PROJECT MANUAL

Renovation of 10 Scattered Sites Homes

IFB for Contract No. 600-31-24

GENERAL CONSTRUCTION

ELECTRICAL CONSTRUCTION

PLUMBING CONSTRUCTION

MECHANICAL CONSTRUCTION

Bids Due

October 25, 2024

10:00 am

Procurement Dept.
412 Boulevard of the Allies
6th Floor, Pittsburgh, PA
15219

Attn:
Procurement
Department

CONSULTANT: **Fukui Architects**

Issued: September 23, 2024

Caster D. Binion
Executive Director

Housing Authority of the City of Pittsburgh

Point of Contact: Darnell.Walker@hacp.org or 412-643-2806

FOR QUESTIONS ONLY: brandon.havranek@hacp.org

HACP Development & Modernization

PROCUREMENT DEPARTMENT
412 Boulevards of the Allies, 6th Floor
Pittsburgh, PA 15219
412.456.5020
www.hacp.org

NOTICE TO PROSPECTIVE BIDDERS

September 12, 2024

INVITATION FOR BIDS (IFB)

Renovation of 10 Scattered Sites Homes

The **HOUSING AUTHORITY OF THE CITY OF PITTSBURGH** will receive separate sealed bids for the following contracts:

GENERAL CONSTRUCTION

ELECTRICAL CONSTRUCTION

MECHANICAL CONSTRUCTION

PLUMBING CONSTRUCTION
The estimated values of the project per contract noted above are in the following ranges:

GENERAL CONSTRUCTION	**$ 254,606.08**	**$ 373,422.25**
ELECTRICAL CONSTRUCTION	**$ 37157.00**	**$ 40,872.70**
PLUMBING CONSTRUCTION	**$ 51,167.25**	**$ 75,045.00**
MECHANICAL CONSTRUCTION	**$ 39,243.00**	**$ 57,556.40**

Bid documents will be available on **September 23, 2024, AT 10:00 AM**

A Pre-Bid Conference will be held on **October 8, 2024, at 10:00 a.m.** at **412 Boulevard of the Allies, Pittsburgh, PA 15219 6th Floor (Conference Room C).** The last day for submission of written questions will be **October 15, 2024, at 12:00 p.m.**

In addition to electronic submission, The Housing Authority of the City of Pittsburgh will only be accepting physical bids dropped off in person from 8:30 AM until the bid opening time of **10:00 a.m.** on **October 25, 2024,** in the lobby of **412 Boulevard of the Allies, Pittsburgh, PA 15219**. Sealed bids may still be mailed via USPS at which time they will be Time and Date Stamped at **412 Boulevard of the Allies, Pittsburgh, PA 15219.** All bids must be received at the above address no later than **10:00 a.m. on October 25, 2024**, regardless of the selected delivery mechanism.

The work must be substantially complete within **245** calendar days of the Notice to Proceed.

Point of contact for questions at the Housing Authority is Brandon Havranek at brandon.havranek@hacp.org.

Bid Documents, including the Bid Forms, Project Manual, and Drawings, may be obtained from the Business Opportunities Section of the HACP website, www.hacp.org. Prospective Bidders may register as a vendor on the website and download the documents free of charge. Electronic Versions of the Bid Documents may also be obtained in person**, Monday through Friday 8:30 a.m. to 4:30 p.m**. at the Housing Authority of the City of Pittsburgh located at **412 Boulevard of the Allies, Pittsburgh, PA 15219**.

HACP Development & Modernization

PROCUREMENT DEPARTMENT
412 Boulevards of the Allies, 6th Floor
Pittsburgh, PA 15219
412.456.5020
www.hacp.org

PRE-BID MEETING

The Pre-Bid meeting will be held on **10/08/2024** at **10:00am** at the address listed below. Interested bidders may decide to attend.

LOCATION: 412 Boulevard of the Allies, 6th Floor, Pittsburgh, PA 15210 (Dev/Mod Dept., Conf Rm C)

PROPOSAL SUBMISSION

The Housing Authority of the City of Pittsburgh will be accepting physical proposals dropped off in person up until **October 25, 2024** at the closing time of **10:00am**. Bids may also be submitted electronically at the following Dropbox link (copy+past):

https://www.dropbox.com/request/CEzYFFQoPFWO7Y81N3lx

Bids can still be mailed via USPS at which time they will be Time and Date Stamped at Procurement Department, 412 Boulevard of the Allies, 6th Floor, Pittsburgh, PA 15219. All Bids must be received at the above address no later than October 25, 2024, at 10:00am., regardless of the selected delivery mechanism.

BID OPENING

The bid opening will be on October 25, 2024, at 10:00am and will be conducted virtually via Zoom.

https://hacp-org.zoom.us/j/84475279803?pwd=ddv9olMcrbLbHCkLiEjMeCJw8ZA8fc.1

Meeting ID: 844 7527 9803
Passcode: 260167
One tap mobile
+13126266799,,84475279803#,,,,*260167# US (Chicago)

AWARD OF CONTRACT (S):

It is the intention of the Authority to award a contract to the lowest responsive and responsible bidder.

All bids shall remain open for the period specified in the IFB, which in no case shall be less than sixty (60) calendar days from the bid opening.

All bids of $10,000 or more must be accompanied by a negotiable bid guarantee that shall not be less than 5% of the amount of the bid. No bid guarantee is required for bids under $10,000. In accordance with 2 CFR 200.318(h) formerly 24 CFR Section 85.36(b)(8), the Authority is permitted to make awards only to responsible bidders possessing the ability to perform successfully under the terms and conditions of the proposed contract. Prior to award of any contract, the Authority shall conduct a pre-contract survey. Consideration will be given to such matters as bidder integrity, compliance with public policy, record of past performance, and financial and technical resources.

All bids must include a completed and signed Form of Agreement (Form 00500) as part of the bid. If the bid is successful and approved by HACP Board of Commissioners (if applicable), HACP will also sign the Form of Agreement thus creating a binding contract.

The successful bidder will be required to furnish an assurance of completion (performance and payment bond) each equal to 100% of the contract price.

The Authority reserves the right to reject any or all bids or to waive any informality in the bidding.

EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS:

The Contractor will be required to comply with all applicable Equal Employment Opportunity requirements for Federally-Assisted Construction Contracts. The Contractor must insure that employees and applicants for employment are not discriminated against because of race, color, religion, sexual preference, handicap or national origin.

A. Section 3 Participation

The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C 1701u and with HUD's regulations set forth at 24 CFR Part 135 ("Section 3"). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance shall be directed to low and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

> Please describe ways the Bidder will assist HACP to comply with HUD's Section 3 requirements for hiring HACP residents and/or local disadvantaged individuals and businesses by reviewing the Section 3 Clause and by completing **Document 00433 – Section 3 Form.**

Section 3 of the Housing and Urban Development Act of 1968, as amended (12 U.S.C. 1701, et seq.) (the "Act") requires the Housing Authority of the City of Pittsburgh to ensure that employment and other economic and business opportunities generated by financial assistance from the Department of Housing and Urban Development ("HUD"), to the greatest extent feasible, are directed to public housing residents and other low income persons, particularly recipients of government housing assistance, and business concerns that provide economic opportunities to low and very low income persons.

To comply with the Act HACP requires its contractors to provide equal employment opportunity to all employees and applicants for employment without regard to race, color, religion, sex, national origin, disability, veteran's or marital status, or economic status and to take affirmative action to ensure that both job applicants and existing employees are given fair and equal treatment.

The goal of this policy is to obtain a reasonable level of success in the recruitment, employment, and utilization of HACP residents and other eligible persons and/or businesses by contractors working on contracts partially or wholly funded with HUD monies. HACP shall examine and consider a contractor's potential for success in providing employment and business opportunities to those covered under Section 3 prior to acting on any proposed contract award. In response to any RFP, RFQ or IFB HACP will require submission of the Section 3 Opportunities Plan and roster of current employees, and certification that the bidder will comply with the requirements of Section 3 either by hiring Section 3 employees to directly perform under the contract or by committing a dollar amount to HACP's Section 3 program in an amount consistent with the chart below. Below are the HACP Section 3 Guidelines as listed in the HACP Section 3 Program Manual:

RESIDENT HIRING REQUIREMENTS / RESIDENT HIRING SCALE

TOTAL LABOR DOLLARS USE TOTAL CONTRACT AMOUNT FOR SERVICE CONTRACTS	**RESIDENT LABOR AS A % OF TOTAL LABOR** **A.** DOLLARS
Labor dollars $25,000 but less than $100,000	10% of the labor dollars
$100,000, but less than $200,000	9% of the labor dollars
At least $200,000, but less than $300,000	8% of the labor dollars
At least $300,000, but less than $400,000	7% of the labor dollars
At least $400,000, but less than $500,000	6% of the labor dollars
At least $500,000, but less than $1 million	5% of the labor dollars
At least $1 million, but less than $2 million	4% of the labor dollars
At least $2 million, but less than $4 million	3% of the labor dollars
At least $4 million, but less than $7 million	2% of the labor dollars
$7 million or more	½ to 1 % of the labor dollars

***A copy of HACP's Section 3 Program Manual is available for download at www.hacp.org*

A copy of HUD's Section 3 requirement is provided herein. If you have any questions regarding the Section 3 Requirements or would like to discuss goals and planning for Section 3 Requirements please contact Mr. Lloyd Wilson, Resident Employment Manager/Section 3 Coordinator, by e-mail at lloyd.wilson@hacp.org or by contacting him at the Housing Authority of the City of Pittsburgh, Resident Employment Program located at the Bedford Hope Center, 2305 Bedford Ave, Pittsburgh PA 15219, telephone (412) 395-3950, ext. 1048. Proposals must demonstrate how the Offeror intends to meet or exceed the Authority's Section 3 requirements. Proposals submitted without a Section 3 plan may be deemed nonresponsive. Also, please complete **Section 3 Opportunities Plan** and include with your proposal.

Any bid or proposal received from a contractor that does not contain a Section 3 Opportunities Plan or certification and back-up documentation acceptable to HACP shall be deemed non-responsive by HACP.

B. MBE/WBE Participation Plan

HACP MBE and WBE Goals. It is the policy of HACP to ensure that Minority Business Enterprises (MBEs) and Women-owned Businesses (WBEs) are provided maximum opportunity to participate in contracts let by HACP. In accordance with Executive Order 11625, HACP has established a minimum threshold of eighteen percent (18%) of the total dollar amount for MBE utilization in this contract. HACP has established a seven percent (7%) minimum threshold for participation of WBEs, and, HACP strongly encourages and affirmatively promotes the use of MBEs and WBEs in all HACP contracts. For these purposes, an MBE is defined as "any legal entity other than a joint venture, organized to engage in commercial transactions, that is at least fifty-one percent (51%) owned and controlled by one or more minority persons." Also, a minority person is defined as a member of a socially or economically disadvantaged minority group, which includes African-Americans, Hispanic-Americans, Native-Americans, and Asian-Americans. A WBE/MBE is defined as "any legal entity other than a joint venture, organized to engage in commercial transactions, that is at least fifty-one percent (51%) owned and controlled by a female.

Bids or proposals submitted in response to this solicitation MUST include an MBE/WBE participation plan which, at a minimum demonstrates "Best Efforts" have been taken to achieve compliance with MBE/WBE goals. HACP's Procurement Policy defines "Best Efforts" in compliance with MBE/WBE goals to mean that the contractor must certify and document with its bid or proposal that it has contacted in writing at least ten (10) certified MBE and ten (10) certified WBE subcontractors to participate in the proposed contract with or lesser number if the contractor provides documentation that ten (10) certified MBE/WBE contractors could not be identified. Each contractor shall certify as to same under penalty of perjury and shall submit the back-up documentation with its bid or proposal. Any bid or proposal received from a contractor that does not contain such certification and back-up documentation acceptable to HACP may be deemed non-responsive by HACP.

If you have any questions regarding the HACP MBE/WBE goals please contact Renelda Colvin, MBE/WBE Compliance Specialist, by e-mail at Renelda.colvin@hacp.org or by contacting her at the Procurement Department, Housing Authority of the City of Pittsburgh, 412 Boulevard of the Allies, Pittsburgh PA 15219, telephone (412) 643-2768. Bids or proposals must demonstrate how the Offerer intends to meet or exceed these goals.

The Authority's Minority and Woman Business (MBE/WBE) participation goals are as follows:

-- MBE Goal: 18%
-- WBE Goal: 7%

Additionally, please be advised that participation credit will be applied in accordance with the following classifications, as follows:

-- Broker:	10% of contract face value
-- Supplier:	60% of contract face value
-- Bona Fide Contractor:	100% of contract face value
-- All Professional Service Firms:	100% of contract face value

Vendor definitions for the above classifications are to be referenced in either the respective vendor MBE/WBE certifications or as defined in 49 CFR Part 26.

Please describe ways the Bidder will utilize MBE/WBE businesses to meet the goals above by completing **Document 00434** – **MBE/WBE Solicitation & Commitment Record**.

Caster D. Binion
Executive Director
Housing Authority of the City of Pittsburgh

Housing Authority of the City of Pittsburgh

Development & Modernization
412 Boulevard of the Allies, 6th Floor
Pittsburgh, PA 15219
Phone: (412) 456-5116
Fax: (412) 456-5007
www.hacp.org

SPECIAL PROVISIONS

NOTICE TO ALL PROSPECTIVE BIDDERS

Renovation of 10 Scattered Sites Homes

CONTRACT NO. 600-31-24

Each successful bidder(s) shall be required to comply with the following special provisions:

A. Required Documents/Information

After bid opening and determination of the responsive and responsible bidder, but prior to Notice to Proceed each successful bidder for this project shall provide the following documents/information to HACP within ten (10) business days of receiving written notice thereof:

(1) Insurance
(2) Payment and Performance Bonds
(3) Construction Schedule
(4) Submittal Log and Corresponding Submittals

Please accept these special provisions by completing the information requested below:

Signature of Authorized Officer: _____ Date: _____

Name of Contractor: _____

Address: _____

Telephone Number: _____

Renovation of 10 Scattered Sites Homes

IFB CONTRACT NO. 600-31-24

HOUSING AUTHORITY OF THE CITY OF
PITTSBURGH DEVELOPMENT & MODERNIZATION
DEPARTMENT

412 Boulevard of the Allies
Pittsburgh, PA 15219
Phone: (412) 456-5020
Fax: (412) 456-5591

Issued: September 23, 2024

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP Contract No. 600-31-24

PROJECT MANUAL
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	Document 00433	Section 3 Opportunities Plan
	Document 00434	MBE/WBE Solicitation & Commitment Record
	Document 00435	Bidder Manpower
	Document 00436	Previous Related Experience
	HUD 5369-A	Representations, Certifications and Other Statements of Bidders
	HUD-2530	Previous Participation Certificate
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PART THREE: CONDITIONS

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To view the Matterport scan click on the link and provide the password. The password is the same for all the sites.

Password: HACP10TO117

7152 McPherson Blvd.
https://my.matterport.com/show/?m=yZnpxWHj9xb

2. 221 Wayside St.
https://my.matterport.com/show/?m=nm8gFWgHhvU

3. 1541 Chelton Avenue.
https://my.matterport.com/show/?m=KU5L66Yze3B

4. 958 Norwich Avenue.
https://my.matterport.com/show/?m=14FXjdT2nSx

5. 2337 Wolford St.
https://my.matterport.com/show/?m=HB4KZyCTGw6

6. 2344 Palm Beach Avenue.
https://my.matterport.com/show/?m=yyc9B8kLaMi

7. 1318 Orangewood Avenue.
https://my.matterport.com/show/?m=U9kuCRwSJjX

8. 8332 Vidette St.
https://my.matterport.com/show/?m=9BabQtcxgNP

9. 1630 Dagmar Avenue.
https://my.matterport.com/show/?m=mL2KpEMbKt7

10. 2534 Neeld Avenue.
https://my.matterport.com/show/?m=mcjUPcbxyv8

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP CONTRACT NO. 600-31-24

INVITATION FOR BIDS
LIST OF DOCUMENTS

The HOUSING AUTHORITY OF THE CITY OF PITTSBURGH will receive separate sealed bids for Renovation of 10 Scattered Sites Homes, for the following contracts:

GENERAL CONSTRUCTION
ELECTRICAL CONSTRUCTION
PLUMBING CONSTRUCTION
MECHANICAL CONSTRUCTION

A complete **Invitation for Bids (IFB)** consists of the following documents:

THE PROJECT MANUAL, **dated** September 23, 2024 consisting of:

Bidding Requirements, Contract Forms, Conditions of the Contract, Wage Determination, and the Specifications.

THE PROJECT DRAWINGS, as prepared by **Fukui Architects**, **dated** **August 20, 2024**.

THE BID PACKAGE, **dated** September 23, 2024 will be available online at hacp.org.

Blank bid document forms to be completed by the bidder;

ADDENDA will be issued as required.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

IDENTIFICATION OF OWNER

The Owner of this project is the Housing Authority of the City of Pittsburgh, a body corporate and politic and created pursuant to the "Housing Authorities Law," an Act passed by the 1937 session of the Legislature of the Commonwealth of Pennsylvania, P.L. 955, approved May 28, 1937, hereinafter variously called the "Housing Authority of the City of Pittsburgh" (HACP), "The Authority," the "Local Housing Authority" (LHA), the "Public Housing Authority" (PHA), or the "Public Housing Authority/Indian Housing Authority" (PHA/IHA).

Caster D. Binion
Executive Director
Housing Authority of the City of Pittsburgh

James D. Harris, Esquire
General Counsel
Housing Authority of the City of Pittsburgh

Procurement Department
Housing Authority of the City of Pittsburgh

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing

Instructions to Bidders for Contracts Public and Indian Housing Programs

Instructions to Bidders for Contracts

Public and Indian Housing Programs

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1. Bid Preparation and Submission

(a) Bidders are expected to examine the specifications, drawings, all instructions, and, if applicable, the construction site (see also the contract clause entitled **Site Investigation and Conditions Affecting the Work** of the *General Conditions of the Contract for Construction*). Failure to do so will be at the bidders' risk.

(b) All bids must be submitted on the forms provided by the Public Housing Agency/Indian Housing Authority (PHA/IHA). Bidders shall furnish all the information required by the solicitation. Bids must be signed and the bidder's name typed or printed on the bid sheet and each continuation sheet which requires the entry of information by the bidder. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent shall be accompanied by evidence of that agent's authority. (Bidders should retain a copy of their bid for their records.)

(c) Bidders must submit as part of their bid a completed form HUD-5369-A, "Representations, Certifications, and Other Statements of Bidders."

(d) All bid documents shall be sealed in an envelope which shall be clearly marked with the words "Bid Documents," the Invitation for Bids (IFB) number, any project or other identifying number, the bidder's name, and the date and time for receipt of bids.

(e) If this solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "No Bid" in the space provided for any item on which no price is submitted.

(f) Unless expressly authorized elsewhere in this solicitation, alternate bids will not be considered.

(g) Unless expressly authorized elsewhere in this solicitation, bids submitted by telegraph or facsimile (fax) machines will not be considered.

(h) If the proposed contract is for a Mutual Help project (as described in 24 CFR Part 905, Subpart E) that involves Mutual Help contributions of work, material, or equipment, supplemental information regarding the bid advertisement is provided as an attachment to this solicitation.

2. Explanations and Interpretations to Prospective Bidders

(a) Any prospective bidder desiring an explanation or interpretation of the solicitation, specifications, drawings, etc., must request it at least 7 days before the scheduled time for bid opening. Requests may be oral or written. Oral requests must be confirmed in writing. The only oral clarifications that will be provided will be those clearly related to solicitation procedures, i.e., not substantive technical information. No other oral explanation or interpretation will be provided. Any information given a prospective bidder concerning this solicitation will be furnished promptly to all other prospective bidders as a written amendment to the solicitation, if that information is necessary in submitting bids, or if the lack of it would be prejudicial to other prospective bidders.

(b) Any information obtained by, or provided to, a bidder other than by formal amendment to the solicitation shall not constitute a change to the solicitation.

3. Amendments to Invitations for Bids

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date on the bid form, or (3) by letter, telegram, or facsimile, if those methods are authorized in the solicitation. The PHA/IHA must receive acknowledgement by the time and at the place specified for receipt of bids. Bids which fail to acknowledge the bidder's receipt of any amendment will result in the rejection of the bid if the amendment(s) contained information which substantively changed the PHA's/IHA's requirements.

(c) Amendments will be on file in the offices of the PHA/IHA and the Architect at least 7 days before bid opening.

4. Responsibility of Prospective Contractor

(a) The PHA/IHA will award contracts only to responsible prospective contractors who have the ability to perform successfully under the terms and conditions of the proposed contract. In determining the responsibility of a bidder, the PHA/IHA will consider such matters as the bidder's:

(1) Integrity;

(2) Compliance with public policy;

(3) Record of past performance; and

(4) Financial and technical resources (including construction and technical equipment).

(b) Before a bid is considered for award, the bidder may be requested by the PHA/IHA to submit a statement or other documentation regarding any of the items in paragraph (a) above. Failure by the bidder to provide such additional information shall render the bidder nonresponsible and ineligible for award.

5. Late Submissions, Modifications, and Withdrawal of Bids

(a) Any bid received at the place designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it:

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., an offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been mailed by the 15th);

(2) Was sent by mail, or if authorized by the solicitation, was sent by telegram or via facsimile, and it is determined by the PHA/IHA that the late receipt was due solely to mishandling by the PHA/IHA after receipt at the PHA/IHA; or

(3) Was sent by U.S. Postal Service Express Mail Next Day Service - Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of proposals. The term "working days" excludes weekends and observed holidays.

(b) Any modification or withdrawal of a bid is subject to the same conditions as in paragraph (a) of this provision.

(c) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date or the bid, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, bidders should request the postal clerk to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(d) The only acceptable evidence to establish the time of receipt at the PHA/IHA is the time/date stamp of PHA/IHA on the proposal wrapper or other documentary evidence of receipt maintained by the PHA/IHA.

(e) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (c) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, bidders should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and Failure by a bidder to acknowledge receipt of the envelope or wrapper.

(f) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful bid that makes its terms more favorable to the PHA/IHA will be considered at any time it is received and may be accepted.

(g) Bids may be withdrawn by written notice, or if authorized by this solicitation, by telegram (including mailgram) or facsimile machine transmission received at any time before the exact time set for opening of bids; provided that written confirmation of telegraphic or facsimile withdrawals over the signature of the bidder is mailed and postmarked prior to the specified bid opening time. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for opening of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

6. Bid Opening

All bids received by the date and time of receipt specified in the solicitation will be publicly opened and read. The time and place of opening will be as specified in the solicitation. Bidders and other interested persons may be present.

7. Service of Protest

(a) Definitions. As used in this provision:

"Interested party" means an actual or prospective bidder whose direct economic interest would be affected by the award of the contract.

"Protest" means a written objection by an interested party to this solicitation or to a proposed or actual award of a contract pursuant to this solicitation.

(b) Protests shall be served on the Contracting Officer by obtaining written and dated acknowledgement from —

Contracting Officer
Legal Department
Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies, 5th Floor
Pittsburgh, PA 15219

[Contracting Officer designate the official or location where a protest may be served on the Contracting Officer]

(c) All protests shall be resolved in accordance with the PHA's/IHA's protest policy and procedures, copies of which are maintained at the PHA/IHA.

8. Contract Award

(a) The PHA/IHA will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the PHA/IHA considering only price and any price-related factors specified in the solicitation.

(b) If the apparent low bid received in response to this solicitation exceeds the PHA's/IHA's available funding for the proposed contract work, the PHA/IHA may either accept separately priced items (see 8(e) below) or use the following procedure to determine contract award. The PHA/IHA shall apply in turn to each bid (proceeding in order from the apparent low bid to the high bid) each of the separately priced bid deductible items, if any, in their priority order set forth in this solicitation. If upon the application of the first deductible item to all initial bids, a new low bid is within the PHA's/IHA's available funding, then award shall be made to that bidder. If no bid is within the available funding amount, then the PHA/IHA shall apply the second deductible item. The PHA/IHA shall continue this process until an evaluated low bid, if any, is within the PHA's/IHA's available funding. If upon the application of all deductibles, no bid is within the PHA's/IHA's available funding, or if the solicitation does not request separately priced deductibles, the PHA/IHA shall follow its written policy and procedures in making any award under this solicitation.

(c) In the case of tie low bids, award shall be made in accordance with the PHA's/IHA's written policy and procedures.

(d) The PHA/IHA may reject any and all bids, accept other than the lowest bid (e.g., the apparent low bid is unreasonably low), and waive informalities or minor irregularities in bids received, in accordance with the PHA's/IHA's written policy and procedures.

(e) Unless precluded elsewhere in the solicitation, the PHA/IHA may accept any item or combination of items bid.

(f) The PHA/IHA may reject any bid as nonresponsive if it is materially unbalanced as to the prices for the various items of work to be performed. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.

(g) A written award shall be furnished to the successful bidder within the period for acceptance specified in the bid and shall result in a binding contract without further action by either party.

9. **Bid Guarantee** (applicable to construction and equipment contracts exceeding $25,000)

All bids must be accompanied by a negotiable bid guarantee which shall not be less than five percent (5%) of the amount of the bid. The bid guarantee may be a certified check, bank draft, U.S. Government Bonds at par value, or a bid bond secured by a surety company acceptable to the U.S. Government and authorized to do business in the state where the work is to be performed. In the case where the work under the contract will be performed on an Indian reservation area, the bid guarantee may also be an irrevocable Letter of Credit (see provision 10, Assurance of Completion, below). Certified checks and bank drafts must be made payable to the order of the PHA/IHA. The bid guarantee shall insure the execution of the contract and the furnishing of a method of assurance of completion by the successful bidder as required by the solicitation. Failure to submit a bid guarantee with the bid shall result in the rejection of the bid. Bid guarantees submitted by unsuccessful bidders will be returned as soon as practicable after bid opening.

10. Assurance of Completion

(a) Unless otherwise provided in State law, the successful bidder shall furnish an assurance of completion prior to the execution of any contract under this solicitation. This assurance may be [Contracting Officer check applicable items] —

[X] (1) a performance and payment bond in a penal sum of 100 percent of the contract price; or, as may be required or permitted by State law;

[ ] (2) separate performance and payment bonds, each for 50 percent or more of the contract price;

[ ] (3) a 20 percent cash escrow;

[ ] (4) a 25 percent irrevocable letter of credit; or,

[ ] (5) an irrevocable letter of credit for 10 percent of the total contract price with a monitoring and disbursements agreement with the IHA (applicable only to contracts awarded by an IHA under the Indian Housing Program).

(b) Bonds must be obtained from guarantee or surety companies acceptable to the U.S. Government and authorized to do business in the state where the work is to be performed. Individual sureties will not be considered. U.S. Treasury Circular Number 570, published annually in the Federal Register, lists companies approved to act as sureties on bonds securing Government contracts, the maximum underwriting limits on each contract bonded, and the States in which the company is licensed to do business. Use of companies listed in this circular is mandatory. Copies of the circular may be downloaded on the U.S. Department of Treasury website **http://www.fms.treas.gov/c570/index.html**, or ordered for a minimum fee by contacting the Government Printing Office at (202) 512-2168.

(c) Each bond shall clearly state the rate of premium and the total amount of premium charged. The current power of attorney for the person who signs for the surety company must be attached to the bond. The effective date of the power of attorney shall not precede the date of the bond. The effective date of the bond shall be on or after the execution date of the contract.

(d) Failure by the successful bidder to obtain the required assurance of completion within the time specified, or within such extended period as the PHA/IHA may grant based upon reasons determined adequate by the PHA/IHA, shall render the bidder ineligible for award. The PHA/IHA may then either award the contract to the next lowest responsible bidder or solicit new bids. The PHA/IHA may retain the ineligible bidder's bid guarantee.

11. **Preconstruction Conference** (applicable to construction contracts)

After award of a contract under this solicitation and prior to the start of work, the successful bidder will be required to attend a preconstruction conference with representatives of the PHA/IHA and its architect/engineer, and other interested parties convened by the PHA/IHA. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract (e.g., Equal Employment Opportunity, Labor Standards). The PHA/IHA will provide the successful bidder with the date, time, and place of the conference.

12. **Indian Preference Requirements** (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

(a) HUD has determined that the contract awarded under this solicitation is subject to the requirements of section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e(b)). Section 7(b) requires that any contract or subcontract entered into for the benefit of Indians shall require that, to the greatest extent feasible

(1) Preferences and opportunities for training and employment (other than core crew positions; see paragraph (h) below) in connection with the administration of such contracts or subcontracts be given to qualified "Indians." The Act defines "Indians" to mean persons who are members of an Indian tribe and defines "Indian tribe" to mean any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act, which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians; and,

(2) Preference in the award of contracts or subcontracts in connection with the administration of contracts be given to Indian organizations and to Indian-owned economic enterprises, as defined in section 3 of the Indian Financing Act of 1974 (25 U.S.C. 1452). That Act defines "economic enterprise" to mean any Indian-owned commercial, industrial, or business activity established or organized for the purpose of profit, except that the Indian ownership must constitute not less than 51 percent of the enterprise; "Indian organization" to mean the governing body of any Indian tribe or entity established or recognized by such governing body; "Indian" to mean any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act; and Indian "tribe" to mean any Indian tribe, band, group, pueblo, or community including Native villages and Native groups (including

corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

(b) (1) The successful Contractor under this solicitation shall comply with the requirements of this provision in awarding all subcontracts under the contract and in providing training and employment opportunities.

(2) A finding by the IHA that the contractor, either (i) awarded a subcontract without using the procedure required by the IHA, (ii) falsely represented that subcontracts would be awarded to Indian enterprises or organizations; or, (iii) failed to comply with the contractor's employment and training preference bid statement shall be grounds for termination of the contract or for the assessment of penalties or other remedies.

(c) If specified elsewhere in this solicitation, the IHA may restrict the solicitation to qualified Indian-owned enterprises and Indian organizations. If two or more (or a greater number as specified elsewhere in the solicitation) qualified Indian-owned enterprises or organizations submit responsive bids, award shall be made to the qualified enterprise or organization with the lowest responsive bid. If fewer than the minimum required number of qualified Indian-owned enterprises or organizations submit responsive bids, the IHA shall reject all bids and readvertise the solicitation in accordance with paragraph (d) below.

(d) If the IHA prefers not to restrict the solicitation as described in paragraph (c) above, or if after having restricted a solicitation an insufficient number of qualified Indian enterprises or organizations submit bids, the IHA may advertise for bids from non-Indian as well as Indian-owned enterprises and Indian organizations. Award shall be made to the qualified Indian enterprise or organization with the lowest responsive bid if that bid is -

(1) Within the maximum HUD-approved budget amount established for the specific project or activity for which bids are being solicited; and

(2) No more than the percentage specified in 24 CFR 905.175(c) higher than the total bid price of the lowest responsive bid from any qualified bidder. If no responsive bid by a qualified Indian-owned economic enterprise or organization is within the stated range of the total bid price of the lowest responsive bid from any qualified enterprise, award shall be made to the bidder with the lowest bid.

(e) Bidders seeking to qualify for preference in contracting or subcontracting shall submit proof of Indian ownership with their bids. Proof of Indian ownership shall include but not be limited to:

(1) Certification by a tribe or other evidence that the bidder is an Indian. The IHA shall accept the certification of a tribe that an individual is a member.

(2) Evidence such as stock ownership, structure, management, control, financing and salary or profit sharing arrangements of the enterprise.

(f) (1) All bidders must submit with their bids a statement describing how they will provide Indian preference in the award of subcontracts. The specific requirements of that statement and the factors to used by the IHA in determining the statement's adequacy are included as an attachment to this solicitation. Any bid that fails to include the required statement shall be rejected as nonresponsive. The IHA may require that comparable statements be provided by subcontractors to the successful Contractor, and may require the Contractor to reject any bid or proposal by a subcontractor that fails to include the statement.

(2) Bidders and prospective subcontractors shall submit a certification (supported by credible evidence) to the IHA in any instance where the bidder or subcontractor believes it is infeasible to provide Indian preference in subcontracting. The acceptance or rejection by the IHA of the certification shall be final. Rejection shall disqualify the bid from further consideration.

(g) All bidders must submit with their bids a statement detailing their employment and training opportunities and their plans to provide preference to Indians in implementing the contract; and the number or percentage of Indians anticipated to be employed and trained. Comparable statements from all proposed subcontractors must be submitted. The criteria to be used by the IHA in determining the statement(s)'s adequacy are included as an attachment to this solicitation. Any bid that fails to include the required statement(s), or that includes a statement that does not meet minimum standards required by the IHA shall be rejected as nonresponsive.

(h) Core crew employees. A core crew employee is an individual who is a bona fide employee of the contractor at the time the bid is submitted; or an individual who was not employed by the bidder at the time the bid was submitted, but who is regularly employed by the bidder in a supervisory or other key skilled position when work is available. Bidders shall submit with their bids a list of all core crew employees.

(i) Preference in contracting, subcontracting, employment, and training shall apply not only on-site, on the reservation, or within the IHA's jurisdiction, but also to contracts with firms that operate outside these areas (e.g., employment in modular or manufactured housing construction facilities).

(j) Bidders should contact the IHA to determine if any additional local preference requirements are applicable to this solicitation.

(k) The IHA [ ] does [X] does not [Contracting Officer check applicable box] maintain lists of Indian-owned economic enterprises and Indian organizations by specialty (e.g., plumbing, electrical, foundations), which are available to bidders to assist them in meeting their responsibility to provide preference in connection with the administration of contracts and subcontracts.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP CONTRACT NO. 600-31-24

NOTICE OF PRE-BID CONFERENCE

A Pre-Bid Conference will be held on October 8, 2024

- A Pre-Bid Conference will be held on October 8, 2024 **at** 10:00 am, at the _____ _____. A site visit of the property will be conducted thereafter. Bidders shall be prepared to review all aspects of the site necessary to prepare a bid.

- Representatives of the Authority, the engineer and other interested parties will be in attendance.

All bidders are urged to attend.

- Bidders are responsible for examining the construction site. (Refer to "Instructions to Bidders for Contracts," Document HUD 5369, Clause 1, "Bid Preparation and Submission.") Notwithstanding the above, lack of attendance will not be a basis for rejecting a bid.

- Bidders are urged to examine the drawings and specifications prior to the Pre-Bid Conference.

- Nothing at the Pre-Bid Conference will change the terms of the IFB unless a subsequent Addendum is issued. (Refer to "Instructions to Bidders for Contracts," Document HUD 5369, Clause 2, "Explanations and Interpretations to Prospective Bidders.")

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP CONTRACT NO. 600-31-24

PROJECT SCHEDULE

NO LATER THAN	
September 23, 2024	Invitation for Bids issued
October 8, 2024 10:00 am	Pre-Bid Conference
October 15, 2024 12:00 pm	Last day to submit written questions
October 25, 2024 10:00 am	Bids due
November 1, 2024 (estimated)	Notice of Award
December 1, 2024 (estimated)	Execution of Contracts
December 1, 2024 (estimated)	Pre-Construction Conference
December 1, 2024 (estimated)	Construction Start
245 calendar days from effective date of Notice to Proceed	All work required under this contract shall be complete

HACP Development & Modernization

PROCUREMENT DEPARTMENT
412 Boulevards of the Allies, 6th Floor
Pittsburgh, PA 15219
412.456.5020
www.hacp.org

HACP Renovation of 10 Scattered Sites -**Project Details**

09-23-24

1. Units at Wolford and Vidette are Vacant and available immediately. They must be completed first and within 75 days of the Notice to Proceed. Liquidated damages apply thereafter. These units may be used for temporary relocation of residents. As such, the General Contractor will be required to perform a secondary final clean and touch up of each of these units prior to the conclusion of the project as directed by HACP.

2. The remaining 8 units are and are expected to remain Occupied during construction. These units will be available for start of construction after January 15, 2025. (See item 9. Below)

3. Completion of these 8 units shall be accomplished in the order designated by the General Contractor with the following to be achieved, and liquidated damages applied thereafter:

   4 units (any addresses) substantially complete within 120 days of NTP
   4 units (any addresses) substantially complete within 180 days of NTP

4. GC will be responsible for generating a comprehensive schedule with input and agreement from other primes. Other Primes must adhere to the schedule and liquidated damages apply to all Prime contractors. Any delay by any Prime will be monitored and documented.

   Each Prime Contractor shall be required to sign the agreed upon schedule, attesting to their agreement with the Schedule and accepting their responsibility to 1) work with the General and all other Prime Contractors in completing the work according to the Schedule; 2) cooperate with others and work to avoid unnecessary delays whether caused by their workforce or others.
   3) work with other Prime Contractors to mitigate unforeseen conditions and weather delays should they occur

5. All Prime Contractors shall be responsible for cooperating with all other Prime Contractors in the completion of their work. Punchlist Inspections will be performed at one time only per address and will include inspections for all primes. The General Contractor will be responsible for coordinating the date of the punch list inspection for all Primes so all punch list inspections will take place on the same day. Two weeks prior to scheduled Final Completion, the Prime Contractors shall inform the General that their work is completed or if there are any items that are incomplete, provide a list of those items to the General Contractor.

6. Several units have hazardous material abatement to be performed by a certified contractor in accordance with all applicable regulations. General Contractor is responsible for Hazardous Material abatement.

If it is practical, due to the nature and location of the materials, for the resident to remain in their home during abatement, all appropriate measures must be taken to ensure the resident is

properly safeguarded. Should temporary relocation of resident of any unit be required for abatement efforts, the duration of the abatement/clearance / relocation shall not exceed 3 days.

7. All Contractors must take care during construction in an occupied residence, keeping disruptions and dust/debris to a minimum. Prior to work being performed in occupied units, residents must be notified in writing 48 hours in advance. At the conclusion of each workday, the unit must be left tidy and with fully functioning utilities.

8. General Contractor will be required to move furniture or other resident belongings in order to access the work to be performed. Care shall be taken to catalog and protect all resident items. As such, the General Contractor will be required to fully photograph each unit prior to any construction efforts inclusive of packaging and or moving items.

9. The Units at McPherson, Chelton, Norwich, Orangewood and Dagmar include bathroom/kitchen renovations that may require the temporary relocation of residents. Should temporary relocation of residents be required for construction efforts, the duration of the construction efforts/ relocation shall not exceed 7 days.

10. To reduce the overall construction time and remove the uncertainty of material procurement, after Contract award, each Prime Contractor shall provide a list of long lead materials required to complete their work. Upon receipt of the Notice to Proceed, contractors are encouraged to pre- order long lead equipment and materials and have it available for construction. Each contractor is responsible for storage of their own materials/equipment. Approval of appropriate shop drawing(s) is required and should be considered in scheduling. Contractors shall field verify as needed.

11. Payment for stored materials is applicable per the requirements of HACP and HUD General Conditions.

12. Matterport files (3D Scan) of each unit are available and a link will be provided as part of the bid documents.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP CONTRACT NO. 600-31-24

SCOPE OF WORK FOR GENERAL CONSTRUCTION

The Contract for General Construction shall consist of the following component parts:

1. THE AGREEMENT
(Bound in the Project Manual)

THE BID	Document 00310 - Scope of Work for General Construction Document 00311 - Form of Bid for General Construction
THE FORM OF AGREEMENT	Document 00500 - Form of Agreement Document 00590 - Contracting Officer Certification
CONDITIONS OF THE CONTRACT	Document HUD - 5370 General Conditions HACP Document - Supplemental General Conditions Document 00830 - Wage Determination Schedule

2. PRIMARY SPECIFICATIONS FOR THE GENERAL CONSTRUCTION CONTRACT
(Bound in the Project Manual)

All Work contained in the Primary Specifications listed below is the Work of the Contractor for this General Construction Contract unless specifically indicated otherwise.

Any Reference in the Primary Specifications to the "Contractor," the "Prime Contractor," or the "General Contractor" shall be interpreted as meaning the Contractor for this General Construction Contract.

The General Contractor shall coordinate the schedule and activities of work performed by this and all other Prime Contracts, as identified by (G)-General, (P)-Plumbing, (H)-HVAC, and (E)-Electrical.

It is the contractual responsibility of the Contractor for General Construction to familiarize himself with the work of the other prime contractors so that the Project as a whole can proceed in an orderly fashion. Failure to familiarize work by other trades would not be an excuse for corrective measures at no cost to the City of Pittsburgh Housing Authority.

For example, the General Contractor shall coordinate installation of general construction work with the requirements of the Plumbing, Mechanical, and Electrical Contractors.

Reference Standard for Incidental Work: Incidental work, as used in this paragraph, is work which is not a basic part of other Prime Contracts but which is required by reference.

For example, the General Contractor is required by his Primary Specifications to install and repair all general work. In the event that the Plumbing Contractor disturbs the general work, the patching, repair shall be done and follow the same Specification requirements of the appropriate Specification Section by the Plumbing Contractor even if that specification section may not be part of the Plumbing Contractor's Primary Specification. The same applies to all trades where incidental work occurs.

TECHNICAL SPECIFICATIONS MAY BE FOUND AT PART FOUR
OF THE PROJECT MANUAL

PLEASE ALSO REFER TO DRAWINGS WHICH ALSO LIST THE SPECIFICATIONS

3. PRIMARY DRAWINGS FOR THE GENERAL CONSTRUCTION CONTRACT
(Contained in the set of Project Drawings issued simultaneously with this Project Manual)

All Work contained in the Primary Drawings listed below is the Work of this Contractor unless specifically indicated otherwise.

Any Reference to the "Contractor," the "Prime Contractor," or the "General Contractor" shall be interpreted as meaning the Contractor for this General Construction Contract.

The Primary Drawings for this contract consist of all Fukui Architects construction documents drawings, **dated** August 20, 2024 and specifications contained in this project manual.

In case of drawing conflict with specifications, it is understood that the specification shall supersede the drawings.

The Technical specifications are included in the drawings and therein General Contractor's work is identified by "(GC)".

The specification also includes PSI Specification for Asbestos Abatement 028000

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP Contract No. 600-31-24

FORM OF BID

GENERAL CONSTRUCTION

Contract No.: 600-31-24

TO: HOUSING AUTHORITY
CITY OF PITTSBURGH
(Hereinafter called the "Authority")
412 Boulevard of the Allies
Pittsburgh, PA 15219

BIDDER: _____
(Bidder Name)
_____
(Business Address)
_____
_____
(Telephone)

1. The undersigned Bidder, having visited the site, having become familiar with local conditions affecting the cost of the work**, including all City of Pittsburgh current code requirements**, and having become familiar with the Invitation for Bids (the IFB) issued by the Authority, which consists of the following:

   - Project Manual, dated September 23, containing Bidding Requirements, Contract Forms, Conditions of the Contract, and Specifications
   - Project Drawings, dated August 20, 2024
   - Addenda (if any) as enumerated in this Form of Bid

   hereby proposes to provide all supervision, technical personnel, labor, materials, machinery, tools, appurtenances, equipment and services required to construct and complete the General Construction Work as described in Document 00310 "Scope of Work for General Construction" and as indicated in the Drawings and Specifications, for the following Firm Fixed Price:

   _____Dollars ($ _____)
   (Insert Bid Price in words) *(Insert Bid Price in Figures)*

2. Bid security **[ ] is [ ] is not** submitted with this bid.
   (Check one)

   Bid Security is in amount of:

   _____% of the bid OR _____ Dollars ($_____)

Bid Security is in the form of:

[ ]	Certified Check	[ ]	Bank Draft
[ ]	U.S. Govt. Bond	[ ]	Bid Bond (Document 00410)

3. The Bidder hereby acknowledges receipt of the following Addenda, if any, as issued by the Authority:

Total number of Addenda _____ (if none, so state)

Addendum No. _____dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____

4. The Bidder attaches hereto the Special Provisions (Document 00021);

5. The Bidder attaches hereto the Statement of Bidder's Qualifications (Document 00420);

6. The Bidder attaches hereto the Section 3 Opportunities Plan (Document 00433), MBE/WBE Solicitation and Commitment Record (Document 00434), Bidder Manpower Plan (Document 00435), and Previous Related Experience (Document 00436);

7. The Bidder attaches hereto the Bidder's Representations, Certifications and Other Statements of Bidders (Document HUD 5369-A), Previous Participation Certificate (Document HUD-2530);

8. The Bidder attaches hereto the Bidder’s Special Provisions – Notice to All Prospective Bidders (Document 00437), Non-Collusion Affidavit (Document 00485);

9. The Bidder attaches hereto the completed Form of Agreement (Document 00500);

10. The Bidder attaches hereto the Supplemental General Conditions (HACP Document).

PROPRIETORSHIP SIGNATURE PAGE

SHEET - FB-I

(To be used when the Bidder is an individual doing business as a Sole Proprietorship.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] An individual doing business in his/her own name
[ ] An individual doing business under a fictitious or assumed name
(Complete Proprietorship Fictitious Name Disclosure below)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Principal*	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

PROPRIETORSHIP FICTITIOUS NAME DISCLOSURE

(To be used when the Bidder is an individual doing business under a fictitious or assumed name.)

_____ is an individual trading under a fictitious or
(Proprietor's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Principal*	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

PARTNERSHIP SIGNATURE PAGE SHEET - FB-P-1

(To be used when the Bidder is an individual doing business as a Partnership.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] A General Partnership (Attach completed Sheet FB-P-3)
  [ ] Doing business under Partnership Name
  [ ] Doing business under a fictitious or assumed name
    (Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)

[ ] A Limited Partnership (Attach completed Sheet FB-P-3)
  [ ] Doing business under Partnership Name
  [ ] Doing business under a fictitious or assumed name
    (Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Partner **	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*
	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Partner **	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

* If the Bidder is a partnership, the Bid and Contract must be signed in the name of the partnership by at least two general partners, and the names and addresses of all the partners must be listed on the certificate on Sheet FB-P-3.

PARTNERSHIP FICTITIOUS NAME DISCLOSURE

SHEET FB-P-2

(To be used when the Bidder is a partnership doing business under a fictitious or assumed name.)

_____ is a partnership trading under a fictitious or
(Partnership's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Partner**	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

PARTNERSHIP CERTIFICATE SHEET FB-P-3

(To be used when the Bidder is a partnership.)

I, as partner of _____,
(Name of Partnership)
certify that the following are the names and addresses of all the partners of said partnership.

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

(Use additional sheets as required.)

Witness { _____ *(Printed or Typed Name)* _____ *(Signature and Date)*

*Partner** { _____ *(Printed or Typed Name)* _____ *(Signature and Date)*

CORPORATION SIGNATURE PAGE SHEET FB-C-1

(To be used when the bidder is a corporation.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] A corporation doing business in its own name
[ ] A corporation doing business under a fictitious or assumed name
(Complete Corporation Fictitious Name Disclosure FB-C-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

(CORPORATE SEAL)

_____
(Corporate Name)

_____
(Printed or Typed Name)

_____
(Printed or Typed Name)

Witness {

_____
(Signature and Date)

President
*V.P.*** {

_____
(Signature and Date)

_____
(Corporate Title)

_____
(Corporate Title)

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION FICTITIOUS NAME DISCLOSURE SHEET FB-C-2

(To be used when the Bidder is a corporation doing business under a fictitious or assumed name.)

_____ is a corporation trading under a fictitious or
(Corporation's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*President*	
{		*V.P. ***	{
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION CERTIFICATE SHEET FB-C-3

(To be used when the bidder is a corporation)

_____ is a corporation organized and existing
(Corporate name used as Bidder name)

under the laws of the state of _____ with its principal place of business at:

_____,_____,_____
(Street Address) *(City)* *(State)*

and, if a non-Pennsylvania corporation **[ ] has [ ] has not** *(check one)* been granted a certificate of authority to do business in Pennsylvania as required by the Pennsylvania Business Corporation Law, approved May 5, 1933, P.L. 364, as amended, 15 P.S. sec.2005 et seq.

I, _____, certify that I am the **[ ] Secretary [ ] Assistant Secretary** of the
(check one)
Corporation named a Bidder herein; that _____ who signed

this Bid on behalf of the Corporation was then _____ of said Corporation that
(President/V.P.) **

I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

(CORPORATE SEAL)

_____
(Signature and Date)

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the above Certificate must be executed by the Secretary or Assistant Secretary

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP CONTRACT NO. 600-31-24

SCOPE OF WORK FOR
ELECTRICAL CONSTRUCTION

The Contract for Electrical Construction shall consist of the following component parts:

1. THE AGREEMENT
(Bound in the Project Manual)

THE BID	Document 00320 - Scope of Work for Electrical Construction Document 00321 - Form of Bid for Electrical Construction
THE FORM OF AGREEMENT	Document 00500 - Form of Agreement Document 00590 - Contracting Officer Certification
CONDITIONS OF THE CONTRACT	Document HUD - 5370 General Conditions HACP Document - Supplemental General Conditions Document 00830 - Wage Determination Schedule

2. PRIMARY SPECIFICATIONS FOR THE ELECTRICAL CONSTRUCTION CONTRACT
(Bound in the Project Manual)

All Work contained in the Primary Specifications listed below is the Work of the Contractor for this Electrical Construction Contract unless specifically indicated otherwise.

Any Reference in the Primary Specifications to the "Contractor," the "Prime Contractor," or the "Electrical Contractor" shall be interpreted as meaning the Contractor for this Electrical Construction Contract.

The Electrical Contractor shall coordinate the schedule and activities of work performed under this contract with that of those contracts identified as (G)-General, (P)-Plumbing, and (H)-HVAC.

It is the contractual responsibility of the Contractor for Electrical Construction to familiarize himself with the work of the other prime contractors so that the Project as a whole can proceed in an orderly fashion. Failure to familiarize work by other trades would not be an excuse for corrective measures at no cost to the City of Pittsburgh Housing Authority.

For example, the Electrical Contractor shall coordinate installation of electrical construction work with the requirements of the Plumbing, Mechanical, and General Contractors.

Reference Standard for Incidental Work: Incidental work, as used in this paragraph, is work which is not a basic part of other Prime Contracts but which is required by reference.

For example, the General Contractor is required by his Primary Specifications to install and repair all general work. In the event that the Plumbing Contractor disturbs the general work, the patching, repair shall be done and follow the same Specification requirements of the appropriate Specification Section by the Plumbing Contractor even if that specification section may not be part of the Plumbing Contractor's Primary Specification. The same applies to all trades where incidental work occurs.

TECHNICAL SPECIFICATIONS MAY BE FOUND AT PART FOUR
OF THE PROJECT MANUAL

PLEASE ALSO REFER TO DRAWINGS THAT INCLUDE THE SPECIFICATIONS.

3. PRIMARY DRAWINGS FOR THE ELECTRICAL CONSTRUCTION CONTRACT
(Contained in the set of Project Drawings issued simultaneously with this Project Manual)

All Work contained in the Primary Drawings listed below is the Work of this Contractor unless specifically indicated otherwise.

Any Reference to the "Contractor," the "Prime Contractor," or the "Electrical Contractor" shall be interpreted as meaning the Contractor for this Electrical Construction Contract.

The Primary Drawings for this contract consist of all Fukui Architects construction documents drawings, **dated** August 20, 2024 and specifications contained in this project manual.

In case of drawing conflict with specifications, it is understood that the specification shall supersede the drawings.

Electrical Contractor's work is identified by "(E)".

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP Contract No. 600-31-24

FORM OF BID

ELECTRICAL CONSTRUCTION

Contract No.: 600-31-24

TO: HOUSING AUTHORITY
CITY OF PITTSBURGH
(Hereinafter called the "Authority")
412 Boulevard of the Allies
Pittsburgh, PA 15219

BIDDER: _____
(Bidder Name)
_____
(Business Address)
_____
_____
(Telephone)

1. The undersigned Bidder, having visited the site, having become familiar with local conditions affecting the cost of the work**, including all City of Pittsburgh current code requirements**, and having become familiar with the Invitation for Bids (the IFB) issued by the Authority, which consists of the following:

   - Project Manual, dated September 23, 20containing Bidding Requirements, Contract Forms, Conditions of the Contract, and Specifications
   - Project Drawings, dated August 20, 2024
   - Addenda (if any) as enumerated in this Form of Bid

   hereby proposes to provide all supervision, technical personnel, labor, materials, machinery, tools, appurtenances, equipment and services required to construct and complete the Electrical Construction Work as described in Document 00320 "Scope of Work for Electrical Construction" and as indicated in the Drawings and Specifications, for the following Firm Fixed Price:

   _____Dollars ($ _____)
   (Insert Bid Price in words) *(Insert Bid Price in Figures)*

2. Bid security **[ ] is [ ] is not** submitted with this bid.
   (Check one)

   Bid Security is in amount of:

   _____% of the bid OR _____ Dollars ($_____)

Bid Security is in the form of:

[ ]	Certified Check	[ ]	Bank Draft
[ ]	U.S. Govt. Bond	[ ]	Bid Bond (Document 00410)

3. The Bidder hereby acknowledges receipt of the following Addenda, if any, as issued by the Authority:

Total number of Addenda _____ (if none, so state)

Addendum No. _____dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____

4. The Bidder attaches hereto the Special Provisions (Document 00021);

5. The Bidder attaches hereto the Statement of Bidder's Qualifications (Document 00420);

6. The Bidder attaches hereto the Section 3 Opportunities Plan (Document 00433), MBE/WBE Solicitation and Commitment Record (Document 00434), Bidder Manpower Plan (Document 00435), and Previous Related Experience (Document 00436);

7. The Bidder attaches hereto the Bidder's Representations, Certifications and Other Statements of Bidders (Document HUD 5369-A), Previous Participation Certificate (Document HUD-2530);

8. The Bidder attaches hereto the Bidder’s Special Provisions – Notice to All Prospective Bidders (Document 00437), Non-Collusion Affidavit (Document 00485);

9. The Bidder attaches hereto the completed Form of Agreement (Document 00500);

10. The Bidder attaches hereto the Supplemental General Conditions (HACP Document).

PROPRIETORSHIP SIGNATURE PAGE

SHEET - FB-I

(To be used when the Bidder is an individual doing business as a Sole Proprietorship.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] An individual doing business in his/her own name
[ ] An individual doing business under a fictitious or assumed name
(Complete Proprietorship Fictitious Name Disclosure below)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Principal*	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

PROPRIETORSHIP FICTITIOUS NAME DISCLOSURE

(To be used when the Bidder is an individual doing business under a fictitious or assumed name.)

_____ is an individual trading under a fictitious or
(Proprietor's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Principal*	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

PARTNERSHIP SIGNATURE PAGE SHEET - FB-P-1

(To be used when the Bidder is an individual doing business as a Partnership.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] A General Partnership (Attach completed Sheet FB-P-3)
  [ ] Doing business under Partnership Name
  [ ] Doing business under a fictitious or assumed name
    (Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)

[ ] A Limited Partnership (Attach completed Sheet FB-P-3)
  [ ] Doing business under Partnership Name
  [ ] Doing business under a fictitious or assumed name
    (Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Partner **	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*
	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Partner **	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

* If the Bidder is a partnership, the Bid and Contract must be signed in the name of the partnership by at least two general partners, and the names and addresses of all the partners must be listed on the certificate on Sheet FB-P-3.

PARTNERSHIP FICTITIOUS NAME DISCLOSURE

SHEET FB-P-2

(To be used when the Bidder is a partnership doing business under a fictitious or assumed name.)

_____ is a partnership trading under a fictitious or
(Partnership's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____		_____
	(Printed or Typed Name)		*(Printed or Typed Name)*
Witness		*Partner**	
{		{	
	_____		_____
	(Signature and Date)		*(Signature and Date)*

PARTNERSHIP CERTIFICATE SHEET FB-P-3

(To be used when the Bidder is a partnership.)

I, as partner of _____,
(Name of Partnership)
certify that the following are the names and addresses of all the partners of said partnership.

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

(Use additional sheets as required.)

Witness { _____ *(Printed or Typed Name)* _____ *(Signature and Date)*

*Partner** { _____ *(Printed or Typed Name)* _____ *(Signature and Date)*

CORPORATION SIGNATURE PAGE SHEET FB-C-1

(To be used when the bidder is a corporation.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] A corporation doing business in its own name
[ ] A corporation doing business under a fictitious or assumed name
(Complete Corporation Fictitious Name Disclosure FB-C-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

(CORPORATE SEAL)

_____
(Corporate Name)

_____
(Printed or Typed Name)

_____
(Printed or Typed Name)

Witness {

_____
(Signature and Date)

President
*V.P.*** {

_____
(Signature and Date)

_____
(Corporate Title)

_____
(Corporate Title)

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION FICTITIOUS NAME DISCLOSURE SHEET FB-C-2

(To be used when the Bidder is a corporation doing business under a fictitious or assumed name.)

_____ is a corporation trading under a fictitious or
(Corporation's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*President*	
{		*V.P. ***	{
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION CERTIFICATE SHEET FB-C-3

(To be used when the bidder is a corporation)

_____ is a corporation organized and existing
(Corporate name used as Bidder name)

under the laws of the state of _____ with its principal place of business at:

_____,_____,_____
(Street Address) *(City)* *(State)*

and, if a non-Pennsylvania corporation **[ ] has [ ] has not** *(check one)* been granted a certificate of authority to do business in Pennsylvania as required by the Pennsylvania Business Corporation Law, approved May 5, 1933, P.L. 364, as amended, 15 P.S. sec.2005 et seq.

I, _____, certify that I am the **[ ] Secretary [ ] Assistant Secretary** of the
(check one)
Corporation named a Bidder herein; that _____ who signed

this Bid on behalf of the Corporation was then _____ of said Corporation that
*(President/V.P.) ***

I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

(CORPORATE SEAL)

_____
(Signature and Date)

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the above Certificate must be executed by the Secretary or Assistant Secretary

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP CONTRACT NO. 600-31-24

SCOPE OF WORK FOR PLUMBING CONSTRUCTION

The Contract for Plumbing Construction shall consist of the following component parts:

1. THE AGREEMENT
(Bound in the Project Manual)

THE BID	Document 00330 - Scope of Work for Plumbing Construction Document 00331 - Form of Bid for Plumbing Construction
THE FORM OF AGREEMENT	Document 00500 - Form of Agreement Document 00590 - Contracting Officer Certification
CONDITIONS OF THE CONTRACT	Document HUD - 5370 General Conditions HACP Document - Supplemental General Conditions Document 00830 - Wage Determination Schedule

2. PRIMARY SPECIFICATIONS FOR THE PLUMBING CONSTRUCTION CONTRACT
(Bound in the Project Manual)

All Work contained in the Primary Specifications listed below is the Work of the Contractor for this Plumbing Construction Contract unless specifically indicated otherwise.

Any Reference in the Primary Specifications to the "Contractor," the "Prime Contractor," or the "Plumbing Contractor" shall be interpreted as meaning the Contractor for this Plumbing Construction Contract.

The Plumbing Contractor shall coordinate the schedule and activities of work performed under this contract with that of those contracts identified as (G)-General, (E)-Electrical, and (H)-HVAC.

It is the contractual responsibility of the Contractor for Plumbing Construction to familiarize himself with the work of the other prime contractors so that the Project as a whole can proceed in an orderly fashion. Failure to familiarize work by other trades would not be an excuse for corrective measures at no cost to the City of Pittsburgh Housing Authority.

For example, the Plumbing Contractor shall coordinate installation of plumbing construction work with the requirements of the Electrical, Mechanical, and General Contractors.

Reference Standard for Incidental Work: Incidental work, as used in this paragraph, is work which is not a basic part of other Prime Contracts but which is required by reference.

For example, the General Contractor is required by his Primary Specifications to install and repair all general work. In the event that the Plumbing Contractor disturbs the general work, the patching, repair shall be done and follow the same Specification requirements of the appropriate Specification Section by the Plumbing Contractor even if that specification section may not be part of the Plumbing Contractor's Primary Specification. The same applies to all trades where incidental work occurs.

TECHNICAL SPECIFICATIONS MAY BE FOUND AT PART FOUR
OF THE PROJECT MANUAL

PLEASE ALSO REFER TO DRAWINGS

3. PRIMARY DRAWINGS FOR THE PLUMBING CONSTRUCTION CONTRACT
(Contained in the set of Project Drawings issued simultaneously with this Project Manual)

All Work contained in the Primary Drawings listed below is the Work of this Contractor unless specifically indicated otherwise.

Any Reference to the "Contractor," the "Prime Contractor," or the "Plumbing Contractor" shall be interpreted as meaning the Contractor for this Plumbing Construction Contract.

The Primary Drawings for this contract consist of all Fukui Architects construction documents drawings, **dated** August 20, 2024 and specifications contained in this project manual.

In case of drawing conflict with specifications, it is understood that the specification shall supersede the drawings.

Plumbing Contractor's work is identified by "(P)".

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP Contract No. 600-31-24

FORM OF BID

PLUMBING CONSTRUCTION

Contract No.: 600-31-24

TO: HOUSING AUTHORITY
CITY OF PITTSBURGH
(Hereinafter called the "Authority")
412 Boulevard of the Allies
Pittsburgh, PA 15219

BIDDER: _____
(Bidder Name)
_____
(Business Address)
_____
_____
(Telephone)

1. The undersigned Bidder, having visited the site, having become familiar with local conditions affecting the cost of the work**, including all City of Pittsburgh current code requirements**, and having become familiar with the Invitation for Bids (the IFB) issued by the Authority, which consists of the following:

   - Project Manual, dated September 23, 20 containing Bidding Requirements, Contract Forms, Conditions of the Contract, and Specifications
   - Project Drawings, dated August 20, 2024
   - Addenda (if any) as enumerated in this Form of Bid

   hereby proposes to provide all supervision, technical personnel, labor, materials, machinery, tools, appurtenances, equipment and services required to construct and complete the Plumbing Construction Work as described in Document 00330 "Scope of Work for Plumbing Construction" and as indicated in the Drawings and Specifications, for the following Firm Fixed Price:

   _____Dollars ($ _____)
   (Insert Bid Price in words) *(Insert Bid Price in Figures)*

2. Bid security **[ ] is [ ] is not** submitted with this bid.
   (Check one)

   Bid Security is in amount of:

   _____% of the bid OR _____ Dollars ($_____)

Bid Security is in the form of:

[ ]	Certified Check	[ ]	Bank Draft
[ ]	U.S. Govt. Bond	[ ]	Bid Bond (Document 00410)

3. The Bidder hereby acknowledges receipt of the following Addenda, if any, as issued by the Authority:

Total number of Addenda _____ (if none, so state)

Addendum No. _____dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____

4. The Bidder attaches hereto the Special Provisions (Document 00021);

5. The Bidder attaches hereto the Statement of Bidder's Qualifications (Document 00420);

6. The Bidder attaches hereto the Section 3 Opportunities Plan (Document 00433), MBE/WBE Solicitation and Commitment Record (Document 00434), Bidder Manpower Plan (Document 00435), and Previous Related Experience (Document 00436);

7. The Bidder attaches hereto the Bidder's Representations, Certifications and Other Statements of Bidders (Document HUD 5369-A), Previous Participation Certificate (Document HUD-2530);

8. The Bidder attaches hereto the Bidder’s Special Provisions – Notice to All Prospective Bidders (Document 00437), Non-Collusion Affidavit (Document 00485);

9. The Bidder attaches hereto the completed Form of Agreement (Document 00500);

10. The Bidder attaches hereto the Supplemental General Conditions (HACP Document).

PROPRIETORSHIP SIGNATURE PAGE

SHEET - FB-I

(To be used when the Bidder is an individual doing business as a Sole Proprietorship.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] An individual doing business in his/her own name
[ ] An individual doing business under a fictitious or assumed name
(Complete Proprietorship Fictitious Name Disclosure below)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Principal*	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

PROPRIETORSHIP FICTITIOUS NAME DISCLOSURE

(To be used when the Bidder is an individual doing business under a fictitious or assumed name.)

_____ is an individual trading under a fictitious or
(Proprietor's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Principal*	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

PARTNERSHIP SIGNATURE PAGE SHEET - FB-P-1

(To be used when the Bidder is an individual doing business as a Partnership.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] A General Partnership (Attach completed Sheet FB-P-3)
  [ ] Doing business under Partnership Name
  [ ] Doing business under a fictitious or assumed name
    (Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)

[ ] A Limited Partnership (Attach completed Sheet FB-P-3)
  [ ] Doing business under Partnership Name
  [ ] Doing business under a fictitious or assumed name
    (Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Partner **	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*
	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Partner **	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

* If the Bidder is a partnership, the Bid and Contract must be signed in the name of the partnership by at least two general partners, and the names and addresses of all the partners must be listed on the certificate on Sheet FB-P-3.

PARTNERSHIP FICTITIOUS NAME DISCLOSURE

SHEET FB-P-2

(To be used when the Bidder is a partnership doing business under a fictitious or assumed name.)

_____ is a partnership trading under a fictitious or
(Partnership's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____		_____
	(Printed or Typed Name)		*(Printed or Typed Name)*
Witness		*Partner**	
{		{	
	_____		_____
	(Signature and Date)		*(Signature and Date)*

PARTNERSHIP CERTIFICATE SHEET FB-P-3

(To be used when the Bidder is a partnership.)

I, as partner of _____,
(Name of Partnership)
certify that the following are the names and addresses of all the partners of said partnership.

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

(Use additional sheets as required.)

Witness { _____ *(Printed or Typed Name)* _____ *(Signature and Date)*

*Partner** { _____ *(Printed or Typed Name)* _____ *(Signature and Date)*

CORPORATION SIGNATURE PAGE SHEET FB-C-1

(To be used when the bidder is a corporation.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] A corporation doing business in its own name
[ ] A corporation doing business under a fictitious or assumed name
(Complete Corporation Fictitious Name Disclosure FB-C-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

(CORPORATE SEAL)

_____
(Corporate Name)

_____
(Printed or Typed Name)

_____
(Printed or Typed Name)

Witness {

_____
(Signature and Date)

_____
(Corporate Title)

President
*V.P.*** {

_____
(Signature and Date)

_____
(Corporate Title)

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION FICTITIOUS NAME DISCLOSURE SHEET FB-C-2

(To be used when the Bidder is a corporation doing business under a fictitious or assumed name.)

_____ is a corporation trading under a fictitious or
(Corporation's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*President*	
{		*V.P. ***	{
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION CERTIFICATE SHEET FB-C-3

(To be used when the bidder is a corporation)

_____ is a corporation organized and existing
(Corporate name used as Bidder name)

under the laws of the state of _____ with its principal place of business at:

_____,_____,_____
(Street Address) *(City)* *(State)*

and, if a non-Pennsylvania corporation **[ ] has [ ] has not** *(check one)* been granted a certificate of authority to do business in Pennsylvania as required by the Pennsylvania Business Corporation Law, approved May 5, 1933, P.L. 364, as amended, 15 P.S. sec.2005 et seq.

I, _____, certify that I am the **[ ] Secretary [ ] Assistant Secretary** of the
(check one)
Corporation named a Bidder herein; that _____ who signed

this Bid on behalf of the Corporation was then _____ of said Corporation that
(President/V.P.) **

I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

(CORPORATE SEAL)

_____
(Signature and Date)

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the above Certificate must be executed by the Secretary or Assistant Secretary

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP CONTRACT NO. 600-31-24

SCOPE OF WORK FOR
MECHANICAL CONSTRUCTION

The Contract for Mechanical Construction shall consist of the following component parts:

1. THE AGREEMENT
(Bound in the Project Manual)

THE BID	Document 00340 - Scope of Work for Mechanical Construction Document 00341 - Form of Bid for Mechanical Construction
THE FORM OF AGREEMENT	Document 00500 - Form of Agreement Document 00590 - Contracting Officer Certification
CONDITIONS OF THE CONTRACT	Document HUD - 5370 General Conditions HACP Document - Supplemental General Conditions Document 00830 - Wage Determination Schedule

2. PRIMARY SPECIFICATIONS FOR THE MECHANICAL CONSTRUCTION CONTRACT
(Bound in the Project Manual)

All Work contained in the Primary Specifications listed below is the Work of the Contractor for this Mechanical Construction Contract unless specifically indicated otherwise.

Any Reference in the Primary Specifications to the "Contractor," the "Prime Contractor," or the "Mechanical Contractor" shall be interpreted as meaning the Contractor for this Mechanical Construction Contract.

The Mechanical Contractor shall coordinate the schedule and activities of work performed under this contract with that of those contracts identified as (G)-General, (E)-Electrical, and (P)-Plumbing.

It is the contractual responsibility of the Contractor for Mechanical Construction to familiarize himself with the work of the other prime contractors so that the Project as a whole can proceed in an orderly fashion. Failure to familiarize work by other trades would not be an excuse for corrective measures at no cost to the City of Pittsburgh Housing Authority.

For example, the Mechanical Contractor shall coordinate installation of mechanical construction work with the requirements of the Electrical, Plumbing, and General Contractors.

Reference Standard for Incidental Work: Incidental work, as used in this paragraph, is work which is not a basic part of other Prime Contracts but which is required by reference.

For example, the General Contractor is required by his Primary Specifications to install and repair all general work. In the event that the Plumbing Contractor disturbs the general work, the patching, repair shall be done and follow the same Specification requirements of the appropriate Specification Section by the Plumbing Contractor even if that specification section may not be part of the Plumbing Contractor's Primary Specification. The same applies to all trades where incidental work occurs.

TECHNICAL SPECIFICATIONS MAY BE FOUND AT PART FOUR
OF THE PROJECT MANUAL

PLEASE ALSO REFER TO DRAWINGS

3. PRIMARY DRAWINGS FOR THE MECHANICAL CONSTRUCTION CONTRACT
(Contained in the set of Project Drawings issued simultaneously with this Project Manual)

All Work contained in the Primary Drawings listed below is the Work of this Contractor unless specifically indicated otherwise.

Any Reference to the "Contractor," the "Prime Contractor," or the "Mechanical Contractor" shall be interpreted as meaning the Contractor for this Mechanical Construction Contract.

The Primary Drawings for this contract consist of all Fukui Architects construction documents drawings, **dated** August 20, 2024 and specifications contained in this project manual.

In case of drawing conflict with specifications, it is understood that the specification shall supersede the drawings.

Technical specifications are included in the drawings and therein Mechanical Contractor's work is identified by "(M)"

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP Contract No. 600-31-24

FORM OF BID

MECHANICAL CONSTRUCTION

Contract No.: 600-31-24

TO: HOUSING AUTHORITY
CITY OF PITTSBURGH
(Hereinafter called the "Authority")
412 Boulevard of the Allies
Pittsburgh, PA 15219

BIDDER: _____
(Bidder Name)
_____
(Business Address)
_____
_____
(Telephone)

1. The undersigned Bidder, having visited the site, having become familiar with local conditions affecting the cost of the work**, including all City of Pittsburgh current code requirements**, and having become familiar with the Invitation for Bids (the IFB) issued by the Authority, which consists of the following:

   - Project Manual, dated September 23, 20_ containing Bidding Requirements, Contract Forms, Conditions of the Contract, and Specifications
   - Project Drawings, dated August 20, 2024
   - Addenda (if any) as enumerated in this Form of Bid

   hereby proposes to provide all supervision, technical personnel, labor, materials, machinery, tools, appurtenances, equipment and services required to construct and complete the Mechanical Construction Work as described in Document 00340 "Scope of Work for Mechanical Construction" and as indicated in the Drawings and Specifications, for the following Firm Fixed Price:

   _____Dollars ($ _____)
   (Insert Bid Price in words) *(Insert Bid Price in Figures)*

2. Bid security **[ ] is [ ] is not** submitted with this bid.
   (Check one)

   Bid Security is in amount of:

   _____% of the bid OR _____ Dollars ($_____)

Bid Security is in the form of:

[ ]	Certified Check	[ ]	Bank Draft
[ ]	U.S. Govt. Bond	[ ]	Bid Bond (Document 00410)

3. The Bidder hereby acknowledges receipt of the following Addenda, if any, as issued by the Authority:

Total number of Addenda _____ (if none, so state)

Addendum No. _____dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____

4. The Bidder attaches hereto the Special Provisions (Document 00021);

5. The Bidder attaches hereto the Statement of Bidder's Qualifications (Document 00420);

6. The Bidder attaches hereto the Section 3 Opportunities Plan (Document 00433), MBE/WBE Solicitation and Commitment Record (Document 00434), Bidder Manpower Plan (Document 00435), and Previous Related Experience (Document 00436);

7. The Bidder attaches hereto the Bidder's Representations, Certifications and Other Statements of Bidders (Document HUD 5369-A), Previous Participation Certificate (Document HUD-2530);

8. The Bidder attaches hereto the Bidder’s Special Provisions – Notice to All Prospective Bidders (Document 00437), Non-Collusion Affidavit (Document 00485);

9. The Bidder attaches hereto the completed Form of Agreement (Document 00500);

10. The Bidder attaches hereto the Supplemental General Conditions (HACP Document).

PROPRIETORSHIP SIGNATURE PAGE

SHEET - FB-I

(To be used when the Bidder is an individual doing business as a Sole Proprietorship.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] An individual doing business in his/her own name
[ ] An individual doing business under a fictitious or assumed name
(Complete Proprietorship Fictitious Name Disclosure below)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Principal*	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

PROPRIETORSHIP FICTITIOUS NAME DISCLOSURE

(To be used when the Bidder is an individual doing business under a fictitious or assumed name.)

_____ is an individual trading under a fictitious or
(Proprietor's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Principal*	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

PARTNERSHIP SIGNATURE PAGE SHEET - FB-P-1

(To be used when the Bidder is an individual doing business as a Partnership.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] A General Partnership (Attach completed Sheet FB-P-3)
  [ ] Doing business under Partnership Name
  [ ] Doing business under a fictitious or assumed name
    (Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)

[ ] A Limited Partnership (Attach completed Sheet FB-P-3)
  [ ] Doing business under Partnership Name
  [ ] Doing business under a fictitious or assumed name
    (Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Partner **	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*
	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*Partner **	
{		{	
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

* If the Bidder is a partnership, the Bid and Contract must be signed in the name of the partnership by at least two general partners, and the names and addresses of all the partners must be listed on the certificate on Sheet FB-P-3.

PARTNERSHIP FICTITIOUS NAME DISCLOSURE

SHEET FB-P-2

(To be used when the Bidder is a partnership doing business under a fictitious or assumed name.)

_____ is a partnership trading under a fictitious or
(Partnership's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____		_____
	(Printed or Typed Name)		*(Printed or Typed Name)*
Witness		*Partner**	
{		{	
	_____		_____
	(Signature and Date)		*(Signature and Date)*

PARTNERSHIP CERTIFICATE SHEET FB-P-3

(To be used when the Bidder is a partnership.)

I, as partner of _____,
(Name of Partnership)
certify that the following are the names and addresses of all the partners of said partnership.

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

(Use additional sheets as required.)

Witness { _____ *(Printed or Typed Name)* _____ *(Signature and Date)*

*Partner** { _____ *(Printed or Typed Name)* _____ *(Signature and Date)*

CORPORATION SIGNATURE PAGE SHEET FB-C-1

(To be used when the bidder is a corporation.)

THE BIDDER CERTIFIES THAT THE BIDDER IS:

[ ] A corporation doing business in its own name
[ ] A corporation doing business under a fictitious or assumed name
(Complete Corporation Fictitious Name Disclosure FB-C-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

(CORPORATE SEAL)

_____
(Corporate Name)

_____
(Printed or Typed Name)

_____
(Printed or Typed Name)

Witness {

_____
(Signature and Date)

President
*V.P.*** {

_____
(Signature and Date)

_____
(Corporate Title)

_____
(Corporate Title)

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION FICTITIOUS NAME DISCLOSURE SHEET FB-C-2

(To be used when the Bidder is a corporation doing business under a fictitious or assumed name.)

_____ is a corporation trading under a fictitious or
(Corporation's Name)

assumed name of _____ and **[ ] has [ ] has not** registered under
(Fictitious or Assumed Name Used as Bidder's Name) *(Check one)*

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945,P.L.967, as amended, 54 P.S.sec.281.1 et seq.

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness		*President*	
{		*V.P. ***	{
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION CERTIFICATE SHEET FB-C-3

(To be used when the bidder is a corporation)

_____ is a corporation organized and existing
(Corporate name used as Bidder name)

under the laws of the state of _____ with its principal place of business at:

_____,_____,_____
(Street Address) *(City)* *(State)*

and, if a non-Pennsylvania corporation **[ ] has [ ] has not** *(check one)* been granted a certificate of authority to do business in Pennsylvania as required by the Pennsylvania Business Corporation Law, approved May 5, 1933, P.L. 364, as amended, 15 P.S. sec.2005 et seq.

I, _____, certify that I am the **[ ] Secretary [ ] Assistant Secretary** of the
(check one)
Corporation named a Bidder herein; that _____ who signed

this Bid on behalf of the Corporation was then _____ of said Corporation that
*(President/V.P.) ***

I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

(CORPORATE SEAL)

_____
(Signature and Date)

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the above Certificate must be executed by the Secretary or Assistant Secretary

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we,

_____, as Principal, and
(Insert name and address of Bidder exactly as it appears on Form of Bid)

_____, as Sureties, are
held and firmly bound unto the Housing Authority of the City of Pittsburgh, its certain attorney, successors, or assigns (the Obligee, hereinafter called the "Authority") in the penal sum of

_____Dollars ($_____)

lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally, firmly by these presents:

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas, the Principal simultaneously submits to the Authority the accompanying bid, dated

_____, 20_____ (the "Bid"), for construction of
(Insert date of bid)

_____
(Insert name of project exactly as it appears on Form of Bid)
pursuant to specifications, drawings and other related documents constituting the Invitation for Bids (the "IFB").

NOW, THEREFORE, if the Principal shall not withdraw said bid within the period specified therein after the opening of the same, or, if no period be specified, within sixty (60) days after the said opening, and shall within the period specified therefore, or, if no period be specified within ten (10) days after the prescribed forms are presented to him for signature, enter into a written contract with the Authority in accordance with the bid as accepted, and give bonds with good and sufficient surety or sureties, as may be required for the faithful performance and proper fulfillment of such contract and for the payment of labor and materialmen or in the event of the withdrawal of said bid within the period specified, or the failure to enter into such contract and give such bonds within the time specified, if the Principal shall pay the Authority the difference between the amount specified in said bid and the amount for which the Authority may procure the required work or supplies or both, if the latter amount be in excess of the former, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS

this _____ day of _____ 20_____.

IF THE PRINCIPAL IS AN INDIVIDUAL, SIGN HERE

_____	_____
(Printed or Typed Name)	*(Printed or Typed Name)*
Witness	*Principal*
{	{
_____	_____
(Signature and Date)	*(Signature and Date)*

SURETY SIGN HERE

(SURETY SEAL)

_____	_____
(Printed or Typed Name)	*(Printed or Typed Name)*
Attest	*Surety****
{	{
_____	_____
(Signature and Date)	*(Signature and Date)*

*** Power of attorney must be attached to this Bid Bond.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS

this _____ day of _____ 20_____.

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

_____ *(Printed or Typed Name)*	_____ *(Printed or Typed Name)*
Witness { _____ *(Signature and Date)*	*Partner** { _____ *(Signature and Date)*
_____ *(Printed or Typed Name)*	_____ *(Printed or Typed Name)*
Witness { _____ *(Signature and Date)*	*Partner** { _____ *(Signature and Date)*

* If the Bidder is a partnership, the Bond must be signed in the name of the partnership by at least two general partners, whose names and addresses must be listed on the certificate on page BF-3-P of the Bid.

SURETY SIGN HERE

(SURETY SEAL)

_____ *(Printed or Typed Name)*	_____ *(Printed or Typed Name)*
Attest { _____ *(Signature and Date)*	*Surety**** { _____ *(Signature and Date)*

*** Power of attorney must be attached to this Bid Bond.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS

this _____ day of _____ 20_____.

IF THE PRINCIPAL IS A CORPORATION, SIGN HERE

(CORPORATE SEAL)

_____
(Corporate Name)

_____
(Printed or Typed Name)

_____
(Printed or Typed Name)

Attest {

President
*V.P.*** {

_____
(Signature and Date)

_____
(Signature and Date)

_____
(Corporate Title)

_____
(Corporate Title)

** If the bidder is a corporation, the Bond must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal below must be executed by the Secretary or Assistant Secretary.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the
[ ] Secretary [ ] Assistant Secretary of the Corporation named a Bidder herein; that
(check one)

_____ who signed this Bid on behalf of the

Corporation was then _____ of said Corporation that I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

(CORPORATE SEAL)

_____
(Signature and Date)

SURETY SIGN HERE

(SURETY SEAL)

_____
(Printed or Typed Name)

_____
(Printed or Typed Name)

Attest

{

_____
(Signature and Date)

*Surety****

{

_____
(Signature and Date)

*** Power of attorney must be attached to this Bid Bond.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

STATEMENT OF BIDDER'S QUALIFICATIONS

Renovation of 10 Scattered Sites Homes

_____ _____
(Bidder's Name) *(Project Name)*

_____ _____
(Address)

_____ 600-31-24
(HACP Project No.)

Names of not more than two principals to contact:

Name:_____ Name:_____

Title:_____ Title:_____

Telephone:_____ Telephone:_____

AUTHORIZATION:

Excerpt from HUD 7460.8-REV-1 AND 24 CFR 85.36(b)(8) & 24 CFR 905.160(a)(3):

"The evaluation of a contractor's ability to perform a contract is known as determining the contractor's responsibility. Has **shall** make awards only to **responsible** contractors possessing the ability to perform successfully under the terms and conditions of a proposed contract. Consideration **shall** be given to such matters as **contractor integrity, compliance with public policy, record of past performance, and financial and technical resources**.

"The award of a contract to an offeror **shall** not be made solely on the basis of the lowest evaluated price without considering the firm's ability to perform the required work. Some of the specific factors to consider include (1) whether the contractor performed satisfactorily on other HA Contracts, (2) is the contractor suspended or debarred from Federal Contracts, and (3) have other HAs has satisfactory performance from this contractor.

"A pre-award survey may entail an on-site inspection of the offeror's facilities, including a review of financial statements, record keeping, production capacity, or similar factors that impact on the ability to perform the contract.

"Recent unsatisfactory performance regarding either quality or timeliness of delivery is an example of a problem which the Contracting Officer **shall** consider and resolve as to its impact on the current procurement prior to making an affirmative determination of responsibility.

ORGANIZATION

THE BIDDER IS:

[ ] An individual doing business in his/her own name
[ ] An individual doing business under a fictitious or assumed name

[ ] A General Partnership
  [ ] Doing business under Partnership Name
  [ ] Doing business under a fictitious or assumed name

[ ] A Limited Partnership
  [ ] Doing business under Partnership Name
  [ ] Doing business under a fictitious or assumed name

[ ] A corporation doing business in its own name
[ ] A corporation doing business under a fictitious or assumed name

How many years has the bidder been in business as a Contractor? _____

How many years has the bidder been in business under its present business name? _____

Under what other or former names has the bidder operated?

PAST PERFORMANCE

CLAIMS AND SUITS. (If the answer to any of the questions below is yes, please attach explanation.)

[ ] Yes [ ] No Has the Bidder ever failed to complete any work awarded to it?

[ ] Yes [ ] No Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against the bidder or its officers?

[ ] Yes [ ] No Has the bidder filed any law suits or requested arbitration with regard to construction contracts within the last five years?

[ ] Yes [ ] No Within the last five years, has any officer or principal of the bidder ever been an officer or principal of another organization when it failed to complete a construction contract? (If answer is yes, please attach details.)

State average annual amount of construction work performed during the past five years: $_____

State total worth of work in progress and under contract: $_____

On a separate sheet, list major construction projects the bidder has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

On a separate sheet, list the major projects the bidder has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.

FINANCIAL RESOURCES

Financial Statement.

Attach a financial statement (audited if available), including the bidder's latest balance sheet and income statement showing the following items:

Current Assets (e.g. cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);
Net Fixed Assets;
Other Assets;
Current Liabilities (e.g. accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes);
Other Liabilities (e.g. capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

Name and address of firm preparing attached financial statement, and date thereof:

[ ] Yes [ ] No Is the attached financial statement for the identical organization named on page one?

If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

[ ] Yes [ ] No Will the organization whose financial statement is attached act as guarantor of the contract for construction?

TECHNICAL RESOURCES

Licensing:
List jurisdictions and trade categories in which the bidder is legally qualified to do business, and indicate registration or license numbers, if applicable.

Experiences:
List the categories of work that the bidder normally performs with its own forces.

On a separate sheet, list the construction experience and present commitments of the key individuals of the bidder.

REFERENCES

List Trade References (use separate sheet if necessary):

List Bank References (use separate sheet if necessary):

List previous HUD/USDA-FmHA projects and Section 8 Contracts (formerly Schedule A on HUD-2530). Applicable to construction contracts exceeding $50,000. List each principals name, previous project, principal's participation role and interest, and disclose defaults, mortgage relief, assignments and foreclosures. **Note that having a Master Schedule on file with HUD will not meet this requirement.**

Certifications: I (meaning the individual who signs as well as the corporations, partnerships or other parties listed above who certify) hereby apply to HUD or USDA-FmHA, as the case may be, for approval to participate as a principal in the role and project listed above based upon my following previous participation record of this Certification.

I certify that all the statements made by me are true, complete and correct to the best of my knowledge and belief and are made in good faith, including the data contained in Schedule A and Exhibits, signed by me and attached to this form.
Warning: HUD and/or the Authority will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. (18 U.S.C. 1001, 1012;31 U.S.C. 3729, 3802)

I further certify that:

1. The list of previous HUD/USDA-FmHA projects and Section 8 Contracts contains a listing of every assisted or insured project of HUD, which I have been or am now a principal.

2. For the period beginning 10 years prior to the date of this certification, and except as shown by me on the certification.
   a. No mortgage on a project listed by me has ever been in default, assigned to the Government or foreclosed, nor has mortgage relief by the mortgagee been given;
   b. I have not experienced default or noncompliance under any Conventional Contract or Turnkey Contract of Sale in connection with a public housing project;
   c. To the best of my knowledge, there are no unresolved findings raised as a result of HUD audits, management reviews or other Governmental investigations concerning me or my projects;
   d. There has not been a suspension or termination of payments under any HUD assistance contract in which I have had a legal or beneficial interest;
   e. I have not been convicted of a felony and am not presently, to my knowledge, the subject of a complaint or indictment charging a felony. (A felony is defined as any offense punishable by imprisonment for a term exceeding one year, but does not include any offense classified as a misdemeanor under the laws of a State and punishable by imprisonment of two years or less);
   f. I have not been suspended, debarred or otherwise restricted by any Department or Agency of the Federal Government or of a State Government from doing business with such Department or Agency.

g. I have not defaulted on an obligation covered by a surety or performance bond and have not been the subject of a claim under an employee fidelity bond.

3. All the names of the parties, known to me to be principals in this project(s) in which I propose to participate, are listed above.

4. I am not a HUD/FmHA employee or a member of a HUD/FmHA employee's immediate household as defined in Standards of Ethical Conduct for Employees of the Executive Branch in 5 C.F.R. Part 2635 (57 FR 35006) and HUD's Standard of Conduct in 24 C.F.r. Part O and USDA's Standard of Conduct in 7 C.F.R. Part 9 Subpart B.

5. I am not a Housing Authority of the City of Pittsburgh employee or a member of an Authority employee's immediate family.

6. I am not a principal participant in an assisted or insured project as of this date on which construction has stopped for a period in excess of 20 days or which has been substantially completed for more than 90 days and documents for closing, including final cost certification have not been filed with HUD or FmHA.

7. To my knowledge I have not been found by HUD or FmHA to be in noncompliance with any applicable civil rights law.

8. I am not a Member of Congress or a Resident Commissioner nor otherwise prohibited or limited by law from contracting with the Government of the United States of America.

9. Statements above (if any) to which I cannot certify have been deleted by striking through the words with a pen. I have initialed each deletion (if any) and have attached a true and accurate signed statement (if applicable) to explain the facts and circumstances which I think helps to qualify me as a responsible principal for participation in this project.

(Signature and Date)

(Typed or Printed Name)

(Title)

(Company Name)

Subscribed and sworn to before me

this_____ day of _____, 20

My Commission expires _____, 20

All section 3 covered contracts shall include the following clause (referred to as the section 3 clause):

A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.

F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

G. With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self- Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

Housing Authority City of Pittsburgh

Development and Modernization Department

Bidder's Section 3 Participation Form

A. Bidder's Section 3 Hiring Plan

Job Category	Total Estimated Positions Needed for Project	No. Positions Occupied by Permanent Employees*	Number of Positions Not Occupied	Number of Positions Available for Section 3 Residents
Trade:				
Journeyman				
Helper				
Apprentices				
Trainees				
Laborer				
Others				

*** Please submit a list of current employees to be assigned to this project including Dates of Hire**

B. Bidder's Section 3 Subcontracting Plan

SUB - CONTRACTOR'S NAME**	SUB - CONTRACTORS ADDRESS	PHONE NUMBER	FEDERAL TAX ID NO./ SS#	DESCRIPTION OF WORK	Sub - Contract Amount

**** If the Bidder has not identified a Section 3 subcontractor, please indicate if there will be any Section 3 subcontracting opportunity and describe scope of work**_____

_____
Company Name

_____
Project Name

_____
Project Number

_____
Name and Title of Person Completing this Form

_____
Signature and Date

PLACE HOLDER FOR

ROSTER OF CURRENT EMPLOYEES

Pursuant to Housing Authority of the City of Pittsburgh Section 3 Program Manual, Part I, Section A - Section 3 Policy Statement (in part):
"HACP shall examine and consider a contractor's potential for success in providing employment and business opportunities to those covered under Section 3 prior to acting on any proposed contract award. In response to any RFP, RFQ or IFB HACP will require submission of the Section 3 Opportunities Plan and roster of current employees, and certification that the bidder will comply with the requirements of Section 3."

Section 3 Participation

With respect to work performed in connection with Section 3 covered Indian housing assistance, Section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of Section 3 and Section 7(b) agree to comply with Section 3 to the maximum extent feasible, but not in derogation of compliance with Section 7(b).

RESIDENT HIRING REQUIREMENTS / RESIDENT HIRING SCALE

TOTAL LABOR DOLLARS USE TOTAL CONTRACT AMOUNT FOR SERVICE CONTRACTS	RESIDENT LABOR AS A % OF TOTAL LABOR DOLLARS
Labor dollars $25,000 but less than $100,000	10% of the labor dollars
$100,000, but less than $200,000	9% of the labor dollars
At least $200,000, but less than $300,000	8% of the labor dollars
At least $300,000, but less than $400,000	7% of the labor dollars
At least $400,000, but less than $500,000	6% of the labor dollars
At least $500,000, but less than $1 million	5% of the labor dollars
At least $1 million, but less than $2 million	4% of the labor dollars
At least $2 million, but less than $4 million	3% of the labor dollars
At least $4 million, but less than $7 million	2% of the labor dollars
$7 million or more	½ to 1 % of the labor dollars

A copy of HACP's Section 3 Program Manual is available for download at www.HACP.org.

SECTION 3 OPPORTUNITIES PLAN

Business Opportunities and Employment Training for Housing Authority of the City of Pittsburgh Low Income Public Housing Residents (LIPH) and Area Residents of Low and Very Low Income Status (ARLIS)

PRIME CONTRACTOR'S NAME: _____
SPECIFICATION OR RFP/IFB/RFQ NUMBER: _____
SPECIFICATION OR RFP/IFB/RFQ TITLE: _____

The Contractor hereby agrees to comply with all the provisions of Section 3 as set forth in 24 CFR 135.1 et seq. and the HACP Section 3 Policy and Program requirements. The Contractor hereby submits this document to identify employment opportunities for HACP residents (LIPH) and **Area Residents of Low and Very Low Income Status (ARLIS**) during the term of the contract between the Contractor and the HACP.

The preference of HACP is to ensure that as many HACP residents as possible are employed. In an effort to further that requirement, HACP has created a preference tier structure as outlined in the HACP Section 3 Policy and Program Manual which can be reviewed by visiting the "Vendor Services" section of www.hacp.org. Contractors are required to comply with Section 3 by first considering Tier I – Hiring. If the Contractor cannot meet its Section 3 requirement in Tier I and needs to move to Tier II or Tier III, that Contractor must document this inability to comply with the preference and the need to move to a lower tier. (Such inability **must** be documented for moves within tiers). The Contractor agrees to meet its Section 3 requirement following the Preferential Tier Structure as indicated by the selection below (check one or more tiers below):

[ ] Tier I – HIRING

The Contractor affirms that the jobs identified shall be for meaningful employment that may or may not be related to the scope of services covered under Contract/Purchase Order # _____. The Contractor has committed to employ _____ resident(s) in order to comply with its Section 3 requirements. A prime contractor may satisfy the HACP Resident Hiring Requirements through his/her subcontractors. **Contact the HACP Resident Employment Program for resident referrals at 412-395-3950, Ext 1048.**

When Tier I is selected, the Contractor shall complete the following table as instructed below:

(1) Indicate each job title for all phases of this contract
(2) The number of positions that will be needed in each category
(3) How many of those positions are currently filled
(4) The number currently filled by low and very low-income HACP residents
(5) The number currently filled by City of Pittsburgh neighborhood area residents
(6) How many positions need to be filled

Indicate your requirement for the number of positions you intend to fill with:

(7) Low income HACP Residents (LIPH) and/or
(8) Low and very low income City of Pittsburgh Neighborhood Area Residents (ARLIS)

SECTION 3 OPPORTUNITIES PLAN

Section 3 Labor Utilization Assessment and Plan							
SPEC or RFP TITLE:					SPEC or RFP NUMBER:		
JOB TITLE (1)	NUMBER OF POSITIONS					HIRING REQUIREMENT	
	# NEEDED (2)	CURRENTLY FILLED			TO BE FILLED (6)	LIPH (7)	ARLIS (8)
		TOTAL (3)	LIPH (4)	ARLIS (5)			

LIPH – HACP low income public housing resident
ARLIS - Area Residents of Low/Very Low Income Status – (Area is the Pittsburgh metropolitan area)

In the event the value of Section 3 resident hiring is less than the amount identified in the Resident Hiring Scale, vendors must contribute to the HACP Education Fund an amount not less than the difference between the value of Section 3 hiring and the amount identified in the Resident Hiring Scale, which funds shall be used to provide other economic opportunities.
Therefore, if it is anticipated that any position listed above shall be for less than the full term of the contract period, you must indicate on the lines below, the anticipated term for each position:

_____

_____

SECTION 3 OPPORTUNITIES PLAN

[ ] Tier II – CONTRACTING

The contractor has identified _____ HACP resident-owned business(es) or _____ Section 3 business(es) which is/are 51 percent or more owned by Section 3 residents or 30 percent or more of their permanent full-time workforce are Section 3 residents. This will satisfy the contractor's Section 3 requirement covered under Contract/Purchase Order # _____.

In a one (1) page letter on your firm's letterhead:

1) Indicate the requirements, expressed in terms of percentage, of planned contracting dollars for the use of Section 3 business concerns as subcontractors.

2) A statement of the total dollar amount to be contracted, total dollar amount to be contracted to Section 3 business concerns for building trades, and total dollar amount to be contracted to Section 3 business concerns for other than building trades work (maintenance, repair, modernization, and development).

3) A description of the method used to develop the requirements above and the efforts to be undertaken by the contractor to meet those requirements.

[ ] Tier III - OTHER ECONOMIC OPPORTUNITIES

Firms may provide other economic opportunities to train and employ Section 3 residents or make a direct cash contribution to the HACP Education Fund. HACP has established the following minimum threshold requirements for provision of training or contribution to the HACP fund that provides other economic opportunities:

a) Contractor incurs the cost of providing skilled training for residents in an amount commensurate with the sliding scale set forth in the Resident Hiring Scale; or,

b) Contractor makes a contribution to the HACP Education Fund at Clean Slate E3 to provide assistance to residents to obtain training. The level of contribution would be commensurate with the sliding scale set forth in the Resident Hiring Scale.
Contractor shall provide, in a letter on firm letterhead:

1) Indication of the skilled training to be provided, the number of persons to be trained, the training provider, the cost of training, and the trainee recruitment plan; or,
2) Provide the amount of planned contribution to be made in relation to percentage of the contract labor hours costs. (Contribution checks should be made payable to: Clean Slate E3 Education Fund and mailed to Clean Slate E3, C/O Housing Authority of the City of Pittsburgh, Finance Department, 412 Boulevard of the Allies, Pittsburgh, PA 15219.

[ ] Tier IV – No New Hire Opportunity

If awarded this contract, the contractor will be able to fulfill the requirements of the IFB/RFP/RFQ with the existing work force. No new hires will be employed as a result of this award. If this position changes and hiring opportunities become necessary, the HACP Resident Employment Program will be notified.

SECTION 3 OPPORTUNITIES PLAN

By signing below, the Contractor hereby agrees to comply with the selected Section 3 requirements indicated above. To the extent that the completion of this form is contingent upon future information, for example price negotiations, request for specific services, etc., the undersigned hereby affirms and agrees to fully adhere to the spirit and intent of the HACP Section 3 Policy.

Furthermore, the undersigned acknowledges and affirms responsibility for completion and submission of this form as part of the response documentation for this Invitation for Bid or Request for Proposal. Failure to submit this form may jeopardize the responsiveness of your submission.

Company Name: _____

Name: _____

Title: _____

Signature: _____ Date: _____

Witness Name: _____

Witness Signature: _____ Date: _____

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH
MBE/WBE SOLICITATION AND COMMITMENT RECORD

SOLICITATION AND COMMITMENT STATEMENT
MINORITY (MBE) AND FEMALE (WBE) OWNED BUSINESS ENTERPRISES

BID NUMBER	NAME OF BIDDER	ADDRESS	PHONE

List below All MBE/WBE's that were solicited - whether or not a commitment was obtained -- Copy this form as necessary

_____MBE _____WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED BY PHONE	BY MAIL	COMMITMENT MADE **YES** (IF YES, GIVE DATE)	**NO**	GIVE REASON(S) IF NO COMMITMENT MADE
COMPANY NAME						
ADDRESS		QUOTE RECEIVED		AMOUNT COMMITTED		
CONTACT PERSON PHONE		YES	NO	DOLLAR AMOUNT $		
				PERCENT OF TOTAL BID %		

_____MBE _____WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED BY PHONE	BY MAIL	COMMITMENT MADE **YES** (IF YES, GIVE DATE)	**NO**	GIVE REASON(S) IF NO COMMITMENT MADE
COMPANY NAME						
ADDRESS		QUOTE RECEIVED		AMOUNT COMMITTED		
CONTACT PERSON PHONE		YES	NO	DOLLAR AMOUNT $		
				PERCENT OF TOTAL BID %		

_____MBE _____WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED BY PHONE	BY MAIL	COMMITMENT MADE **YES** (IF YES, GIVE DATE)	**NO**	GIVE REASON(S) IF NO COMMITMENT MADE
COMPANY NAME						
ADDRESS		QUOTE RECEIVED		AMOUNT COMMITTED		
CONTACT PERSON PHONE		YES	NO	DOLLAR AMOUNT $		
				PERCENT OF TOTAL BID %		

Prepared by: Title: Phone:

NOTE: Certification and letters of intent for each MBE/WBE commitment must accompany this document.

MBE/WBE Participation Plan

I. SMALL BUSINESS PARTICIPATION
Is the Bidder a Small Business as defined by the size and standards in 13 CFR 121?

Yes _____ No _____

II. MINORITY BUSINESS PARTICIPATION
Is the Bidder classified as a Minority Business Enterprise?

Yes _____ No _____

If "No", are any Subcontractors classified as Minority Business enterprises?

Yes _____ No _____

If "Yes", please fill in the following chart:

Consulting Firm(s) (MBE)	$ Value Contract	% of Fee

III. WOMEN-OWNED BUSINESS PARTICIPATION
Is the Bidder classified as a Woman-Owned Business Enterprise?

Yes _____ No _____

If "No", area any Subcontractors classified as Women-Owned Business Enterprises?

Yes _____ No _____

If "Yes", please fill in the following chart:

Consulting Firm(s) (WBE)	$ Value Contract	% of Fee

****All MBE/WBE firms must be certified.**
In order for the MBE/WBE participation plan to be complete, copies of MBE/WBE certification must be included for all firms listed.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH
MBE/WBE RECORD
MBE/WBE SOLICITATION AND COMMITMENT STATEMENT
MBE/WBE 3-YEAR RECORD

BIDDERS NAME: _____
ADDRESS: _____
TELEPHONE: _____
CONTACT PERSON: _____
PROPOSAL AND BID FOR: _____

List below all contracts with the Housing Authority of the City of Pittsburgh during the past three years and the MBE and WBE participation obtained.					
CONTRACT TITLE	CONTRACT DATE	AMOUNT	% PARTICIPATION MBE	WBE	COMMENTS

Prepared by: Title: Phone:

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH
MBE/WBE SOLICITATION AND COMMITMENT STATEMENT
ADDITIONAL INFORMATION SHEET

The bidder presents the following as additional and supplemental information to its MBE/WBE Solicitation and Commitment Statement.

Prepared by: Title: Phone:

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH
MBE/WBE EXHIBIT

MBE/WBE COMMITMENT WAIVER REQUEST FORM

BIDDER'S FIRM:_____
ADDRESS:_____
TELEPHONE:_____
CONTACT PERSON:_____
PROPOSAL AND BID FOR:_____

Waiver of the MBE/WBE participation requirement is requested for the following reasons:

Prepared by: Title: Phone:

NOTE: The fully completed MBE/WBE Solicitation and Commitment Statement must accompany this waiver request.

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11625)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals for minority and female participation at the Housing Authority of the City of Pittsburgh are pursuant to the Mayor's promulgated Executive Order, and the action of the Housing Authority Board. Expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, these goals are seventeen percent (18%) of the total cost of the contract to be expended for minority participation and six percent (7%) for women participation. These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

   The Contractor's compliance with the Executive Order and the regulations in Section 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in Section 41 CFR Part 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in Section 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification, within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation, to:

   LaVaris Ross, Labor Relations Specialist
   U.S. Department of Housing and Urban Development
   Office of Labor Relations
   City Crescent Building
   10 S. Howard Street, 5th Floor
   Baltimore, MD 21201

   The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is within the Commonwealth of Pennsylvania, County of Allegheny, City of Pittsburgh.

Housing Authority of the City of Pittsburgh

Development & Modernization

412 Boulevard of the Allies, 6th Floor
Pittsburgh, PA 15219 Phone: (412)
456-5116 Fax: (412) 456-5007
www.hacp.org

NOTICE TO ALL PROSPECTIVE BIDDERS

REQUEST FOR MANPOWER PLAN

Renovation of 10 Scattered Sites Homes

HACP CONTRACT NO. 600-31-24

Each bid must include a separate Manpower Plan and Major Equipment List for this Invitation for Bids. The Manpower Plan must include (1) the names of the bidder's personnel to be assigned to the Project, (2) trade/position, (3) Social Security Number or Driver's License Number and (4) Employee Date of Hire.

In the event you are bidding on multiple HACP construction work, each bid must include a separate Manpower Plan and Major Equipment List that clearly demonstrates that the bidder has the capacity and will not use the same personnel and equipment on more than one HACP construction work that are being executed simultaneously within the next 180 days.

HACP will use this information to determine whether the bidder has the capacity to perform the work.

Please acknowledge receipt of this Notice by completing the information below and the attached and including copies in your bid.

Bidder's Name: _____

Name of the Person Signing the Bid: _____

Signature of the Person Signing the Bid: _____

Bid Due Date: _____

Housing Authority of the City of Pittsburgh

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www.hacp.org

Bidder's Planned Manpower

(

Provide Employee Name, Trade/Position, Social Security Number or Driver's License Number and Date of Hire for each employee:
(use additional sheets if necessary).

Name	Position	Social Security No. or Driver's License No.		Date of Hire

Housing Authority of the City of Pittsburgh

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SPECIAL PROVISIONS
FOR INVITATION FOR BIDS (IFB)

REQUEST FOR INFORMATION

Each bidder must submit the following information to assist the Owner to determine if the Bidder has the capacity to perform the required work under this **Project Name:_____ IFB No. _____.**

Bidder's Capacity

Provide information demonstrating the Bidder's ability to provide the resources necessary for the timely and efficient implementation of the construction work. Due to the nature of this procurement, capacity will also be evaluated based on the Bidder's ability to complete the work on time and within budget, therefore, please describe the Bidder's Capacity as follows:

1. Manpower Plan and Major Equipment List (Please complete **Form 00435-1 & 2**).
2. List a maximum of three-(3) current or completed ***Housing Authority of the City of Pittsburgh*** related projects, the **Initial Contract Value, Change Orders, if any, and Final Contract Value**. If the project was not completed within budget and on time, please explain the circumstances and/or justification for the change order(s): Please attach a separate sheet if you do not have sufficient space.

	Project #	Initial Contract Value	Change Order(s)	Final Contract Value
a.				
b.				
c.				

Justification for Change Orders/Schedule:_____
_____

3. List at least three-(3) other Owners including one current or completed project plus the following information:

	Vendor's Name & Contact #	Initial Contract Value	Change Order(s)	Final Contract Value
a.				
b.				
c.				

Justification for Change Orders/Schedule:_____
_____

The Bidder hereby certifies that the information provided above is accurate/correct and provision of false information can be a basis for the rejection of this bid:

Bidder's Name:_____ Bidder's Signature:_____
Date:_____

Housing Authority of the City of Pittsburgh

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NOTICE TO ALL PROSPECTIVE BIDDERS

Previous Related Experience
for

Renovation of 10 Scattered Sites Homes

HACP CONTRACT NO. 600-31-24

The bidder shall list three (3) firms, governmental units, or persons for whom the bidder has previously performed work of the nature requested under this IFB. Bidder shall list as references all housing authorities, including HACP, for whom the bidder has previously performed work of the nature requested under this IFB. HACP reserves the right to contact such persons at anytime prior to award and the bidder agrees that HACP may rely on information provided by such persons to determine the bidder's responsibility.

In addition to the references, all bidders will provide the last three jobs they performed, contact information from the job and all change orders related to the job and the reason for each.

All bidders will provide information on the most recet HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 1			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	**Total $ Value per Change**	**Description of Change**	**Reason for Change**
1			
2			
3			
4			
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9			
10			

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All bidders will provide information on the most recet HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 2			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	**Total $ Value per Change**	**Description of Change**	**Reason for Change**
1			
2			
3			
4			
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9			
10			

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All bidders will provide information on the most recet HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 3			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	**Total $ Value per Change**	**Description of Change**	**Reason for Change**
1			
2			
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All bidders will provide information on the most recet HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 4			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	**Total $ Value per Change**	**Description of Change**	**Reason for Change**
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In addition to the references, all bidders will provide the last three jobs they performed, contact information from the job and all change orders related to the job and the reason for each.

All bidders will provide information on the most recet HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 5			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	**Total $ Value per Change**	**Description of Change**	**Reason for Change**
1			
2			
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Previous Related Experience
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Renovation of 10 Scattered Sites Homes

HACP CONTRACT NO. 600-31-24

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In addition to the references, all bidders will provide the last three jobs they performed, contact information from the job and all change orders related to the job and the reason for each.

All bidders will provide information on the most recet HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 6			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	**Total $ Value per Change**	**Description of Change**	**Reason for Change**
1			
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Renovation of 10 Scattered Sites Homes

HACP CONTRACT NO. 600-31-24

The bidder shall list three (3) firms, governmental units, or persons for whom the bidder has previously performed work of the nature requested under this IFB. Bidder shall list as references all housing authorities, including HACP, for whom the bidder has previously performed work of the nature requested under this IFB. HACP reserves the right to contact such persons at anytime prior to award and the bidder agrees that HACP may rely on information provided by such persons to determine the bidder's responsibility.

In addition to the references, all bidders will provide the last three jobs they performed, contact information from the job and all change orders related to the job and the reason for each.

All bidders will provide information on the most recet HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 7			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	**Total $ Value per Change**	**Description of Change**	**Reason for Change**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

***All contractors MUST submit 3 references and most recent HACP Job if applicable.**

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing

Representations, Certifications, and Other Statements of Bidders

Public and Indian Housing Programs

Representations, Certifications, and Other Statements of Bidders

Public and Indian Housing Programs

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1. Certificate of Independent Price Determination

(a) The bidder certifies that--

(1) The prices in this bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to (i) those prices, (ii) the intention to submit a bid, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this bid have not been and will not be knowingly disclosed by the bidder, directly or indirectly, to any other bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a competitive proposal solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder to induce any other concern to submit or not to submit a bid for the purpose of restricting competition.

(b) Each signature on the bid is considered to be a certification by the signatory that the signatory--

(1) Is the person in the bidder's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(l) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(l) through (a)(3) above.

_____ [insert full name of person(s) in the bidder's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the bidder's organization];

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the bidder deletes or modifies subparagraph (a)2 above, the bidder must furnish with its bid a signed statement setting forth in detail the circumstances of the disclosure.

✓ [Contracting Officer check if following paragraph is applicable]

(d) Non-collusive affidavit. (applicable to contracts for construction and equipment exceeding $50,000)

(1) Each bidder shall execute, in the form provided by the PHA/IHA, an affidavit to the effect that he/she has not colluded with any other person, firm or corporation in regard to any bid submitted in response to this solicitation. If the successful bidder did not submit the affidavit with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the affidavit by that date may render the bid nonresponsive. No contract award will be made without a properly executed affidavit.

(2) A fully executed "Non-collusive Affidavit" [ ] is, [ ] is not included with the bid.

2. Contingent Fee Representation and Agreement

(a) Definitions. As used in this provision:

"Bona fide employee" means a person, employed by a bidder and subject to the bidder's supervision and control as to time, place, and manner of performance, who neither exerts, nor proposes to exert improper influence to solicit or obtain contracts nor holds out as being able to obtain any contract(s) through improper influence.

"Improper influence" means any influence that induces or tends to induce a PHA/IHA employee or officer to give consideration or to act regarding a PHA/IHA contract on any basis other than the merits of the matter.

(b) The bidder represents and certifies as part of its bid that, except for full-time bona fide employees working solely for the bidder, the bidder:

(1) [ ] has, [ ] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [ ] has, [ ] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(c) If the answer to either (a)(1) or (a)(2) above is affirmative, the bidder shall make an immediate and full written disclosure to the PHA/IHA Contracting Officer.

(d) Any misrepresentation by the bidder shall give the PHA/IHA the right to (1) terminate the contract; (2) at its discretion, deduct from contract payments the amount of any commission, percentage, brokerage, or other contingent fee; or (3) take other remedy pursuant to the contract.

3. Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (applicable to contracts exceeding $100,000)

(a) The definitions and prohibitions contained in Section 1352 of title 31, United States Code, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The bidder, by signing its bid, hereby certifies to the best of his or her knowledge and belief as of December 23, 1989 that:

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of a contract resulting from this solicitation;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the bidder shall complete and submit, with its bid, OMB standard form LLL, "Disclosure of Lobbying Activities;" and

(3) He or she will include the language of this certification in all subcontracts at any tier and require that all recipients of subcontract awards in excess of $100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than $10,000, and not more than $100,000, for each such failure.

(d) Indian tribes (except those chartered by States) and Indian organizations as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) are exempt from the requirements of this provision.

4. Organizational Conflicts of Interest Certification

The bidder certifies that to the best of its knowledge and belief and except as otherwise disclosed, he or she does not have any organizational conflict of interest which is defined as a situation in which the nature of work to be performed under this proposed contract and the bidder's organizational, financial, contractual, or other interests may, without some restriction on future activities:

(a) Result in an unfair competitive advantage to the bidder; or,

(b) Impair the bidder's objectivity in performing the contract work.

[ ] In the absence of any actual or apparent conflict, I hereby certify that to the best of my knowledge and belief, no actual or apparent conflict of interest exists with regard to my possible performance of this procurement.

5. Bidder's Certification of Eligibility

(a) By the submission of this bid, the bidder certifies that to the best of its knowledge and belief, neither it, nor any person or firm which has an interest in the bidder's firm, nor any of the bidder's subcontractors, is ineligible to:

(1) Be awarded contracts by any agency of the United States Government, HUD, or the State in which this contract is to be performed; or,

(2) Participate in HUD programs pursuant to 24 CFR Part 24.

(b) The certification in paragraph (a) above is a material representation of fact upon which reliance was placed when making award. If it is later determined that the bidder knowingly rendered an erroneous certification, the contract may be terminated for default, and the bidder may be debarred or suspended from participation in HUD programs and other Federal contract programs.

6. Minimum Bid Acceptance Period

(a) "Acceptance period," as used in this provision, means the number of calendar days available to the PHA/IHA for awarding a contract from the date specified in this solicitation for receipt of bids.

(b) This provision supersedes any language pertaining to the acceptance period that may appear elsewhere in this solicitation.

(c) The PHA/IHA requires a minimum acceptance period of [Contracting Officer insert time period] calendar days.

(d) In the space provided immediately below, bidders may specify a longer acceptance period than the PHA's/IHA's minimum requirement. The bidder allows the following acceptance period: calendar days.

(e) A bid allowing less than the PHA's/IHA's minimum acceptance period will be rejected.

(f) The bidder agrees to execute all that it has undertaken to do, in compliance with its bid, if that bid is accepted in writing within (1) the acceptance period stated in paragraph (c) above or (2) any longer acceptance period stated in paragraph (d) above.

7. Small, Minority, Women-Owned Business Concern Representation

The bidder represents and certifies as part of its bid/ offer that it --

(a) [ ] is, [ ] is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 121.

(b) [ ] is, [ ] is not a women-owned business enterprise. "Women-owned business enterprise," as used in this provision, means a business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(c) [ ] is, [ ] is not a minority business enterprise. "Minority business enterprise," as used in this provision, means a business which is at least 51 percent owned or controlled by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals. For the purpose of this definition, minority group members are:

(Check the block applicable to you)

[ ] Black Americans	[ ] Asian Pacific Americans
[ ] Hispanic Americans	[ ] Asian Indian Americans
[ ] Native Americans	[ ] Hasidic Jewish Americans

8. Indian-Owned Economic Enterprise and Indian Organization Representation (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

The bidder represents and certifies that it:

(a) [ ] is, [ ] is not an Indian-owned economic enterprise. "Economic enterprise," as used in this provision, means any commercial, industrial, or business activity established or organized for the purpose of profit, which is at least 51 percent Indian owned. "Indian," as used in this provision, means any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act.

(b) [ ] is, [ ] is not an Indian organization. "Indian organization," as used in this provision, means the governing body of any Indian tribe or entity established or recognized by such governing body. Indian "tribe" means any Indian tribe, band, group, pueblo, or

community including Native villages and Native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

9. Certification of Eligibility Under the Davis-Bacon Act (applicable to construction contracts exceeding $2,000)

(a) By the submission of this bid, the bidder certifies that neither it nor any person or firm who has an interest in the bidder's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of the contract resulting from this solicitation shall be subcontracted to any person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.

10. Certification of Nonsegregated Facilities (applicable to contracts exceeding $10,000)

(a) The bidder's attention is called to the clause entitled **Equal Employment Opportunity** of the General Conditions of the Contract for Construction.

(b) "Segregated facilities," as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin because of habit, local custom, or otherwise.

(c) By the submission of this bid, the bidder certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The bidder agrees that a breach of this certification is a violation of the Equal Employment Opportunity clause in the contract.

(d) The bidder further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) prior to entering into subcontracts which exceed $10,000 and are not exempt from the requirements of the Equal Employment Opportunity clause, it will:

(1) Obtain identical certifications from the proposed subcontractors;

(2) Retain the certifications in its files; and

(3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

Notice to Prospective Subcontractors of Requirement for Certifications of Nonsegregated Facilities

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract exceeding $10,000 which is not exempt from the provisions of the Equal Employment Opportunity clause of the prime contract. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

Note: The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

11. Clean Air and Water Certification (applicable to contracts exceeding $100,000)

The bidder certifies that:

(a) Any facility to be used in the performance of this contract [ ] is, [ ] is not listed on the Environmental Protection Agency List of Violating Facilities:

(b) The bidder will immediately notify the PHA/IHA Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the bidder proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and,

(c) The bidder will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract.

12. Previous Participation Certificate (applicable to construction and equipment contracts exceeding $50,000)

(a) The bidder shall complete and submit with his/her bid the Form HUD-2530, "Previous Participation Certificate." If the successful bidder does not submit the certificate with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the certificate by that date may render the bid nonresponsive. No contract award will be made without a properly executed certificate.

(b) A fully executed "Previous Participation Certificate"

[ ] is, [ ] is not included with the bid.

13. Bidder's Signature

The bidder hereby certifies that the information contained in these certifications and representations is accurate, complete, and current.

_____
(Signature and Date)

_____
(Typed or Printed Name)

_____
(Title)

_____
(Company Name)

(Company Address)

Previous Participation Certification

OMB Approval No. 2502-0118
(Exp. 05/31/2019)

US Department of Housing and Urban Development
Office of Housing/Federal Housing Commissioner

US Department of Agriculture
Farmers Home Administration

Part I to be completed by Controlling Participant of Covered Projects *(See instructions)* Reason for submission:		**For HUD HQ/FmHA use only**	
1. Agency name and City where the application is filed		**2.** Project Name, Project Number, City and Zip Code	
3. Loan or Contract amount $	**4.** Number of Units or Beds	**5.** Section of Act	**6.** Type of Project (check one) ☐ Existing ☐ Rehabilitation ☐ Proposed (New)

7. List all proposed Controlling Participants and attach organization chart for all organizations

Name and address of Principals and Affiliates (Name: Last, First, Middle Initial) proposing to participate	**8 Role of Each Principal in Project**	**9. SSN or IRS Employer Number**

Certifications: The controlling participants(s) listed above hereby apply to HUD or USDA FmHA, as the case maybe, for approval to participate as controlling participant(s) in the role(s) and project listed above. The controlling participant(s) each certify that all the statements made on this form are true, complete and correct to the best of their knowledge and belief and are made in good faith, including any Exhibits attached to this form.
Warning: HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. The controlling participants(s) further certify that to the best of their knowledge and belief:

1. Schedule A contains a listing, for the last ten years, of every project assisted or insured by HUD, USDA FmHA and/or State and local government housing finance agencies in which the controlling participant(s) have participated or are now participating.
2. For the period beginning 10 years prior to the date of this certification, and except as shown on the certification:

a. No mortgage on a project listed has ever been in default, assigned to the Government or foreclosed, nor has it received mortgage relief from the mortgagee;
b. The controlling participants have no defaults or noncompliance under any Conventional Contract or Turnkey Contract of Sale in connection with a public housing project;
c. There are no known unresolved findings as a result of HUD audits, management reviews or other Governmental investigations concerning the controlling participants or their projects;
d. There has not been a suspension or termination of payments under any HUD assistance contract due to the controlling participant's fault or negligence;
e. The controlling participants have not been convicted of a felony and are not presently the subject of a complaint or indictment charging a felony. (A felony is defined as any offense punishable by imprisonment for a term exceeding one year, but does not include any offense classified as a misdemeanor under the laws of a State and punishable by imprisonment of two years or less);
f. The controlling participants have not been suspended, debarred or otherwise restricted by any Department or Agency of the Federal Government or of a State Government from doing business with such Department or Agency;
g. The controlling participants have not defaulted on an obligation covered by a surety or performance bond and have not been the subject of a claim under an employee fidelity bond;

3. All the names of the controlling participants who propose to participate in this project are listed above.
4. None of the controlling participants is a HUD/FmHA employee or a member of a HUD/FmHA employee's immediate household as defined in Standards of Ethical Conduct for Employees of the Executive Branch in 5 C.F.R. Part 2635 (57 FR 35006) and HUD's Standard of Conduct in 24 C.F.R. Part 0 and USDA's Standard of Conduct in 7 C.F.R. Part 0 Subpart B.
5. None of the controlling participants is a participant in an assisted or insured project as of this date on which construction has stopped for a period in excess of 20 days or which has been substantially completed for more than 90 days and documents for closing, including final cost certification, have not been filed with HUD or FmHA.
6. None of the controlling participants have been found by HUD or FmHA to be in noncompliance with any applicable fair housing and civil rights requirements in 24 CFR 5.105(a). (If any controlling participants have been found to be in noncompliance with any requirements, attach a signed statement explaining the relevant facts, circumstances, and resolution, if any).
7. None of the controlling participants is a Member of Congress or a Resident Commissioner nor otherwise prohibited or limited by law from contracting with the Government of the United States of America.
8. Statements above (if any) to which the controlling participant(s) cannot certify have been deleted by striking through the words with a pen, and the controlling participant(s) have initialed each deletion (if any) and have attached a true and accurate signed statement (if applicable) to explain the facts and circumstances.

Name of Controlling Participant	**Signature of Controlling Participant**	**Certification Date (mm/dd/yyyy)**	**Area Code and Tel. No.**
This form prepared by (print name)		**Area Code and Tel. No.**	

Schedule A: List of Previous Projects and Section 8 Contracts. Below is a complete list of the controlling participants' previous participation projects and participation history in multifamily Housing programs of HUD/FmHA, State and local Housing Finance Agencies. **Note:** Read and follow the instruction sheet carefully. Make full disclosure. Add extra sheets if you need more space. Double check for accuracy. If no previous projects, write by your name, "**No previous participation, First Experience**".

1. Controlling Participants' Name (Last, First)	2. List of previous projects (Project name, project ID and, Govt. agency involved)	3.List Participants' Role(s) (indicate dates participated, and if fee or identity of interest participant)	4. Status of loan (current, defaulted, assigned, foreclosed)	5.Was the Project ever in default during your participation			6. Last MOR rating and Physical Insp. Score and date
				Yes	**No**	**If yes, explain**	

Part II- For HUD Internal Processing Only

Received and checked by me for accuracy and completeness; recommend approval or refer to Headquarters after checking appropriate box.

Date (mm/dd/yyyy)	Tel No. and area code	☐ A. No adverse information; form HUD-2530 approval recommended.	☐ C. Disclosure or Certification problem
Staff	Processing and Control	☐ B. Name match in system	☐ D. Other (attach memorandum)

Signature of authorized reviewer	Signature of authorized reviewer	Approved ☐ Yes ☐ No	Date (mm/dd/yyyy)

Instructions for Completing the Previous Participation Certificate, form HUD-2530

Carefully read these instructions and the applicable regulations. A copy of those regulations published at 24 C.F.R. part 200, subpart H, can be obtained on-line at www.gpo.gov and from the Account Executive at any HUD Office. Type or print neatly in ink when filling out this form. Mark answers in all blocks of the form. If the form is not filled completely, it will delay approval of your application.

Attach extra sheets as you need them. Be sure to indicate "Continued on Attachments" wherever appropriate. Sign each additional page that you attach if it refers to you or your record. **Carefully read the certification before you sign it.** Any questions regarding the form or how to complete it can be answered by your HUD Account Executive.

Purpose: This form provides HUD with a certified report of all previous participation in HUD programs by those parties making application. The information requested in this form is used by HUD to determine if you meet the standards established to ensure that all controlling participants in HUD projects will honor their legal, financial and contractual obligations and are acceptable risks from the underwriting standpoint of an insurer, lender or governmental agency. HUD requires that you certify your record of previous participation in HUD/USDA-FmHA, State and Local Housing Finance Agency projects by completing and signing this form, before your project application or participation can be approved.

HUD approval of your certification is a necessary precondition for your participation in the project and in the capacity that you propose. If you do not file this certification, do not furnish the information requested accurately, or do not meet established standards, HUD will not approve your certification.

Note that approval of your certification does not obligate HUD to approve your project application, and it does not satisfy all other HUD program requirements relative to your qualifications.

Who Must Sign and File Form HUD-2530: Form HUD-2530 must be completed and signed by all Controlling Participants of Covered Projects, as such terms are defined in 24 CFR 200.212, and as further clarified by the Processing Guide referenced in 24 CFR 200.210(b) and made available on the HUD website at: http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/mfh/prevparticipation.

Where and When Form HUD-2530 Must Be Filed: The original of this form must be submitted to the HUD Office where your project application will be processed at the same time you file your initial project application. This form must be filed with applications for projects listed in 24 CFR 200.214 and for the Triggering Events listed at 24 CFR 200.218.

Review of Adverse Determination: If approval of your participation in a HUD project is denied, withheld, or conditionally granted on the basis of your record of previous participation, you will be notified by the HUD Office. You may request reconsideration in accordance with 24 CFR 200.222 and further clarified by the Processing Guide. Request must be made in writing within 30 days from your receipt of the notice of determination.

Specific Line Instructions are set forth in the Processing Guide.

The Department of Housing and Urban Development (HUD) is authorized to collect this information by law (42 U.S.C. 3535(d) and 24 C.F.R. 200.217) and by regulation at 24 CFR 200.210. This information is needed so that principals applying to participate in multifamily programs can become HUD-approved controlling participants. The information you provide will enable HUD to evaluate your record with respect to established standards of performance, responsibility and eligibility. Without prior approval, a controlling participant may not participate in a proposed or existing multifamily or healthcare project. HUD uses this information to evaluate whether or not controlling participants pose an unsatisfactory underwriting risk. The information is used to evaluate the potential controlling participants and approve only individuals and organizations that will honor their legal, financial and contractual obligations.

Privacy Act Statement: The Housing and Community Development Act of 1987, 42 U.S.C. 3543 requires persons applying for a Federally-insured or guaranteed loan to furnish his/her Social Security Number (SSN). HUD must have your SSN for identification of your records. HUD may use your SSN for automated processing of your records and to make requests for information about you and your previous records with other public agencies and private sector sources. HUD may disclose certain information to Federal, State and local agencies when relevant to civil, criminal, or regulatory investigations and prosecutions. It will not be otherwise disclosed or released outside of HUD, except as required and permitted by law. You must provide all of the information requested in this application, including your SSN.

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB control number.

A response is mandatory. Failure to provide any of the information will result in your disapproval of participation in this HUD program.

Housing Authority of the City of Pittsburgh

Development & Modernization
412 Boulevard of the Allies, 6th Floor Pittsburgh, PA 15219
Phone: (412) 456-5116 Fax: (412) 456-5007
www.hacp.org

SPECIAL PROVISIONS

NOTICE TO ALL PROSPECTIVE BIDDERS
Renovation of 10 Scattered Sites Homes

Documents Required for Payment
HACP Contract No.: 600-31-24

Pursuant to Sections 27, 38, 40 and 46 of the General Conditions for this Contract, each contractor must submit the following required documents with each Payment Estimate ("PE") in order for HACP to process a PE as follows:

A. **Periodic Estimate – HUD 51001**

B. **Schedule of Stored Materials – HUD 51003** (if applicable)

C. **Summary of Stored Materials – HUD 51004** (if applicable)

D. **Schedule of Change Orders – HUD 51002** (if applicable)

E. **Progress Payment Certification**

F. **Current/Approved Certified Payrolls** (submitted to HACP's Davis-Bacon Wage Clerk).

G. **MBE/WBE Utilization Report**

H. **Section 3 Summary Report**

Signature of Authorized Officer: _____ Date: _____

THIS DOCUMENT MUST BE SIGNED.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

NON-COLLUSION AFFIDAVIT

State of_____

County of_____

_____, being first duly sworn, deposes and says:
(Printed or Typed Name)

That he/she is
(Proprietor, General Partner, President or Vice President)

of _____; and having submitted the foregoing Bid for
(Bidder Name)

Renovation of 10 Scattered Sites Homes

_____ 600-31-24;
(Project Name) *(HACP Contract No.)*

and is the party making the foregoing Bid, and that such Bid is genuine and not collusive or sham; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any Bidder or person, to put in a sham bid, or to refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price of affiant or of any bidder, or to fix any overhead, profit or cost element of said bid price, or of that of any bidder, or to secure any advantage against the Housing Authority of the City of Pittsburgh or any person interested in the proposed contract; and that all statements in said Bid are true.

_____
(Signature and Date)

Subscribed and sworn to before me

this_____ day of _____, 20__

My Commission expires _____, 20__

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

FORM OF AGREEMENT

THIS AGREEMENT, made this ____ day of _____ in the year Two Thousand _____(20) by and between:

_____

_____

_____

[ ] An individual doing business in his/her own name
[ ] An individual doing business under a fictitious or assumed name
[ ] A partnership
[ ] A Corporation

(Hereinafter called the Contractor)

AND

The Housing Authority of the City of Pittsburgh (hereinafter called the Authority)
412 Boulevard of the Allies
Pittsburgh, PA 15219

WITNESSETH: That the Contractor and the Authority, for the consideration stated herein, mutually agree as follows:

ARTICLE 1, STATEMENT OF WORK

The Contractor shall provide all labor, materials and equipment, and services necessary to perform and complete all work required in accordance with Fukui Architects drawings for Renovation of 10 Scattered Sites Homes _____ dated August 20, 2024 and Project Manual dated September 23, 2024 regarding:

CONTRACT NO. 600-31-24

and addenda thereto numbered _____, all as prepared by _____, which said specifications, drawings, and addenda are incorporated herein by reference and are a part hereof.

The work shall begin at the time stipulated in the NOTICE TO PROCEED and in no event exceeding 245 consecutive calendar days from notice to proceed.

ARTICLE 2, THE CONTRACT PRICE

The Authority shall pay the contractor for the performance of the Contract in current fund, subject to additions and deductions as provided in the specifications.

_____ ($_____)

ARTICLE 3, CONTRACT DOCUMENTS

The Contract shall consist of the following component parts:

a. This Agreement
b. Project Manual (including all component parts) dated September 23, 2024.
c. Project Drawings issued by Fukui Architects dated August 20, 2024.

This Agreement, together with the other documents enumerated in this Article 3 which said other documents are as fully a part of the Contract as if hereto attached or herein repeated, form the Contract. In the event that any provision in any component part of this Contract conflicts with any provision of any other component part, the provision of the component part first enumerated in this ARTICLE 3, shall govern, except as subsequent parts may establish more specific criteria or language in which case these criteria and language shall govern. The various provisions in Addenda shall be construed in the order of preference of the component part of the Contract which each modified.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS

this _____ day of _____ 20_____.

IF THE PRINCIPAL IS AN INDIVIDUAL, SIGN HERE

By signing this Form of Agreement, if the Housing Authority accepts and signs Contract No. 600-31-24 this contract shall be binding on both parties.

_____	_____
(Printed or Typed Name)	*(Printed or Typed Name)*
Witness	*Principal*
{	{
_____	_____
(Signature and Date)	*(Signature and Date)*

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

By signing this Form of Agreement, if the Housing Authority accepts and signs Contract No. 600-31-24 this contract shall be binding on both parties.

(Printed or Typed Name)	*(Printed or Typed Name)*
Witness	*Partner**
{	{
(Signature and Date)	*(Signature and Date)*
(Printed or Typed Name)	*(Printed or Typed Name)*
Witness	*Partner**
{	{
(Signature and Date)	*(Signature and Date)*

* If the Bidder is a partnership, the Form of Agreement must be signed in the name of the partnership by at least two general partners, whose names and addresses must be listed on the certificate on page BF-3-P of the Bid.

IF THE PRINCIPAL IS A CORPORATION, SIGN HERE

By signing this Form of Agreement, if the Housing Authority accepts and signs Contract No. 600-31-24 this contract shall be binding on both parties.

(CORPORATE SEAL)

_____
(Corporate Name)

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness {	_____ *(Signature and Date)*	*President V.P.** {	_____ *(Signature and Date)*
	_____ *(Corporate Title)*		_____ *(Corporate Title)*

** If the bidder is a corporation, the Form of Agreement must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the **Secretary/Assistant Secretary** of the Corporation named a Bidder herein; that
(Circle one)
_____ who signed this Bid on behalf of the

Corporation was then _____ of said Corporation that I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

(CORPORATE SEAL)

_____
(Signature and Date)

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Secretary

Attest

{

_____

(Signature and Date)

Chief Contracting Officer

Principal

{

_____

(Signature and Date)

Darrell Davis, Chief Development Officer

Approved as to
Contents and Costs {

_____

(Signature and Date)

Assistant General Counsel

Approved as to
Form {

_____

(Signature and Date)

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

CONTRACTING OFFICER CERTIFICATION

I _____certify that I am the Recording Secretary of the Housing Authority of the City of Pittsburgh; that _____, who signed this Contract on behalf of the Housing Authority, was then Contracting Officer of said Authority; that the said Contract was duly signed for and on behalf of the Housing Authority of the City of Pittsburgh.

_____ (SEAL)
Secretary

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

PERFORMANCE BOND

THIS BOND IS ISSUED SIMULTANEOUSLY WITH PAYMENT BOND IN FAVOR OF THE AUTHORITY CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT.

KNOW ALL MEN BY THESE PRESENTS, that we,

_____, as Principal, and
(Insert name and address of contractor exactly as it appears on Form of Agreement)

_____, as Sureties, are held and firmly bound unto the **Housing Authority of the City of Pittsburgh**, its certain attorney, successors, or assigns (the Obligee, hereinafter called the "Authority") in the penal sum of

_____Dollars ($_____)

lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal heretofore has submitted to the said Authority a certain bid, dated

_____, 20_____ (the "Bid"), for construction of
(Insert date of bid)

_____
(Insert name of project exactly as it appears on Form of Agreement)
pursuant to specifications, drawings and other related documents constituting the Invitation for Bids (the "IFB"); and

WHEREAS, the said Authority is a "Contracting body" under provisions of Act No. 385 of the General Assembly of the Commonwealth of Pennsylvania, approved by the Governor on December 20, 1967, known and cited as the "Public Works Contractors' Bond Law of 1967" (8 P.S. 191-202) (the "Act"); and

WHEREAS, the Act, in Section 3 (a), requires that, before an award shall be made to the Principal shall furnish this Bond to the said Authority, with this Bond to become binding upon the award of a Contract to the Principal by the said Authority in accordance with the Bid; and

WHEREAS, it also is a condition of the IFB that this Bond shall be furnished by the Principal to the said Authority; and

WHEREAS, Under the Invitation for Bids, it is provided, inter alia, that if the Principal shall furnish this Bond to the said Authority, and if the said Authority shall make an award to the Principal in accordance with the Bid, then the Principal and the said Authority shall enter into a contract with respect to performance of such work (the "Contract"), the Form of Agreement for which is set forth in the IFB.

NOW, therefore, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the principal shall faithfully perform the Contract on his part as of the time and in the manner therein provided and satisfy all claims and demands incurred in or for the same, or growing out of the same, or for injury or damages to persons or property in the performance thereof, and shall fully indemnify and save harmless the said Authority from any and all cost and damage which the said Authority may suffer by reason of the principal's failure to do so, and shall fully reimburse and repay the said Authority any and all outlay and expense which it incurs by reason of any such default, then this obligation shall be null and void, otherwise it shall remain in full force and virtue.

It is further understood and agreed that the principal shall guarantee for a period of one (1) year from completion date of the contract against defects in workmanship or materials in accordance with the terms of the Contract.

The said surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the Specifications accompanying the same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS
(2 required by Authority)

this _____ day of _____ 20_____.

IF THE PRINCIPAL IS AN INDIVIDUAL, SIGN HERE

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness	{ _____ *(Signature and Date)*	*Principal*	{ _____ *(Signature and Date)*

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness	{ _____ *(Signature and Date)*	*Partner**	{ _____ *(Signature and Date)*
	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness	{ _____ *(Signature and Date)*	*Partner**	{ _____ *(Signature and Date)*

* If the Bidder is a partnership, the Bond must be signed in the name of the partnership by at least two general partners, whose names and addresses must be listed on the certificate on page BF-3-P of the Bid.

IF THE PRINCIPAL IS A CORPORATION, SIGN HERE

(CORPORATE SEAL)

_____
(Corporate Name)

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness	{	*President V.P.***	{
	_____ *(Signature and Date)*		_____ *(Signature and Date)*
	_____ *(Corporate Title)*		_____ *(Corporate Title)*

** If the bidder is a corporation, the Bond must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal below must be executed by the Secretary or Assistant Secretary.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the
Secretary/Assistant Secretary of the Corporation named a Bidder herein; that
(Circle one)
_____ who signed this Bid on behalf of the

Corporation was then _____ of said Corporation that I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

(CORPORATE SEAL)

_____
(Signature and Date)

SURETY SIGN HERE

(SURETY SEAL)

_____
(Printed or Typed Name)

_____
(Printed or Typed Name)

Attest
{
_____
(Signature and Date)

Surety ***
{
_____
(Signature and Date)

***Power of attorney must be attached to this Bid Bond.

The rate of premium charged is $_____ per thousand.
(To be filled in by Surety)

The total amount of premium charged is $_____
(To be filled in by Surety)

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

PAYMENT BOND
(Labor and Materialmen's Bond)

THIS BOND IS ISSUED SIMULTANEOUSLY WITH PERFORMANCE BOND IN FAVOR OF THE AUTHORITY CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT.

KNOW ALL MEN BY THESE PRESENTS, that we,

_____, as Principal, and
(Insert name and address of Contractor exactly as it appears on Form of Agreement)

_____, as Sureties, are held and firmly bound unto the **Housing Authority of the City of Pittsburgh**, its certain attorney, successors, or assigns (the Obligee, hereinafter called the "Authority") in the penal sum of

_____Dollars ($_____)

lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal heretofore has submitted to the said Obligee a certain bid, dated

_____, 20_____ (the "Bid"), for construction of
(Insert date of bid)

_____
(Insert name of project exactly as it appears on Form of Agreement)
pursuant to specifications, drawings and other related documents constituting the Invitation for Bids (the "IFB"); and

WHEREAS, the said Authority is a "Contracting body" under provisions of Act No. 385 of the General Assembly of the Commonwealth of Pennsylvania, approved by the Governor on December 20, 1967, known and cited as the "Public Works Contractors' Bond Law of 1967" (8 P.S. 191-202) (the "Act"); and

WHEREAS, the Act, in Section 3 (a), requires that, before an award shall be made to the Principal shall furnish this Bond to the said Authority, with this Bond to become binding upon the award of a Contract to the Principal by the said Authority in accordance with the Bid; and

WHEREAS, it also is a condition of the IFB that this Bond shall be furnished by the Principal to the said Authority; and

WHEREAS, Under the Invitation for Bids, it is provided, inter alia, that if the Principal shall furnish this Bond to the said Authority, and if the said Authority shall make an award to the Principal in accordance with the Bid, then the Principal and the said Authority shall enter into a contract with respect to performance of such work (the "Contract"), the Form of Agreement for which is set forth in the IFB.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if said principal and all subcontractors to whom any portion of the work provided for in said contract is sublet and all assignees of said principal and of such subcontractors shall promptly make payment for all material furnished, labor supplied or performed, rental for equipment employed, and services rendered by public utilities in or in connection with the prosecution of the work, whether or not the said material, labor, equipment or services enter into and become component parts of the work or improvement contemplated in said contract, or in any amendment or extension of or addition to said Contract, then the above obligation shall be void; otherwise to remain in full force and effect. PROVIDED, however, that this bond is subject to the following conditions and limitations.

(a) All persons who have performed labor, rendered services or furnished materials or machinery, shall have direct right of action against the principal and surety on this bond, which right of action shall be asserted in proceedings instituted in the State in which such labor was performed, services rendered or materials furnished (or where labor has been performed, services rendered or materials furnished under said Contract is more than one State, then in any such State). Insofar as permitted by the laws of such State, such right of action shall be asserted in a proceeding instituting such action and any or all other persons having claims hereunder, and any other person having a claim hereunder shall have the right to be made a party to such proceeding (but not later than one year after the complete performance of said Contract and final settlement thereof) and to have such claim adjudicated in such action and judgment rendered thereon.

(b) The surety shall not be liable hereunder for any damages or compensation recoverable under any workmen's compensation or employer's liability statute.

(c) In no event shall the surety be liable for a greater sum than the penalty of this bond, or subject to any suit, action or proceeding thereon that is instituted later than one year after the complete performance of said contract and final settlement thereof.

(d) As used herein: The term "person" refers to any individual, firm or corporation who have furnished materials or machinery or public utility services to be used on or incorporated in the work or the prosecution thereof provided for in said Contract or in any amendment or extension of or addition to said Contract, and/or to any person engaged in the prosecution of the work provided for in said Contract or in any amendment or extension of or addition to said Contract, who is an agent, servant or employee of the principal, or of any subcontractor, or of any assignee of said principal or of any subcontractor and also anyone so engaged who performs the work of a laborer or of a mechanic regardless of any contractual relationship between the principal, or any sub-contractor, or any assignee of said principal or of said subcontractor, and such laborer or mechanic, but shall not include office employees not regularly stationed at the site of the work.

The said surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder or the Specifications accompanying the same, shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS
(2 required by Authority)

this _____ day of _____ 20_____.

IF THE PRINCIPAL IS AN INDIVIDUAL, SIGN HERE

	_____		_____
	(Printed or Typed Name)		*(Printed or Typed Name)*
Witness		*Principal*	
	{	{	
	_____		_____
	(Signature and Date)		*(Signature and Date)*

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness	{ _____ *(Signature and Date)*	*Partner**	{ _____ *(Signature and Date)*
	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness	{ _____ *(Signature and Date)*	*Partner**	{ _____ *(Signature and Date)*

* If the Bidder is a partnership, the Bond must be signed in the name of the partnership by at least two general partners, whose names and addresses must be listed on the certificate on page BF-3-P of the Bid.

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(CORPORATE SEAL)

_____
(Corporate Name)

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Witness	{	*President V.P.***	{
	_____ *(Signature and Date)*		_____ *(Signature and Date)*
	_____ *(Corporate Title)*		_____ *(Corporate Title)*

** If the bidder is a corporation, the Bond must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the **Secretary/Assistant Secretary** of the Corporation named a Bidder herein; that
(Circle one)
_____ who signed this Bid on behalf of the

Corporation was then _____ of said Corporation that I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

(CORPORATE SEAL)

_____
(Signature and Date)

SURETY SIGN HERE

(SURETY SEAL)

	_____ *(Printed or Typed Name)*		_____ *(Printed or Typed Name)*
Attest	{	*Surety*	{
	_____ *(Signature and Date)*		_____ *(Signature and Date)*

The rate of premium charged is $_____ per thousand.
(To be filled in by Surety)

The total amount of premium charged is $_____
(To be filled in by Surety)

General Conditions for Construction Contracts - Public Housing Programs

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing
OMB Approval No. 2577-0157 (exp. 3/31/2020)

Applicability. This form is applicable to any construction/development contract greater than $150,000.

This form includes those clauses required by OMB's common rule on grantee procurement, implemented at HUD in 2 CFR 200, and those requirements set forth in Section 3 of the Housing and Urban Development Act of 1968 and its amendment by the Housing and Community Development Act of 1992, implemented by HUD at 24 CFR Part 135. The form is required for construction contracts awarded by Public Housing Agencies (PHAs).
The form is used by Housing Authorities in solicitations to provide necessary contract clauses. If the form were not used, HAs would be unable to enforce their contracts.
Public reporting burden for this collection of information is estimated to average 1.0 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Responses to the collection of information are required to obtain a benefit or to retain a benefit.
The information requested does not lend itself to confidentiality.
HUD may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB number.

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1. Definitions

(a) "Architect" means the person or other entity engaged by the PHA to perform architectural, engineering, design, and other services related to the work as provided for in the contract. When a PHA uses an engineer to act in this capacity, the terms "architect" and "engineer" shall be synonymous. The Architect shall serve as a technical representative of the Contracting Officer. The Architect's authority is as set forth elsewhere in this contract.

(b) "Contract" means the contract entered into between the PHA and the Contractor. It includes the forms of Bid, the Bid Bond, the Performance and Payment Bond or Bonds or other assurance of completion, the Certifications, Representations, and Other Statements of Bidders (form HUD-5370), these General Conditions of the Contract for Construction (form HUD-5370), the applicable wage rate determinations from the U.S. Department of Labor, any special conditions included elsewhere in the contract, the specifications, and drawings. It includes all formal changes to any of those documents by addendum, change order, or other modification.

(c) "Contracting Officer" means the person delegated the authority by the PHA to enter into, administer, and/or terminate this contract and designated as such in writing to the Contractor. The term includes any successor Contracting Officer and any duly authorized representative of the Contracting Officer also designated in writing. The Contracting Officer shall be deemed the authorized agent of the PHA in all dealings with the Contractor.

(d) "Contractor" means the person or other entity entering into the contract with the PHA to perform all of the work required under the contract.

(e) "Drawings" means the drawings enumerated in the schedule of drawings contained in the Specifications and as described in the contract clause entitled Specifications and Drawings for Construction herein.

(f) "HUD" means the United States of America acting through the Department of Housing and Urban Development including the Secretary, or any other person designated to act on its behalf. HUD has agreed, subject to the provisions of an Annual Contributions Contract (ACC), to provide financial assistance to the PHA, which includes assistance in financing the work to be performed under this contract. As defined elsewhere in these General Conditions or the contract documents, the determination of HUD may be required to authorize changes in the work or for release of funds to the PHA for payment to the Contractor. Notwithstanding HUD's role, nothing in this contract shall be construed to create any contractual relationship between the Contractor and HUD.

(g) "Project" means the entire project, whether construction or rehabilitation, the work for which is provided for in whole or in part under this contract.

(h) "PHA" means the Public Housing Agency organized under applicable state laws which is a party to this contract.

(j) "Specifications" means the written description of the technical requirements for construction and includes the criteria and tests for determining whether the requirements are met.

(l) "Work" means materials, workmanship, and manufacture and fabrication of components.

2. Contractor's Responsibility for Work

(a) The Contractor shall furnish all necessary labor, materials, tools, equipment, and transportation necessary for performance of the work. The Contractor shall also furnish all necessary water, heat, light, and power not made available to the Contractor by the PHA pursuant to the clause entitled Availability and Use of Utility Services herein.

(b) The Contractor shall perform on the site, and with its own organization, work equivalent to at least [✓] (12 percent unless otherwise indicated) of the total amount of work to be performed under the order. This percentage may be reduced by a supplemental agreement to this order if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the PHA.

(c) At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work site a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

(d) The Contractor shall be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence, and shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. The Contractor shall hold and save the PHA, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

(e) The Contractor shall lay out the work from base lines and bench marks indicated on the drawings and be responsible for all lines, levels, and measurements of all work executed under the contract. The Contractor shall verify the figures before laying out the work and will be held responsible for any error resulting from its failure to do so.

(f) The Contractor shall confine all operations (including storage of materials) on PHA premises to areas authorized or approved by the Contracting Officer.

(g) The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. After completing the work and before final inspection, the Contractor shall (1) remove from the premises all scaffolding, equipment, tools, and materials (including rejected materials) that are not the property of the PHA and all rubbish caused by its work; (2) leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer; (3) perform all specified tests; and, (4) deliver the installation in complete and operating condition.

(h) The Contractor's responsibility will terminate when all work has been completed, the final inspection made, and the work accepted by the Contracting Officer. The Contractor will then be released from further obligation except as required by the warranties specified elsewhere in the contract.

3. Architect's Duties, Responsibilities, and Authority

(a) The Architect for this contract, and any successor, shall be designated in writing by the Contracting Officer.

(b) The Architect shall serve as the Contracting Officer's technical representative with respect to architectural, engineering, and design matters related to the work performed under the contract. The Architect may provide direction on contract performance. Such direction shall be within the scope of the contract and may not be of a nature which: (1) institutes additional work outside the scope of the contract; (2) constitutes a change as defined in the Changes clause herein; (3) causes an increase or decrease in the cost of the contract; (4) alters the Construction Progress Schedule; or (5) changes any of the other express terms or conditions of the contract.

(c) The Architect's duties and responsibilities may include but shall not be limited to:

(1) Making periodic visits to the work site, and on the basis of his/her on-site inspections, issuing written reports to the PHA which shall include all observed deficiencies. The Architect shall file a copy of the report with the Contractor's designated representative at the site;

(2) Making modifications in drawings and technical specifications and assisting the Contracting Officer in the preparation of change orders and other contract modifications for issuance by the Contracting Officer;

(3) Reviewing and making recommendations with respect to - (i) the Contractor's construction progress schedules; (ii) the Contractor's shop and detailed drawings; (iii) the machinery, mechanical and other equipment and materials or other articles proposed for use by the Contractor; and, (iv) the Contractor's price breakdown and progress payment estimates; and,

(4) Assisting in inspections, signing Certificates of Completion, and making recommendations with respect to acceptance of work completed under the contract.

4. Other Contracts

The PHA may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with PHA employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by PHA employees

Construction Requirements

5. Pre-construction Conference and Notice to Proceed

(a) Within ten calendar days of contract execution, and prior to the commencement of work, the Contractor shall attend a preconstruction conference with representatives of the PHA, its Architect, and other interested parties convened by the PHA. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract. The PHA will provide the Contractor with the date, time, and place of the conference.

(b) The contractor shall begin work upon receipt of a written Notice to Proceed from the Contracting Officer or designee. The Contractor shall not begin work prior to receiving such notice.

6. Construction Progress Schedule

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring labor, materials, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments or take other remedies under the contract until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as required by the Contracting Officer, and immediately deliver three copies of the annotated schedule to the Contracting Officer. If the Contracting Officer determines, upon the basis of inspection conducted pursuant to the clause entitled Inspection and Acceptance of Construction, herein that the Contractor is not meeting the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the PHA. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the Contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the Default clause of this contract.

7. Site Investigation and Conditions Affecting the Work

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to, (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads;(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is

reasonably ascertainable from an inspection of the site, including all exploratory work done by the PHA, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the PHA.

(b) The PHA assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the PHA. Nor does the PHA assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

8. Differing Site Conditions

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or (2) unknown physical conditions at the site(s), of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. Work shall not proceed at the affected site, except at the Contractor's risk, until the Contracting Officer has provided written instructions to the Contractor. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, the Contractor shall file a claim in writing to the PHA within ten days after receipt of such instructions and, in any event, before proceeding with the work. An equitable adjustment in the contract price, the delivery schedule, or both shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

9. Specifications and Drawings for Construction

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by", or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown" "as indicated", "as detailed", or of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place" that is "furnished and installed".

(d) "Shop drawings" means drawings, submitted to the PHA by the Contractor, subcontractor, or any lower tier subcontractor, showing in detail (1) the proposed fabrication and assembly of structural elements and (2) the installation (i.e., form, fit, and attachment details) of materials of equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract. The PHA may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with other contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the PHA's reasons therefore. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Architect approves any such variation and the Contracting Officer concurs, the Contracting Officer shall issue an appropriate modification to the contract, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) It shall be the responsibility of the Contractor to make timely requests of the PHA for such large scale and full size drawings, color schemes, and other additional information, not already in his possession, which shall be

required in the planning and production of the work. Such requests may be submitted as the need arises, but each such request shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay.

(h) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the PHA and one set will be returned to the Contractor. As required by the Contracting Officer, the Contractor, upon completing the work under this contract, shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the work is completed and accepted.

(i) This clause shall be included in all subcontracts at any tier. It shall be the responsibility of the Contractor to ensure that all shop drawings prepared by subcontractors are submitted to the Contracting Officer.

10. As-Built Drawings

(a) "As-built drawings," as used in this clause, means drawings submitted by the Contractor or subcontractor at any tier to show the construction of a particular structure or work as actually completed under the contract. "As-built drawings" shall be synonymous with "Record drawings."

(b) As required by the Contracting Officer, the Contractor shall provide the Contracting Officer accurate information to be used in the preparation of permanent as-built drawings. For this purpose, the Contractor shall record on one set of contract drawings all changes from the installations originally indicated, and record final locations of underground lines by depth from finish grade and by accurate horizontal offset distances to permanent surface improvements such as buildings, curbs, or edges of walks.

(c) This clause shall be included in all subcontracts at any tier. It shall be the responsibility of the Contractor to ensure that all as-built drawings prepared by subcontractors are submitted to the Contracting Officer.

11. Material and Workmanship

(a) All equipment, material, and articles furnished under this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the contract to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of, and as approved by the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) Approval of equipment and materials.

(1) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(2) When required by the specifications or the Contracting Officer, the Contractor shall submit appropriately marked samples (and certificates related to them) for approval at the Contractor's expense, with all shipping charges prepaid. The Contractor shall label, or otherwise properly mark on the container, the material or product represented, its place of origin, the name of the producer, the Contractor's name, and the identification of the construction project for which the material or product is intended to be used.

(3) Certificates shall be submitted in triplicate, describing each sample submitted for approval and certifying that the material, equipment or accessory complies with contract requirements. The certificates shall include the name and brand of the product, name of manufacturer, and the location where produced.

(4) Approval of a sample shall not constitute a waiver of the PHA right to demand full compliance with contract requirements. Materials, equipment and accessories may be rejected for cause even though samples have been approved.

(5) Wherever materials are required to comply with recognized standards or specifications, such specifications shall be accepted as establishing the technical qualities and testing methods, but shall not govern the number of tests required to be made nor modify other contract requirements. The Contracting Officer may require laboratory test reports on items submitted for approval or may approve materials on the basis of data submitted in certificates with samples. Check tests will be made on materials delivered for use only as frequently as the Contracting Officer determines necessary to insure compliance of materials with the specifications. The Contractor will assume all costs of retesting materials which fail to meet contract requirements and/or testing materials offered in substitution for those found deficient.

(6) After approval, samples will be kept in the Project office until completion of work. They may be built into the work after a substantial quantity of the materials they represent has been built in and accepted.

(c) Requirements concerning lead-based paint. The Contractor shall comply with the requirements concerning lead-based paint contained in the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821-4846) as implemented by 24 CFR Part 35.

12. Permits and Codes

(a) The Contractor shall give all notices and comply with all applicable laws, ordinances, codes, rules and regulations. Notwithstanding the requirement of the Contractor to comply with the drawings and specifications in the contract, all work installed shall comply with all applicable codes and regulations as amended by any

waivers. Before installing the work, the Contractor shall examine the drawings and the specifications for compliance with applicable codes and regulations bearing on the work and shall immediately report any discrepancy it may discover to the Contracting Officer. Where the requirements of the drawings and specifications fail to comply with the applicable code or regulation, the Contracting Officer shall modify the contract by change order pursuant to the clause entitled Changes herein to conform to the code or regulation.

(b) The Contractor shall secure and pay for all permits, fees, and licenses necessary for the proper execution and completion of the work. Where the PHA can arrange for the issuance of all or part of these permits, fees and licenses, without cost to the Contractor, the contract amount shall be reduced accordingly.

13. Health, Safety, and Accident Prevention

(a) In performing this contract, the Contractor shall:
(1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his/her health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;
(2) Protect the lives, health, and safety of other persons;
(3) Prevent damage to property, materials, supplies, and equipment; and,
(4) Avoid work interruptions.

(b) For these purposes, the Contractor shall:
(1) Comply with regulations and standards issued by the Secretary of Labor at 29 CFR Part 1926. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96), 40 U.S.C. 3701 et seq.; and
(2) Include the terms of this clause in every subcontract so that such terms will be binding on each subcontractor.

(c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 CFR Part 1904.

(d) The Contracting Officer shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the work, shall be deemed sufficient notice of the noncompliance and corrective action required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.

(e) The Contractor shall be responsible for its subcontractors' compliance with the provisions of this clause. The Contractor shall take such action with respect to any subcontract as the PHA, the Secretary of Housing and Urban Development, or the Secretary of Labor shall direct as a means of enforcing such provisions.

14. Temporary Heating

The Contractor shall provide and pay for temporary heating, covering, and enclosures necessary to properly protect all work and materials against damage by dampness and cold, to dry out the work, and to facilitate the completion of the work. Any permanent heating equipment used shall be turned over to the PHA in the condition and at the time required by the specifications.

15. Availability and Use of Utility Services

(a) The PHA shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the PHA or, where the utility is produced by the PHA, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

(b) The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the PHA, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

16. Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed under this contract, and which do not unreasonably interfere with the work required under this contract.

(b) The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during performance of this contract, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(c) The Contractor shall protect from damage all existing improvements and utilities (1) at or near the work site and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. Prior to disturbing the ground at the construction site, the Contractor shall ensure that all underground utility lines are clearly marked.

(d) The Contractor shall shore up, brace, underpin, secure, and protect as necessary all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be affected by the excavations or other operations connected with the construction of the project.

(e) Any equipment temporarily removed as a result of work under this contract shall be protected, cleaned, and replaced in the same condition as at the time of award of this contract.

(f) New work which connects to existing work shall correspond in all respects with that to which it connects and/or be similar to existing work unless otherwise required by the specifications.

(g) No structural members shall be altered or in any way weakened without the written authorization of the Contracting Officer, unless such work is clearly specified in the plans or specifications.

(h) If the removal of the existing work exposes discolored or unfinished surfaces, or work out of alignment, such surfaces shall be refinished, or the material replaced as necessary to make the continuous work uniform and harmonious. This, however, shall not be construed to require the refinishing or reconstruction of dissimilar finishes previously exposed, or finished surfaces in good condition, but in different planes or on different levels when brought together by the removal of intervening work, unless such refinishing or reconstruction is specified in the plans or specifications.

(i) The Contractor shall give all required notices to any adjoining or adjacent property owner or other party before the commencement of any work.

(j) The Contractor shall indemnify and save harmless the PHA from any damages on account of settlement or the loss of lateral support of adjoining property, any damages from changes in topography affecting drainage, and from all loss or expense and all damages for which the PHA may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.

(k) The Contractor shall repair any damage to vegetation, structures, equipment, utilities, or improvements, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

17. Temporary Buildings and Transportation of Materials

(a) Temporary buildings (e.g., storage sheds, shops, offices, sanitary facilities) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the PHA. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(b) The Contractor shall, as directed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any federal, state, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

18. Clean Air and Water

The contactor shall comply with the Clean Air Act, as amended, 42 USC 7401 et seq., the Federal Water Pollution Control Water Act, as amended, 33 U.S.C. 1251 et seq., and standards issued pursuant thereto in the facilities in which this contract is to be performed.

19. Energy Efficiency

The Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163) for the State in which the work under the contract is performed.

20. Inspection and Acceptance of Construction

(a) Definitions. As used in this clause -

(1) "Acceptance" means the act of an authorized representative of the PHA by which the PHA approves and assumes ownership of the work performed under this contract. Acceptance may be partial or complete.

(2) "Inspection" means examining and testing the work performed under the contract (including, when appropriate, raw materials, equipment, components, and intermediate assemblies) to determine whether it conforms to contract requirements.

(3) "Testing" means that element of inspection that determines the properties or elements, including functional operation of materials, equipment, or their components, by the application of established scientific principles and procedures.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. All work is subject to PHA inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) PHA inspections and tests are for the sole benefit of the PHA and do not: (1) relieve the Contractor of responsibility for providing adequate quality control measures; (2) relieve the Contractor of responsibility for loss or damage of the material before acceptance; (3) constitute or imply acceptance; or, (4) affect the continuing rights of the PHA after acceptance of the completed work under paragraph (j) below.

(d) The presence or absence of the PHA inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specifications without the Contracting Officer's written authorization. All instructions and approvals with respect to the work shall be given to the Contractor by the Contracting Officer.

(e) The Contractor shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The PHA may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The PHA shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The PHA may conduct routine inspections of the construction site on a daily basis.

(g) The Contractor shall, without charge, replace or correct work found by the PHA not to conform to contract requirements, unless the PHA decides that it is in its interest to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(h) If the Contractor does not promptly replace or correct rejected work, the PHA may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor, or (2) terminate for default the Contractor's right to proceed.

(i) If any work requiring inspection is covered up without approval of the PHA, it must, if requested by the Contracting Officer, be uncovered at the expense of the Contractor. If at any time before final acceptance of the entire work, the PHA considers it necessary or advisable, to examine work already completed by removing or tearing it out, the Contractor, shall on request, promptly furnish all necessary facilities, labor, and material. If such work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray all the expenses of the examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, the Contracting Officer shall make an equitable adjustment to cover the cost of the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(j) The Contractor shall notify the Contracting Officer, in writing, as to the date when in its opinion all or a designated portion of the work will be substantially completed and ready for inspection. If the Architect determines that the state of preparedness is as represented, the PHA will promptly arrange for the inspection. Unless otherwise specified in the contract, the PHA shall accept, as soon as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines and designates can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the PHA's right under any warranty or guarantee.

21. Use and Possession Prior to Completion

(a) The PHA shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the PHA intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The PHA's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the PHA has such possession or use, the Contractor shall be relieved of the responsibility for (1) the loss of or damage to the work resulting from the PHA's possession or use, notwithstanding the terms of the clause entitled Permits and Codes herein; (2) all maintenance costs on the areas occupied; and, (3) furnishing heat, light, power, and water used in the areas occupied without proper remuneration therefore. If prior possession or use by the PHA delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

22. Warranty of Title

The Contractor warrants good title to all materials, supplies, and equipment incorporated in the work and agrees to deliver the premises together with all improvements thereon free from any claims, liens or charges, and agrees further that neither it nor any other person, firm or corporation shall have any right to a lien upon the premises or anything appurtenant thereto.

23. Warranty of Construction

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (j) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier. This warranty shall continue for a period of _____ (one year unless otherwise indicated) from the date of final acceptance of the work. If the PHA takes possession of any part of the work before final acceptance, this warranty shall continue for a period of (one year unless otherwise indicated) from the date that the PHA takes possession.

(b) The Contractor shall remedy, at the Contractor's expense, any failure to conform, or any defect. In addition, the Contractor shall remedy, at the Contractor's expense, any damage to PHA-owned or controlled real or personal property when the damage is the result of—

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defects of equipment, material, workmanship or design furnished by the Contractor.

(c) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for (one year unless otherwise indicated) from the date of repair or replacement.

(d) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect or damage.

(e) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the PHA shall have the right to replace, repair or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(f) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall:

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed in writing, for the benefit of the PHA; and,

(3) Enforce all warranties for the benefit of the PHA.

(g) In the event the Contractor's warranty under paragraph (a) of this clause has expired, the PHA may bring suit at its own expense to enforce a subcontractor's, manufacturer's or supplier's warranty.

(h) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defect of material or design furnished by the PHA nor for the repair of any damage that results from any defect in PHA furnished material or design.

(i) Notwithstanding any provisions herein to the contrary, the establishment of the time periods in paragraphs (a) and (c) above relate only to the specific obligation of the Contractor to correct the work, and have no relationship to the time within which its obligation to comply with the contract may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to its obligation other than specifically to correct the work.

(j) This warranty shall not limit the PHA's rights under the Inspection and Acceptance of Construction clause of this contract with respect to latent defects, gross mistakes or fraud.

24. Prohibition Against Liens

The Contractor is prohibited from placing a lien on the PHA's property. This prohibition shall apply to all subcontractors at any tier and all materials suppliers.

Administrative Requirements

25. Contract Period

this contract within 245 calendar days of the effective date of the contract, or within the time schedule established in the notice to proceed issued by the Contracting Officer.

26. Order of Provisions

In the event of a conflict between these General Conditions and the Specifications, the General Conditions shall prevail. In the event of a conflict between the contract and any applicable state or local law or regulation, the state or local law or regulation shall prevail; provided that such state or local law or regulation does not conflict with, or is less restrictive than applicable federal law, regulation, or Executive Order. In the event of such a conflict, applicable federal law, regulation, and Executive Order shall prevail.

27. Payments

(a) The PHA shall pay the Contractor the price as provided in this contract.

(b) The PHA shall make progress payments approximately every 30 days as the work proceeds, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer. The PHA may, subject to written determination and approval of the Contracting Officer, make more frequent payments to contractors which are qualified small businesses.

(c) Before the first progress payment under this contract, the Contractor shall furnish, in such detail as requested by the Contracting Officer, a breakdown of the total contract price showing the amount included therein for each principal category of the work, which shall substantiate the payment amount requested in order to provide a basis for determining progress payments. The breakdown shall be approved by the Contracting Officer and must be acceptable to HUD. If the contract covers more than one project, the Contractor shall furnish a separate breakdown for each. The values and quantities employed in making up this breakdown are for determining the amount of progress payments and shall not be construed as a basis for additions to or deductions from the contract price. The Contractor shall prorate its overhead and profit over the construction period of the contract.

(d) The Contractor shall submit, on forms provided by the PHA, periodic estimates showing the value of the work performed during each period based upon the approved

submitted not later than 45 days in advance of the date set for payment and are subject to correction and revision as required. The estimates must be approved by the Contracting Officer with the concurrence of the Architect prior to payment. If the contract covers more than one project, the Contractor shall furnish a separate progress payment estimate for each.

(e) Along with each request for progress payments and the required estimates, the Contractor shall furnish the following certification, or payment shall not be made: I hereby certify, to the best of my knowledge and belief, that:

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements; and,

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.

_____
Name:

_____
Title:

_____
Date:

(f) Except as otherwise provided in State law, the PHA shall retain ten (10) percent of the amount of progress payments until completion and acceptance of all work under the contract; except, that if upon completion of 50 percent of the work, the Contracting Officer, after consulting with the Architect, determines that the Contractor's performance and progress are satisfactory, the PHA may make the remaining payments in full for the work subsequently completed. If the Contracting Officer subsequently determines that the Contractor's performance and progress are unsatisfactory, the PHA shall reinstate the ten (10) percent (or other percentage as provided in State law) retainage until such time as the Contracting Officer determines that performance and progress are satisfactory.

(g) The Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration when computing progress payments.

Material delivered to the Contractor at locations other than the site may also be taken into consideration if the Contractor furnishes satisfactory evidence that (1) it has acquired title to such material; (2) the material is properly stored in a bonded warehouse, storage yard, or similar suitable place as may be approved by the Contracting Officer; (3) the material is insured to cover its full value; and (4) the material will be used to perform this contract. Before any progress payment which includes delivered material is made, the Contractor shall furnish such documentation as the Contracting Officer may require to assure the protection of the PHA's interest in such materials. The Contractor shall remain responsible for such stored material notwithstanding the transfer of title to the PHA.

(h) All material and work covered by progress payments made shall, at the time of payment become the sole property of the PHA, but this shall not be construed as (1) relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or, (2) waiving the right of the PHA to require the fulfillment of all of the terms of the contract. In the event the work of the Contractor has been damaged by other contractors or persons other than employees of the PHA in the course of their employment, the Contractor shall restore such damaged work without cost to the PHA and to seek redress for its damage only from those who directly caused it.

(i) The PHA shall make the final payment due the Contractor under this contract after (1) completion and final acceptance of all work; and (2) presentation of release of all claims against the PHA arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. Each such exception shall embrace no more than one claim, the basis and scope of which shall be clearly defined. The amounts for such excepted claims shall not be included in the request for final payment. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned.

(j) Prior to making any payment, the Contracting Officer may require the Contractor to furnish receipts or other evidence of payment from all persons performing work and supplying material to the Contractor, if the Contracting Officer determines such evidence is necessary to substantiate claimed costs.

(k) The PHA shall not; (1) determine or adjust any claims for payment or disputes arising there under between the Contractor and its subcontractors or material suppliers; or, (2) withhold any moneys for the protection of the subcontractors or material suppliers. The failure or refusal of the PHA to withhold moneys from the Contractor shall in nowise impair the obligations of any surety or sureties under any bonds furnished under this contract.

28. Contract Modifications

(a) Only the Contracting Officer has authority to modify any term or condition of this contract. Any contract modification shall be authorized in writing.

(b) The Contracting Officer may modify the contract unilaterally (1) pursuant to a specific authorization stated in a contract clause (e.g., Changes); or (2) for administrative matters which do not change the rights or responsibilities of the parties (e.g., change in the PHA address). All other contract modifications shall be in the form of supplemental agreements signed by the Contractor and the Contracting Officer.

(c) When a proposed modification requires the approval of HUD prior to its issuance (e.g., a change order that exceeds the PHA's approved threshold), such modification shall not be effective until the required approval is received by the PHA.

29. Changes

(a) The Contracting Officer may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract including changes:
(1) In the specifications (including drawings and designs);
(2) In the method or manner of performance of the work;
(3) PHA-furnished facilities, equipment, materials, services, or site; or,
(4) Directing the acceleration in the performance of the work.

(b) Any other written order or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances and source of the order and (2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for a adjustment based on defective specifications, no proposal for any change under paragraph (b) above shall be allowed for any costs incurred more than 20 days (5 days for oral orders) before the Contractor gives written notice as required. In the case of defective specifications for which the PHA is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after (1) receipt of a written change order under paragraph (a) of this clause, or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting a written statement describing the general nature and the amount of the proposal. If the facts justify it, the Contracting Officer may extend the period for submission. The proposal may be included in the notice required under paragraph (b) above. No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

(f) The Contractor's written proposal for equitable adjustment shall be submitted in the form of a lump sum proposal supported with an itemized breakdown of all increases and decreases in the contract in at least the following details:

(1) Direct Costs. Materials (list individual items, the quantity and unit cost of each, and the aggregate cost); Transportation and delivery costs associated with materials; Labor breakdowns by hours or unit costs (identified with specific work to be performed); Construction equipment exclusively necessary for the change; Costs of preparation and/ or revision to shop drawings resulting from the change; Worker's Compensation and Public Liability Insurance; Employment taxes under FICA and FUTA; and, Bond Costs when size of change warrants revision.

(2) Indirect Costs. Indirect costs may include overhead, general and administrative expenses, and fringe benefits not normally treated as direct costs.

(3) Profit. The amount of profit shall be negotiated and may vary according to the nature, extent, and complexity of the work required by the change. The allowability of the direct and indirect costs shall be determined in accordance with the Contract Cost Principles and Procedures for Commercial Firms in Part 31 of the Federal Acquisition Regulation (48 CFR 1-31), as implemented by HUD Handbook 2210.18, in effect on the date of this contract. The Contractor shall not be allowed a profit on the profit received by any subcontractor. Equitable adjustments for deleted work shall include a credit for profit and may include a credit for indirect costs. On proposals covering both increases and decreases in the amount of the contract, the application of indirect costs and profit shall be on the net-change in direct costs for the Contractor or subcontractor performing the work.

(g) The Contractor shall include in the proposal its request for time extension (if any), and shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the completion of the contract in its entirety.

(h) The Contracting Officer shall act on proposals within 30 days after their receipt, or notify the Contractor of the date when such action will be taken.

(i) Failure to reach an agreement on any proposal shall be a dispute under the clause entitled Disputes herein. Nothing in this clause, however, shall excuse the Contractor from proceeding with the contract as changed.

(j) Except in an emergency endangering life or property, no change shall be made by the Contractor without a prior order from the Contracting Officer.

30. Suspension of Work

(a) The Contracting Officer may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the PHA.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified (or within a reasonable time if not specified) in this contract an adjustment shall be made for any increase in the cost of performance of the contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor or for which any equitable adjustment is provided for or excluded under any other provision of this contract.

(c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order); and, (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

31. Disputes

(a) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to the contract. A claim arising under the contract, unlike a claim relating to the contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim. The submission may be converted to a claim by complying with the requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(b) Except for disputes arising under the clauses entitled Labor Standards - Davis Bacon and Related Acts, herein, all disputes arising under or relating to this contract, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.

(c) All claims by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision. A claim by the PHA against the Contractor shall be subject to a written decision by the Contracting Officer.

(d) The Contracting Officer shall, within 60 (unless otherwise indicated) days after receipt of the request, decide the claim or notify the Contractor of the date by which the decision will be made.

(e) The Contracting Officer's decision shall be final unless the Contractor (1) appeals in writing to a higher level in the PHA in accordance with the PHA's policy and procedures, (2) refers the appeal to an independent mediator or arbitrator, or (3) files suit in a court of competent jurisdiction. Such appeal must be made within (30 unless otherwise indicated) days after receipt of the Contracting Officer's decision.

(f) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of the Contracting Officer.

32. Default

(a) If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with the diligence that will insure its completion within the time specified in this contract, or any extension thereof, or fails to complete said work within this time, the Contracting Officer may, by written notice to the Contractor, terminate the right to

proceed with the work (or separable part of the work) that has been delayed. In this event, the PHA may take over the work and complete it, by contract or otherwise, and may take possession of and use any materials, equipment, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the PHA resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the PHA in completing the work.

(b) The Contractor's right to proceed shall not be terminated or the Contractor charged with damages under this clause if—

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include (i) acts of God, or of the public enemy, (ii) acts of the PHA or other governmental entity in either its sovereign or contractual capacity, (iii) acts of another contractor in the performance of a contract with the PHA, (iv) fires, (v) floods, (vi) epidemics, (vii) quarantine restrictions, (viii) strikes, (ix) freight embargoes, (x) unusually severe weather, or (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within days (10 days unless otherwise indicated) from the beginning of such delay (unless extended by the Contracting Officer) notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of the delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, time for completing the work shall be extended by written modification to the contract. The findings of the Contracting Officer shall be reduced to a written decision which shall be subject to the provisions of the Disputes clause of this contract.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been for convenience of the PHA.

33. Liquidated Damages

(a) If the Contractor fails to complete the work within the time specified in the contract, or any extension, as specified in the clause entitled Default of this contract, the Contractor shall pay to the PHA as liquidated damages, the sum of $ $ 250.00 Contracting Officer insert amount] for each day of delay. If different completion dates are specified in the contract for separate parts or stages of the work, the amount of liquidated damages shall be assessed on those parts or stages which are delayed. To the extent that the Contractor's delay or nonperformance is excused under another clause in this contract, liquidated damages shall not be due the PHA. The Contractor remains liable for damages caused other than by delay.

(b) If the PHA terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the PHA in completing the work.

(c) If the PHA does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

34. Termination for Convenience

(a) The Contracting Officer may terminate this contract in whole, or in part, whenever the Contracting Officer determines that such termination is in the best interest of the PHA. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which the performance of the work under the contract is terminated, and the date upon which such termination becomes effective.

(b) If the performance of the work is terminated, either in whole or in part, the PHA shall be liable to the Contractor for reasonable and proper costs resulting from such termination upon the receipt by the PHA of a properly presented claim setting out in detail: (1) the total cost of the work performed to date of termination less the total amount of contract payments made to the Contractor; (2) the cost (including reasonable profit) of settling and paying claims under subcontracts and material orders for work performed and materials and supplies delivered to the site, payment for which has not been made by the PHA to the Contractor or by the Contractor to the subcontractor or supplier; (3) the cost of preserving and protecting the work already performed until the PHA or assignee takes possession thereof or assumes responsibility therefore; (4) the actual or estimated cost of legal and accounting services reasonably necessary to prepare and present the termination claim to the PHA; and (5) an amount constituting a reasonable profit on the value of the work performed by the Contractor.

(c) The Contracting Officer will act on the Contractor's claim within days (60 days unless otherwise indicated) of receipt of the Contractor's claim.

(d) Any disputes with regard to this clause are expressly made subject to the provisions of the Disputes clause of this contract.

35. Assignment of Contract

The Contractor shall not assign or transfer any interest in this contract; except that claims for monies due or to become due from the PHA under the contract may be assigned to a bank, trust company, or other financial institution. Such assignments of claims shall only be made with the written concurrence of the Contracting Officer. If the Contractor is a partnership, this contract shall inure to the benefit of the surviving or remaining member(s) of such partnership as approved by the Contracting Officer.

36. Insurance

(a) Before commencing work, the Contractor and each subcontractor shall furnish the PHA with certificates of insurance showing the following insurance is in force and will insure all operations under the Contract:

(1) Workers' Compensation, in accordance with state or Territorial Workers' Compensation laws.

(2) Commercial General Liability with a combined single limit for bodily injury and property damage of not less than $ 1MILLION [Contracting Officer insert amount]

per occurrence to protect the Contractor and each subcontractor against claims for bodily injury or death and damage to the property of others. This shall cover the use of all equipment, hoists, and vehicles on the site(s) not covered by Automobile Liability under (3) below. If the Contractor has a "claims made" policy, then the following additional requirements apply: the policy must provide a "retroactive date" which must be on or before the execution date of the Contract; and the extended reporting period may not be less than five years following the completion date of the Contract.

(3) Automobile Liability on owned and non -owned motor vehicles used on the site(s) or in connection therewith for a combined single limit for bodily injury and property damage of not less than $ 1MILLION [Contracting Officer insert amount] per occurrence.

(b) Before commencing work, the Contractor shall furnish the PHA with a certificate of insurance evidencing that Builder's Risk (fire and extended coverage) Insurance on all work in place and/or materials stored at the building site(s), including foundations and building equipment, is in force. The Builder's Risk Insurance shall be for the benefit of the Contractor and the PHA as their interests may appear and each shall be named in the policy or policies as an insured. The Contractor in installing equipment supplied by the PHA shall carry insurance on such equipment from the time the Contractor takes possession thereof until the Contract work is accepted by the PHA. The Builder's Risk Insurance need not be carried on excavations, piers, footings, or foundations until such time as work on the superstructure is started. It need not be carried on landscape work. Policies shall furnish coverage at all times for the full cash value of all completed construction, as well as materials in place and/or stored at the site(s), whether or not partial payment has been made by the PHA. The Contractor may terminate this insurance on buildings as of the date taken over for occupancy by the PHA. The Contractor is not required to carry Builder's Risk Insurance for modernization work which does not involve structural alterations or additions and where the PHA's existing fire and extended coverage policy can be endorsed to include such work.

(c) All insurance shall be carried with companies which are financially responsible and admitted to do business in the State in which the project is located. If any such insurance is due to expire during the construction period, the Contractor (including subcontractors, as applicable) shall not permit the coverage to lapse and shall furnish evidence of coverage to the Contracting Officer. All certificates of insurance, as evidence of coverage, shall provide that no coverage may be canceled or non-renewed by the insurance company until at least 30 days prior written notice has been given to the Contracting Officer.

37. Subcontracts

(a) Definitions. As used in this contract -

(1) "Subcontract" means any contract, purchase order, or other purchase agreement, including modifications and change orders to the foregoing, entered into by a subcontractor to furnish supplies, materials, equipment, and services for the performance of the prime contract or a subcontract.

(2) "Subcontractor" means any supplier, vendor, or firm that furnishes supplies, materials, equipment, or services to or for the Contractor or another subcontractor.

(b) The Contractor shall not enter into any subcontract with any subcontractor who has been temporarily denied participation in a HUD program or who has been suspended or debarred from participating in contracting programs by any agency of the United States Government or of the state in which the work under this contract is to be performed.

(c) The Contractor shall be as fully responsible for the acts or omissions of its subcontractors, and of persons either directly or indirectly employed by them as for the acts or omissions of persons directly employed by the Contractor.

(d) The Contractor shall insert appropriate clauses in all subcontracts to bind subcontractors to the terms and conditions of this contract insofar as they are applicable to the work of subcontractors.

(e) Nothing contained in this contract shall create any contractual relationship between any subcontractor and the PHA or between the subcontractor and HUD.

38. Subcontracting with Small and Minority Firms, Women's Business Enterprise, and Labor Surplus Area Firms

The Contractor shall take the following steps to ensure that, whenever possible, subcontracts are awarded to small business firms, minority firms, women's business enterprises, and labor surplus area firms:

(a) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(b) Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;

(c) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;

(d) Establishing delivery schedules, where the requirements of the contract permit, which encourage participation by small and minority businesses and women's business enterprises; and

(e) Using the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies.

39. Equal Employment Opportunity

During the performance of this contract, the Contractor agrees as follows:

(a) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, or handicap.

(b) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, national origin, or handicap. Such action shall include, but not be limited to, (1) employment, (2) upgrading, (3) demotion, (4) transfer, (5) recruitment or recruitment advertising, (6) layoff or termination, (7) rates of pay or other forms of compensation, and (8) selection for training, including apprenticeship.

(c) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(d) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, or handicap.

(e) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(f) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(g) The Contractor shall furnish all information and reports required by Executive Order 11246, as amended, Section 503 of the Rehabilitation Act of 1973, as amended, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto. The Contractor shall permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(h) In the event of a determination that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts, or Federally assisted construction contracts under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.

(i) The Contractor shall include the terms and conditions of this clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor. The Contractor shall take such action with respect to any subcontract or purchase order as the Secretary of Housing and Urban Development or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(j) Compliance with the requirements of this clause shall be to the maximum extent consistent with, but not in derogation of, compliance with section 7(b) of the Indian Self-Determination and Education Assistance Act and the Indian Preference clause of this contract.

40. Employment, Training, and Contracting Opportunities for Low-Income Persons, Section 3 of the Housing and Urban Development Act of 1968.

(a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

(b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.

(c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

(d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.

(e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.

(f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

(g) With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b)agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

41. Interest of Members of Congress

No member of or delegate to the Congress of the United States of America shall be admitted to any share or part of this contract or to any benefit that may arise therefrom.

42. Interest of Members, Officers, or Employees and Former Members, Officers, or Employees

No member, officer, or employee of the PHA, no member of the governing body of the locality in which the project is situated, no member of the governing body of the locality in which the PHA was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the project, shall, during his or her tenure, or for one year thereafter, have any interest, direct or indirect, in this contract or the proceeds thereof.

43. Limitations on Payments made to Influence Certain Federal Financial Transactions

(a) The Contractor agrees to comply with Section 1352 of Title 31, United States Code which prohibits the use of Federal appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(b) The Contractor further agrees to comply with the requirement of the Act to furnish a disclosure (OMB Standard Form LLL, Disclosure of Lobbying Activities) if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

44. Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringement of any patent rights and shall save the PHA harmless from loss on account thereof; except that the PHA shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified and the Contractor has no reason to believe that the specified design, process, or product is an infringement. If, however, the Contractor has reason to believe that any design, process or product specified is an infringement of a patent, the Contractor shall promptly notify the Contracting Officer. Failure to give such notice shall make the Contractor responsible for resultant loss.

45. Examination and Retention of Contractor's Records

(a) The PHA, HUD, or Comptroller General of the United States, or any of their duly authorized representatives shall, until 3 years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

(b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders not exceeding $10,000.

(c) The periods of access and examination in paragraphs (a) and (b) above for records relating to (1) appeals under the Disputes clause of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which the PHA, HUD, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

46. Labor Standards - Davis-Bacon and Related Acts

If the total amount of this contract exceeds $2,000, the Federal labor standards set forth in the clause below shall apply to the development or construction work to be performed under the contract.

(a) Minimum Wages.

(1) All laborers and mechanics employed under this contract in the development or construction of the project(s) involved will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the regular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall

be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(2) (i) Any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met: (A) The work to be performed by the classification requested is not performed by a classification in the wage determination; and (B) The classification is utilized in the area by the construction industry; and (C) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employee Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.

(iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.

(iv) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (a)(2)(ii) or (iii) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in classification.

(3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(4) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(b) Withholding of funds. HUD or its designee shall, upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working in the construction or development of the project, all or part of the wages required by the contract, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due.

(c) Payrolls and basic records.

(1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working in the construction or development of the project. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under 29 CFR 5.5(a)(1)(iv), that the wages of any laborer or mechanic include the amount of costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(2) (i) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under subparagraph (c)(1) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The Contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1214-0149.)

(ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(A) That the payroll for the payroll period contains the information required to be maintained under paragraph (c) (1) of this clause and that such information is correct and complete;

(B) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3; and

(C) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance" required by subparagraph (c)(2)(ii) of this clause.

(iv) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(3) The Contractor or subcontractor shall make the records required under subparagraph (c)(1) available for inspection, copying, or transcription by authorized representatives of HUD or its designee, the Contracting Officer, or the Department of Labor and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(d) (1) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship and Training, Employer and Labor Services (OATELS), or with a State Apprenticeship Agency recognized by OATELS, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by OATELS or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under

the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(3) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(e) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

(f) Contract termination; debarment. A breach of this contract clause may be grounds for termination of the contract and for debarment as a Contractor and a subcontractor as provided in 29 CFR 5.12.

(g) Compliance with Davis-Bacon and related Act requirements. All rulings and interpretations of the Davis-Bacon and related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

(h) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this clause shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the PHA, HUD, the U.S. Department of Labor, or the employees or their representatives.

(i) Certification of eligibility.

(1) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a United States Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(3) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.

(j) Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics, including watchmen and guards, shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the provisions set forth in subparagraph (j)(1) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic (including watchmen and guards) employed in violation of the provisions set forth in subparagraph (j)(1) of this clause, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by provisions set forth in subparagraph (j)(1) of this clause.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the provisions set forth in subparagraph (j)(2) of this clause.

(k) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts all the provisions contained in this clause, and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all these provisions.

47. Non-Federal Prevailing Wage Rates

(a) Any prevailing wage rate (including basic hourly rate and any fringe benefits), determined under State or tribal law to be prevailing, with respect to any employee in any trade or position employed under the contract, is inapplicable to the contract and shall not be enforced against the Contractor or any subcontractor, with respect to employees engaged under the contract whenever such non-Federal prevailing wage rate exceeds:
(1) The applicable wage rate determined by the Secretary of Labor pursuant to the Davis-Bacon Act (40 U.S.C. 3141 et seq.) to be prevailing in the locality with respect to such trade;
(b) An applicable apprentice wage rate based thereon specified in an apprenticeship program registered with the U.S. Department of Labor (DOL) or a DOL-recognized State Apprenticeship Agency; or
(c) An applicable trainee wage rate based thereon specified in a DOL-certified trainee program.

48. Procurement of Recovered Materials.

(a) In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. The Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.
(b) Paragraph (a) of this clause shall apply to items purchased under this contract where: (1) the Contractor purchases in excess of $10,000 of the item under this contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of $10,000 of the item both under and outside that contract.

Housing Authority of the City of Pittsburgh

Development & Modernization
412 Boulevard of the Allies, 6th Floor Pittsburgh, PA 15219
Phone: (412) 456-5116 Fax: (412) 456-5007
www.hacp.org

Renovation of 10 Scattered Sites Homes

HACP Contract No. 600-31-24

SUPPLEMENTAL GENERAL CONDITIONS

SUPPLEMENTAL GENERAL CONDITIONS

To the extent that there is a conflict between the terms of the General Conditions and the terms of the Supplemental General Conditions, the terms of the Supplemental General Conditions shall govern to the extent of such conflict.

If HUD 5370 applies:

Section 31(e) of the General Conditions shall be deleted in its entirety and replaced by the following:

31(e). Forum. The Contracting Officer's decision shall be final unless, within thirty (30) days of receipt of the Contracting Officer's decision, the Contractor files suit in a court of competent jurisdiction.

If HUD 5370-EZ applies:

Section 3(d) of the General Conditions shall be deleted in its entirety and replaced by the following:

31(d). Forum. The Contracting Officer's decision shall be final unless, within thirty (30) days of receipt of the Contracting Officer's decision, the Contractor files suit in a court of competent jurisdiction.

If HUD 5370-C applies:

Section 1 Item 7(d) of the General Conditions shall be deleted in its entirety and replaced by the following:

Section 1 Item 7(d). Forum. The Contracting Officer's decision shall be final unless, within thirty (30) days of receipt of the Contracting Officer's decision, the Contractor files suit in a court of competent jurisdiction.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Date: _____ Signature: _____
Contracting Officer

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_____
Vendor Name(Insert vendor company name above)

Date: _____ Signature: _____

Title: _____

THE HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Renovation of 10 Scattered Sites Homes

HACP Contract No. 600-31-24

WAGE DETERMINATION SCHEDULE

The construction covered by this contract is subject to the requirements of Clause 47 **Labor Standards - Davis-Bacon and Related Acts** of the General Conditions of the Contract for Construction. In accordance with 47 (a)(1) the wage determination of the Secretary of Labor is attached.

"General Decision Number: PA20240012 02/23/2024

Superseded General Decision Number: PA20230012

State: Pennsylvania

Construction Type: Residential

County: Allegheny County in Pennsylvania.

RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least $17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least $12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this

wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2024
1	02/02/2024
2	02/23/2024

BRPA0009-039 12/01/2022

	Rates	Fringes
BRICKLAYER	$ 36.99	24.67

CARP0142-004 06/01/2023

	Rates	Fringes
CARPENTER (Including Drywall Hanging and Asphalt Roofing)	$ 32.29	15.27

CARP1759-007 06/01/2017

	Rates	Fringes
SOFT FLOOR LAYER	$ 33.01	16.45

ELEC0005-013 12/22/2023

	Rates	Fringes
ELECTRICIAN	$ 28.90	18.56

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* ELEV0006-004 01/01/2024

	Rates	Fringes
ELEVATOR MECHANIC	$ 58.55	37.885+a+b

FOOTNOTE:

A. Employer contributes 8% of regular hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.

B. Eight Paid Holidays (provided employee has worked 5 consecutive days before and the working day after the holiday): New Years's Day; Memorial Day; Independence Day; Labor Day; Veteran's Day; Thanksgiving Day and the Friday

after Thanksgiving Day, and Christmas Day.

IRON0003-006 06/01/2023

	Rates	Fringes
IRONWORKER, ORNAMENTAL	$ 38.89	34.54

PLUM0027-005 06/01/2023

	Rates	Fringes
PLUMBER	$ 48.65	25.47

SHEE0012-006 07/01/2018

	Rates	Fringes
Sheet metal worker Excluding HVAC Duct Work	$ 19.49	10.08

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* SUPA2003-001 10/31/2003

	Rates	Fringes
Drywall Finishers	$ 15.08 **	3.40
Laborers, Unskilled	$ 12.70 **	2.12
PAINTER (Brush and Roller)	$ 15.90 **	4.35
PLASTERER	$ 18.20	5.16
Power equipment operators: (Backhoe)	$ 17.34	4.06
Roofer (Excluding Asphalt Roofing)	$ 18.70	5.19
Sheet Metal Worker (HVAC Duct Only)	$ 16.00 **	3.08

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.20) or 13658 ($12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not

currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at
https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the

most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination

* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

PART 4: TECHNICAL SPECIFICATIONS

Renovation of 10 Scattered Sites Homes

IFB CONTRACT NO. 600-31-24

Technical Specifications are incorporated into the drawing set provided and referenced elsewhere in this IFB. Asbestos Abatement Specification are listed prior to the drawings.

PART 1 - GENERAL

1.01 STIPULATIONS

A. References herein to “Contractor”, “Asbestos Abatement Contractor” or “AAC” refer to the properly certified personnel employed directly under the General Construction Contract.

B. The procedures specified in this section are for minimum performance. Variations to the stipulated work procedures will only be accepted through written approval by Professional Service Industries, Inc. (PSI), an Intertek company. The AAC is responsible for conformance to regulatory codes, rules and guidelines. The AAC is required to obtain all permits, licenses and approvals to perform the work, including any rights to use patented systems.

1.02 SCOPE OF WORK

A. A survey for asbestos-containing materials (ACM) was conducted by accredited PSI individuals at 10 Scattered Residential sites located in Pittsburgh, PA, and a survey report was prepared. The survey reports were used to identify the types and general locations of ACMs within the buildings.

B. The work includes removal and disposal of identified asbestos-containing roof vent caulking, door caulking, window caulking, vinyl sheet flooring, floor tile, floor tile with associated mastic, and undercoating on sinks.

C. The scope of work for this project includes the filing of required notifications, landfill charges, supplying of all labor, tools, materials, equipment, services and appurtenances to conduct the work. The work shall be performed to the complete satisfaction of Housing Authority City of Pittsburgh (Owner), and the Environmental Consultant in accordance with the current Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) regulations, the Pennsylvania Department of Labor and Industry (PA DL&I), the Department of Environmental Protection (DEP), and the Allegheny County Health Department (ACHD) regulations and any other applicable Federal, State and Local Government regulations. The AAC shall perform the abatement in accordance with the most stringent of the regulations provided.

D. There must be at least three (3) state licensed workers/supervisors present and working at all times during the scheduled shifts. The AAC must have written approval from the Environmental Consultant and the Owner to use less than five certified workers for a specific reason. In addition, sufficient manpower must be provided to maintain the overall project schedule.

E. Submit required documentation in accordance with Owners “Submittal Procedures”. Copy all communication to Owner and Environmental Consultant.

1. SDS Submittals will not be acted upon by Owner but may be accepted as Information Submittals.

The determination of the exact amount of asbestos-containing materials present is solely the responsibility of the General Contractor.

Work under this project includes, but is not limited to, the following Proper Removal and Disposal of the following asbestos-containing materials:

8331 Vidette

Material Description	Material Locations	Estimated Quantity
White Door Caulking	Front Door	20 LF

1541 Chelton Avenue

Material Description	Material Locations	Estimated Quantity
Black Roof Tar	Roof Vents	2 Ea

958 Norwich Street

Material Description	Material Locations	Estimated Quantity
Gray Window Caulking	Front Window	50 LF
Residual Door Caulking	Side Door	15 LF

1318 Orangewood Avenue

Material Description	Material Locations	Estimated Quantity
Tan Door Caulking	Front Doors	20 LF

2534 Neeld Avenue

Material Description	Material Locations	Estimated Quantity
Black Mastic Associated with Non ACM Floor Tile	Basement	500 SF

7152 McPhearson Boulevard

Material Description	Material Locations	Estimated Quantity
Yellow sheet flooring with underlayment and adhesive	Kitchen	150 SF
Kitchen Sink Undercoating	Kitchen	1 Ea.
Gray Exterior Window Caukling	Kitchen and Bathroom Window	2 Ea.

2337 Wolford Street

Material Description	Material Locations	Estimated Quantity
Black Mastic Associated with Non ACM Floor Tile	Kitchen	200 SF
Black Mastic associated with Non ACM Floor Tile	Basement	250 SF
Tan Door Caulking	Basement Door and Front Door	30 LF

F. All loose furnishings and fixtures in the work areas will be removed by the General Contractor prior to abatement activities.

G. The AAC is to include in the bid price and supply all means necessary to access ACMs (i.e. scaffolding, aerial lifts, etc.).

1.03 CONTROL OF WORK

A. Work which does not conform to the requirements of the contract, plans and specifications will be considered unacceptable.

B. Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be corrected immediately to an acceptable condition.

C. If the Owner or Environmental Consultant finds the materials furnished, work performed, or the finished product not within conformity with the contract documents and have resulted in an unacceptable finished product, the affected work or material shall be corrected by and at the expense of the Contractor.

1.04 QUALITY ASSURANCE

A. Independent testing agency:

1. AAC to coordinate with Environmental Consultant whose purpose will be to establish ambient levels of airborne fibers before, during, and after abatement activities, and to detect faults in the work area isolation that might result in the

contamination of the building with airborne asbestos fibers caused by the failure of the air exhausting system or rupture in the containment barriers. The Environmental Consultant will ensure that all work is performed in compliance with OSHA, EPA, and ACHD standards and regulations.

2. Airborne fibers referred to above include all fibers regardless of composition as counted by phase contrast microscopy (PCM) in accordance with NIOSH 7400 Procedure. Should the PCM air monitoring detect either a fault in the work area isolation or visible emission, the AAC shall immediately cease asbestos abatement activities until the fault is corrected. Work shall not recommence until authorized by the Environmental Consultant.

3. Any result greater than 0.01 fibers per cubic centimeter (f/cc) collected by an air sample outside the work area shall be considered as evidence of a fault in the work area isolation. The AAC shall strive to maintain the asbestos concentration inside the work area equal to or less than 0.2 f/cc by engineering and work practice controls. It is recognized that there may be situations when this is not feasible. At the discretion of the Environmental Consultant, levels may exceed 0.2 f/cc, but not 0.5 f/cc. Additional engineering controls and work practices shall be implemented by the AAC should any result from an air sample collected inside the work area exceed 0.5 f/cc.

4. Excessive Airborne Fiber Counts: The following procedures shall be used to resolve any dispute regarding fiber type when a project has been stopped due to excessive airborne fiber counts. Samples will be collected and analyzed by transmission electron microscopy (TEM) utilizing NIOSH 7402 Method by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory.

5. Personnel Air Samples: The AAC is responsible for monitoring its personnel in accordance with OSHA regulations 29CFR 1926.1101 and mandatory appendices.

6. Asbestos abatement work shall be considered to be substantially complete upon confirmation of final air clearance by the Environmental Consultant and passing a visual clearance inspection performed by the ACHD.

B. Contractor Experience:

1. The AAC shall have a minimum of two (2) years of experience in the asbestos abatement business and shall have successfully completed three (3) projects of similar or larger size and dollar value to this project, and shall not have defaulted on an asbestos abatement project within the last two (2) years. The AAC shall furnish documentation of these projects, including names and addresses of the purchaser of the service and the location of the work performed.

2. The AAC shall be certified by the Pennsylvania Department of Labor and Industry and the ACHD. The AAC certification number must be provided to the Owner in its bid.

3. The AAC shall provide a list of any outstanding violations received from OSHA, the EPA, ACHD, or any applicable State and Local Governing body that occurred within the two (2) years.

C. Worker Certification:

1. Furnish proof that its employees have been instructed on the dangers of asbestos exposure, on respirator use, decontamination, and current OSHA and EPA regulations. Proof of training is to be provided to the Environmental Consultant prior to commencement of abatement activities.

2. Documentation of workers medical exams, consisting of x-rays and pulmonary function shall be submitted to the Environmental Consultant prior to any work being performed and as may be required by current OSHA and EPA regulations and any applicable State and Local Government regulations.

3. There must be an EPA Certified Asbestos Abatement Supervisor on site at all times during abatement activities. The Asbestos Abatement Supervisor shall have successfully completed an EPA Certified Practices and Procedures Course as per 40 CFR, Part 763, Subpart E, Appendix C-EPA Model Accreditation Part (must provide a copy of certificate from EPA approved course). All asbestos workers shall have successfully completed an EPA Certified Practices and Procedures Course as per 40 CFR, Part 763, Subpart E, Appendix C-EPA “Model Accreditation Plan”. The Contractor must provide copies of current certificates from Pennsylvania Department of Labor and Industry for all workers and supervisors.

4. The Abatement Supervisor and Abatement Workers shall be licensed by the PA DOLI. Each worker/supervisor shall have photo identification issued by PA DOLI available at the work site.

1.05 POSTING OF REGULATIONS

A. The AAC will have at all times in their possession, at their office and at the jobsite, one (1) copy of the current OSHA Regulations 29CFR1926.1101, Asbestos, and current Environmental Protection Agency 40 CFR Part 61, Subpart N: National Emission Standard for Asbestos, Asbestos Stripping Work Practices and Disposal of Asbestos Waste.

1.06 CODES AND REGULATIONS AND REGULATORY AGENCIES SUBMITTALS (AAC'S RESPONSIBILITY)

A. Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

B. The following codes and regulations govern asbestos abatement work, asbestos waste material, hauling and disposal, employee health and safety, and environmental protection:

1. U.S. Department of labor, OSHA, including but not limited to:
   a. Occupation Exposure to Asbestos, Title 29, Part 1910, Section 1001 and Part 1926, Section 1101 of the Code of Federal Regulations.
   b. Respiratory Protection, Title 29, Part 1910, Section 134 of the Code of Federal Regulations.
   c. Training and Work Practices, Title 29, Part 1926, Section 26 of the Code of Federal Regulations.
   d. Employee Exposure and Medical Records, Title 29, Part 1910, Section 20 of the Code of Federal Regulations.
   e. Specifications for Accident Prevention Signage and Label, Title 29, Part 1910, Section 145 of the Code of Federal Regulations.

2. U.S. Environmental Protection:
   a. Regulations for Controlling Visible Emissions, National Emission Standard for Asbestos, Title 40, Part 61, Subpart M of the Code of Federal Regulations.
   b. Guidelines for Disposal of Solid Waste, Title 40, Part 241 of the Code of Federal Regulations.
   c. Criteria for Classification of Solid Waste Disposal Facilities and Practices, Title 40, Part 257 of the Code of Federal Regulations.

3. U.S. Department of Transportation
   a. Hazardous Material Regulations, Title 49, Part 107 of the Code of Federal Regulations.

4. Commonwealth of Pennsylvania, Bureau of Occupational and Industrial Safety
   a. Pennsylvania Act 194, Asbestos Occupations Accreditation and Certification Act.

5. Pennsylvania Department of Environmental Protection
   a. Asbestos Regulations, Title 25, Part 1, Subpart C

6. Allegheny County Health Department
   a. Rules and Regulations, Article XXI, Air Pollution Control

C. Notify the following agencies in writing ten (10) days prior to starting work for notification and instructions concerning proper disposal of asbestos waste material. Copies of all notifications shall be sent to the Owner and the Environmental Consultant.

1. Pennsylvania Department of Environmental Protection
   Bureau of Air Quality Control
   P.O. Box 8468
   Harrisburg, Pennsylvania 17105-8468

2. Allegheny County Health Department
   301-39th Street, Building 7
   Pittsburgh, Pennsylvania 15201

1.07 AIR MONITORING

A. Air sampling of work areas and surrounding environment will be conducted during the performance of this contract by the Environmental Consultant so as to ensure compliance with all codes, regulations, ordinances and these specifications.

B. AAC shall fully cooperate with the Environmental Consultant and all others responsible for testing and inspecting the work. An air testing and monitoring schedule shall be submitted prior to the start of work.

C. Air testing and analysis shall be in accordance with current EPA and requirements of Section 29CFR 1926.1101 of the current OSHA Regulations, as a minimum. Analysis shall be performed by Phase Contrast Microscopy (PCM) per NIOSH 7400 Method analytical procedures and/or Transmission Electron Microscopy (TEM) per EPA Level II analytical procedures.

D. Air tests taken prior to start of work (background), during abatement activities (areas and personals) and upon completion of removal activities (finals) will be analyzed by PCM. .

E. After a work area has passed the Environmental Consultant's visual inspection, final clearance testing will be performed no sooner than 24 hours later.

F. The Environmental Consultant shall give verbal notification to the Owner of the final clearance results of each test within 24 hours of the time the samples were analyzed. The Environmental Consultant shall confirm the results in writing within three (3) days thereafter.

G. Prompt reports are necessary so that, if required, modifications to work methods and/or practices may be implemented as soon as possible, if such action is required.

H. Representatives of the Environmental Consultant shall have access to the work area at all times. Provide facilities for such access in order that the Environmental Consultant may properly perform its function.

I. Specimens and samples for testing shall be taken by the testing personnel. Sampling equipment and personnel will be provided by the Environmental Consultant. Air sampling shall be performed in each work area prior to commencement of the work at the location. The highest fiber count reading during pre-clearance clean-up monitoring shall be lower than the background readings established by pre-job monitoring or 0.01 f/cc, whichever is lower.

J. Air sampling shall be conducted on, but not necessarily limited to, the following schedule:

Area	When	Number of Samples (minimum)	Volume Sample (liters)	Minimum Collection Rate (liters/min)
Work Area (PCM)	Prior to job start	5	1500	2-10
Work Area (PCM)	During area Isolation	Daily[1]	1000	2-10
Work Area (PCM)	During abatement work	Daily[1]	1000	2-10
Work Area (PCM)[2]	During abatement work	Daily[2]	1000	2-10
Work Area (PCM) (<160 SF, 260 LF)	At completion (final)	3	1500	2-10
Work Area (PCM) (>160 SF, 260 LF)	At completion (final)	5	1500	2-10

NOTES:
1 Consecutive daily air samples will be taken during abatement to yield a minimum of eight (8) hours of sampling time for each active work area.
2 Exterior samples shall be taken at all decontamination unit entrance, waste load out exit, and discharge of HEPA exhaust units.

K. Work area clearance testing shall be completed before work site protective barriers are removed.

L. AAC is responsible for performing the thirty (30) minute excursion air sampling per OSHA Regulations.

M. AAC is responsible for performing personal air samples in the employees breathing zone per OSHA regulations.

1.08 AIR FILTERING

A. An approved pressure/air movement atmosphere may be created in the active work area using HEPA equipped air movement units.

B. Air may be drawn from clean areas through the decontamination and active work areas, HEPA filtered and exhausted through air movement units to the containment exterior. Replace filters in accordance with manufacturer's instructions.

C. Air movement should be sufficient quantity to ensure a minimum of four (4) air changes per hour.

example: Active work area = 50' x 50' x 20' = 50,000 cu. ft.

For four air changes per hour = 4 AC/HR x 50,000 CF/AC = 2000,000 cu. ft./hr.

In cubic feet per minute = 200,000 CF/HR: 60 min./hr. = 3,333 cu. ft./minute

D. The exhaust system must be sufficient to maintain a minimum pressure differential of -0.02 inches of water relative to unsealed, adjacent area. Provide continuous, 24-hours per day monitoring of the pressure differential with an automatic recording instrument.

E. The exhaust system(s) will run twenty-four (24) hours/day until final clearance is obtained and will be maintained in accordance with ANSI Z9.2 and the manufacturer's directions.

F. To ensure continuous operation, provide a spare negative exhaust unit available.

1.09 ALTERNATIVE AIR FILTERING METHODS

A. Other approved air filtering methods may be utilized with the stipulation that designed regulatory agencies provide documented approval to the Owner and the Environmental Consultant. It shall be the responsibility of the AAC to submit all documentation required to the appropriate regulatory agency for their review and approval.

1.10 PLACEMENT OF WARNING SIGNS AND LABELS

A. Warning Signs and Labels: Provide warning signs at all approaches to asbestos control areas containing concentrations of airborne asbestos fibers. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos materials, scrap waste, debris and other products contaminated with asbestos.

Warning Signs: Provide warning signs conforming to 29 CFR 1926.1101 with the following legend:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE
REQUIRED IN THIS AREA

Provide spacing between lines at least equal to the height of the upper of any two lines.

B. Caution Labels: Attach label to each disposal bag and container, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

C. Identification Label: Attach label to inner opaque or colored disposal bag so that it remains visible through the clear outer bag. Attach labels to container transported from facility site. Text shall include the following legend:

Waste Generator Name:

Generator Location:

D. Transportation Marking: In accordance with 49 CFR 107, provide marking on all containers with more than one pound of friable asbestos, as follows:

NA2212
RQ ASBESTOS
PGIII
CLASS 9

PART 2 - PRODUCTS

2.01 EQUIPMENT AND MATERIALS

A. The list of required materials will include, but is not necessarily limited to the following:

1. Respirators: Provide respiratory protection in accordance with OSHA Regulation 29 CFR 1926.1101 and ANSI Z88.2-1980. Respiratory protection shall be as listed below. There shall be NO EXCEPTION to this requirement. No employee or visitor shall enter the area without this protection until all visible asbestos has been removed from this area. Employees or visitors shall wear this type respirator. Respirators shall be NIOSH/MSHA approved.

2. Protective Clothing: Provide only disposable protective clothing with material composition of layered polypropylene or spunbonded polyethylene nonwoven material. Disposable protective clothing is to be worn once and disposed of as asbestos-contaminated waste upon exiting from the work area. Suits shall have zipper front and attached hood and shoe covers. “Tyvek" by DuPont, or approved equal are acceptable disposable coveralls. Gloves will be worn for hand cover as required.

3. Wetting Agents: The asbestos material will be sprayed with water containing an additive to enhance penetration. The additive, or wetting agent, will be polyoxyethylene at a concentration of one (1) ounce per five (5) gallons of water, or equal. A fine spray of this solution must be applied to prevent fiber disturbance preceding the removal of the asbestos material. The asbestos will be sufficiently saturated to prevent emission of airborne fibers in excess of the exposure limits prescribed in the current OSHA standards referenced in these specifications. <u>Dry removal will not be allowed except with written approval.</u>

4. Polyethylene sheeting: Actual thickness must be six (6) mils, for vertical protection (walls, doors, windows) and for all other uses (floors, fixed equipment, HVAC supply and return openings). Industry Standard “6 mil” sheet is not acceptable.

5. Polyethylene bags (with warning labels) six mil (.006") minimum for disposal. All asbestos that is removed shall be double bagged.

6. Tape: High quality vinyl or fabric duct tape.

7. Negative Pressure Filtration Equipment: Air movement and filtering equipment equipped with HEPA filters rated at 99.97% removal down to 0.3 microns, and of sufficient capacity to provide a minimum of four (4) air changes per hour for each active work area.

8. Airless Spray Equipment: Electric airless spray equipment for saturating and mist fiber control. Low-pressure (500 psi) equipment must be available on-site and utilized as required.

9. Vacuum: HEPA rated for surface cleaning and housekeeping. Hand operated and power tools such as, but not limited to, saws, scorers, abrasive wheels and drills should be provided with local exhaust ventilation systems with HEPA filters.

10. Hand tools: Brooms, plastic shovels, scrapers, brushes, etc., in sufficient quantity to ensure the appropriate level of housekeeping.

11. Water Filtration System: Shower and contaminated water filtration system.

12. GFI Equipment: All electrical connectors in the work area must be through "ground fault" protected outlets/circuits.

13. Flooring Removal Machine: Infrared heat unit with HEPA filtration/purification system.

14. Shot blasting methods are to be utilized for this project for flooring adhesive removal.

15. Penetrating Encapsulant: Penetrating encapsulants to be used on this project are International Cellulose Corporation SK-13 Asbestos Encapsulant, International Protective Coatings Corporation Serpiflex Shield, Fiberlock Technology ABC Asbestos Binding Compound Concentrate, and others listed as acceptable in the Environmental Protection Agency - Battelle Laboratory Encapsulant Study, or approved equal.

16. SDS for all materials shall be submitted to Independent testing agency and kept on site.

2.02 PERSONNEL PROTECTION

A. Personnel protection is required for laborers, mechanics, supervision and visitors at the work site during the set-up and abatement operations.

B. Each worker shall be supplied with a minimum of two (2) complete protective work clothes and respirator filter changes per day for the complete duration of the project. Hard hats should be available as appropriate which meet ANSI Z-89.1 standards. Safety toe footwear is to be worn underneath the disposable or recyclable shoe coven and must meet the requirements and specifications in ANSI Z-41-1. Eye wear and face protection must meet the standards and specifications of ANSI Z-87.1.

C. In addition to sets of protective work clothes for workers, the Contractor shall have on hand two (2) additional sets of disposable work clothes per day for personnel who are authorized to inspect the work site. Hard hats should be available as appropriate which meet ANSI Z-89.1 standards. Safety toe footwear is to be worn underneath the disposable or recyclable shoe covers and must meet the requirements and specifications in ANSI Z-4 I-1. Eye wear and face protection must meet the standards and specifications of ANSA Z-87.1.

D. Respirators approved for asbestos use and protective work clothes will be worn by laborers and mechanics as a minimum during set-up operations (plastic draping, light-fixture dropping or removal, etc.).

E. Appropriate respirators will be worn by all personnel in the active work area.

F. Upon leaving the active work area, filters will be discarded, cartridges removed and respirators cleaned in disinfectant solution and clean water rinse.

G. Clean respirators will be stored in plastic bags when not in use.

H. Respirators will be inspected daily for broken, missing, or deteriorated parts.

PART 3-EXECUTION

3.01 AREA PREPARATION

A. Prior to starting the abatement, provide to the Owner and the Environmental Consultant the intended methods for set-up and abatement. Issues to be covered must include type of containment, location of decontamination chambers, method to remove ACMs, safety data sheets (SDS) of any solvents to be used, landfill to be used for disposal of asbestos-containing materials, and a schedule for project completion.

B. Temporary Electrical Services within Containment Area: As required, coordinate with the Owner's access and connection to temporary power and arrangements for temporary lighting. Ensure safe use of temporary power sources and equipment in compliance with the requirements of the UL Code. Provide ground fault circuit interrupters (GFCI) for all equipment and utility circuits. All extension cords shall be grounded. See Section 01 5000 and Division 26.

C. Plumbing and Sanitary Services within Containment Area: Provide for temporary water from existing building sources to control the generation of airborne dust, to allow for area, personnel, and equipment decontamination, and to supply decontamination unit needs. Also, provide for temporary sanitary drainage piping to decontamination unit sump at a minimum slope of 2.0%, and temporary drainage piping to waste water pump and existing drain in accordance with local standards.

D. Isolate the work area for the duration of the work by installing critical barriers completely sealing off all openings in the work area, including, but not limited to, heating ventilation ducts, doorways, corridors, windows, roof ventilator openings, and wall vents, with plastic sheeting taped securely in place.

E. Under no circumstances will the AAC allow any containment areas to be broken.

F. Provide decontamination chamber(s) to be connected to each active work area for entrance to or exit from the active work area. When required a separate material load-out unit shall be provided.

3.02 DECONTAMINATION CHAMBER (USAGE AND ACTIVITIES)

A. Outside room (clean room). In this room the worker leaves all street clothes and dresses in clean working clothes. Respiratory protection equipment is also picked up in this area. No asbestos contaminated items should enter this room. Workers enter this room either from outside the structure dressed in street clothes, or naked from the showers, after showering.

B. Shower Room: This is a separate room used for transit by cleanly dressed workers entering the job from the outside room or by workers headed for the showers after undressing in the equipment room.

C. Equipment Room (contaminated area): Work equipment, footwear and additional contaminated work clothing are left here. This is a change and transit area for workers.

D. Decontamination facilities require temporary utility services. Verify during bidding period the availability for temporary hook up. Mobilization, hook-up and demobilization, disconnection costs will be the responsibility of the Contractor. Installation of temporary services during demolition shall be per current EPA and OSHA regulations.

E. Work Area: The work area should be separated by polyethylene barriers from the equipment room. If the airborne asbestos level in the work area is expected to be high, as in dry removal an additional intermediate cleaning space may be added between the equipment room and the work area. Isolation of the work areas, as required, is necessary to prevent contamination and fiber dispersal to other areas of the building during work and clean-up operation. Air movement will flow uninterrupted from outside the work area through the change and equipment moms into the active work area. It is then HEPA filtered and exhausted to the building exterior.

3.03 WORK AREA ENTRANCE/EXIT

A. All workers involved in the removal of asbestos will utilize the following procedure for work area entrance and exit.

B. The worker enters outside room and removes clothing, puts on clean uniform, gloves and respirator. Gloves will be taped to uniform sleeves and boots taped to coverall legs. Uniforms will be taped closed at neck, zipper seams, wrists and ankles.

C. Any additional clothing and equipment left in dirty room required by the worker is donned. (When the work area is too cold for coveralls only, workers will usually provide themselves with additional warm garments which must be treated as contaminated clothing and left in the decontamination area.)

D. Worker proceeds to work area.

E. Before leaving the work area, the worker shall remove all gross contamination and debris from the coveralls, by vacuuming down the clothes with a vacuum cleaner with a HEPA filter. In practice, this is typically carried out by one worker assisting another.

F. The worker proceeds to equipment room and removes all clothing except respiratory protection equipment. Extra work clothing may be stored in contaminated end of the area.

G. Disposable coveralls are placed in a bag for disposal with other material. The worker then proceeds into the shower room. Respiratory protection equipment should only be removed after wetting in shower to prevent inhalation of fibers. Ensure that employees shower daily before entering the clean room.

H. After showering, the worker moves to the clean room and dresses in either new coveralls for another entry or street clothes if leaving.

I. Respirators are picked up, washed and wrapped by protected workers. The respirators are then brought to the clean room by an outside worker.

J. Workers shall not eat, drink, smoke, chew gum, or chew tobacco in the work area. To eat, drink or smoke, workers shall follow the decontamination procedure outlined above.

K. All footwear shall be left inside work area until completion of the job, then cleaned or discarded.

3.04 METHOD OF REMOVAL

A. Remove and dispose of all asbestos-containing materials in accordance with the more stringent methods and procedures as outlined in the United States Department of Labor, OSHA Asbestos Regulations, Codes of Federal Regulations Title 29, Part 1926, Section 1926.1101 or as are written directly into the contract documents.

B. Dry removal will not be allowed except when wet removal will create a safety hazard. Dry removal process will require written authorization by the USEPA.

C. Work of this section shall be performed in the following manner:

1. Eliminate airflow into containment area by isolating all supply and return air ducts from mechanical system. Turn off electrical power.
2. Install six (6) mil polyethylene critical barriers over all windows, doors, wall openings, ceiling openings, electrical outlets, ventilation points of entry/exit, etc. Secure with duct tape on all sides.
3. Six (6) mil polyethylene protecting ceiling surface from wall to wall, where needed.
4. Isolation barriers separating occupied areas and work areas shall be framed and covered with ½ inch plywood and two (2) layers of six (6) mil polyethylene.
5. Duct HEPA filter unit through window. Locate unit to prevent dead air pockets.
6. Install triple air curtain, six (6) mil polyethylene (typical), over door opening into decontamination unit or load out unit
7. Utilize wet methods with amended water
8. ACM waste must be removed and disposed of by the end of each work shift.
9. <u>Removal of Asbestos Containing Vinyl Sheet Flooring, Floor Tile and Mastic adhesive</u>

    a. Demolition of building systems, components, and/or fixtures may be necessary to access ACMs.
    b. Establish negative pressure, full containment, critical barrier containment or mini-containment, depending on the mastic removal procedure.
    c. Remove asbestos tile mastic and/or contaminated underlayments or vapor barriers by suitable means (e.g., scrapers) and wet methods. Remove the tile without breakage. Place tile into a polyethylene lined fiberboard box or double (6) mil disposal bag. Seal box and place in disposal bag. HEPA vacuum the floor substrate and any remaining loose dust and debris generated by removal activities.
    d. Remove tile adhesive using a surface milling machine consisting of a shot blasting device utilizing steel abrasive shot and a separate dust collector vacuum device equipped with a HEPA filtration system under a full containment or using a solvent adhesive remover under a critical barrier containment with splash guards.

e. When adhesive is to be removed by the use of a chemical adhesive removal solvent, workers must be made aware that solvents formulated from petroleum distillates often contain chemicals which pose significant health risks including eye, skin, respiratory or central nervous system disorders. Therefore, the use of certain solvents may require additional protective clothing and the use of organic vapor respirators. In addition, workers should be made aware that many of these solvents may be categorized as combustible.
f. Non-Petroleum adhesive removal solvents (often citrus-based) avoid many of the hazards inherent in petroleum-based products. However, the flash point for ignition may be relatively similar.
g. Before an adhesive removal solvent is used, submit a safety data sheet (SDS), which is available from chemical manufacturers or distributors. Do not proceed with the work until the SDS is provided to the Owner. When work commences, the solvent shall be used in strict conformance with the manufacturer's recommendations and directions.
h. The Environmental Consultant may test for complete removal of adhesive. Concrete will be scraped to detect adhesive residue. Concrete will be considered bare, if no adhesive residue is visible on the scraper.
i. Accumulate all loose material for disposal. Wet wipe all wall, floor, ceiling and horizontal surfaces.
j. The Environmental Consultant, Professional Service Industries, Inc. (PSI), shall inspect for complete removal of all materials. Contractor shall re-clean and dispose of any asbestos-containing material identified.

10. <u>Sink Undercoating</u>

a. Establish a critical barrier containment.
b. Manually remove doors wrap in six (6) mil polyethylene sheeting for disposal.
c. Accumulate all loose material for disposal. Wet wipe all wall, floor, ceiling and horizontal surfaces.
d. The Owner or Owner’s Consultant shall inspect for complete removal of all materials. Contractor shall re-clean and dispose of any asbestos-containing material identified.

11. <u>Exterior Door and Window Caulking and roof vent tar</u>

a. Establish an exterior regulated work area with barricade tape to prevent entry into an active work area by unauthorized persons. Install drop cloths consisting six (6) mil polyethylene directly underneath active work areas.
b. All materials shall be wetted with amended water, manually removed, and immediately double wrap with six (6) mi polyethylene for disposal.
c. Accumulate all loose material for disposal.
d. The Owner or Owner’s Consultant shall inspect for complete removal of all materials. Contractor shall re-clean and dispose of any asbestos-containing material identified.

D. Vacuum any remaining material from sub surfaces, i.e., wire lath, concrete, pipe, steel joists, etc.

E. All polyethylene, tape, clothing and cleaning materials shall be bagged and disposed of as specified.

F. Clean all equipment, tools, etc., prior to removing them from work area.

G. Remove polyethylene on walls and ceiling. Critical barriers sealing all windows, doors, wall openings, ceiling openings, electrical outlets, etc., are to remain. Treat polyethylene as asbestos-contaminated materials.

H. Place asbestos-containing and asbestos-contaminated material while still wet into sealable, opaque or colored six (6) mil polyethylene bags. Do not overfill, place more than twenty-five (25) pounds into it or use it for disposal of sharp-edged materials.

I. Evacuate the bag with HEPA vacuum and seal collapsed bag by twisting top six (6) inches closed and wrapping with a minimum of two (2) layers of duct tape.

J. Twist top and fold over, apply second wrap of duct tape.

K. Clean outside of disposal bag by wet wiping and take bag to the equipment and staging area.

L. Affix warning and identification labels to opaque or colored bag and then place bag inside a second, six (6) mil polyethylene bag.

M. Seal outer bag by repeating steps I. and J.

N. Double-bagged waste shall be placed into a lined, covered receptacle or dumpster. Wastes must not remain on the ground.

O. HEPA filter unit to remain in place until space has been cleared by clearance test results.

P. Door into decontamination unit or load out room to remain.

Q. The Environmental Consultant will perform a visual inspection to verify all ACM has been removed.

R. The Environmental Consultant will perform final air clearance testing.

S. Remove critical barriers upon instructions from the Environmental Consultant.

T. Any alternate method of removal must have the written approval of the Owner and the Environmental Consultant.

3.05 HOUSEKEEPING

A. Throughout the work period, maintain the building and site in a standard of cleanliness as specified throughout these specifications.

B. Contaminated disposable clothing, respirator filters and other debris will be bagged, properly labeled and sealed at the end of each workday.

C. All asbestos generated by removal, encapsulation or repair will be bagged, properly labeled, and sealed at the end of each workday.

D. Respirators will be thoroughly cleaned at the end of each workday and stored for the next day's use.

E. Retain all stored items in an orderly arrangement allowing maximum access, not impeding traffic, and providing the required protection of materials.

F. Do not allow the accumulation of scrap, debris, waste material, and other items not required for completion of this work.

G. At least weekly, and more often is necessary, completely remove all scrap, debris and waste material from the job site.

H. Unless otherwise noted or directed, materials resulting from demolition operations shall be the property of the AAC, shall not be used in the work and shall be promptly removed from the site.

I. Daily and more often if necessary, inspect the work areas and adjoining spaces, and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.

J. Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the ecology.

K. Maintain the site in a neat and orderly condition at all times.

L. Compressed air is not to be used for cleaning purposes.

3.06 FINAL DECONTAMINATION OF WORK AREA

A. Carefully double bag all removed asbestos material, labeling bags as required.

B. Bags shall be wiped with clean damp cloths prior to transportation to approved disposal site.

C. Plastic barriers, as specified, shall be carefully removed, folded inward rolled into bundles and bagged for disposal. Note: Final barriers are not to be removed until work is completed and instructed by the Environmental Consultant.

D. During decontamination of the work area (after asbestos removal), the AAC shall remove the polyethylene sheets from walls and floors only. The windows and doors shall remain sealed and any HEPA filtration systems shall remain in service until final acceptance.

E. Hard surfaces flooring such as concrete, terrazzo, VAT and ceramic tile, shall be wet mopped, allowed to dry, and damp mopped a second time with clean mop heads.

F. Walls, furniture and equipment (which remain in work area during work operations), windows and other surfaces shall be thoroughly cleaned with damp cloths.

G. And carpeting shall be cleaned with a HEPA type vacuum cleaner.

CONVENTIONAL VACUUMS WILL NOT BE PERMITTED.

H. All surfaces are to be left visually clean.

I. After the work area is found to be in compliance by visual inspection, and before removing plastic barriers, the Environmental Consultant shall take clearance samples as specified in Air Sample Schedule, Section 1.07J as soon as feasible but not sooner than twenty-four (24) hours after completion of all cleaning work, or as may be specified by the Owner. If analysis results of all samples are below 0.01 fibers per cubic centimeter (f/cc), final air clearance has been achieved and the response action is complete.

J. Should final air clearance fail to meet the standard established above, the AAC shall pay all costs associated with the Environmental Consultant's re-sampling and analysis. At Contractor's sole option and at no additional cost to the Owner, PCM samples which fail to meet the clearance levels can be tested for compliance by the TEM protocol established in NIOSH 7402.

K. If pre-clearance criteria are not met, repeat final cleaning until additional tests indicate conformity before proceeding with final clearance.

L. All mop heads and cleaning cloths are to be discarded in the same manner as asbestos waste.

M. Clean all glass inside of work area.

N. All windows, doors, louvers, etc., shall be unsealed and the sheeting, tape etc., shall be disposed of as heretofore prescribed.

O. All plastic sheeting, tape, cleaning materials, clothing and all other disposable material or items used in the work area shall be packed into sealable plastic bags (6-mil. minimum) for transport. Double bagging is required.

3.07 DISPOSAL OF ASBESTOS WASTE

A. All asbestos materials and miscellaneous debris will be transported to the pre-designated disposal site in accordance with the guidelines of the U.S. EPA, Tide 40, Part 61, Subpart H, and all local agencies' regulations.

B. The landfill used for dumping shall be certified to receive and buy materials contaminated by asbestos.

C. Obtain signed waste shipment record indicating material is asbestos waste, and site it came from. Waste Disposal Manifests must also indicate amount of waste in cubic yards or tons.

D. Submit Waste Disposal Manifests to the Owner and the Environmental Consultant with final report.

3.08 RECORDKEEPING AND LOG

A. Maintain a daily log documenting the following items:

1. Entry and exiting of work area by work personnel, visitors, and inspectors.
2. Personnel air monitoring test results.
3. Special or unusual events, such as power loss or equipment failure.
4. Daily inspection of decontamination unit, load-out unit, containment area integrity, and air exhausting system.
5. Amount of asbestos-containing material removed from the work site.
6. Work progress narrative.

B. Provide a copy of the log to the Owner and the Environmental Consultant at the end of the project.

3.09 INSPECTIONS

A. All work procedures detailed in this specification will be strictly adhered to and meet or exceed all current EPA, OSHA, DEP, ACHD, and PDL&I regulations.

B. All work shall meet with the approval of the Owner and the Environmental Consultant. Work which does not meet with such approval shall be determined to be unsatisfactory.

END OF SECTION 02 8000

Renovation of 10 Scattered Sites

10 Scattered Sites - Wayside St
Single Family Residence, Minor Alteration
221 Wayside Street,
Pittsburgh, Pennsylvania 15210

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
ph 412.281.6001 fx 412.281.6002

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Code Conformance Information

Applicable Codes

General:	2018 International Residential Code 2018
Energy:	2018 International Energy Conservation Code
Electrical:	2017 NEC (NFPA 70)
Fire:	2018 International Fire Code
Fuel Gas:	2018 International Fuel Gas Code
Mechanical:	2018 International Mechanical Code
Plumbing:	2017 Allegheny County Health Department Plumbing Code

General Building / Project Information

Stories:	2 Stories
Building Gross Area:	Basement 262 sqft + Garage 270 sqft
	1st Floor 532 sqft
	2nd Floor 532 sqft

1 Site Location
SCALE 1" = 30'

N

Materials Legend

NOT ALL MATERIALS USED

- EARTH
- COMPACTED STONE FILL
- CONCRETE
- STEEL
- RIGID INSULATION
- BLOCKING
- BATT INSULATION
- GYPSUM WALL BOARD
- WOOD
- PLYWOOD SHEATHING
- SPRAY FOAM INSULATION

Abbreviations

A.F.F.	Above Finish Floor
A.P.	Access Panel
ACOUST.	Acoustical
A.C.T.	Acoustical Ceiling Tile
ADH.	Adhesive
ADJUST.	Adjustable
A/C	Air Conditioning
ALT.	Alteration
ALTN.	Alternate
ALUM.	Aluminum
A.O.R.	Area of Refuge
APPROX.	Approximate
ARCH.	Architectural
ASB.	Asbestos
ASPH.	Asphalt
AUTO.	Automatic
AVG.	Average
BLK.	Block
BD.	Board
BOT	Bottom
BLDG	Building
C.I.P.	Cast In Place
C.B.	Catch Basin
CEM.	Cement
CER.	Ceramic
CG	Corner Guard
C.M.T.	Ceramic Mosaic Tile
C.W.T.	Ceramic Wall Tile
C.O.	Cleanout
℄	Center Line
CLO.	Closet
C.W.	Cold Water
CLG.	Ceiling
COL.	Column
CONC.	Concrete
C.M.U.	Concrete Masonry Unit
CONT.	Continuous
CORR.	Corridor
C.M.P.	Corrigated Metal Pipe
CRS.	Courses
DIA.	Diameter
DET	Detail
DGL	Dens Glass Gold
DR.	Door
DN.	Down
D.S.	Downspout
DWG.	Drawing
D.F.	Drinking Fountain
D.I.P.	Ductile Iron Pipe
EA.	Each
E.W.	Each Way
ELEC.	Electrical
E.C.	Electrical Contractor
EL.	Elevation
ELEV.	Elevation
EQUIP.	Equipment
E.F.	Exhaust Fan
EXIST.	Existing
EXP.	Expansion
E.J.	Expansion Joint
EISH	Exterior Sheathing
EXIST.	Existing
EXP.	Exposed
EXT.	Exterior
E.I.F.S.	Exterior Insulation & Finish System
F.R.P.	Fiberglass Reinforced Polyester
F.F.	Finish Floor
FIN.FLR.	Finish Floor
F.A.C.P.	Fire Alarm Control Panel
F.E.	Fire Extinguisher
FLR.	Floor
F.D.	Floor Drain
FTG.	Footing
GA.	Gauge
G.C.	General Contractor
G.F.I.	Ground Fault Interrupter
GYP.	Gypsum
G.W.B.	Gypsum Wall Board
GSH	Gypsum Sheathing
H/C	Handicap
H.V.A.C.	Heating, Ventilation &
HT	Height
HC	Hollow Core
H.M.	Hollow Metal
HORIZ.	Horizontal
HR.	Hour
H.W.	Hot Water
IN	Inch
I.M.	Insulated Metal
INSUL.	Insulation or Insulated
INT.	Interior
INV.	Invert
ISO.	Isolation
JAN.	Janitor's Closet
J.T.	Joint
LAM.	Laminate
LAV.	Lavatory
LG.	Long
M.D.F.	Medium Density Fiberboard
M.D.H.	Magnetic Door Holder
M.H.	Manhole
MFGR.	Manufacturer
MAX.	Maximum
MECH.	Mechanical
MET.	Metal
MIN.	Minimum
MISC.	Miscellaneous
N.I.C.	Not In Contract
N.T.S.	Not To Scale
O.C.	On Center
OPP.	Opposite
O.H.	Overhead
PR.	Pair
PLAS.	Plaster
PLAS.LAM.	Plastic Laminate
P.C.	Plumbing Contractor
PLYWD.	Plywood
POLY.	Polyethylene
P.V.C.	Polyvinyl Chloride
PRE-FAB.	Prefabricated
RE.	Refer To
REF.	Refrigerator
R.C.P.	Reinforced Concrete Pipe
REINF.	Reinforcement
RD.	Roof Drain
RM.	Room
S.A.T.	Suspended Acoustical Tile
SCHED.	Schedule
SHT.	Sheet
SIM.	Similar
S.C.	Solid Core
SPECS.	Specifications
SQ.	Square
S.F.	Square Foot
S.S.	Stainless Steel
STL.	Steel
STOR.	Storage
STRUCT.	Structural
TEL.	Telephone
THK.	Thick
T.B.D.	To Be Determined
T&G	Tongue & Groove
T.O.	Top Of
T.G.	Top Of Grade
T.O.S.	Top Of Steel
TYP.	Typical
UNFIN.	Unfinished
U.N.O.	Unless Noted Otherwise
V.B.	Vapor Barrier
VERT.	Vertical
VEST.	Vestibule
V.C.T.	Vinyl Composition Tile
W.H.	Water Heater
W.W.F.	Welded Wire Fabric
WIN.	Window
W/	With
W/O	Without
WD.	Wood

Symbols

NOT ALL SYMBOLS USED

T.O. FINISH FLOOR ELEV. 0'-0"	ELEVATION HEIGHT
PLAN NORTH	NORTH ARROW
1 A7.1	ELEVATION MARKER

seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

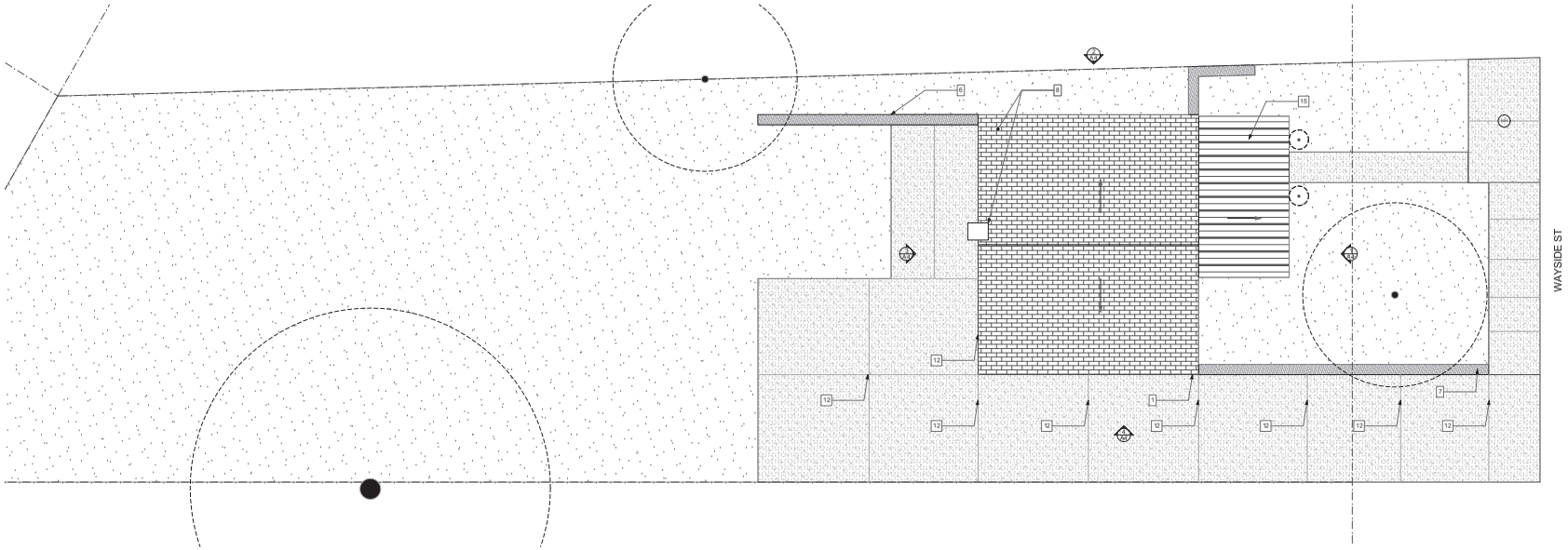
Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
221 Wayside Street
Pittsburgh, Pennsylvania 15210

drawing title

Drawing Index, Code Conformance Information, Abbreviations and Materials, Site Location

scale: As Noted	**Sheet No.**
date: August 20th, 2024	**A1**
no. 1 / of. 8	Project #2326



1 Site Plan
SCALE: 3/16" = 1'-0"

SITE PLAN LEGEND

GRASS	MISC. BRICK	AC CONDENSER	RAILING	TRUE ROOF OUTLINE
LIGHTWEIGHT CONCRETE	MULCHED AREA	TREE / SHRUB	TACTILE PAVING	APPROX. PROPERTY LINE
CONCRETE BLOCK	STREET SIGNAGE	STREET SIGNAGE	MAN HOLE	WINDOW WELL

10 Scattered Sites Keynotes – 221 Wayside St

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages.
3. SMOKE/CO DETECTORS (E) : In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC) : Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. REAR RETAINING WALL (GC): At this location remove existing short retaining wall (approx. 2 ft high x 20 ft long). Remove topsoil and re-slope soil to gradually blend two grades. Restore topsoil and reseed. See Specifications.
7. FRONT RETAINING WALL (GC): Repair small area of existing short retaining wall (approx. 3ft high x 3 ft long) using new concrete masonry units to match. See Specifications.
8. ROOF (GC): Remove existing shingles (approx. 600 sf), flashing, roof vent caps, roof pipe boots flashing, etc. Re-roof using new materials. Replace sloped mortar chimney cap with new. See Specifications.
9. BRICK WINDOW SILLS (GC): Repoint window sills at this location. See Specifications.
10. BRICK WALL (GC): Clean and repoint brick in area and in quantity indicated. See Specifications.
11. STEEL LINTELS AT BRICK OPENINGS (GC): At this location, sandblast and scrape to clean existing steel lintel above opening. Prime and paint with zinc rich primer, paint and caulk to finish. See Specifications.
12. CONCRETE EDGE SEAL (GC): At floor joint between garage slab and driveway, clean out joint, provide new backer rod and caulk to seal full width. See Specifications.
13. GARAGE DOOR LINTEL (GC): Replace steel lintel with new. See Specifications.
14. CONCRETE FRONT PORCH (GC): Grind down raised edge.
15. ALUMINUM AWNING (GC): Power wash, prep and paint existing aluminum awning.

Interior Garage

16. ELECTRICAL PANEL (E): Replace existing breakers with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally, provide proper electrical grounding and bonding of the electrical system. See Specifications.
17. GARAGE TO INTERIOR DOOR (GC): Remove (2) existing doors and frames between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door and frame. Paint to finish with new threshold and all door hardware. See specifications.
18. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand, and paint new GWB to finish. See Specifications.
19. REPLACE EXISTING FURNACE (M): Remove existing furnace from this location. locate new furnace within the existing basement envelope. Connect the furnace to the existing main supply and return ductwork, gas and electrical connections. At ductwork located within the garage envelope, seal per the above. See Specifications.
20. MASONRY WORK IN GARAGE/BASEMENT (GC): Provide new concrete block infill wall to rebuild garage wall and completely seal garage from basement (approx. 60 sf of wall).

Interior Basement

21. WATER HEATER (P): Water Heater installation dated appears to be 12.31.2013 and does not show signs of failure. Service only.
22. FURNACE (M): Furnace installation date appears to be December of 12.22..2004, making the furnace 20 years old. Replace per specifications.
23. DUCTWORK (M): Seam seal all exposed duct seams within basement. See Specifications.
24. BASEMENT ACCESS STAIR (GC): Provide new vinyl non-slip tread covers at each tread. See Specifications
25. BASEMENT FLOOR TILE (GC): Apply new vinyl tile flooring over existing tile flooring (approx. 200 sf). See Specifications. NOTE: Take care to not disturb the existing basement asbestos flooring in a way so as to cause any of the existing flooring to become airborne.
26. GLASS BLOCK WINDOWS (GC): Remove all 4 glass block windows, casing, and caulk and replace with new. See Specifications.
27. DRYER DUCT (M): Run new dryer duct through new glass block window.

Interior First Floor

28. FRONT ENTRY DOOR (GC): Remove existing storm door frame. Provide new storm door with chain limiter and closer. Scrape and caulk existing door frame and trim. See Specifications.
29. FLOOR FINISH (GC): Remove existing carpet (approx. 303 sf) and VCT (approx. 103 sf) floor finish throughout first floor. Prep subfloor and provide new LVT floor finish throughout first floor. See Specification.
30. KITCHEN CEILING (GC): Remove and repair section of existing kitchen ceiling and bulkhead damaged by water from bathroom above (approx. 50 sf). Repair any plumbing pipes found to be leaking above the ceiling prior to closing ceiling. See Specifications.
31. KITCHEN CABINETS / COUNTER and BACKSPLASH (GC): Replace existing kitchen upper and lower cabinets and countertop with new. Provide new tiled backsplash behind stove and below vent hood. Run tile below top of stove 6". See Specifications.
32. KITCHEN APPLIANCES (GC/E/M/P): Provide new stove/oven combination. Provide new sink, sink faucet and drain assembly. Provide new refrigerator. Provide new kitchen exhaust hood ventilated to the exterior. See Specifications.

Second Floor / Attic

33. WINDOWS (GC): At this location, remove existing caulk and recaulk window to seal. See Specifications
34. FLOOR FINISH (GC): Remove carpet flooring throughout. Provide new LVT floors on top of existing hardwood floors. Provide new painted ¼ Rd trim at wall base. See Specification.
35. BATHROOM (GC/P): In second floor bathroom: Remove existing VCT flooring, provide new LVT flooring per Specifications. Remove shower rod and replace it with new. Remove existing shutters at window and patch paint wall to match. Provide new bathroom exhaust fan wired to light circuit and ventilated to the exterior. See Specifications.
36. CEILING (GC): Remove and repair crack in section of existing ceiling (approx. 12 linear ft). See Specifications.
37. ATTIC ACCESS DOOR (GC): Insulate attic door. See Specifications.

PLAN NORTH

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
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seal

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revisions

project title

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The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
221 Wayside Street
Pittsburgh, Pennsylvania 15210

drawing title

Site Plan, Site Plan Legend, Keynotes

scale	Sheet No.
As Noted	A2
date: August 20th, 2024	
no. 2 / of. 8	Project #2326

FLOOR COVERING PLAN LEGEND

VCT FLOORING
CONCRETE FLOORING
CARPET FLOORING
LVT FLOORING
WOOD FLOORING

GENERAL FLOOR PLAN NOTES

1. PROPERTY HAS BEEN TESTED FOR HAZARDOUS MATERIALS. REPORT WILL BE AVAILABLE AND PROVIDED BY HACP. GC TO ABATED MATERIALS FOLLOWING THE RECOMMENDATIONS FROM THE REPORT.
2. CONTRACTOR TO FIELD VERIFY ANY AND ALL CONDITIONS & DIMENSIONS OF WORK AREAS BEFORE BEGINNING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.
3. THE FINISH FLOOR OF THIS PROJECT IS IDENTIFIED AT 0'-0" IN THIS SET OF DRAWINGS.
4. ALIGN NEW WALL & CEILING CONSTRUCTION WITH EXISTING WALL CONSTRUCTION. FINISH NEW PARTITION SMOOTH TO FORM A SEAMLESS JOINT BETWEEN NEW & EXISTING PARTITIONS.
5. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC REPRESENTATIONS. NOTIFY ARCHITECT IN WRITING OF ANY INCONSISTENT OR MISSING DIMENSIONS.
6. DIMENSIONS SHOWN INDICATE FINISHED FACE TO FINISHED FACE, UNLESS NOTED OTHERWISE.
7. ALL NEW OR RELOCATED DOOR FRAMES TO BE LOCATED 4" FROM PERPENDICULAR WALLS, UNLESS NOTED OTHERWISE.
8. SAND WALLS SMOOTH, REMOVE ALL ADHESIVE RESIDUE, AND/OR SKIM WITH JOINT COMPOUND AS NECESSARY TO PREP WALLS FOR NEW FINISHES. THE FLOOR SHOULD BE SCRAPED CLEAN OF ANY ADHESIVE RESIDUE, PATCHED AND LEVELED OUT AS NECESSARY TO RECEIVE NEW FLOORING.
9. ATWALLS EXISTING TO REMAIN, PATCH AND PAINT ANY HOLES OR DAMAGE TO APPEAR NEW.

10 Scattered Sites Keynotes – 221 Wayside St

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Exterior

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13. GARAGE DOOR LINTEL (GC): Replace steel lintel with new. See Specifications.
14. CONCRETE FRONT PORCH (GC): Grind down raised edge.
15. ALUMINUM AWNING (GC): Power wash, prep and paint existing aluminum awning.

Interior Garage

16. ELECTRICAL PANEL (E): Replace existing breakers with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally, provide proper electrical grounding and bonding of the electrical system. See Specifications.
17. GARAGE TO INTERIOR DOOR (GC): Remove (2) existing doors and frames between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door and frame. Paint to finish with new threshold and all door hardware. See specifications.
18. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand, and paint new GWB to finish. See Specifications.
19. REPLACE EXISTING FURNACE (M): Remove existing furnace from this location. Locate new furnace within the existing basement envelope. Connect the furnace to the existing main supply and return ductwork, gas and electrical connections. At ductwork located within the garage envelope, seal per the above. See Specifications.
20. MASONRY WORK IN GARAGE/BASEMENT (GC): Provide new concrete block infill wall to rebuild garage wall and completely seal garage from basement (approx. 60 sf of wall).

Interior Basement

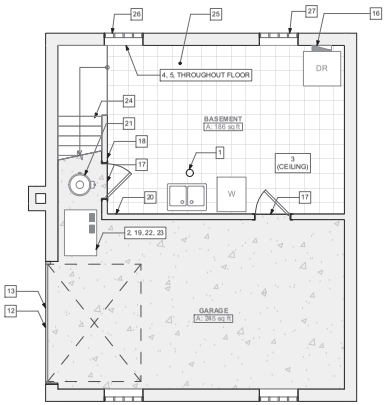
21. WATER HEATER (P): Water Heater installation dated appears to be 12.31.2013 and does not show signs of failure. Service only.
22. FURNACE (M): Furnace installation date appears to be December of 12.22.2004, making the furnace 20 years old. Replace per specifications.
23. DUCTWORK (M): Seam seal all exposed duct seams within basement. See Specifications.
24. BASEMENT ACCESS STAIR (GC): Provide new vinyl non-slip tread covers at each tread. See Specifications
25. BASEMENT FLOOR TILE (GC): Apply new vinyl tile flooring over existing tile flooring (approx. 200 sf). See Specifications. NOTE: Take care to not disturb the existing basement asbestos flooring in a way so as to cause any of the existing flooring to become airborne.
26. GLASS BLOCK WINDOWS (GC): Remove all 4 glass block windows, casing, and caulk and replace with new. See Specifications.
27. DRYER DUCT (M): Run new dryer duct through new glass block window.

Interior First Floor

28. FRONT ENTRY DOOR (GC): Remove existing storm door frame. Provide new storm door with chain limiter and closer. Scrape and caulk existing door frame and trim. See Specifications.
29. FLOOR FINISH (GC): Remove existing carpet (approx. 303 sf) and VCT (approx. 103 sf) floor finish throughout first floor. Prep subfloor and provide new LVT floor finish throughout first floor. See Specification.
30. KITCHEN CEILING (GC): Remove and repair section of existing kitchen ceiling and bulkhead damaged by water from bathroom above (approx. 50 sf). Repair any plumbing pipes found to be leaking above the ceiling prior to closing ceiling. See Specifications.
31. KITCHEN CABINETS / COUNTER and BACKSPLASH (GC): Replace existing kitchen upper and lower cabinets and countertop with new. Provide new tiled backsplash behind stove and below vent hood. Run tile below top of stove 6". See Specifications.
32. KITCHEN APPLIANCES (GC/E/M/P): Provide new stove/oven combination. Provide new sink, sink faucet and drain assembly. Provide new refrigerator. Provide new kitchen exhaust hood ventilated to the exterior. See Specifications.

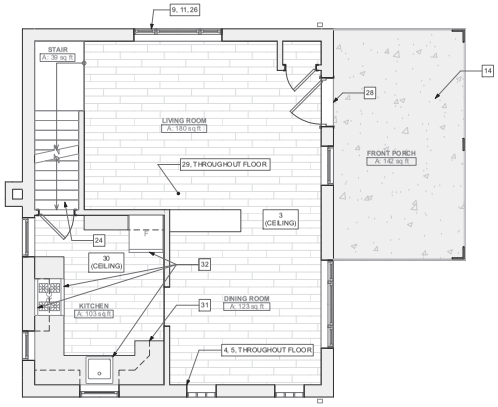
Second Floor / Attic

33. WINDOWS (GC): At this location, remove existing caulk and recaulk window to seal. See Specifications
34. FLOOR FINISH (GC): Remove carpet flooring throughout. Provide new LVT floors on top of existing hardwood floors. Provide new painted ¼ Rd trim at wall base. See Specification.
35. BATHROOM (GC/P): In second floor bathroom: Remove existing VCT flooring, provide new LVT flooring per Specifications. Remove shower rod and replace it with new. Remove existing shutters at window and patch paint wall to match. Provide new bathroom exhaust fan wired to light circuit and ventilated to the exterior. See Specifications.
36. CEILING (GC): Remove and repair crack in section of existing ceiling (approx. 12 linear ft). See Specifications.
37. ATTIC ACCESS DOOR (GC): Insulate attic door. See Specifications.



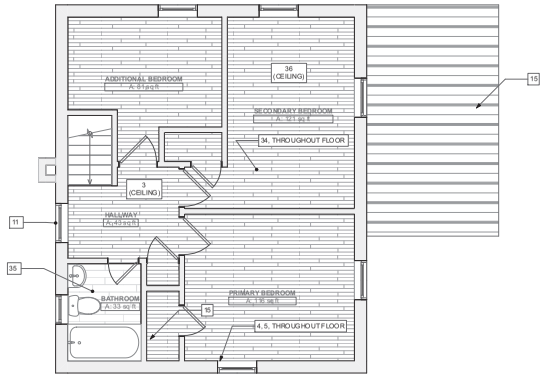
1 Basement
SCALE: 1/4" = 1'-0"

PLAN NORTH



2 First Floor
SCALE: 1/4" = 1'-0"

PLAN NORTH



3 Second Floor
SCALE: 1/4" = 1'-0"

PLAN NORTH

Fukui Architects Pc
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ph 412.281.6001 fx 412.281.6002

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CONSTRUCTION DOCUMENTATION

general notes

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3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
221 Wayside Street
Pittsburgh, Pennsylvania 15210

drawing title

Basement, First Floor, Second Floor, Renovation Plan Legend, Floor Plan Legend, Keynotes

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As Noted	
date	
August 20th, 2024	
no.	of.
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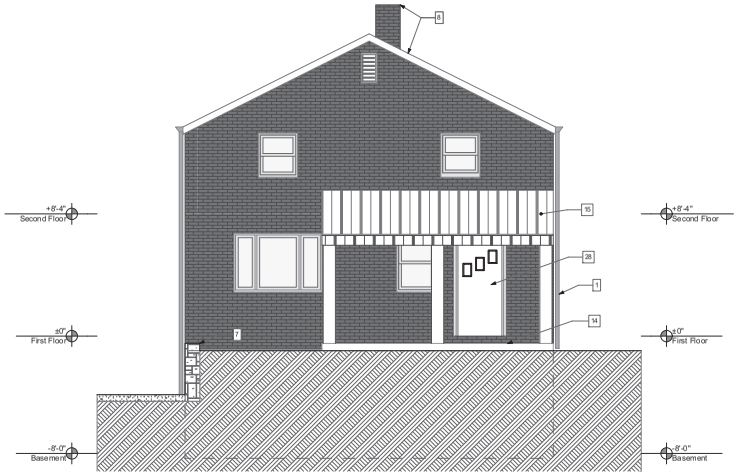
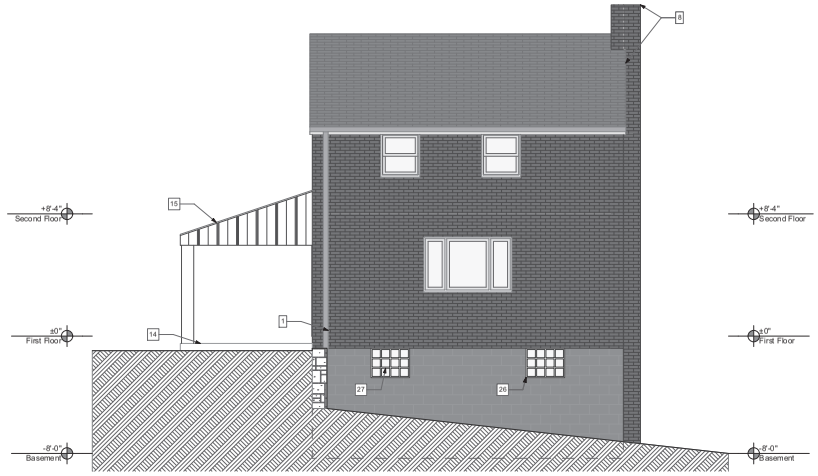
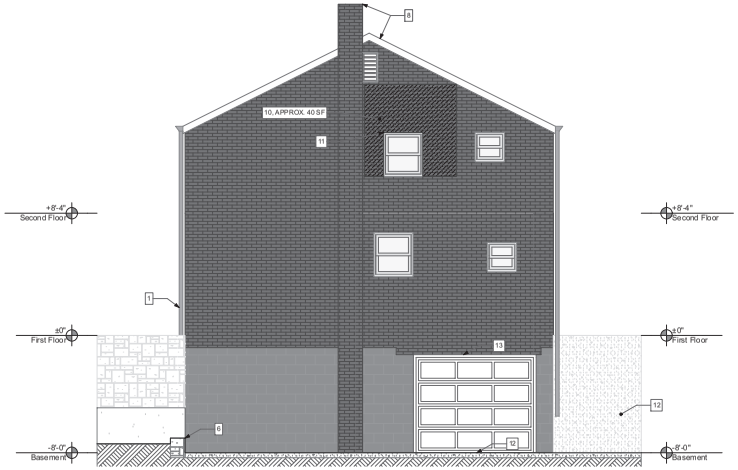
Sheet No.
A3
Project #2326



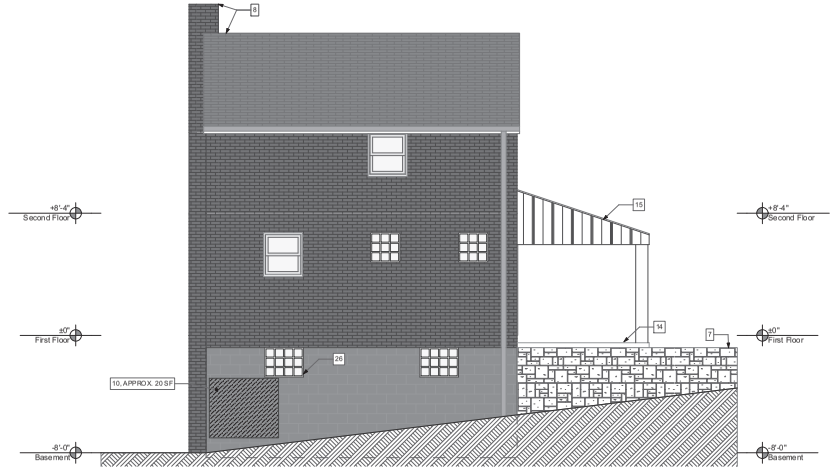
1 South Elevation
SCALE: 1/4" = 1'-0"



2 East Elevation
SCALE: 1/4" = 1'-0"



3 North Elevation
SCALE: 1/4" = 1'-0"



4 West Elevation
SCALE: 1/4" = 1'-0"

10 Scattered Sites Keynotes – 221 Wayside St

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages.
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. REAR RETAINING WALL (GC): At this location remove existing short retaining wall (approx. 2 ft high x 20 ft long). Remove topsoil and re-slope soil to gradually blend two grades. Restore topsoil and reseed. See Specifications.
7. FRONT RETAINING WALL (GC): Repair small area of existing short retaining wall (approx. 3ft high x 3 ft long) using new concrete masonry units to match. See Specifications.
8. ROOF (GC): Remove existing shingles (approx. 600 sf), flashing, roof vent caps, roof pipe boots flashing, etc. Re-roof using new materials. Replace sloped mortar chimney cap with new. See Specifications.
9. BRICK WINDOW SILLS (GC): Repoint window sills at this location. See Specifications.
10. BRICK WALL (GC): Clean and repoint brick in area and in quantity indicated. See Specifications.
11. STEEL LINTELS AT BRICK OPENINGS (GC): At this location, sandblast and scrape to clean existing steel lintel above opening. Prime and paint with zinc rich primer, paint and caulk to finish. See Specifications.
12. CONCRETE EDGE SEAL (GC): At floor joint between garage slab and driveway, clean out joint, provide new backer rod and caulk to seal full width. See Specifications.
13. GARAGE DOOR LINTEL (GC): Replace steel lintel with new. See Specifications.
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seal

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drawing title

South Elevation, East Elevation, West Elevation, North Elevation, Keynotes

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As Noted	
date	
August 20th, 2024	
no.	of.
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Sheet No.

A4

Project #2326

GENERAL NOTES

USE OF THE DOCUMENTS
THE USE OF THESE DOCUMENTS IS RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED. RE-USE OR REPRODUCTION OF THE DOCUMENTS (IN WHOLE OR IN PART), FOR ANY OTHER PURPOSE IS PROHIBITED. TITLE TO THESE REMAINS WITH FUKU ARCHITECTS P.C. (FAR). VISUAL CONTRACT DOCUMENTS DOCUMENTS IS PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

DIVISION 1 - GENERAL CONDITIONS

APPLICABILITY OF HUD-5370 GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS - PUBLIC HOUSING PROGRAMS
THE HUD-5370, GENERAL CONDITIONS CURRENT EDITION, SHALL APPLY TO THE PROJECT. A COPY OF THE HUD GENERAL CONDITIONS ARE INCLUDED IN THE FRONT END DOCUMENTS AS PART OF HUD FORMS. HARD CONES ARE AVAILABLE AT HACP OFFICE.

MULTIPLE CONTRACT
1. COORDINATION
GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT, ELECTRICAL CONTRACT, AND ADDITIONAL CONTRACTS APPLICABLE IN THE CONSTRUCTION DOCUMENTS.

2. GENERAL REQUIREMENTS OF CONTRACTS
UNLESS THE AGREEMENT CONTAINS A MORE SPECIFIC DESCRIPTION OF THE WORK OF EACH CONTRACT, EQUIPMENT INDICATED ON DRAWINGS AND IN SPECIFICATION SECTIONS DETERMINE WHICH CONTRACT INCLUDES A SPECIFIC ELEMENT OF PROJECT.

3. SCOPE OF WORK RESPONSIBILITY
A. GENERAL CONSTRUCTION CONTRACT
WORK OF THE GENERAL CONSTRUCTION CONTRACT INCLUDES, BUT IS NOT LIMITED TO THE REMAINING WORK NOT IDENTIFIED AS WORK UNDER OTHER CONTRACTS.

B. PLUMBING CONTRACT
WORK OF THE PLUMBING CONTRACT INCLUDES, BUT IS NOT LIMITED TO, PLUMBING FIXURES AND APPLIANCES (INCLUDING BUT NOT LIMITED TO SINKS, TUBS, SHOWER ENCLOSURES, SINK ASSEMBLIES, FAUCETS AND DRAIN ASSEMBLIES, ETC), PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT. PLUMBING CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT.

C. MECHANICAL CONTRACT
WORK OF THE MECHANICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ALL MECHANICAL EQUIPMENT AND CONNECTIONS TO EQUIPMENT FURNISHED BY THE MECHANICAL CONTRACT. ELECTRICAL, CONTRACT MECHANICAL EQUIPMENT INCLUDES BUT IS NOT LIMITED TO FURNACES AND CONDENSERS, KITCHEN AND BATH EXHAUST FANS, THERMOSTATS AND CONTROLS, ETC.

D. ELECTRICAL CONTRACT
WORK OF THE ELECTRICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ELECTRICAL EQUIPMENT AND FIXTURES INCLUDING BUT NOT LIMITED TO, (INTERIOR AND EXTERIOR LIGHT FIXTURES, SMOKE AND CO DETECTORS, COMPLETE CIRCUIT BREAKER PANELS INCLUDING ALL BREAKERS AND LABELING, ELECTRICAL SERVICE ENTRANCE), WIRING, AND ELECTRICAL AND LOW VOLTAGE CONNECTIONS TO EQUIPMENT FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT. ELECTRICAL CONNECT WITH TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT

PRE-CONSTRUCTION CONFERENCE AND NOTICE TO PROCEED
(A) WITHIN TEN CALENDAR DAYS OF CONTRACT EXECUTION, AND PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH THE OWNER, ARCHITECT OF PHA, ITS ARCHITECT, AND OTHER INTERESTED PARTIES CONVENED BY THE PHA. THE CONFERENCE WILL SERVE TO ACQUAINT THE CONTRACTOR WITH THE GENERAL PLAN OF THE CONSTRUCTION OPERATION AND ALL OTHER REQUIREMENTS OF THE CONTRACT. THE PHA WILL PROVIDE THE CONTRACTOR WITH THE DATE, TIME, AND PLACE OF THE CONFERENCE.
(B) THE CONTRACTOR SHALL BEGIN WORK UPON RECEIPT OF A WRITTEN NOTICE TO PROCEED FROM THE CONTRACTING OFFICER (OR DESIGNEE). THE CONTRACTOR SHALL NOT BEGIN WORK PRIOR TO RECEIVING SUCH NOTICE.

CONSTRUCTION PROGRESS
(A) THE CONTRACTOR SHALL, WITHIN FIVE DAYS AFTER THE WORK COMMENCES ON THE CONTRACT OR ANOTHER PERIOD OF TIME DETERMINED BY THE CONTRACTING OFFICER, PREPARE AND SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL THREE COPIES OF A PRACTICABLE SCHEDULE SHOWING THE ORDER IN WHICH THE CONTRACTOR PROPOSES TO PERFORM THE WORK, AND THE DATES ON WHICH THE CONTRACTOR CONTEMPLATES STARTING AND COMPLETING THE SEVERAL SALIENT FEATURES OF THE WORK (INCLUDING PROCURING LABOR, MATERIALS, AND EQUIPMENT). THE SCHEDULE SHALL BE IN THE FORM OF A PROGRESS CHART OF SUITABLE SCALE TO INDICATE APPROPRIATELY THE PERCENTAGE OF WORK SCHEDULED FOR COMPLETION BY ANY GIVEN DATE DURING THE PERIOD. IF THE CONTRACTOR FAILS TO SUBMIT A SCHEDULE WITHIN THE TIME PRESCRIBED, THE CONTRACTING OFFICER MAY WITHHOLD APPROVAL OF PROGRESS PAYMENTS OR TAKE OTHER REMEDIES UNDER THE CONTRACT UNTIL THE CONTRACTOR SUBMITS THE REQUIRED SCHEDULE.
(B). THE CONTRACTOR SHALL ENTER THE ACTUAL PROGRESS ON THE CHART AS REQUIRED BY THE CONTRACTING OFFICER, AND IMMEDIATELY DELIVER THREE COPIES OF THE ANNOTATED SCHEDULE TO THE CONTRACTING OFFICER. IF THE CONTRACTOR FAILS TO PROCEED, UPON THE BASIS OF INSPECTION CONDUCTED PURSUANT TO THE CLAUSE ENTITLED INSPECTION AND ACCEPTANCE OF WORK, TO DETERMINE HEREIN THAT THE CONTRACTOR IS NOT MEETING THE APPROVED SCHEDULE, THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO IMPROVE ITS PROGRESS, INCLUDING THOSE THAT MAY BE DIRECTED BY THE CONTRACTING OFFICER, WITHOUT ADDITIONAL COST TO THE PHA. IN THIS CIRCUMSTANCE, THE CONTRACTING OFFICER MAY REQUIRE THE CONTRACTOR TO INCREASE THE NUMBER OF SHIFTS, OVERTIME OPERATIONS, DAYS OF WORK, AND/OR THE AMOUNT OF CONSTRUCTION PLANT, AND TO SUBMIT FOR APPROVAL ANY SUPPLEMENTARY SCHEDULE OR SCHEDULES IN CHART FORM AS THE CONTRACTING OFFICER DEEMS NECESSARY TO DEMONSTRATE HOW THE APPROVED RATE OF PROGRESS WILL BE REGAINED.
(C) FAILURE OF THE CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACTING OFFICER UNDER THIS CLAUSE SHALL BE GROUNDS FOR A DETERMINATION BY THE CONTRACTING OFFICER THAT THE CONTRACTOR IS NOT PROSECUTING THE WORK WITH SUFFICIENT DILIGENCE TO ENSURE COMPLETION WITHIN THE TIME SPECIFIED IN THE CONTRACT. UPON MAKING THIS DETERMINATION, THE CONTRACTING OFFICER MAY TERMINATE THE CONTRACTOR'S RIGHT TO PROCEED WITH THE WORK, OR ANY SEPARABLE PART OF IT, IN ACCORDANCE WITH THE DEFAULT CLAUSE OF THIS CONTRACT.

SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK
(A) THE CONTRACTOR ACKNOWLEDGES THAT IT HAS TAKEN STEPS REASONABLY NECESSARY TO ASCERTAIN THE NATURE AND LOCATION OF THE WORK, AND THAT IT HAS INVESTIGATED AND SATISFIED ITSELF AS TO THE GENERAL AND LOCAL CONDITIONS WHICH CAN AFFECT THE WORK OR ITS COST, INCLUDING BUT NOT LIMITED TO, (1) CONDITIONS BELOW UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS; (2) THE AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, AND ROADS; (3) UNCERTAINTIES OF WEATHER, RIVER STAGES, TIDES, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE; (4) THE CONFORMATION AND CONDITIONS OF THE GROUND; AND (5) THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING WORK PERFORMANCE. THE CONTRACTOR ALSO ACKNOWLEDGES THAT IT HAS SATISFIED ITSELF AS TO THE CHARACTER, QUALITY, AND QUANTITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED IN SO FAR AS THIS INFORMATION IS REASONABLY ASCERTAINABLE FROM AN INSPECTION OF THE SITE, INCLUDING ALL EXPLORATORY WORK DONE BY THE PHA, AS WELL AS FROM THE DRAWINGS AND SPECIFICATIONS MADE A PART OF THIS CONTRACT. ANY FAILURE OF THE CONTRACTOR TO TAKE THE ACTIONS DESCRIBED AND ACKNOWLEDGED IN THIS PARAGRAPH WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK, OR FOR PROCEEDING TO SUCCESSFULLY PERFORM THE WORK WITHOUT ADDITIONAL EXPENSE TO THE PHA.
(B) THE PHA ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR BASED ON THE INFORMATION MADE AVAILABLE BY THE PHA. NOR DOES THE PHA ASSUME RESPONSIBILITY FOR ANY UNDERSTANDING REACHED OR REPRESENTATION MADE CONCERNING CONDITIONS WHICH CAN AFFECT THE WORK BY ANY OF ITS OFFICERS OR AGENTS BEFORE THE EXECUTION OF THIS CONTRACT, UNLESS THAT UNDERSTANDING OR REPRESENTATION IS EXPRESSLY STATED IN THIS CONTRACT.

DIFFERING SITE CONDITIONS
(1) THE CONTRACTOR SHALL PROMPTLY, AND BEFORE THE CONDITIONS ARE DISTURBED, GIVE A WRITTEN NOTICE TO THE CONTRACTING OFFICER OF (1) SUBSURFACE OR INSPECIFICAL CONDITIONS AT THE SITE WHICH DIFFER MATERIALLY FROM THOSE INDICATED IN THIS CONTRACT, OR (2)UNKNOWN PHYSICAL CONDITIONS AT THE SITE OF AN UNUSUAL NATURE, WHICH DIFFER MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERING IN WORK OF THE CONTRACT OF A SIMILAR NATURE.
(B)THE CONTRACTING OFFICER SHALL INVESTIGATE THE SITE CONDITIONS PROMPTLY AFTER RECEIVING THE NOTICE. WORK SHALL NOT PROCEED AT THE AFFECTED SITE, EXCEPT AT THE CONTRACTOR'S RISK, UNTIL THE CONTRACTING OFFICER HAS PROVIDED WRITTEN INSTRUCTIONS TO THE CONTRACTOR. IF THE CONDITIONS DO MATERIALLY SO DIFFER AND CAUSE AN INCREASE OR DECREASE IN THE CONTRACTOR'S COST OF, OR THE TIME REQUIRED FOR, PERFORMING ANY PART OF THE WORK UNDER THIS CONTRACT, WHETHER OR NOT CHANGED AS A RESULT OF THE CONDITIONS, THE CONTRACTOR MUST FILE A CLAIM IN WRITING TO THE PHA WITHIN TEN DAYS AFTER RECEIPT OF SUCH INSTRUCTIONS AND, IN ANY EVENT, BEFORE PROCEEDING WITH THE WORK. (NEGOTIATE ADJUSTMENTS THE CONTRACT PRICE, THE DELIVERY SCHEDULE, OR BOTH SHALL BE MADE UNDER THIS CLAUSE AND THE CONTRACT MODIFIED IN WRITING ACCORDINGLY.)
(C)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED, UNLESS THE CONTRACTOR HAS GIVEN THE WRITTEN NOTICE REQUIRED; PROVIDED, THAT THE TIME PRESCRIBED IN (A) ABOVE FORGIVING WRITTEN NOTICE MAY BE EXTENDED AT THE DISCRETION OF THE PHA.
(D)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED IF MADE AFTER FINAL PAYMENT UNDER THIS CONTRACT.

SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION
(A) THE CONTRACTOR SHALL KEEP ON THE WORK SITE A COPY OF THE DRAWINGS AND SPECIFICATIONS AND SHALL AT ALL TIMES GIVE THE CONTRACTING OFFICER ACCESS THERETO. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH. IN CASE OF DIFFERENCE BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. IN CASE OF DISCREPANCY IN THE FIGURES, IN THE DRAWINGS OR SPECIFICATIONS, THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE CONTRACTING OFFICER, WHO SHALL PROMPTLY MAKE A DETERMINATION IN WRITING. ANY ADJUSTMENTBY THE CONTRACTOR WITHOUT SUCH A DETERMINATION SHALL BE ATITS OWN RISK AND EXPENSE. THE CONTRACTING OFFICER MAY THEREAFTER RESOLVE IT AT FIRST THE TERMS SUCH DRAWINGS AND OTHER INFORMATION AS CONSIDERED NECESSARY, UNLESS OTHERWISE PROVIDED.
(B)WHEREVER IN THE SPECIFICATIONS OR UPON THE DRAWINGS THE WORDS "DIRECTED", "REQUIRED", "ORDERED", "DESIGNATED", "PRESCRIBED", OR WORDS OF LIKE IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE"DIRECTION", "REQUIREMENT", "ORDER", "DESIGNATION", OR "PRESCRIPTION", OF THE CONTRACTING OFFICER IS INTENDED AND SIMILARLY THE WORDS "APPROVED", "ACCEPTABLE", "SATISFACTORY", OR WORDS OF LIKE IMPORT SHALL MEAN "APPROVED BY", OR "ACCEPTABLE TO", OR "SATISFACTORY TO" THE CONTRACTING OFFICER, UNLESS OTHERWISE EXPRESSLY STATED.
(OTHERE SHALL BE NO "ADDITIONAL", "AS DETAILED", OR WORDS OF SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE REFERENCE IS MADE TO THE DRAWINGS ACCOMPANYING THIS CONTRACT UNLESS STATED OTHERWISE. THE WORD "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE" THAT IS "PROVIDED AND INSTALLED"
(D)"SHOP DRAWINGS" MEANS DRAWINGS, SUBMITTED TO THE PHA BY THE CONTRACTOR, A SUBCONTRACTOR, OR ANY LOWER TIER SUBCONTRACTOR, SHOWING IN DETAIL (1) THE PROPOSED FABRICATION AND ASSEMBLY OF STRUCTURAL ELEMENTS AND (2) THE INSTALLATION(I.E., FORM, FIT, AND ATTACHMENT DETAILS) OF MATERIALS OF EQUIPMENT. IT INCLUDES DRAWINGS, DIAGRAMS, LAYOUTS, SCHEDULES, DESIGNS OF THE PHYSICAL PRODUCTS AND ORGANIZATIONS, SCHEDULES, PERFORMANCE AND TEST DATA, AND SIMILAR MATERIALS FURNISHED BY THE CONTRACTOR TO EXPLAIN THE DETAILED SPECIFIC PORTIONS OF THE WORK REQUIRED BY THE CONTRACT. THE PHA MAY REQUIRE A REPRODUCIBLE COPY OF A SHOP DRAWING FOR ANY PURPOSE SHOP DRAWINGS DELIVERED UNDER THIS CONTRACT.
(E)IF THIS CONTRACT REQUIRES SHOP DRAWINGS, THE CONTRACTOR SHALL COORDINATE ALL DRAWINGS, AND WORK WITH THE OTHER WORK IN ACCURACY, COMPLETENESS, AND COMPLIANCE WITH OTHER CONTRACT REQUIREMENTS, AND SUBMIT THE DRAWINGS PROMPTLY AND SUFFICIENTLY IN EVIDENCE OF SUCH COORDINATION AND REVIEW. SHOP DRAWINGS SUBMITTED TO THE CONTRACTING OFFICER WITHOUT EVIDENCE OF THE CONTRACTOR'S REVIEW AND APPROVAL MAY BE RESUBMISSION TO THE CONTRACTING OFFICER WILL INDICATE AN APPROVAL OR DISAPPROVAL OF THE SHOP DRAWINGS. IF THE CONTRACTOR BELIEVES THE DRAWINGS SHALL INDICATE THE PHA'S REASONS THEREFORE. ANY WORK DONE BEFORE SUCH APPROVAL SHALL BE AT THE CONTRACTOR'S RISK. APPROVAL BY THE CONTRACTING OFFICER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS IN SUCH DRAWINGS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM THE REQUIREMENTS OF THIS CONTRACT, EXCEPT WITH RESPECT TO VARIATIONS DESIGNED AND INDICATED ON SHOP DRAWINGS APPROVED IF BELOW.
(F) IF SHOP DRAWINGS SHOW VARIATIONS FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL DESCRIBE SUCH VARIATIONS IN WRITING, SEPARATE FROM THE DRAWINGS, AT THE TIME OF SUBMISSION. IF THE CONTRACTING OFFICER FINDS THAT THE PROPOSED AND THE CONTRACTING OFFICER CONCURS, THE CONTRACTING OFFICER SHALL INDICATE AN APPROVAL THEREOF IN WRITING. IF THE CONTRACTING OFFICER FINDS THAT,IF THE VARIATION IS MINOR OR DOES NOT INVOLVE A CHANGE IN PRICE OR IN TIME OF PERFORMANCE, A MODIFICATION NEED NOT BE ISSUED (QUIT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE TIMELY REQUESTS OF THE PHA FOR SUCH LARGE SCALE AND DETAILED DRAWINGS AND OTHER SCHEDULES NOT OTHER ADDITIONAL INFORMATION NOT ALREADY IN HIS POSSESSION, WHICH SHALL BE REASONABLY NECESSARY TO ENABLE HIM TO PROCEED. SUCH REQUESTS MAY BE SUBMITTED AS THE NEED ARISES, BUT EACH SUCH REQUEST SHALL BE FILED IN AMPLE TIME TO PERMIT APPROPRIATE ACTION TO BE TAKEN WITHOUT DELAY IN PROGRESS OF THE WORK OR DELAY.
(H)THE CONTRACTOR SHALL SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL FOLLOWING THE ESTABLISHED PROCEDURE OF ALL SHOP DRAWINGS AS CALLED FOR UNDER THE VARIOUS HEADINGS OF THESE SPECIFICATIONS. THREE SETS (UNLESS OTHERWISE INDICATED) OF ALL SHOP DRAWINGS WILL BE RETAINED BY THE PHA AND ONE SET WILL BE RETURNED TO THE CONTRACTOR. AS REQUIRED BY THE CONTRACTING OFFICER, FROM TIME TO TIME PRIOR TO COMPLETION OF THE WORK UNDER THIS CONTRACT, SHALL FURNISH A COMPLETE SET OF ALL SHOP DRAWINGS AS FINALLY APPROVED. THESE DRAWINGS SHALL SHOW ALL CHANGES AND REVISION SMADE UP TO THE TIME THE WORK IS COMPLETED AND ACCEPTED.
(I) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL SUBCONTRACTORS PROVIDE SHOP DRAWINGS BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

AS-BUILT DRAWINGS
(A)"AS-BUILT DRAWINGS," AS USED IN THIS CLAUSE, MEANS DRAWINGS SUBMITTED BY THE CONTRACTOR AND SUBCONTRACTORS AT ANY TIER TO SHOW THE CONSTRUCTION OF A PARTICULAR STRUCTURE OR WORK AS ACTUALLY COMPLETED, AND THE CONTRACT, "AS-BUILT DRAWINGS" SHALL BE SYNONYMOUS WITH "RECORD DRAWINGS."
(B)AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER ACCURATE INFORMATIONTO BE USED IN THE PREPARATION OF PERMANENT AS-BUILT DRAWINGS. AMONG OTHER THINGS, THE CONTRACTOR SHALL RECORD ON ONE SET OF CONTRACT DRAWINGS ALL CHANGES FROM THE INSTALLATIONS ORIGINALLY INDICATED AND RECORD FINAL LOCATIONSOF UNDERGROUND LINES BY DEPTH FROM FINISH GRADE AND BY ACCURATE HORIZONTAL OFFSET DISTANCES TO PERMANENT SURFACE IMPROVEMENTS SUCH AS BUILDINGS, CURBS, OR EDGES OF WALKS.
(C) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL AS-BUILT DRAWINGS PROVIDED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

MATERIAL AND WORKMANSHIP
(A)ALL EQUIPMENT, MATERIAL, AND ARTICLES FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED. UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT. REFERENCES IN THE CONTRACT TO EQUIPMENT, MATERIAL, ARTICLES, OR PATENTED PROCESSES BY TRADE NAME, MAKE, OR CATALOG NUMBER, SHALL BE REGARDED AS ESTABLISHING A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. THE CONTRACTOR MAY, AT ITS OPTION, USE ANY EQUIPMENT, MATERIAL, ARTICLE, OR PROCESS THAT, IN THE JUDGMENT OF, AND AS APPROVED BY THE CONTRACTING OFFICER, IS EQUAL TO THAT NAMED IN THE SPECIFICATIONS, UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT.
(B)APPROVAL OF EQUIPMENT AND MATERIALS.
(1) THE CONTRACTOR SHALL OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT TO BE INCORPORATED INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO THE CONTRACTING OFFICER THE NAME OF THE MANUFACTURER, THE MODEL NUMBER, AND OTHER INFORMATION CONCERNING THE PERFORMANCE, CAPACITY, NATURE, AND RATING OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT WHICH IS REQUIRED BY THIS CONTRACT OR IN THE CONTRAC TINGOFFICER. THE CONTRACTOR SHALL ALSO OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MATERIAL ORARTICLES WHICH THE CONTRACTOR PROPOSES TO INCORPORATE INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL PROVIDE FULL INFORMATION CONCERNING THE MATERIAL OR ARTICLES. MACHINERY,
EQUIPMENT, MATERIAL, AND ARTICLES THAT DO NOT HAVE THE REQUIRED APPROVAL SHALL BE INSTALLED OR USED AT THE RISK OF SUBSEQUENT REJECTION.
(2) WHEN REQUIRED BY THE SPECIFICATIONS OR THE CONTRACTING OFFICER, THE CONTRACTOR SHALL SUBMIT APPROPRIATELY MARKED SAMPLES (AND CERTIFICATES RELATED TO THEM) FOR APPROVAL AT THE CONTRACTOR'S
EXPENSE, WITH ALL SHIPPING CHARGES PREPAID. THE CONTRACTOR SHALL LABEL OR OTHERWISE IDENTIFY EACH SPECIMEN OR SAMPLE OF MATERIAL OR PRODUCT REPRESENTED, ITS PLACE OF ORIGIN, THE NAME OF THE PRODUCER, THE CONTRACTOR'S NAME AND THE LOCATION OF THE CONSTRUCTION PROJECT FOR WHICH THE MATERIAL OR PRODUCTIS INTENDED TO BE USED.
(3)CERTIFICATES SHALL BE SUBMITTED IN TRIPLICATE, DESCRIBING EACH SAMPLE SUBMITTED FOR APPROVAL, AND CERTIFYING THAT THE MATERIAL, EQUIPMENT, OR ARTICLE SHOWN SATISFIES THE CONTRACT REQUIREMENTS. THE CERTIFICATES SHALL INCLUDE THE NAME AND BRAND OF THE PRODUCT, NAME OF MANUFACTURER, AND THE LOCATION WHERE PRODUCED.
(4) APPROVAL OF A SAMPLE SHALL NOT CONSTITUTE A WAIVER OF THE PHA RIGHT TO DEMAND FULL COMPLIANCE WITH CONTRACT REQUIREMENTS. MATERIALS, EQUIPMENT AND ACCESSORIES MAY BE REJECTED FOR CAUSE EVEN THOUGH SAMPLES HAVE BEEN APPROVED.
(5) WHEREVER MATERIALS ARE REQUIRED TO COMPLY WITH RECOGNIZED STANDARDS OR SPECIFICATIONS, SUCH SPECIFICATIONS SHALL BE ACCEPTED AS ESTABLISHING THE TECHNICAL QUALITIES AND TESTING METHODS, BUT SHALL NOT GOVERN THE NUMBER OF TESTS REQUIRED TO PROVE COMPLIANCE WITH THE CONTRACT REQUIREMENTS. THE CONTRACTING OFFICER MAY REQUIRE LABORATORY TEST REPORTS ON ITEMS SUBMITTED FOR APPROVAL OR APPROVED PRIOR TO USE ON THE BASIS OF DATA SUBMITTED IN CERTIFICATES WITH SAMPLES. CHECK TESTS WILL BE MADE ON MATERIALS
DELIVERED TO THE WORK SITE IF REQUIRED AS THE CONTRACTING OFFICER DETERMINES NECESSARY TO INSURE COMPLIANCE OF MATERIALS WITH THE SPECIFICATIONS. THE CONTRACTOR WILL ASSUME ALL COSTS OF RETESTING MATERIALS WHICH FAIL TO MEET CONTRACT REQUIREMENTS AND RETESTING MATERIAL SOFFERED IN SUBSTITUTION FOR THOSE FOUND DEFICIENT.
(6) AFTER APPROVAL, SAMPLES WILL BE KEPT IN THE PROJECT OFFICE UNTIL COMPLETION OF WORK. THE CONTRACTOR MUST NOTIFY THE ARCHITECT A SUBSTANTIAL QUANTITY OF THE MATERIALSTHEY REPRESENT HAS BEEN BUILT IN AND ACCEPTED BY PHA.
(C) REQUIREMENTS CONCERNING LEAD-BASED PAINT. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE LEAD-BASED PAINT CONTAINED IN THE LEAD-BASED PAINT POISONING PREVENTION ACT (42 U.S.C. 4821-4846) AS IMPLEMENTED BY 24 CFR PART 35.

PERMITS AND CODES
(A)THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALLAPPLICABLE LAWS, ORDINANCES, CODES, RULES AND REGULATIONS. NOTWITHSTANDING THE REQUIREMENTS OF THE CONTRACTOR TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS IN THE CONTRACT, ALL WORK INSTALLED SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. BEFORE BEGINNING THE WORK, THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND THE SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS BEARING ON THE WORK AND SHALL IMMEDIATELY REPORT ANY DISCREPANCY IT MAY DISCOVER TO THE CONTRACTING OFFICER.
WHERE THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS FAIL TO COMPLY WITH THE APPLICABLE CODE OR REGULATION, THE CONTRACTING OFFICER SHALL MODIFY THE CONTRACT TO CHANGE ORDER PURSUANT TO THE CLAUSE ENTITLED CHANGES HEREIN TO CONFORM TO THE CODE OR REGULATION.
(B) THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES,AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK, WHERE THE PHA CAN ASSISTANCE IN THE ISSUANCE OF ALL OR PART OF THESE PERMITS, FEES AND LICENSES WITHOUT COST TO THE CONTRACTOR, THE CONTRACT AMOUNT SHALL BE REDUCED ACCORDINGLY.

HEALTH, SAFETY AND ACCIDENT PREVENTION
(A) IN PERFORMING THIS CONTRACT, THE CONTRACTOR SHALL:
(1)ENSURE THAT NO LABORER OR MECHANIC SHALL BE REQUIRED TO WORK IN SURROUNDINGS OR UNDER WORKING CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO HIS HEALTH AND AND/OR SAFETY AS DETERMINED UNDER CONSTRUCTION SAFETY AND HEALTHSTANDARDS PROMULGATED BY THE SECRETARY OF LABOR BY REGULATIONS (29PROTECT THE LIVES, HEALTH, AND SAFETY OF THEIR PERSONS; (3)PREVENT DAMAGE TO PROPERTY, MATERIALS, SUPPLIES, AND EQUIPMENT, AND, (4)AVOID INTERFERENCE WITH
(B) FOR THESE PURPOSES, THE CONTRACTOR SHALL: (1)COMPLY WITH REGULATIONS AND STANDARDS ISSUED BY THE SECRETARY OF LABOR AT 29 CFR PART 1926 FAILURE TO COMPLY MAY RESULT IN IMPOSITION OF SANCTIONS PURSUANT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. 327-330) PART 1926, 29 U.S.C. 3701 ETSEQ., AND (2)INCLUDE THE TERMS OF THIS CLAUSE IN EVERY SUBCONTRACT SO THAT SUCH TERMS WILL BE BINDING ON EACH SUBCONTRACTOR.
(C) THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF EXPOSURE DATA ON ALL ACCIDENTS INCIDENT TO WORK PERFORMED UNDER THIS CONTRACT AND RESULTING IN DEATH, TRAUMATIC INJURY,OCCUPATIONAL DISEASE, OR DAMAGE TO PROPERTY, MATERIALS,SUPPLIES, OR EQUIPMENT INCLUDING, BUT NOT LIMITED TO ASSEMBLIES) TO DETERMINE WHETHER IT CONFORMS TO CONTRACT REQUIREMENTS. (1) TEST AND MAINTAIN ALL EQUIPMENT AND MATERIALS THAT DETERMINES THE PROPERTIES OR ELEMENTS, INCLUDING FUNCTIONAL OPERATION OF MATERIALS, EQUIPMENT, OR THEIR COMPONENTS, TO BE APPROVED BY THE CONTRACTING OFFICER'S PRINCIPLES AND PROCEDURES.
(B) THE CONTRACTOR SHALL MAINTAIN AN ADEQUATE INSPECTION SYSTEM AND PERFORM SUCH INSPECTIONS AS WILL ENSURE THAT THE WORK PERFORMED UNDER THE CONTRACT CONFORMS TO CONTRACT REQUIREMENTS. ALL WORK IS SUBJECT TO PHA INSPECTION AND TESTAT ALL PLACES AND AT ALL REASONABLE TIMES BEFORE ACCEPTANCE TO ENSURE STRICT COMPLIANCE WITH THE TERMS OF THE CONTRACT.
(C) PHA INSPECTIONS AND TESTS ARE FOR THE SOLE BENEFIT OF THE PHA AND DO NOT: (1)RELIEVE THE CONTRACTOR OF AN OBLIGATION FOR PROVIDING ADEQUATE QUALITY CONTROL MEASURES, (2) RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR LOSS OR DAMAGE OF THE MATERIAL PRIOR TO THE ACCEPTANCE, (3) CONSTITUTE OR IMPLY ACCEPTANCE OR, (4) AFFECT THE CONTINUING RIGHTS OF THE PHA AFTER ACCEPTANCE OF THE WORK, OR (5)AFFECT THE RIGHTS OF THE PHA BELOW.
(D) THE PRESENCE OR ABSENCE OF THE PHA INSPECTOR DOES NOT RELIEVE THE CONTRACTOR FROM ANY CONTRACT REQUIREMENT, NOR IS THE INSPECTOR AUTHORIZED TO CHANGE ANY TERM OR CONDITION OF THE SPECIFICATION WITHOUT THE WRITTEN CONSENT OR WRITTEN AUTHORIZATION. ALL INSTRUCTIONS AND APPROVALS WITH RESPECT TO THE WORK SHALL BE GIVEN TO THE CONTRACTOR BY THE CONTRACTING OFFICER.
(E) THE CONTRACTOR SHAL

PERFORMED OR COMPLETED SHALL BE SUBMITTED BY EACH PRIME CONTRACTOR. ALL WORK OUTLINED ON THE INITIAL PUNCH LIST SHALL BE COMPLETED BY THE CONTRACTOR PRIOR TO THE FINAL INSPECTION AND BEFORE THE PROJECT WILL BE ACCEPTED FOR FINAL COMPLETION. AFTER ALL REQUIREMENTS PREPARATORY TO THE FINAL INSPECTION HAVE BEEN COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER TO PERFORM A FINAL INSPECTION. IF ALL THE WORK HAS BEEN COMPLETED, INCLUDING PUNCH LIST ITEMS FROM EARLIER INSPECTIONS, AND NO FURTHER CORRECTIONS ARE REQUIRED, THE ARCHITECT SHALL RECOMMEND FINAL ACCEPTANCE OF THE PROJECT WHEN ALL THE CLOSEOUT DOCUMENTS ARE RECEIVED, INCLUDING BUT NOT LIMITED TO WARRANTIES, O&M MANUALS, FINAL TESTING, CERTIFICATES, PERMITS, PUNCH LIST, SUBMITTALS, RFIS, AS BUILD DRAWINGS AND ANY ADDITIONAL DOCUMENTATION REQUIRED BY HACP FOR CLOSEOUT.

ALL PUNCH LIST ITEMS TO BE COMPLETED WITHIN THIRTY (30) WORKING DAYS OF RECEIPT, OR FINAL 10% DRAW WILL BE FORFEITED. ALL WORK NOT COMPLETED WITHIN THE ALLOTTED TIME WILL BE COMPLETED BY HACP AT PRIME CONTRACTOR'S EXPENSE. FINAL COMPLETION OCCURS WHEN ALL PUNCH LIST ITEMS HAVE BEEN COMPLETED AND OCCUPANCY PERMIT HAS BEEN ISSUED.

PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL EQUIPMENT FURNISHED, INSTALLED OR SERVICED UNDER THIS AND THEIR CONTRACTS. EACH PRIME CONTRACTOR SHALL VERIFY THAT ITS EQUIPMENT, ELECTRICAL SYSTEMS AND APPLIANCES ARE FULLY OPERATIONAL AND THAT ALL PLUMBING AND MECHANICAL EQUIPMENT IS OPERATING QUIETLY AND FREE FROM VIBRATION. CONTRACTOR SHALL PROVIDE A BINDER FOR HACP AND TENANT CONTAINING MAINTENANCE MANUALS, INCLUDING OPERATION INSTRUCTIONS, SPARE PARTS, WARRANTIES, INSPECTION PROCEDURES, AND DATA FOR EACH SYSTEM OR EQUIPMENT ITEM.

ALL ELECTRICAL PANELS AND BREAKERS TO BE PROPERLY MARKED AND A TYPED SCHEDULE TO BE FURNISHED.

FINAL CLEANING: AT THE TIME OF THE PROJECT CLOSE OUT, THE GENERAL CONTRACTOR SHALL PROVIDE AND THOROUGHLY CLEAN AND READY THE SPACE FOR OCCUPANCY. THIS SHALL, AT MINIMUM, INCLUDE HARDWARE, SECURITY EQUIPMENT, LIGHT FIXTURES, REPLACEMENT OF BURNED OUT LAMPS, REMOVAL OF NON PERMANENT PROTECTION AND LABELS, TOUCH UP OF ANY MINOR FINISH DAMAGE, AND CLEANING OR REPLACEMENT OF MECHANICAL SYSTEM FILTERS. DAMAGE TO ANY FINISH, SURFACE, EQUIPMENT OR OBJECT CAUSED DURING CLEANING SHALL BE REPAIRED OR REPLACED BY THE GENERAL CONTRACTOR AT HIS/HER OWN COST.

UPON COMPLETION OF THE PROJECT, GENERAL CONTRACTOR SHALL OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT AND PROVIDE A COPY OF THE ORIGINAL TO HACP AND ARCHITECT IF REQUIRED.

AT EACH PAYMENT REQUEST AND BEFORE PAYMENT IS MADE, EACH CONTRACTOR SHALL DELIVER TO THE HACP A COMPLETE RELEASE OF ALL SUB CONTRACTOR'S AND SUPPLIER'S LIENS AND RIGHTS OUT OF THIS CONTRACT, OR RECEIPTS IN FULL COVERING ALL LABOR AND MATERIALS FOR WHICH A LIEN COULD BE FILED OR A BOND SATISFACTORY TO THE HACP INDEMNIFYING HACP AGAINST ANY LIENS.

DIVISION 2 – SITE WORK – NOT APPLICABLE

DIVISION 3 – CONCRETE

PLAN AND REINFORCE CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 19 OF THE IBC 2018 AND ACI 318 AS AMMENDED IN SECTION 1905 OF THE IBC 2018.

CONCRETE TO BE INSTALLED AND CURED PER ACI 318 AND BE NORMAL WEIGHT (144PCF) WITH COMPRESSIVE STRENGTH IN 28 DAYS OF 4000 PSI, AIR ENTRAINED. CEMENT SHALL BE PORTLAND, TYPE I(PLY ASH & GROUND GRANULATED BLAST FURNACE SLAG NOT PERMITTED). COARSE AGGREGATE SHALL BE ¾" MAXIMUM. AIR ENTRAINED SHALL BE 7 PERCENT. SLUMP SHALL BE 4" MAXIMUM.

REINFORCING BARS SHALL COMPLY WITH A.S.T.M. A615–GRADE 60. WELDED WIRE FABRIC SHALL COMPLY WITH A.S.T.M. A185.

4" MINIMUM COMPACTED GRAVEL BED TO PLACE CONCRETE TO BE #57 HAND OR MACHINE COMPACTED BEFORE CONCRETE PLACEMENT.

PROVIDE COLD-APPLIED JOINT SEALANTS, SINGLE COMPONENT, SILICONE, SELF LEVELING TYPE, BY SIKA OR EQUAL.

ROUND BACKER RODS FOR COLD-APPLIED JOINT SEALANTS: ASTM D5249, TYPE 3, OF DIAMETER AND DENSITY REQUIRED TO CONTROL JOINT-SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT. BY SIKA OR EQUAL.

DIVISION 4 – MASONRY

BRICK MASONRY REPOINTING

BRICK MASONRY REPOINTING SPECIALIST QUALIFICATIONS: ENGAGE AN EXPERIENCED BRICK MASONRY REPOINTING FIRM TO PERFORM WORK OF THIS SECTION. FIRM SHALL HAVE COMPLETED WORK SIMILAR IN MATERIAL DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. EXPERIENCE IN ONLY INSTALLING MASONRY IS INSUFFICIENT EXPERIENCE FOR MASONRY REPOINTING WORK.

REPOINTING OF AREAS INDICATED IN THE DRAWINGS AND LOCATIONS WITH THE FOLLOWING DEFECTS:
A. HOLES AND MISSING MORTAR.
B. CRACKS THAT CAN BE PENETRATED 1/4 INCH OR MORE BY A KNIFE BLADE 0.027 INCH THICK.
C.CRACKS 18 INCH OR MORE IN WIDTH AND OF ANY DEPTH.
D.HOLLOW SOUNDING JOINTS WHEN TAPPED BY METAL OBJECT.
E. ERODED SURFACES 1/4 INCH OR MORE DEEP.
F. DETERIORATION TO POINT THAT MORTAR CAN BE EASILY REMOVED BY HAND, WITHOUT TOOLS.
G. JOINTS FILLED WITH SUBSTANCES OTHER THAN MORTAR.

MATERIALS
PORTLAND CEMENT: ASTM C 150/C 150M, TYPE I OR TYPE II, EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION; GRAY, WHERE REQUIRED FOR COLOR MATCHING OF MORTAR.

MASONRY CEMENT: ASTM C 91/C 91M. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- CEMEX S.A.B. DE C.V.
- HOLCIM (US) INC.
- QUIKRETE; THE QUIKRETE COMPANIES, LLC.

REMOVE GUTTERS, DOWNSPOUTS AND ASSOCIATED HARDWARE ADJACENT TO MASONRY REPOINTING. REINSTALL WHEN REPOINTING IS COMPLETED.PROVIDE TEMPORARY RAIN DRAINAGE DURING WORK TO DIRECT WATER AWAY FROM THE BUILDING.

SEE LINTEL REPLACEMENT BELOW AND COORDINATE MASONRY REPOINTING AND REPLACEMENT WITH REMEDIAL LINTEL REPAIR OR REPLACEMENT.

RETAINING WALL
WHERE NOTED ON THE DRAWINGS, NEW DRYSTACK RETAINING WALL, BELGARD OR EQUAL, TO MATCH EXISTING COLOR AND TYPE OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. REMOVE SUFFICIENT SOIL TO ALLOW ACCESS TO INSTALL A NEW WALL. SET NEW WALL IN COMPACTED GRAVEL BED STRICTLY ACCORDING TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS. INSTALL NEW WALL WITH ALL NECESSARY PINS, GEOGRID AND CAP PIECES ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL ACCESSORIES
WALL CAPS, PINS AND GEOGRID FABRIC.
REPLACEMENT WALL CAPS TO MATCH EXISTING, MATERIAL CONCRETE BY BELGARD OR EQUAL. COLOR AND TYPE TO MATCH EXISTING OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

GLASS BLOCK
SOLID GLASS BLOCK COLORLESS, TRANSPARENT, SMOOTH FACES AND MANUFACTURER'S STANDARD EDGE COATING WHITE, BY SEVES, OWINGS CORNING GLASS BLOCK OR EQUAL. SILICONE SEALANT BY SIKA OR EQUAL. PRODUCT INFORMATION AND SAMPLE TO BE PROVIDED TO ARCHITECT AND HACP FOR APPROVAL. SIZE OF GLASS BLOCK TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD SIZES. GLASS BLOCK SHALL BE INSTALLED PER IBC AND IRC BUILDING CODE AND TMS 402/ACI 530/ASCE 5 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES"

DIVISION 5 – METALS

STEEL BEAMS, ANGLES AND PLATES
SHOP PRIMED WITH RUST PREVENTATIVE PAINT. DIMENSIONS AND GRADE TO MATCH EXISTING. SHOP DRAWINGS TO BE PROVIDED BY GC.

ALL EXTERIOR LINTELS MUST BE HOT-DIP GALVANIZED PER ASTM A123.

LINTEL REPLACEMENT/ INSTALLATION ON BRICK VENEER EXTERIOR WALLS
PROTECT EXISTING OPENING WITH PLYWOOD.TEMPORARILY SHORE AND REMOVE EXISTING BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL LINTEL. REPLACE WITH NEW LINTEL WHERE NOTED. PROVIDE STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

FOR LINTEL CLEANING USE METAL CLEANING ON NEXT SECTION.

METAL CLEANING
EXECUTION OF THE WORK: IN CLEANING ITEMS, DISTURB THEM AS MINIMALLY AS POSSIBLE AND AS FOLLOWS:
A. REMOVE DETERIORATED COATINGS AND CORROSION.
B. SEQUENCE WORK TO MINIMIZE TIME BEFORE PROTECTIVE COATINGS ARE REAPPLIED.
C. CLEAN ITEMS IN PLACE UNLESS OTHERWISE INDICATED.

MECHANICAL COATING REMOVAL: USE GENTLE METHODS, SUCH AS SCRAPING AND WIRE BRUSHING, THAT WILL NOT ABRADE METAL SUBSTRATE.

REPAINT: WHERE INDICATED, PREPARE PAINTED DECORATIVE METAL BY CLEANING SURFACE, BLOCKING ABOVE THE OPENING AT LEAST 6 INCHES PAINT, SANDING EDGES SMOOTH, REMOVING EXISTING PAINT AND PRIMING FOR PAINTING AS SPECIFIED.

METAL AWNINGS
BASIS OF DESIGN, MATCH EXISTING AWNINGS DIMENSIONS, PERIMETER FASCIA, BRACING AND SUPPORTS TO BE EXTRUDED ALUMINUM, DECKING ALUMINUM INTERLOCKING PANELS, PROFILE AND THICKNESS AS DETERMINED BY MANUFACTURER. FACTORY APPLIED BACKED ENAMEL OR KYNAR PAINT FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER STANDARD COLOR CHART. INSTALLATION OF AWNINGS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. ALL FASTENERS FOR AWNINGS SHALL BE TYPE 316 SS. FOR LOCATIONS WHERE AWNINGS ARE ATTACHED TO SIDEWALL AWNING FASTENERS SHALL FASTEN INTO STUDS WITH COMPRESSION STAND-OFF IF THROUGH VENEER BRICK. INSTALLATION SHALL INCLUDE PREFINISHED ALUMINUM REGLETED WALL FLASHING AT HEAD, PROPERLY INSTALLED AND CAULKED. SEE ALSO DIVISION 10.

ALUMINUM METAL RAILINGS
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS, INCORPORATED, OR COMPARABLE PRODUCT, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
PROVIDE ALLOY AND TEMPER RECOMMENDED BY ALUMINUM PRODUCER AND FINISHER FOR TYPE OF USE AND FINISH INDICATED, AND WITH STRENGTH AND DURABILITY PROPERTIES FOR EACH ALUMINUM FORM REQUIRED NOT LESS THAN THAT OF ALLOY AND TEMPER DESIGNATED BELOW.
GC TO PROVIDE PRODUCT INFORMATION AND SHOP DRAWINGS OF NEW RAILINGS TO MATCH EXISTING DIMENSIONS. PROVIDE ACCESSORIES AS REQUIRED FOR INSTALLATION ON CONCRETE, BY VINETI CODECKING, WALLS AND CHANGE IN DIRECTION FITTINGS AS REQUIRED.

DIVISION 6 – WOOD AND PLASTICS

WOOD FRAMING AND BLOCKING
SELECT STRUCTURAL GRADE DOUGLAS FIR SOUTH, SIZES AS INDICATED ON DRAWINGS. COMPLY WITH THE "RECOMMENDED NAILING SCHEDULE" OF THE "MANUAL FOR HOUSING FRAMING."

FLOOR SHEATHING (IF REQUIRED) - PROVIDE 3/4" T&G PLYWOOD FLOOR SHEATHING OR OSB STRUCTURAL FIBERBOARD. ALIGN PANELS ACROSS A MINIMUM OF TWO SUPPORTS WITH THICKNESS IN A 3/8 PERPENDICULAR TO AXIS OF JOISTS, STAGGER JOINTS. GLUE TO JOISTS AND EDGES WITH ELASTOMERIC SOLVENT-BASED GLUE CONFORMING TO APA SPECIFICATION AFG-101. FASTEN WITH 8D COMMON OR 6D ANNULAR OR SPIRAL NAILS AT 6" O.C. ALONG EDGES AND 10" ALONG INTERMEDIATE SUPPORTS. FOLLOW PANEL MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR SUB-FLOOR PREP, PRIOR TO INSTALLATION OF FINISH FLOORING.

EXTERIOR WOOD FRAMING EXPOSED TO WEATHERING AND INSECTS SHALL BE MINIMUM 2" X PRESSURE TREATED LUMBER. KILN DRIED TO 19% MOISTURE CONTENT BEFORE INSTALLATION.

WOOD TRIM AND MOLDINGS
PROVIDE FURNITURE GRADE SOLID HARDWOOD TRIM AND MOLDINGS. STAIN ALL SIDES AND ENDS. WOOD TRIM AND MOLDINGS TO MATCH EXISTING UNLESS OTHERWISE NOTED ON DRAWINGS.

INSTALL WOOD TRIM AND MOLDINGS WITH MITER AT CORNERS, MITERED LAP SPLICES, AND SET WITH COUNTER SUNK GALVANIZED FINISH NAILS CAPPED WITH WOOD PUTTY SANDED SMOOTH. COMPLY WITH AWI 300 FOR ALL STANDARD WOOD RUNNING TRIM.

FABRICATOR QUALIFICATIONS
FIRM EXPERIENCED IN PRODUCING ARCHITECTURAL WOODWORK SIMILAR TO THAT INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE, AS WELL AS SUFFICIENT PRODUCTION CAPACITY TO PRODUCE REQUIRED UNITS WITHOUT DELAYING THE WORK.

INTERIOR ARCHITECTURAL WOODWORK

INSTALLER QUALIFICATIONS.
ARRANGE FOR INSTALLING ARCHITECTURAL WOODWORK INSTALLATION BY A FIRM THAT CAN DEMONSTRATE SUCCESSFUL EXPERIENCE IN INSTALLING ARCHITECTURAL WOODWORK ITEMS SIMILAR IN TYPE AND QUALITY TO THOSE REQUIRED FOR THIS PROJECT.

QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH AWI'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS."

ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETE, AND MECHANICAL SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD. REFER TO AWI'S OR WIS MEMBER LIST FOR NAMES OF WOODWORKING FIRMS THAT COULD POTENTIALLY BE INCLUDED.

MATERIALS

WOOD SPECIES AND CUT FOR TRANSPARENT FINISH: AS INDICATED ON DRAWINGS.

WOOD SPECIES FOR OPAQUE FINISH: ANY CLOSED-GRAIN HARDWOOD.

GENERAL: COMPLETE FABRICATION TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE. WHERE NECESSARY FOR FITTING AT THE SITE, PROVIDE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.
- INTERIOR WOODWORK GRADE: AWI CUSTOM.
- SHOP CUT OPENINGS TO MAXIMUM EXTENT POSSIBLE. SAND EDGES OF CUTOUTS TO REMOVE SPLINTERS AND BURRS. SEAL EDGES OF OPENINGS IN COUNTERTOPS WITH A COATING OF VARNISH.
- FOR TRANSPARENT-FINISHED TRIM ITEMS WIDER THAN AVAILABLE LUMBER, USE VENEERED CONSTRUCTION. DO NOT GLUE FOR WIDTH.
- BACK OUT OF FLAT TRIM WITH VERTICAL GRAIN AND KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT FOR MEMBERS WITH ENDS EXPOSED IN FINISHED WORK.
- ASSEMBLE CASINGS IN PLANT EXCEPT WHERE LIMITATIONS OF ACCESS TO PLACE OF INSTALLATION.

PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH THE ARCHITECTURAL WOODWORK STANDARDS FOR GRADES OF CABINETS INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS.

ARCHITECTURAL WOOD WORK STAND ARDS GRADE: AWI PREMIUM.

TYPE OF CONSTRUCTION: FRAMELESS.

DOOR AND DRAWER-FRONT STYLE: FLUSH OVERLAY.

HIGH-PRESSURE DECORATIVE LAMINATE: ISO 4586-3, GRADES AS INDICATED OR IF NOT INDICATED, AS REQUIRED BY QUALITY STANDARD.

EXPOSED SURFACES:
1. PLASTIC-LAMINATE GRADE: AWI PREMIUM.
2. EDGES: GRADE AWI PREMIUM.
3. PATTERN DIRECTION: AS INDICATED.

CONCEALED BACKS OF PANELS WITH EXPOSED PLASTIC-LAMINATE SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE, ISO 4586-3, GRADE TO MATCH EXPOSED SURFACE.

DRAWER CONSTRUCTION: FABRICATE WITH EXPOSED FRONTS FASTENED TO SUBFRONT WITH MOUNTING SCREWS FROM INTERIOR OF BODY.
1. JOIN SUBFRONTS, BACKS, AND SIDES WITH GLUED RABBETED JOINTS AND REINFORCED BY MECHANICAL FASTENERS OR GLUED DOVETAIL JOINTS.

COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURERS' FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS, MATTE FINISH.
B. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
C. WOOD GRAIN, MATTE FINISH.
D. PATTERNS, MATTE FINISH.

SYNTHETIC DECKING
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS; TIMBERTECH, AZEK OR COMPARABLE PRODUCT.
DECKING SIZE AND WIDTH TO MATCH EXISTING INSTALLATION. FINISH TEXTURE BRUSHED; COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. FASCIA BOARDS TO MATCH DECKING COLOR.
DECKING FASTENING SYSTEM AS RECOMMENDED BY MANUFACTURER'S INSTALLATION MANUAL. FOLLOW MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR CUTTING, TRIMMING AND INSTALLING DECKING.

RUBBER STAIR TREADS COVERS
BASIS OF DESIGN, BY ROPPE OR EQUAL, RIBBED PATTERN, BLACK FINISH. FOLLOW THE MANUFACTURER'S INSTRUCTION FOR INSTALLATION.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

ROOFING SHEET METAL FLASHING AND TRIM
GENERAL: CONTRACTOR TO EVALUATE STATUS OF ROOFING MATERIAL, COMMUNICATE THE HACP AND ARCHITECT OF FINDINGS AND IF PATCHING OR REPLACEMENT IS NEEDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INSTALL ASPHALT SHINGLES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN ARMA'S "ASPHALT ROOFING RESIDENTIAL MANUAL - DESIGN AND APPLICATION METHODS" AND NRCA'S "NRCA GUIDELINES FOR ASPHALT SHINGLE ROOFING SYSTEMS".

ASPHALT SHINGLES: ASTM D3462/D3462M, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION; GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF-SEALING, BY GAF OR EQUAL, STRAIGHT CUT. FINISH COLOR TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

GC TO INSPECT FLASHING OF ROOF PENETRATIONS, PATCH AND REPLACE IF NEEDED TO COMPLY WITH CODE AND REGULATIONS.

SHEET METAL STANDARD FOR FLASHING AND TRIM: COMPLY WITH NRCA'S "THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION AND AIR LEAKAGE CONTROL, AND REROOFING" AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL". REQUIREMENTS FOR DIMENSIONS AND PROFILES SHOWN UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.

INSTALL SHEET METAL FLASHING AND TRIM TO COMPLY WITH DETAILS INDICATED AND RECOMMENDATIONS OF CITED SHEET METAL STANDARDS THAT APPLY TO INSTALLATION CHARACTERISTICS REQUIRED UNLESS OTHERWISE INDICATED ON DRAWINGS

THERMAL INSULATION
GC TO PROVIDE THERMAL INSULATION ON WALLS, CEILINGS AND FLOORS AS NOTED ON THE DRAWINGS.

INSULATION TO COMPLY WITH THE ENERGY CODE IN MINIMUM R VALUES OR AS SPECIFIED ON DRAWINGS.

GC TO BE RESPONSIBLE TO INSPECTING, ADJUSTING AND ADDING INSULATION TO THE ENTIRE ATTIC SPACE TO ACHIEVE MINIMUM INSULATION COVERAGE WITHIN NO GAPS. GC TO INFORM HACP AND ARCHITECT PRIOR TO ADD ADDITIONAL INSULATION.

ATTIC DOORS TO RECEIVED RIGID FOAM INSULATION GLUED TO BACK OF THE DOOR AND SEALED WITH RUBBER JOINTS. INSULATION TO MATCH R VALUE OF CEILING ASSEMBLY.

ASSEMBLIES, SEPARATIONS & FIRESTOPPING:

ANY NEW DEMISING OR INTERIOR PARTITIONS SHALL BE RATED AS REQUIRED BY CODE. ANY PENETRATION THROUGH AN EXISTING DIMENSIONAL FIRE RESISTANT RATED ASSEMBLY WALL MUST RETAIN THE UL ASSEMBLY FIRE-RATING.

ALL NEW WORK SHALL MATCH OR EQUAL THE UL FIRE RATINGS, IF ANY, OF THE SURROUNDING WORK. AS APPROPRIATE, THE CONTRACTOR SHALL CONTACT HACP AND ARCHITECT IF ANY AREAS ARE UNCOVERED OR DISCOVERED THAT MAY REQUIRE ADDITIONAL ANALYSIS OR CLARIFICATION.

THROUGH PENETRATIONS OF FIRE RESISTANCE WALLS SHALL BE INSTALLED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY SUCH AS UNDERWRITERS LABORATORIES. IF THE PENETRATING ITEMS ARE STEEL, FERROUS OR COPPER PIPES OR STEEL CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE FIRE-RESISTANCE-WALL SHALL BE PERMITTED TO BE PROTECTED AS FOLLOWS:

IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A MAXIMUM 6-INCH NOMINAL DIAMETER AND THE OPENING IS A MAXIMUM 144 SQUARE INCHES. CONCRETE, GROUT, OR MORTAR SHALL BE PERMITTED WHERE INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING.

THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHERE SUBJECTED TO ASTME 119 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE WALL ASSEMBLY.

MEMBRANE PENETRATIONS, WHERE WALLS AND PARTITIONS ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:
FOR STEEL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. A HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY WHERE THE WALL CAVITY IS FILL WITH CELLULOSE LOOSE FILL, ROCKWOOL OR SLAG WOOL INSULATION OR BLOWN IN FIBER INSULATION (CONSISTING OF 2-INCH NOMINAL LUMBER OR TWO THICKNESSES OF 1-INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS OR ONE THICKNESS OF 0.719-INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANEL OR ONE THICKNESS OF 0.75-INCH PARTICLEBOARD WITH JOINTS BACKED BY 0.75-INCH PARTICLEBOARD. GYPSUM BOARD, CEMENT FIBER BOARD, BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED AS AN ACCEPTABLE FIREBLOCK. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NONRIGID MATERIALS SHALL BE PERMITTED FOR COMPLIANCE WITH THE 10-FOOT HORIZONTAL FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROW OF STUDS OR STAGGERED STUDS. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES. THE INTEGRITY OF FIREBLOCKS SHALL BE MAINTAINED; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

MEMBRANE PENETRATIONS FOR LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL ARE PERMITTED PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE OR TO PREVENT THE FIRE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. SUCH PENETRATIONS SHALL NOT EXCEED ANY AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.

MEMBRANE PENETRATIONS BY LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL THAT HAS BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED PER INSTRUCTIONS INCLUDED IN LISTING.

JOINT SEALERS
INTERIOR JOINT SEALER IS TO BE MILDEW-RESISTANT SILICONE SEALANT. APPLY SEALANT AT ALL MATERIAL JOINTS SUBJECT TO WATER PENETRATION. COLOR TO BE SELECTED BY THE ARCHITECT FROM MFR'S STANDARD LINE.

VINYL SIDING
VINYL SIDING. INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D3679.
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALSIDE, EXTERIOR BUILDING PRODUCTS, KAYCAN LTD., ROYAL BUILDING PRODUCTS, A WESTLAKE COMPANY. OR EQUAL.

HORIZONTAL PATTERN: 6-1/2- OR 7-INCH EXPOSURE IN BEADED-EDGE, SINGLE-BEADED STYLE. SMOOTH TEXTURE. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OR TO MATCH EXISTING WHERE REQUIRED.

WATER PROOFING MEMBRANE
BASIS OF DESIGN, BY SIKA OR EQUAL, 60 MIL. REFER TO MANUFACTURERS INSTRUCTION FOR PREPARATION OF SUBSTRATES AND INSTALLATION OF MEMBRANE.

DIVISION 8 - DOORS, WINDOWS AND HARDWARE

ALL DOORS AND WINDOWS SHALL BE INSTALLED PLUMB, LEVEL, SQUARE, AND PER ALL MANUFACTURERS RECOMMENDATION.

EXTERIOR DOORS TO BE 1 3/4"-THICK, FIBERGLASS INSULATED WITH 3 SETS OF STEEL HINGES, RUBBER WEATHER STRIPPING, LOCKING AS SPECIFIED ON HARDWARE. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING. VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS: 1) IN DOORS, 2) WITHIN 24" OF A DOOR AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE, 3) IN FIXED PANELS WITH THE LOWEST EDGE LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36" OF SUCH GLAZING.

DOOR HARDWARE
INTERIOR DOOR HARDWARE

ALL DOOR HARDWARE TO BE APPROVED BY HACP FACILITY REPRESENTATIVE.

BASIS OF DESIGN NON- ACCESIBLE UNITS
MANUFACTURER BALDWIN OR EQUAL, ROUND KNOB TRADITIONAL ROUND, MODEL PS ROU TRR.150. FINISH TO MATCH EXISTING OR SATIN NICKEL IF ALL INTERIOR DOOR HARDWARE IS REPLACED. OPERATION TYPE: DUMMY, PRIVACY AND PASSAGE.

BASIS OF DESIGN ACCESIBLE UNITS
MANUFACTURER BALDWIN OR EQUAL, TOWN LEVER WITH ROUND ROSE, MODEL 3527BL.RDB-15. FINISH TO MATCH EXISTING OR SATIN NICKEL IF ALL INTERIOR DOOR HARDWARE IS REPLACED. OPERATION TYPE: DUMMY, PRIVACY AND PASSAGE.

OPERATION LOCATION:
PRIVACY

POLISH CHROME PLATE FINISH, 2.2 GPM FLOW RATE, LEVER HANDLE, RIGID SPOUT, DRAIN POP UP.

KITCHEN SINKS – WATER SENSE CERTIFIED
STAINLESS STEEL, COUNTER MOUNTED, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- AFINITY SURFACES

0.038 INCH THICKNESS, 3 1/2" DRAIN GRID CENTERED IN BOWL.

SINKS FAUCETS – WATER SENSE CERTIFIED
GENERAL DUTY, SOLID BRASS, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- HANSGROHE

POLISHED CHROME PLATE FINISH. SINGLE HANDLE ON KITCHEN TWO HANDLE ON UTILITY SINKS.

WATER CLOSET – WATER SENSE CERTIFIED
FLOOR MOUNTED, FLOOR OUTLET, CLOSE COUPLED (GRAVITY TANK), VITREOUS CHINE, 1.6 GAL/FLUSH, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- KOHLER
- TOTO USA

STANDARD HEIGHT, ELONGATED RIM, WATER SAVING, COLOR WHITE.
TOILET SEAT PLASTIC FOR RESIDENTIAL USE, ELONGATED RIM, SEAT COVER, SELF SUSTAINING HINGE, COLOR WHITE.

UTILITY SINK
FRESTANDING UTILITY SINK, MANUFACTURERS: PROFLO OR EQUAL
STANDARD HEIGHT, COLOR WHITE. 20 INCH BY 20 INCH SIZE.

EXTERIOR HOSE BIBB
FREEZELESS WALL FAUCET, WOODFORD OR EQUAL, MODEL 30,3/4 INCH CONNECTION, BRASS FINISH, ASSE 1053 APPROVED, MAX PRESSURE 125 PSI.

SLEEVES
SLEEVES SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH WALLS, CEILINGS, OR FLOORS. SLEEVES SHALL BE CUT FROM SCHEDULE 40 BLACK IRON PIPE. THE INTERNAL DIAMETER OF THE SLEEVE SHALL EXCEED THE EXTERNAL DIAMETER OF THE PIPE (INCLUDING INSULATION) BY NOT LESS THAN ONE INCH. SLEEVES SHALL BE CUT FLUSH WITH WALLS AND UNDERSIDES OF FLOORS AND SHALL EXTEND ONE INCH ABOVE FLOORS ABOVE GRADE.

PIPE PORTALS
PIPING THROUGH THE ROOF SHALL BE INSTALLED THROUGH A PREFABRICATED PIPING PORTAL. PORTALS SHALL HAVE GALVANIZED STEEL INSULATED CURBS, ABS PLASTIC CURB CAP, NEOPRENE RUBBER NIPPLES, AND STAINLESS-STEEL CLAMPS. CURB HEIGHT AS INDICATED ON DRAWINGS. PORTALS SHALL BE MODEL RC AND NJB AS MADE BY ROOF PRODUCTS AND SYSTEMS CORP. PORTALS SHALL HAVE EXTRA HOLES FOR POWER AND CONTROL CONDUITS.

FIRESTOPS
ALL OPENINGS THROUGH FLOORS AND FIRE-RATED PARTITIONS SHALL BE SEALED. VOID SPACES AROUND DUCTS OR PIPES SHALL BE PACKED WITH A FIREPROOF CERAMIC FIBER AND SEALED WITH FIRE RETARDANT CAULKING. FIBER SHALL BE KAOWOOL BY BABCOCK AND WILCOX, FIBERFRAX BY CARBORUNDUM, OR CERAFIBER BY MANVILLE CO. CAULKING SHALL BE SE4111 F BY UNISEAL STANDARD DUXSEAL BY MANVILLE, OR MOLDABLE PUTTY BY 3M.

ESCUTCHEONS
ESCUTCHEONS SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH FLOORS, CEILINGS, OR WALLS OF FINISHED SPACES. ESCUTCHEONS SHALL BE CHROMIUM PLATED STEEL, SNAP ON TYPE WITH SPRING RETAINERS. ESCUTCHEONS SHALL BE THE NO. 40 MADE BY BEATON/CORBIN COMPANY OR APPROVED EQUAL, SIZED TO FIT PIPE PLUS INSULATION. WHERE RISER CLAMPS ARE IN FINISHED SPACES, PROVIDE HIGH-SHIRT ESCUTCHEONS TO COVER CLAMP.

UNIONS
UNIONS SHALL BE INSTALLED AT ALL POINTS INDICATED ON THE DRAWINGS AND AT ALL OTHER POINTS NECESSARY FOR THE INSTALLATION AND REMOVAL OF EQUIPMENT, CONTROL DEVICES, ETC. UNIONS IN GAS LINES WILL BE PERMITTED ONLY AT THE FINAL CONNECTIONS TO EQUIPMENT.

HANGERS
ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH PIPEHANGERS TO PREVENT SAGGING AND AVOID CONCENTRATION OF HANGING LOAD. HANGER SPACING SHALL NOT EXCEED 10 FT. FOR STEEL PIPE OR 8 FT. FOR COPPER TUBING. COPPER TUBING 1-1/4" AND SMALLER SHALL BE SUPPORTED AT NO GREATER THAN 6 FT. SPACING.

REPAIR ALL FIREPROOFING WHICH IS DAMAGED BY HANGER INSTALLATION.

SOIL WASTE AND VENT PIPING
SOIL, WASTE AND VENT STACKS AND BRANCHES, AND ROOF CONDUCTORS SHALL BE ABS OR PVC PIPING AND FITTINGS SCHEDULE 40. WASTE LINES SHALL BE MINIMUM 2 INCH.

HOT AND COLD-WATER PIPING
POTABLE-WATER PIPING AND COMPONENTS ARE TO COMPLY WITH NSF 14, NSF 61, AND NSF 372. INCLUDE MARKING "NSF-PW" ON PIPING.

HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE TYPE L, SEMI-LESS, HARD TEMPER, COPPER TUBING WHICH CONFORMS TO ASTM SPECIFICATION B-88 WITH WROUGHT COPPER, SOLDER, TYPE FITTINGS, OR PEX TUBING PLASTIC IN ACCORDANCE WITH ASTM F876 AND ASTM F877 WITH FITTINGS ASTM F1807, METAL INSERT AND COPPER CRIMP RINGS ASTM F1960, COLD EXPANSION FITTINGS AND REINFORCING RINGS.

INSTALLATION OF PIPING
DRAINAGE PIPING SHALL BE INSTALLED TO ACCURATE LINE AND UNIFORM GRADE, AND AT THE ELEVATIONS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE INDICATED, ALL DRAINAGE LINES SHALL SLOPE NOT LESS THAN 1/4 INCH PER FOOT.
DRAINAGE LINES SHALL BE PROVIDED WITH SUFFICIENT CLEANOUTS TO MAKE ALL PARTS OF THE DRAINAGE SYSTEM ACCESSIBLE. CLEANOUTS SHALL BE PROVIDED ALONG INTERIOR HORIZONTAL RUNS AT NOT MORE THAN 50 FT. ON CENTER. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH ROOF CONDUCTOR AND AT ALL OTHER POINTS INDICATED ON THE DRAWING OR REQUIRED BY LOCAL PLUMBING CODE.

ALL PIPES SHALL BE CUT WITH SQUARE ENDS AND SHALL BE PROPERLY REAMED. THREADS SHALL BE CUT WITH CLEAN, SHARP DIES TO FULL DEPTH. ALL BURRS SHALL BE REMOVED FROM PIPE. JOINT COMPOUND SHALL BE APPLIED TO PIPE THREAD ONLY. USE OF EXCESSIVE JOINT COMPOUND IS PROHIBITED.

SOLDER JOINTS IN ALL WATER LINES SHALL BE MADE WITH 95-5 TIN-ANTIMONY SOLDER. OTHER JOINTS MADE WITH EASYBRITE LEAD FREE SOLDER.

WATER LINES WITHIN THE BUILDING SHALL BE INSTALLED WITH SUFFICIENT PITCH TO PROPERLY DRAIN THE WATER VALVES. IN ADDITION TO DRAIN VALVES INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL DRAIN VALVES NECESSARY TO PROPERLY DRAIN THE SYSTEM.

GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND NFPA-54. ALL GAS PIPING AND CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH AGA RECOMMENDATIONS AND ALL APPLICABLE LOCAL GAS COMPANY REGULATIONS.

CONTRACTOR SHALL VENTILATE THE WORK AREA TO PROVIDE A SAFE ENVIRONMENT. VENTILATION SHALL NOT DIRECT FUMES TO ADJACENT SPACES OR NEIGHBORING STRUCTURES.

CONTRACTOR SHALL PROVIDE ADEQUATE FIRE PROTECTION DURING WELDING, CUTTING AND SOLDERING.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

VALVES
VALVES IN WATER LINES SHALL BE 125 PSI CLASS, BRONZE BODY, BALL VALVES WITH TEFLON SEATS AND PACKING. NIBCO 580 OR APOLLO.DRAIN VALVES SHALL BE BRONZE BODY SOLDERED ENDS, BALL VALVES WITH 3/4 INCH AMERICAN STANDARD HOSE THREAD OUTLET. NIBCO OR APOLLO.

WALL HYDRANT SHALL BE ALL BRASS, FULLY RECESSED, NON-FREEZE, KEY OPERATED, WITH ADJUSTABLE LOCKNUT, REMOVABLE NYLON SEAT, 3/4 INCH HOSE CONNECTION. FURNISH WITH INTEGRAL VACUUM BREAKER. ZURN Z-1300 OR APPROVED EQUAL.

VALVES IN GAS LINES SHALL BE 125 PSI CLASS, THREADED END, IRON BODY. GAS COCKS WITH BRASS PLUG AND WASHER AND SQUARE HEAD. GRANCO NO. 324.

INSULATION
ALL COLD AND HOT WATER PIPING, AND HORIZONTAL PORTIONS OF ROOF CONDUCTORS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX.

PIPE IDENTIFICATION
ALL PIPING SHALL BE LABELED WITH THE NAME OF THE FLUID IN THE PIPE AND WITH ARROWS INDICATING THE DIRECTION OF THE FLOW.

TESTING

DRAINAGE SYSTEM - THE ENTIRE DRAINAGE SYSTEM SHALL BE TESTED HYDROSTATICALLY FOR LEAKS. THE ENTIRE SYSTEM SHALL BE FILLED TO THE TOP OF THE STACKS WITH WATER AND CHECKED FOR LEAKS.

WATER PIPING - ALL WATER PIPING SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL FOREIGN MATERIAL. ALL TESTING SHALL BE COMPLETED BEFORE INSULATION IS APPLIED.
DURING THE TESTS ALL VALVES SHALL BE CAREFULLY CHECKED FOR LEAKAGE AROUND THE STEM.

WATER HEATERS - HEATERS SHALL BE TESTED AND CHECKED TO DETERMINE THEY OPERATE IN COMPLIANCE WITH THE SPECIFICATIONS. ALL CONTROLS SHALL BE PROPERLY ADJUSTED.

DISINFECTION OF POTABLE WATER SYSTEM - GENERAL: NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE. WHENEVER REQUIRED BY THE AUTHORITY HAVING JURISDICTION THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY.

MECHANICAL REQUIREMENTS

GENERAL CONDITIONS OF THE MECHANICAL CONTRACT
PLUMBING CONTRACTOR TO FOLLOW HUD GENERAL CONDITIONS AS SPECIFIED EARLIER IN DIVISION 1.

ALL MECHANICAL WORK TO COMPLY WITH LOCAL CODE AND REGULATIONS.

CUTTING AND PATCHING
ALL CHASES, RECESSES, HOLES, AND OPENINGS FOR EQUIPMENT AND DUCTWORK WILL BE PROVIDED BY THE GENERAL CONTRACTOR.

SHOULD THE MECHANICAL CONTRACTOR FAIL TO SET SLEEVES OR LOCATE OPENINGS BEFORE THE WORK OF THE GENERAL CONTRACTOR HAS BEEN COMPLETED IN THAT PARTICULAR AREA, THE MECHANICAL CONTRACTOR SHALL CUT WHATEVER HOLES ARE NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT. ALL PATCHING NECESSITATED BY THE CUTTING OF SUCH HOLES SHALL BE DONE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

REPAIR ALL FIREPROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

EXHAUST FANS
FANS SHALL VENT DIRECTLY TO THE EXTERIOR. EXHAST DUCTS MAY BE TIED TOGETHER OR TIED INTO AN EXISTING SYSTEM PROVIDED THAT BACK FLOW PREVENTORS ARE INSTALLED AT EACH FAN INCLUDING ALL FANS TIED INTO THE EXISTING SYSTEM.

FURNISH NEMA 1 SURFACE MOUNTING STARTER WITH OVERLOAD AND UNDER VOLTAGE PROTECTION.

FURNISH WITH BIRD SCREEN AND BACKDRAFT DAMPER.

FAN SHALL BE ACE MADE BY COOK, GREENHECK, OR APPROVED EQUAL. HOOFM CAPACITY, PROPELLER DIRECTED. FINISH WHITE.

THE HEATING CONTRACTOR SHALL FURNISH THERMALLY AND ACOUSTICALLY INSULATED CURB.

MECHANICAL EQUIPMENT
THE EQUIPMENT DESCRIBED IN THIS SECTION IS BASIS OF DESIGN, MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT TO MATCH EXISTING SYSTEM CAPACITY AT A MINIMUM.

MECHANICAL CONTRACTOR TO PROVIDE HACP AND ARCHITECT WITH SPECIFICATION SHEETS OF EQUIPMENT.

GAS-FIRED FURNACES, NONCONDENSING
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- BRYANT; CARRIER GLOBAL CORPORATION.
- CARRIER GLOBAL CORPORATION.
- BUILDING SOLUTIONS NORTH AMERICA.

ENERGY STAR RATING OF 95% AFUE OR GREATER
CABINET: GALVANIZED STEEL
- CABINET INTERIOR AROUND HEAT EXCHANGER SHALL BE FACTORY-INSTALLED INSULATION.
- LIFT-OUT PANELS SHALL EXPOSE BURNERS AND ALL OTHER ITEMS REQUIRING ACCESS FOR MAINTENANCE.
- FACTORY PAINT EXTERNAL CABINETS IN MANUFACTURER'S STANDARD COLOR.
- AIRSTREAM SURFACES: SURFACES IN CONTACT WITH THE AIRSTREAM SHALL COMPLY WITH REQUIREMENTS IN ASHRAE 62.1.

FAN: CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT OR BELT DRIVE.
- FAN MOTORS: COMPLY WITH REQUIREMENTS IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT."
- SPECIAL MOTOR FEATURES, SINGLE SPEED: SINGLE SPEED, PREMIUM EFFICIENCY, AS DEFINED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT," AND WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, MULTISPEED: MULTI-TAPPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, ECM: ELECTRONICALLY CONTROLLED MOTOR (ECM) CONTROLLED BY INTEGRATED FURNACE/BLOWER CONTROL.

TYPE OF GAS: NATURAL
HEAT EXCHANGER: ALUMINIZED STEEL.
BURNER:
- GAS VALVE: 100 PERCENT SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUTOFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD.
- IGNITION: ELECTRIC PILOT IGNITION, WITH HOT-SURFACE IGNITER OR ELECTRIC SPARK IGNITION.

GAS-BURNER SAFETY CONTROLS:
- ELECTRONIC FLAME SENSOR: PREVENTS GAS VALVE FROM OPENING UNTIL PILOT FLAME IS PROVEN; STOPS GAS FLOW ON IGNITION FAILURE.
- FLAME ROLLOUT SWITCH: INSTALLED ON BURNER BOX; PREVENTS BURNER OPERATION.
- LIMIT CONTROL: FIXED STOP AT MAXIMUM PERMISSIBLE SETTING; DE-ENERGIZES BURNER ON EXCESSIVE BONNET TEMPERATURE; AUTOMATIC RESET.

COMBUSTION-AIR INDUCER: CENTRIFUGAL FAN WITH THERMALLY PROTECTED MOTOR AND SLEEVE BEARINGS PRIGURGES HEAT EXCHANGER AND VENTS COMBUSTION PRODUCTS; PRESSURE SWITCH PREVENTS FURNACE ON IF COMBUSTION-AIR INLET OR FLUE OUTLET IS BLOCKED.
FURNACE CONTROLS: SOLID-STATE BOARD INTEGRATES IGNITION, HEAT, COOLING, AND FAN SPEEDS; AND ADJUSTABLE FAN-ON AND FAN-OFF TIMING; TERMINALS FOR CONNECTION TO ACCESSORIES.
VENT MATERIALS: COMPLY WITH REQUIREMENTS IN SECTION 235123 "GAS VENTS" FOR TYPE B METAL VENTS.

CAPACITIES AND CHARACTERISTICS:
AIRFLOW CONFIGURATION: UPFLOW.
GAS:
- TYPE: NATURAL
- VENTING TYPE: WITH COMBUSTION-AIR INTAKE
- MINIMUM EFFICIENCY AFUE: 80 PERCENT.
- INPUT: SSE SCHEDULE ON DRAWINGS.
- HEAT OUTPUT: SSE SCHEDULE ON DRAWINGS.
- GAS CONNECTION SIZE: 1/2" NPS.
- VENT SIZE: 4 INCHES.

FAN:
- MOTOR: SIZE: 1/3 HP.
- SPEED: SEE SCHEDULE ON DRAWINGS.
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

FURNACE ELECTRICAL CONNECTION:
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

COMPRESSOR AND CONDENSER UNITS, AIR COOLED, 1.0 TO 5 TONS
DESCRIPTION: FACTORY ASSEMBLED AND TESTED; CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTORS, REFRIGERANT RESERVOIR, AND OPERATING CONTROLS.
ENERGY STAR RATING EQUAL OR OVER 15.2 SEER2
COMPRESSOR TYPE: SCROLL, HERMETICALLY SEALED, WITH RUBBER VIBRATION ISOLATORS.
- TWO-SPEED COMPRESSOR: INCLUDE MANUAL-RESET, HIGH-PRESSURE SWITCH AND AUTOMATIC-RESET, LOW-PRESSURE SWITCH.
- ACCUMULATOR: SUCTION TUBE.

REFRIGERANT: R-410A.
CONDENSER COIL: SEAMLESS COPPER-TUBE, -FIN COIL; WITH REMOVABLE DRAIN PAN AND BRASS SERVICE VALVES WITH SERVICE PORTS.
CONDENSER FAN: DIRECT-DRIVEN, MAX PROPELLER FAN; WITH PERMANENTLY LUBRICATED, TOTALLY ENCLOSED FAN MOTOR WITH THERMAL OVERLOAD PROTECTION AND BALL BEARINGS.
UNIT CASING: GALVANIZED STEEL, FINISHED WITH; WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE. MOUNT SERVICE VALVES, FITTINGS, AND GAUGE PORTS ON EXTERIOR OF CASING.
CAPACITIES AND CHARACTERISTICS:
COMPRESSOR AND CONDENSER UNIT:
- FULL-LOAD COOLING CAPACITY: TO BE CALCULATED BY MECHANICAL CONTRACTOR

ELECTRICAL CHARACTERISTICS:
- VOLTS: 208 V.
- PHASE: 1.
- HERTZ: 60 HZ.

SHEET METAL
DUCT SIZES INDICATED ON THE DRAWINGS ARE THE CLEAR INSIDE DIMENSIONS.

ALL DUCTS SHALL BE COMPLETE WITH FOUR SIDES AND SHALL BE OF AIRTIGHT CONSTRUCTION. ALL DUCTS, UNLESS OTHERWISE NOTED, SHALL BE CONSTRUCTED OF 24 GAGE GALVANIZED SHEET STEEL AT 2" PRESSURE CLASS.

JOINTS, SEAMS AND DUCT WALL PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. SEALANT MATERIAL SHALL BE CAULKING COMPOUND SPECIFICALLY MANUFACTURED FOR DUCT APPLICATION FOR INDOOR USE.

JOINTS BETWEEN SHEET METAL SECTIONS MAY BE MADE WITH PREFABRICATED JOINING SYSTEM SUCH AS THE DUCTMATE INDUSTRIES SYSTEM.
STIFFENERS SHALL BE PLACED AT NOT MORE THAN 8-FOOT INTERVALS.

ALL DUCTS SHALL BE ADEQUATELY SUPPORTED FROM CONSTRUCTION ABOVE BY MEANS OF GALVANIZED STEEL STRAP HANGERS SPACED AT NOT MORE THAN 8-FOOT INTERVALS. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA STANDARDS.

DUCTWORK CONNECTIONS TO AIR HANDLING AND AIR CONDITIONING UNITS SHALL HAVE FLEXIBLE CONNECTIONS. WHEN CONNECTION IS OUTDOORS, CONNECTION LENGTH SHALL BE INSULATED AND WEATHERPROOFED.

TURNING VANES SHALL BE INSTALLED IN ALL ELBOWS HAVING SQUARE THROATS OR A THROAT RADIUS LESS THAN HALF THE DUCT WIDTH. TURNING VANES MAY BE PREFABRICATED. IF JOB FABRICATED, DESIGN AND CONSTRUCTION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. VANES SHALL BE AIRFOIL TYPE.

MANUAL VOLUME CONTROL DAMPERS IN DUCTS SHALL BE CONSTRUCTED OF NOT LIGHTER THAN US GAGE NO. 16 GALVANIZED SHEET STEEL. DAMPER BLADES SHALL BE SUPPORTED ON AN END BEARING ON ONE SIDE AND A COMBINATION BEARING AND DAMPER REGULATOR ON THE OTHER SIDE. REGULATOR SHALL BE EQUIPPED WITH A LOCKING DEVICE. MANUAL DAMPERS SHALL BE OPPOSED BLADE TYPE.

FURNISH AND INSTALL FIRE DAMPERS WHERE INDICATED OR WHERE REQUIRED. DAMPERS SHALL COMPLY WITH LATEST EDITION OF NFPA 90A, AND SHALL BE UL LABELED. BLADE STACK SHALL BE OUT OF AIRSTREAM. FUSIBLE FIRE LINKS SHALL HAVE A MELTING POINT OF 165F. DAMPERS SHALL BE MODEL IBD AS MADE BY PRUSKIN, OR APPROVED EQUAL BY SAFE-AIR. FURNISH ACCESS DOORS TO ALL DAMPERS.

ACCESS DOORS IN DUCTS SHALL BE RIGIDLY CONSTRUCTED AND TIGHTLY FITTED. DOORS SHALL BE SUPPORTED ON TWO STEEL BUTT HINGES AND SHALL BE SECURED WITH A SASH LOCK. DOORS SHALL BE GASKETED AND INSULATED.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

FLEXIBLE DUCTS
FLEXIBLE DUCTS SHALL BE SOUND ATTENUATING, THERMAL INSULATED, WIRE WOUND, REINFORCED TYPE WITH A MOISTURE TIGHT FLAME PROOF VINYL BARRIER. FLEXIBLE DUCTS TO BE USED ONLY TO CONNECT INDIVIDUAL DIFFUSERS WITH MAIN OR BRANCH DUCTS. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PORTION OF THE EXISTING SYSTEM WHICH DOES NOT MEET THESE REQUIREMENTS WITH PROPERLY SIZED AND INSULATED SHEET METAL DUCTS. THIS WORK TO BE INCLUDED IN BASE BID.

DIFFUSERS
DIFFUSERS SHALL BE SQUARE OR RECTANGULAR FACED, RECESSED TYPE, WITH REMOVABLE CORES. DIFFUSER CAPACITIES, SIZES AND DIRECTIONAL BLOWS ARE INDICATED ON THE DRAWINGS. FURNISH EACH DIFFUSER WITH DEFLECTING VANES AND KEY OPERATED, OPPOSED BLADE, VOLUME DAMPERS. DIFFUSERS SHALL BE FURNISHED WITH BAKED, WHITE FINISH.

SUPPLY REGISTERS
SUPPLY REGISTERS SHALL HAVE INDIVIDUALLY ADJUSTABLE FINS WITH VERTICAL FRONT BARS AND HORIZONTAL REAR BARS. FINS SHALL BE STREAMLINED AND OF STURDY CONSTRUCTION. FLANGES SHALL BE 5/8 INCH HANNEL BORDER. FURNISH RUBBER GASKET AROUND PERIMETER OF FLANGE, AND KEY OPERATED, OPPOSED BLADE VOLUME CONTROL DAMPERS. RUBBER GASKET SHALL BE NON-CHLORINATED RUBBER AND NON-POROUS. FURNISH WITH PRIME COAT OF PAINT.

GRILLES
GRILLES AND REGISTERS FOR MECHANICAL TO MATCH EXISTING. GRILLES AND REGISTERS SHALL BE OUT OF STEEL, WITH DAMPER, PRIMED PAINTED WHITE. SIZE OF GRILLE TO MATCH EXISTING OPENING ON TOE KICK, WALL OR CEILING.

CONTROLS
THE HEATING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL DEVICES NECESSARY TO ACHIEVE THE CONTROL SEQUENCE DESCRIBED HEREIN.

CONTROL SYSTEMS SHALL BE GUARANTEED FOR 2 YEARS FROM DATE OF ACCEPTANCE BY HACP.

CONTROL WIRING SHALL BE CONCEALED AND INSTALLED IN ACCORDANCE WITH SECTION 16.

MOTOR STARTERS - MOTOR STARTERS FOR ALL MECHANICAL ITEMS SHALL BE FURNISHED BY THE HEATING CONTRACTOR. STARTERS SHALL HAVE HAND-OFF-AUTO SWITCHES AND CONTROL TRANSFORMERS.

DAMPERS - DAMPERS SHALL BE OPPOSED MULTI-BLADE. BLADES SHALL BE CONSTRUCTED OF 16 GAGE STEEL WITH NEOPRENE GASKETED EDGES, AND SHALL BE MOUNTED IN CORROSION RESISTANT BUSHINGS. DAMPERS SHALL HAVE STOPS ON ALL FOUR SIDES. MOTORS SHALL BE MODULATING WITH OIL-IMMERSED GEAR TRAINS. DAMPERS SHALL BE 2% LOW LEAKAGE TYPE.

FREEZE PROTECTION THERMOSTAT - FREEZE PROTECTION THERMOSTAT SHALL BE MERCURY TUBE, MANUAL RESET TYPE SET AT 45F. INSTALL AN ADJUSTABLE TIME DELAY RELAY TO PERMIT AIR TO ESTABLISH SATISFACTORY TEMPERATURE TO AVOID FALSE TRIPS.

INSULATION
ALL SUPPLY AIR DUCTS SHALL BE INSULATED WITH 2" THICK, 1.00 DENSITY, OWENS-CORNING OR APPROVED EQUAL FLEXIBLE DUCT INSULATION WITH FLAME RETARDANT REINFORCED FIRK 25 FOIL COVERING. SEAL ALL JOINTS, BOLTS, AND ALL EXPOSED EDGES WITH 4" WIDE STRIPS OF SEALING TAPE USING A SUITABLE ADHESIVE. INSULATION SHALL HAVE A 2" FLAP AT ALL JOINTS AND SEAMS WHICH SHALL BE STAPLED AND SECURED WITH ADHESIVE. APPLY ADHESIVE TO DUCTS IN SIX-INCH-WIDE STRIPS AT ONE FOOT IN TERVALS. DUCTOWRK EXPOSED WITHIN THE SPACE MAY NOT BE INSULATED.

OPERATING INSTRUCTIONS
THE CONTRACTOR SHALL FURNISH THREE COMPLETE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS. THIS SHALL INCLUDE FINAL CONTROL DIAGRAMS, CATALOG DATA INCLUDING CONSTRUCTION AND MAINTENANCE INFORMATION ON ALL EQUIPMENT, AND MAINTENANCE INFORMATION IN THE COMPLETE SYSTEM.

ONE COMPLETE CONTROL DIAGRAM SHALL BE INCLUDED IN EACH O&M MANUAL.

THE CONTRACTOR SHALL FORMALLY INSTRUCT THE HACP'S STAFF ON THE OPERATION OF THE SYSTEM. THE INSTRUCTION SHALL CONSIST OF NOT LESS THAN 2 PERIODS, EACH PERIOD OF 4 HOURS DURATION. THE CONTRACTOR SHALL ARRANGE FOR THIS INSTRUCTION WITH THE HACP.

FUNCTIONS AND ALL ACTUATORS OPERATE IN ACCORDANCE WITH THE SPECIFICATIONS.
TESTS AND INSPECTION

THE FOLLOWING OPERATIONS SHALL BE PERFORMED IN PREPARATION FOR FINAL INSPECTION BY THE ARCHITECT. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE TO THE ARCHITECT THAT THE SYSTEM IS OPERATING IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL TESTS AND INSPECTIONS SHALL BE COMPLETED BEFORE FINAL PAYMENT IS MADE TO THE HEATING (MECHANICAL) CONTRACTOR.

CONTROLS - ALL CONTROLS SHALL BE TESTED AND ADJUSTED TO ACHIEVE THE INTENT OF THESE SPECIFICATIONS. CONTROLS SHALL BE ADJUSTED WHILE THE SYSTEM IS OPERATING UNDER FULL LOAD CONDITIONS, BOTH HEATING AND COOLING. CONTROL SUB-CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION THAT ALL ON/OFF AND ALARM.

AIR DISTRIBUTION SYSTEM - AIR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCE SUBCONTRACTOR. THE COST OF THE SUB-CONTRACTOR SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE. THE INDEPENDENT AIR BALANCER SHALL NOT BE AN EMPLOYEE NOR A SUBSIDIARY OF THE CONTRACTOR.

GUARANTEE
THE MECHANICAL CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE JOB THAT ALL EQUIPMENT, MATERIAL AND LABOR FURNISHED BY HIM ARE FREE FROM DEFECTS. ANY DEFECTS IN MATERIAL AND WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT FURTHER EXPENSE TO THE HACP. ALL ITEMS SPECIFIED TO HAVE A LONGER WARRANTIES SHALL BE GUARANTEED FOR THAT LONGER PERIOD. CONTROLS SHALL HAVE A 2-YEAR GUARANTEE ON PARTS AND LABOR.

CONTROLS
SOLID-STATE THERMOSTAT: WALL-MOUNTED, PROGRAMMABLE, MICROPROCESSOR-BASED UNIT WITH MANUAL SWITCHING FROM HEATING TO COOLING, PREFERENTIAL RATE CONTROL, SEVEN-DAY PROGRAMMABILITY WITH MINIMUM OF FOUR TEMPERATURE PRESETS PER DAY, VACATION MODE, AND BATTERY BACKUP PROTECTION AGAINST POWER FAILURE OF PROGRAM SETTINGS.

DIVISION 26 - ELECTRICAL WORK

NOTE: ELECTRICAL WORK ON THIS PROJECT IS TO BE DESIGN BUILD. THE E.C. IS RESPONSIBLE FOR VISITING LOCATIONS AND REQUIREMENTS FOR THE ELECTRICAL SYSTEM WITH THE HACP.

CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE SPECIFIC BUILDING HACP REQUIREMENTS, THE LATEST RULES OF THE NATIONAL ELECTRICAL CODE AND WITH LOCAL ORDINANCES HAVING JURISDICTION.

DO NOT INTERPRET ANYTHING IN THE DRAWINGS OR SPECIFICATIONS AS AUTHORITY TO VIOLATE APPLICABLE CODES.

BE RESPONSIBLE FOR EXAMINING DRAWINGS AND SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES. RESOLVE ALL CONFLICTS BEFORE INSTALLATION AT NO EXTRA COST.

PREPARE ANY ADDITIONAL CLARIFYING DETAILS REQUIRED BY THE LOCAL INSPECTOR AUTHORITIES AND SECURE APPROVAL OF SAME. PAY ANY CHARGES. OBSERVE ALL UNIFORM CONSTRUCTION CODE REQUIREMENTS.

OBSERVE ALL APPLICABLE SAFETY REGULATIONS REQUIRED BY HACP AND/OR BY OSHA.

BRING ANY DISCREPANCIES BETWEEN DIFFERENT DRAWINGS, BETWEEN THE DRAWINGS AND FIELD CONDITIONS, OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR ANY APPARENT OMISSIONS, TO THE ARCHITECT'S ATTENTION BEFORE SUBMITTING THE BID. AFTER AWARD OF CONTRACT.

THE INTERPRETATION OF ANY CONFLICT WILL BE MADE BY THE ARCHITECT AND SHALL BE ACCEPTED AS FINAL.

IF MENTION HAS BEEN OMITTED PERTAINING TO DETAILS, ITEMS OR RELATED ACCESSORIES REQUIRED FOR THE COMPLETION OF ANY ELECTRICAL SYSTEM, INCLUDE SUCH ITEMS AND ACCESSORIES IN THE ELECTRICAL CONTRACT AND WITHOUT ADDITIONAL CHARGES.
AFTER THE JOB IS AWARDED, CLAIMS BASED ON INSUFFICIENT

MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, ASTM AND IEEE. ALL SIMILAR MATERIALS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.

B. RACEWAYS
1. MATERIALS
RIGID HEAVY WALL STEEL CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE STEEL, HOT DIPPED GALVANIZED AND ZINC COATED, INSIDE AND OUTSIDE. CONDUIT SHALL BEAR THE MANUFACTURERS' AND UNDERWRITERS' LABELS. THIN WALL CONDUIT IS DESIGNATED AS E.M.T. STEEL CONDUIT SHALL BE MANUFACTURED BY WHEATLAND, ALLIED, TRIANGLE, OR EQUAL.
FLEXIBLE CONDUIT (GREENFIELD) SHALL BE U. L. LISTED, 3/4 INCH MINIMUM TRADE SIZE FOR BRANCH WIRING. GREENFIELD OF ½ INCH SIZE WILL BE PERMITTED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES ONLY.

2. INSTALLATION
MINIMUM SIZE CONDUIT IS 3/4 INCHES.
INSTALL CONDUIT AS A COMPLETE SYSTEM. CONTINUOUS FROM OUTLET TO OUTLET CABINET BOX OR FITTING. MECHANICALLY AND ELECTRICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY IS SECURED.
DO NOT ROUTE RACEWAYS THROUGH ANY DUCTWORK.

C. CONDUIT FITTINGS
1. MATERIALS
ALL CONDUIT FITTINGS SHALL BE GALVANIZED MALLEABLE IRON OR STEEL, WHERE APPLICABLE.
CONDUIT FITTINGS SHALL CONFORM IN DESIGN AND QUALITY TO THE TYPE OF CONDUIT ON WHICH THEY ARE BEING INSTALLED.

2. INSTALLATION
USE THREADED CONNECTORS ON GRS CONDUIT.
USE SET-SCREW STYLE CONNECTORS ON E.M.T. WHERE SAME IS RUN EXPOSED OR CONCEALED ABOVE GRADE.
USE BUSHINGS, LOCKNUTS AND EXPANSION FITTINGS OF THE APPROPRIATE TYPE FOR THE RACEWAY SYSTEM BEING INSTALLED.

D. PULL BOXES, OUTLET BOXES AND COVERS
1. GENERAL
FOR EACH OUTLET BOX, USE THE PROPER CODE SIZE FOR THE ENTERING CONDUITS AND THE NUMBER OF WIRES TERMINATING THEREIN.
USE BOXES WITH PLASTER RING EXTENSIONS IN PLASTERED OR DRY WALL PARTITIONS.

2. MATERIALS
FOR LARGE PULL BOXES, USE BOXES OF CODE GAUGE SHEET STEEL WITH STEEL COVERS ATTACHED WITH BRASS SCREWS. BOXES SHALL BE HOT DIPPED, GALVANIZED AFTER FABRICATION - THE MINIMUM SIZE OF EACH BOX SHALL BE AS REQUIRED BY THE NATIONAL ELECTRIC CODE. MANUFACTURER'S ARE HOFFMAN, KEYSTONE OR EQUAL.
FOR CONCEALED WORK, USE PRESSED STEEL BOXES, KNOCKOUT TYPE, ZINC COATED, OF 1/16 INCH MINIMUM THICKNESS.
USE BOXES OF FORM AND DIMENSIONS BEST ADAPTED TO SPECIFIC LOCATION, KIND OF FIXTURE USED AND THE NUMBER, SIZE AND ARRANGEMENT OF RACEWAYS CONNECTING THERETO. USE STEEL CITY OR RACO.
USE WIREMOLD FINISHED STYLE BOXES IN FINISHED AREAS WHERE CONCEALED BOXES ARE NOT FEASIBLE.

E. CONDUCTORS IN RACEWAYS
1. MATERIALS
CONDUCTORS SHALL BE SOFT DRAWN COPPER, MINIMUM 97% CONDUCTIVITY, 600 VOLT, CONFORMING TO ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
INSULATION SHALL BE SUITABLE FOR THE CONDITIONS AND LOCATIONS IN WHICH CONDUCTORS ARE INSTALLED. THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED OR REQUIRED BY LOCATION OR INSTALLATION CONDITIONS:
A. FOR BUILDING WIRE IN INTERIOR ABOVE GRADE LOCATIONS, USE TYPE THWN/THHN COPPER RATED 75 DEGREES C. WET OR DRY.
WIRES SHALL BE CLEARLY AND REGULARLY MARKED WITH THE WIRE SIZE, VOLTAGE, INSULATION TYPE AND MANUFACTURER'S NAME.
CONDUCTORS SHALL BE NEW AND MANUFACTURED WITHIN EIGHT MONTHS PREVIOUS TO DELIVERY AT SITE, WITH DATE OF MANUFACTURE MARKED ON THE PACKAGES.
MINIMUM WIRE SIZE FOR BRANCH CIRCUITING SHALL BE #12 AWG.
ALL CIRCUIT RUNS EXCEEDING 75 FEET IN LENGTH EXTENDING FROM THE PANELBOARD TO THE FIRST OUTLET IN THE CIRCUIT SHALL BE #10 AWG MINIMUM.
WIRE #8 AWG AND SMALLER SHALL BE SOLID; WIRE #6 AWG AND LARGER SHALL BE STRANDED.
WIRE SHALL BE AS MANUFACTURED BY HI-TECH, PIRELLI, TRIANGLE OR EQUAL.

2. INSTALLATION
COLOR CODE ALL WIRES PER NEC REQUIREMENTS:
A. MATCH THE EXISTING SCHEME PRESENTLY INSTALLED; NEUTRAL SHALL BE WHITE. EQUIPMENT GROUND SHALL BE GREEN.
THE GROUPING OF OUTLETS ON INDIVIDUAL NEW CIRCUITS AS SHOWN ON THE DRAWINGS SHALL BE STRICTLY OBSERVED. GROUPING OF CONDUCTORS IN THE CONDUIT SHALL NOT BE PERMITTED. INCORPORATE A MAXIMUM OF FOUR (4) WIRES, I.E. A MAXIMUM OF ONE CIRCUIT CONDUCTOR ON EACH PHASE PLUS THE NEUTRAL WIRE PLUS THE GROUND WIRE IN ONE CONDUIT.
EMPLOY A U.L. LISTED COMMERCIAL PRODUCT SUCH AS WYRE-EZE OR YELLOW-77 FOR PULLING WIRES INTO A RACEWAY.
CLEAN AND DRY CONDUITS BEFORE PULLING IN WIRES.
THE USE OF B.X., ROMEX, OR U.F. CABLE IS NOT PERMITTED.
MC CABLE MAY BE USED FOR CONCEALED BRANCH CIRCUIT WIRING.

F. SPLICES
MAKE ALL SPLICES, JOINTS AND TAPS WITH SOLDERLESS PRESSURE CONNECTORS LISTED AND APPROVED FOR THE INTENDED USE AND FOR THE SIZE AND NUMBER OF CONDUCTORS UTILIZED.
1. FOR WIRE #10 AWG AND SMALLER, USE TWIST-ON WIRE NUTS.
2. FOR WIRE #8 AWG AND LARGER, USE HEAVY DUTY SOLDERLESS SET SCREW CONNECTORS WITH A SEPARATE BARREL FOR EACH CONDUCTOR.
USE INSULATING COVERS FROM THE MANUFACTURER, WHERE AVAILABLE. TAPE PROPERLY TO PROVIDE A SUFFICIENT INSULATION AROUND THE ENTIRE SPLICE UNIT, WHEN INTEGRAL INSULATING COVERS ARE NOT AVAILABLE FROM THE FITTING MANUFACTURER.

G. PANELBOARDS AND CABINETS
CABINETS SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH WIRING GUTTERS OF SUFFICIENT WIDTH TO PROVIDE AMPLE SPACE FOR BRANCH CIRCUIT WIRES AND FEEDERS. GUTTERS SHALL NOT BE LESS THAN FOUR INCHES WIDE. GUTTERS SHALL CONFORM TO NEC STANDARDS AND SHALL BE OVER-SIZED WHERE NECESSARY TO ACCOMMODATE THE ENTRANCE OF SEVERAL LARGE CONDUITS AND/OR WHERE NECESSARY TO AVOID OVERCROWDING OF CONDUCTORS OR EQUIPMENT WITHIN. TRIMS SHALL BE SURFACE AS NOTED ON THE PANEL SCHEDULE AND SHALL CONTAIN CONCEALED HINGED DOORS, EACH EQUIPPED WITH FLUSH CHROME PLATED COMBINATION LOCKS AND CATCHES, ALL KEYED ALIKE. FINISH SHALL BE STANDARD BAKED ENAMEL OR LACQUER, MEDIUM GRAY, ANSI-61. PROVIDE TWO (2) KEYS WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE. USE "DOOR IN A DOOR" HINGED TRIMS.

PANELBOARD BASIS OF DESIGN:
- MANUFACTURER: GE, SIEMENS OR EQUAL.
- ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED IN ACCORDANCE WITH NFPA 70, BY QUALIFIED ELECTRICAL TESTING AGENCY RECOGNIZED BY AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH NEMA PB 1.
- COMPLY WITH NFPA 70.
- ENCLOSURES: SURFACE-MOUNTED, DEAD-FRONT CABINETS.
- INDOOR DRY AND CLEAN LOCATIONS: UL 50E, TYPE 1
- OTHER WET OR DAMP INDOOR LOCATIONS: UL 50E
- HEIGHT: 7 FT MAXIMUM.
- RETAIN ONE OF FIRST TWO SUBPARAGRAPHS BELOW. VERIFY WITH MANUFACTURER FOR AVAILABILITY OF "DOOR-IN-DOOR" CONSTRUCTION IN OTHER THAN NEMA 1 STYLE PANELBOARDS.
- HINGED FRONT COVER, ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER. TRIMS MUST COVER LIVE PARTS AND MAY HAVE NO EXPOSED HARDWARE.
- INCOMING MAIN ON TOP
- 20 SPACE- 40 CIRCUITS MINIMUM.

BUSING SHALL BE FULL CAPACITY, 98% CONDUCTIVITY COPPER OR 80% CONDUCTIVITY ALUMINUM, BRACED FOR THE SHORT CIRCUIT CURRENT AVAILABLE TO THE PANEL AND SIZED AS SHOWN IN THE PANEL DETAIL. CIRCUIT BREAKERS SHALL BE CONNECTED TO BUSES WITH BOLTED CONNECTIONS FOR SEQUENCE PHASING: I.E., CIRCUITS 1 AND 2 CONNECTED TO PHASE A; 3 AND 4 TO PHASE B AND SO ON. POLARITY OR BLOCK PHASING SHALL NOT BE ACCEPTABLE. PANEL SHALL INCLUDE A NEUTRAL BUS AND AN EQUIPMENT GROUNDING BUS. CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE, BOLT-ON, WITH THERMAL AND MAGNETIC TRIPS, TRIP-FREE ON OVERLOAD OR SHORT CIRCUIT, UL LISTED, HAVING INTERRUPTING CAPACITIES, AS INDICATED.

H. WIRING DEVICES AND PLATES
1. MATERIALS
ALL WIRING DEVICES SHALL BE MANUFACTURED BY ONE OF THE MANUFACTURERS LISTED. DO NOT MIX MANUFACTURER'S PRODUCTS.
DEVICES SHALL BE U.L. SPECIFICATION GRADE.

2. WALL SWITCHES
SWITCHES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE GENERAL USE, AC QUIET TYPE, 20 AMPERE, 120/277 VOLT, BACK AND SIDE WIRED. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

3. WALL SWITCH TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENTS FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP SINGLE POLE WALL SWITCH - HUBBELL #HBL-1221, P & S #20AC1, COOPER #1221, BRYANT #4901, OR LEVITON# 1221-2.
20 AMP 3-WAY WALL SWITCH - HUBBELL #HBL-1223, P & S #20AC3, COOPER #1223, BRYANT #4903, OR LEVITON #1223-2. USE SIMILAR SERIES FOR 4-WAY SWITCHES.

4. WALL RECEPTACLES
ALL CONVENIENCE AND POWER RECEPTACLES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE THE GROUNDING TYPE.
CONVENIENCE RECEPTACLES SHALL BE 20 AMP, 125 VOLT, BACK AND SIDE WIRED, 3 WIRE GROUNDING, UL LISTED AS COMPLYING WITH THE REQUIREMENTS OF NEC ARTICLE 250-146, AND SHALL BE NEMA 5-20R CONFIGURATION. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

5. RECEPTACLE TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENT FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP, 125 VOLT DUPLEX CONVENIENCE OUTLET (NEMA 5-20R) - HUBBELL #HBL-5362, P & S #5362A, COOPER #5362, BRYANT #5362, OR LEVITON #5362.
20 AMP, 125 VOLT GROUND FAULT INTERRUPTER (NEMA 5-20R) - HUBBELL #GF-5362, P & S #2091, COOPER #WGF-20, BRYANT #GFRS3FT, OR LEVITON #6899.

6. PLATES
USE STAINLESS STEEL PLATES.

I. FASTENINGS AND ATTACHMENTS
FOR FASTENINGS AND ATTACHMENTS, SUCH AS SCREWS, BOLTS AND NUTS, USE DEVICES MADE OF NON-FERROUS METALS OR OF GALVANIZED OR CADMIUM PLATED STEEL. WHEN SUCH DEVICES ARE NOT OBTAINABLE IN NON-FERROUS METALS, OR IN STEEL WITH A PROTECTIVE METALLIC COATING. PAINT SAME WITH A RUST PREVENTING PAINT SUCH AS RUSTOLEUM.
ALL FASTENINGS AND ATTACHMENTS SHALL BE MADE OF MATERIALS OR SO PROTECTED, THAT THEY WILL OFFER THE MAXIMUM PROTECTION AGAINST DETERIORATION FROM AGE, WEATHER OR DAMPNESS.
DO NOT PENETRATE THE ROOF DECK WITH ANY FASTENERS.

J. SURFACE METALLIC RACEWAY SYSTEM
USE A SURFACE METAL RACEWAY SYSTEM AND BOXES, WHERE CONCEALED WIRING IS NOT POSSIBLE OR WHERE SHOWN ON THE PLANS.
USE RACEWAYS, SUCH AS WIREMOLD, FOR STRAIGHT RUNS, COMPLETE WITH BOXES AND FITTINGS, AS DIRECTED. VERIFY COLOR OPTIONS WITH THE ARCHITECT. PAINT SAME WHERE REQUIRED OR INDICATED.
OBTAIN APPROVAL FOR ALL SURFACE ROUTINGS WITH THE ARCHITECT PRIOR TO ROUGH-IN.

K. FIRE STOPS
1. GENERAL
PROVIDE THROUGH PENETRATION FIRE STOP SYSTEMS TO PREVENT THE SPREAD OF FIRE THROUGH OPENINGS MADE IN FIRE-RATED WALLS OR FLOORS TO ACCOMMODATE THROUGH PENETRATING ITEMS SUCH AS CONDUIT AND CABLES.
FIRE-RESISTANCE-RATED ASSEMBLY SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY OR SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRE STOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM-E-814 OR U.L. 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER. THE SYSTEM SHALL HAVE AN F RATING AND A T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. WHERE FLOOR/CEILING ASSEMBLIES ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED. FIRE STOP SHALL RESTORE FLOOR AND WALL TO ORIGINAL FIRE RATED INTEGRITY AND SHALL BE WATERPROOF.

PENETRATIONS OF MEMBRANES THAT ARE PART OF A FIRE-RATED WALL OR FLOOR MUST BE STOPPED AS OUTLINED FOR THROUGH PENETRATIONS WITH THE FOLLOWING EXCEPTIONS.
A. STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
B. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED AS INDICATED.
1. BY HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES.
2. BY HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY IS FILLED WITH CELLULOSE LOOSE FILL ROCK WOOL OR SLAG MINERAL WOOL INSULATION.
3. BY SOLID FIRE BLOCKING.
4. BY PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS.
5. BY OTHER LISTED MATERIALS AND METHODS.

2. MATERIALS
PUTTY - USE FLAMESEAL PUTTY #AA423 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
FIBER - USE CERAMIC FIBER #AA401 (10 LB. BOX) OR #AA417 (2 LB. BAG) AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN WALLS - USE CERAMIC BOARD #AA402 (1" X 18" X 12") OR #AA403 (1" X 36" X 48") AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN FLOOR - USE SUPPORT WIRE #AA404 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.

3. INSTALLATION
USE TOTAL THICKNESS OF 1-1/2 INCHES OF FLAMESEAL PUTTY #AA423 ON ALL PENETRATIONS OF FIRE-RATED WALLS AND FLOORS. USE NELSON FIBER #AA401 OR #AA417 IN CONJUNCTION WITH THE PUTTY TO FILL THE REMAINING VOID OF PENETRATIONS.
PACK CERAMIC FIBER IN CENTER OF OPENING LEAVING 3/4 INCH ON EITHER SIDE OF WALL FOR THE PUTTY. INSTALL THE PUTTY IN THE REMAINING PART OF OPENING, WORKING IT INTO ALL VOIDS AND CAVITIES. FOR OPENINGS WITH GREATER THAN 4 INCHES OF UNSUPPORTED SPACE, USE NELSON CERAMIC BOARD #AA402 OR #AA403 DEPENDING ON SIZE OF OPENING. PACK CERAMIC FIBER IN BOTTOM OF OPENING PER FACTORY RECOMMENDATIONS, LEAVING 1-1/2 INCHES BELOW FLOOR LEVEL FOR THE INSTALLATION OF FLAMESEAL PUTTY. USE SUPPORT WIRE #AA404 ON ALL PENETRATIONS IN EXCESS OF 6 INCHES DIAMETER.

L. MC CABLE
METAL CLAD CABLE (MC) SHALL BE COPPER WIRE WITH 90 DEGREES C. THHN INSULATION, #12 AWG MINIMUM, WITH CONTINUOUS INSULATED GREEN GROUND CONDUCTOR AND STEEL ARMOR, MANUFACTURED BY A.F.C., ALFLEX, OR EQUAL. INSTALL NON-RIGID CABLE IN A NEAT, APPROVED MANNER, AS PER N.E.C. REQUIREMENTS. DO NOT GROUP CABLES INTO A COMMON CONDUIT AS OVERHEATING WILL RESULT. DO NOT TIE THE SEVERAL CABLES TOGETHER. USE APPROVED STYLE "MC" CONNECTORS AND FITTINGS IN ORDER TO MAINTAIN ADEQUATE CASE GROUNDING REQUIRED BY THE NATIONAL ELECTRICAL CODE. PROVIDE AN INDEPENDENT MEANS OF SUPPORT FOR ALL WIRING LOCATED ABOVE A DROPPED CEILING ASSEMBLY FROM THE STRUCTURAL CEILING SYSTEM. DO NOT SUPPORT WIRING FROM THE CEILING ASSEMBLY OR FROM ITS SUPPORT WIRES.

SERVICE AND DISTRIBUTION

A. GENERAL INSTALLATION
USE RIGID HEAVY WALL STEEL CONDUIT FOR EXPOSED EXTERIOR RACEWAYS.
USE EMT ELECTRICAL METALLIC THINWALL CONDUIT FOR CONCEALED INTERIOR FEEDERS, TELEPHONE RACEWAYS, ETC.
USE FLEXIBLE CONDUIT SUCH AS "GREENFIELD" FOR CONNECTIONS TO RECESSED LIGHTING FIXTURES IN 72" MAXIMUM LENGTHS AND FOR USE IN STUD WALLS WHERE THE USE OF RIGID CONDUIT IS NOT PRACTICAL.
USE WEATHERPROOF AND OIL PROOF FLEXIBLE CONDUIT SUCH AS "SEALTITE" FOR ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT IN LENGTHS OF 18" MAXIMUM.
USE LIQUID-TIGHT FLEXIBLE CONDUIT AND APPROPRIATE LIQUID-TIGHT FITTINGS IN AREAS EXPOSED TO THE WEATHER OR LIKELY TO BECOME DAMP, WHERE USED, CONFORM TO NEC #230-118.

USE WIREMOLD RACEWAYS FOR BRANCH CIRCUIT SURFACE ROUTINGS IN FINISHED AREAS ONLY WHERE CONCEALED WIRING IS NOT FEASIBLE, AND WHERE INDICATED.
USE M.C. CABLE FOR CONCEALED BRANCH CIRCUIT WIRING ONLY, IN ACCORDANCE WITH THE N.E.C. REQUIREMENTS.
THE USE OF B.X., ROMEX, AND U.F. IS NOT APPROVED.

LIGHTING FIXTURES AND ACCESSORIES

GENERAL
ALL LIGHTING FIXTURES AND LAMPS WILL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

LIGHTING FIXTURES

BASIS OF DESIGN LIGHTING FIXTURES BY KICHLER OR EQUAL.
CEILING FIXTURE: KICHLER #6112WH. WHITE FINISH. SURFACE MOUNTED
EXTERIOR CEILING FIXTURE: KICHLER #11132AZTLED, OUTDOOR RATED.
WALL EXTERIOR: KICHLER #9654TZ. WALL MOUNTED, OUTDOOR RATED
BATHROOM VANITY: KICHLER JOELSON #45923
FLOOD LIGHT: LITHONIA LIGHTING OLF LED WITH MOTION OCCUPANCY SENSOR
RECESSED LIGHTING: HALO OR EQUAL.

B. INSTALLATION
PROVIDE ALL SUPPLEMENTARY STRUCTURAL MATERIALS REQUIRED TO PROPERLY MOUNT ALL LIGHTING FIXTURES.
SECURELY MOUNT LIGHTING FIXTURES TO STRUCTURAL ELEMENTS OF THE BUILDING TO SUSPENDED CEILING SYSTEMS SUCH THAT SAID FIXTURES WILL BE SQUARE, PLUMB, AND RIGID, WILL NOT FALL OR SAG, AND WILL NOT CAUSE THE SUSPENDED CEILING SYSTEM TO SAG. PROVIDE ADDITIONAL CEILING SUPPORTS, WHERE REQUIRED TO SUPPORT RECESSED OR SURFACE FIXTURES.
INSTALL WIRING TO AND WITHIN FIXTURES TO COMPLY WITH NEC ARTICLE #410. TAKE SPECIAL CARE TO ASSURE THAT THE FIXTURE OUTLETS FOR RECESSED FIXTURES ABOVE SOLID SUSPENDED CEILINGS WILL ACTUALLY BE ACCESSIBLE AFTER THE PROJECT IS COMPLETED.
USE CLIPS TO FASTEN RECESSED TROFFERS TO DROP CEILING CHANNELS AS REQUIRED BY NEC SECTION #410-16. USE CADDY FASTENERS #6 15 OR APPROVED EQUAL.
TIME CLOCKS SHALL BE COMMERCIAL GRADE, 7 DAY, ASTRONOMICAL DAL, WITH 24-HOUR SPRING RESERVE BACKUP, AS MANUFACTURED BY TORK OR PARAGON (IF REQUIRED).

SMOKE ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 20SAR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

COMBO SMOKE + CO ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 3COUDR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

SMOKE DETECTOR'S LOCATIONS:
1. COMBO SMOKE + CO ALARM PER FLOOR, NOT TO BE PLACED IN MECHANICAL ROOM OR KITCHEN.
1 SMOKE DETECTOR IN SIDE EACH SLEEPING ROOM
INTERCONNECT SMOKE DETECTORS INSIDE THE UNIT.

MOTOR WIRING

WIRING FOR MECHANICAL AND PLUMBING CONTRACTS
1. INSTALLATION
VERIFY ALL LOCATIONS WITH THE VARIOUS MECHANICAL CONTRACTORS BEFORE INSTALLING RACEWAYS.
PROVIDE ALL WIRING MATERIALS AND DEVICES REQUIRED TO CONNECT AND OPERATE THE ELECTRICAL PARTS OF EQUIPMENT FURNISHED AND INSTALLED UNDER THE MECHANICAL DIVISION.
INSTALL AND CONNECT ALL STARTERS, PUSHBUTTONS, SWITCHES, THERMOSTATS AND OTHER CONTROL DEVICES AS FURNISHED BY OTHERS, UNLESS OTHERWISE NOTED.
MAKE ALL FINAL CONNECTIONS TO MOTORIZED EQUIPMENT. VERIFY THE CORRECT DIRECTION OF ROTATION.
CONNECT MOTOR CIRCUITS TO THE RIGID CONDUIT SYSTEM BY MEANS OF WEATHERPROOF STYLE FLEXIBLE CONDUIT, PROPERLY GROUNDED AND BONDED. EMPLOY A GREEN GROUND WIRE FOR ALL SYSTEMS AND MOTOR FRAME GROUND CONNECTIONS.
BOLT THE WIRE TO THE MOTOR FRAME AT ONE END AND TO THE MOTOR STARTER AT THE OTHER END WITH APPROVED TERMINAL DEVICES.
DO ALL LINE VOLTAGE CONTROL WIRING (120 VOLTS OR HIGHER).
ALL LOW VOLTAGE CONTROL WIRING (UNDER 120 VOLTS) IS THE RESPONSIBILITY OF THE MECHANICAL OR PLUMBING CONTRACTS.

SECTION 32- EXTERIOR IMPROVEMENTS

CHAIN LINK FENCE
ALUMINUM WIRED FABRIC 2X2 INCHES WITH ROUNDED POST AND RAILS 2.5 INCHES IN DIAMETER. LIGHT INDUSTRIAL STRENGTH, ZINC COATED. WITH TOP AND BOTTOM TENSION WIRED ZINC COATED. MECHANICALLY DRIVEN INTO SOIL OR USING ANCHORING CONCRETE.

GATES TO MATCH FENCE MATERIAL AND FRAME. DOOR WITH LATCH TO PERMIT OPERATION FROM BOTH SIDES OF GATE. PADLOCK AND CHAIN TO BE PROVIDED BY HACP.

SEEDING

QUALITY, NON-STATE CERTIFIED SEED OF GRASS SPECIES AS LISTED BELOW FOR SOLAR EXPOSURE, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PER CENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED

A.SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH.
1.EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
2.DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
3.DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.

B. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

C. PROTECT SEEDED AREAS FROM HOT, DRY WEATHER OR DRYING WINDS BY APPLYING COMPOST MULCH WITHIN 24 HOURS AFTER COMPLETING SEEDING OPERATIONS. SOAK AREAS, SCATTER MULCH UNIFORMLY TO A THICKNESS OF 3/16 INCH +, AND ROLL SURFACE SMOOTH.

TREE AND STUMP REMOVAL
ALL APPROPRIATE SAFETY EQUIPMENT MUST BE UTILIZED AT ALL TIMES DURING OPERATIONS; INCLUDING, BUT NOT LIMITED TO: HARD HATS, GLOVES, SAFETY GLASSES, FALL RESTRAINTS, TRAFFIC CONTROL DEVICES, HIGH VISIBILITY CLOTHING, ADEQUATE HEARING PROTECTION AND ANY OTHER SAFETY REQUIRED BY OSHA.
ONCE A TREE IS CUT DOWN, THE STUMP MUST BE GROUND OUT WITHIN FIVE DAYS (5). STUMPS AND BUTTRESS ROOTS MUST BE REMOVED TO A MINIMUM OF TWELVE INCHES (12") BELOW GROUND LEVEL AND TWO (2) TIMES THE DIAMETER AT BREAST HEIGHT IN SURFACE AREA GROUND. THE REMAINING STUMP AND/OR CHIPS SHALL BE REMOVED FROM THE SITE WITHIN TWO DAYS (2) AFTER GRINDING. ALL SURFACE ROOTS AND ADJACENT SUBSURFACE ROOTS SHALL BE REMOVED AS MAY BE NECESSARY TO ELIMINATE "HUMPS" OR MOUNDS IN THE TREE EASEMENT AREA ADJACENT TO THE STUMP. ALL TREE EASEMENT AREAS ARE TO BE LEFT FLAT AND MEET ORIGINAL GRADE. THE AREA WILL THEN BE BACKFILLED WITH CLEAN, PULVERIZED TOPSOIL TO THE LEVEL OF THE ADJOINING GRADE AND SEEDED. SEE SEEDING FOR SOD REQUIRED.

THE PARTY AUTHORIZED TO REMOVE THE TREE, AT THEIR EXPENSE, SHALL RESTORE THE LAWN AND ANY EXISTING LANDSCAPING AND APPURTENANNCES THAT EXIST BETWEEN THE SIDEWALK AND CURB OR IN OTHER AREAS THAT HAVE BEEN DISTURBED BY THE PARTY AUTHORIZED TO REMOVE THE TREE DURING THE PROSECUTION OF THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL PROTECT ALL CONCRETE SIDEWALK, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT FROM DAMAGE THROUGH THE USE OF PLYWOOD SHEETING OR MATS WHEN NECESSARY. THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL REPLACE OR RESTORE ALL CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT WHICH MAY HAVE BEEN DAMAGED DURING THE PROSECUTION OF THE WORK.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL BE RESPONSIBLE AT ALL TIMES FOR KEEPING THE WORK SITE ADJOINING PREMISES, STREET, WALKS AND DRIVEWAYS CLEAN. ALL TREE BRANCHES, BARK, CHIPS AND OTHER DEBRIS MUST BE CLEARED UP AT THE END OF THE WORKDAY.

SECTION 33- UTILITIES

TRENCH DRAIN SYSTEM
ZURN Z880 2 1/2 [64] WIDE TRENCH DRAIN SYSTEM SHALL BE 4 8 [1220] LONG AND 2 1/2 [63.5] WIDE. DRAIN SHALL BE 3 [76] DEEP. DRAIN SHALL BE MADE OF (HDPE) HIGH DENSITY POLYETHYLENE AND IS UV-10 STABILIZED. DRAIN SHALL HAVE BEDDING FEET TO BE USED FOR POSITIONING AND ANCHORING PURPOSES. DRAINS SHALL HAVE TONGUE AND GROOVE SNAP FIT CONNECTION. DRAIN SHALL HAVE 24 [610] LONG HIGH-DENSITY POLYETHYLENE DECORATIVE GRATE (-POG) PROVIDED AS STANDARD.

INSTALLATION
TRENCH EXCAVATION MUST BE 4" [102MM] GREATER THAN THE TRENCH DEPTH AND A MINIMUM OF 4" [102MM] GREATER THAN THE EDGE OF THE TRENCH ON EACH SIDE. SOFT AND/OR SHIFTING SOIL SUBSTRATES MAY CAUSE CRACKING OF THE CONCRETE AND CONSEQUENT MOVEMENT OF THE TRENCH. IT IS CRITICAL THAT THE CONCRETE BE POURED ON AN ADEQUATE FOUNDATION

ASSEMBLING PER MANUFACTURER INSTRUCTION. A SILICONE CAULK OR A CONSTRUCTION ADHESIVE, SUCH AS LIQUID NAILS, IS RECOMMENDED TO BE USED AT EACH JOINT AS A SEALER.

UPON COMPLETION OF THE TRENCH EXCAVATION, THE CHANNELS SHOULD BE PLACED IN ORDER ALONGSIDE THE EXCAVATION AND ACCORDING TO THE JOB LAYOUT.

AFTER ATTACHMENT OF ACESSORIES, ANCHOR AND LEVEL TRENCH IN THE EXCAVATION USING CONCRETE PATTIES AROUND THE FEET. MAKE FINISH POUR OF CONCRETE AND BE CERTAIN TO PROPERLY VIBRATE CONCRETE TO ELIMINATE ANY UNWANTED VOIDS. FINISH TROWELING SHOULD BE DONE TO SET THE TOP EDGE OF THE TRENCH DRAIN 1/16" [1.6MM] BELOW THE FLOOR GRADE. REMEMBER TO COMPENSATE FOR CONCRETE SHRINKAGE THAT MAY OCCUR DURING CURE SO THAT THE EDGE OF THE TRENCH DRAIN DOES NOT PROTRUDE ABOVE THE FINISHED FLOOR GRADE.

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seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights

Renovation of 10 Scattered Sites

10 Scattered Sites - Norwich Avenue
Single Family Residence, Minor Alteration
958 Norwich Avenue,
Pittsburgh, Pennsylvania 15226

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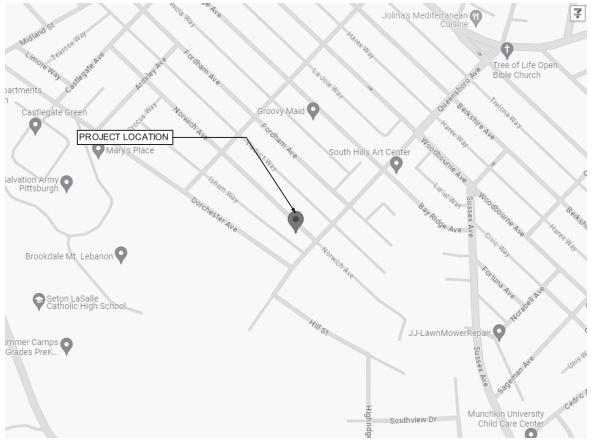
Code Conformance Information

Applicable Codes

General:	2018 International Residential Code 2018
Energy:	2018 International Energy Conservation Code
Electrical:	2017 NEC (NFPA 70)
Fire:	2018 International Fire Code
Fuel Gas:	2018 International Fuel Gas Code
Mechanical:	2018 International Mechanical Code
Plumbing:	2017 Allegheny County Health Department Plumbing Code

General Building / Project Information

Stories:	2 Stories
Building Gross Area:	Basement 304 sqft + 293 sqft Garage
	1st Floor 597 sqft
	2nd Floor 597 sqft



1 Site Location
SCALE: 1" =30'

Materials Legend

NOT ALL MATERIALS USED

- EARTH
- COMPACTED STONE FILL
- CONCRETE
- STEEL
- RIGID INSULATION
- BLOCKING
- BATT INSULATION
- GYPSUM WALL BOARD
- WOOD
- PLYWOOD SHEATHING
- SPRAY FOAM INSULATION

Abbreviations

A.F.F.	Above Finish Floor
A.P.	Access Panel
ACOUST.	Acoustical
A.C.T.	Acoustical Ceiling Tile
ADH.	Adhesive
ADJUST.	Adjustable
A/C	Air Conditioning
ALT.	Alternate
ALTN.	Alternate
ALUM.	Aluminum
A.O.R.	Area of Refuge
APPROX.	Approximate
ARCH.	Architectural
ASB.	Asbestos
ASPH.	Asphalt
AUTO.	Automatic
AVG.	Average
BLK.	Block
BD.	Board
BOT	Bottom
BLDG	Building
C.I.P.	Cast In Place
C.B.	Catch Basin
CEM.	Cement
CER.	Ceramic
CG	Corner Guard
C.M.T.	Ceramic Mosaic Tile
C.W.T.	Ceramic Wall Tile
C.O.	Cleanout
℄	Center Line
CLO.	Closet
C.W.	Cold Water
CLG.	Ceiling
COL.	Column
CONC.	Concrete
C.M.U.	Concrete Masonry Unit
CONT.	Continuous
CORR.	Corridor
C.M.P.	Corrigated Metal Pipe
CRS.	Courses
DIA.	Diameter
DET	Detail
DGL	Dens Glass Gold
DR.	Door
DN.	Down
D.S.	Downspout
DWG.	Drawing
D.F.	Drinking Fountain
D.I.P.	Ductile Iron Pipe
EA.	Each
E.W.	Each Way
ELEC.	Electrical
E.C.	Electrical Contractor
EL.	Elevation
ELEV.	Elevation
EQUIP.	Equipment
E.F.	Exhaust Fan
EXIST.	Existing
EXP.	Expansion
E.J.	Expansion Joint
EISH	Exterior Sheathing
EXIST.	Existing
EXP.	Exposed
EXT.	Exterior
E.I.F.S.	Exterior Insulation & Finish System
F.R.P.	Fiberglass Reinforced Polyester
F.F.	Finish Floor
FIN.FLR.	Finish Floor
F.A.C.P.	Fire Alarm Control Panel
F.E.	Fire Extinguisher
FLR.	Floor
F.D.	Floor Drain
FTG.	Footing
GA.	Gauge
G.C.	General Contractor
G.F.I.	Ground Fault Interrupter
GYP.	Gypsum
G.W.B.	Gypsum Wall Board
GSH	Gypsum Sheathing
H/C	Handicap
H.V.A.C.	Heating, Ventilation &
HT	Height
HC	Hollow Core
H.M.	Hollow Metal
HORIZ.	Horizontal
HR.	Hour
H.W.	Hot Water
IN.	Inch
I.M.	Insulated Metal
INSUL.	Insulation or Insulated
INT.	Interior
INV.	Invert
ISO.	Isolation
JAN.	Janitor's Closet
J.T.	Joint
LAM.	Laminate
LAV.	Lavatory
LG.	Long
M.D.F.	Medium Density Fiberboard
M.D.H.	Magnetic Door Holder
M.H.	Manhole
MFGR.	Manufacturer
MAX.	Maximum
MECH.	Mechanical
MET.	Metal
MIN.	Minimum
MISC.	Miscellaneous
N.I.C.	Not In Contract
N.T.S.	Not To Scale
O.C.	On Center
OPP.	Opposite
O.H.	Overhead
PR.	Pair
PLAS.	Plaster
PLAS.LAM.	Plastic Laminate
P.C.	Plumbing Contractor
PLYWD.	Plywood
POLY.	Polyethylene
P.V.C.	Polyvinyl Chloride
PRE-FAB.	Prefabricated
RE.	Refer To
REF.	Refrigerator
R.C.P.	Reinforced Concrete Pipe
REINF.	Reinforcement
RD.	Roof Drain
RM.	Room
S.A.T.	Suspended Acoustical Tile
SCHED.	Schedule
SHT.	Sheet
SIM.	Similar
S.C.	Solid Core
SPECS.	Specifications
SQ.	Square
S.F.	Square Foot
S.S.	Stainless Steel
STL.	Steel
STOR.	Storage
STRUCT.	Structural
TEL.	Telephone
THK.	Thick
T.B.D.	To Be Determined
T&G	Tongue & Groove
T.O.	Top Of
T.O.	Top Of Grade
T.O.S.	Top Of Steel
TYP.	Typical
UNFIN.	Unfinished
U.N.O.	Unless Noted Otherwise
V.B.	Vapor Barrier
VERT.	Vertical
VEST.	Vestibule
V.C.T.	Vinyl Composition Tile
W.H.	Water Heater
W.W.F.	Welded Wire Fabric
WIN.	Window
W/	With
W/O	Without
WD.	Wood

Symbols

NOT ALL SYMBOLS USED

T.O. FINISH FLOOR ELEV. 0'-0"	ELEVATION HEIGHT
PLAN NORTH	NORTH ARROW
1 A1	ELEVATION MARKER

seal

CONSTRUCTION DOCUMENTATION

general notes

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revisions

project title

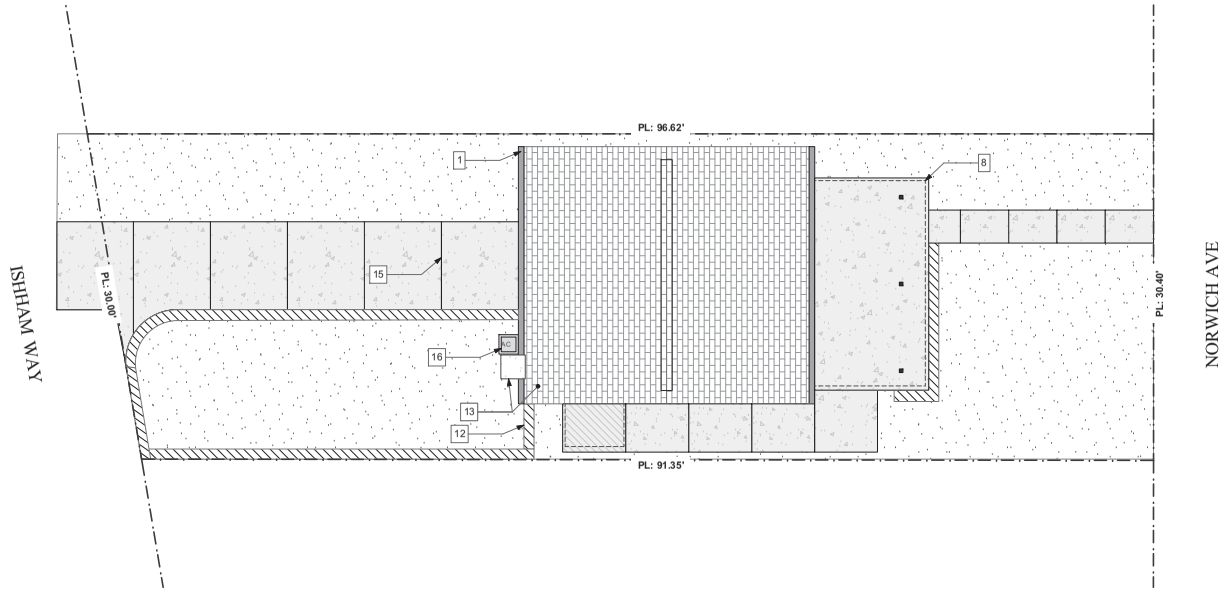
Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
958 Norwich Avenue
Pittsburgh, Pennsylvania 15226

drawing title

Drawing Index, Code Conformance Information, Abbreviations and Materials, Site Location

scale: As Noted	**Sheet No.**
date: August 20th, 2024	**A1**
no. 1 of 9	Project #2326



1 Site Plan
SCALE: 3/16" = 1'-0"

SITE PLAN LEGEND

GRASS	MISC. BRICK	AC CONDENSER	RAILING	TRUE ROOF OUTLINE
LIGHTWEIGHT CONCRETE	MULCHED AREA	TREE / SHRUB	TACTILE PAVING	APPROX. PROPERTY LINE
CONCRETE BLOCK	STREET SIGNAGE	STREET SIGNAGE	MAN HOLE	WINDOW WELL

10 Scattered Sites Keynotes – 958 Norwich Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages.
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
1. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
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6. LIGHTING FIXTURES (E): Provide new energy efficient lighting fixtures in existing locations throughout the interior.

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12. ROOF (GC): Remove existing shingles (approx. 700 sf), flashing, roof vent caps, roof pipe boots flashing, gutters, downspouts etc. Re-roof using new materials. Replace sloped mortar chimney cap with new. See Specifications.
13. REAR ROOF DRAIN (GC): Disconnect roof drain from penetration into building envelope. Clean envelope, remove pipe section penetrating wall and seal wall to match existing construction. Provide new 3x 5 x 5' deep gravel sump with filter fabric wrap and new topsoil cover on Property and downhill in rear. Run roof drain to new underground sump.
14. CONCRETE DRIVEWAY (GC): At each existing driveway slab joint, (7 total x width of Driveway, and along entire edge of driveway edge common with retaining wall) scrape to remove vegetation down 1", provide new backer rod and caulk to seal slab top edge. See Specifications.
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Interior Garage

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25. LAUNDRY TUB FAUCET (P): Replace leaking laundry faucet with new. See Specifications.
26. WATER HEATER (P): Water Heater appears to be manufactured dated Feb of 2017 and does not show signs of failure. Service.
27. FURNACE (M): Furnace manufacture date appears to be December of 2021, making the furnace 3 years old. Service.

Interior First Floor

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Second Floor / Attic

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PLAN NORTH

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
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seal

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revisions

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Project Location:
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drawing title

Site Plan, Site Plan Legend, Keynotes

scale		Sheet No.
As Noted		A2
date: August 20th, 2024		
no. 2	of. 9	Project #2326

FLOOR COVERING PLAN LEGEND

- VCT FLOORING
- CONCRETE FLOORING
- CARPET FLOORING
- LVT FLOORING
- WOOD FLOORING

10 Scattered Sites Keynotes – 958 Norwich Ave

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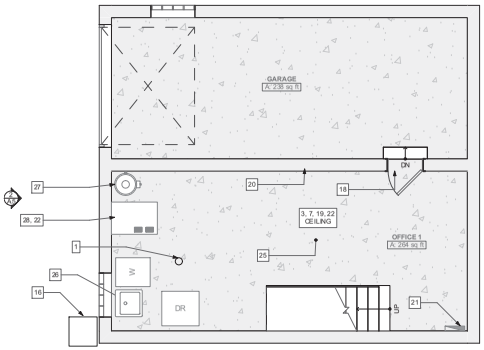
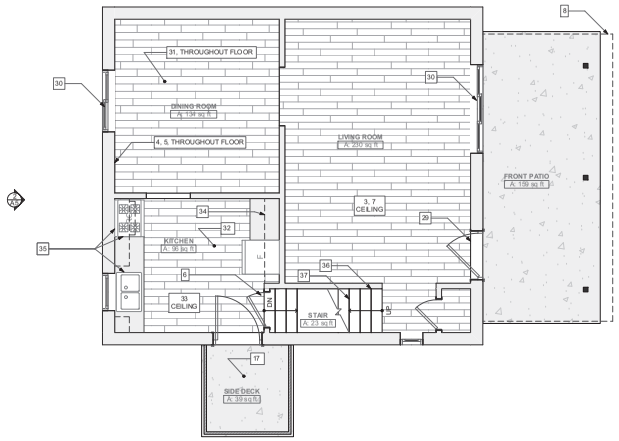
GENERAL FLOOR PLAN NOTES

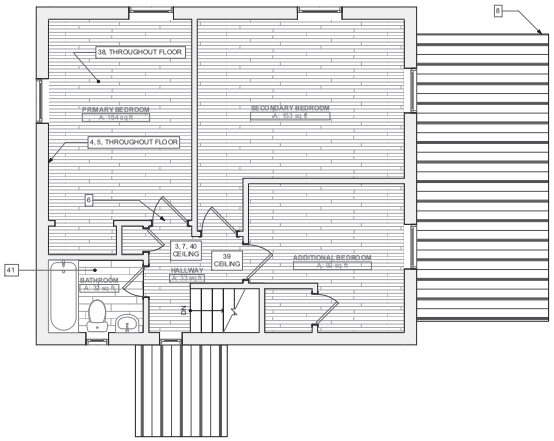
1. PROPERTY HAS BEEN TESTED FOR HAZARDOUS MATERIALS. REPORT WILL BE AVAILABLE AND PROVIDED BY HACP. GC TO ABATED MATERIALS FOLLOWING THE RECOMMENDATIONS FROM THE REPORT
2. CONTRACTOR TO FIELD VERIFY ANY AND ALL CONDITIONS & DIMENSIONS OF WORK AREAS BEFORE BEGINNING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.
3. THE FINISH FLOOR OF THIS PROJECT IS IDENTIFIED AT 0'-0" IN THIS SET OF DRAWINGS.
4. ALIGN NEW WALL & CEILING CONSTRUCTION WITH EXISTING WALL CONSTRUCTION. FINISH NEW PARTITION SMOOTH TO FORM A SEAMLESS JOINT BETWEEN NEW & EXISTING PARTITIONS.
5. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC REPRESENTATIONS. NOTIFY ARCHITECT IN WRITING OF ANY INCONSISTENT OR MISSING DIMENSIONS.
6. DIMENSIONS SHOWN INDICATE FINISHED FACE TO FINISHED FACE, UNLESS NOTED OTHERWISE.
7. ALL NEW OR RELOCATED DOOR FRAMES TO BE LOCATED 4" FROM PERPENDICULAR WALLS, UNLESS NOTED OTHERWISE.
8. SAND WALLS SMOOTH, REMOVE ALL ADHESIVE RESIDUE, AND/OR SKIM WITH JOINT COMPOUND AS NECESSARY TO PREP WALLS FOR NEW FINISHES. THE FLOOR SHOULD BE SCRAPED CLEAN OF ANY ADHESIVE RESIDUE, PATCHED AND LEVELED OUT AS NECESSARY TO RECEIVE NEW FLOORING.
9. AT WALLS EXISTING TO REMAIN, PATCH AND PAINT ANY HOLES OR DAMAGE TO APPEAR NEW.



1 Basement
SCALE: 1/4" = 1'-0"



2 First Floor
SCALE: 1/4" = 1'-0"



3 Second Floor
SCALE: 1/4" = 1'-0"

PLAN NORTH

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
ph 412.281.6001 fx 412.281.6002

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seal

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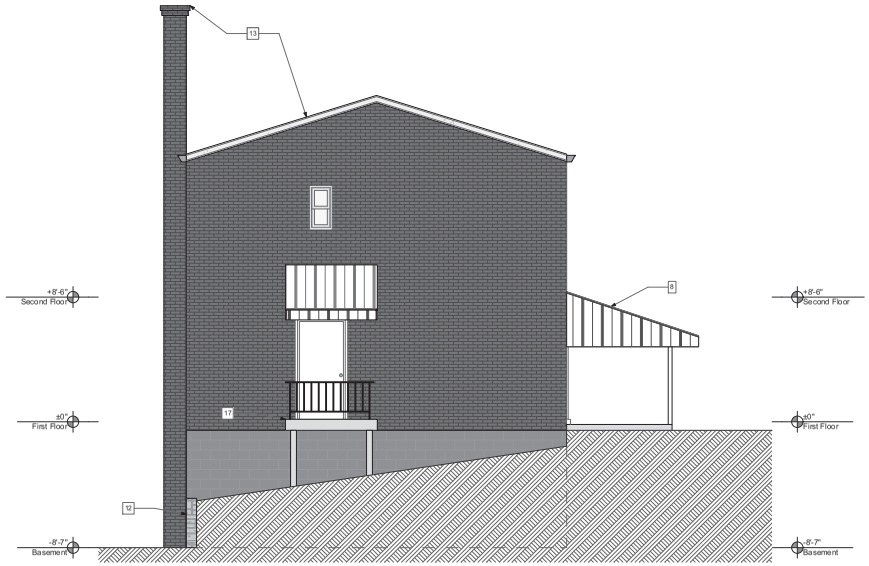
drawing title

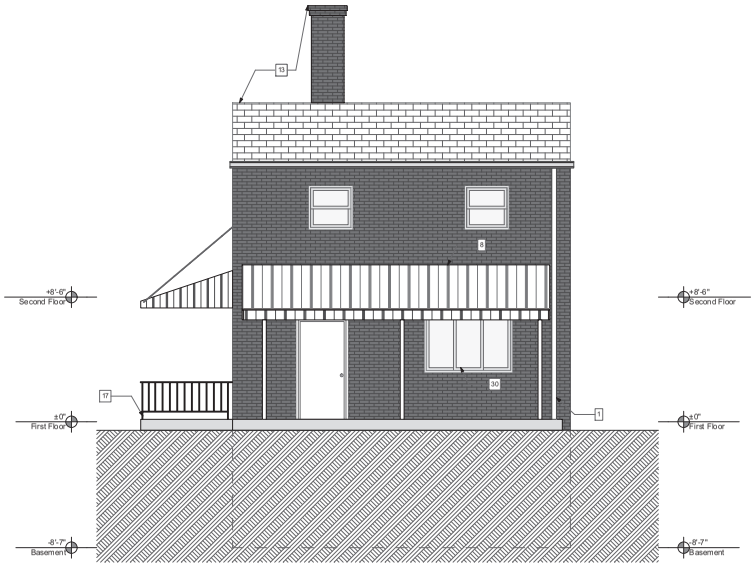
Basement, First Floor, Second Floor, Renovation Plan Legend, Floor Plan Legend, Keynotes

scale	
As Noted	
date: August 20th, 2024	
no. 3	of. 9

Sheet No.
A3
Project #2326



1 South Elevation
SCALE: 1/4" = 1'-0"



2 East Elevation
SCALE: 1/4" = 1'-0"

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1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages.
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
1. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
4. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.
5. INTERIOR DOORS (GC): Remove existing interior doors and provide new interior doors and hardware in all existing door openings throughout. At second floor closet location provide missing closer door and door hardware. See Specifications.
6. LIGHTING FIXTURES (E): Provide new energy efficient lighting fixtures in existing locations throughout the interior.

Exterior

7. ENTRANCE CANOPY (GC): At this location, the existing entrance awning appears to be pulling away from wall. Remove brick both above and below awning attachment in order to ensure that awning is fastened to structural wall studs. If it is not attached, attach awning to wall studs using 14-16 ea. 3/8" Galvanized lag bolts and wood blocking as required. Once awning is firmly attached, re-install brick with new aluminum wall flashing tucked into mortar joint with counter flashing. Caulk tight. Clean debris from awning and re-create proper roof drainage. Repair awning and drains as necessary. Provide new drain inlet baskets. See Specifications.
8. BRICK WINDOW SILLS (GC): Repoint window sills at this location. See Specifications.
9. BRICK WALL (GC): Clean and repoint brick in area and in quantity indicated. See Specifications.
10. BRICK WINDOW SILLS (GC): Repoint window sills at this location. See Specifications.
11. REAR RETAINING WALL (GC): At this location pull back grade and rebuild dry stack retaining wall to plumb (approx. 5 linear ft). Provide new filter fabric and gravel backfill to facilitate drainage as well as new topsoil cap. Reseed. See Specifications.
12. ROOF (GC): Remove existing shingles (approx. 700 sf), flashing, roof vent caps, roof pipe boots flashing, gutters, downspouts etc. Re-roof using new materials. Replace sloped mortar chimney cap with new. See Specifications.
13. REAR ROOF DRAIN (GC): Disconnect roof drain from penetration into building envelope. Clean envelope, remove pipe section penetrating wall and seal wall to match existing construction. Provide new 3x 5 x 5' deep gravel sump with filter fabric wrap and new topsoil cover on Property and downhill in rear. Run roof drain to new underground sump.
14. CONCRETE DRIVEWAY (GC): At each existing driveway slab joint, (7 total x width of Driveway, and along entire edge of driveway edge common with retaining wall) scrape to remove vegetation down 1", provide new backer rod and caulk to seal slab top edge. See Specifications.
15. AC CONDENSOR (M): Provide new AC Condenser on concrete pad. See Specifications.
16. SIDE DECK (GC): Replace wood framed deck (approx. 6 ft x 6 ft, 4 ft above grade) with new pressure treated wood framing. Replace decking and railing with new synthetic material. See Specifications.

Interior Garage

17. GARAGE TO INTERIOR DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door and frame. Paint to finish with new threshold and all door hardware. See specifications.
18. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish. See Specifications.
19. GARAGE TO BASEMENT INSULATION (GC): At area between garage and basement and above block wall (approx. 18" high x full length of garage/basement), remove existing fiberglass batt insulation, provide instead new closed cell foam spray on insulation x 3" thick. See Specifications.

Interior Basement

20. ELECTRICAL PANEL (E): Replace existing corroded electrical panel and replace with new 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally, provide proper electrical grounding and bonding of the electrical system. See Specifications.
21. DUCTWORK (M): Seam seal all exposed duct seams within basement. See Specifications.
22. BASEMENT ACCESS STAIR (GC): Clean and paint basement stair and handrail. Provide new vinyl non-slip tread covers at each tread. See Specifications
23. REMOVAL OF ABANDONED APPLIANCES (GC): Remove and properly dispose of existing HVAC unit currently sitting in basement.
24. BASEMENT FINISH FLOOR (GC): Clean, prep and paint existing basement floor (approx. 260 sf). See Specification.
25. LAUNDRY TUB FAUCET (P): Replace leaking laundry faucet with new. See Specifications.
26. WATER HEATER (P): Water Heater appears to be manufactured dated Feb of 2017 and does not show signs of failure. Service.
27. FURNACE (M): Furnace manufacture date appears to be December of 2021, making the furnace 3 years old. Service.

Interior First Floor

28. FRONT ENTRY DOOR (GC): Remove existing entry door and frame. Provide new insulated entry door, frame hardware and threshold. Provide new storm door with chain limiter and closer. See Specifications.
29. LIVING ROOM / DINING ROOM WINDOWS (GC): Replace both windows in these locations. Repair wall as necessary. See Specifications.
30. FLOOR FINISH (GC): Remove existing carpet and VCT floor finish throughout first floor. Provide new LVT floor over existing hardwood floor (approx. 500 sf). See Specification.
31. KITCHEN FLOORING (GC): Remove existing Kitchen VCT flooring down to subfloor (approx. 100 sf). Repair subfloor as necessary to receive new LVT flooring. Install new waterproof LVT flooring and thresholds. See Specification.
32. KITCHEN CEILING (GC/P): Remove and repair section of existing kitchen ceiling (approx. 50sf) damaged by water from bathroom above. Repair any plumbing pipes found to be leaking above the ceiling prior to closing ceiling. See Specifications.
33. KITCHEN CABINETS / COUNTER and BACKSPLASH (GC): Replace existing kitchen upper and lower cabinets and countertop with new. Provide new tiled backsplash behind stove and below vent hood. Run tile below top of stove 6". See Specifications.
34. KITCHEN APPLIANCES (GC/P/E/M): Provide new stove/oven combination. Provide new sink, sink faucet and drain assembly. Provide new refrigerator. Provide new kitchen exhaust hood ventilated to the exterior. See Specifications.
35. MAIN STAIR HANDRAIL MISSING SECTION (GC): Provide missing section of handrail. New handrail section shall match existing wrought iron material and detailing and be firmly attached. It shall extend from the bottom of the existing handrail to a point above or slightly below the nosing of the lowest riser. See Details and Specifications.
36. MAIN STAIR (GC): Sand and refinish treads and risers at main stairway. Add wood handrail extension to extend past noising of lowest tread. See Specifications.

Second Floor / Attic

37. FLOOR FINISH (GC): Provide new LVT floor over existing hardwood floor (approx. 480 sf). Provide new painted ¼ Rd trim at wall base. See Specification.
38. ATTIC ACCESS DOOR (GC): At this location, provide new insulated hinged attic access door in existing opening.
39. ATTIC INSULATION (GC): Provide new min R-38 blown in Attic Insulation (approx. 520 sf). Verified with depth indicials. Take care not to cover air circulation channels. See Specifications.
40. BATHROOM (GC/P): In second floor bathroom: Remove existing VCT flooring (approx. 25 sf), provide new LVT flooring per Specifications. Remove and replace entirely existing tub tile surround, medicine cabinet, tub/shower faucet and drain, sink faucet and drain, and toilet. Provide new rod and shower curtain. Provide new bathroom exhaust fan wired to light circuit and ventilated to the exterior. Provide new towel bar/s. Robe Hook, Grab bar and toilet roll holder. See Specifications.

Fukui Architects Pc
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Pittsburgh, Pennsylvania 15219
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seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

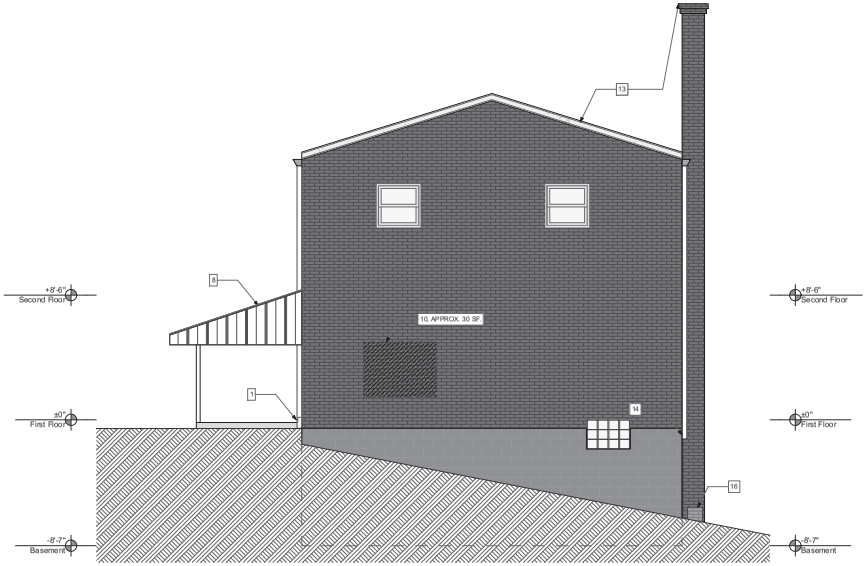
Project Location:
Renovation of 10 Scattered Sites
958 Norwich Avenue
Pittsburgh, Pennsylvania 15226

drawing title

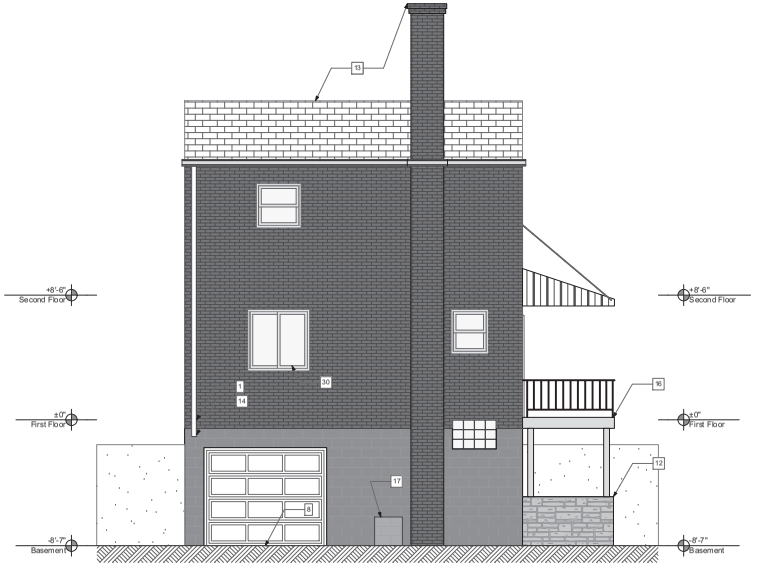
South Elevation, East Elevation, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no.	of.
4	9

Sheet No.
A4
Project #2326



1 North Elevation
SCALE: 1/4" = 1'-0"



2 West Elevation
SCALE: 1/4" = 1'-0"

10 Scattered Sites Keynotes – 958 Norwich Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

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seal

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revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
958 Norwich Avenue
Pittsburgh, Pennsylvania 15226

drawing title

North Elevation, West Elevation, Keynotes

scale		Sheet No.
As Noted		A5
date: August 20th, 2024		
no. 5	of. 9	Project #2326

GENERAL NOTES

USE OF THE DOCUMENTS
THE USE OF THESE DOCUMENTS IS RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED. RE-USE OR REPRODUCTION OF THE DOCUMENTS (IN WHOLE OR IN PART), FOR ANY OTHER PURPOSE IS PROHIBITED. TITLE TO THESE REMAINS WITH FUKU ARCHITECTS P.C. (FAR). VISUAL CONTRACT DOCUMENTS DOCUMENTS IS PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

DIVISION 1 - GENERAL CONDITIONS

APPLICABILITY OF HUD-5370 GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS - PUBLIC HOUSING PROGRAMS
THE HUD-5370, GENERAL CONDITIONS CURRENT EDITION, SHALL APPLY TO THE PROJECT. A COPY OF THE HUD GENERAL CONDITIONS ARE INCLUDED IN THE FRONT END DOCUMENTS AS PART OF HUD FORMS. HARD CONES ARE AVAILABLE AT HACP OFFICE.

MULTIPLE CONTRACT
1. COORDINATION
GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT, ELECTRICAL CONTRACT, AND ADDITIONAL CONTRACTS APPLICABLE IN THE CONSTRUCTION DOCUMENTS.

2. GENERAL REQUIREMENTS OF CONTRACTS
UNLESS THE AGREEMENT CONTAINS A MORE SPECIFIC DESCRIPTION OF THE WORK OF EACH CONTRACT, THE GENERAL REQUIREMENTS ON DRAWINGS AND IN SPECIFICATION SECTIONS DETERMINE WHICH CONTRACT INCLUDES A SPECIFIC ELEMENT OF PROJECT.

3. SCOPE OF WORK RESPONSIBILITY
A. GENERAL CONSTRUCTION CONTRACT
WORK OF THE GENERAL CONSTRUCTION CONTRACT INCLUDES, BUT IS NOT LIMITED TO, THE REMAINING WORK NOT IDENTIFIED AS WORK UNDER OTHER CONTRACTS.

B. PLUMBING CONTRACT
WORK OF THE PLUMBING CONTRACT INCLUDES, BUT IS NOT LIMITED TO, PLUMBING FIXURES AND APPLIANCES (INCLUDING BUT NOT LIMITED TO SINKS, TUBS, SHOWER ENCLOSURES, SINK ENCLOSURES AND DRAIN ASSEMBLIES, ETC), PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT, PLUMBING CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT.

C. MECHANICAL CONTRACT
WORK OF THE MECHANICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ALL MECHANICAL EQUIPMENT AND CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND ELECTRICAL CONTRACT MECHANICAL EQUIPMENT INCLUDES BUT IS NOT LIMITED TO FURNACES AND CONDENSERS, KITCHEN AND BATH EXHAUST FANS, THERMOSTATS AND CONTROLS, ETC.

D. ELECTRICAL CONTRACT
WORK OF THE ELECTRICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ELECTRICAL EQUIPMENT AND FIXTURES INCLUDING BUT NOT LIMITED TO, (INTERIOR AND EXTERIOR LIGHT FIXTURES, SMOKE AND CO DETECTORS, COMPLETE CIRCUIT BREAKER PANELS INCLUDING ALL BREAKERS AND LABELING, ELECTRICAL SERVICE ENTRANCE), WIRING, AND ELECTRICAL AND LOW VOLTAGE CONNECTIONS TO EQUIPMENT FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT. ELECTRICAL CONNECT WITH TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT

PRE-CONSTRUCTION CONFERENCE AND NOTICE TO PROCEED
WITHIN TEN CALENDAR DAYS OF CONTRACT EXECUTION, AND PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH THE PHA REPRESENTATIVE, THE PHA ARCHITECT, AND OTHER INTERESTED PARTIES CONVENED BY THE PHA. THE CONFERENCE WILL SERVE TO ACQUAINT THE CONTRACTOR WITH THE GENERAL PLAN OF THE CONSTRUCTION OPERATION AND ALL OTHER REQUIREMENTS OF THE CONTRACT. THE PHA WILL PROVIDE THE CONTRACTOR WITH THE DATE, TIME, AND PLACE OF THE CONFERENCE.
(B) THE CONTRACTOR SHALL BEGIN WORK UPON RECEIPT OF A WRITTEN NOTICE TO PROCEED FROM THE CONTRACTING OFFICER OR DESIGNEE. THE CONTRACTOR SHALL NOT BEGIN WORK PRIOR TO RECEIVING SUCH NOTICE.

CONSTRUCTION PROGRESS
(A) THE CONTRACTOR SHALL, WITHIN FIVE DAYS AFTER THE WORK COMMENCES ON THE CONTRACT OR ANOTHER PERIOD OF TIME DETERMINED BY THE CONTRACTING OFFICER, PREPARE AND SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL THREE COPIES OF A PRACTICABLE SCHEDULE SHOWING THE ORDER IN WHICH THE CONTRACTOR PROPOSES TO PERFORM THE WORK, AND THE DATES ON WHICH THE CONTRACTOR CONTEMPLATES STARTING AND COMPLETING THE SEVERAL SALIENT FEATURES OF THE WORK (INCLUDING PROCURING LABOR, MATERIALS, AND EQUIPMENT). THE SCHEDULE SHALL BE IN THE FORM OF A PROGRESS CHART OF SUITABLE SCALE TO INDICATE APPROPRIATELY THE PERCENTAGE OF WORK SCHEDULED FOR COMPLETION BY ANY GIVEN DATE DURING THE PERIOD. IF THE CONTRACTOR FAILS TO SUBMIT A SCHEDULE WITHIN THE TIME PRESCRIBED, THE CONTRACTING OFFICER MAY WITHHOLD APPROVAL OF PROGRESS PAYMENTS OR TAKE OTHER REMEDIES UNDER THE CONTRACT UNTIL THE CONTRACTOR SUBMITS THE REQUIRED SCHEDULE.
(B). THE CONTRACTOR SHALL ENTER THE ACTUAL PROGRESS ON THE CHART AS REQUIRED BY THE CONTRACTING OFFICER, IMMEDIATELY DELIVER THREE COPIES OF THE ANNOTATED SCHEDULE TO THE CONTRACTING OFFICER. IF THE CONTRACTOR FALLS BEHIND SCHEDULE, UPON THE BASIS OF INSPECTION CONDUCTED PURSUANT TO THE CLAUSE ENTITLED INSPECTION AND ACCEPTANCE OF WORK, IN SECTION, HEREIN THAT THE CONTRACTOR IS NOT MEETING THE APPROVED SCHEDULE, THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO IMPROVE ITS PROGRESS, INCLUDING THOSE THAT MAY BE REQUESTED BY THE CONTRACTING OFFICER, WITHOUT ADDITIONAL COST TO THE PHA. IN THIS CIRCUMSTANCE THE CONTRACTING OFFICER MAY REQUIRE THE CONTRACTOR TO INCREASE THE NUMBER OF SHIFTS, OVERTIME OPERATIONS, DAYS OF WORK, AND/OR THE AMOUNT OF CONSTRUCTION PLANT, AND TO SUBMIT FOR APPROVAL ANY SUPPLEMENTARY SCHEDULE OR SCHEDULES IN CHART FORM AS THE CONTRACTING OFFICER DEEMS NECESSARY TO DEMONSTRATE HOW THE APPROVED RATE OF PROGRESS WILL BE REGAINED.
(C) FAILURE OF THE CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACTING OFFICER UNDER THIS CLAUSE SHALL BE GROUNDS FOR A DETERMINATION BY THE CONTRACTING OFFICER THAT THE CONTRACTOR IS NOT PROSECUTING THE WORK WITH SUFFICIENT DILIGENCE TO ENSURE COMPLETION WITHIN THE TIME SPECIFIED IN THE CONTRACT. UPON MAKING THIS DETERMINATION, THE CONTRACTING OFFICER MAY TERMINATE THE CONTRACTOR'S RIGHT TO PROCEED WITH THE WORK, OR ANY SEPARABLE PART OF IT, IN ACCORDANCE WITH THE DEFAULT CLAUSE OF THIS CONTRACT.

SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK
(A) THE CONTRACTOR ACKNOWLEDGES THAT IT HAS TAKEN STEPS REASONABLY NECESSARY TO ASCERTAIN THE NATURE AND LOCATION OF THE WORK, AND THAT IT HAS INVESTIGATED AND SATISFIED ITSELF AS TO THE GENERAL AND LOCAL CONDITIONS WHICH CAN AFFECT THE WORK OR ITS COST, INCLUDING BUT NOT LIMITED TO, (1) CONDITIONS BELOW OR UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS; (2) THE AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, AND ROADS; (3) UNCERTAINTIES OF WEATHER, RIVER STAGES, TIDES, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE; (4) THE CONFORMATION AND CONDITIONS OF THE GROUND; AND (5) THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING WORK PERFORMANCE. THE CONTRACTOR ALSO ACKNOWLEDGES THAT IT HAS SATISFIED ITSELF AS TO THE CHARACTER, QUALITY, AND QUANTITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED IN SO FAR AS THIS INFORMATION IS REASONABLY ASCERTAINABLE FROM AN INSPECTION OF THE SITE, INCLUDING ALL EXPLORATORY WORK DONE BY THE PHA, AS WELL AS FROM THE DRAWINGS AND SPECIFICATIONS MADE A PART OF THIS CONTRACT. ANY FAILURE OF THE CONTRACTOR TO TAKE THE ACTIONS DESCRIBED AND ACKNOWLEDGED IN THIS PARAGRAPH WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK, OR FOR PROCEEDING TO SUCCESSFULLY PERFORM THE WORK WITHOUT ADDITIONAL EXPENSE TO THE PHA.
(B) THE PHA ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR BASED ON THE INFORMATION MADE AVAILABLE BY THE PHA. NOR DOES THE PHA ASSUME RESPONSIBILITY FOR ANY UNDERSTANDING REACHED OR REPRESENTATION MADE CONCERNING CONDITIONS WHICH CAN AFFECT THE WORK BY ANY OF ITS OFFICERS OR AGENTS BEFORE THE EXECUTION OF THIS CONTRACT, UNLESS THAT UNDERSTANDING OR REPRESENTATION IS EXPRESSLY STATED IN THIS CONTRACT.

DIFFERING SITE CONDITIONS
(1) THE CONTRACTOR SHALL PROMPTLY, AND BEFORE THE CONDITIONS ARE DISTURBED, GIVE A WRITTEN NOTICE TO THE CONTRACTING OFFICER OF (1) SUBSURFACE OR INTENT PHYSICAL CONDITIONS AT THE SITE WHICH DIFFER MATERIALLY FROM THOSE INDICATED IN THIS CONTRACT, OR (2)UNKNOWN PHYSICAL CONDITIONS AT THE SITE OF AN UNUSUAL NATURE, WHICH DIFFER MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERING IN WORK OF THE NATURE PROVIDED IN THIS CONTRACT.
(B)THE CONTRACTING OFFICER SHALL INVESTIGATE THE SITE CONDITIONS PROMPTLY AFTER RECEIVING THE NOTICE. WORK SHALL NOT PROCEED AT THE AFFECTED SITE, EXCEPT AT THE CONTRACTOR'S RISK, UNTIL THE CONTRACTING OFFICER HAS PROVIDED WRITTEN INSTRUCTIONS TO THE CONTRACTOR. IF THE CONDITIONS DO MATERIALLY SO DIFFER AND CAUSE AN INCREASE OR DECREASE IN THE CONTRACTOR'S COST OF, OR THE TIME REQUIRED FOR, PERFORMING ANY PART OF THE WORK UNDER THIS CONTRACT, WHETHER OR NOT CHANGED AS A RESULT OF THE CONDITIONS, AN EQUITABLE ADJUSTMENT SHALL FILE A CLAIM IN WRITING TO THE PHA WITHIN TEN DAYS AFTER RECEIPT OF SUCH INSTRUCTIONS AND, IN ANY EVENT, BEFORE PROCEEDING WITH THE WORK. (NEGOTIATE ADJUSTMENT IN THE CONTRACT PRICE, THE DELIVERY SCHEDULE, OR BOTH SHALL BE MADE UNDER THIS CLAUSE. AND THE CONTRACT MUST BE MODIFIED IN WRITING ACCORDINGLY.
(C)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED, UNLESS THE CONTRACTOR HAS GIVEN THE WRITTEN NOTICE REQUIRED; PROVIDED, THAT THE TIME PRESCRIBED IN (A) ABOVE FORGIVING WRITTEN NOTICE MAY BE EXTENDED AT THE DISCRETION OF THE PHA.
(D)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED IF MADE AFTER FINAL PAYMENT UNDER THIS CONTRACT.

SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION
(A) THE CONTRACTOR SHALL KEEP ON THE WORK SITE A COPY OF THE DRAWINGS AND SPECIFICATIONS AND SHALL AT ALL TIMES GIVE THE CONTRACTING OFFICER ACCESS THERETO. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH. IN CASE OF DIFFERENCE BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. IN CASE OF DISCREPANCY IN THE FIGURES, IN THE DRAWINGS OR SPECIFICATIONS, THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE CONTRACTING OFFICER, WHO SHALL PROMPTLY MAKE A DETERMINATION IN WRITING. ANY ADJUSTMENTBY THE CONTRACTOR WITHOUT SUCH A DETERMINATION SHALL BE AT ITS OWN RISK AND EXPENSE. THE CONTRACTING OFFICER SHALL FURNISH FROM TIME TO TIME SUCH DETAILED DRAWINGS AND OTHER INFORMATION AS CONSIDERED NECESSARY, UNLESS OTHERWISE PROVIDED.
(B)WHEREVER IN THE SPECIFICATIONS OR UPON THE DRAWINGS THE WORDS "DIRECTED", "REQUIRED", "ORDERED", "DESIGNATED", "PRESCRIBED", OR WORDS OF LIKE IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE"DIRECTION", "REQUIREMENT", "ORDER", DESIGNATION, OR "PRESCRIPTION", OF THE CONTRACTING OFFICER IS INTENDED AND SIMILARLY THE WORDS "APPROVED", "ACCEPTABLE", "SATISFACTORY", OR WORDS OF LIKE IMPORT SHALL MEAN "APPROVED BY", OR "ACCEPTABLE TO", OR "SATISFACTORY TO" THE CONTRACTING OFFICER, UNLESS OTHERWISE EXPRESSLY STATED.
(C)WHERE, "SHOW", "SHOW ON DRAWINGS", "AS DETAILED", OR WORDS OF SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE REFERENCE IS MADE TO THE DRAWINGS ACCOMPANYING THIS CONTRACT UNLESS STATED OTHERWISE. THE WORD "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE" THAT IS "PROVIDE AND INSTALLED"
(D)"SHOP DRAWINGS" MEANS DRAWINGS, SUBMITTED TO THE PHA BY THE CONTRACTOR, A SUBCONTRACTOR, OR ANY LOWER TIER SUBCONTRACTOR, SHOWING IN DETAIL (1) THE PROPOSED FABRICATION AND ASSEMBLY OF STRUCTURAL ELEMENTS AND (2) THE INSTALLATION(I.E., FORM, FIT, AND ATTACHMENT DETAILS) OF MATERIALS OF EQUIPMENT. IT INCLUDES DRAWINGS, DIAGRAMS, LAYOUTS, SCHEDULES, DESIGNS OF THE FOLLOWING: PERFORMANCE AND SIZE TESTS, AND SIMILAR MATERIALS. REVIEW BY THE CONTRACTING OFFICER OF SHOP DRAWINGS FOR ESTIMATES PORTIONS OF THE WORK REQUIRED BY THE CONTRACT. THE PHA MAY DUPLICATE, USE, AND DISCLOSE THE SHOP DRAWINGS FOR ANY PURPOSE. SHOP DRAWINGS S DELIVERED UNDER THIS CONTRACT.
(E)IF THIS CONTRACT REQUIRES SHOP DRAWINGS, THE CONTRACTOR SHALL COORDINATE ALL DRAWINGS, AND SHALL REVIEW THEM FOR ACCURACY, COMPLETENESS, AND COMPLIANCE WITH OTHER CONTRACT REQUIREMENTS, AND SHALL INDICATE ITS APPROVAL THEREON AS EVIDENCE OF SUCH COORDINATION AND REVIEW. SHOP DRAWINGS SUBMITTED TO THE CONTRACTING OFFICER WITHOUT EVIDENCE OF THIS COORDINATION AND REVIEW OR THAT ARE RESUBMISSION FROM THE CONTRACTING OFFICER WILL INDICATE AN APPROVAL OR DISAPPROVAL OF THE SHOP DRAWINGS. IF THE CONTRACTOR PROTESTS, HOWEVER, THAT SHOP DRAWINGS SHOULD BE APPROVED WITHOUT CHANGE, THE CONTRACTOR SHALL INDICATE THE PHA'S REASONS THEREFORE. ANY WORK DONE BEFORE SUCH APPROVAL SHALL BE AT THE CONTRACTOR'S RISK. APPROVAL BY THE CONTRACTING OFFICER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS IN SUCH DRAWINGS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM THE REQUIREMENTS OF THIS CONTRACT, EXCEPT WITH RESPECT TO VARIATIONS DESCRIBED IN SUCH DRAWINGS, AND (4)AVOID WORK THEREBY (F)BELOW.
(F) IF SHOP DRAWINGS SHOW VARIATIONS FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL DESCRIBE SUCH VARIATIONS IN WRITING, SEPARATE FROM THE DRAWINGS, AT THE TIME OF SUBMISSION. IF THE ARCHITECT/ENGINEER FINDS THAT THE PROPOSED AND THE CONTRACTING OFFICER CONCURS, THE CONTRACTING OFFICER SHALL INDICATE AN APPROVAL THEREOF IN CONNECTION TO THE DRAWINGS, EXCEPT THAT,IF THE VARIATION IS MINOR OR DOES NOT INVOLVE A CHANGE IN PRICE OR IN TIME OF PERFORMANCE, A MODIFICATION NEED NOT BE ISSUED. (G)IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE TIMELY REQUESTS OF THE PHA FOR SUCH LARGE SCALE AND DETAILED DRAWINGS AS MAY BE NECESSARY FOR ORDER OF ADDITIONAL INFORMATION NOT ALREADY IN HIS POSSESSION, WHICH SHALL BE REQUIRED TO PROSECUTE THE WORK SHOWN IN THE DRAWINGS. SUCH REQUESTS MAY BE SUBMITTED AS THE NEED ARISES, BUT EACH SUCH REQUEST SHALL BE FILED IN AMPLE TIME TO PERMIT APPROPRIATE ACTION TO BE TAKEN WITHOUT DELAYING THE PROSECUTION OF THE WORK. (H)THE CONTRACTOR SHALL SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL FOLLOWING SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO, ALL SHOP DRAWINGS AS CALLED FOR UNDER THE VARIOUS HEADINGS OF THESE SPECIFICATIONS. THREE SETS (UNLESS OTHERWISE INDICATED) OF ALL SHOP DRAWINGS WILL BE RETAINED BY THE PHA AND ONE SET WILL BE RETURNED TO THE CONTRACTOR. AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL MAKE THE SHOP DRAWINGS A PART OF THE CONTRACT, SHALL FURNISH A COMPLETE SET OF ALL SHOP DRAWINGS AS FINALLY APPROVED, INCLUDING ALL REVISIONS, ALL CHANGES AND REVISION SMADE UP TO THE TIME THE WORK IS COMPLETED AND ACCEPTED.
(I) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL SHOP DRAWINGS PREPARED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

AS-BUILT DRAWINGS
(A)"AS-BUILT DRAWINGS," AS USED IN THIS CLAUSE, MEANS DRAWINGS SUBMITTED BY THE CONTRACTOR OR SUBCONTRACTOR AT ANY TIER TO SHOW THE CONSTRUCTION OF A PARTICULAR STRUCTURE OR WORK AS ACTUALLY CONSTRUCTED IN THE CONTRACT. "AS-BUILT DRAWINGS" SHALL BE SYNONYMOUS WITH "RECORD DRAWINGS."
(B)AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER ACCURATE INFORMATIONTO BE USED IN THE PREPARATION OF PERMANENT AS-BUILT DRAWINGS. THE CONTRACTOR SHALL MAKE THE CONTRACTOR SHALL RECORD ON ONE SET OF CONTRACT DRAWINGS ALL CHANGES FROM THE INSTALLATIONS ORIGINALLY INDICATED AND RECORD FINAL LOCATIONSOF UNDERGROUND LINES BY DEPTH FROM FINISH GRADE AND BY ACCURATE HORIZONTAL OFFSET DISTANCES TO PERMANENT SURFACE IMPROVEMENTS SUCH AS BUILDINGS, CURBS, OR EDGES OF WALKS.
(C) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL AS-BUILT DRAWINGS PREPARED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

MATERIAL AND WORKMANSHIP
(A)ALL EQUIPMENT, MATERIAL, AND ARTICLES FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED. UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT. REFERENCES IN THE CONTRACT TO EQUIPMENT, MATERIAL, ARTICLES, OR PATENTED PROCESSES BY TRADE NAME, MAKE, OR CATALOG NUMBER, SHALL BE REGARDED AS ESTABLISHING A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. THE CONTRACTOR MAY, AT ITS OPTION, USE ANY EQUIPMENT, MATERIAL, ARTICLE, OR PROCESS THAT, IN THE JUDGMENT OF, AND AS APPROVED BY THE CONTRACTING OFFICER, IS EQUAL TO THAT NAMED IN THE SPECIFICATIONS, UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT.
(B)APPROVAL OF EQUIPMENT AND MATERIALS.
(1) THE CONTRACTOR SHALL OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT TO BE INCORPORATED INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER THE NAME OF THE MANUFACTURER, THE MODEL NUMBER, AND OTHER INFORMATION CONCERNING THE PERFORMANCE, CAPACITY, NATURE, AND RATING OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT WHEN REQUIRED BY THIS CONTRACT OR BY THE CONTRACTINGOFFICER. THE CONTRACTOR SHALL ALSO OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MATERIAL ORARTICLES WHICH THE CONTRACTOR PROPOSES TO INCORPORATE INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL PROVIDE FULL INFORMATION CONCERNING THE MATERIAL OR ARTICLES. MACHINERY,
EQUIPMENT, MATERIAL, AND ARTICLES THAT DO NOT HAVE THE REQUIRED APPROVAL SHALL BE INSTALLED OR USED AT THE RISK OF SUBSEQUENT REJECTION.
(2) WHEN REQUIRED BY THE SPECIFICATIONS OR THE CONTRACTING OFFICER, THE CONTRACTOR SHALL SUBMIT APPROPRIATELY MARKED SAMPLES (AND CERTIFICATES RELATED TO THEM) FOR APPROVAL AT THE CONTRACTOR'S
EXPENSE, WITH ALL SHIPPING CHARGES PREPAID. THE CONTRACTOR SHALL LABEL, PACKAGE, AND PREPARE THE SAMPLES FOR SHIPMENT, MATERIAL OR PRODUCT REPRESENTED, ITS PLACE OF ORIGIN, THE NAME OF THE PROJECT, THE CONTRACTOR'S NAME, AND THE SUBMITTAL DESIGNATION OF THE CONSTRUCTION PROJECT FOR WHICH THE MATERIAL OR PRODUCTIS INTENDED TO BE USED.
(3)CERTIFICATES SHALL BE SUBMITTED IN TRIPLICATE, DESCRIBING EACH SAMPLE SUBMITTED FOR APPROVAL, AND CERTIFYING THAT THE MATERIAL, EQUIPMENT, OR WORKMANSHIP WILL COMPLY WITH CONTRACT REQUIREMENTS. THE CERTIFICATES SHALL INCLUDE THE NAME AND BRAND OF THE PRODUCT, NAME OF MANUFACTURER, AND THE LOCATION WHERE PRODUCED.
(4) APPROVAL OF A SAMPLE SHALL NOT CONSTITUTE A WAIVER OF THE PHA RIGHT TO DEMAND FULL COMPLIANCE WITH CONTRACT REQUIREMENTS. MATERIALS, EQUIPMENT AND ACCESSORIES MAY BE REJECTED FOR CAUSE EVEN THOUGH SAMPLES HAVE BEEN APPROVED.
(5) WHEREVER MATERIALS ARE REQUIRED TO COMPLY WITH RECOGNIZED STANDARDS OR SPECIFICATIONS, SUCH SPECIFICATIONS SHALL BE ACCEPTED AS ESTABLISHING THE TECHNICAL QUALITIES AND TESTING METHODS, BUT SHALL NOT GOVERN THE NUMBER OF TESTS REQUIRED TO PROVE THAT THE MATERIALS COMPLY WITH THE STANDARDS. THE CONTRACTING OFFICER MAY REQUIRE LABORATORY TEST REPORTS ON ITEMS SUBMITTED FOR APPROVAL OR APPROVED PREVIOUSLY ON THE BASIS OF DATA SUBMITTED IN CERTIFICATES WITH SAMPLES. CHECK TESTS WILL BE MADE ON MATERIALS
DELIVERED TO THE WORK SITE IN ACCORDANCE WITH THE CONTRACTING OFFICER DETERMINES NECESSARY TO INSURE COMPLIANCE OF MATERIALS WITH THE SPECIFICATIONS. THE CONTRACTOR WILL ASSUME ALL COSTS OF RETESTING MATERIALS WHICH FAIL TO MEET CONTRACT REQUIREMENTS AND RETESTING MATERIAL SOFFERED IN SUBSTITUTION FOR THOSE FOUND DEFICIENT.
(6) AFTER APPROVAL, SAMPLES WILL BE KEPT IN THE PROJECT OFFICE, UNTIL COMPLETION OF WORK. THEY MAY NOT BE USED IN THE WORK (AFTER A SUBSTANTIAL QUANTITY OF THE MATERIALSTHEY REPRESENT HAS BEEN BUILT IN AND ACCEPTED BY THE PHA.
(C) REQUIREMENTS CONCERNING LEAD-BASED PAINT. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE LEAD-BASED PAINT CONTAINED IN THE LEAD-BASED PAINT POISONING PREVENTION ACT (42 U.S.C. 4821-4846) AS IMPLEMENTED BY 24 CFR PART 35.

PERMITS AND CODES
(A)THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALLAPPLICABLE LAWS, ORDINANCES, CODES, RULES AND REGULATIONS. NOTWITHSTANDING THE REQUIREMENTS OF THE CONTRACTOR TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS IN THE CONTRACT, ALL WORK INSTALLED SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. BEFORE BEGINNING ANY WORK, THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND THE SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS BEARING ON THE WORK AND SHALL IMMEDIATELY REPORT ANY DISCREPANCY IT MAY DISCOVER TO THE CONTRACTING OFFICER.
WHERE THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS FAIL TO COMPLY WITH THE APPLICABLE CODE OR REGULATION, THE CONTRACTING OFFICER SHALL MODIFY THE CONTRACT TO CHANGE ORDER PURSUANT TO THE CLAUSE ENTITLED CHANGES HEREIN TO CONFORM TO THE CODE OR REGULATION.
(B) THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES,AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK, WHERE THE PHA CAN ACCOMPLISH THE ISSUANCE OF ALL OR PART OF THESE PERMITS, FEES AND LICENSES WITHOUT COST TO THE CONTRACTOR, THE CONTRACT AMOUNT SHALL BE REDUCED ACCORDINGLY.

HEALTH, SAFETY AND ACCIDENT PREVENTION
(A) IN PERFORMING THIS CONTRACT, THE CONTRACTOR SHALL:
(1)ENSURE THAT NO LABORER OR MECHANIC SHALL BE REQUIRED TO WORK IN SURROUNDINGS OR UNDER WORKING CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO HIS/HER HEALTH AND/OR SAFETY AS DETERMINED UNDER CONSTRUCTION SAFETY AND HEALTHSTANDARDS PROMULGATED BY THE SECRETARY OF LABOR BY REGULATIONS.(2)PROTECT THE LIVES, HEALTH, AND SAFETY OF THEIR PERSONS; (3)PREVENT DAMAGE TO PROPERTY, MATERIALS, SUPPLIES, AND EQUIPMENT, AND, (4)AVOID WORK INTERFERENCE.
(B) FOR THESE PURPOSES, THE CONTRACTOR SHALL: (1)COMPLY WITH REGULATIONS AND STANDARDS ISSUED BY THE SECRETARY OF LABOR AT 29 CFR PART 1926. FAILURE TO COMPLY MAY RESULT IN IMPOSITION OF SANCTIONS PURSUANT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. 327 ET SEQ. 40 U.S.C. 3701 ET SEQ., AND (2)INCLUDE THE TERMS OF THIS CLAUSE IN EVERY SUBCONTRACT SO THAT SUCH TERMS WILL BE BINDING ON EACH SUBCONTRACTOR.
(C) THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF EXPOSURE DATA ON ALL ACCIDENTS INCIDENT TO WORK PERFORMED UNDER THIS CONTRACT AND RESULTING IN DEATH, TRAUMATIC INJURY,OCCUPATIONAL DISEASE, OR DAMAGE TO PROPERTY, MATERIALS,SUPPLIES, OR EQUIPMENT, AND SHALL REPORT THIS DATA IN THE MANNER PRESCRIBED BY 29 CFR PART1904.
(D)THE CONTRACTOR AGREES THAT WHEN THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THESE REQUIREMENTS AND OF THE CORRECTIVE ACTION REQUIRED. THIS NOTICE, WHEN DELIVERED TO THE CONTRACTOR OR THE CONTRACTOR'S REPRESENTATIVE AT THE SITE OF THE WORK, SHALL BE DEEMED SUFFICIENT NOTICE OF THE NON COMPLIANCE AND CORRECTIVE ACTION REQUIRED. AFTER RECEIVING SUCH NOTICE, THE CONTRACTOR SHALL IMMEDIATELY TAKE CORRECTIVE ACTION. IF THE CONTRACTOR FAILS OR REFUSES TO TAKE CORRECTIVE ACTION PROMPTLY, THE CONTRACTING OFFICER MAY ISSUE AN ORDER STOPPING ALL OR PART OF THE WORK UNTIL SATISFACTORY CORRECTIVE ACTION HAS BEEN TAKEN. THE CONTRACTOR SHALL NOT BASE ANY CLAIM ON REQUEST FOR EQUITABLE ADJUSTMENT FOR ADDITIONAL TIME OR MONEY ON ANY STOP ORDER ISSUED UNDER THESE CIRCUMSTANCES.
(E) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS SUBCONTRACTOR'S COMPLIANCE WITH THE PROVISIONS OF THIS CLAUSE. THE CONTRACTOR SHALL NOT INCLUDE THIS CLAUSE IN ANY SUBCONTRACT AS THE PHA, THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, OR THE SECRETARY OF LABOR SHALL DIRECT AS A MEANS OF ENFORCING SUCH PROVISIONS.

TEMPORARY HEATING
THE MECHANICAL CONTRACTOR SHALL PROVIDE AND PAY FOR TEMPORARY HEATING, COVERING, AND ENCLOSURES NECESSARY TO PROPERLY PROTECT ALL WORK AND MATERIALS AGAINST DAMAGE BY DAMPNESS AND COLD, TO DRY OUT THE WORK, AND TO FACILITATE THE COMPLETION OF THE WORK. ANY PERMANENT HEATING EQUIPMENT USED S

PERFORMED OR COMPLETED SHALL BE SUBMITTED BY EACH PRIME CONTRACTOR. ALL WORK OUTLINED ON THE INITIAL PUNCH LIST SHALL BE COMPLETED BY THE CONTRACTOR PRIOR TO THE FINAL INSPECTION AND BEFORE THE PROJECT WILL BE ACCEPTED FOR FINAL COMPLETION. AFTER ALL REQUIREMENTS PREPARATORY TO THE FINAL INSPECTION HAVE BEEN COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER TO PERFORM A FINAL INSPECTION. IF ALL THE WORK HAS BEEN COMPLETED, INCLUDING PUNCH LIST ITEMS FROM EARLIER INSPECTIONS, AND NO FURTHER CORRECTIONS ARE REQUIRED, THE ARCHITECT SHALL RECOMMEND FINAL ACCEPTANCE OF THE PROJECT WHEN ALL THE CLOSEOUT DOCUMENTS ARE RECEIVED, INCLUDING BUT NOT LIMITED TO WARRANTIES, O&M MANUALS, FINAL TESTING, CERTIFICATES, PERMITS, PUNCH LIST, SUBMITTALS, RFIS, AS BUILD DRAWINGS AND ANY ADDITIONAL DOCUMENTATION REQUIRED BY HACP FOR CLOSEOUT.

ALL PUNCH LIST ITEMS TO BE COMPLETED WITHIN THIRTY (30) WORKING DAYS OF RECEIPT, OR FINAL 10% DRAW WILL BE FORFEITED. ALL WORK NOT COMPLETED WITHIN THE ALLOTTED TIME WILL BE COMPLETED BY HACP AT PRIME CONTRACTOR'S EXPENSE. FINAL COMPLETION OCCURS WHEN ALL PUNCH LIST ITEMS HAVE BEEN COMPLETED AND OCCUPANCY PERMIT HAS BEEN ISSUED.

PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL EQUIPMENT FURNISHED, INSTALLED OR SERVICED UNDER THIS AND THEIR CONTRACTS. EACH PRIME CONTRACTOR SHALL VERIFY THAT ITS EQUIPMENT, ELECTRICAL SYSTEMS AND APPLIANCES ARE FULLY OPERATIONAL AND THAT ALL PLUMBING AND MECHANICAL EQUIPMENT IS OPERATING QUIETLY AND FREE FROM VIBRATION. CONTRACTOR SHALL PROVIDE A BINDER FOR HACP AND TENANT CONTAINING MAINTENANCE MANUALS, INCLUDING OPERATION INSTRUCTIONS, SPARE PARTS, WARRANTIES, INSPECTION PROCEDURES, AND DATA FOR EACH SYSTEM OR EQUIPMENT ITEM.

ALL ELECTRICAL PANELS AND BREAKERS TO BE PROPERLY MARKED AND A TYPED SCHEDULE TO BE FURNISHED.

FINAL CLEANING: AT THE TIME OF THE PROJECT CLOSE OUT, THE GENERAL CONTRACTOR SHALL PROVIDE AND THOROUGHLY CLEAN AND READY THE SPACE FOR OCCUPANCY. THIS SHALL, AT MINIMUM, INCLUDE HARDWARE, SECURITY EQUIPMENT, LIGHT FIXTURES, REPLACEMENT OF BURNED OUT LAMPS, REMOVAL OF NON PERMANENT PROTECTION AND LABELS, TOUCH UP OF ANY MINOR FINISH DAMAGE, AND CLEANING OR REPLACEMENT OF MECHANICAL SYSTEM FILTERS. DAMAGE TO ANY FINISH, SURFACE, EQUIPMENT OR OBJECT CAUSED DURING CLEANING SHALL BE REPAIRED OR REPLACED BY THE GENERAL CONTRACTOR AT HIS/HER OWN COST.

UPON COMPLETION OF THE PROJECT, GENERAL CONTRACTOR SHALL OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT AND PROVIDE A COPY OF THE ORIGINAL TO HACP AND ARCHITECT IF REQUIRED.

AT EACH PAYMENT REQUEST AND BEFORE PAYMENT IS MADE, EACH CONTRACTOR SHALL DELIVER TO THE HACP A COMPLETE RELEASE OF ALL SUB CONTRACTOR'S AND SUPPLIER'S LIENS AND RIGHTS OUT OF THIS CONTRACT, OR RECEIPTS IN FULL COVERING ALL LABOR AND MATERIALS FOR WHICH A LIEN COULD BE FILED OR A BOND SATISFACTORY TO THE HACP INDEMNIFYING HACP AGAINST ANY LIENS.

DIVISION 2 – SITE WORK – NOT APPLICABLE

DIVISION 3 – CONCRETE

PLAIN AND REINFORCE CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 19 OF THE IBC 2018 AND ACI 318 AS AMMENDED IN SECTION 1905 OF THE IBC 2018.

CONCRETE TO BE INSTALLED AND CURED PER ACI 318 AND BE NORMAL WEIGHT (144PCF) WITH COMPRESSIVE STRENGTH IN 28 DAYS OF 4000 PSI, AIR ENTRAINED. CEMENT SHALL BE PORTLAND, TYPE I(R),Y ASH & GROUND GRANULATED BLAST FURNACE SLAG NOT PERMITTED). COARSE AGGREGATE SHALL BE ¾" MAXIMUM. AIR ENTRAINED SHALL BE 7 PERCENT. SLUMP SHALL BE 4" MAXIMUM.

REINFORCING BARS SHALL COMPLY WITH A.S.T.M. A615–GRADE 60. WELDED WIRE FABRIC SHALL COMPLY WITH A.S.T.M. A185.

4" MINIMUM COMPACTED GRAVEL BED TO PLACE CONCRETE TO BE #57 HAND OR MACHINE COMPACTED BEFORE CONCRETE PLACEMENT.

PROVIDE COLD-APPLIED JOINT SEALANTS, SINGLE COMPONENT, SILICONE, SELF LEVELING TYPE, BY SIKA OR EQUAL.

ROUND BACKER RODS FOR COLD-APPLIED JOINT SEALANTS: ASTM D5249, TYPE 3, OF DIAMETER AND DENSITY REQUIRED TO CONTROL JOINT-SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT. BY SIKA OR EQUAL.

DIVISION 4 – MASONRY

BRICK MASONRY REPOINTING

BRICK MASONRY REPOINTING SPECIALIST QUALIFICATIONS: ENGAGE AN EXPERIENCED BRICK MASONRY REPOINTING FIRM TO PERFORM WORK OF THIS SECTION. FIRM SHALL HAVE COMPLETED WORK SIMILAR IN MATERIAL DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. EXPERIENCE IN ONLY INSTALLING MASONRY IS INSUFFICIENT EXPERIENCE FOR MASONRY REPOINTING WORK.

REPOINTING OF AREAS INDICATED IN THE DRAWINGS AND LOCATIONS WITH THE FOLLOWING DEFECTS:
A. HOLES AND MISSING MORTAR.
B. CRACKS THAT CAN BE PENETRATED 1/4 INCH OR MORE BY A KNIFE BLADE 0.027 INCH THICK.
C.CRACKS 1/8 INCH OR MORE IN WIDTH AND OF ANY DEPTH.
D.HOLLOW-SOUNDING JOINTS WHEN TAPPED BY METAL OBJECT.
E. ERODED SURFACES 1/4 INCH OR MORE DEEP.
F. DETERIORATION TO POINT THAT MORTAR CAN BE EASILY REMOVED BY HAND, WITHOUT TOOLS.
G. JOINTS FILLED WITH SUBSTANCES OTHER THAN MORTAR.

MATERIALS
PORTLAND CEMENT: ASTM C 150/C 150M, TYPE I OR TYPE II. EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION; GRAY, WHERE REQUIRED FOR COLOR MATCHING OF MORTAR.

MASONRY CEMENT: ASTM C 91/C 91M. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- CEMEX S.A.B. DE C.V.
- HOLCIM (US) INC.
- QUIKRETE; THE QUIKRETE COMPANIES, LLC.

REMOVE GUTTERS, DOWNSPOUTS AND ASSOCIATED HARDWARE ADJACENT TO MASONRY REPOINTING. REINSTALL WHEN REPOINTING IS COMPLETED.PROVIDE TEMPORARY RAIN DRAINAGE DURING WORK TO DIRECT WATER AWAY FROM THE BUILDING.

SEE LINTEL REPLACEMENT BELOW AND COORDINATE MASONRY REPOINTING AND REPLACEMENT WITH REMEDIAL LINTEL REPAIR OR REPLACEMENT.

RETAINING WALL
WHERE NOTED ON THE DRAWINGS, NEW DRYSTACK RETAINING WALL, BELGARD OR EQUAL, TO MATCH EXISTING COLOR AND TYPE OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. REMOVE SUFFICIENT SOIL TO ALLOW ACCESS TO INSTALL A NEW WALL. SET NEW WALL IN COMPACTED GRAVEL BED STRICTLY ACCORDING TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS. INSTALL NEW WALL WITH ALL NECESSARY PINS, GEOGRID AND CAP PIECES ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL ACCESSORIES
WALL CAPS, PINS AND GEOGRID FABRIC.
REPLACEMENT WALL CAPS TO MATCH EXISTING, MATERIAL CONCRETE BY BELGARD OR EQUAL. COLOR AND TYPE TO MATCH EXISTING OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

GLASS BLOCK
SOLID GLASS BLOCK COLORLESS, TRANSPARENT, SMOOTH FACES AND MANUFACTURER'S STANDARD EDGE COATING WHITE, BY SEVES, OWINGS CORNING GLASS BLOCK OR EQUAL. SILICONE SEALANT BY SIKA OR EQUAL. PRODUCT INFORMATION AND SAMPLE TO BE PROVIDED TO ARCHITECT AND HACP FOR APPROVAL. SIZE OF GLASS BLOCK TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD SIZES. GLASS BLOCK SHALL BE INSTALLED PER IBC AND IRC BUILDING CODE AND TMS 402/ACI 530/ASCE 5 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES"

DIVISION 5 – METALS

STEEL BEAMS, ANGLES AND PLATES
SHOP PRIMED WITH RUST PREVENTATIVE PAINT. DIMENSIONS AND GRADE TO MATCH EXISTING. SHOP DRAWINGS TO BE PROVIDED BY GC.

ALL EXTERIOR LINTELS MUST BE HOT-DIP GALVANIZED PER ASTM A123.

LINTEL REPLACEMENT/ INSTALLATION ON BRICK VENEER EXTERIOR WALLS
PROTECT EXISTING OPENING WITH PLYWOOD.TEMPORARILY SHORE AND REMOVE EXISTING BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL ANGLE REPLACEMENT. INSTALL NEW LINTEL WITH HEAVY STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

FOR LINTEL CLEANING USE METAL CLEANING ON NEXT SECTION.

METAL CLEANING
EXECUTION OF THE WORK: IN CLEANING ITEMS, DISTURB THEM AS MINIMALLY AS POSSIBLE AND AS FOLLOWS:
A. REMOVE DETERIORATED COATINGS AND CORROSION.
B. SEQUENCE WORK TO MINIMIZE TIME BEFORE PROTECTIVE COATINGS ARE REAPPLIED.
C. CLEAN ITEMS IN PLACE UNLESS OTHERWISE INDICATED.

MECHANICAL COATING REMOVAL: USE GENTLE METHODS, SUCH AS SCRAPING AND WIRE BRUSHING, THAT WILL NOT ABRADE METAL SUBSTRATE.

REPAINT: WHERE INDICATED, PREPARE PAINTED DECORATIVE METAL BY CLEANING SURFACE, BLEND EDGES WITH THE ADJACENT EXISTING PAINT, SANDING EDGES SMOOTH, REMOVING EXISTING PAINT AND PRIMING FOR PAINTING AS SPECIFIED.

METAL AWNINGS
BASIS OF DESIGN, MATCH EXISTING AWNINGS DIMENSIONS, PERIMETER FASCIA, BRACING AND SUPPORTS TO BE EXTRUDED ALUMINUM, DECKING ALUMINUM INTERLOCKING PANELS, PROFILE AND THICKNESS AS DETERMINED BY MANUFACTURER. FACTORY APPLIED BACKED ENAMEL OR KYNAR PAINT FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER STANDARD COLOR CHART. INSTALLATION OF AWNINGS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. ALL FASTENERS FOR AWNINGS SHALL BE TYPE 316 SS. FOR LOCATIONS WHERE AWNINGS ARE ATTACHED TO SIDEWALL AWNING FASTENERS SHALL FASTEN INTO STUDS WITH COMPRESSION STAND-OFF IF THROUGH VENEER BRICK. INSTALLATION SHALL INCLUDE PREFINISHED ALUMINUM REGLETED WALL FLASHING AT HEAD, PROPERLY INSTALLED AND CAULKED. SEE ALSO DIVISION 10.

ALUMINUM METAL RAILINGS
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS, INCORPORATED, OR COMPARABLE PRODUCT, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
PROVIDE ALLOY AND TEMPER RECOMMENDED BY ALUMINUM PRODUCER AND FINISHER FOR TYPE OF USE AND FINISH INDICATED, AND WITH STRENGTH AND DURABILITY PROPERTIES FOR EACH ALUMINUM FORM REQUIRED NOT LESS THAN THAT OF ALLOY AND TEMPER DESIGNATED BELOW.
GC TO PROVIDE PRODUCT INFORMATION AND SHOP DRAWINGS OF NEW RAILINGS TO MATCH EXISTING DIMENSIONS. PROVIDE ACCESSORIES AS REQUIRED FOR INSTALLATION ON CONCRETE, SHEETMETOD DECKING, WALLS AND CHANGE IN DIRECTION FITTINGS AS REQUIRED.

DIVISION 6 – WOOD AND PLASTICS

WOOD FRAMING AND BLOCKING
SELECT STRUCTURAL GRADE DOUGLAS FIR SOUTH, SIZES AS INDICATED ON DRAWINGS. COMPLY WITH THE "RECOMMENDED NAILING SCHEDULE" OF THE "MANUAL FOR HOUSING FRAMING."

FLOOR SHEATHING (IF REQUIRED) - PROVIDE 3/4" T&G PLYWOOD FLOOR SHEATHING OR OSB STRUCTURAL FIBERBOARD. ALIGN PANELS ACROSS A MINIMUM OF TWO SUPPORTS WITH THICKNESS IN A 3/8 PERPENDICULAR TO AXIS OF JOISTS, STAGGER JOINTS. GLUE TO JOISTS AND EDGES WITH ELASTOMERIC SOLVENT-BASED GLUE CONFORMING TO APA SPECIFICATION AFG-101. FASTEN WITH 8D COMMON OR 6D ANNULAR OR SPIRAL NAILS AT 6" O.C. ALONG EDGES AND 10" ALONG INTERMEDIATE SUPPORTS. FOLLOW PANEL MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR SUB-FLOOR PREP, PRIOR TO INSTALLATION OF FINISH FLOORING.

EXTERIOR WOOD FRAMING EXPOSED TO WEATHERING AND INSECTS SHALL BE MINIMUM 2" X PRESSURE TREATED LUMBER. KILN DRIED TO 19% MOISTURE CONTENT BEFORE INSTALLATION.

WOOD TRIM AND MOLDINGS
PROVIDE FURNITURE GRADE SOLID HARDWOOD TRIM AND MOLDINGS. STAIN ALL SIDES AND ENDS. WOOD TRIM AND MOLDINGS TO MATCH EXISTING UNLESS OTHERWISE NOTED ON DRAWINGS.

INSTALL WOOD TRIM AND MOLDINGS WITH MITER AT CORNERS, MITERED LAP SPLICES, AND SET WITH COUNTER SUNK GALVANIZED FINISH NAILS CAPPED WITH WOOD PUTTY SANDED SMOOTH. COMPLY WITH AWI 300 FOR ALL STANDARD WOOD RUNNING TRIM.

FABRICATOR QUALIFICATIONS
FIRM EXPERIENCED IN PRODUCING ARCHITECTURAL WOODWORK SIMILAR TO THAT INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE, AS WELL AS SUFFICIENT PRODUCTION CAPACITY TO PRODUCE REQUIRED UNITS WITHOUT DELAYING THE WORK.

INTERIOR ARCHITECTURAL WOODWORK

INSTALLER QUALIFICATIONS.
ARRANGE FOR INSTALLING ARCHITECTURAL WOODWORK INSTALLATION BY A FIRM THAT CAN DEMONSTRATE SUCCESSFUL EXPERIENCE IN INSTALLING ARCHITECTURAL WOODWORK ITEMS SIMILAR IN TYPE AND QUALITY TO THOSE REQUIRED FOR THIS PROJECT.

QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH AWI'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS."

ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETE, AND MECHANICAL SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD. REFER TO AWI'S OR WIS MEMBER LIST FOR NAMES OF WOODWORKING FIRMS THAT COULD POTENTIALLY BE INCLUDED.

MATERIALS

WOOD SPECIES AND CUT FOR TRANSPARENT FINISH: AS INDICATED ON DRAWINGS.

WOOD SPECIES FOR OPAQUE FINISH: ANY CLOSED-GRAIN HARDWOOD.

GENERAL: COMPLETE FABRICATION TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE, WHERE NECESSARY FOR FITTING AT THE SITE, PROVIDE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.

- INTERIOR WOODWORK GRADE: AWI CUSTOM.
- SHOP CUT OPENINGS TO MAXIMUM EXTENT POSSIBLE. SAND EDGES OF CUTOUTS TO REMOVE SPLINTERS AND BURRS. SEAL EDGES OF OPENINGS IN COUNTERTOPS WITH A COATING OF VARNISH.
- FOR TRANSPARENT-FINISHED TRIM ITEMS WIDER THAN AVAILABLE LUMBER, USE VENEERED CONSTRUCTION. DO NOT GLUE FOR WIDTH.
- BACK OUT OF FLAT TRIM WITH VERTICAL GRAIN AND KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT FOR MEMBERS WITH END-EXPOSED IN FINISHED WORK.
- ASSEMBLE CASINGS IN PLANT EXCEPT WHERE LIMITATIONS OF ACCESS TO PLACE OF INSTALLATION.

PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH THE ARCHITECTURAL WOODWORK STANDARDS FOR GRADES OF CABINETS INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS.

ARCHITECTURAL WOOD WORK STAND ARDS GRADE: AWI PREMIUM.

TYPE OF CONSTRUCTION: FRAMELESS.

DOOR AND DRAWER-FRONT STYLE: FLUSH OVERLAY.

HIGH-PRESSURE DECORATIVE LAMINATE: ISO 4586-3, GRADES AS INDICATED OR IF NOT INDICATED, AS REQUIRED BY QUALITY STANDARD.

EXPOSED SURFACES:
1. PLASTIC-LAMINATE GRADE: AWI PREMIUM.
2. EDGES: GRADE AWI PREMIUM.
3. PATTERN DIRECTION: AS INDICATED.

CONCEALED BACKS OF PANELS WITH EXPOSED PLASTIC-LAMINATE SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE, ISO 4586-3, GRADE TO MATCH EXPOSED SURFACE.

DRAWER CONSTRUCTION: FABRICATE WITH EXPOSED FRONTS FASTENED TO SUBFRONT WITH MOUNTING SCREWS FROM INTERIOR OF BODY.
1. JOIN SUBFRONTS, BACKS, AND SIDES WITH GLUED RABBETED JOINTS AND REINFORCED BY MECHANICAL FASTENERS OR GLUED DOVETAIL JOINTS.

COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURER'S FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS, MATTE FINISH.
B. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
C. WOOD GRAIN, MATTE FINISH.
D. PATTERNS, MATTE FINISH.

SYNTHETIC DECKING
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS; TIMBERTECH, AZEK OR COMPARABLE PRODUCT.
DECKING SIZE AND LENGTH TO MATCH EXISTING INSTALLATION. FINISH TEXTURE BRUSHED; COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. FASCIA BOARDS TO MATCH DECKING COLOR.
DECKING FASTENING SYSTEM AS RECOMMENDED BY MANUFACTURER'S INSTALLATION MANUAL. FOLLOW MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR CUTTING, TRIMMING AND INSTALLING DECKING.

RUBBER STAIR TREADS COVERS
BASIS OF DESIGN, BY ROPPE OR EQUAL, RIBBED PATTERN, BLACK FINISH. FOLLOW THE MANUFACTURER'S INSTRUCTION FOR INSTALLATION.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

ROOFING SHEET METAL FLASHING AND TRIM
GENERAL: CONTRACTOR TO EVALUATE STATUS OF ROOFING MATERIAL, COMMUNICATE THE HACP AND ARCHITECT OF FINDINGS AND IF PATCHING OR REPLACEMENT IS NEEDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INSTALL ASPHALT SHINGLES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN ARMA'S "ASPHALT ROOFING RESIDENTIAL MANUAL - DESIGN AND APPLICATION METHODS" AND NRCA'S "NRCA GUIDELINES FOR ASPHALT SHINGLE ROOFING SYSTEMS".

ASPHALT SHINGLES: ASTM D3462/D3462M, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION; GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF-SEALING, BY GAF OR EQUAL, STRAIGHT CUT. FINISH COLOR TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

GC TO INSPECT FLASHING OF ROOF PENETRATIONS, PATCH AND REPLACE IF NEEDED TO COMPLY WITH CODE AND REGULATIONS.

SHEET METAL STANDARD FOR FLASHING AND TRIM: COMPLY WITH NRCA'S "THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION AND AIR LEAKAGE CONTROL, AND REROOFING" AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL". REQUIREMENTS FOR DIMENSIONS AND PROFILES SHOWN UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.

INSTALL SHEET METAL FLASHING AND TRIM TO COMPLY WITH DETAILS INDICATED AND RECOMMENDATIONS OF CITED SHEET METAL STANDARDS THAT APPLY TO INSTALLATION CHARACTERISTICS REQUIRED UNLESS OTHERWISE INDICATED ON DRAWINGS

THERMAL INSULATION
GC TO PROVIDE THERMAL INSULATION ON WALLS, CEILINGS AND FLOORS AS NOTED ON THE DRAWINGS.

INSULATION TO COMPLY WITH THE ENERGY CODE IN MINIMUM R VALUES OR AS SPECIFIED ON DRAWINGS.

GC TO BE RESPONSIBLE TO INSPECTING, ADJUSTING AND ADDING INSULATION TO THE ENTIRE ATTIC SPACE TO ENSURE MINIMUM INSULATION COVERAGE WITHIN NO GAPS. GC TO INFORM HACP AND ARCHITECT PRIOR TO ADD ADDITIONAL INSULATION.

ATTIC DOORS TO RECEIVED RIGID FOAM INSULATION GLUED TO BACK OF THE DOOR AND SEALED WITH RUBBER JOINTS. INSULATION TO MATCH R VALUE OF CEILING ASSEMBLY.

ASSEMBLIES, SEPARATIONS & FIRESTOPPING:

ANY NEW DEMISING OR INTERIOR PARTITIONS SHALL BE RATED AS REQUIRED BY CODE. ANY PENETRATION THROUGH AN EXISTING DIMISING OR INTERIOR PARTITION OR ULRATED ASSEMBLY WALL MUST RE-TAIN THE UL ASSEMBLY FIRE-RATING.

ALL NEW WORK SHALL MATCH OR EQUAL THE UL FIRE RATINGS, IF ANY, OF THE SURROUNDING WORK. AS APPROPRIATE, THE CONTRACTOR SHALL CONTACT HACP AND ARCHITECT IF ANY AREAS ARE UNCOVERED OR DISCOVERED THAT MAY REQUIRE ADDITIONAL ANALYSIS OR CLARIFICATION.

THROUGH PENETRATIONS OF FIRE RESISTANCE WALLS SHALL BE INSTALLED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY UNDERWRITERS LABORATORIES. IF THE PENETRATING ITEMS ARE STEEL, FERROUS OR COPPER PIPES OR STEEL CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE FIRE-RESISTANCE-WALL SHALL BE PERMITTED TO BE PROTECTED AS FOLLOWS:

IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A MAXIMUM 6-INCH NOMINAL DIAMETER AND THE OPENING IS A MAXIMUM 144 SQUARE INCHES, CONCRETE, GROUT, OR MORTAR SHALL BE PERMITTED WHERE INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING.

THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHERE SUBJECTED TO ASTME 119 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE WALL ASSEMBLY.

MEMBRANE PENETRATIONS, WHERE WALLS AND PARTITIONS ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:
FOR STEEL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. A HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY WHERE THE WALL CAVITY IS FILL WITH CELLULOSE LOOSE FILL, ROCKWOOL OR SLAGWOOL LOOSE FILL INSULATION PROVIDED THAT (CONSISTING OF 2-INCH NOMINAL LUMBER OR TWO THICKNESSES OF 1-INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS OR ONE THICKNESS OF 0.719-INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANEL OR ONE THICKNESS OF 0.75-INCH PARTICLEBOARD WITH JOINTS BACKED BY 0.75-INCH PARTICLEBOARD. GYPSUM BOARD, CEMENT FIBER BOARD, BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED AS AN ACCEPTABLE FIREBLOCK. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NONRIGID MATERIALS SHALL BE PERMITTED FOR COMPLIANCE WITH THE 10-FOOT HORIZONTAL FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROW OF STUDS OR STAGGERED STUDS. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES. THE INTEGRITY OF FIREBLOCKS SHALL BE MAINTAINED; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

MEMBRANE PENETRATIONS FOR LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL ARE PERMITTED PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE OR TO PREVENT THE FIRE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. SUCH PENETRATIONS SHALL NOT EXCEED ANY AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.

MEMBRANE PENETRATIONS BY LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL THAT HAS BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED PER INSTRUCTIONS INCLUDED IN LISTING.

JOINT SEALERS
INTERIOR JOINT SEALER IS TO BE MILDEW-RESISTANT SILICONE SEALANT. APPLY SEALANT AT ALL MATERIAL JOINTS SUBJECT TO WATER PENETRATION. COLOR TO BE SELECTED BY THE ARCHITECT FROM MFR'S STANDARD LINE.

VINYL SIDING
VINYL SIDING. INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D3679.
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALSIDE, EXTERIOR BUILDING PRODUCTS, KAYCAN LTD., ROYAL BUILDING PRODUCTS, A WESTLAKE COMPANY. OR EQUAL.

HORIZONTAL PATTERN: 6-1/2- OR 7-INCH EXPOSURE IN BEADED-EDGE, SINGLE-BOARD STYLE. SMOOTH TEXTURE. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OR TO MATCH EXISTING WHERE REQUIRED.

WATER PROOFING MEMBRANE
BASIS OF DESIGN, BY SIKA OR EQUAL, 60 MIL. REFER TO MANUFACTURERS INSTRUCTION FOR PREPARATION OF SUBSTRATES AND INSTALLATION OF MEMBRANE.

DIVISION 8 - DOORS, WINDOWS AND HARDWARE

ALL DOORS AND WINDOWS SHALL BE INSTALLED PLUMB, LEVEL, SQUARE, AND PER ALL MANUFACTURERS RECOMMENDATION.

EXTERIOR DOORS TO BE 1 3/4"-THICK, FIBERGLASS INSULATED WITH 3 SETS OF STEEL HINGES, RUBBER WEATHER STRIPPING, LOCKING AS SPECIFIED ON HARDWARE. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING. VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS: 1) IN DOORS, 2) WITHIN 24" OF A DOOR AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE, 3) IN FIXED PANELS WITH THE LOWEST EDGE LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36" OF SUCH GLAZING.

DOOR HARDWARE
INTERIOR DOOR HARDWARE

ALL DOOR HARDWARE TO BE APPROVED BY HACP FACILITY REPRESENTATIVE.

BASIS OF DESIGN NON- ACCESIBLE UNITS
MANUFACTURER BALDWIN OR EQUAL, ROUND KNOB TRADITIONAL ROUND, MODEL PS ROU TRR.150. FINISH TO MATCH EXISTING OR SATIN NICKEL IF ALL INTERIOR DOOR HARDWARE IS REPLACED. OPERATION TYPE: DUMMY, PRIVACY AND PASSAGE.

BASIS OF DESIGN ACCESIBLE UNITS
MANUFACTURER BALDWIN OR EQUAL, TOWN LEVER WITH ROUND ROSE, MODEL 3527BL.RDB-15. FINISH TO MATCH EXISTING OR SATIN NICKEL IF ALL INTERIOR DOOR HARDWARE IS REPLACED. OPERATION TYPE: DUMMY, PRIVACY AND PASSAGE.

OPERATION LOCATION:
PRIVACY: CLOSET

POLISH CHROME PLATE FINISH, 2.2 GPM FLOW RATE, LEVER HANDLE, RIGID SPOUT, DRAIN POP UP.

KITCHEN SINKS – WATER SENSE CERTIFIED
STAINLESS STEEL, COUNTER MOUNTED, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- AFINITY SURFACES

0.038 INCH THICKNESS, 3 1/2" DRAIN GRID CENTERED IN BOWL.

SINKS FAUCETS – WATER SENSE CERTIFIED
GENERAL DUTTY SOLID BRASS, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- HANSGROHE

POLISHED CHROME PLATE FINISH. SINGLE HANDLE ON KITCHEN TWO HANDLE ON UTILITY SINKS.

WATER CLOSET – WATER SENSE CERTIFIED
FLOOR MOUNTED, FLOOR OUTLET, CLOSE COUPLED (GRAVITY TANK), VITREOUS CHINE, 1.6 GAL/FLUSH, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- KOHLER
- TOTO USA

STANDARD HEIGHT, ELONGATED RIM, WATER SAVING, COLOR WHITE.
TOILET SEAT PLASTIC FOR RESIDENTIAL USE, ELONGATED RIM, SEAT COVER, SELF SUSTAINING HINGE, COLOR WHITE.

UTILITY SINK
FRESTANDING UTILITY SINK, MANUFACTURERS: PROFLO OR EQUAL
STANDARD HEIGHT, COLOR WHITE. 20 INCH BY 20 INCH SIZE.

EXTERIOR HOSE BIBB.
FREEZELESS WALL FAUCET, WOODFORD OR EQUAL, MODEL 30,3/4 INCH CONNECTION, BRASS FINISH, ASSE 1053 APPROVED, MAX PRESSURE 125 PSI.

SLEEVES
SLEEVES SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH WALLS, CEILINGS, OR FLOORS. SLEEVES SHALL BE CUT FROM SCHEDULE 40 BLACK IRON PIPE. THE INTERNAL DIAMETER OF THE SLEEVE SHALL EXCEED THE EXTERNAL DIAMETER OF THE PIPE (INCLUDING INSULATION) BY NOT LESS THAN ONE INCH. SLEEVES SHALL BE CUT FLUSH WITH WALLS AND UNDERSIDES OF FLOORS AND SHALL EXTEND ONE INCH ABOVE FLOORS ABOVE GRADE.

PIPE PORTALS
PIPING THROUGH THE ROOF SHALL BE INSTALLED THROUGH A PREFABRICATED PIPING PORTAL. PORTALS SHALL HAVE GALVANIZED STEEL INSULATED CURBS, ABS PLASTIC CURB CAP, NEOPRENE RUBBER NIPPLES, AND STAINLESS-STEEL CLAMPS. CURB HEIGHT AS INDICATED ON DRAWINGS. PORTALS SHALL BE MODEL RC AND NJB AS MADE BY ROOF PRODUCTS AND SYSTEMS CORP. PORTALS SHALL HAVE EXTRA HOLES FOR POWER AND CONTROL CONDUITS.

FIRESTOPS
ALL OPENINGS THROUGH FLOORS AND FIRE-RATED PARTITIONS SHALL BE SEALED. VOID SPACES AROUND DUCTS OR PIPES SHALL BE PACKED WITH A FIREPROOF CERAMIC FIBER AND SEALED WITH FIRE RETARDANT CAULKING. FIBER SHALL BE KAOWOOL BY BABCOCK AND WILCOX, FIBERFRAX BY CARBORUNDUM, OR CERAFIBER BY MANVILLE CO. CAULKING SHALL BE SE4111 F BY UNISEAL STANDARD DUXSEAL BY MANVILLE, OR MOLDABLE PUTTY BY 3M.

ESCUTCHEONS
ESCUTCHEONS SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH FLOORS, CEILINGS, OR WALLS OF FINISHED SPACES. ESCUTCHEONS SHALL BE CHROMIUM PLATED STEEL, SNAP ON TYPE WITH SPRING RETAINERS. ESCUTCHEONS SHALL BE THE NO. 40 MADE BY BEATON/CORBIN COMPANY OR APPROVED EQUAL, SIZED TO FIT PIPE PLUS INSULATION. WHERE RISER CLAMPS ARE IN FINISHED SPACES, PROVIDE HIGH-SHIRT ESCUTCHEONS TO COVER CLAMP.

UNIONS
UNIONS SHALL BE INSTALLED AT ALL POINTS INDICATED ON THE DRAWINGS AND AT ALL OTHER POINTS NECESSARY FOR THE INSTALLATION AND REMOVAL OF EQUIPMENT, CONTROL DEVICES, ETC. UNIONS IN GAS LINES WILL BE PERMITTED ONLY AT THE FINAL CONNECTIONS TO EQUIPMENT.

HANGERS
ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH PIPEHANGERS TO PREVENT SAGGING AND AVOID CONCENTRATION OF HANGING LOAD. HANGER SPACING SHALL NOT EXCEED 10 FT. FOR STEEL PIPE OR 8 FT. FOR COPPER TUBING. COPPER TUBING 1-1/4" AND SMALLER SHALL BE SUPPORTED AT NO GREATER THAN 6 FT. SPACING.

REPAIR ALL FIREPROOFING WHICH IS DAMAGED BY HANGER INSTALLATION.

SOIL WASTE AND VENT PIPING
SOIL, WASTE AND VENT STACKS AND BRANCHES, AND ROOF CONDUCTORS SHALL BE ABS OR PVC PIPING AND FITTINGS SCHEDULE 40. WASTE LINES SHALL BE MINIMUM 2 INCH.

HOT AND COLD-WATER PIPING
POTABLE-WATER PIPING AND COMPONENTS ARE TO COMPLY WITH NSF 14, NSF 61, AND NSF 372. INCLUDE MARKING "NSF-PW" ON PIPING.

HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE TYPE L, SEMI-LESS, HARD TEMPER, COPPER TUBING WHICH CONFORMS TO ASTM SPECIFICATION B-88 WITH WROUGHT COPPER, SOLDER, TYPE FITTINGS, OR PEX TUBING PLASTIC IN ACCORDANCE WITH ASTM F876 AND ASTM F877 WITH FITTINGS ASTM F1807, METAL INSERT AND COPPER CRIMP RINGS ASTM F1960, COLD EXPANSION FITTINGS AND REINFORCING RINGS.

INSTALLATION OF PIPING
DRAINAGE PIPING SHALL BE INSTALLED TO ACCURATE LINE AND UNIFORM GRADE, AND AT THE ELEVATIONS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE INDICATED, ALL DRAINAGE LINES SHALL SLOPE NOT LESS THAN 1/4 INCH PER FOOT.
DRAINAGE LINES SHALL BE PROVIDED WITH SUFFICIENT CLEANOUTS TO MAKE ALL PARTS OF THE DRAINAGE SYSTEM ACCESSIBLE. CLEANOUTS SHALL BE PROVIDED ALONG INTERIOR HORIZONTAL RUNS AT NOT MORE THAN 50 FT. ON CENTER. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH ROOF CONDUCTOR AND AT ALL OTHER POINTS INDICATED ON THE DRAWING OR REQUIRED BY LOCAL PLUMBING CODE.

ALL PIPES SHALL BE CUT WITH SQUARE ENDS AND SHALL BE PROPERLY REAMED. THREADS SHALL BE CUT WITH CLEAN, SHARP DIES TO FULL DEPTH. ALL BURRS SHALL BE REMOVED FROM PIPE. JOINT COMPOUND SHALL BE APPLIED TO PIPE THREAD ONLY. USE OF EXCESSIVE JOINT COMPOUND IS PROHIBITED.

SOLDER JOINTS IN ALL WATER LINES SHALL BE MADE WITH 95-5 TIN-ANTIMONY SOLDER. OTHER JOINTS MADE WITH EASYBRITE LEAD FREE SOLDER.

WATER LINES WITHIN THE BUILDING SHALL BE INSTALLED WITH SUFFICIENT PITCH TO PROPERLY DRAIN LINES AND VALVES. IN ADDITION TO DRAIN VALVES INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL DRAIN VALVES NECESSARY TO PROPERLY DRAIN THE SYSTEM.

GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND NFPA-54. ALL GAS PIPING AND CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH AGA RECOMMENDATIONS AND ALL APPLICABLE LOCAL GAS COMPANY REGULATIONS.

CONTRACTOR SHALL VENTILATE THE WORK AREA TO PROVIDE A SAFE ENVIRONMENT. VENTILATION SHALL NOT DIRECT FUMES TO ADJACENT SPACES OR NEIGHBORING STRUCTURES.

CONTRACTOR SHALL PROVIDE ADEQUATE FIRE PROTECTION DURING WELDING, CUTTING AND SOLDERING.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

VALVES
VALVES IN WATER LINES SHALL BE 125 PSI CLASS, BRONZE BODY, BALL VALVES WITH TEFLON SEATS AND PACKING. NIBCO 580 OR APOLLO.DRAIN VALVES SHALL BE BRONZE BODY SOLDERED ENDS, BALL VALVES WITH 3/4 INCH AMERICAN STANDARD HOSE THREAD OUTLET. NIBCO OR APOLLO.

WALL HYDRANT SHALL BE ALL BRASS, FULLY RECESSED, NON-FREEZE, KEY OPERATED, WITH ADJUSTABLE LOCKNUT, REMOVABLE NYLON SEAT, 3/4 INCH HOSE CONNECTION. FURNISH WITH INTEGRAL VACUUM BREAKER. ZURN Z-1300 OR APPROVED EQUAL.

VALVES IN GAS LINES SHALL BE 125 PSI CLASS, THREADED END, IRON BODY. GAS COCKS WITH BRASS PLUG AND WASHER AND SQUARE HEAD. GRANCO NO. 324.

INSULATION
ALL COLD AND HOT WATER PIPING, AND HORIZONTAL PORTIONS OF ROOF CONDUCTORS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX.

PIPE IDENTIFICATION
ALL PIPING SHALL BE LABELED WITH THE NAME OF THE FLUID IN THE PIPE AND WITH ARROWS INDICATING THE DIRECTION OF THE FLOW.

TESTING

DRAINAGE SYSTEM - THE ENTIRE DRAINAGE SYSTEM SHALL BE TESTED HYDROSTATICALLY FOR LEAKS. THE ENTIRE SYSTEM SHALL BE FILLED TO THE TOP OF THE STACKS WITH WATER AND CHECKED FOR LEAKS.

WATER PIPING - ALL WATER PIPING SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL FOREIGN MATERIAL. ALL TESTING SHALL BE COMPLETED BEFORE INSULATION IS APPLIED.
DURING THE TESTS ALL VALVES SHALL BE CAREFULLY CHECKED FOR LEAKAGE AROUND THE STEM.

WATER HEATERS - HEATERS SHALL BE TESTED AND CHECKED TO DETERMINE THEY OPERATE IN COMPLIANCE WITH THE SPECIFICATIONS. ALL CONTROLS SHALL BE PROPERLY ADJUSTED.

DISINFECTION OF POTABLE WATER SYSTEM - GENERAL: NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE. WHENEVER REQUIRED THE AUTHORITY HAVING JURISDICTION. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY.

MECHANICAL REQUIREMENTS

GENERAL CONDITIONS OF THE MECHANICAL CONTRACT
PLUMBING CONTRACTOR TO FOLLOW HUD GENERAL CONDITIONS AS SPECIFIED EARLIER IN DIVISION 1.

ALL MECHANICAL WORK TO COMPLY WITH LOCAL CODE AND REGULATIONS.

CUTTING AND PATCHING
ALL CHASES, RECESSES, HOLES, AND OPENINGS FOR EQUIPMENT AND DUCTWORK WILL BE PROVIDED BY THE GENERAL CONTRACTOR.

SHOULD THE MECHANICAL CONTRACTOR FAIL TO SET SLEEVES OR LOCATE OPENINGS BEFORE THE WORK OF THE GENERAL CONTRACTOR HAS BEEN COMPLETED IN THAT PARTICULAR AREA, THE MECHANICAL CONTRACTOR SHALL CUT WHATEVER HOLES ARE NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT. ALL PATCHING NECESSITATED BY THE CUTTING OF SUCH HOLES SHALL BE DONE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

REPAIR ALL FIREPROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

EXHAUST FANS
FANS SHALL VENT DIRECTLY TO THE EXTERIOR. EXHAST DUCTS MAY BE TIED TOGETHER OR TIED INTO AN EXISTING SYSTEM PROVIDED THAT BACK FLOW PREVENTORS ARE INSTALLED AT EACH FAN INCLUDING ALL FANS TIED INTO THE EXISTING SYSTEM.

FURNISH NEMA 1 SURFACE MOUNTING STARTER WITH OVERLOAD AND UNDER VOLTAGE PROTECTION.

FURNISH WITH BIRD SCREEN AND BACKDRAFT DAMPER.

FAN SHALL BE ACE MADE BY COOK, GREENHECK, OR APPROVED EQUAL. VOCFM CAPACITY, MANUFACTURED FINISH WHITE.

THE HEATING CONTRACTOR SHALL FURNISH THERMALLY AND ACOUSTICALLY INSULATED CURB.

MECHANICAL EQUIPMENT
THE EQUIPMENT DESCRIBED IN THIS SECTION IS BASIS OF DESIGN, MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT TO MATCH EXISTING SYSTEM CAPACITY AT A MINIMUM.

MECHANICAL CONTRACTOR TO PROVIDE HACP AND ARCHITECT WITH SPECIFICATION SHEETS OF EQUIPMENT.

GAS-FIRED FURNACES, NONCONDENSING
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- BRYANT; CARRIER GLOBAL CORPORATION.
- CARRIER GLOBAL CORPORATION.
- BUILDING SOLUTIONS NORTH AMERICA.

ENERGY STAR RATING OF 95% AFUE OR GREATER
CABINET: GALVANIZED STEEL.
- CABINET INTERIOR AROUND HEAT EXCHANGER SHALL BE FACTORY-INSTALLED INSULATION.
- LIFT-OUT PANELS SHALL EXPOSE BURNERS AND ALL OTHER ITEMS REQUIRING ACCESS FOR MAINTENANCE.
- FACTORY PAINT EXTERNAL CABINETS IN MANUFACTURER'S STANDARD COLOR.
- AIRSTREAM SURFACES: SURFACES IN CONTACT WITH THE AIRSTREAM SHALL COMPLY WITH REQUIREMENTS IN ASHRAE 62.1.

FAN: CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT OR BELT DRIVE.
- FAN MOTORS: COMPLY WITH REQUIREMENTS IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT."
- SPECIAL MOTOR FEATURES, SINGLE SPEED: SINGLE SPEED, PREMIUM EFFICIENCY, AS DEFINED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT," AND WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, MULTISPEED: MULTI-TAPPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, ECM: ELECTRONICALLY CONTROLLED MOTOR (ECM) CONTROLLED BY INTEGRATED FURNACE/BLOWER CONTROL.

TYPE OF GAS: NATURAL
HEAT EXCHANGER: ALUMINIZED STEEL.
BURNER:
- GAS VALVE: 100 PERCENT SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUTOFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD.
- IGNITION: ELECTRIC PILOT IGNITION, WITH HOT-SURFACE IGNITER OR ELECTRIC SPARK IGNITION.

GAS-BURNER SAFETY CONTROLS:
- ELECTRONIC FLAME SENSOR: PREVENTS GAS VALVE FROM OPENING UNTIL PILOT FLAME IS PROVEN; STOPS GAS FLOW ON IGNITION FAILURE.
- FLAME ROLLOUT SWITCH: INSTALLED ON BURNER BOX; PREVENTS BURNER OPERATION.
- LIMIT CONTROL: FIXED STOP AT MAXIMUM PERMISSIBLE SETTING; DE-ENERGIZES BURNER ON EXCESSIVE BONNET TEMPERATURE; AUTOMATIC RESET.

COMBUSTION-AIR INDUCER: CENTRIFUGAL FAN WITH THERMALLY PROTECTED MOTOR AND SLEEVE BEARINGS PRERUPGRES HEAT EXCHANGER AND VENTS COMBUSTION PRODUCTS; PRESSURE SWITCH PREVENTS FURNACE ON IF COMBUSTION-AIR INLET OR FLUE OUTLET IS BLOCKED.
FURNACE CONTROLS: SOLID-STATE BOARD INTEGRATES IGNITION, HEAT, COOLING, AND FAN SPEEDS; AND ADJUSTABLE FAN-ON AND FAN-OFF TIMING; TERMINALS FOR CONNECTION TO ACCESSORIES.
VENT MATERIALS: COMPLY WITH REQUIREMENTS IN SECTION 235123 "GAS VENTS" FOR TYPE B METAL VENTS.

CAPACITIES AND CHARACTERISTICS:
AIRFLOW CONFIGURATION: UPFLOW.
GAS:
- TYPE: NATURAL
- VENTING TYPE: WITH COMBUSTION-AIR INTAKE
- MINIMUM EFFICIENCY AFUE: 80 PERCENT.
- INPUT: SSE SCHEDULE ON DRAWINGS.
- HEAT OUTPUT: SSE SCHEDULE ON DRAWINGS.
- GAS CONNECTION SIZE: 1/2" NPS.
- VENT SIZE: 4 INCHES.

FAN:
- MOTOR: SIZE: 1/3 HP.
- SPEED: SEE SCHEDULE ON DRAWINGS.
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

FURNACE ELECTRICAL CONNECTION:
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

COMPRESSOR AND CONDENSER UNITS, AIR COOLED, 1.0 TO 5 TONS
DESCRIPTION: FACTORY ASSEMBLED AND TESTED; CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTORS, REFRIGERANT RESERVOIR, AND OPERATING CONTROLS.
ENERGY STAR RATING EQUAL OR OVER 15.2 SEER2
COMPRESSOR TYPE: SCROLL, HERMETICALLY SEALED, WITH RUBBER VIBRATION ISOLATORS.
- TWO-SPEED COMPRESSOR: INCLUDE MANUAL-RESET, HIGH-PRESSURE SWITCH AND AUTOMATIC-RESET, LOW-PRESSURE SWITCH.
- ACCUMULATOR: SUCTION TUBE.

REFRIGERANT: R-410A.
CONDENSER COIL: SEAMLESS COPPER-TUBE, -FIN COIL; WITH REMOVABLE DRAIN PAN AND BRASS SERVICE VALVES WITH SERVICE PORTS.
CONDENSER FAN: DIRECT-DRIVE, MAIN PROPELLER FAN; WITH PERMANENTLY LUBRICATED, TOTALLY ENCLOSED FAN MOTOR WITH THERMAL OVERLOAD PROTECTION AND BALL BEARINGS.
UNIT CASING: GALVANIZED STEEL, FINISHED WITH; WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE, MOUNT SERVICE VALVES, FITTINGS, AND GAUGE PORTS ON EXTERIOR OF CASING.
CAPACITIES AND CHARACTERISTICS:
COMPRESSOR AND CONDENSER UNIT:
- FULL-LOAD COOLING CAPACITY: TO BE CALCULATED BY MECHANICAL CONTRACTOR

ELECTRICAL CHARACTERISTICS:
- VOLTS: 208 V.
- PHASE: 1.
- HERTZ: 60 HZ.

SHEET METAL
DUCT SIZES INDICATED ON THE DRAWINGS ARE THE CLEAR INSIDE DIMENSIONS.

ALL DUCTS SHALL BE COMPLETE WITH FOUR SIDES AND SHALL BE OF AIRTIGHT CONSTRUCTION. ALL DUCTS, UNLESS OTHERWISE NOTED, SHALL BE CONSTRUCTED OF 24 GAGE GALVANIZED SHEET STEEL AT 2" PRESSURE CLASS.

JOINTS, SEAMS AND DUCT WALL PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. SEALANT MATERIAL SHALL BE CAULKING COMPOUND SPECIFICALLY MANUFACTURED FOR DUCT APPLICATION FOR INDOOR USE.

JOINTS BETWEEN SHEET METAL SECTIONS MAY BE MADE WITH PREFABRICATED JOINING SYSTEM SUCH AS THE DUCTMATE INDUSTRIES SYSTEM.
STIFFENERS SHALL BE PLACED AT NOT MORE THAN 8-FOOT INTERVALS.

ALL DUCTS SHALL BE ADEQUATELY SUPPORTED FROM CONSTRUCTION ABOVE BY MEANS OF GALVANIZED STEEL STRAP HANGERS SPACED AT NOT MORE THAN 8-FOOT INTERVALS. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA STANDARDS.

DUCTWORK CONNECTIONS TO AIR HANDLING AND AIR CONDITIONING UNITS SHALL HAVE FLEXIBLE CONNECTIONS. WHEN CONNECTION IS OUTDOORS, CONNECTION LENGTH SHALL BE INSULATED AND WEATHERPROOFED.

TURNING VANES SHALL BE INSTALLED IN ALL ELBOWS HAVING SQUARE THROATS OR A THROAT RADIUS LESS THAN HALF THE DUCT WIDTH. TURNING VANES MAY BE PREFABRICATED. IF JOB FABRICATED, DESIGN AND CONSTRUCTION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. VANES SHALL BE AIRFOIL TYPE.

MANUAL VOLUME CONTROL DAMPERS IN DUCTS SHALL BE CONSTRUCTED OF NOT LIGHTER THAN US GAGE NO. 16 GALVANIZED SHEET STEEL. DAMPER BLADES SHALL BE SUPPORTED ON AN END BEARING ON ONE SIDE AND A COMBINATION BEARING AND DAMPER REGULATOR ON THE OTHER SIDE. REGULATOR SHALL BE EQUIPPED WITH A LOCKING DEVICE. MANUAL DAMPERS SHALL BE OPPOSED BLADE TYPE.

FURNISH AND INSTALL FIRE DAMPERS WHERE INDICATED OR WHERE REQUIRED. DAMPERS SHALL COMPLY WITH LATEST EDITION OF NFPA 90A, AND SHALL BE UL LABELED. BLADE STACK SHALL BE OUT OF AIRSTREAM. FUSIBLE FIRE LINKS SHALL HAVE A MELTING POINT OF 165F. DAMPERS SHALL BE MODEL IBD AS MADE BY PRUSKIN, OR APPROVED EQUAL BY SAFE-AIR. FURNISH ACCESS DOORS TO ALL DAMPERS.

ACCESS DOORS IN DUCTS SHALL BE RIGIDLY CONSTRUCTED AND TIGHTLY FITTED. DOORS SHALL BE SUPPORTED ON TWO STEEL BUTT HINGES AND SHALL BE SECURED WITH A SASH LOCK. DOORS SHALL BE GASKETED AND INSULATED.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

FLEXIBLE DUCTS
FLEXIBLE DUCTS SHALL BE SOUND ATTENUATING, THERMAL INSULATED, WIRE WOUND, REINFORCED TYPE WITH A MOISTURE TIGHT FLAME PROOF VINYL BARRIER. FLEXIBLE DUCTS TO BE USED ONLY TO CONNECT INDIVIDUAL DIFFUSERS WITH MAIN OR BRANCH DUCTS. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PORTION OF THE EXISTING SYSTEM WHICH DOES NOT MEET THESE REQUIREMENTS WITH PROPERLY SIZED AND INSULATED SHEET METAL DUCTS. THIS WORK TO BE INCLUDED IN BASE BID.

DIFFUSERS
DIFFUSERS SHALL BE SQUARE OR RECTANGULAR FACED, RECESSED TYPE, WITH REMOVABLE CORES. DIFFUSER CAPACITIES, SIZES AND DIRECTIONAL BLOWS ARE INDICATED ON THE DRAWINGS. FURNISH EACH DIFFUSER WITH DEFLECTING VANES AND KEY OPERATED, OPPOSED BLADE, VOLUME DAMPERS. DIFFUSERS SHALL BE FURNISHED WITH BAKED, WHITE FINISH.

SUPPLY REGISTERS
SUPPLY REGISTERS SHALL HAVE INDIVIDUALLY ADJUSTABLE FINS WITH VERTICAL FRONT BARS AND HORIZONTAL REAR BARS. FINS SHALL BE STREAMLINED AND OF STURDY CONSTRUCTION. FLANGES SHALL BE 5/8 INCH CHANNEL BORDER. FURNISH RUBBER GASKET AROUND PERIMETER OF FLANGE, AND KEY OPERATED, OPPOSED BLADE VOLUME CONTROL DAMPERS. RUBBER GASKET SHALL BE NON-CHLORINATED RUBBER AND NON-POROUS. FURNISH WITH PRIME COAT OF PAINT.

GRILLES
GRILLES AND REGISTERS FOR MECHANICAL TO MATCH EXISTING. GRILLES AND REGISTERS SHALL BE OUT OF STEEL, WITH DAMPER, PRIMED PAINTED WHITE. SIZE OF GRILLE TO MATCH EXISTING OPENING ON TOE KICK, WALL OR CEILING.

CONTROLS
THE HEATING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL DEVICES NECESSARY TO ACHIEVE THE CONTROL SEQUENCE DESCRIBED HEREIN.

CONTROL SYSTEMS SHALL BE GUARANTEED FOR 2 YEARS FROM DATE OF ACCEPTANCE BY HACP.

CONTROL WIRING SHALL BE CONCEALED AND INSTALLED IN ACCORDANCE WITH SECTION 16.

MOTOR STARTERS - MOTOR STARTERS FOR ALL MECHANICAL ITEMS SHALL BE FURNISHED BY THE HEATING CONTRACTOR. STARTERS SHALL HAVE HAND-OFF-AUTO SWITCHES AND CONTROL TRANSFORMERS.

DAMPERS - DAMPERS SHALL BE OPPOSED MULTI-BLADE. BLADES SHALL BE CONSTRUCTED OF 16 GAGE STEEL WITH NEOPRENE GASKETED EDGES, AND SHALL BE MOUNTED IN CORROSION RESISTANT BUSHINGS. DAMPERS SHALL HAVE STOPS ON ALL FOUR SIDES. MOTORS SHALL BE MODULATING WITH OIL-IMMERSED GEAR TRAINS. DAMPERS SHALL BE 2% LOW LEAKAGE TYPE.

FREEZE PROTECTION THERMOSTAT - FREEZE PROTECTION THERMOSTAT SHALL BE MERCURY TUBE, MANUAL RESET TYPE SET AT 45F. INSTALL AN ADJUSTABLE TIME DELAY RELAY TO PERMIT AIR TO ESTABLISH SATISFACTORY TEMPERATURE TO AVOID FALSE TRIPS.

INSULATION
ALL SUPPLY AIR DUCTS SHALL BE INSULATED WITH 2" THICK, 1.00 DENSITY, OWENS-CORNING OR APPROVED EQUAL FLEXIBLE DUCT INSULATION WITH FLAME RETARDANT REINFORCED FIRK 25 FOIL COVERING. SEAL ALL JOINTS, BOLTS, AND ALL EXPOSED EDGES WITH 4" WIDE STRIPS OF SEALING TAPE USING A SUITABLE ADHESIVE. INSULATION SHALL HAVE A 2" FLAP AT ALL JOINTS AND SEAMS WHICH SHALL BE STAPLED AND SECURED WITH ADHESIVE. APPLY ADHESIVE TO DUCTS IN SIX-INCH-WIDE STRIPS AT ONE FOOT IN TERVALS. DUCTOWRK EXPOSED WITHIN THE SPACE MUST BE INSULATED.

OPERATING INSTRUCTIONS
THE CONTRACTOR SHALL FURNISH THREE COMPLETE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS. THIS SHALL INCLUDE FINAL CONTROL DIAGRAMS, CATALOG DATA INCLUDING CONSTRUCTION AND MAINTENANCE INFORMATION ON ALL EQUIPMENT, AND MAINTENANCE INFORMATION IN THE COMPLETE SYSTEM.

ONE COMPLETE CONTROL DIAGRAM SHALL BE INCLUDED IN EACH O&M MANUAL.

THE CONTRACTOR SHALL FORMALLY INSTRUCT THE HACP'S STAFF ON THE OPERATION OF THE SYSTEM. THE INSTRUCTION SHALL CONSIST OF NOT LESS THAN 2 PERIODS, EACH PERIOD OF 4 HOURS DURATION. THE CONTRACTOR SHALL ARRANGE FOR THIS INSTRUCTION WITH THE HACP.

FUNCTIONS AND ALL ACTUATORS OPERATE IN ACCORDANCE WITH THE SPECIFICATIONS.
TESTS AND INSPECTION

THE FOLLOWING OPERATIONS SHALL BE PERFORMED IN PREPARATION FOR FINAL INSPECTION BY THE ARCHITECT. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE TO THE ARCHITECT THAT THE SYSTEM IS OPERATING IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL TESTS AND INSPECTIONS SHALL BE COMPLETED BEFORE FINAL PAYMENT IS MADE TO THE HEATING (MECHANICAL) CONTRACTOR.

CONTROLS - ALL CONTROLS SHALL BE TESTED AND ADJUSTED TO ACHIEVE THE INTENT OF THESE SPECIFICATIONS. CONTROLS SHALL BE ADJUSTED WHILE THE SYSTEM IS OPERATING UNDER FULL LOAD CONDITIONS, BOTH HEATING AND COOLING. CONTROL SUB-CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION THAT ALL ON/OFF AND ALARM.

AIR DISTRIBUTION SYSTEM - AIR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCE SUBCONTRACTOR. THE COST OF THE SUB-CONTRACTOR SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE. THE INDEPENDENT AIR BALANCER SHALL NOT BE AN EMPLOYEE NOR A SUBSIDIARY OF THE CONTRACTOR.

GUARANTEE
THE MECHANICAL CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE JOB THAT ALL EQUIPMENT, MATERIAL AND LABOR FURNISHED BY HIM ARE FREE FROM DEFECTS. ANY DEFECTS IN MATERIAL AND WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT FURTHER EXPENSE TO THE HACP. ALL ITEMS SPECIFIED TO HAVE LONGER WARRANTIES SHALL BE GUARANTEED FOR THAT LONGER PERIOD. CONTROLS SHALL HAVE A 2-YEAR GUARANTEE ON PARTS AND LABOR.

CONTROLS
SOLID-STATE THERMOSTAT: WALL-MOUNTED, PROGRAMMABLE, MICROPROCESSOR-BASED UNIT WITH MANUAL SWITCHING FROM HEATING TO COOLING, PREFERENTIAL RATE CONTROL, SEVEN-DAY PROGRAMMABILITY WITH MINIMUM OF FOUR TEMPERATURE PRESETS PER DAY, VACATION MODE, AND BATTERY BACKUP PROTECTION AGAINST POWER FAILURE OR PROGRAM SETTINGS.

DIVISION 26 - ELECTRICAL WORK

NOTE: ELECTRICAL WORK ON THIS PROJECT IS TO BE DESIGN BUILD. THE E.C. IS RESPONSIBLE FOR PERFORMING LOCATIONS AND REQUIREMENTS FOR THE ELECTRICAL SYSTEM WITH THE HACP.

CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE SPECIFIC BUILDING HACP REQUIREMENTS, THE LATEST RULES OF THE NATIONAL ELECTRICAL CODE AND WITH LOCAL ORDINANCES HAVING JURISDICTION.

DO NOT INTERPRET ANYTHING IN THE DRAWINGS OR SPECIFICATIONS AS AUTHORITY TO VIOLATE APPLICABLE CODES.

BE RESPONSIBLE FOR EXAMINING DRAWINGS AND SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES. RESOLVE ALL CONFLICTS BEFORE INSTALLATION AT NO EXTRA COST.

PREPARE ANY ADDITIONAL CLARIFYING DETAILS REQUIRED BY THE LOCAL INSPECTOR OF AUTHORITIES AND SECURE APPROVAL OF SAME. PAY ANY CHARGES. OBSERVE ALL UNIFORM CONSTRUCTION CODE REQUIREMENTS.

OBSERVE ALL APPLICABLE SAFETY REGULATIONS REQUIRED BY HACP AND/OR BY OSHA.

BRING ANY DISCREPANCIES BETWEEN DIFFERENT DRAWINGS, BETWEEN THE DRAWINGS AND FIELD CONDITIONS, OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR ANY APPARENT OMISSIONS, TO THE ARCHITECT'S ATTENTION BEFORE SUBMITTING THE BID. AFTER AWARD OF CONTRACT.

THE INTERPRETATION OF ANY CONFLICT WILL BE MADE BY THE ARCHITECT AND SHALL BE ACCEPTED AS FINAL.

IF MENTION HAS BEEN OMITTED PERTAINING TO DETAILS, ITEMS OR RELATED ACCESSORIES REQUIRED FOR THE COMPLETION OF ANY ELECTRICAL SYSTEM, INCLUDE SUCH ITEMS AND ACCESSORIES IN THE ELECTRICAL CONTRACT AND WITHOUT ADDITIONAL CHARGES.
AFTER THE JOB IS AWARDED, CLAIMS BASED ON INSUFFICIENT DAT

MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, ASTM AND IEEE. ALL SIMILAR MATERIALS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.

B. RACEWAYS

1. MATERIALS
RIGID HEAVY WALL STEEL CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE STEEL, HOT DIPPED GALVANIZED AND ZINC COATED, INSIDE AND OUTSIDE. CONDUIT SHALL BEAR THE MANUFACTURER'S AND UNDERWRITERS' LABELS. THIN WALL CONDUIT IS DESIGNATED AS E.M.T. STEEL CONDUIT SHALL BE MANUFACTURED BY WHEATLAND, ALLIED, TRIANGLE, OR EQUAL.
FLEXIBLE CONDUIT (GREENFIELD) SHALL BE U. L. LISTED, 3/4 INCH MINIMUM TRADE SIZE FOR BRANCH WIRING. GREENFIELD OF ½ INCH SIZE WILL BE PERMITTED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES ONLY.

2. INSTALLATION
MINIMUM SIZE CONDUIT IS 3/4 INCHES.
INSTALL CONDUIT AS A COMPLETE SYSTEM. CONTINUOUS FROM OUTLET TO OUTLET CABINET BOX OR FITTING MECHANICALLY AND ELECTRICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY IS SECURED.
DO NOT ROUTE RACEWAYS THROUGH ANY DUCTWORK.

C. CONDUIT FITTINGS

1. MATERIALS
ALL CONDUIT FITTINGS SHALL BE GALVANIZED MALLEABLE IRON OR STEEL, WHERE APPLICABLE.
CONDUIT FITTINGS SHALL CONFORM IN DESIGN AND QUALITY TO THE TYPE OF CONDUIT ON WHICH THEY ARE BEING INSTALLED.

2. INSTALLATION
USE THREADED CONNECTORS ON GRS CONDUIT.
USE SET-SCREW STYLE CONNECTORS ON E.M.T. WHERE SAME IS RUN EXPOSED OR CONCEALED ABOVE GRADE.
USE BUSHINGS, LOCKNUTS AND EXPANSION FITTINGS OF THE APPROPRIATE TYPE FOR THE RACEWAY SYSTEM BEING INSTALLED.

D. PULL BOXES, OUTLET BOXES AND COVERS

1. GENERAL
FOR EACH OUTLET BOX, USE THE PROPER CODE SIZE FOR THE ENTERING CONDUITS AND THE NUMBER OF WIRES TERMINATING THEREIN.
USE BOXES WITH PLASTER RING EXTENSIONS IN PLASTERED OR DRY WALL PARTITIONS.

2. MATERIALS
FOR LARGE PULL BOXES, USE BOXES OF CODE GAUGE SHEET STEEL WITH STEEL COVERS ATTACHED WITH BRASS SCREWS. BOXES SHALL BE HOT DIPPED, GALVANIZED AFTER FABRICATION - THE MINIMUM SIZE OF EACH BOX SHALL BE AS REQUIRED BY THE NATIONAL ELECTRIC CODE. MANUFACTURER'S ARE HOFFMAN, KEYSTONE OR EQUAL.
FOR CONCEALED WORK, USE PRESSED STEEL BOXES, KNOCKOUT TYPE, ZINC COATED, OF 1/16 INCH MINIMUM THICKNESS.
USE BOXES OF FORM AND DIMENSIONS BEST ADAPTED TO SPECIFIC LOCATION, KIND OF FIXTURE USED AND THE NUMBER, SIZE AND ARRANGEMENT OF RACEWAYS CONNECTING THERETO. USE STEEL CITY OR RACO.
USE WIREMOLD FINISHED STYLE BOXES IN FINISHED AREAS WHERE CONCEALED BOXES ARE NOT FEASIBLE.

E. CONDUCTORS IN RACEWAYS

1. MATERIALS
CONDUCTORS SHALL BE SOFT DRAWN COPPER, MINIMUM 97% CONDUCTIVITY, 600 VOLT, CONFORMING TO ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
INSULATION SHALL BE SUITABLE FOR THE CONDITIONS AND LOCATIONS IN WHICH CONDUCTORS ARE INSTALLED. THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED OR REQUIRED BY LOCATION OR INSTALLATION CONDITIONS:
A. FOR BUILDING WIRE IN INTERIOR ABOVE GRADE LOCATIONS, USE TYPE THWN/THHN COPPER RATED 75 DEGREES C. WET OR DRY.
WIRES SHALL BE CLEARLY AND REGULARLY MARKED WITH THE WIRE SIZE, VOLTAGE, INSULATION TYPE AND MANUFACTURER'S NAME.
CONDUCTORS SHALL BE NEW AND MANUFACTURED WITHIN EIGHT MONTHS PREVIOUS TO DELIVERY AT SITE, WITH DATE OF MANUFACTURE MARKED ON THE PACKAGES.
MINIMUM WIRE SIZE FOR BRANCH CIRCUITING SHALL BE #12 AWG.
ALL CIRCUIT RUNS EXCEEDING 75 FEET IN LENGTH EXTENDING FROM THE PANELBOARD TO THE FIRST OUTLET IN THE CIRCUIT SHALL BE #10 AWG MINIMUM.
WIRE #8 AWG AND SMALLER SHALL BE SOLID; WIRE #6 AWG AND LARGER SHALL BE STRANDED.
WIRE SHALL BE AS MANUFACTURED BY HI-TECH, PIRELLI, TRIANGLE OR EQUAL.

2. INSTALLATION
COLOR CODE ALL WIRES PER NEC REQUIREMENTS:
A. MATCH THE EXISTING SCHEME PRESENTLY INSTALLED; NEUTRAL SHALL BE WHITE. EQUIPMENT GROUND SHALL BE GREEN.
THE GROUPING OF OUTLETS ON INDIVIDUAL NEW CIRCUITS AS SHOWN ON THE DRAWINGS SHALL BE STRICTLY OBSERVED. GROUPING OF CONDUCTORS IN THE CONDUIT SHALL NOT BE PERMITTED. INCORPORATE A MAXIMUM OF FOUR (4) WIRES, I.E. A MAXIMUM OF ONE CIRCUIT CONDUCTOR ON EACH PHASE PLUS THE NEUTRAL WIRE PLUS THE GROUND WIRE IN ONE CONDUIT.
EMPLOY A U.L. LISTED COMMERCIAL PRODUCT SUCH AS WYRE-EZE OR YELLOW-77 FOR PULLING WIRES INTO A RACEWAY.
CLEAN AND DRY CONDUITS BEFORE PULLING IN WIRES.
THE USE OF B.X., ROMEX, OR U.F. CABLE IS NOT PERMITTED.
MC CABLE MAY BE USED FOR CONCEALED BRANCH CIRCUIT WIRING.

F. SPLICES

MAKE ALL SPLICES, JOINTS AND TAPS WITH SOLDERLESS PRESSURE CONNECTORS LISTED AND APPROVED FOR THE INTENDED USE AND FOR THE SIZE AND NUMBER OF CONDUCTORS UTILIZED.
1. FOR WIRE #10 AWG AND SMALLER, USE TWIST-ON WIRE NUTS.
2. FOR WIRE #8 AWG AND LARGER, USE HEAVY DUTY SOLDERLESS SET SCREW CONNECTORS WITH A SEPARATE BARREL FOR EACH CONDUCTOR.
USE INSULATING COVERS FROM THE MANUFACTURER, WHERE AVAILABLE. TAPE PROPERLY TO PROVIDE A SUFFICIENT INSULATION AROUND THE ENTIRE SPLICE UNIT, WHEN INTEGRAL INSULATING COVERS ARE NOT AVAILABLE FROM THE FITTING MANUFACTURER.

G. PANELBOARDS AND CABINETS

CABINETS SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH WIRING GUTTERS OF SUFFICIENT WIDTH TO PROVIDE AMPLE SPACE FOR BRANCH CIRCUIT WIRES AND FEEDERS. GUTTERS SHALL NOT BE LESS THAN FOUR INCHES WIDE. GUTTERS SHALL CONFORM TO NEC STANDARDS AND SHALL BE OVER-SIZED WHERE NECESSARY TO ACCOMMODATE THE ENTRANCE OF SEVERAL LARGE CONDUITS AND/OR WHERE NECESSARY TO AVOID OVERCROWDING OF CONDUCTORS OR EQUIPMENT WITHIN. TRIMS SHALL BE SURFACE AS NOTED ON THE PANEL SCHEDULE AND SHALL CONTAIN CONCEALED HINGED DOORS, EACH EQUIPPED WITH FLUSH CHROME PLATED COMBINATION LOCKS AND CATCHES, ALL KEYED ALIKE. FINISH SHALL BE STANDARD BAKED ENAMEL OR LACQUER, MEDIUM GRAY, ANSI-61. PROVIDE TWO (2) KEYS WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE. USE "DOOR IN A DOOR" HINGED TRIMS.

PANELBOARD BASIS OF DESIGN:

- MANUFACTURER: GE, SIEMENS OR EQUAL.
- ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED IN ACCORDANCE WITH NFPA 70, BY QUALIFIED ELECTRICAL TESTING AGENCY RECOGNIZED BY AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH NEMA PB 1.
- COMPLY WITH NFPA 70.
- ENCLOSURES: SURFACE-MOUNTED, DEAD-FRONT CABINETS.
- INDOOR DRY AND CLEAN LOCATIONS: UL 50E, TYPE 1
- OTHER WET OR DAMP INDOOR LOCATIONS: UL 50E
- HEIGHT: 7 FT MAXIMUM.
- RETAIN ONE OF FIRST TWO SUBPARAGRAPHS BELOW. VERIFY WITH MANUFACTURER FOR AVAILABILITY OF "DOOR-IN-DOOR" CONSTRUCTION IN OTHER THAN NEMA 1 STYLE PANELBOARDS.
- HINGED FRONT COVER: ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER. TRIMS MUST COVER LIVE PARTS AND MAY HAVE NO EXPOSED HARDWARE.
- INCOMING MAIN ON TOP
- 20 SPACE- 40 CIRCUITS MINIMUM.

BUSING SHALL BE FULL CAPACITY, 98% CONDUCTIVITY COPPER OR 80% CONDUCTIVITY ALUMINUM, BRACED FOR THE SHORT CIRCUIT CURRENT AVAILABLE TO THE PANEL AND SIZED AS SHOWN IN THE PANEL DETAIL. CIRCUIT BREAKERS SHALL BE CONNECTED TO BUSES WITH BOLTED CONNECTIONS FOR SEQUENCE PHASING: I.E., CIRCUITS 1 AND 2 CONNECTED TO PHASE A; 3 AND 4 TO PHASE B AND SO ON. POLARITY OR BLOCK PHASING SHALL NOT BE ACCEPTABLE. PANEL SHALL INCLUDE A NEUTRAL BUS AND AN EQUIPMENT GROUNDING BUS. CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE, BOLT-ON, WITH THERMAL AND MAGNETIC TRIPS, TRIP-FREE ON OVERLOAD OR SHORT CIRCUIT, UL LISTED, HAVING INTERRUPTING CAPACITIES, AS INDICATED.

H. WIRING DEVICES AND PLATES

1. MATERIALS
ALL WIRING DEVICES SHALL BE MANUFACTURED BY ONE OF THE MANUFACTURERS LISTED. DO NOT MIX MANUFACTURER'S PRODUCTS.
DEVICES SHALL BE U.L. SPECIFICATION GRADE.

2. WALL SWITCHES
SWITCHES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE GENERAL USE, AC QUIET TYPE, 20 AMPERE, 120/277 VOLT, BACK AND SIDE WIRED. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

3. WALL SWITCH TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENTS FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP SINGLE POLE WALL SWITCH - HUBBELL #HBL-1221, P & S #20AC1, COOPER #1221, BRYANT #4901, OR LEVITON #1221-2.
20 AMP 3-WAY WALL SWITCH - HUBBELL #HBL-1223, P & S #20AC3, COOPER #1223, BRYANT #4903, OR LEVITON #1223-2. USE SIMILAR SERIES FOR 4-WAY SWITCHES.

4. WALL RECEPTACLES
ALL CONVENIENCE AND POWER RECEPTACLES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE THE GROUNDING TYPE.
CONVENIENCE RECEPTACLES SHALL BE 20 AMP, 125 VOLT, BACK AND SIDE WIRED, 3 WIRE GROUNDING, UL LISTED AS COMPLYING WITH THE REQUIREMENTS OF NEC ARTICLE 250-146, AND SHALL BE NEMA 5-20R CONFIGURATION. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

5. RECEPTACLE TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENT FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP, 125 VOLT DUPLEX CONVENIENCE OUTLET (NEMA 5-20R) - HUBBELL #HBL-5362, P & S #5362A, COOPER #5362, BRYANT #5362, OR LEVITON #5362.
20 AMP, 125 VOLT GROUND FAULT INTERRUPTER (NEMA 5-20R) - HUBBELL #GF-5362, P & S #2091, COOPER #WGF-20, BRYANT #GFRS3FT, OR LEVITON #6899.

6. PLATES
USE STAINLESS STEEL PLATES.

I. FASTENINGS AND ATTACHMENTS

FOR FASTENINGS AND ATTACHMENTS, SUCH AS SCREWS, BOLTS AND NUTS, USE DEVICES MADE OF NON-FERROUS METALS OR OF GALVANIZED OR CADMIUM PLATED STEEL. WHEN SUCH DEVICES ARE NOT OBTAINABLE IN NON-FERROUS METALS, OR IN STEEL WITH A PROTECTIVE METALLIC COATING. PAINT SAME WITH A RUST PREVENTING PAINT SUCH AS RUSTOLEUM.
ALL FASTENINGS AND ATTACHMENTS SHALL BE MADE OF MATERIALS OR SO PROTECTED, THAT THEY WILL OFFER THE MAXIMUM PROTECTION AGAINST DETERIORATION FROM AGE, WEATHER OR DAMPNESS.
DO NOT PENETRATE THE ROOF DECK WITH ANY FASTENERS.

J. SURFACE METALLIC RACEWAY SYSTEM

USE A SURFACE METAL RACEWAY SYSTEM AND BOXES, WHERE CONCEALED WIRING IS NOT POSSIBLE OR WHERE SHOWN ON THE PLANS.
USE RACEWAYS, SUCH AS WIREMOLD, FOR STRAIGHT RUNS, COMPLETE WITH BOXES AND FITTINGS, AS DIRECTED. VERIFY COLOR OPTIONS WITH THE ARCHITECT. PAINT SAME WHERE REQUIRED OR INDICATED.
OBTAIN APPROVAL FOR ALL SURFACE ROUTINGS WITH THE ARCHITECT PRIOR TO ROUGH-IN.

K. FIRE STOPS

1. GENERAL
PROVIDE THROUGH PENETRATION FIRE STOP SYSTEMS TO PREVENT THE SPREAD OF FIRE THROUGH OPENINGS MADE IN FIRE-RATED WALLS OR FLOORS TO ACCOMMODATE THROUGH PENETRATING ITEMS SUCH AS CONDUIT AND CABLES.
FIRE-RESISTANCE-RATED ASSEMBLY SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY OR SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRE STOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM-E-814 OR U.L. 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER. THE SYSTEM SHALL HAVE AN F RATING AND A T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. WHERE FLOOR/CEILING ASSEMBLIES ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED. FIRE STOP SHALL RESTORE FLOOR AND WALL TO ORIGINAL FIRE RATED INTEGRITY AND SHALL BE WATERPROOF.

PENETRATIONS OF MEMBRANES THAT ARE PART OF A FIRE-RATED WALL OR FLOOR MUST BE STOPPED AS OUTLINED FOR THROUGH PENETRATIONS WITH THE FOLLOWING EXCEPTIONS.
A. STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
B. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED AS INDICATED.
1. BY HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES.
2. BY HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY IS FILLED WITH CELLULOSE LOOSE FILL ROCK WOOL OR SLAG MINERAL WOOL INSULATION.
3. BY SOLID FIRE BLOCKING.
4. BY PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS.
5. BY OTHER LISTED MATERIALS AND METHODS.

2. MATERIALS
PUTTY - USE FLAMESEAL PUTTY #AA423 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
FIBER - USE CERAMIC FIBER #AA401 (10 LB. BOX) OR #AA417 (2 LB. BAG) AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN WALLS - USE CERAMIC BOARD #AA402 (1" X 18" X 12") OR #AA403 (1" X 36" X 48") AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN FLOOR - USE SUPPORT WIRE #AA404 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.

3. INSTALLATION
USE TOTAL THICKNESS OF 1-1/2 INCHES OF FLAMESEAL PUTTY #AA423 ON ALL PENETRATIONS OF FIRE-RATED WALLS AND FLOORS. USE NELSON FIBER #AA401 OR #AA417 IN CONJUNCTION WITH THE PUTTY TO FILL THE REMAINING VOID OF PENETRATIONS.
PACK CERAMIC FIBER IN CENTER OF OPENING LEAVING 3/4 INCH ON EITHER SIDE OF WALL FOR THE PUTTY. INSTALL THE PUTTY IN THE REMAINING PART OF OPENING, WORKING IT INTO ALL VOIDS AND CAVITIES.
FOR OPENINGS WITH GREATER THAN 4 INCHES OF UNSUPPORTED SPACE, USE NELSON CERAMIC BOARD #AA402 OR #AA403 DEPENDING ON SIZE OF OPENING. PACK CERAMIC FIBER IN BOTTOM OF OPENING PER FACTORY RECOMMENDATIONS, LEAVING 1-1/2 INCHES BELOW FLOOR LEVEL FOR THE INSTALLATION OF FLAMESEAL PUTTY. USE SUPPORT WIRE #AA404 ON ALL PENETRATIONS IN EXCESS OF 6 INCHES DIAMETER.

L. MC CABLE

METAL CLAD CABLE (MC) SHALL BE COPPER WIRE WITH 90 DEGREES C. THHN INSULATION, #12 AWG MINIMUM, WITH CONTINUOUS INSULATED GREEN GROUND CONDUCTOR AND STEEL ARMOR, MANUFACTURED BY A.F.C., ALFLEX, OR EQUAL. INSTALL NON-RIGID CABLE IN A NEAT, APPROVED MANNER, AS PER N.E.C. REQUIREMENTS. DO NOT GROUP CABLES INTO A COMMON CONDUIT AS OVERHEATING WILL RESULT. DO NOT TIE THE SEVERAL CABLES TOGETHER. USE APPROVED STYLE "MC" CONNECTORS AND FITTINGS IN ORDER TO MAINTAIN ADEQUATE CASE GROUNDING REQUIRED BY THE NATIONAL ELECTRICAL CODE. PROVIDE AN INDEPENDENT MEANS OF SUPPORT FOR ALL WIRING LOCATED ABOVE A DROPPED CEILING ASSEMBLY FROM THE STRUCTURAL CEILING SYSTEM. DO NOT SUPPORT WIRING FROM THE CEILING ASSEMBLY OR FROM ITS SUPPORT WIRES.

SERVICE AND DISTRIBUTION

A. GENERAL INSTALLATION

USE RIGID HEAVY WALL STEEL CONDUIT FOR EXPOSED EXTERIOR RACEWAYS.
USE EMT ELECTRICAL METALLIC THINWALL CONDUIT FOR CONCEALED INTERIOR FEEDERS, TELEPHONE RACEWAYS, ETC.
USE FLEXIBLE CONDUIT SUCH AS "GREENFIELD" FOR CONNECTIONS TO RECESSED LIGHTING FIXTURES IN 72" MAXIMUM LENGTHS AND FOR USE IN STUD WALLS WHERE THE USE OF RIGID CONDUIT IS NOT PRACTICAL.
USE WEATHERPROOF AND OIL PROOF FLEXIBLE CONDUIT SUCH AS "SEAL-TITE" FOR ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT IN LENGTHS OF 18" MAXIMUM.
USE LIQUID-TIGHT FLEXIBLE CONDUIT AND APPROPRIATE LIQUID-TIGHT FITTINGS IN AREAS EXPOSED TO THE WEATHER OR LIKELY TO BECOME DAMP, WHERE USED, CONFORM TO NEC #230-118.

USE WIREMOLD RACEWAYS FOR BRANCH CIRCUIT SURFACE ROUTINGS IN FINISHED AREAS ONLY WHERE CONCEALED WIRING IS NOT FEASIBLE, AND WHERE INDICATED.
USE M.C. CABLE FOR CONCEALED BRANCH CIRCUIT WIRING ONLY, IN ACCORDANCE WITH THE N.E.C. REQUIREMENTS.
THE USE OF B.X., ROMEX, AND U.F. IS NOT APPROVED.

LIGHTING FIXTURES AND ACCESSORIES

GENERAL
ALL LIGHTING FIXTURES AND LAMPS WILL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

LIGHTING FIXTURES

BASIS OF DESIGN LIGHTING FIXTURES BY KICHLER OR EQUAL.
CEILING FIXTURE: KICHLER #6112WH. WHITE FINISH. SURFACE MOUNTED
EXTERIOR CEILING FIXTURE: KICHLER #11132AZTLED, OUTDOOR RATED.
WALL EXTERIOR: KICHLER #9654TZ. WALL MOUNTED, OUTDOOR RATED
BATHROOM VANITY: KICHLER JOELSON #45923
FLOOD LIGHT: LITHONIA LIGHTING OLF LED WITH MOTION OCCUPANCY SENSOR
RECESSED LIGHTING: HALO OR EQUAL.

B. INSTALLATION

PROVIDE ALL SUPPLEMENTARY STRUCTURAL MATERIALS REQUIRED TO PROPERLY MOUNT ALL LIGHTING FIXTURES.
SECURELY MOUNT LIGHTING FIXTURES TO STRUCTURAL ELEMENTS OF THE BUILDING TO SUSPENDED CEILING SYSTEMS SUCH THAT SAID FIXTURES WILL BE SQUARE, PLUMB, AND RIGID, WILL NOT FALL OR SAG, AND WILL NOT CAUSE THE SUSPENDED CEILING SYSTEM TO SAG. PROVIDE ADDITIONAL CEILING SUPPORTS, WHERE REQUIRED TO SUPPORT RECESSED OR SURFACE FIXTURES.
INSTALL WIRING TO AND WITHIN FIXTURES TO COMPLY WITH NEC ARTICLE #410. TAKE SPECIAL CARE TO ASSURE THAT THE FIXTURE OUTLETS FOR RECESSED FIXTURES ABOVE SOLID SUSPENDED CEILINGS WILL ACTUALLY BE ACCESSIBLE AFTER THE PROJECT IS COMPLETED.
USE CLIPS TO FASTEN RECESSED TROFFERS TO DROP CEILING CHANNELS AS REQUIRED BY NEC SECTION #410-16. USE CADDY FASTENERS #6 IS OR APPROVED EQUAL.
TIME CLOCKS SHALL BE COMMERCIAL GRADE, 7 DAY, ASTRONOMICAL DAL, WITH 24-HOUR SPRING RESERVE BACKUP, AS MANUFACTURED BY TORK OR PARAGON (IF REQUIRED).

SMOKE ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 20SAR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

COMBO SMOKE + CO ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 3COUDR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

SMOKE DETECTOR'S LOCATIONS:
1. COMBO SMOKE + CO ALARM PER FLOOR, NOT TO BE PLACED IN MECHANICAL ROOM OR KITCHEN.
1 SMOKE DETECTOR IN SIDE EACH SLEEPING ROOM
INTERCONNECT SMOKE DETECTORS INSIDE THE UNIT.

MOTOR WIRING

WIRING FOR MECHANICAL AND PLUMBING CONTRACTS
1. INSTALLATION
VERIFY ALL LOCATIONS WITH THE VARIOUS MECHANICAL CONTRACTORS BEFORE INSTALLING RACEWAYS.
PROVIDE ALL WIRING MATERIALS AND DEVICES REQUIRED TO CONNECT AND OPERATE THE ELECTRICAL PARTS OF EQUIPMENT FURNISHED AND INSTALLED UNDER THE MECHANICAL DIVISION.
INSTALL AND CONNECT ALL STARTERS, PUSHBUTTONS, SWITCHES, THERMOSTATS AND OTHER CONTROL DEVICES AS FURNISHED BY OTHERS, UNLESS OTHERWISE NOTED.
MAKE ALL FINAL CONNECTIONS TO MOTORIZED EQUIPMENT. VERIFY THE CORRECT DIRECTION OF ROTATION.
CONNECT MOTOR CIRCUITS TO THE RIGID CONDUIT SYSTEM BY MEANS OF WEATHERPROOF STYLE FLEXIBLE CONDUIT, PROPERLY GROUNDED AND BONDED. EMPLOY A GREEN GROUND WIRE FOR ALL SYSTEMS AND MOTOR FRAME GROUND CONNECTIONS.
BOLT THE WIRE TO THE MOTOR FRAME AT ONE END AND TO THE MOTOR STARTER AT THE OTHER END WITH APPROVED TERMINAL DEVICES.
DO ALL LINE VOLTAGE CONTROL WIRING (120 VOLTS OR HIGHER).
ALL LOW VOLTAGE CONTROL WIRING (UNDER 120 VOLTS) IS THE RESPONSIBILITY OF THE MECHANICAL OR PLUMBING CONTRACTS.

SECTION 32- EXTERIOR IMPROVEMENTS

CHAIN LINK FENCE
ALUMINUM WIRED FABRIC 2X2 INCHES WITH ROUNDED POST AND RAILS 2.5 INCHES IN DIAMETER. LIGHT INDUSTRIAL STRENGTH, ZINC COATED, WITH TOP AND BOTTOM TENSION WIRED ZINC COATED. MECHANICALLY DRIVEN INTO SOIL OR USING ANCHORING CONCRETE.

GATES TO MATCH FENCE MATERIAL AND FRAME. DOOR WITH LATCH TO PERMIT OPERATION FROM BOTH SIDES OF GATE. PADLOCK AND CHAIN TO BE PROVIDED BY HACP.

SEEDING

QUALITY, NON-STATE CERTIFIED SEED OF GRASS SPECIES AS LISTED BELOW FOR SOLAR EXPOSURE, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PER CENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED

A. SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH.
1. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
2. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
3. DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.

B. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

C. PROTECT SEEDED AREAS FROM HOT, DRY WEATHER OR DRYING WINDS BY APPLYING COMPOST MULCH WITHIN 24 HOURS AFTER COMPLETING SEEDING OPERATIONS. SOAK AREAS, SCATTER MULCH UNIFORMLY TO A THICKNESS OF 3/16 INCH +, AND ROLL SURFACE SMOOTH.

TREE AND STUMP REMOVAL
ALL APPROPRIATE SAFETY EQUIPMENT MUST BE UTILIZED AT ALL TIMES DURING OPERATIONS, INCLUDING, BUT NOT LIMITED TO HARD HATS, GLOVES, SAFETY GLASSES, FALL RESTRAINTS, TRAFFIC CONTROL DEVICES, HIGH VISIBILITY CLOTHING, ADEQUATE HEARING PROTECTION AND ANY OTHER SAFETY REQUIRED BY OSHA.
ONCE A TREE IS CUT DOWN, THE STUMP MUST BE GROUND OUT WITHIN FIVE DAYS (5). STUMPS AND BUTTRESS ROOTS MUST BE REMOVED TO A MINIMUM OF TWELVE INCHES (12") BELOW GROUND LEVEL AND TWO (2) TIMES THE DIAMETER AT BREAST HEIGHT IN SURFACE AREA GROUND. THE REMAINING STUMP AND/OR CHIPS SHALL BE REMOVED FROM THE SITE WITHIN TWO DAYS (2) AFTER GRINDING. ALL SURFACE ROOTS AND ADJACENT SUBSURFACE ROOTS SHALL BE REMOVED AS MAY BE NECESSARY TO ELIMINATE "HUMPS" OR MOUNDS IN THE TREE EASEMENT AREA ADJACENT TO THE STUMP. ALL TREE EASEMENT AREAS ARE TO BE LEFT FLAT AND MEET ORIGINAL GRADE. THE AREA WILL THEN BE BACKFILLED WITH CLEAN, PULVERIZED TOPSOIL TO THE LEVEL OF THE ADJOINING GRADE AND SEEDED. SEE SEEDING FOR SEED REQUIRED.

THE PARTY AUTHORIZED TO REMOVE THE TREE, AT THEIR EXPENSE, SHALL RESTORE THE LAWN AND ANY EXISTING LANDSCAPING AND APPURTENANNCES THAT EXIST BETWEEN THE SIDEWALK AND CURB OR IN OTHER AREAS THAT HAVE BEEN DISTURBED BY THE PARTY AUTHORIZED TO REMOVE THE TREE DURING THE PROSECUTION OF THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL PROTECT ALL CONCRETE SIDEWALK, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT FROM DAMAGE THROUGH THE USE OF PLYWOOD SHEETING OR MATS WHEN NECESSARY. THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL REPLACE OR RESTORE ALL CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT WHICH MAY HAVE BEEN DAMAGED DURING THE PROSECUTION OF THE WORK.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL BE RESPONSIBLE AT ALL TIMES FOR KEEPING THE WORK SITE ADJOINING PREMISES, STREET, WALKS AND DRIVEWAYS CLEAN. ALL TREE BRANCHES, BARK, CHIPS AND OTHER DEBRIS MUST BE CLEARED UP AT THE END OF THE WORKDAY.

SECTION 33- UTILITIES

TRENCH DRAIN SYSTEM
ZURN Z880 2 1/2 [64] WIDE TRENCH DRAIN SYSTEM SHALL BE 4 ft [1220] LONG AND 2 1/2 [63.5] WIDE. DRAIN SHALL BE 3 [76] DEEP. DRAIN SHALL BE MADE OF (HDPE) HIGH DENSITY POLYETHYLENE AND IS UV-10 STABILIZED. DRAIN SHALL HAVE BEDDING FEET TO BE USED FOR POSITIONING AND ANCHORING PURPOSES. DRAINS SHALL HAVE TONGUE AND GROOVE SNAP FIT CONNECTION. DRAIN SHALL HAVE 24 [610] LONG HIGH-DENSITY POLYETHYLENE DECORATIVE GRATE (-POG) PROVIDED AS STANDARD.

INSTALLATION
TRENCH EXCAVATION MUST BE 4" [102MM] GREATER THAN THE TRENCH DEPTH AND A MINIMUM OF 4" [102MM] GREATER THAN THE EDGE OF THE TRENCH ON EACH SIDE. SOFT AND/OR SHIFTING SOIL SUBSTRATES MAY CAUSE CRACKING OF THE CONCRETE AND CONSEQUENT MOVEMENT OF THE TRENCH. IT IS CRITICAL THAT THE CONCRETE BE POURED ON AN ADEQUATE FOUNDATION

ASSEMBLING PER MANUFACTURER INSTRUCTION. A SILICONE CAULK OR A CONSTRUCTION ADHESIVE, SUCH AS LIQUID NAILS, IS RECOMMENDED TO BE USED AT EACH JOINT AS A SEALER.

UPON COMPLETION OF THE TRENCH EXCAVATION, THE CHANNELS SHOULD BE PLACED IN ORDER ALONGSIDE THE EXCAVATION AND ACCORDING TO THE JOB LAYOUT.

AFTER ATTACHMENT OF ACESSORIES, ANCHOR AND LEVEL TRENCH IN THE EXCAVATION USING CONCRETE PATTIES AROUND THE FEET. MAKE FINISH POUR OF CONCRETE AND BE CERTAIN TO PROPERLY VIBRATE CONCRETE TO ELIMINATE ANY UNWANTED VOIDS. FINISH TROWELING SHOULD BE DONE TO SET THE TOP EDGE OF THE TRENCH DRAIN 1/16" [1.6MM] BELOW THE FLOOR GRADE. REMEMBER TO COMPENSATE FOR CONCRETE SHRINKAGE THAT MAY OCCUR DURING CURE SO THAT THE EDGE OF THE TRENCH DRAIN DOES NOT PROTRUDE ABOVE THE FINISHED FLOOR GRADE.

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CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other re

Renovation of 10 Scattered Sites

10 Scattered Sites - Orangewood Avenue
Single Family Residence, Minor Alteration
1318 Orangewood Avenue,
Pittsburgh, Pennsylvania 15216

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Code Conformance Information

Applicable Codes

General:	2018 International Residential Code 2018
Energy:	2018 International Energy Conservation Code
Electrical:	2017 NEC (NFPA 70)
Fire:	2018 International Fire Code
Fuel Gas:	2018 International Fuel Gas Code
Mechanical:	2018 International Mechanical Code
Plumbing:	2017 Allegheny County Health Department Plumbing Code

General Building / Project Information

Stories:	2 Stories
Building Gross Area:	Basement 341sq ft + Garage 267 sqft
	1st Floor 608 sqft
	2nd Floor 608 sqft

N

1 Site Location
SCALE: 1" =30'

Materials Legend

NOT ALL MATERIALS USED

- EARTH
- COMPACTED STONE FILL
- CONCRETE
- STEEL
- RIGID INSULATION
- BLOCKING
- BATT INSULATION
- GYPSUM WALL BOARD
- WOOD
- PLYWOOD SHEATHING
- SPRAY FOAM INSULATION

Abbreviations

A.F.F.	Above Finish Floor
A.P.	Access Panel
ACOUST.	Acoustical
A.C.T.	Acoustical Ceiling Tile
ADH.	Adhesive
ADJUST.	Adjustable
A/C	Air Conditioning
ALT.	Alteration
ALTN.	Alternate
ALUM.	Aluminum
A.O.R.	Area of Refuge
APPROX.	Approximate
ARCH.	Architectural
ASB.	Asbestos
ASPH.	Asphalt
AUTO.	Automatic
AVG.	Average
BLK.	Block
BD.	Board
BOT	Bottom
BLDG	Building
C.I.P.	Cast In Place
C.B.	Catch Basin
CEM.	Cement
CER.	Ceramic
CG	Corner Guard
C.M.T.	Ceramic Mosaic Tile
C.W.T.	Ceramic Wall Tile
C.O.	Cleanout
℄	Center Line
CLO.	Closet
C.W.	Cold Water
CLG.	Ceiling
COL.	Column
CONC.	Concrete
C.M.U.	Concrete Masonry Unit
CONT.	Continuous
CORR.	Corridor
C.M.P.	Corrigated Metal Pipe
CRS.	Courses
DIA.	Diameter
DET	Detail
DGL	Dens Glass Gold
DR.	Door
DN.	Down
D.S.	Downspout
DWG.	Drawing
D.F.	Drinking Fountain
D.I.P.	Ductile Iron Pipe
EA.	Each
E.W.	Each Way
ELEC.	Electrical
E.C.	Electrical Contractor
EL.	Elevation
ELEV.	Elevation
EQUIP.	Equipment
E.F.	Exhaust Fan
EXIST.	Existing
EXP.	Expansion
E.J.	Expansion Joint
EISH	Exterior Sheathing
EXIST.	Existing
EXP.	Exposed
EXT.	Exterior
E.I.F.S.	Exterior Insulation & Finish System
F.R.P.	Fiberglass Reinforced Polyester
F.F.	Finish Floor
FIN.FLR.	Finish Floor
F.A.C.P.	Fire Alarm Control Panel
F.E.	Fire Extinguisher
FLR.	Floor
F.D.	Floor Drain
FTG.	Footing
GA.	Gauge
G.C.	General Contractor
G.F.I.	Ground Fault Interrupter
GYP.	Gypsum
G.W.B.	Gypsum Wall Board
GSH	Gypsum Sheathing
H/C	Handicap
H.V.A.C.	Heating, Ventilation &
HT	Height
HC	Hollow Core
H.M.	Hollow Metal
HORIZ.	Horizontal
HR.	Hour
H.W.	Hot Water
IN.	Inch
I.M.	Insulated Metal
INSUL.	Insulation or Insulated
INT.	Interior
INV.	Invert
ISO.	Isolation
JAN.	Janitor's Closet
J.T.	Joint
LAM.	Laminate
LAV.	Lavatory
LG.	Long
M.D.F.	Medium Density Fiberboard
M.D.H.	Magnetic Door Holder
M.H.	Manhole
MFGR.	Manufacturer
MAX.	Maximum
MECH.	Mechanical
MET.	Metal
MIN.	Minimum
MISC.	Miscellaneous
N.I.C.	Not In Contract
N.T.S.	Not To Scale
O.C.	On Center
OPP.	Opposite
O.H.	Overhead
PR.	Pair
PLAS.	Plaster
PLAS.LAM.	Plastic Laminate
P.C.	Plumbing Contractor
PLYWD.	Plywood
POLY.	Polyethylene
P.V.C.	Polyvinyl Chloride
PRE-FAB.	Prefabricated
RE.	Refer To
REF.	Refrigerator
R.C.P.	Reinforced Concrete Pipe
REINF.	Reinforcement
RD.	Roof Drain
RM.	Room
S.A.T.	Suspended Acoustical Tile
SCHED.	Schedule
SHT.	Sheet
SIM.	Similar
S.C.	Solid Core
SPECS.	Specifications
SQ.	Square
S.F.	Square Foot
S.S.	Stainless Steel
STL.	Steel
STOR.	Storage
STRUCT.	Structural
TEL.	Telephone
THK.	Thick
T.B.D.	To Be Determined
T&G	Tongue & Groove
T.O.	Top Of
T.O.	Top Of Grade
T.O.S.	Top Of Steel
TYP.	Typical
UNFIN.	Unfinished
U.N.O.	Unless Noted Otherwise
V.B.	Vapor Barrier
VERT.	Vertical
VEST.	Vestibule
V.C.T.	Vinyl Composition Tile
W.H.	Water Heater
W.W.F.	Welded Wire Fabric
WIN.	Window
W/	With
W/O	Without
WD.	Wood

Symbols

NOT ALL SYMBOLS USED

T.O. FINISH FLOOR ELEV. 0'-0"	ELEVATION HEIGHT
PLAN NORTH	NORTH ARROW
1 A1	ELEVATION MARKER

seal

CONSTRUCTION DOCUMENTATION

general notes

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revisions

project title

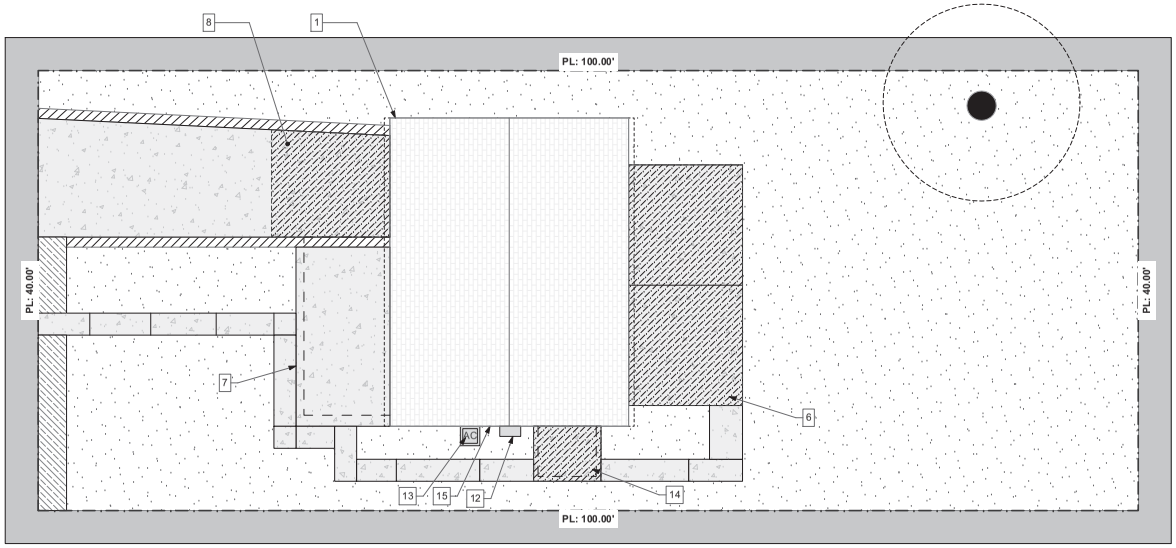
Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
1318 Orangewood Avenue
Pittsburgh, Pennsylvania 15216

drawing title

Drawing Index, Code Conformance Information, Site Location, Abbreviations and Materials

scale: As Noted	**Sheet No.**
date: August 20th, 2024	**A1**
no. 1 / of. 9	Project #2326



PLAN NORTH

1 Site Plan
SCALE: 3/16" = 1'-0"

SITE PLAN LEGEND

GRASS	MISC. BRICK	AC CONDENSER	RAILING	TRUE ROOF OUTLINE
LIGHTWEIGHT CONCRETE	MULCHED AREA	TREE / SHRUB	TACTILE PAVING	APPROX. PROPERTY LINE
CONCRETE BLOCK	STREET SIGNAGE	STREET SIGNAGE	MAN HOLE	WINDOW WELL

10 Scattered Sites Keynotes – 1318 Orangewood Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

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3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
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Exterior

6. BACKYARD PATIO SLAB (GC): Remove existing concrete slab at rear yard (approx. 300 sf). Recompact soil and 4" of compacted gravel. Pour new (10'x 30') 4" slab to replace existing, taking care to assure new slab slopes positively away from house by 1/8" per ft.
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Interior Garage

17. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish. Provide new surface mounted electrical duplex outlet proximal to garage door to supply power to door. See Specifications.
18. GARAGE TO INTERIOR DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.

Interior Basement

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Interior First Floor

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Second Floor

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seal

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drawing title

Site Plan, Site Plan Legend, Keynotes

scale	Sheet No.
As Noted	A2
date: August 20th, 2024	
no. 2 / of. 9	Project #2326

FLOOR COVERING PLAN LEGEND

VCT FLOORING
CONCRETE FLOORING
CARPET FLOORING
LVT FLOORING
WOOD FLOORING

GENERAL FLOOR PLAN NOTES

1. CONTRACTOR TO FIELD VERIFY ANY AND ALL CONDITIONS & DIMENSIONS OF WORK AREAS BEFORE BEGINNING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.
2. THE FINISH FLOOR OF THIS PROJECT IS IDENTIFIED AT 0'-0" IN THIS SET OF DRAWINGS.
3. ALIGN NEW WALL CONSTRUCTION WITH EXISTING WALL CONSTRUCTION. FINISH NEW PARTITION SMOOTH TO FORM A SEAMLESS JOINT BETWEEN NEW & EXISTING PARTITIONS.
4. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC REPRESENTATIONS. NOTIFY ARCHITECT IN WRITING OF ANY INCONSISTENT OR MISSING DIMENSIONS.
5. DIMENSIONS SHOWN INDICATE FINISHED FACE TO FINISHED FACE, UNLESS NOTED OTHERWISE.
6. ALL NEW OR RELOCATED DOOR FRAMES TO BE LOCATED 4" FROM PERPENDICULAR WALLS, UNLESS NOTED OTHERWISE.
7. SAND WALLS SMOOTH, REMOVE ALL ADHESIVE RESIDUE, AND/OR SKIM WITH JOINT COMPOUND AS NECESSARY TO PREP WALLS FOR NEW FINISHES. THE FLOOR SHOULD BE SCRAPED CLEAN OF ANY ADHESIVE RESIDUE, PATCHED AND LEVELED OUT AS NECESSARY TO RECEIVE NEW FLOORING.
8. AT WALLS EXISTING TO REMAIN, PATCH AND PAINT ANY HOLES OR DAMAGE TO APPEAR NEW.

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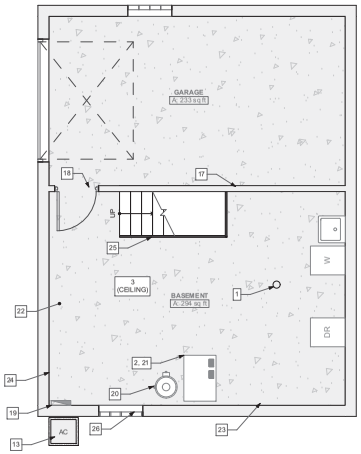
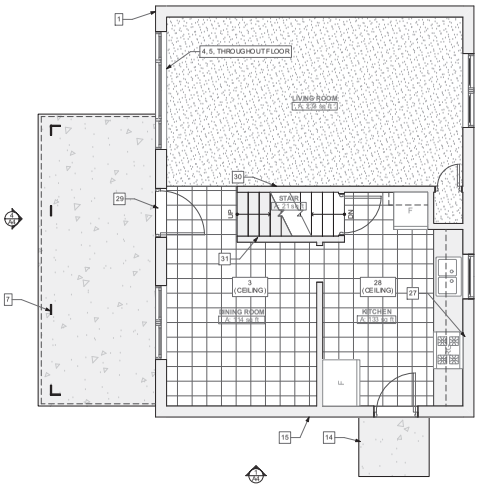
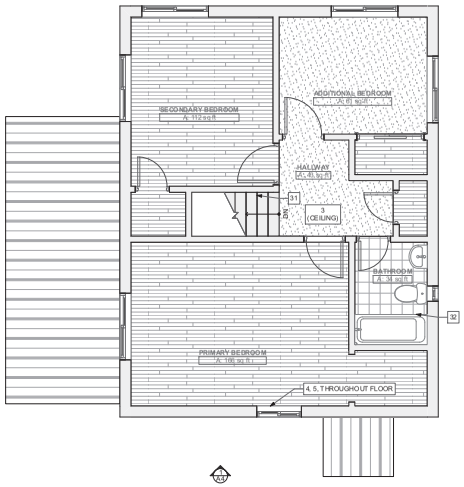


1 Basement
SCALE: 1/4" = 1'-0"



2 First Floor
SCALE: 1/4" = 1'-0"



3 Second Floor
SCALE: 1/4" = 1'-0"

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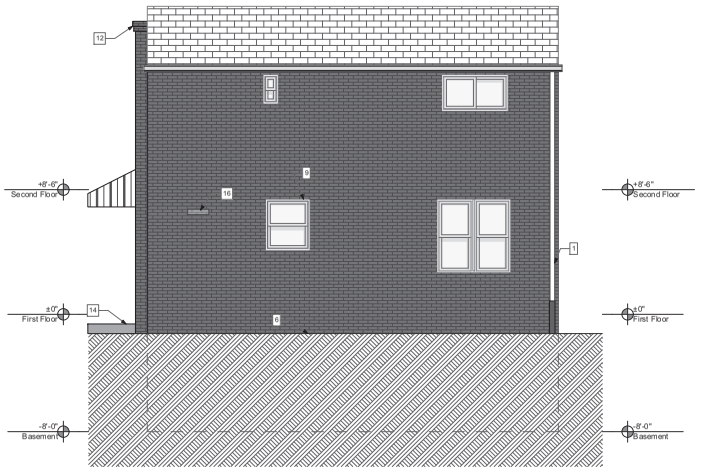
Basement, First Floor, Second Floor, Renovation Plan Legend, Floor Plan Legend, Keynotes

scale	Sheet No.
As Noted	A3
date: August 20th, 2024	
no. 3 / of. 9	Project #2326

1 South Elevation
SCALE: 1/4" = 1'-0"



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7. ENTRANCE CANOPY / RAILING (GC): At this location, remove existing (8'x16') aluminum entrance canopy and railing. provide new canopy, decorative support posts and railing matching existing. See Specifications.
8. DRIVEWAY (GC): Replace bottom driveway concrete (approx. 120 sf) and slope to drain. Camera and clear existing drain line. Provide new trench drain. See Specifications.
9. STEEL LINTELS (GC): Scrape and paint lintels over garage door and all windows.
10. CONCRETE BLOCK RETAINING WALLS (GC0: Provide and install new capstones to replace missing or damaged pieces assume 40 stones total on two walls. See Specifications.
11. EXISTING BRICK VENEER (GC): At brick area noted, strike and repoint areas of loose or missing mortar. Approximately 20 sf. See Specifications.
12. CHIMNEY (GC): Strike and repoint mortar joints at top 8' of chimney. Remove existing crumbling mortar cap and top section of terra cotta flue. Provide new flue section and sloped mortar cap at top. See Specifications.
13. NEW AC CONDENSER (M): Provide new Condenser, seal any through wall penetrations with silicone seal. See Specifications.
14. SIDE PATIO SLAB (GC): Remove existing concrete slab at sideyard (approx. 10 sf). Recompact soil and 4" compacted gravel. Pour new 4" slab to replace existing. Height shall be equidistant between walkway and side door threshold height (approx. 8").
15. HOSE BIBB (P): Provide new freeze proof hose bibb. See Specifications.
16. DAMPER (GC): Remove abandoned damper and patch brick. See Specifications

Interior Garage

17. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish. Provide new surface mounted electrical duplex outlet proximal to garage door to supply power to door. See Specifications.
18. GARAGE TO INTERIOR DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.

Interior Basement

19. ELECTRICAL PANEL (E): Replace circuit breakers with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally, provide proper electrical grounding and bonding of the electrical system. See Specifications.
20. WATER HEATER (P): Water Heater American Standard 40 Gal. manufacture dated 11/2021. The Water Heater appears to be in good condition and doesnot show signs of failure. Provide Inspection of unit by qualified plumber for pressure relief valve leak.
21. FURNACE (M): Furnace is a Bryant Plus 90. It appears to be properly functioning. Provide Inspection of unit by a qualified HVAC Technician. Seam seal all exposed duct seams within basement. Seam seal and insulate all ductwork running in unconditioned space, e.g. Garage. See Specifications.
22. BASEMENT FINISH FLOOR (GC): Clean, prep and paint existing basement floor (approx. 300 sf). See Specification.
23. BASEMENT INSULATION (GC): Replace displaced fiberglass batt insulation at basement rim board. Provide missing sections to create a complete seal. Provide new wire mesh staple set to prevent insulation movement.
24. BASEMENT WATER PIPES AND INSULATION (P): Locate and repair existing leaking copper water line. Remove existing damaged pipe insulation and provide new. See Specifications.
25. BASEMENT ACCESS STAIR (GC): Provide new 1"x painted wood riser closure at each riser of stairway. Provide additionally new non-slip rubber tread covers x full width, depth and nosing of tread. See Specifications.
26. VENT SCREEN (GC): Replace screen at wall vent by electrical panel.

Interior First Floor

27. KITCHEN RANGE HOOD (E/M): Replace existing Kitchen Range hood with new. See Specifications.
28. KITCHEN CEILING (M): Remove exhaust fan and patch ceiling. See Specifications.
29. FRONT DOOR THRESHOLD (GC): Replace front door with new. Remove section of cracked non-shrink grout at sill. Prep surface, caulk crack at concrete slab to seal. Provide new non-shrink grout sloped cap. Clean and seal concrete stoop crack using concrete crack sealant. See Specification.
30. LIVING ROOM (M): Replace thermostat with programable thermostat.

Second Floor

31. MAIN STAIRWAY (GC): At main stairway, remove existing handrail, sand, stain and refinish handrail. Patch and paint existing and old mounting holes. Re-fasten handrail to studs to assure solid mounting. Remove existing carpet stair runner. Sand, stain and finish existing painted wood treads, risers and stringers. See Specifications
32. BATHROOM (GC/P/M/E): Provide new tub/shower, tub/shower surround, shower rod and curtain; tub/shower faucet showerhead, drain assembly and shut-offs. Install new exhaust fan ducted to outside. See Specifications.

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seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
1318 Orangewood Avenue
Pittsburgh, Pennsylvania 15216

drawing title

South Elevation, East Elevation, Keynotes

scale		Sheet No.
As Noted		
date: August 20th, 2024		A4
no. 4	of. 9	Project #2326

3 North Elevation
SCALE: 1/4" = 1'-0"

4 West Elevation
SCALE: 1/4" = 1'-0"

10 Scattered Sites Keynotes – 1318 Orangewood Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages (see additional ductwork note at garage)
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
1. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.
5.

Exterior

6. BACKYARD PATIO SLAB (GC): Remove existing concrete slab at rear yard (approx. 300 sf). Recompact soil and 4" of compacted gravel. Pour new (10'x 30') 4" slab to replace existing, taking care to assure new slab slopes positively away from house by 1/8" per ft.
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seal

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drawing title

West Elevation, North Elevation, Keynotes

scale		Sheet No.
As Noted		A5
date: August 20th, 2024		
no. 5	of. 9	Project #2326

GENERAL NOTES

USE OF THE DOCUMENTS
THE USE OF THESE DOCUMENTS IS RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED. RE-USE OR REPRODUCTION OF THE DOCUMENTS (IN WHOLE OR IN PART), FOR ANY OTHER PURPOSE IS PROHIBITED. TITLE TO THESE REMAINS WITH FUKU ARCHITECTS P.C. (FAR). VISUAL CONTRACT DOCUMENTS DOCUMENTS IS PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

DIVISION 1 - GENERAL CONDITIONS

APPLICABILITY OF HUD-5370 GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS - PUBLIC HOUSING PROGRAMS
THE HUD-5370, GENERAL CONDITIONS CURRENT EDITION, SHALL APPLY TO THE PROJECT. A COPY OF THE HUD GENERAL CONDITIONS ARE INCLUDED IN THE FRONT END DOCUMENTS AS PART OF HUD FORMS. HARD CONES ARE AVAILABLE AT HACP OFFICE.

MULTIPLE CONTRACT
1. COORDINATION
GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT, ELECTRICAL CONTRACT, AND ADDITIONAL CONTRACTS APPLICABLE IN THE CONSTRUCTION DOCUMENTS.

2. GENERAL REQUIREMENTS OF CONTRACTS
UNLESS THE AGREEMENT CONTAINS A MORE SPECIFIC DESCRIPTION OF THE WORK OF EACH CONTRACT, THE DIVISIONS INDICATED ON DRAWINGS AND IN SPECIFICATION SECTIONS DETERMINE WHICH CONTRACT INCLUDES A SPECIFIC ELEMENT OF PROJECT.

3. SCOPE OF WORK RESPONSIBILITY
A. GENERAL CONSTRUCTION CONTRACT
WORK OF THE GENERAL CONSTRUCTION CONTRACT INCLUDES, BUT IS NOT LIMITED TO, THE REMAINING WORK NOT IDENTIFIED AS WORK UNDER OTHER CONTRACTS.

B. PLUMBING CONTRACT
WORK OF THE PLUMBING CONTRACT INCLUDES, BUT IS NOT LIMITED TO, PLUMBING FIXURES AND APPLIANCES (INCLUDING BUT NOT LIMITED TO SINKS, TUBS, SHOWER ENCLOSURES, SINK DRAINS, FAUCETS AND DRAIN ASSEMBLIES, ETC), PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT. PLUMBING CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT.

C. MECHANICAL CONTRACT
WORK OF THE MECHANICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ALL MECHANICAL EQUIPMENT AND CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND ELECTRICAL. CONTRACT MECHANICAL EQUIPMENT INCLUDES BUT IS NOT LIMITED TO FURNACES AND CONDENSERS, KITCHEN AND BATH EXHAUST FANS, THERMOSTATS AND CONTROLS, ETC.

D. ELECTRICAL CONTRACT
WORK OF THE ELECTRICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ELECTRICAL EQUIPMENT AND FIXTURES INCLUDING BUT NOT LIMITED TO: (INTERIOR AND EXTERIOR LIGHT FIXTURES, SMOKE AND CO DETECTORS, COMPLETE CIRCUIT BREAKER PANELS INCLUDING ALL BREAKERS AND LABELING, ELECTRICAL SERVICE ENTRANCE), WIRING, AND ELECTRICAL AND LOW VOLTAGE CONNECTIONS TO EQUIPMENT FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT. ELECTRICAL CONNECT WITH TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT.

PRE-CONSTRUCTION CONFERENCE AND NOTICE TO PROCEED
WITHIN TEN CALENDAR DAYS OF CONTRACT EXECUTION, AND PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH THE OWNER, ARCHITECT OF PHA, ITS ARCHITECT, AND OTHER INTERESTED PARTIES CONVENED BY THE PHA. THE CONFERENCE WILL SERVE TO ACQUAINT THE CONTRACTOR WITH THE GENERAL PLAN OF THE CONSTRUCTION OPERATION AND ALL OTHER REQUIREMENTS OF THE CONTRACT. THE PHA WILL PROVIDE THE CONTRACTOR WITH THE DATE, TIME, AND PLACE OF THE CONFERENCE.
(B) THE CONTRACTOR SHALL BEGIN WORK UPON RECEIPT OF A WRITTEN NOTICE TO PROCEED FROM THE CONTRACTING OFFICER OR DESIGNEE. THE CONTRACTOR SHALL NOT BEGIN WORK PRIOR TO RECEIVING SUCH NOTICE.

CONSTRUCTION PROGRESS
(A) THE CONTRACTOR SHALL, WITHIN FIVE DAYS AFTER THE WORK COMMENCES ON THE CONTRACT OR ANOTHER PERIOD OF TIME DETERMINED BY THE CONTRACTING OFFICER, PREPARE AND SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL THREE COPIES OF A PRACTICABLE SCHEDULE SHOWING THE ORDER IN WHICH THE CONTRACTOR PROPOSES TO PERFORM THE WORK, AND THE DATES ON WHICH THE CONTRACTOR CONTEMPLATES STARTING AND COMPLETING THE SEVERAL SALIENT FEATURES OF THE WORK (INCLUDING PROCUREMENT, LABOR, MATERIALS, AND EQUIPMENT). THE SCHEDULE SHALL BE IN THE FORM OF A PROGRESS CHART OF SUITABLE SCALE TO INDICATE APPROPRIATELY THE PERCENTAGE OF WORK SCHEDULED FOR COMPLETION BY ANY GIVEN DATE DURING THE PERIOD. IF THE CONTRACTOR FAILS TO SUBMIT A SCHEDULE WITHIN THE TIME PRESCRIBED, THE CONTRACTING OFFICER MAY WITHHOLD APPROVAL OF PROGRESS PAYMENTS OR TAKE OTHER REMEDIES UNDER THE CONTRACT UNTIL THE CONTRACTOR SUBMITS THE REQUIRED SCHEDULE.
(B). THE CONTRACTOR SHALL ENTER THE ACTUAL PROGRESS ON THE CHART AS REQUIRED BY THE CONTRACTING OFFICER, AND IMMEDIATELY DELIVER THREE COPIES OF THE ANNOTATED SCHEDULE TO THE CONTRACTING OFFICER. IF THE CONTRACTOR FALLS BEHIND SCHEDULE, UPON THE BASIS OF INSPECTION CONDUCTED PURSUANT TO THE CLAUSE ENTITLED INSPECTION AND ACCEPTANCE OF WORK, IN SECTION HEREIN THAT THE CONTRACTOR IS NOT MEETING THE APPROVED SCHEDULE, THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO IMPROVE ITS PROGRESS, INCLUDING THOSE THAT MAY BE REQUESTED BY THE CONTRACTING OFFICER, WITHOUT ADDITIONAL COST TO THE PHA. IN THIS CIRCUMSTANCE THE CONTRACTING OFFICER MAY REQUIRE THE CONTRACTOR TO INCREASE THE NUMBER OF SHIFTS, OVERTIME OPERATIONS, DAYS OF WORK, AND/OR THE AMOUNT OF CONSTRUCTION PLANT, AND TO SUBMIT FOR APPROVAL ANY SUPPLEMENTARY SCHEDULE OR SCHEDULES IN CHART FORM AS THE CONTRACTING OFFICER DEEMS NECESSARY TO DEMONSTRATE HOW THE APPROVED RATE OF PROGRESS WILL BE REGAINED.
(C) FAILURE OF THE CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACTING OFFICER UNDER THIS CLAUSE SHALL BE GROUNDS FOR A DETERMINATION BY THE CONTRACTING OFFICER THAT THE CONTRACTOR IS NOT PROSECUTING THE WORK WITH SUFFICIENT DILIGENCE TO ENSURE COMPLETION WITHIN THE TIME SPECIFIED IN THE CONTRACT. UPON MAKING THIS DETERMINATION, THE CONTRACTING OFFICER MAY TERMINATE THE CONTRACTOR'S RIGHT TO PROCEED WITH THE WORK, OR ANY SEPARABLE PART OF IT, IN ACCORDANCE WITH THE DEFAULT CLAUSE OF THIS CONTRACT.

SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK
(A) THE CONTRACTOR ACKNOWLEDGES THAT IT HAS TAKEN STEPS REASONABLY NECESSARY TO ASCERTAIN THE NATURE AND LOCATION OF THE WORK, AND THAT IT HAS INVESTIGATED AND SATISFIED ITSELF AS TO THE GENERAL AND LOCAL CONDITIONS WHICH CAN AFFECT THE WORK OR ITS COST, INCLUDING BUT NOT LIMITED TO, (1) CONDITIONS BEARING UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS; (2) THE AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, AND ROADS; (3) UNCERTAINTIES OF WEATHER, RIVER STAGES, TIDES, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE; (4) THE CONFORMATION AND CONDITIONS OF THE GROUND; AND (5) THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING WORK PERFORMANCE. THE CONTRACTOR ALSO ACKNOWLEDGES THAT IT HAS SATISFIED ITSELF AS TO THE CHARACTER, QUALITY, AND QUANTITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED IN SO FAR AS THIS INFORMATION IS REASONABLY ASCERTAINABLE FROM AN INSPECTION OF THE SITE, INCLUDING ALL EXPLORATORY WORK DONE BY THE PHA, AS WELL AS FROM THE DRAWINGS AND SPECIFICATIONS MADE A PART OF THIS CONTRACT. ANY FAILURE OF THE CONTRACTOR TO TAKE THE ACTIONS DESCRIBED AND ACKNOWLEDGED IN THIS PARAGRAPH WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK, OR FOR PROCEEDING TO SUCCESSFULLY PERFORM THE WORK WITHOUT ADDITIONAL EXPENSE TO THE PHA.
(B) THE PHA ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR BASED ON THE INFORMATION MADE AVAILABLE BY THE PHA. NOR DOES THE PHA ASSUME RESPONSIBILITY FOR ANY UNDERSTANDING REACHED OR REPRESENTATION MADE CONCERNING CONDITIONS WHICH CAN AFFECT THE WORK BY ANY OF ITS OFFICERS OR AGENTS BEFORE THE EXECUTION OF THIS CONTRACT, UNLESS THAT UNDERSTANDING OR REPRESENTATION IS EXPRESSLY STATED IN THIS CONTRACT.

DIFFERING SITE CONDITIONS
(1) THE CONTRACTOR SHALL PROMPTLY, AND BEFORE THE CONDITIONS ARE DISTURBED, GIVE A WRITTEN NOTICE TO THE CONTRACTING OFFICER OF (1) SUBSURFACE OR INTENT PHYSICAL CONDITIONS AT THE SITE WHICH DIFFER MATERIALLY FROM THOSE INDICATED IN THIS CONTRACT, OR (2)UNKNOWN PHYSICAL CONDITIONS AT THE SITE OF AN UNUSUAL NATURE, WHICH DIFFER MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERING IN WORK OF THE CHARACTER PROVIDED FOR IN THIS CONTRACT.
(B)THE CONTRACTING OFFICER SHALL INVESTIGATE THE SITE CONDITIONS PROMPTLY AFTER RECEIVING THE NOTICE. WORK SHALL NOT PROCEED AT THE AFFECTED SITE, EXCEPT AT THE CONTRACTOR'S RISK, UNTIL THE CONTRACTING OFFICER HAS PROVIDED WRITTEN INSTRUCTIONS TO THE CONTRACTOR. IF THE CONDITIONS DO MATERIALLY SO DIFFER AND CAUSE AN INCREASE OR DECREASE IN THE CONTRACTOR'S COST OF, OR THE TIME REQUIRED FOR, PERFORMING ANY PART OF THE WORK UNDER THIS CONTRACT, WHETHER OR NOT CHANGED AS A RESULT OF THE CONDITIONS, AN EQUITABLE ADJUSTMENT SHALL FILE A CLAIM IN WRITING TO THE PHA WITHIN TEN DAYS AFTER RECEIPT OF SUCH INSTRUCTIONS AND, IN ANY EVENT, BEFORE PROCEEDING WITH THE WORK, NEGOTIATE AN ADJUSTMENT IN THE CONTRACT PRICE, THE DELIVERY SCHEDULE, OR BOTH. SHALL BE MADE UNDER THIS CLAUSE AND THE CONTRACT MODIFIED IN WRITING ACCORDINGLY.
(C)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED, UNLESS THE CONTRACTOR HAS GIVEN THE WRITTEN NOTICE REQUIRED; PROVIDED, THAT THE TIME PRESCRIBED IN (A) ABOVE FORGIVING WRITTEN NOTICE MAY BE EXTENDED AND THE EXPENSE REIMBURSED.
(D)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED IF MADE AFTER FINAL PAYMENT UNDER THIS CONTRACT.

SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION
(A) THE CONTRACTOR SHALL KEEP ON THE WORK SITE A COPY OF THE DRAWINGS AND SPECIFICATIONS AND SHALL AT ALL TIMES GIVE THE CONTRACTING OFFICER ACCESS THERETO. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH. IN CASE OF DIFFERENCE BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. IN CASE OF DISCREPANCY IN THE FIGURES, IN THE DRAWINGS OR SPECIFICATIONS, THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE CONTRACTING OFFICER, WHO SHALL PROMPTLY MAKE A DETERMINATION IN WRITING AND ADJUSTMENTBY THE CONTRACTOR WITHOUT SUCH A DETERMINATION SHALL BE ATITS OWN RISK AND EXPENSE. THE CONTRACTING OFFICER SHALL FURNISH FROM TIME TO TIME SUCH DETAILED DRAWINGS AND OTHER INFORMATION AS CONSIDERED NECESSARY, UNLESS OTHERWISE PROVIDED.
(B)WHEREVER IN THE SPECIFICATIONS OR UPON THE DRAWINGS THE WORDS "DIRECTED", "REQUIRED", "ORDERED", "DESIGNATED", "PRESCRIBED", OR WORDS OF LIKE IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE"DIRECTION", "REQUIREMENT", "ORDER", DESIGNATION, OR "PRESCRIPTION", OF THE CONTRACTING OFFICER IS INTENDED AND SIMILARLY THE WORDS "APPROVED", "ACCEPTABLE", "SATISFACTORY", OR WORDS OF LIKE IMPORT SHALL MEAN "APPROVED BY", OR "ACCEPTABLE TO", OR "SATISFACTORY TO" THE CONTRACTING OFFICER, UNLESS OTHERWISE EXPRESSLY STATED.
(C)WHERE "SHOW", "SHOWN", "INDICATED", "AS DETAILED", OR WORDS OF SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE REFERENCE IS MADE TO THE DRAWINGS ACCOMPANYING THIS CONTRACT UNLESS STATED OTHERWISE. THE WORD "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE" THAT IS "PROVIDE AND INSTALLED"
(D)"SHOP DRAWINGS" MEANS DRAWINGS, SUBMITTED TO THE PHA BY THE CONTRACTOR, SUBCONTRACTOR, OR ANY LOWER TIER SUBCONTRACTOR, SHOWING IN DETAIL (1) THE PROPOSED FABRICATION AND ASSEMBLY OF STRUCTURAL ELEMENTS AND (2) THE INSTALLATION(I.E., FORM, FIT, AND ATTACHMENT DETAILS) OF MATERIALS OF EQUIPMENT. IT INCLUDES DRAWINGS, DIAGRAMS, LAYOUTS, SCHEDULES, DESIGNS, CERTIFICATES, PERFORMANCE AND LITERATURE SCHEDULES, PERFORMANCE AND TEST DATA, AND SIMILAR MATERIALS FURNISHED BY THE CONTRACTOR TO EXPLAIN THE DETAILED SPECIFIC PORTIONS OF THE WORK REQUIRED BY THE CONTRACT. THE PHA MAY REQUIRE A REASONABLE TIME WITHIN WHICH TO REVIEW AND APPROVE SHOP DRAWINGS SUBMITTED UNDER THIS CONTRACT.
(E)IF THIS CONTRACT REQUIRES SHOP DRAWINGS, THE CONTRACTOR SHALL COORDINATE ALL DRAWINGS, AND REVIEW THEM FOR ACCURACY, COMPLETENESS, AND COMPLIANCE WITH OTHER CONTRACT REQUIREMENTS AND SHALL INDICATE ITS APPROVAL THEREON AS EVIDENCE OF SUCH COORDINATION AND REVIEW. SHOP DRAWINGS SUBMITTED TO THE CONTRACTING OFFICER WITHOUT EVIDENCE OF THIS COORDINATION AND REVIEW WILL BE RETURNED FOR RESUBMISSION. THE CONTRACTING OFFICER WILL INDICATE AN APPROVAL OR DISAPPROVAL OF THE SHOP DRAWINGS WITHIN THE TIME PRESCRIBED. SHALL INDICATE THE PHA'S REASONS THEREFORE. ANY WORK DONE BEFORE SUCH APPROVAL SHALL BE AT THE CONTRACTOR'S RISK. APPROVAL BY THE CONTRACTING OFFICER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS IN SUCH DRAWINGS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM THE REQUIREMENTS OF THIS CONTRACT, EXCEPT WITH RESPECT TO VARIATIONS DESIGNATED IN WRITING BY THE CONTRACTING OFFICER (F)BELOW.
(F) IF SHOP DRAWINGS SHOW VARIATIONS FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL DESCRIBE SUCH VARIATIONS IN WRITING, SEPARATE FROM THE DRAWINGS, AT THE TIME OF SUBMISSION. IF THE CONTRACTING OFFICER FINDS THAT THE PHA MAY AND THE CONTRACTING OFFICER CONCURS, THE CONTRACTING OFFICER SHALL INDICATE AN APPROVAL THEREOF IN CONNECTION TO THE DRAWINGS, EXCEPT THAT,IF THE VARIATION IS MINOR OR DOES NOT INVOLVE A CHANGE IN PRICE OR IN TIME OF PERFORMANCE, A MODIFICATION NEED NOT BE ISSUED. (G)IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE TIMELY REQUESTS OF THE PHA FOR SUCH LARGE SCALE AND DETAILED DRAWINGS AS MAY BE NECESSARY FOR ORDERLY ADDITIONAL INFORMATION NOT ALREADY IN HIS POSSESSION, WHICH SHALL BE REQUIRED BY THE CONTRACT. THE PERIODS OF TIME WITHIN SUCH REQUESTS MAY BE SUBMITTED AS THE NEED ARISES, BUT EACH SUCH REQUEST SHALL BE FILED IN AMPLE TIME TO PERMIT APPROPRIATE ACTION TO BE TAKEN WITHOUT DELAY TO THE WORK IN PROGRESS. (H)THE CONTRACTOR SHALL SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL FOLLOWING SPECIFICATIONS AND DRAWINGS OF ALL SHOP DRAWINGS AS CALLED FOR UNDER THE VARIOUS HEADINGS OF THESE SPECIFICATIONS. THREE SETS (UNLESS OTHERWISE INDICATED) OF ALL SHOP DRAWINGS WILL BE RETAINED BY THE PHA AND ONE SET WILL BE RETURNED TO THE CONTRACTOR. AS REQUIRED BY THE CONTRACTING OFFICER, FROM TIME TO TIME SUCH DRAWINGS MAY BE REVISED. UNDER THIS CONTRACT, SHALL FURNISH A COMPLETE SET OF ALL SHOP DRAWINGS AS FINALLY APPROVED. THESE DRAWINGS SHALL SHOW ALL CHANGES AND REVISION SMADE UP TO THE TIME THE WORK IS COMPLETED AND ACCEPTED.
(I) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL SUBCONTRACTORS PROVIDE SHOP DRAWINGS BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

AS-BUILT DRAWINGS
(A)"AS-BUILT DRAWINGS," AS USED IN THIS CLAUSE, MEANS DRAWINGS SUBMITTED BY THE CONTRACTOR AND ENCLOSURES HEREWITH AS NEEDED TO SHOW THE CONSTRUCTION OF A PARTICULAR STRUCTURE OR WORK AS ACTUALLY CONSTRUCTED UNDER THIS CONTRACT. "AS-BUILT DRAWINGS" SHALL BE SYNONYMOUS WITH "RECORD DRAWINGS."
(B)AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER ACCURATE INFORMATIONTO BE USED IN THE PREPARATION OF PERMANENT AS-BUILT DRAWINGS. FOR THIS PURPOSE, THE CONTRACTOR SHALL RECORD ON ONE SET OF CONTRACT DRAWINGS ALL CHANGES FROM THE INSTALLATIONS ORIGINALLY INDICATED AND RECORD FINAL LOCATIONSOF UNDERGROUND LINES BY DEPTH FROM FINISH GRADE AND BY ACCURATE HORIZONTAL OFFSET DISTANCES TO PERMANENT SURFACE IMPROVEMENTS SUCH AS BUILDINGS, CURBS, OR EDGES OF WALKS.
(C) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL AS-BUILT DRAWINGS PROVIDED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

MATERIAL AND WORKMANSHIP
(A)ALL EQUIPMENT, MATERIAL, AND ARTICLES FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED. UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT. REFERENCES IN THE CONTRACT TO EQUIPMENT, MATERIAL, ARTICLES, OR PATENTED PROCESSES BY TRADE NAME, MAKE, OR CATALOG NUMBER, SHALL BE REGARDED AS ESTABLISHING A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. THE CONTRACTOR MAY, AT ITS OPTION, USE ANY EQUIPMENT, MATERIAL, ARTICLE, OR PROCESS THAT, IN THE JUDGMENT OF, AND AS APPROVED BY THE CONTRACTING OFFICER, IS EQUAL TO THAT NAMED IN THE SPECIFICATIONS, UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT.
(B)APPROVAL OF EQUIPMENT AND MATERIALS.
(1) THE CONTRACTOR SHALL OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT TO BE INCORPORATED INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO THE CONTRACTING OFFICER THE NAME OF THE MANUFACTURER, THE MODEL NUMBER, AND OTHER INFORMATION CONCERNING THE PERFORMANCE, CAPACITY, NATURE, AND RATING OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT WHICH IS REQUIRED BY THIS CONTRACT OR IN THE CONTRACTINGOFFICER. THE CONTRACTOR SHALL ALSO OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MATERIAL ORARTICLES WHICH THE CONTRACTOR PROPOSES TO INCORPORATE INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL PROVIDE FULL INFORMATION CONCERNING THE MATERIAL OR ARTICLES. MACHINERY,
EQUIPMENT, MATERIAL, AND ARTICLES THAT DO NOT HAVE THE REQUIRED APPROVAL SHALL BE INSTALLED OR USED AT THE RISK OF SUBSEQUENT REJECTION.
(2) WHEN REQUIRED BY THE SPECIFICATIONS OR THE CONTRACTING OFFICER, THE CONTRACTOR SHALL SUBMIT APPROPRIATELY MARKED SAMPLES (AND CERTIFICATES RELATED TO THEM) FOR APPROVAL AT THE CONTRACTOR'S
EXPENSE, WITH ALL SHIPPING CHARGES PREPAID. THE CONTRACTOR SHALL LABEL, OR OTHERWISE IDENTIFY, EACH SAMPLE SUBMITTED, MATERIAL OR PRODUCT REPRESENTED, ITS PLACE OF ORIGIN, THE NAME OF THE PRODUCER, THE CONTRACTOR'S NAME AND THE CONTRACT NUMBER OF THE CONSTRUCTION PROJECT FOR WHICH THE MATERIAL OR PRODUCTIS INTENDED TO BE USED.
(3)CERTIFICATES SHALL BE SUBMITTED IN TRIPLICATE, DESCRIBING EACH SAMPLE SUBMITTED FOR APPROVAL, AND CERTIFYING THAT THE MATERIAL, EQUIPMENT, OR WORK PRODUCT CONFORMS TO CONTRACT REQUIREMENTS. THE CERTIFICATES SHALL INCLUDE THE NAME AND BRAND OF THE PRODUCT, NAME OF MANUFACTURER, AND THE LOCATION WHERE PRODUCED.
(4) APPROVAL OF A SAMPLE SHALL NOT CONSTITUTE A WAIVER OF THE PHA RIGHT TO DEMAND FULL COMPLIANCE WITH CONTRACT REQUIREMENTS. MATERIALS, EQUIPMENT AND ACCESSORIES MAY BE REJECTED FOR CAUSE EVEN THOUGH SAMPLES HAVE BEEN APPROVED.
(5) WHEREVER MATERIALS ARE REQUIRED TO COMPLY WITH RECOGNIZED STANDARDS OR SPECIFICATIONS, SUCH SPECIFICATIONS SHALL BE ACCEPTED AS ESTABLISHING THE TECHNICAL QUALITIES AND TESTING METHODS, BUT SHALL NOT GOVERN THE NUMBER OF TESTS REQUIRED TO BE MADE IN ACCEPTING THE MATERIALS. IN ADDITIONS, THE CONTRACTING OFFICER MAY REQUIRE LABORATORY TEST REPORTS ON ITEMS SUBMITTED FOR APPROVAL OR APPROVED PREVIOUSLY ON THE BASIS OF DATA SUBMITTED IN CERTIFICATES WITH SAMPLES. CHECK TESTS WILL BE MADE ON MATERIALS
DELIVERED TO THE WORK AT THE DISCRETION OF A TESTING OFFICER DETERMINES NECESSARY TO INSURE COMPLIANCE OF MATERIALS WITH THE SPECIFICATIONS. THE CONTRACTOR WILL ASSUME ALL COSTS OF RETESTING MATERIALS WHICH FAIL TO MEET CONTRACT REQUIREMENTS AND RETESTING MATERIAL SOFFERED IN SUBSTITUTION FOR THOSE FOUND DEFICIENT.
(6) AFTER APPROVAL, SAMPLES WILL BE KEPT IN THE PROJECT OFFICE UNTIL COMPLETION OF WORK. THEY MAY NOT BE USED IN THE WORK AT A SUBSTANTIAL QUANTITY OF THE MATERIALSTHEY REPRESENT HAS BEEN BUILT IN AND ACCEPTED.
(C) REQUIREMENTS CONCERNING LEAD-BASED PAINT. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE LEAD-BASED PAINT CONTAINED IN THE LEAD-BASED PAINT POISONING PREVENTION ACT (42 U.S.C. 4821-4846) AS IMPLEMENTED BY 24 CFR PART 35.

PERMITS AND CODES
(A)THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALLAPPLICABLE LAWS, ORDINANCES, CODES, RULES AND REGULATIONS. NOTWITHSTANDING THE REQUIREMENTS OF THE CONTRACTOR TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS IN THE CONTRACT, ALL WORK INSTALLED SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. BEFORE BEGINNING THE WORK, THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND THE SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS BEARING ON THE WORK AND SHALL IMMEDIATELY REPORT ANY DISCREPANCY IT MAY DISCOVER TO THE CONTRACTING OFFICER.
WHERE THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS FAIL TO COMPLY WITH THE APPLICABLE CODE OR REGULATION, THE CONTRACTING OFFICER SHALL MODIFY THE CONTRACT TO CHANGE ORDER PURSUANT TO THE CLAUSE ENTITLED CHANGES HEREIN TO CONFORM TO THE CODE OR REGULATION.
(B) THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES,AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK, WHICH THE PHA CAN OBTAIN WITHOUT THE ISSUANCE OF ALL OR PART OF THESE PERMITS, FEES AND LICENSES WITHOUT COST TO THE CONTRACTOR, THE CONTRACT AMOUNT SHALL BE REDUCED ACCORDINGLY.

HEALTH, SAFETY AND ACCIDENT PREVENTION
(A) IN PERFORMING THIS CONTRACT, THE CONTRACTOR SHALL:
(1)ENSURE THAT NO LABORER OR MECHANIC SHALL BE REQUIRED TO WORK IN SURROUNDINGS OR UNDER WORKING CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO HIS HEALTH OR HIS AND/OR SAFETY AS DETERMINED UNDER CONSTRUCTION SAFETY AND HEALTHSTANDARDS PROMULGATED BY THE SECRETARY OF LABOR BY REGULATIONS.(2)PROTECT THE LIVES, HEALTH, AND SAFETY OF THEIR PERSONS; (3)PREVENT DAMAGE TO PROPERTY, MATERIALS, SUPPLIES, AND EQUIPMENT; AND, (4)AVOID WORKING INTERFERENCE.
(B) FOR THESE PURPOSES, THE CONTRACTOR SHALL: (1)COMPLY WITH REGULATIONS AND STANDARDS ISSUED BY THE SECRETARY OF LABOR AT 29 CFR PART 1926. FAILURE TO COMPLY MAY RESULT IN IMPOSITION OF SANCTIONS PURSUANT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. 327-330) PARA 5 (B) (2) 40 U.S.C. 3701(B)(1)(B)(I)(II)(III) AND (2)INCLUDE THE TERMS OF THIS CLAUSE IN EVERY SUBCONTRACT SO THAT SUCH TERMS WILL BE BINDING ON EACH SUBCONTRACTOR.
(C) THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF EXPOSURE DATA ON ALL ACCIDENTS INCIDENT TO WORK PERFORMED UNDER THIS CONTRACT AND RESULTING IN DEATH, TRAUMATIC INJURY,OCCUPATIONAL DISEASE, OR DAMAGE TO PROPERTY, MATERIALS,SUPPLIES, OR EQUIPMENT, AND SHALL REPORT THIS DATA IN THE MANNER PRESCRIBED BY 29 CFR PART1904.
(D)THE CONTRACTOR AGREES THAT WHEN THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THESE REQUIREMENTS AND OF THE CORRECTIVE ACTION REQUIRED. THIS NOTICE, WHEN DELIVERED TO THE CONTRACTOR OR THE CONTRACTOR'S REPRESENTATIVE AT THE SITE OF THE WORK, SHALL BE DEEMED SUFFICIENT NOTICE OF THE NON COMPLIANCE AND CORRECTIVE ACTION REQUIRED. AFTER RECEIVING SUCH NOTICE, THE CONTRACTOR SHALL IMMEDIATELY TAKE CORRECTIVE ACTION. IF THE CONTRACTOR FAILS OR REFUSES TO TAKE CORRECTIVE ACTION PROMPTLY, THE CONTRACTING OFFICER MAY ISSUE AN ORDER STOPPING ALL OR PART OF THE WORK UNTIL SATISFACTORY CORRECTIVE ACTION HAS BEEN TAKEN. THE CONTRACTOR SHALL NOT BASE ANY CLAIM ON REQUEST FOR EQUITABLE ADJUSTMENT FOR ADDITIONAL TIME OR MONEY ON ANY STOP ORDER ISSUED UNDER THESE CIRCUMSTANCES.
(E) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS SUBCONTRACTOR'S COMPLIANCE WITH THE PROVISIONS OF THIS CLAUSE. THE CONTRACTOR SHALL NOT INCLUDE ITSELF OR INSERT TO ANY SUBCONTRACT AS THE PHA, THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, OR THE SECRETARY OF LABOR SHALL DIRECT AS A MEANS OF ENFORCING SUCH PROVISIONS.

TEMPORARY HEATING
THE MECHANICAL CONTRACTOR SHALL PROVIDE AND PAY FOR TEMPORARY HEATING, COVERING, AND ENCLOSURES NECESSARY TO PROPERLY PROTECT ALL WORK AND MATERIALS AGAINST DAMAGE BY DAMPNESS AND COLD, TO DRY OUT THE WORK, AND TO FACILITATE THE COMPLETION OF THE WORK. ANY PERMANENT HEATING EQUIPMENT USED SHALL BE TURNED OVER TO THE PHA IN THE CONDITION AND AT THE TIME REQUIR

PERFORMED OR COMPLETED SHALL BE SUBMITTED BY EACH PRIME CONTRACTOR. ALL WORK OUTLINED ON THE INITIAL PUNCH LIST SHALL BE COMPLETED BY THE CONTRACTOR PRIOR TO THE FINAL INSPECTION AND BEFORE THE PROJECT WILL BE ACCEPTED FOR FINAL COMPLETION. AFTER ALL REQUIREMENTS PREPARATORY TO THE FINAL INSPECTION HAVE BEEN COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER TO PERFORM A FINAL INSPECTION. IF ALL THE WORK HAS BEEN COMPLETED, INCLUDING PUNCH LIST ITEMS FROM EARLIER INSPECTIONS, AND NO FURTHER CORRECTIONS ARE REQUIRED, THE ARCHITECT SHALL RECOMMEND FINAL ACCEPTANCE OF THE PROJECT WHEN ALL THE CLOSEOUT DOCUMENTS ARE RECEIVED, INCLUDING BUT NOT LIMITED TO WARRANTIES, O&M MANUALS, FINAL TESTING, CERTIFICATES, PERMITS, PUNCH LIST, SUBMITTALS, RFIS, AS BUILD DRAWINGS AND ANY ADDITIONAL DOCUMENTATION REQUIRED BY HACP FOR CLOSEOUT.

ALL PUNCH LIST ITEMS TO BE COMPLETED WITHIN THIRTY (30) WORKING DAYS OF RECEIPT, OR FROM 10% DRAW WILL BE FORFEITED. ALL WORK NOT COMPLETED WITHIN THE ALLOTTED TIME WILL BE COMPLETED BY HACP AT PRIME CONTRACTOR'S EXPENSE. FINAL COMPLETION OCCURS WHEN ALL PUNCH LIST ITEMS HAVE BEEN COMPLETED AND OCCUPANCY PERMIT HAS BEEN ISSUED.

PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL EQUIPMENT FURNISHED, INSTALLED OR SERVICED UNDER THIS AND THEIR CONTRACTS. EACH PRIME CONTRACTOR SHALL VERIFY THAT ITS EQUIPMENT, ELECTRICAL SYSTEMS AND APPLIANCES ARE FULLY OPERATIONAL AND THAT ALL PLUMBING AND MECHANICAL EQUIPMENT IS OPERATING QUIETLY AND FREE FROM VIBRATION. CONTRACTOR SHALL PROVIDE A BINDER FOR HACP AND TENANT CONTAINING MAINTENANCE MANUALS, INCLUDING OPERATION INSTRUCTIONS, SPARE PARTS, WARRANTIES, INSPECTION PROCEDURES, AND DATA FOR EACH SYSTEM OR EQUIPMENT ITEM.

ALL ELECTRICAL PANELS AND BREAKERS TO BE PROPERLY MARKED AND A TYPED SCHEDULE TO BE FURNISHED.

FINAL CLEANING: AT THE TIME OF THE PROJECT CLOSE OUT, THE GENERAL CONTRACTOR SHALL PROVIDE AND THOROUGHLY CLEAN AND READY THE SPACE FOR OCCUPANCY. THIS SHALL, AT MINIMUM, INCLUDE HARDWARE, SECURITY EQUIPMENT, LIGHT FIXTURES, REPLACEMENT OF BURNED OUT LAMPS, REMOVAL OF NON PERMANENT PROTECTION AND LABELS, TOUCH UP OF ANY MINOR FINISH DAMAGE, AND CLEANING OR REPLACEMENT OF MECHANICAL SYSTEM FILTERS. DAMAGE TO ANY FINISH, SURFACE, EQUIPMENT OR OBJECT CAUSED DURING CLEANING SHALL BE REPAIRED OR REPLACED BY THE GENERAL CONTRACTOR AT HIS/HER OWN COST.

UPON COMPLETION OF THE PROJECT, GENERAL CONTRACTOR SHALL OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT AND PROVIDE A COPY OF THE ORIGINAL TO HACP AND ARCHITECT IF REQUIRED.

AT EACH PAYMENT REQUEST AND BEFORE PAYMENT IS MADE, EACH CONTRACTOR SHALL DELIVER TO THE HACP A COMPLETE RELEASE OF ALL SUB CONTRACTOR'S AND SUPPLIER'S LIENS AND CLAIMS OUT OF THIS CONTRACT, OR RECEIPTS IN FULL COVERING ALL LABOR AND MATERIALS FOR WHICH A LIEN COULD BE FILED OR A BOND SATISFACTORY TO THE HACP INDEMNIFYING HACP AGAINST ANY LIENS.

DIVISION 2 – SITE WORK – NOT APPLICABLE

DIVISION 3 – CONCRETE

PLAN AND REINFORCE CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 19 OF THE IBC 2018 AND ACI 318 AS AMMENDED IN SECTION 1905 OF THE IBC 2018.

CONCRETE TO BE INSTALLED AND CURED PER ACI 318 AND BE NORMAL WEIGHT (144PCF) WITH COMPRESSIVE STRENGTH IN 28 DAYS OF 4000 PSI, AIR ENTRAINED. CEMENT SHALL BE PORTLAND, TYPE I(PL)Y ASH & GROUND GRANULATED BLAST FURNACE SLAG NOT PERMITTED). COARSE AGGREGATE SHALL BE ¾" MAXIMUM. AIR ENTRAINED SHALL BE 7 PERCENT. SLUMP SHALL BE 4" MAXIMUM.

REINFORCING BARS SHALL COMPLY WITH A.S.T.M. A615–GRADE 60. WELDED WIRE FABRIC SHALL COMPLY WITH A.S.T.M. A185.

4" MINIMUM COMPACTED GRAVEL BED TO PLACE CONCRETE TO BE #57 HAND OR MACHINE COMPACTED BEFORE CONCRETE PLACEMENT.

PROVIDE COLD-APPLIED JOINT SEALANTS, SINGLE COMPONENT, SILICONE, SELF LEVELING TYPE BY SIKA OR EQUAL.

ROUND BACKER RODS FOR COLD-APPLIED JOINT SEALANTS: ASTM D5249, TYPE 3, OF DIAMETER AND DENSITY REQUIRED TO CONTROL JOINT-SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT. BY SIKA OR EQUAL.

DIVISION 4 – MASONRY

BRICK MASONRY REPOINTING

BRICK MASONRY REPOINTING SPECIALIST QUALIFICATIONS: ENGAGE AN EXPERIENCED BRICK MASONRY REPOINTING FIRM TO PERFORM WORK OF THIS SECTION. FIRM SHALL HAVE COMPLETED WORK SIMILAR IN MATERIAL DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. EXPERIENCE IN ONLY INSTALLING MASONRY IS INSUFFICIENT EXPERIENCE FOR MASONRY REPOINTING WORK.

REPOINTING OF AREAS INDICATED IN THE DRAWINGS AND LOCATIONS WITH THE FOLLOWING DEFECTS:
A. HOLES AND MISSING MORTAR.
B. CRACKS THAT CAN BE PENETRATED 1/4 INCH OR MORE BY A KNIFE BLADE 0.027 INCH THICK.
C.CRACKS 1/8 INCH OR MORE IN WIDTH AND OF ANY DEPTH.
D.HOLLOW-SOUNDING JOINTS WHEN TAPPED BY METAL OBJECT.
E. ERODED SURFACES 1/4 INCH OR MORE DEEP.
F. DETERIORATION TO POINT THAT MORTAR CAN BE EASILY REMOVED BY HAND, WITHOUT TOOLS.
G. JOINTS FILLED WITH SUBSTANCES OTHER THAN MORTAR.

MATERIALS
PORTLAND CEMENT: ASTM C 150/C 150M, TYPE I OR TYPE II; EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION; GRAY, WHERE REQUIRED FOR COLOR MATCHING OF MORTAR.

MASONRY CEMENT: ASTM C 91/C 91M. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- CEMEX S.A.B. DE C.V.
- HOLCIM (US) INC.
- QUIKRETE; THE QUIKRETE COMPANIES, LLC.

REMOVE GUTTERS, DOWNSPOUTS AND ASSOCIATED HARDWARE ADJACENT TO MASONRY REPOINTING. REINSTALL WHEN REPOINTING IS COMPLETED.PROVIDE TEMPORARY RAIN DRAINAGE DURING WORK TO DIRECT WATER AWAY FROM THE BUILDING.

SEE LINTEL REPLACEMENT BELOW AND COORDINATE MASONRY REPOINTING AND REPLACEMENT WITH REMEDIAL LINTEL REPAIR OR REPLACEMENT.

RETAINING WALL
WHERE NOTED ON THE DRAWINGS, NEW DRYSTACK RETAINING WALL, BELGARD OR EQUAL, TO MATCH EXISTING COLOR AND TYPE OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. REMOVE SUFFICIENT SOIL TO ALLOW ACCESS TO INSTALL A NEW WALL. SET NEW WALL IN COMPACTED GRAVEL BED STRICTLY ACCORDING TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS. INSTALL NEW WALL WITH ALL NECESSARY PINS, GEOGRID AND CAP PIECES ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL ACCESSORIES
WALL CAPS, PINS AND GEOGRID FABRIC.
REPLACEMENT WALL CAPS TO MATCH EXISTING, MATERIAL CONCRETE BY BELGARD OR EQUAL. COLOR AND TYPE TO MATCH EXISTING OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

GLASS BLOCK
SOLID GLASS BLOCK COLORLESS, TRANSPARENT, SMOOTH FACES AND MANUFACTURER'S STANDARD EDGE COATING WHITE, BY SEVES, OWINGS CORNING GLASS BLOCK OR EQUAL. SILICONE SEALANT BY SIKA OR EQUAL. PRODUCT INFORMATION AND SAMPLE TO BE PROVIDED TO ARCHITECT AND HACP FOR APPROVAL. SIZE OF GLASS BLOCK TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD SIZES. GLASS BLOCK SHALL BE INSTALLED PER IBC AND IRC BUILDING CODE AND TMS 402/ACI 530/ASCE 5 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES"

DIVISION 5 – METALS

STEEL BEAMS, ANGLES AND PLATES
SHOP PRIMED WITH RUST PREVENTATIVE PAINT. DIMENSIONS AND GRADE TO MATCH EXISTING. SHOP DRAWINGS TO BE PROVIDED BY GC.

ALL EXTERIOR LINTELS MUST BE HOT-DIP GALVANIZED PER ASTM A123.

LINTEL REPLACEMENT/ INSTALLATION ON BRICK VENEER EXTERIOR WALLS
PROTECT EXISTING OPENING WITH PLYWOOD.TEMPORARILY SHORE AND REMOVE EXISTING BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL ANGLE REPLACEMENT LINTEL WITH HEAVY DUTY PAINTED STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

FOR LINTEL CLEANING USE METAL CLEANING ON NEXT SECTION.

METAL CLEANING
EXECUTION OF THE WORK: IN CLEANING ITEMS, DISTURB THEM AS MINIMALLY AS POSSIBLE AND AS FOLLOWS:
A. REMOVE DETERIORATED COATINGS AND CORROSION.
B. SEQUENCE WORK TO MINIMIZE TIME BEFORE PROTECTIVE COATINGS ARE REAPPLIED.
C. CLEAN ITEMS IN PLACE UNLESS OTHERWISE INDICATED.

MECHANICAL COATING REMOVAL: USE GENTLE METHODS, SUCH AS SCRAPING AND WIRE BRUSHING, THAT WILL NOT ABRADE METAL SUBSTRATE.

REPAINT: WHERE INDICATED, PREPARE PAINTED DECORATIVE METAL BY CLEANING SURFACE, BEVELING EDGES OF REMAINING ADHERED EXISTING PAINT, SANDING EDGES SMOOTH, REMOVING EXISTING PAINT AND PRIMING FOR PAINTING AS SPECIFIED.

METAL AWNINGS
BASIS OF DESIGN, MATCH EXISTING AWNINGS DIMENSIONS, PERIMETER FASCIA, BRACING AND SUPPORTS TO BE EXTRUDED ALUMINUM, DECKING ALUMINUM INTERLOCKING PANELS, PROFILE AND THICKNESS AS DETERMINED BY MANUFACTURER. FACTORY APPLIED BACKED ENAMEL OR KYNAR PAINT FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER STANDARD COLOR CHART. INSTALLATION OF AWNINGS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. ALL FASTENERS FOR AWNINGS SHALL BE TYPE 316 SS. FOR LOCATIONS WHERE AWNINGS ARE ATTACHED TO SIDEWALL AWNING FASTENERS SHALL FASTEN INTO STUDS WITH COMPRESSION STAND-OFF IF THROUGH VENEER BRICK. INSTALLATION SHALL INCLUDE PREFINISHED ALUMINUM REGLETED WALL FLASHING AT HEAD, PROPERLY INSTALLED AND CAULKED. SEE ALSO DIVISION 10.

ALUMINUM METAL RAILINGS
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS, INCORPORATED, OR COMPARABLE PRODUCT, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
PROVIDE ALLOY AND TEMPER RECOMMENDED BY ALUMINUM PRODUCER AND FINISHER FOR TYPE OF USE AND FINISH INDICATED, AND WITH STRENGTH AND DURABILITY PROPERTIES FOR EACH ALUMINUM FORM REQUIRED NOT LESS THAN THAT OF ALLOY AND TEMPER DESIGNATED BELOW.
GC TO PROVIDE PRODUCT INFORMATION AND SHOP DRAWINGS OF NEW RAILINGS TO MATCH EXISTING DIMENSIONS. PROVIDE ACCESSORIES AS REQUIRED FOR INSTALLATION ON CONCRETE, SHEETHETCDECKING, WALLS AND CHANGE IN DIRECTION FITTINGS AS REQUIRED.

DIVISION 6 – WOOD AND PLASTICS

WOOD FRAMING AND BLOCKING
SELECT STRUCTURAL GRADE DOUGLAS FIR SOUTH, SIZES AS INDICATED ON DRAWINGS. COMPLY WITH THE "RECOMMENDED NAILING SCHEDULE" OF THE "MANUAL FOR HOUSING FRAMING."

FLOOR SHEATHING (IF REQUIRED) - PROVIDE 3/4" T&G PLYWOOD FLOOR SHEATHING OR OSB STRUCTURAL FIBERBOARD. ALIGN PANELS ACROSS A MINIMUM OF TWO SUPPORTS WITH THICKNESS IN A 3/8 PERPENDICULAR TO AXIS OF JOISTS, STAGGER JOINTS. GLUE TO JOISTS AND EDGES WITH ELASTOMERIC SOLVENT-BASED GLUE CONFORMING TO APA SPECIFICATION AFG-101. FASTEN WITH 8D COMMON OR 6D ANNULAR OR SPIRAL NAILS AT 6" O.C. ALONG EDGES AND 10" ALONG INTERMEDIATE SUPPORTS. FOLLOW PANEL MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR SUB-FLOOR PREP, PRIOR TO INSTALLATION OF FINISH FLOORING.

EXTERIOR WOOD FRAMING EXPOSED TO WEATHERING AND INSECTS SHALL BE MINIMUM 2" X PRESSURE TREATED LUMBER. KILN DRIED TO 19% MOISTURE CONTENT BEFORE INSTALLATION.

WOOD TRIM AND MOLDINGS
PROVIDE FURNITURE GRADE SOLID HARDWOOD TRIM AND MOLDINGS. STAIN ALL SIDES AND ENDS. WOOD TRIM AND MOLDINGS TO MATCH EXISTING UNLESS OTHERWISE NOTED ON DRAWINGS.

INSTALL WOOD TRIM AND MOLDINGS WITH MITER AT CORNERS, MITERED LAP SPLICES, AND SET WITH COUNTER SUNK GALVANIZED FINISH NAILS CAPPED WITH WOOD PUTTY SANDED SMOOTH. COMPLY WITH AWI 300 FOR ALL STANDARD WOOD RUNNING TRIM.

FABRICATOR QUALIFICATIONS
FIRM EXPERIENCED IN PRODUCING ARCHITECTURAL WOODWORK SIMILAR TO THAT INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE, AS WELL AS SUFFICIENT PRODUCTION CAPACITY TO PRODUCE REQUIRED UNITS WITHOUT DELAYING THE WORK.

INTERIOR ARCHITECTURAL WOODWORK

INSTALLER QUALIFICATIONS.
ARRANGE FOR INSTALLING ARCHITECTURAL WOODWORK INSTALLATION BY A FIRM THAT CAN DEMONSTRATE SUCCESSFUL EXPERIENCE IN INSTALLING ARCHITECTURAL WOODWORK ITEMS SIMILAR IN TYPE AND QUALITY TO THOSE REQUIRED FOR THIS PROJECT.

QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH AWI'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS."

ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETE, AND MECHANICAL SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD. REFER TO AWI'S OR WIS MEMBER LIST FOR NAMES OF WOODWORKING FIRMS THAT COULD POTENTIALLY BE INCLUDED.

MATERIALS

WOOD SPECIES AND CUT FOR TRANSPARENT FINISH: AS INDICATED ON DRAWINGS.

WOOD SPECIES FOR OPAQUE FINISH: ANY CLOSED-GRAIN HARDWOOD.

GENERAL: COMPLETE FABRICATION TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE, WHERE NECESSARY FOR FITTING AT THE SITE, PROVIDE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.
- INTERIOR WOODWORK GRADE: AWI CUSTOM.
- SHOP CUT OPENINGS TO MAXIMUM EXTENT POSSIBLE. SAND EDGES OF CUTOUTS TO REMOVE SPLINTERS AND BURRS. SEAL EDGES OF OPENINGS IN COUNTERTOPS WITH A COATING OF VARNISH.
- FOR TRANSPARENT-FINISHED TRIM ITEMS WIDER THAN AVAILABLE LUMBER, USE VENEERED CONSTRUCTION. DO NOT GLUE FOR WIDTH.
- BACK OUT OF FLAT TRIM WITH VERTICAL GRAIN AND KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT FOR MEMBERS WITH ENDS EXPOSED IN FINISHED WORK.
- ASSEMBLE CASINGS IN PLANT EXCEPT WHERE LIMITATIONS OF ACCESS TO PLACE OF INSTALLATION.

PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH THE ARCHITECTURAL WOODWORK STANDARDS FOR GRADES OF CABINETS INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS.

ARCHITECTURAL WOOD WORK STAND ARDS GRADE: AWI PREMIUM.

TYPE OF CONSTRUCTION: FRAMELESS.

DOOR AND DRAWER-FRONT STYLE: FLUSH OVERLAY.

HIGH-PRESSURE DECORATIVE LAMINATE: ISO 4586-3, GRADES AS INDICATED OR IF NOT INDICATED, AS REQUIRED BY QUALITY STANDARD.

EXPOSED SURFACES:
1. PLASTIC-LAMINATE GRADE: AWI PREMIUM.
2. EDGES: GRADE AWI PREMIUM.
3. PATTERN DIRECTION: AS INDICATED.

CONCEALED BACKS OF PANELS WITH EXPOSED PLASTIC-LAMINATE SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE, ISO 4586-3, GRADE TO MATCH EXPOSED SURFACE.

DRAWER CONSTRUCTION: FABRICATE WITH EXPOSED FRONTS FASTENED TO SUBFRONT WITH MOUNTING SCREWS FROM INTERIOR OF BODY.
1. JOIN SUBFRONTS, BACKS, AND SIDES WITH GLUED RABBETED JOINTS AND REINFORCED BY MECHANICAL FASTENERS OR GLUED DOVETAIL JOINTS.

COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURERS' FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS, MATTE FINISH.
B. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
C. PATTERNS, MATTE FINISH.
D. PATTERNS, MATTE FINISH.

SYNTHETIC DECKING
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS; TIMBERTECH, AZEK OR COMPARABLE PRODUCT.
DECKING SIZE AND LENGTH TO MATCH EXISTING INSTALLATION. FINISH TEXTURE BRUSHED; COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. FASCIA BOARDS TO MATCH DECKING COLOR.
DECKING FASTENING SYSTEM AS RECOMMENDED BY MANUFACTURER'S INSTALLATION MANUAL. FOLLOW MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR CUTTING, TRIMMING AND INSTALLING DECKING.

RUBBER STAIR TREADS COVERS
BASIS OF DESIGN, BY ROPPE OR EQUAL, RIBBED PATTERN, BLACK FINISH. FOLLOW THE MANUFACTURER'S INSTRUCTION FOR INSTALLATION.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

ROOFING SHEET METAL FLASHING AND TRIM
GENERAL: CONTRACTOR TO EVALUATE STATUS OF ROOFING MATERIAL, COMMUNICATE THE HACP AND ARCHITECT OF FINDINGS AND IF PATCHING OR REPLACEMENT IS NEEDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INSTALL ASPHALT SHINGLES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN ARMA'S "ASPHALT ROOFING RESIDENTIAL MANUAL - DESIGN AND APPLICATION METHODS" AND NRCA'S "NRCA GUIDELINES FOR ASPHALT SHINGLE ROOFING SYSTEMS".

ASPHALT SHINGLES: ASTM D3462/D3462M, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION; GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF-SEALING, BY GAF OR EQUAL, STRAIGHT CUT. FINISH COLOR TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

GC TO INSPECT FLASHING OF ROOF PENETRATIONS, PATCH AND REPLACE IF NEEDED TO COMPLY WITH CODE AND REGULATIONS.

SHEET METAL STANDARD FOR FLASHING AND TRIM: COMPLY WITH NRCA'S "THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION AND AIR LEAKAGE CONTROL, AND REROOFING" AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL". REQUIREMENTS FOR DIMENSIONS AND PROFILES SHOWN UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.

INSTALL SHEET METAL FLASHING AND TRIM TO COMPLY WITH DETAILS INDICATED AND RECOMMENDATIONS OF CITED SHEET METAL STANDARDS THAT APPLY TO INSTALLATION CHARACTERISTICS REQUIRED UNLESS OTHERWISE INDICATED ON DRAWINGS

THERMAL INSULATION
GC TO PROVIDE THERMAL INSULATION ON WALLS, CEILINGS AND FLOORS AS NOTED ON THE DRAWINGS.

INSULATION TO COMPLY WITH THE ENERGY CODE IN MINIMUM R VALUES OR AS SPECIFIED ON DRAWINGS.

GC TO BE RESPONSIBLE TO INSPECTING, ADJUSTING AND ADDING INSULATION TO THE ENTIRE ATTIC SPACE TO ENSURE THAT THERE IS INSULATION COVERAGE WITHIN NO GAPS. GC TO INFORM HACP AND ARCHITECT PRIOR TO ADD ADDITIONAL INSULATION.

ATTIC DOORS TO RECEIVED RIGID FOAM INSULATION GLUED TO BACK OF THE DOOR AND SEALED WITH RUBBER JOINTS. INSULATION TO MATCH R VALUE OF CEILING ASSEMBLY.

ASSEMBLIES, SEPARATIONS & FIRESTOPPING:

ANY NEW DEMISING OR INTERIOR PARTITIONS SHALL BE RATED AS REQUIRED BY CODE. ANY PENETRATION THROUGH AN EXISTING DIMENSIONED RATED ASSEMBLY OR ULRATED ASSEMBLY WALL MUST RETAIN THE UL ASSEMBLY FIRE-RATING.

ALL NEW WORK SHALL MATCH OR EQUAL THE UL FIRE RATINGS, IF ANY, OF THE SURROUNDING WORK. AS APPROPRIATE, THE CONTRACTOR SHALL CONTACT HACP AND ARCHITECT IF ANY AREAS ARE UNCOVERED OR DISCOVERED THAT MAY REQUIRE ADDITIONAL ANALYSIS OR CLARIFICATION.

THROUGH PENETRATIONS OF FIRE RESISTANCE WALLS SHALL BE INSTALLED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY SUCH AS UNDERWRITERS LABORATORIES. IF THE PENETRATING ITEMS ARE STEEL, FERROUS OR COPPER PIPES OR STEEL CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE FIRE-RESISTANCE-WALL SHALL BE PERMITTED TO BE PROTECTED AS FOLLOWS:

IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A MAXIMUM 6-INCH NOMINAL DIAMETER AND THE OPENING IS A MAXIMUM 144 SQUARE INCHES. CONCRETE, GROUT, OR MORTAR SHALL BE PERMITTED WHERE INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING.

THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHERE SUBJECTED TO ASTME 119 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE WALL ASSEMBLY.

MEMBRANE PENETRATIONS, WHERE WALLS AND PARTITIONS ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:
FOR STEEL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. A HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY WHERE THE WALL CAVITY IS FILL WITH CELLULOSE LOOSE FILL, ROCKWOOL OR SLAG WOOL INSULATION PROVIDED THE WALL IS DOUBLE (CONSISTING OF 2-INCH NOMINAL LUMBER OR TWO THICKNESSES OF 1-INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS OR ONE THICKNESS OF 0.719-INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANEL OR ONE THICKNESS OF 0.75-INCH PARTICLEBOARD WITH JOINTS BACKED BY 0.75-INCH PARTICLEBOARD. GYPSUM BOARD, CEMENT FIBER BOARD, BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED AS AN ACCEPTABLE FIREBLOCK. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NONRIGID MATERIALS SHALL BE PERMITTED FOR COMPLIANCE WITH THE 10-FOOT HORIZONTAL FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROW OF STUDS OR STAGGERED STUDS. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES. THE INTEGRITY OF FIREBLOCKS SHALL BE MAINTAINED; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

MEMBRANE PENETRATIONS FOR LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL ARE PERMITTED PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS INCLUDED IN THE LISTING. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24-INCHES. SOLID FIREBLOCKING; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

EXCEPTIONS:
MEMBRANE PENETRATIONS BY STEEL, FERROUS OR COPPER CONDUITS, ELECTRICAL BOXES, PIPES, TUBES, VENTS, CONCRETE, MASONRY-PENETRATING ITEMS WHERE THE ANNULAR SPACE IS PROTECTED EITHER IN ACCORDANCE OR TO PREVENT THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. SUCH PENETRATIONS SHALL NOT EXCEED ANY AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.

MEMBRANE PENETRATIONS BY LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL THAT HAS BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED PER INSTRUCTIONS INCLUDED IN LISTING.

JOINT SEALERS
INTERIOR JOINT SEALER IS TO BE MILDEW-RESISTANT SILICONE SEALANT. APPLY SEALANT AT ALL MATERIAL JOINTS SUBJECT TO WATER PENETRATION. COLOR TO BE SELECTED BY THE ARCHITECT FROM MFR'S STANDARD LINE.

VINYL SIDING
VINYL SIDING. INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D3679.
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALSIDE, EXTERIOR BUILDING PRODUCTS, KAYCAN LTD., ROYAL BUILDING PRODUCTS, A WESTLAKE COMPANY. OR EQUAL.

HORIZONTAL PATTERN: 6-1/2- OR 7-INCH EXPOSURE IN BEADED-EDGE, SINGLE-BOARD STYLE. SMOOTH TEXTURE. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OR TO MATCH EXISTING WHERE REQUIRED.

WATER PROOFING MEMBRANE
BASIS OF DESIGN, BY SIKA OR EQUAL, 60 MIL. REFER TO MANUFACTURERS INSTRUCTION FOR PREPARATION OF SUBSTRATES AND INSTALLATION OF MEMBRANE.

DIVISION 8 - DOORS, WINDOWS AND HARDWARE

ALL DOORS AND WINDOWS SHALL BE INSTALLED PLUMB, LEVEL, SQUARE, AND PER ALL MANUFACTURERS RECOMMENDATION.

EXTERIOR DOORS TO BE 1 3/4"-THICK, FIBERGLASS INSULATED WITH 3 SETS OF STEEL HINGES, RUBBER WEATHER STRIPPING, LOCKING AS SPECIFIED ON HARDWARE. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING. VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS: 1) IN DOORS, 2) WITHIN 24" OF A DOOR AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE, 3) IN FIXED PANELS WITH THE LOWEST EDGE LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36" OF SUCH GLAZING.

DOOR HARDWARE
INTERIOR DOOR HARDWARE

ALL DOOR HARDWARE TO BE APPROVED BY HACP FACILITY REPRESENTATIVE.

BASIS OF DESIGN NON- ACCESIBLE UNITS
MANUFACTURER BALDWIN O

POLISH CHROME PLATE FINISH, 2.2 GPM FLOW RATE, LEVER HANDLE, RIGID SPOUT, DRAIN POP UP.

KITCHEN SINKS – WATER SENSE CERTIFIED
STAINLESS STEEL, COUNTER MOUNTED, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- AFINITY SURFACES

0.038 INCH THICKNESS, 3 1/2" DRAIN GRID CENTERED IN BOWL.

SINKS FAUCETS – WATER SENSE CERTIFIED
GENERAL DUTTY SOLID BRASS, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- HANSGROHE

POLISHED CHROME PLATE FINISH. SINGLE HANDLE ON KITCHEN TWO HANDLE ON UTILITY SINKS.

WATER CLOSET – WATER SENSE CERTIFIED
FLOOR MOUNTED, FLOOR OUTLET, CLOSE COUPLED (GRAVITY TANK), VITREOUS CHINE, 1.6 GAL/FLUSH, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- KOHLER
- TOTO USA

STANDARD HEIGHT, ELONGATED RIM, WATER SAVING, COLOR WHITE.
TOILET SEAT PLASTIC FOR RESIDENTIAL USE, ELONGATED RIM, SEAT COVER, SELF SUSTAINING HINGE, COLOR WHITE.

UTILITY SINK
FRESTANDING UTILITY SINK, MANUFACTURERS: PROFLO OR EQUAL
STANDARD HEIGHT, COLOR WHITE. 20 INCH BY 20 INCH SIZE.

EXTERIOR HOSE BIBB.
FREEZELESS WALL FAUCET, WOODFORD OR EQUAL, MODEL 30,3/4 INCH CONNECTION, BRASS FINISH, ASSE 1053 APPROVED, MAX PRESSURE 125 PSI.

SLEEVES
SLEEVES SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH WALLS, CEILINGS, OR FLOORS. SLEEVES SHALL BE CUT FROM SCHEDULE 40 BLACK IRON PIPE. THE INTERNAL DIAMETER OF THE SLEEVE SHALL EXCEED THE EXTERNAL DIAMETER OF THE PIPE (INCLUDING INSULATION) BY NOT LESS THAN ONE INCH. SLEEVES SHALL BE CUT FLUSH WITH WALLS AND UNDERSIDES OF FLOORS AND SHALL EXTEND ONE INCH ABOVE FLOORS ABOVE GRADE.

PIPE PORTALS
PIPING THROUGH THE ROOF SHALL BE INSTALLED THROUGH A PREFABRICATED PIPING PORTAL. PORTALS SHALL HAVE GALVANIZED STEEL INSULATED CURBS, ABS PLASTIC CURB CAP, NEOPRENE RUBBER NIPPLES, AND STAINLESS-STEEL CLAMPS. CURB HEIGHT AS INDICATED ON DRAWINGS. PORTALS SHALL BE MODEL RC AND NJB AS MADE BY ROOF PRODUCTS AND SYSTEMS CORP. PORTALS SHALL HAVE EXTRA HOLES FOR POWER AND CONTROL CONDUITS.

FIRESTOPS
ALL OPENINGS THROUGH FLOORS AND FIRE-RATED PARTITIONS SHALL BE SEALED. VOID SPACES AROUND DUCTS OR PIPES SHALL BE PACKED WITH A FIREPROOF CERAMIC FIBER AND SEALED WITH FIRE RETARDANT CAULKING. FIBER SHALL BE KAOWOOL BY BABCOCK AND WILCOX, FIBERFRAX BY CARBORUNDUM, OR CERAFIBER BY MANVILLE CO. CAULKING SHALL BE SE4111 F BY UNISEAL STANDARD DUXSEAL BY MANVILLE, OR MOLDABLE PUTTY BY 3M.

ESCUTCHEONS
ESCUTCHEONS SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH FLOORS, CEILINGS, OR WALLS OF FINISHED SPACES. ESCUTCHEONS SHALL BE CHROMIUM PLATED STEEL, SNAP ON TYPE WITH SPRING RETAINERS. ESCUTCHEONS SHALL BE THE NO. 40 MADE BY BEATON/CORBIN COMPANY OR APPROVED EQUAL, SIZED TO FIT PIPE PLUS INSULATION. WHERE RISER CLAMPS ARE IN FINISHED SPACES, PROVIDE HIGH-SHIRT ESCUTCHEONS TO COVER CLAMP.

UNIONS
UNIONS SHALL BE INSTALLED AT ALL POINTS INDICATED ON THE DRAWINGS AND AT ALL OTHER POINTS NECESSARY FOR THE INSTALLATION AND REMOVAL OF EQUIPMENT, CONTROL DEVICES, ETC. UNIONS IN GAS LINES WILL BE PERMITTED ONLY AT THE FINAL CONNECTIONS TO EQUIPMENT.

HANGERS
ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH PIPEHANGERS TO PREVENT SAGGING AND AVOID CONCENTRATION OF HANGING LOAD. HANGER SPACING SHALL NOT EXCEED 10 FT. FOR STEEL PIPE OR 8 FT. FOR COPPER TUBING. COPPER TUBING 1-1/4" AND SMALLER SHALL BE SUPPORTED AT NO GREATER THAN 6 FT. SPACING.

REPAIR ALL FIREPROOFING WHICH IS DAMAGED BY HANGER INSTALLATION.

SOIL WASTE AND VENT PIPING
SOIL, WASTE AND VENT STACKS AND BRANCHES, AND ROOF CONDUCTORS SHALL BE ABS OR PVC PIPING AND FITTINGS SCHEDULE 40. WASTE LINES SHALL BE MINIMUM 2 INCH.

HOT AND COLD-WATER PIPING
POTABLE-WATER PIPING AND COMPONENTS ARE TO COMPLY WITH NSF 14, NSF 61, AND NSF 372. INCLUDE MARKING "NSF-PW" ON PIPING.

HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE TYPE L, SEMI-LESS, HARD TEMPER, COPPER TUBING WHICH CONFORMS TO ASTM SPECIFICATION B-88 WITH WROUGHT COPPER, SOLDER, TYPE FITTINGS, OR PEX TUBING PLASTIC IN ACCORDANCE WITH ASTM F876 AND ASTM F877 WITH FITTINGS ASTM F1807, METAL INSERT AND COPPER CRIMP RINGS ASTM F1960, COLD EXPANSION FITTINGS AND REINFORCING RINGS.

INSTALLATION OF PIPING
DRAINAGE PIPING SHALL BE INSTALLED TO ACCURATE LINE AND UNIFORM GRADE, AND AT THE ELEVATIONS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE INDICATED, ALL DRAINAGE LINES SHALL SLOPE NOT LESS THAN 1/4 INCH PER FOOT.
DRAINAGE LINES SHALL BE PROVIDED WITH SUFFICIENT CLEANOUTS TO MAKE ALL PARTS OF THE DRAINAGE SYSTEM ACCESSIBLE. CLEANOUTS SHALL BE PROVIDED ALONG INTERIOR HORIZONTAL RUNS AT NOT MORE THAN 50 FT. ON CENTER. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH ROOF CONDUCTOR AND AT ALL OTHER POINTS INDICATED ON THE DRAWING OR REQUIRED BY LOCAL PLUMBING CODE.

ALL PIPES SHALL BE CUT WITH SQUARE ENDS AND SHALL BE PROPERLY REAMED. THREADS SHALL BE CUT WITH CLEAN, SHARP DIES TO FULL DEPTH. ALL BURRS SHALL BE REMOVED FROM PIPE. JOINT COMPOUND SHALL BE APPLIED TO PIPE THREAD ONLY. USE OF EXCESSIVE JOINT COMPOUND IS PROHIBITED.

SOLDER JOINTS IN ALL WATER LINES SHALL BE MADE WITH 95-5 TIN-ANTIMONY SOLDER. OTHER JOINTS MADE WITH EASYBRITE LEAD FREE SOLDER.

WATER LINES WITHIN THE BUILDING SHALL BE INSTALLED WITH SUFFICIENT PITCH TO PROPERLY DRAIN LINES AND VALVES. IN ADDITION TO DRAIN VALVES INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL DRAIN VALVES NECESSARY TO PROPERLY DRAIN THE SYSTEM.

GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND NFPA-54. ALL GAS PIPING AND CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH AGA RECOMMENDATIONS AND ALL APPLICABLE LOCAL GAS COMPANY REGULATIONS.

CONTRACTOR SHALL VENTILATE THE WORK AREA TO PROVIDE A SAFE ENVIRONMENT. VENTILATION SHALL NOT DIRECT FUMES TO ADJACENT SPACES OR NEIGHBORING STRUCTURES.

CONTRACTOR SHALL PROVIDE ADEQUATE FIRE PROTECTION DURING WELDING, CUTTING AND SOLDERING.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

VALVES
VALVES IN WATER LINES SHALL BE 125 PSI CLASS, BRONZE BODY, BALL VALVES WITH TEFLON SEATS AND PACKING. NIBCO 580 OR APOLLO.DRAIN VALVES SHALL BE BRONZE BODY SOLDERED ENDS, BALL VALVES WITH 3/4 INCH AMERICAN STANDARD HOSE THREAD OUTLET. NIBCO OR APOLLO.

WALL HYDRANT SHALL BE ALL BRASS, FULLY RECESSED, NON-FREEZE, KEY OPERATED, WITH ADJUSTABLE LOCKNUT, REMOVABLE NYLON SEAT, 3/4 INCH HOSE CONNECTION. FURNISH WITH INTEGRAL VACUUM BREAKER. ZURN Z-1300 OR APPROVED EQUAL.

VALVES IN GAS LINES SHALL BE 125 PSI CLASS, THREADED END, IRON BODY. GAS COCKS WITH BRASS PLUG AND WASHER AND SQUARE HEAD. ORANEO NO. 324.

INSULATION
ALL COLD AND HOT WATER PIPING, AND HORIZONTAL PORTIONS OF ROOF CONDUCTORS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX.

PIPE IDENTIFICATION
ALL PIPING SHALL BE LABELED WITH THE NAME OF THE FLUID IN THE PIPE AND WITH ARROWS INDICATING THE DIRECTION OF THE FLOW.

TESTING

DRAINAGE SYSTEM - THE ENTIRE DRAINAGE SYSTEM SHALL BE TESTED HYDROSTATICALLY FOR LEAKS. THE ENTIRE SYSTEM SHALL BE FILLED TO THE TOP OF THE STACKS WITH WATER AND CHECKED FOR LEAKS.

WATER PIPING - ALL WATER PIPING SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL FOREIGN MATERIAL. ALL TESTING SHALL BE COMPLETED BEFORE INSULATION IS APPLIED.
DURING THE TESTS ALL VALVES SHALL BE CAREFULLY CHECKED FOR LEAKAGE AROUND THE STEM.

WATER HEATERS - HEATERS SHALL BE TESTED AND CHECKED TO DETERMINE THAT THEY OPERATE IN COMPLIANCE WITH THE SPECIFICATIONS. ALL CONTROLS SHALL BE PROPERLY ADJUSTED.

DISINFECTION OF POTABLE WATER SYSTEM - GENERAL: NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE. WHENEVER REQUIRED BY THE AUTHORITY HAVING JURISDICTION THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY.

MECHANICAL REQUIREMENTS

GENERAL CONDITIONS OF THE MECHANICAL CONTRACT
PLUMBING CONTRACTOR TO FOLLOW HUD GENERAL CONDITIONS AS SPECIFIED EARLIER IN DIVISION 1.

ALL MECHANICAL WORK TO COMPLY WITH LOCAL CODE AND REGULATIONS.

CUTTING AND PATCHING
ALL CHASES, RECESSES, HOLES, AND OPENINGS FOR EQUIPMENT AND DUCTWORK WILL BE PROVIDED BY THE GENERAL CONTRACTOR.

SHOULD THE MECHANICAL CONTRACTOR FAIL TO SET SLEEVES OR LOCATE OPENINGS BEFORE THE WORK OF THE GENERAL CONTRACTOR HAS BEEN COMPLETED IN THAT PARTICULAR AREA, THE MECHANICAL CONTRACTOR SHALL CUT WHATEVER HOLES ARE NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT. ALL PATCHING NECESSITATED BY THE CUTTING OF SUCH HOLES SHALL BE DONE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

REPAIR ALL FIREPROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

EXHAUST FANS
FANS SHALL VENT DIRECTLY TO THE EXTERIOR. EXHAST DUCTS MAY BE TIED TOGETHER OR TIED INTO AN EXISTING SYSTEM PROVIDED THAT BACK FLOW PREVENTORS ARE INSTALLED AT EACH FAN INCLUDING ALL FANS TIED INTO THE EXISTING SYSTEM.

FURNISH NEMA 1 SURFACE MOUNTING STARTER WITH OVERLOAD AND UNDER VOLTAGE PROTECTION.

FURNISH WITH BIRD SCREEN AND BACKDRAFT DAMPER.

FAN SHALL BE ACE MADE BY COOK, GREENHECK, OR APPROVED EQUAL. MOTOR CAPACITY TO BE DETERMINED. FINISH WHITE.

THE HEATING CONTRACTOR SHALL FURNISH THERMALLY AND ACOUSTICALLY INSULATED CURB.

MECHANICAL EQUIPMENT
THE EQUIPMENT DESCRIBED IN THIS SECTION IS BASIS OF DESIGN, MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT TO MATCH EXISTING SYSTEM CAPACITY AT A MINIMUM.

MECHANICAL CONTRACTOR TO PROVIDE HACP AND ARCHITECT WITH SPECIFICATION SHEETS OF EQUIPMENT.

GAS-FIRED FURNACES, NONCONDENSING
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- BRYANT; CARRIER GLOBAL CORPORATION.
- CARRIER GLOBAL CORPORATION.
- BUILDING SOLUTIONS NORTH AMERICA.

ENERGY STAR RATING OF 95% AFUE OR GREATER
CABINET: GALVANIZED STEEL.
- CABINET INTERIOR AROUND HEAT EXCHANGER SHALL BE FACTORY-INSTALLED INSULATION.
- LIFT-OUT PANELS SHALL EXPOSE BURNERS AND ALL OTHER ITEMS REQUIRING ACCESS FOR MAINTENANCE.
- FACTORY PAINT EXTERNAL CABINETS IN MANUFACTURER'S STANDARD COLOR.
- AIRSTREAM SURFACES: SURFACES IN CONTACT WITH THE AIRSTREAM SHALL COMPLY WITH REQUIREMENTS IN ASHRAE 62.1.

FAN: CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT OR BELT DRIVE.
- FAN MOTORS: COMPLY WITH REQUIREMENTS IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT."
- SPECIAL MOTOR FEATURES, SINGLE SPEED: SINGLE SPEED, PREMIUM EFFICIENCY, AS DEFINED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT," AND WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, MULTISPEED: MULTI-FAPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, ECM: ELECTRONICALLY CONTROLLED MOTOR (ECM) CONTROLLED BY INTEGRATED FURNACE/BLOWER CONTROL.

TYPE OF GAS: NATURAL
HEAT EXCHANGER: ALUMINIZED STEEL.
BURNER:
- GAS VALVE: 100 PERCENT SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUTOFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD.
- IGNITION: ELECTRIC PILOT IGNITION, WITH HOT-SURFACE IGNITER OR ELECTRIC SPARK IGNITION.

GAS-BURNER SAFETY CONTROLS:
- ELECTRONIC FLAME SENSOR: PREVENTS GAS VALVE FROM OPENING UNTIL PILOT FLAME IS PROVEN; STOPS GAS FLOW ON IGNITION FAILURE.
- FLAME ROLLOUT SWITCH: INSTALLED ON BURNER BOX; PREVENTS BURNER OPERATION.
- LIMIT CONTROL: FIXED STOP AT MAXIMUM PERMISSIBLE SETTING; DE-ENERGIZES BURNER ON EXCESSIVE BONNET TEMPERATURE; AUTOMATIC RESET.

COMBUSTION-AIR INDUCER: CENTRIFUGAL FAN WITH THERMALLY PROTECTED MOTOR AND SLEEVE BEARINGS PRERURGES HEAT EXCHANGER AND VENTS COMBUSTION PRODUCTS; PRESSURE SWITCH PREVENTS BURNER OPERATION IF COMBUSTION-AIR INLET OR FLUE OUTLET IS BLOCKED.
FURNACE CONTROLS: SOLID-STATE BOARD INTEGRATES IGNITION, HEAT, COOLING, AND FAN SPEEDS; AND ADJUSTABLE FAN-ON AND FAN-OFF TIMING; TERMINALS FOR CONNECTION TO ACCESSORIES.
VENT MATERIALS: COMPLY WITH REQUIREMENTS IN SECTION 235123 "GAS VENTS" FOR TYPE B METAL VENTS.

CAPACITIES AND CHARACTERISTICS:
AIRFLOW CONFIGURATION: UPFLOW.
GAS:
- TYPE: NATURAL
- VENTING TYPE: WITH COMBUSTION-AIR INTAKE
- MINIMUM EFFICIENCY AFUE: 80 PERCENT.
- INPUT: SEE SCHEDULE ON DRAWINGS.
- HEAT OUTPUT: SEE SCHEDULE ON DRAWINGS.
- GAS CONNECTION SIZE: 1/2" NPS.
- VENT SIZE: 4 INCHES.

FAN:
- MOTOR: SIZE: 1/3 HP.
- SPEED: SEE SCHEDULE ON DRAWINGS.
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

FURNACE ELECTRICAL CONNECTION:
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

COMPRESSOR AND CONDENSER UNITS, AIR COOLED, 1.0 TO 5 TONS
DESCRIPTION: FACTORY ASSEMBLED AND TESTED; CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTORS, REFRIGERANT RESERVOIR, AND OPERATING CONTROLS.
ENERGY STAR RATING EQUAL OR OVER 15.2 SEER2
COMPRESSOR TYPE: SCROLL, HERMETICALLY SEALED, WITH RUBBER VIBRATION ISOLATORS.
- TWO-SPEED COMPRESSOR: INCLUDE MANUAL-RESET, HIGH-PRESSURE SWITCH AND AUTOMATIC-RESET, LOW-PRESSURE SWITCH.
- ACCUMULATOR: SUCTION TUBE.

REFRIGERANT: R-410A.
CONDENSER COIL: SEAMLESS COPPER-TUBE, -FIN COIL; WITH REMOVABLE DRAIN PAN AND BRASS SERVICE VALVES WITH SERVICE PORTS.
CONDENSER FAN: DIRECT-DRIVE, MALE PROPELLER FAN; WITH PERMANENTLY LUBRICATED, TOTALLY ENCLOSED FAN MOTOR WITH THERMAL OVERLOAD PROTECTION AND BALL BEARINGS.
UNIT CASING: GALVANIZED STEEL, FINISHED WITH; WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE. MOUNT SERVICE VALVES, FITTINGS, AND GAUGE PORTS ON EXTERIOR OF CASING.
CAPACITIES AND CHARACTERISTICS:
COMPRESSOR AND CONDENSER UNIT:
- FULL-LOAD COOLING CAPACITY: TO BE CALCULATED BY MECHANICAL CONTRACTOR

ELECTRICAL CHARACTERISTICS:
- VOLTS: 208 V.
- PHASE: 1.
- HERTZ: 60 HZ.

SHEET METAL
DUCT SIZES INDICATED ON THE DRAWINGS ARE THE CLEAR INSIDE DIMENSIONS.

ALL DUCTS SHALL BE COMPLETE WITH FOUR SIDES AND SHALL BE OF AIRTIGHT CONSTRUCTION. ALL DUCTS, UNLESS OTHERWISE NOTED, SHALL BE CONSTRUCTED OF 24 GAGE GALVANIZED SHEET STEEL AT 2" PRESSURE CLASS.

JOINTS, SEAMS AND DUCT WALL PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. SEALANT MATERIAL SHALL BE CAULKING COMPOUND SPECIFICALLY MANUFACTURED FOR DUCT APPLICATION FOR INDOOR USE.

JOINTS BETWEEN SHEET METAL SECTIONS MAY BE MADE WITH PREFABRICATED JOINING SYSTEM SUCH AS THE DUCTMATE INDUSTRIES SYSTEM.
STIFFENERS SHALL BE PLACED AT NOT MORE THAN 8-FOOT INTERVALS.

ALL DUCTS SHALL BE ADEQUATELY SUPPORTED FROM CONSTRUCTION ABOVE BY MEANS OF GALVANIZED STEEL STRAP HANGERS SPACED AT NOT MORE THAN 8-FOOT INTERVALS. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA STANDARDS.

DUCTWORK CONNECTIONS TO AIR HANDLING AND AIR CONDITIONING UNITS SHALL HAVE FLEXIBLE CONNECTIONS. WHEN CONNECTION IS OUTDOORS, CONNECTION LENGTH SHALL BE INSULATED AND WEATHERPROOFED.

TURNING VANES SHALL BE INSTALLED IN ALL ELBOWS HAVING SQUARE THROATS OR A THROAT RADIUS LESS THAN HALF THE DUCT WIDTH. TURNING VANES MAY BE PREFABRICATED. IF JOB FABRICATED, DESIGN AND CONSTRUCTION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. VANES SHALL BE AIRFOIL TYPE.

MANUAL VOLUME CONTROL DAMPERS IN DUCTS SHALL BE CONSTRUCTED OF NOT LIGHTER THAN US GAGE NO. 16 GALVANIZED SHEET STEEL. DAMPER BLADES SHALL BE SUPPORTED ON AN END BEARING ON ONE SIDE AND A COMBINATION BEARING AND DAMPER REGULATOR ON THE OTHER SIDE. REGULATOR SHALL BE EQUIPPED WITH A LOCKING DEVICE. MANUAL DAMPERS SHALL BE OPPOSED BLADE TYPE.

FURNISH AND INSTALL FIRE DAMPERS WHERE INDICATED OR WHERE REQUIRED. DAMPERS SHALL COMPLY WITH LATEST EDITION OF NFPA 90A, AND SHALL BE UL LABELED. BLADE STACK SHALL BE OUT OF AIRSTREAM. FUSIBLE FIRE LINKS SHALL HAVE A MELTING POINT OF 165F. DAMPERS SHALL BE MODEL IBD AS MADE BY PRUSKIN, OR APPROVED EQUAL BY SAFE-AIR. FURNISH ACCESS DOORS TO ALL DAMPERS.

ACCESS DOORS IN DUCTS SHALL BE RIGIDLY CONSTRUCTED AND TIGHTLY FITTED. DOORS SHALL BE SUPPORTED ON TWO STEEL BUTT HINGES AND SHALL BE SECURED WITH A SASH LOCK. DOORS SHALL BE GASKETED AND INSULATED.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

FLEXIBLE DUCTS
FLEXIBLE DUCTS SHALL BE SOUND ATTENUATING, THERMAL INSULATED, WIRE WOUND, REINFORCED TYPE WITH A MOISTURE TIGHT FLAME PROOF VINYL BARRIER. FLEXIBLE DUCTS TO BE USED ONLY TO CONNECT INDIVIDUAL DIFFUSERS WITH MAIN OR BRANCH DUCTS. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PORTION OF THE EXISTING SYSTEM WHICH DOES NOT MEET THESE REQUIREMENTS WITH PROPERLY SIZED AND INSULATED SHEET METAL DUCTS. THIS WORK TO BE INCLUDED IN BASE BID.

DIFFUSERS
DIFFUSERS SHALL BE SQUARE OR RECTANGULAR FACED, RECESSED TYPE, WITH REMOVABLE CORES. DIFFUSER CAPACITIES, SIZES AND DIRECTIONAL BLOWS ARE INDICATED ON THE DRAWINGS. FURNISH EACH DIFFUSER WITH DEFLECTING VANES AND KEY OPERATED, OPPOSED BLADE, VOLUME DAMPERS. DIFFUSERS SHALL BE FURNISHED WITH BAKED, WHITE FINISH.

SUPPLY REGISTERS
SUPPLY REGISTERS SHALL HAVE INDIVIDUALLY ADJUSTABLE FINS WITH VERTICAL FRONT BARS AND HORIZONTAL REAR BARS. FINS SHALL BE STREAMLINED AND OF STURDY CONSTRUCTION. FLANGES SHALL BE 5/8 INCH HCNNARD BORDER. FURNISH RUBBER GASKET AROUND PERIMETER OF FLANGE, AND KEY OPERATED, OPPOSED BLADE VOLUME CONTROL DAMPERS. RUBBER GASKET SHALL BE NON-CHLORINATED RUBBER AND NON-POROUS. FURNISH WITH PRIME COAT OF PAINT.

GRILLES
GRILLES AND REGISTERS FOR MECHANICAL TO MATCH EXISTING. GRILLES AND REGISTERS SHALL BE OUT OF STEEL, WITH DAMPER, PRIMED PAINTED WHITE. SIZE OF GRILLE TO MATCH EXISTING OPENING ON TOE KICK, WALL OR CEILING.

CONTROLS
THE HEATING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL DEVICES NECESSARY TO ACHIEVE THE CONTROL SEQUENCE DESCRIBED HEREIN.

CONTROL SYSTEMS SHALL BE GUARANTEED FOR 2 YEARS FROM DATE OF ACCEPTANCE BY HACP.

CONTROL WIRING SHALL BE CONCEALED AND INSTALLED IN ACCORDANCE WITH SECTION 16.

MOTOR STARTERS - MOTOR STARTERS FOR ALL MECHANICAL ITEMS SHALL BE FURNISHED BY THE HEATING CONTRACTOR. STARTERS SHALL HAVE HAND-OFF-AUTO SWITCHES AND CONTROL TRANSFORMERS.

DAMPERS - DAMPERS SHALL BE OPPOSED MULTI-BLADE. BLADES SHALL BE CONSTRUCTED OF 16 GAGE STEEL WITH NEOPRENE GASKETED EDGES, AND SHALL BE MOUNTED IN CORROSION RESISTANT BUSHINGS. DAMPERS SHALL HAVE STOPS ON ALL FOUR SIDES. MOTORS SHALL BE MODULATING WITH OIL-IMMERSED GEAR TRAINS. DAMPERS SHALL BE 2% LOW LEAKAGE TYPE.

FREEZE PROTECTION THERMOSTAT - FREEZE PROTECTION THERMOSTAT SHALL BE MERCURY TUBE, MANUAL RESET TYPE SET AT 45F. INSTALL AN ADJUSTABLE TIME DELAY RELAY TO PERMIT AIR TO ESTABLISH SATISFACTORY TEMPERATURE TO AVOID FALSE TRIPS.

INSULATION
ALL SUPPLY AIR DUCTS SHALL BE INSULATED WITH 2" THICK, 1.00 DENSITY, OWENS-CORNING OR APPROVED EQUAL FLEXIBLE DUCT INSULATION WITH FLAME RETARDANT REINFORCED FIRK 25 FOIL COVERING. SEAL ALL JOINTS, BOLTS, AND ALL EXPOSED EDGES WITH 4" WIDE STRIPS OF SEALING TAPE USING A SUITABLE ADHESIVE. INSULATION SHALL HAVE A 2" FLAP AT ALL JOINTS AND SEAMS WHICH SHALL BE STAPLED AND SECURED WITH ADHESIVE. APPLY ADHESIVE TO DUCTS IN SIX-INCH-WIDE STRIPS AT ONE FOOT IN TERVALS. DUCTOWRK EXPOSED WITHIN THE SPACE MAY NOT BE INSULATED.

OPERATING INSTRUCTIONS
THE CONTRACTOR SHALL FURNISH THREE COMPLETE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS. THIS SHALL INCLUDE FINAL CONTROL DIAGRAMS, CATALOG DATA INCLUDING CONSTRUCTION AND MAINTENANCE INFORMATION ON ALL EQUIPMENT, AND MAINTENANCE INFORMATION IN THE COMPLETE SYSTEM.

ONE COMPLETE CONTROL DIAGRAM SHALL BE INCLUDED IN EACH O&M MANUAL.

THE CONTRACTOR SHALL FORMALLY INSTRUCT THE HACP'S STAFF ON THE OPERATION OF THE SYSTEM. THE INSTRUCTION SHALL CONSIST OF NOT LESS THAN 2 PERIODS, EACH PERIOD OF 4 HOURS DURATION. THE CONTRACTOR SHALL ARRANGE FOR THIS INSTRUCTION WITH THE HACP.

FUNCTIONS AND ALL ACTUATORS OPERATE IN ACCORDANCE WITH THE SPECIFICATIONS.
TESTS AND INSPECTION

THE FOLLOWING OPERATIONS SHALL BE PERFORMED IN PREPARATION FOR FINAL INSPECTION BY THE ARCHITECT. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE TO THE ARCHITECT THAT THE SYSTEM IS OPERATING IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL TESTS AND INSPECTIONS SHALL BE COMPLETED BEFORE FINAL PAYMENT IS MADE TO THE HEATING (MECHANICAL) CONTRACTOR.

CONTROLS - ALL CONTROLS SHALL BE TESTED AND ADJUSTED TO ACHIEVE THE INTENT OF THESE SPECIFICATIONS. CONTROLS SHALL BE ADJUSTED WHILE THE SYSTEM IS OPERATING UNDER FULL LOAD CONDITIONS, BOTH HEATING AND COOLING. CONTROL SUB-CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION THAT ALL ON/OFF AND ALARM.

AIR DISTRIBUTION SYSTEM - AIR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCE SUBCONTRACTOR. THE COST OF THE SUB-CONTRACTOR SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE. THE INDEPENDENT AIR BALANCER SHALL NOT BE AN EMPLOYEE NOR A SUBSIDIARY OF THE CONTRACTOR.

GUARANTEE
THE MECHANICAL CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE JOB THAT ALL EQUIPMENT, MATERIAL AND LABOR FURNISHED BY HIM ARE FREE FROM DEFECTS. ANY DEFECTS IN MATERIAL AND WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT FURTHER EXPENSE TO THE HACP. ALL ITEMS SPECIFIED TO HAVE LONGER WARRANTIES SHALL BE GUARANTEED FOR THAT LONGER PERIOD. CONTROLS SHALL HAVE A 2-YEAR GUARANTEE ON PARTS AND LABOR.

CONTROLS
SOLID-STATE THERMOSTAT: WALL-MOUNTED, PROGRAMMABLE, MICROPROCESSOR-BASED UNIT WITH MANUAL SWITCHING FROM HEATING TO COOLING, PREFERENTIAL RATE CONTROL, SEVEN-DAY PROGRAMMABILITY WITH MINIMUM OF FOUR TEMPERATURE PRESETS PER DAY, VACATION MODE, AND BATTERY BACKUP PROTECTION AGAINST POWER FAILURE FOR PROGRAM SETTINGS.

DIVISION 28 - ELECTRICAL WORK

NOTE: ELECTRICAL WORK ON THIS PROJECT IS TO BE DESIGN BUILD. THE E.C. IS RESPONSIBLE FOR PROVIDING LOCATIONS AND REQUIREMENTS FOR THE ELECTRICAL SYSTEM WITH THE HACP.

CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE SPECIFIC BUILDING HACP REQUIREMENTS, THE LATEST RULES OF THE NATIONAL ELECTRICAL CODE AND WITH LOCAL ORDINANCES HAVING JURISDICTION.

DO NOT INTERPRET ANYTHING IN THE DRAWINGS OR SPECIFICATIONS AS AUTHORITY TO VIOLATE APPLICABLE CODES.

BE RESPONSIBLE FOR EXAMINING DRAWINGS AND SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES. RESOLVE ALL CONFLICTS BEFORE INSTALLATION AT NO EXTRA COST.

PREPARE ANY ADDITIONAL CLARIFYING DETAILS REQUIRED BY THE LOCAL INSPECTOR AUTHORITIES AND SECURE APPROVAL OF SAME. PAY ANY CHARGES. OBSERVE ALL UNIFORM CONSTRUCTION CODE REQUIREMENTS.

OBSERVE ALL APPLICABLE SAFETY REGULATIONS REQUIRED BY HACP AND/OR STATE.

BRING ANY DISCREPANCIES BETWEEN DIFFERENT DRAWINGS, BETWEEN THE DRAWINGS AND FIELD CONDITIONS, OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR ANY APPARENT OMISSIONS, TO THE ARCHITECT'S ATTENTION BEFORE SUBMITTING THE BID. AFTER AWARD OF CONTRACT.

THE INTERPRETATION OF ANY CONFLICT WILL BE MADE BY THE ARCHITECT AND SHALL BE ACCEPTED AS FINAL.

IF MENTION HAS BEEN OMITTED PERTAINING TO DETAILS, ITEMS OR RELATED ACCESSORIES REQUIRED FOR THE COMPLETION OF ANY ELECTRICAL SYSTEM, INCLUDE SUCH ITEMS AND ACCESSORIES IN THE ELECTRICAL CONTRACT WITHOUT ADDITIONAL CHARGES.
AFTER THE JOB IS AWARDED, CLAIMS BASED ON INSUFFICIENT D

MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, ASTM AND IEEE. ALL SIMILAR MATERIALS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.

B. RACEWAYS
1. MATERIALS
RIGID HEAVY WALL STEEL CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE STEEL, HOT DIPPED GALVANIZED AND ZINC COATED, INSIDE AND OUTSIDE. CONDUIT SHALL BEAR THE MANUFACTURER'S AND UNDERWRITERS' LABELS. THIN WALL CONDUIT IS DESIGNATED AS E.M.T. STEEL CONDUIT SHALL BE MANUFACTURED BY WHEATLAND, ALLIED, TRIANGLE, OR EQUAL.
FLEXIBLE CONDUIT (GREENFIELD) SHALL BE U. L. LISTED, 3/4 INCH MINIMUM TRADE SIZE FOR BRANCH WIRING. GREENFIELD OF ½ INCH SIZE WILL BE PERMITTED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES ONLY.

2. INSTALLATION
MINIMUM SIZE CONDUIT IS 3/4 INCHES.
INSTALL CONDUIT AS A COMPLETE SYSTEM. CONTINUOUS FROM OUTLET TO OUTLET CABINET BOX OR FITTING MECHANICALLY AND ELECTRICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY IS SECURED.
DO NOT ROUTE RACEWAYS THROUGH ANY DUCTWORK.

C. CONDUIT FITTINGS
1. MATERIALS
ALL CONDUIT FITTINGS SHALL BE GALVANIZED MALLEABLE IRON OR STEEL, WHERE APPLICABLE.
CONDUIT FITTINGS SHALL CONFORM IN DESIGN AND QUALITY TO THE TYPE OF CONDUIT ON WHICH THEY ARE BEING INSTALLED.

2. INSTALLATION
USE THREADED CONNECTORS ON GRS CONDUIT.
USE SET-SCREW STYLE CONNECTORS ON E.M.T. WHERE SAME IS RUN EXPOSED OR CONCEALED ABOVE GRADE.
USE BUSHINGS, LOCKNUTS AND EXPANSION FITTINGS OF THE APPROPRIATE TYPE FOR THE RACEWAY SYSTEM BEING INSTALLED.

D. PULL BOXES, OUTLET BOXES AND COVERS
1. GENERAL
FOR EACH OUTLET BOX, USE THE PROPER CODE SIZE FOR THE ENTERING CONDUITS AND THE NUMBER OF WIRES TERMINATING THEREIN.
USE BOXES WITH PLASTER RING EXTENSIONS IN PLASTERED OR DRY WALL PARTITIONS.

2. MATERIALS
FOR LARGE PULL BOXES, USE BOXES OF CODE GAUGE SHEET STEEL WITH STEEL COVERS ATTACHED WITH BRASS SCREWS. BOXES SHALL BE HOT DIPPED, GALVANIZED AFTER FABRICATION - THE MINIMUM SIZE OF EACH BOX SHALL BE AS REQUIRED BY THE NATIONAL ELECTRIC CODE. MANUFACTURER'S ARE HOFFMAN, KEYSTONE OR EQUAL.
FOR CONCEALED WORK, USE PRESSED STEEL BOXES, KNOCKOUT TYPE, ZINC COATED, OF 1/16 INCH MINIMUM THICKNESS.
USE BOXES OF FORM AND DIMENSIONS BEST ADAPTED TO SPECIFIC LOCATION, KIND OF FIXTURE USED AND THE NUMBER, SIZE AND ARRANGEMENT OF RACEWAYS CONNECTING THERETO. USE STEEL CITY OR RACO.
USE WIREMOLD FINISHED STYLE BOXES IN FINISHED AREAS WHERE CONCEALED BOXES ARE NOT FEASIBLE.

E. CONDUCTORS IN RACEWAYS
1. MATERIALS
CONDUCTORS SHALL BE SOFT DRAWN COPPER, MINIMUM 97% CONDUCTIVITY, 600 VOLT, CONFORMING TO ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
INSULATION SHALL BE SUITABLE FOR THE CONDITIONS AND LOCATIONS IN WHICH CONDUCTORS ARE INSTALLED. THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED OR REQUIRED BY LOCATION OR INSTALLATION CONDITIONS:
A. FOR BUILDING WIRE IN INTERIOR ABOVE GRADE LOCATIONS, USE TYPE THWN/THHN COPPER RATED 75 DEGREES C. WET OR DRY.
WIRES SHALL BE CLEARLY AND REGULARLY MARKED WITH THE WIRE SIZE, VOLTAGE, INSULATION TYPE AND MANUFACTURER'S NAME.
CONDUCTORS SHALL BE NEW AND MANUFACTURED WITHIN EIGHT MONTHS PREVIOUS TO DELIVERY AT SITE, WITH DATE OF MANUFACTURE MARKED ON THE PACKAGES.
MINIMUM WIRE SIZE FOR BRANCH CIRCUITING SHALL BE #12 AWG.
ALL CIRCUIT RUNS EXCEEDING 75 FEET IN LENGTH EXTENDING FROM THE PANELBOARD TO THE FIRST OUTLET IN THE CIRCUIT SHALL BE #10 AWG MINIMUM.
WIRE #8 AWG AND SMALLER SHALL BE SOLID; WIRE #6 AWG AND LARGER SHALL BE STRANDED.
WIRE SHALL BE AS MANUFACTURED BY HI-TECH, PIRELLI, TRIANGLE OR EQUAL.

2. INSTALLATION
COLOR CODE ALL WIRES PER NEC REQUIREMENTS:
A. MATCH THE EXISTING SCHEME PRESENTLY INSTALLED; NEUTRAL SHALL BE WHITE. EQUIPMENT GROUND SHALL BE GREEN.
THE GROUPING OF OUTLETS ON INDIVIDUAL NEW CIRCUITS AS SHOWN ON THE DRAWINGS SHALL BE STRICTLY OBSERVED. GROUPING OF CONDUCTORS IN THE CONDUIT SHALL NOT BE PERMITTED. INCORPORATE A MAXIMUM OF FOUR (4) WIRES, I.E. A MAXIMUM OF ONE CIRCUIT CONDUCTOR ON EACH PHASE PLUS THE NEUTRAL WIRE PLUS THE GROUND WIRE IN ONE CONDUIT.
EMPLOY A U.L. LISTED COMMERCIAL PRODUCT SUCH AS WYRE-EZE OR YELLOW-77 FOR PULLING WIRES INTO A RACEWAY.
CLEAN AND DRY CONDUITS BEFORE PULLING IN WIRES.
THE USE OF B.X., ROMEX, OR U.F. CABLE IS NOT PERMITTED.
MC CABLE MAY BE USED FOR CONCEALED BRANCH CIRCUIT WIRING.

F. SPLICES
MAKE ALL SPLICES, JOINTS AND TAPS WITH SOLDERLESS PRESSURE CONNECTORS LISTED AND APPROVED FOR THE INTENDED USE AND FOR THE SIZE AND NUMBER OF CONDUCTORS UTILIZED.
1. FOR WIRE #10 AWG AND SMALLER, USE TWIST-ON WIRE NUTS.
2. FOR WIRE #8 AWG AND LARGER, USE HEAVY DUTY SOLDERLESS SET SCREW CONNECTORS WITH A SEPARATE BARREL FOR EACH CONDUCTOR.
USE INSULATING COVERS FROM THE MANUFACTURER, WHERE AVAILABLE. TAPE PROPERLY TO PROVIDE A SUFFICIENT INSULATION AROUND THE ENTIRE SPLICE UNIT, WHEN INTEGRAL INSULATING COVERS ARE NOT AVAILABLE FROM THE FITTING MANUFACTURER.

G. PANELBOARDS AND CABINETS
CABINETS SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH WIRING GUTTERS OF SUFFICIENT WIDTH TO PROVIDE AMPLE SPACE FOR BRANCH CIRCUIT WIRES AND FEEDERS. GUTTERS SHALL NOT BE LESS THAN FOUR INCHES WIDE. GUTTERS SHALL CONFORM TO NEC STANDARDS AND SHALL BE OVER-SIZED WHERE NECESSARY TO ACCOMMODATE THE ENTRANCE OF SEVERAL LARGE CONDUITS AND/OR WHERE NECESSARY TO AVOID OVERCROWDING OF CONDUCTORS OR EQUIPMENT WITHIN. TRIMS SHALL BE SURFACE AS NOTED ON THE PANEL SCHEDULE AND SHALL CONTAIN CONCEALED HINGED DOORS, EACH EQUIPPED WITH FLUSH CHROME PLATED COMBINATION LOCKS AND CATCHES, ALL KEYED ALIKE. FINISH SHALL BE STANDARD BAKED ENAMEL OR LACQUER, MEDIUM GRAY, ANSI-61. PROVIDE TWO (2) KEYS WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE. USE "DOOR IN A DOOR" HINGED TRIMS.

PANELBOARD BASIS OF DESIGN:
- MANUFACTURER: GE, SIEMENS OR EQUAL.
- ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED IN ACCORDANCE WITH NFPA 70, BY QUALIFIED ELECTRICAL TESTING AGENCY RECOGNIZED BY AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH NEMA PB 1.
- COMPLY WITH NFPA 70.
- ENCLOSURES: SURFACE-MOUNTED, DEAD-FRONT CABINETS.
- INDOOR DRY AND CLEAN LOCATIONS: UL 50E, TYPE 1
- OTHER WET OR DAMP INDOOR LOCATIONS: UL 50E
- HEIGHT: 7 FT MAXIMUM.
- RETAIN ONE OF FIRST TWO SUBPARAGRAPHS BELOW. VERIFY WITH MANUFACTURER FOR AVAILABILITY OF "DOOR-IN-DOOR" CONSTRUCTION IN OTHER THAN NEMA 1 STYLE PANELBOARDS.
- HINGED FRONT COVER: ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER. TRIMS MUST COVER LIVE PARTS AND MAY HAVE NO EXPOSED HARDWARE.
- INCOMING MAIN ON TOP
- 20 SPACE- 40 CIRCUITS MINIMUM.

BUSING SHALL BE FULL CAPACITY, 98% CONDUCTIVITY COPPER OR 80% CONDUCTIVITY ALUMINUM, BRACED FOR THE SHORT CIRCUIT CURRENT AVAILABLE TO THE PANEL AND SIZED AS SHOWN IN THE PANEL DETAIL. CIRCUIT BREAKERS SHALL BE CONNECTED TO BUSES WITH BOLTED CONNECTIONS FOR SEQUENCE PHASING: I.E., CIRCUITS 1 AND 2 CONNECTED TO PHASE A; 3 AND 4 TO PHASE B AND SO ON. POLARITY OR BLOCK PHASING SHALL NOT BE ACCEPTABLE. PANEL SHALL INCLUDE A NEUTRAL BUS AND AN EQUIPMENT GROUNDING BUS. CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE, BOLT-ON, WITH THERMAL AND MAGNETIC TRIPS, TRIP-FREE ON OVERLOAD OR SHORT CIRCUIT, UL LISTED, HAVING INTERRUPTING CAPACITIES, AS INDICATED.

H. WIRING DEVICES AND PLATES
1. MATERIALS
ALL WIRING DEVICES SHALL BE MANUFACTURED BY ONE OF THE MANUFACTURERS LISTED. DO NOT MIX MANUFACTURER'S PRODUCTS.
DEVICES SHALL BE U.L. SPECIFICATION GRADE.

2. WALL SWITCHES
SWITCHES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE GENERAL USE, AC QUIET TYPE, 20 AMPERE, 120/277 VOLT, BACK AND SIDE WIRED. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

3. WALL SWITCH TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENTS FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP SINGLE POLE WALL SWITCH - HUBBELL #HBL-1221, P & S #20AC1, COOPER #1221, BRYANT #4901, OR LEVITON# 1221-2.
20 AMP 3-WAY WALL SWITCH - HUBBELL #HBL-1223, P & S #20AC3, COOPER #1223, BRYANT #4903, OR LEVITON #1223-2. USE SIMILAR SERIES FOR 4-WAY SWITCHES.

4. WALL RECEPTACLES
ALL CONVENIENCE AND POWER RECEPTACLES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE THE GROUNDING TYPE.
CONVENIENCE RECEPTACLES SHALL BE 20 AMP, 125 VOLT, BACK AND SIDE WIRED, 3 WIRE GROUNDING, UL LISTED AS COMPLYING WITH THE REQUIREMENTS OF NEC ARTICLE 250-146, AND SHALL BE NEMA 5-20R CONFIGURATION. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

5. RECEPTACLE TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENT FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP, 125 VOLT DUPLEX CONVENIENCE OUTLET (NEMA 5-20R) - HUBBELL #HBL-5362, P & S #5362A, COOPER #5362, BRYANT #5362, OR LEVITON #5362.
20 AMP, 125 VOLT GROUND FAULT INTERRUPTER (NEMA 5-20R) - HUBBELL #GF-5362, P & S #2091, COOPER #WGF-20, BRYANT #GFRS3FT, OR LEVITON #6899.

6. PLATES
USE STAINLESS STEEL PLATES.

I. FASTENINGS AND ATTACHMENTS
FOR FASTENINGS AND ATTACHMENTS, SUCH AS SCREWS, BOLTS AND NUTS, USE DEVICES MADE OF NON-FERROUS METALS OR OF GALVANIZED OR CADMIUM PLATED STEEL. WHEN SUCH DEVICES ARE NOT OBTAINABLE IN NON-FERROUS METALS, OR IN STEEL WITH A PROTECTIVE METALLIC COATING. PAINT SAME WITH A RUST PREVENTING PAINT SUCH AS RUSTOLEUM.
ALL FASTENINGS AND ATTACHMENTS SHALL BE MADE OF MATERIALS OR SO PROTECTED, THAT THEY WILL OFFER THE MAXIMUM PROTECTION AGAINST DETERIORATION FROM AGE, WEATHER OR DAMPNESS.
DO NOT PENETRATE THE ROOF DECK WITH ANY FASTENERS.

J. SURFACE METALLIC RACEWAY SYSTEM
USE A SURFACE METAL RACEWAY SYSTEM AND BOXES, WHERE CONCEALED WIRING IS NOT POSSIBLE OR WHERE SHOWN ON THE PLANS.
USE RACEWAYS, SUCH AS WIREMOLD, FOR STRAIGHT RUNS, COMPLETE WITH BOXES AND FITTINGS, AS DIRECTED. VERIFY COLOR OPTIONS WITH THE ARCHITECT. PAINT SAME WHERE REQUIRED OR INDICATED.
OBTAIN APPROVAL FOR ALL SURFACE ROUTINGS WITH THE ARCHITECT PRIOR TO ROUGH-IN.

K. FIRE STOPS
1. GENERAL
PROVIDE THROUGH PENETRATION FIRE STOP SYSTEMS TO PREVENT THE SPREAD OF FIRE THROUGH OPENINGS MADE IN FIRE-RATED WALLS OR FLOORS TO ACCOMMODATE THROUGH PENETRATING ITEMS SUCH AS CONDUIT AND CABLES.
FIRE-RESISTANCE-RATED ASSEMBLY SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY OR SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRE STOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM-E-814 OR U.L. 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER. THE SYSTEM SHALL HAVE AN F RATING AND A T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. WHERE FLOOR/CEILING ASSEMBLIES ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED. FIRE STOP SHALL RESTORE FLOOR AND WALL TO ORIGINAL FIRE RATED INTEGRITY AND SHALL BE WATERPROOF.

PENETRATIONS OF MEMBRANES THAT ARE PART OF A FIRE-RATED WALL OR FLOOR MUST BE STOPPED AS OUTLINED FOR THROUGH PENETRATIONS WITH THE FOLLOWING EXCEPTIONS.
A. STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
B. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED AS INDICATED.
1. BY HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES.
2. BY HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY IS FILLED WITH CELLULOSE LOOSE FILL ROCK WOOL OR SLAG MINERAL WOOL INSULATION.
3. BY SOLID FIRE BLOCKING.
4. BY PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS.
5. BY OTHER LISTED MATERIALS AND METHODS.

2. MATERIALS
PUTTY - USE FLAMESEAL PUTTY #AA423 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
FIBER - USE CERAMIC FIBER #AA401 (10 LB. BOX) OR #AA417 (2 LB. BAG) AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN WALLS - USE CERAMIC BOARD #AA402 (1" X 18" X 12") OR #AA403 (1" X 36" X 48") AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN FLOOR - USE SUPPORT WIRE #AA404 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.

3. INSTALLATION
USE TOTAL THICKNESS OF 1-1/2 INCHES OF FLAMESEAL PUTTY #AA423 ON ALL PENETRATIONS OF FIRE-RATED WALLS AND FLOORS. USE NELSON FIBER #AA401 OR #AA417 IN CONJUNCTION WITH THE PUTTY TO FILL THE REMAINING VOID OF PENETRATIONS.
PACK CERAMIC FIBER IN CENTER OF OPENING LEAVING 3/4 INCH ON EITHER SIDE OF WALL FOR THE PUTTY. INSTALL THE PUTTY IN THE REMAINING PART OF OPENING, WORKING IT INTO ALL VOIDS AND CAVITIES.
FOR OPENINGS WITH GREATER THAN 4 INCHES OF UNSUPPORTED SPACE, USE NELSON CERAMIC BOARD #AA402 OR #AA403 DEPENDING ON SIZE OF OPENING. PACK CERAMIC FIBER IN BOTTOM OF OPENING PER FACTORY RECOMMENDATIONS, LEAVING 1-1/2 INCHES BELOW FLOOR LEVEL FOR THE INSTALLATION OF FLAMESEAL PUTTY. USE SUPPORT WIRE #AA404 ON ALL PENETRATIONS IN EXCESS OF 6 INCHES DIAMETER.

L. MC CABLE
METAL CLAD CABLE (MC) SHALL BE COPPER WIRE WITH 90 DEGREES C. THHN INSULATION, #12 AWG MINIMUM, WITH CONTINUOUS INSULATED GREEN GROUND CONDUCTOR AND STEEL ARMOR, MANUFACTURED BY A.F.C., ALFLEX, OR EQUAL. INSTALL NON-RIGID CABLE IN A NEAT, APPROVED MANNER, AS PER N.E.C. REQUIREMENTS. DO NOT GROUP CABLES INTO A COMMON CONDUIT AS OVERHEATING WILL RESULT. DO NOT TIE THE SEVERAL CABLES TOGETHER. USE APPROVED STYLE "MC" CONNECTORS AND FITTINGS IN ORDER TO MAINTAIN ADEQUATE CASE GROUNDING REQUIRED BY THE NATIONAL ELECTRICAL CODE. PROVIDE AN INDEPENDENT MEANS OF SUPPORT FOR ALL WIRING LOCATED ABOVE A DROPPED CEILING ASSEMBLY FROM THE STRUCTURAL CEILING SYSTEM. DO NOT SUPPORT WIRING FROM THE CEILING ASSEMBLY OR FROM ITS SUPPORT WIRES.

SERVICE AND DISTRIBUTION

A. GENERAL INSTALLATION
USE RIGID HEAVY WALL STEEL CONDUIT FOR EXPOSED EXTERIOR RACEWAYS.
USE EMT ELECTRICAL METALLIC THINWALL CONDUIT FOR CONCEALED INTERIOR FEEDERS, TELEPHONE RACEWAYS, ETC.
USE FLEXIBLE CONDUIT SUCH AS "GREENFIELD" FOR CONNECTIONS TO RECESSED LIGHTING FIXTURES IN 72" MAXIMUM LENGTHS AND FOR USE IN STUD WALLS WHERE THE USE OF RIGID CONDUIT IS NOT PRACTICAL.
USE WEATHERPROOF AND OIL PROOF FLEXIBLE CONDUIT SUCH AS "SEAL-TITE" FOR ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT IN LENGTHS OF 18" MAXIMUM.
USE LIQUID-TIGHT FLEXIBLE CONDUIT AND APPROPRIATE LIQUID-TIGHT FITTINGS IN AREAS EXPOSED TO THE WEATHER OR LIKELY TO BECOME DAMP. WHERE USED, CONFORM TO NEC #350-118.

USE WIREMOLD RACEWAYS FOR BRANCH CIRCUIT SURFACE ROUTINGS IN FINISHED AREAS ONLY WHERE CONCEALED WIRING IS NOT FEASIBLE, AND WHERE INDICATED.
USE M.C. CABLE FOR CONCEALED BRANCH CIRCUIT WIRING ONLY, IN ACCORDANCE WITH THE N.E.C. REQUIREMENTS.
THE USE OF B.X., ROMEX, AND U.F. IS NOT APPROVED.

LIGHTING FIXTURES AND ACCESSORIES

GENERAL
ALL LIGHTING FIXTURES AND LAMPS WILL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

LIGHTING FIXTURES

BASIS OF DESIGN LIGHTING FIXTURES BY KICHLER OR EQUAL.
CEILING FIXTURE: KICHLER #6112WH. WHITE FINISH. SURFACE MOUNTED
EXTERIOR CEILING FIXTURE: KICHLER #11132AZTLED, OUTDOOR RATED.
WALL EXTERIOR: KICHLER #9654TZ, WALL MOUNTED, OUTDOOR RATED
BATHROOM VANITY: KICHLER JOELSON #45923
FLOOD LIGHT: LITHONIA LIGHTING OLF LED WITH MOTION OCCUPANCY SENSOR
RECESSED LIGHTING: HALO OR EQUAL.

B. INSTALLATION
PROVIDE ALL SUPPLEMENTARY STRUCTURAL MATERIALS REQUIRED TO PROPERLY MOUNT ALL LIGHTING FIXTURES.
SECURELY MOUNT LIGHTING FIXTURES TO STRUCTURAL ELEMENTS OF THE BUILDING TO SUSPENDED CEILING SYSTEMS SUCH THAT SAID FIXTURES WILL BE SQUARE, PLUMB, AND RIGID, WILL NOT FALL OR SAG, AND WILL NOT CAUSE THE SUSPENDED CEILING CONFIGURATION. VERIFY COLOR OPTIONS WITH THE ARCHITECT.
PROVIDE ADDITIONAL CEILING SUPPORTS, WHERE REQUIRED TO SUPPORT RECESSED OR SURFACE FIXTURES.
INSTALL WIRING TO AND WITHIN FIXTURES TO COMPLY WITH NEC ARTICLE #410. TAKE SPECIAL CARE TO ASSURE THAT THE FIXTURE OUTLETS FOR RECESSED FIXTURES ABOVE SOLID SUSPENDED CEILINGS WILL ACTUALLY BE ACCESSIBLE AFTER THE PROJECT IS COMPLETED.
USE CLIPS TO FASTEN RECESSED TROFFERS TO DROP CEILING CHANNELS AS REQUIRED BY NEC SECTION #410-16. USE CADDY FASTENERS #6 IS OR APPROVED EQUAL.
TIME CLOCKS SHALL BE COMMERCIAL GRADE, 7 DAY, ASTRONOMICAL DAL, WITH 24-HOUR SPRING RESERVE BACKUP, AS MANUFACTURED BY TORK OR PARAGON (IF REQUIRED).

SMOKE ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 20SAR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

COMBO SMOKE + CO ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 3COUDR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

SMOKE DETECTOR'S LOCATIONS:
1. COMBO SMOKE + CO ALARM PER FLOOR, NOT TO BE PLACED IN MECHANICAL ROOM OR KITCHEN.
1 SMOKE DETECTOR IN SIDE EACH SLEEPING ROOM
INTERCONNECT SMOKE DETECTORS INSIDE THE UNIT.

MOTOR WIRING

WIRING FOR MECHANICAL AND PLUMBING CONTRACTS
1. INSTALLATION
VERIFY ALL LOCATIONS WITH THE VARIOUS MECHANICAL CONTRACTORS BEFORE INSTALLING RACEWAYS.
PROVIDE ALL WIRING MATERIALS AND DEVICES REQUIRED TO CONNECT AND OPERATE THE ELECTRICAL PARTS OF EQUIPMENT FURNISHED AND INSTALLED UNDER THE MECHANICAL DIVISION.
INSTALL AND CONNECT ALL STARTERS, PUSHBUTTONS, SWITCHES, THERMOSTATS AND OTHER CONTROL DEVICES AS FURNISHED BY OTHERS, UNLESS OTHERWISE NOTED.
MAKE ALL FINAL CONNECTIONS TO MOTORIZED EQUIPMENT. VERIFY THE CORRECT DIRECTION OF ROTATION.
CONNECT MOTOR CIRCUITS TO THE RIGID CONDUIT SYSTEM BY MEANS OF WEATHERPROOF STYLE FLEXIBLE CONDUIT, PROPERLY GROUNDED AND BONDED. EMPLOY A GREEN GROUND WIRE FOR ALL SYSTEMS AND MOTOR FRAME GROUND CONNECTIONS.
BOLT THE WIRE TO THE MOTOR FRAME AT ONE END AND TO THE MOTOR STARTER AT THE OTHER END WITH APPROVED TERMINAL DEVICES.
DO ALL LINE VOLTAGE CONTROL WIRING (120 VOLTS OR HIGHER).
ALL LOW VOLTAGE CONTROL WIRING (UNDER 120 VOLTS) IS THE RESPONSIBILITY OF THE MECHANICAL OR PLUMBING CONTRACTS.

SECTION 32- EXTERIOR IMPROVEMENTS

CHAIN LINK FENCE
ALUMINUM WIRED FABRIC 2X2 INCHES WITH ROUNDED POST AND RAILS 2.5 INCHES IN DIAMETER. LIGHT INDUSTRIAL STRENGTH. ZINC COATED. WITH TOP AND BOTTOM TENSION WIRED ZINC COATED. MECHANICALLY DRIVEN INTO SOIL OR USING ANCHORING CONCRETE.

GATES TO MATCH FENCE MATERIAL AND FRAME. DOOR WITH LATCH TO PERMIT OPERATION FROM BOTH SIDES OF GATE. PADLOCK AND CHAIN TO BE PROVIDED BY HACP.

SEEDING

QUALITY, NON-STATE CERTIFIED. SEED OF GRASS SPECIES AS LISTED BELOW FOR SOLAR EXPOSURE, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PER CENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED.

A. SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH.
1. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
2. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
3. DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.

B. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

C. PROTECT SEEDED AREAS FROM HOT, DRY WEATHER OR DRYING WINDS BY APPLYING COMPOST MULCH WITHIN 24 HOURS AFTER COMPLETING SEEDING OPERATIONS. SOAK AREAS, SCATTER MULCH UNIFORMLY TO A THICKNESS OF 3/16 INCH +, AND ROLL SURFACE SMOOTH.

TREE AND STUMP REMOVAL
ALL APPROPRIATE SAFETY EQUIPMENT MUST BE UTILIZED AT ALL TIMES DURING OPERATIONS; INCLUDING, BUT NOT LIMITED TO: HARD HATS, GLOVES, SAFETY GLASSES, FALL RESTRAINTS, TRAFFIC CONTROL DEVICES, HIGH VISIBILITY CLOTHING, ADEQUATE HEARING PROTECTION AND ANY OTHER SAFETY REQUIRED BY OSHA.
ONCE A TREE IS CUT DOWN, THE STUMP MUST BE GROUND OUT WITHIN FIVE DAYS (5). STUMPS AND BUTTRESS ROOTS MUST BE REMOVED TO A MINIMUM OF TWELVE INCHES (12") BELOW GROUND LEVEL AND TWO (2) TIMES THE DIAMETER AT BREAST HEIGHT IN SURFACE AREA GROUND. THE REMAINING STUMP AND/OR CHIPS SHALL BE REMOVED FROM THE SITE WITHIN TWO DAYS (2) AFTER GRINDING. ALL SURFACE ROOTS AND ADJACENT SUBSURFACE ROOTS SHALL BE REMOVED AS MAY BE NECESSARY TO ELIMINATE "HUMPS" OR MOUNDS IN THE TREE EASEMENT AREA ADJACENT TO THE STUMP. ALL TREE EASEMENT AREAS ARE TO BE LEFT FLAT AND MEET ORIGINAL GRADE. THE AREA WILL THEN BE BACKFILLED WITH CLEAN, PULVERIZED TOPSOIL TO THE LEVEL OF THE ADJOINING GRADE AND SEEDED. SEE SEEDING FOR SEED REQUIRED.

THE PARTY AUTHORIZED TO REMOVE THE TREE, AT THEIR EXPENSE, SHALL RESTORE THE LAWN AND ANY EXISTING LANDSCAPING AND APPURTENANNCES THAT EXIST BETWEEN THE SIDEWALK AND CURB OR IN OTHER AREAS THAT HAVE BEEN DISTURBED BY THE PARTY AUTHORIZED TO REMOVE THE TREE DURING THE PROSECUTION OF THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL PROTECT ALL CONCRETE SIDEWALK, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT FROM DAMAGE THROUGH THE USE OF PLYWOOD SHEETING OR MATS WHEN NECESSARY. THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL REPLACE OR RESTORE ALL CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT WHICH MAY HAVE BEEN DAMAGED DURING THE PROSECUTION OF THE WORK.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL BE RESPONSIBLE AT ALL TIMES FOR KEEPING THE WORK SITE ADJOINING PREMISES, STREET, WALKS AND DRIVEWAYS CLEAN. ALL TREE BRANCHES, BARK, CHIPS AND OTHER DEBRIS MUST BE CLEARED UP AT THE END OF THE WORKDAY.

SECTION 33- UTILITIES

TRENCH DRAIN SYSTEM
ZURN Z880 2 1/2 [64] WIDE TRENCH DRAIN SYSTEM SHALL BE 4 ft [1220] LONG AND 2 1/2 [63.5] WIDE. DRAIN SHALL BE 3 [76] DEEP. DRAIN SHALL BE MADE OF (HDPE) HIGH DENSITY POLYETHYLENE AND IS UV-10 STABILIZED. DRAIN SHALL HAVE BEDDING FEET TO BE USED FOR POSITIONING AND ANCHORING PURPOSES. DRAINS SHALL HAVE TONGUE AND GROOVE SNAP FIT CONNECTION. DRAIN SHALL HAVE 24 [610] LONG HIGH-DENSITY POLYETHYLENE DECORATIVE GRATE (-POG) PROVIDED AS STANDARD.

INSTALLATION
TRENCH EXCAVATION MUST BE 4" [102MM] GREATER THAN THE TRENCH DEPTH AND A MINIMUM OF 4" [102MM] GREATER THAN THE EDGE OF THE TRENCH ON EACH SIDE. SOFT AND/OR SHIFTING SOIL SUBSTRATES MAY CAUSE CRACKING OF THE CONCRETE AND CONSEQUENT MOVEMENT OF THE TRENCH. IT IS CRITICAL THAT THE CONCRETE BE POURED ON AN ADEQUATE FOUNDATION

ASSEMBLING PER MANUFACTURER INSTRUCTION. A SILICONE CAULK OR A CONSTRUCTION ADHESIVE, SUCH AS LIQUID NAILS, IS RECOMMENDED TO BE USED AT EACH JOINT AS A SEALER.

UPON COMPLETION OF THE TRENCH EXCAVATION, THE CHANNELS SHOULD BE PLACED IN ORDER ALONGSIDE THE EXCAVATION AND ACCORDING TO THE JOB LAYOUT.

AFTER ATTACHMENT OF ACESSORIES, ANCHOR AND LEVEL TRENCH IN THE EXCAVATION USING CONCRETE PATTIES AROUND THE FEET. MAKE FINISH POUR OF CONCRETE AND BE CERTAIN TO PROPERLY VIBRATE CONCRETE TO ELIMINATE ANY UNWANTED VOIDS. FINISH TROWELING SHOULD BE DONE TO SET THE TOP EDGE OF THE TRENCH DRAIN 1/16" [1.6MM] BELOW THE FLOOR GRADE. REMEMBER TO COMPENSATE FOR CONCRETE SHRINKAGE THAT MAY OCCUR DURING CURE SO THAT THE EDGE OF THE TRENCH DRAIN DOES NOT PROTRUDE ABOVE THE FINISHED FLOOR GRADE.

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CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain

Renovation of 10 Scattered Sites

10 Scattered Sites - Chelton Avenue
Single Family Residence, Minor Alteration
1541 Chelton Avenue,
Pittsburgh, Pennsylvania 15216

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Code Conformance Information

Applicable Codes

General:	2018 International Residential Code 2018
Energy:	2018 International Energy Conservation Code
Electrical:	2017 NEC (NFPA 70)
Fire:	2018 International Fire Code
Fuel Gas:	2018 International Fuel Gas Code
Mechanical:	2018 International Mechanical Code
Plumbing:	2017 Allegheny County Health Department Plumbing Code

General Building / Project Information

Stories:	2 Stories
Building Gross Area:	Basement 461 sqft + 279 sqft Garage
	1st Floor 624 sqft
	2nd Floor 624 sqft

1 Site Location
SCALE: 1" =30'

Materials Legend

NOT ALL MATERIALS USED

- EARTH
- COMPACTED STONE FILL
- CONCRETE
- STEEL
- RIGID INSULATION
- BLOCKING
- BATT INSULATION
- GYPSUM WALL BOARD
- WOOD
- PLYWOOD SHEATHING
- SPRAY FOAM INSULATION

Abbreviations

A.F.F.	Above Finish Floor
A.P.	Access Panel
ACOUST.	Acoustical
A.C.T.	Acoustical Ceiling Tile
ADH.	Adhesive
ADJUST.	Adjustable
A/C	Air Conditioning
ALT.	Alteration
ALTN.	Alternate
ALUM.	Aluminum
A.O.R.	Area of Refuge
APPROX.	Approximate
ARCH.	Architectural
ASB.	Asbestos
ASPH.	Asphalt
AUTO.	Automatic
AVG.	Average
BLK.	Block
BD.	Board
BOT	Bottom
BLDG	Building
C.I.P.	Cast In Place
C.B.	Catch Basin
CEM.	Cement
CER.	Ceramic
CG	Corner Guard
C.M.T.	Ceramic Mosaic Tile
C.W.T.	Ceramic Wall Tile
C.O.	Cleanout
℄	Center Line
CLO.	Closet
C.W.	Cold Water
CLG.	Ceiling
COL.	Column
CONC.	Concrete
C.M.U.	Concrete Masonry Unit
CONT.	Continuous
CORR.	Corridor
C.M.P.	Corrigated Metal Pipe
CRS.	Courses
DIA.	Diameter
DET	Detail
DGL	Dens Glass Gold
DR.	Door
DN.	Down
D.S.	Downspout
DWG.	Drawing
D.F.	Drinking Fountain
D.I.P.	Ductile Iron Pipe
EA.	Each
E.W.	Each Way
ELEC.	Electrical
E.C.	Electrical Contractor
EL.	Elevation
ELEV.	Elevation
EQUIP.	Equipment
E.F.	Exhaust Fan
EXIST.	Existing
EXP.	Expansion
E.J.	Expansion Joint
EISH	Exterior Sheathing
EXIST.	Existing
EXP.	Exposed
EXT.	Exterior
E.I.F.S.	Exterior Insulation & Finish System
F.R.P.	Fiberglass Reinforced Polyester
F.F.	Finish Floor
FIN.FLR.	Finish Floor
F.A.C.P.	Fire Alarm Control Panel
F.E.	Fire Extinguisher
FLR.	Floor
F.D.	Floor Drain
FTG.	Footing
GA.	Gauge
G.C.	General Contractor
G.F.I.	Ground Fault Interrupter
GYP.	Gypsum
G.W.B.	Gypsum Wall Board
GSH	Gypsum Sheathing
H/C	Handicap
H.V.A.C.	Heating, Ventilation &
HT	Height
HC	Hollow Core
H.M.	Hollow Metal
HORIZ.	Horizontal
HR.	Hour
H.W.	Hot Water
IN.	Inch
I.M.	Insulated Metal
INSUL.	Insulation or Insulated
INT.	Interior
INV.	Invert
ISO.	Isolation
JAN.	Janitor's Closet
J.T.	Joint
LAM.	Laminate
LAV.	Lavatory
LG.	Long
M.D.F.	Medium Density Fiberboard
M.D.H.	Magnetic Door Holder
M.H.	Manhole
MFGR.	Manufacturer
MAX.	Maximum
MECH.	Mechanical
MET.	Metal
MIN.	Minimum
MISC.	Miscellaneous
N.I.C.	Not In Contract
N.T.S.	Not To Scale
O.C.	On Center
OPP.	Opposite
O.H.	Overhead
PR.	Pair
PLAS.	Plaster
PLAS.LAM.	Plastic Laminate
P.C.	Plumbing Contractor
PLYWD.	Plywood
POLY.	Polyethylene
P.V.C.	Polyvinyl Chloride
PRE-FAB.	Prefabricated
RE.	Refer To
REF.	Refrigerator
R.C.P.	Reinforced Concrete Pipe
REINF.	Reinforcement
RD.	Roof Drain
RM.	Room
S.A.T.	Suspended Acoustical Tile
SCHED.	Schedule
SHT.	Sheet
SIM.	Similar
S.C.	Solid Core
SPECS.	Specifications
SQ.	Square
S.F.	Square Foot
S.S.	Stainless Steel
STL.	Steel
STOR.	Storage
STRUCT.	Structural
TEL.	Telephone
THK.	Thick
T.B.D.	To Be Determined
T&G	Tongue & Groove
T.O.	Top Of
T.G.	Top Of Grade
T.O.S.	Top Of Steel
TYP.	Typical
UNFIN.	Unfinished
U.N.O.	Unless Noted Otherwise
V.B.	Vapor Barrier
VERT.	Vertical
VEST.	Vestibule
V.C.T.	Vinyl Composition Tile
W.H.	Water Heater
W.W.F.	Welded Wire Fabric
WIN.	Window
W/	With
W/O	Without
WD.	Wood

Symbols

NOT ALL SYMBOLS USED

T.O. FINISH FLOOR ELEV. 0'-0"	ELEVATION HEIGHT
PLAN NORTH	NORTH ARROW
1 A1	ELEVATION MARKER

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CONSTRUCTION DOCUMENTATION

general notes

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revisions

project title

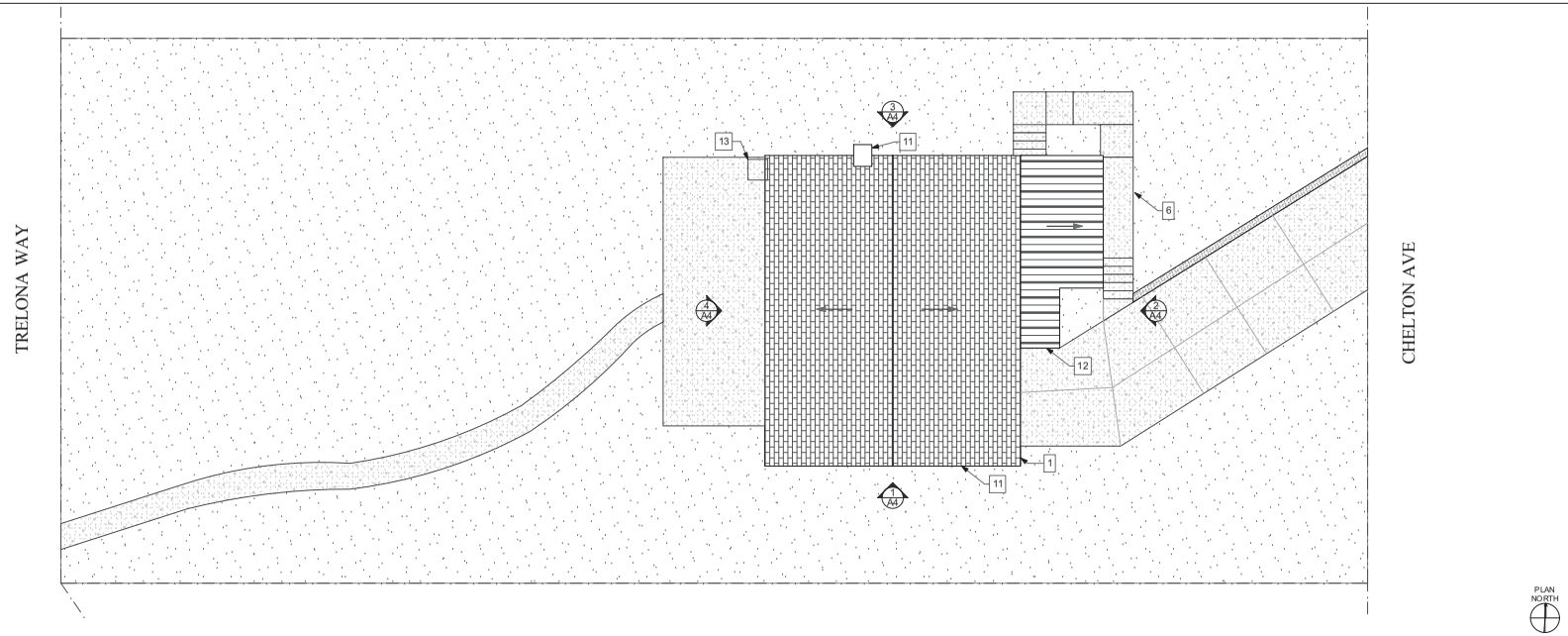
Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
1541 Chelton Avenue
Pittsburgh, Pennsylvania 15216

drawing title

Drawing Index, Code Conformance Information, Abbreviations and Materials, Site Location

scale: As Noted	**Sheet No.**
date: August 20th, 2024	**A1**
no. 1 / of. 8	Project #2326



1 Site Plan
SCALE: 3/16" = 1'-0"

SITE PLAN LEGEND

GRASS	MISC. BRICK	AC CONDENSER	RAILING	TRUE ROOF OUTLINE
LIGHTWEIGHT CONCRETE	MULCHED AREA	TREE / SHRUB	TACTILE PAVING	APPROX. PROPERTY LINE
CONCRETE BLOCK	STREET SIGNAGE	STREET SIGNAGE	MAN HOLE	WINDOW WELL

10 Scattered Sites Keynotes – 1541 Chelton Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages.
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. EXTERIOR CONCRETE WALKWAY (GC): At this location remove section of concrete walkway, steps and railing that has subsided and cracked (Approx. 90 sf with 15 steps). Provide new well compacted gravel fill to level subgrade. Pour new concrete walkway, steps section, doweled into existing and adjacent block wall, Caulk joint between wall and new step/walkway to seal. Provide new galvanized metal railing to match existing. See Specifications.
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14. ELECTRICAL PANEL (E): Replace existing archaic electric panel with new 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly hand written. Additionally provide proper electrical grounding and bonding of the electrical system. See Specifications.
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First Floor

26. WALL FINISH (GC): At wall around front window. Remove existing plaster, insulation, and damaged studs. Provide new materials to restore wall to finished condition. At minimum, provide new wood stud splice, insulation, vapor barrier, and finished GWB. Sand, prepare and paint wall surface (approx. 100 sf).
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28. THROUGH WALL KITCHEN EXHAUST FAN (M): Remove existing through wall kitchen exhaust fan and non-venting hood. Provide new kitchen vent type hood vented to exterior with damper. Seal old exhaust fan penetration in exterior wall using similar materials and details to match surrounding wall finish. See specifications.
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35. FLOOR FINISH (GC): Remove existing VCT floor finish throughout second floor including the bathroom (approx. 540 sf. Prep subfloor and provide new LVT floor finish and wall base. See Specification.
36. ATTIC ACCESS DOOR (GC): At this location, provide new insulated hinged attic access door in existing opening.
37. ATTIC INSULATION (GC): Provide new min R-38 blown in Attic Insulation (approx. 540 sf). Verified with depth indices. Take care not to cover air circulation channels. See Specifications.
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Fukui Architects Pc
205 Ross Street
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Site Plan, Site Plan Legend, Keynotes

scale	Sheet No.
As Noted	A2
date: August 20th, 2024	
no. 2 / of. 8	Project #2326

FLOOR COVERING PLAN LEGEND

VCT FLOORING
CONCRETE FLOORING
CARPET FLOORING
LVT FLOORING
WOOD FLOORING

10 Scattered Sites Keynotes – 1541 Chelton Ave

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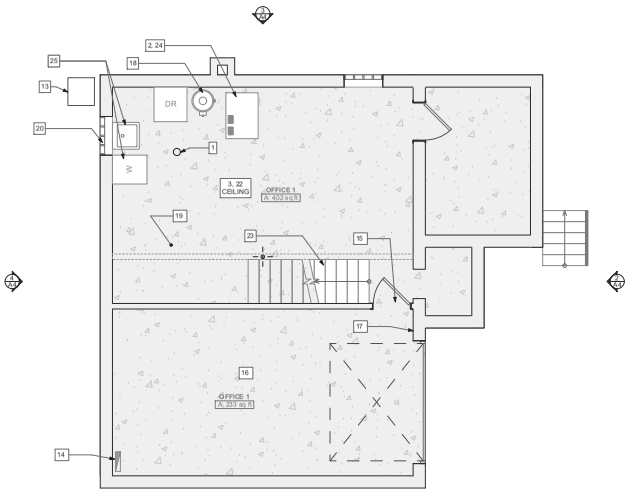
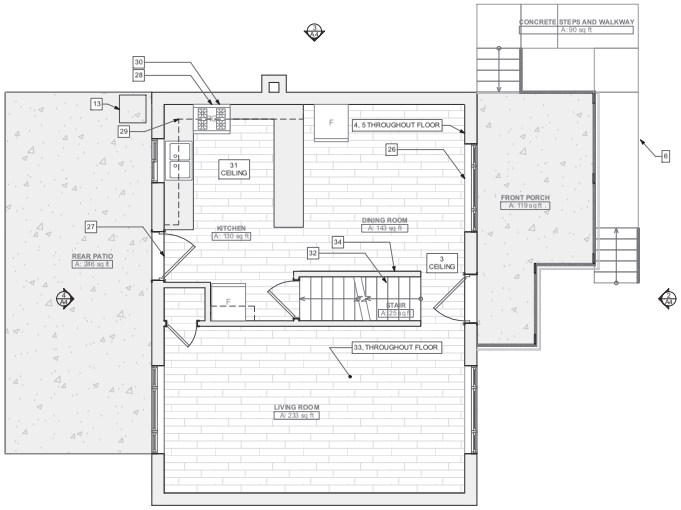
GENERAL FLOOR PLAN NOTES

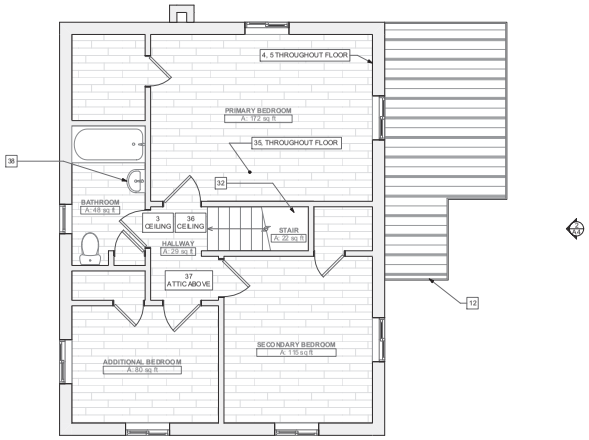
1. PROPERTY HAS BEEN TESTED FOR HAZARDOUS MATERIALS. REPORT WILL BE AVAILABLE AND PROVIDED BY HACP. GC TO ABATED MATERIALS FOLLOWING THE RECOMMENDATIONS FROM THE REPORT.
2. CONTRACTOR TO FIELD VERIFY ANY AND ALL CONDITIONS & DIMENSIONS OF WORK AREAS BEFORE BEGINNING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.
3. THE FINISH FLOOR OF THIS PROJECT IS IDENTIFIED AT 0'-0" IN THIS SET OF DRAWINGS.
4. ALIGN NEW WALL & CEILING CONSTRUCTION WITH EXISTING WALL CONSTRUCTION. FINISH NEW PARTITION SMOOTH TO FORM A SEAMLESS JOINT BETWEEN NEW & EXISTING PARTITIONS.
5. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC REPRESENTATIONS. NOTIFY ARCHITECT IN WRITING OF ANY INCONSISTENT OR MISSING DIMENSIONS.
6. DIMENSIONS SHOWN INDICATE FINISHED FACE TO FINISHED FACE, UNLESS NOTED OTHERWISE.
7. ALL NEW OR RELOCATED DOOR FRAMES TO BE LOCATED 4" FROM PERPENDICULAR WALLS, UNLESS NOTED OTHERWISE.
8. SAND WALLS SMOOTH, REMOVE ALL ADHESIVE RESIDUE, AND/OR SKIM WITH JOINT COMPOUND AS NECESSARY TO PREP WALLS FOR NEW FINISHES. THE FLOOR SHOULD BE SCRAPED CLEAN OF ANY ADHESIVE RESIDUE, PATCHED AND LEVELED OUT AS NECESSARY TO RECEIVE NEW FLOORING.
9. AT WALLS EXISTING TO REMAIN, PATCH AND PAINT ANY HOLES OR DAMAGE TO APPEAR NEW.



1 Basement
SCALE: 1/4" = 1'-0"



2 First Floor
SCALE: 1/4" = 1'-0"



3 Second Floor
SCALE: 1/4" = 1'-0"

Fukui Architects Pc
205 Ross Street
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ph 412.281.6001 fx 412.281.6002

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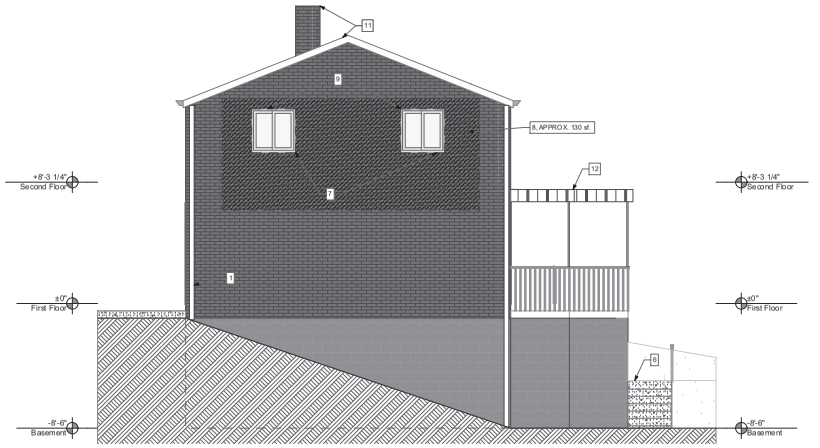
Basement, Second Floor, First Floor, Renovation Plan Legend, Floor Plan Legend, Keynotes

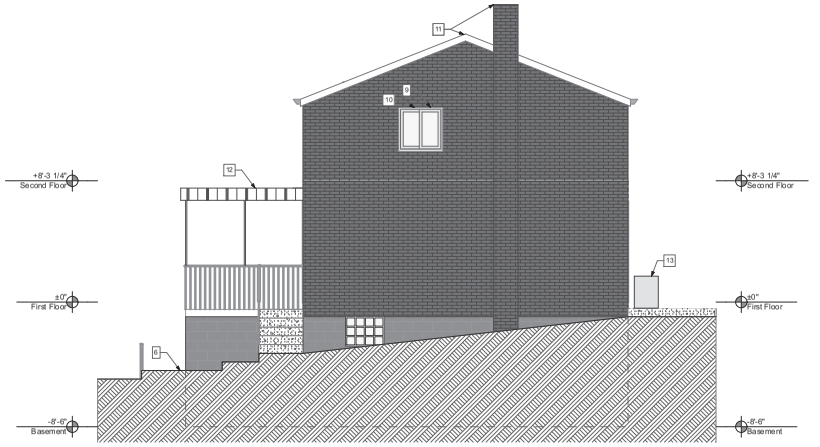
scale	
As Noted	
date	
August 20th, 2024	
no. 3	of. 8

Sheet No.
A3
Project #2326



1 South Elevation
SCALE: 1/4" = 1'-0"

2 East Elevation
SCALE: 1/4" = 1'-0"



3 North Elevation
SCALE: 1/4" = 1'-0"

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Garage

14. ELECTRICAL PANEL (E): Replace existing archaic electric panel with new 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly hand written. Additionally provide proper electrical grounding and bonding of the electrical system. See Specifications.
15. GARAGE TO INTERIOR DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.
16. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish (approx. 230 sf). See Specifications.
17. GARAGE DOOR (GC): Provide new surface mounted electrical duplex outlet proximal to garage door to supply power to garage door.

Basement

18. WATER HEATER (P): Water heater is 9 years old, provide service and check operation. See Specifications.
19. BASEMENT FLOOR (GC): Paint concrete floor. See Specifications.
20. BASEMENT WINDOW (GC): Remove glass block window and patch opening with rigid insulation and infill concrete block.
21. BASEMENT TO OUTSIDE DOOR (GC): Remove existing basement to exterior door, frame and threshold, provide new 1 3/4" insulated metal door, door threshold and all door hardware. Paint frame to finish and trim with new synthetic wood trim, caulked to seal. See Specifications.
22. BASEMENT LIGHTING (E): Provide new replacement ceiling lighting and new Smoke/CO sensors. Add three new lighting locations. Locations to be determined. See Specifications.
23. BASEMENT ACCESS STAIR (GC): Clean and paint an re-attach basement stair handrail. Provide new riser closures consisting of painted 2"-by wood, taking care to preserve 1" nosing dimension at treads. Provide new vinyl non-slip tread covers at each tread. See Specifications
24. FURNACE (M): Furnace manufacture date appears to be October of 2019, making the furnace 5 years old. Service equipment. Provide new seam sealant at all visible supply and return air duct joints. See Specifications.
25. LAUNDRY (P): Provide new laundry sink and faucet and washing machine drain kit. See Specifications.

First Floor

26. WALL FINISH (GC): At wall around front window. Remove existing plaster, insulation, and damaged studs. Provide new materials to restore wall to finished condition. At minimum, provide new wood stud splice, insulation, vapor barrier, and finished GWB. Sand, prepare and paint wall surface (approx. 100 sf).
27. KITCHEN TO OUTSIDE DOOR (GC): Provide new replacement door stops and door edge and bottom seals, as well as new thermally broken door threshold. Provide new Storm Door with chain limiter and closer. Paint frame to finish and trim with new synthetic wood trim, re-caulk to seal. See Specifications.
28. THROUGH WALL KITCHEN EXHAUST FAN (M): Remove existing through wall kitchen exhaust fan and non-venting hood. Provide new kitchen vent type hood vented to exterior with damper. Seal old exhaust fan penetration in exterior wall using similar materials and details to match surrounding wall finish. See specifications.
29. KITCHEN CABINETS (GC/E/M/P): Remove and provide new kitchen counter, upper and lower cabinets to match existing layout. Provide new stove/oven combination and new lighted vent hood (see below). Provide new refrigerator, kitchen sink /faucet/drain assembly. See Specifications.
30. GFI OUTLET (E): Provide new GFI Outlet above stove. See Specifications.
31. KITCHEN CEILING (GC/E): Remove existing kitchen finish ceiling and lighting (approx. 130 sf). Repair leaking plumbing line above. Provide new finished and painted GWB ceiling and new lighting per Specifications.
32. MAIN STAIRWAY (GC): Remove and replace main stair vinyl treads covers. Provide new vinyl tread and riser covers. Typ. 11 treads and 12 risers x 3'-0" Wide (VIF).
33. FLOOR FINISH (GC): Remove existing VCT floor finish throughout first floor (approx. 530 sf). Prep subfloor and provide new LVT floor finish and wall base. See Specification.
34. THERMOSTAT (M): Replace thermostat with a programmable thermostat. See Specifications.

Second Floor / Attic

35. FLOOR FINISH (GC): Remove existing VCT floor finish throughout second floor including the bathroom (approx. 540 sf. Prep subfloor and provide new LVT floor finish and wall base. See Specification.
36. ATTIC ACCESS DOOR (GC): At this location, provide new insulated hinged attic access door in existing opening.
37. ATTIC INSULATION (GC): Provide new min R-38 blown in Attic Insulation (approx. 540 sf). Verified with depth indices. Take care not to cover air circulation channels. See Specifications.
38. BATHROOM (GC/P): In second floor bathroom: Remove and replace entirely existing tub tile surround, medicine cabinet, tub/shower faucet and drain, sink faucet and drain, and toilet. Provide new rod and shower curtain. Repair rotten wood subfloor (approx. 50 sf). Provide new bathroom exhaust fan wired to light circuit and ventilated to the exterior. Provide new towel bar/s. Robe Hook, Grab bar and toilet roll holder. See Specifications.

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seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh, Pennsylvania, 15219

Project Location:
Renovation of 10 Scattered Sites
1541 Chelton Avenue
Pittsburgh, Pennsylvania 15216

drawing title

South Elevation, East Elevation, West Elevation, North Elevation, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no.	of.
4	8

Sheet No.
A4
Project #2326

GENERAL NOTES

USE OF THE DOCUMENTS
THE USE OF THESE DOCUMENTS IS RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED. RE-USE OR REPRODUCTION OF THE DOCUMENTS (IN WHOLE OR IN PART), FOR ANY OTHER PURPOSE IS PROHIBITED. TITLE TO THESE REMAINS WITH FUKU ARCHITECTS P.C. (FAR). VISUAL CONTRACT DOCUMENTS DOCUMENTS IS PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

DIVISION 1 - GENERAL CONDITIONS

APPLICABILITY OF HUD-5370 GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS - PUBLIC HOUSING PROGRAMS
THE HUD-5370, GENERAL CONDITIONS CURRENT EDITION, SHALL APPLY TO THE PROJECT. A COPY OF THE HUD GENERAL CONDITIONS ARE INCLUDED IN THE FRONT END DOCUMENTS AS PART OF HUD FORMS. HARD CONES ARE AVAILABLE AT HACP OFFICE.

MULTIPLE CONTRACT
1. COORDINATION
GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT, ELECTRICAL CONTRACT, AND ADDITIONAL CONTRACTS APPLICABLE IN THE CONSTRUCTION DOCUMENTS.

2. GENERAL REQUIREMENTS OF CONTRACTS
UNLESS THE AGREEMENT CONTAINS A MORE SPECIFIC DESCRIPTION OF THE WORK OF EACH CONTRACT, THE GENERAL REQUIREMENTS ON DRAWINGS AND IN SPECIFICATION SECTIONS DETERMINE WHICH CONTRACT INCLUDES A SPECIFIC ELEMENT OF PROJECT.

3. SCOPE OF WORK RESPONSIBILITY
A. GENERAL CONSTRUCTION CONTRACT
WORK OF THE GENERAL CONSTRUCTION CONTRACT INCLUDES, BUT IS NOT LIMITED TO, THE REMAINING WORK NOT IDENTIFIED AS WORK UNDER OTHER CONTRACTS.

B. PLUMBING CONTRACT
WORK OF THE PLUMBING CONTRACT INCLUDES, BUT IS NOT LIMITED TO, PLUMBING FIXURES AND APPLIANCES (INCLUDING BUT NOT LIMITED TO SINKS, TUBS, SHOWER ENCLOSURES, SINK DRAINS, FAUCETS AND DRAIN ASSEMBLIES, ETC), PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT. PLUMBING CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT.

C. MECHANICAL CONTRACT
WORK OF THE MECHANICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ALL MECHANICAL EQUIPMENT AND CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND ELECTRICAL. CONTRACT MECHANICAL EQUIPMENT INCLUDES BUT IS NOT LIMITED TO FURNACES AND CONDENSERS, KITCHEN AND BATH EXHAUST FANS, THERMOSTATS AND CONTROLS, ETC.

D. ELECTRICAL CONTRACT
WORK OF THE ELECTRICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ELECTRICAL EQUIPMENT AND FIXTURES INCLUDING BUT NOT LIMITED TO, (INTERIOR AND EXTERIOR LIGHT FIXTURES, SMOKE AND CO DETECTORS, COMPLETE CIRCUIT BREAKER PANELS INCLUDING ALL BREAKERS AND LABELING, ELECTRICAL SERVICE ENTRANCE), WIRING, AND ELECTRICAL AND LOW VOLTAGE CONNECTIONS TO EQUIPMENT FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT. ELECTRICAL CONNECT WITH TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT.

PRE-CONSTRUCTION CONFERENCE AND NOTICE TO PROCEED
WITHIN TEN CALENDAR DAYS OF CONTRACT EXECUTION, AND PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH THE OWNER, ARCHITECT OF PRIMA, ITS ARCHITECT, AND OTHER INTERESTED PARTIES CONVENED BY THE PHA. THE CONFERENCE WILL SERVE TO ACQUAINT THE CONTRACTOR WITH THE GENERAL PLAN OF THE CONSTRUCTION OPERATION AND ALL OTHER REQUIREMENTS OF THE CONTRACT. THE PHA WILL PROVIDE THE CONTRACTOR WITH THE DATE, TIME, AND PLACE OF THE CONFERENCE.
(B) THE CONTRACTOR SHALL BEGIN WORK UPON RECEIPT OF A WRITTEN NOTICE TO PROCEED FROM THE CONTRACTING OFFICER OR DESIGNEE. THE CONTRACTOR SHALL NOT BEGIN WORK PRIOR TO RECEIVING SUCH NOTICE.

CONSTRUCTION PROGRESS
(A) THE CONTRACTOR SHALL, WITHIN FIVE DAYS AFTER THE WORK COMMENCES ON THE CONTRACT OR ANOTHER PERIOD OF TIME DETERMINED BY THE CONTRACTING OFFICER, PREPARE AND SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL THREE COPIES OF A PRACTICABLE SCHEDULE SHOWING THE ORDER IN WHICH THE CONTRACTOR PROPOSES TO PERFORM THE WORK, AND THE DATES ON WHICH THE CONTRACTOR CONTEMPLATES STARTING AND COMPLETING THE SEVERAL SALIENT FEATURES OF THE WORK (INCLUDING PROCUREMENT, LABOR, MATERIALS, AND EQUIPMENT). THE SCHEDULE SHALL BE IN THE FORM OF A PROGRESS CHART OF SUITABLE SCALE TO INDICATE APPROPRIATELY THE PERCENTAGE OF WORK SCHEDULED FOR COMPLETION BY ANY GIVEN DATE DURING THE PERIOD. IF THE CONTRACTOR FAILS TO SUBMIT A SCHEDULE WITHIN THE TIME PRESCRIBED, THE CONTRACTING OFFICER MAY WITHHOLD APPROVAL OF PROGRESS PAYMENTS OR TAKE OTHER REMEDIES UNDER THE CONTRACT UNTIL THE CONTRACTOR SUBMITS THE REQUIRED SCHEDULE.
(B). THE CONTRACTOR SHALL ENTER THE ACTUAL PROGRESS ON THE CHART AS REQUIRED BY THE CONTRACTING OFFICER, IMMEDIATELY DELIVER THREE COPIES OF THE ANNOTATED SCHEDULE TO THE CONTRACTING OFFICER, IF THE CONTRACTOR FAILS TO DO THEREUNDER, UPON THE BASIS OF INSPECTION CONDUCTED PURSUANT TO THE CLAUSE ENTITLED INSPECTION AND ACCEPTANCE OF WORK, IMPLICATION HEREIN THAT THE CONTRACTOR IS NOT MEETING THE APPROVED SCHEDULE, THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO IMPROVE ITS PROGRESS, INCLUDING THOSE THAT MAY BE REQUESTED BY THE CONTRACTING OFFICER, WITHOUT ADDITIONAL COST TO THE PHA. IN THIS CIRCUMSTANCE THE CONTRACTING OFFICER MAY REQUIRE THE CONTRACTOR TO INCREASE THE NUMBER OF SHIFTS, OVERTIME OPERATIONS, DAYS OF WORK, AND/OR THE AMOUNT OF CONSTRUCTION PLANT, AND TO SUBMIT FOR APPROVAL ANY SUPPLEMENTARY SCHEDULE OR SCHEDULES IN CHART FORM AS THE CONTRACTING OFFICER DEEMS NECESSARY TO DEMONSTRATE HOW THE APPROVED RATE OF PROGRESS WILL BE REGAINED.
(C) FAILURE OF THE CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACTING OFFICER UNDER THIS CLAUSE SHALL BE GROUNDS FOR A DETERMINATION BY THE CONTRACTING OFFICER THAT THE CONTRACTOR IS NOT PROSECUTING THE WORK WITH SUFFICIENT DILIGENCE TO ENSURE COMPLETION WITHIN THE TIME SPECIFIED IN THE CONTRACT. UPON MAKING THIS DETERMINATION, THE CONTRACTING OFFICER MAY TERMINATE THE CONTRACTOR'S RIGHT TO PROCEED WITH THE WORK, OR ANY SEPARABLE PART OF IT, IN ACCORDANCE WITH THE DEFAULT CLAUSE OF THIS CONTRACT.

SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK
(A) THE CONTRACTOR ACKNOWLEDGES THAT IT HAS TAKEN STEPS REASONABLY NECESSARY TO ASCERTAIN THE NATURE AND LOCATION OF THE WORK, AND THAT IT HAS INVESTIGATED AND SATISFIED ITSELF AS TO THE GENERAL AND LOCAL CONDITIONS WHICH CAN AFFECT THE WORK OR ITS COST, INCLUDING BUT NOT LIMITED TO, (1) CONDITIONS BEARING UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS; (2) THE AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, AND ROADS; (3) UNCERTAINTIES OF WEATHER, RIVER STAGES, TIDES, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE; (4) THE CONFORMATION AND CONDITIONS OF THE GROUND; AND (5) THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING WORK PERFORMANCE. THE CONTRACTOR ALSO ACKNOWLEDGES THAT IT HAS SATISFIED ITSELF AS TO THE CHARACTER, QUALITY, AND QUANTITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED IN SO FAR AS THIS INFORMATION IS REASONABLY ASCERTAINABLE FROM AN INSPECTION OF THE SITE, INCLUDING ALL EXPLORATORY WORK DONE BY THE PHA, AS WELL AS FROM THE DRAWINGS AND SPECIFICATIONS MADE A PART OF THIS CONTRACT. ANY FAILURE OF THE CONTRACTOR TO TAKE THE ACTIONS DESCRIBED AND ACKNOWLEDGED IN THIS PARAGRAPH WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK, OR FOR PROCEEDING TO SUCCESSFULLY PERFORM THE WORK WITHOUT ADDITIONAL EXPENSE TO THE PHA.
(B) THE PHA ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR BASED ON THE INFORMATION MADE AVAILABLE BY THE PHA. NOR DOES THE PHA ASSUME RESPONSIBILITY FOR ANY UNDERSTANDING REACHED OR REPRESENTATION MADE CONCERNING CONDITIONS WHICH CAN AFFECT THE WORK BY ANY OF ITS OFFICERS OR AGENTS BEFORE THE EXECUTION OF THIS CONTRACT, UNLESS THAT UNDERSTANDING OR REPRESENTATION IS EXPRESSLY STATED IN THIS CONTRACT.

DIFFERING SITE CONDITIONS
(1) THE CONTRACTOR SHALL PROMPTLY, AND BEFORE THE CONDITIONS ARE DISTURBED, GIVE A WRITTEN NOTICE TO THE CONTRACTING OFFICER OF (1) SUBSURFACE OR UNKNOWN PHYSICAL CONDITIONS AT THE SITE WHICH DIFFER MATERIALLY FROM THOSE INDICATED IN THIS CONTRACT, OR (2)UNKNOWN PHYSICAL CONDITIONS AT THE SITE OF AN UNUSUAL NATURE, WHICH DIFFER MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERING IN WORK OF THE CHARACTER PROVIDED FOR IN THIS CONTRACT.
(B)THE CONTRACTING OFFICER SHALL INVESTIGATE THE SITE CONDITIONS PROMPTLY AFTER RECEIVING THE NOTICE. WORK SHALL NOT PROCEED AT THE AFFECTED SITE, EXCEPT AT THE CONTRACTOR'S RISK, UNTIL THE CONTRACTING OFFICER HAS PROVIDED WRITTEN INSTRUCTIONS TO THE CONTRACTOR. IF THE CONDITIONS DO MATERIALLY SO DIFFER AND CAUSE AN INCREASE OR DECREASE IN THE CONTRACTOR'S COST OF, OR THE TIME REQUIRED FOR, PERFORMING ANY PART OF THE WORK UNDER THIS CONTRACT, WHETHER OR NOT CHANGED AS A RESULT OF THE CONDITIONS, AN EQUITABLE ADJUSTMENT SHALL FILE A CLAIM IN WRITING TO THE PHA WITHIN TEN DAYS AFTER RECEIPT OF SUCH INSTRUCTIONS AND, IN ANY EVENT, BEFORE PROCEEDING WITH THE WORK, NEGOTIATE AN ADJUSTMENT IN THE CONTRACT PRICE, THE DELIVERY SCHEDULE, OR BOTH. SHALL BE MADE UNDER THIS CLAUSE AND THE CONTRACT MODIFIED IN WRITING ACCORDINGLY.
(C)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED, UNLESS THE CONTRACTOR HAS GIVEN THE WRITTEN NOTICE REQUIRED; PROVIDED, THAT THE TIME PRESCRIBED IN (A) ABOVE FORGIVING WRITTEN NOTICE MAY BE EXTENDED AT THE DISCRETION OF THE PHA.
(D)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED IF MADE AFTER FINAL PAYMENT UNDER THIS CONTRACT.

SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION
(A) THE CONTRACTOR SHALL KEEP ON THE WORK SITE A COPY OF THE DRAWINGS AND SPECIFICATIONS AND SHALL AT ALL TIMES GIVE THE CONTRACTING OFFICER ACCESS THERETO. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH. IN CASE OF DIFFERENCE BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. IN CASE OF DISCREPANCY IN THE FIGURES, IN THE DRAWINGS OR SPECIFICATIONS, THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE CONTRACTING OFFICER, WHO SHALL PROMPTLY MAKE A DETERMINATION IN WRITING AND ADJUSTMENTBY THE CONTRACTOR WITHOUT SUCH A DETERMINATION SHALL BE ATITS OWN RISK AND EXPENSE. THE CONTRACTING OFFICER SHALL FURNISH FROM TIME TO TIME SUCH DETAILED DRAWINGS AND OTHER INFORMATION AS CONSIDERED NECESSARY, UNLESS OTHERWISE PROVIDED.
(B)WHEREVER IN THE SPECIFICATIONS OR UPON THE DRAWINGS THE WORDS "DIRECTED", "REQUIRED", "ORDERED", "DESIGNATED", "PRESCRIBED", OR WORDS OF LIKE IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE"DIRECTION", "REQUIREMENT", "ORDER", DESIGNATION", OR "PRESCRIPTION", OF THE CONTRACTING OFFICER IS INTENDED AND SIMILARLY THE WORDS "APPROVED", "ACCEPTABLE", "SATISFACTORY", OR WORDS OF LIKE IMPORT SHALL MEAN "APPROVED BY", OR "ACCEPTABLE TO", OR "SATISFACTORY TO" THE CONTRACTING OFFICER, UNLESS OTHERWISE EXPRESSLY STATED.
(C)WHERE "SHOW", "SHOWN", "INDICATED", "AS DETAILED", OR WORDS OF SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE REFERENCE IS MADE TO THE DRAWINGS ACCOMPANYING THIS CONTRACT UNLESS STATED OTHERWISE. THE WORD "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE" THAT IS "PROVIDE AND INSTALLED"
(D)"SHOP DRAWINGS" MEANS DRAWINGS, SUBMITTED TO THE PHA BY THE CONTRACTOR, SUBCONTRACTOR, OR SUPPLIER, WHICH DEPICT SUBCONTRACTOR, SHOWING IN DETAIL (1) THE PROPOSED FABRICATION AND ASSEMBLY OF STRUCTURAL ELEMENTS AND (2) THE INSTALLATION(I.E., FORM, FIT, AND ATTACHMENT DETAILS) OF MATERIALS OF EQUIPMENT. IT INCLUDES DRAWINGS, DIAGRAMS, LAYOUTS, SCHEDULES, DESIGNS OF THE FIXTURES, PERFORATIONS, SCHEDULES, PERFORMANCE AND TEST DATA, AND SIMILAR MATERIALS FURNISHED BY THE CONTRACTOR TO EXPLAIN THE DETAILS OF SPECIFIC PORTIONS OF THE WORK REQUIRED BY THE CONTRACT. THE PHA MAY DUPLICATE, USE, AND DISCLOSE IN ANY WAY DESIRED FOR ANY PURPOSE SHOP DRAWINGS S DELIVERED UNDER THIS CONTRACT.
(E)IF THIS CONTRACT REQUIRES SHOP DRAWINGS, THE CONTRACTOR SHALL COORDINATE ALL SHOP DRAWINGS, AND REVIEW THEM FOR ACCURACY, COMPLETENESS, AND COMPLIANCE WITH OTHER CONTRACT REQUIREMENTS AND SHALL INDICATE ITS APPROVAL THEREON AS EVIDENCE OF SUCH COORDINATION AND REVIEW. SHOP DRAWINGS SUBMITTED TO THE CONTRACTING OFFICER WITHOUT EVIDENCE OF THIS COORDINATION AND REVIEW OR THAT ARE RESUBMISSION TO THE CONTRACTING OFFICER WILL INDICATE AN APPROVAL OR DISAPPROVAL OF THE SHOP DRAWINGS. IF THE CONTRACTOR PROCEEDS, SHALL INDICATE THE PHA'S REASONS THEREFORE. ANY WORK DONE BEFORE SUCH APPROVAL SHALL BE AT THE CONTRACTOR'S RISK. APPROVAL BY THE CONTRACTING OFFICER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS IN SUCH DRAWINGS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM THE REQUIREMENTS OF THIS CONTRACT, EXCEPT WITH RESPECT TO VARIATIONS DESIRED AND MADE KNOWN TO THE CONTRACTING OFFICER IF BELOW.
(F) IF SHOP DRAWINGS SHOW VARIATIONS FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL DESCRIBE SUCH VARIATIONS IN WRITING, SEPARATE FROM THE DRAWINGS, AT THE TIME OF SUBMISSION. IF THE ARCHITECT FINDS THAT THE PROPOSED VARIATION AND THE CONTRACTING OFFICER CONCURS, THE CONTRACTING OFFICER SHALL INDICATE AN APPROVAL THEREOF IN CONNECTION TO THE SHOP DRAWINGS, EXCEPT THAT,IF THE VARIATION IS MINOR OR DOES NOT INVOLVE A CHANGE IN PRICE OR IN TIME OF PERFORMANCE, A MODIFICATION NEED NOT BE ISSUED. (G)IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE TIMELY REQUESTS OF THE PHA FOR SUCH LARGE SCALE AND FULL SIZE DRAWINGS AND OTHER INFORMATION OF ORDER ADDITIONAL INFORMATION NOT ALREADY IN HIS POSSESSION, WHICH SHALL BE REQUIRED BY THE CONTRACT. ANY DELAY ARISING FROM SUCH REQUESTS MAY BE SUBMITTED AS THE NEED ARISES, BUT EACH SUCH REQUEST SHALL BE FILED IN AMPLE TIME TO PERMIT APPROPRIATE ACTION TO BE TAKEN WITHOUT DELAY. ANY REQUEST MADE AFTER DELAY.
(H)THE CONTRACTOR SHALL SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL FOLLOWING SPECIFICATIONS REQUIREMENTS OF ALL SHOP DRAWINGS AS CALLED FOR UNDER THE VARIOUS HEADINGS OF THESE SPECIFICATIONS. THREE SETS (UNLESS OTHERWISE INDICATED) OF ALL SHOP DRAWINGS WILL BE RETAINED BY THE PHA AND ONE SET WILL BE RETURNED TO THE CONTRACTOR. AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL MAKE THE SHOP DRAWINGS PART OF THE CONTRACT, SHALL FURNISH A COMPLETE SET OF ALL SHOP DRAWINGS AS FINALLY APPROVED, INCLUDING ALL REVISIONS, ALL CHANGES AND REVISION SMADE UP TO THE TIME THE WORK IS COMPLETED AND ACCEPTED.
(I) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL SUBCONTRACTORS AND SUPPLIERS BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

AS-BUILT DRAWINGS
(A)"AS-BUILT DRAWINGS," AS USED IN THIS CLAUSE, MEANS DRAWINGS SUBMITTED BY THE CONTRACTOR OR SUBCONTRACTOR OR SUPPLIER TO SHOW THE CONSTRUCTION OF A PARTICULAR STRUCTURE OR WORK AS ACTUALLY CONSTRUCTED UNDER THE CONTRACT. "AS-BUILT DRAWINGS" SHALL BE SYNONYMOUS WITH "RECORD DRAWINGS."
(B)AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER ACCURATE INFORMATIONTO BE USED IN THE PREPARATION OF PERMANENT AS-BUILT DRAWINGS. THE CONTRACTOR SHALL MAKE THE CONTRACTOR SHALL RECORD ON ONE SET OF CONTRACT DRAWINGS ALL CHANGES FROM THE INSTALLATIONS ORIGINALLY INDICATED AND RECORD FINAL LOCATIONSOF UNDERGROUND LINES BY DEPTH FROM FINISH GRADE AND BY ACCURATE HORIZONTAL OFFSET DISTANCES TO PERMANENT SURFACE IMPROVEMENTS SUCH AS BUILDINGS, CURBS, OR EDGES OF WALKS.
(C) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL AS-BUILT DRAWINGS PROVIDED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

MATERIAL AND WORKMANSHIP
(A)ALL EQUIPMENT, MATERIAL, AND ARTICLES FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED. UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT. REFERENCES IN THE CONTRACT TO EQUIPMENT, MATERIAL, ARTICLES, OR PATENTED PROCESSES BY TRADE NAME, MAKE, OR CATALOG NUMBER, SHALL BE REGARDED AS ESTABLISHING A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. THE CONTRACTOR MAY, AT ITS OPTION, USE ANY EQUIPMENT, MATERIAL, ARTICLE, OR PROCESS THAT, IN THE JUDGMENT OF, AND AS APPROVED BY THE CONTRACTING OFFICER, IS EQUAL TO THAT NAMED IN THE SPECIFICATIONS, UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT.
(B)APPROVAL OF EQUIPMENT AND MATERIALS.
(1) THE CONTRACTOR SHALL OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT TO BE INCORPORATED INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL GIVE THE CONTRACTING OFFICER THE NAME OF THE MANUFACTURER, THE MODEL NUMBER, AND OTHER INFORMATION CONCERNING THE PERFORMANCE, CAPACITY, NATURE, AND RATING OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT WHEN REQUIRED BY THIS CONTRACT OR BY THE CONTRACTINGOFFICER. THE CONTRACTOR SHALL ALSO OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MATERIAL ORARTICLES WHICH THE CONTRACTOR PROPOSES TO INCORPORATE INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL PROVIDE FULL INFORMATION CONCERNING THE MATERIAL OR ARTICLES. MACHINERY,
EQUIPMENT, MATERIAL, AND ARTICLES THAT DO NOT HAVE THE REQUIRED APPROVAL SHALL BE INSTALLED OR USED AT THE RISK OF SUBSEQUENT REJECTION.
(2) WHEN REQUIRED BY THE SPECIFICATIONS OR THE CONTRACTING OFFICER, THE CONTRACTOR SHALL SUBMIT APPROPRIATELY MARKED SAMPLES AND CERTIFICATES RELATED TO THEM) FOR APPROVAL AT THE CONTRACTOR'S
EXPENSE, WITH ALL SHIPPING CHARGES PREPAID. THE CONTRACTOR SHALL LABEL OR OTHERWISE IDENTIFY EACH SPECIMEN OR SAMPLE OF MATERIAL OR PRODUCT REPRESENTED, ITS PLACE OF ORIGIN, THE NAME OF THE PRODUCER, THE CONTRACTOR'S NAME AND THE LOCATION OF THE CONSTRUCTION PROJECT FOR WHICH THE MATERIAL OR PRODUCTIS INTENDED TO BE USED.
(3)CERTIFICATES SHALL BE SUBMITTED IN TRIPLICATE, DESCRIBING EACH SAMPLE SUBMITTED FOR APPROVAL, AND CERTIFYING THAT THE MATERIAL, EQUIPMENT, OR WORKMANSHIP WITH CONTRACT REQUIREMENTS. THE CERTIFICATES SHALL INCLUDE THE NAME AND BRAND OF THE PRODUCT, NAME OF MANUFACTURER, AND THE LOCATION WHERE PRODUCED.
(4) APPROVAL OF A SAMPLE SHALL NOT CONSTITUTE A WAIVER OF THE PHA RIGHT TO DEMAND FULL COMPLIANCE WITH CONTRACT REQUIREMENTS. MATERIALS, EQUIPMENT AND ACCESSORIES MAY BE REJECTED FOR CAUSE EVEN THOUGH SAMPLES HAVE BEEN APPROVED.
(5) WHEREVER MATERIALS ARE REQUIRED TO COMPLY WITH RECOGNIZED STANDARDS OR SPECIFICATIONS, SUCH SPECIFICATIONS SHALL BE ACCEPTED AS ESTABLISHING THE TECHNICAL QUALITIES AND TESTING METHODS, BUT SHALL NOT GOVERN THE NUMBER OF TESTS REQUIRED TO PROVE COMPLIANCE WITH SPECIFICATIONS REQUIREMENTS. THE CONTRACTING OFFICER MAY REQUIRE LABORATORY TEST REPORTS ON ITEMS SUBMITTED FOR APPROVAL OR APPROVED PREVIOUSLY ON THE BASIS OF DATA SUBMITTED IN CERTIFICATES WITH SAMPLES. CHECK TESTS WILL BE MADE ON MATERIALS
DELIVERED TO THE WORK SITE IF NECESSARY AS THE CONTRACTING OFFICER DETERMINES NECESSARY TO INSURE COMPLIANCE OF MATERIALS WITH THE SPECIFICATIONS. THE CONTRACTOR WILL ASSUME ALL COSTS OF RETESTING MATERIALS WHICH FAIL TO MEET CONTRACT REQUIREMENTS AND RETESTING MATERIAL SOFFERED IN SUBSTITUTION FOR THOSE FOUND DEFICIENT.
(6) AFTER APPROVAL, SAMPLES WILL BE KEPT IN THE PROJECT OFFICE, UNTIL COMPLETION OF WORK. THEY MAY NOT BE USED IN THE WORK, EXCEPT A SUBSTANTIAL QUANTITY OF THE MATERIALSTHEY REPRESENT HAS BEEN BUILT IN AND ACCEPTED FOR.
(C) REQUIREMENTS CONCERNING LEAD-BASED PAINT. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE LEAD-BASED PAINT CONTAINED IN THE LEAD-BASED PAINT POISONING PREVENTION ACT (42 U.S.C. 4821-4846) AS IMPLEMENTED BY 24 CFR PART 35.

PERMITS AND CODES
(A)THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALLAPPLICABLE LAWS, ORDINANCES, CODES, RULES AND REGULATIONS. NOTWITHSTANDING THE REQUIREMENTS OF THE CONTRACTOR TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS IN THE CONTRACT, ALL WORK INSTALLED SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. BEFORE BEGINNING ANY WORK, THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND THE SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS BEARING ON THE WORK AND SHALL IMMEDIATELY REPORT ANY DISCREPANCY IT MAY DISCOVER TO THE CONTRACTING OFFICER.
WHERE THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS FAIL TO COMPLY WITH THE APPLICABLE CODE OR REGULATION, THE CONTRACTING OFFICER SHALL MODIFY THE CONTRACT TO CHANGE ORDER PURSUANT TO THE CLAUSE ENTITLED CHANGES HEREIN TO CONFORM TO THE CODE OR REGULATION.
(B) THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES,AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK. WHERE THE PHA CAN ASSISTIN THE ISSUANCE OF ALL OR PART OF THESE PERMITS, FEES AND LICENSES WITHOUT COST TO THE CONTRACTOR, THE CONTRACT AMOUNT SHALL BE REDUCED ACCORDINGLY.

HEALTH, SAFETY AND ACCIDENT PREVENTION
(A) IN PERFORMING THIS CONTRACT, THE CONTRACTOR SHALL:
(1)ENSURE THAT NO LABORER OR MECHANIC SHALL BE REQUIRED TO WORK IN SURROUNDINGS OR UNDER WORKING CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO HIS/HER HEALTH AND/OR SAFETY AS DETERMINED UNDER CONSTRUCTION SAFETY AND HEALTHSTANDARDS PROMULGATED BY THE SECRETARY OF LABOR BY REGULATIONS.(2)PROTECT THE LIVES, HEALTH, AND SAFETY OF THEIR PERSONS; (3)PREVENT DAMAGE TO PROPERTY, MATERIALS, SUPPLIES, AND EQUIPMENT; AND, (4)AVOID WORKER LOSS BY
(B) FOR THESE PURPOSES, THE CONTRACTOR SHALL: (1)COMPLY WITH REGULATIONS AND STANDARDS ISSUED BY THE SECRETARY OF LABOR AT 29 CFR PART 1926 PURSUANT TO COMPLY WITH THE IMPOSITION OF SANCTIONS PURSUANT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. 327 ETSEQ. AND 29 U.S.C. 651 ETSEQ., AND (2)INCLUDE THE TERMS OF THIS CLAUSE IN EVERY SUBCONTRACT SO THAT SUCH TERMS WILL BE BINDING ON EACH SUBCONTRACTOR.
(C) THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF EXPOSURE DATA ON ALL ACCIDENTS INCIDENT TO WORK PERFORMED UNDER THIS CONTRACT AND RESULTING IN DEATH, TRAUMATIC INJURY,OCCUPATIONAL DISEASE, OR DAMAGE TO PROPERTY, MATERIALS,SUPPLIES, OR EQUIPMENT, AND SHALL REPORT THIS DATA IN THE MANNER PRESCRIBED BY 29 CFR PART1904.
(D)THE CONTRACTOR AGREES THAT THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THESE REQUIREMENTS AND OF THE CORRECTIVE ACTION REQUIRED. THIS NOTICE, WHEN DELIVERED TO THE CONTRACTOR OR THE CONTRACTOR'S REPRESENTATIVE AT THE SITE OF THE WORK, SHALL BE DEEMED SUFFICIENT NOTICE OF THE NON COMPLIANCE AND CORRECTIVE ACTION REQUIRED. AFTER RECEIVING SUCH NOTICE, THE CONTRACTOR SHALL IMMEDIATELY TAKE CORRECTIVE ACTION. IF THE CONTRACTOR FAILS OR REFUSES TO TAKE CORRECTIVE ACTION PROMPTLY, THE CONTRACTING OFFICER MAY ISSUE AN ORDER STOPPING ALL OR PART OF THE WORK UNTIL SATISFACTORY CORRECTIVE ACTION HAS BEEN TAKEN. THE CONTRACTOR SHALL NOT BASE ANY CLAIM ON REQUEST FOR EQUITABLE ADJUSTMENT FOR ADDITIONAL TIME OR MONEY ON ANY STOP ORDER ISSUED UNDER THESE CIRCUMSTANCES.
(E) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS SUBCONTRACTOR'S COMPLIANCE WITH THE PROVISIONS OF THIS CLAUSE. THE CONTRACTOR SHALL NOT INCLUDE THIS CLAUSE IN ANY SUBCONTRACT AS THE PHA, THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, OR THE SECRETARY OF LABOR SHALL DIRECT AS A MEANS OF ENFORCING SUCH PROVISIONS.

TEMPORARY HEATING
THE MECHANICAL CONTRACTOR SHALL PROVIDE AND PAY FOR TEMPORARY HEATING, COVERING, AND ENCLOSURES NECESSARY TO PROPERLY PROTECT ALL WORK AND MATERIALS AGAINST DAMAGE BY DAMPNESS AND COLD, TO DRY OUT THE WORK, AND TO FACILITATE THE COMPLETION OF THE WORK. ANY PERMANENT HEATING EQUIPMENT USED SHALL BE TURNED OVER TO THE PHA IN THE CONDITION AND AT THE TIME REQUIRED BY THE SPECIFICATIONS.

AVAILABILITY AND USE O

PERFORMED OR COMPLETED SHALL BE SUBMITTED BY EACH PRIME CONTRACTOR. ALL WORK OUTLINED ON THE INITIAL PUNCH LIST SHALL BE COMPLETED BY THE CONTRACTOR WHOM IT IS THE FINAL INSPECTION AND BEFORE THE PROJECT WILL BE ACCEPTED FOR FINAL COMPLETION. AFTER ALL REQUIREMENTS PREPARATORY TO THE FINAL INSPECTION HAVE BEEN COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER TO PERFORM A FINAL INSPECTION. IF ALL THE WORK HAS BEEN COMPLETED, INCLUDING PUNCH LIST ITEMS FROM EARLIER INSPECTIONS, AND NO FURTHER CORRECTIONS ARE REQUIRED, THE ARCHITECT SHALL RECOMMEND FINAL ACCEPTANCE OF THE PROJECT WHEN ALL THE CLOSEOUT DOCUMENTS ARE RECEIVED, INCLUDING BUT NOT LIMITED TO WARRANTIES, O&M MANUALS, FINAL TESTING, CERTIFICATES, PERMITS, PUNCH LIST, SUBMITTALS, RFIS, AS BUILD DRAWINGS AND ANY ADDITIONAL DOCUMENTATION REQUIRED BY HACP FOR CLOSEOUT.

ALL PUNCH LIST ITEMS TO BE COMPLETED WITHIN THIRTY (30) WORKING DAYS OF RECEIPT, OR FINAL 10% DRAW WILL BE FORFEITED. ALL WORK NOT COMPLETED WITHIN THE ALLOTTED TIME WILL BE COMPLETED BY HACP AT PRIME CONTRACTOR'S EXPENSE. FINAL COMPLETION OCCURS WHEN ALL PUNCH LIST ITEMS HAVE BEEN COMPLETED AND OCCUPANCY PERMIT HAS BEEN ISSUED.

PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL EQUIPMENT FURNISHED, INSTALLED OR SERVICED UNDER THIS AND THEIR CONTRACTS. EACH PRIME CONTRACTOR SHALL VERIFY THAT ITS EQUIPMENT, ELECTRICAL SYSTEMS AND APPLIANCES ARE FUNCTIONAL AND OPERATIONAL AND THAT ALL PLUMBING AND MECHANICAL EQUIPMENT IS OPERATING QUIETLY AND FREE FROM VIBRATION. CONTRACTOR SHALL PROVIDE A BINDER FOR HACP AND TENANT CONTAINING MAINTENANCE MANUALS, INCLUDING OPERATION INSTRUCTIONS, SPARE PARTS, WARRANTIES, INSPECTION PROCEDURES, AND DATA FOR EACH SYSTEM OR EQUIPMENT ITEM.

ALL ELECTRICAL PANELS AND BREAKERS TO BE PROPERLY MARKED AND A TYPED SCHEDULE TO BE FURNISHED.

FINAL CLEANING: AT THE TIME OF THE PROJECT CLOSE OUT, THE GENERAL CONTRACTOR SHALL PROVIDE AND THOROUGHLY CLEAN AND READY THE SPACE FOR OCCUPANCY. THIS SHALL, AT MINIMUM, INCLUDE HARDWARE, SECURITY EQUIPMENT, LIGHT FIXTURES, REPLACEMENT OF BURNED OUT LAMPS, REMOVAL OF NON PERMANENT PROTECTION AND LABELS, TOUCH UP OF ANY MINOR FINISH DAMAGE, AND CLEANING OR REPLACEMENT OF MECHANICAL SYSTEM FILTERS. DAMAGE TO ANY FINISH, SURFACE, EQUIPMENT OR OBJECT CAUSED DURING CLEANING SHALL BE REPAIRED OR REPLACED BY THE GENERAL CONTRACTOR AT HIS/HER OWN COST.

UPON COMPLETION OF THE PROJECT, GENERAL CONTRACTOR SHALL OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT AND PROVIDE A COPY OF THE ORIGINAL TO HACP AND ARCHITECT IF REQUIRED.

AT EACH PAYMENT REQUEST AND BEFORE PAYMENT IS MADE, EACH CONTRACTOR SHALL DELIVER TO THE HACP A COMPLETE RELEASE OF ALL SUB CONTRACTOR'S AND SUPPLIER'S LIENS ARISING OUT OF THIS CONTRACT, OR RECEIPTS IN FULL COVERING ALL LABOR AND MATERIALS FOR WHICH A LIEN COULD BE FILED OR A BOND SATISFACTORY TO THE HACP INDEMNIFYING HACP AGAINST ANY LIENS.

DIVISION 2 – SITE WORK – NOT APPLICABLE

DIVISION 3 – CONCRETE

PLAN AND REINFORCE CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 19 OF THE IBC 2018 AND ACI 318 AS AMMENDED IN SECTION 1905 OF THE IBC 2018.

CONCRETE TO BE INSTALLED AND CURED PER ACI 318 AND BE NORMAL WEIGHT (144PCF) WITH COMPRESSIVE STRENGTH IN 28 DAYS OF 4000 PSI, AIR ENTRAINED. CEMENT SHALL BE PORTLAND, TYPE I(PLY ASH & GROUND GRANULATED BLAST FURNACE SLAG NOT PERMITTED). COARSE AGGREGATE SHALL BE ¾" MAXIMUM. AIR ENTRAINED SHALL BE 7 PERCENT. SLUMP SHALL BE 4" MAXIMUM.

REINFORCING BARS SHALL COMPLY WITH A.S.T.M. A615–GRADE 60. WELDED WIRE FABRIC SHALL COMPLY WITH A.S.T.M. A185.

4" MINIMUM COMPACTED GRAVEL BED TO PLACE CONCRETE TO BE #57 HAND OR MACHINE COMPACTED BEFORE CONCRETE PLACEMENT.

PROVIDE COLD-APPLIED JOINT SEALANTS, SINGLE COMPONENT, SILICONE, SELF LEVELING TYPE, BY SIKA OR EQUAL.

ROUND BACKER RODS FOR COLD-APPLIED JOINT SEALANTS: ASTM D5249, TYPE 3, OF DIAMETER AND DENSITY REQUIRED TO CONTROL JOINT-SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT. BY SIKA OR EQUAL.

DIVISION 4 – MASONRY

BRICK MASONRY REPOINTING

BRICK MASONRY REPOINTING SPECIALIST QUALIFICATIONS: ENGAGE AN EXPERIENCED BRICK MASONRY REPOINTING FIRM TO PERFORM WORK OF THIS SECTION. FIRM SHALL HAVE COMPLETED WORK SIMILAR IN MATERIAL DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. EXPERIENCE IN ONLY INSTALLING MASONRY IS INSUFFICIENT EXPERIENCE FOR MASONRY REPOINTING WORK.

REPOINTING OF AREAS INDICATED IN THE DRAWINGS AND LOCATIONS WITH THE FOLLOWING DEFECTS:
A. HOLES AND MISSING MORTAR.
B. CRACKS THAT CAN BE PENETRATED 1/4 INCH OR MORE BY A KNIFE BLADE 0.027 INCH THICK.
C.CRACKS 1/8 INCH OR MORE IN WIDTH AND OF ANY DEPTH.
D.HOLLOW-SOUNDING JOINTS WHEN TAPPED BY METAL OBJECT.
E. ERODED SURFACES 1/4 INCH OR MORE DEEP.
F. DETERIORATION TO POINT THAT MORTAR CAN BE EASILY REMOVED BY HAND, WITHOUT TOOLS.
G. JOINTS FILLED WITH SUBSTANCES OTHER THAN MORTAR.

MATERIALS
PORTLAND CEMENT: ASTM C 150/C 150M, TYPE I OR TYPE II. EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION; GRAY, WHERE REQUIRED FOR COLOR MATCHING OF MORTAR.

MASONRY CEMENT: ASTM C 91/C 91M. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- CEMEX S.A.B. DE C.V.
- HOLCIM (US) INC.
- QUIKRETE; THE QUIKRETE COMPANIES, LLC.

REMOVE GUTTERS, DOWNSPOUTS AND ASSOCIATED HARDWARE ADJACENT TO MASONRY REPOINTING. REINSTALL WHEN REPOINTING IS COMPLETED.PROVIDE TEMPORARY RAIN DRAINAGE DURING WORK TO DIRECT WATER AWAY FROM THE BUILDING.

SEE LINTEL REPLACEMENT BELOW AND COORDINATE MASONRY REPOINTING AND REPLACEMENT WITH REMEDIAL LINTEL REPAIR OR REPLACEMENT.

RETAINING WALL
WHERE NOTED ON THE DRAWINGS, NEW DRYSTACK RETAINING WALL, BELGARD OR EQUAL, TO MATCH EXISTING COLOR AND TYPE OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. REMOVE SUFFICIENT SOIL TO ALLOW ACCESS TO INSTALL A NEW WALL. SET NEW WALL IN COMPACTED GRAVEL BED STRICTLY ACCORDING TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS. INSTALL NEW WALL WITH ALL NECESSARY PINS, GEOGRID AND CAP PIECES ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL ACCESSORIES
WALL CAPS, PINS AND GEOGRID FABRIC.
REPLACEMENT WALL CAPS TO MATCH EXISTING, MATERIAL CONCRETE BY BELGARD OR EQUAL. COLOR AND TYPE TO MATCH EXISTING OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

GLASS BLOCK
SOLID GLASS BLOCK COLORLESS, TRANSPARENT, SMOOTH FACES AND MANUFACTURER'S STANDARD EDGE COATING WHITE, BY SEVES, OWINGS CORNING GLASS BLOCK OR EQUAL. SILICONE SEALANT BY SIKA OR EQUAL. PRODUCT INFORMATION AND SAMPLE TO BE PROVIDED TO ARCHITECT AND HACP FOR APPROVAL. SIZE OF GLASS BLOCK TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD SIZES. GLASS BLOCK SHALL BE INSTALLED PER IBC AND IRC BUILDING CODE AND TMS 402/ACI 530/ASCE 5 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES"

DIVISION 5 – METALS

STEEL BEAMS, ANGLES AND PLATES
SHOP PRIMED WITH RUST PREVENTATIVE PAINT. DIMENSIONS AND GRADE TO MATCH EXISTING. SHOP DRAWINGS TO BE PROVIDED BY GC.

ALL EXTERIOR LINTELS MUST BE HOT-DIP GALVANIZED PER ASTM A123.

LINTEL REPLACEMENT/ INSTALLATION ON BRICK VENEER EXTERIOR WALLS
PROTECT EXISTING OPENING WITH PLYWOOD.TEMPORARILY SHORE AND REMOVE EXISTING BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL LINTEL. REPLACE WITH NEW LINTEL WITH PAINTED STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

FOR LINTEL CLEANING USE METAL CLEANING ON NEXT SECTION.

METAL CLEANING
EXECUTION OF THE WORK: IN CLEANING ITEMS, DISTURB THEM AS MINIMALLY AS POSSIBLE AND AS FOLLOWS:
A. REMOVE DETERIORATED COATINGS AND CORROSION.
B. SEQUENCE WORK TO MINIMIZE TIME BEFORE PROTECTIVE COATINGS ARE REAPPLIED.
C. CLEAN ITEMS IN PLACE UNLESS OTHERWISE INDICATED.

MECHANICAL COATING REMOVAL: USE GENTLE METHODS, SUCH AS SCRAPING AND WIRE BRUSHING, THAT WILL NOT ABRADE METAL SUBSTRATE.

REPAINT: WHERE INDICATED, PREPARE PAINTED DECORATIVE METAL BY CLEANING SURFACE, BLOCK ANY BLEED THROUGH OF EXISTING PAINT, SANDING EDGES SMOOTH, REMOVING EXISTING PAINT AND PRIMING FOR PAINTING AS SPECIFIED.

METAL AWNINGS
BASIS OF DESIGN, MATCH EXISTING AWNINGS DIMENSIONS, PERIMETER FASCIA, BRACING AND SUPPORTS TO BE EXTRUDED ALUMINUM, DECKING ALUMINUM INTERLOCKING PANELS, PROFILE AND THICKNESS AS DETERMINED BY MANUFACTURER. FACTORY APPLIED BACKED ENAMEL OR KYNAR PAINT FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER STANDARD COLOR CHART. INSTALLATION OF AWNINGS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. ALL FASTENERS FOR AWNINGS SHALL BE TYPE 316 SS. FOR LOCATIONS WHERE AWNINGS ARE ATTACHED TO SIDEWALL AWNING FASTENERS SHALL FASTEN INTO STUDS WITH COMPRESSION STAND-OFF IF THROUGH VENEER BRICK. INSTALLATION SHALL INCLUDE PREFINISHED ALUMINUM REGLETED WALL FLASHING AT HEAD, PROPERLY INSTALLED AND CAULKED. SEE ALSO DIVISION 10.

ALUMINUM METAL RAILINGS
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS, INCORPORATED, OR COMPARABLE PRODUCT, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
PROVIDE ALLOY AND TEMPER RECOMMENDED BY ALUMINUM PRODUCER AND FINISHER FOR TYPE OF USE AND FINISH INDICATED, AND WITH STRENGTH AND DURABILITY PROPERTIES FOR EACH ALUMINUM FORM REQUIRED NOT LESS THAN THAT OF ALLOY AND TEMPER DESIGNATED BELOW.
GC TO PROVIDE PRODUCT INFORMATION AND SHOP DRAWINGS OF NEW RAILINGS TO MATCH EXISTING DIMENSIONS. PROVIDE ACCESSORIES AS REQUIRED FOR INSTALLATION ON CONCRETE, SHEETMETOD DECKING, WALLS AND CHANGE IN DIRECTION FITTINGS AS REQUIRED.

DIVISION 6 – WOOD AND PLASTICS

WOOD FRAMING AND BLOCKING
SELECT STRUCTURAL GRADE DOUGLAS FIR SOUTH, SIZES AS INDICATED ON DRAWINGS. COMPLY WITH THE "RECOMMENDED NAILING SCHEDULE" OF THE "MANUAL FOR HOUSING FRAMING."

FLOOR SHEATHING (IF REQUIRED) - PROVIDE 3/4" T&G PLYWOOD FLOOR SHEATHING OR OSB STRUCTURAL FIBERBOARD. ALIGN PANELS ACROSS A MINIMUM OF TWO SUPPORTS WITH THICKNESS IN A 3/8 PERPENDICULAR TO AXIS OF JOISTS, STAGGER JOINTS. GLUE TO JOISTS AND EDGES WITH ELASTOMERIC SOLVENT-BASED GLUE CONFORMING TO APA SPECIFICATION AFG-101. FASTEN WITH 8D COMMON OR 6D ANNULAR OR SPIRAL NAILS AT 6" O.C. ALONG EDGES AND 10" ALONG INTERMEDIATE SUPPORTS. FOLLOW PANEL MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR SUB-FLOOR PREP, PRIOR TO INSTALLATION OF FINISH FLOORING.

EXTERIOR WOOD FRAMING EXPOSED TO WEATHERING AND INSECTS SHALL BE MINIMUM 2" X PRESSURE TREATED LUMBER. KILN DRIED TO 19% MOISTURE CONTENT BEFORE INSTALLATION.

WOOD TRIM AND MOLDINGS
PROVIDE FURNITURE GRADE SOLID HARDWOOD TRIM AND MOLDINGS. STAIN ALL SIDES AND ENDS. WOOD TRIM AND MOLDINGS TO MATCH EXISTING UNLESS OTHERWISE NOTED ON DRAWINGS.

INSTALL WOOD TRIM AND MOLDINGS WITH MITER AT CORNERS, MITERED LAP SPLICES, AND SET WITH COUNTER SUNK GALVANIZED FINISH NAILS CAPPED WITH WOOD PUTTY SANDED SMOOTH. COMPLY WITH AWI 300 FOR ALL STANDARD WOOD RUNNING TRIM.

FABRICATOR QUALIFICATIONS
FIRM EXPERIENCED IN PRODUCING ARCHITECTURAL WOODWORK SIMILAR TO THAT INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE, AS WELL AS SUFFICIENT PRODUCTION CAPACITY TO PRODUCE REQUIRED UNITS WITHOUT DELAYING THE WORK.

INTERIOR ARCHITECTURAL WOODWORK

INSTALLER QUALIFICATIONS.
ARRANGE FOR INSTALLING ARCHITECTURAL WOODWORK INSTALLATION BY A FIRM THAT CAN DEMONSTRATE SUCCESSFUL EXPERIENCE IN INSTALLING ARCHITECTURAL WOODWORK ITEMS SIMILAR IN TYPE AND QUALITY TO THOSE REQUIRED FOR THIS PROJECT.

QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH AWI'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS."

ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETE, AND MECHANICAL SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD. REFER TO AWI'S OR WIS MEMBER LIST FOR NAMES OF WOODWORKING FIRMS THAT COULD POTENTIALLY BE INCLUDED.

MATERIALS

WOOD SPECIES AND CUT FOR TRANSPARENT FINISH: AS INDICATED ON DRAWINGS.

WOOD SPECIES FOR OPAQUE FINISH: ANY CLOSED-GRAIN HARDWOOD.

GENERAL: COMPLETE FABRICATION TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE. WHERE NECESSARY FOR FITTING AT THE SITE, PROVIDE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.
- INTERIOR WOODWORK GRADE: AWI CUSTOM.
- SHOP CUT OPENINGS TO MAXIMUM EXTENT POSSIBLE. SAND EDGES OF CUTOUTS TO REMOVE SPLINTERS AND BURRS. SEAL EDGES OF OPENINGS IN COUNTERTOPS WITH A COATING VARNISH.
- FOR TRANSPARENT-FINISHED TRIM ITEMS WIDER THAN AVAILABLE LUMBER, USE VENEERED CONSTRUCTION. DO NOT GLUE FOR WIDTH.
- BACK OUT OF FACE VENEERS OF FLAT TRIM ELEMENTS AND KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT FOR MEMBERS WITH END-EXPOSED INFINISHED WORK.
- ASSEMBLE CASINGS IN PLANT EXCEPT WHERE LIMITATIONS OF ACCESS TO PLACE OF INSTALLATION.

PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH THE ARCHITECTURAL WOODWORK STANDARDS FOR GRADES OF CABINETS INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS.

ARCHITECTURAL WOOD WORK STAND ARDS GRADE: AWI PREMIUM.

TYPE OF CONSTRUCTION: FRAMELESS.

DOOR AND DRAWER-FRONT STYLE: FLUSH OVERLAY.

HIGH-PRESSURE DECORATIVE LAMINATE: ISO 4586-3, GRADES AS INDICATED OR IF NOT INDICATED, AS REQUIRED BY QUALITY STANDARD.

EXPOSED SURFACES:
1. PLASTIC-LAMINATE GRADE: AWI PREMIUM.
2. EDGES: GRADE AWI PREMIUM.
3. PATTERN DIRECTION: AS INDICATED.

CONCEALED BACKS OF PANELS WITH EXPOSED PLASTIC-LAMINATE SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE, ISO 4586-3, GRADE TO MATCH EXPOSED SURFACE.

DRAWER CONSTRUCTION: FABRICATE WITH EXPOSED FRONTS FASTENED TO SUBFRONT WITH MOUNTING SCREWS FROM INTERIOR OF BODY.
1. JOIN SUBFRONTS, BACKS, AND SIDES WITH GLUED RABBETED JOINTS AND REINFORCED BY MECHANICAL FASTENERS OR GLUED DOVETAIL JOINTS.

COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURERS' FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS, MATTE FINISH.
B. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
C. WOOD GRAIN, MATTE FINISH.
D. PATTERNS, MATTE FINISH.

SYNTHETIC DECKING
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS; TIMBERTECH, AZEK OR COMPARABLE PRODUCT.
DECKING SIZE AND LENGTH TO MATCH EXISTING INSTALLATION. FINISH TEXTURE BRUSHED; COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. FASCIA BOARDS TO MATCH DECKING COLOR.
DECKING FASTENING SYSTEM AS RECOMMENDED BY MANUFACTURER'S INSTALLATION MANUAL. FOLLOW MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR CUTTING, TRIMMING AND INSTALLING DECKING.

RUBBER STAIR TREADS COVERS
BASIS OF DESIGN, BY ROPPE OR EQUAL, RIBBED PATTERN, BLACK FINISH. FOLLOW THE MANUFACTURER'S INSTRUCTION FOR INSTALLATION.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

ROOFING SHEET METAL FLASHING AND TRIM
GENERAL: CONTRACTOR TO EVALUATE STATUS OF ROOFING MATERIAL, COMMUNICATE THE HACP AND ARCHITECT OF FINDINGS AND IF PATCHING OR REPLACEMENT IS NEEDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INSTALL ASPHALT SHINGLES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN ARMA'S "ASPHALT ROOFING RESIDENTIAL MANUAL - DESIGN AND APPLICATION METHODS" AND NRCA'S "NRCA GUIDELINES FOR ASPHALT SHINGLE ROOFING SYSTEMS".

ASPHALT SHINGLES: ASTM D3462/D3462M, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION; GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF-SEALING, BY GAF OR EQUAL, STRAIGHT CUT. FINISH COLOR TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

GC TO INSPECT FLASHING OF ROOF PENETRATIONS, PATCH AND REPLACE IF NEEDED TO COMPLY WITH CODE AND REGULATIONS.

SHEET METAL STANDARD FOR FLASHING AND TRIM: COMPLY WITH NRCA'S "THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION AND AIR LEAKAGE CONTROL, AND REROOFING" AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL". REQUIREMENTS FOR DIMENSIONS AND PROFILES SHOWN UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.

INSTALL SHEET METAL FLASHING AND TRIM TO COMPLY WITH DETAILS INDICATED AND RECOMMENDATIONS OF CITED SHEET METAL STANDARDS THAT APPLY TO INSTALLATION CHARACTERISTICS REQUIRED UNLESS OTHERWISE INDICATED ON DRAWINGS

THERMAL INSULATION
GC TO PROVIDE THERMAL INSULATION ON WALLS, CEILINGS AND FLOORS AS NOTED ON THE DRAWINGS.

INSULATION TO COMPLY WITH THE ENERGY CODE IN MINIMUM R VALUES OR AS SPECIFIED ON DRAWINGS.

GC TO BE RESPONSIBLE TO INSPECTING, ADJUSTING AND ADDING INSULATION TO THE ENTIRE ATTIC SPACE TO ENSURE THE MINIMUM INSULATION COVERAGE WITH NO GAPS. GC TO INFORM HACP AND ARCHITECT PRIOR TO ADD ADDITIONAL INSULATION.

ATTIC DOORS TO RECEIVED RIGID FOAM INSULATION GLUED TO BACK OF THE DOOR AND SEALED WITH RUBBER JOINTS. INSULATION TO MATCH R VALUE OF CEILING ASSEMBLY.

ASSEMBLIES, SEPARATIONS & FIRESTOPPING:

ANY NEW DEMISING OR INTERIOR PARTITIONS SHALL BE RATED AS REQUIRED BY CODE. ANY PENETRATION THROUGH AN EXISTING DIMENSIONAL FIRE-RATED OR UL RATED ASSEMBLY WALL MUST RE-RATIN THE UL ASSEMBLY FIRE-RATING.

ALL NEW WORK SHALL MATCH OR EQUAL THE UL FIRE RATINGS, IF ANY, OF THE SURROUNDING WORK. AS APPROPRIATE, THE CONTRACTOR SHALL CONTACT HACP AND ARCHITECT IF ANY AREAS ARE UNCOVERED OR DISCOVERED THAT MAY REQUIRE ADDITIONAL ANALYSIS OR CLARIFICATION.

THROUGH PENETRATIONS OF FIRE RESISTANCE WALLS SHALL BE INSTALLED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY FOR UNDERWRITERS LABORATORIES. IF THE PENETRATING ITEMS ARE STEEL, FERROUS OR COPPER PIPES OR STEEL CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE FIRE-RESISTANCE-WALL SHALL BE PERMITTED TO BE PROTECTED AS FOLLOWS:

IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A MAXIMUM 6-INCH NOMINAL DIAMETER AND THE OPENING IS A MAXIMUM 144 SQUARE INCHES. CONCRETE, GROUT, OR MORTAR SHALL BE PERMITTED WHERE INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING.

THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHEN SUBJECTED TO ASTME 119 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE WALL ASSEMBLY.

MEMBRANE PENETRATIONS, WHERE WALLS AND PARTITIONS ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:
FOR STEEL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. A HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY WHERE THE WALL CAVITY IS FILL WITH CELLULOSE LOOSE FILL, ROCKWOOL OR SLAG WOOL INSULATION SHALL BE PROVIDED. WALLS (CONSISTING OF 2-INCH NOMINAL LUMBER OR TWO THICKNESSES OF 1-INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS OR ONE THICKNESS OF 0.719-INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANEL OR ONE THICKNESS OF 0.75-INCH PARTICLEBOARD WITH JOINTS BACKED BY 0.75-INCH PARTICLEBOARD. GYPSUM BOARD, CEMENT FIBER BOARD, BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED AS AN ACCEPTABLE FIREBLOCK. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NONRIGID MATERIALS SHALL BE PERMITTED FOR COMPLIANCE WITH THE 10-FOOT HORIZONTAL FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROW OF STUDS OR STAGGERED STUDS. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES. THE INTEGRITY OF FIREBLOCKS SHALL BE MAINTAINED; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

MEMBRANE PENETRATIONS FOR LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL ARE PERMITTED PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS: THE LISTING OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24-INCHES. SOLID FIREBLOCKING; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

EXCEPTIONS:
MEMBRANE PENETRATIONS BY STEEL, FERROUS OR COPPER CONDUITS, ELECTRICAL BOXES, PIPES, TUBES, VENTS, CONCRETE, MASONRY-PENETRATING ITEMS WHERE THE ANNULAR SPACE IS PROTECTED EITHER IN ACCORDANCE OR TO PREVENT THE FIRE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. SUCH PENETRATIONS SHALL NOT EXCEED AN AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.

MEMBRANE PENETRATIONS BY LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL THAT HAS BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED PER INSTRUCTIONS INCLUDED IN LISTING.

JOINT SEALERS
INTERIOR JOINT SEALER IS TO BE MILDEW-RESISTANT SILICONE SEALANT. APPLY SEALANT AT ALL MATERIAL JOINTS SUBJECT TO WATER PENETRATION. COLOR TO BE SELECTED BY THE ARCHITECT FROM MFR'S STANDARD LINE.

VINYL SIDING
VINYL SIDING. INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D3679.
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALSIDE, EXTERIOR BUILDING PRODUCTS, KAYCAN LTD., ROYAL BUILDING PRODUCTS, A WESTLAKE COMPANY. OR EQUAL.

HORIZONTAL PATTERN: 6-1/2- OR 7-INCH EXPOSURE IN BEADED-EDGE, SINGLE-BEADED STYLE. SMOOTH TEXTURE. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OR TO MATCH EXISTING WHERE REQUIRED.

WATER PROOFING MEMBRANE
BASIS OF DESIGN, BY SIKA OR EQUAL, 60 MIL. REFER TO MANUFACTURERS INSTRUCTION FOR PREPARATION OF SUBSTRATES AND INSTALLATION OF MEMBRANE.

DIVISION 8 - DOORS, WINDOWS AND HARDWARE

ALL DOORS AND WINDOWS SHALL BE INSTALLED PLUMB, LEVEL, SQUARE, AND PER ALL MANUFACTURERS RECOMMENDATION.

EXTERIOR DOORS TO BE 1 3/4"-THICK, FIBERGLASS INSULATED WITH 3 SETS OF STEEL HINGES, RUBBER WEATHER STRIPPING, LOCKING AS SPECIFIED ON HARDWARE. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING. VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS: 1) IN DOORS, 2) WITHIN 24" OF A DOOR AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE, 3) IN FIXED PANELS WITH THE LOWEST EDGE LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36" OF SUCH GLAZING.

DOOR HARDWARE
INTERIOR DOOR HARDWARE

ALL DOOR HARDWARE TO BE APPROVED BY HACP FACILITY REPRESENTATIVE.

BASIS OF DESIGN NON- ACCESIBLE UNITS
MANUFACTURER BALDWIN OR EQUAL, ROUND KNOB TRADIT

POLISH CHROME PLATE FINISH, 2.2 GPM FLOW RATE, LEVER HANDLE, RIGID SPOUT, DRAIN POP UP.

KITCHEN SINKS – WATER SENSE CERTIFIED
STAINLESS STEEL, COUNTER MOUNTED, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- AFINITY SURFACES

0.038 INCH THICKNESS, 3 1/2" DRAIN GRID CENTERED IN BOWL.

SINKS FAUCETS – WATER SENSE CERTIFIED
GENERAL DUTY, SOLID BRASS, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- HANSGROHE

POLISHED CHROME PLATE FINISH. SINGLE HANDLE ON KITCHEN TWO HANDLE ON UTILITY SINKS.

WATER CLOSET – WATER SENSE CERTIFIED
FLOOR MOUNTED, FLOOR OUTLET, CLOSE COUPLED (GRAVITY TANK), VITREOUS CHINE, 1.6 GAL/FLUSH, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- KOHLER
- TOTO USA

STANDARD HEIGHT, ELONGATED RIM, WATER SAVING, COLOR WHITE.
TOILET SEAT PLASTIC FOR RESIDENTIAL USE, ELONGATED RIM, SEAT COVER, SELF SUSTAINING HINGE, COLOR WHITE.

UTILITY SINK
FRESTANDING UTILITY SINK, MANUFACTURERS: PROFLO OR EQUAL
STANDARD HEIGHT, COLOR WHITE. 20 INCH BY 20 INCH SIZE.

EXTERIOR HOSE BIBB
FREEZELESS WALL FAUCET, WOODFORD OR EQUAL, MODEL 30,3/4 INCH CONNECTION, BRASS FINISH, ASSE 1053 APPROVED, MAX PRESSURE 125 PSI.

SLEEVES
SLEEVES SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH WALLS, CEILINGS, OR FLOORS. SLEEVES SHALL BE CUT FROM SCHEDULE 40 BLACK IRON PIPE. THE INTERNAL DIAMETER OF THE SLEEVE SHALL EXCEED THE EXTERNAL DIAMETER OF THE PIPE (INCLUDING INSULATION) BY NOT LESS THAN ONE INCH. SLEEVES SHALL BE CUT FLUSH WITH WALLS AND UNDERSIDES OF FLOORS AND SHALL EXTEND ONE INCH ABOVE FLOORS ABOVE GRADE.

PIPE PORTALS
PIPING THROUGH THE ROOF SHALL BE INSTALLED THROUGH A PREFABRICATED PIPING PORTAL. PORTALS SHALL HAVE GALVANIZED STEEL INSULATED CURBS, ABS PLASTIC CURB CAP, NEOPRENE RUBBER NIPPLES, AND STAINLESS-STEEL CLAMPS. CURB HEIGHT AS INDICATED ON DRAWINGS. PORTALS SHALL BE MODEL RC AND NJB AS MADE BY ROOF PRODUCTS AND SYSTEMS CORP. PORTALS SHALL HAVE EXTRA HOLES FOR POWER AND CONTROL CONDUITS.

FIRESTOPS
ALL OPENINGS THROUGH FLOORS AND FIRE-RATED PARTITIONS SHALL BE SEALED. VOID SPACES AROUND DUCTS OR PIPES SHALL BE PACKED WITH A FIREPROOF CERAMIC FIBER AND SEALED WITH FIRE RETARDANT CAULKING. FIBER SHALL BE KAOWOOL BY BABCOCK AND WILCOX, FIBERFRAX BY CARBORUNDUM, OR CERAFIBER BY MANVILLE CO. CAULKING SHALL BE SE4111 F BY UNISEAL STANDARD DUXSEAL BY MANVILLE, OR MOLDABLE PUTTY BY 3M.

ESCUTCHEONS
ESCUTCHEONS SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH FLOORS, CEILINGS, OR WALLS OF FINISHED SPACES. ESCUTCHEONS SHALL BE CHROMIUM PLATED STEEL, SNAP ON TYPE WITH SPRING RETAINERS. ESCUTCHEONS SHALL BE THE NO. 40 MADE BY BEATON/CORBIN COMPANY OR APPROVED EQUAL, SIZED TO FIT PIPE PLUS INSULATION. WHERE RISER CLAMPS ARE IN FINISHED SPACES, PROVIDE HIGH-SHIRT ESCUTCHEONS TO COVER CLAMP.

UNIONS
UNIONS SHALL BE INSTALLED AT ALL POINTS INDICATED ON THE DRAWINGS AND AT ALL OTHER POINTS NECESSARY FOR THE INSTALLATION AND REMOVAL OF EQUIPMENT, CONTROL DEVICES, ETC. UNIONS IN GAS LINES WILL BE PERMITTED ONLY AT THE FINAL CONNECTIONS TO EQUIPMENT.

HANGERS
ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH PIPEHANGERS TO PREVENT SAGGING AND AVOID CONCENTRATION OF HANGING LOAD. HANGER SPACING SHALL NOT EXCEED 10 FT. FOR STEEL PIPE OR 8 FT. FOR COPPER TUBING. COPPER TUBING 1-1/4" AND SMALLER SHALL BE SUPPORTED AT NO GREATER THAN 6 FT. SPACING.

REPAIR ALL FIREPROOFING WHICH IS DAMAGED BY HANGER INSTALLATION.

SOIL WASTE AND VENT PIPING
SOIL, WASTE AND VENT STACKS AND BRANCHES, AND ROOF CONDUCTORS SHALL BE ABS OR PVC PIPING AND FITTINGS SCHEDULE 40. WASTE LINES SHALL BE MINIMUM 2 INCH.

HOT AND COLD-WATER PIPING
POTABLE-WATER PIPING AND COMPONENTS ARE TO COMPLY WITH NSF 14, NSF 61, AND NSF 372. INCLUDE MARKING "NSF-PW" ON PIPING.

HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE TYPE L, SEMI-LESS, HARD TEMPER, COPPER TUBING WHICH CONFORMS TO ASTM SPECIFICATION B-88 WITH WROUGHT COPPER, SOLDER, TYPE FITTINGS, OR PEX TUBING PLASTIC IN ACCORDANCE WITH ASTM F876 AND ASTM F877 WITH FITTINGS ASTM F1807, METAL INSERT AND COPPER CRIMP RINGS ASTM F1960, COLD EXPANSION FITTINGS AND REINFORCING RINGS.

INSTALLATION OF PIPING
DRAINAGE PIPING SHALL BE INSTALLED TO ACCURATE LINE AND UNIFORM GRADE, AND AT THE ELEVATIONS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE INDICATED, ALL DRAINAGE LINES SHALL SLOPE NOT LESS THAN 1/4 INCH PER FOOT.
DRAINAGE LINES SHALL BE PROVIDED WITH SUFFICIENT CLEANOUTS TO MAKE ALL PARTS OF THE DRAINAGE SYSTEM ACCESSIBLE. CLEANOUTS SHALL BE PROVIDED ALONG INTERIOR HORIZONTAL RUNS AT NOT MORE THAN 50 FT. ON CENTER. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH ROOF CONDUCTOR AND AT ALL OTHER POINTS INDICATED ON THE DRAWING OR REQUIRED BY LOCAL PLUMBING CODE.

ALL PIPES SHALL BE CUT WITH SQUARE ENDS AND SHALL BE PROPERLY REAMED. THREADS SHALL BE CUT WITH CLEAN, SHARP DIES TO FULL DEPTH. ALL BURRS SHALL BE REMOVED FROM PIPE. JOINT COMPOUND SHALL BE APPLIED TO PIPE THREAD ONLY. USE OF EXCESSIVE JOINT COMPOUND IS PROHIBITED.

SOLDER JOINTS IN ALL WATER LINES SHALL BE MADE WITH 95-5 TIN-ANTIMONY SOLDER. OTHER JOINTS MADE WITH EASYBRITE LEAD FREE SOLDER.

WATER LINES WITHIN THE BUILDING SHALL BE INSTALLED WITH SUFFICIENT PITCH TO PROPERLY DRAIN LINES AND VALVES. IN ADDITION TO DRAIN VALVES INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL DRAIN VALVES NECESSARY TO PROPERLY DRAIN THE SYSTEM.

GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND NFPA-54. ALL GAS PIPING AND CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH AGA RECOMMENDATIONS AND ALL APPLICABLE LOCAL GAS COMPANY REGULATIONS.

CONTRACTOR SHALL VENTILATE THE WORK AREA TO PROVIDE A SAFE ENVIRONMENT. VENTILATION SHALL NOT DIRECT FUMES TO ADJACENT SPACES OR NEIGHBORING STRUCTURES.

CONTRACTOR SHALL PROVIDE ADEQUATE FIRE PROTECTION DURING WELDING, CUTTING AND SOLDERING.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

VALVES
VALVES IN WATER LINES SHALL BE 125 PSI CLASS, BRONZE BODY, BALL VALVES WITH TEFLON SEATS AND PACKING. NIBCO 580 OR APOLLO.DRAIN VALVES SHALL BE BRONZE BODY SOLDERED ENDS, BALL VALVES WITH 3/4 INCH AMERICAN STANDARD HOSE THREAD OUTLET. NIBCO OR APOLLO.

WALL HYDRANT SHALL BE ALL BRASS, FULLY RECESSED, NON-FREEZE, KEY OPERATED, WITH ADJUSTABLE LOCKNUT, REMOVABLE NYLON SEAT, 3/4 INCH HOSE CONNECTION. FURNISH WITH INTEGRAL VACUUM BREAKER. ZURN Z-1300 OR APPROVED EQUAL.

VALVES IN GAS LINES SHALL BE 125 PSI CLASS, THREADED END, IRON BODY. GAS COCKS WITH BRASS PLUG AND WASHER AND SQUARE HEAD. ORANEO NO. 324.

INSULATION
ALL COLD AND HOT WATER PIPING, AND HORIZONTAL PORTIONS OF ROOF CONDUCTORS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX.

PIPE IDENTIFICATION
ALL PIPING SHALL BE LABELED WITH THE NAME OF THE FLUID IN THE PIPE AND WITH ARROWS INDICATING THE DIRECTION OF THE FLOW.

TESTING

DRAINAGE SYSTEM - THE ENTIRE DRAINAGE SYSTEM SHALL BE TESTED HYDROSTATICALLY FOR LEAKS. THE ENTIRE SYSTEM SHALL BE FILLED TO THE TOP OF THE STACKS WITH WATER AND CHECKED FOR LEAKS.

WATER PIPING - ALL WATER PIPING SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL FOREIGN MATERIAL. ALL TESTING SHALL BE COMPLETED BEFORE INSULATION IS APPLIED.
DURING THE TESTS ALL VALVES SHALL BE CAREFULLY CHECKED FOR LEAKAGE AROUND THE STEM.

WATER HEATERS - HEATERS SHALL BE TESTED AND CHECKED TO DETERMINE THEY OPERATE IN COMPLIANCE WITH THE SPECIFICATIONS. ALL CONTROLS SHALL BE PROPERLY ADJUSTED.

DISINFECTION OF POTABLE WATER SYSTEM - GENERAL: NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE. WHENEVER REQUIRED THE AUTHORITY HAVING JURISDICTION. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY.

MECHANICAL REQUIREMENTS

GENERAL CONDITIONS OF THE MECHANICAL CONTRACT
PLUMBING CONTRACTOR TO FOLLOW HUD GENERAL CONDITIONS AS SPECIFIED EARLIER IN DIVISION 1.

ALL MECHANICAL WORK TO COMPLY WITH LOCAL CODE AND REGULATIONS.

CUTTING AND PATCHING
ALL CHASES, RECESSES, HOLES, AND OPENINGS FOR EQUIPMENT AND DUCTWORK WILL BE PROVIDED BY THE GENERAL CONTRACTOR.

SHOULD THE MECHANICAL CONTRACTOR FAIL TO SET SLEEVES OR LOCATE OPENINGS BEFORE THE WORK OF THE GENERAL CONTRACTOR HAS BEEN COMPLETED IN THAT PARTICULAR AREA, THE MECHANICAL CONTRACTOR SHALL CUT WHATEVER HOLES ARE NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT. ALL PATCHING NECESSITATED BY THE CUTTING OF SUCH HOLES SHALL BE DONE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

REPAIR ALL FIREPROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

EXHAUST FANS
FANS SHALL VENT DIRECTLY TO THE EXTERIOR. EXHAST DUCTS MAY BE TIED TOGETHER OR TIED INTO AN EXISTING SYSTEM PROVIDED THAT BACK FLOW PREVENTORS ARE INSTALLED AT EACH FAN INCLUDING ALL FANS TIED INTO THE EXISTING SYSTEM.

FURNISH NEMA 1 SURFACE MOUNTING STARTER WITH OVERLOAD AND UNDER VOLTAGE PROTECTION.

FURNISH WITH BIRD SCREEN AND BACKDRAFT DAMPER.

FAN SHALL BE ACE MADE BY COOK, GREENHECK, OR APPROVED EQUAL. VOCFM CAPACITY, MANUFACTURER'S STANDARD. FINISH WHITE.

THE HEATING CONTRACTOR SHALL FURNISH THERMALLY AND ACOUSTICALLY INSULATED CURB.

MECHANICAL EQUIPMENT
THE EQUIPMENT DESCRIBED IN THIS SECTION IS BASIS OF DESIGN, MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT TO MATCH EXISTING SYSTEM CAPACITY AT A MINIMUM.

MECHANICAL CONTRACTOR TO PROVIDE HACP AND ARCHITECT WITH SPECIFICATION SHEETS OF EQUIPMENT.

GAS-FIRED FURNACES, NONCONDENSING
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- BRYANT; CARRIER GLOBAL CORPORATION.
- CARRIER GLOBAL CORPORATION.
- BUILDING SOLUTIONS NORTH AMERICA.

ENERGY FACTOR MINIMUM OF 95% AFUE OR GREATER
CABINET: GALVANIZED STEEL.
- CABINET INTERIOR AROUND HEAT EXCHANGER SHALL BE FACTORY-INSTALLED INSULATION.
- LIFT-OUT PANELS SHALL EXPOSE BURNERS AND ALL OTHER ITEMS REQUIRING ACCESS FOR MAINTENANCE.
- FACTORY PAINT EXTERNAL CABINETS IN MANUFACTURER'S STANDARD COLOR.
- AIRSTREAM SURFACES: SURFACES IN CONTACT WITH THE AIRSTREAM SHALL COMPLY WITH REQUIREMENTS IN ASHRAE 62.1.

FAN: CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT OR BELT DRIVE.
- FAN MOTORS: COMPLY WITH REQUIREMENTS IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT."
- SPECIAL MOTOR FEATURES, SINGLE SPEED: SINGLE SPEED, PREMIUM EFFICIENCY, AS DEFINED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT," AND WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, MULTISPEED: MULTI-TAPPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, ECM: ELECTRONICALLY CONTROLLED MOTOR (ECM) CONTROLLED BY INTEGRATED FURNACE/BLOWER CONTROL.

TYPE OF GAS: NATURAL
HEAT EXCHANGER: ALUMINIZED STEEL.
BURNER:
- GAS VALVE: 100 PERCENT SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUTOFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD.
- IGNITION: ELECTRIC PILOT IGNITION, WITH HOT-SURFACE IGNITER OR ELECTRIC SPARK IGNITION.

GAS-BURNER SAFETY CONTROLS:
- ELECTRONIC FLAME SENSOR: PREVENTS GAS VALVE FROM OPENING UNTIL PILOT FLAME IS PROVEN; STOPS GAS FLOW ON IGNITION FAILURE.
- FLAME ROLLOUT SWITCH: INSTALLED ON BURNER BOX; PREVENTS BURNER OPERATION.
- LIMIT CONTROL: FIXED STOP AT MAXIMUM PERMISSIBLE SETTING; DE-ENERGIZES BURNER ON EXCESSIVE BONNET TEMPERATURE; AUTOMATIC RESET.

COMBUSTION-AIR INDUCER: CENTRIFUGAL FAN WITH THERMALLY PROTECTED MOTOR AND SLEEVE BEARINGS PRERUPGRES HEAT EXCHANGER AND VENTS COMBUSTION PRODUCTS; PRESSURE SWITCH PREVENTS FURNACE ON IF COMBUSTION-AIR INLET OR FLUE OUTLET IS BLOCKED.
FURNACE CONTROLS: SOLID-STATE BOARD INTEGRATES IGNITION, HEAT, COOLING, AND FAN SPEEDS; AND ADJUSTABLE FAN-ON AND FAN-OFF TIMING; TERMINALS FOR CONNECTION TO ACCESSORIES.
VENT MATERIALS: COMPLY WITH REQUIREMENTS IN SECTION 235123 "GAS VENTS" FOR TYPE B METAL VENTS.

CAPACITIES AND CHARACTERISTICS:
AIRFLOW CONFIGURATION: UPFLOW.
GAS:
- TYPE: NATURAL
- VENTING TYPE: WITH COMBUSTION-AIR INTAKE
- MINIMUM EFFICIENCY AFUE: 80 PERCENT.
- INPUT: SSE SCHEDULE ON DRAWINGS.
- HEAT OUTPUT: SSE SCHEDULE ON DRAWINGS.
- GAS CONNECTION SIZE: 1/2" NPS.
- VENT SIZE: 4 INCHES.

FAN:
- MOTOR: SIZE: 1/3 HP.
- SPEED: SEE SCHEDULE ON DRAWINGS.
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

FURNACE ELECTRICAL CONNECTION:
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

COMPRESSOR AND CONDENSER UNITS, AIR COOLED, 1.0 TO 5 TONS
DESCRIPTION: FACTORY ASSEMBLED AND TESTED; CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTORS, REFRIGERANT RESERVOIR, AND OPERATING CONTROLS.
ENERGY STAR RATING EQUAL OR OVER 15.2 SEER2
COMPRESSOR TYPE: SCROLL, HERMETICALLY SEALED, WITH RUBBER VIBRATION ISOLATORS.
- TWO-SPEED COMPRESSOR: INCLUDE MANUAL-RESET, HIGH-PRESSURE SWITCH AND AUTOMATIC-RESET, LOW-PRESSURE SWITCH.
- ACCUMULATOR: SUCTION TUBE.

REFRIGERANT: R-410A.
CONDENSER COIL: SEAMLESS COPPER-TUBE, -FIN COIL; WITH REMOVABLE DRAIN PAN AND BRASS SERVICE VALVES WITH SERVICE PORTS.
CONDENSER FAN: DIRECT-DRIVEN, MALE PROPELLER FAN; WITH PERMANENTLY LUBRICATED, TOTALLY ENCLOSED FAN MOTOR WITH THERMAL OVERLOAD PROTECTION AND BALL BEARINGS.
UNIT CASING: GALVANIZED STEEL, FINISHED WITH; WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE. MOUNT SERVICE VALVES, FITTINGS, AND GAUGE PORTS ON EXTERIOR OF CASING.
CAPACITIES AND CHARACTERISTICS:
COMPRESSOR AND CONDENSER UNIT:
- FULL-LOAD COOLING CAPACITY: TO BE CALCULATED BY MECHANICAL CONTRACTOR

ELECTRICAL CHARACTERISTICS:
- VOLTS: 208 V.
- PHASE: 1.
- HERTZ: 60 HZ.

SHEET METAL
DUCT SIZES INDICATED ON THE DRAWINGS ARE THE CLEAR INSIDE DIMENSIONS.

ALL DUCTS SHALL BE COMPLETE WITH FOUR SIDES AND SHALL BE OF AIRTIGHT CONSTRUCTION. ALL DUCTS, UNLESS OTHERWISE NOTED, SHALL BE CONSTRUCTED OF 24 GAGE GALVANIZED SHEET STEEL AT 2" PRESSURE CLASS.

JOINTS, SEAMS AND DUCT WALL PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. SEALANT MATERIAL SHALL BE CAULKING COMPOUND SPECIFICALLY MANUFACTURED FOR DUCT APPLICATION FOR INDOOR USE.

JOINTS BETWEEN SHEET METAL SECTIONS MAY BE MADE WITH PREFABRICATED JOINING SYSTEM SUCH AS THE DUCTMATE INDUSTRIES SYSTEM.
STIFFENERS SHALL BE PLACED AT NOT MORE THAN 8-FOOT INTERVALS.

ALL DUCTS SHALL BE ADEQUATELY SUPPORTED FROM CONSTRUCTION ABOVE BY MEANS OF GALVANIZED STEEL STRAP HANGERS SPACED AT NOT MORE THAN 8-FOOT INTERVALS. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA STANDARDS.

DUCTWORK CONNECTIONS TO AIR HANDLING AND AIR CONDITIONING UNITS SHALL HAVE FLEXIBLE CONNECTIONS. WHEN CONNECTION IS OUTDOORS, CONNECTION LENGTH SHALL BE INSULATED AND WEATHERPROOFED.

TURNING VANES SHALL BE INSTALLED IN ALL ELBOWS HAVING SQUARE THROATS OR A THROAT RADIUS LESS THAN HALF THE DUCT WIDTH. TURNING VANES MAY BE PREFABRICATED. IF JOB FABRICATED, DESIGN AND CONSTRUCTION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. VANES SHALL BE AIRFOIL TYPE.

MANUAL VOLUME CONTROL DAMPERS IN DUCTS SHALL BE CONSTRUCTED OF NOT LIGHTER THAN US GAGE NO. 16 GALVANIZED SHEET STEEL. DAMPER BLADES SHALL BE SUPPORTED ON AN END BEARING ON ONE SIDE AND A COMBINATION BEARING AND DAMPER REGULATOR ON THE OTHER SIDE. REGULATOR SHALL BE EQUIPPED WITH A LOCKING DEVICE. MANUAL DAMPERS SHALL BE OPPOSED BLADE TYPE.

FURNISH AND INSTALL FIRE DAMPERS WHERE INDICATED OR WHERE REQUIRED. DAMPERS SHALL COMPLY WITH LATEST EDITION OF NFPA 90A, AND SHALL BE UL LABELED. BLADE STACK SHALL BE OUT OF AIRSTREAM. FUSIBLE FIRE LINKS SHALL HAVE A MELTING POINT OF 165F. DAMPERS SHALL BE MODEL IBD AS MADE BY PRUSKIN, OR APPROVED EQUAL BY SAFE-AIR. FURNISH ACCESS DOORS TO ALL DAMPERS.

ACCESS DOORS IN DUCTS SHALL BE RIGIDLY CONSTRUCTED AND TIGHTLY FITTED. DOORS SHALL BE SUPPORTED ON TWO STEEL BUTT HINGES AND SHALL BE SECURED WITH A SASH LOCK. DOORS SHALL BE GASKETED AND INSULATED.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

FLEXIBLE DUCTS
FLEXIBLE DUCTS SHALL BE SOUND ATTENUATING, THERMAL INSULATED, WIRE WOUND, REINFORCED TYPE WITH A MOISTURE TIGHT FLAME PROOF VINYL BARRIER. FLEXIBLE DUCTS TO BE USED ONLY TO CONNECT INDIVIDUAL DIFFUSERS WITH MAIN OR BRANCH DUCTS. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PORTION OF THE EXISTING SYSTEM WHICH DOES NOT MEET THESE REQUIREMENTS WITH PROPERLY SIZED AND INSULATED SHEET METAL DUCTS. THIS WORK TO BE INCLUDED IN BASE BID.

DIFFUSERS
DIFFUSERS SHALL BE SQUARE OR RECTANGULAR FACED, RECESSED TYPE, WITH REMOVABLE CORES. DIFFUSER CAPACITIES, SIZES AND DIRECTIONAL BLOWS ARE INDICATED ON THE DRAWINGS. FURNISH EACH DIFFUSER WITH DEFLECTING VANES AND KEY OPERATED, OPPOSED BLADE, VOLUME DAMPERS. DIFFUSERS SHALL BE FURNISHED WITH BAKED, WHITE FINISH.

SUPPLY REGISTERS
SUPPLY REGISTERS SHALL HAVE INDIVIDUALLY ADJUSTABLE FINS WITH VERTICAL FRONT BARS AND HORIZONTAL REAR BARS. FINS SHALL BE STREAMLINED AND OF STURDY CONSTRUCTION. FLANGES SHALL BE 5/8 INCH HCNNAREL BORDER. FURNISH RUBBER GASKET AROUND PERIMETER OF FLANGE, AND KEY OPERATED, OPPOSED BLADE VOLUME CONTROL DAMPERS. RUBBER GASKET SHALL BE NON-CHLORINATED RUBBER AND NON-POROUS. FURNISH WITH PRIME COAT OF PAINT.

GRILLES
GRILLES AND REGISTERS FOR MECHANICAL TO MATCH EXISTING. GRILLES AND REGISTERS SHALL BE OUT OF STEEL, WITH DAMPER, PRIMED PAINTED WHITE. SIZE OF GRILLE TO MATCH EXISTING OPENING ON TOE KICK, WALL OR CEILING.

CONTROLS
THE HEATING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL DEVICES NECESSARY TO ACHIEVE THE CONTROL SEQUENCE DESCRIBED HEREIN.

CONTROL SYSTEMS SHALL BE GUARANTEED FOR 2 YEARS FROM DATE OF ACCEPTANCE BY HACP.

CONTROL WIRING SHALL BE CONCEALED AND INSTALLED IN ACCORDANCE WITH SECTION 16.

MOTOR STARTERS - MOTOR STARTERS FOR ALL MECHANICAL ITEMS SHALL BE FURNISHED BY THE HEATING CONTRACTOR. STARTERS SHALL HAVE HAND-OFF-AUTO SWITCHES AND CONTROL TRANSFORMERS.

DAMPERS - DAMPERS SHALL BE OPPOSED MULTI-BLADE. BLADES SHALL BE CONSTRUCTED OF 16 GAGE STEEL WITH NEOPRENE GASKETED EDGES, AND SHALL BE MOUNTED IN CORROSION RESISTANT BUSHINGS. DAMPERS SHALL HAVE STOPS ON ALL FOUR SIDES. MOTORS SHALL BE MODULATING WITH OIL-IMMERSED GEAR TRAINS. DAMPERS SHALL BE 2% LOW LEAKAGE TYPE.

FREEZE PROTECTION THERMOSTAT - FREEZE PROTECTION THERMOSTAT SHALL BE MERCURY TUBE, MANUAL RESET TYPE SET AT 45F. INSTALL AN ADJUSTABLE TIME DELAY RELAY TO PERMIT AIR TO ESTABLISH SATISFACTORY TEMPERATURE TO AVOID FALSE TRIPS.

INSULATION
ALL SUPPLY AIR DUCTS SHALL BE INSULATED WITH 2" THICK, 1.00 DENSITY, OWENS-CORNING OR APPROVED EQUAL FLEXIBLE DUCT INSULATION WITH FLAME RETARDANT REINFORCED FIRK 25 FOIL COVERING. SEAL ALL JOINTS, BOLTS, AND ALL EXPOSED EDGES WITH 4" WIDE STRIPS OF SEALING TAPE USING A SUITABLE ADHESIVE. INSULATION SHALL HAVE A 2" FLAP AT ALL JOINTS AND SEAMS WHICH SHALL BE STAPLED AND SECURED WITH ADHESIVE. APPLY ADHESIVE TO DUCTS IN SIX-INCH-WIDE STRIPS AT ONE FOOT IN TERVALS. DUCTOWRK EXPOSED WITHIN THE SPACE MAY NOT BE INSULATED.

OPERATING INSTRUCTIONS
THE CONTRACTOR SHALL FURNISH THREE COMPLETE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS. THIS SHALL INCLUDE FINAL CONTROL DIAGRAMS, CATALOG DATA INCLUDING CONSTRUCTION AND MAINTENANCE INFORMATION ON ALL EQUIPMENT, AND MAINTENANCE INFORMATION IN THE COMPLETE SYSTEM.

ONE COMPLETE CONTROL DIAGRAM SHALL BE INCLUDED IN EACH O&M MANUAL.

THE CONTRACTOR SHALL FORMALLY INSTRUCT THE HACP'S STAFF ON THE OPERATION OF THE SYSTEM. THE INSTRUCTION SHALL CONSIST OF NOT LESS THAN 2 PERIODS, EACH PERIOD OF 4 HOURS DURATION. THE CONTRACTOR SHALL ARRANGE FOR THIS INSTRUCTION WITH THE HACP.

FUNCTIONS AND ALL ACTUATORS OPERATE IN ACCORDANCE WITH THE SPECIFICATIONS.
TESTS AND INSPECTION

THE FOLLOWING OPERATIONS SHALL BE PERFORMED IN PREPARATION FOR FINAL INSPECTION BY THE ARCHITECT. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE TO THE ARCHITECT THAT THE SYSTEM IS OPERATING IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL TESTS AND INSPECTIONS SHALL BE COMPLETED BEFORE FINAL PAYMENT IS MADE TO THE HEATING (MECHANICAL) CONTRACTOR.

CONTROLS - ALL CONTROLS SHALL BE TESTED AND ADJUSTED TO ACHIEVE THE INTENT OF THESE SPECIFICATIONS. CONTROLS SHALL BE ADJUSTED WHILE THE SYSTEM IS OPERATING UNDER FULL LOAD CONDITIONS, BOTH HEATING AND COOLING. CONTROL SUB-CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION THAT ALL ON/OFF AND ALARM.

AIR DISTRIBUTION SYSTEM - AIR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCE SUBCONTRACTOR. THE COST OF THE SUB-CONTRACTOR SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE. THE INDEPENDENT AIR BALANCER SHALL NOT BE AN EMPLOYEE NOR A SUBSIDIARY OF THE CONTRACTOR.

GUARANTEE
THE MECHANICAL CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE JOB THAT ALL EQUIPMENT, MATERIAL AND LABOR FURNISHED BY HIM ARE FREE FROM DEFECTS. ANY DEFECTS IN MATERIAL AND WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT FURTHER EXPENSE TO THE HACP. ALL ITEMS SPECIFIED TO HAVE A LONGER WARRANTIES SHALL BE GUARANTEED FOR THAT LONGER PERIOD. CONTROLS SHALL HAVE A 2-YEAR GUARANTEE ON PARTS AND LABOR.

CONTROLS
SOLID-STATE THERMOSTAT: WALL-MOUNTED, PROGRAMMABLE, MICROPROCESSOR-BASED UNIT WITH MANUAL SWITCHING FROM HEATING TO COOLING, PREFERENTIAL RATE CONTROL, SEVEN-DAY PROGRAMMABILITY WITH MINIMUM OF FOUR TEMPERATURE PRESETS PER DAY, VACATION MODE, AND BATTERY BACKUP PROTECTION AGAINST POWER FAILURE FOR PROGRAM SETTINGS.

DIVISION 26 - ELECTRICAL WORK

NOTE: ELECTRICAL WORK ON THIS PROJECT IS TO BE DESIGN BUILD. THE E.C. IS RESPONSIBLE FOR REVIEWING LOCATIONS AND REQUIREMENTS FOR THE ELECTRICAL SYSTEM WITH THE HACP.

CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE SPECIFIC BUILDING HACP REQUIREMENTS, THE LATEST RULES OF THE NATIONAL ELECTRICAL CODE AND WITH LOCAL ORDINANCES HAVING JURISDICTION.

DO NOT INTERPRET ANYTHING IN THE DRAWINGS OR SPECIFICATIONS AS AUTHORITY TO VIOLATE APPLICABLE CODES.

BE RESPONSIBLE FOR EXAMINING DRAWINGS AND SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES. RESOLVE ALL CONFLICTS BEFORE INSTALLATION AT NO EXTRA COST.

PREPARE ANY ADDITIONAL CLARIFYING DETAILS REQUIRED BY THE LOCAL INSPECTOR AUTHORITIES AND SECURE APPROVAL OF SAME. PAY ANY CHARGES. OBSERVE ALL UNIFORM CONSTRUCTION CODE REQUIREMENTS.

OBSERVE ALL APPLICABLE SAFETY REGULATIONS REQUIRED BY HACP AND/OR STATE.

BRING ANY DISCREPANCIES BETWEEN DIFFERENT DRAWINGS, BETWEEN THE DRAWINGS AND FIELD CONDITIONS, OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR ANY APPARENT OMISSIONS, TO THE ARCHITECT'S ATTENTION BEFORE SUBMITTING THE BID. AFTER AWARD OF CONTRACT.

THE INTERPRETATION OF ANY CONFLICT WILL BE MADE BY THE ARCHITECT AND SHALL BE ACCEPTED AS FINAL.

IF MENTION HAS BEEN OMITTED PERTAINING TO DETAILS, ITEMS OR RELATED ACCESSORIES REQUIRED FOR THE COMPLETION OF ANY ELECTRICAL SYSTEM, INCLUDE SUCH ITEMS AND ACCESSORIES IN THE ELECTRICAL CONTRACT WITHOUT ADDITIONAL CHARGES.

AFTER THE JOB IS AWARDED, CLAIMS BASED ON

MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, ASTM AND IEEE. ALL SIMILAR MATERIALS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.

B. RACEWAYS

1. MATERIALS
RIGID HEAVY WALL STEEL CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE STEEL, HOT DIPPED GALVANIZED AND ZINC COATED, INSIDE AND OUTSIDE. CONDUIT SHALL BEAR THE MANUFACTURER'S AND UNDERWRITERS' LABELS. THIN WALL CONDUIT IS DESIGNATED AS E.M.T. STEEL CONDUIT SHALL BE MANUFACTURED BY WHEATLAND, ALLIED, TRIANGLE, OR EQUAL.
FLEXIBLE CONDUIT (GREENFIELD) SHALL BE U. L. LISTED, 3/4 INCH MINIMUM TRADE SIZE FOR BRANCH WIRING. GREENFIELD OF ½ INCH SIZE WILL BE PERMITTED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES ONLY.

2. INSTALLATION
MINIMUM SIZE CONDUIT IS 3/4 INCHES.
INSTALL CONDUIT AS A COMPLETE SYSTEM. CONTINUOUS FROM OUTLET TO OUTLET CABINET BOX OR FITTING. MECHANICALLY AND ELECTRICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY IS SECURED.
DO NOT ROUTE RACEWAYS THROUGH ANY DUCTWORK.

C. CONDUIT FITTINGS

1. MATERIALS
ALL CONDUIT FITTINGS SHALL BE GALVANIZED MALLEABLE IRON OR STEEL, WHERE APPLICABLE.
CONDUIT FITTINGS SHALL CONFORM IN DESIGN AND QUALITY TO THE TYPE OF CONDUIT ON WHICH THEY ARE BEING INSTALLED.

2. INSTALLATION
USE THREADED CONNECTORS ON GRS CONDUIT.
USE SET-SCREW STYLE CONNECTORS ON E.M.T. WHERE SAME IS RUN EXPOSED OR CONCEALED ABOVE GRADE.
USE BUSHINGS, LOCKNUTS AND EXPANSION FITTINGS OF THE APPROPRIATE TYPE FOR THE RACEWAY SYSTEM BEING INSTALLED.

D. PULL BOXES, OUTLET BOXES AND COVERS

1. GENERAL
FOR EACH OUTLET BOX, USE THE PROPER CODE SIZE FOR THE ENTERING CONDUITS AND THE NUMBER OF WIRES TERMINATING THEREIN.
USE BOXES WITH PLASTER RING EXTENSIONS IN PLASTERED OR DRY WALL PARTITIONS.

2. MATERIALS
FOR LARGE PULL BOXES, USE BOXES OF CODE GAUGE SHEET STEEL WITH STEEL COVERS ATTACHED WITH BRASS SCREWS. BOXES SHALL BE HOT DIPPED, GALVANIZED AFTER FABRICATION - THE MINIMUM SIZE OF EACH BOX SHALL BE AS REQUIRED BY THE NATIONAL ELECTRIC CODE. MANUFACTURER'S ARE HOFFMAN, KEYSTONE OR EQUAL.
FOR CONCEALED WORK, USE PRESSED STEEL BOXES, KNOCKOUT TYPE, ZINC COATED, OF 1/16 INCH MINIMUM THICKNESS.
USE BOXES OF FORM AND DIMENSIONS BEST ADAPTED TO SPECIFIC LOCATION, KIND OF FIXTURE USED AND THE NUMBER, SIZE AND ARRANGEMENT OF RACEWAYS CONNECTING THERETO. USE STEEL CITY OR RACO.
USE WIREMOLD FINISHED STYLE BOXES IN FINISHED AREAS WHERE CONCEALED BOXES ARE NOT FEASIBLE.

E. CONDUCTORS IN RACEWAYS

1. MATERIALS
CONDUCTORS SHALL BE SOFT DRAWN COPPER, MINIMUM 97% CONDUCTIVITY, 600 VOLT, CONFORMING TO ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
INSULATION SHALL BE SUITABLE FOR THE CONDITIONS AND LOCATIONS IN WHICH CONDUCTORS ARE INSTALLED. THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED OR REQUIRED BY LOCATION OR INSTALLATION CONDITIONS:
A. FOR BUILDING WIRE IN INTERIOR ABOVE GRADE LOCATIONS, USE TYPE THWN/THHN COPPER RATED 75 DEGREES C. WET OR DRY.
WIRES SHALL BE CLEARLY AND REGULARLY MARKED WITH THE WIRE SIZE, VOLTAGE, INSULATION TYPE AND MANUFACTURER'S NAME.
CONDUCTORS SHALL BE NEW AND MANUFACTURED WITHIN EIGHT MONTHS PREVIOUS TO DELIVERY AT SITE, WITH DATE OF MANUFACTURE MARKED ON THE PACKAGES.
MINIMUM WIRE SIZE FOR BRANCH CIRCUITING SHALL BE #12 AWG.
ALL CIRCUIT RUNS EXCEEDING 75 FEET IN LENGTH EXTENDING FROM THE PANELBOARD TO THE FIRST OUTLET IN THE CIRCUIT SHALL BE #10 AWG MINIMUM.
WIRE #8 AWG AND SMALLER SHALL BE SOLID; WIRE #6 AWG AND LARGER SHALL BE STRANDED.
WIRE SHALL BE AS MANUFACTURED BY HI-TECH, PIRELLI, TRIANGLE OR EQUAL.

2. INSTALLATION
COLOR CODE ALL WIRES PER NEC REQUIREMENTS:
A. MATCH THE EXISTING SCHEME PRESENTLY INSTALLED; NEUTRAL SHALL BE WHITE. EQUIPMENT GROUND SHALL BE GREEN.
THE GROUPING OF OUTLETS ON INDIVIDUAL NEW CIRCUITS AS SHOWN ON THE DRAWINGS SHALL BE STRICTLY OBSERVED. GROUPING OF CONDUCTORS IN THE CONDUIT SHALL NOT BE PERMITTED. INCORPORATE A MAXIMUM OF FOUR (4) WIRES, I.E. A MAXIMUM OF ONE CIRCUIT CONDUCTOR ON EACH PHASE PLUS THE NEUTRAL WIRE PLUS THE GROUND WIRE IN ONE CONDUIT.
EMPLOY A U.L. LISTED COMMERCIAL PRODUCT SUCH AS WYRE-EZE OR YELLOW-77 FOR PULLING WIRES INTO A RACEWAY.
CLEAN AND DRY CONDUITS BEFORE PULLING IN WIRES.
THE USE OF B.X., ROMEX, OR U.F. CABLE IS NOT PERMITTED.
MC CABLE MAY BE USED FOR CONCEALED BRANCH CIRCUIT WIRING.

F. SPLICES

MAKE ALL SPLICES, JOINTS AND TAPS WITH SOLDERLESS PRESSURE CONNECTORS LISTED AND APPROVED FOR THE INTENDED USE AND FOR THE SIZE AND NUMBER OF CONDUCTORS UTILIZED.
1. FOR WIRE #10 AWG AND SMALLER, USE TWIST-ON WIRE NUTS.
2. FOR WIRE #8 AWG AND LARGER, USE HEAVY DUTY SOLDERLESS SET SCREW CONNECTORS WITH A SEPARATE BARREL FOR EACH CONDUCTOR.
USE INSULATING COVERS FROM THE MANUFACTURER, WHERE AVAILABLE. TAPE PROPERLY TO PROVIDE A SUFFICIENT INSULATION AROUND THE ENTIRE SPLICE UNIT, WHEN INTEGRAL INSULATING COVERS ARE NOT AVAILABLE FROM THE FITTING MANUFACTURER.

G. PANELBOARDS AND CABINETS

CABINETS SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH WIRING GUTTERS OF SUFFICIENT WIDTH TO PROVIDE AMPLE SPACE FOR BRANCH CIRCUIT WIRES AND FEEDERS. GUTTERS SHALL NOT BE LESS THAN FOUR INCHES WIDE. GUTTERS SHALL CONFORM TO NEC STANDARDS AND SHALL BE OVER-SIZED WHERE NECESSARY TO ACCOMMODATE THE ENTRANCE OF SEVERAL LARGE CONDUITS AND/OR WHERE NECESSARY TO AVOID OVERCROWDING OF CONDUCTORS OR EQUIPMENT WITHIN. TRIMS SHALL BE SURFACE AS NOTED ON THE PANEL SCHEDULE AND SHALL CONTAIN CONCEALED HINGED DOORS, EACH EQUIPPED WITH FLUSH CHROME PLATED COMBINATION LOCKS AND CATCHES, ALL KEYED ALIKE. FINISH SHALL BE STANDARD BAKED ENAMEL OR LACQUER, MEDIUM GRAY, ANSI-61. PROVIDE TWO (2) KEYS WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE. USE "DOOR IN A DOOR" HINGED TRIMS.

PANELBOARD BASIS OF DESIGN:

- MANUFACTURER: GE, SIEMENS OR EQUAL.
- ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED IN ACCORDANCE WITH NFPA 70, BY QUALIFIED ELECTRICAL TESTING AGENCY RECOGNIZED BY AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH NEMA PB 1.
- COMPLY WITH NFPA 70.
- ENCLOSURES: SURFACE-MOUNTED, DEAD-FRONT CABINETS.
- INDOOR DRY AND CLEAN LOCATIONS: UL 50E, TYPE 1
- OTHER WET OR DAMP INDOOR LOCATIONS: UL 50E
- HEIGHT: 7 FT MAXIMUM.
- RETAIN ONE OF FIRST TWO SUBPARAGRAPHS BELOW. VERIFY WITH MANUFACTURER FOR AVAILABILITY OF "DOOR-IN-DOOR" CONSTRUCTION IN OTHER THAN NEMA 1 STYLE PANELBOARDS.
- HINGED FRONT COVER: ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER. TRIMS MUST COVER LIVE PARTS AND MAY HAVE NO EXPOSED HARDWARE.
- INCOMING MAIN ON TOP
- 20 SPACE- 40 CIRCUITS MINIMUM.

BUSING SHALL BE FULL CAPACITY, 98% CONDUCTIVITY COPPER OR 80% CONDUCTIVITY ALUMINUM, BRACED FOR THE SHORT CIRCUIT CURRENT AVAILABLE TO THE PANEL AND SIZED AS SHOWN IN THE PANEL DETAIL. CIRCUIT BREAKERS SHALL BE CONNECTED TO BUSES WITH BOLTED CONNECTIONS FOR SEQUENCE PHASING: I.E., CIRCUITS 1 AND 2 CONNECTED TO PHASE A; 3 AND 4 TO PHASE B AND SO ON. POLARITY OR BLOCK PHASING SHALL NOT BE ACCEPTABLE. PANEL SHALL INCLUDE A NEUTRAL BUS AND AN EQUIPMENT GROUNDING BUS. CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE, BOLT-ON, WITH THERMAL AND MAGNETIC TRIPS, TRIP-FREE ON OVERLOAD OR SHORT CIRCUIT, UL LISTED, HAVING INTERRUPTING CAPACITIES, AS INDICATED.

H. WIRING DEVICES AND PLATES

1. MATERIALS
ALL WIRING DEVICES SHALL BE MANUFACTURED BY ONE OF THE MANUFACTURERS LISTED. DO NOT MIX MANUFACTURER'S PRODUCTS.
DEVICES SHALL BE U.L. SPECIFICATION GRADE.

2. WALL SWITCHES
SWITCHES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE GENERAL USE, AC QUIET TYPE, 20 AMPERE, 120/277 VOLT, BACK AND SIDE WIRED. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

3. WALL SWITCH TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENTS FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP SINGLE POLE WALL SWITCH - HUBBELL #HBL-1221, P & S #20AC1, COOPER #1221, BRYANT #4901, OR LEVITON# 1221-2.
20 AMP 3-WAY WALL SWITCH - HUBBELL #HBL-1223, P & S #20AC3, COOPER #1223, BRYANT #4903, OR LEVITON #1223-2. USE SIMILAR SERIES FOR 4-WAY SWITCHES.

4. WALL RECEPTACLES
ALL CONVENIENCE AND POWER RECEPTACLES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE THE GROUNDING TYPE.
CONVENIENCE RECEPTACLES SHALL BE 20 AMP, 125 VOLT, BACK AND SIDE WIRED, 3 WIRE GROUNDING, UL LISTED AS COMPLYING WITH THE REQUIREMENTS OF NEC ARTICLE 250-146, AND SHALL BE NEMA 5-20R CONFIGURATION. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

5. RECEPTACLE TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENT FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP, 125 VOLT DUPLEX CONVENIENCE OUTLET (NEMA 5-20R) - HUBBELL #HBL-5362, P & S #5362A, COOPER #5362, BRYANT #5362, OR LEVITON #5362.
20 AMP, 125 VOLT GROUND FAULT INTERRUPTER (NEMA 5-20R) - HUBBELL #GF-5362, P & S #2091, COOPER #WGF-20, BRYANT #GFRS3FT, OR LEVITON #6899.

6. PLATES
USE STAINLESS STEEL PLATES.

I. FASTENINGS AND ATTACHMENTS

FOR FASTENINGS AND ATTACHMENTS, SUCH AS SCREWS, BOLTS AND NUTS, USE DEVICES MADE OF NON-FERROUS METALS OR OF GALVANIZED OR CADMIUM PLATED STEEL. WHEN SUCH DEVICES ARE OBTAINABLE IN NON-FERROUS METALS, OR IN STEEL WITH A PROTECTIVE METALLIC COATING. PAINT SAME WITH A RUST PREVENTING PAINT SUCH AS RUSTOLEUM.
ALL FASTENINGS AND ATTACHMENTS SHALL BE MADE OF MATERIALS OR SO PROTECTED, THAT THEY WILL OFFER THE MAXIMUM PROTECTION AGAINST DETERIORATION FROM AGE, WEATHER OR DAMPNESS.
DO NOT PENETRATE THE ROOF DECK WITH ANY FASTENERS.

J. SURFACE METALLIC RACEWAY SYSTEM

USE A SURFACE METAL RACEWAY SYSTEM AND BOXES, WHERE CONCEALED WIRING IS NOT POSSIBLE OR WHERE SHOWN ON THE PLANS.
USE RACEWAYS, SUCH AS WIREMOLD, FOR STRAIGHT RUNS, COMPLETE WITH BOXES AND FITTINGS, AS DIRECTED. VERIFY COLOR OPTIONS WITH THE ARCHITECT. PAINT SAME WHERE REQUIRED OR INDICATED.
OBTAIN APPROVAL FOR ALL SURFACE ROUTINGS WITH THE ARCHITECT PRIOR TO ROUGH-IN.

K. FIRE STOPS

1. GENERAL
PROVIDE THROUGH PENETRATION FIRE STOP SYSTEMS TO PREVENT THE SPREAD OF FIRE THROUGH OPENINGS MADE IN FIRE-RATED WALLS OR FLOORS TO ACCOMMODATE THROUGH PENETRATING ITEMS SUCH AS CONDUIT AND CABLES.
FIRE-RESISTANCE-RATED ASSEMBLY SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY OR SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRE STOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM-E-814 OR U.L. 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER. THE SYSTEM SHALL HAVE AN F RATING AND A T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. WHERE FLOOR/CEILING ASSEMBLIES ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED. FIRE STOP SHALL RESTORE FLOOR AND WALL TO ORIGINAL FIRE RATED INTEGRITY AND SHALL BE WATERPROOF.

PENETRATIONS OF MEMBRANES THAT ARE PART OF A FIRE-RATED WALL OR FLOOR MUST BE STOPPED AS OUTLINED FOR THROUGH PENETRATIONS WITH THE FOLLOWING EXCEPTIONS.
A. STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
B. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED AS INDICATED.
1. BY HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES.
2. BY HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY IS FILLED WITH CELLULOSE LOOSE FILL ROCK WOOL OR SLAG MINERAL WOOL INSULATION.
3. BY SOLID FIRE BLOCKING.
4. BY PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS.
5. BY OTHER LISTED MATERIALS AND METHODS.

2. MATERIALS
PUTTY - USE FLAMESEAL PUTTY #AA423 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
FIBER - USE CERAMIC FIBER #AA401 (10 LB. BOX) OR #AA417 (2 LB. BAG) AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN WALLS - USE CERAMIC BOARD #AA402 (1" X 18" X 12") OR #AA403 (1" X 36" X 48") AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN FLOOR - USE SUPPORT WIRE #AA404 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.

3. INSTALLATION
USE TOTAL THICKNESS OF 1-1/2 INCHES OF FLAMESEAL PUTTY #AA423 ON ALL PENETRATIONS OF FIRE-RATED WALLS AND FLOORS. USE NELSON FIBER #AA401 OR #AA417 IN CONJUNCTION WITH THE PUTTY TO FILL THE REMAINING VOID OF PENETRATIONS.
PACK CERAMIC FIBER IN CENTER OF OPENING LEAVING 3/4 INCH ON EITHER SIDE OF WALL FOR THE PUTTY. INSTALL THE PUTTY IN THE REMAINING PART OF OPENING, WORKING IT INTO ALL VOIDS AND CAVITIES.
FOR OPENINGS WITH GREATER THAN 4 INCHES OF UNSUPPORTED SPACE, USE NELSON CERAMIC BOARD #AA402 OR #AA403 DEPENDING ON SIZE OF OPENING. PACK CERAMIC FIBER IN BOTTOM OF OPENING PER FACTORY RECOMMENDATIONS, LEAVING 1-1/2 INCHES BELOW FLOOR LEVEL FOR THE INSTALLATION OF FLAMESEAL PUTTY. USE SUPPORT WIRE #AA404 ON ALL PENETRATIONS IN EXCESS OF 6 INCHES DIAMETER.

L. MC CABLE

METAL CLAD CABLE (MC) SHALL BE COPPER WIRE WITH 90 DEGREES C. THHN INSULATION, #12 AWG MINIMUM, WITH CONTINUOUS INSULATED GREEN GROUND CONDUCTOR AND STEEL ARMOR, MANUFACTURED BY A.F.C., ALFLEX, OR EQUAL. INSTALL NON-RIGID CABLE IN A NEAT, APPROVED MANNER, AS PER N.E.C. REQUIREMENTS. DO NOT GROUP CABLES INTO A COMMON CONDUIT AS OVERHEATING WILL RESULT. DO NOT TIE THE SEVERAL CABLES TOGETHER. USE APPROVED STYLE "MC" CONNECTORS AND FITTINGS IN ORDER TO MAINTAIN ADEQUATE CASE GROUNDING REQUIRED BY THE NATIONAL ELECTRICAL CODE. PROVIDE AN INDEPENDENT MEANS OF SUPPORT FOR ALL WIRING LOCATED ABOVE A DROPPED CEILING ASSEMBLY FROM THE STRUCTURAL CEILING SYSTEM. DO NOT SUPPORT WIRING FROM THE CEILING ASSEMBLY OR FROM ITS SUPPORT WIRES.

SERVICE AND DISTRIBUTION

A. GENERAL INSTALLATION

USE RIGID HEAVY WALL STEEL CONDUIT FOR EXPOSED EXTERIOR RACEWAYS.
USE EMT ELECTRICAL METALLIC THINWALL CONDUIT FOR CONCEALED INTERIOR FEEDERS, TELEPHONE RACEWAYS, ETC.
USE FLEXIBLE CONDUIT SUCH AS "GREENFIELD" FOR CONNECTIONS TO RECESSED LIGHTING FIXTURES IN 72" MAXIMUM LENGTHS AND FOR USE IN STUD WALLS WHERE THE USE OF RIGID CONDUIT IS NOT PRACTICAL.
USE WEATHERPROOF AND OIL PROOF FLEXIBLE CONDUIT SUCH AS "SEALTITE" FOR ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT IN LENGTHS OF 18" MAXIMUM.
USE LIQUID-TIGHT FLEXIBLE CONDUIT AND APPROPRIATE LIQUID-TIGHT FITTINGS IN AREAS EXPOSED TO THE WEATHER OR LIKELY TO BECOME DAMP. WHERE USED, CONFORM TO NEC #350-118.

USE WIREMOLD RACEWAYS FOR BRANCH CIRCUIT SURFACE ROUTINGS IN FINISHED AREAS ONLY WHERE CONCEALED WIRING IS NOT FEASIBLE, AND WHERE INDICATED.
USE M.C. CABLE FOR CONCEALED BRANCH CIRCUIT WIRING ONLY, IN ACCORDANCE WITH THE N.E.C. REQUIREMENTS.
THE USE OF B.X., ROMEX, AND U.F. IS NOT APPROVED.

LIGHTING FIXTURES AND ACCESSORIES

GENERAL
ALL LIGHTING FIXTURES AND LAMPS WILL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

LIGHTING FIXTURES

BASIS OF DESIGN LIGHTING FIXTURES BY KICHLER OR EQUAL.
CEILING FIXTURE: KICHLER #8112WH. WHITE FINISH. SURFACE MOUNTED
EXTERIOR CEILING FIXTURE: KICHLER #11132AZTLED, OUTDOOR RATED.
WALL EXTERIOR: KICHLER #9654TZ. WALL MOUNTED, OUTDOOR RATED
BATHROOM VANITY: KICHLER JOELSON #45923
FLOOD LIGHT: LITHONIA LIGHTING OLF LED WITH MOTION OCCUPANCY SENSOR
RECESSED LIGHTING: HALO OR EQUAL.

B. INSTALLATION

PROVIDE ALL SUPPLEMENTARY STRUCTURAL MATERIALS REQUIRED TO PROPERLY MOUNT ALL LIGHTING FIXTURES.
SECURELY MOUNT LIGHTING FIXTURES TO STRUCTURAL ELEMENTS OF THE BUILDING TO SUSPENDED CEILING SYSTEMS SUCH THAT SAID FIXTURES WILL BE SQUARE, PLUMB, AND RIGID, WILL NOT FALL OR SAG, AND WILL NOT CAUSE THE SUSPENDED CEILING SYSTEM TO SAG. PROVIDE ADDITIONAL CEILING SUPPORTS, WHERE REQUIRED TO SUPPORT RECESSED OR SURFACE FIXTURES.
INSTALL WIRING TO AND WITHIN FIXTURES TO COMPLY WITH NEC ARTICLE #410. TAKE SPECIAL CARE TO ASSURE THAT THE FIXTURE OUTLETS FOR RECESSED FIXTURES ABOVE SOLID SUSPENDED CEILINGS WILL ACTUALLY BE ACCESSIBLE AFTER THE PROJECT IS COMPLETED.
USE CLIPS TO FASTEN RECESSED TROFFERS TO DROP CEILING CHANNELS AS REQUIRED BY NEC SECTION #410-16. USE CADDY FASTENERS #6 TS OR APPROVED EQUAL.
TIME CLOCKS SHALL BE COMMERCIAL GRADE, 7 DAY, ASTRONOMICAL DAL, WITH 24-HOUR SPRING RESERVE BACKUP, AS MANUFACTURED BY TORK OR PARAGON (IF REQUIRED).

SMOKE ALARMS

BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 20SAR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

COMBO SMOKE + CO ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 3COUDR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

SMOKE DETECTOR'S LOCATIONS:
1. COMBO SMOKE + CO ALARM PER FLOOR, NOT TO BE PLACED IN MECHANICAL ROOM OR KITCHEN.
1 SMOKE DETECTOR IN SIDE EACH SLEEPING ROOM
INTERCONNECT SMOKE DETECTORS INSIDE THE UNIT.

MOTOR WIRING

WIRING FOR MECHANICAL AND PLUMBING CONTRACTS

1. INSTALLATION
VERIFY ALL LOCATIONS WITH THE VARIOUS MECHANICAL CONTRACTORS BEFORE INSTALLING RACEWAYS.
PROVIDE ALL WIRING MATERIALS AND DEVICES REQUIRED TO CONNECT AND OPERATE THE ELECTRICAL PARTS OF EQUIPMENT FURNISHED AND INSTALLED UNDER THE MECHANICAL DIVISION.
INSTALL AND CONNECT ALL STARTERS, PUSHBUTTONS, SWITCHES, THERMOSTATS AND OTHER CONTROL DEVICES AS FURNISHED BY OTHERS, UNLESS OTHERWISE NOTED.
MAKE ALL FINAL CONNECTIONS TO MOTORIZED EQUIPMENT. VERIFY THE CORRECT DIRECTION OF ROTATION.
CONNECT MOTOR CIRCUITS TO THE RIGID CONDUIT SYSTEM BY MEANS OF WEATHERPROOF STYLE FLEXIBLE CONDUIT, PROPERLY GROUNDED AND BONDED. EMPLOY A GREEN GROUND WIRE FOR ALL SYSTEMS AND MOTOR FRAME GROUND CONNECTIONS.
BOLT THE WIRE TO THE MOTOR FRAME AT ONE END AND TO THE MOTOR STARTER AT THE OTHER END WITH APPROVED TERMINAL DEVICES.
DO ALL LINE VOLTAGE CONTROL WIRING (120 VOLTS OR HIGHER).
ALL LOW VOLTAGE CONTROL WIRING (UNDER 120 VOLTS) IS THE RESPONSIBILITY OF THE MECHANICAL OR PLUMBING CONTRACTS.

SECTION 32- EXTERIOR IMPROVEMENTS

CHAIN LINK FENCE
ALUMINUM WIRED FABRIC 2X2 INCHES WITH ROUNDED POST AND RAILS 2.5 INCHES IN DIAMETER. LIGHT INDUSTRIAL STRENGTH. ZINC COATED. WITH TOP AND BOTTOM TENSION WIRED ZINC COATED. MECHANICALLY DRIVEN INTO SOIL OR USING ANCHORING CONCRETE.

GATES TO MATCH FENCE MATERIAL AND FRAME. DOOR WITH LATCH TO PERMIT OPERATION FROM BOTH SIDES OF GATE. PADLOCK AND CHAIN TO BE PROVIDED BY HACP.

SEEDING

QUALITY, NON-STATE CERTIFIED. SEED OF GRASS SPECIES AS LISTED BELOW FOR SOLAR EXPOSURE, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PER CENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED.

A. SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH.
1. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
2. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
3. DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.

B. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

C. PROTECT SEEDED AREAS FROM HOT, DRY WEATHER OR DRYING WINDS BY APPLYING COMPOST MULCH WITHIN 24 HOURS AFTER COMPLETING SEEDING OPERATIONS. SOAK AREAS, SCATTER MULCH UNIFORMLY TO A THICKNESS OF 3/16 INCH +, AND ROLL SURFACE SMOOTH.

TREE AND STUMP REMOVAL
ALL APPROPRIATE SAFETY EQUIPMENT MUST BE UTILIZED AT ALL TIMES DURING OPERATIONS; INCLUDING, BUT NOT LIMITED TO: HARD HATS, GLOVES, SAFETY GLASSES, FALL RESTRAINTS, TRAFFIC CONTROL DEVICES, HIGH VISIBILITY CLOTHING, ADEQUATE HEARING PROTECTION AND ANY OTHER SAFETY REQUIRED BY OSHA.
ONCE A TREE IS CUT DOWN, THE STUMP MUST BE GROUND OUT WITHIN FIVE DAYS (5). STUMPS AND BUTTRESS ROOTS MUST BE REMOVED TO A MINIMUM OF TWELVE INCHES (12") BELOW GROUND LEVEL AND TWO (2) TIMES THE DIAMETER AT BREAST HEIGHT IN SURFACE AREA GROUND. THE REMAINING STUMP AND/OR CHIPS SHALL BE REMOVED FROM THE SITE WITHIN TWO DAYS (2) AFTER GRINDING. ALL SURFACE ROOTS AND ADJACENT SUBSURFACE ROOTS SHALL BE REMOVED AS MAY BE NECESSARY TO ELIMINATE "HUMPS" OR MOUNDS IN THE TREE EASEMENT AREA ADJACENT TO THE STUMP. ALL TREE EASEMENT AREAS ARE TO BE LEFT FLAT AND MEET ORIGINAL GRADE. THE AREA WILL THEN BE BACKFILLED WITH CLEAN, PULVERIZED TOPSOIL TO THE LEVEL OF THE ADJOINING GRADE AND SEEDED. SEE SEEDING FOR SEED REQUIRED.

THE PARTY AUTHORIZED TO REMOVE THE TREE, AT THEIR EXPENSE, SHALL RESTORE THE LAWN AND ANY EXISTING LANDSCAPING AND APPURTENANNCES THAT EXIST BETWEEN THE SIDEWALK AND CURB OR IN OTHER AREAS THAT HAVE BEEN DISTURBED BY THE PARTY AUTHORIZED TO REMOVE THE TREE DURING THE PROSECUTION OF THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL PROTECT ALL CONCRETE SIDEWALK, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT FROM DAMAGE THROUGH THE USE OF PLYWOOD SHEETING OR MATS WHEN NECESSARY. THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL REPLACE OR RESTORE ALL CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT WHICH MAY HAVE BEEN DAMAGED DURING THE PROSECUTION OF THE WORK.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL BE RESPONSIBLE AT ALL TIMES FOR KEEPING THE WORK SITE ADJOINING PREMISES, STREET, WALKS AND DRIVEWAYS CLEAN. ALL TREE BRANCHES, BARK, CHIPS AND OTHER DEBRIS MUST BE CLEARED UP AT THE END OF THE WORKDAY.

SECTION 33- UTILITIES

TRENCH DRAIN SYSTEM
ZURN Z880 2 1/2 [64] WIDE TRENCH DRAIN SYSTEM SHALL BE 48 [1220] LONG AND 2 1/2 [63.5] WIDE. DRAIN SHALL BE 3 [76] DEEP. DRAIN SHALL BE MADE OF (HDPE) HIGH DENSITY POLYETHYLENE AND IS UV-10 STABILIZED. DRAIN SHALL HAVE BEDDING FEET TO BE USED FOR POSITIONING AND ANCHORING PURPOSES. DRAINS SHALL HAVE TONGUE AND GROOVE SNAP FIT CONNECTION. DRAIN SHALL HAVE 24 [610] LONG HIGH-DENSITY POLYETHYLENE DECORATIVE GRATE (-POG) PROVIDED AS STANDARD.

INSTALLATION
TRENCH EXCAVATION MUST BE 4" [102MM] GREATER THAN THE TRENCH DEPTH AND A MINIMUM OF 4" [102MM] GREATER THAN THE EDGE OF THE TRENCH ON EACH SIDE. SOFT AND/OR SHIFTING SOIL SUBSTRATES MAY CAUSE CRACKING OF THE CONCRETE AND CONSEQUENT MOVEMENT OF THE TRENCH. IT IS CRITICAL THAT THE CONCRETE BE POURED ON AN ADEQUATE FOUNDATION

ASSEMBLING PER MANUFACTURER INSTRUCTION. A SILICONE CAULK OR A CONSTRUCTION ADHESIVE, SUCH AS LIQUID NAILS, IS RECOMMENDED TO BE USED AT EACH JOINT AS A SEALER.

UPON COMPLETION OF THE TRENCH EXCAVATION, THE CHANNELS SHOULD BE PLACED IN ORDER ALONGSIDE THE EXCAVATION AND ACCORDING TO THE JOB LAYOUT.

AFTER ATTACHMENT OF ACESSORIES, ANCHOR AND LEVEL TRENCH IN THE EXCAVATION USING CONCRETE PATTIES AROUND THE FEET. MAKE FINISH POUR OF CONCRETE AND BE CERTAIN TO PROPERLY VIBRATE CONCRETE TO ELIMINATE ANY UNWANTED VOIDS. FINISH TROWELING SHOULD BE DONE TO SET THE TOP EDGE OF THE TRENCH DRAIN 1/16" [1.6MM] BELOW THE FLOOR GRADE. REMEMBER TO COMPENSATE FOR CONCRETE SHRINKAGE THAT MAY OCCUR DURING CURE SO THAT THE EDGE OF THE TRENCH DRAIN DOES NOT PROTRUDE ABOVE THE FINISHED FLOOR GRADE.

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CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved

Renovation of 10 Scattered Sites

10 Scattered Sites - Dagmar Avenue
Single Family Residence, Minor Alteration
1630 Dagmar Avenue,
Pittsburgh, Pennsylvania 15216

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
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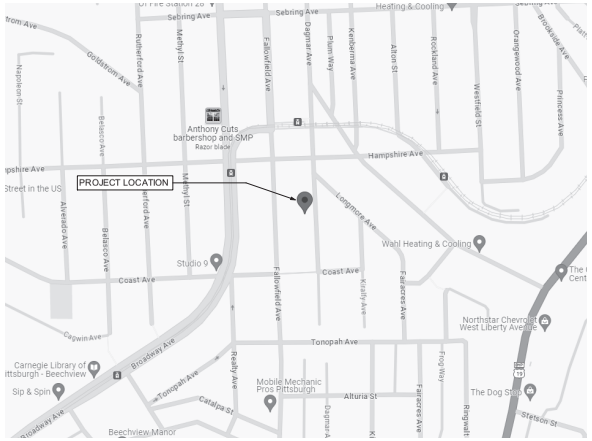
Code Conformance Information

Applicable Codes

General:	2018 International Residential Code 2018
Energy:	2018 International Energy Conservation Code
Electrical:	2017 NEC (NFPA 70)
Fire:	2018 International Fire Code
Fuel Gas:	2018 International Fuel Gas Code
Mechanical:	2018 International Mechanical Code
Plumbing:	2017 Allegheny County Health Department Plumbing Code

General Building / Project Information

Stories:	2 Stories
Building Gross Area:	Basement 390 sqft + Garage 234 sqft
	1st Floor 625 sqft
	2nd Floor 625 sqft



1 Site Location
SCALE: 1" =30'

Materials Legend

NOT ALL MATERIALS USED

- EARTH
- COMPACTED STONE FILL
- CONCRETE
- STEEL
- RIGID INSULATION
- BLOCKING
- BATT INSULATION
- GYPSUM WALL BOARD
- WOOD
- PLYWOOD SHEATHING
- SPRAY FOAM INSULATION

Abbreviations

A.F.F.	Above Finish Floor
A.P.	Access Panel
ACOUST.	Acoustical
A.C.T.	Acoustical Ceiling Tile
ADH.	Adhesive
ADJUST.	Adjustable
A/C	Air Conditioning
ALT.	Alternate
ALTN.	Alternate
ALUM.	Aluminum
A.O.R.	Area of Refuge
APPROX.	Approximate
ARCH.	Architectural
ASB.	Asbestos
ASPH.	Asphalt
AUTO.	Automatic
AVG.	Average
BLK.	Block
BD.	Board
BOT	Bottom
BLDG	Building
C.I.P.	Cast In Place
C.B.	Catch Basin
CEM.	Cement
CER.	Ceramic
CG	Corner Guard
C.M.T.	Ceramic Mosaic Tile
C.W.T.	Ceramic Wall Tile
C.O.	Cleanout
℄	Center Line
CLO.	Closet
C.W.	Cold Water
CLG.	Ceiling
COL.	Column
CONC.	Concrete
C.M.U.	Concrete Masonry Unit
CONT.	Continuous
CORR.	Corridor
C.M.P.	Corrigated Metal Pipe
CRS.	Courses
DIA.	Diameter
DET	Detail
DGL	Dens Glass Gold
DR.	Door
DN.	Down
D.S.	Downspout
DWG.	Drawing
D.F.	Drinking Fountain
D.I.P.	Ductile Iron Pipe
EA.	Each
E.W.	Each Way
ELEC.	Electrical
E.C.	Electrical Contractor
EL.	Elevation
ELEV.	Elevation
EQUIP.	Equipment
E.F.	Exhaust Fan
EXIST.	Existing
EXP.	Expansion
E.J.	Expansion Joint
ESH	Exterior Sheathing
EXIST.	Existing
EXP.	Exposed
EXT.	Exterior
E.I.F.S.	Exterior Insulation & Finish System
F.R.P.	Fiberglass Reinforced Polyester
F.F.	Finish Floor
FIN.FLR.	Finish Floor
F.A.C.P.	Fire Alarm Control Panel
F.E.	Fire Extinguisher
FLR.	Floor
F.D.	Floor Drain
FTG.	Footing
GA.	Gauge
G.C.	General Contractor
G.F.I.	Ground Fault Interrupter
GYP.	Gypsum
G.W.B.	Gypsum Wall Board
GSH	Gypsum Sheathing
H/C	Handicap
H.V.A.C.	Heating, Ventilation &
HT	Height
HC	Hollow Core
H.M.	Hollow Metal
HORIZ.	Horizontal
HR.	Hour
H.W.	Hot Water
IN.	Inch
I.M.	Insulated Metal
INSUL.	Insulation or Insulated
INT.	Interior
INV.	Invert
ISO.	Isolation
JAN.	Janitor's Closet
J.T.	Joint
LAM.	Laminate
LAV.	Lavatory
LG.	Long
M.D.F.	Medium Density Fiberboard
M.D.H.	Magnetic Door Holder
M.H.	Manhole
MFGR.	Manufacturer
MAX.	Maximum
MECH.	Mechanical
MET.	Metal
MIN.	Minimum
MISC.	Miscellaneous
N.I.C.	Not In Contract
N.T.S.	Not To Scale
O.C.	On Center
OPP.	Opposite
O.H.	Overhead
PR.	Pair
PLAS.	Plaster
PLAS.LAM.	Plastic Laminate
P.C.	Plumbing Contractor
PLYWD.	Plywood
POLY.	Polyethylene
P.V.C.	Polyvinyl Chloride
PRE-FAB.	Prefabricated
RE.	Refer To
REF.	Refrigerator
R.C.P.	Reinforced Concrete Pipe
REINF.	Reinforcement
RD.	Roof Drain
RM.	Room
S.A.T.	Suspended Acoustical Tile
SCHED.	Schedule
SHT.	Sheet
SIM.	Similar
S.C.	Solid Core
SPECS.	Specifications
SQ.	Square
S.F.	Square Foot
S.S.	Stainless Steel
STL.	Steel
STOR.	Storage
STRUCT.	Structural
TEL.	Telephone
THK.	Thick
T.B.D.	To Be Determined
T&G	Tongue & Groove
T.O.	Top Of
T.G.	Top Of Grade
T.O.S.	Top Of Steel
TYP.	Typical
UNFIN.	Unfinished
U.N.O.	Unless Noted Otherwise
V.B.	Vapor Barrier
VERT.	Vertical
VEST.	Vestibule
V.C.T.	Vinyl Composition Tile
W.H.	Water Heater
W.W.F.	Welded Wire Fabric
WIN.	Window
W/	With
W/O	Without
WD.	Wood

Symbols

NOT ALL SYMBOLS USED

- T.O. FINISH FLOOR / ELEV. 0'-0" — ELEVATION HEIGHT
- PLAN NORTH — NORTH ARROW
- 0 4' 8' 16' — GRAPHIC SCALE
- 1 / A-000 — BUILDING/ WALL SECTION MARKER
- 2 / A1 — ELEVATION MARKER
- 1 / 400A-000.02 / 3 — INTERIOR ELEVATION MARKER
- 1 / A1 — DETAIL REFERENCE
- XXXX — FINISH MATERIAL DESIGNATOR

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CONSTRUCTION DOCUMENTATION

general notes

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revisions

project title

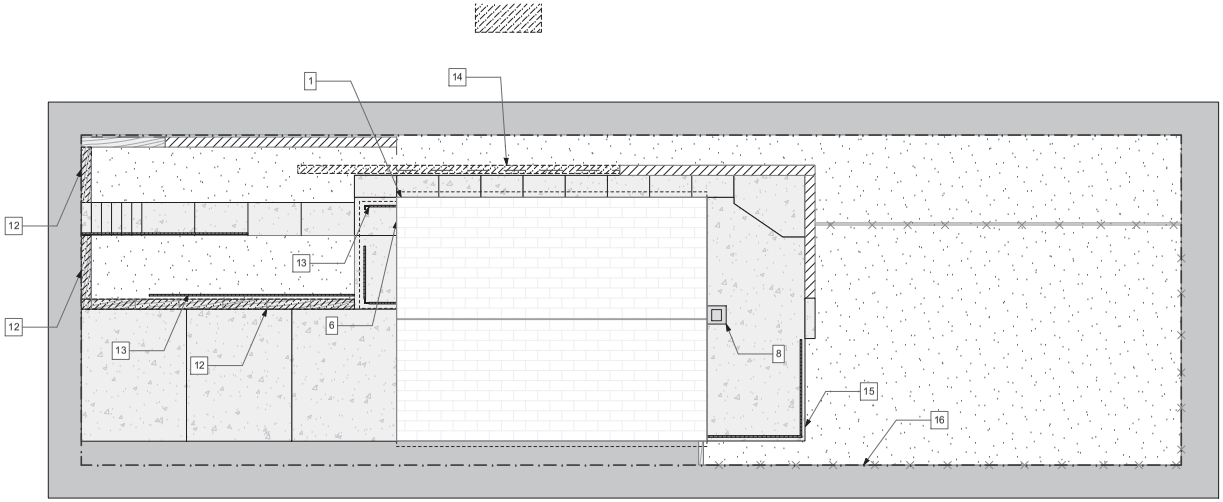
Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
1630 Dagmar Avenue
Pittsburgh, Pennsylvania 15216

drawing title

Drawing Index, Code Conformance Information, Site Location, Abbreviations and Materials

scale: As Noted	**Sheet No.**
date: August 20th, 2024	**A1**
no. 1 / of. 9	Project #2326



PLAN NORTH

1 Site Plan
SCALE: 3/16" = 1'-0"

SITE PLAN LEGEND

GRASS	MISC. BRICK	AC CONDENSER	RAILING	TRUE ROOF OUTLINE
LIGHTWEIGHT CONCRETE	MULCHED AREA	TREE / SHRUB	TACTILE PAVING	APPROX. PROPERTY LINE
CONCRETE BLOCK	STREET SIGNAGE	STREET SIGNAGE	MAN HOLE	WINDOW WELL

10 Scattered Sites Keynotes – 1630 Dagmar Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages (see additional ductwork note at garage)
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. NEW MAILBOX (GC): Provide and install new mailbox per Specifications.
7. EXISTING ENTRANCE CANOPY (GC): Clean and repair portico soffit. Provide new extend perimeter track 1 ½". Remove wall flashing, install new properly installed aluminum step flashing tucked into mortar joints. Caulk to seal. See Specifications.
8. CHIMNEY TOP (GC): Remove existing cracked mortar chimney cap. Provide new sloped mortar cap. See Specifications
9. BRICK SILLS (GC): Repoint and replace missing bricks on front window sills. See Specifications.
10. BRICKWALL (GC): Power wash brick wall in this area (approx. 20 sf).
11. BRICKWALL LINTELS (GC): Scrape and paint lintels over garage and all windows.
12. DRIVEWAY RETAINING WALL (GC): Replace deteriorated wood 6x6 retaining wall with new (approx. 30 linear ft x 3ft high). Provide gravel backfill and weeps. Remove yellow jackets next within existing wood wall. See Specifications.
13. ENTRANCE RAILING (GC): Scrape clean and repaint existing metal railing. Re-set in concrete patio to fasten securely.
14. SIDE WALKWAY (GC): At this location remove disintegrated stone rubble from walkway. At this end of existing retaining wall, for approximately 12 ft, remove and restack existing retaining wall approximately 4 course high. Continue 4 course high dry stack retaining wall for approximately 30 ft towards the street.
15. WATERPROOFING (GC): Pull back soil from porch. Repoint and prep block wall to receive new foundation waterproofing (approx. 50 sf). Provide waterproofing and restore soil to slope away from structure. See specifications.
16. FLORA (GC): Pull overgrown vegetation and debris away from wooden fence to create break between decaying material, soil and fence boards.

Interior Garage

17. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand, and paint new GWB to finish. See Specifications.
18. GARAGE CEILING (E): Provide new light over garage door.
19. SOIL STACK (P): Remove and replace cast iron soil stack at this location with new cast iron with all connections to existing sanitary sewer system and clean-out at base. See Specifications.
20. CONCRETE EDGE SEAL (GC): At floor joint between garage slab and driveway, clean out joint, provide new backer rod and caulk to seal full width. See Specifications.
21. SEAL GARAGE WALL (GC): At this location, provide new caulk to seal non-structural crack at corner of garage wall, approximately 8'-0" in length.

Interior Basement

22. WATER HEATER (P): Water Heater 2021 AO Smith 40 Gal. with a 6 Yr Warranty the Water Heater appears to be appears to be in good condition and does not show signs of failure. Service.
23. FURNACE (M): Existing Furnace is +/-34 years old. Replace furnace with new per Specifications. Seam seal all exposed duct seams within basement. Seam seal and insulate all ductwork running in unconditioned space, e.g. Garage. See Specifications.
24. BASEMENT FINISH FLOOR (GC): Clean, prep and paint existing basement floor (approx. 310 sf). See Specification.
25. BASEMENT CEILING (GC): Replace existing ceiling tile w/ new (approx. 310 sf).
26. BASEMENT WALLS (GC): Clean wall paneling (approx. 800 sf).
27. BASEMENT WALL BY FURNACE (GC): Provide new painted moisture resistant GWB finish on back of this wall (approx. 50 sf).
28. BASEMENT LIGHTING (E): Provide new replacement ceiling lighting and new Smoke/CO sensors. Add three new lighting locations. Locations to be determined. See Specifications.
29. BASEMENT ACCESS STAIR (GC): Clean and paint basement stair handrail. Remove existing and provide new vinyl non-slip tread covers at each tread. See Specifications
30. GLASS BLOCK WINDOW (GC): Clean and re-seal existing glass block window.

Interior First Floor

31. KITCHEN KNEE WALL (GC/M): Repair existing knee wall. Provide new white grille/register properly installed.
32. KITCHEN CABINETS (GC): Carefully clean existing kitchen cabinet faces and interior to remove soiling and oils. Adjust doors and drawers to level and ensure smooth operation, Provide new door and drawer pulls. See Specifications.
33. KITCHEN STOVE/OVEN VENT HOOD (GC/E/M): Remove and replace the existing stove/oven and kitchen vent hood. Provide new kitchen exhaust vent hood ventilated to exterior. See Specifications.
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Second Floor / Attic

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seal

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revisions

project title

Owner:
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412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
1630 Dagmar Avenue
Pittsburgh, Pennsylvania 15216

drawing title

Site Plan, Site Plan Legend, Keynotes

scale	Sheet No.
As Noted	A2
date: August 20th, 2024	
no. 2 / of. 9	Project #2326

FLOOR COVERING PLAN LEGEND

VCT FLOORING
CONCRETE FLOORING
CARPET FLOORING
LVT FLOORING
WOOD FLOORING

10 Scattered Sites Keynotes – 1630 Dagmar Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

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14. SIDE WALKWAY (GC): At this location remove disintegrated stone rubble from walkway. At this end of existing retaining wall, for approximately 12 ft, remove and restack existing retaining wall approximately 4 course high. Continue 4 course high dry stack retaining wall for approximately 30 ft towards the street.
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Interior Garage

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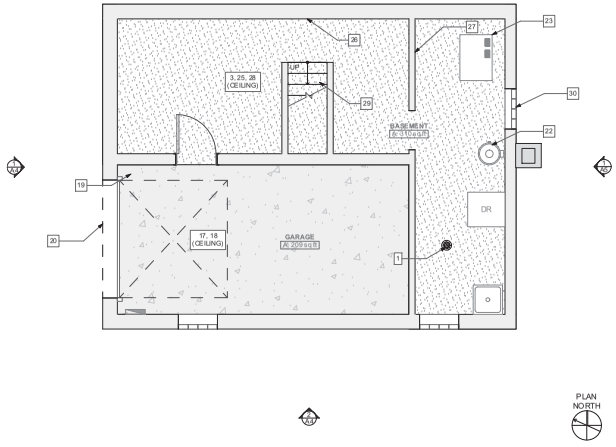
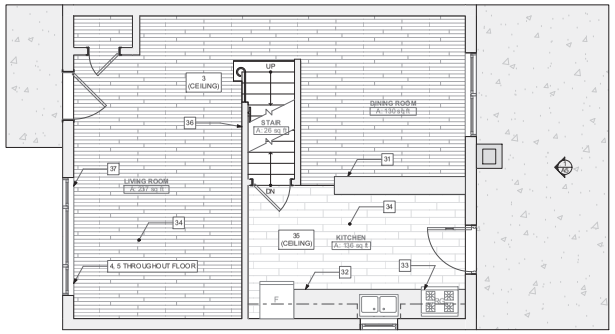
GENERAL FLOOR PLAN NOTES

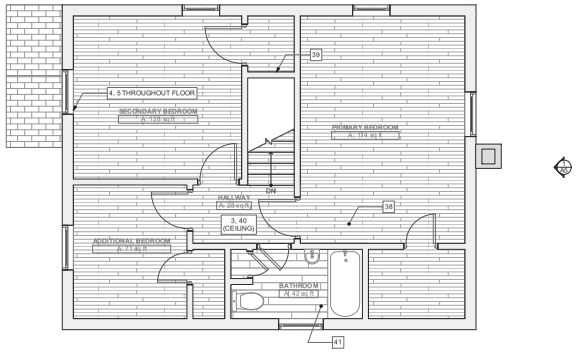
1. PROPERTY HAS BEEN TESTED FOR HAZARDOUS MATERIALS. REPORT WILL BE AVAILABLE AND PROVIDED BY HACP. GC TO ABATED MATERIALS FOLLOWING THE RECOMMENDATIONS FROM THE REPORT.
2. CONTRACTOR TO FIELD VERIFY ANY AND ALL CONDITIONS & DIMENSIONS OF WORK AREAS BEFORE BEGINNING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.
3. THE FINISH FLOOR OF THIS PROJECT IS IDENTIFIED AT 0'-0" IN THIS SET OF DRAWINGS.
4. ALIGN NEW WALL & CEILING CONSTRUCTION WITH EXISTING WALL CONSTRUCTION. FINISH NEW PARTITION SMOOTH TO FORM A SEAMLESS JOINT BETWEEN NEW & EXISTING PARTITIONS.
5. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC REPRESENTATIONS. NOTIFY ARCHITECT IN WRITING OF ANY INCONSISTENT OR MISSING DIMENSIONS.
6. DIMENSIONS SHOWN INDICATE FINISHED FACE TO FINISHED FACE, UNLESS NOTED OTHERWISE.
7. ALL NEW OR RELOCATED DOOR FRAMES TO BE LOCATED 4" FROM PERPENDICULAR WALLS, UNLESS NOTED OTHERWISE.
8. SAND WALLS SMOOTH, REMOVE ALL ADHESIVE RESIDUE, AND/OR SKIM WITH JOINT COMPOUND AS NECESSARY TO PREP WALLS FOR NEW FINISHES. THE FLOOR SHOULD BE SCRAPED CLEAN OF ANY ADHESIVE RESIDUE. PATCHED AND LEVELED OUT AS NECESSARY TO RECEIVE NEW FLOORING.
9. AT WALLS EXISTING TO REMAIN, PATCH AND PAINT ANY HOLES OR DAMAGE TO APPEAR NEW.



1 Basement
SCALE: 1/4" = 1'-0"



2 First Floor
SCALE: 1/4" = 1'-0"



3 Second Floor
SCALE: 1/4" = 1'-0"

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revisions

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Project Location:
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drawing title

Basement, First Floor, Second Floor, Demolition Plan Legend, Floor Plan Legend, Keynotes

scale		Sheet No.
As Noted		A3
date: August 20th, 2024		
no. 3	of. 9	Project #2326

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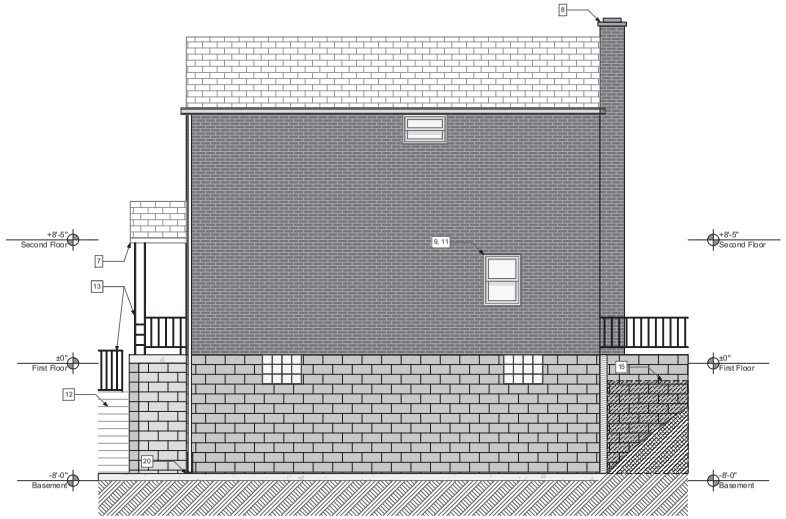
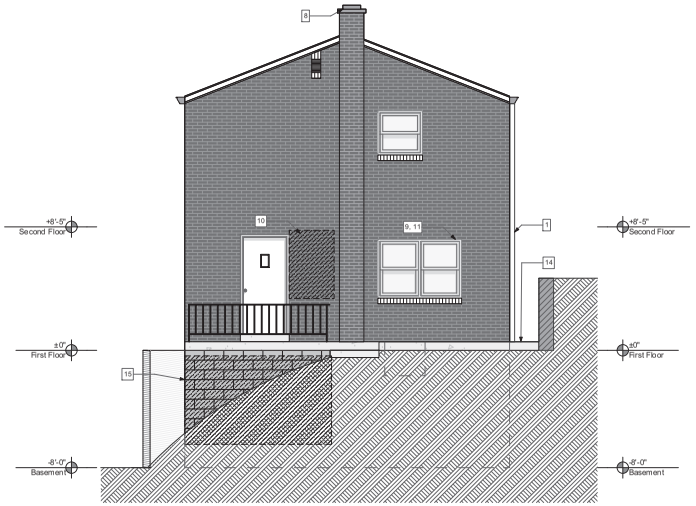


1 South Elevation
SCALE: 1/4" = 1'-0"



2 East Elevation
SCALE: 1/4" = 1'-0"

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seal

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drawing title

South Elevation, East Elevation, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no.	of.
4	9

Sheet No.
A4
Project #2326

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Pittsburgh, Pennsylvania 15219
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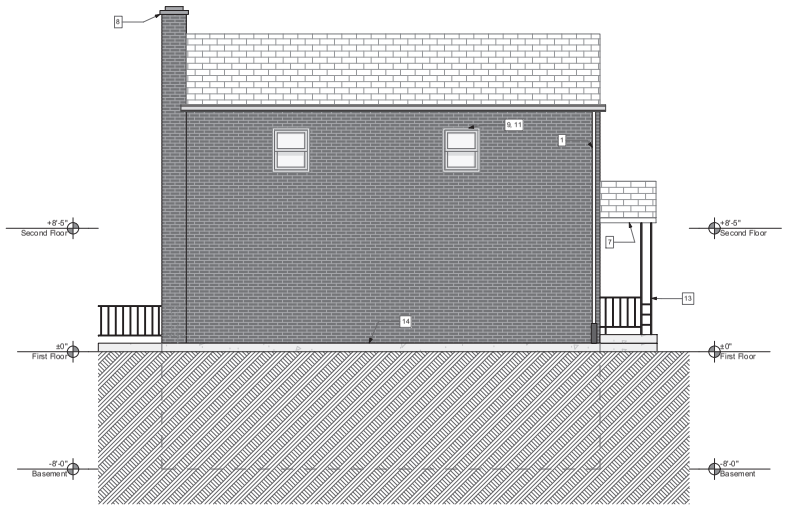

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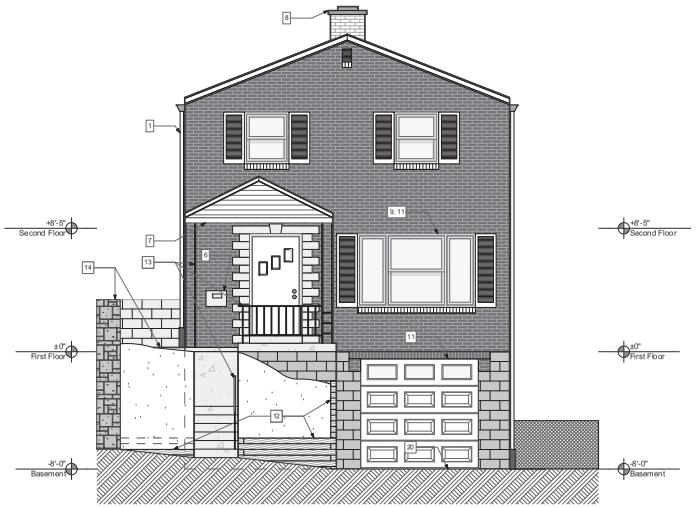
SCALE: 1/4" = 1'-0"



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13. ENTRANCE RAILING (GC): Scrape clean and repaint existing metal railing. Re-set in concrete patio to fasten securely.
14. SIDE WALKWAY (GC): At this location remove disintegrated stone rubble from walkway. At this end of existing retaining wall, for approximately 12 ft, remove and restack existing retaining wall approximately 4 course high. Continue 4 course high dry stack retaining wall for approximately 30 ft towards the street.
15. WATERPROOFING (GC): Pull back soil from porch. Repoint and prep block wall to receive new foundation waterproofing (approx. 50 sf). Provide waterproofing and restore soil to slope away from structure. See specifications.
16. FLORA (GC): Pull overgrown vegetation and debris away from wooden fence to create break between decaying material, soil and fence boards.

Interior Garage

17. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand, and paint new GWB to finish. See Specifications.
18. GARAGE CEILING (E): Provide new light over garage door.
19. SOIL STACK (P): Remove and replace cast iron soil stack at this location with new cast iron with all connections to existing sanitary sewer system and clean-out at base. See Specifications.
20. CONCRETE EDGE SEAL (GC): At floor joint between garage slab and driveway, clean out joint, provide new backer rod and caulk to seal full width. See Specifications.
21. SEAL GARAGE WALL (GC): At this location, provide new caulk to seal non-structural crack at corner of garage wall, approximately 8'-0" in length.

Interior Basement

22. WATER HEATER (P): Water Heater 2021 AO Smith 40 Gal. with a 6 Yr Warranty the Water Heater appears to be appears to be in good condition and does not show signs of failure. Service.
23. FURNACE (M): Existing Furnace is +/-34 years old. Replace furnace with new per Specifications. Seam seal all exposed duct seams within basement. Seam seal and insulate all ductwork running in unconditioned space, e.g. Garage. See Specifications.
24. BASEMENT FINISH FLOOR (GC): Clean, prep and paint existing basement floor (approx. 310 sf). See Specification.
25. BASEMENT CEILING (GC): Replace existing ceiling tile w/ new (approx. 310 sf).
26. BASEMENT WALLS (GC): Clean wall paneling (approx. 800 sf).
27. BASEMENT WALL BY FURNACE (GC): Provide new painted moisture resistant GWB finish on back of this wall (approx. 50 sf).
28. BASEMENT LIGHTING (E): Provide new replacement ceiling lighting and new Smoke/CO sensors. Add three new lighting locations. Locations to be determined. See Specifications.
29. BASEMENT ACCESS STAIR (GC): Clean and paint basement stair handrail. Remove existing and provide new vinyl non-slip tread covers at each tread. See Specifications
30. GLASS BLOCK WINDOW (GC): Clean and re-seal existing glass block window.

Interior First Floor

31. KITCHEN KNEE WALL (GC/M): Repair existing knee wall. Provide new white grille/register properly installed.
32. KITCHEN CABINETS (GC): Carefully clean existing kitchen cabinet faces and interior to remove soiling and oils. Adjust doors and drawers to level and ensure smooth operation, Provide new door and drawer pulls. See Specifications.
33. KITCHEN STOVE/OVEN VENT HOOD (GC/E/M): Remove and replace the existing stove/oven and kitchen vent hood. Provide new kitchen exhaust vent hood ventilated to exterior. See Specifications.
34. FLOOR FINISH (GC): Remove existing carpet and VCT floor finish throughout first floor and stairs. Prep subfloor and provide new LVT floor finish and wall base in kitchen. Sand and re-finish existing wood floors in previously carpeted areas. See Specification.
35. KITCHEN CEILING (GC/E): Remove existing kitchen finish ceiling and lighting. Repair leaking plumbing line above. Provide new finished and painted GWB ceiling (approx. 140 sf) and new lighting per Specifications.
36. LIVING ROOM (M): Replace thermostat with programable thermostat.
37. WINDOWS (GC): Clean tape residue from window's interior.

Second Floor / Attic

38. FLOOR FINISH (GC): Remove existing Carpet floor finish throughout second floor. Provide new LVT floors over existing hardwood floors. With new stained or painted ¼ round at wall base. At bathroom provide new LVT flooring, wall base and threshold. See Specification.
39. ATTIC ACCESS DOOR (GC): At this location, provide new insulated hinged attic access door in existing opening.
40. ATTIC INSULATION (GC): Provide new min R-38 blown in Attic Insulation (approx. 450 sf). Verified with initial depth. Take care not to cover air circulation channels. See Specifications.
41. BATHROOM (GC/E/PM): In second floor bathroom: Remove and replace entirely existing tub tile surround, medicine cabinet, tub/shower faucet and drain, sink faucet and drain, and toilet. Provide new rod and shower curtain. Provide new bathroom exhaust fan wired to light circuit and ventilated to the exterior. Provide new towel bar/s. Robe Hook, Grab bar and toilet roll holder. See Specifications.

seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
1630 Dagmar Avenue
Pittsburgh, Pennsylvania 15216

drawing title

North Elevation, West Elevation, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no. 5	of. 9

Sheet No.
A5
Project #2326

GENERAL NOTES

USE OF THE DOCUMENTS
THE USE OF THESE DOCUMENTS IS RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED. RE-USE OR REPRODUCTION OF THE DOCUMENTS (IN WHOLE OR IN PART), FOR ANY OTHER PURPOSE IS PROHIBITED. TITLE TO THESE REMAINS WITH FUKU ARCHITECTS P.C. (FAR). VISUAL CONTRACT DOCUMENTS DOCUMENTS IS PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

DIVISION 1 - GENERAL CONDITIONS

APPLICABILITY OF HUD-5370 GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS - PUBLIC HOUSING PROGRAMS
THE HUD-5370, GENERAL CONDITIONS CURRENT EDITION, SHALL APPLY TO THE PROJECT. A COPY OF THE HUD GENERAL CONDITIONS ARE INCLUDED IN THE FRONT END DOCUMENTS AS PART OF HUD FORMS. HARD CONES ARE AVAILABLE AT HACP OFFICE.

MULTIPLE CONTRACT
1. COORDINATION
GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT, ELECTRICAL CONTRACT, AND ADDITIONAL CONTRACTS APPLICABLE IN THE CONSTRUCTION DOCUMENTS.

2. GENERAL REQUIREMENTS OF CONTRACTS
UNLESS THE AGREEMENT CONTAINS A MORE SPECIFIC DESCRIPTION OF THE WORK OF EACH CONTRACT, EQUIPMENT INDICATED ON DRAWINGS AND IN SPECIFICATION SECTIONS DETERMINE WHICH CONTRACT INCLUDES A SPECIFIC ELEMENT OF PROJECT.

3. SCOPE OF WORK RESPONSIBILITY
A. GENERAL CONSTRUCTION CONTRACT
WORK OF THE GENERAL CONSTRUCTION CONTRACT INCLUDES, BUT IS NOT LIMITED TO THE REMAINING WORK NOT IDENTIFIED AS WORK UNDER OTHER CONTRACTS.

B. PLUMBING CONTRACT
WORK OF THE PLUMBING CONTRACT INCLUDES, BUT IS NOT LIMITED TO, PLUMBING FIXURES AND APPLIANCES (INCLUDING BUT NOT LIMITED TO SINKS, TUBS, SHOWER ENCLOSURES, SINK DISPOSALS AND DRAIN ASSEMBLIES, ETC), PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT, PLUMBING CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT.

C. MECHANICAL CONTRACT
WORK OF THE MECHANICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ALL MECHANICAL EQUIPMENT AND CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND ELECTRICAL CONTRACT MECHANICAL EQUIPMENT INCLUDES BUT IS NOT LIMITED TO FURNACES AND CONDENSERS, KITCHEN AND BATH EXHAUST FANS, THERMOSTATS AND CONTROLS, ETC.

D. ELECTRICAL CONTRACT
WORK OF THE ELECTRICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ELECTRICAL EQUIPMENT AND FIXTURES INCLUDING BUT NOT LIMITED TO, (INTERIOR AND EXTERIOR LIGHT FIXTURES, SMOKE AND CO DETECTORS, COMPLETE CIRCUIT BREAKER PANELS INCLUDING ALL BREAKERS AND LABELING, ELECTRICAL SERVICE ENTRANCE), WIRING, AND ELECTRICAL AND LOW VOLTAGE CONNECTIONS TO EQUIPMENT FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT. ELECTRICAL CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT

PRE-CONSTRUCTION CONFERENCE AND NOTICE TO PROCEED
WITHIN TEN CALENDAR DAYS OF CONTRACT EXECUTION, AND PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH REPRESENTATIVES OF THE PHA, ITS ARCHITECT, AND OTHER INTERESTED PARTIES CONVENED BY THE PHA. THE CONFERENCE WILL SERVE TO ACQUAINT THE CONTRACTOR WITH THE GENERAL PLAN OF THE CONSTRUCTION OPERATION AND ALL OTHER REQUIREMENTS OF THE CONTRACT. THE PHA WILL PROVIDE THE CONTRACTOR WITH THE DATE, TIME, AND PLACE OF THE CONFERENCE.
(B) THE CONTRACTOR SHALL BEGIN WORK UPON RECEIPT OF A WRITTEN NOTICE TO PROCEED FROM THE CONTRACTING OFFICER OR DESIGNEE. THE CONTRACTOR SHALL NOT BEGIN WORK PRIOR TO RECEIVING SUCH NOTICE.

CONSTRUCTION PROGRESS
(A) THE CONTRACTOR SHALL, WITHIN FIVE DAYS AFTER THE WORK COMMENCES ON THE CONTRACT OR ANOTHER PERIOD OF TIME DETERMINED BY THE CONTRACTING OFFICER, PREPARE AND SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL THREE COPIES OF A PRACTICABLE SCHEDULE SHOWING THE ORDER IN WHICH THE CONTRACTOR PROPOSES TO PERFORM THE WORK, AND THE DATES ON WHICH THE CONTRACTOR CONTEMPLATES STARTING AND COMPLETING THE SEVERAL SALIENT FEATURES OF THE WORK (INCLUDING PROCURING LABOR, MATERIALS, AND EQUIPMENT). THE SCHEDULE SHALL BE IN THE FORM OF A PROGRESS CHART OF SUITABLE SCALE TO INDICATE APPROPRIATELY THE PERCENTAGE OF WORK SCHEDULED FOR COMPLETION BY ANY GIVEN DATE DURING THE PERIOD. IF THE CONTRACTOR FAILS TO SUBMIT A SCHEDULE WITHIN THE TIME PRESCRIBED, THE CONTRACTING OFFICER MAY WITHHOLD APPROVAL OF PROGRESS PAYMENTS OR TAKE OTHER REMEDIES UNDER THE CONTRACT UNTIL THE CONTRACTOR SUBMITS THE REQUIRED SCHEDULE.
(B). THE CONTRACTOR SHALL ENTER THE ACTUAL PROGRESS ON THE CHART AS REQUIRED BY THE CONTRACTING OFFICER, IMMEDIATELY DELIVER THREE COPIES OF THE ANNOTATED SCHEDULE TO THE CONTRACTING OFFICER, IF THE CONTRACTOR FAILS TO PROCEED UPON THE BASIS OF INSPECTION CONDUCTED PURSUANT TO THE CLAUSE ENTITLED INSPECTION AND ACCEPTANCE OF CONSTRUCTION, HEREIN THAT THE CONTRACTOR IS NOT MEETING THE APPROVED SCHEDULE, THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO IMPROVE ITS PROGRESS, INCLUDING THOSE THAT MAY BE REQUESTED BY THE CONTRACTING OFFICER, WITHOUT ADDITIONAL COST TO THE PHA, IN THIS CIRCUMSTANCE THE CONTRACTING OFFICER MAY REQUIRE THE CONTRACTOR TO INCREASE THE NUMBER OF SHIFTS, OVERTIME OPERATIONS, DAYS OF WORK, AND/OR THE AMOUNT OF CONSTRUCTION PLANT, AND TO SUBMIT FOR APPROVAL ANY SUPPLEMENTARY SCHEDULE OR SCHEDULES IN CHART FORM AS THE CONTRACTING OFFICER DEEMS NECESSARY TO DEMONSTRATE HOW THE APPROVED RATE OF PROGRESS WILL BE REGAINED.
(C) FAILURE OF THE CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACTING OFFICER UNDER THIS CLAUSE SHALL BE GROUNDS FOR A DETERMINATION BY THE CONTRACTING OFFICER THAT THE CONTRACTOR IS NOT PROSECUTING THE WORK WITH SUFFICIENT DILIGENCE TO ENSURE COMPLETION WITHIN THE TIME SPECIFIED IN THE CONTRACT. UPON MAKING THIS DETERMINATION, THE CONTRACTING OFFICER MAY TERMINATE THE CONTRACTOR'S RIGHT TO PROCEED WITH THE WORK, OR ANY SEPARABLE PART OF IT, IN ACCORDANCE WITH THE DEFAULT CLAUSE OF THIS CONTRACT.

SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK
(A) THE CONTRACTOR ACKNOWLEDGES THAT IT HAS TAKEN STEPS REASONABLY NECESSARY TO ASCERTAIN THE NATURE AND LOCATION OF THE WORK, AND THAT IT HAS INVESTIGATED AND SATISFIED ITSELF AS TO THE GENERAL AND LOCAL CONDITIONS WHICH CAN AFFECT THE WORK OR ITS COST, INCLUDING BUT NOT LIMITED TO, (1) CONDITIONS BEARING UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS; (2) THE AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, AND ROADS; (3) UNCERTAINTIES OF WEATHER, RIVER STAGES, TIDES, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE; (4) THE CONFORMATION AND CONDITIONS OF THE GROUND; AND (5) THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING WORK PERFORMANCE. THE CONTRACTOR ALSO ACKNOWLEDGES THAT IT HAS SATISFIED ITSELF AS TO THE CHARACTER, QUALITY, AND QUANTITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED IN SO FAR AS THIS INFORMATION IS REASONABLY ASCERTAINABLE FROM AN INSPECTION OF THE SITE, INCLUDING ALL EXPLORATORY WORK DONE BY THE PHA, AS WELL AS FROM THE DRAWINGS AND SPECIFICATIONS MADE A PART OF THIS CONTRACT. ANY FAILURE OF THE CONTRACTOR TO TAKE THE ACTIONS DESCRIBED AND ACKNOWLEDGED IN THIS PARAGRAPH WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK, OR FOR PROCEEDING TO SUCCESSFULLY PERFORM THE WORK WITHOUT ADDITIONAL EXPENSE TO THE PHA.
(B) THE PHA ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR BASED ON THE INFORMATION MADE AVAILABLE BY THE PHA. NOR DOES THE PHA ASSUME RESPONSIBILITY FOR ANY UNDERSTANDING REACHED OR REPRESENTATION MADE CONCERNING CONDITIONS WHICH CAN AFFECT THE WORK BY ANY OF ITS OFFICERS OR AGENTS BEFORE THE EXECUTION OF THIS CONTRACT, UNLESS THAT UNDERSTANDING OR REPRESENTATION IS EXPRESSLY STATED IN THIS CONTRACT.

DIFFERING SITE CONDITIONS
(1) THE CONTRACTOR SHALL PROMPTLY, AND BEFORE THE CONDITIONS ARE DISTURBED, GIVE A WRITTEN NOTICE TO THE CONTRACTING OFFICER OF (1) SUBSURFACE OR UNKNOWN PHYSICAL CONDITIONS AT THE SITE WHICH DIFFER MATERIALLY FROM THOSE INDICATED IN THIS CONTRACT, OR (2)UNKNOWN PHYSICAL CONDITIONS AT THE SITE OF AN UNUSUAL NATURE, WHICH DIFFER MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERING IN WORK OF THE CHARACTER PROVIDED FOR IN THIS CONTRACT.
(B)THE CONTRACTING OFFICER SHALL INVESTIGATE THE SITE CONDITIONS PROMPTLY AFTER RECEIVING THE NOTICE. WORK SHALL NOT PROCEED AT THE AFFECTED SITE, EXCEPT AT THE CONTRACTOR'S RISK, UNTIL THE CONTRACTING OFFICER HAS PROVIDED WRITTEN INSTRUCTIONS TO THE CONTRACTOR. IF THE CONDITIONS DO MATERIALLY SO DIFFER AND CAUSE AN INCREASE OR DECREASE IN THE CONTRACTOR'S COST OF, OR THE TIME REQUIRED FOR, PERFORMING ANY PART OF THE WORK UNDER THIS CONTRACT, WHETHER OR NOT CHANGED AS A RESULT OF THE CONDITIONS, THE CONTRACTOR MAY FILE A CLAIM IN WRITING TO THE PHA WITHIN TEN DAYS AFTER RECEIPT OF SUCH INSTRUCTIONS AND, IN ANY EVENT, BEFORE PROCEEDING WITH THE WORK, NEGOTIATE AJDUSTMENTS IN THE CONTRACT PRICE, THE DELIVERY SCHEDULE, OR BOTH. SHALL BE MADE UNDER THIS CLAUSE AND THE CONTRACT MODIFIED IN WRITING ACCORDINGLY.
(C)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED, UNLESS THE CONTRACTOR HAS GIVEN THE WRITTEN NOTICE REQUIRED; PROVIDED, THAT THE TIME PRESCRIBED IN (A) ABOVE FORGIVING WRITTEN NOTICE MAY BE EXTENDED AT THE DISCRETION OF THE PHA.
(D)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED IF MADE AFTER FINAL PAYMENT UNDER THIS CONTRACT.

SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION
(A) THE CONTRACTOR SHALL KEEP ON THE WORK SITE A COPY OF THE DRAWINGS AND SPECIFICATIONS AND SHALL AT ALL TIMES GIVE THE CONTRACTING OFFICER ACCESS THERETO. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH. IN CASE OF DIFFERENCE BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. IN CASE OF DISCREPANCY IN THE FIGURES, IN THE DRAWINGS OR SPECIFICATIONS, THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE CONTRACTING OFFICER, WHO SHALL PROMPTLY MAKE A DETERMINATION IN WRITING AND ADJUSTMENTBY THE CONTRACTOR WITHOUT SUCH A DETERMINATION SHALL BE ATITIS OWN RISK AND EXPENSE. THE CONTRACTING OFFICER SHALL FURNISH FROM TIME TO TIME SUCH DETAILED DRAWINGS AND OTHER INFORMATION AS CONSIDERED NECESSARY, UNLESS OTHERWISE PROVIDED.
(B)WHEREVER IN THE SPECIFICATIONS OR UPON THE DRAWINGS THE WORDS "DIRECTED", "REQUIRED", "ORDERED", "DESIGNATED", "PRESCRIBED", OR WORDS OF LIKE IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE"DIRECTION", "REQUIREMENT", "ORDER", DESIGNATION, OR "PRESCRIPTION", OF THE CONTRACTING OFFICER IS INTENDED AND SIMILARLY THE WORDS "APPROVED", "ACCEPTABLE", "SATISFACTORY", OR WORDS OF LIKE IMPORT SHALL MEAN "APPROVED BY", OR "ACCEPTABLE TO", OR "SATISFACTORY TO" THE CONTRACTING OFFICER, UNLESS OTHERWISE EXPRESSLY STATED.
(C)WHERE, "SHOW", "SHOWN", "INDICATED", "AS DETAILED", OR WORDS OF SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE REFERENCE IS MADE TO THE DRAWINGS ACCOMPANYING THIS CONTRACT UNLESS STATED OTHERWISE. THE WORD "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE" THAT IS "PROVIDE AND INSTALLED"
(D)"SHOP DRAWINGS" MEANS DRAWINGS, SUBMITTED TO THE PHA BY THE CONTRACTOR, SUBCONTRACTOR, OR SUPPLIER, WHICH SHOW THE SUBCONTRACTOR, SHOWING IN DETAIL (1) THE PROPOSED FABRICATION AND ASSEMBLY OF STRUCTURAL ELEMENTS AND (2) THE INSTALLATION(I.E., FORM, FIT, AND ATTACHMENT DETAILS) OF MATERIALS OF EQUIPMENT. IT INCLUDES DRAWINGS, DIAGRAMS, LAYOUTS, SCHEDULES, DESIGNS OF THE PHYSICAL PROPERTIES, PATTERNS, SCHEDULES, PERFORMANCE AND TEST DATA, AND SIMILAR MATERIALS FURNISHED BY THE CONTRACTOR TO EXPLAIN THE DETAIL OF SPECIFIC PORTIONS OF THE WORK REQUIRED BY THE CONTRACT. THE PHA MAY REQUIRE A REPLICATION OF THE DESIGN CALCULATIONS FOR ANY PURPOSE. SHOP DRAWINGS S DELIVERED UNDER THIS CONTRACT.
(E)IF THIS CONTRACT REQUIRES SHOP DRAWINGS, THE CONTRACTOR SHALL COORDINATE ALL DRAWINGS, AND REVIEW THEM FOR ACCURACY, COMPLETENESS, AND COMPLIANCE WITH OTHER CONTRACT REQUIREMENTS AND SHALL INDICATE ITS APPROVAL THEREON AS EVIDENCE OF SUCH COORDINATION AND REVIEW. SHOP DRAWINGS SUBMITTED TO THE CONTRACTING OFFICER WITHOUT EVIDENCE OF THIS COORDINATION AND REVIEW OR THAT ARE RESUBMISSION FROM THE CONTRACTING OFFICER WILL INDICATE AN APPROVAL OR DISAPPROVAL OF THE SHOP DRAWINGS. IF THE CONTRACTOR BELIEVES THE DELAY SHALL INDICATE THE PHA'S REASONS THEREFORE. ANY WORK DONE BEFORE SUCH APPROVAL SHALL BE AT THE CONTRACTOR'S RISK. APPROVAL BY THE CONTRACTING OFFICER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS IN SUCH DRAWINGS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM THE REQUIREMENTS OF THIS CONTRACT, EXCEPT WITH RESPECT TO VARIATIONS DESIRED AND EXPRESSLY APPROVED IN WRITING BY THE CONTRACTING OFFICER.
(F)IF SHOP DRAWINGS SHOW VARIATIONS FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL DESCRIBE SUCH VARIATIONS IN WRITING, SEPARATE FROM THE DRAWINGS, AT THE TIME OF SUBMISSION. IF THE CONTRACTING OFFICER FINDS THAT THE PROPOSED AND THE CONTRACTING OFFICER CONCURS, THE CONTRACTING OFFICER SHALL INDICATE AN APPROVAL THEREOF IN CONNECTION TO THE DRAWINGS, EXCEPT THAT,IF THE VARIATION IS MINOR OR DOES NOT INVOLVE A CHANGE IN PRICE OR IN TIME OF PERFORMANCE, A MODIFICATION NEED NOT BE ISSUED. (G)IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE TIMELY REQUESTS OF THE PHA FOR SUCH LARGE SCALE AND FULL SIZE DRAWINGS AND OTHER SHOP DRAWINGS OR OTHER ADDITIONAL INFORMATION NOT ALREADY IN HIS POSSESSION, WHICH SHALL BE REQUIRED BY THE CONTRACTOR UNDER THE CONTRACT. SUCH REQUESTS MAY BE SUBMITTED AS THE NEED ARISES, BUT EACH SUCH REQUEST SHALL BE FILED IN AMPLE TIME TO PERMIT APPROPRIATE ACTION TO BE TAKEN WITHOUT CAUSING INTERFERENCE OR DELAY.
(H)THE CONTRACTOR SHALL SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL FOLLOWING SUCH PROCEDURE AS MAY BE DIRECTED ALL SHOP DRAWINGS AS CALLED FOR UNDER THE VARIOUS HEADINGS OF THESE SPECIFICATIONS. THREE SETS (UNLESS OTHERWISE INDICATED) OF ALL SHOP DRAWINGS WILL BE RETAINED BY THE PHA AND ONE SET WILL BE RETURNED TO THE CONTRACTOR. AS REQUIRED BY THE CONTRACTING OFFICER, FROM TIME TO TIME PRIOR TO COMPLETION OF THE WORK UNDER THIS CONTRACT, SHALL FURNISH A COMPLETE SET OF ALL SHOP DRAWINGS AS FINALLY APPROVED. THESE DRAWINGS WILL SHOW ALL CHANGES AND REVISION SMADE UP TO THE TIME THE WORK IS COMPLETED AND ACCEPTED.
(I) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL SUBCONTRACTORS PROVIDE SHOP DRAWINGS BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

AS-BUILT DRAWINGS
(A)"AS-BUILT DRAWINGS," AS USED IN THIS CLAUSE, MEANS DRAWINGS SUBMITTED BY THE CONTRACTOR TO RECORD CHANGES FROM THE WORK TO SHOW THE CONSTRUCTION OF A PARTICULAR STRUCTURE OR WORK AS ACTUALLY CONSTRUCTED UNDER THE CONTRACT. "AS-BUILT DRAWINGS" SHALL BE SYNONYMOUS WITH "RECORD DRAWINGS."
(B)AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER ACCURATE INFORMATIONTO BE USED IN THE PREPARATION OF PERMANENT AS-BUILT DRAWINGS. THE CONTRACTOR SHALL MAKE THE CONTRACTOR SHALL RECORD ON ONE SET OF CONTRACT DRAWINGS ALL CHANGES FROM THE INSTALLATIONS ORIGINALLY INDICATED AND RECORD FINAL LOCATIONSOF UNDERGROUND LINES BY DEPTH FROM FINISH GRADE AND BY ACCURATE HORIZONTAL OFFSET DISTANCES TO PERMANENT SURFACE IMPROVEMENTS SUCH AS BUILDINGS, CURBS, OR EDGES OF WALKS.
(C) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL AS-BUILT DRAWINGS PROVIDED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

MATERIAL AND WORKMANSHIP
(A)ALL EQUIPMENT, MATERIAL, AND ARTICLES FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED. UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT. REFERENCES IN THE CONTRACT TO EQUIPMENT, MATERIAL, ARTICLES, OR PATENTED PROCESSES BY TRADE NAME, MAKE, OR CATALOG NUMBER, SHALL BE REGARDED AS ESTABLISHING A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. THE CONTRACTOR MAY, AT ITS OPTION, USE ANY EQUIPMENT, MATERIAL, ARTICLE, OR PROCESS THAT, IN THE JUDGMENT OF, AND AS APPROVED BY THE CONTRACTING OFFICER, IS EQUAL TO THAT NAMED IN THE SPECIFICATIONS, UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT.
(B)APPROVAL OF EQUIPMENT AND MATERIALS.
(1) THE CONTRACTOR SHALL OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT TO BE INCORPORATED INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL GIVE THE CONTRACTING OFFICER THE NAME OF THE MANUFACTURER, THE MODEL NUMBER, AND OTHER INFORMATION CONCERNING THE PERFORMANCE, CAPACITY, NATURE, AND RATING OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT WHEN REQUIRED BY THIS CONTRACT OR BY THE CONTRACTINGOFFICER. THE CONTRACTOR SHALL ALSO OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MATERIAL ORARTICLES WHICH THE CONTRACTOR PROPOSES TO INCORPORATE INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL PROVIDE FULL INFORMATION CONCERNING THE MATERIAL OR ARTICLES. MACHINERY,
EQUIPMENT, MATERIAL, AND ARTICLES THAT DO NOT HAVE THE REQUIRED APPROVAL SHALL BE INSTALLED OR USED AT THE RISK OF SUBSEQUENT REJECTION.
(2) WHEN REQUIRED BY THE SPECIFICATIONS OR THE CONTRACTING OFFICER, THE CONTRACTOR SHALL SUBMIT APPROPRIATELY MARKED SAMPLES (AND CERTIFICATES RELATED TO THEM) FOR APPROVAL AT THE CONTRACTOR'S
EXPENSE, WITH ALL SHIPPING CHARGES PREPAID. THE CONTRACTOR SHALL LABEL OR OTHERWISE IDENTIFY EACH SPECIMEN OR SAMPLE OF MATERIAL OR PRODUCT REPRESENTED, ITS PLACE OF ORIGIN, THE NAME OF THE PRODUCER, THE CONTRACTOR'S NAME, AND THE DESIGNATION OF THE CONSTRUCTION PROJECT FOR WHICH THE MATERIAL OR PRODUCTIS INTENDED TO BE USED.
(3)CERTIFICATES SHALL BE SUBMITTED IN TRIPLICATE, DESCRIBING EACH SAMPLE SUBMITTED FOR APPROVAL, AND CERTIFYING THAT THE MATERIAL, EQUIPMENT, AND WORKMANSHIP WILL COMPLY WITH CONTRACT REQUIREMENTS. THE CERTIFICATES SHALL INCLUDE THE NAME AND BRAND OF THE PRODUCT, NAME OF MANUFACTURER, AND THE LOCATION WHERE PRODUCED.
(4) APPROVAL OF A SAMPLE SHALL NOT CONSTITUTE A WAIVER OF THE PHA RIGHT TO DEMAND FULL COMPLIANCE WITH CONTRACT REQUIREMENTS. MATERIALS, EQUIPMENT AND ACCESSORIES MAY BE REJECTED FOR CAUSE EVEN THOUGH SAMPLES HAVE BEEN APPROVED.
(5) WHEREVER MATERIALS ARE REQUIRED TO COMPLY WITH RECOGNIZED STANDARDS OR SPECIFICATIONS, SUCH SPECIFICATIONS SHALL BE ACCEPTED AS ESTABLISHING THE TECHNICAL QUALITIES AND TESTING METHODS, BUT SHALL NOT GOVERN THE NUMBER OF TESTS REQUIRED TO PROVE COMPLIANCE WITH THE CONTRACT REQUIREMENTS. THE CONTRACTING OFFICER MAY REQUIRE LABORATORY TEST REPORTS ON ITEMS SUBMITTED FOR APPROVAL OR APPROVED PRIOR TO ORDERING ON THE BASIS OF DATA SUBMITTED IN CERTIFICATES WITH SAMPLES. CHECK TESTS WILL BE MADE ON MATERIALS
DELIVERED TO THE WORK SITE IN ACCORDANCE WITH THE CONTRACTING OFFICER DETERMINES NECESSARY TO INSURE COMPLIANCE OF MATERIALS WITH THE SPECIFICATIONS. THE CONTRACTOR SHALL ASSUME ALL COSTS OF RETESTING MATERIALS WHICH FAIL TO MEET CONTRACT REQUIREMENTS AND RETESTING MATERIAL SOFFERED IN SUBSTITUTION FOR THOSE FOUND DEFICIENT.
(6) AFTER APPROVAL, SAMPLES WILL BE KEPT IN THE PROJECT OFFICE, UNTIL COMPLETION OF WORK. THEY MAY NOT BE USED IN THE WORK, EXCEPT A SUBSTANTIAL QUANTITY OF THE MATERIALSTHEY REPRESENT HAS BEEN BUILT IN AND ACCEPTED FOR.
(C) REQUIREMENTS CONCERNING LEAD-BASED PAINT. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE LEAD-BASED PAINT CONTAINED IN THE LEAD-BASED PAINT POISONING PREVENTION ACT (42 U.S.C. 4821-4846) AS IMPLEMENTED BY 24 CFR PART 35.

PERMITS AND CODES
(A)THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALLAPPLICABLE LAWS, ORDINANCES, CODES, RULES AND REGULATIONS. NOTWITHSTANDING THE REQUIREMENTS OF THE CONTRACTOR TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS IN THE CONTRACT, ALL WORK INSTALLED SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. BEFORE BEGINNING THE WORK, THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND THE SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS BEARING ON THE WORK AND SHALL IMMEDIATELY REPORT ANY DISCREPANCY IT MAY DISCOVER TO THE CONTRACTING OFFICER.
WHERE THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS FAIL TO COMPLY WITH THE APPLICABLE CODE OR REGULATION, THE CONTRACTING OFFICER SHALL MODIFY THE CONTRACT TO CHANGE ORDER PURSUANT TO THE CLAUSE ENTITLED CHANGES HEREIN TO CONFORM TO THE CODE OR REGULATION.
(B) THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES,AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK. WHERE THE PHA CAN ASSISTIN SECURING THE ISSUANCE OF ALL OR PART OF THESE PERMITS, FEES AND LICENSES WITHOUT COST TO THE CONTRACTOR, THE CONTRACT AMOUNT SHALL BE REDUCED ACCORDINGLY.

HEALTH, SAFETY AND ACCIDENT PREVENTION
(A) IN PERFORMING THIS CONTRACT, THE CONTRACTOR SHALL:
(1)ENSURE THAT NO LABORER OR MECHANIC SHALL BE REQUIRED TO WORK IN SURROUNDINGS OR UNDER WORKING CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO HIS/HER HEALTH AND/OR SAFETY AS DETERMINED UNDER CONSTRUCTION SAFETY AND HEALTHSTANDARDS PROMULGATED BY THE SECRETARY OF LABOR BY REGULATION. (2)PROTECT THE LIVES, HEALTH, AND SAFETY OF OTHER PERSONS; (3)PREVENT DAMAGE TO PROPERTY, MATERIALS, SUPPLIES, AND EQUIPMENT; AND, (4)AVOID WORKER LOSS BY
(B) FOR THESE PURPOSES, THE CONTRACTOR SHALL: (1)COMPLY WITH REGULATIONS AND STANDARDS ISSUED BY THE SECRETARY OF LABOR AT 29 CFR PART 1926 PURSUANT TO COMPLY WITH THE IMPOSITION OF SANCTIONS PURSUANT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. 327 ETSEQ. 333 STAT. 96) 40 U.S.C. 3701ETSEQ., AND (2)INCLUDE THE TERMS OF THIS CLAUSE IN EVERY SUBCONTRACT SO THAT SUCH TERMS WILL BE BINDING ON EACH SUBCONTRACTOR.
(C) THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF EXPOSURE DATA ON ALL ACCIDENTS INCIDENT TO WORK PERFORMED UNDER THIS CONTRACT AND RESULTING IN DEATH, TRAUMATIC INJURY,OCCUPATIONAL DISEASE, OR DAMAGE TO PROPERTY, MATERIALS,SUPPLIES, OR EQUIPMENT, AND SHALL REPORT THIS DATA IN THE MANNER PRESCRIBED BY 29 CFR PART1904.
(D)THE CONTRACTOR AGREES THAT THE CONTRACTOR OR ANY NONCOMPLIANCE WITH THESE REQUIREMENTS AND OF THE CORRECTIVE ACTION REQUIRED. THIS NOTICE, WHEN DELIVERED TO THE CONTRACTOR OR THE CONTRACTOR'S REPRESENTATIVE AT THE SITE OF THE WORK, SHALL BE DEEMED SUFFICIENT NOTICE OF THE NON COMPLIANCE AND CORRECTIVE ACTION REQUIRED. AFTER RECEIVING SUCH NOTICE, THE CONTRACTOR SHALL IMMEDIATELY TAKE CORRECTIVE ACTION. IF THE CONTRACTOR FAILS OR REFUSES TO TAKE CORRECTIVE ACTION PROMPTLY, THE CONTRACTING OFFICER MAY ISSUE AN ORDER STOPPING ALL OR PART OF THE WORK UNTIL SATISFACTORY CORRECTIVE ACTION HAS BEEN TAKEN. THE CONTRACTOR SHALL NOT BASE ANY CLAIM ON REQUEST FOR EQUITABLE ADJUSTMENT FOR ADDITIONAL TIME OR MONEY ON ANY STOP ORDER ISSUED UNDER THESE CIRCUMSTANCES.
(E) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS SUBCONTRACTOR'S COMPLIANCE WITH THE PROVISIONS OF THIS CLAUSE. THE CONTRACTOR SHALL TAKE SUCH ACTION WITH RESPECT TO ANY SUBCONTRACT AS THE PHA, THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, OR THE SECRETARY OF LABOR SHALL DIRECT AS A MEANS OF ENFORCING SUCH PROVISIONS.

TEMPORARY HEATING
THE MECHANICAL CONTRACTOR SHALL PROVIDE AND PAY FOR TEMPORARY HEATING, COVERING, AND ENCLOSURES NECESSARY TO PROPERLY PROTECT ALL WORK AND MATERIALS AGAINST DAMAGE BY DAMPNESS AND COLD, TO DRY OUT THE WORK, AND TO FACILITATE THE COMPLETION OF THE WORK. ANY PERMANENT HEATING EQUIPMENT USED SHALL BE TURNED OVER TO THE PHA IN THE CONDITION AND AT THE TIME REQUIRED BY THE SPECIFICATIONS.

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PERFORMED OR COMPLETED SHALL BE SUBMITTED BY EACH PRIME CONTRACTOR. ALL WORK OUTLINED ON THE INITIAL PUNCH LIST SHALL BE COMPLETED BY THE CONTRACTOR WHOM IT IS THE FINAL INSPECTION AND BEFORE THE PROJECT WILL BE ACCEPTED FOR FINAL COMPLETION. AFTER ALL REQUIREMENTS PREPARATORY TO THE FINAL INSPECTION HAVE BEEN COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER TO PERFORM A FINAL INSPECTION. IF ALL THE WORK HAS BEEN COMPLETED, INCLUDING PUNCH LIST ITEMS FROM EARLIER INSPECTIONS, AND NO FURTHER CORRECTIONS ARE REQUIRED, THE ARCHITECT SHALL RECOMMEND FINAL ACCEPTANCE OF THE PROJECT WHEN ALL THE CLOSEOUT DOCUMENTS ARE RECEIVED, INCLUDING BUT NOT LIMITED TO WARRANTIES, O&M MANUALS, FINAL TESTING, CERTIFICATES, PERMITS, PUNCH LIST, SUBMITTALS, RFIS, AS BUILD DRAWINGS AND ANY ADDITIONAL DOCUMENTATION REQUIRED BY HACP FOR CLOSEOUT.

ALL PUNCH LIST ITEMS TO BE COMPLETED WITHIN THIRTY (30) WORKING DAYS OF RECEIPT, OR FROM 10% DRAW WILL BE FORFEITED. ALL WORK NOT COMPLETED WITHIN THE ALLOTTED TIME WILL BE COMPLETED BY HACP AT PRIME CONTRACTOR'S EXPENSE. FINAL COMPLETION OCCURS WHEN ALL PUNCH LIST ITEMS HAVE BEEN COMPLETED AND OCCUPANCY PERMIT HAS BEEN ISSUED.

PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL EQUIPMENT FURNISHED, INSTALLED AND OR SERVICED UNDER THIS AND THEIR CONTRACTS. EACH PRIME CONTRACTOR SHALL VERIFY THAT ITS EQUIPMENT, ELECTRICAL SYSTEMS AND APPLIANCES ARE FULLY OPERATIONAL AND THAT ALL PLUMBING AND MECHANICAL EQUIPMENT IS OPERATING QUIETLY AND FREE FROM VIBRATION. CONTRACTOR SHALL PROVIDE A BINDER FOR HACP AND TENANT CONTAINING MAINTENANCE MANUALS, INCLUDING OPERATION INSTRUCTIONS, SPARE PARTS, WARRANTIES, INSPECTION PROCEDURES, AND DATA FOR EACH SYSTEM OR EQUIPMENT ITEM.

ALL ELECTRICAL PANELS AND BREAKERS TO BE PROPERLY MARKED AND A TYPED SCHEDULE TO BE FURNISHED.

FINAL CLEANING: AT THE TIME OF THE PROJECT CLOSE OUT, THE GENERAL CONTRACTOR SHALL PROVIDE AND THOROUGHLY CLEAN AND READY THE SPACE FOR OCCUPANCY. THIS SHALL, AT MINIMUM, INCLUDE HARDWARE, SECURITY EQUIPMENT, LIGHT FIXTURES, REPLACEMENT OF BURNED OUT LAMPS, REMOVAL OF NON PERMANENT PROTECTION AND LABELS, TOUCH UP OF ANY MINOR FINISH DAMAGE, AND CLEANING OR REPLACEMENT OF MECHANICAL SYSTEM FILTERS. DAMAGE TO ANY FINISH, SURFACE, EQUIPMENT OR OBJECT CAUSED DURING CLEANING SHALL BE REPAIRED OR REPLACED BY THE GENERAL CONTRACTOR AT HIS/HER OWN COST.

UPON COMPLETION OF THE PROJECT, GENERAL CONTRACTOR SHALL OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT AND PROVIDE A COPY OF THE ORIGINAL TO HACP AND ARCHITECT IF REQUIRED.

AT EACH PAYMENT REQUEST AND BEFORE PAYMENT IS MADE, EACH CONTRACTOR SHALL DELIVER TO THE HACP A COMPLETE RELEASE OF ALL SUB CONTRACTOR'S AND SUPPLIER'S LIENS AND RIGHTS OUT OF THIS CONTRACT, OR RECEIPTS IN FULL COVERING ALL LABOR AND MATERIALS FOR WHICH A LIEN COULD BE FILED OR A BOND SATISFACTORY TO THE HACP INDEMNIFYING HACP AGAINST ANY LIENS.

DIVISION 2 – SITE WORK – NOT APPLICABLE

DIVISION 3 – CONCRETE

PLAN AND REINFORCE CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 19 OF THE IBC 2018 AND ACI 318 AS AMMENDED IN SECTION 1905 OF THE IBC 2018.

CONCRETE TO BE INSTALLED AND CURED PER ACI 318 AND BE NORMAL WEIGHT (144PCF) WITH COMPRESSIVE STRENGTH IN 28 DAYS OF 4000 PSI, AIR ENTRAINED. CEMENT SHALL BE PORTLAND, TYPE I(PLY ASH & GROUND GRANULATED BLAST FURNACE SLAG NOT PERMITTED). COARSE AGGREGATE SHALL BE ¾" MAXIMUM. AIR ENTRAINED SHALL BE 7 PERCENT. SLUMP SHALL BE 4" MAXIMUM.

REINFORCING BARS SHALL COMPLY WITH A.S.T.M. A615–GRADE 60. WELDED WIRE FABRIC SHALL COMPLY WITH A.S.T.M. A185.

4" MINIMUM COMPACTED GRAVEL BED TO PLACE CONCRETE TO BE #57 HAND OR MACHINE COMPACTED BEFORE CONCRETE PLACEMENT.

PROVIDE COLD-APPLIED JOINT SEALANTS, SINGLE COMPONENT, SILICONE, SELF LEVELING TYPE. BY SIKA OR EQUAL.

ROUND BACKER RODS FOR COLD-APPLIED JOINT SEALANTS: ASTM D5249, TYPE 3, OF DIAMETER AND DENSITY REQUIRED TO CONTROL JOINT-SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT. BY SIKA OR EQUAL.

DIVISION 4 – MASONRY

BRICK MASONRY REPOINTING

BRICK MASONRY REPOINTING SPECIALIST QUALIFICATIONS: ENGAGE AN EXPERIENCED BRICK MASONRY REPOINTING FIRM TO PERFORM WORK OF THIS SECTION. FIRM SHALL HAVE COMPLETED WORK SIMILAR IN MATERIAL DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. EXPERIENCE IN ONLY INSTALLING MASONRY IS INSUFFICIENT EXPERIENCE FOR MASONRY REPOINTING WORK.

REPOINTING OF AREAS INDICATED IN THE DRAWINGS AND LOCATIONS WITH THE FOLLOWING DEFECTS:
A. HOLES AND MISSING MORTAR.
B. CRACKS THAT CAN BE PENETRATED 1/4 INCH OR MORE BY A KNIFE BLADE 0.027 INCH THICK.
C.CRACKS 1/8 INCH OR MORE IN WIDTH AND OF ANY DEPTH.
D.HOLLOW-SOUNDING JOINTS WHEN TAPPED BY METAL OBJECT.
E. ERODED SURFACES 1/4 INCH OR MORE DEEP.
F. DETERIORATION TO POINT THAT MORTAR CAN BE EASILY REMOVED BY HAND, WITHOUT TOOLS.
G. JOINTS FILLED WITH SUBSTANCES OTHER THAN MORTAR.

MATERIALS
PORTLAND CEMENT: ASTM C 150/C 150M, TYPE I OR TYPE II. EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION; GRAY, WHERE REQUIRED FOR COLOR MATCHING OF MORTAR.

MASONRY CEMENT: ASTM C 91/C 91M. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- CEMEX S.A.B. DE C.V.
- HOLCIM (US) INC.
- QUIKRETE; THE QUIKRETE COMPANIES, LLC.

REMOVE GUTTERS, DOWNSPOUTS AND ASSOCIATED HARDWARE ADJACENT TO MASONRY REPOINTING. REINSTALL WHEN REPOINTING IS COMPLETED.PROVIDE TEMPORARY RAIN DRAINAGE DURING WORK TO DIRECT WATER AWAY FROM THE BUILDING.

SEE LINTEL REPLACEMENT BELOW AND COORDINATE MASONRY REPOINTING AND REPLACEMENT WITH REMEDIAL LINTEL REPAIR OR REPLACEMENT.

RETAINING WALL
WHERE NOTED ON THE DRAWINGS, NEW DRYSTACK RETAINING WALL, BELGARD OR EQUAL, TO MATCH EXISTING COLOR AND TYPE OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. REMOVE SUFFICIENT SOIL TO ALLOW ACCESS TO INSTALL A NEW WALL. SET NEW WALL IN COMPACTED GRAVEL BED STRICTLY ACCORDING TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS. INSTALL NEW WALL WITH ALL NECESSARY PINS, GEOGRID AND CAP PIECES ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL ACCESSORIES
WALL CAPS, PINS AND GEOGRID FABRIC.
REPLACEMENT WALL CAPS TO MATCH EXISTING, MATERIAL CONCRETE BY BELGARD OR EQUAL. COLOR AND TYPE TO MATCH EXISTING OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

GLASS BLOCK
SOLID GLASS BLOCK COLORLESS, TRANSPARENT, SMOOTH FACES AND MANUFACTURER'S STANDARD EDGE COATING WHITE, BY SEVES, OWINGS CORNING GLASS BLOCK OR EQUAL. SILICONE SEALANT BY SIKA OR EQUAL. PRODUCT INFORMATION AND SAMPLE TO BE PROVIDED TO ARCHITECT AND HACP FOR APPROVAL. SIZE OF GLASS BLOCK TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD SIZES. GLASS BLOCK SHALL BE INSTALLED PER IBC AND IRC BUILDING CODE AND TMS 402/ACI 530/ASCE 5 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES"

DIVISION 5 – METALS

STEEL BEAMS, ANGLES AND PLATES
SHOP PRIMED WITH RUST PREVENTATIVE PAINT. DIMENSIONS AND GRADE TO MATCH EXISTING. SHOP DRAWINGS TO BE PROVIDED BY GC.

ALL EXTERIOR LINTELS MUST BE HOT-DIP GALVANIZED PER ASTM A123.

LINTEL REPLACEMENT/ INSTALLATION ON BRICK VENEER EXTERIOR WALLS
PROTECT EXISTING OPENING WITH PLYWOOD.TEMPORARILY SHORE AND REMOVE EXISTING BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL LINTEL. REPLACE WITH NEW LINTEL MATERIAL OF STAINLESS STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

FOR LINTEL CLEANING USE METAL CLEANING ON NEXT SECTION.

METAL CLEANING
EXECUTION OF THE WORK: IN CLEANING ITEMS, DISTURB THEM AS MINIMALLY AS POSSIBLE AND AS FOLLOWS:
A. REMOVE DETERIORATED COATINGS AND CORROSION.
B. SEQUENCE WORK TO MINIMIZE TIME BEFORE PROTECTIVE COATINGS ARE REAPPLIED.
C. CLEAN ITEMS IN PLACE UNLESS OTHERWISE INDICATED.

MECHANICAL COATING REMOVAL: USE GENTLE METHODS, SUCH AS SCRAPING AND WIRE BRUSHING, THAT WILL NOT ABRADE METAL SUBSTRATE.

REPAINT: WHERE INDICATED, PREPARE PAINTED DECORATIVE METAL BY CLEANING SURFACE, BRUSH-HOOK ABOVE THE OPENING AT LEAST 6 INCHES PAINT, SANDING EDGES SMOOTH, REMOVING EXISTING PAINT AND PRIMING FOR PAINTING AS SPECIFIED.

METAL AWNINGS
BASIS OF DESIGN, MATCH EXISTING AWNINGS DIMENSIONS, PERIMETER FASCIA, BRACING AND SUPPORTS TO BE EXTRUDED ALUMINUM, DECKING ALUMINUM INTERLOCKING PANELS, PROFILE AND THICKNESS AS DETERMINED BY MANUFACTURER. FACTORY APPLIED BACKED ENAMEL OR KYNAR PAINT FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER STANDARD COLOR CHART. INSTALLATION OF AWNINGS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. ALL FASTENERS FOR AWNINGS SHALL BE TYPE 316 SS. FOR LOCATIONS WHERE AWNINGS ARE ATTACHED TO SIDEWALL AWNING FASTENERS SHALL FASTEN INTO STUDS WITH COMPRESSION STAND-OFF IF THROUGH VENEER BRICK. INSTALLATION SHALL INCLUDE PREFINISHED ALUMINUM REGLETED WALL FLASHING AT HEAD, PROPERLY INSTALLED AND CAULKED. SEE ALSO DIVISION 10.

ALUMINUM METAL RAILINGS
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS, INCORPORATED, OR COMPARABLE PRODUCT, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
PROVIDE ALLOY AND TEMPER RECOMMENDED BY ALUMINUM PRODUCER AND FINISHER FOR TYPE OF USE AND FINISH INDICATED, AND WITH STRENGTH AND DURABILITY PROPERTIES FOR EACH ALUMINUM FORM REQUIRED NOT LESS THAN THAT OF ALLOY AND TEMPER DESIGNATED BELOW.
GC TO PROVIDE PRODUCT INFORMATION AND SHOP DRAWINGS OF NEW RAILINGS TO MATCH EXISTING DIMENSIONS. PROVIDE ACCESSORIES AS REQUIRED FOR INSTALLATION ON CONCRETE, SHEETMETOD DECKING, WALLS AND CHANGE IN DIRECTION FITTINGS AS REQUIRED.

DIVISION 6 – WOOD AND PLASTICS

WOOD FRAMING AND BLOCKING
SELECT STRUCTURAL GRADE DOUGLAS FIR SOUTH, SIZES AS INDICATED ON DRAWINGS. COMPLY WITH THE "RECOMMENDED NAILING SCHEDULE" OF THE "MANUAL FOR HOUSING FRAMING."

FLOOR SHEATHING (IF REQUIRED) - PROVIDE 3/4" T&G PLYWOOD FLOOR SHEATHING OR OSB STRUCTURAL FIBERBOARD. ALIGN PANELS ACROSS A MINIMUM OF TWO SUPPORTS WITH THICKNESS IN A 3/8 PERPENDICULAR TO AXIS OF JOISTS, STAGGER JOINTS. GLUE TO JOISTS AND EDGES WITH ELASTOMERIC SOLVENT-BASED GLUE CONFORMING TO APA SPECIFICATION AFG-101. FASTEN WITH 8D COMMON OR 6D ANNULAR OR SPIRAL NAILS AT 6" O.C. ALONG EDGES AND 10" ALONG INTERMEDIATE SUPPORTS. FOLLOW PANEL MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR SUB-FLOOR PREP, PRIOR TO INSTALLATION OF FINISH FLOORING.

EXTERIOR WOOD FRAMING EXPOSED TO WEATHERING AND INSECTS SHALL BE MINIMUM 2" X PRESSURE TREATED LUMBER. KILN DRIED TO 19% MOISTURE CONTENT BEFORE INSTALLATION.

WOOD TRIM AND MOLDINGS
PROVIDE FURNITURE GRADE SOLID HARDWOOD TRIM AND MOLDINGS. STAIN ALL SIDES AND ENDS. WOOD TRIM AND MOLDINGS TO MATCH EXISTING UNLESS OTHERWISE NOTED ON DRAWINGS.

INSTALL WOOD TRIM AND MOLDINGS WITH MITER AT CORNERS, MITERED LAP SPLICES, AND SET WITH COUNTER SUNK GALVANIZED FINISH NAILS CAPPED WITH WOOD PUTTY SANDED SMOOTH. COMPLY WITH AWI 300 FOR ALL STANDARD WOOD RUNNING TRIM.

FABRICATOR QUALIFICATIONS
FIRM EXPERIENCED IN PRODUCING ARCHITECTURAL WOODWORK SIMILAR TO THAT INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE, AS WELL AS SUFFICIENT PRODUCTION CAPACITY TO PRODUCE REQUIRED UNITS WITHOUT DELAYING THE WORK.

INTERIOR ARCHITECTURAL WOODWORK

INSTALLER QUALIFICATIONS.
ARRANGE FOR INSTALLING ARCHITECTURAL WOODWORK INSTALLATION BY A FIRM THAT CAN DEMONSTRATE SUCCESSFUL EXPERIENCE IN INSTALLING ARCHITECTURAL WOODWORK ITEMS SIMILAR IN TYPE AND QUALITY TO THOSE REQUIRED FOR THIS PROJECT.

QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH AWI'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS."

ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETE, AND MECHANICAL SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD. REFER TO AWI'S OR WIS MEMBER LIST FOR NAMES OF WOODWORKING FIRMS THAT COULD POTENTIALLY BE INCLUDED.

MATERIALS

WOOD SPECIES AND CUT FOR TRANSPARENT FINISH: AS INDICATED ON DRAWINGS.

WOOD SPECIES FOR OPAQUE FINISH: ANY CLOSED-GRAIN HARDWOOD.

GENERAL: COMPLETE FABRICATION TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE, WHERE NECESSARY FOR FITTING AT THE SITE, PROVIDE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.
- INTERIOR WOODWORK GRADE: AWI CUSTOM.
- SHOP CUT OPENINGS TO MAXIMUM EXTENT POSSIBLE. SAND EDGES OF CUTOUTS TO REMOVE SPLINTERS AND BURRS. SEAL EDGES OF OPENINGS IN COUNTERTOPS WITH A COATING OF VARNISH.
- FOR TRANSPARENT-FINISHED TRIM ITEMS WIDER THAN AVAILABLE LUMBER, USE VENEERED CONSTRUCTION. DO NOT GLUE FOR WIDTH.
- BACK OUT OF FLAT TRIM WITH VERTICAL GRAIN AND KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT FOR MEMBERS WITH ENDS EXPOSED IN FINISHED WORK.
- ASSEMBLE CASINGS IN PLANT EXCEPT WHERE LIMITATIONS OF ACCESS TO PLACE OF INSTALLATION.

PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH THE ARCHITECTURAL WOODWORK STANDARDS FOR GRADES OF CABINETS INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS.

ARCHITECTURAL WOOD WORK STAND ARDS GRADE: AWI PREMIUM.

TYPE OF CONSTRUCTION: FRAMELESS.

DOOR AND DRAWER-FRONT STYLE: FLUSH OVERLAY.

HIGH-PRESSURE DECORATIVE LAMINATE: ISO 4586-3, GRADES AS INDICATED OR IF NOT INDICATED, AS REQUIRED BY QUALITY STANDARD.

EXPOSED SURFACES:
1. PLASTIC-LAMINATE GRADE: AWI PREMIUM.
2. EDGES: GRADE AWI PREMIUM.
3. PATTERN DIRECTION: AS INDICATED.

CONCEALED BACKS OF PANELS WITH EXPOSED PLASTIC-LAMINATE SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE, ISO 4586-3, GRADE TO MATCH EXPOSED SURFACE.

DRAWER CONSTRUCTION: FABRICATE WITH EXPOSED FRONTS FASTENED TO SUBFRONT WITH MOUNTING SCREWS FROM INTERIOR OF BODY.
1. JOIN SUBFRONTS, BACKS, AND SIDES WITH GLUED RABBETED JOINTS AND REINFORCED BY MECHANICAL FASTENERS OR GLUED DOVETAIL JOINTS.

COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURERS' FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS, MATTE FINISH.
B. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
C. WOOD GRAIN, MATTE FINISH.
D. PATTERNS, MATTE FINISH.

SYNTHETIC DECKING
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS; TIMBERTECH, AZEK OR COMPARABLE PRODUCT.
DECKING SIZE AND LENGTH TO MATCH EXISTING INSTALLATION. FINISH TEXTURE BRUSHED; COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. FASCIA BOARDS TO MATCH DECKING COLOR.
DECKING FASTENING SYSTEM AS RECOMMENDED BY MANUFACTURER'S INSTALLATION MANUAL. FOLLOW MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR CUTTING, TRIMMING AND INSTALLING DECKING.

RUBBER STAIR TREADS COVERS
BASIS OF DESIGN, BY ROPPE OR EQUAL, RIBBED PATTERN, BLACK FINISH. FOLLOW THE MANUFACTURER'S INSTRUCTION FOR INSTALLATION.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

ROOFING, SHEET METAL, FLASHING AND TRIM
GENERAL: CONTRACTOR TO EVALUATE STATUS OF ROOFING MATERIAL, COMMUNICATE THE HACP AND ARCHITECT OF FINDINGS AND IF PATCHING OR REPLACEMENT IS NEEDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INSTALL ASPHALT SHINGLES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN ARMA'S "ASPHALT ROOFING RESIDENTIAL MANUAL - DESIGN AND APPLICATION METHODS" AND NRCA'S "NRCA GUIDELINES FOR ASPHALT SHINGLE ROOFING SYSTEMS".

ASPHALT SHINGLES: ASTM D3462/D3462M, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION; GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF-SEALING, BY GAF OR EQUAL, STRAIGHT CUT. FINISH COLOR TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

GC TO INSPECT FLASHING OF ROOF PENETRATIONS, PATCH AND REPLACE IF NEEDED TO COMPLY WITH CODE AND REGULATIONS.

SHEET METAL STANDARD FOR FLASHING AND TRIM: COMPLY WITH NRCA'S "THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION AND AIR LEAKAGE CONTROL, AND REROOFING" AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL". REQUIREMENTS FOR DIMENSIONS AND PROFILES SHOWN UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.

INSTALL SHEET METAL FLASHING AND TRIM TO COMPLY WITH DETAILS INDICATED AND RECOMMENDATIONS OF CITED SHEET METAL STANDARDS THAT APPLY TO INSTALLATION CHARACTERISTICS REQUIRED UNLESS OTHERWISE INDICATED ON DRAWINGS

THERMAL INSULATION
GC TO PROVIDE THERMAL INSULATION ON WALLS, CEILINGS AND FLOORS AS NOTED ON THE DRAWINGS.

INSULATION TO COMPLY WITH THE ENERGY CODE IN MINIMUM R VALUES OR AS SPECIFIED ON DRAWINGS.

GC TO BE RESPONSIBLE TO INSPECTING, ADJUSTING AND ADDING INSULATION TO THE ENTIRE ATTIC SPACE TO ACHIEVE MINIMUM INSULATION COVERAGE WITH NO GAPS. GC TO INFORM HACP AND ARCHITECT PRIOR TO ADD ADDITIONAL INSULATION.

ATTIC DOORS TO RECEIVED RIGID FOAM INSULATION GLUED TO BACK OF THE DOOR AND SEALED WITH RUBBER JOINTS. INSULATION TO MATCH R VALUE OF CEILING ASSEMBLY.

ASSEMBLIES, SEPARATIONS & FIRESTOPPING:

ANY NEW DEMISING OR INTERIOR PARTITIONS SHALL BE RATED AS REQUIRED BY CODE. ANY PENETRATION THROUGH AN EXISTING DIMENSIONAL FIRE RATED OR UL RATED ASSEMBLY WALL MUST RE-TAIN THE UL ASSEMBLY FIRE-RATING.

ALL NEW WORK SHALL MATCH OR EQUAL THE UL FIRE RATINGS, IF ANY, OF THE SURROUNDING WORK. AS APPROPRIATE, THE CONTRACTOR SHALL CONTACT HACP AND ARCHITECT IF ANY AREAS ARE UNCOVERED OR DISCOVERED THAT MAY REQUIRE ADDITIONAL ANALYSIS OR CLARIFICATION.

THROUGH PENETRATIONS OF FIRE RESISTANCE WALLS SHALL BE INSTALLED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY UNDERWRITERS LABORATORIES. IF THE PENETRATING ITEMS ARE STEEL, FERROUS OR COPPER PIPES OR STEEL CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE FIRE-RESISTANCE-WALL SHALL BE PERMITTED TO BE PROTECTED AS FOLLOWS:

IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A MAXIMUM 6-INCH NOMINAL DIAMETER AND THE OPENING IS A MAXIMUM 144 SQUARE INCHES, CONCRETE, GROUT, OR MORTAR SHALL BE PERMITTED WHERE INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING.

THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHERE SUBJECTED TO ASTME 119 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE WALL ASSEMBLY.

MEMBRANE PENETRATIONS, WHERE WALL AND PARTITIONS ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:
FOR STEEL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. A HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY WHERE THE WALL CAVITY IS FILL WITH CELLULOSE LOOSE FILL, ROCKWOOL OR SLAG WOOL INSULATION PROVIDED THE WALL IS RATED (CONSISTING OF 2-INCH NOMINAL LUMBER OR TWO THICKNESSES OF 1-INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS OR ONE THICKNESS OF 0.719-INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANEL OR ONE THICKNESS OF 0.75-INCH PARTICLEBOARD WITH JOINTS BACKED BY 0.75-INCH PARTICLEBOARD. GYPSUM BOARD, CEMENT FIBER BOARD, BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED AS AN ACCEPTABLE FIREBLOCK. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NONRIGID MATERIALS SHALL BE PERMITTED FOR COMPLIANCE WITH THE 10-FOOT HORIZONTAL FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROW OF STUDS OR STAGGERED STUDS. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES. THE INTEGRITY OF FIREBLOCKS SHALL BE MAINTAINED; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

MEMBRANE PENETRATIONS FOR LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL ARE PERMITTED PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS INCLUDED IN THE LISTING. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24-INCHES. SOLID FIREBLOCKING; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

EXCEPTIONS:
MEMBRANE PENETRATIONS BY STEEL, FERROUS OR COPPER CONDUITS, ELECTRICAL BOXES, PIPES, TUBES, VENTS, CONCRETE, MASONRY-PENETRATING ITEMS WHERE THE ANNULAR SPACE IS PROTECTED EITHER IN ACCORDANCE OR TO PREVENT THE FIRE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. SUCH PENETRATIONS SHALL NOT EXCEED AN AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.

MEMBRANE PENETRATIONS BY LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL THAT HAS BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED PER INSTRUCTIONS INCLUDED IN LISTING.

JOINT SEALERS
INTERIOR JOINT SEALER IS TO BE MILDEW-RESISTANT SILICONE SEALANT. APPLY SEALANT AT ALL MATERIAL JOINTS SUBJECT TO WATER PENETRATION. COLOR TO BE SELECTED BY THE ARCHITECT FROM MFR'S STANDARD LINE.

VINYL SIDING
VINYL SIDING. INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D3679.
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALSIDE, EXTERIOR BUILDING PRODUCTS, KAYCAN LTD., ROYAL BUILDING PRODUCTS, A WESTLAKE COMPANY. OR EQUAL.

HORIZONTAL PATTERN: 6-1/2- OR 7-INCH EXPOSURE IN BEADED-EDGE, SINGLE-BEADED STYLE. SMOOTH TEXTURE. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OR TO MATCH EXISTING WHERE REQUIRED.

WATER PROOFING MEMBRANE
BASIS OF DESIGN, BY SIKA OR EQUAL, 60 MIL. REFER TO MANUFACTURERS INSTRUCTION FOR PREPARATION OF SUBSTRATES AND INSTALLATION OF MEMBRANE.

DIVISION 8 - DOORS, WINDOWS AND HARDWARE

ALL DOORS AND WINDOWS SHALL BE INSTALLED PLUMB, LEVEL, SQUARE, AND PER ALL MANUFACTURERS RECOMMENDATION.

EXTERIOR DOORS TO BE 1 3/4"-THICK, FIBERGLASS INSULATED WITH 3 SETS OF STEEL HINGES, RUBBER WEATHER STRIPPING, LOCKING AS SPECIFIED ON HARDWARE. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING. VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS: 1) IN DOORS, 2) WITHIN 24" OF A DOOR AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE, 3) IN FIXED PANELS WITH THE LOWEST EDGE LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36" OF SUCH GLAZING.

DOOR HARDWARE
INTERIOR DOOR HARDWARE

ALL DOOR HARDWARE TO BE APPROVED BY HACP FACILITY REPRESENTATIVE.

BASIS OF DESIGN NON- ACCESIBLE UNITS
MANUFACTURER B

POLISH CHROME PLATE FINISH, 2.2 GPM FLOW RATE, LEVER HANDLE, RIGID SPOUT, DRAIN POP UP.

KITCHEN SINKS – WATER SENSE CERTIFIED
STAINLESS STEEL, COUNTER MOUNTED, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- AFINITY SURFACES

0.038 INCH THICKNESS, 3 1/2" DRAIN GRID CENTERED IN BOWL.

SINKS FAUCETS – WATER SENSE CERTIFIED
GENERAL DUTTY SOLID BRASS, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- HANSGROHE

POLISHED CHROME PLATE FINISH. SINGLE HANDLE ON KITCHEN TWO HANDLE ON UTILITY SINKS.

WATER CLOSET – WATER SENSE CERTIFIED
FLOOR MOUNTED, FLOOR OUTLET, CLOSE COUPLED (GRAVITY TANK), VITREOUS CHINE, 1.6 GAL/FLUSH, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- KOHLER
- TOTO USA

STANDARD HEIGHT, ELONGATED RIM, WATER SAVING, COLOR WHITE.
TOILET SEAT PLASTIC FOR RESIDENTIAL USE, ELONGATED RIM, SEAT COVER, SELF SUSTAINING HINGE, COLOR WHITE.

UTILITY SINK
FRESTANDING UTILITY SINK, MANUFACTURERS: PROFLO OR EQUAL
STANDARD HEIGHT, COLOR WHITE. 20 INCH BY 20 INCH SIZE.

EXTERIOR HOSE BIBB.
FREEZELESS WALL FAUCET, WOODFORD OR EQUAL, MODEL 30,3/4 INCH CONNECTION, BRASS FINISH, ASSE 1053 APPROVED, MAX PRESSURE 125 PSI.

SLEEVES
SLEEVES SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH WALLS, CEILINGS, OR FLOORS. SLEEVES SHALL BE CUT FROM SCHEDULE 40 BLACK IRON PIPE. THE INTERNAL DIAMETER OF THE SLEEVE SHALL EXCEED THE EXTERNAL DIAMETER OF THE PIPE (INCLUDING INSULATION) BY NOT LESS THAN ONE INCH. SLEEVES SHALL BE CUT FLUSH WITH WALLS AND UNDERSIDES OF FLOORS AND SHALL EXTEND ONE INCH ABOVE FLOORS ABOVE GRADE.

PIPE PORTALS
PIPING THROUGH THE ROOF SHALL BE INSTALLED THROUGH A PREFABRICATED PIPING PORTAL. PORTALS SHALL HAVE GALVANIZED STEEL INSULATED CURBS, ABS PLASTIC CURB CAP, NEOPRENE RUBBER NIPPLES, AND STAINLESS-STEEL CLAMPS. CURB HEIGHT AS INDICATED ON DRAWINGS. PORTALS SHALL BE MODEL RC AND NJB AS MADE BY ROOF PRODUCTS AND SYSTEMS CORP. PORTALS SHALL HAVE EXTRA HOLES FOR POWER AND CONTROL CONDUITS.

FIRESTOPS
ALL OPENINGS THROUGH FLOORS AND FIRE-RATED PARTITIONS SHALL BE SEALED. VOID SPACES AROUND DUCTS OR PIPES SHALL BE PACKED WITH A FIREPROOF CERAMIC FIBER AND SEALED WITH FIRE RETARDANT CAULKING. FIBER SHALL BE KAOWOOL BY BABCOCK AND WILCOX, FIBERFRAX BY CARBORUNDUM, OR CERAFIBER BY MANVILLE CO. CAULKING SHALL BE SE411 F BY UNISEAL STANDARD DUXSEAL BY MANVILLE, OR MOLDABLE PUTTY BY 3M.

ESCUTCHEONS
ESCUTCHEONS SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH FLOORS, CEILINGS, OR WALLS OF FINISHED SPACES. ESCUTCHEONS SHALL BE CHROMIUM PLATED STEEL, SNAP ON TYPE WITH SPRING RETAINERS. ESCUTCHEONS SHALL BE THE NO. 40 MADE BY BEATON/CORBIN COMPANY OR APPROVED EQUAL, SIZED TO FIT PIPE PLUS INSULATION. WHERE RISER CLAMPS ARE IN FINISHED SPACES, PROVIDE HIGH-SHIRT ESCUTCHEONS TO COVER CLAMP.

UNIONS
UNIONS SHALL BE INSTALLED AT ALL POINTS INDICATED ON THE DRAWINGS AND AT ALL OTHER POINTS NECESSARY FOR THE INSTALLATION AND REMOVAL OF EQUIPMENT, CONTROL DEVICES, ETC. UNIONS IN GAS LINES WILL BE PERMITTED ONLY AT THE FINAL CONNECTIONS TO EQUIPMENT.

HANGERS
ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH PIPEHANGERS TO PREVENT SAGGING AND AVOID CONCENTRATION OF HANGING LOAD. HANGER SPACING SHALL NOT EXCEED 10 FT. FOR STEEL PIPE OR 8 FT. FOR COPPER TUBING. COPPER TUBING 1-1/4" AND SMALLER SHALL BE SUPPORTED AT NO GREATER THAN 6 FT. SPACING.

REPAIR ALL FIREPROOFING WHICH IS DAMAGED BY HANGER INSTALLATION.

SOIL WASTE AND VENT PIPING
SOIL, WASTE AND VENT STACKS AND BRANCHES, AND ROOF CONDUCTORS SHALL BE ABS OR PVC PIPING AND FITTINGS SCHEDULE 40. WASTE LINES SHALL BE MINIMUM 2 INCH.

HOT AND COLD-WATER PIPING
POTABLE-WATER PIPING AND COMPONENTS ARE TO COMPLY WITH NSF 14, NSF 61, AND NSF 372. INCLUDE MARKING "NSF-PW" ON PIPING.

HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE TYPE L, SEMILESS, HARD TEMPER, COPPER TUBING WHICH CONFORMS TO ASTM SPECIFICATION B-88 WITH WROUGHT COPPER, SOLDER, TYPE FITTINGS, OR PEX TUBING PLASTIC IN ACCORDANCE WITH ASTM F876 AND ASTM F877 WITH FITTINGS ASTM F1807, METAL INSERT AND COPPER CRIMP RINGS ASTM F1960, COLD EXPANSION FITTINGS AND REINFORCING RINGS.

INSTALLATION OF PIPING
DRAINAGE PIPING SHALL BE INSTALLED TO ACCURATE LINE AND UNIFORM GRADE, AND AT THE ELEVATIONS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE INDICATED, ALL DRAINAGE LINES SHALL SLOPE NOT LESS THAN 1/4 INCH PER FOOT.
DRAINAGE LINES SHALL BE PROVIDED WITH SUFFICIENT CLEANOUTS TO MAKE ALL PARTS OF THE DRAINAGE SYSTEM ACCESSIBLE. CLEANOUTS SHALL BE PROVIDED ALONG INTERIOR HORIZONTAL RUNS AT NOT MORE THAN 50 FT. ON CENTER. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH ROOF CONDUCTOR AND AT ALL OTHER POINTS INDICATED ON THE DRAWING OR REQUIRED BY LOCAL PLUMBING CODE.

ALL PIPES SHALL BE CUT WITH SQUARE ENDS AND SHALL BE PROPERLY REAMED. THREADS SHALL BE CUT WITH CLEAN, SHARP DIES TO FULL DEPTH. ALL BURRS SHALL BE REMOVED FROM PIPE. JOINT COMPOUND SHALL BE APPLIED TO PIPE THREAD ONLY. USE OF EXCESSIVE JOINT COMPOUND IS PROHIBITED.

SOLDER JOINTS IN ALL WATER LINES SHALL BE MADE WITH 95-5 TIN-ANTIMONY SOLDER. OTHER JOINTS MADE WITH EASYBRITE LEAD FREE SOLDER.

WATER LINES WITHIN THE BUILDING SHALL BE INSTALLED WITH SUFFICIENT PITCH TO PROPERLY DRAIN LINES. DRAIN VALVES, IN ADDITION TO DRAIN VALVES INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL DRAIN VALVES NECESSARY TO PROPERLY DRAIN THE SYSTEM.

GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND NFPA-54. ALL GAS PIPING AND CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH AGA RECOMMENDATIONS AND ALL APPLICABLE LOCAL GAS COMPANY REGULATIONS.

CONTRACTOR SHALL VENTILATE THE WORK AREA TO PROVIDE A SAFE ENVIRONMENT. VENTILATION SHALL NOT DIRECT FUMES TO ADJACENT SPACES OR NEIGHBORING STRUCTURES.

CONTRACTOR SHALL PROVIDE ADEQUATE FIRE PROTECTION DURING WELDING, CUTTING AND SOLDERING.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

VALVES
VALVES IN WATER LINES SHALL BE 125 PSI CLASS, BRONZE BODY, BALL VALVES WITH TEFLON SEATS AND PACKING. NIBCO 580 OR APOLLO.DRAIN VALVES SHALL BE BRONZE BODY SOLDERED ENDS, BALL VALVES WITH 3/4 INCH AMERICAN STANDARD HOSE THREAD OUTLET. NIBCO OR APOLLO.

WALL HYDRANT SHALL BE ALL BRASS, FULLY RECESSED, NON-FREEZE, KEY OPERATED, WITH ADJUSTABLE LOCKNUT, REMOVABLE NYLON SEAT, 3/4 INCH HOSE CONNECTION. FURNISH WITH INTEGRAL VACUUM BREAKER. ZURN Z-1300 OR APPROVED EQUAL.

VALVES IN GAS LINES SHALL BE 125 PSI CLASS, THREADED END, IRON BODY. GAS COCKS WITH BRASS PLUG AND WASHER AND SQUARE HEAD. ORANEO NO. 324.

INSULATION
ALL COLD AND HOT WATER PIPING, AND HORIZONTAL PORTIONS OF ROOF CONDUCTORS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX.

PIPE IDENTIFICATION
ALL PIPING SHALL BE LABELED WITH THE NAME OF THE FLUID IN THE PIPE AND WITH ARROWS INDICATING THE DIRECTION OF THE FLOW.

TESTING

DRAINAGE SYSTEM - THE ENTIRE DRAINAGE SYSTEM SHALL BE TESTED HYDROSTATICALLY FOR LEAKS. THE ENTIRE SYSTEM SHALL BE FILLED TO THE TOP OF THE STACKS WITH WATER AND CHECKED FOR LEAKS.

WATER PIPING - ALL WATER PIPING SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL FOREIGN MATERIAL. ALL TESTING SHALL BE COMPLETED BEFORE INSULATION IS APPLIED.
DURING THE TESTS ALL VALVES SHALL BE CAREFULLY CHECKED FOR LEAKAGE AROUND THE STEM.

WATER HEATERS - HEATERS SHALL BE TESTED AND CHECKED TO DETERMINE THEY OPERATE IN COMPLIANCE WITH THE SPECIFICATIONS. ALL CONTROLS SHALL BE PROPERLY ADJUSTED.

DISINFECTION OF POTABLE WATER SYSTEM - GENERAL: NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE. WHENEVER REQUIRED BY THE AUTHORITY HAVING JURISDICTION THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY.

MECHANICAL REQUIREMENTS

GENERAL CONDITIONS OF THE MECHANICAL CONTRACT
PLUMBING CONTRACTOR TO FOLLOW HUD GENERAL CONDITIONS AS SPECIFIED EARLIER IN DIVISION 1.

ALL MECHANICAL WORK TO COMPLY WITH LOCAL CODE AND REGULATIONS.

CUTTING AND PATCHING
ALL CHASES, RECESSES, HOLES, AND OPENINGS FOR EQUIPMENT AND DUCTWORK WILL BE PROVIDED BY THE GENERAL CONTRACTOR.

SHOULD THE MECHANICAL CONTRACTOR FAIL TO SET SLEEVES OR LOCATE OPENINGS BEFORE THE WORK OF THE GENERAL CONTRACTOR HAS BEEN COMPLETED IN THAT PARTICULAR AREA, THE MECHANICAL CONTRACTOR SHALL CUT WHATEVER HOLES ARE NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT. ALL PATCHING NECESSITATED BY THE CUTTING OF SUCH HOLES SHALL BE DONE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

REPAIR ALL FIREPROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

EXHAUST FANS
FANS SHALL VENT DIRECTLY TO THE EXTERIOR. EXHAST DUCTS MAY BE TIED TOGETHER OR TIED INTO AN EXISTING SYSTEM PROVIDED THAT BACK FLOW PREVENTORS ARE INSTALLED AT EACH FAN INCLUDING ALL FANS TIED INTO THE EXISTING SYSTEM.

FURNISH NEMA 1 SURFACE MOUNTING STARTER WITH OVERLOAD AND UNDER VOLTAGE PROTECTION.

FURNISH WITH BIRD SCREEN AND BACKDRAFT DAMPER.

FAN SHALL BE ACE MADE BY COOK, GREENHECK, OR APPROVED EQUAL. MOCFM CAPACITY, VERTICAL DISCHARGE. FINISH WHITE.

THE HEATING CONTRACTOR SHALL FURNISH THERMALLY AND ACOUSTICALLY INSULATED CURB.

MECHANICAL EQUIPMENT
THE EQUIPMENT DESCRIBED IN THIS SECTION IS BASIS OF DESIGN, MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT TO MATCH EXISTING SYSTEM CAPACITY AT A MINIMUM.

MECHANICAL CONTRACTOR TO PROVIDE HACP AND ARCHITECT WITH SPECIFICATION SHEETS OF EQUIPMENT.

GAS-FIRED FURNACES, NONCONDENSING
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- BRYANT; CARRIER GLOBAL CORPORATION.
- CARRIER GLOBAL CORPORATION.
- BUILDING SOLUTIONS NORTH AMERICA.

ENERGY STAR RATING OF 95% AFUE OR GREATER
CABINET: GALVANIZED STEEL.
- CABINET INTERIOR AROUND HEAT EXCHANGER SHALL BE FACTORY-INSTALLED INSULATION.
- LIFT-OUT PANELS SHALL EXPOSE BURNERS AND ALL OTHER ITEMS REQUIRING ACCESS FOR MAINTENANCE.
- FACTORY PAINT EXTERNAL CABINETS IN MANUFACTURER'S STANDARD COLOR.
- AIRSTREAM SURFACES: SURFACES IN CONTACT WITH THE AIRSTREAM SHALL COMPLY WITH REQUIREMENTS IN ASHRAE 62.1.

FAN: CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT OR BELT DRIVE.
- FAN MOTORS: COMPLY WITH REQUIREMENTS IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT."
- SPECIAL MOTOR FEATURES, SINGLE SPEED: SINGLE SPEED, PREMIUM EFFICIENCY, AS DEFINED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT," AND WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, MULTISPEED: MULTI-TAPPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, ECM: ELECTRONICALLY CONTROLLED MOTOR (ECM) CONTROLLED BY INTEGRATED FURNACE/BLOWER CONTROL.

TYPE OF GAS: NATURAL
HEAT EXCHANGER: ALUMINIZED STEEL.
BURNER:
- GAS VALVE: 100 PERCENT SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUTOFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD.
- IGNITION: ELECTRIC PILOT IGNITION, WITH HOT-SURFACE IGNITER OR ELECTRIC SPARK IGNITION.

GAS-BURNER SAFETY CONTROLS:
- ELECTRONIC FLAME SENSOR: PREVENTS GAS VALVE FROM OPENING UNTIL PILOT FLAME IS PROVEN; STOPS GAS FLOW ON IGNITION FAILURE.
- FLAME ROLLOUT SWITCH: INSTALLED ON BURNER BOX; PREVENTS BURNER OPERATION.
- LIMIT CONTROL: FIXED STOP AT MAXIMUM PERMISSIBLE SETTING; DE-ENERGIZES BURNER ON EXCESSIVE BONNET TEMPERATURE; AUTOMATIC RESET.

COMBUSTION-AIR INDUCER: CENTRIFUGAL FAN WITH THERMALLY PROTECTED MOTOR AND SLEEVE BEARINGS PRERURGES HEAT EXCHANGER AND VENTS COMBUSTION PRODUCTS; PRESSURE SWITCH PREVENTS FURNACE ON IF COMBUSTION-AIR INLET OR FLUE OUTLET IS BLOCKED.
FURNACE CONTROLS: SOLID-STATE BOARD INTEGRATES IGNITION, HEAT, COOLING, AND FAN SPEEDS; AND ADJUSTABLE FAN-ON AND FAN-OFF TIMING; TERMINALS FOR CONNECTION TO ACCESSORIES.
VENT MATERIALS: COMPLY WITH REQUIREMENTS IN SECTION 235123 "GAS VENTS" FOR TYPE B METAL VENTS.

CAPACITIES AND CHARACTERISTICS:
AIRFLOW CONFIGURATION: UPFLOW.
GAS:
- TYPE: NATURAL
- VENTING TYPE: WITH COMBUSTION-AIR INTAKE
- MINIMUM EFFICIENCY AFUE: 80 PERCENT.
- INPUT: SSE SCHEDULE ON DRAWINGS.
- HEAT OUTPUT: SSE SCHEDULE ON DRAWINGS.
- GAS CONNECTION SIZE: 1/2" NPS.
- VENT SIZE: 4 INCHES.

FAN:
- MOTOR: SIZE: 1/3 HP.
- SPEED: SEE SCHEDULE ON DRAWINGS.
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

FURNACE ELECTRICAL CONNECTION:
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

COMPRESSOR AND CONDENSER UNITS, AIR COOLED, 1.0 TO 5 TONS
DESCRIPTION: FACTORY ASSEMBLED AND TESTED; CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTORS, REFRIGERANT RESERVOIR, AND OPERATING CONTROLS.
ENERGY STAR RATING EQUAL OR OVER 15.2 SEER2
COMPRESSOR TYPE: SCROLL, HERMETICALLY SEALED, WITH RUBBER VIBRATION ISOLATORS.
- TWO-SPEED COMPRESSOR: INCLUDE MANUAL-RESET, HIGH-PRESSURE SWITCH AND AUTOMATIC-RESET, LOW-PRESSURE SWITCH.
- ACCUMULATOR: SUCTION TUBE.

REFRIGERANT: R-410A.
CONDENSER COIL: SEAMLESS COPPER-TUBE, -FIN COIL; WITH REMOVABLE DRAIN PAN AND BRASS SERVICE VALVES WITH SERVICE PORTS.
CONDENSER FAN: DIRECT-DRIVE, MAIN PROPELLER FAN; WITH PERMANENTLY LUBRICATED, TOTALLY ENCLOSED FAN MOTOR WITH THERMAL OVERLOAD PROTECTION AND BALL BEARINGS.
UNIT CASING: GALVANIZED STEEL, FINISHED WITH; WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE. MOUNT SERVICE VALVES, FITTINGS, AND GAUGE PORTS ON EXTERIOR OF CASING.
CAPACITIES AND CHARACTERISTICS:
COMPRESSOR AND CONDENSER UNIT:
- FULL-LOAD COOLING CAPACITY: TO BE CALCULATED BY MECHANICAL CONTRACTOR

ELECTRICAL CHARACTERISTICS:
- VOLTS: 208 V.
- PHASE: 1.
- HERTZ: 60 HZ.

SHEET METAL
DUCT SIZES INDICATED ON THE DRAWINGS ARE THE CLEAR INSIDE DIMENSIONS.

ALL DUCTS SHALL BE COMPLETE WITH FOUR SIDES AND SHALL BE OF AIRTIGHT CONSTRUCTION. ALL DUCTS, UNLESS OTHERWISE NOTED, SHALL BE CONSTRUCTED OF 24 GAGE GALVANIZED SHEET STEEL AT 2" PRESSURE CLASS.

JOINTS, SEAMS AND DUCT WALL PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. SEALANT MATERIAL SHALL BE CAULKING COMPOUND SPECIFICALLY MANUFACTURED FOR DUCT APPLICATION FOR INDOOR USE.

JOINTS BETWEEN SHEET METAL SECTIONS MAY BE MADE WITH PREFABRICATED JOINING SYSTEM SUCH AS THE DUCTMATE INDUSTRIES SYSTEM.
STIFFENERS SHALL BE PLACED AT NOT MORE THAN 8-FOOT INTERVALS.

ALL DUCTS SHALL BE ADEQUATELY SUPPORTED FROM CONSTRUCTION ABOVE BY MEANS OF GALVANIZED STEEL STRAP HANGERS SPACED AT NOT MORE THAN 8-FOOT INTERVALS. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA STANDARDS.

DUCTWORK CONNECTIONS TO AIR HANDLING AND AIR CONDITIONING UNITS SHALL HAVE FLEXIBLE CONNECTIONS. WHEN CONNECTION IS OUTDOORS, CONNECTION LENGTH SHALL BE INSULATED AND WEATHERPROOFED.

TURNING VANES SHALL BE INSTALLED IN ALL ELBOWS HAVING SQUARE THROATS OR A THROAT RADIUS LESS THAN HALF THE DUCT WIDTH. TURNING VANES MAY BE PREFABRICATED. IF JOB FABRICATED, DESIGN AND CONSTRUCTION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. VANES SHALL BE AIRFOIL TYPE.

MANUAL VOLUME CONTROL DAMPERS IN DUCTS SHALL BE CONSTRUCTED OF NOT LIGHTER THAN US GAGE NO. 16 GALVANIZED SHEET STEEL. DAMPER BLADES SHALL BE SUPPORTED ON AN END BEARING ON ONE SIDE AND A COMBINATION BEARING AND DAMPER REGULATOR ON THE OTHER SIDE. REGULATOR SHALL BE EQUIPPED WITH A LOCKING DEVICE. MANUAL DAMPERS SHALL BE OPPOSED BLADE TYPE.

FURNISH AND INSTALL FIRE DAMPERS WHERE INDICATED OR WHERE REQUIRED. DAMPERS SHALL COMPLY WITH LATEST EDITION OF NFPA 90A, AND SHALL BE UL LABELED. BLADE STACK SHALL BE OUT OF AIRSTREAM. FUSIBLE FIRE LINKS SHALL HAVE A MELTING POINT OF 165F. DAMPERS SHALL BE MODEL IBD AS MADE BY PRUSKIN, OR APPROVED EQUAL BY SAFE-AIR. FURNISH ACCESS DOORS TO ALL DAMPERS.

ACCESS DOORS IN DUCTS SHALL BE RIGIDLY CONSTRUCTED AND TIGHTLY FITTED. DOORS SHALL BE SUPPORTED ON TWO STEEL BUTT HINGES AND SHALL BE SECURED WITH A SASH LOCK. DOORS SHALL BE GASKETED AND INSULATED.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

FLEXIBLE DUCTS
FLEXIBLE DUCTS SHALL BE SOUND ATTENUATING, THERMAL INSULATED, WIRE WOUND, REINFORCED TYPE WITH A MOISTURE TIGHT FLAME PROOF VINYL BARRIER. FLEXIBLE DUCTS TO BE USED ONLY TO CONNECT INDIVIDUAL DIFFUSERS WITH MAIN OR BRANCH DUCTS. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PORTION OF THE EXISTING SYSTEM WHICH DOES NOT MEET THESE REQUIREMENTS WITH PROPERLY SIZED AND INSULATED SHEET METAL DUCTS. THIS WORK TO BE INCLUDED IN BASE BID.

DIFFUSERS
DIFFUSERS SHALL BE SQUARE OR RECTANGULAR FACED, RECESSED TYPE, WITH REMOVABLE CORES. DIFFUSER CAPACITIES, SIZES AND DIRECTIONAL BLOWS ARE INDICATED ON THE DRAWINGS. FURNISH EACH DIFFUSER WITH DEFLECTING VANES AND KEY OPERATED, OPPOSED BLADE, VOLUME DAMPERS. DIFFUSERS SHALL BE FURNISHED WITH BAKED, WHITE FINISH.

SUPPLY REGISTERS
SUPPLY REGISTERS SHALL HAVE INDIVIDUALLY ADJUSTABLE FINS WITH VERTICAL FRONT BARS AND HORIZONTAL REAR BARS. FINS SHALL BE STREAMLINED AND OF STURDY CONSTRUCTION. FLANGES SHALL BE 5/8 INCH HCNNAREL BORDER. FURNISH RUBBER GASKET AROUND PERIMETER OF FLANGE, AND KEY OPERATED, OPPOSED BLADE VOLUME CONTROL DAMPERS. RUBBER GASKET SHALL BE NON-CHLORINATED RUBBER AND NON-POROUS. FURNISH WITH PRIME COAT OF PAINT.

GRILLES
GRILLES AND REGISTERS FOR MECHANICAL TO MATCH EXISTING. GRILLES AND REGISTERS SHALL BE OUT OF STEEL, WITH DAMPER, PRIMED PAINTED WHITE. SIZE OF GRILLE TO MATCH EXISTING OPENING ON TOE KICK, WALL OR CEILING.

CONTROLS
THE HEATING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL DEVICES NECESSARY TO ACHIEVE THE CONTROL SEQUENCE DESCRIBED HEREIN.

CONTROL SYSTEMS SHALL BE GUARANTEED FOR 2 YEARS FROM DATE OF ACCEPTANCE BY HACP.

CONTROL WIRING SHALL BE CONCEALED AND INSTALLED IN ACCORDANCE WITH SECTION 16.

MOTOR STARTERS - MOTOR STARTERS FOR ALL MECHANICAL ITEMS SHALL BE FURNISHED BY THE HEATING CONTRACTOR. STARTERS SHALL HAVE HAND-OFF-AUTO SWITCHES AND CONTROL TRANSFORMERS.

DAMPERS - DAMPERS SHALL BE OPPOSED MULTI-BLADE. BLADES SHALL BE CONSTRUCTED OF 16 GAGE STEEL WITH NEOPRENE GASKETED EDGES, AND SHALL BE MOUNTED IN CORROSION RESISTANT BUSHINGS. DAMPERS SHALL HAVE STOPS ON ALL FOUR SIDES. MOTORS SHALL BE MODULATING WITH OIL-IMMERSED GEAR TRAINS. DAMPERS SHALL BE 2% LOW LEAKAGE TYPE.

FREEZE PROTECTION THERMOSTAT - FREEZE PROTECTION THERMOSTAT SHALL BE MERCURY TUBE, MANUAL RESET TYPE SET AT 45F. INSTALL AN ADJUSTABLE TIME DELAY RELAY TO PERMIT AIR TO ESTABLISH SATISFACTORY TEMPERATURE TO AVOID FALSE TRIPS.

INSULATION
ALL SUPPLY AIR DUCTS SHALL BE INSULATED WITH 2" THICK, 1.00 DENSITY, OWENS-CORNING OR APPROVED EQUAL FLEXIBLE DUCT INSULATION WITH FLAME RETARDANT REINFORCED FIRK 25 FOIL COVERING. SEAL ALL JOINTS, BOLTS, AND ALL EXPOSED EDGES WITH 4" WIDE STRIPS OF SEALING TAPE USING A SUITABLE ADHESIVE. INSULATION SHALL HAVE A 2" FLAP AT ALL JOINTS AND SEAMS WHICH SHALL BE STAPLED AND SECURED WITH ADHESIVE. APPLY ADHESIVE TO DUCTS IN SIX-INCH-WIDE STRIPS AT ONE FOOT IN TERVALS. DUCTOWRK EXPOSED WITHIN THE SPACE MUST BE INSULATED.

OPERATING INSTRUCTIONS
THE CONTRACTOR SHALL FURNISH THREE COMPLETE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS. THIS SHALL INCLUDE FINAL CONTROL DIAGRAMS, CATALOG DATA INCLUDING CONSTRUCTION AND MAINTENANCE INFORMATION ON ALL EQUIPMENT, AND MAINTENANCE INFORMATION IN THE COMPLETE SYSTEM.

ONE COMPLETE CONTROL DIAGRAM SHALL BE INCLUDED IN EACH O&M MANUAL.

THE CONTRACTOR SHALL FORMALLY INSTRUCT THE HACP'S STAFF ON THE OPERATION OF THE SYSTEM. THE INSTRUCTION SHALL CONSIST OF NOT LESS THAN 2 PERIODS, EACH PERIOD OF 4 HOURS DURATION. THE CONTRACTOR SHALL ARRANGE FOR THIS INSTRUCTION WITH THE HACP.

FUNCTIONS AND ALL ACTUATORS OPERATE IN ACCORDANCE WITH THE SPECIFICATIONS.
TESTS AND INSPECTION

THE FOLLOWING OPERATIONS SHALL BE PERFORMED IN PREPARATION FOR FINAL INSPECTION BY THE ARCHITECT. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE TO THE ARCHITECT THAT THE SYSTEM IS OPERATING IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL TESTS AND INSPECTIONS SHALL BE COMPLETED BEFORE FINAL PAYMENT IS MADE TO THE HEATING (MECHANICAL) CONTRACTOR.

CONTROLS - ALL CONTROLS SHALL BE TESTED AND ADJUSTED TO ACHIEVE THE INTENT OF THESE SPECIFICATIONS. CONTROLS SHALL BE ADJUSTED WHILE THE SYSTEM IS OPERATING UNDER FULL LOAD CONDITIONS, BOTH HEATING AND COOLING. CONTROL SUB-CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION THAT ALL ON/OFF AND ALARM.

AIR DISTRIBUTION SYSTEM - AIR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCE SUBCONTRACTOR. THE COST OF THE SUB-CONTRACTOR SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE. THE INDEPENDENT AIR BALANCER SHALL NOT BE AN EMPLOYEE NOR A SUBSIDIARY OF THE CONTRACTOR.

GUARANTEE
THE MECHANICAL CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE JOB THAT ALL EQUIPMENT, MATERIAL AND LABOR FURNISHED BY HIM ARE FREE FROM DEFECTS. ANY DEFECTS IN MATERIAL AND WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT FURTHER EXPENSE TO THE HACP. ALL ITEMS SPECIFIED TO HAVE A LONGER WARRANTIES SHALL BE GUARANTEED FOR THAT LONGER PERIOD. CONTROLS SHALL HAVE A 2-YEAR GUARANTEE ON PARTS AND LABOR.

CONTROLS
SOLID-STATE THERMOSTAT: WALL-MOUNTED, PROGRAMMABLE, MICROPROCESSOR-BASED UNIT WITH MANUAL SWITCHING FROM HEATING TO COOLING, PREFERENTIAL RATE CONTROL, SEVEN-DAY PROGRAMMABILITY WITH MINIMUM OF FOUR TEMPERATURE PRESETS PER DAY, VACATION MODE, AND BATTERY BACKUP PROTECTION AGAINST POWER FAILURE FOR PROGRAM SETTINGS.

DIVISION 26 - ELECTRICAL WORK

NOTE: ELECTRICAL WORK ON THIS PROJECT IS TO BE DESIGN BUILD. THE E.C. IS RESPONSIBLE FOR PROVIDING LOCATIONS AND REQUIREMENTS FOR THE ELECTRICAL SYSTEM WITH THE HACP.

CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE SPECIFIC BUILDING HACP REQUIREMENTS, THE LATEST RULES OF THE NATIONAL ELECTRICAL CODE AND WITH LOCAL ORDINANCES HAVING JURISDICTION.

DO NOT INTERPRET ANYTHING IN THE DRAWINGS OR SPECIFICATIONS AS AUTHORITY TO VIOLATE APPLICABLE CODES.

BE RESPONSIBLE FOR EXAMINING DRAWINGS AND SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES. RESOLVE ALL CONFLICTS BEFORE INSTALLATION AT NO EXTRA COST.

PREPARE ANY ADDITIONAL CLARIFYING DETAILS REQUIRED BY THE LOCAL INSPECTOR OF AUTHORITIES AND SECURE APPROVAL OF SAME. PAY ANY CHARGES. OBSERVE ALL UNIFORM CONSTRUCTION CODE REQUIREMENTS.

OBSERVE ALL APPLICABLE SAFETY REGULATIONS REQUIRED BY HACP AND/OR BY OSHA.

BRING ANY DISCREPANCIES BETWEEN DIFFERENT DRAWINGS, BETWEEN THE DRAWINGS AND FIELD CONDITIONS, OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR ANY APPARENT OMISSIONS, TO THE ARCHITECT'S ATTENTION BEFORE SUBMITTING THE BID. AFTER AWARD OF CONTRACT.

THE INTERPRETATION OF ANY CONFLICT WILL BE MADE BY THE ARCHITECT AND SHALL BE ACCEPTED AS FINAL.

IF MENTION HAS BEEN OMITTED PERTAINING TO DETAILS, ITEMS OR RELATED ACCESSORIES REQUIRED FOR THE COMPLETION OF ANY ELECTRICAL SYSTEM, INCLUDE SUCH ITEMS AND ACCESSORIES IN THE ELECTRICAL CONTRACT WITHOUT ADDITIONAL CHARGES.
AFTER THE JOB IS AWARDED, CLAIMS BASED ON INSUF

MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, ASTM AND IEEE. ALL SIMILAR MATERIALS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.

B. RACEWAYS

1. MATERIALS
RIGID HEAVY WALL STEEL CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE STEEL, HOT DIPPED GALVANIZED AND ZINC COATED, INSIDE AND OUTSIDE. CONDUIT SHALL BEAR THE MANUFACTURER'S AND UNDERWRITERS' LABELS. THIN WALL CONDUIT IS DESIGNATED AS E.M.T. STEEL CONDUIT SHALL BE MANUFACTURED BY WHEATLAND, ALLIED, TRIANGLE, OR EQUAL.
FLEXIBLE CONDUIT (GREENFIELD) SHALL BE U. L. LISTED, 3/4 INCH MINIMUM TRADE SIZE FOR BRANCH WIRING. GREENFIELD OF ½ INCH SIZE WILL BE PERMITTED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES ONLY.

2. INSTALLATION
MINIMUM SIZE CONDUIT IS 3/4 INCHES.
INSTALL CONDUIT AS A COMPLETE SYSTEM. CONTINUOUS FROM OUTLET TO OUTLET , CABINET , BOX OR FITTING . MECHANICALLY AND ELECTRICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY IS SECURED.
DO NOT ROUTE RACEWAYS THROUGH ANY DUCTWORK.

C. CONDUIT FITTINGS

1. MATERIALS
ALL CONDUIT FITTINGS SHALL BE GALVANIZED MALLEABLE IRON OR STEEL, WHERE APPLICABLE.
CONDUIT FITTINGS SHALL CONFORM IN DESIGN AND QUALITY TO THE TYPE OF CONDUIT ON WHICH THEY ARE BEING INSTALLED.

2. INSTALLATION
USE THREADED CONNECTORS ON GRS CONDUIT.
USE SET-SCREW STYLE CONNECTORS ON E.M.T. WHERE SAME IS RUN EXPOSED OR CONCEALED ABOVE GRADE.
USE BUSHINGS, LOCKNUTS AND EXPANSION FITTINGS OF THE APPROPRIATE TYPE FOR THE RACEWAY SYSTEM BEING INSTALLED.

D. PULL BOXES, OUTLET BOXES AND COVERS

1. GENERAL
FOR EACH OUTLET BOX, USE THE PROPER CODE SIZE FOR THE ENTERING CONDUITS AND THE NUMBER OF WIRES TERMINATING THEREIN.
USE BOXES WITH PLASTER RING EXTENSIONS IN PLASTERED OR DRY WALL PARTITIONS.

2. MATERIALS
FOR LARGE PULL BOXES, USE BOXES OF CODE GAUGE SHEET STEEL WITH STEEL COVERS ATTACHED WITH BRASS SCREWS. BOXES SHALL BE HOT DIPPED, GALVANIZED AFTER FABRICATION - THE MINIMUM SIZE OF EACH BOX SHALL BE AS REQUIRED BY THE NATIONAL ELECTRIC CODE. MANUFACTURER'S ARE HOFFMAN, KEYSTONE OR EQUAL.
FOR CONCEALED WORK, USE PRESSED STEEL BOXES, KNOCKOUT TYPE, ZINC COATED, OF 1/16 INCH MINIMUM THICKNESS.
USE BOXES OF FORM AND DIMENSIONS BEST ADAPTED TO SPECIFIC LOCATION, KIND OF FIXTURE USED AND THE NUMBER, SIZE AND ARRANGEMENT OF RACEWAYS CONNECTING THERETO. USE STEEL CITY OR RACO.
USE WIREMOLD FINISHED STYLE BOXES IN FINISHED AREAS WHERE CONCEALED BOXES ARE NOT FEASIBLE.

E. CONDUCTORS IN RACEWAYS

1. MATERIALS
CONDUCTORS SHALL BE SOFT DRAWN COPPER, MINIMUM 97% CONDUCTIVITY, 600 VOLT, CONFORMING TO ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
INSULATION SHALL BE SUITABLE FOR THE CONDITIONS AND LOCATIONS IN WHICH CONDUCTORS ARE INSTALLED. THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED OR REQUIRED BY LOCATION OR INSTALLATION CONDITIONS:
A. FOR BUILDING WIRE IN INTERIOR ABOVE GRADE LOCATIONS, USE TYPE THWN/THHN COPPER RATED 75 DEGREES C. WET OR DRY.
WIRES SHALL BE CLEARLY AND REGULARLY MARKED WITH THE WIRE SIZE, VOLTAGE, INSULATION TYPE AND MANUFACTURER'S NAME.
CONDUCTORS SHALL BE NEW AND MANUFACTURED WITHIN EIGHT MONTHS PREVIOUS TO DELIVERY AT SITE, WITH DATE OF MANUFACTURE MARKED ON THE PACKAGES.
MINIMUM WIRE SIZE FOR BRANCH CIRCUITING SHALL BE #12 AWG.
ALL CIRCUIT RUNS EXCEEDING 75 FEET IN LENGTH EXTENDING FROM THE PANELBOARD TO THE FIRST OUTLET IN THE CIRCUIT SHALL BE #10 AWG MINIMUM.
WIRE #8 AWG AND SMALLER SHALL BE SOLID; WIRE #6 AWG AND LARGER SHALL BE STRANDED.
WIRE SHALL BE AS MANUFACTURED BY HI-TECH, PIRELLI, TRIANGLE OR EQUAL.

2. INSTALLATION
COLOR CODE ALL WIRES PER NEC REQUIREMENTS:
A. MATCH THE EXISTING SCHEME PRESENTLY INSTALLED; NEUTRAL SHALL BE WHITE. EQUIPMENT GROUND SHALL BE GREEN.
THE GROUPING OF OUTLETS ON INDIVIDUAL NEW CIRCUITS AS SHOWN ON THE DRAWINGS SHALL BE STRICTLY OBSERVED. GROUPING OF CONDUCTORS IN THE CONDUIT SHALL NOT BE PERMITTED. INCORPORATE A MAXIMUM OF FOUR (4) WIRES, I.E. A MAXIMUM OF ONE CIRCUIT CONDUCTOR ON EACH PHASE PLUS THE NEUTRAL WIRE PLUS THE GROUND WIRE IN ONE CONDUIT.
EMPLOY A U.L. LISTED COMMERCIAL PRODUCT SUCH AS WYRE-EZE OR YELLOW-77 FOR PULLING WIRES INTO A RACEWAY.
CLEAN AND DRY CONDUITS BEFORE PULLING IN WIRES.
THE USE OF B.X., ROMEX, OR U.F. CABLE IS NOT PERMITTED.
MC CABLE MAY BE USED FOR CONCEALED BRANCH CIRCUIT WIRING.

F. SPLICES

MAKE ALL SPLICES, JOINTS AND TAPS WITH SOLDERLESS PRESSURE CONNECTORS LISTED AND APPROVED FOR THE INTENDED USE AND FOR THE SIZE AND NUMBER OF CONDUCTORS UTILIZED.
1. FOR WIRE #10 AWG AND SMALLER, USE TWIST-ON WIRE NUTS.
2. FOR WIRE #8 AWG AND LARGER, USE HEAVY DUTY SOLDERLESS SET SCREW CONNECTORS WITH A SEPARATE BARREL FOR EACH CONDUCTOR.
USE INSULATING COVERS FROM THE MANUFACTURER, WHERE AVAILABLE. TAPE PROPERLY TO PROVIDE A SUFFICIENT INSULATION AROUND THE ENTIRE SPLICE UNIT, WHEN INTEGRAL INSULATING COVERS ARE NOT AVAILABLE FROM THE FITTING MANUFACTURER.

G. PANELBOARDS AND CABINETS

CABINETS SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH WIRING GUTTERS OF SUFFICIENT WIDTH TO PROVIDE AMPLE SPACE FOR BRANCH CIRCUIT WIRES AND FEEDERS. GUTTERS SHALL NOT BE LESS THAN FOUR INCHES WIDE. GUTTERS SHALL CONFORM TO NEC STANDARDS AND SHALL BE OVER-SIZED WHERE NECESSARY TO ACCOMMODATE THE ENTRANCE OF SEVERAL LARGE CONDUITS AND/OR WHERE NECESSARY TO AVOID OVERCROWDING OF CONDUCTORS OR EQUIPMENT WITHIN. TRIMS SHALL BE SURFACE AS NOTED ON THE PANEL SCHEDULE AND SHALL CONTAIN CONCEALED HINGED DOORS, EACH EQUIPPED WITH FLUSH CHROME PLATED COMBINATION LOCKS AND CATCHES, ALL KEYED ALIKE. FINISH SHALL BE STANDARD BAKED ENAMEL OR LACQUER, MEDIUM GRAY, ANSI-61. PROVIDE TWO (2) KEYS WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE. USE "DOOR IN A DOOR" HINGED TRIMS.

PANELBOARD BASIS OF DESIGN:

- MANUFACTURER: GE, SIEMENS OR EQUAL.
- ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED IN ACCORDANCE WITH NFPA 70, BY QUALIFIED ELECTRICAL TESTING AGENCY RECOGNIZED BY AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH NEMA PB 1.
- COMPLY WITH NFPA 70.
- ENCLOSURES: SURFACE-MOUNTED, DEAD-FRONT CABINETS.
- INDOOR DRY AND CLEAN LOCATIONS: UL 50E, TYPE 1
- OTHER WET OR DAMP INDOOR LOCATIONS: UL 50E
- HEIGHT: 7 FT MAXIMUM.
- RETAIN ONE OF FIRST TWO SUBPARAGRAPHS BELOW. VERIFY WITH MANUFACTURER FOR AVAILABILITY OF "DOOR-IN-DOOR" CONSTRUCTION IN OTHER THAN NEMA 1 STYLE PANELBOARDS.
- HINGED FRONT COVER: ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER. TRIMS MUST COVER LIVE PARTS AND MAY HAVE NO EXPOSED HARDWARE.
- INCOMING MAIN ON TOP
- 20 SPACE- 40 CIRCUITS MINIMUM.

BUSING SHALL BE FULL CAPACITY, 98% CONDUCTIVITY COPPER OR 80% CONDUCTIVITY ALUMINUM, BRACED FOR THE SHORT CIRCUIT CURRENT AVAILABLE TO THE PANEL AND SIZED AS SHOWN IN THE PANEL DETAIL. CIRCUIT BREAKERS SHALL BE CONNECTED TO BUSES WITH BOLTED CONNECTIONS FOR SEQUENCE PHASING: I.E., CIRCUITS 1 AND 2 CONNECTED TO PHASE A; 3 AND 4 TO PHASE B AND SO ON. POLARITY OR BLOCK PHASING SHALL NOT BE ACCEPTABLE. PANEL SHALL INCLUDE A NEUTRAL BUS AND AN EQUIPMENT GROUNDING BUS. CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE, BOLT-ON, WITH THERMAL AND MAGNETIC TRIPS, TRIP-FREE ON OVERLOAD OR SHORT CIRCUIT, UL LISTED, HAVING INTERRUPTING CAPACITIES, AS INDICATED.

H. WIRING DEVICES AND PLATES

1. MATERIALS
ALL WIRING DEVICES SHALL BE MANUFACTURED BY ONE OF THE MANUFACTURERS LISTED. DO NOT MIX MANUFACTURER'S PRODUCTS.
DEVICES SHALL BE U.L. SPECIFICATION GRADE.

2. WALL SWITCHES
SWITCHES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE GENERAL USE, AC QUIET TYPE, 20 AMPERE, 120/277 VOLT, BACK AND SIDE WIRED. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

3. WALL SWITCH TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENTS FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP SINGLE POLE WALL SWITCH - HUBBELL #HBL-1221, P & S #20AC1, COOPER #1221, BRYANT #4901, OR LEVITON# 1221-2.
20 AMP 3-WAY WALL SWITCH - HUBBELL #HBL-1223, P & S #20AC3, COOPER #1223, BRYANT #4903, OR LEVITON #1223-2. USE SIMILAR SERIES FOR 4-WAY SWITCHES.

4. WALL RECEPTACLES
ALL CONVENIENCE AND POWER RECEPTACLES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE THE GROUNDING TYPE.
CONVENIENCE RECEPTACLES SHALL BE 20 AMP, 125 VOLT, BACK AND SIDE WIRED, 3 WIRE GROUNDING, UL LISTED AS COMPLYING WITH THE REQUIREMENTS OF NEC ARTICLE 250-146, AND SHALL BE NEMA 5-20R CONFIGURATION. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

5. RECEPTACLE TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENT FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP, 125 VOLT DUPLEX CONVENIENCE OUTLET (NEMA 5-20R) - HUBBELL #HBL-5362, P & S #5362A, COOPER #5362, BRYANT #5362, OR LEVITON #5362.
20 AMP, 125 VOLT GROUND FAULT INTERRUPTER (NEMA 5-20R) - HUBBELL #GF-5362, P & S #2091, COOPER #WGF-20, BRYANT #GFRS3FT, OR LEVITON #6899.

6. PLATES
USE STAINLESS STEEL PLATES.

I. FASTENINGS AND ATTACHMENTS

FOR FASTENINGS AND ATTACHMENTS, SUCH AS SCREWS, BOLTS AND NUTS, USE DEVICES MADE OF NON-FERROUS METALS OR OF GALVANIZED OR CADMIUM PLATED STEEL. WHEN SUCH DEVICES ARE NOT OBTAINABLE IN NON-FERROUS METALS, OR IN STEEL WITH A PROTECTIVE METALLIC COATING. PAINT SAME WITH A RUST PREVENTING PAINT SUCH AS RUSTOLEUM.
ALL FASTENINGS AND ATTACHMENTS SHALL BE MADE OF MATERIALS OR SO PROTECTED, THAT THEY WILL OFFER THE MAXIMUM PROTECTION AGAINST DETERIORATION FROM AGE, WEATHER OR DAMPNESS.
DO NOT PENETRATE THE ROOF DECK WITH ANY FASTENERS.

J. SURFACE METALLIC RACEWAY SYSTEM

USE A SURFACE METAL RACEWAY SYSTEM AND BOXES, WHERE CONCEALED WIRING IS NOT POSSIBLE OR WHERE SHOWN ON THE PLANS.
USE RACEWAYS, SUCH AS WIREMOLD, FOR STRAIGHT RUNS, COMPLETE WITH BOXES AND FITTINGS, AS DIRECTED. VERIFY COLOR OPTIONS WITH THE ARCHITECT. PAINT SAME WHERE REQUIRED OR INDICATED.
OBTAIN APPROVAL FOR ALL SURFACE ROUTINGS WITH THE ARCHITECT PRIOR TO ROUGH-IN.

K. FIRE STOPS

1. GENERAL
PROVIDE THROUGH PENETRATION FIRE STOP SYSTEMS TO PREVENT THE SPREAD OF FIRE THROUGH OPENINGS MADE IN FIRE-RATED WALLS OR FLOORS TO ACCOMMODATE THROUGH PENETRATING ITEMS SUCH AS CONDUIT AND CABLES.
FIRE-RESISTANCE-RATED ASSEMBLY SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY OR SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRE STOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM-E-814 OR U.L. 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER. THE SYSTEM SHALL HAVE AN F RATING AND A T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. WHERE FLOOR/CEILING ASSEMBLIES ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED. FIRE STOP SHALL RESTORE FLOOR AND WALL TO ORIGINAL FIRE RATED INTEGRITY AND SHALL BE WATERPROOF.

PENETRATIONS OF MEMBRANES THAT ARE PART OF A FIRE-RATED WALL OR FLOOR MUST BE STOPPED AS OUTLINED FOR THROUGH PENETRATIONS WITH THE FOLLOWING EXCEPTIONS.
A. STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
B. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED AS INDICATED.
1. BY HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES.
2. BY HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY IS FILLED WITH CELLULOSE LOOSE FILL ROCK WOOL OR SLAG MINERAL WOOL INSULATION.
3. BY SOLID FIRE BLOCKING.
4. BY PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS.
5. BY OTHER LISTED MATERIALS AND METHODS.

2. MATERIALS
PUTTY - USE FLAMESEAL PUTTY #AA423 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
FIBER - USE CERAMIC FIBER #AA401 (10 LB. BOX) OR #AA417 (2 LB. BAG) AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN WALLS - USE CERAMIC BOARD #AA402 (1" X 18" X 12") OR #AA403 (1" X 36" X 48") AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN FLOOR - USE SUPPORT WIRE #AA404 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.

3. INSTALLATION
USE TOTAL THICKNESS OF 1-1/2 INCHES OF FLAMESEAL PUTTY #AA423 ON ALL PENETRATIONS OF FIRE-RATED WALLS AND FLOORS. USE NELSON FIBER #AA401 OR #AA417 IN CONJUNCTION WITH THE PUTTY TO FILL THE REMAINING VOID OF PENETRATIONS.
PACK CERAMIC FIBER IN CENTER OF OPENING LEAVING 3/4 INCH ON EITHER SIDE OF WALL FOR THE PUTTY. INSTALL THE PUTTY IN THE REMAINING PART OF OPENING, WORKING IT INTO ALL VOIDS AND CAVITIES. FOR OPENINGS WITH GREATER THAN 4 INCHES OF UNSUPPORTED SPACE, USE NELSON CERAMIC BOARD #AA402 OR #AA403 DEPENDING ON SIZE OF OPENING. PACK CERAMIC FIBER IN BOTTOM OF OPENING PER FACTORY RECOMMENDATIONS, LEAVING 1-1/2 INCHES BELOW FLOOR LEVEL FOR THE INSTALLATION OF FLAMESEAL PUTTY. USE SUPPORT WIRE #AA404 ON ALL PENETRATIONS IN EXCESS OF 6 INCHES DIAMETER.

L. MC CABLE

METAL CLAD CABLE (MC) SHALL BE COPPER WIRE WITH 90 DEGREES C. THHN INSULATION, #12 AWG MINIMUM, WITH CONTINUOUS INSULATED GREEN GROUND CONDUCTOR AND STEEL ARMOR, MANUFACTURED BY A.F.C., ALFLEX, OR EQUAL. INSTALL NON-RIGID CABLE IN A NEAT, APPROVED MANNER, AS PER N.E.C. REQUIREMENTS. DO NOT GROUP CABLES INTO A COMMON CONDUIT AS OVERHEATING WILL RESULT. DO NOT TIE THE SEVERAL CABLES TOGETHER. USE APPROVED STYLE "MC" CONNECTORS AND FITTINGS IN ORDER TO MAINTAIN ADEQUATE CASE GROUNDING REQUIRED BY THE NATIONAL ELECTRICAL CODE. PROVIDE AN INDEPENDENT MEANS OF SUPPORT FOR ALL WIRING LOCATED ABOVE A DROPPED CEILING ASSEMBLY FROM THE STRUCTURAL CEILING SYSTEM. DO NOT SUPPORT WIRING FROM THE CEILING ASSEMBLY OR FROM ITS SUPPORT WIRES.

SERVICE AND DISTRIBUTION

A. GENERAL INSTALLATION

USE RIGID HEAVY WALL STEEL CONDUIT FOR EXPOSED EXTERIOR RACEWAYS.
USE EMT ELECTRICAL METALLIC THINWALL CONDUIT FOR CONCEALED INTERIOR FEEDERS, TELEPHONE RACEWAYS, ETC.
USE FLEXIBLE CONDUIT SUCH AS "GREENFIELD" FOR CONNECTIONS TO RECESSED LIGHTING FIXTURES IN 72" MAXIMUM LENGTHS AND FOR USE IN STUD WALLS WHERE THE USE OF RIGID CONDUIT IS NOT PRACTICAL.
USE WEATHERPROOF AND OIL PROOF FLEXIBLE CONDUIT SUCH AS "SEALTITE" FOR ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT IN LENGTHS OF 18" MAXIMUM.
USE LIQUID-TIGHT FLEXIBLE CONDUIT AND APPROPRIATE LIQUID-TIGHT FITTINGS IN AREAS EXPOSED TO THE WEATHER OR LIKELY TO BECOME DAMP. WHERE USED, CONFORM TO NEC #350-118.

USE WIREMOLD RACEWAYS FOR BRANCH CIRCUIT SURFACE ROUTINGS IN FINISHED AREAS ONLY WHERE CONCEALED WIRING IS NOT FEASIBLE, AND WHERE INDICATED.
USE M.C. CABLE FOR CONCEALED BRANCH CIRCUIT WIRING ONLY, IN ACCORDANCE WITH THE N.E.C. REQUIREMENTS.
THE USE OF B.X., ROMEX, AND U.F. IS NOT APPROVED.

LIGHTING FIXTURES AND ACCESSORIES

GENERAL
ALL LIGHTING FIXTURES AND LAMPS WILL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

LIGHTING FIXTURES

BASIS OF DESIGN LIGHTING FIXTURES BY KICHLER OR EQUAL.
CEILING FIXTURE: KICHLER #6112WH. WHITE FINISH. SURFACE MOUNTED
EXTERIOR CEILING FIXTURE: KICHLER #11132AZTLED, OUTDOOR RATED.
WALL EXTERIOR: KICHLER #9654TZ, WALL MOUNTED, OUTDOOR RATED
BATHROOM VANITY: KICHLER JOELSON #45923
FLOOD LIGHT: LITHONIA LIGHTING OLF LED WITH MOTION OCCUPANCY SENSOR
RECESSED LIGHTING: HALO OR EQUAL.

B. INSTALLATION

PROVIDE ALL SUPPLEMENTARY STRUCTURAL MATERIALS REQUIRED TO PROPERLY MOUNT ALL LIGHTING FIXTURES.
SECURELY MOUNT LIGHTING FIXTURES TO STRUCTURAL ELEMENTS OF THE BUILDING TO SUSPENDED CEILING SYSTEMS SUCH THAT SAID FIXTURES WILL BE SQUARE, PLUMB, AND RIGID, WILL NOT FALL OR SAG, AND WILL NOT CAUSE THE SUSPENDED CEILING SYSTEM TO SAG. PROVIDE ADDITIONAL CEILING SUPPORTS, WHERE REQUIRED TO SUPPORT RECESSED OR SURFACE FIXTURES.
INSTALL WIRING TO AND WITHIN FIXTURES TO COMPLY WITH NEC ARTICLE #410. TAKE SPECIAL CARE TO ASSURE THAT THE FIXTURE OUTLETS FOR RECESSED FIXTURES ABOVE SOLID SUSPENDED CEILINGS WILL ACTUALLY BE ACCESSIBLE AFTER THE PROJECT IS COMPLETED.
USE CLIPS TO FASTEN RECESSED TROFFERS TO DROP CEILING CHANNELS AS REQUIRED BY NEC SECTION #410-16. USE CADDY FASTENERS #6 IS OR APPROVED EQUAL.
TIME CLOCKS SHALL BE COMMERCIAL GRADE, 7 DAY, ASTRONOMICAL DAL, WITH 24-HOUR SPRING RESERVE BACKUP, AS MANUFACTURED BY TORK OR PARAGON (IF REQUIRED).

SMOKE ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 20SAR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

COMBO SMOKE + CO ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 3COUDR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

SMOKE DETECTOR'S LOCATIONS:
1. COMBO SMOKE + CO ALARM PER FLOOR, NOT TO BE PLACED IN MECHANICAL ROOM OR KITCHEN.
1 SMOKE DETECTOR IN SIDE EACH SLEEPING ROOM
INTERCONNECT SMOKE DETECTORS INSIDE THE UNIT.

MOTOR WIRING

WIRING FOR MECHANICAL AND PLUMBING CONTRACTS
1. INSTALLATION
VERIFY ALL LOCATIONS WITH THE VARIOUS MECHANICAL CONTRACTORS BEFORE INSTALLING RACEWAYS.
PROVIDE ALL WIRING MATERIALS AND DEVICES REQUIRED TO CONNECT AND OPERATE THE ELECTRICAL PARTS OF EQUIPMENT FURNISHED AND INSTALLED UNDER THE MECHANICAL DIVISION.
INSTALL AND CONNECT ALL STARTERS, PUSHBUTTONS, SWITCHES, THERMOSTATS AND OTHER CONTROL DEVICES AS FURNISHED BY OTHERS, UNLESS OTHERWISE NOTED.
MAKE ALL FINAL CONNECTIONS TO MOTORIZED EQUIPMENT. VERIFY THE CORRECT DIRECTION OF ROTATION.
CONNECT MOTOR CIRCUITS TO THE RIGID CONDUIT SYSTEM BY MEANS OF WEATHERPROOF STYLE FLEXIBLE CONDUIT, PROPERLY GROUNDED AND BONDED. EMPLOY A GREEN GROUND WIRE FOR ALL SYSTEMS AND MOTOR FRAME GROUND CONNECTIONS.
BOLT THE WIRE TO THE MOTOR FRAME AT ONE END AND TO THE MOTOR STARTER AT THE OTHER END WITH APPROVED TERMINAL DEVICES.
DO ALL LINE VOLTAGE CONTROL WIRING (120 VOLTS OR HIGHER).
ALL LOW VOLTAGE CONTROL WIRING (UNDER 120 VOLTS) IS THE RESPONSIBILITY OF THE MECHANICAL OR PLUMBING CONTRACTS.

SECTION 32- EXTERIOR IMPROVEMENTS

CHAIN LINK FENCE
ALUMINUM WIRED FABRIC 2X2 INCHES WITH ROUNDED POST AND RAILS 2.5 INCHES IN DIAMETER. LIGHT INDUSTRIAL STRENGTH, ZINC COATED. WITH TOP AND BOTTOM TENSION WIRED ZINC COATED. MECHANICALLY DRIVEN INTO SOIL OR USING ANCHORING CONCRETE.

GATES TO MATCH FENCE MATERIAL AND FRAME. DOOR WITH LATCH TO PERMIT OPERATION FROM BOTH SIDES OF GATE. PADLOCK AND CHAIN TO BE PROVIDED BY HACP.

SEEDING

QUALITY, NON-STATE CERTIFIED. SEED OF GRASS SPECIES AS LISTED BELOW FOR SOLAR EXPOSURE, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PER CENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED.

A. SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH.
1. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
2. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
3. DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.

B. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

C. PROTECT SEEDED AREAS FROM HOT, DRY WEATHER OR DRYING WINDS BY APPLYING COMPOST MULCH WITHIN 24 HOURS AFTER COMPLETING SEEDING OPERATIONS. SOAK AREAS, SCATTER MULCH UNIFORMLY TO A THICKNESS OF 3/16 INCH +, AND ROLL SURFACE SMOOTH.

TREE AND STUMP REMOVAL
ALL APPROPRIATE SAFETY EQUIPMENT MUST BE UTILIZED AT ALL TIMES DURING OPERATIONS; INCLUDING, BUT NOT LIMITED TO: HARD HATS, GLOVES, SAFETY GLASSES, FALL RESTRAINTS, TRAFFIC CONTROL DEVICES, HIGH VISIBILITY CLOTHING, ADEQUATE HEARING PROTECTION AND ANY OTHER SAFETY REQUIRED BY OSHA.
ONCE A TREE IS CUT DOWN, THE STUMP MUST BE GROUND OUT WITHIN FIVE DAYS (5). STUMPS AND BUTTRESS ROOTS MUST BE REMOVED TO A MINIMUM OF TWELVE INCHES (12") BELOW GROUND LEVEL AND TWO (2) TIMES THE DIAMETER AT BREAST HEIGHT IN SURFACE AREA GROUND. THE REMAINING STUMP AND/OR CHIPS SHALL BE REMOVED FROM THE SITE WITHIN TWO DAYS (2) AFTER GRINDING. ALL SURFACE ROOTS AND ADJACENT SUBSURFACE ROOTS SHALL BE REMOVED AS MAY BE NECESSARY TO ELIMINATE "HUMPS" OR MOUNDS IN THE TREE EASEMENT AREA ADJACENT TO THE STUMP. ALL TREE EASEMENT AREAS ARE TO BE LEFT FLAT AND MEET ORIGINAL GRADE. THE AREA WILL THEN BE BACKFILLED WITH CLEAN, PULVERIZED TOPSOIL TO THE LEVEL OF THE ADJOINING GRADE AND SEEDED. SEE SEEDING FOR SEED REQUIRED.

THE PARTY AUTHORIZED TO REMOVE THE TREE, AT THEIR EXPENSE, SHALL RESTORE THE LAWN AND ANY EXISTING LANDSCAPING AND APPURTENANNCES THAT EXIST BETWEEN THE SIDEWALK AND CURB OR IN OTHER AREAS THAT HAVE BEEN DISTURBED BY THE PARTY AUTHORIZED TO REMOVE THE TREE DURING THE PROSECUTION OF THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL PROTECT ALL CONCRETE SIDEWALK, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT FROM DAMAGE THROUGH THE USE OF PLYWOOD SHEETING OR MATS WHEN NECESSARY. THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL REPLACE OR RESTORE ALL CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT WHICH MAY HAVE BEEN DAMAGED DURING THE PROSECUTION OF THE WORK.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL BE RESPONSIBLE AT ALL TIMES FOR KEEPING THE WORK SITE ADJOINING PREMISES, STREET, WALKS AND DRIVEWAYS CLEAN. ALL TREE BRANCHES, BARK, CHIPS AND OTHER DEBRIS MUST BE CLEARED UP AT THE END OF THE WORKDAY.

SECTION 33- UTILITIES

TRENCH DRAIN SYSTEM
ZURN Z880 2 1/2 [64] WIDE TRENCH DRAIN SYSTEM SHALL BE 4 ft [1220] LONG AND 2 1/2 [63.5] WIDE. DRAIN SHALL BE 3 [76] DEEP. DRAIN SHALL BE MADE OF (HDPE) HIGH DENSITY POLYETHYLENE AND IS UV-10 STABILIZED. DRAIN SHALL HAVE BEDDING FEET TO BE USED FOR POSITIONING AND ANCHORING PURPOSES. DRAINS SHALL HAVE TONGUE AND GROOVE SNAP FIT CONNECTION. DRAIN SHALL HAVE 24 [610] LONG HIGH-DENSITY POLYETHYLENE DECORATIVE GRATE (-POG) PROVIDED AS STANDARD.

INSTALLATION
TRENCH EXCAVATION MUST BE 4" [102MM] GREATER THAN THE TRENCH DEPTH AND A MINIMUM OF 4" [102MM] GREATER THAN THE EDGE OF THE TRENCH ON EACH SIDE. SOFT AND/OR SHIFTING SOIL SUBSTRATES MAY CAUSE CRACKING OF THE CONCRETE AND CONSEQUENT MOVEMENT OF THE TRENCH. IT IS CRITICAL THAT THE CONCRETE BE POURED ON AN ADEQUATE FOUNDATION

ASSEMBLING PER MANUFACTURER INSTRUCTION. A SILICONE CAULK OR A CONSTRUCTION ADHESIVE, SUCH AS LIQUID NAILS, IS RECOMMENDED TO BE USED AT EACH JOINT AS A SEALER.

UPON COMPLETION OF THE TRENCH EXCAVATION, THE CHANNELS SHOULD BE PLACED IN ORDER ALONGSIDE THE EXCAVATION AND ACCORDING TO THE JOB LAYOUT.

AFTER ATTACHMENT OF ACESSORIES, ANCHOR AND LEVEL TRENCH IN THE EXCAVATION USING CONCRETE PATTIES AROUND THE FEET. MAKE FINISH POUR OF CONCRETE AND BE CERTAIN TO PROPERLY VIBRATE CONCRETE TO ELIMINATE ANY UNWANTED VOIDS. FINISH TROWELING SHOULD BE DONE TO SET THE TOP EDGE OF THE TRENCH DRAIN 1/16" [1.6MM] BELOW THE FLOOR GRADE. REMEMBER TO COMPENSATE FOR CONCRETE SHRINKAGE THAT MAY OCCUR DURING CURE SO THAT THE EDGE OF THE TRENCH DRAIN DOES NOT PROTRUDE ABOVE THE FINISHED FLOOR GRADE.

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CONSTRUCTION DOCUMENTATION

general notes

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2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved

Renovation of 10 Scattered Sites

10 Scattered Sites - Wolford St
Single Family Residence, Minor Alteration
2337 Wolford Street,
Pittsburgh, Pennsylvania 15216

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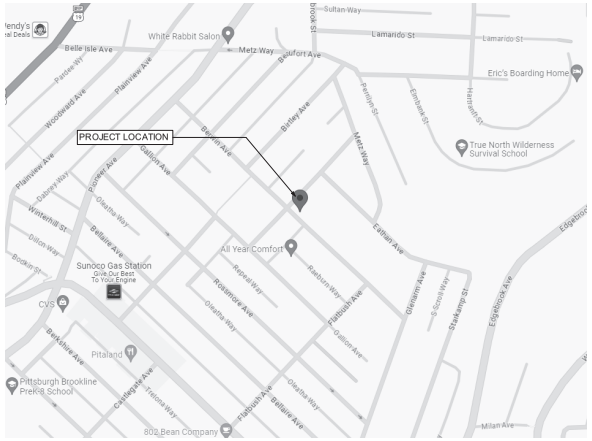
Code Conformance Information

Applicable Codes

General:	2018 International Residential Code 2018
Energy:	2018 International Energy Conservation Code
Electrical:	2017 NEC (NFPA 70)
Fire:	2018 International Fire Code
Fuel Gas:	2018 International Fuel Gas Code
Mechanical:	2018 International Mechanical Code
Plumbing:	2017 Allegheny County Health Department Plumbing Code

General Building / Project Information

Stories:	2 Stories
Building Gross Area:	Basement 372 sqft + 253 Garage
	1st Floor 624 sqft
	2nd Floor 624 sqft



1 Site Location
SCALE: 1" =30'

Materials Legend

NOT ALL MATERIALS USED

- EARTH
- COMPACTED STONE FILL
- CONCRETE
- STEEL
- RIGID INSULATION
- BLOCKING
- BATT INSULATION
- GYPSUM WALL BOARD
- WOOD
- PLYWOOD SHEATHING
- SPRAY FOAM INSULATION

Abbreviations

A.F.F.	Above Finish Floor
A.P.	Access Panel
ACOUST.	Acoustical
A.C.T.	Acoustical Ceiling Tile
ADH.	Adhesive
ADJUST.	Adjustable
A/C	Air Conditioning
ALT.	Alternate
ALTN.	Alternate
ALUM.	Aluminum
A.O.R.	Area of Refuge
APPROX.	Approximate
ARCH.	Architectural
ASB.	Asbestos
ASPH.	Asphalt
AUTO.	Automatic
AVG.	Average
BLK.	Block
BD.	Board
BOT	Bottom
BLDG	Building
C.I.P.	Cast In Place
C.B.	Catch Basin
CEM.	Cement
CER.	Ceramic
CG	Corner Guard
C.M.T.	Ceramic Mosaic Tile
C.W.T.	Ceramic Wall Tile
C.O.	Cleanout
℄	Center Line
CLO.	Closet
C.W.	Cold Water
CLG.	Ceiling
COL.	Column
CONC.	Concrete
C.M.U.	Concrete Masonry Unit
CONT.	Continuous
CORR.	Corridor
C.M.P.	Corrigated Metal Pipe
CRS.	Courses
DIA.	Diameter
DET	Detail
DGL	Dens Glass Gold
DR.	Door
DN.	Down
D.S.	Downspout
DWG.	Drawing
D.F.	Drinking Fountain
D.I.P.	Ductile Iron Pipe
EA.	Each
E.W.	Each Way
ELEC.	Electrical
E.C.	Electrical Contractor
EL.	Elevation
ELEV.	Elevation
EQUIP.	Equipment
E.F.	Exhaust Fan
EXIST.	Existing
EXP.	Expansion
E.J.	Expansion Joint
ESH	Exterior Sheathing
EXIST.	Existing
EXP.	Exposed
EXT.	Exterior
E.I.F.S.	Exterior Insulation & Finish System
F.R.P.	Fiberglass Reinforced Polyester
F.F.	Finish Floor
FIN.FLR.	Finish Floor
F.A.C.P.	Fire Alarm Control Panel
F.E.	Fire Extinguisher
FLR.	Floor
F.D.	Floor Drain
FTG.	Footing
GA.	Gauge
G.C.	General Contractor
G.F.I.	Ground Fault Interrupter
GYP.	Gypsum
G.W.B.	Gypsum Wall Board
GSH	Gypsum Sheathing
H/C	Handicap
H.V.A.C.	Heating, Ventilation &
HT	Height
HC	Hollow Core
H.M.	Hollow Metal
HORIZ.	Horizontal
HR.	Hour
H.W.	Hot Water
IN.	Inch
I.M.	Insulated Metal
INSUL.	Insulation or Insulated
INT.	Interior
INV.	Invert
ISO.	Isolation
JAN.	Janitor's Closet
J.T.	Joint
LAM.	Laminate
LAV.	Lavatory
LG.	Long
M.D.F.	Medium Density Fiberboard
M.D.H.	Magnetic Door Holder
M.H.	Manhole
MFGR.	Manufacturer
MAX.	Maximum
MECH.	Mechanical
MET.	Metal
MIN.	Minimum
MISC.	Miscellaneous
N.I.C.	Not In Contract
N.T.S.	Not To Scale
O.C.	On Center
OPP.	Opposite
O.H.	Overhead
PR.	Pair
PLAS.	Plaster
PLAS.LAM.	Plastic Laminate
P.C.	Plumbing Contractor
PLYWD.	Plywood
POLY.	Polyethylene
P.V.C.	Polyvinyl Chloride
PRE-FAB.	Prefabricated
RE.	Refer To
REF.	Refrigerator
R.C.P.	Reinforced Concrete Pipe
REINF.	Reinforcement
RD.	Roof Drain
RM.	Room
S.A.T.	Suspended Acoustical Tile
SCHED.	Schedule
SHT.	Sheet
SIM.	Similar
S.C.	Solid Core
SPECS.	Specifications
SQ.	Square
S.F.	Square Foot
S.S.	Stainless Steel
STL.	Steel
STOR.	Storage
STRUCT.	Structural
TEL.	Telephone
THK.	Thick
T.B.D.	To Be Determined
T&G	Tongue & Groove
T.O.	Top Of
T.O.	Top Of Grade
T.O.S.	Top Of Steel
TYP.	Typical
UNFIN.	Unfinished
U.N.O.	Unless Noted Otherwise
V.B.	Vapor Barrier
VERT.	Vertical
VEST.	Vestibule
V.C.T.	Vinyl Composition Tile
W.H.	Water Heater
W.W.F.	Welded Wire Fabric
WIN.	Window
W/	With
W/O	Without
WD.	Wood

Symbols

NOT ALL SYMBOLS USED

T.O. FINISH FLOOR ELEV. 0'-0"	ELEVATION HEIGHT
PLAN NORTH	NORTH ARROW
1 A7.1	ELEVATION MARKER

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revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
2337 Wolford Street
Pittsburgh, Pennsylvania 15216

drawing title

Site Location, Drawing Index, Code Conformance Information, Abbreviations and Materials

scale: As Noted	**Sheet No.**
date: August 20th, 2024	**A1**
no. 1 / of. 9	Project #2326

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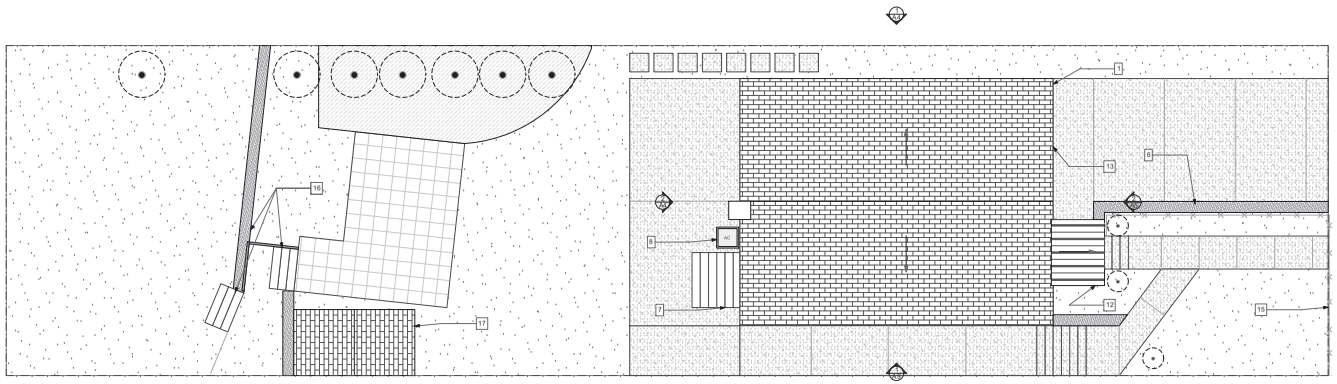


PLAN NORTH

1 Site Plan
SCALE: 3/16" = 1'-0"

SITE PLAN LEGEND

GRASS	MISC. BRICK	AC CONDENSER	RAILING	TRUE ROOF OUTLINE
LIGHTWEIGHT CONCRETE	MULCHED AREA	TREE / SHRUB	TACTILE PAVING	APPROX. PROPERTY LINE
CONCRETE BLOCK	STREET SIGNAGE	STREET SIGNAGE	MAN HOLE	WINDOW WELL

10 Scattered Sites Keynotes - 2337 Wolford St

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contact

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages.
3. SMOKE/CO DETECTORS: In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. EXTERIOR TIMBER RETAINING WALL (GC): At this location existing Pressure Treated Timber retaining wall is failing. Completely remove the existing wall and replace with new segmented concrete block retaining wall installed per Specifications (approx. 24 linear ft x 2 ft high).
7. EXTERIOR REAR STEPS (GC): Clean and paint exterior wood stairs. See Specifications.
8. EXTERIOR CONDENSER (M): Remove existing DX line insulation. Provide new insulation on both lines with aluminum jacketing to protect from solar degradation. See Specifications.
9. BRICK WINDOW SILLS (GC): Repoint window all sills. See Specifications.
10. BRICK WALL LINTELS (GC): Scrape and paint lintels over garage door and all windows.
11. BRICK WALL (GC): Clean and repoint brick in area and in quantity indicated. See Specifications.
12. ENTRANCE RAILING (GC): At this location, remove existing metal railing. Provide new entrance railing and securely fasten, similar to existing. See Specifications.
13. GARAGE TO DRIVEWAY SLAB JOINT (GC): Scrape to remove organic growth from existing joint down 1". Provide new backer rod and caulk to seal. See Specifications.
14. REAR EXTERIOR DOOR (GC): Remove caulking around back door and install new caulk.
15. FRONT FENCE (GC): Remove portion of chain-link fence (approx. 30 linear ft x 3 ft high) along sidewalk and replace with new including gate.
16. BACKYARD STEPS (GC): Replace existing landscape steps using new concrete dry laid steps. Rebuilding dry stack wall using new dry stack masonry units. See Specifications.
17. BACKYARD SHED (GC): Remove existing garden shed and wood platform (approx. 6 ft x 10 ft). Restore grading and reseed. See Specifications.

Garage

18. CLEAN OUT (P): Clean out miscellaneous shelves and properly dispose of. See Specifications.
19. SOIL STACK (P): Remove and replace cast iron soil stack at this location with new cast iron with all connections to existing sanitary sewer system and clean-out at base. See Specifications.
20. FLOOR DRAIN (P): Remove and replace garage floor drain grate with new automotive rated grate. Snake drain to clear.
21. CONCRETE EDGE SEAL (GC): At floor joint between garage slab and driveway, clean out joint, provide new backer rod and caulk to seal full width. See Specifications.
22. GARAGE TO INTERIOR DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.
23. GARAGE ENVELOPE (GC): At this location, where interior stair or beam penetrates garage wall, provide new spray foam insulation (neatly trimmed) to seal air infiltration between garage and residence. Provide finished 5/8" type "X" GWB finish to fully enclose opening with all edge and corner beads. Spackle, sand and paint new GWB to finish. See Specifications.
24. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish. See Specifications.

Basement

25. WATER HEATER (P): Water Heater appears to be manufactured dated April of 2019 and does not show signs of failure. Service.
26. BASEMENT WALL FINISH (GC): At exterior basement walls, remove interior existing finish paneling and wall covering (approx. 500 sf). Provide new 2"x pressure treated kiln dried furring at 16" OC with 1 ½" closed cell rigid insulation between furring strips from floor to ceiling. Over furring, provide new 5/8" MR GWB finish, taped, spackled, sanded and painted with 4" rubber or vinyl cove base. See Specifications.
27. BASEMENT INTERIOR WALL (GC): Rebuild wall by furnace (approx. 20 sf).
28. BASEMENT TO OUTSIDE DOOR (GC): Remove existing basement to exterior door, frame and threshold, provide new 1 3/4" insulated metal door, door threshold and all door hardware. Paint frame to finish and trim with new synthetic wood trim, caulked to seal. See Specifications.
29. BASEMENT FINISHED CEILING (GC): Remove and replace existing suspended ceiling tiles (approx. 320 sf). Provide new moisture resistant tiles in existing suspended grid. Clean, prep and paint exposed ductwork and suspended grid to match tile color.
30. BASEMENT LIGHTING (E): Provide new replacement ceiling lighting and new Smoke/CO sensors. See Specifications.
31. BASEMENT FLOOR (GC): Completely remove existing finish flooring carpet and tile. Clean, prep and paint concrete floor. See Specifications.
32. BASEMENT EXTERIOR STAIR (GC): Sand and paint existing exterior wood stair, treads, risers, stringers and railing. See Specifications.
33. BASEMENT ACCESS STAIR (GC): At stair to Basement, re-attach existing handrail to secure. Remove existing carpeted tread covers. Provide new vinyl non-slip tread covers covering full width and depth of tread surface and nosing. Sand and repaint risers and handrail.
34. ELECTRICAL PANEL (E): Replace existing archaic electric panel with new 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally provide proper electrical grounding and bonding of the electrical system. See Specifications.
35. FURNACE (M): Furnace manufacture date appears to be October of 1993, making the furnace 31 years old. Replace furnace. See Specifications.
36. MISC. WIRING (E): Trace and remove remnant low voltage and line voltage electrical wires back to nearest junction box, source or panel.

First Floor

37. WALL FINISH (GC): Remove existing wall covering, curtain rods, mirror, or other finish on this wall down to the wall board. Sand, prepare and paint wall surface. See Finish Schedule.
38. DINING ROOM CEILING (E): Remove and replace lighting fixture with new.
39. DINING ROOM (GC): Remove and replace countertop on half wall with new. Remove phone box on wall and patch wall.
40. DINING ROOM WINDOW (GC): Replace missing window screen with new.
41. KITCHEN CABINETS (GC): Carefully clean existing kitchen cabinet faces and interior to remove soiling and oils. Provide new door/drawer knobs. See Specifications.
42. GFI OUTLET (E): Provide new GFI Outlet above stove. See Specifications.
43. KITCHEN CEILING (GC/E): Remove existing kitchen finish ceiling and lighting. Repair leaking plumbing line above. Provide new finished and painted GWB ceiling (approx. 20 sf) and new lighting per Specifications.
44. KITCHEN FLOORING (GC): Remove, prep subfloor and replace existing Kitchen flooring (approx. 145 sf) and wall base with new waterproof LVT flooring and 4" rubber base. See Specifications.
45. REMOVE RESIDENT INSTALLED WALL COVERING (GC): Remove wall finishes on this wall. Prep and paint wall to finish with new wall base. See Specifications.
46. MAIN STAIRWAY (GC): Remove and replace main stair carpet at treads and risers.
47. FLOOR FINISH (GC): Remove existing carpet finish in Living Room (approx. 235 sf) and Dining Room (approx. 120 sf), tack strips and thresholds. Provide new LVT floors over existing hardwood floors. See Specification.
48. THROUGH WALL KITCHEN EXHAUST FAN (M): Remove existing through wall kitchen exhaust fan and non-venting hood. Provide new kitchen vent type hood vented to exterior with damper. Seal old exhaust fan penetration in exterior wall using similar materials and details to match surrounding wall finish. See specifications.
49. KITCHEN STOVE BACKSPASH (GC): Provide new tile behind stove. See specifications.
50. FRONT DOOR (GC): Replace deadbolt with new and install new screen door.
51. LIVING ROOM THERMOSTAT (M): Provide new programmable thermostat.

Second Floor / Attic

52. REMOVE SHELVES (GC): In this location, remove existing shelving standards and shelves. Patch, sand and paint wall finish to match. See Specifications.
53. ATTIC ACCESS DOOR (GC): At this location, provide new insulated hinged attic access door in existing opening.
54. ATTIC INSULATION (GC): Provide new min R-38 blown in Attic Insulation (approx. 550 sf). Verified with depth indicials. Take care not to cover air circulation channels. See Specifications.
55. PRIMARY BEDROOM FLOORING (GC): Remove existing loose laid carpet flooring. Provide new LVT floors over existing hardwood floors. See Specifications.
56. BEDROOMS (GC): Remove drapery rods, patch and paint.
57. COAT CLOSET (GC): At this location, remove existing coat rods and replace with new coat rod. See Specification.
58. BATHROOM (GC/P/M/E): In second floor bathroom: Remove and replace entirely existing tub tile surround, medicine cabinet, tub/shower faucet and drain, sink faucet and drain. Provide new rod and shower curtain. Provide new bathroom exhaust fan ventilated to exterior wired to light circuit Tighten loose towel bar (1). Provide new vanity light. See Specifications.

seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
2337 Wolford Street
Pittsburgh, Pennsylvania 15216

drawing title

Site Plan, Site Plan Legend, Keynotes

scale: As Noted		Sheet No.
date: August 20th, 2024		A2
no. 2	of. 9	Project #2326

FLOOR COVERING PLAN LEGEND

- VCT FLOORING
- CONCRETE FLOORING
- CARPET FLOORING
- LVT FLOORING
- WOOD FLOORING

GENERAL FLOOR PLAN NOTES

1. PROPERTY HAS BEEN TESTED FOR HAZARDOUS MATERIALS. REPORT WILL BE AVAILABLE AND PROVIDED BY HKOP. GC TO ABATED MATERIALS FOLLOWING THE RECOMMENDATIONS FROM THE REPORT.
2. CONTRACTOR TO FIELD VERIFY ANY AND ALL CONDITIONS & DIMENSIONS OF WORK AREAS BEFORE BEGINNING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.
3. THE FINISH FLOOR OF THIS PROJECT IS IDENTIFIED AT 0'-0" IN THIS SET OF DRAWINGS.
4. ALIGN NEW WALLS & CEILING CONSTRUCTION WITH EXISTING WALL CONSTRUCTION. FINISH NEW PARTITION SMOOTH TO FORM A SEAMLESS JOINT BETWEEN NEW & EXISTING PARTITIONS.
5. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC REPRESENTATIONS. NOTIFY ARCHITECT IN WRITING OF ANY INCONSISTENT OR MISSING DIMENSIONS.
6. DIMENSIONS SHOWN INDICATE FINISHED FACE TO FINISHED FACE, UNLESS NOTED OTHERWISE.
7. ALL NEW OR RELOCATED DOOR FRAMES TO BE LOCATED 4" FROM PERPENDICULAR WALLS, UNLESS NOTED OTHERWISE.
8. SAND WALLS SMOOTH. REMOVE ALL ADHESIVE RESIDUE, AND/OR SKIM WITH JOINT COMPOUND AS NECESSARY TO PREP WALLS FOR NEW FINISHES. THE FLOOR SHOULD BE SCRAPED CLEAN OF ANY ADHESIVE RESIDUE, PATCHED AND LEVELED OUT AS NECESSARY TO RECEIVE NEW FLOORING.
9. AT WALLS EXISTING TO REMAIN, PATCHAND PAINT ANY HOLES OR DAMAGE TO APPEAR NEW.

10 Scattered Sites Keynotes - 2337 Wolford St

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages.
3. SMOKE/CO DETECTORS: In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. EXTERIOR TIMBER RETAINING WALL (GC): At this location existing Pressure Treated Timber retaining wall is failing. Completely remove the existing wall and replace with new segmented concrete block retaining wall installed per Specifications (approx. 24 linear ft x 2 ft high).
7. EXTERIOR REAR STEPS (GC): Clean and paint exterior wood stairs. See Specifications.
8. EXTERIOR CONDENSER (M): Remove existing DX line insulation. Provide new insulation on both lines with aluminum jacketing to protect from solar degradation. See Specifications.
9. BRICK WINDOW SILLS (GC): Repoint window all sills. See Specifications.
10. BRICK WALL LINTELS (GC): Scrape and paint lintels over garage door and all windows.
11. BRICK WALL (GC): Clean and repoint brick in area and in quantity indicated. See Specifications.
12. ENTRANCE RAILING (GC): At this location, remove existing metal railing. Provide new entrance railing and securely fasten, similar to existing. See Specifications.
13. GARAGE TO DRIVEWAY SLAB JOINT (GC): Scrape to remove organic growth from existing joint down 1". Provide new backer rod and caulk to seal. See Specifications.
14. REAR EXTERIOR DOOR (GC): Remove caulking around back door and install new caulk.
15. FRONT FENCE (GC): Remove portion of chain-link fence (approx. 30 linear ft x 3 ft high) along sidewalk and replace with new including gate.
16. BACKYARD STEPS (GC): Replace existing landscape steps using new concrete dry laid steps. Rebuilding dry stack wall using new dry stack masonry units. See Specifications.
17. BACKYARD SHED (GC): Remove existing garden shed and wood platform (approx. 6 ft x 10 ft). Restore grading and reseed. See Specifications.

Garage

18. CLEAN OUT (P): Clean out miscellaneous shelves and properly dispose of. See Specifications.
19. SOIL STACK (P): Remove and replace cast iron soil stack at this location with new cast iron with all connections to existing sanitary sewer system and clean-out at base. See Specifications.
20. FLOOR DRAIN (P): Remove and replace garage floor drain grate with new automotive rated grate. Snake drain to clear.
21. CONCRETE EDGE SEAL (GC): At floor joint between garage slab and driveway, clean out joint, provide new backer rod and caulk to seal full width. See Specifications.
22. GARAGE TO INTERIOR DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.
23. GARAGE ENVELOPE (GC): At this location, where interior stair or beam penetrates garage wall, provide new spray foam insulation (neatly trimmed) to seal air infiltration between garage and residence. Provide finished 5/8" type "X" GWB finish to fully enclose opening with all edge and corner beads. Spackle, sand and paint new GWB to finish. See Specifications.
24. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish. See Specifications.

Basement

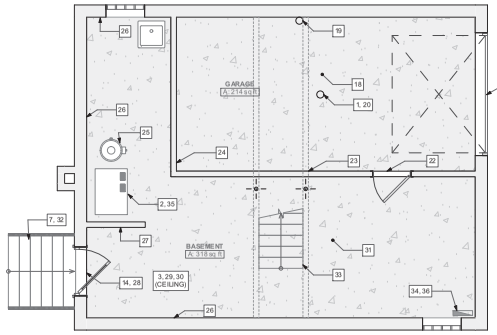
25. WATER HEATER (P): Water Heater appears to be manufactured dated April of 2019 and does not show signs of failure. Service.
26. BASEMENT WALL FINISH (GC): At exterior basement walls, remove interior existing finish paneling and wall covering (approx. 500 sf). Provide new 2"x pressure treated kiln dried furring at 16" OC with 1 ½" closed cell rigid insulation between furring strips from floor to ceiling. Over furring, provide new 5/8" MR GWB finish, taped, spackled, sanded and painted with 4" rubber or vinyl cove base. See Specifications.
27. BASEMENT INTERIOR WALL (GC): Rebuild wall by furnace (approx. 20 sf).
28. BASEMENT TO OUTSIDE DOOR (GC): Remove existing basement to exterior door, frame and threshold, provide new 1 3/4" insulated metal door, door threshold and all door hardware. Paint frame to finish and trim with new synthetic wood trim, caulked to seal. See Specifications.
29. BASEMENT FINISHED CEILING (GC): Remove and replace existing suspended ceiling tiles (approx. 320 sf). Provide new moisture resistant tiles in existing suspended grid. Clean, prep and paint exposed ductwork and suspended grid to match tile color.
30. BASEMENT LIGHTING (E): Provide new replacement ceiling lighting and new Smoke/CO sensors. See Specifications.
31. BASEMENT FLOOR (GC): Completely remove existing finish flooring carpet and tile. Clean, prep and paint concrete floor. See Specifications.
32. BASEMENT EXTERIOR STAIR (GC): Sand and paint existing exterior wood stair, treads, risers, stringers and railing. See Specifications.
33. BASEMENT ACCESS STAIR (GC): At stair to Basement, re-attach existing handrail to secure. Remove existing carpeted tread covers. Provide new vinyl non-slip tread covers covering full width and depth of tread surface and nosing. Sand and repaint risers and handrail.
34. ELECTRICAL PANEL (E): Replace existing archaic electric panel with new 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally provide proper electrical grounding and bonding of the electrical system. See Specifications.
35. FURNACE (M): Furnace manufacture date appears to be October of 1993, making the furnace 31 years old. Replace furnace. See Specifications.
36. MISC. WIRING (E): Trace and remove remnant low voltage and line voltage electrical wires back to nearest junction box, source or panel.

First Floor

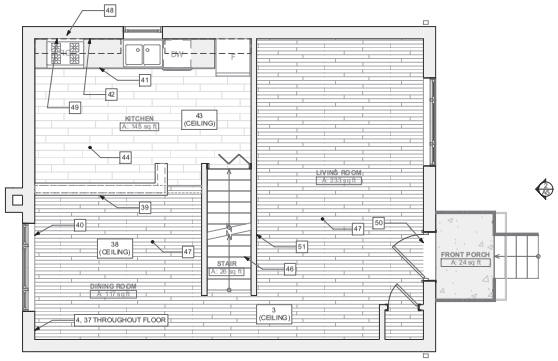
37. WALL FINISH (GC): Remove existing wall covering, curtain rods, mirror, or other finish on this wall down to the wall board. Sand, prepare and paint wall surface. See Finish Schedule.
38. DINING ROOM CEILING (E): Remove and replace lighting fixture with new.
39. DINING ROOM (GC): Remove and replace countertop on half wall with new. Remove phone box on wall and patch wall.
40. DINING ROOM WINDOW (GC): Replace missing window screen with new.
41. KITCHEN CABINETS (GC): Carefully clean existing kitchen cabinet faces and interior to remove soiling and oils. Provide new door/drawer knobs. See Specifications.
42. GFI OUTLET (E): Provide new GFI Outlet above stove. See Specifications.
43. KITCHEN CEILING (GC/E): Remove existing kitchen finish ceiling and lighting. Repair leaking plumbing line above. Provide new finished and painted GWB ceiling (approx. 20 sf) and new lighting per Specifications.
44. KITCHEN FLOORING (GC): Remove, prep subfloor and replace existing Kitchen flooring (approx. 145 sf) and wall base with new waterproof LVT flooring and 4" rubber base. See Specifications.
45. REMOVE RESIDENT INSTALLED WALL COVERING (GC): Remove wall finishes on this wall. Prep and paint wall to finish with new wall base. See Specifications.
46. MAIN STAIRWAY (GC): Remove and replace main stair carpet at treads and risers.
47. FLOOR FINISH (GC): Remove existing carpet finish in Living Room (approx. 235 sf) and Dining Room (approx. 120 sf), tack strips and thresholds. Provide new LVT floors over existing hardwood floors. See Specification.
48. THROUGH WALL KITCHEN EXHAUST FAN (M): Remove existing through wall kitchen exhaust fan and non-venting hood. Provide new kitchen vent type hood vented to exterior with damper. Seal old exhaust fan penetration in exterior wall using similar materials and details to match surrounding wall finish. See specifications.
49. KITCHEN STOVE BACKSPASH (GC): Provide new tile behind stove. See specifications.
50. FRONT DOOR (GC): Replace deadbolt with new and install new screen door.
51. LIVING ROOM THERMOSTAT (M): Provide new programable thermostat.

Second Floor / Attic

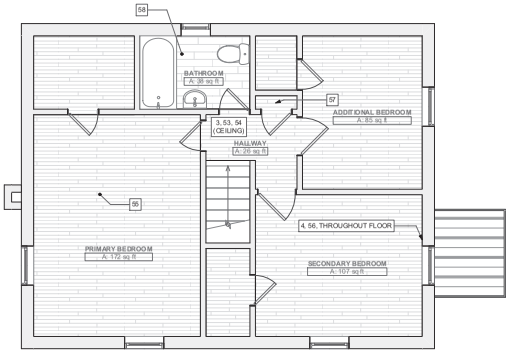
52. REMOVE SHELVES (GC): In this location, remove existing shelving standards and shelves. Patch, sand and paint wall finish to match. See Specifications.
53. ATTIC ACCESS DOOR (GC): At this location, provide new insulated hinged attic access door in existing opening.
54. ATTIC INSULATION (GC): Provide new min R-38 blown in Attic Insulation (approx. 550 sf). Verified with depth indicials. Take care not to cover air circulation channels. See Specifications.
55. PRIMARY BEDROOM FLOORING (GC): Remove existing loose laid carpet flooring. Provide new LVT floors over existing hardwood floors. See Specifications.
56. BEDROOMS (GC): Remove drapery rods, patch and paint.
57. COAT CLOSET (GC): At this location, remove existing coat rods and replace with new coat rod. See Specification.
58. BATHROOM (GC/P/M/E): In second floor bathroom: Remove and replace entirely existing tub tile surround, medicine cabinet, tub/shower faucet and drain, sink faucet and drain. Provide new rod and shower curtain. Provide new bathroom exhaust fan ventilated to exterior wired to light circuit Tighten loose towel bar (1). Provide new vanity light. See Specifications.



1 Basement
SCALE: 1/4" = 1'-0"



2 First Floor
SCALE: 1/4" = 1'-0"



3 Second Floor
SCALE: 1/4" = 1'-0"

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
ph 412.281.6001 fx 412.281.6002

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seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

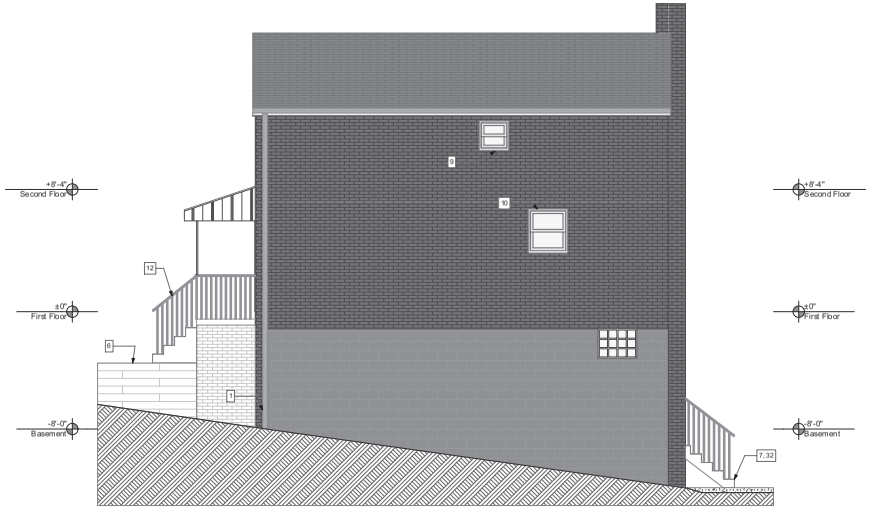
Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
2337 Wolford Street
Pittsburgh, Pennsylvania 15216

drawing title

Basement, Second Floor, First Floor, Renovation Plan Legend, Floor Plan Legend, Keynotes

scale	Sheet No.
As Noted	A3
date: August 20th, 2024	
no. 3 / of. 9	Project #2326



1 South Elevation
SCALE: 1/4" = 1'-0"

2 East Elevation
SCALE: 1/4" = 1'-0"

10 Scattered Sites Keynotes - 2337 Wolford St

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contact

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages.
3. SMOKE/CO DETECTORS: In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. EXTERIOR TIMBER RETAINING WALL (GC): At this location existing Pressure Treated Timber retaining wall is failing. Completely remove the existing wall and replace with new segmented concrete block retaining wall installed per Specifications (approx. 24 linear ft x 2 ft high).
7. EXTERIOR REAR STEPS (GC): Clean and paint exterior wood stairs. See Specifications.
8. EXTERIOR CONDENSER (M): Remove existing DX line insulation. Provide new insulation on both lines with aluminum jacketing to protect from solar degradation. See Specifications.
9. BRICK WINDOW SILLS (GC): Repoint window all sills. See Specifications.
10. BRICK WALL LINTELS (GC): Scrape and paint lintels over garage door and all windows.
11. BRICK WALL (GC): Clean and repoint brick in area and in quantity indicated. See Specifications.
12. ENTRANCE RAILING (GC): At this location, remove existing metal railing. Provide new entrance railing and securely fasten, similar to existing. See Specifications.
13. GARAGE TO DRIVEWAY SLAB JOINT (GC): Scrape to remove organic growth from existing joint down 1". Provide new backer rod and caulk to seal. See Specifications.
14. REAR EXTERIOR DOOR (GC): Remove caulking around back door and install new caulk.
15. FRONT FENCE (GC): Remove portion of chain-link fence (approx. 30 linear ft x 3 ft high) along sidewalk and replace with new including gate.
16. BACKYARD STEPS (GC): Replace existing landscape steps using new concrete dry laid steps. Rebuilding dry stack wall using new dry stack masonry units. See Specifications.
17. BACKYARD SHED (GC): Remove existing garden shed and wood platform (approx. 6 ft x 10 ft). Restore grading and reseed. See Specifications.

Garage

18. CLEAN OUT (P): Clean out miscellaneous shelves and properly dispose of. See Specifications.
19. SOIL STACK (P): Remove and replace cast iron soil stack at this location with new cast iron with all connections to existing sanitary sewer system and clean-out at base. See Specifications.
20. FLOOR DRAIN (P): Remove and replace garage floor drain grate with new automotive rated grate. Snake drain to clear.
21. CONCRETE EDGE SEAL (GC): At floor joint between garage slab and driveway, clean out joint, provide new backer rod and caulk to seal full width. See Specifications.
22. GARAGE TO INTERIOR DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.
23. GARAGE ENVELOPE (GC): At this location, where interior stair or beam penetrates garage wall, provide new spray foam insulation (neatly trimmed) to seal air infiltration between garage and residence. Provide finished 5/8" type "X" GWB finish to fully enclose opening with all edge and corner beads. Spackle, sand and paint new GWB to finish. See Specifications.
24. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish. See Specifications.

Basement

25. WATER HEATER (P): Water Heater appears to be manufactured dated April of 2019 and does not show signs of failure. Service.
26. BASEMENT WALL FINISH (GC): At exterior basement walls, remove interior existing finish paneling and wall covering (approx. 500 sf). Provide new 2"x pressure treated kiln dried furring at 16" OC with 1 ½" closed cell rigid insulation between furring strips from floor to ceiling. Over furring, provide new 5/8" MR GWB finish, taped, spackled, sanded and painted with 4" rubber or vinyl cove base. See Specifications.
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34. ELECTRICAL PANEL (E): Replace existing archaic electric panel with new 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally provide proper electrical grounding and bonding of the electrical system. See Specifications.
35. FURNACE (M): Furnace manufacture date appears to be October of 1993, making the furnace 31 years old. Replace furnace. See Specifications.
36. MISC. WIRING (E): Trace and remove remnant low voltage and line voltage electrical wires back to nearest junction box, source or panel.

First Floor

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38. DINING ROOM CEILING (E): Remove and replace lighting fixture with new.
39. DINING ROOM (GC): Remove and replace countertop on half wall with new. Remove phone box on wall and patch wall.
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41. KITCHEN CABINETS (GC): Carefully clean existing kitchen cabinet faces and interior to remove soiling and oils. Provide new door/drawer knobs. See Specifications.
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44. KITCHEN FLOORING (GC): Remove, prep subfloor and replace existing Kitchen flooring (approx. 145 sf) and wall base with new waterproof LVT flooring and 4" rubber base. See Specifications.
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46. MAIN STAIRWAY (GC): Remove and replace main stair carpet at treads and risers.
47. FLOOR FINISH (GC): Remove existing carpet finish in Living Room (approx. 235 sf) and Dining Room (approx. 120 sf), tack strips and thresholds. Provide new LVT floors over existing hardwood floors. See Specification.
48. THROUGH WALL KITCHEN EXHAUST FAN (M): Remove existing through wall kitchen exhaust fan and non-venting hood. Provide new kitchen vent type hood vented to exterior with damper. Seal old exhaust fan penetration in exterior wall using similar materials and details to match surrounding wall finish. See specifications.
49. KITCHEN STOVE BACKSPASH (GC): Provide new tile behind stove. See specifications.
50. FRONT DOOR (GC): Replace deadbolt with new and install new screen door.
51. LIVING ROOM THERMOSTAT (M): Provide new programmable thermostat.

Second Floor / Attic

52. REMOVE SHELVES (GC): In this location, remove existing shelving standards and shelves. Patch, sand and paint wall finish to match. See Specifications.
53. ATTIC ACCESS DOOR (GC): At this location, provide new insulated hinged attic access door in existing opening.
54. ATTIC INSULATION (GC): Provide new min R-38 blown in Attic Insulation (approx. 550 sf). Verified with depth indicials. Take care not to cover air circulation channels. See Specifications.
55. PRIMARY BEDROOM FLOORING (GC): Remove existing loose laid carpet flooring. Provide new LVT floors over existing hardwood floors. See Specifications.
56. BEDROOMS (GC): Remove drapery rods, patch and paint.
57. COAT CLOSET (GC): At this location, remove existing coat rods and replace with new coat rod. See Specification.
58. BATHROOM (GC/P/M/E): In second floor bathroom: Remove and replace entirely existing tub tile surround, medicine cabinet, tub/shower faucet and drain, sink faucet and drain. Provide new rod and shower curtain. Provide new bathroom exhaust fan ventilated to exterior wired to light circuit Tighten loose towel bar (1). Provide new vanity light. See Specifications.

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Pittsburgh, Pennsylvania 15219
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seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
2337 Wolford Street
Pittsburgh, Pennsylvania 15216

drawing title

South Elevation, East Elevation, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no.	of.
4	9

Sheet No.
A4
Project #2326

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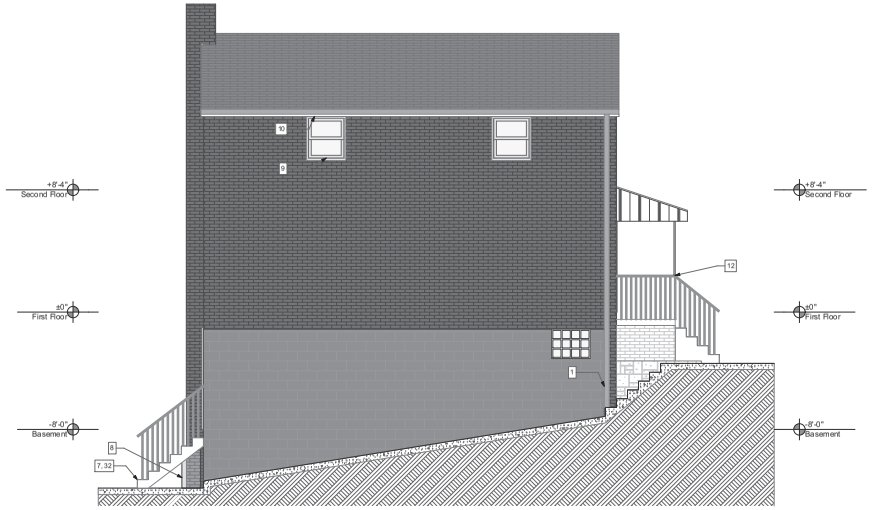

1 North Elevation
SCALE: 1/4" = 1'-0"

2 West Elevation
SCALE: 1/4" = 1'-0"

10 Scattered Sites Keynotes - 2337 Wolford St

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contact

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages.
3. SMOKE/CO DETECTORS: In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. EXTERIOR TIMBER RETAINING WALL (GC): At this location existing Pressure Treated Timber retaining wall is failing. Completely remove the existing wall and replace with new segmented concrete block retaining wall installed per Specifications (approx. 24 linear ft x 2 ft high).
7. EXTERIOR REAR STEPS (GC): Clean and paint exterior wood stairs. See Specifications.
8. EXTERIOR CONDENSER (M): Remove existing DX line insulation. Provide new insulation on both lines with aluminum jacketing to protect from solar degradation. See Specifications.
9. BRICK WINDOW SILLS (GC): Repoint window all sills. See Specifications.
10. BRICK WALL LINTELS (GC): Scrape and paint lintels over garage door and all windows.
11. BRICK WALL (GC): Clean and repoint brick in area and in quantity indicated. See Specifications.
12. ENTRANCE RAILING (GC): At this location, remove existing metal railing. Provide new entrance railing and securely fasten, similar to existing. See Specifications.
13. GARAGE TO DRIVEWAY SLAB JOINT (GC): Scrape to remove organic growth from existing joint down 1". Provide new backer rod and caulk to seal. See Specifications.
14. REAR EXTERIOR DOOR (GC): Remove caulking around back door and install new caulk.
15. FRONT FENCE (GC): Remove portion of chain-link fence (approx. 30 linear ft x 3 ft high) along sidewalk and replace with new including gate.
16. BACKYARD STEPS (GC): Replace existing landscape steps using new concrete dry laid steps. Rebuilding dry stack wall using new dry stack masonry units. See Specifications.
17. BACKYARD SHED (GC): Remove existing garden shed and wood platform (approx. 6 ft x 10 ft). Restore grading and reseed. See Specifications.

Garage

18. CLEAN OUT (P): Clean out miscellaneous shelves and properly dispose of. See Specifications.
19. SOIL STACK (P): Remove and replace cast iron soil stack at this location with new cast iron with all connections to existing sanitary sewer system and clean-out at base. See Specifications.
20. FLOOR DRAIN (P): Remove and replace garage floor drain grate with new automotive rated grate. Snake drain to clear.
21. CONCRETE EDGE SEAL (GC): At floor joint between garage slab and driveway, clean out joint, provide new backer rod and caulk to seal full width. See Specifications.
22. GARAGE TO INTERIOR DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.
23. GARAGE ENVELOPE (GC): At this location, where interior stair or beam penetrates garage wall, provide new spray foam insulation (neatly trimmed) to seal air infiltration between garage and residence. Provide finished 5/8" type "X" GWB finish to fully enclose opening with all edge and corner beads. Spackle, sand and paint new GWB to finish. See Specifications.
24. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish. See Specifications.

Basement

25. WATER HEATER (P): Water Heater appears to be manufactured dated April of 2019 and does not show signs of failure. Service.
26. BASEMENT WALL FINISH (GC): At exterior basement walls, remove interior existing finish paneling and wall covering (approx. 500 sf). Provide new 2"x pressure treated kiln dried furring at 16" OC with 1 ½" closed cell rigid insulation between furring strips from floor to ceiling. Over furring, provide new 5/8" MR GWB finish, taped, spackled, sanded and painted with 4" rubber or vinyl cove base. See Specifications.
27. BASEMENT INTERIOR WALL (GC): Rebuild wall by furnace (approx. 20 sf).
28. BASEMENT TO OUTSIDE DOOR (GC): Remove existing basement to exterior door, frame and threshold, provide new 1 3/4" insulated metal door, door threshold and all door hardware. Paint frame to finish and trim with new synthetic wood trim, caulked to seal. See Specifications.
29. BASEMENT FINISHED CEILING (GC): Remove and replace existing suspended ceiling tiles (approx. 320 sf). Provide new moisture resistant tiles in existing suspended grid. Clean, prep and paint exposed ductwork and suspended grid to match tile color.
30. BASEMENT LIGHTING (E): Provide new replacement ceiling lighting and new Smoke/CO sensors. See Specifications.
31. BASEMENT FLOOR (GC): Completely remove existing finish flooring carpet and tile. Clean, prep and paint concrete floor. See Specifications.
32. BASEMENT EXTERIOR STAIR (GC): Sand and paint existing exterior wood stair, treads, risers, stringers and railing. See Specifications.
33. BASEMENT ACCESS STAIR (GC): At stair to Basement, re-attach existing handrail to secure. Remove existing carpeted tread covers. Provide new vinyl non-slip tread covers covering full width and depth of tread surface and nosing. Sand and repaint risers and handrail.
34. ELECTRICAL PANEL (E): Replace existing archaic electric panel with new 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally provide proper electrical grounding and bonding of the electrical system. See Specifications.
35. FURNACE (M): Furnace manufacture date appears to be October of 1993, making the furnace 31 years old. Replace furnace. See Specifications.
36. MISC. WIRING (E): Trace and remove remnant low voltage and line voltage electrical wires back to nearest junction box, source or panel.

First Floor

37. WALL FINISH (GC): Remove existing wall covering, curtain rods, mirror, or other finish on this wall down to the wall board. Sand, prepare and paint wall surface. See Finish Schedule.
38. DINING ROOM CEILING (E): Remove and replace lighting fixture with new.
39. DINING ROOM (GC): Remove and replace countertop on half wall with new. Remove phone box on wall and patch wall.
40. DINING ROOM WINDOW (GC): Replace missing window screen with new.
41. KITCHEN CABINETS (GC): Carefully clean existing kitchen cabinet faces and interior to remove soiling and oils. Provide new door/drawer knobs. See Specifications.
42. GFI OUTLET (E): Provide new GFI Outlet above stove. See Specifications.
43. KITCHEN CEILING (GC/E): Remove existing kitchen finish ceiling and lighting. Repair leaking plumbing line above. Provide new finished and painted GWB ceiling (approx. 20 sf) and new lighting per Specifications.
44. KITCHEN FLOORING (GC): Remove, prep subfloor and replace existing Kitchen flooring (approx. 145 sf) and wall base with new waterproof LVT flooring and 4" rubber base. See Specifications.
45. REMOVE RESIDENT INSTALLED WALL COVERING (GC): Remove wall finishes on this wall. Prep and paint wall to finish with new wall base. See Specifications.
46. MAIN STAIRWAY (GC): Remove and replace main stair carpet at treads and risers.
47. FLOOR FINISH (GC): Remove existing carpet finish in Living Room (approx. 235 sf) and Dining Room (approx. 120 sf), tack strips and thresholds. Provide new LVT floors over existing hardwood floors. See Specification.
48. THROUGH WALL KITCHEN EXHAUST FAN (M): Remove existing through wall kitchen exhaust fan and non-venting hood. Provide new kitchen vent type hood vented to exterior with damper. Seal old exhaust fan penetration in exterior wall using similar materials and details to match surrounding wall finish. See specifications.
49. KITCHEN STOVE BACKSPASH (GC): Provide new tile behind stove. See specifications.
50. FRONT DOOR (GC): Replace deadbolt with new and install new screen door.
51. LIVING ROOM THERMOSTAT (M): Provide new programmable thermostat.

Second Floor / Attic

52. REMOVE SHELVES (GC): In this location, remove existing shelving standards and shelves. Patch, sand and paint wall finish to match. See Specifications.
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56. BEDROOMS (GC): Remove drapery rods, patch and paint.
57. COAT CLOSET (GC): At this location, remove existing coat rods and replace with new coat rod. See Specification.
58. BATHROOM (GC/P/M/E): In second floor bathroom: Remove and replace entirely existing tub tile surround, medicine cabinet, tub/shower faucet and drain, sink faucet and drain. Provide new rod and shower curtain. Provide new bathroom exhaust fan ventilated to exterior wired to light circuit Tighten loose towel bar (1). Provide new vanity light. See Specifications.

seal

CONSTRUCTION DOCUMENTATION

general notes

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revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
2337 Wolford Street
Pittsburgh, Pennsylvania 15216

drawing title

West Elevation, North Elevation, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no. 5	of. 9

Sheet No.
A5
Project #2326

GENERAL NOTES

USE OF THE DOCUMENTS
THE USE OF THESE DOCUMENTS IS RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED. RE-USE OR REPRODUCTION OF THE DOCUMENTS (IN WHOLE OR IN PART), FOR ANY OTHER PURPOSE IS PROHIBITED. TITLE TO THESE REMAINS WITH FUKU ARCHITECTS P.C. (FAR). VISUAL CONTRACT DOCUMENTS DOCUMENTS IS PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

DIVISION 1 - GENERAL CONDITIONS

APPLICABILITY OF HUD-5370 GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS - PUBLIC HOUSING PROGRAMS
THE HUD-5370, GENERAL CONDITIONS CURRENT EDITION, SHALL APPLY TO THE PROJECT. A COPY OF THE HUD GENERAL CONDITIONS ARE INCLUDED IN THE FRONT END DOCUMENTS AS PART OF HUD FORMS. HARD CONES ARE AVAILABLE AT HACP OFFICE.

MULTIPLE CONTRACT
1. COORDINATION
GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT, ELECTRICAL CONTRACT, AND ADDITIONAL CONTRACTS APPLICABLE IN THE CONSTRUCTION DOCUMENTS.

2. GENERAL REQUIREMENTS OF CONTRACTS
UNLESS THE AGREEMENT CONTAINS A MORE SPECIFIC DESCRIPTION OF THE WORK OF EACH CONTRACT, THE GENERAL REQUIREMENTS ON DRAWINGS AND IN SPECIFICATION SECTIONS DETERMINE WHICH CONTRACT INCLUDES A SPECIFIC ELEMENT OF PROJECT.

3. SCOPE OF WORK RESPONSIBILITY
A. GENERAL CONSTRUCTION CONTRACT
WORK OF THE GENERAL CONSTRUCTION CONTRACT INCLUDES, BUT IS NOT LIMITED TO, THE REMAINING WORK NOT IDENTIFIED AS WORK UNDER OTHER CONTRACTS.

B. PLUMBING CONTRACT
WORK OF THE PLUMBING CONTRACT INCLUDES, BUT IS NOT LIMITED TO, PLUMBING FIXURES AND APPLIANCES (INCLUDING BUT NOT LIMITED TO SINKS, TUBS, SHOWER ENCLOSURES, SINK ASSEMBLIES, FAUCETS AND DRAIN ASSEMBLIES, ETC), PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT, PLUMBING CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT.

C. MECHANICAL CONTRACT
WORK OF THE MECHANICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ALL MECHANICAL EQUIPMENT AND CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND ELECTRICAL CONTRACT MECHANICAL EQUIPMENT INCLUDES BUT IS NOT LIMITED TO FURNACES AND CONDENSERS, KITCHEN AND BATH EXHAUST FANS, THERMOSTATS AND CONTROLS, ETC.

D. ELECTRICAL CONTRACT
WORK OF THE ELECTRICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ELECTRICAL EQUIPMENT AND FIXTURES INCLUDING BUT NOT LIMITED TO, (INTERIOR AND EXTERIOR LIGHT FIXTURES, SMOKE AND CO DETECTORS, COMPLETE CIRCUIT BREAKER PANELS INCLUDING ALL BREAKERS AND LABELING, ELECTRICAL SERVICE ENTRANCE), WIRING, AND ELECTRICAL AND LOW VOLTAGE CONNECTIONS TO EQUIPMENT FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT. ELECTRICAL CONNECT WITH TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT

PRE-CONSTRUCTION CONFERENCE AND NOTICE TO PROCEED
WITHIN TEN CALENDAR DAYS OF CONTRACT EXECUTION, AND PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH THE OWNER, ARCHITECT OF PRIMA, ITS ARCHITECT, AND OTHER INTERESTED PARTIES CONVENED BY THE PHA. THE CONFERENCE WILL SERVE TO ACQUAINT THE CONTRACTOR WITH THE GENERAL PLAN OF THE CONSTRUCTION OPERATION AND ALL OTHER REQUIREMENTS OF THE CONTRACT. THE PHA WILL PROVIDE THE CONTRACTOR WITH THE DATE, TIME, AND PLACE OF THE CONFERENCE.
(B) THE CONTRACTOR SHALL BEGIN WORK UPON RECEIPT OF A WRITTEN NOTICE TO PROCEED FROM THE CONTRACTING OFFICER OR DESIGNEE. THE CONTRACTOR SHALL NOT BEGIN WORK PRIOR TO RECEIVING SUCH NOTICE.

CONSTRUCTION PROGRESS
(A) THE CONTRACTOR SHALL, WITHIN FIVE DAYS AFTER THE WORK COMMENCES ON THE CONTRACT OR ANOTHER PERIOD OF TIME DETERMINED BY THE CONTRACTING OFFICER, PREPARE AND SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL THREE COPIES OF A PRACTICABLE SCHEDULE SHOWING THE ORDER IN WHICH THE CONTRACTOR PROPOSES TO PERFORM THE WORK, AND THE DATES ON WHICH THE CONTRACTOR CONTEMPLATES STARTING AND COMPLETING THE SEVERAL SALIENT FEATURES OF THE WORK (INCLUDING PROCUREMENT, LABOR, MATERIALS, AND EQUIPMENT). THE SCHEDULE SHALL BE IN THE FORM OF A PROGRESS CHART OF SUITABLE SCALE TO INDICATE APPROPRIATELY THE PERCENTAGE OF WORK SCHEDULED FOR COMPLETION BY ANY GIVEN DATE DURING THE PERIOD. IF THE CONTRACTOR FAILS TO SUBMIT A SCHEDULE WITHIN THE TIME PRESCRIBED, THE CONTRACTING OFFICER MAY WITHHOLD APPROVAL OF PROGRESS PAYMENTS OR TAKE OTHER REMEDIES UNDER THE CONTRACT UNTIL THE CONTRACTOR SUBMITS THE REQUIRED SCHEDULE.
(B) THE CONTRACTOR SHALL ENTER THE ACTUAL PROGRESS ON THE CHART AS REQUIRED BY THE CONTRACTING OFFICER, AND IMMEDIATELY DELIVER THREE COPIES OF THE ANNOTATED SCHEDULE TO THE CONTRACTING OFFICER. IF THE CONTRACTOR FAILS TO PROCEED, UPON THE BASIS OF INSPECTION CONDUCTED PURSUANT TO THE CLAUSE ENTITLED INSPECTION AND ACCEPTANCE OF WORK, DESCRIBED HEREIN THAT THE CONTRACTOR IS NOT MEETING THE APPROVED SCHEDULE, THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO IMPROVE ITS PROGRESS, INCLUDING THOSE THAT MAY BE REQUESTED BY THE CONTRACTING OFFICER, WITHOUT ADDITIONAL COST TO THE PHA. IN THIS CIRCUMSTANCE, THE CONTRACTING OFFICER MAY REQUIRE THE CONTRACTOR TO INCREASE THE NUMBER OF SHIFTS, OVERTIME OPERATIONS, DAYS OF WORK, AND/OR THE AMOUNT OF CONSTRUCTION PLANT, AND TO SUBMIT FOR APPROVAL ANY SUPPLEMENTARY SCHEDULE OR SCHEDULES IN CHART FORM AS THE CONTRACTING OFFICER DEEMS NECESSARY TO DEMONSTRATE HOW THE APPROVED RATE OF PROGRESS WILL BE REGAINED.
(C) FAILURE OF THE CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACTING OFFICER UNDER THIS CLAUSE SHALL BE GROUNDS FOR A DETERMINATION BY THE CONTRACTING OFFICER THAT THE CONTRACTOR IS NOT PROSECUTING THE WORK WITH SUFFICIENT DILIGENCE TO ENSURE COMPLETION WITHIN THE TIME SPECIFIED IN THE CONTRACT. UPON MAKING THIS DETERMINATION, THE CONTRACTING OFFICER MAY TERMINATE THE CONTRACTOR'S RIGHT TO PROCEED WITH THE WORK, OR ANY SEPARABLE PART OF IT, IN ACCORDANCE WITH THE DEFAULT CLAUSE OF THIS CONTRACT.

SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK
(A) THE CONTRACTOR ACKNOWLEDGES THAT IT HAS TAKEN STEPS REASONABLY NECESSARY TO ASCERTAIN THE NATURE AND LOCATION OF THE WORK, AND THAT IT HAS INVESTIGATED AND SATISFIED ITSELF AS TO THE GENERAL AND LOCAL CONDITIONS WHICH CAN AFFECT THE WORK OR ITS COST, INCLUDING BUT NOT LIMITED TO, (1) CONDITIONS BEARING UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS; (2) THE AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, AND ROADS; (3) UNCERTAINTIES OF WEATHER, RIVER STAGES, TIDES, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE; (4) THE CONFORMATION AND CONDITIONS OF THE GROUND; AND (5) THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING WORK PERFORMANCE. THE CONTRACTOR ALSO ACKNOWLEDGES THAT IT HAS SATISFIED ITSELF AS TO THE CHARACTER, QUALITY, AND QUANTITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED IN SO FAR AS THIS INFORMATION IS REASONABLY ASCERTAINABLE FROM AN INSPECTION OF THE SITE, INCLUDING AN EXPLORATORY WORK DONE BY THE PHA, AS WELL AS FROM THE DRAWINGS AND SPECIFICATIONS MADE A PART OF THIS CONTRACT. ANY FAILURE OF THE CONTRACTOR TO TAKE THE ACTIONS DESCRIBED AND ACKNOWLEDGED IN THIS PARAGRAPH WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK, OR FOR PROCEEDING TO SUCCESSFULLY PERFORM THE WORK WITHOUT ADDITIONAL EXPENSE TO THE PHA.
(B) THE PHA ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR BASED ON THE INFORMATION MADE AVAILABLE BY THE PHA. NOR DOES THE PHA ASSUME RESPONSIBILITY FOR ANY UNDERSTANDING REACHED OR REPRESENTATION MADE CONCERNING CONDITIONS WHICH CAN AFFECT THE WORK BY ANY OF ITS OFFICERS OR AGENTS BEFORE THE EXECUTION OF THIS CONTRACT, UNLESS THAT UNDERSTANDING OR REPRESENTATION IS EXPRESSLY STATED IN THIS CONTRACT.

DIFFERING SITE CONDITIONS
(1) THE CONTRACTOR SHALL PROMPTLY, AND BEFORE THE CONDITIONS ARE DISTURBED, GIVE A WRITTEN NOTICE TO THE CONTRACTING OFFICER OF (1) SUBSURFACE OR INTENT PHYSICAL CONDITIONS AT THE SITE WHICH DIFFER MATERIALLY FROM THOSE INDICATED IN THIS CONTRACT, OR (2)UNKNOWN PHYSICAL CONDITIONS AT THE SITE OF AN UNUSUAL NATURE, WHICH DIFFER MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERING IN WORK OF THE CHARACTER PROVIDED FOR IN THIS CONTRACT.
(B)THE CONTRACTING OFFICER SHALL INVESTIGATE THE SITE CONDITIONS PROMPTLY AFTER RECEIVING THE NOTICE. WORK SHALL NOT PROCEED AT THE AFFECTED SITE, EXCEPT AT THE CONTRACTOR'S RISK, UNTIL THE CONTRACTING OFFICER HAS PROVIDED WRITTEN INSTRUCTIONS TO THE CONTRACTOR. IF THE CONDITIONS DO MATERIALLY SO DIFFER AND CAUSE AN INCREASE OR DECREASE IN THE CONTRACTOR'S COST OF, OR THE TIME REQUIRED FOR, PERFORMING ANY PART OF THE WORK UNDER THIS CONTRACT, WHETHER OR NOT CHANGED AS A RESULT OF THE CONDITIONS, THE CONTRACTOR MAY FILE A CLAIM IN WRITING TO THE PHA WITHIN TEN DAYS AFTER RECEIPT OF SUCH INSTRUCTIONS AND, IN ANY EVENT, BEFORE PROCEEDING WITH THE WORK. ADJUSTMENTS ADJUSTMENT IN THE CONTRACT PRICE, THE DELIVERY SCHEDULE, OR BOTH SHALL BE MADE UNDER THIS CLAUSE AND THE CONTRACT MODIFIED IN WRITING ACCORDINGLY.
(C)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED, UNLESS THE CONTRACTOR HAS GIVEN THE WRITTEN NOTICE REQUIRED; PROVIDED, THAT THE TIME PRESCRIBED IN (A) ABOVE FORGIVING WRITTEN NOTICE MAY BE EXTENDED AT THE DISCRETION OF THE PHA.
(D)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED IF MADE AFTER FINAL PAYMENT UNDER THIS CONTRACT.

SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION
(A) THE CONTRACTOR SHALL KEEP ON THE WORK SITE A COPY OF THE DRAWINGS AND SPECIFICATIONS AND SHALL AT ALL TIMES GIVE THE CONTRACTING OFFICER ACCESS THERETO. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH. IN CASE OF DIFFERENCE BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. IN CASE OF DISCREPANCY IN THE FIGURES, IN THE DRAWINGS OR SPECIFICATIONS, THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE CONTRACTING OFFICER, WHO SHALL PROMPTLY MAKE A DETERMINATION IN WRITING. ANY ADJUSTMENTBY THE CONTRACTOR WITHOUT SUCH A DETERMINATION SHALL BE AT1TS OWN RISK AND EXPENSE. THE CONTRACTING OFFICER SHALL FURNISH FROM TIME TO TIME SUCH DETAILED DRAWINGS AND OTHER INFORMATION AS CONSIDERED NECESSARY, UNLESS OTHERWISE PROVIDED.
(B)WHEREVER IN THE SPECIFICATIONS OR UPON THE DRAWINGS THE WORDS "DIRECTED", "REQUIRED", "ORDERED", "DESIGNATED", "PRESCRIBED", OR WORDS OF LIKE IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE"DIRECTION", "REQUIREMENT", "ORDER", DESIGNATION, OR "PRESCRIPTION", OF THE CONTRACTING OFFICER IS INTENDED AND SIMILARLY THE WORDS "APPROVED", "ACCEPTABLE", "SATISFACTORY", OR WORDS OF LIKE IMPORT SHALL MEAN "APPROVED BY", OR "ACCEPTABLE TO", OR "SATISFACTORY TO" THE CONTRACTING OFFICER, UNLESS OTHERWISE EXPRESSLY STATED.
(C)WHERE "SHOW", "SHOW ON DRAWINGS", "AS DETAILED", OR WORDS OF SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE REFERENCE IS MADE TO THE DRAWINGS ACCOMPANYING THIS CONTRACT UNLESS STATED OTHERWISE. THE WORD "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE" THAT IS "PROVIDED AND INSTALLED".
(D)"SHOP DRAWINGS" MEANS DRAWINGS, SUBMITTED TO THE PHA BY THE CONTRACTOR, A SUBCONTRACTOR, OR ANY LOWER TIER SUBCONTRACTOR, SHOWING IN DETAIL (1) THE PROPOSED FABRICATION AND ASSEMBLY OF STRUCTURAL ELEMENTS AND (2) THE INSTALLATION(I.E., FORM, FIT, AND ATTACHMENT DETAILS) OF MATERIALS OF EQUIPMENT. IT INCLUDES DRAWINGS, DIAGRAMS, LAYOUTS, SCHEDULES, DESIGNS OF THE FOLLOWING: (1) PERFORMANCE AND SCHEDULES; (2) PERFORMANCE AND TEST DATA, AND SIMILAR MATERIALS FURNISHED BY THE CONTRACTOR TO EXPLAIN THE DETAILED SPECIFIC PORTIONS OF THE WORK REQUIRED BY THE CONTRACT. THE PHA MAY DUPLICATE, USE, AND DISCLOSE IN ANY WAY DESIRED FOR ANY PURPOSE SHOP DRAWINGS S DELIVERED UNDER THIS CONTRACT.
(E)IF THIS CONTRACT REQUIRES SHOP DRAWINGS, THE CONTRACTOR SHALL COORDINATE ALL SHOP DRAWINGS, AND REVIEW THEM FOR ACCURACY, COMPLETENESS, AND COMPLIANCE WITH OTHER CONTRACT REQUIREMENTS, AND SHALL INDICATE ITS APPROVAL THEREON AS EVIDENCE OF SUCH COORDINATION AND REVIEW. SHOP DRAWINGS SUBMITTED TO THE CONTRACTING OFFICER WITHOUT EVIDENCE OF THIS COORDINATION AND REVIEW OR THAT ARE FOUND BY THE CONTRACTING OFFICER TO BE INCOMPLETE OR INCORRECT WILL INDICATE AN APPROVAL OR DISAPPROVAL OF THE SHOP DRAWINGS, AND THE CONTRACTOR SHALL INDICATE THE PHA'S REASONS THEREFORE. ANY WORK DONE BEFORE SUCH APPROVAL SHALL BE AT THE CONTRACTOR'S RISK. APPROVAL BY THE CONTRACTING OFFICER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS IN SUCH DRAWINGS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM THE REQUIREMENTS OF THIS CONTRACT, EXCEPT WITH RESPECT TO VARIATIONS DESCRIBED IN SUCH DRAWINGS, AND (4)AVOID WORK NOT SHOWN IF BELOW.
(F)IF SHOP DRAWINGS SHOW VARIATIONS FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL DESCRIBE SUCH VARIATIONS IN WRITING, SEPARATE FROM THE DRAWINGS, AT THE TIME OF SUBMISSION. IF THE ARCHITECT OF PRIMA FINDS THAT THE PROPOSED AND THE CONTRACTING OFFICER CONCURS, THE CONTRACTING OFFICER SHALL INDICATE AN APPROVAL THEREOF IN CONNECTION TO THE DRAWINGS, EXCEPT THAT,IF THE VARIATION IS MINOR OR DOES NOT INVOLVE A CHANGE IN PRICE OR IN TIME OF PERFORMANCE, A MODIFICATION NEED NOT BE ISSUED. (G)IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE TIMELY REQUESTS OF THE PHA FOR SUCH LARGE SCALE AND DETAILED DRAWINGS AS MAY BE NECESSARY TO ADEQUATE OPERATIONAL INFORMATION NOT ALREADY IN HIS POSSESSION, WHICH SHALL BE REQUIRED BY THE CONTRACTOR IN ORDER TO AVOID DELAYS. SUCH REQUESTS MAY BE SUBMITTED AS THE NEED ARISES, BUT EACH SUCH REQUEST SHALL BE FILED IN AMPLE TIME TO PERMIT APPROPRIATE ACTION TO BE TAKEN WITHOUT DELAY. ORDINARILY, THE NECESSITY FOR SUCH DELAY.
(H)THE CONTRACTOR SHALL SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL FOLLOWING THE ESTABLISHMENT OF THE WORK OF ALL SHOP DRAWINGS AS CALLED FOR UNDER THE VARIOUS HEADINGS OF THESE SPECIFICATIONS. THREE SETS (UNLESS OTHERWISE INDICATED) OF ALL SHOP DRAWINGS WILL BE RETAINED BY THE PHA AND ONE SET WILL BE RETURNED TO THE CONTRACTOR. AS REQUIRED BY THE CONTRACTING OFFICER FROM TIME TO TIME DURING THE PROGRESS OF THE CONTRACT, SHALL FURNISH A COMPLETE SET OF ALL SHOP DRAWINGS AS FINALLY APPROVED. THESE DRAWINGS WILL SHOW ALL CHANGES AND REVISION SMADE UP TO THE TIME THE WORK IS COMPLETED AND ACCEPTED.
(I) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL SUBCONTRACTORS PROVIDE SHOP DRAWINGS BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

AS-BUILT DRAWINGS
(A)"AS-BUILT DRAWINGS," AS USED IN THIS CLAUSE, MEANS DRAWINGS SUBMITTED BY THE CONTRACTOR OR SUBCONTRACTOR AT ANY TIER TO SHOW THE CONSTRUCTION OF A PARTICULAR STRUCTURE OR WORK AS ACTUALLY CONSTRUCTED. (B)"RECORD DRAWINGS", "AS-BUILT DRAWINGS" SHALL BE SYNONYMOUS WITH "RECORD DRAWINGS."
(B)AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER ACCURATE INFORMATIONTO BE USED IN THE PREPARATION OF PERMANENT AS-BUILT DRAWINGS. THE CONTRACTOR SHALL MAINTAIN THE CONTRACTOR SHALL RECORD ON ONE SET OF CONTRACT DRAWINGS ALL CHANGES FROM THE INSTALLATIONS ORIGINALLY INDICATED AND RECORD FINAL LOCATIONSOF UNDERGROUND LINES BY DEPTH FROM FINISH GRADE AND BY ACCURATE HORIZONTAL OFFSET DISTANCES TO PERMANENT SURFACE IMPROVEMENTS SUCH AS BUILDINGS, CURBS, OR EDGES OF WALKS.
(C) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL AS-BUILT DRAWINGS PROVIDED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

MATERIAL AND WORKMANSHIP
(A)ALL EQUIPMENT, MATERIAL, AND ARTICLES FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED. UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT. REFERENCES IN THE CONTRACT TO EQUIPMENT, MATERIAL, ARTICLES, OR PATENTED PROCESSES BY TRADE NAME, MAKE, OR CATALOG NUMBER, SHALL BE REGARDED AS ESTABLISHING A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. THE CONTRACTOR MAY, AT ITS OPTION, USE ANY EQUIPMENT, MATERIAL, ARTICLE, OR PROCESS THAT, IN THE JUDGMENT OF, AND AS APPROVED BY THE CONTRACTING OFFICER, IS EQUAL TO THAT NAMED IN THE SPECIFICATIONS, UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT.
(B)APPROVAL OF EQUIPMENT AND MATERIALS.
(1) THE CONTRACTOR SHALL OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT TO BE INCORPORATED INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL GIVE THE CONTRACTING OFFICER THE NAME OF THE MANUFACTURER, THE MODEL NUMBER, AND OTHER INFORMATION CONCERNING THE PERFORMANCE, CAPACITY, NATURE, AND RATING OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT WHEN THE REQUIRED BY THIS CONTRACT OR IN THE CONTRAINQOFFICER, THE CONTRACTOR SHALL ALSO OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MATERIAL ORARTICLES WHICH THE CONTRACTOR PROPOSES TO INCORPORATE INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL PROVIDE FULL INFORMATION CONCERNING THE MATERIAL OR ARTICLES. MACHINERY,
EQUIPMENT, MATERIAL, AND ARTICLES THAT DO NOT HAVE THE REQUIRED APPROVAL SHALL BE INSTALLED OR USED AT THE RISK OF SUBSEQUENT REJECTION.
(2) WHEN REQUIRED BY THE SPECIFICATIONS OR THE CONTRACTING OFFICER, THE CONTRACTOR SHALL SUBMIT APPROPRIATELY MARKED SAMPLES (AND CERTIFICATES RELATED TO THEM) FOR APPROVAL AT THE CONTRACTOR'S
EXPENSE, WITH ALL SHIPPING CHARGES PREPAID. THE CONTRACTOR SHALL LABEL, OR OTHERWISE IDENTIFY, EACH SAMPLE SUBMITTED, MATERIAL OR PRODUCT REPRESENTED, ITS PLACE OF ORIGIN, THE NAME OF THE PRODUCER, THE CONTRACTOR'S NAME, AND THE SPECIFICATION OF THE CONSTRUCTION PROJECT FOR WHICH THE MATERIAL OR PRODUCTS INTENDED TO BE USED.
(3)CERTIFICATES SHALL BE SUBMITTED IN TRIPLICATE, DESCRIBING EACH SAMPLE SUBMITTED FOR APPROVAL, AND CERTIFYING THAT THE MATERIAL, EQUIPMENT, AND OTHER ITEMS CONFORM TO CONTRACT REQUIREMENTS. THE CERTIFICATES SHALL INCLUDE THE NAME AND BRAND OF THE PRODUCT, NAME OF MANUFACTURER, AND THE LOCATION WHERE PRODUCED.
(4) APPROVAL OF A SAMPLE SHALL NOT CONSTITUTE A WAIVER OF THE PHA RIGHT TO DEMAND FULL COMPLIANCE WITH CONTRACT REQUIREMENTS. MATERIALS, EQUIPMENT AND ACCESSORIES MAY BE REJECTED FOR CAUSE EVEN THOUGH SUBMITTALS HAVE BEEN APPROVED.
(5) WHEREVER MATERIALS ARE REQUIRED TO COMPLY WITH RECOGNIZED STANDARDS OR SPECIFICATIONS, SUCH SPECIFICATIONS SHALL BE ACCEPTED AS ESTABLISHING THE TECHNICAL QUALITIES AND TESTING METHODS, BUT SHALL NOT GOVERN THE NUMBER OF TESTS REQUIRED TO PROVE COMPLIANCE WITH THE SPECIFICATIONS. THE CONTRACTING OFFICER MAY REQUIRE LABORATORY TEST REPORTS ON ITEMS SUBMITTED FOR APPROVAL OR APPROVED PRIOR TO USE ON THE BASIS OF DATA SUBMITTED IN CERTIFICATES WITH SAMPLES. CHECK TESTS WILL BE MADE ON MATERIALS
DELIVERED TO THE WORK SITE IF NECESSARY AS THE CONTRACTING OFFICER DETERMINES NECESSARY TO INSURE COMPLIANCE OF MATERIALS WITH SPECIFICATIONS. THE CONTRACTOR WILL ASSUME ALL COSTS OF RETESTING MATERIALS WHICH FAIL TO MEET CONTRACT REQUIREMENTS AND RETESTING MATERIAL SOFFERED IN SUBSTITUTION FOR THOSE FOUND DEFICIENT.
(6) AFTER APPROVAL, SAMPLES WILL BE KEPT IN THE PROJECT OFFICE UNTIL COMPLETION OF WORK. THE CONTRACTOR SHALL REMOVE AFTER A SUBSTANTIAL QUANTITY OF THE MATERIALSTHEY REPRESENT HAS BEEN BUILT INTO AND ACCEPTED WORK.
(C) REQUIREMENTS CONCERNING LEAD-BASED PAINT. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS CONCERNING LEAD-BASED PAINT CONTAINED IN THE LEAD-BASED PAINT POISONING PREVENTION ACT (42 U.S.C. 4821-4846) AS IMPLEMENTED BY 24 CFR PART 35.

PERMITS AND CODES
(A)THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALLAPPLICABLE LAWS, ORDINANCES, CODES, RULES AND REGULATIONS. NOTWITHSTANDING THE REQUIREMENTS OF THE CONTRACTOR TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS IN THE CONTRACT, ALL WORK INSTALLED SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. BEFORE BEGINNING THE WORK, THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND THE SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS BEARING ON THE WORK AND SHALL IMMEDIATELY REPORT ANY DISCREPANCY IT MAY DISCOVER TO THE CONTRACTING OFFICER.
WHERE THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS FAIL TO COMPLY WITH THE APPLICABLE CODE OR REGULATION, THE CONTRACTING OFFICER SHALL MODIFY THE CONTRACT TO CHANGE ORDER PURSUANT TO THE CLAUSE ENTITLED CHANGES HEREIN TO CONFORM TO THE CODE OR REGULATION.
(B) THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES,AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK, WHERE THE PHA CAN ASSISTWITH THE ISSUANCE OF ALL OR PART OF THESE PERMITS, FEES AND LICENSES WITHOUT COST TO THE CONTRACTOR, THE CONTRACT AMOUNT SHALL BE REDUCED ACCORDINGLY.

HEALTH, SAFETY AND ACCIDENT PREVENTION
(A) IN PERFORMING THIS CONTRACT, THE CONTRACTOR SHALL:(1)ENSURE THAT NO LABORER OR MECHANIC SHALL BE REQUIRED TO WORK IN SURROUNDINGS OR UNDER WORKING CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO HIS HEALTH AND AND/OR SAFETY AS DETERMINED UNDER CONSTRUCTION SAFETY AND HEALTHSTANDARDS PROMULGATED BY THE SECRETARY OF LABOR BY REGULATIONS.(2)PROTECT THE LIVES, HEALTH, AND SAFETY OF THEIR PERSONS; (3)PREVENT DAMAGE TO PROPERTY, MATERIALS, SUPPLIES, AND EQUIPMENT, AND, (4)AVOID WORK INTERFERENCE.
(B) FOR THESE PURPOSES, THE CONTRACTOR SHALL: (1)COMPLY WITH REGULATIONS AND STANDARDS ISSUED BY THE SECRETARY OF LABOR AT 29 CFR PART 1926 PURSUANT TO COMPLY WITH THE IMPOSITION OF SANCTIONS PURSUANT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. 327 ETSEQ. 91-54 S STAT. 96), 40 U.S.C. 3701ETSEQ., AND (2)INCLUDE THE TERMS OF THIS CLAUSE IN EVERY SUBCONTRACT SO THAT SUCH TERMS WILL BE BINDING ON EACH SUBCONTRACTOR.
(C) THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF EXPOSURE DATA ON ALL ACCIDENTS INCIDENT TO WORK PERFORMED UNDER THIS CONTRACT AND RESULTING IN DEATH, TRAUMATIC INJURY,OCCUPATIONAL DISEASE, OR DAMAGE TO PROPERTY, MATERIALS,SUPPLIES, OR EQUIPMENT, AND SHALL REPORT THIS DATA IN THE MANNER PRESCRIBED BY 29 CFR PART1904.
(D)THE CONTRACTOR AGREES TO INSERT THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THESE REQUIREMENTS AND OF THE CORRECTIVE ACTION REQUIRED. THIS NOTICE, WHEN DELIVERED TO THE CONTRACTOR OF THE CONTRACTOR'S REPRESENTATIVE AT THE SITE OF THE WORK, SHALL BE DEEMED SUFFICIENT NOTICE OF THE NON COMPLIANCE AND CORRECTIVE ACTION REQUIRED. AFTER RECEIVING SUCH NOTICE, THE CONTRACTOR SHALL IMMEDIATELY TAKE CORRECTIVE ACTION. IF THE CONTRACTOR FAILS OR REFUSES TO TAKE CORRECTIVE ACTION PROMPTLY, THE CONTRACTING OFFICER MAY ISSUE AN ORDER SUSPENDING TOPING ALL OR PART OF THE WORK UNTIL SATISFACTORY CORRECTIVE ACTION HAS BEEN TAKEN. THE CONTRACTOR SHALL NOT BASE ANY CLAIM ON REQUEST FOR EQUITABLE ADJUSTMENT FOR ADDITIONAL TIME OR MONEY ON ANY STOP ORDER ISSUED UNDER THESE CIRCUMSTANCES.
(E) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS SUBCONTRACTOR'S COMPLIANCE WITH THE PROVISIONS OF THIS CLAUSE. THE CONTRACTOR SHALL NOT INSERT THIS CLAUSE NEXT TO ANY SUBCONTRACT AS THE PHA, THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, OR THE SECRETARY OF LABOR SHALL DIRECT AS A MEANS OF ENFORCING SUCH PROVISIONS.

TEMPORARY HEATING
THE MECHANICAL CONTRACTOR SHALL PROVIDE AND PAY FOR TEMPORARY HEATING, COVERING, AND ENCLOSURES NECESSARY TO PROPERLY PROTECT ALL WORK AND MATERIALS AGAINST DAMAGE BY DAMPNESS AND COLD, TO DRY OUT THE WORK, AND TO FACILITATE THE COMPLETION OF THE WORK. ANY PERMANENT HEATING EQUIPMENT USED SHALL BE TURNED OVER TO THE PHA IN THE COND

PERFORMED OR COMPLETED SHALL BE SUBMITTED BY EACH PRIME CONTRACTOR. ALL WORK OUTLINED ON THE INITIAL PUNCH LIST SHALL BE COMPLETED BY THE CONTRACTOR PRIOR TO THE FINAL INSPECTION AND BEFORE THE PROJECT WILL BE ACCEPTED FOR FINAL COMPLETION. AFTER ALL REQUIREMENTS PREPARATORY TO THE FINAL INSPECTION HAVE BEEN COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER TO PERFORM A FINAL INSPECTION. IF ALL THE WORK HAS BEEN COMPLETED, INCLUDING PUNCH LIST ITEMS FROM EARLIER INSPECTIONS, AND NO FURTHER CORRECTIONS ARE REQUIRED, THE ARCHITECT SHALL RECOMMEND FINAL ACCEPTANCE OF THE PROJECT WHEN ALL THE CLOSEOUT DOCUMENTS ARE RECEIVED, INCLUDING BUT NOT LIMITED TO WARRANTIES, O&M MANUALS, FINAL TESTING, CERTIFICATES, PERMITS, PUNCH LIST, SUBMITTALS, RFIS, AS BUILD DRAWINGS AND ANY ADDITIONAL DOCUMENTATION REQUIRED BY HACP FOR CLOSEOUT.

ALL PUNCH LIST ITEMS TO BE COMPLETED WITHIN THIRTY (30) WORKING DAYS OF RECEIPT, OR FROM 10% DRAW WILL BE FORFEITED. ALL WORK NOT COMPLETED WITHIN THE ALLOTTED TIME WILL BE COMPLETED BY HACP AT PRIME CONTRACTOR'S EXPENSE. FINAL COMPLETION OCCURS WHEN ALL PUNCH LIST ITEMS HAVE BEEN COMPLETED AND OCCUPANCY PERMIT HAS BEEN ISSUED.

PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL EQUIPMENT FURNISHED, INSTALLED OR SERVICED UNDER THIS AND THEIR CONTRACTS. EACH PRIME CONTRACTOR SHALL VERIFY THAT ITS EQUIPMENT, ELECTRICAL SYSTEMS AND APPLIANCES ARE FULLY OPERATIONAL AND THAT ALL PLUMBING AND MECHANICAL EQUIPMENT IS OPERATING QUIETLY AND FREE FROM VIBRATION. CONTRACTOR SHALL PROVIDE A BINDER FOR HACP AND TENANT CONTAINING MAINTENANCE MANUALS, INCLUDING OPERATION INSTRUCTIONS, SPARE PARTS, WARRANTIES, INSPECTION PROCEDURES, AND DATA FOR EACH SYSTEM OR EQUIPMENT ITEM.

ALL ELECTRICAL PANELS AND BREAKERS TO BE PROPERLY MARKED AND A TYPED SCHEDULE TO BE FURNISHED.

FINAL CLEANING: AT THE TIME OF THE PROJECT CLOSE OUT, THE GENERAL CONTRACTOR SHALL PROVIDE AND THOROUGHLY CLEAN AND READY THE SPACE FOR OCCUPANCY. THIS SHALL, AT MINIMUM, INCLUDE HARDWARE, SECURITY EQUIPMENT, LIGHT FIXTURES, REPLACEMENT OF BURNED OUT LAMPS, REMOVAL OF NON PERMANENT PROTECTION AND LABELS, TOUCH UP OF ANY MINOR FINISH DAMAGE, AND CLEANING OR REPLACEMENT OF MECHANICAL SYSTEM FILTERS. DAMAGE TO ANY FINISH, SURFACE, EQUIPMENT OR OBJECT CAUSED DURING CLEANING SHALL BE REPAIRED OR REPLACED BY THE GENERAL CONTRACTOR AT HIS/HER OWN COST.

UPON COMPLETION OF THE PROJECT, GENERAL CONTRACTOR SHALL OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT AND PROVIDE A COPY OF THE ORIGINAL TO HACP AND ARCHITECT IF REQUIRED.

AT EACH PAYMENT REQUEST AND BEFORE PAYMENT IS MADE, EACH CONTRACTOR SHALL DELIVER TO THE HACP A COMPLETE RELEASE OF ALL SUB CONTRACTOR'S AND SUPPLIER'S LIENS ARISING OUT OF THIS CONTRACT, OR RECEIPTS IN FULL COVERING ALL LABOR AND MATERIALS FOR WHICH A LIEN COULD BE FILED OR A BOND SATISFACTORY TO THE HACP INDEMNIFYING HACP AGAINST ANY LIENS.

DIVISION 2 – SITE WORK – NOT APPLICABLE

DIVISION 3 – CONCRETE

PLAN AND REINFORCE CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 19 OF THE IBC 2018 AND ACI 318 AS AMMENDED IN SECTION 1905 OF THE IBC 2018.

CONCRETE TO BE INSTALLED AND CURED PER ACI 318 AND BE NORMAL WEIGHT (144PCF) WITH COMPRESSIVE STRENGTH IN 28 DAYS OF 4000 PSI, AIR ENTRAINED. CEMENT SHALL BE PORTLAND, TYPE I(PLY ASH & GROUND GRANULATED BLAST FURNACE SLAG NOT PERMITTED). COARSE AGGREGATE SHALL BE ¾" MAXIMUM AIR ENTRAINED SHALL BE 7 PERCENT. SLUMP SHALL BE 4" MAXIMUM

REINFORCING BARS SHALL COMPLY WITH A.S.T.M. A615–GRADE 60. WELDED WIRE FABRIC SHALL COMPLY WITH A.S.T.M. A185.

4" MINIMUM COMPACTED GRAVEL BED TO PLACE CONCRETE TO BE #57 HAND OR MACHINE COMPACTED BEFORE CONCRETE PLACEMENT.

PROVIDE COLD-APPLIED JOINT SEALANTS, SINGLE COMPONENT, SILICONE, SELF LEVELING TYPE BY SIKA OR EQUAL.

ROUND BACKER RODS FOR COLD-APPLIED JOINT SEALANTS: ASTM D5249, TYPE 3, OF DIAMETER AND DENSITY REQUIRED TO CONTROL JOINT-SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT. BY SIKA OR EQUAL.

DIVISION 4 – MASONRY

BRICK MASONRY REPOINTING

BRICK MASONRY REPOINTING SPECIALIST QUALIFICATIONS: ENGAGE AN EXPERIENCED BRICK MASONRY REPOINTING FIRM TO PERFORM WORK OF THIS SECTION. FIRM SHALL HAVE COMPLETED WORK SIMILAR IN MATERIAL DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. EXPERIENCE IN ONLY INSTALLING MASONRY IS INSUFFICIENT EXPERIENCE FOR MASONRY REPOINTING WORK.

REPOINTING OF AREAS INDICATED IN THE DRAWINGS AND LOCATIONS WITH THE FOLLOWING DEFECTS:
A. HOLES AND MISSING MORTAR.
B. CRACKS THAT CAN BE PENETRATED 1/4 INCH OR MORE BY A KNIFE BLADE 0.027 INCH THICK.
C.CRACKS 16 INCH OR MORE IN WIDTH AND OF ANY DEPTH.
D.HOLLOW-SOUNDING JOINTS WHEN TAPPED BY METAL OBJECT.
E. ERODED SURFACES 1/4 INCH OR MORE DEEP.
F. DETERIORATION TO POINT THAT MORTAR CAN BE EASILY REMOVED BY HAND, WITHOUT TOOLS.
G. JOINTS FILLED WITH SUBSTANCES OTHER THAN MORTAR.

MATERIALS
PORTLAND CEMENT: ASTM C 150/C 150M, TYPE I OR TYPE II. EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION; GRAY, WHERE REQUIRED FOR COLOR MATCHING OF MORTAR.

MASONRY CEMENT: ASTM C 91/C 91M. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- CEMEX S.A.B. DE C.V.
- HOLCIM (US) INC.
- QUIKRETE; THE QUIKRETE COMPANIES, LLC.

REMOVE GUTTERS, DOWNSPOUTS AND ASSOCIATED HARDWARE ADJACENT TO MASONRY REPOINTING. REINSTALL WHEN REPOINTING IS COMPLETED.PROVIDE TEMPORARY RAIN DRAINAGE DURING WORK TO DIRECT WATER AWAY FROM THE BUILDING.

SEE LINTEL REPLACEMENT BELOW AND COORDINATE MASONRY REPOINTING AND REPLACEMENT WITH REMEDIAL LINTEL REPAIR OR REPLACEMENT.

RETAINING WALL
WHERE NOTED ON THE DRAWINGS, NEW DRYSTACK RETAINING WALL, BELGARD OR EQUAL, TO MATCH EXISTING COLOR AND TYPE OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. REMOVE SUFFICIENT SOIL TO ALLOW ACCESS TO INSTALL A NEW WALL. SET NEW WALL IN COMPACTED GRAVEL BED STRICTLY ACCORDING TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS. INSTALL NEW WALL WITH ALL NECESSARY PINS, GEOGRID AND CAP PIECES ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL ACCESSORIES
WALL CAPS, PINS AND GEOGRID FABRIC.
REPLACEMENT WALL CAPS TO MATCH EXISTING, MATERIAL CONCRETE BY BELGARD OR EQUAL. COLOR AND TYPE TO MATCH EXISTING OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

GLASS BLOCK
SOLID GLASS BLOCK COLORLESS, TRANSPARENT, SMOOTH FACES AND MANUFACTURER'S STANDARD EDGE COATING WHITE, BY SEVES, OWINGS CORNING GLASS BLOCK OR EQUAL. SILICONE SEALANT BY SIKA OR EQUAL. PRODUCT INFORMATION AND SAMPLE TO BE PROVIDED TO ARCHITECT AND HACP FOR APPROVAL. SIZE OF GLASS BLOCK TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD SIZES. GLASS BLOCK SHALL BE INSTALLED PER IBC AND IRC BUILDING CODE AND TMS 402/ACI 530/ASCE 5 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES"

DIVISION 5 – METALS

STEEL BEAMS, ANGLES AND PLATES
SHOP PRIMED WITH RUST PREVENTATIVE PAINT. DIMENSIONS AND GRADE TO MATCH EXISTING. SHOP DRAWINGS TO BE PROVIDED BY GC.

ALL EXTERIOR LINTELS MUST BE HOT-DIP GALVANIZED PER ASTM A123.

LINTEL REPLACEMENT/ INSTALLATION ON BRICK VENEER EXTERIOR WALLS
PROTECT EXISTING OPENING WITH PLYWOOD.TEMPORARILY SHORE AND REMOVE EXISTING BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL LINTEL. REPLACE WITH NEW LINTEL WHICH MATCHES STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

FOR LINTEL CLEANING USE METAL CLEANING ON NEXT SECTION.

METAL CLEANING
EXECUTION OF THE WORK: IN CLEANING ITEMS, DISTURB THEM AS MINIMALLY AS POSSIBLE AND AS FOLLOWS:
A. REMOVE DELETERIOUS COATINGS AND CORROSION.
B. SEQUENCE WORK TO MINIMIZE TIME BEFORE PROTECTIVE COATINGS ARE REAPPLIED.
C. CLEAN ITEMS IN PLACE UNLESS OTHERWISE INDICATED.

MECHANICAL COATING REMOVAL: USE GENTLE METHODS, SUCH AS SCRAPING AND WIRE BRUSHING, THAT WILL NOT ABRADE METAL SUBSTRATE.

REPAINT: WHERE INDICATED, PREPARE PAINTED DECORATIVE METAL BY CLEANING SURFACE, BEVELING EDGES OF REMAINING ADHERED EXISTING PAINT, SANDING EDGES SMOOTH, REMOVING EXISTING PAINT AND PRIMING FOR PAINTING AS SPECIFIED.

METAL AWNINGS
BASIS OF DESIGN, MATCH EXISTING AWNINGS DIMENSIONS, PERIMETER FASCIA, BRACING AND SUPPORTS TO BE EXTRUDED ALUMINUM, DECKING ALUMINUM INTERLOCKING PANELS, PROFILE AND THICKNESS AS DETERMINED BY MANUFACTURER. FACTORY APPLIED BACKED ENAMEL OR KYNAR PAINT FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER STANDARD COLOR CHART. INSTALLATION OF AWNINGS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. ALL FASTENERS FOR AWNINGS SHALL BE TYPE 316 SS. FOR LOCATIONS WHERE AWNINGS ARE ATTACHED TO SIDEWALL AWNING FASTENERS SHALL FASTEN INTO STUDS WITH COMPRESSION STAND-OFF IF THROUGH VENEER BRICK. INSTALLATION SHALL INCLUDE PREFINISHED ALUMINUM REGLETED WALL FLASHING AT HEAD, PROPERLY INSTALLED AND CAULKED. SEE ALSO DIVISION 10.

ALUMINUM METAL RAILINGS
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS, INCORPORATED, OR COMPARABLE PRODUCT, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
PROVIDE ALLOY AND TEMPER RECOMMENDED BY ALUMINUM PRODUCER AND FINISHER FOR TYPE OF USE AND FINISH INDICATED, AND WITH STRENGTH AND DURABILITY PROPERTIES FOR EACH ALUMINUM FORM REQUIRED NOT LESS THAN THAT OF ALLOY AND TEMPER DESIGNATED BELOW.
GC TO PROVIDE PRODUCT INFORMATION AND SHOP DRAWINGS OF NEW RAILINGS TO MATCH EXISTING DIMENSIONS. PROVIDE ACCESSORIES AS REQUIRED FOR INSTALLATION ON CONCRETE, BRICK/METOD/DECKING, WALLS AND CHANGE IN DIRECTION FITTINGS AS REQUIRED.

DIVISION 6 – WOOD AND PLASTICS

WOOD FRAMING AND BLOCKING
SELECT STRUCTURAL GRADE DOUGLAS FIR SOUTH, SIZES AS INDICATED ON DRAWINGS. COMPLY WITH THE "RECOMMENDED NAILING SCHEDULE" OF THE "MANUAL FOR HOUSING FRAMING."

FLOOR SHEATHING (IF REQUIRED) - PROVIDE 3/4" T&G PLYWOOD FLOOR SHEATHING OR OSB STRUCTURAL FIBERBOARD. ALIGN PANELS ACROSS A MINIMUM OF TWO SUPPORTS WITH THICKNESS IN A 3/8 PERPENDICULAR TO AXIS OF JOISTS. STAGGER JOINTS. GLUE TO JOISTS AND EDGES WITH ELASTOMERIC SOLVENT-BASED GLUE CONFORMING TO APA SPECIFICATION AFG-101. FASTEN WITH 8D COMMON OR 6D ANNULAR OR SPIRAL NAILS AT 6" O.C. ALONG EDGES AND 10" ALONG INTERMEDIATE SUPPORTS. FOLLOW PANEL MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR SUB-FLOOR PREP, PRIOR TO INSTALLATION OF FINISH FLOORING.

EXTERIOR WOOD FRAMING EXPOSED TO WEATHERING AND INSECTS SHALL BE MINIMUM 2" X PRESSURE TREATED LUMBER. KILN DRIED TO 19% MOISTURE CONTENT BEFORE INSTALLATION.

WOOD TRIM AND MOLDINGS
PROVIDE FURNITURE GRADE SOLID HARDWOOD TRIM AND MOLDINGS. STAIN ALL SIDES AND ENDS. WOOD TRIM AND MOLDINGS TO MATCH EXISTING UNLESS OTHERWISE NOTED ON DRAWINGS.

INSTALL WOOD TRIM AND MOLDINGS WITH MITER AT CORNERS, MITERED LAP SPLICES, AND SET WITH COUNTER SUNK GALVANIZED FINISH NAILS CAPPED WITH WOOD PUTTY SANDED SMOOTH. COMPLY WITH AWI 300 FOR ALL STANDARD WOOD RUNNING TRIM.

FABRICATOR QUALIFICATIONS
FIRM EXPERIENCED IN PRODUCING ARCHITECTURAL WOODWORK SIMILAR TO THAT INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE, AS WELL AS SUFFICIENT PRODUCTION CAPACITY TO PRODUCE REQUIRED UNITS WITHOUT DELAYING THE WORK.

INTERIOR ARCHITECTURAL WOODWORK

INSTALLER QUALIFICATIONS.
ARRANGE FOR INSTALLING ARCHITECTURAL WOODWORK INSTALLATION BY A FIRM THAT CAN DEMONSTRATE SUCCESSFUL EXPERIENCE IN INSTALLING ARCHITECTURAL WOODWORK ITEMS SIMILAR IN TYPE AND QUALITY TO THOSE REQUIRED FOR THIS PROJECT.

QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH AWI'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS."

ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETE, AND MECHANICAL SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD. REFER TO AWI'S OR WIS MEMBER LIST FOR NAMES OF WOODWORKING FIRMS THAT COULD POTENTIALLY BE INCLUDED.

MATERIALS

WOOD SPECIES AND CUT FOR TRANSPARENT FINISH: AS INDICATED ON DRAWINGS.

WOOD SPECIES FOR OPAQUE FINISH: ANY CLOSED-GRAIN HARDWOOD.

GENERAL: COMPLETE FABRICATION TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE. WHERE NECESSARY FOR FITTING AT THE SITE, PROVIDE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.
- INTERIOR WOODWORK GRADE: AWI CUSTOM.
- SHOP CUT OPENINGS TO MAXIMUM EXTENT POSSIBLE. SAND EDGES OF CUTOUTS TO REMOVE SPLINTERS AND BURRS. SEAL EDGES OF OPENINGS IN COUNTERTOPS WITH A COATING VARNISH.
- FOR TRANSPARENT-FINISHED TRIM ITEMS WIDER THAN AVAILABLE LUMBER, USE VENEERED CONSTRUCTION. DO NOT GLUE FOR WIDTH.
- BACK OUT OF FACE VENEERS BACKS OF FLAT TRIM MEMBERS AND KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT FOR MEMBERS WITH ENDS EXPOSED IN FINISHED WORK.
- ASSEMBLE CASINGS IN PLANT EXCEPT WHERE LIMITATIONS OF ACCESS TO PLACE OF INSTALLATION.

PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH THE ARCHITECTURAL WOODWORK STANDARDS FOR GRADES OF CABINETS INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS.

ARCHITECTURAL WOOD WORK STAND ARDS GRADE: AWI PREMIUM.

TYPE OF CONSTRUCTION: FRAMELESS.

DOOR AND DRAWER-FRONT STYLE: FLUSH OVERLAY.

HIGH-PRESSURE DECORATIVE LAMINATE: ISO 4586-3, GRADES AS INDICATED OR IF NOT INDICATED, AS REQUIRED BY QUALITY STANDARD.

EXPOSED SURFACES:
1. PLASTIC-LAMINATE GRADE: AWI PREMIUM.
2. EDGES: GRADE AWI PREMIUM.
3. PATTERN DIRECTION: AS INDICATED.

CONCEALED BACKS OF PANELS WITH EXPOSED PLASTIC-LAMINATE SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE, ISO 4586-3, GRADE TO MATCH EXPOSED SURFACE.

DRAWER CONSTRUCTION: FABRICATE WITH EXPOSED FRONTS FASTENED TO SUBFRONT WITH MOUNTING SCREWS FROM INTERIOR OF BODY.
1. JOIN SUBFRONTS, BACKS, AND SIDES WITH GLUED DOVETAIL JOINTS. ATTACH BOTTOMS BY MECHANICAL FASTENERS OR GLUED DOVETAIL JOINTS.

COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURERS' FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS, MATTE FINISH.
B. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
C. PATTERNS, MATTE FINISH.
D. PATTERNS, MATTE FINISH.

SYNTHETIC DECKING
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS; TIMBERTECH, AZEK OR COMPARABLE PRODUCT.
DECKING SIZE AND LENGTH TO MATCH EXISTING INSTALLATION. FINISH TEXTURE BRUSHED; COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. FASCIA BOARDS TO MATCH DECKING COLOR.
DECKING FASTENING SYSTEM AS RECOMMENDED BY MANUFACTURER'S INSTALLATION MANUAL. FOLLOW MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR CUTTING, TRIMMING AND INSTALLING DECKING.

RUBBER STAIR TREADS COVERS
BASIS OF DESIGN, BY ROPPE OR EQUAL, RIBBED PATTERN, BLACK FINISH. FOLLOW THE MANUFACTURER'S INSTRUCTION FOR INSTALLATION.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

ROOFING SHEET METAL FLASHING AND TRIM
GENERAL: CONTRACTOR TO EVALUATE STATUS OF ROOFING MATERIAL, COMMUNICATE THE HACP AND ARCHITECT OF FINDINGS AND IF PATCHING OR REPLACEMENT IS NEEDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INSTALL ASPHALT SHINGLES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN ARMA'S "ASPHALT ROOFING RESIDENTIAL MANUAL - DESIGN AND APPLICATION METHODS" AND NRCA'S "NRCA GUIDELINES FOR ASPHALT SHINGLE ROOFING SYSTEMS".

ASPHALT SHINGLES: ASTM D3462/D3462M, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION; GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF-SEALING, BY GAF OR EQUAL, STRAIGHT CUT. FINISH COLOR TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. HACP TO APPROVE FINAL COLOR SELECTION. RIDGE VENT, IF REQUIRED TO MATCH ROOFING MATERIAL MANUFACTURER.

GC TO INSPECT FLASHING OF ROOF PENETRATIONS, PATCH AND REPLACE IF NEEDED TO COMPLY WITH CODE AND REGULATIONS.

SHEET METAL STANDARD FOR FLASHING AND TRIM: COMPLY WITH NRCA'S "THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION AND AIR LEAKAGE CONTROL, AND REROOFING" AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL". REQUIREMENTS FOR DIMENSIONS AND PROFILES SHOWN UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.

INSTALL SHEET METAL FLASHING AND TRIM TO COMPLY WITH DETAILS INDICATED AND RECOMMENDATIONS OF CITED SHEET METAL STANDARDS THAT APPLY TO INSTALLATION CHARACTERISTICS REQUIRED UNLESS OTHERWISE INDICATED ON DRAWINGS

THERMAL INSULATION
GC TO PROVIDE THERMAL INSULATION ON WALLS, CEILINGS AND FLOORS AS NOTED ON THE DRAWINGS.

INSULATION TO COMPLY WITH THE ENERGY CODE IN MINIMUM R VALUES OR AS SPECIFIED ON DRAWINGS.

GC TO BE RESPONSIBLE TO INSPECTING, ADJUSTING AND ADDING INSULATION TO THE ENTIRE ATTIC SPACE TO ENSURE THAT THERE IS INSULATION COVERAGE WITHIN NO GAPS. GC TO INFORM HACP AND ARCHITECT PRIOR TO ADD ADDITIONAL INSULATION.

ATTIC DOORS TO RECEIVED RIGID FOAM INSULATION GLUED TO BACK OF THE DOOR AND SEALED WITH RUBBER JOINTS. INSULATION TO MATCH R VALUE OF CEILING ASSEMBLY.

ASSEMBLIES, SEPARATIONS & FIRESTOPPING:

ANY NEW DEMISING OR INTERIOR PARTITIONS SHALL BE RATED AS REQUIRED BY CODE. ANY PENETRATION THROUGH AN EXISTING DIMENSIONAL FIRE RATED ASSEMBLY OR ULRATED ASSEMBLY WALL MUST RE-TAIN THE UL ASSEMBLY FIRE-RATING.

ALL NEW WORK SHALL MATCH OR EQUAL THE UL FIRE RATINGS, IF ANY, OF THE SURROUNDING WORK. AS APPROPRIATE, THE CONTRACTOR SHALL CONTACT HACP AND ARCHITECT IF ANY AREAS ARE UNCOVERED OR DISCOVERED THAT MAY REQUIRE ADDITIONAL ANALYSIS OR CLARIFICATION.

THROUGH PENETRATIONS OF FIRE RESISTANCE WALLS SHALL BE INSTALLED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY SUCH AS UNDERWRITERS LABORATORIES. IF THE PENETRATING ITEMS ARE STEEL, FERROUS OR COPPER PIPES OR STEEL CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE FIRE-RESISTANCE-WALL SHALL BE PERMITTED TO BE PROTECTED AS FOLLOWS:

IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A MAXIMUM 6-INCH NOMINAL DIAMETER AND THE OPENING IS A MAXIMUM 144 SQUARE INCHES. CONCRETE, GROUT, OR MORTAR SHALL BE PERMITTED WHERE INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING.

THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHERE SUBJECTED TO ASTME 119 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE WALL ASSEMBLY.

MEMBRANE PENETRATIONS, WHERE WALL AND PARTITIONS ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:
FOR STEEL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. A HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY WHERE THE WALL CAVITY IS FILL WITH CELLULOSE LOOSE FILL, ROCKWOOL OR SLAG WOOL INSULATION PROVIDED THE WALL IS RATED (CONSISTING OF 2-INCH NOMINAL LUMBER OR TWO THICKNESSES OF 1-INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS OR ONE THICKNESS OF 0.719-INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANEL OR ONE THICKNESS OF 0.75-INCH PARTICLEBOARD WITH JOINTS BACKED BY 0.75-INCH PARTICLEBOARD. GYPSUM BOARD, CEMENT FIBER BOARD, BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED AS AN ACCEPTABLE FIREBLOCK. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NONRIGID MATERIALS SHALL BE PERMITTED FOR COMPLIANCE WITH THE 10-FOOT HORIZONTAL FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROW OF STUDS OR STAGGERED STUDS. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES. THE INTEGRITY OF FIREBLOCKS SHALL BE MAINTAINED; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

MEMBRANE PENETRATIONS FOR LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL ARE PERMITTED PROVIDED THOSE BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS: THE LISTING OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24-INCHES. SOLID FIREBLOCKING; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

EXCEPTIONS:
MEMBRANE PENETRATIONS BY STEEL, FERROUS OR COPPER CONDUITS, ELECTRICAL BOXES, PIPES, TUBES, VENTS, CONCRETE, MASONRY-PENETRATING ITEMS WHERE THE ANNULAR SPACE IS PROTECTED EITHER IN ACCORDANCE OR TO PREVENT THE FIRE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. SUCH PENETRATIONS SHALL NOT EXCEED ANY AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.

MEMBRANE PENETRATIONS BY LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL THAT HAS BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED PER INSTRUCTIONS INCLUDED IN LISTING.

JOINT SEALERS
INTERIOR JOINT SEALER IS TO BE MILDEW-RESISTANT SILICONE SEALANT. APPLY SEALANT AT ALL MATERIAL JOINTS SUBJECT TO WATER PENETRATION. COLOR TO BE SELECTED BY THE ARCHITECT FROM MFR'S STANDARD LINE.

VINYL SIDING
VINYL SIDING. INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D3679.
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALSIDE, EXTERIOR BUILDING PRODUCTS, KAYCAN LTD., ROYAL BUILDING PRODUCTS, A WESTLAKE COMPANY. OR EQUAL.

HORIZONTAL PATTERN: 6-1/2- OR 7-INCH EXPOSURE IN BEADED-EDGE, SINGLE-BOARD STYLE. SMOOTH TEXTURE. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OR TO MATCH EXISTING WHERE REQUIRED.

WATER PROOFING MEMBRANE
BASIS OF DESIGN, BY SIKA OR EQUAL, 60 MIL. REFER TO MANUFACTURERS INSTRUCTION FOR PREPARATION OF SUBSTRATES AND INSTALLATION OF MEMBRANE.

DIVISION 8 - DOORS, WINDOWS AND HARDWARE

ALL DOORS AND WINDOWS SHALL BE INSTALLED PLUMB, LEVEL, SQUARE, AND PER ALL MANUFACTURERS RECOMMENDATION.

EXTERIOR DOORS TO BE 1 3/4"-THICK, FIBERGLASS INSULATED WITH 3 SETS OF STEEL HINGES, RUBBER WEATHER STRIPPING, LOCKING AS SPECIFIED ON HARDWARE. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING. VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS: 1) IN DOORS, 2) WITHIN 24" OF A DOOR AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE, 3) IN FIXED PANELS WITH THE LOWEST EDGE LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36" OF SUCH GLAZING.

DOOR HARDWARE
INTERIOR DOOR HARDWARE

ALL DOOR HARDWARE TO BE APPROVED BY HACP FACILITY REPRES

POLISH CHROME PLATE FINISH, 2.2 GPM FLOW RATE, LEVER HANDLE, RIGID SPOUT, DRAIN POP UP.

KITCHEN SINKS – WATER SENSE CERTIFIED
STAINLESS STEEL, COUNTER MOUNTED, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- AFINITY SURFACES

0.038 INCH THICKNESS, 3 1/2" DRAIN GRID CENTERED IN BOWL.

SINKS FAUCETS – WATER SENSE CERTIFIED
GENERAL DUTY, SOLID BRASS, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- HANSGROHE

POLISHED CHROME PLATE FINISH. SINGLE HANDLE ON KITCHEN TWO HANDLE ON UTILITY SINKS.

WATER CLOSET – WATER SENSE CERTIFIED
FLOOR MOUNTED, FLOOR OUTLET, CLOSE COUPLED (GRAVITY TANK), VITREOUS CHINE, 1.6 GAL/FLUSH, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- KOHLER
- TOTO USA

STANDARD HEIGHT, ELONGATED RIM, WATER SAVING, COLOR WHITE.
TOILET SEAT PLASTIC FOR RESIDENTIAL USE, ELONGATED RIM, SEAT COVER, SELF SUSTAINING HINGE, COLOR WHITE.

UTILITY SINK
FRESTANDING UTILITY SINK, MANUFACTURERS: PROFLO OR EQUAL
STANDARD HEIGHT, COLOR WHITE. 20 INCH BY 20 INCH SIZE.

EXTERIOR HOSE BIBB
FREEZELESS WALL FAUCET, WOODFORD OR EQUAL, MODEL 30,3/4 INCH CONNECTION, BRASS FINISH, ASSE 1053 APPROVED, MAX PRESSURE 125 PSI.

SLEEVES
SLEEVES SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH WALLS, CEILINGS, OR FLOORS. SLEEVES SHALL BE CUT FROM SCHEDULE 40 BLACK IRON PIPE. THE INTERNAL DIAMETER OF THE SLEEVE SHALL EXCEED THE EXTERNAL DIAMETER OF THE PIPE (INCLUDING INSULATION) BY NOT LESS THAN ONE INCH. SLEEVES SHALL BE CUT FLUSH WITH WALLS AND UNDERSIDES OF FLOORS AND SHALL EXTEND ONE INCH ABOVE FLOORS ABOVE GRADE.

PIPE PORTALS
PIPING THROUGH THE ROOF SHALL BE INSTALLED THROUGH A PREFABRICATED PIPING PORTAL. PORTALS SHALL HAVE GALVANIZED STEEL INSULATED CURBS, ABS PLASTIC CURB CAP, NEOPRENE RUBBER NIPPLES, AND STAINLESS-STEEL CLAMPS. CURB HEIGHT AS INDICATED ON DRAWINGS. PORTALS SHALL BE MODEL RC AND NJB AS MADE BY ROOF PRODUCTS AND SYSTEMS CORP. PORTALS SHALL HAVE EXTRA HOLES FOR POWER AND CONTROL CONDUITS.

FIRESTOPS
ALL OPENINGS THROUGH FLOORS AND FIRE-RATED PARTITIONS SHALL BE SEALED. VOID SPACES AROUND DUCTS OR PIPES SHALL BE PACKED WITH A FIREPROOF CERAMIC FIBER AND SEALED WITH FIRE RETARDANT CAULKING. FIBER SHALL BE KAOWOOL BY BABCOCK AND WILCOX, FIBERFRAX BY CARBORUNDUM, OR CERAFIBER BY MANVILLE CO. CAULKING SHALL BE SE4111 F BY UNISEAL STANDARD DUXSEAL BY MANVILLE, OR MOLDABLE PUTTY BY 3M.

ESCUTCHEONS
ESCUTCHEONS SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH FLOORS, CEILINGS, OR WALLS OF FINISHED SPACES. ESCUTCHEONS SHALL BE CHROMIUM PLATED STEEL, SNAP ON TYPE WITH SPRING RETAINERS. ESCUTCHEONS SHALL BE THE NO. 40 MADE BY BEATON/CORBIN COMPANY OR APPROVED EQUAL, SIZED TO FIT PIPE PLUS INSULATION. WHERE RISER CLAMPS ARE IN FINISHED SPACES, PROVIDE HIGH-SHIRT ESCUTCHEONS TO COVER CLAMP.

UNIONS
UNIONS SHALL BE INSTALLED AT ALL POINTS INDICATED ON THE DRAWINGS AND AT ALL OTHER POINTS NECESSARY FOR THE INSTALLATION AND REMOVAL OF EQUIPMENT, CONTROL DEVICES, ETC. UNIONS IN GAS LINES WILL BE PERMITTED ONLY AT THE FINAL CONNECTIONS TO EQUIPMENT.

HANGERS
ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH PIPEHANGERS TO PREVENT SAGGING AND AVOID CONCENTRATION OF HANGING LOAD. HANGER SPACING SHALL NOT EXCEED 10 FT. FOR STEEL PIPE OR 8 FT. FOR COPPER TUBING. COPPER TUBING 1-1/4" AND SMALLER SHALL BE SUPPORTED AT NO GREATER THAN 6 FT. SPACING.

REPAIR ALL FIREPROOFING WHICH IS DAMAGED BY HANGER INSTALLATION.

SOIL WASTE AND VENT PIPING
SOIL, WASTE AND VENT STACKS AND BRANCHES, AND ROOF CONDUCTORS SHALL BE ABS OR PVC PIPING AND FITTINGS SCHEDULE 40. WASTE LINES SHALL BE MINIMUM 2 INCH.

HOT AND COLD-WATER PIPING
POTABLE-WATER PIPING AND COMPONENTS ARE TO COMPLY WITH NSF 14, NSF 61, AND NSF 372. INCLUDE MARKING "NSF-PW" ON PIPING.

HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE TYPE L, SEMI-ELESS, HARD TEMPER, COPPER TUBING WHICH CONFORMS TO ASTM SPECIFICATION B-88 WITH WROUGHT COPPER, SOLDER, TYPE FITTINGS, OR PEX TUBING PLASTIC IN ACCORDANCE WITH ASTM F876 AND ASTM F877 WITH FITTINGS ASTM F1807, METAL INSERT AND COPPER CRIMP RINGS ASTM F1960, COLD EXPANSION FITTINGS AND REINFORCING RINGS.

INSTALLATION OF PIPING
DRAINAGE PIPING SHALL BE INSTALLED TO ACCURATE LINE AND UNIFORM GRADE, AND AT THE ELEVATIONS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE INDICATED, ALL DRAINAGE LINES SHALL SLOPE NOT LESS THAN 1/4 INCH PER FOOT.
DRAINAGE LINES SHALL BE PROVIDED WITH SUFFICIENT CLEANOUTS TO MAKE ALL PARTS OF THE DRAINAGE SYSTEM ACCESSIBLE. CLEANOUTS SHALL BE PROVIDED ALONG INTERIOR HORIZONTAL RUNS AT NOT MORE THAN 50 FT. ON CENTER. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH ROOF CONDUCTOR AND AT ALL OTHER POINTS INDICATED ON THE DRAWING OR REQUIRED BY LOCAL PLUMBING CODE.

ALL PIPES SHALL BE CUT WITH SQUARE ENDS AND SHALL BE PROPERLY REAMED. THREADS SHALL BE CUT WITH CLEAN, SHARP DIES TO FULL DEPTH. ALL BURRS SHALL BE REMOVED FROM PIPE. JOINT COMPOUND SHALL BE APPLIED TO PIPE THREAD ONLY. USE OF EXCESSIVE JOINT COMPOUND IS PROHIBITED.

SOLDER JOINTS IN ALL WATER LINES SHALL BE MADE WITH 95-5 TIN-ANTIMONY SOLDER. OTHER JOINTS MADE WITH EASYBRITE LEAD FREE SOLDER.

WATER LINES WITHIN THE BUILDING SHALL BE INSTALLED WITH SUFFICIENT PITCH TO PROPERLY DRAIN THE WATER VALVES. IN ADDITION TO DRAIN VALVES INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL DRAIN VALVES NECESSARY TO PROPERLY DRAIN THE SYSTEM.

GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND NFPA-54. ALL GAS PIPING AND CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH AGA RECOMMENDATIONS AND ALL APPLICABLE LOCAL GAS COMPANY REGULATIONS.

CONTRACTOR SHALL VENTILATE THE WORK AREA TO PROVIDE A SAFE ENVIRONMENT. VENTILATION SHALL NOT DIRECT FUMES TO ADJACENT SPACES OR NEIGHBORING STRUCTURES.

CONTRACTOR SHALL PROVIDE ADEQUATE FIRE PROTECTION DURING WELDING, CUTTING AND SOLDERING.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

VALVES
VALVES IN WATER LINES SHALL BE 125 PSI CLASS, BRONZE BODY, BALL VALVES WITH TEFLON SEATS AND PACKING. NIBCO 580 OR APOLLO.DRAIN VALVES SHALL BE BRONZE BODY SOLDERED ENDS, BALL VALVES WITH 3/4 INCH AMERICAN STANDARD HOSE THREAD OUTLET. NIBCO OR APOLLO.

WALL HYDRANT SHALL BE ALL BRASS, FULLY RECESSED, NON-FREEZE, KEY OPERATED, WITH ADJUSTABLE LOCKNUT, REMOVABLE NYLON SEAT, 3/4 INCH HOSE CONNECTION. FURNISH WITH INTEGRAL VACUUM BREAKER. ZURN Z-1300 OR APPROVED EQUAL.

VALVES IN GAS LINES SHALL BE 125 PSI CLASS, THREADED END, IRON BODY. GAS COCKS WITH BRASS PLUG AND WASHER AND SQUARE HEAD. GRANCE NO. 324.

INSULATION
ALL COLD AND HOT WATER PIPING, AND HORIZONTAL PORTIONS OF ROOF CONDUCTORS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX.

PIPE IDENTIFICATION
ALL PIPING SHALL BE LABELED WITH THE NAME OF THE FLUID IN THE PIPE AND WITH ARROWS INDICATING THE DIRECTION OF THE FLOW.

TESTING

DRAINAGE SYSTEM - THE ENTIRE DRAINAGE SYSTEM SHALL BE TESTED HYDROSTATICALLY FOR LEAKS. THE ENTIRE SYSTEM SHALL BE FILLED TO THE TOP OF THE STACKS WITH WATER AND CHECKED FOR LEAKS.

WATER PIPING - ALL WATER PIPING SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL FOREIGN MATERIAL. ALL TESTING SHALL BE COMPLETED BEFORE INSULATION IS APPLIED.
DURING THE TESTS ALL VALVES SHALL BE CAREFULLY CHECKED FOR LEAKAGE AROUND THE STEM.

WATER HEATERS - HEATERS SHALL BE TESTED AND CHECKED TO DETERMINE THAT THEY OPERATE IN COMPLIANCE WITH THE SPECIFICATIONS. ALL CONTROLS SHALL BE PROPERLY ADJUSTED.

DISINFECTION OF POTABLE WATER SYSTEM - GENERAL: NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE. WHENEVER REQUIRED THE AUTHORITY HAVING JURISDICTION. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY.

MECHANICAL REQUIREMENTS

GENERAL CONDITIONS OF THE MECHANICAL CONTRACT
PLUMBING CONTRACTOR TO FOLLOW HUD GENERAL CONDITIONS AS SPECIFIED EARLIER IN DIVISION 1.

ALL MECHANICAL WORK TO COMPLY WITH LOCAL CODE AND REGULATIONS.

CUTTING AND PATCHING
ALL CHASES, RECESSES, HOLES, AND OPENINGS FOR EQUIPMENT AND DUCTWORK WILL BE PROVIDED BY THE GENERAL CONTRACTOR.

SHOULD THE MECHANICAL CONTRACTOR FAIL TO SET SLEEVES OR LOCATE OPENINGS BEFORE THE WORK OF THE GENERAL CONTRACTOR HAS BEEN COMPLETED IN THAT PARTICULAR AREA, THE MECHANICAL CONTRACTOR SHALL CUT WHATEVER HOLES ARE NECESSARY FOR THE INSTALLATION OF EQUIPMENT. ALL PATCHING NECESSITATED BY THE CUTTING OF SUCH HOLES SHALL BE DONE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

REPAIR ALL FIREPROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

EXHAUST FANS
FANS SHALL VENT DIRECTLY TO THE EXTERIOR. EXHAST DUCTS MAY BE TIED TOGETHER OR TIED INTO AN EXISTING SYSTEM PROVIDED THAT BACK FLOW PREVENTORS ARE INSTALLED AT EACH FAN INCLUDING ALL FANS TIED INTO THE EXISTING SYSTEM.

FURNISH NEMA 1 SURFACE MOUNTING STARTER WITH OVERLOAD AND UNDER VOLTAGE PROTECTION.

FURNISH WITH BIRD SCREEN AND BACKDRAFT DAMPER.

FAN SHALL BE ACE MADE BY COOK, GREENHECK, OR APPROVED EQUAL. MOCFM CAPACITY, VERTICAL DISCHARGE. FINISH WHITE.

THE HEATING CONTRACTOR SHALL FURNISH THERMALLY AND ACOUSTICALLY INSULATED CURB.

MECHANICAL EQUIPMENT
THE EQUIPMENT DESCRIBED IN THIS SECTION IS BASIS OF DESIGN, MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT TO MATCH EXISTING SYSTEM CAPACITY AT A MINIMUM.

MECHANICAL CONTRACTOR TO PROVIDE HACP AND ARCHITECT WITH SPECIFICATION SHEETS OF EQUIPMENT.

GAS-FIRED FURNACES, NONCONDENSING
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- BRYANT; CARRIER GLOBAL CORPORATION.
- CARRIER GLOBAL CORPORATION.
- BUILDING SOLUTIONS NORTH AMERICA.

ENERGY STAR RATING OF 95% AFUE OR GREATER
CABINET: GALVANIZED STEEL.
- CABINET INTERIOR AROUND HEAT EXCHANGER SHALL BE FACTORY-INSTALLED INSULATION.
- LIFT-OUT PANELS SHALL EXPOSE BURNERS AND ALL OTHER ITEMS REQUIRING ACCESS FOR MAINTENANCE.
- FACTORY PAINT EXTERNAL CABINETS IN MANUFACTURER'S STANDARD COLOR.
- AIRSTREAM SURFACES: SURFACES IN CONTACT WITH THE AIRSTREAM SHALL COMPLY WITH REQUIREMENTS IN ASHRAE 62.1.

FAN: CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT OR BELT DRIVE.
- FAN MOTORS: COMPLY WITH REQUIREMENTS IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT."
- SPECIAL MOTOR FEATURES, SINGLE SPEED: SINGLE SPEED, PREMIUM EFFICIENCY, AS DEFINED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT," AND WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, MULTISPEED: MULTI-TAPPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, ECM: ELECTRONICALLY CONTROLLED MOTOR (ECM) CONTROLLED BY INTEGRATED FURNACE/BLOWER CONTROL.

TYPE OF GAS: NATURAL
HEAT EXCHANGER: ALUMINIZED STEEL.
BURNER:
- GAS VALVE: 100 PERCENT SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUTOFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD.
- IGNITION: ELECTRIC PILOT IGNITION, WITH HOT-SURFACE IGNITER OR ELECTRIC SPARK IGNITION.

GAS-BURNER SAFETY CONTROLS:
- ELECTRONIC FLAME SENSOR: PREVENTS GAS VALVE FROM OPENING UNTIL PILOT FLAME IS PROVEN; STOPS GAS FLOW ON IGNITION FAILURE.
- FLAME ROLLOUT SWITCH: INSTALLED ON BURNER BOX; PREVENTS BURNER OPERATION.
- LIMIT CONTROL: FIXED STOP AT MAXIMUM PERMISSIBLE SETTING; DE-ENERGIZES BURNER ON EXCESSIVE BONNET TEMPERATURE; AUTOMATIC RESET.

COMBUSTION-AIR INDUCER: CENTRIFUGAL FAN WITH THERMALLY PROTECTED MOTOR AND SLEEVE BEARINGS PRERURGED HEAT EXCHANGER AND VENTS COMBUSTION PRODUCTS; PRESSURE SWITCH PREVENTS FURNACE ON IF COMBUSTION-AIR INLET OR FLUE OUTLET IS BLOCKED.
FURNACE CONTROLS: SOLID-STATE BOARD INTEGRATES IGNITION, HEAT, COOLING, AND FAN SPEEDS; AND ADJUSTABLE FAN-ON AND FAN-OFF TIMING; TERMINALS FOR CONNECTION TO ACCESSORIES.
VENT MATERIALS: COMPLY WITH REQUIREMENTS IN SECTION 235123 "GAS VENTS" FOR TYPE B METAL VENTS.

CAPACITIES AND CHARACTERISTICS:
AIRFLOW CONFIGURATION: UPFLOW.
GAS:
- TYPE: NATURAL
- VENTING TYPE: WITH COMBUSTION-AIR INTAKE
- MINIMUM EFFICIENCY AFUE: 80 PERCENT.
- INPUT: SEE SCHEDULE ON DRAWINGS.
- HEAT OUTPUT: SEE SCHEDULE ON DRAWINGS.
- GAS CONNECTION SIZE: 1/2" NPS.
- VENT SIZE: 4 INCHES.

FAN:
- MOTOR: SIZE: 1/3 HP.
- SPEED: SEE SCHEDULE ON DRAWINGS.
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

FURNACE ELECTRICAL CONNECTION:
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

COMPRESSOR AND CONDENSER UNITS, AIR COOLED, 1.0 TO 5 TONS
DESCRIPTION: FACTORY ASSEMBLED AND TESTED; CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTORS, REFRIGERANT RESERVOIR, AND OPERATING CONTROLS.
ENERGY STAR RATING EQUAL OR OVER 15.2 SEER2
COMPRESSOR TYPE: SCROLL, HERMETICALLY SEALED, WITH RUBBER VIBRATION ISOLATORS.
- TWO-SPEED COMPRESSOR: INCLUDE MANUAL-RESET, HIGH-PRESSURE SWITCH AND AUTOMATIC-RESET, LOW-PRESSURE SWITCH.
- ACCUMULATOR: SUCTION TUBE.

REFRIGERANT: R-410A.
CONDENSER COIL: SEAMLESS COPPER-TUBE, -FIN COIL; WITH REMOVABLE DRAIN PAN AND BRASS SERVICE VALVES WITH SERVICE PORTS.
CONDENSER FAN: DIRECT-DRIVEN, MALE PROPELLER FAN; WITH PERMANENTLY LUBRICATED, TOTALLY ENCLOSED FAN MOTOR WITH THERMAL OVERLOAD PROTECTION AND BALL BEARINGS.
UNIT CASING: GALVANIZED STEEL, FINISHED WITH; WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE, MOUNT SERVICE VALVES, FITTINGS, AND GAUGE PORTS ON EXTERIOR OF CASING.
CAPACITIES AND CHARACTERISTICS:
COMPRESSOR AND CONDENSER UNIT:
- FULL-LOAD COOLING CAPACITY: TO BE CALCULATED BY MECHANICAL CONTRACTOR

ELECTRICAL CHARACTERISTICS:
- VOLTS: 208 V.
- PHASE: 1.
- HERTZ: 60 HZ.

SHEET METAL
DUCT SIZES INDICATED ON THE DRAWINGS ARE THE CLEAR INSIDE DIMENSIONS.

ALL DUCTS SHALL BE COMPLETE WITH FOUR SIDES AND SHALL BE OF AIRTIGHT CONSTRUCTION. ALL DUCTS, UNLESS OTHERWISE NOTED, SHALL BE CONSTRUCTED OF 24 GAGE GALVANIZED SHEET STEEL AT 2" PRESSURE CLASS.

JOINTS, SEAMS AND DUCT WALL PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. SEALANT MATERIAL SHALL BE CAULKING COMPOUND SPECIFICALLY MANUFACTURED FOR DUCT APPLICATION FOR INDOOR USE.

JOINTS BETWEEN SHEET METAL SECTIONS MAY BE MADE WITH PREFABRICATED JOINING SYSTEM SUCH AS THE DUCTMATE INDUSTRIES SYSTEM.
STIFFENERS SHALL BE PLACED AT NOT MORE THAN 8-FOOT INTERVALS.

ALL DUCTS SHALL BE ADEQUATELY SUPPORTED FROM CONSTRUCTION ABOVE BY MEANS OF GALVANIZED STEEL STRAP HANGERS SPACED AT NOT MORE THAN 8-FOOT INTERVALS. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA STANDARDS.

DUCTWORK CONNECTIONS TO AIR HANDLING AND AIR CONDITIONING UNITS SHALL HAVE FLEXIBLE CONNECTIONS. WHEN CONNECTION IS OUTDOORS, CONNECTION LENGTH SHALL BE INSULATED AND WEATHERPROOFED.

TURNING VANES SHALL BE INSTALLED IN ALL ELBOWS HAVING SQUARE THROATS OR A THROAT RADIUS LESS THAN HALF THE DUCT WIDTH. TURNING VANES MAY BE PREFABRICATED. IF JOB FABRICATED, DESIGN AND CONSTRUCTION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. VANES SHALL BE AIRFOIL TYPE.

MANUAL VOLUME CONTROL DAMPERS IN DUCTS SHALL BE CONSTRUCTED OF NOT LIGHTER THAN US GAGE NO. 16 GALVANIZED SHEET STEEL. DAMPER BLADES SHALL BE SUPPORTED ON AN END BEARING ON ONE SIDE AND A COMBINATION BEARING AND DAMPER REGULATOR ON THE OTHER SIDE. REGULATOR SHALL BE EQUIPPED WITH A LOCKING DEVICE. MANUAL DAMPERS SHALL BE OPPOSED BLADE TYPE.

FURNISH AND INSTALL FIRE DAMPERS WHERE INDICATED OR WHERE REQUIRED. DAMPERS SHALL COMPLY WITH LATEST EDITION OF NFPA 90A, AND SHALL BE UL LABELED. BLADE STACK SHALL BE OUT OF AIRSTREAM. FUSIBLE FIRE LINKS SHALL HAVE A MELTING POINT OF 165F. DAMPERS SHALL BE MODEL IBD AS MADE BY PRUSKIN, OR APPROVED EQUAL BY SAFE-AIR. FURNISH ACCESS DOORS TO ALL DAMPERS.

ACCESS DOORS IN DUCTS SHALL BE RIGIDLY CONSTRUCTED AND TIGHTLY FITTED. DOORS SHALL BE SUPPORTED ON TWO STEEL BUTT HINGES AND SHALL BE SECURED WITH A SASH LOCK. DOORS SHALL BE GASKETED AND INSULATED.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

FLEXIBLE DUCTS
FLEXIBLE DUCTS SHALL BE SOUND ATTENUATING, THERMAL INSULATED, WIRE WOUND, REINFORCED TYPE WITH A MOISTURE TIGHT FLAME PROOF VINYL BARRIER. FLEXIBLE DUCTS TO BE USED ONLY TO CONNECT INDIVIDUAL DIFFUSERS WITH MAIN OR BRANCH DUCTS. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PORTION OF THE EXISTING SYSTEM WHICH DOES NOT MEET THESE REQUIREMENTS WITH PROPERLY SIZED AND INSULATED SHEET METAL DUCTS. THIS WORK TO BE INCLUDED IN BASE BID.

DIFFUSERS
DIFFUSERS SHALL BE SQUARE OR RECTANGULAR FACED, RECESSED TYPE, WITH REMOVABLE CORES. DIFFUSER CAPACITIES, SIZES AND DIRECTIONAL BLOWS ARE INDICATED ON THE DRAWINGS. FURNISH EACH DIFFUSER WITH DEFLECTING VANES AND KEY OPERATED, OPPOSED BLADE, VOLUME DAMPERS. DIFFUSERS SHALL BE FURNISHED WITH BAKED, WHITE FINISH.

SUPPLY REGISTERS
SUPPLY REGISTERS SHALL HAVE INDIVIDUALLY ADJUSTABLE FINS WITH VERTICAL FRONT BARS AND HORIZONTAL REAR BARS. FINS SHALL BE STREAMLINED AND OF STURDY CONSTRUCTION. FLANGES SHALL BE 5/8 INCH HCNNAIRE BORDER. FURNISH RUBBER GASKET AROUND PERIMETER OF FLANGE, AND KEY OPERATED, OPPOSED BLADE VOLUME CONTROL DAMPERS. RUBBER GASKET SHALL BE NON-CHLORINATED RUBBER AND NON-POROUS. FURNISH WITH PRIME COAT OF PAINT.

GRILLES
GRILLES AND REGISTERS FOR MECHANICAL TO MATCH EXISTING. GRILLES AND REGISTERS SHALL BE OUT OF STEEL, WITH DAMPER, PRIMED PAINTED WHITE. SIZE OF GRILLE TO MATCH EXISTING OPENING ON TOE KICK, WALL OR CEILING.

CONTROLS
THE HEATING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL DEVICES NECESSARY TO ACHIEVE THE CONTROL SEQUENCE DESCRIBED HEREIN.

CONTROL SYSTEMS SHALL BE GUARANTEED FOR 2 YEARS FROM DATE OF ACCEPTANCE BY HACP.

CONTROL WIRING SHALL BE CONCEALED AND INSTALLED IN ACCORDANCE WITH SECTION 16.

MOTOR STARTERS - MOTOR STARTERS FOR ALL MECHANICAL ITEMS SHALL BE FURNISHED BY THE HEATING CONTRACTOR. STARTERS SHALL HAVE HAND-OFF-AUTO SWITCHES AND CONTROL TRANSFORMERS.

DAMPERS - DAMPERS SHALL BE OPPOSED MULTI-BLADE. BLADES SHALL BE CONSTRUCTED OF 16 GAGE STEEL WITH NEOPRENE GASKETED EDGES, AND SHALL BE MOUNTED IN CORROSION RESISTANT BUSHINGS. DAMPERS SHALL HAVE STOPS ON ALL FOUR SIDES. MOTORS SHALL BE MODULATING WITH OIL-IMMERSED GEAR TRAINS. DAMPERS SHALL BE 2% LOW LEAKAGE TYPE.

FREEZE PROTECTION THERMOSTAT - FREEZE PROTECTION THERMOSTAT SHALL BE MERCURY TUBE, MANUAL RESET TYPE SET AT 45F. INSTALL AN ADJUSTABLE TIME DELAY RELAY TO PERMIT AIR TO ESTABLISH SATISFACTORY TEMPERATURE TO AVOID FALSE TRIPS.

INSULATION
ALL SUPPLY AIR DUCTS SHALL BE INSULATED WITH 2" THICK, 1.00 DENSITY, OWENS-CORNING OR APPROVED EQUAL FLEXIBLE DUCT INSULATION WITH FLAME RETARDANT REINFORCED FRK 25 FOIL COVERING. SEAL ALL JOINTS, BOLTS, AND ALL EXPOSED EDGES WITH 4" WIDE STRIPS OF SEALING TAPE USING A SUITABLE ADHESIVE. INSULATION SHALL HAVE A 2" FLAP AT ALL JOINTS AND SEAMS WHICH SHALL BE STAPLED AND SECURED WITH ADHESIVE. APPLY ADHESIVE TO DUCTS IN SIX-INCH-WIDE STRIPS AT ONE FOOT IN TERVALS. DUCTOWRK EXPOSED WITHIN THE SPACE MAY NOT BE INSULATED.

OPERATING INSTRUCTIONS
THE CONTRACTOR SHALL FURNISH THREE COMPLETE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS. THIS SHALL INCLUDE FINAL CONTROL DIAGRAMS, CATALOG DATA INCLUDING CONSTRUCTION AND MAINTENANCE INFORMATION ON ALL EQUIPMENT, AND MAINTENANCE INFORMATION IN THE COMPLETE SYSTEM.

ONE COMPLETE CONTROL DIAGRAM SHALL BE INCLUDED IN EACH O&M MANUAL.

THE CONTRACTOR SHALL FORMALLY INSTRUCT THE HACP'S STAFF ON THE OPERATION OF THE SYSTEM. THE INSTRUCTION SHALL CONSIST OF NOT LESS THAN 2 PERIODS, EACH PERIOD OF 4 HOURS DURATION. THE CONTRACTOR SHALL ARRANGE FOR THIS INSTRUCTION WITH THE HACP.

FUNCTIONS AND ALL ACTUATORS OPERATE IN ACCORDANCE WITH THE SPECIFICATIONS.
TESTS AND INSPECTION

THE FOLLOWING OPERATIONS SHALL BE PERFORMED IN PREPARATION FOR FINAL INSPECTION BY THE ARCHITECT. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE TO THE ARCHITECT THAT THE SYSTEM IS OPERATING IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL TESTS AND INSPECTIONS SHALL BE COMPLETED BEFORE FINAL PAYMENT IS MADE TO THE HEATING (MECHANICAL) CONTRACTOR.

CONTROLS - ALL CONTROLS SHALL BE TESTED AND ADJUSTED TO ACHIEVE THE INTENT OF THESE SPECIFICATIONS. CONTROLS SHALL BE ADJUSTED WHILE THE SYSTEM IS OPERATING UNDER FULL LOAD CONDITIONS, BOTH HEATING AND COOLING. CONTROL SUB-CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION THAT ALL ON/OFF AND ALARM.

AIR DISTRIBUTION SYSTEM - AIR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCE SUBCONTRACTOR. THE COST OF THE SUB-CONTRACTOR SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE. THE INDEPENDENT AIR BALANCER SHALL NOT BE AN EMPLOYEE NOR A SUBSIDIARY OF THE CONTRACTOR.

GUARANTEE
THE MECHANICAL CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE JOB THAT ALL EQUIPMENT, MATERIAL AND LABOR FURNISHED BY HIM ARE FREE FROM DEFECTS. ANY DEFECTS IN MATERIAL AND WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT FURTHER EXPENSE TO THE HACP. ALL ITEMS SPECIFIED TO HAVE A LONGER WARRANTIES SHALL BE GUARANTEED FOR THAT LONGER PERIOD. CONTROLS SHALL HAVE A 2-YEAR GUARANTEE ON PARTS AND LABOR.

CONTROLS
SOLID-STATE THERMOSTAT: WALL-MOUNTED, PROGRAMMABLE, MICROPROCESSOR-BASED UNIT WITH MANUAL SWITCHING FROM HEATING TO COOLING, PREFERENTIAL RATE CONTROL, SEVEN-DAY PROGRAMMABILITY WITH MINIMUM OF FOUR TEMPERATURE PRESETS PER DAY, VACATION MODE, AND BATTERY BACKUP PROTECTION AGAINST POWER FAILURE FOR PROGRAM SETTINGS.

DIVISION 26 - ELECTRICAL WORK

NOTE: ELECTRICAL WORK ON THIS PROJECT IS TO BE DESIGN BUILD. THE E.C. IS RESPONSIBLE FOR PERFORMING LOCATIONS AND REQUIREMENTS FOR THE ELECTRICAL SYSTEM WITH THE HACP.

CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE SPECIFIC BUILDING HACP REQUIREMENTS, THE LATEST RULES OF THE NATIONAL ELECTRICAL CODE AND WITH LOCAL ORDINANCES HAVING JURISDICTION.

DO NOT INTERPRET ANYTHING IN THE DRAWINGS OR SPECIFICATIONS AS AUTHORITY TO VIOLATE APPLICABLE CODES.

BE RESPONSIBLE FOR EXAMINING DRAWINGS AND SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES. RESOLVE ALL CONFLICTS BEFORE INSTALLATION AT NO EXTRA COST.

PREPARE ANY ADDITIONAL CLARIFYING DETAILS REQUIRED BY THE LOCAL INSPECTOR OF AUTHORITIES AND SECURE APPROVAL OF SAME. PAY ANY CHARGES. OBSERVE ALL UNIFORM CONSTRUCTION CODE REQUIREMENTS.

OBSERVE ALL APPLICABLE SAFETY REGULATIONS REQUIRED BY HACP AND/OR BY OSHA.

BRING ANY DISCREPANCIES BETWEEN DIFFERENT DRAWINGS, BETWEEN THE DRAWINGS AND FIELD CONDITIONS, OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR ANY APPARENT OMISSIONS, TO THE ARCHITECT'S ATTENTION BEFORE SUBMITTING THE BID. AFTER AWARD OF CONTRACT.

THE INTERPRETATION OF ANY CONFLICT WILL BE MADE BY THE ARCHITECT AND SHALL BE ACCEPTED AS FINAL.

IF MENTION HAS BEEN OMITTED PERTAINING TO DETAILS, ITEMS OR RELATED ACCESSORIES REQUIRED FOR THE COMPLETION OF ANY ELECTRICAL SYSTEM, INCLUDE SUCH ITEMS AND ACCESSORIES IN THE ELECTRICAL CONTRACT AND WITHOUT ADDITIONAL CHARGES.
AFTER THE JOB IS AWARDED, CLAIMS BASED ON

MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, ASTM AND IEEE. ALL SIMILAR MATERIALS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.

B. RACEWAYS

1. MATERIALS
RIGID HEAVY WALL STEEL CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE STEEL, HOT DIPPED GALVANIZED AND ZINC COATED, INSIDE AND OUTSIDE. CONDUIT SHALL BEAR THE MANUFACTURER'S AND UNDERWRITERS' LABELS. THIN WALL CONDUIT IS DESIGNATED AS E.M.T. STEEL CONDUIT SHALL BE MANUFACTURED BY WHEATLAND, ALLIED, TRIANGLE, OR EQUAL.
FLEXIBLE CONDUIT (GREENFIELD) SHALL BE U. L. LISTED, 3/4 INCH MINIMUM TRADE SIZE FOR BRANCH WIRING. GREENFIELD OF ½ INCH SIZE WILL BE PERMITTED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES ONLY.

2. INSTALLATION
MINIMUM SIZE CONDUIT IS 3/4 INCHES.
INSTALL CONDUIT AS A COMPLETE SYSTEM. CONTINUOUS FROM OUTLET TO OUTLET CABINET BOX OR FITTING. MECHANICALLY AND ELECTRICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY IS SECURED.
DO NOT ROUTE RACEWAYS THROUGH ANY DUCTWORK.

C. CONDUIT FITTINGS

1. MATERIALS
ALL CONDUIT FITTINGS SHALL BE GALVANIZED MALLEABLE IRON OR STEEL, WHERE APPLICABLE.
CONDUIT FITTINGS SHALL CONFORM IN DESIGN AND QUALITY TO THE TYPE OF CONDUIT ON WHICH THEY ARE BEING INSTALLED.

2. INSTALLATION
USE THREADED CONNECTORS ON GRS CONDUIT.
USE SET-SCREW STYLE CONNECTORS ON E.M.T. WHERE SAME IS RUN EXPOSED OR CONCEALED ABOVE GRADE.
USE BUSHINGS, LOCKNUTS AND EXPANSION FITTINGS OF THE APPROPRIATE TYPE FOR THE RACEWAY SYSTEM BEING INSTALLED.

D. PULL BOXES, OUTLET BOXES AND COVERS

1. GENERAL
FOR EACH OUTLET BOX, USE THE PROPER CODE SIZE FOR THE ENTERING CONDUITS AND THE NUMBER OF WIRES TERMINATING THEREIN.
USE BOXES WITH PLASTER RING EXTENSIONS IN PLASTERED OR DRY WALL PARTITIONS.

2. MATERIALS
FOR LARGE PULL BOXES, USE BOXES OF CODE GAUGE SHEET STEEL WITH STEEL COVERS ATTACHED WITH BRASS SCREWS. BOXES SHALL BE HOT DIPPED, GALVANIZED AFTER FABRICATION - THE MINIMUM SIZE OF EACH BOX SHALL BE AS REQUIRED BY THE NATIONAL ELECTRIC CODE. MANUFACTURER'S ARE HOFFMAN, KEYSTONE OR EQUAL.
FOR CONCEALED WORK, USE PRESSED STEEL BOXES, KNOCKOUT TYPE, ZINC COATED, OF 1/16 INCH MINIMUM THICKNESS.
USE BOXES OF FORM AND DIMENSIONS BEST ADAPTED TO SPECIFIC LOCATION, KIND OF FIXTURE USED AND THE NUMBER, SIZE AND ARRANGEMENT OF RACEWAYS CONNECTING THERETO. USE STEEL CITY OR RACO.
USE WIREMOLD FINISHED STYLE BOXES IN FINISHED AREAS WHERE CONCEALED BOXES ARE NOT FEASIBLE.

E. CONDUCTORS IN RACEWAYS

1. MATERIALS
CONDUCTORS SHALL BE SOFT DRAWN COPPER, MINIMUM 97% CONDUCTIVITY, 600 VOLT, CONFORMING TO ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
INSULATION SHALL BE SUITABLE FOR THE CONDITIONS AND LOCATIONS IN WHICH CONDUCTORS ARE INSTALLED. THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED OR REQUIRED BY LOCATION OR INSTALLATION CONDITIONS:
A. FOR BUILDING WIRE IN INTERIOR ABOVE GRADE LOCATIONS, USE TYPE THWN/THHN COPPER RATED 75 DEGREES C. WET OR DRY.
WIRES SHALL BE CLEARLY AND REGULARLY MARKED WITH THE WIRE SIZE, VOLTAGE, INSULATION TYPE AND MANUFACTURER'S NAME.
CONDUCTORS SHALL BE NEW AND MANUFACTURED WITHIN EIGHT MONTHS PREVIOUS TO DELIVERY AT SITE, WITH DATE OF MANUFACTURE MARKED ON THE PACKAGES.
MINIMUM WIRE SIZE FOR BRANCH CIRCUITING SHALL BE #12 AWG.
ALL CIRCUIT RUNS EXCEEDING 75 FEET IN LENGTH EXTENDING FROM THE PANELBOARD TO THE FIRST OUTLET IN THE CIRCUIT SHALL BE #10 AWG MINIMUM.
WIRE #8 AWG AND SMALLER SHALL BE SOLID; WIRE #6 AWG AND LARGER SHALL BE STRANDED.
WIRE SHALL BE AS MANUFACTURED BY HI-TECH, PIRELLI, TRIANGLE OR EQUAL.

2. INSTALLATION
COLOR CODE ALL WIRES PER NEC REQUIREMENTS:
A. MATCH THE EXISTING SCHEME PRESENTLY INSTALLED; NEUTRAL SHALL BE WHITE. EQUIPMENT GROUND SHALL BE GREEN.
THE GROUPING OF OUTLETS ON INDIVIDUAL NEW CIRCUITS AS SHOWN ON THE DRAWINGS SHALL BE STRICTLY OBSERVED. GROUPING OF CONDUCTORS IN THE CONDUIT SHALL NOT BE PERMITTED. INCORPORATE A MAXIMUM OF FOUR (4) WIRES, I.E. A MAXIMUM OF ONE CIRCUIT CONDUCTOR ON EACH PHASE PLUS THE NEUTRAL WIRE PLUS THE GROUND WIRE IN ONE CONDUIT.
EMPLOY A U.L. LISTED COMMERCIAL PRODUCT SUCH AS WYRE-EZE OR YELLOW-77 FOR PULLING WIRES INTO A RACEWAY.
CLEAN AND DRY CONDUITS BEFORE PULLING IN WIRES.
THE USE OF B.X., ROMEX, OR U.F. CABLE IS NOT PERMITTED.
MC CABLE MAY BE USED FOR CONCEALED BRANCH CIRCUIT WIRING.

F. SPLICES

MAKE ALL SPLICES, JOINTS AND TAPS WITH SOLDERLESS PRESSURE CONNECTORS LISTED AND APPROVED FOR THE INTENDED USE AND FOR THE SIZE AND NUMBER OF CONDUCTORS UTILIZED.
1. FOR WIRE #10 AWG AND SMALLER, USE TWIST-ON WIRE NUTS.
2. FOR WIRE #8 AWG AND LARGER, USE HEAVY DUTY SOLDERLESS SET SCREW CONNECTORS WITH A SEPARATE BARREL FOR EACH CONDUCTOR.
USE INSULATING COVERS FROM THE MANUFACTURER, WHERE AVAILABLE. TAPE PROPERLY TO PROVIDE A SUFFICIENT INSULATION AROUND THE ENTIRE SPLICE UNIT, WHEN INTEGRAL INSULATING COVERS ARE NOT AVAILABLE FROM THE FITTING MANUFACTURER.

G. PANELBOARDS AND CABINETS

CABINETS SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH WIRING GUTTERS OF SUFFICIENT WIDTH TO PROVIDE AMPLE SPACE FOR BRANCH CIRCUIT WIRES AND FEEDERS. GUTTERS SHALL NOT BE LESS THAN FOUR INCHES WIDE. GUTTERS SHALL CONFORM TO NEC STANDARDS AND SHALL BE OVER-SIZED WHERE NECESSARY TO ACCOMMODATE THE ENTRANCE OF SEVERAL LARGE CONDUITS AND/OR WHERE NECESSARY TO AVOID OVERCROWDING OF CONDUCTORS OR EQUIPMENT WITHIN. TRIMS SHALL BE SURFACE AS NOTED ON THE PANEL SCHEDULE AND SHALL CONTAIN CONCEALED HINGED DOORS, EACH EQUIPPED WITH FLUSH CHROME PLATED COMBINATION LOCKS AND CATCHES, ALL KEYED ALIKE. FINISH SHALL BE STANDARD BAKED ENAMEL OR LACQUER, MEDIUM GRAY, ANSI-61. PROVIDE TWO (2) KEYS WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE. USE "DOOR IN A DOOR" HINGED TRIMS.

PANELBOARD BASIS OF DESIGN:

- MANUFACTURER: GE, SIEMENS OR EQUAL.
- ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED IN ACCORDANCE WITH NFPA 70, BY QUALIFIED ELECTRICAL TESTING AGENCY RECOGNIZED BY AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH NEMA PB 1.
- COMPLY WITH NFPA 70.
- ENCLOSURES: SURFACE-MOUNTED, DEAD-FRONT CABINETS.
- INDOOR DRY AND CLEAN LOCATIONS: UL 50E, TYPE 1
- OTHER WET OR DAMP INDOOR LOCATIONS: UL 50E
- HEIGHT: 7 FT MAXIMUM.
- RETAIN ONE OF FIRST TWO SUBPARAGRAPHS BELOW. VERIFY WITH MANUFACTURER FOR AVAILABILITY OF "DOOR-IN-DOOR" CONSTRUCTION IN OTHER THAN NEMA 1 STYLE PANELBOARDS.
- HINGED FRONT COVER, ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER. TRIMS MUST COVER LIVE PARTS AND MAY HAVE NO EXPOSED HARDWARE.
- INCOMING MAIN ON TOP
- 20 SPACE- 40 CIRCUITS MINIMUM.

BUSING SHALL BE FULL CAPACITY, 98% CONDUCTIVITY COPPER OR 80% CONDUCTIVITY ALUMINUM, BRACED FOR THE SHORT CIRCUIT CURRENT AVAILABLE TO THE PANEL AND SIZED AS SHOWN IN THE PANEL DETAIL. CIRCUIT BREAKERS SHALL BE CONNECTED TO BUSES WITH BOLTED CONNECTIONS FOR SEQUENCE PHASING: I.E., CIRCUITS 1 AND 2 CONNECTED TO PHASE A, 3 AND 4 TO PHASE B AND SO ON. POLARITY OR BLOCK PHASING SHALL NOT BE ACCEPTABLE. PANEL SHALL INCLUDE A NEUTRAL BUS AND AN EQUIPMENT GROUNDING BUS. CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE, BOLT-ON, WITH THERMAL AND MAGNETIC TRIPS, TRIP-FREE ON OVERLOAD OR SHORT CIRCUIT, UL LISTED, HAVING INTERRUPTING CAPACITIES, AS INDICATED.

H. WIRING DEVICES AND PLATES

1. MATERIALS
ALL WIRING DEVICES SHALL BE MANUFACTURED BY ONE OF THE MANUFACTURERS LISTED. DO NOT MIX MANUFACTURER'S PRODUCTS.
DEVICES SHALL BE U.L. SPECIFICATION GRADE.

2. WALL SWITCHES
SWITCHES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE GENERAL USE, AC QUIET TYPE, 20 AMPERE, 120/277 VOLT, BACK AND SIDE WIRED. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

3. WALL SWITCH TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENTS FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP SINGLE POLE WALL SWITCH - HUBBELL #HBL-1221, P & S #20AC1, COOPER #1221, BRYANT #4901, OR LEVITON# 1221-2.
20 AMP 3-WAY WALL SWITCH - HUBBELL #HBL-1223, P & S #20AC3, COOPER #1223, BRYANT #4903, OR LEVITON #1223-2. USE SIMILAR SERIES FOR 4-WAY SWITCHES.

4. WALL RECEPTACLES
ALL CONVENIENCE AND POWER RECEPTACLES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE THE GROUNDING TYPE.
CONVENIENCE RECEPTACLES SHALL BE 20 AMP, 125 VOLT, BACK AND SIDE WIRED, 3 WIRE GROUNDING, UL LISTED AS COMPLYING WITH THE REQUIREMENTS OF NEC ARTICLE 250-146, AND SHALL BE NEMA 5-20R CONFIGURATION. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

5. RECEPTACLE TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENT FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP, 125 VOLT DUPLEX CONVENIENCE OUTLET (NEMA 5-20R) - HUBBELL #HBL-5362, P & S #5362A, COOPER #5362, BRYANT #5362, OR LEVITON #5362.
20 AMP, 125 VOLT GROUND FAULT INTERRUPTER (NEMA 5-20R) - HUBBELL #GF-5362, P & S #2091, COOPER #WGF-20, BRYANT #GFRS3FT, OR LEVITON #6899.

6. PLATES
USE STAINLESS STEEL PLATES.

I. FASTENINGS AND ATTACHMENTS

FOR FASTENINGS AND ATTACHMENTS, SUCH AS SCREWS, BOLTS AND NUTS, USE DEVICES MADE OF NON-FERROUS METALS OR OF GALVANIZED OR CADMIUM PLATED STEEL. WHEN SUCH DEVICES ARE OBTAINABLE IN NON-FERROUS METALS, OR IN STEEL WITH A PROTECTIVE METALLIC COATING. PAINT SAME WITH A RUST PREVENTING PAINT SUCH AS RUSTOLEUM.
ALL FASTENINGS AND ATTACHMENTS SHALL BE MADE OF MATERIALS OR SO PROTECTED, THAT THEY WILL OFFER THE MAXIMUM PROTECTION AGAINST DETERIORATION FROM AGE, WEATHER OR DAMPNESS.
DO NOT PENETRATE THE ROOF DECK WITH ANY FASTENERS.

J. SURFACE METALLIC RACEWAY SYSTEM

USE A SURFACE METAL RACEWAY SYSTEM AND BOXES, WHERE CONCEALED WIRING IS NOT POSSIBLE OR WHERE SHOWN ON THE PLANS.
USE RACEWAYS, SUCH AS WIREMOLD, FOR STRAIGHT RUNS, COMPLETE WITH BOXES AND FITTINGS, AS DIRECTED. VERIFY COLOR OPTIONS WITH THE ARCHITECT. PAINT SAME WHERE REQUIRED OR INDICATED.
OBTAIN APPROVAL FOR ALL SURFACE ROUTINGS WITH THE ARCHITECT PRIOR TO ROUGH-IN.

K. FIRE STOPS

1. GENERAL
PROVIDE THROUGH PENETRATION FIRE STOP SYSTEMS TO PREVENT THE SPREAD OF FIRE THROUGH OPENINGS MADE IN FIRE-RATED WALLS OR FLOORS TO ACCOMMODATE THROUGH PENETRATING ITEMS SUCH AS CONDUIT AND CABLES.
FIRE-RESISTANCE-RATED ASSEMBLY SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY OR SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRE STOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM-E-814 OR U.L. 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER. THE SYSTEM SHALL HAVE AN F RATING AND A T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. WHERE FLOOR/CEILING ASSEMBLIES ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED. FIRE STOP SHALL RESTORE FLOOR AND WALL TO ORIGINAL FIRE RATED INTEGRITY AND SHALL BE WATERPROOF.

PENETRATIONS OF MEMBRANES THAT ARE PART OF A FIRE-RATED WALL OR FLOOR MUST BE STOPPED AS OUTLINED FOR THROUGH PENETRATIONS WITH THE FOLLOWING EXCEPTIONS.
A. STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
B. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED AS INDICATED.
1. BY HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES.
2. BY HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY IS FILLED WITH CELLULOSE LOOSE FILL ROCK WOOL OR SLAG MINERAL WOOL INSULATION.
3. BY SOLID FIRE BLOCKING.
4. BY PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS.
5. BY OTHER LISTED MATERIALS AND METHODS.

2. MATERIALS
PUTTY - USE FLAMESEAL PUTTY #AA423 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
FIBER - USE CERAMIC FIBER #AA401 (10 LB. BOX) OR #AA417 (2 LB. BAG) AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN WALLS - USE CERAMIC BOARD #AA402 (1" X 18" X 12") OR #AA403 (1" X 36" X 48") AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN FLOOR - USE SUPPORT WIRE #AA404 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.

3. INSTALLATION
USE TOTAL THICKNESS OF 1-1/2 INCHES OF FLAMESEAL PUTTY #AA423 ON ALL PENETRATIONS OF FIRE-RATED WALLS AND FLOORS. USE NELSON FIBER #AA401 OR #AA417 IN CONJUNCTION WITH THE PUTTY TO FILL THE REMAINING VOID OF PENETRATIONS.
PACK CERAMIC FIBER IN CENTER OF OPENING LEAVING 3/4 INCH ON EITHER SIDE OF WALL FOR THE PUTTY. INSTALL THE PUTTY IN THE REMAINING PART OF OPENING, WORKING IT INTO ALL VOIDS AND CAVITIES. FOR OPENINGS WITH GREATER THAN 4 INCHES OF UNSUPPORTED SPACE, USE NELSON CERAMIC BOARD #AA402 OR #AA403 DEPENDING ON SIZE OF OPENING. PACK CERAMIC FIBER IN BOTTOM OF OPENING PER FACTORY RECOMMENDATIONS, LEAVING 1-1/2 INCHES BELOW FLOOR LEVEL FOR THE INSTALLATION OF FLAMESEAL PUTTY. USE SUPPORT WIRE #AA404 ON ALL PENETRATIONS IN EXCESS OF 6 INCHES DIAMETER.

L. MC CABLE

METAL CLAD CABLE (MC) SHALL BE COPPER WIRE WITH 90 DEGREES C. THHN INSULATION, #12 AWG MINIMUM, WITH CONTINUOUS INSULATED GREEN GROUND CONDUCTOR AND STEEL ARMOR, MANUFACTURED BY A.F.C., ALFLEX, OR EQUAL. INSTALL NON-RIGID CABLE IN A NEAT, APPROVED MANNER, AS PER N.E.C. REQUIREMENTS. DO NOT GROUP CABLES INTO A COMMON CONDUIT AS OVERHEATING WILL RESULT. DO NOT TIE THE SEVERAL CABLES TOGETHER. USE APPROVED STYLE "MC" CONNECTORS AND FITTINGS IN ORDER TO MAINTAIN ADEQUATE CASE GROUNDING REQUIRED BY THE NATIONAL ELECTRICAL CODE. PROVIDE AN INDEPENDENT MEANS OF SUPPORT FOR ALL WIRING LOCATED ABOVE A DROPPED CEILING ASSEMBLY FROM THE STRUCTURAL CEILING SYSTEM. DO NOT SUPPORT WIRING FROM THE CEILING ASSEMBLY OR FROM ITS SUPPORT WIRES.

SERVICE AND DISTRIBUTION

A. GENERAL INSTALLATION

USE RIGID HEAVY WALL STEEL CONDUIT FOR EXPOSED EXTERIOR RACEWAYS.
USE EMT ELECTRICAL METALLIC THINWALL CONDUIT FOR CONCEALED INTERIOR FEEDERS, TELEPHONE RACEWAYS, ETC.
USE FLEXIBLE CONDUIT SUCH AS "GREENFIELD" FOR CONNECTIONS TO RECESSED LIGHTING FIXTURES IN 72" MAXIMUM LENGTHS AND FOR USE IN STUD WALLS WHERE THE USE OF RIGID CONDUIT IS NOT PRACTICAL.
USE WEATHERPROOF AND OIL PROOF FLEXIBLE CONDUIT SUCH AS "SEAL-TITE" FOR ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT IN LENGTHS OF 18" MAXIMUM.
USE LIQUID-TIGHT FLEXIBLE CONDUIT AND APPROPRIATE LIQUID-TIGHT FITTINGS IN AREAS EXPOSED TO THE WEATHER OR LIKELY TO BECOME DAMP, WHERE USED, CONFORM TO NEC #230-118.

USE WIREMOLD RACEWAYS FOR BRANCH CIRCUIT SURFACE ROUTINGS IN FINISHED AREAS ONLY WHERE CONCEALED WIRING IS NOT FEASIBLE, AND WHERE INDICATED.
USE M.C. CABLE FOR CONCEALED BRANCH CIRCUIT WIRING ONLY, IN ACCORDANCE WITH THE N.E.C. REQUIREMENTS.
THE USE OF B.X., ROMEX, AND U.F. IS NOT APPROVED.

LIGHTING FIXTURES AND ACCESSORIES

GENERAL
ALL LIGHTING FIXTURES AND LAMPS WILL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

LIGHTING FIXTURES

BASIS OF DESIGN LIGHTING FIXTURES BY KICHLER OR EQUAL.
CEILING FIXTURE: KICHLER #6112WH. WHITE FINISH. SURFACE MOUNTED
EXTERIOR CEILING FIXTURE: KICHLER #11132AZTLED, OUTDOOR RATED.
WALL EXTERIOR: KICHLER #9654TZ, WALL MOUNTED, OUTDOOR RATED
BATHROOM VANITY: KICHLER JOELSON #45923
FLOOD LIGHT: LITHONIA LIGHTING OLF LED WITH MOTION OCCUPANCY SENSOR
RECESSED LIGHTING: HALO OR EQUAL.

B. INSTALLATION

PROVIDE ALL SUPPLEMENTARY STRUCTURAL MATERIALS REQUIRED TO PROPERLY MOUNT ALL LIGHTING FIXTURES.
SECURELY MOUNT LIGHTING FIXTURES TO STRUCTURAL ELEMENTS OF THE BUILDING TO SUSPENDED CEILING SYSTEMS SUCH THAT SAID FIXTURES WILL BE SQUARE, PLUMB, AND RIGID, WILL NOT FALL OR SAG, AND WILL NOT CAUSE THE SUSPENDED CEILING SYSTEM TO SAG. PROVIDE ADDITIONAL CEILING SUPPORTS, WHERE REQUIRED TO SUPPORT RECESSED OR SURFACE FIXTURES.
INSTALL WIRING TO AND WITHIN FIXTURES TO COMPLY WITH NEC ARTICLE #410. TAKE SPECIAL CARE TO ASSURE THAT THE FIXTURE OUTLETS FOR RECESSED FIXTURES ABOVE SOLID SUSPENDED CEILINGS WILL ACTUALLY BE ACCESSIBLE AFTER THE PROJECT IS COMPLETED.
USE CLIPS TO FASTEN RECESSED TROFFERS TO DROP CEILING CHANNELS AS REQUIRED BY NEC SECTION #410-16. USE CADDY FASTENERS #6 IS OR APPROVED EQUAL.
TIME CLOCKS SHALL BE COMMERCIAL GRADE, 7 DAY, ASTRONOMICAL DAL, WITH 24-HOUR SPRING RESERVE BACKUP, AS MANUFACTURED BY TORK OR PARAGON (IF REQUIRED).

SMOKE ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 20SAR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

COMBO SMOKE + CO ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 3COUDR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

SMOKE DETECTOR'S LOCATIONS:
1. COMBO SMOKE + CO ALARM PER FLOOR, NOT TO BE PLACED IN MECHANICAL ROOM OR KITCHEN.
1 SMOKE DETECTOR IN SIDE EACH SLEEPING ROOM
INTERCONNECT SMOKE DETECTORS INSIDE THE UNIT.

MOTOR WIRING

WIRING FOR MECHANICAL AND PLUMBING CONTRACTS
1. INSTALLATION
VERIFY ALL LOCATIONS WITH THE VARIOUS MECHANICAL CONTRACTORS BEFORE INSTALLING RACEWAYS.
PROVIDE ALL WIRING MATERIALS AND DEVICES REQUIRED TO CONNECT AND OPERATE THE ELECTRICAL PARTS OF EQUIPMENT FURNISHED AND INSTALLED UNDER THE MECHANICAL DIVISION.
INSTALL AND CONNECT ALL STARTERS, PUSHBUTTONS, SWITCHES, THERMOSTATS AND OTHER CONTROL DEVICES AS FURNISHED BY OTHERS, UNLESS OTHERWISE NOTED.
MAKE ALL FINAL CONNECTIONS TO MOTORIZED EQUIPMENT. VERIFY THE CORRECT DIRECTION OF ROTATION.
CONNECT MOTOR CIRCUITS TO THE RIGID CONDUIT SYSTEM BY MEANS OF WEATHERPROOF STYLE FLEXIBLE CONDUIT, PROPERLY GROUNDED AND BONDED. EMPLOY A GREEN GROUND WIRE FOR ALL SYSTEMS AND MOTOR FRAME GROUND CONNECTIONS.
BOLT THE WIRE TO THE MOTOR FRAME AT ONE END AND TO THE MOTOR STARTER AT THE OTHER END WITH APPROVED TERMINAL DEVICES.
DO ALL LINE VOLTAGE CONTROL WIRING (120 VOLTS OR HIGHER).
ALL LOW VOLTAGE CONTROL WIRING (UNDER 120 VOLTS) IS THE RESPONSIBILITY OF THE MECHANICAL OR PLUMBING CONTRACTS.

SECTION 32- EXTERIOR IMPROVEMENTS

CHAIN LINK FENCE
ALUMINUM WIRED FABRIC 2X2 INCHES WITH ROUNDED POST AND RAILS 2.5 INCHES IN DIAMETER. LIGHT INDUSTRIAL STRENGTH, ZINC COATED. WITH TOP AND BOTTOM TENSION WIRED ZINC COATED. MECHANICALLY DRIVEN INTO SOIL OR USING ANCHORING CONCRETE.

GATES TO MATCH FENCE MATERIAL AND FRAME. DOOR WITH LATCH TO PERMIT OPERATION FROM BOTH SIDES OF GATE. PADLOCK AND CHAIN TO BE PROVIDED BY HACP.

SEEDING

QUALITY, NON-STATE CERTIFIED. SEED OF GRASS SPECIES AS LISTED BELOW FOR SOLAR EXPOSURE, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PER CENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED.

A. SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH.
1. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
2. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
3. DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.

B. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

C. PROTECT SEEDED AREAS FROM HOT, DRY WEATHER OR DRYING WINDS BY APPLYING COMPOST MULCH WITHIN 24 HOURS AFTER COMPLETING SEEDING OPERATIONS. SOAK AREAS, SCATTER MULCH UNIFORMLY TO A THICKNESS OF 3/16 INCH +, AND ROLL SURFACE SMOOTH.

TREE AND STUMP REMOVAL
ALL APPROPRIATE SAFETY EQUIPMENT MUST BE UTILIZED AT ALL TIMES DURING OPERATIONS; INCLUDING, BUT NOT LIMITED TO: HARD HATS, GLOVES, SAFETY GLASSES, FALL RESTRAINTS, TRAFFIC CONTROL DEVICES, HIGH VISIBILITY CLOTHING, ADEQUATE HEARING PROTECTION AND ANY OTHER SAFETY REQUIRED BY OSHA.
ONCE A TREE IS CUT DOWN, THE STUMP MUST BE GROUND OUT WITHIN FIVE DAYS (5). STUMPS AND BUTTRESS ROOTS MUST BE REMOVED TO A MINIMUM OF TWELVE INCHES (12") BELOW GROUND LEVEL AND TWO (2) TIMES THE DIAMETER AT BREAST HEIGHT IN SURFACE AREA GROUND. THE REMAINING STUMP AND/OR CHIPS SHALL BE REMOVED FROM THE SITE WITHIN TWO DAYS (2) AFTER GRINDING. ALL SURFACE ROOTS AND ADJACENT SUBSURFACE ROOTS SHALL BE REMOVED AS MAY BE NECESSARY TO ELIMINATE "HUMPS" OR MOUNDS IN THE TREE EASEMENT AREA ADJACENT TO THE STUMP. ALL TREE EASEMENT AREAS ARE TO BE LEFT FLAT AND MEET ORIGINAL GRADE. THE AREA WILL THEN BE BACKFILLED WITH CLEAN, PULVERIZED TOPSOIL TO THE LEVEL OF THE ADJOINING GRADE AND SEEDED. SEE SEEDING FOR SEED REQUIRED.

THE PARTY AUTHORIZED TO REMOVE THE TREE, AT THEIR EXPENSE, SHALL RESTORE THE LAWN AND ANY EXISTING LANDSCAPING AND APPURTENANNCES THAT EXIST BETWEEN THE SIDEWALK AND CURB OR IN OTHER AREAS THAT HAVE BEEN DISTURBED BY THE PARTY AUTHORIZED TO REMOVE THE TREE DURING THE PROSECUTION OF THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL PROTECT ALL CONCRETE SIDEWALK, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT FROM DAMAGE THROUGH THE USE OF PLYWOOD SHEETING OR MATS WHEN NECESSARY. THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL REPLACE OR RESTORE ALL CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT WHICH MAY HAVE BEEN DAMAGED DURING THE PROSECUTION OF THE WORK.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL BE RESPONSIBLE AT ALL TIMES FOR KEEPING THE WORK SITE ADJOINING PREMISES, STREET, WALKS AND DRIVEWAYS CLEAN. ALL TREE BRANCHES, BARK, CHIPS AND OTHER DEBRIS MUST BE CLEARED UP AT THE END OF THE WORKDAY.

SECTION 33- UTILITIES

TRENCH DRAIN SYSTEM
ZURN Z880 2 1/2 [64] WIDE TRENCH DRAIN SYSTEM SHALL BE 48 [1220] LONG AND 2 1/2 [63.5] WIDE. DRAIN SHALL BE 3 [76] DEEP. DRAIN SHALL BE MADE OF (HDPE) HIGH DENSITY POLYETHYLENE AND IS UV-10 STABILIZED. DRAIN SHALL HAVE BEDDING FEET TO BE USED FOR POSITIONING AND ANCHORING PURPOSES. DRAINS SHALL HAVE TONGUE AND GROOVE SNAP FIT CONNECTION. DRAIN SHALL HAVE 24 [610] LONG HIGH-DENSITY POLYETHYLENE DECORATIVE GRATE (-POG) PROVIDED AS STANDARD.

INSTALLATION
TRENCH EXCAVATION MUST BE 4" [102MM] GREATER THAN THE TRENCH DEPTH AND A MINIMUM OF 4" [102MM] GREATER THAN THE EDGE OF THE TRENCH ON EACH SIDE. SOFT AND/OR SHIFTING SOIL SUBSTRATES MAY CAUSE CRACKING OF THE CONCRETE AND CONSEQUENT MOVEMENT OF THE TRENCH. IT IS CRITICAL THAT THE CONCRETE BE POURED ON AN ADEQUATE FOUNDATION

ASSEMBLING PER MANUFACTURER INSTRUCTION. A SILICONE CAULK OR A CONSTRUCTION ADHESIVE, SUCH AS LIQUID NAILS, IS RECOMMENDED TO BE USED AT EACH JOINT AS A SEALER.

UPON COMPLETION OF THE TRENCH EXCAVATION, THE CHANNELS SHOULD BE PLACED IN ORDER ALONGSIDE THE EXCAVATION AND ACCORDING TO THE JOB LAYOUT.

AFTER ATTACHMENT OF ACESSORIES, ANCHOR AND LEVEL TRENCH IN THE EXCAVATION USING CONCRETE PATTIES AROUND THE FEET. MAKE FINISH POUR OF CONCRETE AND BE CERTAIN TO PROPERLY VIBRATE CONCRETE TO ELIMINATE ANY UNWANTED VOIDS. FINISH TROWELING SHOULD BE DONE TO SET THE TOP EDGE OF THE TRENCH DRAIN 1/16" [1.6MM] BELOW THE FLOOR GRADE. REMEMBER TO COMPENSATE FOR CONCRETE SHRINKAGE THAT MAY OCCUR DURING CURE SO THAT THE EDGE OF THE TRENCH DRAIN DOES NOT PROTRUDE ABOVE THE FINISHED FLOOR GRADE.

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CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights,

Renovation of 10 Scattered Sites

10 Scattered Sites - Palm Beach Avenue
Single Family Residence, Minor Alteration
2344 Palm Beach Avenue,
Pittsburgh, Pennsylvania 15216

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Code Conformance Information

Applicable Codes

General:	2018 International Residential Code 2018
Energy:	2018 International Energy Conservation Code
Electrical:	2017 NEC (NFPA 70)
Fire:	2018 International Fire Code
Fuel Gas:	2018 International Fuel Gas Code
Mechanical:	2018 International Mechanical Code
Plumbing:	2017 Allegheny County Health Department Plumbing Code

General Building / Project Information

Stories:	2 Stories
Building Gross Area:	Basement 354 sqft + Garage 263 sqft
	1st Floor 617 sqft
	2nd Floor 617 sqft

1 Site Location
SCALE: 1" = 30'

Materials Legend

NOT ALL MATERIALS USED

- EARTH
- COMPACTED STONE FILL
- CONCRETE
- STEEL
- RIGID INSULATION
- BLOCKING
- BATT INSULATION
- GYPSUM WALL BOARD
- WOOD
- PLYWOOD SHEATHING
- SPRAY FOAM INSULATION

Abbreviations

A.F.F.	Above Finish Floor
A.P.	Access Panel
ACOUST.	Acoustical
A.C.T.	Acoustical Ceiling Tile
ADH.	Adhesive
ADJUST.	Adjustable
A/C	Air Conditioning
ALT.	Alteration
ALTN.	Alternate
ALUM.	Aluminum
A.O.R.	Area of Refuge
APPROX.	Approximate
ARCH.	Architectural
ASB.	Asbestos
ASPH.	Asphalt
AUTO.	Automatic
AVG.	Average
BLK.	Block
BD.	Board
BOT	Bottom
BLDG	Building
C.I.P.	Cast In Place
C.B.	Catch Basin
CEM.	Cement
CER.	Ceramic
CG	Corner Guard
C.M.T.	Ceramic Mosaic Tile
C.W.T.	Ceramic Wall Tile
C.O.	Cleanout
℄	Center Line
CLO.	Closet
C.W.	Cold Water
CLG.	Ceiling
COL.	Column
CONC.	Concrete
C.M.U.	Concrete Masonry Unit
CONT.	Continuous
CORR.	Corridor
C.M.P.	Corrigated Metal Pipe
CRS.	Courses
DIA.	Diameter
DET	Detail
DGL	Dens Glass Gold
DR.	Door
DN.	Down
D.S.	Downspout
DWG.	Drawing
D.F.	Drinking Fountain
D.I.P.	Ductile Iron Pipe
EA.	Each
E.W.	Each Way
ELEC.	Electrical
E.C.	Electrical Contractor
EL.	Elevation
ELEV.	Elevation
EQUIP.	Equipment
E.F.	Exhaust Fan
EXIST.	Existing
EXP.	Expansion
E.J.	Expansion Joint
EISH	Exterior Sheathing
EXIST.	Existing
EXP.	Exposed
EXT.	Exterior
E.I.F.S.	Exterior Insulation & Finish System
F.R.P.	Fiberglass Reinforced Polyester
F.F.	Finish Floor
FIN.FLR.	Finish Floor
F.A.C.P.	Fire Alarm Control Panel
F.E.	Fire Extinguisher
FLR.	Floor
F.D.	Floor Drain
FTG.	Footing
GA.	Gauge
G.C.	General Contractor
G.F.I.	Ground Fault Interrupter
GYP.	Gypsum
G.W.B.	Gypsum Wall Board
GSH	Gypsum Sheathing
H/C	Handicap
H.V.A.C.	Heating, Ventilation &
HT	Height
HC	Hollow Core
H.M.	Hollow Metal
HORIZ.	Horizontal
HR.	Hour
H.W.	Hot Water
IN.	Inch
I.M.	Insulated Metal
INSUL.	Insulation or Insulated
INT.	Interior
INV.	Invert
ISO.	Isolation
JAN.	Janitor's Closet
J.T.	Joint
LAM.	Laminate
LAV.	Lavatory
LG.	Long
M.D.F.	Medium Density Fiberboard
M.D.H.	Magnetic Door Holder
M.H.	Manhole
MFGR.	Manufacturer
MAX.	Maximum
MECH.	Mechanical
MET.	Metal
MIN.	Minimum
MISC.	Miscellaneous
N.I.C.	Not In Contract
N.T.S.	Not To Scale
O.C.	On Center
OPP.	Opposite
O.H.	Overhead
PR.	Pair
PLAS.	Plaster
PLAS.LAM.	Plastic Laminate
P.C.	Plumbing Contractor
PLYWD.	Plywood
POLY.	Polyethylene
P.V.C.	Polyvinyl Chloride
PRE-FAB.	Prefabricated
RE.	Refer To
REF.	Refrigerator
R.C.P.	Reinforced Concrete Pipe
REINF.	Reinforcement
RD.	Roof Drain
RM.	Room
S.A.T.	Suspended Acoustical Tile
SCHED.	Schedule
SHT.	Sheet
SIM.	Similar
S.C.	Solid Core
SPECS.	Specifications
SQ.	Square
S.F.	Square Foot
S.S.	Stainless Steel
STL.	Steel
STOR.	Storage
STRUCT.	Structural
TEL.	Telephone
THK.	Thick
T.B.D.	To Be Determined
T&G	Tongue & Groove
T.O.	Top Of
T.G.	Top Of Grade
T.O.S.	Top Of Steel
TYP.	Typical
UNFIN.	Unfinished
U.N.O.	Unless Noted Otherwise
V.B.	Vapor Barrier
VERT.	Vertical
VEST.	Vestibule
V.C.T.	Vinyl Composition Tile
W.H.	Water Heater
W.W.F.	Welded Wire Fabric
WIN.	Window
W/	With
W/O	Without
WD.	Wood

Symbols

NOT ALL SYMBOLS USED

T.O. FINISH FLOOR ELEV. 0'-0"	ELEVATION HEIGHT
PLAN NORTH	NORTH ARROW
1 A1	ELEVATION MARKER

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general notes

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revisions

project title

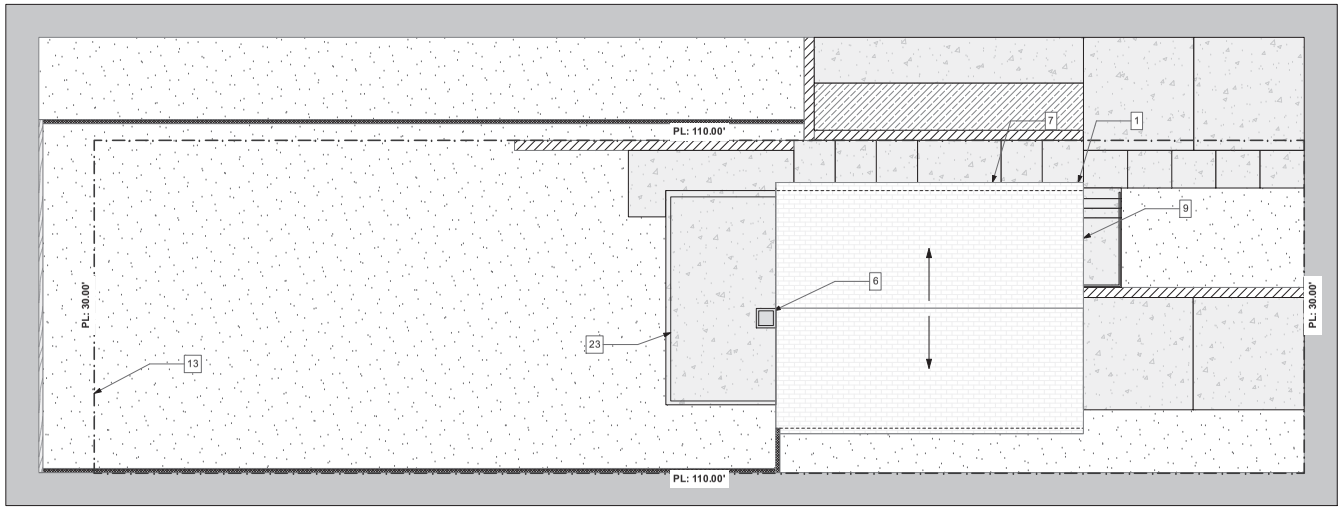
Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
2344 Palm Beach Avenue
Pittsburgh, Pennsylvania 15216

drawing title

Drawing Index, Code Conformance Information, Site Location, Abbreviations and Materials

scale: As Noted	Sheet No. A1
date: August 20th, 2024	
no. 1 / of. 9	Project #2326



1 Site Plan
SCALE: 3/16" = 1'-0"

PLAN NORTH

SITE PLAN LEGEND

GRASS	MISC. BRICK	AC CONDENSER	RAILING	TRUE ROOF OUTLINE
LIGHTWEIGHT CONCRETE	MULCHED AREA	TREE / SHRUB	TACTILE PAVING	APPROX. PROPERTY LINE
CONCRETE BLOCK	STREET SIGNAGE	STREET SIGNAGE	MAN HOLE	WINDOW WELL

10 Scattered Sites Keynotes – 2344 Palm Beach Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages (see additional ductwork note at garage)
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. CHIMNEY TOP (GC): Remove existing mortar cap and top section of terra cotta flue liner. Provide new flue liner section and new sloped mortar cap. See Specifications
7. BACKYARD ACCESS WALK (GC): At edge of walk to house, provide new backer rod and caulk to seal, approximately 60 lf. See Specifications
8. FRONT DOOR (GC): Remove existing front exterior door, frame and threshold, provide new 1 3/4" insulated wood look fiberglass door (with 3 lites sim. to existing), door threshold and all door hardware. Paint frame to finish and trim with new synthetic wood trim, caulked to seal. See Specifications.
9. ENTRANCE CANOPY (GC): At this location, provide new 52" wide x 36" deep, concave style aluminum entrance canopy properly fastened, flashed and sealed to exterior.
10. CONCRETE BLOCK ADDITION AT REAR (GC): At entire façade (3 SIDES) of block addition, strike and repoint areas of loose or missing mortar. This includes areas left, right and above all window lintels as well as the decorative block railing above.
11. RAILING AT ENTRY (GC): Sandblast to clean railing and remove all rust. Prime with zinc rich primer and repaint railing. See Specifications.
12. EXISTING BRICK VENEER (GC): At brick area noted, strike and repoint areas of loose or missing mortar. This includes areas left, right and above all window lintels as well as the entire chimney stack.
13. REAR FENCE (GC): Replace approximately 30' of stockade fence along rear property line. See Specifications.
14. ATTIC GRILLE (M): Replace ventilation grille with new.
15. MAILBOX (GC): Provide new mailbox mounted to exterior wall.

Interior Garage

16. ELECTRICAL PANEL (E): Replace existing archaic electric panel with new 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally provide proper electrical grounding and bonding of the electrical system. See Specifications.
17. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope and at plywood cover, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish. See Specifications.
18. GARAGE DOOR TO HOUSE (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.

Interior Basement & Addition

19. WATER HEATER (P): Water Heater AO Smith 40 Gal. with a 6 Yr Warranty. The Water Heater appears to be in good condition and does not show signs of failure. Provide Inspection of unit by a qualified Plumbing Contractor. See Specifications.
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21. BASEMENT FINISH FLOOR (GC): Clean, prep and paint existing basement floor (approx. 305 sf). See Specification.
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25. WALLS (GC): Replace damaged paneling on front wall.
26. CEILING (GC): Install new grid and ceiling tile (approx. 305 sf).

Interior First Floor

27. KITCHEN BULKHEAD LIGHTING (E): At existing bulkhead recessed fluorescent lightning, remove lighting and properly dispose of. Patch and paint bulkhead to match. Provide new LED surface mounted strop lights. Remove exhaust fan and patch ceiling. See Specifications.
28. KITCHEN CABINETS (GC): Carefully clean existing kitchen cabinet faces and interior to remove soiling and oils. Adjust doors and drawers to level and ensure smooth operation. Install new cabinet handles. See Specifications.
29. KITCHEN SINK AND FAUCETS (P): Provide new Kitchen sink faucet and drain.
30. KITCHEN FLOORING (GC): Kitchen flooring: Remove and replace kitchen flooring and wall base. Prep subfloor, smooth and level. Provide new LVT finish flooring and 4" rubber cove base.
31. KITCHEN TO OUTSIDE DOOR (GC): Paint frame to finish and trim with new synthetic wood trim, re-caulk to seal. See Specifications.
32. LIVING ROOM (M): Replace thermostat with programable thermostat.

Second Floor / Attic

33. MAIN STAIRWAY (GC): At main stairway, remove existing handrail, sand, stain and refinish handrail. Patch and paint existing and old mounting holes. Re-fasten handrail to studs to assure solid mounting. See Specifications
34. BATHROOM (M): Provide new exhaust fan wired to light circuit and vented to the exterior.

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
ph 412.281.6001 fx 412.281.6002

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revisions

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Project Location:
Renovation of 10 Scattered Sites
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Pittsburgh, Pennsylvania 15216

drawing title

Site Plan, Site Plan Legend, Keynotes

scale	Sheet No.
As Noted	A2
date: August 20th, 2024	
no. 2 / of. 9	Project #2326

FLOOR COVERING PLAN LEGEND

VCT FLOORING
CONCRETE FLOORING
CARPET FLOORING
LVT FLOORING
WOOD FLOORING

10 Scattered Sites Keynotes – 2344 Palm Beach Ave

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9. ENTRANCE CANOPY (GC): At this location, provide new 52" wide x 36" deep, concave style aluminum entrance canopy properly fastened, flashed and sealed to exterior.
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20. FURNACE (M): Furnace is a Carrier Weathermaker 9200 and has an efficiency rating of 95.5%. The last year of manufacture of this unit is 2001, making this unit at a minimum 23 years old. Replace unit with new. Seam seal all exposed duct seams within basement. Seam seal and insulate all ductwork running in unconditioned space, e.g. Garage. See Specifications.
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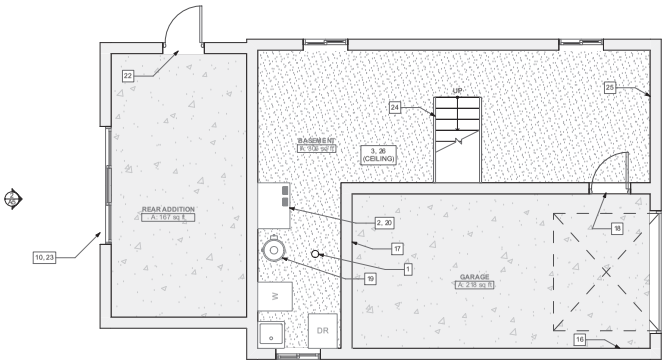
Second Floor / Attic

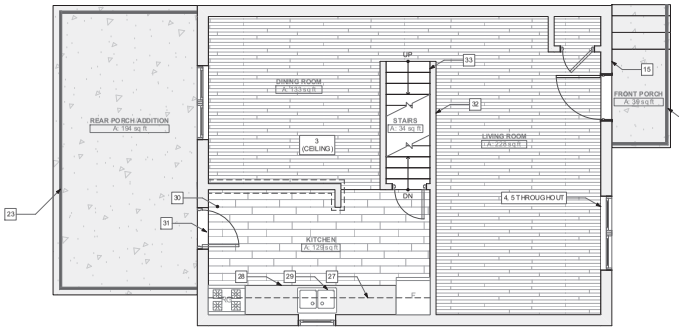
33. MAIN STAIRWAY (GC): At main stairway, remove existing handrail, sand, stain and refinish handrail. Patch and paint existing and old mounting holes. Re-fasten handrail to studs to assure solid mounting. See Specifications

GENERAL FLOOR PLAN NOTES

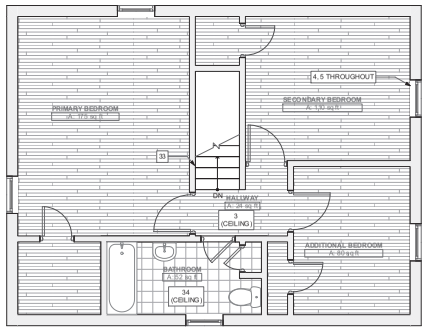
1. PROPERTY HAS BEEN TESTED FOR HAZARDOUS MATERIALS. REPORT WILL BE AVAILABLE AND PROVIDED BY HACP. GC TO ABATED MATERIALS FOLLOWING THE RECOMMENDATIONS FROM THE REPORT.
2. CONTRACTOR TO FIELD VERIFY ANY AND ALL CONDITIONS & DIMENSIONS OF WORK AREAS BEFORE BEGINNING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.
3. THE FINISH FLOOR OF THIS PROJECT IS IDENTIFIED AT 0'-0" IN THIS SET OF DRAWINGS.
4. ALIGN NEW WALL & CEILING CONSTRUCTION WITH EXISTING WALL CONSTRUCTION. FINISH NEW PARTITION SMOOTH TO FORM A SEAMLESS JOINT BETWEEN NEW & EXISTING PARTITIONS.
5. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC REPRESENTATIONS. NOTIFY ARCHITECT IN WRITING OF ANY INCONSISTENT OR MISSING DIMENSIONS.
6. DIMENSIONS SHOWN INDICATE FINISHED FACE TO FINISHED FACE, UNLESS NOTED OTHERWISE.
7. ALL NEW OR RELOCATED DOOR FRAMES TO BE LOCATED 4" FROM PERPENDICULAR WALLS, UNLESS NOTED OTHERWISE.
8. SAND WALLS SMOOTH, REMOVE ALL ADHESIVE RESIDUE, AND/OR SKIM WITH JOINT COMPOUND AS NECESSARY TO PREP WALLS FOR NEW FINISHES. THE FLOOR SHOULD BE SCRAPED CLEAN OF ANY ADHESIVE RESIDUE, PATCHED AND LEVELED OUT AS NECESSARY TO RECEIVE NEW FLOORING.
9. AT WALLS EXISTING TO REMAIN, PATCH AND PAINT ANY HOLES OR DAMAGE TO APPEAR NEW.



1 Basement
SCALE: 1/4" = 1'-0"



2 First Floor
SCALE: 1/4" = 1'-0"



3 Second Floor
SCALE: 1/4" = 1'-0"

PLAN NORTH

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
ph 412.281.6001 fx 412.281.6002

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seal

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revisions

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drawing title

Basement, First Floor, Second Floor, Renovation Plan Legend, Keynotes, Floor Plan Legend

scale	Sheet No.
As Noted	A3
date: August 20th, 2024	
no. 3 / of. 9	Project #2326

Fukui Architects Pc
205 Ross Street
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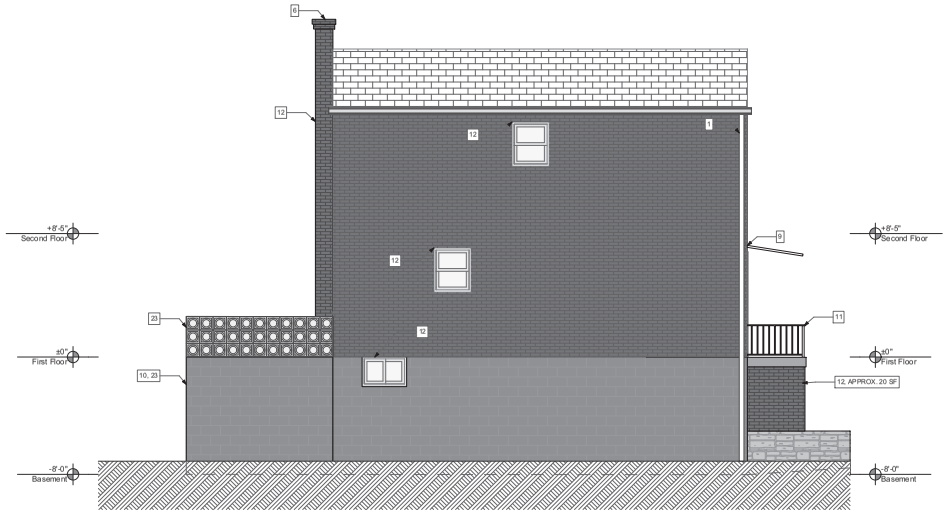
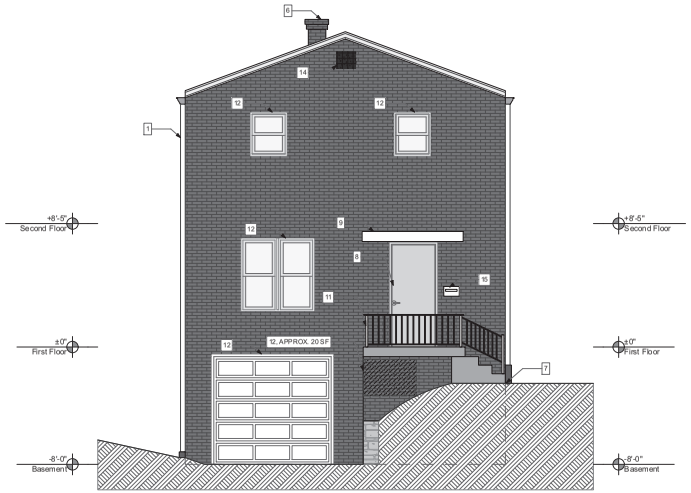


1 South Elevation
SCALE: 1/4" = 1'-0"



2 East Elevation
SCALE: 1/4" = 1'-0"

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Second Floor / Attic

33. MAIN STAIRWAY (GC): At main stairway, remove existing handrail, sand, stain and refinish handrail. Patch and paint existing and old mounting holes. Re-fasten handrail to studs to assure solid mounting. See Specifications
34. BATHROOM (M): Provide new exhaust fan wired to light circuit and vented to the exterior.

seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
2344 Palm Beach Avenue
Pittsburgh, Pennsylvania 15216

drawing title

South Elevation, East Elevation, Keynotes

scale		Sheet No.
As Noted		A4
date: August 20th, 2024		
no. 4	of. 9	Project #2326

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
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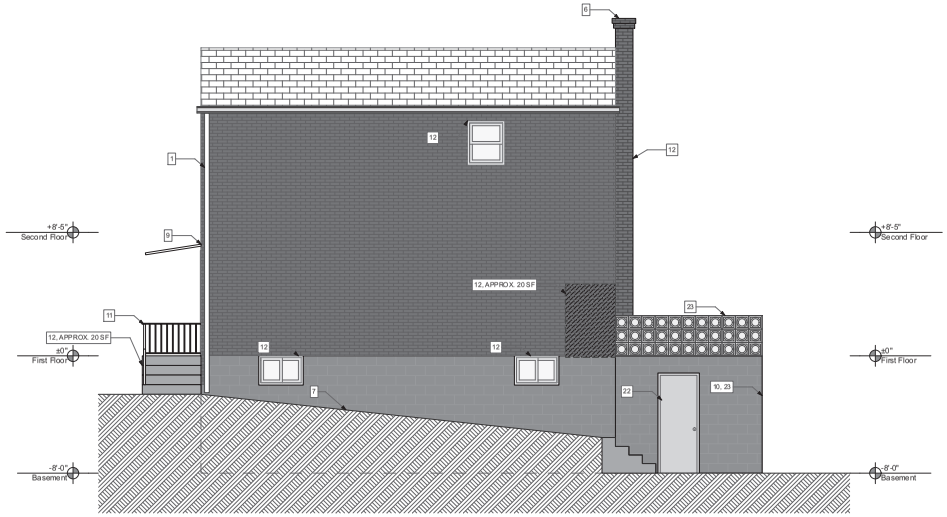
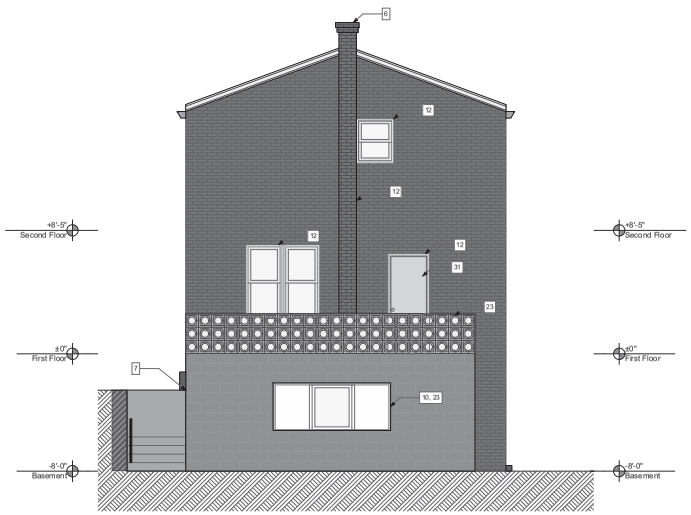


1 North Elevation
SCALE: 1/4" = 1'-0"



2 West Elevation
SCALE: 1/4" = 1'-0"

10 Scattered Sites Keynotes – 2344 Palm Beach Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages (see additional ductwork note at garage)
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. CHIMNEY TOP (GC): Remove existing mortar cap and top section of terra cotta flue liner. Provide new flue liner section and new sloped mortar cap. See Specifications
7. BACKYARD ACCESS WALK (GC): At edge of walk to house, provide new backer rod and caulk to seal, approximately 60 lf. See Specifications
8. FRONT DOOR (GC): Remove existing front exterior door, frame and threshold, provide new 1 3/4" insulated wood look fiberglass door (with 3 lites sim. to existing), door threshold and all door hardware. Paint frame to finish and trim with new synthetic wood trim, caulked to seal. See Specifications.
9. ENTRANCE CANOPY (GC): At this location, provide new 52" wide x 36" deep, concave style aluminum entrance canopy properly fastened, flashed and sealed to exterior.
10. CONCRETE BLOCK ADDITION AT REAR (GC): At entire façade (3 SIDES) of block addition, strike and repoint areas of loose or missing mortar. This includes areas left, right and above all window lintels as well as the decorative block railing above.
11. RAILING AT ENTRY (GC): Sandblast to clean railing and remove all rust. Prime with zinc rich primer and repaint railing. See Specifications.
12. EXISTING BRICK VENEER (GC): At brick area noted, strike and repoint areas of loose or missing mortar. This includes areas left, right and above all window lintels as well as the entire chimney stack.
13. REAR FENCE (GC): Replace approximately 30' of stockade fence along rear property line. See Specifications.
14. ATTIC GRILLE (M): Replace ventilation grille with new.
15. MAILBOX (GC): Provide new mailbox mounted to exterior wall.

Interior Garage

16. ELECTRICAL PANEL (E): Replace existing archaic electric panel with new 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally provide proper electrical grounding and bonding of the electrical system. See Specifications.
17. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope and at plywood cover, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish. See Specifications.
18. GARAGE DOOR TO HOUSE (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.

Interior Basement & Addition

19. WATER HEATER (P): Water Heater AO Smith 40 Gal. with a 6 Yr Warranty. The Water Heater appears to be in good condition and does not show signs of failure. Provide Inspection of unit by a qualified Plumbing Contractor. See Specifications.
20. FURNACE (M): Furnace is a Carrier Weathermaker 9200 and has an efficiency rating of 95.5%. The last year of manufacture of this unit is 2001, making this unit at a minimum 23 years old. Replace unit with new. Seam seal all exposed duct seams within basement. Seam seal and insulate all ductwork running in unconditioned space, e.g. Garage. See Specifications.
21. BASEMENT FINISH FLOOR (GC): Clean, prep and paint existing basement floor (approx. 305 sf). See Specification.
22. ADDITION TO OUTSIDE DOOR (GC): Remove existing exterior door, frame and threshold, provide new 1 3/4" insulated metal door, door threshold and all door hardware. Paint frame to finish and trim with new synthetic wood trim, caulked to seal. See Specifications.
23. REAR PORCH ADDITION (GC): Clean and repoint concrete block (approx. 200 sf), provide new block for filler (approx. 10 sf). Reset concrete block railing entirely (approx. 40 linear ft). See Specifications.
24. BASEMENT STAIR (GC): Remove worn carpeted stair and stringer carpet. Sand and paint existing exterior wood stair, treads, risers, stringers and railing. Provide new non-slip rubber treads covering full width and depth of tread as well as nosing. Re-attach handrail. See Specifications.
25. WALLS (GC): Replace damaged paneling on front wall.
26. CEILING (GC): Install new grid and ceiling tile (approx. 305 sf).

Interior First Floor

27. KITCHEN BULKHEAD LIGHTING (E): At existing bulkhead recessed fluorescent lighting, remove lighting and properly dispose of. Patch and paint bulkhead to match. Provide new LED surface mounted strop lights. Remove exhaust fan and patch ceiling. See Specifications.
28. KITCHEN CABINETS (GC): Carefully clean existing kitchen cabinet faces and interior to remove soiling and oils. Adjust doors and drawers to level and ensure smooth operation. Install new cabinet handles. See Specifications.
29. KITCHEN SINK AND FAUCETS (P): Provide new Kitchen sink faucet and drain.
30. KITCHEN FLOORING (GC): Kitchen flooring: Remove and replace kitchen flooring and wall base. Prep subfloor, smooth and level. Provide new LVT finish flooring and 4" rubber cove base.
31. KITCHEN TO OUTSIDE DOOR (GC): Paint frame to finish and trim with new synthetic wood trim, re-caulk to seal. See Specifications.
32. LIVING ROOM (M): Replace thermostat with programable thermostat.

Second Floor / Attic

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North Elevation, West Elevation, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no.	of.
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Sheet No.
A5
Project #2326

GENERAL NOTES

USE OF THE DOCUMENTS
THE USE OF THESE DOCUMENTS IS RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED. RE-USE OR REPRODUCTION OF THE DOCUMENTS (IN WHOLE OR IN PART), FOR ANY OTHER PURPOSE IS PROHIBITED. TITLE TO THESE REMAINS WITH FUKU ARCHITECTS P.C. (FAR). VISUAL CONTRACT DOCUMENTS DOCUMENTS IS PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

DIVISION 1 - GENERAL CONDITIONS

APPLICABILITY OF HUD-5370 GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS - PUBLIC HOUSING PROGRAMS
THE HUD-5370, GENERAL CONDITIONS CURRENT EDITION, SHALL APPLY TO THE PROJECT. A COPY OF THE HUD GENERAL CONDITIONS ARE INCLUDED IN THE FRONT END DOCUMENTS AS PART OF HUD FORMS. HARD CONES ARE AVAILABLE AT HACP OFFICE.

MULTIPLE CONTRACT
1. COORDINATION
GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT, ELECTRICAL CONTRACT, AND ADDITIONAL CONTRACTS APPLICABLE IN THE CONSTRUCTION DOCUMENTS.

2. GENERAL REQUIREMENTS OF CONTRACTS
UNLESS THE AGREEMENT CONTAINS A MORE SPECIFIC DESCRIPTION OF THE WORK OF EACH CONTRACT, THE GENERAL REQUIREMENTS ON DRAWINGS AND IN SPECIFICATION SECTIONS DETERMINE WHICH CONTRACT INCLUDES A SPECIFIC ELEMENT OF PROJECT.

3. SCOPE OF WORK RESPONSIBILITY
A. GENERAL CONSTRUCTION CONTRACT
WORK OF THE GENERAL CONSTRUCTION CONTRACT INCLUDES, BUT IS NOT LIMITED TO, THE REMAINING WORK NOT IDENTIFIED AS WORK UNDER OTHER CONTRACTS.

B. PLUMBING CONTRACT
WORK OF THE PLUMBING CONTRACT INCLUDES, BUT IS NOT LIMITED TO, PLUMBING FIXURES AND APPLIANCES (INCLUDING BUT NOT LIMITED TO SINKS, TUBS, SHOWER ENCLOSURES, SINK DRAINS, FAUCETS AND DRAIN ASSEMBLIES, ETC), PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT, PLUMBING CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT.

C. MECHANICAL CONTRACT
WORK OF THE MECHANICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ALL MECHANICAL EQUIPMENT AND CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND ELECTRICAL CONTRACT MECHANICAL EQUIPMENT INCLUDES BUT IS NOT LIMITED TO FURNACES AND CONDENSERS, KITCHEN AND BATH EXHAUST FANS, THERMOSTATS AND CONTROLS, ETC.

D. ELECTRICAL CONTRACT
WORK OF THE ELECTRICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ELECTRICAL EQUIPMENT AND FIXTURES INCLUDING BUT NOT LIMITED TO, (INTERIOR AND EXTERIOR LIGHT FIXTURES, SMOKE AND CO DETECTORS, COMPLETE CIRCUIT BREAKER PANELS INCLUDING ALL BREAKERS AND LABELING, ELECTRICAL SERVICE ENTRANCE), WIRING, AND ELECTRICAL AND LOW VOLTAGE CONNECTIONS TO EQUIPMENT FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT. ELECTRICAL CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT

PRE-CONSTRUCTION CONFERENCE AND NOTICE TO PROCEED
WITHIN TEN CALENDAR DAYS OF CONTRACT EXECUTION, AND PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH REPRESENTATIVES OF THE PHA, ITS ARCHITECT, AND OTHER INTERESTED PARTIES CONVENED BY THE PHA. THE CONFERENCE WILL SERVE TO ACQUAINT THE CONTRACTOR WITH THE GENERAL PLAN OF THE CONSTRUCTION OPERATION AND ALL OTHER REQUIREMENTS OF THE CONTRACT. THE PHA WILL PROVIDE THE CONTRACTOR WITH THE DATE, TIME, AND PLACE OF THE CONFERENCE.
(B) THE CONTRACTOR SHALL BEGIN WORK UPON RECEIPT OF A WRITTEN NOTICE TO PROCEED FROM THE CONTRACTING OFFICER OR DESIGNEE. THE CONTRACTOR SHALL NOT BEGIN WORK PRIOR TO RECEIVING SUCH NOTICE.

CONSTRUCTION PROGRESS
(A) THE CONTRACTOR SHALL, WITHIN FIVE DAYS AFTER THE WORK COMMENCES ON THE CONTRACT OR ANOTHER PERIOD OF TIME DETERMINED BY THE CONTRACTING OFFICER, PREPARE AND SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL THREE COPIES OF A PRACTICABLE SCHEDULE SHOWING THE ORDER IN WHICH THE CONTRACTOR PROPOSES TO PERFORM THE WORK, AND THE DATES ON WHICH THE CONTRACTOR CONTEMPLATES STARTING AND COMPLETING THE SEVERAL SALIENT FEATURES OF THE WORK (INCLUDING PROCURING LABOR, MATERIALS, AND EQUIPMENT). THE SCHEDULE SHALL BE IN THE FORM OF A PROGRESS CHART OF SUITABLE SCALE TO INDICATE APPROPRIATELY THE PERCENTAGE OF WORK SCHEDULED FOR COMPLETION BY ANY GIVEN DATE DURING THE PERIOD. IF THE CONTRACTOR FAILS TO SUBMIT A SCHEDULE WITHIN THE TIME PRESCRIBED, THE CONTRACTING OFFICER MAY WITHHOLD APPROVAL OF PROGRESS PAYMENTS OR TAKE OTHER REMEDIES UNDER THE CONTRACT UNTIL THE CONTRACTOR SUBMITS THE REQUIRED SCHEDULE.
(B) THE CONTRACTOR SHALL ENTER THE ACTUAL PROGRESS ON THE CHART AS REQUIRED BY THE CONTRACTING OFFICER, AND IMMEDIATELY DELIVER THREE COPIES OF THE ANNOTATED SCHEDULE TO THE CONTRACTING OFFICER. IF THE CONTRACTOR FAILS TO PROCEED, UPON THE BASIS OF INSPECTION CONDUCTED PURSUANT TO THE CLAUSE ENTITLED INSPECTION AND ACCEPTANCE OF WORK, TO PROCEED HEREIN THAT THE CONTRACTOR IS NOT MEETING THE APPROVED SCHEDULE, THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO IMPROVE ITS PROGRESS, INCLUDING THOSE THAT MAY BE REQUESTED BY THE CONTRACTING OFFICER, WITHOUT ADDITIONAL COST TO THE PHA, IN THIS CIRCUMSTANCE THE CONTRACTING OFFICER MAY REQUIRE THE CONTRACTOR TO INCREASE THE NUMBER OF SHIFTS, OVERTIME OPERATIONS, DAYS OF WORK, AND/OR THE AMOUNT OF CONSTRUCTION PLANT, AND TO SUBMIT FOR APPROVAL ANY SUPPLEMENTARY SCHEDULE OR SCHEDULES IN CHART FORM AS THE CONTRACTING OFFICER DEEMS NECESSARY TO DEMONSTRATE HOW THE APPROVED RATE OF PROGRESS WILL BE REGAINED.
(C) FAILURE OF THE CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACTING OFFICER UNDER THIS CLAUSE SHALL BE GROUNDS FOR A DETERMINATION BY THE CONTRACTING OFFICER THAT THE CONTRACTOR IS NOT PROSECUTING THE WORK WITH SUFFICIENT DILIGENCE TO ENSURE COMPLETION WITHIN THE TIME SPECIFIED IN THE CONTRACT. UPON MAKING THIS DETERMINATION, THE CONTRACTING OFFICER MAY TERMINATE THE CONTRACTOR'S RIGHT TO PROCEED WITH THE WORK, OR ANY SEPARABLE PART OF IT, IN ACCORDANCE WITH THE DEFAULT CLAUSE OF THIS CONTRACT.

SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK
(A) THE CONTRACTOR ACKNOWLEDGES THAT IT HAS TAKEN STEPS REASONABLY NECESSARY TO ASCERTAIN THE NATURE AND LOCATION OF THE WORK, AND THAT IT HAS INVESTIGATED AND SATISFIED ITSELF AS TO THE GENERAL AND LOCAL CONDITIONS WHICH CAN AFFECT THE WORK OR ITS COST, INCLUDING BUT NOT LIMITED TO, (1) CONDITIONS BELOW UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS; (2) THE AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, AND ROADS; (3) UNCERTAINTIES OF WEATHER, RIVER STAGES, TIDES, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE; (4) THE CONFORMATION AND CONDITIONS OF THE GROUND; AND (5) THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING WORK PERFORMANCE. THE CONTRACTOR ALSO ACKNOWLEDGES THAT IT HAS SATISFIED ITSELF AS TO THE CHARACTER, QUALITY, AND QUANTITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED IN SO FAR AS THIS INFORMATION IS REASONABLY ASCERTAINABLE FROM AN INSPECTION OF THE SITE, INCLUDING ALL EXPLORATORY WORK DONE BY THE PHA, AS WELL AS FROM THE DRAWINGS AND SPECIFICATIONS MADE A PART OF THIS CONTRACT. ANY FAILURE OF THE CONTRACTOR TO TAKE THE ACTIONS DESCRIBED AND ACKNOWLEDGED IN THIS PARAGRAPH WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK, OR FOR PROCEEDING TO SUCCESSFULLY PERFORM THE WORK WITHOUT ADDITIONAL EXPENSE TO THE PHA.
(B) THE PHA ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR BASED ON THE INFORMATION MADE AVAILABLE BY THE PHA. NOR DOES THE PHA ASSUME RESPONSIBILITY FOR ANY UNDERSTANDING REACHED OR REPRESENTATION MADE CONCERNING CONDITIONS WHICH CAN AFFECT THE WORK BY ANY OF ITS OFFICERS OR AGENTS BEFORE THE EXECUTION OF THIS CONTRACT, UNLESS THAT UNDERSTANDING OR REPRESENTATION IS EXPRESSLY STATED IN THIS CONTRACT.

DIFFERING SITE CONDITIONS
(1) THE CONTRACTOR SHALL PROMPTLY, AND BEFORE THE CONDITIONS ARE DISTURBED, GIVE A WRITTEN NOTICE TO THE CONTRACTING OFFICER OF (1) SUBSURFACE OR UNKNOWN PHYSICAL CONDITIONS AT THE SITE WHICH DIFFER MATERIALLY FROM THOSE INDICATED IN THIS CONTRACT, OR (2)UNKNOWN PHYSICAL CONDITIONS AT THE SITE OF AN UNUSUAL NATURE, WHICH DIFFER MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERING IN WORK OF THE NATURE PROVIDED FOR IN THE CONTRACT.
(B)THE CONTRACTING OFFICER SHALL INVESTIGATE THE SITE CONDITIONS PROMPTLY AFTER RECEIVING THE NOTICE. WORK SHALL NOT PROCEED AT THE AFFECTED SITE, EXCEPT AT THE CONTRACTOR'S RISK, UNTIL THE CONTRACTING OFFICER HAS PROVIDED WRITTEN INSTRUCTIONS TO THE CONTRACTOR. IF THE CONDITIONS DO MATERIALLY SO DIFFER AND CAUSE AN INCREASE OR DECREASE IN THE CONTRACTOR'S COST OF, OR THE TIME REQUIRED FOR, PERFORMING ANY PART OF THE WORK UNDER THIS CONTRACT, WHETHER OR NOT CHANGED AS A RESULT OF THE CONDITIONS, AN EQUITABLE ADJUSTMENT SHALL BE MADE UNDER THIS CLAUSE. THE CONTRACTOR SHALL FILE A CLAIM IN WRITING TO THE PHA WITHIN TEN DAYS AFTER RECEIPT OF SUCH INSTRUCTIONS AND, IN ANY EVENT, BEFORE PROCEEDING WITH THE WORK. (NEGOTIATE ADJUSTMENTS IN THE CONTRACT PRICE, THE DELIVERY SCHEDULE, OR BOTH SHALL BE MADE UNDER THIS CLAUSE ON THE CONDITIONS STATED GIVEN THE WRITTEN NOTICE REQUIRED; PROVIDED, THAT THE TIME PRESCRIBED IN (A) ABOVE FORGIVING WRITTEN NOTICE MAY BE EXTENDED BY THE CONTRACTING OFFICER.
(D)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED, UNLESS THE CONTRACTOR HAS GIVEN THE WRITTEN NOTICE REQUIRED; PROVIDED, THAT THE TIME PRESCRIBED IN (A) ABOVE FORGIVING WRITTEN NOTICE MAY BE EXTENDED BY THE CONTRACTING OFFICER.
(D)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED IF MADE AFTER FINAL PAYMENT UNDER THIS CONTRACT.

SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION
(A) THE CONTRACTOR SHALL KEEP ON THE WORK SITE A COPY OF THE DRAWINGS AND SPECIFICATIONS AND SHALL AT ALL TIMES GIVE THE CONTRACTING OFFICER ACCESS THERETO. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH. IN CASE OF DIFFERENCE BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. IN CASE OF DISCREPANCY IN THE FIGURES, IN THE DRAWINGS OR SPECIFICATIONS, THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE CONTRACTING OFFICER, WHO SHALL PROMPTLY MAKE A DETERMINATION IN WRITING. ANY ADJUSTMENTBY THE CONTRACTOR WITHOUT SUCH A DETERMINATION SHALL BE AT ITS OWN RISK AND EXPENSE. THE CONTRACTING OFFICER MAY SUPPLEMENT FROM TIME TO TIME SUCH DRAWINGS AND SPECIFICATIONS AND OTHER INFORMATION AS CONSIDERED NECESSARY, UNLESS OTHERWISE PROVIDED.
(B)WHEREVER IN THE SPECIFICATIONS OR UPON THE DRAWINGS THE WORDS "DIRECTED", "REQUIRED", "ORDERED", "DESIGNATED", "PRESCRIBED", OR WORDS OF LIKE IMPORT ARE MADE, IT SHALL BE UNDERSTOOD THAT THE"DIRECTION", "REQUIREMENT", "ORDER", "DESIGNATION", OR "PRESCRIPTION", OF THE CONTRACTING OFFICER IS INTENDED AND SIMILARLY THE WORDS "APPROVED", "ACCEPTABLE", "SATISFACTORY", OR WORDS OF LIKE IMPORT SHALL MEAN "APPROVED BY", OR "ACCEPTABLE TO", OR "SATISFACTORY TO" THE CONTRACTING OFFICER, UNLESS OTHERWISE EXPRESSLY STATED.
(OTHERE SHALL BE NO "ADDITIONS", "AS DETAILED", OR WORDS OF SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE REFERENCE IS MADE TO THE DRAWINGS ACCOMPANYING THIS CONTRACT UNLESS STATED OTHERWISE. THE WORD "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE" THAT IS "PROVIDED AND INSTALLED"
(D)"SHOP DRAWINGS" MEANS DRAWINGS, SUBMITTED TO THE PHA BY THE CONTRACTOR, A SUBCONTRACTOR, OR ANY LOWER TIER SUBCONTRACTOR, SHOWING IN DETAIL (1) THE PROPOSED FABRICATION AND ASSEMBLY OF STRUCTURAL ELEMENTS AND (2) THE INSTALLATION(I.E., FORM, FIT, AND ATTACHMENT DETAILS) OF MATERIALS OF EQUIPMENT. IT INCLUDES DRAWINGS, DIAGRAMS, LAYOUTS, SCHEDULES, DESIGNS OF THE FOLLOWING: PERFORMANCE AND SCHEDULES, PERFORMANCE AND TEST DATA, AND SIMILAR MATERIALS FURNISHED BY THE CONTRACTOR TO EXPLAIN THE DETAILED PORTIONS OF THE WORK REQUIRED BY THE CONTRACT. THE PHA MAY DUPLICATE, USE, AND DISCLOSE IN ANY MANNER FOR ANY PURPOSE SHOP DRAWINGS DELIVERED UNDER THIS CONTRACT.
(E)IF THIS CONTRACT REQUIRES SHOP DRAWINGS, THE CONTRACTOR SHALL COORDINATE ALL DRAWINGS, AND REVIEW THEM FOR ACCURACY, COMPLETENESS, AND COMPLIANCE WITH OTHER CONTRACT REQUIREMENTS, AND SHALL INDICATE ITS APPROVAL THEREON AS EVIDENCE OF SUCH COORDINATION AND REVIEW. SHOP DRAWINGS SUBMITTED TO THE CONTRACTING OFFICER WITHOUT EVIDENCE OF THIS COORDINATION AND REVIEW OR THAT ARE FOUND BY THE CONTRACTING OFFICER TO BE INCOMPLETE OR NOT IN ACCORDANCE WITH THE CONTRACT WILL BE RETURNED FOR RESUBMISSION. THE CONTRACTING OFFICER WILL INDICATE AN APPROVAL OR DISAPPROVAL OF THE SHOP DRAWINGS WITHIN THE TIME PRESCRIBED. SHALL INDICATE THE PHA'S REASONS THEREFORE. ANY WORK DONE BEFORE SUCH APPROVAL SHALL BE AT THE CONTRACTOR'S RISK. APPROVAL BY THE CONTRACTING OFFICER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS IN SUCH DRAWINGS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM THE REQUIREMENTS OF THIS CONTRACT, EXCEPT WITH RESPECT TO VARIATIONS DESIRED AND MADE KNOWN TO THE CONTRACTING OFFICER IF BELOW.
(F) IF SHOP DRAWINGS SHOW VARIATIONS FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL DESCRIBE SUCH VARIATIONS IN WRITING, SEPARATE FROM THE DRAWINGS, AT THE TIME OF SUBMISSION. IF THE CONTRACTING OFFICER FINDS THE PROPOSED VARIATION AND THE CONTRACTING OFFICER CONCURS, THE CONTRACTING OFFICER SHALL INDICATE AN APPROVAL THEREOF IN CONNECTION TO THE DRAWINGS, EXCEPT THAT,IF THE VARIATION IS MINOR OR DOES NOT INVOLVE A CHANGE IN PRICE OR IN TIME OF PERFORMANCE, A MODIFICATION NEED NOT BE ISSUED. (G)IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE TIMELY REQUESTS OF THE PHA FOR SUCH LARGE SCALE AND DETAILED DRAWINGS AS MAY BE NECESSARY FOR ORDERLY ADDITIONAL INFORMATION NOT ALREADY IN HIS POSSESSION, WHICH SHALL BE REQUIRED UNDER THE CONTRACT. "AS-BUILT" DRAWINGS SUCH REQUESTS MAY BE SUBMITTED AS THE NEED ARISES, BUT EACH SUCH REQUEST SHALL BE FILED IN AMPLE TIME TO PERMIT APPROPRIATE ACTION TO BE TAKEN WITHOUT DELAY OF WORK OR DELAY TO THE CONTRACTOR.
(H)THE CONTRACTOR SHALL SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL FOLLOWING THE ESTABLISHMENT OF THE WORK ALL SHOP DRAWINGS AS CALLED FOR UNDER THE VARIOUS HEADINGS OF THESE SPECIFICATIONS. THREE SETS (UNLESS OTHERWISE INDICATED) OF ALL SHOP DRAWINGS WILL BE RETAINED BY THE PHA AND ONE SET WILL BE RETURNED TO THE CONTRACTOR. AS REQUIRED BY THE CONTRACTING OFFICER, FROM TIME TO TIME SUCH DRAWINGS MAY BE REVISED. UNDER THIS CONTRACT, SHALL FURNISH A COMPLETE SET OF ALL SHOP DRAWINGS AS FINALLY APPROVED. THESE DRAWINGS WILL SHOW ALL CHANGES AND REVISION SMADE UP TO THE TIME THE WORK IS COMPLETED AND ACCEPTED.
(I) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL SUBCONTRACTORS PROVIDED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

AS-BUILT DRAWINGS
(A)"AS-BUILT DRAWINGS," AS USED IN THIS CLAUSE, MEANS DRAWINGS SUBMITTED BY THE CONTRACTOR OR SUBCONTRACTOR AT ANY TIER TO SHOW THE CONSTRUCTION OF A PARTICULAR STRUCTURE OR WORK AS ACTUALLY COMPLETED UNDER THE CONTRACT. "AS-BUILT DRAWINGS" SHALL BE SYNONYMOUS WITH "RECORD DRAWINGS."
(B)AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER ACCURATE INFORMATIONTO BE USED IN THE PREPARATION OF PERMANENT AS-BUILT DRAWINGS. FOR THIS PURPOSE, THE CONTRACTOR SHALL RECORD ON ONE SET OF CONTRACT DRAWINGS ALL CHANGES FROM THE INSTALLATIONS ORIGINALLY INDICATED AND RECORD FINAL LOCATIONSOF UNDERGROUND LINES BY DEPTH FROM FINISH GRADE AND BY ACCURATE HORIZONTAL OFFSET DISTANCES TO PERMANENT SURFACE IMPROVEMENTS SUCH AS BUILDINGS, CURBS, OR EDGES OF WALKS.
(C) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL AS-BUILT DRAWINGS PROVIDED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

MATERIAL AND WORKMANSHIP
(A)ALL EQUIPMENT, MATERIAL, AND ARTICLES FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED. UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT. REFERENCES IN THE CONTRACT TO EQUIPMENT, MATERIAL, ARTICLES, OR PATENTED PROCESSES BY TRADE NAME, MAKE, OR CATALOG NUMBER, SHALL BE REGARDED AS ESTABLISHING A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. THE CONTRACTOR MAY, AT ITS OPTION, USE ANY EQUIPMENT, MATERIAL, ARTICLE, OR PROCESS THAT, IN THE JUDGMENT OF, AND AS APPROVED BY THE CONTRACTING OFFICER, IS EQUAL TO THAT NAMED IN THE SPECIFICATIONS, UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT.
(B)APPROVAL OF EQUIPMENT AND MATERIALS.
(1) THE CONTRACTOR SHALL OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT TO BE INCORPORATED INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL GIVE THE CONTRACTING OFFICER THE NAME OF THE MANUFACTURER, THE MODEL NUMBER, AND OTHER INFORMATION CONCERNING THE PERFORMANCE, CAPACITY, NATURE, AND RATING OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT WHEN THE REQUIRED BY THIS CONTRACT OR BY THE CONTRACTINGOFFICER. THE CONTRACTOR SHALL ALSO OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MATERIAL ORARTICLES WHICH THE CONTRACTOR PROPOSES TO INCORPORATE INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL PROVIDE FULL INFORMATION CONCERNING THE MATERIAL OR ARTICLES. MACHINERY,
EQUIPMENT, MATERIAL, AND ARTICLES THAT DO NOT HAVE THE REQUIRED APPROVAL SHALL BE INSTALLED OR USED AT THE RISK OF SUBSEQUENT REJECTION.
(2) WHEN REQUIRED BY THE SPECIFICATIONS OR THE CONTRACTING OFFICER, THE CONTRACTOR SHALL SUBMIT APPROPRIATELY MARKED SAMPLES AND CERTIFICATES RELATED TO THEM) FOR APPROVAL AT THE CONTRACTOR'S
EXPENSE, WITH ALL SHIPPING CHARGES PREPAID. THE CONTRACTOR SHALL LABEL, OR OTHERWISE SUPPLY THE CONTRACTING OFFICER WITH MATERIAL OR PRODUCT REPRESENTED, ITS PLACE OF ORIGIN, THE NAME OF THE PRODUCER, THE CONTRACTOR'S NAME AND THE INTENDED LOCATION OF THE CONSTRUCTION PROJECT FOR WHICH THE MATERIAL OR PRODUCTIS INTENDED TO BE USED.
(3)CERTIFICATES SHALL BE SUBMITTED IN TRIPLICATE, DESCRIBING EACH SAMPLE SUBMITTED FOR APPROVAL, AND CERTIFYING THAT THE MATERIAL EQUIPMENT, OR ARTICLE SHOWN SATISFIES THE CONTRACT REQUIREMENTS. THE CERTIFICATES SHALL INCLUDE THE NAME AND BRAND OF THE PRODUCT, NAME OF MANUFACTURER, AND THE LOCATION WHERE PRODUCED.
(4) APPROVAL OF A SAMPLE SHALL NOT CONSTITUTE A WAIVER OF THE PHA RIGHT TO DEMAND FULL COMPLIANCE WITH CONTRACT REQUIREMENTS. MATERIALS, EQUIPMENT AND ACCESSORIES MAY BE REJECTED FOR CAUSE EVEN THOUGH SAMPLES HAVE BEEN APPROVED.
(5) WHEREVER MATERIALS ARE REQUIRED TO COMPLY WITH RECOGNIZED STANDARDS OR SPECIFICATIONS, SUCH SPECIFICATIONS SHALL BE ACCEPTED AS ESTABLISHING THE TECHNICAL QUALITIES AND TESTING METHODS, BUT SHALL NOT GOVERN THE NUMBER OF TESTS REQUIRED TO BE MADE UNDER THE CONTRACT. UNLESS OTHERWISE STATED, THE CONTRACTING OFFICER MAY REQUIRE LABORATORY TEST REPORTS ON ITEMS SUBMITTED FOR APPROVAL OR APPROVED PRIOR TO USE ON THE BASIS OF DATA SUBMITTED IN CERTIFICATES WITH SAMPLES. CHECK TESTS WILL BE MADE ON MATERIALS
DELIVERED TO THE WORK SITE AFTER THEY HAVE BEEN ACCEPTED BY THE CONTRACTING OFFICER DETERMINES NECESSARY TO INSURE COMPLIANCE OF MATERIALS WITH THE SPECIFICATIONS. THE CONTRACTOR WILL ASSUME ALL COSTS OF RETESTING MATERIALS WHICH FAIL TO MEET CONTRACT REQUIREMENTS AND RETESTING MATERIAL SOFFERED IN SUBSTITUTION FOR THOSE FOUND DEFICIENT.
(6) AFTER APPROVAL, SAMPLES WILL BE KEPT IN THE PROJECT OFFICE, UNTIL COMPLETION OF WORK. THEY MAY NOT BE USED IN THE WORK AT A SUBSTANTIAL QUANTITY OF THE MATERIALSTHEY REPRESENT HAS BEEN BUILT IN AND ACCEPTED BY PHA.
(C) REQUIREMENTS CONCERNING LEAD-BASED PAINT. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF LEAD-BASED PAINT CONTAINED IN THE LEAD-BASED PAINT POISONING PREVENTION ACT (42 U.S.C. 4821-4846) AS IMPLEMENTED BY 24 CFR PART 35.

PERMITS AND CODES
(A)THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALLAPPLICABLE LAWS, ORDINANCES, CODES, RULES AND REGULATIONS. NOTWITHSTANDING THE REQUIREMENTS OF THE CONTRACTOR TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS IN THE CONTRACT, ALL WORK INSTALLED SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. BEFORE BEGINNING THE WORK, THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND THE SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS BEARING ON THE WORK AND SHALL IMMEDIATELY REPORT ANY DISCREPANCY IT MAY DISCOVER TO THE CONTRACTING OFFICER.
WHERE THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS FAIL TO COMPLY WITH THE APPLICABLE CODE OR REGULATION, THE CONTRACTING OFFICER SHALL MODIFY THE CONTRACT TO CHANGE ORDER PURSUANT TO THE CLAUSE ENTITLED CHANGES HEREIN TO CONFORM TO THE CODE OR REGULATION.
(B) THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES,AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK, WHERE THE PHA CAN EXPEDITE THE ISSUANCE OF ALL OR PART OF THESE PERMITS, FEES AND LICENSES WITHOUT COST TO THE CONTRACTOR, THE CONTRACT AMOUNT SHALL BE REDUCED ACCORDINGLY.

HEALTH, SAFETY AND ACCIDENT PREVENTION
(A) IN PERFORMING THIS CONTRACT, THE CONTRACTOR SHALL:
(1)ENSURE THAT NO LABORER OR MECHANIC SHALL BE REQUIRED TO WORK IN SURROUNDINGS OR UNDER WORKING CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO HIS/HER HEALTH AND/OR SAFETY AS DETERMINED UNDER CONSTRUCTION SAFETY AND HEALTHSTANDARDS PROMULGATED BY THE SECRETARY OF LABOR BY REGULATIONS.(2)PROTECT THE LIVES, HEALTH, AND SAFETY OF THEIR PERSONS; (3)PREVENT DAMAGE TO PROPERTY, MATERIALS, SUPPLIES, AND EQUIPMENT; AND, (4)AVOID WORKER LOSS BY
(B) FOR THESE PURPOSES, THE CONTRACTOR SHALL: (1)COMPLY WITH REGULATIONS AND STANDARDS ISSUED BY THE SECRETARY OF LABOR AT 29 CFR PART 1926. FAILURE TO COMPLY MAY RESULT IN IMPOSITION OF SANCTIONS PURSUANT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. 327-330) AND/OR 18 U.S.C. 2001 (F1BSI), AND (2)INCLUDE THE TERMS OF THIS CLAUSE IN EVERY SUBCONTRACT SO THAT SUCH TERMS WILL BE BINDING ON EACH SUBCONTRACTOR.
(C) THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF EXPOSURE DATA ON ALL ACCIDENTS INCIDENT TO WORK PERFORMED UNDER THIS CONTRACT AND RESULTING IN DEATH, TRAUMATIC INJURY,OCCUPATIONAL DISEASE, OR DAMAGE TO PROPERTY, MATERIALS,SUPPLIES, OR EQUIPMENT, AND SHALL REPORT THIS DATA IN THE MANNER PRESCRIBED BY 29 CFR PART1904.
(D)THE CONTRACTOR AGREES THAT WHENEVER THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THESE REQUIREMENTS AND OF THE CORRECTIVE ACTION REQUIRED. THIS NOTICE, WHEN DELIVERED TO THE CONTRACTOR OR THE CONTRACTOR'S REPRESENTATIVE AT THE SITE OF THE WORK, SHALL BE DEEMED SUFFICIENT NOTICE OF THE NON COMPLIANCE AND CORRECTIVE ACTION REQUIRED. AFTER RECEIVING SUCH NOTICE, THE CONTRACTOR SHALL IMMEDIATELY TAKE CORRECTIVE ACTION. IF THE CONTRACTOR FAILS OR REFUSES TO TAKE CORRECTIVE ACTION PROMPTLY, THE CONTRACTING OFFICER MAY ISSUE AN ORDER STOPPING ALL OR PART OF THE WORK UNTIL SATISFACTORY CORRECTIVE ACTION HAS BEEN TAKEN. THE CONTRACTOR SHALL NOT BASE ANY CLAIM ON REQUEST FOR EQUITABLE ADJUSTMENT FOR ADDITIONAL TIME OR MONEY ON ANY STOP ORDER ISSUED UNDER THESE CIRCUMSTANCES.
(E) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS SUBCONTRACTOR'S COMPLIANCE WITH THE PROVISIONS OF THIS CLAUSE. THE CONTRACTOR SHALL TAKE SUCH ACTION WITH RESPECT TO ANY SUBCONTRACT AS THE PHA, THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, OR THE SECRETARY OF LABOR SHALL DIRECT AS A MEANS OF ENFORCING SUCH PROVISIONS.

TEMPORARY HEATING
THE MECHANICAL CONTRACTOR SHALL PROVIDE AND PAY FOR TEMPORARY HEATING, COVERING, AND ENCLOSURES NECESSARY TO PROPERLY PROTEC

PERFORMED OR COMPLETED SHALL BE SUBMITTED BY EACH PRIME CONTRACTOR. ALL WORK OUTLINED ON THE INITIAL PUNCH LIST SHAL. BE COMPLETED BY THE CONTRACTOR PRIOR TO THE FINAL INSPECTION AND BEFORE THE PROJECT WILL BE ACCEPTED FOR FINAL COMPLETION. AFTER ALL REQUIREMENTS PREPARATORY TO THE FINAL INSPECTION HAVE BEEN COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER TO PERFORM A FINAL INSPECTION. IF ALL THE WORK HAS BEEN COMPLETED, INCLUDING PUNCH LIST ITEMS FROM EARLIER INSPECTIONS, AND NO FURTHER CORRECTIONS ARE REQUIRED, THE ARCHITECT SHALL RECOMMIND FINAL ACCEPTANCE OF THE PROJECT WHEN ALL THE CLOSEOUT DOCUMENTS ARE RECEIVED, INCLUDING BUT NOT LIMITED TO WARRANTIES, O&M MANUALS, FINAL TESTING, CERTIFICATES, PERMITS, PUNCH LIST, SUBMITTALS, RFIS, AS BUILD DRAWINGS AND ANY ADDITIONAL DOCUMENTATION REQUIRED BY HACP FOR CLOSEOUT.

ALL PUNCH LIST ITEMS TO BE COMPLETED WITHIN THIRTY (30) WORKING DAYS OF RECEIPT, OR FROM 10% DRAW WILL BE FORFEITED. ALL WORK NOT COMPLETED WITHIN THE ALLOTTED TIME WILL BE COMPLETED BY HACP AT PRIME CONTRACTOR'S EXPENSE. FINAL COMPLETION OCCURS WHEN ALL PUNCH LIST ITEMS HAVE BEEN COMPLETED AND OCCUPANCY PERMIT HAS BEEN ISSUED.

PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL EQUIPMENT FURNISHED, INSTALLED OR SERVICED UNDER THIS AND THEIR CONTRACTS. EACH PRIME CONTRACTOR SHALL VERIFY THAT ITS EQUIPMENT, ELECTRICAL SYSTEMS AND APPLIANCES ARE FULLY OPERATIONAL AND THAT ALL PLUMBING AND MECHANICAL EQUIPMENT IS OPERATING QUIETLY AND FREE FROM VIBRATION. CONTRACTOR SHALL PROVIDE A BINDER FOR HACP AND TENANT CONTAINING MAINTENANCE MANUALS, INCLUDING OPERATION INSTRUCTIONS, SPARE PARTS, WARRANTIES, INSPECTION PROCEDURES, AND DATA FOR EACH SYSTEM OR EQUIPMENT ITEM.

ALL ELECTRICAL PANELS AND BREAKERS TO BE PROPERLY MARKED AND A TYPED SCHEDULE TO BE FURNISHED.

FINAL CLEANING: AT THE TIME OF THE PROJECT CLOSE OUT, THE GENERAL CONTRACTOR SHALL PROVIDE AND THOROUGHLY CLEAN AND READY THE SPACE FOR OCCUPANCY. THIS SHALL, AT MINIMUM, INCLUDE HARDWARE, SECURITY EQUIPMENT, LIGHT FIXTURES, REPLACEMENT OF BURNED OUT LAMPS, REMOVAL OF NON PERMANENT PROTECTION AND LABELS, TOUCH UP OF ANY MINOR FINISH DAMAGE, AND CLEANING OR REPLACEMENT OF MECHANICAL SYSTEM FILTERS. DAMAGE TO ANY FINISH, SURFACE, EQUIPMENT OR OBJECT CAUSED DURING CLEANING SHALL BE REPAIRED OR REPLACED BY THE GENERAL CONTRACTOR AT HIS/HER OWN COST.

UPON COMPLETION OF THE PROJECT, GENERAL CONTRACTOR SHALL OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT AND PROVIDE A COPY OF THE ORIGINAL TO HACP AND ARCHITECT IF REQUIRED.

AT EACH PAYMENT REQUEST AND BEFORE PAYMENT IS MADE, EACH CONTRACTOR SHALL DELIVER TO THE HACP A COMPLETE RELEASE OF ALL SUB CONTRACTOR'S AND SUPPLIER'S LIENS AND CLAIMS OUT OF THIS CONTRACT, OR RECEIPTS IN FULL COVERING ALL LABOR AND MATERIALS FOR WHICH A LIEN COULD BE FILED OR A BOND SATISFACTORY TO THE HACP INDEMNIFYING HACP AGAINST ANY LIENS.

DIVISION 2 – SITE WORK – NOT APPLICABLE

DIVISION 3 – CONCRETE

PLAN AND REINFORCE CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 19 OF THE IBC 2018 AND ACI 318 AS AMMENDED IN SECTION 1905 OF THE IBC 2018.

CONCRETE TO BE INSTALLED AND CURED PER ACI 318 AND BE NORMAL WEIGHT (144PCF) WITH COMPRESSIVE STRENGTH IN 28 DAYS OF 4000 PSI, AIR ENTRAINED. CEMENT SHALL BE PORTLAND, TYPE I(PLY ASH & GROUND GRANULATED BLAST FURNACE SLAG NOT PERMITTED). COARSE AGGREGATE SHALL BE ¾" MAXIMUM. AIR ENTRAINED SHALL BE 7 PERCENT. SLUMP SHALL BE 4" MAXIMUM.

REINFORCING BARS SHALL COMPLY WITH A.S.T.M. A615–GRADE 60. WELDED WIRE FABRIC SHALL COMPLY WITH A.S.T.M. A185.

4" MINIMUM COMPACTED GRAVEL BED TO PLACE CONCRETE TO BE #57 HAND OR MACHINE COMPACTED BEFORE CONCRETE PLACEMENT.

PROVIDE COLD-APPLIED JOINT SEALANTS, SINGLE COMPONENT, SILICONE, SELF LEVELING TYPE, BY SIKA OR EQUAL.

ROUND BACKER RODS FOR COLD-APPLIED JOINT SEALANTS: ASTM D5249, TYPE 3, OF DIAMETER AND DENSITY REQUIRED TO CONTROL JOINT-SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT. BY SIKA OR EQUAL.

DIVISION 4 – MASONRY

BRICK MASONRY REPOINTING

BRICK MASONRY REPOINTING SPECIALIST QUALIFICATIONS: ENGAGE AN EXPERIENCED BRICK MASONRY REPOINTING FIRM TO PERFORM WORK OF THIS SECTION. FIRM SHALL HAVE COMPLETED WORK SIMILAR IN MATERIAL DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. EXPERIENCE IN ONLY INSTALLING MASONRY IS INSUFFICIENT EXPERIENCE FOR MASONRY REPOINTING WORK.

REPOINTING OF AREAS INDICATED IN THE DRAWINGS AND LOCATIONS WITH THE FOLLOWING DEFECTS:
A. HOLES AND MISSING MORTAR.
B. CRACKS THAT CAN BE PENETRATED 1/4 INCH OR MORE BY A KNIFE BLADE 0.027 INCH THICK.
C.CRACKS 1/8 INCH OR MORE IN WIDTH AND OF ANY DEPTH.
D.HOLLOW-SOUNDING JOINTS WHEN TAPPED BY METAL OBJECT.
E. ERODED SURFACES 1/4 INCH OR MORE DEEP.
F. DETERIORATION TO POINT THAT MORTAR CAN BE EASILY REMOVED BY HAND, WITHOUT TOOLS.
G. JOINTS FILLED WITH SUBSTANCES OTHER THAN MORTAR.

MATERIALS
PORTLAND CEMENT: ASTM C 150/C 150M, TYPE I OR TYPE II. EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION; GRAY, WHERE REQUIRED FOR COLOR MATCHING OF MORTAR.

MASONRY CEMENT: ASTM C 91/C 91M. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- CEMEX S.A.B. DE C.V.
- HOLCIM (US) INC.
- QUIKRETE; THE QUIKRETE COMPANIES, LLC.

REMOVE GUTTERS, DOWNSPOUTS AND ASSOCIATED HARDWARE ADJACENT TO MASONRY REPOINTING. REINSTALL WHEN REPOINTING IS COMPLETED.PROVIDE TEMPORARY RAIN DRAINAGE DURING WORK TO DIRECT WATER AWAY FROM THE BUILDING.

SEE LINTEL REPLACEMENT BELOW AND COORDINATE MASONRY REPOINTING AND REPLACEMENT WITH REMEDIAL LINTEL REPAIR OR REPLACEMENT.

RETAINING WALL
WHERE NOTED ON THE DRAWINGS, NEW DRYSTACK RETAINING WALL, BELGARD OR EQUAL, TO MATCH EXISTING COLOR AND TYPE OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. REMOVE SUFFICIENT SOIL TO ALLOW ACCESS TO INSTALL A NEW WALL. SET NEW WALL IN COMPACTED GRAVEL BED STRICTLY ACCORDING TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS. INSTALL NEW WALL WITH ALL NECESSARY PINS, GEOGRID AND CAP PIECES ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL ACCESSORIES
WALL CAPS, PINS AND GEOGRID FABRIC.
REPLACEMENT WALL CAPS TO MATCH EXISTING, MATERIAL CONCRETE BY BELGARD OR EQUAL. COLOR AND TYPE TO MATCH EXISTING OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

GLASS BLOCK
SOLID GLASS BLOCK COLORLESS, TRANSPARENT, SMOOTH FACES AND MANUFACTURER'S STANDARD EDGE COATING WHITE, BY SEVES, OWINGS CORNING GLASS BLOCK OR EQUAL. SUCCINE SEALANT BY SIKA OR EQUAL. PRODUCT INFORMATION AND SAMPLE TO BE PROVIDED TO ARCHITECT AND HACP FOR APPROVAL. SIZE OF GLASS BLOCK TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD SIZES. GLASS BLOCK SHALL BE INSTALLED PER IBC AND IRC BUILDING CODE AND TMS 402/ACI 530/ASCE 5 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES"

DIVISION 5 – METALS

STEEL BEAMS, ANGLES AND PLATES
SHOP PRIMED WITH RUST PREVENTATIVE PAINT. DIMENSIONS AND GRADE TO MATCH EXISTING. SHOP DRAWINGS TO BE PROVIDED BY GC.

ALL EXTERIOR LINTELS MUST BE HOT-DIP GALVANIZED PER ASTM A123.

LINTEL REPLACEMENT/ INSTALLATION ON BRICK VENEER EXTERIOR WALLS
PROTECT EXISTING OPENING WITH PLYWOOD.TEMPORARILY SHORE AND REMOVE EXISTING BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL AND REPLACE WITH NEW GALVANIZED WIRE MESH STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

FOR LINTEL CLEANING USE METAL CLEANING ON NEXT SECTION.

METAL CLEANING
EXECUTION OF THE WORK: IN CLEANING ITEMS, DISTURB THEM AS MINIMALLY AS POSSIBLE AND AS FOLLOWS:
A. REMOVE DETERIORATED COATINGS AND CORROSION.
B. SEQUENCE WORK TO MINIMIZE TIME BEFORE PROTECTIVE COATINGS ARE REAPPLIED.
C. CLEAN ITEMS IN PLACE UNLESS OTHERWISE INDICATED.

MECHANICAL COATING REMOVAL: USE GENTLE METHODS, SUCH AS SCRAPING AND WIRE BRUSHING, THAT WILL NOT ABRADE METAL SUBSTRATE.

REPAINT: WHERE INDICATED, PREPARE PAINTED DECORATIVE METAL BY CLEANING SURFACE, BEVELING EDGES OF REMAINING EXISTING PAINT, SANDING EDGES SMOOTH, REMOVING EXISTING PAINT AND PRIMING FOR PAINTING AS SPECIFIED.

METAL AWNINGS
BASIS OF DESIGN, MATCH EXISTING AWNINGS DIMENSIONS, PERIMETER FASCIA, BRACING AND SUPPORTS TO BE EXTRUDED ALUMINUM, DECKING ALUMINUM INTERLOCKING PANELS, PROFILE AND THICKNESS AS DETERMINED BY MANUFACTURER. FACTORY APPLIED BACKED ENAMEL OR KYNAR PAINT FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER STANDARD COLOR CHART. INSTALLATION OF AWNINGS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. ALL FASTENERS FOR AWNINGS SHALL BE TYPE 316 SS. FOR LOCATIONS WHERE AWNINGS ARE ATTACHED TO SIDEWALL, AWNING FASTENERS SHALL FASTEN INTO STUDS WITH COMPRESSION STAND-OFF IF THROUGH VENEER BRICK. INSTALLATION SHALL INCLUDE PREFINISHED ALUMINUM REGLETED WALL FLASHING AT HEAD, PROPERLY INSTALLED AND CAULKED. SEE ALSO DIVISION 10.

ALUMINUM METAL RAILINGS
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS, INCORPORATED. OR COMPARABLE PRODUCT, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
PROVIDE ALLOY AND TEMPER RECOMMENDED BY ALUMINUM PRODUCER AND FINISHER FOR TYPE OF USE AND FINISH INDICATED, AND WITH STRENGTH AND DURABILITY PROPERTIES FOR EACH ALUMINUM FORM REQUIRED NOT LESS THAN THAT OF ALLOY AND TEMPER DESIGNATED BELOW.
GC TO PROVIDE PRODUCT INFORMATION AND SHOP DRAWINGS OF NEW RAILINGS TO MATCH EXISTING DIMENSIONS. PROVIDE ACCESSORIES AS REQUIRED FOR INSTALLATION ON CONCRETE, BY VINYL DECKING, WALLS AND CHANGE IN DIRECTION FITTINGS AS REQUIRED.

DIVISION 6 – WOOD AND PLASTICS

WOOD FRAMING AND BLOCKING
SELECT STRUCTURAL GRADE DOUGLAS FIR SOUTH, SIZES AS INDICATED ON DRAWINGS. COMPLY WITH THE "RECOMMENDED NAILING SCHEDULE" OF THE "MANUAL FOR HOUSING FRAMING."

FLOOR SHEATHING (IF REQUIRED) - PROVIDE 3/4" T&G PLYWOOD FLOOR SHEATHING OR OSB STRUCTURAL FIBERBOARD. ALIGN PANELS ACROSS A MINIMUM OF TWO SUPPORTS WITH THEIR LONGITUDINAL AXIS PERPENDICULAR TO AXIS OF JOISTS, STAGGER JOINTS. GLUE TO JOISTS AND EDGES WITH ELASTOMERIC SOLVENT-BASED GLUE CONFORMING TO APA SPECIFICATION AFG-101. FASTEN WITH 8D COMMON OR 6D ANNULAR OR SPIRAL NAILS AT 6" O.C. ALONG EDGES AND 10" ALONG INTERMEDIATE SUPPORTS. FOLLOW PANEL MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR SUB-FLOOR PREP, PRIOR TO INSTALLATION OF FINISH FLOORING.

EXTERIOR WOOD FRAMING EXPOSED TO WEATHERING AND INSECTS SHALL BE MINIMUM 2" X PRESSURE TREATED LUMBER. KILN DRIED TO 19% MOISTURE CONTENT BEFORE INSTALLATION.

WOOD TRIM AND MOLDINGS
PROVIDE FURNITURE GRADE SOLID HARDWOOD TRIM AND MOLDINGS. STAIN ALL SIDES AND ENDS. WOOD TRIM AND MOLDINGS TO MATCH EXISTING UNLESS OTHERWISE NOTED ON DRAWINGS.

INSTALL WOOD TRIM AND MOLDINGS WITH MITER AT CORNERS, MITERED LAP SPLICES, AND SET WITH COUNTER SUNK GALVANIZED FINISH NAILS CAPPED WITH WOOD PUTTY SANDED SMOOTH. COMPLY WITH AWI 300 FOR ALL STANDARD WOOD RUNNING TRIM.

FABRICATOR QUALIFICATIONS
FIRM EXPERIENCED IN PRODUCING ARCHITECTURAL WOODWORK SIMILAR TO THAT INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE, AS WELL AS SUFFICIENT PRODUCTION CAPACITY TO PRODUCE REQUIRED UNITS WITHOUT DELAYING THE WORK.

INTERIOR ARCHITECTURAL WOODWORK

INSTALLER QUALIFICATIONS.
ARRANGE FOR INSTALLATION OF ARCHITECTURAL WOODWORK INSTALLATION BY A FIRM THAT CAN DEMONSTRATE SUCCESSFUL EXPERIENCE IN INSTALLING ARCHITECTURAL WOODWORK ITEMS SIMILAR IN TYPE AND QUALITY TO THOSE REQUIRED FOR THIS PROJECT.

QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH AWI'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS."

ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETE, AND MECHANICAL SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD. REFER TO AWI'S OR WIS MEMBER LIST FOR NAMES OF WOODWORKING FIRMS THAT COULD POTENTIALLY BE INCLUDED.

MATERIALS

WOOD SPECIES AND CUT FOR TRANSPARENT FINISH: AS INDICATED ON DRAWINGS.

WOOD SPECIES FOR OPAQUE FINISH: ANY CLOSED-GRAIN HARDWOOD.

GENERAL: COMPLETE FABRICATION TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE, WHERE NECESSARY FOR FITTING AT THE SITE, PROVIDE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.
- INTERIOR WOODWORK GRADE: AWI CUSTOM.
- SHOP CUT OPENINGS TO MAXIMUM EXTENT POSSIBLE. SAND EDGES OF CUTOUTS TO REMOVE SPLINTERS AND BURRS. SEAL EDGES OF OPENINGS IN COUNTERTOPS WITH A COAT OF VARNISH.
- FOR TRANSPARENT-FINISHED TRIM ITEMS WIDER THAN AVAILABLE LUMBER, USE VENEERED CONSTRUCTION. DO NOT GLUE FOR WIDTH.
- BACK OUT OF CONVEX BACKS OF FLAT TRIM AND MOLDINGS AND KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT FOR MEMBERS WITH END-EXPOSED INFINISHED WORK.
- ASSEMBLE CASINGS IN PLANT EXCEPT WHERE LIMITATIONS OF ACCESS TO PLACE OF INSTALLATION.

PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH THE ARCHITECTURAL WOODWORK STANDARDS FOR GRADES OF CABINETS INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS

ARCHITECTURAL WOOD WORK STAND ARDS GRADE: AWI PREMIUM.

TYPE OF CONSTRUCTION: FRAMELESS.

DOOR AND DRAWER-FRONT STYLE: FLUSH OVERLAY.

HIGH-PRESSURE DECORATIVE LAMINATE: ISO 4586-3, GRADES AS INDICATED OR IF NOT INDICATED, AS REQUIRED BY QUALITY STANDARD.

EXPOSED SURFACES:
1. PLASTIC-LAMINATE GRADE: AWI PREMIUM.
2. EDGES: GRADE AWI PREMIUM.
3. PATTERN DIRECTION: AS INDICATED.

CONCEALED BACKS OF PANELS WITH EXPOSED PLASTIC-LAMINATE SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE, ISO 4586-3, GRADE TO MATCH EXPOSED SURFACE.

DRAWER CONSTRUCTION: FABRICATE WITH EXPOSED FRONTS FASTENED TO SUBFRONT WITH MOUNTING SCREWS FROM INTERIOR OF BODY.
1. JOIN SUBFRONTS, BACKS, AND SIDES WITH GLUED RABBETED JOINTS ALSO REINFORCED BY MECHANICAL FASTENERS OR GLUED DOVETAIL JOINTS.

COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURERS' FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS, MATTE FINISH.
B. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
C. WOOD GRAIN, MATTE FINISH.
D. PATTERNS, MATTE FINISH.

SYNTHETIC DECKING
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS; TIMBERTECH, AZEK OR COMPARABLE PRODUCT.
DECKING SIZE AND LENGTH TO MATCH EXISTING INSTALLATION. FINISH TEXTURE BRUSHED; COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. FASCIA BOARDS TO MATCH DECKING COLOR.
DECKING FASTENING SYSTEM AS RECOMMENDED BY MANUFACTURER'S INSTALLATION MANUAL. FOLLOW MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR CUTTING, TRIMMING AND INSTALLING DECKING.

RUBBER STAIR TREADS COVERS
BASIS OF DESIGN, BY ROPPE OR EQUAL, RIBBED PATTERN, BLACK FINISH. FOLLOW THE MANUFACTURER'S INSTRUCTION FOR INSTALLATION.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

ROOFING, SHEET METAL, FLASHING AND TRIM
GENERAL: CONTRACTOR TO EVALUATE STATUS OF ROOFING MATERIAL, COMMUNICATE THE HACP AND ARCHITECT OF FINDINGS AND IF PATCHING OR REPLACEMENT IS NEEDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INSTALL ASPHALT SHINGLES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN ARMA'S "ASPHALT ROOFING RESIDENTIAL MANUAL - DESIGN AND APPLICATION METHODS" AND NRCA'S "NRCA GUIDELINES FOR ASPHALT SHINGLE ROOF SYSTEMS".

ASPHALT SHINGLES: ASTM D3462/D3462M, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION, GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF-SEALING, BY GAF OR EQUAL, STRAIGHT CUT. FINISH COLOR TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. HACP TO APPROVE FINAL COLOR SELECTION. RIDGE VENT, IF REQUIRED TO MATCH ROOFING MATERIAL MANUFACTURER.

GC TO INSPECT FLASHING OF ROOF PENETRATIONS, PATCH AND REPLACE IF NEEDED TO COMPLY WITH CODE AND REGULATIONS.

SHEET METAL STANDARD FOR FLASHING AND TRIM: COMPLY WITH NRCA'S "THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION AND AIR LEAKAGE CONTROL, AND REROOFING" AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL". REQUIREMENTS FOR DIMENSIONS AND PROFILES SHOWN UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.

INSTALL SHEET METAL FLASHING AND TRIM TO COMPLY WITH DETAILS INDICATED AND RECOMMENDATIONS OF CITED SHEET METAL STANDARDS THAT APPLY TO INSTALLATION CHARACTERISTICS REQUIRED UNLESS OTHERWISE INDICATED ON DRAWINGS

THERMAL INSULATION
GC TO PROVIDE THERMAL INSULATION ON WALLS, CEILINGS AND FLOORS AS NOTED ON THE DRAWINGS.

INSULATION TO COMPLY WITH THE ENERGY CODE IN MINIMUM R VALUES OR AS SPECIFIED ON DRAWINGS.

GC TO BE RESPONSIBLE TO INSPECTING, ADJUSTING AND ADDING INSULATION TO THE ENTIRE ATTIC SPACE TO ENSURE THE MINIMUM INSULATION COVERAGE WITH NO GAPS. GC TO INFORM HACP AND ARCHITECT PRIOR TO ADD ADDITIONAL INSULATION.

ATTIC DOORS TO RECEIVED RIGID FOAM INSULATION GLUED TO BACK OF THE DOOR AND WITH RUBBER JOINTS. INSULATION TO MATCH R VALUE OF CEILING ASSEMBLY.

ASSEMBLIES, SEPARATIONS & FIRESTOPPING:

ANY NEW DEMISING OR INTERIOR PARTITIONS SHALL BE RATED AS REQUIRED BY CODE. ANY PENETRATION THROUGH AN EXISTING DIMENSIONAL INTERIOR PERFORMANCE UL RATED ASSEMBLY WALL MUST RETAIN THE UL ASSEMBLY FIRE-RATING.

ALL NEW WORK SHALL MATCH OR EQUAL THE UL FIRE RATINGS, IF ANY, OF THE SURROUNDING WORK. AS APPROPRIATE, THE CONTRACTOR SHALL CONTACT HACP AND ARCHITECT IF ANY AREAS ARE UNCOVERED OR DISCOVERED THAT MAY REQUIRE ADDITIONAL ANALYSIS OR CLARIFICATION.

THROUGH PENETRATIONS OF FIRE RESISTANCE WALLS SHALL BE INSTALLED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY UNDERWRITERS LABORATORIES. IF THE PENETRATING ITEMS ARE STEEL, FERROUS OR COPPER PIPES OR STEEL CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE FIRE-RESISTANCE-WALL SHALL BE PERMITTED TO BE PROTECTED AS FOLLOWS:

IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A MAXIMUM 6-INCH NOMINAL DIAMETER AND THE OPENING IS A MAXIMUM 144 SQUARE INCHES, CONCRETE, GROUT, OR MORTAR SHALL BE PERMITTED WHERE INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING.

THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHERE SUBJECTED TO ASTME 119 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE WALL ASSEMBLY.

MEMBRANE PENETRATIONS, WHERE WALL AND PARTITIONS ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:
FOR STEEL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. A HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY WHERE THE WALL CAVITY IS FILL WITH CELLULOSE LOOSE FILL, ROCKWOOL OR SLAG WOOL INSULATION PROVIDED THE WALL IS RATED (CONSISTING OF 2-INCH NOMINAL LUMBER OR TWO THICKNESSES OF 1-INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS OR ONE THICKNESS OF 0.719-INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANEL OR ONE THICKNESS OF 0.75-INCH PARTICLEBOARD WITH JOINTS BACKED BY 0.75-INCH PARTICLEBOARD. GYPSUM BOARD, CEMENT FIBER BOARD, BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED AS AN ACCEPTABLE FIREBLOCK. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NONRIGID MATERIALS SHALL BE PERMITTED FOR COMPLIANCE WITH THE 10-FOOT HORIZONTAL FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROW OF STUDS OR STAGGERED STUDS. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES. THE INTEGRITY OF FIREBLOCKS SHALL BE MAINTAINED; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

MEMBRANE PENETRATIONS FOR LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL ARE PERMITTED PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE OR TO PREVENT THE FIRE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. SUCH PENETRATIONS SHALL NOT EXCEED AN AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.

MEMBRANE PENETRATIONS BY LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL THAT HAS BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED PER INSTRUCTIONS INCLUDED IN LISTING.

JOINT SEALERS
INTERIOR JOINT SEALER IS TO BE MILDEW-RESISTANT SILICONE SEALANT. APPLY SEALANT AT ALL MATERIAL JOINTS SUBJECT TO WATER PENETRATION. COLOR TO BE SELECTED BY THE ARCHITECT FROM MFR'S STANDARD LINE.

VINYL SIDING
VINYL SIDING. INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D3679.
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALSIDE, EXTERIOR BUILDING PRODUCTS, KAYCAN LTD., ROYAL BUILDING PRODUCTS, A WESTLAKE COMPANY. OR EQUAL.

HORIZONTAL PATTERN: 6-1/2- OR 7-INCH EXPOSURE IN BEADED-EDGE, SINGLE-BOARD STYLE. SMOOTH TEXTURE. COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OR TO MATCH EXISTING WHERE REQUIRED.

WATER PROOFING MEMBRANE
BASIS OF DESIGN, BY SIKA OR EQUAL, 60 MIL. REFER TO MANUFACTURERS INSTRUCTION FOR PREPARATION OF SUBSTRATES AND INSTALLATION OF MEMBRANE.

DIVISION 8 - DOORS, WINDOWS AND HARDWARE

ALL DOORS AND WINDOWS SHALL BE INSTALLED PLUMB, LEVEL, SQUARE, AND PER ALL MANUFACTURERS RECOMMENDATION.

EXTERIOR DOORS TO BE 1 3/4"-THICK, FIBERGLASS INSULATED WITH 3 SETS OF STEEL HINGES, RUBBER WEATHER STRIPPING, LOCKING AS SPECIFIED ON HARDWARE. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING, VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS: 1) IN DOORS, 2) WITHIN 24" OF A DOOR AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE, 3) IN FIXED PANELS WITH THE LOWEST EDGE LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36" OF SUCH GLAZING.

DOOR HARDWARE
INTERIOR DOOR HARDWARE

ALL DOOR HARDWARE TO BE APPROVED BY HACP FACILITY REPRESENTATIVE.

BASIS OF DESIGN NON- ACCESIBLE UNITS
MANUFACTURER BALDWIN OR EQUAL, ROUND KNOB TRADITIONAL ROUND, MODEL PS ROU TRR.150. FINISH TO MATCH EXISTING OR SATIN NICKEL IF ALL INTERIOR DOOR HARDWARE IS REPLACED. OPERATION TYPE: DUMMY, PRIVACY AND PASSAGE.

BASIS OF DESIGN ACCESIBLE UNITS
MANUFACTURER BALDWIN OR EQUAL, TOBIN LEVER WITH ROUND ROSE, MODEL 3527BL-RDB-15. FINISH TO MATCH EXISTING OR SATIN NICKEL IF ALL INTERIOR DOOR HARDWARE IS REPLACED. OPERATION TYPE: DUMMY, PRIVACY AND P

POLISH CHROME PLATE FINISH, 2.2 GPM FLOW RATE, LEVER HANDLE, RIGID SPOUT, DRAIN POP UP.

KITCHEN SINKS – WATER SENSE CERTIFIED
STAINLESS STEEL, COUNTER MOUNTED, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- AFFINITY SURFACES

0.038 INCH THICKNESS, 3 1/2" DRAIN GRID CENTERED IN BOWL.

SINKS FAUCETS – WATER SENSE CERTIFIED
GENERAL DUTY, SOLID BRASS, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- HANSGROHE

POLISHED CHROME PLATE FINISH. SINGLE HANDLE ON KITCHEN TWO HANDLE ON UTILITY SINKS.

WATER CLOSET – WATER SENSE CERTIFIED
FLOOR MOUNTED, FLOOR OUTLET, CLOSE COUPLED (GRAVITY TANK), VITREOUS CHINE, 1.6 GAL/FLUSH, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- KOHLER
- TOTO USA

STANDARD HEIGHT, ELONGATED RIM, WATER SAVING, COLOR WHITE.
TOILET SEAT PLASTIC FOR RESIDENTIAL USE, ELONGATED RIM, SEAT COVER, SELF SUSTAINING HINGE, COLOR WHITE.

UTILITY SINK
FRESTANDING UTILITY SINK, MANUFACTURERS: PROFLO OR EQUAL
STANDARD HEIGHT, COLOR WHITE. 20 INCH BY 20 INCH SIZE.

EXTERIOR HOSE BIBB
FREEZELESS WALL FAUCET, WOODFORD OR EQUAL, MODEL 30,3/4 INCH CONNECTION, BRASS FINISH, ASSE 1053 APPROVED, MAX PRESSURE 125 PSI.

SLEEVES
SLEEVES SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH WALLS, CEILINGS, OR FLOORS. SLEEVES SHALL BE CUT FROM SCHEDULE 40 BLACK IRON PIPE. THE INTERNAL DIAMETER OF THE SLEEVE SHALL EXCEED THE EXTERNAL DIAMETER OF THE PIPE (INCLUDING INSULATION) BY NOT LESS THAN ONE INCH. SLEEVES SHALL BE CUT FLUSH WITH WALLS AND UNDERSIDES OF FLOORS AND SHALL EXTEND ONE INCH ABOVE FLOORS ABOVE GRADE.

PIPE PORTALS
PIPING THROUGH THE ROOF SHALL BE INSTALLED THROUGH A PREFABRICATED PIPING PORTAL. PORTALS SHALL HAVE GALVANIZED STEEL INSULATED CURBS, ABS PLASTIC CURB CAP, NEOPRENE RUBBER NIPPLES, AND STAINLESS-STEEL CLAMPS. CURB HEIGHT AS INDICATED ON DRAWINGS. PORTALS SHALL BE MODEL RC AND NJB AS MADE BY ROOF PRODUCTS AND SYSTEMS CORP. PORTALS SHALL HAVE EXTRA HOLES FOR POWER AND CONTROL CONDUITS.

FIRESTOPS
ALL OPENINGS THROUGH FLOORS AND FIRE-RATED PARTITIONS SHALL BE SEALED. VOID SPACES AROUND DUCTS OR PIPES SHALL BE PACKED WITH A FIREPROOF CERAMIC FIBER AND SEALED WITH FIRE RETARDANT CAULKING. FIBER SHALL BE KAOWOOL BY BABCOCK AND WILCOX, FIBERFRAX BY CARBORUNDUM, OR CERAFIBER BY MANVILLE CO. CAULKING SHALL BE SE4111 F BY UNISEAL STANDARD DUXSEAL BY MANVILLE, OR MOLDABLE PUTTY BY 3M.

ESCUTCHEONS
ESCUTCHEONS SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH FLOORS, CEILINGS, OR WALLS OF FINISHED SPACES. ESCUTCHEONS SHALL BE CHROMIUM PLATED STEEL, SNAP ON TYPE WITH SPRING RETAINERS. ESCUTCHEONS SHALL BE THE NO. 40 MADE BY BEATON/CORBIN COMPANY OR APPROVED EQUAL, SIZED TO FIT PIPE PLUS INSULATION. WHERE RISER CLAMPS ARE IN FINISHED SPACES, PROVIDE HIGH-SHIRT ESCUTCHEONS TO COVER CLAMP.

UNIONS
UNIONS SHALL BE INSTALLED AT ALL POINTS INDICATED ON THE DRAWINGS AND AT ALL OTHER POINTS NECESSARY FOR THE INSTALLATION AND REMOVAL OF EQUIPMENT, CONTROL DEVICES, ETC. UNIONS IN GAS LINES WILL BE PERMITTED ONLY AT THE FINAL CONNECTIONS TO EQUIPMENT.

HANGERS
ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH PIPEHANGERS TO PREVENT SAGGING AND AVOID CONCENTRATION OF HANGING LOAD. HANGER SPACING SHALL NOT EXCEED 10 FT. FOR STEEL PIPE OR 8 FT. FOR COPPER TUBING. COPPER TUBING 1-1/4" AND SMALLER SHALL BE SUPPORTED AT NO GREATER THAN 6 FT. SPACING.

REPAIR ALL FIREPROOFING WHICH IS DAMAGED BY HANGER INSTALLATION.

SOIL WASTE AND VENT PIPING
SOIL, WASTE AND VENT STACKS AND BRANCHES, AND ROOF CONDUCTORS SHALL BE ABS OR PVC PIPING AND FITTINGS SCHEDULE 40. WASTE LINES SHALL BE MINIMUM 2 INCH.

HOT AND COLD-WATER PIPING
POTABLE-WATER PIPING AND COMPONENTS ARE TO COMPLY WITH NSF 14, NSF 61, AND NSF 372. INCLUDE MARKING "NSF-PW" ON PIPING.

HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE TYPE L, SEMI-ESS, HARD TEMPER, COPPER TUBING WHICH CONFORMS TO ASTM SPECIFICATION B-88 WITH WROUGHT COPPER, SOLDER, TYPE FITTINGS, OR PEX TUBING PLASTIC IN ACCORDANCE WITH ASTM F876 AND ASTM F877 WITH FITTINGS ASTM F1807, METAL INSERT AND COPPER CRIMP RINGS ASTM F1960, COLD EXPANSION FITTINGS AND REINFORCING RINGS.

INSTALLATION OF PIPING
DRAINAGE PIPING SHALL BE INSTALLED TO ACCURATE LINE AND UNIFORM GRADE, AND AT THE ELEVATIONS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE INDICATED, ALL DRAINAGE LINES SHALL SLOPE NOT LESS THAN 1/4 INCH PER FOOT.
DRAINAGE LINES SHALL BE PROVIDED WITH SUFFICIENT CLEANOUTS TO MAKE ALL PARTS OF THE DRAINAGE SYSTEM ACCESSIBLE. CLEANOUTS SHALL BE PROVIDED ALONG INTERIOR HORIZONTAL RUNS AT NOT MORE THAN 50 FT. ON CENTER. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH ROOF CONDUCTOR AND AT ALL OTHER POINTS INDICATED ON THE DRAWING OR REQUIRED BY LOCAL PLUMBING CODE.

ALL PIPES SHALL BE CUT WITH SQUARE ENDS AND SHALL BE PROPERLY REAMED. THREADS SHALL BE CUT WITH CLEAN, SHARP DIES TO FULL DEPTH. ALL BURRS SHALL BE REMOVED FROM PIPE. JOINT COMPOUND SHALL BE APPLIED TO PIPE THREAD ONLY. USE OF EXCESSIVE JOINT COMPOUND IS PROHIBITED.

SOLDER JOINTS IN ALL WATER LINES SHALL BE MADE WITH 95-5 TIN-ANTIMONY SOLDER. OTHER JOINTS MADE WITH EASYBRITE LEAD FREE SOLDER.

WATER LINES WITHIN THE BUILDING SHALL BE INSTALLED WITH SUFFICIENT PITCH TO PROPERLY DRAIN LINES AND VALVES. IN ADDITION TO DRAIN VALVES INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL DRAIN VALVES NECESSARY TO PROPERLY DRAIN THE SYSTEM.

GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND NFPA-54. ALL GAS PIPING AND CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH AGA RECOMMENDATIONS AND ALL APPLICABLE LOCAL GAS COMPANY REGULATIONS.

CONTRACTOR SHALL VENTILATE THE WORK AREA TO PROVIDE A SAFE ENVIRONMENT. VENTILATION SHALL NOT DIRECT FUMES TO ADJACENT SPACES OR NEIGHBORING STRUCTURES.

CONTRACTOR SHALL PROVIDE ADEQUATE FIRE PROTECTION DURING WELDING, CUTTING AND SOLDERING.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

VALVES
VALVES IN WATER LINES SHALL BE 125 PSI CLASS, BRONZE BODY, BALL VALVES WITH TEFLON SEATS AND PACKING. NIBCO 580 OR APOLLO.DRAIN VALVES SHALL BE BRONZE BODY SOLDERED ENDS, BALL VALVES WITH 3/4 INCH AMERICAN STANDARD HOSE THREAD OUTLET. NIBCO OR APOLLO.

WALL HYDRANT SHALL BE ALL BRASS, FULLY RECESSED, NON-FREEZE, KEY OPERATED, WITH ADJUSTABLE LOCKNUT, REMOVABLE NYLON SEAT, 3/4 INCH HOSE CONNECTION. FURNISH WITH INTEGRAL VACUUM BREAKER. ZURN Z-1300 OR APPROVED EQUAL.

VALVES IN GAS LINES SHALL BE 125 PSI CLASS, THREADED END, IRON BODY. GAS COCKS WITH BRASS PLUG AND WASHER AND SQUARE HEAD. GRANCE NO. 324.

INSULATION
ALL COLD AND HOT WATER PIPING, AND HORIZONTAL PORTIONS OF ROOF CONDUCTORS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX.

PIPE IDENTIFICATION
ALL PIPING SHALL BE LABELED WITH THE NAME OF THE FLUID IN THE PIPE AND WITH ARROWS INDICATING THE DIRECTION OF THE FLOW.

TESTING

DRAINAGE SYSTEM - THE ENTIRE DRAINAGE SYSTEM SHALL BE TESTED HYDROSTATICALLY FOR LEAKS. THE ENTIRE SYSTEM SHALL BE FILLED TO THE TOP OF THE STACKS WITH WATER AND CHECKED FOR LEAKS.

WATER PIPING - ALL WATER PIPING SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL FOREIGN MATERIAL. ALL TESTING SHALL BE COMPLETED BEFORE INSULATION IS APPLIED.
DURING THE TESTS ALL VALVES SHALL BE CAREFULLY CHECKED FOR LEAKAGE AROUND THE STEM.

WATER HEATERS - HEATERS SHALL BE TESTED AND CHECKED TO DETERMINE THAT THEY OPERATE IN COMPLIANCE WITH THE SPECIFICATIONS. ALL CONTROLS SHALL BE PROPERLY ADJUSTED.

DISINFECTION OF POTABLE WATER SYSTEM - GENERAL: NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE. WHENEVER REQUIRED BY THE AUTHORITY HAVING JURISDICTION THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY.

MECHANICAL REQUIREMENTS

GENERAL CONDITIONS OF THE MECHANICAL CONTRACT
PLUMBING CONTRACTOR TO FOLLOW HUD GENERAL CONDITIONS AS SPECIFIED EARLIER IN DIVISION 1.

ALL MECHANICAL WORK TO COMPLY WITH LOCAL CODE AND REGULATIONS.

CUTTING AND PATCHING
ALL CHASES, RECESSES, HOLES, AND OPENINGS FOR EQUIPMENT AND DUCTWORK WILL BE PROVIDED BY THE GENERAL CONTRACTOR.

SHOULD THE MECHANICAL CONTRACTOR FAIL TO SET SLEEVES OR LOCATE OPENINGS BEFORE THE WORK OF THE GENERAL CONTRACTOR HAS BEEN COMPLETED IN THAT PARTICULAR AREA, THE MECHANICAL CONTRACTOR SHALL CUT WHATEVER HOLES ARE NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT. ALL PATCHING NECESSITATED BY THE CUTTING OF SUCH HOLES SHALL BE DONE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

REPAIR ALL FIREPROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

EXHAUST FANS
FANS SHALL VENT DIRECTLY TO THE EXTERIOR. EXHAST DUCTS MAY BE TIED TOGETHER OR TIED INTO AN EXISTING SYSTEM PROVIDED THAT BACK FLOW PREVENTORS ARE INSTALLED AT EACH FAN INCLUDING ALL FANS TIED INTO THE EXISTING SYSTEM.

FURNISH NEMA 1 SURFACE MOUNTING STARTER WITH OVERLOAD AND UNDER VOLTAGE PROTECTION.

FURNISH WITH BIRD SCREEN AND BACKDRAFT DAMPER.

FAN SHALL BE ACE MADE BY COOK, GREENHECK, OR APPROVED EQUAL. MOCFM CAPACITY, PROVIDE EQUIPMENT TO MATCH EXISTING SYSTEM CAPACITY AT A MINIMUM.

MECHANICAL CONTRACTOR TO PROVIDE HACP AND ARCHITECT WITH SPECIFICATION SHEETS OF EQUIPMENT.

GAS-FIRED FURNACES, NONCONDENSING
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- BRYANT; CARRIER GLOBAL CORPORATION.
- CARRIER GLOBAL CORPORATION.
- BUILDING SOLUTIONS NORTH AMERICA.

ENERGY STAR RATING OF 95% AFUE OR GREATER
CABINET: GALVANIZED STEEL.
- CABINET INTERIOR AROUND HEAT EXCHANGER SHALL BE FACTORY-INSTALLED INSULATION.
- LIFT-OUT PANELS SHALL EXPOSE BURNERS AND ALL OTHER ITEMS REQUIRING ACCESS FOR MAINTENANCE.
- FACTORY PAINT EXTERNAL CABINETS IN MANUFACTURER'S STANDARD COLOR.
- AIRSTREAM SURFACES: SURFACES IN CONTACT WITH THE AIRSTREAM SHALL COMPLY WITH REQUIREMENTS IN ASHRAE 62.1.

FAN: CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT OR BELT DRIVE.
- FAN MOTORS: COMPLY WITH REQUIREMENTS IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT."
- SPECIAL MOTOR FEATURES, SINGLE SPEED: SINGLE SPEED, PREMIUM EFFICIENCY, AS DEFINED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT," AND WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, MULTISPEED: MULTI-TAPPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, ECM: ELECTRONICALLY CONTROLLED MOTOR (ECM) CONTROLLED BY INTEGRATED FURNACE/BLOWER CONTROL.

TYPE OF GAS: NATURAL
HEAT EXCHANGER: ALUMINIZED STEEL.
BURNER:
- GAS VALVE: 100 PERCENT SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUTOFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD.
- IGNITION: ELECTRIC PILOT IGNITION, WITH HOT-SURFACE IGNITER OR ELECTRIC SPARK IGNITION.

GAS-BURNER SAFETY CONTROLS:
- ELECTRONIC FLAME SENSOR: PREVENTS GAS VALVE FROM OPENING UNTIL PILOT FLAME IS PROVEN; STOPS GAS FLOW ON IGNITION FAILURE.
- FLAME ROLLOUT SWITCH: INSTALLED ON BURNER BOX; PREVENTS BURNER OPERATION.
- LIMIT CONTROL: FIXED STOP AT MAXIMUM PERMISSIBLE SETTING; DE-ENERGIZES BURNER ON EXCESSIVE BONNET TEMPERATURE; AUTOMATIC RESET.

COMBUSTION-AIR INDUCER: CENTRIFUGAL FAN WITH THERMALLY PROTECTED MOTOR AND SLEEVE BEARINGS PRERURGES HEAT EXCHANGER AND VENTS COMBUSTION PRODUCTS; PRESSURE SWITCH PREVENTS BURNER OPERATION IF COMBUSTION-AIR INLET OR FLUE OUTLET IS BLOCKED.
FURNACE CONTROLS: SOLID-STATE BOARD INTEGRATES IGNITION, HEAT, COOLING, AND FAN SPEEDS; AND ADJUSTABLE FAN-ON AND FAN-OFF TIMING; TERMINALS FOR CONNECTION TO ACCESSORIES.
VENT MATERIALS: COMPLY WITH REQUIREMENTS IN SECTION 235123 "GAS VENTS" FOR TYPE B METAL VENTS.

CAPACITIES AND CHARACTERISTICS:
AIRFLOW CONFIGURATION: UPFLOW.
GAS:
- TYPE: NATURAL
- VENTING TYPE: WITH COMBUSTION-AIR INTAKE
- MINIMUM EFFICIENCY AFUE: 80 PERCENT.
- INPUT: SEE SCHEDULE ON DRAWINGS.
- HEAT OUTPUT: SEE SCHEDULE ON DRAWINGS.
- GAS CONNECTION SIZE: 1/2" NPS.
- VENT SIZE: 4 INCHES.

FAN:
- MOTOR: SIZE: 1/3 HP.
- SPEED: SEE SCHEDULE ON DRAWINGS.
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

FURNACE ELECTRICAL CONNECTION:
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

COMPRESSOR AND CONDENSER UNITS, AIR COOLED, 1.0 TO 5 TONS
DESCRIPTION: FACTORY ASSEMBLED AND TESTED; CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTORS, REFRIGERANT RESERVOIR, AND OPERATING CONTROLS.
ENERGY STAR RATING EQUAL OR OVER 15.2 SEER2
COMPRESSOR TYPE: SCROLL, HERMETICALLY SEALED, WITH RUBBER VIBRATION ISOLATORS.
- TWO-SPEED COMPRESSOR: INCLUDE MANUAL-RESET, HIGH-PRESSURE SWITCH AND AUTOMATIC-RESET, LOW-PRESSURE SWITCH.
- ACCUMULATOR: SUCTION TUBE.

REFRIGERANT: R-410A.
CONDENSER COIL: SEAMLESS COPPER-TUBE, -FIN COIL; WITH REMOVABLE DRAIN PAN AND BRASS SERVICE VALVES WITH SERVICE PORTS.
CONDENSER FAN: DIRECT-DRIVEN, MALE PROPELLER FAN; WITH PERMANENTLY LUBRICATED, TOTALLY ENCLOSED FAN MOTOR WITH THERMAL OVERLOAD PROTECTION AND BALL BEARINGS.
UNIT CASING: GALVANIZED STEEL, FINISHED WITH; WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE. MOUNT SERVICE VALVES, FITTINGS, AND GAUGE PORTS ON EXTERIOR OF CASING.
CAPACITIES AND CHARACTERISTICS:
COMPRESSOR AND CONDENSER UNIT:
- FULL-LOAD COOLING CAPACITY: TO BE CALCULATED BY MECHANICAL CONTRACTOR

ELECTRICAL CHARACTERISTICS:
- VOLTS: 208 V.
- PHASE: 1.
- HERTZ: 60 HZ.

SHEET METAL
DUCT SIZES INDICATED ON THE DRAWINGS ARE THE CLEAR INSIDE DIMENSIONS.

ALL DUCTS SHALL BE COMPLETE WITH FOUR SIDES AND SHALL BE OF AIRTIGHT CONSTRUCTION. ALL DUCTS, UNLESS OTHERWISE NOTED, SHALL BE CONSTRUCTED OF 24 GAGE GALVANIZED SHEET STEEL AT 2" PRESSURE CLASS.

JOINTS, SEAMS AND DUCT WALL PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. SEALANT MATERIAL SHALL BE CAULKING COMPOUND SPECIFICALLY MANUFACTURED FOR DUCT APPLICATION FOR INDOOR USE.

JOINTS BETWEEN SHEET METAL SECTIONS MAY BE MADE WITH PREFABRICATED JOINING SYSTEM SUCH AS THE DUCTMATE INDUSTRIES SYSTEM.
STIFFENERS SHALL BE PLACED AT NOT MORE THAN 8-FOOT INTERVALS.

ALL DUCTS SHALL BE ADEQUATELY SUPPORTED FROM CONSTRUCTION ABOVE BY MEANS OF GALVANIZED STEEL STRAP HANGERS SPACED AT NOT MORE THAN 8-FOOT INTERVALS. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA STANDARDS.

DUCTWORK CONNECTIONS TO AIR HANDLING AND AIR CONDITIONING UNITS SHALL HAVE FLEXIBLE CONNECTIONS. WHEN CONNECTION IS OUTDOORS, CONNECTION LENGTH SHALL BE INSULATED AND WEATHERPROOFED.

TURNING VANES SHALL BE INSTALLED IN ALL ELBOWS HAVING SQUARE THROATS OR A THROAT RADIUS LESS THAN HALF THE DUCT WIDTH. TURNING VANES MAY BE PREFABRICATED. IF JOB FABRICATED, DESIGN AND CONSTRUCTION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. VANES SHALL BE AIRFOIL TYPE.

MANUAL VOLUME CONTROL DAMPERS IN DUCTS SHALL BE CONSTRUCTED OF NOT LIGHTER THAN US GAGE NO. 16 GALVANIZED SHEET STEEL. DAMPER BLADES SHALL BE SUPPORTED ON AN END BEARING ON ONE SIDE AND A COMBINATION BEARING AND DAMPER REGULATOR ON THE OTHER SIDE. REGULATOR SHALL BE EQUIPPED WITH A LOCKING DEVICE. MANUAL DAMPERS SHALL BE OPPOSED BLADE TYPE.

FURNISH AND INSTALL FIRE DAMPERS WHERE INDICATED OR WHERE REQUIRED. DAMPERS SHALL COMPLY WITH LATEST EDITION OF NFPA 90A, AND SHALL BE UL LABELED. BLADE STACK SHALL BE OUT OF AIRSTREAM. FUSIBLE FIRE LINKS SHALL HAVE A MELTING POINT OF 165F. DAMPERS SHALL BE MODEL IBD AS MADE BY PRUSKIN, OR APPROVED EQUAL BY SAFE-AIR. FURNISH ACCESS DOORS TO ALL DAMPERS.

ACCESS DOORS IN DUCTS SHALL BE RIGIDLY CONSTRUCTED AND TIGHTLY FITTED. DOORS SHALL BE SUPPORTED ON TWO STEEL BUTT HINGES AND SHALL BE SECURED WITH A SASH LOCK. DOORS SHALL BE GASKETED AND INSULATED.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

FLEXIBLE DUCTS
FLEXIBLE DUCTS SHALL BE SOUND ATTENUATING, THERMAL INSULATED, WIRE WOUND, REINFORCED TYPE WITH A MOISTURE TIGHT FLAME PROOF VINYL BARRIER. FLEXIBLE DUCTS TO BE USED ONLY TO CONNECT INDIVIDUAL DIFFUSERS WITH MAIN OR BRANCH DUCTS. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PORTION OF THE EXISTING SYSTEM WHICH DOES NOT MEET THESE REQUIREMENTS WITH PROPERLY SIZED AND INSULATED SHEET METAL DUCTS. THIS WORK TO BE INCLUDED IN BASE BID.

DIFFUSERS
DIFFUSERS SHALL BE SQUARE OR RECTANGULAR FACED, RECESSED TYPE, WITH REMOVABLE CORES. DIFFUSER CAPACITIES, SIZES AND DIRECTIONAL BLOWS ARE INDICATED ON THE DRAWINGS. FURNISH EACH DIFFUSER WITH DEFLECTING VANES AND KEY OPERATED, OPPOSED BLADE, VOLUME DAMPERS. DIFFUSERS SHALL BE FURNISHED WITH BAKED, WHITE FINISH.

SUPPLY REGISTERS
SUPPLY REGISTERS SHALL HAVE INDIVIDUALLY ADJUSTABLE FINS WITH VERTICAL FRONT BARS AND HORIZONTAL REAR BARS. FINS SHALL BE STREAMLINED AND OF STURDY CONSTRUCTION. FLANGES SHALL BE 5/8 INCH HCNNAREL BORDER. FURNISH RUBBER GASKET AROUND PERIMETER OF FLANGE, AND KEY OPERATED, OPPOSED BLADE VOLUME CONTROL DAMPERS. RUBBER GASKET SHALL BE NON-CHLORINATED RUBBER AND NON-POROUS. FURNISH WITH PRIME COAT OF PAINT.

GRILLES
GRILLES AND REGISTERS FOR MECHANICAL TO MATCH EXISITING. GRILLES AND REGISTERS SHALL BE OUT OF STEEL, WITH DAMPER, PRIMED PAINTED WHITE. SIZE OF GRILLE TO MATCH EXISTING OPENING ON TOE KICK, WALL OR CEILING.

CONTROLS
THE HEATING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL DEVICES NECESSARY TO ACHIEVE THE CONTROL SEQUENCE DESCRIBED HEREIN.

CONTROL SYSTEMS SHALL BE GUARANTEED FOR 2 YEARS FROM DATE OF ACCEPTANCE BY HACP.

CONTROL WIRING SHALL BE CONCEALED AND INSTALLED IN ACCORDANCE WITH SECTION 16.

MOTOR STARTERS - MOTOR STARTERS FOR ALL MECHANICAL ITEMS SHALL BE FURNISHED BY THE HEATING CONTRACTOR. STARTERS SHALL HAVE HAND-OFF-AUTO SWITCHES AND CONTROL TRANSFORMERS.

DAMPERS - DAMPERS SHALL BE OPPOSED MULTI-BLADE. BLADES SHALL BE CONSTRUCTED OF 16 GAGE STEEL WITH NEOPRENE GASKETED EDGES, AND SHALL BE MOUNTED IN CORROSION RESISTANT BUSHINGS. DAMPERS SHALL HAVE STOPS ON ALL FOUR SIDES. MOTORS SHALL BE MODULATING WITH OIL-IMMERSED GEAR TRAINS. DAMPERS SHALL BE 2% LOW LEAKAGE TYPE.

FREEZE PROTECTION THERMOSTAT - FREEZE PROTECTION THERMOSTAT SHALL BE MERCURY TUBE, MANUAL RESET TYPE SET AT 45F. INSTALL AN ADJUSTABLE TIME DELAY RELAY TO PERMIT AIR TO ESTABLISH SATISFACTORY TEMPERATURE TO AVOID FALSE TRIPS.

INSULATION
ALL SUPPLY AIR DUCTS SHALL BE INSULATED WITH 2" THICK, 1.00 DENSITY, OWENS-CORNING OR APPROVED EQUAL FLEXIBLE DUCT INSULATION WITH FLAME RETARDANT REINFORCED FIRK 25 FOIL COVERING. SEAL ALL JOINTS, BOLTS, AND ALL EXPOSED EDGES WITH 4" WIDE STRIPS OF SEALING TAPE USING A SUITABLE ADHESIVE. INSULATION SHALL HAVE A 2" FLAP AT ALL JOINTS AND SEAMS WHICH SHALL BE STAPLED AND SECURED WITH ADHESIVE. APPLY ADHESIVE TO DUCTS IN SIX-INCH-WIDE STRIPS AT ONE FOOT IN TERVALS. DUCTOWRK EXPOSED WITHIN THE SPACE MUST BE INSULATED.

OPERATING INSTRUCTIONS
THE CONTRACTOR SHALL FURNISH THREE COMPLETE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS. THIS SHALL INCLUDE FINAL CONTROL DIAGRAMS, CATALOG DATA INCLUDING CONSTRUCTION AND MAINTENANCE INFORMATION ON ALL EQUIPMENT, AND MAINTENANCE INFORMATION IN THE COMPLETE SYSTEM.

ONE COMPLETE CONTROL DIAGRAM SHALL BE INCLUDED IN EACH O&M MANUAL.

THE CONTRACTOR SHALL FORMALLY INSTRUCT THE HACP'S STAFF ON THE OPERATION OF THE SYSTEM. THE INSTRUCTION SHALL CONSIST OF NOT LESS THAN 2 PERIODS, EACH PERIOD OF 4 HOURS DURATION. THE CONTRACTOR SHALL ARRANGE FOR THIS INSTRUCTION WITH THE HACP.

FUNCTIONS AND ALL ACTUATORS OPERATE IN ACCORDANCE WITH THE SPECIFICATIONS.
TESTS AND INSPECTION

THE FOLLOWING OPERATIONS SHALL BE PERFORMED IN PREPARATION FOR FINAL INSPECTION BY THE ARCHITECT. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE TO THE ARCHITECT THAT THE SYSTEM IS OPERATING IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL TESTS AND INSPECTIONS SHALL BE COMPLETED BEFORE FINAL PAYMENT IS MADE TO THE HEATING (MECHANICAL) CONTRACTOR.

CONTROLS - ALL CONTROLS SHALL BE TESTED AND ADJUSTED TO ACHIEVE THE INTENT OF THESE SPECIFICATIONS. CONTROLS SHALL BE ADJUSTED WHILE THE SYSTEM IS OPERATING UNDER FULL LOAD CONDITIONS, BOTH HEATING AND COOLING. CONTROL SUB-CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION THAT ALL ON/OFF AND ALARM.

AIR DISTRIBUTION SYSTEM - AIR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCE SUBCONTRACTOR. THE COST OF THE SUB-CONTRACTOR SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE. THE INDEPENDENT AIR BALANCER SHALL NOT BE AN EMPLOYEE NOR A SUBSIDIARY OF THE CONTRACTOR.

GUARANTEE
THE MECHANICAL CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE JOB THAT ALL EQUIPMENT, MATERIAL AND LABOR FURNISHED BY HIM ARE FREE FROM DEFECTS. ANY DEFECTS IN MATERIAL AND WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT FURTHER EXPENSE TO THE HACP. ALL ITEMS SPECIFIED TO HAVE A LONGER WARRANTIES SHALL BE GUARANTEED FOR THAT LONGER PERIOD. CONTROLS SHALL HAVE A 2-YEAR GUARANTEE ON PARTS AND LABOR.

CONTROLS
SOLID-STATE THERMOSTAT: WALL-MOUNTED, PROGRAMMABLE, MICROPROCESSOR-BASED UNIT WITH MANUAL SWITCHING FROM HEATING TO COOLING, PREFERENTIAL RATE CONTROL, SEVEN-DAY PROGRAMMABILITY WITH MINIMUM OF FOUR TEMPERATURE PRESETS PER DAY, VACATION MODE, AND BATTERY BACKUP PROTECTION AGAINST POWER FAILURE OF PROGRAM SETTINGS.

DIVISION 26 - ELECTRICAL WORK

NOTE: ELECTRICAL WORK ON THIS PROJECT IS TO BE DESIGN BUILD. THE E.C. IS RESPONSIBLE FOR REVIEWING LOCATIONS AND REQUIREMENTS FOR THE ELECTRICAL SYSTEM WITH THE HACP.

CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE SPECIFIC BUILDING HACP REQUIREMENTS, THE LATEST RULES OF THE NATIONAL ELECTRICAL CODE AND WITH LOCAL ORDINANCES HAVING JURISDICTION.

DO NOT INTERPRET ANYTHING IN THE DRAWINGS OR SPECIFICATIONS AS AUTHORITY TO VIOLATE APPLICABLE CODES.

BE RESPONSIBLE FOR EXAMINING DRAWINGS AND SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES. RESOLVE ALL CONFLICTS BEFORE INSTALLATION AT NO EXTRA COST.

PREPARE ANY ADDITIONAL CLARIFYING DETAILS REQUIRED BY THE LOCAL INSPECTOR AUTHORITIES AND SECURE APPROVAL OF SAME. PAY ANY CHARGES. OBSERVE ALL UNIFORM CONSTRUCTION CODE REQUIREMENTS.

OBSERVE ALL APPLICABLE SAFETY REGULATIONS REQUIRED BY HACP AND/OR BY OSHA.

BRING ANY DISCREPANCIES BETWEEN DIFFERENT DRAWINGS, BETWEEN THE DRAWINGS AND FIELD CONDITIONS, OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR ANY APPARENT OMISSIONS, TO THE ARCHITECT'S ATTENTION BEFORE SUBMITTING THE BID. AFTER AWARD OF CONTRACT.

THE INTERPRETATION OF ANY CONFLICT WILL BE MADE BY THE ARCHITECT AND SHALL BE ACCEPTED AS FINAL.

IF MENTION HAS BEEN OMITTED PERTAINING TO DETAILS, ITEMS OR RELATED ACCESSORIES REQUIRED FOR THE COMPLETION OF ANY ELECTRICAL SYSTEM, INCLUDE SUCH ITEMS AND ACCESSORIES IN THE ELECTRICAL CONTRACT AND WITHOUT ADDITIONAL CHARGES.
AFTER THE JOB IS AWARDED, CLAIMS BASED ON INSUFFICIENT DATA OR INCORRECT, ASSUMED CONDITIONS, OR CLAIMS BASED ON MISUNDERSTANDING THE NATURE OR CHARACTER OF THE WORK OR THE CONDITIONS UNDER WHICH IT MUST BE PERFORMED WILL NOT BE RECOGNIZED.

OBTAIN AND PAY FOR ALL PERMIT

MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, ASTM AND IEEE. ALL SIMILAR MATERIALS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.

B. RACEWAYS

1. MATERIALS
RIGID HEAVY WALL STEEL CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE STEEL, HOT DIPPED GALVANIZED AND ZINC COATED, INSIDE AND OUTSIDE. CONDUIT SHALL BEAR THE MANUFACTURER'S AND UNDERWRITERS' LABELS. THIN WALL CONDUIT IS DESIGNATED AS E.M.T. STEEL CONDUIT SHALL BE MANUFACTURED BY WHEATLAND, ALLIED, TRIANGLE, OR EQUAL.
FLEXIBLE CONDUIT (GREENFIELD) SHALL BE U. L. LISTED, 3/4 INCH MINIMUM TRADE SIZE FOR BRANCH WIRING. GREENFIELD OF ½ INCH SIZE WILL BE PERMITTED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES ONLY.

2. INSTALLATION
MINIMUM SIZE CONDUIT IS 3/4 INCHES.
INSTALL CONDUIT AS A COMPLETE SYSTEM. CONTINUOUS FROM OUTLET TO OUTLET , CABINET , BOX OR FITTING . MECHANICALLY AND ELECTRICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY IS SECURED.
DO NOT ROUTE RACEWAYS THROUGH ANY DUCTWORK.

C. CONDUIT FITTINGS

1. MATERIALS
ALL CONDUIT FITTINGS SHALL BE GALVANIZED MALLEABLE IRON OR STEEL, WHERE APPLICABLE.
CONDUIT FITTINGS SHALL CONFORM IN DESIGN AND QUALITY TO THE TYPE OF CONDUIT ON WHICH THEY ARE BEING INSTALLED.

2. INSTALLATION
USE THREADED CONNECTORS ON GRS CONDUIT.
USE SET-SCREW STYLE CONNECTORS ON E.M.T. WHERE SAME IS RUN EXPOSED OR CONCEALED ABOVE GRADE.
USE BUSHINGS, LOCKNUTS AND EXPANSION FITTINGS OF THE APPROPRIATE TYPE FOR THE RACEWAY SYSTEM BEING INSTALLED.

D. PULL BOXES, OUTLET BOXES AND COVERS

1. GENERAL
FOR EACH OUTLET BOX, USE THE PROPER CODE SIZE FOR THE ENTERING CONDUITS AND THE NUMBER OF WIRES TERMINATING THEREIN.
USE BOXES WITH PLASTER RING EXTENSIONS IN PLASTERED OR DRY WALL PARTITIONS.

2. MATERIALS
FOR LARGE PULL BOXES, USE BOXES OF CODE GAUGE SHEET STEEL WITH STEEL COVERS ATTACHED WITH BRASS SCREWS. BOXES SHALL BE HOT DIPPED, GALVANIZED AFTER FABRICATION - THE MINIMUM SIZE OF EACH BOX SHALL BE AS REQUIRED BY THE NATIONAL ELECTRIC CODE. MANUFACTURER'S ARE HOFFMAN, KEYSTONE OR EQUAL.
FOR CONCEALED WORK, USE PRESSED STEEL BOXES, KNOCKOUT TYPE, ZINC COATED, OF 1/16 INCH MINIMUM THICKNESS.
USE BOXES OF FORM AND DIMENSIONS BEST ADAPTED TO SPECIFIC LOCATION, KIND OF FIXTURE USED AND THE NUMBER, SIZE AND ARRANGEMENT OF RACEWAYS CONNECTING THERETO. USE STEEL CITY OR RACO.
USE WIREMOLD FINISHED STYLE BOXES IN FINISHED AREAS WHERE CONCEALED BOXES ARE NOT FEASIBLE.

E. CONDUCTORS IN RACEWAYS

1. MATERIALS
CONDUCTORS SHALL BE SOFT DRAWN COPPER, MINIMUM 97% CONDUCTIVITY, 600 VOLT, CONFORMING TO ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
INSULATION SHALL BE SUITABLE FOR THE CONDITIONS AND LOCATIONS IN WHICH CONDUCTORS ARE INSTALLED. THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED OR REQUIRED BY LOCATION OR INSTALLATION CONDITIONS:
A. FOR BUILDING WIRE IN INTERIOR ABOVE GRADE LOCATIONS, USE TYPE THWN/THHN COPPER RATED 75 DEGREES C. WET OR DRY.
WIRES SHALL BE CLEARLY AND REGULARLY MARKED WITH THE WIRE SIZE, VOLTAGE, INSULATION TYPE AND MANUFACTURER'S NAME.
CONDUCTORS SHALL BE NEW AND MANUFACTURED WITHIN EIGHT MONTHS PREVIOUS TO DELIVERY AT SITE, WITH DATE OF MANUFACTURE MARKED ON THE PACKAGES.
MINIMUM WIRE SIZE FOR BRANCH CIRCUITING SHALL BE #12 AWG.
ALL CIRCUIT RUNS EXCEEDING 75 FEET IN LENGTH EXTENDING FROM THE PANELBOARD TO THE FIRST OUTLET IN THE CIRCUIT SHALL BE #10 AWG MINIMUM.
WIRE #8 AWG AND SMALLER SHALL BE SOLID; WIRE #6 AWG AND LARGER SHALL BE STRANDED.
WIRE SHALL BE AS MANUFACTURED BY HI-TECH, PIRELLI, TRIANGLE OR EQUAL.

2. INSTALLATION
COLOR CODE ALL WIRES PER NEC REQUIREMENTS:
A. MATCH THE EXISTING SCHEME PRESENTLY INSTALLED; NEUTRAL SHALL BE WHITE. EQUIPMENT GROUND SHALL BE GREEN.
THE GROUPING OF OUTLETS ON INDIVIDUAL NEW CIRCUITS AS SHOWN ON THE DRAWINGS SHALL BE STRICTLY OBSERVED. GROUPING OF CONDUCTORS IN THE CONDUIT SHALL NOT BE PERMITTED. INCORPORATE A MAXIMUM OF FOUR (4) WIRES, I.E. A MAXIMUM OF ONE CIRCUIT CONDUCTOR ON EACH PHASE PLUS THE NEUTRAL WIRE PLUS THE GROUND WIRE IN ONE CONDUIT.
EMPLOY A U.L. LISTED COMMERCIAL PRODUCT SUCH AS WYRE-EZE OR YELLOW-77 FOR PULLING WIRES INTO A RACEWAY.
CLEAN AND DRY CONDUITS BEFORE PULLING IN WIRES.
THE USE OF B.X., ROMEX, OR U.F. CABLE IS NOT PERMITTED.
MC CABLE MAY BE USED FOR CONCEALED BRANCH CIRCUIT WIRING.

F. SPLICES

MAKE ALL SPLICES, JOINTS AND TAPS WITH SOLDERLESS PRESSURE CONNECTORS LISTED AND APPROVED FOR THE INTENDED USE AND FOR THE SIZE AND NUMBER OF CONDUCTORS UTILIZED.
1. FOR WIRE #10 AWG AND SMALLER, USE TWIST-ON WIRE NUTS.
2. FOR WIRE #8 AWG AND LARGER, USE HEAVY DUTY SOLDERLESS SET SCREW CONNECTORS WITH A SEPARATE BARREL FOR EACH CONDUCTOR.
USE INSULATING COVERS FROM THE MANUFACTURER, WHERE AVAILABLE. TAPE PROPERLY TO PROVIDE A SUFFICIENT INSULATION AROUND THE ENTIRE SPLICE UNIT, WHEN INTEGRAL INSULATING COVERS ARE NOT AVAILABLE FROM THE FITTING MANUFACTURER.

G. PANELBOARDS AND CABINETS

CABINETS SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH WIRING GUTTERS OF SUFFICIENT WIDTH TO PROVIDE AMPLE SPACE FOR BRANCH CIRCUIT WIRES AND FEEDERS. GUTTERS SHALL NOT BE LESS THAN FOUR INCHES WIDE. GUTTERS SHALL CONFORM TO NEC STANDARDS AND SHALL BE OVER-SIZED WHERE NECESSARY TO ACCOMMODATE THE ENTRANCE OF SEVERAL LARGE CONDUITS AND/OR WHERE NECESSARY TO AVOID OVERCROWDING OF CONDUCTORS OR EQUIPMENT WITHIN. TRIMS SHALL BE SURFACE AS NOTED ON THE PANEL SCHEDULE AND SHALL CONTAIN CONCEALED HINGED DOORS, EACH EQUIPPED WITH FLUSH CHROME PLATED COMBINATION LOCKS AND CATCHES, ALL KEYED ALIKE. FINISH SHALL BE STANDARD BAKED ENAMEL OR LACQUER, MEDIUM GRAY, ANSI-61. PROVIDE TWO (2) KEYS WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE. USE "DOOR IN A DOOR" HINGED TRIMS.

PANELBOARD BASIS OF DESIGN:

- MANUFACTURER: GE, SIEMENS OR EQUAL.
- ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED IN ACCORDANCE WITH NFPA 70, BY QUALIFIED ELECTRICAL TESTING AGENCY RECOGNIZED BY AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH NEMA PB 1.
- COMPLY WITH NFPA 70.
- ENCLOSURES: SURFACE-MOUNTED, DEAD-FRONT CABINETS.
- INDOOR DRY AND CLEAN LOCATIONS: UL 50E, TYPE 1
- OTHER WET OR DAMP INDOOR LOCATIONS: UL 50E
- HEIGHT: 7 FT MAXIMUM.
- RETAIN ONE OF FIRST TWO SUBPARAGRAPHS BELOW. VERIFY WITH MANUFACTURER FOR AVAILABILITY OF "DOOR-IN-DOOR" CONSTRUCTION IN OTHER THAN NEMA 1 STYLE PANELBOARDS.
- HINGED FRONT COVER, ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER. TRIMS MUST COVER LIVE PARTS AND MAY HAVE NO EXPOSED HARDWARE.
- INCOMING MAIN ON TOP
- 20 SPACE- 40 CIRCUITS MINIMUM.

BUSING SHALL BE FULL CAPACITY, 98% CONDUCTIVITY COPPER OR 80% CONDUCTIVITY ALUMINUM, BRACED FOR THE SHORT CIRCUIT CURRENT AVAILABLE TO THE PANEL AND SIZED AS SHOWN IN THE PANEL DETAIL. CIRCUIT BREAKERS SHALL BE CONNECTED TO BUSES WITH BOLTED CONNECTIONS FOR SEQUENCE PHASING: I.E., CIRCUITS 1 AND 2 CONNECTED TO PHASE A; 3 AND 4 TO PHASE B AND SO ON. POLARITY OR BLOCK PHASING SHALL NOT BE ACCEPTABLE. PANEL SHALL INCLUDE A NEUTRAL BUS AND AN EQUIPMENT GROUNDING BUS. CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE, BOLT-ON, WITH THERMAL AND MAGNETIC TRIPS, TRIP-FREE ON OVERLOAD OR SHORT CIRCUIT, UL LISTED, HAVING INTERRUPTING CAPACITIES, AS INDICATED.

H. WIRING DEVICES AND PLATES

1. MATERIALS
ALL WIRING DEVICES SHALL BE MANUFACTURED BY ONE OF THE MANUFACTURERS LISTED. DO NOT MIX MANUFACTURER'S PRODUCTS.
DEVICES SHALL BE U.L. SPECIFICATION GRADE.

2. WALL SWITCHES
SWITCHES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE GENERAL USE, AC QUIET TYPE, 20 AMPERE, 120/277 VOLT, BACK AND SIDE WIRED. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

3. WALL SWITCH TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENTS FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP SINGLE POLE WALL SWITCH - HUBBELL #HBL-1221, P & S #20AC1, COOPER #1221, BRYANT #4901, OR LEVITON # 1221-2.
20 AMP 3-WAY WALL SWITCH - HUBBELL #HBL-1223, P & S #20AC3, COOPER #1223, BRYANT #4903, OR LEVITON #1223-2. USE SIMILAR SERIES FOR 4-WAY SWITCHES.

4. WALL RECEPTACLES
ALL CONVENIENCE AND POWER RECEPTACLES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE THE GROUNDING TYPE.
CONVENIENCE RECEPTACLES SHALL BE 20 AMP, 125 VOLT, BACK AND SIDE WIRED, 3 WIRE GROUNDING, UL LISTED AS COMPLYING WITH THE REQUIREMENTS OF NEC ARTICLE 250-146, AND SHALL BE NEMA 5-20R CONFIGURATION. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

5. RECEPTACLE TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENT FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP, 125 VOLT DUPLEX CONVENIENCE OUTLET (NEMA 5-20R) - HUBBELL #HBL-5362, P & S #5362A, COOPER #5362, BRYANT #5362, OR LEVITON #5362.
20 AMP, 125 VOLT GROUND FAULT INTERRUPTER (NEMA 5-20R) - HUBBELL #GF-5362, P & S #2091, COOPER #WGF-20, BRYANT #GFRS3FT, OR LEVITON #6899.

6. PLATES
USE STAINLESS STEEL PLATES.

I. FASTENINGS AND ATTACHMENTS

FOR FASTENINGS AND ATTACHMENTS, SUCH AS SCREWS, BOLTS AND NUTS, USE DEVICES MADE OF NON-FERROUS METALS OR OF GALVANIZED OR CADMIUM PLATED STEEL. WHEN SUCH DEVICES ARE NOT OBTAINABLE IN NON-FERROUS METALS, OR IN STEEL WITH A PROTECTIVE METALLIC COATING. PAINT SAME WITH A RUST PREVENTING PAINT SUCH AS RUSTOLEUM.
ALL FASTENINGS AND ATTACHMENTS SHALL BE MADE OF MATERIALS OR SO PROTECTED, THAT THEY WILL OFFER THE MAXIMUM PROTECTION AGAINST DETERIORATION FROM AGE, WEATHER OR DAMPNESS.
DO NOT PENETRATE THE ROOF DECK WITH ANY FASTENERS.

J. SURFACE METALLIC RACEWAY SYSTEM

USE A SURFACE METAL RACEWAY SYSTEM AND BOXES, WHERE CONCEALED WIRING IS NOT POSSIBLE OR WHERE SHOWN ON THE PLANS.
USE RACEWAYS, SUCH AS WIREMOLD, FOR STRAIGHT RUNS, COMPLETE WITH BOXES AND FITTINGS, AS DIRECTED. VERIFY COLOR OPTIONS WITH THE ARCHITECT. PAINT SAME WHERE REQUIRED OR INDICATED.
OBTAIN APPROVAL FOR ALL SURFACE ROUTINGS WITH THE ARCHITECT PRIOR TO ROUGH-IN.

K. FIRE STOPS

1. GENERAL
PROVIDE THROUGH PENETRATION FIRE STOP SYSTEMS TO PREVENT THE SPREAD OF FIRE THROUGH OPENINGS MADE IN FIRE-RATED WALLS OR FLOORS TO ACCOMMODATE THROUGH PENETRATING ITEMS SUCH AS CONDUIT AND CABLES.
FIRE-RESISTANCE-RATED ASSEMBLY SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY OR SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRE STOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM-E-814 OR U.L. 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER. THE SYSTEM SHALL HAVE AN F RATING AND A T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. WHERE FLOOR/CEILING ASSEMBLIES ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED. FIRE STOP SHALL RESTORE FLOOR AND WALL TO ORIGINAL FIRE RATED INTEGRITY AND SHALL BE WATERPROOF.

PENETRATIONS OF MEMBRANES THAT ARE PART OF A FIRE-RATED WALL OR FLOOR MUST BE STOPPED AS OUTLINED FOR THROUGH PENETRATIONS WITH THE FOLLOWING EXCEPTIONS.
A. STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
B. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED AS INDICATED.
1. BY HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES.
2. BY HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY IS FILLED WITH CELLULOSE LOOSE FILL ROCK WOOL OR SLAG MINERAL WOOL INSULATION.
3. BY SOLID FIRE BLOCKING.
4. BY PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS.
5. BY OTHER LISTED MATERIALS AND METHODS.

2. MATERIALS
PUTTY - USE FLAMESEAL PUTTY #AA423 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
FIBER - USE CERAMIC FIBER #AA401 (10 LB. BOX) OR #AA417 (2 LB. BAG) AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN WALLS - USE CERAMIC BOARD #AA402 (1" X 18" X 12") OR #AA403 (1" X 36" X 48") AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN FLOOR - USE SUPPORT WIRE #AA404 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.

3. INSTALLATION
USE TOTAL THICKNESS OF 1-1/2 INCHES OF FLAMESEAL PUTTY #AA423 ON ALL PENETRATIONS OF FIRE-RATED WALLS AND FLOORS. USE NELSON FIBER #AA401 OR #AA417 IN CONJUNCTION WITH THE PUTTY TO FILL THE REMAINING VOID OF PENETRATIONS.
PACK CERAMIC FIBER IN CENTER OF OPENING LEAVING 3/4 INCH ON EITHER SIDE OF WALL FOR THE PUTTY. INSTALL THE PUTTY IN THE REMAINING PART OF OPENING, WORKING IT INTO ALL VOIDS AND CAVITIES.
FOR OPENINGS WITH GREATER THAN 4 INCHES OF UNSUPPORTED SPACE, USE NELSON CERAMIC BOARD #AA402 OR #AA403 DEPENDING ON SIZE OF OPENING. PACK CERAMIC FIBER IN BOTTOM OF OPENING PER FACTORY RECOMMENDATIONS, LEAVING 1-1/2 INCHES BELOW FLOOR LEVEL FOR THE INSTALLATION OF FLAMESEAL PUTTY. USE SUPPORT WIRE #AA404 ON ALL PENETRATIONS IN EXCESS OF 6 INCHES DIAMETER.

L. MC CABLE

METAL CLAD CABLE (MC) SHALL BE COPPER WIRE WITH 90 DEGREES C. THHN INSULATION, #12 AWG MINIMUM, WITH CONTINUOUS INSULATED GREEN GROUND CONDUCTOR AND STEEL ARMOR, MANUFACTURED BY A.F.C., ALFLEX, OR EQUAL. INSTALL NON-RIGID CABLE IN A NEAT, APPROVED MANNER, AS PER N.E.C. REQUIREMENTS. DO NOT GROUP CABLES INTO A COMMON CONDUIT AS OVERHEATING WILL RESULT. DO NOT TIE THE SEVERAL CABLES TOGETHER. USE APPROVED STYLE "MC" CONNECTORS AND FITTINGS IN ORDER TO MAINTAIN ADEQUATE CASE GROUNDING REQUIRED BY THE NATIONAL ELECTRICAL CODE. PROVIDE AN INDEPENDENT MEANS OF SUPPORT FOR ALL WIRING LOCATED ABOVE A DROPPED CEILING ASSEMBLY FROM THE STRUCTURAL CEILING SYSTEM. DO NOT SUPPORT WIRING FROM THE CEILING ASSEMBLY OR FROM ITS SUPPORT WIRES.

SERVICE AND DISTRIBUTION

A. GENERAL INSTALLATION

USE RIGID HEAVY WALL STEEL CONDUIT FOR EXPOSED EXTERIOR RACEWAYS.
USE EMT ELECTRICAL METALLIC THINWALL CONDUIT FOR CONCEALED INTERIOR FEEDERS, TELEPHONE RACEWAYS, ETC.
USE FLEXIBLE CONDUIT SUCH AS "GREENFIELD" FOR CONNECTIONS TO RECESSED LIGHTING FIXTURES IN 72" MAXIMUM LENGTHS AND FOR USE IN STUD WALLS WHERE THE USE OF RIGID CONDUIT IS NOT PRACTICAL.
USE WEATHERPROOF AND OIL PROOF FLEXIBLE CONDUIT SUCH AS "SEAL-TITE" FOR ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT IN LENGTHS OF 18" MAXIMUM.
USE LIQUID-TIGHT FLEXIBLE CONDUIT AND APPROPRIATE LIQUID-TIGHT FITTINGS IN AREAS EXPOSED TO THE WEATHER OR LIKELY TO BECOME DAMP. WHERE USED, CONFORM TO NEC #350-118.

USE WIREMOLD RACEWAYS FOR BRANCH CIRCUIT SURFACE ROUTINGS IN FINISHED AREAS ONLY WHERE CONCEALED WIRING IS NOT FEASIBLE, AND WHERE INDICATED.
USE M.C. CABLE FOR CONCEALED BRANCH CIRCUIT WIRING ONLY, IN ACCORDANCE WITH THE N.E.C. REQUIREMENTS.
THE USE OF B.X., ROMEX, AND U.F. IS NOT APPROVED.

LIGHTING FIXTURES AND ACCESSORIES

GENERAL
ALL LIGHTING FIXTURES AND LAMPS WILL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

LIGHTING FIXTURES

BASIS OF DESIGN LIGHTING FIXTURES BY KICHLER OR EQUAL.
CEILING FIXTURE: KICHLER #6112WH. WHITE FINISH. SURFACE MOUNTED
EXTERIOR CEILING FIXTURE: KICHLER #11132AZTLED, OUTDOOR RATED.
WALL EXTERIOR: KICHLER #9654TZ, WALL MOUNTED, OUTDOOR RATED
BATHROOM VANITY: KICHLER JOELSON #45923
FLOOD LIGHT: LITHONIA LIGHTING OLF LED WITH MOTION OCCUPANCY SENSOR
RECESSED LIGHTING: HALO OR EQUAL.

B. INSTALLATION

PROVIDE ALL SUPPLEMENTARY STRUCTURAL MATERIALS REQUIRED TO PROPERLY MOUNT ALL LIGHTING FIXTURES.
SECURELY MOUNT LIGHTING FIXTURES TO STRUCTURAL ELEMENTS OF THE BUILDING TO SUSPENDED CEILING SYSTEMS SUCH THAT SAID FIXTURES WILL BE SQUARE, PLUMB, AND RIGID, WILL NOT FALL OR SAG, AND WILL NOT CAUSE THE SUSPENDED CEILING SYSTEM TO SAG. PROVIDE ADDITIONAL CEILING SUPPORTS, WHERE REQUIRED TO SUPPORT RECESSED OR SURFACE FIXTURES.
INSTALL WIRING TO AND WITHIN FIXTURES TO COMPLY WITH NEC ARTICLE #410. TAKE SPECIAL CARE TO ASSURE THAT THE FIXTURE OUTLETS FOR RECESSED FIXTURES ABOVE SOLID SUSPENDED CEILINGS WILL ACTUALLY BE ACCESSIBLE AFTER THE PROJECT IS COMPLETED.
USE CLIPS TO FASTEN RECESSED TROFFERS TO DROP CEILING CHANNELS AS REQUIRED BY NEC SECTION #410-16. USE CADDY FASTENERS #6 15 OR APPROVED EQUAL.
TIME CLOCKS SHALL BE COMMERCIAL GRADE, 7 DAY, ASTRONOMICAL DAL, WITH 24-HOUR SPRING RESERVE BACKUP, AS MANUFACTURED BY TORK OR PARAGON (IF REQUIRED).

SMOKE ALARMS

BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 20SAR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

COMBO SMOKE + CO ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 3COUDR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

SMOKE DETECTOR'S LOCATIONS:
1. COMBO SMOKE + CO ALARM PER FLOOR, NOT TO BE PLACED IN MECHANICAL ROOM OR KITCHEN.
1 SMOKE DETECTOR IN SIDE EACH SLEEPING ROOM
INTERCONNECT SMOKE DETECTORS INSIDE THE UNIT.

MOTOR WIRING

WIRING FOR MECHANICAL AND PLUMBING CONTRACTS

1. INSTALLATION
VERIFY ALL LOCATIONS WITH THE VARIOUS MECHANICAL CONTRACTORS BEFORE INSTALLING RACEWAYS.
PROVIDE ALL WIRING MATERIALS AND DEVICES REQUIRED TO CONNECT AND OPERATE THE ELECTRICAL PARTS OF EQUIPMENT FURNISHED AND INSTALLED UNDER THE MECHANICAL DIVISION.
INSTALL AND CONNECT ALL STARTERS, PUSHBUTTONS, SWITCHES, THERMOSTATS AND OTHER CONTROL DEVICES AS FURNISHED BY OTHERS, UNLESS OTHERWISE NOTED.
MAKE ALL FINAL CONNECTIONS TO MOTORIZED EQUIPMENT. VERIFY THE CORRECT DIRECTION OF ROTATION.
CONNECT MOTOR CIRCUITS TO THE RIGID CONDUIT SYSTEM BY MEANS OF WEATHERPROOF STYLE FLEXIBLE CONDUIT, PROPERLY GROUNDED AND BONDED. EMPLOY A GREEN GROUND WIRE FOR ALL SYSTEMS AND MOTOR FRAME GROUND CONNECTIONS.
BOLT THE WIRE TO THE MOTOR FRAME AT ONE END AND TO THE MOTOR STARTER AT THE OTHER END WITH APPROVED TERMINAL DEVICES.
DO ALL LINE VOLTAGE CONTROL WIRING (120 VOLTS AND HIGHER).
ALL LOW VOLTAGE CONTROL WIRING (UNDER 120 VOLTS) IS THE RESPONSIBILITY OF THE MECHANICAL OR PLUMBING CONTRACTS.

SECTION 32- EXTERIOR IMPROVEMENTS

CHAIN LINK FENCE
ALUMINUM WIRED FABRIC 2X2 INCHES WITH ROUNDED POST AND RAILS 2.5 INCHES IN DIAMETER. LIGHT INDUSTRIAL STRENGTH, ZINC COATED. WITH TOP AND BOTTOM TENSION WIRED ZINC COATED. MECHANICALLY DRIVEN INTO SOIL OR USING ANCHORING CONCRETE.

GATES TO MATCH FENCE MATERIAL AND FRAME. DOOR WITH LATCH TO PERMIT OPERATION FROM BOTH SIDES OF GATE. PADLOCK AND CHAIN TO BE PROVIDED BY HACP.

SEEDING

QUALITY, NON-STATE CERTIFIED SEED OF GRASS SPECIES AS LISTED BELOW FOR SOLAR EXPOSURE, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PER CENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED

A. SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH.
1. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
2. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
3. DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.

B. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

C. PROTECT SEEDED AREAS FROM HOT, DRY WEATHER OR DRYING WINDS BY APPLYING COMPOST MULCH WITHIN 24 HOURS AFTER COMPLETING SEEDING OPERATIONS. SOAK AREAS, SCATTER MULCH UNIFORMLY TO A THICKNESS OF 3/16 INCH +, AND ROLL SURFACE SMOOTH.

TREE AND STUMP REMOVAL
ALL APPROPRIATE SAFETY EQUIPMENT MUST BE UTILIZED AT ALL TIMES DURING OPERATIONS; INCLUDING, BUT NOT LIMITED TO: HARD HATS, GLOVES, SAFETY GLASSES, FALL RESTRAINTS, TRAFFIC CONTROL DEVICES, HIGH VISIBILITY CLOTHING, ADEQUATE HEARING PROTECTION AND ANY OTHER SAFETY REQUIRED BY OSHA.
ONCE A TREE IS CUT DOWN, THE STUMP MUST BE GROUND OUT WITHIN FIVE DAYS (5). STUMPS AND BUTTRESS ROOTS MUST BE REMOVED TO A MINIMUM OF TWELVE INCHES (12") BELOW GROUND LEVEL AND TWO (2) TIMES THE DIAMETER AT BREAST HEIGHT IN SURFACE AREA GROUND. THE REMAINING STUMP AND/OR CHIPS SHALL BE REMOVED FROM THE SITE WITHIN TWO DAYS (2) AFTER GRINDING. ALL SURFACE ROOTS AND ADJACENT SUBSURFACE ROOTS SHALL BE REMOVED AS MAY BE NECESSARY TO ELIMINATE "HUMPS" OR MOUNDS IN THE TREE EASEMENT AREA ADJACENT TO THE STUMP. ALL TREE EASEMENT AREAS ARE TO BE LEFT FLAT AND MEET ORIGINAL GRADE. THE AREA WILL THEN BE BACKFILLED WITH CLEAN, PULVERIZED TOPSOIL TO THE LEVEL OF THE ADJOINING GRADE AND SEEDED. SEE SEEDING FOR SEED REQUIRED.

THE PARTY AUTHORIZED TO REMOVE THE TREE, AT THEIR EXPENSE, SHALL RESTORE THE LAWN AND ANY EXISTING LANDSCAPING AND APPURTENANNCES THAT EXIST BETWEEN THE SIDEWALK AND CURB OR IN OTHER AREAS THAT HAVE BEEN DISTURBED BY THE PARTY AUTHORIZED TO REMOVE THE TREE DURING THE PROSECUTION OF THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL PROTECT ALL CONCRETE SIDEWALK, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT FROM DAMAGE THROUGH THE USE OF PLYWOOD SHEETING OR MATS WHEN NECESSARY. THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL REPLACE OR RESTORE ALL CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT WHICH MAY HAVE BEEN DAMAGED DURING THE PROSECUTION OF THE WORK.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL BE RESPONSIBLE AT ALL TIMES FOR KEEPING THE WORK SITE ADJOINING PREMISES, STREET, WALKS AND DRIVEWAYS CLEAN. ALL TREE BRANCHES, BARK, CHIPS AND OTHER DEBRIS MUST BE CLEARED UP AT THE END OF THE WORKDAY.

SECTION 33- UTILITIES

TRENCH DRAIN SYSTEM
ZURN Z880 2 1/2 [64] WIDE TRENCH DRAIN SYSTEM SHALL BE 48 [1220] LONG AND 2 1/2 [63.5] WIDE. DRAIN SHALL BE 3 [76] DEEP. DRAIN SHALL BE MADE OF (HDPE) HIGH DENSITY POLYETHYLENE AND IS UV-10 STABILIZED. DRAIN SHALL HAVE BEDDING FEET TO BE USED FOR POSITIONING AND ANCHORING PURPOSES. DRAINS SHALL HAVE TONGUE AND GROOVE SNAP FIT CONNECTION. DRAIN SHALL HAVE 24 [610] LONG HIGH-DENSITY POLYETHYLENE DECORATIVE GRATE (-POG) PROVIDED AS STANDARD.

INSTALLATION
TRENCH EXCAVATION MUST BE 4" [102MM] GREATER THAN THE TRENCH DEPTH AND A MINIMUM OF 4" [102MM] GREATER THAN THE EDGE OF THE TRENCH ON EACH SIDE. SOFT AND/OR SHIFTING SOIL SUBSTRATES MAY CAUSE CRACKING OF THE CONCRETE AND CONSEQUENT MOVEMENT OF THE TRENCH. IT IS CRITICAL THAT THE CONCRETE BE POURED ON AN ADEQUATE FOUNDATION

ASSEMBLING PER MANUFACTURER INSTRUCTION. A SILICONE CAULK OR A CONSTRUCTION ADHESIVE, SUCH AS LIQUID NAILS, IS RECOMMENDED TO BE USED AT EACH JOINT AS A SEALER.

UPON COMPLETION OF THE TRENCH EXCAVATION, THE CHANNELS SHOULD BE PLACED IN ORDER ALONGSIDE THE EXCAVATION AND ACCORDING TO THE JOB LAYOUT.

AFTER ATTACHMENT OF ACESSORIES, ANCHOR AND LEVEL TRENCH IN THE EXCAVATION USING CONCRETE PATTIES AROUND THE FEET. MAKE FINISH POUR OF CONCRETE AND BE CERTAIN TO PROPERLY VIBRATE CONCRETE TO ELIMINATE ANY UNWANTED VOIDS. FINISH TROWELING SHOULD BE DONE TO SET THE TOP EDGE OF THE TRENCH DRAIN 1/16" [1.6MM] BELOW THE FLOOR GRADE. REMEMBER TO COMPENSATE FOR CONCRETE SHRINKAGE THAT MAY OCCUR DURING CURE SO THAT THE EDGE OF THE TRENCH DRAIN DOES NOT PROTRUDE ABOVE THE FINISHED FLOOR GRADE.

Fukui Architects Pc
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seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reser

Renovation of 10 Scattered Sites

10 Scattered Sites - Neeld Avenue
Single Family Residence, Minor Alteration
2534 Neeld Avenue,
Pittsburgh, Pennsylvania 15216

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
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Code Conformance Information

Applicable Codes

General:	2018 International Residential Code 2018
Energy:	2018 International Energy Conservation Code
Electrical:	2017 NEC (NFPA 70)
Fire:	2018 International Fire Code
Fuel Gas:	2018 International Fuel Gas Code
Mechanical:	2018 International Mechanical Code
Plumbing:	2017 Allegheny County Health Department Plumbing Code

General Building / Project Information

Stories:	2 Stories
Building Gross Area:	Basement 481 sqft + Garage 320 sqft
	1st Floor 1,040 sqft
	2nd Floor 636 sqft

1 Site Location
SCALE: 1" = 30'

N

Materials Legend

NOT ALL MATERIALS USED

- EARTH
- COMPACTED STONE FILL
- CONCRETE
- STEEL
- RIGID INSULATION
- BLOCKING
- BATT INSULATION
- GYPSUM WALL BOARD
- WOOD
- PLYWOOD SHEATHING
- SPRAY FOAM INSULATION

Abbreviations

A.F.F.	Above Finish Floor
A.P.	Access Panel
ACOUST.	Acoustical
A.C.T.	Acoustical Ceiling Tile
ADH.	Adhesive
ADJUST.	Adjustable
A/C	Air Conditioning
ALT.	Alternate
ALTN.	Alternate
ALUM.	Aluminum
A.O.R.	Area of Refuge
APPROX.	Approximate
ARCH.	Architectural
ASB.	Asbestos
ASPH.	Asphalt
AUTO.	Automatic
AVG.	Average
BLK.	Block
BD.	Board
BOT	Bottom
BLDG	Building
C.I.P.	Cast In Place
C.B.	Catch Basin
CEM.	Cement
CER.	Ceramic
CG	Corner Guard
C.M.T.	Ceramic Mosaic Tile
C.W.T.	Ceramic Wall Tile
C.O.	Cleanout
℄	Center Line
CLO.	Closet
C.W.	Cold Water
CLG.	Ceiling
COL.	Column
CONC.	Concrete
C.M.U.	Concrete Masonry Unit
CONT.	Continuous
CORR.	Corridor
C.M.P.	Corrigated Metal Pipe
CRS.	Courses
DIA.	Diameter
DET	Detail
DGL	Dens Glass Gold
DR.	Door
DN.	Down
D.S.	Downspout
DWG.	Drawing
D.F.	Drinking Fountain
D.I.P.	Ductile Iron Pipe
EA.	Each
E.W.	Each Way
ELEC.	Electrical
E.C.	Electrical Contractor
EL.	Elevation
ELEV.	Elevation
EQUIP.	Equipment
E.F.	Exhaust Fan
EXIST.	Existing
EXP.	Expansion
E.J.	Expansion Joint
ESH	Exterior Sheathing
EXIST.	Existing
EXP.	Exposed
EXT.	Exterior
E.I.F.S.	Exterior Insulation & Finish System
F.R.P.	Fiberglass Reinforced Polyester
F.F.	Finish Floor
FIN.FLR.	Finish Floor
F.A.C.P.	Fire Alarm Control Panel
F.E.	Fire Extinguisher
FLR.	Floor
F.D.	Floor Drain
FTG.	Footing
GA.	Gauge
G.C.	General Contractor
G.F.I.	Ground Fault Interrupter
GYP.	Gypsum
G.W.B.	Gypsum Wall Board
GSH	Gypsum Sheathing
H/C	Handicap
H.V.A.C.	Heating, Ventilation &
HT	Height
HC	Hollow Core
H.M.	Hollow Metal
HORIZ.	Horizontal
HR.	Hour
H.W.	Hot Water
IN.	Inch
I.M.	Insulated Metal
INSUL.	Insulation or Insulated
INT.	Interior
INV.	Invert
ISO.	Isolation
JAN.	Janitor's Closet
J.T.	Joint
LAM.	Laminate
LAV.	Lavatory
LG.	Long
M.D.F.	Medium Density Fiberboard
M.D.H.	Magnetic Door Holder
M.H.	Manhole
MFGR.	Manufacturer
MAX.	Maximum
MECH.	Mechanical
MET.	Metal
MIN.	Minimum
MISC.	Miscellaneous
N.I.C.	Not In Contract
N.T.S.	Not To Scale
O.C.	On Center
OPP.	Opposite
O.H.	Overhead
PR.	Pair
PLAS.	Plaster
PLAS.LAM.	Plastic Laminate
P.C.	Plumbing Contractor
PLYWD.	Plywood
POLY.	Polyethylene
P.V.C.	Polyvinyl Chloride
PRE-FAB.	Prefabricated
RE.	Refer To
REF.	Refrigerator
R.C.P.	Reinforced Concrete Pipe
REINF.	Reinforcement
RD.	Roof Drain
RM.	Room
S.A.T.	Suspended Acoustical Tile
SCHED.	Schedule
SHT.	Sheet
SIM.	Similar
S.C.	Solid Core
SPECS.	Specifications
SQ.	Square
S.F.	Square Foot
S.S.	Stainless Steel
STL.	Steel
STOR.	Storage
STRUCT.	Structural
TEL.	Telephone
THK.	Thick
T.B.D.	To Be Determined
T&G	Tongue & Groove
T.O.	Top Of
T.O.	Top Of Grade
T.O.S.	Top Of Steel
TYP.	Typical
UNFIN.	Unfinished
U.N.O.	Unless Noted Otherwise
V.B.	Vapor Barrier
VERT.	Vertical
VEST.	Vestibule
V.C.T.	Vinyl Composition Tile
W.H.	Water Heater
W.W.F.	Welded Wire Fabric
WIN.	Window
W/	With
W/O	Without
WD.	Wood

Symbols

NOT ALL SYMBOLS USED

ELEV. 0'-0"	ELEVATION HEIGHT
PLAN NORTH	NORTH ARROW
1 / A1.1	ELEVATION MARKER

seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
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5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

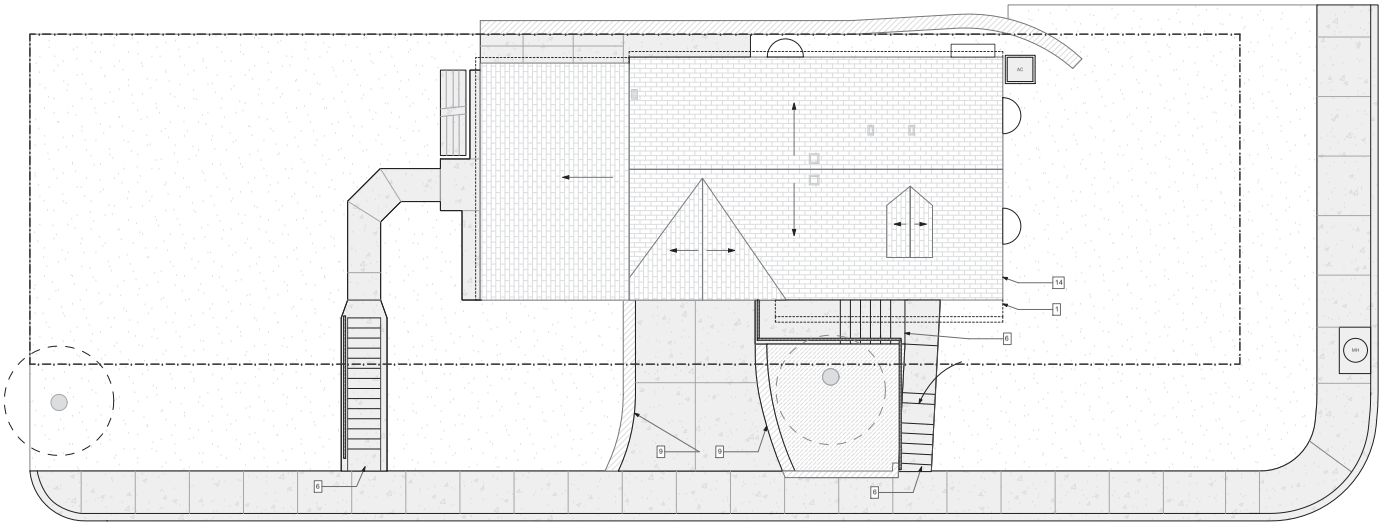
Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
2534 Neeld Avenue
Pittsburgh, Pennsylvania 15216

drawing title

Drawing Index, Code Conformance Information, Site Location, Abbreviations and Materials

scale: As Noted	**Sheet No.**
date: August 20th, 2024	**A1**
no. 1 / of. 9	Project #2326



PLAN NORTH

1 Site Plan
SCALE: 3/16" = 1'-0"

SITE PLAN LEGEND

GRASS	MISC. BRICK	AC CONDENSER	RAILING	TRUE ROOF OUTLINE
LIGHTWEIGHT CONCRETE	MULCHED AREA	TREE / SHRUB	TACTILE PAVING	APPROX. PROPERTY LINE
CONCRETE BLOCK	STREET SIGNAGE	STREET SIGNAGE	MAN HOLE	WINDOW WELL

10 Scattered Sites Keynotes – 2534 Neeld Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages (see additional ductwork note at garage)
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. CONCRETE ENTRY STEPS (GC): Remove existing failing concrete steps from sidewalk to upper landing (approx. 7 risers/landings and 2 separate bottom risers/landings), taking care to set aside step lighting for reinstallation. Recompact soil and 4" of compacted gravel. Form and pour new exposed aggregate steps and landing, with even risers and sloped slightly to drain. Reset hardwired step lighting. Re-establish anchorage of metal railing. See Specifications.
7. VINYL SIDING (GC): On 3 sides of Three Season Room provide new vinyl siding on lower approx. 3 ft high portion of wall (approx. 150 sf).
8. ENTRANCE CANOPY / RAILING (GC): At this location, remove existing (8'x16' nom) aluminum entrance canopy AND RAILING. provide new canopy, decorative support posts and railing matching existing. See Specifications.
9. CONCRETE BLOCK RETAINING WALLS (GC): Provide and install new capstones to replace missing or damaged pieces, approx. 40 stones total on two walls. See Specifications.
10. EXISTING BRICK VENEER (GC): At brick area noted, strike and repoint areas of loose or missing mortar. Approximately 20 sf. See Specifications.
11. LINTEL REPLACEMENT BRICK REPAIR/REPOINTING (GC): At the following locations noted on elevations, temporarily support brick and remove corroded steel lintel. Repair masonry displaced or all open joints affected by damaged lintel. Replace lintel and replace and repoint brick per Specifications. Caulk to seal.
12. LINTELS (GC): Scrape, paint, and recaulk lintels over garage door and all windows.
13. ATTIC VENT (GC): Replace damaged attic vent in this location. See Specifications.
14. ROOF (GC): Remove existing shingles (approx. 1,200 sf), flashing, roof vent caps, roof pipe boots flashing, etc. Re-roof using new materials per Specifications.

Interior Garage

15. ELECTRICAL PANEL (E): Replace circuit breakers with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally, provide proper electrical grounding and bonding of the electrical system. See Specifications.
16. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish. See Specifications.
17. WALL PENETRATIONS BETWEEN GARAGE AND RESIDENCE (GC): At wall indicated, provide new brick/block infill mortared in place to completely seal garage from residence.
18. GARAGE TO INTERIOR DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.
19. GARAGE DOOR (E): Provide new surface mounted electrical duplex outlet proximal to garage door to supply power to garage door.

Interior Basement

20. WATER HEATER (P): Water Heater American Standard 40 Gal. manufacture dated 10/2017. The Water Heater appears to be in good condition and does not show signs of failure. Service. Raise flue outside to run new exhaust flue up wall to eliminate interference with gas meter outside (approx. 20 ft in height). See Specifications.
21. FURNACE (M): Furnace is 2 years old. It appears to be properly functioning. Provide Inspection of unit by a qualified HVAC Technician. Seam seal all exposed duct seams within basement. Seam seal and insulate all ductwork running in unconditioned space, e.g. Garage. See Specifications.
22. BASEMENT AND MECHANICAL ROOM FINISH FLOOR (GC): Properly remove and dispose of existing damaged asbestos tile flooring. Paint concrete floor (approx. 360 sf). See Specifications.
23. BASEMENT AND MECHANICAL ROOM CEILING (GC): Remove existing damaged suspended ceiling tiles (approx. 360 sf). Provide new moisture resistant ceiling tile in existing suspended grid.
24. BASEMENT BATHROOM (GC/E/M/P): Remove existing damaged plaster ceiling (approx. 25 sf). Provide new moisture resistant GWB ceiling, lighting and exhaust fan. See Specifications. Clean shower basin. Provide new shower rod and tub/shower faucet and drain per specifications.
25. LAUNDRY SINK (P): Provide new laundry sink. See Specifications.
26. APPLIANCES (GC): To be removed by others.

Interior First Floor

27. KITCHEN RANGE HOOD (GC/E/M): Replace existing Kitchen Range hood with new. Vent to exterior. At existing ceiling mounted exhaust fan, remove fan, ductwork and damper if not re-usable. Patch ceiling and exterior wall to match. See Specifications.
28. KITCHEN CEILING / LIGHTING (GC/E): Provide new LED Energy star rated light fixtures at Kitchen ceiling. Remove existing recessed fluorescent lighting at Kitchen bulkhead. Laminate new 5/8" GWB over bulkhead to cover openings (approx. 130 sf). Tape spackle and paint bulkhead and provide new surface mounted LED lights. See Specifications.
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31. KITCHEN FLOORING (GC): Remove existing Kitchen flooring down to subfloor. Repair subfloor as necessary to receive new LVT flooring (approx. 130 sf). Install new waterproof LVT flooring and thresholds. See Specification.
32. THREE SEASON ROOM ADDITION (GC): Provide new pressure treated sleepers at 16" o.c. over existing concrete flooring to level flooring (approx. 270 sf). Provide new synthetic wood decking over sleepers as finish flooring. At low corner of concrete subfloor, provide new floor drain and drain pipe to exterior. Drain to daylight with insect/rodent proof screen. Replace existing insect screening and wood stops with new screening and synthetic stops. Scrape and paint existing wood wall and roof framing. Replace rotten members with new pressure treated wood. Replace both doors in this room. See Specifications.
33. BEDROOM CEILING (GC/E/P): Relace light fixture with new. Remove section of water damaged ceiling (approx. 50 sf). Remove leaking plumbing drain line from bathroom above. Repair ceiling and refinish entire ceiling to match existing (approx. 100 sf).

Second Floor

34. BATHROOM (M/E): Install new exhaust fan, ducted to outside. See Specifications.

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seal

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general notes

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revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
2534 Neeld Avenue
Pittsburgh, Pennsylvania 15216

drawing title

Site Plan, Site Plan Legend, Keynotes

scale	Sheet No.
As Noted	A2
date: August 20th, 2024	
no. 2 / of. 9	Project #2326

FLOOR COVERING PLAN LEGEND

VCT FLOORING
CONCRETE FLOORING
CARPET FLOORING
LVT FLOORING
WOOD FLOORING

10 Scattered Sites Keynotes – 2534 Neeld Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contact

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages (see additional ductwork note at garage)
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing draperyrods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. CONCRETE ENTRY STEPS (GC): Remove existing failing concrete steps from sidewalk to upper landing (approx. 7 risers/landings and 2 separate bottom risers/landings), taking care to set aside step lighting for reinstallation. Recompact soil and 4" of compacted gravel. Form and pour new exposed aggregate steps and landing, with even risers and sloped slightly to drain. Reset hardwired step lighting. Re-establish anchorage of metal railing. See Specifications.
7. VINYL SIDING (GC): On 3 sides of Three Season Room provide new vinyl siding on lower approx. 3 ft high portion of wall (approx. 150 sf).
8. ENTRANCE CANOPY / RAILING (GC): At this location, remove existing (8'x16' nom) aluminum entrance canopy AND RAILING. provide new canopy, decorative support posts and railing matching existing. See Specifications.
9. CONCRETE BLOCK RETAINING WALLS (GC): Provide and install new capstones to replace missing or damaged pieces, approx. 40 stones total on two walls. See Specifications.
10. EXISTING BRICK VENEER (GC): At brick area noted, strike and repoint areas of loose or missing mortar. Approximately 20 sf. See Specifications.
11. LINTEL REPLACEMENT BRICK REPAIR/REPOINTING (GC): At the following locations noted on elevations, temporarily support brick and remove corroded steel lintel. Repair masonry displaced or all open joints affected by damaged lintel. Replace lintel and replace and repoint brick per Specifications. Caulk to seal.
12. LINTELS (GC): Scrape, paint, and recaulk lintels over garage door and all windows.
13. ATTIC VENT (GC): Replace damaged attic vent in this location. See Specifications.
14. ROOF (GC): Remove existing shingles (approx. 1,200 sf), flashing, roof vent caps, roof pipe boots flashing, etc. Re-roof using new materials per Specifications.

Interior Garage

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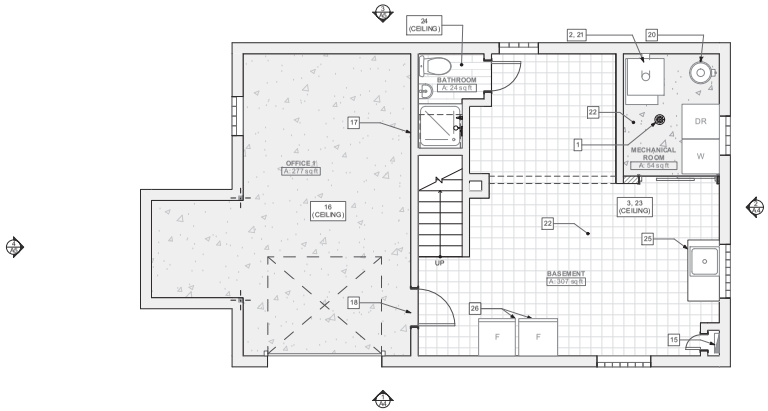
Second Floor

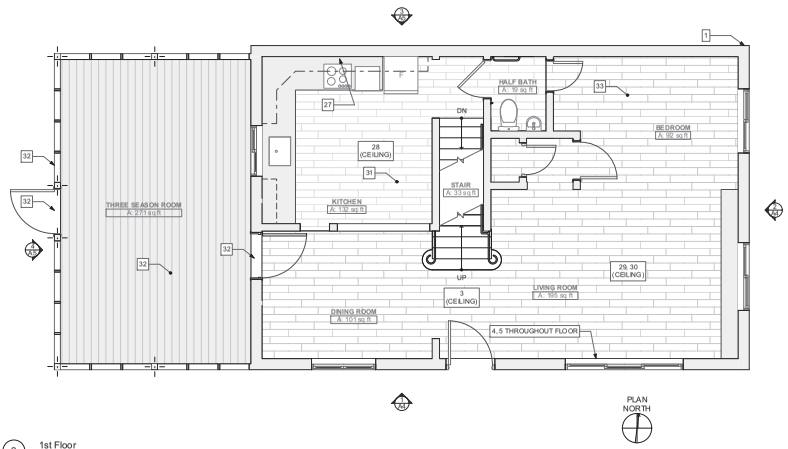
34. BATHROOM (M/E): Install new exhaust fan, ducted to outside. See Specifications.

GENERAL FLOOR PLAN NOTES

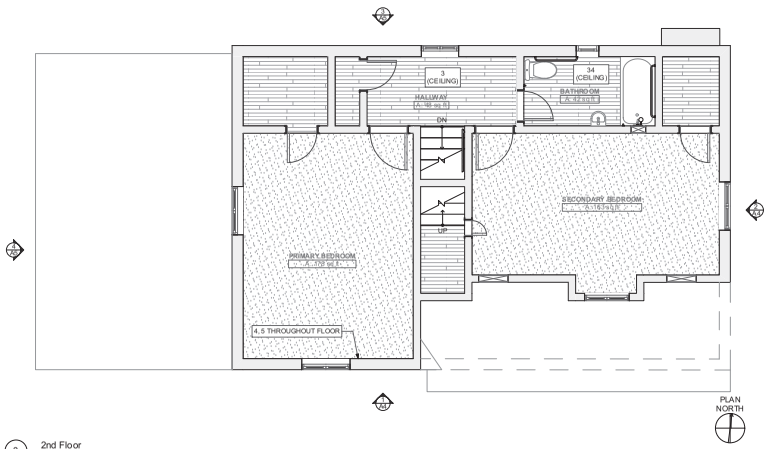
1. PROPERTY HAS BEEN TESTED FOR HAZARDOUS MATERIALS. REPORT WILL BE AVAILABLE AND PROVIDED BY HACP. GC TO ABATED MATERIALS FOLLOWING THE RECOMMENDATIONS FROM THE REPORT.
2. CONTRACTOR TO FIELD VERIFY ANY AND ALL CONDITIONS & DIMENSIONS OF WORK AREAS BEFORE BEGINNING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.
3. THE FINISH FLOOR OF THIS PROJECT IS IDENTIFIED AT 0'-0" IN THIS SET OF DRAWINGS.
4. ALIGN NEW WALL & CEILING CONSTRUCTION WITH EXISTING WALL CONSTRUCTION. FINISH NEW PARTITION SMOOTH TO FORM A SEAMLESS JOINT BETWEEN NEW & EXISTING PARTITIONS.
5. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC REPRESENTATIONS. NOTIFY ARCHITECT IN WRITING OF ANY INCONSISTENT OR MISSING DIMENSIONS.
6. DIMENSIONS SHOWN INDICATE FINISHED FACE TO FINISHED FACE, UNLESS NOTED OTHERWISE.
7. ALL NEW OR RELOCATED DOOR FRAMES TO BE LOCATED 4" FROM PERPENDICULAR WALLS, UNLESS NOTED OTHERWISE.
8. SAND WALLS SMOOTH, REMOVE ALL ADHESIVE RESIDUE, AND/OR SKIM WITH JOINT COMPOUND AS NECESSARY TO PREP WALLS FOR NEW FINISHES. THE FLOOR SHOULD BE SCRAPED CLEAN OF ANY ADHESIVE RESIDUE, PATCHED AND LEVELED OUT AS NECESSARY TO RECEIVE NEW FLOORING.
9. AT WALLS EXISTING TO REMAIN, PATCH AND PAINT ANY HOLES OR DAMAGE TO APPEAR NEW.



1 Basement
SCALE: 1/4" = 1'-0"



2 1st Floor
SCALE: 1/4" = 1'-0"



3 2nd Floor
SCALE: 1/4" = 1'-0"

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CONSTRUCTION DOCUMENTATION

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revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
2534 Neeld Avenue
Pittsburgh, Pennsylvania 15216

drawing title

Basement, 1st Floor, 2nd Floor, Renovation Plan Legend, Floor Plan Legend, Keynotes

scale	Sheet No.
As Noted	A3
date: August 20th, 2024	
no. 3 / of. 9	Project #2326

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205 Ross Street
Pittsburgh, Pennsylvania 15219
ph 412.281.6001 fx 412.281.6002

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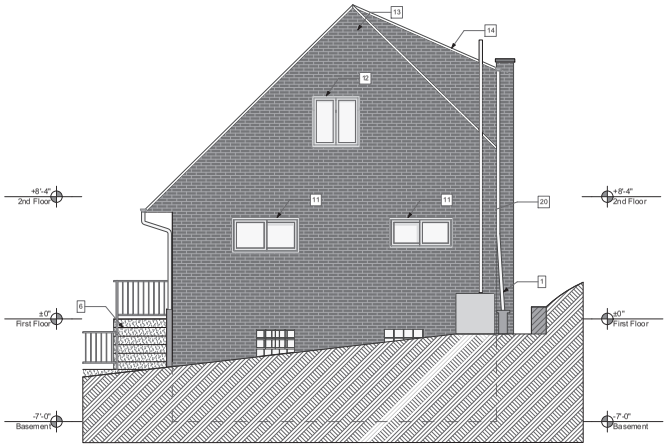
1 South Elevation
SCALE: 1/4" = 1'-0"



2 East Elevation
SCALE: 1/4" = 1'-0"

seal

CONSTRUCTION DOCUMENTATION

general notes

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Pittsburgh, Pennsylvania 15216

drawing title

East Elevation, South Elevation, Keynotes

10 Scattered Sites Keynotes – 2534 Neeld Ave

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Second Floor

34. BATHROOM (M/E): Install new exhaust fan, ducted to outside. See Specifications.

scale: As Noted	**Sheet No.**
date: August 20th, 2024	**A4**
no. 4 / of. 9	Project #2326

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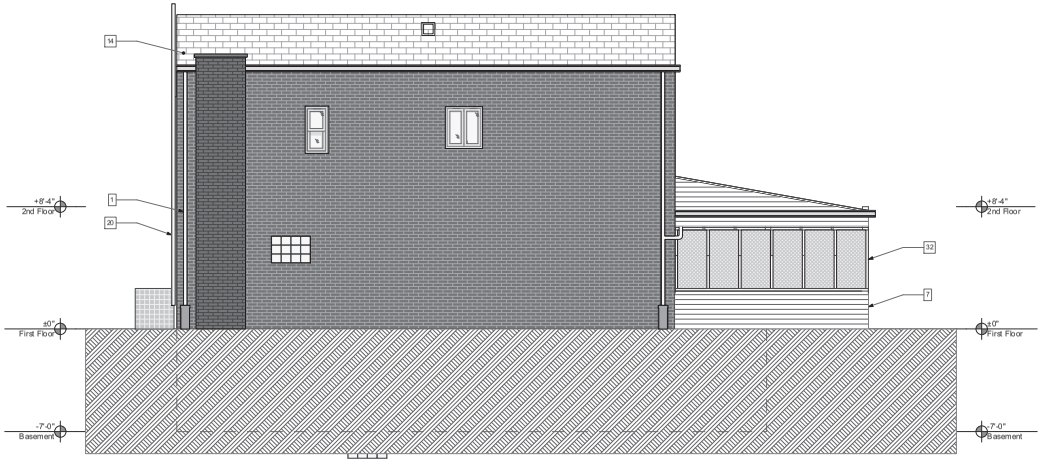
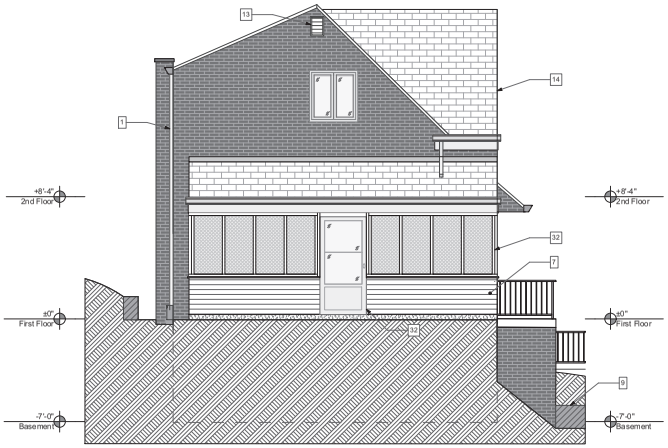


3 North Elevation
SCALE: 1/4" = 1'-0"



4 West Elevation
SCALE: 1/4" = 1'-0"

10 Scattered Sites Keynotes – 2534 Neeld Ave

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages (see additional ductwork note at garage)
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. CONCRETE ENTRY STEPS (GC): Remove existing failing concrete steps from sidewalk to upper landing (approx. 7 risers/landings and 2 separate bottom risers/landings), taking care to set aside step lighting for reinstallation. Recompact soil and 4" of compacted gravel. Form and pour new exposed aggregate steps and landing, with even risers and sloped slightly to drain. Reset hardwired step lighting. Re-establish anchorage of metal railing. See Specifications.
7. VINYL SIDING (GC): On 3 sides of Three Season Room provide new vinyl siding on lower approx. 3 ft high portion of wall (approx. 150 sf).
8. ENTRANCE CANOPY / RAILING (GC): At this location, remove existing (8'x16' nom) aluminum entrance canopy AND RAILING. provide new canopy, decorative support posts and railing matching existing. See Specifications.
9. CONCRETE BLOCK RETAINING WALLS (GC): Provide and install new capstones to replace missing or damaged pieces, approx. 40 stones total on two walls. See Specifications.
10. EXISTING BRICK VENEER (GC): At brick area noted, strike and repoint areas of loose or missing mortar. Approximately 20 sf. See Specifications.
11. LINTEL REPLACEMENT BRICK REPAIR/REPOINTING (GC): At the following locations noted on elevations, temporarily support brick and remove corroded steel lintel. Repair masonry displaced or all open joints affected by damaged lintel. Replace lintel and replace and repoint brick per Specifications. Caulk to seal.
12. LINTELS (GC): Scrape, paint, and recaulk lintels over garage door and all windows.
13. ATTIC VENT (GC): Replace damaged attic vent in this location. See Specifications.
14. ROOF (GC): Remove existing shingles (approx. 1,200 sf), flashing, roof vent caps, roof pipe boots flashing, etc. Re-roof using new materials per Specifications.

Interior Garage

15. ELECTRICAL PANEL (E): Replace circuit breakers with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally, provide proper electrical grounding and bonding of the electrical system. See Specifications.
16. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, sand and paint new GWB to finish. See Specifications.
17. WALL PENETRATIONS BETWEEN GARAGE AND RESIDENCE (GC): At wall indicated, provide new brick/block infill mortared in place to completely seal garage from residence.
18. GARAGE TO INTERIOR DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.
19. GARAGE DOOR (E): Provide new surface mounted electrical duplex outlet proximal to garage door to supply power to garage door.

Interior Basement

20. WATER HEATER (P): Water Heater American Standard 40 Gal. manufacture dated 10/2017. The Water Heater appears to be in good condition and does not show signs of failure. Service. Raise flue outside to run new exhaust flue up wall to eliminate interference with gas meter outside (approx. 20 ft in height). See Specifications.
21. FURNACE (M): Furnace is 2 years old. It appears to be properly functioning. Provide Inspection of unit by a qualified HVAC Technician. Seam seal all exposed duct seams within basement. Seam seal and insulate all ductwork running in unconditioned space, e.g. Garage. See Specifications.
22. BASEMENT AND MECHANICAL ROOM FINISH FLOOR (GC): Properly remove and dispose of existing damaged asbestos tile flooring. Paint concrete floor (approx. 360 sf). See Specifications.
23. BASEMENT AND MECHANICAL ROOM CEILING (GC): Remove existing damaged suspended ceiling tiles (approx. 360 sf). Provide new moisture resistant ceiling tile in existing suspended grid.
24. BASEMENT BATHROOM (GC/E/M/P): Remove existing damaged plaster ceiling (approx. 25 sf). Provide new moisture resistant GWB ceiling, lighting and exhaust fan. See Specifications. Clean shower basin. Provide new shower rod and tub/shower faucet and drain per specifications.
25. LAUNDRY SINK (P): Provide new laundry sink. See Specifications.
26. APPLIANCES (GC): To be removed by others.

Interior First Floor

27. KITCHEN RANGE HOOD (GC/E/M): Replace existing Kitchen Range hood with new. Vent to exterior. At existing ceiling mounted exhaust fan, remove fan, ductwork and damper if not re-usable. Patch ceiling and exterior wall to match. See Specifications.
28. KITCHEN CEILING / LIGHTING (GC/E): Provide new LED Energy star rated light fixtures at Kitchen ceiling. Remove existing recessed fluorescent lighting at Kitchen bulkhead. Laminate new 5/8" GWB over bulkhead to cover openings (approx. 130 sf). Tape spackle and paint bulkhead and provide new surface mounted LED lights. See Specifications.
29. LIVING ROOM LIGHTING (E): Provide new LED Energy star rated light fixture at Living Room Ceiling. See Specifications.
30. LIVING ROOM CEILNG REPLACEMENT (GC/P): Remove completely the existing water damaged ceiling in this room. Trace and repair any damaged or leaking plumbing above. Provide new 5/8" painted GWB ceiling (approx. 200 sf). See Specifications.
31. KITCHEN FLOORING (GC): Remove existing Kitchen flooring down to subfloor. Repair subfloor as necessary to receive new LVT flooring (approx. 130 sf). Install new waterproof LVT flooring and thresholds. See Specification.
32. THREE SEASON ROOM ADDITION (GC): Provide new pressure treated sleepers at 16" o.c. over existing concrete flooring to level flooring (approx. 270 sf). Provide new synthetic wood decking over sleepers as finish flooring. At low corner of concrete subfloor, provide new floor drain and drain pipe to exterior. Drain to daylight with insect/rodent proof screen. Replace existing insect screening and wood stops with new screening and synthetic stops. Scrape and paint existing wood wall and roof framing. Replace rotten members with new pressure treated wood. Replace both doors in this room. See Specifications.
33. BEDROOM CEILING (GC/E/P): Relace light fixture with new. Remove section of water damaged ceiling (approx. 50 sf). Remove leaking plumbing drain line from bathroom above. Repair ceiling and refinish entire ceiling to match existing (approx. 100 sf).

Second Floor

34. BATHROOM (M/E): Install new exhaust fan, ducted to outside. See Specifications.

seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
2534 Neeld Avenue
Pittsburgh, Pennsylvania 15216

drawing title

West Elevation, North Elevation, Keynotes

scale		Sheet No.
As Noted		A5
date: August 20th, 2024		
no. 5	of. 9	Project #2326

GENERAL NOTES

USE OF THE DOCUMENTS
THE USE OF THESE DOCUMENTS IS RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED. RE-USE OR REPRODUCTION OF THE DOCUMENTS (IN WHOLE OR IN PART), FOR ANY OTHER PURPOSE IS PROHIBITED. TITLE TO THESE REMAINS WITH FUKU ARCHITECTS P.C. (FAR). VISUAL CONTRACT DOCUMENTS DOCUMENTS IS PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

DIVISION 1 - GENERAL CONDITIONS

APPLICABILITY OF HUD-5370 GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS - PUBLIC HOUSING PROGRAMS
THE HUD-5370, GENERAL CONDITIONS CURRENT EDITION, SHALL APPLY TO THE PROJECT. A COPY OF THE HUD GENERAL CONDITIONS ARE INCLUDED IN THE FRONT END DOCUMENTS AS PART OF HUD FORMS. HARD CONES ARE AVAILABLE AT HACP OFFICE.

MULTIPLE CONTRACT
1. COORDINATION
GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT, ELECTRICAL CONTRACT, AND ADDITIONAL CONTRACTS APPLICABLE IN THE CONSTRUCTION DOCUMENTS.

2. GENERAL REQUIREMENTS OF CONTRACTS
UNLESS THE AGREEMENT CONTAINS A MORE SPECIFIC DESCRIPTION OF THE WORK OF EACH CONTRACT, THE GENERAL REQUIREMENTS ON DRAWINGS AND IN SPECIFICATION SECTIONS DETERMINE WHICH CONTRACT INCLUDES A SPECIFIC ELEMENT OF PROJECT.

3. SCOPE OF WORK RESPONSIBILITY
A. GENERAL CONSTRUCTION CONTRACT
WORK OF THE GENERAL CONSTRUCTION CONTRACT INCLUDES, BUT IS NOT LIMITED TO, THE REMAINING WORK NOT IDENTIFIED AS WORK UNDER OTHER CONTRACTS.

B. PLUMBING CONTRACT
WORK OF THE PLUMBING CONTRACT INCLUDES, BUT IS NOT LIMITED TO, PLUMBING FIXURES AND APPLIANCES (INCLUDING BUT NOT LIMITED TO SINKS, TUBS, SHOWER ENCLOSURES, SINK DRAINS, FAUCETS AND DRAIN ASSEMBLIES, ETC), PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT. PLUMBING CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT.

C. MECHANICAL CONTRACT
WORK OF THE MECHANICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ALL MECHANICAL EQUIPMENT AND CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND ELECTRICAL. CONTRACT MECHANICAL EQUIPMENT INCLUDES BUT IS NOT LIMITED TO FURNACES AND CONDENSERS, KITCHEN AND BATH EXHAUST FANS, THERMOSTATS AND CONTROLS, ETC.

D. ELECTRICAL CONTRACT
WORK OF THE ELECTRICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ELECTRICAL EQUIPMENT AND FIXTURES INCLUDING BUT NOT LIMITED TO, (INTERIOR AND EXTERIOR LIGHT FIXTURES, SMOKE AND CO DETECTORS, COMPLETE CIRCUIT BREAKER PANELS INCLUDING ALL BREAKERS AND LABELING, ELECTRICAL SERVICE ENTRANCE), WIRING, AND ELECTRICAL AND LOW VOLTAGE CONNECTIONS TO EQUIPMENT FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT. ELECTRICAL CONNECT WITH TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT

PRE-CONSTRUCTION CONFERENCE AND NOTICE TO PROCEED
WITHIN TEN CALENDAR DAYS OF CONTRACT EXECUTION, AND PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH THE OWNER, ARCHITECT OF PRIMA, ITS ARCHITECT, AND OTHER INTERESTED PARTIES CONVENED BY THE PHA. THE CONFERENCE WILL SERVE TO ACQUAINT THE CONTRACTOR WITH THE GENERAL PLAN OF THE CONSTRUCTION OPERATION AND ALL OTHER REQUIREMENTS OF THE CONTRACT. THE PHA WILL PROVIDE THE CONTRACTOR WITH THE DATE, TIME, AND PLACE OF THE CONFERENCE.
(B) THE CONTRACTOR SHALL BEGIN WORK UPON RECEIPT OF A WRITTEN NOTICE TO PROCEED FROM THE CONTRACTING OFFICER OR DESIGNEE. THE CONTRACTOR SHALL NOT BEGIN WORK PRIOR TO RECEIVING SUCH NOTICE.

CONSTRUCTION PROGRESS
(A) THE CONTRACTOR SHALL, WITHIN FIVE DAYS AFTER THE WORK COMMENCES ON THE CONTRACT OR ANOTHER PERIOD OF TIME DETERMINED BY THE CONTRACTING OFFICER, PREPARE AND SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL THREE COPIES OF A PRACTICABLE SCHEDULE SHOWING THE ORDER IN WHICH THE CONTRACTOR PROPOSES TO PERFORM THE WORK, AND THE DATES ON WHICH THE CONTRACTOR CONTEMPLATES STARTING AND COMPLETING THE SEVERAL SALIENT FEATURES (INCLUDING PROCUREMENT, FABRICATING LABOR, MATERIALS, AND EQUIPMENT). THE SCHEDULE SHALL BE IN THE FORM OF A PROGRESS CHART OF SUITABLE SCALE TO INDICATE APPROPRIATELY THE PERCENTAGE OF WORK SCHEDULED FOR COMPLETION BY ANY GIVEN DATE DURING THE PERIOD. IF THE CONTRACTOR FAILS TO SUBMIT A SCHEDULE WITHIN THE TIME PRESCRIBED, THE CONTRACTING OFFICER MAY WITHHOLD APPROVAL OF PROGRESS PAYMENTS OR TAKE OTHER REMEDIES UNDER THE CONTRACT UNTIL THE CONTRACTOR SUBMITS THE REQUIRED SCHEDULE.
(B). THE CONTRACTOR SHALL ENTER THE ACTUAL PROGRESS ON THE CHART AS REQUIRED BY THE CONTRACTING OFFICER, AND IMMEDIATELY DELIVER THREE COPIES OF THE ANNOTATED SCHEDULE TO THE CONTRACTING OFFICER. IF THE CONTRACTOR FAILS TO PROCEED, UPON THE BASIS OF INSPECTION CONDUCTED PURSUANT TO THE CLAUSE ENTITLED INSPECTION AND ACCEPTANCE OF CONSTRUCTION, HEREIN THAT THE CONTRACTOR IS NOT MEETING THE APPROVED SCHEDULE, THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO IMPROVE ITS PROGRESS, INCLUDING THOSE THAT MAY BE REQUESTED BY THE CONTRACTING OFFICER, WITHOUT ADDITIONAL COST TO THE PHA. IN THIS CIRCUMSTANCE THE CONTRACTING OFFICER MAY REQUIRE THE CONTRACTOR TO INCREASE THE NUMBER OF SHIFTS, OVERTIME OPERATIONS, DAYS OF WORK, AND/OR THE AMOUNT OF CONSTRUCTION PLANT, AND TO SUBMIT FOR APPROVAL ANY SUPPLEMENTARY SCHEDULE OR SCHEDULES IN CHART FORM AS THE CONTRACTING OFFICER DEEMS NECESSARY TO DEMONSTRATE HOW THE APPROVED RATE OF PROGRESS WILL BE REGAINED.
(C) FAILURE OF THE CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACTING OFFICER UNDER THIS CLAUSE SHALL BE GROUNDS FOR A DETERMINATION BY THE CONTRACTING OFFICER THAT THE CONTRACTOR IS NOT PROSECUTING THE WORK WITH SUFFICIENT DILIGENCE TO ENSURE COMPLETION WITHIN THE TIME SPECIFIED IN THE CONTRACT. UPON MAKING THIS DETERMINATION, THE CONTRACTING OFFICER MAY TERMINATE THE CONTRACTOR'S RIGHT TO PROCEED WITH THE WORK, OR ANY SEPARABLE PART OF IT, IN ACCORDANCE WITH THE DEFAULT CLAUSE OF THIS CONTRACT.

SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK
(A) THE CONTRACTOR ACKNOWLEDGES THAT IT HAS TAKEN STEPS REASONABLY NECESSARY TO ASCERTAIN THE NATURE AND LOCATION OF THE WORK, AND THAT IT HAS INVESTIGATED AND SATISFIED ITSELF AS TO THE GENERAL AND LOCAL CONDITIONS WHICH CAN AFFECT THE WORK OR ITS COST, INCLUDING BUT NOT LIMITED TO, (1) CONDITIONS BELOW OR UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS; (2) THE AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, AND ROADS; (3) UNCERTAINTIES OF WEATHER, RIVER STAGES, TIDES, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE; (4) THE CONFORMATION AND CONDITIONS OF THE GROUND; AND (5) THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING WORK PERFORMANCE. THE CONTRACTOR ALSO ACKNOWLEDGES THAT IT HAS SATISFIED ITSELF AS TO THE CHARACTER, QUALITY, AND QUANTITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED IN SO FAR AS THIS INFORMATION IS REASONABLY ASCERTAINABLE FROM AN INSPECTION OF THE SITE, INCLUDING ALL EXPLORATORY WORK DONE BY THE PHA, AS WELL AS FROM THE DRAWINGS AND SPECIFICATIONS MADE A PART OF THIS CONTRACT. ANY FAILURE OF THE CONTRACTOR TO TAKE THE ACTIONS DESCRIBED AND ACKNOWLEDGED IN THIS PARAGRAPH WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK, OR FOR PROCEEDING TO SUCCESSFULLY PERFORM THE WORK WITHOUT ADDITIONAL EXPENSE TO THE PHA.
(B) THE PHA ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR BASED ON THE INFORMATION MADE AVAILABLE BY THE PHA. NOR DOES THE PHA ASSUME RESPONSIBILITY FOR ANY UNDERSTANDING REACHED OR REPRESENTATION MADE CONCERNING CONDITIONS WHICH CAN AFFECT THE WORK BY ANY OF ITS OFFICERS OR AGENTS BEFORE THE EXECUTION OF THIS CONTRACT, UNLESS THAT UNDERSTANDING OR REPRESENTATION IS EXPRESSLY STATED IN THIS CONTRACT.

DIFFERING SITE CONDITIONS
(1) THE CONTRACTOR SHALL PROMPTLY, AND BEFORE THE CONDITIONS ARE DISTURBED, GIVE A WRITTEN NOTICE TO THE CONTRACTING OFFICER OF (1) SUBSURFACE OR INSPECIFICAL CONDITIONS AT THE SITE WHICH DIFFER MATERIALLY FROM THOSE INDICATED IN THIS CONTRACT, OR (2)UNKNOWN PHYSICAL CONDITIONS AT THE SITE OF AN UNUSUAL NATURE, WHICH DIFFER MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERING IN WORK OF THE NATURE PROVIDED IN THE CONTRACT.
(B)THE CONTRACTING OFFICER SHALL INVESTIGATE THE SITE CONDITIONS PROMPTLY AFTER RECEIVING THE NOTICE. WORK SHALL NOT PROCEED AT THE AFFECTED SITE, EXCEPT AT THE CONTRACTOR'S RISK, UNTIL THE CONTRACTING OFFICER HAS PROVIDED WRITTEN INSTRUCTIONS TO THE CONTRACTOR. IF THE CONDITIONS DO MATERIALLY SO DIFFER AND CAUSE AN INCREASE OR DECREASE IN THE CONTRACTOR'S COST OF, OR THE TIME REQUIRED FOR, PERFORMING ANY PART OF THE WORK UNDER THIS CONTRACT, WHETHER OR NOT CHANGED AS A RESULT OF THE CONDITIONS, THE CONTRACTOR MAY FILE A CLAIM IN WRITING TO THE PHA WITHIN TEN DAYS AFTER RECEIPT OF SUCH INSTRUCTIONS AND, IN ANY EVENT, BEFORE PROCEEDING WITH THE WORK. (NEGOTIATE ADJUSTMENT IN THE CONTRACT PRICE, THE DELIVERY SCHEDULE, OR BOTH SHALL BE MADE UNDER THIS CLAUSE AND THE CONTRACT MODIFIED IN WRITING ACCORDINGLY.)
(C)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED, UNLESS THE CONTRACTOR HAS GIVEN THE WRITTEN NOTICE REQUIRED; PROVIDED, THAT THE TIME PRESCRIBED IN (A) ABOVE FORGIVING WRITTEN NOTICE MAY BE EXTENDED AT THE DISCRETION OF THE PHA.
(D)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED IF MADE AFTER FINAL PAYMENT UNDER THIS CONTRACT.

SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION
(A) THE CONTRACTOR SHALL KEEP ON THE WORK SITE A COPY OF THE DRAWINGS AND SPECIFICATIONS AND SHALL AT ALL TIMES GIVE THE CONTRACTING OFFICER ACCESS THERETO. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH. IN CASE OF DIFFERENCE BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. IN CASE OF DISCREPANCY IN THE FIGURES, IN THE DRAWINGS OR SPECIFICATIONS, THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE CONTRACTING OFFICER, WHO SHALL PROMPTLY MAKE A DETERMINATION IN WRITING. ANY ADJUSTMENTBY THE CONTRACTOR WITHOUT SUCH A DETERMINATION SHALL BE ATITIS OWN RISK AND EXPENSE. THE CONTRACTING OFFICER SHALL FURNISH FROM TIME TO TIME SUCH DETAILED DRAWINGS AND OTHER INFORMATION AS CONSIDERED NECESSARY, UNLESS OTHERWISE PROVIDED.
(B)WHEREVER IN THE SPECIFICATIONS OR UPON THE DRAWINGS THE WORDS "DIRECTED", "REQUIRED", "ORDERED", "DESIGNATED", "PRESCRIBED", OR WORDS OF LIKE IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE"DIRECTION", "REQUIREMENT", "ORDER", "DESIGNATION", OR "PRESCRIPTION", OF THE CONTRACTING OFFICER IS INTENDED AND SIMILARLY THE WORDS "APPROVED", "ACCEPTABLE", "SATISFACTORY", OR WORDS OF LIKE IMPORT SHALL MEAN "APPROVED BY", OR "ACCEPTABLE TO", OR "SATISFACTORY TO" THE CONTRACTING OFFICER, UNLESS OTHERWISE EXPRESSLY STATED.
(C)WHERE "SHOW", "SHOWN", "INDICATED", "AS DETAILED", OR WORDS OF SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE REFERENCE IS MADE TO THE DRAWINGS ACCOMPANYING THIS CONTRACT UNLESS STATED OTHERWISE. THE WORD "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE" THAT IS "PROVIDE AND INSTALLED"
(D)"SHOP DRAWINGS" MEANS DRAWINGS, SUBMITTED TO THE PHA BY THE CONTRACTOR, SUBCONTRACTOR, OR SUPPLIER, WHICH SHOW THE SUBCONTRACTOR, SHOWING IN DETAIL (1) THE PROPOSED FABRICATION AND ASSEMBLY OF STRUCTURAL ELEMENTS AND (2) THE INSTALLATION(I.E., FORM, FIT, AND ATTACHMENT DETAILS) OF MATERIALS OF EQUIPMENT. IT INCLUDES DRAWINGS, DIAGRAMS, LAYOUTS, SCHEDULES, DESIGNS OF THE PHYSICAL PROPERTIES, LITERATURE, SCHEDULES, PERFORMANCE AND TEST DATA, AND SIMILAR MATERIALS FURNISHED BY THE CONTRACTOR TO EXPLAIN THE WORK IN THE SPECIFIC PORTIONS OF THE WORK REQUIRED BY THE CONTRACT. THE PHA MAY REQUIRE A REASONABLE TIME FOR REVIEW AND APPROVAL FOR ANY PURPOSE SHOP DRAWINGS DELIVERED UNDER THIS CONTRACT.
(E)IF THIS CONTRACT REQUIRES SHOP DRAWINGS, THE CONTRACTOR SHALL COORDINATE ALL DRAWINGS, AND REVIEW THEM FOR ACCURACY, COMPLETENESS, AND COMPLIANCE WITH OTHER CONTRACT REQUIREMENTS AND SHALL INDICATE ITS APPROVAL THEREON AS EVIDENCE OF SUCH COORDINATION AND REVIEW. SHOP DRAWINGS SUBMITTED TO THE CONTRACTING OFFICER WITHOUT EVIDENCE OF THIS CONTRACTOR'S APPROVAL MAY BE RETURNED FOR REVISION. THE CONTRACTING OFFICER WILL INDICATE AN APPROVAL OR DISAPPROVAL OF THE SHOP DRAWINGS, AND IF NOT APPROVED, THE REASONS THEREFOR. SHALL INDICATE THE PHA'S REASONS THEREFORE. ANY WORK DONE BEFORE SUCH APPROVAL SHALL BE AT THE CONTRACTOR'S RISK. APPROVAL BY THE CONTRACTING OFFICER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS IN SUCH DRAWINGS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM THE REQUIREMENTS OF THIS CONTRACT, EXCEPT WITH RESPECT TO VARIATIONS DESCRIBED IN SUCH DRAWINGS, AND AVOID WORK NOT IN (F)BELOW.
(F) IF SHOP DRAWINGS SHOW VARIATIONS FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL DESCRIBE SUCH VARIATIONS IN WRITING, SEPARATE FROM THE DRAWINGS, AT THE TIME OF SUBMISSION. IF THE CONTRACTING OFFICER FINDS THE PROPOSED VARIATION AND THE CONTRACTING OFFICER CONCURS, THE CONTRACTING OFFICER SHALL INDICATE AN APPROVAL THEREOF IN CONNECTION TO THE SHOP DRAWINGS, EXCEPT THAT,IF THE VARIATION IS MINOR OR DOES NOT INVOLVE A CHANGE IN PRICE OR IN TIME OF PERFORMANCE, A MODIFICATION NEED NOT BE ISSUED. (G)IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE TIMELY REQUESTS OF THE PHA FOR SUCH LARGE SCALE AND DETAILED DRAWINGS AS MAY BE NECESSARY FOR ORDERLY ADDITIONAL INFORMATION NOT ALREADY IN HIS POSSESSION, WHICH SHALL BE REQUIRED SUCH THAT THE WORK SHALL NOT BE DELAYED. SUCH REQUESTS MAY BE SUBMITTED AS THE NEED ARISES, BUT EACH SUCH REQUEST SHALL BE FILED IN AMPLE TIME TO PERMIT APPROPRIATE ACTION TO BE TAKEN WITHOUT DELAYING THE WORK OR CAUSING DELAY.
(H)THE CONTRACTOR SHALL SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL FOLLOWING SPECIFICATIONS REQUIREMENTS OF ALL SHOP DRAWINGS AS CALLED FOR UNDER THE VARIOUS HEADINGS OF THESE SPECIFICATIONS. THREE SETS (UNLESS OTHERWISE INDICATED) OF ALL SHOP DRAWINGS WILL BE RETAINED BY THE PHA AND ONE SET WILL BE RETURNED TO THE CONTRACTOR. AS REQUIRED BY THE CONTRACTING OFFICER, FROM TIME TO TIME PRIOR TO COMPLETION OF THE WORK UNDER THIS CONTRACT, SHALL FURNISH A COMPLETE SET OF ALL SHOP DRAWINGS AS FINALLY APPROVED. THESE DRAWINGS WILL SHOW ALL CHANGES AND REVISION SMADE UP TO THE TIME THE WORK IS COMPLETED AND ACCEPTED.
(I) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL SUBCONTRACTORS AND SUPPLIERS BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

AS-BUILT DRAWINGS
(A)"AS-BUILT DRAWINGS," AS USED IN THIS CLAUSE, MEANS DRAWINGS SUBMITTED BY THE CONTRACTOR AND SUBCONTRACTORS AT ANY TIER TO SHOW THE CONSTRUCTION OF A PARTICULAR STRUCTURE OR WORK AS ACTUALLY CONSTRUCTED UNDER THIS CONTRACT. "AS-BUILT DRAWINGS" SHALL BE SYNONYMOUS WITH "RECORD DRAWINGS."
(B)AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER ACCURATE INFORMATIONTO BE USED IN THE PREPARATION OF PERMANENT AS-BUILT DRAWINGS. THE CONTRACTOR SHALL MAKE THE CONTRACTOR SHALL RECORD ON ONE SET OF CONTRACT DRAWINGS ALL CHANGES FROM THE INSTALLATIONS ORIGINALLY INDICATED AND RECORD FINAL LOCATIONSOF UNDERGROUND LINES BY DEPTH FROM FINISH GRADE AND BY ACCURATE HORIZONTAL OFFSET DISTANCES TO PERMANENT SURFACE IMPROVEMENTS SUCH AS BUILDINGS, CURBS, OR EDGES OF WALKS.
(C) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL AS-BUILT DRAWINGS PREPARED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

MATERIAL AND WORKMANSHIP
(A)ALL EQUIPMENT, MATERIAL, AND ARTICLES FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED. UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT. REFERENCES IN THE CONTRACT TO EQUIPMENT, MATERIAL, ARTICLES, OR PATENTED PROCESSES BY TRADE NAME, MAKE, OR CATALOG NUMBER, SHALL BE REGARDED AS ESTABLISHING A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. THE CONTRACTOR MAY, AT ITS OPTION, USE ANY EQUIPMENT, MATERIAL, ARTICLE, OR PROCESS THAT, IN THE JUDGMENT OF, AND AS APPROVED BY THE CONTRACTING OFFICER, IS EQUAL TO THAT NAMED IN THE SPECIFICATIONS, UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT.
(B)APPROVAL OF EQUIPMENT AND MATERIALS.
(1) THE CONTRACTOR SHALL OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT TO BE INCORPORATED INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL GIVE THE CONTRACTING OFFICER THE NAME OF THE MANUFACTURER, THE MODEL NUMBER, AND OTHER INFORMATION CONCERNING THE PERFORMANCE, CAPACITY, NATURE, AND RATING OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT WHEN REQUIRED BY THIS CONTRACT OR BY THE CONTRACTINGOFFICER. THE CONTRACTOR SHALL ALSO OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MATERIAL ORARTICLES WHICH THE CONTRACTOR PROPOSES TO INCORPORATE INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL PROVIDE FULL INFORMATION CONCERNING THE MATERIAL OR ARTICLES. MACHINERY,
EQUIPMENT, MATERIAL, AND ARTICLES THAT DO NOT HAVE THE REQUIRED APPROVAL SHALL BE INSTALLED OR USED AT THE RISK OF SUBSEQUENT REJECTION.
(2) WHEN REQUIRED BY THE SPECIFICATIONS OR THE CONTRACTING OFFICER, THE CONTRACTOR SHALL SUBMIT APPROPRIATELY MARKED SAMPLES (AND CERTIFICATES RELATED TO THEM) FOR APPROVAL AT THE CONTRACTOR'S
EXPENSE, WITH ALL SHIPPING CHARGES PREPAID. THE CONTRACTOR SHALL LABEL, OR OTHERWISE IDENTIFY, EACH SAMPLE SUBMITTED, MATERIAL OR PRODUCT REPRESENTED, ITS PLACE OF ORIGIN, THE NAME OF THE PRODUCER, THE CONTRACTOR'S NAME AND THE SPECIFICATION OF THE CONSTRUCTION PROJECT FOR WHICH THE MATERIAL OR PRODUCTIS INTENDED TO BE USED.
(3)CERTIFICATES SHALL BE SUBMITTED IN TRIPLICATE, DESCRIBING EACH SAMPLE SUBMITTED FOR APPROVAL, AND CERTIFYING THAT THE MATERIAL, EQUIPMENT, AND WORKMANSHIP WILL COMPLY WITH CONTRACT REQUIREMENTS. THE CERTIFICATES SHALL INCLUDE THE NAME AND BRAND OF THE PRODUCT, NAME OF MANUFACTURER, AND THE LOCATION WHERE PRODUCED.
(4) APPROVAL OF A SAMPLE SHALL NOT CONSTITUTE A WAIVER OF THE PHA RIGHT TO DEMAND FULL COMPLIANCE WITH CONTRACT REQUIREMENTS. MATERIALS, EQUIPMENT AND ACCESSORIES MAY BE REJECTED FOR CAUSE EVEN THOUGH SAMPLES HAVE BEEN APPROVED.
(5) WHEREVER MATERIALS ARE REQUIRED TO COMPLY WITH RECOGNIZED STANDARDS OR SPECIFICATIONS, SUCH SPECIFICATIONS SHALL BE ACCEPTED AS ESTABLISHING THE TECHNICAL QUALITIES AND TESTING METHODS, BUT SHALL NOT GOVERN THE NUMBER OF TESTS REQUIRED TO PROVE COMPLIANCE WITH THE CONTRACT REQUIREMENTS. THE CONTRACTING OFFICER MAY REQUIRE LABORATORY TEST REPORTS ON ITEMS SUBMITTED FOR APPROVAL OR APPROVED PRIOR TO USE ON THE BASIS OF DATA SUBMITTED IN CERTIFICATES WITH SAMPLES. CHECK TESTS WILL BE MADE ON MATERIALS
DELIVERED FOR USE ONLY AFTER ACCEPTANCE BY THE CONTRACTING OFFICER. DETERMINES NECESSARY TO INSURE COMPLIANCE OF MATERIALS WITH THE CONTRACT REQUIREMENTS. THE CONTRACTOR WILL ASSUME ALL COSTS OF RETESTING MATERIALS WHICH FAIL TO MEET CONTRACT REQUIREMENTS AND RETESTING MATERIAL SOFFERED IN SUBSTITUTION FOR THOSE FOUND DEFICIENT.
(6) AFTER APPROVAL, SAMPLES WILL BE KEPT IN THE PROJECT OFFICE, UNTIL COMPLETION OF WORK. THEY MAY NOT BE USED IN THE WORK (EXCEPT A SUBSTANTIAL QUANTITY OF THE MATERIALSTHEY REPRESENT HAS BEEN BUILT IN AND ACCEPTED BY THE PHA.
(C) REQUIREMENTS CONCERNING LEAD-BASED PAINT. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF LEAD-BASED PAINT CONTAINED IN THE LEAD-BASED PAINT POISONING PREVENTION ACT (42 U.S.C. 4821-4846) AS IMPLEMENTED BY 24 CFR PART 35.

PERMITS AND CODES
(A)THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALLAPPLICABLE LAWS, ORDINANCES, CODES, RULES AND REGULATIONS. NOTWITHSTANDING THE REQUIREMENTS OF THE CONTRACTOR TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS IN THE CONTRACT, ALL WORK INSTALLED SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. BEFORE BEGINNING THE WORK, THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND THE SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS BEARING ON THE WORK AND SHALL IMMEDIATELY REPORT ANY DISCREPANCY IT MAY DISCOVER TO THE CONTRACTING OFFICER.
WHERE THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS FAIL TO COMPLY WITH THE APPLICABLE CODE OR REGULATION, THE CONTRACTING OFFICER SHALL MODIFY THE CONTRACT TO CHANGE ORDER PURSUANT TO THE CLAUSE ENTITLED CHANGES HEREIN TO CONFORM TO THE CODE OR REGULATION.
(B) THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES,AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK, WHERE THE PHA CAN CONSTRUCTIVELY OBTAIN ISSUANCE OF ALL OR PART OF THESE PERMITS, FEES AND LICENSES WITHOUT COST TO THE CONTRACTOR, THE CONTRACT AMOUNT SHALL BE REDUCED ACCORDINGLY.

HEALTH, SAFETY AND ACCIDENT PREVENTION
(A) IN PERFORMING THIS CONTRACT, THE CONTRACTOR SHALL:
(1)ENSURE THAT NO LABORER OR MECHANIC SHALL BE REQUIRED TO WORK IN SURROUNDINGS OR UNDER WORKING CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO HIS HEALTH AND/OR SAFETY AS DETERMINED UNDER CONSTRUCTION SAFETY AND HEALTHSTANDARDS PROMULGATED BY THE SECRETARY OF LABOR BY REGULATIONS.(2)PROTECT THE LIVES, HEALTH, AND SAFETY OF THEIR PERSONS; (3)PREVENT DAMAGE TO PROPERTY, MATERIALS, SUPPLIES, AND EQUIPMENT; AND, (4)AVOID WORK INTERFERENCE.
(B) FOR THESE PURPOSES, THE CONTRACTOR SHALL: (1)COMPLY WITH REGULATIONS AND STANDARDS ISSUED BY THE SECRETARY OF LABOR AT 29 CFR PART 1926. FAILURE TO COMPLY MAY RESULT IN IMPOSITION OF SANCTIONS PURSUANT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (PL 91-54, 83 STAT. 96); 40 U.S.C. 327 ETSEQ., AND (2)INCLUDE THE TERMS OF THIS CLAUSE IN EVERY SUBCONTRACT SO THAT SUCH TERMS WILL BE BINDING ON EACH SUBCONTRACTOR.
(C) THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF EXPOSURE DATA ON ALL ACCIDENTS INCIDENT TO WORK PERFORMED UNDER THIS CONTRACT AND RESULTING IN DEATH, TRAUMATIC INJURY,OCCUPATIONAL DISEASE, OR DAMAGE TO PROPERTY, MATERIALS,SUPPLIES, OR EQUIPMENT, AND SHALL REPORT THIS DATA IN THE MANNER PRESCRIBED BY 29 CFR PART1904.
(D)THE CONTRACTOR FURTHER AGREES THAT THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THESE REQUIREMENTS AND OF THE CORRECTIVE ACTION REQUIRED. THIS NOTICE, WHEN DELIVERED TOTHE CONTRACTOR OR THE CONTRACTOR'S REPRESENTATIVE AT THE SITE OF THE WORK, SHALL BE DEEMED SUFFICIENT NOTICE OF THE NON COMPLIANCE AND CORRECTIVE ACTION REQUIRED. AFTER RECEIVING SUCH NOTICE, THE CONTRACTOR SHALL IMMEDIATELY TAKE CORRECTIVE ACTION. IF THE CONTRACTOR FAILS OR REFUSES TO TAKE CORRECTIVE ACTION PROMPTLY, THE CONTRACTING OFFICER MAY ISSUE AN ORDER STOPPING ALL OR PART OF THE WORK UNTIL SATISFACTORY CORRECTIVE ACTION HAS BEEN TAKEN. THE CONTRACTOR SHALL NOT BASE ANY CLAIM ON REQUEST FOR EQUITABLE ADJUSTMENT FOR ADDITIONAL TIME OR MONEY ON ANY STOP ORDER ISSUED UNDER THESE CIRCUMSTANCES.
(E) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS SUBCONTRACTOR'S COMPLIANCE WITH THE PROVISIONS OF THIS CLAUSE. THE CONTRACTOR SHALL INCLUDE THIS CLAUSE IN EVERY SUBCONTRACT AS THE PHA, THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, AND THE SECRETARY OF LABOR SHALL DIRECT AS A MEANS OF ENFORCING SUCH PROVISIONS.

TEMPORARY HEATING
THE MECHANICAL CONTRACTOR SHALL PROVIDE AND PAY FOR TEMPORARY HEATING, COVERING, AND ENCLOSURES NECESSARY TO PROPERLY PROTECT ALL WORK AND MATERIALS AGAINST DAMAGE BY DAMPNESS AND COLD, TO DRY OUT THE WORK, AND TO FACILITATE THE COMPLETION OF THE WORK. ANY PERMANENT HEATING EQUIPMENT USED SHALL BE TURNED OVER TO THE PHA IN THE CONDITION AND AT THE TIME REQUI

PERFORMED OR COMPLETED SHALL BE SUBMITTED BY EACH PRIME CONTRACTOR. ALL WORK OUTLINED ON THE INITIAL PUNCH LIST SHALL BE COMPLETED BY THE CONTRACTOR PRIOR TO THE FINAL INSPECTION AND BEFORE THE PROJECT WILL BE ACCEPTED FOR FINAL COMPLETION. AFTER ALL REQUIREMENTS PREPARATORY TO THE FINAL INSPECTION HAVE BEEN COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER TO PERFORM A FINAL INSPECTION. IF ALL THE WORK HAS BEEN COMPLETED, INCLUDING PUNCH LIST ITEMS FROM EARLIER INSPECTIONS, AND NO FURTHER CORRECTIONS ARE REQUIRED, THE ARCHITECT SHALL RECOMMEND FINAL ACCEPTANCE OF THE PROJECT WHEN ALL THE CLOSEOUT DOCUMENTS ARE RECEIVED, INCLUDING BUT NOT LIMITED TO WARRANTIES, O&M MANUALS, FINAL TESTING, CERTIFICATES, PERMITS, PUNCH LIST, SUBMITTALS, RFIS, AS BUILD DRAWINGS AND ANY ADDITIONAL DOCUMENTATION REQUIRED BY HACP FOR CLOSEOUT.

ALL PUNCH LIST ITEMS TO BE COMPLETED WITHIN THIRTY (30) WORKING DAYS OF RECEIPT, OR FINAL 10% DRAW WILL BE FORFEITED. ALL WORK NOT COMPLETED WITHIN THE ALLOTTED TIME WILL BE COMPLETED BY HACP AT PRIME CONTRACTOR'S EXPENSE. FINAL COMPLETION OCCURS WHEN ALL PUNCH LIST ITEMS HAVE BEEN COMPLETED AND OCCUPANCY PERMIT HAS BEEN ISSUED.

PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL EQUIPMENT FURNISHED, INSTALLED OR SERVICED UNDER THIS AND THEIR CONTRACTS. EACH PRIME CONTRACTOR SHALL VERIFY THAT ITS EQUIPMENT, ELECTRICAL SYSTEMS AND APPLIANCES ARE FULLY OPERATIONAL AND THAT ALL PLUMBING AND MECHANICAL EQUIPMENT IS OPERATING QUIETLY AND FREE FROM VIBRATION. CONTRACTOR SHALL PROVIDE A BINDER FOR HACP AND TENANT CONTAINING MAINTENANCE MANUALS, INCLUDING OPERATION INSTRUCTIONS, SPARE PARTS, WARRANTIES, INSPECTION PROCEDURES, AND DATA FOR EACH SYSTEM OR EQUIPMENT ITEM.

ALL ELECTRICAL PANELS AND BREAKERS TO BE PROPERLY MARKED AND A TYPED SCHEDULE TO BE FURNISHED.

FINAL CLEANING: AT THE TIME OF THE PROJECT CLOSE OUT, THE GENERAL CONTRACTOR SHALL PROVIDE AND THOROUGHLY CLEAN AND READY THE SPACE FOR OCCUPANCY. THIS SHALL, AT MINIMUM, INCLUDE HARDWARE, SECURITY EQUIPMENT, LIGHT FIXTURES, REPLACEMENT OF BURNED OUT LAMPS, REMOVAL OF NON PERMANENT PROTECTION AND LABELS, TOUCH UP OF ANY MINOR FINISH DAMAGE, AND CLEANING OR REPLACEMENT OF MECHANICAL SYSTEM FILTERS. DAMAGE TO ANY FINISH, SURFACE, EQUIPMENT OR OBJECT CAUSED DURING CLEANING SHALL BE REPAIRED OR REPLACED BY THE GENERAL CONTRACTOR AT HIS/HER OWN COST.

UPON COMPLETION OF THE PROJECT, GENERAL CONTRACTOR SHALL OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT AND PROVIDE A COPY OF THE ORIGINAL TO HACP AND ARCHITECT IF REQUIRED.

AT EACH PAYMENT REQUEST AND BEFORE PAYMENT IS MADE, EACH CONTRACTOR SHALL DELIVER TO THE HACP A COMPLETE RELEASE OF ALL SUB CONTRACTOR'S AND SUPPLIER'S LIENS ARISING OUT OF THIS CONTRACT, OR RECEIPTS IN FULL COVERING ALL LABOR AND MATERIALS FOR WHICH A LIEN COULD BE FILED OR A BOND SATISFACTORY TO THE HACP INDEMNIFYING HACP AGAINST ANY LIENS.

DIVISION 2 – SITE WORK – NOT APPLICABLE

DIVISION 3 – CONCRETE

PLAN AND REINFORCE CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 19 OF THE IBC 2018 AND ACI 318 AS AMMENDED IN SECTION 1905 OF THE IBC 2018.

CONCRETE TO BE INSTALLED AND CURED PER ACI 318 AND BE NORMAL WEIGHT (144PCF) WITH COMPRESSIVE STRENGTH IN 28 DAYS OF 4000 PSI, AIR ENTRAINED. CEMENT SHALL BE PORTLAND, TYPE I(PLY ASH & GROUND GRANULATED BLAST FURNACE SLAG NOT PERMITTED). COARSE AGGREGATE SHALL BE ¾" MAXIMUM. AIR ENTRAINED SHALL BE 7 PERCENT. SLUMP SHALL BE 4" MAXIMUM.

REINFORCING BARS SHALL COMPLY WITH A.S.T.M. A615–GRADE 60. WELDED WIRE FABRIC SHALL COMPLY WITH A.S.T.M. A185.

4" MINIMUM COMPACTED GRAVEL BED TO PLACE CONCRETE TO BE #57 HAND OR MACHINE COMPACTED BEFORE CONCRETE PLACEMENT.

PROVIDE COLD-APPLIED JOINT SEALANTS, SINGLE COMPONENT, SILICONE, SELF LEVELING TYPE BY SIKA OR EQUAL.

ROUND BACKER RODS FOR COLD-APPLIED JOINT SEALANTS: ASTM D5249, TYPE 3, OF DIAMETER AND DENSITY REQUIRED TO CONTROL JOINT-SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT. BY SIKA OR EQUAL.

DIVISION 4 – MASONRY

BRICK MASONRY REPOINTING

BRICK MASONRY REPOINTING SPECIALIST QUALIFICATIONS: ENGAGE AN EXPERIENCED BRICK MASONRY REPOINTING FIRM TO PERFORM WORK OF THIS SECTION. FIRM SHALL HAVE COMPLETED WORK SIMILAR IN MATERIAL DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. EXPERIENCE IN ONLY INSTALLING MASONRY IS INSUFFICIENT EXPERIENCE FOR MASONRY REPOINTING WORK.

REPOINTING OF AREAS INDICATED IN THE DRAWINGS AND LOCATIONS WITH THE FOLLOWING DEFECTS:
A. HOLES AND MISSING MORTAR.
B. CRACKS THAT CAN BE PENETRATED 1/4 INCH OR MORE BY A KNIFE BLADE 0.027 INCH THICK.
C.CRACKS 16 INCH OR MORE IN WIDTH AND OF ANY DEPTH.
D.HOLLOW-SOUNDING JOINTS WHEN TAPPED BY METAL OBJECT.
E. ERODED SURFACES 1/4 INCH OR MORE DEEP.
F. DETERIORATION TO POINT THAT MORTAR CAN BE EASILY REMOVED BY HAND, WITHOUT TOOLS.
G. JOINTS FILLED WITH SUBSTANCES OTHER THAN MORTAR.

MATERIALS
PORTLAND CEMENT: ASTM C 150/C 150M, TYPE I OR TYPE II. EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION; GRAY, WHERE REQUIRED FOR COLOR MATCHING OF MORTAR.

MASONRY CEMENT: ASTM C 91/C 91M. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- CEMEX S.A.B. DE C.V.
- HOLCIM (US) INC.
- QUIKRETE; THE QUIKRETE COMPANIES, LLC.

REMOVE GUTTERS, DOWNSPOUTS AND ASSOCIATED HARDWARE ADJACENT TO MASONRY REPOINTING. REINSTALL WHEN REPOINTING IS COMPLETED.PROVIDE TEMPORARY RAIN DRAINAGE DURING WORK TO DIRECT WATER AWAY FROM THE BUILDING.

SEE LINTEL REPLACEMENT BELOW AND COORDINATE MASONRY REPOINTING AND REPLACEMENT WITH REMEDIAL LINTEL REPAIR OR REPLACEMENT.

RETAINING WALL
WHERE NOTED ON THE DRAWINGS, NEW DRYSTACK RETAINING WALL, BELGARD OR EQUAL, TO MATCH EXISTING COLOR AND TYPE OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. REMOVE SUFFICIENT SOIL TO ALLOW ACCESS TO INSTALL A NEW WALL. SET NEW WALL IN COMPACTED GRAVEL BED STRICTLY ACCORDING TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS. INSTALL NEW WALL WITH ALL NECESSARY PINS, GEOGRID AND CAP PIECES ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL ACCESSORIES
WALL CAPS, PINS AND GEOGRID FABRIC.
REPLACEMENT WALL CAPS TO MATCH EXISTING, MATERIAL CONCRETE BY BELGARD OR EQUAL. COLOR AND TYPE TO MATCH EXISTING OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

GLASS BLOCK
SOLID GLASS BLOCK COLORLESS, TRANSPARENT, SMOOTH FACES AND MANUFACTURER'S STANDARD EDGE COATING WHITE, BY SEVES, OWINGS CORNING GLASS BLOCK OR EQUAL. SILICONE SEALANT BY SIKA OR EQUAL. PRODUCT INFORMATION AND SAMPLE TO BE PROVIDED TO ARCHITECT AND HACP FOR APPROVAL. SIZE OF GLASS BLOCK TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD SIZES. GLASS BLOCK SHALL BE INSTALLED PER IBC AND IRC BUILDING CODE AND TMS 402/ACI 530/ASCE 5 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES"

DIVISION 5 – METALS

STEEL BEAMS, ANGLES AND PLATES
SHOP PRIMED WITH RUST PREVENTATIVE PAINT. DIMENSIONS AND GRADE TO MATCH EXISTING. SHOP DRAWINGS TO BE PROVIDED BY GC.

ALL EXTERIOR LINTELS MUST BE HOT-DIP GALVANIZED PER ASTM A123.

LINTEL REPLACEMENT/ INSTALLATION ON BRICK VENEER EXTERIOR WALLS
PROTECT EXISTING OPENING WITH PLYWOOD.TEMPORARILY SHORE AND REMOVE EXISTING BRICK AROUND THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL LINTEL. REPLACE WITH NEW LINTEL WITH PAINTED STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

FOR LINTEL CLEANING USE METAL CLEANING ON NEXT SECTION.

METAL CLEANING
EXECUTION OF THE WORK: IN CLEANING ITEMS, DISTURB THEM AS MINIMALLY AS POSSIBLE AND AS FOLLOWS:
A. REMOVE DETERIORATED COATINGS AND CORROSION.
B. SEQUENCE WORK TO MINIMIZE TIME BEFORE PROTECTIVE COATINGS ARE REAPPLIED.
C. CLEAN ITEMS IN PLACE UNLESS OTHERWISE INDICATED.

MECHANICAL COATING REMOVAL: USE GENTLE METHODS, SUCH AS SCRAPING AND WIRE BRUSHING, THAT WILL NOT ABRADE METAL SUBSTRATE.

REPAINT: WHERE INDICATED, PREPARE PAINTED DECORATIVE METAL BY CLEANING SURFACE, BLOCK AGAINST WEATHER AND ADHERE EXISTING PAINT. SANDING EDGES SMOOTH, REMOVING EXISTING PAINT AND PRIMING FOR PAINTING AS SPECIFIED.

METAL AWNINGS
BASIS OF DESIGN, MATCH EXISTING AWNINGS DIMENSIONS, PERIMETER FASCIA, BRACING AND SUPPORTS TO BE EXTRUDED ALUMINUM, DECKING ALUMINUM INTERLOCKING PANELS, PROFILE AND THICKNESS AS DETERMINED BY MANUFACTURER. FACTORY APPLIED BACKED ENAMEL OR KYNAR PAINT FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER STANDARD COLOR CHART. INSTALLATION OF AWNINGS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. ALL FASTENERS FOR AWNINGS SHALL BE TYPE 316 SS. FOR LOCATIONS WHERE AWNINGS ARE ATTACHED TO SIDEWALL AWNING FASTENERS SHALL FASTEN INTO STUDS WITH COMPRESSION STAND-OFF IF THROUGH VENEER BRICK. INSTALLATION SHALL INCLUDE PREFINISHED ALUMINUM REGLETED WALL FLASHING AT HEAD, PROPERLY INSTALLED AND CAULKED. SEE ALSO DIVISION 10.

ALUMINUM METAL RAILINGS
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS, INCORPORATED, OR COMPARABLE PRODUCT, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
PROVIDE ALLOY AND TEMPER RECOMMENDED BY ALUMINUM PRODUCER AND FINISHER FOR TYPE OF USE AND FINISH INDICATED, AND WITH STRENGTH AND DURABILITY PROPERTIES FOR EACH ALUMINUM FORM REQUIRED NOT LESS THAN THAT OF ALLOY AND TEMPER DESIGNATED BELOW.
GC TO PROVIDE PRODUCT INFORMATION AND SHOP DRAWINGS OF NEW RAILINGS TO MATCH EXISTING DIMENSIONS. PROVIDE ACCESSORIES AS REQUIRED FOR INSTALLATION ON CONCRETE, SHEETMETOD DECKING, WALLS AND CHANGE IN DIRECTION FITTINGS AS REQUIRED.

DIVISION 6 – WOOD AND PLASTICS

WOOD FRAMING AND BLOCKING
SELECT STRUCTURAL GRADE DOUGLAS FIR SOUTH, SIZES AS INDICATED ON DRAWINGS. COMPLY WITH THE "RECOMMENDED NAILING SCHEDULE" OF THE "MANUAL FOR HOUSING FRAMING."

FLOOR SHEATHING (IF REQUIRED) - PROVIDE 3/4" T&G PLYWOOD FLOOR SHEATHING OR OSB STRUCTURAL FIBERBOARD. ALIGN PANELS ACROSS A MINIMUM OF TWO SUPPORTS WITH THICKNESS IN A 3/8 PERPENDICULAR TO AXIS OF JOISTS, STAGGER JOINTS. GLUE TO JOISTS AND EDGES WITH ELASTOMERIC SOLVENT-BASED GLUE CONFORMING TO APA SPECIFICATION AFG-101. FASTEN WITH 8D COMMON OR 6D ANNULAR OR SPIRAL NAILS AT 6" O.C. ALONG EDGES AND 10" ALONG INTERMEDIATE SUPPORTS. FOLLOW PANEL MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR SUB-FLOOR PREP, PRIOR TO INSTALLATION OF FINISH FLOORING.

EXTERIOR WOOD FRAMING EXPOSED TO WEATHERING AND INSECTS SHALL BE MINIMUM 2" X PRESSURE TREATED LUMBER. KILN DRIED TO 19% MOISTURE CONTENT BEFORE INSTALLATION.

WOOD TRIM AND MOLDINGS
PROVIDE FURNITURE GRADE SOLID HARDWOOD TRIM AND MOLDINGS. STAIN ALL SIDES AND ENDS. WOOD TRIM AND MOLDINGS TO MATCH EXISTING UNLESS OTHERWISE NOTED ON DRAWINGS.

INSTALL WOOD TRIM AND MOLDINGS WITH MITER AT CORNERS, MITERED LAP SPLICES, AND SET WITH COUNTER SUNK GALVANIZED FINISH NAILS CAPPED WITH WOOD PUTTY SANDED SMOOTH. COMPLY WITH AWI 300 FOR ALL STANDARD WOOD RUNNING TRIM.

FABRICATOR QUALIFICATIONS
FIRM EXPERIENCED IN PRODUCING ARCHITECTURAL WOODWORK SIMILAR TO THAT INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE, AS WELL AS SUFFICIENT PRODUCTION CAPACITY TO PRODUCE REQUIRED UNITS WITHOUT DELAYING THE WORK.

INTERIOR ARCHITECTURAL WOODWORK

INSTALLER QUALIFICATIONS.
ARRANGE FOR INSTALLING ARCHITECTURAL WOODWORK INSTALLATION BY A FIRM THAT CAN DEMONSTRATE SUCCESSFUL EXPERIENCE IN INSTALLING ARCHITECTURAL WOODWORK ITEMS SIMILAR IN TYPE AND QUALITY TO THOSE REQUIRED FOR THIS PROJECT.

QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH AWI'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS."

ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETE, AND MECHANICAL SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD. REFER TO AWI'S OR WIS MEMBER LIST FOR NAMES OF WOODWORKING FIRMS THAT COULD POTENTIALLY BE INCLUDED.

MATERIALS

WOOD SPECIES AND CUT FOR TRANSPARENT FINISH: AS INDICATED ON DRAWINGS.

WOOD SPECIES FOR OPAQUE FINISH: ANY CLOSED-GRAIN HARDWOOD.

GENERAL: COMPLETE FABRICATION TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE, WHERE NECESSARY FOR FITTING AT THE SITE, PROVIDE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.

- INTERIOR WOODWORK GRADE: AWI CUSTOM.
- SHOP CUT OPENINGS TO MAXIMUM EXTENT POSSIBLE. SAND EDGES OF CUTOUTS TO REMOVE SPLINTERS AND BURRS. SEAL EDGES OF OPENINGS IN COUNTERTOPS WITH A COATING VARNISH.
- FOR TRANSPARENT-FINISHED TRIM ITEMS WIDER THAN AVAILABLE LUMBER, USE VENEERED CONSTRUCTION. DO NOT GLUE FOR WIDTH.
- BACK OUT OF FACE VENEERS BACKS OF FLAT TRIM MEMBERS AND KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT FOR MEMBERS WITH ENDS EXPOSED IN FINISHED WORK.
- ASSEMBLE CASINGS IN PLANT EXCEPT WHERE LIMITATIONS OF ACCESS TO PLACE OF INSTALLATION.

PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH THE ARCHITECTURAL WOODWORK STANDARDS FOR GRADES OF CABINETS INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS.

ARCHITECTURAL WOOD WORK STAND ARDS GRADE: AWI PREMIUM.

TYPE OF CONSTRUCTION: FRAMELESS.

DOOR AND DRAWER-FRONT STYLE: FLUSH OVERLAY.

HIGH-PRESSURE DECORATIVE LAMINATE: ISO 4586-3, GRADES AS INDICATED OR IF NOT INDICATED, AS REQUIRED BY QUALITY STANDARD.

EXPOSED SURFACES:
1. PLASTIC-LAMINATE GRADE: AWI PREMIUM.
2. EDGES: GRADE AWI PREMIUM.
3. PATTERN DIRECTION: AS INDICATED.

CONCEALED BACKS OF PANELS WITH EXPOSED PLASTIC-LAMINATE SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE, ISO 4586-3, GRADE TO MATCH EXPOSED SURFACE.

DRAWER CONSTRUCTION: FABRICATE WITH EXPOSED FRONTS FASTENED TO SUBFRONT WITH MOUNTING SCREWS FROM INTERIOR OF BODY.
1. JOIN SUBFRONTS, BACKS, AND SIDES WITH GLUED RABBETED JOINTS AND REINFORCED BY MECHANICAL FASTENERS OR GLUED DOVETAIL JOINTS.

COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURERS' FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS, MATTE FINISH.
B. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
C. PATTERNS, MATTE FINISH.
D. PATTERNS, MATTE FINISH.

SYNTHETIC DECKING
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS; TIMBERTECH, AZEK OR COMPARABLE PRODUCT.
DECKING SIZE AND LENGTH TO MATCH EXISTING INSTALLATION. FINISH TEXTURE BRUSHED; COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. FASCIA BOARDS TO MATCH DECKING COLOR.
DECKING FASTENING SYSTEM AS RECOMMENDED BY MANUFACTURER'S INSTALLATION MANUAL. FOLLOW MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR CUTTING, TRIMMING AND INSTALLING DECKING.

RUBBER STAIR TREADS COVERS
BASIS OF DESIGN, BY ROPPE OR EQUAL, RIBBED PATTERN, BLACK FINISH. FOLLOW THE MANUFACTURER'S INSTRUCTION FOR INSTALLATION.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

ROOFING SHEET METAL FLASHING AND TRIM
GENERAL: CONTRACTOR TO EVALUATE STATUS OF ROOFING MATERIAL, COMMUNICATE THE HACP AND ARCHITECT OF FINDINGS AND IF PATCHING OR REPLACEMENT IS NEEDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INSTALL ASPHALT SHINGLES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN ARMA'S "ASPHALT ROOFING RESIDENTIAL MANUAL - DESIGN AND APPLICATION METHODS" AND NRCA'S "NRCA GUIDELINES FOR ASPHALT SHINGLE ROOFING SYSTEMS".

ASPHALT SHINGLES: ASTM D3462/D3462M, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION; GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF-SEALING, BY GAF OR EQUAL, STRAIGHT CUT. FINISH COLOR TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING. VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS: 1) IN DOORS, 2) WITHIN 24" OF A DOOR AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE, 3) IN FIXED PANELS WITH THE LOWEST EDGE LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36" OF SUCH GLAZING.

DOOR HARDWARE
INTERIOR DOOR HARDWARE

ALL DOOR HARDWARE TO BE APPROVED BY HACP FACILITY REPRESENTATIVE.

BASIS OF DESIGN NON- ACCESIBLE UNITS
MANUFACTURER BALDWIN OR EQUAL, ROUND KNOB TRADITIONAL ROUND, MODEL PS ROU TRR.150. FINISH TO MATCH EXISTING OR SATIN NICKEL IF ALL INTERIOR DOOR HARDWARE IS REPLACED. OPERATION TYPE: DUMMY, PRIVACY AND PASSAGE.

GC TO BE RESPONSIBLE TO INSPECTING, ADJUSTING AND ADDING INSULATION TO THE ENTIRE ATTIC SPACE TO INSURE MINIMUM R-49 INSULATION COVERAGE WITH NO GAPS. GC TO INFORM HACP AND ARCHITECT PRIOR TO ADD ADDITIONAL INSULATION.

ATTIC DOORS TO RECEIVED RIGID FOAM INSULATION GLUED TO BACK OF THE DOOR AND SEALED WITH RUBBER JOINTS. INSULATION TO MATCH R VALUE OF CEILING ASSEMBLY.

ASSEMBLIES, SEPARATIONS & FIRESTOPPING:

ANY NEW DEMISING OR INTERIOR PARTITIONS SHALL BE RATED AS REQUIRED BY CODE. ANY PENETRATION THROUGH AN EXISTING DIMENSIONAL FIRE RATED OR UL RATED ASSEMBLY WALL MUST RE-TAIN THE UL ASSEMBLY FIRE-RATING.

ALL NEW WORK SHALL MATCH OR EQUAL THE UL FIRE RATINGS, IF ANY, OF THE SURROUNDING WORK. AS APPROPRIATE, THE CONTRACTOR SHALL CONTACT HACP AND ARCHITECT IF ANY AREAS ARE UNCOVERED OR DISCOVERED THAT MAY REQUIRE ADDITIONAL ANALYSIS OR CLARIFICATION.

THROUGH PENETRATIONS OF FIRE RESISTANCE WALLS SHALL BE INSTALLED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY UNDERWRITERS LABORATORIES. IF THE PENETRATING ITEMS ARE STEEL, FERROUS OR COPPER PIPES OR STEEL CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE FIRE-RESISTANCE-WALL SHALL BE PERMITTED TO BE PROTECTED AS FOLLOWS:

IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A MAXIMUM 6-INCH NOMINAL DIAMETER AND THE OPENING IS A MAXIMUM 144 SQUARE INCHES. CONCRETE, GROUT, OR MORTAR SHALL BE PERMITTED WHERE INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING.

THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHERE SUBJECTED TO ASTME 119 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE WALL ASSEMBLY.

MEMBRANE PENETRATIONS, WHERE WALLS AND PARTITIONS ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:
FOR STEEL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. A HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY WHERE THE WALL CAVITY IS FILL WITH CELLULOSE LOOSE FILL, ROCKWOOL OR SLAG WOOL INSULATION PROVIDED THE WALL IS RATED (CONSISTING OF 2-INCH NOMINAL LUMBER OR TWO THICKNESSES OF 1-INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS OR ONE THICKNESS OF 0.179-INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANEL OR ONE THICKNESS OF 0.75-INCH PARTICLEBOARD WITH JOINTS BACKED BY 0.75-INCH PARTICLEBOARD. GYPSUM BOARD, CEMENT FIBER BOARD, BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED AS AN ACCEPTABLE FIREBLOCK. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NONRIGID MATERIALS SHALL BE PERMITTED FOR COMPLIANCE WITH THE 10-FOOT HORIZONTAL FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROW OF STUDS OR STAGGERED STUDS. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES. THE INTEGRITY OF FIREBLOCKS SHALL BE MAINTAINED; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

MEMBRANE PENETRATIONS FOR LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL ARE PERMITTED PROVIDED THOSE BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS INCLUDED IN THE LISTING. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24-INCHES. SOLID FIREBLOCKING; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

EXCEPTIONS:
MEMBRANE PENETRATIONS BY STEEL, FERROUS OR COPPER CONDUITS, ELECTRICAL BOXES, PIPES, TUBES, VENTS, CONCRETE, MASONRY-PENETRATING ITEMS WHERE THE ANNULAR SPACE IS PROTECTED EITHER IN ACCORDANCE OR TO PREVENT THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. SUCH PENETRATIONS SHALL NOT EXCEED AN AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.

MEMBRANE PENETRATIONS BY LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL THAT HAS BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED PER INSTRUCTIONS INCLUDED IN LISTING.

JOINT SEALERS
INTERIOR JOINT SEALER IS TO BE MILDEW-RESISTANT SILICONE SEALANT. APPLY SEALANT AT ALL MATERIAL JOINTS SUBJECT TO WATER PENETRATION. COLOR TO BE SELECTED BY THE ARCHITECT FROM MFR'S STANDARD LINE.

VINYL SIDING
VINYL SIDING. INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D3679.
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALSIDE, EXTERIOR BUILDING PRODUCTS, KAYCAN LTD., ROYAL BUILDING PRODUCTS, A WESTLAKE COMPANY. OR EQUAL.

HORIZONTAL PATTERN: 6-1/2- OR 7-INCH EXPOSURE IN BEADED-EDGE, SINGLE-BEADED STYLE. SMOOTH TEXTURE. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OR TO MATCH EXISTING WHERE REQUIRED.

WATER PROOFING MEMBRANE
BASIS OF DESIGN, BY SIKA OR EQUAL, 60 MIL. REFER TO MANUFACTURERS INSTRUCTION FOR PREPARATION OF SUBSTRATES AND INSTALLATION OF MEMBRANE.

DIVISION 8 - DOORS, WINDOWS AND HARDWARE

ALL DOORS AND WINDOWS SHALL BE INSTALLED PLUMB, LEVEL, SQUARE, AND PER ALL MANUFACTURERS RECOMMENDATION.

EXTERIOR DOORS TO BE 1 3/4"-THICK, FIBERGLASS INSULATED WITH 3 SETS OF STEEL HINGES, RUBBER WEATHER STRIPPING, LOCKING AS SPECIFIED ON HARDWARE. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING. VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS: 1) IN DOORS, 2) WITHIN 24" OF A DOOR AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE, 3) IN FIXED PANELS WITH THE LOWEST EDGE LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36" OF SUCH GLAZING.

DOOR HARDWARE
INTERIOR DOOR HARDWARE

ALL DOOR HARD

POLISH CHROME PLATE FINISH, 2.2 GPM FLOW RATE, LEVER HANDLE, RIGID SPOUT, DRAIN POP UP.

KITCHEN SINKS – WATER SENSE CERTIFIED
STAINLESS STEEL, COUNTER MOUNTED, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- AMERICAN STANDARD.
- ELKAY
- AFFINITY SURFACES

0.038 INCH THICKNESS, 3 1/2" DRAIN GRID CENTERED IN BOWL.

SINKS FAUCETS – WATER SENSE CERTIFIED
GENERAL DUTTY SOLID BRASS, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- AMERICAN STANDARD.
- ELKAY
- HANSGROHE

POLISHED CHROME PLATE FINISH. SINGLE HANDLE ON KITCHEN TWO HANDLE ON UTILITY SINKS.

WATER CLOSET – WATER SENSE CERTIFIED
FLOOR MOUNTED, FLOOR OUTLET, CLOSE COUPLED (GRAVITY TANK), VITREOUS CHINE, 1.6 GAL/FLUSH, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- AMERICAN STANDARD.
- KOHLER
- TOTO USA

STANDARD HEIGHT, ELONGATED RIM, WATER SAVING, COLOR WHITE.
TOILET SEAT PLASTIC FOR RESIDENTIAL USE, ELONGATED RIM, SEAT COVER, SELF SUSTAINING HINGE, COLOR WHITE.

UTILITY SINK
FRESTANDING UTILITY SINK, MANUFACTURERS: PROFLO OR EQUAL
STANDARD HEIGHT, COLOR WHITE. 20 INCH BY 20 INCH SIZE.

EXTERIOR HOSE BIBB.
FREEZELESS WALL FAUCET, WOODFORD OR EQUAL, MODEL 30,3/4 INCH CONNECTION, BRASS FINISH, ASSE 1053 APPROVED, MAX PRESSURE 125 PSI.

SLEEVES
SLEEVES SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH WALLS, CEILINGS, OR FLOORS. SLEEVES SHALL BE CUT FROM SCHEDULE 40 BLACK IRON PIPE. THE INTERNAL DIAMETER OF THE SLEEVE SHALL EXCEED THE EXTERNAL DIAMETER OF THE PIPE (INCLUDING INSULATION) BY NOT LESS THAN ONE INCH. SLEEVES SHALL BE CUT FLUSH WITH WALLS AND UNDERSIDES OF FLOORS AND SHALL EXTEND ONE INCH ABOVE FLOORS ABOVE GRADE.

PIPE PORTALS
PIPING THROUGH THE ROOF SHALL BE INSTALLED THROUGH A PREFABRICATED PIPING PORTAL. PORTALS SHALL HAVE GALVANIZED STEEL INSULATED CURBS, ABS PLASTIC CURB CAP, NEOPRENE RUBBER NIPPLES, AND STAINLESS-STEEL CLAMPS. CURB HEIGHT AS INDICATED ON DRAWINGS. PORTALS SHALL BE MODEL RC AND NJB AS MADE BY ROOF PRODUCTS AND SYSTEMS CORP. PORTALS SHALL HAVE EXTRA HOLES FOR POWER AND CONTROL CONDUITS.

FIRESTOPS
ALL OPENINGS THROUGH FLOORS AND FIRE-RATED PARTITIONS SHALL BE SEALED. VOID SPACES AROUND DUCTS OR PIPES SHALL BE PACKED WITH A FIREPROOF CERAMIC FIBER AND SEALED WITH FIRE RETARDANT CAULKING. FIBER SHALL BE KAOWOOL BY BABCOCK AND WILCOX, FIBERFRAX BY CARBORUNDUM, OR CERAFIBER BY MANVILLE CO. CAULKING SHALL BE SE411 F BY UNISEAL STANDARD DUXSEAL BY MANVILLE, OR MOLDABLE PUTTY BY 3M.

ESCUTCHEONS
ESCUTCHEONS SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH FLOORS, CEILINGS, OR WALLS OF FINISHED SPACES. ESCUTCHEONS SHALL BE CHROMIUM PLATED STEEL, SNAP ON TYPE WITH SPRING RETAINERS. ESCUTCHEONS SHALL BE THE NO. 40 MADE BY BEATON/CORBIN COMPANY OR APPROVED EQUAL, SIZED TO FIT PIPE PLUS INSULATION. WHERE RISER CLAMPS ARE IN FINISHED SPACES, PROVIDE HIGH-SHIRT ESCUTCHEONS TO COVER CLAMP.

UNIONS
UNIONS SHALL BE INSTALLED AT ALL POINTS INDICATED ON THE DRAWINGS AND AT ALL OTHER POINTS NECESSARY FOR THE INSTALLATION AND REMOVAL OF EQUIPMENT, CONTROL DEVICES, ETC. UNIONS IN GAS LINES WILL BE PERMITTED ONLY AT THE FINAL CONNECTIONS TO EQUIPMENT.

HANGERS
ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH PIPEHANGERS TO PREVENT SAGGING AND AVOID CONCENTRATION OF HANGING LOAD. HANGER SPACING SHALL NOT EXCEED 10 FT. FOR STEEL PIPE OR 8 FT. FOR COPPER TUBING. COPPER TUBING 1-1/4" AND SMALLER SHALL BE SUPPORTED AT NO GREATER THAN 6 FT. SPACING.

REPAIR ALL FIREPROOFING WHICH IS DAMAGED BY HANGER INSTALLATION.

SOIL WASTE AND VENT PIPING
SOIL, WASTE AND VENT STACKS AND BRANCHES, AND ROOF CONDUCTORS SHALL BE ABS OR PVC PIPING AND FITTINGS SCHEDULE 40. WASTE LINES SHALL BE MINIMUM 2 INCH.

HOT AND COLD-WATER PIPING
POTABLE-WATER PIPING AND COMPONENTS ARE TO COMPLY WITH NSF 14, NSF 61, AND NSF 372. INCLUDE MARKING "NSF-PW" ON PIPING.

HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE TYPE L, SEMI-LESS, HARD TEMPER, COPPER TUBING WHICH CONFORMS TO ASTM SPECIFICATION B-88 WITH WROUGHT COPPER, SOLDER, TYPE FITTINGS, OR PEX TUBING PLASTIC IN ACCORDANCE WITH ASTM F876 AND ASTM F877 WITH FITTINGS ASTM F1807, METAL INSERT AND COPPER CRIMP RINGS ASTM F1960, COLD EXPANSION FITTINGS AND REINFORCING RINGS.

INSTALLATION OF PIPING
DRAINAGE PIPING SHALL BE INSTALLED TO ACCURATE LINE AND UNIFORM GRADE, AND AT THE ELEVATIONS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE INDICATED, ALL DRAINAGE LINES SHALL SLOPE NOT LESS THAN 1/4 INCH PER FOOT.
DRAINAGE LINES SHALL BE PROVIDED WITH SUFFICIENT CLEANOUTS TO MAKE ALL PARTS OF THE DRAINAGE SYSTEM ACCESSIBLE. CLEANOUTS SHALL BE PROVIDED ALONG INTERIOR HORIZONTAL RUNS AT NOT MORE THAN 50 FT. ON CENTER. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH ROOF CONDUCTOR AND AT ALL OTHER POINTS INDICATED ON THE DRAWING OR REQUIRED BY LOCAL PLUMBING CODE.

ALL PIPES SHALL BE CUT WITH SQUARE ENDS AND SHALL BE PROPERLY REAMED. THREADS SHALL BE CUT WITH CLEAN, SHARP DIES TO FULL DEPTH. ALL BURRS SHALL BE REMOVED FROM PIPE. JOINT COMPOUND SHALL BE APPLIED TO PIPE THREAD ONLY. USE OF EXCESSIVE JOINT COMPOUND IS PROHIBITED.

SOLDER JOINTS IN ALL WATER LINES SHALL BE MADE WITH 95-5 TIN-ANTIMONY SOLDER. OTHER JOINTS MADE WITH EASYBRITE LEAD FREE SOLDER.

WATER LINES WITHIN THE BUILDING SHALL BE INSTALLED WITH SUFFICIENT PITCH TO PROPERLY DRAIN LINES AND VALVES. IN ADDITION TO DRAIN VALVES INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL DRAIN VALVES NECESSARY TO PROPERLY DRAIN THE SYSTEM.

GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND NFPA-54. ALL GAS PIPING AND CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH AGA RECOMMENDATIONS AND ALL APPLICABLE LOCAL GAS COMPANY REGULATIONS.

CONTRACTOR SHALL VENTILATE THE WORK AREA TO PROVIDE A SAFE ENVIRONMENT. VENTILATION SHALL NOT DIRECT FUMES TO ADJACENT SPACES OR NEIGHBORING STRUCTURES.

CONTRACTOR SHALL PROVIDE ADEQUATE FIRE PROTECTION DURING WELDING, CUTTING AND SOLDERING.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

VALVES
VALVES IN WATER LINES SHALL BE 125 PSI CLASS, BRONZE BODY, BALL VALVES WITH TEFLON SEATS AND PACKING. NIBCO 580 OR APOLLO.DRAIN VALVES SHALL BE BRONZE BODY SOLDERED ENDS, BALL VALVES WITH 3/4 INCH AMERICAN STANDARD HOSE THREAD OUTLET. NIBCO OR APOLLO.

WALL HYDRANT SHALL BE ALL BRASS, FULLY RECESSED, NON-FREEZE, KEY OPERATED, WITH ADJUSTABLE LOCKNUT, REMOVABLE NYLON SEAT, 3/4 INCH HOSE CONNECTION. FURNISH WITH INTEGRAL VACUUM BREAKER. ZURN Z-1300 OR APPROVED EQUAL.

VALVES IN GAS LINES SHALL BE 125 PSI CLASS, THREADED END, IRON BODY. GAS COCKS WITH BRASS PLUG AND WASHER AND SQUARE HEAD. GRANCE NO. 324.

INSULATION
ALL COLD AND HOT WATER PIPING, AND HORIZONTAL PORTIONS OF ROOF CONDUCTORS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX.

PIPE IDENTIFICATION
ALL PIPING SHALL BE LABELED WITH THE NAME OF THE FLUID IN THE PIPE AND WITH ARROWS INDICATING THE DIRECTION OF THE FLOW.

TESTING

DRAINAGE SYSTEM - THE ENTIRE DRAINAGE SYSTEM SHALL BE TESTED HYDROSTATICALLY FOR LEAKS. THE ENTIRE SYSTEM SHALL BE FILLED TO THE TOP OF THE STACKS WITH WATER AND CHECKED FOR LEAKS.

WATER PIPING - ALL WATER PIPING SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL FOREIGN MATERIAL. ALL TESTING SHALL BE COMPLETED BEFORE INSULATION IS APPLIED.
DURING THE TESTS ALL VALVES SHALL BE CAREFULLY CHECKED FOR LEAKAGE AROUND THE STEM.

WATER HEATERS - HEATERS SHALL BE TESTED AND CHECKED TO DETERMINE THEY OPERATE IN COMPLIANCE WITH THE SPECIFICATIONS. ALL CONTROLS SHALL BE PROPERLY ADJUSTED.

DISINFECTION OF POTABLE WATER SYSTEM - GENERAL: NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE. WHENEVER REQUIRED THE AUTHORITY HAVING JURISDICTION. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY.

MECHANICAL REQUIREMENTS

GENERAL CONDITIONS OF THE MECHANICAL CONTRACT
PLUMBING CONTRACTOR TO FOLLOW HUD GENERAL CONDITIONS AS SPECIFIED EARLIER IN DIVISION 1.

ALL MECHANICAL WORK TO COMPLY WITH LOCAL CODE AND REGULATIONS.

CUTTING AND PATCHING
ALL CHASES, RECESSES, HOLES, AND OPENINGS FOR EQUIPMENT AND DUCTWORK WILL BE PROVIDED BY THE GENERAL CONTRACTOR.

SHOULD THE MECHANICAL CONTRACTOR FAIL TO SET SLEEVES OR LOCATE OPENINGS BEFORE THE WORK OF THE GENERAL CONTRACTOR HAS BEEN COMPLETED IN THAT PARTICULAR AREA, THE MECHANICAL CONTRACTOR SHALL CUT WHATEVER HOLES ARE NECESSARY FOR THE INSTALLATION OF HIS EQUIPMENT. ALL PATCHING NECESSITATED BY THE CUTTING OF SUCH HOLES SHALL BE DONE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

REPAIR ALL FIREPROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

EXHAUST FANS
FANS SHALL VENT DIRECTLY TO THE EXTERIOR. EXHAST DUCTS MAY BE TIED TOGETHER OR TIED INTO AN EXISTING SYSTEM PROVIDED THAT BACK FLOW PREVENTORS ARE INSTALLED AT EACH FAN INCLUDING ALL FANS TIED INTO THE EXISTING SYSTEM.

FURNISH NEMA 1 SURFACE MOUNTING STARTER WITH OVERLOAD AND UNDER VOLTAGE PROTECTION.

FURNISH WITH BIRD SCREEN AND BACKDRAFT DAMPER.

FAN SHALL BE ACE MADE BY COOK, GREENHECK, OR APPROVED EQUAL. VOCFM CAPACITY, PROPERLY LABELED. FINISH WHITE.

THE HEATING CONTRACTOR SHALL FURNISH THERMALLY AND ACOUSTICALLY INSULATED CURB.

MECHANICAL EQUIPMENT
THE EQUIPMENT DESCRIBED IN THIS SECTION IS BASIS OF DESIGN, MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT TO MATCH EXISTING SYSTEM CAPACITY AT A MINIMUM.

MECHANICAL CONTRACTOR TO PROVIDE HACP AND ARCHITECT WITH SPECIFICATION SHEETS OF EQUIPMENT.

GAS-FIRED FURNACES, NONCONDENSING
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- BRYANT; CARRIER GLOBAL CORPORATION.
- CARRIER GLOBAL CORPORATION.
- BUILDING SOLUTIONS NORTH AMERICA.

ENERGY STAR RATING OF 95% AFUE OR GREATER
CABINET: GALVANIZED STEEL.

- CABINET INTERIOR AROUND HEAT EXCHANGER SHALL BE FACTORY-INSTALLED INSULATION.
- LIFT-OUT PANELS SHALL EXPOSE BURNERS AND ALL OTHER ITEMS REQUIRING ACCESS FOR MAINTENANCE.
- FACTORY PAINT EXTERNAL CABINETS IN MANUFACTURER'S STANDARD COLOR.
- AIRSTREAM SURFACES: SURFACES IN CONTACT WITH THE AIRSTREAM SHALL COMPLY WITH REQUIREMENTS IN ASHRAE 62.1.

FAN: CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT OR BELT DRIVE.

- FAN MOTORS: COMPLY WITH REQUIREMENTS IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT."
- SPECIAL MOTOR FEATURES, SINGLE SPEED: SINGLE SPEED, PREMIUM EFFICIENCY, AS DEFINED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT," AND WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, MULTISPEED: MULTI-TAPPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, ECM: ELECTRONICALLY CONTROLLED MOTOR (ECM) CONTROLLED BY INTEGRATED FURNACE/BLOWER CONTROL.

TYPE OF GAS: NATURAL
HEAT EXCHANGER: ALUMINIZED STEEL.
BURNER:

- GAS VALVE: 100 PERCENT SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUTOFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD.
- IGNITION: ELECTRIC PILOT IGNITION, WITH HOT-SURFACE IGNITER OR ELECTRIC SPARK IGNITION.

GAS-BURNER SAFETY CONTROLS:

- ELECTRONIC FLAME SENSOR: PREVENTS GAS VALVE FROM OPENING UNTIL PILOT FLAME IS PROVEN; STOPS GAS FLOW ON IGNITION FAILURE.
- FLAME ROLLOUT SWITCH: INSTALLED ON BURNER BOX; PREVENTS BURNER OPERATION.
- LIMIT CONTROL: FIXED STOP AT MAXIMUM PERMISSIBLE SETTING; DE-ENERGIZES BURNER ON EXCESSIVE BONNET TEMPERATURE; AUTOMATIC RESET.

COMBUSTION-AIR INDUCER: CENTRIFUGAL FAN WITH THERMALLY PROTECTED MOTOR AND SLEEVE BEARINGS PRESURGES HEAT EXCHANGER AND VENTS COMBUSTION PRODUCTS; PRESSURE SWITCH PREVENTS BURNER OPERATION IF COMBUSTION-AIR INLET OR FLUE OUTLET IS BLOCKED.
FURNACE CONTROLS: SOLID-STATE BOARD INTEGRATES IGNITION, HEAT, COOLING, AND FAN SPEEDS; AND ADJUSTABLE FAN-ON AND FAN-OFF TIMING; TERMINALS FOR CONNECTION TO ACCESSORIES.
VENT MATERIALS: COMPLY WITH REQUIREMENTS IN SECTION 235123 "GAS VENTS" FOR TYPE B METAL VENTS.

CAPACITIES AND CHARACTERISTICS:
AIRFLOW CONFIGURATION: UPFLOW.
GAS:

- TYPE: NATURAL
- VENTING TYPE: WITH COMBUSTION-AIR INTAKE
- MINIMUM EFFICIENCY AFUE: 80 PERCENT.
- INPUT: SSE SCHEDULE ON DRAWINGS.
- HEAT OUTPUT: SSE SCHEDULE ON DRAWINGS.
- GAS CONNECTION SIZE: 1/2" NPS.
- VENT SIZE: 4 INCHES.

FAN:

- MOTOR: SSE: 1/3 HP.
- SPEED: SEE SCHEDULE ON DRAWINGS.
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

FURNACE ELECTRICAL CONNECTION:

- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

COMPRESSOR AND CONDENSER UNITS, AIR COOLED, 1.0 TO 5 TONS
DESCRIPTION: FACTORY ASSEMBLED AND TESTED; CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTORS, REFRIGERANT RESERVOIR, AND OPERATING CONTROLS.
ENERGY STAR RATING EQUAL OR OVER 15.2 SEER2
COMPRESSOR TYPE: SCROLL, HERMETICALLY SEALED, WITH RUBBER VIBRATION ISOLATORS.

- TWO-SPEED COMPRESSOR: INCLUDE MANUAL-RESET, HIGH-PRESSURE SWITCH AND AUTOMATIC-RESET, LOW-PRESSURE SWITCH.
- ACCUMULATOR: SUCTION TUBE.

REFRIGERANT: R-410A.
CONDENSER COIL: SEAMLESS COPPER-TUBE, FIN COIL; WITH REMOVABLE DRAIN PAN AND BRASS SERVICE VALVES WITH SERVICE PORTS.
CONDENSER FAN: DIRECT-DRIVE, MAIN PROPELLER FAN; WITH PERMANENTLY LUBRICATED, TOTALLY ENCLOSED FAN MOTOR WITH THERMAL OVERLOAD PROTECTION AND BALL BEARINGS.
UNIT CASING: GALVANIZED STEEL, FINISHED WITH; WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE, MOUNT SERVICE VALVES, FITTINGS, AND GAUGE PORTS ON EXTERIOR OF CASING.
CAPACITIES AND CHARACTERISTICS:
COMPRESSOR AND CONDENSER UNIT:

- FULL-LOAD COOLING CAPACITY: TO BE CALCULATED BY MECHANICAL CONTRACTOR

ELECTRICAL CHARACTERISTICS:

- VOLTS: 208 V.
- PHASE: 1.
- HERTZ: 60 HZ.

SHEET METAL
DUCT SIZES INDICATED ON THE DRAWINGS ARE THE CLEAR INSIDE DIMENSIONS.

ALL DUCTS SHALL BE COMPLETE WITH FOUR SIDES AND SHALL BE OF AIRTIGHT CONSTRUCTION. ALL DUCTS, UNLESS OTHERWISE NOTED, SHALL BE CONSTRUCTED OF 24 GAGE GALVANIZED SHEET STEEL AT 2" PRESSURE CLASS.

JOINTS, SEAMS AND DUCT WALL PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. SEALANT MATERIAL SHALL BE CAULKING COMPOUND SPECIFICALLY MANUFACTURED FOR DUCT APPLICATION FOR INDOOR USE.

JOINTS BETWEEN SHEET METAL SECTIONS MAY BE MADE WITH PREFABRICATED JOINING SYSTEM SUCH AS THE DUCTMATE INDUSTRIES SYSTEM.
STIFFENERS SHALL BE PLACED AT NOT MORE THAN 8-FOOT INTERVALS.

ALL DUCTS SHALL BE ADEQUATELY SUPPORTED FROM CONSTRUCTION ABOVE BY MEANS OF GALVANIZED STEEL STRAP HANGERS SPACED AT NOT MORE THAN 8-FOOT INTERVALS. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA STANDARDS.

DUCTWORK CONNECTIONS TO AIR HANDLING AND AIR CONDITIONING UNITS SHALL HAVE FLEXIBLE CONNECTIONS. WHEN CONNECTION IS OUTDOORS, CONNECTION LENGTH SHALL BE INSULATED AND WEATHERPROOFED.

TURNING VANES SHALL BE INSTALLED IN ALL ELBOWS HAVING SQUARE THROATS OR A THROAT RADIUS LESS THAN HALF THE DUCT WIDTH. TURNING VANES MAY BE PREFABRICATED. IF JOB FABRICATED, DESIGN AND CONSTRUCTION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. VANES SHALL BE AIRFOIL TYPE.

MANUAL VOLUME CONTROL DAMPERS IN DUCTS SHALL BE CONSTRUCTED OF NOT LIGHTER THAN US GAGE NO. 16 GALVANIZED SHEET STEEL. DAMPER BLADES SHALL BE SUPPORTED ON AN END BEARING ON ONE SIDE AND A COMBINATION BEARING AND DAMPER REGULATOR ON THE OTHER SIDE. REGULATOR SHALL BE EQUIPPED WITH A LOCKING DEVICE. MANUAL DAMPERS SHALL BE OPPOSED BLADE TYPE.

FURNISH AND INSTALL FIRE DAMPERS WHERE INDICATED OR WHERE REQUIRED. DAMPERS SHALL COMPLY WITH LATEST EDITION OF NFPA 90A, AND SHALL BE UL LABELED. BLADE STACK SHALL BE OUT OF AIRSTREAM. FUSIBLE FIRE LINKS SHALL HAVE A MELTING POINT OF 165F. DAMPERS SHALL BE MODEL IBD AS MADE BY PRUSKIN, OR APPROVED EQUAL BY SAFE-AIR. FURNISH ACCESS DOORS TO ALL DAMPERS.

ACCESS DOORS IN DUCTS SHALL BE RIGIDLY CONSTRUCTED AND TIGHTLY FITTED. DOORS SHALL BE SUPPORTED ON TWO STEEL BUTT HINGES AND SHALL BE SECURED WITH A SASH LOCK. DOORS SHALL BE GASKETED AND INSULATED.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

FLEXIBLE DUCTS
FLEXIBLE DUCTS SHALL BE SOUND ATTENUATING, THERMAL INSULATED, WIRE WOUND, REINFORCED TYPE WITH A MOISTURE TIGHT FLAME PROOF VINYL BARRIER. FLEXIBLE DUCTS TO BE USED ONLY TO CONNECT INDIVIDUAL DIFFUSERS WITH MAIN OR BRANCH DUCTS. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PORTION OF THE EXISTING SYSTEM WHICH DOES NOT MEET THESE REQUIREMENTS WITH PROPERLY SIZED AND INSULATED SHEET METAL DUCTS. THIS WORK TO BE INCLUDED IN BASE BID.

DIFFUSERS
DIFFUSERS SHALL BE SQUARE OR RECTANGULAR FACED, RECESSED TYPE, WITH REMOVABLE CORES. DIFFUSER CAPACITIES, SIZES AND DIRECTIONAL BLOWS ARE INDICATED ON THE DRAWINGS. FURNISH EACH DIFFUSER WITH DEFLECTING VANES AND KEY OPERATED, OPPOSED BLADE, VOLUME DAMPERS. DIFFUSERS SHALL BE FURNISHED WITH BAKED, WHITE FINISH.

SUPPLY REGISTERS
SUPPLY REGISTERS SHALL HAVE INDIVIDUALLY ADJUSTABLE FINS WITH VERTICAL FRONT BARS AND HORIZONTAL REAR BARS. FINS SHALL BE STREAMLINED AND OF STURDY CONSTRUCTION. FLANGES SHALL BE 5/8 INCH CHANNEL BORDER. FURNISH RUBBER GASKET AROUND PERIMETER OF FLANGE, AND KEY OPERATED, OPPOSED BLADE VOLUME CONTROL DAMPERS. RUBBER GASKET SHALL BE NON-CHLORINATED RUBBER AND NON-POROUS. FURNISH WITH PRIME COAT OF PAINT.

GRILLES
GRILLES AND REGISTERS FOR MECHANICAL TO MATCH EXISTING. GRILLES AND REGISTERS SHALL BE OUT OF STEEL, WITH DAMPER, PRIMED PAINTED WHITE. SIZE OF GRILLE TO MATCH EXISTING OPENING ON TOE KICK, WALL OR CEILING.

CONTROLS
THE HEATING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL DEVICES NECESSARY TO ACHIEVE THE CONTROL SEQUENCE DESCRIBED HEREIN.

CONTROL SYSTEMS SHALL BE GUARANTEED FOR 2 YEARS FROM DATE OF ACCEPTANCE BY HACP.

CONTROL WIRING SHALL BE CONCEALED AND INSTALLED IN ACCORDANCE WITH SECTION 16.

MOTOR STARTERS - MOTOR STARTERS FOR ALL MECHANICAL ITEMS SHALL BE FURNISHED BY THE HEATING CONTRACTOR. STARTERS SHALL HAVE HAND-OFF-AUTO SWITCHES AND CONTROL TRANSFORMERS.

DAMPERS - DAMPERS SHALL BE OPPOSED MULTI-BLADE. BLADES SHALL BE CONSTRUCTED OF 16 GAGE STEEL WITH NEOPRENE GASKETED EDGES, AND SHALL BE MOUNTED IN CORROSION RESISTANT BUSHINGS. DAMPERS SHALL HAVE STOPS ON ALL FOUR SIDES. MOTORS SHALL BE MODULATING WITH OIL-IMMERSED GEAR TRAINS. DAMPERS SHALL BE 2% LOW LEAKAGE TYPE.

FREEZE PROTECTION THERMOSTAT - FREEZE PROTECTION THERMOSTAT SHALL BE MERCURY TUBE, MANUAL RESET TYPE SET AT 45F. INSTALL AN ADJUSTABLE TIME DELAY RELAY TO PERMIT AIR TO ESTABLISH SATISFACTORY TEMPERATURE TO AVOID FALSE TRIPS.

INSULATION
ALL SUPPLY AIR DUCTS SHALL BE INSULATED WITH 2" THICK, 1.00 DENSITY, OWENS-CORNING OR APPROVED EQUAL FLEXIBLE DUCT INSULATION WITH FLAME RETARDANT REINFORCED FIRK 25 FOIL COVERING. SEAL ALL JOINTS, BOLTS, AND ALL EXPOSED EDGES WITH 4" WIDE STRIPS OF SEALING TAPE USING A SUITABLE ADHESIVE. INSULATION SHALL HAVE A 2" FLAP AT ALL JOINTS AND SEAMS WHICH SHALL BE STAPLED AND SECURED WITH ADHESIVE. APPLY ADHESIVE TO DUCTS IN SIX-INCH-WIDE STRIPS AT ONE FOOT IN TERVALS. DUCTOWRK EXPOSED WITHIN THE SPACE MAY NOT BE INSULATED.

OPERATING INSTRUCTIONS
THE CONTRACTOR SHALL FURNISH THREE COMPLETE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS. THIS SHALL INCLUDE FINAL CONTROL DIAGRAMS, CATALOG DATA INCLUDING CONSTRUCTION AND MAINTENANCE INFORMATION ON ALL EQUIPMENT, AND MAINTENANCE INFORMATION IN THE COMPLETE SYSTEM.

ONE COMPLETE CONTROL DIAGRAM SHALL BE INCLUDED IN EACH O&M MANUAL.

THE CONTRACTOR SHALL FORMALLY INSTRUCT THE HACP'S STAFF ON THE OPERATION OF THE SYSTEM. THE INSTRUCTION SHALL CONSIST OF NOT LESS THAN 2 PERIODS, EACH PERIOD OF 4 HOURS DURATION. THE CONTRACTOR SHALL ARRANGE FOR THIS INSTRUCTION WITH THE HACP.

FUNCTIONS AND ALL ACTUATORS OPERATE IN ACCORDANCE WITH THE SPECIFICATIONS.
TESTS AND INSPECTION

THE FOLLOWING OPERATIONS SHALL BE PERFORMED IN PREPARATION FOR FINAL INSPECTION BY THE ARCHITECT. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE TO THE ARCHITECT THAT THE SYSTEM IS OPERATING IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL TESTS AND INSPECTIONS SHALL BE COMPLETED BEFORE FINAL PAYMENT IS MADE TO THE HEATING (MECHANICAL) CONTRACTOR.

CONTROLS - ALL CONTROLS SHALL BE TESTED AND ADJUSTED TO ACHIEVE THE INTENT OF THESE SPECIFICATIONS. CONTROLS SHALL BE ADJUSTED WHILE THE SYSTEM IS OPERATING UNDER FULL LOAD CONDITIONS, BOTH HEATING AND COOLING. CONTROL SUB-CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION THAT ALL ON/OFF AND ALARM.

AIR DISTRIBUTION SYSTEM - AIR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCE SUBCONTRACTOR. THE COST OF THE SUB-CONTRACTOR SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE. THE INDEPENDENT AIR BALANCER SHALL NOT BE AN EMPLOYEE NOR A SUBSIDIARY OF THE CONTRACTOR.

GUARANTEE
THE MECHANICAL CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE JOB THAT ALL EQUIPMENT, MATERIAL AND LABOR FURNISHED BY HIM ARE FREE FROM DEFECTS. ANY DEFECTS IN MATERIAL AND WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT FURTHER EXPENSE TO THE HACP. ALL ITEMS SPECIFIED TO HAVE A LONGER WARRANTIES SHALL BE GUARANTEED FOR THAT LONGER PERIOD. CONTROLS SHALL HAVE A 2-YEAR GUARANTEE ON PARTS AND LABOR.

CONTROLS
SOLID-STATE THERMOSTAT: WALL-MOUNTED, PROGRAMMABLE, MICROPROCESSOR-BASED UNIT WITH MANUAL SWITCHING FROM HEATING TO COOLING, PREFERENTIAL RATE CONTROL, SEVEN-DAY PROGRAMMABILITY WITH MINIMUM OF FOUR TEMPERATURE PRESETS PER DAY, VACATION MODE, AND BATTERY BACKUP PROTECTION AGAINST POWER FAILURE FOR PROGRAM SETTINGS.

DIVISION 26 - ELECTRICAL WORK

NOTE: ELECTRICAL WORK ON THIS PROJECT IS TO BE DESIGN BUILD. THE E.C. IS RESPONSIBLE FOR PERFORMING LOCATIONS AND REQUIREMENTS FOR THE ELECTRICAL SYSTEM WITH THE HACP.

CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE SPECIFIC BUILDING HACP REQUIREMENTS, THE LATEST RULES OF THE NATIONAL ELECTRICAL CODE AND WITH LOCAL ORDINANCES HAVING JURISDICTION.

DO NOT INTERPRET ANYTHING IN THE DRAWINGS OR SPECIFICATIONS AS AUTHORITY TO VIOLATE APPLICABLE CODES.

BE RESPONSIBLE FOR EXAMINING DRAWINGS AND SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES. RESOLVE ALL CONFLICTS BEFORE INSTALLATION AT NO EXTRA COST.

PREPARE ANY ADDITIONAL CLARIFYING DETAILS REQUIRED BY THE LOCAL INSPECTOR OF AUTHORITIES AND SECURE APPROVAL OF SAME. PAY ANY CHARGES. OBSERVE ALL UNIFORM CONSTRUCTION CODE REQUIREMENTS.

OBSERVE ALL APPLICABLE SAFETY REGULATIONS REQUIRED BY HACP AND/OR STATE.

BRING ANY DISCREPANCIES BETWEEN DIFFERENT DRAWINGS, BETWEEN THE DRAWINGS AND FIELD CONDITIONS, OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR ANY APPARENT OMISSIONS, TO THE ARCHITECT'S ATTENTION BEFORE SUBMITTING THE BID. AFTER AWARD OF CONTRACT, THE INTERPRETATION OF ANY CONFLICT WILL BE MADE BY THE ENGINEER AND SHALL BE ACCEPTED AS FINAL.
IF MENTION HAS BEEN OMITTED PERTAINING TO DETAILS, ITEMS OR RELATED ACCESSORIES REQUIRED FOR THE COMPLETION OF ANY ELECTRICAL SYSTEM, INCLUDE SUCH ITEMS AND ACCESSORIES IN THE ELECTRICAL CONTRACT AND WITHOUT ADDITIONAL CHARGES.
AFTER THE JOB IS AWARDED, CLAIMS BASED ON INSUFFICIENT

MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, ASTM AND IEEE. ALL SIMILAR MATERIALS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.

B. RACEWAYS
1. MATERIALS
RIGID HEAVY WALL STEEL CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE STEEL, HOT DIPPED GALVANIZED AND ZINC COATED, INSIDE AND OUTSIDE. CONDUIT SHALL BEAR THE MANUFACTURER'S AND UNDERWRITERS' LABELS. THIN WALL CONDUIT IS DESIGNATED AS E.M.T. STEEL CONDUIT SHALL BE MANUFACTURED BY WHEATLAND, ALLIED, TRIANGLE, OR EQUAL.
FLEXIBLE CONDUIT (GREENFIELD) SHALL BE U. L. LISTED, 3/4 INCH MINIMUM TRADE SIZE FOR BRANCH WIRING. GREENFIELD OF ½ INCH SIZE WILL BE PERMITTED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES ONLY.

2. INSTALLATION
MINIMUM SIZE CONDUIT IS 3/4 INCHES.
INSTALL CONDUIT AS A COMPLETE SYSTEM. CONTINUOUS FROM OUTLET TO OUTLET , CABINET , BOX OR FITTING . MECHANICALLY AND ELECTRICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY IS SECURED.
DO NOT ROUTE RACEWAYS THROUGH ANY DUCTWORK.

C. CONDUIT FITTINGS
1. MATERIALS
ALL CONDUIT FITTINGS SHALL BE GALVANIZED MALLEABLE IRON OR STEEL, WHERE APPLICABLE.
CONDUIT FITTINGS SHALL CONFORM IN DESIGN AND QUALITY TO THE TYPE OF CONDUIT ON WHICH THEY ARE BEING INSTALLED.

2. INSTALLATION
USE THREADED CONNECTORS ON GRS CONDUIT.
USE SET-SCREW STYLE CONNECTORS ON E.M.T. WHERE SAME IS RUN EXPOSED OR CONCEALED ABOVE GRADE.
USE BUSHINGS, LOCKNUTS AND EXPANSION FITTINGS OF THE APPROPRIATE TYPE FOR THE RACEWAY SYSTEM BEING INSTALLED.

D. PULL BOXES, OUTLET BOXES AND COVERS
1. GENERAL
FOR EACH OUTLET BOX, USE THE PROPER CODE SIZE FOR THE ENTERING CONDUITS AND THE NUMBER OF WIRES TERMINATING THEREIN.
USE BOXES WITH PLASTER RING EXTENSIONS IN PLASTERED OR DRY WALL PARTITIONS.

2. MATERIALS
FOR LARGE PULL BOXES, USE BOXES OF CODE GAUGE SHEET STEEL WITH STEEL COVERS ATTACHED WITH BRASS SCREWS. BOXES SHALL BE HOT DIPPED, GALVANIZED AFTER FABRICATION - THE MINIMUM SIZE OF EACH BOX SHALL BE AS REQUIRED BY THE NATIONAL ELECTRIC CODE. MANUFACTURER'S ARE HOFFMAN, KEYSTONE OR EQUAL.
FOR CONCEALED WORK, USE PRESSED STEEL BOXES, KNOCKOUT TYPE, ZINC COATED, OF 1/16 INCH MINIMUM THICKNESS.
USE BOXES OF FORM AND DIMENSIONS BEST ADAPTED TO SPECIFIC LOCATION, KIND OF FIXTURE USED AND THE NUMBER, SIZE AND ARRANGEMENT OF RACEWAYS CONNECTING THERETO. USE STEEL CITY OR RACO.
USE WIREMOLD FINISHED STYLE BOXES IN FINISHED AREAS WHERE CONCEALED BOXES ARE NOT FEASIBLE.

E. CONDUCTORS IN RACEWAYS
1. MATERIALS
CONDUCTORS SHALL BE SOFT DRAWN COPPER, MINIMUM 97% CONDUCTIVITY, 600 VOLT, CONFORMING TO ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
INSULATION SHALL BE SUITABLE FOR THE CONDITIONS AND LOCATIONS IN WHICH CONDUCTORS ARE INSTALLED. THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED OR REQUIRED BY LOCATION OR INSTALLATION CONDITIONS:
A. FOR BUILDING WIRE IN INTERIOR ABOVE GRADE LOCATIONS, USE TYPE THWN/THHN COPPER RATED 75 DEGREES C. WET OR DRY.
WIRES SHALL BE CLEARLY AND REGULARLY MARKED WITH THE WIRE SIZE, VOLTAGE, INSULATION TYPE AND MANUFACTURER'S NAME.
CONDUCTORS SHALL BE NEW AND MANUFACTURED WITHIN EIGHT MONTHS PREVIOUS TO DELIVERY AT SITE, WITH DATE OF MANUFACTURE MARKED ON THE PACKAGES.
MINIMUM WIRE SIZE FOR BRANCH CIRCUITING SHALL BE #12 AWG.
ALL CIRCUIT RUNS EXCEEDING 75 FEET IN LENGTH EXTENDING FROM THE PANELBOARD TO THE FIRST OUTLET IN THE CIRCUIT SHALL BE #10 AWG MINIMUM.
WIRE #8 AWG AND SMALLER SHALL BE SOLID; WIRE #6 AWG AND LARGER SHALL BE STRANDED.
WIRE SHALL BE AS MANUFACTURED BY HI-TECH, PIRELLI, TRIANGLE OR EQUAL.

2. INSTALLATION
COLOR CODE ALL WIRES PER NEC REQUIREMENTS:
A. MATCH THE EXISTING SCHEME PRESENTLY INSTALLED; NEUTRAL SHALL BE WHITE. EQUIPMENT GROUND SHALL BE GREEN.
THE GROUPING OF OUTLETS ON INDIVIDUAL NEW CIRCUITS AS SHOWN ON THE DRAWINGS SHALL BE STRICTLY OBSERVED. GROUPING OF CONDUCTORS IN THE CONDUIT SHALL NOT BE PERMITTED. INCORPORATE A MAXIMUM OF FOUR (4) WIRES, I.E. A MAXIMUM OF ONE CIRCUIT CONDUCTOR ON EACH PHASE PLUS THE NEUTRAL WIRE PLUS THE GROUND WIRE IN ONE CONDUIT.
EMPLOY A U.L. LISTED COMMERCIAL PRODUCT SUCH AS WYRE-EZE OR YELLOW-77 FOR PULLING WIRES INTO A RACEWAY.
CLEAN AND DRY CONDUITS BEFORE PULLING IN WIRES.
THE USE OF B.X., ROMEX, OR U.F. CABLE IS NOT PERMITTED.
MC CABLE MAY BE USED FOR CONCEALED BRANCH CIRCUIT WIRING.

F. SPLICES
MAKE ALL SPLICES, JOINTS AND TAPS WITH SOLDERLESS PRESSURE CONNECTORS LISTED AND APPROVED FOR THE INTENDED USE AND FOR THE SIZE AND NUMBER OF CONDUCTORS UTILIZED.
1. FOR WIRE #10 AWG AND SMALLER, USE TWIST-ON WIRE NUTS.
2. FOR WIRE #8 AWG AND LARGER, USE HEAVY DUTY SOLDERLESS SET SCREW CONNECTORS WITH A SEPARATE BARREL FOR EACH CONDUCTOR.
USE INSULATING COVERS FROM THE MANUFACTURER, WHERE AVAILABLE. TAPE PROPERLY TO PROVIDE A SUFFICIENT INSULATION AROUND THE ENTIRE SPLICE UNIT, WHEN INTEGRAL INSULATING COVERS ARE NOT AVAILABLE FROM THE FITTING MANUFACTURER.

G. PANELBOARDS AND CABINETS
CABINETS SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH WIRING GUTTERS OF SUFFICIENT WIDTH TO PROVIDE AMPLE SPACE FOR BRANCH CIRCUIT WIRES AND FEEDERS. GUTTERS SHALL NOT BE LESS THAN FOUR INCHES WIDE. GUTTERS SHALL CONFORM TO NEC STANDARDS AND SHALL BE OVER-SIZED WHERE NECESSARY TO ACCOMMODATE THE ENTRANCE OF SEVERAL LARGE CONDUITS AND/OR WHERE NECESSARY TO AVOID OVERCROWDING OF CONDUCTORS OR EQUIPMENT WITHIN. TRIMS SHALL BE SURFACE AS NOTED ON THE PANEL SCHEDULE AND SHALL CONTAIN CONCEALED HINGED DOORS, EACH EQUIPPED WITH FLUSH CHROME PLATED COMBINATION LOCKS AND CATCHES, ALL KEYED ALIKE. FINISH SHALL BE STANDARD BAKED ENAMEL OR LACQUER, MEDIUM GRAY, ANSI-61. PROVIDE TWO (2) KEYS WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE. USE "DOOR IN A DOOR" HINGED TRIMS.

PANELBOARD BASIS OF DESIGN:
- MANUFACTURER: GE, SIEMENS OR EQUAL.
- ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED IN ACCORDANCE WITH NFPA 70, BY QUALIFIED ELECTRICAL TESTING AGENCY RECOGNIZED BY AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH NEMA PB 1.
- COMPLY WITH NFPA 70.
- ENCLOSURES: SURFACE-MOUNTED, DEAD-FRONT CABINETS.
- INDOOR DRY AND CLEAN LOCATIONS: UL 50E, TYPE 1
- OTHER WET OR DAMP INDOOR LOCATIONS: UL 50E
- HEIGHT: 7 FT MAXIMUM.
- RETAIN ONE OF FIRST TWO SUBPARAGRAPHS BELOW. VERIFY WITH MANUFACTURER FOR AVAILABILITY OF "DOOR-IN-DOOR" CONSTRUCTION IN OTHER THAN NEMA 1 STYLE PANELBOARDS.
- HINGED FRONT COVER, ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER. TRIMS MUST COVER LIVE PARTS AND MAY HAVE NO EXPOSED HARDWARE.
- INCOMING MAIN ON TOP
- 20 SPACE- 40 CIRCUITS MINIMUM.

BUSING SHALL BE FULL CAPACITY, 98% CONDUCTIVITY COPPER OR 80% CONDUCTIVITY ALUMINUM, BRACED FOR THE SHORT CIRCUIT CURRENT AVAILABLE TO THE PANEL AND SIZED AS SHOWN IN THE PANEL DETAIL. CIRCUIT BREAKERS SHALL BE CONNECTED TO BUSES WITH BOLTED CONNECTIONS FOR SEQUENCE PHASING: I.E., CIRCUITS 1 AND 2 CONNECTED TO PHASE A; 3 AND 4 TO PHASE B AND SO ON. POLARITY OR BLOCK PHASING SHALL NOT BE ACCEPTABLE. PANEL SHALL INCLUDE A NEUTRAL BUS AND AN EQUIPMENT GROUNDING BUS. CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE, BOLT-ON, WITH THERMAL AND MAGNETIC TRIPS, TRIP-FREE ON OVERLOAD OR SHORT CIRCUIT, UL LISTED, HAVING INTERRUPTING CAPACITIES, AS INDICATED.

H. WIRING DEVICES AND PLATES
1. MATERIALS
ALL WIRING DEVICES SHALL BE MANUFACTURED BY ONE OF THE MANUFACTURERS LISTED. DO NOT MIX MANUFACTURER'S PRODUCTS.
DEVICES SHALL BE U.L. SPECIFICATION GRADE.

2. WALL SWITCHES
SWITCHES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE GENERAL USE, AC QUIET TYPE, 20 AMPERE, 120/277 VOLT, BACK AND SIDE WIRED. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

3. WALL SWITCH TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENTS FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP SINGLE POLE WALL SWITCH - HUBBELL #HBL-1221, P & S #20AC1, COOPER #1221, BRYANT #4901, OR LEVITON # 1221-2.
20 AMP 3-WAY WALL SWITCH - HUBBELL #HBL-1223, P & S #20AC3, COOPER #1223, BRYANT #4903, OR LEVITON #1223-2. USE SIMILAR SERIES FOR 4-WAY SWITCHES.

4. WALL RECEPTACLES
ALL CONVENIENCE AND POWER RECEPTACLES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE THE GROUNDING TYPE.
CONVENIENCE RECEPTACLES SHALL BE 20 AMP, 125 VOLT, BACK AND SIDE WIRED, 3 WIRE GROUNDING, UL LISTED AS COMPLYING WITH THE REQUIREMENTS OF NEC ARTICLE 250-146, AND SHALL BE NEMA 5-20R CONFIGURATION. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

5. RECEPTACLE TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENT FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP, 125 VOLT DUPLEX CONVENIENCE OUTLET (NEMA 5-20R) - HUBBELL #HBL-5362, P & S #5362A, COOPER #5362, BRYANT #5362, OR LEVITON #5362.
20 AMP, 125 VOLT GROUND FAULT INTERRUPTER (NEMA 5-20R) - HUBBELL #GF-5362, P & S #2091, COOPER #WGF-20, BRYANT #GFRS3FT, OR LEVITON #6899.

6. PLATES
USE STAINLESS STEEL PLATES.

I. FASTENINGS AND ATTACHMENTS
FOR FASTENINGS AND ATTACHMENTS, SUCH AS SCREWS, BOLTS AND NUTS, USE DEVICES MADE OF NON-FERROUS METALS OR OF GALVANIZED OR CADMIUM PLATED STEEL. WHEN SUCH DEVICES ARE NOT OBTAINABLE IN NON-FERROUS METALS, OR IN STEEL WITH A PROTECTIVE METALLIC COATING. PAINT SAME WITH A RUST PREVENTING PAINT SUCH AS RUSTOLEUM.
ALL FASTENINGS AND ATTACHMENTS SHALL BE MADE OF MATERIALS OR SO PROTECTED, THAT THEY WILL OFFER THE MAXIMUM PROTECTION AGAINST DETERIORATION FROM AGE, WEATHER OR DAMPNESS.
DO NOT PENETRATE THE ROOF DECK WITH ANY FASTENERS.

J. SURFACE METALLIC RACEWAY SYSTEM
USE A SURFACE METAL RACEWAY SYSTEM AND BOXES, WHERE CONCEALED WIRING IS NOT POSSIBLE OR WHERE SHOWN ON THE PLANS.
USE RACEWAYS, SUCH AS WIREMOLD, FOR STRAIGHT RUNS, COMPLETE WITH BOXES AND FITTINGS, AS DIRECTED. VERIFY COLOR OPTIONS WITH THE ARCHITECT. PAINT SAME WHERE REQUIRED OR INDICATED.
OBTAIN APPROVAL FOR ALL SURFACE ROUTINGS WITH THE ARCHITECT PRIOR TO ROUGH-IN.

K. FIRE STOPS
1. GENERAL
PROVIDE THROUGH PENETRATION FIRE STOP SYSTEMS TO PREVENT THE SPREAD OF FIRE THROUGH OPENINGS MADE IN FIRE-RATED WALLS OR FLOORS TO ACCOMMODATE THROUGH PENETRATING ITEMS SUCH AS CONDUIT AND CABLES.
FIRE-RESISTANCE-RATED ASSEMBLY SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY OR SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRE STOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM-E-814 OR U.L. 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER. THE SYSTEM SHALL HAVE AN F RATING AND A T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. WHERE FLOOR/CEILING ASSEMBLIES ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED. FIRE STOP SHALL RESTORE FLOOR AND WALL TO ORIGINAL FIRE RATED INTEGRITY AND SHALL BE WATERPROOF.

PENETRATIONS OF MEMBRANES THAT ARE PART OF A FIRE-RATED WALL OR FLOOR MUST BE STOPPED AS OUTLINED FOR THROUGH PENETRATIONS WITH THE FOLLOWING EXCEPTIONS.
A. STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
B. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED AS INDICATED.
1. BY HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES.
2. BY HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY IS FILLED WITH CELLULOSE LOOSE FILL ROCK WOOL OR SLAG MINERAL WOOL INSULATION.
3. BY SOLID FIRE BLOCKING.
4. BY PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS.
5. BY OTHER LISTED MATERIALS AND METHODS.

2. MATERIALS
PUTTY - USE FLAMESEAL PUTTY #AA423 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
FIBER - USE CERAMIC FIBER #AA401 (10 LB. BOX) OR #AA417 (2 LB. BAG) AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN WALLS - USE CERAMIC BOARD #AA402 (1" X 18" X 12") OR #AA403 (1" X 36" X 48") AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN FLOOR - USE SUPPORT WIRE #AA404 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.

3. INSTALLATION
USE TOTAL THICKNESS OF 1-1/2 INCHES OF FLAMESEAL PUTTY #AA423 ON ALL PENETRATIONS OF FIRE-RATED WALLS AND FLOORS. USE NELSON FIBER #AA401 OR #AA417 IN CONJUNCTION WITH THE PUTTY TO FILL THE REMAINING VOID OF PENETRATIONS.
PACK CERAMIC FIBER IN CENTER OF OPENING LEAVING 3/4 INCH ON EITHER SIDE OF WALL FOR THE PUTTY. INSTALL THE PUTTY IN THE REMAINING PART OF OPENING, WORKING IT INTO ALL VOIDS AND CAVITIES.
FOR OPENINGS WITH GREATER THAN 4 INCHES OF UNSUPPORTED SPACE, USE NELSON CERAMIC BOARD #AA402 OR #AA403 DEPENDING ON SIZE OF OPENING. PACK CERAMIC FIBER IN BOTTOM OF OPENING PER FACTORY RECOMMENDATIONS, LEAVING 1-1/2 INCHES BELOW FLOOR LEVEL FOR THE INSTALLATION OF FLAMESEAL PUTTY. USE SUPPORT WIRE #AA404 ON ALL PENETRATIONS IN EXCESS OF 6 INCHES DIAMETER.

L. MC CABLE
METAL CLAD CABLE (MC) SHALL BE COPPER WIRE WITH 90 DEGREES C. THHN INSULATION, #12 AWG MINIMUM, WITH CONTINUOUS INSULATED GREEN GROUND CONDUCTOR AND STEEL ARMOR, MANUFACTURED BY A.F.C., ALFLEX, OR EQUAL. INSTALL NON-RIGID CABLE IN A NEAT, APPROVED MANNER, AS PER N.E.C. REQUIREMENTS. DO NOT GROUP CABLES INTO A COMMON CONDUIT AS OVERHEATING WILL RESULT. DO NOT TIE THE SEVERAL CABLES TOGETHER. USE APPROVED STYLE "MC" CONNECTORS AND FITTINGS IN ORDER TO MAINTAIN ADEQUATE CASE GROUNDING REQUIRED BY THE NATIONAL ELECTRICAL CODE. PROVIDE AN INDEPENDENT MEANS OF SUPPORT FOR ALL WIRING LOCATED ABOVE A DROPPED CEILING ASSEMBLY FROM THE STRUCTURAL CEILING SYSTEM. DO NOT SUPPORT WIRING FROM THE CEILING ASSEMBLY OR FROM ITS SUPPORT WIRES.

SERVICE AND DISTRIBUTION

A. GENERAL INSTALLATION
USE RIGID HEAVY WALL STEEL CONDUIT FOR EXPOSED EXTERIOR RACEWAYS.
USE EMT ELECTRICAL METALLIC THINWALL CONDUIT FOR CONCEALED INTERIOR FEEDERS, TELEPHONE RACEWAYS, ETC.
USE FLEXIBLE CONDUIT SUCH AS "GREENFIELD" FOR CONNECTIONS TO RECESSED LIGHTING FIXTURES IN 72" MAXIMUM LENGTHS AND FOR USE IN STUD WALLS WHERE THE USE OF RIGID CONDUIT IS NOT PRACTICAL.
USE WEATHERPROOF AND OIL PROOF FLEXIBLE CONDUIT SUCH AS "SEAL-TITE" FOR ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT IN LENGTHS OF 1/F MAXIMUM.
USE LIQUID-TIGHT FLEXIBLE CONDUIT AND APPROPRIATE LIQUID-TIGHT FITTINGS IN AREAS EXPOSED TO THE WEATHER OR LIKELY TO BECOME DAMP. WHERE USED, CONFORM TO NEC #230-118.

USE WIREMOLD RACEWAYS FOR BRANCH CIRCUIT SURFACE ROUTINGS IN FINISHED AREAS ONLY WHERE CONCEALED WIRING IS NOT FEASIBLE, AND WHERE INDICATED.
USE M.C. CABLE FOR CONCEALED BRANCH CIRCUIT WIRING ONLY, IN ACCORDANCE WITH THE N.E.C. REQUIREMENTS.
THE USE OF B.X., ROMEX, AND U.F. IS NOT APPROVED.

LIGHTING FIXTURES AND ACCESSORIES

GENERAL
ALL LIGHTING FIXTURES AND LAMPS WILL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

LIGHTING FIXTURES

BASIS OF DESIGN LIGHTING FIXTURES BY KICHLER OR EQUAL.
CEILING FIXTURE: KICHLER #6112WH. WHITE FINISH. SURFACE MOUNTED
EXTERIOR CEILING FIXTURE: KICHLER #11132AZTLED, OUTDOOR RATED.
WALL EXTERIOR: KICHLER #9654TZ. WALL MOUNTED, OUTDOOR RATED
BATHROOM VANITY: KICHLER JOELSON #45923
FLOOD LIGHT: LITHONIA LIGHTING OLF LED WITH MOTION OCCUPANCY SENSOR
RECESSED LIGHTING: HALO OR EQUAL.

B. INSTALLATION
PROVIDE ALL SUPPLEMENTARY STRUCTURAL MATERIALS REQUIRED TO PROPERLY MOUNT ALL LIGHTING FIXTURES.
SECURELY MOUNT LIGHTING FIXTURES TO STRUCTURAL ELEMENTS OF THE BUILDING TO SUSPENDED CEILING SYSTEMS SUCH THAT SAID FIXTURES WILL BE SQUARE, PLUMB, AND RIGID, WILL NOT FALL OR SAG, AND WILL NOT CAUSE THE SUSPENDED CEILING SYSTEM TO SAG. PROVIDE ADDITIONAL CEILING SUPPORTS, WHERE REQUIRED TO SUPPORT RECESSED OR SURFACE FIXTURES.
INSTALL WIRING TO AND WITHIN FIXTURES TO COMPLY WITH NEC ARTICLE #410. TAKE SPECIAL CARE TO ASSURE THAT THE FIXTURE OUTLETS FOR RECESSED FIXTURES ABOVE SOLID SUSPENDED CEILINGS WILL ACTUALLY BE ACCESSIBLE AFTER THE PROJECT IS COMPLETED.
USE CLIPS TO FASTEN RECESSED TROFFERS TO DROP CEILING CHANNELS AS REQUIRED BY NEC SECTION #410-16. USE CADDY FASTENERS #6 IS OR APPROVED EQUAL.
TIME CLOCKS SHALL BE COMMERCIAL GRADE, 7 DAY, ASTRONOMICAL DAL, WITH 24-HOUR SPRING RESERVE BACKUP, AS MANUFACTURED BY TORK OR PARAGON (IF REQUIRED).

SMOKE ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 20SAR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

COMBO SMOKE + CO ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 3COUDR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

SMOKE DETECTOR'S LOCATIONS:
1. COMBO SMOKE + CO ALARM PER FLOOR, NOT TO BE PLACED IN MECHANICAL ROOM OR KITCHEN.
1 SMOKE DETECTOR IN SIDE EACH SLEEPING ROOM
INTERCONNECT SMOKE DETECTORS INSIDE THE UNIT.

MOTOR WIRING

WIRING FOR MECHANICAL AND PLUMBING CONTRACTS
1. INSTALLATION
VERIFY ALL LOCATIONS WITH THE VARIOUS MECHANICAL CONTRACTORS BEFORE INSTALLING RACEWAYS.
PROVIDE ALL WIRING MATERIALS AND DEVICES REQUIRED TO CONNECT AND OPERATE THE ELECTRICAL PARTS OF EQUIPMENT FURNISHED AND INSTALLED UNDER THE MECHANICAL DIVISION.
INSTALL AND CONNECT ALL STARTERS, PUSHBUTTONS, SWITCHES, THERMOSTATS AND OTHER CONTROL DEVICES AS FURNISHED BY OTHERS, UNLESS OTHERWISE NOTED.
MAKE ALL FINAL CONNECTIONS TO MOTORIZED EQUIPMENT. VERIFY THE CORRECT DIRECTION OF ROTATION.
CONNECT MOTOR CIRCUITS TO THE RIGID CONDUIT SYSTEM BY MEANS OF WEATHERPROOF STYLE FLEXIBLE CONDUIT, PROPERLY GROUNDED AND BONDED. EMPLOY A GREEN GROUND WIRE FOR ALL SYSTEMS AND MOTOR FRAME GROUND CONNECTIONS.
BOLT THE WIRE TO THE MOTOR FRAME AT ONE END AND TO THE MOTOR STARTER AT THE OTHER END WITH APPROVED TERMINAL DEVICES.
DO ALL LINE VOLTAGE CONTROL WIRING (120 VOLTS OR HIGHER).
ALL LOW VOLTAGE CONTROL WIRING (UNDER 120 VOLTS) IS THE RESPONSIBILITY OF THE MECHANICAL OR PLUMBING CONTRACTS.

SECTION 32- EXTERIOR IMPROVEMENTS

CHAIN LINK FENCE
ALUMINUM WIRED FABRIC 2X2 INCHES WITH ROUNDED POST AND RAILS 2.5 INCHES IN DIAMETER. LIGHT INDUSTRIAL STRENGTH, ZINC COATED. WITH TOP AND BOTTOM TENSION WIRED ZINC COATED. MECHANICALLY DRIVEN INTO SOIL OR USING ANCHORING CONCRETE.

GATES TO MATCH FENCE MATERIAL AND FRAME. DOOR WITH LATCH TO PERMIT OPERATION FROM BOTH SIDES OF GATE. PADLOCK AND CHAIN TO BE PROVIDED BY HACP.

SEEDING

QUALITY, NON-STATE CERTIFIED. SEED OF GRASS SPECIES AS LISTED BELOW FOR SOLAR EXPOSURE, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PER CENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED.

A. SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH.
1. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
2. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
3. DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.

B. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

C. PROTECT SEEDED AREAS FROM HOT, DRY WEATHER OR DRYING WINDS BY APPLYING COMPOST MULCH WITHIN 24 HOURS AFTER COMPLETING SEEDING OPERATIONS. SOAK AREAS, SCATTER MULCH UNIFORMLY TO A THICKNESS OF 3/16 INCH +, AND ROLL SURFACE SMOOTH.

TREE AND STUMP REMOVAL
ALL APPROPRIATE SAFETY EQUIPMENT MUST BE UTILIZED AT ALL TIMES DURING OPERATIONS, INCLUDING, BUT NOT LIMITED TO: HARD HATS, GLOVES, SAFETY GLASSES, FALL RESTRAINTS, TRAFFIC CONTROL DEVICES, HIGH VISIBILITY CLOTHING, ADEQUATE HEARING PROTECTION AND ANY OTHER SAFETY REQUIRED BY OSHA.
ONCE A TREE IS CUT DOWN, THE STUMP MUST BE GROUND OUT WITHIN FIVE DAYS (5). STUMPS AND BUTTRESS ROOTS MUST BE REMOVED TO A MINIMUM OF TWELVE INCHES (12") BELOW GROUND LEVEL AND TWO (2) TIMES THE DIAMETER AT BREAST HEIGHT IN SURFACE AREA GROUND. THE REMAINING STUMP AND/OR CHIPS SHALL BE REMOVED FROM THE SITE WITHIN TWO DAYS (2) AFTER GRINDING. ALL SURFACE ROOTS AND ADJACENT SUBSURFACE ROOTS SHALL BE REMOVED AS MAY BE NECESSARY TO ELIMINATE "HUMPS" OR MOUNDS IN THE TREE EASEMENT AREA ADJACENT TO THE STUMP. ALL TREE EASEMENT AREAS ARE TO BE LEFT FLAT AND MEET ORIGINAL GRADE. THE AREA WILL THEN BE BACKFILLED WITH CLEAN, PULVERIZED TOPSOIL TO THE LEVEL OF THE ADJOINING GRADE AND SEEDED. SEE SEEDING FOR SEED REQUIRED.

THE PARTY AUTHORIZED TO REMOVE THE TREE, AT THEIR EXPENSE, SHALL RESTORE THE LAWN AND ANY EXISTING LANDSCAPING AND APPURTENANNCES THAT EXIST BETWEEN THE SIDEWALK AND CURB OR IN OTHER AREAS THAT HAVE BEEN DISTURBED BY THE PARTY AUTHORIZED TO REMOVE THE TREE DURING THE PROSECUTION OF THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL PROTECT ALL CONCRETE SIDEWALK, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT FROM DAMAGE THROUGH THE USE OF PLYWOOD SHEETING OR MATS WHEN NECESSARY. THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL REPLACE OR RESTORE ALL CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT WHICH MAY HAVE BEEN DAMAGED DURING THE PROSECUTION OF THE WORK.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL BE RESPONSIBLE AT ALL TIMES FOR KEEPING THE WORK SITE ADJOINING PREMISES, STREET, WALKS AND DRIVEWAYS CLEAN. ALL TREE BRANCHES, BARK, CHIPS AND OTHER DEBRIS MUST BE CLEARED UP AT THE END OF THE WORKDAY.

SECTION 33- UTILITIES

TRENCH DRAIN SYSTEM
ZURN Z880 2 1/2 [64] WIDE TRENCH DRAIN SYSTEM SHALL BE 4 8 [1220] LONG AND 2 1/2 [63.5] WIDE. DRAIN SHALL BE 3 [76] DEEP. DRAIN SHALL BE MADE OF (HDPE) HIGH DENSITY POLYETHYLENE AND IS UV-10 STABILIZED. DRAIN SHALL HAVE BEDDING FEET TO BE USED FOR POSITIONING AND ANCHORING PURPOSES. DRAINS SHALL HAVE TONGUE AND GROOVE SNAP FIT CONNECTION. DRAIN SHALL HAVE 24 [610] LONG HIGH-DENSITY POLYETHYLENE DECORATIVE GRATE (-POG) PROVIDED AS STANDARD.

INSTALLATION
TRENCH EXCAVATION MUST BE 4" [102MM] GREATER THAN THE TRENCH DEPTH AND A MINIMUM OF 4" [102MM] GREATER THAN THE EDGE OF THE TRENCH ON EACH SIDE. SOFT AND/OR SHIFTING SOIL SUBSTRATES MAY CAUSE CRACKING OF THE CONCRETE AND CONSEQUENT MOVEMENT OF THE TRENCH. IT IS CRITICAL THAT THE CONCRETE BE POURED ON AN ADEQUATE FOUNDATION

ASSEMBLING PER MANUFACTURER INSTRUCTION. A SILICONE CAULK OR A CONSTRUCTION ADHESIVE, SUCH AS LIQUID NAILS, IS RECOMMENDED TO BE USED AT EACH JOINT AS A SEALER.

UPON COMPLETION OF THE TRENCH EXCAVATION, THE CHANNELS SHOULD BE PLACED IN ORDER ALONGSIDE THE EXCAVATION AND ACCORDING TO THE JOB LAYOUT.

AFTER ATTACHMENT OF ACESSORIES, ANCHOR AND LEVEL TRENCH IN THE EXCAVATION USING CONCRETE PATTIES AROUND THE FEET. MAKE FINISH POUR OF CONCRETE AND BE CERTAIN TO PROPERLY VIBRATE CONCRETE TO ELIMINATE ANY UNWANTED VOIDS. FINISH TROWELING SHOULD BE DONE TO SET THE TOP EDGE OF THE TRENCH DRAIN 1/16" [1.6MM] BELOW THE FLOOR GRADE. REMEMBER TO COMPENSATE FOR CONCRETE SHRINKAGE THAT MAY OCCUR DURING CURE SO THAT THE EDGE OF THE TRENCH DRAIN DOES NOT PROTRUDE ABOVE THE FINISHED FLOOR GRADE.

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CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory

Renovation of 10 Scattered Sites

10 Scattered Sites - McPherson Blvd
Single Family Residence, Minor Alteration
7152 McPherson Blvd,
Pittsburgh, Pennsylvania 15208

Fukui Architects Pc
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Code Conformance Information

Applicable Codes

General:	2018 International Residential Code 2018
Energy:	2018 International Energy Conservation Code
Electrical:	2017 NEC (NFPA 70)
Fire:	2018 International Fire Code
Fuel Gas:	2018 International Fuel Gas Code
Mechanical:	2018 International Mechanical Code
Plumbing:	2017 Allegheny County Health Department Plumbing Code

General Building / Project Information

Stories:	1 Stories
Building Gross Area:	Basement 994 sqft
	1st Floor 994 sqft + Garage 317 sq ft

1 Site Location
SCALE: 1" = 30'

Materials Legend

NOT ALL MATERIALS USED

- EARTH
- COMPACTED STONE FILL
- CONCRETE
- STEEL
- RIGID INSULATION
- BLOCKING
- BATT INSULATION
- GYPSUM WALL BOARD
- WOOD
- PLYWOOD SHEATHING
- SPRAY FOAM INSULATION

Abbreviations

A.F.F.	Above Finish Floor
A.P.	Access Panel
ACOUST.	Acoustical
A.C.T.	Acoustical Ceiling Tile
ADH.	Adhesive
ADJUST.	Adjustable
A/C	Air Conditioning
ALT.	Alteration
ALTN.	Alternate
ALUM.	Aluminum
A.O.R.	Area of Refuge
APPROX.	Approximate
ARCH.	Architectural
ASB.	Asbestos
ASPH.	Asphalt
AUTO.	Automatic
AVG.	Average
BLK.	Block
BD.	Board
BOT	Bottom
BLDG	Building
C.I.P.	Cast In Place
C.B.	Catch Basin
CEM.	Cement
CER.	Ceramic
CG	Corner Guard
C.M.T.	Ceramic Mosaic Tile
C.W.T.	Ceramic Wall Tile
C.O.	Cleanout
℄	Center Line
CLO.	Closet
C.W.	Cold Water
CLG.	Ceiling
COL.	Column
CONC.	Concrete
C.M.U.	Concrete Masonry Unit
CONT.	Continuous
CORR.	Corridor
C.M.P.	Corrigated Metal Pipe
CRS.	Courses
DIA.	Diameter
DET.	Detail
DGL	Dens Glass Gold
DR.	Door
DN.	Down
D.S.	Downspout
DWG.	Drawing
D.F.	Drinking Fountain
D.I.P.	Ductile Iron Pipe
EA.	Each
E.W.	Each Way
ELEC.	Electrical
E.C.	Electrical Contractor
EL.	Elevation
ELEV.	Elevation
EQUIP.	Equipment
E.F.	Exhaust Fan
EXIST.	Existing
EXP.	Expansion
E.J.	Expansion Joint
ESH	Exterior Sheathing
EXIST.	Existing
EXP.	Exposed
EXT.	Exterior
E.I.F.S.	Exterior Insulation & Finish System
F.R.P.	Fiberglass Reinforced Polyester
F.F.	Finish Floor
FINFLR.	Finish Floor
F.A.C.P.	Fire Alarm Control Panel
F.E.	Fire Extinguisher
FLR.	Floor
F.D.	Floor Drain
FTG.	Footing
GA.	Gauge
G.C.	General Contractor
G.F.I.	Ground Fault Interrupter
GYP.	Gypsum
GW.B.	Gypsum Wall Board
GSH	Gypsum Sheathing
H/C	Handicap
H.V.A.C.	Heating, Ventilation &
HT	Height
HC	Hollow Core
H.M.	Hollow Metal
HORIZ.	Horizontal
HR.	Hour
H.W.	Hot Water
IN.	Inch
I.M.	Insulated Metal
INSUL.	Insulation or Insulated
INT.	Interior
INV.	Invert
ISO.	Isolation
JAN.	Janitor's Closet
J.T.	Joint
LAM.	Laminate
LAV.	Lavatory
LG.	Long
M.D.F.	Medium Density Fiberboard
M.D.H.	Magnetic Door Holder
M.H.	Manhole
MFGR.	Manufacturer
MAX.	Maximum
MECH.	Mechanical
MET.	Metal
MIN.	Minimum
MISC.	Miscellaneous
N.I.C.	Not In Contract
N.T.S.	Not To Scale
O.C.	On Center
OPP.	Opposite
O.H.	Overhead
PR.	Pair
PLAS.	Plaster
PLAS.LAM.	Plastic Laminate
P.C.	Plumbing Contractor
PLYWD.	Plywood
PQLY.	Polyethylene
P.V.C.	Polyvinyl Chloride
PREFAB.	Prefabricated
RE.	Refer To
REF.	Refrigerator
R.C.P.	Reinforced Concrete Pipe
REINF.	Reinforcement
RD.	Roof Drain
RM.	Room
S.A.T.	Suspended Acoustical Tile
SCHED.	Schedule
SHT.	Sheet
SIM.	Similar
S.C.	Solid Core
SPECS.	Specifications
SQ.	Square
S.F.	Square Foot
S.S.	Stainless Steel
STL.	Steel
STOR.	Storage
STRUCT.	Structural
TEL.	Telephone
THK.	Thick
T.B.D.	To Be Determined
T&G	Tongue & Groove
T.O.	Top Of
T.G.	Top Of Grade
T.O.S.	Top Of Steel
TYP.	Typical
UNFIN.	Unfinished
U.N.O.	Unless Noted Otherwise
V.B.	Vapor Barrier
VERT.	Vertical
VEST.	Vestibule
V.C.T.	Vinyl Composition Tile
W.H.	Water Heater
W.W.F.	Welded Wire Fabric
WIN.	Window
W/	With
W/O	Without
WD.	Wood

Symbols

NOT ALL SYMBOLS USED

T.O. FINISH FLOOR ELEV: 0'-0"	ELEVATION HEIGHT
PLAN NORTH	NORTH ARROW
A1	ELEVATION MARKER

seal

CONSTRUCTION DOCUMENTATION

general notes

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revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
7152 McPherson Blvd
Pittsburgh, Pennsylvania 15208

drawing title

Drawing Index, Code Conformance Information, Abbreviations and Materials, Site Location

scale: As Noted	**Sheet No.**
date: August 20th, 2024	**A1**
no. 1 / of. 8	Project #2326

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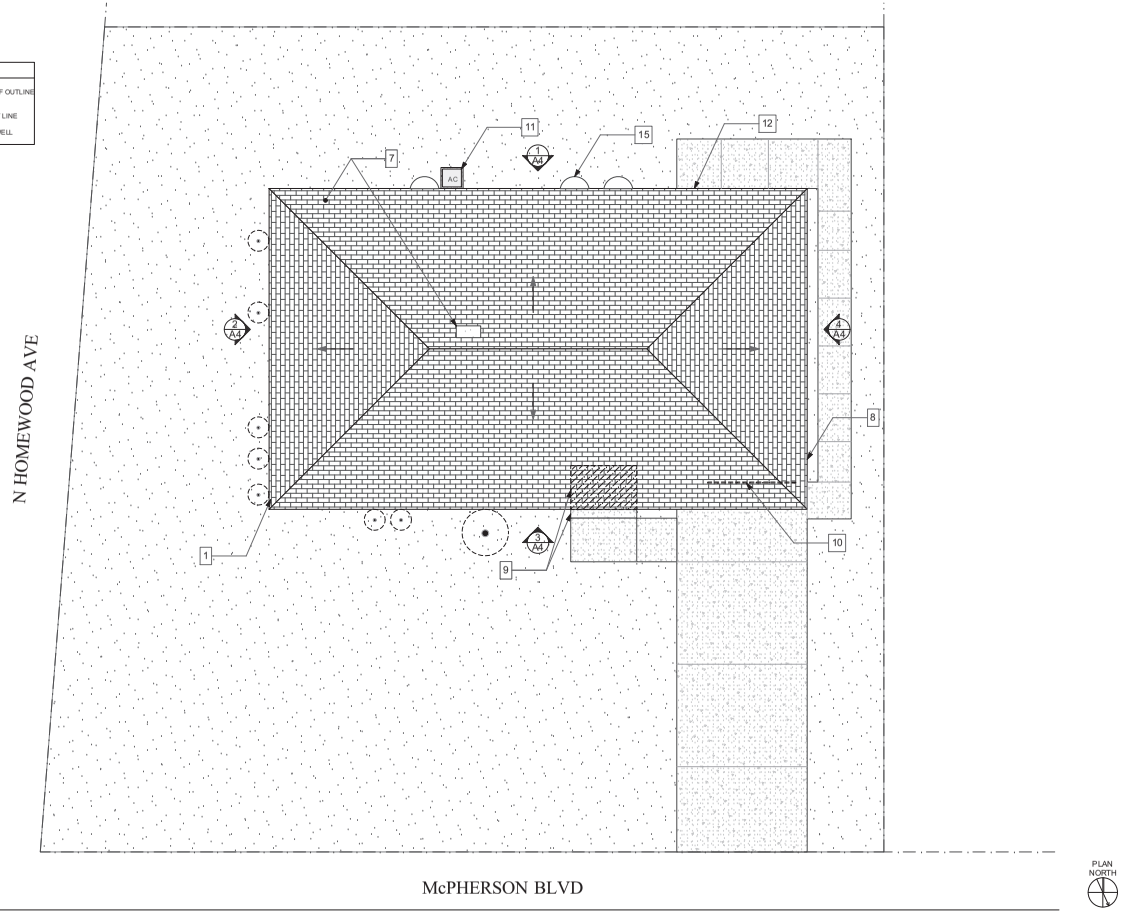
SITE PLAN LEGEND

GRASS	MISC. BRICK	AC CONDENSER	RAILING	TRUE ROOF OUTLINE
LIGHTWEIGHT CONCRETE	MULCHED AREA	TREE / SHRUB	TACTILE PAVING	APPROX. PROPERTY LINE
CONCRETE BLOCK	STREET SIGNAGE	STREET SIGNAGE	MAN HOLE	WINDOW WELL



1 Site Plan
SCALE: 3/16" = 1'-0"

10 Scattered Sites Keynotes – 7153 McPherson Blvd

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages (see additional ductwork note at garage)
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS, AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.
6. ABANDONED ATTIC MTD HVAC UNIT AND DUCTWORK (M, GC): Remove existing abandoned unit all utility connections, ductwork, grilles, and diffusers. Patch and paint to match all finished surfaces where existing grilles & diffusers and utility penetrations were removed.

Exterior

7. ROOF (GC): Remove existing shingles (approx. 1,600 sf), flashing, roof vent caps, roof pipe boots flashing, gutters, downspouts, etc. Relocate existing Dish to a wall mounted location so as to not penetrate the roof. Re-roof using new materials per Specifications. Replace sloped mortar chimney cap with new.
8. ELECTRICAL SERVICE ENTRANCE (E): Replace existing electrical service entrance. See Specifications.
9. CONCRETE ENTRY STEPS (GC): Remove existing displaced concrete steps (2) and stoop (approx. 25 sf). Provide new poured concrete steps and stoop pinned to front concrete porch. See Specifications.
10. CONCRETE EDGE SEAL (GC): At floor joint between garage slab and driveway, clean out joint, provide new backer rod and caulk to seal full width. See Specifications.
11. EXISTING AC CONDENSER (M): Provide new seal tie replacement from conduit to Condenser. Remove abandoned condensate drain line from old HVAC in attic and seal any through wall penetrations with silicone seal, see Note 6 for coordination. See Specifications.
12. REAR LIGHT FIXTURE (E): Replace photocell in existing exterior light fixture and assure proper functioning. Alternatively, replace fixture with new photocell operated fixture with switch override.
13. GARAGE DOOR (GC): Scrape clean and repaint garage door and wood trim.
14. FRONT COLUMNS (GC): Scrape clean and repaint (3) columns by front porch.
15. WINDOW WELLS (GC): Provide liquid applied waterproofing membrane to exposed foundation block within all window wells. See specifications.

Interior Garage

16. ELECTRICAL PANEL (E): Replace existing archaic electric fuse panel and electrical panel with new consolidated 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally, provide proper electrical grounding and bonding of the electrical system. See Specifications.
17. GARAGE CEILING (GC): At corner of garage ceiling. Remove portion of ceiling (approx. 10 sf) damaged by water intrusion. Replace with new GWB with textured/painted finish to match. Note: repair ceiling after roof is replaced and Dish is permanently relocated. See Specifications.
18. REAR DOOR TO EXTERIOR (GC): Replace rear doorknob on door to exterior with new. Scrape to remove old caulk and re-caulk door frame to seal.

Interior Basement

19. FURNACE/ DUCTWORK (M): Furnace is 3 years old. Provide inspection by a qualified HVAC technician. Seam seal all exposed duct seams within basement. See Specifications.
20. BASEMENT ACCESS STAIR (GC): Clean and paint basement stair handrail. Provide new riser closures consisting of painted 2"-by wood, taking care to preserve 1" nosing dimension at treads. Provide new vinyl non-slip tread covers at each tread. See Specifications
21. WATER HEATER (P): Water heater is 15 years old, replace. Provide all necessary connections (electrical, water and waste) with the installation. See Specifications.

Interior First Floor

22. FLOOR FINISH (GC): Remove existing carpet (approx. 604 sf) and VCT (approx. 155 sf) floor finish throughout first floor. Prep subfloor and provide new LVT floor finish and wall base in kitchen and bathrooms (approx. 155 sf). Provide new LVT floors over existing hardwood floors (approx. 604 sf). See Specification.
23. DISHWASHER (GC): Replace existing non-operating dishwasher per Specifications. Provide all necessary connections (electrical, water and waste) with the installation.
24. BATHROOM (P/GC): In first floor bathroom: Remove and replace entirely existing tub tile surround, vanity base and sink, medicine cabinet, tub/shower faucet and drain, sink faucet and drain, and toilet. Provide new sliding glass shower door. Provide new bathroom exhaust fan wired to light circuit and ventilated to the exterior. Provide new towel bar(s), Robe Hook, Grab bar and toilet roll holder. Provide repair of wall behind tub surround after demolition. See Specifications.

Attic

25. MISC. ATTIC INSULATION (GC): Provide new min R-38 fiberglass batt insulation at location where HVAC unit was removed (approx. 10 sf). See Specifications.

seal

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general notes

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revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
7152 McPherson Blvd
Pittsburgh, Pennsylvania 15208

drawing title

Site Plan, Site Plan Legend, Keynotes

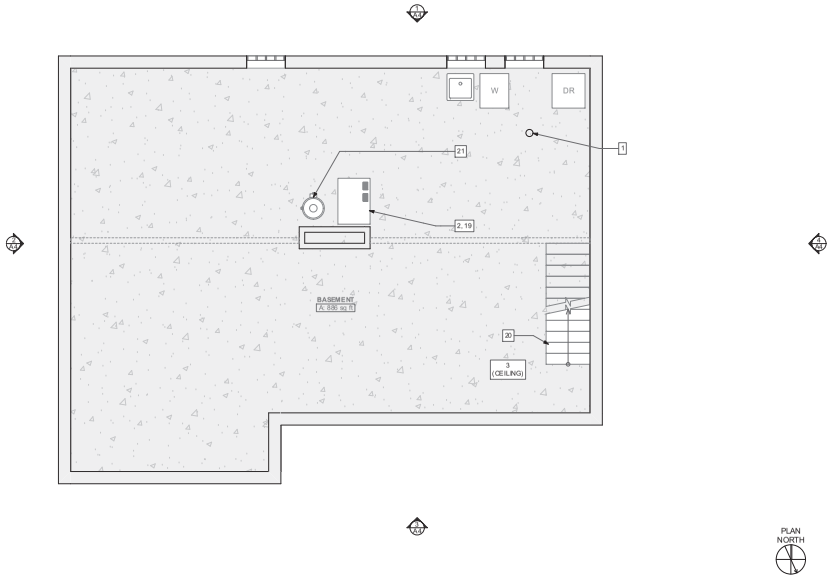
scale		Sheet No.
As Noted		A2
date: August 20th, 2024		
no. 2	of. 8	Project #2326

FLOOR COVERING PLAN LEGEND

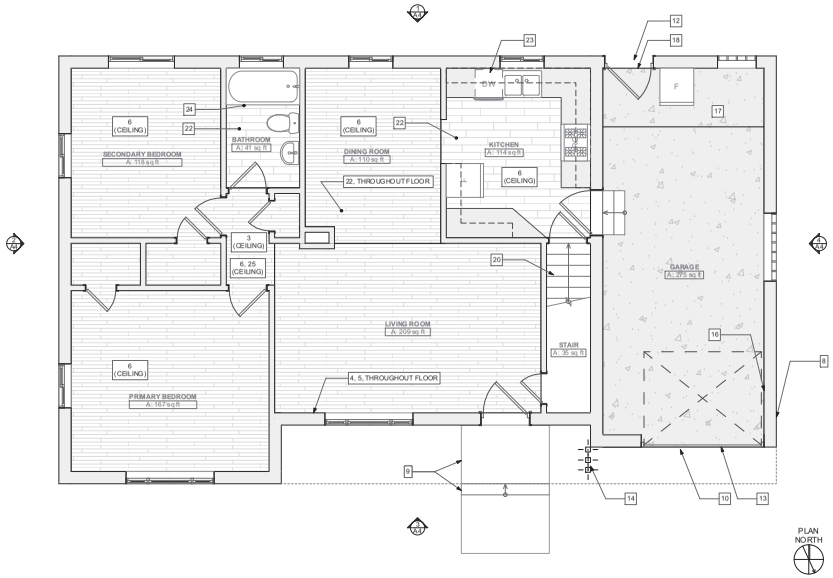
VCT FLOORING
CONCRETE FLOORING
CARPET FLOORING
LVT FLOORING
WOOD FLOORING

GENERAL FLOOR PLAN NOTES

1. PROPERTY HAS BEEN TESTED FOR HAZARDOUS MATERIALS. REPORT WILL BE AVAILABLE AND PROVIDED BY HACP. GC TO ABATED MATERIALS FOLLOWING THE RECOMMENDATIONS FROM THE REPORT.
2. CONTRACTOR TO FIELD VERIFY ANY AND ALL CONDITIONS & DIMENSIONS OF WORK AREAS BEFORE BEGINNING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.
3. THE FINISH FLOOR OF THIS PROJECT IS IDENTIFIED AT 0'-0" IN THIS SET OF DRAWINGS.
4. ALIGN NEW WALL & CEILING CONSTRUCTION WITH EXISTING WALL CONSTRUCTION. FINISH NEW PARTITION SMOOTH TO FORM A SEAMLESS JOINT BETWEEN NEW & EXISTING PARTITIONS.
5. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC REPRESENTATIONS. NOTIFY ARCHITECT IN WRITING OF ANY INCONSISTENT OR MISSING DIMENSIONS.
6. DIMENSIONS SHOWN INDICATE FINISHED FACE TO FINISHED FACE, UNLESS NOTED OTHERWISE.
7. ALL NEW OR RELOCATED DOOR FRAMES TO BE LOCATED 4" FROM PERPENDICULAR WALLS, UNLESS NOTED OTHERWISE.
8. SAND WALLS SMOOTH, REMOVE ALL ADHESIVE RESIDUE, AND/OR SKIM WITH JOINT COMPOUND AS NECESSARY TO PREP WALLS FOR NEW FINISHES. THE FLOOR SHOULD BE SCRAPED CLEAN OF ANY ADHESIVE RESIDUE, PATCHED AND LEVELED OUT AS NECESSARY TO RECEIVE NEW FLOORING.
9. AT WALLS EXISTING TO REMAIN, PATCH AND PAINT ANY HOLES OR DAMAGE TO APPEAR NEW.



1 Basement
SCALE: 1/4" = 1'-0"



2 First Floor
SCALE: 1/4" = 1'-0"

10 Scattered Sites Keynotes – 7153 McPherson Blvd

GC: General Contract; E: Electrical Contract; P: Plumbing Contract; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages (see additional ductwork note at garage)
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS, AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.
6. ABANDONED ATTIC MTD HVAC UNIT AND DUCTWORK (M, GC): Remove existing abandoned unit all utility connections, ductwork, grilles, and diffusers. Patch and paint to match all finished surfaces where existing grilles & diffusers and utility penetrations were removed.

Exterior

7. ROOF (GC): Remove existing shingles (approx. 1,600 sf), flashing, roof vent caps, roof pipe boots flashing, gutters, downspouts, etc. Relocate existing Dish to a wall mounted location so as to <u>not</u> penetrate the roof. Re-roof using new materials per Specifications. Replace sloped mortar chimney cap with new.
8. ELECTRICAL SERVICE ENTRANCE (E): Replace existing electrical service entrance. See Specifications.
9. CONCRETE ENTRY STEPS (GC): Remove existing displaced concrete steps (2) and stoop (approx. 25 sf). Provide new poured concrete steps and stoop pinned to front concrete porch. See Specifications.
10. CONCRETE EDGE SEAL (GC): At floor joint between garage slab and driveway, clean out joint, provide new backer rod and caulk to seal full width. See Specifications.
11. EXISTING AC CONDENSER (M): Provide new seal tie replacement from conduit to Condenser. Remove abandoned condensate drain line from old HVAC in attic and seal any through wall penetrations with silicone seal, see Note 6 for coordination. See Specifications.
12. REAR LIGHT FIXTURE (E): Replace photocell in existing exterior light fixture and assure proper functioning. Alternatively, replace fixture with new photocell operated fixture with switch override.
13. GARAGE DOOR (GC): Scrape clean and repaint garage door and wood trim.
14. FRONT COLUMNS (GC): Scrape clean and repaint (3) columns by front porch.

15. WINDOW WELLS (GC): Provide liquid applied waterproofing membrane to exposed foundation block within all window wells. See specifications.

Interior Garage

16. ELECTRICAL PANEL (E): Replace existing archaic electric fuse panel and electrical panel with new consolidated 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally, provide proper electrical grounding and bonding of the electrical system. See Specifications.
17. GARAGE CEILING (GC): At corner of garage ceiling. Remove portion of ceiling (approx. 10 sf) damaged by water intrusion. Replace with new GWB with textured/painted finish to match. Note: repair ceiling after roof is replaced and Dish is permanently relocated. See Specifications.
18. REAR DOOR TO EXTERIOR (GC): Replace rear doorknob on door to exterior with new. Scrape to remove old caulk and re-caulk door frame to seal.

Interior Basement

19. FURNACE/ DUCTWORK (M): Furnace is 3 years old. Provide inspection by a qualified HVAC technician. Seam seal all exposed duct seams within basement. See Specifications.
20. BASEMENT ACCESS STAIR (GC): Clean and paint basement stair handrail. Provide new riser closures consisting of painted 2"-by wood, taking care to preserve 1" nosing dimension at treads. Provide new vinyl non-slip tread covers at each tread. See Specifications
21. WATER HEATER (P): Water heater is 15 years old, replace. Provide all necessary connections (electrical, water and waste) with the installation. See Specifications.

Interior First Floor

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seal

CONSTRUCTION DOCUMENTATION

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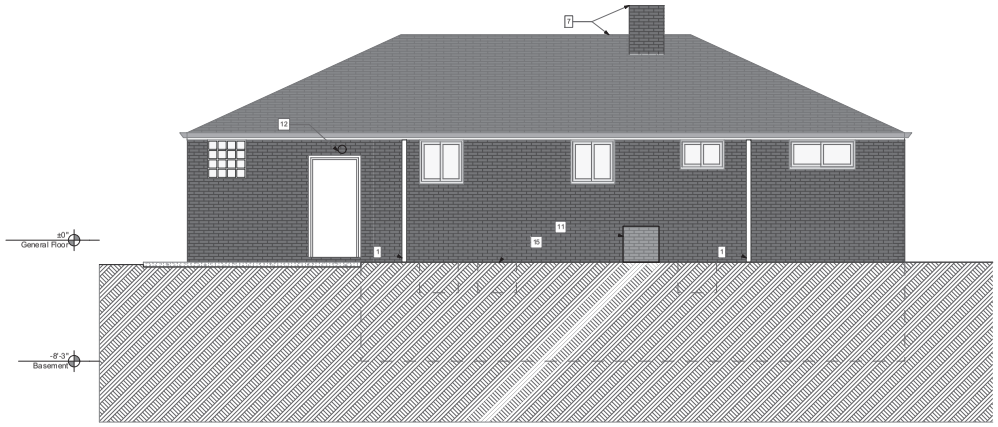
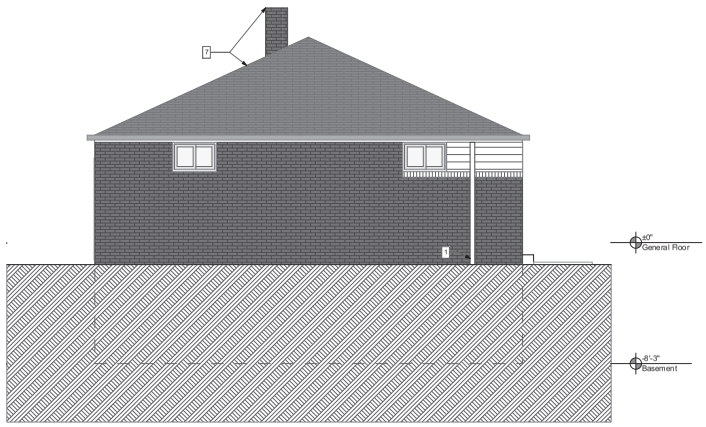
Basement, Renovation Plan Legend, First Floor, Floor Plan Legend, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no. 3	of. 8

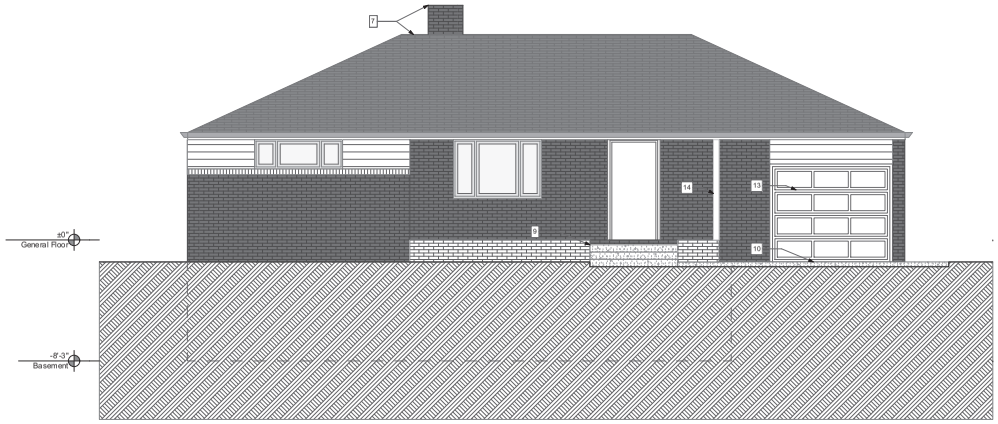
Sheet No.
A3
Project #2326



1 South Elevation
SCALE: 1/4" = 1'-0"



2 East Elevation
SCALE: 1/4" = 1'-0"



3 North Elevation
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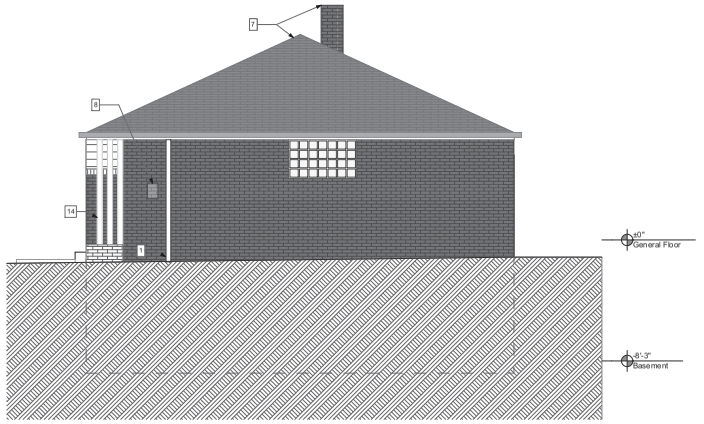

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South Elevation, East Elevation, West Elevation, North Elevation, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no.	of.
4	8

Sheet No.
A4
Project #2326

GENERAL NOTES

USE OF THE DOCUMENTS
THE USE OF THESE DOCUMENTS IS RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED. RE-USE OR REPRODUCTION OF THE DOCUMENTS (IN WHOLE OR IN PART), FOR ANY OTHER PURPOSE IS PROHIBITED. TITLE TO THESE REMAINS WITH FUKU ARCHITECTS P.C. (FAR). VISUAL CONTRACT DOCUMENTS DOCUMENTS IS PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

DIVISION 1 - GENERAL CONDITIONS

APPLICABILITY OF HUD-5370 GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS - PUBLIC HOUSING PROGRAMS
THE HUD-5370, GENERAL CONDITIONS CURRENT EDITION, SHALL APPLY TO THE PROJECT. A COPY OF THE HUD GENERAL CONDITIONS ARE INCLUDED IN THE FRONT END DOCUMENTS AS PART OF HUD FORMS. HARD CONES ARE AVAILABLE AT HACP OFFICE.

MULTIPLE CONTRACT
1. COORDINATION
GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT, ELECTRICAL CONTRACT, AND ADDITIONAL CONTRACTS APPLICABLE IN THE CONSTRUCTION DOCUMENTS.

2. GENERAL REQUIREMENTS OF CONTRACTS
UNLESS THE AGREEMENT CONTAINS A MORE SPECIFIC DESCRIPTION OF THE WORK OF EACH CONTRACT, THE GENERAL CONDITIONS ON DRAWINGS AND IN SPECIFICATION SECTIONS DETERMINE WHICH CONTRACT INCLUDES A SPECIFIC ELEMENT OF PROJECT.

3. SCOPE OF WORK RESPONSIBILITY
A. GENERAL CONSTRUCTION CONTRACT
WORK OF THE GENERAL CONSTRUCTION CONTRACT INCLUDES, BUT IS NOT LIMITED TO, THE REMAINING WORK NOT IDENTIFIED AS WORK UNDER OTHER CONTRACTS.

B. PLUMBING CONTRACT
WORK OF THE PLUMBING CONTRACT INCLUDES, BUT IS NOT LIMITED TO, PLUMBING FIXURES AND APPLIANCES (INCLUDING BUT NOT LIMITED TO SINKS, TUBS, SHOWER ENCLOSURES, SINK ASSEMBLIES, FAUCETS AND DRAIN ASSEMBLIES, ETC), PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT. PLUMBING CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT.

C. MECHANICAL CONTRACT
WORK OF THE MECHANICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ALL MECHANICAL EQUIPMENT AND CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND ELECTRICAL. CONTRACT MECHANICAL EQUIPMENT INCLUDES BUT IS NOT LIMITED TO FURNACES AND CONDENSERS, KITCHEN AND BATH EXHAUST FANS, THERMOSTATS AND CONTROLS, ETC.

D. ELECTRICAL CONTRACT
WORK OF THE ELECTRICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ELECTRICAL EQUIPMENT AND FIXTURES INCLUDING BUT NOT LIMITED TO, (INTERIOR AND EXTERIOR LIGHT FIXTURES, SMOKE AND CO DETECTORS, COMPLETE CIRCUIT BREAKER PANELS INCLUDING ALL BREAKERS AND LABELING, ELECTRICAL SERVICE ENTRANCE), WIRING, AND ELECTRICAL AND LOW VOLTAGE CONNECTIONS TO EQUIPMENT FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT. ELECTRICAL CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT

PRE-CONSTRUCTION CONFERENCE AND NOTICE TO PROCEED
WITHIN TEN CALENDAR DAYS OF CONTRACT EXECUTION, AND PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH THE PROJECT ARCHITECT OF PHA, ITS ARCHITECT, AND OTHER INTERESTED PARTIES CONVENED BY THE PHA. THE CONFERENCE WILL SERVE TO ACQUAINT THE CONTRACTOR WITH THE GENERAL PLAN OF THE CONSTRUCTION OPERATION AND ALL OTHER REQUIREMENTS OF THE CONTRACT. THE PHA WILL PROVIDE THE CONTRACTOR WITH THE DATE, TIME, AND PLACE OF THE CONFERENCE.
(B) THE CONTRACTOR SHALL BEGIN WORK UPON RECEIPT OF A WRITTEN NOTICE TO PROCEED FROM THE CONTRACTING OFFICER OR DESIGNEE. THE CONTRACTOR SHALL NOT BEGIN WORK PRIOR TO RECEIVING SUCH NOTICE.

CONSTRUCTION PROGRESS
(A) THE CONTRACTOR SHALL, WITHIN FIVE DAYS AFTER THE WORK COMMENCES ON THE CONTRACT OR ANOTHER PERIOD OF TIME DETERMINED BY THE CONTRACTING OFFICER, PREPARE AND SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL THREE COPIES OF A PRACTICABLE SCHEDULE SHOWING THE ORDER IN WHICH THE CONTRACTOR PROPOSES TO PERFORM THE WORK, AND THE DATES ON WHICH THE CONTRACTOR CONTEMPLATES STARTING AND COMPLETING THE SEVERAL SALIENT FEATURES OF THE WORK (INCLUDING PROCURING LABOR, MATERIALS, AND EQUIPMENT). THE SCHEDULE SHALL BE IN THE FORM OF A PROGRESS CHART OF SUITABLE SCALE TO INDICATE APPROPRIATELY THE PERCENTAGE OF WORK SCHEDULED FOR COMPLETION BY ANY GIVEN DATE DURING THE PERIOD. IF THE CONTRACTOR FAILS TO SUBMIT A SCHEDULE WITHIN THE TIME PRESCRIBED, THE CONTRACTING OFFICER MAY WITHHOLD APPROVAL OF PROGRESS PAYMENTS OR TAKE OTHER REMEDIES UNDER THE CONTRACT UNTIL THE CONTRACTOR SUBMITS THE REQUIRED SCHEDULE.
(B). THE CONTRACTOR SHALL ENTER THE ACTUAL PROGRESS ON THE CHART AS REQUIRED BY THE CONTRACTING OFFICER, AND IMMEDIATELY DELIVER THREE COPIES OF THE ANNOTATED SCHEDULE TO THE CONTRACTING OFFICER. IF THE CONTRACTOR FALLS BEHIND SCHEDULE, UPON THE BASIS OF INSPECTION CONDUCTED PURSUANT TO THE CLAUSE ENTITLED INSPECTION AND ACCEPTANCE OF CONSTRUCTION, HEREIN THAT THE CONTRACTOR IS NOT MEETING THE APPROVED SCHEDULE, THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO IMPROVE ITS PROGRESS, INCLUDING THOSE THAT MAY BE REQUESTED BY THE CONTRACTING OFFICER, WITHOUT ADDITIONAL COST TO THE PHA. IN THIS CIRCUMSTANCE THE CONTRACTING OFFICER MAY REQUIRE THE CONTRACTOR TO INCREASE THE NUMBER OF SHIFTS, OVERTIME OPERATIONS, DAYS OF WORK, AND/OR THE AMOUNT OF CONSTRUCTION PLANT, AND TO SUBMIT FOR APPROVAL ANY SUPPLEMENTARY SCHEDULE OR SCHEDULES IN CHART FORM AS THE CONTRACTING OFFICER DEEMS NECESSARY TO DEMONSTRATE HOW THE APPROVED RATE OF PROGRESS WILL BE REGAINED.
(C) FAILURE OF THE CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACTING OFFICER UNDER THIS CLAUSE SHALL BE GROUNDS FOR A DETERMINATION BY THE CONTRACTING OFFICER THAT THE CONTRACTOR IS NOT PROSECUTING THE WORK WITH SUFFICIENT DILIGENCE TO ENSURE COMPLETION WITHIN THE TIME SPECIFIED IN THE CONTRACT. UPON MAKING THIS DETERMINATION, THE CONTRACTING OFFICER MAY TERMINATE THE CONTRACTOR'S RIGHT TO PROCEED WITH THE WORK, OR ANY SEPARABLE PART OF IT, IN ACCORDANCE WITH THE DEFAULT CLAUSE OF THIS CONTRACT.

SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK
(A) THE CONTRACTOR ACKNOWLEDGES THAT IT HAS TAKEN STEPS REASONABLY NECESSARY TO ASCERTAIN THE NATURE AND LOCATION OF THE WORK, AND THAT IT HAS INVESTIGATED AND SATISFIED ITSELF AS TO THE GENERAL AND LOCAL CONDITIONS WHICH CAN AFFECT THE WORK OR ITS COST, INCLUDING BUT NOT LIMITED TO, (1) CONDITIONS BEARING UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS; (2) THE AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, AND ROADS; (3) UNCERTAINTIES OF WEATHER, RIVER STAGES, TIDES, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE; (4) THE CONFORMATION AND CONDITIONS OF THE GROUND; AND (5) THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING WORK PERFORMANCE. THE CONTRACTOR ALSO ACKNOWLEDGES THAT IT HAS SATISFIED ITSELF AS TO THE CHARACTER, QUALITY, AND QUANTITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED IN SO FAR AS THIS INFORMATION IS REASONABLY ASCERTAINABLE FROM AN INSPECTION OF THE SITE, INCLUDING ALL EXPLORATORY WORK DONE BY THE PHA, AS WELL AS FROM THE DRAWINGS AND SPECIFICATIONS MADE A PART OF THIS CONTRACT. ANY FAILURE OF THE CONTRACTOR TO TAKE THE ACTIONS DESCRIBED AND ACKNOWLEDGED IN THIS PARAGRAPH WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK, OR FOR PROCEEDING TO SUCCESSFULLY PERFORM THE WORK WITHOUT ADDITIONAL EXPENSE TO THE PHA.
(B) THE PHA ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR BASED ON THE INFORMATION MADE AVAILABLE BY THE PHA. NOR DOES THE PHA ASSUME RESPONSIBILITY FOR ANY UNDERSTANDING REACHED OR REPRESENTATION MADE CONCERNING CONDITIONS WHICH CAN AFFECT THE WORK BY ANY OF ITS OFFICERS OR AGENTS BEFORE THE EXECUTION OF THIS CONTRACT, UNLESS THAT UNDERSTANDING OR REPRESENTATION IS EXPRESSLY STATED IN THIS CONTRACT.

DIFFERING SITE CONDITIONS
(1) THE CONTRACTOR SHALL PROMPTLY, AND BEFORE THE CONDITIONS ARE DISTURBED, GIVE A WRITTEN NOTICE TO THE CONTRACTING OFFICER OF (1) SUBSURFACE OR UNKNOWN PHYSICAL CONDITIONS AT THE SITE WHICH DIFFER MATERIALLY FROM THOSE INDICATED IN THIS CONTRACT, OR (2)UNKNOWN PHYSICAL CONDITIONS AT THE SITE OF AN UNUSUAL NATURE, WHICH DIFFER MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERING IN WORK OF THE CHARACTER PROVIDED FOR IN THIS CONTRACT.
(B)THE CONTRACTING OFFICER SHALL INVESTIGATE THE SITE CONDITIONS PROMPTLY AFTER RECEIVING THE NOTICE. WORK SHALL NOT PROCEED AT THE AFFECTED SITE, EXCEPT AT THE CONTRACTOR'S RISK, UNTIL THE CONTRACTING OFFICER HAS PROVIDED WRITTEN INSTRUCTIONS TO THE CONTRACTOR. IF THE CONDITIONS DO MATERIALLY SO DIFFER AND CAUSE AN INCREASE OR DECREASE IN THE CONTRACTOR'S COST OF, OR THE TIME REQUIRED FOR, PERFORMING ANY PART OF THE WORK UNDER THIS CONTRACT, WHETHER OR NOT CHANGED AS A RESULT OF THE CONDITIONS, THE CONTRACTOR MAY FILE A CLAIM IN WRITING TO THE PHA WITHIN TEN DAYS AFTER RECEIPT OF SUCH INSTRUCTIONS AND, IN ANY EVENT, BEFORE PROCEEDING WITH THE WORK. (NEGOTIATE ADJUSTMENTS THE CONTRACT PRICE, THE DELIVERY SCHEDULE, OR BOTH. SHALL BE MADE UNDER THIS CLAUSE AND THE CONTRACT MODIFIED IN WRITING ACCORDINGLY.
(C)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED, UNLESS THE CONTRACTOR HAS GIVEN THE WRITTEN NOTICE REQUIRED; PROVIDED, THAT THE TIME PRESCRIBED IN (A) ABOVE FORGIVING WRITTEN NOTICE MAY BE EXTENDED AND THE REMAINING WORK NOT IDENTIFIED AS WORK UNDER OTHER CONTRACTS.
(D)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED IF MADE AFTER FINAL PAYMENT UNDER THIS CONTRACT.

SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION
(A) THE CONTRACTOR SHALL KEEP ON THE WORK SITE A COPY OF THE DRAWINGS AND SPECIFICATIONS AND SHALL AT ALL TIMES GIVE THE CONTRACTING OFFICER ACCESS THERETO. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH. IN CASE OF DIFFERENCE BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. IN CASE OF DISCREPANCY IN THE FIGURES, IN THE DRAWINGS OR SPECIFICATIONS, THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE CONTRACTING OFFICER, WHO SHALL PROMPTLY MAKE A DETERMINATION IN WRITING. ANY ADJUSTMENTBY THE CONTRACTOR WITHOUT SUCH A DETERMINATION SHALL BE AT1TS OWN RISK AND EXPENSE. THE CONTRACTING OFFICER SHALL FURNISH FROM TIME TO TIME SUCH DETAILED DRAWINGS AND OTHER INFORMATION AS CONSIDERED NECESSARY, UNLESS OTHERWISE PROVIDED.
(B)WHEREVER IN THE SPECIFICATIONS OR UPON THE DRAWINGS THE WORDS "DIRECTED", "REQUIRED", "ORDERED", "DESIGNATED", "PRESCRIBED", OR WORDS OF LIKE IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE"DIRECTION", "REQUIREMENT", "ORDER", DESIGNATION, OR "PRESCRIPTION", OF THE CONTRACTING OFFICER IS INTENDED AND SIMILARLY THE WORDS "APPROVED", "ACCEPTABLE", "SATISFACTORY", OR WORDS OF LIKE IMPORT SHALL MEAN "APPROVED BY", OR "ACCEPTABLE TO", OR "SATISFACTORY TO" THE CONTRACTING OFFICER, UNLESS OTHERWISE EXPRESSLY STATED.
(C)WHERE "SHOW", "SHOW ON DRAWINGS", "AS DETAILED", OR WORDS OF SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE REFERENCE IS MADE TO THE DRAWINGS ACCOMPANYING THIS CONTRACT UNLESS STATED OTHERWISE. THE WORD "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE" THAT IS "PROVIDED AND INSTALLED".
(D)"SHOP DRAWINGS" MEANS DRAWINGS, SUBMITTED TO THE PHA BY THE CONTRACTOR, SUBCONTRACTOR, OR ANY LOWER TIER SUBCONTRACTOR, SHOWING IN DETAIL (1) THE PROPOSED FABRICATION AND ASSEMBLY OF STRUCTURAL ELEMENTS AND (2) THE INSTALLATION(I.E., FORM, FIT, AND ATTACHMENT DETAILS) OF MATERIALS OF EQUIPMENT. IT INCLUDES DRAWINGS, DIAGRAMS, LAYOUTS, SCHEDULES, DESIGNS OF THE PHYSICAL PROPERTIES, PATTERNS, SCHEDULES, PERFORMANCE AND TEST DATA, AND SIMILAR MATERIALS FURNISHED BY THE CONTRACTOR TO EXPLAIN THE DETAILED SPECIFIC PORTIONS OF THE WORK REQUIRED BY THE CONTRACT. THE PHA MAY REQUIRE A REASONABLE NUMBER OF PRINTED COPIES FOR ANY PURPOSE. SHOP DRAWINGS S DELIVERED UNDER THIS CONTRACT.
(E)IF THIS CONTRACT REQUIRES SHOP DRAWINGS, THE CONTRACTOR SHALL COORDINATE ALL DRAWINGS, AND REVIEW THEM FOR ACCURACY, COMPLETENESS, AND COMPLIANCE WITH OTHER CONTRACT REQUIREMENTS AND SHALL INDICATE ITS APPROVAL THEREON AS EVIDENCE OF SUCH COORDINATION AND REVIEW. SHOP DRAWINGS SUBMITTED TO THE CONTRACTING OFFICER WITHOUT EVIDENCE OF THIS COORDINATION AND REVIEW MAY BE RETURNED FOR REVISION. THE CONTRACTING OFFICER WILL INDICATE AN APPROVAL OR DISAPPROVAL OF THE SHOP DRAWINGS, AND IF NOT APPROVED, THE REASONS THEREFOR. SHALL INDICATE THE PHA'S REASONS THEREFORE. ANY WORK DONE BEFORE SUCH APPROVAL SHALL BE AT THE CONTRACTOR'S RISK. APPROVAL BY THE CONTRACTING OFFICER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS IN SUCH DRAWINGS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM THE REQUIREMENTS OF THIS CONTRACT, EXCEPT WITH RESPECT TO VARIATIONS DESIGNATED AND INDICATED IN WRITING BY THE CONTRACTOR (F)BELOW.
(F) IF SHOP DRAWINGS SHOW VARIATIONS FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL DESCRIBE SUCH VARIATIONS IN WRITING, SEPARATE FROM THE DRAWINGS, AT THE TIME OF SUBMISSION. IF THE ARCHITECT OF ENGINEER FINDS THAT THE PROPOSED AND THE CONTRACTING OFFICER CONCURS, THE CONTRACTING OFFICER SHALL INDICATE AN APPROVAL THEREOF IN CONNECTION TO THE SHOP DRAWINGS, EXCEPT THAT,IF THE VARIATION IS MINOR OR DOES NOT INVOLVE A CHANGE IN PRICE OR IN TIME OF PERFORMANCE, A MODIFICATION NEED NOT BE ISSUED. (G)IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE TIMELY REQUESTS OF THE PHA FOR SUCH LARGE SCALE AND FULL SIZE DRAWINGS, SAMPLES, AND REPORTS AS MAY BE DEEMED ADDITIONAL INFORMATION NOT ALREADY IN HIS POSSESSION, WHICH SHALL BE REQUIRED BY THE CONTRACTOR IN ORDER TO PROCEED. SUCH REQUESTS MAY BE SUBMITTED AS THE NEED ARISES, BUT EACH SUCH REQUEST SHALL BE FILED IN AMPLE TIME TO PERMIT APPROPRIATE ACTION TO BE TAKEN WITHOUT DELAYING THE WORK OR DELAYING THE CONTRACTING OFFICER. SHALL SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL FOLLOWING SUCH REQUEST, SUFFICIENT COPIES OF ALL SHOP DRAWINGS AS CALLED FOR UNDER THE VARIOUS HEADINGS OF THESE SPECIFICATIONS. THREE SETS (UNLESS OTHERWISE INDICATED) OF ALL SHOP DRAWINGS, WILL BE RETAINED BY THE PHA AND ONE SET WILL BE RETURNED TO THE CONTRACTOR. AS REQUIRED BY THE CONTRACTING OFFICER, FROM TIME TO TIME SUBMIT TO THE CONTRACTING OFFICER FOR CONTRACT, SHALL FURNISH A COMPLETE SET OF ALL SHOP DRAWINGS AS FINALLY APPROVED. THESE DRAWINGS WILL SHOW ALL CHANGES AND REVISION SMADE UP TO THE TIME THE WORK IS COMPLETED AND ACCEPTED.
(H)THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL SUBCONTRACTORS AND SUPPLIERS BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

AS-BUILT DRAWINGS
(A)"AS-BUILT DRAWINGS," AS USED IN THIS CLAUSE, MEANS DRAWINGS SUBMITTED BY THE CONTRACTOR AND ENCLOSURES NECESSARY TO SHOW THE CONSTRUCTION OF A PARTICULAR STRUCTURE OR WORK AS ACTUALLY CONSTRUCTED UNDER THE CONTRACT. "AS-BUILT DRAWINGS" SHALL BE SYNONYMOUS WITH "RECORD DRAWINGS."
(B)AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER ACCURATE INFORMATIONTO BE USED IN THE PREPARATION OF PERMANENT AS-BUILT DRAWINGS. THE CONTRACTOR SHALL MAKE THE CONTRACTOR SHALL RECORD ON ONE SET OF CONTRACT DRAWINGS ALL CHANGES FROM THE INSTALLATIONS ORIGINALLY INDICATED AND RECORD FINAL LOCATIONSOF UNDERGROUND LINES BY DEPTH FROM FINISH GRADE AND BY ACCURATE HORIZONTAL OFFSET DISTANCES TO PERMANENT SURFACE IMPROVEMENTS SUCH AS BUILDINGS, CURBS, OR EDGES OF WALKS.
(C)THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL AS-BUILT DRAWINGS PROVIDED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

MATERIAL AND WORKMANSHIP
(A)ALL EQUIPMENT, MATERIAL, AND ARTICLES FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED. UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT. REFERENCES IN THE CONTRACT TO EQUIPMENT, MATERIAL, ARTICLES, OR PATENTED PROCESSES BY TRADE NAME, MAKE, OR CATALOG NUMBER, SHALL BE REGARDED AS ESTABLISHING A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. THE CONTRACTOR MAY, AT ITS OPTION, USE ANY EQUIPMENT, MATERIAL, ARTICLE, OR PROCESS THAT, IN THE JUDGMENT OF, AND AS APPROVED BY THE CONTRACTING OFFICER, IS EQUAL TO THAT NAMED IN THE SPECIFICATIONS, UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT.
(B)APPROVAL OF EQUIPMENT AND MATERIALS.
(1) THE CONTRACTOR SHALL OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT TO BE INCORPORATED INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL GIVE THE CONTRACTING OFFICER THE NAME OF THE MANUFACTURER, THE MODEL NUMBER, AND OTHER INFORMATION CONCERNING THE PERFORMANCE, CAPACITY, NATURE, AND RATING OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT WHEN REQUIRED BY THIS CONTRACT OR BY THE CONTRACTINGOFFICER. THE CONTRACTOR SHALL ALSO OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MATERIAL ORARTICLES WHICH THE CONTRACTOR PROPOSES TO INCORPORATE INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL PROVIDE FULL INFORMATION CONCERNING THE MATERIAL OR ARTICLES. MACHINERY,
EQUIPMENT, MATERIAL, AND ARTICLES THAT DO NOT HAVE THE REQUIRED APPROVAL SHALL BE INSTALLED OR USED AT THE RISK OF SUBSEQUENT REJECTION.
(2) WHEN REQUIRED BY THE SPECIFICATIONS OR THE CONTRACTING OFFICER, THE CONTRACTOR SHALL SUBMIT APPROPRIATELY MARKED SAMPLES (AND CERTIFICATES RELATED TO THEM) FOR APPROVAL AT THE CONTRACTOR'S
EXPENSE, WITH ALL SHIPPING CHARGES PREPAID. THE CONTRACTOR SHALL LABEL, OR OTHERWISE SUPPLY THE CONTRACTING OFFICER WITH MATERIAL OR PRODUCT REPRESENTED, ITS PLACE OF ORIGIN, THE NAME OF THE PRODUCER, THE CONTRACTOR'S NAME, AND THE INTENDED LOCATION OF THE CONSTRUCTION PROJECT FOR WHICH THE MATERIAL OR PRODUCTS INTENDED TO BE USED.
(3)CERTIFICATES SHALL BE SUBMITTED IN TRIPLICATE, DESCRIBING EACH SAMPLE SUBMITTED FOR APPROVAL, AND CERTIFYING THAT THE MATERIAL, EQUIPMENT, AND OTHER ITEMS CONFORM TO CONTRACT REQUIREMENTS. THE CERTIFICATES SHALL INCLUDE THE NAME AND BRAND OF THE PRODUCT, NAME OF MANUFACTURER, AND THE LOCATION WHERE PRODUCED.
(4) APPROVAL OF A SAMPLE SHALL NOT CONSTITUTE A WAIVER OF THE PHA RIGHT TO DEMAND FULL COMPLIANCE WITH CONTRACT REQUIREMENTS. MATERIALS, EQUIPMENT AND ACCESSORIES MAY BE REJECTED FOR CAUSE EVEN THOUGH SAMPLES HAVE BEEN APPROVED.
(5) WHEREVER MATERIALS ARE REQUIRED TO COMPLY WITH RECOGNIZED STANDARDS OR SPECIFICATIONS, SUCH SPECIFICATIONS SHALL BE ACCEPTED AS ESTABLISHING THE TECHNICAL QUALITIES AND TESTING METHODS, BUT SHALL NOT GOVERN THE NUMBER OF TESTS REQUIRED TO BE MADE. UNLESS OTHERWISE SPECIFIED IN THE SPECIFICATIONS, THE CONTRACTING OFFICER MAY REQUIRE LABORATORY TEST REPORTS ON ITEMS SUBMITTED FOR APPROVAL OR ANY APPROVED ITEM, WHICH ON THE BASIS OF DATA SUBMITTED IN CERTIFICATES WITH SAMPLES. CHECK TESTS WILL BE MADE ON MATERIALS
DELIVERED TO THE WORK SITE. IF REQUIRED BY THE CONTRACTING OFFICER DETERMINES NECESSARY TO INSURE COMPLIANCE OF MATERIALS WITH THE SPECIFICATIONS, THE CONTRACTOR WILL ASSUME ALL COSTS OF RETESTING MATERIALS WHICH FAIL TO MEET CONTRACT REQUIREMENTS AND RETESTING MATERIAL SOFFERED IN SUBSTITUTION FOR THOSE FOUND DEFICIENT.
(6) AFTER APPROVAL, SAMPLES WILL BE KEPT IN THE PROJECT OFFICE, UNTIL COMPLETION OF WORK. THE CONTRACTOR SHALL REMOVE ALL SAMPLES FROM THE PREMISES. ALL SAMPLES
(7) REQUIREMENTS CONCERNING LEAD-BASED PAINT. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS CONCERNING LEAD-BASED PAINT CONTAINED IN THE LEAD-BASED PAINT POISONING PREVENTION ACT (42 U.S.C. 4821-4846) AS IMPLEMENTED BY 24 CFR PART 35.

PERMITS AND CODES
(A)THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALLAPPLICABLE LAWS, ORDINANCES, CODES, RULES AND REGULATIONS. NOTWITHSTANDING THE REQUIREMENTS OF THE CONTRACTOR TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS IN THE CONTRACT, ALL WORK INSTALLED SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. BEFORE BEGINNING ANY WORK, THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND THE SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS BEARING ON THE WORK AND SHALL IMMEDIATELY REPORT ANY DISCREPANCY IT MAY DISCOVER TO THE CONTRACTING OFFICER.
WHERE THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS FAIL TO COMPLY WITH THE APPLICABLE CODE OR REGULATION, THE CONTRACTING OFFICER SHALL MODIFY THE CONTRACT TO CHANGE ORDER PURSUANT TO THE CLAUSE ENTITLED CHANGES HEREIN TO CONFORM TO THE CODE OR REGULATION.
(B) THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES,AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK, WHICH THE PHA CAN OBTAIN WITHOUT THE ISSUANCE OF ALL OR PART OF THESE PERMITS, FEES AND LICENSES WITHOUT COST TO THE CONTRACTOR, THE CONTRACT AMOUNT SHALL BE REDUCED ACCORDINGLY.

HEALTH, SAFETY AND ACCIDENT PREVENTION
(A) IN PERFORMING THIS CONTRACT, THE CONTRACTOR SHALL:
(1)ENSURE THAT NO LABORER OR MECHANIC SHALL BE REQUIRED TO WORK IN SURROUNDINGS OR UNDER WORKING CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO HIS/HER HEALTH AND/OR SAFETY AS DETERMINED UNDER CONSTRUCTION SAFETY AND HEALTHSTANDARDS PROMULGATED BY THE SECRETARY OF LABOR BY REGULATIONS.(2)PROTECT THE LIVES, HEALTH, AND SAFETY OF THEIR PERSONS; (3)PREVENT DAMAGE TO PROPERTY, MATERIALS, SUPPLIES, AND EQUIPMENT; AND, (4)AVOID WORKING IN ADVERSE
(B) FOR THESE PURPOSES, THE CONTRACTOR SHALL: (1)COMPLY WITH REGULATIONS AND STANDARDS ISSUED BY THE SECRETARY OF LABOR AT 29 CFR PART 1926 PURSUANT TO COMPLY WITH THE IMPOSITION OF SANCTIONS PURSUANT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. 327 ETSEQ. AND 18 U.S.C. 1001 ETSEQ., AND (2)INCLUDE THE TERMS OF THIS CLAUSE IN EVERY SUBCONTRACT SO THAT SUCH TERMS WILL BE BINDING ON EACH SUBCONTRACTOR.
(C) THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF EXPOSURE DATA ON ALL ACCIDENTS INCIDENT TO WORK PERFORMED UNDER THIS CONTRACT AND RESULTING IN DEATH, TRAUMATIC INJURY,OCCUPATIONAL DISEASE, OR DAMAGE TO PROPERTY, MATERIALS,SUPPLIES, OR EQUIPMENT, AND SHALL REPORT THIS DATA IN THE MANNER PRESCRIBED BY 29 CFR PART1904.
(D)THE CONTRACTOR FURTHER AGREES THAT THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THESE REQUIREMENTS AND OF THE CORRECTIVE ACTION REQUIRED. THIS NOTICE, WHEN DELIVERED TO THE CONTRACTOR OR THE CONTRACTOR'S REPRESENTATIVE AT THE SITE OF THE WORK, SHALL BE DEEMED SUFFICIENT NOTICE OF THE NON COMPLIANCE AND CORRECTIVE ACTION REQUIRED. AFTER RECEIVING SUCH NOTICE, THE CONTRACTOR SHALL IMMEDIATELY TAKE CORRECTIVE ACTION. IF THE CONTRACTOR FAILS OR REFUSES TO TAKE CORRECTIVE ACTION PROMPTLY, THE CONTRACTING OFFICER MAY ISSUE AN ORDER STOPPING ALL OR PART OF THE WORK UNTIL SATISFACTORY CORRECTIVE ACTION HAS BEEN TAKEN. THE CONTRACTOR SHALL NOT BASE ANY CLAIM ON REQUEST FOR EQUITABLE ADJUSTMENT FOR ADDITIONAL TIME OR MONEY ON ANY STOP ORDER ISSUED UNDER THESE CIRCUMSTANCES.
(E) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS SUBCONTRACTOR'S COMPLIANCE WITH THE PROVISIONS OF THIS CLAUSE. THE CONTRACTOR SHALL NOT GRANT EXTENSIONS OF TIME TO ANY SUBCONTRACT AS THE PHA, THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, OR THE SECRETARY OF LABOR SHALL DIRECT AS A MEANS OF ENFORCING SUCH PROVISIONS.

TEMPORARY HEATING
THE MECHANICAL CONTRACTOR SHALL PROVIDE AND PAY FOR TEMPORARY HEATING, COVERING, AND ENCLOSURES NECESSARY TO PROPERLY PROTECT ALL WORK AND MATERIALS AGAINST DAMAGE BY DAMPNESS AND COLD, TO DRY OUT THE WORK, AND TO FACILITATE THE COMPLETION OF THE WORK. ANY PERMANENT HEATING EQUIPMENT USED SHALL BE TURNED OVER TO THE PHA IN THE CONDITION AND AT THE TIME REQUIRED BY THE SPECIFICATIONS.

AVAIL

PERFORMED OR COMPLETED SHALL BE SUBMITTED BY EACH PRIME CONTRACTOR. ALL WORK OUTLINED ON THE INITIAL PUNCH LIST SHALL BE COMPLETED BY THE CONTRACTOR PRIOR TO THE FINAL INSPECTION AND BEFORE THE PROJECT WILL BE ACCEPTED FOR FINAL COMPLETION. AFTER ALL REQUIREMENTS PREPARATORY TO THE FINAL INSPECTION HAVE BEEN COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER TO PERFORM A FINAL INSPECTION. IF ALL THE WORK HAS BEEN COMPLETED, INCLUDING PUNCH LIST ITEMS FROM EARLIER INSPECTIONS, AND NO FURTHER CORRECTIONS ARE REQUIRED, THE ARCHITECT SHALL RECOMMEND FINAL ACCEPTANCE OF THE PROJECT WHEN ALL THE CLOSEOUT DOCUMENTS ARE RECEIVED, INCLUDING BUT NOT LIMITED TO WARRANTIES, O&M MANUALS, FINAL TESTING, CERTIFICATES, PERMITS, PUNCH LIST, SUBMITTALS, RFIS, AS BUILD DRAWINGS AND ANY ADDITIONAL DOCUMENTATION REQUIRED BY HACP FOR CLOSEOUT.

ALL PUNCH LIST ITEMS TO BE COMPLETED WITHIN THIRTY (30) WORKING DAYS OF RECEIPT, OR FINAL 10% DRAW WILL BE FORFEITED. ALL WORK NOT COMPLETED WITHIN THE ALLOTTED TIME WILL BE COMPLETED BY HACP AT PRIME CONTRACTOR'S EXPENSE. FINAL COMPLETION OCCURS WHEN ALL PUNCH LIST ITEMS HAVE BEEN COMPLETED AND OCCUPANCY PERMIT HAS BEEN ISSUED.

PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL EQUIPMENT FURNISHED, INSTALLED OR SERVICED UNDER THIS AND THEIR CONTRACTS. EACH PRIME CONTRACTOR SHALL VERIFY THAT ITS EQUIPMENT, ELECTRICAL SYSTEMS AND APPLIANCES ARE FULLY OPERATIONAL AND THAT ALL PLUMBING AND MECHANICAL EQUIPMENT IS OPERATING QUIETLY AND FREE FROM VIBRATION. CONTRACTOR SHALL PROVIDE A BINDER FOR HACP AND TENANT CONTAINING MAINTENANCE MANUALS, INCLUDING OPERATION INSTRUCTIONS, SPARE PARTS, WARRANTIES, INSPECTION PROCEDURES, AND DATA FOR EACH SYSTEM OR EQUIPMENT ITEM.

ALL ELECTRICAL PANELS AND BREAKERS TO BE PROPERLY MARKED AND A TYPED SCHEDULE TO BE FURNISHED.

FINAL CLEANING: AT THE TIME OF THE PROJECT CLOSE OUT, THE GENERAL CONTRACTOR SHALL PROVIDE AND THOROUGHLY CLEAN AND READY THE SPACE FOR OCCUPANCY. THIS SHALL, AT MINIMUM, INCLUDE HARDWARE, SECURITY EQUIPMENT, LIGHT FIXTURES, REPLACEMENT OF BURNED OUT LAMPS, REMOVAL OF NON PERMANENT PROTECTION AND LABELS, TOUCH UP OF ANY MINOR FINISH DAMAGE, AND CLEANING OR REPLACEMENT OF MECHANICAL SYSTEM FILTERS. DAMAGE TO ANY FINISH, SURFACE, EQUIPMENT OR OBJECT CAUSED DURING CLEANING SHALL BE REPAIRED OR REPLACED BY THE GENERAL CONTRACTOR AT HIS/HER OWN COST.

UPON COMPLETION OF THE PROJECT, GENERAL CONTRACTOR SHALL OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT AND PROVIDE A COPY OF THE ORIGINAL TO HACP AND ARCHITECT IF REQUIRED.

AT EACH PAYMENT REQUEST AND BEFORE PAYMENT IS MADE, EACH CONTRACTOR SHALL DELIVER TO THE HACP A COMPLETE RELEASE OF ALL SUB CONTRACTOR'S AND SUPPLIER'S LIENS AND CLAIMS OUT OF THIS CONTRACT, OR RECEIPTS IN FULL COVERING ALL LABOR AND MATERIALS FOR WHICH A LIEN COULD BE FILED OR A BOND SATISFACTORY TO THE HACP INDEMNIFYING HACP AGAINST ANY LIENS.

DIVISION 2 – SITE WORK – NOT APPLICABLE

DIVISION 3 – CONCRETE

PLAN AND REINFORCE CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 19 OF THE IBC 2018 AND ACI 318 AS AMMENDED IN SECTION 1905 OF THE IBC 2018.

CONCRETE TO BE INSTALLED AND CURED PER ACI 318 AND BE NORMAL WEIGHT (144PCF) WITH COMPRESSIVE STRENGTH IN 28 DAYS OF 4000 PSI, AIR ENTRAINED. CEMENT SHALL BE PORTLAND, TYPE I(PLY ASH & GROUND GRANULATED BLAST FURNACE SLAG NOT PERMITTED). COARSE AGGREGATE SHALL BE ¾" MAXIMUM AIR ENTRAINED SHALL BE 7 PERCENT. SLUMP SHALL BE 4" MAXIMUM

REINFORCING BARS SHALL COMPLY WITH A.S.T.M. A615–GRADE 60. WELDED WIRE FABRIC SHALL COMPLY WITH A.S.T.M. A185.

4" MINIMUM COMPACTED GRAVEL BED TO PLACE CONCRETE TO BE #57 HAND OR MACHINE COMPACTED BEFORE CONCRETE PLACEMENT.

PROVIDE COLD-APPLIED JOINT SEALANTS, SINGLE COMPONENT, SILICONE, SELF LEVELING TYPE, BY SIKA OR EQUAL.

ROUND BACKER RODS FOR COLD-APPLIED JOINT SEALANTS: ASTM D5249, TYPE 3, OF DIAMETER AND DENSITY REQUIRED TO CONTROL JOINT-SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT. BY SIKA OR EQUAL.

DIVISION 4 – MASONRY

BRICK MASONRY REPOINTING

BRICK MASONRY REPOINTING SPECIALIST QUALIFICATIONS: ENGAGE AN EXPERIENCED BRICK MASONRY REPOINTING FIRM TO PERFORM WORK OF THIS SECTION. FIRM SHALL HAVE COMPLETED WORK SIMILAR IN MATERIAL DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. EXPERIENCE IN ONLY INSTALLING MASONRY IS INSUFFICIENT EXPERIENCE FOR MASONRY REPOINTING WORK.

REPOINTING OF AREAS INDICATED IN THE DRAWINGS AND LOCATIONS WITH THE FOLLOWING DEFECTS:
A. HOLES AND MISSING MORTAR.
B. CRACKS THAT CAN BE PENETRATED 1/4 INCH OR MORE BY A KNIFE BLADE 0.027 INCH THICK.
C.CRACKS 16 INCH OR MORE IN WIDTH AND OF ANY DEPTH.
D.HOLLOW-SOUNDING JOINTS WHEN TAPPED BY METAL OBJECT.
E. ERODED SURFACES 1/4 INCH OR MORE DEEP.
F. DETERIORATION TO POINT THAT MORTAR CAN BE EASILY REMOVED BY HAND, WITHOUT TOOLS.
G. JOINTS FILLED WITH SUBSTANCES OTHER THAN MORTAR.

MATERIALS
PORTLAND CEMENT: ASTM C 150/C 150M, TYPE I OR TYPE II. EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION; GRAY, WHERE REQUIRED FOR COLOR MATCHING OF MORTAR.

MASONRY CEMENT: ASTM C 91/C 91M. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- CEMEX S.A.B. DE C.V.
- HOLCIM (US) INC.
- QUIKRETE; THE QUIKRETE COMPANIES, LLC.

REMOVE GUTTERS, DOWNSPOUTS AND ASSOCIATED HARDWARE ADJACENT TO MASONRY REPOINTING. REINSTALL WHEN REPOINTING IS COMPLETED.PROVIDE TEMPORARY RAIN DRAINAGE DURING WORK TO DIRECT WATER AWAY FROM THE BUILDING.

SEE LINTEL REPLACEMENT BELOW AND COORDINATE MASONRY REPOINTING AND REPLACEMENT WITH REMEDIAL LINTEL REPAIR OR REPLACEMENT.

RETAINING WALL
WHERE NOTED ON THE DRAWINGS, NEW DRYSTACK RETAINING WALL, BELGARD OR EQUAL, TO MATCH EXISTING COLOR AND TYPE OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. REMOVE SUFFICIENT SOIL TO ALLOW ACCESS TO INSTALL A NEW WALL. SET NEW WALL IN COMPACTED GRAVEL BED STRICTLY ACCORDING TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS. INSTALL NEW WALL WITH ALL NECESSARY PINS, GEOGRID AND CAP PIECES ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL ACCESSORIES
WALL CAPS, PINS AND GEOGRID FABRIC.
REPLACEMENT WALL CAPS TO MATCH EXISTING, MATERIAL CONCRETE BY BELGARD OR EQUAL. COLOR AND TYPE TO MATCH EXISTING OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

GLASS BLOCK
SOLID GLASS BLOCK COLORLESS, TRANSPARENT, SMOOTH FACES AND MANUFACTURER'S STANDARD EDGE COATING WHITE, BY SEVES, OWINGS CORNING GLASS BLOCK OR EQUAL. SILICONE SEALANT BY SIKA OR EQUAL. PRODUCT INFORMATION AND SAMPLE TO BE PROVIDED TO ARCHITECT AND HACP FOR APPROVAL. SIZE OF GLASS BLOCK TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD SIZES. GLASS BLOCK SHALL BE INSTALLED PER IBC AND IRC BUILDING CODE AND TMS 402/ACI 530/ASCE 5 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES"

DIVISION 5 – METALS

STEEL BEAMS, ANGLES AND PLATES
SHOP PRIMED WITH RUST PREVENTATIVE PAINT. DIMENSIONS AND GRADE TO MATCH EXISTING. SHOP DRAWINGS TO BE PROVIDED BY GC.

ALL EXTERIOR LINTELS MUST BE HOT-DIP GALVANIZED PER ASTM A123.

LINTEL REPLACEMENT/ INSTALLATION ON BRICK VENEER EXTERIOR WALLS
PROTECT EXISTING OPENING WITH PLYWOOD.TEMPORARILY SHORE AND REMOVE EXISTING BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL LINTEL. REPLACE WITH NEW LINTEL WITH PAINTED STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

FOR LINTEL CLEANING USE METAL CLEANING ON NEXT SECTION.

METAL CLEANING
EXECUTION OF THE WORK: IN CLEANING ITEMS, DISTURB THEM AS MINIMALLY AS POSSIBLE AND AS FOLLOWS:
A. REMOVE DETERIORATED COATINGS AND CORROSION.
B. SEQUENCE WORK TO MINIMIZE TIME BEFORE PROTECTIVE COATINGS ARE REAPPLIED.
C. CLEAN ITEMS IN PLACE UNLESS OTHERWISE INDICATED.

MECHANICAL COATING REMOVAL: USE GENTLE METHODS, SUCH AS SCRAPING AND WIRE BRUSHING, THAT WILL NOT ABRADE METAL SUBSTRATE.

REPAINT: WHERE INDICATED, PREPARE PAINTED DECORATIVE METAL BY CLEANING SURFACE, BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL LINTEL. REPLACE WITH NEW LINTEL WITH PAINTED STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURER'S FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS, MATTE FINISH.
B. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
C. PATTERNED PAPER FINISH.
D. PATTERNS, MATTE FINISH.

SYNTHETIC DECKING
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS; TIMBERTECH, AZEK OR COMPARABLE PRODUCT.
DECKING SIZE AND LENGTH TO MATCH EXISTING INSTALLATION. FINISH TEXTURE BRUSHED; COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. FASCIA BOARDS TO MATCH DECKING COLOR.
DECKING FASTENING SYSTEM AS RECOMMENDED BY MANUFACTURER'S INSTALLATION MANUAL. FOLLOW MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR CUTTING, TRIMMING AND INSTALLING DECKING.

RUBBER STAIR TREADS COVERS
BASIS OF DESIGN, BY ROPPE OR EQUAL, RIBBED PATTERN, BLACK FINISH. FOLLOW THE MANUFACTURER'S INSTRUCTION FOR INSTALLATION.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

ROOFING, SHEET METAL, FLASHING AND TRIM
GENERAL: CONTRACTOR TO EVALUATE STATUS OF ROOFING MATERIAL, COMMUNICATE THE HACP AND ARCHITECT OF FINDINGS AND IF PATCHING OR REPLACEMENT IS NEEDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INSTALL ASPHALT SHINGLES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN ARMA'S "ASPHALT ROOFING RESIDENTIAL MANUAL - DESIGN AND APPLICATION METHODS" AND NRCA'S "NR CA GUIDELINES FOR ASPHALT SHINGLE ROOF SYSTEMS".

ASPHALT SHINGLES: ASTM D3462/D3462M, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION; GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF-SEALING, BY GAF OR EQUAL, STRAIGHT CUT. FINISH COLOR TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

GC TO INSPECT FLASHING OF ROOF PENETRATIONS, PATCH AND REPLACE IF NEEDED TO COMPLY WITH CODE AND REGULATIONS.

SHEET METAL STANDARD FOR FLASHING AND TRIM: COMPLY WITH NRCA'S "THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION AND AIR LEAKAGE CONTROL, AND REROOFING" AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL". REQUIREMENTS FOR DIMENSIONS AND PROFILES SHOWN UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.

INSTALL SHEET METAL FLASHING AND TRIM TO COMPLY WITH DETAILS INDICATED AND RECOMMENDATIONS OF CITED SHEET METAL STANDARDS THAT APPLY TO INSTALLATION CHARACTERISTICS REQUIRED UNLESS OTHERWISE INDICATED ON DRAWINGS

THERMAL INSULATION
GC TO PROVIDE THERMAL INSULATION ON WALLS, CEILINGS AND FLOORS AS NOTED ON THE DRAWINGS.

INSULATION TO COMPLY WITH THE ENERGY CODE IN MINIMUM R VALUES OR AS SPECIFIED ON DRAWINGS.

GC TO BE RESPONSIBLE TO INSPECTING, ADJUSTING AND ADDING INSULATION TO THE ENTIRE ATTIC SPACE TO ENSURE THE MINIMUM INSULATION COVERAGE WITH NO GAPS. GC TO INFORM HACP AND ARCHITECT PRIOR TO ADD ADDITIONAL INSULATION.

ATTIC DOORS TO RECEIVED RIGID FOAM INSULATION GLUED TO BACK OF THE DOOR AND SEALED WITH RUBBER JOINTS. INSULATION TO MATCH R VALUE OF CEILING ASSEMBLY.

ASSEMBLIES, SEPARATIONS & FIRESTOPPING:

ANY NEW DEMISING OR INTERIOR PARTITIONS SHALL BE RATED AS REQUIRED BY CODE. ANY PENETRATION THROUGH AN EXISTING DIMENSIONED RATED ASSEMBLY OR ULRATED ASSEMBLY WALL MUST RETAIN THE UL ASSEMBLY FIRE-RATING.

ALL NEW WORK SHALL MATCH OR EQUAL THE UL FIRE RATINGS, IF ANY, OF THE SURROUNDING WORK. AS APPROPRIATE, THE CONTRACTOR SHALL CONTACT HACP AND ARCHITECT IF ANY AREAS ARE UNCOVERED OR DISCOVERED THAT MAY REQUIRE ADDITIONAL ANALYSIS OR CLARIFICATION.

THROUGH PENETRATIONS OF FIRE RESISTANCE WALLS SHALL BE INSTALLED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY AND UNDERWRITERS LABORATORIES. IF THE PENETRATING ITEMS ARE STEEL, FERROUS OR COPPER PIPES OR STEEL CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE FIRE-RESISTANCE-WALL SHALL BE PERMITTED TO BE PROTECTED AS FOLLOWS:

IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A MAXIMUM 6-INCH NOMINAL DIAMETER AND THE OPENING IS A MAXIMUM 144 SQUARE INCHES. CONCRETE, GROUT, OR MORTAR SHALL BE PERMITTED WHERE INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING.

THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHEN SUBJECTED TO ASTME 119 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE WALL ASSEMBLY.

MEMBRANE PENETRATIONS, WHERE WALL AND PARTITIONS ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:
FOR STEEL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. A HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY WHERE THE WALL CAVITY IS FILL WITH CELLULOSE LOOSE FILL, ROCKWOOL OR SLAG WOOL INSULATION PROVIDED THE WALL IS RATED (CONSISTING OF 2-INCH NOMINAL LUMBER OR TWO THICKNESSES OF 1-INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS OR ONE THICKNESS OF 0.719-INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANEL OR ONE THICKNESS OF 0.75-INCH PARTICLEBOARD WITH JOINTS BACKED BY 0.75-INCH PARTICLEBOARD. GYPSUM BOARD, CEMENT FIBER BOARD, BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED AS AN ACCEPTABLE FIREBLOCK. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NONRIGID MATERIALS SHALL BE PERMITTED FOR COMPLIANCE WITH THE 10-FOOT DOOR AND DRAWER-FRONT STYLE: FLUSH OVERLAY.

HIGH-PRESSURE DECORATIVE LAMINATE: ISO 4586-3, GRADES AS INDICATED OR IF NOT INDICATED, AS REQUIRED BY QUALITY STANDARD.

EXPOSED SURFACES:
1. PLASTIC-LAMINATE GRADE: AWI PREMIUM.
2. EDGES: GRADE AWI PREMIUM.
3. PATTERN DIRECTION: AS INDICATED.

CONCEALED BACKS OF PANELS WITH EXPOSED PLASTIC-LAMINATE SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE, ISO 4586-3, GRADE TO MATCH EXPOSED SURFACE.

DRAWER CONSTRUCTION: FABRICATE WITH EXPOSED FRONTS FASTENED TO SUBFRONT WITH MOUNTING SCREWS FROM INTERIOR OF BODY.
1. JOIN SUBFRONTS, BACKS, AND SIDES WITH GLUED DOVETAIL JOINTS. ATTACH BOTTOMS BY MECHANICAL FASTENERS OR GLUED DOVETAIL JOINTS.

COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURER'S FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS, MATTE FINISH.
B. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
C. PATTERNED PAPER FINISH.
D. PATTERNS, MATTE FINISH.

EXCEPTIONS:
MEMBRANE PENETRATIONS BY STEEL, FERROUS OR COPPER CONDUITS, ELECTRICAL BOXES, PIPES, TUBES, VENTS, CONCRETE, MASONRY-PENETRATING ITEMS WHERE THE ANNULAR SPACE IS PROTECTED EITHER IN ACCORDANCE OR TO PREVENT THE FIRE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. SUCH PENETRATIONS SHALL NOT EXCEED ANY AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.

MEMBRANE PENETRATIONS BY TESTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL THAT HAS BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED PER INSTRUCTIONS INCLUDED IN LISTING.

JOINT SEALERS
INTERIOR JOINT SEALER IS TO BE MILDEW-RESISTANT SILICONE SEALANT. APPLY SEALANT AT ALL MATERIAL JOINTS SUBJECT TO WATER PENETRATION. COLOR TO BE SELECTED BY THE ARCHITECT FROM MFR'S STANDARD LINE.

VINYL SIDING
VINYL SIDING. INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D3679.
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALSIDE, EXTERIOR BUILDING PRODUCTS, KAYCAN LTD., ROYAL BUILDING PRODUCTS, A WESTLAKE COMPANY. OR EQUAL.

HORIZONTAL PATTERN: 6-1/2- OR 7-INCH EXPOSURE IN BEADED-EDGE, SINGLE-BEADED STYLE. SMOOTH TEXTURE. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OR TO MATCH EXISTING WHERE REQUIRED.

WATER PROOFING MEMBRANE
BASIS OF DESIGN, BY SIKA OR EQUAL, 60 MIL. REFER TO MANUFACTURERS INSTRUCTION FOR PREPARATION OF SUBSTRATES AND INSTALLATION OF MEMBRANE.

DIVISION 8 - DOORS, WINDOWS AND HARDWARE

ALL DOORS AND WINDOWS SHALL BE INSTALLED PLUMB, LEVEL, SQUARE, AND PER ALL MANUFACTURERS RECOMMENDATION.

EXTERIOR DOORS TO BE 1 3/4"-THICK, FIBERGLASS INSULATED WITH 3 SETS OF STEEL HINGES, RUBBER WEATHER STRIPPING, LOCKING AS SPECIFIED ON HARDWARE. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING, VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS: 1) IN DOORS, 2) WITHIN 24" OF A DOOR AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE, 3) IN FIXED PANELS WITH THE LOWEST EDGE LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36" OF SUCH GLAZING.

DOOR HARDWARE
INTERIOR DOOR HARDWARE

ALL DOOR HARDWARE TO BE APPROVED BY HACP FACILITY REPRESENTATIVE.

BASIS OF DESIGN NON- ACCESIBLE UNITS
MANUFACTURER BALDWIN OR EQUAL, ROUND KNOB TRADITIONAL ROUND, MODEL PS ROU TRR.150. FINISH TO MATCH EXISTING OR SATIN NICKEL IF ALL INTERIOR DOOR HARDWARE IS REPLACED. OPERATION TYPE: DUMMY, PRIVACY AND PASSAGE.

BASIS OF DESIGN ACCESIBLE UNITS
MANUFACTURER BALDWIN OR EQUAL, TOWN LEVER WITH ROUND ROSE, MODEL 3527BL.RDB-15. FINISH TO MATCH EXISTING OR SATIN NICKEL IF ALL INTERIOR DOOR HARDWARE IS REPLACED. OPERATION TYPE: DUMMY, PRIVACY AND PASSAGE.

OPERATION LOCATION:
PUMMY: CLOSET DOORS THAT ARE NOT SWINGING DOORS
PRIVACY: BATHROOMS
PASSAGE: BEDROOMS, CLOSETS WITH SWINGING DOOR

EXTERIOR DOOR HARDWARE

ALL DOOR HARDWARE TO BE APPROVED BY HACP FACILITY REPRESENTATIVE.

DEADBOLT AND LEVERS
D100 GRADE 1 DEADBOLT BY FALCON, SATIN CHROME FINISH.
ALL EXTERIOR. STORAGE AND MAINTENANCE DOOR TO HAVE 6 PIN FALCON CORE LOCKS.

ENTRANCE LEVER TO BE FALCON W SERIES GRADE 2 CYLINDRICAL LOCK, LEVER TO BE AVALON AND KNOB TO BE COINTURN STYLE SATIN CHROME FINISH.

UNLESS NOTED OTHERWISE, THE FINISH OF THE NEW HARDWARE SHOULD MATCH THE EXISTING.

ADJUSTMENT: ADJUST AND CHECK EACH OPAERATING ITEM OF DOOR HARDWARE AND EACH DOOR TO ENSURE PROPER OPERATION OR FUNCTION OF EVERY UNIT. REPLACE UNITS THAT CANNOT BE ADJUSTED TO OPERATE AS INTENDED. ADJUST DOOR CONTROL DEVICES TO COMPENSATE FOR FINAL OPERATION OF HEATING AND VENTILATING EQUIPMENT AND TO COMPLY WITH REFERENCED ACCESSIBILITY REQUIREMENTS.

DOOR AND WINDOW SEALANTS
SEALANTS FOR DOORS AND WINDOWS TO BE SILICONE BY SIKA, TREMCO OR EQUAL.

WINDOWS
REPLACEMENT WINDOWS TO MATCH EXISTING STYLE AND FINISH. ALL WINDOWS TO BE APPROVED BY HACP FACILITY REPRESENTATIVE.

BASIS OF DESIGN, ANDERSEN WINDOWS OR EQUAL, VINYL WINDOW REPLACEMENT, FINISH TO MATCH EXISTING OR WHITE. LOW E GLAZING WITH ARGON TO MATCH THERMAL PERFORMANCE FENESTRATION OF U 0.3 MAX. PROVIDE SCREENS ON OPERABLE WINDOWS. SCREEN FRAME FINISH TO MATCH WINDOW. OPERATION TO MATCH EXISTING WINDOW TO BE REPLACED.

THERMAL PERFORMANCE OF FENESTRATION:

MAX FENESTRATION: U 0.3MAX
SOLAR HEAT GAIN COEFFICIENT FOR ALL VERTICAL GLAZING: NR
SKYLIGHTS: U 0.55 MAX.

DIVISION 9 - FINISHES

ALL FINISH TRIM TO BE PAINT GRADE POPLAR OR OTHER TIGHT-GRAINED HARDWOOD, SMOOTH SANDED FINISHED WITH SCARFED JOINTS, GLUED AND NAILED. NO BUTT JOINTS.

GYPSUM BOARD TO BE FINISHED AS SPECIFIED ACCORDING TO THE FOLLOWING:

STANDARD FINISH (LEVEL 4 PER GA 216-96): ALL JOINTS AND INTERIOR ANGLES HAVE TAPE EMBEDDED IN JOINT COMPOUND AND TWO SEPARATE COATS OF JOINT COMPOUND APPLIED OVER ALL FLAT JOINTS AND ONE HORIZONTAL FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROW OF STUDS OR STAGGERED STUDS. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES. THE INTEGRITY OF FIREBLOCKS SHALL BE MAINTAINED; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

MEMBRANE PENETRATIONS FOR LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL ARE PERMITTED PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE OR TO PREVENT THE FIRE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. SUCH PENETRATIONS SHALL NOT EXCEED ANY AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.

MEMBRANE PENETRATIONS BY TESTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL THAT HAS BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED PER INSTRUCTIONS INCLUDED IN LISTING.

JOINT SEALERS
INTERIOR JOINT SEALER IS TO BE MILDEW-RESISTANT SILICONE SEALANT. APPLY SEALANT AT ALL MATERIAL JOINTS SUBJECT TO WATER PENETRATION. COLOR TO BE SELECTED BY THE ARCHITECT FROM MFR'S STANDARD LINE.

VINYL SIDING
VINYL SIDING. INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D3679.
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALSIDE, EXTERIOR BUILDING PRODUCTS, KAYCAN LTD., ROYAL BUILDING PRODUCTS, A WESTLAKE COMPANY. OR EQUAL.

HORIZONTAL PATTERN: 6-1/2- OR 7-INCH EXPOSURE IN BEADED-EDGE, SINGLE-BEADED STYLE. SMOOTH TEXTURE. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OR TO MATCH EXISTING WHERE REQUIRED.

WATER PROOFING MEMBRANE
BASIS OF DESIGN, BY SIKA OR EQUAL, 60 MIL. REFER TO MANUFACTURERS INSTRUCTION FOR PREPARATION OF SUBSTRATES AND INSTALLATION OF MEMBRANE.

DIVISION 8 - DOORS, WINDOWS AND HARDWARE

ALL DOORS AND WINDOWS SHALL BE INSTALLED PLUMB, LEVEL, SQUARE, AND PER ALL MANUFACTURERS RECOMMENDATION.

EXTERIOR DOORS TO BE 1 3/4"-THICK, FIBERGLASS INSULATED WITH 3 SETS OF STEEL HINGES, RUBBER WEATHER STRIPPING, LOCKING AS SPECIFIED ON HARDWARE. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING, VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS: 1) IN DOORS, 2) WITHIN 24" OF A DOOR AND WHOSE BOTTOM EDGE IS LESS THAN 60" ABOVE THE FLOOR OR WALKING SURFACE, 3) IN FIXED PANELS WITH THE LOWEST EDGE LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36"

POLISH CHROME PLATE FINISH, 2.2 GPM FLOW RATE, LEVER HANDLE, RIGID SPOUT, DRAIN POP UP.

KITCHEN SINKS – WATER SENSE CERTIFIED
STAINLESS STEEL, COUNTER MOUNTED, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- AFINITY SURFACES

0.038 INCH THICKNESS, 3 1/2" DRAIN GRID CENTERED IN BOWL.

SINKS FAUCETS – WATER SENSE CERTIFIED
GENERAL DUTY, SOLID BRASS, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- HANSGROHE

POLISHED CHROME PLATE FINISH. SINGLE HANDLE ON KITCHEN TWO HANDLE ON UTILITY SINKS.

WATER CLOSET – WATER SENSE CERTIFIED
FLOOR MOUNTED, FLOOR OUTLET, CLOSE COUPLED (GRAVITY TANK), VITREOUS CHINE, 1.6 GAL/FLUSH, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- KOHLER
- TOTO USA

STANDARD HEIGHT, ELONGATED RIM, WATER SAVING, COLOR WHITE.
TOILET SEAT PLASTIC FOR RESIDENTIAL USE, ELONGATED RIM, SEAT COVER, SELF SUSTAINING HINGE, COLOR WHITE.

UTILITY SINK
FRESTANDING UTILITY SINK, MANUFACTURERS: PROFLO OR EQUAL
STANDARD HEIGHT, COLOR WHITE. 20 INCH BY 20 INCH SIZE.

EXTERIOR HOSE BIBB
FREEZELESS WALL FAUCET, WOODFORD OR EQUAL, MODEL 30,3/4 INCH CONNECTION, BRASS FINISH, ASSE 1053 APPROVED, MAX PRESSURE 125 PSI.

SLEEVES
SLEEVES SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH WALLS, CEILINGS, OR FLOORS. SLEEVES SHALL BE CUT FROM SCHEDULE 40 BLACK IRON PIPE. THE INTERNAL DIAMETER OF THE SLEEVE SHALL EXCEED THE EXTERNAL DIAMETER OF THE PIPE (INCLUDING INSULATION) BY NOT LESS THAN ONE INCH. SLEEVES SHALL BE CUT FLUSH WITH WALLS AND UNDERSIDES OF FLOORS AND SHALL EXTEND ONE INCH ABOVE FLOORS ABOVE GRADE.

PIPE PORTALS
PIPING THROUGH THE ROOF SHALL BE INSTALLED THROUGH A PREFABRICATED PIPING PORTAL. PORTALS SHALL HAVE GALVANIZED STEEL INSULATED CURBS, ABS PLASTIC CURB CAP, NEOPRENE RUBBER NIPPLES, AND STAINLESS-STEEL CLAMPS. CURB HEIGHT AS INDICATED ON DRAWINGS. PORTALS SHALL BE MODEL RC AND NJB AS MADE BY ROOF PRODUCTS AND SYSTEMS CORP. PORTALS SHALL HAVE EXTRA HOLES FOR POWER AND CONTROL CONDUITS.

FIRESTOPS
ALL OPENINGS THROUGH FLOORS AND FIRE-RATED PARTITIONS SHALL BE SEALED. VOID SPACES AROUND DUCTS OR PIPES SHALL BE PACKED WITH A FIREPROOF CERAMIC FIBER AND SEALED WITH FIRE RETARDANT CAULKING. FIBER SHALL BE KAOWOOL BY BABCOCK AND WILCOX, FIBERFRAX BY CARBORUNDUM, OR CERAFIBER BY MANVILLE CO. CAULKING SHALL BE SE411 F BY UNISEAL STANDARD DUXSEAL BY MANVILLE, OR MOLDABLE PUTTY BY 3M.

ESCUTCHEONS
ESCUTCHEONS SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH FLOORS, CEILINGS, OR WALLS OF FINISHED SPACES. ESCUTCHEONS SHALL BE CHROMIUM PLATED STEEL, SNAP ON TYPE WITH SPRING RETAINERS. ESCUTCHEONS SHALL BE THE NO. 40 MADE BY BEATON/CORBIN COMPANY OR APPROVED EQUAL, SIZED TO FIT PIPE PLUS INSULATION. WHERE RISER CLAMPS ARE IN FINISHED SPACES, PROVIDE HIGH-SHIRT ESCUTCHEONS TO COVER CLAMP.

UNIONS
UNIONS SHALL BE INSTALLED AT ALL POINTS INDICATED ON THE DRAWINGS AND AT ALL OTHER POINTS NECESSARY FOR THE INSTALLATION AND REMOVAL OF EQUIPMENT, CONTROL DEVICES, ETC. UNIONS IN GAS LINES WILL BE PERMITTED ONLY AT THE FINAL CONNECTIONS TO EQUIPMENT.

HANGERS
ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH PIPEHANGERS TO PREVENT SAGGING AND AVOID CONCENTRATION OF HANGING LOAD. HANGER SPACING SHALL NOT EXCEED 10 FT. FOR STEEL PIPE OR 8 FT. FOR COPPER TUBING. COPPER TUBING 1-1/4" AND SMALLER SHALL BE SUPPORTED AT NO GREATER THAN 6 FT. SPACING.

REPAIR ALL FIREPROOFING WHICH IS DAMAGED BY HANGER INSTALLATION.

SOIL WASTE AND VENT PIPING
SOIL, WASTE AND VENT STACKS AND BRANCHES, AND ROOF CONDUCTORS SHALL BE ABS OR PVC PIPING AND FITTINGS SCHEDULE 40. WASTE LINES SHALL BE MINIMUM 2 INCH.

HOT AND COLD-WATER PIPING
POTABLE-WATER PIPING AND COMPONENTS ARE TO COMPLY WITH NSF 14, NSF 61, AND NSF 372. INCLUDE MARKING "NSF-PW" ON PIPING.

HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE TYPE L, SEMI-ELESS, HARD TEMPER, COPPER TUBING WHICH CONFORMS TO ASTM SPECIFICATION B-88 WITH WROUGHT COPPER, SOLDER, TYPE FITTINGS, OR PEX TUBING PLASTIC IN ACCORDANCE WITH ASTM F876 AND ASTM F877 WITH FITTINGS ASTM F1807, METAL INSERT AND COPPER CRIMP RINGS ASTM F1960, COLD EXPANSION FITTINGS AND REINFORCING RINGS.

INSTALLATION OF PIPING
DRAINAGE PIPING SHALL BE INSTALLED TO ACCURATE LINE AND UNIFORM GRADE, AND AT THE ELEVATIONS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE INDICATED, ALL DRAINAGE LINES SHALL SLOPE NOT LESS THAN 1/4 INCH PER FOOT.
DRAINAGE LINES SHALL BE PROVIDED WITH SUFFICIENT CLEANOUTS TO MAKE ALL PARTS OF THE DRAINAGE SYSTEM ACCESSIBLE. CLEANOUTS SHALL BE PROVIDED ALONG INTERIOR HORIZONTAL RUNS AT NOT MORE THAN 50 FT. ON CENTER. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH ROOF CONDUCTOR AND AT ALL OTHER POINTS INDICATED ON THE DRAWING OR REQUIRED BY LOCAL PLUMBING CODE.

ALL PIPES SHALL BE CUT WITH SQUARE ENDS AND SHALL BE PROPERLY REAMED. THREADS SHALL BE CUT WITH CLEAN, SHARP DIES TO FULL DEPTH. ALL BURRS SHALL BE REMOVED FROM PIPE. JOINT COMPOUND SHALL BE APPLIED TO PIPE THREAD ONLY. USE OF EXCESSIVE JOINT COMPOUND IS PROHIBITED.

SOLDER JOINTS IN ALL WATER LINES SHALL BE MADE WITH 95-5 TIN-ANTIMONY SOLDER. OTHER JOINTS MADE WITH EASYBRITE LEAD FREE SOLDER.

WATER LINES WITHIN THE BUILDING SHALL BE INSTALLED WITH SUFFICIENT PITCH TO PROPERLY DRAIN LINES AND VALVES. IN ADDITION TO DRAIN VALVES INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL DRAIN VALVES NECESSARY TO PROPERLY DRAIN THE SYSTEM.

GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND NFPA-54. ALL GAS PIPING AND CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH AGA RECOMMENDATIONS AND ALL APPLICABLE LOCAL GAS COMPANY REGULATIONS.

CONTRACTOR SHALL VENTILATE THE WORK AREA TO PROVIDE A SAFE ENVIRONMENT. VENTILATION SHALL NOT DIRECT FUMES TO ADJACENT SPACES OR NEIGHBORING STRUCTURES.

CONTRACTOR SHALL PROVIDE ADEQUATE FIRE PROTECTION DURING WELDING, CUTTING AND SOLDERING.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

VALVES
VALVES IN WATER LINES SHALL BE 125 PSI CLASS, BRONZE BODY, BALL VALVES WITH TEFLON SEATS AND PACKING. NIBCO 580 OR APOLLO.DRAIN VALVES SHALL BE BRONZE BODY SOLDERED ENDS, BALL VALVES WITH 3/4 INCH AMERICAN STANDARD HOSE THREAD OUTLET. NIBCO OR APOLLO.

WALL HYDRANT SHALL BE ALL BRASS, FULLY RECESSED, NON-FREEZE, KEY OPERATED, WITH ADJUSTABLE LOCKNUT, REMOVABLE NYLON SEAT, 3/4 INCH HOSE CONNECTION. FURNISH WITH INTEGRAL VACUUM BREAKER. ZURN Z-1300 OR APPROVED EQUAL.

VALVES IN GAS LINES SHALL BE 125 PSI CLASS, THREADED END, IRON BODY. GAS COCKS WITH BRASS PLUG AND WASHER AND SQUARE HEAD. ORANEO NO. 324.

INSULATION
ALL COLD AND HOT WATER PIPING, AND HORIZONTAL PORTIONS OF ROOF CONDUCTORS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX.

PIPE IDENTIFICATION
ALL PIPING SHALL BE LABELED WITH THE NAME OF THE FLUID IN THE PIPE AND WITH ARROWS INDICATING THE DIRECTION OF THE FLOW.

TESTING

DRAINAGE SYSTEM - THE ENTIRE DRAINAGE SYSTEM SHALL BE TESTED HYDROSTATICALLY FOR LEAKS. THE ENTIRE SYSTEM SHALL BE FILLED TO THE TOP OF THE STACKS WITH WATER AND CHECKED FOR LEAKS.

WATER PIPING - ALL WATER PIPING SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL FOREIGN MATERIAL. ALL TESTING SHALL BE COMPLETED BEFORE INSULATION IS APPLIED.
DURING THE TESTS ALL VALVES SHALL BE CAREFULLY CHECKED FOR LEAKAGE AROUND THE STEM.

WATER HEATERS - HEATERS SHALL BE TESTED AND CHECKED TO DETERMINE THEY OPERATE IN COMPLIANCE WITH THE SPECIFICATIONS. ALL CONTROLS SHALL BE PROPERLY ADJUSTED.

DISINFECTION OF POTABLE WATER SYSTEM - GENERAL: NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE. WHENEVER REQUIRED THE AUTHORITY HAVING JURISDICTION. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY.

MECHANICAL REQUIREMENTS

GENERAL CONDITIONS OF THE MECHANICAL CONTRACT
PLUMBING CONTRACTOR TO FOLLOW HUD GENERAL CONDITIONS AS SPECIFIED EARLIER IN DIVISION 1.

ALL MECHANICAL WORK TO COMPLY WITH LOCAL CODE AND REGULATIONS.

CUTTING AND PATCHING
ALL CHASES, RECESSES, HOLES, AND OPENINGS FOR EQUIPMENT AND DUCTWORK WILL BE PROVIDED BY THE GENERAL CONTRACTOR.

SHOULD THE MECHANICAL CONTRACTOR FAIL TO SET SLEEVES OR LOCATE OPENINGS BEFORE THE WORK OF THE GENERAL CONTRACTOR HAS BEEN COMPLETED IN THAT PARTICULAR AREA, THE MECHANICAL CONTRACTOR SHALL CUT WHATEVER HOLES ARE NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT. ALL PATCHING NECESSITATED BY THE CUTTING OF SUCH HOLES SHALL BE DONE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

REPAIR ALL FIREPROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

EXHAUST FANS
FANS SHALL VENT DIRECTLY TO THE EXTERIOR. EXHAST DUCTS MAY BE TIED TOGETHER OR TIED INTO AN EXISTING SYSTEM PROVIDED THAT BACK FLOW PREVENTORS ARE INSTALLED AT EACH FAN INCLUDING ALL FANS TIED INTO THE EXISTING SYSTEM.

FURNISH NEMA 1 SURFACE MOUNTING STARTER WITH OVERLOAD AND UNDER VOLTAGE PROTECTION.

FURNISH WITH BIRD SCREEN AND BACKDRAFT DAMPER.

FAN SHALL BE ACE MADE BY COOK, GREENHECK, OR APPROVED EQUAL. MOTOR CAPACITY TO BE DETERMINED. FINISH WHITE.

THE HEATING CONTRACTOR SHALL FURNISH THERMALLY AND ACOUSTICALLY INSULATED CURB.

MECHANICAL EQUIPMENT
THE EQUIPMENT DESCRIBED IN THIS SECTION IS BASIS OF DESIGN, MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT TO MATCH EXISTING SYSTEM CAPACITY AT A MINIMUM.

MECHANICAL CONTRACTOR TO PROVIDE HACP AND ARCHITECT WITH SPECIFICATION SHEETS OF EQUIPMENT.

GAS-FIRED FURNACES, NONCONDENSING
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- BRYANT; CARRIER GLOBAL CORPORATION.
- CARRIER GLOBAL CORPORATION.
- BUILDING SOLUTIONS NORTH AMERICA.

ENERGY FACTOR MINIMUM OF 95% AFUE OR GREATER
CABINET: GALVANIZED STEEL.
- CABINET INTERIOR AROUND HEAT EXCHANGER SHALL BE FACTORY-INSTALLED INSULATION.
- LIFT-OUT PANELS SHALL EXPOSE BURNERS AND ALL OTHER ITEMS REQUIRING ACCESS FOR MAINTENANCE.
- FACTORY PAINT EXTERNAL CABINETS IN MANUFACTURER'S STANDARD COLOR.
- AIRSTREAM SURFACES: SURFACES IN CONTACT WITH THE AIRSTREAM SHALL COMPLY WITH REQUIREMENTS IN ASHRAE 62.1.

FAN: CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT OR BELT DRIVE.
- FAN MOTORS: COMPLY WITH REQUIREMENTS IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT."
- SPECIAL MOTOR FEATURES, SINGLE SPEED: SINGLE SPEED, PREMIUM EFFICIENCY, AS DEFINED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT," AND WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, MULTISPEED: MULTI-TAPPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, ECM: ELECTRONICALLY CONTROLLED MOTOR (ECM) CONTROLLED BY INTEGRATED FURNACE/BLOWER CONTROL.

TYPE OF GAS: NATURAL
HEAT EXCHANGER: ALUMINIZED STEEL.
BURNER:
- GAS VALVE: 100 PERCENT SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUTOFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD.
- IGNITION: ELECTRIC PILOT IGNITION, WITH HOT-SURFACE IGNITER OR ELECTRIC SPARK IGNITION.

GAS-BURNER SAFETY CONTROLS:
- ELECTRONIC FLAME SENSOR: PREVENTS GAS VALVE FROM OPENING UNTIL PILOT FLAME IS PROVEN; STOPS GAS FLOW ON IGNITION FAILURE.
- FLAME ROLLOUT SWITCH: INSTALLED ON BURNER BOX; PREVENTS BURNER OPERATION.
- LIMIT CONTROL: FIXED STOP AT MAXIMUM PERMISSIBLE SETTING; DE-ENERGIZES BURNER ON EXCESSIVE BONNET TEMPERATURE; AUTOMATIC RESET.

COMBUSTION-AIR INDUCER: CENTRIFUGAL FAN WITH THERMALLY PROTECTED MOTOR AND SLEEVE BEARINGS PRERUPGES HEAT EXCHANGER AND VENTS COMBUSTION PRODUCTS; PRESSURE SWITCH PREVENTS FURNACE OPERATION IF COMBUSTION-AIR INLET OR FLUE OUTLET IS BLOCKED.
FURNACE CONTROLS: SOLID-STATE BOARD INTEGRATES IGNITION, HEAT, COOLING, AND FAN SPEEDS; AND ADJUSTABLE FAN-ON AND FAN-OFF TIMING; TERMINALS FOR CONNECTION TO ACCESSORIES.
VENT MATERIALS: COMPLY WITH REQUIREMENTS IN SECTION 235123 "GAS VENTS" FOR TYPE B METAL VENTS.

CAPACITIES AND CHARACTERISTICS:
AIRFLOW CONFIGURATION: UPFLOW.
GAS:
- TYPE: NATURAL
- VENTING TYPE: WITH COMBUSTION-AIR INTAKE
- MINIMUM EFFICIENCY AFUE: 80 PERCENT.
- INPUT: SSE SCHEDULE ON DRAWINGS.
- HEAT OUTPUT: SSE SCHEDULE ON DRAWINGS.
- GAS CONNECTION SIZE: 1/2" NPS.
- VENT SIZE: 4 INCHES.

FAN:
- MOTOR: SIZE: 1/3 HP.
- SPEED: SEE SCHEDULE ON DRAWINGS.
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

FURNACE ELECTRICAL CONNECTION:
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

COMPRESSOR AND CONDENSER UNITS, AIR COOLED, 1.0 TO 5 TONS
DESCRIPTION: FACTORY ASSEMBLED AND TESTED; CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTORS, REFRIGERANT RESERVOIR, AND OPERATING CONTROLS.
ENERGY STAR RATING EQUAL OR OVER 15.2 SEER2
COMPRESSOR TYPE: SCROLL, HERMETICALLY SEALED, WITH RUBBER VIBRATION ISOLATORS.
- TWO-SPEED COMPRESSOR: INCLUDE MANUAL-RESET, HIGH-PRESSURE SWITCH AND AUTOMATIC-RESET, LOW-PRESSURE SWITCH.
- ACCUMULATOR: SUCTION TUBE.

REFRIGERANT: R-410A.
CONDENSER COIL: SEAMLESS COPPER-TUBE, -FIN COIL; WITH REMOVABLE DRAIN PAN AND BRASS SERVICE VALVES WITH SERVICE PORTS.
CONDENSER FAN: DIRECT-DRIVE, MAIN PROPELLER FAN; WITH PERMANENTLY LUBRICATED, TOTALLY ENCLOSED FAN MOTOR WITH THERMAL OVERLOAD PROTECTION AND BALL BEARINGS.
UNIT CASING: GALVANIZED STEEL, FINISHED WITH; WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE. MOUNT SERVICE VALVES, FITTINGS, AND GAUGE PORTS ON EXTERIOR OF CASING.
CAPACITIES AND CHARACTERISTICS:
COMPRESSOR AND CONDENSER UNIT:
- FULL-LOAD COOLING CAPACITY: TO BE CALCULATED BY MECHANICAL CONTRACTOR

ELECTRICAL CHARACTERISTICS:
- VOLTS: 208 V.
- PHASE: 1.
- HERTZ: 60 HZ.

SHEET METAL
DUCT SIZES INDICATED ON THE DRAWINGS ARE THE CLEAR INSIDE DIMENSIONS.

ALL DUCTS SHALL BE COMPLETE WITH FOUR SIDES AND SHALL BE OF AIRTIGHT CONSTRUCTION. ALL DUCTS, UNLESS OTHERWISE NOTED, SHALL BE CONSTRUCTED OF 24 GAGE GALVANIZED SHEET STEEL AT 2" PRESSURE CLASS.

JOINTS, SEAMS AND DUCT WALL PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. SEALANT MATERIAL SHALL BE CAULKING COMPOUND SPECIFICALLY MANUFACTURED FOR DUCT APPLICATION FOR INDOOR USE.

JOINTS BETWEEN SHEET METAL SECTIONS MAY BE MADE WITH PREFABRICATED JOINING SYSTEM SUCH AS THE DUCTMATE INDUSTRIES SYSTEM.
STIFFENERS SHALL BE PLACED AT NOT MORE THAN 8-FOOT INTERVALS.

ALL DUCTS SHALL BE ADEQUATELY SUPPORTED FROM CONSTRUCTION ABOVE BY MEANS OF GALVANIZED STEEL STRAP HANGERS SPACED AT NOT MORE THAN 8-FOOT INTERVALS. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA STANDARDS.

DUCTWORK CONNECTIONS TO AIR HANDLING AND AIR CONDITIONING UNITS SHALL HAVE FLEXIBLE CONNECTIONS. WHEN CONNECTION IS OUTDOORS, CONNECTION LENGTH SHALL BE INSULATED AND WEATHERPROOFED.

TURNING VANES SHALL BE INSTALLED IN ALL ELBOWS HAVING SQUARE THROATS OR A THROAT RADIUS LESS THAN HALF THE DUCT WIDTH. TURNING VANES MAY BE PREFABRICATED. IF JOB FABRICATED, DESIGN AND CONSTRUCTION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. VANES SHALL BE AIRFOIL TYPE.

MANUAL VOLUME CONTROL DAMPERS IN DUCTS SHALL BE CONSTRUCTED OF NOT LIGHTER THAN US GAGE NO. 16 GALVANIZED SHEET STEEL. DAMPER BLADES SHALL BE SUPPORTED ON AN END BEARING ON ONE SIDE AND A COMBINATION BEARING AND DAMPER REGULATOR ON THE OTHER SIDE. REGULATOR SHALL BE EQUIPPED WITH A LOCKING DEVICE. MANUAL DAMPERS SHALL BE OPPOSED BLADE TYPE.

FURNISH AND INSTALL FIRE DAMPERS WHERE INDICATED OR WHERE REQUIRED. DAMPERS SHALL COMPLY WITH LATEST EDITION OF NFPA 90A, AND SHALL BE UL LABELED. BLADE STACK SHALL BE OUT OF AIRSTREAM. FUSIBLE FIRE LINKS SHALL HAVE A MELTING POINT OF 165F. DAMPERS SHALL BE MODEL IBD AS MADE BY PRUSKIN, OR APPROVED EQUAL BY SAFE-AIR. FURNISH ACCESS DOORS TO ALL DAMPERS.

ACCESS DOORS IN DUCTS SHALL BE RIGIDLY CONSTRUCTED AND TIGHTLY FITTED. DOORS SHALL BE SUPPORTED ON TWO STEEL BUTT HINGES AND SHALL BE SECURED WITH A SASH LOCK. DOORS SHALL BE GASKETED AND INSULATED.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

FLEXIBLE DUCTS
FLEXIBLE DUCTS SHALL BE SOUND ATTENUATING, THERMAL INSULATED, WIRE WOUND, REINFORCED TYPE WITH A MOISTURE TIGHT FLAME PROOF VINYL BARRIER. FLEXIBLE DUCTS TO BE USED ONLY TO CONNECT INDIVIDUAL DIFFUSERS WITH MAIN OR BRANCH DUCTS. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PORTION OF THE EXISTING SYSTEM WHICH DOES NOT MEET THESE REQUIREMENTS WITH PROPERLY SIZED AND INSULATED SHEET METAL DUCTS. THIS WORK TO BE INCLUDED IN BASE BID.

DIFFUSERS
DIFFUSERS SHALL BE SQUARE OR RECTANGULAR FACED, RECESSED TYPE, WITH REMOVABLE CORES. DIFFUSER CAPACITIES, SIZES AND DIRECTIONAL BLOWS ARE INDICATED ON THE DRAWINGS. FURNISH EACH DIFFUSER WITH DEFLECTING VANES AND KEY OPERATED, OPPOSED BLADE VOLUME DAMPERS. DIFFUSERS SHALL BE FURNISHED WITH BAKED, WHITE FINISH.

SUPPLY REGISTERS
SUPPLY REGISTERS SHALL HAVE INDIVIDUALLY ADJUSTABLE FINS WITH VERTICAL FRONT BARS AND HORIZONTAL REAR BARS. FINS SHALL BE STREAMLINED AND OF STURDY CONSTRUCTION. FLANGES SHALL BE 5/8 INCH CHANNEL BORDER. FURNISH RUBBER GASKET AROUND PERIMETER OF FLANGE, AND KEY OPERATED, OPPOSED BLADE VOLUME CONTROL DAMPERS. RUBBER GASKET SHALL BE NON-CHLORINATED RUBBER AND NON-POROUS. FURNISH WITH PRIME COAT OF PAINT.

GRILLES
GRILLES AND REGISTERS FOR MECHANICAL TO MATCH EXISTING. GRILLES AND REGISTERS SHALL BE OUT OF STEEL, WITH DAMPER, PRIMED PAINTED WHITE. SIZE OF GRILLE TO MATCH EXISTING OPENING ON TOE KICK, WALL OR CEILING.

CONTROLS
THE HEATING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL DEVICES NECESSARY TO ACHIEVE THE CONTROL SEQUENCE DESCRIBED HEREIN.

CONTROL SYSTEMS SHALL BE GUARANTEED FOR 2 YEARS FROM DATE OF ACCEPTANCE BY HACP.

CONTROL WIRING SHALL BE CONCEALED AND INSTALLED IN ACCORDANCE WITH SECTION 16.

MOTOR STARTERS - MOTOR STARTERS FOR ALL MECHANICAL ITEMS SHALL BE FURNISHED BY THE HEATING CONTRACTOR. STARTERS SHALL HAVE HAND-OFF-AUTO SWITCHES AND CONTROL TRANSFORMERS.

DAMPERS - DAMPERS SHALL BE OPPOSED MULTI-BLADE. BLADES SHALL BE CONSTRUCTED OF 16 GAGE STEEL WITH NEOPRENE GASKETED EDGES, AND SHALL BE MOUNTED IN CORROSION RESISTANT BUSHINGS. DAMPERS SHALL HAVE STOPS ON ALL FOUR SIDES. MOTORS SHALL BE MODULATING WITH OIL-IMMERSED GEAR TRAINS. DAMPERS SHALL BE 2% LOW LEAKAGE TYPE.

FREEZE PROTECTION THERMOSTAT - FREEZE PROTECTION THERMOSTAT SHALL BE MERCURY TUBE, MANUAL RESET TYPE SET AT 45F. INSTALL AN ADJUSTABLE TIME DELAY RELAY TO PERMIT AIR TO ESTABLISH SATISFACTORY TEMPERATURE TO AVOID FALSE TRIPS.

INSULATION
ALL SUPPLY AIR DUCTS SHALL BE INSULATED WITH 2" THICK, 1.00 DENSITY, OWENS-CORNING OR APPROVED EQUAL FLEXIBLE DUCT INSULATION WITH FLAME RETARDANT REINFORCED FIRK 25 FOIL COVERING. SEAL ALL JOINTS, BOLTS, AND NUTS AND EXPOSED EDGES WITH 4" WIDE STRIPS OF SEALING TAPE USING A SUITABLE ADHESIVE. INSULATION SHALL HAVE A 2" FLAP AT ALL JOINTS AND SEAMS WHICH SHALL BE STAPLED AND SECURED WITH ADHESIVE. APPLY ADHESIVE TO DUCTS IN SIX-INCH-WIDE STRIPS AT ONE FOOT IN TERVALS. DUCTOWRK EXPOSED WITHIN THE SPACE MUST BE INSULATED.

OPERATING INSTRUCTIONS
THE CONTRACTOR SHALL FURNISH THREE COMPLETE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS. THIS SHALL INCLUDE FINAL CONTROL DIAGRAMS, CATALOG DATA INCLUDING CONSTRUCTION AND MAINTENANCE INFORMATION ON ALL EQUIPMENT, AND MAINTENANCE INFORMATION IN THE COMPLETE SYSTEM.

ONE COMPLETE CONTROL DIAGRAM SHALL BE INCLUDED IN EACH O&M MANUAL.

THE CONTRACTOR SHALL FORMALLY INSTRUCT THE HACP'S STAFF ON THE OPERATION OF THE SYSTEM. THE INSTRUCTION SHALL CONSIST OF NOT LESS THAN 2 PERIODS, EACH PERIOD OF 4 HOURS DURATION. THE CONTRACTOR SHALL ARRANGE FOR THIS INSTRUCTION WITH THE HACP.

FUNCTIONS AND ALL ACTUATORS OPERATE IN ACCORDANCE WITH THE SPECIFICATIONS.
TESTS AND INSPECTION

THE FOLLOWING OPERATIONS SHALL BE PERFORMED IN PREPARATION FOR FINAL INSPECTION BY THE ARCHITECT. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE TO THE ARCHITECT THAT THE SYSTEM IS OPERATING IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL TESTS AND INSPECTIONS SHALL BE COMPLETED BEFORE FINAL PAYMENT IS MADE TO THE HEATING (MECHANICAL) CONTRACTOR.

CONTROLS - ALL CONTROLS SHALL BE TESTED AND ADJUSTED TO ACHIEVE THE INTENT OF THESE SPECIFICATIONS. CONTROLS SHALL BE ADJUSTED WHILE THE SYSTEM IS OPERATING UNDER FULL LOAD CONDITIONS, BOTH HEATING AND COOLING. CONTROL SUB-CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION THAT ALL ON/OFF AND ALARM.

AIR DISTRIBUTION SYSTEM - AIR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCE SUBCONTRACTOR. THE COST OF THE SUB-CONTRACTOR SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE. THE INDEPENDENT AIR BALANCER SHALL NOT BE AN EMPLOYEE NOR A SUBSIDIARY OF THE CONTRACTOR.

GUARANTEE
THE MECHANICAL CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE JOB THAT ALL EQUIPMENT, MATERIAL AND LABOR FURNISHED BY HIM ARE FREE FROM DEFECTS. ANY DEFECTS IN MATERIAL AND WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT FURTHER EXPENSE TO THE HACP. ALL ITEMS SPECIFIED TO HAVE A LONGER WARRANTIES SHALL BE GUARANTEED FOR THAT LONGER PERIOD. CONTROLS SHALL HAVE A 2-YEAR GUARANTEE ON PARTS AND LABOR.

CONTROLS
SOLID-STATE THERMOSTAT: WALL-MOUNTED, PROGRAMMABLE, MICROPROCESSOR-BASED UNIT WITH MANUAL SWITCHING FROM HEATING TO COOLING, PREFERENTIAL RATE CONTROL, SEVEN-DAY PROGRAMMABILITY WITH MINIMUM OF FOUR TEMPERATURE PRESETS PER DAY, VACATION MODE, AND BATTERY BACKUP PROTECTION AGAINST POWER FAILURE FOR PROGRAM SETTINGS.

DIVISION 26 - ELECTRICAL WORK

NOTE: ELECTRICAL WORK ON THIS PROJECT IS TO BE DESIGN BUILD. THE E.C. IS RESPONSIBLE FOR REVIEWING LOCATIONS AND REQUIREMENTS FOR THE ELECTRICAL SYSTEM WITH THE HACP.

CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE SPECIFIC BUILDING HACP REQUIREMENTS, THE LATEST RULES OF THE NATIONAL ELECTRICAL CODE AND WITH LOCAL ORDINANCES HAVING JURISDICTION.

DO NOT INTERPRET ANYTHING IN THE DRAWINGS OR SPECIFICATIONS AS AUTHORITY TO VIOLATE APPLICABLE CODES.

BE RESPONSIBLE FOR EXAMINING DRAWINGS AND SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES. RESOLVE ALL CONFLICTS BEFORE INSTALLATION AT NO EXTRA COST.

PREPARE ANY ADDITIONAL CLARIFYING DETAILS REQUIRED BY THE LOCAL INSPECTOR AUTHORITIES AND SECURE APPROVAL OF SAME. PAY ANY CHARGES. OBSERVE ALL UNIFORM CONSTRUCTION CODE REQUIREMENTS.

OBSERVE ALL APPLICABLE SAFETY REGULATIONS REQUIRED BY HACP AND/OR BY OSHA.

BRING ANY DISCREPANCIES BETWEEN DIFFERENT DRAWINGS, BETWEEN THE DRAWINGS AND FIELD CONDITIONS, OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR ANY APPARENT OMISSIONS, TO THE ARCHITECT'S ATTENTION BEFORE SUBMITTING THE BID. AFTER AWARD OF CONTRACT.

THE INTERPRETATION OF ANY CONFLICT WILL BE MADE BY THE ARCHITECT AND SHALL BE ACCEPTED AS FINAL.

IF MENTION HAS BEEN OMITTED PERTAINING TO DETAILS, ITEMS OR RELATED ACCESSORIES REQUIRED FOR THE COMPLETION OF ANY ELECTRICAL SYSTEM, INCLUDE SUCH ITEMS AND ACCESSORIES IN THE ELECTRICAL CONTRACT AND WITHOUT ADDITIONAL CHARGES.
AFTER THE JOB IS AWARDED, CLAIMS BASED ON IN

MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, ASTM AND IEEE. ALL SIMILAR MATERIALS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.

B. RACEWAYS

1. MATERIALS
RIGID HEAVY WALL STEEL CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE STEEL, HOT DIPPED GALVANIZED AND ZINC COATED, INSIDE AND OUTSIDE. CONDUIT SHALL BEAR THE MANUFACTURER'S AND UNDERWRITERS' LABELS. THIN WALL CONDUIT IS DESIGNATED AS E.M.T. STEEL CONDUIT SHALL BE MANUFACTURED BY WHEATLAND, ALLIED, TRIANGLE, OR EQUAL.
FLEXIBLE CONDUIT (GREENFIELD) SHALL BE U. L. LISTED, 3/4 INCH MINIMUM TRADE SIZE FOR BRANCH WIRING. GREENFIELD OF ½ INCH SIZE WILL BE PERMITTED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES ONLY.

2. INSTALLATION
MINIMUM SIZE CONDUIT IS 3/4 INCHES.
INSTALL CONDUIT AS A COMPLETE SYSTEM. CONTINUOUS FROM OUTLET TO OUTLET CABINET BOX OR FITTING. MECHANICALLY AND ELECTRICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY IS SECURED.
DO NOT ROUTE RACEWAYS THROUGH ANY DUCTWORK.

C. CONDUIT FITTINGS

1. MATERIALS
ALL CONDUIT FITTINGS SHALL BE GALVANIZED MALLEABLE IRON OR STEEL, WHERE APPLICABLE.
CONDUIT FITTINGS SHALL CONFORM IN DESIGN AND QUALITY TO THE TYPE OF CONDUIT ON WHICH THEY ARE BEING INSTALLED.

2. INSTALLATION
USE THREADED CONNECTORS ON GRS CONDUIT.
USE SET-SCREW STYLE CONNECTORS ON E.M.T. WHERE SAME IS RUN EXPOSED OR CONCEALED ABOVE GRADE.
USE BUSHINGS, LOCKNUTS AND EXPANSION FITTINGS OF THE APPROPRIATE TYPE FOR THE RACEWAY SYSTEM BEING INSTALLED.

D. PULL BOXES, OUTLET BOXES AND COVERS

1. GENERAL
FOR EACH OUTLET BOX, USE THE PROPER CODE SIZE FOR THE ENTERING CONDUITS AND THE NUMBER OF WIRES TERMINATING THEREIN.
USE BOXES WITH PLASTER RING EXTENSIONS IN PLASTERED OR DRY WALL PARTITIONS.

2. MATERIALS
FOR LARGE PULL BOXES, USE BOXES OF CODE GAUGE SHEET STEEL WITH STEEL COVERS ATTACHED WITH BRASS SCREWS. BOXES SHALL BE HOT DIPPED, GALVANIZED AFTER FABRICATION - THE MINIMUM SIZE OF EACH BOX SHALL BE AS REQUIRED BY THE NATIONAL ELECTRIC CODE. MANUFACTURER'S ARE HOFFMAN, KEYSTONE OR EQUAL.
FOR CONCEALED WORK, USE PRESSED STEEL BOXES, KNOCKOUT TYPE, ZINC COATED, OF 1/16 INCH MINIMUM THICKNESS.
USE BOXES OF FORM AND DIMENSIONS BEST ADAPTED TO SPECIFIC LOCATION, KIND OF FIXTURE USED AND THE NUMBER, SIZE AND ARRANGEMENT OF RACEWAYS CONNECTING THERETO. USE STEEL CITY OR RACO.
USE WIREMOLD FINISHED STYLE BOXES IN FINISHED AREAS WHERE CONCEALED BOXES ARE NOT FEASIBLE.

E. CONDUCTORS IN RACEWAYS

1. MATERIALS
CONDUCTORS SHALL BE SOFT DRAWN COPPER, MINIMUM 97% CONDUCTIVITY, 600 VOLT, CONFORMING TO ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
INSULATION SHALL BE SUITABLE FOR THE CONDITIONS AND LOCATIONS IN WHICH CONDUCTORS ARE INSTALLED. THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED OR REQUIRED BY LOCATION OR INSTALLATION CONDITIONS:
A. FOR BUILDING WIRE IN INTERIOR ABOVE GRADE LOCATIONS, USE TYPE THWN/THHN COPPER RATED 75 DEGREES C. WET OR DRY.
WIRES SHALL BE CLEARLY AND REGULARLY MARKED WITH THE WIRE SIZE, VOLTAGE, INSULATION TYPE AND MANUFACTURER'S NAME.
CONDUCTORS SHALL BE NEW AND MANUFACTURED WITHIN EIGHT MONTHS PREVIOUS TO DELIVERY AT SITE, WITH DATE OF MANUFACTURE MARKED ON THE PACKAGES.
MINIMUM WIRE SIZE FOR BRANCH CIRCUITING SHALL BE #12 AWG.
ALL CIRCUIT RUNS EXCEEDING 75 FEET IN LENGTH EXTENDING FROM THE PANELBOARD TO THE FIRST OUTLET IN THE CIRCUIT SHALL BE #10 AWG MINIMUM.
WIRE #8 AWG AND SMALLER SHALL BE SOLID; WIRE #6 AWG AND LARGER SHALL BE STRANDED.
WIRE SHALL BE AS MANUFACTURED BY HI-TECH, PIRELLI, TRIANGLE OR EQUAL.

2. INSTALLATION
COLOR CODE ALL WIRES PER NEC REQUIREMENTS:
A. MATCH THE EXISTING SCHEME PRESENTLY INSTALLED; NEUTRAL SHALL BE WHITE. EQUIPMENT GROUND SHALL BE GREEN.
THE GROUPING OF OUTLETS ON INDIVIDUAL NEW CIRCUITS AS SHOWN ON THE DRAWINGS SHALL BE STRICTLY OBSERVED. GROUPING OF CONDUCTORS IN THE CONDUIT SHALL NOT BE PERMITTED. INCORPORATE A MAXIMUM OF FOUR (4) WIRES, I.E. A MAXIMUM OF ONE CIRCUIT CONDUCTOR ON EACH PHASE PLUS THE NEUTRAL WIRE PLUS THE GROUND WIRE IN ONE CONDUIT.
EMPLOY A U.L. LISTED COMMERCIAL PRODUCT SUCH AS WYRE-EZE OR YELLOW-77 FOR PULLING WIRES INTO A RACEWAY.
CLEAN AND DRY CONDUITS BEFORE PULLING IN WIRES.
THE USE OF B.X., ROMEX, OR U.F. CABLE IS NOT PERMITTED.
MC CABLE MAY BE USED FOR CONCEALED BRANCH CIRCUIT WIRING.

F. SPLICES

MAKE ALL SPLICES, JOINTS AND TAPS WITH SOLDERLESS PRESSURE CONNECTORS LISTED AND APPROVED FOR THE INTENDED USE AND FOR THE SIZE AND NUMBER OF CONDUCTORS UTILIZED.
1. FOR WIRE #10 AWG AND SMALLER, USE TWIST-ON WIRE NUTS.
2. FOR WIRE #8 AWG AND LARGER, USE HEAVY DUTY SOLDERLESS SET SCREW CONNECTORS WITH A SEPARATE BARREL FOR EACH CONDUCTOR.
USE INSULATING COVERS FROM THE MANUFACTURER, WHERE AVAILABLE. TAPE PROPERLY TO PROVIDE A SUFFICIENT INSULATION AROUND THE ENTIRE SPLICE UNIT, WHEN INTEGRAL INSULATING COVERS ARE NOT AVAILABLE FROM THE FITTING MANUFACTURER.

G. PANELBOARDS AND CABINETS

CABINETS SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH WIRING GUTTERS OF SUFFICIENT WIDTH TO PROVIDE AMPLE SPACE FOR BRANCH CIRCUIT WIRES AND FEEDERS. GUTTERS SHALL NOT BE LESS THAN FOUR INCHES WIDE. GUTTERS SHALL CONFORM TO NEC STANDARDS AND SHALL BE OVER-SIZED WHERE NECESSARY TO ACCOMMODATE THE ENTRANCE OF SEVERAL LARGE CONDUITS AND/OR WHERE NECESSARY TO AVOID OVERCROWDING OF CONDUCTORS OR EQUIPMENT WITHIN. TRIMS SHALL BE SURFACE AS NOTED ON THE PANEL SCHEDULE AND SHALL CONTAIN CONCEALED HINGED DOORS, EACH EQUIPPED WITH FLUSH CHROME PLATED COMBINATION LOCKS AND CATCHES, ALL KEYED ALIKE. FINISH SHALL BE STANDARD BAKED ENAMEL OR LACQUER, MEDIUM GRAY, ANSI-61. PROVIDE TWO (2) KEYS WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE. USE "DOOR IN A DOOR" HINGED TRIMS.

PANELBOARD BASIS OF DESIGN:

- MANUFACTURER: GE, SIEMENS OR EQUAL.
- ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED IN ACCORDANCE WITH NFPA 70, BY QUALIFIED ELECTRICAL TESTING AGENCY RECOGNIZED BY AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH NEMA PB 1.
- COMPLY WITH NFPA 70.
- ENCLOSURES: SURFACE-MOUNTED, DEAD-FRONT CABINETS.
- INDOOR DRY AND CLEAN LOCATIONS: UL 50E, TYPE 1
- OTHER WET OR DAMP INDOOR LOCATIONS: UL 50E
- HEIGHT: 7 FT MAXIMUM.
- RETAIN ONE OF FIRST TWO SUBPARAGRAPHS BELOW. VERIFY WITH MANUFACTURER FOR AVAILABILITY OF "DOOR-IN-DOOR" CONSTRUCTION IN OTHER THAN NEMA 1 STYLE PANELBOARDS.
- HINGED FRONT COVER: ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER. TRIMS MUST COVER LIVE PARTS AND MAY HAVE NO EXPOSED HARDWARE.
- INCOMING MAIN ON TOP
- 20 SPACE- 40 CIRCUITS MINIMUM.

BUSING SHALL BE FULL CAPACITY, 98% CONDUCTIVITY COPPER OR 80% CONDUCTIVITY ALUMINUM, BRACED FOR THE SHORT CIRCUIT CURRENT AVAILABLE TO THE PANEL AND SIZED AS SHOWN IN THE PANEL DETAIL. CIRCUIT BREAKERS SHALL BE CONNECTED TO BUSES WITH BOLTED CONNECTIONS FOR SEQUENCE PHASING: I.E., CIRCUITS 1 AND 2 CONNECTED TO PHASE A; 3 AND 4 TO PHASE B AND SO ON. POLARITY OR BLOCK PHASING SHALL NOT BE ACCEPTABLE. PANEL SHALL INCLUDE A NEUTRAL BUS AND AN EQUIPMENT GROUNDING BUS. CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE, BOLT-ON, WITH THERMAL AND MAGNETIC TRIPS, TRIP-FREE ON OVERLOAD OR SHORT CIRCUIT, UL LISTED, HAVING INTERRUPTING CAPACITIES, AS INDICATED.

H. WIRING DEVICES AND PLATES

1. MATERIALS
ALL WIRING DEVICES SHALL BE MANUFACTURED BY ONE OF THE MANUFACTURERS LISTED. DO NOT MIX MANUFACTURER'S PRODUCTS.
DEVICES SHALL BE U.L. SPECIFICATION GRADE.

2. WALL SWITCHES
SWITCHES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE GENERAL USE, AC QUIET TYPE, 20 AMPERE, 120/277 VOLT, BACK AND SIDE WIRED. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

3. WALL SWITCH TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENTS FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP SINGLE POLE WALL SWITCH - HUBBELL #HBL-1221, P & S #20AC1, COOPER #1221, BRYANT #4901, OR LEVITON# 1221-2.
20 AMP 3-WAY WALL SWITCH - HUBBELL #HBL-1223, P & S #20AC3, COOPER #1223, BRYANT #4903, OR LEVITON #1223-2. USE SIMILAR SERIES FOR 4-WAY SWITCHES.

4. WALL RECEPTACLES
ALL CONVENIENCE AND POWER RECEPTACLES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE THE GROUNDING TYPE.
CONVENIENCE RECEPTACLES SHALL BE 20 AMP, 125 VOLT, BACK AND SIDE WIRED, 3 WIRE GROUNDING, UL LISTED AS COMPLYING WITH THE REQUIREMENTS OF NEC ARTICLE 250-146, AND SHALL BE NEMA 5-20R CONFIGURATION. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

5. RECEPTACLE TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENT FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP, 125 VOLT DUPLEX CONVENIENCE OUTLET (NEMA 5-20R) - HUBBELL #HBL-5362, P & S #5362A, COOPER #5362, BRYANT #5362, OR LEVITON #5362.
20 AMP, 125 VOLT GROUND FAULT INTERRUPTER (NEMA 5-20R) - HUBBELL #GF-5362, P & S #2091, COOPER #WGF-20, BRYANT #GFRS3FT, OR LEVITON #6899.

6. PLATES
USE STAINLESS STEEL PLATES.

I. FASTENINGS AND ATTACHMENTS

FOR FASTENINGS AND ATTACHMENTS, SUCH AS SCREWS, BOLTS AND NUTS, USE DEVICES MADE OF NON-FERROUS METALS OR OF GALVANIZED OR CADMIUM PLATED STEEL. WHEN SUCH DEVICES ARE OBTAINABLE IN NON-FERROUS METALS, OR IN STEEL WITH A PROTECTIVE METALLIC COATING. PAINT SAME WITH A RUST PREVENTING PAINT SUCH AS RUSTOLEUM.
ALL FASTENINGS AND ATTACHMENTS SHALL BE MADE OF MATERIALS OR SO PROTECTED, THAT THEY WILL OFFER THE MAXIMUM PROTECTION AGAINST DETERIORATION FROM AGE, WEATHER OR DAMPNESS.
DO NOT PENETRATE THE ROOF DECK WITH ANY FASTENERS.

J. SURFACE METALLIC RACEWAY SYSTEM

USE A SURFACE METAL RACEWAY SYSTEM AND BOXES, WHERE CONCEALED WIRING IS NOT POSSIBLE OR WHERE SHOWN ON THE PLANS.
USE RACEWAYS, SUCH AS WIREMOLD, FOR STRAIGHT RUNS, COMPLETE WITH BOXES AND FITTINGS, AS DIRECTED. VERIFY COLOR OPTIONS WITH THE ARCHITECT. PAINT SAME WHERE REQUIRED OR INDICATED.
OBTAIN APPROVAL FOR ALL SURFACE ROUTINGS WITH THE ARCHITECT PRIOR TO ROUGH-IN.

K. FIRE STOPS

1. GENERAL
PROVIDE THROUGH PENETRATION FIRE STOP SYSTEMS TO PREVENT THE SPREAD OF FIRE THROUGH OPENINGS MADE IN FIRE-RATED WALLS OR FLOORS TO ACCOMMODATE THROUGH PENETRATING ITEMS SUCH AS CONDUIT AND CABLES.
FIRE-RESISTANCE-RATED ASSEMBLY SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY OR SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRE STOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM-E-814 OR U.L. 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER. THE SYSTEM SHALL HAVE AN F RATING AND A T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. WHERE FLOOR/CEILING ASSEMBLIES ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED. FIRE STOP SHALL RESTORE FLOOR AND WALL TO ORIGINAL FIRE RATED INTEGRITY AND SHALL BE WATERPROOF.

PENETRATIONS OF MEMBRANES THAT ARE PART OF A FIRE-RATED WALL OR FLOOR MUST BE STOPPED AS OUTLINED FOR THROUGH PENETRATIONS WITH THE FOLLOWING EXCEPTIONS.
A. STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
B. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED AS INDICATED.
1. BY HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES.
2. BY HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY IS FILLED WITH CELLULOSE LOOSE FILL ROCK WOOL OR SLAG MINERAL WOOL INSULATION.
3. BY SOLID FIRE BLOCKING.
4. BY PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS.
5. BY OTHER LISTED MATERIALS AND METHODS.

2. MATERIALS
PUTTY - USE FLAMESEAL PUTTY #AA423 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
FIBER - USE CERAMIC FIBER #AA401 (10 LB. BOX) OR #AA417 (2 LB. BAG) AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN WALLS - USE CERAMIC BOARD #AA402 (1" X 18" X 12") OR #AA403 (1" X 36" X 48") AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN FLOOR - USE SUPPORT WIRE #AA404 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.

3. INSTALLATION
USE TOTAL THICKNESS OF 1-1/2 INCHES OF FLAMESEAL PUTTY #AA423 ON ALL PENETRATIONS OF FIRE-RATED WALLS AND FLOORS. USE NELSON FIBER #AA401 OR #AA417 IN CONJUNCTION WITH THE PUTTY TO FILL THE REMAINING VOID OF PENETRATIONS.
PACK CERAMIC FIBER IN CENTER OF OPENING LEAVING 3/4 INCH ON EITHER SIDE OF WALL FOR THE PUTTY. INSTALL THE PUTTY IN THE REMAINING PART OF OPENING, WORKING IT INTO ALL VOIDS AND CAVITIES.
FOR OPENINGS WITH GREATER THAN 4 INCHES OF UNSUPPORTED SPACE, USE NELSON CERAMIC BOARD #AA402 OR #AA403 DEPENDING ON SIZE OF OPENING. PACK CERAMIC FIBER IN BOTTOM OF OPENING PER FACTORY RECOMMENDATIONS, LEAVING 1-1/2 INCHES BELOW FLOOR LEVEL FOR THE INSTALLATION OF FLAMESEAL PUTTY. USE SUPPORT WIRE #AA404 ON ALL PENETRATIONS IN EXCESS OF 6 INCHES DIAMETER.

L. MC CABLE

METAL CLAD CABLE (MC) SHALL BE COPPER WIRE WITH 90 DEGREES C. THHN INSULATION, #12 AWG MINIMUM, WITH CONTINUOUS INSULATED GREEN GROUND CONDUCTOR AND STEEL ARMOR, MANUFACTURED BY A.F.C., ALFLEX, OR EQUAL. INSTALL NON-RIGID CABLE IN A NEAT, APPROVED MANNER, AS PER N.E.C. REQUIREMENTS. DO NOT GROUP CABLES INTO A COMMON CONDUIT AS OVERHEATING WILL RESULT. DO NOT TIE THE SEVERAL CABLES TOGETHER. USE APPROVED STYLE "MC" CONNECTORS AND FITTINGS IN ORDER TO MAINTAIN ADEQUATE CASE GROUNDING REQUIRED BY THE NATIONAL ELECTRICAL CODE. PROVIDE AN INDEPENDENT MEANS OF SUPPORT FOR ALL WIRING LOCATED ABOVE A DROPPED CEILING ASSEMBLY FROM THE STRUCTURAL CEILING SYSTEM. DO NOT SUPPORT WIRING FROM THE CEILING ASSEMBLY OR FROM ITS SUPPORT WIRES.

SERVICE AND DISTRIBUTION

A. GENERAL INSTALLATION

USE RIGID HEAVY WALL STEEL CONDUIT FOR EXPOSED EXTERIOR RACEWAYS.
USE EMT ELECTRICAL METALLIC THINWALL CONDUIT FOR CONCEALED INTERIOR FEEDERS, TELEPHONE RACEWAYS, ETC.
USE FLEXIBLE CONDUIT SUCH AS "GREENFIELD" FOR CONNECTIONS TO RECESSED LIGHTING FIXTURES IN 72" MAXIMUM LENGTHS AND FOR USE IN STUD WALLS WHERE THE USE OF RIGID CONDUIT IS NOT PRACTICAL.
USE WEATHERPROOF AND OIL PROOF FLEXIBLE CONDUIT SUCH AS "SEAL-TITE" FOR ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT IN LENGTHS OF 18" MAXIMUM.
USE LIQUID-TIGHT FLEXIBLE CONDUIT AND APPROPRIATE LIQUID-TIGHT FITTINGS IN AREAS EXPOSED TO THE WEATHER OR LIKELY TO BECOME DAMP, WHERE USED, CONFORM TO NEC #350-118.

USE WIREMOLD RACEWAYS FOR BRANCH CIRCUIT SURFACE ROUTINGS IN FINISHED AREAS ONLY WHERE CONCEALED WIRING IS NOT FEASIBLE, AND WHERE INDICATED.
USE M.C. CABLE FOR CONCEALED BRANCH CIRCUIT WIRING ONLY, IN ACCORDANCE WITH THE N.E.C. REQUIREMENTS.
THE USE OF B.X., ROMEX, AND U.F. IS NOT APPROVED.

LIGHTING FIXTURES AND ACCESSORIES

GENERAL
ALL LIGHTING FIXTURES AND LAMPS WILL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

LIGHTING FIXTURES

BASIS OF DESIGN LIGHTING FIXTURES BY KICHLER OR EQUAL.
CEILING FIXTURE: KICHLER #6112WH. WHITE FINISH. SURFACE MOUNTED
EXTERIOR CEILING FIXTURE: KICHLER #11132AZTLED, OUTDOOR RATED.
WALL EXTERIOR: KICHLER #9654TZ, WALL MOUNTED, OUTDOOR RATED
BATHROOM VANITY: KICHLER JOELSON #45923
FLOOD LIGHT: LITHONIA LIGHTING OLF LED WITH MOTION OCCUPANCY SENSOR
RECESSED LIGHTING: HALO OR EQUAL.

B. INSTALLATION

PROVIDE ALL SUPPLEMENTARY STRUCTURAL MATERIALS REQUIRED TO PROPERLY MOUNT ALL LIGHTING FIXTURES.
SECURELY MOUNT LIGHTING FIXTURES TO STRUCTURAL ELEMENTS OF THE BUILDING TO SUSPENDED CEILING SYSTEMS SUCH THAT SAID FIXTURES WILL BE SQUARE, PLUMB, AND RIGID, WILL NOT FALL OR SAG, AND WILL NOT CAUSE THE SUSPENDED CEILING SYSTEM TO SAG. PROVIDE ADDITIONAL CEILING SUPPORTS, WHERE REQUIRED TO SUPPORT RECESSED OR SURFACE FIXTURES.
INSTALL WIRING TO AND WITHIN FIXTURES TO COMPLY WITH NEC ARTICLE #410. TAKE SPECIAL CARE TO ASSURE THAT THE FIXTURE OUTLETS FOR RECESSED FIXTURES ABOVE SOLID SUSPENDED CEILINGS WILL ACTUALLY BE ACCESSIBLE AFTER THE PROJECT IS COMPLETED.
USE CLIPS TO FASTEN RECESSED TROFFERS TO DROP CEILING CHANNELS AS REQUIRED BY NEC SECTION #410-16. USE CADDY FASTENERS #6 IS OR APPROVED EQUAL.
TIME CLOCKS SHALL BE COMMERCIAL GRADE, 7 DAY, ASTRONOMICAL DAL, WITH 24-HOUR SPRING RESERVE BACKUP, AS MANUFACTURED BY TORK OR PARAGON (IF REQUIRED).

SMOKE ALARMS

BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 20SAR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

COMBO SMOKE + CO ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 3COUDR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

SMOKE DETECTOR'S LOCATIONS:
1. COMBO SMOKE + CO ALARM PER FLOOR, NOT TO BE PLACED IN MECHANICAL ROOM OR KITCHEN.
1 SMOKE DETECTOR IN SIDE EACH SLEEPING ROOM
INTERCONNECT SMOKE DETECTORS INSIDE THE UNIT.

MOTOR WIRING

WIRING FOR MECHANICAL AND PLUMBING CONTRACTS

1. INSTALLATION
VERIFY ALL LOCATIONS WITH THE VARIOUS MECHANICAL CONTRACTORS BEFORE INSTALLING RACEWAYS.
PROVIDE ALL WIRING MATERIALS AND DEVICES REQUIRED TO CONNECT AND OPERATE THE ELECTRICAL PARTS OF EQUIPMENT FURNISHED AND INSTALLED UNDER THE MECHANICAL DIVISION.
INSTALL AND CONNECT ALL STARTERS, PUSHBUTTONS, SWITCHES, THERMOSTATS AND OTHER CONTROL DEVICES AS FURNISHED BY OTHERS, UNLESS OTHERWISE NOTED.
MAKE ALL FINAL CONNECTIONS TO MOTORIZED EQUIPMENT. VERIFY THE CORRECT DIRECTION OF ROTATION.
CONNECT MOTOR CIRCUITS TO THE RIGID CONDUIT SYSTEM BY MEANS OF WEATHERPROOF STYLE FLEXIBLE CONDUIT, PROPERLY GROUNDED AND BONDED. EMPLOY A GREEN GROUND WIRE FOR ALL SYSTEMS AND MOTOR FRAME GROUND CONNECTIONS.
BOLT THE WIRE TO THE MOTOR FRAME AT ONE END AND TO THE MOTOR STARTER AT THE OTHER END WITH APPROVED TERMINAL DEVICES.
DO ALL LINE VOLTAGE CONTROL WIRING (120 VOLTS OR HIGHER).
ALL LOW VOLTAGE CONTROL WIRING (UNDER 120 VOLTS) IS THE RESPONSIBILITY OF THE MECHANICAL OR PLUMBING CONTRACTS.

SECTION 32- EXTERIOR IMPROVEMENTS

CHAIN LINK FENCE
ALUMINUM WIRED FABRIC 2X2 INCHES WITH ROUNDED POST AND RAILS 2.5 INCHES IN DIAMETER. LIGHT INDUSTRIAL STRENGTH, ZINC COATED. WITH TOP AND BOTTOM TENSION WIRED ZINC COATED. MECHANICALLY DRIVEN INTO SOIL OR USING ANCHORING CONCRETE.

GATES TO MATCH FENCE MATERIAL AND FRAME. DOOR WITH LATCH TO PERMIT OPERATION FROM BOTH SIDES OF GATE. PADLOCK AND CHAIN TO BE PROVIDED BY HACP.

SEEDING

QUALITY, NON-STATE CERTIFIED SEED OF GRASS SPECIES AS LISTED BELOW FOR SOLAR EXPOSURE, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PER CENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED

A.SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH.
1.EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
2.DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
3.DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.

B. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

C. PROTECT SEEDED AREAS FROM HOT, DRY WEATHER OR DRYING WINDS BY APPLYING COMPOST MULCH WITHIN 24 HOURS AFTER COMPLETING SEEDING OPERATIONS. SOAK AREAS, SCATTER MULCH UNIFORMLY TO A THICKNESS OF 3/16 INCH +, AND ROLL SURFACE SMOOTH.

TREE AND STUMP REMOVAL
ALL APPROPRIATE SAFETY EQUIPMENT MUST BE UTILIZED AT ALL TIMES DURING OPERATIONS; INCLUDING, BUT NOT LIMITED TO: HARD HATS, GLOVES, SAFETY GLASSES, FALL RESTRAINTS, TRAFFIC CONTROL DEVICES, HIGH VISIBILITY CLOTHING, ADEQUATE HEARING PROTECTION AND ANY OTHER SAFETY REQUIRED BY OSHA.
ONCE A TREE IS CUT DOWN, THE STUMP MUST BE GROUND OUT WITHIN FIVE DAYS (5). STUMPS AND BUTTRESS ROOTS MUST BE REMOVED TO A MINIMUM OF TWELVE INCHES (12") BELOW GROUND LEVEL AND TWO (2) TIMES THE DIAMETER AT BREAST HEIGHT IN SURFACE AREA GROUND. THE REMAINING STUMP AND/OR CHIPS SHALL BE REMOVED FROM THE SITE WITHIN TWO DAYS (2) AFTER GRINDING. ALL SURFACE ROOTS AND ADJACENT SUBSURFACE ROOTS SHALL BE REMOVED AS MAY BE NECESSARY TO ELIMINATE "HUMPS" OR MOUNDS IN THE TREE EASEMENT AREA ADJACENT TO THE STUMP. ALL TREE EASEMENT AREAS ARE TO BE LEFT FLAT AND MEET ORIGINAL GRADE. THE AREA WILL THEN BE BACKFILLED WITH CLEAN, PULVERIZED TOPSOIL TO THE LEVEL OF THE ADJOINING GRADE AND SEEDED. SEE SEEDING FOR SEED REQUIRED.

THE PARTY AUTHORIZED TO REMOVE THE TREE, AT THEIR EXPENSE, SHALL RESTORE THE LAWN AND ANY EXISTING LANDSCAPING AND APPURTENANCES THAT EXIST BETWEEN THE SIDEWALK AND CURB OR IN OTHER AREAS THAT HAVE BEEN DISTURBED BY THE PARTY AUTHORIZED TO REMOVE THE TREE DURING THE PROSECUTION OF THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL PROTECT ALL CONCRETE SIDEWALK, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT FROM DAMAGE THROUGH THE USE OF PLYWOOD SHEETING OR MATS WHEN NECESSARY. THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL REPLACE OR RESTORE ALL CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT WHICH MAY HAVE BEEN DAMAGED DURING THE PROSECUTION OF THE WORK.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL BE RESPONSIBLE AT ALL TIMES FOR KEEPING THE WORK SITE ADJOINING PREMISES, STREET, WALKS AND DRIVEWAYS CLEAN. ALL TREE BRANCHES, BARK, CHIPS AND OTHER DEBRIS MUST BE CLEARED UP AT THE END OF THE WORKDAY.

SECTION 33- UTILITIES

TRENCH DRAIN SYSTEM
ZURN Z880 2 1/2 [64] WIDE TRENCH DRAIN SYSTEM SHALL BE 4 8 [1220] LONG AND 2 1/2 [63.5] WIDE. DRAIN SHALL BE 3 [76] DEEP. DRAIN SHALL BE MADE OF (HDPE) HIGH DENSITY POLYETHYLENE AND IS UV-10 STABILIZED. DRAIN SHALL HAVE BEDDING FEET TO BE USED FOR POSITIONING AND ANCHORING PURPOSES. DRAINS SHALL HAVE TONGUE AND GROOVE SNAP FIT CONNECTION. DRAIN SHALL HAVE 24 [610] LONG HIGH-DENSITY POLYETHYLENE DECORATIVE GRATE (-POG) PROVIDED AS STANDARD.

INSTALLATION
TRENCH EXCAVATION MUST BE 4" [102MM] GREATER THAN THE TRENCH DEPTH AND A MINIMUM OF 4" [102MM] GREATER THAN THE EDGE OF THE TRENCH ON EACH SIDE. SOFT AND/OR SHIFTING SOIL SUBSTRATES MAY CAUSE CRACKING OF THE CONCRETE AND CONSEQUENT MOVEMENT OF THE TRENCH. IT IS CRITICAL THAT THE CONCRETE BE POURED ON AN ADEQUATE FOUNDATION

ASSEMBLING PER MANUFACTURER INSTRUCTION. A SILICONE CAULK OR A CONSTRUCTION ADHESIVE, SUCH AS LIQUID NAILS, IS RECOMMENDED TO BE USED AT EACH JOINT AS A SEALER.

UPON COMPLETION OF THE TRENCH EXCAVATION, THE CHANNELS SHOULD BE PLACED IN ORDER ALONGSIDE THE EXCAVATION AND ACCORDING TO THE JOB LAYOUT.

AFTER ATTACHMENT OF ACESSORIES, ANCHOR AND LEVEL TRENCH IN THE EXCAVATION USING CONCRETE PATTIES AROUND THE FEET. MAKE FINISH POUR OF CONCRETE AND BE CERTAIN TO PROPERLY VIBRATE CONCRETE TO ELIMINATE ANY UNWANTED VOIDS. FINISH TROWELING SHOULD BE DONE TO SET THE TOP EDGE OF THE TRENCH DRAIN 1/16" [1.6MM] BELOW THE FLOOR GRADE. REMEMBER TO COMPENSATE FOR CONCRETE SHRINKAGE THAT MAY OCCUR DURING CURE SO THAT THE EDGE OF THE TRENCH DRAIN DOES NOT PROTRUDE ABOVE THE FINISHED FLOOR GRADE.

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CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights,

Renovation of 10 Scattered Sites

10 Scattered Sites - Vidette St
Single Family Residence, Minor Alteration
8331 Vidette Street,
Pittsburgh, Pennsylvania 15221

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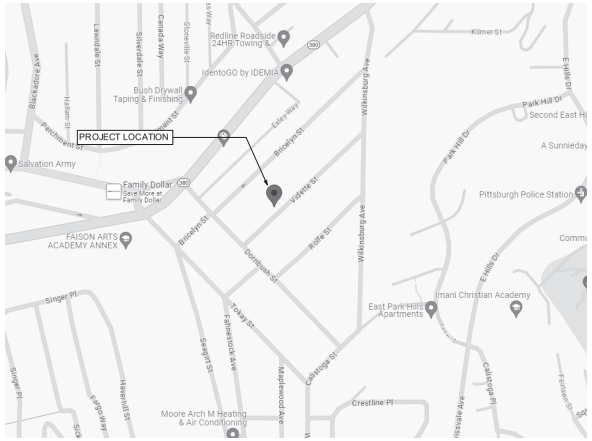
Code Conformance Information

Applicable Codes

General:	2018 International Residential Code 2018
Energy:	2018 International Energy Conservation Code
Electrical:	2017 NEC (NFPA 70)
Fire:	2018 International Fire Code
Fuel Gas:	2018 International Fuel Gas Code
Mechanical:	2018 International Mechanical Code
Plumbing:	2017 Allegheny County Health Department Plumbing Code

General Building / Project Information

Stories:	2 Stories
Building Gross Area:	Basement 351 sqft + Garage 266 sqft
	1st Floor 617 sqft
	2nd Floor 617 sqft



1 Site Location
SCALE: 1" = 30'

Materials Legend

NOT ALL MATERIALS USED

- EARTH
- COMPACTED STONE FILL
- CONCRETE
- STEEL
- RIGID INSULATION
- BLOCKING
- BATT INSULATION
- GYPSUM WALL BOARD
- WOOD
- PLYWOOD SHEATHING
- SPRAY FOAM INSULATION

Abbreviations

A.F.F.	Above Finish Floor
A.P.	Access Panel
ACOUST.	Acoustical
A.C.T.	Acoustical Ceiling Tile
ADH.	Adhesive
ADJUST.	Adjustable
A/C	Air Conditioning
ALT.	Alternate
ALTN.	Alternate
ALUM.	Aluminum
A.O.R.	Area of Refuge
APPROX.	Approximate
ARCH.	Architectural
ASB.	Asbestos
ASPH.	Asphalt
AUTO.	Automatic
AVG.	Average
BLK.	Block
BD.	Board
BOT	Bottom
BLDG	Building
C.I.P.	Cast In Place
C.B.	Catch Basin
CEM.	Cement
CER.	Ceramic
CG	Corner Guard
C.M.T.	Ceramic Mosaic Tile
C.W.T.	Ceramic Wall Tile
C.O.	Cleanout
℄	Center Line
CLO.	Closet
C.W.	Cold Water
CLG.	Ceiling
COL.	Column
CONC.	Concrete
C.M.U.	Concrete Masonry Unit
CONT.	Continuous
CORR.	Corridor
C.M.P.	Corrigated Metal Pipe
CRS.	Courses
DIA.	Diameter
DET	Detail
DGL	Dens Glass Gold
DR.	Door
DN.	Down
D.S.	Downspout
DWG.	Drawing
D.F.	Drinking Fountain
D.I.P.	Ductile Iron Pipe
EA.	Each
E.W.	Each Way
ELEC.	Electrical
E.C.	Electrical Contractor
EL.	Elevation
ELEV.	Elevation
EQUIP.	Equipment
E.F.	Exhaust Fan
EXIST.	Existing
EXP.	Expansion
E.J.	Expansion Joint
ESH	Exterior Sheathing
EXIST.	Existing
EXP.	Exposed
EXT.	Exterior
E.I.F.S.	Exterior Insulation & Finish System
F.R.P.	Fiberglass Reinforced Polyester
F.F.	Finish Floor
FIN.FLR.	Finish Floor
F.A.C.P.	Fire Alarm Control Panel
F.E.	Fire Extinguisher
FLR.	Floor
F.D.	Floor Drain
FTG.	Footing
GA.	Gauge
G.C.	General Contractor
G.F.I.	Ground Fault Interrupter
GYP.	Gypsum
G.W.B.	Gypsum Wall Board
GSH	Gypsum Sheathing
H/C	Handicap
H.V.A.C.	Heating, Ventilation &
HT	Height
HC	Hollow Core
H.M.	Hollow Metal
HORIZ.	Horizontal
HR.	Hour
H.W.	Hot Water
IN	Inch
I.M.	Insulated Metal
INSUL.	Insulation or Insulated
INT.	Interior
INV.	Invert
ISO.	Isolation
JAN.	Janitor's Closet
J.T.	Joint
LAM.	Laminate
LAV.	Lavatory
LG.	Long
M.D.F.	Medium Density Fiberboard
M.D.H.	Magnetic Door Holder
M.H.	Manhole
MFGR.	Manufacturer
MAX.	Maximum
MECH.	Mechanical
MET.	Metal
MIN.	Minimum
MISC.	Miscellaneous
N.I.C.	Not In Contract
N.T.S.	Not To Scale
O.C.	On Center
OPP.	Opposite
O.H.	Overhead
PR.	Pair
PLAS.	Plaster
PLAS.LAM.	Plastic Laminate
P.C.	Plumbing Contractor
PLYWD.	Plywood
POLY.	Polyethylene
P.V.C.	Polyvinyl Chloride
PRE-FAB.	Prefabricated
RE.	Refer To
REF.	Refrigerator
R.C.P.	Reinforced Concrete Pipe
REINF.	Reinforcement
RD.	Roof Drain
RM.	Room
S.A.T.	Suspended Acoustical Tile
SCHED.	Schedule
SHT.	Sheet
SIM.	Similar
S.C.	Solid Core
SPECS.	Specifications
SQ.	Square
S.F.	Square Foot
S.S.	Stainless Steel
STL.	Steel
STOR.	Storage
STRUCT.	Structural
TEL.	Telephone
THK.	Thick
T.B.D.	To Be Determined
T&G	Tongue & Groove
T.O.	Top Of
T.O.	Top Of Grade
T.O.S.	Top Of Steel
TYP.	Typical
UNFIN.	Unfinished
U.N.O.	Unless Noted Otherwise
V.B.	Vapor Barrier
VERT.	Vertical
VEST.	Vestibule
V.C.T.	Vinyl Composition Tile
W.H.	Water Heater
W.W.F.	Welded Wire Fabric
WIN.	Window
W/	With
W/O	Without
WD.	Wood

Symbols

NOT ALL SYMBOLS USED

T.O. FINISH FLOOR ELEV. 0'-0"	ELEVATION HEIGHT
PLAN NORTH	NORTH ARROW
1 A1	ELEVATION MARKER

seal

CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other reserved rights, including the copyright thereto.

revisions

project title

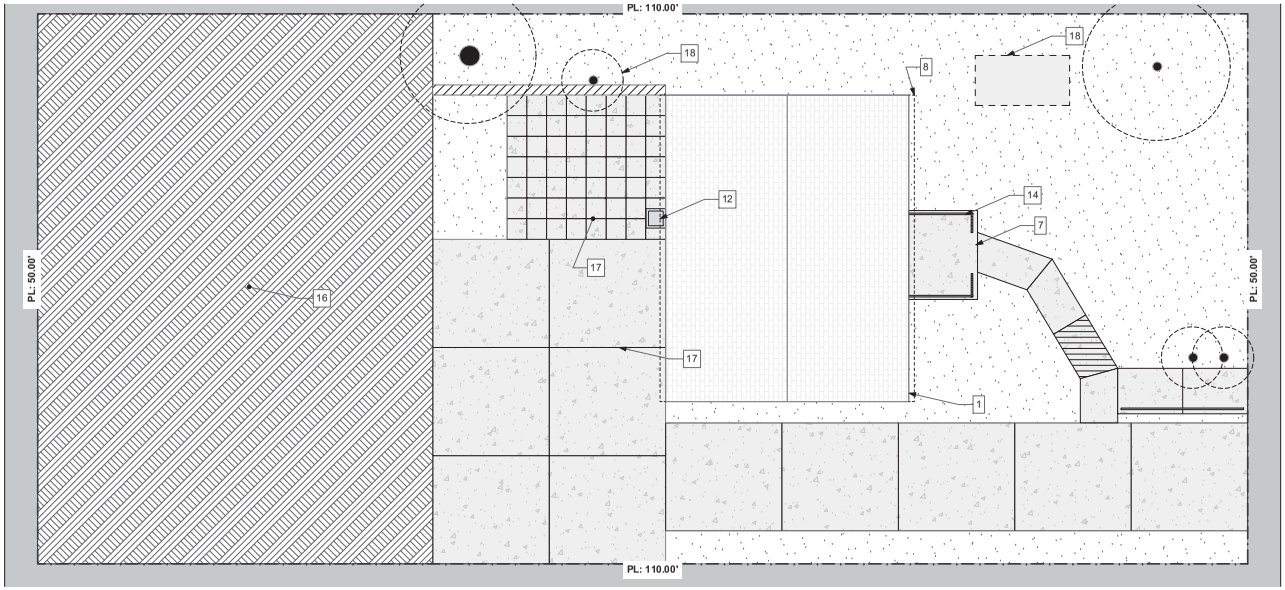
Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
8331 Vidette Street
Pittsburgh, Pennsylvania 15221

drawing title

Drawing Index, Code Conformance Information, Site Location, Abbreviations and Materials

scale: As Noted	**Sheet No.**
date: August 20th, 2024	**A1**
no. 1 / of. 9	Project #2326



PLAN NORTH

1 Site Plan
SCALE: 3/16" = 1'-0"

SITE PLAN LEGEND

GRASS	MISC. BRICK	AC CONDENSER	RAILING	TRUE ROOF OUTLINE
LIGHTWEIGHT CONCRETE	MULCHED AREA	TREE / SHRUB	TACTILE PAVING	APPROX. PROPERTY LINE
CONCRETE BLOCK	STREET SIGNAGE	STREET SIGNAGE	MAN HOLE	WINDOW WELL

10 Scattered Sites Keynotes - 8331 Vidette St

GC: General Contract; E: Electrical Contract; P: Plumbing Contact; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages (see additional ductwork note at garage)
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. FRONT DOOR (GC): Remove existing front exterior door, frame and threshold, provide new 1 3/4" insulated wood look fiberglass door (with 3 lites sim. to existing), door threshold and all door hardware. Paint frame to finish and trim with new synthetic wood trim, caulked to seal. See Specifications.
7. ENTRANCE CANOPY (GC): At this location, provide new 52" wide x 36" deep, concave style aluminum entrance canopy properly fastened, flashed and sealed to exterior wall face. See Specifications.
8. ROOF GUTTERS AND FASCIA (GC): Remove gutters and replace existing fascia board with new synthetic white fascia board. Clear gutters downspouts and underground piping of debris. Clean and reinstall gutters and reconnect to downspout ensuring that all joints are properly sealed. Provide new gutter guard protection along the full length of the gutters. See Specification.
9. EXISTING LINTELS (GC): Protect surrounding finishes and windows, sandblast to clean rust and old paint off of existing steel lintels. Prime bare steel using zinc rich primer. Paint lintels to finish and caulk to seal within brick joints. Match caulk to mortar. Replace these (2) lintels with new. See Specifications
10. EXISTING BRICK SILLS (GC): At exterior of building, repoint all brick sills at each opening location (14 total).

11. EXISTING BRICK VENEER (GC): At entire façade strike and repoint areas of loose or missing mortar. This includes areas left, right and above all window lintels as well as the entire chimney stack.
12. CHIMNEY (GC): in addition to repointing chimney, remove existing crumbling mortar cap and provide new aluminum cap at top. See Specifications.
13. EXISTING WINDOW CAULK (GC): Scrape clean and recaulk head, jamb and sill of all windows. See Specifications.
14. ENTRY RAILING (GC): Scrape and paint patio railing. (See Specifications)
15. REAR GLASS SLIDING DOOR (GC): Remove and replace existing rear sliding door, frame and associated synthetic trim. Provide new replacement sliding door x full height and width of opening. See Specifications.
16. REAR YARD (GC): In this area clear out undergrowth, fallen and dead branches (approx. 1,800 sf).
17. REAR PATIO (GC): Remove and replace concrete pavers (approx. 200 sf). Provide new concrete slab sloped to drain away from building. See Specifications. At existing concrete slab and driveway clean control joints down to ½" to 1" and provide new backer rod and caulk to seal (approx. 200 sf). Pressure wash entire slab.
18. TREE STUMPS (GC): Remove existing tree stump and surrounding invasive flora entirely. Provide new compacted soil and grass overseed to establish lawn in area of removal.

Interior Garage

19. ELECTRICAL PANEL (E): Replace existing archaic electric panel with new 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally provide proper electrical grounding and bonding of the electrical system. See Specifications.
20. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, and paint new GWB to finish. See Specifications.
21. GARAGE TO HOUSE DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.
22. GARAGE WALLS (GC): Scrape and paint interior surface floor to ceiling (approx. 550 sf). See Specifications.
23. GARAGE FLOOR (GC): Pressure wash to clean garage floor (approx. 240 sf).

Interior Basement

24. WATER HEATER (P): Water Heater appears to be manufacture dated May of 2019 and does not show signs of failure. Service.
25. FURNACE (M): Furnace is 32 years old. Replace the Furnace. See Specifications.
26. BASEMENT FINISH FLOOR (GC): Clean, prep and paint existing basement floor (approx. 200 sf). See Specification.
27. WATER METER (E): Add grounding site to jump water meter. Reattach cover.
28. MECHANICAL ROOM (GC): Clean and paint walls (approx. 300 sf). Provide new painted moisture resistant GWB finish at partition wall and below stair.

Interior First Floor

29. KITCHEN APPLIANCES (GC/E/M): Replace all appliances including stove/oven, refrigerator, kitchen exhaust hood.
30. KITCHEN CABINETS (GC): Carefully clean existing kitchen cabinet faces and interior to remove soiling and oils. Provide new door/drawer knobs. Adjust doors and drawers to level and ensure smooth operation. See Specifications.
31. KITCHEN SINK AND FAUCETS (P): Provide new Kitchen sink faucet and drain.
32. KITCHEN FLOORING (GC): Kitchen flooring: Remove and replace kitchen flooring (approx. 100 sf) and wall base. Prep subfloor, smooth and level. Provide new LVT finish flooring and 4" rubber cove base.
33. KITCHEN BACKSPLASH (GC): Kitchen stove backsplash: Provide new thinset ceramic tile backsplash from 12" below top of cooking surface to base of upper cabinets x width of cabinets. Grouted and sealed.
34. KITCHEN CEILING (GC/E): Kitchen Ceiling and ceiling lighting: remove remaining damaged portions of kitchen ceiling. Replace/Repair existing leaking plumbing lines above. Provide new GWB ceiling patch to blend with existing ceiling. Tape, spackle, texture and paint entire ceiling (approx. 100 sf). Provide new energy star kitchen lighting fixtures (typ. 2). See Specifications.
35. FLOOR FINISH (GC): Remove existing carpet and VCT floor finish throughout first floor dining room and living room. Provide new LVT floors over existing hardwood floors (approx. 360 sf). See Specification.
36. EXISTING STONE VENEER WALL (GC): At existing interior stone veneer wall (approx. 120 sf), clean and prep stone. Provide new semi-gloss white paint finish. See Specifications.
37. EXISTING INTERIOR WALL REPAIR (GC): Scrape, spackle, sand and paint area of wall adjacent to rear Living Room Window to match existing (Approx. 12 Sq In.)
38. NEW LIVING ROOM CEILING LIGHT FIXTURE AND SWITCH (E): Centered in Living Room ceiling, provide new energy star rated LED type surface mounted light fixture, wiring and new switch control. Gang new switch with existing 3 gang switch location adjacent to front door. See Specifications.
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Interior Second Floor

40. MAIN STAIRWAY (GC): At main stairway, replace 5 damaged painted oak stair treads. Match existing tread nosing, trim, depth and width. Glue and screw to secure. Repaint entire stairway treads, risers and stringers to match existing. Sand and re-paint handrail, or replace handrail, and paint.
41. BATHROOM (GC/P/E/M): Completely renovate bathroom with new tub/shower, tub/shower surround, shower rod and curtain; sink base cabinet and counter with integral sink; sink faucet, drain assembly and shut-offs; toilet and spring loaded paper holder; new medicine cabinet and lighting. Provide new GFCI outlet located on left side of sink approx. 42" AFF. Remove completely the existing flooring down to the floor joists. If necessary, sister two joists to strengthen and level. Otherwise level floor and provide new glue down ¾" T&G exterior grade subfloor glued and screwed to fasten. Provide new waterproof LVT finish flooring (approx. 40 sf) and 4" rubber cove base. See Specifications.
42. FLOOR FINISH (GC): Remove existing carpet and VCT floor finish throughout second floor. Provide new LVT floors over existing hardwood floors (approx. 460 sf). See Specification.
43. WINDOWS (GC): Clean tape residue. Clean out all window tracks (14 total).
44. PRIMARY BEDROOM CLOSET (GC): Add closet rod (3 ft).

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
ph 412.281.6001 fx 412.281.6002

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seal

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revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
8331 Vidette Street
Pittsburgh, Pennsylvania 15221

drawing title

Site Plan, Site Plan Legend, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no. 2	of. 9

Sheet No.
A2
Project #2326

FLOOR COVERING PLAN LEGEND

VCT FLOORING
CONCRETE FLOORING
CARPET FLOORING
LVT FLOORING
WOOD FLOORING

10 Scattered Sites Keynotes - 8331 Vidette St

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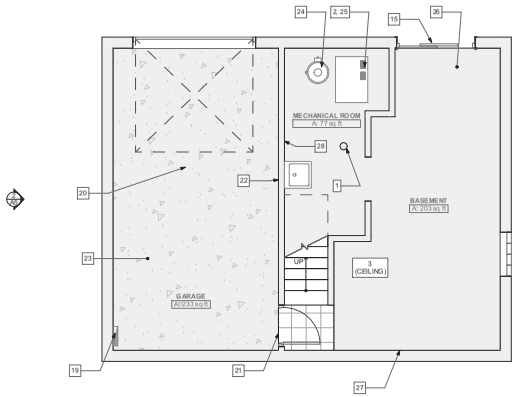
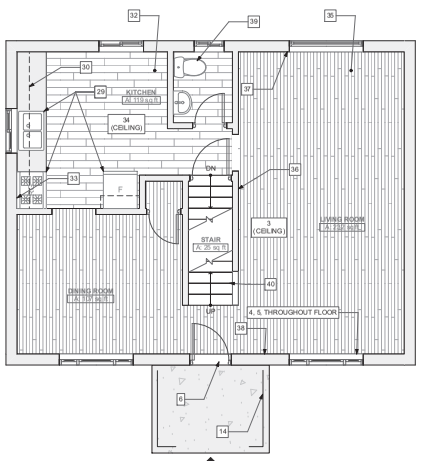
43. WINDOWS (GC): Clean tape residue. Clean out all window tracks (14 total).
44. PRIMARY BEDROOM CLOSET (GC): Add closet rod (3 ft).

GENERAL FLOOR PLAN NOTES

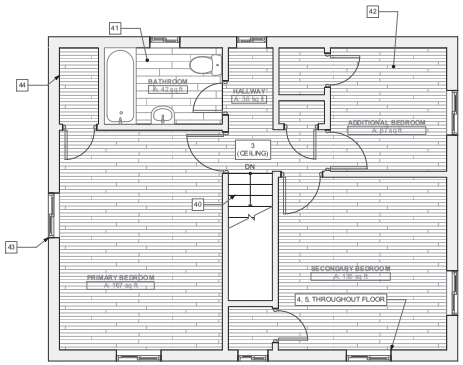
1. PROPERTY HAS BEEN TESTED FOR HAZARDOUS MATERIALS. REPORT WILL BE AVAILABLE AND PROVIDED BY HACP. GC TO ABATED MATERIALS FOLLOWING THE RECOMMENDATIONS FROM THE REPORT.
2. CONTRACTOR TO FIELD VERIFY ANY AND ALL CONDITIONS & DIMENSIONS OF WORK AREAS BEFORE BEGINNING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.
3. THE FINISH FLOOR OF THIS PROJECT IS IDENTIFIED AT 0'-0" IN THIS SET OF DRAWINGS.
4. ALIGN NEW WALL & CEILING CONSTRUCTION WITH EXISTING WALL CONSTRUCTION. FINISH NEW PARTITION SMOOTH TO FORM A SEAMLESS JOINT BETWEEN NEW & EXISTING PARTITIONS.
5. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC REPRESENTATIONS. NOTIFY ARCHITECT IN WRITING OF ANY INCONSISTENT OR MISSING DIMENSIONS.
6. DIMENSIONS SHOWN INDICATE FINISHED FACE TO FINISHED FACE, UNLESS NOTED OTHERWISE.
7. ALL NEW OR RELOCATED DOOR FRAMES TO BE LOCATED 4" FROM PERPENDICULAR WALLS, UNLESS NOTED OTHERWISE.
8. SAND WALLS SMOOTH, REMOVE ALL ADHESIVE RESIDUE, AND/OR SKIM WITH JOINT COMPOUND AS NECESSARY TO PREP WALLS FOR NEW FINISHES. THE FLOOR SHOULD BE SCRAPED CLEAN OF ANY ADHESIVE RESIDUE, PATCHED AND LEVELED OUT AS NECESSARY TO RECEIVE NEW FLOORING.
9. AT WALLS EXISTING TO REMAIN, PATCH AND PAINT ANY HOLES OR DAMAGE TO APPEAR NEW.



1 Basement
SCALE: 1/4" = 1'-0"



2 First Floor
SCALE: 1/4" = 1'-0"



3 Second Floor
SCALE: 1/4" = 1'-0"

Fukui Architects Pc
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Pittsburgh, Pennsylvania 15219
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CONSTRUCTION DOCUMENTATION

general notes

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revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

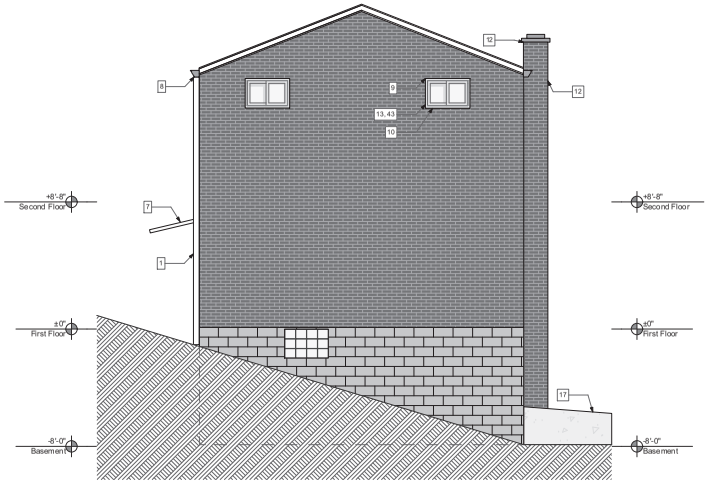
Project Location:
Renovation of 10 Scattered Sites
8331 Vidette Street
Pittsburgh, Pennsylvania 15221

drawing title

Basement, First Floor, Second Floor, Renovation Plan Legend, Keynotes, Floor Plan Legend

scale		Sheet No.
As Noted		A3
date: August 20th, 2024		
no. 3	of. 9	Project #2326

1 South Elevation
SCALE: 1/4" = 1'-0"



2 East Elevation
SCALE: 1/4" = 1'-0"

10 Scattered Sites Keynotes - 8331 Vidette St

GC: General Contract; E: Electrical Contract; P: Plumbing Contact; M: Mechanical Contract

Portions of the work must be coordinated with the Hazardous materials report provided by PSI. GC to follow recommendations for abatement specified in the report if not already performed.

General

1. UNDERGROUND SEWER LINES (P): Camera and clear sanitary sewer line from lowest level to main, including all roof drains to tie in or daylight.
2. DUCTWORK (M): Engage professional ductwork cleaning company to clean whole house ductwork, including grilles and diffusers. Replace any rusted grilles or diffusers (Allowance of 6 grilles and 6 diffusers per address should be added, total number to be adjusted based on the total used at all 10 sites). Additionally, seam seal all exposed duct joints to limit air leakage. Insulate and seal ductwork in unconditioned spaces, e.g., garages (see additional ductwork note at garage)
3. SMOKE/CO DETECTORS (E): In entire house, provide new Smoke/CO Detectors. See Specifications for type and locations.
4. MISCELLANEOUS WALL (GC): Remove all existing drapery rods. See Specifications.
5. AT INTERIOR WALLS, CEILINGS, DOORS AND TRIM (GC): Repair holes and gouges ready for paint. Prep and paint all walls, ceilings, wall base, painted doors, and painted trim/casing. Painted doors, trim, casing, and wall base to be painted with a semi-gloss finish. All existing Walls and ceilings to be painted with an eggshell finish. See Specifications.

Exterior

6. FRONT DOOR (GC): Remove existing front exterior door, frame and threshold, provide new 1 3/4" insulated wood look fiberglass door (with 3 lites sim. to existing), door threshold and all door hardware. Paint frame to finish and trim with new synthetic wood trim, caulked to seal. See Specifications.
7. ENTRANCE CANOPY (GC): At this location, provide new 52" wide x 36" deep, concave style aluminum entrance canopy properly fastened, flashed and sealed to exterior wall face. See Specifications.
8. ROOF GUTTERS AND FASCIA (GC): Remove gutters and replace existing fascia board with new synthetic white fascia board. Clear gutters downspouts and underground piping of debris. Clean and reinstall gutters and reconnect to downspout ensuring that all joints are properly sealed. Provide new gutter guard protection along the full length of the gutters. See Specification.
9. EXISTING LINTELS (GC): Protect surrounding finishes and windows, sandblast to clean rust and old paint off of existing steel lintels. Prime bare steel using zinc rich primer. Paint lintels to finish and caulk to seal within brick joints. Match caulk to mortar. Replace these (2) lintels with new. See Specifications
10. EXISTING BRICK SILLS (GC): At exterior of building, repoint all brick sills at each opening location (14 total).

11. EXISTING BRICK VENEER (GC): At entire façade strike and repoint areas of loose or missing mortar. This includes areas left, right and above all window lintels as well as the entire chimney stack.

12. CHIMNEY (GC): in addition to repointing chimney, remove existing crumbling mortar cap and provide new aluminum cap at top. See Specifications.
13. EXISTING WINDOW CAULK (GC): Scrape clean and recaulk head, jamb and sill of all windows. See Specifications.
14. ENTRY RAILING (GC): Scrape and paint patio railing. (See Specifications)
15. REAR GLASS SLIDING DOOR (GC): Remove and replace existing rear sliding door, frame and associated synthetic trim. Provide new replacement sliding door x full height and width of opening. See Specifications.
16. REAR YARD (GC): In this area clear out undergrowth, fallen and dead branches (approx. 1,800 sf).
17. REAR PATIO (GC): Remove and replace concrete pavers (approx. 200 sf). Provide new concrete slab sloped to drain away from building. See Specifications. At existing concrete slab and driveway clean control joints down to ½" to 1" and provide new backer rod and caulk to seal (approx. 200 sf). Pressure wash entire slab.
18. TREE STUMPS (GC): Remove existing tree stump and surrounding invasive flora entirely. Provide new compacted soil and grass overseed to establish lawn in area of removal.

Interior Garage

19. ELECTRICAL PANEL (E): Replace existing archaic electric panel with new 100 AMP panel with new arc fault type circuit breakers. Balance loads, mark all circuits and provide new panel legend typed or neatly and legibly handwritten. Additionally provide proper electrical grounding and bonding of the electrical system. See Specifications.
20. GARAGE ENVELOPE (GC): At this location, where ductwork penetrates garage envelope, expose ductwork, seam seal joints and wrap duct in 1" rigid insulation. Provide finished 5/8" type "X" GWB finish to fully enclose duct tight to ceiling and wall with all edge and corner beads. Tape, spackle, and paint new GWB to finish. See Specifications.
21. GARAGE TO HOUSE DOOR (GC): Remove existing door and frame between garage and residence. Provide new min. 1 3/8" thick, 20 minute rated insulated metal door. Paint to finish with new threshold and all door hardware. See specifications.
22. GARAGE WALLS (GC): Scrape and paint interior surface floor to ceiling (approx. 550 sf). See Specifications.
23. GARAGE FLOOR (GC): Pressure wash to clean garage floor (approx. 240 sf).

Interior Basement

24. WATER HEATER (P): Water Heater appears to be manufacture dated May of 2019 and does not show signs of failure. Service.
25. FURNACE (M): Furnace is 32 years old. Replace the Furnace. See Specifications.
26. BASEMENT FINISH FLOOR (GC): Clean, prep and paint existing basement floor (approx. 200 sf). See Specification.
27. WATER METER (E): Add grounding site to jump water meter. Reattach cover.
28. MECHANICAL ROOM (GC): Clean and paint walls (approx. 300 sf). Provide new painted moisture resistant GWB finish at partition wall and below stair.

Interior First Floor

29. KITCHEN APPLIANCES (GC/E/M): Replace all appliances including stove/oven, refrigerator, kitchen exhaust hood.
30. KITCHEN CABINETS (GC): Carefully clean existing kitchen cabinet faces and interior to remove soiling and oils. Provide new door/drawer knobs. Adjust doors and drawers to level and ensure smooth operation. See Specifications.
31. KITCHEN SINK AND FAUCETS (P): Provide new Kitchen sink faucet and drain.
32. KITCHEN FLOORING (GC): Kitchen flooring: Remove and replace kitchen flooring (approx. 100 sf) and wall base. Prep subfloor, smooth and level. Provide new LVT finish flooring and 4" rubber cove base.
33. KITCHEN BACKSPLASH (GC): Kitchen stove backsplash: Provide new thinset ceramic tile backsplash from 12" below top of cooking surface to base of upper cabinets x width of cabinets. Grouted and sealed.
34. KITCHEN CEILING (GC/E): Kitchen Ceiling and ceiling lighting: remove remaining damaged portions of kitchen ceiling. Replace/Repair existing leaking plumbing lines above. Provide new GWB ceiling patch to blend with existing ceiling. Tape, spackle, texture and paint entire ceiling (approx. 100 sf). Provide new energy star kitchen lighting fixtures (typ. 2). See Specifications.
35. FLOOR FINISH (GC): Remove existing carpet and VCT floor finish throughout first floor dining room and living room. Provide new LVT floors over existing hardwood floors (approx. 360 sf). See Specification.
36. EXISTING STONE VENEER WALL (GC): At existing interior stone veneer wall (approx. 120 sf), clean and prep stone. Provide new semi-gloss white paint finish. See Specifications.
37. EXISTING INTERIOR WALL REPAIR (GC): Scrape, spackle, sand and paint area of wall adjacent to rear Living Room Window to match existing (Approx. 12 Sq In.)
38. NEW LIVING ROOM CEILING LIGHT FIXTURE AND SWITCH (E): Centered in Living Room ceiling, provide new energy star rated LED type surface mounted light fixture, wiring and new switch control. Gang new switch with existing 3 gang switch location adjacent to front door. See Specifications.
39. HALF-BATH (P): Replace toilet with new. See Specifications.

Interior Second Floor

40. MAIN STAIRWAY (GC): At main stairway, replace 5 damaged painted oak stair treads. Match existing tread nosing, trim, depth and width. Glue and screw to secure. Repaint entire stairway treads, risers and stringers to match existing. Sand and re-paint handrail, or replace handrail, and paint.
41. BATHROOM (GC/P/E/M): Completely renovate bathroom with new tub/shower, tub/shower surround, shower rod and curtain; sink base cabinet and counter with integral sink; sink faucet, drain assembly and shut-offs; toilet and spring loaded paper holder; new medicine cabinet and lighting. Provide new GFCI outlet located on left side of sink approx. 42" AFF. Remove completely the existing flooring down to the floor joists. If necessary, sister two joists to strengthen and level. Otherwise level floor and provide new glue down ¾" T&G exterior grade subfloor glued and screwed to fasten. Provide new waterproof LVT finish flooring (approx. 40 sf) and 4" rubber cove base. See Specifications.
42. FLOOR FINISH (GC): Remove existing carpet and VCT floor finish throughout second floor. Provide new LVT floors over existing hardwood floors (approx. 460 sf). See Specification.
43. WINDOWS (GC): Clean tape residue. Clean out all window tracks (14 total).
44. PRIMARY BEDROOM CLOSET (GC): Add closet rod (3 ft).

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Pittsburgh, Pennsylvania 15219
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seal

CONSTRUCTION DOCUMENTATION

general notes

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revisions

project title

Owner:
The Housing Authority of the City of Pittsburgh
412 Boulevard of the Allies
Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
8331 Vidette Street
Pittsburgh, Pennsylvania 15221

drawing title

South Elevation, East Elevation, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no.	of.
4	9

Sheet No.
A4
Project #2326

Fukui Architects Pc
205 Ross Street
Pittsburgh, Pennsylvania 15219
ph 412.281.6001 fx 412.281.6002

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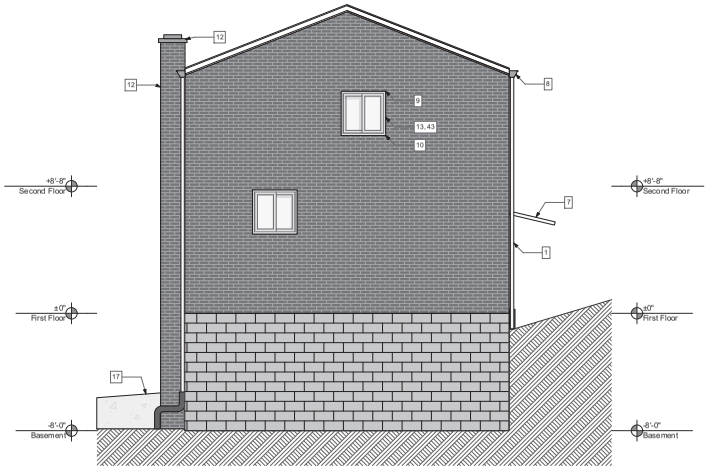
1 North Elevation
SCALE: 1/4" = 1'-0"



2 West Elevation
SCALE: 1/4" = 1'-0"

10 Scattered Sites Keynotes - 8331 Vidette St

GC: General Contract; E: Electrical Contract; P: Plumbing Contact; M: Mechanical Contract

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44. PRIMARY BEDROOM CLOSET (GC): Add closet rod (3 ft).

seal

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revisions

project title

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Pittsburgh,Pennsylvania,15219

Project Location:
Renovation of 10 Scattered Sites
8331 Vidette Street
Pittsburgh, Pennsylvania 15221

drawing title

North Elevation, West Elevation, Keynotes

scale	
As Noted	
date	
August 20th, 2024	
no. 5	of. 9

Sheet No.
A5
Project #2326

GENERAL NOTES

USE OF THE DOCUMENTS
THE USE OF THESE DOCUMENTS IS RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED. RE-USE OR REPRODUCTION OF THE DOCUMENTS (IN WHOLE OR IN PART), FOR ANY OTHER PURPOSE IS PROHIBITED. TITLE TO THESE REMAINS WITH FUKU ARCHITECTS P.C. (FAR). VISUAL CONTRACT DOCUMENTS DOCUMENTS ARE PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

DIVISION 1 - GENERAL CONDITIONS

APPLICABILITY OF HUD-5370 GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS - PUBLIC HOUSING PROGRAMS
THE HUD-5370, GENERAL CONDITIONS CURRENT EDITION, SHALL APPLY TO THE PROJECT. A COPY OF THE HUD GENERAL CONDITIONS ARE INCLUDED IN THE FRONT END DOCUMENTS AS PART OF HUD FORMS. HARD CONES ARE AVAILABLE AT HACP OFFICE.

MULTIPLE CONTRACT
1. COORDINATION
GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT, ELECTRICAL CONTRACT, AND ADDITIONAL CONTRACTS APPLICABLE IN THE CONSTRUCTION DOCUMENTS.

2. GENERAL REQUIREMENTS OF CONTRACTS
UNLESS THE AGREEMENT CONTAINS A MORE SPECIFIC DESCRIPTION OF THE WORK OF EACH CONTRACT, THE DIVISIONS AND INDICATED ON DRAWINGS AND IN SPECIFICATION SECTIONS DETERMINE WHICH CONTRACT INCLUDES A SPECIFIC ELEMENT OF PROJECT.

3. SCOPE OF WORK RESPONSIBILITY
A. GENERAL CONSTRUCTION CONTRACT
WORK OF THE GENERAL CONSTRUCTION CONTRACT INCLUDES, BUT IS NOT LIMITED TO, THE REMAINING WORK NOT IDENTIFIED AS WORK UNDER OTHER CONTRACTS.

B. PLUMBING CONTRACT
WORK OF THE PLUMBING CONTRACT INCLUDES, BUT IS NOT LIMITED TO, PLUMBING FIXURES AND APPLIANCES (INCLUDING BUT NOT LIMITED TO SINKS, TUBS, SHOWER ENCLOSURES, SINK DRAINS, FAUCETS AND DRAIN ASSEMBLIES, ETC), PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT. PLUMBING CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE PLUMBING CONTRACT AND MECHANICAL CONTRACT.

C. MECHANICAL CONTRACT
WORK OF THE MECHANICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ALL MECHANICAL EQUIPMENT AND CONNECTIONS TO EQUIPMENT FURNISHED BY THE MECHANICAL CONTRACT. ELECTRICAL, CONTRACT MECHANICAL EQUIPMENT INCLUDES BUT IS NOT LIMITED TO FURNACES AND CONDENSERS, KITCHEN AND BATH EXHAUST FANS, THERMOSTATS AND CONTROLS, ETC.

D. ELECTRICAL CONTRACT
WORK OF THE ELECTRICAL CONTRACT INCLUDES, BUT IS NOT LIMITED TO, SUPPLYING AND INSTALLING ELECTRICAL EQUIPMENT AND FIXTURES INCLUDING BUT NOT LIMITED TO, (INTERIOR AND EXTERIOR LIGHT FIXTURES, SMOKE AND CO DETECTORS, COMPLETE CIRCUIT BREAKER PANELS INCLUDING ALL BREAKERS AND LABELING, ELECTRICAL SERVICE ENTRANCE), WIRING, AND ELECTRICAL AND LOW VOLTAGE CONNECTIONS TO EQUIPMENT FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT. ELECTRICAL CONNECTIONS TO EXISTING SYSTEMS AND TEMPORARY FACILITIES AND CONTROLS FURNISHED BY THE GENERAL CONSTRUCTION CONTRACT, PLUMBING CONTRACT, MECHANICAL CONTRACT AND ELECTRICAL CONTRACT

PRE-CONSTRUCTION CONFERENCE AND NOTICE TO PROCEED
WITHIN TEN CALENDAR DAYS OF CONTRACT EXECUTION, AND PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH THE OWNER, ARCHITECT OF PHA, ITS ARCHITECT, AND OTHER INTERESTED PARTIES CONVENED BY THE PHA. THE CONFERENCE WILL SERVE TO ACQUAINT THE CONTRACTOR WITH THE GENERAL PLAN OF THE CONSTRUCTION OPERATION AND ALL OTHER REQUIREMENTS OF THE CONTRACT. THE PHA WILL PROVIDE THE CONTRACTOR WITH THE DATE, TIME, AND PLACE OF THE CONFERENCE.
(B) THE CONTRACTOR SHALL BEGIN WORK UPON RECEIPT OF A WRITTEN NOTICE TO PROCEED FROM THE CONTRACTING OFFICER OR DESIGNEE. THE CONTRACTOR SHALL NOT BEGIN WORK PRIOR TO RECEIVING SUCH NOTICE.

CONSTRUCTION PROGRESS
(A) THE CONTRACTOR SHALL, WITHIN FIVE DAYS AFTER THE WORK COMMENCES ON THE CONTRACT OR ANOTHER PERIOD OF TIME DETERMINED BY THE CONTRACTING OFFICER, PREPARE AND SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL THREE COPIES OF A PRACTICABLE SCHEDULE SHOWING THE ORDER IN WHICH THE CONTRACTOR PROPOSES TO PERFORM THE WORK, AND THE DATES ON WHICH THE CONTRACTOR CONTEMPLATES STARTING AND COMPLETING THE SEVERAL SALIENT FEATURES OF THE WORK (INCLUDING PROCUREMENT, LABOR, MATERIALS, AND EQUIPMENT). THE SCHEDULE SHALL BE IN THE FORM OF A PROGRESS CHART OF SUITABLE SCALE TO INDICATE APPROPRIATELY THE PERCENTAGE OF WORK SCHEDULED FOR COMPLETION BY ANY GIVEN DATE DURING THE PERIOD. IF THE CONTRACTOR FAILS TO SUBMIT A SCHEDULE WITHIN THE TIME PRESCRIBED, THE CONTRACTING OFFICER MAY WITHHOLD APPROVAL OF PROGRESS PAYMENTS OR TAKE OTHER REMEDIES UNDER THE CONTRACT UNTIL THE CONTRACTOR SUBMITS THE REQUIRED SCHEDULE.
(B) THE CONTRACTOR SHALL ENTER THE ACTUAL PROGRESS ON THE CHART AS REQUIRED BY THE CONTRACTING OFFICER, IMMEDIATELY DELIVER THREE COPIES OF THE ANNOTATED SCHEDULE TO THE CONTRACTING OFFICER. IF THE CONTRACTOR FALLS BEHIND SCHEDULE, UPON THE BASIS OF INSPECTION CONDUCTED PURSUANT TO THE CLAUSE ENTITLED INSPECTION AND ACCEPTANCE OF CONSTRUCTION, HEREIN THAT THE CONTRACTOR IS NOT MEETING THE APPROVED SCHEDULE, THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO IMPROVE ITS PROGRESS, INCLUDING THOSE THAT MAY BE REQUESTED BY THE CONTRACTING OFFICER, WITHOUT ADDITIONAL COST TO THE PHA. IN THIS CIRCUMSTANCE, THE CONTRACTING OFFICER MAY REQUIRE THE CONTRACTOR TO INCREASE THE NUMBER OF SHIFTS, OVERTIME OPERATIONS, DAYS OF WORK, AND/OR THE AMOUNT OF CONSTRUCTION PLANT, AND TO SUBMIT FOR APPROVAL ANY SUPPLEMENTARY SCHEDULE OR SCHEDULES IN CHART FORM AS THE CONTRACTING OFFICER DEEMS NECESSARY TO DEMONSTRATE HOW THE APPROVED RATE OF PROGRESS WILL BE REGAINED.
(C) FAILURE OF THE CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACTING OFFICER UNDER THIS CLAUSE SHALL BE GROUNDS FOR A DETERMINATION BY THE CONTRACTING OFFICER THAT THE CONTRACTOR IS NOT PROSECUTING THE WORK WITH SUFFICIENT DILIGENCE TO ENSURE COMPLETION WITHIN THE TIME SPECIFIED IN THE CONTRACT. UPON MAKING THIS DETERMINATION, THE CONTRACTING OFFICER MAY TERMINATE THE CONTRACTOR'S RIGHT TO PROCEED WITH THE WORK, OR ANY SEPARABLE PART OF IT, IN ACCORDANCE WITH THE DEFAULT CLAUSE OF THIS CONTRACT.

SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK
(A) THE CONTRACTOR ACKNOWLEDGES THAT IT HAS TAKEN STEPS REASONABLY NECESSARY TO ASCERTAIN THE NATURE AND LOCATION OF THE WORK, AND THAT IT HAS INVESTIGATED AND SATISFIED ITSELF AS TO THE GENERAL AND LOCAL CONDITIONS WHICH CAN AFFECT THE WORK OR ITS COST, INCLUDING BUT NOT LIMITED TO, (1) CONDITIONS BELOW UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS; (2) THE AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, AND ROADS; (3) UNCERTAINTIES OF WEATHER, RIVER STAGES, TIDES, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE; (4) THE CONFORMATION AND CONDITIONS OF THE GROUND; AND (5) THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING WORK PERFORMANCE. THE CONTRACTOR ALSO ACKNOWLEDGES THAT IT HAS SATISFIED ITSELF AS TO THE CHARACTER, QUALITY, AND QUANTITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED IN SO FAR AS THIS INFORMATION IS REASONABLY ASCERTAINABLE FROM AN INSPECTION OF THE SITE, INCLUDING AN EXPLORATORY WORK DONE BY THE PHA, AS WELL AS FROM THE DRAWINGS AND SPECIFICATIONS MADE A PART OF THIS CONTRACT. ANY FAILURE OF THE CONTRACTOR TO TAKE THE ACTIONS DESCRIBED AND ACKNOWLEDGED IN THIS PARAGRAPH WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK, OR FOR PROCEEDING TO SUCCESSFULLY PERFORM THE WORK WITHOUT ADDITIONAL EXPENSE TO THE PHA.
(B) THE PHA ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR BASED ON THE INFORMATION MADE AVAILABLE BY THE PHA. NOR DOES THE PHA ASSUME RESPONSIBILITY FOR ANY UNDERSTANDING REACHED OR REPRESENTATION MADE CONCERNING CONDITIONS WHICH CAN AFFECT THE WORK BY ANY OF ITS OFFICERS OR AGENTS BEFORE THE EXECUTION OF THIS CONTRACT, UNLESS THAT UNDERSTANDING OR REPRESENTATION IS EXPRESSLY STATED IN THIS CONTRACT.

DIFFERING SITE CONDITIONS
(1) THE CONTRACTOR SHALL PROMPTLY, AND BEFORE THE CONDITIONS ARE DISTURBED, GIVE A WRITTEN NOTICE TO THE CONTRACTING OFFICER OF (1) SUBSURFACE OR UNKNOWN PHYSICAL CONDITIONS AT THE SITE WHICH DIFFER MATERIALLY FROM THOSE INDICATED IN THIS CONTRACT, OR (2)UNKNOWN PHYSICAL CONDITIONS AT THE SITE OF AN UNUSUAL NATURE, WHICH DIFFER MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERING IN WORK OF THE CHARACTER PROVIDED FOR IN THIS CONTRACT.
(B)THE CONTRACTING OFFICER SHALL INVESTIGATE THE SITE CONDITIONS PROMPTLY AFTER RECEIVING THE NOTICE. WORK SHALL NOT PROCEED AT THE AFFECTED SITE, EXCEPT AT THE CONTRACTOR'S RISK, UNTIL THE CONTRACTING OFFICER HAS PROVIDED WRITTEN INSTRUCTIONS TO THE CONTRACTOR. IF THE CONDITIONS DO MATERIALLY SO DIFFER AND CAUSE AN INCREASE OR DECREASE IN THE CONTRACTOR'S COST OF, OR THE TIME REQUIRED FOR, PERFORMING ANY PART OF THE WORK UNDER THIS CONTRACT, WHETHER OR NOT CHANGED AS A RESULT OF THE CONDITIONS, THE CONTRACTOR MAY FILE A CLAIM IN WRITING TO THE PHA WITHIN TEN DAYS AFTER RECEIPT OF SUCH INSTRUCTIONS AND, IN ANY EVENT, BEFORE PROCEEDING WITH THE WORK. ADJUSTMENTS ADJUSTMENT IN THE CONTRACT PRICE, THE DELIVERY SCHEDULE, OR BOTH SHALL BE MADE UNDER THIS CLAUSE AND THE CONTRACT MODIFIED IN WRITING ACCORDINGLY.
(C)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED, UNLESS THE CONTRACTOR HAS GIVEN THE WRITTEN NOTICE REQUIRED; PROVIDED, THAT THE TIME PRESCRIBED IN (A) ABOVE FORGIVING WRITTEN NOTICE MAY BE EXTENDED AT THE DISCRETION OF THE PHA.
(D)NO REQUEST BY THE CONTRACTOR FOR AN EQUITABLE ADJUSTMENT TO THE CONTRACT UNDER THIS CLAUSE SHALL BE ALLOWED IF MADE AFTER FINAL PAYMENT UNDER THIS CONTRACT.

SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION
(A) THE CONTRACTOR SHALL KEEP ON THE WORK SITE A COPY OF THE DRAWINGS AND SPECIFICATIONS AND SHALL AT ALL TIMES GIVE THE CONTRACTING OFFICER ACCESS THERETO. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH. IN CASE OF DIFFERENCE BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. IN CASE OF DISCREPANCY IN THE FIGURES, IN THE DRAWINGS OR SPECIFICATIONS, THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE CONTRACTING OFFICER, WHO SHALL PROMULGATE THE DETERMINATION IN WRITING. ANY ADJUSTMENTBY THE CONTRACTOR WITHOUT SUCH A DETERMINATION SHALL BE ATITS OWN RISK AND EXPENSE. THE CONTRACTING OFFICER SHALL FURNISH FROM TIME TO TIME SUCH DETAILED DRAWINGS AND OTHER INFORMATION AS CONSIDERED NECESSARY, UNLESS OTHERWISE PROVIDED.
(B)WHEREVER IN THE SPECIFICATIONS OR UPON THE DRAWINGS THE WORDS "DIRECTED", "REQUIRED", "ORDERED", "DESIGNATED", "PRESCRIBED", OR WORDS OF LIKE IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE"DIRECTION", "REQUIREMENT", "ORDER", DESIGNATION, OR "PRESCRIPTION", OF THE ARCHITECT OF PHA OFFICER IS INTENDED AND SIMILARLY THE WORDS "APPROVED", "ACCEPTABLE", "SATISFACTORY", OR WORDS OF LIKE IMPORT SHALL MEAN "APPROVED BY", OR "ACCEPTABLE TO", OR "SATISFACTORY TO" THE CONTRACTING OFFICER, UNLESS OTHERWISE EXPRESSLY STATED.
(C)WHERE, AS, AND IN THE EXTENT THAT, THE DRAWINGS AND SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE REFERENCE IS MADE TO THE DRAWINGS ACCOMPANYING THIS CONTRACT UNLESS STATED OTHERWISE. THE WORD "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE" THAT IS "PROVIDED AND INSTALLED"
(D)"SHOP DRAWINGS" MEANS DRAWINGS, SUBMITTED TO THE PHA BY THE CONTRACTOR, A SUBCONTRACTOR, OR ANY LOWER TIER SUBCONTRACTOR, SHOWING IN DETAIL (1) THE PROPOSED FABRICATION AND ASSEMBLY OF STRUCTURAL ELEMENTS AND (2) THE INSTALLATION(I.E., FORM, FIT, AND ATTACHMENT DETAILS) OF MATERIALS OF EQUIPMENT. IT INCLUDES DRAWINGS, DIAGRAMS, LAYOUTS, SCHEDULES, DESIGNS OF THE FOLLOWING: (1) PERFORMANCE AND SCHEDULES, PERFORMANCE AND TEST DATA, AND SIMILAR MATERIALS FURNISHED BY THE CONTRACTOR TO EXPLAIN THE DETAILED SPECIFIC PORTIONS OF THE WORK REQUIRED BY THE CONTRACT. THE PHA MAY SUPPLEMENT THE SHOP DRAWINGS WITH SPECIFICATIONS FOR ANY PURPOSE. SHOP DRAWINGS S DELIVERED UNDER THIS CONTRACT.
(E)IF THIS CONTRACT REQUIRES SHOP DRAWINGS, THE CONTRACTOR SHALL COORDINATE ALL SHOP DRAWINGS, AND REVIEW THEM FOR ACCURACY, COMPLETENESS, AND COMPLIANCE WITH OTHER CONTRACT REQUIREMENTS, AND INDICATE ITS APPROVAL THEREON AS EVIDENCE OF SUCH COORDINATION AND REVIEW. SHOP DRAWINGS SUBMITTED TO THE CONTRACTING OFFICER WITHOUT EVIDENCE OF THIS COORDINATION AND REVIEW OR THAT ARE RESUBMISSION TO THE CONTRACTING OFFICER WILL INDICATE AN APPROVAL OR DISAPPROVAL OF THE SHOP DRAWINGS. IF THE CONTRACTOR BELIEVES SUCH SHOULD INDICATE THE PHA'S REASONS THEREFORE. ANY WORK DONE BEFORE SUCH APPROVAL SHALL BE AT THE CONTRACTOR'S RISK. APPROVAL BY THE CONTRACTING OFFICER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS IN SUCH DRAWINGS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM THE REQUIREMENTS OF THIS CONTRACT, EXCEPT WITH RESPECT TO VARIATIONS DESIRED AND MADE KNOWN TO THE CONTRACTING OFFICER IF BELOW.
(F) IF SHOP DRAWINGS SHOW VARIATIONS FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL DESCRIBE SUCH VARIATIONS IN WRITING, SEPARATE FROM THE DRAWINGS, AT THE TIME OF SUBMISSION. IF THE CONTRACTING OFFICER FINDS THAT THE PHA AND THE CONTRACTING OFFICER CONCURS, THE CONTRACTING OFFICER SHALL INDICATE AN APPROVAL THEREOF. IN THIS CASE, THE CONTRACTOR SHALL INDICATE THAT, IF THE VARIATION IS MINOR OR DOES NOT INVOLVE A CHANGE IN PRICE OR IN TIME OF PERFORMANCE, A MODIFICATION NEED NOT BE ISSUED. (G)IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE TIMELY REQUESTS OF THE PHA FOR SUCH LARGE SCALE AND DETAILED DRAWINGS AS MAY BE NECESSARY FOR ORDER OF ADDITIONAL INFORMATION NOT ALREADY IN HIS POSSESSION, WHICH SHALL BE REQUIRED UNDER THIS CONTRACT. ANY DELAY ARISING FROM SUCH REQUESTS MAY BE SUBMITTED AS THE NEED ARISES, BUT EACH SUCH REQUEST SHALL BE FILED IN AMPLE TIME TO PERMIT APPROPRIATE ACTION TO BE TAKEN WITHOUT DELAY OR INTERFERENCE WITH THE DELIVERY.
(H) THE CONTRACTOR SHALL SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL FOLLOWING SUCH REQUIREMENTS AS MAY BE MADE, ALL SHOP DRAWINGS AS CALLED FOR UNDER THE VARIOUS HEADINGS OF THESE SPECIFICATIONS. THREE SETS (UNLESS OTHERWISE INDICATED) OF ALL SHOP DRAWINGS, WILL BE RETAINED BY THE PHA AND ONE SET WILL BE RETURNED TO THE CONTRACTOR, AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL PROCEED WITH THE WORK OF THE CONTRACT, SHALL FURNISH A COMPLETE SET OF ALL SHOP DRAWINGS AS FINALLY APPROVED. THESE DRAWINGS WILL SHOW ALL CHANGES AND REVISION SMADE UP TO THE TIME THE WORK IS COMPLETED AND ACCEPTED.
(I) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL SUBCONTRACTORS PROVIDED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

AS-BUILT DRAWINGS
(A)"AS-BUILT DRAWINGS," AS USED IN THIS CLAUSE, MEANS DRAWINGS SUBMITTED BY THE CONTRACTOR TO RECORD CHANGES FROM THE WORK TO SHOW THE CONSTRUCTION OF A PARTICULAR STRUCTURE OR WORK AS ACTUALLY CONSTRUCTED UNDER THE CONTRACT. "AS-BUILT DRAWINGS" SHALL BE SYNONYMOUS WITH "RECORD DRAWINGS."
(B)AS REQUIRED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER ACCURATE INFORMATIONTO BE USED IN THE PREPARATION OF PERMANENT AS-BUILT DRAWINGS. THE CONTRACTOR SHALL MAKE THE CONTRACTOR SHALL RECORD ON ONE SET OF CONTRACT DRAWINGS ALL CHANGES FROM THE INSTALLATIONS ORIGINALLY INDICATED AND RECORD FINAL LOCATIONSOF UNDERGROUND LINES BY DEPTH FROM FINISH GRADE AND BY ACCURATE HORIZONTAL OFFSET DISTANCES TO PERMANENT SURFACE IMPROVEMENTS SUCH AS BUILDINGS, CURBS, OR EDGES OF WALKS.
(C) THIS CLAUSE SHALL BE INCLUDED IN ALL SUBCONTRACTS AT ANY TIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL AS-BUILT DRAWINGS PROVIDED BY SUBCONTRACTORS ARE SUBMITTED TO THE CONTRACTING OFFICER.

MATERIAL AND WORKMANSHIP
(A)ALL EQUIPMENT, MATERIAL, AND ARTICLES FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED. UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT. REFERENCES IN THE CONTRACT TO EQUIPMENT, MATERIAL, ARTICLES, OR PATENTED PROCESSES BY TRADE NAME, MAKE, OR CATALOG NUMBER, SHALL BE REGARDED AS ESTABLISHING A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. THE CONTRACTOR MAY, AT ITS OPTION, USE ANY EQUIPMENT, MATERIAL, ARTICLE, OR PROCESS THAT, IN THE JUDGMENT OF, AND AS APPROVED BY THE CONTRACTING OFFICER, IS EQUAL TO THAT NAMED IN THE SPECIFICATIONS, UNLESS OTHERWISE SPECIFICALLY PROVIDED IN THIS CONTRACT.
(B)APPROVAL OF EQUIPMENT AND MATERIALS.
(1) THE CONTRACTOR SHALL OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT TO BE INCORPORATED INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL GIVE THE CONTRACTING OFFICER THE NAME OF THE MANUFACTURER, THE MODEL NUMBER, AND OTHER INFORMATION CONCERNING THE PERFORMANCE, CAPACITY, NATURE, AND RATING OF THE MACHINERY AND MECHANICAL AND OTHER EQUIPMENT WHEN REQUIRED BY THIS CONTRACT OR BY THE CONTRACTINGOFFICER. THE CONTRACTOR SHALL ALSO OBTAIN THE CONTRACTING OFFICER'S APPROVAL OF THE MATERIAL ORARTICLES WHICH THE CONTRACTOR PROPOSES TO INCORPORATE INTO THE WORK. WHEN REQUESTING APPROVAL, THE CONTRACTOR SHALL PROVIDE FULL INFORMATION CONCERNING THE MATERIAL OR ARTICLES. MACHINERY,
EQUIPMENT, MATERIAL, AND ARTICLES THAT DO NOT HAVE THE REQUIRED APPROVAL SHALL BE INSTALLED OR USED AT THE RISK OF SUBSEQUENT REJECTION.
(2) WHEN REQUIRED BY THE SPECIFICATIONS OR THE CONTRACTING OFFICER, THE CONTRACTOR SHALL SUBMIT APPROPRIATELY MARKED SAMPLES (AND CERTIFICATES RELATED TO THEM) FOR APPROVAL AT THE CONTRACTOR'S
EXPENSE, WITH ALL SHIPPING CHARGES PREPAID. THE CONTRACTOR SHALL LABEL THE SAMPLES OR SHIPPING CONTAINERS IN WHICH THE MATERIAL OR PRODUCT REPRESENTED, ITS PLACE OF ORIGIN, THE NAME OF THE PRODUCER, THE CONTRACTOR'S NAME AND THE LOCATION OF THE CONSTRUCTION PROJECT FOR WHICH THE MATERIAL OR PRODUCTS INTENDED TO BE USED.
(3) CERTIFICATES SHALL BE SUBMITTED IN TRIPLICATE, DESCRIBING EACH SAMPLE SUBMITTED FOR APPROVAL, AND CERTIFYING THAT THE MATERIAL, EQUIPMENT, AND OTHER ITEMS CONFORM TO CONTRACT REQUIREMENTS. THE CERTIFICATES SHALL INCLUDE THE NAME AND BRAND OF THE PRODUCT, NAME OF MANUFACTURER, AND THE LOCATION WHERE PRODUCED.
(4) APPROVAL OF A SAMPLE SHALL NOT CONSTITUTE A WAIVER OF THE PHA RIGHT TO DEMAND FULL COMPLIANCE WITH CONTRACT REQUIREMENTS. MATERIALS, EQUIPMENT AND ACCESSORIES MAY BE REJECTED FOR CAUSE EVEN THOUGH SAMPLES HAVE BEEN APPROVED.
(5) WHEREVER MATERIALS ARE REQUIRED TO COMPLY WITH RECOGNIZED STANDARDS OR SPECIFICATIONS, SUCH SPECIFICATIONS SHALL BE ACCEPTED AS ESTABLISHING THE TECHNICAL QUALITIES AND TESTING METHODS, BUT SHALL NOT GOVERN THE NUMBER OF TESTS REQUIRED TO BE MADE UNDER THE CONTRACT UNLESS OTHERWISE STATED. THE CONTRACTING OFFICER MAY REQUIRE LABORATORY TEST REPORTS ON ITEMS SUBMITTED FOR APPROVAL OR APPROVED UNDER THIS CLAUSE ON THE BASIS OF DATA SUBMITTED IN CERTIFICATES WITH SAMPLES. CHECK TESTS WILL BE MADE ON MATERIALS
DELIVERED TO THE WORK SITE AT ANY TIME IF NECESSARY AS THE CONTRACTING OFFICER DETERMINES NECESSARY TO INSURE COMPLIANCE OF MATERIALS WITH THE SPECIFICATIONS. THE CONTRACTOR WILL ASSUME ALL COSTS OF RETESTING MATERIALS WHICH FAIL TO MEET CONTRACT REQUIREMENTS AND RETESTING MATERIAL SOFFERED IN SUBSTITUTION FOR THOSE FOUND DEFICIENT.
(6) AFTER APPROVAL, SAMPLES WILL BE KEPT IN THE PROJECT OFFICE, UNTIL COMPLETION OF WORK. THEY MAY NOT BE USED IN THE WORK (AFTER A SUBSTANTIAL QUANTITY OF THE MATERIALSTHEY REPRESENT HAS BEEN BUILT INTO THE WORK).
(C) REQUIREMENTS CONCERNING LEAD-BASED PAINT. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE LEAD-BASED PAINT CONTAINED IN THE LEAD-BASED PAINT POISONING PREVENTION ACT (42 U.S.C. 4821-4846) AS IMPLEMENTED BY 24 CFR PART 35.

PERMITS AND CODES
(A)THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALLAPPLICABLE LAWS, ORDINANCES, CODES, RULES AND REGULATIONS. NOTWITHSTANDING THE REQUIREMENTS OF THE CONTRACTOR TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS IN THE CONTRACT, ALL WORK INSTALLED SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. BEFORE BEGINNING ANY WORK, THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND THE SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS BEARING ON THE WORK AND SHALL IMMEDIATELY REPORT ANY DISCREPANCY IT MAY DISCOVER TO THE CONTRACTING OFFICER.
WHERE THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS FAIL TO COMPLY WITH THE APPLICABLE CODE OR REGULATION, THE CONTRACTING OFFICER SHALL MODIFY THE CONTRACT TO CHANGE ORDER PURSUANT TO THE CLAUSE ENTITLED CHANGES HEREIN TO CONFORM TO THE CODE OR REGULATION.
(B) THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES,AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK, WHERE THE PHA CONTRACTS FOR THE ISSUANCE OF ALL OR PART OF THESE PERMITS, FEES AND LICENSES WITHOUT COST TO THE CONTRACTOR, THE CONTRACT AMOUNT SHALL BE REDUCED ACCORDINGLY.

HEALTH, SAFETY AND ACCIDENT PREVENTION
(A) IN PERFORMING THIS CONTRACT, THE CONTRACTOR SHALL:
(1)ENSURE THAT NO LABORER OR MECHANIC SHALL BE REQUIRED TO WORK IN SURROUNDINGS OR UNDER WORKING CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO HIS/HER HEALTH AND/OR SAFETY AS DETERMINED UNDER CONSTRUCTION SAFETY AND HEALTHSTANDARDS PROMULGATED BY THE SECRETARY OF LABOR BY REGULATION. (2)PROTECT THE LIVES, HEALTH, AND SAFETY OF OTHER PERSONS; (3)PREVENT DAMAGE TO PROPERTY, MATERIALS, SUPPLIES, AND EQUIPMENT; AND, (4)AVOID WORK INTERRUPTIONS.
(B) FOR THESE PURPOSES, THE CONTRACTOR SHALL: (1)COMPLY WITH REGULATIONS AND STANDARDS ISSUED BY THE SECRETARY OF LABOR AT 29 CFR PART 1926 AND FAILURE TO COMPLY MAY RESULT IN IMPOSITION OF SANCTIONS PURSUANT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. 327 ET SEQ. 40 U.S.C. 3701 ET SEQ.), AND (2)INCLUDE THE TERMS OF THIS CLAUSE IN EVERY SUBCONTRACT SO THAT SUCH TERMS WILL BE BINDING ON EACH SUBCONTRACTOR.
(C) THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF EXPOSURE DATA ON ALL ACCIDENTS INCIDENT TO WORK PERFORMED UNDER THIS CONTRACT AND RESULTING IN DEATH, TRAUMATIC INJURY,OCCUPATIONAL DISEASE, OR DAMAGE TO PROPERTY, MATERIALS,SUPPLIES, OR EQUIPMENT, AND SHALL REPORT THIS DATA IN THE MANNER PRESCRIBED BY 29 CFR PART1904.
(D)THE CONTRACTOR AGREES THAT THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THESE REQUIREMENTS AND OF THE CORRECTIVE ACTION REQUIRED. THIS NOTICE, WHEN DELIVERED TOTHE CONTRACTOR OR THE CONTRACTOR'S REPRESENTATIVE AT THE SITE OF THE WORK, SHALL BE DEEMED SUFFICIENT NOTICE OF THE NON COMPLIANCE AND CORRECTIVE ACTION REQUIRED. AFTER RECEIVING SUCH NOTICE, THE CONTRACTOR SHALL IMMEDIATELY TAKE CORRECTIVE ACTION. IF THE CONTRACTOR FAILS OR REFUSES TO TAKE CORRECTIVE ACTION PROMPTLY, THE CONTRACTING OFFICER MAY ISSUE AN ORDER STOPPING ALL OR PART OF THE WORK UNTIL SATISFACTORY CORRECTIVE ACTION HAS BEEN TAKEN. THE CONTRACTOR SHALL NOT BASE ANY CLAIM ON REQUEST FOR EQUITABLE ADJUSTMENT FOR ADDITIONAL TIME OR MONEY ON ANY STOP ORDER ISSUED UNDER THESE CIRCUMSTANCES.
(E) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS SUBCONTRACTORS' COMPLIANCE WITH THE PROVISIONS OF THIS CLAUSE. THE CONTRACTOR SHALL NOT INCLUDE THIS CLAUSE IN ANY SUBCONTRACT AS THE PHA, THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, OR THE SECRETARY OF LABOR SHALL DIRECT AS A MEANS OF ENFORCING SUCH PROVISIONS.

TEMPORARY HEATING
THE MECHANICAL CONTRACTOR SHALL PROVIDE AND PAY FOR TEMPORARY HEATING, COVERING, AND ENCLOSURES NECESSARY TO PROPERLY PROTECT ALL WORK AND MATERIALS AGAINST DAMAGE BY DAMPNESS AND COLD, TO DRY OUT THE WORK, AND TO FACILITATE THE COMPLETION OF THE WORK. ANY PERMANENT HEATING EQUIPMENT USED SHALL BE TURNED OVER TO THE PHA IN THE CONDITION AND AT THE TIME REQUIRED BY THE SPECIFICATIONS.

AVAILABILITY AND USE OF UTILITY SERVICES
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PERFORMED OR COMPLETED SHALL BE SUBMITTED BY EACH PRIME CONTRACTOR. ALL WORK OUTLINED ON THE INITIAL PUNCH LIST SHALL BE COMPLETED BY THE CONTRACTOR PRIOR TO THE FINAL INSPECTION AND BEFORE THE PROJECT WILL BE ACCEPTED FOR FINAL COMPLETION. AFTER ALL REQUIREMENTS PREPARATORY TO THE FINAL INSPECTION HAVE BEEN COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER TO PERFORM A FINAL INSPECTION. IF ALL THE WORK HAS BEEN COMPLETED, INCLUDING PUNCH LIST ITEMS FROM EARLIER INSPECTIONS, AND NO FURTHER CORRECTIONS ARE REQUIRED, THE ARCHITECT SHALL RECOMMEND FINAL ACCEPTANCE OF THE PROJECT WHEN ALL THE CLOSEOUT DOCUMENTS ARE RECEIVED, INCLUDING BUT NOT LIMITED TO WARRANTIES, O&M MANUALS, FINAL TESTING, CERTIFICATES, PERMITS, PUNCH LIST, SUBMITTALS, RFIS, AS BUILD DRAWINGS AND ANY ADDITIONAL DOCUMENTATION REQUIRED BY HACP FOR CLOSEOUT.

ALL PUNCH LIST ITEMS TO BE COMPLETED WITHIN THIRTY (30) WORKING DAYS OF RECEIPT, OR FROM 10% DRAW WILL BE FORFEITED. ALL WORK NOT COMPLETED WITHIN THE ALLOTTED TIME WILL BE COMPLETED BY HACP AT PRIME CONTRACTOR'S EXPENSE. FINAL COMPLETION OCCURS WHEN ALL PUNCH LIST ITEMS HAVE BEEN COMPLETED AND OCCUPANCY PERMIT HAS BEEN ISSUED.

PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL EQUIPMENT FURNISHED, INSTALLED AND/OR SERVICED UNDER THIS AND THEIR CONTRACTS. EACH PRIME CONTRACTOR SHALL VERIFY THAT ITS EQUIPMENT, ELECTRICAL SYSTEMS AND APPLIANCES ARE FULLY OPERATIONAL AND THAT ALL PLUMBING AND MECHANICAL EQUIPMENT IS OPERATING QUIETLY AND FREE FROM VIBRATION. CONTRACTOR SHALL PROVIDE A BINDER FOR HACP AND TENANT CONTAINING MAINTENANCE MANUALS, INCLUDING OPERATION INSTRUCTIONS, SPARE PARTS, WARRANTIES, INSPECTION PROCEDURES, AND DATA FOR EACH SYSTEM OR EQUIPMENT ITEM.

ALL ELECTRICAL PANELS AND BREAKERS TO BE PROPERLY MARKED AND A TYPED SCHEDULE TO BE FURNISHED.

FINAL CLEANING: AT THE TIME OF THE PROJECT CLOSE OUT, THE GENERAL CONTRACTOR SHALL PROVIDE AND THOROUGHLY CLEAN AND READY THE SPACE FOR OCCUPANCY. THIS SHALL, AT MINIMUM, INCLUDE HARDWARE, SECURITY EQUIPMENT, LIGHT FIXTURES, REPLACEMENT OF BURNED OUT LAMPS, REMOVAL OF NON PERMANENT PROTECTION AND LABELS, TOUCH UP OF ANY MINOR FINISH DAMAGE, AND CLEANING OR REPLACEMENT OF MECHANICAL SYSTEM FILTERS. DAMAGE TO ANY FINISH, SURFACE, EQUIPMENT OR OBJECT CAUSED DURING CLEANING SHALL BE REPAIRED OR REPLACED BY THE GENERAL CONTRACTOR AT HIS/HER OWN COST.

UPON COMPLETION OF THE PROJECT, GENERAL CONTRACTOR SHALL OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT AND PROVIDE A COPY OF THE ORIGINAL TO HACP AND ARCHITECT IF REQUIRED.

AT EACH PAYMENT REQUEST AND BEFORE PAYMENT IS MADE, EACH CONTRACTOR SHALL DELIVER TO THE HACP A COMPLETE RELEASE OF ALL SUB CONTRACTOR'S AND SUPPLIER'S LIENS AND RIGHTS OUT OF THIS CONTRACT, OR RECEIPTS IN FULL COVERING ALL LABOR AND MATERIALS FOR WHICH A LIEN COULD BE FILED OR A BOND SATISFACTORY TO THE HACP INDEMNIFYING HACP AGAINST ANY LIENS.

DIVISION 2 – SITE WORK – NOT APPLICABLE

DIVISION 3 – CONCRETE

PLAN AND REINFORCE CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 19 OF THE IBC 2018 AND ACI 318 AS AMMENDED IN SECTION 1905 OF THE IBC 2018.

CONCRETE TO BE INSTALLED AND CURED PER ACI 318 AND BE NORMAL WEIGHT (144PCF) WITH COMPRESSIVE STRENGTH IN 28 DAYS OF 4000 PSI, AIR ENTRAINED. CEMENT SHALL BE PORTLAND, TYPE I(PL)Y ASH & GROUND GRANULATED BLAST FURNACE SLAG NOT PERMITTED). COARSE AGGREGATE SHALL BE ¾" MAXIMUM. AIR ENTRAINED SHALL BE 7 PERCENT. SLUMP SHALL BE 4" MAXIMUM.

REINFORCING BARS SHALL COMPLY WITH A.S.T.M. A615–GRADE 60. WELDED WIRE FABRIC SHALL COMPLY WITH A.S.T.M. A185.

4" MINIMUM COMPACTED GRAVEL BED TO PLACE CONCRETE TO BE #57 HAND OR MACHINE COMPACTED BEFORE CONCRETE PLACEMENT.

PROVIDE COLD-APPLIED JOINT SEALANTS, SINGLE COMPONENT, SILICONE, SELF LEVELING TYPE BY SIKA OR EQUAL.

ROUND BACKER RODS FOR COLD-APPLIED JOINT SEALANTS: ASTM D5249, TYPE 3, OF DIAMETER AND DENSITY REQUIRED TO CONTROL JOINT-SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT. BY SIKA OR EQUAL.

DIVISION 4 – MASONRY

BRICK MASONRY REPOINTING

BRICK MASONRY REPOINTING SPECIALIST QUALIFICATIONS: ENGAGE AN EXPERIENCED BRICK MASONRY REPOINTING FIRM TO PERFORM WORK OF THIS SECTION. FIRM SHALL HAVE COMPLETED WORK SIMILAR IN MATERIAL DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. EXPERIENCE IN ONLY INSTALLING MASONRY IS INSUFFICIENT EXPERIENCE FOR MASONRY REPOINTING WORK.

REPOINTING OF AREAS INDICATED IN THE DRAWINGS AND LOCATIONS WITH THE FOLLOWING DEFECTS:
A. HOLES AND MISSING MORTAR.
B. CRACKS THAT CAN BE PENETRATED 1/4 INCH OR MORE BY A KNIFE BLADE 0.027 INCH THICK.
C.CRACKS 1/8 INCH OR MORE IN WIDTH AND OF ANY DEPTH.
D.HOLLOW-SOUNDING JOINTS WHEN TAPPED BY METAL OBJECT.
E. ERODED SURFACES 1/4 INCH OR MORE DEEP.
F. DETERIORATION TO POINT THAT MORTAR CAN BE EASILY REMOVED BY HAND, WITHOUT TOOLS.
G. JOINTS FILLED WITH SUBSTANCES OTHER THAN MORTAR.

MATERIALS
PORTLAND CEMENT: ASTM C 150/C 150M, TYPE I OR TYPE II. EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION; GRAY, WHERE REQUIRED FOR COLOR MATCHING OF MORTAR.

MASONRY CEMENT: ASTM C 91/C 91M. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- CEMEX S.A.B. DE C.V.
- HOLCIM (US) INC.
- QUIKRETE; THE QUIKRETE COMPANIES, LLC.

REMOVE GUTTERS, DOWNSPOUTS AND ASSOCIATED HARDWARE ADJACENT TO MASONRY REPOINTING. REINSTALL WHEN REPOINTING IS COMPLETED.PROVIDE TEMPORARY RAIN DRAINAGE DURING WORK TO DIRECT WATER AWAY FROM THE BUILDING.

SEE LINTEL REPLACEMENT BELOW AND COORDINATE MASONRY REPOINTING AND REPLACEMENT WITH REMEDIAL LINTEL REPAIR OR REPLACEMENT.

RETAINING WALL
WHERE NOTED ON THE DRAWINGS, NEW DRYSTACK RETAINING WALL, BELGARD OR EQUAL, TO MATCH EXISTING COLOR AND TYPE OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. REMOVE SUFFICIENT SOIL TO ALLOW ACCESS TO INSTALL A NEW WALL. SET NEW WALL IN COMPACTED GRAVEL BED STRICTLY ACCORDING TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS. INSTALL NEW WALL WITH ALL NECESSARY PINS, GEOGRID AND CAP PIECES ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL ACCESSORIES
WALL CAPS, PINS AND GEOGRID FABRIC.
REPLACEMENT WALL CAPS TO MATCH EXISTING, MATERIAL CONCRETE BY BELGARD OR EQUAL. COLOR AND TYPE TO MATCH EXISTING OR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

GLASS BLOCK
SOLID GLASS BLOCK COLORLESS, TRANSPARENT, SMOOTH FACES AND MANUFACTURER'S STANDARD EDGE COATING WHITE, BY SEVES, OWINGS CORNING GLASS BLOCK OR EQUAL. SILICONE SEALANT BY SIKA OR EQUAL. PRODUCT INFORMATION AND SAMPLE TO BE PROVIDED TO ARCHITECT AND HACP FOR APPROVAL. SIZE OF GLASS BLOCK TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD SIZES. GLASS BLOCK SHALL BE INSTALLED PER IBC AND IRC BUILDING CODE AND TMS 402/ACI 530/ASCE 5 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES"

DIVISION 5 – METALS

STEEL BEAMS, ANGLES AND PLATES
SHOP PRIMED WITH RUST PREVENTATIVE PAINT. DIMENSIONS AND GRADE TO MATCH EXISTING. SHOP DRAWINGS TO BE PROVIDED BY GC.

ALL EXTERIOR LINTELS MUST BE HOT-DIP GALVANIZED PER ASTM A123.

LINTEL REPLACEMENT/ INSTALLATION ON BRICK VENEER EXTERIOR WALLS
PROTECT EXISTING OPENING WITH PLYWOOD.TEMPORARILY SHORE AND REMOVE EXISTING BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL AND REPLACE WITH NEW LINTEL WITH MATCHING STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

FOR LINTEL CLEANING USE METAL CLEANING ON NEXT SECTION.

METAL CLEANING
EXECUTION OF THE WORK: IN CLEANING ITEMS, DISTURB THEM AS MINIMALLY AS POSSIBLE AND AS FOLLOWS:
A. REMOVE DISTINGUISHED COATINGS AND CORROSION.
B. SEQUENCE WORK TO MINIMIZE TIME BEFORE PROTECTIVE COATINGS ARE REAPPLIED.
C. CLEAN ITEMS IN PLACE UNLESS OTHERWISE INDICATED.

MECHANICAL COATING REMOVAL: USE GENTLE METHODS, SUCH AS SCRAPING AND WIRE BRUSHING, THAT WILL NOT ABRADE METAL SUBSTRATE.

REPAINT: WHERE INDICATED, PREPARE PAINTED DECORATIVE METAL BY CLEANING SURFACE, BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING METAL AND REPLACE WITH NEW LINTEL WITH MATCHING STEEL ANGLE TO MATCH EXISTING LENGTH AND GAUGE. PROVIDE NEW FLASHING OVER NEW LINTEL AND CAULK AGAINST HOUSE WRAP. REINSTALL EXISTING BRICK.

FOR LINTEL CLEANING USE METAL CLEANING ON NEXT SECTION.

METAL CLEANING
EXECUTION OF THE WORK: IN CLEANING ITEMS, DISTURB THEM AS MINIMALLY AS POSSIBLE AND AS FOLLOWS:
A. REMOVE DISTINGUISHED COATINGS AND CORROSION.
B. SEQUENCE WORK TO MINIMIZE TIME BEFORE PROTECTIVE COATINGS ARE REAPPLIED.
C. CLEAN ITEMS IN PLACE UNLESS OTHERWISE INDICATED.

MECHANICAL COATING REMOVAL: USE GENTLE METHODS, SUCH AS SCRAPING AND WIRE BRUSHING, THAT WILL NOT ABRADE METAL SUBSTRATE.

REPAINT: WHERE INDICATED, PREPARE PAINTED DECORATIVE METAL BY CLEANING SURFACE, BRICK ABOVE THE OPENING AT LEAST 6 INCHES ON EACH SIDE MINIMUM AND VERTICALLY AS NEEDED TO REMOVE EXISTING PAINT. SANDING EDGES SMOOTH, REMOVING EXISTING PAINT AND PRIMING FOR PAINTING AS SPECIFIED.

METAL AWNINGS
BASIS OF DESIGN, MATCH EXISTING AWNINGS DIMENSIONS, PERIMETER FASCIA, BRACING AND SUPPORTS TO BE EXTRUDED ALUMINUM, DECKING ALUMINUM INTERLOCKING PANELS, PROFILE AND THICKNESS AS DETERMINED BY MANUFACTURER. FACTORY APPLIED BACKED ENAMEL OR KYNAR PAINT FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER STANDARD COLOR CHART. INSTALLATION OF AWNINGS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. ALL FASTENERS FOR AWNINGS SHALL BE TYPE 316 SS. FOR LOCATIONS WHERE AWNINGS ARE ATTACHED TO SIDEWALL AWNING FASTENERS SHALL FASTEN INTO STUDS WITH COMPRESSION STAND-OFF IF THROUGH VENEER BRICK. INSTALLATION SHALL INCLUDE PREFINISHED ALUMINUM REGLETED WALL FLASHING AT HEAD, PROPERLY INSTALLED AND CAULKED. SEE ALSO DIVISION 10.

ALUMINUM METAL RAILINGS
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS, INCORPORATED, OR COMPARABLE PRODUCT, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
PROVIDE ALLOY AND TEMPER RECOMMENDED BY ALUMINUM PRODUCER AND FINISHER FOR TYPE OF USE AND FINISH INDICATED, AND WITH STRENGTH AND DURABILITY PROPERTIES FOR EACH ALUMINUM FORM REQUIRED NOT LESS THAN THAT OF ALLOY AND TEMPER DESIGNATED BELOW.
GC TO PROVIDE PRODUCT INFORMATION AND SHOP DRAWINGS OF NEW RAILINGS TO MATCH EXISTING DIMENSIONS. PROVIDE ACCESSORIES AS REQUIRED FOR INSTALLATION ON CONCRETE, SHEETMETOD DECKING, WALLS AND CHANGE IN DIRECTION FITTINGS AS REQUIRED.

DIVISION 6 – WOOD AND PLASTICS

WOOD FRAMING AND BLOCKING
SELECT STRUCTURAL GRADE DOUGLAS FIR SOUTH, SIZES AS INDICATED ON DRAWINGS. COMPLY WITH THE "RECOMMENDED NAILING SCHEDULE" OF THE "MANUAL FOR HOUSING FRAMING."

FLOOR SHEATHING (IF REQUIRED) - PROVIDE 3/4" T&G PLYWOOD FLOOR SHEATHING OR OSB STRUCTURAL FIBERBOARD. ALIGN PANELS ACROSS A MINIMUM OF TWO SUPPORTS WITH THICKNESS IN A 3/8 PERPENDICULAR TO AXIS OF JOISTS, STAGGER JOINTS. GLUE TO JOISTS AND EDGES WITH ELASTOMERIC SOLVENT-BASED GLUE CONFORMING TO APA SPECIFICATION AFG-101. FASTEN WITH 8D COMMON OR 6D ANNULAR OR SPIRAL NAILS AT 6" O.C. ALONG EDGES AND 10" ALONG INTERMEDIATE SUPPORTS. FOLLOW PANEL MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR SUB-FLOOR PREP, PRIOR TO INSTALLATION OF FINISH FLOORING.

EXTERIOR WOOD FRAMING EXPOSED TO WEATHERING AND INSECTS SHALL BE MINIMUM 2" X PRESSURE TREATED LUMBER. KILN DRIED TO 19% MOISTURE CONTENT BEFORE INSTALLATION.

WOOD TRIM AND MOLDINGS
PROVIDE FURNITURE GRADE SOLID HARDWOOD TRIM AND MOLDINGS. STAIN ALL SIDES AND ENDS. WOOD TRIM AND MOLDINGS TO MATCH EXISTING UNLESS OTHERWISE NOTED ON DRAWINGS.

INSTALL WOOD TRIM AND MOLDINGS WITH MITER AT CORNERS, MITERED LAP SPLICES, AND SET WITH COUNTER SUNK GALVANIZED FINISH NAILS CAPPED WITH WOOD PUTTY SANDED SMOOTH. COMPLY WITH AWI 300 FOR ALL STANDARD WOOD RUNNING TRIM.

FABRICATOR QUALIFICATIONS
FIRM EXPERIENCED IN PRODUCING ARCHITECTURAL WOODWORK SIMILAR TO THAT INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE, AS WELL AS SUFFICIENT PRODUCTION CAPACITY TO PRODUCE REQUIRED UNITS WITHOUT DELAYING THE WORK.

INTERIOR ARCHITECTURAL WOODWORK

INSTALLER QUALIFICATIONS.
ARRANGE FOR INSTALLING ARCHITECTURAL WOODWORK INSTALLATION BY A FIRM THAT CAN DEMONSTRATE SUCCESSFUL EXPERIENCE IN INSTALLING ARCHITECTURAL WOODWORK ITEMS SIMILAR IN TYPE AND QUALITY TO THOSE REQUIRED FOR THIS PROJECT.

QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH AWI'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS."

ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETE, AND MECHANICAL SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD. REFER TO AWI'S OR WIS MEMBER LIST FOR NAMES OF WOODWORKING FIRMS THAT COULD POTENTIALLY BE INCLUDED.

MATERIALS

WOOD SPECIES AND CUT FOR TRANSPARENT FINISH: AS INDICATED ON DRAWINGS.

WOOD SPECIES FOR OPAQUE FINISH: ANY CLOSED-GRAIN HARDWOOD.

GENERAL: COMPLETE FABRICATION TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE. WHERE NECESSARY FOR FITTING AT THE SITE, PROVIDE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.
- INTERIOR WOODWORK GRADE: AWI CUSTOM.
- SHOP CUT OPENINGS TO MINIMUM EXTENT POSSIBLE. SAND EDGES OF CUTOUTS TO REMOVE SPLINTERS AND BURRS. SEAL EDGES OF OPENINGS IN COUNTERTOPS WITH A COATING OF VARNISH.
- FOR TRANSPARENT-FINISHED TRIM ITEMS WIDER THAN AVAILABLE LUMBER, USE VENEERED CONSTRUCTION. DO NOT GLUE FOR WIDTH.
- BACK OUT OF FLAT TRIM WITH VERTICAL GRAIN AND KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT FOR MEMBERS WITH END-EXPOSED IN FINISHED WORK.
- ASSEMBLE CASINGS IN PLANT EXCEPT WHERE LIMITATIONS OF ACCESS TO PLACE OF INSTALLATION.

PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH THE ARCHITECTURAL WOODWORK STANDARDS FOR GRADES OF CABINETS INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS.

ARCHITECTURAL WOOD WORK STAND ARDS GRADE: AWI PREMIUM.

TYPE OF CONSTRUCTION: FRAMELESS.

DOOR AND DRAWER-FRONT STYLE: FLUSH OVERLAY.

HIGH-PRESSURE DECORATIVE LAMINATE: ISO 4586-3, GRADES AS INDICATED OR IF NOT INDICATED, AS REQUIRED BY QUALITY STANDARD.

EXPOSED SURFACES:
1. PLASTIC-LAMINATE GRADE: AWI PREMIUM.
2. EDGES: GRADE AWI PREMIUM.
3. PATTERN DIRECTION: AS INDICATED.

CONCEALED BACKS OF PANELS WITH EXPOSED PLASTIC-LAMINATE SURFACES: HIGH-PRESSURE DECORATIVE LAMINATE, ISO 4586-3, GRADE TO MATCH EXPOSED SURFACE.

DRAWER CONSTRUCTION: FABRICATE WITH EXPOSED FRONTS FASTENED TO SUBFRONT WITH MOUNTING SCREWS FROM INTERIOR OF BODY.
1. JOIN SUBFRONTS, BACKS, AND SIDES WITH GLUED RABBETED JOINTS AND REINFORCED BY MECHANICAL FASTENERS OR GLUED DOVETAIL JOINTS.

COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS SELECTED BY ARCHITECT FROM LAMINATE MANUFACTURERS' FULL RANGE IN THE FOLLOWING CATEGORIES:
A. SOLID COLORS, MATTE FINISH.
B. SOLID COLORS WITH CORE SAME COLOR AS SURFACE, MATTE FINISH.
C. WOOD GRAIN, MATTE FINISH.
D. PATTERNS, MATTE FINISH.

SYNTHETIC DECKING
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE AZEK BUILDING PRODUCTS; TIMBERTECH, AZEK OR COMPARABLE PRODUCT.
DECKING SIZE AND LENGTH TO MATCH EXISTING INSTALLATION. FINISH TEXTURE BRUSHED; COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. FASCIA BOARDS TO MATCH DECKING COLOR.
DECKING FASTENING SYSTEM AS RECOMMENDED BY MANUFACTURER'S INSTALLATION MANUAL. FOLLOW MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR CUTTING, TRIMMING AND INSTALLING DECKING.

RUBBER STAIR TREADS COVERS
BASIS OF DESIGN, BY ROPPE OR EQUAL, RIBBED PATTERN, BLACK FINISH. FOLLOW THE MANUFACTURER'S INSTRUCTION FOR INSTALLATION.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

ROOFING SHEET METAL FLASHING AND TRIM
GENERAL: CONTRACTOR TO EVALUATE STATUS OF ROOFING MATERIAL, COMMUNICATE THE HACP AND ARCHITECT OF FINDINGS AND IF PATCHING OR REPLACEMENT IS NEEDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INSTALL ASPHALT SHINGLES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN ARMA'S "ASPHALT ROOFING RESIDENTIAL MANUAL - DESIGN AND APPLICATION METHODS" AND NRCA'S "NR CA GUIDELINES FOR ASPHALT SHINGLE ROOFING SYSTEMS".

ASPHALT SHINGLES: ASTM D3462/D3462M, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION; GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF-SEALING, BY GAF OR EQUAL, STRAIGHT CUT. FINISH COLOR TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

GC TO INSPECT FLASHING OF ROOF PENETRATIONS, PATCH AND REPLACE IF NEEDED TO COMPLY WITH CODE AND REGULATIONS.

SHEET METAL STANDARD FOR FLASHING AND TRIM: COMPLY WITH NRCA'S "THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION AND AIR LEAKAGE CONTROL, AND REROOFING" AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL". REQUIREMENTS FOR DIMENSIONS AND PROFILES SHOWN UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.

INSTALL SHEET METAL FLASHING AND TRIM TO COMPLY WITH DETAILS INDICATED AND RECOMMENDATIONS OF CITED SHEET METAL STANDARDS THAT APPLY TO INSTALLATION CHARACTERISTICS REQUIRED UNLESS OTHERWISE INDICATED ON DRAWINGS

THERMAL INSULATION
GC TO PROVIDE THERMAL INSULATION ON WALLS, CEILINGS AND FLOORS AS NOTED ON THE DRAWINGS.

INSULATION TO COMPLY WITH THE ENERGY CODE IN MINIMUM R VALUES OR AS SPECIFIED ON DRAWINGS.

GC TO BE RESPONSIBLE TO INSPECTING, ADJUSTING AND ADDING INSULATION TO THE ENTIRE ATTIC SPACE TO ENSURE MINIMUM INSULATION COVERAGE WITHIN NO GAPS. GC TO INFORM HACP AND ARCHITECT PRIOR TO ADD ADDITIONAL INSULATION.

ATTIC DOORS TO RECEIVED RIGID FOAM INSULATION GLUED TO BACK OF THE DOOR AND SEALED WITH RUBBER JOINTS. INSULATION TO MATCH R VALUE OF CEILING ASSEMBLY.

ASSEMBLIES, SEPARATIONS & FIRESTOPPING:

ANY NEW DEMISING OR INTERIOR PARTITIONS SHALL BE RATED AS REQUIRED BY CODE. ANY PENETRATION THROUGH AN EXISTING DIMENSIONED RATED ASSEMBLY OR ULRATED ASSEMBLY WALL MUST RETAIN THE UL ASSEMBLY FIRE-RATING.

ALL NEW WORK SHALL MATCH OR EQUAL THE UL FIRE RATINGS, IF ANY, OF THE SURROUNDING WORK. AS APPROPRIATE, THE CONTRACTOR SHALL CONTACT HACP AND ARCHITECT IF ANY AREAS ARE UNCOVERED OR DISCOVERED THAT MAY REQUIRE ADDITIONAL ANALYSIS OR CLARIFICATION.

THROUGH PENETRATIONS OF FIRE RESISTANCE WALLS SHALL BE INSTALLED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED BY AN INDEPENDENT TESTING AGENCY SUCH AS UNDERWRITERS LABORATORIES. IF THE PENETRATING ITEMS ARE STEEL, FERROUS OR COPPER PIPES OR STEEL CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE FIRE-RESISTANCE-WALL SHALL BE PERMITTED TO BE PROTECTED AS FOLLOWS:

IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A MAXIMUM 6-INCH NOMINAL DIAMETER AND THE OPENING IS A MAXIMUM 144 SQUARE INCHES, CONCRETE, GROUT, OR MORTAR SHALL BE PERMITTED WHERE INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING.

THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHERE SUBJECTED TO ASTME 119 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE WALL ASSEMBLY.

MEMBRANE PENETRATIONS, WHERE WALL AND PARTITIONS ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:
FOR STEEL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. A HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY WHERE THE WALL CAVITY IS FILL WITH CELLULOSE LOOSE FILL, ROCKWOOL OR SLAG WOOL INSULATION PROVIDED THE WALL IS RATED (CONSISTING OF 2-INCH NOMINAL LUMBER OR TWO THICKNESSES OF 1-INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS OR ONE THICKNESS OF 0.719-INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 0.719-INCH WOOD STRUCTURAL PANEL OR ONE THICKNESS OF 0.75-INCH PARTICLEBOARD WITH JOINTS BACKED BY 0.75-INCH PARTICLEBOARD. GYPSUM BOARD, CEMENT FIBER BOARD, BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED AS AN ACCEPTABLE FIREBLOCK. BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NONRIGID MATERIALS SHALL BE PERMITTED FOR COMPLIANCE WITH THE 10-FOOT HORIZONTAL FIREBLOCKING IN WALLS CONSTRUCTED USING PARALLEL ROW OF STUDS OR STAGGERED STUDS. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASES. THE INTEGRITY OF FIREBLOCKS SHALL BE MAINTAINED; PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS AND METHODS.

MEMBRANE PENETRATIONS FOR LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL ARE PERMITTED PROVIDED THOSE BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE OR TO PREVENT THE FIRE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. SUCH PENETRATIONS SHALL NOT EXCEED AN AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.

MEMBRANE PENETRATIONS BY LISTED ELECTRICAL OUTLET BOXES OF ANY MATERIAL THAT HAS BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED PER INSTRUCTIONS INCLUDED IN LISTING.

JOINT SEALERS
INTERIOR JOINT SEALER IS TO BE MILDEW-RESISTANT SILICONE SEALANT. APPLY SEALANT AT ALL MATERIAL JOINTS SUBJECT TO WATER PENETRATION: COLOR TO BE SELECTED BY THE ARCHITECT FROM MFR'S STANDARD LINE.

VINYL SIDING
VINYL SIDING. INTEGRALLY COLORED PRODUCT COMPLYING WITH ASTM D3679.
BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALSIDE, EXTERIOR BUILDING PRODUCTS, KAYCAN LTD., ROYAL BUILDING PRODUCTS, A WESTLAKE COMPANY. OR EQUAL.

HORIZONTAL PATTERN: 6-1/2- OR 7-INCH EXPOSURE IN BEADED-EDGE, SINGLE-BEADED STYLE. SMOOTH TEXTURE. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OR TO MATCH EXISTING WHERE REQUIRED.

WATER PROOFING MEMBRANE
BASIS OF DESIGN, BY SIKA OR EQUAL, 60 MIL. REFER TO MANUFACTURERS INSTRUCTION FOR PREPARATION OF SUBSTRATES AND INSTALLATION OF MEMBRANE.

DIVISION 8 - DOORS, WINDOWS AND HARDWARE

ALL DOORS AND WINDOWS SHALL BE INSTALLED PLUMB, LEVEL, SQUARE, AND PER ALL MANUFACTURERS RECOMMENDATION.

EXTERIOR DOORS TO BE 1 3/4"-THICK, FIBERGLASS INSULATED WITH 3 SETS OF STEEL HINGES, RUBBER WEATHER STRIPPING, LOCKING AS SPECIFIED ON HARDWARE. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL

INTERIOR DOORS SOLID CORE FIVE PLY VENEER FACED, 1 3/8" THICK, 1 PAIR OF HINGES, HARDWARE TO MATCH EXISTING. VENEER FINISH TO MATCH EXISTING OR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. MANUFACTURER MASONITE OR EQUAL.

INTERIOR GLAZING SHALL BE AS SPECIFIED ON THE DRAWINGS.

TEMPERED OR SAFETY GLAZING IS TO BE PROVIDED AS FOLLOWS:

POLISH CHROME PLATE FINISH, 2.2 GPM FLOW RATE, LEVER HANDLE, RIGID SPOUT, DRAIN POP UP.

KITCHEN SINKS – WATER SENSE CERTIFIED
STAINLESS STEEL, COUNTER MOUNTED, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- AFFINITY SURFACES

0.038 INCH THICKNESS, 3 1/2" DRAIN GRID CENTERED IN BOWL.

SINKS FAUCETS – WATER SENSE CERTIFIED
GENERAL DUTTY SOLID BRASS, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- ELKAY
- HANSGROHE

POLISHED CHROME PLATE FINISH. SINGLE HANDLE ON KITCHEN TWO HANDLE ON UTILITY SINKS.

WATER CLOSET – WATER SENSE CERTIFIED
FLOOR MOUNTED, FLOOR OUTLET, CLOSE COUPLED (GRAVITY TANK), VITREOUS CHINE, 1.6 GAL/FLUSH, MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AMERICAN STANDARD.
- KOHLER
- TOTO USA

STANDARD HEIGHT, ELONGATED RIM, WATER SAVING, COLOR WHITE.
TOILET SEAT PLASTIC FOR RESIDENTIAL USE, ELONGATED RIM, SEAT COVER, SELF SUSTAINING HINGE, COLOR WHITE.

UTILITY SINK
FRESTANDING UTILITY SINK, MANUFACTURERS: PROFLO OR EQUAL
STANDARD HEIGHT, COLOR WHITE. 20 INCH BY 20 INCH SIZE.

EXTERIOR HOSE BIBB.
FREEZELESS WALL FAUCET, WOODFORD OR EQUAL, MODEL 30,3/4 INCH CONNECTION, BRASS FINISH, ASSE 1053 APPROVED, MAX PRESSURE 125 PSI.

SLEEVES
SLEEVES SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH WALLS, CEILINGS, OR FLOORS. SLEEVES SHALL BE CUT FROM SCHEDULE 40 BLACK IRON PIPE. THE INTERNAL DIAMETER OF THE SLEEVE SHALL EXCEED THE EXTERNAL DIAMETER OF THE PIPE (INCLUDING INSULATION) BY NOT LESS THAN ONE INCH. SLEEVES SHALL BE CUT FLUSH WITH WALLS AND UNDERSIDES OF FLOORS AND SHALL EXTEND ONE INCH ABOVE FLOORS ABOVE GRADE.

PIPE PORTALS
PIPING THROUGH THE ROOF SHALL BE INSTALLED THROUGH A PREFABRICATED PIPING PORTAL. PORTALS SHALL HAVE GALVANIZED STEEL INSULATED CURBS, ABS PLASTIC CURB CAP, NEOPRENE RUBBER NIPPLES, AND STAINLESS-STEEL CLAMPS. CURB HEIGHT AS INDICATED ON DRAWINGS. PORTALS SHALL BE MODEL RC AND NJB AS MADE BY ROOF PRODUCTS AND SYSTEMS CORP. PORTALS SHALL HAVE EXTRA HOLES FOR POWER AND CONTROL CONDUITS.

FIRESTOPS
ALL OPENINGS THROUGH FLOORS AND FIRE-RATED PARTITIONS SHALL BE SEALED. VOID SPACES AROUND DUCTS OR PIPES SHALL BE PACKED WITH A FIREPROOF CERAMIC FIBER AND SEALED WITH FIRE RETARDANT CAULKING. FIBER SHALL BE KAOWOOL BY BABCOCK AND WILCOX, FIBERFRAX BY CARBORUNDUM, OR CERAFIBER BY MANVILLE CO. CAULKING SHALL BE SE411 F BY UNISEAL STANDARD DUXSEAL BY MANVILLE, OR MOLDABLE PUTTY BY 3M.

ESCUTCHEONS
ESCUTCHEONS SHALL BE INSTALLED WHEREVER PIPING PASSES THROUGH FLOORS, CEILINGS, OR WALLS OF FINISHED SPACES. ESCUTCHEONS SHALL BE CHROMIUM PLATED STEEL, SNAP ON TYPE WITH SPRING RETAINERS. ESCUTCHEONS SHALL BE THE NO. 40 MADE BY BEATON/CORBIN COMPANY OR APPROVED EQUAL, SIZED TO FIT PIPE PLUS INSULATION. WHERE RISER CLAMPS ARE IN FINISHED SPACES, PROVIDE HIGH-SHIRT ESCUTCHEONS TO COVER CLAMP.

UNIONS
UNIONS SHALL BE INSTALLED AT ALL POINTS INDICATED ON THE DRAWINGS AND AT ALL OTHER POINTS NECESSARY FOR THE INSTALLATION AND REMOVAL OF EQUIPMENT, CONTROL DEVICES, ETC. UNIONS IN GAS LINES WILL BE PERMITTED ONLY AT THE FINAL CONNECTIONS TO EQUIPMENT.

HANGERS
ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH PIPEHANGERS TO PREVENT SAGGING AND AVOID CONCENTRATION OF HANGING LOAD. HANGER SPACING SHALL NOT EXCEED 10 FT. FOR STEEL PIPE OR 8 FT. FOR COPPER TUBING. COPPER TUBING 1-1/4" AND SMALLER SHALL BE SUPPORTED AT NO GREATER THAN 6 FT. SPACING.

REPAIR ALL FIREPROOFING WHICH IS DAMAGED BY HANGER INSTALLATION.

SOIL WASTE AND VENT PIPING
SOIL, WASTE AND VENT STACKS AND BRANCHES, AND ROOF CONDUCTORS SHALL BE ABS OR PVC PIPING AND FITTINGS SCHEDULE 40. WASTE LINES SHALL BE MINIMUM 2 INCH.

HOT AND COLD-WATER PIPING
POTABLE-WATER PIPING AND COMPONENTS ARE TO COMPLY WITH NSF 14, NSF 61, AND NSF 372. INCLUDE MARKING "NSF-PW" ON PIPING.

HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE TYPE L, SEMI-LESS, HARD TEMPER, COPPER TUBING WHICH CONFORMS TO ASTM SPECIFICATION B-88 WITH WROUGHT COPPER, SOLDER, TYPE FITTINGS, OR PEX TUBING PLASTIC IN ACCORDANCE WITH ASTM F876 AND ASTM F877 WITH FITTINGS ASTM F1807, METAL INSERT AND COPPER CRIMP RINGS ASTM F1960, COLD EXPANSION FITTINGS AND REINFORCING RINGS.

INSTALLATION OF PIPING
DRAINAGE PIPING SHALL BE INSTALLED TO ACCURATE LINE AND UNIFORM GRADE, AND AT THE ELEVATIONS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE INDICATED, ALL DRAINAGE LINES SHALL SLOPE NOT LESS THAN 1/4 INCH PER FOOT.
DRAINAGE LINES SHALL BE PROVIDED WITH SUFFICIENT CLEANOUTS TO MAKE ALL PARTS OF THE DRAINAGE SYSTEM ACCESSIBLE. CLEANOUTS SHALL BE PROVIDED ALONG INTERIOR HORIZONTAL RUNS AT NOT MORE THAN 50 FT. ON CENTER. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH ROOF CONDUCTOR AND AT ALL OTHER POINTS INDICATED ON THE DRAWING OR REQUIRED BY LOCAL PLUMBING CODE.

ALL PIPES SHALL BE CUT WITH SQUARE ENDS AND SHALL BE PROPERLY REAMED. THREADS SHALL BE CUT WITH CLEAN, SHARP DIES TO FULL DEPTH. ALL BURRS SHALL BE REMOVED FROM PIPE. JOINT COMPOUND SHALL BE APPLIED TO PIPE THREAD ONLY. USE OF EXCESSIVE JOINT COMPOUND IS PROHIBITED.

SOLDER JOINTS IN ALL WATER LINES SHALL BE MADE WITH 95-5 TIN-ANTIMONY SOLDER. OTHER JOINTS MADE WITH EASYBRITE LEAD FREE SOLDER.

WATER LINES WITHIN THE BUILDING SHALL BE INSTALLED WITH SUFFICIENT PITCH TO PROPERLY DRAIN LINES AND VALVES. IN ADDITION TO DRAIN VALVES INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL DRAIN VALVES NECESSARY TO PROPERLY DRAIN THE SYSTEM.

GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND NFPA-54. ALL GAS PIPING AND CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH AGA RECOMMENDATIONS AND ALL APPLICABLE LOCAL GAS COMPANY REGULATIONS.

CONTRACTOR SHALL VENTILATE THE WORK AREA TO PROVIDE A SAFE ENVIRONMENT. VENTILATION SHALL NOT DIRECT FUMES TO ADJACENT SPACES OR NEIGHBORING STRUCTURES.

CONTRACTOR SHALL PROVIDE ADEQUATE FIRE PROTECTION DURING WELDING, CUTTING AND SOLDERING.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

VALVES
VALVES IN WATER LINES SHALL BE 125 PSI CLASS, BRONZE BODY, BALL VALVES WITH TEFLON SEATS AND PACKING. NIBCO 580 OR APOLLO.DRAIN VALVES SHALL BE BRONZE BODY SOLDERED ENDS, BALL VALVES WITH 3/4 INCH AMERICAN STANDARD HOSE THREAD OUTLET. NIBCO OR APOLLO.

WALL HYDRANT SHALL BE ALL BRASS, FULLY RECESSED, NON-FREEZE, KEY OPERATED, WITH ADJUSTABLE LOCKNUT, REMOVABLE NYLON SEAT, 3/4 INCH HOSE CONNECTION. FURNISH WITH INTEGRAL VACUUM BREAKER. ZURN Z-1300 OR APPROVED EQUAL.

VALVES IN GAS LINES SHALL BE 125 PSI CLASS, THREADED END, IRON BODY. GAS COCKS WITH BRASS PLUG AND WASHER AND SQUARE HEAD. GRANCE NO. 324.

INSULATION
ALL COLD AND HOT WATER PIPING, AND HORIZONTAL PORTIONS OF ROOF CONDUCTORS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX.

PIPE IDENTIFICATION
ALL PIPING SHALL BE LABELED WITH THE NAME OF THE FLUID IN THE PIPE AND WITH ARROWS INDICATING THE DIRECTION OF THE FLOW.

TESTING

DRAINAGE SYSTEM - THE ENTIRE DRAINAGE SYSTEM SHALL BE TESTED HYDROSTATICALLY FOR LEAKS. THE ENTIRE SYSTEM SHALL BE FILLED TO THE TOP OF THE STACKS WITH WATER AND CHECKED FOR LEAKS.

WATER PIPING - ALL WATER PIPING SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL FOREIGN MATERIAL. ALL TESTING SHALL BE COMPLETED BEFORE INSULATION IS APPLIED.
DURING THE TESTS ALL VALVES SHALL BE CAREFULLY CHECKED FOR LEAKAGE AROUND THE STEM.

WATER HEATERS - HEATERS SHALL BE TESTED AND CHECKED TO DETERMINE THAT THEY OPERATE IN COMPLIANCE WITH THE SPECIFICATIONS. ALL CONTROLS SHALL BE PROPERLY ADJUSTED.

DISINFECTION OF POTABLE WATER SYSTEM - GENERAL: NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE. WHENEVER REQUIRED BY THE AUTHORITY HAVING JURISDICTION THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY.

MECHANICAL REQUIREMENTS

GENERAL CONDITIONS OF THE MECHANICAL CONTRACT
PLUMBING CONTRACTOR TO FOLLOW HUD GENERAL CONDITIONS AS SPECIFIED EARLIER IN DIVISION 1.

ALL MECHANICAL WORK TO COMPLY WITH LOCAL CODE AND REGULATIONS.

CUTTING AND PATCHING
ALL CHASES, RECESSES, HOLES, AND OPENINGS FOR EQUIPMENT AND DUCTWORK WILL BE PROVIDED BY THE GENERAL CONTRACTOR.

SHOULD THE MECHANICAL CONTRACTOR FAIL TO SET SLEEVES OR LOCATE OPENINGS BEFORE THE WORK OF THE GENERAL CONTRACTOR HAS BEEN COMPLETED IN THAT PARTICULAR AREA, THE MECHANICAL CONTRACTOR SHALL CUT WHATEVER HOLES ARE NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT. ALL PATCHING NECESSITATED BY THE CUTTING OF SUCH HOLES SHALL BE DONE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

REPAIR ALL FIREPROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

EXHAUST FANS
FANS SHALL VENT DIRECTLY TO THE EXTERIOR. EXHAST DUCTS MAY BE TIED TOGETHER OR TIED INTO AN EXISTING SYSTEM PROVIDED THAT BACK FLOW PREVENTORS ARE INSTALLED AT EACH FAN INCLUDING ALL FANS TIED INTO THE EXISTING SYSTEM.

FURNISH NEMA 1 SURFACE MOUNTING STARTER WITH OVERLOAD AND UNDER VOLTAGE PROTECTION.

FURNISH WITH BIRD SCREEN AND BACKDRAFT DAMPER.

FAN SHALL BE ACE MADE BY COOK, GREENHECK, OR APPROVED EQUAL. VOLUME CAPACITY, PRESSURE REQUIRED, FINISH WHITE.

THE HEATING CONTRACTOR SHALL FURNISH THERMALLY AND ACOUSTICALLY INSULATED CURB.

MECHANICAL EQUIPMENT
THE EQUIPMENT DESCRIBED IN THIS SECTION IS BASIS OF DESIGN, MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT TO MATCH EXISTING SYSTEM CAPACITY AT A MINIMUM.

MECHANICAL CONTRACTOR TO PROVIDE HACP AND ARCHITECT WITH SPECIFICATION SHEETS OF EQUIPMENT.

GAS-FIRED FURNACES, NONCONDENSING
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- BRYANT; CARRIER GLOBAL CORPORATION.
- CARRIER GLOBAL CORPORATION.
- BUILDING SOLUTIONS NORTH AMERICA.

ENERGY FACT RATING OF 95% AFUE OR GREATER
CABINET: GALVANIZED STEEL.
- CABINET INTERIOR AROUND HEAT EXCHANGER SHALL BE FACTORY-INSTALLED INSULATION.
- LIFT-OUT PANELS SHALL EXPOSE BURNERS AND ALL OTHER ITEMS REQUIRING ACCESS FOR MAINTENANCE.
- FACTORY PAINT EXTERNAL CABINETS IN MANUFACTURER'S STANDARD COLOR.
- AIRSTREAM SURFACES: SURFACES IN CONTACT WITH THE AIRSTREAM SHALL COMPLY WITH REQUIREMENTS IN ASHRAE 62.1.

FAN: CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT OR BELT DRIVE.
- FAN MOTORS: COMPLY WITH REQUIREMENTS IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT."
- SPECIAL MOTOR FEATURES, SINGLE SPEED: SINGLE SPEED, PREMIUM EFFICIENCY, AS DEFINED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR MECHANICAL EQUIPMENT," AND WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, MULTISPEED: MULTI-TAPPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.
- SPECIAL MOTOR FEATURES, ECM: ELECTRONICALLY CONTROLLED MOTOR (ECM) CONTROLLED BY INTEGRATED FURNACE/BLOWER CONTROL.

TYPE OF GAS: NATURAL
HEAT EXCHANGER: ALUMINIZED STEEL.
BURNER:
- GAS VALVE: 100 PERCENT SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUTOFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD.
- IGNITION: ELECTRIC PILOT IGNITION, WITH HOT-SURFACE IGNITER OR ELECTRIC SPARK IGNITION.

GAS-BURNER SAFETY CONTROLS:
- ELECTRONIC FLAME SENSOR: PREVENTS GAS VALVE FROM OPENING UNTIL PILOT FLAME IS PROVEN; STOPS GAS FLOW ON IGNITION FAILURE.
- FLAME ROLLOUT SWITCH: INSTALLED ON BURNER BOX; PREVENTS BURNER OPERATION.
- LIMIT CONTROL: FIXED STOP AT MAXIMUM PERMISSIBLE SETTING; DE-ENERGIZES BURNER ON EXCESSIVE BONNET TEMPERATURE; AUTOMATIC RESET.

COMBUSTION-AIR INDUCER: CENTRIFUGAL FAN WITH THERMALLY PROTECTED MOTOR AND SLEEVE BEARINGS PRERUPGRES HEAT EXCHANGER AND VENTS COMBUSTION PRODUCTS; PRESSURE SWITCH PREVENTS BURNER OPERATION IF COMBUSTION-AIR INLET OR FLUE OUTLET IS BLOCKED.
FURNACE CONTROLS: SOLID-STATE BOARD INTEGRATES IGNITION, HEAT, COOLING, AND FAN SPEEDS; AND ADJUSTABLE FAN-ON AND FAN-OFF TIMING; TERMINALS FOR CONNECTION TO ACCESSORIES.
VENT MATERIALS: COMPLY WITH REQUIREMENTS IN SECTION 235123 "GAS VENTS" FOR TYPE B METAL VENTS.

CAPACITIES AND CHARACTERISTICS:
AIRFLOW CONFIGURATION: UPFLOW.
GAS:
- TYPE: NATURAL
- VENTING TYPE: WITH COMBUSTION-AIR INTAKE
- MINIMUM EFFICIENCY AFUE: 80 PERCENT.
- INPUT: SSE SCHEDULE ON DRAWINGS.
- HEAT OUTPUT: SSE SCHEDULE ON DRAWINGS.
- GAS CONNECTION SIZE: 1/2" NPS.
- VENT SIZE: 4 INCHES.

FAN:
- MOTOR: SIZE: 1/3 HP.
- SPEED: SEE SCHEDULE ON DRAWINGS.
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

FURNACE ELECTRICAL CONNECTION:
- VOLTS: 120.
- PHASE: SINGLE.
- HERTZ: 60.
- MINIMUM CIRCUIT AMPACITY: 15.
- MAXIMUM OVERCURRENT PROTECTION: 25.

COMPRESSOR AND CONDENSER UNITS, AIR COOLED, 1.0 TO 5 TONS
DESCRIPTION: FACTORY ASSEMBLED AND TESTED; CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTORS, REFRIGERANT RESERVOIR, AND OPERATING CONTROLS.
ENERGY STAR RATING EQUAL OR OVER 15.2 SEER2
COMPRESSOR TYPE: SCROLL, HERMETICALLY SEALED, WITH RUBBER VIBRATION ISOLATORS.
- TWO-SPEED COMPRESSOR: INCLUDE MANUAL-RESET, HIGH-PRESSURE SWITCH AND AUTOMATIC-RESET, LOW-PRESSURE SWITCH.
- ACCUMULATOR: SUCTION TUBE.

REFRIGERANT: R-410A.
CONDENSER COIL: SEAMLESS COPPER-TUBE, -FIN COIL; WITH REMOVABLE DRAIN PAN AND BRASS SERVICE VALVES WITH SERVICE PORTS.
CONDENSER FAN: DIRECT-DRIVE, MAIN PROPELLER FAN; WITH PERMANENTLY LUBRICATED, TOTALLY ENCLOSED FAN MOTOR WITH THERMAL OVERLOAD PROTECTION AND BALL BEARINGS.
UNIT CASING: GALVANIZED STEEL, FINISHED WITH WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE. MOUNT SERVICE VALVES, FITTINGS, AND GAUGE PORTS ON EXTERIOR OF CASING.
CAPACITIES AND CHARACTERISTICS:
COMPRESSOR AND CONDENSER UNIT:
- FULL-LOAD COOLING CAPACITY: TO BE CALCULATED BY MECHANICAL CONTRACTOR

ELECTRICAL CHARACTERISTICS:
- VOLTS: 208 V.
- PHASE: 1.
- HERTZ: 60 HZ.

SHEET METAL
DUCT SIZES INDICATED ON THE DRAWINGS ARE THE CLEAR INSIDE DIMENSIONS.

ALL DUCTS SHALL BE COMPLETE WITH FOUR SIDES AND SHALL BE OF AIRTIGHT CONSTRUCTION. ALL DUCTS, UNLESS OTHERWISE NOTED, SHALL BE CONSTRUCTED OF 24 GAGE GALVANIZED SHEET STEEL AT 2" PRESSURE CLASS.

JOINTS, SEAMS AND DUCT WALL PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. SEALANT MATERIAL SHALL BE CAULKING COMPOUND SPECIFICALLY MANUFACTURED FOR DUCT APPLICATION FOR INDOOR USE.

JOINTS BETWEEN SHEET METAL SECTIONS MAY BE MADE WITH PREFABRICATED JOINING SYSTEM SUCH AS THE DUCTMATE INDUSTRIES SYSTEM.
STIFFENERS SHALL BE PLACED AT NOT MORE THAN 8-FOOT INTERVALS.

ALL DUCTS SHALL BE ADEQUATELY SUPPORTED FROM CONSTRUCTION ABOVE BY MEANS OF GALVANIZED STEEL STRAP HANGERS SPACED AT NOT MORE THAN 8-FOOT INTERVALS. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA STANDARDS.

DUCTWORK CONNECTIONS TO AIR HANDLING AND AIR CONDITIONING UNITS SHALL HAVE FLEXIBLE CONNECTIONS. WHEN CONNECTION IS OUTDOORS, CONNECTION LENGTH SHALL BE INSULATED AND WEATHERPROOFED.

TURNING VANES SHALL BE INSTALLED IN ALL ELBOWS HAVING SQUARE THROATS OR A THROAT RADIUS LESS THAN HALF THE DUCT WIDTH. TURNING VANES MAY BE PREFABRICATED. IF JOB FABRICATED, DESIGN AND CONSTRUCTION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. VANES SHALL BE AIRFOIL TYPE.

MANUAL VOLUME CONTROL DAMPERS IN DUCTS SHALL BE CONSTRUCTED OF NOT LIGHTER THAN US GAGE NO. 16 GALVANIZED SHEET STEEL. DAMPER BLADES SHALL BE SUPPORTED ON AN END BEARING ON ONE SIDE AND A COMBINATION BEARING AND DAMPER REGULATOR ON THE OTHER SIDE. REGULATOR SHALL BE EQUIPPED WITH A LOCKING DEVICE. MANUAL DAMPERS SHALL BE OPPOSED BLADE TYPE.

FURNISH AND INSTALL FIRE DAMPERS WHERE INDICATED OR WHERE REQUIRED. DAMPERS SHALL COMPLY WITH LATEST EDITION OF NFPA 90A, AND SHALL BE UL LABELED. BLADE STACK SHALL BE OUT OF AIRSTREAM. FUSIBLE FIRE LINKS SHALL HAVE A MELTING POINT OF 165F. DAMPERS SHALL BE MODEL IBD AS MADE BY PRUSKIN, OR APPROVED EQUAL BY SAFE-AIR. FURNISH ACCESS DOORS TO ALL DAMPERS.

ACCESS DOORS IN DUCTS SHALL BE RIGIDLY CONSTRUCTED AND TIGHTLY FITTED. DOORS SHALL BE SUPPORTED ON TWO STEEL BUTT HINGES AND SHALL BE SECURED WITH A SASH LOCK. DOORS SHALL BE GASKETED AND INSULATED.

REPAIR ALL FIRE PROOFING DAMAGED BY THE WORK UNDER THIS CONTRACT.

FLEXIBLE DUCTS
FLEXIBLE DUCTS SHALL BE SOUND ATTENUATING, THERMAL INSULATED, WIRE WOUND, REINFORCED TYPE WITH A MOISTURE TIGHT FLAME PROOF VINYL BARRIER. FLEXIBLE DUCTS TO BE USED ONLY TO CONNECT INDIVIDUAL DIFFUSERS WITH MAIN OR BRANCH DUCTS. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PORTION OF THE EXISTING SYSTEM WHICH DOES NOT MEET THESE REQUIREMENTS WITH PROPERLY SIZED AND INSULATED SHEET METAL DUCTS. THIS WORK TO BE INCLUDED IN BASE BID.

DIFFUSERS
DIFFUSERS SHALL BE SQUARE OR RECTANGULAR FACED, RECESSED TYPE, WITH REMOVABLE CORES. DIFFUSER CAPACITIES, SIZES AND DIRECTIONAL BLOWS ARE INDICATED ON THE DRAWINGS. FURNISH EACH DIFFUSER WITH DEFLECTING VANES AND KEY OPERATED, OPPOSED BLADE, VOLUME DAMPERS. DIFFUSERS SHALL BE FURNISHED WITH BAKED, WHITE FINISH.

SUPPLY REGISTERS
SUPPLY REGISTERS SHALL HAVE INDIVIDUALLY ADJUSTABLE FINS WITH VERTICAL FRONT BARS AND HORIZONTAL REAR BARS. FINS SHALL BE STREAMLINED AND OF STURDY CONSTRUCTION. FLANGES SHALL BE 5/8 INCH HCNNAREL BORDER. FURNISH RUBBER GASKET AROUND PERIMETER OF FLANGE, AND KEY OPERATED, OPPOSED BLADE VOLUME CONTROL DAMPERS. RUBBER GASKET SHALL BE NON-CHLORINATED RUBBER AND NON-POROUS. FURNISH WITH PRIME COAT OF PAINT.

GRILLES
GRILLES AND REGISTERS FOR MECHANICAL TO MATCH EXISTING. GRILLES AND REGISTERS SHALL BE OUT OF STEEL, WITH DAMPER, PRIMED PAINTED WHITE. SIZE OF GRILLE TO MATCH EXISTING OPENING ON TOE KICK, WALL OR CEILING.

CONTROLS
THE HEATING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL DEVICES NECESSARY TO ACHIEVE THE CONTROL SEQUENCE DESCRIBED HEREIN.

CONTROL SYSTEMS SHALL BE GUARANTEED FOR 2 YEARS FROM DATE OF ACCEPTANCE BY HACP.

CONTROL WIRING SHALL BE CONCEALED AND INSTALLED IN ACCORDANCE WITH SECTION 16.

MOTOR STARTERS - MOTOR STARTERS FOR ALL MECHANICAL ITEMS SHALL BE FURNISHED BY THE HEATING CONTRACTOR. STARTERS SHALL HAVE HAND-OFF-AUTO SWITCHES AND CONTROL TRANSFORMERS.

DAMPERS - DAMPERS SHALL BE OPPOSED MULTI-BLADE. BLADES SHALL BE CONSTRUCTED OF 16 GAGE STEEL WITH NEOPRENE GASKETED EDGES, AND SHALL BE MOUNTED IN CORROSION RESISTANT BUSHINGS. DAMPERS SHALL HAVE STOPS ON ALL FOUR SIDES. MOTORS SHALL BE MODULATING WITH OIL-IMMERSED GEAR TRAINS. DAMPERS SHALL BE 2% LOW LEAKAGE TYPE.

FREEZE PROTECTION THERMOSTAT - FREEZE PROTECTION THERMOSTAT SHALL BE MERCURY TUBE, MANUAL RESET TYPE SET AT 45F. INSTALL AN ADJUSTABLE TIME DELAY RELAY TO PERMIT AIR TO ESTABLISH SATISFACTORY TEMPERATURE TO AVOID FALSE TRIPS.

INSULATION
ALL SUPPLY AIR DUCTS SHALL BE INSULATED WITH 2" THICK, 1.00 DENSITY, OWENS-CORNING OR APPROVED EQUAL FLEXIBLE DUCT INSULATION WITH FLAME RETARDANT REINFORCED FIRK 25 FOIL COVERING. SEAL ALL JOINTS, BOLTS, AND ALL EXPOSED EDGES WITH 4" WIDE STRIPS OF SEALING TAPE USING A SUITABLE ADHESIVE. INSULATION SHALL HAVE A 2" FLAP AT ALL JOINTS AND SEAMS WHICH SHALL BE STAPLED AND SECURED WITH ADHESIVE. APPLY ADHESIVE TO DUCTS IN SIX-INCH-WIDE STRIPS AT ONE FOOT IN TERVALS. DUCTOWRK EXPOSED WITHIN THE SPACE MAY NOT BE INSULATED.

OPERATING INSTRUCTIONS
THE CONTRACTOR SHALL FURNISH THREE COMPLETE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS. THIS SHALL INCLUDE FINAL CONTROL DIAGRAMS, CATALOG DATA INCLUDING CONSTRUCTION AND MAINTENANCE INFORMATION ON ALL EQUIPMENT, AND MAINTENANCE INFORMATION IN THE COMPLETE SYSTEM.

ONE COMPLETE CONTROL DIAGRAM SHALL BE INCLUDED IN EACH O&M MANUAL.

THE CONTRACTOR SHALL FORMALLY INSTRUCT THE HACP'S STAFF ON THE OPERATION OF THE SYSTEM. THE INSTRUCTION SHALL CONSIST OF NOT LESS THAN 2 PERIODS, EACH PERIOD OF 4 HOURS DURATION. THE CONTRACTOR SHALL ARRANGE FOR THIS INSTRUCTION WITH THE HACP.

FUNCTIONS AND ALL ACTUATORS OPERATE IN ACCORDANCE WITH THE SPECIFICATIONS.
TESTS AND INSPECTION

THE FOLLOWING OPERATIONS SHALL BE PERFORMED IN PREPARATION FOR FINAL INSPECTION BY THE ARCHITECT. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE TO THE ARCHITECT THAT THE SYSTEM IS OPERATING IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL TESTS AND INSPECTIONS SHALL BE COMPLETED BEFORE FINAL PAYMENT IS MADE TO THE HEATING (MECHANICAL) CONTRACTOR.

CONTROLS - ALL CONTROLS SHALL BE TESTED AND ADJUSTED TO ACHIEVE THE INTENT OF THESE SPECIFICATIONS. CONTROLS SHALL BE ADJUSTED WHILE THE SYSTEM IS OPERATING UNDER FULL LOAD CONDITIONS, BOTH HEATING AND COOLING. CONTROL SUB-CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION THAT ALL ON/OFF AND ALARM.

AIR DISTRIBUTION SYSTEM - AIR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCE SUBCONTRACTOR. THE COST OF THE SUB-CONTRACTOR SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE. THE INDEPENDENT AIR BALANCER SHALL NOT BE AN EMPLOYEE NOR A SUBSIDIARY OF THE CONTRACTOR.

GUARANTEE
THE MECHANICAL CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE JOB THAT ALL EQUIPMENT, MATERIAL AND LABOR FURNISHED BY HIM ARE FREE FROM DEFECTS. ANY DEFECTS IN MATERIAL AND WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT FURTHER EXPENSE TO THE HACP. ALL ITEMS SPECIFIED TO HAVE A LONGER WARRANTIES SHALL BE GUARANTEED FOR THAT LONGER PERIOD. CONTROLS SHALL HAVE A 2-YEAR GUARANTEE ON PARTS AND LABOR.

CONTROLS
SOLID-STATE THERMOSTAT: WALL-MOUNTED, PROGRAMMABLE, MICROPROCESSOR-BASED UNIT WITH MANUAL SWITCHING FROM HEATING TO COOLING, PREFERENTIAL RATE CONTROL, SEVEN-DAY PROGRAMMABILITY WITH MINIMUM OF FOUR TEMPERATURE PRESETS PER DAY, VACATION MODE, AND BATTERY BACKUP PROTECTION AGAINST POWER FAILURE OF PROGRAM SETTINGS.

DIVISION 26 - ELECTRICAL WORK

NOTE: ELECTRICAL WORK ON THIS PROJECT IS TO BE DESIGN BUILD. THE E.C. IS RESPONSIBLE FOR VISITING LOCATIONS AND REQUIREMENTS FOR THE ELECTRICAL SYSTEM WITH THE HACP.

CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE SPECIFIC BUILDING HACP REQUIREMENTS, THE LATEST RULES OF THE NATIONAL ELECTRICAL CODE AND WITH LOCAL ORDINANCES HAVING JURISDICTION.

DO NOT INTERPRET ANYTHING IN THE DRAWINGS OR SPECIFICATIONS AS AUTHORITY TO VIOLATE APPLICABLE CODES.

BE RESPONSIBLE FOR EXAMINING DRAWINGS AND SPECIFICATIONS FOR COMPLIANCE WITH APPLICABLE CODES. RESOLVE ALL CONFLICTS BEFORE INSTALLATION AT NO EXTRA COST.

PREPARE ANY ADDITIONAL CLARIFYING DETAILS REQUIRED BY THE LOCAL INSPECTOR AUTHORITIES AND SECURE APPROVAL OF SAME. PAY ANY CHARGES. OBSERVE ALL UNIFORM CONSTRUCTION CODE REQUIREMENTS.

OBSERVE ALL APPLICABLE SAFETY REGULATIONS REQUIRED BY HACP AND/OR BY OSHA.

BRING ANY DISCREPANCIES BETWEEN DIFFERENT DRAWINGS, BETWEEN THE DRAWINGS AND FIELD CONDITIONS, OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR ANY APPARENT OMISSIONS, TO THE ARCHITECT'S ATTENTION BEFORE SUBMITTING THE BID. AFTER AWARD OF CONTRACT.

THE INTERPRETATION OF ANY CONFLICT WILL BE MADE BY THE ARCHITECT AND SHALL BE ACCEPTED AS FINAL.

IF MENTION HAS BEEN OMITTED PERTAINING TO DETAILS, ITEMS OR RELATED ACCESSORIES REQUIRED FOR THE COMPLETION OF ANY ELECTRICAL SYSTEM, INCLUDE SUCH ITEMS AND ACCESSORIES IN THE ELECTRICAL CONTRACT AND WITHOUT ADDITIONAL CHARGES.
AFTER THE JOB IS AWARDED, CLAIMS BASED ON

MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, ASTM AND IEEE. ALL SIMILAR MATERIALS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.

B. RACEWAYS

1. MATERIALS
RIGID HEAVY WALL STEEL CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE STEEL, HOT DIPPED GALVANIZED AND ZINC COATED, INSIDE AND OUTSIDE. CONDUIT SHALL BEAR THE MANUFACTURER'S AND UNDERWRITERS' LABELS. THIN WALL CONDUIT IS DESIGNATED AS E.M.T. STEEL CONDUIT SHALL BE MANUFACTURED BY WHEATLAND, ALLIED, TRIANGLE, OR EQUAL.
FLEXIBLE CONDUIT (GREENFIELD) SHALL BE U. L. LISTED, 3/4 INCH MINIMUM TRADE SIZE FOR BRANCH WIRING. GREENFIELD OF ½ INCH SIZE WILL BE PERMITTED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES ONLY.

2. INSTALLATION
MINIMUM SIZE CONDUIT IS 3/4 INCHES.
INSTALL CONDUIT AS A COMPLETE SYSTEM. CONTINUOUS FROM OUTLET TO OUTLET , CABINET , BOX OR FITTING . MECHANICALLY AND ELECTRICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY IS SECURED.
DO NOT ROUTE RACEWAYS THROUGH ANY DUCTWORK.

C. CONDUIT FITTINGS

1. MATERIALS
ALL CONDUIT FITTINGS SHALL BE GALVANIZED MALLEABLE IRON OR STEEL, WHERE APPLICABLE.
CONDUIT FITTINGS SHALL CONFORM IN DESIGN AND QUALITY TO THE TYPE OF CONDUIT ON WHICH THEY ARE BEING INSTALLED.

2. INSTALLATION
USE THREADED CONNECTORS ON GRS CONDUIT.
USE SET-SCREW STYLE CONNECTORS ON E.M.T. WHERE SAME IS RUN EXPOSED OR CONCEALED ABOVE GRADE.
USE BUSHINGS, LOCKNUTS AND EXPANSION FITTINGS OF THE APPROPRIATE TYPE FOR THE RACEWAY SYSTEM BEING INSTALLED.

D. PULL BOXES, OUTLET BOXES AND COVERS

1. GENERAL
FOR EACH OUTLET BOX, USE THE PROPER CODE SIZE FOR THE ENTERING CONDUITS AND THE NUMBER OF WIRES TERMINATING THEREIN.
USE BOXES WITH PLASTER RING EXTENSIONS IN PLASTERED OR DRY WALL PARTITIONS.

2. MATERIALS
FOR LARGE PULL BOXES, USE BOXES OF CODE GAUGE SHEET STEEL WITH STEEL COVERS ATTACHED WITH BRASS SCREWS. BOXES SHALL BE HOT DIPPED, GALVANIZED AFTER FABRICATION - THE MINIMUM SIZE OF EACH BOX SHALL BE AS REQUIRED BY THE NATIONAL ELECTRIC CODE. MANUFACTURER'S ARE HOFFMAN, KEYSTONE OR EQUAL.
FOR CONCEALED WORK, USE PRESSED STEEL BOXES, KNOCKOUT TYPE, ZINC COATED, OF 1/16 INCH MINIMUM THICKNESS.
USE BOXES OF FORM AND DIMENSIONS BEST ADAPTED TO SPECIFIC LOCATION, KIND OF FIXTURE USED AND THE NUMBER, SIZE AND ARRANGEMENT OF RACEWAYS CONNECTING THERETO. USE STEEL CITY OR RACO.
USE WIREMOLD FINISHED STYLE BOXES IN FINISHED AREAS WHERE CONCEALED BOXES ARE NOT FEASIBLE.

E. CONDUCTORS IN RACEWAYS

1. MATERIALS
CONDUCTORS SHALL BE SOFT DRAWN COPPER, MINIMUM 97% CONDUCTIVITY, 600 VOLT, CONFORMING TO ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
INSULATION SHALL BE SUITABLE FOR THE CONDITIONS AND LOCATIONS IN WHICH CONDUCTORS ARE INSTALLED. THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED OR REQUIRED BY LOCATION OR INSTALLATION CONDITIONS:
A. FOR BUILDING WIRE IN INTERIOR ABOVE GRADE LOCATIONS, USE TYPE THWN/THHN COPPER RATED 75 DEGREES C. WET OR DRY.
WIRES SHALL BE CLEARLY AND REGULARLY MARKED WITH THE WIRE SIZE, VOLTAGE, INSULATION TYPE AND MANUFACTURER'S NAME.
CONDUCTORS SHALL BE NEW AND MANUFACTURED WITHIN EIGHT MONTHS PREVIOUS TO DELIVERY AT SITE, WITH DATE OF MANUFACTURE MARKED ON THE PACKAGES.
MINIMUM WIRE SIZE FOR BRANCH CIRCUITING SHALL BE #12 AWG.
ALL CIRCUIT RUNS EXCEEDING 75 FEET IN LENGTH EXTENDING FROM THE PANELBOARD TO THE FIRST OUTLET IN THE CIRCUIT SHALL BE #10 AWG MINIMUM.
WIRE #8 AWG AND SMALLER SHALL BE SOLID; WIRE #6 AWG AND LARGER SHALL BE STRANDED.
WIRE SHALL BE AS MANUFACTURED BY HI-TECH, PIRELLI, TRIANGLE OR EQUAL.

2. INSTALLATION
COLOR CODE ALL WIRES PER NEC REQUIREMENTS:
A. MATCH THE EXISTING SCHEME PRESENTLY INSTALLED; NEUTRAL SHALL BE WHITE. EQUIPMENT GROUND SHALL BE GREEN.
THE GROUPING OF OUTLETS ON INDIVIDUAL NEW CIRCUITS AS SHOWN ON THE DRAWINGS SHALL BE STRICTLY OBSERVED. GROUPING OF CONDUCTORS IN THE CONDUIT SHALL NOT BE PERMITTED. INCORPORATE A MAXIMUM OF FOUR (4) WIRES, I.E. A MAXIMUM OF ONE CIRCUIT CONDUCTOR ON EACH PHASE PLUS THE NEUTRAL WIRE PLUS THE GROUND WIRE IN ONE CONDUIT.
EMPLOY A U.L. LISTED COMMERCIAL PRODUCT SUCH AS WYRE-EZE OR YELLOW-77 FOR PULLING WIRES INTO A RACEWAY.
CLEAN AND DRY CONDUITS BEFORE PULLING IN WIRES.
THE USE OF B.X., ROMEX, OR U.F. CABLE IS NOT PERMITTED.
MC CABLE MAY BE USED FOR CONCEALED BRANCH CIRCUIT WIRING.

F. SPLICES

MAKE ALL SPLICES, JOINTS AND TAPS WITH SOLDERLESS PRESSURE CONNECTORS LISTED AND APPROVED FOR THE INTENDED USE AND FOR THE SIZE AND NUMBER OF CONDUCTORS UTILIZED.
1. FOR WIRE #10 AWG AND SMALLER, USE TWIST-ON WIRE NUTS.
2. FOR WIRE #8 AWG AND LARGER, USE HEAVY DUTY SOLDERLESS SET SCREW CONNECTORS WITH A SEPARATE BARREL FOR EACH CONDUCTOR. USE INSULATING COVERS FROM THE MANUFACTURER, WHERE AVAILABLE. TAPE PROPERLY TO PROVIDE A SUFFICIENT INSULATION AROUND THE ENTIRE SPLICE UNIT, WHEN INTEGRAL INSULATING COVERS ARE NOT AVAILABLE FROM THE FITTING MANUFACTURER.

G. PANELBOARDS AND CABINETS

CABINETS SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH WIRING GUTTERS OF SUFFICIENT WIDTH TO PROVIDE AMPLE SPACE FOR BRANCH CIRCUIT WIRES AND FEEDERS. GUTTERS SHALL NOT BE LESS THAN FOUR INCHES WIDE. GUTTERS SHALL CONFORM TO NEC STANDARDS AND SHALL BE OVER-SIZED WHERE NECESSARY TO ACCOMMODATE THE ENTRANCE OF SEVERAL LARGE CONDUITS AND/OR WHERE NECESSARY TO AVOID OVERCROWDING OF CONDUCTORS OR EQUIPMENT WITHIN. TRIMS SHALL BE SURFACE AS NOTED ON THE PANEL SCHEDULE AND SHALL CONTAIN CONCEALED HINGED DOORS, EACH EQUIPPED WITH FLUSH CHROME PLATED COMBINATION LOCKS AND CATCHES, ALL KEYED ALIKE. FINISH SHALL BE STANDARD BAKED ENAMEL OR LACQUER, MEDIUM GRAY, ANSI-61. PROVIDE TWO (2) KEYS WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE. USE "DOOR IN A DOOR" HINGED TRIMS.

PANELBOARD BASIS OF DESIGN:

- MANUFACTURER: GE, SIEMENS OR EQUAL.
- ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED IN ACCORDANCE WITH NFPA 70, BY QUALIFIED ELECTRICAL TESTING AGENCY RECOGNIZED BY AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH NEMA PB 1.
- COMPLY WITH NFPA 70.
- ENCLOSURES: SURFACE-MOUNTED, DEAD-FRONT CABINETS.
- INDOOR DRY AND CLEAN LOCATIONS: UL 50E, TYPE 1
- OTHER WET OR DAMP INDOOR LOCATIONS: UL 50E
- HEIGHT: 7 FT MAXIMUM.
- RETAIN ONE OF FIRST TWO SUBPARAGRAPHS BELOW. VERIFY WITH MANUFACTURER FOR AVAILABILITY OF "DOOR-IN-DOOR" CONSTRUCTION IN OTHER THAN NEMA 1 STYLE PANELBOARDS.
- HINGED FRONT COVER: ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER. TRIMS MUST COVER LIVE PARTS AND MAY HAVE NO EXPOSED HARDWARE.
- INCOMING MAIN ON TOP
- 20 SPACE- 40 CIRCUITS MINIMUM.

BUSING SHALL BE FULL CAPACITY, 98% CONDUCTIVITY COPPER OR 80% CONDUCTIVITY ALUMINUM, BRACED FOR THE SHORT CIRCUIT CURRENT AVAILABLE TO THE PANEL AND SIZED AS SHOWN IN THE PANEL DETAIL. CIRCUIT BREAKERS SHALL BE CONNECTED TO BUSES WITH BOLTED CONNECTIONS FOR SEQUENCE PHASING: I.E., CIRCUITS 1 AND 2 CONNECTED TO PHASE A; 3 AND 4 TO PHASE B AND SO ON. POLARITY OR BLOCK PHASING SHALL NOT BE ACCEPTABLE. PANEL SHALL INCLUDE A NEUTRAL BUS AND AN EQUIPMENT GROUNDING BUS. CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE, BOLT-ON, WITH THERMAL AND MAGNETIC TRIPS, TRIP-FREE ON OVERLOAD OR SHORT CIRCUIT, UL LISTED, HAVING INTERRUPTING CAPACITIES, AS INDICATED.

H. WIRING DEVICES AND PLATES

1. MATERIALS
ALL WIRING DEVICES SHALL BE MANUFACTURED BY ONE OF THE MANUFACTURERS LISTED. DO NOT MIX MANUFACTURER'S PRODUCTS.
DEVICES SHALL BE U.L. SPECIFICATION GRADE.

2. WALL SWITCHES
SWITCHES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE GENERAL USE, AC QUIET TYPE, 20 AMPERE, 120/277 VOLT, BACK AND SIDE WIRED. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

3. WALL SWITCH TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENTS FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP SINGLE POLE WALL SWITCH - HUBBELL #HBL-1221, P & S #20AC1, COOPER #1221, BRYANT #4901, OR LEVITON #1221-2.
20 AMP 3-WAY WALL SWITCH - HUBBELL #HBL-1223, P & S #20AC3, COOPER #1223, BRYANT #4903, OR LEVITON #1223-2. USE SIMILAR SERIES FOR 4-WAY SWITCHES.

4. WALL RECEPTACLES
ALL CONVENIENCE AND POWER RECEPTACLES SHALL CONFORM TO NEMA HEAVY DUTY STANDARDS AND SHALL BE THE GROUNDING TYPE.
CONVENIENCE RECEPTACLES SHALL BE 20 AMP, 125 VOLT, BACK AND SIDE WIRED, 3 WIRE GROUNDING, UL LISTED AS COMPLYING WITH THE REQUIREMENTS OF NEC ARTICLE 250-146, AND SHALL BE NEMA 5-20R CONFIGURATION. VERIFY COLOR OPTIONS WITH THE ARCHITECT.

5. RECEPTACLE TABLE
THE FOLLOWING ENTRIES ARE ACCEPTABLE EQUIVALENT FROM EACH OF THE LISTED MANUFACTURERS:

20 AMP, 125 VOLT DUPLEX CONVENIENCE OUTLET (NEMA 5-20R) - HUBBELL #HBL-5362, P & S #5362A, COOPER #5362, BRYANT #5362, OR LEVITON #5362.
20 AMP, 125 VOLT GROUND FAULT INTERRUPTER (NEMA 5-20R) - HUBBELL #GF-5362, P & S #2091, COOPER #WGF-20, BRYANT #GFRS3FT, OR LEVITON #6899.

6. PLATES
USE STAINLESS STEEL PLATES.

I. FASTENINGS AND ATTACHMENTS

FOR FASTENINGS AND ATTACHMENTS, SUCH AS SCREWS, BOLTS AND NUTS, USE DEVICES MADE OF NON-FERROUS METALS OR OF GALVANIZED OR CADMIUM PLATED STEEL. WHEN SUCH DEVICES ARE NOT OBTAINABLE IN NON-FERROUS METALS, OR IN STEEL WITH A PROTECTIVE METALLIC COATING. PAINT SAME WITH A RUST PREVENTING PAINT SUCH AS RUSTOLEUM.
ALL FASTENINGS AND ATTACHMENTS SHALL BE MADE OF MATERIALS OR SO PROTECTED, THAT THEY WILL OFFER THE MAXIMUM PROTECTION AGAINST DETERIORATION FROM AGE, WEATHER OR DAMPNESS.
DO NOT PENETRATE THE ROOF DECK WITH ANY FASTENERS.

J. SURFACE METALLIC RACEWAY SYSTEM

USE A SURFACE METAL RACEWAY SYSTEM AND BOXES, WHERE CONCEALED WIRING IS NOT POSSIBLE OR WHERE SHOWN ON THE PLANS.
USE RACEWAYS, SUCH AS WIREMOLD, FOR STRAIGHT RUNS, COMPLETE WITH BOXES AND FITTINGS, AS DIRECTED. VERIFY COLOR OPTIONS WITH THE ARCHITECT. PAINT SAME WHERE REQUIRED OR INDICATED.
OBTAIN APPROVAL FOR ALL SURFACE ROUTINGS WITH THE ARCHITECT PRIOR TO ROUGH-IN.

K. FIRE STOPS

1. GENERAL
PROVIDE THROUGH PENETRATION FIRE STOP SYSTEMS TO PREVENT THE SPREAD OF FIRE THROUGH OPENINGS MADE IN FIRE-RATED WALLS OR FLOORS TO ACCOMMODATE THROUGH PENETRATING ITEMS SUCH AS CONDUIT AND CABLES.
FIRE-RESISTANCE-RATED ASSEMBLY SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY OR SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRE STOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM-E-814 OR U.L. 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER. THE SYSTEM SHALL HAVE AN F RATING AND A T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. WHERE FLOOR/CEILING ASSEMBLIES ARE REQUIRED TO HAVE A MINIMUM 1-HOUR FIRE RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED. FIRE STOP SHALL RESTORE FLOOR AND WALL TO ORIGINAL FIRE RATED INTEGRITY AND SHALL BE WATERPROOF.

PENETRATIONS OF MEMBRANES THAT ARE PART OF A FIRE-RATED WALL OR FLOOR MUST BE STOPPED AS OUTLINED FOR THROUGH PENETRATIONS WITH THE FOLLOWING EXCEPTIONS.
A. STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA PROVIDED THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
B. OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED AS INDICATED.
1. BY HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES.
2. BY HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY IS FILLED WITH CELLULOSE LOOSE FILL ROCK WOOL OR SLAG MINERAL WOOL INSULATION.
3. BY SOLID FIRE BLOCKING.
4. BY PROTECTING BOTH OUTLET BOXES BY LISTED PUTTY PADS.
5. BY OTHER LISTED MATERIALS AND METHODS.

2. MATERIALS
PUTTY - USE FLAMESEAL PUTTY #AA423 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
FIBER - USE CERAMIC FIBER #AA401 (10 LB. BOX) OR #AA417 (2 LB. BAG) AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN WALLS - USE CERAMIC BOARD #AA402 (1" X 18" X 12") OR #AA403 (1" X 36" X 48") AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.
OVERSIZED OPENINGS IN FLOOR - USE SUPPORT WIRE #AA404 AS MANUFACTURED BY NELSON ELECTRIC, TULSA, OKLAHOMA.

3. INSTALLATION
USE TOTAL THICKNESS OF 1-1/2 INCHES OF FLAMESEAL PUTTY #AA423 ON ALL PENETRATIONS OF FIRE-RATED WALLS AND FLOORS. USE NELSON FIBER #AA401 OR #AA417 IN CONJUNCTION WITH THE PUTTY TO FILL THE REMAINING VOID OF PENETRATIONS.
PACK CERAMIC FIBER IN CENTER OF OPENING LEAVING 3/4 INCH ON EITHER SIDE OF WALL FOR THE PUTTY. INSTALL THE PUTTY IN THE REMAINING PART OF OPENING, WORKING IT INTO ALL VOIDS AND CAVITIES.
FOR OPENINGS WITH GREATER THAN 4 INCHES OF UNSUPPORTED SPACE, USE NELSON CERAMIC BOARD #AA402 OR #AA403 DEPENDING ON SIZE OF OPENING. PACK CERAMIC FIBER IN BOTTOM OF OPENING PER FACTORY RECOMMENDATIONS, LEAVING 1-1/2 INCHES BELOW FLOOR LEVEL FOR THE INSTALLATION OF FLAMESEAL PUTTY. USE SUPPORT WIRE #AA404 ON ALL PENETRATIONS IN EXCESS OF 6 INCHES DIAMETER.

L. MC CABLE

METAL CLAD CABLE (MC) SHALL BE COPPER WIRE WITH 90 DEGREES C. THHN INSULATION, #12 AWG MINIMUM, WITH CONTINUOUS INSULATED GREEN GROUND CONDUCTOR AND STEEL ARMOR, MANUFACTURED BY A.F.C., ALFLEX, OR EQUAL. INSTALL NON-RIGID CABLE IN A NEAT, APPROVED MANNER, AS PER N.E.C. REQUIREMENTS. DO NOT GROUP CABLES INTO A COMMON CONDUIT AS OVERHEATING WILL RESULT. DO NOT TIE THE SEVERAL CABLES TOGETHER. USE APPROVED STYLE "MC" CONNECTORS AND FITTINGS IN ORDER TO MAINTAIN ADEQUATE CASE GROUNDING REQUIRED BY THE NATIONAL ELECTRICAL CODE. PROVIDE AN INDEPENDENT MEANS OF SUPPORT FOR ALL WIRING LOCATED ABOVE A DROPPED CEILING ASSEMBLY FROM THE STRUCTURAL CEILING SYSTEM. DO NOT SUPPORT WIRING FROM THE CEILING ASSEMBLY OR FROM ITS SUPPORT WIRES.

SERVICE AND DISTRIBUTION

A. GENERAL INSTALLATION

USE RIGID HEAVY WALL STEEL CONDUIT FOR EXPOSED EXTERIOR RACEWAYS.
USE EMT ELECTRICAL METALLIC THINWALL CONDUIT FOR CONCEALED INTERIOR FEEDERS, TELEPHONE RACEWAYS, ETC.
USE FLEXIBLE CONDUIT SUCH AS "GREENFIELD" FOR CONNECTIONS TO RECESSED LIGHTING FIXTURES IN 72" MAXIMUM LENGTHS AND FOR USE IN STUD WALLS WHERE THE USE OF RIGID CONDUIT IS NOT PRACTICAL.
USE WEATHERPROOF AND OIL PROOF FLEXIBLE CONDUIT SUCH AS "SEAL-TITE" FOR ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT IN LENGTHS OF 18" MAXIMUM.
USE LIQUID-TIGHT FLEXIBLE CONDUIT AND APPROPRIATE LIQUID-TIGHT FITTINGS IN AREAS EXPOSED TO THE WEATHER OR LIKELY TO BECOME DAMP, WHERE USED, CONFORM TO NEC #230-118.

USE WIREMOLD RACEWAYS FOR BRANCH CIRCUIT SURFACE ROUTINGS IN FINISHED AREAS ONLY WHERE CONCEALED WIRING IS NOT FEASIBLE, AND WHERE INDICATED.
USE M.C. CABLE FOR CONCEALED BRANCH CIRCUIT WIRING ONLY, IN ACCORDANCE WITH THE N.E.C. REQUIREMENTS.
THE USE OF B.X., ROMEX, AND U.F. IS NOT APPROVED.

LIGHTING FIXTURES AND ACCESSORIES

GENERAL
ALL LIGHTING FIXTURES AND LAMPS WILL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

LIGHTING FIXTURES

BASIS OF DESIGN LIGHTING FIXTURES BY KICHLER OR EQUAL.
CEILING FIXTURE: KICHLER #6112WH. WHITE FINISH. SURFACE MOUNTED
EXTERIOR CEILING FIXTURE: KICHLER #11132AZTLED , OUTDOOR RATED.
WALL EXTERIOR: KICHLER #9654TZ. WALL MOUNTED, OUTDOOR RATED
BATHROOM VANITY: KICHLER JOELSON #45923
FLOOD LIGHT: LITHONIA LIGHTING OLF LED WITH MOTION OCCUPANCY SENSOR
RECESSED LIGHTING: HALO OR EQUAL.

B. INSTALLATION

PROVIDE ALL SUPPLEMENTARY STRUCTURAL MATERIALS REQUIRED TO PROPERLY MOUNT ALL LIGHTING FIXTURES.
SECURELY MOUNT LIGHTING FIXTURES TO STRUCTURAL ELEMENTS OF THE BUILDING TO SUSPENDED CEILING SYSTEMS SUCH THAT SAID FIXTURES WILL BE SQUARE, PLUMB, AND RIGID, WILL NOT FALL OR SAG, AND WILL NOT CAUSE THE SUSPENDED CEILING SYSTEM TO SAG. PROVIDE ADDITIONAL CEILING SUPPORTS, WHERE REQUIRED TO SUPPORT RECESSED OR SURFACE FIXTURES.
INSTALL WIRING TO AND WITHIN FIXTURES TO COMPLY WITH NEC ARTICLE #410. TAKE SPECIAL CARE TO ASSURE THAT THE FIXTURE OUTLETS FOR RECESSED FIXTURES ABOVE SOLID SUSPENDED CEILINGS WILL ACTUALLY BE ACCESSIBLE AFTER THE PROJECT IS COMPLETED.
USE CLIPS TO FASTEN RECESSED TROFFERS TO DROP CEILING CHANNELS AS REQUIRED BY NEC SECTION #410-16. USE CADDY FASTENERS #6 IS OR APPROVED EQUAL.
TIME CLOCKS SHALL BE COMMERCIAL GRADE, 7 DAY, ASTRONOMICAL DAL, WITH 24-HOUR SPRING RESERVE BACKUP, AS MANUFACTURED BY TORK OR PARAGON (IF REQUIRED).

SMOKE ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 20SAR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

COMBO SMOKE + CO ALARMS
BASIS OF DESIGN, KIDDE OR EQUAL, MODEL 30CUDR, PHOTOELECTRIC, HARDWIRE 120 V AC WITH 2 AA BATTERY BACKUP, FINISH WHITE.

SMOKE DETECTOR'S LOCATIONS:
1. COMBO SMOKE + CO ALARM PER FLOOR, NOT TO BE PLACED IN MECHANICAL ROOM OR KITCHEN.
1 SMOKE DETECTOR IN SIDE EACH SLEEPING ROOM.
INTERCONNECT SMOKE DETECTORS INSIDE THE UNIT.

MOTOR WIRING

WIRING FOR MECHANICAL AND PLUMBING CONTRACTS
1. INSTALLATION
VERIFY ALL LOCATIONS WITH THE VARIOUS MECHANICAL CONTRACTORS BEFORE INSTALLING RACEWAYS.
PROVIDE ALL WIRING MATERIALS AND DEVICES REQUIRED TO CONNECT AND OPERATE THE ELECTRICAL PARTS OF EQUIPMENT FURNISHED AND INSTALLED UNDER THE MECHANICAL DIVISION.
INSTALL AND CONNECT ALL STARTERS, PUSHBUTTONS, SWITCHES, THERMOSTATS AND OTHER CONTROL DEVICES AS FURNISHED BY OTHERS, UNLESS OTHERWISE NOTED.
MAKE ALL FINAL CONNECTIONS TO MOTORIZED EQUIPMENT. VERIFY THE CORRECT DIRECTION OF ROTATION.
CONNECT MOTOR CIRCUITS TO THE RIGID CONDUIT SYSTEM BY MEANS OF WEATHERPROOF STYLE FLEXIBLE CONDUIT, PROPERLY GROUNDED AND BONDED. EMPLOY A GREEN GROUND WIRE FOR ALL SYSTEMS AND MOTOR FRAME GROUND CONNECTIONS.
BOLT THE WIRE TO THE MOTOR FRAME AT ONE END AND TO THE MOTOR STARTER AT THE OTHER END WITH APPROVED TERMINAL DEVICES.
DO ALL LINE VOLTAGE CONTROL WIRING (120 VOLTS AND HIGHER).
ALL LOW VOLTAGE CONTROL WIRING (UNDER 120 VOLTS) IS THE RESPONSIBILITY OF THE MECHANICAL OR PLUMBING CONTRACTS.

SECTION 32- EXTERIOR IMPROVEMENTS

CHAIN LINK FENCE
ALUMINUM WIRED FABRIC 2X2 INCHES WITH ROUNDED POST AND RAILS 2.5 INCHES IN DIAMETER. LIGHT INDUSTRIAL STRENGTH, ZINC COATED. WITH TOP AND BOTTOM TENSION WIRED ZINC COATED. MECHANICALLY DRIVEN INTO SOIL OR USING ANCHORING CONCRETE.

GATES TO MATCH FENCE MATERIAL AND FRAME. DOOR WITH LATCH TO PERMIT OPERATION FROM BOTH SIDES OF GATE. PADLOCK AND CHAIN TO BE PROVIDED BY HACP.

SEEDING

QUALITY, NON-STATE CERTIFIED. SEED OF GRASS SPECIES AS LISTED BELOW FOR SOLAR EXPOSURE, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PER CENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED.

A. SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH.
1. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
2. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
3. DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.

B. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

C. PROTECT SEEDED AREAS FROM HOT, DRY WEATHER OR DRYING WINDS BY APPLYING COMPOST MULCH WITHIN 24 HOURS AFTER COMPLETING SEEDING OPERATIONS. SOAK AREAS, SCATTER MULCH UNIFORMLY TO A THICKNESS OF 3/16 INCH +, AND ROLL SURFACE SMOOTH.

TREE AND STUMP REMOVAL
ALL APPROPRIATE SAFETY EQUIPMENT MUST BE UTILIZED AT ALL TIMES DURING OPERATIONS; INCLUDING, BUT NOT LIMITED TO HARD HATS, GLOVES, SAFETY GLASSES, FALL RESTRAINTS, TRAFFIC CONTROL DEVICES, HIGH VISIBILITY CLOTHING, ADEQUATE HEARING PROTECTION AND ANY OTHER SAFETY REQUIRED BY OSHA.
ONCE A TREE IS CUT DOWN, THE STUMP MUST BE GROUND OUT WITHIN FIVE DAYS (5). STUMPS AND BUTTRESS ROOTS MUST BE REMOVED TO A MINIMUM OF TWELVE INCHES (12") BELOW GROUND LEVEL AND TWO (2) TIMES THE DIAMETER AT BREAST HEIGHT IN SURFACE AREA GROUND. THE REMAINING STUMP AND/OR CHIPS SHALL BE REMOVED FROM THE SITE WITHIN TWO DAYS (2) AFTER GRINDING. ALL SURFACE ROOTS AND ADJACENT SUBSURFACE ROOTS SHALL BE REMOVED AS MAY BE NECESSARY TO ELIMINATE "HUMPS" OR MOUNDS IN THE TREE EASEMENT AREA ADJACENT TO THE STUMP. ALL TREE EASEMENT AREAS ARE TO BE LEFT FLAT AND MEET ORIGINAL GRADE. THE AREA WILL THEN BE BACKFILLED WITH CLEAN, PULVERIZED TOPSOIL TO THE LEVEL OF THE ADJOINING GRADE AND SEEDED. SEE SEEDING FOR SUBD REQUIRED.

THE PARTY AUTHORIZED TO REMOVE THE TREE, AT THEIR EXPENSE, SHALL RESTORE THE LAWN AND ANY EXISTING LANDSCAPING AND APPURTENANNCES THAT EXIST BETWEEN THE SIDEWALK AND CURB OR IN OTHER AREAS THAT HAVE BEEN DISTURBED BY THE PARTY AUTHORIZED TO REMOVE THE TREE DURING THE PROSECUTION OF THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL PROTECT ALL CONCRETE SIDEWALK, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT FROM DAMAGE THROUGH THE USE OF PLYWOOD SHEETING OR MATS WHEN NECESSARY. THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL REPLACE OR RESTORE ALL CONCRETE SIDEWALKS, DRIVEWAY APPROACHES, DRIVEWAYS AND STREET PAVEMENT WHICH MAY HAVE BEEN DAMAGED DURING THE PROSECUTION OF THE WORK.

THE PARTY AUTHORIZED TO REMOVE THE TREE SHALL BE RESPONSIBLE AT ALL TIMES FOR KEEPING THE WORK SITE ADJOINING PREMISES, STREET, WALKS AND DRIVEWAYS CLEAN. ALL TREE BRANCHES, BARK, CHIPS AND OTHER DEBRIS MUST BE CLEARED UP AT THE END OF THE WORKDAY.

SECTION 33- UTILITIES

TRENCH DRAIN SYSTEM
ZURN Z880 2 1/2 [64] WIDE TRENCH DRAIN SYSTEM SHALL BE 48 [1220] LONG AND 2 1/2 [63.5] WIDE. DRAIN SHALL BE 3 [76] DEEP. DRAIN SHALL BE MADE OF (HDPE) HIGH DENSITY POLYETHYLENE AND IS UV-10 STABILIZED. DRAIN SHALL HAVE BEDDING FEET TO BE USED FOR POSITIONING AND ANCHORING PURPOSES. DRAINS SHALL HAVE TONGUE AND GROOVE SNAP FIT CONNECTION. DRAIN SHALL HAVE 24 [610] LONG HIGH-DENSITY POLYETHYLENE DECORATIVE GRATE (-POG) PROVIDED AS STANDARD.

INSTALLATION
TRENCH EXCAVATION MUST BE 4" [102MM] GREATER THAN THE TRENCH DEPTH AND A MINIMUM OF 4" [102MM] GREATER THAN THE EDGE OF THE TRENCH ON EACH SIDE. SOFT AND/OR SHIFTING SOIL SUBSTRATES MAY CAUSE CRACKING OF THE CONCRETE AND CONSEQUENT MOVEMENT OF THE TRENCH. IT IS CRITICAL THAT THE CONCRETE BE POURED ON AN ADEQUATE FOUNDATION

ASSEMBLING PER MANUFACTURER INSTRUCTION. A SILICONE CAULK OR A CONSTRUCTION ADHESIVE, SUCH AS LIQUID NAILS, IS RECOMMENDED TO BE USED AT EACH JOINT AS A SEALER.

UPON COMPLETION OF THE TRENCH EXCAVATION, THE CHANNELS SHOULD BE PLACED IN ORDER ALONG SIDE THE EXCAVATION AND ACCORDING TO THE JOB LAYOUT.

AFTER ATTACHMENT OF ACESSORIES, ANCHOR AND LEVEL TRENCH IN THE EXCAVATION USING CONCRETE PATTIES AROUND THE FEET. MAKE FINISH POUR OF CONCRETE AND BE CERTAIN TO PROPERLY VIBRATE CONCRETE TO ELIMINATE ANY UNWANTED VOIDS. FINISH TROWELING SHOULD BE DONE TO SET THE TOP EDGE OF THE TRENCH DRAIN 1/16" [1.6MM] BELOW THE FLOOR GRADE. REMEMBER TO COMPENSATE FOR CONCRETE SHRINKAGE THAT MAY OCCUR DURING CURE SO THAT THE EDGE OF THE TRENCH DRAIN DOES NOT PROTRUDE ABOVE THE FINISHED FLOOR GRADE.

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CONSTRUCTION DOCUMENTATION

general notes

1. Any conflicts in the drawings or between new and existing construction shall be referred to the Architect.
2. Contractor shall verify all dimensions and existing conditions in the field and shall advise **Fukui Architects, Pc** of any discrepancies between, additions to, deletions from, or alterations to any and all conditions prior to proceeding with any phase of work. **Do not scale drawings.**
3. All work shall be installed in accordance with applicable codes and regulations.
4. Contractor shall be responsible for the patching, repairing, and preparations of all existing floor, wall, and ceiling surfaces as required to receive scheduled finishes.
5. All items shown on drawings are finished construction assemblies. Contractor shall provide and install all material required for finished assemblies.
6. All reports, plans, specifications, computer files, field data, notices, and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law statutory, and other re