

Client: Village of Oak Park
Project Name: Main Fire Station Bunk Room Renovations

Project No.: 23-124
Bid Due Date: Friday, August 4th, 2023 @ 11:00 a.m.
Project Manager: Vic Sabaliauskas
 Building Maintenance Superintendent

BID TAB WORKSHEET

Contractor	Base Bid Amount	Alternates						Total Bid Amount	EEO	Bid Bond
		Alt. No. 1	Alt. No. 2a	Alt. No. 2b	Alt. No. 3	Alt. No. 4	Alt. No. 5		M/W/DBE	
Midwest Services & Development midwestservices2010@gmail.com	\$300,000.00	\$110,000.00	\$15,000.00	\$17,000.00	\$75,000.00	\$4,000.00	\$12,000.00	\$533,000.00	No	X
D Kersey Construction brian@dkersey.com	\$395,575.00	\$128,750.00	\$23,350.00	\$29,900.00	\$81,450.00	\$5,800.00	\$7,500.00	\$672,325.00	No	X
Lo Destro Construction egardstrom@lodestroconstruction.com	\$358,416.00	\$259,268.00	\$82,455.00	\$88,481.00	\$124,143.00	\$26,738.00	\$17,250.00	\$956,751.00	No	X

Alt. No. 1: The existing roof top mechanical unit is to be removed and replaced with a new unit on the existing curb. The existing curb shall be modified to accommodate the new piece of equipment. Existing ductwork is to be reconfigured and replaced as shown on the drawings to serve the new plan layout. New controls are to be provided for RTU-1. In addition, all work associated with adding a second unit (RTU-2) is to be provided

Alt. No. 2a: Provide a humidifier, in-line with the supply ductwork, to serve RTU-1. Modify ductwork to accommodate the humidifier installation. New connections and integration into RTU-1 to be provided.

Alt. No. 2b: Provide a humidifier, in-line with the supply ductwork, to serve RTU-2. Modify ductwork to accommodate the humidifier installation. New connections and integration into RTU-2 to be provided.

Alt. No. 3: The two existing condensing units (on the roof) and two fan coil units (in the basement) to be removed and replaced. All associated refrigerant piping and the refrigerant are to be demolished. Selective demolition of the walls and ceilings shall be provided as shown on the drawings. New piping and refrigerant shall be provided. New connections and integration of equipment to be provided. Restoration of walls and ceilings shall be provided as shown.

Alt. No. 4: In lieu of batt insulation, provide closed cell polyurethane spray foam insulation achieving R-25 on underside of roof deck. The entire area above the bunk room, plus a minimum of 2 feet beyond the wall perimeter shall be covered with spray foam insulation.

Alt. No. 5: Provide the base bid fire alarm horn and strobe locations plus a visual/audio notification device in each individual bunk room.

Village of Oak Park
Capital Improvement Program
2023 - 2027

Project: Fire Station 1 Mechanical, Plumbing and Fire Protection System Repairs Priority Code: A Category: Building Improvements



Description:

This project involves repair or replacement of the mechanical, plumbing (M&P) and fire protection systems at the main fire station. A more detailed description of suggested repairs is identified in the Property Condition Assessment (PCA) that was completed for the main fire station in 2019.

Justification:

The 2019 PCA identified various deficiencies and repair recommendations for the M&P and fire protection systems at the main fire station. Project design and engineering will prioritize reductions in building emissions and energy usage in alignment with the Village Climate Ready Oak Park Plan Goal: EE02 - Adopt Enhanced Building Performance Standards. Staff will present appropriate alternatives to replacement in kind identified during design with cost benefit evaluations for board directions

Current Status:

This is a new project that would include repairs and/or replacement of various components of the M&P and fire protection systems. Costs were provided based on information in the PCA. The following items would be replaced in 2023: condensing units, compressors and associated components for two AC systems. In 2024, the following items would be replaced: domestic water heater (\$5,000), exhaust fans (\$15,000), fire alarm panel and carbon monoxide (CO) detectors (\$15,000) and sprinkler pipe sections (\$10,000). The existing AC units at the main fire station are antiquated (still use and are low on R12 refrigerant) and are breaking down more and more frequently. The most recent assessment from a mechanical contractor was that the units are not reliable, not cost-effective and are in need of replacement. R12 refrigerant is much less environmentally friendly than modern refrigerants, is very difficult to obtain and is very costly to purchase.

Funding Sources	Account Number	Actuals		Project Budget		Amended Budget		Year End Estimate		Recommended Budget		
		FY 2020	FY 2021	FY 2022	FY 2022	FY 2022	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Transfer From CIP Fund #3095	3012-41300-101-491495	-	-	-	-	-	-	25,000	45,000	-	-	-
Total:		-	-	-	-	-	-	25,000	45,000	-	-	-
Expenditures												
Construction												
		-	-	-	-	-	-	25,000	45,000	-	-	-
Total:		-	-	-	-	-	-	25,000	45,000	-	-	-

Village of Oak Park
 Capital Improvement Program
 2023 - 2027

Project: Fire Station 1 Bunk Room Modifications Priority Code: A Category: Building Improvements



Description:

This project involves modifying the existing bunk room at the main fire station to provide for future female employees, as well as installing new carpeting in all carpeted areas of the building.

Justification:

The existing bunk room at the main fire station does not provide adequate accommodations for female staff. Modifications to the bunk room floor plan, which would include installation of partitions, additional beds and additional lighting would satisfy that immediate need and be beneficial to the Village through increased productivity and morale. The existing carpeting is over 25 years old and is in need of replacement.

Current Status:

This is a new project. The Village received bids for this work from general contractors in early 2022. All bids exceeded the available funds in the CIP BIF budget so this work is deferred until 2023. The \$25,000 that was budgeted for this work in 2022 was reallocated to cover a portion of the cost for the 2022 South Fire Station Renovation Project. The proposed design work would also include the design for renovations to the men's showers in the 2nd floor men's locker room. That project is being proposed to be completed in 2024.

Funding Sources	Account Number	Actuals		Project Budget	Amended Budget	Year End								
		FY 2020	FY2021			FY2022	FY2022 Estimate	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027		
Transfer From CIP Fund #30:	3012-41300-101-491495	-	-	25,000	-	-	-	240,000	-	-	-	-	-	-
Total:		-	-	25,000	-	-	-	240,000	-	-	-	-	-	-
Expenditures														
Design	3012-43790-101-540673	-	-	-	-	-	-	40,000	-	-	-	-	-	-
Construction	3012-43790-101-540673	-	-	25,000	-	-	-	200,000	-	-	-	-	-	-
Total:		-	-	25,000	-	-	-	240,000	-	-	-	-	-	-



Office of the Secretary of State
ilsos.gov

Business Entity Search

Entity Information

Entity Name	MIDWEST SERVICES AND DEVELOPMENT CORP.		
File Number	67948955	Status	GOODSTANDING
Entity Type	CORPORATION	Type of Corp	DOMESTIC BCA
Incorporation Date (Domestic)	05-24-2011	State	ILLINOIS
Duration Date	PERPETUAL		
Annual Report Filing Date	05-01-2023	Annual Report Year	2023
Agent Information	NICOLETA MAN 5280 N LAWLER AVE CHICAGO ,IL 60630	Agent Change Date	10-21-2014

Services and More Information

Bid Bond

AIA Document A310™ - 2010

CONTRACTOR:

(Name, legal status and address)

MIDWEST SERVICES AND DEVELOPMENT CORP.
5280 N. Lawler Ave
Chicago, IL 60630

Bid Bond No. OS02370

SURETY:

(Name, legal status and principal place of business)

Old Republic Surety Company
P.O. Box 1635
Milwaukee, WI 53201-1635

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:

(Name, legal status and address)

Village of Oak Park
201 South Boulevard
Oak Park, IL 60302

BOND AMOUNT: Ten Percent of the Bid Amount (10.00% of Bid Amount)

PROJECT:

(Name, location or address, and Project number, if any)

Fire Station 1 Bunk Renovation

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 18th day of July, 2023

[Signature]
(Witness)
[Signature]
(Witness) Karla K. Heffron

MIDWEST SERVICES AND DEVELOPMENT CORP.
(Principal) [Signature] *(Seal)*
(Title)
Old Republic Surety Company
(Surety) [Signature] *(Seal)*
(Title) Samuel Duchow, Attorney-in-Fact

★ ★ ★ ★ ★ OLD REPUBLIC SURETY COMPANY ★ ★ ★ ★ ★

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That OLD REPUBLIC SURETY COMPANY, a Wisconsin stock insurance corporation, does make, constitute and appoint: MICHAEL J. DOUGLAS, CHRIS M. STEINAGEL, CHRISTOPHER MATHER KEMP, ROBERT S. DOWNEY, CONNIE SMITH, KORY C. MORTEL, ELIOT MOTU, SAMUEL DUCHOW of HUDSON, WI

its true and lawful Attorney(s)-in-Fact, with full power and authority for and on behalf of the company as surety, to execute and deliver and affix the seal of the company thereto (if a seal is required), bonds, undertakings, recognizances or other written obligations in the nature thereof, (other than bail bonds, bank depository bonds, mortgage deficiency bonds, mortgage guaranty bonds, guarantees of installment paper and note guaranty bonds, self-insurance workers compensation bonds guaranteeing payment of benefits, or black lung bonds), as follows:

ALL WRITTEN INSTRUMENTS

and to bind OLD REPUBLIC SURETY COMPANY thereby, and all of the acts of said Attorneys-in-Fact, pursuant to these presents, are ratified and confirmed. This appointment is made under and by authority of the board of directors at a special meeting held on February 18, 1982.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following resolutions adopted by the board of directors of the OLD REPUBLIC SURETY COMPANY on February 18, 1982.

RESOLVED that, the president, any vice-president or assistant vice president, in conjunction with the secretary or any assistant secretary, may appoint attorneys-in-fact or agents with authority as defined or limited in the instrument evidencing the appointment in each case, for and on behalf of the company to execute and deliver and affix the seal of the company to bonds, undertakings, recognizances, and suretyship obligations of all kinds; and said officers may remove any such attorney-in-fact or agent and revoke any Power of Attorney previously granted to such person.

RESOLVED FURTHER, that any bond, undertaking, recognizance, or suretyship obligation shall be valid and binding upon the Company

- (i) when signed by the president, any vice president or assistant vice president, and attested and sealed (if a seal be required) by any secretary or assistant secretary; or
- (ii) when signed by the president, any vice president or assistant vice president, secretary or assistant secretary, and countersigned and sealed (if a seal be required) by a duly authorized attorney-in-fact or agent; or
- (iii) when duly executed and sealed (if a seal be required) by one or more attorneys-in-fact or agents pursuant to and within the limits of the authority evidenced by the Power of Attorney issued by the company to such person or persons.

RESOLVED FURTHER that the signature of any authorized officer and the seal of the company may be affixed by facsimile to any Power of Attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the company; and such signature and seal when so used shall have the same force and effect as though manually affixed.

IN WITNESS WHEREOF, OLD REPUBLIC SURETY COMPANY has caused these presents to be signed by its proper officer, and its corporate seal to be affixed this 22nd day of September, 2022.

Karen J. Haffner
Assistant Secretary



OLD REPUBLIC SURETY COMPANY

Alan Pavlic
President

STATE OF WISCONSIN, COUNTY OF WAUKESHA - SS

On this 22nd day of September, 2022, personally came before me, Alan Pavlic and Karen J. Haffner, to me known to be the individuals and officers of the OLD REPUBLIC SURETY COMPANY who executed the above instrument, and they each acknowledged the execution of the same, and being by me duly sworn, did severally depose and say: that they are the said officers of the corporation aforesaid, and that the seal affixed to the above instrument is the seal of the corporation, and that said corporate seal and their signatures as such officers were duly affixed and subscribed to the said instrument by the authority of the board of directors of said corporation.



Kathryn R. Pearson
Notary Public

My Commission Expires: September 28, 2026

(Expiration of notary's commission does not invalidate this instrument)

CERTIFICATE

I, the undersigned, assistant secretary of the OLD REPUBLIC SURETY COMPANY, a Wisconsin corporation, CERTIFY that the foregoing and attached Power of Attorney remains in full force and has not been revoked; and furthermore, that the Resolutions of the board of directors set forth in the Power of Attorney, are now in force.

24-5172

Signed and sealed at the City of Brookfield, WI this 18th day of July, 2023

ORSC 22262 (3-06)

Karen J. Haffner
Assistant Secretary

J. RYAN BONDING, INC.

SECTION IV
PROPOSAL FORM (Pricing)

The undersigned proposes to furnish all labor and materials required to complete the Work in accordance with the attached specifications and at the price indicated below.

Total Lump Sum Cost Base Bid: \$ 300,000.00

Alternates:

Alternate Bid No. 1: Mechanical Work

Base Bid: Existing roof top mechanical unit is to remain in place. Existing ductwork and controls are to be reconfigured and replaced as shown on the drawings to serve the new plan layout.

Alternate Bid: The existing roof top mechanical unit is to be removed and replaced with a new unit on the existing curb. The existing curb shall be modified to accommodate the new piece of equipment. Existing ductwork is to be reconfigured and replaced as shown on the drawings to serve the new plan layout. New controls are to be provided for RTU-1. In addition, all work associated with adding a second unit (RTU-2) is to be provided. This includes, but is not limited to, the new unit, new roof curb, modifications to the roof as shown on the drawings, framing a new roof opening with steel angles tied to the existing joists, new insulated ductwork, and new controls.

Alternate Bid No. 2a: Humidifier for RTU-1

Base Bid: Existing roof top mechanical unit to remain as is.

Alternate Bid: Provide a humidifier, in-line with the supply ductwork, to serve RTU-1. Modify ductwork to accommodate the humidifier installation. New connections and integration into RTU-1 to be provided.

Alternate Bid No. 2b: Humidifier for RTU-2

Base Bid: RTU-2, nor its humidifier, are to be included in the project.

Alternate Bid: Provide a humidifier, in-line with the new supply ductwork, to serve RTU-2. New connections and integration into RTU-2 to be provided.

Alternate Bid No. 3: Condensing Units & Fan Coil Units

Base Bid: The two existing condensing units (on the roof) and all associated piping and refrigerant to remain. Both fan coil units (in the mechanical room on the lower level) are to remain.

Alternate Bid: The two existing condensing units (on the roof) and two fan coil units (in the basement) to be removed and replaced. All associated refrigerant piping and the refrigerant are to be demolished. Selective demolition of the walls and ceilings shall be provided as shown on the drawings. New piping and

refrigerant shall be provided. New connections and integration of equipment to be provided. Restoration of walls and ceilings shall be provided as shown.

Alternate Bid No. 4: Thermal Insulation.

Base Bid: Provide R-21 batt insulation laid over all ceilings (acoustical panel) in bunk room area. Cut insulation around light fixtures.

Alternate Bid: In lieu of batt insulation, provide closed cell polyurethane spray foam insulation achieving R-25 on underside of roof deck. The entire area above the bunk room, plus a minimum of 2 feet beyond the wall perimeter shall be covered with spray foam insulation.

Alternate Bid No. 5: Fire Alarm System

Base Bid: Provide a fire alarm horn and strobe in each section of the corridor as shown.

Alternate Bid: Provide the base bid fire alarm horn and strobe locations plus a visual/audio notification device in each individual bunk room.

Total for Alt. No.1:	\$ <u>110,000.00</u>
Total for Alt. No.2a:	\$ <u>15,000.00</u>
Total for Alt. No.2b:	\$ <u>17,000.00</u>
Total for Alt. No.3:	\$ <u>75,000.00</u>
Total for Alt. No.4:	\$ <u>4,000</u>
Total for Alt. No.5:	\$ <u>12,000.00</u>

24-Hour Emergency Call-back Number:

(773) 818-5204

Printed Name: Constantin Bontas

Proposal Signature: *constantin bontas*

State of Illinois) County of Cook)

Constantin Bontas- President
(Type Name of Individual Signing)

being first duly sworn on oath deposes and says that the contractor on the above proposal is organized as indicated below and that all statements herein made on behalf of such

The partnership does business under the legal name of _____, which name is

is registered with the office of _____ in the county of

_____.

(c) Sole Proprietor

The contractor is a Sole Proprietor whose full name is

_____. If the contractor is operating under

a trade name, said trade name is _____,

which name is registered with the office of _____

in the county of _____.

Signed: _____

Sole Proprietor

In compliance with the above, the undersigned offers and agrees, if his/her proposal is accepted within ninety (90) calendar days from date of opening, to furnish any or all of the items upon which prices are quoted, at the price set opposite each item, delivered at the designated point within the time specified above.

SECTION VI
TAX COMPLIANCE AFFIDAVIT

Constantin Bontas, being first duly sworn, deposes and says:

that he/she is President of
(partner, officer, owner, etc.)

Midwest Service and Development
(Contractor selected)

The individual or entity making the foregoing proposal or proposal certifies that he/she is not barred from entering into an agreement with the Village of Oak Park because of any delinquency in the payment of any tax administered by the Department of Revenue unless the individual or entity is contesting, in accordance with the procedures established by the appropriate revenue act, liability for the tax or the amount of the tax. The individual or entity making the proposal or proposal understands that making a false statement regarding delinquency in taxes is a Class A Misdemeanor and, in addition, voids the agreement and allows the municipality to recover all amounts paid to the individual or entity under the agreement in civil action.

Constantin Bontas

By:
Its: President

(name of contractor if the contractor is an individual)
(name of partner if the contractor is a partnership)
(name of officer if the contractor is a corporation)

The above statement must be subscribed and sworn to before a notary public.

Subscribed and sworn to before me this Eight day of August, 2023.

Bianca Rogers
Notary Public's Signature

- Notary Public Seal



Reporting Requirements

The following forms must be completed in their entirety, notarized and included as part of the proposal document. Failure to respond truthfully to any question on the list or failure to cooperate fully with further inquiry by the Village of Oak Park will result in disqualification of your proposal.

SECTION VII
ORGANIZATION OF PROPOSING FIRM

Please fill out the applicable section:

A. Corporation:

The contractor is a corporation, legally named Midwest Service and Development and is organized and existing in good standing under the laws of the State of Illinois. The full names of its officers are:

President Constantin Bontas

Secretary Nicoleta Man

Treasurer Nicoleta Man

Registered Agent Name and Address: 5820 N. Lawler, Chicago, IL, 60630

The corporation has a corporate seal. (In the event that this proposal is executed by a person other than the President, attach hereto a certified copy of that section of Corporate By-Laws or other authorization by the Corporation that permits the person to execute the offer for the corporation.)

B. Sole Proprietor:

The contractor is a Sole Proprietor. If the contractor does business under an assumed name, the

assumed name is _____, which is registered with the Cook County Clerk. The contractor is otherwise in compliance with the Assumed Business Name Act, 805 ILCS 405/0.01, et. seq.

C. Partnership:

The contractor is a partnership which operates under the name _____

The following are the names, addresses and signatures of all partners:

Signature	Signature

(Attach additional sheets if necessary.) If so, check here _____.

If the partnership does business under an assumed name, the assumed name must be registered with the Cook County Clerk and the partnership is otherwise in compliance with the Assumed Business Name Act, 805 ILCS 405/0.01, et. seq.

D. Affiliates: The name and address of any affiliated entity of the business, including a description of the affiliation: _____

Signature of Owner

**SECTION VIII
PROPOSAL BOND**

WE _____
as PRINCIPAL, and _____
as SURETY, are held and firmly bound unto the Village of Oak Park, Illinois (hereafter referred to as "VOP") in the penal sum of Ten Percent (10%) of the total Proposal price, as specified in the invitation for Proposals. We bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly to pay to the VOP this sum under the conditions of this instrument.

WHEREAS THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that, the said PRINCIPAL is submitting a written Proposal to the VOP acting through its awarding authority for the completion of the work designated as the above section.

THEREFORE if the Proposal is accepted and an agreement awarded to the PRINCIPAL by the VOP for the above-designated section and the PRINCIPAL shall within fifteen (15) days after award enter into a formal agreement, furnish surety guaranteeing the faithful performance of the work, and furnish evidence of the required insurance coverage, all as provided in specifications then this obligation shall become void; otherwise it shall remain in full force and effect.

IN THE EVENT the VOP determines the PRINCIPAL has failed to enter into a formal agreement in compliance with any requirements set forth in the preceding paragraph, then the VOP acting through its awarding authority shall immediately be entitled to recover the full penal sum set out above, together with all court costs, all attorney fees, and any other expense of recovery.

IN TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this _____ day of _____ A.D. 2023.

PRINCIPAL

(Company Name)	(Company Name)
By: _____ (Signature & Title)	By: _____ (Signature & Title)

(If PRINCIPAL is a joint venture of two or more contractors, the company names, and authorized signatures of each contractor must be affixed)

SECTION IX
CONTRACT BOND



Contract Bond

_____, as PRINCIPAL, and _____ as SURETY, are held and firmly bound unto the Village of Oak Park (hereafter referred to as "Village") in the penal sum of _____, well and truly to be paid to the Village, for the payment of which its heirs, executors, administrators, successors and assigns, are bound jointly to pay to the Village under the conditions of this instrument.

WHEREAS, THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that, the Principal has entered into a written contract with the Village, acting through its President and Board of Trustees, for the construction of work, which contract is hereby referred to and made a part hereof as if written herein at length, and whereby the Principal has promised and agreed to perform the work in accordance with the terms of the contract, and has promised to pay all sums of money due for any labor, materials, apparatus, fixtures or machinery furnished to such Principal for the purpose of performing such work, including paying not less than the prevailing rate of wages in Cook County, where the work is for the construction of any public work subject to the Prevailing Wage Act, and has further agreed to save and indemnify and keep harmless the Village against all liabilities, judgments, costs and expenses which may in any manner accrue against the Village in consequence of granting such contract or which may in any manner result from the carelessness or neglect of the Principal, his agents, employees or workmen in any respect whatever; and has further agreed that this bond will inure to the benefit of any person, firm, company, or corporation, to whom any money may be due from the Principal, subcontractor or otherwise, for any such labor, materials, apparatus, fixtures or machinery so furnished and that suit may be maintained on such bond by any such person, firm, company, or corporation, for the recovery of any such money.

NOW THEREFORE, if the Principal shall well and truly perform the work in accordance with the terms of the contract, and shall pay all sums of money due or to become due for any labor, materials, apparatus, fixtures or machinery furnished to it for the purpose of constructing such work, and shall commence and complete the work within the time prescribed in the contract, and shall pay and discharge all damages, direct and indirect, that may be suffered or sustained on account of such work during the time of performance thereof and until the work shall have been accepted, and shall save and indemnify and keep harmless the Village against all liabilities, judgments, costs and expenses which may in any manner accrue against the Village in consequence of granting such contract or which may in any manner result from the carelessness or neglect of the Principal, his agents, employees or workmen in any respect whatever; and shall in all respects fully and faithfully comply with all the provisions, conditions, and requirements of the contract, then this obligation will be void; otherwise it will remain in full force and effect.

IN WITNESS WHEREOF, the PRINCIPAL and the SURETY have caused this instrument to be signed by their respective officers this _____ day of _____, 2023.

NAME OF PRINCIPAL

By: _____
Signature

By: _____
Printed Name

Its: _____
Title

Subscribed to and Sworn before me on the
_____ day of _____, 2023.

Notary Public

NAME OF SURETY

By: _____
Signature of Attorney-in-Fact

Subscribed to and Sworn before me on the
_____ day of _____, 2023.

Notary Public

**SECTION X
COMPLIANCE AFFIDAVIT**

I, Constantin Bontas, (print name) being first duly sworn on oath depose and state:

1. I am the (title) President of the proposing company and am authorized to make the statements contained in this affidavit on behalf of the company;
2. I have examined and carefully prepared this Proposal based on the request and have verified the facts contained in the Proposal in detail before submitting it;
3. The proposing company is organized as indicated above on the form entitled "Organization of Proposing Company."
4. I authorize the Village of Oak Park to verify the company's business references and credit at its option;
5. Neither the proposing company nor its affiliates¹ are barred from proposing on this project as a result of a violation of 720 ILCS 5/33E-3 or 33E-4 relating to Proposal rigging and Proposal rotating, or section 2-6-12 of the Oak Park Village Code relating to "Proposing Requirements".
6. The proposing company has the M/W/DBE status indicated below on the form entitled "EEO Report."
7. Neither the proposing company nor its affiliates is barred from agreementing with the Village of Oak Park because of any delinquency in the payment of any debt or tax owed to the Village except for those taxes which the proposing company is contesting, in accordance with the procedures established by the appropriate revenue act, liability for the tax or the amount of the tax. I understand that making a false statement regarding delinquency in taxes is a Class A Misdemeanor and, in addition, voids the agreement and allows the Village of Oak Park to recover all amounts paid to the proposing company under the agreement in civil action.
8. I am familiar with Section 13-3-2 through 13-3-4 of the Oak Park Village Code relating to Fair Employment Practices and understand the contents thereof; and state that the proposing company is an "Equal Opportunity Employer" as defined by Section 2000(E) of Chapter 21, Title 42 of the United States Code Annotated and Federal Executive Orders #11246 and #11375 which are incorporated herein by reference. **Also complete the attached EEO Report or Submit an EEO-1.**
9. I certify that the contractor is in compliance with the Drug Free Workplace Act, 41 U.S.C.A, 702

Signature: constantin bontas

Name and address of Business: Midwest Service and Development 5820 N.Lawler , Chicago, IL, 60630

Telephone 773 818 5204 E-Mail midwestservices2010@gmail.com

Subscribed to and sworn before me this 08 day of August, 2023.

Bianca Rogers
Notary Public



¹ Affiliates means: (i) any subsidiary or parent of the agreementing business entity, (ii) any member of the same unitary business group; (iii) any person with any ownership interest or distributive share of the agreementing business entity in excess of 7.5%; (iv) any entity owned or controlled by an executive employee, his or her spouse or minor children of the agreementing business entity.

SECTION XI
M/W/DBE STATUS AND EEO REPORT

Failure to respond truthfully to any questions on this form, failure to complete the form or failure to cooperate fully with further inquiry by the Village of Oak Park will result in disqualification of this Proposal.

1. Contractor Name: Midwest Service and Development
2. Check here if your firm is:
- Minority Business Enterprise (MBE) (A firm that is at least 51% owned, managed and controlled by a Minority.)
 - Women's Business Enterprise (WBE) (A firm that is at least 51% owned, managed and controlled by a Woman.)
 - Owned by a person with a disability (DBE) (A firm that is at least 51% owned by a person with a disability)
 - None of the above

[Submit copies of any W/W/DBE certifications]

3. What is the size of the firm's current stable work force?
- 3 Number of full-time employees
- 2 Number of part-time employees
4. Similar information will be requested of all sub-contractors working on this agreement. Forms will be furnished to the lowest responsible contractor with the notice of agreement award, and these forms must be completed and submitted to the Village before the execution of the agreement by the Village.

Signature: constantin bontas

Date: August 08 2023

EEO Report

Please fill out this form completely. Failure to respond truthfully to any questions on this form, or failure to cooperate fully with further inquiry by the Village of Oak Park will result in disqualification of this Proposal. An incomplete form will disqualify your Proposal.

An EEO-1 Report may be submitted in lieu of this report

Contractor Name Midwest Service and Development
 Total Employees 5

Job Category	Total # of Empl.	Total Males	Total Females	Black	Males				Females				Total Minorities
					Hispanic	American Indian	Alaskan Native	Asian & Pacific Islander	Hispanic	American Indian	Alaskan Native	Asian & Pacific Islander	
Officials & Managers	3	2	1										
Professionals	1				1								
Technicians													
Sales Workers													
Office & Clerical													
Semi-Skilled													
Laborers													
Service Workers													
Management Trainees													
Apprentices	1												

This completed and notarized report must accompany your Proposal. It should be attached to your Affidavit of Compliance. Failure to include it with your Proposal will be disqualify you from consideration.

Midwest Service and Development, being first duly sworn, deposes and says that he/she is the President

(Name of Person Making Affidavit)
 (Title or Officer)

of Midwest Services and that the above EEO Report information is true and accurate and is submitted with the intent that it

be relied upon. Subscribed and sworn to before me this Eight day of August, 2023.

constantin bontas
 (Signature)

August 08 2023
 (Date)

REQUEST FOR PROPOSALS
INSTRUCTIONS AND SPECIFICATIONS FOR:

Village of Oak Park Main Fire Station Bunk Room Renovations
Bid Number: 23-124
Issuance Date: 6/28/2023

The Village of Oak Park will receive proposals from qualified contractors to renovate the 2nd floor bunk room at the main fire station, located at 100 N. Euclid, Oak Park, IL 60302. Proposals will be accepted at the Public Works Center Monday through Friday, 7:30 a.m. to 4:00 p.m. local time until **11:00 a.m. on Friday, August 4th, 2023**. Proposals may also be sent via e-mail to vics@oak-park.us. Proposals will be reviewed and the results of the review will be presented to the Village of Oak Park Board of Trustees.

There will be a mandatory pre-bid meeting at the main fire station on Thursday, July 13th, 2023 at 9:00 a.m. Prospective bidders are encouraged to attend the pre-bid meeting to inspect site conditions and obtain other pertinent information about the scope of work. Plans/specs/drawings will be available after July 6th and will be distributed at the pre-bid mtg.

Specifications and bid forms may be obtained by sending a request to Building Maintenance Superintendent, Vic Sabaliauskas at vics@oak-park.us or by stopping by the Public Works Center at the address listed above or by calling 708-358-5710.

The Board of Trustees reserves the right to accept or reject any and all proposals or to waive technicalities, or to accept any item of any proposal.

Do not detach any portion of this document. Upon formal award to the successful contractor, a written agreement will be executed in substantially the form attached.

In responding to this Request for Proposals, the official logo of the Village of Oak Park is not to be used in any form. Use of the Village logo is strictly prohibited by law and such use could subject the proposer to disqualification.

Submission of Proposals

The bid shall be submitted on the bid form included herewith. If bid is hand delivered or mailed to the Public Works Center, the bid shall be submitted in a sealed envelope marked "**BID: 23-124 Village of Oak Park Main Fire Station Bunk Room Renovations**", shall bear the return address of the bidder, and shall be addressed as follows:

TO: Vic Sabaliauskas, Building Maintenance Superintendent
Department of Public Works
201 South Blvd.
Oak Park, IL 60302

SECTION I
PROPOSAL INSTRUCTIONS, TERMS AND CONDITIONS

Preparation and Submission of Proposal

All proposals must be delivered to the Public Works Center by the specific time indicated on the cover page. Proposals arriving after the specified time will not be accepted. Mailed proposals that are received by the Village after the specified hour will not be accepted regardless of the post-marked time on the envelope. Proposals must be signed by an officer of the company who is authorized to enter into agreements on behalf of the company. Proposals shall be sealed in an envelope and marked as stated on the cover page.

Proposal Bond

The contractor shall provide a proposal bond in the amount of ten percent (10%) of the total proposal price. The attached form may be used or the contractor may provide cash or a certified check in the amount specified. The proposal bonds, cash or checks will be returned once the selected contractor has entered into an agreement for this work and provided the Contract bond in an amount of one hundred percent (100%) of the total approved proposal price.

Contract Bond

The successful contractor shall, within ten (10) calendar days after award of the Proposal, furnish a contract bond in the amount of one hundred percent (100%) of the contract price. The bond shall ensure faithful performance of the work, and the payment for materials, labor and of the subcontractors. The bond shall be with a surety or sureties with a rating of "A" or better by A.M. Best and Company and such sureties shall be approved by the Village. Bonds in the form of certified or cashier's check shall be made payable to the Village of Oak Park, Illinois. The contract bond shall be furnished in the same number of copies as the number of copies of the agreement to be executed.

Award of Agreement

The agreement will be awarded in whole or in part to the responsible contractor whose proposal, conforming to the request for proposals, will be most advantageous to the Village; price and other factors considered.

Costs of Preparation

The Village will not be responsible for any expenses incurred in preparing and submitting a proposal or entering into the applicable agreement.

Taxes not Applicable

The Village of Oak Park as an Illinois municipality pays neither Illinois Sales Tax nor Federal Excise Tax (State Tax Exemption Identification Number E9998-1823-06). Contractors should exclude these taxes from their prices.

Withdrawal of Proposals

Any contractor may withdraw its proposal at any time prior to the time specified in the advertisement as the closing time for the receipt of proposals, by signing a request therefore. No contractor may withdraw or cancel its proposal for a period of sixty (60) calendar days after

the advertised closing time for the receipt of proposals. The successful contractor may not withdraw or cancel its proposal after having been notified that the proposal was accepted by the Village Board of Trustees.

Investigation of Contractors

The Village will make such investigations as are necessary to determine the ability of the contractor to fulfill proposal requirements. If requested, the contractor should be prepared to present evidence to the Village of Oak Park of ability and possession of necessary facilities and financial resources to comply with the terms of the attached specifications and proposals. In addition, the contractor shall furnish the Village with any information the Village may request, and shall be prepared to show completed work of a similar nature to that included in its proposal. The Village reserves the right to visit and inspect the premises and operation of any contractor.

Rejection of Contractor

The Village will reject any proposal from any person, firm or corporation that appears to be in default or arrears on any debt, agreement or the payment of any taxes. The Village will reject any proposal from a contractor that failed to satisfactorily complete work for the Village under any previous agreement.

Conditions

Contractors are advised to become familiar with all conditions, instructions and specifications governing the work. Contractors shall be presumed to have investigated the work site, conditions and scope of the work before submitting a proposal.

Compliance with Applicable Laws

The contractor will strictly comply with all ordinances of the Village of Oak Park and Village Code and laws of the State of Illinois.

Governing Law

All agreements entered into by the Village of Oak Park are governed by the laws of the State of Illinois without regard to conflicts of law. Any action brought to enforce an agreement with the Village of Oak Park must be brought in the state and federal courts located in Cook County, Illinois.

Subletting of Agreement

No agreement awarded by the Village of Oak Park shall be assigned or any part sub-agreement without the written consent of the Village of Oak Park or as noted in the contractor's proposal. In no case shall such consent relieve the contractor from its obligations or change the terms of the agreement.

Interpretation of Agreement Documents

Any contractor with a question about this proposal may request an interpretation thereof from the Village. If the Village changes the proposal, either by clarifying it or by changing the specifications, the Village will issue a written addendum, and will mail a copy of the addendum to all prospective contractors. The Village will not assume responsibility for receipt of such addendum. In all cases, it will be the contractor's responsibility to obtain all addenda issued.

Contractors will provide written acknowledgment of receipt of each addendum issued with the proposal submission.

Minority Business and Women Business Enterprise Requirements

The Village of Oak Park, in an effort to reaffirm its policy of non-discrimination, encourages the efforts of contractors and subcontractors to take affirmative action in providing for Equal Employment Opportunity without regard to race, religion, creed, color, sex, national origin, age, handicap unrelated to ability to perform the job or protected veteran's status.

Licenses and Permits

The contractor shall be responsible for becoming a licensed contractor in the Village. The contractor shall also be responsible for obtaining any and all required permits from the Village's Development Customer Services Department (Building Permits Division). The Village shall waive all permit fees.

Agreement

The selected contractor shall enter into an Independent Contractor Agreement with the Village to complete the work in a form substantially similar to the agreement attached hereto. The agreement shall be executed by the contractor and returned, together with the contract bond within ten (10) calendar days after the agreement has been mailed to the contractor. The contractor shall execute three copies of the agreement. One fully executed copy will be returned to the contractor.

Notice to Proceed

Work shall begin within fourteen (14) days from the Notice to Proceed from the Village's Building Maintenance Superintendent. All work shall be completed in accordance with the detailed specifications set forth herein, unless the Building Maintenance Superintendent grants an extension.

Fees and Cost

In the event any action is brought to enforce any agreement entered into by the Village of Oak Park, or to collect any unpaid amount from the Village of Oak Park, each party bears the responsibility of paying its own attorneys' fees and costs.

Dispute Resolution

The Village of Oak Park does not agree to the mandatory arbitration of any dispute.

SECTION II
DETAILED SPECIFICATIONS

See attached detailed specifications and design documents as submitted by the design firm of Studio GC, Inc.

The selected contractor shall furnish all labor, supervision, supplies, tools, equipment, vehicles and other means necessary or proper for performing and completing the work. The selected contractor shall be responsible for the cleaning up of the job site and shall repair or restore all structures and property that may be damaged or disturbed during performance of the work to the satisfaction of the Village of Oak Park.

The agreement and work shall be carried out in conformance with the laws and regulations of the Village of Oak Park and these specifications. All work will be performed according to the standards set forth in the applicable building codes and standards, including mechanical, fire, plumbing, electric, accessibility, or any other applicable codes in force in the Village of Oak Park and State of Illinois.

Alterations, Omissions and Extra Work

The Village of Oak Park reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work as may be deemed necessary.

Job Site Conditions

To the fullest extent possible, the contractor will not allow its work to interfere with the critical operations of the Fire Department. Contractor will take all necessary actions as directed by the Village in that regard.

Material Storage: The contractor shall be responsible for the storage and safety of his own materials. The Village assumes no liability whatever for any material damaged or stolen on the premises. Any damage to, or loss by theft or vandalism of any material, appurtenance, or appliance, after such has been applied, connected or installed on Village property, shall be the sole responsibility of the contractor until the project is completed and accepted by the Village.

Safety Precautions: The contractor is solely responsible for implementing effective safety precautions on and around the work site to protect workers and other persons who might be affected and shall exercise every precaution at all times for the protection of the property. The contractor shall not leave any combustible materials or other fire hazards overnight or allowed them to accumulate. The contractor shall abide by all applicable laws, standards, and regulations that apply to the completion of the work, including EPA and OSHA safety standards and regulations.

Damage to Property: Contractor shall repair, at no additional cost to the Village, all damage to Village property caused by the contractor resulting from his work. Where repair of existing work is called for, such patching and replacement shall be made to blend with existing work so that the patch or replacement will be inconspicuous after finishing.

Daily Clean-up: The contractor shall keep the premises clean and orderly during the course of the work and all debris shall be removed on a continuous basis.

Method of Payment

The Village of Oak Park will pay monthly all undisputed invoices billed at the rates set forth in the contractor's proposal within 30 days of approval as provided in the Local Government Prompt Payment Act, 50 ILCS505/4. The maximum interest rate for any payment not made within 30 days of approval is 1%.

Change Orders

Change Orders: Changes in the Work may be agreed to after execution of the agreement, and without invalidating the agreement, if the change order is in writing and signed. Any changes to the scope of work which result in an increase in the agreement price will be subject to an agreement addendum which must be signed by both parties. Any such change order will be prepared by the Village. The contractor may only proceed with the change upon receipt of the written change order signed by the Village.

Emergency Changes: Contractor may perform work not included in the scope of work if necessary to remedy a condition that poses an immediate threat to persons or property. Work of this nature shall be carried out only to the extent of bringing the condition under control. The Village shall be notified immediately. A change order will then be negotiated and executed for the work performed, and for work remaining, if any.

Minor Changes (Field Orders): The Village may verbally authorize minor changes in the scope of work in order to prevent a delay in the progression of the work. These field orders may not involve a change in the agreement price or be inconsistent with the scope of work.

Changes Due to Unknown Conditions: The contractor is not responsible for changes in the work that are due to conditions that were not reasonably observable or conditions that have changed. In such cases, the contractor shall notify the Village and a change order will be negotiated.

Any change which results in a total agreement price in excess of \$10,000 must be approved by the Village of Oak Park Board of Trustees.

Correction of Work Prior To Final Payment

The Village has the right to stop work if the contractor fails to carry out the work in a manner acceptable to the Village. If the Village deems the contractor's work unacceptable, at the Village's election, the contractor shall do one of the following:

1. Promptly repair or replace the defective work, without expense to the Village, including costs associated with repairing any damage to property caused by the replacement work; or;
2. If the Village deems it unacceptable to have the contractor correct work which has been incorrectly done, a deduction from the agreement price shall be made based on the costs to the Village to have the work repaired. Such a deduction from the agreement price shall in no way affect the Village's other remedies or relieve the

contractor from responsibility for defects and related damage occurring as a result of defective or unacceptable work.

Contractor's Representative

The contractor shall have at all times a competent foreman or superintendent on the job that shall have full authority to act for the contractor, and to receive and execute orders from the Director of Public Works or appointed representative. Any instructions given to such superintendent or person executing work for the contractor shall be binding on the contractor as though given to him personally. Contractor's representative must be proficient in the use and interpretation of the English language.

Workers

The contractors shall employ competent laborers and shall replace, at the request of the Building Maintenance Superintendent any incompetent, unfaithful, abusive or disorderly workers in their employ. Only workers expert in their respective branches of work shall be employed where special skill is required. Inappropriate behavior or examples of unproductive work effort will not be tolerated. The Village has the right to require a contractor's employee to be immediately removed from the work crew if the above behavior is exhibited.

Dispute Resolution

All disputes, including collection disputes, shall be brought in the Circuit Court of Cook County, Illinois. This agreement shall be interpreted in accordance with the laws of the State of Illinois. In any dispute resolution process, each party shall bear its own costs, including attorney's fees. Any purported agreement between the parties that states terms contrary to this paragraph M will be deemed per se invalid.

Mandatory Qualifications for Contractor's Personnel

Crews shall include at least one (1) supervisor during any given shift.

1. No more than 50% of the crew may be trainees at any one time.
2. Supervisors must be fluent in the English language and capable of reading and writing English.
3. Technicians employed by the contractor selected shall be fully trained and skilled in safe and proper techniques. Specific training required must follow the OSHA standards (see *below*).
4. The contractor selected shall provide sufficient documentation, if requested by the Village, to demonstrate adequate training has been provided upon commencement of the agreement. Contractor selected shall submit statement outlining training program and method of verifying employee competency. Failure to do so may be ample cause for rejection of proposal. The use of technicians who are not adequately trained may be sufficient grounds for termination of the agreement.
5. The Village reserves the right to require immediate removal of any employee of the contractor selected deemed unfit for service for any reason. This right is non-negotiable and the

contractor selected agrees to this condition by accepting this agreement. The contractor selected shall have enough qualified personnel to replace a terminated employee within 24 hours. Failure to do so can result in the termination of the agreement.

OSHA Requirements

1. Material Safety Data Sheets – Contractor selected shall furnish the Village of Oak Park copies of Material Safety Data Sheets (MSDS), for all products used, prior to beginning service at Village facilities. In addition, each time a new chemical is introduced, a copy of that product’s MSDS must be provided to the Building Maintenance Superintendent prior to the product being used. The Material Safety Data Sheets must be in compliance with OSHA Regulation 1910.1200, paragraph g.
2. Labeling of Hazardous Materials – Contractor selected shall comply with OSHA regulation 1919.1200, paragraph f, concerning labeling of all chemical containers.
3. Caution Signs – Contractor selected shall use “caution signs” as required by OSHA Regulation 1910.44 and 1910.145 at no cost to the Village. Caution signs shall be on-site upon commencement of agreement.

Proof of compliance with OSHA regulation 1920.1200, Hazard Communication, shall be provided to the Building Maintenance Superintendent upon commencement of this agreement, if requested.

Failure of the contractor selected or his/her employees to comply with all applicable laws, regulations and rules shall permit the Village to immediately terminate this agreement without liability.

Prevailing Wages

Contractor and any applicable subcontractor shall pay prevailing wages as established by the Illinois Department of Labor and determined by the Village for each craft or type of work needed to execute the contract in accordance with the Illinois Prevailing Wage Act, 820 ILCS 130/0.01 *et seq.* (“Act”). Contractor shall prominently post the current schedule of prevailing wages at the Project site(s) and shall notify immediately in writing all of its subcontractors of all changes in the schedule of prevailing wages. Any increases in costs to Contractor due to changes in the prevailing rate of wage during the terms of any Contract shall be at the sole expense of Contractor and not at the expense of the Village, and shall not result in an increase to the Contract Price. Contractor shall be solely responsible to maintain accurate records as required by the Act and shall submit certified payroll records to the Village evidencing its compliance with the Act on no less than a monthly basis as required by the Act. Contractor shall be solely liable for paying the difference between prevailing wages and any wages actually received by laborers, workmen and/or mechanics engaged in the Work for the Project.

Contractor shall indemnify, hold harmless, and defend the Village, its officers, officials, employees, agents and volunteers (“Indemnified Parties”) against all regulatory actions, complaints, damages, claims, suits, liabilities, liens, judgments, costs and expenses, including reasonable attorney’s fees, which may in any way arise from or accrue against the Indemnified

Parties as a consequence of noncompliance with the Act or which may in any way result therefrom, including a complaint by the Illinois Department of Labor under Section 4(a-3) of the Act, 820 ILCS 130/4(a-3) that any or all of the Indemnified Parties violated the Act by failing to give proper notice to the Grantee or any other party performing work on the Public Improvements that not less than the prevailing rate of wages shall be paid to all laborers, workers and mechanics performing Work on the Project, including interest, penalties or fines under Section 4(a-3). The indemnification obligations of this section on the part of Contractor shall survive the termination or expiration of this Agreement. In any such claim, complaint or action against the Indemnified Parties, Contractor shall, at its own expense, appear, defend and pay all charges of reasonable attorney's fees and all reasonable costs and other reasonable expenses arising therefrom or incurred in connection therewith, and, if any judgment or award shall be rendered against the Indemnified Parties in any such action, Contractor shall at its own expense, satisfy and discharge such judgment or award.

SECTION III
SCOPE OF WORK

Plans, drawings and specifications will be available after July 6th and will be distributed at the pre-bid meeting on July 13th. Plans can also be sent electronically to prospective bidders upon request after July 6th.

An asbestos survey of the areas included in the scope of work has been completed (by the firm of Environmental Consulting Group) and the results of the analysis showed no presence of ACM.

Addenda: The bidding contractor acknowledges receipt of Addenda as listed below and represents that any additions to, modifications of, or deletions from the Work specified, as called for in these Addenda, are included in the Base Bid Sum and the Alternates. Contractor shall submit this form with their bid.

<i>Addendum No.</i>	<i>Date</i>
_____	_____
_____	_____
_____	_____
_____	_____

SECTION IV
PROPOSAL FORM (Pricing)

The undersigned proposes to furnish all labor and materials required to complete the Work in accordance with the attached specifications and at the price indicated below.

Total Lump Sum Cost Base Bid: \$ _____

Alternates:

Alternate Bid No. 1: Mechanical Work

Base Bid: Existing roof top mechanical unit is to remain in place. Existing ductwork and controls are to be reconfigured and replaced as shown on the drawings to serve the new plan layout.

Alternate Bid: The existing roof top mechanical unit is to be removed and replaced with a new unit on the existing curb. The existing curb shall be modified to accommodate the new piece of equipment. Existing ductwork is to be reconfigured and replaced as shown on the drawings to serve the new plan layout. New controls are to be provided for RTU-1. In addition, all work associated with adding a second unit (RTU-2) is to be provided. This includes, but is not limited to, the new unit, new roof curb, modifications to the roof as shown on the drawings, framing a new roof opening with steel angles tied to the existing joists, new insulated ductwork, and new controls.

Alternate Bid No. 2a: Humidifier for RTU-1

Base Bid: Existing roof top mechanical unit to remain as is.

Alternate Bid: Provide a humidifier, in-line with the supply ductwork, to serve RTU-1. Modify ductwork to accommodate the humidifier installation. New connections and integration into RTU-1 to be provided.

Alternate Bid No. 2b: Humidifier for RTU-2

Base Bid: RTU-2, nor its humidifier, are to be included in the project.

Alternate Bid: Provide a humidifier, in-line with the new supply ductwork, to serve RTU-2. New connections and integration into RTU-2 to be provided.

Alternate Bid No. 3: Condensing Units & Fan Coil Units

Base Bid: The two existing condensing units (on the roof) and all associated piping and refrigerant to remain. Both fan coil units (in the mechanical room on the lower level) are to remain.

Alternate Bid: The two existing condensing units (on the roof) and two fan coil units (in the basement) to be removed and replaced. All associated refrigerant piping and the refrigerant are to be demolished. Selective demolition of the walls and ceilings shall be provided as shown on the drawings. New piping and

refrigerant shall be provided. New connections and integration of equipment to be provided. Restoration of walls and ceilings shall be provided as shown.

Alternate Bid No. 4: Thermal Insulation.

Base Bid: Provide R-21 batt insulation laid over all ceilings (acoustical panel) in bunk room area. Cut insulation around light fixtures.

Alternate Bid: In lieu of batt insulation, provide closed cell polyurethane spray foam insulation achieving R-25 on underside of roof deck. The entire area above the bunk room, plus a minimum of 2 feet beyond the wall perimeter shall be covered with spray foam insulation.

Alternate Bid No. 5: Fire Alarm System

Base Bid: Provide a fire alarm horn and strobe in each section of the corridor as shown.

Alternate Bid: Provide the base bid fire alarm horn and strobe locations plus a visual/audio notification device in each individual bunk room.

Total for Alt. No.1:	\$ _____
Total for Alt. No.2a:	\$ _____
Total for Alt. No.2b:	\$ _____
Total for Alt. No.3:	\$ _____
Total for Alt. No.4:	\$ _____
Total for Alt. No.5:	\$ _____

24-Hour Emergency Call-back Number:

(____) _____

Printed Name: _____

Proposal Signature: _____

State of _____) County of _____)

(Type Name of Individual Signing)

being first duly sworn on oath deposes and says that the contractor on the above proposal is organized as indicated below and that all statements herein made on behalf of such

Contractor and that their deponent is authorized to make them, and also deposes and says that deponent has examined and carefully prepared their proposal from the agreement specifications and has checked the same in detail before submitting this proposal; that the statements contained herein are true and correct.

Signature of contractor authorizes the Village of Oak Park to verify references of business and credit at its option.

Signature of contractor shall also be acknowledged before a Notary Public or other person authorized by law to execute such acknowledgments.

Dated: _____/____/2023 _____

Organization Name
(Seal - If Corporation)

By:

Authorized Signature

Address

Telephone: _____

Subscribed and sworn to before me this _____ day of _____, 2023
_____ in the State of _____ My

Commission
Notary Public

Expires on ____/____/_____

Complete Applicable Paragraph Below

(a) Corporation

The contractor is a corporation, which operates under the legal name of _____ and is organized and existing under the laws of the State of _____. The full names of its Officers are:

President _____

Secretary _____

Treasurer _____

The corporation does have a corporate seal. (In the event that this proposal is executed by a person other than the President, attach hereto a certified copy of that section of Corporate By-Laws or other authorization by the Corporation that permits the person to execute the offer for the corporation.)

(b) Partnership

Names, Signatures, and Addresses of all Partners

The partnership does business under the legal name of _____, which name is

is registered with the office of _____ in the county of _____.

(c) Sole Proprietor

The contractor is a Sole Proprietor whose full name is _____.

If the contractor is operating under

a trade name, said trade name is _____,

which name is registered with the office of _____

in the county of _____.

Signed: _____

Sole Proprietor

In compliance with the above, the undersigned offers and agrees, if his/her proposal is accepted within ninety (90) calendar days from date of opening, to furnish any or all of the items upon which prices are quoted, at the price set opposite each item, delivered at the designated point within the time specified above.

MUNICIPAL QUALIFICATION REFERENCE SHEET
(or attach separate form)

MUNICIPALITY _____

ADDRESS _____

CONTACT _____

PHONE _____ **E-mail:** _____

WORK PERFORMED _____

MUNICIPALITY _____

ADDRESS _____

CONTACT _____

PHONE _____ **E-mail:** _____

WORK PERFORMED _____

MUNICIPALITY _____

ADDRESS _____

CONTACT _____

PHONE _____ **E-mail:** _____

WORK PERFORMED _____

SECTION V
CONTRACTOR CERTIFICATION

_____, as part of its proposal on an agreement for construction Work
(Name of Contractor selected) for the Village of Oak Park, hereby certifies that said contractor selected
is not barred from proposing on the aforementioned agreement as a result of a violation to
either Section 33E-3 or 33E-4 of Article 33E of Chapter 38 of the Illinois Revised Statutes or
Section 2-6-12 of the Oak Park Village Code relating to "Proposing Requirement.

(Authorized Agent of Contractor selected)

Subscribed and sworn to before me this _____ day of _____, 2023.

Notary Public's Signature

- Notary Public Seal -

SECTION VI
TAX COMPLIANCE AFFIDAVIT

_____, being first duly sworn, deposes and says:

that he/she is _____ of
(partner, officer, owner, etc.)

(Contractor selected)

The individual or entity making the foregoing proposal or proposal certifies that he/she is not barred from entering into an agreement with the Village of Oak Park because of any delinquency in the payment of any tax administered by the Department of Revenue unless the individual or entity is contesting, in accordance with the procedures established by the appropriate revenue act, liability for the tax or the amount of the tax. The individual or entity making the proposal or proposal understands that making a false statement regarding delinquency in taxes is a Class A Misdemeanor and, in addition, voids the agreement and allows the municipality to recover all amounts paid to the individual or entity under the agreement in civil action.

By:
Its:

(name of contractor if the contractor is an individual)
(name of partner if the contractor is a partnership)
(name of officer if the contractor is a corporation)

The above statement must be subscribed and sworn to before a notary public.

Subscribed and sworn to before me this _____ day of _____, 2023.

Notary Public's Signature

- Notary Public Seal -

Reporting Requirements

The following forms must be completed in their entirety, notarized and included as part of the proposal document. Failure to respond truthfully to any question on the list or failure to cooperate fully with further inquiry by the Village of Oak Park will result in disqualification of your proposal.

SECTION VII
ORGANIZATION OF PROPOSING FIRM

Please fill out the applicable section:

A. Corporation:

The contractor is a corporation, legally named _____ and is organized and existing in good standing under the laws of the State of _____. The full names of its officers are:

President _____

Secretary _____

Treasurer _____

Registered Agent Name and Address: _____

The corporation has a corporate seal. (In the event that this proposal is executed by a person other than the President, attach hereto a certified copy of that section of Corporate By-Laws or other authorization by the Corporation that permits the person to execute the offer for the corporation.)

B. Sole Proprietor:

The contractor is a Sole Proprietor. If the contractor does business under an assumed name, the

assumed name is _____, which is registered with the Cook County Clerk. The contractor is otherwise in compliance with the Assumed Business Name Act, 805 ILCS 405/0.01, et. seq.

C. Partnership:

The contractor is a partnership which operates under the name _____

The following are the names, addresses and signatures of all partners:

Signature	Signature

(Attach additional sheets if necessary.) If so, check here _____.

If the partnership does business under an assumed name, the assumed name must be registered with the Cook County Clerk and the partnership is otherwise in compliance with the Assumed Business Name Act, 805 ILCS 405/0.01, et. seq.

D. Affiliates: The name and address of any affiliated entity of the business, including a description of the affiliation: _____

Signature of Owner

Subscribed to and sworn before me on the
_____ day of _____, 2023.

Notary Public

NAME OF SURETY

By: _____
Signature of Attorney-in-Fact

subscribed to and sworn before me on the
_____ day of _____, 2023.

Notary Public

SECTION IX
CONTRACT BOND



Contract Bond

_____, as PRINCIPAL, and _____ as SURETY, are held and firmly bound unto the Village of Oak Park (hereafter referred to as “Village”) in the penal sum of _____, well and truly to be paid to the Village, for the payment of which its heirs, executors, administrators, successors and assigns, are bound jointly to pay to the Village under the conditions of this instrument.

WHEREAS, THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that, the Principal has entered into a written contract with the Village, acting through its President and Board of Trustees, for the construction of work, which contract is hereby referred to and made a part hereof as if written herein at length, and whereby the Principal has promised and agreed to perform the work in accordance with the terms of the contract, and has promised to pay all sums of money due for any labor, materials, apparatus, fixtures or machinery furnished to such Principal for the purpose of performing such work, including paying not less than the prevailing rate of wages in Cook County, where the work is for the construction of any public work subject to the Prevailing Wage Act, and has further agreed to save and indemnify and keep harmless the Village against all liabilities, judgments, costs and expenses which may in any manner accrue against the Village in consequence of granting such contract or which may in any manner result from the carelessness or neglect of the Principal, his agents, employees or workmen in any respect whatever; and has further agreed that this bond will inure to the benefit of any person, firm, company, or corporation, to whom any money may be due from the Principal, subcontractor or otherwise, for any such labor, materials, apparatus, fixtures or machinery so furnished and that suit may be maintained on such bond by any such person, firm, company, or corporation, for the recovery of any such money.

NOW THEREFORE, if the Principal shall well and truly perform the work in accordance with the terms of the contract, and shall pay all sums of money due or to become due for any labor, materials, apparatus, fixtures or machinery furnished to it for the purpose of constructing such work, and shall commence and complete the work within the time prescribed in the contract, and shall pay and discharge all damages, direct and indirect, that may be suffered or sustained on account of such work during the time of performance thereof and until the work shall have been accepted, and shall save and indemnify and keep harmless the Village against all liabilities, judgments, costs and expenses which may in any manner accrue against the Village in consequence of granting such contract or which may in any manner result from the carelessness or neglect of the Principal, his agents, employees or workmen in any respect whatever; and shall in all respects fully and faithfully comply with all the provisions, conditions, and requirements of the contract, then this obligation will be void; otherwise it will remain in full force and effect.

IN WITNESS WHEREOF, the PRINCIPAL and the SURETY have caused this instrument to be signed by their respective officers this _____ day of _____, 2023.

NAME OF PRINCIPAL

By: _____
Signature

By: _____
Printed Name

Its: _____
Title

Subscribed to and Sworn before me on the
_____ day of _____, 2023.

Notary Public

NAME OF SURETY

By: _____
Signature of Attorney-in-Fact

Subscribed to and Sworn before me on the
_____ day of _____, 2023.

Notary Public

SECTION X
COMPLIANCE AFFIDAVIT

I, _____, (print name) being first duly sworn on oath depose and state:

1. I am the (title) _____ of the proposing company and am authorized to make the statements contained in this affidavit on behalf of the company;
2. I have examined and carefully prepared this Proposal based on the request and have verified the facts contained in the Proposal in detail before submitting it;
3. The proposing company is organized as indicated above on the form entitled "Organization of Proposing Company."
4. I authorize the Village of Oak Park to verify the company's business references and credit at its option;
5. Neither the proposing company nor its affiliates¹ are barred from proposing on this project as a result of a violation of 720 ILCS 5/33E-3 or 33E-4 relating to Proposal rigging and Proposal rotating, or section 2-6-12 of the Oak Park Village Code relating to "Proposing Requirements".
6. The proposing company has the M/W/DBE status indicated below on the form entitled "EEO Report."
7. Neither the proposing company nor its affiliates is barred from agreementing with the Village of Oak Park because of any delinquency in the payment of any debt or tax owed to the Village except for those taxes which the proposing company is contesting, in accordance with the procedures established by the appropriate revenue act, liability for the tax or the amount of the tax. I understand that making a false statement regarding delinquency in taxes is a Class A Misdemeanor and, in addition, voids the agreement and allows the Village of Oak Park to recover all amounts paid to the proposing company under the agreement in civil action.
8. I am familiar with Section 13-3-2 through 13-3-4 of the Oak Park Village Code relating to Fair Employment Practices and understand the contents thereof; and state that the proposing company is an "Equal Opportunity Employer" as defined by Section 2000(E) of Chapter 21, Title 42 of the United States Code Annotated and Federal Executive Orders #11246 and #11375 which are incorporated herein by reference. **Also complete the attached EEO Report or Submit an EEO-1.**
9. I certify that the contractor is in compliance with the Drug Free Workplace Act, 41 U.S.C.A, 702

Signature: _____

Name and address of Business: _____

Telephone _____ E-Mail _____

Subscribed to and sworn before me this _____ day of _____, 2023.

Notary Public

- Notary Public Seal -

¹ Affiliates means: (i) any subsidiary or parent of the agreementing business entity, (ii) any member of the same unitary business group; (iii) any person with any ownership interest or distributive share of the agreementing business entity in excess of 7.5%; (iv) any entity owned or controlled by an executive employee, his or her spouse or minor children of the agreementing business entity.

SECTION XI
M/W/DBE STATUS AND EEO REPORT

Failure to respond truthfully to any questions on this form, failure to complete the form or failure to cooperate fully with further inquiry by the Village of Oak Park will result in disqualification of this Proposal.

1. Contractor Name: _____

2. Check here if your firm is:

- Minority Business Enterprise (MBE) (A firm that is at least 51% owned, managed and controlled by a Minority.)
- Women's Business Enterprise (WBE) (A firm that is at least 51% owned, managed and controlled by a Woman.)
- Owned by a person with a disability (DBE) (A firm that is at least 51% owned by a person with a disability)
- None of the above

[Submit copies of any W/W/DBE certifications]

3. What is the size of the firm's current stable work force?

_____ Number of full-time employees

_____ Number of part-time employees

4. Similar information will be requested of all sub-contractors working on this agreement. Forms will be furnished to the lowest responsible contractor with the notice of agreement award, and these forms must be completed and submitted to the Village before the execution of the agreement by the Village.

Signature: _____

Date: _____

EEO Report

Please fill out this form completely. Failure to respond truthfully to any questions on this form, or failure to cooperate fully with further inquiry by the Village of Oak Park will result in disqualification of this Proposal. An incomplete form will disqualify your Proposal.

An EEO-1 Report may be submitted in lieu of this report

Contractor Name _____
 Total Employees _____

Job Category	Total # of Empl.	Total Males	Total Females	Black	Males				Females				Total Minorities
					Hispanic	American Indian	Alaskan Native	Asian & Pacific Islander	Hispanic	American Indian	Alaskan Native	Asian & Pacific Islander	
Officials & Managers													
Professionals													
Technicians													
Sales Workers													
Office & Clerical													
Semi-Skilled													
Laborers													
Service Workers													
Management Trainees													
Apprentices													

This completed and notarized report must accompany your Proposal. It should be attached to your Affidavit of Compliance. Failure to include it with your Proposal will be disqualify you from consideration.

_____, being first duly sworn, deposes and says that he/she is the _____
 (Name of Person Making Affidavit)
 (Title or Officer)
 of _____ and that the above EEO Report information is true and accurate and is submitted with the intent that it

be relied upon. Subscribed and sworn to before me this _____ day of _____, 2023.

 (Signature)

 (Date

SECTION XII
NO PROPOSAL EXPLANATION

If your company does not wish to propose on the attached specifications, the Village of Oak Park would be interested in any explanation or comment you may have as to what prevented your firm from submitting a Proposal.

Thank you.

Proposal Name:

Village of Oak Park Main Fire Station Bunk Room Renovations
Bid Number: 23-124
Issuance Date: 6/28/2023

Comments:

Signed: _____

Phone: _____



SAMPLE ONLY – DO NOT SIGN
INDEPENDENT CONTRACTOR AGREEMENT

THIS INDEPENDENT CONTRACTOR AGREEMENT (“Contract”) is entered into on the _____ day of _____ 2023, by and between the Village of Oak Park, an Illinois home rule municipal corporation (hereinafter the “Village”), and _____, a _____ (hereafter the “Contractor”).

WHEREAS, the Contractor submitted a Proposal to renovate the bunk room, locker room and restroom at the south fire station (hereinafter referred to as the “Work”), pursuant to the Village’s Request for Proposals, attached hereto and incorporated herein by reference; and

WHEREAS, the Contractor represented in said Proposal that it has the necessary personnel, experience, and competence to promptly complete the Work and the work required hereunder; and

WHEREAS, the Contractor’s Proposal is attached hereto and incorporated herein by reference into this Agreement; and

WHEREAS, the Contractor shall perform the Work pursuant to the terms and conditions of this Contract..

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Contract,, and other good and valuable consideration received and to be received, it is mutually agreed by and between the parties as follows:

1. RECITALS INCORPORATED

The above recitals are incorporated herein as though fully set forth.

2. SCOPE OF WORK

The Contractor shall perform the Work in accordance with its Proposal for a total cost not to exceed \$_____ (“Contract Price”). The Contractor shall complete the Work in accordance with any applicable manufacturers’ warranties and in accordance with the Village’s Request for Proposals, the Contractor’s Proposal and this Contract, all of which, together shall constitute the Contract Documents. The Contractor acknowledges that it has inspected the sites where the work is to be performed and that it is fully familiar with all of the conditions at the sites, and further that its Proposal has adequately taken into consideration all of the conditions at the sites. The Contractor hereby represents and warrants that it has the skill and experience necessary to complete this Work in a good and workmanlike manner. The Contractor further represents and warrants that the Work will be completed in a good and workmanlike manner in accordance with the Contract Documents, and that the Work will be free from defects.

The Contractor shall achieve completion of all work required pursuant to the Contract

Documents by December 31, 2022 (“Contract Time”). The Contract Time is of the essence. In the event the Contractor fails to complete the Project on or before said date, the Village shall be entitled to liquidated damages in the amount of \$500.00 per day for each day the work remains uncompleted beyond the completion date set forth above. This amount is not a penalty, and the parties agree to said amount given the difficulties associated with determining or calculating damages to the Village in the event the Project is not completed on time. The Contractor shall have no claim for damages, for compensation in excess of the Contract Price, or for a delay or extension of the Contract Time based upon conditions found at, or in the vicinity of, the site(s).

3. DESIGNATED REPRESENTATIVES

The Contractor shall designate in writing a person to act as its designated representative with respect to the Work to be performed under this Agreement. Such person shall have complete authority to transmit and receive instructions and information, interpret and define the Contractor's policies and decisions with respect to the Work governed by this Contract. The Village's Building Maintenance Superintendent shall have complete authority to transmit and receive instructions and information, interpret and define the Village's policies and decisions with respect to the Work governed by this Contract, or such other person as designated in writing by the Village Manager.

4. TERM OF CONTRACT

The Contractor shall perform the Work pursuant to this Contract beginning on the effective date as defined herein and ending on December 31st, 2022 or on the date that the Work is completed as determined by the Village. The Contractor shall invoice the Village for the Work provided pursuant to this Contract the rates set forth in its Proposal.

5. PAYMENT SCHEDULE

The Contractor shall, as a condition precedent to its right to receive any payment, submit to the Village an application for payment and such receipts, vouchers, and other documents as may be necessary to establish the Contractor's payment for all labor and material and the absence of any interest whether in the nature of a lien or otherwise of any party in any property, work, or fund with respect to the Work performed hereunder. Such documents shall include, where relevant, the following forms, copies of which are attached hereto:

- (i) Contractor's sworn statement;
- (ii) Contractor's partial or final waiver of lien;
- (iii) Subcontractor's sworn statement(s); and
- (iv) Subcontractor's partial or final waiver of lien.

Payment by the Village shall be conditioned upon an inspection by the Village of the

work completed and submission of required waivers by the Contractor. Payment by the Village shall in no way constitute a waiver of, or relieve the Contractor from, any defects in the work. All payments shall be made in accordance with the Illinois Local Government Prompt Payment Act, 50 ILCS 505/1 *et seq.* Final payment for any Work performed by the Contractor pursuant to an invoice by the Contractor shall be made by the Village to the Contractor when the Contractor has fully performed the work and the work has been approved by the Village and submission of required waivers and paperwork by Contractor. Approval of the work and issuance of the final payment by the Village shall not constitute a waiver of, or release the Contractor from, any defects in the work.

The Village shall have the right to withhold from any payment due hereunder such amount as may reasonably appear necessary to compensate the Village for any actual or prospective loss due to Work which is defective or does not conform to the Contract Documents; damage for which the Contractor is liable hereunder; liens or claims of liens; claims of third parties, subcontractors, or material men; or any failure of the Contractor to perform any of its obligations under this Contract. The Village may apply any money withheld or due Contractor hereunder to reimburse itself for any and all costs, expenses, losses, damages, liabilities, suits, judgments, awards, and attorney's fees incurred, suffered, or sustained by the Village and chargeable to the Contractor.

6. TERMINATION

The Village may terminate this Contract for cause, which includes but is not necessarily limited to, the Contractor's failure to perform the work pursuant to this Contract. The Village shall provide the Contractor with five (5) days' written notice of a termination for cause pursuant to the provisions of Section 12 below. The Village may also terminate this Contract when it determines the same to be in its best interests by giving fourteen (14) days' written notice to the Contractor pursuant to the provisions of Section 12 below. In such event, the Village shall pay to the Contractor all amounts due for the work performed up to the date of termination.

7. COMPLIANCE WITH APPLICABLE LAWS

The Contractor shall comply with all applicable laws, regulations, and rules promulgated by any federal, state, county, municipal and/or other governmental unit or regulatory body now in effect during the performance of the work. By way of example only and not as a limitation, the following are included within the scope of the laws, regulations and rules with which the Contractor must comply: all forms of Workers Compensation Laws, all terms of the equal employment opportunity rules and regulations of the Illinois Department of Human Rights, statutes relating to contracts let by units of government, and all applicable civil rights and anti-discrimination laws and regulations.

8. INDEMNIFICATION

To the fullest extent permitted by law, the Contractor shall waive any right of

contribution against the Village and shall indemnify and hold harmless the Village and its officers, officials, employees, volunteers and agents from and against all claims, damages, losses and expenses, including, but not limited to, legal fees (attorney's and paralegal's fees, expert fees and court costs) arising out of or resulting from the performance of the Contractor's work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or injury to or destruction of property, other than the work itself, including the loss of use resulting therefrom, or is attributable to misuse or improper use of trademark or copyright-protected material or otherwise protected intellectual property, to the extent it is caused in whole or in part by any wrongful or negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. Such obligation shall not be construed to negate, abridge or otherwise reduce any other right to indemnity which the Village would otherwise have. The Contractor shall similarly protect, indemnify and hold and save harmless, the Village, its officers, officials, employees, volunteers and agents against and from any and all claims, costs, causes, actions and expenses, including, but not limited to, legal fees incurred by reason of the Contractor's breach of any of its obligations under, or the Contractor's default of, any provisions of this Contract. The indemnification obligations under this Section shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any subcontractor under Workers' Compensation or Disability Benefit Acts or Employee Benefit Acts.

9. INSURANCE

The Contractor shall, at the Contractor's expense, secure and maintain in effect throughout the duration of this Contract, insurance of the following kinds and limits set forth in this Section. The Contractor shall furnish "Certificates of Insurance" to the Village before beginning Work on the Project pursuant to this Contract. All insurance policies shall be written with insurance companies licensed to do business in the State of Illinois and having a rating of at least A:VII according to the latest edition of the Best's Key Rating Guide; and shall include a provision preventing cancellation of the insurance policy unless thirty (30) days prior written notice is given to the Village. This provision shall also be stated on each Certificate of Insurance: "Should any of the above described policies be canceled before the expiration date, the issuing company shall mail fifteen thirty (30) days written notice to the certificate holder named to the left."

The limits of liability for the insurance required shall provide coverage for not less than the following amounts, or greater where required by law:

(A) **Commercial General Liability:**

- i. Coverage to include Broad Form Property Damage, Contractual and Personal Injury.
- ii. Limits:

General Aggregate	\$ 2,000,000.00
Each Occurrence	\$ 1,000,000.00

Personal Injury \$ 1,000,000.00

iii. Coverage for all claims arising out of the Contractor's operations or premises and anyone directly or indirectly employed by the Contractor.

(B) Workers' Compensation:

i. Workers' Compensation insurance shall be provided in accordance with the provisions of the laws of the State of Illinois, including occupational disease provisions, for all employees who perform the Work pursuant to this Contract, and if work is subcontracted pursuant to the provisions of this Contract, the Contractor shall require each subcontractor similarly to provide workers' compensation insurance. In case employees engaged in hazardous work under this Contract are not protected under the Workers' Compensation Act, the Contractor shall provide, and shall cause each subcontractor to provide, adequate and suitable insurance for the protection of employees not otherwise provided.

(C) Comprehensive Automobile Liability:

i. Comprehensive Automobile Liability coverage shall include all owned, hired, non-owned vehicles, and/or trailers and other equipment required to be licensed, covering personal injury, bodily injury and property damage.

ii. Limits:
Combined Single Limit \$1,000,000.00

(D) Umbrella:

i. Limits:
Each Occurrence/Aggregate \$ 5,000,000.00

(E) The Village, its officers, employees, agents and volunteers shall be named as additional insureds on all insurance policies set forth herein except Workers' Compensation. The Contractor shall be responsible for the payment of any deductibles for said insurance policies. The coverage shall contain no special limitations on the scope of protection afforded to the Village, its officers, employees, agents, and volunteers.

(F) The Contractor understands and agrees that any insurance protection required by this Contract or otherwise provided by the Contractor, shall in no way limit the responsibility to indemnify, keep and save harmless, and defend the Village, its officers, employees, agents and volunteers as herein provided.

10. GUARANTY

The Contractor warrants and guarantees that its Work provided for the Project to be performed under this Agreement, and all workmanship, materials, equipment, and supplies performed, furnished, used, or installed under this Contract, shall be free from

defects and flaws in workmanship or design; shall strictly conform to the requirements of this Contract; and shall be fit and sufficient for the purposes expressed in, or reasonably inferred from, this Contract. The Contractor further warrants and guarantees that the strength of all parts of all manufactured materials, equipment, and supplies shall be adequate and as specified and that the performance requirements of this Contract shall be fulfilled.

The Contractor shall, at no expense to the Village, correct any failure to fulfill the above guaranty that may appear at any time. In any event, the guaranty herein expressed shall not be sole and exclusive, and is additional to any other guaranty or warranty expressed or implied.

11. AFFIDAVIT OR CERTIFICATE

The Contractor shall furnish any affidavit or certificate in connection with the work covered by this Contract as required by law.

12. NOTICES

Any notice required to be given by this Contract shall be deemed sufficient if made in writing and sent by certified mail, return receipt requested, or personal service, or by facsimile transmission to the persons and addresses indicated below or to such addresses and persons as either party hereto shall notify the other party of in writing pursuant to the provisions of this Section:

To the Village:

Village Manager
Village of Oak Park
123 Madison Street
Oak Park, Illinois 60302-4272
Email: villagemanger@oak-park.us
Facsimile: (708) 358-5101

To the Contractor:

Email: _____
Facsimile: _____

Mailing of such notice as and when above provided shall be equivalent to personal notice and shall be deemed to have been given at the time of mailing.

Notice of facsimile transmission shall be effective as of date and time of facsimile transmission, provided that the notice transmitted shall be sent on business days during business hours (9:00 a.m. to 5:00 p.m. Chicago time). In the event facsimile notice transmitted during non-business hours, the effective date and time of notice is the first hour of the first business day after transmission.

13. AUTHORITY TO EXECUTE

The individuals executing this Contract on behalf of the Contractor and the Village represent that they have the legal power, right, and actual authority to bind their respective parties to the terms and conditions of this Contract.

14. EFFECTIVE DATE

The effective date of this Contract reflected above and below shall be the date that the Village Manager executes this Contract behalf of the Village.

15. ENTIRE CONTRACT; APPROVAL OF SUBCONTRACTORS

This Contract, including the documents incorporated by reference herein, sets forth the entire Contract of the parties with respect to the accomplishment of the Work. No right or interest in this Contract shall be assigned, in whole or in part, by either party without the prior written consent of the other party. The Village reserves the right to approve the use of subcontractors to complete any portion of the Work and to approve any applicable contract between the Contractor and a proposed subcontractor to perform any of the Work. This Contract shall be binding upon the parties and upon their respective heirs, executors, administrators, personal representatives, successors, and assigns, except as herein provided.

16. INDEPENDENT CONTRACTOR

The Contractor shall have the full control of the ways and means of performing the work referred to above and that the Contractor and its employees, representatives or subcontractors are not employees of the Village, it being specifically agreed that the Contractor bears the relationship of an independent contractor to the Village. The Contractor shall solely be responsible for the payment of all salaries, benefits and costs of supplying personnel for the Work.

17. CONTRACT BOND

The Contractor, before commencing the work on the Project, shall furnish a Contract Bond. The Contract Bond shall be in an amount equal to 100% of the full amount of the Contract Sum as security for the faithful performance of its obligations pursuant to the Contract Documents and as security for the payment of all persons performing labor and furnishing materials in connection with the Contract Documents. Such bond shall be on standard AIA Documents, shall be issued by a surety satisfactory to the Village, and shall name the Village as a primary co-obligee. The Contract Bond shall become a part of the Contract Documents. The failure of Contractor to supply the required Contract Bond within ten (10) days after the Notice of Award or within such extended period as the Village may grant if the Contract Bond does not meet its approval shall constitute a default, and the Village may either award the Contract to the next lowest responsible proposer or re-advertise for proposals. A charge against the defaulting Contractor may be made for the difference between the amount of the

Contractor's Proposal and the amount for which a contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the proposal guarantee.

18. GOVERNING LAW AND VENUE

This Contract shall be governed by the laws of the State of Illinois both as to interpretation and performance. Venue for any action pursuant to this Contract shall be in the Circuit Court of Cook County, Illinois.

19. AMENDMENTS AND MODIFICATIONS

This Contract may be modified or amended from time-to-time provided, however, that no such amendment or modification shall be effective unless reduced to writing and duly authorized and signed by the authorized representative of the Village and the authorized representative of the Contractor.

20. NON-WAIVER OF RIGHTS

No failure of either party to exercise any power given to it hereunder or to insist upon strict compliance by the other party with its obligations hereunder, and no custom or practice of the parties at variance with the terms hereof, nor any payment under this Contract shall constitute a waiver of either party's right to demand exact compliance with the terms hereof.

21. CONFLICT

In case of a conflict between any provision(s) of the Village's Request for Proposals or the Contractor's Proposal and this Contract, this Contract and the Village's Request for Proposals shall control to the extent of such conflict.

22. HEADINGS AND TITLES

The headings and titles provided in this Contract are for convenience only and shall not be deemed a part of this Contract.

23. COOPERATION OF THE PARTIES

The Village and the Contractor shall cooperate in the provision of the Work to be provided by Contractor pursuant to this Contract and in compliance with applicable laws, including, but not limited to, the Illinois Freedom of Information Act, 5 ILCS 140/1 et seq. ("FOIA"), and the provision of any documents and information pursuant to a FOIA request. The Contractor shall provide any and all documents to the Village pursuant to a FOIA request at no cost to the Village.

24. COUNTERPARTS; FACSIMILE OR PDF SIGNATURES

This Contract may be executed in counterparts, each of which shall be considered an original and together shall be one and the same Contract. A facsimile or pdf copy of this Agreement and any signature(s) thereon will be considered for all purposes as an original.

25. CERTIFIED PAYROLL

Contractor shall be solely responsible to maintain accurate records reflecting its payroll for its employees who perform any of the Work for the Village pursuant to this Contract and shall submit certified payroll records to the Village's Director of Public Works at any time during the term of this Contract. Contractor shall provide said certified payroll records within seven (7) days upon the request of the Director of Public Works.

26. PREVAILING WAGE

Contractor and any applicable subcontractor shall pay prevailing wages as established by the Illinois Department of Labor and determined by the Village for each craft or type of work needed to execute the contract in accordance with the Illinois Prevailing Wage Act, 820 ILCS 130/0.01 *et seq.* ("Act"). Contractor shall prominently post the current schedule of prevailing wages at the Project site(s) and shall notify immediately in writing all of its subcontractors of all changes in the schedule of prevailing wages. Any increases in costs to Contractor due to changes in the prevailing rate of wage during the terms of any Contract shall be at the sole expense of Contractor and not at the expense of the Village, and shall not result in an increase to the Contract Price. Contractor shall be solely responsible to maintain accurate records as required by the Act and shall submit certified payroll records to the Village evidencing its compliance with the Act on no less than a monthly basis as required by the Act. Contractor shall be solely liable for paying the difference between prevailing wages and any wages actually received by laborers, workmen and/or mechanics engaged in the Work for the Project.

Contractor shall indemnify, hold harmless, and defend the Village, its officers, officials, employees, agents and volunteers ("Indemnified Parties") against all regulatory actions, complaints, damages, claims, suits, liabilities, liens, judgments, costs and expenses, including reasonable attorney's fees, which may in any way arise from or accrue against the Indemnified Parties as a consequence of noncompliance with the Act or which may in any way result therefrom, including a complaint by the Illinois Department of Labor under Section 4(a-3) of the Act, 820 ILCS 130/4(a-3) that any or all of the Indemnified Parties violated the Act by failing to give proper notice to the Grantee or any other party performing work on the Public Improvements that not less than the prevailing rate of wages shall be paid to all laborers, workers and mechanics performing Work on the Project, including interest, penalties or fines under Section 4(a-3). The indemnification obligations of this section on the part of Contractor shall survive the termination or expiration of this Agreement. In any such claim, complaint or action against the Indemnified Parties, Contractor shall, at its own expense, appear, defend and pay all

charges of reasonable attorney's fees and all reasonable costs and other reasonable expenses arising therefrom or incurred in connection therewith, and, if any judgment or award shall be rendered against the Indemnified Parties in any such action, Contractor shall at its own expense, satisfy and discharge such judgment or award.

**[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK -
SIGNATURE PAGE FOLLOWS]**

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be signed by their duly authorized representatives on the days and dates set forth below.

VILLAGE OF OAK PARK

CONTRACTOR

By:
Its: Village Manager

By:
Its:

Date: _____, 2023

Date: _____, 2023

ATTEST

ATTEST

By:
Its: Village Clerk

By:
Its:

Date: _____, 2023

Date: _____, 2023

GENERAL NOTES

1) REFER TO THE PROJECT MANUAL FOR BIDDING REQUIREMENTS, CONTRACT FORMS, GENERAL CONDITIONS OF THE CONTRACT, SUPPLEMENTARY CONDITIONS OF THE CONTRACT, AND TECHNICAL SPECIFICATIONS.
2) EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE PROJECT SITE AND OBSERVING THE SURROUNDING CONDITIONS PRIOR TO SUBMITTING A BID FOR THIS PROJECT...

GENERAL NOTES

21) PROVIDE GROUTED CELLS IN MASONRY WALLS TO ANCHOR ALL WALL MOUNTED ITEMS INCLUDING, BUT NOT LIMITED TO: MILLWORK, CASEWORK, WALL CABINETS, HANDRAILS, COAT RACKS, WALL HOOKS, DOOR STOPS, TOILET ACCESSORIES, OWNER FURNISHED EQUIPMENT, SHELING, LIGHT FIXTURES, LIFE SAFETY EQUIPMENT AND OTHER SIMILAR ITEMS.
22) PROVIDE FIRE TREATED WOOD OR STEEL FRAME BLOCKING, AS REQUIRED, IN FRAMED WALLS AND CEILINGS TO ANCHOR ALL WALL AND CEILING MOUNTED ITEMS INCLUDING, BUT NOT LIMITED TO, MILLWORK, CASEWORK, WALL CABINETS, HANDRAILS, COAT RACKS, WALL HOOKS, DOOR STOPS, TOILET ACCESSORIES, OWNER FURNISHED EQUIPMENT, SHELING, LIGHT FIXTURES, LIFE SAFETY EQUIPMENT AND OTHER SIMILAR ITEMS.

PROJECT NOTES

1) CONTRACTORS SHALL PROVIDE TEMPORARY BARRIERS AND CONTROLS IN THE PROXIMITY OF SITE THROUGHOUT THE WORK DAY. CONTRACTORS SHALL COORDINATE WITH THE LOCAL MUNICIPALITY AND OWNER TO LIMIT, DISRUPTION AND TO PROTECT LOCAL TRAFFIC AND RESIDENTS DURING THE COURSE OF THE WORK.
2) BEFORE BEGINNING WORK AT THE SITE AND THROUGHOUT THE COURSE OF THE WORK, INSPECT AND VERIFY THE EXISTING CONDITIONS, MATERIALS, DIMENSIONS, LOCATIONS AND CONDITIONS OF EVERY ITEM AFFECTED BY THE WORK UNDER THIS CONTRACT...

PROJECT NOTES

20) WORK SHOWN IS NEW UNLESS SPECIFICALLY NOTED OR OTHERWISE INDICATED.
21) DO NOT SCALE DRAWINGS, DIMENSIONS SHALL GOVERN, LARGE SCALE DETAILS SHALL GOVERN OVER SMALL SCALE DETAILS. IF A REQUIRED DIMENSION IS NOT INDICATED OR ANY DIMENSIONING DISCREPANCIES EXIST ON THE DRAWINGS THE CONTRACTORS SHALL PROMPTLY WRITE TO THE ARCHITECT FOR RESOLUTION.
22) VERIFY ALL DIMENSIONS IN FIELD PRIOR TO SHOP FABRICATION OF ITEMS.



Second Floor Bunk House Floor Plan

Village of Oak Park
100 N Euclid Ave, Oak Park, IL 60301

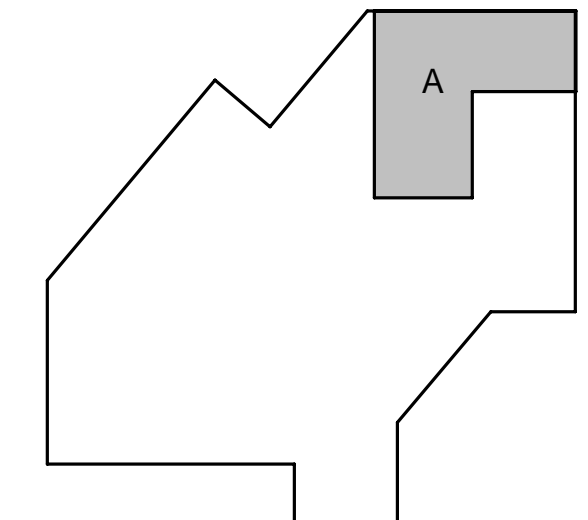
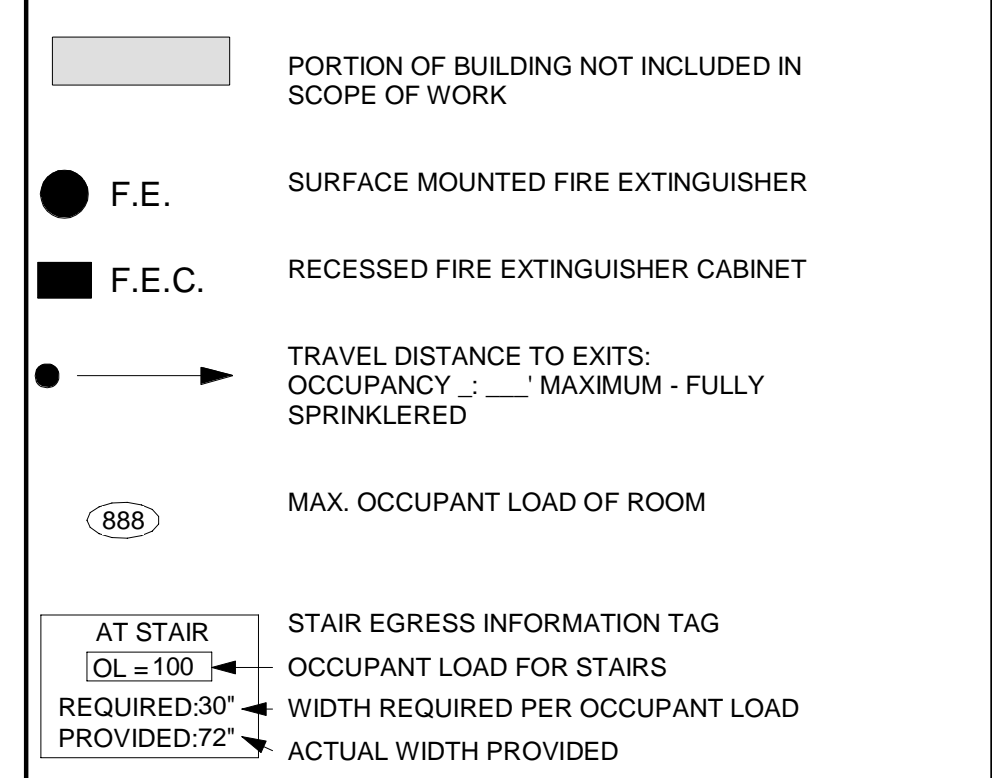


Table with columns: NO, ISSUE, DATE. Includes a 'KEY PLAN' section with a grid of dots.

GENERAL NOTES

G1.00

CODE COMPLIANCE	
BUILDING DATA: CONSTRUCTION CLASSIFICATION: TYPE III OCCUPANCY: NON-SEPARATED MIXED USE / GROUP(S) S S-1 (Most Stringent) S-2 R-3	
AREAS (GSF):	TO REMAIN RENOVATED NEW COMPLETE
SECOND FLOOR: 2,286	1,052 1,052 3,483
ALLOWABLE ARE PER FLOOR PER SECTION 503 AND MODIFICATIONS: 36,000 SF > 5,300 SF	
HEIGHTS: ACTUAL	ALLOWABLE
GROUP: 1 STORIES - 20'-0"	2 STORIES - 40'
GENERAL FIRE RESISTANCE RATED ELEMENTS	
STRUCTURAL FRAME	0 HOURS
EXTERIOR BEARING WALLS	0 HOURS
INTERIOR BEARING WALLS	0 HOURS
NON BEARING WALLS AND PARTITIONS	0 HOURS
FLOOR CONSTRUCTION	0 HOURS
ROOF CONSTRUCTION	0 HOURS
ILLINOIS PLUMBING CODE REVIEW:	
TOTAL NUMBER OF ACTUAL OCCUPANTS: (ILL. PLUMBING CODE 800.810 (a), (2), (b)) OCCUPANCY: BASED ON NUMBER OF BEDS: 13 - (7) MEN, (6) WOMEN	
NUMBER OF FIXTURES REQUIRED - FEMALE IN FACILITIES FOR EMPLOYEE USE PER PLUMBING CODE: WATER CLOSETS: 1 LAVATORY: 1 SHOWER: 1	
NUMBER OF FIXTURES REQUIRED - MALE IN FACILITIES FOR EMPLOYEE USE PER PLUMBING CODE: WATER CLOSETS: 1 LAVATORY: 1 SHOWER: 1	
DRINKING FOUNTAINS: 1 OR WATER STATION / BOTTLED WATER	
SERVICE SINK: 1 PER FLOOR	
PROPOSED	
TOTAL WATER CLOSETS (PROPOSED & EXISTING): 4 (2 URINALS)	
TOTAL LAVATORIES (EXISTING): 5	
TOTAL SHOWERS (EXISTING): 3	
TOTAL EXISTING WATER FOUNTAINS: EXISTING WATER STATION	
TOTAL SERVICE SINKS: 1 EXISTING	
	<ul style="list-style-type: none"> PORTION OF BUILDING NOT INCLUDED IN SCOPE OF WORK F.E. SURFACE MOUNTED FIRE EXTINGUISHER F.E.C. RECESSED FIRE EXTINGUISHER CABINET TRAVEL DISTANCE TO EXITS: OCCUPANCY: : : : MAXIMUM - FULLY SPRINKLERED MAX. OCCUPANT LOAD OF ROOM AT STAIR OL=100 REQUIRED:30' PROVIDED:72' STAIR EGRESS INFORMATION TAG OCCUPANT LOAD FOR STAIRS WIDTH REQUIRED PER OCCUPANT LOAD ACTUAL WIDTH PROVIDED



GRAPHIC SCALE
0 2'-0" 4'-0" 8'-0" 12'-0"

NEW SECOND FLOOR BUNK ROOMS
1/4" = 1'-0"

Code Compliance Notes	
1	PROJECT SHALL REMAIN IN COMPLIANCE WITH ALL ASPECTS OF ALL GOVERNING CODES AND ORDINANCES DURING THE COURSE OF CONSTRUCTION.
2	CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING ALL REQUIRED SHOP DRAWINGS AND CUTSHEETS FOR LIFE SAFETY SYSTEM COMPONENTS TO THE LOCAL AUTHORITY HAVING JURISDICTION.
3	CONTRACTOR SHALL ORGANIZE A MEETING WITH THE LOCAL AUTHORITY HAVING JURISDICTION TO REVIEW THE LOCATIONS OF ALL LIFE SAFETY DEVICES AND EQUIPMENT PRIOR TO THEIR INSTALLATION.
4	REFER TO SHEET A1.00 FOR PARTITION TYPES
5	ALL EGRESS EXITS OUT TO GRADE
6	PLUMBING FIXTURE COUNTS COMPLY (NO WORK IN THE TOILET ROOMS)

UL Assembly Notes	
1	CONTRACTOR SHALL COORDINATE BETWEEN CODE COMPLIANCE PLANS, LEGEND AND WALL TYPES TO DETERMINE CORRESPONDING UL DESIGNATION.
2	ALL FIRE RATED ASSEMBLIES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH TESTED ASSEMBLIES INDICATED AND SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE CODES. SEE TITLE PAGE FOR LIST OF ADOPTED CODES.
3	CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL COMPONENTS OF INDICATED ASSEMBLIES WHETHER SPECIFICALLY NOTED OR SHOWN IN THE DETAILS HEREIN.
4	CONTRACTOR SHALL FOLLOW MANUFACTURER'S DIRECTIONS TO ACHIEVE THE REQUIRED ASSEMBLY. IF THERE IS A CONFLICT OR DISCREPANCY BETWEEN THE MANUFACTURER'S INSTRUCTIONS AND THE DRAWINGS OR SPECIFICATIONS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING PRIOR TO COMMENCEMENT OF THE WORK.
5	ALL PENETRATIONS THROUGH ALL FIRE RATED WALL, FLOOR AND ROOF ASSEMBLIES SHALL BE FIRE SEALED IN ACCORDANCE WITH THE FIRE RESISTANT JOINT MANUFACTURER'S DETAILS. INSTALLATION SHALL BE APPROPRIATE FOR LOCATION, TYPE OF CONSTRUCTION AND PENETRATING ITEM. ALL PENETRATIONS ARE TO MEET OR EXCEED THE REQUIRED ASSEMBLY RATING.
6	TERMINATIONS OF FIRE RATED WALLS TO THE ROOF DECK, FLOOR DECK OR DIFFERING WALL TYPE SHALL BE FIRE SEALED ALONG THE ENTIRE EDGE TO CLOSE ALL GAPS.
7	ALL DUCTWORK, DIFFUSERS AND GRILLES PENETRATING FIRE RATED ASSEMBLIES SHALL BE INSTALLED WITH AN APPROPRIATE FIRE DAMPER. DAMPER SHALL BE APPROPRIATE FOR LOCATION AND TYPE OF CONSTRUCTION. DAMPERS ARE TO MEET OR EXCEED THE REQUIRED RATING.
8	ALL FIXTURES, EQUIPMENT AND DEVICES PENETRATING FIRE RATED ASSEMBLIES SHALL BE UL LISTED FOR INSTALLATION IN THE ASSEMBLY.
9	NO FIXTURES, EQUIPMENT OR DEVICES ARE TO BE INSTALLED IF ITS INSTALLATION WILL COMPROMISE A REQUIRED FIRE RATED ASSEMBLY.

Room Occupancy					
Number	Name	Area	Room Occupancy Style	Floor Area Allowances Per Occupant	Room Occupancy
200	CORRIDOR	103 SF	Circulation	0	
200A	CORRIDOR	122 SF	Circulation	0	
201	BUNK	48 SF	Business	100	1
202	BUNK	41 SF	Business	100	1
203	BUNK	48 SF	Business	100	1
204	BUNK	52 SF	Business	100	1
205	BUNK	53 SF	Business	100	1
206	BUNK	50 SF	Business	100	1
207	BUNK	23 SF	Business	100	1
209	BUNK	46 SF	Business	100	1
210	BUNK	64 SF	Business	100	1
211	BUNK	51 SF	Business	100	1
212	BUNK	44 SF	Business	100	1
213	BUNK	44 SF	Business	100	1
214	BUNK	45 SF	Business	100	1
Grand total: 15					13

UL Assemblies
Assembly Type
BEAMS
COLUMNS
EXTERIOR WALL (Load Bearing)
EXTERIOR WALL (Non Load Bearing)
FLOOR
INTERIOR WALL - SHAFTS
ROOF

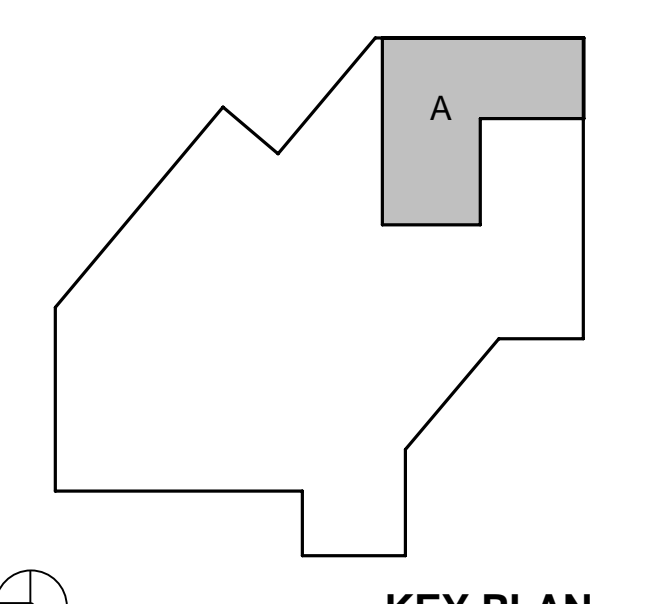
EGRESS PATH..	
EXIT ROUTE	DISTANCE
A	43'
B	46'



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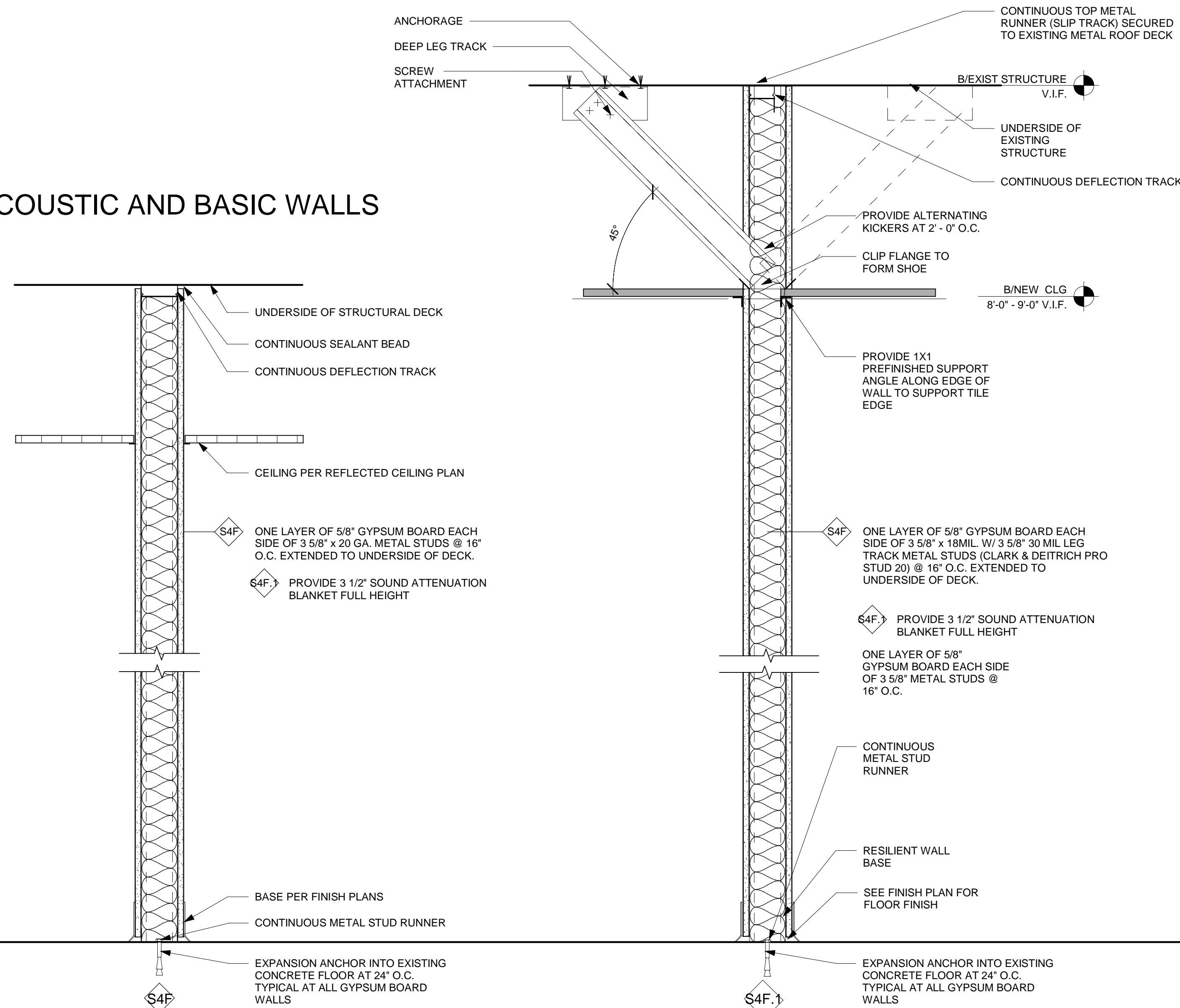


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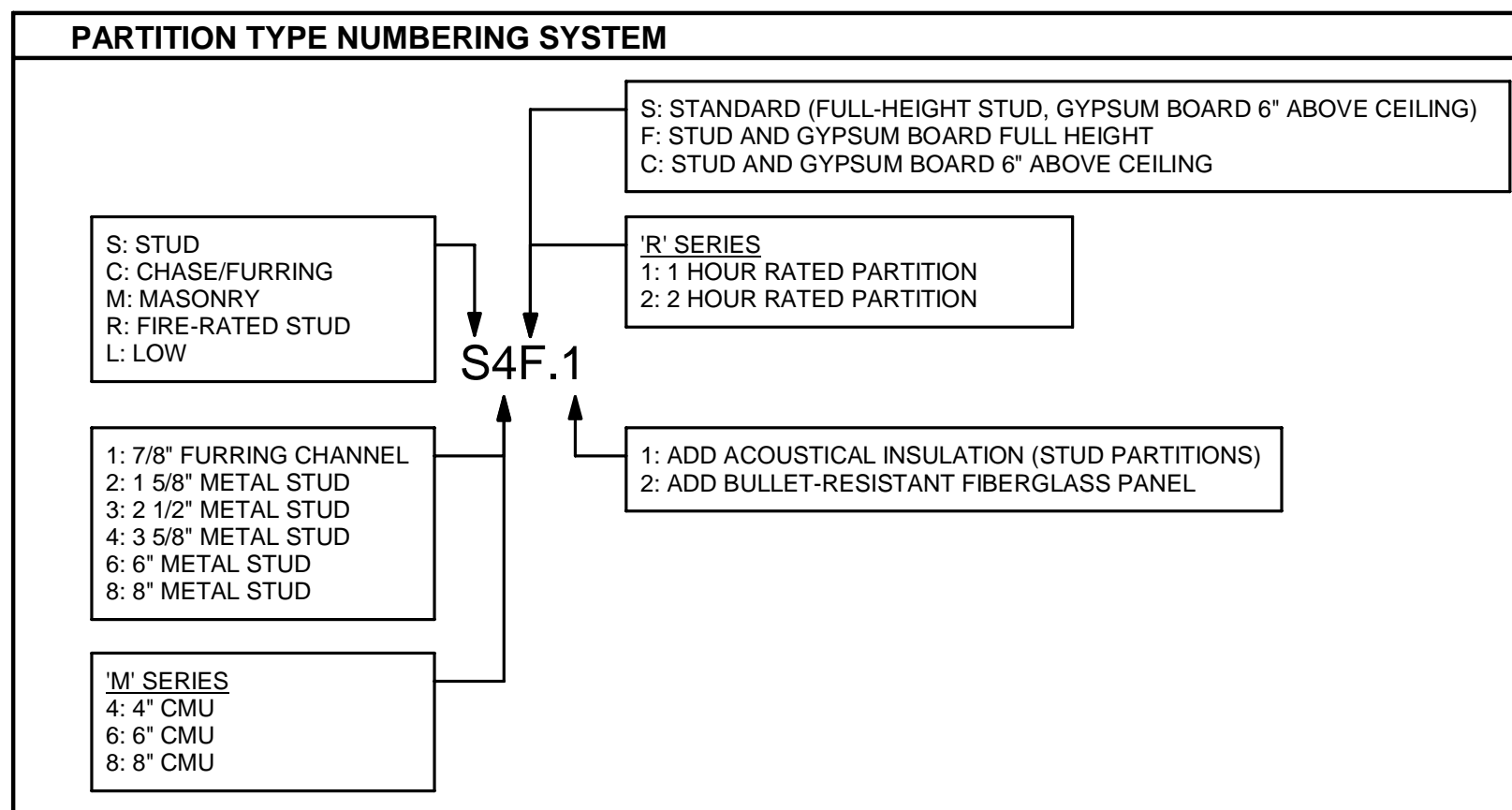
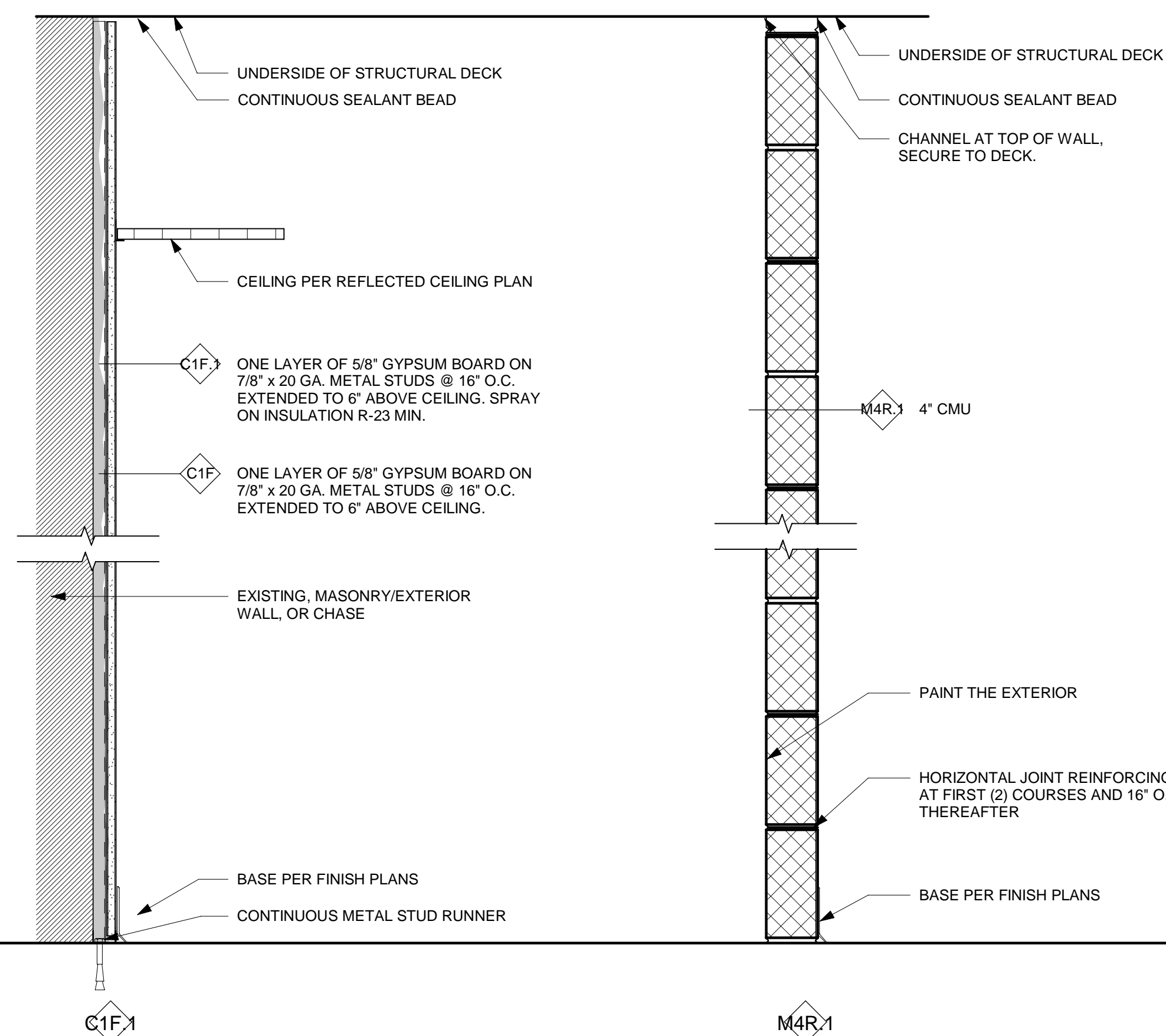
CODE COMPLIANCE - SECOND FLOOR

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ACOUSTIC AND BASIC WALLS



CHASE AND FURRING PARTITIONS



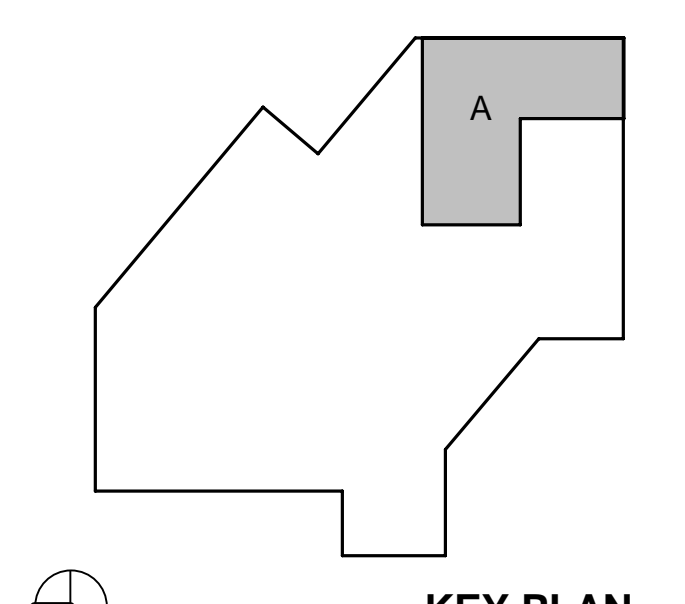
- PARTITION NOTES:**
- PROVIDE DIFFERENT GYPSUM BOARD TYPES AS NOTED HEREIN AND DEFINED BY THE SPECIFICATIONS.
 - ALL GYPSUM BOARD SHALL BE HELD UP TO 3/8" ABOVE THE FINISH FLOOR. SEAL BOTTOM PER NOTES 3 AND 4.
 - ALL ACOUSTICAL PARTITIONS ARE TO BE SEALED TOP AND BOTTOM WITH ACOUSTICAL SEALANT BETWEEN BOTTOM/TOP TRACK AND FLOOR/DECK.
 - ALL FIRE RATED PARTITIONS ARE TO BE SEALED TOP AND BOTTOM WITH FIRE CAULK WITH UL ASSEMBLY BETWEEN BOTTOM/TOP TRACK AND FLOOR/DECK.
 - ALL PARTITIONS REQUIRED TO RESIST THE PASSAGE OF SMOKE TO BE SEALED TOP AND BOTTOM WITH L-RATED SEALANT BETWEEN BOTTOM/TOP TRACK AND FLOOR/DECK.
 - ACOUSTICAL PARTITIONS ARE DEFINED AS ANY FULL HEIGHT WALL DESIGNATED WITH SOUND ATTENUATION BLANKET.
 - ALL PENETRATIONS THROUGH FIRE RATED, SMOKE OR ACOUSTICAL PARTITIONS SHALL BE SEALED WITH THE APPROPRIATE ASSEMBLY TO MAINTAIN THE WALL RATING.
 - WHERE A RATED WALL IS BLOCKED BY AN OBSTRUCTION THE WALL SHALL BE OFFSET USING SHAFT WALL CONSTRUCTION TO CIRCUMVENT THE OBSTRUCTION AND TERMINATE AT THE DECK ABOVE.
 - ALL METAL STUDS TO BE 20 GA METAL MINIMUM.
 - ALL PARTITIONS THAT EXTEND TO DECK ARE TO BE CONSTRUCTED WITH THE APPROPRIATE PARTITION HEAD CLOSURE. MAINTAIN THE RATING OF THE WALL AND ENSURE A COMPLETE SEAL ALONG THE ENTIRE WALL LENGTH.
 - STRUCTURAL MASONRY SHEAR WALLS ARE TO GROUTED SOLID FULL HEIGHT.
 - WHERE MOUNTING COMPONENTS TO CMU, THE CELLS BEHIND THAT BEING MOUNTED ARE TO BE GROUTED SOLID.

- PARTITION NOTES**
- PROVIDE MOLD AND MOISTURE RESISTANT GYPSUM BOARD FULL HEIGHT ON ALL PARTITIONS UNLESS NOTED OTHERWISE.
 - FOR ALL FIRE RATED PARTITIONS: PROVIDE FIRE RATED MOLD AND MOISTURE RESISTANT GYPSUM BOARD FULL HEIGHT UNLESS NOTED OTHERWISE.
 - AT ALL EXISTING RATED WALLS, SEAL ALL NEW AND EXISTING PENETRATIONS WITH UL ASSEMBLIES.
 - ALL GYPSUM BOARD SHALL BE HELD UP TO 3/8" ABOVE FINISH FLOOR - CAULK BOTTOM (FIRE CAULK AT RATED PARTITIONS).
 - SEAL HEAD OF WALL CONDITIONS AT ALL EXISTING AND NEW RATED WALLS WITH UL ASSEMBLIES - TYPICAL BOTH SIDES OF RATED WALL.
 - LABEL ALL FIRE RATED/SMOKE PARTITIONS ABOVE CEILING LEVEL, BOTH FACES OF WALLS:
- 1 HR RATED WALL**
- ALL METAL STUDS AND FRAMING TO BE MINIMUM 20 GAUGE, TYP.



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PARTITION TYPES & MOUNTING HEIGHTS

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GENERAL NOTES - DEMOLITION

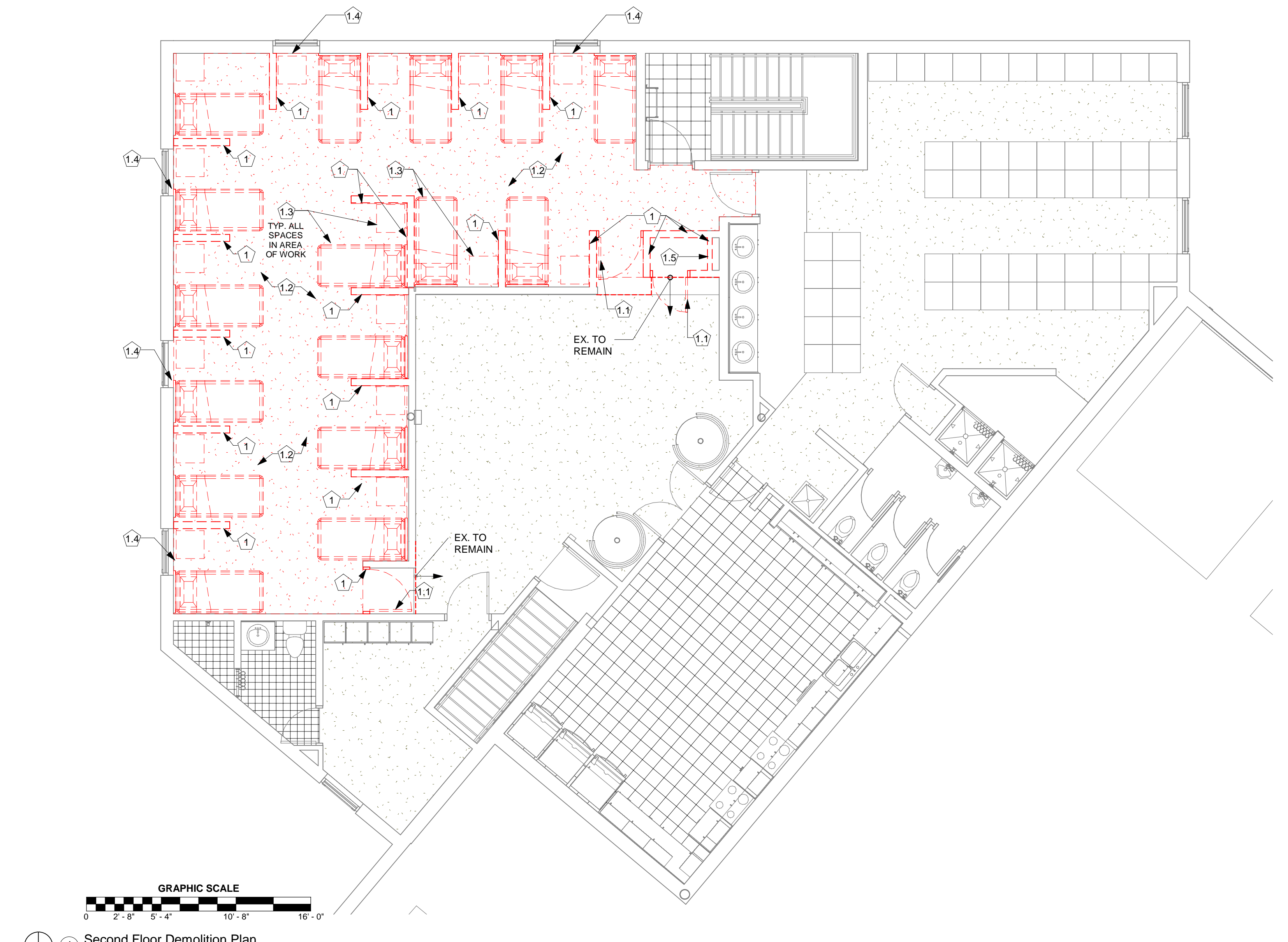
- A. CONTRACTOR TO WALK THE BUILDING WITH ARCHITECT TO REVIEW DEMOLITION SCOPE PRIOR TO COMMENCING THE WORK.
- B. REFER TO NEW WORK PLANS TO COORDINATE EXTENT OF DEMOLITION.
- C. REFER TO OTHER DISCIPLINE DRAWINGS TO COORDINATE THE DEMOLITION WORK WITH INFRASTRUCTURE THAT IS TO BE SAVED / REUSED AND FOR ADDITIONAL DEMOLITION REQUIRED. CONTRACTOR TO NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF CONFLICT OR DISCREPANCY WITH ITEMS INDICATED TO BE REMOVED.
- D. PROVIDE ALL DEMOLITION WORK NECESSARY TO ACCOMPLISH THE NEW WORK AS SHOWN HEREIN.
- E. WHERE DEMOLITION AND/OR REMOVAL IS INDICATED, IT IS INTENDED TO SHOW THE GENERAL NATURE OF EXISTING CONDITIONS AND EXTENT OF WORK. IT IS NOT TO BE CONSIDERED A RECORD DRAWING OF EXISTING CONDITIONS.
- F. WHERE AN ELECTRICAL COMPONENT IS INDICATED TO BE DEMOLISHED OR IS WITHIN A WALL, FLOOR OR CEILING INDICATED TO BE DEMOLISHED, CONTRACTOR SHALL REMOVE THE EXISTING ELECTRICAL FIXTURE/DEVICE AND THE CONDUIT FEED, WIRING, AND ALL ASSOCIATED ITEMS AND EQUIPMENT BACK TO THE SOURCE OF THE SUPPLY U.O.N. (TYP.)
- G. WHERE A PLUMBING COMPONENT IS INDICATED TO BE DEMOLISHED OR IS WITHIN A WALL, FLOOR OR CEILING INDICATED TO BE DEMOLISHED, CONTRACTOR SHALL REMOVE THE EXISTING PLUMBING FIXTURE AND THE SUPPLY, WASTE AND VENT PIPING AND ALL ASSOCIATED ITEMS AND EQUIPMENT BACK TO THE SOURCE OR MAIN AND CAPPED U.O.N. (TYP.)
- H. WHERE A MECHANICAL COMPONENT IS INDICATED TO BE DEMOLISHED OR IS WITHIN A WALL, FLOOR OR CEILING INDICATED TO BE DEMOLISHED, CONTRACTOR SHALL REMOVE THE EXISTING MECHANICAL FIXTURE/COMPONENT AND THE SUPPLY AND RETURN DUCTWORK AND ALL ASSOCIATED ITEMS AND EQUIPMENT BACK TO THE SOURCE OR MAIN AND CAPPED U.O.N. (TYP.)
- I. MODIFY EXISTING DUCTWORK TO REMAIN TO ACCOMMODATE NEW CONSTRUCTION, AND RECONNECT EXISTING TO NEW DUCTWORK TO COMPLETE THE DISTRIBUTION SYSTEM.
- J. ENLARGING OR PATCHING WALL, FLOOR OR CEILING OPENINGS AT REMOVAL OR INSTALLATION OF NEW COMPONENTS IS THE RESPONSIBILITY OF THE CONTRACTOR. SUCH WORK SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
- K. PROVIDE TEMPORARY AND PERMANENT SUPPORT AS NECESSARY TO MAINTAIN THE INTEGRITY OF EXISTING STRUCTURES.
- L. VERIFY W/ OWNER ITEMS TO BE SALVAGED AND RETURNED TO OWNER. ALL ITEMS TO BE SALVAGED SHALL BE CAREFULLY REMOVED SO AS TO ALLOW FOR REUSE.

DEMOLITION KEY NOTES - DENOTED

- 1 DEMOLISH EXISTING MASONRY PARTITION INCLUDING ASSOCIATED BUILDING SYSTEM COMPONENTS WITHIN WALL IN THEIR ENTIRETY. REMOVE BUILDING SYSTEM COMPONENTS BACK TO THEIR SOURCE AND CAP PER CODE REQUIREMENTS.
- 1.1 DEMOLISH EXISTING DOOR, FRAME AND ALL ASSOCIATED HARDWARE. PRIOR TO REMOVING HARDWARE FROM SITE, COORDINATE WITH OWNER TO SALVAGE ANY COMPONENTS FOR THEIR REUSE.
- 1.1B DEMOLISH EXISTING DOOR AND ALL ASSOCIATED HARDWARE. PRIOR TO REMOVING HARDWARE FROM SITE, COORDINATE WITH OWNER TO SALVAGE ANY COMPONENTS FOR THEIR REUSE. EXISTING FRAME TO REMAIN -PAINT
- 1.2 REMOVE EXISTING CARPET FLOORING AND ALL ASSOCIATED ADHESIVE. SCARIFY AND GRIND CONCRETE SLAB THROUGH MECHANICAL MEANS TO PROVIDE A SMOOTH FLAT SURFACE TO RECEIVE NEW FLOORING. COORDINATE WITH NEW FLOORING MANUFACTURER'S REQUIREMENTS.
- 1.3 REMOVE EXISTING FURNITURE IN ANY SPACES. PRIOR TO REMOVING FURNITURE FROM SITE, COORDINATE WITH OWNER TO SALVAGE ANY PIECES FOR THEIR REUSE - TYPICAL FOR ALL FURNITURE WITHIN SCOPE OF WORK
- 1.4 CONTRACTOR SHALL REMOVE ALL WINDOW SHADES IN WORK AREA AND SALVAGE FOR REUSE. CONTRACTOR SHALL LABEL EACH SHADE TO DESIGNATE ITS ORIGINAL LOCATION SO THE SHADE CAN BE REINALLED IN THE SAME PLACE.
- 1.5 DEMOLISH EXISTING 4" CMU WALL AS REQUIRED TO REMOVE AND INSTALL PIPES
- 2 REMOVE EXISTING ACOUSTICAL PANELS, LIGHT FIXTURES, AND ALL OTHER COMPONENTS OF THE EXISTING METAL SUSPENSION SYSTEM IN ITS ENTIRETY. DISCONNECT THE DUCTWORK FROM THE EXISTING DIFFUSERS, BEING REMOVED WITH THE CEILING.
- 2.1 DEMOLISH AND SALVAGE FOR RE-INSTALLATION OF EMERGENCY LIGHTS, EXIT LIGHTS AND LIFE SAFETY DEVICES, IN LIKE NEW CONDITION. INCLUDING, BUT NOT LIMITED TO, ASSOCIATED HANGERS AND ANCHOR CLIPS
- 2.3 REMOVE EXISTING GYPSUM CEILING AND LIGHT FIXTURES IN THEIR ENTIRETY TO FACILITATE INSTALLATION OF NEW WORK.
- 2.4 REMOVE EXISTING SECURITY CAMERA TO FACILITATE NEW CEILING WORK AND SALVAGE FOR RE-INSTALLATION IN SAME/SIMILAR LOCATION. (U.O.N.)
- 2.7 REMOVE EXISTING CLNG. SPEAKERS.

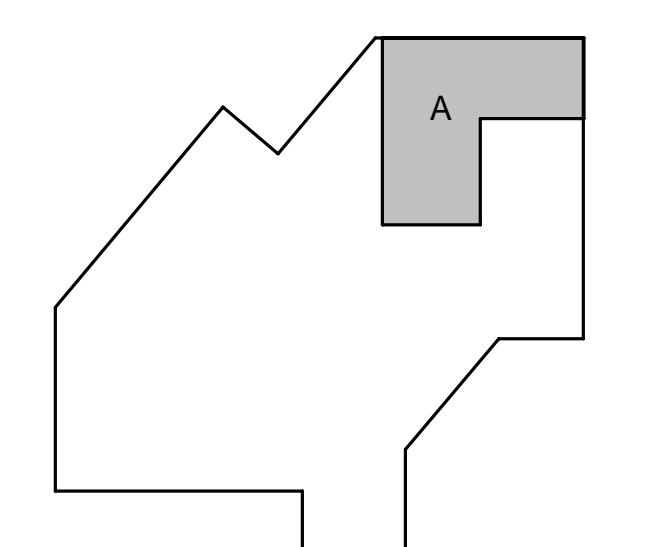
DEMOLITION LEGEND:

- WALL PARTITION TO BE REMOVED
- ITEM TO BE REMOVED
- DEMO KEY NOTE
- PORTION OF AREA TO BE REMOVED. COORDINATE EXACT EXTENTS WITH NEW WORK PLANS
- PORTION OF EXISTING CONCRETE SLAB TO BE REMOVED. COORDINATE EXACT EXTENTS WITH NEW WORK PLANS



Second Floor Bunk House Floor Plan

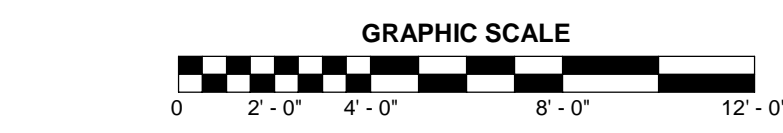
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DEMOLITION PLAN

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① SECOND FLOOR PLAN
1/4" = 1'-0"

FLOOR PLAN LEGEND:

101	ROOM TAG
101	DOOR AND FRAME TAG
101	PARTITION TAG
1	NEW WORK SHEET NOTE
⊙	EXISTING COLUMN GRID LINE
CJ	CONTROL JOINT

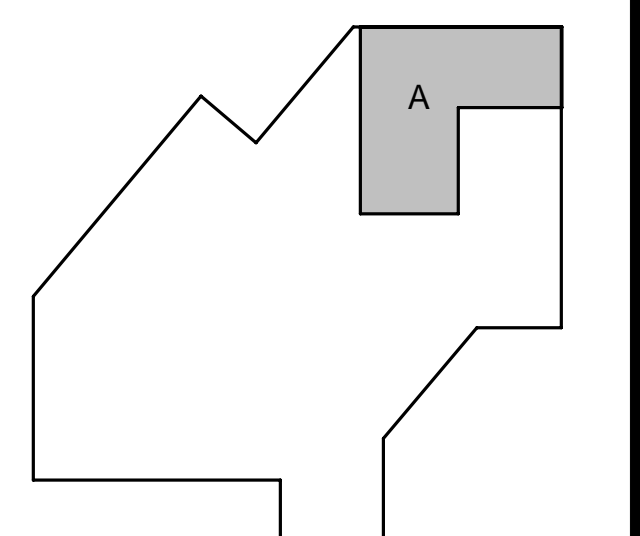
GENERAL NOTES - FLOOR PLAN

- FIELD VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS.
- WALLS THAT GO TO DECK ARE TO BE SCRIBED AROUND STRUCTURAL ELEMENTS, AND OTHER BUILDING SYSTEM COMPONENTS. SEALANT SHALL BE USED TO CLOSE ALL GAPS BETWEEN THE WALL AND ANY PENETRATING ELEMENT.
- WALLS THAT GO TO DECK THAT RUN PARALLEL TO A SOLID CONTINUOUS OBJECT SHALL RUN TO THE OTHERSIDE OF THE OBJECT AND SEALED. KICKERS SHALL BE ADDED EVERY 48" TO BRACE THE WALL AROUND THE OBJECT.
- WALLS THAT GO TO DECK THAT RUN PARALLEL TO A NON SOLID OBJECT (i.e. OPEN WEB JOIST) SHALL BE CONSTRUCTED TO ENCAPSULATE THE OBJECT WITHIN THE WALL. THE WALL WILL INCREASE IN WIDTH ACCORDINGLY.
- WALLS THAT TERMINATE AGAINST A DISSIMILAR MATERIAL ARE TO RECEIVE J-BEAD TRIM ALONG THE ENTIRE EDGE AND THE JOINT SEALED.
- SEE CODE COMPLIANCE PLANS FOR FIRE RATING OF WALLS AND UL RATED ASSEMBLY TO BE FOLLOWED.
- PROVIDE WOOD OR METAL BLOCKING IN FRAMED WALLS BEHIND CASEWORK, TOILET ACCESSORIES, WALL MOUNTED TVS, BULLETIN BOARDS, LOCKERS AND OTHER WALL MOUNTED COMPONENTS.
- PROVIDE SOLID GROUTED CELLS IN MASONRY CMU WALLS BEHIND CASEWORK, TOILET ACCESSORIES, WALL MOUNTED TVS, BULLETIN BOARDS, LOCKERS AND OTHER WALL MOUNTED COMPONENTS.
- DOORS JAMB, HINGE SIDE, TO BE 4" FROM ADJACENT WALL UNO.
- INFILL ALL HOLES IN CONCRETE FLOOR AND OR SLAB ON GRADE THAT ARE NOT IN USE. FULL DEPTH. USE A CEMENTITIOUS FILL MATERIAL. PROVIDE TEMPORARY FRAMING TO HOLD FILL MATERIAL IN PLACE.
- FURNITURE SHOWN IS FOR REFERENCE ONLY. CONTRACTOR SHALL REINSTALL ALL WINDOW SHADES IN SAME POSITION AFTER CONSTRUCTION OPERATIONS ARE COMPLETE.



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KEY PLAN

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SECOND FLOOR PLAN



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REFLECTED CEILING PLAN LEGEND:	
CEILING TYPES	
	2'x2' SUSPENDED ACOUSTIC TILE CEILING SYSTEM: SAT-1
	2'x2' SUSPENDED ACOUSTIC TILE CEILING SYSTEM: SAT-2
	2'x2' SUSPENDED VINYL FACED ACOUSTIC TILE CEILING SYSTEM: SAT-3
	GYP. BOARD IN TOILET ROOMS (MOISTURE RESISTANT GYP. BOARD IN TOILET ROOMS - TYPICAL.)
	EXPOSED TO STRUCTURE ABOVE
LIGHTING FIXTURES	
	RECESSED 2'x2'
	RECESSED 2'x4'
	RECESSED 6" DOWNLIGHT
MECHANICAL SYMBOLS - FOR REFERENCE ONLY	
	RETURN DIFFUSER
	SUPPLY DIFFUSER
MISCELLANEOUS - FOR REFERENCE ONLY	
	CEILING MOUNTED OCCUPANCY SENSOR
	SPRINKLER HEAD

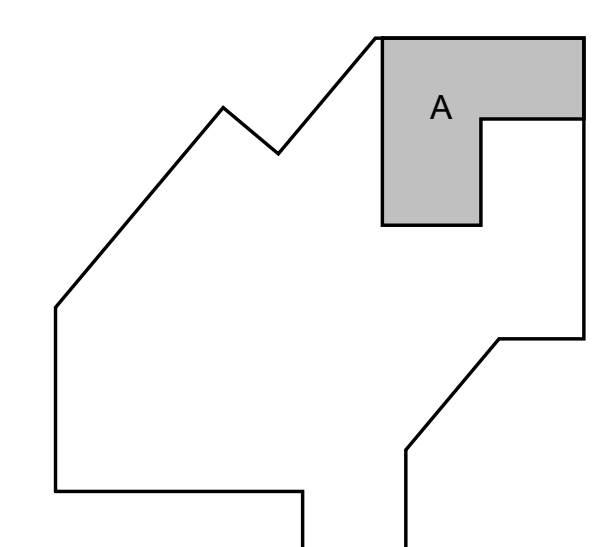
- GENERAL NOTES - REFLECTED CEILING**
- A. ALL CEILING GRID LAYOUTS ARE TO BE CENTERED IN ROOM UNLESS NOTED/DIMENSIONED OTHERWISE.
 - B. NO CEILING TILES ARE TO BE SMALLER THAN 6" IN ANY ONE DIMENSION. ADJUST CEILING GRID LAYOUT ACCORDINGLY.
 - C. CONTRACTOR SHALL REVIEW AND COORDINATE THE SPECIFIED MOUNTING TRIM STYLE AND HANGING ACCESSORIES FOR EACH FIXTURE FOR EACH SPECIFIED CEILING TYPE. IF THE SPECIFIED TRIM AND/OR ACCESSORIES CONFLICT WITH ANY OF THE CEILING TYPES, CONTRACTOR SHALL NOTIFY THE ARCHITECT IN THE FIXTURE SUBMITTAL OF SUCH CONFLICTS AND/OR ERRORS.
 - D. ALL SPRINKLER HEADS TO BE CENTERED IN TILE.
 - E. ALL LIGHTS TO BE CENTERED IN ROOM NOTED/DIMENSIONED OTHERWISE OR INDICATED BY GRID LOCATION.
 - F. PROVIDE ACCESS PANELS IN GYPSUM CEILINGS BELOW OPERATIONAL OR CONFIGURABLE COMPONENTS SUCH AS VALVES, DAMPERS, OR UNITS. PROVIDE CONCEALED EDGES (MUD-IN) FOR ALL ACCESS PANELS. REVIEW WITH ARCHITECT IN FIELD PRIOR TO CEILINGS BEING INSTALLED AS PART OF THE CONTRACTOR BID. PROVIDE FOR (4) 24" X 24" ACCESS PANELS.
 - G. FOR ACOUSTICAL PANEL CEILINGS: WALL MOULDING SHALL HAVE CONTINUOUS BEAD OF SEALANT APPLIED TO BACKLGS BEFORE BEING FASTENED TO WALL.
 - H. FOR ACOUSTICAL PANEL CEILINGS: ALL WALL CORNERS SHALL RECEIVE PRE-MANUFACTURED WALL MOULDING CORNERS. FIELD MODIFIED/CREATED GRID FOR CORNER APPLICATIONS ARE NOT ACCEPTABLE.



1 SECOND FLOOR REFLECTED CEILING PLAN
 1/4" = 1'-0"

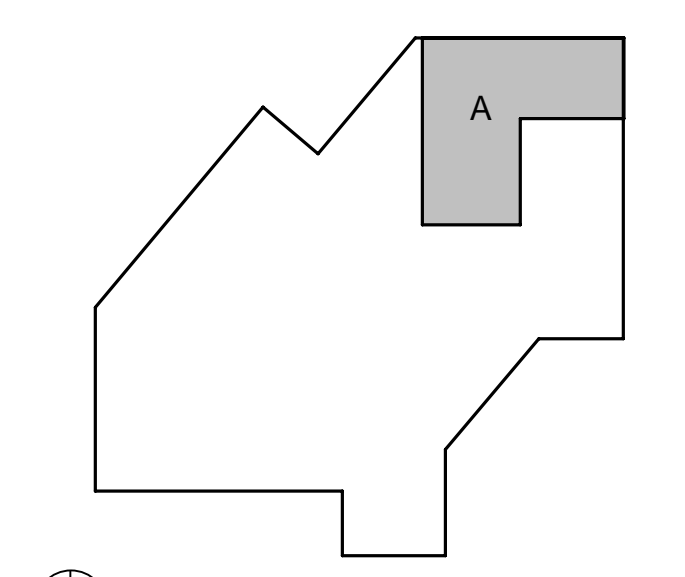
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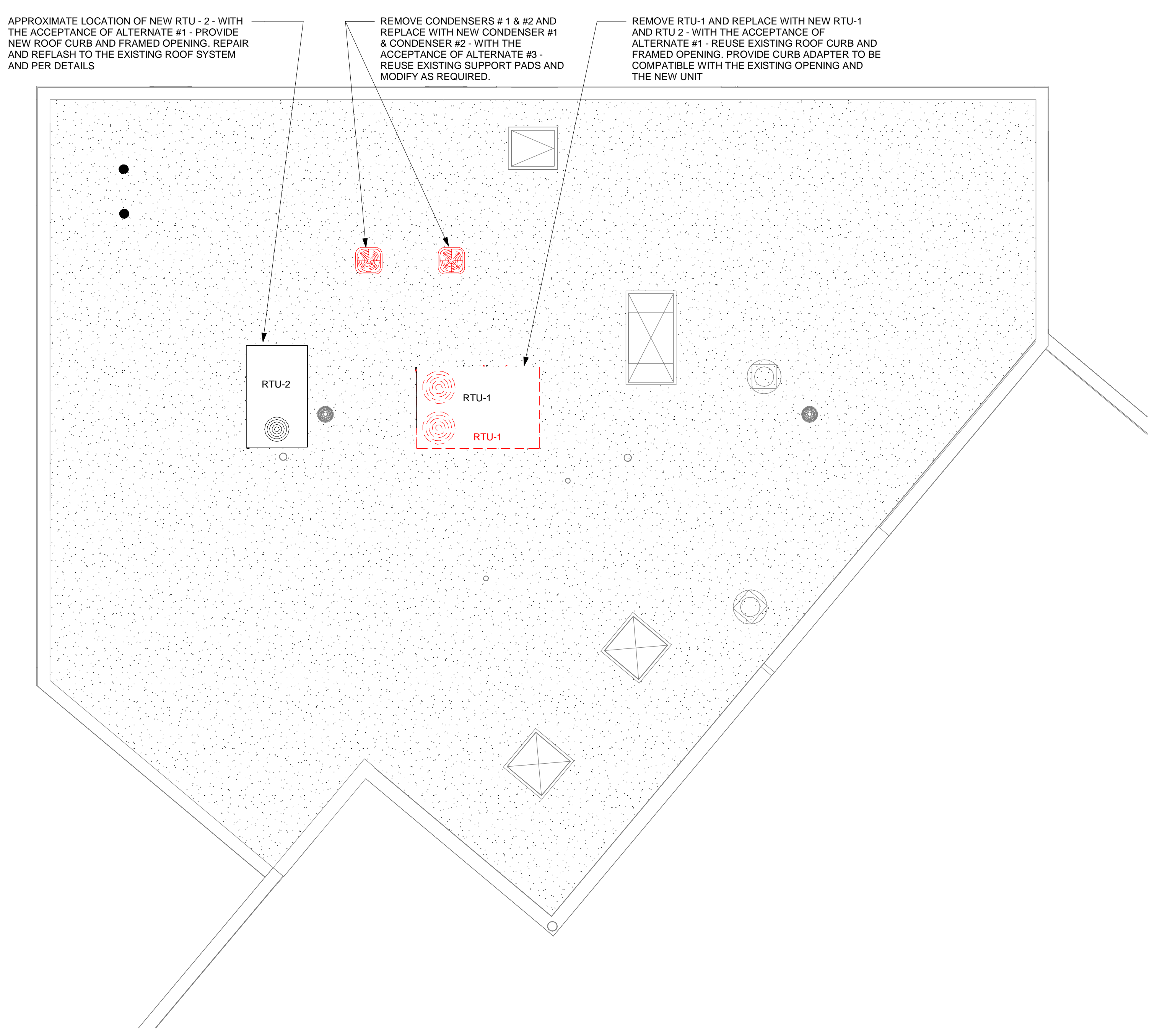
REFLECTED CEILING PLANS



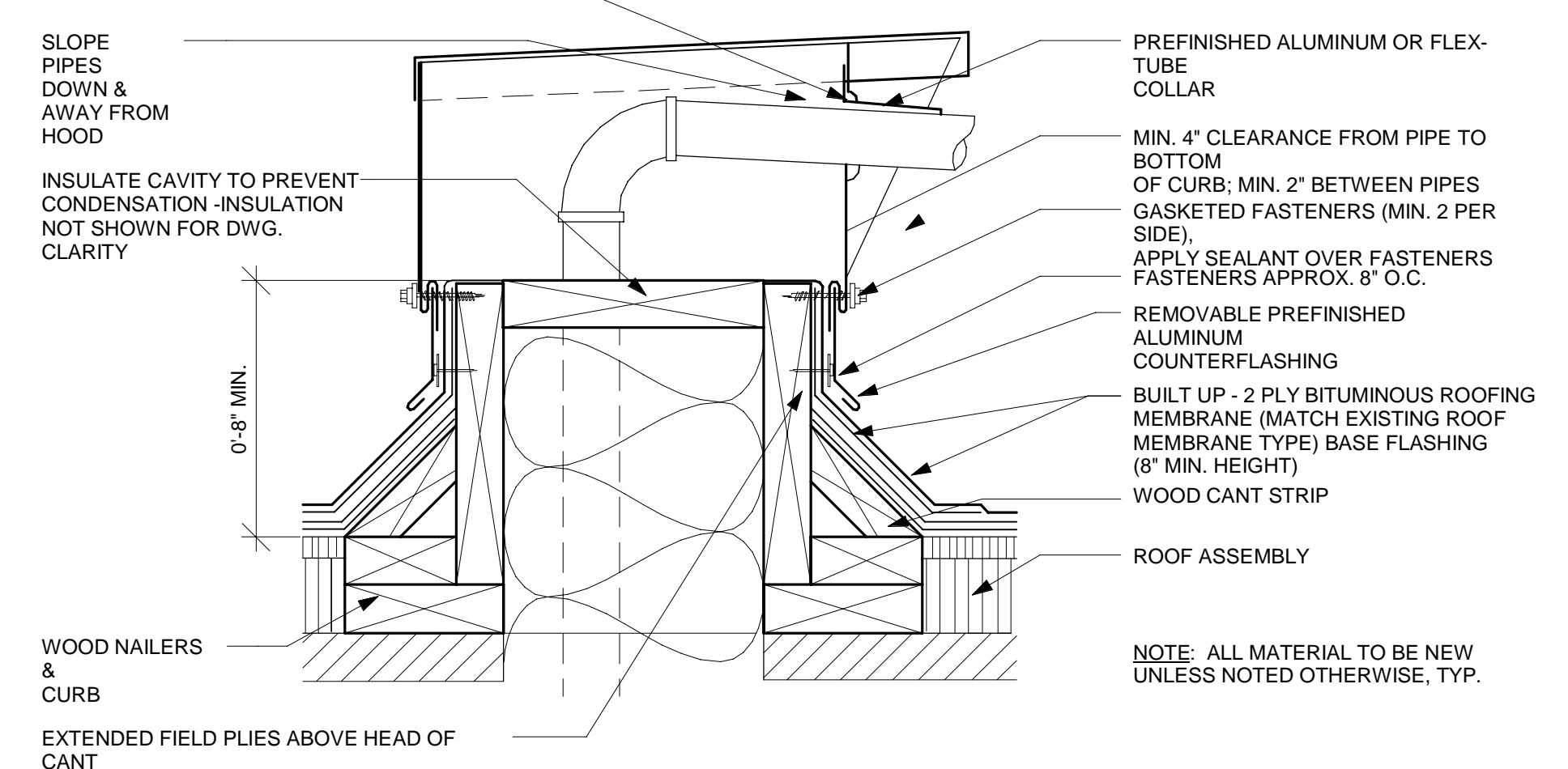
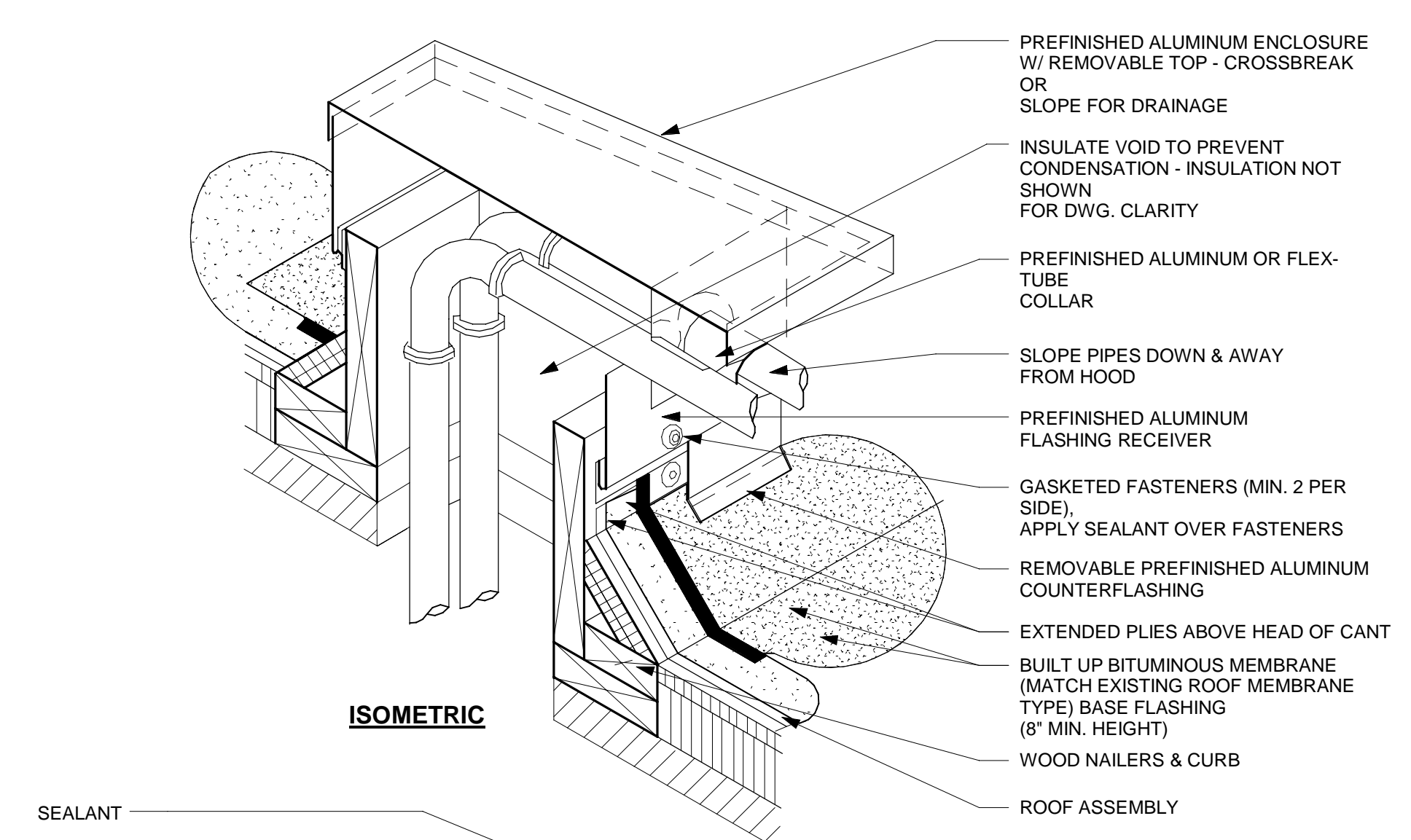
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ROOF PLAN & DETAILS

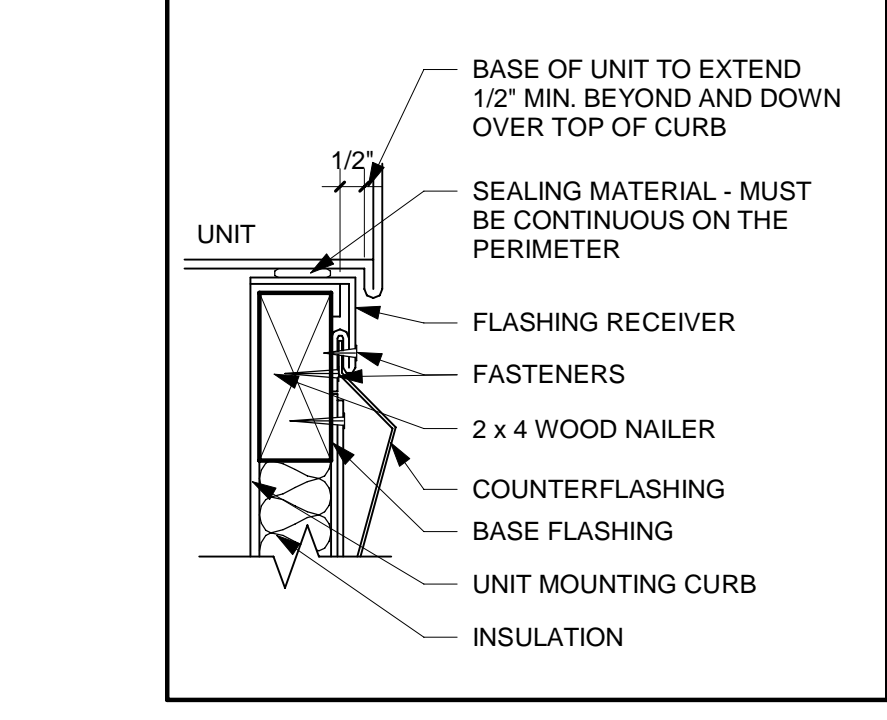
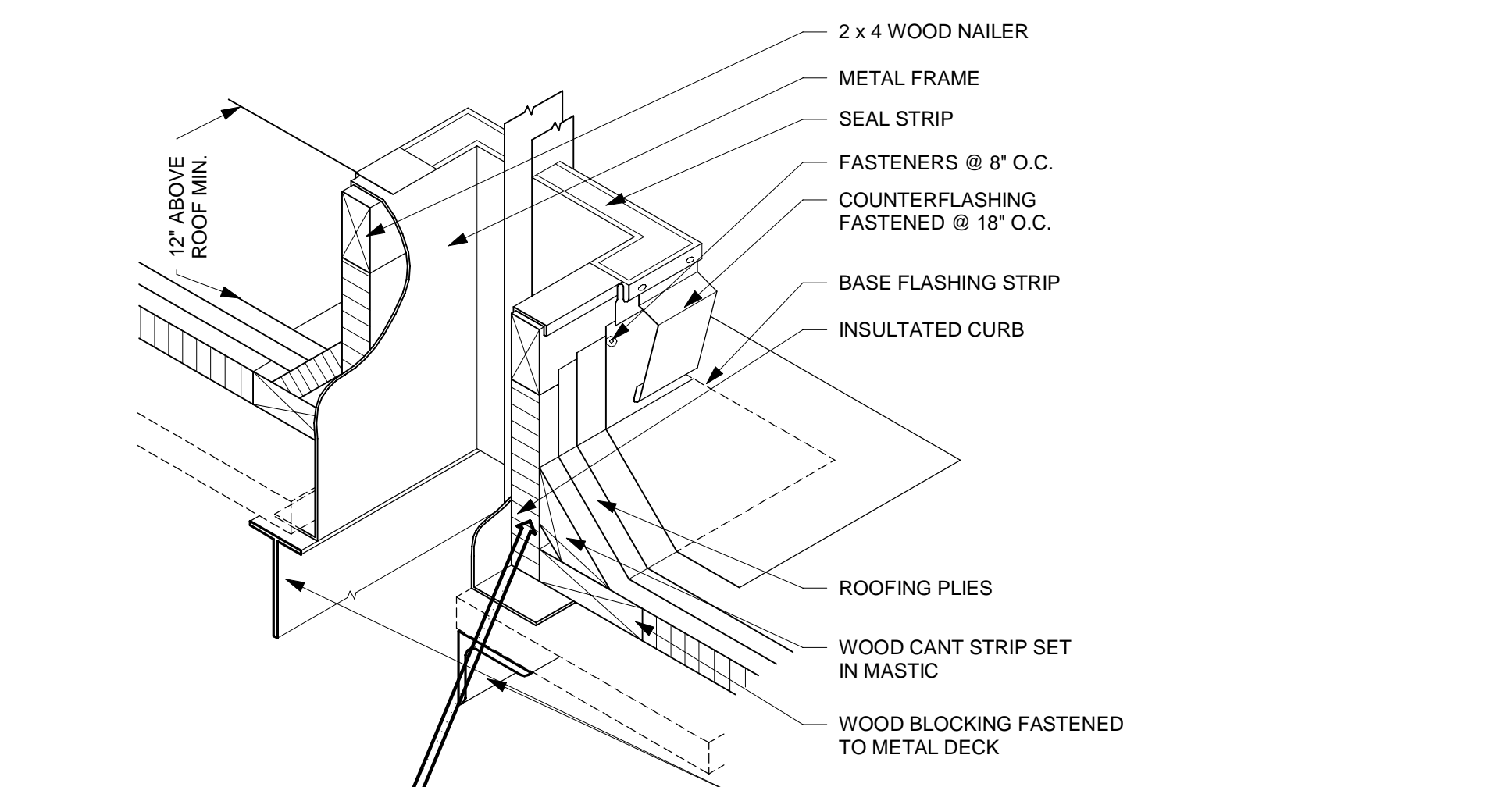
- GENERAL NOTES - ROOF PLAN**
- A. CONTRACTOR TO COORDINATE ALL ROOF EQUIPMENT, VENTS, FANS, ETC. WITH ARCHITECTURAL ROOF PLAN - REFER TO OTHER DISCIPLINE DRAWINGS FOR ADDITIONAL PENETRATION REQUIREMENTS.
 - B. PROVIDE CRICKETS TO FACILITATE FLOW OF DRAINAGES @ ALL PENETRATIONS AND OBSTRUCTIONS. CRICKETS SHALL HAVE A 1/2" PER FOOT SLOPE.
 - C. CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION, SUCH AS PLYWOOD, OF NEWLY ROOFED AREAS USED AS WORK ACCESS OR STAGING AREAS.
 - D. CONTRACTOR SHALL VERIFY PRIOR TO INSTALLATION LOCATIONS OF SECONDARY INTERNAL ROOF DRAINS (MAX. 4' ABOVE PRIMARY ROOF DRAINS).
 - E. CONTRACTOR SHALL NEVER LEAVE THE SITE UNTIL THE AFFECTED ROOF AREA IS WATERTIGHT.
 - F. PROVIDE SADDLES AT HIGH SIDE OF ALL EQUIPMENT CURBS AND AT ROOF HATCHES FOR POSITIVE DRAINAGE TO ROOF DRAINS.
 - G. FINAL LOCATION OF MECHANICAL ROOF TOP UNITS SHALL BE COORDINATED WITH HVAC CONTRACTOR.
 - H. MECHANICAL CONTRACTOR SHALL PROVIDE FINISH COLLAR AT ALL LOCATIONS WHERE MECHANICAL DUCTWORK PENETRATES EXTERIOR WALL. GENERAL TRADES CONTRACTOR SHALL PROVIDE ALL FLASHINGS FOR WATERWEATHER TIGHT SEAL AROUND COLLAR.
 - I. ALL CURBS AND THROUGH WALL FLASHING TO BE A MINIMUM OF 18" ABOVE ROOF STRUCTURE.
 - J. CONTRACTOR TO CONSOLIDATE ROOFING PENETRATIONS AND PLACE IN AREAS NOT READILY SEEN.
 - K. CONTRACTOR TO PAINT ALL ROOFING PENETRATIONS TO MATCH ROOF COLOR (AS SELECTED BY ARCHITECT FROM MANUFACTURERS FULL RANGE).
 - L. ALL SHEET METAL FLASHING AND TRIM TO BE FREE FROM OIL CANNING, DIMPLING, AND ALL OTHER SURFACE IMPERFECTIONS.
 - M. CONTRACTOR SHALL LIMIT OPERATIONS OF THE REMOVAL OF THE EXISTING ROOF TO THAT AREA THAT CAN BE REPLACED AND MADE WATERTIGHT PRIOR TO LEAVING THE SITE AT THE END OF EACH DAY.
 - N. MODIFY ALL EXISTING CURBS AS REQUIRED TO RAISE EQUIPMENT SUCH THAT THERE IS A MINIMUM OF 8" FROM TOP OF ROOF ASSEMBLY TO TOP OF CURB.
 - O. FIELD VERIFY AND COORDINATE ALL ITEMS, DIMENSIONS, CONDITIONS, AND QUANTITIES, ETC.
 - P. ALL NEW EXTERIOR GAS PIPE WORK ON ROOFS TO BE PAINTED SAFETY YELLOW. ALL NEW EXTERIOR DUCTWORK TO BE PAINTED COLOR TO BE SELECTED BY ARCHITECT (TYP.).
 - Q. REMOVAL, REPLACEMENT, PATCHING AND REPAIR OF EXISTING ROOFING MATERIALS SHALL BE ACCOMPLISHED BY METHODS AND MATERIALS SO AS NOT TO VOID EXISTING WARRANTIES. USE REPAIR MATERIALS IDENTICAL TO EXISTING MATERIALS (TYP.).
 - R. ALL NEW ROOF WORK TO BE R-30 MIN. PER IECC 2018 TYP. G.C. TO PROVIDE THE NECESSARY INSULATION THICKNESS TO ACHIEVE MIN. R-30 C.I. TYP.
 - S. **NO PRESSURE TREATED WOOD IS TO BE USED ON THIS PROJECT. SHOULD ANY PRESSURE TREATED WOOD BE ENCOUNTERED, STAINLESS STEEL FASTENERS MUST BE USED IN AFFECTED AREAS.**
 - T. ALL ROOF AREAS AND ITEMS TO BE FIELD VERIFIED (GUTTER AND DOWNSPOUT LOCATIONS, ROOF DRAIN LAYOUT AND LOCATIONS, DRAINAGE PATTERN AND LAYOUT, ROOFTOP EQUIPMENT AND OTHER PENETRATIONS, ETC.).
 - U. ALL FLAT ROOFS TO BE APPROPRIATELY SLOPED FOR POSITIVE DRAINAGE.
 - V. LIGHTNING PROTECTION SYSTEM TO REMAIN, RELOCATE AS NECESSARY.



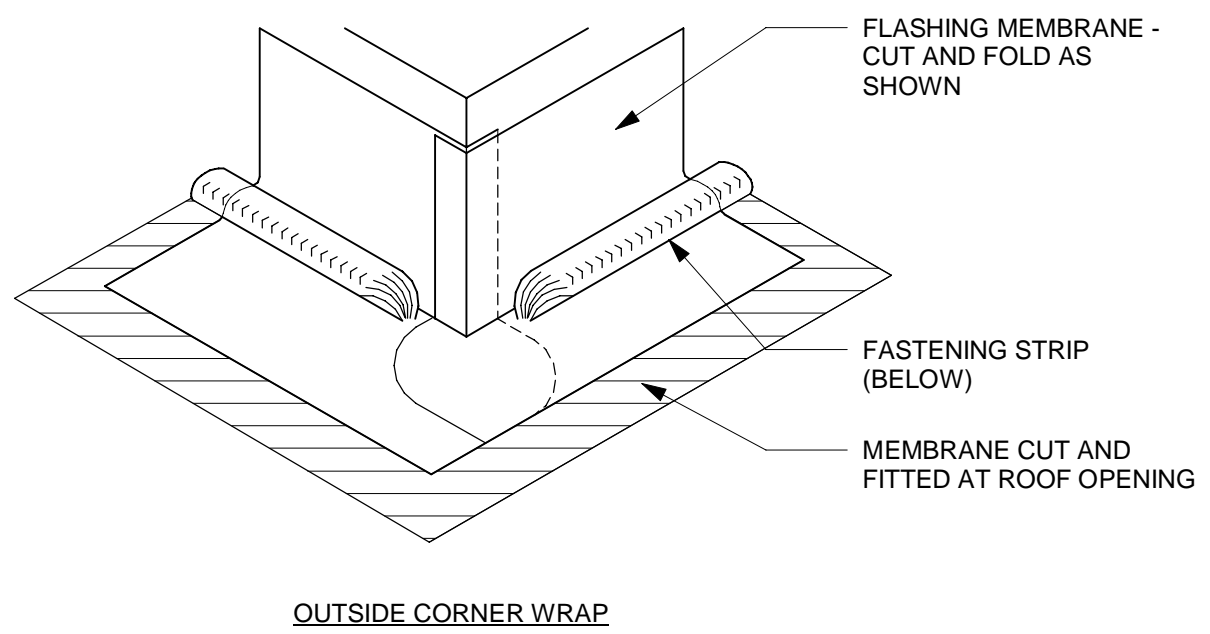
1 ROOF PLAN
3/16" = 1'-0"



5 ROOF CURB DETAIL
3" = 1'-0"

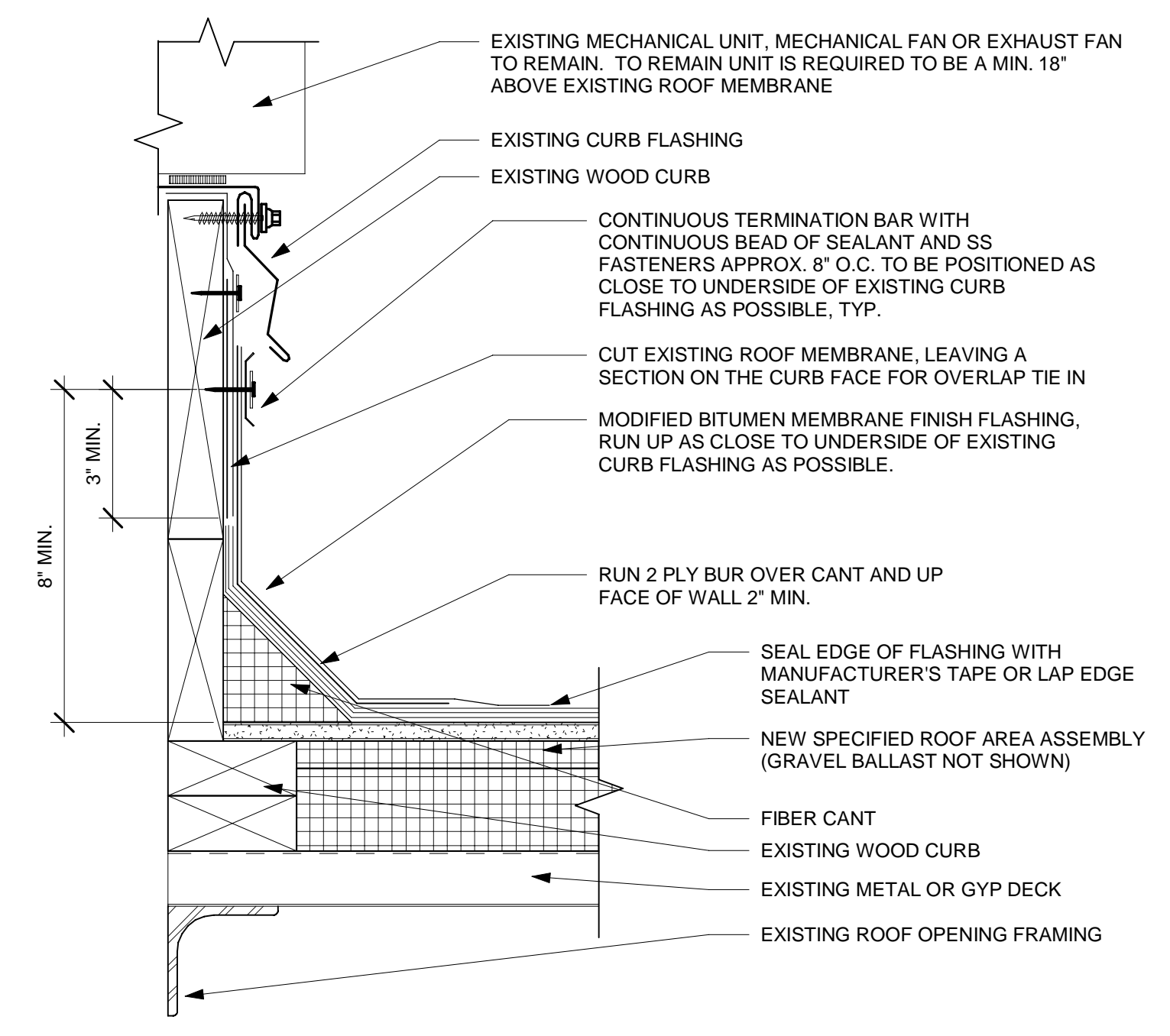
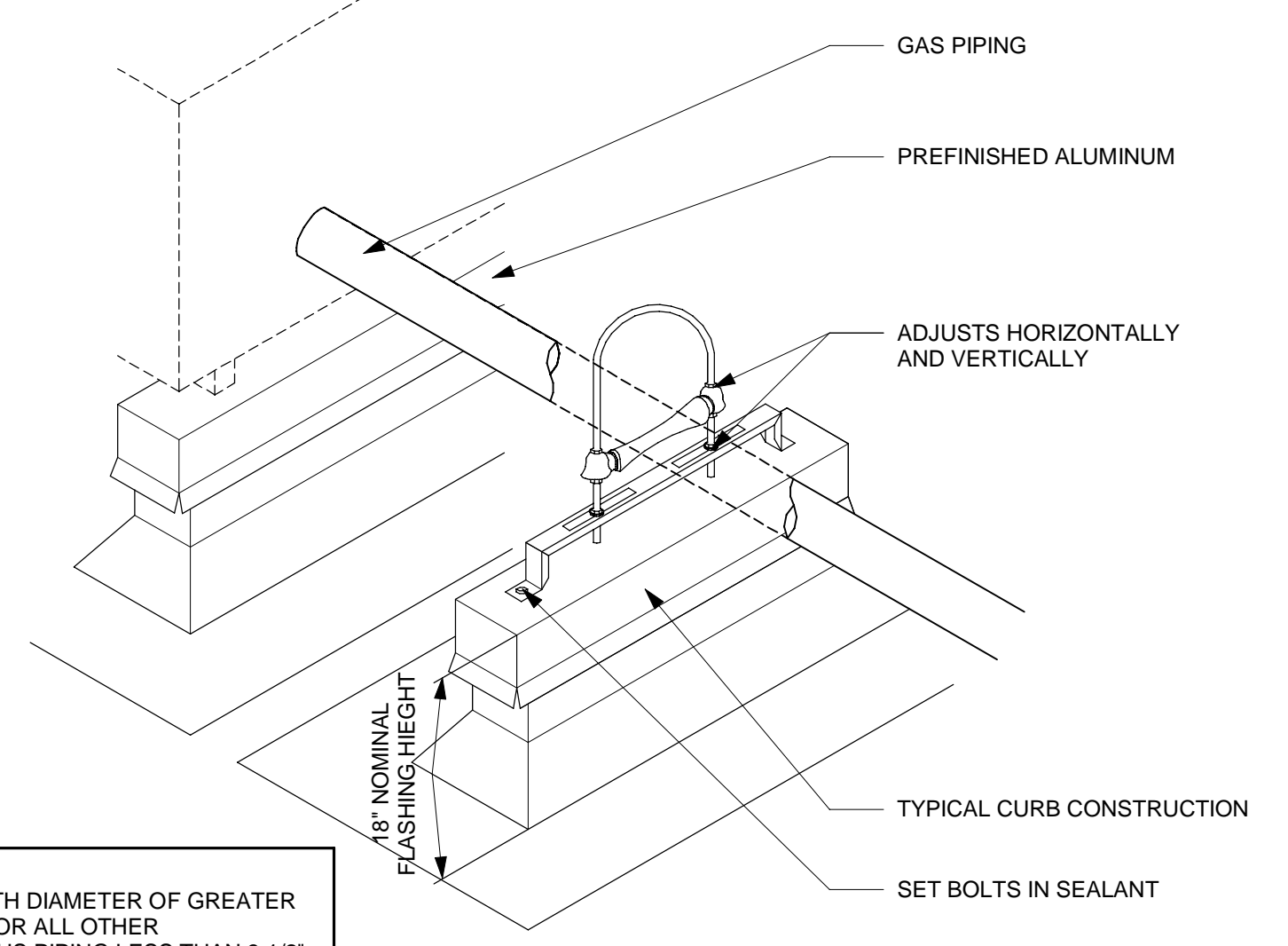


2 new ROOF CURB DETAIL
3" = 1'-0"



NOTE:
FOR PIPES WITH DIAMETER OF GREATER THAN 3 1/2". FOR ALL OTHER MISCELLANEOUS PIPING LESS THAN 3 1/2" USE MIRO PAD SUPPORTS.

3 PIPE SUPPORT DETAIL
3" = 1'-0"



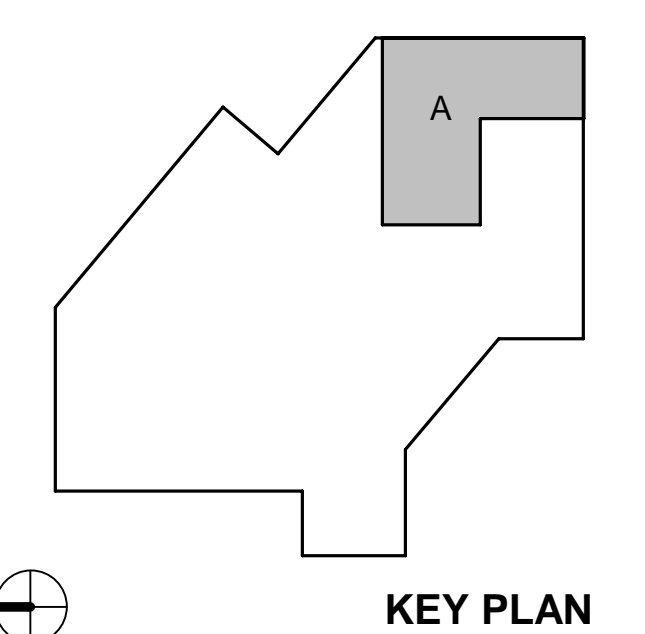
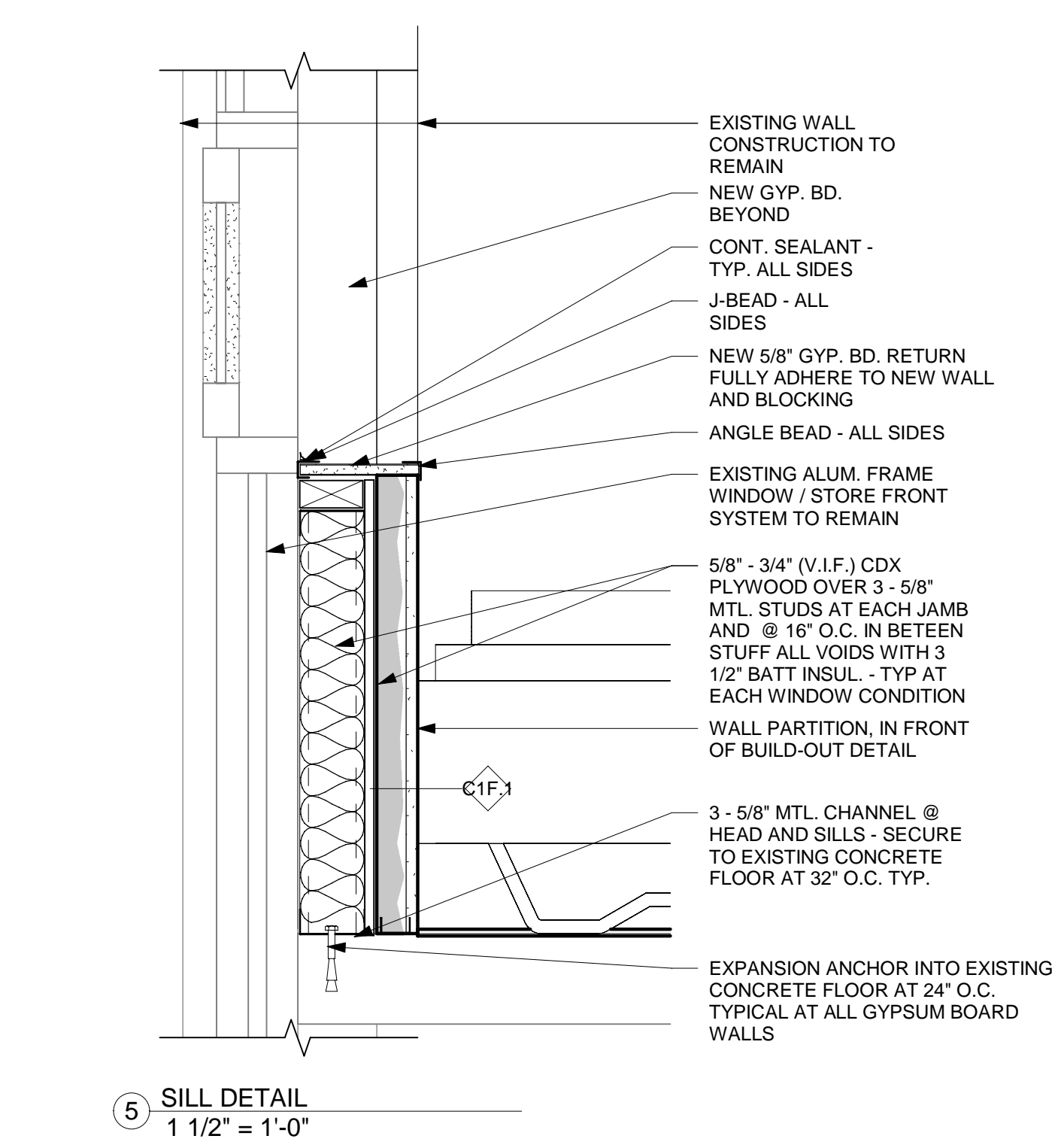
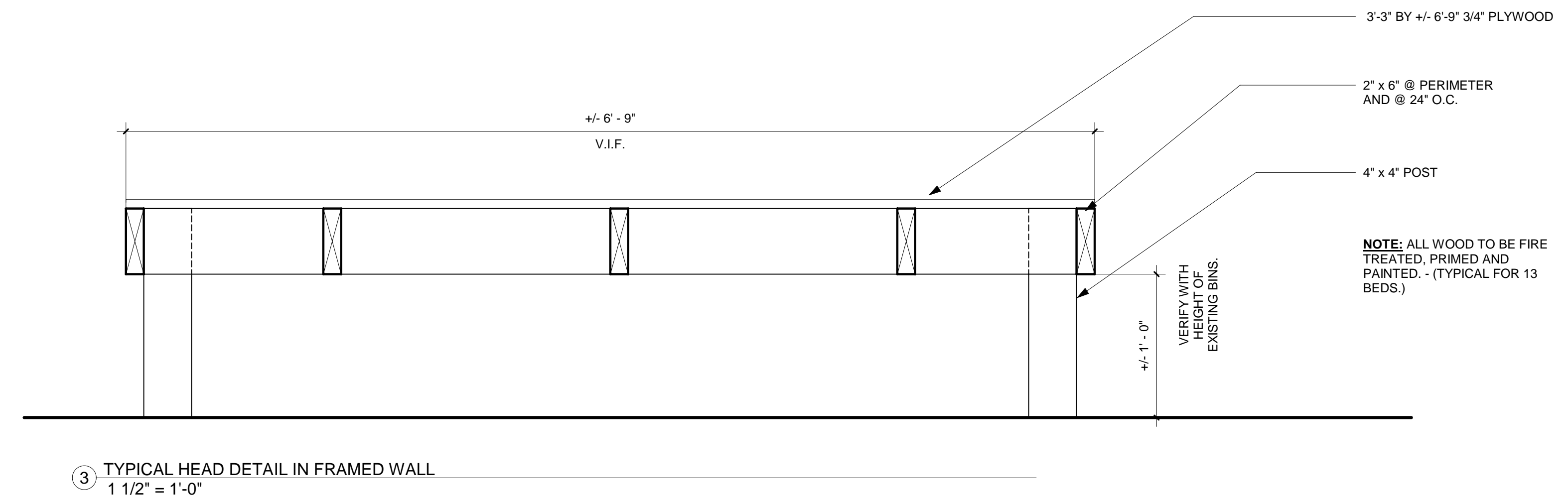
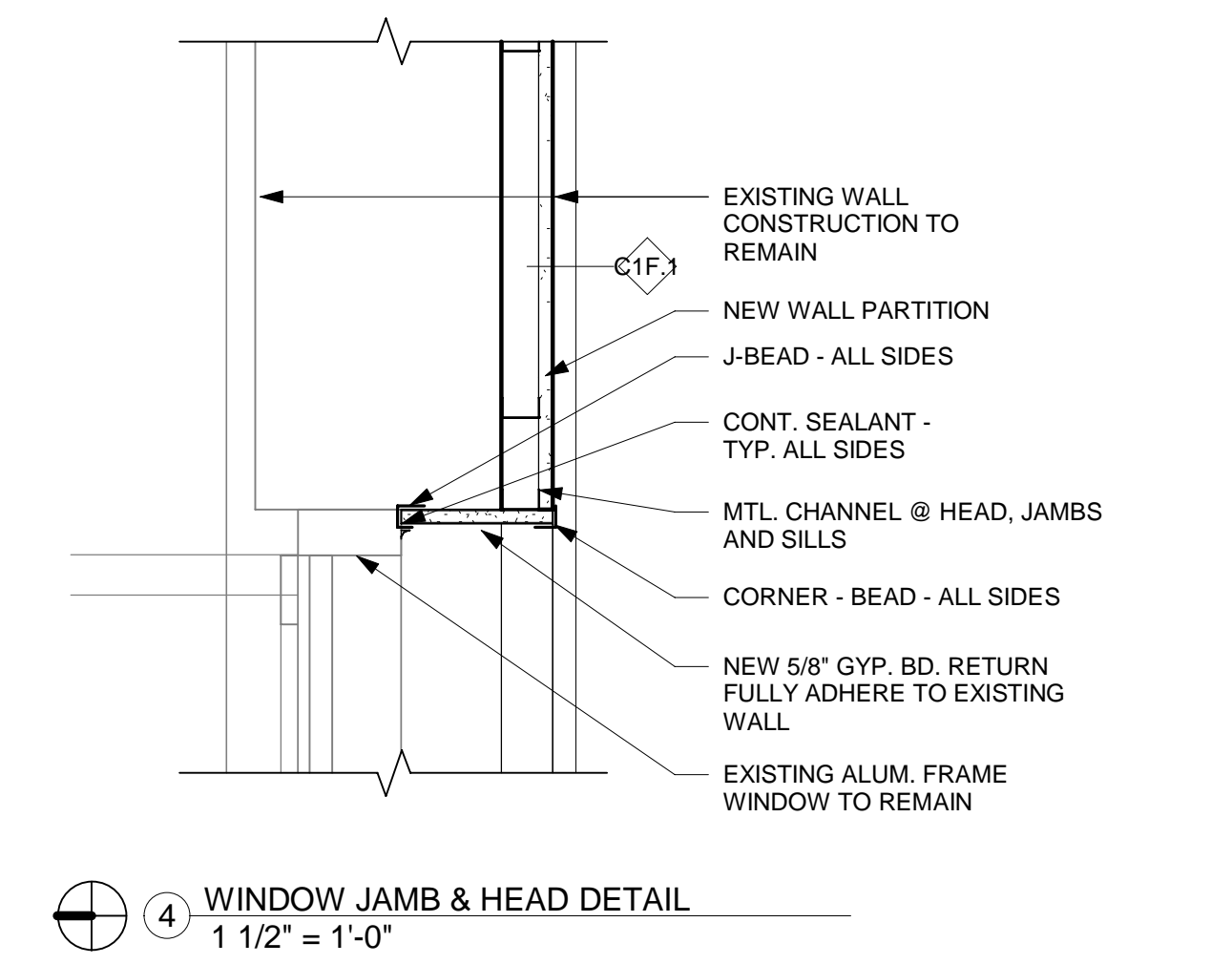
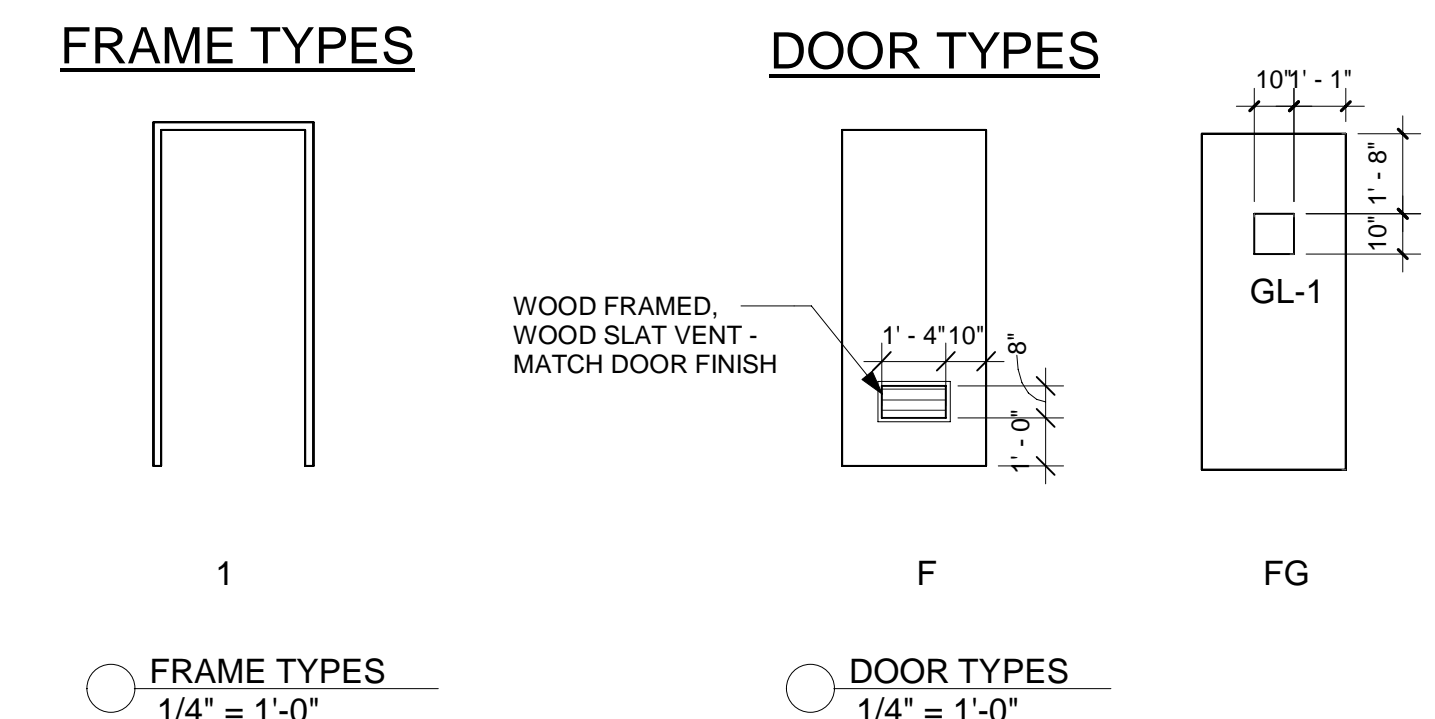
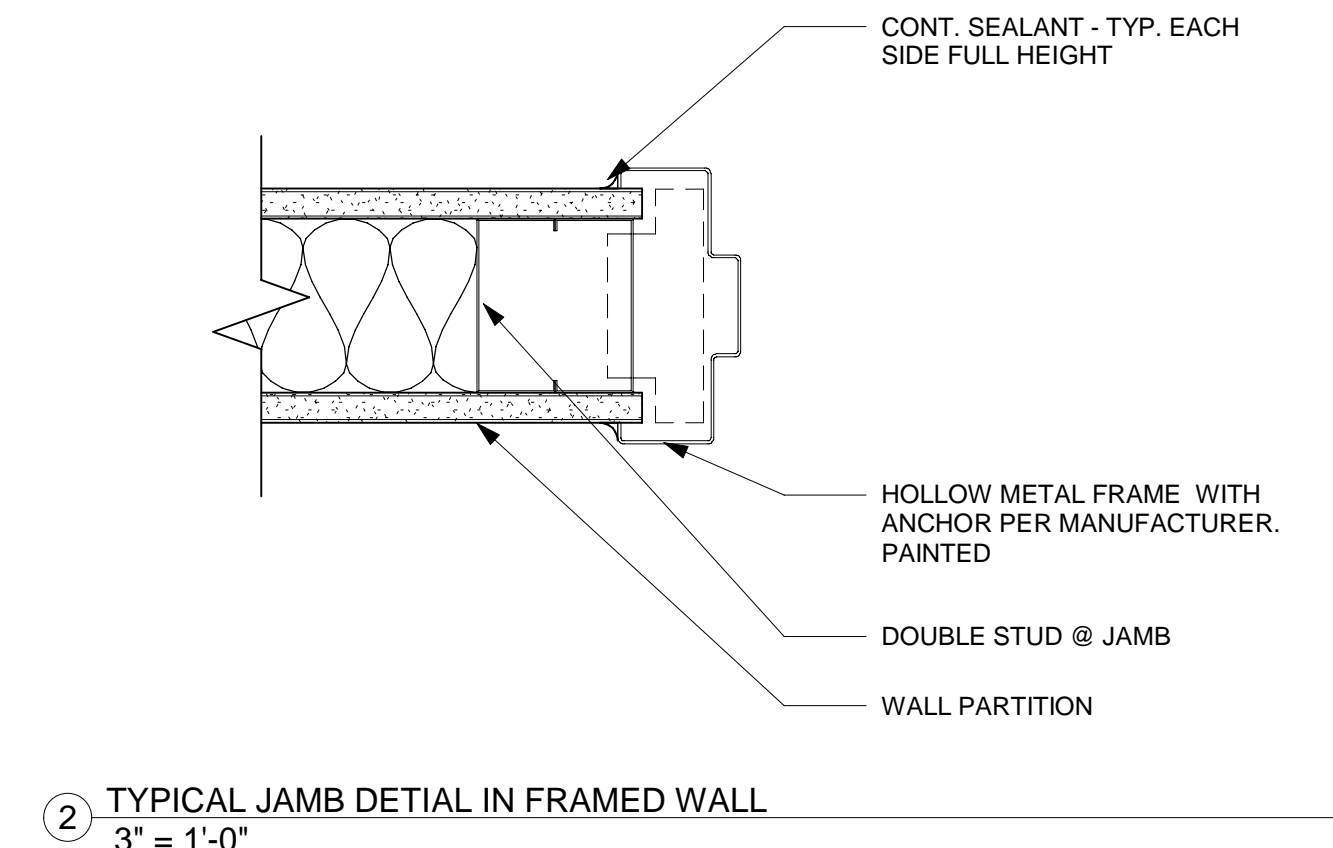
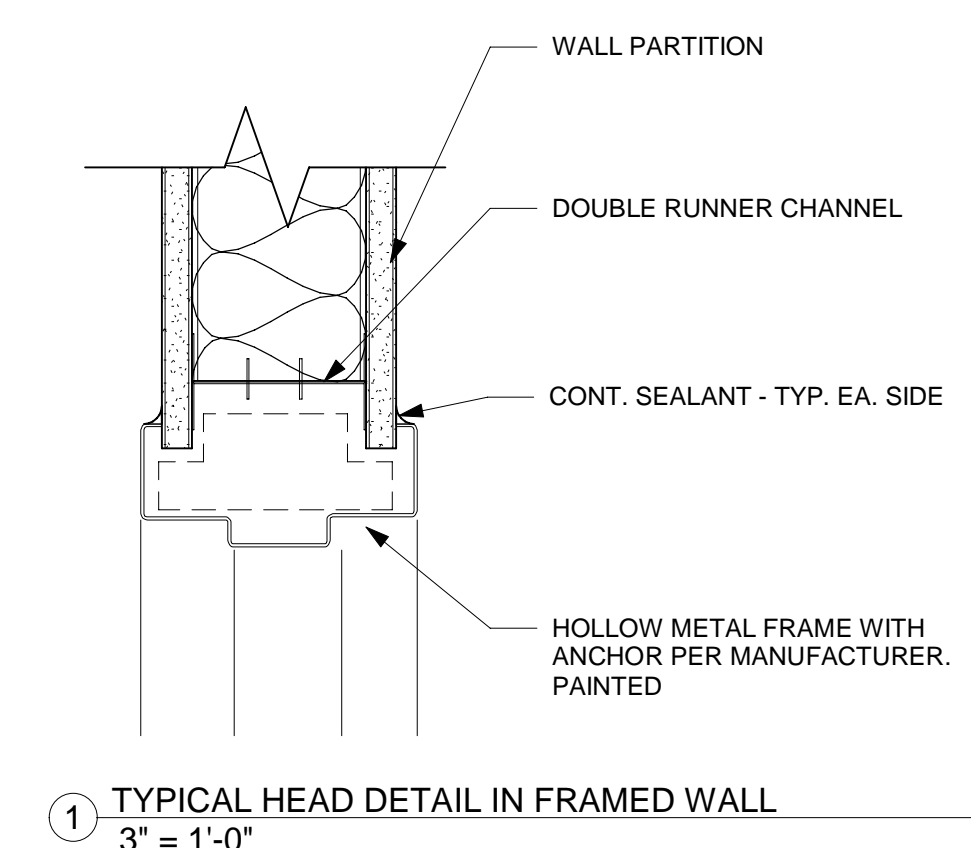
4 ROOF CURB DETAIL
3" = 1'-0"

FOR MECHANICAL AIR HANDLERS, CONDENSERS, ROOF TOP EQUIPMENT, MECHANICAL FANS AND EXHAUST FANS.

DOOR/ FRAME SCHEDULE																			
DOOR NO.	ROOM	DOOR								HARDWARE SET	FIRE LABEL	FRAME					DETAIL		COMMENTS
		QUANTITY	TYPE	WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	TYPE			WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	HEAD	JAMB	
200	CORRIDOR	1	FG	3' - 0"	6' - 10"	1 3/4"	Wood	PREFIN	1	---	1	3' - 4"	7' - 2"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	EXISTING FRAME TO REMAIN - PAINT
200A	CORRIDOR	1	FG	3' - 0"	6' - 10"	1 3/4"	Wood	PREFIN	1	---	1	3' - 4"	7' - 0"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
201	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
202	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
203	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
204	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
205	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
206	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
207	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
209	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
210	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
211	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
212	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
213	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	
214	BUNK	1	F	2' - 6"	6' - 8"	1 3/4"	Wood	PREFIN	2	---	1	2' - 10"	6' - 10"	5 3/4"	HM	PAINT	1/ A8.00	2/ A8.00	

GLAZING SCHEDULE	
TYPE	DESCRIPTION
GL-1	1/4" TEMPERED GLASS.

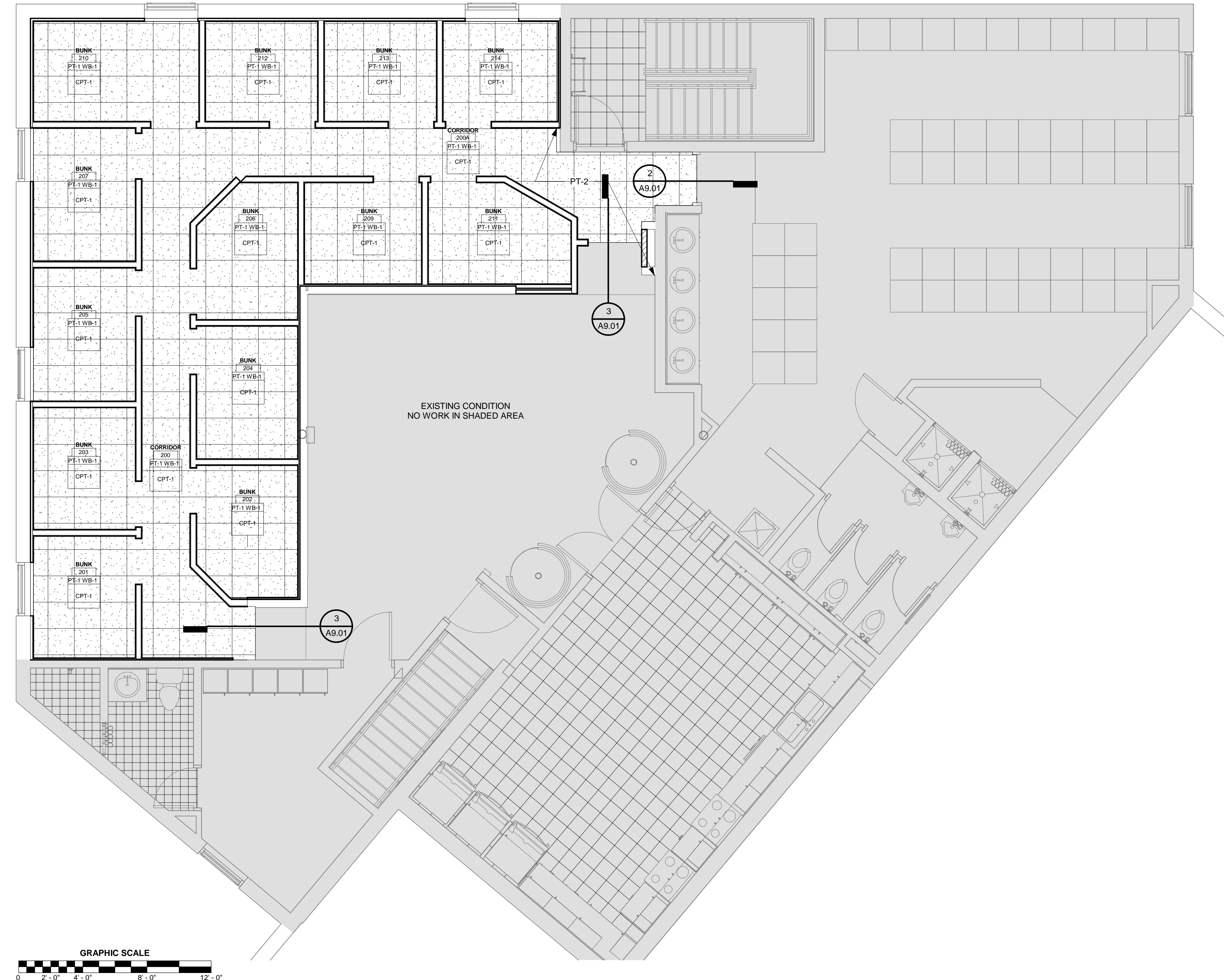
NOTES:
1.) ALL INTERIOR GLAZING TO BE TYPE GL-1



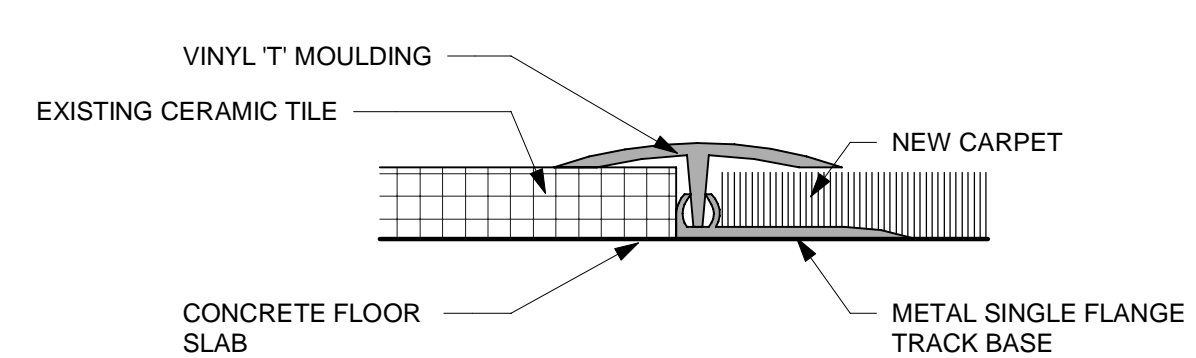
NO	ISSUE	DATE
1	ISSUED FOR BIDDING	6/28/2023
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DOOR AND FRAME SCHEDULE & DETAILS

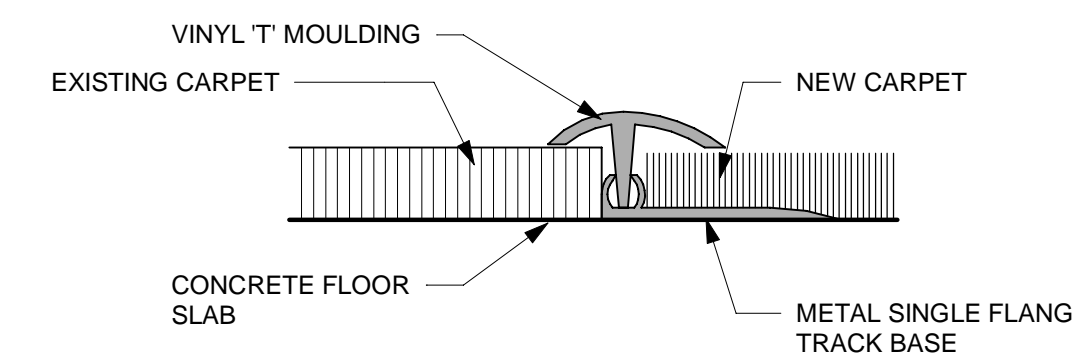
LEGEND - ROOM FINISHES:				
WALL FINISH	FLOOR FINISH	ROOM NAME	ROOM NUMBER	
WALL FINISH	FLOOR FINISH	ROOM FINISH TAG	ROOM FINISH TAG	
	CPT-1	CARPET TILE MFR: MOWHAWK COLLECTION: COLOR BALANCE COLOR: 979 MAGNETIC SIZE: 12' x 36', HALF LAP	WB	RUBBER WALL BASE MFR: JOHNSONITE PATTERN: RUBBER BASE (COVE) COLOR: 40 BLACK B SIZE: 4"
	CPT-2	CARPET TILE MFR: JJ FLOORING COLLECTION: KINETEX STYLE: STRATA 1826 COLOR: VOLCANIC 1853 SIZE: 18' x 36', HALF LAP		
		PAINT: TO BE SELECTED BY ARCHITECT FROM MANUFACTURERS FULL RANGE		
	PNT-1	GYP. BD. GENERAL WALLS MFR: SHERWIN WILLIAMS COLOR: TBD (NEUTRAL WHITE)		
	PNT-2	GYP. BD. CEILINGS, EXPOSED CONCRETE WALLS MFR: SHERWIN WILLIAMS COLOR: BRIGHT WHITE		
NOTES:				
1. HM DOOR AND WINDOW FRAMES TO BE PAINTED U.N.O.				
2. WOOD DOORS TO BE BIRCH WITH STAIN MATCHING EXISTING DOORS. MATCHING SAMPLES TO BE APPROVED BY ARCHITECT				
3. ALL GYP. BD. CLGS, WALLS, AND CMU WALLS TO BE PAINTED - TYP.				
4. PROVIDE PREPARATION OF NEW AND EXISTING WALLS PRIOR TO PAINTING WORK. THIS INCLUDES BUT IS NOT LIMITED TO PATCHING HOLES, GOUGES, SCRATCHES AND OTHER DAMAGE, SECURING THE SUBSTRATE, REMOVING EXCESS DRYWALL COMPOUND AND CLEANING THE SUBSTRATE OF ALL DUST, DIRT AND STAINS.				
5. REMOVE ALL SURFACE MOUNTED EQUIPMENT, MARKER/BULLETIN BOARDS, HARDWARE, DEVICES, COVER PLATES, ETC. PRIOR TO BEGINNING PAINTING OPERATIONS. REINSTALL ALL REMOVED ITEMS AFTER PAINTING IS COMPLETED IN THE ORIGINAL LOCATIONS.				
6. PROPERLY PROTECT ALL EXISTING ITEMS DURING CLEANING AND PAINTING INCLUDING BUT NOT LIMITED TO FLOORING MATERIALS, ALUM. FRAMES AND GLASS, WOOD TRIM, DOORS AND ELEC. FIXTURES, SWITCHES, OUTLETS, EMERGENCY AND OTHER DEVICES.				
7. DO NOT PAINT ACOUSTICAL PANEL CEILINGS				
8. DO NOT PAINT ANY STAINED WOOD TRIM, FRAMES, DOORS, OR ANY OTHER WOOD SURFACES NOT PREVIOUSLY PAINTED.				
9. DO NOT PAINT ELECTRICAL WALL SWITCHES, OUTLETS, OR COVER PLATES IF NOT PREVIOUSLY PAINTED.				
10. TRANSITION DETAILS APPLY TO FLOORING MATERIAL TRANSITIONS FOR STATED MATERIALS. VERIFY IN FIELD ALL TRANSITIONS NEEDED BUT NOT NECESSARILY SHOWN AND LOCATIONS TO BE PROVIDED.				
11. PROVIDE TRANSITION BETWEEN MATERIAL UNDER DOORS OR TO ALIGN WITH ADJACENT WALL EDGES. AT LOCATIONS WITH NO CLEAR TRANSITION LOCATION, REVIEW IN FIELD WITH ARCHITECT.				
12. FOR WALL BASE: ALL WALL CORNERS SHALL RECEIVE PRE-MANUFACTURED INSIDE AND/OR OUTSIDE CORNERS. FIELD MODIFIED/CREATED WALL BASE FOR CORNER APPLICATIONS ARE NOT ACCEPTABLE.				
13. ALL CONCRETE FLOORS RECEIVING CARPET OR RESILIENT FINISH FLOORING SHALL BE SEALED WITH FLUID APPLIED MOISTURE MITIGATION PRODUCT				
14. AN ANTI-FRACTURE WATERPROOFING MEMBRANE IS TO BE APPLIED UNDER ALL CERAMIC/PORCELAIN TILE INSTALLATIONS.				
15. REMOVE ALL ADHESIVE, MARKS AND STAINS FROM CONCRETE SURFACES PRIOR TO BEGINNING FLOORING INSTALLATION. SCARIFY FLOOR TO MEET SURFACE PROFILE REQUIRED BY FLOORING MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE SELF LEVELING CEMENTITIOUS UNDERLAYMENT OVER ALL CONCRETE SURFACES, EXCEPT PROVIDE TROWABLE CEMENTITIOUS UNDERLAYMENT WHERE PROVIDING SLOPED FLOOR TO DRAINS. PROVIDE PRIMER PER FLOORING MANUFACTURE'S INSTRUCTIONS. PROVIDE MANUFACTURER'S APPROVED HIGH RH ADHESIVE FOR EACH FLOORING TYPE.				
16. FIELD VERIFY AND COORDINATE ALL DIMENSIONS, CONDITIONS, AND QUANTITIES, ETC.				
17. REVIEW FLOORING PATTERN INSTALLATION IN FIELD PRIOR TO INSTALLING.				



1 NEW FINISH PLAN
1/4" = 1'-0"



2 CARPET TO CERAMIC TILE
12" = 1'-0"



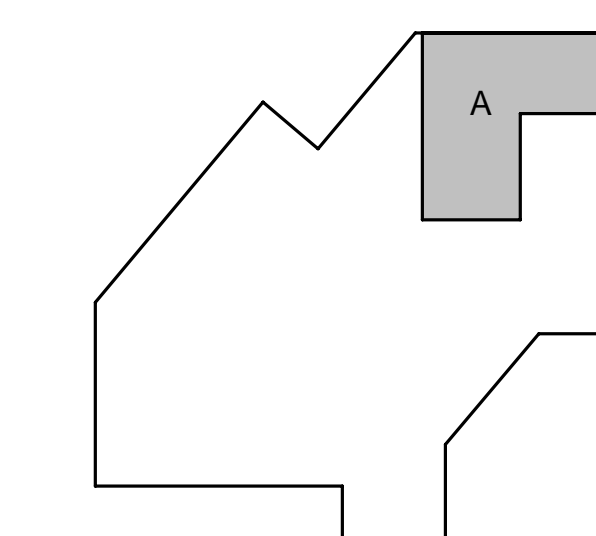
3 CARPET TO CARPET
12" = 1'-0"



STUDIO GC
architecture + interiors
223 West Jackson Boulevard, Suite 1200
Chicago, Illinois 60606
(312) 253-3400

Second Floor Bunk House Floor Plan

Village of Oak Park
100 N Euclid Ave., Oak Park, IL 60301

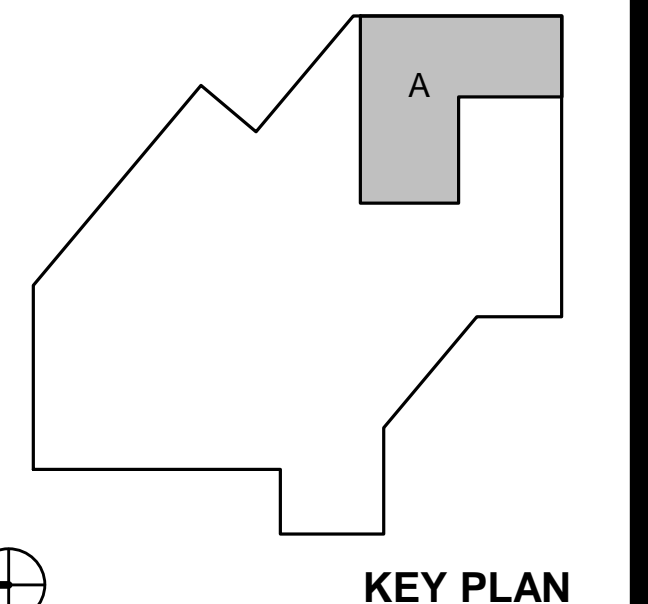


KEY PLAN

NO	ISSUE	DATE
	ISSUED FOR BIDDING	6/28/2023

FINISH PLANS & DETAILS

23016A **A9.01**

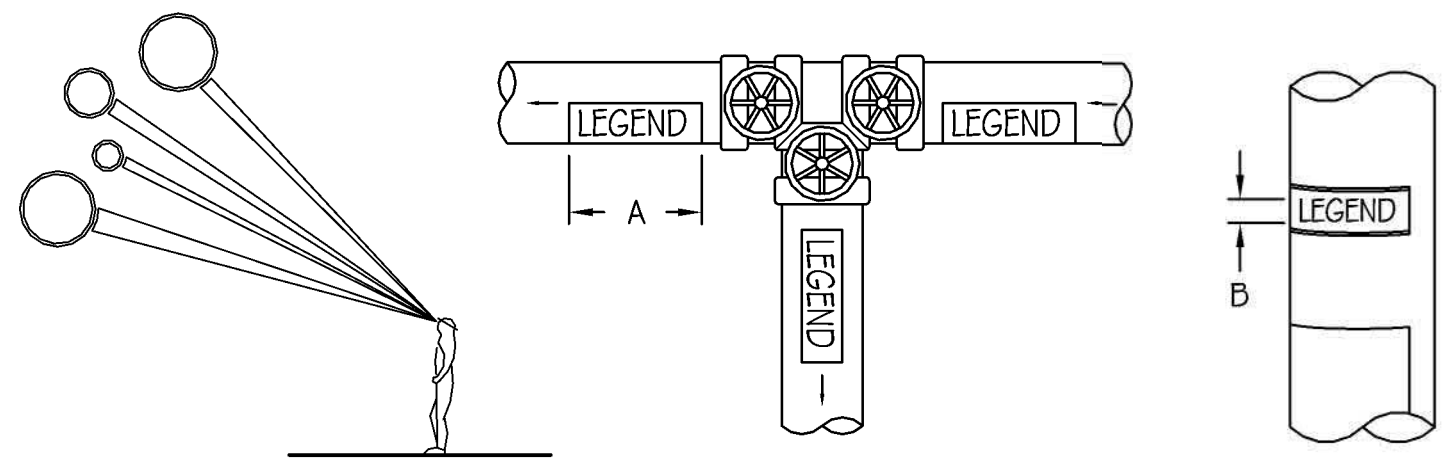


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MECHANICAL/ELECTRICAL NOTES AND DETAILS

GENERAL REMODELING NOTES - ALL CONTRACTORS

- ALL WORK SHOWN ON DRAWINGS SHALL BE CONSIDERED NEW AND IN CONTRACT UNLESS SPECIFICALLY INDICATED OTHERWISE.
- DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING, DUCTWORK, CONDUITS, RACEWAYS, ETC., AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. EACH CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
- IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLARITY OF PRESENTATION.
- CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED ARE CLEAR OF OBSTRUCTIONS. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL NOTIFY OWNER/ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK.
- CONTRACTOR SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND/OR SHOP DRAWINGS ON LOCATIONS AND SIZES OF PIPING, DUCTWORK, CONDUIT, RACEWAYS, EQUIPMENT, FRAMES, BOXES, SLEEVES AND OPENINGS, ETC. NEEDED FOR THEIR WORK TO PERMIT OTHER TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.
- WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTORS SHALL VERIFY EXACT LOCATIONS OF ALL DEVICES AND EQUIPMENT WITH FIELD CONDITIONS, SHOP DRAWINGS, AND WORK OF OTHER TRADES PRIOR TO ROUGH-IN. EACH CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.
- CONTRACTOR SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, COLUMNS AND WALLS AS SHOWN ON THE DRAWINGS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SLEEVED SHALL BE CUT AND REINFORCED AS REQUIRED BY FIELD CONDITIONS AND LOCATIONS AND SIZES SHALL BE CHECKED AND APPROVED BY ARCHITECT BEFORE CONTRACTOR CUTS ANY STRUCTURAL BUILDING MEMBER.
- THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH ARCHITECT/ENGINEER AND OWNERS STIPULATION AS DIRECTED.
- CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE GENERAL CONTRACTOR'S WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR WORK.
- CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL CORING, CUTTING, PATCHING, REPAIRING, REFINISHING AND REMOVAL/REPLACEMENT OF NEW OR EXISTING BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OR REMOVAL OF THEIR WORK. ALL PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE ADJACENT CONSTRUCTION AS CLOSELY AS POSSIBLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK OR REMOVAL OF EXISTING WORK SHALL BE REPAIRED, REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR, TO THE SATISFACTION OF THE ARCHITECT AND OWNER. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, REFINISHING, AND REMOVAL/REPLACEMENT. (NOTE: CONTRACTOR SHALL VERIFY EXISTING BUILDING'S ROOF WARRANTY AND EMPLOY OTHER SUBCONTRACTOR(S) AS REQUIRED BY ROOF MANUFACTURER'S REPRESENTATIVE SO AS NOT TO VOID OWNER'S ROOF WARRANTY.)
- SOME OF THE EXISTING ITEMS AND EQUIPMENT SCHEDULED TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER. ANY ITEMS THAT THE OWNER WANTS TO RETAIN SHALL BE REMOVED CAREFULLY SO AS NOT TO DAMAGE THEM. ALL OTHER ITEMS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEAN-UP DURING CONSTRUCTION. IF CONTRACTOR FAILS TO PROVIDE SUCH CLEAN-UP, THE ARCHITECT/ENGINEER WILL DIRECT ANOTHER CONTRACTOR TO PERFORM THE CLEAN-UP AND THE NEGLIGENT CONTRACTOR SHALL PAY THE ASSOCIATED BACK-CHARGES AS DEEMED APPROPRIATE BY THE ARCHITECT/ENGINEER.
- CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR PIPING, DUCTWORK, CONDUIT, TANKS, EQUIPMENT, ETC. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY.
- IT IS MANDATORY THAT THE COMPLETE EXISTING BUILDING REMAIN IN CONTINUOUS AND NON-INTERRUPTED OPERATION DURING REMODELING/ALTERING OF SAID EXISTING BUILDING. THE SPECIFIC AREA(S) BEING REMODELED/ALTERED AT ANY SCHEDULED TIME ARE OBVIOUSLY EXCLUSIVE OF THIS STATEMENT. SERVICES TO EXISTING BUILDING SHALL BE KEPT IN CONTINUOUS OPERATION INCLUDING POWER, SIGNAL SYSTEMS, LIGHTING, TELEPHONE, HEATING, COOLING, VENTILATING, TEMPERATURE CONTROL, SEWERS AND HOT AND COLD WATER. ANY ABSOLUTELY NECESSARY INTERRUPTION OF THESE SERVICES TO ACCOMPLISH CONTRACT WORK SHALL BE ARRANGED WITH THE OWNER A MINIMUM OF TEN (10) WORKING DAYS IN ADVANCE. SUCH INTERRUPTIONS SHALL BE KEPT TO AN ABSOLUTE MINIMUM AS FAR AS TIME INTERVAL IS INVOLVED AND TEMPORARY SERVICES SHALL BE FURNISHED AND INSTALLED UNDER THIS CONTRACT WHERE NECESSARY TO ACCOMPLISH THIS PURPOSE. TEMPORARIES SHALL BE REMOVED BY THE CONTRACTOR ONLY AFTER NEW PERMANENT SERVICES ARE INSTALLED AND FULLY OPERATIONAL.
- UNLESS INDICATED OTHERWISE, THE ARCHITECT/ENGINEER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED TO ASBESTOS, PCB'S, CONTAMINATED SOILS, ETC.) ARE PRESENT WITHIN THE EXISTING BUILDING OR ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED, THE CONTRACTOR SHALL NOT DISTURB THEM AND SHALL CONTACT THE ARCHITECT/ENGINEER IMMEDIATELY.
- WHERE WORK CALLED FOR ON THE DRAWINGS OR IN THE SPECIFICATIONS INVOLVES THE REMOVAL OR RELOCATION OF PIPING OR EQUIPMENT CONTAINING REFRIGERANT, ALL REFRIGERANT SHALL BE RECOVERED BY APPROVED METHODS PER EPA REGULATIONS.
- CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IF MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") SET ON 6" X 6" PLANKS AND/OR WOOD PALLETES. ALL MATERIAL AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARP'S OR VISQUIN. ALL PIPING AND DUCTWORK WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT WILL BE ALLOWED TO BE STORED OUTSIDE THE BUILDING ON THE SITE UNLESS IT IS SUPPORTED OFF THE GROUND AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS.
- THE DRAWINGS, SCHEDULES AND SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH PIECE OF EQUIPMENT AS THE BASIS FOR DIMENSIONAL DESIGN. IF THE CONTRACTOR PURCHASES EQUIPMENT FROM A SPECIFIED ACCEPTABLE MANUFACTURER, BUT NOT THE SCHEDULED MANUFACTURER USED FOR THE BASE DESIGN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH SUITABLE ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE OF THE EQUIPMENT. WHEN EQUIPMENT SUBMITTED FOR REVIEW DOES NOT MEET THE PHYSICAL SIZE OR ARRANGEMENT OF THAT SCHEDULED AND SPECIFIED, CONTRACTOR SHALL PAY FOR ALL ALTERATIONS REQUIRED TO ACCOMMODATE SUCH EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR WILL ALSO PAY ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT TO FIT IN THE SPACE AND FUNCTION AS INTENDED.
- CONTRACTOR AND/OR MANUFACTURER SHALL VERIFY THAT THE CHARACTERISTICS OF THE EQUIPMENT SUBMITTED FOR REVIEW MEETS THE CAPACITY AND DUTY SPECIFIED. WHEN EQUIPMENT SUBMITTED FOR REVIEW REQUIRES MODIFICATIONS TO THE WORK OF OTHER CONTRACTORS, SUBMITTING CONTRACTOR SHALL PAY FOR ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT FUNCTION SAFELY AND PROPERLY.
- CONTRACTOR SHALL FIELD VERIFY THE SIZE OF EXISTING OPENINGS, WINDOWS, DOORS, CORRIDORS, ROOMS, ETC. FOR ACCESS OF THE NEW EQUIPMENT INTO OR REMOVAL OF EXISTING EQUIPMENT FROM THE BUILDING. IF OPENINGS ARE TOO SMALL FOR ACCESS THEN CONTRACTOR SHALL, AT THEIR OWN EXPENSE, PROVIDE NEW OR ENLARGED OPENINGS AND RESTORE SAME TO ORIGINAL SIZE AND CONDITION. CONTRACTOR MAY ELECT TO ORDER THE EQUIPMENT DISASSEMBLED AND/OR WITH SPLIT HOUSING FOR ENTRANCE INTO THE EXISTING SPACE OR BUILDING. CONTRACTOR SHALL REASSEMBLE EQUIPMENT AFTER IT IS IN THE SPACE AT THEIR OWN EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND THEIR ASSOCIATED FEES.
- CONTRACTOR SHALL SUBMIT DIGITAL COPIES OF SHOP DRAWINGS OF ALL EQUIPMENT, DIFFUSERS, REGISTERS, TEMPERATURE CONTROL SYSTEM, LIGHTING FIXTURES, PANELBOARDS, ELECTRICAL DEVICES, TO ENGINEER FOR APPROVAL PRIOR TO ORDERING ANY ITEMS OR FABRICATING ANY DUCTWORK.
- CONTRACTOR SHALL PROVIDE OWNER TRAINING ON ALL EQUIPMENT AND BUILDING SYSTEMS PROVIDED/ALTERED BY THEIR WORK. TRAINING SHALL BE ACCOMPLISHED DURING TIME DEDICATED FOR THAT PURPOSE, NOT IN CONJUNCTION WITH SERVICE WORK.
- AT COMPLETION OF PROJECT, CONTRACTOR SHALL SUBMIT ONE PHYSICAL AND DIGITAL COPIES OF OPERATION AND MAINTENANCE MANUALS FOR ALL WORK PROVIDED BY THEM ON PROJECT. MANUALS SHALL BE CLEARLY ORGANIZED AND CONTAIN COPIES OF APPROVED EQUIPMENT, SHOP DRAWINGS, EQUIPMENT PARTS LISTS, SERVICE CONTACTS, CONTRACTOR AND MANUFACTURER WARRANTIES, AND "AS BUILT" FLOOR PLANS.
- CONTRACTOR SHALL PROVIDE WARRANTY FOR ALL MATERIAL AND GUARANTEE ALL WORKMANSHIP PROVIDED BY THEM FOR 1 (ONE) YEAR FROM SUBSTANTIAL COMPLETION OF WORK INVOLVED.
- CONTRACTOR SHALL MAINTAIN A CURRENT VILLAGE OF OAK PARK LICENSE THROUGHOUT ALL PHASES OF CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL INSPECTIONS WITH VILLAGE OF OAK PARK OFFICIALS.
- IDENTIFY ALL PIPING AND DUCTWORK WITH PLASTIC LABELS INDICATING CONTENTS AND FLOW DIRECTION. MARKERS TO BE PLACED AT A MAXIMUM OF 50 FT. INTERVALS AT BRANCH CONNECTIONS, AND AT BOTH SIDES OF WALL/FLOOR PENETRATIONS. IDENTIFY VALVES, EQUIPMENT, AND PANELS WITH ENGRAVED 3-LAYER PLASTIC LAMINATED TAGS OR SIGNS.



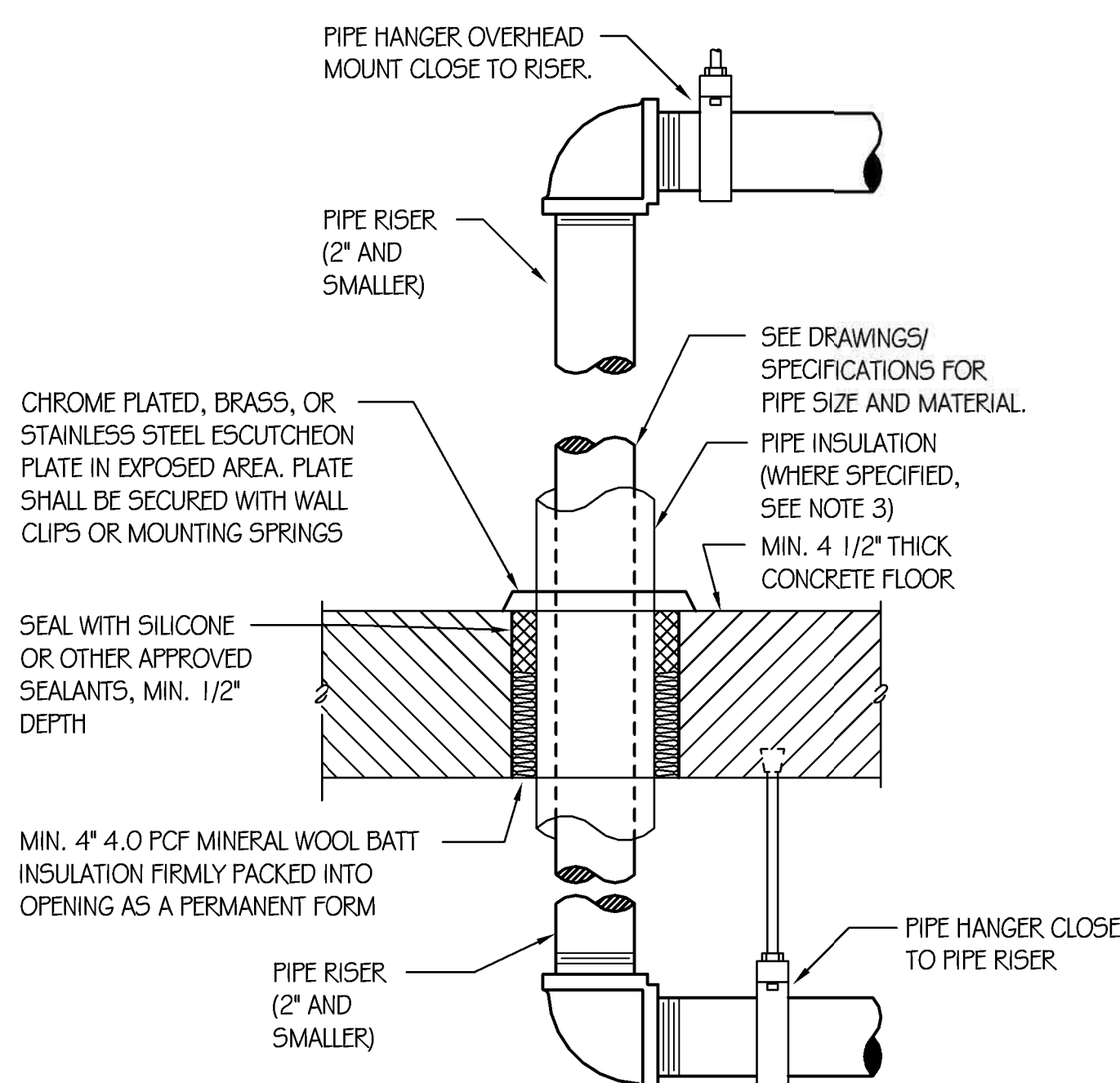
NOTE: IDENTIFICATION MARKERS OR STRIPS TO BE PLACED ON ALL EXPOSED COVERED AND UNCOVERED PIPES AT 50'-0" INTERVALS, ADJACENT TO ALL VALVES OR BRANCHES, AND AT BOTH SIDES OF WALL/FLOOR PENETRATIONS. ARROWS OF SAME COLOR AS IDENTIFICATION MARKERS SHALL ALSO BE PLACED ON PIPES POINTING AWAY FROM MARKER INDICATING DIRECTION OF FLOW.

SIZE OF LEGEND LETTERS		
OUTSIDE DIAMETER OF PIPE OR COVERING	LENGTH OF COLOR FIELD A	SIZE OF LETTERS B
3/4" TO 1 1/4"	8"	1 1/2"
1 1/2" TO 2"	8"	3/4"
2 1/2" TO 6"	12"	1 1/4"
8" TO 10"	24"	2 1/2"
OVER 10"	32"	3 1/2"

SERVICE	BACKGROUND OR COLOR BAND	LETTER COLOR
CONDENSATE	SAFETY GREEN	WHITE
REFRIGERANT SUCTION	SAFETY ORANGE	BLACK
REFRIGERANT LIQUID	SAFETY ORANGE	BLACK
MAKE-UP WATER	SAFETY GREEN	WHITE
SANITARY DRAIN	SAFETY GREEN	WHITE
PLUMBING VENT	SAFETY GREEN	WHITE
STORM WATER	SAFETY GREEN	WHITE
CITY WATER	SAFETY GREEN	WHITE
DOMESTIC COLD WATER	SAFETY GREEN	WHITE
DOMESTIC HOT WATER	SAFETY GREEN	WHITE
DOMESTIC HOT WATER CIRC.	SAFETY GREEN	WHITE
FIRE PROTECTION (SPRINKLER)	SAFETY RED	WHITE

TYPICAL PIPE IDENTIFICATION MARKERS

NO SCALE

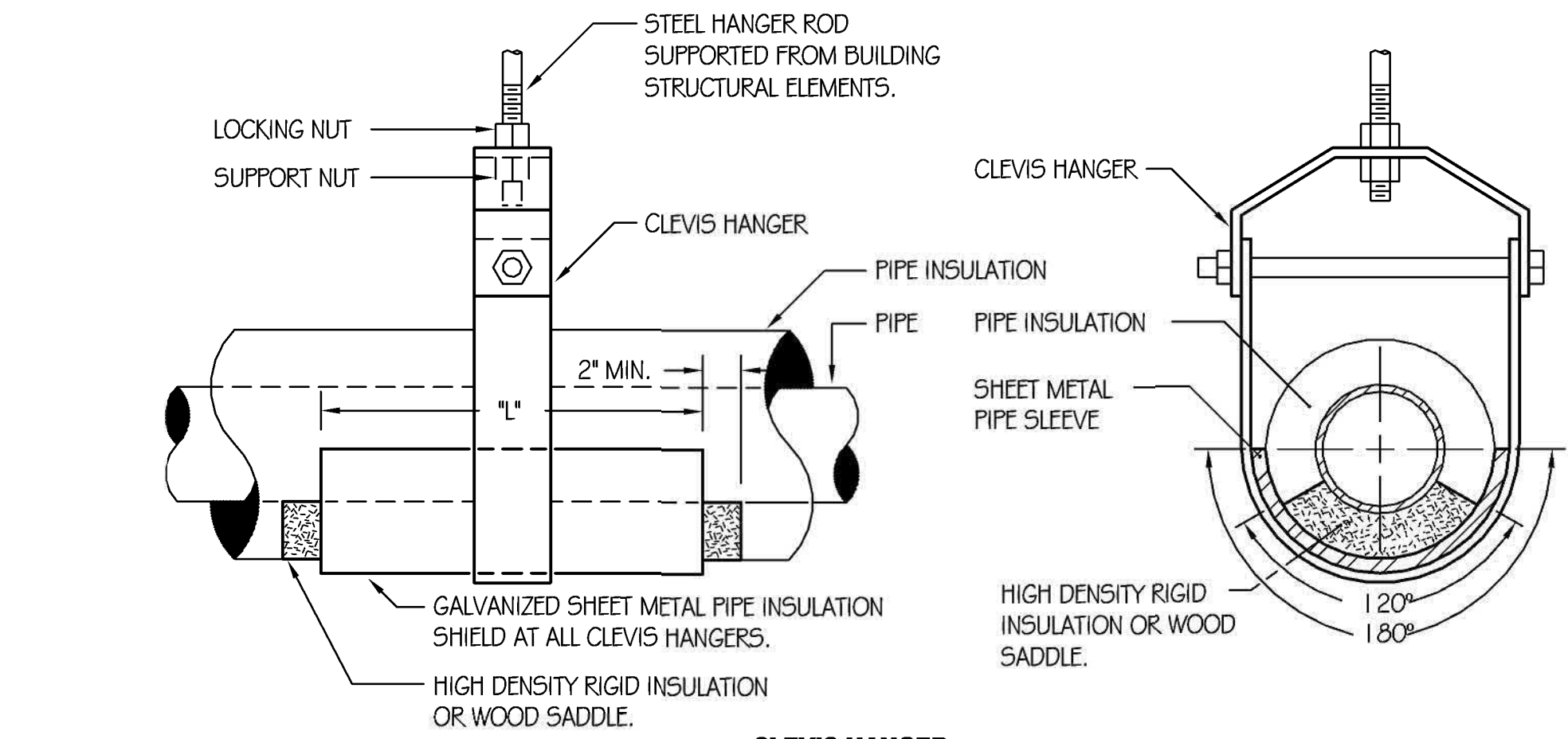


- NOTES:
- CONTRACTOR SHALL ISOLATE ALL PIPES WHICH VIBRATE FROM CONSTRUCTION IN ORDER TO AVOID TRANSMISSION TO STRUCTURE.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THEIR WALL OPENINGS WITH OTHER TRADES AND/OR CONTRACTORS.
 - WHERE INSULATED: 1" THICK 3.5 PCF GLASS FIBER INSULATION WITH ALL SERVICE JACKET SHALL BE UTILIZED AND SEALED WITH METAL FASTENERS OR SELF SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH PRODUCT.

PIPE PENETRATION OF FLOOR ASSEMBLY (DIA. 2" AND BELOW)

NO SCALE

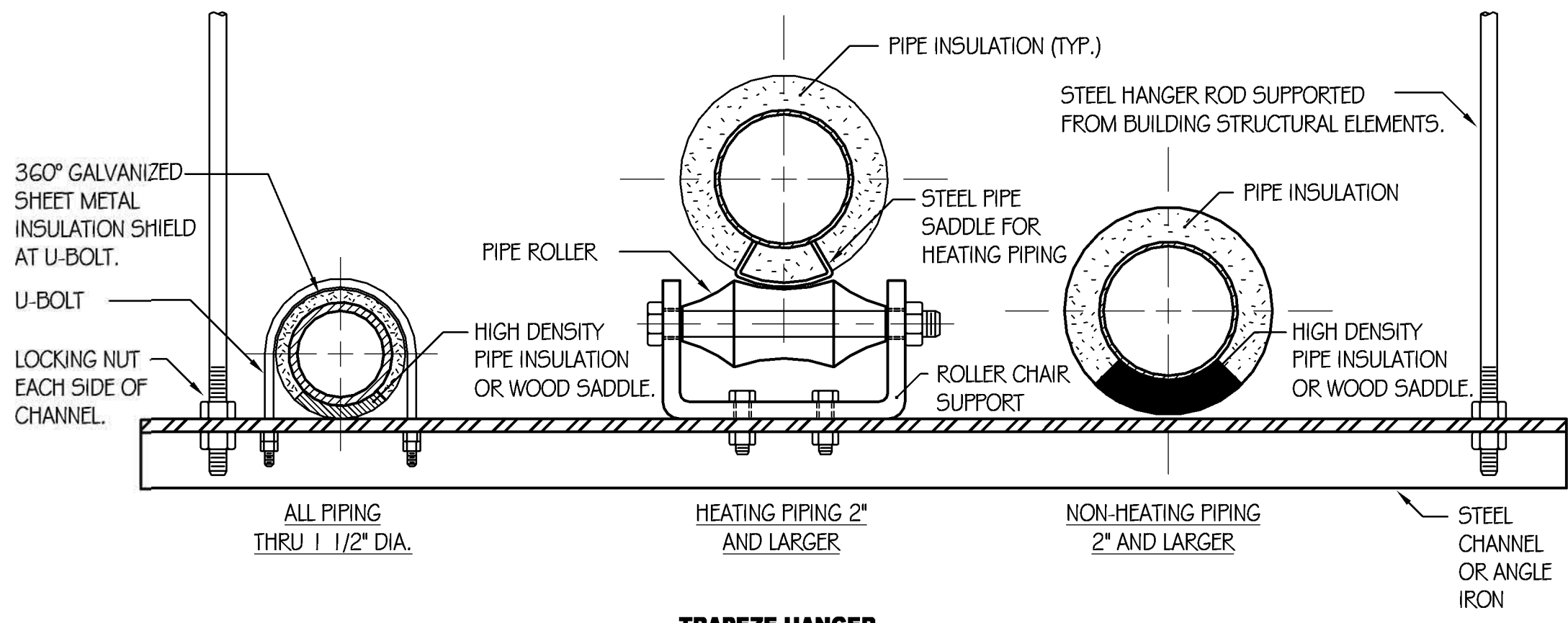
COORDINATE ALL ROOF WORK SO AS NOT TO VOID OWNERS ROOF WARRANTY.



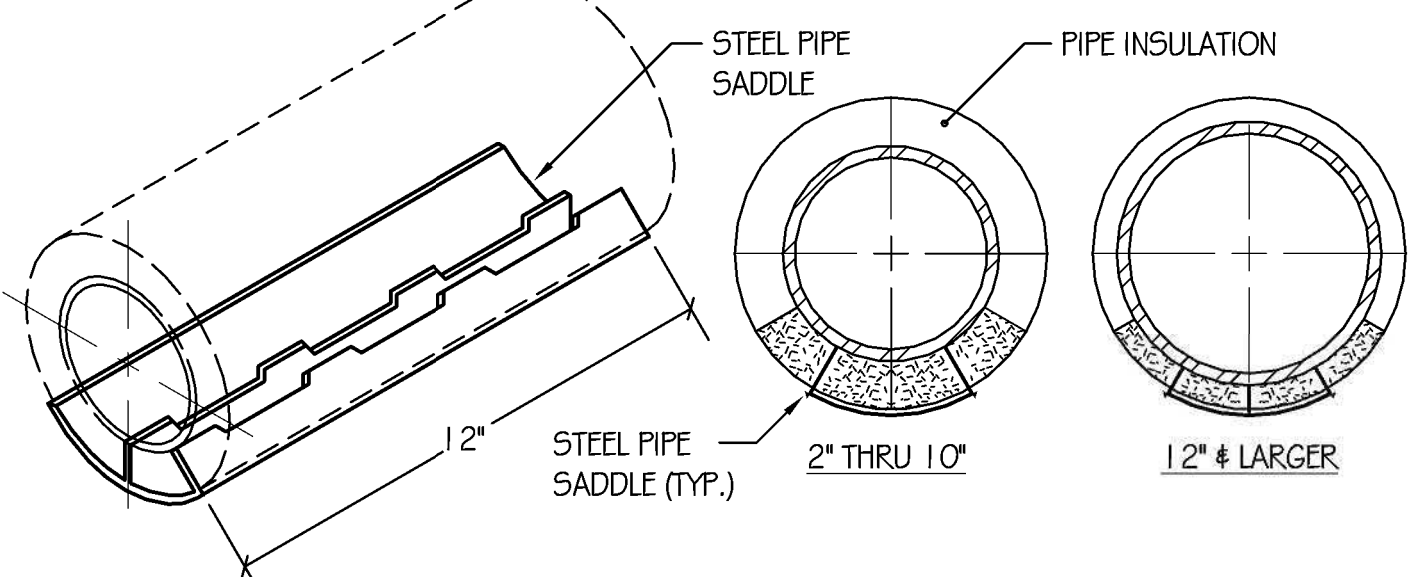
CLEVIS HANGER

PIPE SIZE	LENGTH	GAUGE
UP TO 3/4"	8"	20 GA.
1" - 2"	12"	18 GA.
2 1/2" - 4"	12"	16 GA.
5" & 6"	18"	16 GA.
8" & UP	24"	14 GA.

NOTE: 1. CONFER WITH ARCHITECT AND REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON ACCEPTABLE METHODS AND LOCATIONS FOR HANGER SUPPORTS.



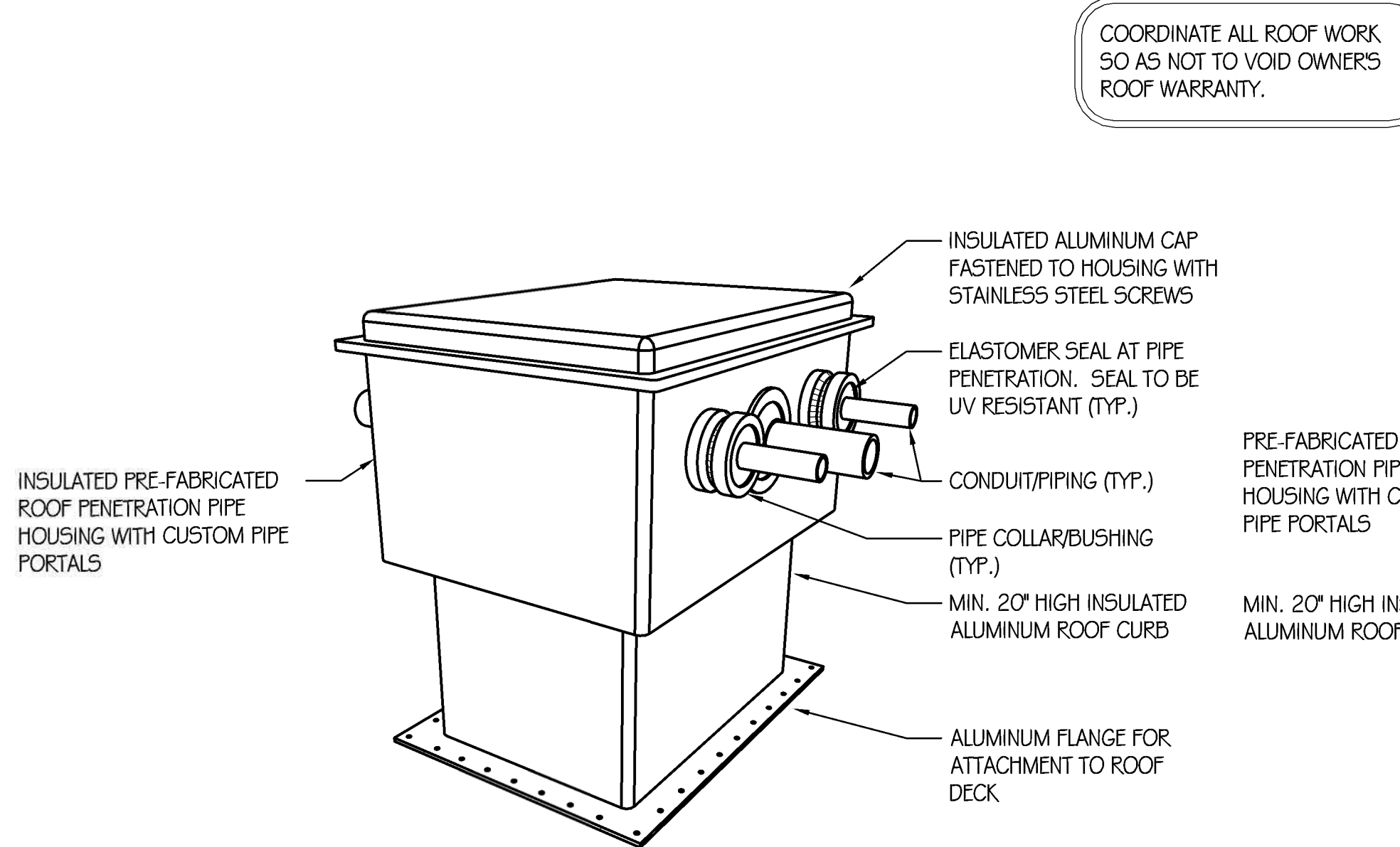
TRAPEZE HANGER



STEEL PIPE SADDLES AT PIPE ROLLERS

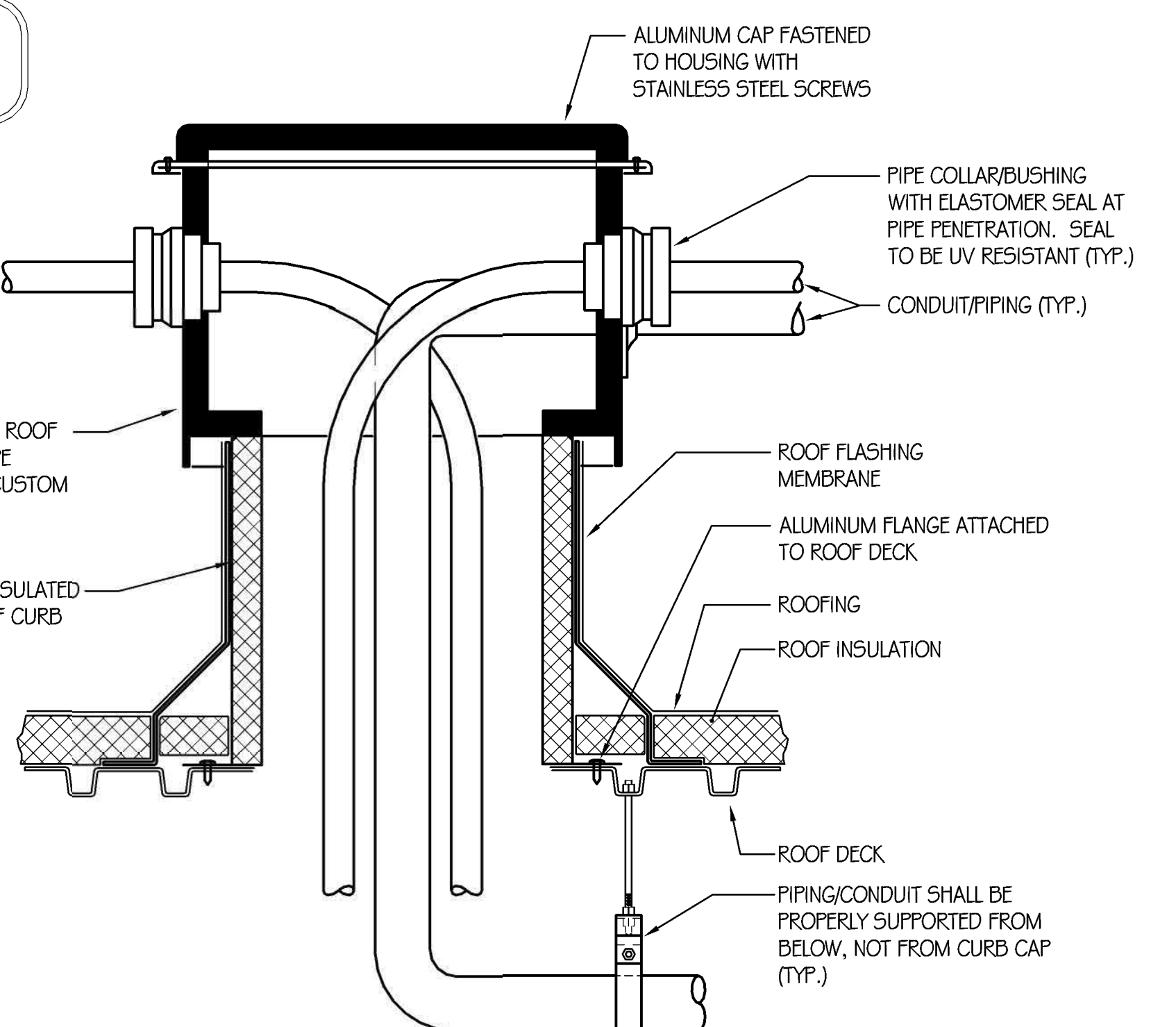
TYPICAL PIPE HANGER DETAILS

NO SCALE



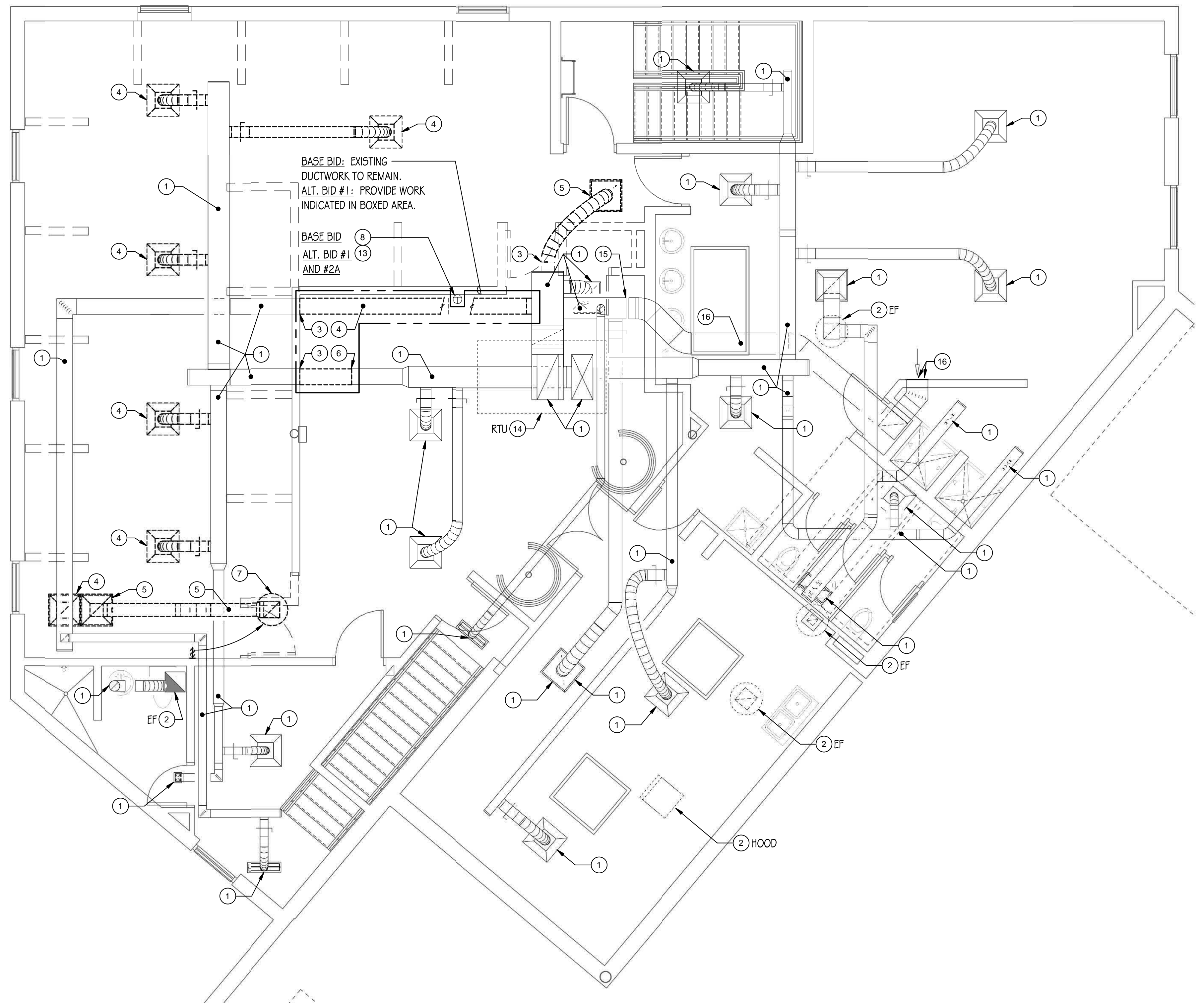
PIPING OR CONDUIT ROOF CURB DETAIL

NO SCALE



PIPE PENETRATION OF INTERIOR WALL DETAIL

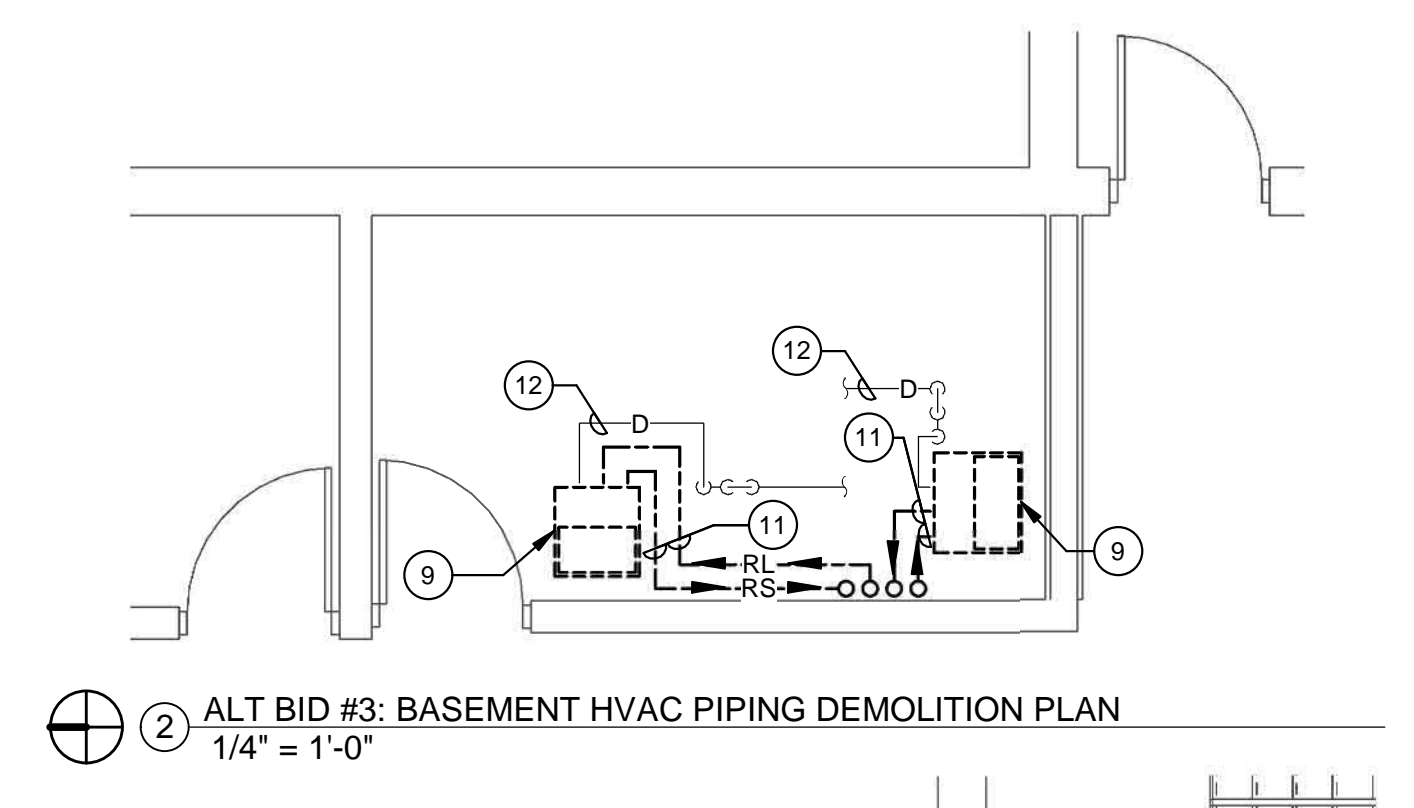
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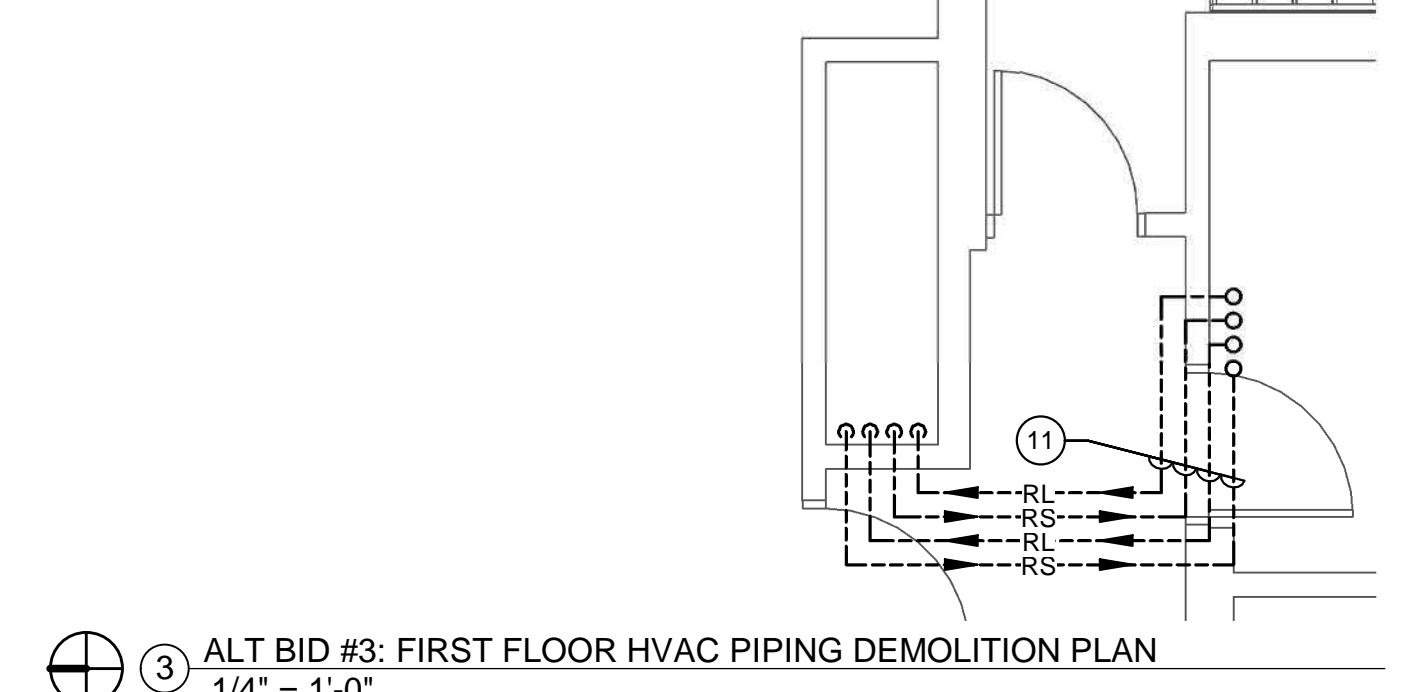
⊕ 1 SECOND FLOOR HVAC DEMOLITION PLAN
1/4" = 1'-0"

DRAWING NOTES

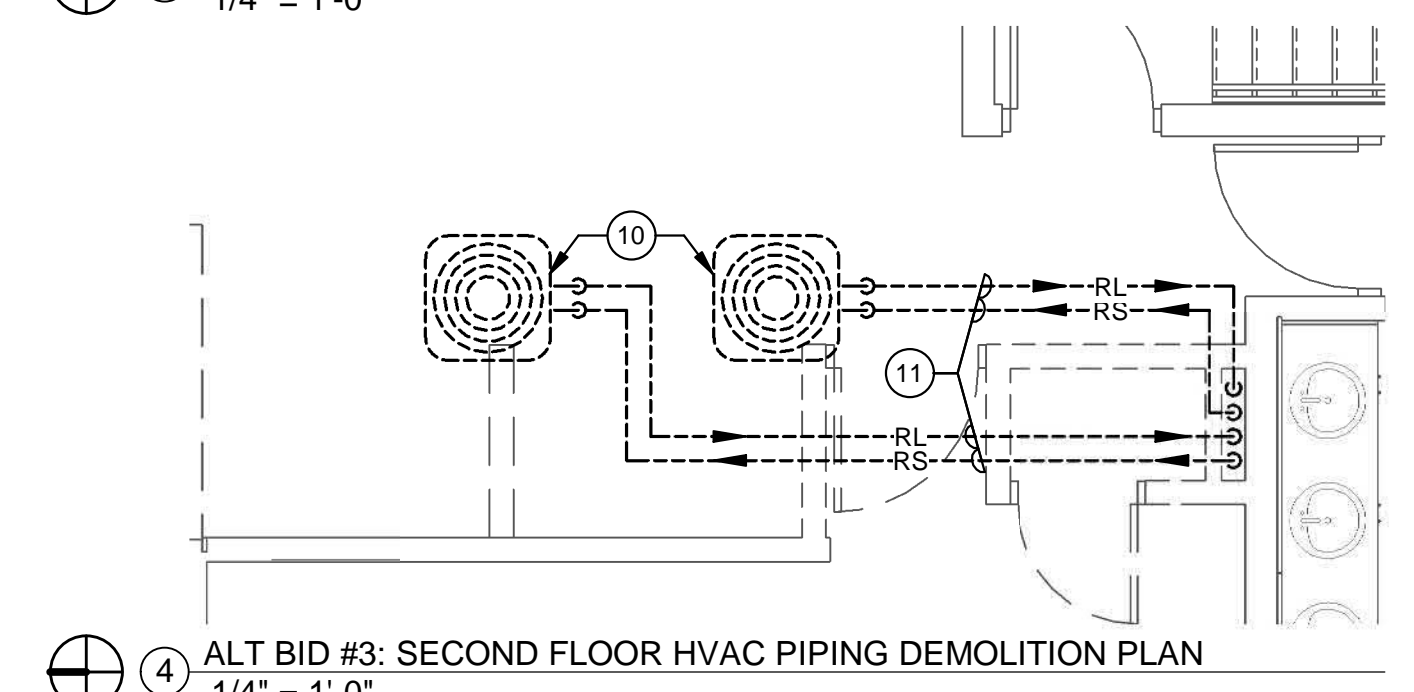
- 1 EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
- 2 EXISTING HVAC EQUIPMENT TO REMAIN.
- 3 NEW CONNECTION TO BE MADE AT THIS LOCATION. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
- 4 REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED AND CAP AT MAIN.
- 5 REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED.
- 6 CAP EXISTING DUCT AT LOCATION SHOWN AND REMOVE ALL DUCTWORK, REGISTERS, DIFFUSERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
- 7 REMOVE EXISTING EXHAUST FAN AND ALL ASSOCIATED DUCTWORK, GRILLES, REGISTERS, DAMPERS, INSULATION, CONTROLS, ETC. REMOVE ROOF CURB UNLESS NOTED OTHERWISE.
- 8 EXISTING THERMOSTAT TO REMAIN.
- 9 REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED PIPING, VALVING, CONTROLS, HANGERS, SUPPORTS, INSULATION, ETC. REQUIRED FOR REPLACEMENT. EXISTING DUCTWORK AND DRAIN PIPING TO BE MODIFIED AS REQUIRED TO ACCEPT NEW FAN COIL UNIT.
- 10 REMOVE AIR COOLED CONDENSING UNIT AND ALL ASSOCIATED PIPING, VALVING, AND CONTROLS. ROOF SUPPORTS TO REMAIN.
- 11 REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED.
- 12 EXISTING PIPING AND VALVING TO REMAIN.
- 13 REMOVE EXISTING THERMOSTAT INCLUDING ALL ASSOCIATED CONDUIT, WIRING, PNEUMATIC TUBING, ETC. LOCATED ABOVE ANY ACCESSIBLE CEILING BETWEEN THERMOSTAT AND THE UNIT IT CONTROLS. PROVIDE BLANK COVER PLATE OVER ALL ABANDONED JUNCTION BOXES IN WALLS THAT ARE TO REMAIN.
- 14 BASE BID: EXISTING HVAC EQUIPMENT TO REMAIN. ALT. BID #1: REMOVE EXISTING ROOFTOP UNIT AND ALL ASSOCIATED CONTROLS. ALL ASSOCIATED DUCTWORK, DAMPERS, PIPING, VALVING, HANGERS, SUPPORTS, INSULATION, ETC. TO REMAIN. MODIFY ROOF CURB AS REQUIRED TO PROPERLY INSTALL NEW ROOFTOP UNIT.
- 15 CAP EXISTING DUCT AT LOCATION SHOWN AND ABANDON IN PLACE ALL DUCTWORK, REGISTERS, DIFFUSERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
- 16 EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO BE ABANDONED IN PLACE.



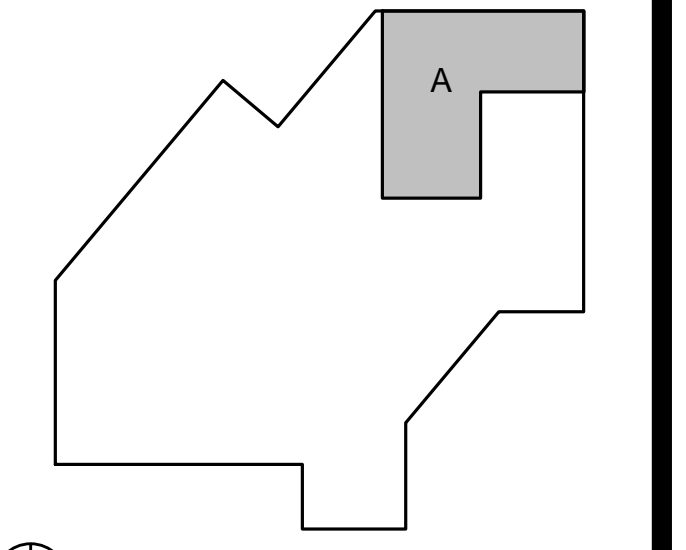
⊕ 2 ALT BID #3: BASEMENT HVAC PIPING DEMOLITION PLAN
1/4" = 1'-0"



⊕ 3 ALT BID #3: FIRST FLOOR HVAC PIPING DEMOLITION PLAN
1/4" = 1'-0"



⊕ 4 ALT BID #3: SECOND FLOOR HVAC PIPING DEMOLITION PLAN
1/4" = 1'-0"

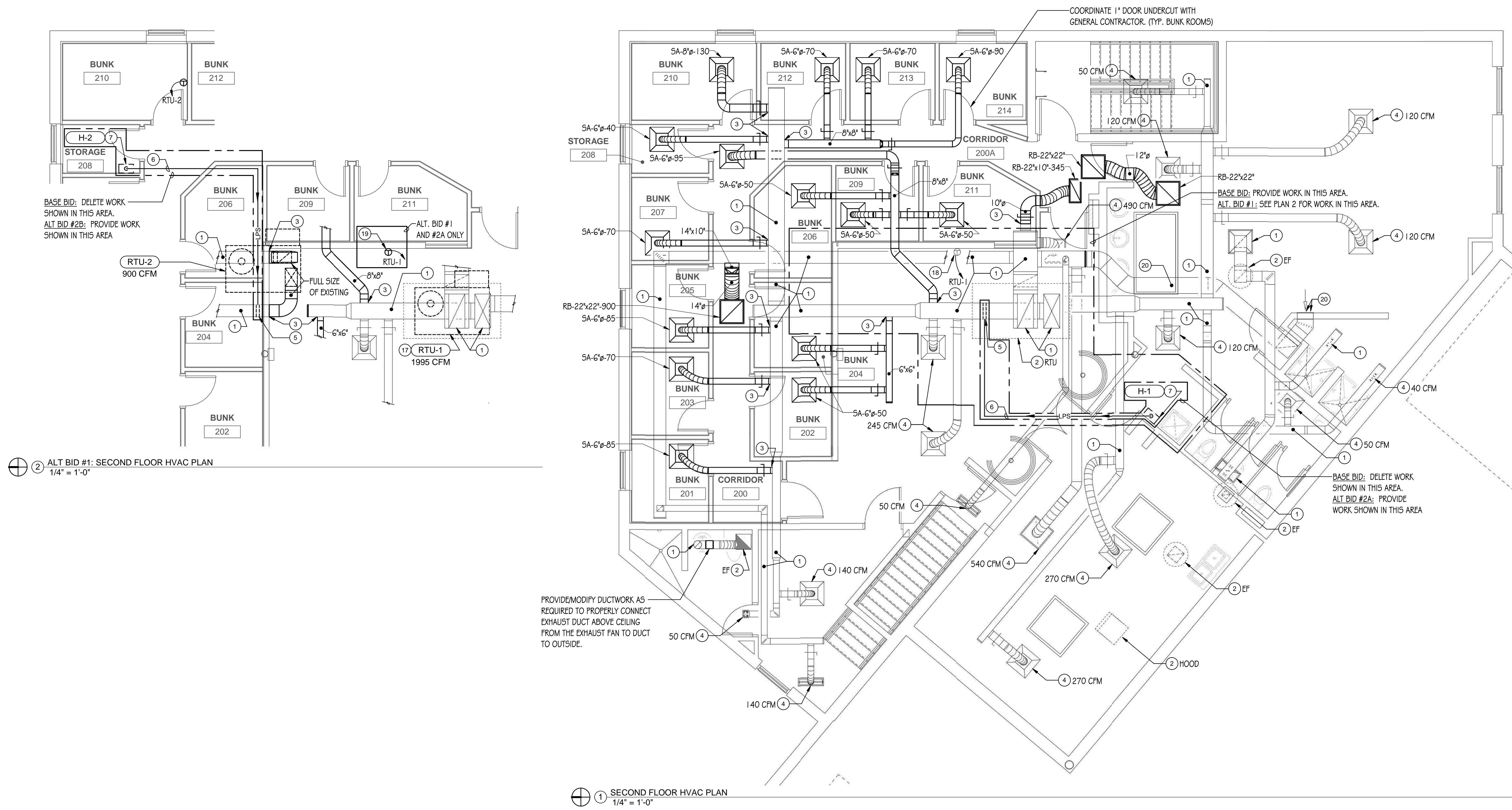


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HVAC DEMOLITION PLANS

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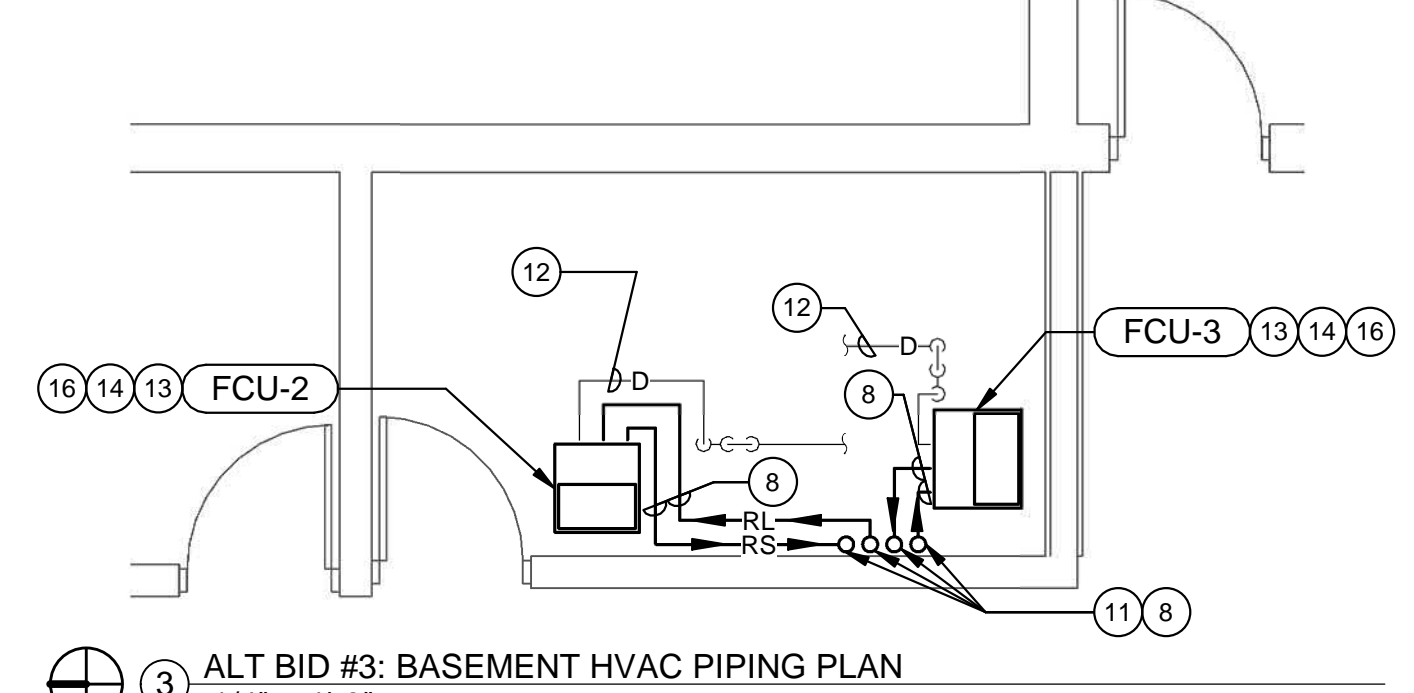


⊕ ② ALT BID #1: SECOND FLOOR HVAC PLAN
1/4" = 1'-0"

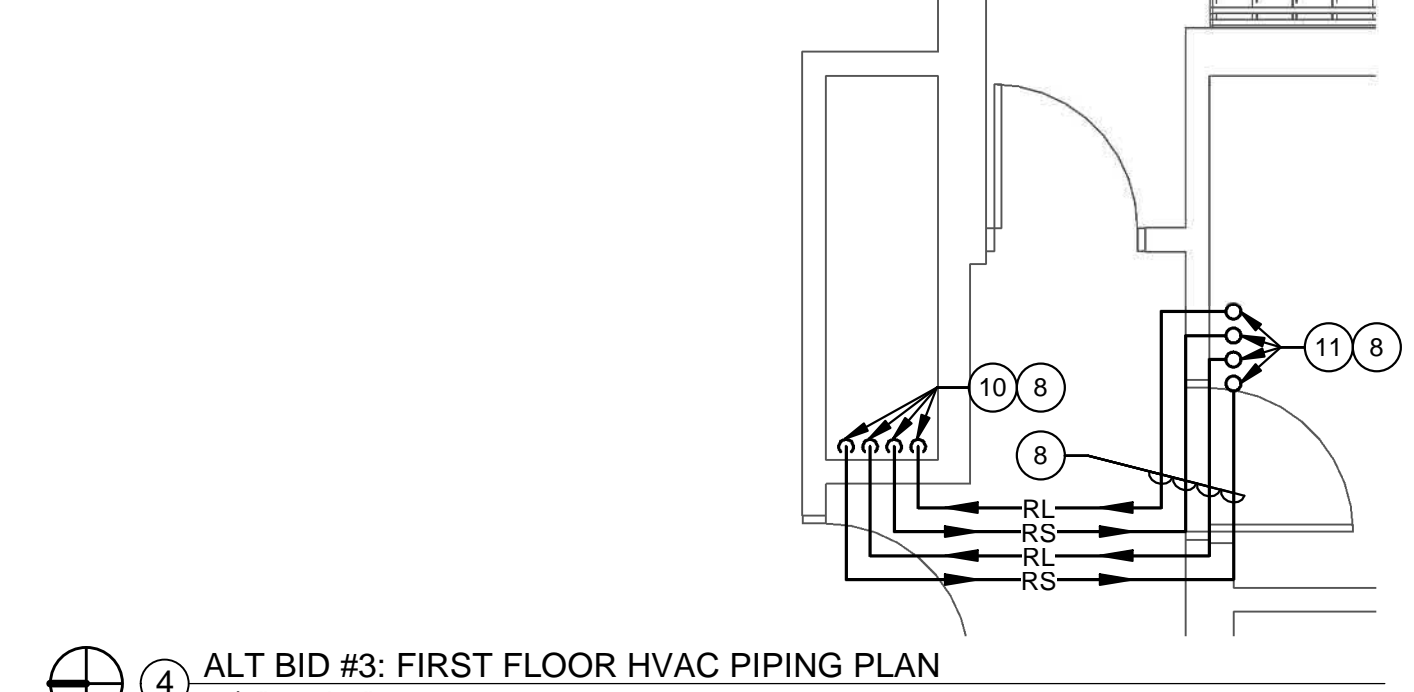
⊕ ① SECOND FLOOR HVAC PLAN
1/4" = 1'-0"

DRAWING NOTES

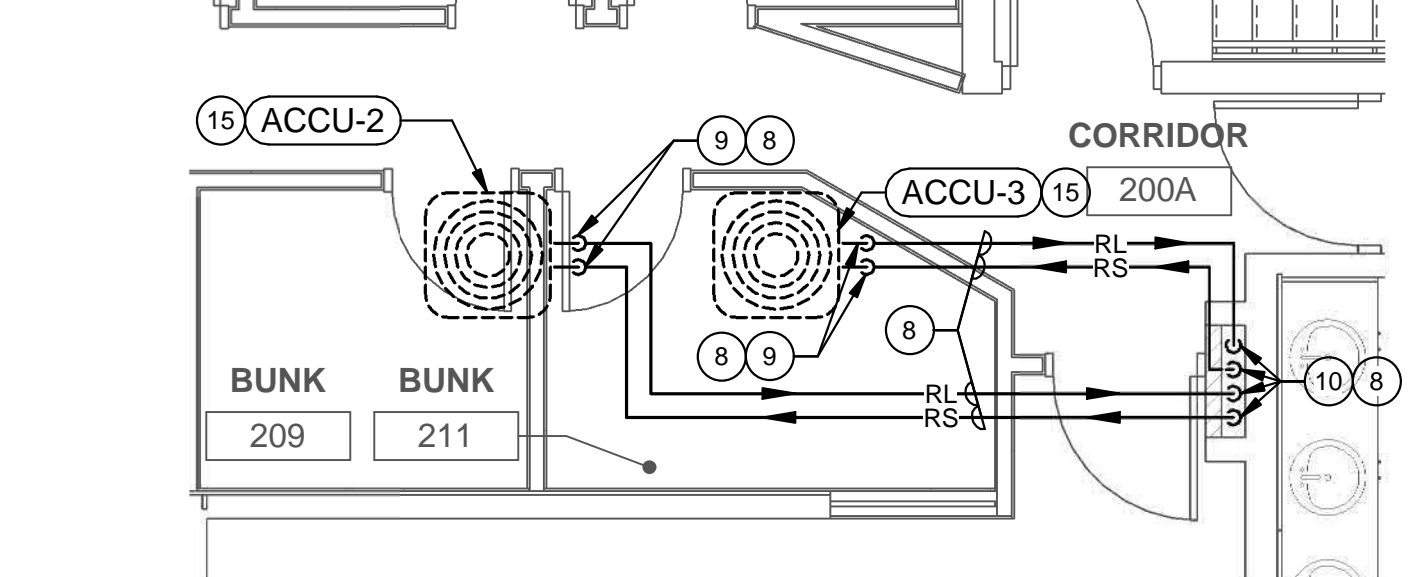
- 1 EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
- 2 EXISTING HVAC EQUIPMENT TO REMAIN.
- 3 MAKE NEW CONNECTION TO EXISTING DUCTWORK AT THIS LOCATION.
- 4 BALANCE EXISTING DIFFUSER TO AIRFLOW RATE INDICATED.
- 5 HUMIDIFIER MANUFACTURER'S SINGLE DISPERSION TUBE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTION IN EXISTING DUCTWORK.
- 6 1 1/2" COPPER TUBING INSULATED 2" THICK AND PITCHED 1/2" PER FOOT AND INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTION. PIPE LENGTH NOT TO EXCEED 32'.
- 7 HUMIDIFIER TO BE MOUNTED ON WALL AND BE ACCESSIBLE FROM THE JANITOR CLOSET. ROUTE UNIT DRAIN TO EXISTING MOP BASIN NEW FLOOR DRAIN IN ROOM. MAINTAIN ALL MANUFACTURER'S SERVICE CLEARANCES. SEE DETAIL.
- 8 REFRIGERANT PIPING SIZED, INSULATED, SUPPORTED, AND INSTALLED IN STRICT ACCORDANCE WITH EQUIPMENT MANUFACTURER'S INSTRUCTION.
- 9 PIPE OF SIZE INDICATED UP THRU ROOF.
- 10 PIPE OF SIZE INDICATED DOWN THRU FLOOR.
- 11 PIPE OF SIZE INDICATED UP THRU FLOOR.
- 12 EXISTING PIPING AND VALVING TO REMAIN.
- 13 MODIFY EXISTING DUCTWORK AS REQUIRED TO PROPERLY INSTALL NEW FAN COIL UNIT. PROVIDE NEW WEB BASED THERMOSTAT AT SAME LOCATION AS FORMER THERMOSTAT. FIELD VERIFY.
- 14 MODIFY EXISTING CONDENSATE DRAIN AS REQUIRED TO PROPERLY INSTALL NEW FAN COIL UNIT.
- 15 MODIFY EXISTING ROOF SUPPORTS AS REQUIRED TO PROPERLY SUPPORT NEW UNIT.
- 16 CAREFULLY REMOVE EXISTING IONIZER FROM EXISTING FAN COIL UNIT CABINET AND RE-INSTALL IN NEW FAN COIL UNIT IN ACCORDANCE WITH IONIZER MANUFACTURER'S INSTRUCTION.
- 17 EXISTING ROOF CURB TO REMAIN AND BE MODIFIED TO PROPERLY ACCEPT NEW EQUIPMENT.
- 18 EXISTING THERMOSTAT TO REMAIN.
- 19 NEW WALL MOUNTED TEMPERATURE SENSOR AT SAME LOCATION AS FORMER THERMOSTAT.
- 20 EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO BE ABANDONED IN PLACE.



⊕ ③ ALT BID #3: BASEMENT HVAC PIPING PLAN
1/4" = 1'-0"



⊕ ④ ALT BID #3: FIRST FLOOR HVAC PIPING PLAN
1/4" = 1'-0"



⊕ ⑤ ALT BID #3: SECOND FLOOR HVAC PIPING PLAN
1/4" = 1'-0"

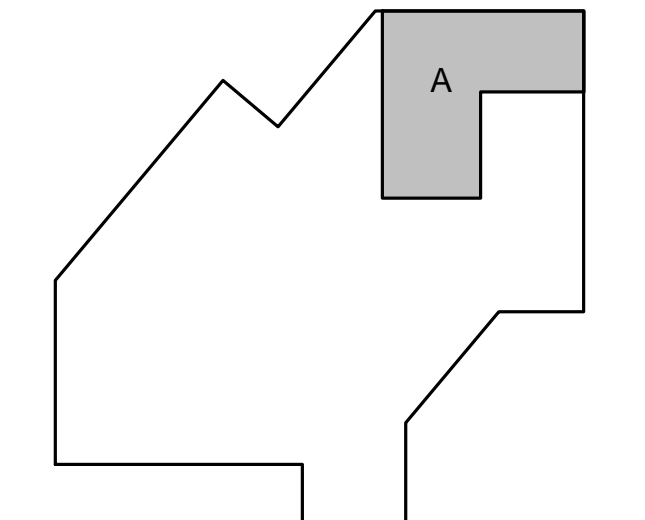


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Fax 847.882.2201
2010 ENGINEERING GROUP LLC
Design Firm Registration Number:
184.004110-0006

Second Floor Bunk House Floor Plan

Village of Oak Park
100 N Euclid Ave, Oak Park, IL 60301



⊕ KEY PLAN

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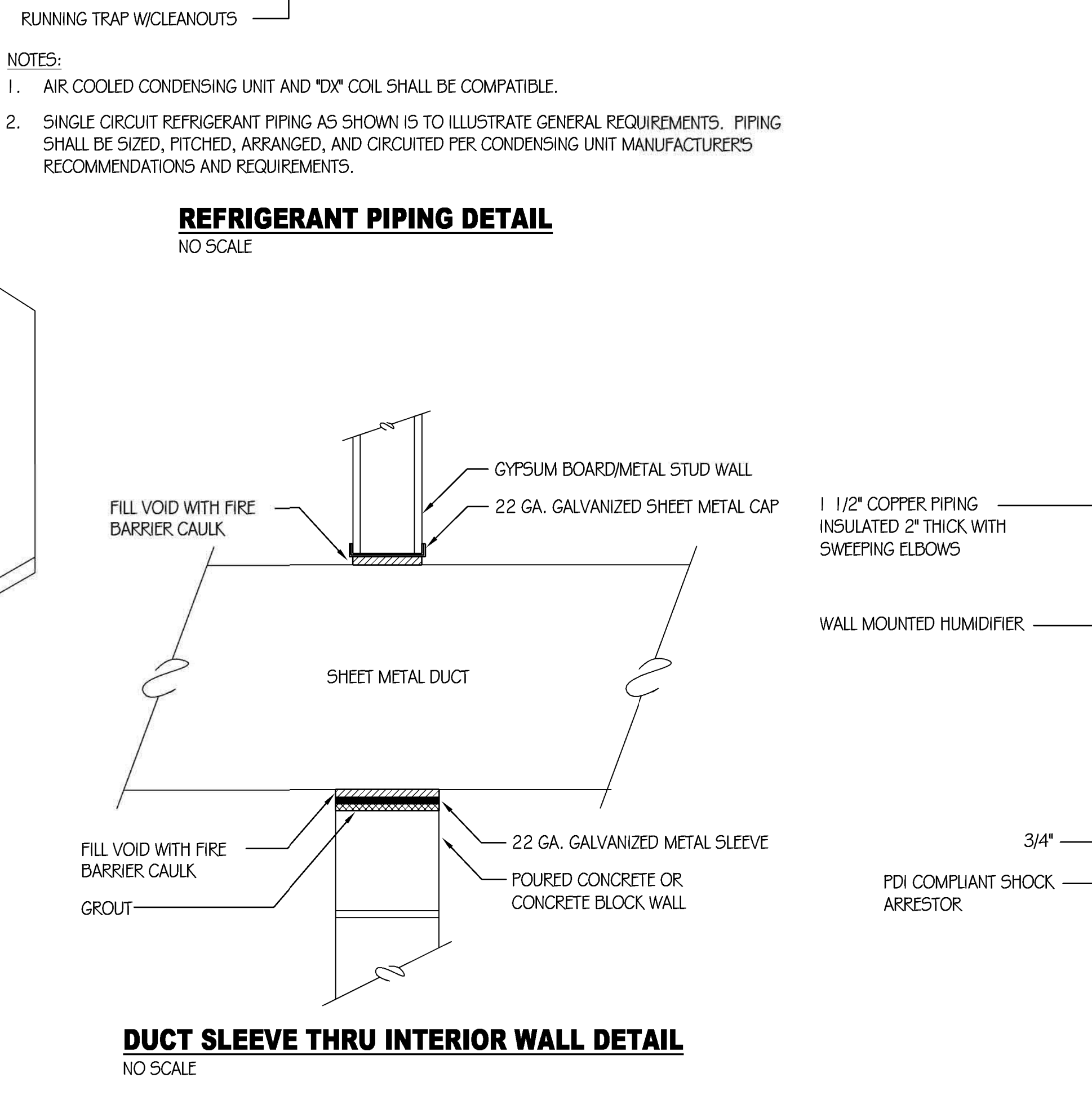
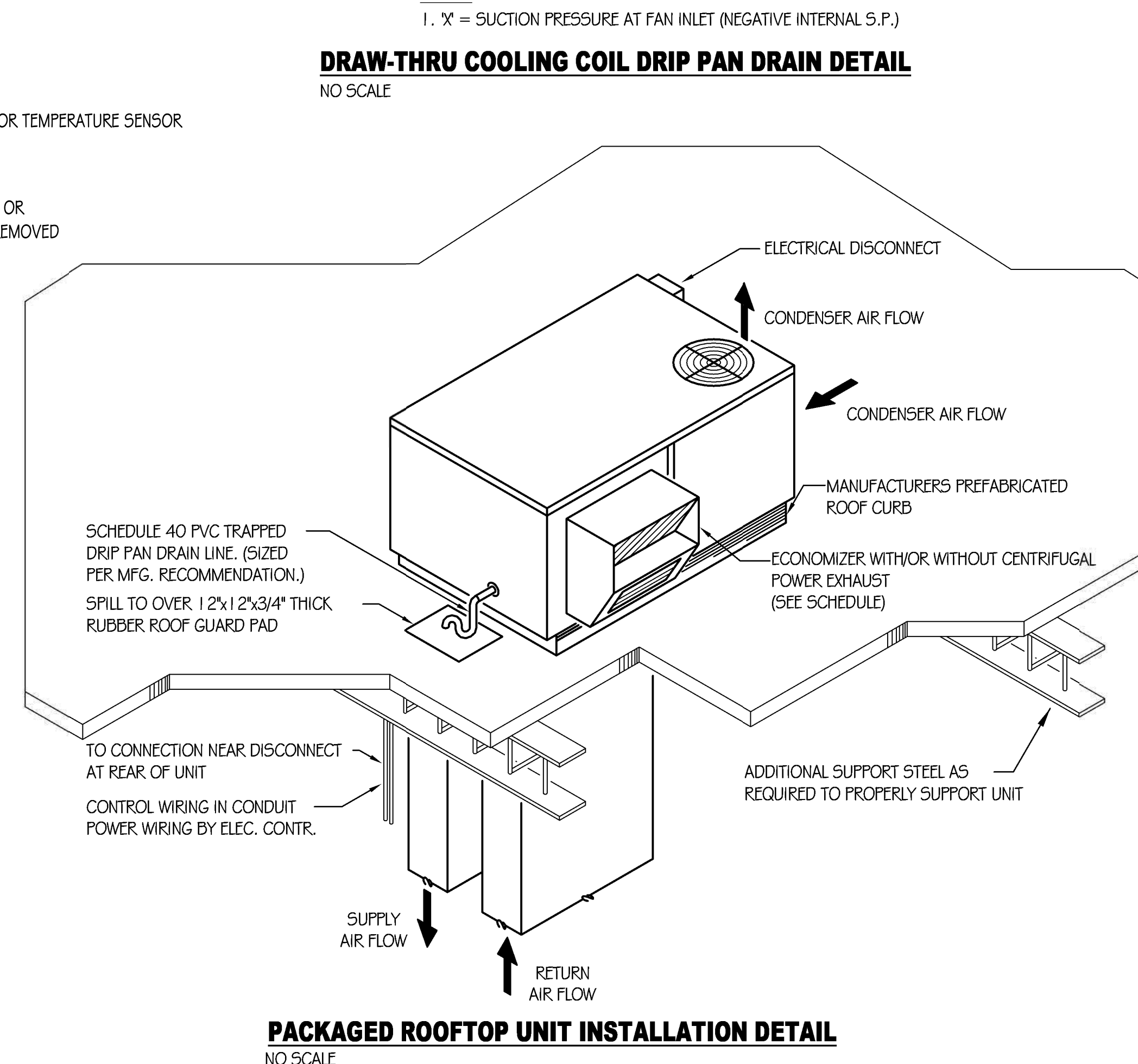
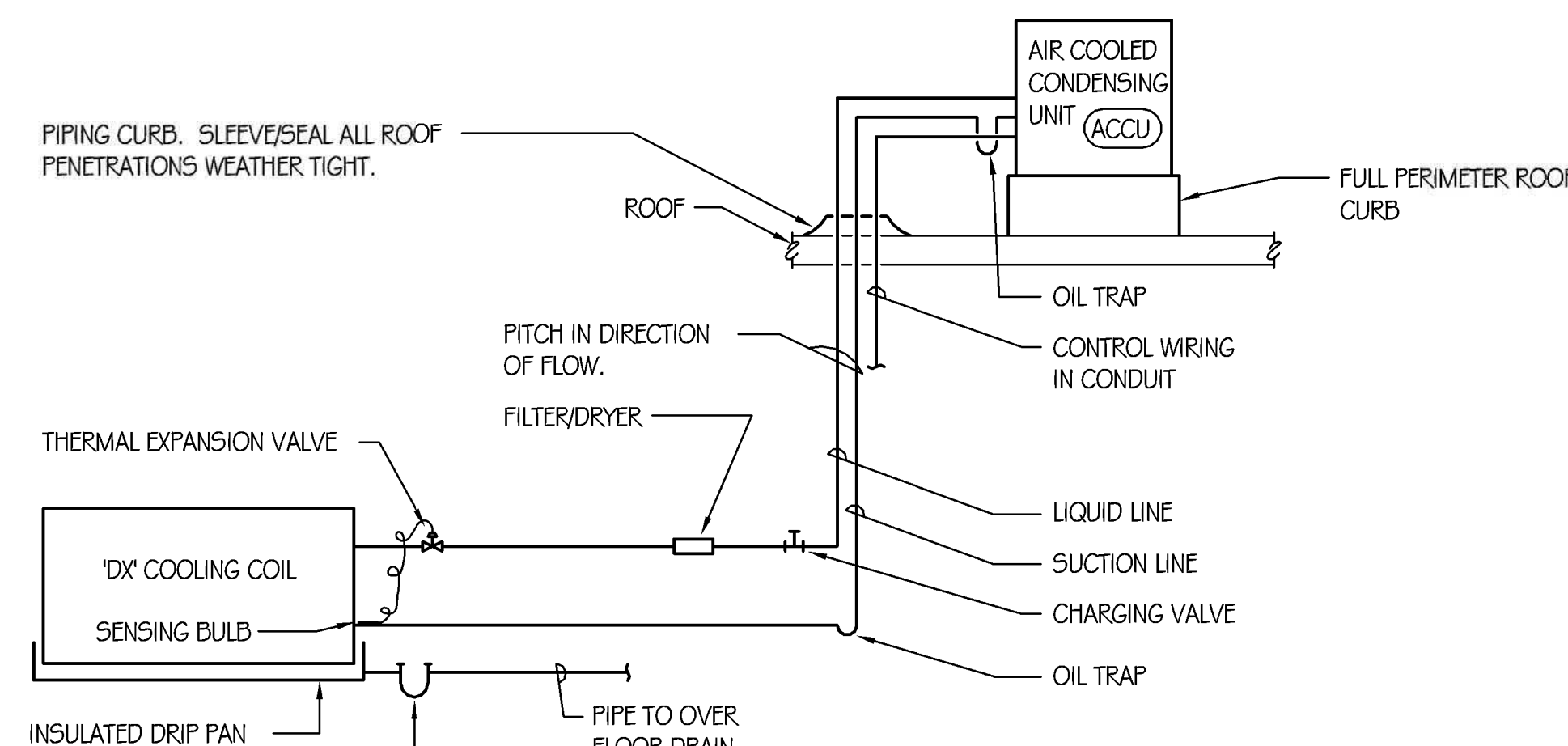
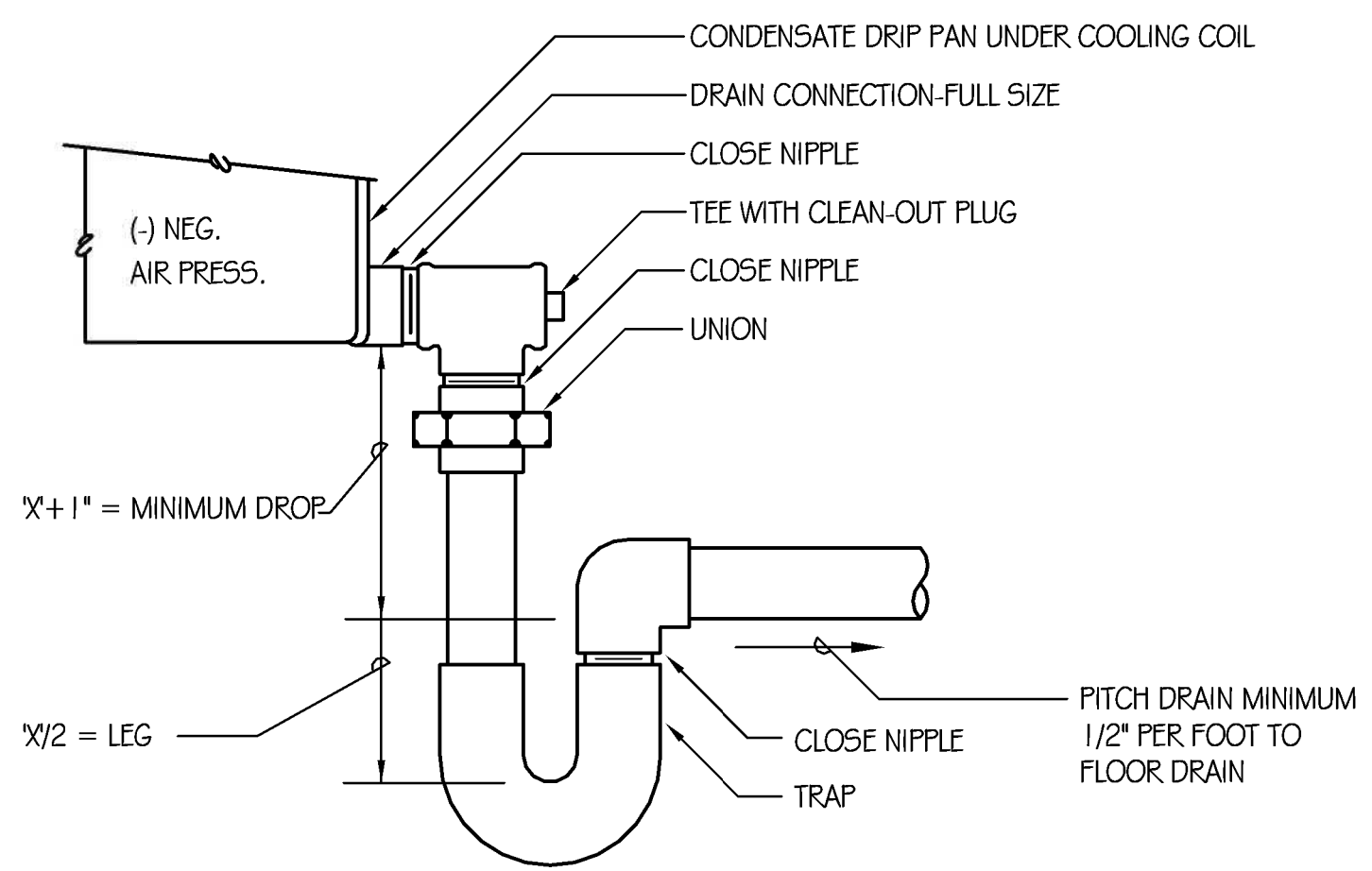
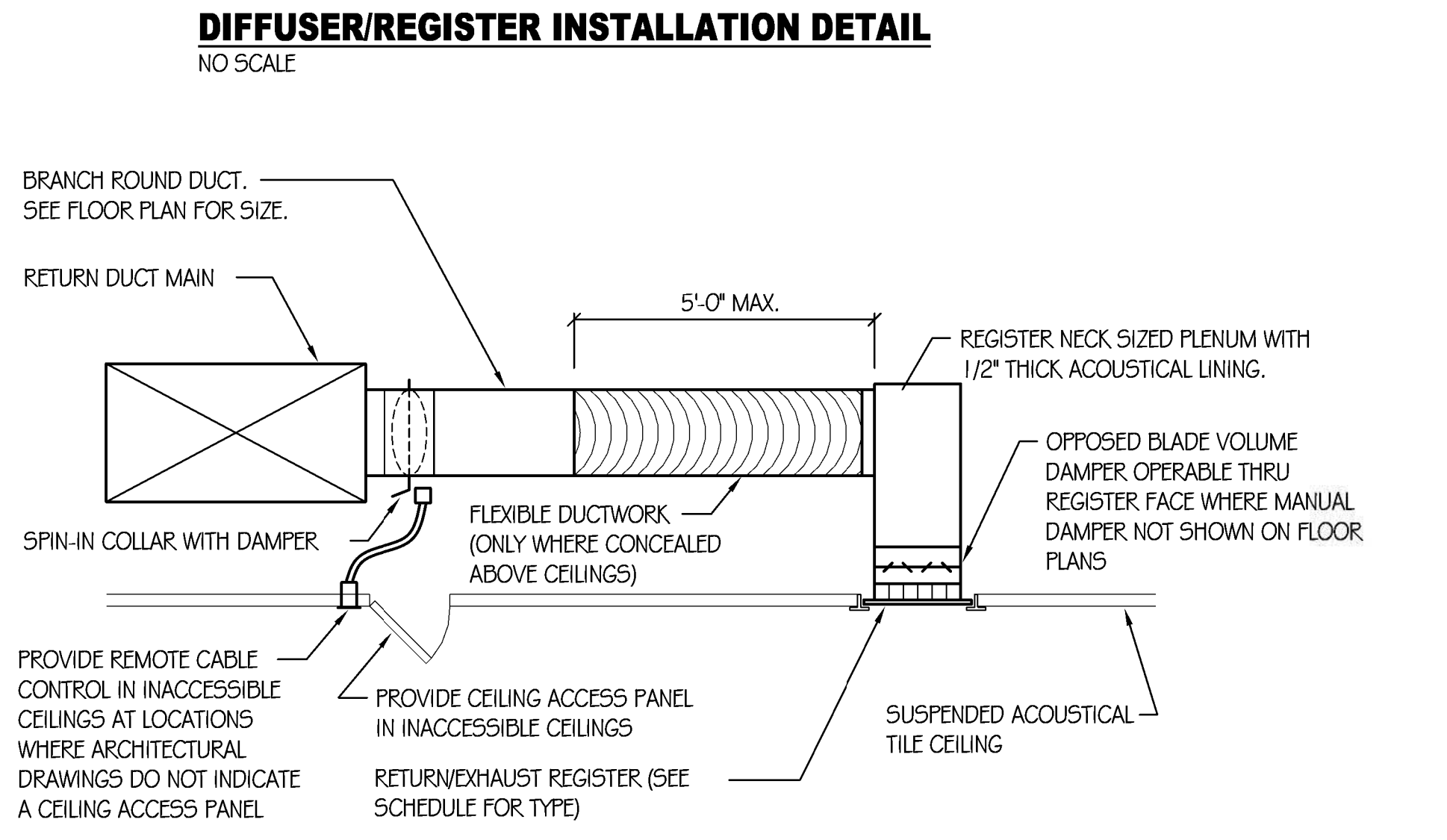
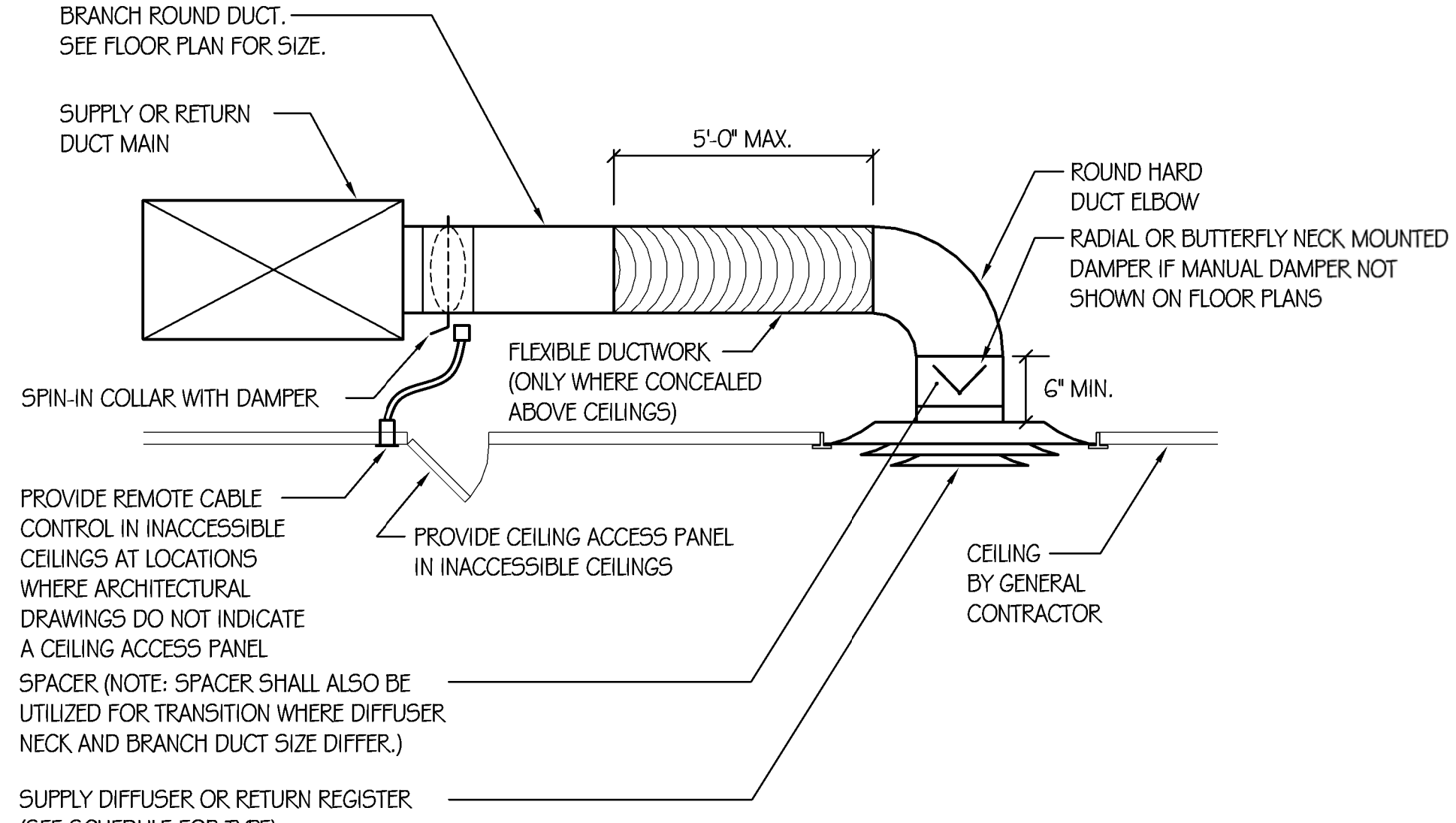
HVAC PLANS

HV1.10
23016

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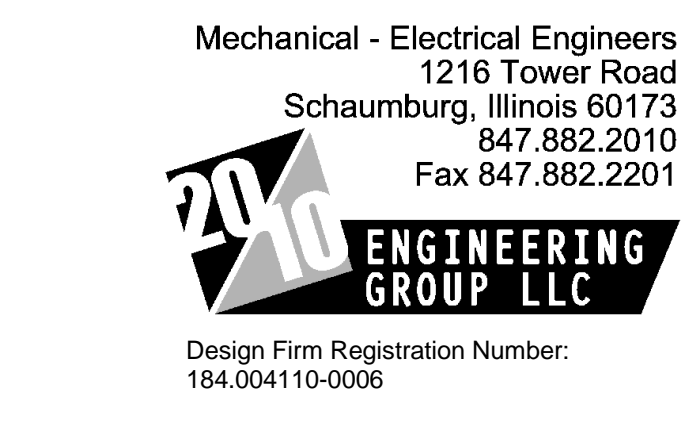
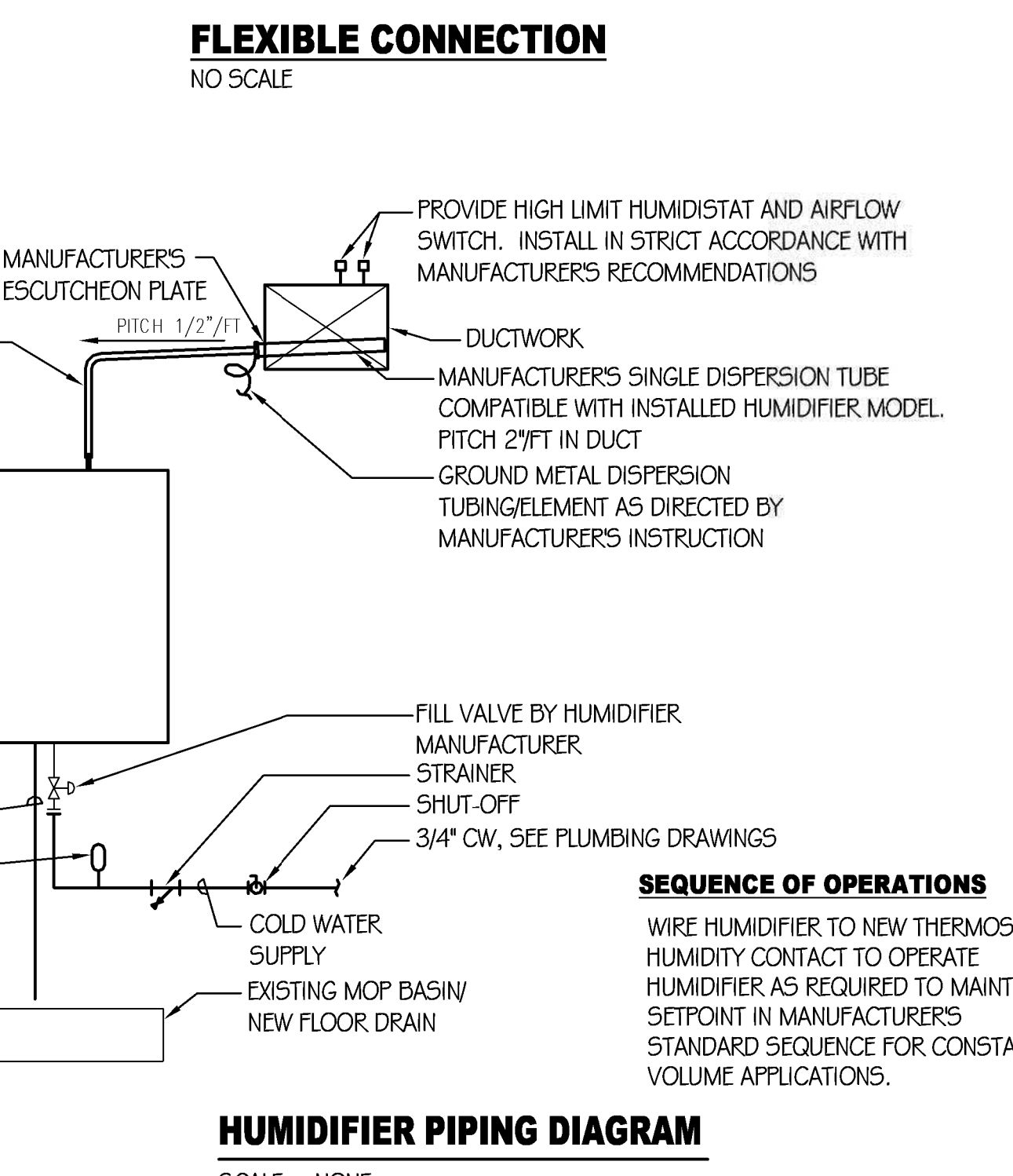
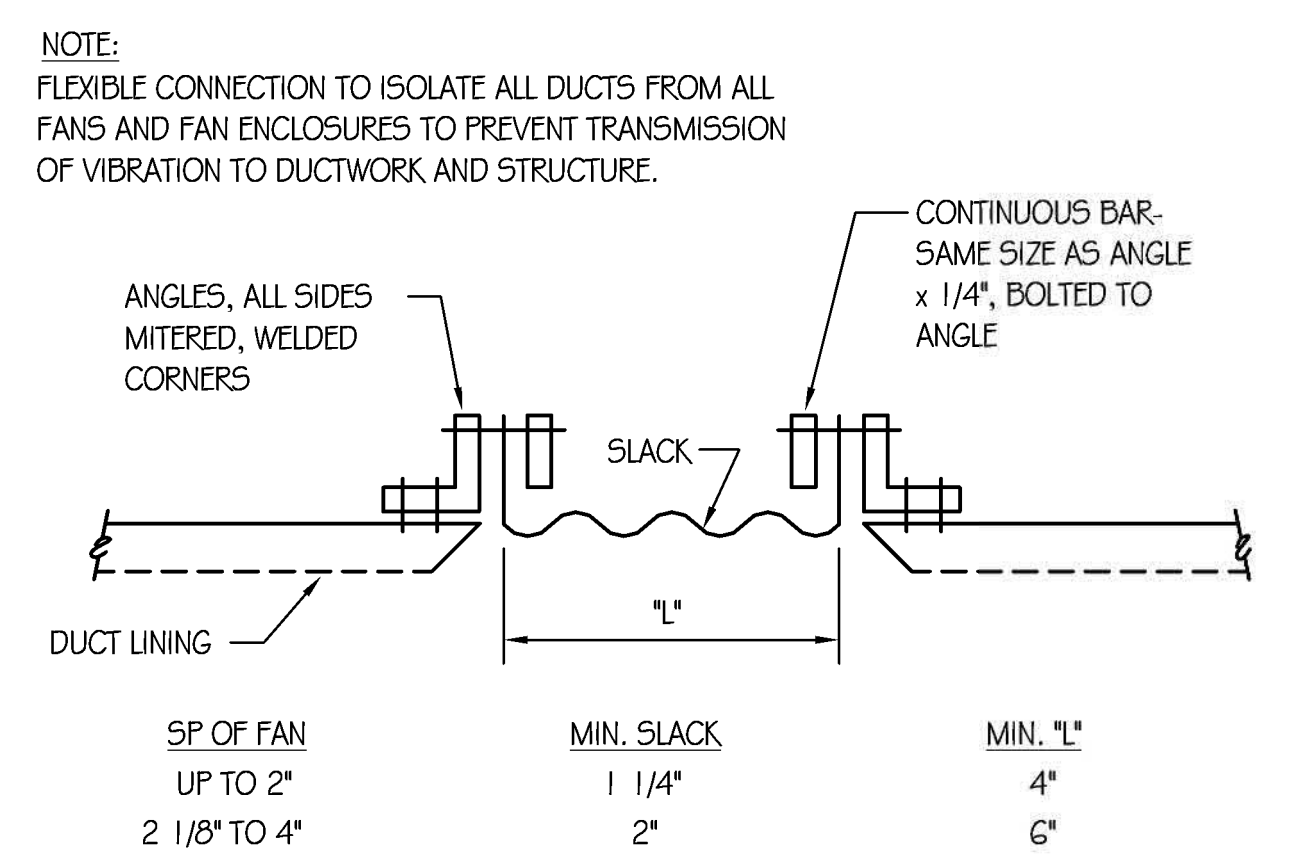
HVAC SYMBOLS AND ABBREVIATIONS

ACCU	AIR COOLED CONDENSING UNIT	LPS	LOW PRESSURE STEAM (UP TO 15 PSIG)
BAS	BUILDING AUTOMATION SYSTEM	RS	REFRIGERANT SUCTION
BHP	BRAKE HORSEPOWER	RL	REFRIGERANT LIQUID
BTU	BRITISH THERMAL UNIT	D	DRAIN LINE
BTUH	BRITISH THERMAL UNIT PER HOUR	BV	BALL VALVE (2" & SMALLER)
CFM	CUBIC FEET PER MINUTE	BVL	BUTTERFLY VALVE (2 1/2" & LARGER)
D	DRAIN LINE	CV	3 WAY CONTROL VALVE
DB	DRY BULB	CV2	2 WAY CONTROL VALVE
DN.	DOWN	PA	PIPE ANCHOR
EAT	ENTERING AIR TEMPERATURE	ST	STRAINER
EF	EXHAUST FAN	STBV	STRAINER WITH BLOWDOWN VALVE
E5P	EXTERNAL STATIC PRESSURE	FE	DIRECTION OF FLOW
EWT	ENTERING WATER TEMPERATURE	EB	PIPE ELBOW (TURNED UP)
F	FAHRENHEIT	ED	PIPE ELBOW (TURNED DOWN)
FCU	FAN COIL UNIT	FTD	PIPE TEE DOWN (DROP)
FD	FLOOR DRAIN	FUT	PIPE TEE UP
FID	FIRE DAMPER	FUA	PIPE TEE UP OR ANGLE
GC	GENERAL CONTRACTOR	FUD	PIPE TEE DOWN OR ANGLE
GPM	GALLONS PER MINUTE	FD	FLEXIBLE DUCT CONNECTION
HP	HORSEPOWER	MS	MANUAL SINGLE BLADE OR OPPOSED BLADE DAMPER
LAT	LEAVING AIR TEMPERATURE	AF	AIR FLOW
LWT	LEAVING WATER TEMPERATURE	MCA	DUCT SIZE FREE AREA (1ST FIGURE, SIDE OF DUCT SHOWN)
MCA	MINIMUM CIRCUIT AMPS	MOC	MAXIMUM OVERCURRENT PROTECTION
MOC	MAXIMUM OVERCURRENT PROTECTION	NC	CROSS-SECTION OF SUPPLY OR OUTSIDE AIR INTAKE DUCT
NC	NEW CONNECTION	NK	NECK
NK	NECK	PA	CROSS-SECTION OF RETURN OR EXHAUST DUCT
PA	PIPE ANCHOR	PD	PRESSURE DROP
PD	PRESSURE DROP	PE	PIPE ENCLOSURE
PE	PIPE ENCLOSURE	PH	PHASE
PH	PHASE	PSI	POUNDS PER SQUARE INCH
PSI	POUNDS PER SQUARE INCH	RPM	REVOLUTIONS PER MINUTE
RPM	REVOLUTIONS PER MINUTE	RTU	ROOFTOP UNIT
RTU	ROOFTOP UNIT	SF	SUPPLY FAN
SF	SUPPLY FAN	SMD	SMOKE DETECTOR
SMD	SMOKE DETECTOR	SP	STATIC PRESSURE
SP	STATIC PRESSURE	TC	TEMPERATURE CONTROL
TC	TEMPERATURE CONTROL	TSP	TOTAL STATIC PRESSURE
TSP	TOTAL STATIC PRESSURE	TYP.	TYPICAL
TYP.	TYPICAL	UC	UNDERCUT DOOR
UC	UNDERCUT DOOR	WB	WET BULB
WB	WET BULB	W.C.	WATER COLUMN
W.C.	WATER COLUMN	WG	WATER GAUGE
WG	WATER GAUGE		

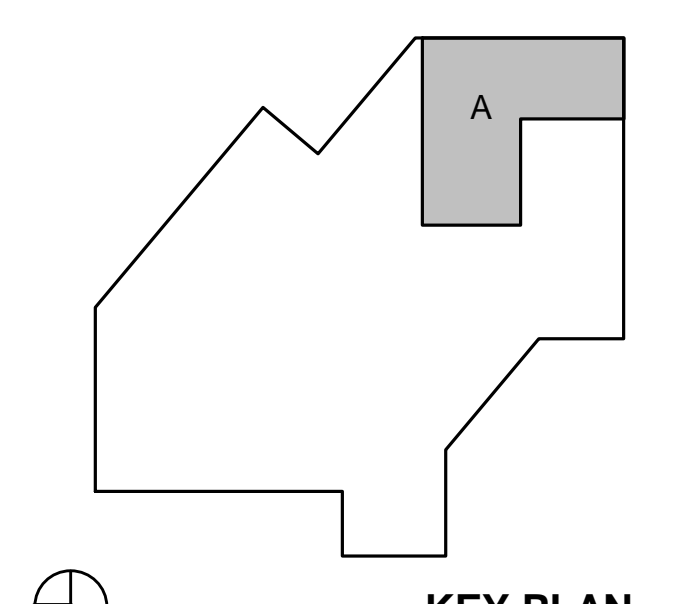


GENERAL NOTES - HVAC WORK:

- ALL NEW WORK AND MATERIALS SHALL CONFORM TO VILLAGE OF OAK PARK CODE AND VILLAGE OF OAK PARK BUILDING STANDARDS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND INSPECTIONS AND PAYING THEIR ASSOCIATED FEES.
- NOISE AND VIBRATION WILL NOT BE TOLERATED. CONTRACTOR SHALL BID ON FURNISHING EVERY DETAIL TO ASSURE THIS END.
- PATCH AND REFINISH ALL DAMAGED INSULATED SURFACES OF ALL EXISTING DUCTWORK, PIPING AND ASSOCIATED FITTINGS TO MATCH EXISTING WHERE NEW CONNECTIONS ARE BEING MADE.
- CONTRACTORS SHALL PROVIDE A ONE YEAR WARRANTY ON ALL MATERIALS, EQUIPMENT AND LABOR FROM DATE OF SUBSTANTIAL COMPLETION OF WORK EXCEPT AS FOLLOWS: PROVIDE A 5 YEAR PARTS AND LABOR WARRANTY FOR ROOFTOP UNIT COMPRESSOR.
- THE LOCATIONS SHOWN FOR ALL DIFFUSERS, REGISTERS AND GRILLES, ETC. ARE DIAGRAMMATIC. EXACT LOCATION SHALL BE DETERMINED FROM THE REFLECTED CEILING PLANS AND/OR ON THE JOB SITE BY THE ARCHITECT/ENGINEER REPRESENTATIVES.
- EXCEPT AS NOTED OTHERWISE, ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK SHALL BE GALVANIZED SHEET METAL WITH SEALED JOINTS CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH CURRENT SMACNA MANUAL. SIZES SHOWN ARE INSIDE FACE TO INSIDE FACE.
- ROUND EXPOSED SUPPLY OR RETURN DUCTWORK SHALL BE SINGLE WALL SPIRAL GALVANIZED.
- ALL NEW CONCEALED SUPPLY DUCTWORK SHALL BE EXTERNALLY INSULATED 1 1/2\"/>



Second Floor Bunk House Floor Plan



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HVAC ABBREVIATIONS, DETAILS, LEGEND, AND SPECS

HV4.00

ROOFTOP UNIT SCHEDULE																																									
EQUIP TAG	LOCATION	AREA SERVED	MANUF	MODEL	SYSTEM TYPE	UNIT TYPE	PHYSICAL CHARACTERISTICS				SUPPLY FAN						HEATING SECTION				COOLING SECTION						ELECTRICAL DATA				NOTES										
							DIMENSIONS (IN.)			WEIGHT (LBS)	CFM	CODE OA	CONTROL MIN. OA	ESP (IN.)	TYPE	DRIVE TYPE	MOTOR			KW	STAGES	EAT (°F)	LAT (°F)	QTY	CAPACITY STEPS	EER	IEER/SEER	REFRIG. TYPE	SENSIBLE CAPACITY (BTU/H)	TOTAL CAPACITY (BTU/H)		OAT (DB °F)	EAT (DB °F)	EAT (WB °F)	LAT (DB °F)	LAT (WB °F)	FILTER TYPE	MCA	MOCP	PH	VOLT
							LENGTH	WIDTH	HEIGHT								BHP	RPM	HP																						
RTU-1	ROOF	INTERIOR ROOMS	CARRIER	50FC-B06	CAV	VERT.	74 3/8"	46 5/8"	33 3/8"	714	1,995	500	200	0.50	FC	DIRECT	0.9	2057	1.40	18	1	49.9	79.1	1	1	11	14	R-410A	44,700	59,300	95.0	80.0	67.0	59.3	57.7	2" THROWAWAY	76.0	80	3	208	1,2,3,5,6,7
RTU-2	ROOF	PERIMETER ROOMS	CARRIER	50FC-B04	CAV	VERT.	74 3/8"	46 5/8"	33 3/8"	640	900	225	90	0.50	FC	DIRECT	0.3	1669	0.70	12	1	50.0	92.1	1	1	11.5	14	R-410A	25,400	35,100	95.0	80.0	67.0	60.4	57.9	2" THROWAWAY	49.0	50	3	208	1,2,4,5,6,7

NOTES:

- OTHER ACCEPTABLE MANUFACTURERS: TRANE, DAIKIN, YORK.
- PROVIDE THE FOLLOWING FACTORY INSTALLED OPTIONS: HINGED ACCESS PANELS, HAIL GUARD, IECC COMPLIANT ECONOMIZER WITH POWERED EXHAUST, REHEAT COIL FOR DEHUMIDIFICATION SEQUENCE, FIELD-POWERED CONVENIENCE OUTLET, PHASE PROTECTION MONITOR, AND NON-FUSED DISCONNECT.
- INSULATED ADAPTER ROOF CURB TO MATE WITH EXISTING ROOF CURB - FIELD MEASURE PRIOR TO PLACING ORDER.
- PROVIDE MANUFACTURER'S 24" ROOF CURB.
- PROVIDE WEB-BASED PROGRAMMABLE THERMOSTAT WITH HUMIDIFICATION, DEHUMIDIFICATION, AND DCV FUNCTION.
- PROVIDE GFS IONIZATION DEVICE AT FAN INLET SIZED FOR SYSTEM AIRFLOW. WIRE TO UNIT LOW VOLTAGE POWER AS DIRECTED BY MANUFACTURER.
- PROVIDE ONLY IF ALTERNATE BID #1 IS ACCEPTED.

FAN COIL UNIT SCHEDULE																													
EQUIP TAG	LOCATION	AREA SERVED	MANUF.	MODEL	TYPE	APPROXIMATE OVERALL DIMENSIONS (IN.)			AIRFLOW (CFM)	FAN				HEATING			"DX" COIL SECTION						FILTERS	ELECTRICAL DATA				NOTES	
						L	W	H		MIN. OA (CFM)	ESP (IN.)	TYPE	MOTOR		KW	EAT (°F)	LAT (°F)	EAT (DB °F)	EAT (WB °F)	LAT (DB °F)	LAT (WB °F)	SENSIBLE CAPACITY (MBH)		TOTAL CAPACITY (MBH)	MCA	MOCP	PHASE		VOLT
													PHASE	VOLT															
FCU-2	BASEMENT MECHANICAL	BASEMENT	CARRIER	FJ4DNXC48L00	VERTICAL UPFLOW	22.1	21.1	53.4	1500	375	0.50	FC	I	208	15	50.0	81.6	80.0	67.0	59.6	57.1	33060	47360	I IN. THICK THROWAWAY	96.6	100	I	208	1,2,3,4
FCU-3	BASEMENT MECHANICAL	FIRST FLOOR TRAINING ROOM	CARRIER	FJ4DNXD60L00	VERTICAL UPFLOW	22.1	24.7	59.2	2000	500	0.50	FC	I	208	18	50.0	78.4	80.0	67.0	59.9	57.9	43470	58420	I IN. THICK THROWAWAY	114.5	125	I	208	1,2,3,4

NOTES:

- OTHER ACCEPTABLE MANUFACTURERS: TRANE, DAIKIN, YORK.
- PROVIDE COMPATIBLE DX-COIL AND CONDENSING UNIT.
- PROVIDE WEB-BASED 7-DAY PROGRAMMABLE THERMOSTAT.
- PROVIDE ONLY IF ALTERNATE BID #3 IS ACCEPTED.

AIR COOLED CONDENSING UNIT SCHEDULE																									
EQUIP TAG	MANUF.	MODEL	LOCATION	HEAT REJECTION (BTUH)	WEIGHT (LBS)	COMPRESSORS				FANS						ELECTRICAL DATA				NOTES					
						QUANTITY	SIZE (TONS EA.)	STEPS	SST (°F)	REF. TYPE	REF. CHARGE (LBS)	EAT (°F)	QUANTITY	TYPE	HP	RPM	MCA	MOCP	PH		VOLT				
ACCU-2	CARRIER	24ABB348A005	ROOF	48,000	186	1	4	1	45	R-410A	7.00	95	1	PROP	0.25	1100	17.8	30	3	208	1,2				
ACCU-3	CARRIER	24ABB360A005	ROOF	60,000	198	1	5	1	45	R-410A	8.00	95	1	PROP	0.25	1100	21.4	30	3	208	1,2				

NOTES:

- OTHER ACCEPTABLE MANUFACTURERS: TRANE, DAIKIN, YORK.
- PROVIDE ONLY IF ALTERNATE BID #3 IS ACCEPTED.

HUMIDIFIER SCHEDULE													
EQUIPMENT TAG	LOCATION	EQUIPMENT SERVED	MANUFACTURER	MODEL	TYPE	CAPACITY (LB/HR)	KW	PHASE	VOLTAGE	MCA	MOCP	NOTES	
H-1	JC	INTERIOR BUNKS	DRI-STEEM	XTP-002	REPLACEABLE CYLINDER ELECTRODE	5.0	1.7	I	208	10	15	1,2,3	
H-2	JC	PERIMETER BUNKS	DRI-STEEM	XTP-002	REPLACEABLE CYLINDER ELECTRODE	5.0	1.7	I	208	10	15	1,2,4	

NOTES:

- OTHER ACCEPTABLE MANUFACTURERS: CAREL, HONEYWELL.
- PROVIDE MANUFACTURER'S FIELD INSTALLED HUMIDITY SENSOR AND SINGLE DISPERSION TUBE.
- PROVIDE ONLY IF ALTERNATE BID #2A IS ACCEPTED (MAY BE ACCEPTED WITH EITHER BASE BID OR ALT BID #1).
- PROVIDE ONLY IF ALTERNATE BID #2B IS ACCEPTED (MAY ONLY BE ACCEPTED IF ALT BID #1 IS ACCEPTED).

DIFFUSER, REGISTER, AND GRILLE SCHEDULE							
TAG	MANUFACTURER	MODEL	TYPE	NOMINAL FACE SIZE	MATERIAL	MAX. N.C.	NOTES
A	TITUS	OMNI	SQUARE PANEL FACE	24"x24"	STEEL	30	I
B	TITUS	50F	EGG CRATE	VARIES	ALUMINUM	30	1,2

NOTES:

- OTHER ACCEPTABLE MANUFACTURERS: EQUAL.
- 1/2"x1/2"x1" OR 1/2"x1/2"x1/2" W/ 45 DEG. DEFLECTION GRID.

FLOOR PLAN TAG LEGEND:

S= SUPPLY
R= RETURN/RELIEF
E= EXHAUST EQUIPMENT TAG

AIR FLOW (CFM)
NECK SIZE (IN.)

2018 INTERNATIONAL MECHANICAL CODE VENTILATION SCHEDULE																							
ROOM NUMBER	ROOM NAME	OCCUPANCY CLASSIFICATION	ROOM DATA		NATURAL VENTILATION (SECTION 402)		MECHANICAL VENTILATION (SECTION 403)													NOTES			
			AREA (FT2)	VOLUME (FT3)	MINIMUM OPERABLE AREA (FT2)	ACTUAL OPERABLE AREA (FT2)	ESTIMATED MAXIMUM OCCUPANT LOAD (SEE NOTE 1)											REQUIRED BREATHING ZONE OUTSIDE AIR (SEE NOTE 1)			ACTUAL ROOM VENTILATION		
							DEFAULT OCCUPANCY	ZONE POPULATION (RP)	FIXTURE QUANTITY REQUIRENG EXHAUST	CFM PERSON (RP)	CFM SQ.FT. (RA)	EXHAUST AIRFLOW RATE CFM/SQ.FT.	BREATHING ZONE OUTDOOR AIRFLOW RATE (Vbz)	ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)	REQD TOTAL O.A. CFM	REQD TOTAL E.A. CFM	TOTAL	% O.A.	TOTAL O.A.		EXHAUST CFM		
200	CORRIDOR	CORRIDORS	222.82	2005.38	8.9	--	--	--	--	5	0.06	--	13.4	0.8	16.7	--	95	20%	19	0	I		
201	BUNK	BEDROOM/LIVING ROOM	43	860	1.7	--	0	I	--	5	0.06	--	7.6	0.8	9.5	--	85	25%	21	0	I		
202	BUNK	BEDROOM/LIVING ROOM	45	405	1.8	--	0	J	--	5	0.06	--	7.7	0.8	9.6	--	50	25%	13	0	I		
203	BUNK	BEDROOM/LIVING ROOM	43	387	1.7	--	0	J	--	5	0.06	--	7.6	0.8	9.5	--	70	25%	16	0	I		
204	BUNK	BEDROOM/LIVING ROOM	45	900	1.8	--	0	J	--	5	0.06	--	7.7	0.8	9.6	--	50	25%	13	0	I		
205	BUNK	BEDROOM/LIVING ROOM	43	387	1.7	--	0	J	--	5	0.06	--	7.6	0.8	9.5	--	85	25%	21	0	I		
206	BUNK	BEDROOM/LIVING ROOM	56	504	2.2	--	1	J	--	5	0.06	--	8.4	0.8	10.5	--	50	25%	13	0	I		
207	BUNK	BEDROOM/LIVING ROOM	43	860	1.7	--	0	J	--	5	0.06	--	7.6	0.8	9.5	--	70	25%	16	0	I		
208	STORAGE	STORAGE ROOMS	22	198	0.9	--	--	--	--	0.12	--	--	2.6	0.8	3.3	--	40	25%	10	0	I		
209	BUNK	BEDROOM/LIVING ROOM	43	387	1.7	--	0	J	--	5	0.06	--	7.6	0.8	9.5	--	50	25%	13	0	I		
210	BUNK	BEDROOM/LIVING ROOM	65	1300	2.6	--	1	J	--	5	0.06	--	7.2	0.8	8.9	--	130	25%	33	0	I		
211	BUNK	BEDROOM/LIVING ROOM	53	477	2.1	--	1	J	--	5	0.06	--	5.8	0.8	7.3	--	50	25%	13	0	I		
212	BUNK	BEDROOM/LIVING ROOM	44	396	1.8	--	0	J	--	5	0.06	--	7.6	0.8	9.6	--	70	25%	16	0	I		
213	BUNK	BEDROOM/LIVING ROOM	44	396	1.8	--	0	J	--	5	0.06	--	7.6	0.8	9.6	--	70	25%	16	0	I		
214	BUNK	BEDROOM/LIVING ROOM	45	405	1.8	--	0	J	--	5	0.06	--	7.7	0.8	9.6	--	90	25%	23	0	I		
000	WOMENS TOILET	BATHROOM/TOILET-PRIVATE	60.38	543.42	2.4	--	--	--	--	50	--	--	50	--	50	--	50	25%	13	75	I		
000	EXISTING BUNK	BEDROOM/LIVING ROOM	124.21	1117.89	5.0	--	1	J	--	5	0.06	--	13.7	0.8	17.1	--	140	25%	35	0	I		
000	DAY ROOM	LIVING AREAS	463.61	4226.49	19.8	--	--	6	--	15	--	--	90.0	0.8	112.5	--	540	25%	135	0	I		
000	KITCHEN	LIVING AREAS	424.86	3833.74	17.0	--	--	6	--	15	--	--	90.0	0.8	112.5	--	450	25%	125	0	I		
000	LOCKER ROOM	LOCKER/DESSING ROOMS	863.81	7954.29	35.4	--	--	3	--	--	0.25	--	--	0.8	--	220.953	480	25%	120	1125	I		

NOTES:

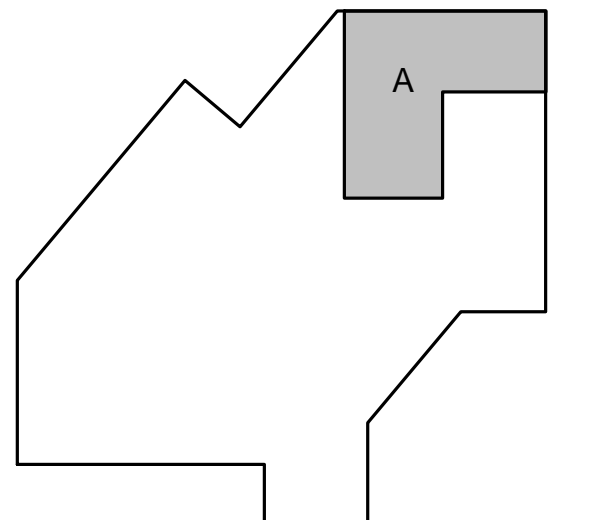
- COORDINATED WITH TABLE 403.3
- CODE MET BY NATURAL VENTILATION



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Fax 847.882.2201
2040 ENGINEERING GROUP LLC
Design Firm Registration Number:
184.004110-0006

Second Floor Bunk House Floor Plan



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HVAC SCHEDULES

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DRAWING NOTES

- 1 ELECTRICALLY DISCONNECT EXISTING EQUIPMENT FOR REMOVAL. REMOVE ANY ASSOCIATED FIRE ALARM DEVICES, DISCONNECT SWITCHES, STARTERS, AND ALL CONDUITS AND CONDUCTORS BETWEEN UNIT AND PANEL. LEAVE CIRCUIT BREAKER AT 'OFF' POSITION AND INDICATE CIRCUIT AS 'SPARE' IN PANELBOARD DIRECTORY.
- 2 EXISTING MECHANICAL EQUIPMENT TO REMAIN. PROTECT CONDUIT AND WIRING SERVING UNIT TO MAINTAIN PROPER OPERATION OF EQUIPMENT.



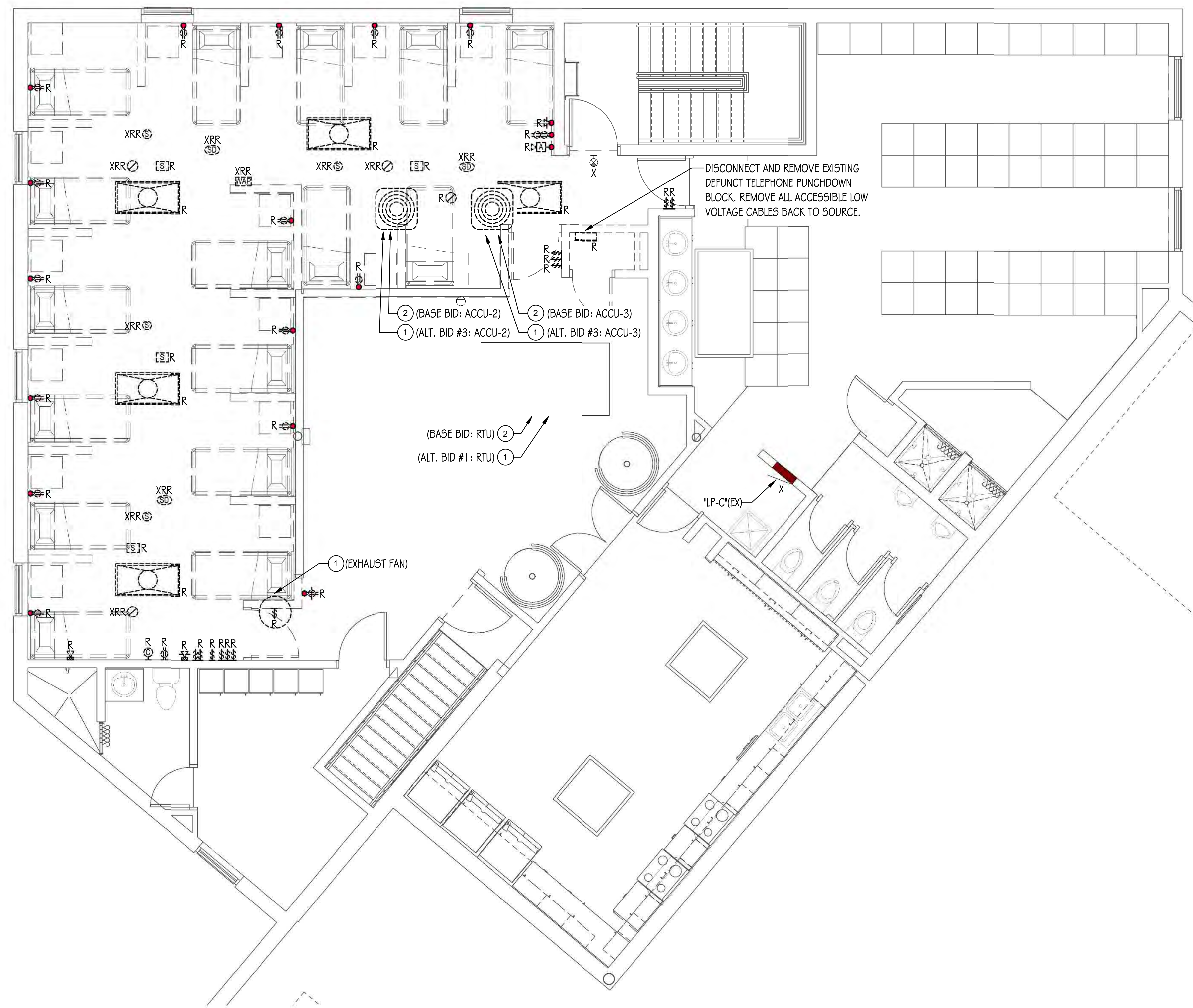
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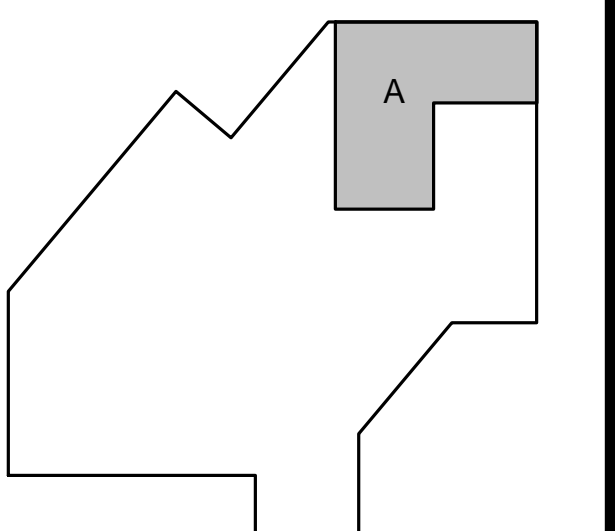
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⊕ SECOND FLOOR ELECTRICAL DEMOLITION PLAN
1/4" = 1'-0"

Second Floor Bunk House Floor Plan

Village of Oak Park
100 N Euclid Ave., Oak Park, IL 60301



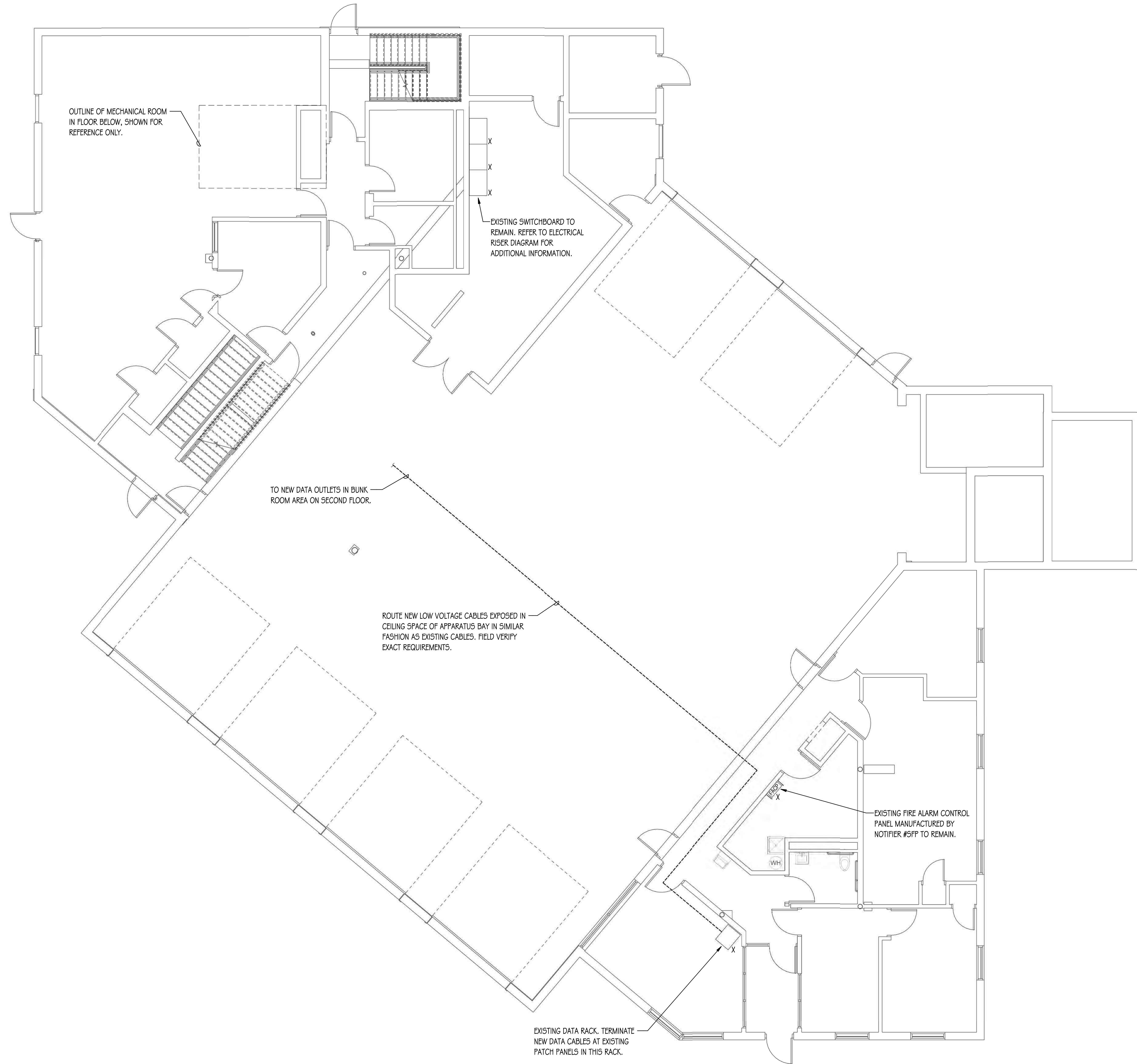
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ELECTRICAL DEMOLITION PLAN

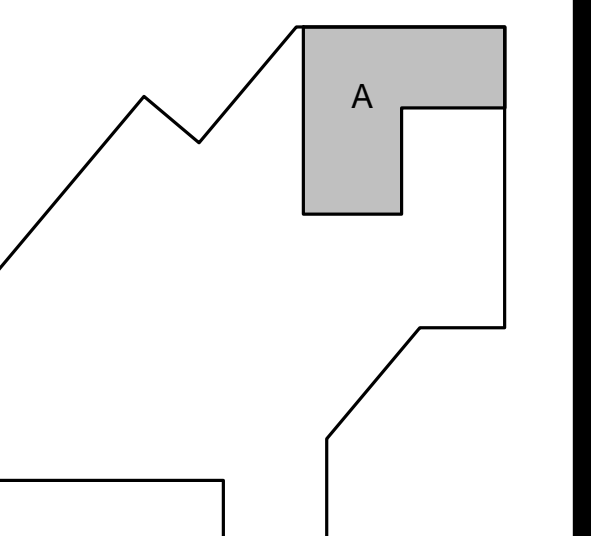
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Second Floor Bunk House Floor Plan

Village of Oak Park
100 N Euclid Ave, Oak Park, IL 60301



KEY PLAN

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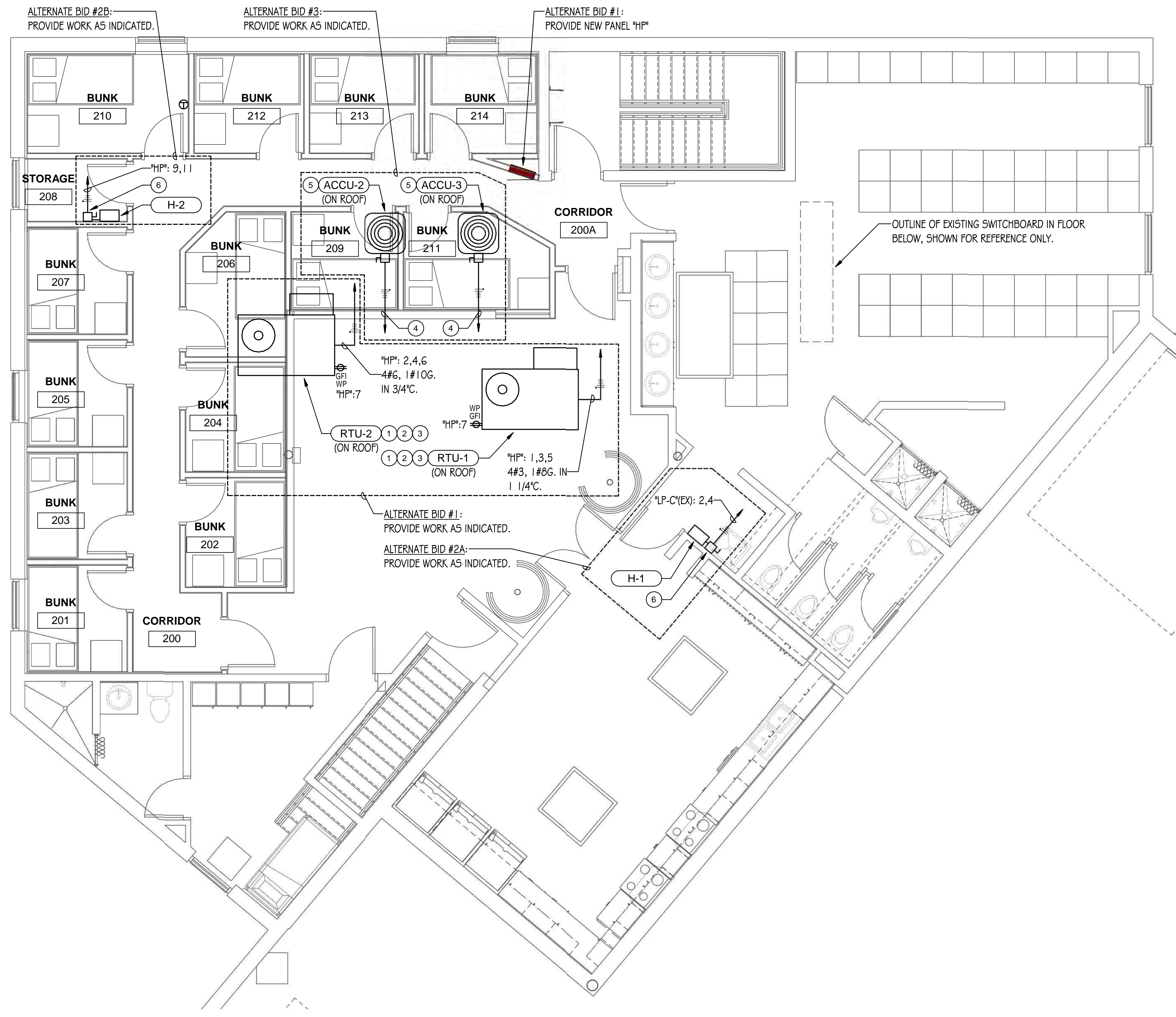
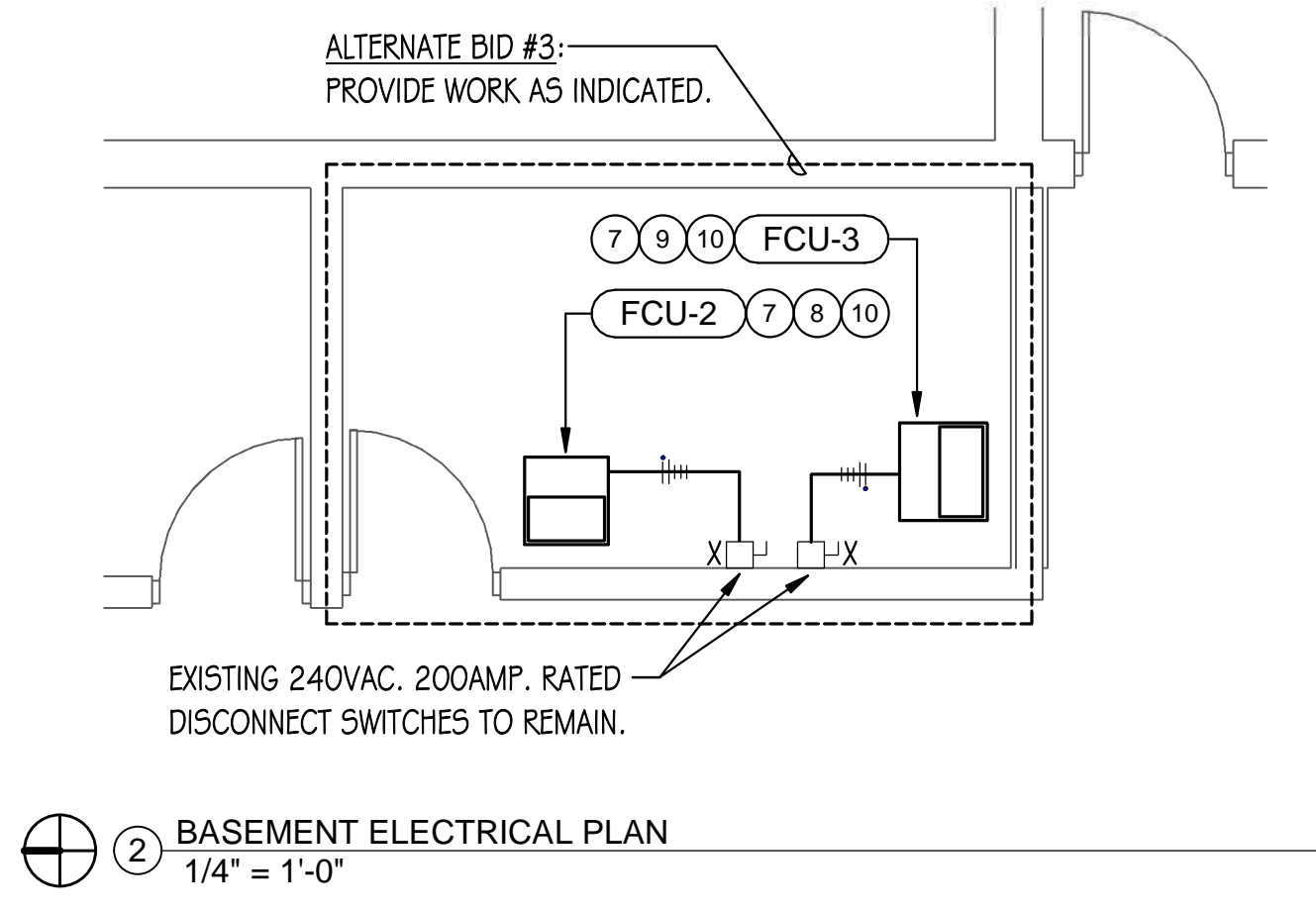
ELECTRICAL PLAN

E1.10

① FIRST FLOOR ELECTRICAL PLAN
3/16" = 1'-0"

DRAWING NOTES

- DISCONNECT SWITCH FURNISHED WITH EQUIPMENT, WIRED BY ELECTRICAL CONTRACTOR.
- ROOFTOP GFI SERVICE RECEPTACLE SHALL BE PROVIDED WITH SEPARATE POWER FEED. PROVIDE (1) 20A-1P BRANCH CIRCUIT AS INDICATED. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION.
- ALL ELECTRICAL CONDUITS FOR ROOFTOP EQUIPMENT SHALL BE BROUGHT UP THROUGH THE BASE OF THE EQUIPMENT TO MINIMIZE ROOF PENETRATIONS. WHERE THIS IS NOT POSSIBLE, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE NECESSARY PIPE PORTALS TO MAINTAIN WEATHERPROOF INTEGRITY OF THE ROOF.
- WIRE 4# 10, 1# 10G, IN 3/4" C. TO EXISTING FUSE SWITCH CURRENTLY SERVING EQUIPMENT IN EXISTING SWITCHBOARD. REFER TO ELECTRICAL RISER DIAGRAM ON SHEET E3.00 FOR ADDITIONAL INFORMATION.
- PROVIDE 240VAC, 30AMP, NON-FUSIBLE DISCONNECT SWITCH IN NEMA 3R ENCLOSURE. DISCONNECT SWITCH SHALL BE MOUNTED ON STAINLESS-STEEL UNISTRUT METAL FRAMING SYSTEM SUPPORTED ON ROOF. COORDINATE EXACT LOCATION OF MECHANICAL EQUIPMENT WITH OTHERS TO MAINTAIN 3-FOOT WORKING SPACE IN FRONT OF ELECTRICAL EQUIPMENT.
- PROVIDE 240VAC, 30AMP, NON-FUSIBLE DISCONNECT SWITCH IN NEMA 1 ENCLOSURE. COORDINATE EXACT LOCATION OF MECHANICAL EQUIPMENT WITH OTHERS TO MAINTAIN 3-FOOT WORKING SPACE IN FRONT OF ELECTRICAL EQUIPMENT.
- ELECTRICALLY DISCONNECT EXISTING EQUIPMENT FOR REMOVAL. EXISTING DISCONNECT SWITCHES, CONDUITS AND CONDUCTORS SHALL REMAIN TO FEED NEW EQUIPMENT.
- NEW EQUIPMENT PROVIDED AT SIMILAR LOCATION AS FORMER EQUIPMENT. UTILIZE EXISTING BRANCH CIRCUIT, CUT BACK EXISTING CONDUCTORS AND CONDUIT, PROVIDE NEW JUNCTION BOX AND SPLICE CONDUCTORS OF MATCHING GAUGE FOR FINAL CONNECTION TO NEW EQUIPMENT. CONDUCTORS SHALL BE MINIMUM SIZE OF #11AWG. INFORM ARCHITECT/ENGINEER IF OTHERWISE. FIELD VERIFY EXACT REQUIREMENTS.
- NEW EQUIPMENT PROVIDED AT SIMILAR LOCATION AS FORMER EQUIPMENT. UTILIZE EXISTING BRANCH CIRCUIT, CUT BACK EXISTING CONDUCTORS AND CONDUIT, PROVIDE NEW JUNCTION BOX AND SPLICE CONDUCTORS OF MATCHING GAUGE FOR FINAL CONNECTION TO NEW EQUIPMENT. CONDUCTORS SHALL BE MINIMUM SIZE OF #11/0AWG. INFORM ARCHITECT/ENGINEER IF OTHERWISE. FIELD VERIFY EXACT REQUIREMENTS.
- CAREFULLY DISCONNECT EXISTING 120VAC, IONIZER TO ACCOMMODATE REMOVAL OF EXISTING EQUIPMENT. EXTEND EXISTING CONDUITS AND CONDUCTORS AS REQUIRED TO NEW DEVICE LOCATION AS REQUIRED. COORDINATE INSTALLATION WITH OTHERS FOR A COMPLETE AND OPERABLE SYSTEM.



Second Floor Bunk House Floor Plan



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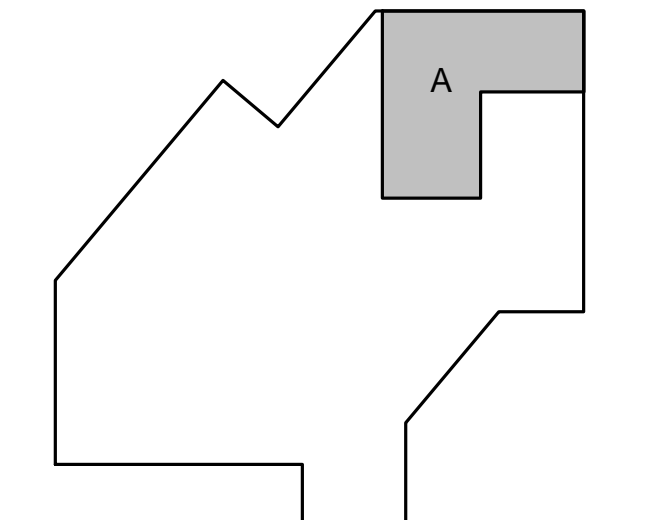
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ELECTRICAL PLANS - ALTERNATE BIDS

E1.21

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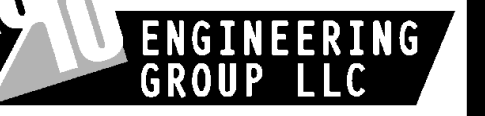
GENERAL NOTE:
 NEW LUMINARIES SHALL RECONNECT TO EXISTING LIGHTING BRANCH CIRCUIT CURRENTLY SERVING AREA. PROVIDE NEW SWITCHING SCHEME AS INDICATED. FIELD VERIFY EXACT REQUIREMENTS.



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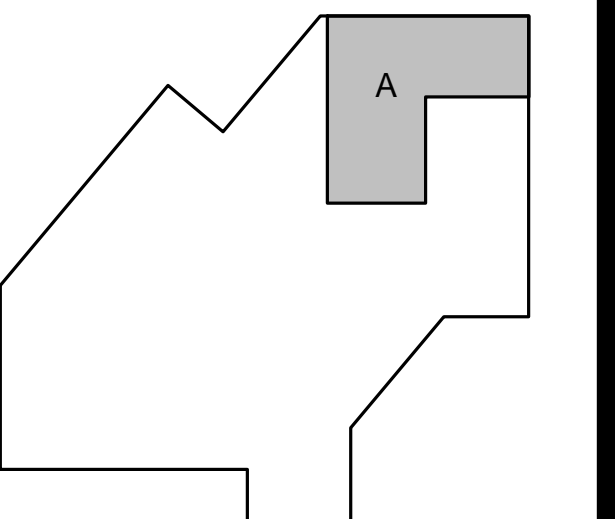
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⊕ SECOND FLOOR LIGHTING PLAN
 1/4" = 1'-0"

Second Floor Bunk House Floor Plan

Village of Oak Park
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KEY PLAN

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LIGHTING PLAN

ELECTRICAL ABBREVIATIONS

Table with 4 columns: Symbol, Description, Symbol, Description. Includes terms like AMPERES, GROUND FAULT PROTECTIVE EQUIPMENT, TAMPER PROOF, etc.

DEMOLITION SYMBOLS

Table with 2 columns: Symbol, Description. Lists symbols for existing electrical equipment to remain, be removed, or relocated.

NOTE: NOT ALL SYMBOLS ARE USED ON THIS PROJECT.

GENERAL NOTE:

EXISTING CONDITIONS WERE OBTAINED FROM EXISTING AS-BUILT DRAWINGS AND CURSORY FIELD OBSERVATION. THIS CONTRACTOR SHALL IDENTIFY ANY DISCREPANCIES IN THE FIELD AND REPORT THEM TO THE ENGINEER.

BIDDING NOTE:

SEE DRAWINGS ME1.0 FOR GENERAL NOTES AND ADDITIONAL DETAILS APPLICABLE TO THIS TRADE'S WORK.

GENERAL NOTE:

CONTRACTOR SHALL MAINTAIN FIRE RATING OF ALL PARTITIONS FOR NEW PENETRATIONS. ANY PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE PROPERLY SEALED AND TREATED TO MAINTAIN THE FIRE STOPPING RATING OF THE WALL. CABLING SHALL NOT PENETRATE WALLS UNLESS ROUTED THROUGH RACEWAY SYSTEM OR ROUTED ABOVE ACCESSIBLE CEILINGS THROUGH METALLIC CONDUIT SLEEVES, EXTENDING A MINIMUM OF 6" EACH SIDE OF THE WALL WITH PROTECTIVE END BUSHINGS TO PREVENT DAMAGE TO CABLES. VOIDS AROUND SLEEVES SHALL BE SEALED WITH APPROPRIATE MATERIALS AS TO MAINTAIN THE ACOUSTIC OR FIRE RATING OF WALLS ABOVE AND BELOW CEILINGS. CABLES RAN THROUGH VOIDS WITHOUT SLEEVES OR RACEWAYS WILL NOT BE ACCEPTABLE. CONTRACTOR SHALL VERIFY EXISTING FIRE PARTITIONS IN THE FIELD.

GENERAL NOTE:

INCIDENTAL WORK MAY ALSO BE NECESSARY DUE TO CHANGES AFFECTING FIRE ALARM, ELECTRICAL, OR OTHER SYSTEMS. SUCH INCIDENTAL WORK IS ALSO PART OF THIS CONTRACT. INSPECT THOSE AREAS, ASCERTAIN WORK NEEDED, AND DO THAT WORK IN ACCORD WITH THE CONTRACT REQUIREMENTS, AT NO ADDITIONAL COST. THE REMOVAL & REINSTALLATION OF EXISTING WORK TO ACCOMMODATE CHANGES TO EXISTING, OR INSTALLATION OF, ELECTRICAL, OTHER SYSTEMS IS ALSO PART OF THIS CONTRACT.

GENERAL NOTE:

REFER TO ARCHITECTURAL FLOOR PLANS FOR ADDITIONAL INFORMATION REGARDING MOUNTING HEIGHTS AND LOCATIONS OF ELECTRICAL DEVICES BEFORE ROUGH-IN.

WHERE CONFLICTS BETWEEN ELECTRICAL & ARCHITECTURAL ELEVATIONS ARISE, CONTRACTOR TO VERIFY WITH ARCHITECT/ENGINEER TEAM PRIOR TO ROUGH-IN.

FIRE ALARM NOTE:

FIRE ALARM WORK IS PART OF THIS CONTRACT.

ALL NEW FIRE ALARM DEVICES SHALL BE UL LISTED AND COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM. PROVIDE ALL EXPANSION MODULES, POWER SUPPLIES, WIRING AND LABOR TO EXPAND SYSTEM TO ACCEPT NEW DEVICES SHOWN ON DRAWINGS, INCLUDE ALL PROGRAMMING AND TESTING AS REQUIRED.

INSTALLING CONTRACTOR SHALL SUBMIT PRODUCT DATA, CALCULATIONS AND SHOP DRAWING INDICATING DEVICE LOCATIONS AND ADDRESSABLE IDENTIFICATIONS TO LOCAL AUTHORITY HAVING JURISDICTION WHERE APPLICABLE.

ELECTRICAL SYMBOL LIST (NOTE: NOT ALL SYMBOLS ARE USED IN THE PROJECT.)

Table listing electrical symbols and their descriptions, such as 2' X 4' LUMINAIRE, 1' X 4' LUMINAIRE, HALF SHADING DENOTES FIXTURE UNSWITCHED 'NIGHTLIGHT', STRIP LUMINAIRE PER LUMINAIRE SCHEDULE, etc.

Table listing electrical symbols and their descriptions, such as CONDUIT ROUTED CONCEALED IN WALLS AND CEILING, CONDUIT ROUTED EXPOSED, CONDUIT ROUTED BELOW GRADE, DENOTES CONDUIT HOMERUN, etc.



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Second Floor Bunk House Floor Plan

Village of Oak Park 100 N Euclid Ave., Oak Park, IL 60301

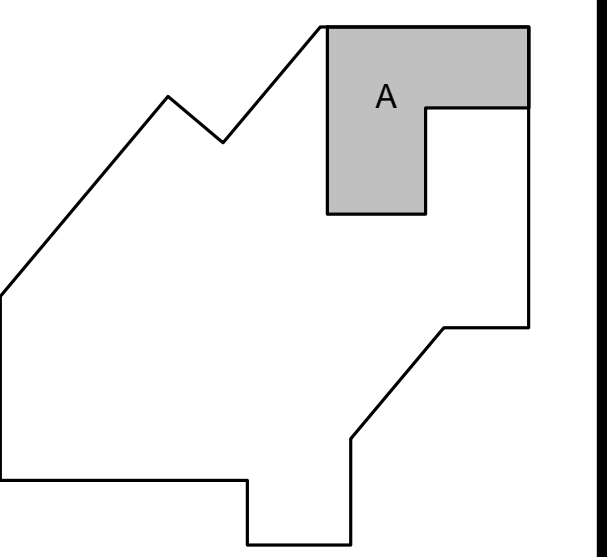


Table with 3 columns: NO, ISSUE, DATE. Shows Bid Set issue on 06/28/2023.

ELECTRICAL SYMBOL LIST

E4.00

GENERAL ELECTRICAL NOTES: (APPLICABLE TO ALL SHEETS.)

1. THE MINIMUM WIRE SIZE SHALL BE #12 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS AND BRANCH FEEDS TO POWER OUTLETS SHALL BE 3/4". 1/2" CONDUIT IS ACCEPTABLE FOR BRANCH WIRING TO END OF THE LINE RECEPTACLES ONLY. ALL POWER BRANCH CIRCUITS SHALL TERMINATE AT 20A-1P CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
2. PROVIDE ALL PENETRATIONS, SLEEVES, AND SEALANT AS REQUIRED THROUGH PARTITIONS TO ACCOMMODATE THE FIRE ALARM, PAGING, CLOCK, VOICE, AND DATA CABLING. ANY PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE PROPERLY SEALED AND TREATED TO MAINTAIN THE FIRE STOPPING RATING OF THE WALLS, FLOORS, AND CEILINGS.
3. BACKBOXES ARE TO BE MOUNTED OFFSET, NOT BACK TO BACK.
4. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF 'AS BUILT' DRAWINGS.
5. UNLESS INDICATED OTHERWISE, ALL MATERIALS REQUIRED TO PROVIDE BRANCH CIRCUITS AND FEEDERS ARE TO BE NEW.
6. DURING THE COURSE OF INVESTIGATION AND DEMOLITION, IF IT IS DETERMINED THAT IT MAY BE FEASIBLE TO UTILIZE EXISTING MATERIALS FOR BRANCH CIRCUITS AND FEEDERS, CONTRACTOR SHALL NOTIFY ENGINEER FOR APPROVAL PRIOR TO PERFORMING ANY WORK.
7. ANY ELECTRICAL DEVICES ON NEW WALLS SHALL BE FLUSH MOUNTED. NO WIREMOLDS ARE ACCEPTABLE ON NEW WALLS UNLESS NOTED OTHERWISE.
8. VERIFY RECEPTACLE LOCATIONS WITH ARCHITECTURAL FURNITURE LAYOUT TO ENSURE PROPER ACCESSIBILITY.
9. DRAWINGS DO NOT REPRESENT ALL EXISTING FIRE ALARM DEVICES. INITIATING AND NOTIFICATION DEVICES NOT SHOWN ON THE DRAWINGS ARE EXISTING TO REMAIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN OPERATION OF THE EXISTING DEVICES NOT SHOWN.
10. EXISTING FIRE ALARM SYSTEM SHALL BE OPERATIONAL AT ALL TIMES. THE OCCUPIED AREA OF THE BUILDING SHALL NOT BE LEFT UNPROTECTED AT ANY TIME. IF AN INTERRUPTION OF FIRE ALARM SYSTEM IS REQUIRED TO FACILITATE DEVICE INSTALLATION, PROVIDE 48 HOURS OF ADVANCE NOTICE TO THE OWNER AND THE LOCAL FIRE DEPARTMENT. CONTRACTOR SHALL HIRE AN AUTHORIZED PERSONNEL TO WATCH/GUARD ANY UNPROTECTED AREAS OF THE BUILDING WHERE NECESSARY.
11. UNLESS INDICATED ON ARCHITECTURAL DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL CORING, CUTTING, PATCHING, REPAIRING, REFINISHING, AND REMOVAL/REPLACEMENT OF NEW OR EXISTING BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OR REMOVAL OF THEIR WORK. REMOVE, STORE, AND REINSTALL CEILING TILES AS REQUIRED TO INSTALL WORK ABOVE EXISTING REMOVABLE CEILINGS WHICH REMAIN. REPLACE TILES BROKEN OR DAMAGED DURING CONSTRUCTION. ALL PATCHING, REPAIRING, AND REFINISHING WORK TO OTHER FINISHES AND STRUCTURAL ELEMENTS SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE ADJACENT CONSTRUCTION AS CLOSELY AS POSSIBLE WHILE MAINTAINING EXISTING FIRE RATINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXISTING FIRE RATINGS OF CEILINGS AND PARTITIONS SYSTEMS. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK OR REMOVAL OF EXISTING WORK SHALL BE REPAIRED, REPLACED, AND PAID FOR BY THE INSTALLING CONTRACTOR TO THE SATISFACTION OF THE ARCHITECT AND OWNER. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, REFINISHING, AND REMOVAL/REPLACEMENT.
12. REMOVE AND REINSTALL CEILING MOUNTED DEVICES AS REQUIRED TO ALLOW INSTALLATION OF FEEDERS, BRANCH CIRCUITS, MECHANICAL PIPING, AND DUCT WORK. DEVICES INCLUDE BUT ARE NOT LIMITED TO: LUMINAIRES, SPEAKERS, FIRE ALARM, AND PAGING DEVICES.
13. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
14. SPECIAL ATTENTION SHALL BE PAID TO ALL CONDUIT ROUTING IN OPEN CEILING SPACE FOR AESTHETIC PURPOSES. ALL EXPOSED CONDUITS SHALL BE ROUTED PERPENDICULAR AND PARALLEL TO BUILDING LINES AND TIGHT TO CEILING/STRUCTURAL CORNERS. WHERE THIS IS NOT FEASIBLE, SUBMIT CONDUIT ROUTING PLAN TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
15. IN RENOVATIONS, IF AN EXISTING RECEPTACLE/JUNCTION BOX LOCATION WILL END UP HIDDEN BEHIND PERMANENTLY INSTALLED EQUIPMENT OR CASEWORK, PROCEED AS NOTED BELOW:
A. IF THE RECEPTACLE IS AN END OF LINE DEVICE (IT DOES NOT FEED OTHER DEVICES), IT SHALL BE REMOVED INCLUDING ASSOCIATED WIRING BACK TO LAST ACTIVE DEVICE OR JUNCTION BOX AND A BLANK COVER PLATE INSTALLED.
B. IF THE RECEPTACLE DOES SERVE DOWNSTREAM DEVICES, REMOVE RECEPTACLE AND REWORK WIRING TO A NEW OR EXISTING JUNCTION BOX ABOVE CEILING SUCH THAT NO WIRES ARE PRESENT IN THE JUNCTION BOX. A BLANK COVER PLATE SHALL BE INSTALLED.
16. CONTRACTOR SHALL PROVIDE DEDICATED NEUTRAL FOR EACH BRANCH CIRCUIT TO MEET THE REQUIREMENTS OF NEC ARTICLE 210.4(B).
17. LOW VOLTAGE CABLES INCLUDING, BUT NOT LIMITED TO, TELECOMMUNICATIONS, PAGING, TEMPERATURE CONTROL, FIRE ALARM, LIGHTING CONTROL, AND AUDIO/VIDEO SYSTEMS, ETC., SHALL BE INSTALLED IN A COMPLETE RACEWAY SYSTEM IN ALL AREAS.
18. IN JUNCTION BOXES WHERE CURRENT CARRYING CONDUCTORS ARE SPLICED OR TERMINATED, PROVIDE BOND TO JUNCTION BOX FROM EQUIPMENT GROUNDING CONDUCTOR.
19. IN AREAS OF THE BUILDING WHERE NEW CEILING HEIGHT IS HIGHER THAN THE EXISTING CEILING HEIGHT, ANY EXISTING CONDUITS/CONDUCTORS AND JUNCTION BOXES SERVING EXISTING DEVICES/EQUIPMENT TO REMAIN SHALL BE RE-ROUTED, RELOCATED, AND MODIFIED AS REQUIRED TO ACCOMMODATE NEW CEILING HEIGHT. FIELD VERIFY EXACT CONDITIONS.
20. IN AREAS OF THE BUILDING WHERE NEW DRYWALL OR PLASTER CEILING IS SCHEDULED TO BE INSTALLED, ANY EXISTING JUNCTION BOXES AND ASSOCIATED CONDUITS/CONDUCTORS SHALL BE MODIFIED AND RELOCATED AS REQUIRED TO AN ACCESSIBLE LOCATION UNLESS NEW ACCESS PANELS ARE PERMITTED TO BE INSTALLED IN NEW CEILING BY THE ARCHITECT.
21. REFER TO MECHANICAL PLANS FOR EXACT LOCATIONS OF THERMOSTAT/CARBON DIOXIDE DETECTORS. PROVIDE SINGLE GANG BACKBOX AND EMPTY 3/4" CONDUIT WITH PULL STRING STUBBED INTO ACCESSIBLE CEILING SPACE FOR INSTALLATION OF THERMOSTAT/CARBON DIOXIDE DETECTORS. CABLING AND DEVICE SHALL BE BY OTHERS.
22. ALL EXPOSED CONDUIT SHALL BE PAINTED TO MATCH SURROUNDING FINISHES.
23. CONDUITS AND RACEWAYS SHALL NOT BE ROUTED ACROSS FLOORS OR SLABS.
24. CONDUCTORS FOR EQUIPMENT RATED 100AMP, AND BELOW ARE SIZED PER ARTICLE 110.14(C)(1)(a)(2) WHICH INDICATES TO UTILIZE THE 60° TEMPERATURE RATING COLUMN OF TABLE 310.15(B)(16) REGARDLESS OF CONDUCTOR INSULATION RATING.

GENERAL ELECTRICAL DEMOLITION NOTES: (APPLICABLE TO ALL SHEETS.)

1. ALL INDICATED ELECTRICAL EQUIPMENT, LUMINAIRES, DEVICES, AND RELATED CONDUIT AND WIRING TO BE REMOVED UNLESS NOTED OTHERWISE.
2. ALL DEMOLITION OF THE ELECTRICAL SYSTEM AS NOTED ON THE DEMOLITION DRAWINGS SHALL BE COORDINATED WITH THE RENOVATION REQUIREMENTS TO DETERMINE THIS CONTRACTOR'S WORK.
3. IT IS THE INTENT OF THE ELECTRICAL DEMOLITION DRAWING(S) TO INDICATE AREAS IN WHICH ELECTRICAL EQUIPMENT, CONDUIT, LUMINAIRES, DEVICES, ETC. NEED TO BE REMOVED, RELOCATED, OR MODIFIED BY THIS CONTRACTOR TO ALLOW FOR THE RENOVATION PHASE OF CONSTRUCTION. THE ELECTRICAL DEMOLITION PLAN IS FOR REFERENCE PURPOSES ONLY AND IT IS NOT INTENDED TO BE THE SOLE SOURCE OF EXISTING CONDITIONS.
4. CONTRACTOR SHALL VISIT THE BUILDING, BEFORE SUBMITTING THEIR BID, TO VERIFY THE EXISTING CONDITIONS WHICH WILL AFFECT THEIR WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE ELECTRICAL DEMOLITION REQUIRED TO ACCOMMODATE THE RENOVATION. REMOVE AS REQUIRED ALL LUMINAIRES, CONNECTIONS TO MECHANICAL EQUIPMENT, DEVICES, ETC.. PULL OUT ALL UNUSED CONDUCTORS AND CABLES, AND REMOVE ALL ABANDONED CONDUIT. ELECTRICALLY DISCONNECT AIR HANDLING UNITS, PUMPS, BOILERS, AND OTHER SUCH EQUIPMENT FOR REMOVAL BY OTHERS. BACKFEED AS REQUIRED ALL DOWNSTREAM DEVICES WHICH REMAIN. (THE CONTRACTOR SHALL COORDINATE WITH THE OWNER WHICH ITEMS INDICATED TO BE REMOVED & DISCONNECTED SHALL BE SALVAGED AND PRESENTED TO THE OWNER PRIOR TO ANY DISPOSAL OF THESE ITEMS.)
6. ALL REMOVED EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE. WHERE WORK CALLED FOR ON THE DRAWINGS OR IN THE SPECIFICATIONS INVOLVES THE REMOVAL OF FLUORESCENT LAMPS CONTAINING MERCURY OR CLOTH INSULATED CONDUCTORS, THEY SHALL BE PROPERLY HANDLED AND REMOVED FROM SITE BY APPROVED METHODS PER EPA REGULATIONS.
7. ALL EXISTING RECEPTACLES/DATA OUTLETS/DEVICES/EQUIPMENT THAT ARE NOT PART OF DEMOLITION SHALL REMAIN AS IS UNLESS NOTED OTHERWISE. CONTRACTOR SHALL CHECK AND VERIFY FOR CONTINUING OPERATION OF THESE DEVICES PRIOR TO SUBSTANTIAL COMPLETION. IF ANY EXISTING CIRCUITS TO REMAIN ARE INTERRUPTED BY DEMOLITION OR NEW CONSTRUCTION, CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT/REMOVAL/ROUTING/MODIFICATION OF CONDUITS AND WIRES INCLUDING EXTENSION, AS REQUIRED TO MAINTAIN FUNCTIONALITY OF DOWNSTREAM RECEPTACLES/DATA OUTLETS/DEVICES/EQUIPMENT.
8. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT PHASING AND MAINTAIN EXISTING SYSTEMS ACTIVE IN AREAS WHICH REMAIN OCCUPIED.
9. EXISTING CEILING MOUNTED SPEAKERS, PROGRAM BELLS, FIRE ALARM DEVICES, AND SIMILAR ELECTRICAL EQUIPMENT AND DEVICES TO REMAIN SHALL BE EXTENDED AND REINSTALLED AS REQUIRED IN NEW CEILINGS. FIELD VERIFY EXACT QUANTITIES AND REQUIREMENTS.
10. SUPPORT ALL CABLING DRAPED OR LYING LOOSE ABOVE EXISTING CEILINGS WHICH ARE SCHEDULED TO BE REMOVED. TIE WRAP CABLING TO JOISTS OR OTHER STRUCTURAL MEMBERS AS REQUIRED. UPON THE COMPLETION OF THE PROJECT, NO CABLING SHALL BE LYING ON ACCESSIBLE CEILINGS.
11. WHERE EXISTING DEVICE IS REMOVED FROM WALL WITH NO NEW DEVICE GOING BACK AT SAME LOCATION, PROVIDE BLANK BRUSHED STAINLESS STEEL COVER PLATES AS REQUIRED. COVER PLATES SHALL BE OF PROPER SIZE AND INSTALLED FLUSH WITH WALL.

GENERAL LIGHTING NOTES: (APPLICABLE TO ALL SHEETS.)

1. THE MINIMUM WIRE SIZE SHALL BE #12 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS SHALL BE 3/4". 1/2" CONDUIT IS ACCEPTABLE FOR BRANCH WIRING TO LUMINAIRES WHERE APPLICABLE. ALL LIGHTING BRANCH CIRCUITS SHALL TERMINATE AT 20A-1P CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
2. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LUMINAIRE LOCATIONS.
3. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF 'AS BUILT' DRAWINGS.
4. EMERGENCY BATTERY PACKS SHOWN ARE TO BE CONNECTED TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF LOCAL SWITCH UNLESS NOTED OTHERWISE.
5. ALL LAY-IN LUMINAIRES SHALL BE INDEPENDENTLY SUPPORTED AT OPPOSITE CORNERS TO A STRUCTURAL MEMBER.
6. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
7. PROVIDE DEDICATED NEUTRAL FOR EACH BRANCH CIRCUIT TO MEET THE REQUIREMENTS OF NEC ARTICLE 210.4(B).
8. IN JUNCTION BOXES WHERE CURRENT CARRYING CONDUCTORS ARE SPLICED OR TERMINATED, PROVIDE BOND TO JUNCTION BOX FROM EQUIPMENT GROUNDING CONDUCTOR.



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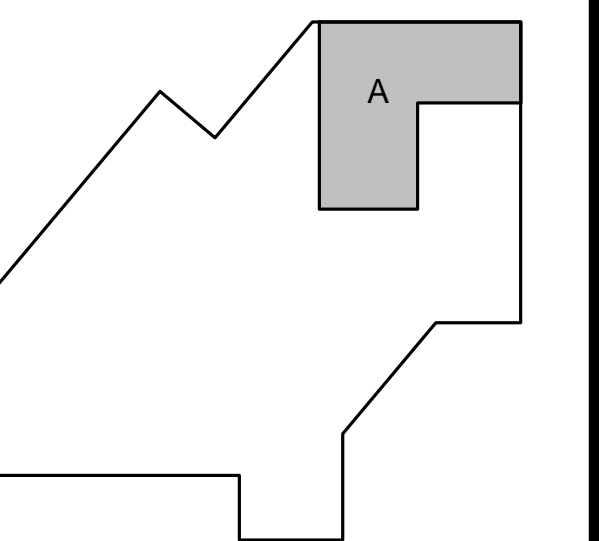
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184.004110-0006

Second Floor Bunk House Floor Plan

Village of Oak Park
100 N Euclid Ave., Oak Park, IL 60301



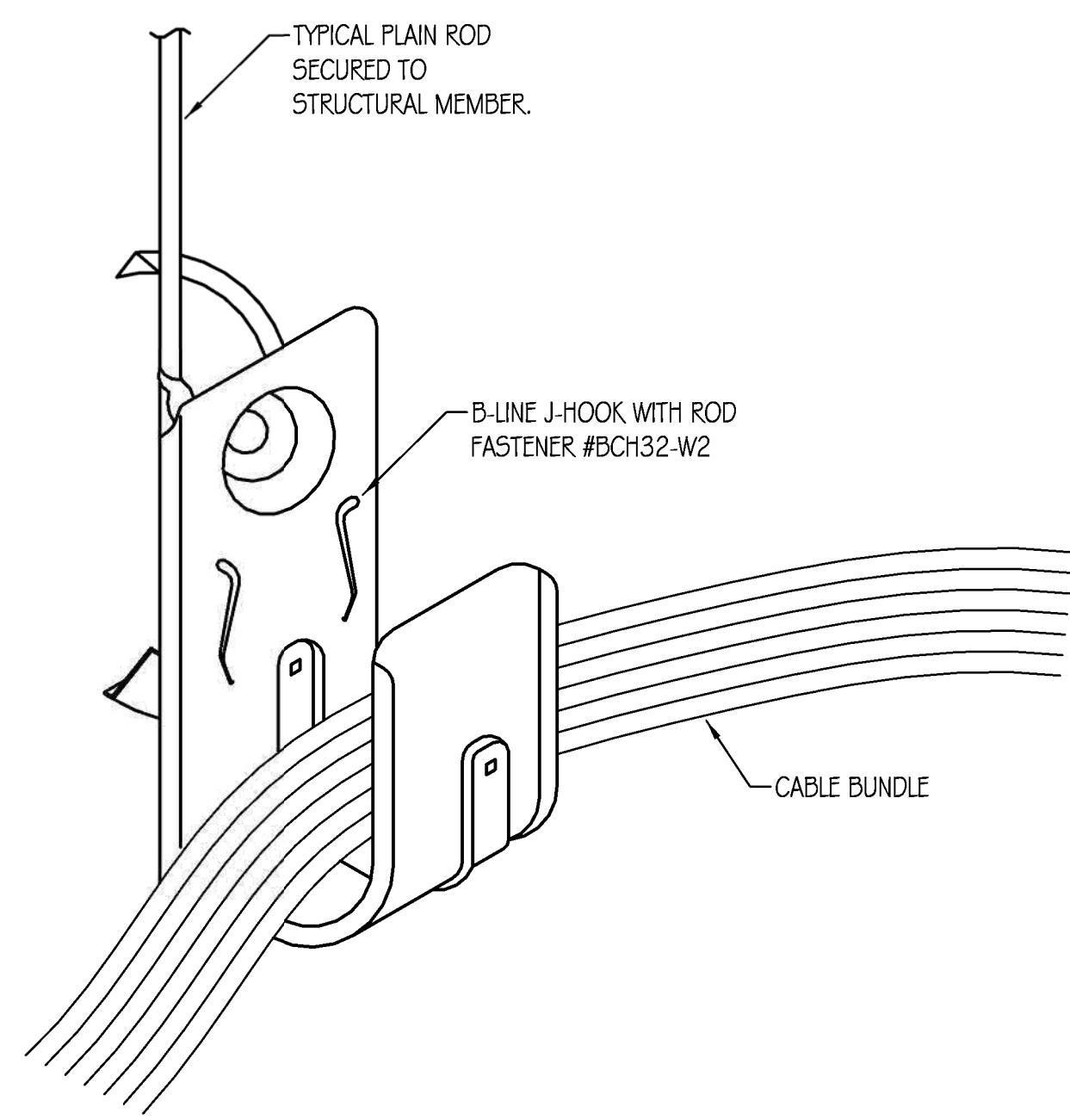
KEY PLAN

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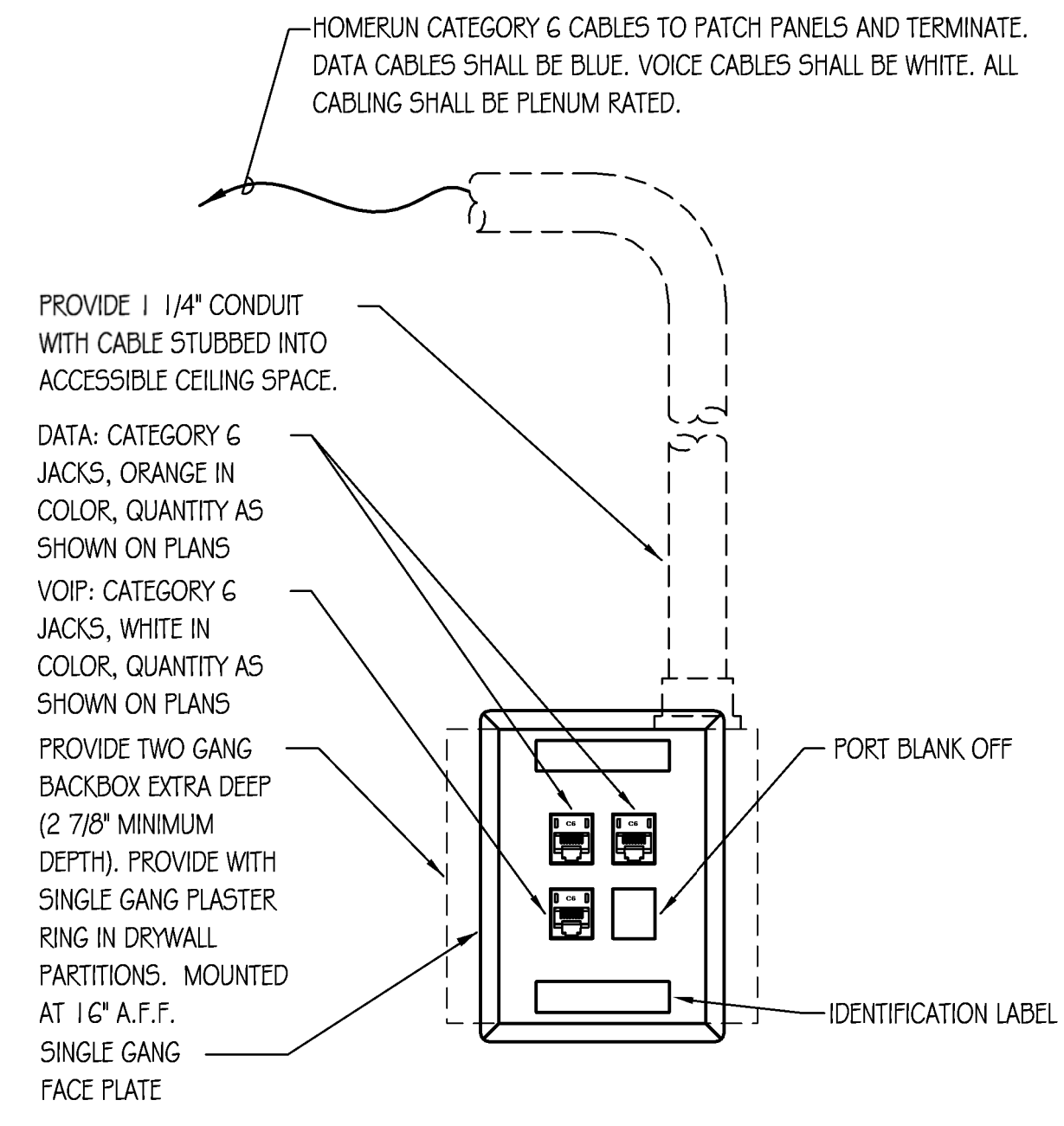
ELECTRICAL NOTES

E4.10

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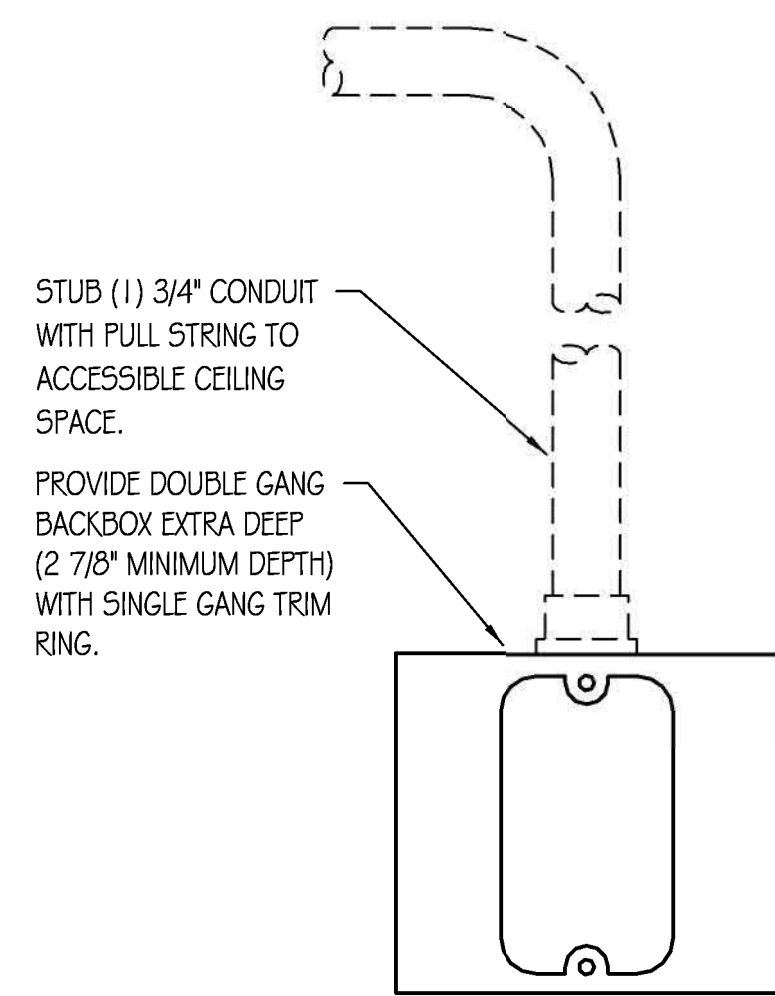


CABLE BUNDLE SUPPORT DETAIL
NO SCALE



TYPICAL COMMUNICATION OUTLET DETAIL
NO SCALE

- PLAN SYMBOL =
- NOTES :
- PROVIDE MACHINE MADE IDENTIFICATION LABELS FOR EACH LOW VOLTAGE OUTLET. VERIFY EXACT REQUIREMENTS WITH OWNERS REPRESENTATIVE.
 - ALL CABLE SHALL BE A MINIMUM OF CATEGORY 6 UNLESS INDICATED OTHERWISE.
 - LABEL EACH DATA JACK WITH THE IDF CLOSET AND PATCH PORT NUMBER.
 - PROVIDE QUANTITY OF CABLES AND JACKS AS INDICATED ON PLANS.
 - CABLE JACKET AND JACK COLORS SHALL MATCH EXISTING BUILDING STANDARDS.



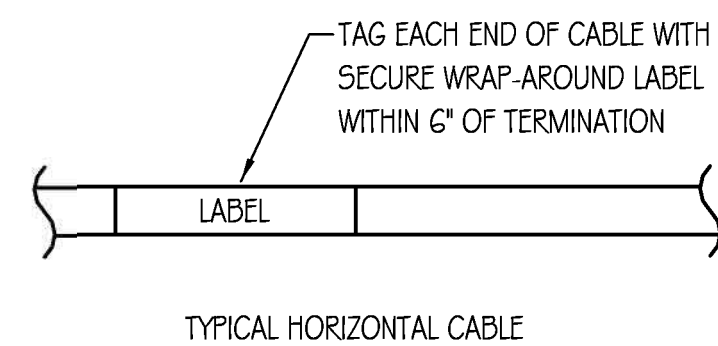
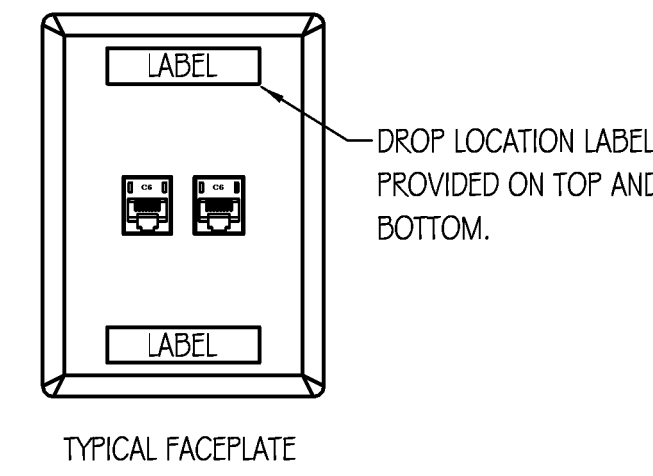
STATION ALERT JUNCTION BOX DETAIL
NO SCALE

PLAN SYMBOL =

DROP LOCATION LABELING LOGIC
(PATCH-ID)-(PORT #)

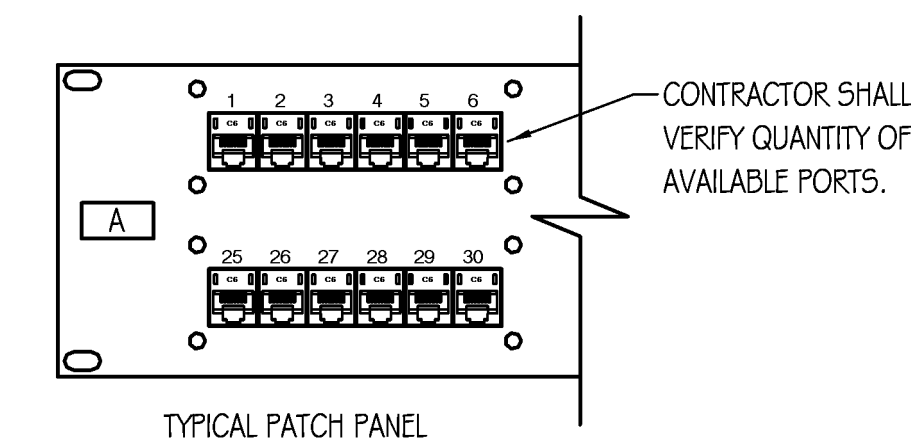
INDIVIDUAL PORT NUMBER ('01','02')

PATCH PANEL ('A','B','C')



NOTE: EACH HORIZONTAL CABLE TERMINATION SHALL HAVE DEDICATED IDENTIFICATION. ALL LABELING MUST BE DONE WITH MECHANICAL LABEL MAKER, UTILIZING SCHEME AND METHODS ILLUSTRATED ABOVE, NO HAND-LETTERING PERMISSIBLE. ALL LABELS TO FEATURE BLACK TEXT ON WHITE BACKGROUND.

DATA CABLE LABELING DETAIL
NO SCALE



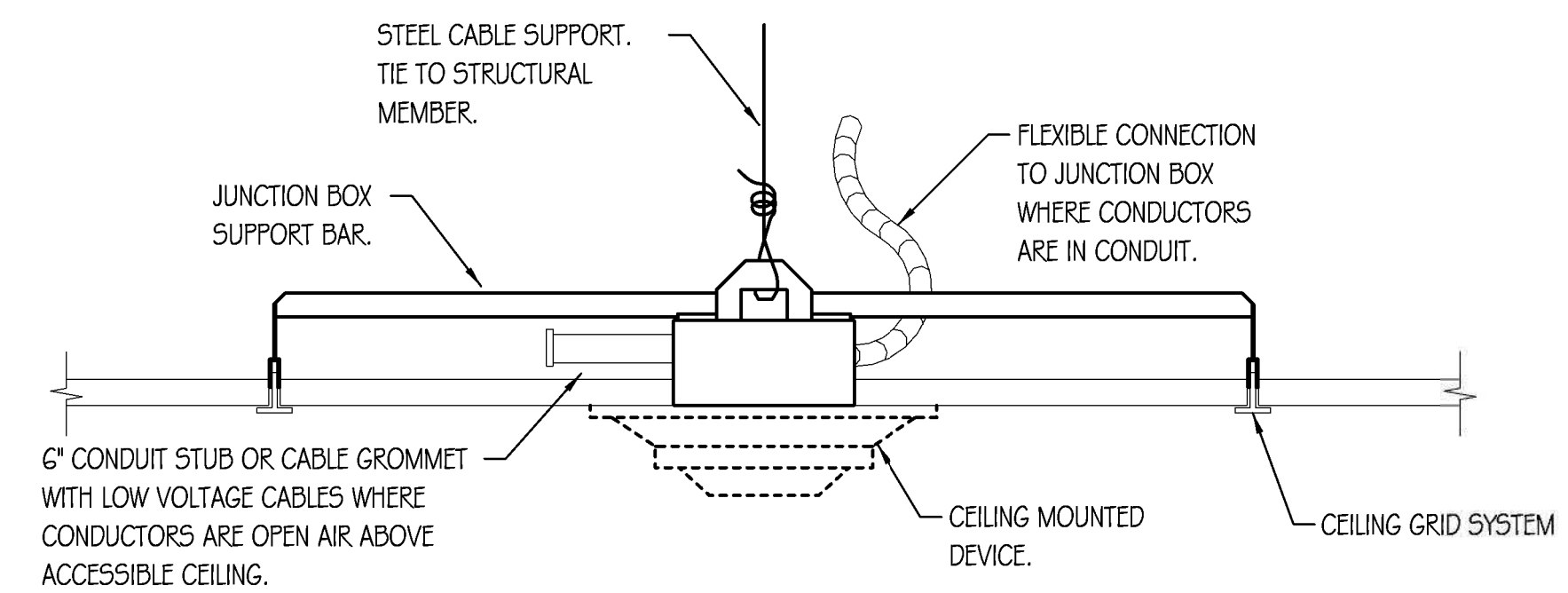
MATRIX OF RESPONSIBILITY			
ITEM	BY ELECTRICAL CONTRACTOR	BY OWNERS REPRESENTATIVE	NOTES
TELECOMMUNICATION - BACKBOX ROUGH-IN AND RACEWAYS	X	-	-
TELECOMMUNICATION - CABLING AND TERMINATIONS	X	-	-
TELECOMMUNICATION - CABLE TESTING AND CERTIFICATION	X	-	-
TELECOMMUNICATION - PATCH PANELS, CABLE MANAGEMENT, FLOOR MOUNTED RACKS	-	-	3
TELECOMMUNICATION - UPS, SWITCHES, SERVERS, WIRELESS ACCESS POINTS	-	X	-
TELECOMMUNICATION - 120VAC TO EQUIPMENT	X	-	-
STATION ALERT SYSTEM - BACKBOX ROUGH-IN AND RACEWAYS	X	-	1
STATION ALERT SYSTEM - CABLING AND TERMINATIONS	-	X	-
STATION ALERT SYSTEM - EQUIPMENT AND ASSOCIATED RACK/CABINET	-	X	-
STATION ALERT SYSTEM - 120VAC TO EQUIPMENT	X	-	2

GENERAL NOTES:

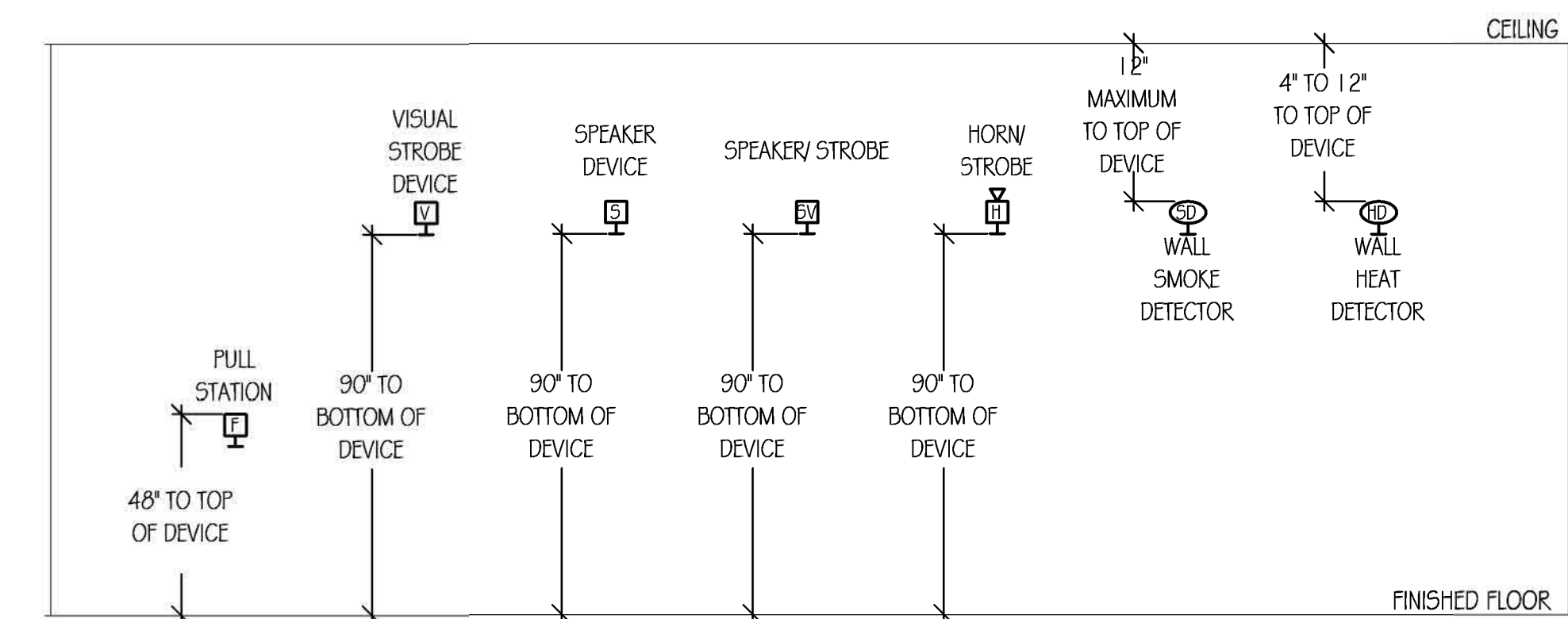
- MATRIX IS SHOWN AS RECOMMENDATIONS ONLY AND PROVIDED AS A COURTESY TO CONTRACTOR. SOME COMPONENTS MAY NOT BE INCLUDED IN THIS MATRIX. CONFIRM WITH ARCHITECT, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER PRIOR TO BIDDING TO CONFIRM SCOPE APPLICABLE TO THIS TRADES WORK.

NOTES:

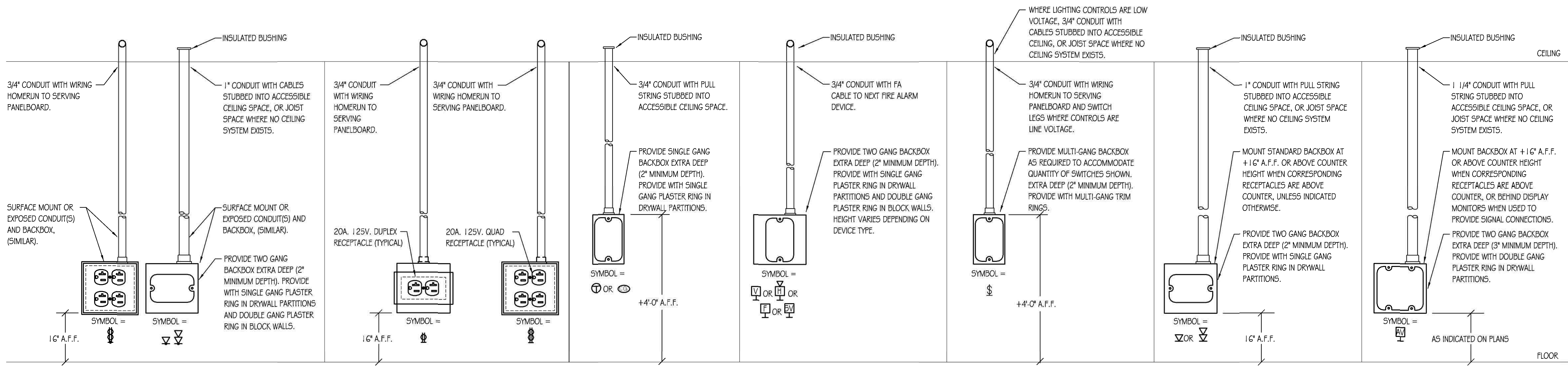
- CONTRACTOR TO CONFIRM EXACT QUANTITY, HEIGHT, BACKBOX SIZE AND CONDUIT SIZE WITH OWNERS REPRESENTATIVE PRIOR TO ROUGH-IN.
- CONTRACTOR TO CONFIRM EXACT LOCATION AND ELECTRICAL CHARACTERISTICS OF EQUIPMENT WITH OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.
- NEW CABLES TO BE TERMINATED IN EXISTING PATCH PANELS ON EXISTING RACKS.



CEILING MOUNTED DEVICE SUPPORT DETAIL
NO SCALE



FIRE ALARM DEVICE MOUNTING HEIGHT DETAIL
NO SCALE



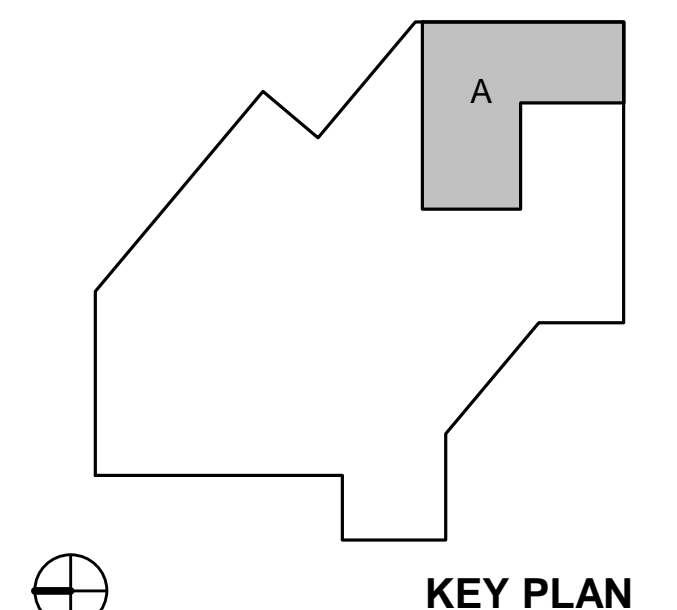
JUNCTION BOX ROUGH-IN DETAIL
NO SCALE

- NOTES :
- DETAILS ARE FOR REFERENCE ONLY.
 - NOT ALL DEVICES ARE REQUIRED FOR THIS PROJECT.
 - PROVIDE TWO GANG BACKBOXES (2" MINIMUM DEPTH) WITH ALL RECEPTACLE OUTLETS.

USE ONLY IN NON-PUBLIC AREAS (E.G. MECHANICAL/ELECTRICAL ROOMS) WHERE FLUSH/RECESS INSTALLATION IS NOT REQUIRED. SEE PLAN DRAWINGS FOR LOCATIONS.

AT MONITOR LOCATIONS IN METAL STUD WALLS, PROVIDE ADDITIONAL 3/4" WOODEN BACKER BOARD TO SUPPORT THE WEIGHT OF VIDEO MONITORS. BOARDS SHOULD SPAN THREE STUDS AND MEASURE AT LEAST 18" HIGH.

Second Floor Bunk House Floor Plan



NO	ISSUE	DATE
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ELECTRICAL DETAILS

E5.00

23016

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ELECTRICAL SPECIFICATIONS

1. SCOPE
THE WORK COVERED BY THIS SPECIFICATION INCLUDES THE COMPLETE ELECTRICAL SYSTEM.
- THE WORK TO BE PERFORMED UNDER THE ELECTRICAL SPECIFICATIONS AND DRAWINGS CONSISTS OF FURNISHING ALL LABOR AND MATERIAL FOR THE COMPLETE INSTALLATION OF ELECTRICAL SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
- CONDUIT AND WIRING
 - WIRING DEVICES
 - LUMINAIRES
 - TELECOMMUNICATIONS

2. GENERAL
THIS SPECIFICATION IS INCLUSIVE FOR EACH ITEM REQUIRING ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PROPERLY INSTALL, ALTER, ADJUST, AND PUT INTO OPERATION THE COMPLETE ELECTRICAL SYSTEM.

THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER LAYOUT AND CONSTRUCTION OF THE WORK INCLUDED IN THIS CONTRACT.

THE DRAWINGS AND SPECIFICATIONS SHALL BE UNDERSTOOD TO COVER, ACCORDING TO THEIR INTENT AND MEANING, COMPLETE SYSTEMS AS DESCRIBED HEREIN.

MINOR ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERRABLE AS NECESSARY FOR THE COMPLETE AND PROPER OPERATION OF ANY SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR FOR SUCH SYSTEM(S) WHETHER OR NOT THEY ARE SPECIFICALLY CALLED FOR BY THE DRAWINGS AND/OR SPECIFICATIONS.

THE COMPLETE INSTALLATION SHALL MEET ALL APPLICABLE CODE REQUIREMENTS.

3. VISIT TO SITE
ATTENTION IS DIRECTED TO THE NECESSITY OF THE CONTRACTOR TO VISIT THE SITE AND EXAMINE ALL CONDITIONS AFFECTING THE PROPER EXECUTION OF THIS CONTRACT. SUBMISSION OF PROPOSALS SHALL BE CONSIDERED EVIDENCE THAT THE CONTRACTOR HAS VISITED AND EXAMINED THE SITE.

NO EXTRA PAYMENT WILL BE ALLOWED TO THE CONTRACTOR FOR EXTRA WORK CAUSED BY FAILURE TO VISIT, EXAMINE, AND CLARIFY.

4. LAWS, ORDINANCES, AND REGULATIONS
ALL SYSTEMS SHALL CONFORM IN FULL AND/OR PART TO ALL PERTINENT LAWS, ORDINANCES, AND REGULATIONS OF ALL BODIES HAVING JURISDICTION AT ALL GOVERNING LEVELS, NOTWITHSTANDING ANYTHING IN THESE DRAWINGS OR SPECIFICATIONS TO THE CONTRARY. IN THE CASE OF CONFLICT BETWEEN GOVERNING LEVELS, THE MORE STRINGENT LAWS SHALL APPLY.

THE CONTRACTOR SHALL PAY ALL FEES AND OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY ANY AUTHORITY HAVING JURISDICTION IN CONNECTION WITH THE CONTRACTOR'S WORK.

WHERE APPLICABLE, ALL NEW MATERIAL SHALL BEAR THE UNDERWRITER'S SEAL OF APPROVAL, AS WELL AS THOSE SEALS OF ALL MUNICIPALITIES HAVING JURISDICTION. CERTIFICATES TO THIS EFFECT SHALL BE FURNISHED TO THE ARCHITECT UPON REQUEST.

THE CONTRACTOR SHALL SECURE AND PAY FOR ALL LICENSES REQUIRED BY THE GOVERNING BODIES TO OPERATE AS AN ELECTRICAL CONTRACTOR FOR THIS PROJECT.

5. WORKSMANSHIP
ALL WORK TO BE PERFORMED SHALL BE DONE BY QUALIFIED MECHANICS IN THE EMPLOY OF THE CONTRACTOR ON THIS PROJECT; MECHANICS SHALL BE SKILLED IN THE PHASES OF THE WORK TO WHICH THEY ARE USED.

THE COMPLETE SYSTEM SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE.

6. MATERIALS AND EQUIPMENT
ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM TO THE GRADE, QUALITY, AND STANDARD SPECIFIED HEREIN.

ALL EQUIPMENT OFFERED UNDER THESE SPECIFICATIONS SHALL BE LIMITED TO PRODUCTS REGULARLY PRODUCED AND RECOMMENDED FOR SERVICE IN ACCORDANCE WITH ENGINEERING DATA, RATINGS, OR OTHER COMPREHENSIVE LITERATURE MADE AVAILABLE TO THE PUBLIC AND IN EFFECT AT THE TIME OF OPENING BIDS.

EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS FOR TYPE AND CAPACITY OF EACH PIECE OF EQUIPMENT USED.

7. COORDINATION WITH OTHER TRADES
THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THEIR WORK WITH THE WORK OF OTHER TRADES. THE CONTRACTOR IS COMPLETELY RESPONSIBLE IF FAILURE ON THEIR PART TO COORDINATE EFFORTS RESULTS IN EXTRA WORK HAVING TO BE DONE TO COMPLETE A TASK, AS SUCH, THEIR FAILURE SHALL NOT BE THE BASIS FOR ANY EXTRA CHARGES AGAINST THE OWNER.

8. GROUNDING
PROVIDE ALL ELECTRICAL SYSTEM AND EQUIPMENT GROUNDS AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE, THE NATIONAL SAFETY CODE, AND ALL AGENCIES/AUTHORITIES NOTED ABOVE.

9. WIRING - MANNER OF INSTALLATION
ALL WIRES SHALL BE INSTALLED IN METALLIC CONDUIT. PROVIDE THIN WALL CONDUIT (EMT) IN ALL LOCATIONS EXCEPT WHERE PROHIBITED BY CODE, EXPOSED TO WEATHER, EXPOSED TO MECHANICAL INJURY, OR WHERE BURIED IN OR BELOW SLABS ON GRADE; IN THOSE LOCATIONS PROVIDE RIGID STEEL CONDUIT.

THE ENTIRE CONDUIT SYSTEM SHALL BE INSTALLED BOTH ELECTRICALLY AND MECHANICALLY CONTINUOUS. CONDUIT FITTINGS SHALL BE SUITABLE FOR THEIR PURPOSE AND SHALL BE COMPRESSION TYPE ONLY. INDENTER TYPE FITTINGS ARE STRICTLY PROHIBITED.

10. WIRE AND CABLE
WIRE AND CABLE FOR BRANCH CIRCUITS AND SECONDARY FEEDERS WITHIN THE BUILDING SHALL BE COPPER, THERMOPLASTIC INSULATED, TYPE THIN OR THIN, AND 600V RATED. TYPE THW MAY BE USED IN LIEU OF TYPE THWN OR THHN IN SIZES OF #12 AWG AND #10 AWG IN DRY LOCATIONS AT THE CONTRACTOR'S OPTION. WIRE BENEATH OR IN THE GROUND FLOOR AND OTHER WET LOCATIONS SHALL BE TYPE THWN.

NO WIRE SMALLER THAN #12 AWG SHALL BE USED ON THIS PROJECT UNLESS INDICATED. LOW VOLTAGE CONTROL AND SIGNAL CIRCUITS MAY BE A MINIMUM OF #18 AWG.

PROVIDE COLOR CODED WIRING AS FOLLOWS:

PHASE A	120/208V	120/240V DELTA	277/480V
PHASE B	BLACK	BLACK	BROWN
PHASE C	RED	ORANGE	ORANGE
PHASE D	BLUE	BLUE	YELLOW
NEUTRAL	WHITE	WHITE	GRAY
GROUND	GREEN	GREEN	GREEN WITH YELLOW STRIPE

BRANCH CIRCUIT WIRING FOR 20 AMP RECEPTACLES AND LIGHTING CIRCUITS SHALL BE ADJUSTED FOR VOLTAGE DROP:

A. 120/208V:	0-75'	-	#12AWG MINIMUM
	75'-150'	-	#10AWG MINIMUM
	150'-225'	-	#8AWG MINIMUM
B. 277/480V:	0-100'	-	#12AWG MINIMUM
	100'-200'	-	#10AWG MINIMUM
	200'-300'	-	#8AWG MINIMUM

WIRE SIZES #12 AWG AND #10 AWG SHALL BE SOLID. WIRE SIZE #8 AWG AND LARGER SHALL BE STRANDED.

CONDUCTORS OF DIFFERENT VOLTAGES ("LOW VOLTAGE" vs. 120/208 VOLT) SHALL NOT OCCUPY THE SAME WIRING ENCLOSURE, CABLE, OR RACEWAY.

ALL WIRING SHALL BE ENCLOSED WITHIN A COMPLETE AND CONTINUOUS METAL RACEWAY.

11. SPLICING
SPLICING WIRES SHALL BE DONE ONLY IN ACCESSIBLE OUTLET, JUNCTION, OR PULL BOXES. SPLICES SHALL BE MADE STRICTLY IN ACCORDANCE WITH THE INSTRUCTIONS OF THE CABLE MANUFACTURER USING THE METHODS AND MATERIALS RECOMMENDED BY THE MANUFACTURER.

FOR #10 AWG AND #12 AWG WIRE, SPLICES SHALL BE MADE WITH SCOTCHLOK CONNECTORS.

WIRE #8 AWG AND LARGER:
BURNED OR EQUAL SOLDERLESS MECHANICAL LUG AND PAINTED WITH INSULATING VARNISH.
POLARIS OR EQUAL SOLDERLESS MECHANICAL LUG WITH FACTORY APPLIED CHEMICAL AND ABRASION RESISTANT, UV RATED INSULATION.

ALL CONNECTIONS SHALL BE PROPERLY TAPED WITH SCOTCH ELECTRICAL TAPE #22, #33, OR APPROVED EQUAL.

12. JUNCTION AND PULL BOXES
JUNCTION BOXES, PULL BOXES, AND TERMINAL BOXES SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS AND AT OTHER LOCATIONS AS REQUIRED TO FACILITATE THE PULLING OF CABLES. THEY SHALL BE CODE SIZED AND SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED SHEET STEEL. EACH BOX SHALL BE PROVIDED WITH A SCREW-ON REMOVABLE COVER. PROVIDE FLANGED COVERS ON FLUSH BOXES. BOXES SHALL BE SMOOTH, SQUARE, AND SET PARALLEL WITH WALLS AND CEILING. MINIMUM SIZE OF JUNCTION BOXES SHALL BE 4" X 4" X 2" SQUARE.

13. CONDUIT AND ELECTRIC METALLIC TUBING
CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE IN ACCORDANCE WITH APPLICABLE ARTICLES OF THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE.

INTERMEDIATE METAL CONDUIT (IMC) - ARTICLE 342
RIGID METAL CONDUIT (RMC) - ARTICLE 344
FLEXIBLE METAL CONDUIT (FMC) - ARTICLE 248
LIQUID TIGHT FLEXIBLE METAL CONDUIT (LFMC) - ARTICLE 350
RIGID POLYVINYL CHLORIDE CONDUIT (PVC) ARTICLE 352
ELECTRICAL METALLIC TUBING (EMT) - ARTICLE 358

IMC, RMC, AND EMT SHALL BE GALVANIZED STEEL.

THE CONDUIT SHALL BE INSTALLED PERPENDICULAR AND PARALLEL TO BUILDING LINES.

ALL CONDUIT INSTALLED OVERHEAD SHALL BE RIGIDLY SUPPORTED FROM THE STRUCTURE ABOVE AND NOT FROM ANY PART OF THE ROOFING SYSTEM OR CEILING SYSTEM. CEILING SYSTEM TO INCLUDE T-BAR GRID, SUPPORT WIRES, ETC.

ALL CONDUIT INSTALLATION SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

- SINGLE PHASE 120 VOLT BRANCH CIRCUITS, COMMUNICATIONS WIRING, AND OTHER SIGNALING CIRCUITS FOR INTERIOR LOCATIONS: USE EMT.
- THREE PHASE 208 VOLT FEEDERS AND SINGLE PHASE BRANCH CIRCUITS FOR INTERIOR LOCATIONS: UP TO 2" USE EMT, OVER 2" USE IMC.
- EXTERIOR CONDUITS ABOVE GRADE SHALL BE IMC OR RMC.
- EXTERIOR CONDUITS BELOW GRADE SHALL RMC OR PVC.
- PROVIDE METALLIC TRACER WIRE OR TAPE FOR ALL BELOW GRADE NON-METALLIC CONDUITS.

14. OUTLET BOXES
GENERALLY, OUTLET BOXES OF PROPER TYPE AND NOT LESS THAN 4 INCHES SQUARE OR OCTAGONAL AS REQUIRED BY BUILDING CONDITIONS SHALL BE PLACED AT ALL LIGHT, RECEPTACLE, AND SWITCH OUTLETS. OUTLET BOXES SHALL BE FIRMLY SECURED IN PLACE AND SHALL BE SET TRUE, SQUARE, AND FLUSH WITH THE FINISHED SURFACES. THE CONTRACTOR SHALL MOVE ANY OUTLET BOX UP TO 5 FEET IN ANY DIRECTION WITHOUT COST IF RELOCATED PRIOR TO INSTALLATION. MINIMUM DEPTH SHALL BE 2 INCHES.

15. WIRING DEVICES
ACCEPTABLE MANUFACTURERS: PASS # SEYMOUR, LEVITON, COOPER, OR HUBBELL

SWITCHES SHALL BE OF THE HEAVY DUTY GRADE, 120/277 VOLT, FLUSH TOGGLE TYPE RATED AT 20 AMPERES AND UL APPROVED. ALL SWITCHES SHALL HAVE POLES AS REQUIRED AND SHALL BE SIMILAR TO PASS # SEYMOUR #PS20AC1. RECEPTACLES SHALL BE POLARIZED, GROUNDED, DUPLEX, BACK AND SIDE WIRED, RATED 20 AMPERES, AND UL APPROVED. ALL GENERAL PURPOSE RECEPTACLES SHALL BE SPECIFICATION GRADE, TAMPER-RESISTANT TYPE SIMILAR TO PASS # SEYMOUR #TR5362. ALL RECEPTACLES WITH GROUND-FAULT CIRCUIT INTERRUPTER SHALL BE TAMPER-RESISTANT TYPE SIMILAR TO PASS # SEYMOUR #2097TR. ALL USB TYPE RECEPTACLES SHALL INCLUDE (2) USB PORTS WITH MINIMUM 5AMP CHARGE OUTPUT SIMILAR TO PASS # SEYMOUR #TR5362USB. ALL WEATHER-RESISTANT RECEPTACLES WITH GROUND-FAULT CIRCUIT INTERRUPTER SHALL BE SIMILAR TO PASS # SEYMOUR #2095TRWR. DEVICE COLORS TO BE SELECTED BY ARCHITECT.

CONTRACTOR TO SUBMIT SHOP DRAWINGS ON THIS ITEM.

16. DEVICE WALLPLATES
SWITCH AND RECEPTACLE PLATES IN FINISHED AREAS SHALL BE TYPE 302/304 BRUSHED STAINLESS STEEL BY SAME MANUFACTURE AS DEVICE. ALL PLATES IN UNFINISHED AREAS AREA SHALL BE FORMED STEEL (GARVIN COVERS).

CONTRACTOR TO SUBMIT SHOP DRAWINGS ON THIS ITEM.

17. DISCONNECTS
ACCEPTABLE MANUFACTURERS: EATON, SQUARE D, OR SIEMENS

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL FUSIBLE OR NON-FUSIBLE DISCONNECT SWITCHES AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.

PROVIDE HEAVY DUTY, KNIFE SWITCH TYPE DISCONNECT SWITCHES FOR ALL ELECTRICALLY OPERATED EQUIPMENT NEMA RATED FOR SIZE AND LOCATION. DISCONNECT SWITCHES SHALL BE PLENUM RATED OR WEATHERPROOF WHERE REQUIRED. HANDLE SHALL BE LOCKABLE IN THE "OFF" POSITION. PROVIDE A PLASTIC LAMINATE INSCRIPTION PLATE WITH RIVETS FOR IDENTIFICATION. (PULLOUT SWITCHES ARE NOT APPROVED.) FOR FUSIBLE DISCONNECT SWITCHES, PROVIDE FUSE CLIPS DESIGNED TO ACCOMMODATE NEMA FU 1, CLASS R FUSES.

CONTRACTOR TO SUBMIT SHOP DRAWINGS ON THIS ITEM.

18. PANELBOARDS
ACCEPTABLE MANUFACTURERS: EATON, SQUARE D, OR SIEMENS

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PANELBOARDS AND CABINETS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.

PANELBOARDS SHALL BE DEAD FRONT, WITH CAPACITY AND VOLTAGE CHARACTERISTICS AS SHOWN ON THE SCHEDULES. MAIN AND NEUTRAL BUS BARS SHALL BE COPPER AND BASED ON A CURRENT DENSITY OF NOT MORE THAN 1,000 AMPERES PER SQUARE INCH CROSS SECTION AND SHALL BE FULL CAPACITY FOR THE ENTIRE LENGTH OF THE PANEL. BUSSING SHALL BE SEQUENCED SO AS TO PERMIT THE INSTALLATION OF FUSIBLE SWITCHES OR 1, 2, AND 3 POLE BREAKERS AT ANY LOCATION. LUGS SHALL BE SUITABLE FOR COPPER CABLE. GROUND BARS SHALL BE COPPER.

FUSIBLE SWITCHES SHALL BE 3 POLE, SEPARATELY COMPARTMENTED WITH CLASS RK1 FUSE CLIPS.

CIRCUIT BREAKERS SHALL BE QUICK-MAKE/QUICK-BREAK, SWITCHING DUTY RATED FOR 20A BREAKERS, TRIP INDICATING AND AMBIENT COMPENSATED, WITH COMMON TRIP ON MULTI-POLE BREAKERS. CIRCUIT BREAKERS SHALL BE BOLT-ON CONNECTED TO THE PANELBOARD, MINIMUM INTERRUPTING CAPACITY SHALL BE 10,000 AIC FOR 120/208 VOLT CIRCUIT BREAKERS. (PLUG-IN BREAKERS ARE NOT APPROVED.)

BREAKERS USED FOR EXIT SIGNS, EMERGENCY LIGHTING, AND NIGHT LIGHTING CIRCUITS SHALL BE LOCKED IN THE "ON" POSITION.

PANELBOARD BOXES SHALL BE CODE GAUGE, GALVANIZED SHEET STEEL, WITH 4 INCH MINIMUM SIDE GUTTERS AND 5 INCH MINIMUM END GUTTERS. PANELBOARD BOXES SHALL NOT EXCEED 78 INCHES ABOVE FINISHED FLOOR.

EACH BRANCH CIRCUIT SHALL BE DISTINCTLY NUMBERED. PANELBOARD WIRING SHALL BE TAGGED AT EACH BREAKER WITH PROPER CIRCUIT NUMBERING. WRAP AROUND TAPES (BRADY TAGS) WILL BE ACCEPTABLE.

PANELBOARDS SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE, UNDERWRITERS LABORATORIES, AND NEMA, AND SHALL DISPLAY A SERVICE ENTRANCE LABEL WHERE APPLICABLE. EACH PANELBOARD SHALL BE LEFT WITH A TYPEWRITTEN DIRECTORY IDENTIFYING EACH LOAD AFFIXED TO THE INSIDE COVER OF THE PANELBOARD.

PROVIDE A PERMANENT IDENTIFICATION NAMEPLATE ON ALL PANELBOARDS AND DISTRIBUTION PANELS. AT FUSIBLE DISTRIBUTION PANELS PROVIDE A NAMEPLATE AT EACH PIECE OF EQUIPMENT.

CONTRACTOR TO SUBMIT SHOP DRAWINGS ON THIS ITEM.

19. LUMINAIRES
LUMINAIRES SHALL BE PROVIDED AS SPECIFIED ON DRAWINGS. LUMINAIRES SHALL BE HUNG AND MOUNTED IN PLACE, PROPERLY WIRED, TESTED, AND LEFT READY FOR OPERATION BY THE CONTRACTOR.

LED LUMINAIRES: DESIGNED AND TESTED TO IESNA STANDARDS LM-80 AND LM-79, WITH 5 YEAR MANUFACTURERS WARRANTY.

WHERE LOCATED BENEATH DUCTWORK, THE CONTRACTOR IS PROHIBITED FROM PUNCTURING THE DUCTWORK OR MOUNTING LUMINAIRES DIRECTLY TO THE DUCTWORK. THE CONTRACTOR MAY MOUNT THE LUMINAIRES TO THE DUCTWORK SUPPORT MEMBERS. HANGING DEVICES, BRACKETS, ENCLOSURES, AND OTHER ACCESSORIES SHALL BE PROVIDED FOR A COMPLETE INSTALLATION AND SHALL BE INSTALLED BY THE CONTRACTOR. LUMINAIRES SHALL BE HUNG PLUMB AND SET SQUARE AGAINST THE WALL OR CEILING, OR SUSPENDED AS DESIGNATED. THE MOUNTING HEIGHT OF LUMINAIRES SHALL BE CONFIRMED BEFORE INSTALLATION.

CONTRACTOR TO SUBMIT SHOP DRAWINGS ON THIS ITEM.

20. LIGHTING CONTROL SYSTEM
LIGHTING CONTROLS SHALL BE PROVIDED AS SPECIFIED ON DRAWINGS. ALL SENSORS SHALL BE MOUNTED IN PLACE, PROPERLY WIRED, PROGRAMMED AND TESTED FOR OPERATION BY THE CONTRACTOR.

TIME-BASED, SENSOR-BASED AND MANUAL LIGHTING CONTROL WITHOUT THE USE OF ANY CENTRALLY HARDWIRED SWITCHING EQUIPMENT (RELAY PANELS). THE SYSTEMS CONTROL SHALL BE EXERCISED BY DIRECTLY SWITCHING LOADS ON/OFF AND/OR DIMMING LIGHTS.

COVERAGE OF SENSORS SHALL REMAIN CONSTANT AFTER SENSITIVITY CONTROL HAS BEEN SET. NO AUTOMATIC REDUCTION SHALL OCCUR IN COVERAGE DUE TO THE CYCLING OF AIR CONDITIONER OR HEATING FANS.

ALL SENSORS SHALL HAVE READILY ACCESSIBLE, USER ADJUSTABLE CONTROLS FOR TIME DELAY AND SENSITIVITY.

IN THE EVENT OF FAILURE, A BYPASS MANUAL OVERRIDE SHALL BE PROVIDED ON EACH SENSOR. WHEN BYPASS IS UTILIZED, LIGHTING SHALL REMAIN ON CONSTANTLY OR CONTROL SHALL DIVERT TO A WALL SWITCH UNTIL SENSOR IS REPLACED.

ALL SENSORS SHALL PROVIDE A METHOD OF INDICATION TO VERIFY THAT MOTION IS BEING DETECTED DURING TESTING AND THAT THE UNIT IS WORKING.

POWER PACKS: PLENUM RATED, SELF-CONTAINED LOW VOLTAGE CLASS 2 TRANSFORMER AND RELAY COMPATIBLE WITH SPECIFIED LOW VOLTAGE OCCUPANCY SENSORS FOR SWITCHING OF LINE VOLTAGE LOADS. PROVIDE QUANTITY, TYPE AND CONFIGURATION OF POWER AND SLAVE PACKS WITH ALL ASSOCIATED WIRING AND ACCESSORIES AS REQUIRED TO CONTROL THE LOAD INDICATED ON DRAWINGS.

CONTRACTOR TO SUBMIT SHOP DRAWINGS ON THIS ITEM.

21. TELECOMMUNICATIONS

WORK SHALL BE DONE IN CONFORMANCE WITH THE FOLLOWING STANDARDS, BUT SHALL IN NO WAY VIOLATE APPLICABLE CODES, LAWS, AND ORDINANCES OF GOVERNING BODIES HAVING JURISDICTION.

- ANSI/TIA-568.0-E: GENERIC TELECOMMUNICATIONS CABLING FOR CUSTOMER PREMISE
- ANSI/TIA-568.1-E: COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING
- ANSI/TIA-568.2-D: BALANCED TWISTED-PAIR TELECOMMUNICATIONS CABLING AND COMPONENTS
- ANSI/TIA-569-E: TELECOMMUNICATIONS PATHWAYS AND SPACES
- ANSI/TIA-606-C: ADMINISTRATION STANDARD FOR TELECOMMUNICATIONS INFRASTRUCTURE
- ANSI/TIA-607-D: GENERIC TELECOMMUNICATIONS BONDING AND GROUNDING FOR CUSTOMER PREMISES
- ANSI/TIA-1152-A: REQUIREMENTS FOR FIELD TEST INSTRUMENTS AND MEASUREMENTS FOR BALANCED TWISTED-PAIR CABLING

PATCH CORDS AND CROSS CONNECTS SHALL BE ORGANIZED AND BUNDLED AND NEAT IN APPEARANCE. BUNDLES OF PATCH CORDS AND CROSS CONNECTS SHALL BE SUPPORTED BY THE STRAIN RELIEF BAR OF THE COMPONENT OR OTHER SUPPLEMENTAL STRAIN RELIEF DEVICES IF NO BAR IS PRESENT.

EACH CABLE BEING TERMINATED ONTO A PATCH PANEL SHALL BE SUPPORTED UP TO THE POINT OF TERMINATION THROUGH THE USE OF THE COMPONENTS STRAIN RELIEF BAR. BUNDLING OF CABLES SHALL BE DONE LOOSELY SO AS TO AVOID DAMAGE AND/OR DISTORTIONS OF THE OUTER CABLE JACKETS AND INNER CABLE CONDUCTORS. ALL BUNDLE/CABLE TIES SHALL BE LEFT FIRM BUT NOT OVERTIGHTENED.

CABLES ARE TO BE TESTED AND CERTIFIED AFTER INSTALLATION IS COMPLETE. IF FOR ANY REASON A DROP LOCATION RACEWAY AND/OR FACEPLATE IS REMOVED FOR ADDITIONAL WORK, CABLES ASSOCIATED WITH THE DROP LOCATION ARE TO BE RE-TESTED AT THE COST OF THE CONTRACTOR. TEST REPORTS SHALL BE INCLUDED AS PART OF PROJECT CLOSEOUT DOCUMENTS.

CABLE SUPPORTS SHALL BE OF THE TYPE THAT DOES NOT APPLY FORCE TO THE CABLES OTHER THAN THE CABLES OWN WEIGHT. CABLE SUPPORTS SHALL NOT BE OVERLOADED BEYOND AND MANUFACTURERS RECOMMENDATIONS.

CABLES ARE TO BE INDIVIDUALLY LABELED AT EACH END. LABELS SHALL BE WRAP AROUND, NON SMEAR TYPE SO THAT THE PRINT IS COVERED BY A CLEAR TAPE. LABELS ARE TO BE MACHINE MADE.

THE CABLING IN THE ENCLOSURE SHALL BE MANAGED IN NEAT GROUPS ACCORDING TO THEIR USE (VOICE, DATA OR INTERCOM). CROSS OVERS OF BUNDLES SHALL BE AVOIDED.

CABLING SHALL BE ROUTED WITHIN CONDUITS IN WALLS.

CONTRACTOR SHALL SUBMIT:
MANUFACTURER CUT SHEETS, PRODUCT PERFORMANCE DATA, AND INSTALLATION INSTRUCTIONS FOR EACH COMPONENT INCLUDING CABLES, TERMINATION HARDWARE, PATCH PANELS, IDENTIFICATION LABELS, RACKS, ETC.

PRODUCTS
HORIZONTAL CABLING:
UL-LISTED, 100 OHM, 4-PAIR, UNSHIELDED TWISTED PAIR (UTP), CATEGORY 6, PLENUM (CMP) RATED CABLE.
APPROVED MANUFACTURERS: BERK-TEK LANMARK-G, MOHAWK G LAN, HUBBELL NEXTSPEED, PANDUIT TYG

DATAVOICE CONNECTORS:
MODULAR, 8-POSITION/8-CONDUCTOR, T568B WIRED, RJ-45 STYLE, CATEGORY 6 JACKS. COLOR AS SPECIFIED ON DRAWINGS OR TO MATCH BUILDING STANDARD.
APPROVED MANUFACTURERS: HUBBELL HXJG, PANDUIT, LEVITON

WALLPLATES:
- TYPE 302/304 BRUSHED STAINLESS STEEL TO MATCH WIRING DEVICES.
- ACCEPTS QUANTITY OF MODULAR JACKS/INSERTS INDICATED ON DRAWINGS, FOR USE WITH SNAP-IN JACKS ACCOMMODATING UTP CABLES.
- JACKS SHALL SNAP FIRMLY INTO FACEPLATE FRAME AND BE FLUSH WITH OUTER PLATE SURFACE.
- PROVIDE COLOR-MATCHED SNAP-IN BLANK INSERTS TO FILL ALL UNUSED OPENINGS.
- LEGEND: SNAP-IN, CLEAR-LABEL COVERS AND MACHINE-PRINTED PAPER INSERTS.
APPROVED MANUFACTURERS: HUBBELL, LEVITON, PANDUIT

EXECUTION
FOR A RENOVATION PROJECT IN AN EXISTING BUILDING, DEMO AND REMOVE BACK TO SOURCE, ALL ABANDONED COMMUNICATIONS WIRING SERVING COMMUNICATIONS OUTLETS AND DEVICES WITHIN THE AREA OF WORK. COORDINATE WORK TO NOT DISRUPT COMMUNICATIONS SERVICES TO AREAS OUTSIDE THE PROJECT'S AREA OF WORK AS MAY BE SERVED BY COMPONENTS AND COMMUNICATIONS INFRASTRUCTURE LOCATED WITHIN THE PROJECT'S AREA OF WORK.

HORIZONTAL CABLE RUN ABOVE THE SUSPENDED CEILING SHALL BE INSTALLED IN A NEAT AND ORGANIZED MANNER, STRAIGHT AND PLUMB AND SHALL BE WHEN POSSIBLE ROUTED ABOVE ACCESSIBLE CORRIDOR AREAS. CABLE DROPS TO WALL OUTLETS SHALL BE RUN IN THE CONDUIT SUB-UPS.

HORIZONTAL CABLES SHALL BE RUN ABOVE THE SUSPENDED CEILING AND SHALL BE SUPPORTED THROUGH CATEGORY 6 J-HOOKS INSTALLED AT A MAXIMUM SPACING OF 5 FOOT ON-CENTER. COORDINATE CABLE INSTALLATION WITH OTHER CEILING INSTALLATIONS INCLUDING HVAC DUCTS, ELECTRICAL FIXTURES AND CONDUITS, AND SPRINKLER PIPING. CABLE BUNDLE DROOP SHALL NOT EXCEED 8" BETWEEN SUPPORTS.

CABLES SHALL BE BUNDLED BY MEANS OF VELCRO. ZIP-TIES ARE UNACCEPTABLE.

THE LENGTH OF EACH HORIZONTAL CABLE RUN SHALL NOT EXCEED 295 FEET. HORIZONTAL CABLE IS DEFINED AS THAT LENGTH OF CABLE FROM THE BACK OF THE WORKSTATION OUTLET TO THE BACK OF THE PATCH PANEL OR CONNECTING BLOCK IN THE TELECOMMUNICATIONS CLOSET. HORIZONTAL CABLE SHALL BE A CONTINUOUS RUN OF CABLE WITH NO SPLICES, BRIDGES, OR OTHER DISCONTINUITIES.

MAINTAIN CABLE TWIST-RATE AT ALL TERMINATION POINTS. THE AMOUNT OF CABLE UNTWIST SHALL BE NO MORE THAN 1/2". DO NOT STRIP BACK THE CABLE JACKET ANY MORE THAN IS NECESSARY TO TERMINATE THE INDIVIDUAL CONDUCTORS, 1 INCH MAXIMUM.

LEAVE ENOUGH CABLE (APPROXIMATELY 1 1/2 INCHES AT THE OUTLET + 48 INCHES AT THE RACK) TO ALLOW EASY TERMINATION OF THE CABLE.

CABLES SHALL NOT BE TIE WRAPPED TO ELECTRICAL CONDUITS OR OTHER SYSTEM PIPING.



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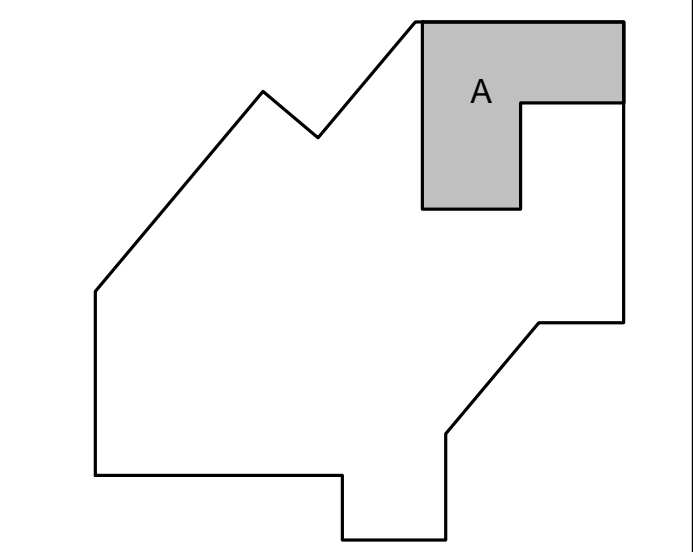
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Design Firm Registration Number:
184.004110-0006

Second Floor Bunk House Floor Plan

Village of Oak Park
100 N Euclid Ave., Oak Park, IL 60301



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ELECTRICAL SPECIFICATIONS

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ELECTRICAL SPECIFICATIONS (CONTINUED)

TESTING AND CERTIFICATION
 COPPER UTP CABLE TESTS: UPON COMPLETION OF THE INSTALLATION AND TERMINATION OF ALL COMMUNICATION CABLES, THE HORIZONTAL CABLING PLANT SHALL BE END-TO-END PERFORMANCE TESTED AND CERTIFIED FOR THE SPECIFIED CABLE CLASSIFICATION CATEGORIES AND SHALL BE PERFORMED IN ACCORDANCE WITH ANSI/TIA-568.

1. ALL INSTALLED CABLES SHALL BE PERMANENT LINK TESTED WITH LEVEL III TESTERS IN ACCORDANCE WITH ANSI/TIA-568 FOR THE FOLLOWING PARAMETERS:
 - A. WIRE MAP.
 - B. LENGTH.
 - C. PROPAGATION DELAY.
 - D. DELAY SKEW.
 - E. DC LOOP RESISTANCE.
 - F. DC RESISTANCE UNBALANCE WITHIN A PAIR.
 - G. DC RESISTANCE UNBALANCE BETWEEN PAIRS.
 - H. INSERTION LOSS.
 - I. NEXT (NEAR-END CROSSTALK).
 - J. PS NEXT (POWER SUM NEAR-END CROSSTALK).
 - K. ACR-N (ATTENUATION TO CROSSTALK RATIO NEAR-END).
 - L. PS ACR-N (POWER SUM ATTENUATION TO CROSSTALK RATIO NEAR-END).
 - M. ACR-F (ATTENUATION TO CROSSTALK RATIO FAR-END).
 - N. PS ACR-F (POWER SUM ATTENUATION TO CROSSTALK RATIO FAR-END).
 - O. RETURN LOSS.
 - P. TCL (TRANSVERSE CONVERSION LOSS).
 - Q. ELTCL (EQUAL LEVEL TRANSVERSE CONVERSION TRANSFER LOSS).
 - R. PS ANEXT (POWER SUM ALIEN NEAR-END CROSSTALK).
 - S. AVERAGE PS ANEXT (AVERAGE POWER SUM ALIEN NEAR-END CROSSTALK).
 - T. PS AACR-F (POWER SUM ALIEN ATTENUATION TO CROSSTALK RATIO FAR-END).
 - U. AVERAGE PS AACR-F (AVERAGE POWER SUM ALIEN ATTENUATION TO CROSSTALK RATIO FAR-END).

2. INSTALLED CABLES SHALL BE FIELD-TESTED AND PASS THE TEST REQUIREMENTS AND ANALYSIS. A STAR (**) PASSING SHALL NOT BE CONSIDERED ACCEPTABLE. ANY PERMANENT LINK THAT FAILS THESE REQUIREMENTS SHALL BE DIAGNOSED AND CORRECTED. ANY CORRECTIVE ACTION THAT MUST TAKE PLACE SHALL BE DOCUMENTED AND FOLLOWED WITH A NEW TEST TO PROVE THAT THE CORRECTED PERMANENT LINK MEETS PERFORMANCE REQUIREMENTS. THE FINAL AND PASSING RESULT OF THE TESTS FOR ALL PERMANENT LINKS SHALL BE PROVIDED IN THE TEST RESULTS DOCUMENTATION AS PART OF CLOSE-OUT REQUIREMENTS.

21. FIRE ALARM SYSTEM
 WORK SHALL BE DONE IN CONFORMANCE WITH THE FOLLOWING STANDARDS, BUT SHALL IN NO WAY VIOLATE APPLICABLE CODES, LAWS, AND ORDINANCES OF GOVERNING BODIES HAVING JURISDICTION.

- A. NFPA 70 NATIONAL ELECTRICAL CODE
- B. NFPA 72 INSTALLATION, MAINTENANCE, AND USE OF PROTECTIVE SIGNALING SYSTEMS
- C. NFPA 72E AUTOMATIC FIRE DETECTORS
- D. NFPA 72G NOTIFICATION APPLIANCES FOR PROTECTIVE SIGNALING SYSTEMS
- E. NFPA 72H GUIDE FOR TEST PROCEDURES FOR PROTECTIVE SIGNALING SYSTEMS
- F. NFPA 101 LIFE SAFETY CODE

THE WORK COVERED BY THIS SPECIFICATION INCLUDES THE FURNISHING OF ALL LABOR, EQUIPMENT, MATERIALS, AND PERFORMING ALL OPERATIONS IN CONNECTION WITH THE FIRE ALARM SYSTEM AS SHOWN ON THE DRAWINGS, HEREINAFTER SPECIFIED, AND AS DIRECTED BY THE ARCHITECT/ENGINEER.

1. MODIFY AND EXPAND THE EXISTING FIRE ALARM SYSTEM AS SHOWN ON THE DRAWINGS. EXISTING NOTIFICATION DEVICES SHALL BE REPLACED WITH NEW TO ACHIEVE SYNCHRONIZATION.
2. PROVIDE ADDITIONAL CONDUCTORS, RACEWAY, NAC PANELS, NOTIFICATION AND INITIATION DEVICES.
3. PROVIDE SYSTEM PROGRAMMING AS REQUIRED.

CONTRACTOR SHALL SUBMIT:
 1. SHOP DRAWINGS SHOWING SYSTEM DETAILS INCLUDING LOCATION OF FACP, ALL DEVICES, CIRCUITING AND DETAILS OF GRAPHIC ANNUNCIATOR.
 2. SYSTEM POWER AND BATTERY CHARTS WITH PERFORMANCE GRAPHS AND VOLTAGE DROP CALCULATIONS TO ASSURE THAT THE SYSTEM WILL OPERATE IN ACCORDANCE WITH THE PRESCRIBED BACKUP TIME PERIODS AND UNDER ALL VOLTAGE CONDITIONS PER UL AND NFPA STANDARDS.

INSTALLER OF FIRE ALARM SYSTEM SHALL BE A COMPANY SPECIALIZING IN INSTALLING THE PRODUCTIONS SPECIFIED IN THIS SECTION WITH MINIMUM FIVE YEARS EXPERIENCE, AND CERTIFIED BY THE STATE OF ILLINOIS AS FIRE ALARM INSTALLER. FURNISH PRODUCTS LISTED AND CLASSIFIED BY UL AS SUITABLE FOR PURPOSE SPECIFIED AND INDICATED.

PRODUCTS
 MANUFACTURERS:
 NOTIFIER, TO MATCH EXISTING 'SFP' SYSTEM INSTALLED IN BUILDING.

- FIRE ALARM AND EQUIPMENT:
- A. POWER AND DISTANCE EXTENDER: 120V W/ BATTERY
 - B. STROBE NOTIFICATION: MULTI-CANDELA STROBE NOTIFICATION APPLIANCE
 - C. HORN/STROBE NOTIFICATION: HORN AND MULTI-CANDELA STROBE NOTIFICATION APPLIANCE
 - D. PHOTOELECTRIC SMOKE DETECTOR
 - E. HEAT DETECTOR, COMBINATION FIXED TEMPERATURE AND RATE-OF-RISE
 - F. STANDARD DETECTOR BASE FOR 4 INCH SQUARE BOX
 - G. PULL STATION: DOUBLE ACTION, PUSH OPERATION

- WIRE AND CABLE:
- A. UL LISTED AND PLENUM RATED.
 - B. SIGNALING LINE CIRCUITS - ANNUNCIATOR DATA: TWISTED PAIR, NOT LESS THAN NO. 18AWG OR AS RECOMMENDED BY THE MANUFACTURER.
 - C. SIGNALING LINE CIRCUITS - INTELLIGENT LOOP: TWISTED PAIR, NOT LESS THAN NO. 18AWG OR AS RECOMMENDED BY THE MANUFACTURER.
 1. CIRCUIT INTEGRITY (CI) CABLE: PROVIDE AS REQUIRED TO MEET NFPA OR LOCAL CODE REQUIREMENTS.
 2. CI CABLE SHALL MEET NATIONAL ELECTRICAL CODE, POWER LIMITED FIRE ALARM SERVICE.
 - D. NOTIFICATION APPLIANCE CIRCUITS - 12AWG THHN OR FLP OR AS RECOMMENDED BY THE MANUFACTURER.

EXECUTION
 INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

INSTALL BACKBOXES AND CONDUIT SLEEVES AS REQUIRED FOR FIRE ALARM SYSTEM CABLING. ALL FIRE ALARM SYSTEM SHALL BE ROUTED CONCEALED IN CONDUIT, SURFACE RACEWAY SYSTEM OR IN ACCESSIBLE CEILING SPACES. ALL CABLING ROUTED OUTSIDE OF CONDUIT SHALL BE SUPPORTED FROM THE STRUCTURE WITH APPROVED BRIDAL RINGS AND TIES. IN OPEN STRUCTURE AREAS SUCH AS GYMNASIUM AND STORAGE AREAS, CABLING SHALL BE INSTALLED IN CONDUIT.

USE #14 AWG MINIMUM SIZE CONDUCTORS FOR INITIATING CIRCUITS AND #12 AWG MINIMUM SIZE CONDUCTOR FOR INDICATING CIRCUITS. INSTALL WIRING IN UL APPROVED PLENUM RATED FIRE ALARM CABLE.

MOUNT END-OF-LINE DEVICE BOX WITH LAST DEVICE OR SEPARATE BOX ADJACENT TO LAST DEVICE IN CIRCUIT. PERMANENTLY MARK EXTERIOR HOUSING OF LAST DEVICE "EOL" FOR EASY IDENTIFICATION.

FIELD INSPECT AND TEST SYSTEM AFTER COMPLETION.

INCLUDE SERVICES OF MANUFACTURER'S CERTIFIED TECHNICIAN TO SUPERVISE INSTALLATION, ADJUSTMENTS, FINAL CONNECTIONS, AND SYSTEM TESTING.

PROVIDE FIRE ALARM CIRCUIT CONDUCTORS WITH INSULATION COLOR CODED, OR USING COLORED TAPE AT EACH CONDUCTOR TERMINATION AND IN EACH JUNCTION BOX TO MATCH EXISTING COLOR CODE.

INSTALLING CONTRACTOR SHALL PREPARE AND SUBMIT AN ENGINEERED SET OF DRAWINGS, CALCULATIONS, AND PRODUCT DATA SHEETS FOR SUBMITTAL TO THE AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL. CONTRACTOR SHALL INCLUDE ALL COSTS FOR THE PREPARATION AND REVIEW OF THIS SUBMITTAL BY THE AUTHORITY HAVING JURISDICTION AND SHALL PAY ANY ASSOCIATED PERMIT FEES.

22. FIRESTOPPING
 THE CONTRACTOR SHALL FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED WALLS, PARTITIONS, ROOFS, AND/OR FLOORS SO THAT THE INTEGRITY OF THE FIRE RATING IS NOT COMPROMISED BY THE CONTRACTOR'S INSTALLATION OF ANY BOX, CABLE TRAY, RACEWAY, AND/OR CONDUIT. FIRE STOPPING METHODS AND MATERIALS SHALL CONFORM TO LOCAL CODE AUTHORITY REQUIREMENTS. AT A MINIMUM, THE CONTRACTOR SHALL GROUT AROUND ALL BOXES, CABLE TRAYS, RACEWAYS, CONDUITS, ETC., IN PENETRATION RATED PARTITION/FLOOR CONSTRUCTION WITH NON-SHRINK GROUT SO THAT ALL OPEN SPACES ARE FILLED IN SOLIDLY.

THE CONTRACTOR SHALL PROVIDE SUITABLY RATED LUMINAIRES OR UTILIZE APPROVED MATERIALS AND METHODS TO MAINTAIN THE INTEGRITY OF THE FIRE RATED CEILING. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR THE LOCATION OF ALL FIRE RATED CEILINGS, PARTITIONS, AND WALLS.

23. BALANCING
 THE SYSTEM OF FEEDERS AND BRANCH CIRCUITS FOR POWER AND LIGHTING SHALL BE CONNECTED IN SUCH A MANNER THAT THE CONNECTED LOADS ARE BALANCED ELECTRICALLY ON THE THREE PHASES AS CLOSELY AS POSSIBLE (WITHIN 10 PERCENT). SHOULD THE POWER COMPANY FIND AN UNFAVORABLE OPERATING CONDITION REACTING ON THE SERVICE, THE CONTRACTOR SHALL MAKE SUCH CHANGES REQUIRED TO BALANCE THE LOAD WITHOUT ADDITIONAL COST TO THE OWNER.

24. TESTING AND ADJUSTMENTS
 ALL WORK SHALL BE TESTED BY THE CONTRACTOR. ALL MATERIAL, LABOR, AND EQUIPMENT SHALL BE FURNISHED BY THE CONTRACTOR TO ACCOMPLISH SUCH TESTS AS REQUIRED BY THE ARCHITECT/ENGINEER.

UPON COMPLETION OF THIS WORK, THE PROJECT SHALL BE FREE FROM SHORT CIRCUITS AND GROUNDS AND A THOROUGH TEST SHALL BE MADE. ALL OVERLOAD DEVICES, INCLUDING THOSE FURNISHED UNDER OTHER CONTRACTS SHALL BE ADJUSTED TO SUIT LOAD CONDITIONS BY THE CONTRACTOR. ALL SYSTEMS SHALL BE TESTED AND THEIR OPERATION DEMONSTRATED.

LIGHTING EQUIPMENT SHALL BE ADJUSTED TO THE SATISFACTION OF THE OWNER.

25. GUARANTEE
 THE CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE IN WRITING ALL MATERIAL, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION. THE CONTRACTOR SHALL PROVIDE FREE SERVICE FOR ALL EQUIPMENT INVOLVED IN THEIR CONTRACT DURING THIS GUARANTEE PERIOD.

THE GUARANTEE SHALL INCLUDE RESTORATION TO ITS ORIGINAL CONDITION OF ALL ADJACENT WORK THAT MUST BE DISTURBED IN FULFILLING THIS GUARANTEE.

ALL SUCH REPAIRS AND/OR REPLACEMENTS SHALL BE MADE WITHOUT DELAY AND AT THE CONVENIENCE OF THE OWNER.

26. SUBSTITUTIONS
 APPROVALS OF SUBSTITUTIONS FOR "APPROVED EQUAL" MUST BE MADE IN WRITING AND SUBSTITUTIONS MUST BE APPROVED BEFORE INSTALLATION. INSTALLATION WITHOUT PRIOR APPROVAL MAY RESULT IN THE CONTRACTOR REMOVING SUBSTITUTION AND REPLACING IT WITH SPECIFIED ITEM AT THEIR EXPENSE.

APPROVAL MAY BE GIVEN BY ARCHITECT OR ENGINEER.



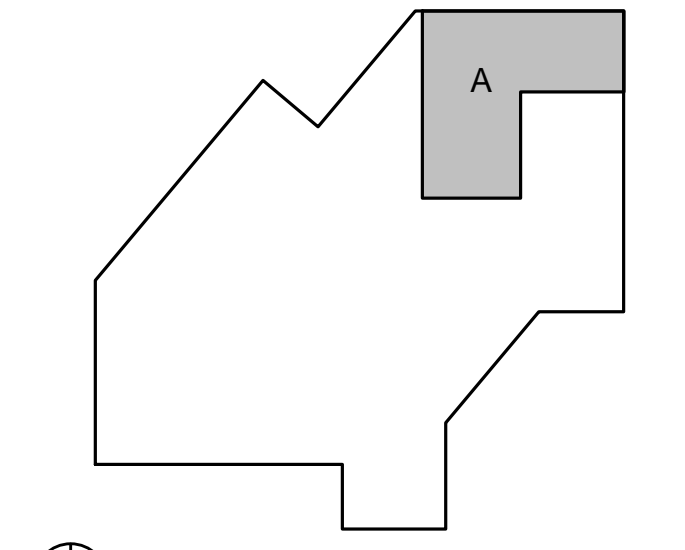
223 W Jackson Blvd | Suite 1200
 Chicago, Illinois 60606
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Mechanical - Electrical Engineers
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 847.882.2010
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Design Firm Registration Number:
 184.004110-0006

Second Floor Bunk House Floor Plan



KEY PLAN

NO	ISSUE	DATE
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ELECTRICAL SPECIFICATIONS

E6.10

23016

PLUMBING GENERAL NOTES

- GENERAL**
- ALL WORK SHALL BE INSTALLED AND ALL MATERIALS SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS OF ILLINOIS DEPARTMENT OF PUBLIC HEALTH ILLINOIS PLUMBING CODE 2014 EDITION, INTERNATIONAL PLUMBING CODE 2015 EDITION AND ALL LOCAL AMENDMENTS TO THE PLUMBING CODE.
 - IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE ALL INSPECTIONS WITH THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH STATE PLUMBING INSPECTORS AND THE LOCAL PLUMBING INSPECTOR HAVING JURISDICTION.
 - EXACT LOCATION OF PLUMBING FIXTURES AND DEVICES SHALL BE VERIFIED WITH ARCHITECTURAL DRAWINGS, ACTUAL BUILDING WALLS, FLOORS AND CEILING, CABINETRY AND EQUIPMENT SHOP DRAWINGS PRIOR TO STARTING ANY WORK.
 - DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING, ETC., AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
 - PITCH ALL SUPPLY AND RETURN WATER LINES TO DRAIN COMPLETELY THROUGH LOWER EQUIPMENT FIXTURES, UNIONS, OR DRAIN VALVES. INSTALL A 1/2" DRAIN VALVE WITH 3/4" HOSE THREAD OUTLET IN ALL MAIN PIPING RUNS WHICH WOULD NOT BE ABLE TO DRAIN THRU A LOWER PIECE OF EQUIPMENT.
 - ALL VENT AND WASTE PIPING SIZES ARE MINIMUM. ADDITIONAL VENTS SHALL BE ADDED AND/OR PIPE SIZE INCREASED AS REQUIRED BY APPLICABLE CODES, STATUTES AND REGULATIONS, ETC. WITHOUT ADDITIONAL COST TO THE OWNER.
 - PIPE SIZE SHALL BE MAINTAINED FULL SIZE UP TO "LOOK-OUT" AT FIXTURE CONNECTION.
 - STERILIZATION: UPON COMPLETION OF TESTING AND FLUSHING OF NEW DOMESTIC WATER PIPING, THE CONTRACTOR SHALL STERILIZE ALL WATER PIPING INCLUDING ALL DOMESTIC HOT WATER SUPPLY AND RETURN AND ALL DOMESTIC COLD WATER PIPING. CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY TAPPINGS, VALVE OPENINGS, DRAIN FITTINGS, ETC., AS REQUIRED TO STERILIZE THE WATER PIPING, INCLUDING ALL REQUIRED EXCAVATION WORK, FITTING AND LABOR. WATER PIPING SHALL BE FLUSHED AND CHLORINATED AS SPECIFIED IN AWWA-C-601-54 STANDARD PROCEDURE FOR DISINFECTING WATER MAINS AND AS REQUIRED BY ILLINOIS DEPARTMENT OF PUBLIC HEALTH. DISINFECTING SHALL NOT BE DEEMED COMPLETED UNTIL SATISFACTORY BACTERIOLOGICAL ANALYSIS REPORTS ARE RECEIVED FOR SAMPLES OF WATER COLLECTED AND TESTED FROM THE NEW WATER PIPING SYSTEM ALL BY PLUMBING CONTRACTOR.
 - PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PVC PIPING WITH THE MECHANICAL SYSTEMS. PVC PIPING SHALL NOT BE USED IN PLENUM CEILINGS.
 - PVC PIPING SHALL NOT BE ALLOWED FOR SANITARY PIPING SYSTEMS ABOVE OR BELOW GRADE IN APPLICATION WHERE FLOOR DRAINS IN KITCHENS, BOILER ROOMS AND MECHANICAL ROOMS CAN RECEIVE WASTE WITH WATER TEMPERATURE EXCEEDING 140 DEGREES. CAST IRON PIPING SHALL BE USED A MINIMUM (25) FEET OR TO A POINT IN THE SYSTEM WHERE THE WASTE CAN BE MIXED DOWN TO A TEMPERATURE LESS THEN 140 DEGREES.
 - PROVIDE WATER HAMMER ARRESTORS MIFAB MW SERIES OR APPROVED EQUAL. WATER HAMMER ARRESTORS SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION FOR SERVICE AND EASY REPLACEMENT. LOCATIONS, SIZE AND QUANTITIES SHALL BE DETERMINED BY CONTRACTOR. VERIFY AND COORDINATE ALL METHODS WITH STATE PLUMBING INSPECTOR.
 - ALL EXISTING PIPING INFORMATION SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM OWNER'S EXISTING CONSTRUCTION DOCUMENTS AND LIMITED FIELD SURVEY. EXACT LOCATION OF EXISTING SANITARY/STORM LINES, WATER LINES, VENT LINES, VALVES AND ALL PIPE SIZES SHALL BE FIELD VERIFIED BEFORE STARTING INSTALLATION. FOR UNDERGROUND PIPING, CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE LOCATIONS, CONNECTION LOCATION, SIZE, DIRECTION OF FLOW, AND DEPTH VIA PIPE LOCATING/TELEVISION EQUIPMENT AS REQUIRED PRIOR TO SAW CUTTING OF FLOOR OR BEGINNING WORK. CONTRACTOR'S BID SHALL INCLUDE SAW CUTTING, PATCHING TO MATCH EXISTING PIPING, LABOR, ETC. TO LOCATE, MAKE CONNECTIONS TO EXISTING UNDERFLOOR PIPING, OR CAP EXISTING UNDERFLOOR PIPING WITHIN 10 FEET OF LOCATION SHOWN ON DRAWINGS. IF LOCATION SHOWN FOR ANY CONNECTION DOES NOT EXIST OR IS NOT ACCESSIBLE, CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IMMEDIATELY.
 - PLUMBING CONTRACTOR SHALL PROVIDE STACK TEST ON ALL ROUGH AND UNDERGROUND PLUMBING PER ILLINOIS PLUMBING CODE.
 - PLUMBING CONTRACTOR SHALL PROVIDE PRESSURE TEST ON ALL ABOVE GROUND SANITARY AND VENT PIPING PER ILLINOIS PLUMBING CODE.
 - PLUMBING CONTRACTOR SHALL PROVIDE 100LB AIR TEST OR WATER PRESSURE TEST ON ALL WATER PIPING AT TIME OF ROUGH INSPECTION PER ILLINOIS PLUMBING CODE.
 - INSTALL POTABLE WATER PROTECTION DEVICES ON PLUMBING PIPING WHERE CONTAMINATION OF DOMESTIC WATER MAY OCCUR INCLUDING BUT NOT LIMITED TO BOILER FEED LINES, CLEANING CHEMICAL EQUIPMENT, FIRE SPRINKLER SYSTEMS, IRRIGATION SYSTEMS, FLUSH VALVES, INTERIOR OR EXTERIOR HOSE CONNECTIONS, FOOD SERVICE EQUIPMENT, ICE MAKERS, PROVIDE (RPZ) BACKFLOW PREVENTER AT ALL LOCATIONS WHERE SANITIZING CHEMICALS OR DETERGENTS ARE ASPIRATED OR INJECTED BY WATER PRESSURE INTO THE POTABLE WATER. PRESSURE TYPE VACUUM BREAKERS SHALL NOT BE PERMITTED.
 - SANITARY AND VENT FITTINGS SHOWN ON PLUMBING DRAWINGS REPRESENT TYPICAL FITTINGS GENERATED FROM DRAFTING SOFTWARE, CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL REQUIRED CODE COMPLIANT FITTINGS IN HORIZONTAL TO HORIZONTAL, HORIZONTAL TO VERTICAL AND VERTICAL TO HORIZONTAL TRANSITIONS.
 - DEAD END PIPING BEYOND 24 INCHES IN WATER SUPPLY PIPING SHALL NOT BE PERMITTED. DEAD END PIPING BEYOND 10 FEET OF NEAREST VENTED SANITARY PIPING WILL NOT BE PERMITTED PER I.D.P.H. SECTION 890.1320.
 - ALL FLOOR DRAINS SHALL BE PROTECTED TO PREVENT THE LOSS OF THE TRAP SEAL BY EVAPORATION. APPROVED METHODS SHALL BE PER I.D.P.H. SECTION 890.420(f).

- PIPE INSULATION**
- ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER SUPPLY/RETURN PIPING SHALL BE INSULATED WITH ASTM C547 FIBERGLASS PIPE INSULATION WITH ASTM C1136 VAPOR BARRIER JACKET COMPLETE WITH PVC FITTING COVERS. ALL COLD WATER PIPING SHALL BE INSULATED WITH 1" THICK INSULATION. ALL DOMESTIC HOT WATER AND RECIRC PIPING 1 1/4" AND SMALLER SHALL BE INSULATED WITH 1" INSULATION. ALL DOMESTIC HOT WATER AND RECIRC PIPING 1 1/2" AND LARGER SHALL BE INSULATED WITH 1 1/2" THICK INSULATION. INSULATE ALL DOMESTIC WATER SUPPLY PIPING TO THE FIXTURE CONNECTION. INSULATE ALL WATER SUPPLY PIPING IN CEILINGS, PLUMBING CHASES AND WALLS.
 - PATCH AND REFINISH ALL DAMAGED INSULATED SURFACES OF ALL EXISTING PLUMBING PIPING AND ASSOCIATED FITTINGS WHERE NEW CONNECTIONS ARE MADE. INCLUDING BUT NOT LIMITED DOMESTIC COLD WATER, HOT WATER SUPPLY/RETURN AND WASTE.

- PIPE HANGERS AND SUPPORTS**
- ALL SANITARY, VENT, STORM, DOMESTIC SUPPLY AND RETURN PIPING SHALL BE SUSPENDED WITH CLEVIS AND/OR TRAPEZE PIPE HANGERS. ALL HORIZONTAL STORM, DOMESTIC SUPPLY AND RETURN PIPING SHALL BE INSULATED AND REST ON SHEET METAL INSULATION SHIELDS. SEE DETAIL ON MECHANICAL/ELECTRICAL COORDINATION DRAWINGS FOR ADDITIONAL INFORMATION. SWIVEL JOINT HANGERS MAY BE USED ONLY ON WASTE AND VENT PIPING WHEN PIPING IS NOT INSULATED. HANGER MATERIAL SHALL BE OF COMPATIBLE MATERIAL TO PIPING MATERIAL TO PREVENT CORROSION. HANGERS SHALL BE SUPPORTED FROM STRUCTURAL MEMBERS ONLY.
 - WHEN WATER SUPPLY PIPING IS INSTALLED IN PARALLEL AND SAME ELEVATION, PROVIDE TRAPEZE HANGERS. PIPING SHALL REST ON SHEET METAL SHIELD AT EACH TRAPEZE HANGER WITH ATTACHMENT TO STEEL CHANNEL EVERY 30 FEET UTILIZING A STRUT MOUNTED INSULATION COUPLING WITH STRUT CLAMP FOR USE WITH COPPER PIPING AND FIBERGLASS INSULATION.
 - VERTICAL ATTACHMENT TO METAL DECK AND WOOD TRUSS'S SHALL NOT BE PERMITTED. HORIZONTAL ATTACHMENT TO WOOD TRUSS SHALL BE MADE BY HORIZONTAL SUPPORT TO BOTTOM CORD OF TRUSS.

- PIPE AND VALVE IDENTIFICATION**
- PROVIDE PIPE LABELING IDENTIFICATION PER ASME A13.1. SEE DETAIL FOR ADDITIONAL INFORMATION.
 - PROVIDE VALVE TAGS ON ALL VALVES INSTALLED UNDER THIS CONTRACT. PROVIDE A SUMMARY OF VALVE TAG NUMBERS, VALVE SIZES AND LOCATIONS ON A DURABLE MATERIAL FOR MOUNTING IN BOILER/MECHANICAL ROOM.
- VALVES**
- PLUMBING CONTRACTOR SHALL PROVIDE ALL REQUIRED ISOLATION VALVES PER I.D.P.H. SECTION 890.1190. VALVES SHALL BE INSTALLED TO ISOLATE ONE ROOM WITHOUT AFFECTING WATER SUPPLY TO ANY OTHER ROOM. ONLY EXCEPTION SHALL BE DIRECT BACK-TO-BACK FIXTURES SERVING PUBLIC SPACES.
 - INSTALL BALL VALVES ON PIPING 3" AND SMALLER AND OS&Y GATE VALVES ON PIPING 4" AND LARGER IN EACH RISER OR BRANCH TAKEOFF FROM MAINS, RISERS AND AS INDICATED ON DRAWINGS. PROVIDE OS&Y GATE VALVES AT ALL WATER SERVICES OF 2 1/2" AND LARGER BEFORE AND AFTER WATER METER.
 - INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.
 - INSTALL VALVES WITH CLEARANCE FOR INSTALLATION OF INSULATION AND ALLOWING ACCESS.
 - PROVIDE ACCESS TO ALL VALVES AND SYSTEM COMPONENTS REQUIRING ACCESS. ALL PIPING ACCESSORIES AND EQUIPMENT SUCH AS ISOLATION VALVES AND IN-LINE PUMPS SHALL BE INSTALLED AT A REASONABLE HEIGHT AND POSITION IN ORDER TO FACILITATE MAINTENANCE.

- WATER SHUT-DOWN**
- CONTRACTOR SHALL PROVIDE ALL MEANS TO SHUT-DOWN EXISTING PIPING SYSTEMS WHERE REQUIRED TO COMPLETE WORK UNDER THIS CONTRACT. CONTRACTOR SHALL PROVIDE ALL NECESSARY VALVES TO ISOLATE RENOVATED SECTIONS OF THE BUILDING WITHOUT DISTURBING SECTIONS OF THE BUILDING NOT UNDER RENOVATION. CONTRACTOR SHALL PROVIDE ALL MEANS TO DRAIN WATER SUPPLY PIPING WHERE REQUIRED TO MODIFY PIPING CONFIGURATION OR MAKE NEW CONNECTIONS TO EXISTING PIPING. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WATER DAMAGE CAUSED BY DRAINING OF WATER SUPPLY PIPING. UPON REACTIVATION OF WATER IN PIPING, CONTRACTOR SHALL OPERATE ALL ASSOCIATED FAUCETS, FLUSH VALVES, HOSE VALVES, PLUMBING FIXTURES AND REMOVE ALL REMAINING AIR IN THE SYSTEM.

- FIRE STOP SYSTEMS**
- PROVIDE FIRE RATED SEALANT AROUND ALL NEW PENETRATIONS FOR PIPING, CONDUIT, ETC. AT WALLS, FLOORS AND CEILINGS. GENERAL PURPOSE FIRE STOPPING SEALANT SHALL BE DOW CORNING, NELSON OR 3M COMPANY; WATER BASED, NON SLUMPING, PREMIXED SEALANT WITH INTUMESCENT PROPERTIES, RATED FOR 3 HOURS PER ASTM E814, NFPA AND UL-1479. FILL ALL VOIDS AROUND ALL PIPING PENETRATIONS THROUGH WALLS AND CEILINGS WITH A MINIMUM 1 HOUR FIRE RATING. PROVIDE PVC COLLAR ASSEMBLY AT ALL PVC PIPING PENETRATIONS THROUGH FIRE WALLS, FLOORS OR CEILING WHERE REQUIRED BY LOCAL FIRE DISTRICT.

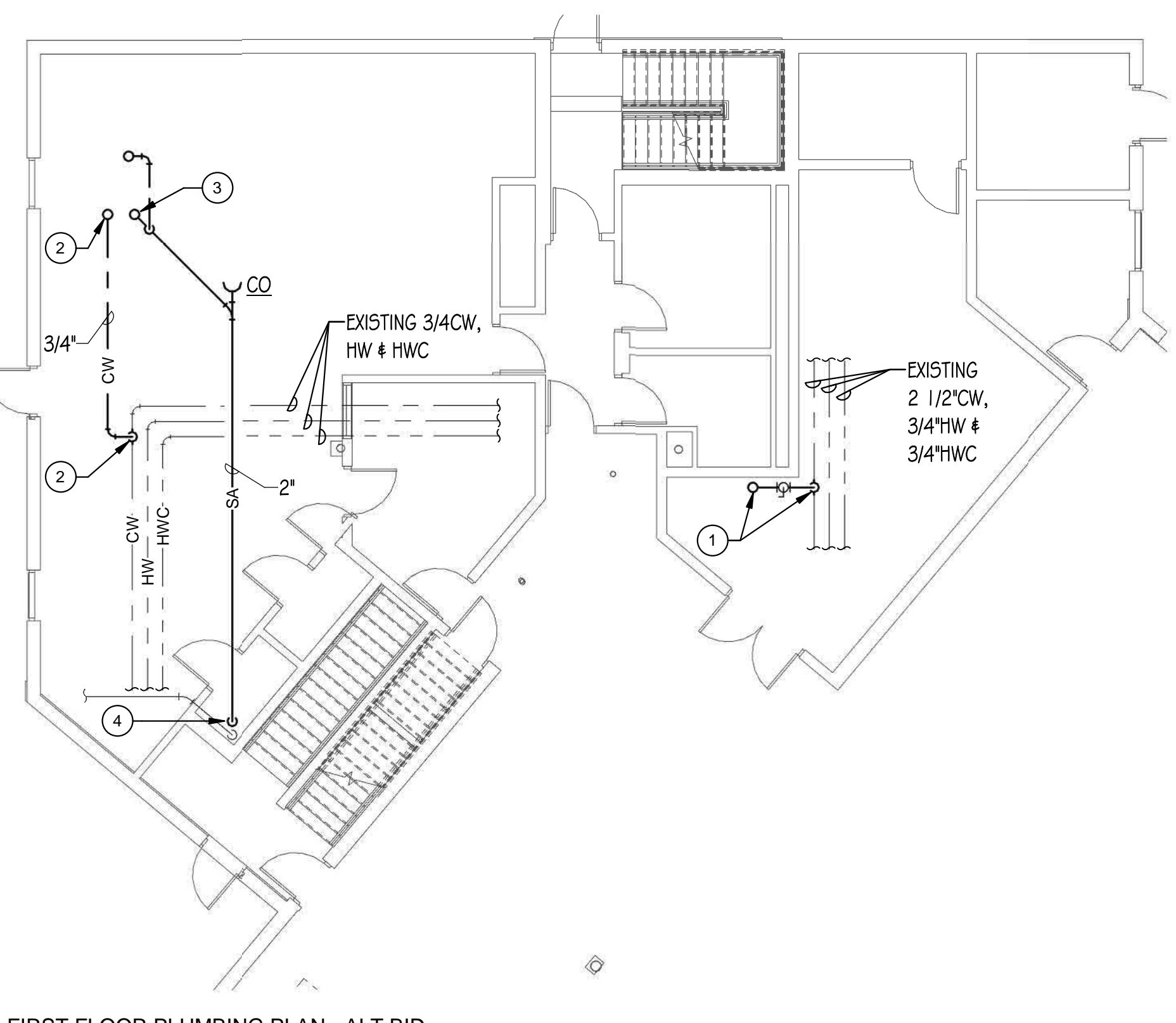
- PIPE ROUTING**
- PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR DISMANTLING THE EXISTING SUSPENDED ACoustICAL CEILING TILE SYSTEM AND REINSTALLING CEILING AS REQUIRED TO ACCOMMODATE THE INSTALLATION OF NEW PIPING.
 - PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE CAUSED TO SUSPENDED CEILING MATERIALS BY THE DISMANTLING, STORAGE AND REINSTALLATION OF CEILING MATERIALS.
 - PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORING THROUGH WALLS, PIPE HANGERS AND MODIFICATIONS TO STRUCTURE FOR THE INSTALLATION OF PIPE HANGERS.
 - PIPE SIZES INDICATED ON DRAWINGS ARE MINIMUMS. CONTRACTOR SHALL MATCH PIPE SIZE WHEN CONNECTING TO EXISTING PIPING LARGER THAN SIZED LISTED.
 - NEW PIPING SHALL NOT BE PERMITTED OVER ANY ELECTRICAL PANELS OR EQUIPMENT.
 - NEW PIPE ROUTING SHALL NOT INTERFERE WITH NORMAL MAINTENANCE OPERATION OF EXISTING EQUIPMENT, ACCESS PANELS, DUCTWORK ACCESS PANELS, DUCTWORK ACCESSORIES, AND ALL HVAC AND ELECTRICAL EQUIPMENT.
 - ALL PIPING, FITTINGS AND JOINTS SHALL COMPLY WITH THE STATE AND LOCAL AMENDMENTS AND THE AUTHORITY HAVING JURISDICTION. MATERIALS LISTED IN THE SPECIFICATION THAT DO NOT COMPLY WITH THESE AMENDMENTS SHALL NOT BE USED IN THE BIDDING PROCESS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE ADOPTED AMENDMENTS.
 - WATER SUPPLY PIPING SIZES SHOWN ON DRAWING ARE BASED ON COPPER PIPING. SANITARY, VENT AND STORM PIPING SIZES SHOWN ARE BASED ON CAST IRON PIPING. INNER DIAMETERS SHALL BE REVIEWED WITH IDPH STATE PLUMBING INSPECTOR PRIOR TO INSTALLATION AND SHALL BE OF SUFFICIENT SIZE TO PROVIDE ADEQUATE FLOW AT MINIMAL PRESSURE DROP TO INSURE PLUMBING FIXTURES OPERATE TO OWNER'S SATISFACTION.

PLUMBING PIPE SPECIFICATION
PLUMBING PIPING SHALL BE AS FOLLOWS:

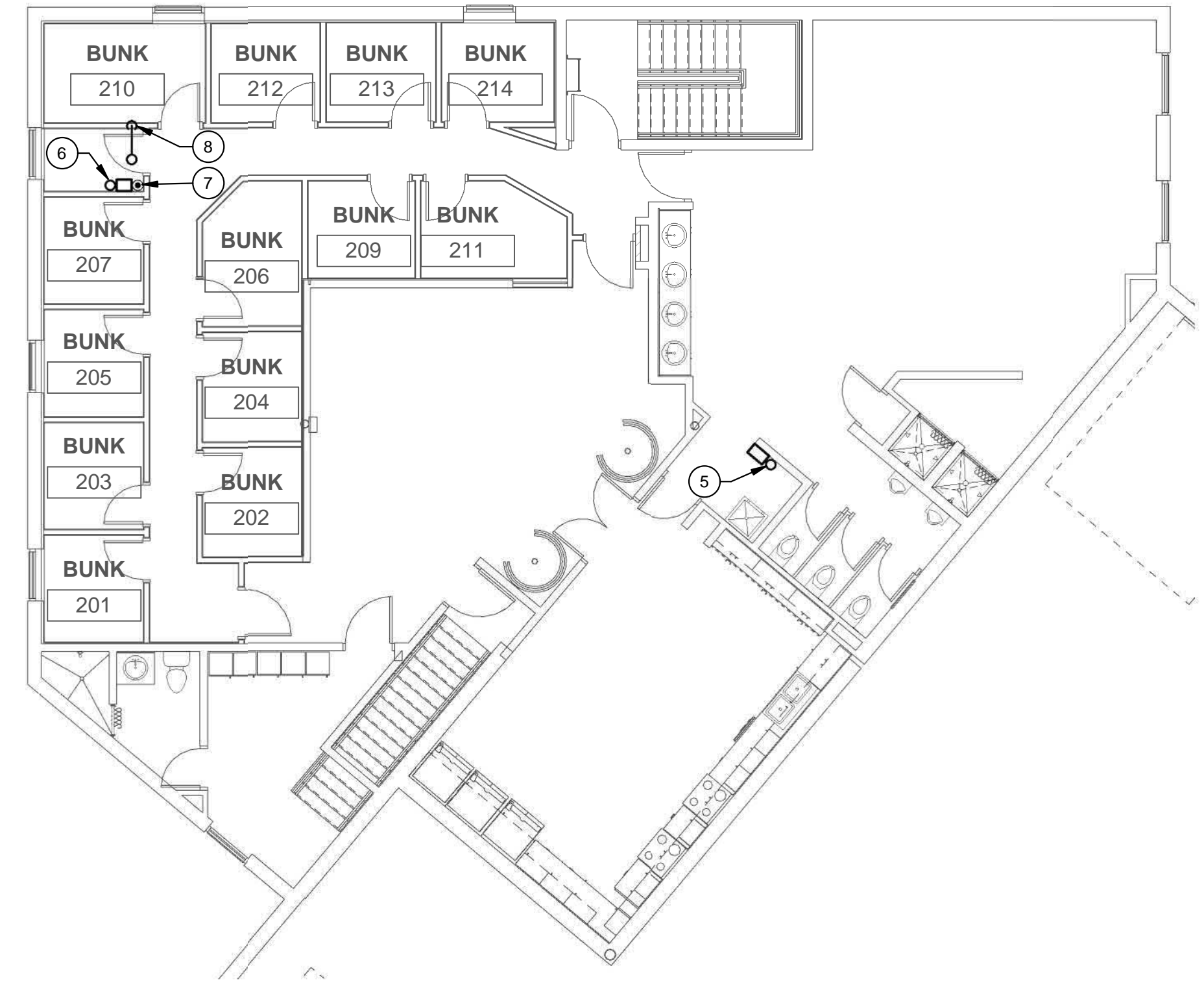
- SANITARY AND VENT PIPING, ABOVE GRADE**
- CAST IRON PIPE: ASTM A74, SERVICE WEIGHT.
FITTINGS: CAST IRON.
JOINTS: ASTM C564, NEOPRENE GASKET SYSTEM OR LEAD AND OAKUM.
 - CAST IRON PIPE: CISPI 301, HUBLESS, SERVICE WEIGHT.
FITTINGS: CAST IRON.
JOINTS: CISPI 310, NEOPRENE GASKETS AND STAINLESS STEEL CLAMP AND SHIELD ASSEMBLIES.
 - COPPER TUBE: ASTM B306, DWV.
FITTINGS: ASME B16.23, CAST BRONZE, OR ASME B16.29, WROUGHT COPPER.
JOINTS: ASTM B32, SOLDER, GRADE 50B.
 - STEEL PIPE (VENT ONLY): ASTM A53 SCHEDULE 40, GALVANIZED.
CAST IRON FITTINGS: ASME B16.1, FLANGES AND FITTINGS.
MECHANICAL GROOVED COUPLINGS: MALLEABLE IRON, GALVANIZED.
 - PLASTIC PIPE: ASTM D2665, POLYVINYL CHLORIDE (PVC) MATERIAL.
FITTINGS: PVC, ASTM D2665.
JOINTS: ASTM D2855 SOLVENT WELD WITH ASTM D2564 SOLVENT CEMENT.
INSULATED THROUGHOUT FOR SOUND CONTROL.
- WATER PIPING, ABOVE GRADE**
- COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN.
FITTINGS: ASME B16.18, CAST COPPER ALLOY OR ASME B16.22, WROUGHT COPPER AND BRONZE.
JOINTS: ASTM B32, SOLDER, GRADE 95TA.
 - COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN.
PRESS FITTINGS: VIEGA PROGRESS; ASME B16.18 CAST COPPER ALLOY, ASME B16.22 WROUGHT COPPER ASME B16.26 FLARED COPPER, EPDM O-RING. FITTINGS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
 - COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN.
FITTINGS: VICTALUC GROOVED COUPLING 600 SERIES; ASTM A-395 DUCTILE IRON BODY WITH EPDM GASKET, ASTM B-633 BOLTS/NUTS.
FITTINGS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.

DRAWING NOTES

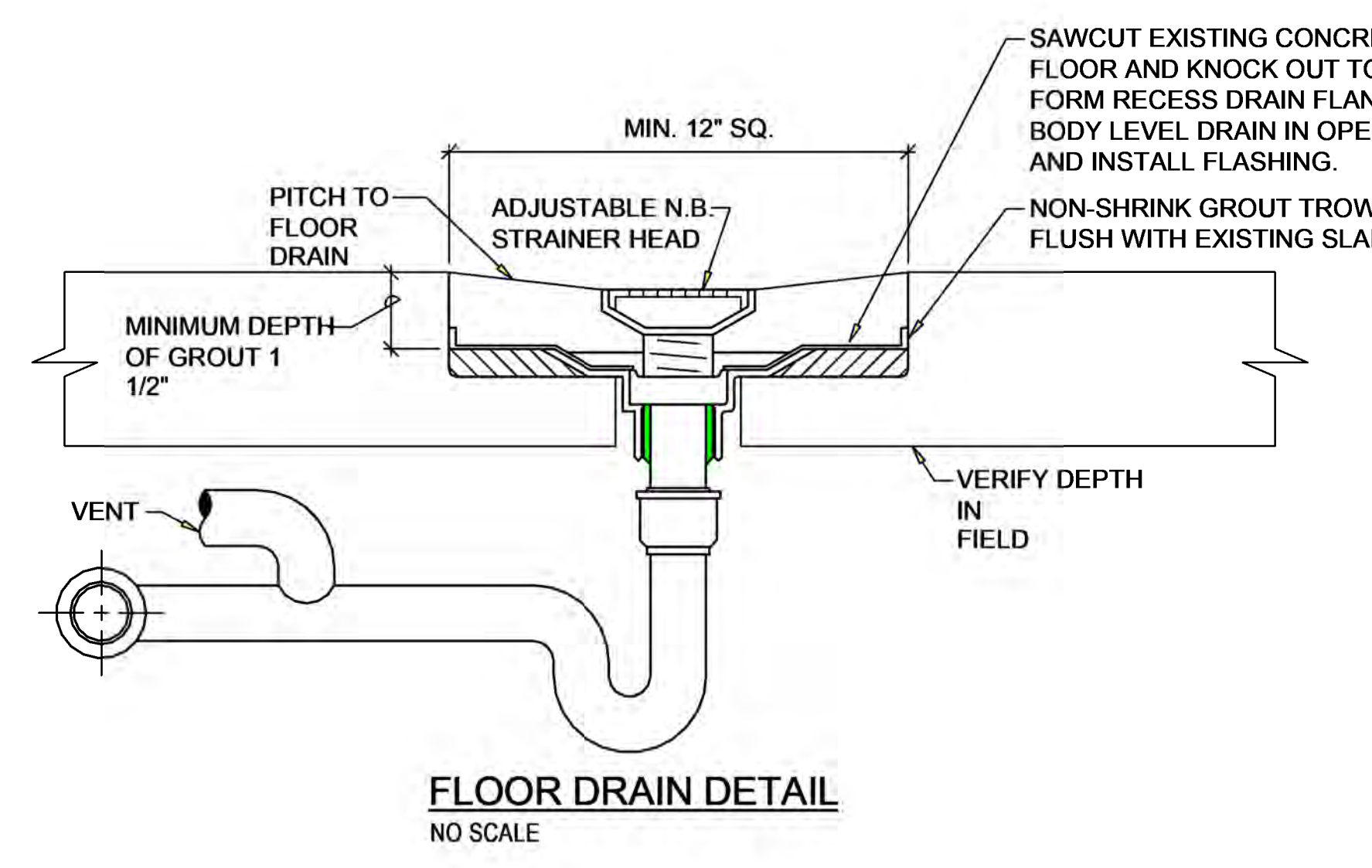
- BASE BID: NO PLUMBING WORK IN THIS AREA. ALTERNATE BID #2A: RUN 3/4" CW TO FLOOR ABOVE. MAKE NEW CONNECTION TO EXISTING 2 1/2" CW ABOVE CEILING. PROVIDE NEW BV SHUT OFF FOR FEED LINE TO SECOND FLOOR.
- BASE BID: NO PLUMBING WORK IN THIS AREA. ALTERNATE BID #2B: RUN 3/4" CW TO FLOOR ABOVE. MAKE NEW CONNECTION TO EXISTING 3/4" CW ABOVE CEILING. PROVIDE NEW BV SHUT OFF FOR FEED LINE TO SECOND FLOOR.
- BASE BID: NO PLUMBING WORK IN THIS AREA. ALTERNATE BID #2B: 2" SA UP TO 2" FD-1 WITH 2" VENT TO FLOOR ABOVE.
- BASE BID: NO PLUMBING WORK IN THIS AREA. ALTERNATE BID #2B: DRIP 2" SA ADJACENT TO EXISTING 4" SA AND MAKE NEW CONNECTION TO 4" SA STACK. VERIFY EXACT ROUTE AND LOCATION IN FIELD.
- BASE BID: NO PLUMBING WORK IN THIS AREA. ALTERNATE BID #2A: RUN 3/4" CW FROM FLOOR BELOW UP ON WALL AND CONNECT TO HUMIDIFICATION UNIT.
- BASE BID: NO PLUMBING WORK IN THIS AREA. ALTERNATE BID #2B: RUN 3/4" CW FROM FLOOR BELOW UP ON WALL AND CONNECT TO HUMIDIFICATION UNIT.
- BASE BID: NO PLUMBING WORK IN THIS AREA. ALTERNATE BID #2B: 2" FD-1
- BASE BID: NO PLUMBING WORK IN THIS AREA. ALTERNATE BID #2B: 2" VENT FROM FLOOR BELOW. RISE IN WALL AND OFFSET. RUN NEW 2"x3" VENT THRU ROOF. LOCATE VENT AT LEAST 15'-0" FROM ANY FRESH AIR INTAKE.



1 FIRST FLOOR PLUMBING PLAN - ALT BID
1/8" = 1'-0"



2 SECOND FLOOR PLUMBING PLAN - ALT BID
1/8" = 1'-0"



PLUMBING SYMBOLS AND ABBREVIATIONS

AC	ABOVE CEILING	---	CW	---	DOMESTIC COLD WATER
CI	CAST IRON	---	HW	---	DOMESTIC HOT WATER
CO	CLEANOUT	---	HWC	---	DOMESTIC HOT WATER CIRCULATING
CW	COLD WATER	---	SA	---	SUSPENDED SANITARY SEWER
DN.	DOWN	---	SA	---	UNDERGROUND SANITARY SEWER
FD	FLOOR DRAIN	---	V	---	SUSPENDED VENT PIPING
HW	HOT WATER	---	ED	---	FLOOR DRAIN (ROUND)
HWC	HOT WATER CIRCULATING	---	BV	---	BALL VALVE
NC	NEW CONNECTION	---	EB	---	PIPE ELBOW (TURNED UP)
SA	SANITARY	---	ED	---	PIPE ELBOW (TURNED DOWN)
V	VENT	---	NC	---	NEW CONNECTION
VTR	VENT THROUGH ROOF	---			
WCO	WALL CLEANOUT	---			



223 W Jackson Blvd | Suite 1200
Chicago, Illinois 60606
ph: 312.253.5400 | fx: 312.253.3401

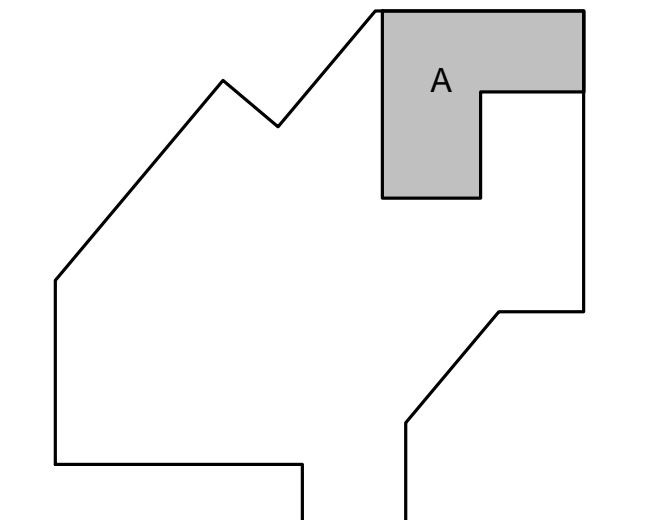
Mechanical - Electrical Engineers
1216 Tower Road
Schaumburg, Illinois 60173
847.882.2010
Fax 847.882.2201



Design Firm Registration Number:
184.004110-0006

Second Floor Bunk House Floor Plan

Village of Oak Park
100 N Euclid Ave, Oak Park, IL 60301



NO	ISSUE	DATE
	BID SET	06/28/2023

FIRST AND SECOND FLOOR PLUMBING PLANS - ALT BID

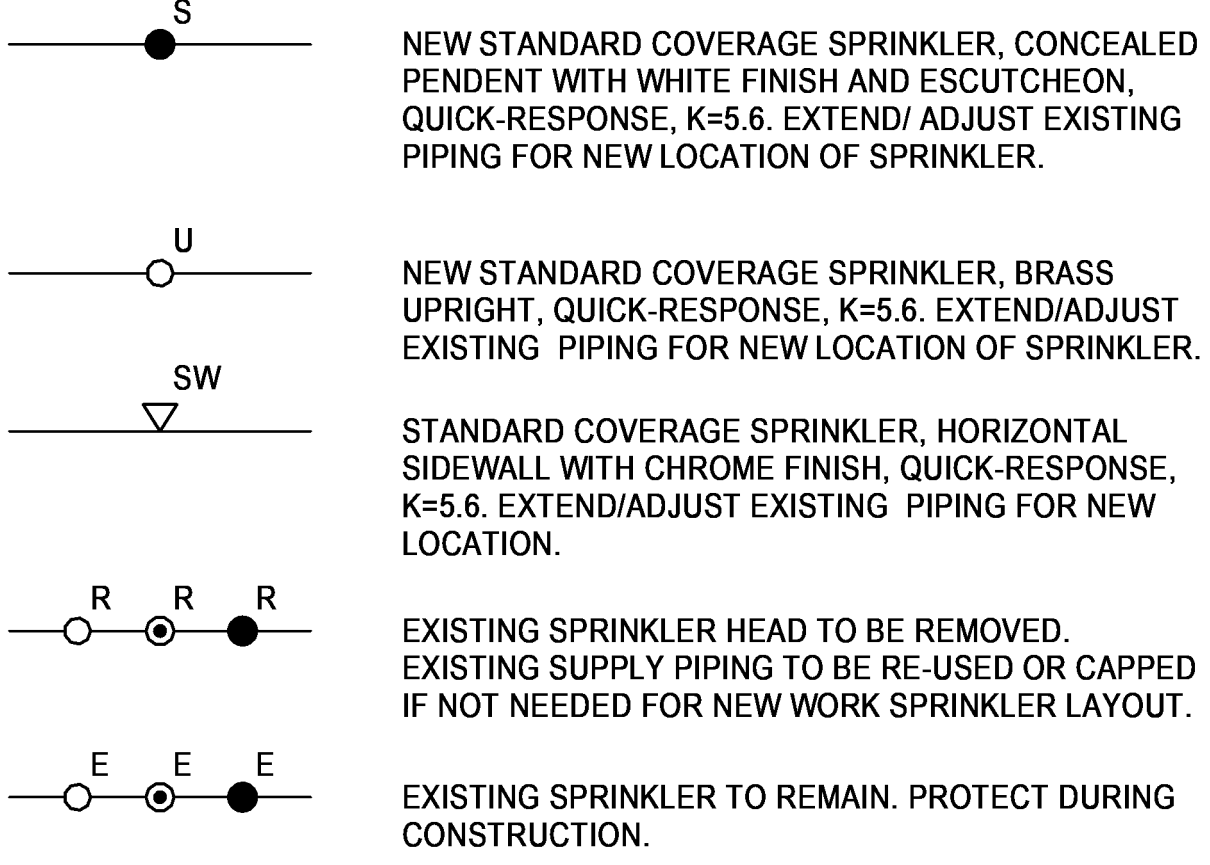
BIDDING NOTE
SEE DRAWING ME1.10 FOR GENERAL NOTES AND ADDITIONAL DETAILS APPLICABLE TO THIS TRADE'S WORK.

P1.10

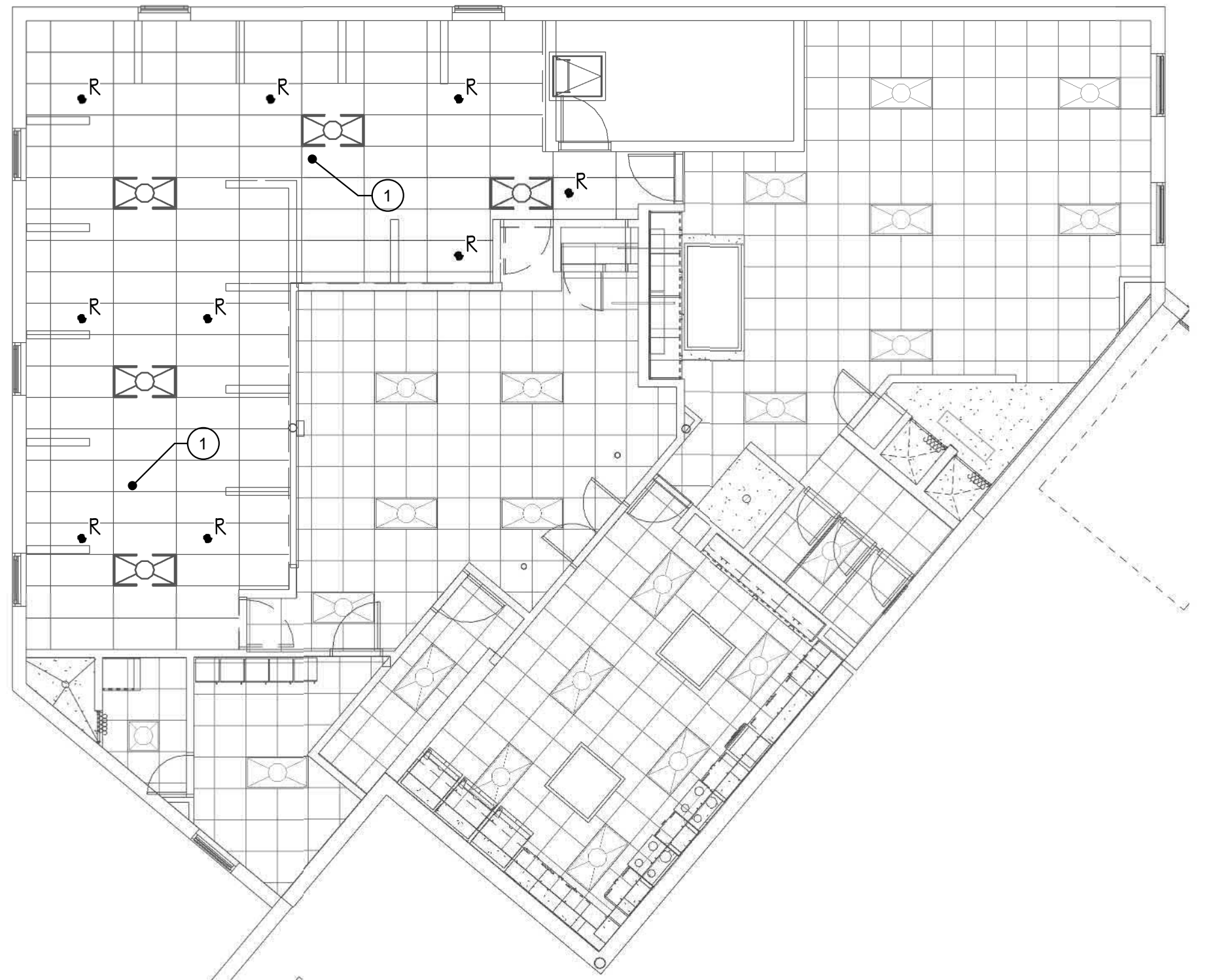
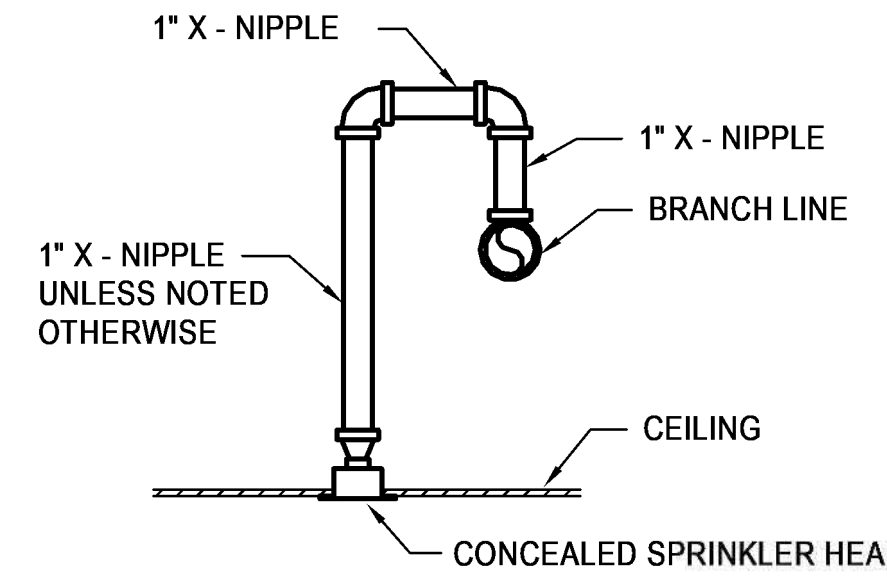
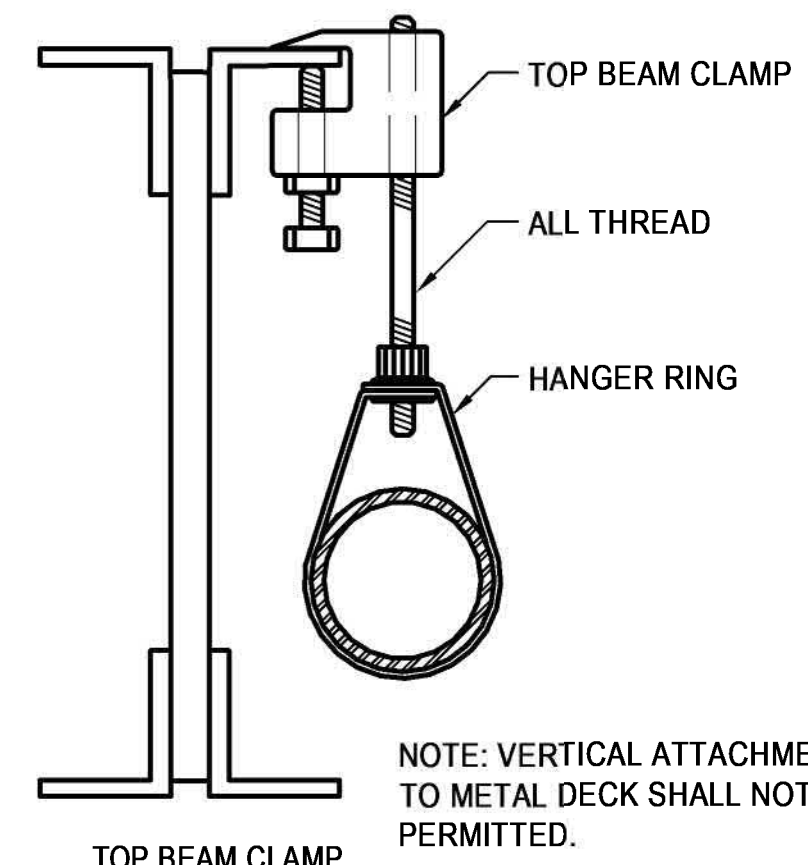
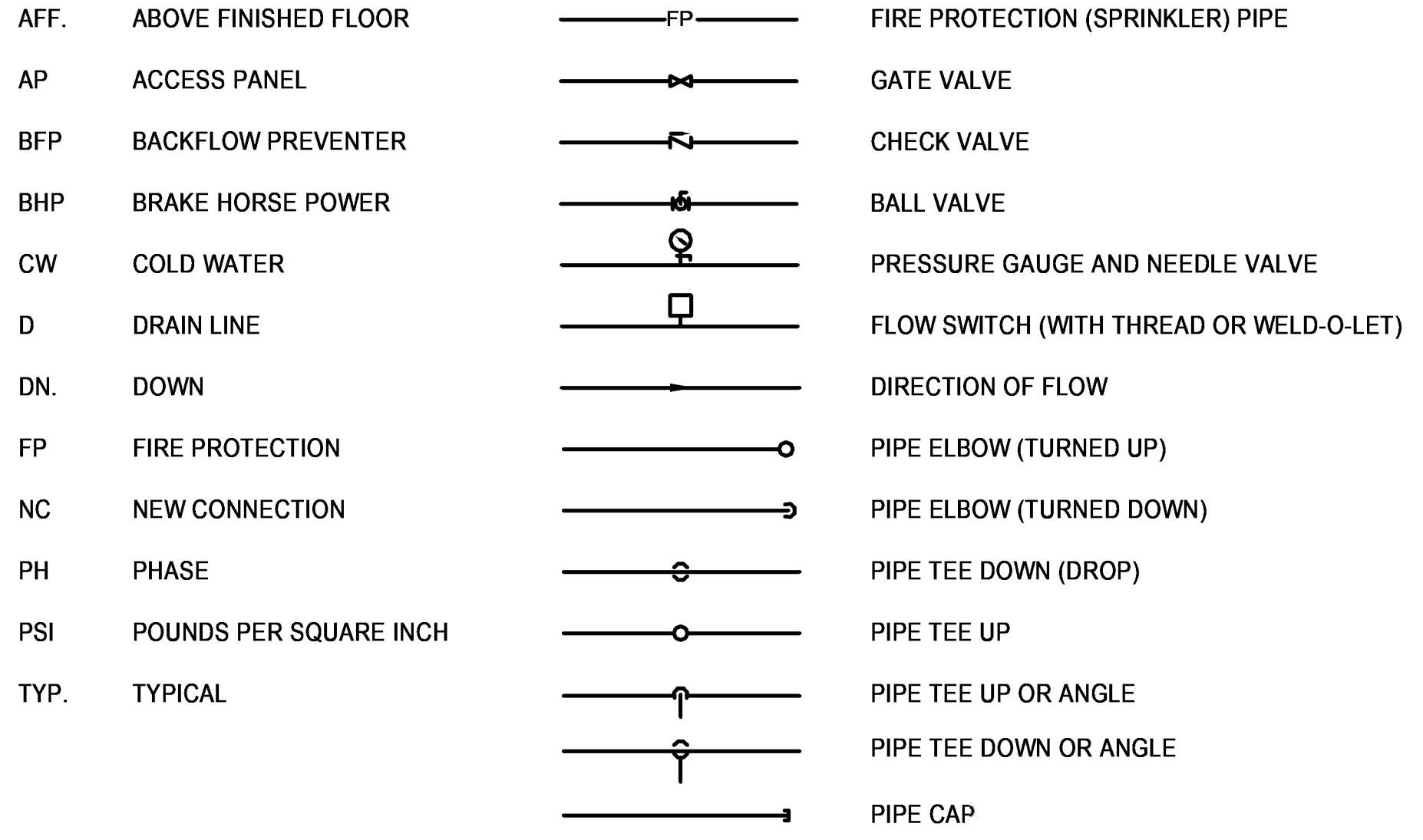
GENERAL NOTES - FIRE PROTECTION

- SYSTEM TO PROVIDE COVERAGE FOR RENOVATED AREAS. SYSTEM SHALL CONFORM TO THE DESIGN CRITERIA REQUIRED BY NFPA-13 AND THE LOCAL AUTHORITY HAVING JURISDICTION. WORKING PLANS AND CALCULATIONS SHALL BE SUBMITTED TO LOCAL APPROVAL AGENCIES AND TO OWNER'S FIRE PROTECTION CONSULTANT FOR APPROVAL.
- ALL WORK SHALL BE INSTALLED AND ALL MATERIALS SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS OF NFPA-13, 2010 EDITION AND ALL LOCAL AMENDMENTS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL INSPECTIONS WITH THE LOCAL AUTHORITY HAVING JURISDICTION.
- CONTRACTOR SHALL PROVIDE WARRANTY FOR ALL MATERIAL AND GUARANTEE ALL WORKMANSHIP FOR (1) ONE YEAR FROM SUBSTANTIAL COMPLETION OF WORK.
- DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING, ETC., AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
- ALL EXISTING PIPING INFORMATION SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM OWNER'S EXISTING CONSTRUCTION DOCUMENTS AND LIMITED FIELD SURVEY. EXACT LOCATION OF EXISTING SPRINKLER SYSTEM COMPONENTS SHALL BE FIELD VERIFIED BEFORE STARTING INSTALLATION.
- CONTRACTOR SHALL VERIFY EXISTING AVAILABLE FLOW DATA WITH OWNER'S FIRE PUMP SYSTEM AND FIELD CONDITIONS. CONTRACTOR TO CONTACT ARCHITECT/ENGINEER AND LOCAL MUNICIPALITY 48 HOURS PRIOR TO FLOW TEST.
- CONTRACTOR SHALL REVIEW ALL FLOOR PLANS AND DETERMINE EACH ROOM SPECIFIC HAZARD PER THE REQUIREMENTS OF NFPA-13. SPRINKLER DESIGN SHALL ADHERE TO THE STANDARDS SET FORTH IN NFPA-13.
- LIGHT HAZARD AREAS SHALL BE DESIGNED TO 0.10 GPM PER SQUARE FOOT, 225 SQ.FT PER HEAD WITH A REMOTE AREA OF 1500 SQUARE FEET. AN AREA OF LESS THAN 1,500 SQUARE FEET MAY BE PERMITTED WHEN THE USE OF QUICK RESPONSE HEADS QUALIFIES FOR AN AREA REDUCTION. AREA SIZES SHALL BE DETERMINED BY THE REGULATIONS OF NFPA-13. ROOM TYPES SHALL INCLUDE BUT NOT BE LIMITED TO CLASSROOMS, TOILET ROOMS, CORRIDORS, VESTIBULES, MULTI-PURPOSE ROOMS, STAIRWAYS, EXAM ROOMS, OFFICE SPACES, ETC.
- ALL FIRE PROTECTION PIPING SHALL BE SUSPENDED WITH APPROVED/LISTED PIPE HANGERS IN COMPLIANCE WITH NFPA STANDARDS. CUTTING STRUCTURAL MEMBERS TO RUN PIPING, OR TO FACILITATE HANGER FASTENING IS NOT PERMITTED.
- VERTICAL ATTACHMENT TO METAL DECK AND WOOD TRUSS'S SHALL NOT BE PERMITTED. HORIZONTAL ATTACHMENT TO WOOD TRUSS SHALL BE MADE BY HORIZONTAL SUPPORT TO BOTTOM CORD OF TRUSS.
- FIRE PROTECTION SYSTEM SHALL INCLUDE ALL ITEMS FOR A COMPLETE SYSTEM. SPECIFICALLY THIS IS TO INCLUDE BUT NOT LIMITED TO: PIPE SUPPORTS, VALVES, GAUGES, TRIM, ALARMS, SPECIALTY DEVICES, CONTROLS, AND ITEMS INCIDENTAL TO A COMPLETE SYSTEM.
- CONTRACTOR SHALL PROVIDE ALL MEANS TO SHUT-DOWN EXISTING PIPING SYSTEMS WHERE REQUIRED TO COMPLETE WORK UNDER THIS CONTRACT. CONTRACTOR SHALL PROVIDE ALL NECESSARY VALVES TO ISOLATE RENOVATED SECTIONS OF THE BUILDING WITHOUT DISTURBING SECTIONS OF THE BUILDING NOT UNDER RENOVATION.
- INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.
- PROVIDE ACCESS TO ALL VALVES AND SYSTEM COMPONENTS REQUIRING ACCESS. ALL PIPING ACCESSORIES AND EQUIPMENT SUCH AS VALVES SHALL BE INSTALLED AT A REASONABLE HEIGHT AND POSITION IN ORDER TO FACILITATE MAINTENANCE.
- ALL SPRINKLER HEADS SHALL BE LOCATED IN THE CENTER OF 2x2 TILE OR QUARTER POINT OF 2x4 CEILING TILE UNLESS OTHERWISE NOTED OR DIRECTED BY THE ARCHITECT/ENGINEER OR LOCAL FIRE DEPARTMENT AUTHORITIES.
- OPTION FOR EXTENDED COVERAGE SPRINKLERS ALLOWED WHERE PRESSURE PERMITS.
- ALL SPRINKLER HEADS BELOW 7'-0" FEET OR IN MECHANICAL ROOMS, STORAGE ROOMS, GYMNASIUMS OR IN AREAS SUBJECTED TO MECHANICAL INJURY SHALL HAVE AN APPROVED HEAD GUARD.
- CONTRACTOR SHALL PROVIDE ADDITIONAL SPRINKLER HEADS ABOVE AND BELOW MECHANICAL/ ELECTRICAL DUCTS AND EQUIPMENT WHICH EXCEEDS 48 INCHES IN WIDTH.
- FLEXIBLE CONNECTION TO SPRINKLER HEADS SHALL NOT BE PERMITTED.
- SPRINKLER HEADS SHOWN ARE MINIMUMS. CONTRACTOR SHALL PROVIDE ADDITIONAL HEADS AS REQUIRED TO COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS OR TO PROVIDE ADEQUATE COVERAGE AS SPECIFIED OR REQUIRED BY APPROPRIATE HAZARD CLASS.
- MINIMUM PIPE SIZE SHALL BE 1 INCH. ANY REDUCING OF SIZE SHALL OCCUR AT SPRINKLER HEAD CONNECTION.
- SPRINKLER PIPING SHALL NOT BE INSTALLED DIRECTLY OVER ANY ELECTRICAL EQUIPMENT PANELS, TELEPHONE OR LOW VOLTAGE EQUIPMENT OR SIMILAR TYPE OF EQUIPMENT.
- ALL PIPE AND FITTINGS SHALL BE INSTALLED IN RUST-FREE CONDITION.
- THE USE OF THREADED BUSHINGS WILL NOT BE PERMITTED IN ANY AREA OF THIS INSTALLATION.
- ALL PIPING SHALL BE HYDROSTATICALLY TESTED @ 200 PSI FOR NO LESS THAN 2 HOURS. THE FIRE DEPARTMENT SHALL BE NOTIFIED (NO LESS THAN 48 HOURS PRIOR) OF THE DATE AND TIME OF THE TEST AND MAY WITNESS IT IF SO DESIRED OR REQUIRED.
- ALL PIPING PASSING THRU' FLOOR CONSTRUCTION SHALL HAVE A SCHEDULE 40 STEEL PIPE SLEEVE INSTALLED AROUND PIPE ONLY. ALL PIPE PASSING THRU WALLS SHALL HAVE A GALVANIZED SHEET METAL OR SCHEDULE 40 STEEL PIPE SLEEVE INSTALLED AROUND THE PIPE. ALL EXPOSED PIPE WHICH PASSES THROUGH A WALL OR CEILING SHALL BE EQUIPPED WITH AN ESCUTCHEON PLATE.
- ALL PIPING SHALL BE INSTALLED TO ALLOW FOR PROPER DRAINING OF ENTIRE SYSTEM PER NFPA-13.
- SCREWED UNIONS SHALL NOT BE PERMITTED ON PIPING LARGER THAN 2 INCHES.
- ALL NEW CONNECTIONS MADE TO AN EXISTING SYSTEM MAIN SHALL BE ACCOMPLISHED WITH A CUT-IN OR TEE FITTING OF EQUAL SIZE TO THAT OF THE EXISTING MAIN.
- PROVIDE PIPE LABELING IDENTIFICATION PER ASME A13.1. SEE DETAIL FOR ADDITIONAL INFORMATION. PIPE LABELS SHALL BE WRAP AROUND TYPE. SELF ADHESIVE TYPE SHALL NOT BE PERMITTED.
- GENERAL PURPOSE FIRE STOPPING SEALANT SHALL BE DOW CORNING, NELSON OR 3M COMPANY; WATER BASED, NON SLUMPING, PREMIXED SEALANT WITH INTUMESCENT PROPERTIES, RATED FOR 3 HOURS PER ASTM E814, NFPA AND UL-1479. FILL ALL VOIDS AROUND ALL PIPING PENETRATIONS THROUGH WALLS AND CEILINGS WITH A MINIMUM 1 HOUR FIRE RATING. PROVIDE PVC COLLAR ASSEMBLY AT ALL PVC PIPING PENETRATIONS THROUGH FIRE WALLS, FLOORS OR CEILING WHERE REQUIRED BY LOCAL FIRE DISTRICT.

SPRINKLER SYMBOLS AND ABBREVIATIONS



FIRE PROTECTION SYMBOLS AND ABBREVIATIONS



1 SECOND FLOOR FIRE PROTECTION DEMOLITION PLAN
1/8" = 1'-0"



2 SECOND FLOOR FIRE PROTECTION PLAN
1/8" = 1'-0"

DRAWING NOTES

1 EXISTING MAIN AND BRANCH PIPING IN THIS AREA TO REMAIN. ADJUST EXISTING PIPING FOR NEW SPRINKLER LOCATIONS AND LOAD.

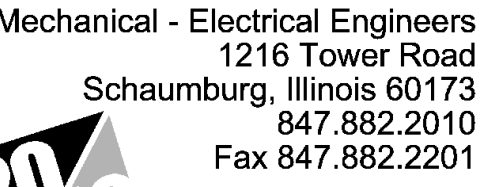
THE FOLLOWING ITEMS ARE CLARIFICATIONS TO THE CONTRACTOR REGARDING THE SHUT DOWN OF THE EXISTING SPRINKLER SYSTEM AND FIRE DEPARTMENT OPERATIONAL REQUIREMENTS

- FIRE PROTECTION SPRINKLER SYSTEM MUST REMAIN OPERATIONAL DURING TIMES THAT BUILDING IS OCCUPIED BY STUDENTS AND STAFF.
- DAILY ACTIVATION AND DEACTIVATION OF THE SPRINKLER SYSTEM FOR MODIFICATION OF PIPING AND SPRINKLER INSTALLATION IS THE CONTRACTORS RESPONSIBILITY. CONTRACTOR SHALL DRAIN ZONE AS NEEDED TO PERFORM WORK. SPRINKLER SYSTEM MUST BE RESTORED TO OPERATIONAL CONDITION INCLUDING REFILLING AND VENTING OF SYSTEM AT COMPLETION OF EACH DAY'S WORK.
- ALL TIMES OF SPRINKLER SYSTEM SHUT-DOWN ARE SUBJECT TO OWNERS DISCRETION AND MAY HAVE RESTRICTIONS BASED ON SCHEDULED EVENTS AT FACILITY. ALL ASPECTS OF SPRINKLER SYSTEM SHUT-DOWN SHALL BE COORDINATED WITH OWNER. CONTRACTOR MAY REQUEST TO DEVIATE FROM SCHEDULED AVAILABLE SHUT-DOWN TIMES HOWEVER OWNER SHALL REVIEW EACH REQUEST AND APPROVE OR DENY ANY SUCH REQUEST.

BIDDING NOTE
SEE DRAWING ME1.10 FOR GENERAL NOTES AND ADDITIONAL DETAILS APPLICABLE TO THIS TRADE'S WORK.



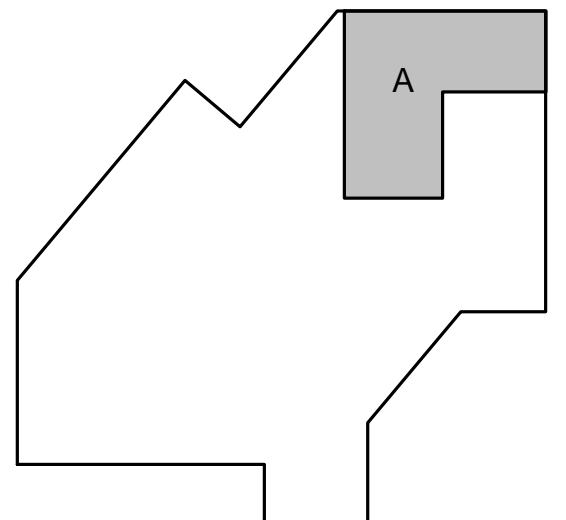
223 W Jackson Blvd | Suite 1200
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ph: 312.253.3400 | fx: 312.253.3401



Mechanical - Electrical Engineers
1216 Tower Road
Schaumburg, Illinois 60173
847.882.2010
Fax 847.882.2201
Design Firm Registration Number:
184.004110-0006

Second Floor Bunk House Floor Plan

Village of Oak Park
100 N Euclid Ave., Oak Park, IL 60301



KEY PLAN

NO	ISSUE	DATE
•	BID SET	06/28/2023
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**SECOND FLOOR
FIRE
PROTECTION
PLANS**

FP1.20

VILLAGE OF OAK PARK FIRE STATION No.1

BUNK ROOM RENOVATION



ARCHITECT'S PROJECT NO. 23016A

VILLAGE OF OAK PARK
FIRE STATION No. 1
BUNK ROOM RENOVATION

VILLAGE OF OAK PARK
DEPARTMENT OF PUBLIC WORKS
201 SOUTH BLVD
OAK PARK, ILLINOIS, 60302

ARCHITECT: STUDIOGC ARCHITECTURE + INTERIORS
 223 WEST JACKSON BOULEVARD
 SUITE 1200
 CHICAGO, ILLINOIS 60606
 312-253-3400

DATE: JUNE 28, 2023

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REQUEST FOR PROPOSALS
INSTRUCTIONS AND SPECIFICATIONS FOR:

Village of Oak Park Main Fire Station Bunk Room Renovations
Bid Number: 23-124
Issuance Date: 6/28/2023

The Village of Oak Park will receive proposals from qualified contractors to renovate the 2nd floor bunk room at the main fire station, located at 100 N. Euclid, Oak Park, IL 60302. Proposals will be accepted at the Public Works Center Monday through Friday, 7:30 a.m. to 4:00 p.m. local time until **11:00 a.m. on Friday, August 4th, 2023**. Proposals may also be sent via e-mail to vics@oak-park.us. Proposals will be reviewed and the results of the review will be presented to the Village of Oak Park Board of Trustees.

There will be a mandatory pre-bid meeting at the main fire station on Thursday, July 13th, 2023 at 9:00 a.m. Prospective bidders are encouraged to attend the pre-bid meeting to inspect site conditions and obtain other pertinent information about the scope of work. Plans/specs/drawings will be available after July 6th and will be distributed at the pre-bid mtg.

Specifications and bid forms may be obtained by sending a request to Building Maintenance Superintendent, Vic Sabaliauskas at vics@oak-park.us or by stopping by the Public Works Center at the address listed above or by calling 708-358-5710.

The Board of Trustees reserves the right to accept or reject any and all proposals or to waive technicalities, or to accept any item of any proposal.

Do not detach any portion of this document. Upon formal award to the successful contractor, a written agreement will be executed in substantially the form attached.

In responding to this Request for Proposals, the official logo of the Village of Oak Park is not to be used in any form. Use of the Village logo is strictly prohibited by law and such use could subject the proposer to disqualification.

Submission of Proposals

The bid shall be submitted on the bid form included herewith. If bid is hand delivered or mailed to the Public Works Center, the bid shall be submitted in a sealed envelope marked "**BID: 23-124 Village of Oak Park Main Fire Station Bunk Room Renovations**", shall bear the return address of the bidder, and shall be addressed as follows:

TO: Vic Sabaliauskas, Building Maintenance Superintendent
Department of Public Works
201 South Blvd.
Oak Park, IL 60302

SECTION I
PROPOSAL INSTRUCTIONS, TERMS AND CONDITIONS

Preparation and Submission of Proposal

All proposals must be delivered to the Public Works Center by the specific time indicated on the cover page. Proposals arriving after the specified time will not be accepted. Mailed proposals that are received by the Village after the specified hour will not be accepted regardless of the post-marked time on the envelope. Proposals must be signed by an officer of the company who is authorized to enter into agreements on behalf of the company. Proposals shall be sealed in an envelope and marked as stated on the cover page.

Proposal Bond

The contractor shall provide a proposal bond in the amount of ten percent (10%) of the total proposal price. The attached form may be used or the contractor may provide cash or a certified check in the amount specified. The proposal bonds, cash or checks will be returned once the selected contractor has entered into an agreement for this work and provided the Contract bond in an amount of one hundred percent (100%) of the total approved proposal price.

Contract Bond

The successful contractor shall, within ten (10) calendar days after award of the Proposal, furnish a contract bond in the amount of one hundred percent (100%) of the contract price. The bond shall ensure faithful performance of the work, and the payment for materials, labor and of the subcontractors. The bond shall be with a surety or sureties with a rating of "A" or better by A.M. Best and Company and such sureties shall be approved by the Village. Bonds in the form of certified or cashier's check shall be made payable to the Village of Oak Park, Illinois. The contract bond shall be furnished in the same number of copies as the number of copies of the agreement to be executed.

Award of Agreement

The agreement will be awarded in whole or in part to the responsible contractor whose proposal, conforming to the request for proposals, will be most advantageous to the Village; price and other factors considered.

Costs of Preparation

The Village will not be responsible for any expenses incurred in preparing and submitting a proposal or entering into the applicable agreement.

Taxes not Applicable

The Village of Oak Park as an Illinois municipality pays neither Illinois Sales Tax nor Federal Excise Tax (State Tax Exemption Identification Number E9998-1823-06). Contractors should exclude these taxes from their prices.

Withdrawal of Proposals

Any contractor may withdraw its proposal at any time prior to the time specified in the advertisement as the closing time for the receipt of proposals, by signing a request therefore. No contractor may withdraw or cancel its proposal for a period of sixty (60) calendar days after

the advertised closing time for the receipt of proposals. The successful contractor may not withdraw or cancel its proposal after having been notified that the proposal was accepted by the Village Board of Trustees.

Investigation of Contractors

The Village will make such investigations as are necessary to determine the ability of the contractor to fulfill proposal requirements. If requested, the contractor should be prepared to present evidence to the Village of Oak Park of ability and possession of necessary facilities and financial resources to comply with the terms of the attached specifications and proposals. In addition, the contractor shall furnish the Village with any information the Village may request, and shall be prepared to show completed work of a similar nature to that included in its proposal. The Village reserves the right to visit and inspect the premises and operation of any contractor.

Rejection of Contractor

The Village will reject any proposal from any person, firm or corporation that appears to be in default or arrears on any debt, agreement or the payment of any taxes. The Village will reject any proposal from a contractor that failed to satisfactorily complete work for the Village under any previous agreement.

Conditions

Contractors are advised to become familiar with all conditions, instructions and specifications governing the work. Contractors shall be presumed to have investigated the work site, conditions and scope of the work before submitting a proposal.

Compliance with Applicable Laws

The contractor will strictly comply with all ordinances of the Village of Oak Park and Village Code and laws of the State of Illinois.

Governing Law

All agreements entered into by the Village of Oak Park are governed by the laws of the State of Illinois without regard to conflicts of law. Any action brought to enforce an agreement with the Village of Oak Park must be brought in the state and federal courts located in Cook County, Illinois.

Subletting of Agreement

No agreement awarded by the Village of Oak Park shall be assigned or any part sub-agreement without the written consent of the Village of Oak Park or as noted in the contractor's proposal. In no case shall such consent relieve the contractor from its obligations or change the terms of the agreement.

Interpretation of Agreement Documents

Any contractor with a question about this proposal may request an interpretation thereof from the Village. If the Village changes the proposal, either by clarifying it or by changing the specifications, the Village will issue a written addendum, and will mail a copy of the addendum to all prospective contractors. The Village will not assume responsibility for receipt of such addendum. In all cases, it will be the contractor's responsibility to obtain all addenda issued.

Contractors will provide written acknowledgment of receipt of each addendum issued with the proposal submission.

Minority Business and Women Business Enterprise Requirements

The Village of Oak Park, in an effort to reaffirm its policy of non-discrimination, encourages the efforts of contractors and subcontractors to take affirmative action in providing for Equal Employment Opportunity without regard to race, religion, creed, color, sex, national origin, age, handicap unrelated to ability to perform the job or protected veteran's status.

Licenses and Permits

The contractor shall be responsible for becoming a licensed contractor in the Village. The contractor shall also be responsible for obtaining any and all required permits from the Village's Development Customer Services Department (Building Permits Division). The Village shall waive all permit fees.

Agreement

The selected contractor shall enter into an Independent Contractor Agreement with the Village to complete the work in a form substantially similar to the agreement attached hereto. The agreement shall be executed by the contractor and returned, together with the contract bond within ten (10) calendar days after the agreement has been mailed to the contractor. The contractor shall execute three copies of the agreement. One fully executed copy will be returned to the contractor.

Notice to Proceed

Work shall begin within fourteen (14) days from the Notice to Proceed from the Village's Building Maintenance Superintendent. All work shall be completed in accordance with the detailed specifications set forth herein, unless the Building Maintenance Superintendent grants an extension.

Fees and Cost

In the event any action is brought to enforce any agreement entered into by the Village of Oak Park, or to collect any unpaid amount from the Village of Oak Park, each party bears the responsibility of paying its own attorneys' fees and costs.

Dispute Resolution

The Village of Oak Park does not agree to the mandatory arbitration of any dispute.

SECTION II
DETAILED SPECIFICATIONS

See attached detailed specifications and design documents as submitted by the design firm of Studio GC, Inc.

The selected contractor shall furnish all labor, supervision, supplies, tools, equipment, vehicles and other means necessary or proper for performing and completing the work. The selected contractor shall be responsible for the cleaning up of the job site and shall repair or restore all structures and property that may be damaged or disturbed during performance of the work to the satisfaction of the Village of Oak Park.

The agreement and work shall be carried out in conformance with the laws and regulations of the Village of Oak Park and these specifications. All work will be performed according to the standards set forth in the applicable building codes and standards, including mechanical, fire, plumbing, electric, accessibility, or any other applicable codes in force in the Village of Oak Park and State of Illinois.

Alterations, Omissions and Extra Work

The Village of Oak Park reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work as may be deemed necessary.

Job Site Conditions

To the fullest extent possible, the contractor will not allow its work to interfere with the critical operations of the Fire Department. Contractor will take all necessary actions as directed by the Village in that regard.

Material Storage: The contractor shall be responsible for the storage and safety of his own materials. The Village assumes no liability whatever for any material damaged or stolen on the premises. Any damage to, or loss by theft or vandalism of any material, appurtenance, or appliance, after such has been applied, connected or installed on Village property, shall be the sole responsibility of the contractor until the project is completed and accepted by the Village.

Safety Precautions: The contractor is solely responsible for implementing effective safety precautions on and around the work site to protect workers and other persons who might be affected and shall exercise every precaution at all times for the protection of the property. The contractor shall not leave any combustible materials or other fire hazards overnight or allowed them to accumulate. The contractor shall abide by all applicable laws, standards, and regulations that apply to the completion of the work, including EPA and OSHA safety standards and regulations.

Damage to Property: Contractor shall repair, at no additional cost to the Village, all damage to Village property caused by the contractor resulting from his work. Where repair of existing work is called for, such patching and replacement shall be made to blend with existing work so that the patch or replacement will be inconspicuous after finishing.

Daily Clean-up: The contractor shall keep the premises clean and orderly during the course of the work and all debris shall be removed on a continuous basis.

Method of Payment

The Village of Oak Park will pay monthly all undisputed invoices billed at the rates set forth in the contractor's proposal within 30 days of approval as provided in the Local Government Prompt Payment Act, 50 ILCS505/4. The maximum interest rate for any payment not made within 30 days of approval is 1%.

Change Orders

Change Orders: Changes in the Work may be agreed to after execution of the agreement, and without invalidating the agreement, if the change order is in writing and signed. Any changes to the scope of work which result in an increase in the agreement price will be subject to an agreement addendum which must be signed by both parties. Any such change order will be prepared by the Village. The contractor may only proceed with the change upon receipt of the written change order signed by the Village.

Emergency Changes: Contractor may perform work not included in the scope of work if necessary to remedy a condition that poses an immediate threat to persons or property. Work of this nature shall be carried out only to the extent of bringing the condition under control. The Village shall be notified immediately. A change order will then be negotiated and executed for the work performed, and for work remaining, if any.

Minor Changes (Field Orders): The Village may verbally authorize minor changes in the scope of work in order to prevent a delay in the progression of the work. These field orders may not involve a change in the agreement price or be inconsistent with the scope of work.

Changes Due to Unknown Conditions: The contractor is not responsible for changes in the work that are due to conditions that were not reasonably observable or conditions that have changed. In such cases, the contractor shall notify the Village and a change order will be negotiated.

Any change which results in a total agreement price in excess of \$10,000 must be approved by the Village of Oak Park Board of Trustees.

Correction of Work Prior To Final Payment

The Village has the right to stop work if the contractor fails to carry out the work in a manner acceptable to the Village. If the Village deems the contractor's work unacceptable, at the Village's election, the contractor shall do one of the following:

1. Promptly repair or replace the defective work, without expense to the Village, including costs associated with repairing any damage to property caused by the replacement work; or;
2. If the Village deems it unacceptable to have the contractor correct work which has been incorrectly done, a deduction from the agreement price shall be made based on the costs to the Village to have the work repaired. Such a deduction from the agreement price shall in no way affect the Village's other remedies or relieve the

contractor from responsibility for defects and related damage occurring as a result of defective or unacceptable work.

Contractor's Representative

The contractor shall have at all times a competent foreman or superintendent on the job that shall have full authority to act for the contractor, and to receive and execute orders from the Director of Public Works or appointed representative. Any instructions given to such superintendent or person executing work for the contractor shall be binding on the contractor as though given to him personally. Contractor's representative must be proficient in the use and interpretation of the English language.

Workers

The contractors shall employ competent laborers and shall replace, at the request of the Building Maintenance Superintendent any incompetent, unfaithful, abusive or disorderly workers in their employ. Only workers expert in their respective branches of work shall be employed where special skill is required. Inappropriate behavior or examples of unproductive work effort will not be tolerated. The Village has the right to require a contractor's employee to be immediately removed from the work crew if the above behavior is exhibited.

Dispute Resolution

All disputes, including collection disputes, shall be brought in the Circuit Court of Cook County, Illinois. This agreement shall be interpreted in accordance with the laws of the State of Illinois. In any dispute resolution process, each party shall bear its own costs, including attorney's fees. Any purported agreement between the parties that states terms contrary to this paragraph M will be deemed per se invalid.

Mandatory Qualifications for Contractor's Personnel

Crews shall include at least one (1) supervisor during any given shift.

1. No more than 50% of the crew may be trainees at any one time.
2. Supervisors must be fluent in the English language and capable of reading and writing English.
3. Technicians employed by the contractor selected shall be fully trained and skilled in safe and proper techniques. Specific training required must follow the OSHA standards (see *below*).
4. The contractor selected shall provide sufficient documentation, if requested by the Village, to demonstrate adequate training has been provided upon commencement of the agreement. Contractor selected shall submit statement outlining training program and method of verifying employee competency. Failure to do so may be ample cause for rejection of proposal. The use of technicians who are not adequately trained may be sufficient grounds for termination of the agreement.
5. The Village reserves the right to require immediate removal of any employee of the contractor selected deemed unfit for service for any reason. This right is non-negotiable and the

contractor selected agrees to this condition by accepting this agreement. The contractor selected shall have enough qualified personnel to replace a terminated employee within 24 hours. Failure to do so can result in the termination of the agreement.

OSHA Requirements

1. Material Safety Data Sheets – Contractor selected shall furnish the Village of Oak Park copies of Material Safety Data Sheets (MSDS), for all products used, prior to beginning service at Village facilities. In addition, each time a new chemical is introduced, a copy of that product’s MSDS must be provided to the Building Maintenance Superintendent prior to the product being used. The Material Safety Data Sheets must be in compliance with OSHA Regulation 1910.1200, paragraph g.
2. Labeling of Hazardous Materials – Contractor selected shall comply with OSHA regulation 1919.1200, paragraph f, concerning labeling of all chemical containers.
3. Caution Signs – Contractor selected shall use “caution signs” as required by OSHA Regulation 1910.44 and 1910.145 at no cost to the Village. Caution signs shall be on-site upon commencement of agreement.

Proof of compliance with OSHA regulation 1920.1200, Hazard Communication, shall be provided to the Building Maintenance Superintendent upon commencement of this agreement, if requested.

Failure of the contractor selected or his/her employees to comply with all applicable laws, regulations and rules shall permit the Village to immediately terminate this agreement without liability.

Prevailing Wages

Contractor and any applicable subcontractor shall pay prevailing wages as established by the Illinois Department of Labor and determined by the Village for each craft or type of work needed to execute the contract in accordance with the Illinois Prevailing Wage Act, 820 ILCS 130/0.01 *et seq.* (“Act”). Contractor shall prominently post the current schedule of prevailing wages at the Project site(s) and shall notify immediately in writing all of its subcontractors of all changes in the schedule of prevailing wages. Any increases in costs to Contractor due to changes in the prevailing rate of wage during the terms of any Contract shall be at the sole expense of Contractor and not at the expense of the Village, and shall not result in an increase to the Contract Price. Contractor shall be solely responsible to maintain accurate records as required by the Act and shall submit certified payroll records to the Village evidencing its compliance with the Act on no less than a monthly basis as required by the Act. Contractor shall be solely liable for paying the difference between prevailing wages and any wages actually received by laborers, workmen and/or mechanics engaged in the Work for the Project.

Contractor shall indemnify, hold harmless, and defend the Village, its officers, officials, employees, agents and volunteers (“Indemnified Parties”) against all regulatory actions, complaints, damages, claims, suits, liabilities, liens, judgments, costs and expenses, including reasonable attorney’s fees, which may in any way arise from or accrue against the Indemnified

Parties as a consequence of noncompliance with the Act or which may in any way result therefrom, including a complaint by the Illinois Department of Labor under Section 4(a-3) of the Act, 820 ILCS 130/4(a-3) that any or all of the Indemnified Parties violated the Act by failing to give proper notice to the Grantee or any other party performing work on the Public Improvements that not less than the prevailing rate of wages shall be paid to all laborers, workers and mechanics performing Work on the Project, including interest, penalties or fines under Section 4(a-3). The indemnification obligations of this section on the part of Contractor shall survive the termination or expiration of this Agreement. In any such claim, complaint or action against the Indemnified Parties, Contractor shall, at its own expense, appear, defend and pay all charges of reasonable attorney's fees and all reasonable costs and other reasonable expenses arising therefrom or incurred in connection therewith, and, if any judgment or award shall be rendered against the Indemnified Parties in any such action, Contractor shall at its own expense, satisfy and discharge such judgment or award.

SECTION III
SCOPE OF WORK

Plans, drawings and specifications will be available after July 6th and will be distributed at the pre-bid meeting on July 13th. Plans can also be sent electronically to prospective bidders upon request after July 6th.

An asbestos survey of the areas included in the scope of work has been completed (by the firm of Environmental Consulting Group) and the results of the analysis showed no presence of ACM.

Addenda: The bidding contractor acknowledges receipt of Addenda as listed below and represents that any additions to, modifications of, or deletions from the Work specified, as called for in these Addenda, are included in the Base Bid Sum and the Alternates. Contractor shall submit this form with their bid.

<i>Addendum No.</i>	<i>Date</i>
_____	_____
_____	_____
_____	_____
_____	_____

SECTION IV
PROPOSAL FORM (Pricing)

The undersigned proposes to furnish all labor and materials required to complete the Work in accordance with the attached specifications and at the price indicated below.

Total Lump Sum Cost Base Bid: \$ _____

Alternates:

Alternate Bid No. 1: Mechanical Work

Base Bid: Existing roof top mechanical unit is to remain in place. Existing ductwork and controls are to be reconfigured and replaced as shown on the drawings to serve the new plan layout.

Alternate Bid: The existing roof top mechanical unit is to be removed and replaced with a new unit on the existing curb. The existing curb shall be modified to accommodate the new piece of equipment. Existing ductwork is to be reconfigured and replaced as shown on the drawings to serve the new plan layout. New controls are to be provided for RTU-1. In addition, all work associated with adding a second unit (RTU-2) is to be provided. This includes, but is not limited to, the new unit, new roof curb, modifications to the roof as shown on the drawings, framing a new roof opening with steel angles tied to the existing joists, new insulated ductwork, and new controls.

Alternate Bid No. 2a: Humidifier for RTU-1

Base Bid: Existing roof top mechanical unit to remain as is.

Alternate Bid: Provide a humidifier, in-line with the supply ductwork, to serve RTU-1. Modify ductwork to accommodate the humidifier installation. New connections and integration into RTU-1 to be provided.

Alternate Bid No. 2b: Humidifier for RTU-2

Base Bid: RTU-2, nor its humidifier, are to be included in the project.

Alternate Bid: Provide a humidifier, in-line with the new supply ductwork, to serve RTU-2. New connections and integration into RTU-2 to be provided.

Alternate Bid No. 3: Condensing Units & Fan Coil Units

Base Bid: The two existing condensing units (on the roof) and all associated piping and refrigerant to remain. Both fan coil units (in the mechanical room on the lower level) are to remain.

Alternate Bid: The two existing condensing units (on the roof) and two fan coil units (in the basement) to be removed and replaced. All associated refrigerant piping and the refrigerant are to be demolished. Selective demolition of the walls and ceilings shall be provided as shown on the drawings. New piping and

refrigerant shall be provided. New connections and integration of equipment to be provided. Restoration of walls and ceilings shall be provided as shown.

Alternate Bid No. 4: Thermal Insulation.

Base Bid: Provide R-21 batt insulation laid over all ceilings (acoustical panel) in bunk room area. Cut insulation around light fixtures.

Alternate Bid: In lieu of batt insulation, provide closed cell polyurethane spray foam insulation achieving R-25 on underside of roof deck. The entire area above the bunk room, plus a minimum of 2 feet beyond the wall perimeter shall be covered with spray foam insulation.

Alternate Bid No. 5: Fire Alarm System

Base Bid: Provide a fire alarm horn and strobe in each section of the corridor as shown.

Alternate Bid: Provide the base bid fire alarm horn and strobe locations plus a visual/audio notification device in each individual bunk room.

Total for Alt. No.1:	\$ _____
Total for Alt. No.2a:	\$ _____
Total for Alt. No.2b:	\$ _____
Total for Alt. No.3:	\$ _____
Total for Alt. No.4:	\$ _____
Total for Alt. No.5:	\$ _____

24-Hour Emergency Call-back Number:

(____) _____

Printed Name: _____

Proposal Signature: _____

State of _____) County of _____)

(Type Name of Individual Signing)

being first duly sworn on oath deposes and says that the contractor on the above proposal is organized as indicated below and that all statements herein made on behalf of such

Contractor and that their deponent is authorized to make them, and also deposes and says that deponent has examined and carefully prepared their proposal from the agreement specifications and has checked the same in detail before submitting this proposal; that the statements contained herein are true and correct.

Signature of contractor authorizes the Village of Oak Park to verify references of business and credit at its option.

Signature of contractor shall also be acknowledged before a Notary Public or other person authorized by law to execute such acknowledgments.

Dated: _____/____/2023 _____

Organization Name
(Seal - If Corporation)

By:

Authorized Signature

Address

Telephone: _____

Subscribed and sworn to before me this _____ day of _____, 2023
_____ in the State of _____ My

Commission
Notary Public

Expires on ____/____/_____

Complete Applicable Paragraph Below

(a) Corporation

The contractor is a corporation, which operates under the legal name of _____ and is organized and existing under the laws of the State of _____. The full names of its Officers are:

President _____

Secretary _____

Treasurer _____

The corporation does have a corporate seal. (In the event that this proposal is executed by a person other than the President, attach hereto a certified copy of that section of Corporate By-Laws or other authorization by the Corporation that permits the person to execute the offer for the corporation.)

(b) Partnership

Names, Signatures, and Addresses of all Partners

The partnership does business under the legal name of _____, which name is

is registered with the office of _____ in the county of _____.

(c) Sole Proprietor

The contractor is a Sole Proprietor whose full name is _____.

If the contractor is operating under

a trade name, said trade name is _____,

which name is registered with the office of _____

in the county of _____.

Signed: _____

Sole Proprietor

In compliance with the above, the undersigned offers and agrees, if his/her proposal is accepted within ninety (90) calendar days from date of opening, to furnish any or all of the items upon which prices are quoted, at the price set opposite each item, delivered at the designated point within the time specified above.

MUNICIPAL QUALIFICATION REFERENCE SHEET
(or attach separate form)

MUNICIPALITY _____

ADDRESS _____

CONTACT _____

PHONE _____ **E-mail:** _____

WORK PERFORMED _____

MUNICIPALITY _____

ADDRESS _____

CONTACT _____

PHONE _____ **E-mail:** _____

WORK PERFORMED _____

MUNICIPALITY _____

ADDRESS _____

CONTACT _____

PHONE _____ **E-mail:** _____

WORK PERFORMED _____

SECTION V
CONTRACTOR CERTIFICATION

_____, as part of its proposal on an agreement for construction Work
(Name of Contractor selected) for the Village of Oak Park, hereby certifies that said contractor selected
is not barred from proposing on the aforementioned agreement as a result of a violation to
either Section 33E-3 or 33E-4 of Article 33E of Chapter 38 of the Illinois Revised Statutes or
Section 2-6-12 of the Oak Park Village Code relating to "Proposing Requirement.

(Authorized Agent of Contractor selected)

Subscribed and sworn to before me this _____ day of _____, 2023.

Notary Public's Signature

- Notary Public Seal -

SECTION VI
TAX COMPLIANCE AFFIDAVIT

_____, being first duly sworn, deposes and says:

that he/she is _____ of
(partner, officer, owner, etc.)

(Contractor selected)

The individual or entity making the foregoing proposal or proposal certifies that he/she is not barred from entering into an agreement with the Village of Oak Park because of any delinquency in the payment of any tax administered by the Department of Revenue unless the individual or entity is contesting, in accordance with the procedures established by the appropriate revenue act, liability for the tax or the amount of the tax. The individual or entity making the proposal or proposal understands that making a false statement regarding delinquency in taxes is a Class A Misdemeanor and, in addition, voids the agreement and allows the municipality to recover all amounts paid to the individual or entity under the agreement in civil action.

By:
Its:

(name of contractor if the contractor is an individual)
(name of partner if the contractor is a partnership)
(name of officer if the contractor is a corporation)

The above statement must be subscribed and sworn to before a notary public.

Subscribed and sworn to before me this _____ day of _____, 2023.

Notary Public's Signature

- Notary Public Seal -

Reporting Requirements

The following forms must be completed in their entirety, notarized and included as part of the proposal document. Failure to respond truthfully to any question on the list or failure to cooperate fully with further inquiry by the Village of Oak Park will result in disqualification of your proposal.

SECTION VII
ORGANIZATION OF PROPOSING FIRM

Please fill out the applicable section:

A. Corporation:

The contractor is a corporation, legally named _____ and is organized and existing in good standing under the laws of the State of _____. The full names of its officers are:

President _____

Secretary _____

Treasurer _____

Registered Agent Name and Address: _____

The corporation has a corporate seal. (In the event that this proposal is executed by a person other than the President, attach hereto a certified copy of that section of Corporate By-Laws or other authorization by the Corporation that permits the person to execute the offer for the corporation.)

B. Sole Proprietor:

The contractor is a Sole Proprietor. If the contractor does business under an assumed name, the

assumed name is _____, which is registered with the Cook County Clerk. The contractor is otherwise in compliance with the Assumed Business Name Act, 805 ILCS 405/0.01, et. seq.

C. Partnership:

The contractor is a partnership which operates under the name _____

The following are the names, addresses and signatures of all partners:

Signature	Signature

(Attach additional sheets if necessary.) If so, check here _____.

If the partnership does business under an assumed name, the assumed name must be registered with the Cook County Clerk and the partnership is otherwise in compliance with the Assumed Business Name Act, 805 ILCS 405/0.01, et. seq.

D. Affiliates: The name and address of any affiliated entity of the business, including a description of the affiliation: _____

Signature of Owner

SECTION VIII
PROPOSAL BOND

WE _____
as PRINCIPAL, and _____
as SURETY, are held and firmly bound unto the Village of Oak Park, Illinois (hereafter referred to as "VOP") in the penal sum of Ten Percent (10%) of the total Proposal price, as specified in the invitation for Proposals. We bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly to pay to the VOP this sum under the conditions of this instrument.

WHEREAS THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that, the said PRINCIPAL is submitting a written Proposal to the VOP acting through its awarding authority for the completion of the work designated as the above section.

THEREFORE if the Proposal is accepted and an agreement awarded to the PRINCIPAL by the VOP for the above-designated section and the PRINCIPAL shall within fifteen (15) days after award enter into a formal agreement, furnish surety guaranteeing the faithful performance of the work, and furnish evidence of the required insurance coverage, all as provided in specifications then this obligation shall become void; otherwise it shall remain in full force and effect.

IN THE EVENT the VOP determines the PRINCIPAL has failed to enter into a formal agreement in compliance with any requirements set forth in the preceding paragraph, then the VOP acting through its awarding authority shall immediately be entitled to recover the full penal sum set out above, together with all court costs, all attorney fees, and any other expense of recovery.

IN TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this _____ day of _____ A.D. 2023.

PRINCIPAL

_____ (Company Name) _____ (Company Name)

By: _____ By: _____
(Signature & Title) (Signature & Title)

(If PRINCIPAL is a joint venture of two or more contractors, the company names, and authorized signatures of each contractor must be affixed)

Subscribed to and sworn before me on the
_____ day of _____, 2023.

Notary Public

NAME OF SURETY

By: _____
Signature of Attorney-in-Fact

subscribed to and sworn before me on the
_____ day of _____, 2023.

Notary Public

SECTION IX
CONTRACT BOND



Contract Bond

_____, as PRINCIPAL, and _____ as SURETY, are held and firmly bound unto the Village of Oak Park (hereafter referred to as “Village”) in the penal sum of _____, well and truly to be paid to the Village, for the payment of which its heirs, executors, administrators, successors and assigns, are bound jointly to pay to the Village under the conditions of this instrument.

WHEREAS, THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that, the Principal has entered into a written contract with the Village, acting through its President and Board of Trustees, for the construction of work, which contract is hereby referred to and made a part hereof as if written herein at length, and whereby the Principal has promised and agreed to perform the work in accordance with the terms of the contract, and has promised to pay all sums of money due for any labor, materials, apparatus, fixtures or machinery furnished to such Principal for the purpose of performing such work, including paying not less than the prevailing rate of wages in Cook County, where the work is for the construction of any public work subject to the Prevailing Wage Act, and has further agreed to save and indemnify and keep harmless the Village against all liabilities, judgments, costs and expenses which may in any manner accrue against the Village in consequence of granting such contract or which may in any manner result from the carelessness or neglect of the Principal, his agents, employees or workmen in any respect whatever; and has further agreed that this bond will inure to the benefit of any person, firm, company, or corporation, to whom any money may be due from the Principal, subcontractor or otherwise, for any such labor, materials, apparatus, fixtures or machinery so furnished and that suit may be maintained on such bond by any such person, firm, company, or corporation, for the recovery of any such money.

NOW THEREFORE, if the Principal shall well and truly perform the work in accordance with the terms of the contract, and shall pay all sums of money due or to become due for any labor, materials, apparatus, fixtures or machinery furnished to it for the purpose of constructing such work, and shall commence and complete the work within the time prescribed in the contract, and shall pay and discharge all damages, direct and indirect, that may be suffered or sustained on account of such work during the time of performance thereof and until the work shall have been accepted, and shall save and indemnify and keep harmless the Village against all liabilities, judgments, costs and expenses which may in any manner accrue against the Village in consequence of granting such contract or which may in any manner result from the carelessness or neglect of the Principal, his agents, employees or workmen in any respect whatever; and shall in all respects fully and faithfully comply with all the provisions, conditions, and requirements of the contract, then this obligation will be void; otherwise it will remain in full force and effect.

IN WITNESS WHEREOF, the PRINCIPAL and the SURETY have caused this instrument to be signed by their respective officers this _____ day of _____, 2023.

NAME OF PRINCIPAL

By: _____
Signature

By: _____
Printed Name

Its: _____
Title

Subscribed to and Sworn before me on the
_____ day of _____, 2023.

Notary Public

NAME OF SURETY

By: _____
Signature of Attorney-in-Fact

Subscribed to and Sworn before me on the
_____ day of _____, 2023.

Notary Public

SECTION X
COMPLIANCE AFFIDAVIT

I, _____, (print name) being first duly sworn on oath depose and state:

1. I am the (title) _____ of the proposing company and am authorized to make the statements contained in this affidavit on behalf of the company;
2. I have examined and carefully prepared this Proposal based on the request and have verified the facts contained in the Proposal in detail before submitting it;
3. The proposing company is organized as indicated above on the form entitled "Organization of Proposing Company."
4. I authorize the Village of Oak Park to verify the company's business references and credit at its option;
5. Neither the proposing company nor its affiliates¹ are barred from proposing on this project as a result of a violation of 720 ILCS 5/33E-3 or 33E-4 relating to Proposal rigging and Proposal rotating, or section 2-6-12 of the Oak Park Village Code relating to "Proposing Requirements".
6. The proposing company has the M/W/DBE status indicated below on the form entitled "EEO Report."
7. Neither the proposing company nor its affiliates is barred from agreementing with the Village of Oak Park because of any delinquency in the payment of any debt or tax owed to the Village except for those taxes which the proposing company is contesting, in accordance with the procedures established by the appropriate revenue act, liability for the tax or the amount of the tax. I understand that making a false statement regarding delinquency in taxes is a Class A Misdemeanor and, in addition, voids the agreement and allows the Village of Oak Park to recover all amounts paid to the proposing company under the agreement in civil action.
8. I am familiar with Section 13-3-2 through 13-3-4 of the Oak Park Village Code relating to Fair Employment Practices and understand the contents thereof; and state that the proposing company is an "Equal Opportunity Employer" as defined by Section 2000(E) of Chapter 21, Title 42 of the United States Code Annotated and Federal Executive Orders #11246 and #11375 which are incorporated herein by reference. **Also complete the attached EEO Report or Submit an EEO-1.**
9. I certify that the contractor is in compliance with the Drug Free Workplace Act, 41 U.S.C.A, 702

Signature: _____

Name and address of Business: _____

Telephone _____ E-Mail _____

Subscribed to and sworn before me this _____ day of _____, 2023.

Notary Public

- Notary Public Seal -

¹ Affiliates means: (i) any subsidiary or parent of the agreementing business entity, (ii) any member of the same unitary business group; (iii) any person with any ownership interest or distributive share of the agreementing business entity in excess of 7.5%; (iv) any entity owned or controlled by an executive employee, his or her spouse or minor children of the agreementing business entity.

SECTION XI
M/W/DBE STATUS AND EEO REPORT

Failure to respond truthfully to any questions on this form, failure to complete the form or failure to cooperate fully with further inquiry by the Village of Oak Park will result in disqualification of this Proposal.

1. Contractor Name: _____

2. Check here if your firm is:

- Minority Business Enterprise (MBE) (A firm that is at least 51% owned, managed and controlled by a Minority.)
- Women's Business Enterprise (WBE) (A firm that is at least 51% owned, managed and controlled by a Woman.)
- Owned by a person with a disability (DBE) (A firm that is at least 51% owned by a person with a disability)
- None of the above

[Submit copies of any W/W/DBE certifications]

3. What is the size of the firm's current stable work force?

_____ Number of full-time employees

_____ Number of part-time employees

4. Similar information will be requested of all sub-contractors working on this agreement. Forms will be furnished to the lowest responsible contractor with the notice of agreement award, and these forms must be completed and submitted to the Village before the execution of the agreement by the Village.

Signature: _____

Date: _____

EEO Report

Please fill out this form completely. Failure to respond truthfully to any questions on this form, or failure to cooperate fully with further inquiry by the Village of Oak Park will result in disqualification of this Proposal. An incomplete form will disqualify your Proposal.

An EEO-1 Report may be submitted in lieu of this report

Contractor Name _____
 Total Employees _____

Job Category	Total # of Empl.	Total Males	Total Females	Black	Males				Females				Total Minorities
					Hispanic	American Indian	Alaskan Native	Asian & Pacific Islander	Hispanic	American Indian	Alaskan Native	Asian & Pacific Islander	
Officials & Managers													
Professionals													
Technicians													
Sales Workers													
Office & Clerical													
Semi-Skilled													
Laborers													
Service Workers													
Management Trainees													
Apprentices													

This completed and notarized report must accompany your Proposal. It should be attached to your Affidavit of Compliance. Failure to include it with your Proposal will be disqualify you from consideration.

_____, being first duly sworn, deposes and says that he/she is the _____
 (Name of Person Making Affidavit)
 (Title or Officer)
 of _____ and that the above EEO Report information is true and accurate and is submitted with the intent that it

be relied upon. Subscribed and sworn to before me this _____ day of _____, 2023.

 (Signature)

 (Date

SECTION XII
NO PROPOSAL EXPLANATION

If your company does not wish to propose on the attached specifications, the Village of Oak Park would be interested in any explanation or comment you may have as to what prevented your firm from submitting a Proposal.

Thank you.

Proposal Name:

Village of Oak Park Main Fire Station Bunk Room Renovations
Bid Number: 23-124
Issuance Date: 6/28/2023

Comments:

Signed: _____

Phone: _____



SAMPLE ONLY – DO NOT SIGN
INDEPENDENT CONTRACTOR AGREEMENT

THIS INDEPENDENT CONTRACTOR AGREEMENT (“Contract”) is entered into on the _____ day of _____ 2023, by and between the Village of Oak Park, an Illinois home rule municipal corporation (hereinafter the “Village”), and _____, a _____ (hereafter the “Contractor”).

WHEREAS, the Contractor submitted a Proposal to renovate the bunk room, locker room and restroom at the south fire station (hereinafter referred to as the “Work”), pursuant to the Village’s Request for Proposals, attached hereto and incorporated herein by reference; and

WHEREAS, the Contractor represented in said Proposal that it has the necessary personnel, experience, and competence to promptly complete the Work and the work required hereunder; and

WHEREAS, the Contractor’s Proposal is attached hereto and incorporated herein by reference into this Agreement; and

WHEREAS, the Contractor shall perform the Work pursuant to the terms and conditions of this Contract..

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Contract,, and other good and valuable consideration received and to be received, it is mutually agreed by and between the parties as follows:

1. RECITALS INCORPORATED

The above recitals are incorporated herein as though fully set forth.

2. SCOPE OF WORK

The Contractor shall perform the Work in accordance with its Proposal for a total cost not to exceed \$_____ (“Contract Price”). The Contractor shall complete the Work in accordance with any applicable manufacturers’ warranties and in accordance with the Village’s Request for Proposals, the Contractor’s Proposal and this Contract, all of which, together shall constitute the Contract Documents. The Contractor acknowledges that it has inspected the sites where the work is to be performed and that it is fully familiar with all of the conditions at the sites, and further that its Proposal has adequately taken into consideration all of the conditions at the sites. The Contractor hereby represents and warrants that it has the skill and experience necessary to complete this Work in a good and workmanlike manner. The Contractor further represents and warrants that the Work will be completed in a good and workmanlike manner in accordance with the Contract Documents, and that the Work will be free from defects.

The Contractor shall achieve completion of all work required pursuant to the Contract

Documents by December 31, 2022 (“Contract Time”). The Contract Time is of the essence. In the event the Contractor fails to complete the Project on or before said date, the Village shall be entitled to liquidated damages in the amount of \$500.00 per day for each day the work remains uncompleted beyond the completion date set forth above. This amount is not a penalty, and the parties agree to said amount given the difficulties associated with determining or calculating damages to the Village in the event the Project is not completed on time. The Contractor shall have no claim for damages, for compensation in excess of the Contract Price, or for a delay or extension of the Contract Time based upon conditions found at, or in the vicinity of, the site(s).

3. DESIGNATED REPRESENTATIVES

The Contractor shall designate in writing a person to act as its designated representative with respect to the Work to be performed under this Agreement. Such person shall have complete authority to transmit and receive instructions and information, interpret and define the Contractor's policies and decisions with respect to the Work governed by this Contract. The Village's Building Maintenance Superintendent shall have complete authority to transmit and receive instructions and information, interpret and define the Village's policies and decisions with respect to the Work governed by this Contract, or such other person as designated in writing by the Village Manager.

4. TERM OF CONTRACT

The Contractor shall perform the Work pursuant to this Contract beginning on the effective date as defined herein and ending on December 31st, 2022 or on the date that the Work is completed as determined by the Village. The Contractor shall invoice the Village for the Work provided pursuant to this Contract the rates set forth in its Proposal.

5. PAYMENT SCHEDULE

The Contractor shall, as a condition precedent to its right to receive any payment, submit to the Village an application for payment and such receipts, vouchers, and other documents as may be necessary to establish the Contractor's payment for all labor and material and the absence of any interest whether in the nature of a lien or otherwise of any party in any property, work, or fund with respect to the Work performed hereunder. Such documents shall include, where relevant, the following forms, copies of which are attached hereto:

- (i) Contractor's sworn statement;
- (ii) Contractor's partial or final waiver of lien;
- (iii) Subcontractor's sworn statement(s); and
- (iv) Subcontractor's partial or final waiver of lien.

Payment by the Village shall be conditioned upon an inspection by the Village of the

work completed and submission of required waivers by the Contractor. Payment by the Village shall in no way constitute a waiver of, or relieve the Contractor from, any defects in the work. All payments shall be made in accordance with the Illinois Local Government Prompt Payment Act, 50 ILCS 505/1 *et seq.* Final payment for any Work performed by the Contractor pursuant to an invoice by the Contractor shall be made by the Village to the Contractor when the Contractor has fully performed the work and the work has been approved by the Village and submission of required waivers and paperwork by Contractor. Approval of the work and issuance of the final payment by the Village shall not constitute a waiver of, or release the Contractor from, any defects in the work.

The Village shall have the right to withhold from any payment due hereunder such amount as may reasonably appear necessary to compensate the Village for any actual or prospective loss due to Work which is defective or does not conform to the Contract Documents; damage for which the Contractor is liable hereunder; liens or claims of liens; claims of third parties, subcontractors, or material men; or any failure of the Contractor to perform any of its obligations under this Contract. The Village may apply any money withheld or due Contractor hereunder to reimburse itself for any and all costs, expenses, losses, damages, liabilities, suits, judgments, awards, and attorney's fees incurred, suffered, or sustained by the Village and chargeable to the Contractor.

6. TERMINATION

The Village may terminate this Contract for cause, which includes but is not necessarily limited to, the Contractor's failure to perform the work pursuant to this Contract. The Village shall provide the Contractor with five (5) days' written notice of a termination for cause pursuant to the provisions of Section 12 below. The Village may also terminate this Contract when it determines the same to be in its best interests by giving fourteen (14) days' written notice to the Contractor pursuant to the provisions of Section 12 below. In such event, the Village shall pay to the Contractor all amounts due for the work performed up to the date of termination.

7. COMPLIANCE WITH APPLICABLE LAWS

The Contractor shall comply with all applicable laws, regulations, and rules promulgated by any federal, state, county, municipal and/or other governmental unit or regulatory body now in effect during the performance of the work. By way of example only and not as a limitation, the following are included within the scope of the laws, regulations and rules with which the Contractor must comply: all forms of Workers Compensation Laws, all terms of the equal employment opportunity rules and regulations of the Illinois Department of Human Rights, statutes relating to contracts let by units of government, and all applicable civil rights and anti-discrimination laws and regulations.

8. INDEMNIFICATION

To the fullest extent permitted by law, the Contractor shall waive any right of

contribution against the Village and shall indemnify and hold harmless the Village and its officers, officials, employees, volunteers and agents from and against all claims, damages, losses and expenses, including, but not limited to, legal fees (attorney's and paralegal's fees, expert fees and court costs) arising out of or resulting from the performance of the Contractor's work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or injury to or destruction of property, other than the work itself, including the loss of use resulting therefrom, or is attributable to misuse or improper use of trademark or copyright-protected material or otherwise protected intellectual property, to the extent it is caused in whole or in part by any wrongful or negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. Such obligation shall not be construed to negate, abridge or otherwise reduce any other right to indemnity which the Village would otherwise have. The Contractor shall similarly protect, indemnify and hold and save harmless, the Village, its officers, officials, employees, volunteers and agents against and from any and all claims, costs, causes, actions and expenses, including, but not limited to, legal fees incurred by reason of the Contractor's breach of any of its obligations under, or the Contractor's default of, any provisions of this Contract. The indemnification obligations under this Section shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any subcontractor under Workers' Compensation or Disability Benefit Acts or Employee Benefit Acts.

9. INSURANCE

The Contractor shall, at the Contractor's expense, secure and maintain in effect throughout the duration of this Contract, insurance of the following kinds and limits set forth in this Section. The Contractor shall furnish "Certificates of Insurance" to the Village before beginning Work on the Project pursuant to this Contract. All insurance policies shall be written with insurance companies licensed to do business in the State of Illinois and having a rating of at least A:VII according to the latest edition of the Best's Key Rating Guide; and shall include a provision preventing cancellation of the insurance policy unless thirty (30) days prior written notice is given to the Village. This provision shall also be stated on each Certificate of Insurance: "Should any of the above described policies be canceled before the expiration date, the issuing company shall mail fifteen thirty (30) days written notice to the certificate holder named to the left."

The limits of liability for the insurance required shall provide coverage for not less than the following amounts, or greater where required by law:

(A) **Commercial General Liability:**

- i. Coverage to include Broad Form Property Damage, Contractual and Personal Injury.
- ii. Limits:

General Aggregate	\$ 2,000,000.00
Each Occurrence	\$ 1,000,000.00

Personal Injury \$ 1,000,000.00

iii. Coverage for all claims arising out of the Contractor's operations or premises and anyone directly or indirectly employed by the Contractor.

(B) Workers' Compensation:

i. Workers' Compensation insurance shall be provided in accordance with the provisions of the laws of the State of Illinois, including occupational disease provisions, for all employees who perform the Work pursuant to this Contract, and if work is subcontracted pursuant to the provisions of this Contract, the Contractor shall require each subcontractor similarly to provide workers' compensation insurance. In case employees engaged in hazardous work under this Contract are not protected under the Workers' Compensation Act, the Contractor shall provide, and shall cause each subcontractor to provide, adequate and suitable insurance for the protection of employees not otherwise provided.

(C) Comprehensive Automobile Liability:

i. Comprehensive Automobile Liability coverage shall include all owned, hired, non-owned vehicles, and/or trailers and other equipment required to be licensed, covering personal injury, bodily injury and property damage.

ii. Limits:
Combined Single Limit \$1,000,000.00

(D) Umbrella:

i. Limits:
Each Occurrence/Aggregate \$ 5,000,000.00

(E) The Village, its officers, employees, agents and volunteers shall be named as additional insureds on all insurance policies set forth herein except Workers' Compensation. The Contractor shall be responsible for the payment of any deductibles for said insurance policies. The coverage shall contain no special limitations on the scope of protection afforded to the Village, its officers, employees, agents, and volunteers.

(F) The Contractor understands and agrees that any insurance protection required by this Contract or otherwise provided by the Contractor, shall in no way limit the responsibility to indemnify, keep and save harmless, and defend the Village, its officers, employees, agents and volunteers as herein provided.

10. GUARANTY

The Contractor warrants and guarantees that its Work provided for the Project to be performed under this Agreement, and all workmanship, materials, equipment, and supplies performed, furnished, used, or installed under this Contract, shall be free from

defects and flaws in workmanship or design; shall strictly conform to the requirements of this Contract; and shall be fit and sufficient for the purposes expressed in, or reasonably inferred from, this Contract. The Contractor further warrants and guarantees that the strength of all parts of all manufactured materials, equipment, and supplies shall be adequate and as specified and that the performance requirements of this Contract shall be fulfilled.

The Contractor shall, at no expense to the Village, correct any failure to fulfill the above guaranty that may appear at any time. In any event, the guaranty herein expressed shall not be sole and exclusive, and is additional to any other guaranty or warranty expressed or implied.

11. AFFIDAVIT OR CERTIFICATE

The Contractor shall furnish any affidavit or certificate in connection with the work covered by this Contract as required by law.

12. NOTICES

Any notice required to be given by this Contract shall be deemed sufficient if made in writing and sent by certified mail, return receipt requested, or personal service, or by facsimile transmission to the persons and addresses indicated below or to such addresses and persons as either party hereto shall notify the other party of in writing pursuant to the provisions of this Section:

To the Village:

Village Manager
Village of Oak Park
123 Madison Street
Oak Park, Illinois 60302-4272
Email: villagemanger@oak-park.us
Facsimile: (708) 358-5101

To the Contractor:

Email: _____
Facsimile: _____

Mailing of such notice as and when above provided shall be equivalent to personal notice and shall be deemed to have been given at the time of mailing.

Notice of facsimile transmission shall be effective as of date and time of facsimile transmission, provided that the notice transmitted shall be sent on business days during business hours (9:00 a.m. to 5:00 p.m. Chicago time). In the event facsimile notice transmitted during non-business hours, the effective date and time of notice is the first hour of the first business day after transmission.

13. AUTHORITY TO EXECUTE

The individuals executing this Contract on behalf of the Contractor and the Village represent that they have the legal power, right, and actual authority to bind their respective parties to the terms and conditions of this Contract.

14. EFFECTIVE DATE

The effective date of this Contract reflected above and below shall be the date that the Village Manager executes this Contract behalf of the Village.

15. ENTIRE CONTRACT; APPROVAL OF SUBCONTRACTORS

This Contract, including the documents incorporated by reference herein, sets forth the entire Contract of the parties with respect to the accomplishment of the Work. No right or interest in this Contract shall be assigned, in whole or in part, by either party without the prior written consent of the other party. The Village reserves the right to approve the use of subcontractors to complete any portion of the Work and to approve any applicable contract between the Contractor and a proposed subcontractor to perform any of the Work. This Contract shall be binding upon the parties and upon their respective heirs, executors, administrators, personal representatives, successors, and assigns, except as herein provided.

16. INDEPENDENT CONTRACTOR

The Contractor shall have the full control of the ways and means of performing the work referred to above and that the Contractor and its employees, representatives or subcontractors are not employees of the Village, it being specifically agreed that the Contractor bears the relationship of an independent contractor to the Village. The Contractor shall solely be responsible for the payment of all salaries, benefits and costs of supplying personnel for the Work.

17. CONTRACT BOND

The Contractor, before commencing the work on the Project, shall furnish a Contract Bond. The Contract Bond shall be in an amount equal to 100% of the full amount of the Contract Sum as security for the faithful performance of its obligations pursuant to the Contract Documents and as security for the payment of all persons performing labor and furnishing materials in connection with the Contract Documents. Such bond shall be on standard AIA Documents, shall be issued by a surety satisfactory to the Village, and shall name the Village as a primary co-obligee. The Contract Bond shall become a part of the Contract Documents. The failure of Contractor to supply the required Contract Bond within ten (10) days after the Notice of Award or within such extended period as the Village may grant if the Contract Bond does not meet its approval shall constitute a default, and the Village may either award the Contract to the next lowest responsible proposer or re-advertise for proposals. A charge against the defaulting Contractor may be made for the difference between the amount of the

Contractor's Proposal and the amount for which a contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the proposal guarantee.

18. GOVERNING LAW AND VENUE

This Contract shall be governed by the laws of the State of Illinois both as to interpretation and performance. Venue for any action pursuant to this Contract shall be in the Circuit Court of Cook County, Illinois.

19. AMENDMENTS AND MODIFICATIONS

This Contract may be modified or amended from time-to-time provided, however, that no such amendment or modification shall be effective unless reduced to writing and duly authorized and signed by the authorized representative of the Village and the authorized representative of the Contractor.

20. NON-WAIVER OF RIGHTS

No failure of either party to exercise any power given to it hereunder or to insist upon strict compliance by the other party with its obligations hereunder, and no custom or practice of the parties at variance with the terms hereof, nor any payment under this Contract shall constitute a waiver of either party's right to demand exact compliance with the terms hereof.

21. CONFLICT

In case of a conflict between any provision(s) of the Village's Request for Proposals or the Contractor's Proposal and this Contract, this Contract and the Village's Request for Proposals shall control to the extent of such conflict.

22. HEADINGS AND TITLES

The headings and titles provided in this Contract are for convenience only and shall not be deemed a part of this Contract.

23. COOPERATION OF THE PARTIES

The Village and the Contractor shall cooperate in the provision of the Work to be provided by Contractor pursuant to this Contract and in compliance with applicable laws, including, but not limited to, the Illinois Freedom of Information Act, 5 ILCS 140/1 et seq. ("FOIA"), and the provision of any documents and information pursuant to a FOIA request. The Contractor shall provide any and all documents to the Village pursuant to a FOIA request at no cost to the Village.

24. COUNTERPARTS; FACSIMILE OR PDF SIGNATURES

This Contract may be executed in counterparts, each of which shall be considered an original and together shall be one and the same Contract. A facsimile or pdf copy of this Agreement and any signature(s) thereon will be considered for all purposes as an original.

25. CERTIFIED PAYROLL

Contractor shall be solely responsible to maintain accurate records reflecting its payroll for its employees who perform any of the Work for the Village pursuant to this Contract and shall submit certified payroll records to the Village's Director of Public Works at any time during the term of this Contract. Contractor shall provide said certified payroll records within seven (7) days upon the request of the Director of Public Works.

26. PREVAILING WAGE

Contractor and any applicable subcontractor shall pay prevailing wages as established by the Illinois Department of Labor and determined by the Village for each craft or type of work needed to execute the contract in accordance with the Illinois Prevailing Wage Act, 820 ILCS 130/0.01 *et seq.* ("Act"). Contractor shall prominently post the current schedule of prevailing wages at the Project site(s) and shall notify immediately in writing all of its subcontractors of all changes in the schedule of prevailing wages. Any increases in costs to Contractor due to changes in the prevailing rate of wage during the terms of any Contract shall be at the sole expense of Contractor and not at the expense of the Village, and shall not result in an increase to the Contract Price. Contractor shall be solely responsible to maintain accurate records as required by the Act and shall submit certified payroll records to the Village evidencing its compliance with the Act on no less than a monthly basis as required by the Act. Contractor shall be solely liable for paying the difference between prevailing wages and any wages actually received by laborers, workmen and/or mechanics engaged in the Work for the Project.

Contractor shall indemnify, hold harmless, and defend the Village, its officers, officials, employees, agents and volunteers ("Indemnified Parties") against all regulatory actions, complaints, damages, claims, suits, liabilities, liens, judgments, costs and expenses, including reasonable attorney's fees, which may in any way arise from or accrue against the Indemnified Parties as a consequence of noncompliance with the Act or which may in any way result therefrom, including a complaint by the Illinois Department of Labor under Section 4(a-3) of the Act, 820 ILCS 130/4(a-3) that any or all of the Indemnified Parties violated the Act by failing to give proper notice to the Grantee or any other party performing work on the Public Improvements that not less than the prevailing rate of wages shall be paid to all laborers, workers and mechanics performing Work on the Project, including interest, penalties or fines under Section 4(a-3). The indemnification obligations of this section on the part of Contractor shall survive the termination or expiration of this Agreement. In any such claim, complaint or action against the Indemnified Parties, Contractor shall, at its own expense, appear, defend and pay all

charges of reasonable attorney's fees and all reasonable costs and other reasonable expenses arising therefrom or incurred in connection therewith, and, if any judgment or award shall be rendered against the Indemnified Parties in any such action, Contractor shall at its own expense, satisfy and discharge such judgment or award.

**[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK -
SIGNATURE PAGE FOLLOWS]**

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be signed by their duly authorized representatives on the days and dates set forth below.

VILLAGE OF OAK PARK

CONTRACTOR

By:
Its: Village Manager

By:
Its:

Date: _____, 2023

Date: _____, 2023

ATTEST

ATTEST

By:
Its: Village Clerk

By:
Its:

Date: _____, 2023

Date: _____, 2023

SECTION 011000 – SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. The General Conditions, Supplementary Conditions, and Division 01 General Requirements are hereby made a part of each Division and Section of these Specifications.

1.2 PROJECT DESCRIPTION

- A. The Project consists of the renovation of the bunk room at the existing fire station located at 100 N Euclid Ave, Oak Park, IL 60301, for the Village of Oak Park, hereafter called the Owner. To be constructed in accordance with the Contract Documents prepared by Studio GC, dated June 28, 2023.
- B. Scope: The Work includes the work of all trades required; and all the labor, materials, and equipment necessary and incidental to the construction and completion of the Work.
- C. Work to be executed under one General Contract, including all trades.

1.3 CONTRACTOR USE OF PREMISES

- A. General: During the construction period the Contractor shall have limited use of the premises for construction operations, including use of the site. The Contractor's use of the premises is limited by the Owner's need for continuity of Fire Department operations.
- B. General: Limit use of the premises to construction activities in areas indicated; allow for Owner occupancy and use by the public.
 - 1. Keep driveways and entrances serving the premises clear and available to the Owner and the Owner's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
 - 2. Move all stored materials or equipment which interferes with the operations of the Owner or other contractors.
- C. Do not load structure with weight that will endanger structure.
- D. Contractor shall assume full responsibility for protection and safekeeping of materials and equipment stored on site.
- E. Contractor shall obtain and pay for additional storage space or work area as required for operations.

1.4 OWNER OCCUPANCY

- A. Full Owner Occupancy: The Owner will occupy the site and existing building during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Owner's operations.

1.5 DUTIES OF CONTRACTOR

- A. Except as specifically noted, provide and pay for:
 - 1. Labor, materials and equipment.
 - 2. Tools, construction equipment and machinery.
 - 3. Other facilities and services required to complete the Work.
- B. Secure and pay for as required to complete the Work, and as applicable at the time of receipt of bids:
 - 1. Licenses.
 - 2. Fees.
- C. Give required notices to Owner, testing agency, and public authorities which have jurisdiction over the Work.
- D. Comply with codes, ordinances and other legal requirements of public authorities which have jurisdiction over the Work.
- E. Promptly submit written notice to the Architect of any observed variance of Contract Documents from legal requirements.
- F. Provide bonds for each portion of the Work.
- G. Activities which are to occur on site during the construction period shall be coordinated with Owner to establish proper dates which construction operations may occur.
- H. The Contractor shall include expedited delivery schedules, additional labor shifts, overtime work, and such other labor, equipment and materials as are necessary to complete each portion of the work by the date of Substantial Completion.
- I. Utilities Shut-offs shall not occur without prior approval of the Owner.

1.6 PROJECT LIMITATIONS

- A. The Work shall commence as follows:
 - 1. Commencement of Work on site: September 5, 2023
- B. The Work shall not commence until the contractor's bonds and insurance have been received and approved by the Owner.

1.7 TIME OF COMPLETION AND OCCUPANCY

- A. As part of the bid proposal, the general contractor is to submit a proposed project schedule for the work.

1.8 JOB OPERATIONS

A. Work Limitations:

1. Areas that are under construction are located adjacent to areas occupied by the Owner's personnel and the public. Owner will endeavor to remain out of construction zones.
2. Owner will occupy those spaces in the building that are not under construction during each phase for the purpose of maintain fire department operations.
3. Schedule and perform work in such a manner so as not to disrupt existing electrical, plumbing and mechanical systems in the building areas that are used for maintaining fire department operations. Existing systems must remain fully functional at all times; the fire station is open 24 hours a day. Provide Owner with minimum 48 hours' notice of any required shut down of any existing system.
4. Provide Owner with minimum 48-hour notice before starting demolition of any area that may disturb Owner's operations.
5. Maintain required exits and exit pathways at all times building is occupied.

B. Project Security:

1. General Project Security to be provided by the General Contractor. All Subcontractors must provide necessary precautions to protect their own materials and equipment until such Work is installed and operational.
2. Provide necessary precautions, including, but not limited to barriers and/or fencing, to protect Owner's personnel, pedestrians and workmen in the area of construction or demolition, as well as areas with stored materials and equipment.
3. Securely close off all areas of construction to prevent unauthorized entry.

1.9 ELECTRICAL UTILITIES

A. Owner will provide electrical power for construction activities in the form of designated existing line-voltage receptacles:

1. Coordinate power requirements with owner's representative.
2. Do not use emergency power circuits.
3. Do not overload circuits.
4. Provide all necessary extension cords.

B. Contractor, if it intends to set a trailer on site as part of their operation, shall be responsible for obtaining and paying for a temporary electrical service to run the trailer.

C. Contractor, if existing line voltage is insufficient to perform their work, shall be responsible for obtaining and paying for additional temporary electrical infrastructure to run the project.

1.10 CLEAN UP

A. Rubbish and debris resulting from the Work shall be collected and properly disposed of away from the site. If the Owner is required to perform cleaning as a result of the Contractor's lack of cleaning, the Owner may perform the required cleaning. If the Owner performs the cleaning, the Contractor will be backcharged at a rate of three (3) times the cost of the cleaning including labor and material costs.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.
- B. Related Sections include the following:
 - 1. Division 01 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A list of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES

A. Unit Price 1: Moisture Mitigation Coating

1. Description: Provide preparation and application of moisture mitigation coating on existing concrete slabs.
2. Unit of Measurement: Per 100 square feet.

B. Unit Price 2: Spray Foam Insulation

1. Description: Provide preparation and application of spray foam, closed cell insulation, thickness of 3", and ignition coating on existing interior surfaces.
2. Unit of Measurement: Per square feet.

C. Unit Price 3: Carpet Installation

1. Description: Provide preparation and application of moisture mitigation coating and specified carpet tile.
2. Unit of Measurement: Per 100 square feet.

3.2 UNIT PRICE SCHEDULE FORM

1. UNIT PRICES: State the amount (unit price) which shall include all expenses, including overhead and profit, which shall be used to make adjustments to the Contract Sum should additional work or less work be required. The unit prices shall be the same for additional, deducted or omitted units of work. Unit prices shall be established by the Bidder in accordance with this Section "Unit Prices". Contractor shall submit this completed schedule with their bid.

Unit Price 1: Add Moisture Mitigation Coating \$ _____/100 s.f.

Unit Price 2: Add Spray Foam Insulation \$ _____/s.f.

Unit Price 3: Add Carpet Tile \$ _____/100 s.f.

END OF SECTION 012200

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate Bid No. 1: Mechanical Work

1. Base Bid: Existing roof top mechanical unit is to remain in place. Existing ductwork and controls are to be reconfigured and replaced as shown on the drawings to serve the new plan layout.
2. Alternate Bid: The existing roof top mechanical unit is to be removed and replaced with a new unit on the existing curb. The existing curb shall be modified to accommodate the new piece of equipment. Existing ductwork is to be reconfigured and replaced as shown on the drawings to serve the new plan layout. New controls are to be provided for RTU-1. In addition, all work associated with adding a second unit (RTU-2) is to be provided. This includes, but is not limited to, the new unit, new roof curb, modifications to the roof as shown on the drawings, framing a new roof opening with steel angles tied to the existing joists, new insulated ductwork, and new controls.

B. Alternate Bid No. 2a: Humidifier for RTU-1

1. Base Bid: Existing roof top mechanical unit to remain as is.
2. Alternate Bid: Provide a humidifier, in-line with the supply ductwork, to serve RTU-1. Modify ductwork to accommodate the humidifier installation. New connections and integration into RTU-1 to be provided.

C. Alternate Bid No. 2b: Humidifier for RTU-2

1. Base Bid: RTU-2, nor its humidifier, are to be included in the project.
2. Alternate Bid: Provide a humidifier, in-line with the new supply ductwork, to serve RTU-2. New connections and integration into RTU-2 to be provided.

D. Alternate Bid No. 3: Condensing Units & Fan Coil Units

1. Base Bid: The two existing condensing units (on the roof) and all associated piping and refrigerant to remain. Both fan coil units (in the mechanical room on the lower level) are to remain.
2. Alternate Bid: The two existing condensing units (on the roof) and two fan coil units (in the basement) to be removed and replaced. All associated refrigerant piping and the refrigerant are to be demolished. Selective demolition of the walls and ceilings shall be provided as shown on the drawings. New piping and refrigerant shall be provided. New connections and integration of equipment to be provided. Restoration of walls and ceilings shall be provided as shown.

E. Alternate Bid No. 4: Thermal Insulation.

1. Base Bid: Provide R-21 batt insulation laid over all ceilings (acoustical panel) in bunk room area. Cut insulation around light fixtures.
 2. Alternate Bid: In lieu of batt insulation, provide closed cell polyurethane spray foam insulation achieving R-25 on underside of roof deck. The entire area above the bunk room, plus a minimum of 2 feet beyond the wall perimeter shall be covered with spray foam insulation.
- F. Alternate Bid No. 5: Fire Alarm System
1. Base Bid: Provide a fire alarm horn and strobe in each section of the corridor as shown.
 2. Alternate Bid: Provide the base bid fire alarm horn and strobe locations plus a visual/audio notification device in each individual bunk room.

END OF SECTION 012300

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Sections:
 - 1. Division 01 Section "Allowances" for products selected under an allowance.
 - 2. Division 01 Section "Alternates" for products selected under an alternate.
 - 3. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
 - 4. Divisions 02 through 32 Sections for specific requirements and limitations for substitutions.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 SUBMITTALS

- A. Substitution Requests: Submit each request for consideration electronically. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use facsimile of form provided in the Project Manual.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant

qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

- d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one (1) week of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Architect will consider requests for substitution if received within 30 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - d. Substitution request is fully documented and properly submitted.
 - e. Requested substitution will not adversely affect Contractor's construction schedule.
 - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - g. Requested substitution is compatible with other portions of the Work.
 - h. Requested substitution has been coordinated with other portions of the Work.
 - i. Requested substitution provides specified warranty.
 - j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SUBSTITUTIONS REQUEST FROM

All bids shall be based upon the Contractor providing materials and equipment as required by the proposed Contract Documents.

Bidders desiring to propose substitutions for acceptable manufacturers, suppliers, materials and/or equipment indicated within the specifications shall list below such proposed substitutions, along with the amount to be added or deducted from the lump sum base bid should the Owner decide to accept such proposed substitutions.

The Owner reserves the right to reject any and all such proposed substitutions.

Proposed substitutions will not be used to determine the low bid.

In order to receive consideration, each proposed substitution shall be accompanied by complete technical data and written description of material or product, including effect on the construction schedule.

Note: Manufacturers, suppliers, materials and/or equipment approved by the Architect prior to the scheduled time for receipt of Bids, but not indicated in Addenda, must be listed below if said change from the specification requirements is to be considered.

<u>ITEM SPECIFIED</u>	<u>PROPOSED SUBSTITUTION</u>	<u>ADD</u>	<u>DEDUCT</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Name of Bidder: _____

Date: _____

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections include the following:
 - 1. Division 01 Section "Allowances" for procedural requirements for handling and processing allowances.
 - 2. Division 01 Section "Unit Prices" for administrative requirements for using unit prices.
 - 3. Division 01 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 5 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. Furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. Furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Include costs of labor and supervision directly attributable to the change.
 - 5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - 6. Comply with requirements in Division 01 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.
- C. Proposal Request Form: Use AIA Document G709 for Proposal Requests.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures by Owner and Contractor on AIA Document G701.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: When the Owner and Contractor are not in total agreement on the terms of a Change Order Proposal Request, the Architect may issue a Construction Change Directive on AIA Form G714, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections include the following:
 - 1. Division 01 Section "Allowances" for procedural requirements governing handling and processing of allowances.
 - 2. Division 01 Section "Unit Prices" for administrative requirements governing use of unit prices.
 - 3. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with Continuation Sheets.
 - b. Submittals Schedule.
 - c. Contractor's Construction Schedule.
 - 2. Submit the Schedule of Values to Architect at earliest possible date, but no later than the date scheduled for the pre-construction meeting.
 - 3. Subschedules: Where the Work is separated into multiple sites or phases, provide sub-schedules showing values correlated with each site or phase of payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the Schedule of Values:

- a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
2. Submit draft of AIA Document G703 Continuation Sheets.
 3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value.
 - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training in the amount of 10 percent of the Contract Sum.
 5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if stored off site.
 7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
 8. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
 9. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place shall be shown as separate line items in the Schedule of Values and not distributed as general overhead expense.
 10. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 - 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 - 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
 - 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal: Submit 2 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. Each copy shall include waivers of lien and similar attachments.
 - 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien as follows:
 - 1. From the Prime contractor for the Work covered by the payment.
 - 2. From subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
 - a. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 - b. When an application shows completion of an item, submit final or full waivers.
 - c. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 - d. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 - e. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. List of subcontractors.
 - 2. Schedule of Values.

3. Contractor's Construction Schedule (preliminary if not final).
 4. Products list and local suppliers of products. List supplier's name, address, and contact person.
 5. Schedule of unit prices.
 6. Submittals Schedule (preliminary if not final).
 7. List of Contractor's staff assignments.
 8. List of Contractor's principal consultants.
 9. Copies of building permits.
 10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 11. Initial progress report.
 12. Report of preconstruction conference.
 13. Certificates of insurance and insurance policies.
 14. Performance and payment bonds.
 15. Initial settlement survey and damage report if required.
- H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
 5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
 6. AIA Document G707, "Consent of Surety to Final Payment."
 7. Evidence that claims have been settled.
 8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
 9. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination Drawings.
 - 2. Administrative and supervisory personnel.
 - 3. Project meetings.
 - 4. Requests for Interpretation (RFIs).
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- C. Related Sections include the following:
 - 1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
 - 2. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.5 SUBMITTALS

A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - c. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - d. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - e. Indicate required installation sequences.
 - f. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Key Personnel Names: Within **15** days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of operations with other contractors.

1.7 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. Preparation of Record Documents.
 - l. Use of the premises and existing building.
 - m. Work restrictions.
 - n. Owner's occupancy requirements.
 - o. Responsibility for temporary facilities and controls.
 - p. Construction waste management and recycling.
 - q. Parking availability.
 - r. Office, work, and storage areas.
 - s. Equipment deliveries and priorities.
 - t. First aid.
 - u. Security.
 - v. Progress cleaning.
 - w. Working hours.
 3. Minutes: Record and distribute meeting minutes.

- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. The Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written recommendations.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

- a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
- b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
3. Minutes: Record the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- E. Coordination Meetings: Conduct Project coordination meetings at weekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
 1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or

behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
 - c. Review present and future needs of each contractor present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Change Orders.
3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.8 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
 1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Architect.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs, as appropriate.
 7. Drawing number and detail references, as appropriate.
 8. Field dimensions and conditions, as appropriate.
 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.

- a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow seven working days for Architect's response for each RFI.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or RFIs with numerous errors.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within three days of receipt of the RFI response.
- D. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within three days if Contractor disagrees with response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 – CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. General: This Section specifies administrative and procedural requirements for schedules and reports required for proper performance of the Work.
- B. Coordination: Each prime Contractor shall closely coordinate scheduling and reporting with the scheduling and reporting of other prime Contractors.
- C. Schedules required include:
 - 1. Preliminary Construction Schedule.
 - 2. Contractor's Construction Schedule.
 - 3. Schedule of Inspections and Tests.
- D. Reports required include:
 - 1. Daily Construction Reports.
 - 2. Material location reports.
 - 3. Field correction reports.
 - 4. Special reports.
- E. The schedule of values is included in Section "Payment Procedures."
- F. Project meeting minutes are included in Section "Project Management and Coordination."
- G. Inspection and test reports are included in Section "Quality Requirements."

1.3 PRELIMINARY CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit a preliminary horizontal bar-chart type construction schedule within 2 days of the date established for Commencement of the Work.
 - 1. Provide a separate time bar for each significant construction activity. Coordinate each element on the schedule with other construction activities. Schedule each construction activity in proper sequence. Provide a continuous vertical line to identify the first working day of each week.
 - 2. Indicate completion of the Work in advance of the date established for Substantial Completion.
- B. Submittal Tabulation: With the submittal of the Preliminary Construction Schedule, include a tabulation by date of submittals required during the first 90 days of construction. List those submittals required to

maintain orderly progress of the Work, and those required early because of long lead time for manufacture or fabrication.

1. At the Contractor's option, submittal dates may be shown on the schedule, in lieu of being tabulated separately.

1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Prepare a comprehensive, fully developed, horizontal bar-chart type Contractor's Construction Schedule based on the Preliminary Construction Schedule and on whatever updating and feedback was received since the start of the Project.

1. Submit the schedule within 15 days of the date established for commencement of the Work.
2. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week.
 - a. If practical, use the same breakdown of units of the Work as indicated in the "Schedule of Values."
3. For significant construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in 10 percent increments within the time bar. As Work progresses, place a contrasting mark in each bar to indicate actual completion percentage.
4. Prepare the Schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data clearly for the entire construction period.
5. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other portions of the Work; include minor elements involved in the overall sequence of the Work. Show each construction activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.
6. Coordinate the Contractor's Construction Schedule with the schedule of values, list of subcontracts, Submittal Schedule, progress reports, payment requests and other required schedules and reports.
7. Indicate completion of the Work in advance of the date established for Substantial Completion. Indicate Substantial Completion on the Schedule to allow ample time for the Architect administrative procedures necessary for Certification of Substantial Completion.

- B. Phasing: Provide notations on the Schedule to show how the sequence of the Work is affected by the following:

1. Requirements for phased completion.
2. Work by separate Contractors.
3. Work by the Owner.
4. Pre-purchased materials.
5. Coordination with existing construction.
6. Limitations of continued occupancies.
7. Uninterruptible services.
8. Partial occupancy prior to Substantial Completion.
9. Site restrictions.
10. Provisions for future construction.
11. Seasonal variations.
12. Environmental control.

- C. Work Stages: Use crosshatched bars to indicate important stages of construction for each major portion of the Work.

- D. Such stages include, but are not necessarily limited to:
1. Subcontract awards.
 2. Purchases.
 3. Mockups.
 4. Fabrication.
 5. Sample testing.
 6. Deliveries.
 7. Installation.
 8. Testing.
 9. Adjusting.
 10. Curing.
 11. Start-up and placement into final use and operation.
- E. Area Separations: Provide a separate time bar to identify each major area of construction for each major portion of the Work. For the purposes of this article, a "major area" is defined as a story of construction, separate buildings or a similar significant construction element.
1. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. Structural Completion.
 - b. Permanent space enclosure.
 - c. Completion of mechanical installation.
 - d. Completion of the electrical portion of the Work.
 - e. Substantial Completion.
- F. Cost Correlation: Immediately below the date line at the head of the bar-chart, provide a two item cost correlation line, indicating both "precalculated" and "actual" costs. On the cost correlation line show dollar-volume of Work performed as of the same dates used for preparation of payment requests.
1. Refer to Section "Payment Procedures" for cost reporting and payment procedures.
- G. Distribution: Following the Architect response to initial submittal of the Contractor's Construction Schedule, print and distribute copies to the Architect, Owner, separate contractors, subcontractors, suppliers, fabricators, and other parties required to comply with scheduled dates.
1. Post copies of the Schedule in the Project meeting room and temporary field office.
 2. When revisions are made, distribute the updated Schedule to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.
- H. Schedule Updating: Revise the Schedule immediately after each meeting or other activity, where revisions have been recognized or made. Issue the updated Schedule concurrently with report of each meeting.

1.5 SCHEDULE OF INSPECTIONS AND TESTS

- A. Prepare a schedule of inspections, tests and similar services required by the Contract Documents. Submit the schedule within 30 days of the date established for commencement of the Work.
- B. Form: The Schedule shall be in tabular form and shall include but not be limited to the following data:
1. Specification Section number.

2. Description of the test.
3. Identification of applicable standards.
4. Identification of test methods.
5. Number of tests required.
6. Time schedule or time span for tests.
7. Entity responsible for performing tests.
8. Requirements for taking Samples.
9. Unique characteristics of each service.

- C. Distribution: Distribute the Schedule to the Owner, Architect, and each party involved in performance of portions of the Work, where inspections and tests are required.

1.6 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Architect at weekly intervals:

1. List of subcontractors at the site.
2. List of separate contractors at the site.
3. Approximate count of personnel at the site.
4. High and low temperatures, general weather conditions.
5. Accidents (refer to accident reports).
6. Meetings and significant decisions.
7. Unusual events (refer to special reports).
8. Stoppages, delays, shortages, losses.
9. Meter readings and similar recordings.
10. Emergency procedures.
11. Orders and requests of governing authorities.
12. Change Orders received, implemented.
13. Services connected, disconnected.
14. Equipment or system tests and start-ups.
15. Partial Completions, occupancies.
16. Substantial Completions authorized.

- B. Material Location Reports: At weekly intervals prepare a comprehensive list of materials delivered to and stored at the site. The list shall be cumulative, showing materials previously reported plus items recently delivered. Include with the list a statement of progress on and delivery dates for all materials or items of equipment being fabricated or stored away from the building site. Submit copies of the list to the Architect at weekly intervals.

- C. Field Correction Report: When the need to take corrective action that requires a departure from the Contract Documents arises, prepare a detailed report including a statement describing the problem and recommended changes. Indicate reasons the Contract Documents cannot be followed. Submit a copy to the Architect immediately.

- D. The Contractor shall furnish to the Owner weekly written progress reports including an updated schedule of construction and schedule of values in duplicate on all construction activities.

1.7 ACCIDENT REPORTS

- A. General: The Contractor shall provide a written report to the Owner of any and all accident whatsoever arising out of or in connection with the performance of the Work, whether on or adjacent to the site,

which causes death or personal injury or property damage. The report shall be furnished to the Owner within five (5) days of the occurrence.

1.8 FIELD CORRECTION REPORTS

- A. Field Correction Report: When the need to take corrective action that requires a departure from the Contract Documents arises, prepare a detailed report including a statement describing the problem and recommended changes. Indicate reasons the Contract Documents cannot be followed. Submit a copy to the Architect immediately.

1.9 SPECIAL REPORTS

- A. General: Submit special reports directly to the Owner within one day of an occurrence. Submit a copy to the Architect and other parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at the site, prepare and submit a special report. List the chain of events, persons participating, response by the Contractor's personnel, an evaluation of the results or effects and similar pertinent information. Advise the Owner in advance when such events are known or predictable.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULES & REPORTS

- A. General: Maintain a record of all schedules and reports. Include with electronic version of closeout documents to Owner.

END OF SECTION 013200

SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work including:

1. Submittal schedule.
2. Shop Drawings.
3. Product Data.
4. Samples.

- B. Administrative Submittals: Refer to other Division 01 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

1. Permits.
2. Applications for payment.
3. Performance and payment bonds.
4. Insurance certificates.
5. List of Subcontractors.
6. Schedule of Values.

- C. Inspection and test reports are included in Section "Quality Requirements."

1.3 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
3. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.

- a. Allow ten (10) business days for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Architect will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow ten (10) business days for reprocessing each submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.
- B. Submittal Preparation: Architect will provide access to their Newforma Project Center (Project Management System) to the Contractor for logging, transmission, and overall management of electronic submittals.
1. Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
 2. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 3. Include the following information on the label for processing and recording action taken.
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect/Engineer.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
- C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Architect using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
1. On the transmittal Record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.
- 1.4 CONTRACTOR'S REVIEW OF SUBMITTALS
- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
 - B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp or indication in web-based Project software. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 - C. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.5 ARCHITECT ACTION

- A. Except for submittals for record, information or similar purposes, where action and return are required or requested, the Architect/Engineer will review each submittal, mark to indicate action taken, and return promptly.
 - 1. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
 - 1. Final Unrestricted Release: Where submittals are marked "Accepted," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 - 2. Final-But-Restricted Release: When submittals are marked "Accepted as Noted," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
 - 3. Returned for Resubmittal: When submittal is marked "Not Accepted, Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary, to obtain a different action mark.
 - a. Do not permit submittals marked "Not Accepted, Revise and Resubmit" to be used at the Project site, or elsewhere where Work is in progress.
 - 4. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "No Action Taken"

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
 - 1. Division 01 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
 - 2. Division 01 Section "Execution" for repair and restoration of construction disturbed by testing and inspecting activities.
 - 3. Divisions 02 through 33 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
 - F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
 - G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
 - H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
 - 1. Material testing related to excavation and backfill testing and observation, cast in place concrete and reinforcement testing and observation, unit masonry mortar grout and reinforcement testing and observation, structural steel weld and bolt testing and observation, hot-mix asphalt testing and observation are conducted by Owner. Contractor shall be responsible for coordinating with Owner's testing agency to have testing and observation completed when required based on the construction schedule. Contractor shall maintain a log of all testing requested of the Owner's testing agency and documented results. The cost of follow up testing or observation that is required due to failed inspections, Contractor work not being ready for scheduled inspection, or miss communication by the Contractor which require rescheduling of the inspection shall be the responsibility of the Contractor.
 - 2. Material testing specified in the individual specifications, and not noted above, are to be provided by the Contractor's testing agency funded from the testing allowance at the discretion of the Owner through written authorization.
 - I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
 - J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
 - K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of **five** previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- 1.4 DELEGATED-DESIGN SERVICES
- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

1.5 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.6 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Description of test and inspection.
 - 3. Identification of applicable standards.
 - 4. Identification of test and inspection methods.
 - 5. Number of tests and inspections required.
 - 6. Time schedule or time span for tests and inspections.
 - 7. Entity responsible for performing tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.
- C. Reports: Prepare and submit certified written reports that include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspecting.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

- E. Delegated-Design Services Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.7 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.

- b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - a. Allow three days for initial review and each re-review of each mockup.
 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 6. Demolish and remove mockups when directed, unless otherwise indicated.
- K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 02 through 33.

1.8 QUALITY CONTROL

- A. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
1. Contractor shall engage a qualified testing agency to perform these quality-control services.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

- C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Determine the location from which test samples will be taken and which tests are conducted.
 - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 - 6. Do not perform any duties of Contractor.
- E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Delivery of samples to testing agencies.
 - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- G. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents.
 - 1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.

2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 2. Comply with the Contract Document requirements for Division 01 Section "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.

- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.
- D. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADAAG	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities Available from Access Board www.access-board.gov	(800) 872-2253 (202) 272-0080
CFR	Code of Federal Regulations Available from Government Printing Office www.access.gpo.gov/nara/cfr	(888) 293-6498 (202) 512-1530
CRD	Handbook for Concrete and Cement Available from Army Corps of Engineers Waterways Experiment Station www.wes.army.mil	(601) 634-2355
DOD	Department of Defense Military Specifications and Standards Available from Department of Defense Single Stock Point www.dodssp.daps.mil	(215) 697-6257
DSCC	Defense Supply Center Columbus (See FS)	
FED-STD	Federal Standard (See FS)	
FS	Federal Specification Available from Department of Defense Single Stock Point www.dodssp.daps.mil	(215) 697-6257
	Available from General Services Administration www.apps.fss.gsa.gov/pub/fedspecs/index.cfm	(202) 619-8925
	Available from National Institute of Building Sciences www.nibs.org	(202) 289-7800
FTMS	Federal Test Method Standard (See FS)	
MIL	See MILSPEC	
MS MIL	See MILSPEC	

MILSPEC	Military Specification and Standards Available from Department of Defense Single Stock Point www.dodssp.daps.mil	(215) 697-6257
UFAS	Uniform Federal Accessibility Standards Available from Access Board www.access-board.gov	(800) 872-2253 (202) 272-5434

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association, Inc. (The) www.aluminum.org	(202) 862-5100
AAADM	American Association of Automatic Door Manufacturers www.aaadm.com	(216) 241-7333
AABC	Associated Air Balance Council www.aabchq.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association www.aamanet.org	(847) 303-5664
AASHTO	American Association of State Highway and Transportation Officials www.aashto.org	(202) 624-5800
AATCC	American Association of Textile Chemists and Colorists (The) www.aatcc.org	(919) 549-8141
ABMA	American Bearing Manufacturers Association www.abma-dc.org	(202) 367-1155
ACI	American Concrete Institute/ACI International www.aci-int.org	(248) 848-3700
ACPA	American Concrete Pipe Association www.concrete-pipe.org	(972) 506-7216
AEIC	Association of Edison Illuminating Companies, Inc. (The) www.aeic.org	(205) 257-2530

AFPA	American Forest & Paper Association (See AF&PA)	
AF&PA	American Forest & Paper Association www.afandpa.org	(800) 878-8878 (202) 463-2700
AGA	American Gas Association www.aga.org	(202) 824-7000
AGC	Associated General Contractors of America (The) www.agc.org	(703) 548-3118
AHA	American Hardboard Association www.hardboard.org	(847) 934-8800
AHAM	Association of Home Appliance Manufacturers www.aham.org	(202) 872-5955
AI	Asphalt Institute www.asphaltinstitute.org	(859) 288-4960
AIA	American Institute of Architects (The) www.aia.org	(800) 242-3837 (202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction www.aitc-glulam.org	(303) 792-9559
ALCA	Associated Landscape Contractors of America www.alca.org	(800) 395-2522 (703) 736-9666
ALSC	American Lumber Standard Committee, Incorporated www.alsc.org	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc. www.amca.org	(847) 394-0150
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
AOSA	Association of Official Seed Analysts www.aosaseed.com	(505) 522-1437
APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600
APA	Architectural Precast Association www.archprecast.org	(239) 454-6989
API	American Petroleum Institute	(202) 682-8000

	www.api.org	
ARI	Air-Conditioning & Refrigeration Institute www.ari.org	(703) 524-8800
ARMA	Asphalt Roofing Manufacturers Association www.asphaltroofing.org	(202) 207-0917
ASCA	Architectural Spray Coaters Association www.ascassoc.com	(856) 848-6120
ASCE	American Society of Civil Engineers www.asce.org	(800) 548-2723 (703) 295-6300
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (The American Society of Mechanical Engineers International) www.asme.org	(800) 843-2763 (212) 591-7722
ASSE	American Society of Sanitary Engineering www.asse-plumbing.org	(440) 835-3040
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9585
AWCI	AWCI International (Association of the Wall and Ceiling Industries International) www.awci.org	(703) 534-8300
AWCMA	American Window Covering Manufacturers Association (See WCSC)	
AWI	Architectural Woodwork Institute www.awinet.org	(800) 449-8811 (703) 733-0600
AWPA	American Wood-Preservers' Association www.awpa.com	(817) 326-6300
AWS	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association www.awwa.org	(800) 926-7337 (303) 794-7711
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
BIA	Brick Industry Association (The) www.bia.org	(703) 620-0010
BIFMA	BIFMA International	(616) 285-3963

	(Business and Institutional Furniture Manufacturer's Association International) www.bifma.com	
CCC	Carpet Cushion Council www.carpetcushion.org	(203) 637-1312
CCFSS	Center for Cold-Formed Steel Structures www.umn.edu/~ccfss	(573) 341-4471
CDA	Copper Development Association Inc. www.copper.org	(800) 232-3282 (212) 251-7200
CEA	Canadian Electricity Association www.canelect.ca	(514) 866-6121
CFFA	Chemical Fabrics & Film Association, Inc. www.chemicalfabricsandfilm.com	(216) 241-7333
CGA	Compressed Gas Association www.cganet.com	(703) 788-2700
CGSB	Canadian General Standards Board www.pwgsc.gc.ca/cgsb	(819) 956-0425
CIMA	Cellulose Insulation Manufacturers Association www.cellulose.org	(888) 881-2462 (937) 222-2462
CISCA	Ceilings & Interior Systems Construction Association www.cisca.org	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute www.cispi.org	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute www.chainlinkinfo.org	(301) 596-2583
CPPA	Corrugated Polyethylene Pipe Association www.cppa-info.org	(800) 510-2772 (202) 462-9607
CRI	Carpet & Rug Institute (The) www.carpet-rug.com	(800) 882-8846 (706) 278-3176
CRSI	Concrete Reinforcing Steel Institute www.crsi.org	(847) 517-1200
CSA	CSA International (Formerly: IAS - International Approval Services) www.csa-international.org	(800) 463-6727 (416) 747-4000
CSI	Construction Specifications Institute (The) www.csinet.org	(800) 689-2900 (703) 684-0300
CSSB	Cedar Shake & Shingle Bureau www.cedarbureau.org	(604) 820-7700

CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute) www.cti.org	(281) 583-4087
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
EIA	Electronic Industries Alliance www.eia.org	(703) 907-7500
EIMA	EIFS Industry Members Association www.eima.com	(800) 294-3462 (770) 968-7945
EJCDC	Engineers Joint Contract Documents Committee www.asce.org	(800) 548-2723 (703) 295-6300
EJMA	Expansion Joint Manufacturers Association, Inc. www.ejma.org	(914) 332-0040
ESD	ESD Association	(315) 339-6937
FCI	Fluid Controls Institute www.fluidcontrolsintitute.org	(216) 241-7333
FGMA	Flat Glass Marketing Association (See GANA)	
FM	Factory Mutual System (See FMG)	
FMG	FM Global (Formerly: FM - Factory Mutual System) www.fmglobal.com	(401) 275-3000
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc. www.floridarroof.com	(407) 671-3772
FSA	Fluid Sealing Association www.fluidsealing.com	(610) 971-4850
FSC	Forest Stewardship Council www.fscoax.org	52 951 5146905
GA	Gypsum Association www.gypsum.org	(202) 289-5440
GANA	Glass Association of North America (Formerly: FGMA - Flat Glass Marketing Association) www.glasswebsite.com	(785) 271-0208
GRI	Geosynthetic Research Institute www.drexel.edu/gri	(215) 895-2343

GTA	Glass Tempering Division of Glass Association of North America (See GANA)	
HI	Hydraulic Institute www.pumps.org	(888) 786-7744 (973) 267-9700
HI	Hydronics Institute www.gamanet.org	(908) 464-8200
HMMA	Hollow Metal Manufacturers Association (See NAAMM)	
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900
HPW	H. P. White Laboratory, Inc. www.hpwhite.com	(410) 838-6550
IAS	International Approval Services (See CSA)	
ICEA	Insulated Cable Engineers Association, Inc. www.icea.net	(770) 830-0369
ICRI	International Concrete Repair Institute, Inc. www.icri.org	(847) 827-0830
IEC	International Electrotechnical Commission www.iec.ch	41 22 919 02 11
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The) www.ieee.org	(212) 419-7900
IESNA	Illuminating Engineering Society of North America www.iesna.org	(212) 248-5000
IGCC	Insulating Glass Certification Council www.igcc.org	(315) 646-2234
IGMA	Insulating Glass Manufacturers Alliance (The) www.igmaonline.org	(613) 233-1510
ILI	Indiana Limestone Institute of America, Inc. www.iliai.com	(812) 275-4426
ISSFA	International Solid Surface Fabricators Association www.issfa.net	(702) 567-8150
ITS	Intertek Testing Services www.itsglobal.com	(800) 345-3851 (607) 753-6711
IWS	Insect Screening Weavers Association (Now defunct)	

KCMA	Kitchen Cabinet Manufacturers Association www.kcma.org	(703) 264-1690
LMA	Laminating Materials Association www.lma.org	(201) 664-2700
LPI	Lightning Protection Institute www.lightning.org	(800) 488-6864 (847) 577-7200
LSGA	Laminated Safety Glass Association (See GANA)	
MBMA	Metal Building Manufacturers Association www.mbma.com	(216) 241-7333
MFMA	Maple Flooring Manufacturers Association www.maplefloor.org	(847) 480-9138
MFMA	Metal Framing Manufacturers Association www.metalframingmfg.org	(312) 644-6610
MH	Material Handling Industry of America (See MHIA)	
MHIA	Material Handling Industry of America www.mhia.org	(800) 345-1815 (704) 676-1190
MIA	Marble Institute of America www.marble-institute.com	(440) 250-9222
MPI	Master Painters Institute www.paintinfo.com	(888) 674-8937
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc. www.mss-hq.com	(703) 281-6613
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(312) 332-0405
NAAMM	North American Association of Mirror Manufacturers (See GANA)	
NACE	NACE International (National Association of Corrosion Engineers International) www.nace.org	(281) 228-6200
NADCA	National Air Duct Cleaners Association www.nadca.com	(202) 737-2926
NAIMA	North American Insulation Manufacturers Association (The) www.naima.org	(703) 684-0084
NAMI	National Accreditation and Management Institute, Inc.	(304) 258-5100

NBGQA	National Building Granite Quarries Association, Inc. www.nbgqa.com	(800) 557-2848
NCMA	National Concrete Masonry Association www.ncma.org	(703) 713-1900
NCPI	National Clay Pipe Institute www.ncpi.org	(262) 248-9094
NCTA	National Cable & Telecommunications Association www.ncta.com	(202) 775-3550
NEBB	National Environmental Balancing Bureau www.nebb.org	(301) 977-3698
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NeLMA	Northeastern Lumber Manufacturers' Association www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association www.netaworld.org	(303) 697-8441
NFPA	NFPA International (National Fire Protection Association International) www.nfpa.org	(800) 344-3555 (617) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NGA	National Glass Association www.glass.org	(703) 442-4890
NHLA	National Hardwood Lumber Association www.natlhardwood.org	(800) 933-0318 (901) 377-1818
NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393
NOFMA	National Oak Flooring Manufacturers Association www.nofma.org	(901) 526-5016
NRCA	National Roofing Contractors Association www.nrca.net	(800) 323-9545 (847) 299-9070
NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(888) 846-7622 (301) 587-1400
NSF	NSF International (National Sanitation Foundation International) www.nsf.org	(800) 673-6275 (734) 769-8010

NSSGA	National Stone, Sand & Gravel Association www.nssga.org	(800) 342-1415 (703) 525-8788
NTMA	National Terrazzo and Mosaic Association, Inc. www.ntma.com	(800) 323-9736 (703) 779-1022
NTRMA	National Tile Roofing Manufacturers Association (See RTI)	
NWWDA	National Wood Window and Door Association (See WDMA)	
OPL	Omega Point Laboratories, Inc. www.opl.com	(800) 966-5253 (210) 635-8100
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300
PDCA	Painting and Decorating Contractors of America www.pdca.com	(800) 332-7322 (703) 359-0826
PDI	Plumbing & Drainage Institute www.pdionline.org	(800) 589-8956 (508) 230-3516
PGI	PVC Geomembrane Institute www.pgi-tp.ce.uiuc.edu	(217) 333-3929
RCSC	Research Council on Structural Connections www.boltcouncil.org	(800) 644-2400 (312) 670-2400
RFCI	Resilient Floor Covering Institute www.rfci.com	Contact by mail only
RIS	Redwood Inspection Service www.calredwood.org	(888) 225-7339 (415) 382-0662
RTI	Roof Tile Institute (Formerly: NTRMA - National Tile Roofing Manufacturers Association) www.ntrma.org	(541) 689-0366
SAE	SAE International www.sae.org	(724) 776-4841
SDI	Steel Deck Institute www.sdi.org	(847) 462-1930
SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SEFA	Scientific Equipment and Furniture Association www.sefalabfurn.com	(516) 294-5424
SGCC	Safety Glazing Certification Council	(315) 646-2234

	www.sgcc.org	
SIA	Security Industry Association www.siaonline.org	(703) 683-2075
SIGMA	Sealed Insulating Glass Manufacturers Association (See IGMA)	
SJI	Steel Joist Institute www.steeljoist.org	(843) 626-1995
SMA	Screen Manufacturers Association	(561) 533-0991
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SMPTE	Society of Motion Picture and Television Engineers www.smpte.org	(914) 761-1100
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division) www.sprayfoam.org	(800) 523-6154
SPIB	Southern Pine Inspection Bureau (The) www.spib.org	(850) 434-2611
SPI/SPFD	Society of the Plastics Industry, Inc. (The) Spray Polyurethane Foam Division (See SPFA)	
SPRI	SPRI (Single Ply Roofing Institute) www.spri.org	(781) 647-7026
SSINA	Specialty Steel Industry of North America www.ssina.com	(800) 982-0355 (202) 342-8630
SSPC	SSPC: The Society for Protective Coatings www.sspc.org	(877) 281-7772 (412) 281-2331
STI	Steel Tank Institute www.steeltank.com	(847) 438-8265
SWI	Steel Window Institute www.steelwindows.com	(216) 241-7333
SWRI	Sealant, Waterproofing, & Restoration Institute www.swrionline.org	(816) 472-7974
TCA	Tile Council of America, Inc. www.tileusa.com	(864) 646-8453
TIA/EIA	Telecommunications Industry Association/Electronic	(703) 907-7700

	Industries Alliance www.tiaonline.org	
TMS	The Masonry Society www.masonrysociety.org	(303) 939-9700
TPI	Truss Plate Institute, Inc. www.tpinst.org	(608) 833-5900
TPI	Turfgrass Producers International www.turfgrassod.org	(800) 405-8873 (847) 705-9898
UL	Underwriters Laboratories Inc. www.ul.com	(800) 704-4050 (847) 272-8800
UNI	Uni-Bell PVC Pipe Association www.uni-bell.org	(972) 243-3902
USITT	United States Institute for Theatre Technology, Inc. www.usitt.org	(800) 938-7488 (315) 463-6463
WASTEC	Waste Equipment Technology Association www.wastec.org	(800) 424-2869 (202) 244-4700
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WCMA	Window Covering Manufacturers Association (See WCSC)	
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association) www.windowcoverings.org	(800) 506-4636 (212) 661-4261
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) www.wdma.com	(800) 223-2301 (847) 299-5200
WIC	Woodwork Institute of California www.wicnet.org	(916) 372-9943
WMMPA	Wood Moulding & Millwork Producers Association www.wmmpa.com	(800) 550-7889 (530) 661-9591
WSRCA	Western States Roofing Contractors Association www.wsrca.com	(800) 725-0333 (650) 548-0112
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone

numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

BOCA	BOCA International, Inc. www.bocai.org	(708) 799-2300
CABO	Council of American Building Officials (See ICC)	
IAPMO	International Association of Plumbing and Mechanical Officials (The) www.iapmo.org	(909) 595-8449
ICBO	International Conference of Building Officials www.icbo.org	(800) 284-4406 (562) 699-0541
ICBO ES	ICBO Evaluation Service, Inc. www.icbo.org/ICBO_ES/	(800) 423-6587
ICC	International Code Council, Inc. (Formerly: CABO - Council of American Building Officials) www.intlcode.org	(703) 931-4533
SBCCI	Southern Building Code Congress International, Inc. www.sbcci.org	(205) 591-1853

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CE	Army Corps of Engineers www.usace.army.mil	
CPSC	Consumer Product Safety Commission www.cpsc.gov	(800) 638-2772 (301) 504-0990
DOC	Department of Commerce www.doc.gov	(202) 482-2000
EPA	Environmental Protection Agency www.epa.gov	(202) 260-2090
FAA	Federal Aviation Administration www.faa.gov	(202) 366-4000
FDA	Food and Drug Administration www.fda.gov	(888) 463-6332
GSA	General Services Administration www.gsa.gov	(202) 708-5082

HUD	Department of Housing and Urban Development www.hud.gov	(202) 708-1112
LBL	Lawrence Berkeley Laboratory (See LBNL)	
LBNL	Lawrence Berkeley National Laboratory www.lbl.gov	(510) 486-5605
NCHRP	National Cooperative Highway Research Program (See TRB)	
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
OSHA	Occupational Safety & Health Administration www.osha.gov	(800) 321-6742 (202) 693-1999
PBS	Public Building Service (See GSA)	
RUS	Rural Utilities Service (See USDA)	(202) 720-9540
SD	State Department www.state.gov	(202) 647-4000
TRB	Transportation Research Board www.nas.edu/trb	(202) 334-2934
USDA	Department of Agriculture www.usda.gov	(202) 720-2791
USPS	Postal Service www.usps.com	(202) 268-2000

- E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CAPUC (See CPUC)

CBHF	State of California, Department of Consumer Affairs Bureau of Home Furnishings and Thermal Insulation www.dca.ca.gov/bhfti	(800) 952-5210 (916) 574-2041
CPUC	California Public Utilities Commission www.cpuc.ca.gov	(415) 703-2782

TFS Texas Forest Service
Forest Products Laboratory
www.txforestsERVICE.tamu.edu

(936) 639-8180

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.
- B. Temporary utilities required include but are not limited to:
 - 1. Water service and distribution.
 - 2. Temporary electric power and light.
 - 3. Temporary heat.
- C. Temporary construction and support facilities to be provided by the General Contractor include, but are not limited to:
 - 1. Field offices and storage sheds as needed.
 - 2. Temporary enclosures.
 - 3. Waste disposal services.
 - 4. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities to be provided by the General Contractor include, but are not limited to:
 - 1. Barricades, warning signs, lights.
 - 2. Enclosure to separate work area from remainder of fire station.

1.3 SUBMITTALS

- A. Temporary Utilities: Submit reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

1.4 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:
 - 1. Building Code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, Fire Department and Rescue Squad rules.
 - 5. Environmental protection regulations.

- B. Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities."
 - 1. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by AGC and ASC, for industry recommendations.
 - 2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility or negotiate terms of use of existing utilities with Owner if available. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of the permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials; if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.
- B. Lumber and Plywood: Comply with requirements in Division 06 Section "Rough Carpentry."
 - 1. For fences and vision barriers, provide exterior type, minimum 3/8" thick plywood.
 - 2. For safety barriers, sidewalk bridges and similar uses, provide minimum 5/8" thick exterior plywood.
- C. Tarpaulins: Provide waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.
- D. Water: Provide potable water approved by local health authorities.
- E. Open-Mesh Fencing: Provide 11-gage, galvanized 2-inch, chain link fabric fencing 6-feet high with galvanized steel pipe posts, 1-1/2" I.D. for line posts and 2-1/2" I.D. for corner posts.
- F. Construction Sign: Provide 4' x 8' sign on approved backup material, mounted to three 4" galvanized steel pipe posts. Sign graphic to be provided by Owner.

2.2 EQUIPMENT

- A. General: Provide new equipment; if acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.
- C. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.
- E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.
- G. First Aid Supplies: Comply with governing regulations.
- H. Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. In other locations provide hand-carried, portable, UL-rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.
 - 1. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service the general contractor requires to perform work. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment; comply with the company's recommendations.
1. Arrange with the company and existing users for a time when service can be interrupted, where necessary, to make connections for temporary services.
 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 3. Obtain easements to bring temporary utilities to the site, where the Owner's easements cannot be used for that purpose.
 4. Install and operate temporary lighting that will fulfill security and protection requirements, without operating the entire system, and will provide adequate illumination for construction operations and traffic conditions.
- B. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off the site in a lawful manner.
1. Filter out excessive amounts of soil, construction debris, chemicals, oils and similar contaminants that might clog sewers or pollute waterways before discharge.
 2. Connect temporary sewers to the municipal system as directed by the sewer department officials.
 3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.
- C. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

3.3 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access if facilities are required.
1. Maintain temporary construction and support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Storage and Fabrication Sheds: Install storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on the site.
- C. Toilets: Provide temporary facilities on site for use by contractors. Use of the Owner's existing toilet facilities will not be permitted.
- D. Drinking Water Facilities: Containerized tap-dispenser bottled-water type drinking water units, including paper supply to be provided by General Contractor.
1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7 to 13 deg C).
- E. Dewatering Facilities and Drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with

dewatering requirements of applicable Division 02 Sections. Where feasible, utilize the same facilities. Maintain the site, excavations and construction free of water.

- F. Temporary Enclosures: General Contractor shall provide temporary enclosure for protection of construction in progress and completed, from exposure, foul weather, other construction operations and similar activities.
1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 square feet or less with plywood or similar materials.
 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing wood-framed construction.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer as requested by the Architect.
- B. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."
1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 2. Store combustible materials in containers in fire-safe locations.
 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
 4. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.
- C. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations. Unless otherwise indicated on Drawings.
 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.
- D. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.
- E. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.

1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

- F. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.5 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
1. Do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Burning: Do not burn waste materials.
 4. Disposal: Remove waste materials from Owner's property and legally dispose of them.

3.6 OPERATION, TERMINATION AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation and similar facilities on a 24-hour day basis where required to achieve indicated results and to avoid possibility of damage.
 2. Protection: Prevent water filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of the Contractor. The Owner reserves the right to take possession of Project identification signs.
 2. Remove temporary paving that is not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that does not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances which might impair growth of plant materials or lawns. Repair or replace street paving, curbs and sidewalks at the temporary entrances, as required by the governing authority.
 3. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
 - a. Replace air filters and clean inside of ductwork and housings.

- b. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
- c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.

END OF SECTION 015000

SECTION 016000 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
- B. The Contractor's Construction Schedule is included under Section "Submittal Procedures."
- C. Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section "Substitution Procedures."

1.3 DEFINITIONS

- A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms such are self-explanatory and have well recognized meanings in the construction industry.
 - 1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - a. "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
 - b. "Foreign Products", as distinguished from "domestic products," are items substantially manufactured (50 percent or more of value) outside of the United States and its possessions; or produced or supplied by entities substantially owned (more than 50 percent) by persons who are not citizens of nor living within the United States and its possessions.
 - 2. "Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
 - 3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 SUBMITTALS

- A. Product List Schedule: Prepare a schedule showing products specified in a tabular form acceptable to the Architect. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed.
1. Coordinate the product list schedule with the Contractor's Construction Schedule.
 2. Form: Prepare the product listing schedule with information on each item tabulated under the following column headings:
 - a. Related Specification Section number.
 - b. Generic name used in Contract Documents.
 - c. Proprietary name, model number and similar designations.
 - d. Manufacturer's and name and address.
 - e. Supplier's name and address.
 - f. Installer's name and address.
 - g. Projected delivery date, or time span of delivery period.
 3. Completed Schedule: Within 2 business days after date of commencement of the Work, submit 3 copies of the completed product list schedule. Provide a written explanation for omissions of data, and for known variations from Contract requirements.
 4. Architect/Engineer's Action: The Architect will respond in writing to the Contractor within 2 business days of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers or products, but does not constitute a waiver of the requirement that products comply with Contract Documents. The Architect response will include the following:
 - a. A list of unacceptable product selections, containing a brief explanation of reasons for this action.

1.5 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
1. When specified products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities, to the fullest extent possible.
- B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
- C. Foreign Product Limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the Work:
1. No available domestic product complies with the Contract Documents.
 2. Domestic products that comply with Contract Document are only available at prices or terms that are substantially higher than foreign products that also comply with the Contract Documents.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
 3. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 4. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
 5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 7. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:
1. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. No substitutions will be permitted.
 2. Semiproprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.
 - a. Where products or manufacturers are specified by name, accompanied by the term "or equal," or "or approved equal" comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 3. Non-Proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

4. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
 - a. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
6. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.
7. Visual Matching: Where Specifications require matching an established Sample, the Architect/Engineer's decision will be final on whether a proposed product matches satisfactorily.
 - a. Where no product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for noncompliance with specified requirements.
8. Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect/Engineer will select the color, pattern and texture from the product line selected.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS:

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Installation of the Work.
 - 3. Cutting and patching.
 - 4. Protection of installed construction.
- B. Related Sections include the following:
 - 1. Division 01 Section "Submittal Procedures" for submitting surveys.
 - 2. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
 - 3. Division 02 Section "Selective Demolition" for demolition and removal of selected portions of the building.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least **10** days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.

5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Architectural Historical Elements: Where cutting and patching exterior or interior elements of the Carnegie Library, indicate processes and procedures for restoring the area to match the existing historical character of the building.
8. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:
 1. Primary operational systems and equipment.
 2. Air or smoke barriers.
 3. Fire-suppression systems.
 4. Mechanical systems piping and ducts.
 5. Control systems.
 6. Communication systems.
 7. Conveying systems.
 8. Electrical wiring systems.
 9. Operating systems of special construction in Division 13 Sections.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:
 1. Water, moisture, or vapor barriers.
 2. Membranes and flashings.
 3. Exterior curtain-wall construction.
 4. Equipment supports.
 5. Piping, ductwork, vessels, and equipment.
 6. Noise- and vibration-control elements and systems.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize or prevent interruption to occupied areas.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect and Construction Manager promptly.

- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
- C. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
- D. Establish limits on use of Project site.
- E. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
- F. Inform installers of lines and levels to which they must comply.
- G. Check the location, level and plumb, of every major element as the Work progresses.
- H. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
- I. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- J. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- K. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- L. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and Construction Manager.

3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 02 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.

- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017700 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
 - 1. Inspection procedures.
 - 2. Project record document submittal.
 - 3. Operating and maintenance manual submittal.
 - 4. Submittal of warranties.
 - 5. Final cleaning.
- B. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 02 through 32.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 - 2. Advise Owner of pending insurance change-over requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
 - 5. Submit record drawings, maintenance manuals, and similar final record information.
 - 6. Deliver tools, spare parts, extra stock, and similar items.
 - 7. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.
 - 8. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.

9. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

B. Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Architect will repeat inspection when requested and assured that the Work has been substantially completed.
2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Architect.
4. Submit consent of surety to final payment.
5. Submit a final liquidated damages settlement statement.
6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Reinspection Procedure: The Architect will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.

1. Upon completion of reinspection, the Architect will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, reinspection will be repeated.

1.5 RECORD DOCUMENT SUBMITTALS

A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect's reference during normal working hours.

B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.

2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
 3. Note related Change Order numbers where applicable.
 4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
- C. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Architect and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.
- D. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Architect for the Owner's records.
- E. Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:
1. Emergency instructions.
 2. Spare parts list.
 3. Copies of warranties.
 4. Wiring diagrams.
 5. Recommended "turn around" cycles.
 6. Inspection procedures.
 7. Shop Drawings and Product Data.
 8. Fixture lamping schedule.

1.6 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 30 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 CONTRACT CLOSEOUT

- A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools.
5. Lubricants.
6. Identification systems.
7. Control sequences.
8. Hazards.
9. Cleaning.
10. Warranties and bonds.
11. Maintenance agreements and similar continuing commitments.

- B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Start-up.
2. Shutdown.
3. Emergency operations.
4. Noise and vibration adjustments.
5. Safety procedures.
6. Economy and efficiency adjustments.
7. Effective energy utilization.

3.2 FINAL CLEANING

- A. General: General cleaning during construction is required by the General Conditions and included in Section "Temporary Facilities and Controls".

- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Complete cleaning after all construction operations are completed. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials, including mirrors and glass in doors and windows.
 - c. Clean exposed exterior and interior hard-surfaced finishes and components to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces, extracting all construction debris and dust.

- d. Clean the interior of the duct system. Wipe surfaces of mechanical and electrical equipment and fixtures. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
- C. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
1. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

- 1. Operation and maintenance documentation directory.
- 2. Emergency manuals.
- 3. Operation manuals for systems, subsystems, and equipment.
- 4. Maintenance manuals for the care and maintenance of products, materials, and finishes systems and equipment.

- B. Related Sections include the following:

- 1. Division 01 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
- 2. Division 01 Section "Closeout Procedures" for submitting operation and maintenance manuals.
- 3. Division 01 Section "Project Record Documents" for preparing Record Drawings for operation and maintenance manuals.
- 4. Divisions 02 through 32 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

- 1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
- 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

- B. Format: Submit operations and maintenance manuals in the following format:

1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
- C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.
 1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.
 2. One indexed paper copy in 3 labeled three ring binders are to be provided to the Owner, matching the electronic submittal.

1.5 COORDINATION

- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Organization: Include a section in the directory for each of the following:
 1. List of documents.
 2. List of systems.
 3. List of equipment.
 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
1. Title page.
 2. Table of contents.
 3. Manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
1. Subject matter included in manual.
 2. Name and address of Project.
 3. Name and address of Owner.
 4. Date of submittal.
 5. Name, address, and telephone number of Contractor.
 6. Name and address of Architect.
 7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary, to provide essential information for proper operation or maintenance of equipment or system.

- b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2 by 11-inch (215-by-280-mm) white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
 1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
 1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions.
 2. Performance and design criteria if Contractor is delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Product name and model number.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer

or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

- C. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material and chemical composition.
 - 5. Reordering information for specially manufactured products.

- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.
 - 5. Repair instructions.

- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - 1. Standard printed maintenance instructions and bulletins.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.

- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.

3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training videotape, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
1. Do not use original Project Record Documents as part of operation and maintenance manuals.
 2. Comply with requirements of newly prepared Record Drawings in Division 01 Section "Project Record Documents."
- G. Comply with Division 01 Section "Project Closeout" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. Related Sections include the following:
 - 1. Division 01 Section "Closeout Procedures" for general closeout procedures.
 - 2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 3. Divisions 02 through 32 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal: Submit one set of PDF files of scanned marked-up Record Prints. Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return documents for corrections, organizing into sets, scanning, and final submittal.
 - b. Final Submittal: Submit one set of Record PDF Drawing plots to Owner and Architect. Submit one paper copy printed from record plots to Owner. Plot and print each Drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one copy of each Product Data submittal.
 - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations below first floor.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
 2. Consult Architect for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.

- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 - 1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 - 2. Record PDF Drawings: Organize sheets into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 - 4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
 - 5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 017839

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Instruction in operation and maintenance of systems, subsystems, and equipment.
 - 2. Demonstration and training video recordings.
- B. Specified Elsewhere:
 - 1. Refer to technical sections in Divisions 2 through 32 for systems requiring demonstration and training sessions.

1.3 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.
- B. Attendance Record: For each training module, submit list of participants and length of instruction time.

1.4 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
 - 1. Identification: On each copy, provide an applied label with the following information:
 - a. Name of Project.
 - b. Name of Architect.
 - c. Name of Contractor.
 - d. Date of video recording.

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.6 INSTRUCTION PROGRAM

A. Training Modules:

- 1. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
- 2. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
- 3. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
- 4. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
- 5. Maintenance: Include the following:

- a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning.
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
6. Repairs: Include the following:
- a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

1.7 PREPARATION

- A. Set up instructional equipment at instruction location.

1.8 INSTRUCTION

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 1. Owner will furnish Contractor with names and positions of participants.
- B. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 1. Schedule training with Owner, through Architect, with at least seven days' advance notice.
- C. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

1.9 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. Digital Video Recordings:
 1. Submit video recordings in electronic format.
 2. File Hierarchy: Organize folder structure and file locations according to Project Manual table of contents. Provide complete screen-based menu.
 3. File Names: Utilize file names based on name of equipment generally described in video segment, as identified in Project specifications.
- B. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.
 1. Film training session(s) in segments not to exceed 15 minutes.
 - a. Produce segments to present a single significant piece of equipment per segment.

- b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
 - c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.
- C. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
- 1. Furnish additional portable lighting as required.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 017900

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on the use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 017300 "Execution" for cutting and patching procedures.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- C. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
4. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property. Indicate proposed locations and construction of barriers.
- B. Predemolition Photographs: Submit before Work begins.
- C. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- D. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- D. Hazardous Materials, Lead Based Paint: When surfaces containing lead based paint are encountered during the course of demolition, comply with all applicable EPA and IEPA regulations and procedures concerning full or partial demolition.
- F. Storage or sale of removed items or materials on-site is not permitted.
- G. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA and IEPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.
 - 1. Inventory and record the condition of items to be removed and salvaged. Provide photographs of conditions that might be misconstrued as damage caused by salvage operations.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
 - 1. Comply with requirements for existing services/systems interruptions specified in Section 011000 "Summary."
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
- C. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 4. Dispose of demolished items and materials promptly.
- B. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
 2. Protect items from damage during transport and storage.
 3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- C. Removed and Salvaged Items:
1. Carefully remove and clean face brick in sufficient quantities as may be required to reinstall at transitions between new and existing construction.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 035416 - HYDRAULIC CEMENT UNDERLAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes the following:
 - 1. Hydraulic-cement-based, polymer-modified, self-leveling underlayment for application below interior floor coverings.
 - 2. Self-drying, trowelable concrete underlayment.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to comply with manufacturer's written instructions to prevent deterioration from moisture or other detrimental effects.

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ventilation, ambient temperature and humidity, and other conditions affecting underlayment performance.
 - 1. Place hydraulic-cement-based underlayments only when ambient temperature and temperature of substrates are between 50 and 80 deg F.

1.6 COORDINATION

- A. Coordinate application of underlayment with requirements of floor-covering products and adhesives, to ensure compatibility of products.

PART 2 - PRODUCTS

2.1 HYDRAULIC-CEMENT-BASED UNDERLAYMENTS

- A. Underlayment: Hydraulic-cement-based, polymer-modified, self-leveling product that can be applied in minimum uniform thickness of 1/4 inch and that can be feathered at edges to match adjacent floor elevations.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Ardex; V-1200 Self-Leveling Underlayment.
 - b. Custom Building Products; Custom Tech TechLevel 150.
 - c. MAPEI Corporation; Ultraplan 1 Plus.
 - d. Maxxon; Level EZ.
 - e. Schonex; US.
 - f. USG Corporation; Durock Brand Speed Self-Leveling Underlayment.
 - g. Uzin; NC 150 Project Plus Self Leveling Compound.
 2. Cement Binder: ASTM C 150, portland cement, or hydraulic or blended hydraulic cement as defined by ASTM C 219.
 3. Compressive Strength: Not less than 4000 psi at 28 days when tested according to ASTM C 109/C 109M.
 4. Underlayment Additive: Resilient-emulsion product of underlayment manufacturer, formulated for use with underlayment when applied to substrate and conditions indicated.
- B. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch; or coarse sand as recommended by underlayment manufacturer.
1. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.
- C. Water: Potable and at a temperature of not more than 70 deg F.
- D. Primer: Product of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.

2.1 SELF-DRYING TROWELABLE UNDERLAYMENTS

- A. Products: Subject to compliance with requirements, provide the following:
1. Ardex; SD-P.
- B. Primer:
1. Porous concrete: ARDEX P 51Primer.
 2. Non-porous substrates, such as burnished concrete, epoxy coating systems, terrazzo, ceramic, quarry and porcelain tiles, concrete treated with silicate curing compounds: ARDEX P82 Ultra Prime.
- C. Water: Clean, potable, not warmer than 70 deg F.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for conditions affecting performance.
 - 1. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Prepare and clean substrate according to manufacturer's written instructions.
 - 1. Treat nonmoving substrate cracks according to manufacturer's written instructions to prevent cracks from telegraphing (reflecting) through underlayment.
 - 2. Fill substrate voids to prevent underlayment from leaking.
- B. Concrete Substrates: Mechanically remove, according to manufacturer's written instructions, laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond.
 - 1. Moisture Testing: Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates do not exceed a maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.

3.3 APPLICATION

- A. General: Mix and apply underlayment components according to manufacturer's written instructions.
 - 1. Close areas to traffic during underlayment application and for time period after application recommended in writing by manufacturer.
 - 2. Coordinate application of components to provide optimum underlayment-to-substrate and intercoat adhesion.
 - 3. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.
- B. Apply primer over prepared substrate at manufacturer's recommended spreading rate.
- C. Apply underlayment to produce uniform, level surface.
 - 1. Apply a final layer without aggregate to product surface.
 - 2. Feather edges to match adjacent floor elevations.
- D. Apply trowelable underlayment to produce positive sloped substrates as indicated on the drawings.
- E. Cure underlayment according to manufacturer's written instructions. Prevent contamination during application and curing processes.
- F. Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.
- G. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

3.4 PROTECTION

- A. Protect underlayment from concentrated and rolling loads for remainder of construction period.

END OF SECTION 035416

SECTION 042000 - UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Concrete masonry units.
 - 2. Clay face brick.
 - 3. Mortar and grout.
 - 4. Masonry-joint reinforcement.
 - 5. Ties and anchors.
 - 6. Embedded flashing.
 - 7. Miscellaneous masonry accessories.

1.3 DEFINITIONS

- A. CMU(s): Concrete masonry unit(s).

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For the following:
 - 1. Reinforcing Steel: Detail bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315. Show elevations of reinforced walls.
- C. Samples for Initial Selection: For each type and color of the following:
 - 1. Clay face brick, in the form of straps of five or more bricks.

1.5 INFORMATIONAL SUBMITTALS

- A. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.
- D. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.7 FIELD CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides of walls, and hold cover securely in place.
 - 2. Where one wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe, and hold cover in place.
- B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
 - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 - 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.
- B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

2.2 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6, except as modified by requirements in the Contract Documents.
- B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work and will be within 20 feet vertically and horizontally of a walking surface.
- C. Fire-Resistance Ratings: Comply with requirements for fire-resistance-rated assembly designs indicated.
 - 1. Where fire-resistance-rated construction is indicated, units shall be listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction.

2.3 CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
 - 1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
 - 2. Provide bullnose units for outside corners unless otherwise indicated.
- B. CMUs: ASTM C 90.
 - 1. Density Classification: Normal weight.
 - 2. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
 - 3. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.

2.4 BRICK

- A. General: Provide shapes indicated and as follows, with exposed surfaces matching finish and color of exposed faces of adjacent units:
 - 1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
 - 2. Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.

3. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.
4. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

B. Clay Face Brick: Facing brick complying with ASTM C 216.

1. Grade: SW.
2. Type: FBX.
3. Initial Rate of Absorption: Less than 30 g/30 sq. in. per minute when tested according to ASTM C 67.
4. Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced."
5. Size (Actual Dimensions): Modular - 3-5/8 inches wide by 2-1/4 inches high by 7-5/8 inches long.
6. Application: Use where brick is exposed unless otherwise indicated.
7. Provide face brick matching color range, texture, and size of existing adjacent brickwork, as approved by the Architect.
 - a. Basis of Design Match: Contractor shall provide three matching samples in field for selection by Architect.

2.5 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150/C 150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

1. Alkali content shall not be more than 0.1 percent when tested according to ASTM C 114.

B. Hydrated Lime: ASTM C 207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

D. Aggregate for Mortar: ASTM C 144.

1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.

E. Aggregate for Grout: ASTM C 404.

F. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Euclid Chemical Company (The); Accelguard 80.
 - b. Grace Construction Products, W. R. Grace & Co. - Conn.; Morset.
 - c. BASF Corporation, Building Systems; Trimix-NCA.

G. Water: Potable.

2.6 REINFORCEMENT

- A. Masonry-Joint Reinforcement, General: ASTM A 951/A 951M.
 - 1. Interior Walls: Hot-dip galvanized carbon steel.
 - 2. Exterior Walls: Hot-dip galvanized carbon steel.
 - 3. Wire Size for Side Rods: 0.148-inch diameter.
 - 4. Wire Size for Cross Rods: 0.148-inch diameter.
 - 5. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
 - 6. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.
- B. Masonry-Joint Reinforcement for Single-Wythe Masonry: Ladder or truss type with single pair of side rods.

2.7 TIES AND ANCHORS

- A. General: Ties and anchors shall extend at least 1-1/2 inches into veneer but with at least a 5/8-inch cover on outside face.
- B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:
 - 1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M, with ASTM A 153/A 153M, Class B-2 coating.
 - 2. Galvanized-Steel Sheet: ASTM A 653/A 653M, Commercial Steel, G60 zinc coating.
- C. Adjustable Anchors for Connecting to Structural Steel Framing: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
 - 1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch- diameter, hot-dip galvanized steel wire.
 - 2. Tie Section: Triangular-shaped wire tie made from 0.187-inch- diameter, hot-dip galvanized steel wire.
- D. Stabilization/Shear Anchor: Galvanized steel anchor that allows for load transfer across control joints and inhibits lateral movement. Resists out-of-plane shear forces while allowing for in-plane movement of the masonry. Provide one of the following:
 - 1. Heckmann Building Products, Inc.; No. 353 Debonded shear anchor.
 - 2. Hohmann & Barnard, Inc.; Slip-Set Stabilizer.
 - 3. Wirebond; No 1700 Control Joint Anchor
- E. Adjustable Masonry-Veneer Anchors:
 - 1. General: Provide anchors that allow vertical adjustment but resist a 100-lbf load in both tension and compression perpendicular to plane of wall without deforming or developing play in excess of 1/16 inch.
 - 2. Fabricate sheet metal anchor sections and other sheet metal parts from 0.105-inch- thick steel sheet, galvanized after fabrication.
 - 3. Fabricate wire ties from 0.25-inch- diameter, hot-dip galvanized-steel wire unless otherwise indicated.

4. Screw-Attached, Masonry-Veneer Anchors: Wire tie and a sheet metal anchor section, 1-1/4 inches wide by 6 inches long, with screw holes top and bottom and with raised rib-stiffened strap, 5/8 inch wide by 3-5/8 inches long, stamped into center to provide a slot between strap and base for inserting wire tie.
 - a. Products: Subject to compliance with requirements, provide one of the following:
 - 1) Heckmann Building Products Inc.; 315-D with 316.
 - 2) Hohmann & Barnard, Inc.; DW-10HS.
 - 3) Wire-Bond; 1004, Type III.
5. Provide polymer-coated, steel expansion anchors to fasten sheet metal anchor sections to cmu backup..

2.1 EMBEDDED FLASHING MATERIALS

A. Flexible Flashing: Use the following unless otherwise indicated:

1. Stainless Steel Flashing: Composite flashing product consisting of a stainless-steel core with one uncoated (bare) stainless steel face (outward facing) with a butyl block co-polymer adhesive (inward facing).
 - a. Products: Subject to compliance with requirements, provide one of the following:
 - 1) York Manufacturing, Inc.; York 304 SS.
 - 2) Illinois Products, Inc.; IPCO Self-Adhesive Stainless Steel.
 - 3) STS Coatings, Inc.; Wall Guardian Self Adhering Stainless Steel Flashing.
 - b. Stainless steel: type 304, ASTM A240.
 - c. Adhesive: block co-polymer.
 - d. Polyether sealant
 - 1) York Manufacturing, Inc.; UniverSeal US-100.
 - 2) STS Coatings; GreatSeal LT-100.
 - 3) Prosoco, Inc.; R-Guard Joint Seam Sealer.
 - e. Splice Tape
 - 1) York Manufacturing, Inc.; York 304 SS.
 - 2) Illinois Products, Inc.; IPCO Self-Adhering Stainless-Steel Flashing.
 - f. Corner and End Dams: form the stainless-steel flashing in the field or use 26-gauge stainless steel pre-manufactured corners.
 - g. Termination Bar: Rigid PVC or stainless-steel termination bar with sealant catch lip

2.2 MISCELLANEOUS MASONRY ACCESSORIES

- ### A. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity.
1. Products: Subject to compliance with requirements, provide one of the following:

- a. Heckmann Building Products Inc.; #84 Wall Defender.
 - b. Hohmann & Barnard, Inc.; Mortar Trap.
 - c. Mortar Net USA, Ltd.; Mortar Net.
 - d. York Flashing; Weep-Armor.
2. Configuration: Strips, full depth of cavity and 10 inches high, with dovetail-shaped notches 7 inches deep that prevent clogging with mortar droppings. Provide multiple layers if necessary to fill full width of cavity.

2.3 MASONRY CLEANERS

- A. Proprietary Non-Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Diedrich Technologies, Inc.
 - b. EaCo Chem, Inc.
 - c. ProSoCo, Inc.

2.4 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
1. Do not use calcium chloride in mortar or grout.
 2. Use portland cement-lime mortar unless otherwise indicated.
 3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.
1. For all masonry, use Type N.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
 2. Verify that foundations are within tolerances specified.

3. Verify that reinforcing dowels are properly placed.
4. Verify that substrates are free of substances that impair mortar bond.

- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this and other Sections.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match construction immediately adjacent to opening.
- D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
- F. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested according to ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

3.3 TOLERANCES

- A. Dimensions and Locations of Elements:
 1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch or minus 1/4 inch.
 2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch.
 3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.
- B. Lines and Levels:
 1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
 2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
 3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
 4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.

5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet or 1/2-inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.

3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 4 inches. Bond and interlock each course of each wythe at corners. Do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- F. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
- G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below, and rod mortar or grout into core.
- H. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.
- I. Build nonload-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.
 1. Install compressible filler in joint between top of partition and underside of structure above.
 2. Unless otherwise indicated, fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch clearance between end of anchor rod and end of tube. Space anchors 48 inches o.c. unless otherwise indicated.

3. Wedge nonload-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.
4. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Section 078446 "Fire-Resistive Joint Systems."

3.5 MORTAR BEDDING AND JOINTING

- A. Lay CMUs as follows:
 1. Bed face shells in mortar and make head joints of depth equal to bed joints.
 2. Bed webs in mortar in grouted masonry, including starting course on footings.
 3. Fully bed units and fill cells with mortar at anchors and ties as needed to fully embed anchors and ties in mortar.
- B. Lay solid masonry units and hollow brick with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

3.6 CAVITY WALLS

- A. Bond wythes of cavity walls together using adjustable masonry veneer anchors.
- B. Keep cavities clean of mortar droppings and other materials during construction. Bevel beds away from cavity, to minimize mortar protrusions into cavity. Do not attempt to trowel or remove mortar fins protruding into cavity.
- C. Installing Cavity Wall Insulation: Place small dabs of adhesive, spaced approximately 12 inches o.c. both ways, on inside face of insulation boards, or attach with plastic fasteners designed for this purpose. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Press units firmly against inside wythe of masonry or other construction as shown.
 1. Fill cracks and open gaps in insulation with crack sealer compatible with insulation and masonry.

3.7 MASONRY-JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
 1. Space reinforcement not more than 16 inches o.c.
 2. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings in addition to continuous reinforcement.
- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.
- D. Provide continuity at corners by using prefabricated L-shaped units.

- E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.8 FLASHING, WEEP HOLES, AND CAVITY VENTS

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. Install cavity vents at shelf angles, ledges, head of wall cavities, and other obstructions to upward flow of air in cavities, and where indicated.
- B. Install flashing as follows unless otherwise indicated:
 - 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape.
 - 2. At multiwythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of 8 inches, and through inner wythe to within 1/2 inch of the interior face of wall in exposed masonry. Where interior face of wall is to receive furring or framing, carry flashing completely through inner wythe and turn flashing up approximately 2 inches on interior face.
 - 3. At masonry-veneer walls, extend flashing through veneer, across airspace behind veneer, and up face of sheathing at least 8 inches; with upper edge tucked under , lapping at least 4 inches.
 - 4. At lintels and shelf angles, extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
- C. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.
- D. Install weep holes in exterior wythes and veneers in head joints of first course of masonry immediately above embedded flashing.
 - 1. Use open-head joints to form weep holes.
 - 2. Space weep holes 24 inches o.c. unless otherwise indicated.
- E. Place cavity drainage material in airspace behind veneers to comply with configuration requirements for cavity drainage material in "Miscellaneous Masonry Accessories" Article.
- F. Install cavity vents in head joints in exterior wythes at spacing indicated. Use open-head joints to form cavity vents.

3.9 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- C. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.
6. Clean masonry with a proprietary non-acidic cleaner applied according to manufacturer's written instructions.
7. Clean limestone units to comply with recommendations in ILI's "Indiana Limestone Handbook."

END OF SECTION 042000

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Structural steel.
2. Shrinkage-resistant grout.

B. Related Requirements:

1. Section 055000 "Metal Fabrications" for steel lintels and shelf angles not attached to structural-steel frame, miscellaneous steel fabrications and other steel items not defined as structural steel.
2. Section 099123 "Interior Painting" for painting requirements.

1.2 DEFINITIONS

- A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in ANSI/AISC 303.

1.3 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

A. Product Data:

1. Structural-steel materials.
2. Metal fabrications.
3. High-strength, bolt-nut-washer assemblies.
4. Anchor rods.
5. Threaded rods.
6. Shop primer.
7. Galvanized-steel primer.
8. Etching cleaner.

9. Galvanized repair paint.
10. Shrinkage-resistant grout.

B. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Include embedment Drawings.
3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections.
5. Identify members not to be shop primed.

C. Delegated Design Submittal: For structural-steel connections indicated on Drawings to comply with design loads, design criteria, and structural general notes. Standard connections to be selected by the steel Fabricator's Steel Detailer in conformance with the requirements of the AISC Manual of Steel Construction and the AISC Code of Standard Practice.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer, fabricator, shop-painting applicators, and testing agency.
- B. Welding certificates.
- C. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.
- D. Survey of existing conditions.
- E. Field quality-control reports.

1.7 QUALITY ASSURANCE

- A. Comply with the applicable provisions of the following specifications and documents:
 1. AISC 303
 2. AISC 360
 3. RCSC's "Specification for Structural Joints Using ASTM A325 or A490 Bolts"
 4. AWS D1.1
- B. Fabricator Qualifications: A qualified fabricator that participates in a Quality Certification Program.
- C. Installer Qualifications: A qualified Installer who participates in a Quality Certification Program.
- D. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.
- B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.
 1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
 2. Clean and relubricate bolts and nuts that become dry or rusty before use.
 3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F3125/F3125M, Grade F1852 bolt assemblies and for retesting bolt assemblies after lubrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Comply with applicable provisions of the following specifications and documents:
 1. ANSI/AISC 303.
 2. ANSI/AISC 360.
 3. RCSC's "Specification for Structural Joints Using High-Strength Bolts."
- B. Connection Design Information:
 1. Option 2: Fabricator's experienced steel detailer shall select or complete connections in accordance with AISC 303 and AISC 360.
 - a. Select and complete connections using schematic details indicated and AISC 360.
- C. Moment Connections: Type FR, fully restrained.
- D. Construction: Shear wall system.

2.2 STRUCTURAL-STEEL MATERIALS

- A. W-Shapes: ASTM A992 Grade 50.
- B. Channels and Angles: ASTM A36 Grade 36.
- C. Plate and Bar: ASTM A36 Grade 36.
- D. Cold-Formed Hollow Structural Sections: ASTM A500 Grade B structural tubing.
- E. Steel Pipe: ASTM A53/A53M, Grade B.
- F. Welding Electrodes: Comply with AWS requirements.

2.3 BOLTS AND CONNECTORS

- A. High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325 (Grade A325M), Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH (ASTM A563M, Class 10S), heavy-

hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers; all with plain finish.

- B. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F3125/F3125M, Grade F1852, Type 1, heavy-hex or round head assemblies, consisting of steel structural bolts with splined ends; ASTM A563, Grade DH (ASTM A563M, Class 10S), heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers.
- C. Shear Stud Connectors: ASTM A108, AISI C-1015 through C-1020, headed-stud type, cold-finished carbon steel; AWS D1.1/D1.1M, Type B.

2.4 RODS

- A. Headed Anchor Rods: ASTM F1554, Grade 36, straight.
 - 1. Nuts: ASTM A563 (ASTM A563M) heavy-hex carbon steel.
 - 2. Plate Washers: ASTM A36/A36M carbon steel.
 - 3. Washers: ASTM F436 (ASTM F436M), Type 1, hardened carbon steel.
 - 4. Finish: Plain.
- B. Threaded Rods: ASTM A36.
 - 1. Nuts: ASTM A63 (ASTM A563M) heavy-hex carbon steel.
 - 2. Washers: ASTM F436 (ASTM F436M), Type 1, hardened or ASTM A36 carbon steel.
 - 3. Finish: Plain.

2.5 PRIMER

- A. Steel Primer:
 - 1. Comply with Section 099113 "Exterior Painting," Section 099123 "Interior Painting," and Section 099600 "High-Performance Coatings."
 - 2. Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.
- B. Galvanized-Steel Primer:
 - 1. Etching Cleaner: MPI#25, for galvanized steel.
 - 2. Galvanizing Repair Paint: MPI#18, MPI#19, or SSPC-Paint 20 ASTM A780.

2.6 SHRINKAGE-RESISTANT GROUT

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C1107/C1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.7 FABRICATION

- A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate in accordance with ANSI/AISC 303 and to ANSI/AISC 360.

1. Camber structural-steel members where indicated.
 2. Fabricate beams with rolling camber up.
 3. Identify high-strength structural steel in accordance with ASTM A6/A6M and maintain markings until structural-steel framing has been erected.
 4. Mark and match-mark materials for field assembly.
 5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
- B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.
- C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.
- D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.
- E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted in accordance with SSPC-SP 3.
- F. Steel Wall-Opening Framing: Select true and straight members for fabricating steel wall-opening framing to be attached to structural-steel frame. Straighten as required to provide uniform, square, and true members in completed wall framing. Build up welded framing, weld exposed joints continuously, and grind smooth.
- G. Welded-Steel Door Frames: Build up welded-steel door frames attached to structural-steel frame. Weld exposed joints continuously and grind smooth. Plug-weld fixed steel bar stops to frames. Secure removable stops to frames with countersunk machine screws, uniformly spaced not more than 10 inches (250 mm) o.c. unless otherwise indicated on Drawings.
- H. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel members.
1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
 2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
 3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.8 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.
1. Joint Type: Snug tightened, Pretensioned.
- B. Weld Connections: Comply with AWS D1.1 for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
1. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in ANSI/AISC 303 for mill material.

2.9 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel in accordance with ASTM A123/A123M.
1. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.
 2. Galvanize all steel permanently exposed to weather and all lintels in exterior walls. Coordinate cleaning of steel after galvanizing with finished coating, comply with Section 099113 "Exterior Painting," Section 099123 "Interior Painting," and Section 099600 "High-Performance Coatings."

2.10 SHOP PRIMING

- A. Shop prime steel surfaces, except the following:
1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches (50 mm).
 2. Surfaces to be field welded.
 3. Surfaces of high-strength bolted, slip-critical connections.
 4. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).
 5. Galvanized surfaces unless indicated to be painted.
 6. Corrosion-resisting (weathering) steel surfaces.
 7. Surfaces enclosed in interior construction.
- B. Surface Preparation of Steel: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces in accordance with the following specifications and standards:
1. SSPC-SP 3.
- C. Surface Preparation of Galvanized Steel: Prepare galvanized-steel surfaces for shop priming by thoroughly cleaning steel of grease, dirt, oil, flux, and other foreign matter, and treating with etching cleaner or in accordance with SSPC-SP 16.
- D. Priming: Immediately after surface preparation, apply primer in accordance with manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils (0.038 mm). Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
 2. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

2.11 SOURCE QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform shop tests and inspections.
1. Allow testing agency access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
 2. Bolted Connections: Inspect shop-bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
 3. Welded Connections: Visually inspect shop-welded connections in accordance with AWS D1.1.
 4. In addition to visual inspection, test and inspect shop-welded shear stud connectors in accordance with requirements in AWS D1.1/D1.1M for stud welding and as follows:

- a. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear stud connector.
 - b. Conduct tests in accordance with requirements in AWS D1.1/D1.1M on additional shear stud connectors if weld fracture occurs on shear stud connectors already tested.
5. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
 1. Prepare a certified survey of existing conditions. Include bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated on Drawings.
 1. Do not remove temporary shoring supporting composite deck construction and structural-steel framing until cast-in-place concrete has attained its design compressive strength.

3.3 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and in accordance with ANSI/AISC 303 and ANSI/AISC 360.
- B. Baseplates, Bearing Plates and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
 1. Set plates for structural members on wedges, shims, or setting nuts as required.
 2. Weld plate washers to top of baseplate.
 3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
 4. Promptly pack shrinkage-resistant grout solidly between bearing surfaces and plates, so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for grouting.
- C. Maintain erection tolerances of structural steel within ANSI/AISC 303.
- D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure. Slope roof framing members to slopes indicated on Drawings.
 2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
- E. Splice members only where indicated.
- F. Do not use thermal cutting during erection unless approved by Architect. Finish thermally cut sections within smoothness limits in AWS D1.1/D1.1M.
- G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.4 FIELD CONNECTIONS

- A. High-Strength Bolts: Install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt and joint type specified.
1. Joint Type: Snug tightened, Pretensioned.
- B. Weld Connections: Comply with AWS D1.1 for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
1. Comply with ANSI/AISC 303 and ANSI/AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
 2. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.
 3. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in ANSI/AISC 303 for mill material.
- C. Shear Stud Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Weld using end welding of headed-stud shear connectors in accordance with AWS D1.1/D1.1M and manufacturer's written instructions.

3.5 REPAIR

- A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing, and repair galvanizing to comply with ASTM A780/A780M.
- B. Touchup Painting:
1. Immediately after erection, clean exposed areas where primer is damaged or missing, and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 - a. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.
 2. Cleaning and touchup painting are specified in Section 099113 "Exterior Painting.", Section 099123 "Interior Painting.", and Section 099600 "High-Performance Coatings."
- C. Touchup Priming: Cleaning and touchup priming are specified in Section 099600 "High-Performance Coatings."

3.6 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector to perform the following special inspections:
 - 1. Verify structural-steel materials and inspect steel frame joint details.
 - 2. Verify weld materials and inspect welds.
 - 3. Verify connection materials and inspect high strength bolted connections.

- B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
 - 1. Bolted Connections: Inspect bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
 - 2. Welded Connections: Visually inspect field welds in accordance with AWS D1.1/D1.1M.
 - 3. Shear Stud Connectors: In addition to visual inspection, test and inspect field-welded shear connectors according to requirements in AWS D1.1/D1.1M for stud welding and as follows:
 - a. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.
 - b. Conduct tests according to requirements in AWS D1.1/D1.1M on additional shear connectors if weld fracture occurs on shear connectors already tested.

END OF SECTION 051200

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Wood blocking and backing.
 - 2. Plywood backing panels.

1.3 DEFINITIONS

- A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- B. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
 - 2. NLGA: National Lumber Grades Authority.
 - 3. SPIB: The Southern Pine Inspection Bureau.
 - 4. WCLIB: West Coast Lumber Inspection Bureau.
 - 5. WWPA: Western Wood Products Association.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
 - 2. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.
 - 3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
 - 4. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 - 3. Provide dressed lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal thickness unless otherwise indicated.
- C. MDF: ANSI A208.2, Grade 130, made with binder containing no urea-formaldehyde resin.

2.2 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
 - 1. Use treatment that does not promote corrosion of metal fasteners.
 - 2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
 - 3. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D2898. Use for exterior locations and where indicated.
- C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.
- D. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.

- E. Application: Treat items indicated on Drawings, and the following:
1. Concealed blocking.
 2. Plywood backing panels.
 3. Wood cants, nailers, curbs, equipment support bases, blocking, and similar members in connection with roofing.

2.3 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
1. Blocking.
 2. Nailers.
 3. Cants.
- B. For items of dimension lumber size, provide Standard, Stud, or No. 3 grade lumber and any of the following species:
1. Hem-fir (north); NLGA.
 2. Mixed southern pine; SPIB.
 3. Spruce-pine-fir; NLGA.
- C. For concealed boards, provide lumber with 15 percent maximum moisture content and any of the following species and grades:
1. Mixed southern pine, No. 2 grade; SPIB.
 2. Hem-fir or hem-fir (north), Construction or No. 2 Common grade; NLGA, WCLIB, or WWPA.
 3. Spruce-pine-fir (south) or spruce-pine-fir, Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.
- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- F. Lumber Trim for Opaque Finish (Painted Finish):
1. Species and Grade: Alder, aspen, basswood, cottonwood, gum, magnolia, soft maple, sycamore, tupelo, or yellow poplar; B Finish or better; NHLA.
 2. Maximum Moisture Content: 13 percent.
 3. Finger Jointing: Allowed.
 4. Face Surface: Surfaced (smooth).
 5. Ease exposed edges.

2.4 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: DOC PS 1, Exterior, BC, fire-retardant treated, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

2.5 FASTENERS AND HARDWARE

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Screws for Fastening to Metal Framing: ASTM C 1002, length as recommended by screw manufacturer for material being fastened.
- F. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081 BHMA A156.9, B04102; with shelf brackets, B04112.
- G. Shelf Rests: BHMA A156.9, B04013; metal, two-pin type with shelf hold-down clip.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- C. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- D. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant treated plywood backing panels with classification marking of testing agency exposed to view.
- E. Do not splice structural members between supports unless otherwise indicated.
- F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- G. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

- H. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
- I. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

3.3 PROTECTION

- A. Protect miscellaneous rough carpentry from weather. If, despite protection, miscellaneous rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Polyisocyanurate foam-plastic board.
 - 2. Glass-fiber blanket.
- B. Related Requirements:
 - 1. For sound attenuation blanket used as acoustic insulation.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect foam-plastic board insulation as follows:
 - 1. Do not expose to sunlight except to necessary extent for period of installation and concealment.
 - 2. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site until just before installation time.
 - 3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

PART 2 - PRODUCTS

2.1 POLYISOCYANURATE FOAM-PLASTIC BOARD

- A. Polyisocyanurate Board, Foil Faced: ASTM C1289, foil faced, Type I, Class 1 or 2.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Atlas EPS; a Division of Atlas Roofing Corporation.
- b. Carlisle Coatings & Waterproofing Inc.
- c. Dow Chemical Company (The).
- d. Firestone Building Products.
- e. Hunter Panels.
- f. Rmax, Inc.

2. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.

2.2 GLASS-FIBER BLANKET

- A. Glass-Fiber Blanket, Polypropylene-Scrim-Kraft Faced: ASTM C665, Type II (nonreflective faced), Class A (faced surface with a flame-spread index of 25 or less); Category 1 (membrane is a vapor barrier).
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. CertainTeed Corporation.
 - b. Johns Manville; a Berkshire Hathaway company.
 - c. Knauf Insulation.
 - d. Owens Corning.

2.3 ACCESSORIES

- A. Insulation for Miscellaneous Voids:
 1. Glass-Fiber Insulation: ASTM C764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E84.
- B. Adhesive for Bonding Insulation: Product compatible with insulation and air and water barrier materials, and with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.
- C. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide ventilation between insulated attic spaces and vented eaves.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

- C. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.3 INSTALLATION OF CAVITY-WALL INSULATION

- A. Foam-Plastic Board Insulation: Install pads of adhesive spaced approximately 24 inches o.c. both ways on inside face and as recommended by manufacturer.
 - 1. Fit courses of insulation between wall ties and other obstructions, with edges butted tightly in both directions, and with faces flush.
 - 2. Press units firmly against inside substrates.
 - 3. Supplement adhesive attachment of insulation by securing boards with two-piece wall ties designed for this purpose and specified in Section 042000 "Unit Masonry."

3.4 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

- A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
 - 1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
 - 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
 - 3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
 - 4. Attics: Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.
 - 5. Vapor-Retarder-Faced Blankets: Tape joints and ruptures in vapor-retarder facings, and seal each continuous area of insulation to ensure airtight installation.
 - a. Exterior Walls: Set units with facing placed toward interior of construction.
- B. Loose-Fill Insulation: Apply according to ASTM C1015 and manufacturer's written instructions. Level horizontal applications to uniform thickness as indicated, lightly settle to uniform density, but do not compact excessively.

3.5 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100

SECTION 072119 - FOAMED-IN-PLACE INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Closed-cell spray polyurethane foam.

- B. Related Requirements:

- 1. Section 072100 "Thermal Insulation" for foam-plastic board insulation.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 CLOSED-CELL SPRAY POLYURETHANE FOAM

- A. Closed-Cell Spray Polyurethane Foam: ASTM C 1029, Type II, minimum density of 1.5 lb/cu. ft. and minimum aged R-value at 1-inch thickness of 6.2 deg F x h x sq. ft./Btu at 75 deg F.

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. BASF Corporation.
- b. CertainTeed Corporation.
- c. Henry Company.
- d. Icynene Inc.
- e. Johns Manville; a Berkshire Hathaway company.

- 2. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

- a. Flame-Spread Index: 25 or less.
- b. Smoke-Developed Index: 450 or less.

- 3. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.

2.2 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by insulation manufacturer where required for adhesion of insulation to substrates.
- B. Ignition Barrier Coating: Product compatible with manufacturer of closed cell spray foam insulation which prevents direct impingement of a flame source on the spray polyurethane foam surface.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Verify that substrates are clean, dry, and free of substances that are harmful to insulation.
- B. Priming: Prime substrates where recommended by insulation manufacturer. Apply primer to comply with insulation manufacturer's written instructions. Confine primers to areas to be insulated; do not allow spillage or migration onto adjoining surfaces.

3.2 INSTALLATION

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Spray insulation to envelop entire area to be insulated and fill voids.
- C. Apply in multiple passes to not exceed maximum thicknesses recommended by manufacturer. Do not spray into rising foam.
- D. Framed Construction: Install into cavities formed by framing members to achieve thickness indicated on Drawings.
- E. Cavity Walls: Install into cavities to fully fill void.
- F. Miscellaneous Voids: Apply according to manufacturer's written instructions.
- G. Ignition Barrier Coating: Apply to entire surface of spray insulation.

3.3 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.

END OF SECTION 072119

SECTION 075552.1 – SBS-SIS-ES-MODIFIED BITUMINOUS MEMBRANE ROOFING (COLD APPLIED)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Mineral surface Modified bituminous membrane roofing.
 - 2. Base Sheet
 - 3. Roof insulation.
- B. Related Sections include the following:
 - 1. Division 06 Section "Rough Carpentry" for wood nailers, cants, curbs, and blocking and for wood-based, structural-use roof deck panels.
 - 2. Division 07 Section "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counterflashings.
 - 3. Division 07 Section "Joint Sealants."

1.3 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
- B. Design Requirements:
 - 1. Uniform Wind Uplift Load Capacity
 - a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
 - 1) Design Code: ASCE 7, Method 2 for Components and Cladding.
 - 2) Importance Factor of: 1.15
 - 3) Wind Speed: 90mph.
 - 4) Exposure Category: B

2. Live Load: 20 psf, or not to exceed original building design.
 3. Dead Load: Installation of new roofing materials shall not exceed the dead load capacity of the existing roof structure.
- C. Roof System membranes containing recycled or bio-based materials shall be third party certified through UL Environment.

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated. Include data substantiating that materials comply with requirements.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other Work.
1. Base flashings, cants, and membrane terminations.
 2. Flat stock insulation.
 3. Crickets, saddles, and tapered edge strips, including slopes.
- C. Samples for Verification: For the following products:
1. 12-by-12-inch (300-by-300-mm) square of modified bitumen.
 2. 12-by-12-inch (300-by-300-mm) square of roof insulation.
 3. Six insulation fasteners of each type, length, and finish.
- D. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install roofing system and is eligible to receive the standard roofing manufacturer's warranty.
- E. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
1. Submit evidence of meeting performance requirements.
- F. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Owners and Architects, and other information specified.
- G. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, indicate compliance of components of roofing system with requirements based on comprehensive testing of current product specification.
1. Indicate compliance of bulk roofing asphalt materials delivered to Project with requirements. Include quantity and statistical and descriptive data for each product. Submit certificate with each load before it is used.
 2. Include continuous log showing time and temperature for each load of bulk bitumen, indicating date obtained from manufacturer, where held, and how transported before final heating and application in roof.
- H. Research/Evaluation Reports: Evidence of roofing system's compliance with building code in effect for Project from a model code organization acceptable to authorities having jurisdiction.

- I. Maintenance Data: For roofing system to include in maintenance manuals specified in Division 1.
- J. Warranties: Sample copy of standard roofing manufacturer's warranty stating obligations, remedies, limitations, and exclusions of warranty.
- K. Wind Uplift Calculation: Roofing system manufacturer's engineering department shall provide a ASCE 7-10 Calculation per IBC, Chapter 15. Calculations shall be diagrammatically show fastening pattern for insulation attachment.
- L. Plumbing calculation: roofing system manufacturer's engineering department shall provide a primary drain and overflow drain or overflow scupper calculation per IBC, Chapter 11. Calculations shall be stamped by a IL licensed engineer.
- M. Litigation and settlements: Provide a notarized statement from a corporate officer stating roofing system manufacturer has not settled litigation or paid fines to a public agency in excess of twenty million dollars.
- N. Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer to perform Work of this Section who has specialized in installing roofing similar to that required for this Project; who is approved, authorized, or licensed by the roofing system manufacturer to install manufacturer's product; and who is eligible to receive standard roofing manufacturer's warranty. All bidding roofing contractors must have full-time roofing installers on the payroll of the company and have an established certified and verifiable apprenticeship-training program for minimum 5 years. Brokers or jobbers that subcontract roofing work are not acceptable for certification to bid. All contractors must provide an AIA Qualification Form with their roofing bid to be considered as a responsible bidder.
- B. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, FMG, or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.
 - 1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.
- C. Preliminary Roofing Conference: Before starting roof deck construction, conduct conference at Project site. Meet with the same participants and review the same items listed for the preinstallation conference. In addition, review status of submittals and coordination of work related to roof construction. Notify participants at least 5 working days before conference.
- D. Preinstallation Conference: Conduct conference at Project site. Comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to roofing system including, but not limited to, the following:
 - 1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.

3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

E. Manufacturer's Inspections:

1. The Roofing Systems Manufacturer shall provide daily jobsite inspections and weekly written progress reports with photographs of work in progress as required. One manufacturer's representative shall provide all inspections.
2. Confirm, whenever called upon by the Architect or Owner that no application procedures were in conflict with the published specifications other than those that may have been previously reported and corrected.
3. Inspections: Performed only by a full-time employee of the Roofing System Manufacturer. The Representative has been in the employment of Manufacturer a minimum of 5 years and live within 100-mile radius of the jobsite.
4. The Roofing System Manufacturer provide inspections of the roofing system, whenever called upon by the Architect or Owner, for the duration of the delivered warranty period.
5. Manufacturer's Representative shall attend job progress meeting to discuss any issues with sub trades that interface with the roof installation.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store roofing materials in a dry, well-ventilated, weathertight location to ensure no significant moisture pick-up and maintain at a temperature exceeding roofing system manufacturer's written instructions. Store rolls of felt and other sheet materials on end on pallets or other raised surfaces. Do not double-stack rolls.
 1. Handle and store roofing materials and place equipment in a manner to avoid significant or permanent damage to deck or structural supporting members.
- B. Do not leave unused felts and other sheet materials on the roof overnight or when roofing work is not in progress unless protected from weather and moisture and unless maintained at a temperature exceeding 50 deg F (10 deg C).
- C. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- D. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

- E. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.8 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.9 WARRANTY

- A. General Warranty: The warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Standard Roofing Manufacturer's Warranty: Submit a written warranty, without monetary limitation, signed by roofing system manufacturer agreeing to promptly repair leaks in the roof membrane and base flashings resulting from defects in materials and workmanship for the following warranty period:
 - 1. Warranty Period: 30 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. SBS/SIS/ESS-Modified Bituminous Membrane Roofing:
 - a. Garland Company
 - 2. Polyisocyanurate Board Insulation:
 - a. Hunter Insulation Products Co.
 - b. Johns Manville Insulation
 - c. Viking Products Group
 - 3. Fiberglass Faced Gypsum Cover Board Insulation:
 - a. Georgia Pacific – Dens Deck Prime

2.2 SBS/SIS/ES-MODIFIED BITUMINOUS MATERIALS

- A. SBS-SIS-ES- Modified Bituminous Sheet, Mineral Surfaced: Stress Ply E FR Mineral -modified asphalt sheets with continuous layer of mineral granules factory applied to top exposed surface; manufacturer's standard sheet thickness. Granule color: Light Grey
 - 1. Use: Roof membrane.

2. Reinforcing: Combination fiberglass/ polyester.

B. Physical Properties: Provide mineral surfaced SBS-SIS-ES-modified bituminous membrane materials with the following properties when tested according to ASTM D 5147:

1. Thickness: 160 mils.
2. Tensile Strength: 700 lbf/in.MD, 750lbf/in.CMD.
3. Elongation at Maximum Load: 6 percent at 73 deg F in each direction.
4. Tear Strength: 900 lbf/in.MD, 950lbf/in.CMD
5. Low-Temperature Flexibility: Pass at minus 40 deg F
6. Compound Stability: Not less than 250 deg F.

2.3 BASE-SHEET

A. Base-Ply: Stessbase 120. 120 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.

1. Thickness: 120 mils.
2. Tensile Strength: 100 lbf/in.MD, 100lbf/in.CMD.
3. Elongation at Maximum Load: 4 percent at 73 deg F in each direction.
4. Tear Strength: 100 lbf/in.MD, 100lbf/in.CMD
5. Low-Temperature Flexibility: Pass at minus 40 deg F

2.4 AUXILIARY ROOFING MEMBRANE MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.

1. Furnish liquid-type auxiliary materials that meet VOC limits of authorities having jurisdiction.

B. Asphalt Primer: ASTM D 41- Garla-Prime.

C. Cold Process Asphalt Adhesive: Weatherking WC - Rubberized, polymer modified cold process asphalt roofing bitumen V.O.C. compliant ASTM D 3019.

D. Flashing Adhesive/Mastic: Flashing Bond: Asphalt roofing mastic V.O.C. compliant, ASTM D 2822, Type II trowel grade flashing adhesive.

E. Aluminized Roof Mastic: Silver Flash – Aluminized Roofing Mastic ASTM D 312, Type III.

F. Mastic Reinforcement Fabric: GarMesh – Styrene-Butadiene-Rubber (SBR) coated, woven, fiberglass scrim, ASTM D1688-86, Type III.

G. Liquid Flashing: Tuff Flash LO – Two-part, asphaltic polyurethane-based, low odor, liquid flashing membrane, ASTM D412

H. Liquid Flashing Reinforcement: Grip Polyester Firm – Polyester-reinforcing fabric used for liquid flashing three course. ASTM D3786.

I. Aluminum Roof Paint: Garla Brite – Non-fibered, asphalt-based. ASTM D2824, Type I.

- J. Metal Flashing Sheet: Metal flashing sheet is specified in Division 7 Section "Sheet Metal Flashing and Trim."
- K. Wood Nailer Strips: Furnish wood nailer strips complying with requirements of Division 6 Section "Miscellaneous Rough Carpentry."
- L. Cants: Cellulose-fiber board, complying with ASTM C 208, Type 2.
- M. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

2.5 ROOF INSULATION

- A. General: Provide preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated. Base layer 4 foot by 4 foot insulation boards, second layer will be of four foot by four foot in size.
 - 1. Provide preformed tapered edge strips and other insulation shapes where indicated for sloping to drain.
- B. Polyisocyanurate Board Insulation: Rigid, cellular polyisocyanurate thermal insulation complying with ASTM C 1289, classified by facer type as follows:
 - 1. Polyisocyanurate insulation board with Type II, felt or glass-fiber mat in both sides. Provide and install tapered saddles and crickets as marked on drawings.
 - 2. In areas where applicable or marked on drawings (between drains and drain sumps), provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Slopes will be a minimum 1/4" per foot but at least double the slope of the roof.
 - 3. Drain sumps to be 8' (4' o.c.)
- C. Cover Board Insulation: Dens Deck Prime - Provide high density, fiberglass faced, gypsum board complying with ASTM C 208. Minimum thickness will be 1/2".

2.6 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with membrane roofing.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.
- C. Tapered Edge Strips: ASTM C 728, rigid, perlite insulation board.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.
- C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. General: Clean surfaces thoroughly prior to installation.
 - 1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 - 2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
 - 3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
 - 4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
 - 5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
 - 6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
 - 7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

3.3 INSTALLATION - GENERAL

- A. NILES WEST – ROOF R6, R18, R22- Remove existing membrane down to the existing insulation. Inspect existing insulation and replace any areas that are deemed to be wet or damaged with new polyisocyanurate insulation to match existing height. Install one layer of 0.5 inch high-density fiberglass mat-faced gypsum cover board set in low rise insulation adhesive (full spray coverage). Run long joints of insulation in continuous straight line, perpendicular to roof slope, with end joints staggered between rows. Stagger joints minimum 12" each direction. All insulation will be a maximum of 48-by-48-inch boards. Install multi ply modified bitumen membrane roof system in cold process asphalt adhesive per manufacturer's requirements in Part 3.4 of this section. Heat weld seams on cap sheet with Leister Bitumat hot air welder. Apply aluminized coating to entire finished roof (30 days after cap sheet installation).
- B. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.

- C. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
 - 1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
 - 2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.
- D. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water.
- E. All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1 inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16 ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

3.4 INSTALLATION COLD APPLIED ROOF SYSTEM

- A. SBS Modified Base Sheet: Cut base ply sheets into 18 foot lengths and allow plies to relax before installing. Install base sheet in Interply Adhesive: applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
 - 1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
 - 2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
 - 3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
 - 4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
 - 5. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
 - 6. Install base flashing ply to all perimeter and projection details.
 - 7. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies
- B. SBS-SIS-ES Modified Cap Ply(s): Cut cap ply sheets into 18 foot lengths and allow plies to relax before installing. Install in interplay adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plys specified. Shingle in proper direction to shed water on each large area of roofing.
 - 1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
 - 2. Solidly bond to the base layers with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
 - 3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane.

4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
 5. Allow cold adhesive to set for 5 to 10 minutes before installing the top layer of modified membrane.
 6. Extend membrane 2 inches beyond top edge of all cants in full moppings of the cold adhesive as shown on the Drawings.
 7. Use hot air welder to ensure full adhesion of edge and lap seams with minimal bleed out.
- C. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.
- D. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06114.
1. Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components.
 2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
 3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
 4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.
- E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07620 or Section 07710. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.
- F. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.
- G. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
 2. Prepare all walls, penetrations, expansion joints and surfaces to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 3. Adhere to the underlying base flashing ply with specified hot material unless otherwise noted in these specifications. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
 4. Solidly adhere the entire sheet of flashing membrane to the substrate.
 5. Seal all vertical laps of flashing membrane with a three-course application of trowel-grade mastic and mesh.
 6. Coordinate counter flashing, cap flashings, expansion joints, and similar work with modified bitumen roofing work as specified.
 7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
- H. Flashing Cap Ply: Install flashing cap sheets by the same application method used for the base ply.

1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
 2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
 4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
 5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
 6. All stripping shall be installed prior to flashing cap sheet installation.
 7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
 8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.
- I. Surface Coatings: Apply roof coatings in strict conformance with the manufacturer's recommended procedures. Apply Garla Brite to the entire field and flashings 2 Gallon(s) per 100 sf total (two coats of 1Gal/SQ.).

3.5 INSTALLATION EDGE TREATMENT AND ROOF PENETRATION FLASHING

A. Coping Cap:

1. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches (609 mm). Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Attach tapered board to top of wall.
4. Install base flashing ply covering entire wall and wrapped over top of wall and down face with 6 inches (152 mm) on to field of roof and set in cold asphalt. Nail membrane at 8 inches (203 mm) o.c.
5. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all seams and allow to cure and aluminize.
6. Install continuous cleat and fasten at 6 inches (152 mm) o.c. to outside wall.
7. Install new metal coping cap hooked to continuous cleat.
8. Install batten strips at all seams.
9. Fasten inside cap 24 inches (609 mm) o.c. with approved fasteners and neoprene washers through slotted holes, which allow for expansion and contraction.

B. Metal Edge:

1. Position base ply of the Modified Roofing membrane over the roof edge covering nailers completely, fastening eight (8) inches on center. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations.
2. Install continuous cleat on face of nailer and fasten six (6) inches on center.
3. Install new Gravel Stop hooked to continuous cleat. Set metal flange into roofing cement, nail every three (3) inches on center, and prime at a rate of one hundred (100) square feet per gallon.

- Strip in Gravel Stop flange with base flashing membrane extending six (6) inches into roof field, followed with a cap sheet extending nine (9) inches into the roof field. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations.

C. Surface Mounted Counterflashing:

- Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches (609 mm). Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
- Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
- Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of the roof.
- Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
- Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
- Secure counterflashing set on butyl tape above flashing at 8 inches (203 mm) o.c. and caulk top of counterflashing.

D. Reglet Mounted Counterflashing:

- Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches. Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
- Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
- Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of the roof.
- Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
- Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
- Cut reglet in masonry one joint above flashing.
- Secure reglet counterflashing with expansion fasteners and caulk reglet opening.

E. Curb Detail/Air Handling Station:

- Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
- Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
- Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
- Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
- Install pre-manufactured counterflashing with fasteners and neoprene washers or per manufacturer's recommendations.
- Set equipment on neoprene pad and fasten as required by equipment manufacturer.

F. Roof Drain:

- Plug drain to prevent debris from entering plumbing.
- Taper insulation to drain minimum of 48 inches from center of drain.

3. Run roof system base ply over drain. Cut out ply inside drain bowl.
4. Set lead/copper flashing (30 inch square minimum) in 1/4 inch bed of mastic. Run lead/copper into drain a minimum of 2 inches (50 mm). Prime lead/copper at a rate of 100 square feet per gallon and allow to dry.
5. Install modified membrane (48 inch square minimum) in bitumen.
6. Install clamping ring and assure that all plies are under the clamping ring.
7. Remove drain plug and install strainer.

3.6 PROTECTION

- A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.
- B. Protect exposed surfaces of finished walls with tarps to prevent damage.
- C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.
- D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.
- E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.7 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations on weekly basis. Provide a final inspection upon completion of the Work.
 1. Warranty shall be issued upon manufacturer's acceptance of the installation.
 2. Daily Field observations shall be performed by a Technical Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
 3. Provide observation reports from the Technical Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 4. Provide a final report from the Technical Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

END OF SECTION 075552

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Manufactured reglets with counterflashing.
- 2. Formed low-slope roof sheet metal fabrications.

- B. Related Requirements:

- 1. Section 061053 Miscellaneous Rough Carpentry for wood nailers, curbs, and blocking.

1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 ACTION SUBMITTALS

- A. Product Data: For each of the following

- 1. Underlayment materials.
- 2. Elastomeric sealant.
- 3. Butyl sealant.
- 4. Epoxy seam sealer.

- B. Shop Drawings: For sheet metal flashing and trim.

- 1. Include plans, elevations, sections, and attachment details.
- 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
- 3. Include identification of material, thickness, weight, and finish for each item and location in Project.
- 4. Include details for forming, including profiles, shapes, seams, and dimensions.
- 5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
- 6. Include details of termination points and assemblies.

7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
8. Include details of roof-penetration flashing.
9. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counterflashings.
10. Include details of special conditions.
11. Include details of connections to adjoining work.
12. Detail formed flashing and trim at scale of not less than 1-1/2 inches per 12 inches.

- C. Samples: For each exposed product and for each color and texture specified, 12 inches long by actual width.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
 2. Protect stored sheet metal flashing and trim from contact with water.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.6 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

- 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 SHEET METALS

- A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Aluminum Sheet: ASTM B209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth, flat surface.

- 1. Exposed Coil-Coated Finish:

- a. Metallic Fluoropolymer: AAMA 2605. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 2. Color: As selected by Architect from manufacturer's full range.
 - 3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.

- C. Stainless Steel Sheet: ASTM A240/A240M, Type 304, dead soft, fully annealed; with smooth, flat surface.

- 1. Finish: ASTM A480/A480M, No. 2D (dull, cold rolled).

2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D226/D226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.
- B. Self-Adhering, High-Temperature Sheet Underlayment: Minimum 30 mils thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer in accordance with underlayment manufacturer's written instructions.

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Carlisle Residential; a division of Carlisle Construction Materials.
 - b. Henry Company.
 - c. Owens Corning.
 - d. Protecto Wrap Company.

- 2. Source Limitations: Obtain underlayment from single source from single manufacturer.
 - 3. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus 20 deg F or lower.

- C. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum.

2.4 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.
 - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
 - 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
 - 3. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel in accordance with ASTM A153/A153M or ASTM F2329.
- C. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- D. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- E. Bituminous Coating: Cold-applied asphalt emulsion in accordance with ASTM D1187/D1187M.
- F. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with interlocking counterflashing on exterior face, of same metal as reglet.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Fry Reglet Corporation.
 - b. Heckmann Building Products, Inc.
 - c. Hickman Company, W. P.
 - d. Hohmann & Barnard, Inc.
 - 2. Source Limitations: Obtain reglets from single source from single manufacturer.
 - 3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
 - 4. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
 - 5. Finish: With manufacturer's standard color coating.

2.5 FABRICATION, GENERAL

- A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
 4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances:
1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
 2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
 2. Use lapped expansion joints only where indicated on Drawings.
- D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Seams:
1. Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use.
 2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer.
- G. Do not use graphite pencils to mark metal surfaces.

2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing (Gravel Stop): Fabricate in minimum 96-inch- long, but not exceeding 12-foot- long sections. Furnish with 6-inch- wide, joint cover plates.
1. Joint Style: Butted with expansion space and 6-inch- wide, concealed backup plate and exposed cover plate.
 2. Fabricate from the following materials:
 - a. Aluminum: 0.050 inch thick.

- B. Copings: Fabricate in minimum 96-inch- long, but not exceeding 12-foot- long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, and weld watertight. Shop fabricate interior and exterior corners.
 - 1. Coping Profile: in accordance with SMACNA's "Architectural Sheet Metal Manual."
 - 2. Joint Style: Butted with expansion space and 6-inch- wide, concealed backup plate and 6-inch-wide, exposed cover plate.
 - 3. Fabricate from the following materials:
 - a. Aluminum: 0.050 inch thick.
- C. Roof-to-Wall Transition Expansion-Joint Cover: Fabricate from the following materials:
 - 1. Aluminum: 0.050 inch thick.
- D. Base Flashing: Fabricate from the following materials:
 - 1. Aluminum: 0.040 inch thick.
- E. Counterflashing: Fabricate from the following materials:
 - 1. Aluminum: 0.032 inch thick.
- F. Flashing Receivers: Fabricate from the following materials:
 - 1. Aluminum: 0.032 inch thick.
- G. Roof-Drain Flashing: Fabricate from the following materials:
 - 1. Stainless Steel: 0.0156 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim.
 - 1. Install in shingle fashion to shed water.

2. Lap joints not less than 2 inches.

B. Self-Adhering, High-Temperature Sheet Underlayment:

1. Install self-adhering, high-temperature sheet underlayment; wrinkle free.
2. Prime substrate if recommended by underlayment manufacturer.
3. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures.
4. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses.
5. Overlap side edges not less than 3-1/2 inches. Roll laps and edges with roller.
6. Roll laps and edges with roller.
7. Cover underlayment within 14 days.

C. Install slip sheet, wrinkle free, directly on substrate before installing sheet metal flashing and trim.

1. Install in shingle fashion to shed water.
2. Lapp joints not less than 4 inches.

3.3 INSTALLATION, GENERAL

A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.

1. Install fasteners, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
2. Install sheet metal flashing and trim true to line, levels, and slopes.
3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.
4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
5. Install continuous cleats with fasteners spaced not more than 12 inches o.c.
6. Space individual cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
8. Do not field cut sheet metal flashing and trim by torch.
9. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

1. Coat concealed side of uncoated-aluminum stainless steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.

1. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
2. Use lapped expansion joints only where indicated on Drawings.

- D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
 - 1. Use sealant-filled joints unless otherwise indicated.
 - a. Embed hooked flanges of joint members not less than 1 inch into sealant.
 - b. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way.
 - c. Adjust setting proportionately for installation at higher ambient temperatures.
 - 1) Do not install sealant-type joints at temperatures below 40 deg F.
 - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

3.4 INSTALLATION OF ROOF-DRAINAGE SYSTEM

- A. Install sheet metal roof-drainage items to produce complete roof-drainage system in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Hanging Gutters:
 - 1. Join sections with joints sealed with sealant.
 - 2. Provide for thermal expansion.
 - 3. Attach gutters at eave or fascia to firmly anchor them in position.
 - 4. Provide end closures and seal watertight with sealant.
 - 5. Slope to downspouts.
 - 6. Fasten gutter spacers to front and back of gutter.
 - 7. Anchor back of gutter that extends onto roof deck with cleats spaced not more than 24 inches apart.
 - 8. Anchor gutter with straps spaced not more than 36 inches apart to roof deck unless otherwise indicated, and loosely lock to front gutter bead.
- C. Downspouts:
 - 1. Join sections with 1-1/2-inch telescoping joints.
 - 2. Provide hangers with fasteners designed to hold downspouts securely to walls.
 - 3. Locate hangers at top and bottom and at approximately 60 inches o.c.
 - 4. Provide elbows at base of downspout to direct water away from building.
 - 5. Connect downspouts to underground drainage system.
- D. Splash Bocks:
 - 1. Precast concrete splash blocks, minimum 36 inches long
- E. Parapet Scuppers:
 - 1. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.

2. Anchor scupper closure trim flange to exterior wall and make watertight at scupper.
3. Loosely lock front edge of scupper with conductor head.
4. Seal with elastomeric sealant exterior wall scupper flanges into back of conductor head.

- F. Conductor Heads: Anchor securely to wall, with elevation of conductor head rim at minimum of 1 inch below scupper or gutter discharge.
- G. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated on Drawings. Lap joints minimum of 4 inches in direction of water flow.

3.5 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard.
1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Roof Edge Flashing:
1. Install roof edge flashings in accordance with ANSI/SPRI/FM 4435/ES-1.
 2. Anchor to resist uplift and outward forces in accordance with recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.
- C. Copings:
1. Install roof edge flashings in accordance with ANSI/SPRI/FM 4435/ES-1.
 2. Anchor to resist uplift and outward forces in accordance with recommendations in cited sheet metal standard unless otherwise indicated.
 - a. Interlock exterior bottom edge of coping with continuous cleat anchored to substrate at 16-inch centers.
 - b. Anchor interior leg of coping with washers and screw fasteners through slotted holes at 24-inch centers.
- D. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.
1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
 2. Extend counterflashing 4 inches over base flashing.
 3. Lap counterflashing joints minimum of 4 inches.
 4. Secure in waterproof manner by means of snap-in installation and sealant or lead wedges and sealant unless otherwise indicated.

3.6 INSTALLATION OF WALL FLASHINGS

- A. Install sheet metal wall flashing to intercept and exclude penetrating moisture in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

3.7 INSTALLATION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.8 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean off excess sealants.

3.9 PROTECTION

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.
- C. Maintain sheet metal flashing and trim in clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076200

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Nonstaining silicone joint sealants.
 - 2. Latex joint sealants.

1.3 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

1.4 QUALITY ASSURANCE

- A. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.5 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
 - 2. When joint substrates are wet.
 - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 - 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.6 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.

- B. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
 - 1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
 - 2. Disintegration of joint substrates from causes exceeding design specifications.
 - 3. Mechanical damage caused by individuals, tools, or other outside agents.
 - 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following:
 - 1. Architectural sealants shall have a VOC content of 250 g/L or less.
 - 2. Sealants and sealant primers for nonporous substrates shall have a VOC content of 250 g/L or less.
- C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 NONSTAINING SILICONE JOINT SEALANTS

- A. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C 1248.
- B. Silicone, Nonstaining, S, NS, 50, NT: Nonstaining, single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Dow Corning Corporation; 756 SM.
 - b. GE Construction Sealants; SCS 9000.
 - c. Pecora; 864 NST.
 - d. Tremco Incorporated; Spectrem 3.

2.3 LATEX JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Construction Chemicals, LLC, Building Systems; Sonolac.
 - b. Sherwin-Williams Company (The); 850A.
 - c. Tremco Incorporated; Tremflex 834.

2.4 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. BASF Construction Chemicals, LLC, Building Systems.
 - b. Construction Foam Products, a division of Nomaco, Inc.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) or Type O (open-cell material), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance. Use open-cell material at double caulk beads in vertical joints for curing of initial (internal) caulk bead.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 2. Remove laitance and form-release agents from concrete.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

3.4 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Extent of Testing: Test completed and cured sealant joints as follows:
 - a. Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
 - b. Perform one test for each 1000 feet of joint length thereafter or one test per each floor per elevation.
2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
3. Inspect tested joints and report on the following:
 - a. Whether sealants filled joint cavities and are free of voids.
 - b. Whether sealant dimensions and configurations comply with specified requirements.
 - c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.
4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.
5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

B. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

- #### A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

- #### A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
 - 1. Joint Locations:
 - a. Construction joints in cast-in-place concrete.
 - b. Joints between storefront framing.
 - c. Joints between different materials listed above.
 - d. Exterior sealant joints as indicated.
 - 2. Joint Sealant: Silicone, nonstaining, S, NS, 50, NT.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

- B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement.
 - 1. Joint Locations:
 - a. Control joints on exposed interior surfaces of exterior walls.
 - b. Perimeter joints between interior wall surfaces and frames of interior doors.
 - c. Other joints as indicated on Drawings.
 - 2. Joint Sealant: Acrylic latex.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes hollow-metal work.
- B. Related Requirements:
 - 1. Division 08 Section "Door Hardware" for door hardware for hollow-metal doors.

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.4 COORDINATION

- A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Include the following:
 - 1. Elevations of each door type.
 - 2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
 - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 4. Locations of reinforcement and preparations for hardware.
 - 5. Details of each different wall opening condition.
 - 6. Details of anchorages, joints, field splices, and connections.
 - 7. Details of accessories.
 - 8. Details of moldings, removable stops, and glazing.
 - 9. Details of conduit and preparations for power, signal, and control systems.
- C. Schedule: Provide a schedule of hollow-metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final Door Hardware Schedule.

1.6 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each type of hollow-metal door and frame assembly, for tests performed by a qualified testing agency.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow-metal work palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
 - 1. Provide additional protection to prevent damage to factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow-metal work vertically under cover at Project site with head up. Place on minimum 4-inch-high wood blocking. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Ceco Door; ASSA ABLOY.
 - 2. LaForce, Inc.
 - 3. Mesker Door Inc.
 - 4. Pioneer Industries, Inc.
 - 5. Steelcraft.
- B. Source Limitations: Obtain hollow-metal work from single source from single manufacturer.

2.2 INTERIOR DOORS AND FRAMES

- A. Construct interior doors and frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Heavy-Duty Doors and Frames: SDI A250.8, Level 2.
 - 1. Physical Performance: Level B according to SDI A250.4.
 - 2. Doors:
 - a. Type: As indicated in the Door and Frame Schedule.
 - b. Thickness: 1-3/4 inches.
 - c. Face: Uncoated, cold-rolled steel sheet, minimum thickness of 0.042 inch.
 - d. Edge Construction: Model 2, Seamless.
 - e. Core: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core at manufacturer's discretion.

3. Frames:
 - a. Materials: Uncoated steel sheet, minimum thickness of 0.053 inch.
 - b. Sidelite Frames: Fabricated from same thickness material as adjacent door frame.
 - c. Construction: Full profile welded.
4. Exposed Finish: Prime.

2.3 EXTERIOR HOLLOW-METAL DOORS AND FRAMES

- A. Construct exterior doors and frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Heavy-Duty Doors and Frames: SDI A250.8, Level 2.
 1. Physical Performance: Level B according to SDI A250.4.
 2. Doors:
 - a. Type: As indicated in the Door and Frame Schedule.
 - b. Thickness: 1-3/4 inches
 - c. Face: Metallic-coated steel sheet, minimum thickness of 0.042 inch, with minimum A40 coating.
 - d. Edge Construction: Model 2, Seamless.
 - e. Core: Polyisocyanurate.
 - 1) Thermal-Rated Doors: Provide doors fabricated with thermal-resistance value (R-value) of not less than 2.1 deg F x h x sq. ft./Btu when tested according to ASTM C 1363.
 3. Frames:
 - a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch, with minimum A40 coating.
 - b. Construction: Full profile welded.
 4. Exposed Finish: Prime.

2.4 FRAME ANCHORS

- A. Jamb Anchors:
 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
 2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.
 3. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch- diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.
- B. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch, and as follows:
 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.5 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.
 - 1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- E. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.
- F. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.
- G. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.
- H. Glazing: Comply with requirements in Section 088000 "Glazing."
- I. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.6 FABRICATION

- A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Hollow-Metal Doors:
 - 1. Steel-Stiffened Door Cores: Provide minimum thickness 0.026 inch, steel vertical stiffeners of same material as face sheets extending full-door height, with vertical webs spaced not more than 6 inches apart. Spot weld to face sheets no more than 5 inches o.c. Fill spaces between stiffeners with glass- or mineral-fiber insulation.
 - 2. Fire Door Cores: As required to provide fire-protection and temperature-rise ratings indicated.
 - 3. Vertical Edges for Single-Acting Doors: Bevel edges 1/8 inch in 2 inches.
 - 4. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets.
 - 5. Bottom Edge Closures: Close bottom edges of doors with end closures or channels of same material as face sheets.
 - 6. Exterior Doors: Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.

7. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency.
- C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
1. Sidelite Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
 2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 3. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.
 4. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Masonry Type: Locate anchors not more than 16 inches from top and bottom of frame. Space anchors not more than 32 inches o.c., to match coursing, and as follows:
 - 1) Three anchors per jamb from 60 to 90 inches high.
 - b. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Four anchors per jamb from 60 to 90 inches high.
 - c. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.
 5. Head Anchors: Two anchors per head for frames more than 42 inches wide and mounted in metal-stud partitions.
 6. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- D. Fabricate concealed stiffeners and edge channels from either cold- or hot-rolled steel sheet.
- E. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.
- F. Stops and Moldings: Provide stops and moldings around glazed lites and louvers where indicated. Form corners of stops and moldings with butted or mitered hairline joints.
1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow-metal work.

2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
4. Provide loose stops and moldings on inside of hollow-metal work.
5. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.

2.7 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

- A. General: Install hollow-metal work plumb, rigid, properly aligned, and securely fastened in place. Comply with Drawings and manufacturer's written instructions.
- B. Hollow-Metal Frames: Install hollow-metal frames for doors, transoms, sidelites, borrowed lites, and other openings, of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.
 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

- a. At fire-rated openings, install frames according to NFPA 80.
 - b. Install frames with removable stops located on secure side of opening.
 - c. Install door silencers in frames before grouting.
 - d. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - e. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
 - f. Field apply spray insulation in the frame cavity for exterior frames.
2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
- a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.
4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
5. Concrete Walls: Solidly fill space between frames and concrete with mineral-fiber insulation.
6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
7. In-Place Metal or Wood-Stud Partitions: Secure slip-on drywall frames in place according to manufacturer's written instructions.
8. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
- a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- C. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.
1. Non-Fire-Rated Steel Doors:
 - a. Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/32 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/32 inch.
 - c. At Bottom of Door: 3/4 inch plus or minus 1/32 inch.
 - d. Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.
- D. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.
1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

3.4 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow-metal work immediately after installation.
- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- D. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Solid-core doors with wood-veneer faces.
 - 2. Factory finishing flush wood doors.
 - 3. Factory fitting flush wood doors to frames and factory machining for hardware.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of door. Include details of core and edge construction and trim for openings. Include factory-finishing specifications.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
 - 1. Dimensions and locations of blocking.
 - 2. Dimensions and locations of mortises and holes for hardware.
 - 3. Dimensions and locations of cutouts.
 - 4. Undercuts.
 - 5. Requirements for veneer matching.
 - 6. Fire-protection ratings for fire-rated doors.
- C. Samples for Initial Selection:
 - 1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches (200 by 250 mm), for each material and finish. For each wood species and transparent finish, provide set of three Samples showing typical range of color and grain to be expected in finished Work.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in plastic bags or cardboard cartons.
- C. Mark each door on top and bottom rail with opening number used on Shop Drawings.

1.5 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during remainder of construction period.

1.6 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
 - a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Eggers Industries.
 2. Graham Wood Doors.
 3. Oshkosh Door Company.
 4. VT Industries.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Wood Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings and temperature-rise limits indicated on Drawings, based on testing at positive pressure in accordance with NFPA 252.
1. Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
 2. At doors with continuous hinges, mount label to top of door to maintain visibility after hinge installation.
 3. Temperature-Rise Limit: Provide doors that have a maximum transmitted temperature end point of not more than 450 deg F above ambient after 30 minutes of standard fire-test exposure at the following locations.
 - a. At vertical exit enclosures and exit passageways.
 - b. Where indicated on the Drawings.

2.3 FLUSH WOOD DOORS, GENERAL

- A. Quality Standard: In addition to requirements specified, comply with AWI's, AWMAC's, and WI's "Architectural Woodwork Standards."
 - 1. Contract Documents contain selections chosen from options in quality standard and additional requirements beyond those of quality standard. Comply with those selections and requirements in addition to quality standard.
- B. WDMA I.S.1-A Performance Grade: Extra Heavy Duty.
- C. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
 - 1. Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
 - 2. At doors with continuous hinges, mount label to top of door to maintain visibility after hinge installation.
- D. Particleboard-Core Doors:
 - 1. Particleboard: ANSI A208.1.
 - 2. Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.
 - 3. Provide doors with glued-wood-stave or structural-composite-lumber cores instead of particleboard cores for doors indicated to receive exit devices.
- E. Structural-Composite-Lumber-Core Doors:
 - 1. Structural Composite Lumber: WDMA I.S.10.
 - a. Screw Withdrawal, Face: 700 lbf.
 - b. Screw Withdrawal, Edge: 400 lbf.
- F. Mineral-Core Doors:
 - 1. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.
 - 2. Blocking: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as needed to eliminate through-bolting hardware.
 - a. 4-1/2-by-10-inch lock blocks, in doors indicated to have exit devices.
 - 3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.
 - a. Screw-Holding Capability: 475 lbf per WDMA T.M.-10.

2.4 VENEER-FACED DOORS FOR TRANSPARENT FINISH

- A. Interior Solid-Core Doors:
 - 1. Grade: Custom (Grade A faces).

2. Species: Birch, or as otherwise required to match existing.
3. Cut: Plain sliced (flat sliced).
4. Match between Veneer Leaves: Slip match.
5. Assembly of Veneer Leaves on Door Faces: Center-balance match.
6. Pair and Set Match: Provide for doors hung in same opening.
7. Exposed Vertical and Top Edges: Same species as faces or a compatible species - edge Type A.
8. Core: Particleboard.
9. Construction: Five plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering. Faces are bonded to core using a hot press.
10. WDMA I.S.1-A Performance Grade: Extra Heavy Duty.

2.5 LIGHT FRAMES AND LOUVERS

- A. Wood Beads for Light Openings in Wood Doors: Provide manufacturer's standard wood beads unless otherwise indicated.
1. Wood Species: Same species as door faces.
 2. Profile: Manufacturer's standard shape.
 3. At wood-core doors with fire-protection ratings, provide wood beads and metal glazing clips approved for such use.

2.6 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
1. Comply with NFPA 80 requirements for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.
1. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.

2.7 FACTORY FINISHING

- A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on bottom edges, edges of cutouts, and mortises.
- B. Factory finish doors.
- C. Transparent Finish:
1. Grade: Custom.
 2. Finish: WDMA TR-4 conversion varnish or WDMA TR-6 catalyzed polyurethane.
 3. Staining: Match existing adjacent stain finish as approved by the Architect.
 4. Effect: Semifilled finish, produced by applying an additional finish coat to partially fill the wood pores.

5. Sheen: Satin.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and installed door frames, with Installer present, before hanging doors.
 1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Division 08 Section, "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
 1. Install fire-rated doors according to NFPA 80.
 2. Install smoke- and draft-control doors according to NFPA 105.
- C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.
- D. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.3 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

SECTION 083113 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Access doors and frames for walls and ceilings.

1.3 ALLOWANCES

- A. In addition to access doors shown on the drawings, include in base bid the provision of three (3) 30-inch x 30-inch access doors and frames of each type specified in this section.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details materials, individual components and profiles, and finishes.

PART 2 - PRODUCTS

2.1 ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Acudor Products, Inc.
 - 2. Elmdor/Stoneman Manufacturing Co.; Div. of Acorn Engineering Co.
 - 3. J. L. Industries, Inc.; Div. of Activar Construction Products Group.
 - 4. Larsen's Manufacturing Company.
 - 5. Milcor Inc.
 - 6. Nystrom, Inc.
- B. Source Limitations: Obtain each type of access door and frame from single source from single manufacturer.
- C. Flush Access Doors with Exposed Flanges:
 - 1. Assembly Description: Fabricate door to fit flush to frame. Provide manufacturer's standard-width exposed flange, proportional to door size.
 - 2. Locations: Wall.

3. Door Size: 30-inch x 30 inch, unless otherwise indicated.
4. Metallic-Coated Steel Sheet for Door: Nominal 0.064 inch, 16 gage.
 - a. Finish: Factory finish.
5. Frame Material: Same material, thickness, and finish as door.
6. Hinges: Manufacturer's standard.
7. Hardware: Lock.

D. Flush Access Doors with Concealed Flanges:

1. Assembly Description: Fabricate door to fit flush to frame. Provide frame with gypsum board beads for concealed flange installation.
2. Locations: Wall and ceiling.
3. Door Size: 30-inch x 30-inch, unless otherwise indicated.
4. Metallic-Coated Steel Sheet for Door: Nominal 0.064 inch, 16 gage.
 - a. Finish: Factory finish.
5. Frame Material: Same material and thickness as door.
6. Hinges: Manufacturer's standard.
7. Hardware: Lock.

E. Hardware:

Wall access panels.

1. Lock: Cylinder.
 - a. Key all locks the same.

Ceiling Access panels.

2. Lock: Latch.
 - a. Quarter turn latch.

2.2 MATERIALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 or A60 metallic coating.
- C. Frame Anchors: Same type as door face.
- D. Inserts, Bolts, and Anchor Fasteners: Hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329.

2.3 FABRICATION

- A. General: Provide access door and frame assemblies manufactured as integral units ready for installation.

- B. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- C. Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access doors to types of supports indicated.
 - 1. For concealed flanges with drywall bead, provide edge trim for gypsum board securely attached to perimeter of frames.
 - 2. Provide mounting holes in frames for attachment of units to metal framing.
 - 3. Provide mounting holes in frame for attachment of masonry anchors.

2.4 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Steel and Metallic-Coated-Steel Finishes:
 - 1. Factory Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat, with a minimum dry-film thickness of 1 mil for topcoat.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing access doors and frames.
- B. Install doors flush with adjacent finish surfaces or recessed to receive finish material.

3.3 ADJUSTING

- A. Adjust doors and hardware, after installation, for proper operation.
- B. Remove and replace doors and frames that are warped, bowed, or otherwise damaged.

END OF SECTION 083113

SECTION 087110 - DOOR HARDWARE

PART 1 - GENERAL

1.1 Refer to “General and Special Conditions” and “Instructions to Bidders”, Division 1 of Specifications. Requirements of these Sections and the project drawings shall govern work in this section.

1.2 SUMMARY

A. Section Includes:

1. Door Hardware, including electric hardware.
2. Cylinders for doors fabricated with locking hardware.
3. Costs of jobsite visit(s) necessary for keying conference(s), field verifying of existing conditions, and service issues which may be required during the course of construction.

B. Related Sections:

1. Division 1 - General Requirements
2. Division 7 - Joint Sealers – Exterior Thresholds.
3. Division 8 - Metal Doors and Frames.
4. Division 8 - Wood Doors.

C. Specific Omissions: Hardware for the following is specified or indicated elsewhere.

1. Cabinets, including open wall shelving and locks.
2. Toilet accessories, including grab bars.
3. Rough hardware.

1.3 REFERENCES:

- A. Use date of standard in effect as of Bid date.
- B. American National Standards Institute – ANSI 156.18 – Materials and Finishes.
- C. ANSI A117.1 – Specifications for making buildings and facilities usable by physically handicapped people.
- D. ADA – Americans with Disabilities Act of 1990
- E. BHMA – Builders Hardware Manufacturers Association
- F. DHI – Door and Hardware Institute
- G. International Building Code (IBC)
- H. NFPA – National Fire Protection Association

1. NFPA 80 – Fire Doors and Windows
2. NFPA 101 – Life Safety Code
3. NFPA 105 – Smoke and Draft Control Door Assemblies
4. NFPA 252 – Fire Tests of Door Assemblies

I. UL – Underwriters Laboratories

1. UL10C – Fire Test of Door Assemblies as amended to incorporate positive pressure testing.

J. WHI – Warnock Hersey Incorporated

K. SDI – Steel Door Institute

L. AWI – Architectural Woodwork Institute

M. Illinois Accessibility Code, current version.

1.4 SUBMITTALS & SUBSTITUTIONS

A. Submit electronic copy of schedule per Division 1. Organize vertically formatted schedule into “Hardware Sets” following guidelines established in Door & Hardware Institute Handbook (DHI) Sequence and Format for the Hardware Schedule with index of doors and headings, indicating complete designations of every item required for each door or opening. Horizontal schedule format will be returned “Not Approved”. Include following information:

1. Type, style, function, size, quantity and finish of hardware items.
 - a. Use BHMA Finish codes per ANSI A156.18.
2. Name, part number and manufacturer of each item.
3. Fastenings and other pertinent information.
4. Location of hardware set coordinated with floor plans and door schedule.
5. Explanation of abbreviations, symbols, and codes contained in schedule.
6. Mounting locations for hardware.
7. Door and frame sizes, materials and degrees of swing.
8. List of manufacturers used and their nearest representative with address and phone number.
9. Catalog cuts.
10. Manufacturer’s technical data and installation instructions for electronic hardware.
11. Date of jobsite visit.

B. Bid and submit manufacturer’s updated/improved item if scheduled item is discontinued.

C. Make substitution requests in accordance with Division 1. Only products bearing BHMA certification will be considered. Include product data and indicate benefit to the Project. Furnish operating samples on request.

1. Items listed with no substitute manufacturers have been requested by Owner to meet existing standard.
2. For products specified by naming several Products or Manufacturers select any one of the products or manufacturers named, which complies with the specifications. No substitute product will be considered.

- D. Furnish as-built/as-installed schedule with closeout documents, including keying schedule, manufacturers' installation, adjustment and maintenance information, and supplier's final inspection report.
- E. Schedules shall be kept current with all changes to the project. If changes occur, project hardware schedules shall be maintained to reflect the changes as they are approved. Omitted items shall be deleted from openings, added and replaced items shall be included. Installation submittals shall be kept current as changes occur. Upon request, a complete updated hardware schedule shall be provided to the contractor. Supplemental submittals that include only the changed openings will not be acceptable.
- F. Prior to final payment, provide a record copy of hardware schedules, including all revisions and updates. All openings shall be listed to reflect final installed configuration only.

1.5 QUALITY ASSURANCE:

- A. Qualifications:
 - 1. Hardware supplier: A recognized architectural finish hardware supplier, with warehousing facilities, who has been furnishing hardware in the project's vicinity for a period of not less than 2 years. The hardware supplier shall be a corporate member in good standing of The Door and Hardware Institute (DHI), employing at least one Architectural Hardware Consultant (AHC) who is currently participating in DHI's continuing education program (CEP).
 - 2. Electrified hardware supplier: An experienced door hardware supplier who has completed projects with electrified door hardware similar in material, design and extent to that indicated for this project, who has a record of successful in-service performance and is acceptable to manufacturer of materials. Shall prepare data for electrified door hardware based on testing and engineering analysis of manufacturer's assemblies similar to those in this project.
 - 3. Responsible for detailing, scheduling and ordering of finish hardware.
- B. Hardware: New, free of defects, blemishes and excessive play. Obtain each kind of hardware (latch and locksets, exit devices, hinges and closers) from one manufacturer.
- C. Exit Doors: Operable from inside with single motion without the use of a key or special knowledge or effort.
- D. Fire-Rated Openings: In compliance with NFPA 80. Provide proper latching hardware, non-flaming door closers and approved-bearing hinges. Furnish openings complete. Provide positive latching and self-closing, regardless if not listed in sets.
- E. Pre-Installation Meetings: Prior to start of hardware installation, contractor shall schedule and conduct pre-installation meeting with hardware supplier, lock, exit device, and door closer manufacturers' representative(s), installer and related trades, to coordinate materials and techniques, and sequence complex hardware items and systems installation. Proper and correct installation and adjustment of hardware is to be reviewed, and criteria for punch list review will be established. Convene at least one week prior to commencement of related work. Written documentation of date and attendees/participants is to be provided to architect and owner for record.
- F. Items of hardware not definitely specified herein but necessary for completion of the work shall be provided. Such items shall be of type and quality suitable to the service required and comparable to the adjacent hardware. Where size and shape of members is such as to prevent the use of types specified, hardware shall be furnished of suitable types having as nearly as practicable the same operation and quality as the type specified. Sizes shall be adequate for the service required.

- G. Include such nuances as strike type, strike lip length, raised barrel hinges, mounting brackets, blade stop spacers, special templates, fasteners, shims, and coordination between conflicting products. All doors shall be provided with a stop.

1.6 DELIVERY, STORAGE AND HANDLING:

- A. Delivery: coordinate delivery to appropriate locations (shop or field).
 - 1. Permanent keys and cores: secured delivery direct to Owner's representative.
- B. Acceptance at Site: Items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers. Shipments direct from manufacturer to Site are not acceptable.
- C. Storage: Provide locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, etc.

1.7 PROJECT CONDITIONS:

- A. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical as the same operation and quality as type specified, subject to Architect's approval.
- B. Prior to submittal, carefully inspect existing conditions to verify finish hardware required to complete Work, including size, strike plate size, quantities, and sill conditions material. If conflict between the scheduled material and existing conditions, submit request for directions from Architect.

1.8 SEQUENCING AND COORDINATION:

- A. Reinforce walls for wall stops.
- B. Coordinate finish floor materials and floor-mounted hardware.
- C. Conduit and raceways as needed for electrical and electronic hardware items. Fire/life-safety system interfacing. Point-to-point wiring diagrams plus riser diagrams to related trades.
- D. Furnish manufacturer templates to door and frame fabricators.
- E. Use hardware consultant to check Shop Drawings for doors and entrances to confirm that adequate provisions will be made for proper hardware installation.

1.9 WARRANTY:

- A. Part of respective manufacturers' regular terms of sale. Provide manufacturers' warranties:
 - 1. Mortise Locksets: Three years.
 - 2. Closers: Ten years mechanical, two years electrical.
 - 3. Exit Devices: Three years.
 - 4. Hinges: One year butt hinges, lifetime geared hinges.
 - 5. Other Hardware: One year.

1.10 COMMISSIONING:

- A. Test door hardware operation with climate control system and stairwell pressurization system both at rest and while in full operation.
- B. Test electrical hardware systems for satisfactory operation.
- C. Test hardware interfaced with fire/life-safety system for proper operation and release.

1.11 MAINTENANCE:

- A. Furnish operating and maintenance data of manufacturers for door hardware items. Include instructions for operation, adjustments and maintenance and parts list.
- B. Instruct personnel of Owner in proper adjustments and maintenance of door hardware and hardware finishes during final adjustment phase of hardware installation.
- C. Furnish a complete set of specialized tools as needed for continued adjustment, maintenance, removal and replacement of door hardware by Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. Listed acceptable alternate manufacturers: submit for review products with equivalent function and features of scheduled products.

<u>ITEM:</u>	<u>MANUFACTURER:</u>	<u>ACCEPTABLE SUB:</u>
Hinges	(IVE) Ives	McKinney, Hager
Continuous Hinges	(HAG) Hager	Select, Zero
Locks	(SCH) Schlage	Sargent, Yale, <i>Falcon (Add04)</i>
Exit Devices	(VON) Von Duprin	Sargent, Yale, <i>Falcon (Add04)</i>
Closers	(LCN) LCN	Sargent, <i>(Remove Norton Add04)</i>
Flush Bolts	(IVE) Ives	Hiawatha, Trimco, Rockwood
Push & Pull Plates	(IVE) Ives	Hiawatha, Trimco, Rockwood
Kickplates	(IVE) Ives	Rockwood, Trimco, Rockwood
Stops & Holders	(IVE) Ives	Hiawatha, Trimco, Rockwood
Overhead Stops	(GLY) Glynn-Johnson	Rixson, Sargent
Thresholds	(NGP) National Guard	Pemko, Reese
Seals & Bottoms	(NGP) National Guard	Pemko, Reese

- B. Provide hardware items required to complete the work in accordance with these specifications and manufacturers' instructions.
 - 1. Include items inadvertently omitted from this specification. Note these items in submittal for review. There will not be any extra's allowed for items that should have been picked up during bidding.
 - 2. Where scheduled item is now obsolete, bid and furnish manufacturers updated item at no additional cost to the project.

2.2 HANGING MEANS:

- A. Conventional Hinges: Hinge open widths minimum, but, of sufficient throw to permit maximum door swing. Steel or stainless steel pins and concealed bearings.
1. Three hinges per leaf to 7 foot, 6 inch height. Add one for each additional 30 inches in height, or any fraction thereof.
 2. Extra heavy weight hinges on doors over 3 foot, 5 inches in width.
 3. Out swinging exterior doors: non-ferrous with non-removable (NRP) pins.
 4. Non-ferrous material exteriors and at doors subject to corrosive atmospheric conditions.
 5. Provide shims and shimming instructions for proper door adjustment.
 6. Scheduled Hinges are Ives 5BB1
 7. Accepted substitutions: McKinney TB2714, Hager BB1279
- B. Continuous Hinges: A pinless assembly of three interlocking extrusions applied to the full height of the door and frame without mortising. The door leaf and jamb leaf shall be geared together for the entire length of the hinge and joined by a channel. Hinge knuckle shall be monolithic in appearance. Continuous hinge with visible knuckle separations are not acceptable. Vertical door loads shall be carried on minimum 3/4" acetal bearings through a full 180 degrees. The door leaf and jamb leaf shall have templated screw hole locations for future replacement needs. All heavy duty hinges (HD) shall have a minimum of 32 bearings for a 7' length.
1. Factory machine hinge leaves for electric power transfer device where specified in Hardware Sets.
 2. Scheduled Hinge: Hager 780-112HD / 780-224HD
 3. Accepted substitution: Select SL11HD / SL24HD, Zero.

2.3 LOCKSETS, LATCHSETS, DEADBOLTS:

- A. Cylindrical Locksets and Latchsets:
1. Latchbolts: 1/2 inch throw.
 2. Lever Trim: through-bolted, accessible design, cast lever or solid extruded type levers as scheduled. Filled hollow tube design unacceptable.
 3. Spindles: security design independent break-away. Breakage of outside lever does not allow access to inside lever's hubworks to gain wrongful entry.
 4. Strikes: 16 gage curved steel, bronze or brass with 1 inch deep box construction, lips of sufficient length to clear trim and protect clothing.
 5. Scheduled Lock Series and Design: Schlage ND Series (except mortise where shown in sets).
 6. Certifications:
 - a. ANSI A156.2, Series 4000, Grade 1.
 7. Accepted substitutions: Sargent 10-line, Yale 5400LN series, *Falcon T series (Add04)*. No alternate manufacturers will be allowed without architects written approval prior to bidding.

2.4 EXIT DEVICES/PANIC HARDWARE

- A. General features:
1. Independent lab-tested 2,000,000 cycles.

2. Push-through touch pad design. No exposed touch bar fasteners, no exposed cavities when operated. Return stroke fluid dampeners and rubber bottoming dampeners, plus anti-rattle devices.
3. ¾” throw deadlocking latchbolts.
4. No exposed screws to show through glass doors.
5. Non-handed basic device design with center case interchangeable with all functions, no extra parts required to effect change of function.
6. Releasable with 32 lb. maximum pressure under 250 lb. load to the door.
7. Heavy cast metal flush mounted end caps finished to match exit device.

B. Specific features:

1. Lever Trim: Breakaway type (996L), forged brass or bronze escutcheon min .130” thickness, match lockset lever design.
2. Fire-Labeled Devices: UL label indicating “Fire Exit Hardware”. Vertical rod devices less bottom rod (LBR) unless otherwise scheduled.
3. Electrically Operated Devices: Single manufacturer source for electric latch retraction devices, electrically controlled trim, power transfers, power supplies, monitoring switches and controls.
4. Removable Mullions: Removable with single turn of building key. Securely reinstalled without need for key.
5. Scheduled Exit Device: Von Duprin 33 / 99 series
6. Accepted substitutions: Sargent 80, Yale 7000 Series, *Falcon 24/25 Series (Add04)*. No alternate manufacturers will be allowed without architects written approval prior to bidding.

C. Power Supplies: Power supplies are to provide filtered, regulated power to operate electrical products including electrified exit devices. Output power is to be field-selectable for either 24VDC @ 2.0 ampere or 12VDC @ 4.0 ampere. Standard input is to be 120VAC @ 1.0 ampere or 240VAC @ 0.5 ampere. Steel enclosure shall incorporate key lock and have minimum quantity of five knockout holes for conduit connection. Terminal block to accept up to 14 gauge wire.

1. Scheduled Power Supplies: Von Duprin
2. Accepted substitutions: Securitron.

D. Electrical Power Transfer Devices: Fully concealed when door is closed, power transfer device is to have two 18 gauge or ten 24 gauge wires as indicated by model scheduled.

1. Scheduled Power Transfer Devices: Von Duprin
2. Accepted substitutions: Securitron.

2.5 CLOSERS

A. General: One manufacturer for closer units throughout the Work, including surface closers, high security closers, overhead concealed closers, floor closers, low-energy door operators and electromagnetic hold-open closers.

1. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast iron body. Double heat-treated pinion shaft, single piece forged piston, chrome-silicon steel spring.
2. ISO 2000 certified. Units stamped with date-of-manufacture code.
3. Independent lab-tested 10,000,000 cycles.
4. Thru-bolts at wood doors unless doors are provided with closer blocking. Non-sized, and adjustable. Place closer inside building, stairs, and rooms.

5. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.
6. Opening pressure: Exterior doors 8.5 lb., interior doors 5 lb., labeled fire doors 15 lb.
7. Separate adjusting valves for closing speed, latching speed and backcheck, fourth valve for delayed action where scheduled.
8. Extra-duty arms (EDA) at all doors scheduled with parallel arm units.
9. Exterior door closers: tested to 100 hours of ASTM B117 salt spray test, furnish data on request.
10. Exterior doors do not require seasonal adjustments in temperatures from 120 degrees F to -30 degrees F, furnish data on request.
11. Non-flaming fluid will not fuel door or floor covering fires.
12. Scheduled Closers: LCN 4040XP.
13. Accepted substitutions: Sargent 281. (*Removed Norton Add04*) No alternate manufacturers will be allowed without architects written approval prior to bidding.

2.6 FLUSH BOLTS AND DUSTPROOF STRIKES, COORDINATORS

- A. Constant Latching Flush Bolts shall be UL listed for use in pairs or as single top bolt with auxiliary latch for labeled pairs of wood or hollow metal doors. Low actuation forces. Inactive door will re-latch automatically.
 1. Scheduled constant latching flush bolts: Ives
 2. Accepted substitutions: Hiawatha, Trimco, Rockwood.
- B. Manual Flush Bolts shall be provided in pairs, be non-handed, fit standard ANSI metal door prep and be UL listed for use on doors with fire ratings up to 3 hours. Bolts shall have minimum 5/8" bolt throw with 7/8" vertical adjustment. Top bolt rod shall be provided in length to position activating lever not more than 80 inches above the finished floor.
 1. Scheduled manual flush bolts: Ives FB458
 2. Accepted substitutions: Hiawatha, Trimco, Rockwood.
- C. Dustproof Strikes are to be spring loaded plunger type, with locking ring for use with threshold, or mounting flange for installation where no threshold is present.
 1. Scheduled dustproof strikes: Ives DP2
 2. Accepted substitutions: Hiawatha, Trimco, Rockwood.

2.7 OVERHEAD STOPS AND HOLDERS

- A. Surface mounted and concealed overhead stops and holders shall be heavy duty 300 series stainless steel, brass/bronze and steel materials, as required for specified finish, with finished metal end caps. Holders shall incorporate selective, adjustable hold-open mechanism. Templating of both surface and concealed overhead stops and holders allows for 85 to 115 degree stop/hold open position.
 1. Scheduled surface mounted overhead stops and holders are Glynn-Johnson 90 Series; scheduled concealed overhead stops and holders are Glynn-Johnson 100 series.
 2. Accepted substitutions: Rixson, Sargent.

2.8 OTHER HARDWARE

- A. Kick Plates: Four beveled edges, .050 inches minimum thickness, height and width as scheduled. Sheet-metal screws of bronze or stainless steel to match other hardware.
1. Scheduled kick plates are: Ives 8400
 2. Accepted substitutions: Rockwood, Trimco
- B. Door Stops: Provide stops to protect walls, casework or other hardware.
1. Unless otherwise noted in Hardware Sets, provide wall type with appropriate fasteners. Where wall type cannot be used, provide overhead type.
 2. Scheduled door stops are: Ives WS407CCV
 3. Accepted substitutions: Hiawatha W1326R, Trimco 1270WV, Rockwood
- C. Seals: Specially formulated to withstand greater temperature extremes while providing maximum protection against air infiltration. UL label applied to seals on rated doors. Substitute products: certify that the products equal or exceed specified material's thickness and durability. Proposed substitutions: submit for approval.
1. Meets UL10B and ASTM E283 classification.
 2. Sound control openings: Use components tested as a system using nationally accepted standards by independent laboratories. Ensure that the door leafs have the necessary sealed-in-place STC ratings.
 3. Scheduled seals: National Guard Products 160S, 5050B, 1038NA
 4. Accepted substitutions: Pemko, Reese
- D. Automatic door bottoms: low operating force units. Doors with automatic door bottoms plus head and jamb seals cannot require more than two pounds operating force to open when closer is disconnected.
1. Scheduled door bottoms: National Guard Products
 2. Accepted substitutions: Pemko, Reese
- E. Sweeps: Specially formulated to withstand greater temperature extremes while providing maximum protection against air infiltration. Neoprene or nylon brush type as scheduled.
1. Scheduled sweeps: National Guard Products 200NA
 2. Accepted substitutions: Pemko, Reese
- F. Thresholds: As scheduled and per details. Substitute products: certify that the products equal or exceed specified material's thickness. Proposed substitutions: submit for approval.
1. Exteriors: Set in full bed of butyl-rubber or polyisobutylene mastic sealant complying with requirements in Division 7 "Thermal and Moisture Protection". Non-ferrous ¼ inch fasteners and lead expansion shield anchors, or Red-Head #SFS-1420 (or approved equivalent) Flat Head Sleeve Anchors (SS/FHSL).
 2. Fire-rated openings, 90min or less duration: use thresholds to interrupt floor covering material under the door where that material has a critical radiant flux value less than 0.22 watts per square centimeter, per NFPA 253. Use threshold unit as scheduled. If none scheduled, request direction from Architect.
 3. Sound control openings: Set in bed of mastic sealant.
 4. Scheduled thresholds: National Guard Products 425, 442-5, 804V
 5. Accepted substitutions: Pemko, Reese

- G. Push Plates: Push plates shall be minimum .050” thickness brass, bronze or stainless steel as appropriate for specified finish. Plates are to be in size scheduled in Hardware Sets. Beveled four sides, and provided with fasteners appropriate for attaching to doors. Where “CFC” or “CFTP” is indicated in Hardware Sets, factory drill holes in face of push plates to accommodate deadbolt cylinder or turnpiece.
 - 1. Scheduled push plates: Ives 8200 4” X 16”
 - 2. Accepted substitutions: Hiawatha 200F, Trimco 1001-3, Rockwood
- H. Pull Plates: Where pull plates are listed in the Hardware Sets, provide 1’ round pull, 10” center-to-center, with 2-1/2” projection, factory attached to push plate in size indicated.
 - 1. Scheduled pull plates: Ives 8303-0
 - 2. Accepted substitutions: Hiawatha 200F X 536B, Trimco 1018-3B, Rockwood
- I. Push/Pull Bars: Where push/pull bars are listed in the Hardware Sets, provide 1” diameter round bar stock with 10” center-to-center offset pulls.
 - 1. Scheduled push/pull bars: Ives 9190-0
 - 2. Accepted substitutions: Hiawatha 658A X 1081LBP, Trimco 1737, Rockwood
- J. Fasteners: Generally, exposed screws to be Phillips or Robertson drive. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full-thread. Sleeve nuts: full length to prevent door compression.
- K. Silencers: Interior hollow metal frames, 3 for single doors, 2 for pairs of doors. Omit where adhesive mounted seal occurs. Leave no unfilled/uncovered pre-punched silencer holes.

2.9 FINISH:

- A. Generally BHMA 626 Satin Chromium (US26D).
 - 1. Areas using BHMA 626 to have push-plates, pulls and protection plates of BHMA 630, Satin Stainless Steel, unless otherwise noted.
- B. Door closers: factory powder coated to match other hardware, unless otherwise noted.
- C. Aluminum items: match predominant adjacent material. Seals to coordinate with frame color.

2.10 KEYING REQUIREMENTS:

- A. Key System: Master key system. Key blanks available from factory-direct sources. Supplier must meet with Owner to determine exact keying and source for permanent cylinders. For estimate use factory GMK charge.
- B. Locksets and cylinders: Keyed at factory of lock manufacturer where permanent records are maintained. Locks and cylinders same manufacturer.
- C. Bitting List: Secured shipment direct from point of origination to Owner.
- D. Supply three (3) cut keys per cylinder or lock.

- E. All keys to be stamped with “Do Not Duplicate” and appropriate key set.

PART 3 - EXECUTION

3.1 ACCEPTABLE INSTALLERS:

- A. Installer must demonstrate suitable competence and experience with installing finish hardware on like projects.

3.2 PREPARATION:

- A. Ensure that walls and frames are square and plumb before hardware installation.
- B. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.
- C. Notify Architect of any code conflicts before ordering material.
- D. Existing frames and doors scheduled to receive new hardware: carefully remove existing hardware, tag and bag, and turn over to Owner. Match new locksets strike plates to existing frame preps.
 - 1. Patch and fill wood frames and doors with solid wood stock or dowel material before cutting for new hardware. Do not reuse existing screw holes - - fill and re-pilot.
 - 2. Metal doors/frames: Weld or fasten with screws filler pieces in existing hardware cut-outs and mortises not scheduled for re-use by new hardware. Leave surfaces smooth by using non-metallic filler material.
 - 3. Patch all holes, sand smooth and paint existing doors and frames scheduled to receive new hardware.

3.3 INSTALLATION

- A. Install hardware per manufacturer’s instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation.
 - 1. Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.
 - 2. When hardware is to be attached to existing metal surface and insufficient reinforcement exists, use RivNuts, NutSerts or similar anchoring device for screws.
- B. Drill pilot holes for fasteners in wood doors and/or frames.
- C. Lubricate and adjust existing hardware scheduled to remain. Carefully remove and give to Owner items not scheduled for re-use.

3.4 ADJUSTING

- A. Adjust and check for proper operation and function. Replace units, which cannot be adjusted to operate freely and smoothly.
 - 1. Hardware damaged by improper installation or adjustment methods to be repaired or replaced to Owner’s satisfaction at no additional cost to Owner.
- B. Inspection: Prior to owner’s occupancy, the general contractor shall schedule and conduct a post-installation meeting with the hardware supplier and the manufacturer representative who supplied the commercial locks, the exit devices, the door controls/closers, etc.. The purpose is to eliminate any or all institutional door hardware “punch list” items. This will enable the general contractor and the owner to gain approval for their building occupancy permit much quicker.
- C. Follow-up inspection: Installer to provide letter of agreement to Owner that approximately 6 months after substantial completion, installer will visit Project with representatives of the manufacturers of the locking devices and door closers to accomplish following:
 - 1. Re-adjust hardware.
 - 2. Evaluate maintenance procedures and recommend changes or additions, and instruct Owner’s personnel.
 - 3. Identify items that have deteriorated or failed.
 - 4. Submit written report identifying problems and likely future problems.

3.5 DEMONSTRATION:

- A. Demonstrate electrical hardware systems, including adjustment and maintenance procedures.

3.6 PROTECTION/CLEANING:

- A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.
- B. Clean adjacent wall, frame and door surfaces soiled from installation/reinstallation process.

3.7 SCHEDULE OF FINISH HARDWARE

SET 01 200, 200A

3	EA	HINGES	780-224HD	CLR	HAGER
1	EA	RIM EXIT DEVICE	99 L-NL	626	VON DUPRIN
1	EA	CYLINDER	AS REQUIRED	626	SCHLAGE
1	EA	CLOSER	4040XP CUSH	689	LCN
1	EA	SWEEP	200N	AL	NGP
1	EA	WALL STOP	WS407	630	IVES

SET 2: (Privacy Indicator) **201, 202, 203, 204, 205, 206, 207, 209, 210, 211, 212, 213 & 214**

3	EA	HINGES	AS SPECIFIED	652	HAGER
1	EA	PRIVACY LOCK W/IND.	L9496 x 06	626	SCHLAGE
1	EA	CLOSER	4040XP CUSH	689	LCN
1	EA	PUSH PLATE	70C	630	ROCKWOOD
1	EA	PULL PLATE	BF111 x 70C	630	ROCKWOOD
1	EA	KICK PLATE (Push Side)	8" x 2" LDW	630	ROCKWOOD
1	EA	WALL STOP	WS407	630	IVES

END OF SECTION 087110

SECTION 090561.13 - MOISTURE VAPOR EMISSION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes fluid-applied, resin-based, membrane-forming systems that control the moisture-vapor-emission rate of high-moisture, interior concrete to prepare it for floor covering installation.

1.3 DEFINITIONS

- A. MVE: Moisture vapor emission.
- B. MVER: Moisture vapor emission rate.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.5 INFORMATIONAL SUBMITTALS

- A. Preinstallation testing reports.
- B. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Employs factory-trained personnel who are available for consultation and Project-site inspection.
- B. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating directions for storage and mixing with other components.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Comply with MVE-control system manufacturer's written instructions for substrate and ambient temperatures, humidity, ventilation, and other conditions affecting system installation.
1. Store system components in a temperature-controlled environment and protected from weather and at ambient temperature of not less than 65 deg F and not more than 85 deg F at least 48 hours before use.
 2. Maintain ambient temperature and relative humidity in installation areas within range recommended in writing by MVE-control system manufacturer, but not less than 65 deg F or more than 85 deg F and not less than 40 or more than 60 percent relative humidity, for 48 hours before installation, during installation, and for 48 hours after installation unless longer period is recommended in writing by manufacturer.
 3. Install MVE-control systems where concrete surface temperatures will remain a minimum of 5 deg F higher than the dew point for ambient temperature and relative humidity conditions in installation areas for 48 hours before installation, during installation, and for 48 hours after installation unless longer period is recommended in writing by manufacturer.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. MVE-Control System Capabilities: Capable of suppressing MVE without failure where installed on concrete that exhibits the following conditions:
1. MVER: Maximum 15 lb of water/1000 sq. ft. when tested according to ASTM F 1869.
 2. Relative Humidity: Maximum 90 percent when tested according to ASTM F 2170 using in situ probes.
- B. Tensile Bond Strength: For MVE-control system, greater than 200 psi with failure in the concrete according to ASTM D 7234.

2.2 MVE-CONTROL SYSTEM

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. ARDEX Americas.
 2. KOSTER American Corporation.
 3. MAPEI Corporation.
 4. SCHONOX HPS North America, Inc.
 5. UZIN a division of UFLOOR Systems Inc.
- B. MVE-Control System: ASTM F 3010-qualified, fluid-applied, two-component, epoxy-resin, membrane-forming system; formulated for application on concrete substrates to reduce MVER to level required for installation of floor coverings indicated and acceptable to manufacturers of floor covering products indicated, including adhesives.
1. Substrate Primer: Provide MVE-control system manufacturer's concrete-substrate primer if required for system indicated by substrate conditions.

2. Cementitious Underlayment Primer: If required for subsequent installation of cementitious underlayment products, provide MVE-control system manufacturer's primer to ensure adhesion of products to MVE-control system.

2.3 ACCESSORIES

- A. Patching and Leveling Material: Moisture-, mildew-, and alkali-resistant product recommended in writing by MVE-control system manufacturer and with minimum of 3000-psi compressive strength after 28 days when tested according to ASTM C 109/C 109M.
- B. Crack-Filling Material: Resin-based material recommended in writing by MVE-control system manufacturer for sealing concrete substrate crack repair.
- C. Cementitious Underlayment: If required to maintain manufacturer's warranty, provide MVE-control system manufacturer's hydraulic cement-based underlayment.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
 1. Installation of system indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Preinstallation Testing:
 1. Testing Agency: Engage a qualified testing agency to perform tests.
 2. Alkalinity Testing: Perform pH testing according to ASTM F 710. Install MVE-control system in areas where pH readings are less than 7.0 and in areas where pH readings are greater than 8.5.
 3. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
 - a. Internal Relative Humidity Test: Using in situ probes, ASTM F 2170. Install MVE-control system in locations where concrete substrates exhibit relative humidity level greater than 75 percent.
 4. Tensile-Bond-Strength Testing: For typical locations indicated to receive installation of MVE-control system, install minimum 100-sq. ft. area of MVE-control system to prepared concrete substrate and test according to ASTM D 7234.
 - a. Proceed with installation only where tensile bond strength is greater than 200 psi with failure in the concrete.

- B. Concrete Substrates: Prepare and clean substrates according to MVE-control system manufacturer's written instructions to ensure adhesion of system to concrete.
 - 1. Remove coatings and other substances that are incompatible with MVE-control system and that contain soap, wax, oil, or silicone, using mechanical methods recommended in writing by MVE-control system manufacturer. Do not use solvents.
 - 2. Provide concrete surface profile complying with ICRI 310.2R CSP 3 by shot blasting using apparatus that abrades the concrete surface with shot, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
 - 3. After shot blasting, repair damaged and deteriorated concrete according to MVE-control system manufacturer's written instructions.
 - 4. Protect substrate voids and joints to prevent resins from flowing into or leaking through them.
 - 5. Fill surface depressions and irregularities with patching and leveling material.
 - 6. Fill surface cracks, grooves, control joints, and other nonmoving joints with crack-filling material.
 - 7. Allow concrete to dry, undisturbed, for period recommended in writing by MVE-control system manufacturer after surface preparation, but not less than 24 hours.
 - 8. Before installing MVE-control systems, broom sweep and vacuum prepared concrete.

3.3 INSTALLATION

- A. General: Install MVE-control system according to ASTM F 3010 and manufacturer's written instructions to produce a uniform, monolithic surface free of surface deficiencies such as pin holes, fish eyes, and voids.
 - 1. Install primers as required to comply with manufacturer's written instructions.
- B. Do not apply MVE-control system across substrate expansion, isolation, and other moving joints.
- C. Apply system, including component coats if any, in thickness recommended in writing by MVE-control system manufacturer for MVER indicated by preinstallation testing.
- D. Cure MVE-control system components according to manufacturer's written instructions. Prevent contamination or other damage during installation and curing processes.
- E. After curing, examine MVE-control system for surface deficiencies. Repair surface deficiencies according to manufacturer's written instructions.
- F. Install cementitious underlayment over cured membrane if required to maintain manufacturer's warranty and in thickness required to maintain the warranty.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform installation inspections.
- B. Installation Inspections: Inspect substrate preparation and installation of system components to ensure compliance with manufacturer's written instructions and to ensure that a complete MVE-control system is installed without deficiencies.
 - 1. Verify that surface preparation meets requirements.
 - 2. Verify that component coats and complete MVE-control-system film thicknesses comply with manufacturer's written instructions.
 - 3. Verify that MVE-control-system components and installation areas that evidence deficiencies are repaired according to manufacturer's written instructions.

- C. MVE-control system will be considered defective if it does not pass inspections.

3.5 PROTECTION

- A. Protect MVE-control system from damage, wear, dirt, dust, and other contaminants before floor covering installation. Use protective methods and materials, including temporary coverings, recommended in writing by MVE-control system manufacturer.
- B. Do not allow subsequent preinstallation examination and testing for floor covering installation to damage, puncture, or otherwise compromise the MVE-control system membrane.

END OF SECTION 090561.13

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Non-load-bearing steel framing systems for interior gypsum board assemblies.
 - 2. Suspension systems for interior gypsum ceilings, soffits, and grid systems.
- B. Related Requirements:
 - 1. Section 054000 "Cold-Formed Metal Framing" for heavy gauge metal framing.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 FRAMING SYSTEMS

- A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
 - 1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
 - 2. Protective Coating: Coating with equivalent corrosion resistance of ASTM A 653/A 653M, G40, hot-dip galvanized unless otherwise indicated.
- B. Studs and Runners: ASTM C 645.

1. Steel Studs and Runners:
 - a. Minimum Base-Metal Thickness: 20 ga. or as indicated on Drawings.
 - b. Depth: 3-5/8 inches.

- C. Slip-Type Head Joints: Provide the following:
 1. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch- deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.

- D. Firestop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Fire Trak Corp.; Fire Trak System attached to studs with Fire Trak Posi Klip.
 - b. Grace Construction Products; FlameSafe FlowTrak System.
 - c. Metal-Lite, Inc.; The System.

- E. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
 1. Minimum Base-Metal Thickness: 20 ga.
 2. Depth: As indicated on Drawings.

- F. Cold-Rolled Furring Channels: 18 ga. minimum uncoated-steel thickness, with minimum 1/2-inch- wide flanges.
 1. Depth: As indicated on Drawings.
 2. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum uncoated-steel thickness of 0.033 inch.
 3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.

- G. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum uncoated-metal thickness of 0.018 inch, and depth required to fit insulation thickness indicated.

2.3 SUSPENSION SYSTEMS

- A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.

- B. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.

- C. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.053 inch and minimum 1/2-inch- wide flanges.
 1. Depth: 2 inches.

- D. Furring Channels (Furring Members):
 1. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch deep.

- E. Grid Suspension System for Gypsum Board Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Chicago Metallic Corporation; Drywall Grid System.
 - b. USG Corporation; Drywall Suspension System.

2.4 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 - 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- B. Isolation Strip at Exterior Walls: Provide one of the following:
 - 1. Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), nonperforated.
 - 2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.

3.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754.
 - 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.

- D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
 - 1. Single-Layer Application: 16 inches o.c. unless otherwise indicated.
 - 2. Multilayer Application: 16 inches o.c. unless otherwise indicated.
 - 3. Tile Backing Panels: 16 inches o.c. unless otherwise indicated.
- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.
- D. Direct Furring:
 - 1. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
- E. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.5 INSTALLING SUSPENSION SYSTEMS

- A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
 - 1. Carrying Channels (Main Runners): 48 inches o.c.
 - 2. Furring Channels (Furring Members): 16 inches o.c.
- B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- C. Suspend hangers from building structure as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 - a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 - a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.

3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 4. Do not attach hangers to steel roof deck.
 5. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 6. Do not connect or suspend steel framing from ducts, pipes, or conduit.
- D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.
- E. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.
- F. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Interior gypsum board.

- B. Related Requirements:

- 1. Section 061600 "Sheathing" for gypsum sheathing for exterior walls.
- 2. Section 092216 "Non-Structural Metal Framing" for non-structural framing and suspension systems that support gypsum board panels.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 QUALITY ASSURANCE

- A. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.

- 1. Install mockups for the following:

- a. Each level of gypsum board finish indicated for use in exposed locations.

- 2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
- 3. Simulate finished lighting conditions for review of mockups.
- 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.6 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned. At Contractor's discretion and at contractor's cost, fiberglass faced interior gypsum panels may be installed in areas which are yet to be enclosed and conditioned. Follow gypsum panel manufacturer's recommendations.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

- A. Recycled Content of Gypsum Panel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. CertainTeed Corp.
 - 2. Georgia-Pacific Gypsum LLC.
 - 3. National Gypsum Company.
 - 4. USG Corporation.
- B. Gypsum Board: ASTM C 1396/C 1396M.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed Corp.: "ProRoc Regular Gypsum Board."

- b. Georgia-Pacific Gypsum LLC.; "ToughRock Gypsum Board."
 - c. National Gypsum Company; "Gold Bond Gypsum Board."
 - d. USG Corporation; "Sheetrock Gypsum Panels."
 - 2. Thickness: 5/8 inch.
 - 3. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
 - C. Gypsum Board, Type X: ASTM C 1396/C 1396M.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed Corp.: "ProRoc Type X Gypsum Board."
 - b. Georgia-Pacific Gypsum LLC.; "ToughRock Fireguard Gypsum Board."
 - c. National Gypsum Company; "Fire-Shield Gypsum Board."
 - d. USG Corporation; "Sheetrock Firecode Core Gypsum Panels."
 - 2. Thickness: 5/8 inch.
 - 3. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
 - D. Gypsum Ceiling Board: ASTM C 1396/C 1396M.
 - 1. Thickness: 1/2 inch.
 - 2. Long Edges: Tapered.
- 2.4 GYPSUM BOARD FOR INTERIOR FACE OF EXTERIOR WALL (OR AS NOTED ON DRAWINGS)
 - A. Glass-Mat Interior Gypsum Board: ASTM C 1658/C 1658M. With fiberglass mat laminated to both sides. Specifically designed for interior use.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed Corp.; "GlasRoc."
 - b. Georgia-Pacific Gypsum LLC; DensArmour Plus.
 - c. National Gypsum; e2XP Interior Extreme.
 - d. USG Corporation; "Mold Tough Glass-Mat Panels."
 - 2. Core: 5/8 inch, Type X, unless otherwise indicated.
 - 3. Core: 5/8 inch, abuse resistant where indicated.
 - 4. Long Edges: Tapered.
 - 5. Mold Resistance: ASTM D 3273, score of 10.
- 2.5 TRIM ACCESSORIES
 - A. Interior Trim: ASTM C 1047.
 - 1. Material: Plastic.
 - 2. Manufacturer: Subject to compliance with the requirements, provide trim accessories from the following:
 - a. Trimtex.
 - b. Manufacturer as approved by the Architect prior to receipt of bids.

3. Shapes:
 - a. Cornerbead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.

B. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Fry Reglet No. DA.1, DRM 625-100; Standard Reveal Molding 5/8" deep x " tall, or comparable product by one of the following:
 - a. Fry Reglet Corporation.
 - b. Gordon Inc.
 - c. Pittcon Industries.
2. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221 (ASTM B 221M), Alloy 6063-T5.
3. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.
4. Provide Fry "Snap-In" Reveal where indicated to cover cut edge of wall coverings and prevent peeling.

2.6 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.
2. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
3. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, sandable topping compound.
5. Skim Coat. For fourth coat, use drying-type, sandable topping compound.

2.7 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
- C. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- D. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Accumetric LLC; BOSS 824 Acoustical Sound Sealant.
 - b. Pecora Corporation; AIS-919.
 - c. USG Corporation; SHEETROCK Acoustical Sealant.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Extend panels a minimum of 1/2-inch into hollow-metal frames.
- G. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 2. Fit gypsum panels around ducts, pipes, and conduits.
 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.
- H. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- I. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- J. STC-Rated Assemblies and Assemblies with Insulation: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.
- K. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
1. Wallboard Type: Vertical surfaces unless otherwise indicated.
 2. Type X: Where required for fire-resistance-rated assembly.
 3. Ceiling Type: Ceiling surfaces.
 4. Glass-Mat Interior Type: At interior face of exterior wall construction, tile backing panels, and as indicated on Drawings.
- B. Single-Layer Application:
1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
 2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.
 3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

- B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 - 1. Cornerbead: Use at outside corners unless otherwise indicated.
 - 2. Bullnose Bead: Use where indicated.
 - 3. LC-Bead: Use at exposed panel edges.
- D. Aluminum Trim: Install in locations indicated on Drawings.

3.5 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
 - a. Primer and its application to surfaces are specified in other Division 09 Sections.
 - 3. Level 5:
 - a. On interior face of exterior walls.
 - b. On all fiberglass-faced gypsum interior panels where paint is final decoration, unless otherwise noted.
 - c. On all walls scheduled to receive vinyl wall covering as a finish material.

3.6 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes acoustical panels and exposed suspension systems for interior ceilings.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Acoustical Ceiling Units: Full-size panels equal to 2 percent of quantity of each type of ceiling unit installed.
 - 2. Suspension-System Components: Quantity of each exposed component equal to 2 percent of quantity of each type of grid system installed.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension-system components, and accessories to Project site and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of acoustical ceiling panel and its supporting suspension system from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Ceiling products shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: Class A according to ASTM E 1264.
 - 2. Smoke-Developed Index: 50 or less.

2.3 ACOUSTICAL PANEL TYPE **SAT-1**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide one of the following:
 - 1. Armstrong World Industries; "Ultima" No. 1910.
 - 2. CertainTeed Corporation; "Symphony M High NRC" No. 1222-75-1
 - 3. United States Gypsum Company; "Mars" No. 86185.
- B. Acoustical Panel Standard: Provide manufacturer's standard panels according to ASTM E 1264 and designated by type, form, pattern, acoustical rating, and light reflectance unless otherwise indicated.
- C. Classification: Provide panels as follows:
 - 1. Type and Form: Type IV, mineral base with membrane-faced overlay; Form 2, water felted; with vinyl overlay on face.
 - 2. Pattern: E (lightly textured).
- D. Color: White.
- E. Light Reflectance (LR): Not less than 0.88.
- F. Ceiling Attenuation Class (CAC): Not less than 35.
- G. Noise Reduction Coefficient (NRC): Not less than 0.75.
- H. Edge/Joint Detail: Square.
- I. Thickness: 3/4 inch.
- J. Modular Size: 24 by 24 inches.

- K. Antimicrobial Treatment: Manufacturer's standard broad spectrum, antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273, ASTM D 3274, or ASTM G 21 and evaluated according to ASTM D 3274 or ASTM G 21.

2.4 METAL SUSPENSION SYSTEM

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Armstrong World Industries, Inc.
 - 2. CertainTeed Corporation.
 - 3. United States Gypsum Company.
- B. Wide-Face, Capped, Double-Web, Steel Suspension System for SAT-1 AND SAT-2: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized, G30 coating designation; with prefinished 15/16-inch- wide metal caps on flanges.
 - 1. Structural Classification: Intermediate-duty system.
 - 2. End Condition of Cross Runners: Override (stepped) or butt-edge type.
 - 3. Cap Material: Cold-rolled steel or aluminum.
 - 4. Cap Finish: Painted white.

2.5 ACCESSORIES

- A. Wire Hangers, Braces, and Ties: Provide wires as follows:
 - 1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 - 2. Size: Wire diameter sufficient for its stress at three times hanger design load (ASTM C 635/C 635M, Table 1, "Direct Hung") will be less than yield stress of wire, but not less than 0.135-inch- diameter wire.

2.6 METAL EDGE MOLDINGS AND TRIM

- A. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.
 - 1. Edge moldings shall fit acoustical panel edge details and suspension systems indicated and match width and configuration of exposed runners unless otherwise indicated.
 - 2. For lay-in panels with reveal edge details, provide stepped edge molding that forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.
 - 3. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
- B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.
- B. Layout openings for penetrations centered on the penetrating items.

3.3 INSTALLATION

- A. Install acoustical panel ceilings according to ASTM C 636/C 636M and manufacturer's written instructions.
- B. Suspend ceiling hangers from building's structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, provide, as work of this Section, supplemental suspension members and hangers in form of trapezes or equivalent devices.
 - 4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 - 5. When steel framing does not permit installation of hanger wires at spacing required, provide carrying channels or other supplemental support for attachment of hanger wires.
 - 6. Do not attach hangers to steel deck tabs.
 - 7. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 - 8. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
 - 9. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.

- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
 - 1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
 - 2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends. Miter corners accurately and connect securely.
 - 3. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide precise fit.
 - 1. Arrange directionally patterned acoustical panels as follows:
 - a. As indicated on reflected ceiling plans.
 - 2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
 - 3. Protect lighting fixtures and air ducts according to requirements indicated for fire-resistance-rated assembly.

3.4 ERECTION TOLERANCES

- A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet, non-cumulative.
- B. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet, non-cumulative.

3.5 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.
- B. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Resilient base.
 - 2. Resilient molding accessories.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified, not less than 12 inches long.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F.

1.6 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive resilient products during the following time periods:
 - 1. 48 hours before installation.
 - 2. During installation.
 - 3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer.

PART 2 - PRODUCTS

2.1 THERMOPLASTIC-RUBBER BASE

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Armstrong World Industries, Inc.
 - 2. Johnsonite; A Tarkett Company.
 - 3. Roppe Corporation, USA.
 - 4. VPI, LLC, Floor Products Division.
- B. Product Standard: ASTM F 1861, Type TP (rubber, thermoplastic).
 - 1. Group: I (solid, homogeneous) or II (layered).
 - a. Cove, All Locations
- C. Thickness: 0.125 inch.
- D. Height: 4 inches.
- E. Lengths: Coils in manufacturer's standard length.
- F. Outside Corners: Preformed.
- G. Inside Corners: Preformed.
- H. Colors: As selected by Architect from full range of industry colors.

2.2 VINYL MOLDING ACCESSORY

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Armstrong World Industries, Inc.
 - 2. Johnsonite; A Tarkett Company.
 - 3. Roppe Corporation, USA.
 - 4. Description:
 - a. nosing for carpet.
 - b. nosing for resilient flooring.
 - c. reducer strip for resilient flooring.
 - d. joiner for tile and carpet.
- B. Profile and Dimensions: As indicated.
- C. Locations: Provide vinyl molding accessories at all transitions between different finish materials.
- D. Colors and Patterns: As selected by Architect from full range of industry colors.

2.3 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
 - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
 - 1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- C. Do not install resilient products until they are the same temperature as the space where they are to be installed.
 - 1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.
- D. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.
- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.
- G. Preformed Corners: Install preformed corners before installing straight pieces.

3.4 RESILIENT ACCESSORY INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient accessories.
- B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.
- B. Perform the following operations immediately after completing resilient-product installation:
 - 1. Remove adhesive and other blemishes from exposed surfaces.
 - 2. Sweep and vacuum horizontal surfaces thoroughly.
 - 3. Damp-mop horizontal surfaces to remove marks and soil.
- C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

SECTION 096813 - TILE CARPETING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes modular carpet tile.
- B. Related Requirements:
 - 1. Division 09 Sections for other floor covering materials.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include manufacturer's written data on physical characteristics, durability, and fade resistance.
 - 2. Include installation recommendations for each type of substrate.
- B. Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.
 - 1. Carpet Tile: Full-size Sample.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For carpet tiles to include in maintenance manuals. Include the following:
 - 1. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
 - 2. Precautions for cleaning materials and methods that could be detrimental to carpet tile.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Carpet Tile: Full-size units equal to 5 percent of amount installed for each type indicated, but not less than 10 sq. yd.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with CRI 104.

1.7 WARRANTY

- A. Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.
 - 1. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate, vandalism, or abuse.
 - 2. Failures include, but are not limited to, more than 10 percent edge raveling, snags, runs, loss of face fiber, and delamination.
 - 3. Warranty Period: Minimum 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CARPET TILE

- A. Products: Subject to compliance with requirements, provide products indicated In the Finish Legend found on the drawings.

2.2 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.
- B. Adhesives: Water-resistant, mildew-resistant, high RH rated, nonstaining, pressure-sensitive type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed carpet tile and is recommended by carpet tile manufacturer for releasable installation.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance. Examine carpet tile for type, color, pattern, and potential defects.
- B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
 - 1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by carpet tile manufacturer.
 - 2. Subfloor finishes comply with requirements specified in Section 033000 "Cast-in-Place Concrete" for slabs receiving carpet tile.
 - 3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Comply with CRI 104, Section 6.2, "Site Conditions; Floor Preparation," and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile installation.
- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider and protrusions more than 1/32 inch unless more stringent requirements are required by manufacturer's written instructions.
- C. Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by carpet tile manufacturer.
- D. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

3.3 INSTALLATION

- A. General: Comply with CRI 104, Section 14, "Carpet Modules," and with carpet tile manufacturer's written installation instructions.
- B. Installation Method: Glue down; install every tile with full-spread, releasable, pressure-sensitive adhesive.
- C. Maintain dye lot integrity. Do not mix dye lots in same area.
- D. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.
- E. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, nonstaining marking device.
- G. Install pattern parallel to walls and borders.

3.4 CLEANING AND PROTECTION

- A. Perform the following operations immediately after installing carpet tile:
 - 1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet tile manufacturer.
 - 2. Remove yarns that protrude from carpet tile surface.
 - 3. Vacuum carpet tile using commercial machine with face-beater element.
- B. Protect installed carpet tile to comply with CRI 104, Section 16, "Protecting Indoor Installations."
- C. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION 096813

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following interior substrates:
 - 1. Concrete masonry units (CMUs).
 - 2. Steel and iron.
 - 3. Wood.
 - 4. Gypsum board.
 - 5. Sealed concrete floor.
- B. Related Requirements:
 - 1. Section 055000 "Metal Fabrications" for shop priming metal fabrications.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples for Initial Selection: For each type of topcoat product.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint: 5 percent, but not less than 1 gal. of each material and color applied.

1.5 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Architect will select one surface to represent surfaces and conditions for application of each paint system.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft..
 - b. Other Items: Architect will designate items or areas required.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide specified products by one of the following:
 1. Behr Process Corporation.
 2. Benjamin Moore & Co.
 3. PPG Architectural Coatings.
 4. Sherwin-Williams Company (The).

2.2 PAINT, GENERAL

- A. Material Compatibility:
 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- B. Colors: As indicated in a color schedule.
- C. Bonding Primer: Where paint is scheduled to be applied to glazed CMU, tile, or other similar surfaces, provide a bonding primer:
 1. Behr Process Corporation: Interior/Exterior Bonding Primer 432.
 2. Benjamin Moore & Co.; Insl-X STIX

3. PPG Architectural Coatings; Gripper interior/Exterior.
4. Sherwin-Williams Company (The); Extreme Bond Interior/Exterior Primer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 1. Masonry (Clay and CMUs): 12 percent.
 2. Wood: 15 percent.
 3. Gypsum Board: 12 percent.
- C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- E. Proceed with coating application only after unsatisfactory conditions have been corrected.
 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
- E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- F. Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
 1. Use applicators and techniques suited for paint and substrate indicated.
 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
 1. Paint the following work where exposed in occupied spaces:
 - a. Uninsulated metal piping.
 - b. Pipe hangers and supports.
 - c. Metal conduit.
 - d. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
 - e. Other items as directed by Architect.

3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Traffic Surfaces:

- 1. Water-Based Clear Sealer System: Two (2) coats water-based sealer:
 - a. BEN: M27-00 Clear Acrylic Sealer
 - b. PPG: Perma-Crete Plex-Seal WB Interior/Exterior Clear Sealer 4-6200.
 - c. S-W: H & C Wet Look Sealer 50.048054.

B. CMU Substrates:

- 1. Dry Environments:
 - a. One (1) coat, latex block filler:
 - 1) BEHR: Behr Pro Block Filler Primer, 50 (<50 g/L VOC).
 - 2) Benjamin Moore: Ultra Spec® Masonry Hi-Build Block Filler 571 (<50 g/L VOC).
 - 3) PPG Paints; Speedhide Masonry Latex Block Filler, 6-7 (<50 g/L VOC).
 - 4) Sherwin-Williams: PrepRite Latex Block Filler, B25W25 (<50 g/L VOC).
 - b. Two (2) coats, acrylic-latex enamel (eggshell):
 - 1) BEHR: Behr Pro i300 Interior Eggshell, 330 (<5 g/L VOC).
 - 2) Benjamin Moore: Ultra Spec® 500 Interior Eggshell Finish N538 (0 g/L VOC).
 - 3) PPG Paints: 6-4310XI Speedhide Zero VOC Interior Latex Eggshell (0 g/L VOC).
 - 4) Sherwin-Williams: ProMar 200 Zero VOC Interior Latex EgShel, B20W2600 (<50 g/L VOC).
- 2. Wet Environments:
 - a. One (1) coat, latex block filler:
 - 1) Behr Paint Company; Behr Pro Block Filler Primer PR50 (<50 g/L VOC).
 - 2) PPG Paints; Amerlock 400 Block Filler (<199 g/L VOC).
 - 3) Sherwin-Williams Company (The); Pro Industrial Heavy Duty Block Filler, B42W150 (< 50 g/L VOC).

- b. Two (2) coats, acrylic-latex enamel (eggshell):
 - 1) Behr Paint Company; US Coatings AquaGrip 2600 Gloss Water-Base Epoxy Coating (97 g/L VOC).
 - 2) PPG Paints; Aquapon WB EP Epoxy, 98E-1 Series (26 g/L VOC).
 - 3) Sherwin-Williams Company (The); Pro Industrial WB Catalyzed Epoxy, Gloss, B73 Series (<50 g/L VOC).

C. Steel Substrates:

1. Hollow Metal Doors and Frames:

- a. One (1) coat, water based primer:
 - 1) BEHR: Premium Plus Multi-Surface Primer, 436 (<50 g/L VOC).
 - 2) Benjamin Moore: Ultra Spec HP Acrylic Metal Primer HP04 (43 g/L VOC).
 - 3) PPG Paints; Pitt-Tech Plus Waterborne Acrylic Primer/Finish 4020PF (91 g/L VOC).
 - 4) Sherwin-Williams: Pro Industrial Pro-Cryl Universal Primer, B66-310 (< 100 g/L).
- b. Two (2) coats, water-based epoxy finish:
 - 1) BEHR: Behr Pro Pre-Catalyzed Waterborne Epoxy Semi-Gloss HP150 (<10 g/L VOC).
 - 2) Benjamin Moore: V341 COROTECH WB Pre-Cat Epoxy Coating Semi-Gloss (71 g/L VOC).
 - 3) PPG Paints; Aquapon WB EP Epoxy, 98E-1 Series (26 g/L VOC).
 - 4) Sherwin-Williams: Pro Industrial Water Based Catalyzed Epoxy, B73-300 Series (<50 g/L VOC).

D. Wood Substrates:

1. Doors, Frames, Trim and Chair Rails

- a. Opaque Epoxy System:
 - 1) One (1) coat, latex primer:
 - a) BEHR: Premium Plus All-In-One Primer & Sealer, 75 (<5 g/L VOC).
 - b) Benjamin Moore: Advance® Waterborne Alkyd Primer 0790 (<50 g/L VOC).
 - c) PPG Paints; Seal Grip Gripper Universal Acrylic Primer/Sealer, 17-921XI (<50 g/L VOC).
 - d) Sherwin-Williams PrepRite ProBlock Latex, B51-600 (<50 g/L VOC).
 - 2) Two (2) coats, water-based epoxy finish:
 - a) BEHR: Behr Pro Pre-Catalyzed Waterborne Epoxy Semi-Gloss HP150 (<10 g/L VOC).
 - b) Benjamin Moore: V341 COROTECH WB Pre-Cat Epoxy Coating Semi-Gloss (71 g/L VOC).
 - c) PPG Paints; Aquapon WB EP Epoxy, 98E-1 Series (26 g/L VOC)..
 - d) Sherwin-Williams: Pro Industrial Water Based Catalyzed Epoxy, B73-300 Series (<50 g/L VOC).

E. Gypsum Board Substrates:

1. Walls:

a. One (1) coat, latex primer:

- 1) BEHR: Premium Plus Interior Drywall Primer & Sealer, 73 (<50 g/L VOC).
- 2) Benjamin Moore: Ultra Spec® 500 Interior Latex Primer N534 (0 g/L VOC).
- 3) PPG Paints; Speedhide Zero Interior Latex Sealer 6-4900xi (<50 g/L VOC).
- 4) Sherwin-Williams: ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (< 50 g/L VOC).

b. Two (2) coats, -acrylic-latex enamel (eggshell):

- 1) BEHR: Behr Pro i300 Interior Eggshell. 330 (<5 g/L VOC).
- 2) Benjamin Moore: Ultra Spec® 500 Interior Eggshell Finish N538 (0 g/L VOC).
- 3) PPG Paints; Speedhide Zero VOC Interior Latex Eggshell 6-4310XI (0 g/L VOC).
- 4) Sherwin-Williams: ProMar 200 Zero VOC Interior Latex EgShel, B20W2600 (< 50 g/L VOC).

2. Ceilings:

a. One (1) coat, latex primer:

- 1) BEHR: Premium Plus Interior Drywall Primer & Sealer, 73 (<50 g/L VOC).
- 2) Benjamin Moore: Ultra Spec® 500 Interior Latex Primer N534 (0 g/L VOC).
- 3) PPG Paints; Performance Flat Interior Latex (<50 g/L VOC). – self priming).
- 4) Sherwin-Williams: ProMar 400 Interior Primer, B28W4600 (< 50 g/L VOC).

b. Two (2) coats, Acrylic-Latex (flat):

- 1) BEHR: Behr Pro i100 Interior Flat, 110 (<50 g/L VOC).
- 2) Benjamin Moore: Ultra Spec® 500 Interior Flat Finish N536 (0 g/L VOC).
- 3) PPG Paints; Performance Flat Interior Latex (<50 g/L VOC).
- 4) Sherwin-Williams: ProMar 400 Zero VOC Interior Latex Flat, B30-4600 (< 50 g/L).

END OF SECTION 099123

SECTION 099300 - STAINING AND TRANSPARENT FINISHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes surface preparation and application of wood stains and transparent finishes on the following substrates:
 - 1. Exterior Substrates:
 - a. Dressed lumber (finish carpentry or woodwork).

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
 - 2. Indicate VOC content.
- B. Samples for Initial Selection: For each type of product.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Stains and Transparent Finishes: 5 percent, but not less than 1 gal. of each material and color applied.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.6 FIELD CONDITIONS

- A. Apply finishes only when temperature of surfaces to be finished and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply finishes when relative humidity exceeds 85 percent, at temperatures less than 5 deg F above the dew point, or to damp or wet surfaces.
- C. Do not apply exterior finishes in snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Behr Process Corporation.
 - 2. Benjamin Moore & Co.
 - 3. PPG Architectural Finishes, Inc.
 - 4. Sherwin-Williams Company (The).
- B. Products: Subject to compliance with requirements, provide one of the products listed in wood finish systems schedules for the product category indicated.

2.2 MATERIALS, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products List."
- B. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, products shall be recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- C. VOC Content: For field applications, paints and coatings shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
 - 1. Clear Wood Finishes, Varnishes: 275 g/L.
 - 2. Stains: 100 g/L.
- D. Stain Colors: Match existing as approved by the Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Exterior Wood Substrates: 15 percent, when measured with an electronic moisture meter.
- C. Maximum Moisture Content of Interior Wood Substrates: 15 percent, when measured with an electronic moisture meter.
- D. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- E. Proceed with finish application only after unsatisfactory conditions have been corrected.
 - 1. Beginning finish application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and finishing.
 - 1. After completing finishing operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean and prepare surfaces to be finished according to manufacturer's written instructions for each substrate condition and as specified.
 - 1. Remove dust, dirt, oil, and grease by washing with a detergent solution; rinse thoroughly with clean water and allow to dry. Remove grade stamps and pencil marks by sanding lightly. Remove loose wood fibers by brushing.
 - 2. Remove mildew by scrubbing with a commercial wash formulated for mildew removal and as recommended by stain manufacturer.
- D. Exterior Wood Substrates:
 - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
 - 2. Prime edges, ends, faces, undersides, and backsides of wood.
 - a. For solid hide stained wood, stain edges and ends after priming.
 - 3. Countersink steel nails, if used, and fill with putty or plastic wood filler tinted to final color. Sand smooth when dried.

3.3 APPLICATION

- A. Apply finishes according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
 - 1. Use applicators and techniques suited for finish and substrate indicated.
 - 2. Finish surfaces behind movable equipment and furniture same as similar exposed surfaces.
 - 3. Do not apply finishes over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- B. Apply finishes to produce surface films without cloudiness, holidays, lap marks, brush marks, runs, ropiness, or other surface imperfections.

3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing finish application, clean spattered surfaces. Remove spattered materials by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from finish application. Correct damage by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced finished wood surfaces.

3.5 EXTERIOR WOOD-FINISH-SYSTEM SCHEDULE

- A. Wood Substrates: architectural woodwork.
 - 1. Solid-Color, Water-Based Stain System MPI EXT 6.3K:
 - a. Prime Coat: Primer, alkyd for exterior wood, MPI #5.
 - 1) Benjamin Moore & Co.; Super Spec Exterior Alkyd Primer 176/K176
 - 2) PPG Architectural Finishes, Inc.; Seal Grip Interior/ Exterior Alkyd Universal Primer/Sealer 17-941NF.
 - 3) Sherwin-Williams Company (The); Exterior Oil Based Primer Y24W8020.
 - b. Intermediate Coat: Stain, exterior, water based, solid hide, matching topcoat.
 - c. Topcoat: Stain, exterior, water based, solid hide, MPI #16.
 - 1) Benjamin Moore & Co.; Arborcoat Waterborne Exterior Solid Color Stain 640/K640.
 - 2) PPG Architectural Finishes, Inc.; OlympicMaximum Sealant + Sealant in One.
 - 3) Sherwin-Williams Company (The); ProMar Ext Solid Color Acrylic Stain A16W00351.

END OF SECTION 099300