

Anderson County Government

Request for Bids

100 North Main Street, Suite 214
Courthouse
Clinton, Tennessee 37716
(865) 457-6218 Office
(865) 457-6252 Fax

purchasing@andersoncountyttn.gov

Date Issued: April 11, 2024

**Bids will be received until
2:30 p.m. Eastern Time on April 30, 2024**

Sealed bids are subject to the General Terms and Conditions of this bid, and any other data attached or incorporated by reference. Bids will be received in the Anderson County Purchasing Office until the date and time specified above, and at that time publicly opened and read aloud.

ANDERSON COUNTY RESERVES THE RIGHT TO WAIVE ANY INFORMALITIES
IN OR TO REJECT ANY OR ALL BIDS AND TO ACCEPT THE BID DEEMED
FAVORABLE AND IN THE BEST INTEREST OF ANDERSON COUNTY.



Robert J. Holbrook, Director of Finance

BID DESCRIPTION

Re-Bid for Concrete for the new CHS Welding Building. Bidders are to provide one original and two copies.

A mandatory pre-bid meeting will take place at 10 am on April 16, 2024.

Bids must be in sealed envelopes with the Bid # clearly labeled.

Questions are to be emailed to purchasing@andersoncountyttn.gov and kleehammer@andersoncountyttn.gov.

ADVERTISEMENT FOR BIDS

**Anderson County Schools
Clinton, TN
Concrete
CLINTON HIGH SCHOOL**

General Notice

ANDERSON COUNTY PURCHASING is requesting Bids for the construction of the following Project:

CTE WELDING BUILDING
CLINTON HIGH SCHOOL
425 DRAGON LANE
CLINTON, TN 37716

Bids for the construction of the Project will be received at **the Anderson County Courthouse located at 100 Main St, Suite 214, Clinton, TN 37716**, until **April 30, 2024, at 2:30 pm local time**. At that time the Bids received will be publicly opened and read.

The Project includes the following Work: **All Concrete** for a New Welding Building at Clinton High School. There will be a mandatory Prebid meeting on **April 16, 2024, at 10:00 a.m. local time** located at Clinton High School.

Bids are requested for the following Contract:

Concrete Footers, Foundation and Building Slab for CTE Welding Building

Construction Manager:

**GCE Construction
P.O. Box 177
LaFollette, TN 37766
423-201-9836**

Prospective Bidders are to contact **Katherine Kleehammer with Anderson County Purchasing for any questions.**

UNIVERSITY OF CALIFORNIA

College of Letters and Physical Sciences

Department of

Chemistry

1285 CHURCH DRIVE

Chemistry 1285

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Department of

Chemistry

1285 CHURCH DRIVE

UNIVERSITY OF CALIFORNIA

Sealed bids for the construction of “Concrete Footers, Foundation , and Building Slab for CTE Welding Building” will be received at the office of:

Purchasing Department
Anderson County Courthouse
100 North Main Street, Room 214
Clinton, TN 37716

until April 30, 2024 @ 2:30 p.m., at which time and place they will be publicly opened and read.

There will be a mandatory PreBid meeting on April 16, 2024 at 10:00 am located at Clinton High School.

Drawings and Specifications and other Contract Documents may be examined at the following

locations: The office of the Architect – MBI Companies, Inc.; 299 N. Weisgarber Road, Knoxville, TN 37919
Knoxville Builders Exchange of Tennessee, Tel: 866-941-BXTN (2986)
Dodge Data & Analytics, Tel: 877-784-9556
Bid Clerk by Construct Connect, Tel: 877-737-6482

The official repository for the bid documents, including any addenda, is Vendor Registry. Bid deposit is not required. Subcontractors, vendors, and others who desire individual drawings and specification sections may obtain them from Knoxville Blueprint, Knoxville, Tennessee, 546-7601, by paying the costs of reproduction, which is not refundable.

Bid Bond shall not be required. The successful bidder will be required to execute a performance bond in an amount equal to one hundred percent (100%) of the Contract Sum and a payment bond covering and including labor and materials in an amount equal to one hundred percent (100%) of the Contract Sum. Performance and Labor and Material Payment Bond shall be on AIA Form A312.

All bidders must be licensed contractors as required by the contractors Licensing Act of 1976, enacted by the General Assembly of the State of Tennessee on March 18, 1976 and as amended to date as codified by Tennessee Code Annotated (TCA) Sections §62-6-119. Bidder's name, license number, date of expiration of license, license limit, and that part of license classification applying to the bid must be placed on the envelope containing the bid, otherwise the bid cannot be opened or considered. As applicable by Tennessee Annotated Code and/or TDEC regulations, the names of the Mechanical, Plumbing, Electrical, Masonry, Roofing and/or Geothermal Subcontractors, License numbers, date of expiration of their licenses, license limit, and license classification must also be on the bid envelopes otherwise the bid cannot be opened or considered. General Contractors performing Mechanical, Plumbing, Electrical, Masonry, Roofing and/or Geothermal work must designate this information on the outside of the envelope.

Each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not a person included within or on the list created pursuant to TCA §12-12-106.

No bidder will be permitted to withdraw his bid within sixty (60) days after the date of opening of bids. The Owner reserves the right to reject any or all bids and to waive any informalities therein.

Upon award of the construction contract to the successful bidder, construction shall commence on a date to be specified in the "Notice to Proceed" to the Contractor and shall be completed on or before the completion date specified in the Contract Documents as time is of the essence in the performance of the contract for construction.

Upon receipt of Notice to Proceed, the Contractor will complete the work regularly, diligently, and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified on the Bid Form.

The Owner reserves the right to waive any information in or to reject any or all bids and to accept the bid deemed favorable to the interest of the Owner.

END OF SECTION

PART 1 GENERAL:

1.01 GENERAL:

A The following amendments modify, change, delete from or add to the Instructions to Bidders (AIA Document A701, 2018 Edition). Where any part of the Instructions to Bidders is modified or voided by these amendments, the unaltered provisions of that part shall remain in effect.

1.02 Bid Bond - N/A

A SUBMISSION OF BIDS:

1.03 In addition to the information listed in Subparagraph 4.3.1, the email containing the bid shall include the plainly marked bid envelope PDF with the bidding contractor's license number, date of expiration of the license, license limitation, and that part of license classification applying to the bid. If this information is not marked on the bid envelope PDF, the Architect and the Owner are prohibited from considering the bid by the requirements of The contractor's Licensing Act of 1976 enacted by the General Assembly of the State of Tennessee, as amended by Chapter 9 and Chapter 406 of the Public Acts of 1977. The names of the Masonry, Roofing, Geothermal, Plumbing, Mechanical, and Electrical Subcontractors, License numbers and date of expiration of their licenses must also be on the bid envelope PDF.

B Notes: Bidders' attention is called to the provisions of the Contractor's Licensing Act that particular subcontractors (Electrical, Mechanical, HVAC, Masonry, Roofing, Geothermal, etc.) must have a contractor's license if the aggregate amount of their subcontract is equal to or exceeds monetary limits enumerated in that Act for each subcontractor's trade.

CONTRACT FOR CONSTRUCTION:

1.04 The Contract for Construction of the Project will be executed on AIA Document A101, current version.

A PERFORMANCE AND LABOR AND MATERIALS PAYMENT BOND:

1.05 The successful bidder will be required to furnish a Performance Bond and a Labor and Materials Payment Bond in the amount of one hundred percent (100%) of the contract sum. Bonds shall be executed on AIA Document A312.

A DEFINITIONS:

1.06 All definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201 - 2017 Edition, are applicable to these Instructions to Bidders.

A Bidding documents include the Invitation to Bid, Instructions to Bidders, the Bid Forms, Agreement between Owner and Contractor and the proposed Contract Documents including any Addenda issued prior to receipt of Bids.

B Addenda are written or graphic instruments issued prior to the execution of the Contract which modify or interpret the bidding documents, including Drawings and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed.

C All correspondence concerning the bid process shall be addressed to the Architect.

D

- E A Bid is a complete and properly signed proposal to do the Work or designated portion thereof for the sums stipulated therein, submitted in accordance with the Bidding Documents.
 - F The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which work may be added or from which work may be deleted for sums stated in any Alternate Bids.
 - G A Bidder is a person or entity who submits a Bid.
 - H A Sub-Bidder is a person or entity who submits a bid to a Bidder for materials or labor for a portion of the Work.
- 1.07 EXAMINATION OF DOCUMENTS AND SITE:
- A. Each Bidder, by making his Bid, represents that he has read and understands the Bidding Documents.
 - B. Each Bidder, by making his Bid, represents that he has visited the site and familiarized himself with the local conditions under which the Work is to be performed.
 - C. Each Bidder, by making his Bid, represents that his Bid is based upon the materials, systems and equipment required by the Bidding Documents unless exceptions are noted on the Bid Form.
- 1.08 BIDDING PROCEDURES:
- A. All Bids shall be prepared on the included forms and submitted in accordance with the Instructions to Bidders.
 - B. A Bid is invalid if it has not been received prior to the time and date for receipt of bids indicated in the Invitation to Bid, or prior to any extension thereof issued to the Bidders.
 - C. Unless otherwise provided in any supplement to these Instructions to Bidders, no bidder shall modify, withdraw or cancel his Bid or any part thereof for sixty (60) days after the time designated for the receipt of Bids in the Invitation to Bid.
 - D. Prior to the receipt of Bids, Addenda will be emailed to each person or firm recorded by the Architect and Engineer as having received the Bidding Documents. Addenda issued after receipt of Bids will be mailed or delivered only to the selected Bidder.
 - E. Bids shall not contain any recapitulation of the Work (except as noted on the Bid Form) to be done and no oral or telephone proposals or modifications will be considered.
 - F. The Bidder shall make no additional stipulations on the Bid Form or limit or qualify his Bid in any other manner. Bids so qualified will be subject to disqualification.
 - G. Only written instructions will be binding. The Architect or Engineer will not be responsible for any oral, or telephonic instructions.
 - H. The names of all Subcontractors and material suppliers proposed to be employed shall be submitted for approval by the Owner before they are employed, and all such Subcontractors and material suppliers must be known to perform work of a high standard in their respective trades. If the Owner has reasonable objection to any such proposed person or entity, and notifies the Bidder in writing of such objection, the Bidder shall provide an acceptable substitute person or entity in accordance with Article 5.2 of the General Conditions.

1.09 DISCREPANCIES AND AMBIGUITIES:

- A. Each Bidder shall examine the Bidding Documents carefully and, not later than ten (10) days prior to the date for receipt of Bids, shall make written request to the Architect or Engineer via email only, for interpretations or correction of any ambiguity, inconsistency or error therein which he may discover. The Architect or Engineer will issue any interpretation or correction as an Addendum. Only a written interpretation or correction by Addendum shall be binding. No Bidder shall rely upon any interpretation or correction given by any other method.

1.10 SUBSTITUTIONS:

- A. Each Bidder represents that his Bid is based upon the materials and equipment described in the Bidding Documents.
- B. Where products or systems are specified by naming only one manufacturer and no provisions for substitutions are listed, no substitutions are allowed. Where substitution provisions are listed, they will only be considered if approved by Addenda prior to Bidding.

1.11 QUALIFICATION OF BIDDERS:

- A. A Bidder shall submit to the Owner a properly executed Contractor's Qualification Statement, AIA Document A305 and/or properly documented experience record, if requested.
- B. Bidders may be disqualified, and their Bids not considered for any of the following specific reasons:
 - 1. Reason for believing collusion exists among Bidders.
 - a. Submit Non-Collusion Affidavit of Subcontractors after bid. Completion of this form by each subcontractor is required before issuance of Notice to Proceed.
 - 2. The Bidder being interested in any litigation against the Owner.
 - 3. The Bidder being in arrears on any existing contract or having defaulted on a previous contract.
 - 4. Lack of competency as revealed by the financial statement, experience and equipment, questionnaires, or qualification statement.
 - 5. Uncompleted work which in the judgment of the Owner will prevent or hinder the prompt completion of additional work if awarded.
- C. A Bidder shall submit to the Owner a confidential Financial Statement in a sealed envelope, if requested.

END OF SECTION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not a person included within the list created pursuant to Tennessee Code Annotated §12-12-106.

Authorizing Signature: _____
(Sign in BLUE ink)

END OF SECTION

TO: Purchasing Department
Attention: Katherine Ajmeri
Anderson County Courthouse
100 North Main Street, Room 214
Clinton, TN 37716

DATED: _____, 2024

Having carefully examined the Invitation and Instructions to Bidders, the General Conditions of the Contract and Specifications entitled "Clinton High School Welding and Agriculture Building" and the Drawings similarly entitled, as well as the premises and conditions affecting the work, the Undersigned proposes to furnish all materials and labor called for by them for the work in accordance with said documents for the sum of:

_____ Dollars (\$ _____).

hereinafter referred to as the Base Bid.

The Bidder hereby acknowledges that the following documents are attached to and made a condition of this Bid:

- a) Required Bid Security in the form of: N/A
- b) Attachment 1: Concrete Footers, Foundation, and Building Slab for CTE Welding
- c) Attachment 2: Non-Collusion Affidavit
- d) Attachment 3: Diversity Business Information
- e) Attachment 4: Insurance Requirement Acknowledgement
- f) Attachment 5: Conflict of Interest Affidavit/Statement
- g) Attachment 6: Background Check Compliance Form
- h) Attachment 7: Drug-Free Workplace Affidavit
- i) Authorization to do Business in Tennessee
- j) Specification Compliance Form

If written notice of the acceptance of this bid is mailed, emailed, or delivered to the Undersigned within sixty (60) days after the date of receipt of bids or at any time thereafter before this bid is withdrawn, the Undersigned agrees that he will execute and deliver a Contract on the forms which will be provided him in accordance with bid as specified; and that he will give performance and payment bonds as specified with good and sufficient surety or sureties all within ten (10) days, unless a longer period is allowed after the prescribed forms are presented to him for signature.

The Bidder proposes to complete the work within _____ consecutive calendar days from the Notice to Proceed. The Bidder, by submitting this Bid, agrees to furnish labor, materials, equipment, etc., necessary to complete the work by the above stated dates and to accept the conditions for liquidated damages in the amount of **Five Hundred Dollars (\$500.00)** per calendar day. The above stated dates for completion of this project are of utmost importance to the Owner.

MBI #210042.04
ANDERSON COUNTY BID #

SECTION 00 41 13
BID FORM

The Undersigned hereby acknowledges receipt of all Contract Documents including all pages of the Specifications, all sheets of the Drawings, and the following Addenda:

Addendum No. ___ Date: _____	Addendum No. ___ Date: _____
Addendum No. ___ Date: _____	Addendum No. ___ Date: _____
Addendum No. ___ Date: _____	Addendum No. ___ Date: _____

Sincerely,

Bidder (If by a Corporation, this Bid must have the Signature Required by its By-Laws)

Title

Firm Name

State of Incorporation

State License No.

Official Address

END OF BID FORM

THIS FORM MUST BE FIRMLY ATTACHED TO THE OUTSIDE OF THE ENVELOPE CONTAINING THE BID. NO BID WILL BE CONSIDERED IF THIS FORM IS INCOMPLETE OR NOT ATTACHED TO THE OUTSIDE OF THE BID ENVELOPE.

TO:	Purchasing Department Attention: Katherine Ajmeri Anderson County Courthouse 100 North Main Street, Room 214 Clinton, TN 37716	PROJECT:	Concrete Footers, Foundation and Building Slab for Clinton High School Welding and Agriculture Building 425 Dragon Drive Clinton, TN 37716
DATE:		TIME:	
LOCATION:			

NAME OF BIDDER:		BIDDER'S LICENSE CLASSIFICATION:	
LICENSE NO.:	<i>(If bidder is licensed in more than one classification that applies to work being bid, include the license number, classification & expiration date of all classifications)</i>	EXPIRATION DATE:	
		MONETARY LIMITS:	

PART II: IF THE BID INVOLVES: (1) ELECTRICAL WORK, (2) PLUMBING WORK, (3) HEATING, VENTILATION OR AIR CONDITIONING WORK, (4) MASONRY WORK, (5) ROOFING WORK OR (6) GEOTHERMAL WORK, THE BIDDER MUST COMPLETE PART II. IF NOT, ENTER "NONE" IN THE SPACE FORM ITEM (A) BELOW.

Electrical	Plumbing	HVAC	Masonry	Roofing	Geothermal
A. Name of Sub holding electrical license:	A. Name of Sub holding plumbing license:	A. Name of Sub holding HVAC license:	A. Name of Sub holding Masonry license:	A. Name of Sub holding Roofing license:	A. Name of Sub holding Geothermal license:
B. License No. of Contractor holding electrical license:	B. License No. of Contractor holding plumbing license:	B. License No. of Contractor holding HVAC license:	B. License No. of Contractor holding Masonry license:	B. License No. of Contractor holding Roofing license:	B. TDEC Lic.No. of Contractor holding Geothermal license:
C. License classification and limits:	C. License classification and limits:	C. License classification and limits:	C. License classification and limits:	C. License classification and limits:	C. TDEC License classification and limits:
D. Expiration date of electrical license:	D. Expiration date of plumbing license:	D. Expiration date of HVAC license:	D. Expiration date of Masonry license:	D. Expiration date of Roofing license:	D. Expiration date of Geothermal license:

BID NUMBER: **Attachment 1**
– Concrete Footers, Foundation and Building
Slab for CTE Welding Building

SECTION 1 - BID INFORMATION
Acknowledgment of Addenda: (Write "Yes" if received)
Addenda 1 _____ Addenda 2 _____ Addenda 3 _____ Addenda 4 _____

SECTION 2 - VENDOR INFORMATION
Vendor Name _____
Vendor Address _____
City _____
State _____ Zip _____
Telephone Number _____
Contact Person <i>(Please Print)</i> _____
E-Mail Address _____
Taxpayer Identification Number, Social Security or Employer Identification Number: _____
State of Tennessee Business License Number: License # _____
<u>I agree to abide by all Terms and Conditions of this Invitation to Bid and certify that I am authorized to sign this bid for the vendor. Failure to include any information mentioned in the bid or to comply with these bid instructions may result in rejection of your entire bid. Signing this form affirms that the original Invitation for Bid document has not been altered in any way.</u>
<u>Authorizing Signature:</u>
_____ (Please sign original in blue ink)

Attachment 2

Non-Collusion Affidavit

- This Non-Collusion Affidavit is material to any contract awarded pursuant to this bid.
- This Non-Collusion Affidavit must be executed by the member, officer, or employee of the bidder who makes the final decision on prices and the amount quoted in the bid.
- Bid rigging and other efforts to restrain competition and the making of false sworn statements in connection with the submission of bids are unlawful and may be subject to criminal prosecution. The person who signs the affidavit should examine it carefully before signing and assure himself or herself that such statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the bidder with responsibilities for the preparation, approval, or submission of the bid.
- In the case of a bid submitted by a joint venture, each party to the venture must be identified in the bid documents, and an affidavit must be submitted separately on behalf of each party.
- The term "complementary bid" as used in the affidavit has the meaning commonly associated with that term in the bidding process and includes the knowing submission of bids higher than the bid of another firm, an intentionally high or noncompetitive bid, and any other form of bid submitted for the purpose of giving a false appearance of competition.
- Failure to file an affidavit in compliance with these instructions may result in disqualification of the bid.

Non-Collusion Affidavit

STATE OF _____

COUNTY OF _____

I state that I am (Title) _____ of (Name of My Firm) _____ and that I am authorized to make this affidavit on behalf of my firm and its owners, directors, and officers. I am the person responsible in my firm to the price(s) and the amount of this bid.

I STATE THAT:

- The price(s) and amount of this bid have been arrived at independently and without consultation, communication, or agreement with any other contractor, bidder, or potential bidder.
- Neither the price(s) nor the amount of this bid and neither the approximate price(s) nor approximate amount of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before bid opening.
- No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.
- The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.
- (Name of My Firm) _____, its affiliates, subsidiaries, officers, directors, and employees are not currently under investigation by any governmental agency and have not in the last three years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction involving conspiracy or collusion with respect to bidding on any public contract, except as follows:

I state that (Name of My Firm) _____ understands and acknowledges that the above representation are material and important and will be relied on by Anderson County in awarding the contract(s) for which this bid is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from Anderson County of the true facts relating to submission of bids for this contract.

Representative's Signature

Title

Sworn to and subscribed before me this _____ day of _____, _____.

Notary Public

My commission expires: _____

Attachment 3



DIVERSITY BUSINESS INFORMATION

Definitions for Determining Minority, Women And Small-Owned Firms

The guidelines for determining minority, women and small-owned firms are defined as follows:

- "MINORITY"** means a person who is a citizen or lawful permanent resident of the United States and who is:
- Black (a person having origins in any of the black racial groups of Africa);
 - Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);
 - Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or
 - American Indian and Alaskan Native (a person having origins in any of the original peoples of North America).

"MINORITY BUSINESS ENTERPRISE" shall mean a minority business:

A continuing, independent, for profit business which performs a commercially useful function, and is at least 51 percent owned and controlled by one or more minority individuals; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned and controlled by one or more minorities. Whose management and daily business operations are controlled by one or more of minority individuals. "Control" as used in the above clause, means exercising the power to make policy decision. "Operate," as used in the above clause, means being actively involved in the day-to-day management of the business.

"WOMEN BUSINESS ENTERPRISE" shall mean women business:

A continuing, independent, for profit business which performs a commercially useful function, and which is at least 51 percent owned and controlled by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned and controlled by one or more women. Whose management and daily business operations are controlled by one or more of such individuals. "Control" as used in the above clause, means exercising the power to make policy decision. "Operate," as used in the above clause, means being actively involved in the day-to-day management of the business.

Attachment 3

**DIVERSITY BUSINESS INFORMATION
ANDERSON COUNTY GOVERNMENT**

NOTE: This form is to be submitted only by those who qualify. Bidders do not have to be a minority business to be considered.

IMPORTANT! NOTARY AND COPY OF CERTIFICATION REQUIRED

SECTION 6 – DIVERSITY INFORMATION

VENDOR/CONTRACTOR NAME: _____

Type of Company: (Check One)

() Corporation () Partnership () Limited Liability () Sole Proprietor

Is your company 51% Owned or Operated by a Minority Group? Yes ___ No___

If yes, check the ethnic category and indicate % of ownership:

- American Indian/Alaskan Native ____%
- African American ____%
- Hispanic ____%
- Asian/Pacific Islander ____%
- Other ____% _____ (please indicate)

Please name the entity of certification: _____

Please provide copy of certification letter or certificate

I, HEREBY CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

Signature: _____ **OFFICER OF THE COMPANY**

Name: _____ **Title:** _____

NOTARY ACKNOWLEDGEMENT:

STATE OF _____)

COUNTY OF _____)

ON _____, 20____, BEFORE ME, _____,

PERSONALLY APPEARED _____, PERSONALLY KNOWN TO ME (OR PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/ THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON (S) ACTED, EXECUTED THE INSTRUMENT.

WITNESS MY HAND AND OFFICIAL SEAL.

SIGNATURE OF NOTARY: _____

PRINTED FULL NAME OF NOTARY: _____

MY COMMISSION EXPIRES: _____

**Attachment 4
Insurance Requirement Acknowledgment**

The bidder awarded this bid or contract will maintain, at their expense adequate insurance coverage to protect them from claims arising under the Worker's Compensation Act, any and all claims for bodily injury and property damage to the Bidder and to Anderson County Government while delivery and service are being done. A certificate of insurance must be on file in the Purchasing Department before work may begin and must be maintained until work is completed.

Only the items marked with an "X" are applicable to this bid and or contract.

- | | | |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| 1. | <input checked="" type="checkbox"/> Workers Compensation
Employers Liability | Statutory limits
100,000/100,000/500,000 |
| 2. | <input checked="" type="checkbox"/> Commercial General Liability | \$500,000 per occurrence
\$1,000,000 aggregate |
| | <input checked="" type="checkbox"/> Occurrence Form Only | |
| | <input checked="" type="checkbox"/> Include Premises Liability | |
| | <input checked="" type="checkbox"/> Include Contractual | |
| | <input checked="" type="checkbox"/> Include XCU | |
| | <input checked="" type="checkbox"/> Include Products and Completed Operations | |
| | <input checked="" type="checkbox"/> Include Personal Injury | |
| | <input checked="" type="checkbox"/> Include Independent Contractors | |
| | <input checked="" type="checkbox"/> Include Vendors Liability | |
| | <input checked="" type="checkbox"/> Include Professional or E&O Liability | |
| 3. | <input type="checkbox"/> Business Auto | |
| | <input type="checkbox"/> Include Garage Liability | |
| | <input type="checkbox"/> Include Garage Keepers Liability | |
| | <input type="checkbox"/> Copy of Valid Driver's License | |
| | <input type="checkbox"/> Copy of Current Motor Vehicle Record | |
| | <input type="checkbox"/> Copy of Current Auto Liability Declarations Page | |
| 4. | <input type="checkbox"/> Crime Coverages | |
| | <input type="checkbox"/> Employee Dishonesty | |
| | <input type="checkbox"/> Employee Dishonesty Bond | |
| 5. | <input type="checkbox"/> Property Coverages | |
| | <input type="checkbox"/> Builders Risk | |
| | <input type="checkbox"/> Inland Marine | |
| | <input type="checkbox"/> Transportation | |
| 6. | <input checked="" type="checkbox"/> Performance Bond Required – A <u>One Hundred Percent (100%)</u> performance or an irrevocable letter of credit in favor of Anderson County Government at a federally insured financial institution in accordance with T.C.A. 12-4-201. This <u>MUST</u> be submitted before purchase order issued. REQUIRED IF BID IS OVER \$100,000. | |

Certificate Holder Shall Be: Anderson County Government, Clinton, Tennessee, and shall show the bid number and title. Anderson County Government shall be named as an additional insured on all policies except worker's compensation and auto. Insurance carrier ratings shall have a Best's rating of A-VII or better, or its equivalent. Cancellation clause on certificate should strike out "endeavor to" and include a 30-day notice of cancellation where applicable. Any deviations from the above requirements must be disclosed to the Anderson County Purchasing Agent. Any liability deductibles or exclusions must also be disclosed. Exceptions can be granted if applicable.

Bidders Statement and Certification

I understand the insurance requirements of these specifications and will comply in full within 21 (twenty-one) calendar days if awarded this bid and or contract. I agree to furnish the county with proof of insurance for the entire term of the bid and or contract.

Vendor Name

Authorized Signature

Bid Representative Name (Please Print)

Date

Attachment 5
ANDERSON COUNTY GOVERNMENT
PURCHASING DEPARTMENT

CONFLICT OF INTEREST AFFIDAVIT/STATEMENT

NOTE: PLEASE SIGN AND RETURN PAGE TWO IN YOUR BID PACKET.

T. C. A. 5-14-114. Conflicts of interest -- Illegal payments.

(a) Neither the county purchasing agent, nor members of the county purchasing commission, nor members of the county legislative body, nor other officials of the county, shall be financially interested, or have any personal beneficial interest, either directly or indirectly, in any contract or purchase order for any supplies, materials, equipment or contractual services used by or furnished to any department or agency of the county government.

(b) Nor shall any such persons accept or receive, directly or indirectly, from any person, firm or corporation to which any contract or purchase order may be awarded, by rebate, gift or otherwise, any money or anything of value whatsoever, or any promise, obligation or contract for future reward or compensation.

(c) A violation of this section is a Class D felony.

T. C. A. 12-4-101 Personal interest of officers prohibited.

(a) (1) It is unlawful for any officer, committee member, director, or other person whose duty it is to vote for, let out, overlook, or in any manner to superintend any work or any contract in which any municipal corporation, county, state, development district, utility district, human resource agency, or other political subdivision created by statute shall or may be interested, to be directly interested in any such contract. "Directly interested" means any contract with the official personally or with any business in which the official is the sole proprietor, a partner, or the person having the controlling interest. "Controlling interest" includes the individual with the ownership or control of the largest number of outstanding shares owned by any single individual or corporation. This subdivision (a)(1) shall not be construed to prohibit any officer, committee person, director, or any person, other than a member of a local governing body of a county or municipality, from voting on the budget, appropriation resolution, or tax rate resolution, or amendments thereto, unless the vote is on a specific amendment to the budget or a specific appropriation or resolution in which such person is directly interested.

(2) (A) Subdivision (a)(1) shall also apply to a member of the board of directors of any not-for-profit corporation authorized by the laws of Tennessee to act for the benefit or on behalf of any one (1) or more counties, cities, towns and local governments pursuant to title 7, chapter 54 or 58.

(B) Subdivision (a)(2)(A) does not apply to any county with a metropolitan form of government and having a population of four hundred thousand (400,000) or more, according to the 1980 federal census or any subsequent federal census.

(b) It is unlawful for any officer, committee member, director, or other person whose duty it is to vote for, let out, overlook, or in any manner to superintend any work or any contract in which any municipal corporation, county, state, development district, utility district, human resource agency, or other political subdivision created by statute shall or may be interested, to be indirectly interested in any such contract unless the officer publicly acknowledges such officer's interest. "Indirectly interested" means any contract in which the officer is interested but not directly so, but includes contracts where the officer is directly interested but is the sole supplier of goods or services in a municipality or county.

Attachment 5
ANDERSON COUNTY GOVERNMENT
PURCHASING DEPARTMENT

CONFLICT OF INTEREST AFFIDAVIT/STATEMENT

(c) (1) Any member of a local governing body of a county or a municipality who is also an employee of such county or municipality and whose employment predates the member's initial election or appointment to the governing body of the county or municipality may vote on matters in which the member has a conflict of interest if the member informs the governing body immediately prior to the vote as follows: "Because I am an employee of (name of governmental unit), I have a conflict of interest in the proposal about to be voted. However, I declare that my argument and my vote answer only to my conscience and to my obligation to my constituents and the citizens this body represents." The vote of any such member having a conflict of interest who does not so inform the governing body of such conflict shall be void if challenged in a timely manner. As used in this subdivision (c)(1), "timely manner" means during the same meeting at which the vote was cast and prior to the transaction of any further business by the body.

(2) Any member of a local governing body of a county or a municipality who is also an employee of such county or municipality and whose employment began on or after the date on which the member was initially elected or appointed to serve on the governing body of the county or municipality shall not vote on matters in which the member has a conflict of interest.

(3) (A) In the event a member of a local governing body of a county or a municipality has a conflict of interest in a matter to be voted upon by the body, such member may abstain for cause by announcing such to the presiding officer.

(B) (i) Any member of a local governing body of a municipality who abstains from voting for cause on any issue coming to a vote before the body shall not be counted for the purpose of determining a majority vote.

(ii) This subdivision (c)(3)(B) shall in no way be construed to apply to any county having a metropolitan form of government and having a population in excess of five hundred thousand (500,000), according to the 1990 federal census or any subsequent federal census.

(d) This section shall apply to a member of the board of directors or officer of any nonprofit corporation required under § 8-44-102(b)(1)(E) to conduct all meetings of its governing body as open meetings.

I have read and understand both T.C. A. 5-14-114 and T. C. A. 12-4-101, and will comply.

NOTE: PLEASE SIGN AND RETURN PAGE TWO IN YOUR BID PACKET.

Contractor or Company Owner (signature)

Date

Contractor or Company Name (print)

Attachment 6

Rev. December 6, 2007

BACKGROUND CHECK COMPLIANCE FORM

ANDERSON COUNTY GOVERNMENT

PURCHASING DEPARTMENT
 100 N. MAIN STREET, ROOM 214 or 218
 CLINTON, TN 37716
 (865) 457-6251
 (865) 457-6252 (Fax)

BID NUMBER

CONTRACT NUMBER

BACKGROUND CHECKS Contractors shall comply with Public Chapter 587 of 2007, as codified in Tennessee Code Annotated Section 49-5-413, which requires all contractors to facilitate a criminal history records check conducted by the Tennessee Bureau of Investigation and the Federal Bureau of Investigation for each employee prior to permitting the employee to have contact with students or enter school grounds when students are present.

Any person, corporation or other entity who enters or any employee of any person, corporation or entity who enters into or renews a contract with a local board of education or child care program on or after September 1, 2007, must:

- (1) Provide a fingerprint sample
- (2) Submit to a criminal history records check to be conducted by the Tennessee Bureau of Investigations and the Federal Bureau of Investigations.

Contact the Anderson County School's Human Resources Department at (865) 463-2800 ext. 2811 for fingerprint instructions.

Company or Individuals (Name)

Address

City, State, Zip Code

Telephone Number

()

Contractor License Number (If Applicable)

I agree to abide by Public Chapter 587 of 2007, as codified in Tennessee Code Annotated Section 49-5-413, and certify that I am authorized to sign. The undersigned further agrees if this bid or contract is accepted, to furnish any and all of the Background Check Information on himself and all of his employees as required by law, at the request of Anderson County Government. I hereby agree to release all criminal history and other required information to Anderson County Government, the Tennessee Bureau of Investigation and the Federal Bureau of Investigation in accordance with Tennessee law and I further certify that all information supplied by me regarding this inquiry is true and accurate. I agree to release and hold harmless the above-mentioned governmental entities for the use of this information related to the purposes mandated under Tennessee law. I further certify that I have obtained acceptable criminal history information on all current employees and will obtain said information on future employees associated with the performance of the work defined in this bid or contract, pursuant to Tennessee Code Annotated 49-5-413 and that neither I nor any employee of mine is prohibited from direct contact with school children for the reasons enumerated in Tennessee Code annotated Section §§ 49-5-401 et seq.

Signature _____ **Title** _____

Printed Name: _____ **Date** _____
(Please Print Clearly) (Month, Day, Year)

INTERNAL OFFICE USE ONLY

Notes _____

Attachment 7

DRUG-FREE WORKPLACE AFFIDAVIT

STATE OF _____

COUNTY OF _____

The undersigned, principal officer of _____, an employer of five (5) or more employees contracting with _____ County Government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of _____ (hereinafter referred to as the "Company"), and is duly authorized to execute this Affidavit on behalf of the Company.
2. The Company submits this Affidavit pursuant to T.C.A. 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9 of the *Tennessee Code Annotated*.
3. The Company is compliance with T.C.A. 50-9-113

Further affiant saith not.

Principal Officer

STATE OF _____

COUNTY OF _____

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purpose therein contained.

Witness my hand and seal office this _____ day of _____, 20_____.

Notary Public

My commission expires: _____, 20_____.

General Terms and Conditions

BID ENVELOPE SUBMISSION INSTRUCTIONS:

Bids are to be received in a sealed envelope/package with the bid number, company name and opening date clearly marked. Failure to comply may result in rejection of the entire bid. Anderson County will not be responsible for any lost or misdirected mail. Late bids, e-mailed bids and faxed bids will not be considered nor returned. It is the sole responsibility of the bidder to ensure their bid is delivered to the Purchasing Department.

Please note that Anderson County Government does not receive a guaranteed delivery time for express mail and/or packages. PLEASE MAIL ACCORDINGLY.

**ANDERSON COUNTY FINANCE DEPARTMENT
100 NORTH MAIN STREET, SUITES 214 AND 218
CLINTON, TN 37716**

Email: purchasing@andersoncountyttn.gov

Website: <http://andersontn.org/purchasing>

(865) 457-6218 Phone

(865) 457-6252 Fax

**Bid documents must be completed in ink or typed, signed in ink,
and free from alterations, erasures or mark-throughs.**

SECTION 1 - GENERAL TERMS AND CONDITIONS

1.1 ALTERATIONS OR AMENDMENTS: Alterations, amendments, changes, modifications or additions to this solicitation shall not be binding on Anderson County without prior written approval.

1.2 NO CONTACT POLICY: After vendor receives a copy of this bid, any contact initiated by any vendor with any Anderson County representative, other than the Purchasing Department, concerning this invitation for bid is prohibited and agreements made thereto will not be considered binding on Anderson County. Any such unauthorized contact may cause the disqualification of the bidder from this procurement transaction.

1.3 QUESTIONS: Pursuant to TCA §12-4-113, questions regarding the specifications or bid procedures must be received by the Purchasing Agent and/or designer no less than ninety-six (96) hours before the bid opening date. No addenda within less than forty-eight (48) hours of the bid opening date shall be permitted. Any questions concerning the bid document must be submitted to purchasing@andersontn.org no less than ninety-six (96) hours before bid opening date.

1.4 BID CLOCK: The bid/time clock in the Anderson County Purchasing office will be the time of record.

1.5 TAXES: Anderson County is not liable for Federal excise or State sales tax. Tax exemption certificates will be provided upon request.

1.6 CONFLICT OF INTEREST: If requested by the Purchasing Agent, vendors must complete and submit a "Conflict of Interest Affidavit Statement" prior to contract award, see T.C.A. 5-14-114 and T. C. A. 12-4-101.

1.7 NON-COLLUSION: Vendors, by submitting a signed bid, certify that the accompanying bid is not the result of, or affected by, any unlawful act of collusion with any other person or company engaged in the same line of business or commerce, or any other fraudulent act punishable under Tennessee or United States law.

1.8 NON-DISCRIMINATION: Contracted vendors will not discriminate against any employee or applicant for employment because of race, religion, sex, national origin or disability except where religion, sex, national origin or disability is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor.

1.9 SAME AS OR EQUIVALENT TO: Vendors are to bid as specified herein or propose an approved equal. Determination of equality is solely Anderson County's responsibility. Any designated brands are for reference purpose only, not a statement of preference. When an alternate manufacturer, brand, model or make is bid, Anderson County will determine if the item bid meets or exceeds the items as specified. If the bidder does not indicate that an alternate manufacturer, brand, model or make is being bid, it is understood that the item(s) bid are the same manufacturer, brand, model or make as requested in the Invitation to Bid. Comparable products of other manufacturers will be considered if proof of comparability is contained in the bid submission. It shall be the responsibility of the vendors, including vendors whose product is referenced to furnish upon request catalog pages, brochures or other data to provide an adequate basis for determining the quality and functional capabilities of the product offered. Failure to provide this data may be considered valid justification for rejection of bid.

1.10 MULTIPLE BIDS/AWARDS: Anderson County may consider multiple bid awards.

1.11 STATE OF TENNESSEE CONTRACTORS' LICENSE LAW (T.C.A. 62-6-119) b): Bids for which the total cost of the project is twenty-five thousand dollars (\$25,000) or more, the outside of the sealed bid envelope/package containing the bid provides the following information: the Company Name, the Contractor's license number, license classification, the date of the license expiration and that part of each license classification applying to the bid. In addition, each heating ventilation or air conditioning, plumbing and electrical subcontractor's license number, date of the license expiration and that part of each classification applying to the bid if the value of the work is \$25,000 or greater, must be notated. If the value of either the contractor or the subcontractor's work is less than \$25,000, the bid envelope/package containing the bid is to be notated with the phrase "Contractor or Subcontractor's Bid is Less than \$25,000" after each appropriate heading. In the case of joint ventures, each party submitting the bid must provide this information. If no subcontractors are being used, the outside of the envelope/package containing the bid must state, "No Subcontractors are being used on this project."

1.12 ACCEPTANCE: Vendors shall hold their price firm and subject to acceptance by Anderson County for a minimum period of sixty (60) working days from the date of the bid opening, unless otherwise indicated in their bid. Any or all bids may be rejected for good cause.

1.13 BID AWARDS: Bids will be awarded to the lowest and best bidder, taking into consideration the qualities of the articles to be supplied, their conformity with specifications and their suitability to the requirements of Anderson County and the delivery terms. Anderson County also reserves the right to not award this bid.

1.14 BIDDER'S MINIMUM QUALIFICATIONS: Bidders must have the resources and capability to provide the materials and services as described in the solicitation. Anderson County reserves the right to request additional information and/or material not specified as a bid requirement from any bidder to confirm qualifications.

1.15 DEBARMENT: By submitting a response to this solicitation, bidders are certifying that bidder is not currently debarred from doing business with any local or state Government or the Federal Government. Bidders shall provide documentation relating to any and all debarments that occurred within the last ten

years. The County will search the "System for Award Management" for federally excluded vendors before awarding a bid.

1.16 PROTEST: Any vendor wishing to protest the bid award shall notify in writing the Anderson County Purchasing Agent and the County Law Director, 101 S. Main Street, Suite 310, Clinton, TN 37716. No protest will be accepted, except those protests made in writing and received within (10) ten calendar days of the bid award. Protests must be in writing and envelopes/package containing protest must be clearly marked with bid number and words "BID PROTEST". The Purchasing Agent, in conjunction with the Purchasing Committee, and with the advice and counsel of the County Law Director, shall review and make a final decision as to any bid protest. Appeals shall be filed in the Circuit or Chancery Courts of Anderson County within sixty (60) days of the final decision.

VENDORS PLEASE NOTE: ANDERSON COUNTY WILL NOT STOP THE PURCHASE PROCESS. THE PURCHASE MAY BE COMPLETED OR THE PROJECT MAY BE RE-BID WHILE THE PROTEST PROCEDURE IS STILL IN OPERATION. IF A RE-BID IS MADE, THE PROTESTING VENDOR SHOULD SUBMIT A NEW BID. OTHERWISE, THEY WILL BE WITHOUT A BID ON THE RE-BID. FURTHER, THE RE-BIDDING WILL NOT END THE APPEALS PROCESS. IT WILL CONTINUE UNTIL A FINAL DECISION IS REACHED OR THE COMPLAINANT WITHDRAWS THE APPEAL.

1.17 DELIVERY: Bid pricing is to include complete supply and delivery to Anderson County, Tennessee. Vendors are to state the delivery time in the bid. Anderson County requires that vendors deliver all products "free on board" to final destination unless indicated otherwise in the bid requirements.

1.18 PROOF OF FINANCIAL AND BUSINESS CAPABILITY: Bidders must, upon the request of Anderson County, provide satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these specifications. Anderson County will make the final determination as to the bidder's ability.

1.19 VENDOR'S DEFAULT: Anderson County reserves the right, in case of vendor default, to procure the articles or services from other sources and hold the defaulting vendor responsible for any excess costs occasioned thereby.

1.20 DUPLICATE COPIES: Vendors are to submit one original and at least one exact copy of their bids, including brochures; unless additional copies are requested in bid specifications.

1.21 DRUG-FREE WORKPLACE: Under the provisions of Tennessee Code Annotated §50-9-113 enacted by the General Assembly effective 2001, all employers with five (5) or more employees who contract with either the state or a local government to provide construction services are required to submit an affidavit stating that they have a drug free workplace program that complies with Title 50, Chapter 9, in effect at the time of submission of a bid at least to the extent required of governmental entities. The statute imposes other requirements on the contractor and contractors should consult private legal counsel if legal questions arise under this section or any other provision of this document. All contractors with five (5) or more employees that will be providing construction services are to return the provided written affidavit signed by the principal officer of a covered employer acknowledging that the contracting entity is in compliance with the Drug Free Workplace laws of State of Tennessee.

1.22 COMPETITION INTENDED: It is the responsibility of the bidder to review the entire Invitation to Bid document and to notify the Purchasing Department if the Invitation to Bid is formulated in a manner that would unnecessarily restrict competition or if it is ambiguous in what is being requested. The Purchasing Agent must receive questions regarding the specifications or bid procedures no less than ninety-six (96) hours prior to the time set for the bid opening.

1.23 SCHOOL CAFETERIA BIDS: If this bid is for Anderson County School's Cafeteria Food Service Department, bidders must be in compliance with Section 104(d) of the William F. Goodling Child Nutrition Reauthorization Act of 1998 which requires school and institutions participating in the National School Lunch Program (NSLP) and School Breakfast Program (SBP) to "Buy American" to the maximum extent practicable.

1.24 TERMINATION: Anderson County reserves the right to terminate contracts in whole or in part with thirty (30) days written notification to the contractor. In the event of termination, the County shall not be liable for any costs other than the cost of services performed and materials delivered and accepted prior to termination date.

1.25 OSHA SAFETY: The Vendor is responsible for training their employees in Safety and Health Regulations for the job, assuring compliance with Tennessee Occupational Safety and Health regulations and any other Regulatory Agency.

1.26 PERFORMANCE BOND: A standard surety or performance bond or an irrevocable letter of credit in favor of Anderson County Government at a federally insured financial institution will be required to be submitted with bid, if indicated in section four, item six insurance requirement checklist.

1.27 BACKGROUND CHECKS: Contractors shall comply with Public Chapter 587 of 2007, as codified in Tennessee Code Annotated Section 49-5-413, which requires all contractors to facilitate a criminal history records check conducted by the Tennessee Bureau of Investigation and the Federal Bureau of Investigation for each employee prior to permitting the employee to have contact with students or enter school grounds when students are present.

1.28 AWARD RESULTS: As soon as practicable after proposal or bid evaluations, Anderson County shall post the award decision to Vendor Registry at www.vendorregistry.com. Individual notices are normally not mailed or e-mailed except to the successful vendor.

1.29 INDEMNIFICATION/HOLD HARMLESS: Vendor shall indemnify, defend, save and hold harmless Anderson County and, its officers, agents and employees from all suits, claims, actions or damages of any nature brought because of, arising out of, or due to breach of the agreement by Vendor, its subcontractors, suppliers, agents, or employees or due to any negligent act or occurrence or any omission or commission of Vendor, its subcontractors, suppliers, agents or employees.

1.30 DECLARATIVE STATEMENT: Any statement or words (i.e.: must, shall, will, etc.) are declarative statements and the proposer must comply with the condition. Failure to comply with any such condition may result in their bid being non-responsive and disqualified.

1.31 WAIVING OF INFORMALITIES: Anderson County reserves the right to waive minor informalities or technicalities when it is in the best interest of Anderson County.

1.32 APPROPRIATION: Funding for multi-year contracts are subject to budget appropriations. In the event no funds are appropriated by Anderson County for the goods or services in any fiscal year or insufficient funds exist to purchase the goods or services of a contract, then that contract shall expire upon the expenditure of previously appropriated funds or the end of the current fiscal year, whichever occurs first, with no further obligations owed to or by either party.

1.33 ASSIGNMENT: Vendor shall not assign or sub-contract any agreement, its obligations or rights hereunder to any party, company, partnership, incorporation or person without the prior written specific consent of Anderson County.

1.34 QUANTITIES: Anderson County does not guarantee quantities to be purchased off this bid.

1.35 UNIT PRICE: In case of discrepancy between any unit price and an extended price, the unit price will be presumed to be correct, subject, however, to correction to the same extent and in the same manner as any other mistake.

1.36 MODIFICATION OR WITHDRAWAL OF BIDS: When it is certain that a mistake has been made in the preparation of the bid, a request will be made to the bidder to confirm the bid. Provisions must be made so that mistakes can be taken care of and the ambiguity resolved satisfactorily. Bids may be modified or withdrawn by written notice received in the Purchasing Department prior to the time and date set for the bid

opening. The changes or withdrawal of the bids shall be in writing and signed by an official of the company. The envelope containing the modification should clearly state "modification to bid." Either the entire bid or a particular item may be withdrawn or modified in this manner.

1.37 PRE-BID CONFERENCES: Attendance at Pre-bid Conferences is strongly encouraged. When deemed necessary a Mandatory Pre-bid Conference will be held. A company representative **MUST** be in attendance and sign the Pre-bid sign-in sheet in order to be considered for bid award.

1.38 ADDENDUM: § T.C.A. 12-14-113 Anderson County Government reserves the right to amend this solicitation by addendum. Addenda will be posted to the vendor registry up to 48 hours in advance of the bid/proposals due date and time. It is the bidder's responsibility to check the website for addendum. If in the County's opinion revisions are of such a magnitude, the deadline for this solicitation may be extended in an addendum. Addenda may change specifications, reply sheets, and times and dates for pre-bid meetings as well as due dates/deadlines for questions and bids/proposals.

1.39 OWNERSHIP: All bids, once received, become property of Anderson County Government and will not be returned.

1.40 WEATHER AND COURTHOUSE CLOSINGS: In the event of a situation severe enough to necessitate the closing of Anderson County Government offices during a planned bid opening, vendors will receive notification of the new date and time upon re-opening of county government offices. No bids will be opened until the rescheduled date for bid opening and all bidders/proposers whose submissions meet the extended deadline will be given equal consideration at that time. Anderson County shall not be liable for any commercial carrier's decision regarding deliveries during inclement weather.

1.41 IRAN DIVESTMENT ACT OF 2014: Pursuant to the Iran Divestment Act of 2014, Tenn. Code Ann. § 12-12-106 requires the State of Tennessee Chief Procurement Officer to publish, using creditable information freely available to the public, a list of persons it determines engage in investment activities in Iran, as described in § 12-12-105. Inclusion on this list makes a person ineligible to contract with Anderson County; if a person ceases its engagement in investment activities in Iran, it may be removed from the list. The State of Tennessee list is available here: <http://tennessee.gov/generalservices/article/Public-Information-library>.

1.42 ANTI-BOYCOTT OF ISRAEL: By responding to this bid the Bidder certifies that it is not currently engaged in and agrees for the duration of this Agreement not to engage in, the boycott of Israel.

MBI #220042.02

SECTION 00 45 46
AUTHORIZATION TO DO BUSINESS
IN TENNESSEE

Non-Tennessee resident companies wishing to do business with Anderson County must have proof of a current Certificate of Authority from the Tennessee Secretary of State office before entering into any acquisition agreement or contract with the County per Tennessee Code Annotated 48-11-309. Application forms for this certificate can be downloaded from the Secretary of State web site at www.state.tn.us/sos or by phoning 615-741-2286.

TO: Anderson County Schools
101 S. Main
Clinton, TN 37716

PROJECT: Clinton High School Welding and Agriculture Building
411 Douglas LN
Clinton, TN 37716

Having carefully and thoroughly examined the Project Manual, including all Specifications, and all Drawings for the above referenced project, the Undersigned proposes to perform all Work contained therein in strict compliance with ALL included requirements.

The undersigned certifies that the following statements are correct and acknowledges each by initially the space adjacent to each:

_____ I understand that manufacturers and products provided on the Drawings and in the Project Manual ARE NOT specified as such to only provide a standard of quality but are, in fact, specified as such to also indicate the exact manufacturer and/or product intended by the Owner, Architect and/or Engineer for use in the construction of the above referenced project.

_____ I will not at any time use or install products that have not been approved in compliance with Division 1 requirements.

_____ I understand that I, nor any of those in my employ, have the authority to determine whether or not a product is "equal" to the specified product or basis of design.

_____ The proposed Base Bid includes all specified manufacturers, products and materials or manufacturers, products and materials which were approved in compliance with Division 1 requirements prior to submission of Bid proposal.

_____ I understand that my bid may be rejected if I did not bid all aspects of the project as specified.

Having certified the above to best of my knowledge, I further certify, by signature below, that failure(s) to comply with the specified products, procedures and/or requirements and the subsequent correction thereof, by course determined by the Architect or Engineer, shall not be grounds for additional compensation of time or monies whether or not such failures were intentional.

Signature & Date _____

Print Name _____

Title _____

Contractor Company Name _____

Contractor's License No. _____

Date of Expiration _____

License Classification _____

Address _____

At your request, MBI Companies, Inc. (MBI) will provide electronic files for your convenience and use in the preparation of documents related to Clinton High School Welding and Agriculture Building, subject to the following terms and conditions:

Electronic File(s) Transfer Fees are based on the following:

- Adobe PDF format:** \$60.00 for the first drawing/file and \$30.00 for each additional drawing/file will be required. This fee is payable in advance and by credit card only.
- Autodesk DWF format:** \$60.00 for the first drawing/file and \$30.00 for each additional drawing/file will be required. This fee is payable in advance and by credit card only.
- Autodesk AutoCAD DWG format:** \$80.00 per drawing/file. This fee is payable in advance and by credit card only.
- Autodesk Revit RVT format (if available):** \$1500.00 Architectural model/file \$1000.00 Structural model/file \$1000.00 Mechanical model/file \$1000 Plumbing model/file \$1000.00 Electrical model/file \$1000.00 Fire protection model \$4000.00 all model sets. This fee is payable in advance and by credit card only.
Large requests will be evaluated for the effort required to bundle and transfer the information and will be assessed on a case by case basis.

MBI makes no representation as to the compatibility of these files with your hardware or your software beyond the specified release of the referenced software.

Data contained on these electronic files is part of MBI's instruments of service and shall not be used by you or anyone else receiving this data through or from you for any purpose other than as a convenience in the preparation of documents pertaining to the referenced project. Any use by you or others, will be your sole risk and without liability or legal exposure to MBI. You agree to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against MBI, its officers, directors, employees, agents or sub-consultants which may arise out of or in connection with your use of the electronic files.

Furthermore, you shall, to the fullest extent permitted by law, indemnify and hold harmless MBI from all claims, damages, losses and expenses, including attorney's fees arising out of or resulting from your use of these electronic files.

These electronic files are not Contract Documents. Significant differences may exist between these electronic files and corresponding hard copy Contract Documents due to addenda, change orders or other revisions. MBI makes no representation regarding the accuracy or completeness of the electronic files you receive. In the event that a conflict arises between the signed Contract Documents prepared by MBI and Electronic Files, signed Contract Documents shall govern. You are responsible for determining if any conflict exists. By your use of these electronic files, you are not relieved of your duty to fully comply with the Contract Documents, including and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, verify field conditions and coordinate your work with that of other Contractors for the project.

The fees listed above are for costs to un-archive, gather and transmit files only, and under no circumstances shall delivery of the electronic files for use by you be deemed a sale of the file(s) by MBI and MBI makes no warranties, either express or implied, of merchantability and fitness for any particular purpose. In no event shall MBI be liable for any loss of profit or any consequential damages. Usage by any parties of the data contained in the electronic files released shall constitute agreement to these terms.

Any requests for updated electronic files shall incur additional charges.

Please return this completed form by email: mbi@mbicompanies.com, or by facsimile at the following number (865) 584-5213. Once the fees have been paid, the file(s) will be transferred to the indicated e-mail address and a receipt will be returned by mail.

Transfer Fee Amount: _____

Email Address: _____ Phone Number: _____

Method of Payment: VISA MasterCard AMEX

Visa Code (Last 3 digits on back of card) _____ AMEX (4 digits on front of card) _____

Credit Card Number and Expiration Date: _____

Name & Address of Cardholder: _____

Cardholder Signature & Date _____

Contractor's Request for Information (RFI)			
Project Name:	Contract No.:	Date:	RFI No.:
Contractor's Name:	To:		
Subject:			

References

Area(s):
Specification Section(s):
Drawing No.:
Other References:
Problem / Information Requested: <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

Information Requested by:

Reply needed by:

Contractor's Interpretation and Proposed Resolution: <hr/> <hr/> <hr/> <hr/> <hr/>

Architect's / Engineer's Evaluation and Response			
<hr/> <hr/> <hr/>			
Disposition:	Clarification Only	Sketch or Drawing	Other
Approval:	Project Manager	Owner	Contractor

To:
Attn:
Specified Item:

Project:
Proposed Substitute:

1. The following are attached (Mark all that apply):

Complete Description
Laboratory Tests

Information on the availability of maintenance services and replacement materials for proposed substitute(s)

Catalog
Spec Data

Names, addresses, and phone numbers of fabricators and suppliers for proposed substitute(s)

2. This substitution will have the following effects on dimensions, gauges, weights, etc.:

3. This substitution will have the following effects on wiring, piping, ductwork, etc.:

4. This substitution will have the following effects on other trades:

5. This substitution will have the following effect on construction Schedules:

6. The proposed substitute(s) differs from the specified product(s) in quality and performance as follows:

7. Manufacturers guarantees for the substitute(s) and the specified product(s) are (check one):

the same

different (if different, explain below)

8. If the proposed substitution is accepted, it will result in:
 no cost impact **a cost increase of**
 a cost decrease of _____
 (If change in cost is indicated, itemization on specified Cost Itemization Form is attached)

9. License fees or royalties are pending on the proposed substitute.
 No **Yes** (if yes, explain below)

10. The undersigned or the firm represented shall pay for additional studies, investigations, submittals, redesign, and analysis by the Designer necessitated by this substitution request.

Substitutions must be requested in accordance with applicable Contract requirements. After bidding, substitutions are to be submitted only by Contractor. Substitute products should not be ordered or installed without written acceptance.

Submitted by: _____ **Date:** _____
 Sign here: _____
Name: _____ **Telephone:** _____
 type or print: _____
for: _____
 Name of firm: _____
Address: _____
 Street address: _____
 and mailing address _____
 if different: _____
 City, State, _____
 and Zip Code: _____

Designer's Review Comments:

- | | |
|---------------------------------------------------|-----------------------------------------------------------------|
| <input type="checkbox"/> Accepted | <input type="checkbox"/> Rejected |
| <input type="checkbox"/> Accepted as noted | <input type="checkbox"/> Rejected (received too late) |
| | <input type="checkbox"/> Rejected (submittal incomplete) |

Additional comments:

For the Designer: _____ **Date:** _____
 Signature here: _____

AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Clinton High School Welding and Agriculture Building
411 Douglas LN
Clinton, TN 37716

MBI Comm. No.: 220042.02

THE OWNER:

(Name, legal status and address)

Anderson County Schools
Contact: Clay McCamey
101 S. Main
Clinton, TN 37716

THE ARCHITECT:

(Name, legal status and address)

MBI Companies Inc.
299 N. Weisgarber Road
Knoxville, TN 37919

TABLE OF ARTICLES

1	GENERAL PROVISIONS
2	OWNER
3	CONTRACTOR
4	ARCHITECT
5	SUBCONTRACTORS
6	CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
7	CHANGES IN THE WORK
8	TIME
9	PAYMENTS AND COMPLETION
10	PROTECTION OF PERSONS AND PROPERTY
11	INSURANCE AND BONDS
12	UNCOVERING AND CORRECTION OF WORK
13	MISCELLANEOUS PROVISIONS

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For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES

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INDEX

(Topics and numbers in bold are Section headings.)

Acceptance of Nonconforming Work

9.6.6, 9.9.3, **12.3**

Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3

Access to Work

3.16, 6.2.1, 12.1

Accident Prevention

10

Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5,

10.2.8, 13.3.2, 14.1, 15.1.2, 15.2

Addenda

1.1.1

Additional Costs, Claims for

3.7.4, 3.7.5, 10.3.2, 15.1.5

Additional Inspections and Testing

9.4.2, 9.8.3, 12.2.1, **13.4**

Additional Time, Claims for

3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.6**

Administration of the Contract

3.1.3, **4.2**, 9.4, 9.5

Advertisement or Invitation to Bid

1.1.1

Aesthetic Effect

4.2.13

Allowances

3.8

Applications for Payment

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.5.4, 9.6.3, 9.7, 9.10

Approvals

2.1.1, 2.3.1, 2.5, 3.1.3, 3.10.2, 3.12.8, 3.12.9,

3.12.10.1, 4.2.7, 9.3.2, 13.4.1

Arbitration

8.3.1, 15.3.2, **15.4**

ARCHITECT

4

Architect, Definition of

4.1.1

Architect, Extent of Authority

2.5, 3.12.7, 4.1.2, 4.2, 5.2, 6.3, 7.1.2, 7.3.4, 7.4, 9.2,

9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1,

13.4.1, 13.4.2, 14.2.2, 14.2.4, 15.1.4, 15.2.1

Architect, Limitations of Authority and Responsibility

2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3,

4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4, 9.4.2,

9.5.4, 9.6.4, 15.1.4, 15.2

Architect's Additional Services and Expenses

2.5, 12.2.1, 13.4.2, 13.4.3, 14.2.4

Architect's Administration of the Contract

3.1.3, 3.7.4, 15.2, 9.4.1, 9.5

Architect's Approvals

2.5, 3.1.3, 3.5, 3.10.2, 4.2.7

Architect's Authority to Reject Work

3.5, 4.2.6, 12.1.2, 12.2.1

Architect's Copyright

1.1.7, 1.5

Architect's Decisions

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3,

7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1,

13.4.2, 15.2

Architect's Inspections

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.4

Architect's Instructions

3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.4.2

Architect's Interpretations

4.2.11, 4.2.12

Architect's Project Representative

4.2.10

Architect's Relationship with Contractor

1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2,

3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16,

3.18, 4.1.2, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5,

9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.3.2, 13.4, 15.2

Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3

Architect's Representations

9.4.2, 9.5.1, 9.10.1

Architect's Site Visits

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4

Asbestos

10.3.1

Attorneys' Fees

3.18.1, 9.6.8, 9.10.2, 10.3.3

Award of Separate Contracts

6.1.1, 6.1.2

Award of Subcontracts and Other Contracts for Portions of the Work

5.2

Basic Definitions

1.1

Bidding Requirements

1.1.1

Binding Dispute Resolution

8.3.1, 9.7, 11.5, 13.1, 15.1.2, 15.1.3, 15.2.1, 15.2.5,

15.2.6.1, 15.3.1, 15.3.2, 15.3.3, 15.4.1

Bonds, Lien

7.3.4.4, 9.6.8, 9.10.2, 9.10.3

Bonds, Performance, and Payment

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**, 11.1.3, **11.5**

Building Information Models Use and Reliance

1.8

Building Permit

3.7.1

Capitalization

1.3

Certificate of Substantial Completion

9.8.3, 9.8.4, 9.8.5

Certificates for Payment

4.2.1, 4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.4

Certificates of Inspection, Testing or Approval
13.4.4

Certificates of Insurance
9.10.2

Change Orders

1.1.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8, 5.2.3, 7.1.2, 7.1.3, 7.2, 7.3.2, 7.3.7, 7.3.9, 7.3.10, 8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.2, 11.5, 12.1.2

Change Orders, Definition of

7.2.1

CHANGES IN THE WORK

2.2.2, 3.11, 4.2.8, 7, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1, 11.5

Claims, Definition of

15.1.1

Claims, Notice of
1.6.2, 15.1.3

CLAIMS AND DISPUTES

3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, 15, 15.4
Claims and Timely Assertion of Claims

15.4.1

Claims for Additional Cost

3.2.4, 3.3.1, 3.7.4, 7.3.9, 9.5.2, 10.2.5, 10.3.2, 15.1.5

Claims for Additional Time

3.2.4, 3.3.1, 3.7.4, 6.1.1, 8.3.2, 9.5.2, 10.3.2, 15.1.6

Concealed or Unknown Conditions, Claims for
3.7.4

Claims for Damages

3.2.4, 3.18, 8.3.3, 9.5.1, 9.6.7, 10.2.5, 10.3.3, 11.3, 11.3.2, 14.2.4, 15.1.7

Claims Subject to Arbitration
15.4.1

Cleaning Up

3.15, 6.3

Commencement of the Work, Conditions Relating to
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3, 6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.2, 15.1.5

Commencement of the Work, Definition of
8.1.2

Communications

3.9.1, 4.2.4

Completion, Conditions Relating to

3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1, 9.10, 12.2, 14.1.2, 15.1.2

COMPLETION, PAYMENTS AND

9

Completion, Substantial

3.10.1, 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 15.1.2

Compliance with Laws

2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14.1.1, 14.2.1.3, 15.2.8, 15.4.2, 15.4.3

Concealed or Unknown Conditions

3.7.4, 4.2.8, 8.3.1, 10.3

Conditions of the Contract

1.1.1, 6.1.1, 6.1.4

Consent, Written

3.4.2, 3.14.2, 4.1.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 13.2, 15.4.4.2

Consolidation or Joinder

15.4.4

CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

1.1.4, 6

Construction Change Directive, Definition of
7.3.1

Construction Change Directives

1.1.1, 3.4.2, 3.11, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, 7.3, 9.3.1.1

Construction Schedules, Contractor's

3.10, 3.11, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

Contingent Assignment of Subcontracts

5.4, 14.2.2.2

Continuing Contract Performance

15.1.4

Contract, Definition of

1.1.2

CONTRACT, TERMINATION OR SUSPENSION OF THE

5.4.1.1, 5.4.2, 11.5, 14

Contract Administration

3.1.3, 4, 9.4, 9.5

Contract Award and Execution, Conditions Relating to

3.7.1, 3.10, 5.2, 6.1

Contract Documents, Copies Furnished and Use of
1.5.2, 2.3.6, 5.3

Contract Documents, Definition of

1.1.1

Contract Sum

2.2.2, 2.2.4, 3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.3, 7.4, 9.1, 9.2, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.5, 12.1.2, 12.3, 14.2.4, 14.3.2, 15.1.4.2, 15.1.5, 15.2.5

Contract Sum, Definition of

9.1

Contract Time

1.1.4, 2.2.1, 2.2.2, 3.7.4, 3.7.5, 3.10.2, 5.2.3, 6.1.5, 7.2.1.3, 7.3.1, 7.3.5, 7.3.6, 7, 7, 7.3.10, 7.4, 8.1.1, 8.2.1, 8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 12.1.2, 14.3.2, 15.1.4.2, 15.1.6.1, 15.2.5

Contract Time, Definition of

8.1.1

CONTRACTOR

3

Contractor, Definition of

3.1, 6.1.2

Contractor's Construction and Submittal Schedules

3.10, 3.12.1, 3.12.2, 4.2.3, 6.1.3, 15.1.6.2

Contractor's Employees
2.2.4, 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3, 11.3, 14.1, 14.2.1.1

Contractor's Liability Insurance
11.1
Contractor's Relationship with Separate Contractors and Owner's Forces
3.12.5, 3.14.2, 4.2.4, 6, 11.3, 12.2.4
Contractor's Relationship with Subcontractors
1.2.2, 2.2.4, 3.3.2, 3.18.1, 3.18.2, 4.2.4, 5, 9.6.2, 9.6.7, 9.10.2, 11.2, 11.3, 11.4
Contractor's Relationship with the Architect
1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.4, 15.1.3, 15.2.1
Contractor's Representations
3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2
Contractor's Responsibility for Those Performing the Work
3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8
Contractor's Review of Contract Documents
3.2
Contractor's Right to Stop the Work
2.2.2, 9.7
Contractor's Right to Terminate the Contract
14.1
Contractor's Submittals
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3
Contractor's Superintendent
3.9, 10.2.6
Contractor's Supervision and Construction Procedures
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 7.3.6, 8.2, 10, 12, 14, 15.1.4
Coordination and Correlation
1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1
Copies Furnished of Drawings and Specifications
1.5, 2.3.6, 3.11
Copyrights
1.5, 3.17
Correction of Work
2.5, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, 12.2, 12.3, 15.1.3.1, 15.1.3.2, 15.2.1
Correlation and Intent of the Contract Documents
1.2
Cost, Definition of
7.3.4
Costs
2.5, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.4, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.2, 12.1.2, 12.2.1, 12.2.4, 13.4, 14
Cutting and Patching
3.14, 6.2.5

Damage to Construction of Owner or Separate Contractors
3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 12.2.4
Damage to the Work
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 12.2.4
Damages, Claims for
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.3.2, 11.3, 14.2.4, 15.1.7
Damages for Delay
6.2.3, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 14.3.2
Date of Commencement of the Work, Definition of
8.1.2
Date of Substantial Completion, Definition of
8.1.3
Day, Definition of
8.1.4
Decisions of the Architect
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.4.2, 14.2.2, 14.2.4, 15.1, 15.2
Decisions to Withhold Certification
9.4.1, 9.5, 9.7, 14.1.1.3
Defective or Nonconforming Work, Acceptance, Rejection and Correction of
2.5, 3.5, 4.2.6, 6.2.3, 9.5.1, 9.5.3, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1
Definitions
1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1, 15.1.1
Delays and Extensions of Time
3.2, **3.7.4**, 5.2.3, 7.2.1, 7.3.1, **7.4**, **8.3**, 9.5.1, **9.7**, 10.3.2, **10.4**, 14.3.2, **15.1.6**, 15.2.5
Digital Data Use and Transmission
1.7
Disputes
6.3, 7.3.9, 15.1, 15.2
Documents and Samples at the Site
3.11
Drawings, Definition of
1.1.5
Drawings and Specifications, Use and Ownership of
3.11
Effective Date of Insurance
8.2.2
Emergencies
10.4, 14.1.1.2, **15.1.5**
Employees, Contractor's
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3.3, 11.3, 14.1, 14.2.1.1
Equipment, Labor, or Materials
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2
Execution and Progress of the Work
1.1.3, 1.2.1, 1.2.2, 2.3.4, 2.3.6, 3.1, 3.3.1, 3.4.1, 3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.6, 8.2, 9.5.1, 9.9.1, 10.2, 10.3, 12.1, 12.2, 14.2, 14.3.1, 15.1.4

Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2,
10.4, 14.3, 15.1.6, **15.2.5**

Failure of Payment

9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Faulty Work

(See Defective or Nonconforming Work)

Final Completion and Final Payment

4.2.1, 4.2.9, 9.8.2, **9.10**, 12.3, 14.2.4, 14.4.3

Financial Arrangements, Owner's

2.2.1, 13.2.2, 14.1.1.4

GENERAL PROVISIONS

1

Governing Law

13.1

Guarantees (See Warranty)

Hazardous Materials and Substances

10.2.4, **10.3**

Identification of Subcontractors and Suppliers

5.2.1

Indemnification

3.17, **3.18**, 9.6.8, 9.10.2, 10.3.3, 11.3

Information and Services Required of the Owner

2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10.1, 6.1.3, 6.1.4, 6.2.5,

9.6.1, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2,

14.1.1.4, 14.1.4, 15.1.4

Initial Decision

15.2

Initial Decision Maker, Definition of

1.1.8

Initial Decision Maker, Decisions

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Initial Decision Maker, Extent of Authority

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Injury or Damage to Person or Property

10.2.8, 10.4

Inspections

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,

9.9.2, 9.10.1, 12.2.1, 13.4

Instructions to Bidders

1.1.1

Instructions to the Contractor

3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.4.2

Instruments of Service, Definition of

1.1.7

Insurance

6.1.1, 7.3.4, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5, **11**

Insurance, Notice of Cancellation or Expiration

11.1.4, 11.2.3

Insurance, Contractor's Liability

11.1

Insurance, Effective Date of

8.2.2, 14.4.2

Insurance, Owner's Liability

11.2

Insurance, Property

10.2.5, 11.2, 11.4, 11.5

Insurance, Stored Materials

9.3.2

INSURANCE AND BONDS

11

Insurance Companies, Consent to Partial Occupancy
9.9.1

Insured loss, Adjustment and Settlement of
11.5

Intent of the Contract Documents

1.2.1, 4.2.7, 4.2.12, 4.2.13

Interest

13.5

Interpretation

1.1.8, 1.2.3, **1.4**, 4.1.1, 5.1, 6.1.2, 15.1.1

Interpretations, Written

4.2.11, 4.2.12

Judgment on Final Award

15.4.2

Labor and Materials, Equipment

1.1.3, 1.1.6, **3.4**, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,

5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1,

10.2.4, 14.2.1.1, 14.2.1.2

Labor Disputes

8.3.1

Laws and Regulations

1.5, 2.3.2, 3.2.3, 3.2.4, 3.6, 3.7, 3.12.10, 3.13, 9.6.4,

9.9.1, 10.2.2, 13.1, 13.3.1, 13.4.2, 13.5, 14, 15.2.8,

15.4

Liens

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Limitations, Statutes of

12.2.5, 15.1.2, 15.4.1.1

Limitations of Liability

3.2.2, 3.5, 3.12.10, 3.12.10.1, 3.17, 3.18.1, 4.2.6,

4.2.7, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.6.8, 10.2.5, 10.3.3,

11.3, 12.2.5, 13.3.1

Limitations of Time

2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,

5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,

9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15,

15.1.2, 15.1.3, 15.1.5

Materials, Hazardous

10.2.4, **10.3**

Materials, Labor, Equipment and

1.1.3, 1.1.6, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,

5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2,

10.2.1.2, 10.2.4, 14.2.1.1, 14.2.1.2

Means, Methods, Techniques, Sequences and

Procedures of Construction

3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

Mechanic's Lien

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Mediation

8.3.1, 15.1.3.2, 15.2.1, 15.2.5, 15.2.6, **15.3**, 15.4.1,

15.4.1.1

Minor Changes in the Work

1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1, **7.4**

MISCELLANEOUS PROVISIONS

13

Modifications, Definition of

1.1.1

Modifications to the Contract

1.1.1, 1.1.2, 2.5, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7, 10.3.2

Mutual Responsibility

6.2

Nonconforming Work, Acceptance of

9.6.6, 9.9.3, **12.3**

Nonconforming Work, Rejection and Correction of
2.4, 2.5, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4, 12.2

Notice

1.6, 1.6.1, 1.6.2, 2.1.2, 2.2.2, 2.2.3, 2.2.4, 2.5, 3.2.4, 3.3.1, 3.7.4, 3.7.5, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 7.4, 8.2.2, 9.6.8, 9.7, 9.10.1, 10.2.8, 10.3.2, 11.5, 12.2.2.1, 13.4.1, 13.4.2, 14.1, 14.2.2, 14.4.2, 15.1.3, 15.1.5, 15.1.6, 15.4.1

Notice of Cancellation or Expiration of Insurance

11.1.4, 11.2.3

Notice of Claims

1.6.2, 2.1.2, 3.7.4, 9.6.8, 10.2.8, **15.1.3**, 15.1.5, 15.1.6, 15.2.8, 15.3.2, 15.4.1

Notice of Testing and Inspections

13.4.1, 13.4.2

Observations, Contractor's

3.2, 3.7.4

Occupancy

2.3.1, 9.6.6, 9.8

Orders, Written

1.1.1, 2.4, 3.9.2, 7, 8.2.2, 11.5, 12.1, 12.2.2.1, 13.4.2, 14.3.1

OWNER

2

Owner, Definition of

2.1.1

Owner, Evidence of Financial Arrangements

2.2, 13.2.2, 14.1.1.4

Owner, Information and Services Required of the

2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2, 14.1.1.4, 14.1.4, 15.1.4

Owner's Authority

1.5, 2.1.1, 2.3.32.4, 2.5, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2, 10.3.2, 11.4, 11.5, 12.2.2, 12.3, 13.2.2, 14.3, 14.4, 15.2.7

Owner's Insurance

11.2

Owner's Relationship with Subcontractors

1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2

Owner's Right to Carry Out the Work

2.5, 14.2.2

Owner's Right to Clean Up

6.3

Owner's Right to Perform Construction and to Award Separate Contracts

6.1

Owner's Right to Stop the Work

2.4

Owner's Right to Suspend the Work

14.3

Owner's Right to Terminate the Contract

14.2, 14.4

Ownership and Use of Drawings, Specifications and Other Instruments of Service

1.1.1, 1.1.6, 1.1.7, **1.5**, 2.3.6, 3.2.2, 3.11, 3.17, 4.2.12, 5.3

Partial Occupancy or Use

9.6.6, **9.9**

Patching, Cutting and

3.14, 6.2.5

Patents

3.17

Payment, Applications for

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1, 14.2.3, 14.2.4, 14.4.3

Payment, Certificates for

4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4

Payment, Failure of

9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Payment, Final

4.2.1, 4.2.9, **9.10**, 12.3, 14.2.4, 14.4.3

Payment Bond, Performance Bond and

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**

Payments, Progress

9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4

PAYMENTS AND COMPLETION

9

Payments to Subcontractors

5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2

PCB

10.3.1

Performance Bond and Payment Bond

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**

Permits, Fees, Notices and Compliance with Laws

2.3.1, **3.7**, 3.13, 7.3.4.4, 10.2.2

PERSONS AND PROPERTY, PROTECTION OF

10

Polychlorinated Biphenyl

10.3.1

Product Data, Definition of

3.12.2

Product Data and Samples, Shop Drawings

3.11, **3.12**, 4.2.7

Progress and Completion

4.2.2, **8.2**, 9.8, 9.9.1, 14.1.4, 15.1.4

Progress Payments

9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4

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User Notes:

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Project, Definition of
1.1.4
Project Representatives
 4.2.10
Property Insurance
 10.2.5, **11.2**
Proposal Requirements
 1.1.1
PROTECTION OF PERSONS AND PROPERTY
10
Regulations and Laws
 1.5, 2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1,
 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14, 15.2.8, 15.4
Rejection of Work
 4.2.6, 12.2.1
Releases and Waivers of Liens
 9.3.1, 9.10.2
Representations
 3.2.1, 3.5, 3.12.6, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.10.1
Representatives
 2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.10, 13.2.1
Responsibility for Those Performing the Work
 3.3.2, 3.18, 4.2.2, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10
Retainage
 9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3
Review of Contract Documents and Field
Conditions by Contractor
 3.2, 3.12.7, 6.1.3
Review of Contractor's Submittals by Owner and
Architect
 3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2
Review of Shop Drawings, Product Data and Samples
by Contractor
 3.12
Rights and Remedies
 1.1.2, 2.4, 2.5, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1,
 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.1, 12.2.2,
 12.2.4, **13.3**, 14, 15.4
Royalties, Patents and Copyrights
3.17
Rules and Notices for Arbitration
 15.4.1
Safety of Persons and Property
10.2, 10.4
Safety Precautions and Programs
 3.3.1, 4.2.2, 4.2.7, 5.3, **10.1**, 10.2, 10.4
Samples, Definition of
3.12.3
Samples, Shop Drawings, Product Data and
3.11, 3.12, 4.2.7
Samples at the Site, Documents and
3.11
Schedule of Values
9.2, 9.3.1
Schedules, Construction
 3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

Separate Contracts and Contractors
 1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2
Separate Contractors, Definition of
6.1.1
Shop Drawings, Definition of
3.12.1
Shop Drawings, Product Data and Samples
 3.11, **3.12**, 4.2.7
Site, Use of
3.13, 6.1.1, 6.2.1
Site Inspections
 3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.9.2, 9.4.2, 9.10.1, 13.4
Site Visits, Architect's
 3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
Special Inspections and Testing
 4.2.6, 12.2.1, 13.4
Specifications, Definition of
1.1.6
Specifications
 1.1.1, **1.1.6**, 1.2.2, 1.5, 3.12.10, 3.17, 4.2.14
Statute of Limitations
 15.1.2, 15.4.1.1
Stopping the Work
 2.2.2, 2.4, 9.7, 10.3, 14.1
Stored Materials
 6.2.1, 9.3.2, 10.2.1.2, 10.2.4
Subcontractor, Definition of
5.1.1
SUBCONTRACTORS
5
Subcontractors, Work by
 1.2.2, 3.3.2, 3.12.1, 3.18, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2,
 9.6.7
Subcontractual Relations
5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1
Submittals
 3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.4, 9.2, 9.3, 9.8,
 9.9.1, 9.10.2, 9.10.3
Submittal Schedule
 3.10.2, 3.12.5, 4.2.7
Subrogation, Waivers of
 6.1.1, **11.3**
Substances, Hazardous
10.3
Substantial Completion
 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, **9.8**, 9.9.1, 9.10.3, 12.2,
 15.1.2
Substantial Completion, Definition of
9.8.1
Substitution of Subcontractors
 5.2.3, 5.2.4
Substitution of Architect
 2.3.3
Substitutions of Materials
 3.4.2, 3.5, 7.3.8
Sub-subcontractor, Definition of
5.1.2

Subsurface Conditions
3.7.4
Successors and Assigns
13.2
Superintendent
3.9, 10.2.6
Supervision and Construction Procedures
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3,
7.3.4, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.4
Suppliers
1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.5.4, 9.6,
9.10.5, 14.2.1
Surety
5.4.1.2, 9.6.8, 9.8.5, 9.10.2, 9.10.3, 11.1.2, 14.2.2,
15.2.7
Surety, Consent of
9.8.5, 9.10.2, 9.10.3
Surveys
1.1.7, 2.3.4
Suspension by the Owner for Convenience
14.3
Suspension of the Work
3.7.5, 5.4.2, 14.3
Suspension or Termination of the Contract
5.4.1.1, 14
Taxes
3.6, 3.8.2.1, 7.3.4.4
Termination by the Contractor
14.1, 15.1.7
Termination by the Owner for Cause
5.4.1.1, 14.2, 15.1.7
Termination by the Owner for Convenience
14.4
Termination of the Architect
2.3.3
Termination of the Contractor Employment
14.2.2

TERMINATION OR SUSPENSION OF THE CONTRACT

14

Tests and Inspections

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,
9.9.2, 9.10.1, 10.3.2, 12.2.1, 13.4

TIME

8

Time, Delays and Extensions of

3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7,
10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5

Time Limits

2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2,
5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1,
9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15.1.2,
15.1.3, 15.4

Time Limits on Claims

3.7.4, 10.2.8, 15.1.2, 15.1.3

Title to Work

9.3.2, 9.3.3

UNCOVERING AND CORRECTION OF WORK

12

Uncovering of Work

12.1
Unforeseen Conditions, Concealed or Unknown

3.7.4, 8.3.1, 10.3

Unit Prices

7.3.3.2, 9.1.2

Use of Documents

1.1.1, 1.5, 2.3.6, 3.12.6, 5.3

Use of Site

3.13, 6.1.1, 6.2.1

Values, Schedule of

9.2, 9.3.1

Waiver of Claims by the Architect

13.3.2

Waiver of Claims by the Contractor

9.10.5, 13.3.2, 15.1.7

Waiver of Claims by the Owner

9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.3.2, 14.2.4, 15.1.7

Waiver of Consequential Damages

14.2.4, 15.1.7

Waiver of Liens

9.3, 9.10.2, 9.10.4

Waivers of Subrogation

6.1.1, 11.3

Warranty

3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.2, 9.10.4, 12.2.2,
15.1.2

Weather Delays

8.3, 15.1.6.2

Work, Definition of

1.1.3

Written Consent

1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3,
13.2, 13.3.2, 15.4.4.2

Written Interpretations

4.2.11, 4.2.12

Written Orders

1.1.1, 2.4, 3.9, 7, 8.2.2, 12.1, 12.2, 13.4.2, 14.3.1

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

G202™-2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and

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delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

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§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;

- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

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- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will

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promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act

or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

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The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and

approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

PART 1 GENERAL:

1.01 The following amendments modify, change, delete from or add to the General Conditions of the Contract for Construction (AIA Document A201, 2017 Edition), hereinafter referred to as the General Conditions. Where any part of the General Conditions is modified or voided by these amendments the unaltered provisions of that part shall remain in effect.

1.02 INTENT OF CONTRACT DOCUMENTS:

A. Add the following Subparagraphs 1.2.4 and 1.2.5 at the end of Paragraph 1.2, Correlation and Intent of the Contract Documents:

1.2.4 If there is any conflict or discrepancy within or between any of the Contract Documents involving the quality or quantity of work required, it is the intention of the Contract that the work of highest quality or greatest quantity shown or specified shall be furnished, unless such conflict or discrepancy shall have been brought to the Architect's attention and clarified by Addendum prior to the opening of bids.

1.2.5 Whether or not the word "ALL" is used in the specifications, coverage is intended to be complete, except where partial coverage is specifically and expressly noted. In all cases where an item is referred to in the singular number, it is intended that the reference shall apply to as many such items as are required to complete the work. Words such as "Install", "Provide", "Furnish", and "Supply" shall be construed as meaning complete furnishing, installing, and constructing unless modified by additional information.

1.03 DOCUMENTS FURNISHED TO THE CONTRACTOR:

A. Revise Subparagraph 1.5.2 to read as follows:

Copies of the Drawings and Specifications can be obtained by the General Contractor at the cost of reproduction from the print house of their choice subject to the provisions of Paragraph 1.5, Ownership and use of Drawings, Specifications, and other Instruments of Service. All Drawings and Specifications acquired by the Contractor shall be subject to the provisions of Paragraph 1.5, Ownership and use of Drawings, Specifications, and other Instruments of Service.

B. Add Subparagraph 2.3.7 at the end of Paragraph 2.3, Information and Services Required of the Owner:

2.3.7 Electronic data files produced by the Architect containing information about the project are instruments of service and shall be subject to the provisions of Paragraph 1.5, Ownership and Use of Drawings, Specifications, and Other Instruments of Service. Electronic data files are not Contract Documents and differences may exist between these electronic files and the hard copy documents issued as Contract Documents. These files may be made available to the Contractor for convenience in preparing documents relating to the project upon execution of an electronic files release and payment of transfer fees as stated in the electronic files release.

1.04 REVIEW OF CONTRACT DOCUMENTS:

A. Add the following Subparagraph 3.2.5 at the end of Paragraph 3.2, Review of Contract Documents and Field Conditions by Contractor:

3.2.5 Should discrepancies or conflicts in the requirements of the Drawings and Specifications be discovered after the work has started, the Contractor shall report such discrepancies or conflicts to the Architect immediately and no work affected thereby shall be started, or if started, shall be stopped immediately until the Contractor and the Architect agree upon clarification of the discrepancy or conflict.

1.05 PERMITS, FEES AND NOTICES:

- A. Add the following Subparagraph 3.7.6 at the end of Paragraph 3.7, Permits, Fees, Notices, and Compliance with Laws:

3.7.6 The Contractor shall obtain a Certificate of Occupancy from the Building Inspection Department having jurisdiction for each phase of the project as it is completed and ready for occupancy and shall deliver such certificate to the Architect.

1.06 SUBMITTALS:

- A. Add the following Subparagraphs 3.12.11 and 3.12.12 at the end of Paragraph 3.12, Shop Drawings, Product Data and Samples:

3.12.11 Additional provisions pertaining to shop drawings and samples are included in Division 1, General Requirements.

3.12.12 Submittals that have not been marked as reviewed, signed, and dated by the Contractor may be returned by the Architect without action.

1.07 SUBCONTRACTURAL RELATIONS:

- A. Add the following Subparagraphs 5.3.1 and 5.3.2 to Paragraph 5.3, Subcontractual Relations:

5.3.1 The Contractor shall be directly responsible for all of the work included in the Contract, whether performed by his own forces or by his subcontractors. Except in extreme emergencies, all instructions, clarifications, and approvals will be given by the Architect to subcontractors only through the Contractor and all shop drawings, samples, and correspondence from the subcontractor shall be submitted to the Architect through the Contractor.

5.3.2 Insofar as it does not affect the quality of workmanship or materials, the Contractor shall settle all questions of responsibility arising among his various subcontractors and shall determine the extent of work and responsibility of each of the subcontractors.

1.08 CHANGES IN THE WORK:

- A. Change Sub-subparagraph .5 of Subparagraph 7.3.4 to the following:

.5 Overhead and profit of which the maximum amount of allowable given in this Subparagraph shall be considered to include, but is not limited to, job-site staff and office expense, incidental job burdens, small tools, bonds, insurance and home office overhead allocation. The percentages for overhead and profit shall not exceed the following:

To Contractor on work performed by other than its own forces - 5% profit;

To first-tier Subcontractor on work performed by its Sub-subcontractors - 5% profit; and

To Contractor and/or Subcontractors for that portion of the work performed with their respective forces - 10% overhead and 5% profit.

- B. Add the following Subparagraph 7.4.1 to Paragraph 7.4, Minor Changes in the Work:

7.4.1 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials, and subcontractors. **Where major cost items are subcontracts, they shall be itemized also. In no case will a change involving over \$500.00 be approved without such itemization.**

1.09 APPLICATIONS FOR PAYMENT:

- A. Add the following Clauses 9.3.4 and 9.3.5, in Paragraph 9.3, Applications for Payment:

9.3.4 Until Substantial Completion, the Owner will pay ninety five percent (95%) of the amount due the Contractor on account of progress payments, holding the remaining five percent (5%) of the amount of such Contract as retainage. At Substantial Completion and with the full knowledge of the Contractor's Surety, retainage will be reduced to an amount sufficient in the Architect's opinion to complete the Work should the Contractor default.

9.3.5 The Contractor is to use the 1992 Edition of AIA Document G702, Application and Certificate for Payment. **Beginning with the second Application for Payment, the Contractor shall verify that he has paid all subcontractors and major material suppliers those respective amounts representing all work and materials which have formed the basis of previous progress payments.** The application shall be submitted in three notarized copies.

1.10 PROGRESS PAYMENTS:

- A. Revise Subparagraph 9.6.1, to read as follows:

Unless otherwise provided in the agreement, the Owner will make progress payments to the Contractor on or about the fifteenth (15th) day of each calendar month on the basis of a duly certified and approved estimate of the work performed during the preceding calendar month. In preparing estimates, materials delivered to and properly stored on the site shall be given consideration. **Materials stored off-site shall not be paid for by the Owner unless the Contractor furnishes a certificate of insurance for that material showing the Owner as the Owner of said material.**

- 1.11 Add Subparagraph 9.6.9 at the end of Subparagraph 9.6, Progress Payments.

9.6.9 Upon commencement of the work, an escrow account as provided by Tennessee Code Annotated, Section 4-15-102; Section 66-11-144 and Title 66, Chapter 34, shall be established in a financial institution chosen by the Contractor and approved by the Owner. The escrow agreement shall provide that the financial institution will act as escrow agent, will pay interest on funds deposited in such account in accordance with provisions of the escrow agreement and will disburse funds from the account upon the direction of the Owner as set forth below. Compensation to the escrow agent for establishing and maintaining the escrow account shall be paid from interest accrued to the escrow account.

1.12 COSTS FOR DELAYS IN SUBSTANTIAL COMPLETION:

- A. Add the following Subparagraph 9.8.6 at the end of Paragraph 9.8, Substantial Completion:

9.8.6 As actual damages for any delay in completion are impossible of determination, the Contractor and his sureties shall be liable for and shall pay to the Owner the sum of Two Hundred Fifty Dollars (\$250.00) as fixed, agreed, and liquidated damages for each calendar day of delay until a Certificate of Substantial Completion is executed by the Owner, Architect, and Contractor.

1.13 FINAL PAYMENT:

- A. In Subparagraph 9.10.2, item (6), delete the words "if required by the Owner"; and replace the words "releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner" with the following: "Contract Close Out Submittals as enumerated in Section 01 33 00 Submittal Procedures and as reviewed and approved by the Architect.

1.14 COSTS FOR DELAYS IN FINAL COMPLETION

- A. Add the following Subparagraph 9.10.6 at the end of Paragraph 9.10, Final Completion and Final Payment:

9.10.6 If after Substantial Completion of the work and issuance of the Punch List, Final Completion of the Work is delayed beyond the time allotted for completion of the Punch List through no fault of the Owner or the Architect, the Contractor shall be liable for such ongoing costs as the Architect shall incur on the Project. Such costs shall be computed and billed to the Contractor at the Architect's standard hourly rates in effect at the time the work is executed. Payment shall be required within thirty (30) days of invoice. Interest shall accrue at one percent (1%) per month on past due amounts. Contractor shall be liable for all legal fees if legal action is required for collection of unpaid amounts.

1.15 CONTRACTOR'S LIABILITY INSURANCE:

A. In Subparagraph 11.1.1 in the second line, following the phrase "in the jurisdiction where the Project is located", insert the following clause: ", and to which the Owner has no reasonable objections,".

1.16 LIMITS OF CONTRACTOR'S LIABILITY INSURANCE:

Add the following Clause 11.1.2.1 to Subparagraph 11.1.2:

11.1.2.1 The insurance required by Subparagraph 11.1.1 shall be written for not less than the following limits, or greater if required by law:

A. Workmen's Compensation:

- | | | |
|----|-----------------------|-----------------------------------------------------------------------------------------------------------|
| 1. | State: | Statutory |
| 2. | Employer's Liability: | \$100,000.00 Each Accident
\$500,000.00 Disease - Policy Limit
\$100,000.00 Disease - Each Employee |

B. Comprehensive General Liability (including Premises-Operations; Independent Contractors' Products/Completed Operations; Contractual; Personal injury):

- | | | |
|----|--------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1. | Bodily Injury & Property Damage, combined single limit: | |
| | Each Occurrence: | \$1,000,000.00 |
| | Annual Aggregate: | \$1,000,000.00 |
| 2. | Products/Completed Operations to be maintained for One Year after Final Payment. | |
| | | \$5,000,000.00 Aggregate |
| 3. | Property Damage Liability Insurance shall provide X, C, and U Coverage, and Coverage for any Special Hazards such as Blasting. | |

C. Comprehensive Automobile Liability (including Owned, Hired and Non-Owned):

- | | | |
|----|-----------------------------------------|-----------|
| 1. | Bodily Injury/Property Damage Combined: | \$500,000 |
|----|-----------------------------------------|-----------|

D. Umbrella Liability: \$2,000,000

1.17 OWNER'S LIABILITY INSURANCE:

A. Replace Paragraph 11.2.1 with the following:

The Contractor shall take out and furnish to the Owner and maintain during the life of this Contract complete Owner's Protective Liability Insurance in amounts as specified in the limits of Contractor's Liability Insurance for Bodily Injury and Property Damage. This policy shall be made out in the name of the Owner and the Architect.

1.18 PROPERTY INSURANCE (BUILDER'S RISK)

- A. Use 11.2: Owner to provide property insurance.

1.19 PERFORMANCE BOND AND PAYMENT BOND

- A. Change Subparagraph 11.1.2 to read as follows:

11.1.2 The Contractor shall execute a performance bond and a payment bond in an amount equal to one hundred percent (100%) of the Contract Sum and a payment bond covering and including labor and materials in an amount equal to one hundred percent (100%) of the Contract Sum. Bond shall be executed on AIA Document A311 and A312. Such bond shall be from a surety Company authorized to transact business in the State of Tennessee and Company shall be registered in Federal Register, Department of the Treasury, Fiscal Service, Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies; Notice. Attorneys in Fact who sign any bonds must file with each instrument a certified and effective dated copy of their power of attorney.

- B. Add the following Subparagraph 11.1.2.1 to the end of Subparagraph 11.1.2:

11.1.2.1 Mechanical, Plumbing and Electrical Subcontractors shall execute a performance bond in an amount equal to one hundred percent of the Contract Value of their portion of the work and a payment bond covering and including labor and materials in an amount equal to one hundred percent (100%) of the Contract Value of their portion of the work. Performance and Labor and Material Payment Bonds shall be executed on AIA Form A311 and A312. Such bond shall be from a surety Company authorized to transact business in the State of Tennessee and Company shall be registered in Federal Register, Department of the Treasury, Fiscal Service, Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies; Notice. Attorneys in Fact who sign any bonds must file with each instrument a certified and effective dated copy of their power of attorney.

1.20 INSPECTIONS AND CORRESPONDENCE:

- A. Add the following Subparagraph 13.4.7 to the end of Paragraph 13.4, Tests and Inspections:

13.4.7 Inspections and or correspondence by the Architect required due to failure by the Contractor to obtain inspections and approval from the Public Authorities having jurisdiction are beyond the scope of Construction Contract Administration for the Architect. As additional services, the Contractor will be billed a minimum fee of Five Hundred Dollars (\$500.00) per occurrence plus the Architect's time at the Architect's standard hourly rate for the personnel required to perform these functions.

1.21 INTEREST:

- A. Revise Paragraph 13.5 to read as follows:

"Payments due and unpaid for thirty (30) days under the Contract Documents shall bear interest from the date thirty (30) days after payment is due at the rate of 1/2% (0.5 percent) per month; 6% APR.

1.22 ARBITRATION:

- A. Delete Paragraph 15.4 Arbitration, entirely and delete all references to arbitration elsewhere in the General Conditions.

1.23 TIME:

- A. Time is an essential consideration of the Contract and work shall commence on the date to be specified in a written notice to the Contractor to proceed and shall progress with a proper and sufficient force of workmen and ample supply of materials and equipment to complete the Contract within the time limit agreed to in the Contract for Construction.

1.24 SUBSTITUTIONS:

- A. All requests shall be submitted to the Architect in writing with a fully executed substitution request form and shall clearly define and describe materials, methods or equipment for which approval is requested.
- B. Prior to Execution of a Contract for Construction:
1. If any Contractors desire to substitute any firms, materials, brands, methods, etc., other than specified, he may have the privilege at any time prior to ten days before bidding, of submitting these matters to the Architect for approval.
 2. Requests shall be submitted by the General Contractor. Direct requests by manufacturer or material suppliers will not be considered.
 3. If such submissions are approved by the Architect or if the Architect shall decide to enlarge the scope of the Specifications, such approvals or additional information will be made by Addendum to the Contractor.
- C. After Execution of a Contract for Construction:
1. Substitutions after execution of a Contract for Construction will, generally, not be considered, except under unusual circumstances, such as strikes, lockouts, bankruptcy, discontinuing of a product, etc.
 2. Requests for substitutions shall be made in writing to the Architect within ten (10) days of the date that the Contractor ascertains that he cannot obtain the material or equipment specified.
 3. Requests shall be accompanied by complete description of the material or apparatus to be submitted. On request from the Architect, samples of any of all such items shall be submitted and/or set up as directed for inspection and consideration. The amount of credit or extra cost to the Owner on account of the substitution shall be a part of this request.
 - a. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - i. Statement indicating why specified material or product cannot be provided.
 - ii. The amount of credit or extra cost to the Owner on account of the substitution
 - iii. 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.
 - iv. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - v. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - vi. Samples, where applicable or requested.
 - vii. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - viii. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

- ix. 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 lack of availability or delays in delivery.
- x. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
- xi. 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.

D. "Or Approved Equal" or "Or Approved Substitution"

- 1. Where the phrase "or approved equal" or "approved substitution" occurs in the Contract Documents, do not assume that material, equipment, or methods will be approved as equal by the Architect unless the item has been specifically approved for this work by the Architect
 - a. Color choices will be one of the determining factors for approval.
- 2. The decision of the Architect will be final.

1.01 STANDARDS:

- A Any material or other work specified by reference to the number, symbol, or title of a specific standard, such as American National Standards Institute (ANSI) Standard, a Federal Specification, a trade association standard, or other similar standard, shall conform to the requirements in the latest revision thereof or any amendment or supplement thereto in effect on the date of the drawings and specifications, except as limited to type, class or grade, or as modified in such reference.
- B The standards referred to, except as modified in the specification, shall have full force and effect as though recited for the reason that the manufacturers and trades involved are assumed to be familiar with their requirements. The Architect will furnish, upon request, information as to how copies of the standards referred to may be obtained.
- C Where material or work is specified by reference to conform to standards such as listed in Paragraph A above, or to Codes, Laws, and Regulations, but specific provisions of the Contract Drawings or Contract Specifications exceed the requirements of such references, the Contract Drawings and Specifications shall govern.

1.02 MANUFACTURER'S DIRECTIONS:

- A All manufactured articles, material and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's instructions and recommendations. Any conflicts between such manufacturer's instructions and recommendations and the specifications shall be brought to the attention of the Architect and the procedures reconciled before proceeding with the work.

1.03 GUARANTEE:

- A All work under this Contract shall be guaranteed for a period of one (1) year after execution of Certificate of Substantial Completion against defects caused by the use of inferior materials or workmanship. Guarantee period of incomplete items at time of execution of Certificate of Substantial Completion shall commence on date of installation into building. Repair and/or replace all such defective materials or equipment and any work damaged thereby or make any other adjustment necessary without additional cost to the Owner.

1.04 LAYING OUT WORK:

- A The Contractor shall, immediately upon entering the projects for the purpose of beginning work, locate all general reference points and be responsible for all lines, elevations, and measurements.

PART 2 PRODUCTS:

NOT USED

PART 3 EXECUTION:

NOT USED

END OF SECTION

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Furnish all labor, materials, and equipment, and perform all work to construct, as specified herein and as shown on the accompanying drawings entitled "A New 9,000 SF welding and agriculture building for Clinton High School." The building shall be constructed complete and ready for occupancy except for the items specifically excluded in "Work Not Included".
- B. The work shall include site preparation, building construction, plumbing, heating, ventilating and air conditioning; electrical work; special equipment as specified; and site improvements as shown and specified.
- C. Patch any existing work damaged by construction.

1.02 WORK NOT INCLUDED

- A. The following items of work will be provided by the Owner or by others under separate contracts:
 - 1. Wayfinding signage.
 - 2. Toilet accessories not included on drawings: OFCI.
 - 3. Movable furniture unless specifically shown on the drawings and specifications.
 - 4. Security System Equipment.
 - 5. Telephone System Equipment.
 - 6. Computer System Equipment.
 - 7. Any other items noted on the drawings as Not in Contract (NIC); or Owner Furnished Contractor Installed (OFCI).
- B. The following work in connection with the items listed in paragraph 1.02A preceding shall be part of the General Contract work:
 - 1. Verification of correct location of electrical receptacles, telephone outlets, water and waste connections and similar outlets to suit equipment arrangement.
 - 2. Provision of telephone outlet boxes and conduit turned out above ceiling for use by owner's telephone contractor.

1.03 OCCUPANCY OF THE BUILDING DURING CONSTRUCTION

- A. The Contractor shall schedule and organize his work in such a manner and use such methods that will interfere as little as possible with other work in progress on the site and with the operation of adjacent buildings.

1.04 CONTRACTOR'S USE OF PREMISES

- A. Before construction is started the Contractor shall confer with the Architect and the Owner and arrange for available trucking and storage space for the delivery of materials, storage space for materials and equipment, and parking space for his workmen.
- B. Construction operations and storage of materials and equipment shall be restricted to areas of the site mutually agreed upon and in such a manner as not to block access of fire fighting equipment to the building and facilities.
- C. Construction vehicular traffic and the operation of construction equipment such as cranes, bulldozers, and other similar equipment shall be carefully supervised and controlled to avoid damage to existing structures and facilities which are to remain in place.

1.05 VERIFICATION OF DIMENSIONS

- A. Dimensions, elevations, and locations shown on the drawings in reference to existing structures and utilities are the best available data obtainable but are not guaranteed by the Architect or the Owner and the Architect and the Owner will not be responsible for their accuracy.
- B. Before proceeding with any work dependent upon the data involved, the Contractor shall field check and verify all dimensions, grades, line levels, or other conditions of limitations at the site and building to avoid construction errors. If any work is performed by the Contractor or by his Subcontractors prior to adequate verification of applicable data, any resultant extra cost for adjustment of work to conform to existing limitations shall be borne by the Contractor without reimbursement or compensation by the Owner.

1.06 CONTROL POINTS AND LAYOUT

- A. The initial lines, grades, and dimensions necessary for the location and control of the work under the Contract are shown on the Contract Drawings.
- B. The Contractor shall provide for himself all additional and supplementary lines and grades as may be necessary to layout the work and ensure proper control of the work until completed. It shall be the Contractor's responsibility to satisfy himself as to the accuracy of all measurements before construction.

1.07 SUBSTANTIAL COMPLETION OF THE WORK

- A. Upon substantial completion of any phase of the work, the Owner shall assume complete responsibility for the maintenance and operation of the heating, ventilating and air conditioning system and service utilities in that portion of the project.
- B. The Owner shall also become responsible for all other maintenance and damage and ordinary wear and tear and, with the exception of items under guarantee, the cost of repairs or restoration during the period between substantial and final completion.
- C. The Owner shall have the responsibility to have in effect all necessary insurance for protection against any losses not directly attributable to the Contractor's negligence.
- D. Upon substantial completion, payments for work in the substantially complete portion of the work shall be released to the Contractor, except for the retainage and an amount to cover the cost of the incomplete or deficient items included in the punch list made at the inspection to determine substantial completion. This amount shall be approximately the value of the punch list items as estimated by the Architect.
- E. The Contractor shall arrange a schedule so that punch list items are completed in the designated time by working during regular working hours. The Contractor shall be afforded access to the occupied portion of the building to perform this work during regular working hours.

1.08 ENVIRONMENTAL HAZARDOUS PRODUCTS, MATERIALS, WASTE

- A. Do not incorporate in the Work hazardous materials or products as currently defined in the Resource Conservation and Recovery Act of 1976 (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), or Environmental Protection Agency (EPA) regulations, rules, or requirements, as amended, unless the Contract Documents give no other option than to provide a material or product which contains a hazardous material, component, constituent, waste, or leachate. In studying the Contract Documents and carrying out the Work, report at once to the Designer the discovery of a product or material which contains hazardous materials, components, constituents, waste, or leachate.

- B. Do not incorporate in the Work a product or material which contains concentrations of a constituent, component, or material above the threshold levels which would require adherence to hazardous waste disposal regulations as currently defined, or could cause a release or threat of release of a hazardous substance at a level that would require a remedial response or removal action as currently defined by RCRA, CERCLA, or the EPA.
- C. Select materials and products meeting specified requirements which comply with EPA requirements as regards hazardous materials content. In making requests for substitutions, determine that materials and products proposed for substitution comply with RCRA, CERCLA, and EPA requirements.

1.09 BUILDING PRODUCTS USE

- A. It is the responsibility of the Contractor to inform himself concerning the application of the products he uses to follow the directions of the Architect and manufacturer.
- B. In the event of disagreement between the Contract Documents and the manufacturer's directions, the Contractor will obtain written instructions from the Architect before proceeding with the installation.
- C. If the Contractor has knowledge of or reason to believe the likelihood of failure, he will transmit such knowledge to the Architect, and ask for written instructions before proceeding with the work.

1.10 OWNERSHIP OF REMOVED MATERIALS AND EQUIPMENT

- A. All removed existing materials and equipment designated to be removed which are not to remain the property of the Owner or are not noted to be reused in the new work shall become the property of the Contractor and shall be removed from the premises and site and disposed of by him.

1.11 SEPARATE CONTRACTS

- A. The Owner may award separate contracts in connection with the project. The work in any such separate contracts may proceed simultaneously with the execution of this Contract. The Contractor shall coordinate operations with any separate contractors. The Contractor will be required in the arrangement for the storage of materials and in the detailed execution of the work. The Contractor, including his subcontractors, shall keep himself informed of the progress and the detailed work of separate contractors and shall notify the Architect immediately of the lack of progress or defective workmanship that will interfere with his own operations. Failure of the Contractor to keep informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by separate contractors shall be construed as acceptance of him of the state of the work as being satisfactory for proper coordination with his own work.
- B. The separate contractors will provide competent foremen or supervisors for the installation of their equipment and they are to confer with the Contractor and his subs and other separate contractors where required in regard to connections and installations.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

- A. This section includes administrative and procedural requirements governing Allowances and Unit Prices.
- B. Allowances included on the drawings or in individual specification sections not specifically listed herein shall be bound by the procedures described herein. The Schedule of Allowances may not be a comprehensive list of all Allowances to be included in the Bid.

1.02 RELATED DOCUMENTS

- A. Applicable provisions of the General Conditions, Supplementary Conditions, and Division 1 General Requirements apply to the work under this section.

1.03 ALLOWANCES

- A. Types of allowances include the following:
 - 1. Discretionary Fund/Contingency Allowance.
- B. Selection and Purchases:
 - 1. At the earliest practical date after award of the Contract, advise the Architect of the date when the final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
 - 2. At the Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
 - 3. Purchase products and systems selected by the Architect from the designated supplier.
- C. Submittals:
 - 1. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
 - 2. Submit invoices or delivery slips to show the actual quantities of materials delivered to the site for use in fulfillment of each allowance.
 - 3. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit costs, and to have this work measured, at the Owner's expense, by an independent surveyor acceptable to the Contractor.
 - 4. Schedule: A "Schedule of Allowances" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials described under each Allowance.
- D. Discretionary Fund/Contingency Allowance:
 - 1. Use the discretionary fund only as directed by the Architect for the Owner's purposes and only by Field Orders Construction Change Directive (AIA Document G714) which indicate amounts to be charged to the allowance.
 - 2. The Contractor's related costs for products and equipment ordered by the Owner under the discretionary fund are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.
 - 3. Field Orders Construction Change Directive (AIA Document G714) authorizing use of funds from the discretionary fund will include Contractor's related costs and reasonable overhead and profit margins.
 - 4. At Project closeout, credit unused amounts remaining in the discretionary fund to the Owner by Change Order.
- E. Unused Materials:
 - 1. Return unused materials to the manufacturer or supplier for credit to the Owner, after installation has been completed and accepted.

2. When requested by the Architect, prepare unused material for storage by Owner where it is not economically practical to return the material for credit. When directed by the Architect, deliver unused material to the Owner's storage space. Otherwise, disposal of unused material is the Contractor's responsibility.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: Discretionary Fund Allowance

1. Description: Allowance included in Base Bid for use at the discretion of the Owner and the Architect according to Section 01 10 00 Summary of the Work.

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

A This Section includes administrative and procedural requirements for submittal and approval of substitutions.

1.02 RELATED DOCUMENTS

A Applicable provisions of the General Conditions, Supplementary Conditions, and other Division 1, General Requirements, apply to the work under this section.

1.03 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.

1.04 SUBMITTALS

A. Substitution Requests: Submit a PDF of each request for consideration. 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 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.
 - i. Operational efficiency and energy consumption for equipment and appliances.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations if requested, 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. 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.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.

- k. 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.
- l. 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 seven (7) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
 - a. Forms of Acceptance: 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.

1.05 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.

1.06 PROCEDURES

- A. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than fifteen (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.
 - 2. Submit confirmation of the above requirements on 00 63 25 - Substitution Request Form included in this project manual.
- B. Substitutions for Convenience: Architect will consider requests for substitution if received within 10 days prior to the date of the Bid. 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 if applicable.
 - 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.
2. Submit confirmation of the above requirements on 00 63 25 - Substitution Request Form included in this project manual.

PART 3 EXECUTION - NOT USED

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
 - 2. Section 01 21 00 - Allowances and Unit Prices: For procedural requirements governing the handling and processing of allowances.
 - 3. Section 01 32 00 - Construction Progress Documentation: For administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.02 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.

1.03 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.
 - 4. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide subschedules showing values coordinated with each element.
 - 5. Subschedules for Separate Design Contracts: Where the Owner has retained design professionals under separate contracts who will each provide certification of payment requests, provide subschedules showing values coordinated with the scope of each design services contract, as described in Section 01 10 00 - Summary.
- B. Format and Content: Use 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. Arrange schedule of values consistent with format of AIA Document G703.
 - 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
 - 4. 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.
 - 5. 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.
 - 6. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate Owner payments or deposits, if any, and balance to be paid by Contractor.

7. Overhead Costs: Include total cost and proportionate share of general overhead and profit for each line item.
8. Overhead Costs: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
9. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
10. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.04 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
- 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 Times: Submit Application for Payment to Architect by the last day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
 1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.
- D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
 1. Other Application for Payment forms proposed by the Contractor shall be acceptable to Architect and Owner. Submit forms for approval with initial submittal of schedule of values.
- E. 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 for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued and signed, or authorized, before last day of construction period covered by application.
 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
 1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- G. Transmittal: Submit a PDF of each Application for Payment to Architect by email. Include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- I. 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. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
 5. Products list (preliminary if not final).
 6. Sustainable design action plans, including preliminary project materials cost data.
 7. Schedule of unit prices.
 8. Submittal schedule (preliminary if not final).
 9. List of Contractor's staff assignments.
 10. List of Contractor's principal consultants.
 11. Copies of building permits.
 12. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 13. Initial progress report.
 14. Report of preconstruction conference.
 15. Certificates of insurance and insurance policies.
 16. Performance and payment bonds.
 17. Data needed to acquire Owner's insurance.
- J. Application for Payment at Substantial Completion: After Architect issues 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 Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- K. Final Payment Application: After completing Project closeout requirements, 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.
 5. AIA Document G706A.
 6. AIA Document G707.
 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.

MBI #220042.02

SECTION 01 29 00
PAYMENT PROCEDURES

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General administrative requirements.
- B. Preconstruction meeting.
- C. Progress meetings.
- D. Construction progress schedule.
- E. Contractor's daily reports.
- F. Progress photographs.
- G. Submittals for review, information, and project closeout.
- H. Number of copies of submittals.
- I. Requests for Information (RFI) procedures.
- J. Submittal procedures.

1.02 RELATED REQUIREMENTS

- A. Section 00 72 00 - General Conditions: Dates for applications for payment.
- B. Section 00 73 00 - Supplementary Conditions: Duties of the Construction Manager.
- C. Section 01 32 16 - Construction Progress Schedule: Form, content, and administration of schedules.
- D. Section 01 60 00 - Product Requirements: General product requirements.
- E. Section 01 70 00 - Execution and Closeout Requirements: Additional coordination requirements.
- F. Section 01 78 00 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 REFERENCE STANDARDS

- A. AIA G716 - Request for Information.
- B. AIA G810 - Transmittal Letter.
- C. CSI/CSC Form 12.1A - Submittal Transmittal; Current Edition.
- D. CSI/CSC Form 13.2A - Request for Interpretation; Current Edition.

1.04 GENERAL ADMINISTRATIVE REQUIREMENTS

- A. Comply with requirements of Section 01 70 00 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- B. Make the following types of submittals to MBI Companies:
 - 1. Requests for Information (RFI).
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.
 - 5. Design data.
 - 6. Manufacturer's instructions and field reports.
 - 7. Applications for payment and change order requests.
 - 8. Progress schedules.
 - 9. Coordination drawings.
 - 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
 - 11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. MBI Companies will schedule a meeting after Notice of Award.
- B. Attendance Required:
 - 1. Owner.
 - 2. MBI Companies.
 - 3. Contractor.
- C. Agenda:
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
 - 5. Submission of initial Submittal schedule.
 - 6. Designation of personnel representing the parties to Contract, and MBI Companies.
 - 7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 8. Scheduling.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to MBI Companies, Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the work at maximum bi-monthly intervals.
- B. Attendance Required:
 - 1. Contractor.
 - 2. Owner.
 - 3. MBI Companies.
- C. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems that impede, or will impede, planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Review of RFIs log and status of responses.
 - 7. Review of off-site fabrication and delivery schedules.
 - 8. Maintenance of progress schedule.
 - 9. Corrective measures to regain projected schedules.
 - 10. Planned progress during succeeding work period.
 - 11. Coordination of projected progress.
 - 12. Maintenance of quality and work standards.
 - 13. Effect of proposed changes on progress schedule and coordination.
 - 14. Other business relating to work.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to MBI Companies, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE

- A. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- B. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.

- C. Within 10 days after joint review, submit complete schedule.
- D. Submit updated schedule with each Application for Payment.

3.04 DAILY CONSTRUCTION REPORTS

- A. Include only factual information. Do not include personal remarks or opinions regarding operations and/or personnel.
- B. In addition to transmitting electronically a copy to Owner and MBI Companies, submit two printed copies at weekly intervals.
 - 1. Submit in format acceptable to Owner.
- C. Prepare a daily construction report recording the following information concerning events at Project site and project progress:
 - 1. Date.
 - 2. High and low temperatures, and general weather conditions.
 - 3. Safety, environmental, or industrial relations incidents.
 - 4. Meetings and significant decisions.
 - 5. Stoppages, delays, shortages, and losses. Include comparison between scheduled work activities (in Contractor's most recently updated and published schedule) and actual activities. Explain differences, if any. Note days or periods when no work was in progress and explain the reasons why.
 - 6. Testing and/or inspections performed.
 - 7. Signature of Contractor's authorized representative.

3.05 PROGRESS PHOTOGRAPHS

- A. Submit photographs with each application for payment, taken not more than 3 days prior to submission of application for payment.
- B. Photography Type: Digital; electronic files.
- C. Provide photographs of site and construction throughout progress of work produced by an experienced photographer, acceptable to MBI Companies.
- D. In addition to periodic, recurring views, take photographs of each of the following events:
- E. Views:
 - 1. Provide non-aerial photographs from four cardinal views at each specified time, until date of Substantial Completion.
 - 2. Consult with MBI Companies for instructions on views required.
 - 3. Provide factual presentation.
 - 4. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.
- F. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format; provide files unaltered by photo editing software.
 - 1. Delivery Medium: Via email.
 - 2. File Naming: Include project identification, date and time of view, and view identification.
 - 3. PDF File: Assemble all photos into printable pages in PDF format, with 2 to 3 photos per page, each photo labeled with file name; one PDF file per submittal.

3.06 REQUESTS FOR INFORMATION (RFI)

- A. Definition: A request seeking one of the following:
 - 1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
 - 2. A resolution to an issue which has arisen due to field conditions and affects design intent.

- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
 - 1. Prepare a separate RFI for each specific item.
 - a. Review, coordinate, and comment on requests originating with subs and/or materials suppliers.
 - b. Do not forward requests which solely require internal coordination between subcontractors.
 - 2. Prepare using an electronic version of the form appended to this section.
 - 3. Combine RFI and its attachments into a single electronic file. PDF format is preferred.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
 - 1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
 - 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
 - a. Approval of submittals (use procedures specified elsewhere in this section).
 - b. Approval of substitutions (see Section - 01 60 00 - Product Requirements)
 - c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
 - d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
 - 3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
 - 4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
 - a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the MBI Companies, and any of its consultants, due to processing of such RFIs.
- E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
 - 1. Official Project name and number, and any additional required identifiers established in Contract Documents.
 - 2. Owner's, MBI Companies', and Contractor's names.
 - 3. Discrete and consecutive RFI number, and descriptive subject/title.
 - 4. Issue date, and requested reply date.
 - 5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
 - 6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
 - 7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.
- F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
 - 1. Indicate current status of every RFI. Update log promptly and on a regular basis.
 - 2. Note dates of when each request is made, and when a response is received.
 - 3. Highlight items requiring priority or expedited response.
 - 4. Highlight items for which a timely response has not been received to date.
 - 5. Identify and include improper or frivolous RFIs.

- H. Review Time: MBI Companies will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
 - 1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.
- I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
 - 1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
 - 2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
 - 3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
 - 4. Notify MBI Companies within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.07 SUBMITTAL SCHEDULE

- A. Submit to MBI Companies for review a schedule for submittals in tabular format.
 - 1. Submit at the same time as the preliminary schedule specified in Section - 01 32 16 - Construction Progress Schedule.
 - 2. Coordinate with Contractor's construction schedule and schedule of values.
 - 3. Format schedule to allow tracking of status of submittals throughout duration of construction.
 - 4. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.
 - 5. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
 - a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

3.08 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 - 1. Product data.
 - 2. Shop drawings.
 - 3. Samples for selection.
 - 4. Samples for verification.
- B. Submit to MBI Companies for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 - Closeout Submittals.

3.09 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 - 1. Design data.
 - 2. Certificates.
 - 3. Test reports.
 - 4. Inspection reports.
 - 5. Manufacturer's instructions.
 - 6. Manufacturer's field reports.
 - 7. Other types indicated.

- B. Submit for MBI Companies' knowledge as contract administrator or for Owner.

3.10 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 78 00 - Closeout Submittals:
 1. Project record documents.
 2. Operation and maintenance data.
 3. Warranties.
 4. Bonds.
 5. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

3.11 NUMBER OF COPIES OF SUBMITTALS

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Samples: Submit the number specified in individual specification sections; one of which will be retained by MBI Companies.
 1. After review, produce duplicates.
 2. Retained samples will not be returned to Contractor unless specifically so stated.

3.12 SUBMITTAL PROCEDURES

- A. General Requirements:
 1. Use a separate transmittal for each item.
 2. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
 3. Transmit using approved form.
 4. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
 5. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
 6. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
 - a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
 7. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
 - a. Deliver submittals to MBI Companies at business address.
 8. Schedule submittals to expedite the Project, and coordinate submission of related items.
 - a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
 - b. For sequential reviews involving MBI Companies' consultants, Owner, or another affected party, allow an additional 7 days.
 - c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to MBI Companies' approval, allow an additional 30 days.
 9. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
 10. Provide space for Contractor and MBI Companies review stamps.
 11. When revised for resubmission, identify all changes made since previous submission.
 12. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
 13. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.

14. Submittals not requested will not be recognized or processed.
15. The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Architect's approval of submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submission and the Architect has given written approval to the specific deviation. The Contractor shall not be relieved from responsibility for error or omissions in the submittals by the Architect's approval thereof.

B. Product Data Procedures:

1. Submit only information required by individual specification sections.
2. Collect required information into a single submittal.
3. Submit concurrently with related shop drawing submittal.
4. Do not submit (Material) Safety Data Sheets for materials or products.

C. Shop Drawing Procedures:

1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
2. Do not reproduce Contract Documents to create shop drawings.
3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

D. Samples Procedures:

1. Transmit related items together as single package.
2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.
3. Include with transmittal high-resolution image files of samples to facilitate electronic review and approval. Provide separate submittal page for each item image.

3.13 SUBMITTAL REVIEW

- A. Submittals for Review: MBI Companies will review each submittal, and approve, or take other appropriate action.
 1. The Architect shall provide 2 reviews of submittals as part of the scope of work. Additional reviews required by failure of the Contractor to make indicated corrections or submit an acceptable product will be billed to the Contractor at the Architect's standard hourly rate.
- B. Submittals for Information: MBI Companies will acknowledge receipt and review. See below for actions to be taken.
- C. MBI Companies' actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
- D. MBI Companies' and consultants' actions on items submitted for review:
 1. Authorizing purchasing, fabrication, delivery, and installation:
 - a. "Approved", or language with same legal meaning.
 - b. "Approved as Noted, Resubmission not required", or language with same legal meaning.
 - 1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
 - c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
 - 1) Resubmit corrected item, with review notations acknowledged and incorporated. Resubmit separately, or as part of project record documents.
 - 2) Non-responsive resubmittals may be rejected.
 2. Not Authorizing fabrication, delivery, and installation:
 - a. "Revise and Resubmit".
 - 1) Resubmit revised item, with review notations acknowledged and incorporated.
 - 2) Non-responsive resubmittals may be rejected.
 - b. "Rejected".
 - 1) Submit item complying with requirements of Contract Documents.
- E. MBI Companies' and consultants' actions on items submitted for information:
 1. Items for which no action was taken:

- a. "Received" - to notify the Contractor that the submittal has been received for record only.
2. Items for which action was taken:
 - a. "Reviewed" - no further action is required from Contractor.

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. RFIs.
 - 4. Digital project management procedures.
 - 5. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
 - 2. Section 01 32 00 - Construction Progress Documentation: For preparing and submitting Contractor's construction schedule.
 - 3. Section 01 70 00 - Execution and Closeout Requirements: For procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.02 DEFINITIONS

- A. BIM: Building Information Modeling.
- B. RFI: Request for Information. Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.03 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- 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 cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
 - 1. Post copies of list in project meeting room, in temporary field office, in web-based Project software directory, and in prominent location in built facility. Keep list current at all times.

1.04 GENERAL COORDINATION PROCEDURES

- 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.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.

- B. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its own operations with operations included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- C. 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.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities 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.

1.05 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated 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. Coordinate the addition of trade-specific information to coordination drawings in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - f. Indicate required installation sequences.
 - g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted

- devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within plenums to accommodate layout of light fixtures and other components indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
 3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
 4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
 5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
 6. Mechanical and Plumbing Work: Show the following:
 - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire-rated enclosures around ductwork.
 7. Electrical Work: Show the following:
 - a. Runs of vertical and horizontal conduit 1-1/4 inches (32 mm) in diameter and larger.
 - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
 - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor-control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
 8. Fire-Protection System: Show the following:
 - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
 9. Review: Architect will review coordination drawings to confirm that in general the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make suitable modifications and resubmit.
 10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 01 33 00 - Submittal Procedures.

1.06 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
 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 information or interpretation and the following:
 1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.

12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Form: Form bound in Project Manual.
1. Attachments shall be electronic files in PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI 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 returned without action or withdrawn.
 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.
- F. 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 seven days if Contractor disagrees with response.

1.07 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings may be provided by Architect for Contractor's use during construction.
1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
 2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
 3. Digital Drawing Software Program: Contract Drawings are available in current version of Revit.
 4. Contractor shall execute a data licensing agreement in the form of MBI Companies' Electronic Release Form included in this Project Manual.
 - a. Subcontractors, and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of MBI Companies' Electronic Release Form included in this Project Manual.

- B. Web-Based Project Software: Provide, administer, and use web-based Project software site for purposes of hosting and managing Project communication and documentation until Final Completion.
1. Web-based Project software site includes, at a minimum, the following features:
 - a. Compilation of Project data, including Contractor, subcontractors, Architect, architect's consultants, Owner, and other entities involved in Project. Include names of individuals and contact information.
 - b. Access control for each entity for each workflow process, to determine entity's digital rights to create, modify, view, and print documents.
 - c. Document workflow planning, allowing customization of workflow between project entities.
 - d. Creation, logging, tracking, and notification for Project communications required in other Specification Sections, including, but not limited to, RFIs, submittals, Minor Changes in the Work, Construction Change Directives, and Change Orders.
 - e. Track status of each Project communication in real time, and log time and date when responses are provided.
 - f. Procedures for handling PDFs or similar file formats, allowing markups by each entity. Provide security features to lock markups against changes once submitted.
 - g. Processing and tracking of payment applications.
 - h. Processing and tracking of contract modifications.
 - i. Creating and distributing meeting minutes.
 - j. Document management for Drawings, Specifications, and coordination drawings, including revision control.
 - k. Management of construction progress photographs.
 - l. Mobile device compatibility, including smartphones and tablets.
 2. Provide web-based Project software user licenses for use of Owner, Architect, and Architect's consultants. Provide software training at Architect's office for web-based Project software users.
 3. At completion of Project, provide digital archive in format that is readable by common desktop software applications in format acceptable to Architect. Provide data in locked format to prevent further changes.
 4. Provide one of the following web-based Project software packages under their current published licensing agreements:
 - a. Autodesk; Buzzsaw or Constructware.
 - b. Corecon Technologies, Inc.
 - c. Meridian Systems; Prolog.
 - d. Newforma, Inc.
 - e. Procore Technologies, Inc.
 - f. Smartsheet, Inc.
 - g. Viewpoint, Inc.; Viewpoint for Project Collaboration.
- C. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:
1. Assemble complete submittal package into a single bookmarked file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.08 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 a minimum of 10 working days prior to meeting.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will 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 and conduct 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.

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. 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. Responsibilities and personnel assignments.
 - b. Tentative construction schedule.
 - c. Phasing.
 - d. Critical work sequencing and long lead items.
 - e. Designation of key personnel and their duties.
 - f. Lines of communications.
 - g. Use of web-based Project software.
 - h. Procedures for processing field decisions and Change Orders.
 - i. Procedures for RFIs.
 - j. Procedures for testing and inspecting.
 - k. Procedures for processing Applications for Payment.
 - l. Distribution of the Contract Documents.
 - m. Submittal procedures.
 - n. Sustainable design requirements.
 - o. Preparation of Record Documents.
 - p. Use of the premises.
 - q. Work restrictions.
 - r. Working hours.
 - s. Owner's occupancy requirements.
 - t. Responsibility for temporary facilities and controls.
 - u. Procedures for moisture and mold control.
 - v. Procedures for disruptions and shutdowns.
 - w. Construction waste management and recycling.
 - x. Parking availability.
 - y. Office, work, and storage areas.
 - z. Equipment deliveries and priorities.
 - aa. First aid.
 - bb. Security.
 - cc. Progress cleaning.
 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for 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. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Sustainable design requirements.
 - i. Review of mockups.
 - j. Possible conflicts.
 - k. Compatibility requirements.
 - l. Time schedules.
 - m. Weather limitations.
 - n. Manufacturer's written instructions.

- o. Warranty requirements.
 - p. Compatibility of materials.
 - q. Acceptability of substrates.
 - r. Temporary facilities and controls.
 - s. Space and access limitations.
 - t. Regulations of authorities having jurisdiction.
 - u. Testing and inspecting requirements.
 - v. Installation procedures.
 - w. Coordination with other work.
 - x. Required performance results.
 - y. Protection of adjacent work.
 - z. 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 other parties requiring information.
 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. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of Record Documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Procedures for completing and archiving web-based Project software site data files.
 - d. Submittal of written warranties.
 - e. Requirements for completing sustainable design documentation.
 - f. Requirements for preparing operations and maintenance data.
 - g. Requirements for delivery of material samples, attic stock, and spare parts.
 - h. Requirements for demonstration and training.
 - i. Preparation of Contractor's punch list.
 - j. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - k. Submittal procedures.
 - l. Coordination of separate contracts.
 - m. Owner's partial occupancy requirements.
 - n. Installation of Owner's furniture, fixtures, and equipment.
 - o. Responsibility for removing temporary facilities and controls.
 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Conduct progress meetings at regular intervals.
1. Coordinate dates of meetings with preparation of payment requests.
 2. 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 meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. 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) Resolution of BIM component conflicts.
 - 4) Status of submittals.
 - 5) Status of sustainable design documentation.
 - 6) Deliveries.
 - 7) Off-site fabrication.
 - 8) Access.
 - 9) Site use.
 - 10) Temporary facilities and controls.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) Status of 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.
- 4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - 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.

F. Coordination Meetings: Conduct Project coordination meetings at regular 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 meetings 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) Resolution of BIM component conflicts.
 - 4) Status of submittals.
 - 5) Deliveries.
 - 6) Off-site fabrication.

- 7) Access.
 - 8) Site use.
 - 9) Temporary facilities and controls.
 - 10) Work hours.
 - 11) Hazards and risks.
 - 12) Progress cleaning.
 - 13) Quality and work standards.
 - 14) Status of RFIs.
 - 15) Proposal Requests.
 - 16) Change Orders.
 - 17) Pending changes.
3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
1. Startup construction schedule.
 2. Contractor's Construction Schedule.
 3. Construction schedule updating reports.
 4. Daily construction reports.
 5. Material location reports.
 6. Site condition reports.
 7. Unusual event reports.
- B. Related Requirements:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.
1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 2. Predecessor Activity: An activity that precedes another activity in the network.
 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event: The starting or ending point of an activity.
- F. Float: The measure of leeway in starting and completing an activity.
1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- G. Resource Loading: The allocation of manpower and equipment necessary for completing an activity as scheduled.

1.03 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
1. Working electronic copy of schedule file, where indicated.
 2. PDF file.

- B. Startup construction schedule.
 - 1. Submittal of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.
 - C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.
 - D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 - 1. Submit a working digital copy of schedule, using software indicated, and labeled to comply with requirements for submittals.
 - E. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 - 1. Activity Report: List of activities sorted by activity number and then early start date, or actual start date if known.
 - 2. Logic Report: List of preceding and succeeding activities for each activity, sorted in ascending order by activity number and then by early start date, or actual start date if known.
 - 3. Total Float Report: List of activities sorted in ascending order of total float.
 - 4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.
 - F. Construction Schedule Updating Reports: Submit with Applications for Payment.
 - G. Daily Construction Reports: Submit at monthly intervals.
 - H. Material Location Reports: Submit at monthly intervals.
 - I. Site Condition Reports: Submit at time of discovery of differing conditions.
 - J. Unusual Event Reports: Submit at time of unusual event.
 - K. Qualification Data: For scheduling consultant.
- 1.04 QUALITY ASSURANCE
- A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's request.
 - B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 01 31 00 - Project Management and Coordination. Review methods and procedures related to the preliminary construction schedule and Contractor's Construction Schedule, including, but not limited to, the following:
 - 1. Review software limitations and content and format for reports.
 - 2. Verify availability of qualified personnel needed to develop and update schedule.
 - 3. Discuss constraints, including phasing, work stages, area separations, interim milestones, and partial Owner occupancy.
 - 4. Review delivery dates for Owner-furnished products.
 - 5. Review schedule for work of Owner's separate contracts.
 - 6. Review submittal requirements and procedures.
 - 7. Review time required for review of submittals and resubmittals.
 - 8. Review requirements for tests and inspections by independent testing and inspecting agencies.
 - 9. Review time required for Project closeout and Owner startup procedures, including commissioning activities.
 - 10. Review and finalize list of construction activities to be included in schedule.
 - 11. Review procedures for updating schedule.

1.05 COORDINATION

- A. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
1. Secure time commitments for performing critical elements of the Work from entities involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.06 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.
- ± Use Microsoft Project, Primavera, Meridian Prolog, Scheduling component of Project website software specified in Section 01 31 00 - Project Management and Coordination, or other approved software.
- B. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.
1. In-House Option: Owner may waive requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
 2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.
- C. Time Frame: Extend schedule from date established for the Notice of Award to date of Substantial Completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- D. Activities: Treat each floor or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
1. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 2. Submittal Review Time: Include review and resubmittal times indicated in Section 01 30 00 – Administrative Requirements in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
 3. Startup and Testing Time: Include days for startup and testing.
 4. Commissioning Time: Include days for commissioning.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
 6. Punch List and Final Completion: Include days for completion of punch list items and final completion.
- E. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in the schedule and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 01 10 00 - Summary. Delivery dates indicated stipulate the earliest possible delivery date.
 5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 01 10 00 - Summary. Delivery dates indicated stipulate the earliest possible delivery date.
 6. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use-of-premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.

- h. Environmental control.
 - 7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Subcontract awards.
 - b. Submittals.
 - c. Purchases.
 - d. Mockups.
 - e. Fabrication.
 - f. Sample testing.
 - g. Deliveries.
 - h. Installation.
 - i. Tests and inspections.
 - j. Adjusting.
 - k. Curing.
 - l. Building flush-out.
 - m. Startup and placement into final use and operation.
 - n. Commissioning.
 - 8. Construction Areas: Identify each major area of construction for each major portion of the Work. 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. Temporary enclosure and space conditioning.
 - c. Permanent space enclosure.
 - d. Completion of mechanical installation.
 - e. Completion of electrical installation.
 - f. Substantial Completion.
- F. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, final completion, and other important milestones:
- G. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.
- 1. See Section 01 29 00 - Payment Procedures: For cost reporting and payment procedures.
- H. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
- 1. Unresolved issues.
 - 2. Unanswered Requests for Information.
 - 3. Rejected or unreturned submittals.
 - 4. Notations on returned submittals.
 - 5. Pending modifications affecting the Work and the Contract Time.
- I. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
- 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 - 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 - 3. As the Work progresses, indicate final completion percentage for each activity.
- J. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

- K. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules 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.

1.07 STARTUP CONSTRUCTION SCHEDULE

- A. Gantt-Chart Schedule: Submit startup, horizontal, Gantt-chart-type construction schedule within seven days of date established for the Notice of Award.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

1.08 GANTT-CHART SCHEDULE REQUIREMENTS

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed.
1. Base schedule on the startup construction schedule and additional information received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1.09 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 7. Testing and inspection.
 8. Accidents.
 9. Meetings and significant decisions.
 10. Unusual events.
 11. Stoppages, delays, shortages, and losses.
 12. Meter readings and similar recordings.
 13. Emergency procedures.
 14. Orders and requests of authorities having jurisdiction.
 15. Change Orders received and implemented.
 16. Construction/Work Change Directives received and implemented.
 17. Services connected and disconnected.
 18. Equipment or system tests and startups.
 19. Partial completions and occupancies.
 20. Substantial Completions authorized.
- B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- C. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating,

responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

1. Submit unusual event reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

- A. Work Included: Prepare and submit request for extensions of Time based on weather conditions.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not limited to General Conditions, Supplementary General Conditions and Sections in Division 1 of these Specifications.
 - 2. Applications for Payment.

1.02 EXTENSIONS OF CONTRACT TIME

- A. If the basis exists for an extension of Time in accordance with the General Conditions and Supplementary General Conditions, an extension of time on the basis of weather may be granted only for the number of Weather Delay Days in excess of the number of days listed in the standard Baseline for that month.

1.03 STANDARD BASELINE FOR AVERAGE CLIMATIC RANGE

- A. The State of Tennessee has reviewed weather data available from the National Oceanic and Atmospheric Administration and determined a Standard Baseline of average climatic range for the State of Tennessee.
- B. Standard Baseline shall be regarded as the normal and anticipatable number of calendar days for each month during which construction activity shall be expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is included in the Work and is not eligible for extension of Contract Time.
- C. Standard Baseline for each month of the year is as follows (the anticipatable delay days follow the month):

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
12	11	8	7	7	6	7	5	4	5	6	11

1.04 ADVERSE WEATHER AND WEATHER DELAY DAYS

- A. Adverse Weather is defined as the occurrence of one or more of the following conditions, substantiated by NOAA data, which prevents exterior construction activity or access to the site within twenty-four (24) hours:
 - 1. Precipitation threshold (rain, snow, or ice) in excess of one-tenth inch (0.10") liquid measure. Snow to liquid measure ratio is 10:1.
 - 2. Standing snow in excess of one inch (1.00").
- B. Additional extension of Time may be granted for drying days following periods of two or more consecutive days of precipitation for the following conditions:
 - 1. At a rate of one day extension of Time for each period of two or more consecutive days of precipitation of 1.0 inch or more (liquid measure).
 - 2. Only if there is a hindrance to site access or site work, such as excavation, backfill and footings and the like and then only when no such work is performed.
- C. A Weather Delay Day may be counted only if adverse weather prevents work on the Project for fifty percent (50%) or more of the contractor's scheduled, critical path work, including a weekend day or holiday if Contractor has scheduled construction activity that day.

1.05 DOCUMENTATION AND SUBMITTALS

- A. Contractor shall submit on a monthly basis daily job site work logs (daily reports) showing which, and to what extent, construction activities have been adversely affected by weather.

- B. Submit actual weather data, if requested by Architect to support claim for time extension, as obtained from NOAA weather reporting station nearest the project site.
- C. Use Standard Baseline data provided in this Section when documenting actual delays due to weather in excess of the average climatic range.
- D. Organize claim and documentation to facilitate evaluation of a basis of calendar month periods and submit in accordance with the procedures for Claims established in the General Conditions.
- E. Extensions of Time requested by the Contractor and approved by the Architect on the basis of conditions stated above shall be acknowledged and communicated in writing to the Contractor periodically.
- F. For extensions of Contract Time granted, a modification shall be issued in accordance with the provisions of the General Conditions, and the applicable General requirements. Modifications for extensions of Time may be issued quarterly or held to the end of the Project as appropriate based on Architect's approval of such extensions as noted in E above.
- G. Extensions of Time not requested in a timely manner by the Contractor will not be granted at a later time.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

Submittal Cover Sheet

Submittal No.: _____

Contractor: _____

Date: _____

Phone: _____

Fax: _____

Project Manager: _____

Email: _____

Project Title: _____

Architect's Comm. No.: _____

Spec Section Title: _____

Section No.: _____

Sub / Supplier: _____

Phone: _____

YES NO

Product is as Specified

If not as specified attach Substitution Request Form

Contractor's Review Stamp

Remarks: _____

PART 1 GENERAL

1.01 PROGRESS SCHEDULE

- A. In addition to the progress schedule required by the General Conditions, the Contractor shall also submit his proposed scheme of work for approval, describing proposed methods and sequences of work from beginning to completion of the work and their correlation with the Owner's requirements.
- B. When the Contractor's proposed sequence of work has been approved by the Owner, it shall become the time schedule for the work and shall be adhered to as closely as possible by both the Contractor and the Owner, except that mutually agreeable modifications may be made from time to time to meet unforeseen exigencies.

1.02 TIME OF PERFORMING WORK

- A. Generally, the Contractor will be permitted to conduct his work in the building and on the premises during his regular working hours.
- B. The building must have the HVAC system operational and maintained at a constant temperature prior to installing any building finishes, except metal support systems.

1.03 OBSTRUCTIONS

- A. All obstructions encountered during the construction of the Contract work shall be overcome by the Contractor by removal or alteration of work in place, by adjustments in the new work, or by temporary removal and reinstallation of existing work.

1.04 CLEANING UP

- A. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- B. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- C. Exposed Surfaces in Finished Areas: Clean exposed surfaces
- D. Upon completion of the work, remove spots, stains, dirt, and dust from finished surfaces, both new and existing, including the surfaces of all existing machinery, equipment, and exposed piping that have been soiled by the construction. Protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- E. Clean and mop hard surface flooring and resilient flooring and vacuum clean carpet flooring
- F. Wash all glass and clean plumbing fixtures, lighting fixtures, and mechanical equipment.
- G. Comply with all special cleaning instructions contained in the various other sections of the specifications.
- H. Protect new and existing surfaces from the growth and spread of mold and mildew. If mold and mildew occur, notify Architect prior to proceeding. Retain qualified testing agency to document and direct remediation. Remediate or replace surfaces to stop the growth and spread of mold and mildew as deemed necessary by a qualified testing agency acceptable to the Contractor, Owner and Architect.
 - 1. Pay for necessary testing and perform all abatement work required to remedy condition.

1.05 INSPECTION OF WORK IN PLACE

- A. The Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities. The architect is to be given advanced notification for inspection of Structural, Mechanical, Plumbing, and Electrical work prior to said work being covered.
- B. Contractor shall give architect advanced notification for final inspection punch list prior to Owner occupying space.

1.06 SMOKING AND FIRE PRECAUTIONS

- A. No fire, or use of any fire, or explosion-producing tools or equipment will be permitted on the property
- B. This facility is a designated non-smoking facility. Smoking will not be permitted in the facility or within 20 feet of any entrance.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality assurance.
- C. References and standards.
- D. Testing and inspection agencies and services.
- E. Contractor's construction-related professional design services.
- F. Contractor's design-related professional design services.
- G. Control of installation.
- H. Mock-ups.
- I. Tolerances.
- J. Manufacturers' field services.
- K. Defect Assessment.

1.02 RELATED REQUIREMENTS

- A. Document 00 72 00 - General Conditions: Inspections and approvals required by public authorities.
- B. Section 01 30 00 - Administrative Requirements: Submittal procedures.

1.03 REFERENCE STANDARDS

- A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants.
- B. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation.
- C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry.
- D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing.
- G. ASTM E699 - Standard Specification for Agencies Involved in Testing, Quality Assurance, and Evaluating of Manufactured Building Components.
- H. IAS AC89 - Accreditation Criteria for Testing Laboratories.

1.04 DEFINITIONS

- A. Contractor's Quality Control Plan: Contractor's management plan for executing the Contract for Construction.
- B. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
 - 1. Design Services Types Required:
 - a. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor's sole responsibilities for construction means, methods, techniques, sequences, and procedures.
 - b. Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.

- C. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.05 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:
 1. Temporary sheeting, shoring, or supports.
 2. Temporary scaffolding.
 3. Temporary bracing.
 4. Temporary falsework for support of spanning or arched structures.
 5. Temporary foundation underpinning.
 6. Temporary stairs or steps required for construction access only.
 7. Temporary hoist(s) and rigging.
 8. Investigation of soil conditions to support construction equipment.

1.06 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Base design on performance and/or design criteria indicated in individual specification sections.
 1. Submit a Request for Information to MBI Companies if the criteria indicated are not sufficient to perform required design services.
- C. Scope of Contractor's Professional Design Services: Provide for the following items of work:
 1. Structural Design of Reinforcement Splices: As described in Section 03 01 00 - Maintenance of Concrete.
 2. Structural Design of Formwork: As described in Section 03 10 00 - Concrete Forming and Accessories.
 3. Structural Design of Formwork: As described in Section 03 11 19 - Insulating Concrete Forming.
 4. Concrete Mix Design: As described in Section 03 30 00 - Cast-in-Place Concrete. No specific designer qualifications are required.
 5. Structural Calculations and Design: As described in Section 03 38 00 - Post-Tensioned Concrete.
 6. Structural Calculations and Design: As described in Section 03 41 00 - Precast Structural Concrete.
 7. Concrete Mix and Structural Design: As described in Section 03 41 13 - Precast Concrete Hollow Core Planks.
 8. Concrete Mix and Structural Design: As described in Section 03 45 00 - Precast Architectural Concrete.
 9. Concrete Mix and Structural Design: As described in Section 03 47 13 - Tilt-Up Concrete.
 10. Concrete Mix and Structural Design: As described in Section 03 49 00 - Glass-Fiber Reinforced Concrete.
 11. Structural Design of Steel Connections: As described in Section 05 12 00 - Structural Steel Framing.
 12. Structural Design of Steel Connections: As described in Section 05 21 00 - Steel Joist Framing.
 13. Structural Design of Steel Decking: As described in Section 05 31 00 - Steel Decking.
 14. Structural Design of Metal Framing: As described in Section 05 40 00 - Cold-Formed Metal Framing.
 15. Structural Design of Steel Trusses: As described in Section 05 44 00 - Cold-Formed Metal Trusses.
 16. Structural Design of Formwork: As described in Section 05 45 00 - Metal Support Assemblies.
 17. Structural Design of Metal Fabrications: As described in Section 05 50 00 - Metal Fabrications.
 18. Structural Design of Stairs: As described in Section 05 51 00 - Metal Stairs.
 19. Structural Design of Railings: As described in Section 05 52 13 - Pipe and Tube Railings.
 20. Structural Design of Gratings and Plates: As described in Section 05 53 05 - Metal Gratings and Floor Plates.
 21. Structural Design of Spiral Stairs: As described in Section 05 71 13 - Fabricated Metal Spiral Stairs.
 22. Structural Design of Insulated Panels: As described in Section 06 12 19 - Structural Insulated Panels.
 23. Structural Design of Heavy Timber Framing: As described in Section 06 13 23 - Heavy Timber Framing.
 24. Structural Design of Wood Decking: As described in Section 06 15 00 - Wood Decking.
 25. Structural Design of Metal-Web Wood Joists: As described in Section 06 17 36 - Metal-Web Wood Joists.
 26. Structural Design of Wood Trusses: As described in Section 06 17 53 - Shop-Fabricated Wood Trusses

27. Structural Design of Glued-Laminated Construction: As described in Section 06 18 00 - Glued-Laminated Construction.
28. Structural Design of Fabrications: As described in Section 06 82 00 - Composite Trim.
29. Structural Calculations: As described in Section 07 42 13.23 - Metal Composite Material Wall Panels.
30. Fire Protection Design: As described in Section 07 87 00 - Smoke Containment Barriers.
31. Structural Design: Include physical characteristics, engineering calculations, and resulting dimensional limitations as described in Section 08 44 35 - Protective Framed Glazing Assemblies.
32. Structural Design Calculations for Exterior Assemblies: As described in Section 08 41 26 - All-Glass Entrances and Storefronts.
33. Structural Design: Include physical characteristics, engineering calculations, and resulting dimensional limitations as described in Section 08 43 13 - Aluminum-Framed Storefronts.
34. Structural design: Include calculations for resisting wind loads, anchor locations, and loads at points of attachment as described in Section 08 43 27 - Channel Glass Storefronts.
35. Structural Design: Include calculations for resisting wind loads, anchor locations, loads at points of attachment to building structure, physical characteristics, resulting dimensional limitations as described in Section 08 44 13 - Glazed Aluminum Curtain Walls.
36. Structural Design: Include calculations for resisting wind loads, anchor locations, loads at points of attachment to building structure, physical characteristics, resulting dimensional limitations as described in Section 08 44 18 - Glazed Steel Curtain Walls.
37. Structural Design: Include calculations for resisting wind loads, anchor locations, loads at points of attachment to building structure, physical characteristics, resulting dimensional limitations as described in Section 08 44 26 - Structural Glass Curtain Walls.
38. Structural Design: Include calculations for resisting wind loads, physical characteristics, resulting dimensional limitations as described in Section 08 45 00 - Translucent Wall and Roof Assemblies.
39. Structural Design: Include calculations for resisting wind loads, physical characteristics, resulting dimensional limitations as described in Section 08 63 00 - Metal-Framed Skylights.
40. Structural Calculations for Framing System: As described in Section 08 88 36.16 - Electrochromic Tintable Glass.
41. Structural Design for Seismic Loads: As described in Section 09 54 23 - Linear Metal Ceilings.
42. Structural Design of Floor System: As described in Section 09 69 00 - Access Flooring.
43. Structural Design of Pallet Storage Racks System: As described in Section 10 56 29.16 - Pallet Storage Racks.
44. Structural Design and Calculations: As described in Section 10 71 13.43 - Fixed Sun Screens.
45. Structural Design of Canopy: As described in Section 10 73 16.13 - Metal Canopies.
46. Structural Design of Foundation: As described in Section 10 75 00 - Flagpoles.
47. Structural Design and Calculations: As described in Section 10 82 13 - Exterior Grilles and Screens.
48. Structural Design and Calculations: As described in Section 10 82 23 - Interior Grilles and Screens.
49. Control System Design. As described in Section 11 14 00 - Pedestrian Control Equipment.
50. Structural Design of Pool Tank Supports: As described in Section 13 11 00 - Swimming Pools.
51. Structural Design of Cold Storage Room Roof: As described in Section 13 21 26 - Cold Storage Rooms
52. Design of Structural Components: Include development of shop drawings, and performing shop and site work, as described in Section 13 34 19 - Metal Building Systems.
53. Corrosion Protection Design: As described in Section 13 47 13 - Cathodic Protection.
54. Design of Structural Components: As described in Section 14 12 00 - Electric Dumbwaiters.
55. Design of Structural Components: As described in Section 14 20 20 - Freight Elevators.
56. Design of Structural Components: As described in Section 14 21 00 - Electric Traction Elevators.
57. Design of Structural Components: As described in Section 14 24 00 - Hydraulic Elevators.
58. Design of Structural Components: As described in Section 14 31 00 - Escalators.
59. Structural Design of Seismic Controls: As described in Section 21 05 48 - Vibration and Seismic Controls for Fire Suppression Piping and Equipment.
60. Sprinkler Layout: Coordinate with ceiling installation, detailed pipe layout, and hydraulic calculations as described in Section 21 13 00 - Fire-Suppression Sprinkler Systems.
61. System Design: Include calculations, detailed layout, component locations, control diagrams, wiring diagrams, and sequences of operation as described in Section 21 22 00 - Clean-Agent Fire-Extinguishing System.

62. System Design: Include calculations, detailed layout, component locations, control diagrams, wiring diagrams, and sequences of operation as described in Section 21 23 00 - Wet-Chemical Fire-Extinguishing System.
63. System Design: Include calculations, detailed layout, component locations, control diagrams, wiring diagrams, and sequences of operation as described in Section 21 24 00 - Dry-Chemical Fire-Extinguishing System.
64. System Design and Detailed Layout: As described in Section 21 30 00 - Fire Pumps.
65. Structural Design of Seismic Controls: As described in Section 22 05 48 - Vibration and Seismic Controls for Plumbing Piping and Equipment.
66. System Design: As described in Section 23 09 13 - Instrumentation and Control Devices for HVAC.
67. System Design: As described in Section 23 09 23 - Direct-Digital Control System for HVAC.
68. System Design: As described in Section 23 09 43 - Pneumatic Control System for HVAC.
69. Written Sequence of Operation: Include entire HVAC system and each piece of equipment, as described in Section 23 09 93 - Sequence of Operations for HVAC Controls.
70. Piping System Design: As described in Section 23 23 00 - Refrigerant Piping.
71. Engineering Calculations Indicating Maximum Room Sound Levels Are Not Exceeded: As described in Section 23 33 19 - Duct Silencers.
72. Structural Design: As described in Section 23 51 00 - Breechings, Chimneys, and Stacks.
73. Structural Design of Seismic Controls: As described in Section 26 05 48 - Vibration and Seismic Controls for Electrical Systems.
74. Structural Calculations and Design of Equipment Mounting: As described in Section 26 31 00 - Photovoltaic Collectors.
75. Electrical Calculations: For array and associated equipment, as described in Section 26 31 00 - Photovoltaic Collectors.
76. Sound Masking Systems Design: As described in Section 27 51 19 - Sound Masking Systems.
77. Monitoring of Pile Placement, Elevation, and Load Testing: As described in Section 31 09 16.21 - Pile Load Tests.
78. Design of Structural Fill: As described in Section 31 23 23 - Fill.
79. Design of Geofoam Fill: As described in Section 31 23 23.43 - Geofoam.
80. Selection and Design of Pile Components: As described in Section 31 62 13.19 - Precast Concrete Piles
81. Selection and Design of Footing Components: As described in Section 31 62 13.26 - Pressure-Injected Footings.
82. Selection and Design of Pile Components: As described in Section 31 62 16.13 - Sheet Steel Piles.
83. Selection and Design of Pile Components: As described in Section 31 62 16.16 - Steel H Piles.
84. Selection and Design of Pile Components: As described in Section 31 62 19 - Timber Piles.
85. Selection and Design of Pile Components: As described in Section 31 62 23.13 - Concrete-Filled Steel Piles.
86. Design of Piles: As described in Section 31 63 16 - Auger Cast Grout Piles.
87. Design of Piers: As described in Section 31 63 29 - Drilled Concrete Piers and Shafts
88. Design of Piers: As described in Section 31 66 13.13 - Rammed Aggregate Piers.
89. Design or Piers: As described in Section 31 66 14 - Hydraulically Driven Pier Foundations.
90. Design of Helical Foundations: As described in Section 31 66 15 - Helical Foundations Piles.
91. Structural Calculations and Design: As described in Section 32 32 23 - Segmental Retaining Walls
92. Design of Seismic Component of Structural Supports and Anchors: As described in Section 46 05 09 - Piping and Equipment Supports and Anchors.

1.07 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Designer's Qualification Statement: Submit for MBI Companies's knowledge as contract administrator, or for Owner's information.
 1. Include information for each individual professional responsible for producing, or supervising production of, design-related professional services provided by Contractor.
 - a. Full name.
 - b. Professional licensure information.
 - c. Statement addressing extent and depth of experience specifically relevant to design of items assigned to Contractor.

- C. Design Data: Submit for MBI Companies's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
 - 1. Include calculations that have been used to demonstrate compliance to performance and regulatory criteria provided, and to determine design solutions.
 - 2. Include required product data and shop drawings.
 - 3. Include a statement or certification attesting that design data complies with criteria indicated, such as building codes, loads, functional, and similar engineering requirements.
 - 4. Include signature and seal of design professional responsible for allocated design services on calculations and drawings.

 - D. Test Reports: After each test/inspection, promptly submit two copies of report to MBI Companies and to Contractor.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test/inspection.
 - h. Date of test/inspection.
 - i. Results of test/inspection.
 - j. Compliance with Contract Documents.
 - k. When requested by MBI Companies, provide interpretation of results.
 - 2. Test report submittals are for MBI Companies's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.

 - E. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to MBI Companies, in quantities specified for Product Data.
 - 1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 2. Certificates may be recent or previous test results on material or product, but must be acceptable to MBI Companies.

 - F. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

 - G. Manufacturer's Field Reports: Submit reports for MBI Companies's benefit as contract administrator or for Owner.
 - 1. Submit report in duplicate within 30 days of observation to MBI Companies for information.
 - 2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

 - H. Erection Drawings: Submit drawings for MBI Companies's benefit as contract administrator or for Owner.
 - 1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
 - 2. Data indicating inappropriate or unacceptable Work may be subject to action by MBI Companies or Owner.
- 1.08 QUALITY ASSURANCE
- A. Testing Agency Qualifications:
 - 1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
 - 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.

3. Qualification Statement: Provide documentation showing testing laboratory is accredited under IAS AC89.
- B. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.
- C. Contractor's Quality Control (CQC) Plan:
 1. Prior to start of work, submit a comprehensive plan describing how contract deliverables will be produced. Tailor CQC plan to specific requirements of the project. Include the following information:
 - a. Management Structure: Identify personnel responsible for quality. Include a chart showing lines of authority.
 - 1) Include qualifications (in resume form), duties, responsibilities of each person assigned to CQC function.
 - b. Management Approach: Define, describe, and include in the plan specific methodologies used in executing the work.
 - 1) Management and control of documents and records relating to quality.
 - 2) Communications.
 - 3) Coordination procedures.
 - 4) Resource management.
 - 5) Process control.
 - 6) Inspection and testing procedures and scheduling.
 - 7) Control of noncomplying work.
 - 8) Tracking deficiencies from identification, through acceptable corrective action, and verification.
 - 9) Control of testing and measuring equipment.
 - 10) Project materials certification.
 - 11) Managerial continuity and flexibility.
 - c. Owner will not make a separate payment for providing and maintaining a Quality Control Plan. Include associated costs in Bid price.
 - d. Acceptance of the plan is required prior to start of construction activities not including mobilization work. Owner's acceptance of the plan will be conditional and predicated on continuing satisfactory adherence to the plan. Owner reserves the right to require Contractor to make changes to the plan and operations, including removal of personnel, as necessary, to obtain specified quality of work results.
 - D. Quality-Control Personnel Qualifications. Engage a person with requisite training and experience to implement and manage quality assurance (QA) and quality control (QC) for the project.

1.09 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from MBI Companies before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of MBI Companies shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.10 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ services of an independent testing agency to perform certain specified testing; payment for cost of services will be derived from allowance specified in Section 01 21 00; see Section 01 21 00 and applicable sections for description of services included in allowance.
- B. Owner will employ and pay for services of an independent testing agency to perform other specified testing.
- C. Contractor shall employ and pay for services of an independent testing agency to perform other specified testing.
- D. As indicated in individual specification sections, Owner or Contractor shall employ and pay for services of an independent testing agency to perform other specified testing.
- E. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- F. Contractor Employed Agency:
 - 1. Testing agency: Comply with requirements of ASTM E329, ASTM E543, ASTM E699, ASTM C1021, ASTM C1077, ASTM C1093, and ASTM D3740.
 - 2. Inspection agency: Comply with requirements of ASTM D3740, and ASTM E329.
 - 3. Laboratory Qualifications: Accredited by IAS according to IAS AC89.
 - 4. Laboratory: Authorized to operate in the State in which the Project is located.
 - 5. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
 - 6. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from MBI Companies before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.
- B. Accepted mock-ups establish the standard of quality the MBI Companies will use to judge the Work.
- C. Integrated Exterior Mock-ups: Construct integrated exterior mock-up as indicated on drawings. Coordinate installation of exterior envelope materials and products as required in individual Specification Sections. Provide adequate supporting structure for mock-up materials as necessary.
- D. Room Mock-ups: Construct room mock-ups as indicated on drawings. Coordinate installation of materials, products, and assemblies as required in specification sections; finish according to requirements. Provide required

lighting and any supplemental lighting where required to enable MBI Companies to evaluate quality of the mock-up.

- E. Notify MBI Companies fifteen (15) working days in advance of dates and times when mock-ups will be constructed.
- F. Provide supervisory personnel who will oversee mock-up construction. Provide workers that will be employed during the construction at Project.
- G. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- H. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- I. Obtain MBI Companies's approval of mock-ups before starting work, fabrication, or construction.
 - 1. MBI Companies will issue written comments within seven (7) working days of initial review and each subsequent follow up review of each mock-up.
 - 2. Make corrections as necessary until Architect's approval is issued.
- J. MBI Companies will use accepted mock-ups as a comparison standard for the remaining Work.
- K. Where mock-up has been accepted by MBI Companies and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by MBI Companies.
- L. Legally salvage and recycle the demolished mock-up materials.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from MBI Companies before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

- A. See individual specification sections for testing and inspection required.
- B. Testing Agency Duties:
 - 1. Test samples of mixes submitted by Contractor.
 - 2. Provide qualified personnel at site. Cooperate with MBI Companies and Contractor in performance of services.
 - 3. Perform specified sampling and testing of products in accordance with specified standards.
 - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 5. Promptly notify MBI Companies and Contractor of observed irregularities or non-compliance of Work or products.
 - 6. Perform additional tests and inspections required by MBI Companies.
 - 7. Attend preconstruction meetings and progress meetings.
 - 8. Submit reports of all tests/inspections specified.
- C. Limits on Testing/Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the Work.
 - 3. Agency may not assume any duties of Contractor.
 - 4. Agency has no authority to stop the Work.
- D. Contractor Responsibilities:
 - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 - 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.

- 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
- 4. Notify MBI Companies and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
- 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by MBI Companies.
- F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.05 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance equipment, as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to MBI Companies 30 days in advance of required observations.
 - 1. Observer subject to approval of MBI Companies.
 - 2. Observer subject to approval of Owner.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.
- B. If, in the opinion of MBI Companies, it is not practical to remove and replace the work, MBI Companies will direct an appropriate remedy or adjust payment.

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY OF REFERENCE STANDARDS

- A. Regulatory requirements applicable to this project are the following:
- B. 28 CFR 35 - Nondiscrimination on the Basis of Disability in State and Local Government Services; Final Rule; Department of Justice; current edition.
- C. 28 CFR 36 - Nondiscrimination by Public Accommodations and in Commercial Facilities; Final Rule; Department of Justice; current edition.
- D. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.
- E. 49 CFR 37 - Transportation Services for Individuals with Disabilities (ADA); current edition.
- F. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; current edition.
- G. FED-STD-795 - Uniform Federal Accessibility Standards (UFAS).
- H. 29 CFR 1910 - Occupational Safety and Health Standards; current edition.
- I. State of Tennessee amendments to some or all of the following.
- J. County of Anderson amendments to some or all of the following.
- K. ICC A117.1 - Accessible and Usable Buildings and Facilities; current edition.
- L. ICC (IFC) - International Fire Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- M. NFPA 1 - Fire Code; current edition.
- N. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- O. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- P. NFPA 5000 - Building Construction and Safety Code; 2018.
- Q. ICC (IPC) - International Plumbing Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- R. ICC (IMC) - International Mechanical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- S. ICC (IFGC) - International Fuel Gas Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- T. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- U. ICC (IECC) - International Energy Conservation Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.02 RELATED REQUIREMENTS

- A. Section 01 40 00 - Quality Requirements.

1.03 QUALITY ASSURANCE

- A. Contractor's Designer Qualifications: Refer to Section - 01 40 00 - Quality Requirements.

MBI #220042.02

SECTION 01 41 00
REGULATORY REQUIREMENTS

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

PART 1 GENERAL

1.01 Quality Control is defined as testing and inspection performed by/or under the direction of the Contractor to ensure materials and construction meet the requirements of the Contract Documents and Specifications.

1.02 TESTS

- A. Engage inspection and test service agencies, including independent testing laboratories, which comply with "Guidelines for Effective Practice for Materials Engineering Laboratories" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.
- B. Tests required to establish compliance with the Contract requirements for quality control shall be made by a testing agency acceptable to the Contractor, the Owner, and the Architect with reports certified by the laboratory and furnished in duplicate to the Architect with a copy to the Contractor.
- C. Representatives of the testing agency and monitoring shall have access to the work at all times. The Contractor shall provide facilities for such access and samples as necessary so that the testing agency may properly perform its function.

D. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to the following:

- Name of testing agency or testing laboratory.
- Dates and locations of samples and test or inspections.
- Names of individuals making the inspection or test.
- Complete inspection or test data.
- Test results
- Interpretations of test results.
- Notation of significant ambient conditions at the time of sample taking and testing.
- Comments or professional opinion as to whether inspected or tested work complies with requirements of the contract documents.
- Recommendations on retesting, if applicable.

E. Non-Compliant Inspection/Test Results: Within 24 hours of inspection/test being performed, notify Architect/Engineer of-Record, and the Contractor of any non-conforming/non-compliant inspections/tests. Copies of successful retests of the originally non-conforming/non-compliant work shall be submitted to the Architect/Engineer-Of-Record and the Contractor.

F. Project Closeout: Contractor shall certify to the Architect of Record that the required quality control services, as required by this section and the contract documents have been performed and that all results indicate compliance with requirements.

1.03 COST OF TESTS

A. The cost of the services of the testing agency and monitoring shall be paid by the Contractor. When the tests indicate noncompliance with the Contract requirements, any subsequent retesting occasioned by noncompliance shall be performed by the same testing agency and the costs shall be paid by the Contractor.

1.04 NOTIFICATIONS OF THE ARCHITECT

A. Notify architect within 24 hours before any work is completed for areas as described herein. If the architect is not notified as stated above and the Contractor proceeds with the work, the Architect shall have authority to direct the Contractor to remove part or all installed materials at the Contractor's expense for a detailed observation.

B. The Architect shall be notified at the following points of work:

- 1. Footing bottoms and concrete reinforcement prior to pouring any concrete.

2. Waterproofing/Damp-proofing prior to any backfilling work.
3. Water drainage test on sloped concrete floors prior to finish floor materials installed.
4. Thru-wall flashing installation and mortar mix prior to installing any masonry.
5. Completed structural steel erection before floor slabs are poured.
6. Mechanical and Electrical systems above ceiling inspection prior to installation of finish ceiling material.

- C. The respective contractor and/or subcontractor shall correct any deficiencies that may be observed. Construction work observations or lack there of by the architect does not relieve the contractor and/or subcontractor from any liability of faulty workmanship that may have occurred or may occur at a later date.

1.05 OTHER TESTS

- A. See provisions of the General Conditions regarding tests required by governing authorities.
- B. The provisions of Divisions 22, 23 and 26 for tests required for plumbing, mechanical, and electrical work.

PART 2 PRODUCTS – (NOT USED)

PART 3 EXECUTION

3.01 REPAIR AND PROTECTION

- A. Upon completion of inspection, testing, sample taking, and similar services, repair damaged work and restore substrates and finishes to eliminate all deficiencies. Repair and protection are the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Code-required special inspections.
- B. Testing services incidental to special inspections.
- C. Submittals.
- D. Manufacturers' field services.
- E. Fabricators' field services.

1.02 RELATED REQUIREMENTS

- A. Document 00 72 00 - General Conditions: Inspections and approvals required by public authorities.
- B. Section 01 30 00 - Administrative Requirements: Submittal procedures.
- C. Section 01 40 00 - Quality Requirements.
- D. Section 01 41 00 – Regulatory Requirements.

1.03 ABBREVIATIONS AND ACRONYMS

- A. AHJ: Authority having jurisdiction.
- B. IAS: International Accreditation Service, Inc.
- C. NIST: National Institute of Standards and Technology.

1.04 DEFINITIONS

- A. Code or Building Code: See Contract Documents and drawings for applicable code for this project.
- B. Authority Having Jurisdiction (AHJ): Agency or individual officially empowered to enforce the building, fire and life safety code requirements of the permitting jurisdiction in which the Project is located.
- C. Special Inspection:
 - 1. Special inspections are inspections and testing of materials, installation, fabrication, erection or placement of components and connections mandated by the AHJ that also require special expertise to ensure compliance with the approved Contract Documents and the referenced standards.
 - 2. Special inspections are separate from and independent of tests and inspections conducted by Owner or Contractor for the purposes of quality assurance and contract administration.

1.05 REFERENCE STANDARDS

- A. ACI 318 - Building Code Requirements for Structural Concrete and Commentary.
- B. AISC 341 - Seismic Provisions for Structural Steel Buildings.
- C. AISC 360 - Specification for Structural Steel Buildings.
- D. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- E. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
- F. ASTM A706/A706M - Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement.
- G. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
- H. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete.

- I. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
 - J. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection.
 - K. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing.
 - L. ASTM E605/E605M - Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members.
 - M. ASTM E736/E736M - Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members.
 - N. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestops.
 - O. ASTM E2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers.
 - P. ASTM E2570/E2570M - Standard Test Methods for Evaluating Water-Resistive Barrier (WRB) Coatings Used under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage.
 - Q. AWCI 117 - Technical Manual 12-B; Standard Practice for the Testing and Inspection of Field Applied Thin Film Intumescent Fire-Resistive Materials; an Annotated Guide.
 - R. AWS D1.1/D1.1M - Structural Welding Code – Steel.
 - S. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel.
 - T. AWS D1.4/D1.4M - Structural Welding Code - Reinforcing Steel.
 - U. ICC (IBC) – International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
 - V. SDI (QA/QC) – Standard for Quality Control and Quality Assurance for Installation of Steel Deck.
 - W. SJI 100 - Catalog of Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders.
 - X. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures.
- 1.06 SUBMITTALS
- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
 - B. Special Inspection Agency Qualifications: Prior to the start of work, the Special Inspection Agency is required to:
 - 1. Submit agency name, address, and telephone number, names of full time registered Engineer and responsible officer.
 - 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
 - 3. Submit certification that Special Inspection Agency is acceptable to AHJ.
 - C. Testing Agency Qualifications: Prior to the start of work, the Testing Agency is required to:
 - 1. Submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
 - 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
 - 3. Submit certification that Testing Agency is acceptable to AHJ.
 - D. Smoke Control Testing Agency Qualifications: Prior to the start of work, the Testing Agency is required to:
 - 1. Submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.

2. Submit documentary evidence that agency has appropriate credentials and documented experience in fire protection engineering, mechanical engineering and HVAC air balancing.
 3. Submit certification that Testing Agency is acceptable to AHJ.
- E. Manufacturer's Qualification Statement: Manufacturer is required to submit documentation of manufacturing capability and quality control procedures. Include documentation of AHJ approval.
- F. Fabricator's Qualification Statement: Fabricator is required to submit documentation of fabrication facilities and methods as well as quality control procedures. Include documentation of AHJ approval.
- G. Special Inspection Reports: After each special inspection, Special Inspector is required to promptly submit at least two copies of report; one to MBI Companies and one to the AHJ.
1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of Special Inspector.
 - d. Date and time of special inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of special inspection.
 - h. Date of special inspection.
 - i. Results of special inspection.
 - j. Compliance with Contract Documents.
 2. Final Special Inspection Report: Document special inspections and correction of discrepancies prior to the start of the work.
- H. Fabricator Special Inspection Reports: After each special inspection of fabricated items at the Fabricator's facility, Special Inspector is required to promptly submit at least two copies of report; one to MBI Companies and one to AHJ.
1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of Special Inspector.
 - d. Date and time of special inspection.
 - e. Identification of fabricated item and specification section.
 - f. Location in the Project.
 - g. Results of special inspection.
 - h. Verification of fabrication and quality control procedures.
 - i. Compliance with Contract Documents.
 - j. Compliance with referenced standard(s).
- I. Test Reports: After each test or inspection, promptly submit at least two copies of report; one to MBI Companies and one to AHJ.
1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test or inspection.
 - h. Date of test or inspection.
 - i. Results of test or inspection.
 - j. Compliance with Contract Documents.

- J. Certificates: When specified in individual special inspection requirements, Special Inspector shall submit certification by the manufacturer, fabricator, and installation subcontractor to MBI Companies and AHJ, in quantities specified for Product Data.
 - 1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 2. Certificates may be recent or previous test results on material or product, but must be acceptable to MBI Companies and AHJ.
- K. Manufacturer's Field Reports: Submit reports to MBI Companies and AHJ.
 - 1. Submit report in duplicate within 30 days of observation to MBI Companies for information.
 - 2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in Contract Documents.
- L. Fabricator's Field Reports: Submit reports to MBI Companies and AHJ.
 - 1. Submit report in duplicate within 30 days of observation to MBI Companies for information.
 - 2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in Contract Documents.

1.07 SPECIAL INSPECTION AGENCY

- A. Owner or Owner's Agent will employ services of a Special Inspection Agency to perform inspections and associated testing and sampling in accordance with ASTM E329 and required by the building code.
- B. The Special Inspection Agency may employ and pay for services of an independent testing agency to perform testing and sampling associated with special inspections and required by the building code.
- C. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.08 TESTING AND INSPECTION AGENCIES

- A. Owner or Owner's Agent may employ services of an independent testing agency to perform additional testing and sampling associated with special inspections but not required by the building code.
- B. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.09 QUALITY ASSURANCE

- A. Special Inspection Agency Qualifications:
 - 1. Independent firm specializing in performing testing and inspections of the type specified in this section.
- B. Testing Agency Qualifications:
 - 1. Independent firm specializing in performing testing and inspections of the type specified in this section.
- C. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SCHEDULE OF SPECIAL INSPECTIONS, GENERAL

- A. Frequency of Special Inspections: Special Inspections are indicated as continuous or periodic.
 - 1. Continuous Special Inspection: Special Inspection Agency is required to be present in the area where the work is being performed and observe the work at all times the work is in progress.
 - 2. Periodic Special Inspection: Special Inspection Agency is required to be present in the area where work is being performed and observe the work part-time or intermittently and at the completion of the work.

THE FOLLOWING INFORMATION IS PROVIDED AS A SUPPLEMENT (BUT NOT AN EXHAUSTIVE LIST) TO THE SPECIAL INSPECTION REQUIREMENTS LISTED IN THE DRAWINGS. SPECIAL INSPECTIONS REQUIRED FOR THIS PROJECT ARE LISTED IN THE DRAWINGS AND INFORMATION BELOW IS TO BE USED TO SUPPLEMENT ITEMS THAT ARE REQUIRED.

3.02 SPECIAL INSPECTIONS FOR STEEL CONSTRUCTION

- A. Structural Steel: Comply with quality assurance inspection requirements of ICC (IBC).
- B. Cold-Formed Steel Deck: Comply with quality assurance inspection requirements of SDI (QA/QC).
- C. Open-Web Joists and Joist Girders: Comply with requirements of ICC (IBC), Table 1705.2.3.
 - 1. End Connections - Welding or Bolted: Comply with requirements of SJI 100; periodic.
 - 2. Bridging - Horizontal or Diagonal:
 - a. Standard Bridging: Comply with requirements of SJI 100; periodic.
 - b. Bridging That Differs From the SJI Specifications: Periodic inspection.
- D. Cold-Formed Steel Trusses Spanning 60 feet or Greater: Special Inspector is required to verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.

3.03 SPECIAL INSPECTIONS FOR CONCRETE CONSTRUCTION

- A. Reinforcement, Including Prestressing Tendons, and Verification of Placement: Verify compliance with ACI 318, Chapters 20, 25.2, 25.3, 26.6.1-26.6.3; periodic.
- B. Reinforcing Steel, Including Prestressing of Tendons and Placement: Verify compliance with approved Contract Documents and ACI 318, Sections 3.5 and 7.1 through 7.7; periodic.
- C. Reinforcing Bar Welding: Verify compliance with AWS D1.4/D1.4M and ACI 318, 26.6.4; periodic.
 - 1. Verify weldability of reinforcing bars other than those complying with ASTM A706/A706M; periodic.
 - 2. Inspect single-pass fillet welds, maximum 5/16 inch; periodic.
 - 3. Inspect all other welds; continuous.
- D. Anchors Cast in Concrete: Verify compliance with ACI 318, 17.8.2; periodic.
- E. Bolts Installed in Concrete: Where allowable loads have been increased or where strength design is used, verify compliance with approved Contract Documents and ACI 318, Sections 8.1.3 and 21.2.8 prior to and during placement of concrete; continuous.
- F. Anchors Post-Installed in Hardened Concrete: Verify compliance with ACI 318.
 - 1. Adhesive Anchors: Verify horizontally or upwardly-inclined orientation installations resisting sustained tension loads - Section 17.8.2.4; continuous.
 - 2. Other Mechanical and Adhesive Anchors: Verify as per Chapter 17.8.2; periodic.
- G. Design Mix: Verify plastic concrete complies with the design mix in approved Contract Documents and with ACI 318, Chapter 19, 16.4.3, 26.4.4; periodic.
- H. Design Mix: Verify plastic concrete complies with the design mix in approved Contract Documents and with ACI 318, Chapter 4 and 5.2; periodic.
- I. Concrete Sampling Concurrent with Strength Test Sampling: Each time fresh concrete is sampled for strength tests, verify compliance with ASTM C172/C172M, ASTM C31/C31M and ACI 318, Chapter 26.5, 26.12, and record the following, continuous:
 - 1. Slump.
 - 2. Air content.
 - 3. Temperature of concrete.
- J. Concrete and Shotcrete Placement: Verify application techniques comply with approved Contract Documents and ACI 318, Chapter 26.5; continuous.
- K. Specified Curing Temperature and Techniques: Verify compliance with ACI 318, Chapter 26.5.3-26.5.5; periodic.

- L. Specified Curing Temperature and Techniques: Verify compliance with approved Contract Documents and ACI 318, Sections 5.11 through 5.13; periodic.
- M. Prestressed Concrete: Verify compliance with approved Contract Documents; continuous.
 - 1. Application of Prestressing Forces: Verify compliance with ACI 318, Chapter 26.10.
 - 2. Grouting of Bonded Prestressing Tendons: Verify compliance with ACI 318, Chapter 26.10.
- N. Precast Concrete Members: Verify erection techniques and placement comply with approved Contract Documents and ACI 318, Chapter 26.9; periodic.
- O. Concrete Strength in Situ: Verify concrete strength complies with approved Contract Documents and ACI 318, Chapter 26.11.2, for the following:
 - 1. Post-tensioned concrete, prior to stressing of tendons; periodic.
 - 2. Beams and structural slabs, prior to removal of shores and forms; periodic.
- P. Formwork Shape, Location and Dimensions: Verify compliance with approved Contract Documents and ACI 318, Chapter 26.11.1.2(b); periodic.
- Q. Welding of Reinforcing Bars: Conduct special inspections and verify Special Inspector's qualifications in accordance with requirements of AWS D1.4/D1.4M.
- R. Materials: If the Contractor cannot provide sufficient data or documentary evidence that concrete materials comply with the quality standards of ACI 318, the AHJ will require testing of materials in accordance with the appropriate standards and criteria in ACI 318, Chapters 19 and 20.

3.04 SPECIAL INSPECTIONS FOR MASONRY CONSTRUCTION

- A. Masonry Structures Subject to Special Inspection:
 - 1. Masonry construction when required by the quality assurance program of TMS 402/602.
 - 2. Empirically designed masonry, glass unit masonry and masonry veneer in structures designated as "essential facilities".
 - a. Perform inspections in accordance with Level B Quality Assurance.
 - 3. Engineered masonry in structures classified as "low hazard..." and "substantial hazard to human life in the event of failure".
- B. Verify each item below complies with approved Contract Documents and the applicable articles of TMS 402/602.
 - 1. Inspections and Approvals:
 - a. Verify compliance with the required inspection provisions of the approved Contract Documents; periodic.
 - b. Verify approval of submittals required by Contract Documents; periodic.
 - 2. Compressive Strength of Masonry: Verify compressive strength of masonry units prior to start of construction unless specifically exempted by code; periodic.
 - 3. Slump Flow and Visual Stability Index (VSI): Verify compliance as self consolidating grout arrives on site; continuous.
 - 4. Joints and Accessories: When masonry construction begins, verify:
 - a. Proportions of site prepared mortar; periodic.
 - b. Construction of mortar joints; periodic.
 - c. Location of reinforcement, connectors, prestressing tendons, anchorages, etc; periodic.
 - d. Prestressing technique; periodic.
 - e. Grade and size of prestressing tendons and anchorages; periodic.
 - 5. Structural Elements, Joints, Anchors, Protection: During masonry construction, verify:
 - a. Size and location of structural elements; periodic.
 - b. Type, size and location of anchors, including anchorage of masonry to structural members, frames or other construction; periodic.
 - c. Size, grade and type of reinforcement, anchor bolts and prestressing tendons and anchorages; periodic.
 - d. Welding of reinforcing bars; continuous.
 - e. Preparation, construction and protection of masonry against hot weather above 90 degrees F and cold weather below 40 degrees F; periodic.

- f. Application and measurement of prestressing force; continuous.
 - 6. Grouting Preparation: Prior to grouting, verify:
 - a. Grout space is clean; periodic.
 - b. Correct placement of reinforcing, connectors, prestressing tendons and anchorages; periodic.
 - c. Correctly proportioned site prepared grouts and prestressing grout for bonded tendons; periodic.
 - d. Correctly constructed mortar joints; periodic.
 - 7. Prestressing Bonded Tendons: Verify placement after grouting; continuous.
 - 8. Preparation of Grout Specimens, Mortar Specimens and Prisms: Observe preparation of specimens; periodic.
- C. Engineered Masonry in Buildings Designated as "Essential Facilities": Verify compliance of each item below with approved Contract Documents and the applicable articles of TMS 402/602.
- 1. Inspections and Approvals:
 - a. Verify compliance with the required inspection provisions of the approved Contract Documents; periodic.
 - b. Verify approval of submittals required by Contract Documents; periodic.
 - 2. Compressive Strength of Masonry: Verify compressive strength of masonry units prior to start of construction and upon completion of each 5,000 square feet increment of masonry erected during construction; periodic.
 - 3. Preblended Mortar and Grout: Verify proportions of materials upon delivery to site; periodic.
 - 4. Slump Flow and Visual Stability Index (VSI): Verify compliance as self consolidating grout arrives on site; continuous.
 - 5. Engineered Elements, Joints, Anchors, Grouting, Protection: Verify compliance of each item below with approved Contract Documents and referenced standards.
 - a. Proportions of site prepared mortar; periodic.
 - b. Placement of masonry units and construction of mortar joints; periodic.
 - c. Placement of reinforcement, connectors, prestressing tendons, anchorages, etc.; periodic.
 - d. Grout space prior to grouting; continuous.
 - e. Placement of grout; continuous.
 - f. Placement of prestressing grout; continuous.
 - g. Size and location of structural elements; periodic.
 - h. Type, size and location of anchors, including anchorage of masonry to structural members, frames or other construction; continuous.
 - i. Size, grade and type of reinforcement, anchor bolts and prestressing tendons and anchorages; periodic.
 - j. Welding of reinforcing bars; continuous.
 - k. Preparation, construction and protection of masonry against hot weather above 90 degrees F and cold weather below 40 degrees F; periodic.
 - l. Application and measurement of prestressing force; continuous.
 - 6. Preparation of Grout Specimens, Mortar Specimens and Prisms: Observe preparation of specimens; continuous.
- 3.05 SPECIAL INSPECTIONS FOR PREFABRICATED AND SITE-BUILT WOOD CONSTRUCTION
- A. High Load Diaphragms: Verify compliance of each item below with approved Contract Documents.
 - 1. Grade and thickness of sheathing.
 - 2. Nominal size of framing members at adjacent panel edges.
 - 3. Nail or staple diameter and length.
 - 4. Number of fastener lines.
 - 5. Fastener spacing at lines and at edges.
 - B. Metal Plate Connected Wood Trusses with Clear Span of 60 feet or More: Verify compliance of each item below with approved Contract Documents in general and with approved truss submittal package in particular.
 - 1. Temporary restraint and bracing.
 - 2. Permanent individual truss member restraint and bracing.

3.06 SPECIAL INSPECTIONS FOR SOILS

- A. Materials and Placement: Verify each item below complies with approved construction documents and approved geotechnical report.
1. Design bearing capacity of material below shallow foundations; periodic.
 2. Design depth of excavations and suitability of material at bottom of excavations; periodic.
 3. Materials, densities, lift thicknesses; placement and compaction of backfill: continuous.
 4. Subgrade, prior to placement of compacted fill verify proper preparation; periodic.
- B. Testing: Classify and test excavated material; periodic.

3.07 SPECIAL INSPECTIONS FOR DRIVEN DEEP FOUNDATIONS

- A. Materials, Equipment and Final Placement: Verify each item below complies with approved construction documents and approved geotechnical report.
1. Material types, sizes and lengths; continuous.
 2. Capacities of test elements and additional load tests as required; continuous.
 3. Placement locations and plumbness; continuous.
 4. Type and size of hammer; continuous.
- B. Installation: Observe driving operations and maintain complete and accurate records for each element; continuous.
1. Record number of blows per foot of penetration.
 2. Determine penetration required to achieve design capacity.
 3. Record tip and butt elevations.
 4. Document any damage to foundation element.
- C. Steel Components of Driven Deep Foundations: Perform additional inspections as required by the Special Inspections for Steel Construction article of this section.
- D. Concrete and Concrete Filled Components of Driven Deep Foundations: Perform additional inspections as required by the Special Inspections for Concrete Construction article of this section.
- E. Specialty Items Associated with Driven Deep Foundations: Conduct special inspections as directed by MBI Companies.

3.08 SPECIAL INSPECTIONS FOR CAST-IN-PLACE DEEP FOUNDATIONS

- A. Materials, Equipment and Final Placement: Verify each item below complies with approved construction documents and approved geotechnical report.
1. Element length; continuous.
 2. Element diameters and bell diameters; continuous.
 3. Embedment into bedrock; continuous.
 4. End bearing strata capacity; continuous.
 5. Placement locations and plumbness; continuous.
 6. Type and size of hammer; continuous.
- B. Drilling Operations: Observe and maintain complete and accurate records for each element; continuous.
- C. Material Volume: Record concrete and grout volumes.
- D. Concrete Elements Associated with Cast-in-Place Deep Foundations: Perform additional inspections as required by the Special Inspections for Concrete Construction article of this section.

3.09 SPECIAL INSPECTIONS FOR HELICAL PILE FOUNDATIONS

- A. Materials, Equipment and Placement: Verify each item below complies with approved construction documents and approved geotechnical report.
1. Type and capacity of installation equipment used; continuous.
 2. Pile dimensions; continuous.
 3. Tip elevation; continuous.
 4. Final depth; continuous.

5. Final installation torque; continuous.
 6. Other installation data requested in writing by MBI Companies; continuous.
- 3.10 SPECIAL INSPECTIONS FOR VERTICAL MASONRY FOUNDATION ELEMENTS
- A. Vertical Masonry Foundation Elements are subject to the same special inspection requirements listed in the "Special Inspections for Masonry Construction" Article of this section.
- 3.11 SPECIAL INSPECTIONS FOR SPRAYED FIRE RESISTANT MATERIALS
- A. Sprayed Fire Resistant Materials, General:
1. Verify compliance of sprayed-fire resistant materials with specific fire-rated assemblies indicated in approved Contract Documents, and with applicable requirements of the building code.
 2. Perform special inspections after rough installation of electrical, mechanical, plumbing, automatic fire sprinkler and suspension systems for ceilings.
- B. Physical and visual tests: Verify compliance with fire resistance rating.
1. Condition of substrates; periodic.
 2. Thickness of sprayed fire resistant material; periodic.
 3. Density of sprayed fire resistant material in pounds per cubic foot; periodic.
 4. Bond strength (adhesion and cohesion); periodic.
 5. Condition of finished application; periodic.
- C. Structural member surface conditions:
1. Inspect structural member surfaces before application of sprayed fire resistant materials; periodic.
 2. Verify preparation of structural member surfaces complies with approved Contract Documents and manufacturer's written instructions; periodic.
- D. Application:
1. Ensure minimum ambient temperature before and after application complies with the manufacturer's written instructions; periodic.
 2. Verify area where sprayed fire resistant material is applied is ventilated as required by the manufacturer's written instructions during and after application; periodic.
- E. Thickness: Verify that no more than 10 percent of thickness measurements taken from sprayed fire resistant material are less than thickness required by fire resistance design in approved Contract Documents. In no case shall the thickness of the sprayed fire resistant material be less than the minimum below.
1. Minimum Allowable Thickness: Tested according to ASTM E605/E605M, periodic.
 - a. Design thickness 1 inch or greater: Design thickness minus 1/4 inch.
 - b. Design thickness greater than 1 inch: Design thickness minus 25 percent.
 2. Floor, Roof and Wall Assemblies: Test thickness according to ASTM E605/E605M with no less than four measurements per 1,000 square feet of sprayed area on each story of the structure or portion thereof; periodic.
 - a. Cellular Decks: Measure thickness within a single 12 inch by 12 inch area. Make a minimum of four measurements arranged symmetrically in testing area.
 - b. Fluted Decks: Measure thickness within a single 12 inch by 12 inch area. Make a minimum of four measurements arranged symmetrically in testing area and include one example each of valley, crest and sides. Report the average of the four measurements.
 3. Structural Members: Test according to ASTM E605/E605M. Test no less than 25 percent of structural members on each story of the structure or portion thereof; periodic.
 - a. Beams and girders: Make nine thickness measurements around beam or girder at each end of a 12 inch by 12 inch length.
 - b. Joists and trusses: Make seven thickness measurements around joist or truss at each end of a 12 inch by 12 inch length.
 - c. Wide flanged columns: Make twelve thickness measurements around column at each end of a 12 inch by 12 inch length.
 - d. Hollow structural sections and pipe columns: Make four thickness measurements around hollow structural section or pipe column at each end of a 12 inch by 12 inch length.

- F. Density: Verify density of sprayed fire resistant material is no less than density required by the fire resistance design in the approved Contract Documents.
 - 1. Floor, Roof and Wall Assemblies: Test according to ASTM E605/E605M with no less than one sample per 2,500 square feet of sprayed area on each story of the structure or portion thereof; periodic.
 - 2. Beams, Girders, Trusses and Columns: Test according to ASTM E605/E605M with no less than one sample per 2,500 square feet of sprayed area on each story of the structure or portion thereof; periodic.
 - G. Bond Strength: Verify adhesive and cohesive bond strength of sprayed fire resistant materials is no less than 150 pounds per square foot when in-place samples of the cured material are tested according to ASTM E736/E736M and as described below.
 - 1. Floor, roof and wall assemblies: Test no less than one sample per each 2,500 square feet of sprayed area on each story of the structure or portion thereof; periodic.
 - 2. Structural members: Test no less than one sample from each type of structural member in each 2,500 square feet of each story of the structure or portion thereof; periodic.
 - 3. Primer, paint and encapsulant bond tests: When sprayed fire resistant material is applied to a primed, painted or encapsulated surface for which acceptable material to substrate performance has not been determined, conduct bond test.
- 3.12 SPECIAL INSPECTIONS FOR MASTIC AND INTUMESCENT FIRE RESISTANT COATINGS
- A. Verify mastic and intumescent fire resistant coatings comply with AWCI 117 and the fire resistance rating indicated on approved Contract Documents.
- 3.13 SPECIAL INSPECTIONS FOR EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)
- A. Verify water resistive barrier coating applied over sheathing complies with ASTM E2570/E2570M.
- 3.14 SPECIAL INSPECTIONS FOR FIRE RESISTANT PENETRATIONS AND JOINTS
- A. Verify penetration firestops in accordance with ASTM E2174.
 - B. Verify fire resistant joints in accordance with ASTM E2393.
- 3.15 SPECIAL INSPECTIONS FOR SMOKE CONTROL
- A. Test smoke control systems as follows:
 - 1. Record device locations and test system for leakage after erection of ductwork but before starting construction that conceals or blocks access to system.
 - 2. Test and record pressure difference, flow measurements, detection function and controls after system is complete and before structure is occupied.
- 3.16 SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE
- A. Seismic Force-Resisting Systems: Comply with the quality assurance plan requirements of AISC 341.
 - B. Structural Steel: Comply with the quality assurance plan requirements of AISC 341.
 - C. Structural Wood:
 - 1. Field gluing; continuous.
 - 2. Nailing, bolting, anchoring and other fastening of components within the seismic force-resisting system; periodic.
 - D. Cold Formed Steel Light Frame Construction:
 - 1. Field welding; periodic.
 - 2. Screw attachment, bolting, anchoring and other fastening of components within the main seismic force-resisting system; periodic.
 - E. Storage Racks and Access Floors: Anchorage; periodic.
 - F. Architectural Components: Erection and fastening of components below; periodic.
 - 1. Exterior cladding.
 - 2. Interior and exterior veneer.

3. Interior and exterior non-loadbearing walls and partitions.
- G. Mechanical and Electrical Components:
1. Anchorage of electric equipment required for emergency or standby power systems; periodic.
 2. Installation and anchorage of other electrical equipment; periodic.
 3. Installation of piping systems for flammable, combustible or highly-toxic contents and associated mechanical units; periodic.
 4. Installation of HVAC ductwork that will contain hazardous materials; periodic.
 5. Vibration isolation systems where the approved Contract Documents require a nominal clearance of 1/4 inch or less between support frame and seismic restraint; periodic.
 6. Installation of mechanical and electrical equipment, including duct work, piping systems and their structural supports, where automatic fire sprinkler systems are installed.
 - a. Verify clearances have been provided as required by Section 13.2.3 of ASCE 7.
 - b. Verify nominal clearance of 3 inches has been provided between fire protection sprinkler drops and sprigs and: structural members not used collectively or independently to support the sprinklers; equipment attached to the building structure; and other systems' piping.
- H. Seismic Isolation Systems:
1. Fabrication and installation of isolator units; periodic.
 2. Fabrication and isolation of energy dissipation devices; periodic.
- I. Cold-Formed Steel Special Bolted Moment Frames:
1. Installation in seismic force-resisting systems; periodic.
- J. Designated Seismic System Verification: Verify label, anchorage or mounting complies with certificate of compliance provided by manufacturer or fabricator.
- K. Structural Testing for Seismic Resistance:
1. Concrete reinforcement: Comply with ACI 318, Section 21.1.5.2.
 - a. Materials Obtain mill certificates demonstrating compliance with ASTM A615/A615M; periodic.
 - b. Welding: Perform chemical tests complying with ACI 318, Section 3.5.2 to determine weldability; periodic.
 2. Structural Steel: Comply with the quality assurance requirements of AISC 341.
 3. Non-Structural Components:
 - a. General Design Requirements: Obtain manufacturer certification of compliance with requirements of ASCE 7, Section 13.2.1; periodic.
 - b. Designated Seismic Force-Resisting Non-Structural System Components: Obtain manufacturer certification of compliance with ASCE 7, Section 13.2.2; periodic.
 4. Seismically Isolated Structures: Test system in accordance with ASCE 7, Section 17.8.
- L. Structural Observations for Seismic Resistance: Visually observe structural system for general compliance with the approved Contract Documents; periodic.
- 3.17 SPECIAL INSPECTIONS FOR WIND RESISTANCE
- A. Structural Wood:
1. Field gluing of components in the main wind force-resisting system; continuous.
 2. Nailing, bolting, anchoring and other fastening of components within the main wind force-resisting system; periodic.
- B. Cold-Formed Steel Light Frame Construction:
1. Field welding; periodic.
 2. Screw attachment, bolting, anchoring and other fastening of components within the main wind force-resisting system; periodic.
- C. Wind Resisting Components:
1. Roof covering, roof deck, and floor framing connections; periodic.
 2. Exterior wall covering and wall connections to roof and floor diaphragms and framing; periodic.

- D. Structural Observations for Wind Resistance: Visually observe structural system for general compliance with the approved Contract Documents; periodic.

3.18 STRUCTURAL OBSERVATIONS FOR STRUCTURES

- A. Provide Observations: For structure where one or more of the following conditions exist:
 1. The structure is classified as Risk Category IV.
 2. The structure is a high-rise building.
 3. Such observation is required by the registered design professional responsible for the structural design.
 4. Such observation is specifically required by AHJ.

3.19 OTHER SPECIAL INSPECTIONS

- A. Provide for special inspection of work that, in the opinion of the AHJ, is unusual in nature.
- B. For the purposes of this section, work unusual in nature includes, but is not limited to:
 1. Construction materials and systems that are alternatives to materials and systems prescribed by the building code.
 2. Unusual design applications of materials described in the building code.
 3. Materials and systems required to be installed in accordance with the manufacturer's instructions when said instructions prescribe requirements not included in the building code or in standards referenced by the building code.
- C. Alternative Test Procedures: Where approved rules and standards do not exist, test materials and assemblies as required by AHJ or provide AHJ with documentation of quality and manner in which those materials and assemblies are used.
- D. Load Tests:
 1. Proposed Construction and Construction in Progress: Where required by code, conduct tests listed below.
 - a. Load test procedures specified in code; periodic.
 - b. Load test procedures not specified in code; periodic.
 - c. Loadbearing Wall and Partition Assemblies: Load test with and without window framing; periodic.
 - d. Exterior Window and Door Assemblies: Wind load design pressure test; periodic.
 2. Completed Construction: Where required by code, conduct tests listed below.
 - a. Load test procedures specified in code; periodic.
 - b. Load test procedures not specified in code; periodic.

3.20 SPECIAL INSPECTION AGENCY DUTIES AND RESPONSIBILITIES

- A. Special Inspection Agency shall:
 1. Verify samples submitted by Contractor comply with the referenced standards and the approved Contract Documents.
 2. Provide qualified personnel at site. Cooperate with MBI Companies and Contractor in performance of services.
 3. Perform specified sampling and testing of products in accordance with specified reference standards.
 4. Ascertain compliance of materials and products with requirements of Contract Documents.
 5. Promptly notify MBI Companies and Contractor of observed irregularities or non-compliance of work or products.
 6. Perform additional tests and inspections required by MBI Companies.
 7. Attend preconstruction meetings and progress meetings.
 8. Submit reports of all tests or inspections specified.
- B. Limits on Special Inspection Agency Authority:
 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Agency may not approve or accept any portion of the work.
 3. Agency may not assume any duties of Contractor.
 4. Agency has no authority to stop the work.

- C. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by MBI Companies.
- D. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.21 TESTING AGENCY DUTIES AND RESPONSIBILITIES

- A. Testing Agency Duties:
 - 1. Test samples submitted by Contractor.
 - 2. Provide qualified personnel at site. Cooperate with MBI Companies and Contractor in performance of services.
 - 3. Perform specified sampling and testing of products in accordance with specified standards.
 - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 5. Promptly notify MBI Companies and Contractor of observed irregularities or non-compliance of work or products.
 - 6. Perform additional tests and inspections required by MBI Companies.
 - 7. Attend preconstruction meetings and progress meetings.
 - 8. Submit reports of all tests or inspections specified.
- B. Limits on Testing or Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the work.
 - 3. Agency may not assume any duties of Contractor.
 - 4. Agency has no authority to stop the work.
- C. On instructions by MBI Companies, perform re-testing required because of non-compliance with specified requirements, using the same agency.
- D. Contractor will pay for re-testing required because of non-compliance with specified requirements.

3.22 CONTRACTOR DUTIES AND RESPONSIBILITIES

- A. Contractor Responsibilities, General:
 - 1. Deliver to agency at designated location, adequate samples of materials for special inspections that require material verification.
 - 2. Cooperate with agency and laboratory personnel; provide access to approved documents at project site, to the work, to manufacturers' facilities, and to fabricators' facilities.
 - 3. Provide incidental labor and facilities:
 - a. To provide access to work to be tested or inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested or inspected.
 - c. To facilitate tests or inspections.
 - d. To provide storage and curing of test samples.
 - 4. Notify MBI Companies and laboratory 24 hours prior to expected time for operations requiring testing or inspection services.
 - 5. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 - 6. Retain special inspection records.
- B. Contractor Responsibilities, Seismic Force-Resisting System, Designated Seismic System, and Seismic Force-Resisting Component: Submit written statement of responsibility for each item listed in the Statement of Special Inspections to AHJ and Owner prior to starting work. Statement of responsibility shall acknowledge awareness of special construction requirements and other requirements listed.
- C. Contractor Responsibilities, Wind Force-Resisting System and Wind Force-Resisting Component: Submit written statement of responsibility for each item listed in the Statement of Special Inspections to AHJ and Owner prior to starting work. Statement of responsibility shall acknowledge awareness of special construction requirements and other requirements listed.

3.23 MANUFACTURERS' AND FABRICATORS' FIELD SERVICES

- A. When specified in individual specification sections, require material suppliers, assembly fabricators, or product manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, to test, adjust, and balance equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to MBI Companies 30 days in advance of required observations.
 - 1. Observer subject to approval of MBI Companies.
 - 2. Observer subject to approval of Owner.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Dewatering
- B. Temporary utilities.
- C. Temporary telecommunications services.
- D. Temporary sanitary facilities.
- E. Temporary Controls: Barriers, enclosures, and fencing.
- F. Security requirements.
- G. Vehicular access and parking.
- H. Waste removal facilities and services.
- I. Project identification sign.
- J. Field offices.

1.02 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

1.03 DEWATERING

- A. Provide temporary means and methods for dewatering all temporary facilities and controls.
- B. Maintain temporary facilities in operable condition.

1.04 TEMPORARY UTILITIES

- A. Owner will provide the following:
 - 1. Electrical power and metering, consisting of connection to existing facilities.
 - 2. Water supply, consisting of connection to existing facilities.
- B. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.
- C. Existing facilities may not be used.
- D. New permanent facilities may be used.
- E. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.05 TELECOMMUNICATIONS SERVICES

- A. Provide equivalent equipment and connections for Owner's field office.
- B. Telecommunications services shall include:
 - 1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
 - 2. Telephone Land Lines: One line, minimum; one handset per line.
 - 3. Internet Connections: Minimum of one; DSL modem or faster.
 - 4. Email: Account/address reserved for project use.
 - 5. Facsimile Service: Minimum of one dedicated fax machine/printer, with dedicated phone line.
 - 6. Facsimile Service: Fax-to-email software on personal computer.
 - 7. Project web site.

1.06 TEMPORARY SANITARY FACILITIES

- A. Provide adequate temporary toilet facilities for the use of workmen, conforming to applicable laws, ordinances, and governmental regulations. Service sanitary facilities on a weekly basis. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.
- C. At end of construction, temporary toilet facilities shall be removed from the site.

1.07 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Provide protection for plants designated to remain. Replace damaged plants.
- D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.08 FENCING

- A. Construction: Commercial grade chain link fence.
- B. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.09 EXTERIOR ENCLOSURES

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.10 INTERIOR ENCLOSURES

- A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.
- B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:
 1. STC rating of 35 in accordance with ASTM E90.
 2. Maximum flame spread rating of 75 in accordance with ASTM E84.
- C. Paint surfaces exposed to view from Owner-occupied areas.

1.11 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

1.12 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.

- E. Designated existing on-site roads may be used for construction traffic.
- F. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.13 WASTE REMOVAL

- A. See Section 01 74 19 - Construction Waste Management and Disposal, for additional requirements.
- B. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- C. Provide containers with lids. Remove trash from site periodically.
- D. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.14 PROJECT IDENTIFICATION

- A. On or near the field office, the Contractor shall install a bulletin board upon which to post legally required notices. The bulletin board shall be of adequate size to contain all required notices and be so constructed as to protect the postings from obliteration by the weather.
- B. The Architect shall provide one painted sign stating the Architect (MBI Companies, Inc.). Location of sign shall be as directed by the Architect. The Contractor shall erect a substantial wood frame to support the sign provided by the Architect.
- C. Maintain all bulletin boards and job signs in good condition from start to completion of the work.
- D. No other signs are allowed without Owner permission except those required by law.

1.15 FIELD OFFICES

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack, and drawing display table.
- B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.
- C. Locate offices a minimum distance of 30 feet from existing and new structures.

1.16 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition.
- E. Restore new permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition.
- C. Pre-installation meetings.
- D. Cutting and patching.
- E. Surveying for laying out the work.
- F. Cleaning and protection.
- G. Starting of systems and equipment.
- H. Demonstration and instruction of Owner personnel.
- I. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.02 RELATED REQUIREMENTS

- A. Section 01 10 00 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 30 00 - Administrative Requirements: Submittals procedures, Electronic document submittal service.
- C. Section 01 40 00 - Quality Requirements: Testing and inspection procedures.
- D. Section 01 50 00 - Temporary Facilities and Controls: Temporary exterior enclosures, and temporary interior partitions.
- E. Section 01 74 19 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.
- F. Individual Product Specification Sections:
 - 1. Advance notification to other sections of openings required in work of those sections.
 - 2. Limitations on cutting structural members.

1.03 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.04 SUBMITTALS

- A. See Section 01 30 00.
- B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
 - 1. On request, submit documentation verifying accuracy of survey work.
 - 2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
 - 3. Submit surveys and survey logs for the project record.
- C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.
 - 6. Include in request:
 - a. Identification of Project.
 - b. Location and description of affected work.
 - c. Necessity for cutting or alteration.

- d. Description of proposed work and products to be used.
- e. Effect on work of Owner or separate Contractor.
- f. Written permission of affected separate Contractor.
- g. Date and time work will be executed.

D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.05 QUALIFICATIONS

- A. For demolition work, employ a firm specializing in the type of work required.
- B. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to MBI Companies. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities.

1.06 PROJECT CONDITIONS

- A. Use of explosives is not permitted.
 - B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
 - C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
 - D. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
 - E. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
 - 1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
 - 2. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.
 - F. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
 - 1. Minimize amount of bare soil exposed at one time.
 - 2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
 - 3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
 - 4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
 - G. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
 - 1. At All Times: Excessively noisy tools and operations will not be tolerated inside the building at any time of day; excessively noisy includes jackhammers.
 - 2. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.
 - H. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
 - 1. Pest Control Service: Weekly treatments.
 - I. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.
 - J. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.
- 1.07 COORDINATION
- A. See Section 01 10 00 - Summary for occupancy-related requirements.
 - B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
 - C. Notify affected utility companies and comply with their requirements.

- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 25 00 – Substitution Procedures, and on 00 63 25 – Substitution Request Form.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or mis-fabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify MBI Companies four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 1. Review conditions of examination, preparation and installation procedures.

2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to MBI Companies, Owner, participants, and those affected by decisions made.
- 3.04 LAYING OUT THE WORK
- A. Verify locations of survey control points prior to starting work.
 - B. Promptly notify MBI Companies of any discrepancies discovered.
 - C. Contractor shall locate and protect survey control and reference points.
 - D. Control datum for survey is that established by Owner provided survey.
 - E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
 - F. Promptly report to MBI Companies the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
 - G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to MBI Companies.
 - H. Utilize recognized engineering survey practices.
 - I. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 2. Grid or axis for structures.
 3. Building foundation, column locations, and ground floor elevations.
 - J. Periodically verify layouts by same means.
 - K. Maintain a complete and accurate log of control and survey work as it progresses.
- 3.05 GENERAL INSTALLATION REQUIREMENTS
- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
 - B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
 - C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
 - D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
 - E. Make neat transitions between different surfaces, maintaining texture and appearance.
- 3.06 ALTERATIONS
- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 1. Verify that construction and utility arrangements are as indicated.
 2. Report discrepancies to MBI Companies before disturbing existing installation.
 3. Beginning of alterations work constitutes acceptance of existing conditions.
 - B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
 - C. Remove existing work as indicated and as required to accomplish new work.
 1. Remove items indicated on drawings.
 2. Relocate items indicated on drawings.

3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
 - b. Provide temporary connections as required to maintain existing systems in service.
 4. Verify that abandoned services serve only abandoned facilities.
 5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- E. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 3. Repair adjacent construction and finishes damaged during removal work.
- F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- H. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- I. Clean existing systems and equipment.
- J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- K. Do not begin new construction in alterations areas before demolition is complete.
- L. Comply with all other applicable requirements of this section.
- 3.07 CUTTING AND PATCHING
- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
1. Complete the work.
 2. Fit products together to integrate with other work.
 3. Provide openings for penetration of mechanical, electrical, and other services.
 4. Match work that has been cut to adjacent work.
 5. Repair areas adjacent to cuts to required condition.
 6. Repair new work damaged by subsequent work.
 7. Remove samples of installed work for testing when requested.
 8. Remove and replace defective and non-complying work.

- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 84 00, to full thickness of the penetrated element.
- J. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.08 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.10 SYSTEM STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.

E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.11 DEMONSTRATION AND INSTRUCTION

A. Conduct training session for Owner's designated personnel covering various mechanical, electrical, and other operating features for familiarization with the physical plant equipment and operation. One copy of the required (see various technical sections on project closeout) mechanical operations manual shall be on hand during this session along with the mechanics familiar with all equipment. These mechanics shall have on hand such tools and/or equipment to reveal controls and mechanic access areas. The instruction session shall be scheduled for a full day but in no case less than the minimum time required to review each type of equipment/operation. The minimum areas of instruction shall be:

1. Location and operation of project site water valves, meters and other operational equipment.
2. Location and operation of project electrical disconnects.
3. Operation of sewage handling facilities.
4. Sprinkler valves, alarms, test and operation.
5. Project landscape irrigation operation.
6. Project Site lighting operation/maintenance.
7. Storm sewer operation/configuration.
8. Refuse containment areas.
9. Roof maintenance/warranty considerations. Traffic cautions.
10. HVAC unit operations/maintenance (filters and thermostats, boiler and/or cooling tower maintenance).
11. Interior lighting, lamp and ballast replacement.
12. Keying and lock operations.
13. Locations and use of required replacement finish materials such as floor and ceiling tiles and panels.
14. Notification procedures for Contractor warranty work.

B. Video Tape Owner's Instruction Session and provide two (2) copies on DVD to Owner as part of Close Out Documentation.

3.12 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.13 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

E. Clean filters of operating equipment.

F. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.

G. Clean site; sweep paved areas, rake clean landscaped surfaces.

H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.14 SUBSTANTIAL COMPLETION

A. Notify the owner not less than twenty-one (21) days prior to the date of substantial completion to allow notification of tenants.

B. Submit written certification to Architect that Project, or designated portion of Project, is substantially complete. Include a list of items to be completed or corrected as a result of his inspection of the work.

- C. Submit the Certificate of Occupancy issued by the local building authority to the Architect for forwarding to the Owner.
- D. The Architect will make an inspection within seven (7) days after receipt of certification, together with Owner's Representative.
- E. Should the Architect consider the work substantially complete:
 - 1. The Contractor shall prepare, and submit to the Architect, a list of items to be completed or corrected, as determined by the Architect's inspection.
 - 2. The Architect will prepare and issue a certificate of substantial completion, AIA document G704, complete with signatures of Owner, Contractor, and Architect, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by the Architect.
 - 3. The Owner will occupy the project, under provisions stated in certificate of substantial completion.
 - 4. The Contractor will complete work listed for completion or correction, within the designated time.
 - 5. Refer to Supplementary Conditions Article 9.10.6 for failure to complete in a timely manner.
- F. Should the Architect consider that the Work is not Substantially Complete:
 - 1. He shall immediately notify Contractor, in writing stating reasons.
 - 2. The Contractor shall complete the Work, and send second written notice to the Architect, certifying that the project or designated portion of project, is substantially complete.
 - 3. The Architect will reinspect the work at the Contractor's expense.

3.15 CLOSEOUT PROCEDURES AT FINAL COMPLETION:

- A. As a precedent to final acceptance of the work and issuance of Certificate of Final Payment, including the Release of Retainage, certain submittals shall be made as specified in the various sections of the specifications. All such submittals shall be delivered to the Architect, in the form and number of copies specified, prior to or with the Contractor's request for final payment. Submittals shall include but not be limited to:
 - 1. General Contractor's Affidavit, Waiver and Release of Lien Statements and Consent of Surety, to final payment as well as release of lien statements from all subcontractors and major material suppliers as specified in Subparagraph 9.10.2 of the General Conditions. These documents shall be addressed to the Owner and shall be original signed documents and not reproduced copies. Two (2) sets of these drawings shall be submitted.
 - 2. Written guarantees and warranties as specified in the various other sections of the specifications.
 - 3. Record drawings as specified in the General Conditions and in Divisions 15 and 16. Include electronic files provided to Contractor for use in the project with as-built information added.
 - 4. One copy of each final approved shop drawing submitted during the course of the project. Include electronic files provided to Contractor for use in the project with as-built information added.
 - 5. Three copies of operation and maintenance data for mechanical equipment and electrical equipment.
 - 6. Letter stating that to the best of the Contractor's knowledge, no asbestos containing materials or other Work hazardous materials or products as currently defined in the Resource Conservation and Recovery Act of 1976 (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), or Environmental Protection Agency (EPA) regulations, rules, or requirements, as amended
 - 7. Contract Close-Out Submittals, except for record drawings, shall be submitted in commercial quality three ring binders with durable plastic covers. Identify the project on the face and side of the binders. Provide a cover sheet giving complete Project Title, Contractor's and Architect's name, address, phone number, name of project superintendent, and related general information. Include a Table of Contents to identify material in the Project Data Binders and a complete listing of subcontractors and material suppliers. Provide copies of all Certificates, Warranties and related documents as well as Product Data, Maintenance and Operation Data and related information required by the Contract Documents or furnished with items included in the Project. Two (2) sets of these documents shall be submitted.
- A. Submit written certification that the Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for final inspection by Owner and Architect.
- B. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments and sum remaining due.

3.16 WARRANTIES

- A. Provide notarized copies.
- B. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers.
- C. Provide Table of Contents and assemble in three D side ring binders with durable plastic covers. Note: This is in addition to copies of warranties provided with operation and maintenance binders.
- D. Submit prior to final Application for Payment.
- E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten (10) days after acceptance, listing date of acceptance as warranty period.

3.17 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance, and extra materials in quantities specified in individual specification sections.
- B. Deliver to Project site and place in location as directed, obtain receipt prior to final payment.

END OF SECTION

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
- E. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

- A. Section 01 30 00 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. Section 01 50 00 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- C. Section 01 70 00 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

1.03 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

- A. See Section 01 30 00.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PROCEDURES

- A. See Section 01 30 00 for additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. See Section 01 50 00 for additional requirements related to trash/waste collection and removal facilities and services.
- C. See Section 01 60 00 for waste prevention requirements related to delivery, storage, and handling.
- D. See Section 01 70 00 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

3.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and MBI Companies.
- C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings.
 - 1. Pre-bid meeting.
 - 2. Pre-construction meeting.
 - 3. Regular job-site meetings.
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
 - 1. Provide containers as required.
 - 2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - 3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

- I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Section 00 72 00 - General Conditions and 00 73 00 - Supplementary Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 70 00 - Execution and Closeout Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to MBI Companies with claim for final Application for Payment.
- B. Operation and Maintenance Data:
 - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. MBI Companies will review draft and return one copy with comments.
 - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with MBI Companies comments. Revise content of all document sets as required prior to final submission.
 - 4. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.

- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates utilized.
 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 1. Measured depths of foundations in relation to finish first floor datum.
 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 4. Field changes of dimension and detail.
 5. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 1. Product data, with catalog number, size, composition, and color and texture designations.
 2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.
- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 1. Description of unit or system, and component parts.
 2. Identify function, normal operating characteristics, and limiting conditions.
 3. Include performance curves, with engineering data and tests.
 4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

- D. Include color coded wiring diagrams as installed.
- E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - 1. Include HVAC outdoor and exhaust air damper calibration strategy.
 - a. Include provisions which ensure that full closure of dampers can be achieved.
 - 2. Include Carbon Dioxide Monitoring Protocol.
 - 3. Include Carbon Monoxide Monitoring Protocol.
 - 4. Include Frost Mitigation Strategy for ventilation heat-recovery system.
- G. Provide servicing and lubrication schedule, and list of lubricants required.
- H. Include manufacturer's printed operation and maintenance instructions.
- I. Include sequence of operation by controls manufacturer.
- J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- K. Provide control diagrams by controls manufacturer as installed.
- L. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- M. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- N. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- O. Include test and balancing reports.
- P. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of MBI Companies, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Arrangement of Contents: Organize each volume in parts as follows:
 - 1. Project Directory.

2. Table of Contents, of all volumes, and of this volume.
3. Operation and Maintenance Data: Arranged by system, then by product category.
 - a. Source data.
 - b. Product data, shop drawings, and other submittals.
 - c. Operation and maintenance data.
 - d. Field quality control data.
 - e. Photocopies of warranties and bonds.
4. Design Data: To allow for addition of design data furnished by MBI Companies or others, provide a tab labeled "Design Data" and provide a binder large enough to allow for insertion of at least 20 pages of typed text.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.
- F. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.
- G. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- H. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- I. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

PART 1 GENERAL

1.01 SCOPE

- A. The extent of concrete work is shown on the drawings.

1.02 SUBMITTALS

- A. Submit manufacturer's product data with application and installation instructions for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing and sealing compounds, and others requested by the Architect.
- B. Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with the ACI 315, Details and Detailing of Concrete Reinforcement, showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of concrete reinforcement. Show on the shop drawings special reinforcement required and openings through concrete structures.
- C. Submit two (2) copies of laboratory test reports with standard deviation analysis or trial batch data. All concrete materials shall be listed.

1.03 QUALITY ASSURANCE

- A. Comply with the provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified.
 - 1. ACI 301, Specifications for Structural Concrete for Buildings
 - 2. ACI 302, Guide for Concrete Floor and Slab Placement
 - 3. ACI 304, Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete
 - 4. ACI 305, Hot Weather Concreting
 - 5. ACI 306, Cold Weather Concreting
 - 6. ACI 315, Detailing Manual
 - 7. ACI 318, Building Code Requirements for Reinforced Concrete
 - 8. ACI 347, Recommended Practice for Concrete Formwork
 - 9. CRSI Manual of Standard Practice
 - 10. ACI 211.1 Standard Practice for Selecting proportions for Normal, Heavyweight, and Mass Concrete.
 - 11. ACI 211.2 - Standard Practice for Selecting Proportions for Structural Lightweight Concrete.
- B. The Contractor is responsible for correcting concrete work that does not conform to the specified requirements, including requirements for strength, tolerances, and finishes.

1.04 QUALITY CONTROL AND TESTING

- A. Materials and operations shall be inspected and tested as work progresses. Failure to detect defective work shall not prevent rejection when defect is discovered, nor shall it obligate the Owner for final acceptance.
- B. If indicated as required by Section 01 40 00 and/or 01 45 00, Special Inspectors shall meet the "Qualifications Standards of Inspectors and Testing Technicians" noted in the Statement of Special Inspections.
- C. Testing agencies shall meet the requirements of "Standard Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction," ASTM E 329.
- D. The following testing service shall be performed by the designated party identified in Sections 01 40 00 and/or 01 45 00.
 - 1. Secure composite samples in accordance with "Standard Method of Sampling Fresh Concrete," ASTM C 172.

2. Mold and cure three specimens from each test required in accordance with "Standard Method of Making and Curing Concrete Test Specimens in the Field," ASTM C 31.
 3. Test specimens in accordance with "Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens," ASTM C 39. Two specimens shall be tested at 28 days for acceptance and one shall be tested at 7 days for information.
 4. Make one strength test for each 100 cu. yd. (76.5 m³) or fraction thereof, of each mix design of concrete placed in any one day.
 5. Determine slump of normal-weight concrete sample for each strength test in accordance with "Standard Test Method for Slump of Portland Cement Concrete," ASTM C 143.
 6. Determine total air content of normal-weight concrete sample for each strength test in accordance with "Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method," ASTM C 231 or "Standard Test Method for air content of freshly mixed concrete by the Volumetric Method," C-173.
 7. Determine temperature, unit weight, yield and air content (gravimetric) of concrete sample for each strength test in compliance with ASTM C 138, "Standard Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete."
 8. If water is added at the site, the designated agency shall retest the concrete in accordance with "Standard Test Method for Slump of Portland Cement Concrete" plus whatever other tests the designated agency feels are necessary. No water will be added at the site without the approval of the designated agency.
 9. Qualification of proposed materials and the establishment of mix designs in accordance with "Building Code Requirements for Reinforced Concrete," ACI 318.
 10. Non-Compliant Test Reports: All test reports indicating non-compliance should be faxed immediately to all parties on the test report distribution list. Copies shall be on different colored paper.
 11. Test results will be reported to the Architect and Contractor in writing on the same day that the test is made. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in the structure, design compressive strength at 28 days, concrete mix proportions and materials, and compressive breaking strength and type of break for both 7 day tests and 28 day tests.
 12. Perform additional tests of in-place concrete when test results indicate required strength level has not been achieved and/or other characteristics have not been attained in the structure, as directed by the Architect. The testing service may conduct tests to determine the adequacy of concrete by cored cylinders that comply with ASTM C42 or by such other methods as are directed by the Architect. Contractor shall pay for such tests and any additional testing that may be required when concrete is verified to be unacceptable.
 13. Employ, at the Contractor's expense, a testing laboratory to perform Flatness/Levelness Testing. Comply with ASTM E-1155-96, but provide a minimum of one line of sampling in two perpendicular directions through each structural bay.
 - a. Perform testing using a "Dipstick Profiler" within 72 hours of concrete placement.
 - b. Supplement Dipstick testing with use of 10 foot certified straight edge placed randomly on the floor. Floor surface shall not exceed 3/8" below edge of straight edge anywhere along its surface when ends are placed on adjacent high spots.
- E. To facilitate testing and inspection, the Contractor shall:
1. Furnish labor to assist testing agency in obtaining and handling samples at the job site.
 2. Advise testing agency in advance of operations to allow for the assignment of testing personnel and testing.
 3. Provide and maintain for the use of the testing agency adequate facilities for proper curing of concrete test specimens on the project site in accordance with ASTM C 31.

PART 2 PRODUCTS

2.01 FORM MATERIALS

- A. Forms for Exposed Finish Concrete: Unless otherwise specified or shown on the drawings, construct formwork for exposed concrete surfaces with plywood, metal, metal framed plywood, or other panel type materials acceptable to the Architect in order to provide exposed surfaces that are continuous, straight, and smooth. To minimize the number of joints and to conform to the joint system shown on the drawings, furnish panels in the largest practicable sizes. Provide form material that is thick enough to withstand pressure of newly placed concrete without bowing or deflection.
- B. Forms for Unexposed Finish Concrete: For surfaces that will be unexposed in the finished structure, form concrete with plywood, lumber, metal, or other material acceptable to the Architect. If lumber is used, it shall be dressed on at least two edges and one side for tight fit.
- C. Automatic machine placement shall be used for curb placement. Submit revised mix design and laboratory test results that meet or exceed requirements for outdoor concrete. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete.

2.02 REINFORCING MATERIALS

- A. Reinforcing Bar: ASTM A615, Grade 60.
- B. Welded Wire Fabric: ASTM A185, welded steel wire fabric.
- C. Supports for Reinforcement: Provide supports for reinforcement, including bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Unless otherwise indicated on the drawings, use wire type bar supports complying with CRSI recommendations. Concrete brick, wood, construction debris and other organic material will not be acceptable. Comply with the following:
 - 1. For slabs on grade, where wetted base material will not support chair legs, use supports with sand plates or horizontal runners.
 - 2. Use Mesh-Ups plastic wire mesh supports as manufactured by Lotel, Baton Rouge, 800-535-8375 or equal product as manufactured by Grip Rite/PROLOK or Dayton Superior/Aztec.
 - 3. For concrete surfaces exposed to view, where leg supports are in contact with forms, provide supports with legs that are hot dip galvanized or protected by either plastic or stainless steel.

2.03 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150, Type I. Use only one brand of cement throughout the project, unless otherwise acceptable to the Architect.
- B. Normal Weight Aggregates: ASTM C33, or local aggregates that do not comply with ASTM C33, but that have been shown by special test or actual service to produce concrete of adequate strength and durability may be used when acceptable to the Architect.
- C. Fine aggregate: Clean, sharp, natural sand or crushed gravel when used for vehicular wearing surfaces. Manufactured sand may be used elsewhere provided the percentage passing a No. 200 sieve is less than 3%.
- D. Coarse Aggregate: Crushed stone conforming to ASTM C 33 standard specification for concrete aggregates that is clean, uncoated, and processed from natural rock or stone and that contains no clay, mud, loam, or foreign matter.
- E. Combined aggregate gradation for slabs and other designated concrete shall be 8% - 18% for large top size aggregates (1½ in.) or 8% - 22% for smaller top size aggregates (1 in. or ¾ in.) retained on each sieve below the top size and above the No. 100.

- F. Vapor Barrier: The vapor barrier shall be placed over prepared base material where indicated below slabs on grade. Vapor Barrier shall conform to ASTM E 1745, Class A. The membrane shall have a water vapor permeance rate on no greater than 0.01 perms when tested in accordance with ASTM E 1745 Section 7.1. Membrane shall have minimum tensile strength of 58 lbf and a Resistance to Puncture of 2600 grams in accordance with ASTM test standards. Vapor barrier shall be no less than **20 mil** thick in accordance with ACI 302.1R.
 - 1. Available Product: Subject to compliance with requirements, products that are pre-approved for incorporation into Work are Stego Wrap (20 mil) Vapor Barrier by Stego Industries LLC, Perminator EVOH by W. R. Meadows or Dura-Skrim by Raven Industries.
- G. Water: clean, fresh, drinkable.
- H. Admixtures:
 - 1. Water Reducing Admixture: Conforming to ASTM C494, Type A, Eucon WR-75, WR-91 or MR by the Euclid Chemical Company, Pozzolith 322N or Polyheed 997 by Master Builders, or Plastocrete 161 by Sika Chemical Corporation.
 - 2. Water Reducing, Retarding Admixture: Conforming to ASTM C494, Type D, Eucon Retarder-75 by the Euclid Chemical Co., Pozzolith 100XR by Master Builders, Plastiment by Sika Corp. or Daratard - 17 by WR Grace and Co.
 - 3. High Range Water Reducing Admixture: Conforming to ASTM C494, Type F or G, (Superplasticizer): Eucon 37, 1037 or Plastol 5000 by the Euclid Chemical Co. or Rheobuild 1000 or 716 by Master Builders or Sikament 686 by Sika Corp.
 - 4. Non-chloride Accelerator: Accelguard 80 by the Euclid Chemical Co. or Darex Set Accelerator by W.R. Grace or SikaSet NC by Sika Corp.
 - 5. Air Entraining Admixture: ASTM C260.
 - 6. Pozzolanic Admixtures: ASTM C618.
 - 7. Prohibited Admixtures: Calcium Chloride or admixtures containing more than 0.05% Chloride Ions are not permitted. Admixtures indicated as prohibited on drawings shall not be used whether or not they appear in the list above.
- I. Supplementary Cementitious Materials:
 - 1. Fly Ash: ASTM C618, Type F: Ignition loss shall not exceed three (3) percent. Only one source of fly ash shall be used.
 - 2. Ground Granulated Blast-Furnace Slag: ASTM C989, Grade 100 or 120.
 - 3. Fly ash shall be used at a maximum percentage rate of 25% of Portland Cement by weight and blast furnace slag at a maximum percentage rate of 40% of Portland Cement by weight. Do not use fly ash for concrete to receive hardeners. The exact amount selected shall be based on a successful test placement.

2.04 RELATED MATERIALS

- A. Mineral Aggregate Base: Open graded stone conforming to ASTM No. 57

Sieve Size , Grading D	Total Percent by Weight, Passing Sieves
1-1/2 in. (37.5 mm)	100
1 in. (25 mm)	95-100
1/2 in. (12.5 mm)	50-80
No. 4 (4.75 mm)	0-10
No. 8 (2.36 mm)	0-5

- B. Waterstops shall be Vinylex RB6316H preformed PVC ribbed waterstop by Vinylex Corporation, Knoxville, Tennessee or equal by Greenstreak or Paul Murphy Plastics Co.

- C. Joint Filler: Provide preformed joint filler at slab expansion joints, joints between floor slabs and walls and other isolation joints. Provide one of the following:
1. Precompressed, impregnated open cell foam.
 2. Asphalt saturated fiberboard complying with ASTM D 1751
 3. Granulated cork between saturated felt or glass fiber felt complying with ASTM D1752 Type H.
- D. Curing Compounds:
1. Clear Curing and Sealing Compound (VOC Compliant, 350 g/l): Liquid type membrane-forming curing compound, clear styrene acrylate type, complying with ASTM C1315, Type I, Class A, 25% solids content minimum. Moisture loss shall be not more than 0.40 Kg/m² when applied at 300 sf/gal. Manufacturer's certification is required. Subject to project requirements provide one of the following products: Super Diamond Clear VOX or Super Rez Seal VOX by The Euclid Chemical Co. or Vocomp-30 by W.R. Meadows or Lumiseal WB Plus by L&M Construction Chemicals Inc.
 2. Curing Compound (Strippable for use on slabs to receive direct applied finishes): The curing compound shall conform to ASTM C309. Provide Kurez DR VOX by The Euclid Chemical Co. or 1100 Clear Series by W. R. Meadows or L&M Cure R by L&M Construction Chemicals Inc.
 3. For concrete to receive a special concrete finish (i.e., staining, polishing, etc.), curing compounds called for in those specification sections, if any, shall take precedence over curing compounds specified herein solely for those areas to receive such finish.
- E. Bonding Compound: Provide polyvinyl acetate, rewettable type compound. Do not use in areas subject to moisture. Euco Weld by Euclid Chemical Co. or Weldcrete by Larsen or LiquidWeld by Sika Corp.
- F. Epoxy Adhesive: Where called for, compound shall be a 2 component, 100% solids, 100% reactive compound suitable for use on dry or damp surfaces.
- G. Non-shrink Grout: The grout shall conform to CRD-C621-80, "Corps of Engineers Specification for Non-shrink Grout". Euco NS by the Euclid Chemical Co. or Masterflow 713 by Master Builders or SikaGrout 212 by Sika Corp.
- H. High Flow Grout: Where high fluidity and/or increased placing time is required, use high flow grout. The factory pre-mixed grout shall conform to ASTM C1107, "Standard Specification for Packages Dry, Hydraulic-Cement Grout (Non-Shrink)." In addition, the grout manufacturer shall furnish test data from an independent laboratory indicating that the grout when placed at a fluid consistency shall achieve 95% bearing under a 18" x 36" base plate. Provide Hi-Flow Grout by The Euclid Chemical Co. or SikaGrout 328 by Sika Corp or MasterFlow 928 by Master Builders.
- I. Non-Oxidizing Metallic Hardener: The specified non-oxidizing metallic floor hardener shall be formulated, processed and packaged under stringent quality control at the manufacturer's owned and controlled factory. The hardener shall be a mixture of specially processed non-rusting aggregate, selected Portland cement and necessary plasticizing agents. Product shall be Diamond-Plate by The Euclid Chemical Co.
1. For concrete to receive a special concrete finish (i.e., staining, polishing, etc.), hardeners called for in those specification sections shall take precedence over hardeners specified herein solely for those areas to receive such finish.
- J. Mineral Aggregate Hardener: The specified mineral aggregate hardener shall be formulated, processed and packaged under stringent quality control at the manufacturer's owned and controlled factory. The hardener shall be a factory-blended mixture of specially processed graded mineral aggregate, selected Portland cement and necessary plasticizing agents. Product shall be Surfex by The Euclid Chemical Co. or MasterTop 100 by Master Builders.

1. For concrete to receive a special concrete finish (i.e., staining, polishing, etc.), hardeners called for in those specification sections shall take precedence over hardeners specified herein solely for those areas to receive such finish.
- K. Liquid Densifier/Sealer: The liquid densifier compound shall be a silicate based sealer which penetrates concrete surfaces, increases abrasion resistance and provides a “low-sheen” surface that is easy to clean and eases the problem of tire mark removal. Product shall have a minimum solids content of 20% of which 50% must be silicate. Provide Diamond Hard by The Euclid Chemical Company or Liqui-Hard by W.R. Meadows or Seal Hard by L&M Construction Chemicals Inc. or SikaFloor 3S by Sika Corp.
1. For concrete to receive a special concrete finish (i.e., staining, polishing, etc.), densifiers/sealers called for in those specification sections shall take precedence over densifiers/sealers specified herein solely for those areas to receive such finish.
- L. Integral Color Dye for Exterior Application: Colored concrete system by L.M. Scofield Company or equal approved prior to bidding, having the following characteristics:
1. Admixture shall be a colored, water-reducing, admixture containing no calcium chloride with coloring agents that are limeproof and ultra-violet resistant.
 2. Colored admixture shall conform to the requirements of ACI 303.1, ASTM C979, ASTM C494 and ASSHTO M194.
 3. Curing compound shall comply with ASTM C309.
 4. Color: To be selected by Architect from manufacturer’s standard chart.
- M. One Part Repair Topping: Latex and microsilica modified cementitious mortar designed for use as a floor or deck topping at thicknesses of 1/16” to 3/8”. Product shall be Thin-Top Supreme by Euclid Chemical Co. or SikaTop 122 Plus by Sika Corp. for thicknesses up to 2”. Product shall be Concrete-Top Supreme by Euclid Chemical Co. or SikaTop 121 Plus by Sika Corp.
- N. Underlayment Compound: Free-flowing, self-leveling, pumpable cementitious base compound, “Super Flo-Top” by The Euclid Chemical Co. or SikaLevel 315 by Sika Corp or Level Set 300 by TEC. The compound shall exhibit the following properties:
- | | |
|----------------------------------|---------------------------------------------|
| Compressive Strength (ASTM C109) | - 4400 PSI @ 7 days
- 5000 PSI @ 28 days |
| Bond Strength (ASTM C1042) | - 700 PSI @ 7 days
- 1000 PSI @ 28 days |

2.05 MISCELLANEOUS MATERIALS

- A. Fill concrete spandrel blocks with concrete and reinforce with two (2) No. 4 bars to form cap beams at top of all masonry walls unless noted otherwise.
- B. Fill steel pan stair risers and landings with non-slip concrete, poured in place and reinforced with 2" diamond mesh lath or fiber mesh. The fill shall consist by volume of 1 part Portland cement, 1-1/2 parts sand and 3 parts pea gravel. Fill shall have a smooth steel trowel finish.
- C. Provide 2’-6” x 2’-6” corner bars of same size and number as footing reinforcing in all foundation corners unless noted otherwise.
- D. Concrete slabs on grade at dumpster pads and equipment pads shall be 6 inch concrete reinforced with WWF 6 x 6 – W2.9 x W2.9 over 4 inches of crushed stone unless noted otherwise on the drawings.

2.06 MIX DESIGN

A. Preparation

1. Prepare design mixes for each type and strength of concrete in accordance with ACI 318, "Building Code Requirements for Structural Concrete," Section 5.3 and with applicable provisions of ASTM C94. Submit written reports of each proposed mix for each class of concrete on the Mix Design Submittal Form included at the end of this specification at least 15 days before the start of work.
2. Provide special mix design for use with automatic machine placement of curbs.
3. The design mix shall provide normal weight concrete with 28 day compressive strength as indicated on the drawings or as shown below if not otherwise indicated.

B. Admixtures

1. All concrete shall contain the specified water reducing admixture or high-range water-reducing admixture. All concrete slabs placed at air temperatures below 50° F shall contain the specified non-chloride accelerator. All concrete required to be air entrained shall contain an approved air entraining mixture. All pumped concrete and concrete with a W/cm of less than 0.50 shall contain the specified high-range water-reducing admixture.
 - a. Use an air entraining admixture in all concrete structures and slabs exposed to freezing and thawing or subjected to hydrostatic pressure:
 - 2.5% to 5.5% for maximum 2 inches aggregate
 - 4.5% to 7.5% for maximum 3/4 inch aggregate
 - 5.5% to 8.5% for maximum 1/2 inch aggregate
 - b. All trowel finished interior slabs: Maximum air content of 3% (do not add air entraining admixture).
2. Water/Cement Ratio:

a. Concrete exposed to freezing and thawing:	0.50
b. Concrete subject to deicers and/or required to be watertight:	0.45
c. Concrete subject to brackish water or salt spray:	0.40
d. Interior trowel finished slabs subject to vehicular traffic:	0.53
e. All other concrete:	0.58
3. Use the amounts of admixtures recommended by the manufacturer for climatic conditions prevailing at the time of placing. Adjust quantities and types of admixtures as required to maintain quality control.

2.07 SELECTION OF PROPORTIONS

A. General:

Concrete shall be composed of Portland cement, fine aggregate, coarse aggregate, water, admixtures, and as specified, Air Entraining Admixture. Proportions of ingredients shall produce concrete that will work readily into corners and angles of forms, bond to reinforcement, without segregation or excessive bleed water forming on the surface. Proportions of materials shall be in accordance with ACI 211.1, "Recommended Practice for Selecting Proportions for Normal, Heavy and Mass Weight Concrete."

1. Proportions of ingredients shall be selected by past field experience or, in lieu of past performance, laboratory trial mixes to produce placeability, durability, specified strength and properties specified.

B. Required Average Strength Above Specified Strength:

Determinations of required average strength (f 'c) shall be in accordance with ACI 318, "Building Code Requirements for Reinforced Concrete," and evaluations of compressive strength results of field concrete shall be in accordance with ACI 214, "Recommended Practice for Evaluation of Strength Test Results of Concrete."

1. Past Field Experience - Proportions shall be established on the actual field experience of the ready-mix producer with the materials proposed to be employed. Standard deviations shall be determined by 30 consecutive tests (or two groups of tests totaling 30 or more).
 - a. Average strength (f 'c) shall exceed specified strength (f 'c) by at least:

400 psi (2.8 MPa)	-	standard deviation is less than 300
550 psi (3.8 MPa)	-	standard deviation is 300 to 400
700 psi (4.8 MPa)	-	standard deviation is 400 to 500
900 psi (6.2 MPa)	-	standard deviation is 500 to 600
1200 psi (8.3 MPa)	-	standard deviation is above 600 or unknown

2. Trial Mixes - When the ready-mix producer does not have a record of past performance, the combination of materials and the proportions selected shall be selected from trial mixes having proportions and consistencies suitable for the work based on ACI 211.1-91, using at least three different water-cement ratios which will produce a range of strengths encompassing those required.
 - a. Average strength (f 'c) required shall be:

Specified compressive strength	--	Required average compressive strength
Less than 3000 (f 'c psi)	--	f 'c + 1000 (f 'c psi)
3000 to 5000 (f 'c psi)	--	f 'c + 1200 (f 'c psi)
Over 5000 (f 'c psi)	--	f 'c + 1400 (f 'c psi)

2.08 CONCRETE QUALITIES REQUIRED

A. Specified Compressive Strength:

Specified Compressive (f 'c) Strength @ 28 days, unless noted higher on the drawings, shall be:

- 3000 psi (21 MPa) – Interior floor slabs (< 6” thick) with applied finishes and footings.
- 4000 psi (28 MPa) – Interior floor slabs (> or equal to 6” thick)
- 4000 psi (28 MPa) – Walks, curbs, columns, beams and other concrete exposed to the weather.

B. Slump:

1. Consolidation by vibration: 3 in. (76 mm) not to exceed 4 in. (102 mm).
2. Consolidation by other methods: 4 in. (102 mm) not to exceed 5 in. (127 mm).
3. Placement and consolidation by automatic machine: Slump as required by mix design.
 - a. Any concrete containing high-range water-reducing admixture (superplasticizer) shall have a maximum slump of 9” unless otherwise approved by the Architect. The concrete shall arrive at job site at a slump of 2” to 3”, (3” to 4” for concrete receiving a “shake-on” hardener or lightweight concrete), be verified, then high-range water-reducing admixture added to increase slump to approved level. All other concrete shall have a maximum slump of 4.”
 - b. Slump shall be determined by ASTM C 143-78, "Standard Test Method for Slump of Portland Cement Concrete."

- C. “Quick Dry” Concrete: Maximum W/cm – 0.40, superplasticized, 3% maximum air content. The floor finish shall be as required by the manufacturer of the specified floor coating or covering.
- D. Aggregate Size: Maximum size of coarse aggregate shall not exceed:
 - 1. One-fifth narrowest dimension between forms.
 - 2. Three-fourths minimum clear spacing between reinforcing bars.
 - 3. One-third the thickness of slabs.
 - 4. Use 1½” top size in all trowel finished interior slabs-on-grade subject to vehicular traffic.

2.09 CONCRETE CLEANERS

- A. Citrus based industrial degreaser and detergent. Acceptable products include:
 - 1. AC-4450 ORANGE NATURAL 20 CONCENTRATE as distributed by Interstate Products Inc. 800-474-7294
 - 2. Commercial Strength Contractor’s Solvent as manufactured by Orange-Sol Industrial Products Inc. 800-279-8822
 - 3. De-Solv-It Heavy Duty 24 as manufactured by Orange-Sol Industrial Products Inc. 800-279-8822

PART 3 EXECUTION

3.01 PRE-CONCRETE CONFERENCE

- A. At least 35 days prior to start of the concrete construction schedule, the contractor shall conduct a meeting to review the proposed mix designs and to discuss the required methods and procedures necessary to achieve the required concrete quality. Contractor shall send a pre-concrete conference agenda to all attendees 20 days prior to the scheduled date of the conference.

3.02 PREPARATION FOR SLABS ON GRADE

- A. Subgrade: Before any base material is installed, compact the subgrade of the area to be paved to 100% of optimum density as determined by ASTM D698 (Standard Proctor).
- B. Base: Install a mineral aggregate base of the type specified above in accordance with Section 303 of the TDOT specifications.
- C. The base must not depress more than 1/2” under a fully loaded ready-mix concrete truck.

3.03 FORMWORK

- A. Design, construct, erect, brace, and maintain formwork according to ACI 301.
- B. Use metal form ties that are factory made, adjustable in length, designed to prevent form deflection, and either removable or snap-off and that will prevent the concrete surface’s being spalled when the ties are removed. If snap-off ties are used, the portion remaining within the concrete after removal must be at least 1-1/2 inches inside the concrete unless the drawings indicate otherwise.
- C. Provide openings in concrete formwork to accommodate the work of other trades. Determine the size and location of openings, recesses, and chases from the trades providing such work. Accurately place and securely support items built into forms.
- D. Clean thoroughly forms and adjacent surfaces that are to receive concrete. Remove chips, wood, sawdust, dirt, and any other debris just before the concrete is placed. After concrete placement, retighten forms if necessary to eliminate mortar leaks.

3.04 PLACING VAPOR BARRIER

- A. Install vapor barrier in accordance with ASTM E1643.

- B. Arrange layout of vapor barrier to minimize seams and penetrations.
- C. Unroll vapor barrier over compacted aggregate base.
- D. Overlap all seams a minimum of six inches and seal with tape.
- E. All penetrations must be sealed using a combination of seam tape and mastic in accordance with manufacturer's latest printed instructions.
- F. Turn vapor barrier up at edge of slab to masonry wall juncture to provide bond break.

3.05 PLACING REINFORCEMENT

- A. For details and methods of placing reinforcement and supports, comply with the specified codes and standards, the recommended practice of the CRSI as outlined in "Placing Reinforcing Bars," and these specifications.

3.06 INSTALLATION OF WATERSTOPS

- A. Provide continuous waterstops and install waterstops in concrete joints where indicated.
- B. Carry waterstops in walls into lower slabs and join to waterstops in slabs with appropriate fittings.
- C. In water bearing structures, provide waterstops in all joints, whether or not indicated on drawings.
- D. Secure waterstops accurately to position and line as indicated on the drawings using factory installed hog rings or factory pre-punched holes in the outermost rib with tie wire. Do not drive nails, screws, or other fasteners through the waterstop at any time at any location.
- E. Secure at intervals of not more than 15 inches to prevent movement during the pour of concrete.
- F. Terminate waterstops 3 inches from the top of finished surfaces of walls and slabs, unless otherwise specified on the drawings.

3.07 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete the formwork installation, reinforcing steel, and items to be embedded or cast in.
- B. Use mechanical vibrating equipment, including a laser screed, supplemented by hand spading, rodding, or tamping to consolidate placed concrete. The equipment and procedures used to consolidate the concrete shall comply with the recommended practices of ACI 309 and suit both the type of concrete and project conditions.
- C. Until the placing of a panel or section is completed, deposit and consolidate concrete slabs in a continuous operation within construction joints.
- D. Consolidate concrete during placing operations so that it is thoroughly worked around reinforcement and other embedded items and into corners.
- E. Bring slab surfaces to the correct level with a straightedge and strike off. Use appropriate bull floats or straightedges to smooth the surface, leaving it free from humps and hollows. Do not sprinkle water on the plastic surface. Do not disturb the slab surfaces before starting finishing operations.
- F. Maintain reinforcement in the proper position during placement operations.
- G. Cold Weather Placement: Comply with ACI 306 and the requirements therein specified to protect concrete work from physical damage or reduced strength due to frost, freezing, or low temperatures.

- H. Hot Weather Placement: When the weather is hot enough to impair the concrete's quality and strength, place the concrete as specified herein and in ACI 305.

3.08 JOINTS

- A. Locate and install construction joints (which are not shown on the drawings) as approved by the Architect so that the strength and appearance of the structure will not be impaired.
- B. Provide keyways at least 1-1/2 inches deep in construction joints that are in walls and slabs or between walls and footings. Bulkheads designed for this purpose may be used if accepted by the Architect. Construction joints, in slabs subjected to vehicular traffic, shall have round, square or diamond dowels as indicated on the drawings.
- C. Place construction joints perpendicular to the main reinforcement. Continue all reinforcement across construction joints of structural members.
- D. Construct isolation joints in slabs on the ground wherever there is contact between slabs on the ground and vertical surfaces and wherever else indicated on the Drawings.
- E. Contraction (control) joints in slabs on ground as shown on the Drawings shall have a maximum spacing of 30 times slab thickness (up to a maximum of fifteen (15) feet) each way if not shown otherwise.
- F. Saw-Cut Control Joints:
1. Primary Method: Soff-Cut System method, by Soff-Cut International, Corona, CA, 800-776-3328. Finisher must have documented successful experience in the use of this method prior to this project. Install cuts within 2 hours after final finish at each saw cut location. Use 1/8 inch thick blade, cutting 1-1/4 inch into slab.
 2. Optional Method (Where Equipment is Not Available for Primary Method): Properly time cutting with the set of the concrete. Saw-cut control joints within 12 hours after finishing. Start cutting as soon as the concrete has hardened sufficiently to prevent aggregates being dislodged by the saw. Complete cutting before shrinkage stresses become sufficient to produce cracking. Use 1/4 inch thick blade, cutting 1/4 slab depth.

3.09 FINISH OF FORMED SURFACES

- A. Finishes to be in accordance with ACI 301.
- B. Trowel Finish: Apply a trowel finish to all interior slab surfaces unless otherwise noted on drawings. Concrete shall be placed, consolidated, struck-off and leveled to proper elevation using a laser screed, or vibratory screed. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units. Cut down high spots and fill low spots with highway straightedge. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture. Surface shall achieve an F(F) 20 – F(L) 17 tolerance. Surface shall then be troweled, at least twice, to a smooth dense finish, free of trowel marks, uniform in texture and appearance, and achieve a tolerance of F(F) 25 and F(L) 20 minimum overall composite and F(F) 17 and F(L) 15 minimum at any individual section measured according to ASTM E 1155. For floors to receive an applied floor covering, grind smooth any surface defects that could telegraph through applied floor covering or repair as necessary with specified repair compound or underlayment to achieve specified tolerance. For finishes in which the concrete surface is exposed to view, grinding or reparations involving compounds or underlayments are not acceptable and shall not be used to achieve specified floor tolerances.
- C. Non-Oxidizing Metallic Floor Hardener: All slabs, in areas subject to vehicular traffic including all loading dock areas and any other areas noted on drawings, shall receive an application of non-oxidizing, metallic floor hardener applied at a rate of 1.5 lbs/ft². Immediately following first floating operation, uniformly distribute approximately 2/3 of required weight of non-oxidizing metallic floor hardener over concrete

surface, by mechanical spreader, and embed by means of power floating. Hardener shall be floated in and second application made. Surface shall be floated again to properly bond hardener to base concrete slab. Surface shall then be troweled, at least twice, to a smooth dense finish.

- D. Mineral Aggregate Hardener: All slabs, in areas noted on drawings, shall receive an application of mineral aggregate hardener applied at a rate of 1.2 lbs/ft². Hardener shall be applied in two applications by mechanical spreader. First shake shall comprise 2/3 of specified amount of hardener. This application shall be made after initial floating operation unless climatic conditions dictate earlier application. Hardener shall be floated in and second application made. Surface shall be floated again to properly bond hardener to base concrete slab. Surface shall then be troweled, at least twice, to a smooth, dense finish.
- E. Non-slip Broom Finish: Apply non-slip broom finish to exterior concrete platforms, steps, and ramps and elsewhere as indicated by the drawings or schedules. Texture shall be as approved by Architect from sample panels.
- F. Liquid Densifier/Sealer Finish: Apply this compound on exposed interior floors subjected to vehicular abrasion and shake on hardener slabs as indicated on the drawings. Application shall be made in strict accordance with directions of the manufacturer and just prior to completion of construction. Spray, squeegee or roll on liquid densifier to clean, dry concrete surface. Liquid should be scrubbed into surface with mechanical scrubber. Keep the surface wet with the densifier during the application process. When product thickens, but not more than 60 minutes after initial application, surface shall be squeegeed or vacuumed to remove all excess liquid
- G. Sealer/Dustproofer Finish: Apply a second coat of the specified curing and sealing compound to interior concrete floors where shown on the drawings or in schedules to be sealed concrete. The compound shall be applied in strict accordance with the directions of the manufacturers and just prior to completion of construction.

3.10 CURING

- A. After placing and finishing the concrete, start initial curing as soon as free water has disappeared from concrete surface. Keep continuously moist for not less than 7 days and above 50° F. When high early strength concrete is used, the temperature requirement may be reduced to three days.
- B. Begin final curing immediately after initial curing and before the concrete has dried. Continue final curing in accordance with ACI 301. Avoid rapid drying at the end of the final curing period.
- C. All exposed interior slabs, not receiving a liquid densifier, and troweled slabs receiving mastic applied adhesives or “shake-on” hardeners shall be cured with the specified curing and sealing compound. Exterior slabs, sidewalks, curbs, and architectural concrete, not receiving a penetrating sealer, shall be cured with the specified clear, non-yellowing curing and sealing compound. Maximum coverage shall be 400 ft²/gallon on steel troweled surfaces and 300 ft²/gallon on floated or broomed surfaces for the curing/sealing compound.
- D. Curing Compound (Strippable): Use the specified strippable curing compound on surfaces to be covered with finish or coating material applied directly to concrete, such as liquid densifier/sealer, waterproofing, dampproofing, membrane roofing, flooring, painting, and other coatings and finish materials. Apply in accordance with manufacturer’s instructions.

3.11 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Unless the drawings show otherwise or the Architect directs, fill in holes and openings left in concrete structures for the work of other trades once that work is in place. Mix, place, and cure concrete as specified herein to blend with in-place construction. Provide other miscellaneous concrete filling shown on the drawings or necessary to complete the work.

- B. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on the drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with the certified diagrams or templates of the manufacturer furnishing the machines and equipment.
- C. Nonshrink Grout: Grout base plates and foundations as indicated using specified non-shrink grout. Use non-metallic grout for exposed conditions, unless otherwise indicated.
 - 1. Where high fluidity and/or increased placing time is required use the specified high flow grout. This grout shall be used for all base plates larger than 10 square feet.

3.12 EVALUATION AND ACCEPTANCE

- A. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength, and no individual strength test result falls below specified compressive strength by more than 500 psi.
- B. **No cracks which affect structural integrity will be accepted.** Affected areas to be removed and replaced. Submit repair plan to structural engineer for approval before beginning repairs
- C. Cracks which do not affect structural integrity:
 - 1. Cracks consistently greater than 1/4" in width will not be accepted, remove and replace section to nearest existing joint.
 - 2. Cracks showing vertical separation of plane will not be accepted remove and replace section to nearest existing joint.
 - 3. Cracks less than 1/4" in width, occurring in appearance sensitive areas (i.e. front entry, front sidewalk, etc.), may require replacement. Final decision resides with the Owner.
 - 4. Cracks less than a 1/4" in width in non-appearance sensitive areas will be filled with Bonsal vinyl concrete repair compound, or approved equal, following manufacturer's recommended application procedures.

3.13 WALKS AND CURBS

- A. Walks and sidewalks shall be not less than 4" thick, placed over a 4" layer of porous fill as specified, and marked off with surface joints at 6'-0" o.c. as shown. Install expansion joints between walks and building, at changes in walk direction, at 30'-0" o.c., and elsewhere as shown. Expansion joints shall be formed with 1/2" thick preformed filler.
- B. Curbs shall be constructed to size and profile shown, placed over binder course of paving. Provide expansion joints at 50 feet on center maximum.
- C. All edges, joints and margins shall be straight and true and rounded with jointing and edging tools.
- D. Walks shall be sloped 1/4" per foot.

3.14 REPAIR OF DEFECTIVE AREAS

- A. With prior approval of method and procedure by the Engineer, all repairs of defective areas shall conform to ACI 301, Section 5.3.7, except that the specified bonding compound must be used.
- B. Leveling of floors for subsequent finishes shall be achieved by use of the specified underlayment material.
- C. All exposed floors shall be leveled, where required, with the specified self-leveling repair topping.
- D. Repair methods not specified above may be used, subject to acceptance of Engineer.

3.15 CLEANING AND PROTECTION

- A. Protect corners, edges, and surfaces of cast-in-place architectural concrete from damage; use guards and barricades.
- B. Protect cast-in-place architectural concrete from staining, laitance, and contamination during remainder of construction period.
- C. Clean cast-in-place architectural concrete surfaces after finish treatment to remove stains, markings, dust, and debris. Use power washer set to low pressure (800 psi maximum) with orange cleaner/degreaser to clean all exposed exterior concrete.
- D. Wash and rinse surfaces according to concrete finish applicator's recommendations and cleaning solutions written instructions. Protect other Work from staining or damage due to cleaning operations.
- E. Do not use cleaning materials or processes that could change the appearance of cast-in-place architectural concrete finishes.

END OF SECTION

CONCRETE MIX DESIGN SUBMITTAL FORM

Project: _____
City: _____
General Contractor: _____
Concrete Contractor: _____
Concrete Strength (Class): _____
Use (describe): _____

Design Mix Information

Please check one

Based on Standard Deviation Analysis
 Trial Mix Test Data

Design Characteristics:

Density pcf
 Strength psi (28 day)
 Air % specified

*If trial mixes are used the Mix Design is proportioned to achieve $f'_{cr} = f'_c + 1200$ psi
 (1400 psi for strength higher than 5000 psi at 28 days)*

<u>MATERIALS</u>	<i>Type/ Source</i>	<i>Specific Gravity</i>	<i>Weight/lb.</i>	<i>Absolute Vol. cu.ft.</i>
Cement				
Flyash				
Microsilica				
Coarse Aggregate				
Fine Aggregate				
Water				
Air				
Other				
	TOTAL			27.0 cu. ft.

* Water/Cement Ratio (lbs. water/lbs. cement) = _____ %

<u>ADMIXTURES</u>	Manufacturer	Dosage oz/cwt
Water Reducer		
Air Entraining Agent		
High Range Water Reducer		
Non-Corrosive Accelerator		
Other		

Slump before HRWR _____ inches
 Slump after HRWR _____ inches

Standard Deviation Analysis (from experience records):

# of Test Cylinders Evaluated:	
Standard Deviation:	

$f'_{cr} = f'_c + 1.34s$ or $f'_{cr} = f'_c + 2.33s - 500$

(Refer to ACI 301 for increased deviation factor when less than 30 tests are available)

LABORATORY TEST DATA

Compressive Strength

Age (days)	Mix # 1	Mix #2	Mix #3
7	psi	psi	psi
7	psi	psi	psi
28	psi	psi	psi
28	psi	psi	psi
28 average	psi	psi	psi

REQUIRED ATTACHMENTS:

- Coarse Aggregate Gradation Report
- Fine Aggregate Gradation Report
- Concrete Compressive Strength Data or Trial Mixture Test Data
- Admixture Compatibility certification letter

Please Check

Submitted by:

Name: _____

Address: _____

Phone #: _____

Main Plant Location: _____

Miles from Project: _____

Secondary Plant Location: _____

Miles from Project: _____

Date: _____

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface treatments for concrete floors and slabs.

1.02 RELATED REQUIREMENTS

- A. Section 03 30 00 - Cast-in-Place Concrete: Finishing of concrete surface to tolerance; floating, troweling, and similar operations; curing.
- B. Section 03 30 00 - Cast-in-Place Concrete: Curing compounds that also function as sealers.

1.03 REFERENCES

- A. ACI 302.1R - Guide to Concrete Floor and Slab Construction.
- B. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete.
- C. ASTM C779 - Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces.
- D. National Floor Safety Institute (NFSI): B101.1 and B101.3 standards; Phase 2 Testing and certification of High-Traction flooring materials, coatings, and treatments.

1.04 POLISHED FLOORING PERFORMANCE REQUIREMENTS

- A. Provide polished flooring that has been selected, manufactured and installed to achieve the following:
 1. Abrasion Resistance: ASTM C779, Method A, high resistance, no more than 0.008 inch wear in 30 minutes.
 2. Reflectivity: Increase of 35% as determined by standard gloss meter.
 3. Waterproof Properties: 70% or greater reduction in absorption.
 4. High Traction Rating: NFSI 101-A, non-slip properties.
- B. Design Requirements:
 1. Hardened Concrete Properties:
 - a. Minimum Concrete Compressive Strength: 3500 psi (24 MPa).
 - b. Normal Weight Concrete: No lightweight aggregate.
 - c. Non-air entrained.
 2. Placement Properties:
 - a. Natural concrete slump of 4 1/2 inches - 5 inches. Admixtures may be used.
 - b. Flatness Requirements:
 - 1) Overall FF 40.
 - 2) Local FF 20.
 3. Hard-Steel Troweled (3 passes) Concrete: No burn marks. Finish to ACI 302.1R, Class 5 floor.

1.05 PRE-INSTALLATION MEETING

- A. Pre-installation meeting: To be attended by the Architect, General Contractor, Concrete Sub-Contractor, and Polished Concrete Sub-Contractor.
- B. Issue a proposed agenda to all parties requested to attend not less than 5 working days prior to the meeting. Include:
 1. Environmental requirements
 2. Scheduling and phasing of work
 3. Coordinating with other work and personnel
 4. Protection of adjacent surfaces.
 5. Surface preparation
 6. Repair of defects and defective work prior to installation
 7. Cleaning
 8. Installation of polished floor finishes.
 9. Application of liquid hardener, densifier.
 10. Protection of finished surfaces after installation.

- C. Convene a minimum of two weeks before starting work of this section.

1.06 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with concrete floor placement and concrete floor curing.

1.07 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate information on shop drawings as follows:
 1. Typical layout including dimensions and floor grinding schedule.
 2. Plan view of floor and joint pattern layout.
 3. Areas to receive colored surface treatment.
 4. Hardener, sealer, densifier in notes.
- C. Product Data: Submit product data, including manufacturer's product sheet, for specified products.
 1. Material Safety Data Sheets (MSDS).
 2. Preparation and concrete grinding procedures.
 3. Colored Concrete Surface, Dye Selection Guides.
- D. Product Data: Manufacturer's published data on each finishing product, including information on compatibility of different products and limitations.
- E. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties as cited in Performance Requirements.
- F. Certificates:
 1. Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
 2. Letter of certification from the National Floor Safety Institute confirming the system has been tested and passed Phase 2 level of certification when tested by Method B101.1 and B101.3.
 3. Current contractor's certificate signed by manufacturer declaring contractor as an approved installer of polishing system.
- G. Manufacturer's Instructions: Manufacturer's installation instructions.
- H. Maintenance Data: Provide data on maintenance and renewal of applied finishes.
- I. Closeout Submittals:
 1. Warranty: Submit warranty documents specified.
 2. Operation and Maintenance Data: Submit operation and maintenance data for installed products.
 - a. Manufacturer's instructions on maintenance renewal of applied treatments.
 - b. Protocols and product specifications for joint filling, crack repair and/or surface repair.

1.08 QUALITY ASSURANCE

- A. Qualifications:
 1. Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
 2. Installer trained and holding current certification for installation by manufacturer.
 3. Manufacturer Qualifications:
 - a. Ensure manufacturer has minimum 5 years experience in manufacturing components similar to or exceeding requirements of project.
 - b. Manufacturer capable of providing field service representation during construction and approving application method.
- B. Regulatory Requirements.
 1. NFSI Test Methods B101.1 and B101.3 Phase Two Level High Traction Material.
 2. Applicable Building Codes

1.09 MOCK-UP

- A. For coatings, construct mock-up area under conditions similar to those that will exist during application, with coatings applied.
- B. Mock-Up Size: 10 feet square
- C. At location as directed under conditions similar to those which will exist during actual placement.
- D. Locate where directed by Architect.
- E. Mock-up will be used to judge workmanship, concrete substrate preparation, operation of equipment, material application, color selection and shine.
- F. Allow adequate time for inspection of mock-up before proceeding with work.
- G. When accepted, mock-up will demonstrate minimum standard of quality required for this work.
- H. Accepted mock-up may remain as part of the work.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's sealed packaging, including application instructions.

1.11 FIELD CONDITIONS

- A. Maintain light level equivalent to a minimum 200 W light source at 8 feet above the floor surface over each 20 foot square area of floor being finished.
- B. Do not finish floors until interior heating system is operational.
- C. Maintain ambient temperature of 50 degrees F minimum.

1.12 WARRANTY

- A. A. Time Period: Warrant that the Polished Concrete Floor will maintain its luster and overall appearance with reasonable cleaning for (36) months from date of Final Acceptance.
- B. Repairs:
 - 1. Repair unsatisfactory conditions promptly at no additional cost to the Owner.
 - 2. Emergency repairs may be made by the Owner without relieving the Contractor of his warranty obligations.
 - 3. Delays of more than 30 days for repair work will allow the Owner to proceed with such repairs at the Contractor's expense.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Basis of Design: L & M Construction Chemicals, Inc., 14851 Calhoun Rd., Omaha, NE 68152-1140; Telephone: (800) 362-3331, (402) 453-6600; Fax: (402) 453-0244; website: www.LMCC.com or alternate manufacturer approved by Architect prior to bidding.

2.02 CONCRETE FLOOR FINISH APPLICATIONS

- A. Unless otherwise indicated, all concrete floors are to be finished using liquid densifier/hardener.
- B. Hardener, Sealer, Densifier: Proprietary, water based, odorless liquid, VOC compliant, environmentally safe chemical hardening solution leaving no surface film.
 - 1. Basis of Design: L & M Construction Chemicals, Inc., FGS Hardener Plus.
- C. Liquid Densifier/Hardener.
- D. Dry Shake Hardener.
- F. Penetrating Clear Sealer.
- G. High Gloss Clear Sealer.

J. Polished Finish.

2.03 SURFACE TREATMENTS

- A. Troweling Aid, Densifier and Curing Agent: Liquid reactive colloidal silica-based topical treatment, spray-applied to wet concrete and floated or troweled into the surface.
1. Product:
 - a. Solomon Colors; Solomon Colors Lythic Day1: www.solomoncolors.com/#sle.
 - b. Substitutions: See Section 01 25 00 – Substitution Procedures.

2.04 DENSIFIERS AND HARDENERS

- A. Liquid Densifier/Hardener: Penetrating chemical compound that reacts with concrete, filling the pores and dustproofing; for application to concrete after set.
1. Composition: Lithium silicate.
 2. Products:
 - a. ARDEX Engineered Cements: www.ardexamericas.com.
 - b. Euclid Chemical Company: www.euclidchemical.com.
 - c. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc: www.lmcc.com.
 - d. PROSOCO, Inc: www.prosoco.com/consolideck.
 - e. W. R. Meadows, Inc: www.wrmeadows.com.
 - f. Substitutions: See Section 01 25 00 – Substitution Procedures.
- B. Dry Shake Hardener: Premixed dry powder for spreading on and working into concrete surface prior to set.
1. Color(s): As selected by MBI Companies from manufacturer's standard range.
 2. Products:
 - a. Euclid Chemical Company: www.euclidchemical.com.
 - b. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc: www.lmcc.com.
 - c. Master Builders Solutions by BASF: www.master-builders-solutions.basf.us/en-us.
 - d. SpecChem, LLC: www.specchemllc.com.
 - e. Substitutions: See Section 01 25 00 – Substitution Procedures.

2.05 COATINGS

- A. Concrete Floor Topping with Aggregate: Pre-mixed blend of Portland cement, hardeners and emery/corundum.
1. Product:
 - a. Dayton Superior Corporation: www.daytonsuperior.com.
 - b. Euclid Chemical Company: www.euclidchemical.com.
 - c. Euclid Chemical Company: www.euclidchemical.com.
 - d. Substitutions: See Section 01 25 00 – Substitution Procedures.
- B. High Gloss Clear Coating: Transparent, non-yellowing, water- or solvent-based coating.
1. Composition: Acrylic polymer-based.
 2. Nonvolatile Content: 15 percent, minimum, when measured by volume.
 3. Products:
 - a. Euclid Chemical Company: www.euclidchemical.com.
 - b. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc: www.lmcc.com.
 - c. PROSOCO, Inc: www.prosoco.com/consolideck.
 - d. The QUIKRETE Companies; QUIKRETE®: www.quikrete.com.
 - e. SpecChem, LLC: www.specchemllc.com.
 - f. W. R. Meadows, Inc: www.wrmeadows.com.
 - g. Substitutions: See Section 01 25 00 – Substitution Procedures.
- C. Low Gloss Clear Coating: Transparent, non-yellowing, water- or solvent-based coating.
1. Composition: Acrylic polymer-based.
 2. Nonvolatile Content: 25 percent, minimum, when measured by volume.
 3. Products:
 - a. Concrete Sealers USA: www.concretesealersusa.com.
 - b. Concrete Sealers USA: www.concretesealersusa.com.

c. Substitutions: See Section 01 25 00 – Substitution Procedures.

D. Penetrating Sealer: Transparent, non-yellowing, water- or solvent-based coating.

1. Composition: Siliconate.

2. Products:

a. Ameripolish, Inc: www.ameripolish.com.

b. Concrete Sealers USA: www.concretesealersusa.com.

c. Surface Koatings, Inc: www.surfkoat.com.

d. Substitutions: See Section 01 25 00 – Substitution Procedures.

2.06 POLISHED CONCRETE SYSTEM

A. Polished Concrete System: Materials, equipment, and procedures designed and furnished by a single manufacturer to produce dense polished concrete of the specified sheen.

1. Acceptable Systems:

a. ARDEX Engineered Cements: www.ardexamericas.com.

b. Euclid Chemical Company; www.euclidchemical.com.

c. L&M Construction Chemicals, Inc., a subsidiary of Laticrete International, Inc: www.lmcc.com.

d. PROSOCO, Inc: www.prosoco.com/consolideck.

e. W. R. Meadows, Inc: www.wrmeadows.com.

f. Substitutions: See Section 01 25 00 – Substitution Procedures.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that floor surfaces are acceptable to receive the work of this section.

B. Verify that flaws in concrete have been patched and joints filled with methods and materials suitable for further finishes.

3.02 GENERAL

A. Apply materials in accordance with manufacturer's instructions.

3.03 COATING APPLICATION

A. Verify that surface is free of previous coatings, sealers, curing compounds, water repellents, laitance, efflorescence, fats, oils, grease, wax, soluble salts, residues from cleaning agents, and other impediments to adhesion.

B. Verify that water vapor emission from concrete and relative humidity in concrete are within limits established by coating manufacturer.

C. Protect adjacent non-coated areas from drips, overflow, and overspray; immediately remove excess material.

D. Apply coatings in accordance with manufacturer's instructions, matching approved mock-ups for color, special effects, sealing and workmanship.

3.04 CONCRETE POLISHING

A. Execute using materials, equipment, and procedures specified by manufacturer, using manufacturer approved installer.

1. Final Polished Sheen: Satin finish; other sheens are included as comparison to illustrate required sheen; final sheen is before addition of any sealer or coating, regardless of whether that is also specified or not.

2. Semi-Gloss Finish: Reflecting overhead and side images from 35 to 45 feet away.

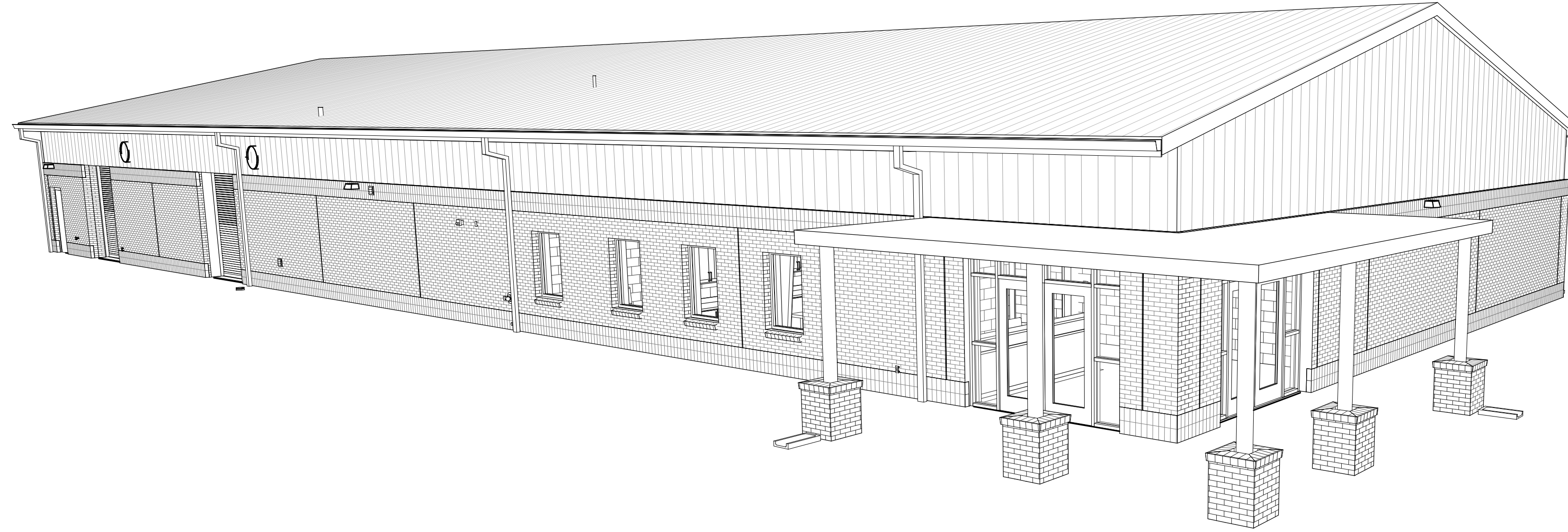
3. High Gloss Finish: Finish that looks wet and shows mirror-like reflections of side and overhead images.

B. Protect finished surface as required and as recommended by manufacturer of polishing system.

END OF SECTION

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

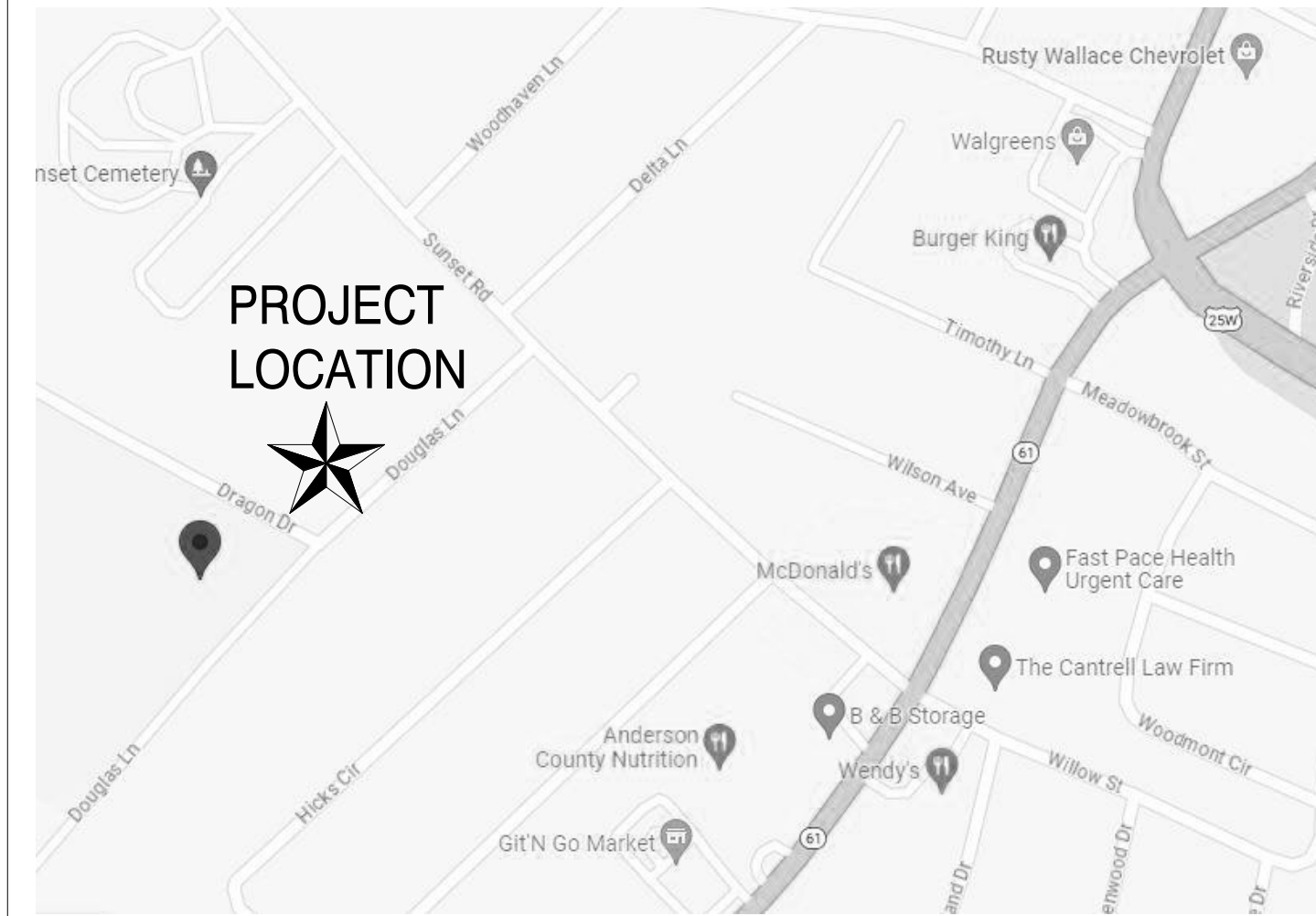
411 DOUGLAS LN
CLINTON, TN 37716



ABBREVIATIONS:

AFF	ABOVE FINISH FLOOR	MTL	- METAL
ALT	- ALTERNATE	MG	- MANUFACTURING
ALUM	- ALUMINUM	MFR	- MANUFACTURER
ARCH	- ARCHITECTURAL	MIN	- MINIMUM
ACT	- ACOUSTICAL TILE CEILING	MISC	- MISCELLANEOUS
ASPH	- ASPHALT	NIC	- NOT IN CONTRACT
BF	- BOTTOM FACE	NTS	- NOT TO SCALE
BSMT	- BASEMENT	NO. #	- NUMBER
BM	- BENCH MARK	OC	- ON CENTER
BLOG	- BUILDING	OD	- OUTSIDE DIAMETER
BLK	- BLOCK	OD	- PLATE
BRG	- BEARING	PLAS	- PLASTIC
CB	- CATCH BASIN	P LAM	- PLASTIC LAMINATE
CJ	- CONTROL JOINT	PLYWD	- PLYWOOD
CHB	- CHALK BOARD	PTD	- PAINTED
CLG	- CEILING	RAD,R	- RADIUS
CLOS. CL	- CLOSET	RD	- ROOF DRAIN
CLR	- CLEAR	REIN	- REINFORCING
COL	- COLUMN	REQD	- REQUIRED
COMP	- COMPOSITION	RS	- RISER
CONC	- CONCRETE	RM	- ROOM
CONST	- CONSTRUCTION	RO	- ROUGH OPENING
CMU	- CONCRETE MASONRY UNIT	SCHED	- SCHEDULE
CT	- CERAMIC TILE	SCWD	- SOLID CORE WOOD
DTL	- DETAIL	SECT	- SECTION
D, DIA	- DIAMETER	SHT	- SHEET
DN	- DOWN	SIM	- SIMILAR
DWG	- DRAWING	SPECS	- SPECIFICATIONS
DF	- DRINK FOUNTAIN	SOFT / SF	- SQUARE FEET
DS	- DOWNSPOUT	STD	- STANDARD
EA	- EACH	STL	- STEEL
EF	- EACH FACE	STOR	- STORAGE
ELEC	- ELECTRIC	SD	- STORM DRAIN
EWC	- ELECTRIC WATER COOLER	SUSP	- SUSPENDED
ELEV	- ELEVATION	SQ	- SQUARE
EXIST	- EXISTING	TACK	- TACK BOARD
EXT	- EXTERIOR	THOLD	- THRESHOLD
EJ	- EXPANSION JOINT	TLT	- TOILET
FE	- FIRE EXTINGUISHER	TD, TDS	- THREAD (S)
FL	- FLOOR	TF	- TOP FACE
FD	- FLOOR DRAIN	TYP	- TYPICAL
FT	- FOOT	URINAL	- URINAL
FTNG	- FOOTING	VF	- VERIFY IN FIELD
GALV	- GALVANIZED IRON	VS	- VENT STACK
GA	- GAUGE	VOL	- VOLUME
GYP	- GYPSUM	VT	- VINYL TILE
HB	- HOSE BIB	VERT	- VERTICAL
HCWD	- HOLLOW CORE WOOD	WSCOT	- WAINSCOT
HDW	- HARDWARE	WC	- WATER CLOSET
HGT	- HEIGHT	WH	- WATER HEATER
HM	- HOLLOW METAL	WPF	- WATERPROOFING
ID	- INSIDE DIAMETER	WFL	- WIDE FLANGE
IN	- INCH	WDF	- WINDOW
INV	- INVERT	WD	- WOOD
JAN	- JANITOR	WT	- WIT
JST	- JOIST	WWF	- WELDED WIRE FABRIC
LAV	- LAVATORY	WWM	- WELDED WIRE MESH
LB	- LBS	L	- LEAD
MH	- MANHOLE	AT	- ANGLE
MAX	- MAXIMUM	@	- CHANNEL
MECH	- MECHANICAL	Ø	- DIAMETER

VICINITY MAP:



MATERIALS LEGEND:

	CONCRETE BLOCK		CONCRETE IN SECTION		RIGID INSULATION, EIFS AS NOTED
	BRICK		SOIL IN SECTION		PLYWOOD
	METAL IN SECTION		CRUSHED STONE		FINISH WOOD
	GYP. BOARD, PLASTER, OR CONCRETE IN PLAN AS NOTED		BATT INSULATION		WOOD FRAMING

PROJECT INFORMATION:

PROJECT DESCRIPTION
A NEW 9,282 S.F. WELDING BUILDING AND AGRICULTURE FOR CLINTON HIGH SCHOOL.

JURISDICTION
CITY OF CLINTON, TN
CODES ENFORCEMENT
100 N. BOWLING STREET
CLINTON, TN 37716
PHONE NUMBER (865) 259-1107 OR (865) 259-1108

RESPONDING FIRE DEPARTMENT:
JEFF LITTLE, FIRE CHIEF
264 HIWAY DR.
CLINTON, TN 37716
PHONE: 865-457-2131
EMAIL: JLITTLE@CLINTONTN.NET

DESIGN CODES
2018 INTERNATIONAL BUILDING CODE
2017 NATIONAL ELECTRICAL CODE
2018 INTERNATIONAL FIRE CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 INTERNATIONAL FUEL GAS CODE
2018 INTERNATIONAL PLUMBING CODE
2018 INTERNATIONAL ENERGY CONSERVATION CODE
2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES CODE (ICC A117.12009)

TYPE OF CONSTRUCTION: II-B, SPRINKLERED.
OCCUPANCY: EDUCATIONAL
NUMBER OF STORIES: 1 STORY

IECC CLIMATE ZONE: 4A, CLINTON, TENNESSEE

STATE DESIGN CODES
2012 INTERNATIONAL EXISTING BUILDING CODE
2012 INTERNATIONAL BUILDING CODE (EXCLUDING CHAPTER 11 AND SECTION 3411)
2017 NATIONAL ELECTRICAL CODE, NFPA 70
2012 INTERNATIONAL FIRE CODE
2012 INTERNATIONAL MECHANICAL CODE
2012 INTERNATIONAL PLUMBING CODE
2012 INTERNATIONAL FUEL GAS CODE
2012 INTERNATIONAL ENERGY CONSERVATION CODE
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN
2012 NFPA - 101 LIFE SAFETY CODE

NOTE:
WHERE THERE IS A DISCREPANCY BETWEEN THE STATE AND LOCAL BUILDING CODES, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

PROJECT DIRECTORY:

OWNER: ANDERSON COUNTY DR. TIM PARROTT - DIRECTOR 101 S. MAIN ST. CLINTON, TN 37716 865-463-2800	STRUCTURAL ENGINEER: MBI COMPANIES INC. NICK DEAL 299 N. WEISGARBER ROAD KNOXVILLE, TN 37919 865-584-0999	MECHANICAL ENGINEER: MBI COMPANIES INC. JOHN BUCHANAN 299 N. WEISGARBER ROAD KNOXVILLE, TN 37919 865-584-0999
ARCHITECT: MBI COMPANIES INC. VALERIE NIPPER 299 N. WEISGARBER ROAD KNOXVILLE, TN 37919 865-584-0999	ELECTRICAL ENGINEER: VREELAND ENGINEERS INC. HAROLD DAMRON 6107 SUTHERLAND AVENUE KNOXVILLE, TN 37919 865-745-4402	CIVIL ENGINEER: MBI COMPANIES INC. AWS HADEETHI 299 N. WEISGARBER ROAD KNOXVILLE, TN 37919 865-584-0999
SURVEYING: MCGREW ENGINEERING & SURVEYING ALEX MCGREW 353 CULLOM ST., CLINTON, TN 37716 865-457-1864	GENERAL CONTRACTOR: GCE CONSTRUCTION TIMOTHY GAYLOR P.O. BOX 177 LAFOLLETTE, TN 37766 MOBILE: 423-494-1410 EMAIL: tim@gceco.net	

LIST OF DRAWINGS:

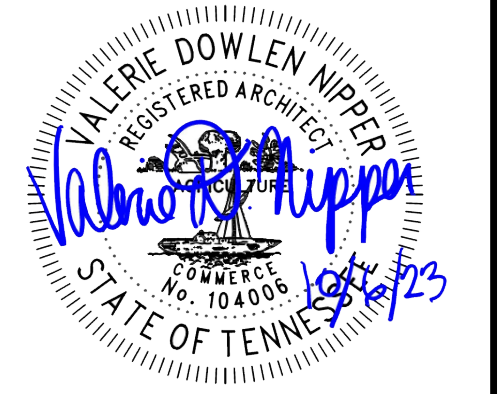
SHEET #	DRAWING TITLE	REV #
GENERAL		
G000	COVER SHEET	
CIVIL AND SITE ENGINEERING		
C001	CIVIL NOTES AND LEGEND	
C002	OVERALL SITE PLAN	
C100	PHASE 1 EROSION PREVENTION & SEDIMENT CONTROL PLAN	
C101	PHASE 2 EROSION PREVENTION & SEDIMENT CONTROL PLAN	
C200	SITE DEMOLITION PLAN	
C300	SITE LAYOUT & UTILITY PLAN	
C400	SITE GRADING & DRAINAGE PLAN	
C800	CIVIL DETAILS	
C801	CIVIL DETAILS	
C802	CIVIL DETAILS	
C803	CIVIL DETAILS	
L100	LANDSCAPE PLAN	
ARCHITECTURAL		
A000	GENERAL NOTES AND ACCESSIBILITY DETAILS	
A001	LIFE SAFETY INFORMATION	
A101	NOTED FLOOR PLANS	
A102	DIMENSION FLOOR PLANS	
A201	DOOR SCHEDULE, DOOR/FRAME ELEVATIONS	
A202	DOOR AND WINDOW DETAILS	
A301	ROOF PLAN AND DETAILS	
A401	EXTERIOR ELEVATIONS	
A501	WALL SECTIONS	
A502	WALL SECTIONS	
A601	ENLARGED PLANS, INTERIOR ELEVATIONS AND DETAILS	
A602	ENLARGED PLANS, INTERIOR ELEVATIONS AND DETAILS	
A603	ENLARGED PLANS, INTERIOR ELEVATIONS AND DETAILS	
A701	REFLECTED CEILING PLAN AND DETAILS	
A901	FLOOR FINISH PLAN	
STRUCTURAL ENGINEERING		
S001	STRUCTURAL NOTES	
S002	SPECIAL INSPECTIONS	
S003	TYPICAL FOUNDATION AND SLAB ON GRADE DETAILS	
S004	TYPICAL CMU DETAILS W/ HORIZONTAL JOINT REINFORCING	
S101	FOUNDATION PLAN	
MECHANICAL		
FP001	FIRE PROTECTION LEGENDS, SPECIFICATIONS, AND NOTES	
FP101	FLOOR PLAN - FIRE PROTECTION	
FP201	FIRE PROTECTION DETAILS	
FP202	FIRE PROTECTION DETAILS	
M001	HVAC LEGENDS, SPECIFICATIONS, AND NOTES	
M101	FLOOR PLAN - HVAC	
M201	HVAC SCHEDULES	
M301	HVAC DETAILS	
P001	PLUMBING LEGEND AND NOTES	
P101	FLOOR PLAN - SANITARY	
P102	FLOOR PLAN - WATER	
P103	ENLARGED BATHROOM PLAN	
P201	PLUMBING SCHEDULES	
P301	PLUMBING DETAILS	
ELECTRICAL ENGINEERING		
E101	FIRST FLOOR PLAN - LIGHTING	
E102	FIRST FLOOR PLAN - POWER	
E103	FIRST FLOOR PLAN - COMMUNICATION	
E104	FIRST FLOOR PLAN - FIRE ALARM AND HVAC WIRING	
E201	LEGEND, SCHEDULES, DETAILS	
E202	PANELBOARD SCHEDULES, FEEDER DIAGRAM	
Grand total: 53		

MBI

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

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PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

<input type="checkbox"/>	FOR REVIEW ONLY
<input type="checkbox"/>	FOR PERMITTING ONLY
<input type="checkbox"/>	SCHEMATIC DESIGN
<input type="checkbox"/>	DESIGN DEVELOPMENT
<input type="checkbox"/>	CONSTRUCTION BIDDING
<input checked="" type="checkbox"/>	CONSTRUCTION DOCUMENTS
<input type="checkbox"/>	AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

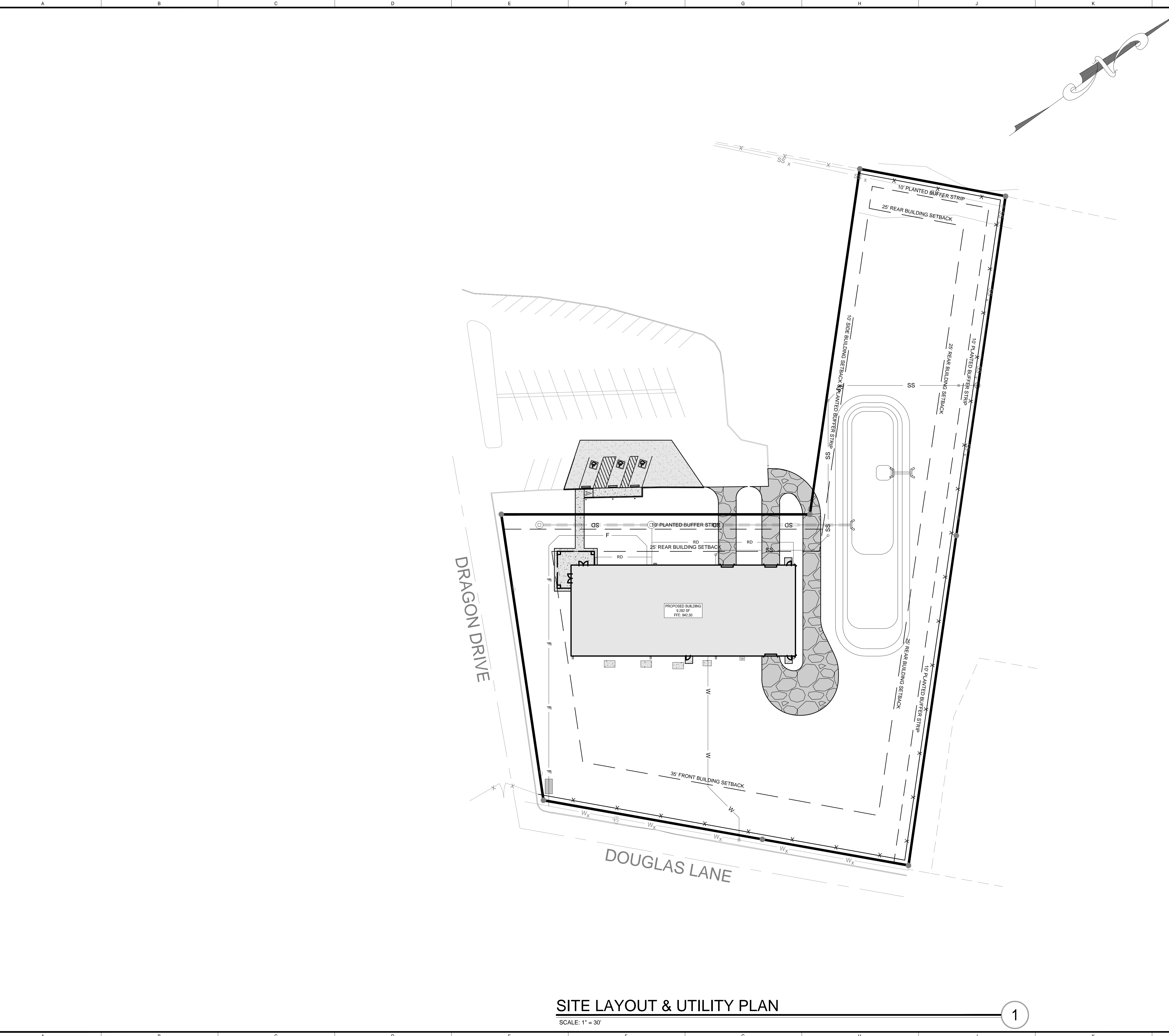
SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG
SHEET TITLE:	

COVER SHEET

SHEET NO.:

G000

R:\Revit\Projects\2022\220042\Anderson County Schools\220042-02_Clinton High School Welding Building\03_Civil\03_CAD\03_220042-02_CB.dwg, 9/25/2023 9:14:13 AM



SITE LAYOUT & UTILITY PLAN

SCALE: 1" = 30'

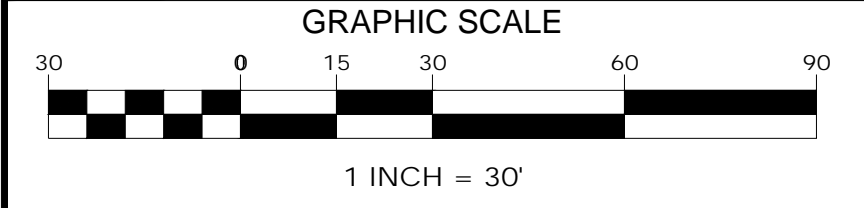
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GENERAL SHEET NOTES:

1. SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS



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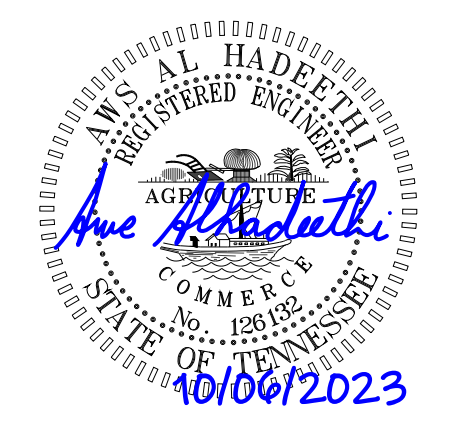
MBI

ENGINEER:

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

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PROJECT INFORMATION

PROJECT:

**CLINTON HIGH SCHOOL
WELDING AND
AGRICULTURAL BUILDING**

PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: **220042-02**

ACTIVE DESIGN PHASE

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- CONSTRUCTION BIDDING
- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN



SHEET INFORMATION

SHEET ISSUED: 09/25/2023
DESIGNED BY: I.A.J.
DRAWN BY: I.A.J.
REVIEWED BY: A.M.A.
SHEET TITLE:

OVERALL SITE PLAN

SHEET NO.:

C002



GENERAL SHEET NOTES

1. SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS
2. TEMPORARY STABILIZATION IS REQUIRED WHEN GRADING OPERATIONS ARE TEMPORARILY HALTED FOR OVER 14 DAYS AND ON SOIL STOCKPILES. SEED AREAS THAT SHOW SIGNS OF EXCESSIVE EROSION.
3. CONSTRUCTION LIMITS SHALL BE CLEARLY MARKED IN THE FIELD.

EROSION CONTROL LEGEND

- SF SILT FENCE; SEE DETAIL 3/C800
- [Stone Pattern] CONSTRUCTION EXIT; SEE DETAIL 1/C800

ENGINEER:

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CONSULTANT

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PROJECT INFORMATION

PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURAL BUILDING

PROJECT ADDRESS: 411 DOUGLAS LN, CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

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- CONSTRUCTION BIDDING
- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 09/25/2023
DESIGNED BY: I.A.J.
DRAWN BY: I.A.J.
REVIEWED BY: A.M.A.
SHEET TITLE: PHASE 1 EROSION PREVENTION & SEDIMENT CONTROL PLAN

SHEET NO.: C100

PHASE 1 EROSION PREVENTION & SEDIMENT CONTROL PLAN

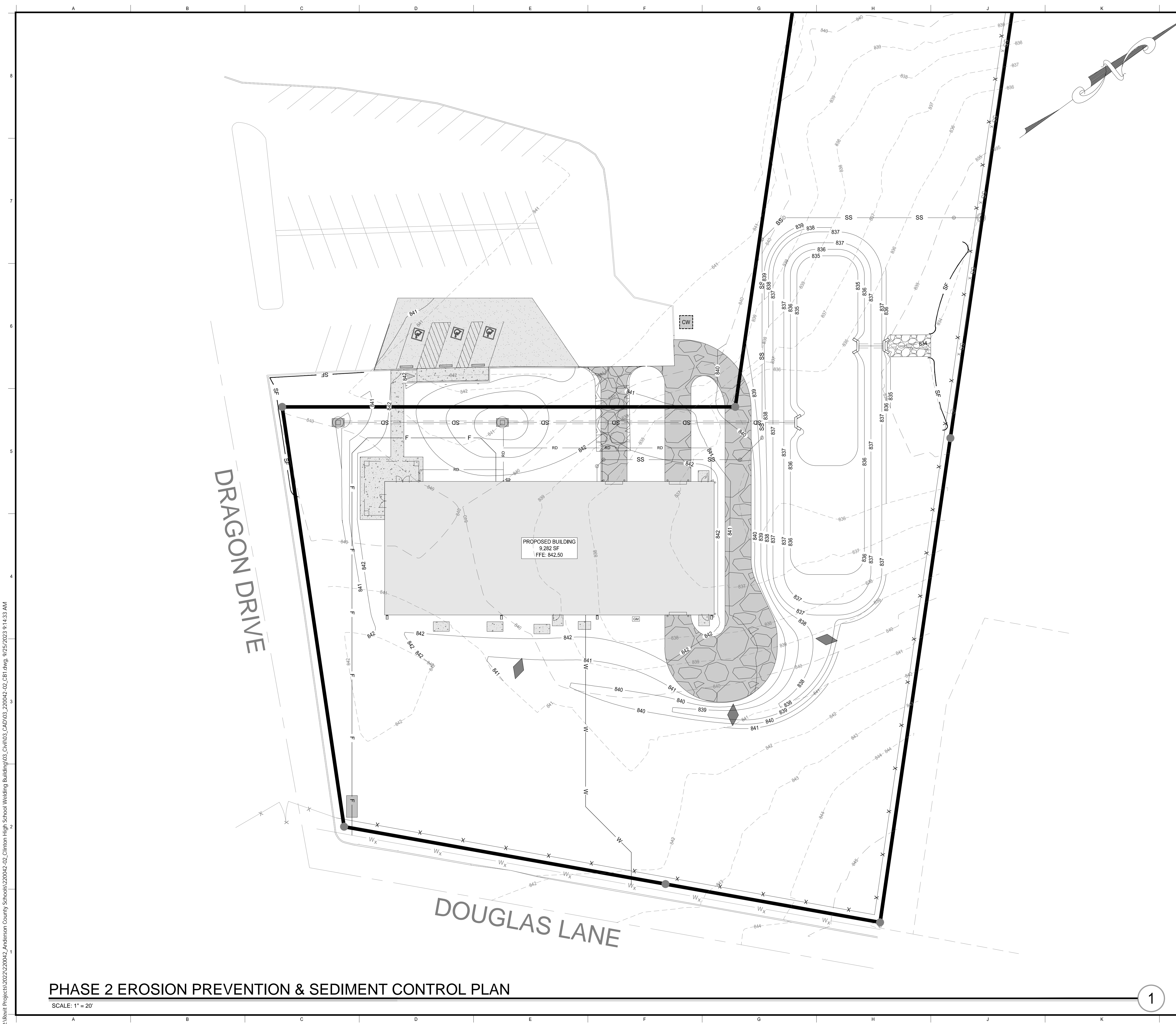
SCALE: 1" = 20'

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GRAPHIC SCALE

1 INCH = 20'

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GENERAL SHEET NOTES:

1. SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS
2. PERMANENT STABILIZATION IS REQUIRED WHEN GRADING OPERATIONS ARE COMPLETED AND WHEN CONSTRUCTION OPERATIONS WILL NOT IMPACT THE DISTURBED AREA. SEED AREAS THAT SHOW SIGNS OF EXCESSIVE EROSION.
3. CONSTRUCTION LIMITS SHALL BE CLEARLY MARKED IN THE FIELD.
4. SLOPE MATTING SHALL BE PLACED ON ALL SLOPES GREATER THAN 2:1; SEE DETAIL 2/C800

EROSION CONTROL LEGEND

	SILT FENCE; SEE DETAIL 3/C800
	CONSTRUCTION EXIT; SEE DETAIL 1/C800
	INLET PROTECTION; SEE DETAIL 4/C800
	CHECK DAM; SEE DETAIL 6/C800
	15'L x 8'W x 1.5'D CLASS A-1 RIP RAP OUTLET PROTECTION
	CONCRETE WASHOUT; SEE DETAIL 5/C800

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ENGINEER:

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CONSULTANT

SEAL:

AL HADEETHI
REGISTERED ENGINEER
AGRICULTURE
COMMERCIAL
STATE OF TENNESSEE
No. 15574
10/06/2023

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PROJECT INFORMATION

PROJECT:

**CLINTON HIGH SCHOOL
WELDING AND
AGRICULTURAL BUILDING**

PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: **220042-02**

ACTIVE DESIGN PHASE

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<input type="checkbox"/>	FOR PERMITTING ONLY
<input type="checkbox"/>	SCHEMATIC DESIGN
<input type="checkbox"/>	DESIGN DEVELOPMENT
<input type="checkbox"/>	CONSTRUCTION BIDDING
<input checked="" type="checkbox"/>	CONSTRUCTION DOCUMENTS
<input type="checkbox"/>	AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 09/25/2023

DESIGNED BY: I.A.J.

DRAWN BY: I.A.J.

REVIEWED BY: A.M.A.

SHEET TITLE:

PHASE 2 EROSION PREVENTION & SEDIMENT CONTROL PLAN

SHEET NO.: **C101**

PHASE 2 EROSION PREVENTION & SEDIMENT CONTROL PLAN

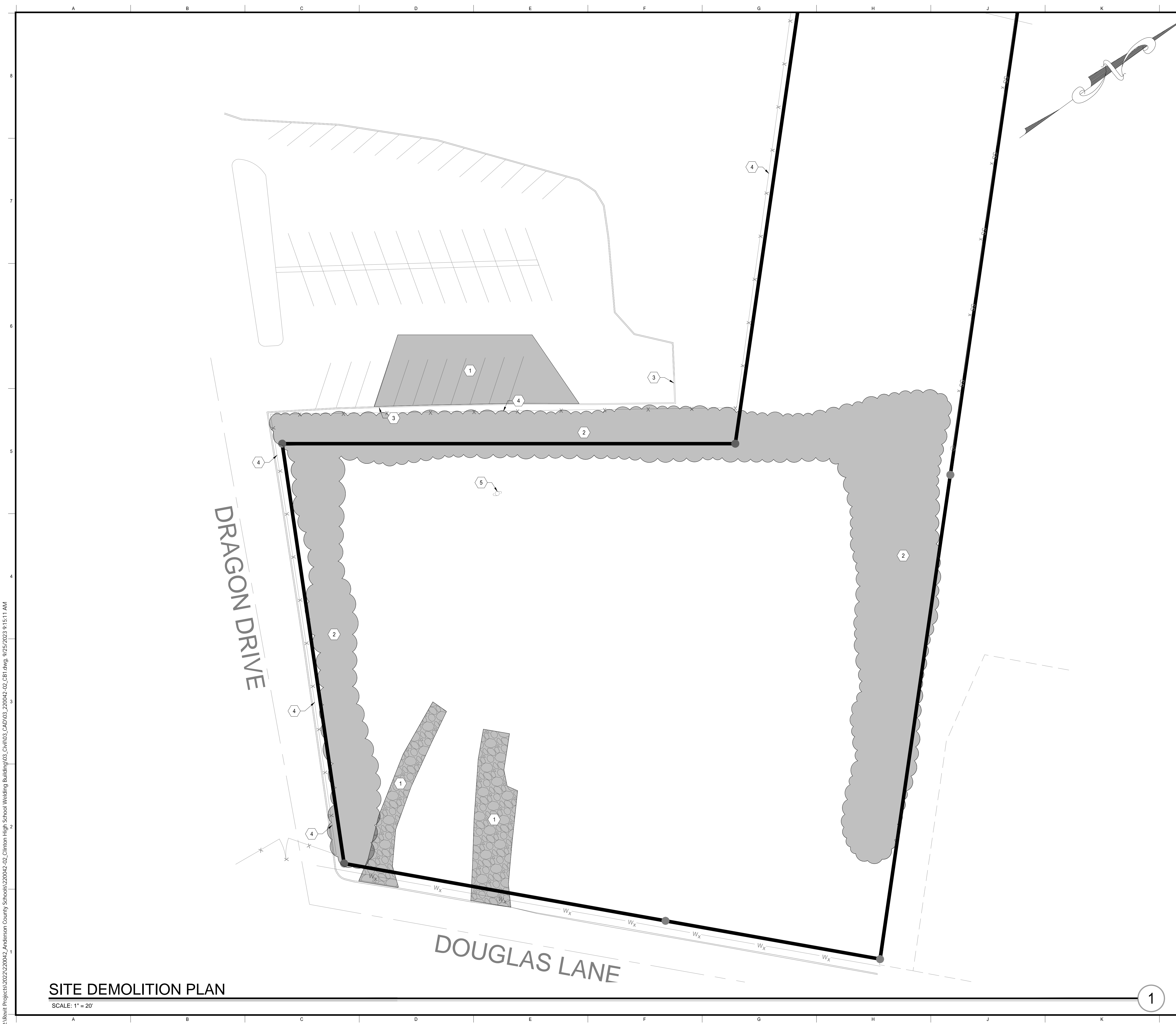
SCALE: 1" = 20'

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GRAPHIC SCALE

1 INCH = 20'

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GENERAL SHEET NOTES:

1. SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS

DEMOLITION LEGEND



DEMOLITION KEYED NOTES

- 1 EXISTING ASPHALT/CONCRETE PAVING TO BE DEMOLISHED
- 2 EXISTING VEGETATION TO BE DEMOLISHED
- 3 EXISTING CONCRETE CURB TO BE DEMOLISHED
- 4 EXISTING CHAIN LINK FENCE WITH BARBED WIRE TO BE DEMOLISHED
- 5 EXISTING UTILITY POLE TO BE DEMOLISHED

ENGINEER:

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PROJECT:

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WELDING AND
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PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: **220042-02**

ACTIVE DESIGN PHASE

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SCHEMATIC DESIGN

DESIGN DEVELOPMENT

CONSTRUCTION BIDDING

CONSTRUCTION DOCUMENTS

AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 09/25/2023

DESIGNED BY: I.A.J.

DRAWN BY: I.A.J.

REVIEWED BY: A.M.A.

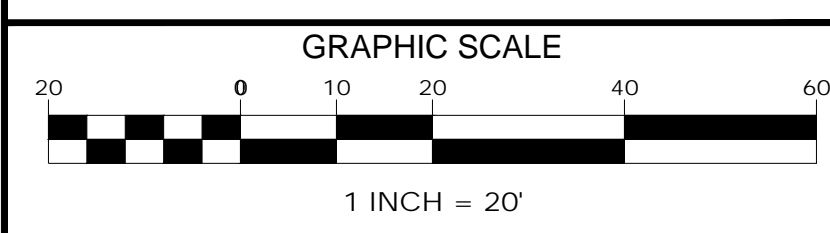
SHEET TITLE:

SITE DEMOLITION PLAN

SHEET NO.: **C200**

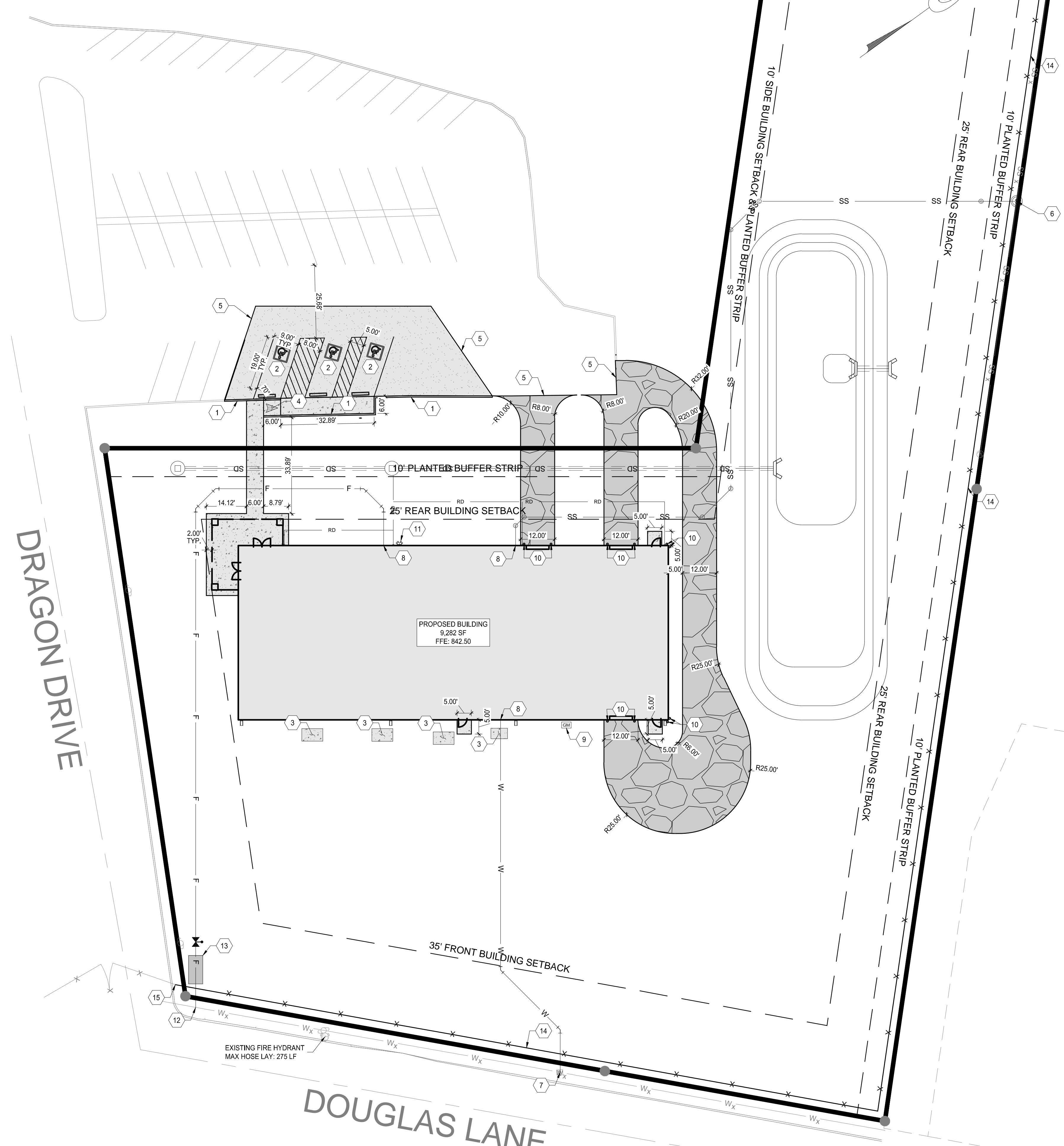
SITE DEMOLITION PLAN

SCALE: 1" = 20'



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GENERAL SHEET NOTES:

- SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS
- FOR TYPICAL ANGLED PARKING SPACE LAYOUT, SEE 7/C800
- ALL RADII NOT LABELED ARE TO BE R3.00'
- COORDINATE ALL UTILITY CROSSINGS; SEE DETAIL 5/C802
- FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION. DETERMINE LOCATED, SIZE, MATERIAL & INVERTS. REPORT ANY DISCREPANCIES TO OWNER & ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION & INSTALLATION.
- ALL POURED CONCRETE SHALL BE CONSTRUCTED WITH EXPANSION JOINTS; SEE DETAIL 4/C801

UTILITY CONTACTS

WATER CLINTON UTILITY BOARD 1001 CHARLES G. SEIVERS BLVD., P.O. BOX 296 CLINTON, TN 37717 (865) 457-9232	SEWER CLINTON UTILITY BOARD 1001 CHARLES G. SEIVERS BLVD., P.O. BOX 296 CLINTON, TN 37717 (865) 457-9232
GAS POWELL CLUNCH UTILITY DISTRICT 203 E. FIRST ST. ROCKY TOP, TN 37769 (865) 426-2822	ELECTRIC CLINTON UTILITY BOARD 1001 CHARLES G. SEIVERS BLVD., P.O. BOX 296 CLINTON, TN 37717 (865) 457-9232

SHEET LEGEND

	HEAVY DUTY ASPHALT PAVING; SEE DETAIL 2/C801
	6" CRUSHER RUN
	CONCRETE SIDEWALK; SEE DETAIL 1/C801
	ADA COMPLIANT 'NO PARKING' STRIPING; 8/C800
	WATER METER BY LOCAL UTILITY
	CO-CLEANOUT; SEE DETAIL 4/C802
	C.U.B. TYPICAL SANITARY SEWER MANHOLE; SEE DETAIL 1/C803
	6" DUCTILE IRON C900 FIRE PROTECTION SERVICE LINE; SEE DETAIL 2/C802
	2" POTABLE WATER (PVC CLASS 200); SEE DETAIL 2/C802
	4" ASTM D3034 SDR35 PVC BUILDING SANITARY SEWER SERVICE LINE @ 2.0% MIN. SLOPE; SEE DETAIL 2/C802
	THRUST BLOCK; SEE DETAIL 2/C803
	POST INDICATOR VALVE; SEE DETAIL 9/C802

SHEET KEYED NOTES

- CONCRETE CURB; SEE DETAIL 3/C801
- ADA COMPLIANT PARKING SPACE; SEE DETAIL 7/C801
- MECHANICAL UNITS; SEE MECHANICAL PLANS FOR DETAILS
- ADA COMPLIANT RAMP; SEE DETAIL 6/C801
- PROVIDE SMOOTH TRANSITION TO EXISTING SURFACE
- FIELD LOCATE AND CONNECT TO EXISTING PER LOCAL UTILITY REQUIREMENTS.
- WATER LINE CONNECTION TO EXISTING METER; COORDINATE WITH LOCAL UTILITY COMPANY.
- FOR CONTINUATION SEE PLUMBING PLAN
- GAS METER; SEE MECHANICAL PLANS FOR DETAILS; COORDINATE INSTALLATION WITH LOCAL UTILITY COMPANY
- 6" BOLLARD; SEE DETAIL 5/C801
- FIRE DEPARTMENT CONNECTION; SEE MECHANICAL PLANS FOR DETAILS
- FIRE SERVICE LINE CONNECTION BY LOCAL UTILITY COMPANY. COORDINATE TAP & METER LOCATIONS.
- FIRE LINE METER PIT; TO BE INSTALLED PER LOCAL UTILITY REQUIREMENTS
- CHAIN LINK FENCE WITH BARBED WIRE SHALL ENCOMPASS ENTIRE PROPERTY; MATCH EXISTING HEIGHT; SEE DETAIL 3/C803
- CHAIN LINK FENCE TO CONNECT TO EXISTING FENCE POST

REVISION INFORMATION

NO.	DATE	DESCRIPTION

AREAS & CALCULATIONS

IMPERVIOUS AREA			
EXISTING	PROPOSED	TOTAL INCREASE	
0.15 Acres	0.35 Acres	0.20 Acres	
6,354 sqft	15,317 sqft	8,963 sqft	

DISTURBED AREA	
TOTAL SITE AREA	DISTURBED AREA
1.89 Acres	0.98 Acres
82,256 sqft	42,689 sqft

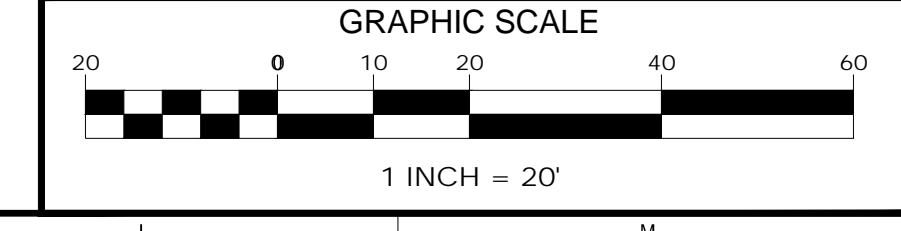
PARKING CALCULATION

REQUIREMENT:
 1 SPACE PER EACH FACULTY MEMBER AND 5 ADDITIONAL SPACES FOR VISITOR PARKING, PLUS 1 SPACE FOR EACH 4 PUPILS

CALCULATION:
 5 FACULTY: 1 x 5 = 5 SPACES
 60 PUPILS: 60 / 4 = 15 SPACES
 5 VISITOR SPACES

REQUIRED	PROVIDED
REGULAR ACCESSIBLE 24	REGULAR ACCESSIBLE 40
TOTAL 25	TOTAL 43

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ENGINEER:

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 KNOXVILLE, TN 37919

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PROJECT INFORMATION

PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURAL BUILDING

PROJECT ADDRESS: 411 DOUGLAS LN, CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

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 SCHEMATIC DESIGN
 DESIGN DEVELOPMENT
 CONSTRUCTION BIDDING
 CONSTRUCTION DOCUMENTS
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REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 09/25/2023
 DESIGNED BY: I.A.J.
 DRAWN BY: I.A.J.
 REVIEWED BY: A.M.A.
 SHEET TITLE:

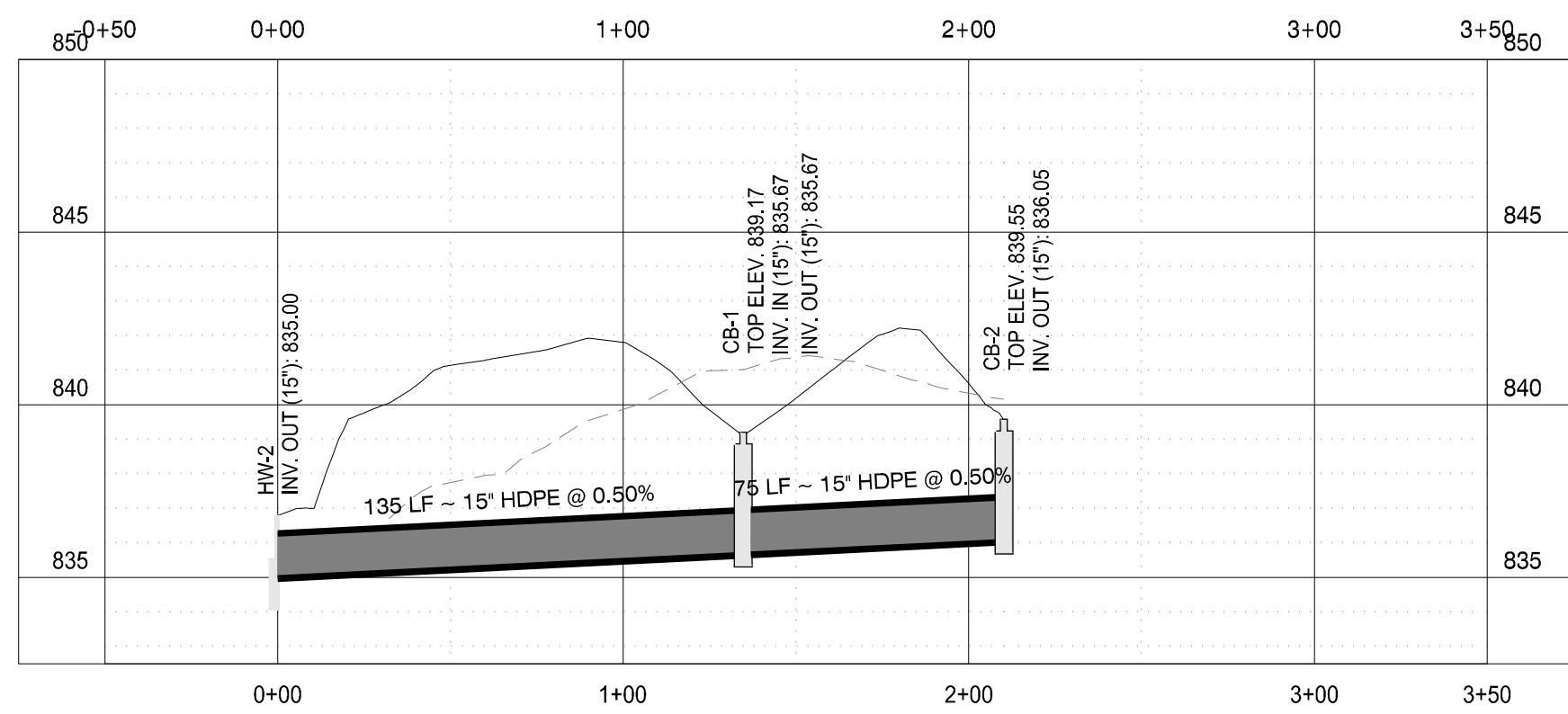
SITE LAYOUT & UTILITY PLAN

SHEET NO.: C300

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SITE LAYOUT & UTILITY PLAN

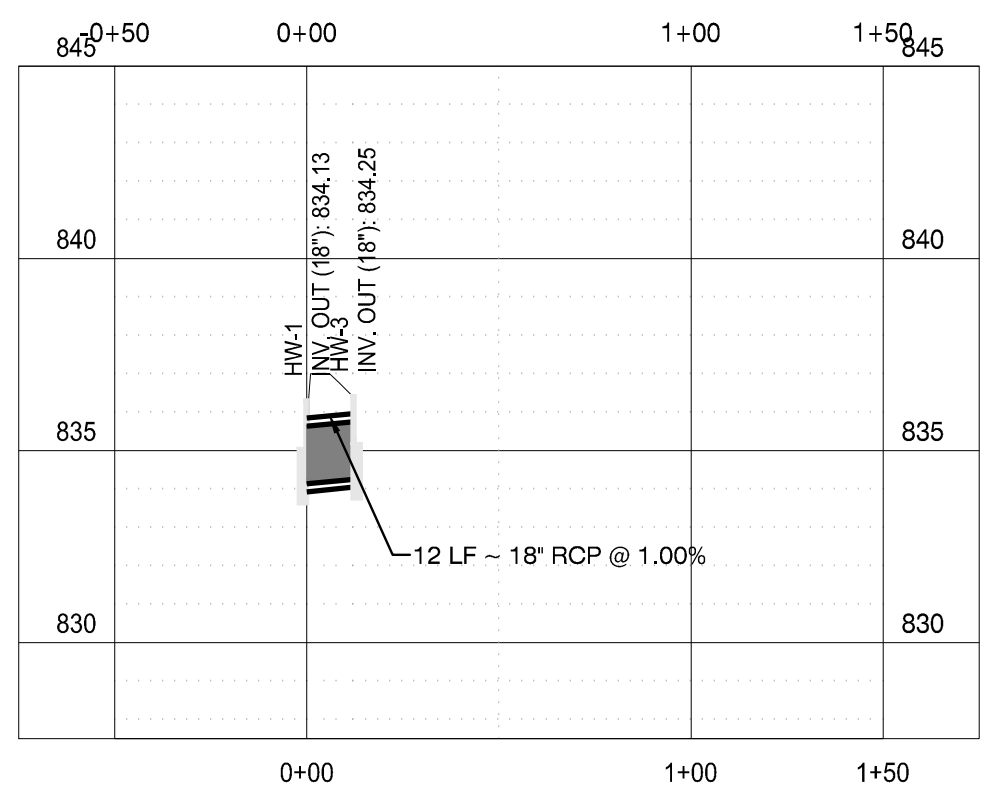
SCALE: 1" = 20'



STORM LINE #1

SCALE: H: 1" = 50'-0" V: 1" = 5'-0"

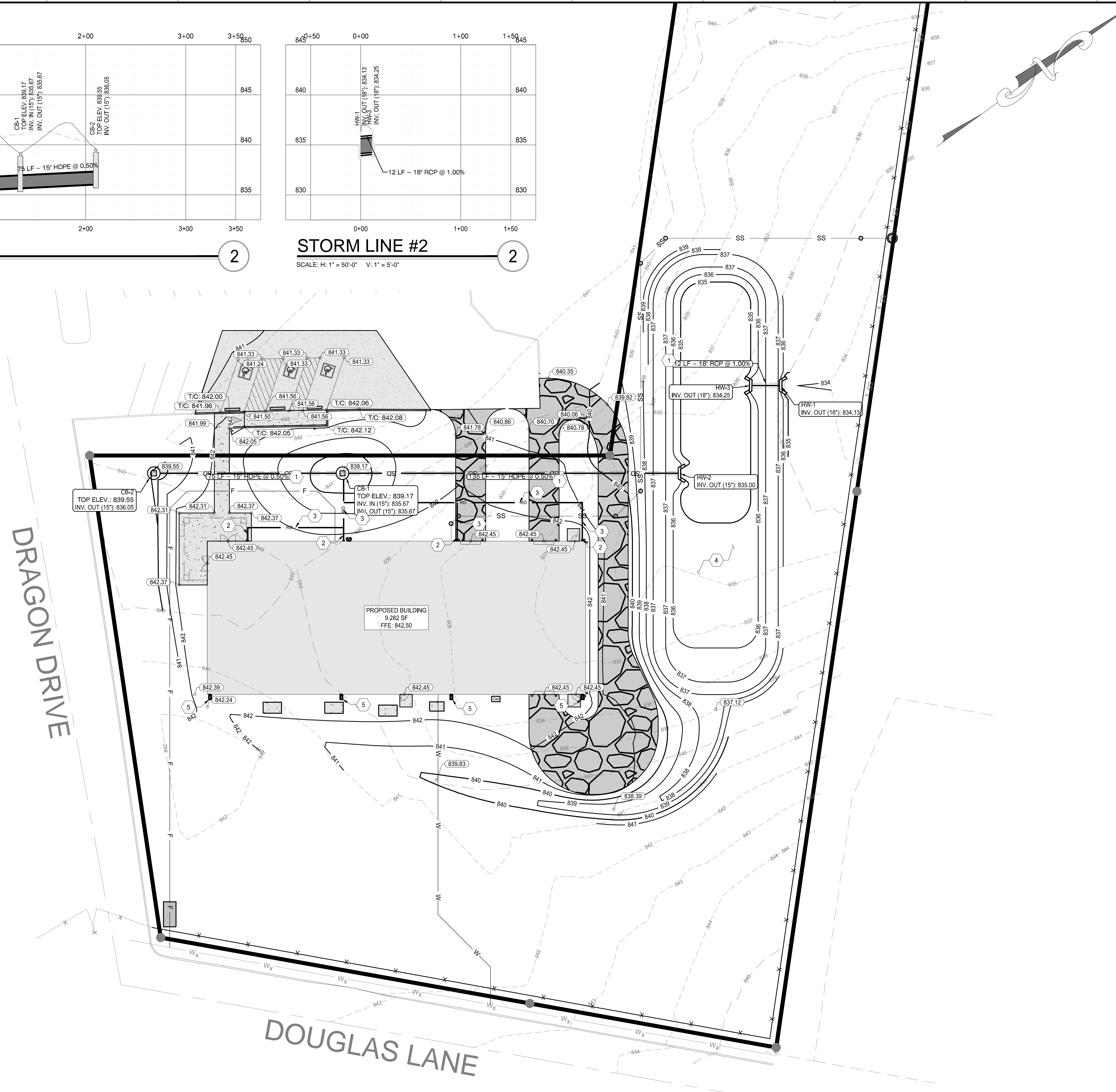
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STORM LINE #2

SCALE: H: 1" = 50'-0" V: 1" = 5'-0"

2



GENERAL SHEET NOTES

1. SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS

DRAINAGE LEGEND

- HW-HEADWALL
- CB-CATCH BASIN; SEE DETAIL 3/C802

PROFILE LEGEND

- EXISTING GRADE
- PROPOSED GRADE

DRAINAGE KEYED NOTES

- 1 STORM SEWER DRAINAGE PIPE & UTILITY TRENCH; SEE DETAIL 1/C802
- 2 DOWNSPOUT BOOT; SEE DETAIL 6/C802
- 3 ASTM D 3034 SDR35 PVC STORM DRAIN @ 1.0% MIN. SLOPE; ALL SIZES TO BE 8" UNLESS OTHERWISE NOTED
- 4 DETENTION POND; SEE DETAIL 8/C802
- 5 SPLASH BLOCK; SEE DETAIL 7/C802

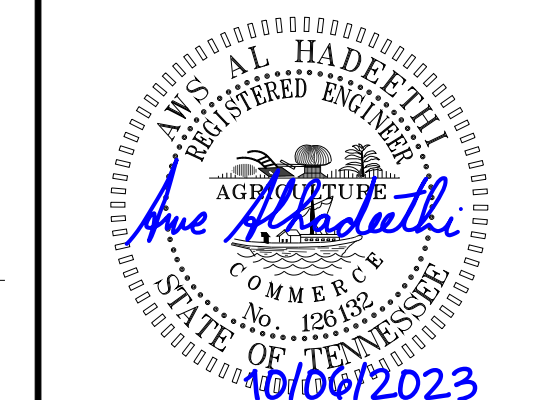
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ENGINEER:

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PROJECT INFORMATION

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PROJECT ADDRESS:

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CLINTON, TN 37716

PROJECT NO.: 220042-02

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REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 08/25/2023
DESIGNED BY: I.A.J.
DRAWN BY: I.A.J.
REVIEWED BY: A.M.A.
SHEET TITLE:

SITE GRADING & DRAINAGE PLAN

SHEET NO.:

C400

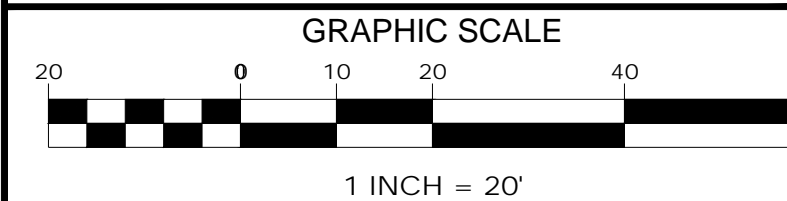
SITE GRADING & DRAINAGE PLAN

SCALE: 1" = 20'

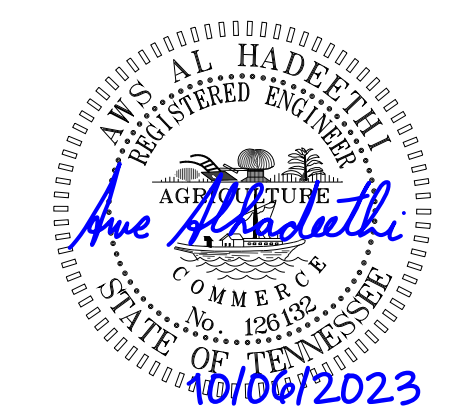
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 WELDING AND
 AGRICULTURAL BUILDING

PROJECT ADDRESS:
 411 DOUGLAS LN.
 CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE	
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<input type="checkbox"/>	AS-BUILT RECORD SET

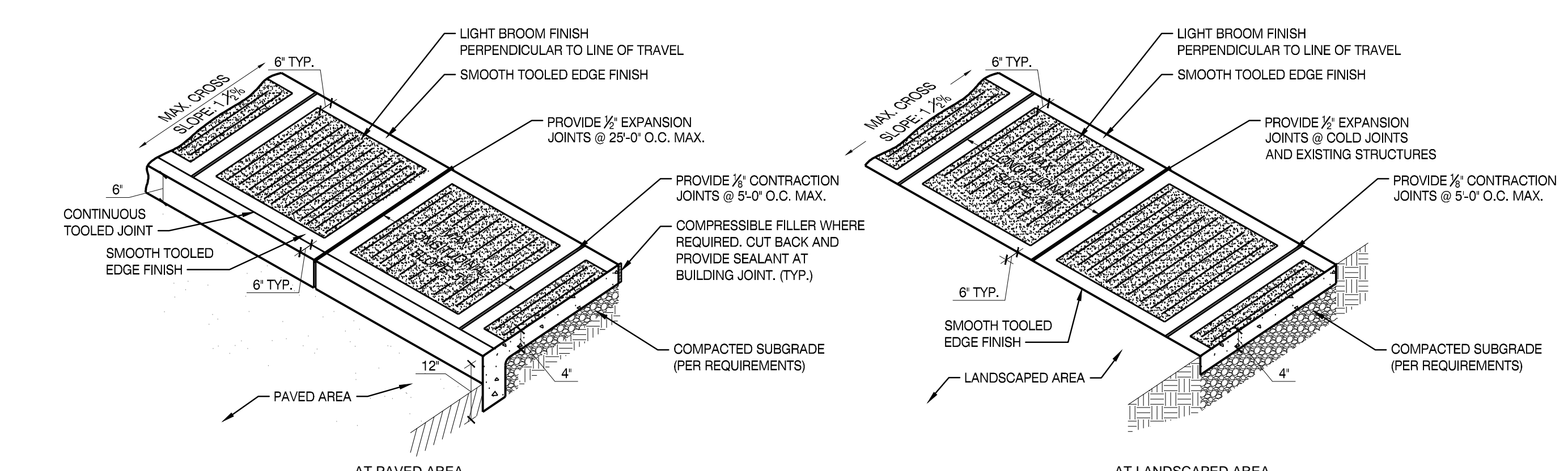
REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

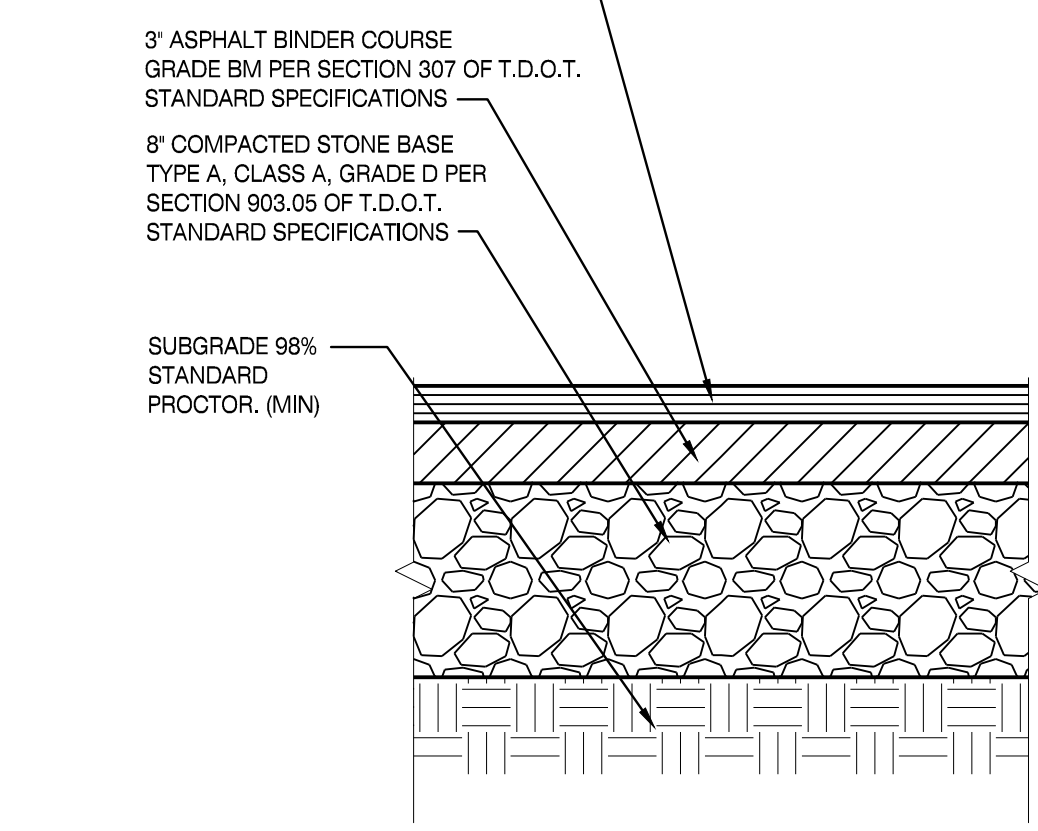
SHEET INFORMATION

SHEET ISSUED:	09/25/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.
SHEET TITLE:	



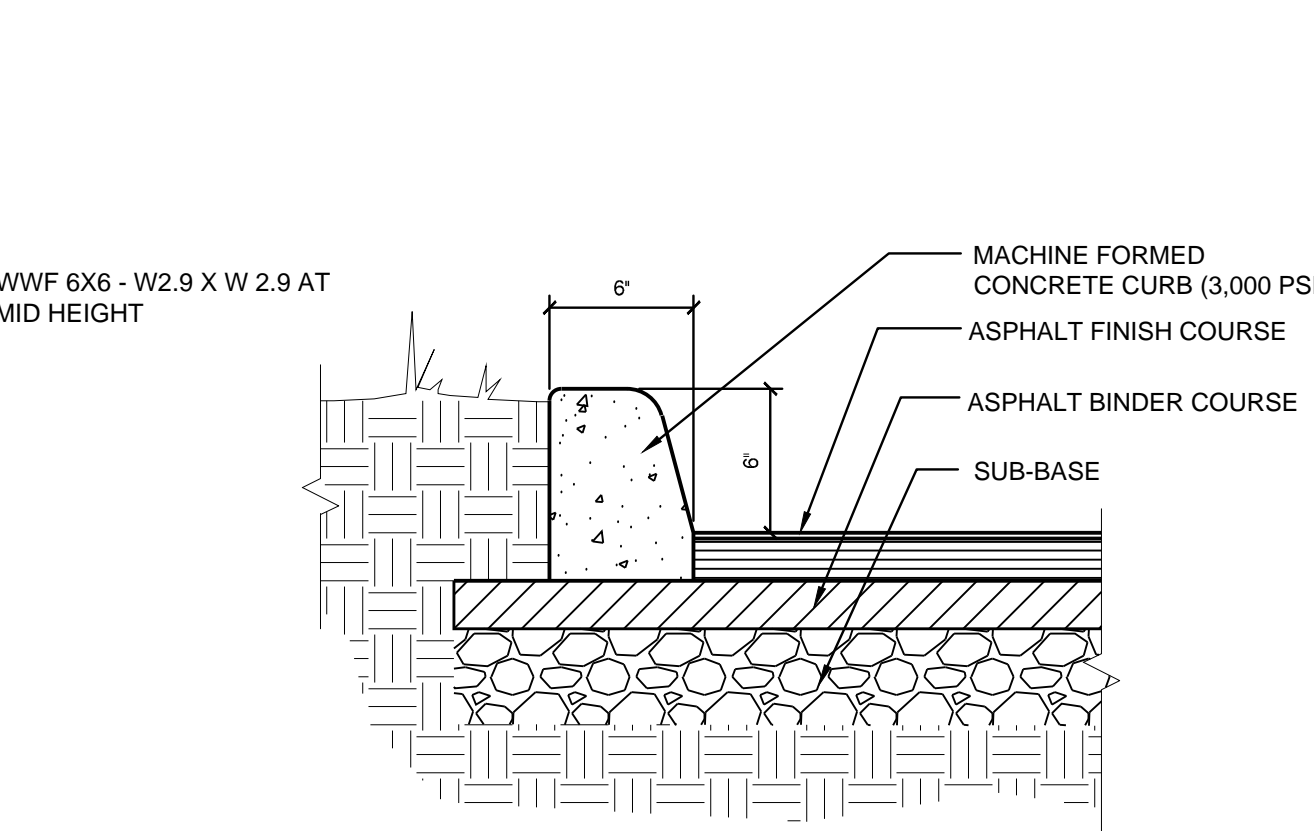
CONCRETE SIDEWALK

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HEAVY DUTY ASPHALT PAVING

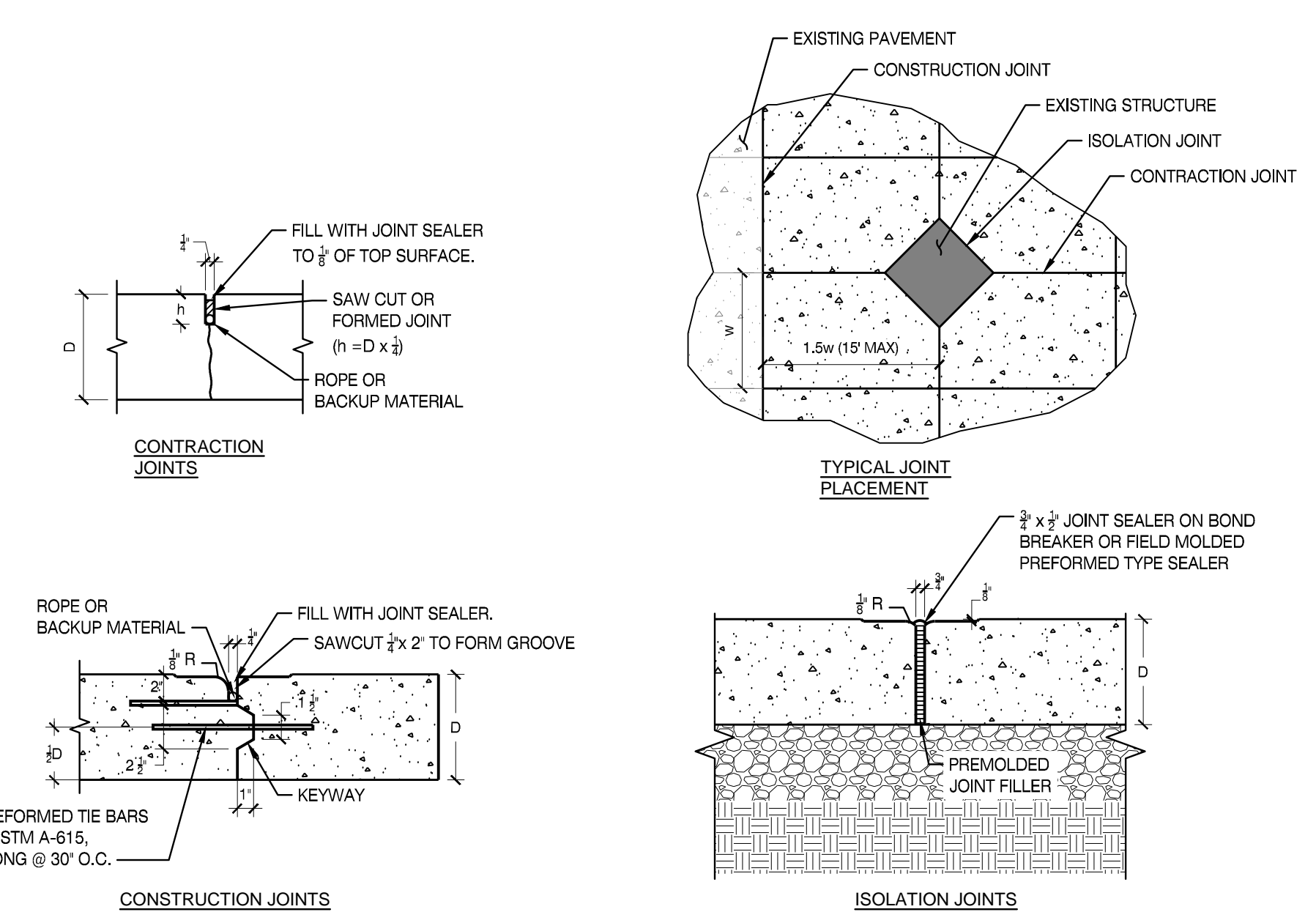
2



CONCRETE CURB

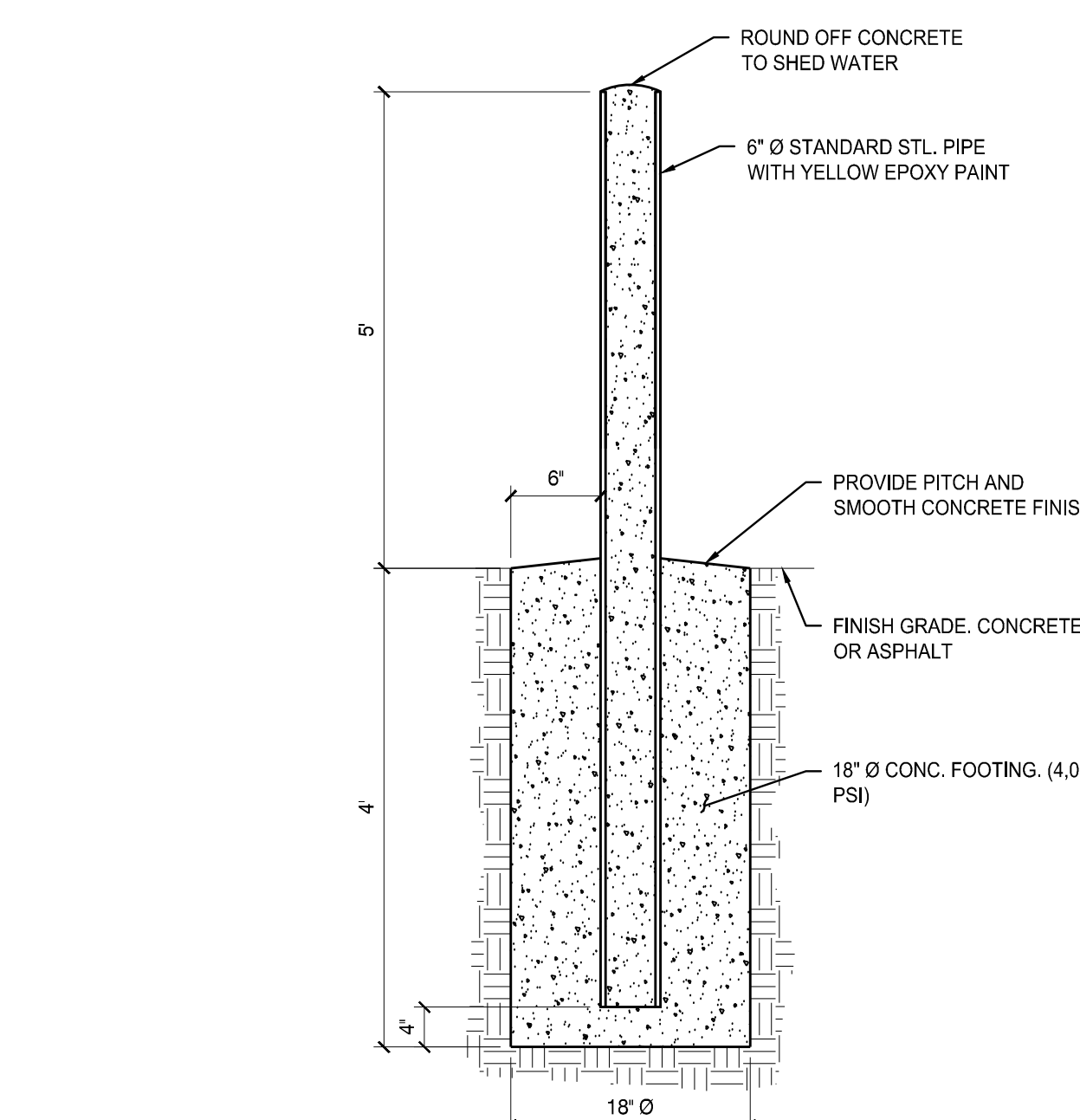
3

NOTES:
 1. JOINT SPACING SHALL BE UNIFORM AND TYPICALLY LESS THAN 30xSLAB THICKNESS. IN NO CASES SHALL JOINT SPACING EXCEED 15'
 2. THE LENGTH OF JOINT SPACING SHALL NOT EXCEED 1.5w
 3. SAWING OF THE JOINTS SHALL BEGIN AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO PERMIT SAWING WITHOUT EXCESSIVE RAVELING BUT IN NO CASE LONGER THAN 18 HOURS AFTER POURING. ALL JOINTS SHALL BE SAWS BEFORE UNCONTROLLED SHRINKAGE CRACKING OCCURS. IF NECESSARY, THE SAWING OPERATIONS SHALL BE CARRIED ON BOTH DAY AND NIGHT REGARDLESS OF WEATHER CONDITIONS. A STANDBY SAW SHALL BE AVAILABLE IN THE EVENT OF BREAKDOWN.
 4. THE JOINTS CAN BE COMPLETELY FILLED WITH SEALANT MATERIAL OR PREMOULDED JOINT FILLER CAN BE INSERTED IN THE JOINT FIRST TO REDUCE THE AMOUNT OF SEALANT REQUIRED.
 5. SEALER TO BE POURED TO WITHIN 3/4" OF TOP OF PAVEMENT.
 6. PRIOR TO SEALING, JOINT SURFACES MUST BE CLEANED AND FREE OF CURING COMPOUND, RESIDUE, LANTANCE AND ANY OTHER FOREIGN MATERIAL.
 7. THE SURFACE SHOULD BE DRY WHEN THE SEALANT IS POURED.
 8. THE CONCRETE SHALL BE DEPOSITED ON A MOIST GRADE IN SUCH MANNER AS TO REQUIRE AS LITTLE REHANDLING AS POSSIBLE. PLACING SHALL BE CONTINUOUS BETWEEN TRANSVERSE JOINTS WITHOUT THE USE OF INTERMEDIATE BULKHEADS. NECESSARY HAND SPREADING SHALL BE DONE WITH SHOVELS, NOT RAKES. WORKMEN SHALL NOT BE ALLOWED TO WALK ON THE FRESHLY MIXED CONCRETE WITH BOOTS OR SHOES COATED WITH EARTH OR FOREIGN SUBSTANCES.
 9. ALL JOINT DOWELS MUST BE LEVEL, TRUE AND ADEQUATELY SUPPORTED SO THERE IS NO MOVEMENT DURING THE PLACEMENT OF CONCRETE.
 10. TRANSVERSE CONSTRUCTION JOINTS ARE NECESSARY FOR PLANNED INTERRUPTIONS, AND WHERE EMERGENCY INTERRUPTIONS SUSPEND OPERATIONS FOR 30 MINUTES OR MORE.
 11. ALL JOINTS & JOINT SEALANTS SHALL MEET T.D.O.T.'S STANDARDS AND SPECIFICATIONS.



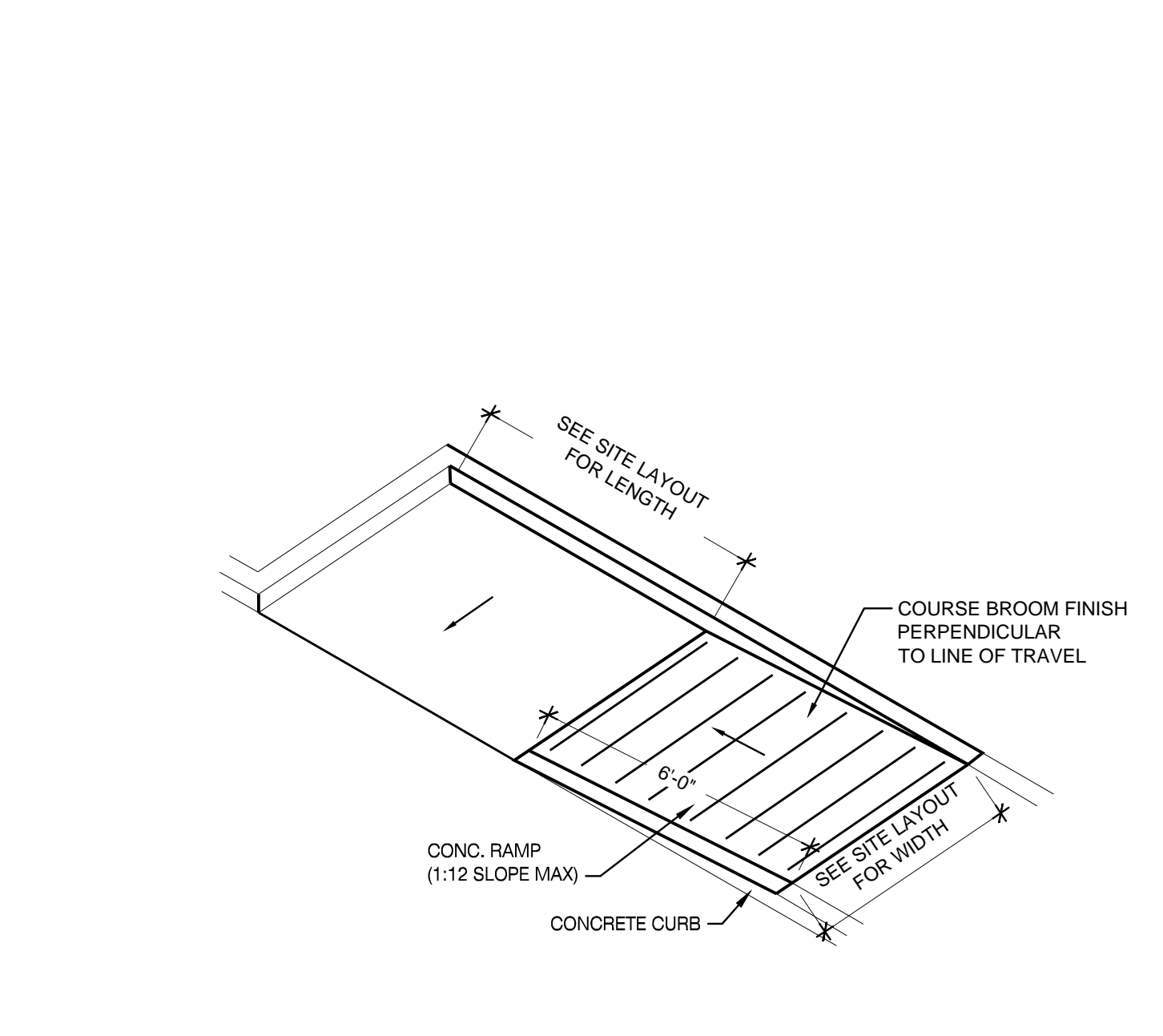
CONCRETE JOINTS

4



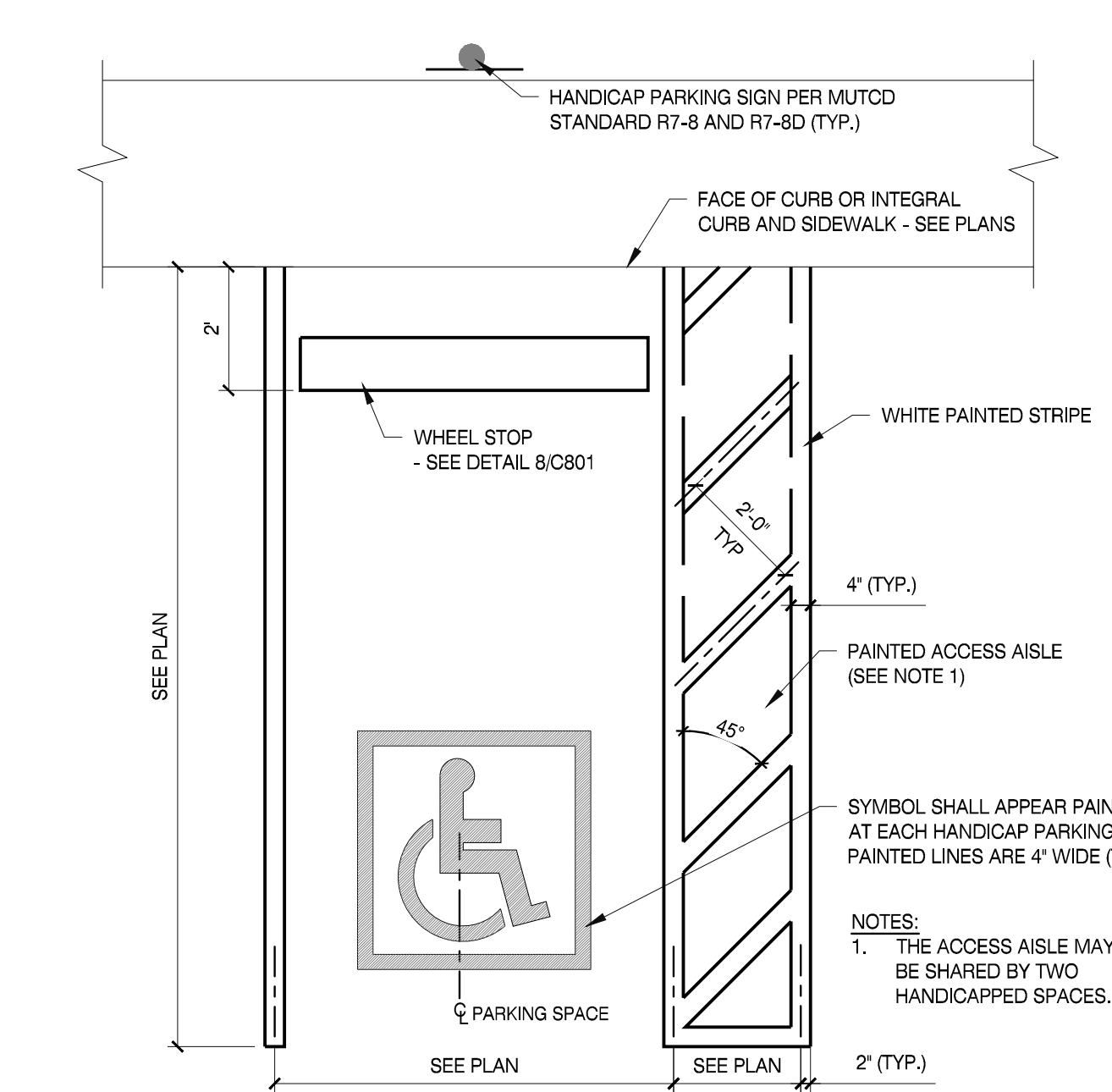
6" BOLLARDS

5



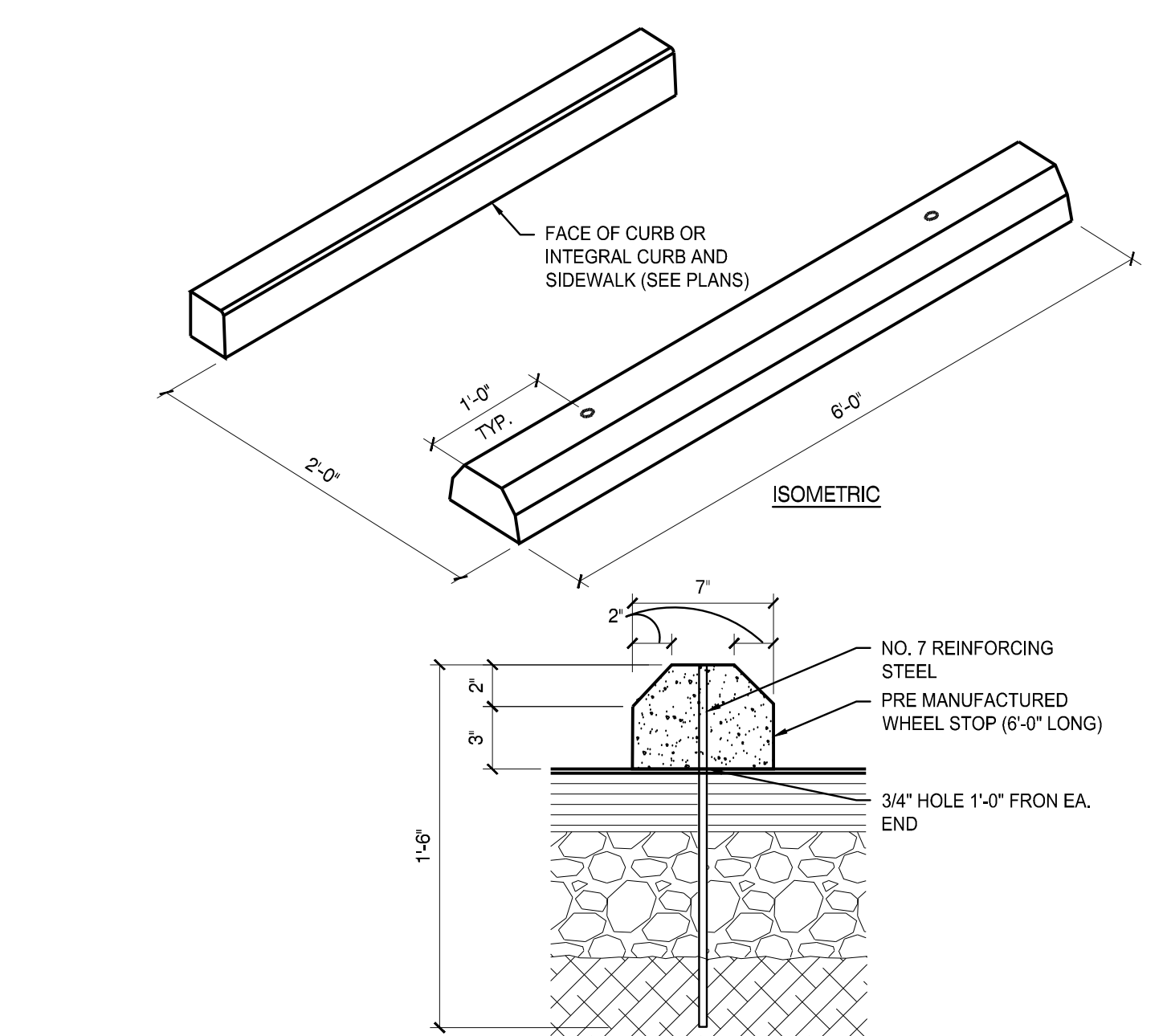
ADA RAMP

6



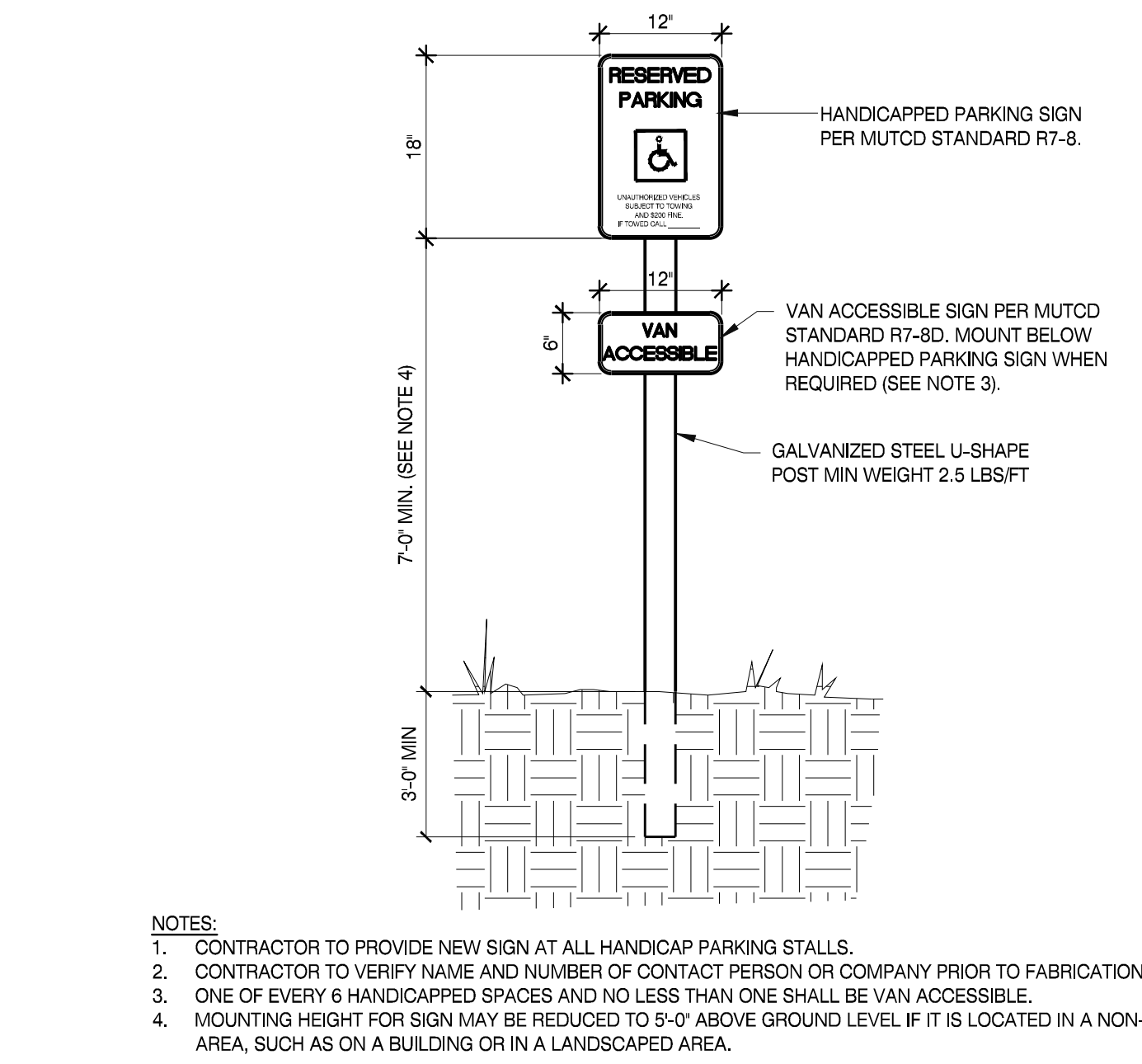
HANDICAP PARKING SPACE

7



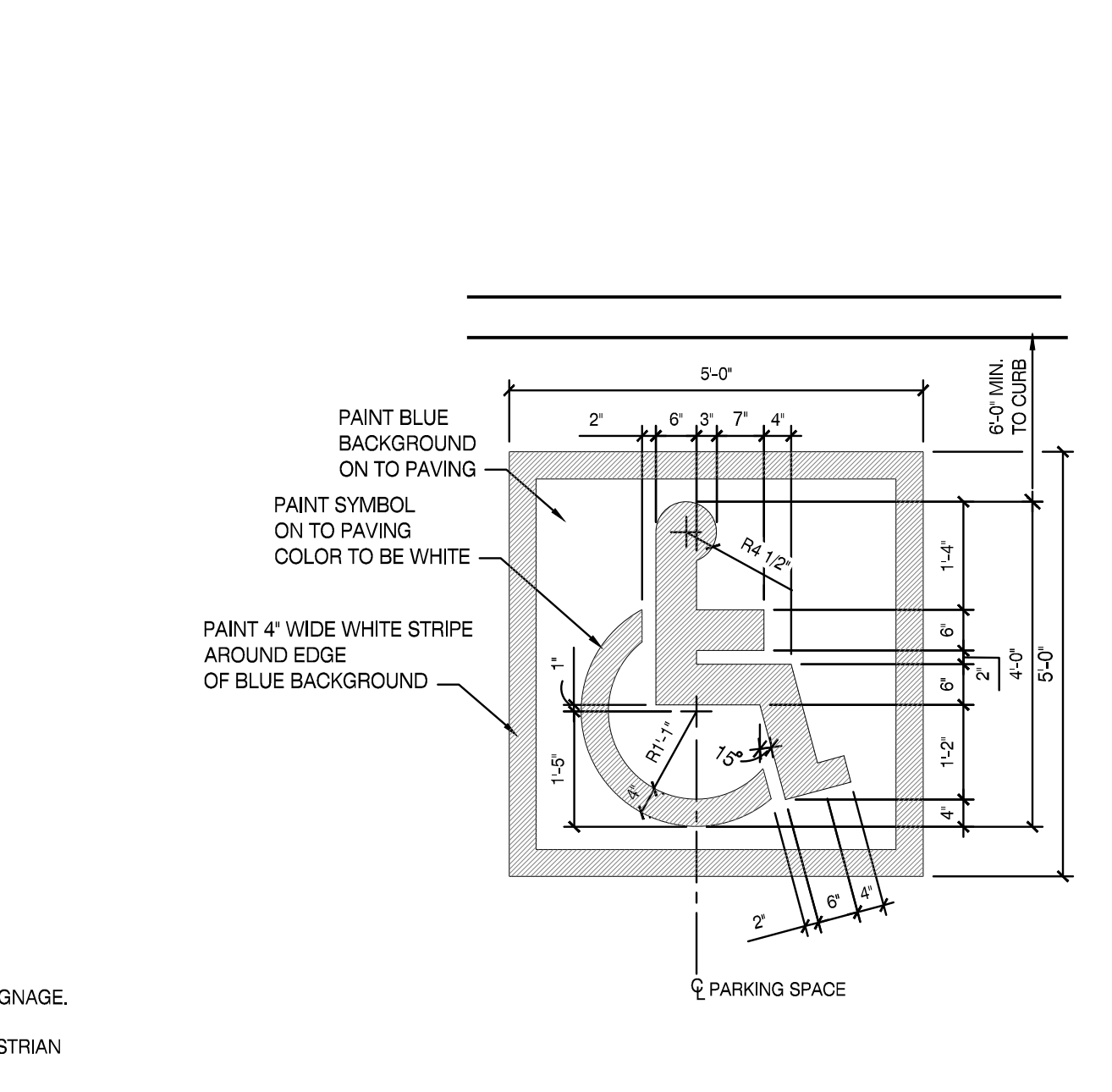
WHEEL STOP

8



STANDARD HANDICAP SIGN

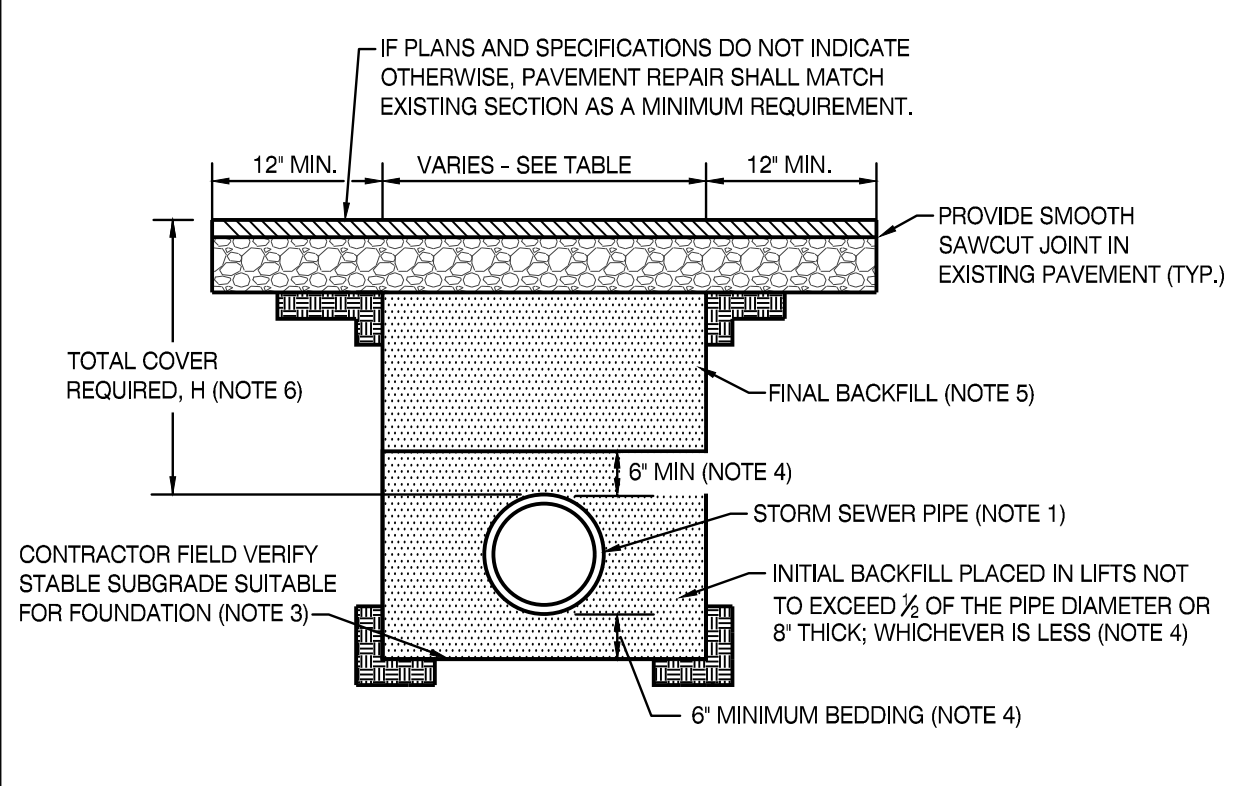
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PAINTED HANDICAP SYMBOL

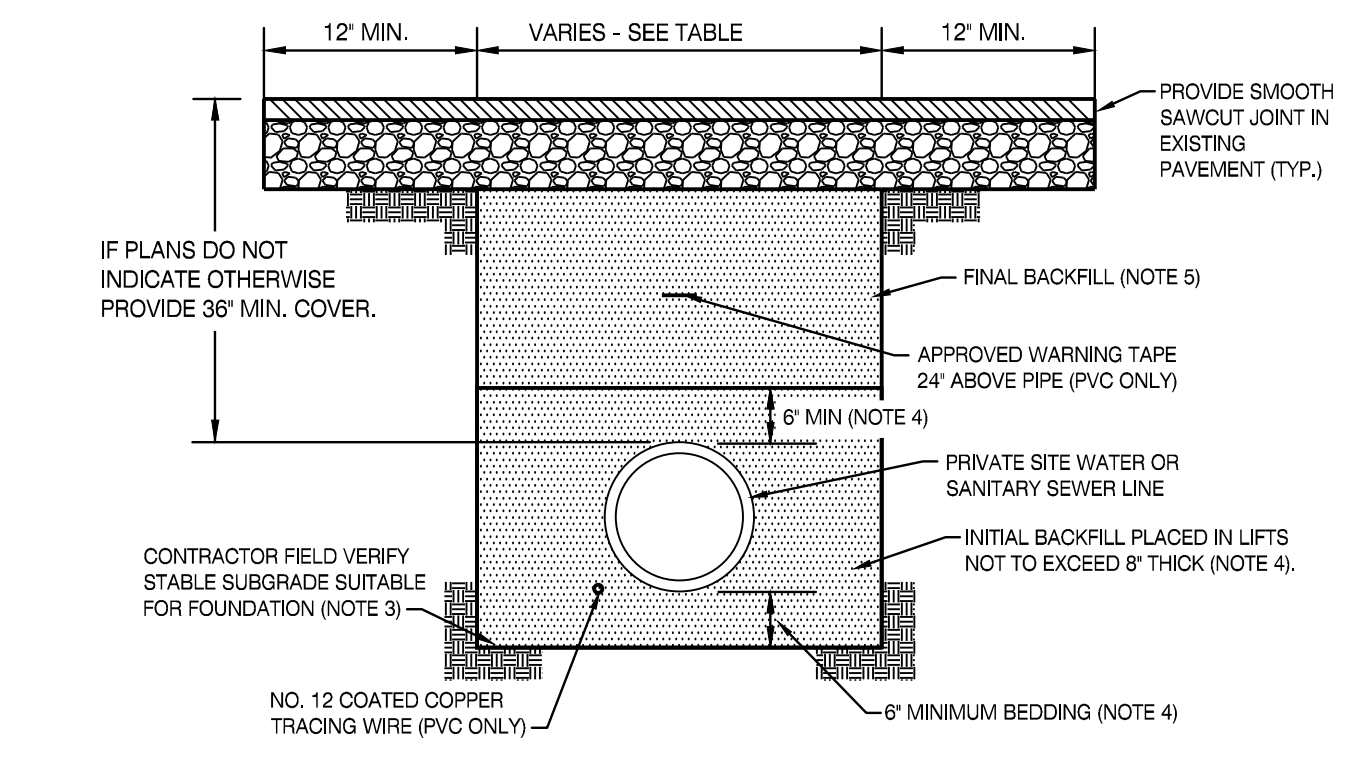
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R:\Revit\Projects\2022\220042-Anderson County Schools\220042-02_Clinton High School Welding Building\03_Civil\03_CAD\03_220042-02_CB.dwg, 9/25/2023 8:11:30 AM



- ALL HDPE PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST ED., AND ALL CMP SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM A 798, LATEST ED.
- THIS DETAIL ADDRESSES A TRENCH TYPE INSTALLATION. FOR EMBANKMENT OR OTHER INSTALLATIONS, FOR CMP SEE AASHTO SECTION 27, FOR HDPE SEE AASHTO SECTION 30. THIS DETAIL DOES NOT ADDRESS OSHA TRENCH SAFETY REQUIREMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MEET ALL HEALTH AND SAFETY ISSUES REGARDING TRENCH SAFETY.
- WHERE THE TRENCH BOTTOM IS UNSUITABLE FOR FOUNDATION IN THE OPINION OF THE PROJECT GEOTECHNICAL ENGINEER, THE CONTRACTOR SHALL STABILIZE THE TRENCH BOTTOM ACCORDING TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER.
- BEDDING AND INITIAL BACKFILL TO 6" ABOVE THE CROWN OF THE PIPE SHALL BE #57 CRUSHED STONE. ELIMINATE VOIDS BY KNIFING UNDER AND AROUND PIPE WITH SHOVEL OR OTHER MEANS AT THE DISCRETION OF THE CONTRACTOR.
- FINAL BACKFILL FOR ALL PIPES LOCATED IN PAVED AREAS SHALL BE COMPACTED #57 CRUSHED STONE MEETING THE REQUIREMENTS OF THE TENNESSEE STATE DEPARTMENT OF TRANSPORTATION. FOR GRASS OR LANDSCAPED AREAS, PROVIDE #57 CRUSHED STONE INITIAL BACKFILL TO 6" ABOVE CROWN OF PIPE AND COVER GRAVEL WITH A NONWOVEN GEOTEXTILE TO PREVENT MIGRATION OF FINES. FINAL BACKFILL TO SURFACE SHALL BE SOIL FREE OF FOREIGN DEBRIS. SOIL BACKFILL SHALL BE PLACED IN 8" LOOSE LIFTS AND BE COMPACTED TO 90% STANDARD DENSITY PER AASHTO T-99 OR PER PROJECT SPECIFICATIONS, WHICHEVER IS MORE STRINGENT. TOP 6" SHALL BE TOPSOIL FROM SITE STRIPPING OPERATIONS LOOSELY PLACED.
- MINIMUM COVER, H, IS 24" UP TO 48" DIAMETER PIPE. H IS 36" FOR 54" TO 60" DIAMETER PIPE. H IS MEASURED FROM TOP OF PIPE TO TOP OF FLEXIBLE PAVEMENT OR GROUND SURFACE IN GRASS OR LANDSCAPE AREAS WHERE APPLICABLE. FOR ROP AND CONCRETE PIPE, H IS 12" MINIMUM.

ALUMINIZED CMP, HDPE AND PVC		ROP AND CONCRETE	
PIPE DIA (IN)	MINIMUM WIDTH (IN)	PIPE DIA (IN)	MINIMUM WIDTH (IN)
4	21	12	22
6	23	15	26
8	26	18	31
10	28	24	40
12	30	30	50
15	34	36	59
18	39	42	68
24	48	48	78
30	56	54	87
36	64	60	96

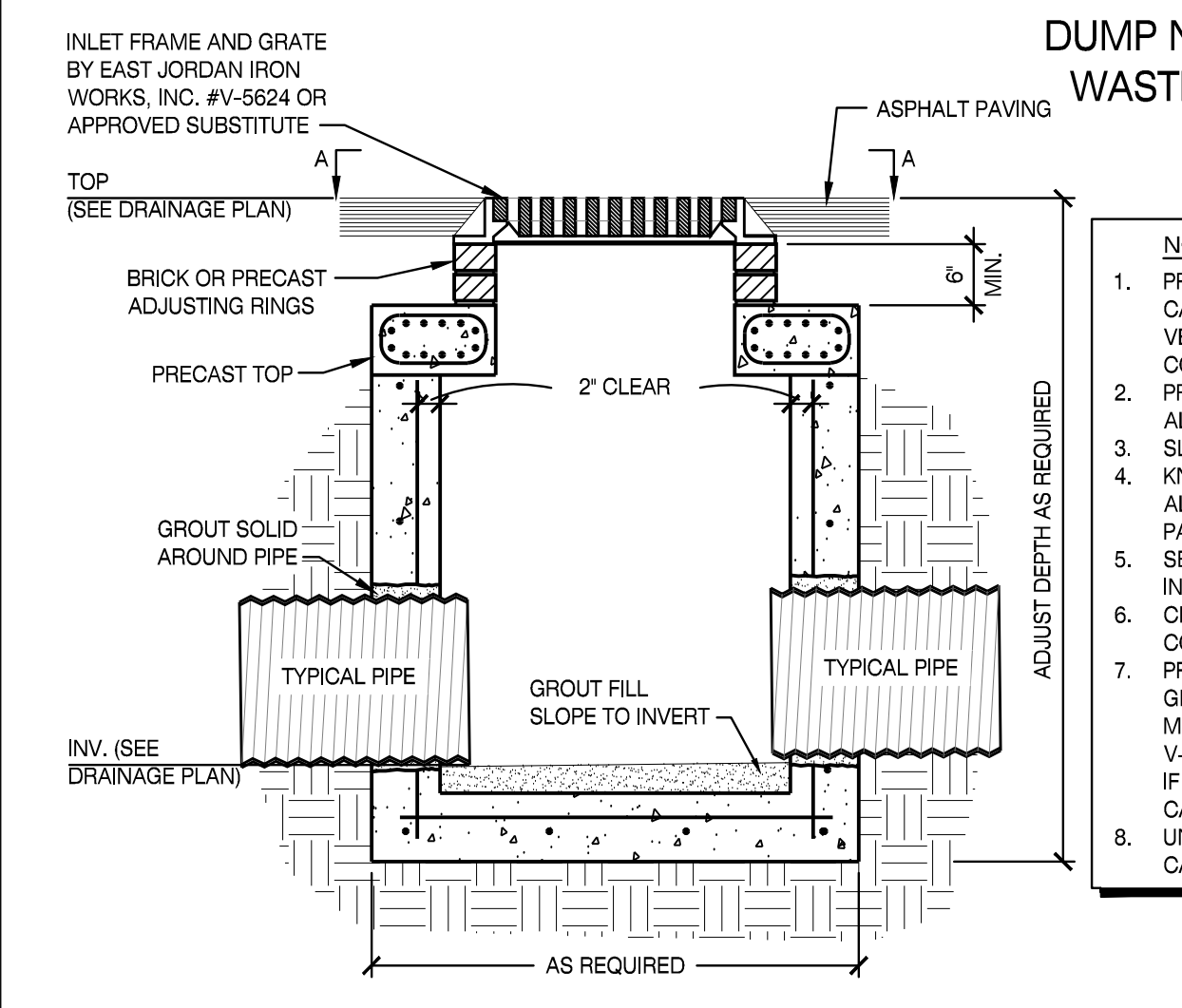


- NOTES:
- ALL PRIVATE SITE UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODE, LOCAL UTILITY REQUIREMENTS, AND THE LOCAL AGENCY HAVING JURISDICTION OVER BUILDING CONSTRUCTION.
 - THIS DETAIL ADDRESSES A TRENCH TYPE INSTALLATION. THIS DETAIL DOES NOT ADDRESS OSHA TRENCH SAFETY REQUIREMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MEET ALL HEALTH AND SAFETY ISSUES REGARDING TRENCH SAFETY.
 - WHERE THE TRENCH BOTTOM IS UNSUITABLE FOR FOUNDATION IN THE OPINION OF THE PROJECT GEOTECHNICAL ENGINEER, THE CONTRACTOR SHALL STABILIZE THE TRENCH BOTTOM ACCORDING TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER.
 - BEDDING AND INITIAL BACKFILL TO 6" ABOVE THE CROWN OF THE PIPE SHALL BE #57 CRUSHED STONE. ELIMINATE VOIDS BY KNIFING UNDER AND AROUND PIPE WITH SHOVEL OR OTHER MEANS AT THE DISCRETION OF THE CONTRACTOR.
 - FINAL BACKFILL FOR ALL PIPES LOCATED IN PAVED AREAS SHALL BE COMPACTED #57 CRUSHED STONE MEETING THE REQUIREMENTS OF THE STATES DEPARTMENT OF TRANSPORTATION.
 - FOR GRASS OR LANDSCAPED AREAS, PROVIDE #57 CRUSHED STONE INITIAL BACKFILL TO 6" ABOVE CROWN OF PIPE AND COVER GRAVEL WITH A NONWOVEN GEOTEXTILE TO PREVENT MIGRATION OF FINES. FINAL BACKFILL TO SURFACE SHALL BE SOIL FREE OF FOREIGN DEBRIS. SOIL BACKFILL SHALL BE PLACED IN 8" LOOSE LIFTS AND BE COMPACTED TO 90% STANDARD DENSITY PER AASHTO T-99 OR PER PROJECT SPECIFICATIONS, WHICHEVER IS MORE STRINGENT. TOP 6" SHALL BE TOPSOIL FROM SITE STRIPPING OPERATIONS LOOSELY PLACED.
 - IF PLANS AND SPECIFICATIONS DO NOT INDICATE OTHERWISE, PAVEMENT REPAIR SHALL MATCH EXISTING SECTION AS A MINIMUM REQUIREMENT.

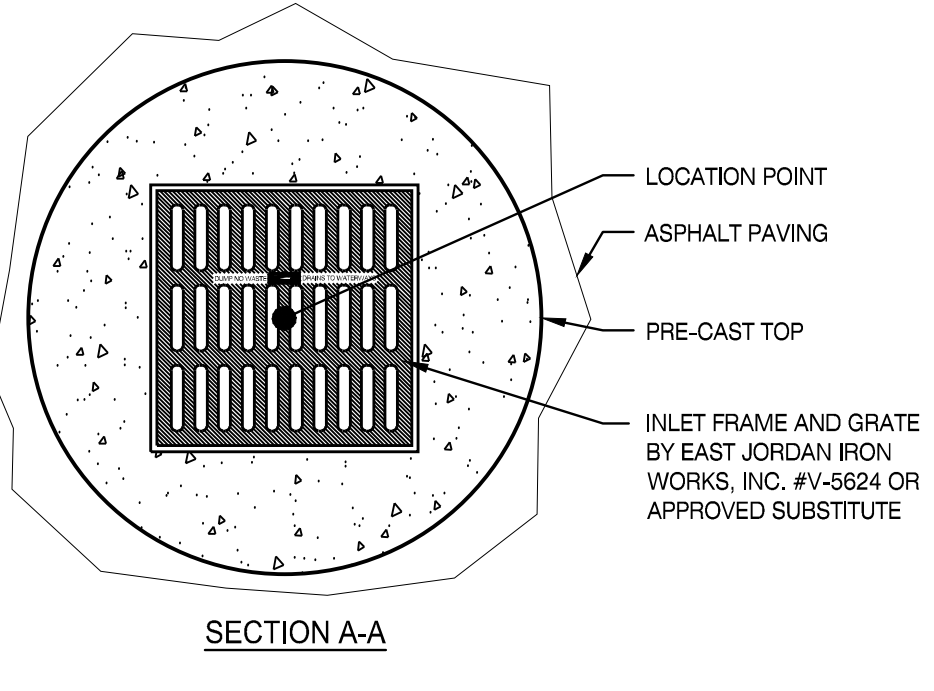
PIPE DIA. (IN.)	MIN. WIDTH (IN.)
< 4	18
4	21
6	23
8	26

STORM SEWER TRENCH

WATER AND SEWER TRENCH

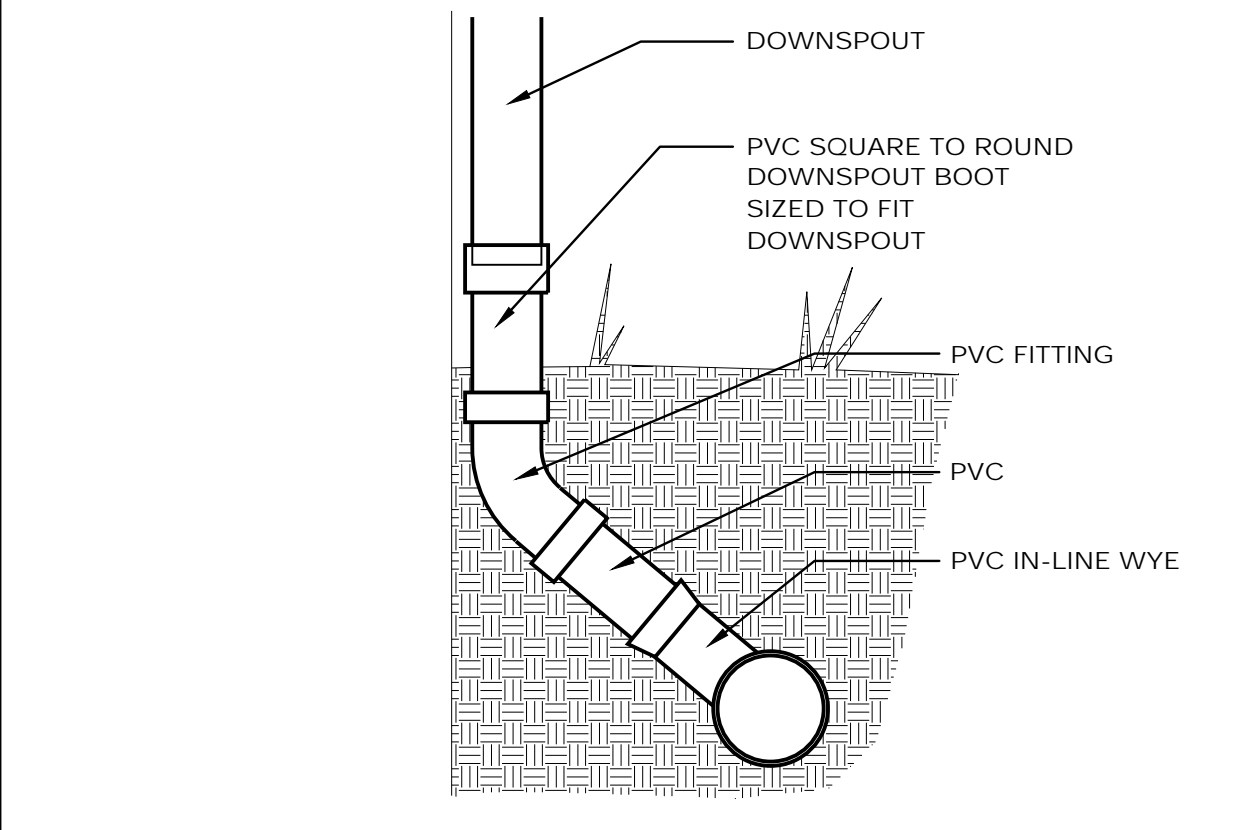


- DUMP NO WASTE DRAINS TO WATERWAYS
- ENVIRONMENTAL MESSAGE
- * SYMBOL SHALL BE PERMANENTLY CAST INTO GRATE
- NOTES:
- PRECAST SQUARE OR ROUND CATCHBASINS ARE ACCEPTABLE. CATCHBASINS SHALL MEET I.D.O.T. REQUIREMENTS. PRECAST VENDOR SELECT STRUCTURE BEST SUITED FOR PIPE CONFIGURATION AND DEPTH.
 - PROVIDE ADJUSTING RINGS OR BRICK COURSES BELOW GRATE TO ALLOW FOR FINAL ADJUSTMENT AS SHOWN.
 - SLOPE GRATE TO MATCH SLOPE.
 - KNOCK OUT HOLE IN ADJUSTING RING OR BRICK COURSE TO ALLOW SITE DRAINAGE UNTIL FINAL PAVEMENT IS COMPLETE. PATCH HOLE WITH GROUT BEFORE PAVING.
 - SEE STORM DRAINAGE PLAN FOR TYPE AND SIZING OF PIPES AND INVERT ELEVATIONS.
 - CLEAN CATCH BASIN OF ALL CONSTRUCTION DEBRIS AND SILT AT COMPLETION OF SITE WORK.
 - PROVIDE #V-5636 WHERE LARGE GRATE IS INDICATED ON PLAN. GRATE SHALL INCLUDE PERMANENTLY STAMPED ENVIRONMENTAL MESSAGE TO PREVENT DUMPING OF ILLEGAL WASTE. PROVIDE V-56-36-90 WHERE LARGE ADA GRATE IS INDICATED ON THE PLAN. IF INLET IS LOCATED IN A PUBLIC ROAD, PROVIDE TDOT-STANDARD CAST IRON GRATE PER STANDARD DRAWING D-CBB-42 UNLESS OTHERWISE NOTED, PROVIDE A PRECAST T.D.O.T. NO. 42 CATCH BASIN.

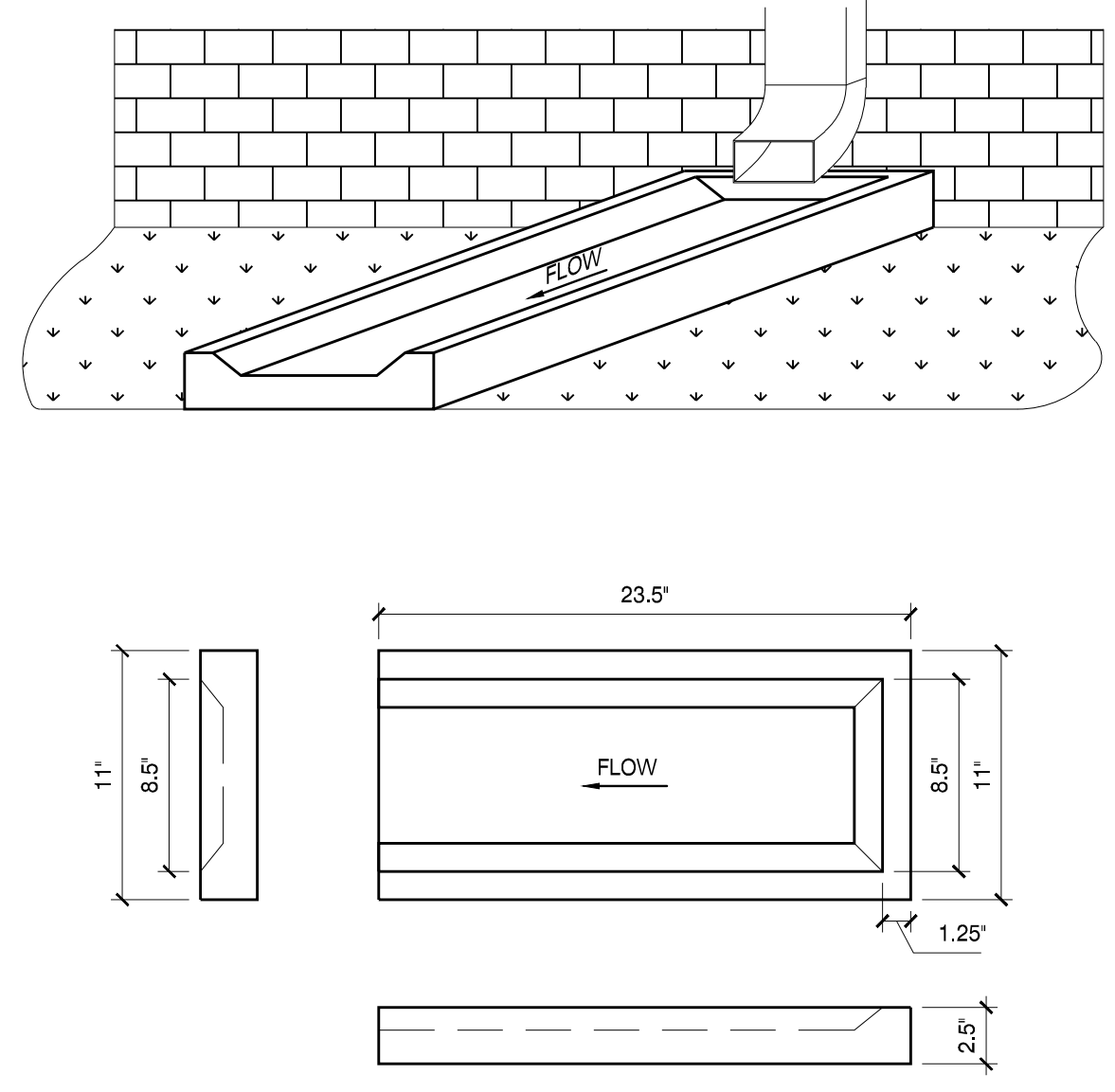


CATCH BASIN

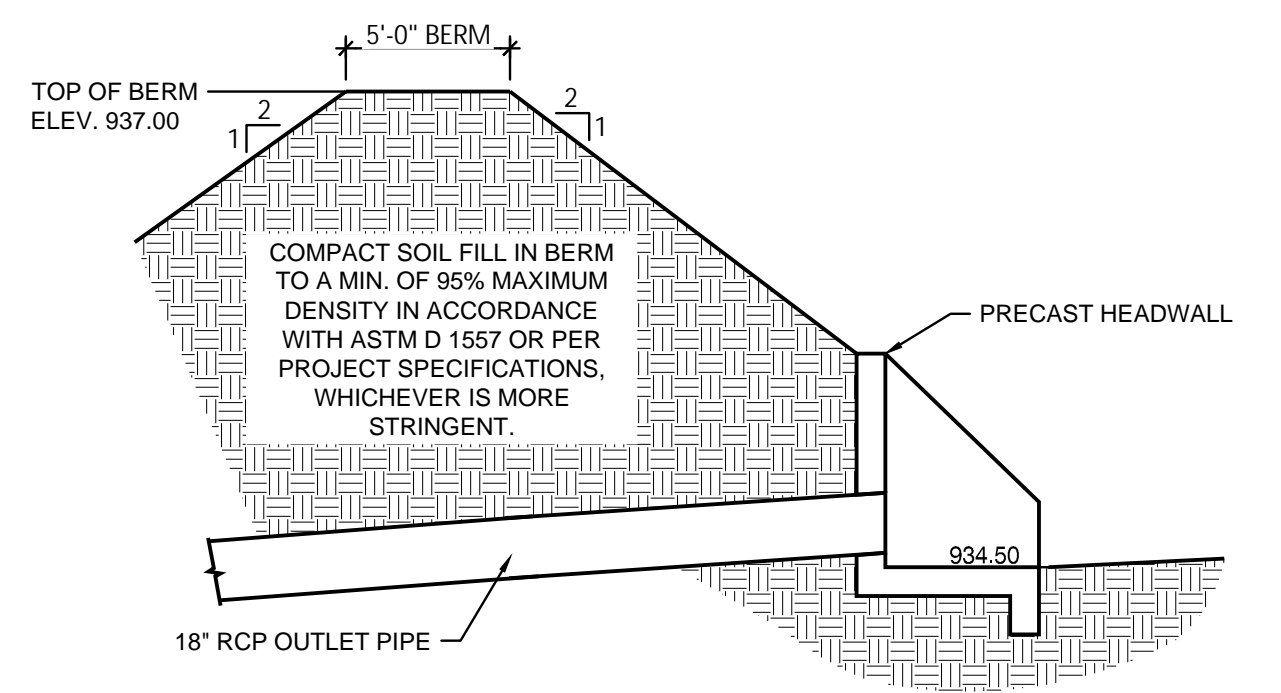
STORM/SEWER CLEANOUT



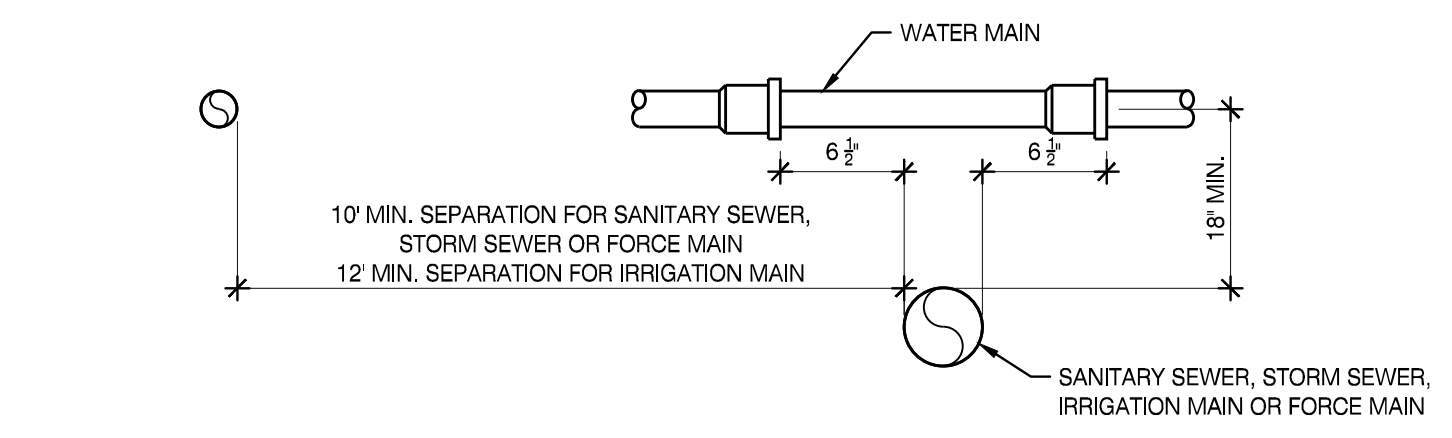
DOWNSPOUT BOOT



DRAINAGE SPLASH BLOCK

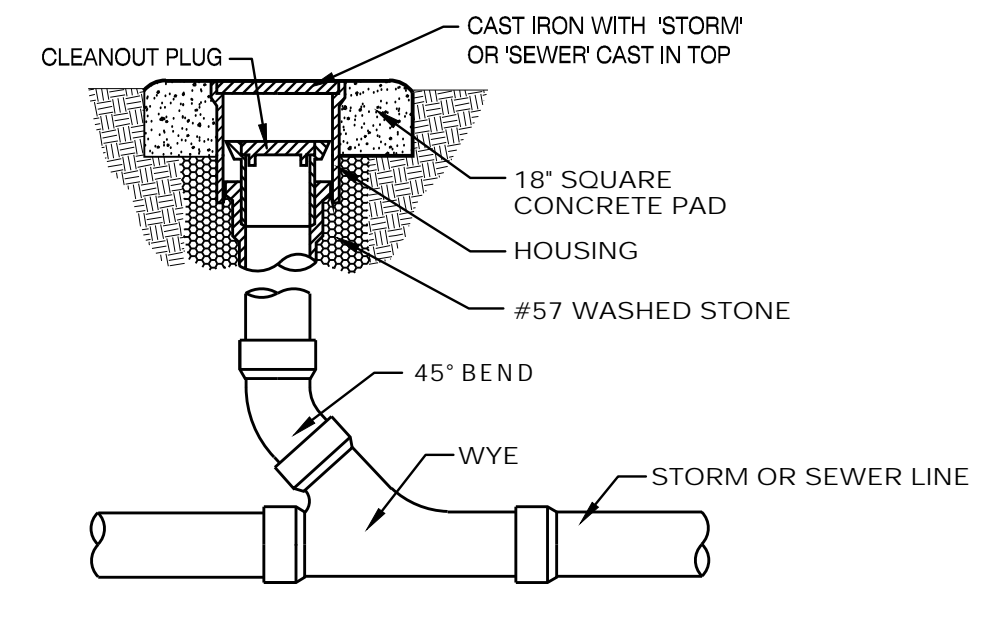


DETENTION POND

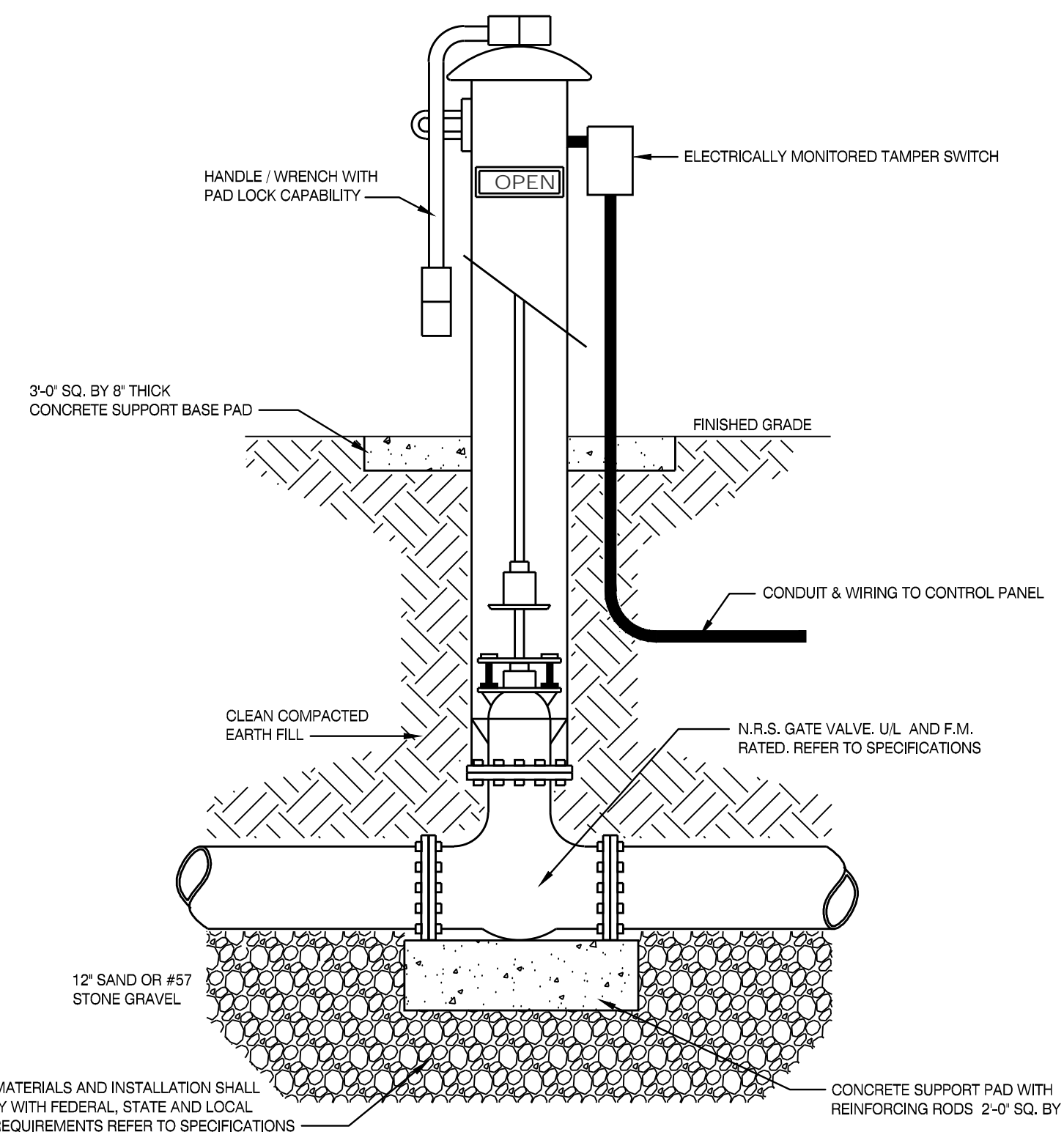


- WATER MAINS SHALL BE SEPARATED FROM STORM SEWER, SANITARY SEWER, NON-POTABLE IRRIGATION MAINS, AND FORCE MAINS BY A MINIMUM CLEAR VERTICAL DISTANCE OF 18" MEASURED BETWEEN THE BOTTOM OF THE UPPER PIPE AND THE TOP OF THE LOWER PIPE. THE 18" MINIMUM VERTICAL SEPARATION DISTANCE DOES NOT APPLY TO SEPARATION OF SEWER LATERALS AND POTABLE WATER MAIN PIPELINE INSTALLATIONS. ALSO, WATER MAINS SHALL BE SEPARATED FROM STORM SEWER, SANITARY SEWER AND FORCE MAINS BY 10" AND FROM IRRIGATION MAINS BY 12" MEASURED HORIZONTALLY BETWEEN OUTSIDE OF PIPES.
- ALL CROSSINGS WITH VERTICAL CLEARANCE LESS THAN 18" SHALL REQUIRE SUBMISSION AND APPROVAL OF A DEVIATION. IF A DEVIATION IS SUBMITTED, THE FOLLOWING MINIMUM STIPULATIONS APPLY: THE CROSSING SHALL BE MADE USING THICKNESS CLASS 200 AWWA C-900 DR14, PVC (CLASS 235 AWWA C-905, DR 18, PVC FOR PIPES GREATER THAN 12" IN DIAMETER) OR DUCTILE IRON, PRESSURE CLASS 250 PIPE FOR A HORIZONTAL DISTANCE OF 10' ON EACH SIDE OF THE CROSSING. WATER MAIN CONCRETE ENCASEMENT SHALL ONLY BE MADE AFTER WRITTEN APPROVAL OF THE WATER DIRECTOR OR HIS DESIGNEE.
- 18" CLEAR DISTANCE SHALL NOT BE REDUCED IN CASES WHERE WATER CROSSES UNDER SEWER LINE.
- WATER MAINS, SANITARY SEWER, STORM SEWER, AND NON-POTABLE IRRIGATION MAINS SHALL BE IN SEPARATE TRENCHES.
- WATER MAINS CROSSING ANY TYPE OF SANITARY SEWER, INCLUDING FORCE MAIN, OR STORM SEWER SHALL HAVE THE ONE FULL LENGTH OF WATER MAIN CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THAT THE WATER JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST 3' FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER.
- 10" STONE SHALL BE UTILIZED FOR SEPARATION BETWEEN GRAVITY SANITARY SEWER LINES AND STORMWATER LINES.

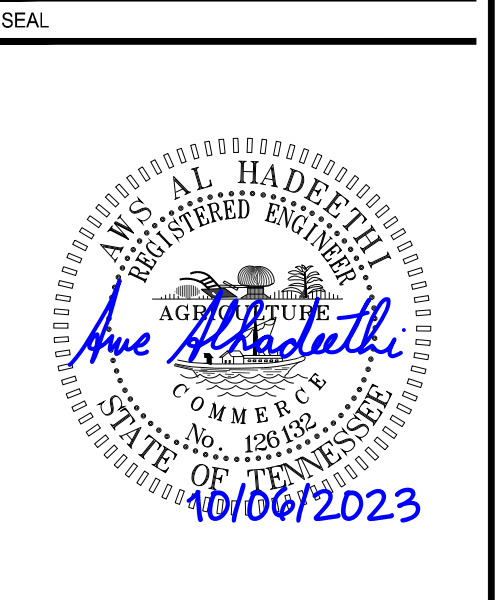
PIPE SEPARATION



STORM/SEWER CLEANOUT



POST INDICATOR VALVE



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PROJECT INFORMATION
 PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURAL BUILDING
 PROJECT ADDRESS:
 411 DOUGLAS LN.
 CLINTON, TN 37716

PROJECT NO.: **220042-02**

ACTIVE DESIGN PHASE

- FOR REVIEW ONLY
- FOR PERMITTING ONLY
- SCHEMATIC DESIGN
- DESIGN DEVELOPMENT
- CONSTRUCTION BIDDING
- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

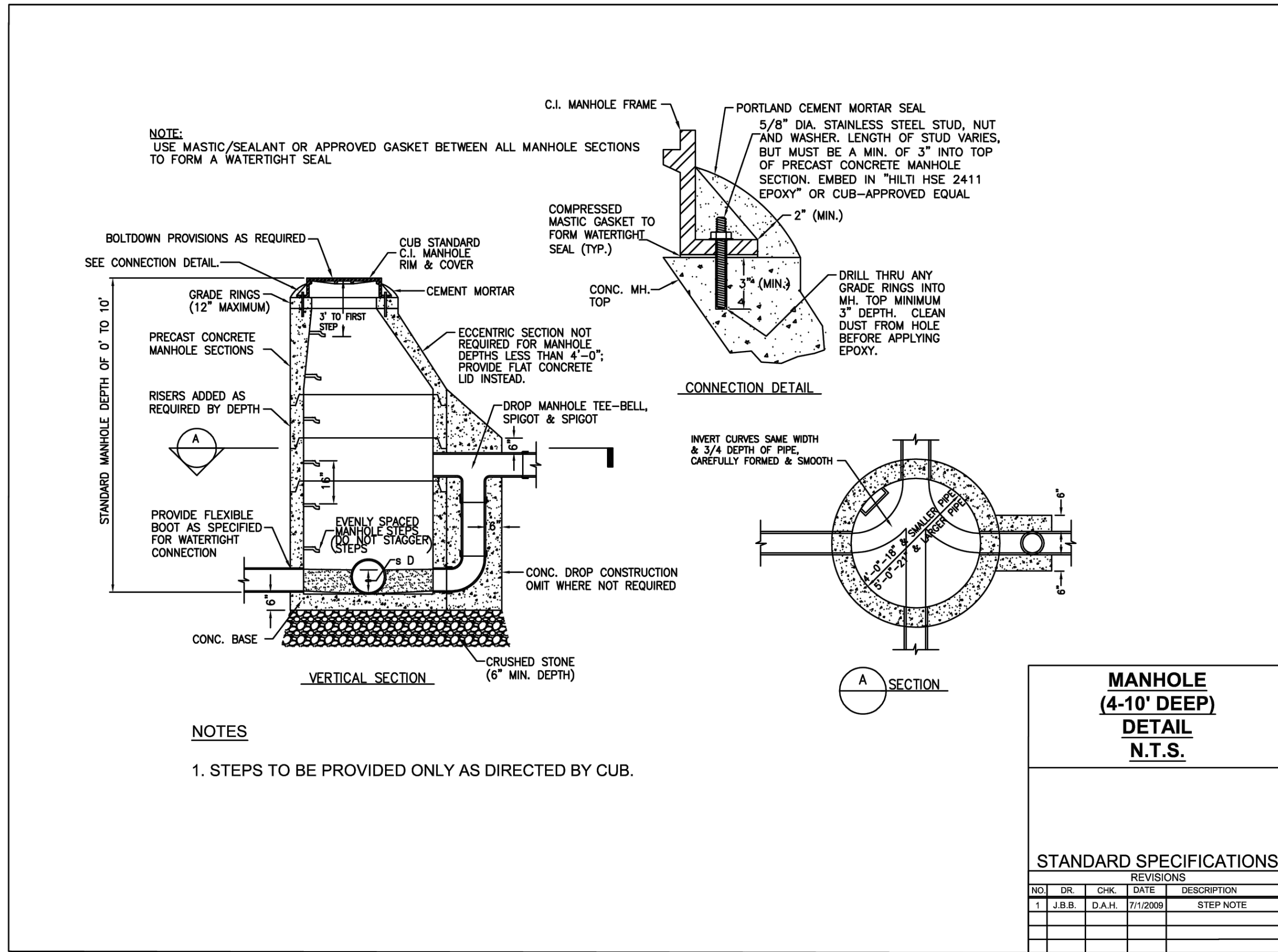
KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 09/25/2023
 DESIGNED BY: I.A.J.
 DRAWN BY: I.A.J.
 REVIEWED BY: A.M.A.
 SHEET TITLE:

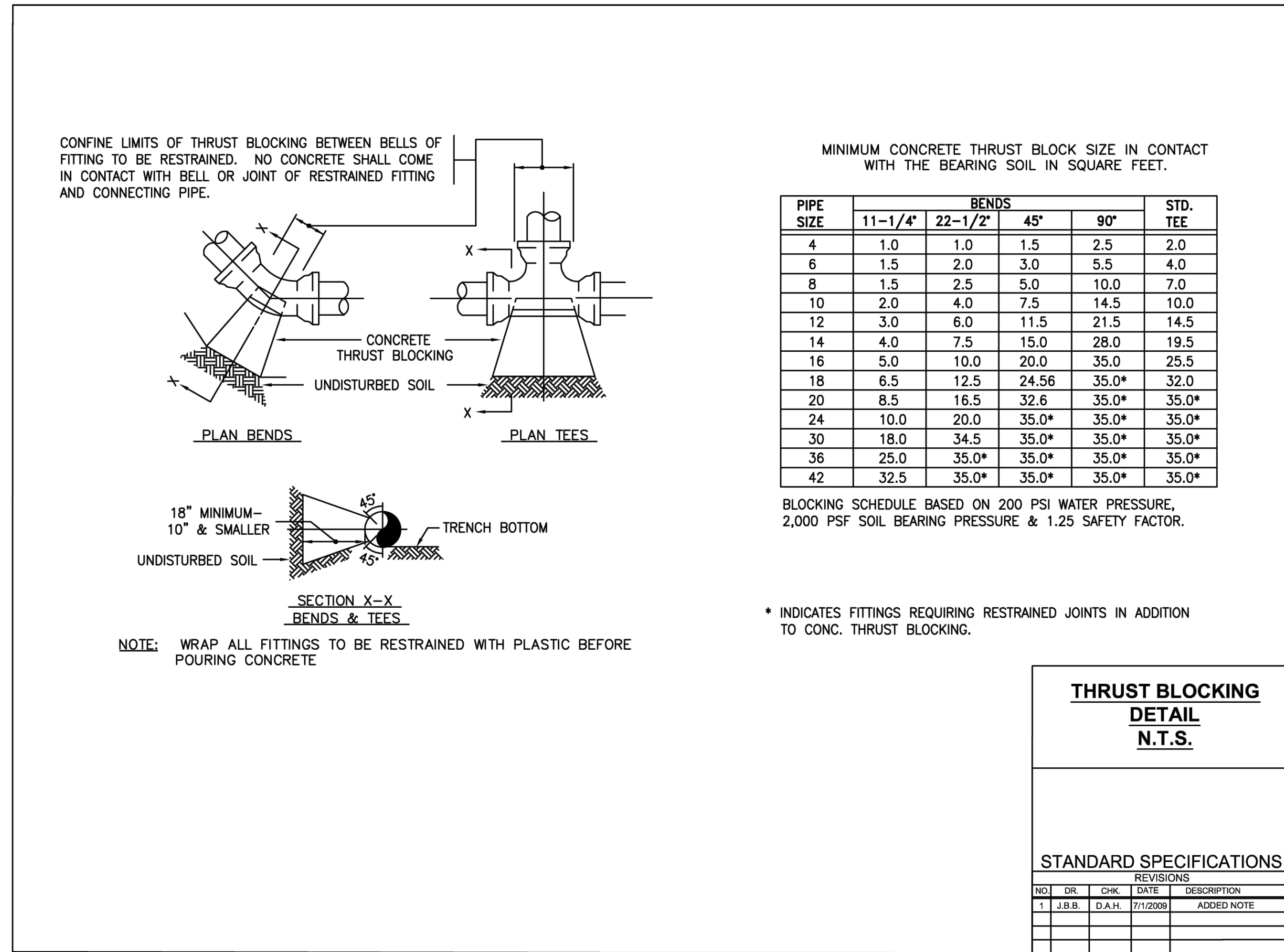
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SHEET NO.: **C802**



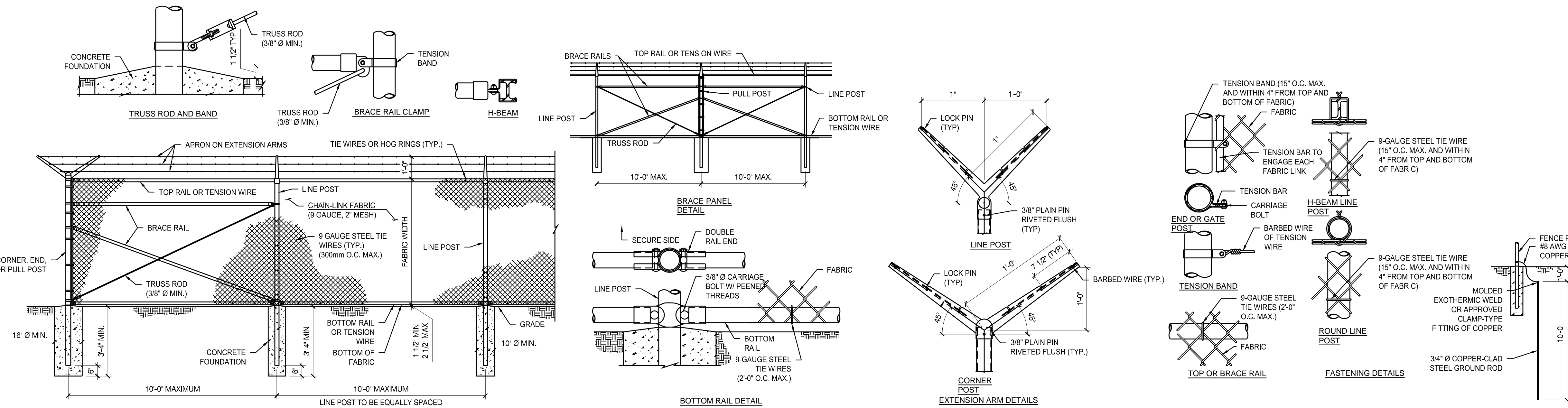
C.U.B. TYPICAL SANITARY SEWER MANHOLE

1



C.U.B. TYPICAL THRUST BLOCK

1



CHAIN LINK FENCE

3

USE AND SECTION	STEEL POST SCHEDULE		
	FABRIC WIDTH 72" OR LESS	FABRIC WIDTH 84" TO 96"	FABRIC WIDTH 108" AND OVER
CORNER	2.375" O.D.	2.875" O.D.	4.00" O.D.
END & PULL POSTS	2.00" SQ.	2.50" SQ.	3.00" SQ.
TUBULAR - ROUND	3.50" X 3.50"	3.50" X 3.50"	
TUBULAR - SQUARE			
C-SECTION (ROLL-FORMED)			
LINE POSTS	1.90" O.D.	2.375" O.D.	2.875" O.D.
TUBULAR - ROUND	2.25" X 1.70"	2.25" X 1.70"	2.25" X 1.70"
H-SECTION	1.875" X 1.625"	2.25" X 1.70"	
C-SECTION (ROLL-FORMED)			
BOTTOM & BRACE RAILS	1.66" O.D.		
TUBULAR - ROUND	1.50" SQ.		
TUBULAR - SQUARE	1.625" X 1.50"		
H-SECTION	1.625" X 1.25"		
C-SECTION (ROLL-FORMED)			

NOTES:

- DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION THAT COMPLY WITH THE SPECIFICATIONS.
- WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.
- C-SECTION POSTS SHALL BE INSTALLED SO THAT THE VOID INSIDE THE POST IS COMPLETELY FILLED WITH CONCRETE UP TO THE TOP OF THE FOUNDATION.
- BOTTOM RAIL SHALL BE ATTACHED TO DOUBLE RAIL ENDS USING 3/8" CARRIAGE BOLTS AS SHOWN.
- PROVIDE BRACE PANEL WHENEVER STRAIGHT RUNS EXCEED 500 FEET.

LEGEND:

- TYPE FE1 - CHAIN-LINK FENCE WITHOUT BARBED WIRE APRON
- TYPE FE2 - CHAIN-LINK FENCE WITH BARBED WIRE ON SINGLE OUTRIGGER
- TYPE FE3 - CHAIN-LINK FENCE WITH BARBED WIRE ON DOUBLE OUTRIGGER
- TYPE FE4 - CHAIN-LINK FENCE WITH BARBED WIRE AND BARRED TAPE ON DOUBLE OUTRIGGER
- TBR - FENCE WITH TOP RAIL AND TENSION WIRE AT BOTTOM
- TBT - FENCE WITH TOP AND BOTTOM RAILS
- TWBR - FENCE WITH TOP TENSION WIRE AND BOTTOM RAIL
- FINAL NUMBER IS FABRIC WIDTH IN INCHES.

EXAMPLES:

- FE1-T2 - CHAIN-LINK SECURITY FENCE WITH BARBED WIRE ON SINGLE OUTRIGGER, TOP RAIL, AND 72 INCH FABRIC WIDTH.
- FE1-TWBR-84 - CHAIN-LINK SECURITY FENCE WITH NO APRON, TOP AND BOTTOM TENSION WIRE, AND 84 INCH FABRIC WIDTH.

MBI

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CONSULTANT:

SEAL:

Al Hadeed
 AGRI-CULTURE
 STATE OF TENNESSEE
 10/06/2023

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CLINTON HIGH SCHOOL WELDING AND AGRICULTURAL BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN.
 CLINTON, TN 37716

PROJECT NO.: 220042-02

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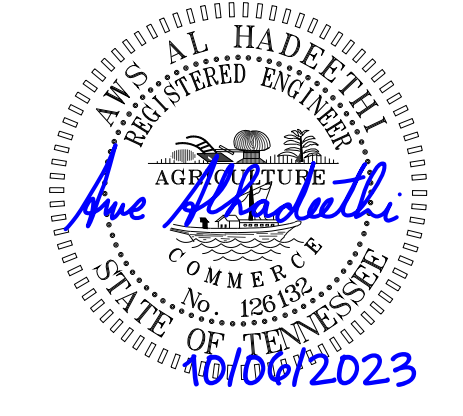
KEY PLAN:

SHEET INFORMATION:

SHEET ISSUED: 09/25/2023
 DESIGNED BY: I.A.J.
 DRAWN BY: I.A.J.
 REVIEWED BY: A.M.A.
 SHEET TITLE:

CIVIL DETAILS

SHEET NO.: C803



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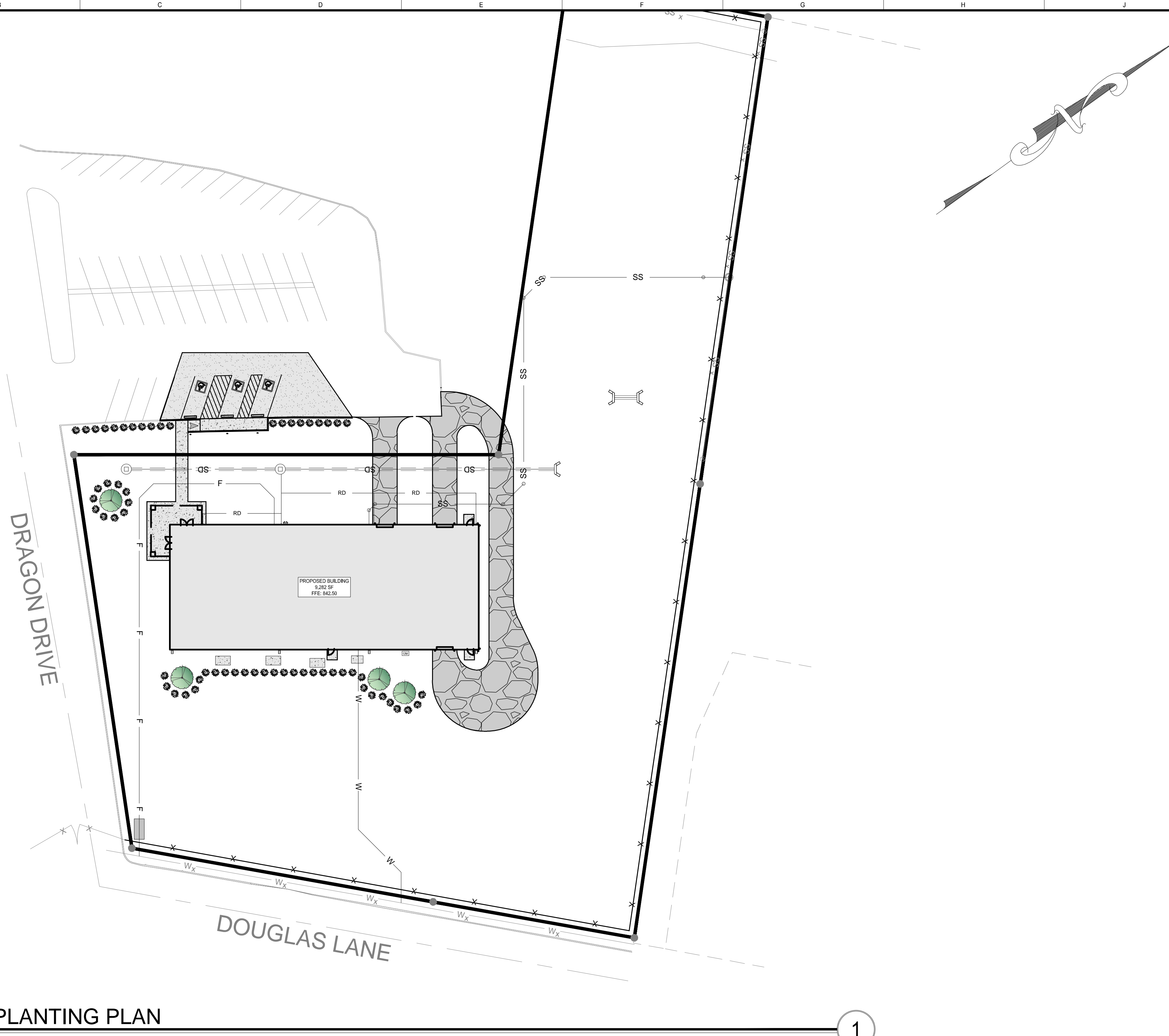
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KEY PLAN

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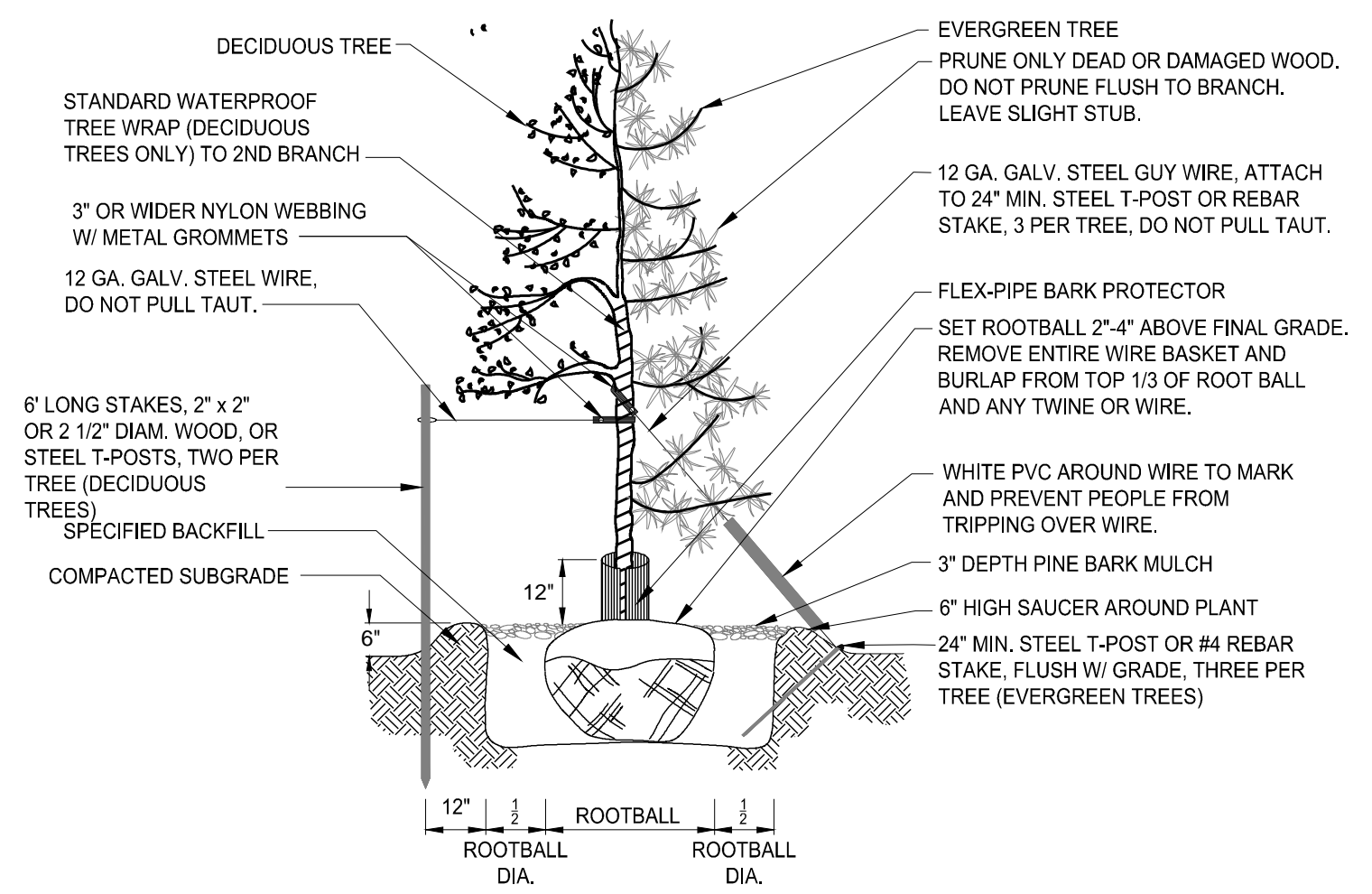
SITE LANDSCAPE PLAN
 SHEET NO.:

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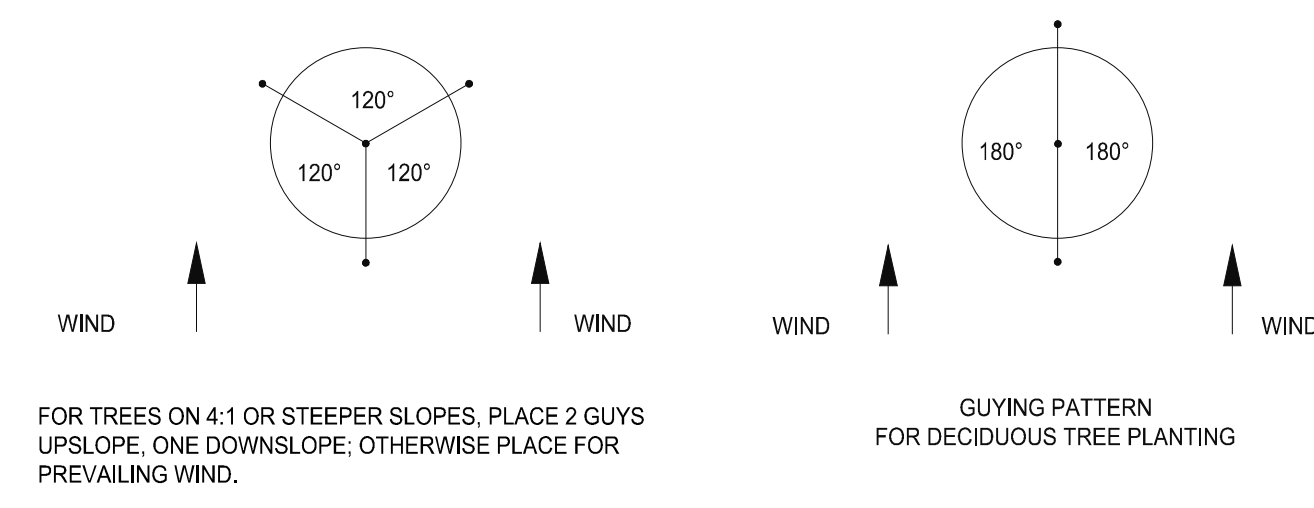


LANDSCAPE PLANTING PLAN

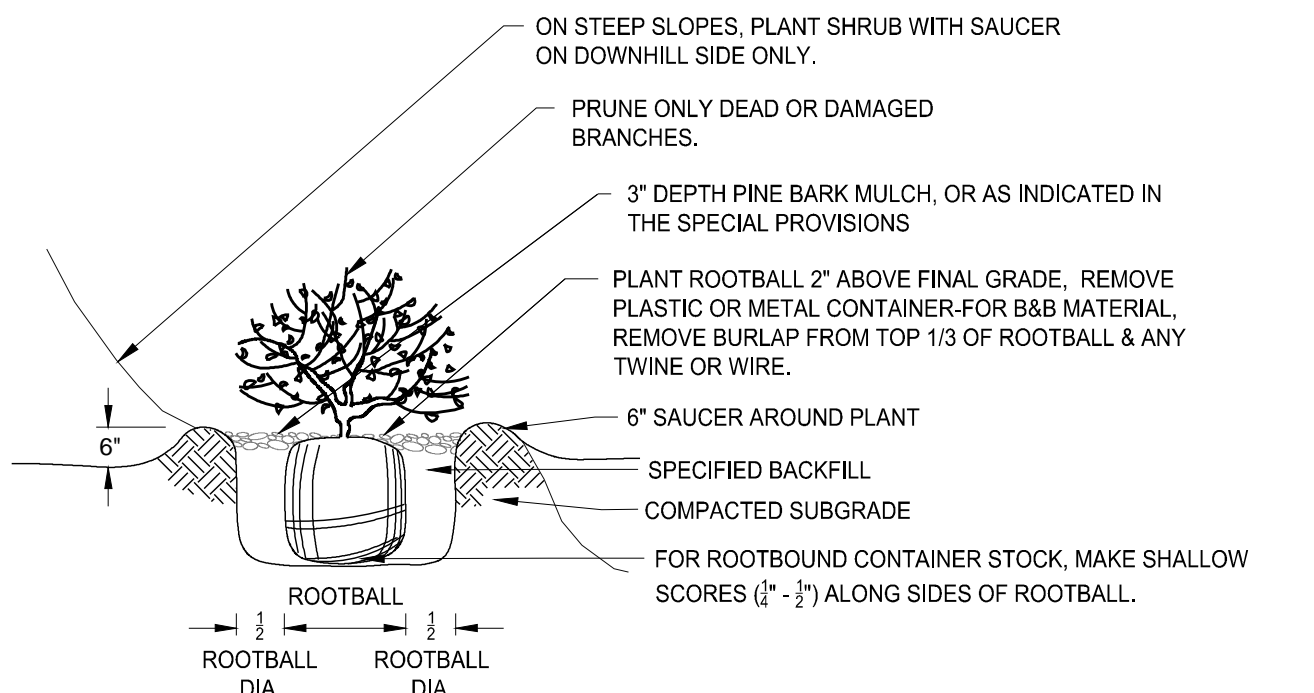
SCALE: 1" = 30'



TREE PLANTING & GUYING



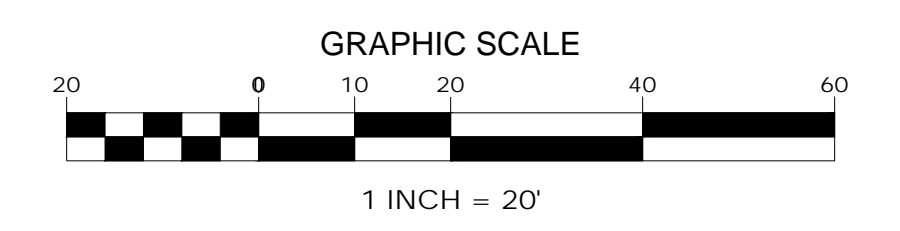
GUYING PATTERN



SHRUB PLANTING DETAIL

- #### GENERAL LANDSCAPE NOTES
- CARE IS TO BE TAKEN TO PROTECT ALL UNDERGROUND UTILITIES. THE GENERAL CONTRACTOR IS TO VERIFY AND MARK THE EXACT LOCATION OF ALL EXISTING UTILITIES (WATER, SEWER, GAS, ELECTRIC, SEPTIC TANKS, ETC.)
 - SOIL USED IN THE BACKFILL OF PLANTING PITS AND LANDSCAPE BEDS SHALL BE CLEAN AND WEED FREE, AND SHALL BE MIXED WITH 25% PEAT MOSS/PINE BARK BY VOLUME.
 - 12-6-6 PENNINGTON NURSERY FERTILIZER OR EQUAL SHALL BE USED IN ALL PLANTING PITS.
 - HERBICIDE, TRIFLURAN OR EQUAL TO BE APPLIED TO PLANTING BEDS FOR NOXIOUS WEED CONTROL.
 - ALL PLANTING BEDS TO HAVE A MINIMUM 3" OF PINE BARK MULCH.
 - PRESSURE TREATED WOODEN STAKES SHALL BE USED FOR TREES OVER 2" CALIPER OR IN AREAS WHERE HEAVY WIND IS A FACTOR.
 - ALL LANDSCAPING MATERIAL SHALL BE INSTALLED IN A PROFESSIONAL MANNER, AND ACCORDING TO ACCEPTED PLANTING PROCEDURES.
 - TOPSOIL FURNISHED BY THE OWNER OR LANDSCAPE CONTRACTOR SHALL BE NATURAL, FERTILE, FRIABLE SOIL POSSESSING CHARACTERISTICS REPRESENTATIVE OF PRODUCTIVE SOILS IN THE AREA. SOIL SHALL NOT BE EXCESSIVELY ACIDIC, ALKALINE OR TOXIC THAT IT MAY BE HARMFUL TO PLANT GROWTH. TOPSOIL SHOULD BE FREE OF CLAY LUMPS, STONES, STUMPS, ROOTS, OR SUBSTANCE 2" OR MORE IN DIAMETER.
 - ALL TREES RETAINED OR NEW SHALL BE PROPERLY MAINTAINED TO ENSURE THEIR SURVIVAL FOR 12 MONTHS AFTER DATE OF SUBSTANTIAL COMPLETION. ANY TREE WHICH FALLS TO SURVIVE AFTER 12 MONTHS SHALL BE REPLACED WITHIN 9 MONTHS OF LOSS.
 - LAWN QUALITY SHALL BE PROVIDED WITH FRESH, CLEAN, NEW-CROP SEED COMPLYING WITH TOLERANCE FOR PURITY AND GERMINATION ESTABLISHED BY OFFICIAL SEED ANALYSIS OF SEED VENDOR'S CERTIFIED STATEMENT FOR EACH GRASS SEED MIXTURE. PROJECT CONDITIONS PROCEED WITH AND COMPLETE LAWNS AND GRASSES AS RAPIDLY AS PORTIONS OF SITE BECOME AVAILABLE. FERTILIZER WITH COMMERCIAL PERCENTAGE TO BE DETERMINED WITH ANALYSIS AND SEASON OF INSTALLATION. LIME TO BE NATURAL DOLOMITIC LIMESTONE CONTAINING NOT LESS THAN 85% OF TOTAL CARBONATE WITH MINIMUM OF 30% MAGNESIUM CARBONATES. SOD TYPE SHALL BE STRONGLY ROOTED, FRESHLY CULTIVATED SOD, NOT LESS THAN 1 YEAR OLD, FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES.
 - PROPOSED PLANT MATERIAL WILL NOT INTERFERE WITH ANY EXISTING AND/OR PLANNED UNDERGROUND OR OVERHEAD UTILITIES.
 - APPLY TEMPORARY SEEDING WHENEVER GRADING OPERATIONS ARE TEMPORARILY HALTED FOR OVER 14 DAYS AND FINAL GRADING OF EXPOSED SURFACES IS TO BE COMPLETED WITHIN ONE YEAR. APPLY TEMPORARY SEEDING TO SOIL STOCKPILES.
 - APPLY PERMANENT SEEDING WHENEVER GRADING OPERATIONS ARE COMPLETED AND ALL CONSTRUCTION OPERATIONS WILL NOT IMPACT THE DISTURBED AREA. APPLY PERMANENT SEEDING TO ALL NON-CONSTRUCTION AREAS, WHICH SHOW SIGNS OF EXCESSIVE EROSION.
 - THE GUYING OF TREES IS OPTIONAL BUT, THE LANDSCAPE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR THE STABILITY AND PLUMB CONDITION OF ALL TREES AND SHRUBS AND SHALL BE LEGALLY LIABLE FOR ANY DAMAGE CAUSED BY THE INSTABILITY OF ANY PLANT MATERIALS. THE GUYING DETAILS ARE AN APPROVED METHOD OF TREE GUYING, OR EQUAL.
 - CONTRACTOR SHALL ADHERE TO ALL LOCAL LANDSCAPE ORDINANCES.

Know what's below.
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 In Tennessee call 811 or 1-800-351-1111



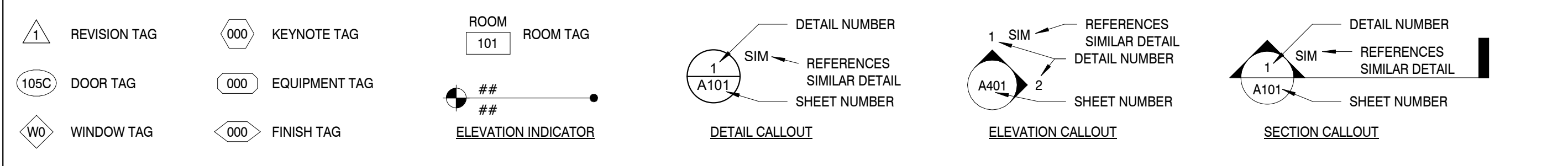
PLANT SCHEDULE

FLOWERING TREES	QTY	COMMON NAME / BOTANICAL NAME	SIZE	CAL	CONT
	4	DOGWOOD / <i>Cornus florida</i>	15-30' H	2"	
DECIDUOUS SHRUBS	QTY	COMMON NAME / BOTANICAL NAME	SIZE	CONT	
	61	SPIREA / <i>Spiraea x 'Little Princess'</i>	18-24" H	3 gal	

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NOTES:
 1. CLEAR SPACES MUST BE LEVEL TO PREVENT WHEELCHAIRS FROM ROLLING WHEN THE OCCUPANT RELEASES THE WHEEL GRIPS TO REACH FOR THE DOOR. 1/4" SLOPE PER FOOT IS ALLOWED FOR DRAINAGE.
 2. WHERE DOORS OPEN ONTO BUT NOT INTO A CORRIDOR. THE REQUIRED LEVEL AREA BEYOND THE DOORS MAY BE A MINIMUM OF 48" A.F.F.

ARCHITECTURAL SYMBOLS



GENERAL NOTES

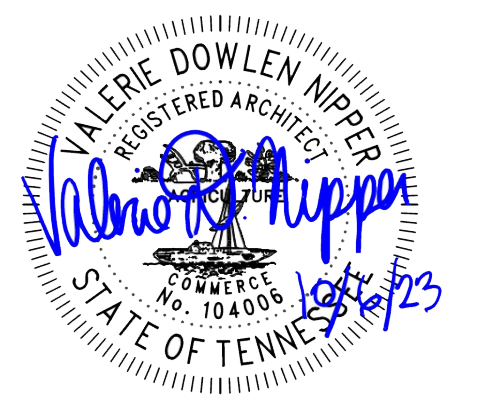
- THE ARCHITECT HAS MADE EVERY EFFORT TO SET FORTH IN THE CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE OMISSIONS AND DISCREPANCIES IN THE DRAWINGS AND SPECIFICATIONS SHALL NOT EXCUSE HIM FROM PROVIDING A COMPLETED FACILITY AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS. IN THE EVENT OF DISCREPANCIES, CONTRACTOR SHALL PRICE THE MORE EXPENSIVE AND EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.
- DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. THE DRAWINGS, GENERAL NOTES AND SPECIFICATIONS ARE COMPLIANT, AND WHAT IS CALLED FOR BY ANY WILL BE BINDING AS IF CALLED FOR BY ALL. WORK SHOWN OR REFERRED TO ON ANY DRAWING SHALL BE PROVIDED AS THOUGH SHOWN ON ALL RELATED DRAWINGS. IF THERE IS ANY CONFLICT OR DISCREPANCY WITHIN OR BETWEEN ANY OF THE CONTRACT DOCUMENTS INVOLVING THE QUALITY OR QUANTITY OF WORK REQUIRED, THE WORK OF HIGHEST QUALITY AND/OR GREATEST QUANTITY SHOWN OR SPECIFIED SHALL BE FURNISHED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR BECOMING FAMILIAR WITH ALL CONTRACT DOCUMENTS AND FIELD CONDITIONS, AND CONFIRM THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT. THE CONTRACTOR SHALL PROVIDE AT THE PROJECT SITE A SET OF CONSTRUCTION DOCUMENTS ANNOTATED WITH THE LATEST REVISIONS AND CLARIFICATIONS FOR THE USE BY ALL.
- CONDUCT OPERATIONS IN SUCH A MANNER AS TO MINIMIZE INTERFERENCE WITH USE OF PUBLIC WAYS AND ADJACENT USED FACILITIES. DO NOT CLOSE, BLOCK OR OTHERWISE OBSTRUCT USE OF PUBLIC WAYS OR FACILITIES WITHOUT WRITTEN CONSENT OF AUTHORITIES HAVING JURISDICTION. PROVIDE ALTERNATE ROUTES TO CLOSED OR OBSTRUCTED FACILITIES AS REQUIRED BY LOCAL REGULATIONS.
- EXCEPT WHERE OTHERWISE SPECIFIED, THE CONTRACTOR SHALL AT ALL TIMES PROVIDE PROTECTION AGAINST WEATHER TO MAINTAIN ALL WORK, MATERIALS, APPARATUS, AND FIXTURES FROM INJURY OR DAMAGES. AT THE END OF THE DAY'S WORK, ALL NEW WORK LIKELY TO BE DAMAGED SHALL BE COVERED OR OTHERWISE PROTECTED AS REQUIRED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING HIS OWN TELEPHONE AND TOILET FOR ALL SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL TAPS, EXTENSIONS, VALVES, OR OTHER DEVICES NECESSARY TO RUN POWER TOOLS AND EQUIPMENT. SUCH MODIFICATIONS TO EXISTING UTILITIES MUST BE REMOVED AT COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHALL LIMIT THE INGRESS AND EGRESS OF WORKERS AND EQUIPMENT TO THE CONSTRUCTION SITE TO AUTHORIZED PERSONS ONLY. DAMAGE TO ANY EXISTING INTERIOR OR EXTERIOR CONSTRUCTION SHALL BE REPAIRED TO "LIKE NEW" CONDITION UNDER THIS CONTRACT.
- THE CONTRACTOR SHALL MAINTAIN AT ALL TIMES ADEQUATE SAFETY BARRICADES FOR PROTECTION OF JOB PERSONNEL AND THE PUBLIC AND CLEAR ACCESS IN AND OUT OF THE WORK SITE SO AS TO FACILITATE DAILY TRAFFIC MOVEMENT, DELIVERIES, AND SAFETY. REMOVE BARRICADES WHEN NO LONGER REQUIRED.
- REMOVE DEBRIS, RUBBISH, AND OTHER SUBSTANCES FROM SITE. LEGALLY TRANSPORT AND DISPOSE OF SUCH MATERIALS OFF-SITE. BURYING OR BURNING OF "TO BE REMOVED" MATERIALS ON THE PROJECT SITE IS FORBIDDEN.
- COOPERATE WITH THE APPLICABLE CITY OR OTHER GOVERNMENT OFFICIALS AND INSPECTORS AT ALL TIMES. IF SUCH OFFICIAL OR INSPECTOR DEMS SPECIAL INSPECTION NECESSARY, PROVIDE ALL ASSISTANCE AND FACILITIES THAT WILL EXPEDITE HIS INSPECTION.
- ALL DETAILS OF CONSTRUCTION SHALL CONFORM WITH THE APPLICABLE CODES (SEE PROJECT INFORMATION ON COVER SHEET)
- PROVIDE HIGH SECURITY SURFACE MOUNTED BOX W/ TAMPER SWITCH (FIRE DEPARTMENT KEY BOX) AT THE ENTRANCE. THREE COMPLETE SETS OF KEYS MUST BE PROVIDED. KEYS MUST BE PROVIDED FOR ALL ROOMS CONTAINING FIRE AND LIFE SAFETY SYSTEM CONTROLS. PRIOR TO INSTALLATION VERIFY EXACT LOCATION AND EXACT TYPE OF BOX REQUIRED WITH LOCAL AUTHORITY HAVING JURISDICTION.
- MOUNT FIRE EXTINGUISHERS LISTED IN SPECIFICATIONS AT LOCATIONS SHOWN AND/OR DIRECTED BY FIRE DEPARTMENT CODE OFFICIAL HAVING JURISDICTION.
- INSTALL ALL MANUFACTURED ITEMS, MATERIALS, AND EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDED SPECIFICATIONS. UNLESS OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE, AS A MINIMUM STANDARD, WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES HAVING JURISDICTION. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE PERFORMANCE OF THE WORK.
- PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT AND APPURTENANCES, AND LABOR NECESSARY TO AFFECT ALL INSTALLATIONS INDICATED ON THE DRAWINGS. THE WORK SHALL ALSO INCLUDE ALL MATERIALS, DETAIL AND LABOR NECESSARY FOR THE SUCCESSFUL INSTALLATION OF THE WORK DESCRIBED HEREIN.
- ALL DIMENSIONS ARE TO FACE OF CONC. BLOCK, CONC. PANEL, FACE OF EXISTING FINISH, OR FACE OF NEW STUD, UNLESS OTHERWISE NOTED. "CLEAR" DENOTES FINISH TO FINISH DIMENSIONS.
- CONTRACTOR IS TO COORDINATE THE BUILDING PLANS WITH THE CIVIL AND SURVEY DRAWINGS FOR EXACT ELEVATIONS AND SLOPES OF EXTERIOR GRADES FOR INSTALLATION OF NEW EXTERIOR STAIRS, RAMPS AND SIDEWALKS. CONTRACTOR TO FIELD VERIFY EXTERIOR GRADES AT BUILDING ENTRANCES TO ALIGN WITH FINISHED FLOOR ELEVATIONS AND/OR NEW STAIR/RAMP ELEVATIONS. GRADING AT BUILDING PERIMETER TO SLOPE AWAY FROM BUILDING MIN. 1/4" PER FOOT.
- ALL GRADES, LINES, LEVELS, AND DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO START OF CONSTRUCTION. ANY ERROR OR INCONSISTENCY SHALL BE REPORTED TO THE ARCHITECT FOR INSTRUCTIONS PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR IS TO FIELD VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR POSSIBLE CONFLICTS.
- CONTRACTOR IS TO FIELD VERIFY LOCATIONS AND RUNS OF ALL NEW AND EXISTING STORM SEWER PIPING AND ROOF TIE-INS. REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO START OF CONSTRUCTION.
- DO NOT INTERRUPT EXISTING UTILITIES IN OCCUPIED FACILITIES UNLESS AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION. IF INTERRUPTION IS ALLOWED, PROVIDE ALTERNATE TEMPORARY SERVICES ACCEPTABLE TO GOVERNING AUTHORITIES. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES 48 HOURS PRIOR TO ANY DEMOLITION WORK.
- CONTRACTOR SHALL PERFORM HIGH QUALITY PROFESSIONAL WORK. JOIN MATERIALS TO UNIFORM ACCURATE FITS SO THEY MEET WITH NEAT, STRAIGHT LINES, FREE OF SMEARS OR OVERLAPS. INSTALL EXPOSED MATERIALS APPROPRIATELY LEVEL, PLUMB AND AT THE ACCURATE RIGHT ANGLES. OR FLUSH WITH ADJOINING MATERIALS. WORK OF EACH TRADE SHALL MEET ALL NATIONAL STANDARDS PUBLISHED BY THAT TRADE.
- BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AND SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS. ANY DIFFERENCES BETWEEN DIMENSIONS INDICATED ON THE DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR INSTRUCTIONS AND CONSIDERATIONS BEFORE PROCEEDING WITH THE WORK.
- FURNISH AND INSTALL ALL REQUIRED BACKING FOR ALL SHELVES, CABINETS, FIXTURES, HANDRAILS AND EQUIPMENT. COORDINATING WITH OWNER AND CONTRACTOR FOR EXACT SIZE, NUMBER, AND LOCATION PRIOR TO START OF CONSTRUCTION. METAL BACKING PLATES TO BE FLAT STOCK (20 GAUGE MIN.) WHEN APPLIED TO METAL FRAMING. ALL WOOD BLOCKING, NAILERS, ETC. MUST BE FIRE RETARDANT TREATED.
- GLAZING IN DOORS AND ADJACENT PANELS MUST BE TEMPERED. RESPONSIBILITY OF GLAZING SUBCONTRACTOR TO VERIFY & PLACE TEMPERED GLASS AS REQUIRED BY THE LOCAL BUILDING CODE & INSPECTOR.
- SPOUT OUTLETS FOR WHEELCHAIR ACCESSIBLE DRINKING FOUNTAINS SHALL BE 36" MAX A.F.F. AND FOR STANDING PERSONS SHALL BE 38" MIN A.F.F. AND 43" MAX. A.F.F.
- FILL ALL C.M.U. CELLS BELOW FINISH FLOOR OR FINISHED GRADE, WHICHEVER IS HIGHER SHALL BE SOLID GROUTED.
- PROVIDE ADA COMPLIANT SIGNAGE AT ALL TOILET AND BATHROOMS. APPROPRIATELY IDENTIFIED AS "MEN" AND "WOMEN".
- ALL TOILET ROOMS AND BATHROOMS WALLS SHALL EXTEND FROM FINISH FLOOR TO FLOOR/ ROOF DECK ABOVE. PROVIDE SOUND BATT INSULATION IN ENTIRE STUD CAVITY.
- ALL WALLS WITHIN 24" OF SERVICE SINK, URINAL AND/ OR WATER CLOSET SHALL HAVE A SMOOTH, HARD, NONABSORBENT SURFACE. TO A HEIGHT OF NOT LESS THAN 48" A.F.F. IF TILE OR FRP IS NOT SPECIFIED PROVIDE EPOXY PAINT, COLOR TO BE SELECTED BY ARCHITECT.
- ALL WALL BASE IN TOILET ROOMS, BATHROOMS AND KITCHENS SHALL BE COVED AND EXTEND UPWARD ONTO THE WALL A MIN. OF 4" A.F.F.



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PROJECT INFORMATION

PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS: 411 DOUGLAS LN CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

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- SCHEMATIC DESIGN
- DESIGN DEVELOPMENT
- CONSTRUCTION BIDDING
- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

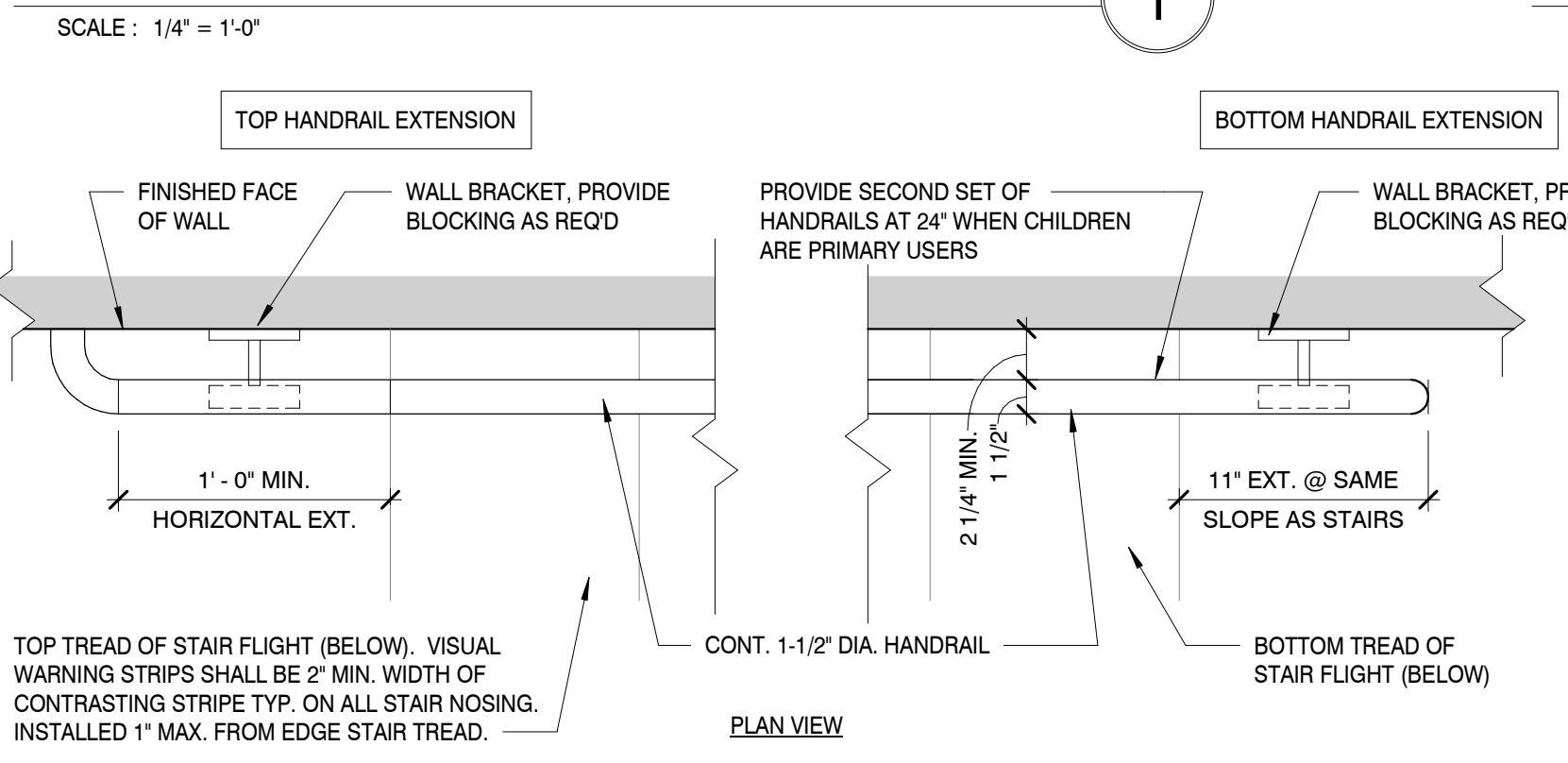
KEY PLAN

SHEET INFORMATION	
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DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG
SHEET TITLE:	

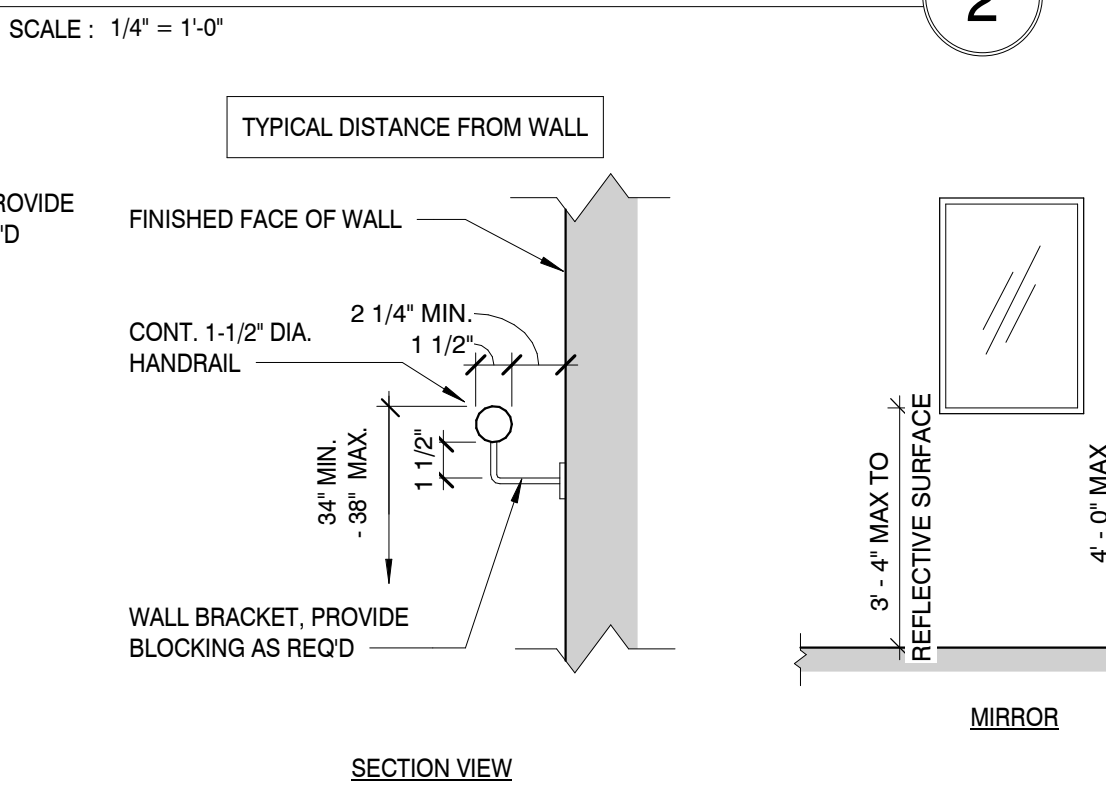
GENERAL NOTES AND ACCESSIBILITY DETAILS

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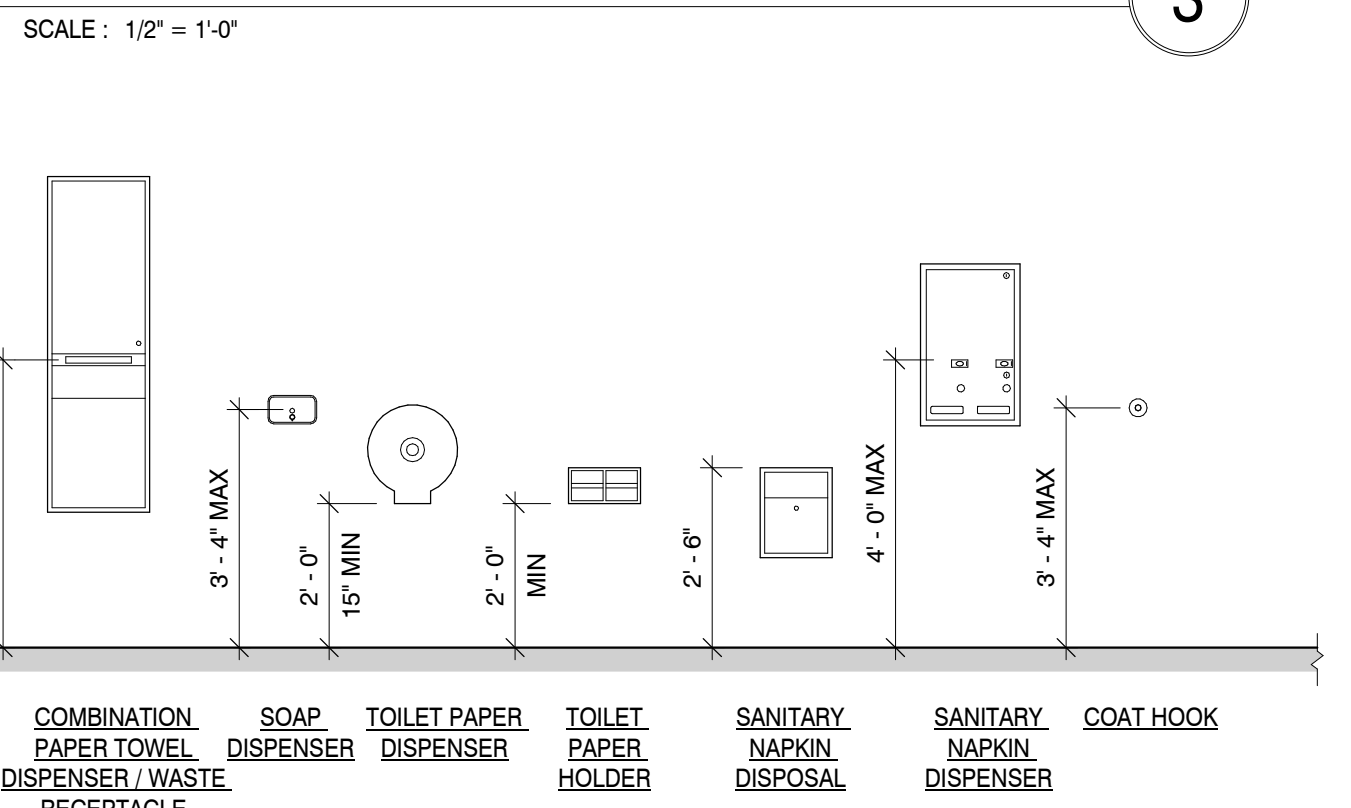
CORRIDOR CLEARANCES



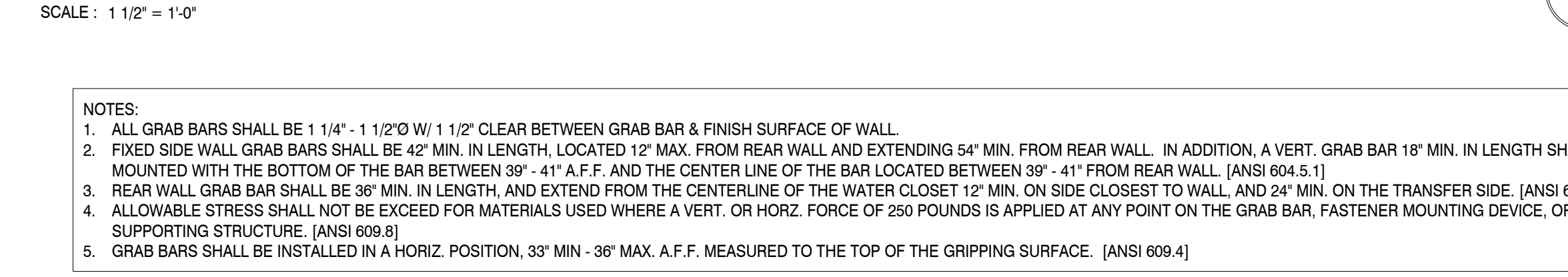
DOOR CLEARANCES



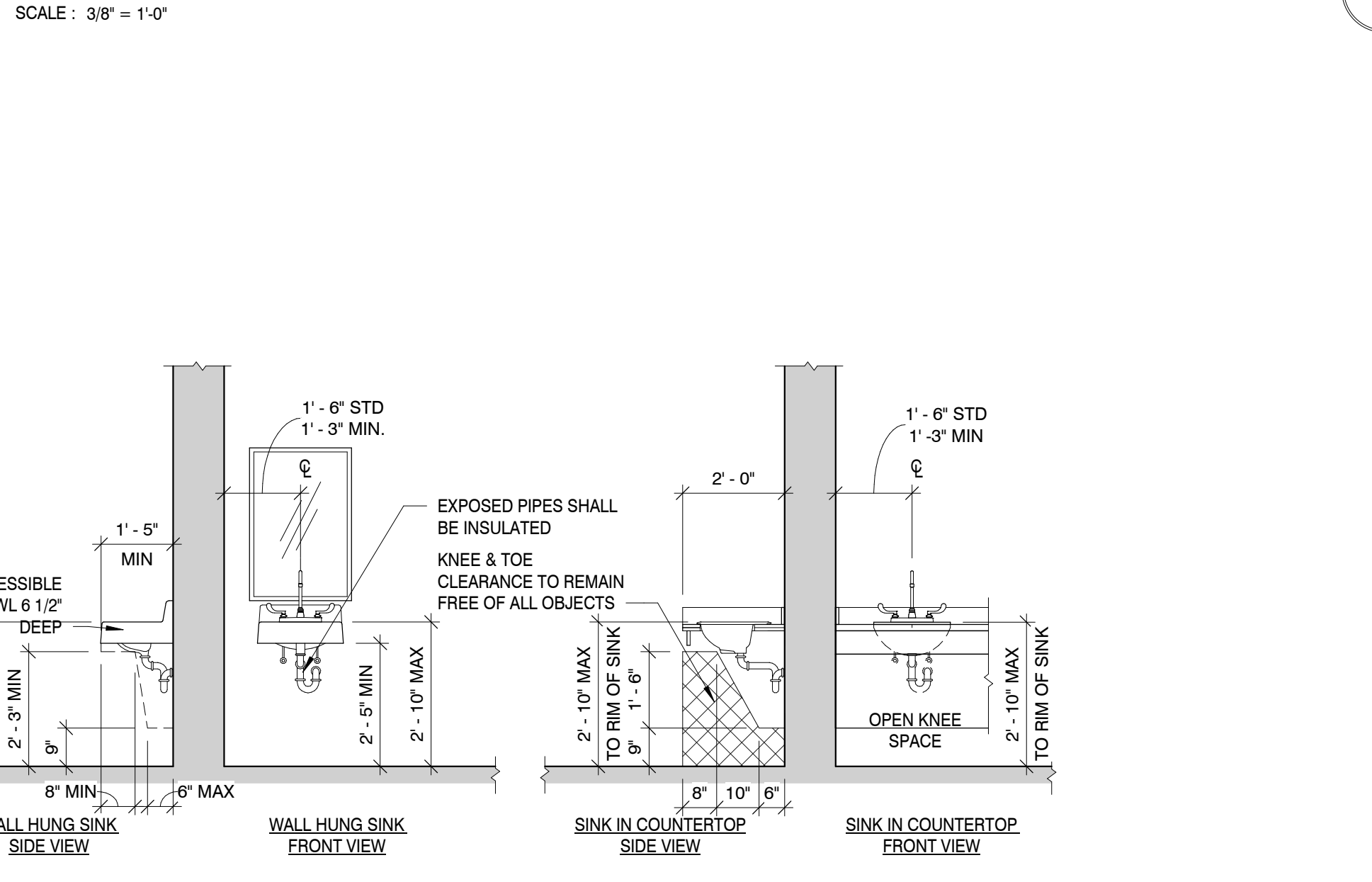
SIGNAGE NOTES AND DETAILS



STAIR HANDRAIL DETAILS AND NOTES



RESTROOM ACCESSORY MOUNTING HEIGHTS



PLUMBING FIXTURES DETAILS

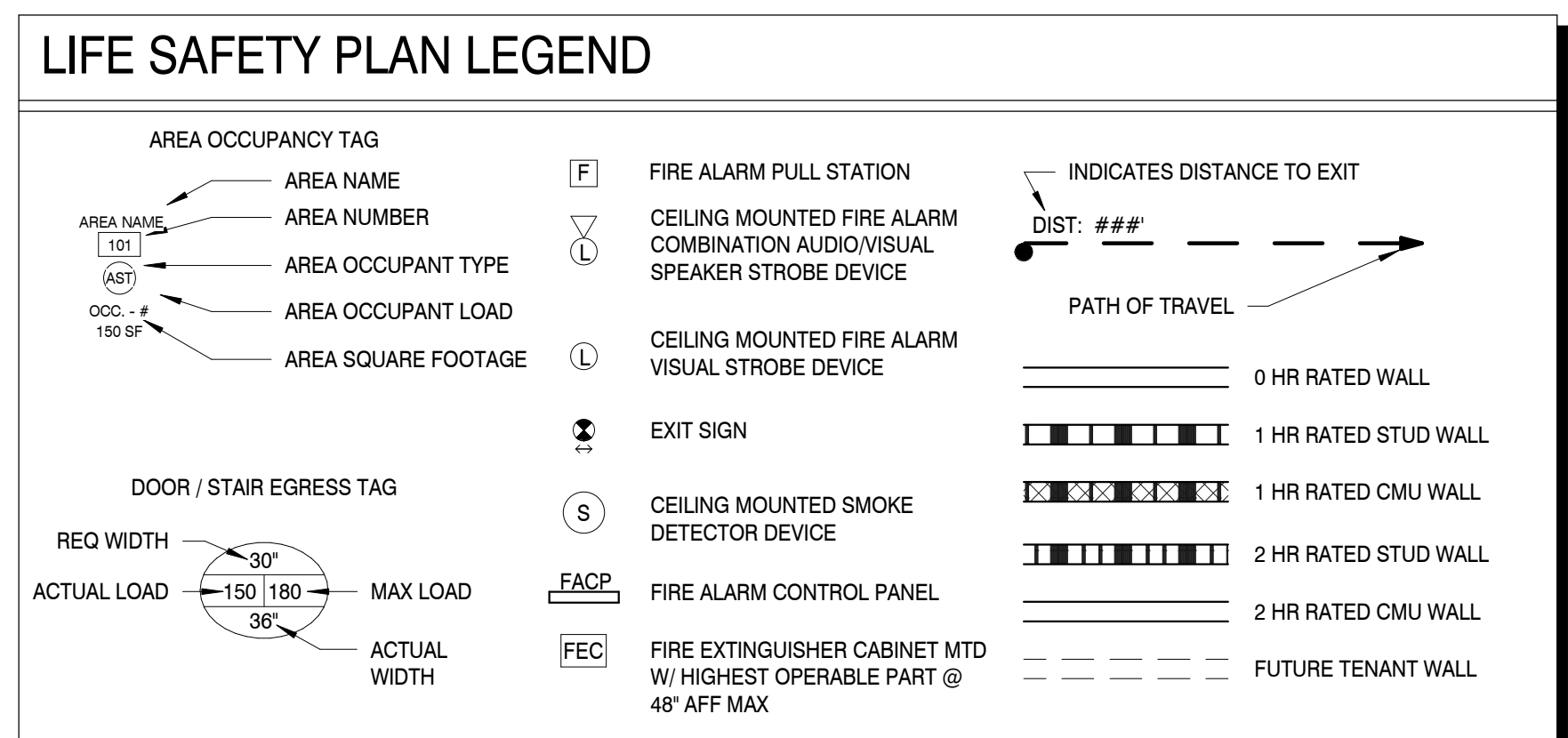


BUILDING OCCUPANCY
BUILDING OCCUPANCY CLASSIFICATIONS PER IBC CHAPTERS 3, 4, 5
BUILDING OCCUPANCY GROUP: IBC CHAPTER 3
GROUP A-1 through G-2

LIFE SAFETY LOAD CALCULATIONS
AREA: NO., NAME, SQ. FT., LOAD FACTOR, OCCUPANT LOAD, CALCULATED LOAD
106 STOR 83 SF

ADDITIONAL FIRE RESISTANCE RATING INFORMATION
DESCRIPTION: SHAFT / HOISTWAY ENCLOSURES, EXIT ENCLOSURES, EXIT PASSAGEWAYS
FIRE RATING: 2 HR, 1 HR

FIRE RESISTANCE RATING REQUIREMENTS
FIRE RESISTANCE RATING REQUIREMENTS PER IBC TABLE 601
TYPE OF CONSTRUCTION: IIB
PRIMARY STRUCT FRAME: 0 HOURS



MEANS OF EGRESS
DOORS: PER IBC 1010
THE CLEAR WIDTH OF AN EGRESS DOOR OPENING SHALL NOT BE LESS THAN 32" AND NOT MORE THAN 48"

EGRESS DOOR SCHEDULE
DOOR: MARK, WIDTH REQUIRED, WIDTH PROVIDED, OCCUPANT LOAD, MAXIMUM LOAD
111B 32" 33" 37 165

EGRESS DOOR SCHEDULE
DOOR: MARK, WIDTH REQUIRED, WIDTH PROVIDED, OCCUPANT LOAD, MAXIMUM LOAD
111B 32" 33" 37 165

COMMON PATH OF TRAVEL PER IBC 1006.2.1
OCCUPANCY: A, E, M
SPRINKLERED: YES
MAX DISTANCE: 75 FT

LIFE SAFETY SYSTEMS:
LIFE SAFETY SYSTEMS ARE PER IBC CHAPTER 9
AUTOMATIC SPRINKLER SYSTEM PER NFPA 13

CONSTRUCTION TYPE AND ALLOWABLE BUILDING AREA
BUILDING AREAS AND CONSTRUCTION TYPE PER IBC CHAPTER 5
CONSTRUCTION TYPE: IBC CHAPTER 5

EGRESS CAPACITY FACTORS
EGRESS CAPACITY FACTORS ARE PER IBC 1005
AUTOMATIC SPRINKLER SYSTEM: 0.3

COMMON PATH OF TRAVEL PER IBC 1014.3
OCCUPANCY: E
SPRINKLERED: YES
MAX DISTANCE: 75 FT

EGRESS CAPACITY FACTORS
EGRESS CAPACITY FACTORS ARE PER IBC 1005
AUTOMATIC SPRINKLER SYSTEM: 0.3

BUILDING AREA MODIFICATIONS:
AUTOMATIC SPRINKLER SYSTEM: IBC SECTION 504.3
AREA INCREASE: IBC SECTION 506.2

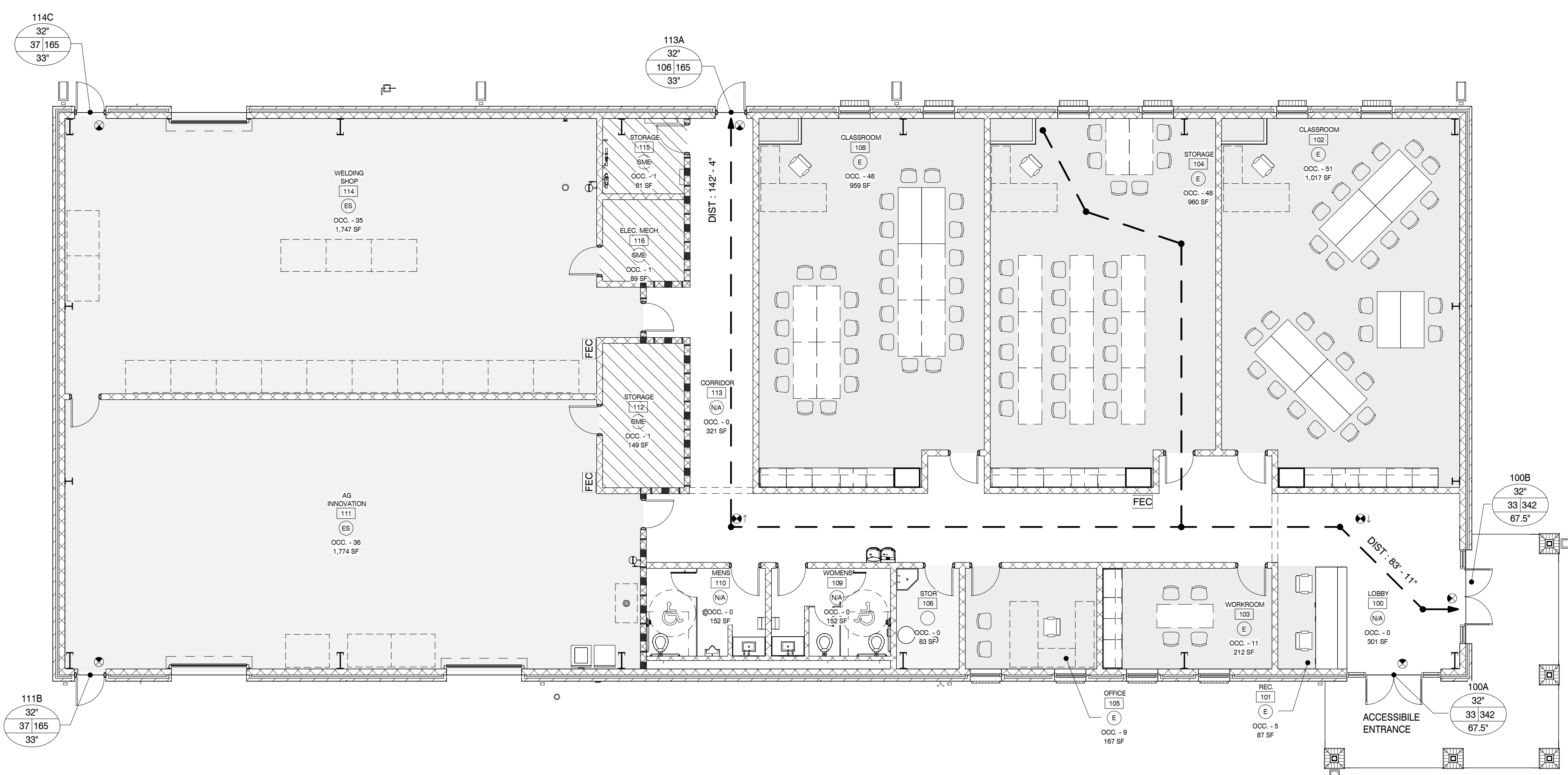
BUILDING AREA AND HEIGHT:
IBC TABLE 506.2 | 504.3
MAXIMUM AREA ALLOWED:
ACTUAL BUILDING AREA:

COMMON PATH OF TRAVEL PER IBC 1016.2
OCCUPANCY: E
SPRINKLERED: YES
MAX DISTANCE: 250 FT

MINIMUM REQUIRED EGRESS WIDTH:
STAIRWAYS: 0.3
OTHER EGRESS COMPONENTS: 0.2

BUILDING AREA AND HEIGHT:
IBC TABLE 506.2 | 504.3
MAXIMUM AREA ALLOWED:
ACTUAL BUILDING AREA:

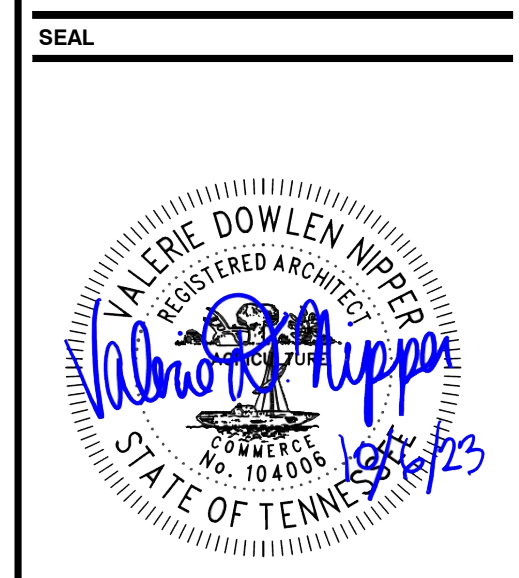
COMMON PATH OF TRAVEL PER IBC 1018.4
OCCUPANCY: E
SPRINKLERED: YES
MAX DISTANCE: 50 FT



LIFE SAFETY PLAN
SCALE: 1/8" = 1'-0"



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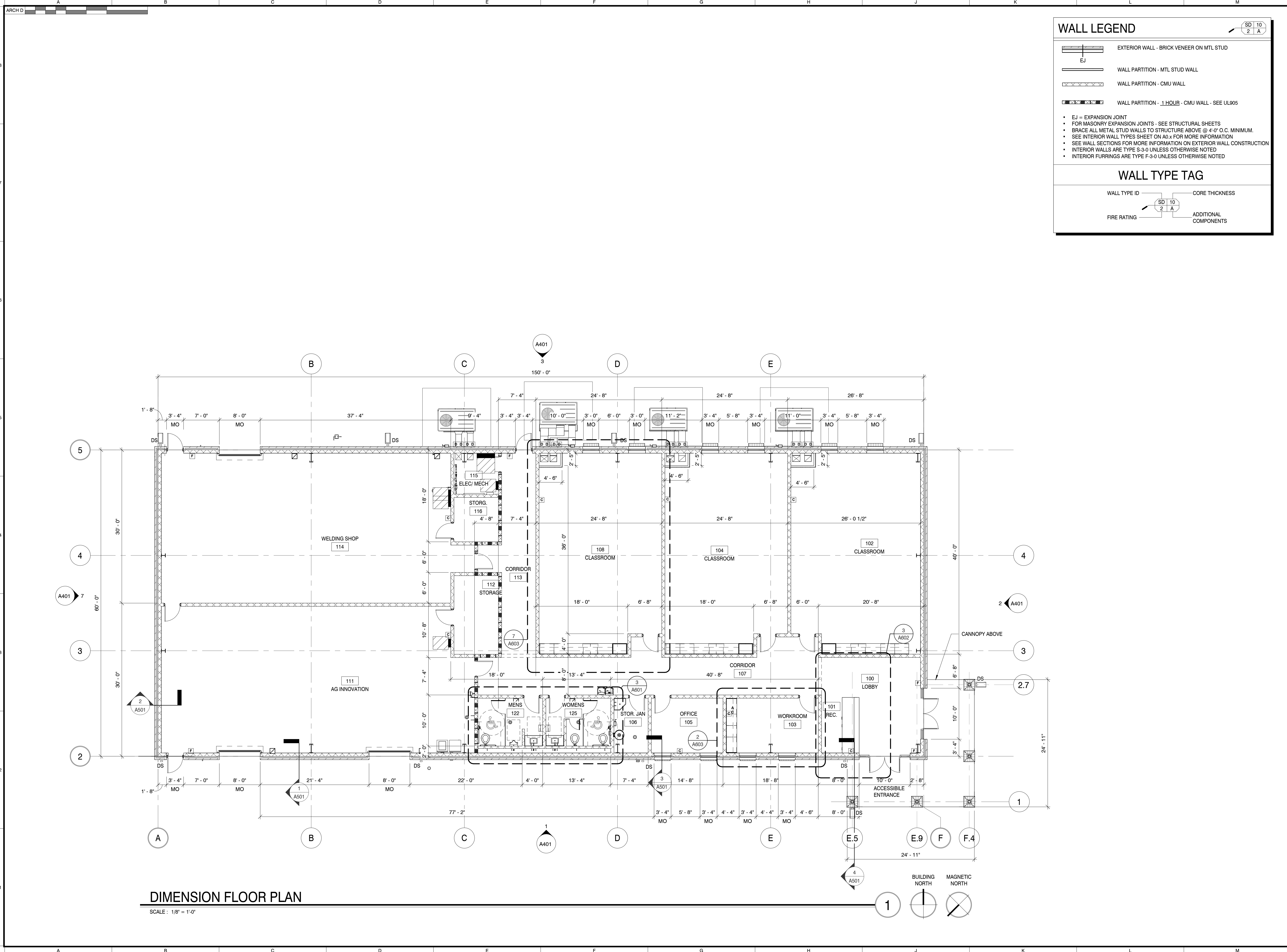
PROJECT INFORMATION
PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING
PROJECT ADDRESS: 411 DOUGLAS LN CLINTON, TN 37716
PROJECT NO.: 220042-02

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NO. DATE DESCRIPTION

KEY PLAN

SHEET INFORMATION
SHEET ISSUED: 10/06/2023
DESIGNED BY: CMG
DRAWN BY: MDC
REVIEWED BY: CMG
SHEET TITLE:



WALL LEGEND

EXTERIOR WALL - BRICK VENEER ON MTL STUD
 WALL PARTITION - MTL STUD WALL
 WALL PARTITION - CMU WALL
 WALL PARTITION - 1 HOUR - CMU WALL - SEE UL905

- EJ = EXPANSION JOINT
- FOR MASONRY EXPANSION JOINTS - SEE STRUCTURAL SHEETS
- BRACE ALL METAL STUD WALLS TO STRUCTURE ABOVE @ 4'-0" O.C. MINIMUM.
- SEE INTERIOR WALL TYPES SHEET ON A0.0 FOR MORE INFORMATION
- SEE WALL SECTIONS FOR MORE INFORMATION ON EXTERIOR WALL CONSTRUCTION
- INTERIOR WALLS ARE TYPE S-3-0 UNLESS OTHERWISE NOTED
- INTERIOR FURRINGS ARE TYPE F-3-0 UNLESS OTHERWISE NOTED

WALL TYPE TAG

WALL TYPE ID: CORE THICKNESS: 10"
 FIRE RATING: 2 HOURS ADDITIONAL COMPONENTS: A

DIMENSION FLOOR PLAN
SCALE: 1/8" = 1'-0"

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REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION
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 DESIGNED BY: CMG
 DRAWN BY: MDC
 REVIEWED BY: CMG
 SHEET TITLE:

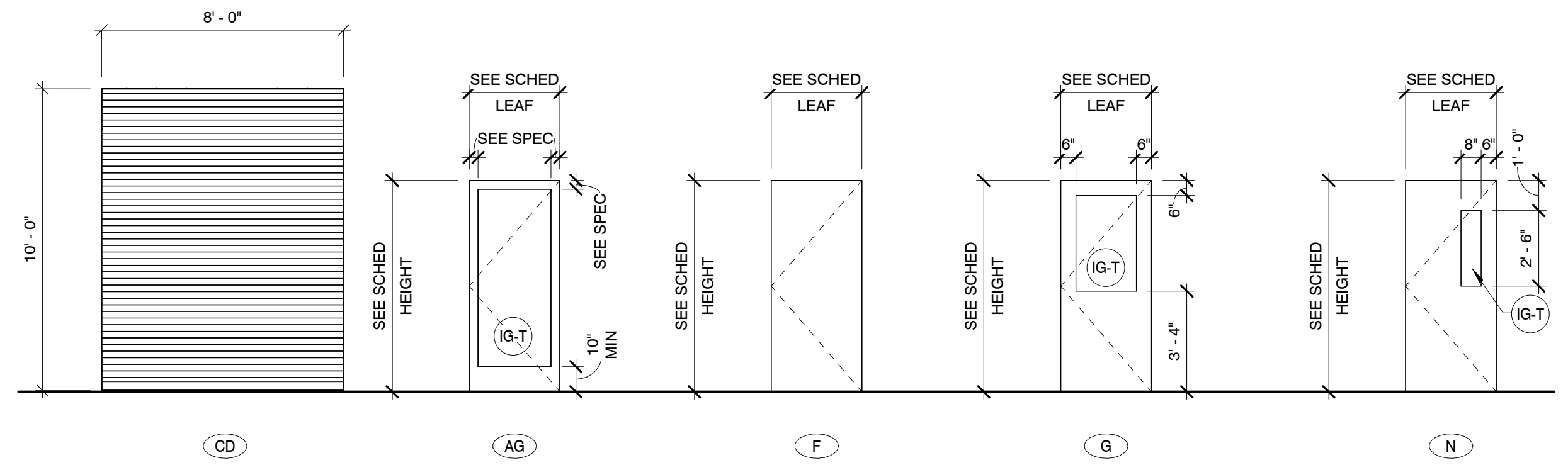
DIMENSION FLOOR PLANS

SHEET NO.: **A102**

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DOOR AND FRAME SCHEDULE

DOOR NUMBER	D-TYPE	THICK	HEIGHT	FULL WIDTH	DOOR PANELS					DOOR FRAME					DETAILS				REMARKS		
					PANEL CONFIG	LEAF (LEAF)	D-MAT	D-FINISH	LABEL	F-TYPE	F-HEIGHT	F-WIDTH	DOOR HEAD	DOOR JAMBS	F-MAT	F-FINISH	HEAD	JAMB		T-HOLD	H-WARE
100A	FG	1 3/4"	7'-0"	6'-0"	PAIR - SWING	3'-0" (3'-0")	AL/GL											9/A202		CARD READER ACCESS	
100B	FG	1 3/4"	7'-0"	6'-0"	PAIR - SWING	3'-0" (3'-0")	AL/GL											9/A202			
102A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													
103A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													
104A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													
105A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													
106A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													
108A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													
111B	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	HM	PAINTED													
111C	OC	3"	10'-0"	8'-0"	OHD COILING	8'-0"	STL	PRE-FINISHED	N/A	10'-0"	8'-0"										
111D	OC	3"	10'-0"	8'-0"	OHD COILING	8'-0"	STL	PRE-FINISHED	N/A	10'-0"	8'-0"										
112A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													
113A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	HM	PAINTED													
114A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED	45												
114B	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													
114C	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	HM	PAINTED													
114D	OC	3"	10'-0"	8'-0"	OHD COILING	8'-0"	STL	PRE-FINISHED	N/A	10'-0"	8'-0"										
115A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													
116A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													
116D	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED	45												
122A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													
125A	F	1 3/4"	7'-0"	3'-0"	SINGLE - SWING	3'-0"	WD	PAINTED													



DOOR TYPES

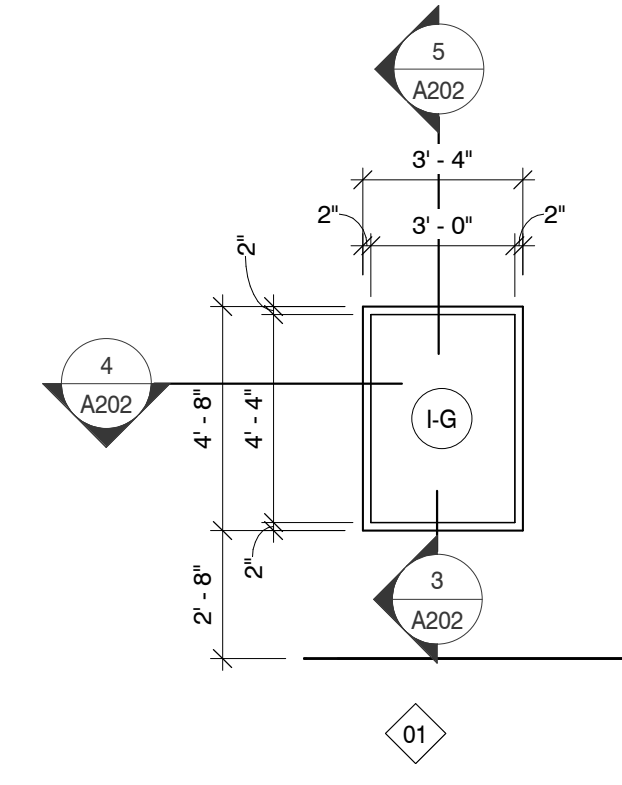
SCALE: 1/4" = 1'-0"

GLAZING SCHEDULE

- IG 1" THICK INSULATED GLASS WITH 1/2" AIR SPACE AND TWO 1/4" LITES
- IG-T 1" THICK INSULATED GLASS WITH 1/2" AIR SPACE AND TWO 1/4" LITES, FULLY TEMPERED

GENERAL WINDOW NOTES

- ALL GRADES SHOWN HERE ARE FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY ALL GRADES PRIOR TO BIDDING AND BE RESPONSIBLE FOR ANY ADDITIONAL WORK THAT THE VARYING GRADES MAY REQUIRE TO COMPLETE THE SCOPE OF WORK.
- CONTRACTOR TO FIELD VERIFY EXACT NUMBER OF WINDOWS EXISTING PRIOR TO BIDDING AND IS RESPONSIBLE FOR REPLACING ALL WINDOWS IN ALL BUILDINGS UNLESS SPECIFICALLY NOTED OTHERWISE.
- ALL NEW WINDOWS IN EXISTING BATHROOMS ARE TO HAVE FROSTED TRANSLUCENT GLASS.
- VERIFY EXACT SIZE OF EXISTING OPENINGS IN FIELD, PROVIDE SHIMS AND OR BLOCKING AS REQ'D TO ALLOW FOR NEW WINDOW INSTALLATION.
- REPAIR/ REPLACE ALL CAULK AS REQ'D. VERIFY CONDITION W/ OWNER'S REPRESENTATIVE PRIOR TO START OF DEMO WORK.
- ALL WINDOWS TO HAVE VINYL MINI BLINDS, PROVIDED AND INSTALLED BY CONTRACTOR.
- ALL WINDOWS IN DOORS AND NEXT TO DOORS TO HAVE TEMPERED GLASS.
- PROVIDE AN ADDITIONAL (12) TOP WINDOW PANELS, AN ADDITIONAL (12) BOTTOM WINDOW PANELS FOR EACH WINDOW TYPE. PROVIDE THESE ADDITIONAL WINDOWS TO THE OWNER AT TIME OF PROJECT CLOSE-OUT.
- ALL WINDOWS TO INCLUDE INSECT SCREENS.
- ALL NEW WINDOWS IN EXISTING BEDROOMS SHALL MEET MIN. REQUIREMENTS OF NFPA 2003: SECTION 33.2.2.3. FOR EGRESS CLEARANCE



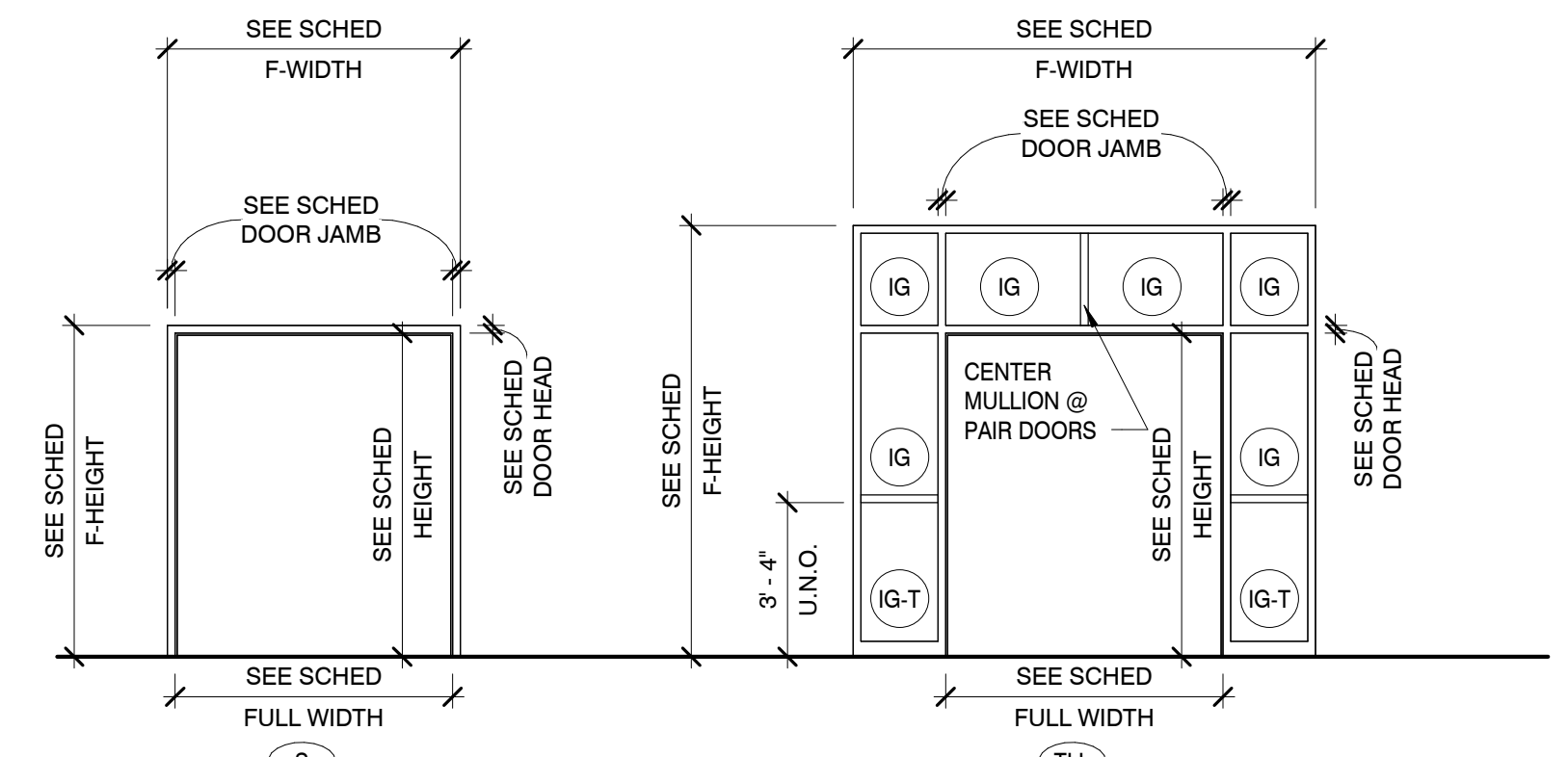
NOTES:
SEE SPECIFICATIONS FOR ALUMINUM FRAME REQUIREMENTS.
SEE DETAILS FOR ADDITIONAL DIMENSIONS AND INFORMATION.

WINDOW TYPES

SCALE: 1/4" = 1'-0"

GENERAL DOOR NOTES

- INTERIOR WOOD DOORS TO BE FACTORY FINISH. WOOD SPECIES TO BE ROTARY CUT BIRCH.
- EXTERIOR HOLLOW METAL DOORS ARE TO BE INSULATED.
- EXTERIOR HOLLOW METAL DOORS AND FRAMES ARE TO BE FACTORY PRIMED AND FIELD PAINTED.



DOOR FRAME TYPES

SCALE: 1/4" = 1'-0"

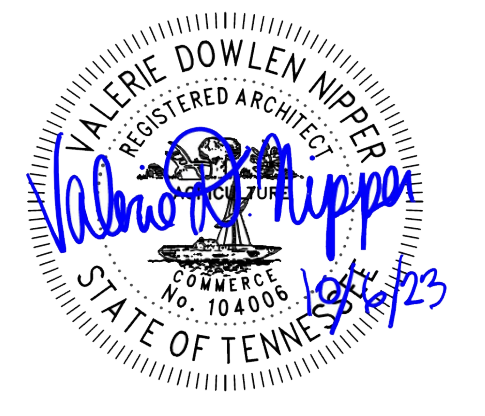
NOTES:
SEE SPECIFICATIONS FOR ALUMINUM FRAME REQUIREMENTS.
SEE DETAILS FOR ADDITIONAL DIMENSIONS AND INFORMATION.



MBI COMPANIES INC.
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PROJECT INFORMATION

PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:
411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: **220042-02**

ACTIVE DESIGN PHASE	
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<input type="checkbox"/>	FOR PERMITTING ONLY
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<input type="checkbox"/>	DESIGN DEVELOPMENT
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REVISION INFORMATION

NO.	DATE	DESCRIPTION

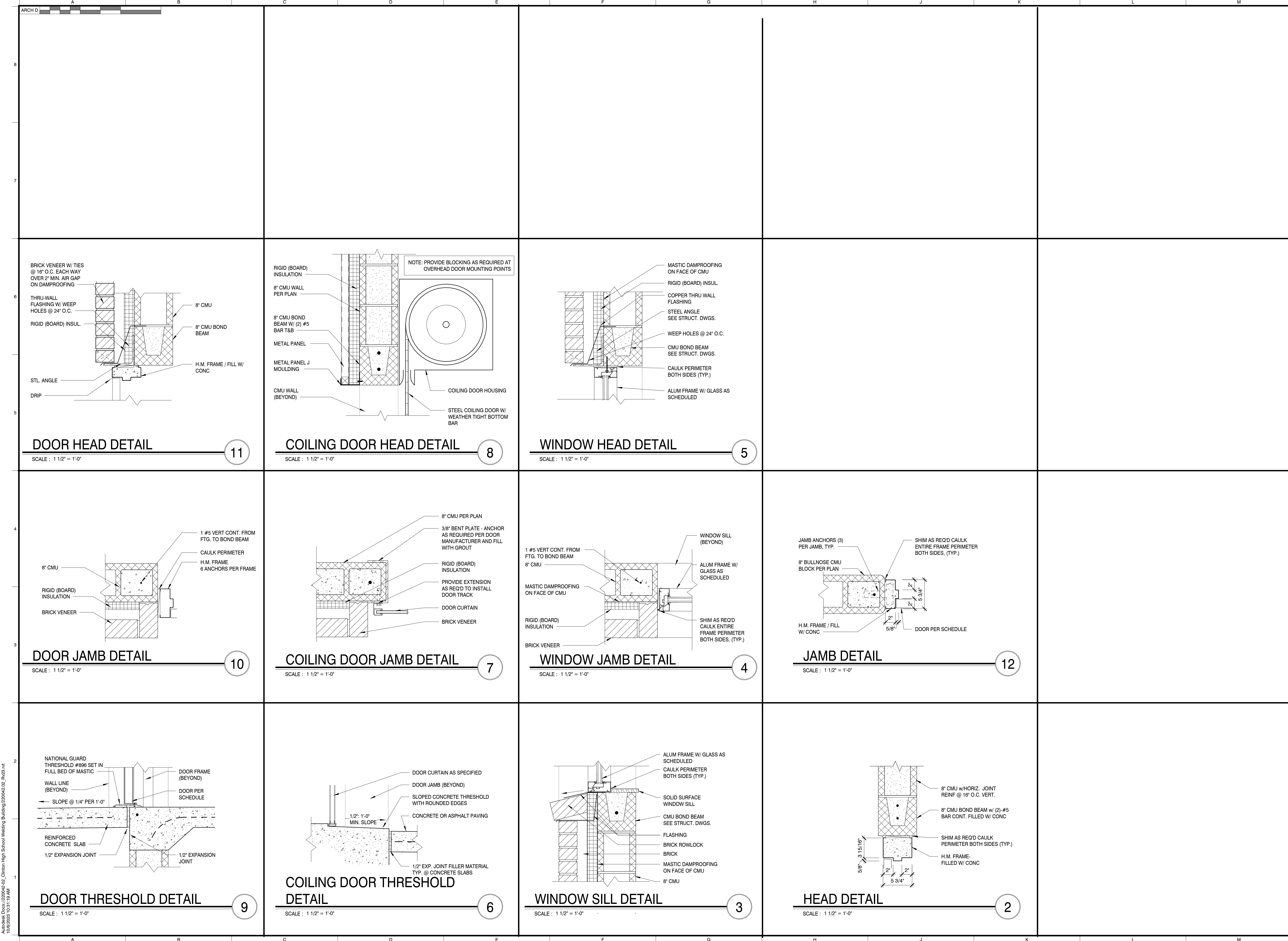
KEY PLAN

SHEET INFORMATION	
SHEET ISSUED:	10/06/2023
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DRAWN BY:	MDC
REVIEWED BY:	CMG
SHEET TITLE:	

DOOR SCHEDULE,
DOOR/FRAME
ELEVATIONS

SHEET NO.: **A201**

Architect: D:\220042-02_Clinton High School Welding Building\220042-02_Rv23.rvt
10/06/2023 10:32:58 AM



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PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

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 DESIGN DEVELOPMENT
 CONSTRUCTION BIDDING
 CONSTRUCTION DOCUMENTS
 AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

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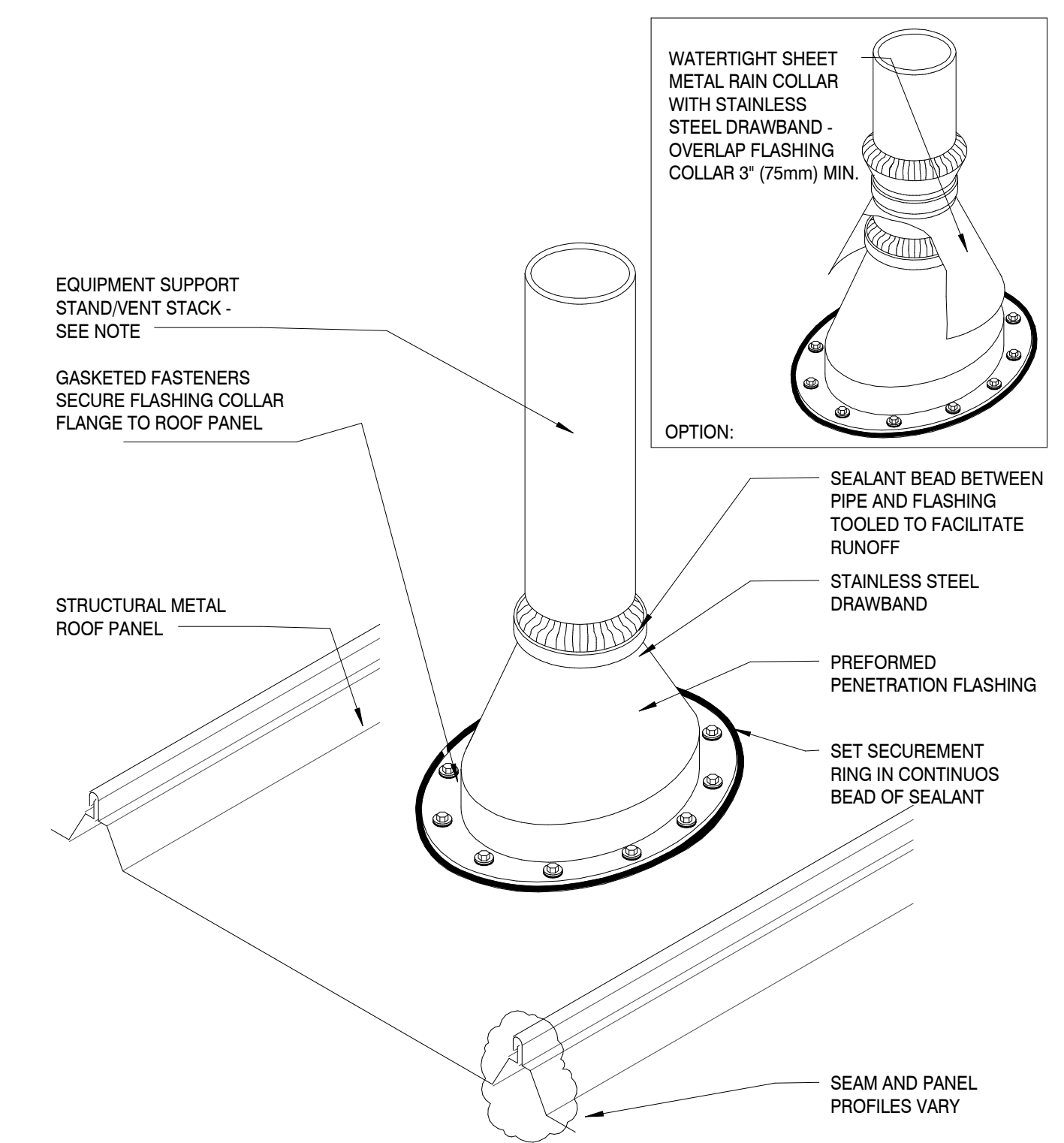
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 DRAWN BY: MDC
 REVIEWED BY: CMG
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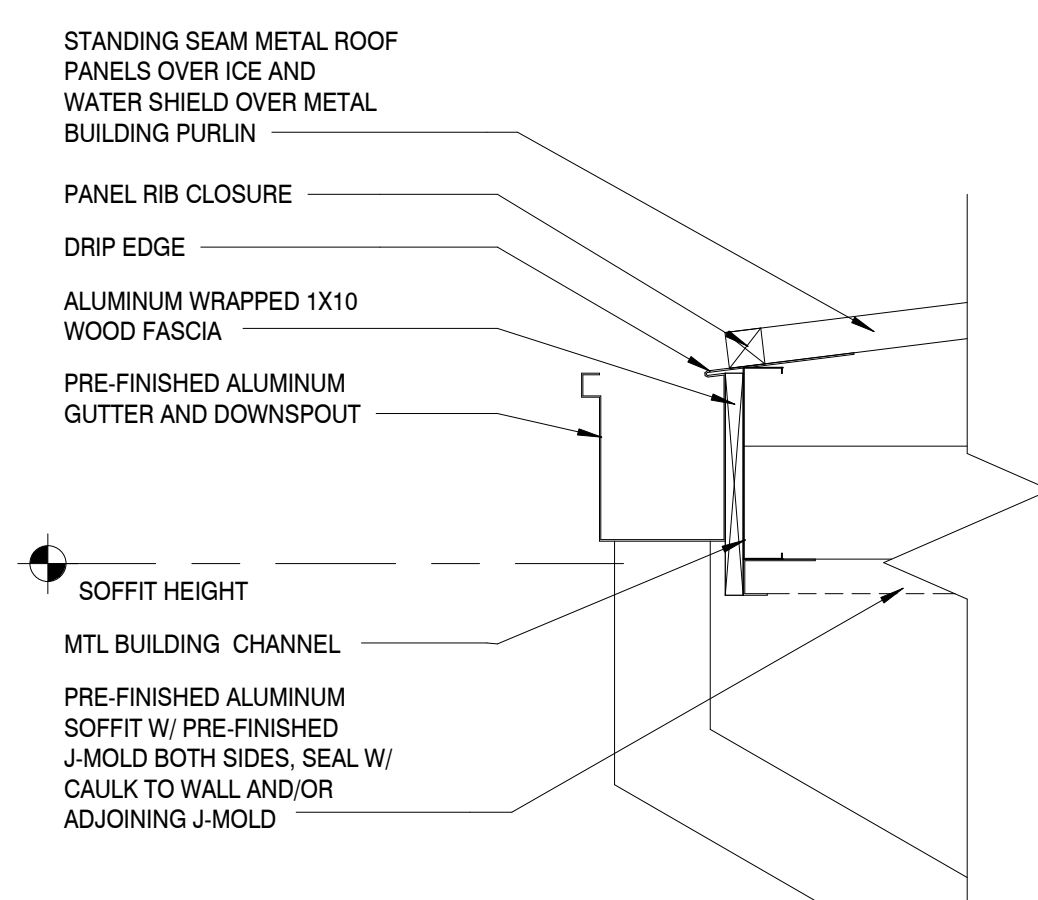
DOOR AND WINDOW DETAILS

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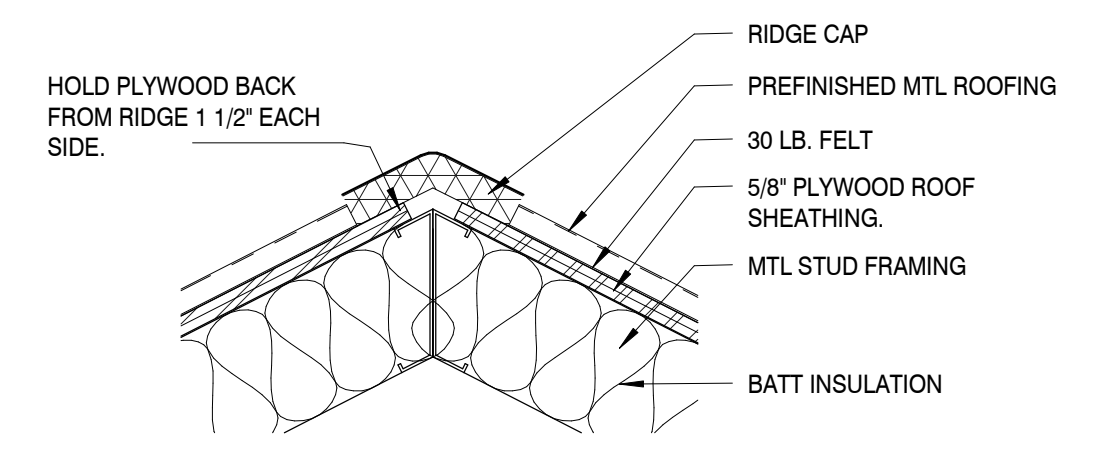
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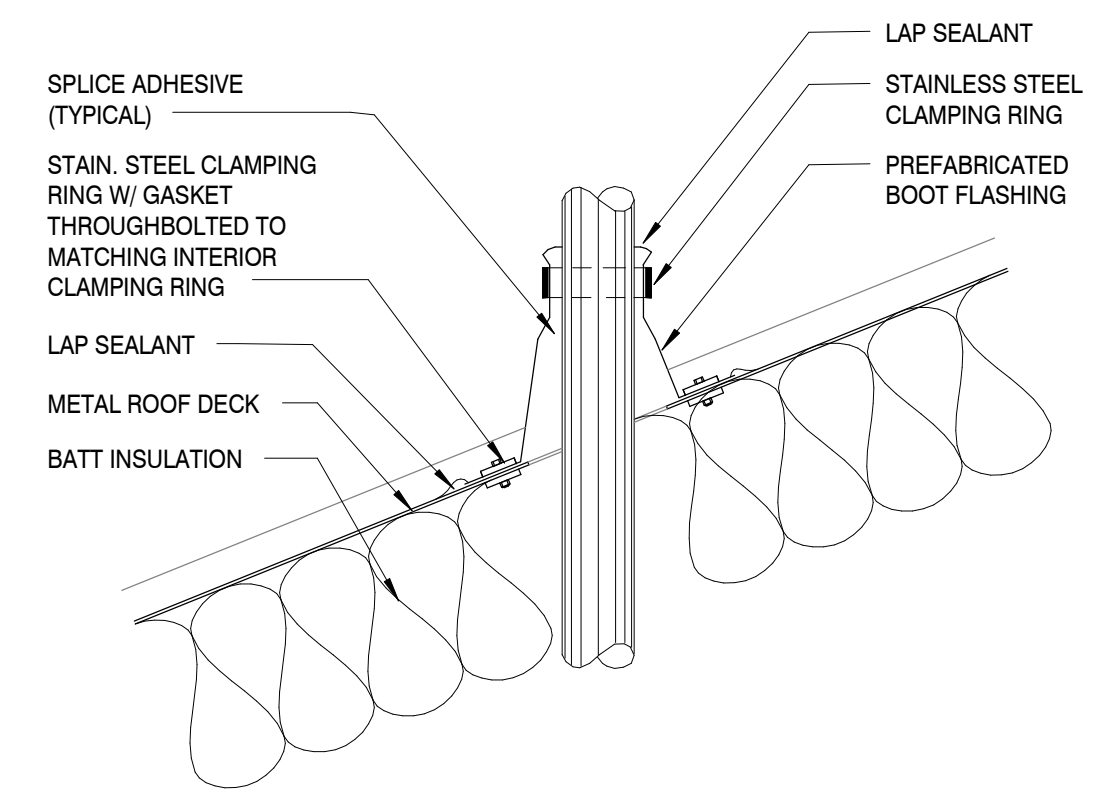
VENT PIPE DETAIL
SCALE: 12" = 1'-0"
5



EAVE DETAIL
SCALE: 1 1/2" = 1'-0"
4



PIPE PENETRATION DTL
SCALE: 1 1/2" = 1'-0"
3



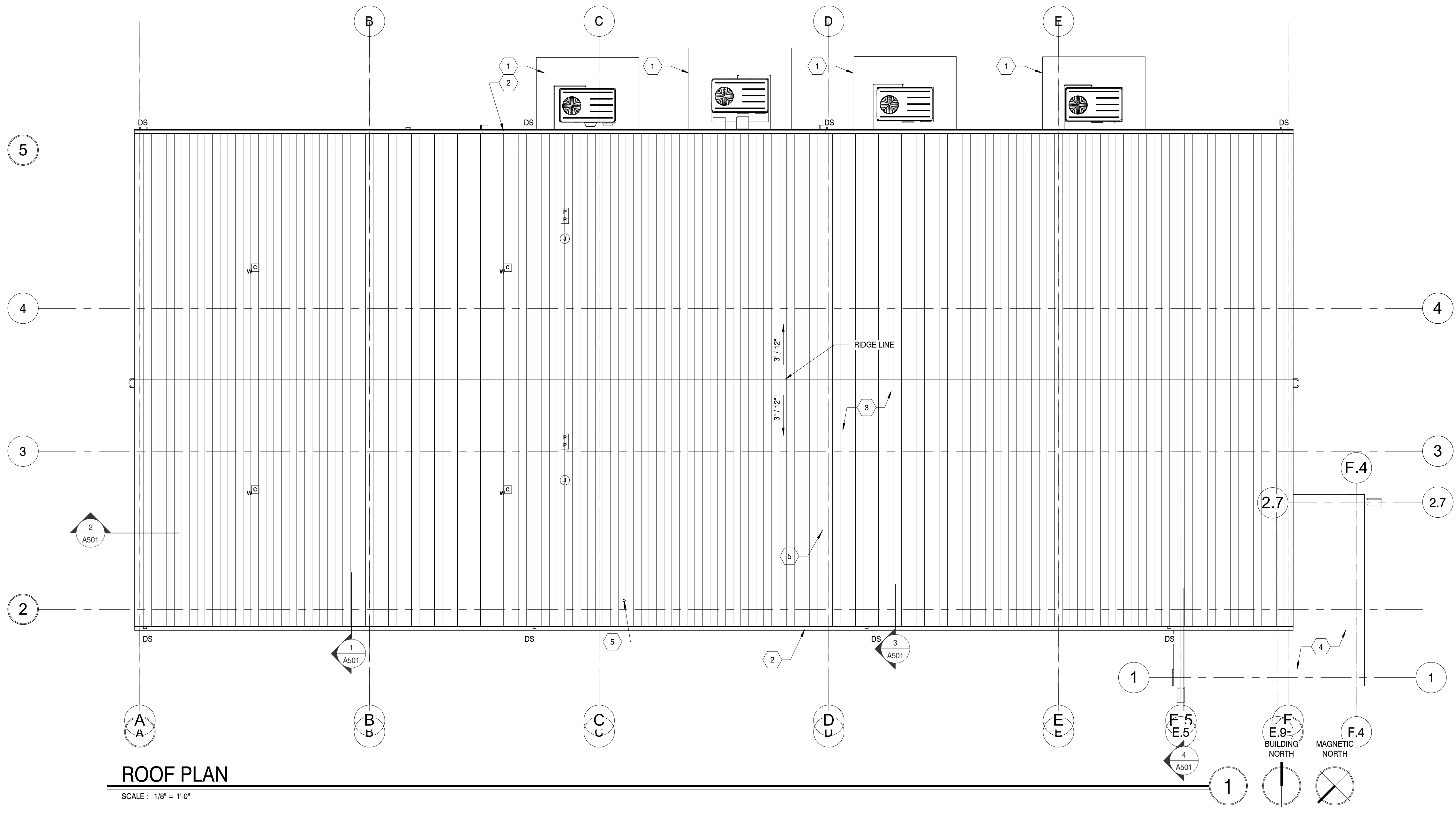
PIPE PENETRATION DTL
SCALE: 1 1/2" = 1'-0"
2

ROOF GENERAL NOTES

- CONTRACTOR SHALL FIELD VERIFY NUMBER, TYPE, AND LOCATIONS OF ALL UTILITIES AND EQUIPMENT, INCLUDING BUT NOT LIMITED TO SATELLITE DISHES, HVAC UNITS, FANS, VENT PIPES, ETC. THAT WILL AFFECT HIS SCOPE OF WORK. CONTRACTOR SHALL INCLUDE IN HIS BID ALL NECESSARY WORK TO COORDINATE THE INSTALLATION OF NEW WORK WITH EXISTING UTILITIES AND EQUIPMENT.
- THE CONTRACTOR SHALL AT ALL TIMES PROTECT ALL EXISTING INTERIOR SPACES EXPOSED DURING CONSTRUCTION AGAINST DAMAGE DUE TO WEATHER OR CONSTRUCTION.
- REUSE EXISTING CURBS, THOSE CURBS THAT ARE TOO SHORT BECAUSE OF ADDITIONAL INSULATION SHALL RECEIVE NEW TALLER NAILERS AT TOP OF CURB.
- COORDINATE STAGING AREAS AND CONSTRUCTION ACCESS WITH OWNER PRIOR TO START OF CONSTRUCTION.
- REPAIR AND RESEED ANY EXISTING GRASS AREAS DISTURBED DURING CONSTRUCTION OR STAGING.
- PROVIDE SPLASH BLOCKS ON 24' X 24' PROTECTION MATS AT ALL EXISTING ROOF DRAINS FROM HIGH ROOF. VERIFY QUANTITY NEEDED IN FIELD PRIOR TO BIDDING.
- COORDINATE STAGING AREA AND CONSTRUCTION ACCESS WITH OWNER PRIOR TO START OF CONSTRUCTION.
- PROVIDE GUTTER EXPANSION JOINTS AT 48' MAX. O.C. AND 24' MAX. FROM CORNERS.

ROOF PLAN KEYNOTES

- CLEARANCE OF OUTDOOR UNIT.
- PRE-FINISHED ALUMINIUM GUTTER & DOWNSPOUT.
- STANDING SEAM ROOF.
- PREMANUFACTURED CANOPY.
- ROOF VENT PIPE SEE DETAIL 2/A301.



ROOF PLAN
SCALE: 1/8" = 1'-0"
1

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Valerie Dowlen Nipper
REGISTERED ARCHITECT
No. 10400
STATE OF TENNESSEE

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PROJECT INFORMATION
PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING
PROJECT ADDRESS: 411 DOUGLAS LN CLINTON, TN 37716
PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

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REVISION INFORMATION

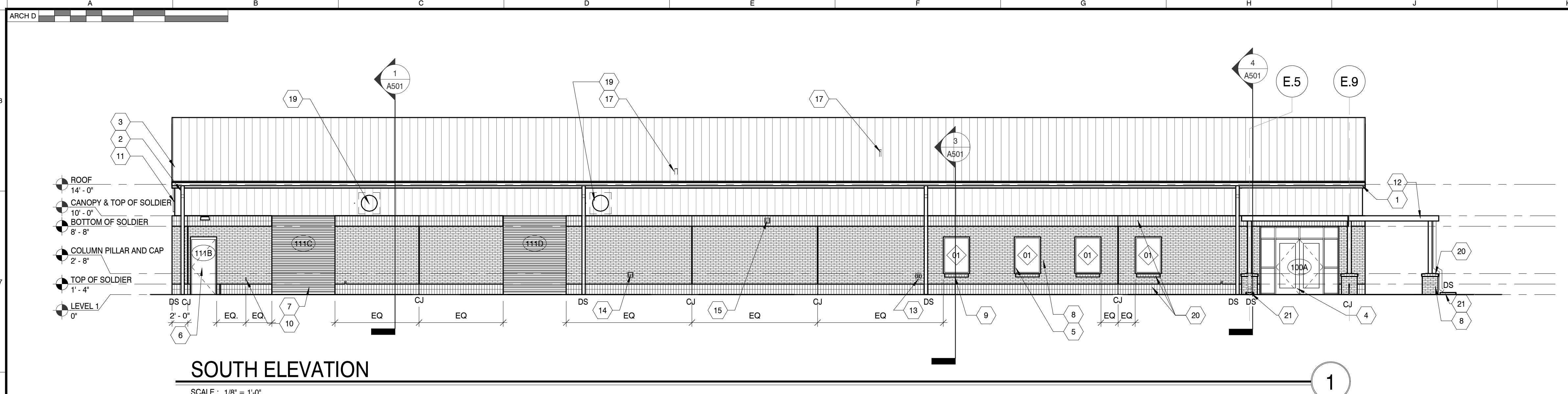
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KEY PLAN

SHEET INFORMATION
SHEET ISSUED: 10/06/2023
DESIGNED BY: CMG
DRAWN BY: MDC
REVIEWED BY: CMG
SHEET TITLE:

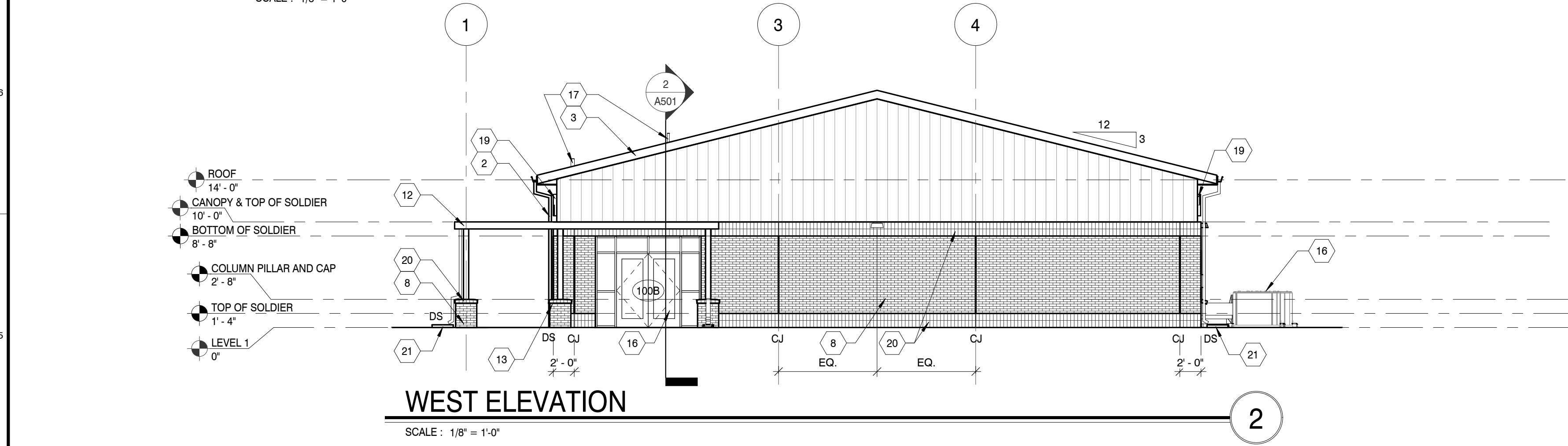
ROOF PLAN AND DETAILS
SHEET NO.: **A301**

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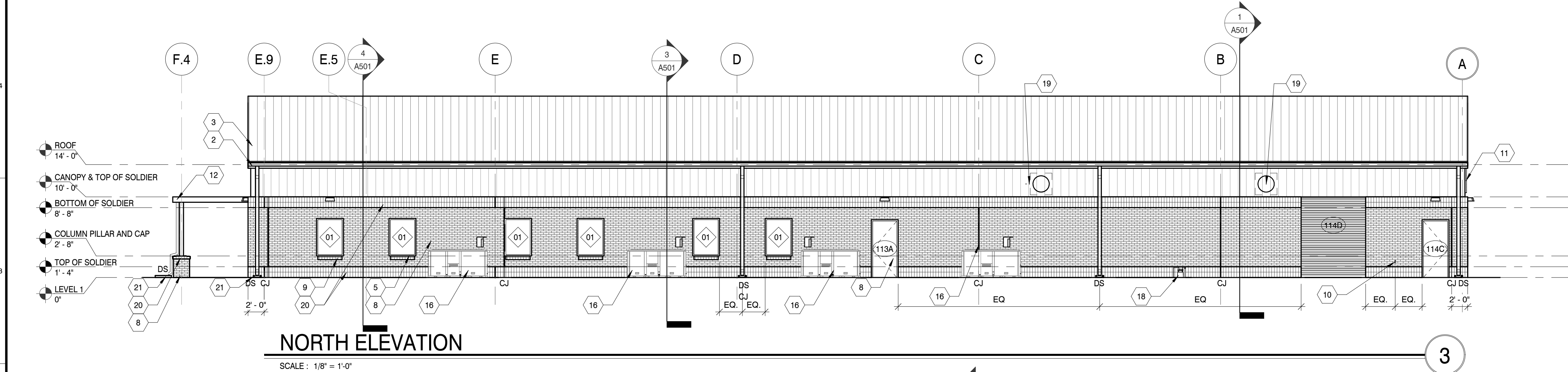
SOUTH ELEVATION

SCALE: 1/8" = 1'-0"



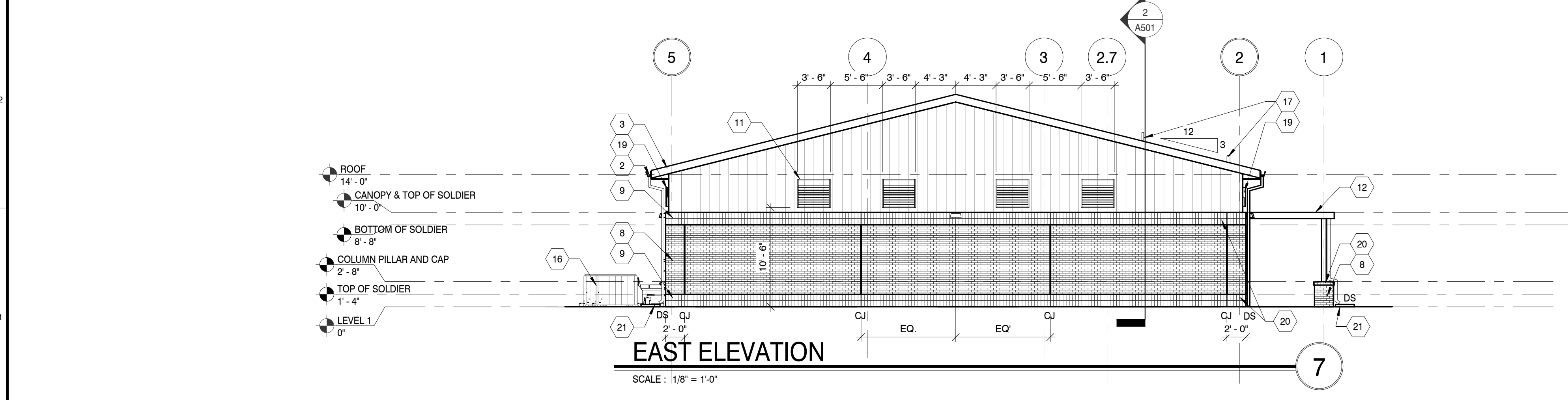
WEST ELEVATION

SCALE: 1/8" = 1'-0"



NORTH ELEVATION

SCALE: 1/8" = 1'-0"



EAST ELEVATION

SCALE: 1/8" = 1'-0"

EXTERIOR ELEVATION KEYNOTES

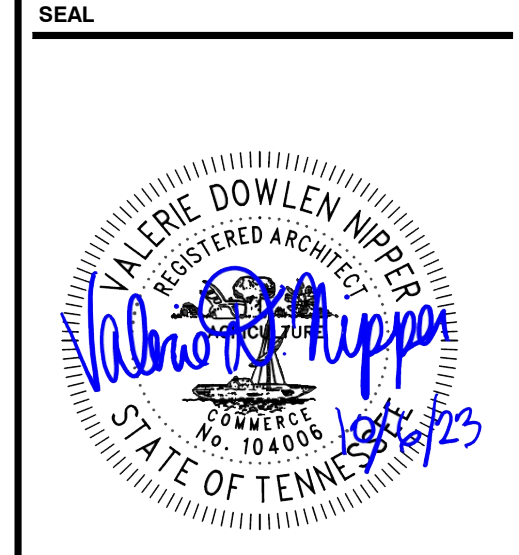
1. PRE-FINISHED METAL WRAPPED FASCIA (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
2. PRE-FINISHED ALUMINUM GUTTER & DOWNSPOUT (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
3. STANDING SEAM ROOF (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
4. INSULATED ALUMINUM STOREFRONT (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
5. INSULATED ALUMINUM WINDOW (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
6. INSULATED HOLLOW METAL DOOR & FRAME
7. INSULATED ALUMINUM COLONG DOOR (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
8. BRICK VENEER AND MORTAR COLOR 1 (BROWN) MATCH CLINTON HIGH SCHOOL ATHLETIC CENTER
9. BRICK VENEER AND MORTAR ROWLOCK COLOR 2 MATCH CLINTON HIGH SCHOOL ATHLETIC CENTER
10. HOSE BIB 2 1/2" A.F.F. - SEE PLUMBING DRAWINGS
11. METAL BUILDING LOUVERS
12. PRE-MANUFACTURED CANOPY
13. FIRE DEPARTMENT INLET CONNECTION - SEE FIRE PROTECTION DRAWINGS
14. DRYER VENT THRU - SEE MECHANICAL DRAWINGS
15. EXHAUST FAN - SEE MECHANICAL DRAWINGS
16. PACKAGED UNIT - SEE MECHANICAL DRAWINGS
17. ROOF VENT PIPE SEE DETAIL 2/A501
18. GAS METER, SIZED FOR 360 MBH OVER 125' SET REGULATOR FOR 0.5 PSI
19. WALL EXHAUST FAN - SEE MECHANICAL DRAWINGS
20. BRICK VENEER AND MORTAR COLOR 2 (GRAY) MATCH CLINTON HIGH SCHOOL ATHLETIC CENTER
21. SPLASHBLOCK

ALL EXPOSED PIPING ON EXTERIOR OF BUILDING TO BE PAINTED TO COLOR MATCH ADJACENT MATERIAL
 CJ - CONTROL JOINT (IN BRICK VENEER)
 DS - PRE-FINISHED METAL GUTTER & DOWNSPOUT W/ DOWNSPOUT BOOT



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PROJECT ADDRESS: 411 DOUGLAS LN CLINTON, TN 37716

PROJECT NO.: 220042-02

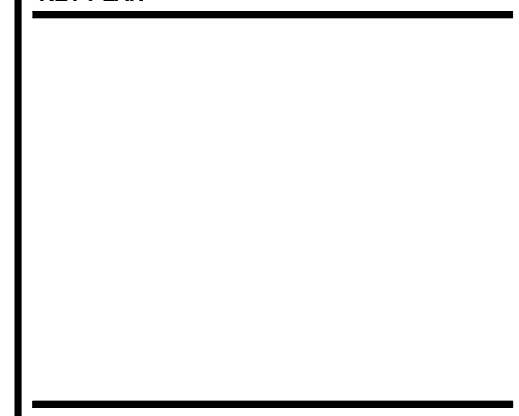
ACTIVE DESIGN PHASE

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- SCHEMATIC DESIGN
- DESIGN DEVELOPMENT
- CONSTRUCTION BIDDING
- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN



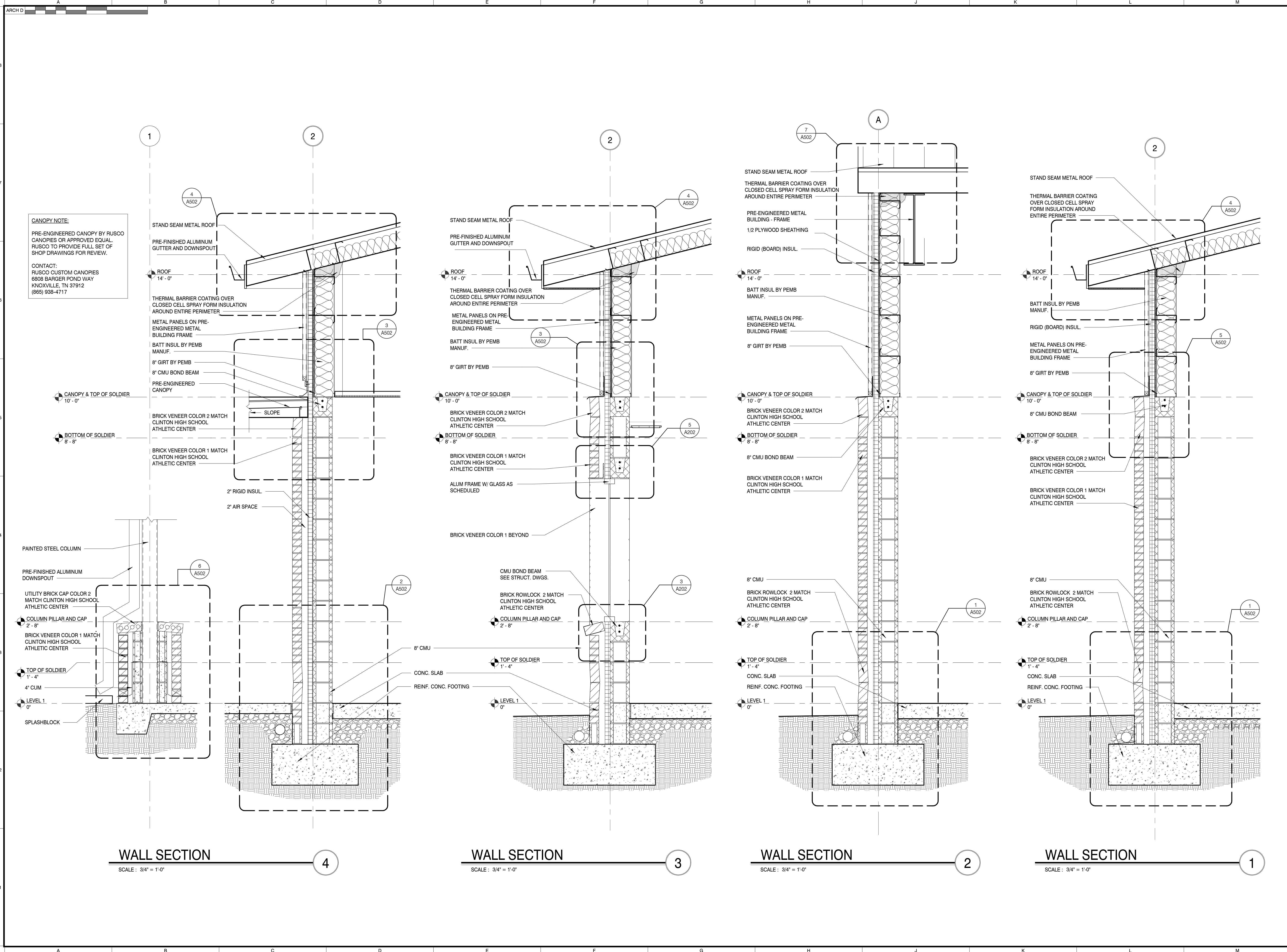
SHEET INFORMATION

SHEET ISSUED: 10/06/2023
 DESIGNED BY: CMG
 DRAWN BY: MDC
 REVIEWED BY: CMG
 SHEET TITLE:

EXTERIOR ELEVATIONS

SHEET NO.: A401

File Path: I:\2023\2023-02-Clinton High School Welding Building\220042-02_Rv23.rvt
 10/06/2023 10:32:25 AM



CANOPY NOTE:
 PRE-ENGINEERED CANOPY BY RUSCO CANOPIES OR APPROVED EQUAL. RUSCO TO PROVIDE FULL SET OF SHOP DRAWINGS FOR REVIEW.
 CONTACT:
 RUSCO CUSTOM CANOPIES
 6808 BARGER POND WAY
 KNOXVILLE, TN 37912
 (865) 938-4717

WALL SECTION 4
 SCALE: 3/4" = 1'-0"

WALL SECTION 3
 SCALE: 3/4" = 1'-0"

WALL SECTION 2
 SCALE: 3/4" = 1'-0"

WALL SECTION 1
 SCALE: 3/4" = 1'-0"

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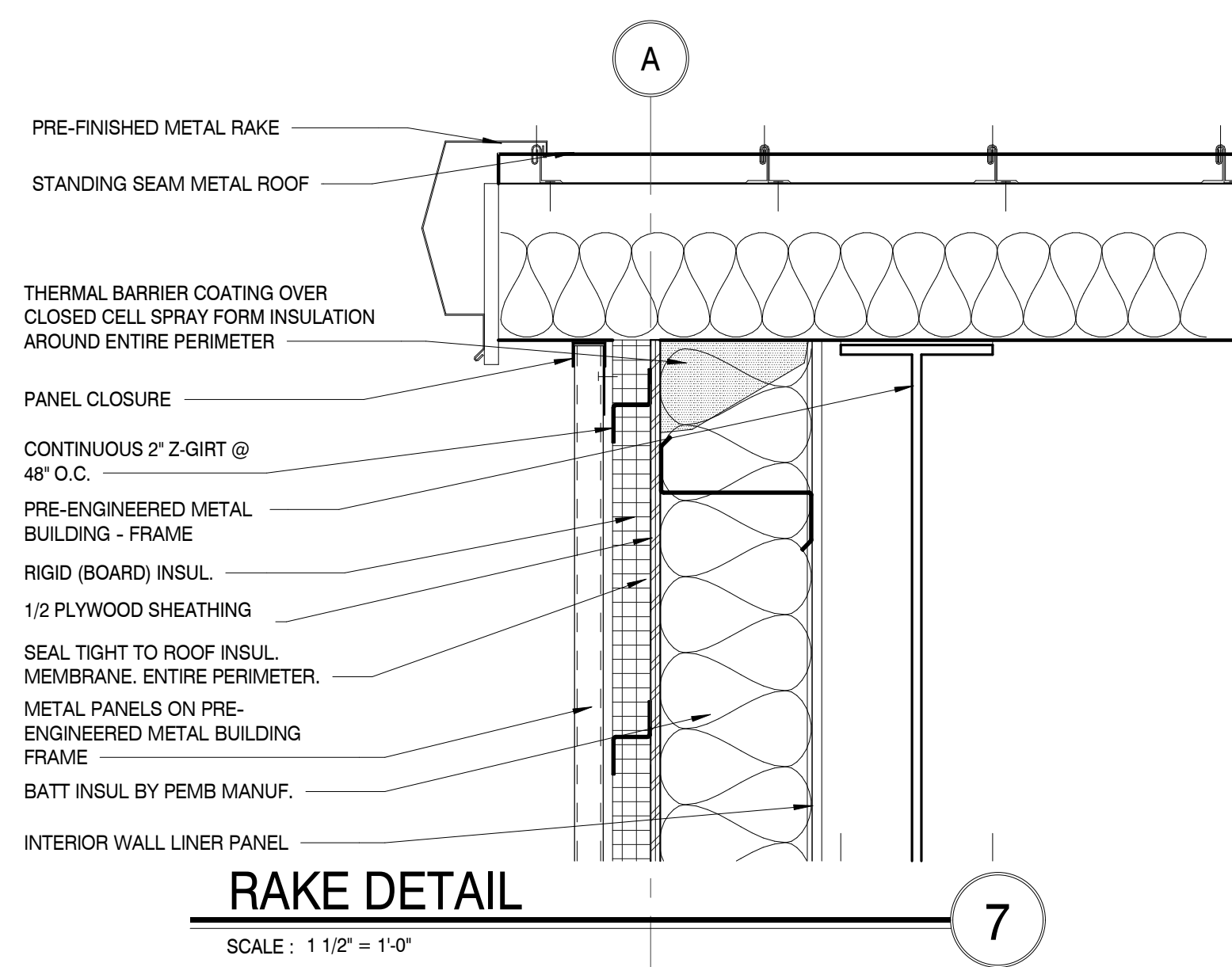
SHEET INFORMATION

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 DESIGNED BY: CMG
 DRAWN BY: MDC
 REVIEWED BY: CMG
 SHEET TITLE:

WALL SECTIONS

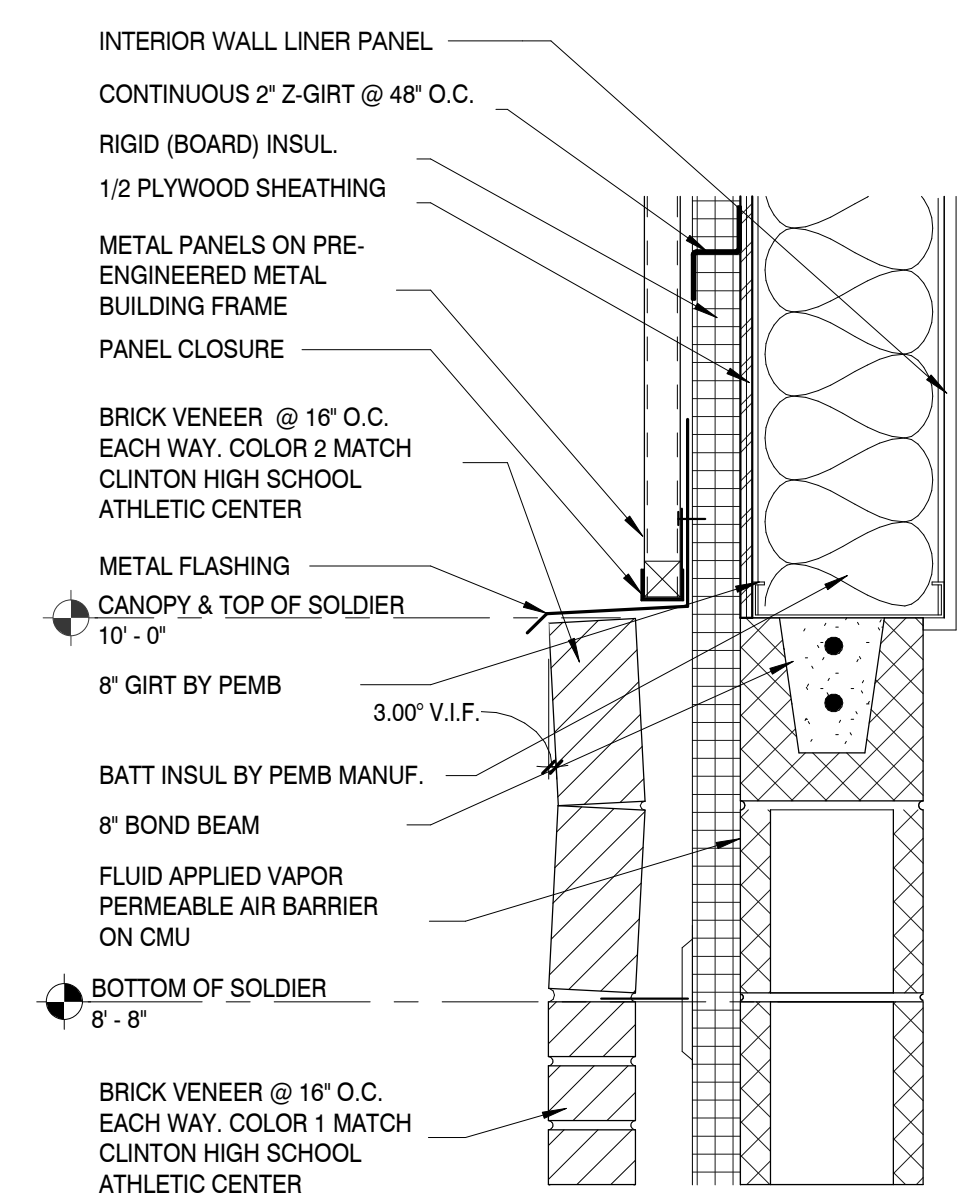
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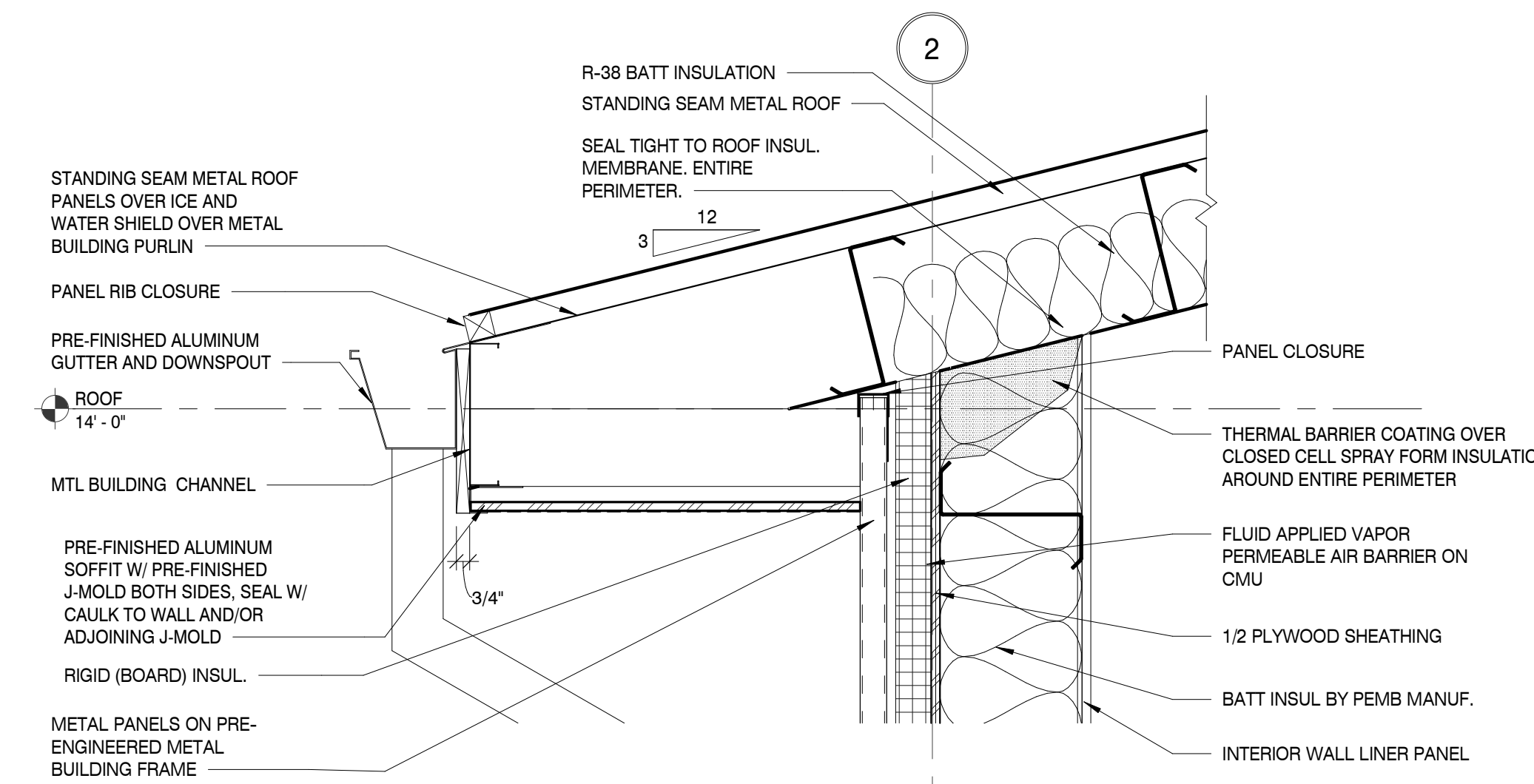
RAKE DETAIL
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7



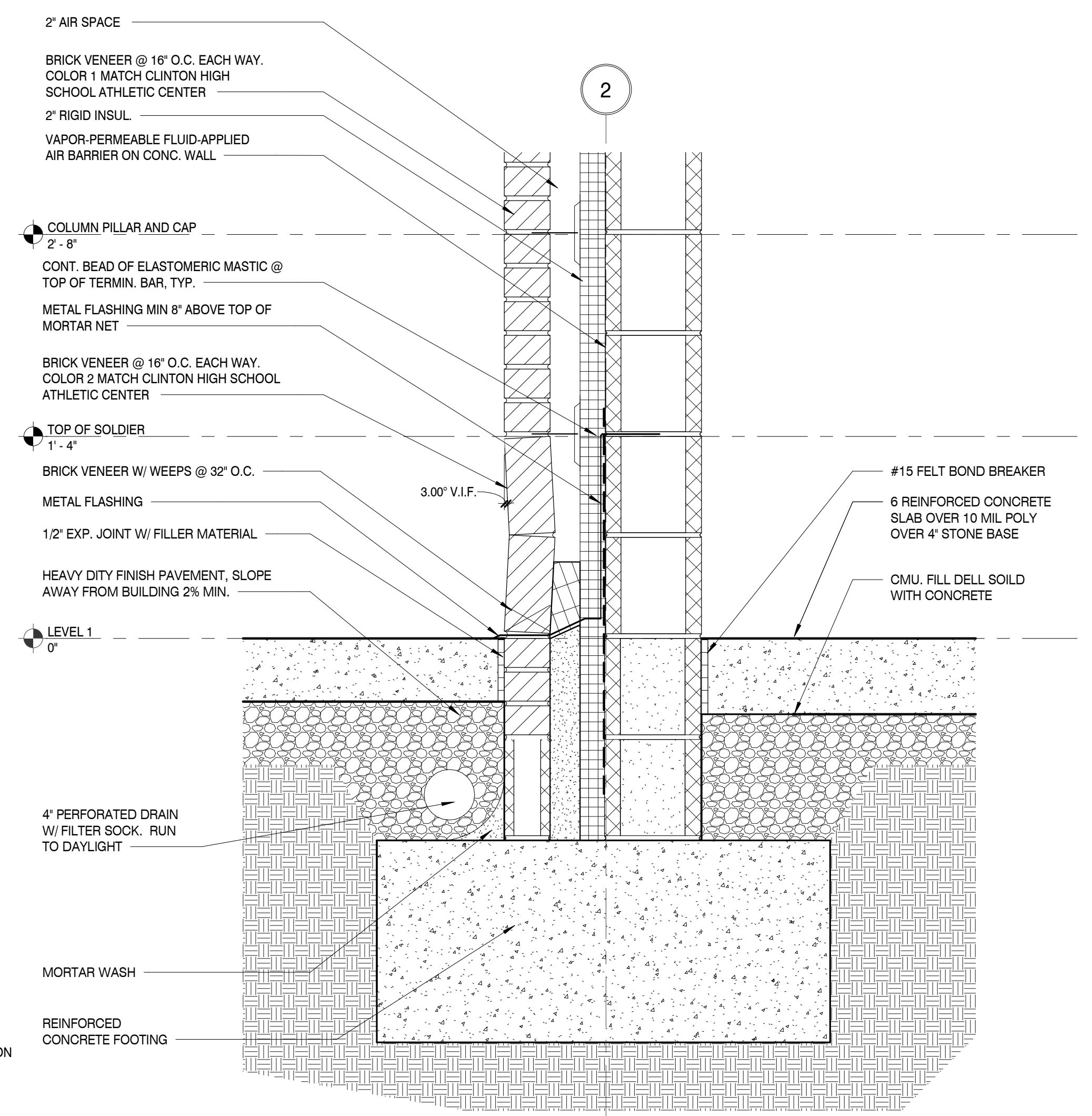
BRICK DETAIL
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5



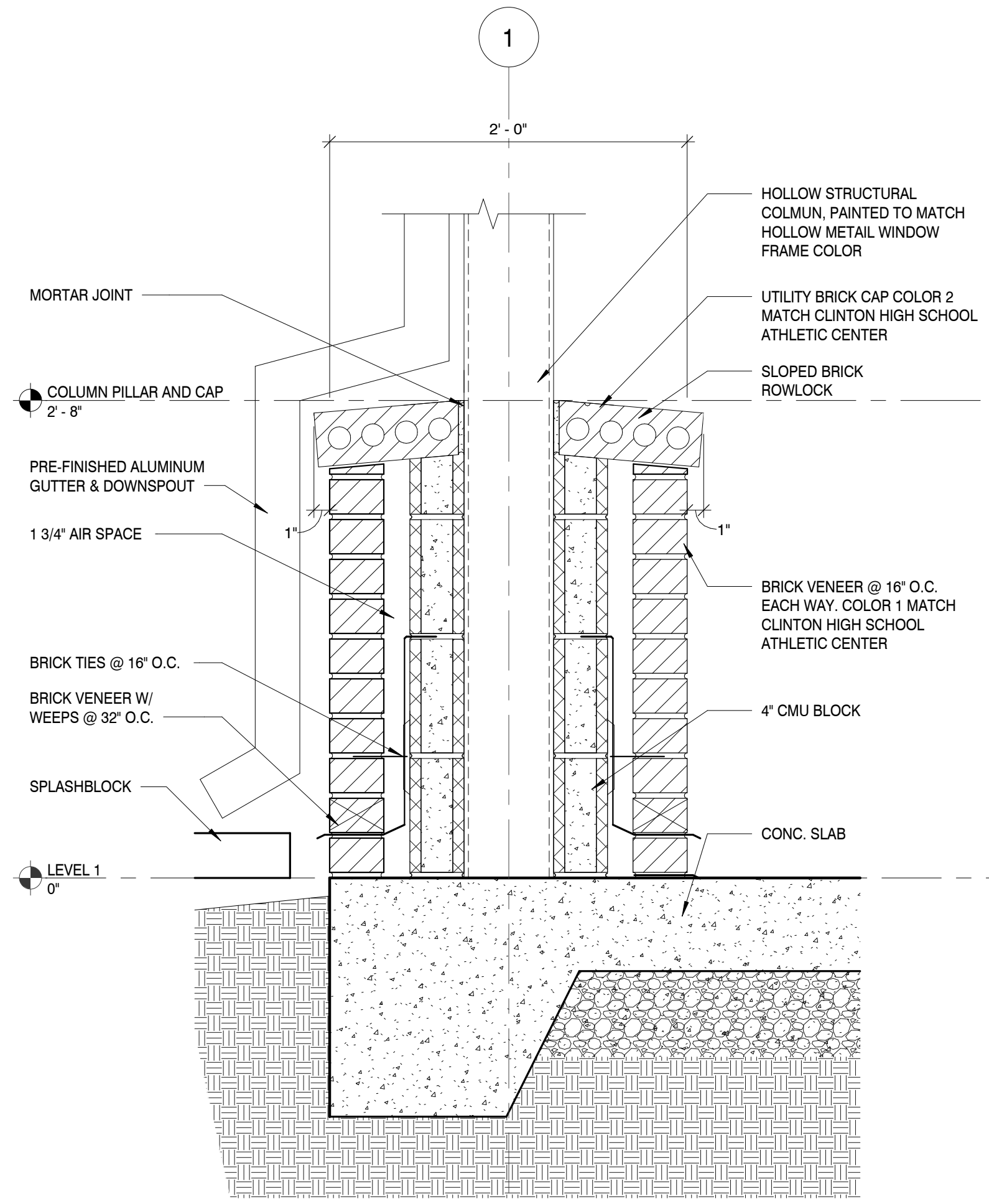
EAVE DETAIL
SCALE: 1 1/2" = 1'-0"

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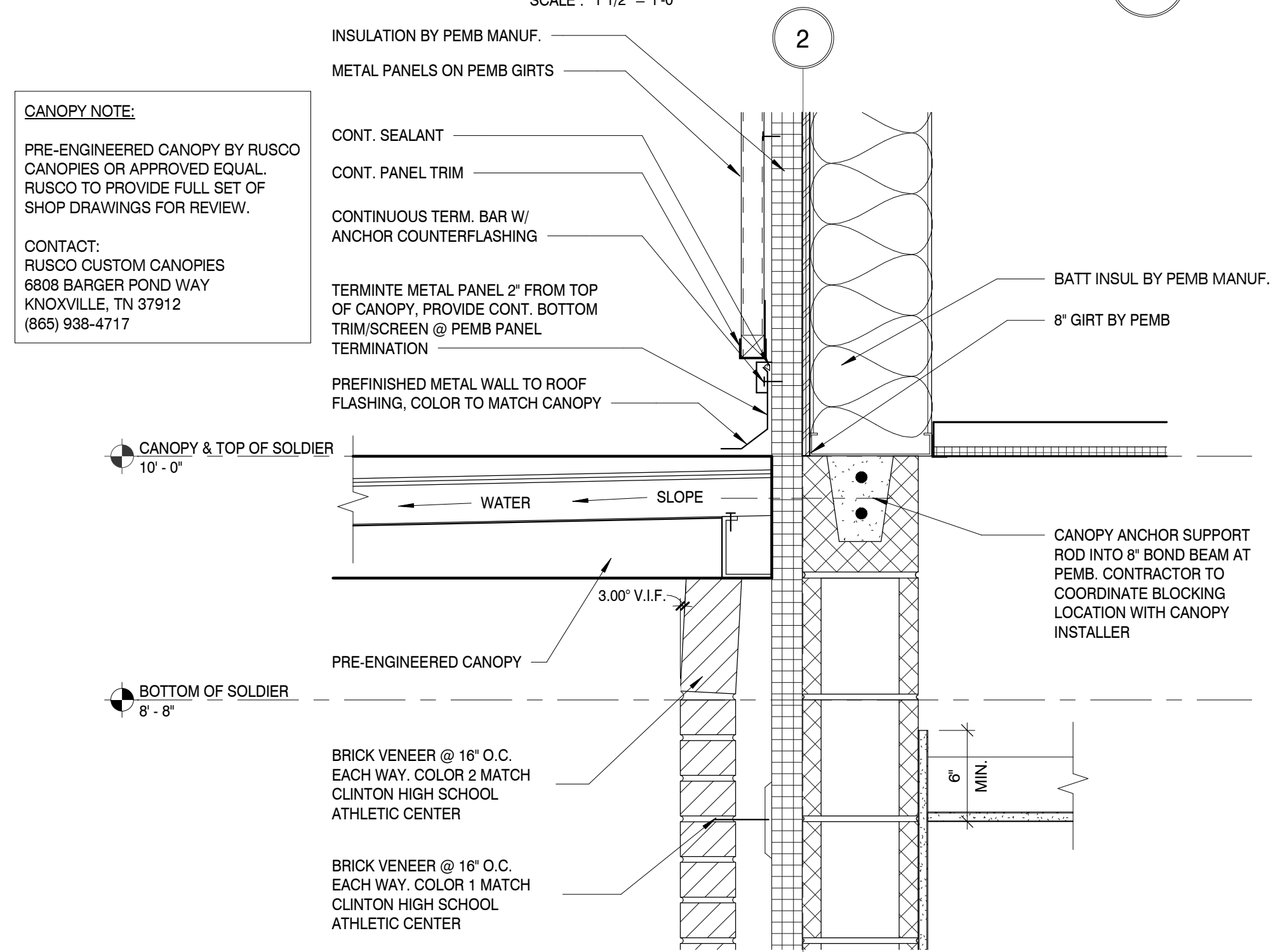
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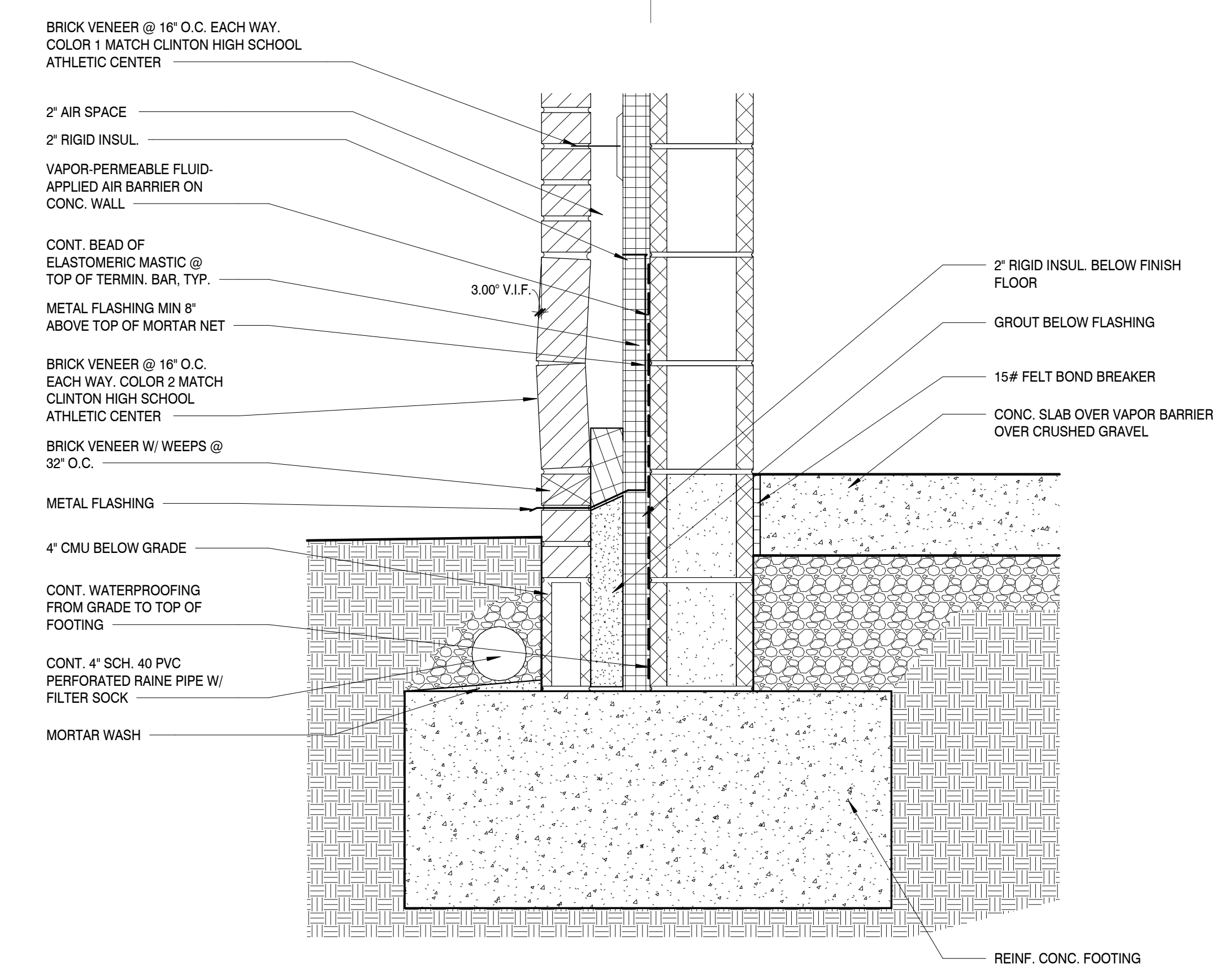
SECTION THRU COLUMN PILLAR AND CAP
SCALE: 1 1/2" = 1'-0"

6



WALL CONNECTION DETAIL TO CANOPY
SCALE: 1 1/2" = 1'-0"

3



FOUNDATION DETAIL
SCALE: 1 1/2" = 1'-0"

1



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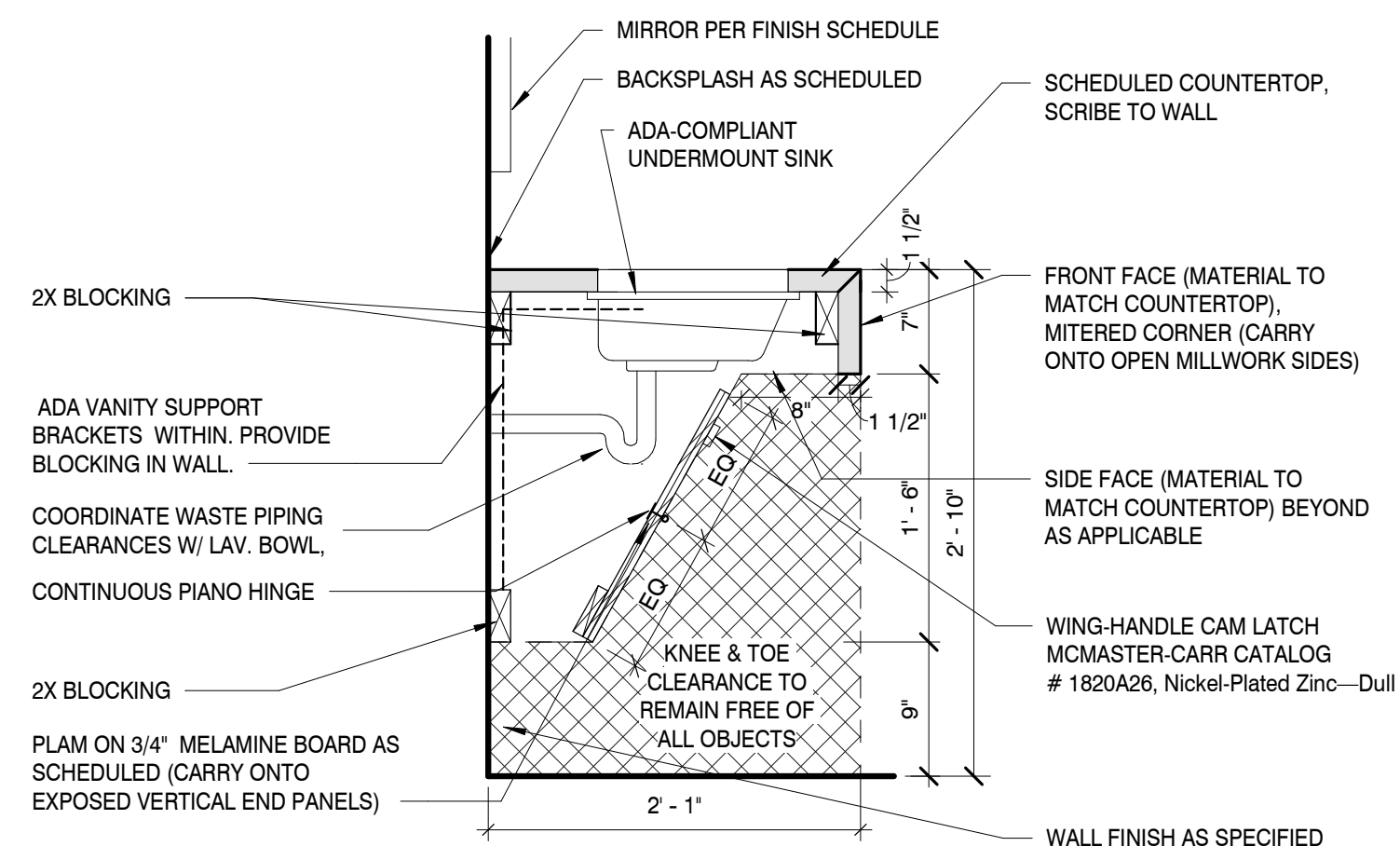
REVISION INFORMATION

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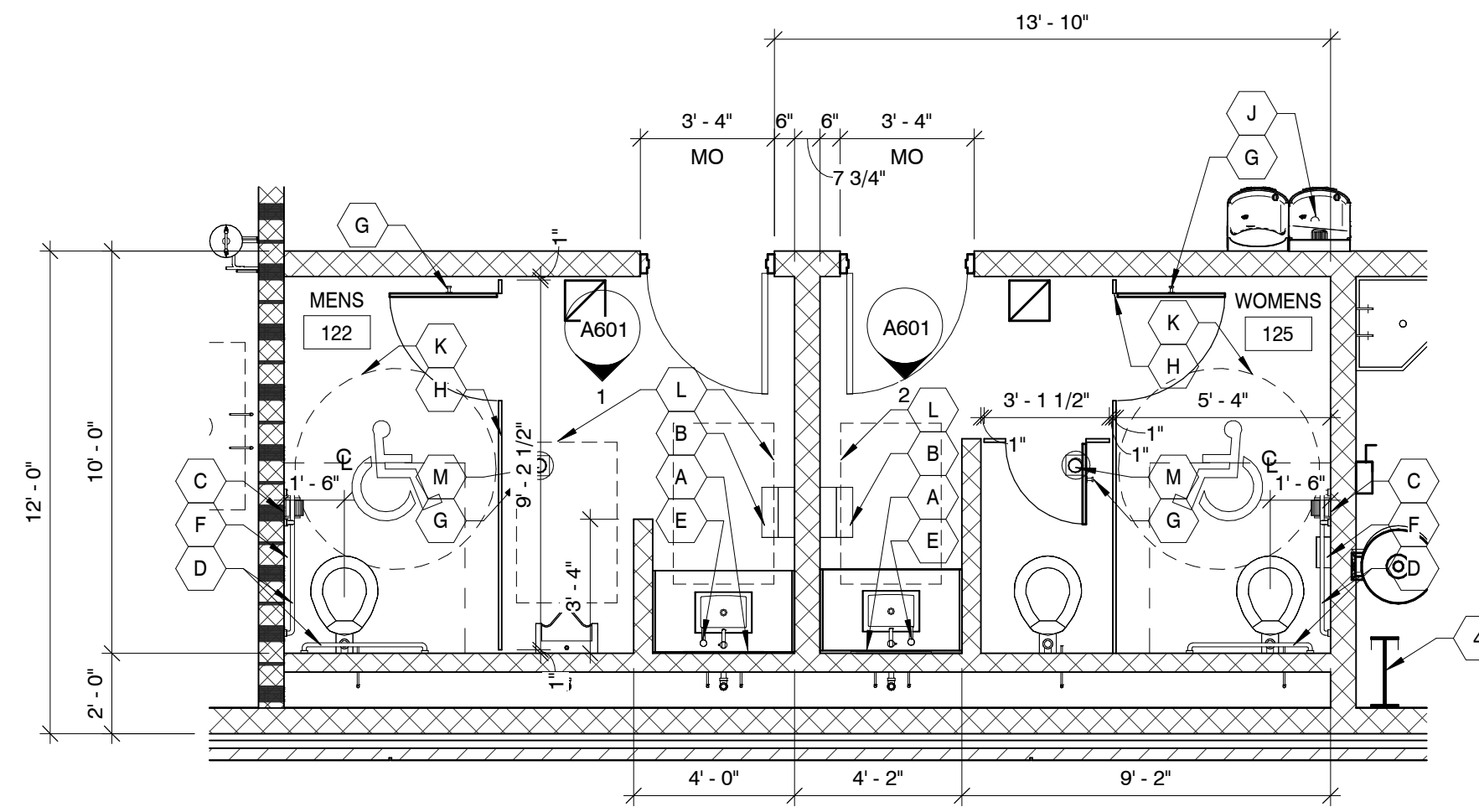
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SHEET INFORMATION

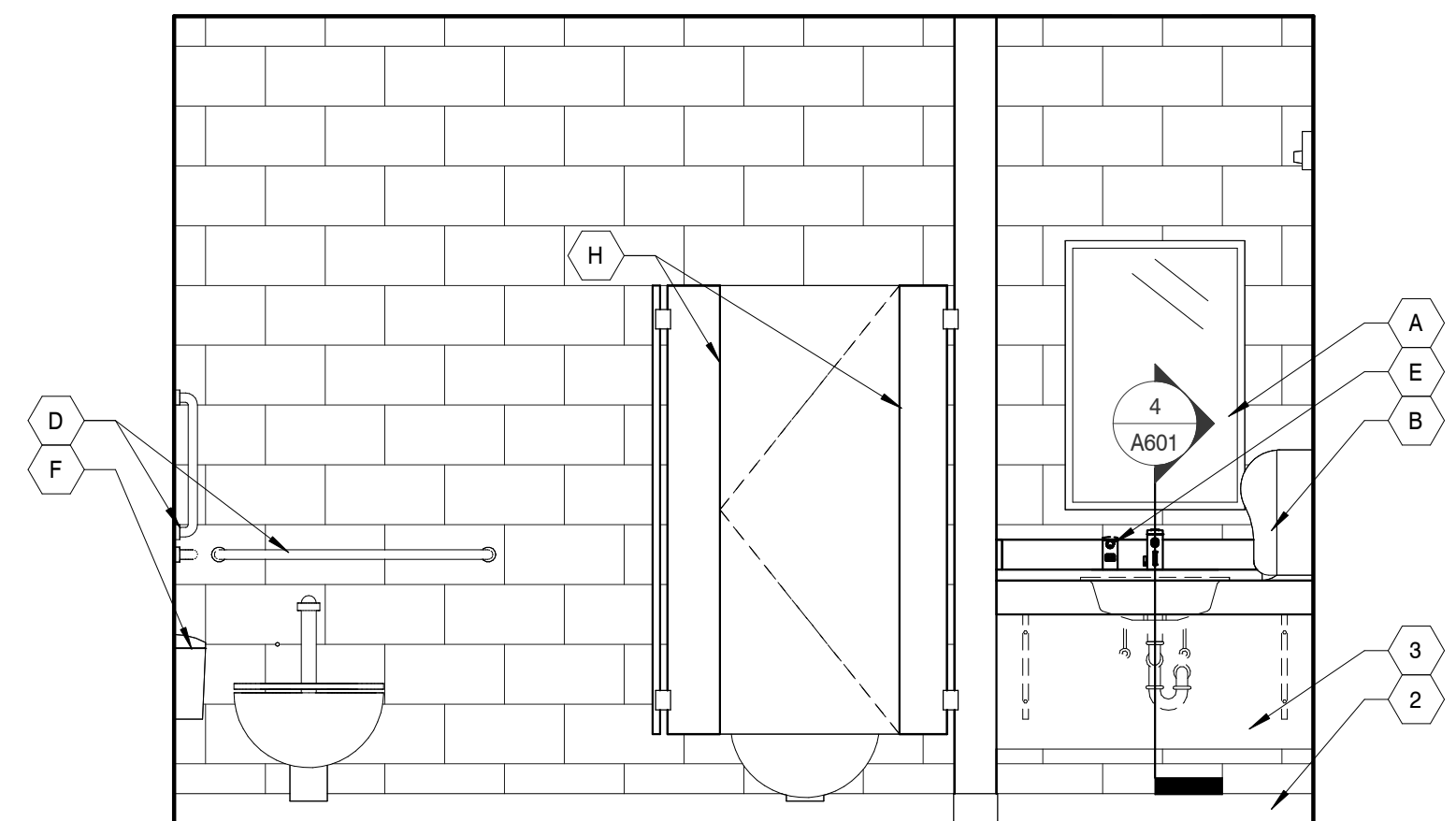
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DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG
SHEET TITLE:	



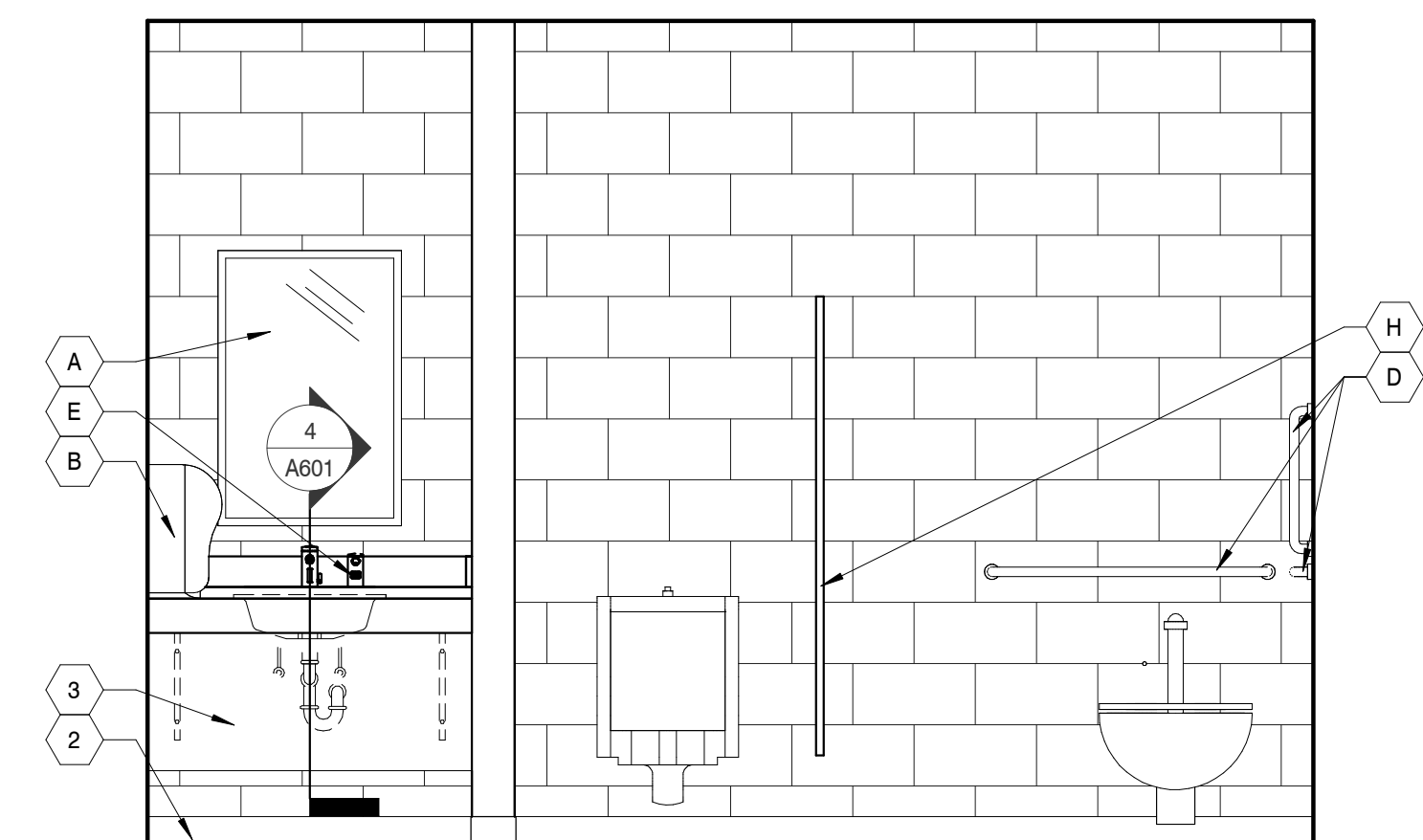
MILLWORK - LAVATORY VANITY - ANGLED APRON 4
SCALE: 1/4" = 1'-0"



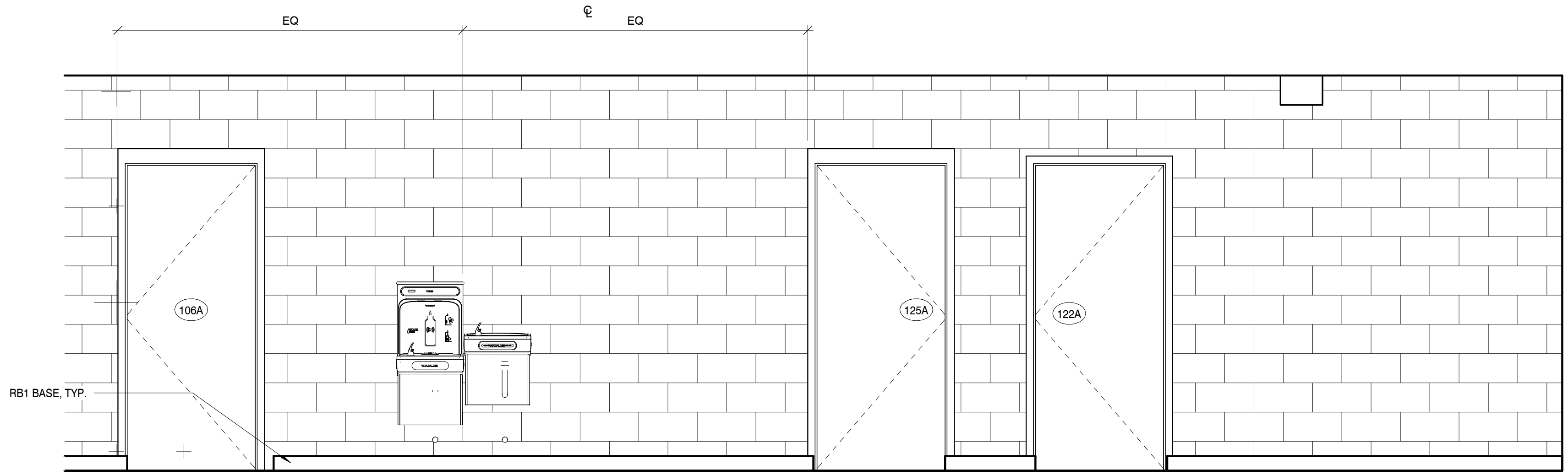
ENLARGED RESTROOM PLAN 3
SCALE: 1/4" = 1'-0"



RESTROOM ELEVATION WOMENS 2
SCALE: 1/2" = 1'-0"



RESTROOM ELEVATION - MENS 1
SCALE: 1/2" = 1'-0"



INTERIOR ELEVATION - RESTROOM GRAPHICS 5
SCALE: 1/2" = 1'-0"

GENERAL PLUMBING NOTES

1. ALL PLUMBING MATERIAL AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
2. SEE PLUMBING DRAWINGS FOR LOCATIONS AND SIZES OF ACCESS PANELS.
3. ALL FIXTURES AND ACCESSORIES SHALL COMPLY WITH THE CURRENT A.D.A., STATE OR LOCAL REGULATIONS FOR MOUNTING HEIGHTS AND CLEARANCES.
4. ALL HOT WATER AND DRAIN PIPES SHALL BE INSULATED PER A.D.A. REQUIREMENTS. MINIMUM HOT WATER SUPPLY INSULATION SHALL BE PRE-MOLDED FIBERGLASS PIPE INSULATION WITH WHITE ALL SERVICE JACKET. INSULATION THICKNESS SHALL BE MIN. 1". SEE PLUMBING DRAWINGS.
5. ALL GRAB BARS IN NEW CONSTRUCTION SHALL BE INSTALLED WITH CONCEALED ANCHOR PLATES.
6. THE FLUSH ACTIVATOR SHALL BE LOCATED ON THE WIDE CLEARANCE SIDE OF HANDICAPPED UNITS AND SHALL BE LEVER TYPE. THE FORCE TO ACTIVATE SHALL NOT EXCEED 5 POUNDS. ACTIVATION SHALL BE WITHIN 40" OF FIN. FLOOR.
7. LAVATORY FAUCET CONTROLS SHALL BE LEVER TYPE AND THE FORCE TO ACTIVATE SHALL NOT EXCEED 5 POUNDS.
8. PROVIDE BLOCKING IN WALLS AS REQ'D FOR ALL FIXTURES AND EQUIPMENT.
9. ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF FURRING UNLESS OTHERWISE NOTED. 'CLEAR' DENOTES FINISH TO FINISH.
10. TOILET ROOM WALLS TO HAVE SOUND BATT INSULATION FROM FLOOR TO DECK ABOVE.
11. GYP. BD. IN ALL WET AREAS TO BE WATER RESISTANT GYP. BD.
12. CONCRETE BACKER BOARD SHALL BE PROVIDED BEHIND TILE AT WALLS.
13. ADJUST SUPPLY LINE WALL PENETRATION HEIGHTS AS NEEDED TO AVOID CONFLICTS BETWEEN FLUSH VALVES AND GRAB BAR MOUNTING HEIGHTS. GRAB BAR MOUNTING HEIGHTS ARE TO TAKE PRIORITY.
14. CONTRACTOR TO CORRIDATE WITH SPECIFIED FIXTURES AND FINISHES TO ENSURE RIM OF LAVATORIES TO BE 34" A.F.F. MAX.

RESTROOM ACCESSORIES X

- A. 24" x 36" FRAMELESS MIRROR W/ 1/4" FLOAT PLATE SET IN SILICONE. (40" A.F.F. TO BOTTOM OF REFLECTIVE SURFACE), CENTER ABOVE SINK, TYP.
- B. PAPER TOWEL
- C. TOILET TISSUE DISPENSER (WALL MOUNTED). DISPENSER SHALL BE LOCATED ITHIN 12" OF THE FRONT EDGE OF THE TOILET SEAT. (1 PER STALL)
- D. 42" x 36" HORIZ. AND 18" VERT. STAINLESS STEEL GRAB BAR, (SURFACE MOUNTED), 1 1/4" - 1 1/2" MOUNTED 1 1/2" FROM WALL.
- E. SOAP DISPENSER
- F. FEMINE NAPKIN RECEPTACLE
- G. COAT / ROBE HOOK
- H. BATHROOM PARTITION
- I. 36" MOP RACK
- J. HI-LO WATER FOUNTAIN WITH BOTTLE FILLER
- K. 60"X56" CLEAR FLOOR AREA AT WATER CLOSET
- L. 30"X48" ACCESSIBLE FLOOR AREA
- M. FLOOR DRAIN - SEE PLUMBING DRAWINGS

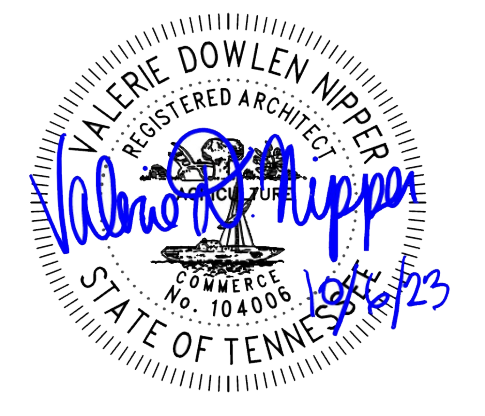
FLOOR PLAN KEYNOTES #

1. ALIGN FINISHES
2. CONCRETE FLOOR WITH INTEGRAL 4" WALL BASE
3. REMOVABLE LAVATORY VANITY - ANGLED APRON
4. PRE-ENGINEERED METAL BUILDING COLUMN
5. MILLWORK - REFER TO INTERIOR ELEVATIONS
6. MOP SINK - SEE PLUMBING. PROVIDE 48" HIGH FRP
7. PANEL WAINSCOT AT SIDE AND REAR WALL WALL-MOUNTED MOP AND BROOM RACK
8. FURNITURE - (N.I.C.)
9. WASHER - (O.F.C.I.)
10. DRYER - (O.F.C.I.)
11. DOG WASH STATION - (O.F.C.I.)
12. WELDING STATION - (O.F.C.I.)
13. EYE WASH STATION
14. HOSE BIB 24" A.F.F.
15. FLOOR DRAIN
16. PACKAGED UNIT CLEARANCE
17. DRYER VENT THRU
18. PACKAGED UNIT
19. GAS METER, SIZED FOR 360 MBH OVER 125' SET REGULATOR FOR 0.5 PSI
20. FIRE DEPARTMENT INLET CONNECTION
21. HOT WATER HEATER
22. CEILING RETRACTABLE COIL EXTENSION CORD REEL
23. SPLASHBLOCK

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PROJECT INFORMATION

PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:
411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: **220042-02**

ACTIVE DESIGN PHASE

- FOR REVIEW ONLY
- FOR PERMITTING ONLY
- SCHEMATIC DESIGN
- DESIGN DEVELOPMENT
- CONSTRUCTION BIDDING
- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

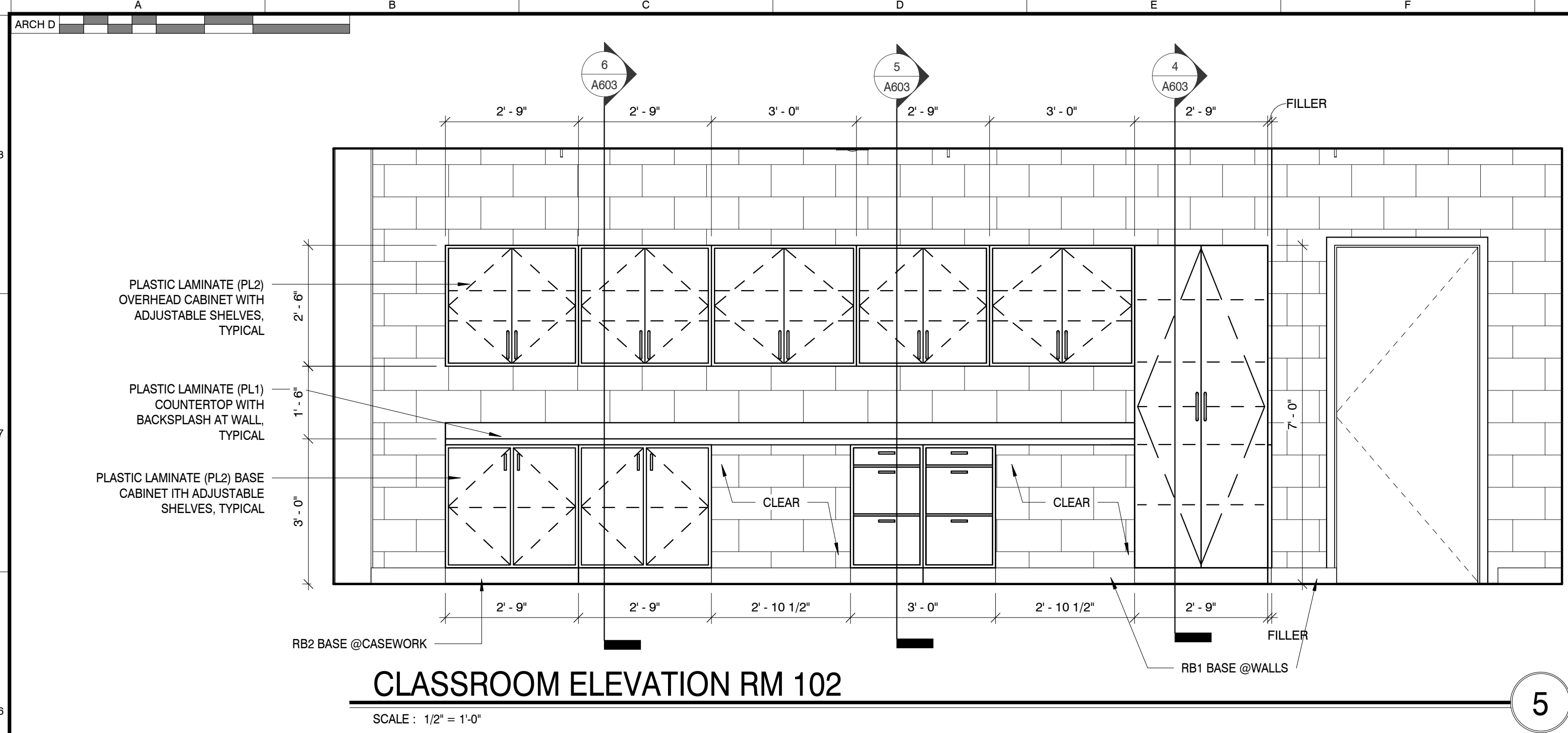


SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: CMG
DRAWN BY: MDC
REVIEWED BY: CMG
SHEET TITLE:

ENLARGED PLANS, INTERIOR ELEVATIONS AND DETAILS

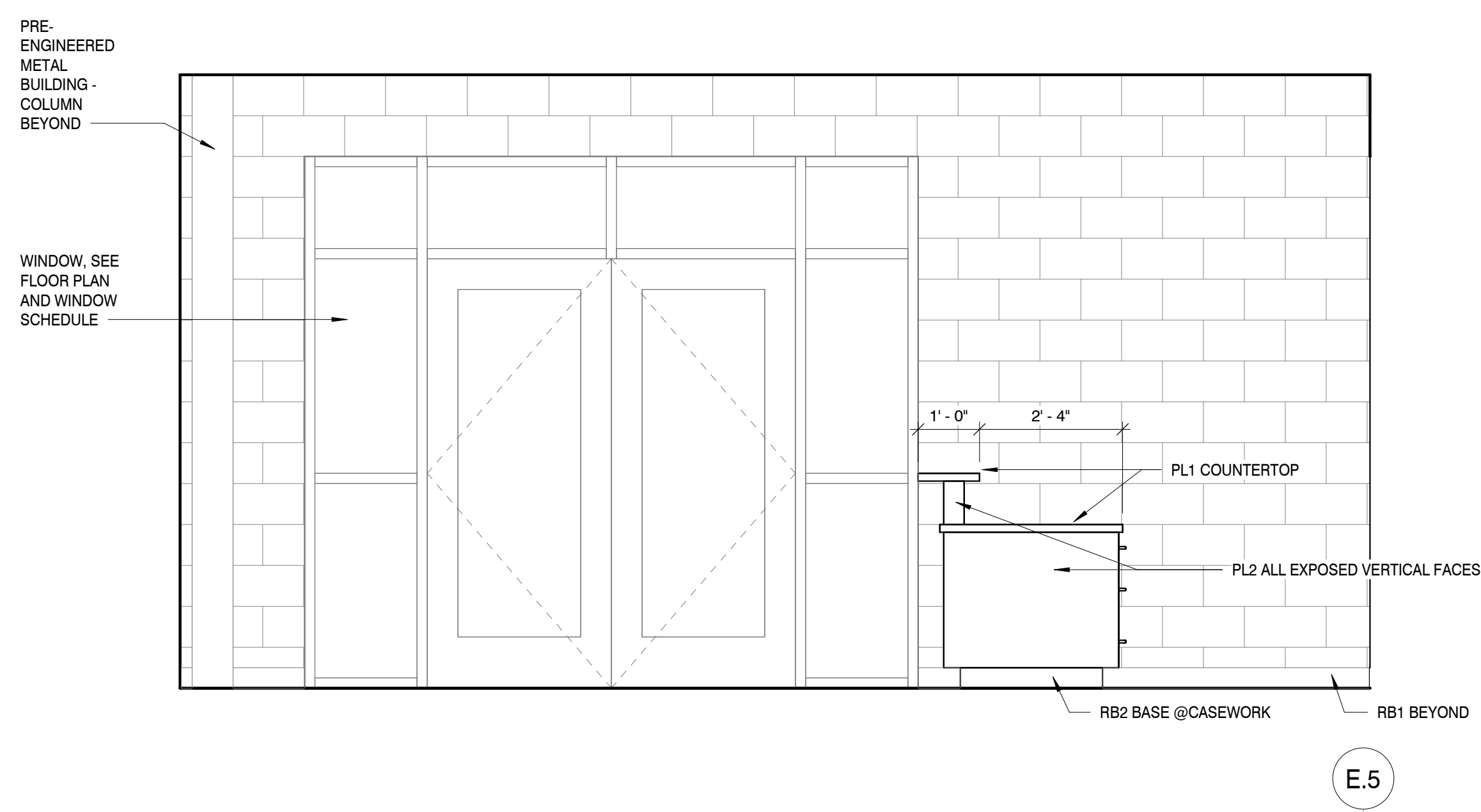
SHEET NO.: **A601**



CLASSROOM ELEVATION RM 102
SCALE: 1/2" = 1'-0"

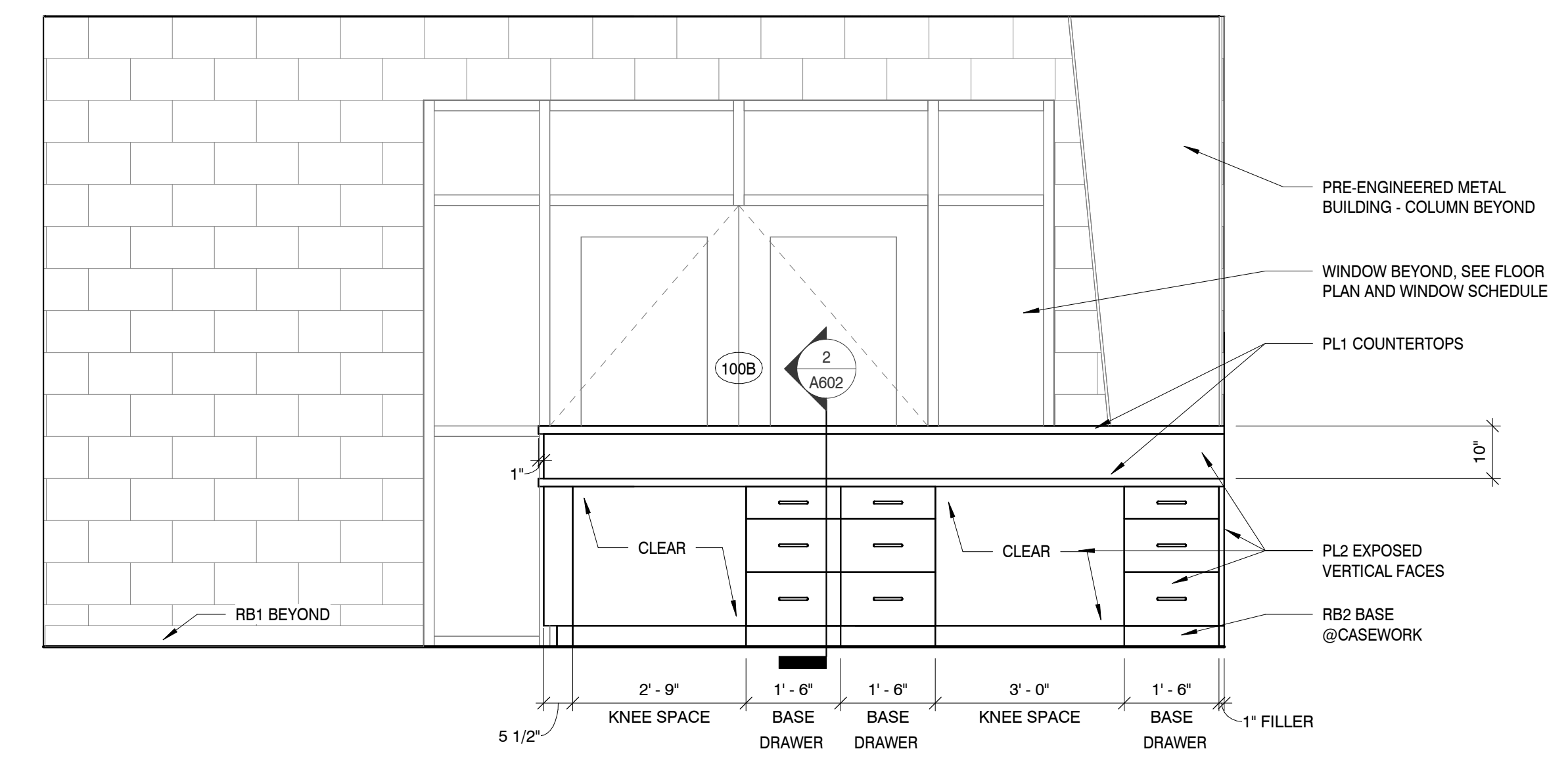
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- FLOOR PLAN KEYNOTES**
1. ALIGN FINISHES
 2. CONCRETE FLOOR WITH INTERGRAL 4" WALL BASE
 3. REMOVABLE LAVATORY VANITY - ANGLED APRON
 4. PRE-ENGINEERED METAL BUILDING COLUMN
 5. MILLWORK - REFER TO INTERIOR ELEVATIONS
 6. MOP SINK - SEE PLUMBING. PROVIDE 48" HIGH FRP
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WALL-MOUNTED MOP AND BROOM RACK
 8. FURNITURE - (N.I.C.)
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 11. DOG WASH STATION - (O.F.C.I.)
 12. WELDING STATION - (O.F.C.I.)
 13. EYE WASH STATION
 14. HOSE BIB 24" A.F.F.
 15. FLOOR DRAIN
 16. PACKAGED UNIT CLEARANCE
 17. DRYER VENT THRU
 18. PACKAGED UNIT
 19. GAS METER, SIZED FOR 360 MBH OVER 125'
SET REGULATOR FOR 0.5 PSI
 20. FIRE DEPARTMENT INLET CONNECTION
 21. HOT WATER HEATER
 22. CEILING RETRACTABLE COIL EXTENSION CORD REEL
 23. SPLASHBLOCK



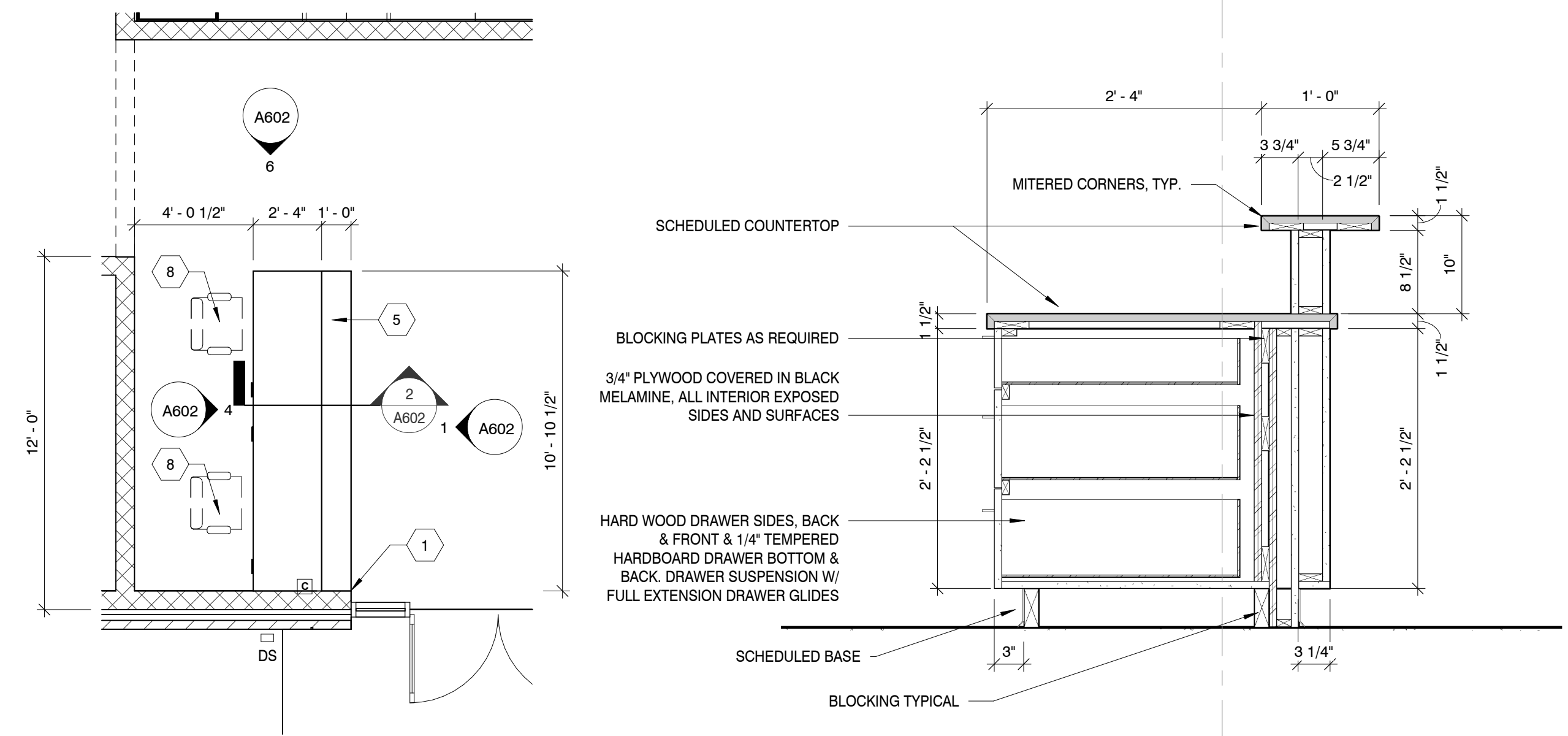
INTERIOR ELEVATION EAST RECEPTION DESK
SCALE: 1/2" = 1'-0"

E.5



INTERIOR ELEVATION EAST RECEPTION DESK
SCALE: 1/2" = 1'-0"

4

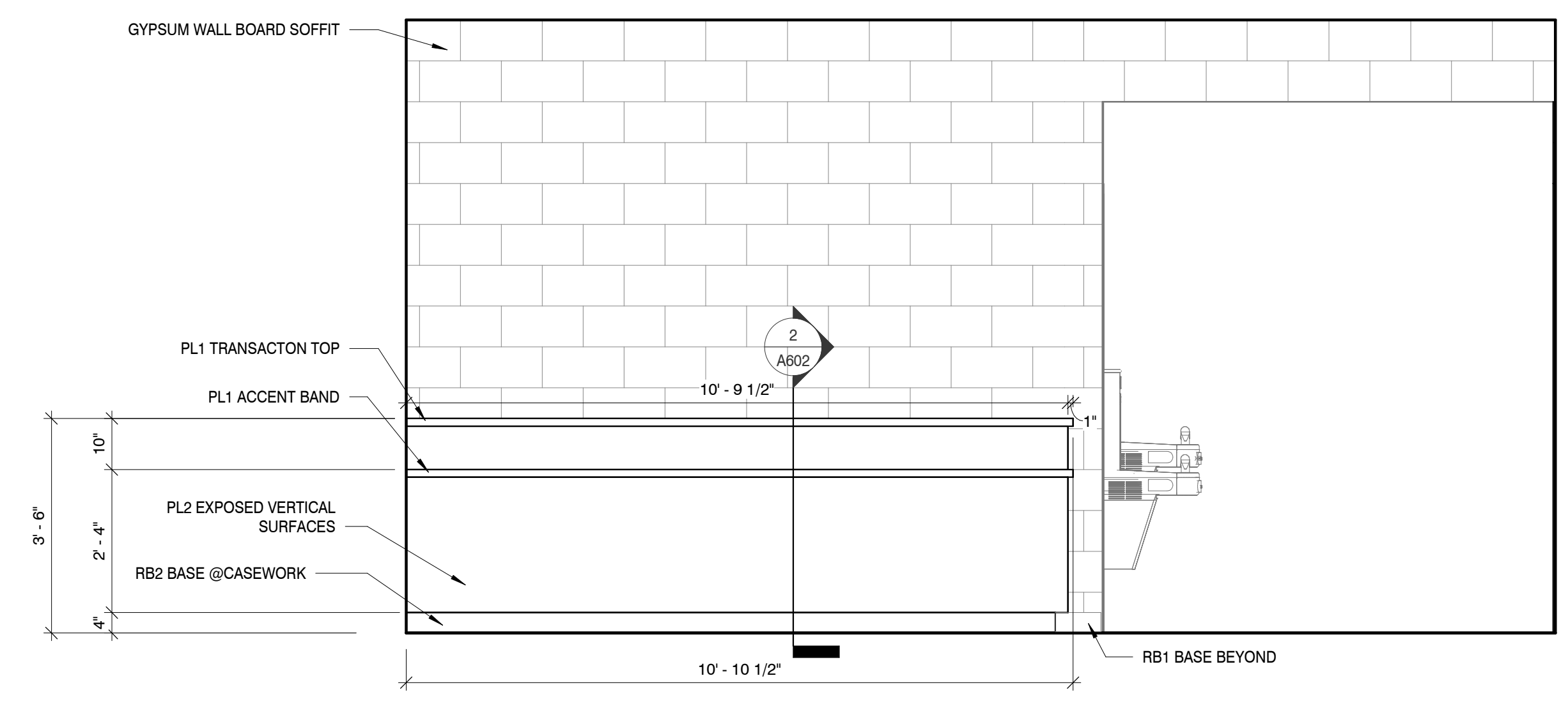


ENLARGED RECEPTION DESK PLAN
SCALE: 1/4" = 1'-0"

3

MILLWORK DETAIL - RECEPTION
SCALE: 1" = 1'-0"

2



INTERIOR ELEVATION REC. 101
SCALE: 1/2" = 1'-0"

1



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CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING
PROJECT ADDRESS:
411 DOUGLAS LN
CLINTON, TN 37716
PROJECT NO.: **220042-02**

ACTIVE DESIGN PHASE

- FOR REVIEW ONLY
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- SCHEMATIC DESIGN
- DESIGN DEVELOPMENT
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- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

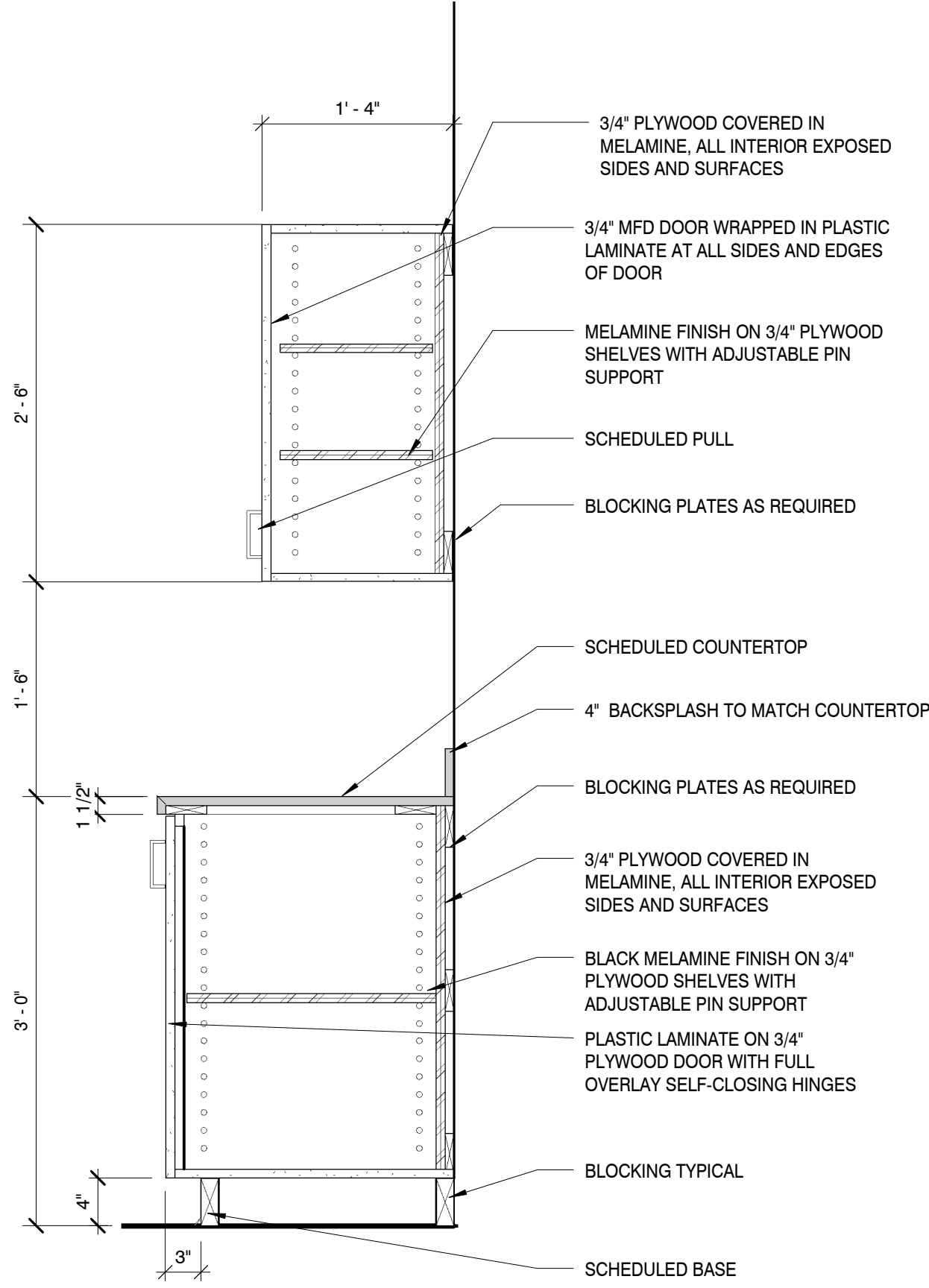
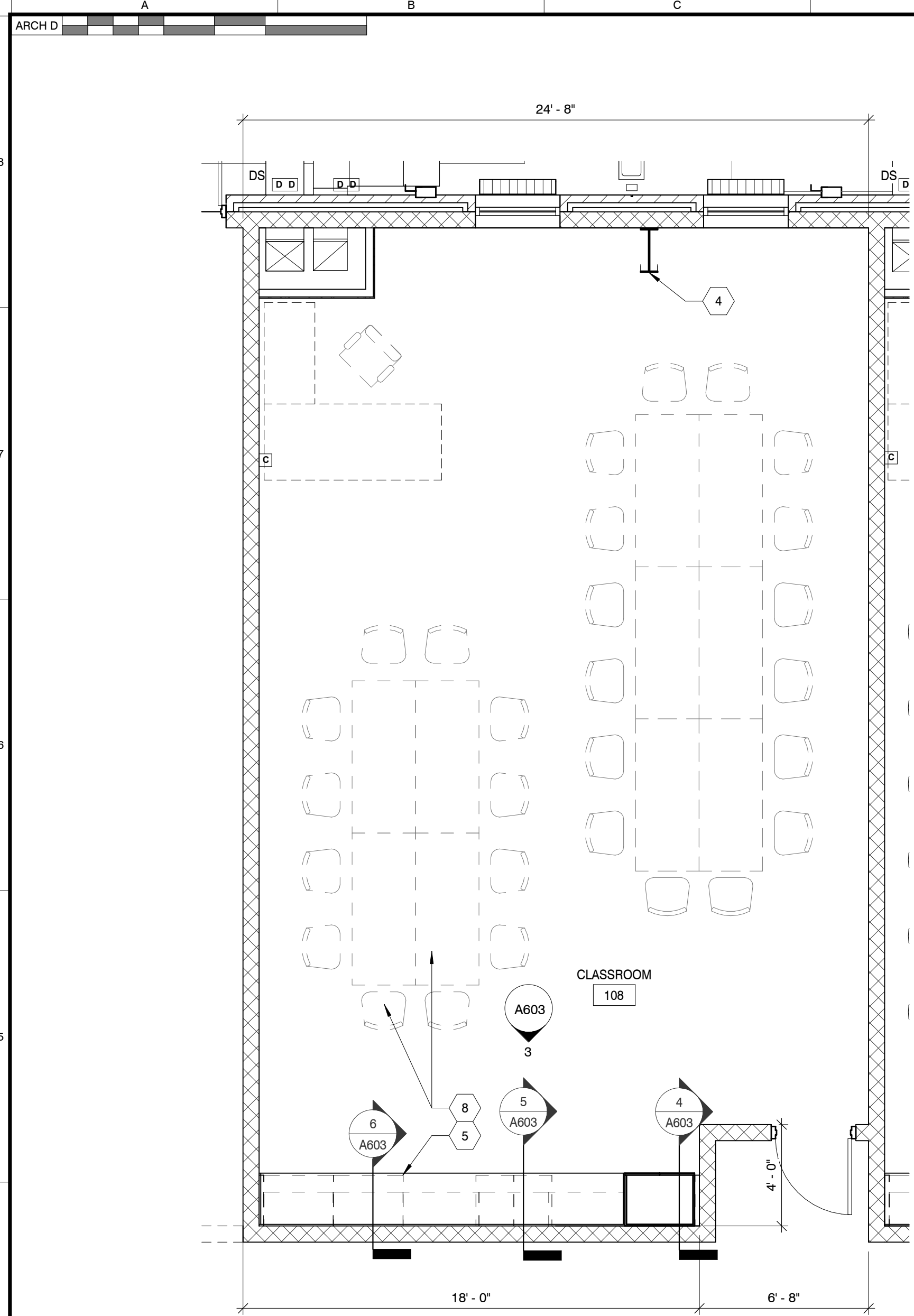
SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: CMG
DRAWN BY: MDC
REVIEWED BY: CMG
SHEET TITLE:

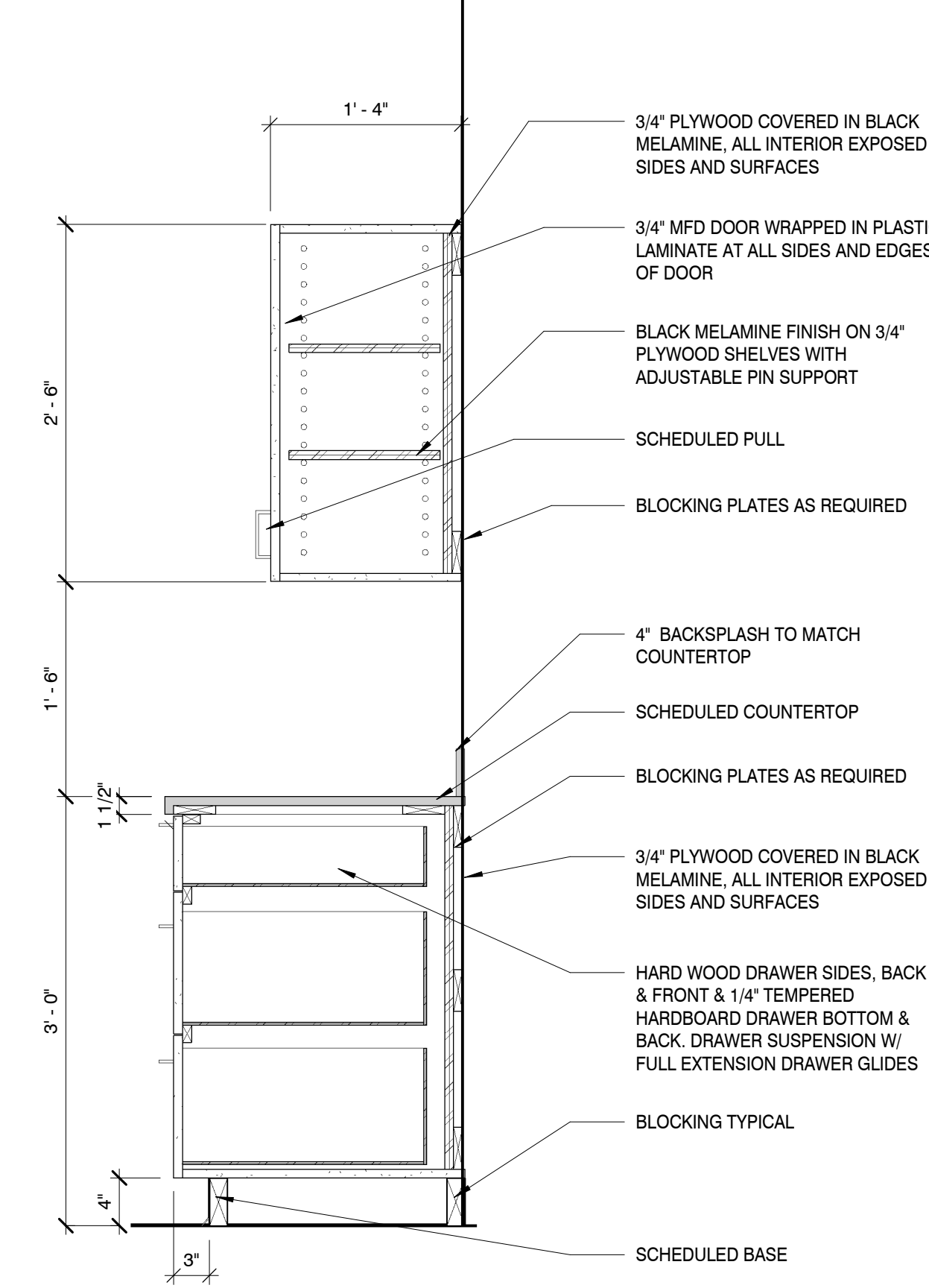
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SHEET NO.:

A602

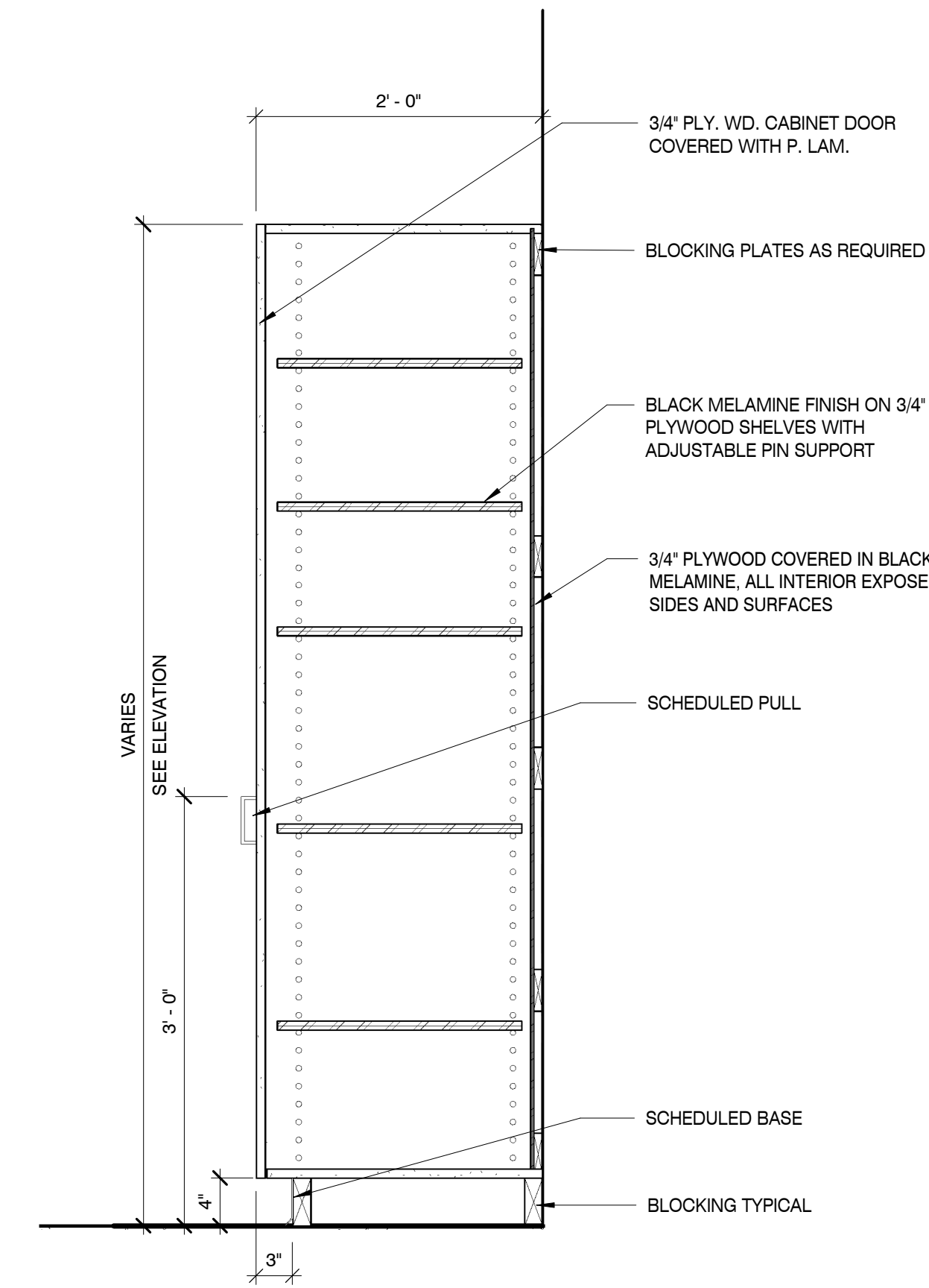
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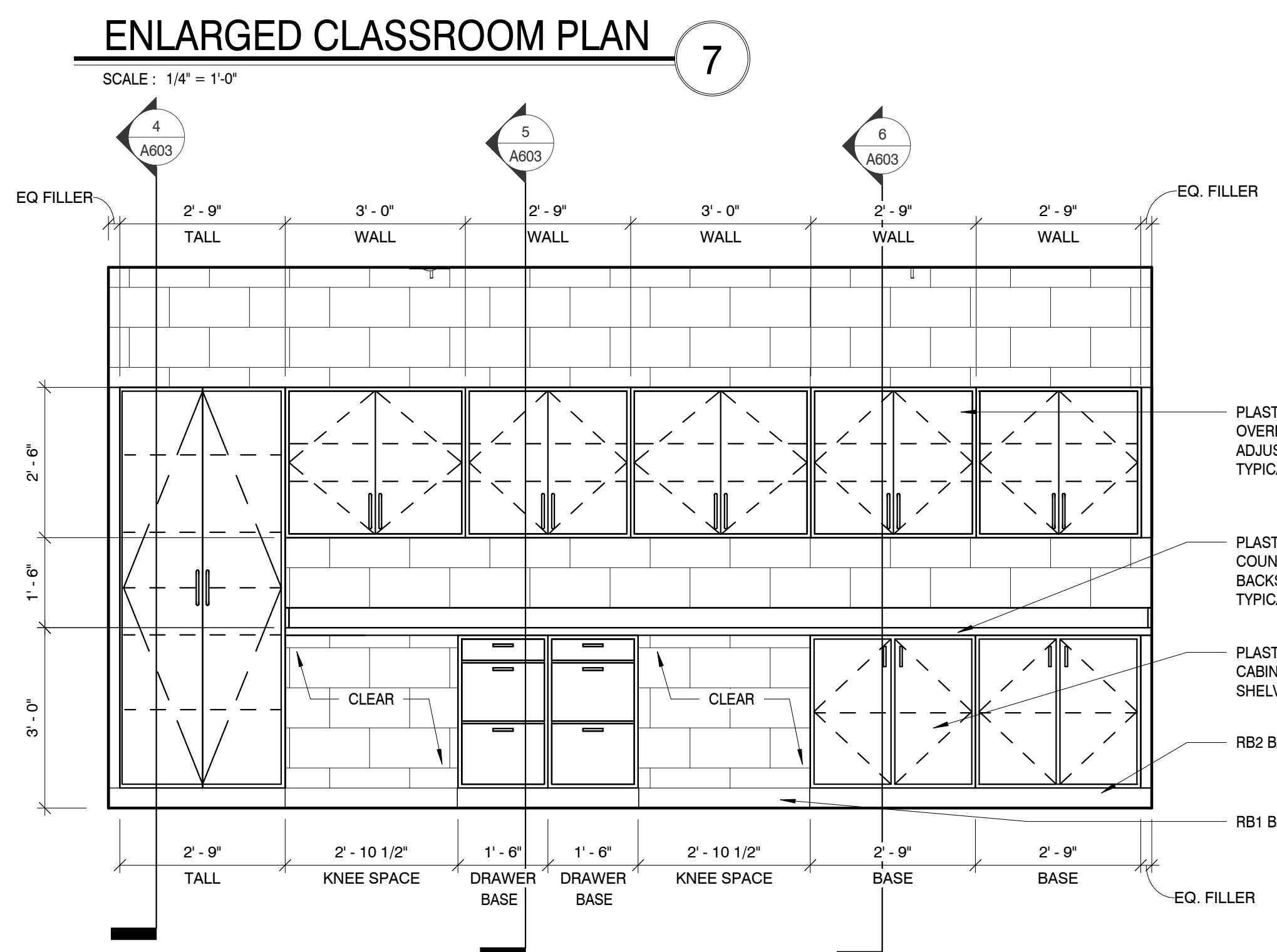
MILLWORK DETAIL 6
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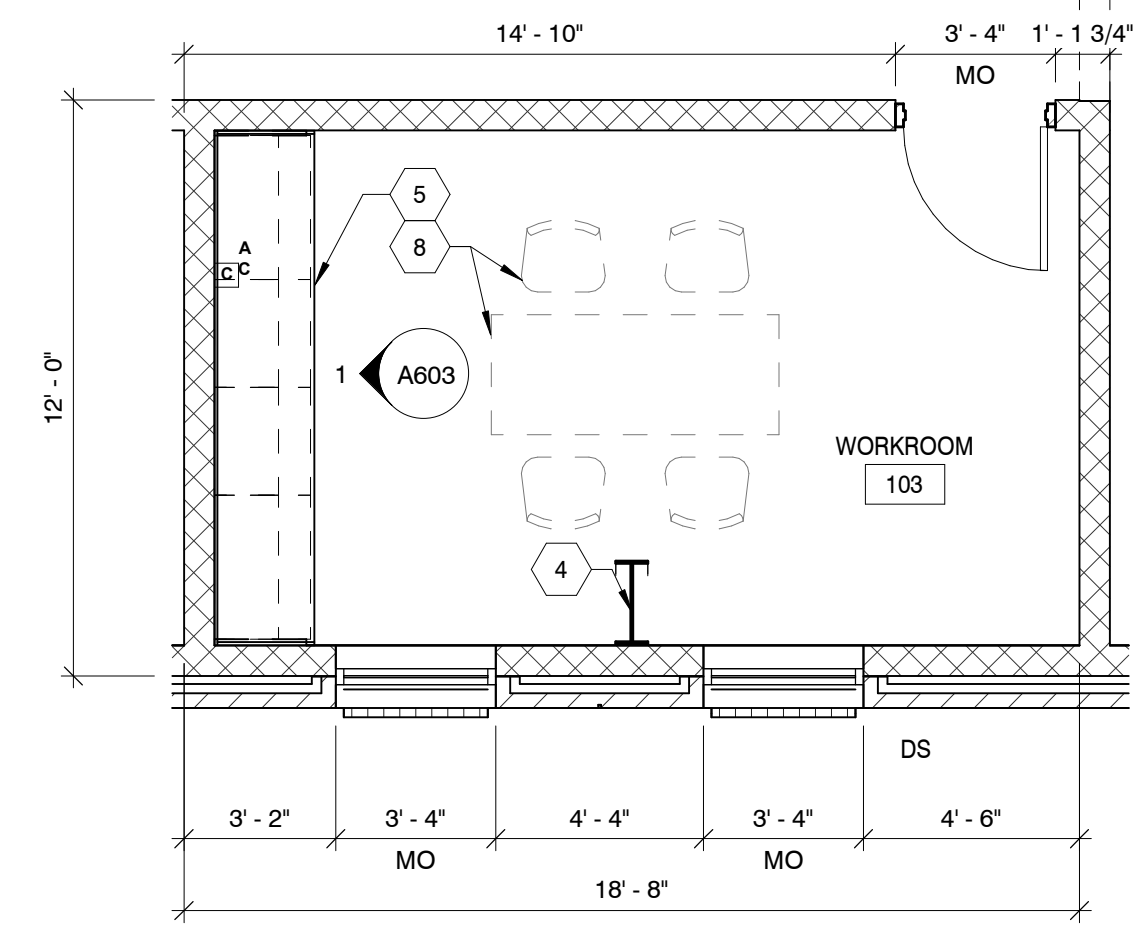
MILLWORK DETAIL 5
SCALE: 1" = 1'-0"



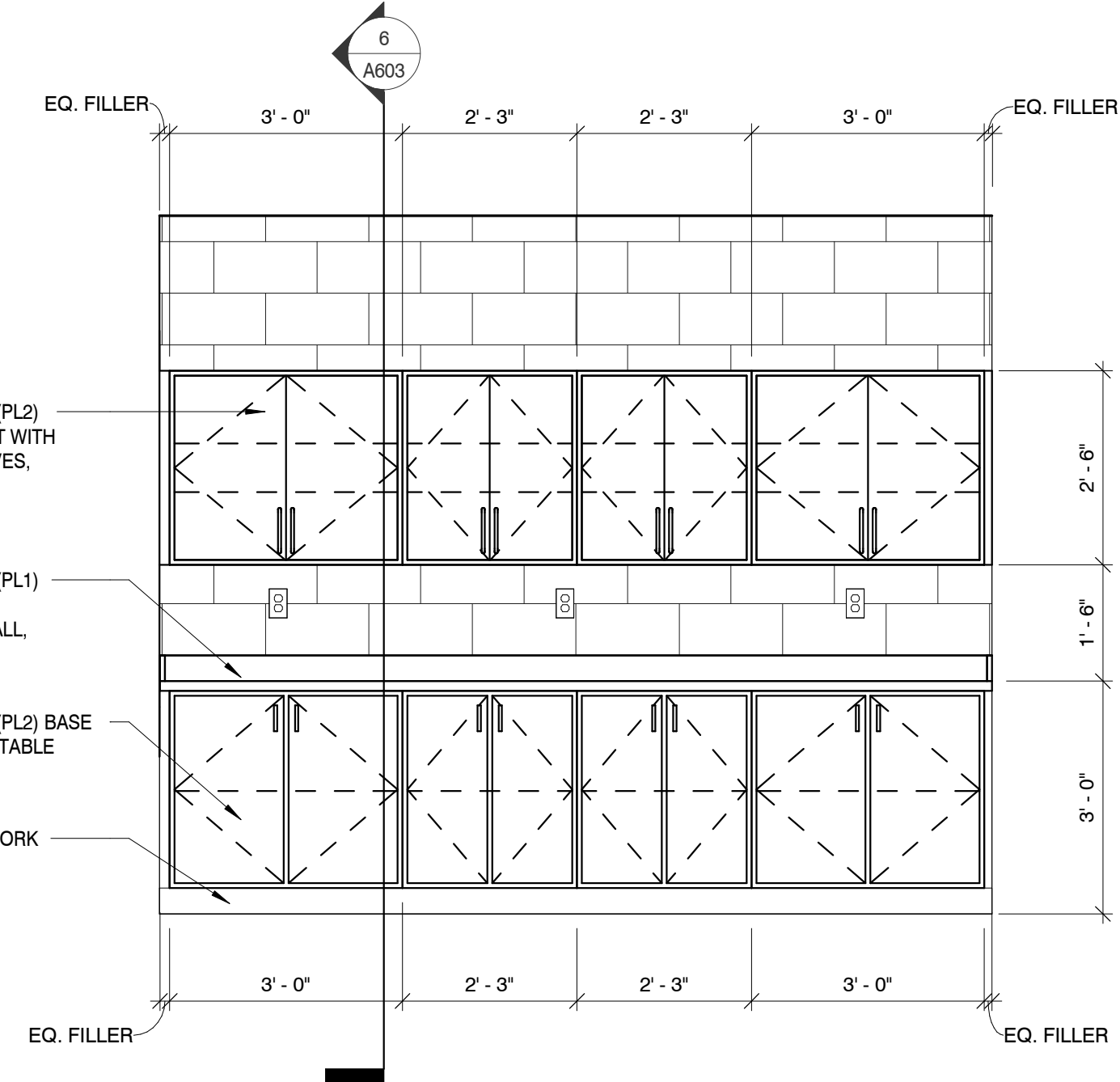
MILLWORK DETAIL 4
SCALE: 1" = 1'-0"



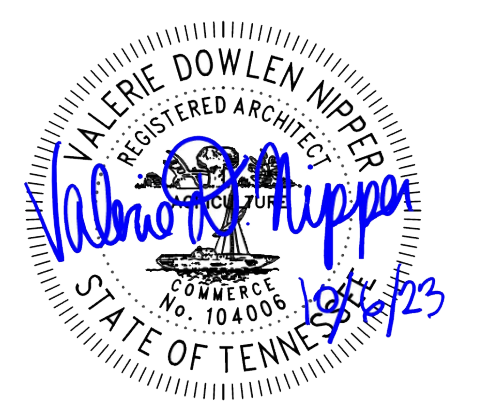
CLASSROOM ELEVATION RM 104 & 108
SCALE: 1/2" = 1'-0"



ENLARGED WORKROOM PLAN
SCALE: 1/4" = 1'-0"



INTERIOR ELEVATION - WORKROOM 103
SCALE: 1/2" = 1'-0"



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REVISION INFORMATION

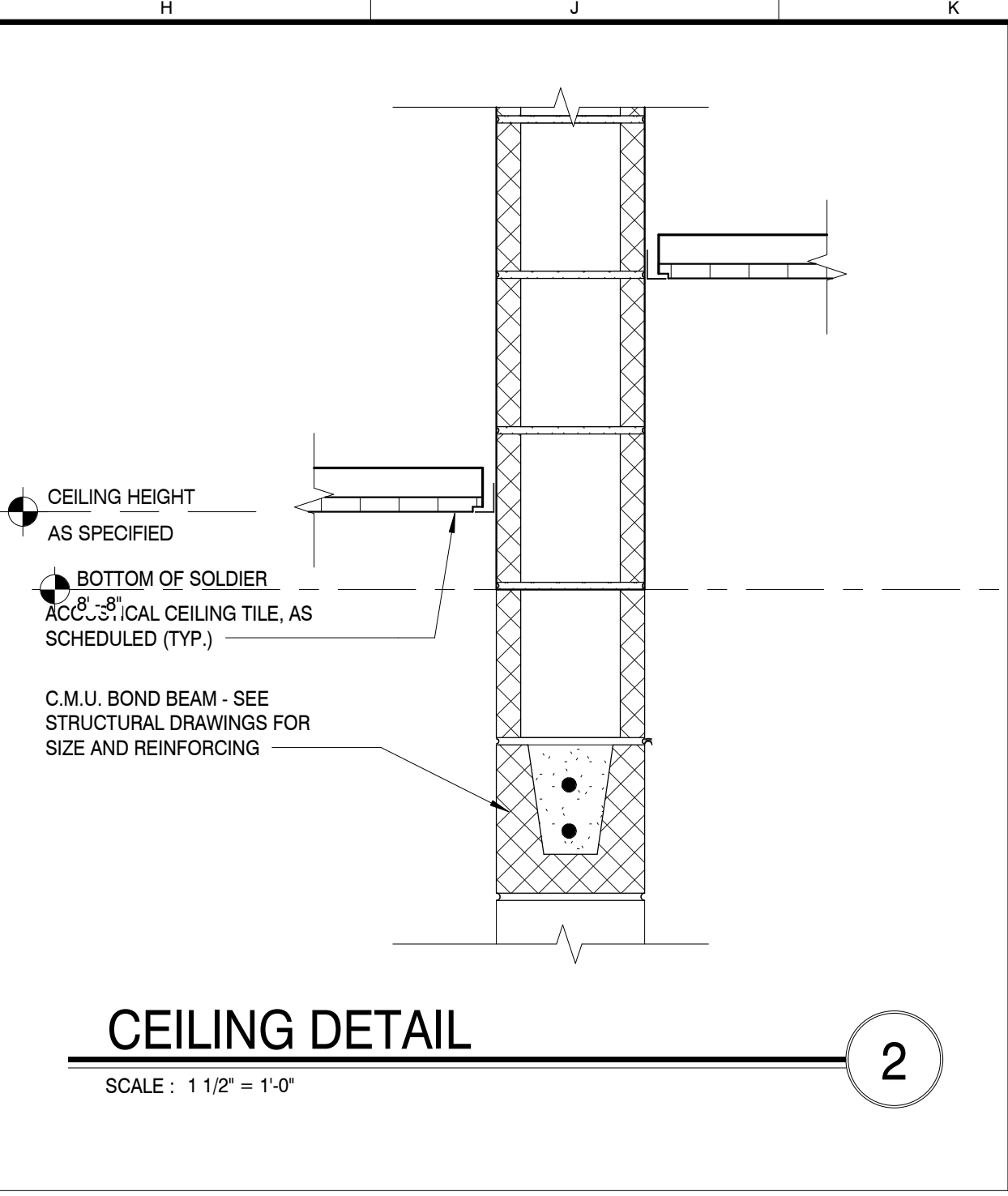
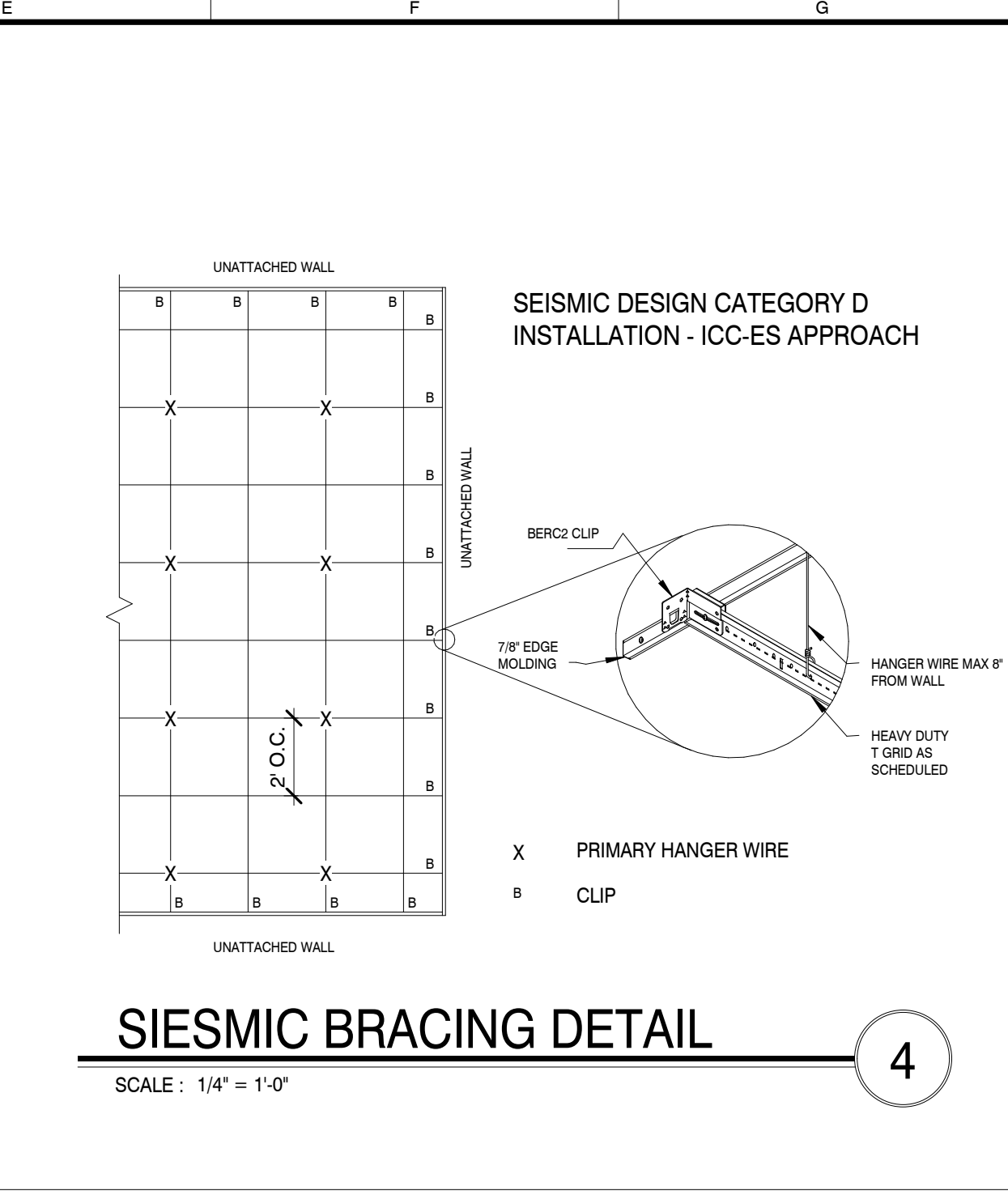
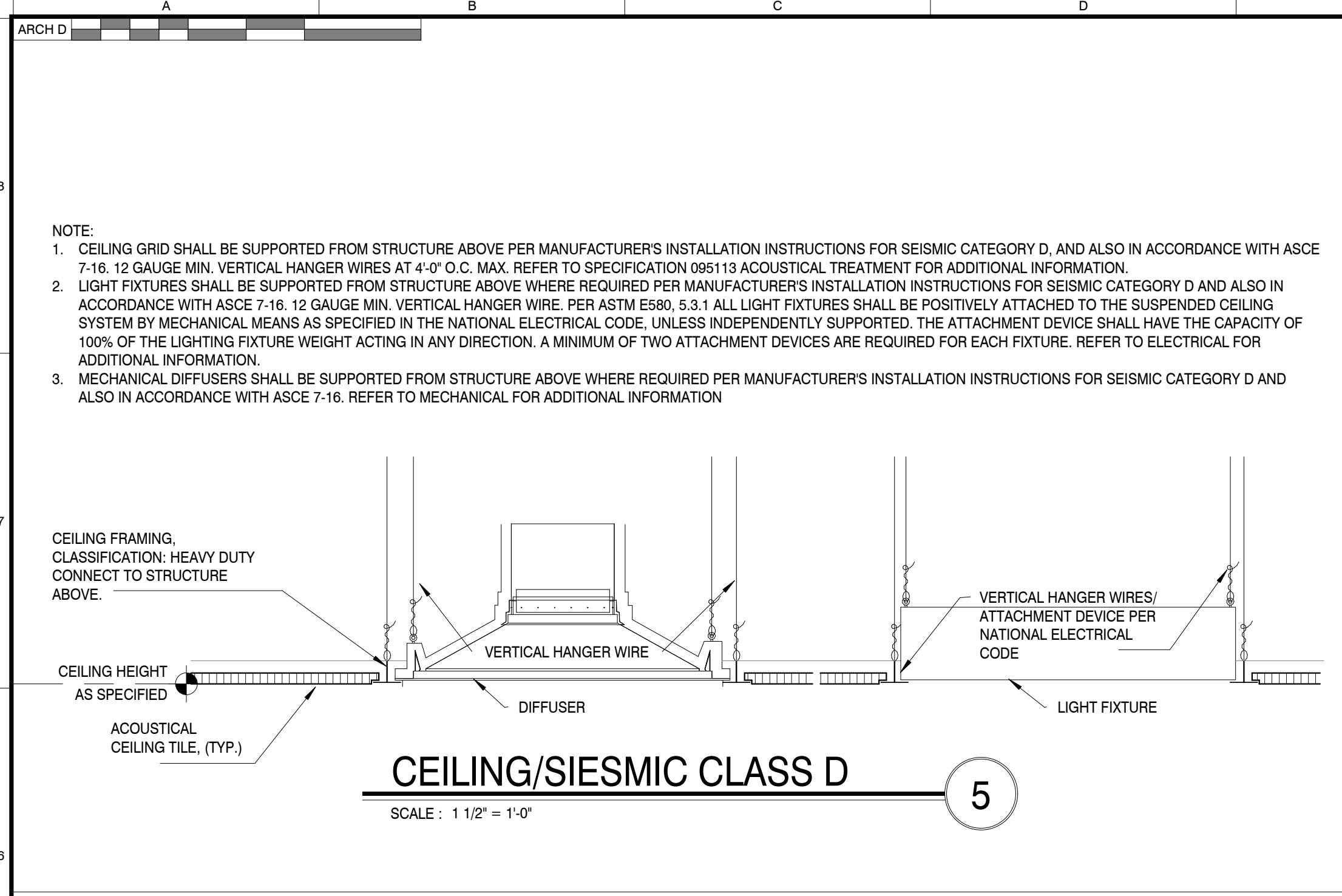
NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

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DRAWN BY:	MDC
REVIEWED BY:	CMG
SHEET TITLE:	

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REFLECTED CEILING LEGEND

	2X4 LED FIXTURE
	2X2 LED FIXTURE
	8'-0" INDUSTRIAL LED
	8' RECESSED CAN LIGHT
	COMBINATION EMERGENCY LIGHT AND EXIT LIGHT
	EXIT LIGHT
	EMERGENCY LIGHT
	HVAC SUPPLY DIFFUSER
	HVAC R/A GRILL
	EXHAUST FAN
	24"X24" ACOUSTICAL CEILING TILE (ACT2 UNLESS OTHERWISE NOTED)
	24"X48" ACOUSTICAL CEILING TILE (ACT2 UNLESS OTHERWISE NOTED)
	5/8" GYP. BD. CEILING (TO BE PAINTED P1 UNLESS NOTED OTHERWISE)
	PREFINISHED FLUSH SEAM ALUMINUM SOFFIT
	9'-0" A.F.F. CEILING HEIGHT UNLESS OTHERWISE NOTED

CEILING PLAN KEYNOTES

- CEILING RETRACTABLE COIL EXTENSION CORD REEL
- GAS UNIT HEATER



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PROJECT INFORMATION

PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS: 411 DOUGLAS LN CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

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<input type="checkbox"/>	FOR PERMITTING ONLY
<input type="checkbox"/>	SCHEMATIC DESIGN
<input type="checkbox"/>	DESIGN DEVELOPMENT
<input type="checkbox"/>	CONSTRUCTION BIDDING
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REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 10/06/2023

DESIGNED BY: CMG

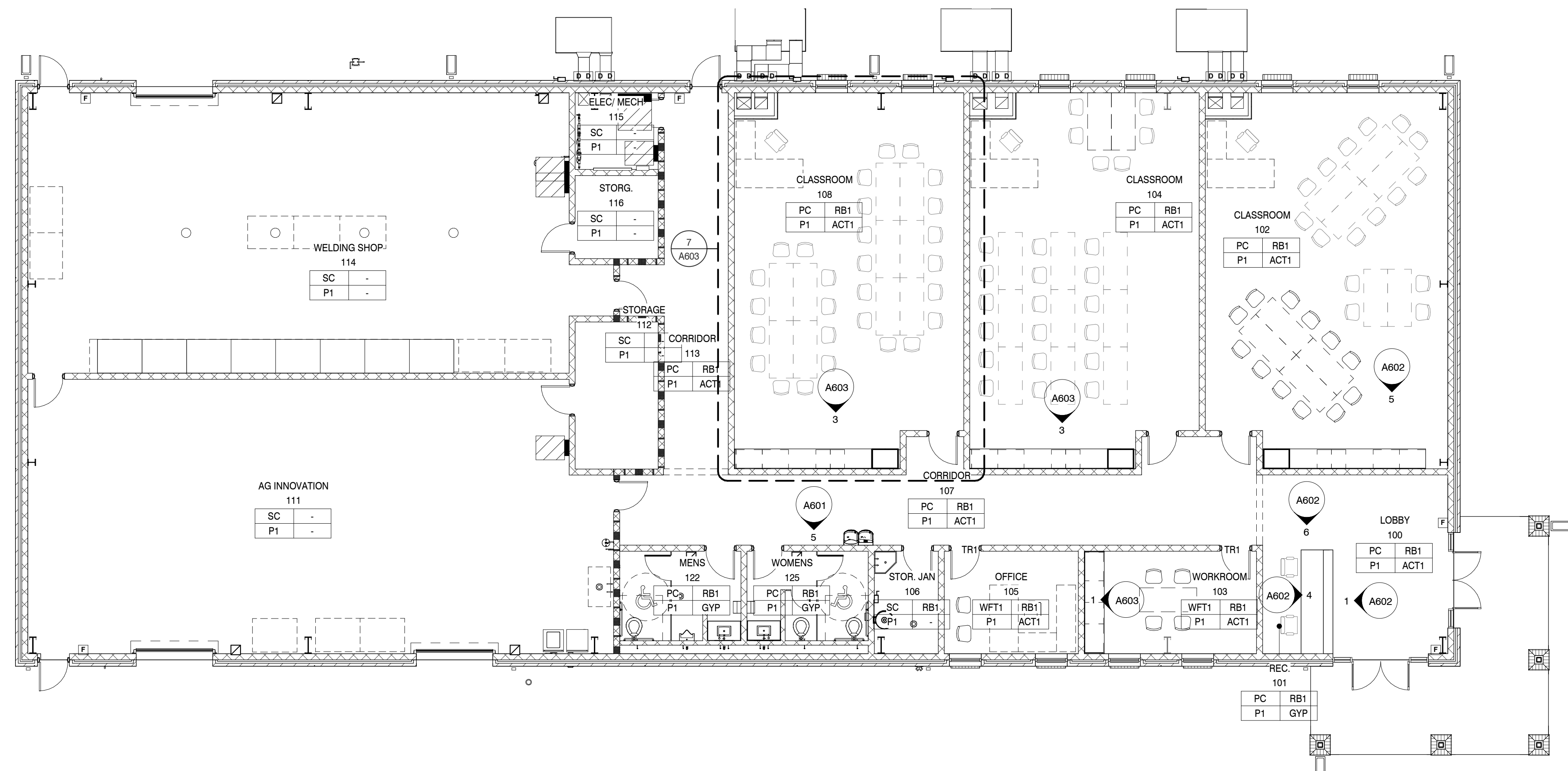
DRAWN BY: MDC

REVIEWED BY: CMG

SHEET TITLE: REFLECTED CEILING PLAN AND DETAILS

SHEET NO.: A701

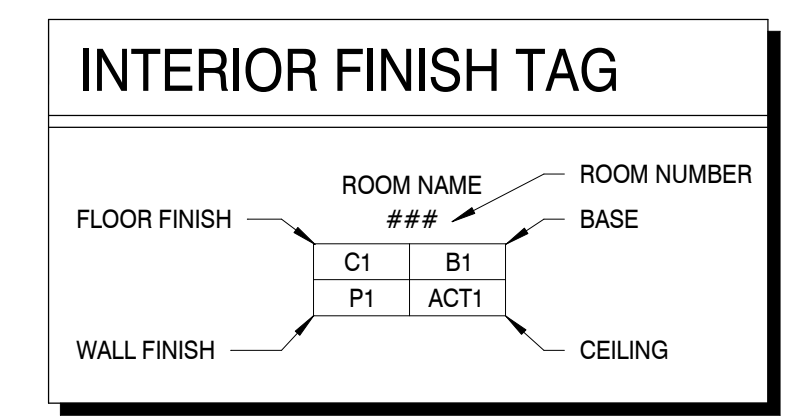
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FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

FINISH SCHEDULE			
CODE	ITEM	MANUFACTURER	DESCRIPTION
NOTE: LOCATE THE FLOOR FINISH CHANGE AT DOOR OPENINGS AT THE CENTERLINE OF THE DOOR LEAF			
WFT1	WOVEN FLOOR TILE	J+J FLOORING	KINETEX, AGAINST THE GRAIN 1840, COLOR: BARLEY 2819, 12X48, PARQUET INSTALLATION
SC	SEALED CONCRETE		GRAY STAIN
PC	POLISHED CONCRETE		GRAY STAIN
WALL BASE			
RB1	RUBBER BASE	BPI	TARKETT, BURNT UMBER 63, 4" STANDARD
RB2	RUBBER BASE	BPI	TARKETT, 4" MILLWORK MONUMENT, MW-63-S4, BURNT UMBER 63 (MILLWORK LOCATIONS)
WALLS			
P1	PAINT	SHERWIN WILLIAMS	SW 7064 PASSIVE (GENERAL WALL PAINT U.N.O.)
P2	PAINT	SHERWIN WILLIAMS	SW 7674 PEPPERCORN (HOLLOW METAL PAINT)
CEILING			
ACT1	ACOUSTICAL CEILING TILE	ARMSTRONG	STYLE: CALLA-2824 SQUARE TEGULAR, SIZE: 24" x 24" x 1", COLOR: WHITE, GRID: 9/16"
GYP	GYP. BD. BULKHEAD	SHERWIN WILLIAMS	PAINT (P1) UNLESS NOTED OTHERWISE
MISC.			
ST1	STAIN	MASONITE	ASPIRO SERIES, SPECIES: WHITE BIRCH, COLOR: COCOA BEAN
TP1	TOILET PARTITION	SCRANTON	HINY HIDERS, FLOOR MOUNTED-OVERHEAD BRACE, ORANGE PEEL-SHALE, CONTINUOUS 71" H STAINLESS STEEL HELIX, OCCUPANCY INDICATOR, STAINLESS STEEL 71" CONTINUOUS STRIKE
PL1	PLASTIC LAMINATE	FORMICA	FOG 961C-58 (COUNTERTOP)
PL2	PLASTIC LAMINATE	FORMICA	STORM 912C-58 (CABINET FRONT/SIDES)
TR1	TRANSITION	BPI	TARKETT, SLT-63-L

- GENERAL INTERIOR NOTES**
- ALL FURR DOWNS TO BE PAINTED P1 UNLESS OTHERWISE NOTED
 - ALL HOLLOW METAL PAINT SHALL HAVE SEMI-GLOSS FINISH
 - CONTRACTOR TO PROVIDE APPROPRIATE TRANSITIONS AS REQUIRED
 - PRIOR TO CONSTRUCTION, CONTRACTOR TO SUBMIT ALL SAMPLES TO ARCHITECT FOR REVIEW AND APPROVAL
 - ALL GYPSUM WALL BOARD TO BE PAINTED
 - CONTRACTOR SHALL PROVIDE APPROPRIATE SEAM SEALANT FOR ALL CARPET TRANSITIONS
 - CONTRACTOR SHALL PROVIDE APPROPRIATE GROUT & SEALANT FOR ALL FLOOR & WALL TILE APPLICATIONS



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PROJECT ADDRESS: 411 DOUGLAS LN CLINTON, TN 37716

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REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: CMG
DRAWN BY: AJA
REVIEWED BY: CMG
SHEET TITLE:

FLOOR FINISH PLAN
SHEET NO.:

A901

GENERAL NOTES

- 1. Structural drawings are intended to be used in close coordination with the civil, architectural, mechanical, plumbing and electrical drawings. Any discrepancies or omissions shall be brought to the attention of the Architect and resolved prior to the beginning of construction.

SUBMITTALS NOTES

- 1. The Structural Engineer's review is only for general conformance with the design concept, the construction documents and specifications. Corrections or comments made on this review do not relieve the contractor from compliance with the plans and specifications. Comments on this review do not authorize an increase in the construction budget.

DESIGN CODES AND SPECIFICATIONS

Table with columns for Building Code, Design Loads, Concrete, Steel, and Masonry, listing various standards like ASCE 7-16, ACI 318-14, etc.

DESIGN LOADS

Table listing design loads for Roof, Live Load, Snow Load, Wind Load, and Seismic Load with corresponding values and units.

FOUNDATION NOTES

- 1. Foundation design parameters have been assumed and should be verified by a Geotechnical Engineer prior to construction.

CONCRETE NOTES

- 1. All concrete elements shall be installed and detailed in accordance with the appropriate ACI documents. Contractor to have copies of the ACI documents at the job site during construction.

REINFORCING STEEL NOTES

- 1. Reinforcing steel and accessories shall be detailed, fabricated and placed in accordance with the latest edition of the ACI Detailing Manual. Provide shop drawings for reinforcing steel prior to fabrication.

STRUCTURAL STEEL NOTES

- 8. Post-installed expansion/screw anchors for connecting steel members to concrete or masonry shall use approved mechanical anchors listed in Post-Installed Anchor Notes.

POST-INSTALLED ANCHOR NOTES

- 1. Post-installed anchors shall be used only where specified on structural drawings.

MASONRY NOTES

- 1. Structural masonry is defined as being either load bearing or serving as the lateral force resisting system. Structural masonry is shown on the structural plans, and is defined in schedules and details on the architectural drawings.

MASONRY NOTES

- 28. Vertical contraction joints in concrete masonry shall be spaced at 25'-0" on center maximum unless noted otherwise on architectural or structural plans (See notes 29 & 30 for reinforcing required at joint). Joints shall be 3/8" wide and shall extend the full height of the wall.

PRE-ENGINEERED METAL BUILDING (PEMB) NOTES

- 1. THE FOOTING SIZES AND REINFORCEMENTS SHOWN ARE ASSUMED AND MAY BE ADJUSTED WHEN THE FINAL REACTIONS ARE FURNISHED BY THE PEMB MANUFACTURER.

Architect: Dierckx, 10/16/2023 09:02, Clinton High School Welding Building 220042-02, Rv03.rvt, 10/16/2023 10:55:31 PM

MBI logo, project information for Clinton High School Welding and Agriculture Building, sheet information, and structural notes S001.

GENERAL SPECIAL INSPECTION NOTES

- Special inspection is defined by the building code as "inspection of construction requiring the expertise of an approved special inspector in order to ensure compliance with this code and the approved construction documents" (see 2018 IBC Chapter 17).
- Definitions of special inspection frequency:
 - Continuous: Special inspection by the special inspector who is present when and where the work to be inspected is being performed.
 - Periodic: Special inspection by the special inspector who is intermittently present where the work to be inspected has been or is being performed.
 - Perform: Tasks to be performed for each welded joint or member or for each bolted connection.
 - Observe: Items to be observed on a random basis. Operations need not be delayed pending these inspections.
 - Document: Create a report documenting that the work has been performed in accordance with the contract documents.
- The owner or the owner's agent shall employ one or more special inspectors to provide inspections during construction on the types of work listed under 2018 IBC Section 1705. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection. The special inspector shall disclose all possible conflicts of interest so that objectivity can be confirmed by the building official and/or the design professional.
- Special inspectors are as defined in specification section 014500. All other testing falls under specification section 014000.
- Report requirements:
 - Special inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the building official, and to the registered design professional in responsible charge. Reports shall indicate that work inspected was done in conformance to the approved construction documents.
 - Discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and to the registered design professional in responsible charge prior to the completion of that phase of the work.
 - A final report documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon by the permit applicant and the building official prior to the start of the work.
- In the event that the project locale does not require a building official to be involved, the owner or owner's agent shall review the special inspection requirements with the design professional to determine which items for special inspection are mandatory.
- Special inspection items listed in the following tables are required if the inspection item pertains to the project.

STATEMENT OF SPECIAL INSPECTIONS

Project: CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING
 Location: 411 DOUGLAS LN, CLINTON, TN 37716
 Owner: ANDERSON CO. SCHOOLS
 Design Professional: W. NICHOLAS DEAL, P.E., S.E.

This Statement of Special Inspections is submitted in accordance with Section 1704.3 of the 2018 IBC. It includes a Schedule of Special Inspection Services applicable to the above referenced Project as well as the identity of the individuals, agencies, or firms intended to be retained for conducting these inspections. If applicable, it includes Requirements for Seismic Resistance and/or Requirements for Wind Resistance.

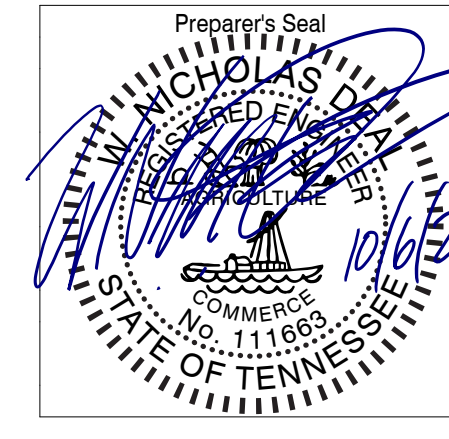
Are requirements for Seismic Resistance included in the Statement of Special Inspections? No
 Are requirements for Wind Resistance included in the Statement of Special Inspections? No

The Special Inspector(s) shall keep records of all inspections and shall furnish interim inspection reports to the Building Official and to the Registered Design Professional in Responsible Charge at a frequency agreed upon by the Design Professional and the Building Official prior to the start of work. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge prior to completion of that phase of work. A Final Report of Special Inspections documenting required special inspections and corrections of any discrepancies noted in the inspections shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge at the conclusion of the project.

Frequency of interim report submittals to the Building Official and Registered Design Professional in Responsible Charge shall be as follows:

Building Official: Monthly
 Design Professional in Responsible Charge: Bi-weekly

Statement of Special Inspections Prepared by:
 W. NICHOLAS DEAL, P.E., S.E.
 Type or print name



Signature _____ Date _____
 Building Official's Acceptance:
 Signature _____ Date _____

CONCRETE CONSTRUCTION				
Required	Task	Extent	Description	Service
YES	1. Reinforcing steel, including prestressing tendons	Periodic	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.	Field inspection
YES	2. Anchors cast in concrete	Periodic	Verify prior to placing concrete that cast in anchors have proper embedment, spacing and edge distance.	Field inspection
YES	3. Post-installed anchors or dowels	Periodic	Inspect all post-installed anchors/dowels as required by the approved ICC-ES report.	Field inspection and/or anchor capacity testing
YES	4. Use of required mix design	Periodic	Verify that all mixes used comply with the approved construction documents.	Submittal review and field verification
YES	5. Concrete slump, air content, and temperature	Continuous	At the time fresh concrete is sampled to fabricate specimens for strength test, verify these tests are performed.	Field inspection
YES	6. Concrete & shotcrete placement	Continuous	Verify proper application techniques are used during concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.	Field inspection
YES	7. Curing temperature and techniques	Periodic	Inspect curing, cold weather protection and hot weather protection procedures	Field inspection
NO	8. Pre-stressed concrete	Continuous	Verify application of prestressing forces and grouting of bonded prestressing tendons in the seismic force-resisting system.	Field inspection
NO	9. Erection of precast concrete	Periodic	Verify that all precast elements are lifted, assembled and braced in accordance with the approved construction documents.	Field inspection
YES	10. In-situ concrete strength verification	Periodic	Prior to the removal of shores and forms or the stressing of post-tensioned tendons, verify that adequate strength has been achieved.	Field inspection
YES	11. Formwork	Periodic	Inspect the forms to ensure that they are placed plumb and conform to the shapes, lines, and dimensions of the members as required by the approved construction documents.	Field inspection
NO	12. Reinforcement complying with ASTM A615 in special moment frames, special structural walls and coupling beams (only when Special Inspections for seismic resistance is required)	Periodic	Verify that ASTM A615 reinforcing steel used in these areas complies with ACI 318, 21.1.5.2 by means of certified mill test reports. If this reinforcing steel is to be welded, chemical tests shall be performed in accordance with ACI 318: 3.5.2.	Field inspection
NO	13. Reinforcement placement within progressive collapse resisting system (only when Special Inspections for progressive collapse resistance is required)	Continuous	Visually inspect reinforcing steel placement with a particular emphasis on reinforcing steel anchorages, laps and other details within the progressive collapse resisting system, including horizontal tie force elements, vertical tie force elements and bridging elements.	Field inspection

STRUCTURAL STEEL CONSTRUCTION				
Required	Task	Extent	Description	Service
YES	1. Verify welding procedure specifications (WPS) and consumable certificates	Perform		Submittal review
YES	2. Material identification (type/grade)	Observe		Shop and field inspection
YES	3. Welder identification system	Observe	A system shall be maintained by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress dye type.	Submittal review
YES	4. Fit-up of groove welds (including joint geometry)	Observe	Verify joint preparation, dimensions (alignment, root opening, root face, bevel), cleanliness (condition of surface steel), tacking (tack weld quality and location), and backing type and fit (if applicable).	Shop and field inspection
YES	5. Configuration and finish of access	Observe		Shop and field inspection
YES	6. Fit-up of fillet welds	Observe	Verify dimensions (alignment, gaps at root), cleanliness (condition of steel surfaces), and tacking (tack weld quality and location).	Shop and field inspection

During Welding (AISC 360-16: Table N5.4.2; AISC 341-16: Table J6-2)				
Required	Task	Extent	Description	Service
YES	1. Use of qualified welders	Observe		Shop and field inspection
YES	2. Control and handling of welding consumables	Observe	Verify packaging and exposure control.	Shop and field inspection
YES	3. No welding over cracked tack welds	Observe		Shop and field inspection
YES	4. Environmental conditions	Observe	Verify wind speed within limits and precipitation and temperature criteria being met.	Shop and field inspection
YES	5. WPS followed	Observe	Verify settings on weld equipment, travel speed, selecting welding materials, shielding gas type/flow rate, preheat applied, interpass temperature maintained (min./max.), proper position (F, V, H, OH), and intermix of filler metals avoided unless approved.	Submittal review with shop and field verification
YES	6. Welding techniques	Observe	Verify interpass and final cleaning, each pass within profile limitations, and each pass meets quality requirements.	Shop and field inspection
YES	7. Placement and installation of steel headed stud anchors	Perform		Field inspection

After Welding (AISC 360-16: Table N5.4.3; AISC 341-16: Table J6-3)				
Required	Task	Extent	Description	Service
YES	1. Welds cleaned	Observe		Shop and field inspection
YES	2. Size, length and location of welds	Perform		Shop and field inspection
YES	3. Welds meet visual acceptance criteria	Perform	Verify crack prohibition, weld/base-metal fusion, crater cross section, weld profiles, weld size, undercut, and porosity.	Shop and field inspection
YES	4. Arc strikes	Perform		Shop and field inspection
YES	5. k-area	Perform	When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3" of the weld.	Shop and field inspection
YES	6. Backing removed and weld tabs removed (if required)	Perform / Document		Shop and field inspection
YES	7. Backing removed, weld tabs removed and finished, and fillet welds added (if required)	Perform / Document		Shop and field inspection
YES	8. Placement of reinforcing or contouring fillet welds (if required)	Perform / Document		Shop and field inspection
YES	9. Repair activities	Perform		Shop and field inspection
YES	10. Document acceptance or rejection of welded joint or member	Perform		Shop and field inspection

After Bolting (AISC 360-16: Table N5.6.3; AISC 341-16: Table J7-3)				
Required	Task	Extent	Description	Service
YES	1. Document acceptance or rejection of bolted connections	Perform		Field inspection

Other Steel Inspections (AISC 360-16: N5.8)				
Required	Task	Extent	Description	Service
YES	1. Anchor rods and other embedments supporting structural steel	Perform	Verify the diameter, grade, type and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete.	Field inspection
YES	2. Fabricated steel or erected steel frame	Observe	Verify compliance with the details shown on the construction documents, such as braces, stiffeners, member locations and proper application of joint details at each connection.	Field inspection

MASONRY CONSTRUCTION - LEVEL B				
Required	Task	Extent	Description	Service
YES	1. Review material certificates, mix designs, test results and construction procedures	Periodic	Verify that materials conform to the requirements of the approved construction documents.	Submittal review

As Construction Begins (TMS 402/602-16: Table 4)				
Required	Task	Extent	Description	Service
YES	1. Proportions of site-prepared mortar	Periodic	Verify that mortar is of the type and color specified on the construction documents, that it conforms to ASTM C270, and that it is mixed in accordance with TMS 602: 2.1, 2.6A, and 2.6C.	Submittal review and field verification
NO	2. Grade and size of prestressing tendons and anchorages	Periodic	Verify that prestressing tendons comply with TMS 602: 2.4B and that anchorages, couplers, and end blocks comply with 2.4H.	Field inspection
YES	3. Grade, type, and size of reinforcement, connectors, and prestressing tendons and anchorages	Periodic	Verify that reinforcement is placed in accordance with TMS 602: 3.4. Prestressing tendons shall be placed per 3.6A.	Field inspection
NO	4. Prestressing technique	Periodic	Verify that prestressing technique complies with TMS 602: 3.6B.	Field inspection
NO	5. Properties of thin-bed mortar for AAC masonry	Continuous / Periodic	Verify that mortar complies with TMS 602: 2.1 C.1. Continuous inspection for the first 5000 sf of wall and periodic for all following applications.	Field inspection
NO	6. Sample panel construction	Periodic	Verify that sample panels contain full range of unit and mortar color. Each procedure should be demonstrated on sample panel per TMS 602: 1.6D.	Field inspection

Prior to Grouting (TMS 402/602-16: Table 4)				
Required	Task	Extent	Description	Service
YES	1. Grout space	Periodic	Verify that grout space is free of mortar droppings, debris, loose aggregate, and other deleterious materials and that cleanouts are provided per TMS 602: 3.2D and 3.2F.	Field inspection
NO	2. Placement of prestressing tendons and anchorages.	Periodic	Verify that provided reinforcement conforms to TMS 602 2.4. Confirm tolerances for prestressed tendon placement and forces meet TMS 602: 3.6.	Field inspection
YES	3. Placement of reinforcement, connectors, and anchor bolts.	Periodic	Verify reinforcement was placed in grout space prior to grouting. Confirm reinforcement, wall ties, and anchors are sized, selected, and located as specified in the project drawings. TMS 602: 3.2E and 3.4.	
YES	4. Proportions of site-prepared grout and prestressing grout for bonded tendons	Periodic	Verify that grout is proportioned per ASTM C476 and has a slump between 8" to 11". Self-consolidated grout shall not be proportioned onsite.	Field inspection

During Construction (TMS 402/602-16: Table 4)				
Required	Task	Extent	Description	Service
YES	1. Materials and procedures with the approved submittals	Periodic	Ensure materials are used in compliance with construction procedures outlined in TMS 602: 1.5	Field inspection
YES	2. Placement of masonry units and mortar joint construction	Periodic	Verify bed joints are constructed in compliance with TMS 602: 3.3B	Field inspection
YES	3. Size and location of structural members	Periodic	Verify the locations of structural elements with respect to the approved construction documents and confirm that tolerances meet the requirements of TMS 602: 3.3F.	Field inspection
YES	4. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction.	Periodic	Verify that correct anchorages and connections are provided per the approved construction documents and TMS 402: 1.2.1, 6.2.1, and 6.3.1.	Field inspection
NO	5. Welding of reinforcement	Continuous	Verify welded reinforcement meets the requirements of TMS 402: 6.1.6.1.2.	Field inspection
YES	6. Preparation, construction, and protection of masonry during cold weather (<40°F) or hot weather (>90°F)	Periodic	Verify that cold weather construction is performed in accordance with TMS 602: 1.8C and hot weather construction per TMS 602: 1.8D.	Field inspection
NO	7. Application and measurement of prestressing force	Continuous	Verify the proper prestressing force is applied per TMS 602: 3.6B.	Field inspection
YES	8. Placement of grout and prestressing grout for bonded tendons in compliance	Continuous	Verify placement of grout is done in accordance with TMS 602: 3.5 and placement of grout for bonded tendons is in accordance with TMS 602: 3.6C.	Field inspection
NO	9. Placement of AAC masonry units and construction of thin-bed mortar joints	Continuous / Periodic	Verify that mortar is placed in accordance with TMS602: 3.3B.9 and 3.3F.1.b. Continuous inspection for the first 5000 sf of wall and periodic for all following applications.	Field inspection
YES	10. Observation of grout specimens, mortar specimens, and/or prisms	Periodic	Confirm that specimens/prisms are performed as required by TMS 602: 1.4.	Field inspection

SOILS CONSTRUCTION				
Soil (2018 IBC: Table 1705.6)				
Required	Task	Extent	Description	Service
YES	1. Foundation bearing capacity	Periodic	Verify the materials below foundations are adequate to achieve the design bearing capacity.	Field inspection
YES	2. Excavations	Periodic	Verify the excavations are extended to the proper depth and have reached proper material.	Field inspection
YES	3. Perform classification and testing of compacted fill materials	Periodic		Field inspection
YES	4. Compacted fill material	Continuous	Verify the use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	Field inspection
YES	5. Subgrade	Periodic	Prior to placement of compacted fill, observe sub-grade and verify that the site has been properly prepared.	Field inspection



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CONSULTANT
 STRUCTURAL ENGINEER

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PROJECT INFORMATION

PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:
 411 DOUGLAS LN
 CLINTON, TN 37716

PROJECT NO.: 220042-02

- ACTIVE DESIGN PHASE**
- FOR REVIEW ONLY
 - FOR PERMITTING ONLY
 - SCHEMATIC DESIGN
 - DESIGN DEVELOPMENT
 - CONSTRUCTION BIDDING
 - CONSTRUCTION DOCUMENTS
 - AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

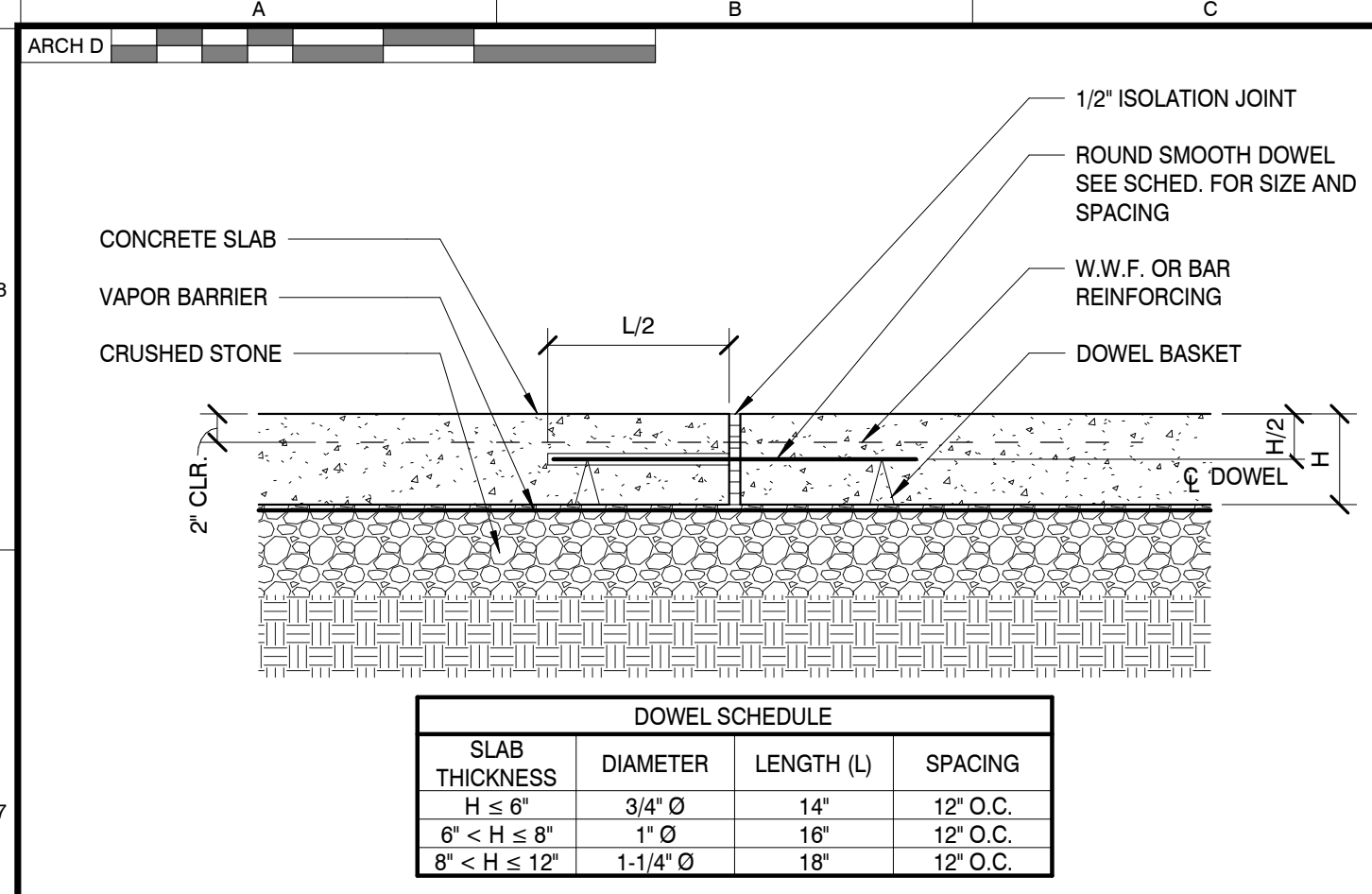
KEY PLAN

SHEET INFORMATION
 SHEET ISSUED: 10/06/2023
 DESIGNED BY: ZSP
 DRAWN BY: TLT
 REVIEWED BY: WND
 SHEET TITLE:

SPECIAL INSPECTIONS
 SHEET NO.:

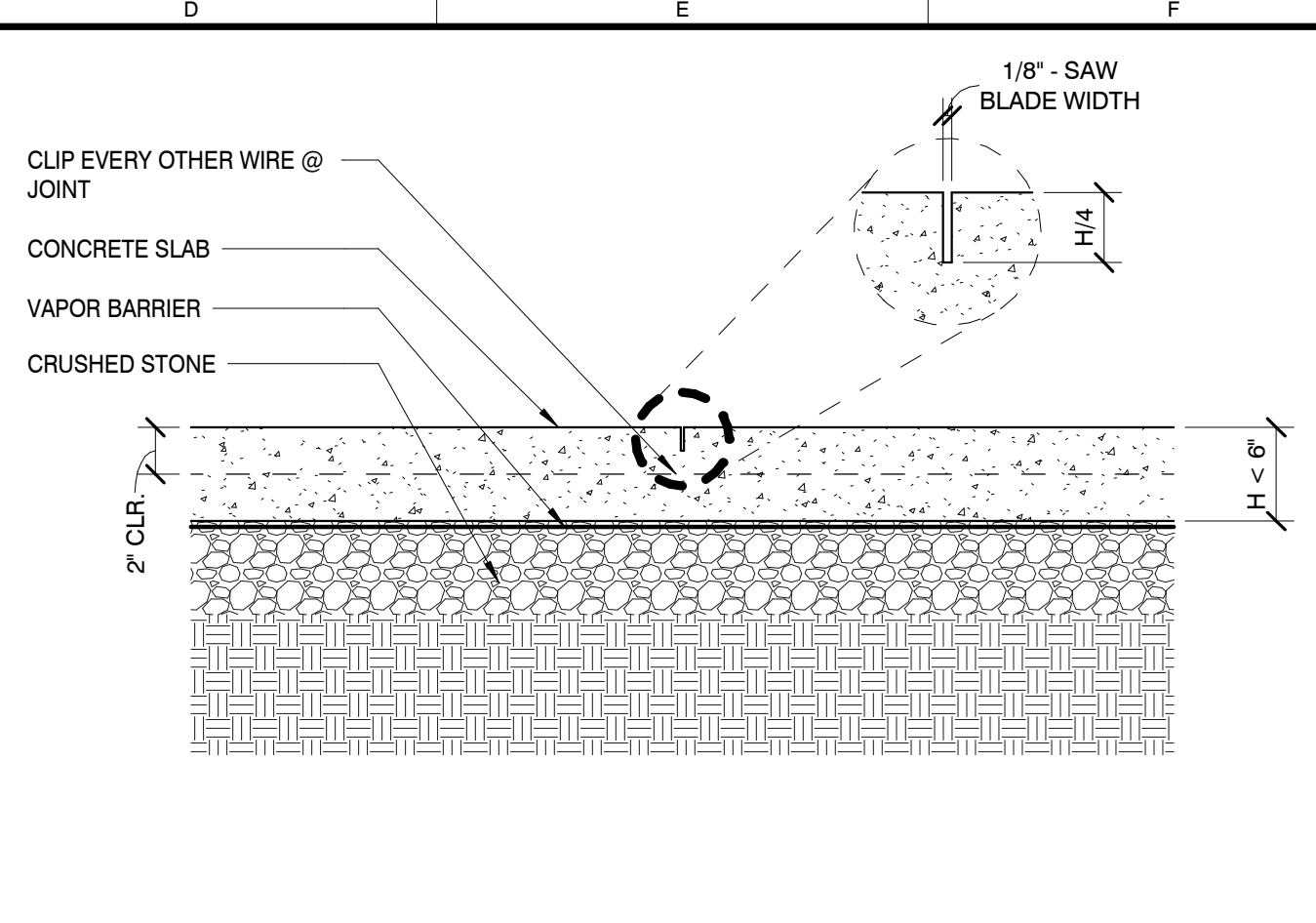
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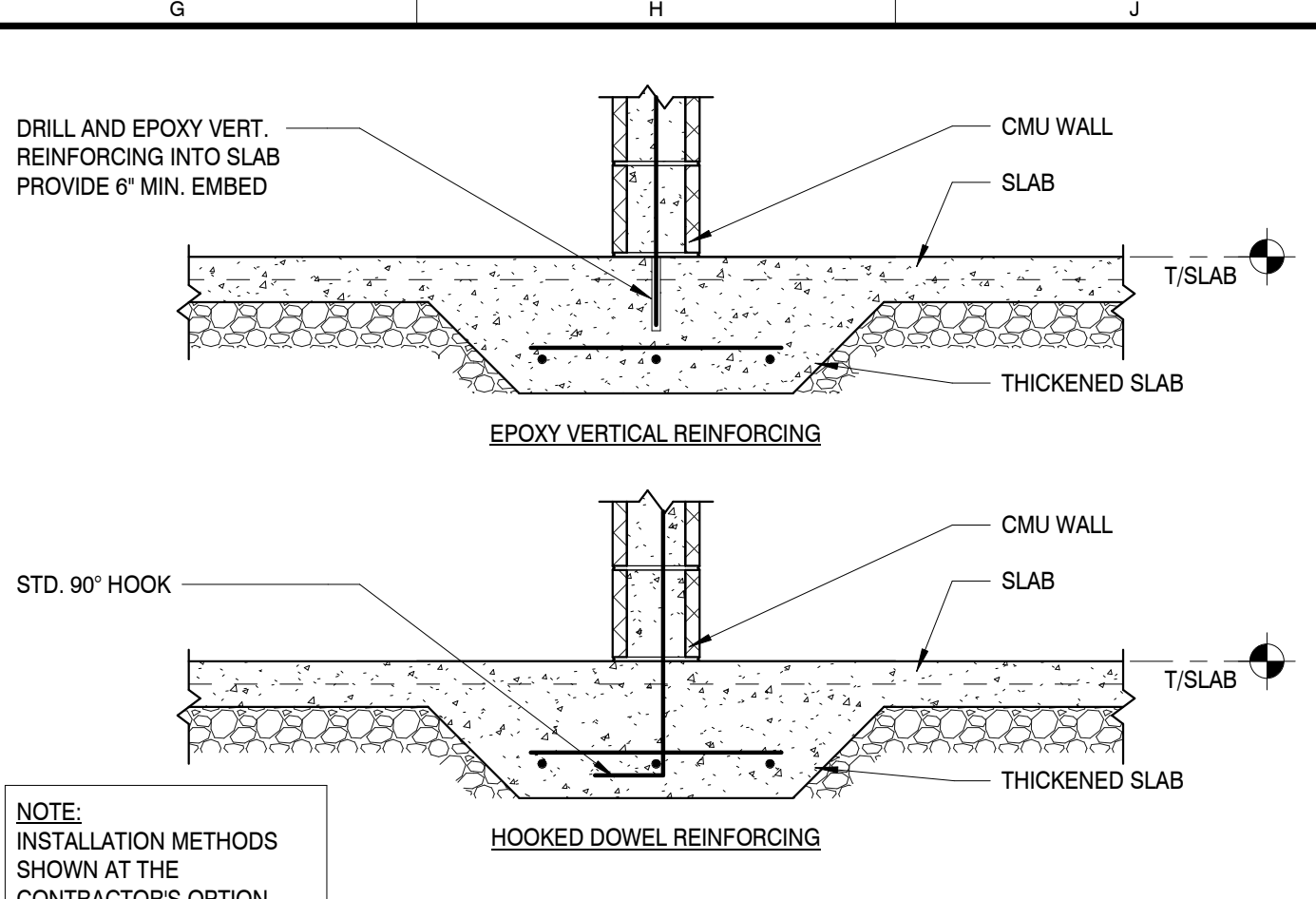


DOWEL SCHEDULE			
SLAB THICKNESS	DIAMETER	LENGTH (L)	SPACING
H ≤ 6"	3/4" Ø	14"	12" O.C.
6" < H ≤ 8"	1" Ø	16"	12" O.C.
8" < H ≤ 12"	1-1/4" Ø	18"	12" O.C.

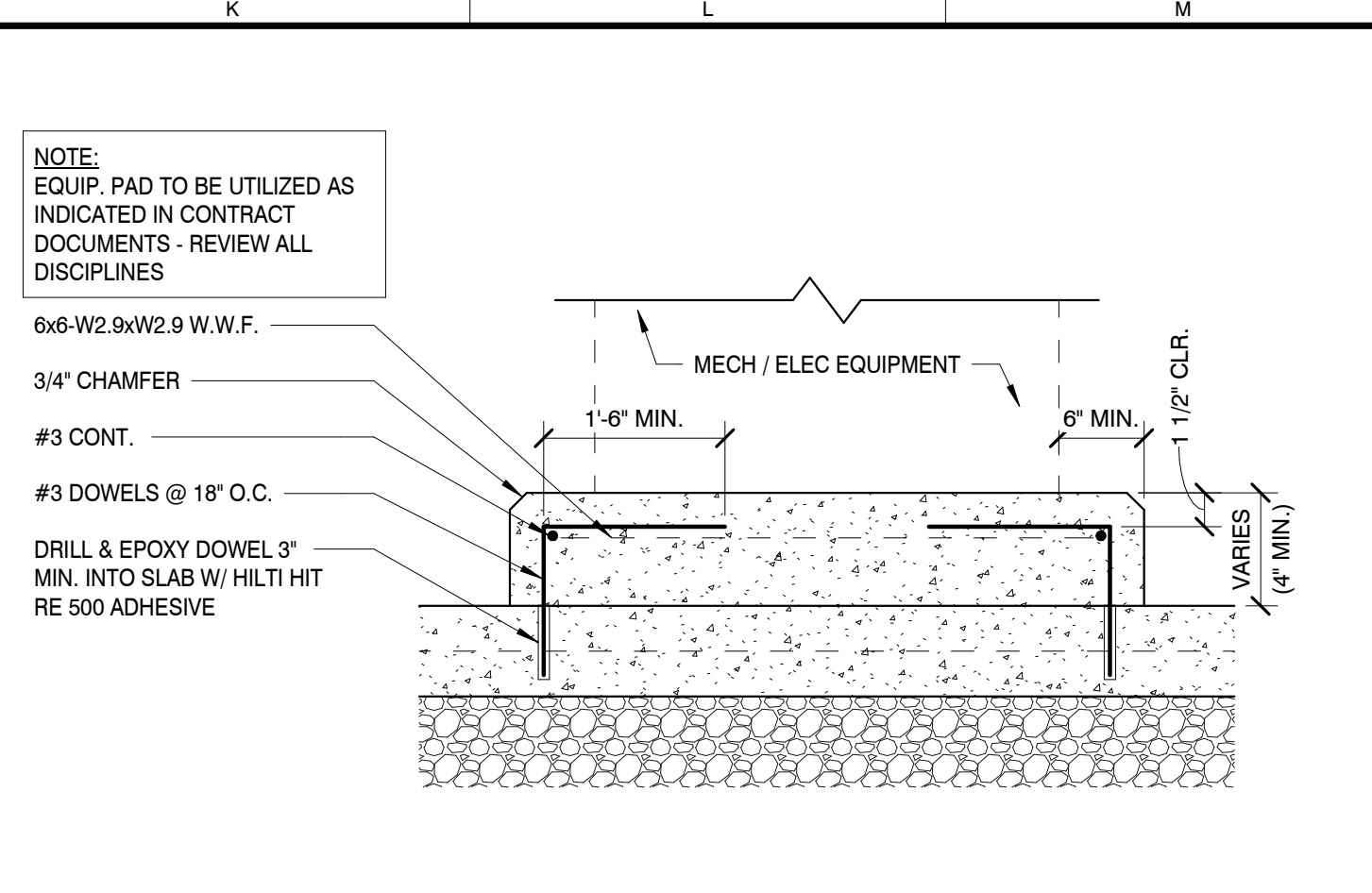
CONSTRUCTION JOINT DETAIL 1
SCALE: 1 1/2" = 1'-0"



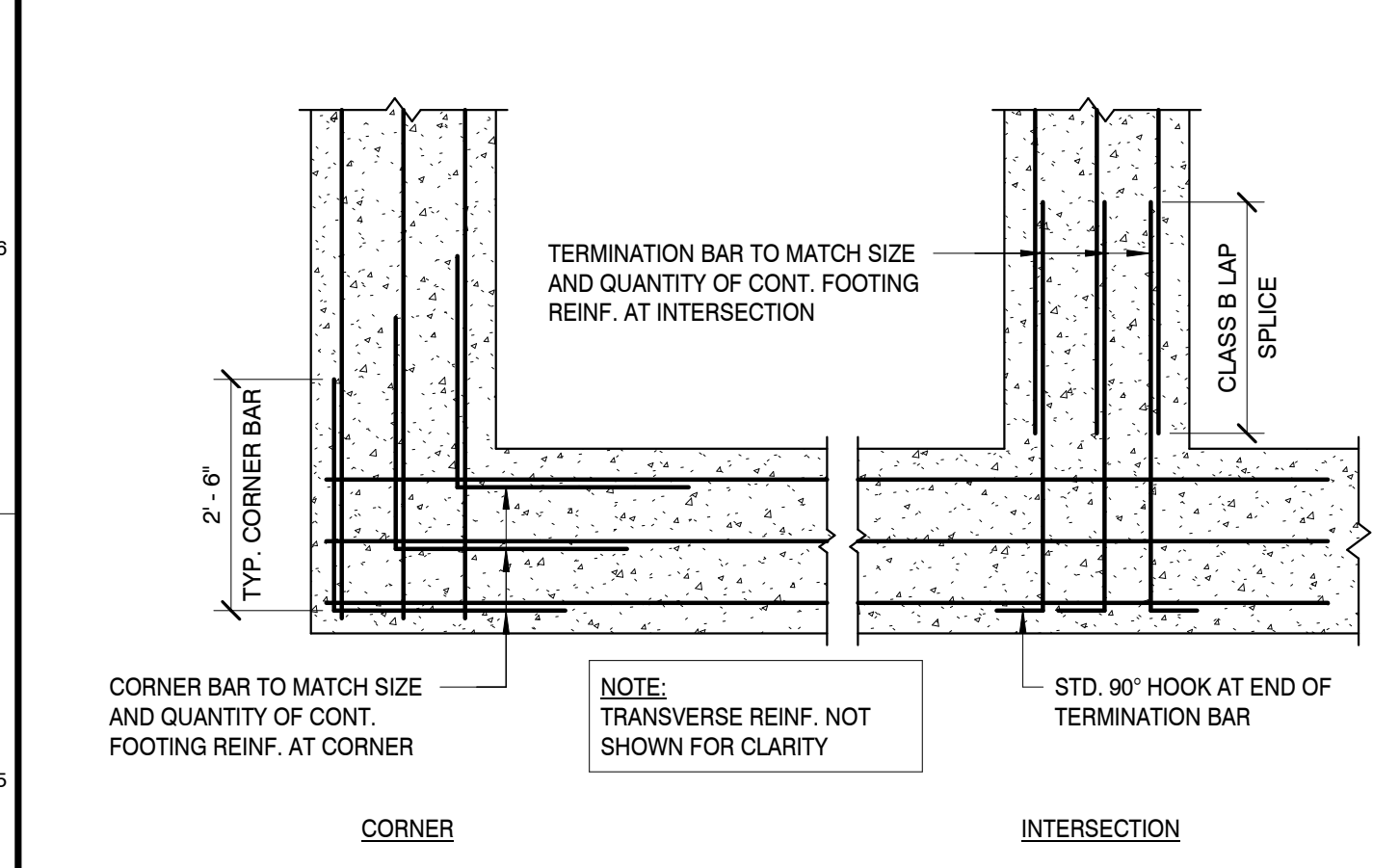
CONTRACTION JOINT DETAIL 2
SCALE: 1 1/2" = 1'-0"



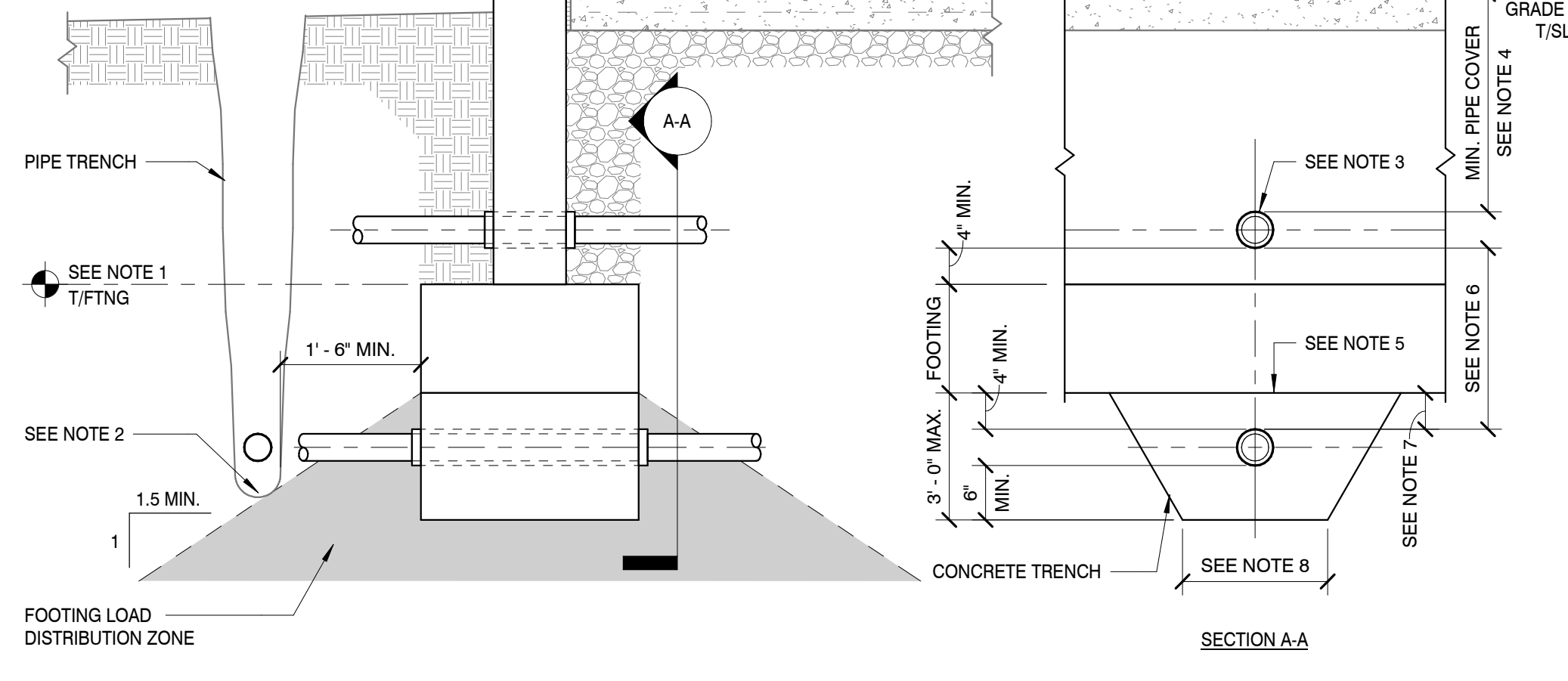
THICKENED SLAB DETAIL 3
SCALE: 3/4" = 1'-0"



INTERIOR EQUIP. PAD DETAIL 4
SCALE: 1 1/2" = 1'-0"



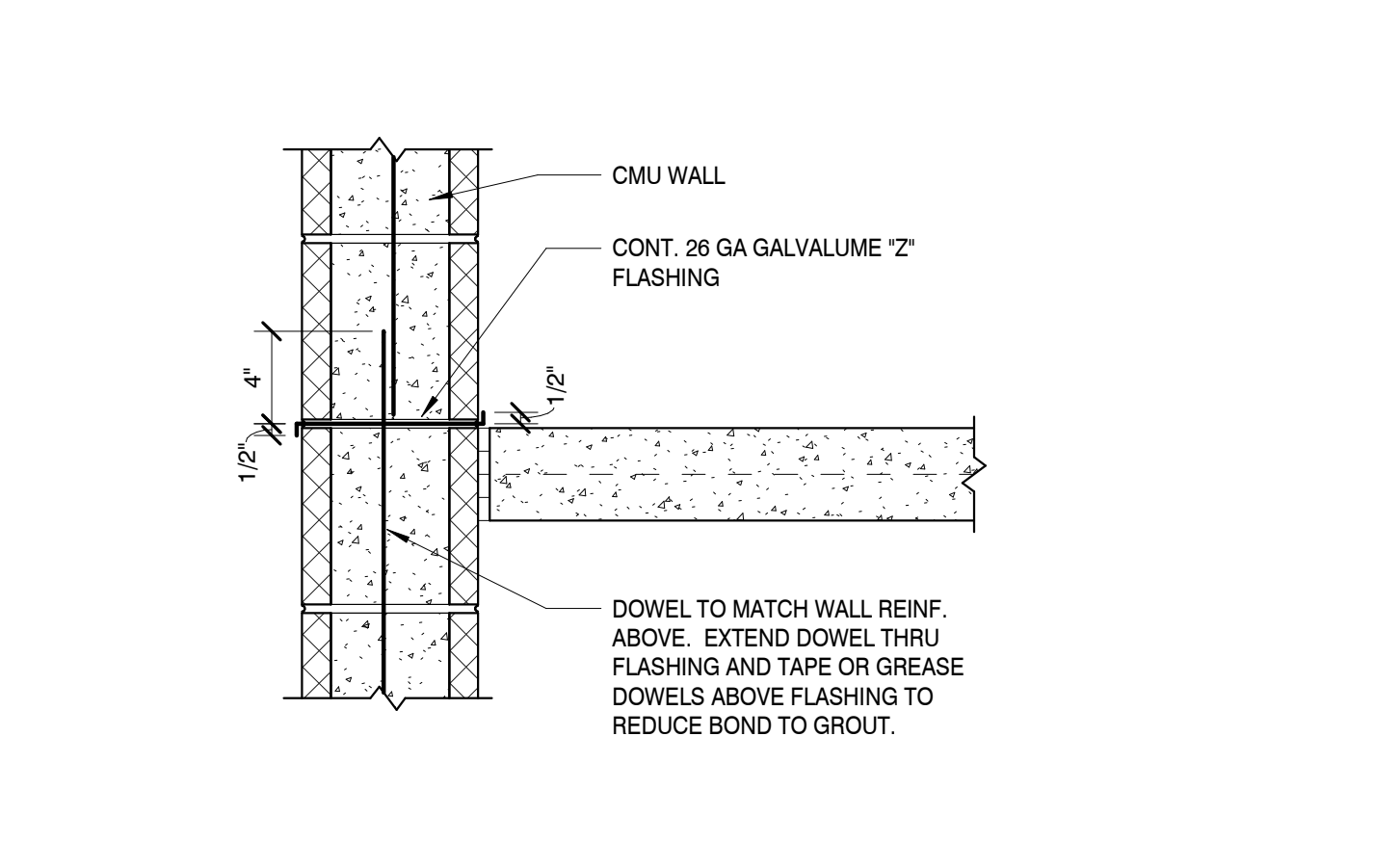
TYP. WALL FOOTING REINF. LAYOUT 5
SCALE: 1/2" = 1'-0"



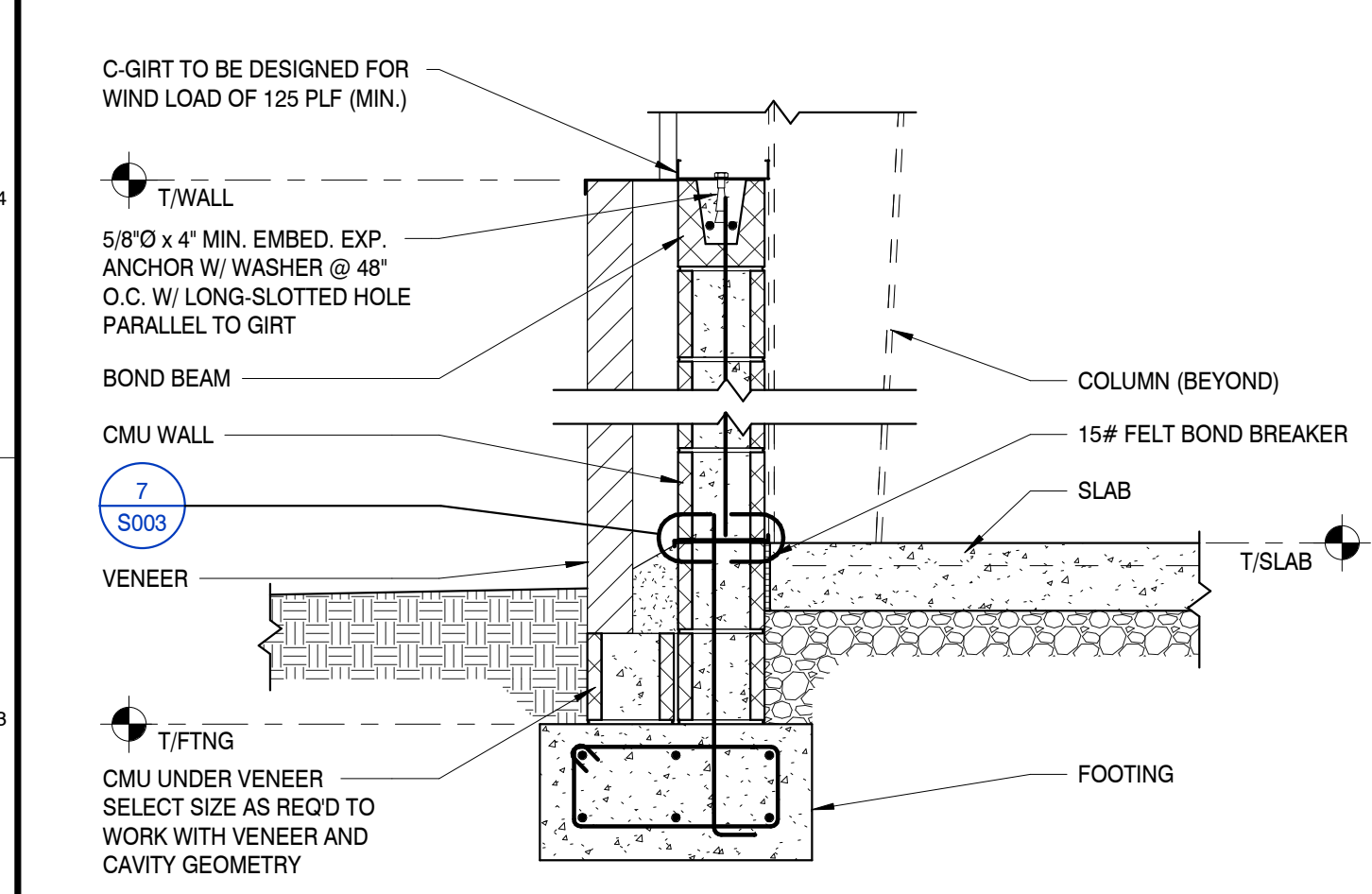
TYPICAL PIPE AND TRENCH LOCATIONS AT FOUNDATION 6
SCALE: 3/4" = 1'-0"

NOTES:

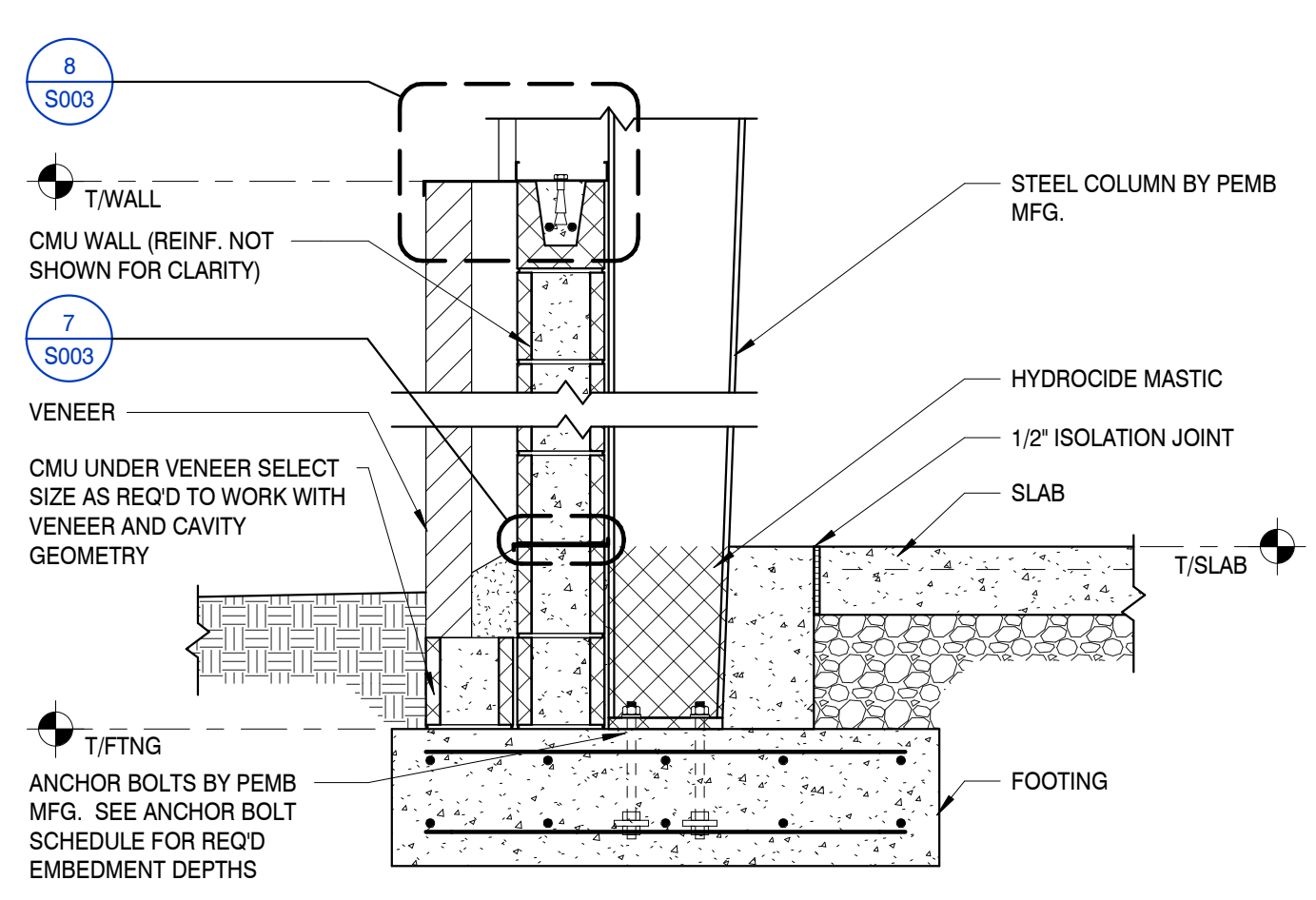
1. STEP FOOTING AS REQUIRED TO ALLOW TRANSVERSE PIPES TO CROSS ABOVE OR BELOW FOOTING AS SHOWN.
2. FOR PIPES RUNNING PARALLEL TO FOOTING, FOOTING DEPTH AND PIPE LOCATION SHALL BE COORDINATED SO THAT THE PIPE TRENCH IS NOT LOCATED WITHIN THE FOOTING LOAD DISTRIBUTION ZONE THAT EXTENDS OUT FROM THE BOTTOM EDGE OF THE FOOTING.
3. PROVIDE PIPE SLEEVE AND COMPRESSIBLE FILLER MATERIAL AS REQUIRED TO ACCOMMODATE 1" SETTLEMENT UNLESS NOTED OTHERWISE IN GEOTECHNICAL REPORT AT ALL PIPE PENETRATIONS.
4. TRANSVERSE PIPE PENETRATIONS MAY BE PLACED BETWEEN THE TOP OF FOOTING AND THE SLAB ON GRADE THROUGH THE STEM WALL PROVIDED MINIMUM PIPE COVER IS MAINTAINED.
5. TRENCH AND FOOTING MAY BE POURED MONOLITHICALLY AT THE CONTRACTOR'S OPTION.
6. TRANSVERSE PIPES SHALL NOT CROSS THROUGH FOOTING OR AREA 4" ABOVE AND BELOW FOOTING.
7. IF CROWN OF PIPE IS LOCATED GREATER THAN 4'-0" BELOW BOTTOM OF FOOTING, NO CONCRETE TRENCH IS REQUIRED.
8. TRENCH WIDTH SHALL BE EQUAL TO FOOTING WIDTH ABOVE.



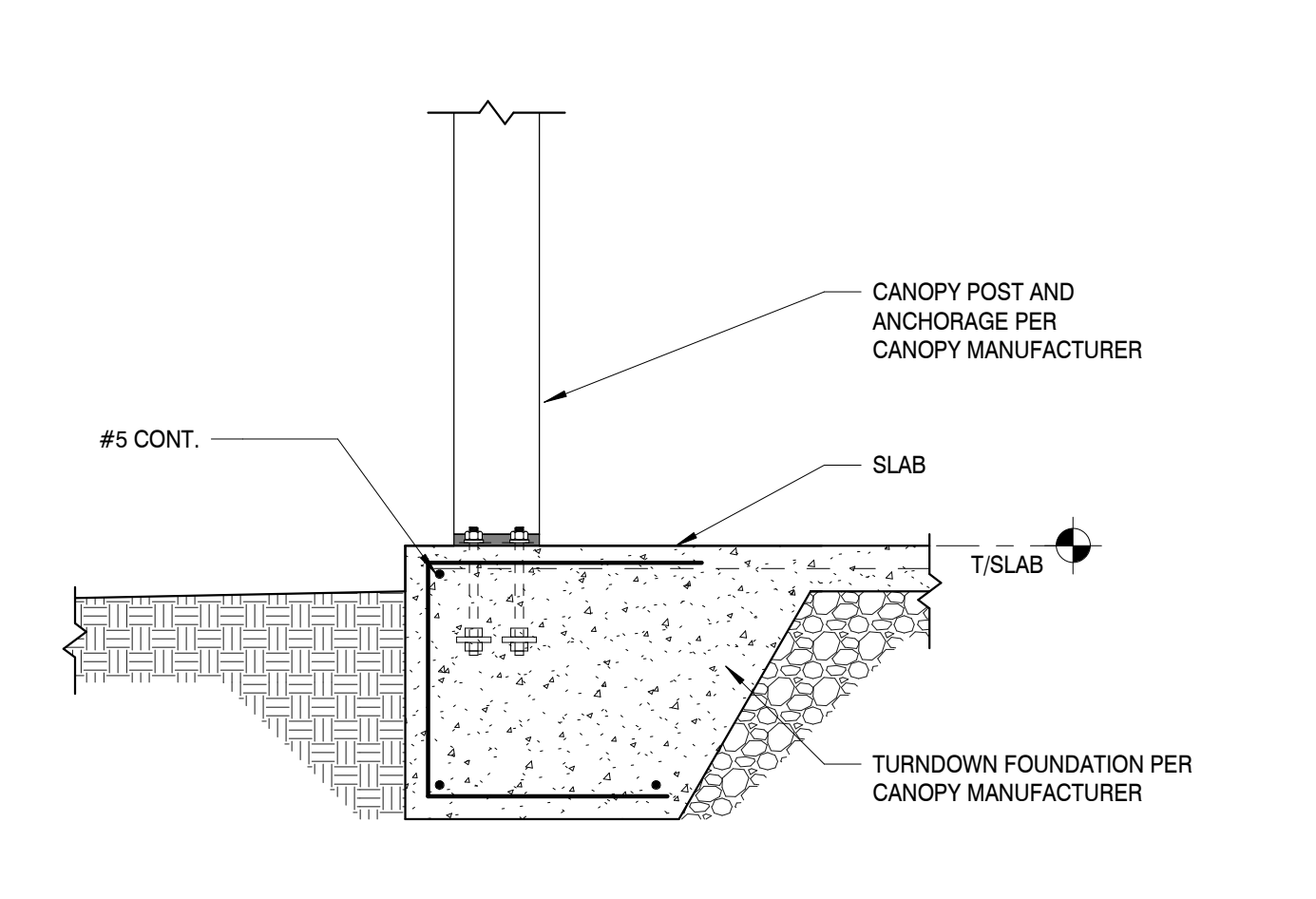
HORIZ. CONTROL JOINT DETAIL 7
SCALE: 1 1/2" = 1'-0"



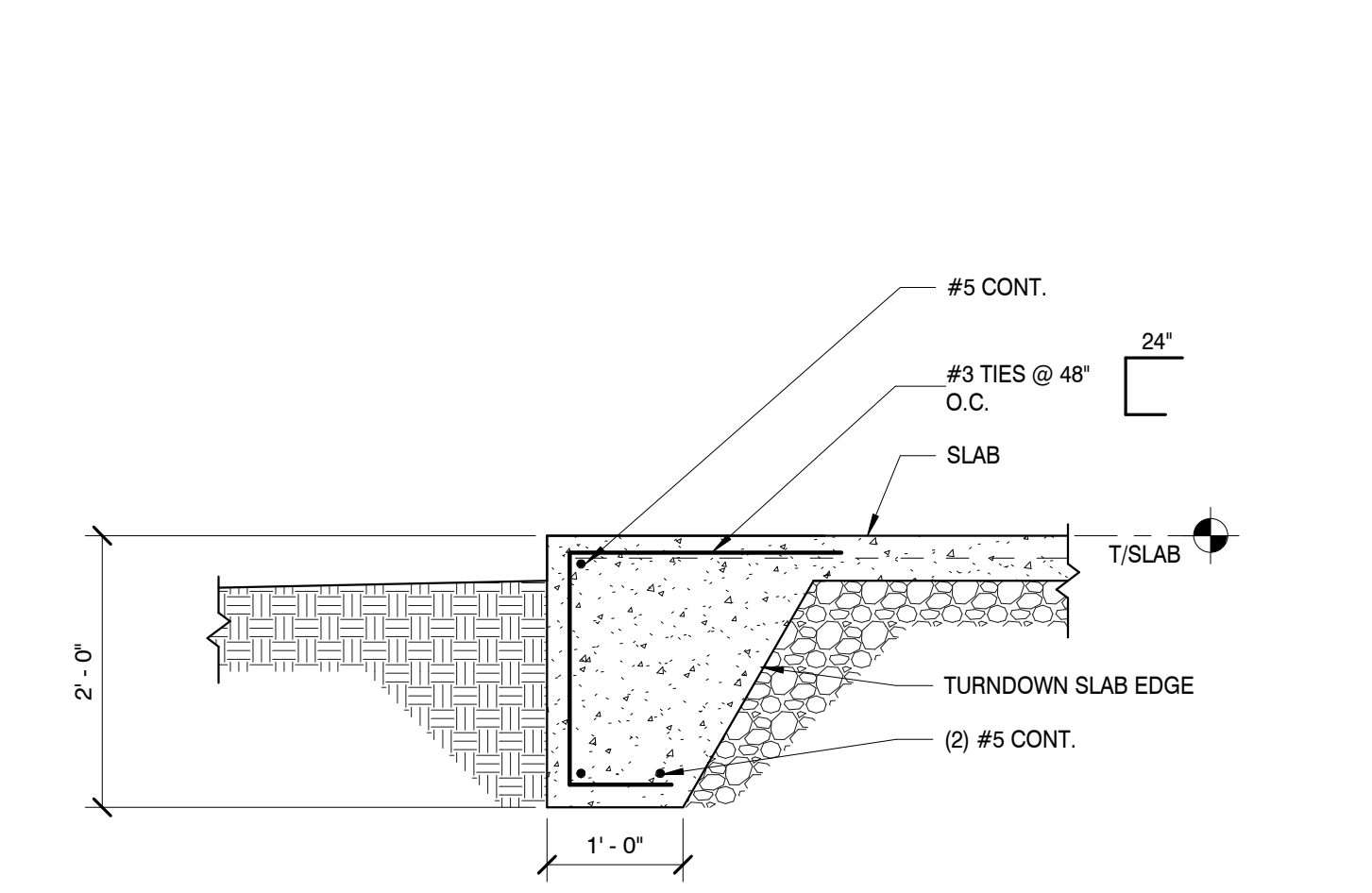
FOUNDATION DETAIL 8
SCALE: 3/4" = 1'-0"



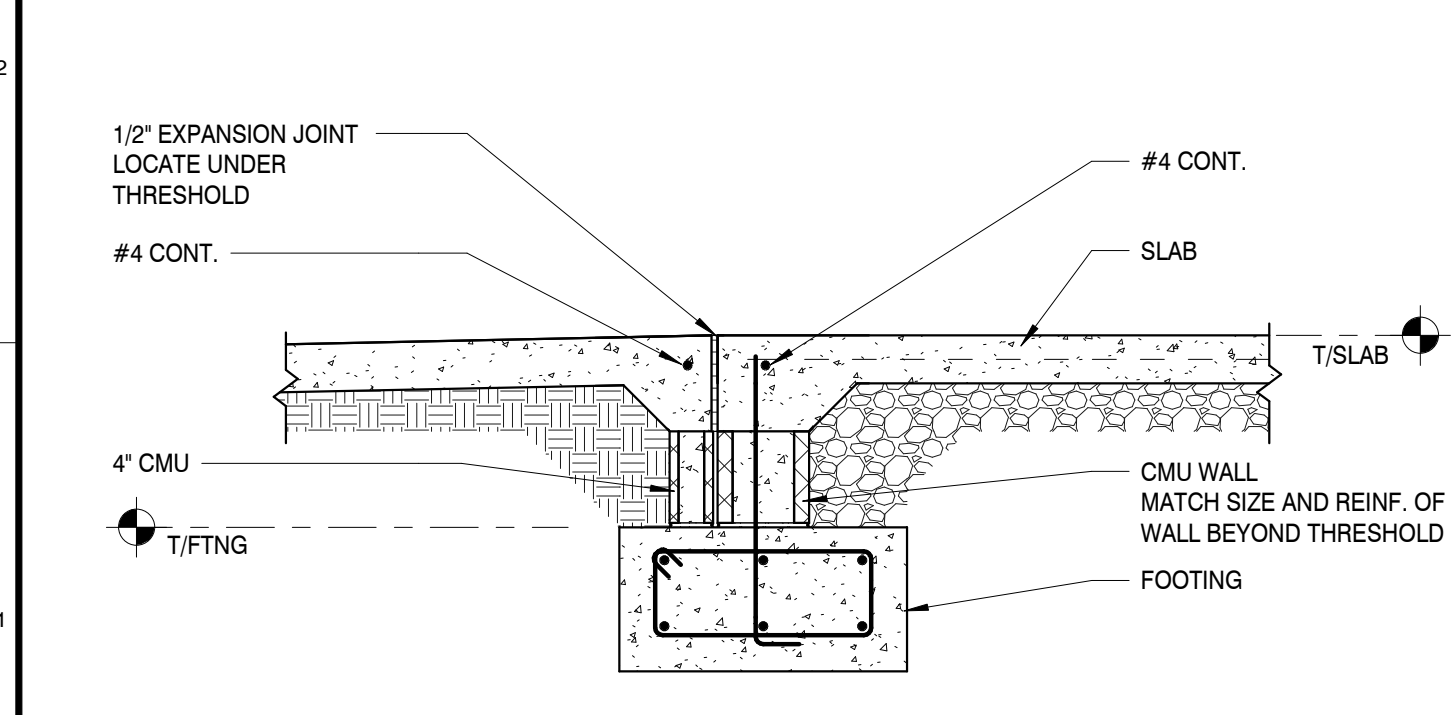
FOUNDATION DETAIL 9
SCALE: 3/4" = 1'-0"



TURNDOWN SLAB DETAIL 10
SCALE: 3/4" = 1'-0"



TURNDOWN SLAB DETAIL 11
SCALE: 3/4" = 1'-0"



THRESHOLD DETAIL 12
SCALE: 3/4" = 1'-0"

MBI

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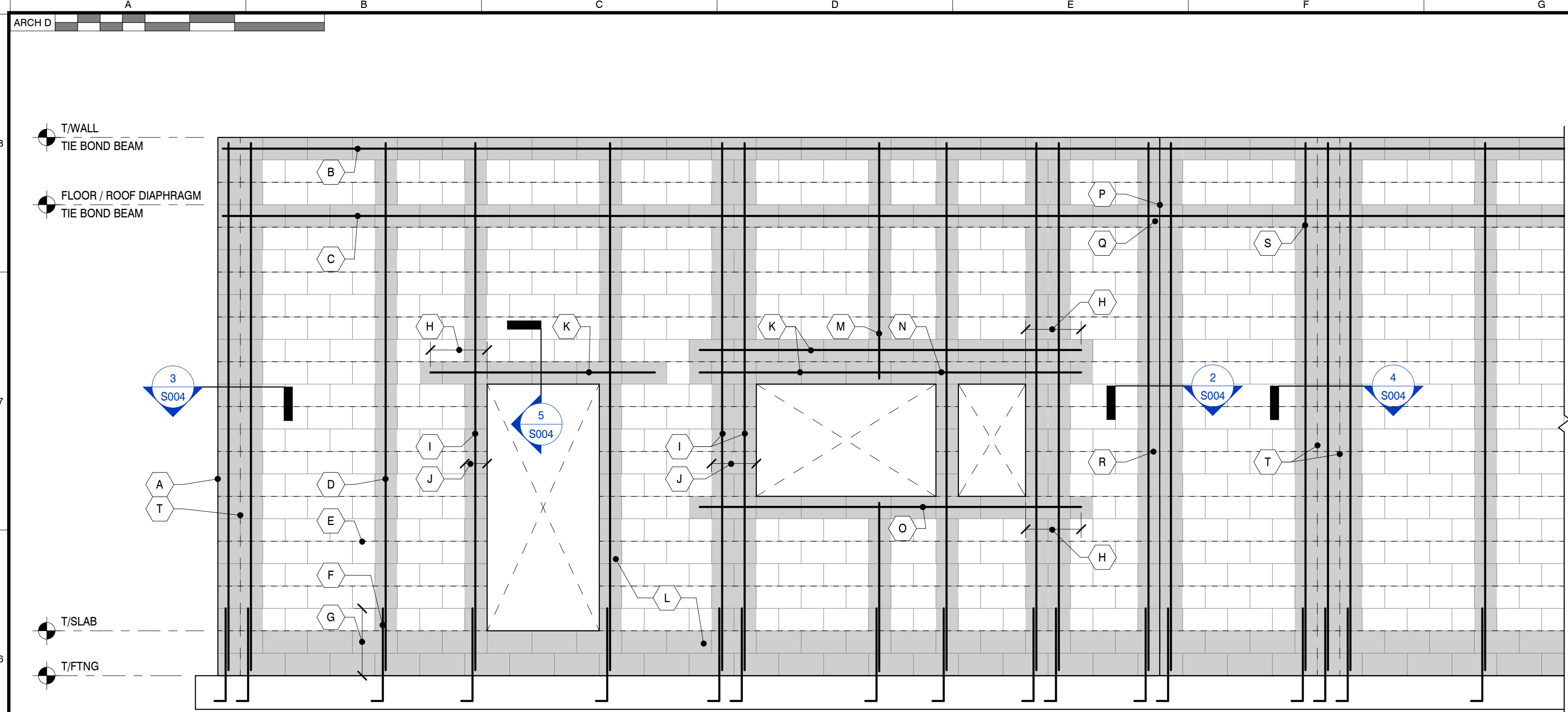
KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: ZSP
DRAWN BY: TLT
REVIEWED BY: WND
SHEET TITLE: TYPICAL FOUNDATION AND SLAB ON GRADE DETAILS

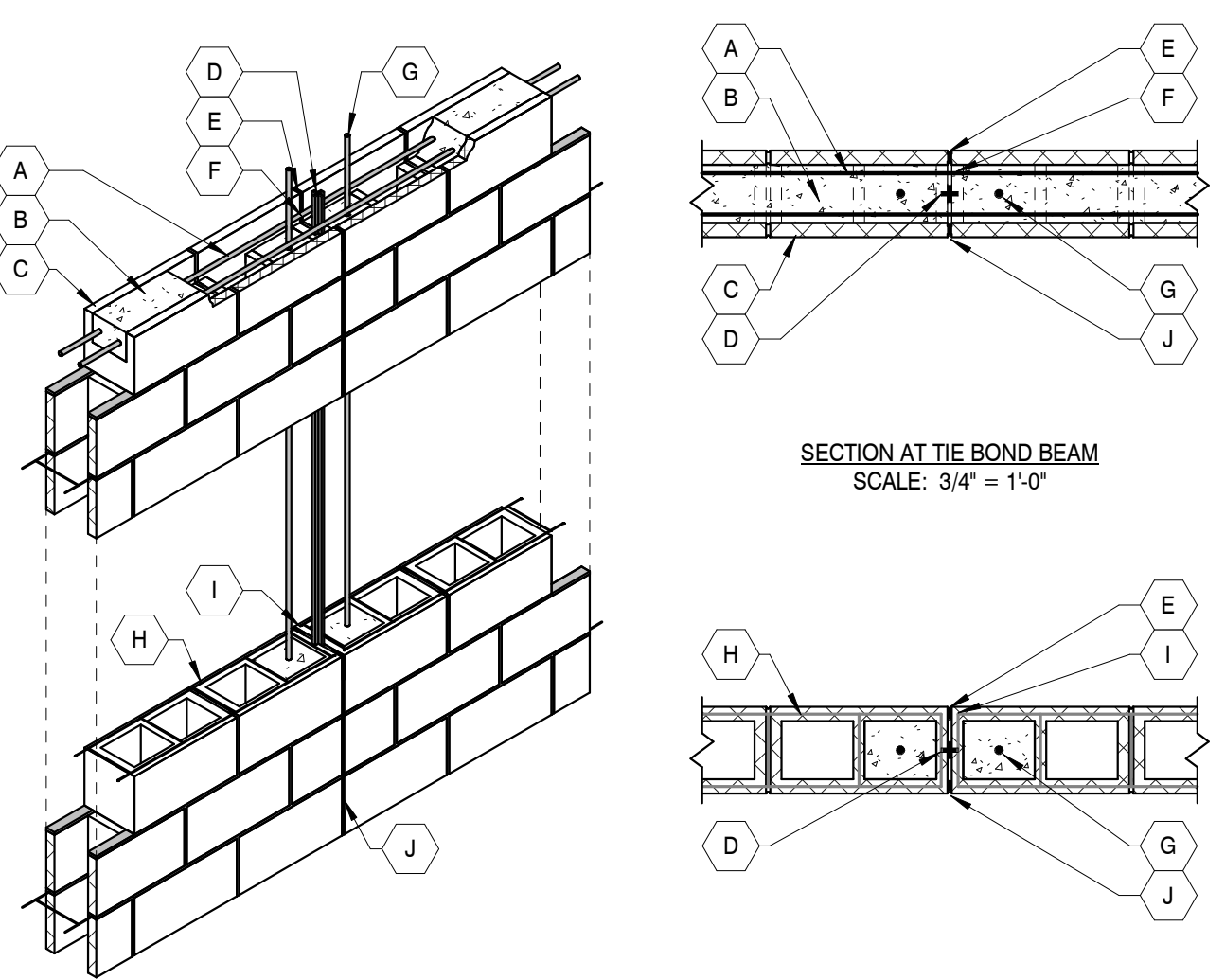
SHEET NO.: S003

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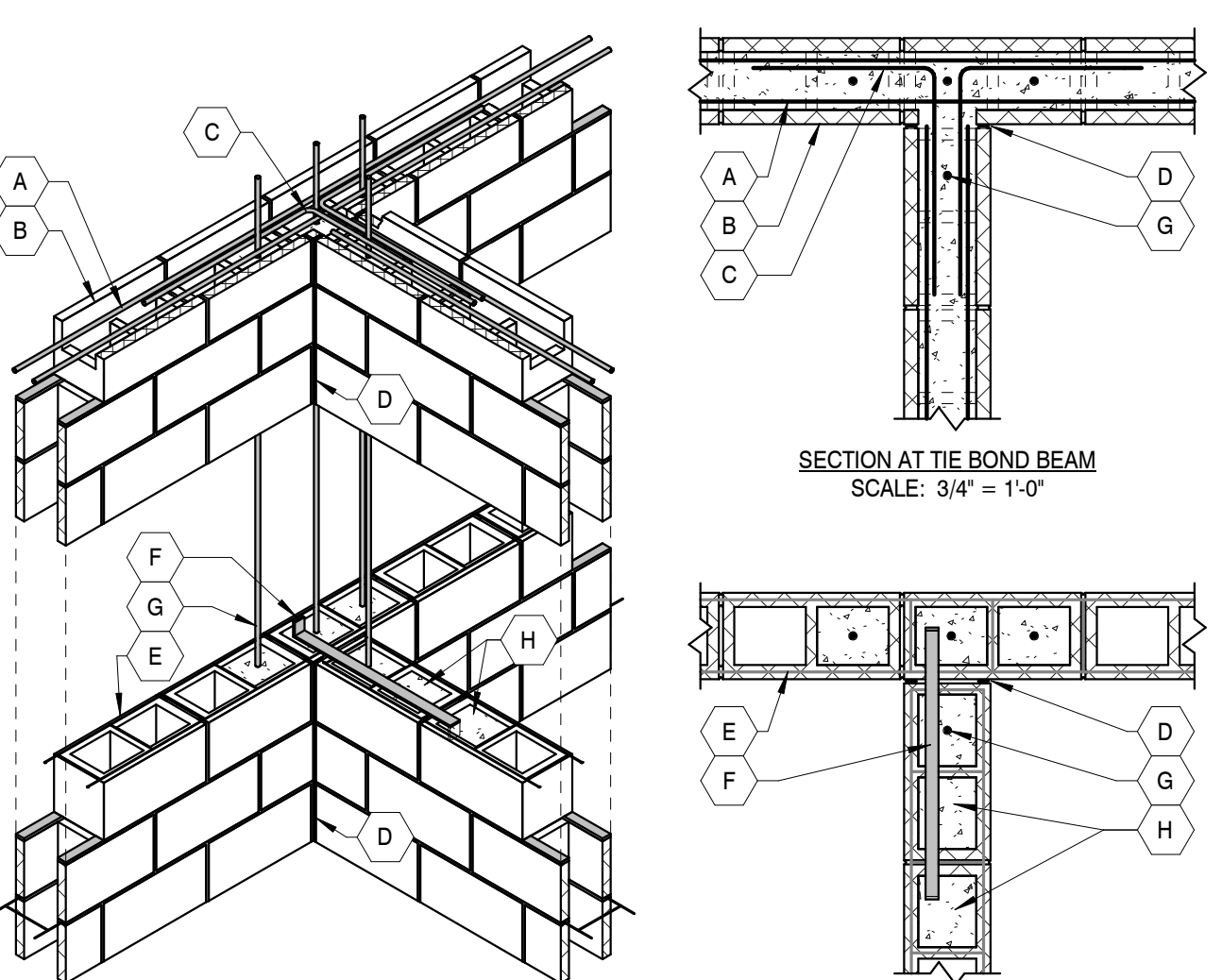
CMU WALL ELEVATION GUIDE (W/ HORIZONTAL JOINT REINFORCING)

SCALE: 3/8" = 1'-0"



CMU CONTRACTION JOINT DETAIL

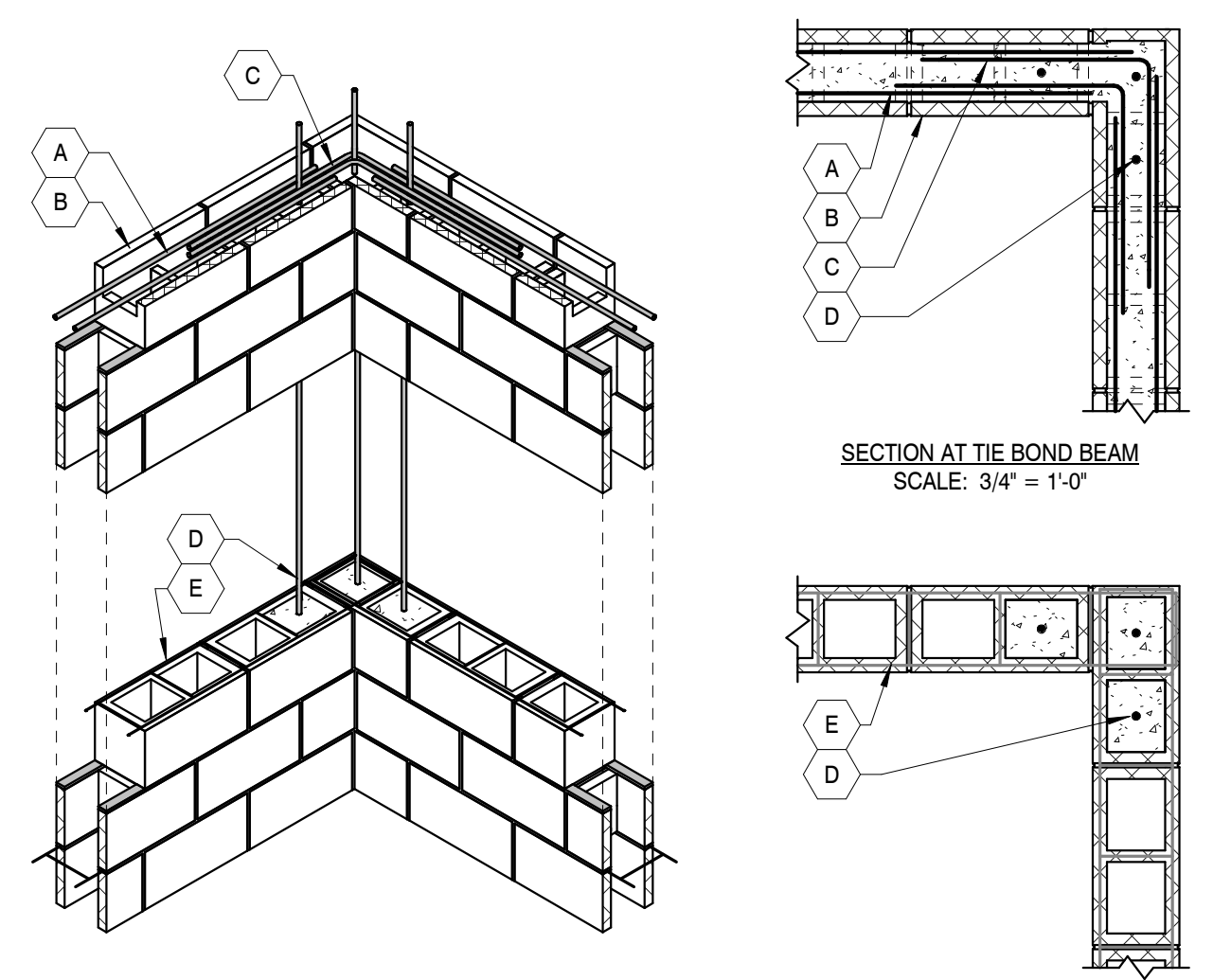
SCALE: 1/2" = 1'-0"



CMU WALL INTERSECTION DETAIL

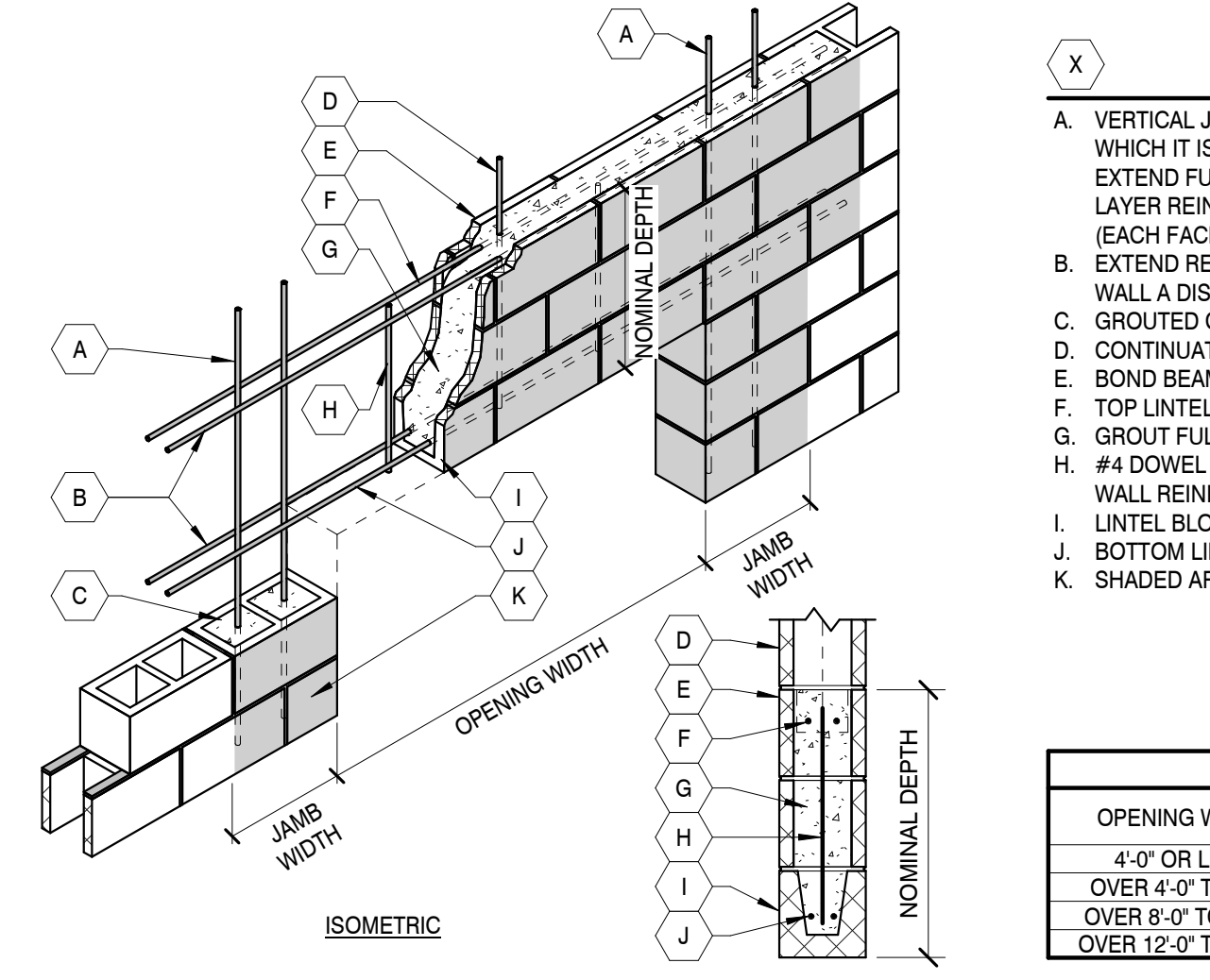
SCALE: 1/2" = 1'-0"

- KEYED NOTES**
- A. TIE BOND BEAM REINFORCING
 - B. GROUT
 - C. BOND BEAM UNIT
 - D. PREFORMED GASKET IN SASH UNIT
 - E. BACKER ROD AND SEALANT
 - F. TIE BOND BEAM REINFORCING CONTINUOUS ACROSS JOINT
 - G. VERTICAL BAR REINFORCING (MATCH SIZE AND QUANTITY OF VERTICAL WALL REINFORCING) AT (1) CELL EACH SIDE OF JOINT
 - H. HORIZONTAL JOINT REINFORCING
 - I. TERMINATE HORIZONTAL JOINT REINFORCING EACH SIDE OF JOINT
 - J. HEAD JOINTS TO ALIGN FULL HEIGHT OF JOINT AND SHALL BE FREE OF MORTAR AND GROUT



CMU WALL CORNER DETAIL

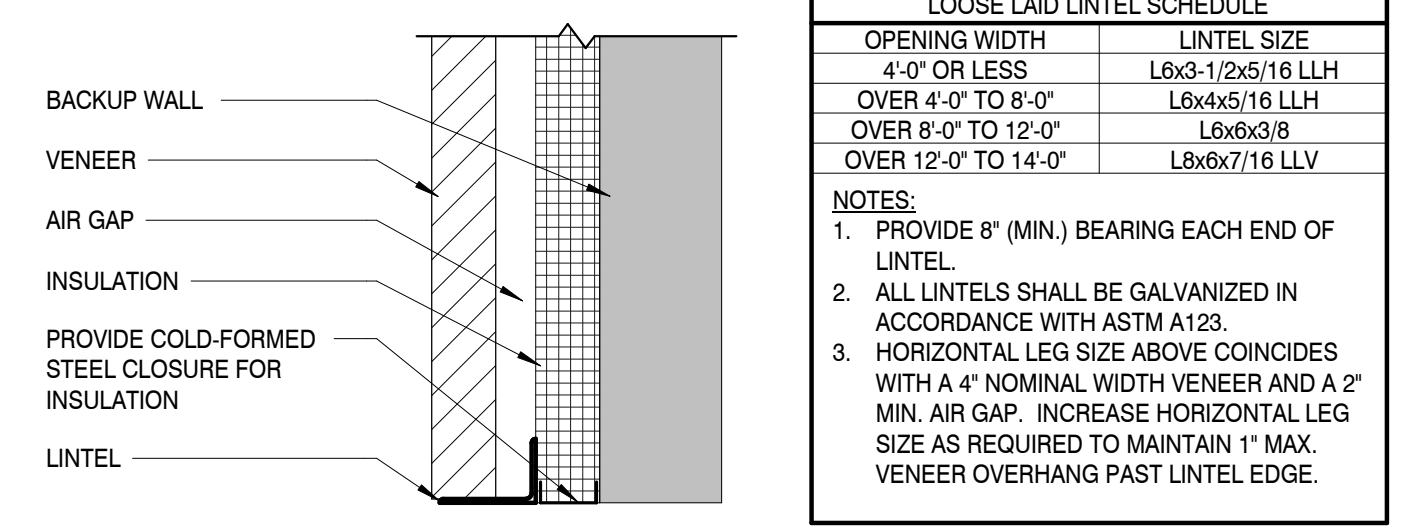
SCALE: 1/2" = 1'-0"



CMU LINTEL DETAIL

SCALE: 1/2" = 1'-0"

- GENERAL NOTES**
1. THIS DETAIL IS FOR REFERENCE ONLY TO IDENTIFY THE COMPONENTS OF MASONRY WALL CONSTRUCTION. FOR SPECIFIC REQUIREMENTS OF WALL CONSTRUCTION, REFER TO NOTES, PLANS AND DETAILS.
- KEYED NOTES**
- A. WALL CORNER
 - B. TIE BOND BEAM AT TOP OF WALL
 - C. TIE BOND BEAM AT FLOOR / ROOF DIAPHRAGM
 - D. VERTICAL BAR REINFORCING
 - E. HORIZONTAL JOINT REINFORCING
 - F. FOUNDATION DOWELS
 - G. REINFORCING SPLICE LENGTH OF 64 BAR DIAMETERS BUT NOT LESS THAN 12"
 - H. EXTEND REINFORCING BEYOND EDGE OF OPENING FOR DEVELOPMENT INTO WALL A DISTANCE OF 40 BAR DIAMETERS BUT NOT LESS THAN 24"
 - I. JAMB REINFORCING EACH SIDE OF OPENING
 - J. JAMB WIDTH
 - K. LINTEL REINFORCING
 - L. SOLID GROUTED CELLS
 - M. CONTINUATION OF INTERRUPTED VERTICAL WALL REINFORCING ABOVE OPENINGS
 - N. WHEN PIER BETWEEN SERIES OF OPENINGS IS LESS THAN 1'-4" WIDE, CONSIDER OVERALL WIDTH OF SERIES TO DETERMINE LINTEL SIZE
 - O. 8" HIGH BOND BEAM AT BOTTOM OF ALL OPENINGS
 - P. CONTRACTION JOINT (C/J)
 - Q. TIE BOND BEAM REINFORCING TO BE CONTINUOUS ACROSS CONTRACTION JOINT AT TOP OF WALL AND FLOOR / ROOF DIAPHRAGM
 - R. HORIZONTAL JOINT REINFORCING TO BE DISCONTINUOUS ACROSS CONTRACTION JOINT
 - S. KNOCK OUT BOND BEAM UNITS REQUIRED AT VERTICAL REINFORCING
 - T. WALL BEYOND



BRICK LINTEL DETAIL

SCALE: 1" = 1'-0"

LOOSE LAID LINTEL SCHEDULE

OPENING WIDTH	LINTEL SIZE
4'-0" OR LESS	L6x3-1/2x5-1/8 LLH
OVER 4'-0" TO 8'-0"	L6x4x5-1/8 LLH
OVER 8'-0" TO 12'-0"	L6x6x3/8
OVER 12'-0" TO 14'-0"	L8x6x7/16 LLV

NOTES:

1. PROVIDE 8" (MIN.) BEARING EACH END OF LINTEL.
2. ALL LINTELS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
3. HORIZONTAL LEG SIZE ABOVE COINCIDES WITH A 4" NOMINAL WIDTH VENEER AND A 2" MIN. AIR GAP. INCREASE HORIZONTAL LEG SIZE AS REQUIRED TO MAINTAIN 1" MAX. VENEER OVERHANG PAST LINTEL EDGE.

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PROJECT INFORMATION
PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING
PROJECT ADDRESS: 411 DOUGLAS LN, CLINTON, TN 37716
PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

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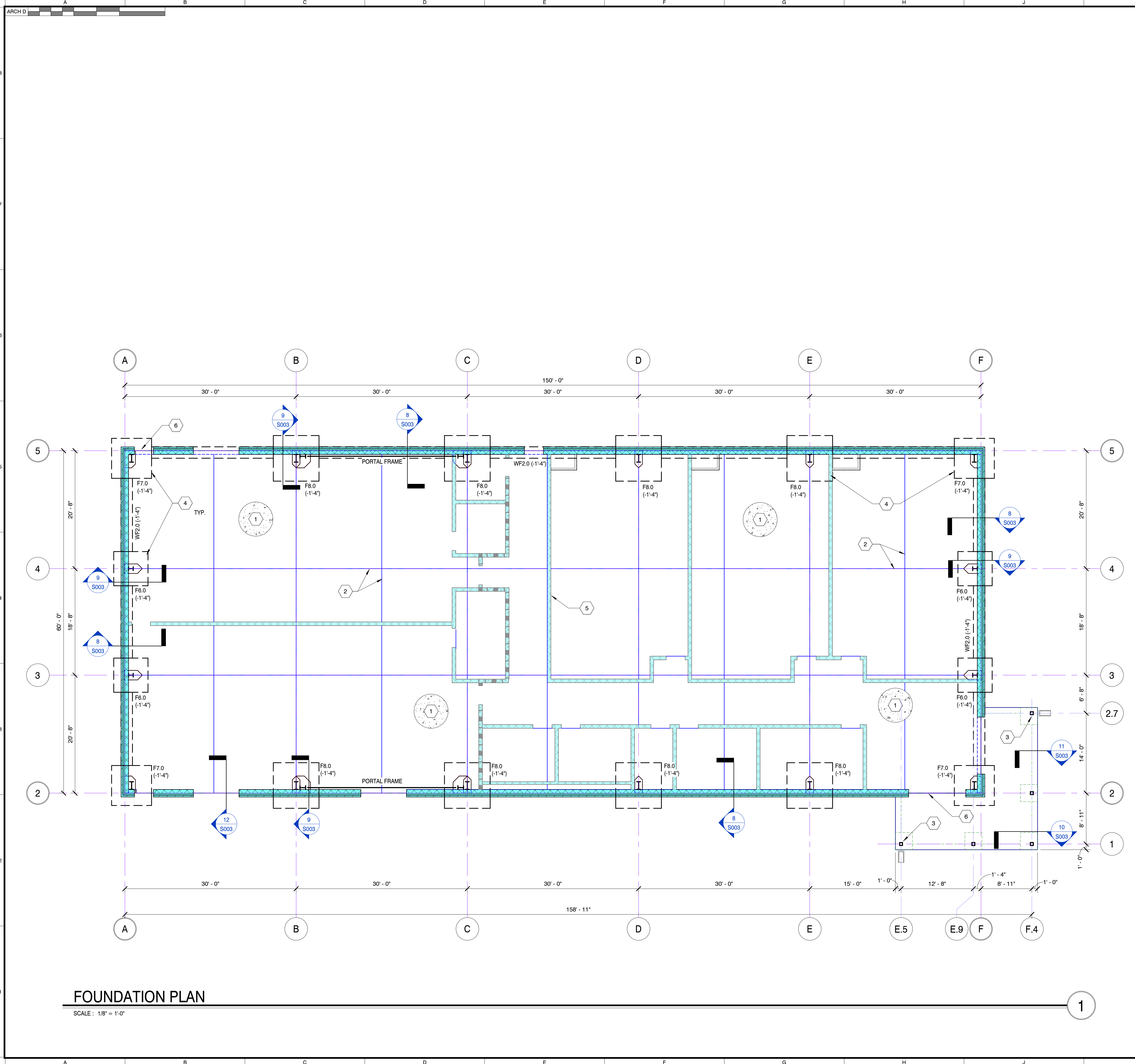
REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

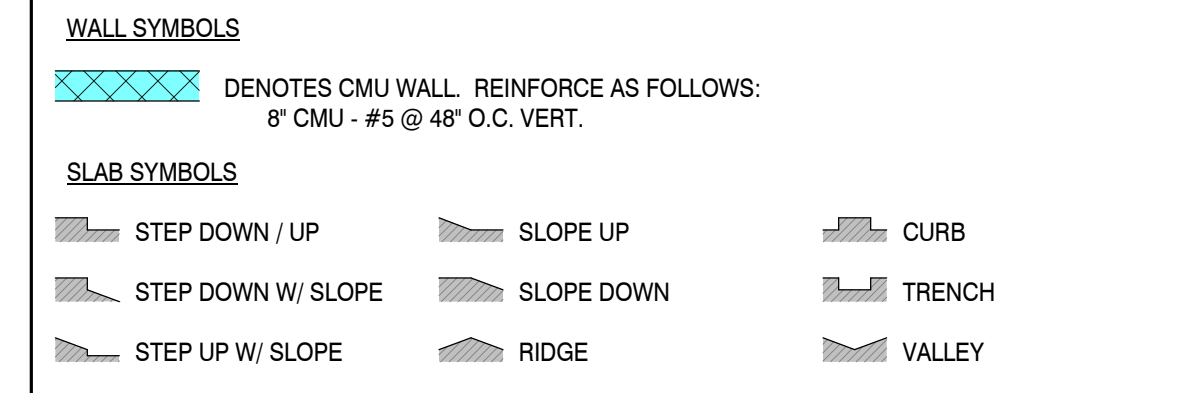
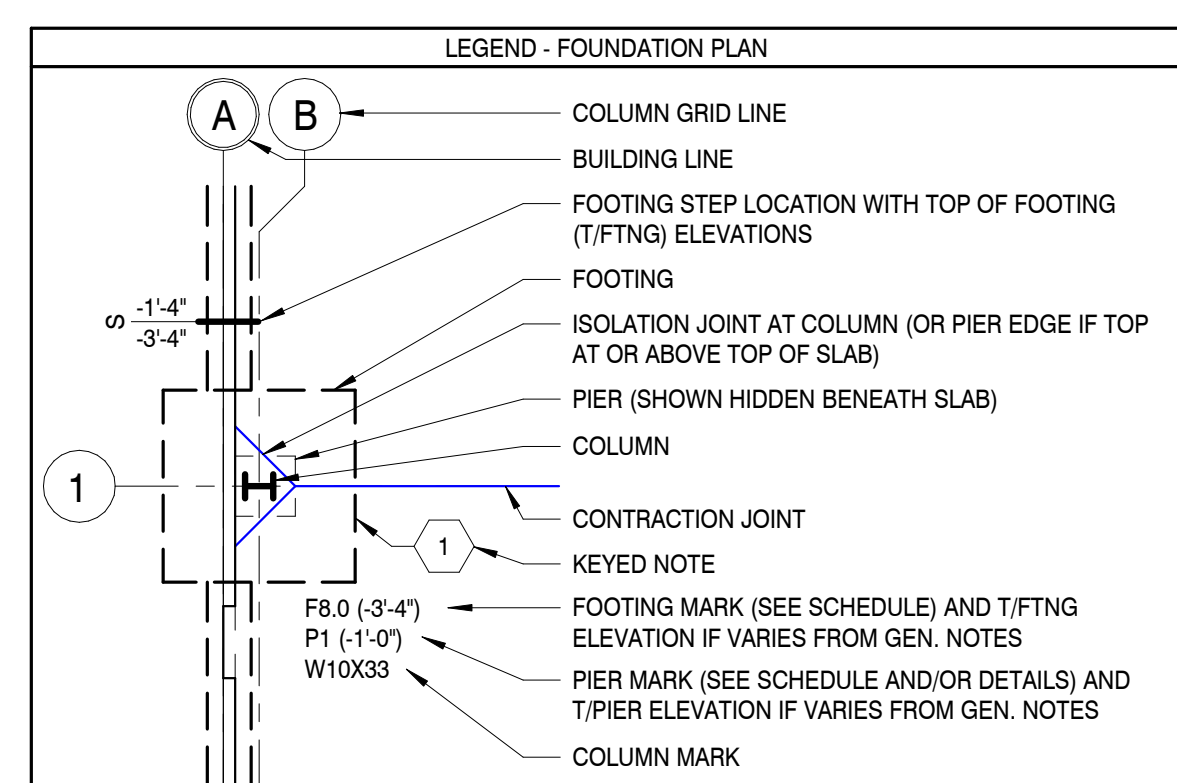
SHEET INFORMATION
SHEET ISSUED: 10/06/2023
DESIGNED BY: ZSP
DRAWN BY: TLT
REVIEWED BY: WND
SHEET TITLE: TYPICAL CMU DETAILS W/ HORIZONTAL JOINT REINFORCING
SHEET NO.: S004

File Path: C:\projects\220042-02_Clinton High School Welding Building\220042-02_Rv23.rvt
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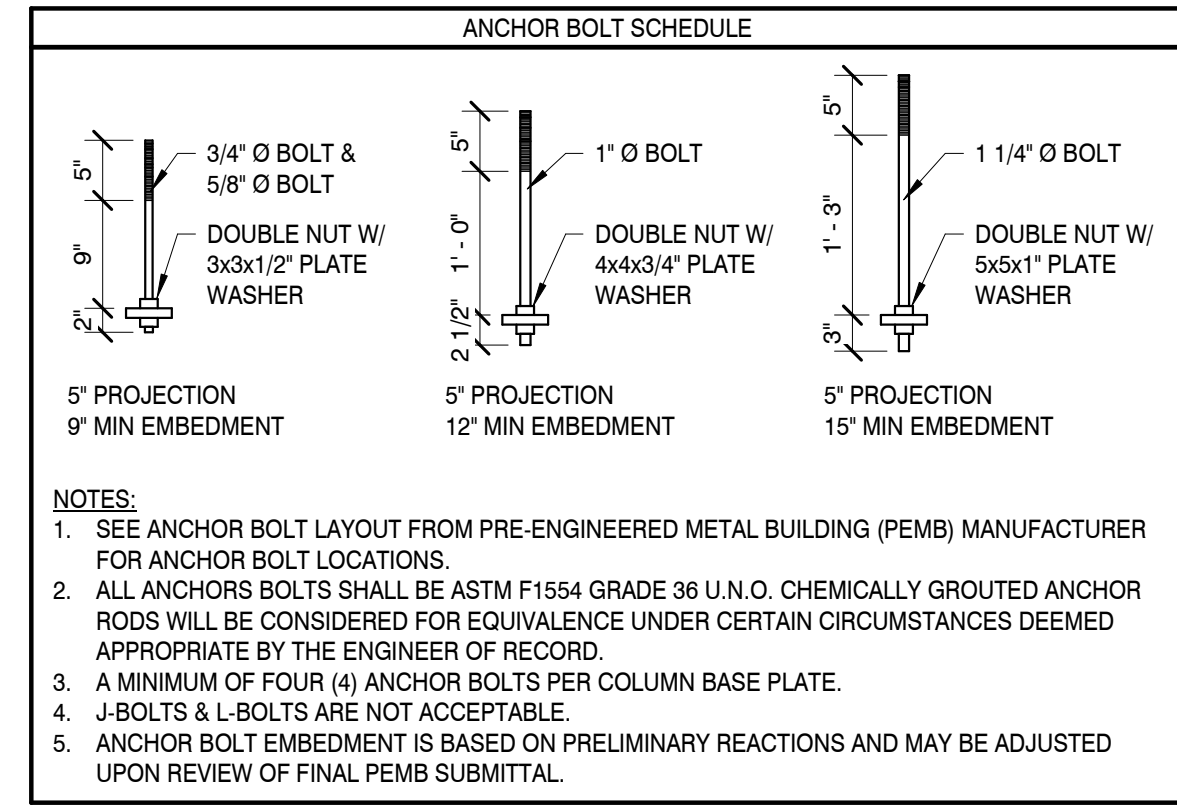
- GENERAL NOTES - FOUNDATION PLAN**
- ELEVATIONS ARE REFERENCED FROM THE FIRST LEVEL TOP OF SLAB (T/SLAB) DATUM ELEVATION OF 0'-0". SEE CIVIL DRAWINGS FOR EQUIVALENT MEAN SEA LEVEL ELEVATION.
 - CONTRACTOR TO COORDINATE LOCATION AND SIZE OF FOOTING STEPS AND SHOULD ADJUST AS REQUIRED TO MAINTAIN 1'-0" MINIMUM COVER OVER TOP OF FOOTING AND MEET LOCAL FROST DEPTH CRITERIA. COORDINATE WITH SITE GRADING PLAN. SEE FOUNDATION NOTES ON S0.0 FOR MORE INFORMATION.
 - TOP OF FOOTING (T/FTNG) ELEVATIONS ARE -1'-4" UNLESS NOTED OTHERWISE. ELEVATIONS ARE REFERENCED FROM THE DATUM LISTED IN NOTE #1.
 - COORDINATE FOUNDATION LAYOUT WITH PLUMBING AND OTHER UNDERGROUND UTILITIES. STEP AND/OR LOWER FOUNDATIONS AS NECESSARY TO PREVENT CONFLICTS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF DEWATERING AREAS EXCAVATED FOR BUILDING CONSTRUCTION.
 - SEE S00 SHEETS FOR ADDITIONAL NOTES AND TYPICAL DETAILS NOT SPECIFICALLY REFERENCED ON STRUCTURAL DRAWINGS.

- KEYED NOTES - FOUNDATION PLAN**
- FLOOR SLAB TO BE 4" THICK SLAB ON GRADE WITH 6x6-W1.4XW1.4 WWF ON 20 MIL POLY VAPOR BARRIER OVER 4" CRUSHED STONE.
 - CONTRACTOR TO COORDINATE WITH PLUMBING AND OTHER UNDERGROUND UTILITIES. STEP AND/OR LOWER FOUNDATIONS AS NECESSARY TO PREVENT CONFLICTS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF DEWATERING AREAS EXCAVATED FOR BUILDING CONSTRUCTION.
 - SEE S00 SHEETS FOR ADDITIONAL NOTES AND TYPICAL DETAILS NOT SPECIFICALLY REFERENCED ON STRUCTURAL DRAWINGS.



FOUNDATION SCHEDULE

MARK	WIDTH	LENGTH	THICKNESS	REINFORCING	COMMENTS
F6.0	6'-0"	6'-0"	1'-4"	(7) #5 E.W. T&B	
F7.0	7'-0"	7'-0"	1'-6"	(7) #6 E.W. T&B	
F8.0	8'-0"	8'-0"	1'-8"	(9) #6 E.W. T&B	
WF2.0	2'-0"	--	1'-0"	(3) #5 CONT. T&B W/ #3 TIES @ 48" O.C. TRANS	CONT. WALL FOUNDATION



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REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: ZSP
DRAWN BY: TLT
REVIEWED BY: WND
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FOUNDATION PLAN
SHEET NO.: S101

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FIRE PROTECTION SPECIFICATIONS

SECTION 15300 - FIRE PROTECTION PART I GENERAL

- 1.01 DESCRIPTION OF WORK:
A. EXTENT OF FIRE PROTECTION WORK IS INDICATED ON DRAWINGS AND SCHEDULES, AND BY REQUIREMENTS OF THIS SECTION.
B. THE SYSTEM SHALL BE WET PIPE SYSTEM
- 1.02 QUALITY ASSURANCE:
A. CODES AND STANDARDS:
1. NFPA COMPLIANCE: INSTALL FIRE PROTECTION SYSTEM IN ACCORDANCE WITH NFPA 13 "STANDARDS FOR THE INSTALLATION OF SPRINKLER SYSTEMS". NFPA 14, "STANDARDS FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS" AND NFPA 24 "STANDARD FOR OUTSIDE PROTECTION."
2. UL COMPLIANCE: PROVIDE FIRE PROTECTION PRODUCTS IN ACCORDANCE WITH UL STANDARDS; PROVIDE UL LABEL ON EACH PRODUCT.
3. FIRE DEPARTMENT/MARSHAL COMPLIANCE: INSTALL FIRE PROTECTION SYSTEMS IN ACCORDANCE WITH LOCAL REGULATIONS OF FIRE DEPARTMENT OR FIRE MARSHAL.
4. QUALIFICATIONS: HYDRAULIC CALCULATIONS AND PREPARATION OF SHOP DRAWINGS SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF A RESPONSIBLE MANAGING EMPLOYEE WHO HOLDS A NCET LEVEL III CERTIFICATION. INSTALLATION SHALL BE PERFORMED BY A LICENSED SPRINKLER CONTRACTOR.
- 1.03 SUBMITTALS:
A. PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR FIRE PROTECTION MATERIALS AND PRODUCTS WITH A TABLE OF CONTENTS. IDENTIFY MATERIAL, SIZE, AND MODEL NUMBER OF EACH PRODUCT.
B. SHOP DRAWINGS: SUBMIT SCALED LAYOUT DRAWINGS FOR FIRE PROTECTION PIPE AND FITTINGS INCLUDING, BUT NOT LIMITED TO, PIPE AND TUBE SIZES, LOCATIONS, ELEVATIONS, AND SLOPES OF HORIZONTAL RUNS, WALL AND FLOOR PENETRATIONS, AND CONNECTIONS. INDICATE INTERFACE AND SPATIAL RELATIONSHIPS BETWEEN PIPING AND APPROXIMATE EQUIPMENT.
C. APPROVAL DRAWINGS: PREPARE APPROVAL DRAWINGS OF FIRE PROTECTION SYSTEMS INDICATING PIPE SIZES, PIPE LOCATIONS, FITTINGS, SHUTOFFS, EQUIPMENT, ETC. SUBMIT TO AGENCY HAVING JURISDICTION FOR APPROVAL. SUBMIT ONE APPROVED COPY, BEARING STAMP AND/OR SIGNATURE OF AGENCY HAVING JURISDICTION, BEFORE PROCEEDING WITH INSTALLATION.
D. APPROVAL CALCULATIONS: PREPARE HYDRAULIC CALCULATIONS OF FIRE PROTECTION SYSTEM USING A FIRE HYDRANT FLOW TEST THAT IS NO MORE THAN 6 MONTHS OLD. SUBMIT TO AGENCY HAVING JURISDICTION FOR APPROVAL. SUBMIT TO ARCHITECT, ONE APPROVED COPY, BEARING STAMP AND/OR SIGNATURE OF AGENCY HAVING JURISDICTION, BEFORE PROCEEDING WITH INSTALLATION.
E. RECORD DRAWINGS: AT PROJECT CLOSEOUT, SUBMIT RECORD DRAWINGS OF INSTALLED FIRE PROTECTION PIPING AND PRODUCTS.

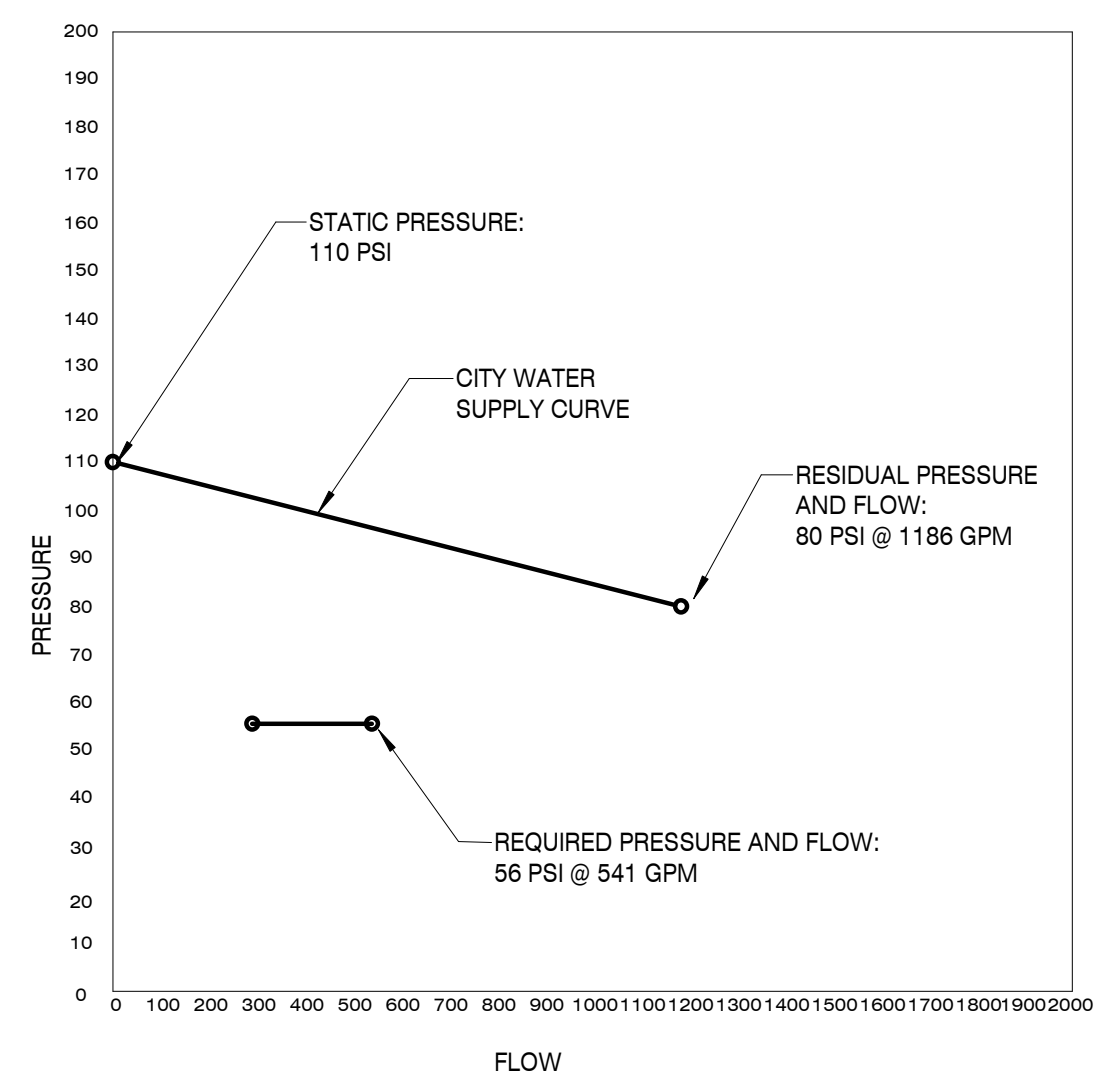
PART II PRODUCTS

- 2.01 MATERIALS AND PRODUCTS:
A. GENERAL: PROVIDE PIPING MATERIALS AND FACTORY-FABRICATED PIPING PRODUCTS OF SIZES, TYPES, PRESSURE RATINGS, TEMPERATURE RATINGS, AND CAPACITIES AS INDICATED. WHERE NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER TO COMPLY WITH INSTALLATION REQUIREMENTS. PROVIDE SIZES AND TYPES MATCHING PIPING AND EQUIPMENT CONNECTIONS; PROVIDE FITTINGS OF MATERIALS WHICH MATCH PIPE MATERIALS USED IN FIRE PROTECTION SYSTEM.
- 2.02 BASIC IDENTIFICATION:
A. GENERAL: PROVIDE IDENTIFICATION AS FOLLOWS:
1. FIRE PROTECTION PIPING: PLASTIC PIPE MARKERS
2. FIRE PROTECTION VALVES: PLASTIC VALVE TAGS.
- 2.03 BASIC PIPES AND PIPE FITTINGS:
A. GENERAL: PROVIDE PIPES AND PIPE FITTINGS AS FOLLOWS:
1. BLACK STEEL PIPE: SCHEDULE 40 FOR ABOVE 6"; BLACK STEEL PIPE: SCHEDULE 10 FOR 6" AND SMALLER; MECHANICAL GROOVED PIPE COUPLINGS (VICTAULIC 009N/108 IGS SYSTEM OR EQUAL) AND FITTINGS (FIRELOCK, VICTAULIC R FITTINGS, OR EQUAL); ROLL-GROOVE AND MECHANICAL LOCKING TYPE.
2. DUCTILE IRON PRESSURE PIPE: AWWA C-106 WITH FITTINGS COMPLYING WITH AWWA C-110 AND RUBBER GASKETS COMPLYING WITH AWWA C-111.
3. BRAIDED FLEXIBLE, SPRINKLER HOSE FITTINGS: BRAIDED, FLEXIBLE HOSE FOR CONNECTION TO SPRINKLER WITH BRACKET FOR CONNECTION TO CEILING GRID.
4. APPROVED MANUFACTURERS: VICTAULIC [AH2, AH2CC, AB6, VS1, OR VS2] OR EQUAL.
- E. BRANCH OUTLET FITTINGS:
1. BODY MATERIAL: DUCTILE-IRON HOUSING WITH EPDM SEALS AND BOLTS AND NUTS.
2. TYPE: MECHANICAL-T AND -CROSS FITTINGS.
3. BRANCH OUTLETS: GROOVED, PLAIN-END PIPE, OR THREADED.
4. APPROVED MANUFACTURERS: ANVIL, TYCO, AND VICTAULIC.
- 2.04 BASIC PIPING SPECIALTIES:
A. GENERAL: PROVIDE PIPING SPECIALTIES:
1. PIPE ESCUTCHEONS
2. DIELECTRIC UNIONS
3. DRIP PANS
4. PIPE SLEEVES
5. SLEEVE SEALS
6. FIRE BARRIER PENETRATION SEALS
- 2.05 BASIC SUPPORTS AND ANCHORS:
A. GENERAL: PROVIDE SUPPORTS AND ANCHORS AS FOLLOWS:
1. ADJUSTABLE STEEL CLEVIS HANGERS, ADJUSTABLE STEEL BAND HANGERS, OR ADJUSTABLE BAND HANGERS, FOR HORIZONTAL PIPING HANGERS AND SUPPORTS.
2. TWO-BOLT RISER CLAMPS FOR VERTICAL PIPING SUPPORTS.
3. STEEL TURNBUCKLES AND MALLEABLE IRON SOCKETS FOR HANGER-ROD ATTACHMENTS.
4. CONCRETE INSERTS, TOP-BEAM C-CLAMPS, SIDE BEAM OR CHANNEL CLAMPS OR CENTER BEAM CLAMPS FOR BUILDING ATTACHMENTS.
B. ANCHORS:
1. GENERAL: PROVIDE ANCHORAGES FOR TEES, PLUGS, CAPS, BENDS, AND HYDRANTS IN ACCORDANCE WITH NFPA 24.
2. CLAMPS, STRAPS AND WASHERS: STEEL, ANSI/ASTM A-506
3. RODS: STEEL, ANSI/ASTM A-575
4. O-RING COUPLERS: MALLEABLE IRON, ANSI/ASTM A-197
5. BOLTS: STEEL, ANSI/ASTM A-307
6. CAST-IRON WASHERS: ANSI/ASTM A-126, CLASS A
7. THRUST BLOCKS: 2500 PSI CONCRETE
- 2.06 BASIC VALVES:
A. GENERAL: PROVIDE VALVES AS FOLLOWS:
B. INTERIOR VALVES:
1. SECTIONAL: GATE VALVES OR BUTTERFLY VALVES; UL LISTED.
2. CHECK: SWING CHECK VALVES; UL LISTED.
C. EXTERIOR VALVES:
1. GATE VALVES: STANDARD SHUT-OFF VALVES CAST INTO BODY, OUTSIDE-SCREW-AND-YOKE TYPE COMPLYING WITH AWWA C-500. SIZES 2" AND SMALLER SHALL BE BRONZE, 175 PSI WG, RISING STEM, SCREWED BONNET, SIZES 2 1/2" AND LARGER SHALL BE IRON BODY BRONZE MOUNTED, 175 PSI WG, SOLID WEDGE, REPLACEABLE SEAT (VICTAULIC SERIES 771, OR EQUAL).
2. CHECK VALVES: GRAVITY-OPERATED, REGULAR TYPE, IRON-BODY BRONZE FITTED WITH METAL-TO-METAL OR RUBBER FACED CHECKS, COMPLYING WITH ASTM A-12 (VICTAULIC SERIES 717, OR EQUAL).
3. BUTTERFLY VALVES: RUBBER SEATED, EQUIPPED WITH GEAR OR TRAVELLING NUT ACTUATOR TO MINIMIZE WATER HAMMER, COMPLYING WITH AWWA C-50 (VICTAULIC SERIES 705 FIRELOCK, OR EQUAL).
4. INDICATOR POSTS: TELESCOPIC BARREL TYPE FOR USE WITH UNDERGROUND GATE VALVES.
- 2.07 SPECIAL VALVES:
A. GENERAL: PROVIDE VALVES, UL LISTED, IN ACCORDANCE WITH THE FOLLOWING LISTING. PROVIDE SIZES AND TYPES WHICH MATE AND MATCH PIPING AND EQUIPMENT CONNECTIONS.
B. ALARM CHECK VALVE: PROVIDE CAST-IRON WATER FLOW ALARM CHECK VALVE, 175 PSI WORKING PRESSURE. PROVIDE TRIM FOR BYPASS, DRAIN, ALARM, PRESSURE GAUGES AND FILL LINE.
1. APPROVED ALARM CHECK VALVE MANUFACTURERS: BERHAD, VICTAULIC (FIREPAC ALLOWED), OR EQUAL.
C. FIRE DEPARTMENT CONNECTION VALVE: PROVIDE FIRE DEPARTMENT CONNECTION IRON SWING CHECK VALVE, 175 PSI RATED WORKING PRESSURE, OF SIZE AND END TYPE INDICATED.
D. DETECTOR CHECK VALVES: PROVIDE CAST-IRON BODY DETECTOR CHECK VALVE, BRONZE FITTED, WITH TAPPED BOSSES ON EACH SIDE FOR BY-PASS METER, AIR VENT, AND COVER-MOUNTED EYEBOLT.
1. APPROVED DETECTOR CHECK VALVE MANUFACTURERS: AMES, WATTS, WILKINS
E. BACKFLOW PREVENTION VALVES:
1. PROVIDE APPROVED DOUBLE VALVE ASSEMBLIES TO SEPARATE AUTOMATIC FIRE SPRINKLER SYSTEM FROM POTABLE WATER SYSTEM.
2. APPROVED DOUBLE CHECK VALVE MANUFACTURERS: AMES, WATTS, WILKINS
- 2.08 HYDRANTS:
A. GENERAL: PROVIDE CAST-IRON SIDEWALK FIRE HYDRANTS WITH THREADED MALE NOZZLE CONFORMING TO AMERICAN NATIONAL STANDARD FIRE HOSE CONNECTION SCREW THREADS UNLESS OTHER HOSE CONNECTION REQUIRED BY LOCAL FIRE AUTHORITIES.
B. PROVIDE DRY-BARREL FIRE HYDRANTS (BASE VALVE TYPE) COMPLYING WITH AWWA C-502 AND AS FOLLOWS:
1. WORKING PRESSURE, 150 PSI UNLESS OTHERWISE INDICATED.
2. VALVE OPENING DIRECTION, CLOCKWISE, INDICATED BY ARROW AND THE WORD "OPEN" CAST ON DOME.
3. NOZZLES, TWO 2-1/2" HOSE CONNECTIONS AND ONE 4-1/2" PUMPER CONNECTION WITH CAPS AND CHAINS. NOZZLE CAP NUTS TO MATCH OPERATING STEM NUTS. PROVIDE NATIONAL STANDARD HOSE THREADS ON 2-1/2". HOSE THREADS ON 4-1/2" PUMPER CONNECTION SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS: O.D.-4.875", P.D.-4.777", ROOT DIAMETER 4.653", 6 THREADS PER INCH, GAUGE 2C.

- 2.09 AUTOMATIC SPRINKLERS:
A. GENERAL: PROVIDE AUTOMATIC SPRINKLERS OF TYPE INDICATED ON DRAWINGS, AND IN ACCORDANCE WITH THE FOLLOWING LISTING. PROVIDE FUSIBLE LINKS FOR 165°F (74°C) AND SPRINKLERS WITH NOMINAL 1/2" DISCHARGE ORIFICE UNLESS OTHERWISE INDICATED.
1. UPRIGHT
2. PENDENT
3. FLUSH PENDENT
4. CONCEALED PENDENT
5. HORIZONTAL SIDEWALL
6. FINISH: CHROME PLATE FOR OCCUPIED AREAS, CAST BRASS FOR UNOCCUPIED AREAS, WAX COATED WHERE EXPOSED TO ACIDS, OR FINISH AS NOTED ON DRAWINGS.
B. APPROVED SPRINKLER HEAD MANUFACTURERS: RELIABLE, VICTAULIC, VIKING, TYCO
C. SPRINKLER CABINET AND WRENCH: FURNISH STEEL, BAKED RED ENAMELED, SPRINKLER BOX WITH CAPACITY TO STORE 12 SPRINKLERS AND WRENCH SIZED TO SPRINKLERS.
D. IN AREAS SUBJECT TO PHYSICAL ABUSE SUCH AS GYMNASIUMS AND MECHANICAL ROOMS, PROVIDE STEEL WIRE GUARDS OVER SPRINKLERS.
E. IN VARIOUS APPLICATIONS, UL LISTED AND FM APPROVED VICTAULIC V9 INSTALLATION READY COUPLING MAY BE USED TO JOIN 1/2", 3/4", OR 1" SPRINKLER HEADS ONTO THE 1" IGS OUTLET, OR APPROVED EQUAL.
- 2.10 WALL TYPE SIAMESE CONNECTIONS:
A. GENERAL: PROVIDE WALL TYPE CAST BRASS SIAMESE CONNECTIONS AND ESCUTCHEON PLATE ASSEMBLY, WITH 2, 2-1/2" FIRE DEPARTMENT INLETS WITH FEMALE HOSE CONNECTIONS, AMERICAN NATIONAL FIRE HOSE CONNECTION SCREW THREAD, EQUIPPED WITH INDIVIDUAL DROP CLAPPER VALVES, EQUIPPED WITH PLUGS AND CHAINS, CONSTRUCTION FEATURES AS INDICATED, AND CONSTRUCTED WITH THE FOLLOWING ADDITIONAL CONSTRUCTION FEATURES:
1. FINISH: POLISHED BRASS
2. INLET PIPE: 4" PIPE
3. CAST LETTERING: "AUTO. SPKR."
4. ESCUTCHEON: 12" DIAMETER OF 7" X 14" RECTANGLE
5. SIAMESE CONNECTION: FLUSH, STACKED INLETS; FLUSH, ADJACENT INLETS; Y-TYPE, INLETS STRAIGHT, PROJECTING CONFIGURATION; OR Y-TYPE, INLETS 45°, PROJECTING CONFIGURATION.
6. PROVIDE KNOX BOX.
7. APPROVED MANUFACTURERS: CROKER, GUARDIAN FIRE, POTTER ROEMER, AND VIKING

PART III EXECUTION

- 3.01 INSPECTION:
A. GENERAL: EXAMINE AREAS AND CONDITIONS UNDER WHICH FIRE PROTECTION MATERIALS AND PRODUCTS ARE TO BE INSTALLED. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.
- 3.02 INSTALLATION OF BASIC IDENTIFICATION:
A. GENERAL: INSTALL MECHANICAL IDENTIFICATION SUCH THAT ALL FIRE PROTECTION PIPING AND EQUIPMENT CAN BE IDENTIFIED.
- 3.03 INSTALLATION OF OUTSIDE PIPING:
A. GENERAL: INSTALL EXTERIOR FIRE WATER SYSTEM IN COMPLIANCE WITH APPLICABLE PROVISIONS OF NFPA 24 AND AS HEREIN SPECIFIED. ARRANGE AND PAY FOR TAPS AND SERVICE BY LOCAL WATER UTILITY. FOR SLIP-JOINT PIPE, PROVIDE 3000 PSI CONCRETE THRUST BLOCKS AGAINST UNDISTURBED SOIL.
B. CAST-IRON PIPE: INSTALL IN ACCORDANCE WITH RECOMMENDED PROCEDURES OF THE CAST-IRON PIPE RESEARCH ASSOCIATION.
C. HYDRANTS: INSTALL IN ACCORDANCE WITH AWWA M-17.
D. CONTROL VALVES: INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
E. JOINT ADAPTERS: MAKE JOINTS BETWEEN CAST-IRON PIPE AND OTHER TYPES OF PIPE WITH STANDARD MANUFACTURED CAST-IRON ADAPTERS AND FITTINGS.
F. INTERIOR INSPECTION: INSPECT CONDUIT TO DETERMINE WHETHER LINE DISPLACEMENT OR OTHER DAMAGE HAS OCCURRED.
1. IF THE INSPECTION INDICATES POOR ALIGNMENT, DEBRIS, DISPLACED PIPE, INFILTRATION, OR OTHER DEFECTS, CORRECT SUCH DEFECTS TO SATISFACTION OF ARCHITECT/ENGINEER.
G. CLEANING CONDUIT: CLEAR INTERIOR OF CONDUIT OF DIRT AND OTHER SUPERFLUOUS MATERIALS AS WORK PROGRESSES. MAINTAIN SWAB OR DRAG IN LINE AND PULL PAST EACH JOINT AS IT IS COMPLETED. PLACE PLUGS IN END OF UNCOMPLETED CONDUIT AT END OF DAY OR WHENEVER WORK STOPS. FLUSH LINES TO REMOVE COLLECTED DEBRIS BEFORE CONNECTING TO OTHER FIRE PROTECTION SYSTEMS. FLUSH CONDUIT AT RATES OF FLOW RECOMMENDED BY NFPA 24 UNLESS HIGHER RATES REQUIRED BY LOCAL AUTHORITIES.
- 3.04 INSTALLATION OF PIPES AND PIPE FITTINGS:
A. GENERAL: INSTALL PIPES AND PIPE FITTINGS IN ACCORDANCE WITH DRAWING AND REQUIREMENT OF AUTHORITY HAVING JURISDICTION. NOTE THAT ALL WORK INCLUDING UNDERGROUND LINES MUST BE INSTALLED BY A LICENSED SPRINKLER CONTRACTOR.
B. COMPLY WITH REQUIREMENTS OF NFPA 13 AND NFPA 14 FOR INSTALLATION OF FIRE PROTECTION PIPING MATERIALS. INSTALL PIPING PRODUCTS WHERE INDICATED, IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PIPING SYSTEMS COMPLY WITH REQUIREMENTS AND SERVE INTENDED PURPOSES.
C. COORDINATE WITH OTHER WORK, INCLUDING PLUMBING PIPING, AS NECESSARY, TO INTERFACE COMPONENTS OF FIRE PROTECTION PIPING PROPERLY WITH OTHER WORK.
D. INSTALL DRAIN PIPING AT LOW POINTS OF PIPING SYSTEMS. PROVIDE DRY DRUM DRIPS WHERE INDICATED.
E. INSTALL SECTIONAL VALVES IN INLET PIPING, AT BOTTOM OF EACH RISER, AND IN LOOPS.
F. INSTALL FIRE DEPARTMENT CONNECTION VALVES IN PIPING WHERE FIRE DEPARTMENT CONNECTIONS ARE INDICATED.
G. INSTALL WATER FLOW INDICATORS WHERE INDICATED.
1. APPROVED MANUFACTURERS: POTTER, VIKING, AND WATTS.
H. MOUNT SUPERVISORY SWITCHES ON EACH SECTIONAL VALVE.
I. INSTALL PRESSURE GAGES ON RISER OR MAIN FEED, AT EACH SPRINKLER TEST CONNECTION, AND AT TOP OF EACH STANDPIPE.
J. INSTALL MANUAL SHUTOFF AT EACH AUDIBLE ALARM STATION.
K. INSTALL INSPECTORS TEST CONNECTIONS WHERE INDICATED, OR AT MOST REMOTE POINT FROM RISER.
L. INSTALL ELECTRICALLY OPERATED ALARM BELL NEAR FIRE DEPARTMENT CONNECTION.
1. FINISH: RED-ENAMEL FACTORY FINISH, SUITABLE FOR OUTDOOR USE.
2. APPROVED MANUFACTURERS: FIRE-LITE ALARMS, NOTIFIER, AND POTTER.
- 3.05 INSTALLATION OF VALVES:
A. INSTALL VALVES IN PER MANUFACTURERS WRITTEN RECOMMENDATIONS.
B. DETECTOR CHECK VALVES: INSTALL IN HORIZONTAL POSITION AS INDICATED, ORIENTED FOR PROPER FLOW DIRECTION. INSTALL BY-PASS METER WITH GLOBE VALVE AND CHECK VALVE. IN ACCORDANCE WITH MANUFACTURERS INSTALLATION DIRECTIONS.
C. INSTALL BACKFLOW PREVENTION VALVE TO SEPARATE SPRINKLER SYSTEM FROM POTABLE WATER SYSTEM.
- 3.06 INSTALLATION OF FIRE PROTECTION SPECIALTIES:
A. GENERAL: INSTALL FIRE PROTECTION SPECIALTIES AS INDICATED, AND IN ACCORDANCE WITH NFPA 13 AND 14. FURNISH WIRING REQUIREMENTS TO ELECTRICAL INSTALLER FOR ELECTRICAL WIRING OF SUPERVISORY SWITCHES.
- 3.07 FIELD QUALITY CONTROL:
A. SPRINKLER PIPING FLUSHING: PRIOR TO CONNECTING SPRINKLER RISERS FOR FLUSHING, FLUSH WATER FEED MAINS, LEAD-IN CONNECTIONS AND CONTROL PORTIONS OF SPRINKLER PIPING. AFTER FIRE SPRINKLER PIPING INSTALLATION HAS BEEN COMPLETED AND BEFORE PIPING IS PLACED IN SERVICE, FLUSH ENTIRE SPRINKLER SYSTEM, AS REQUIRED TO REMOVE FOREIGN SUBSTANCES, UNDER PRESSURE AS SPECIFIED IN NFPA 13. CONTINUE FLUSHING UNTIL WATER IS CLEAR, AND CHECK TO ENSURE THAT DEBRIS HAS NOT CLOGGED SPRINKLERS.
B. PERFORM HYDROSTATIC TESTING OF COMPLETED OUTSIDE LINES IN ACCORDANCE WITH NFPA 24 UNLESS MORE STRINGENT TEST REQUIRED BY LOCAL AUTHORITIES HAVING JURISDICTION.
C. HYDROSTATIC TESTING: AFTER FLUSHING SYSTEM, TEST FIRE SPRINKLER PIPING HYDROSTATICALLY, FOR PERIOD OF 2 HOURS, AT NOT LESS THAN 200 PSI OR IN EXCESS OF MAXIMUM STATIC PRESSURE WHICH MAXIMUM STATIC PRESSURE IS IN EXCESS OF 150 PSI. CHECK SYSTEM FOR LEAKAGE OF JOINTS. MEASURE HYDROSTATIC PRESSURE AT LOW POINT OF EACH SYSTEM OR ZONE BEING TESTED.
D. REPAIR OR REPLACE PIPING SYSTEM AS REQUIRED TO ELIMINATE LEAKAGE IN ACCORDANCE WITH NFPA STANDARDS FOR "LITTLE OR NO LEAKAGE" AND RETEST AS SPECIFIED TO DEMONSTRATE COMPLIANCE.
- 3.08 ADJUSTING AND CLEANING:
A. CLEANING AND INSPECTING: CLEAN AND INSPECT FIRE PROTECTION SYSTEMS TO BE WIP-DOWN CLEAN AND FREE FROM LEAKS AND DEFECTS. INSPECT PIPE HANGERS TO INSURE SECURE STRUCTURAL CONNECTION AND THE HANGER IS TIGHT AND CARRYING THE WEIGHT OF THE PIPE.
EXTRA STOCK:
A. HEADS: FOR EACH STYLE AND TEMPERATURE RANGE REQUIRED, FURNISH ADDITIONAL SPRINKLER HEADS, AMOUNTING TO ONE UNIT FOR EVERY 100 INSTALLED UNITS, BUT NOT LESS THAN 5 UNITS OF EACH.
B. WRENCHES: FURNISH 2 SPANNER WRENCHES FOR EACH TYPE AND SIZE OF VALVE CONNECTION AND FIRE HOSE COUPLING.



PRELIMINARY SPRINKLER CALCULATION

Flow test Data	Static Pressure: 110	
	Residual Pressure: 80	
	Flow (GPM): 1186	
	Date taken: JULY 03, 2023	
	Time: 2:20 PM	
	Test taken by: CLINTON FIRE DEPARTMENT	
	Elevation of Hydrant: 0	
GPM Demand of BLDG.		
Most remote area or highest demand (Room Name)	WELDING SHOP	
Design Density (NFPA 13 or supplied by insurance Co.)	0.15	
Design Area (Square footage)	1500	
Overage Factor (1.20 typ.)	1.2907	
Remote area GPM demand (Density x Area x Overage)	290.4075	
Standpipe GPM demand (If required) (500 gpm for the first, 250 after)	0	
Hose GPM demand (100 Light, 250 ordinary, 500 extra hazard)	250	
Total GPM (Remote Area + Standpipe + Hose)	540.4075	
Available Pressure		
Density	0.15	
Max Sprinkler Head coverage (As per NFPA 13 table 4-2.2)	121	
Square footage spacing x Density = GPM sprinkler head (Q)	18.15	
K-Factor of Sprinkler head (K)	5.6	
Equation: Pressure required at head = (Q / K) ²	11	4.33
Elevation difference from test hydrant to base of riser x .433	10	
Elevation difference from base of riser to remote area x .433	15	6.495
Backflow Preventer pressure drop		
Safety Factor (5 psi min.) (SF)	5	
Fixed Pressure drop =	31	
Estimated Friction Drop Thru Fire Line		
Length of run from test hydrant to riser (HR)	300	
Pipe C Factor (Ductile Iron C-100)	100	
Nominal Pipe Inside Diameter (10", 8", 6", 4", 3")	6	
Friction loss in pipe (psi/ft) (Based on Hazen William Equation) (HW1)		
HR x 1.30 x HW1 =	0.016637	
Length of run from riser to last sprinkler head (estimated.) (RS)		
Base of Riser to farthest sprinkler	160	
Pipe C Factor (Black Steel C-120)	120	
Nominal Pipe Inside Diameter (6", 4", 3", 2-1/2", 2")	4	
Friction loss in pipe (psi/ft) (Based on Hazen William Equation) (HW2)		
RS x 1.30 x HW2 =	0.085537	
Estimated Required Flow Data for Building		
Required GPM	540.4075	
Required PSI	56	

SPRINKLER LEGEND

SY	DESCRIPTION	SPRA	TYP	TEMP.	ORIFICE	K	MODEL #	FINISH
●	PENDENT	15" X 15"	QUICK RESPONSE	165°	1/2"	5.6	V2708	SEMI-RECESSED WHITE
○	UPRIGHT	15" X 15"	STANDARD	212°	1/2"	5.6	V2703	BRASS
▶	DRY SIDEWALL	15"	STANDARD	175°	1/2"	5.6	V3509-VS1	BRASS

FIRE PROTECTION GENERAL NOTES:

- THE SPRINKLER HEADS SHOWN ARE GENERAL IN NUMBER AND LOCATION. THE EXACT NUMBERS AND LOCATIONS SHALL BE DETERMINED BY THE SUCCESSFUL SPRINKLER INSTALLER AND SHALL BE SHOWN ON HIS SHOP DRAWINGS. THE SPRINKLER SYSTEM SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND NFPA 13 & 24.
- PROVIDE A HYDRAULICALLY DESIGNED FULL COVERAGE SPRINKLER SYSTEM.
- PROVIDE DRY PENDANT TYPE HEADS IN COOLER, FREEZER AND/OR OTHER AREAS THAT ARE SUBJECT TO FREEZING FOR FREEZE PROTECTION.
- THE SPRINKLER CONTRACTOR SHALL COORDINATE LOCATIONS OF SPRINKLER HEADS AND ASSOCIATED PIPING WITH ALL OTHER TRADES.
- ALL SPRINKLER HEADS LOCATED IN 2x4 TILES SHALL BE CENTERED.
- SPRINKLER SYSTEM SHALL BE LIGHT HAZARD IN ALL AREAS, EXCEPT ORDINARY HAZARD GROUP I IN THE WELDING SHOP, AG INNOVATION, ELECTRICAL/MECHANICAL ROOM.
- CONTRACTOR SHALL VERIFY LOCATION AND INSTALLATION REQUIREMENTS OF BACKFLOW PREVENTER WITH THE LOCAL AUTHORITY HAVING JURISDICTION, AND LOCAL WATER UTILITY BEFORE CONSTRUCTION OR SITE EXCAVATION HAS BEGUN.
- SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR FULL REPLACEMENT COST OF SURFACES DAMAGED BY DRAINAGE FROM THE SPRINKLER SYSTEM.
- THE CONTRACTOR MUST PROVIDE A CERTIFIED CALCULATION DEMONSTRATING THE CHARACTERISTICS OF THE PROPOSED SYSTEM AND SHOWING PIPE SIZE AND SYSTEM FLOW.
- THE MINIMUM PIPE SIZE FOR THE UNDERGROUND SPRINKLER MAIN IS 6". CONTRACTOR TO VERIFY WITH A CERTIFIED CALCULATION. THE MINIMUM BURY DEPTH FOR THE FIRE MAIN IS 36" BELOW FINISHED GRADE.
- PROVIDE A 'PUMPER' HYDRANT WITHIN 100' OF THE FIRE DEPARTMENT CONNECTION AS REQUIRED BY THE AHJ.
- THE NEW SPRINKLER SYSTEM IS AN NFPA 13-4.1 WET PIPE.
- ALL FIRE PROTECTION PIPING STARTING FROM POINT OF SERVICE ON MUST BE INSTALLED BY A LICENSED FIRE PROTECTION CONTRACTOR. SEE THE SITE UTILITY DRAWING FOR UNDERGROUND PIPING AND VALVES REQUIRED.
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, RULES AND ORDINANCES.
- THE VELOCITY OF WATER FOR SPRINKLER PIPING SHALL NOT EXCEED 21 FPS (FEET PER SECOND).
- CONTRACTOR SHALL MAKE ARRANGEMENTS FOR CONNECTIONS TO ALL UTILITY LINES AND PAY ALL FEES AND COSTS FOR CONNECTIONS TO THOSE SERVICES.
- SEE MECHANICAL SHEETS FOR DIFFUSER LOCATIONS.
- SEE ELECTRICAL LIGHTING SHEETS FOR LOCATION OF LIGHTS.

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CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

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PROJECT INFORMATION

PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS: 411 DOUGLAS LN, CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

FOR REVIEW ONLY
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 DESIGN DEVELOPMENT
 CONSTRUCTION BIDDING
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REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

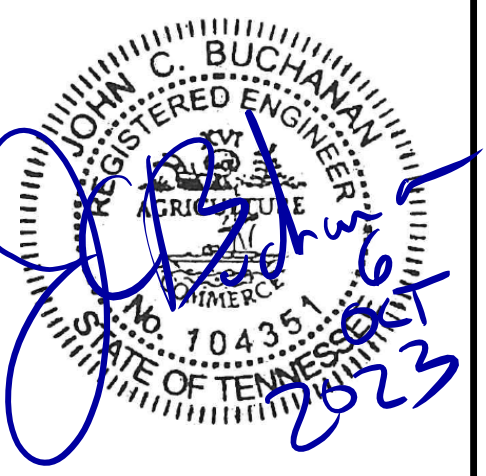
SHEET INFORMATION

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DESIGNED BY: JEJ
DRAWN BY: JEJ
REVIEWED BY: JCB
SHEET TITLE:

FIRE PROTECTION LEGENDS, SPECIFICATIONS, AND NOTES

SHEET NO.: **FP001**

Arch Date: 10/06/2023 09:02; Clinton High School Welding Building; 07_220042-02; Mechanical_R02.rvt



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411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: **220042-02**

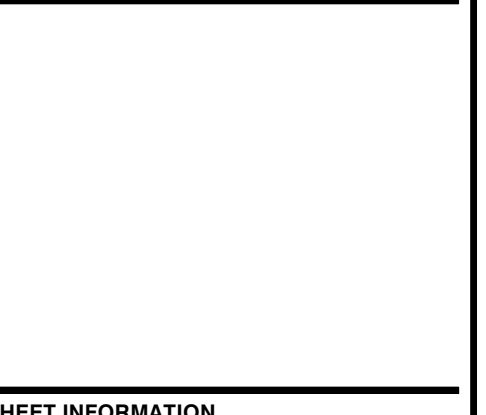
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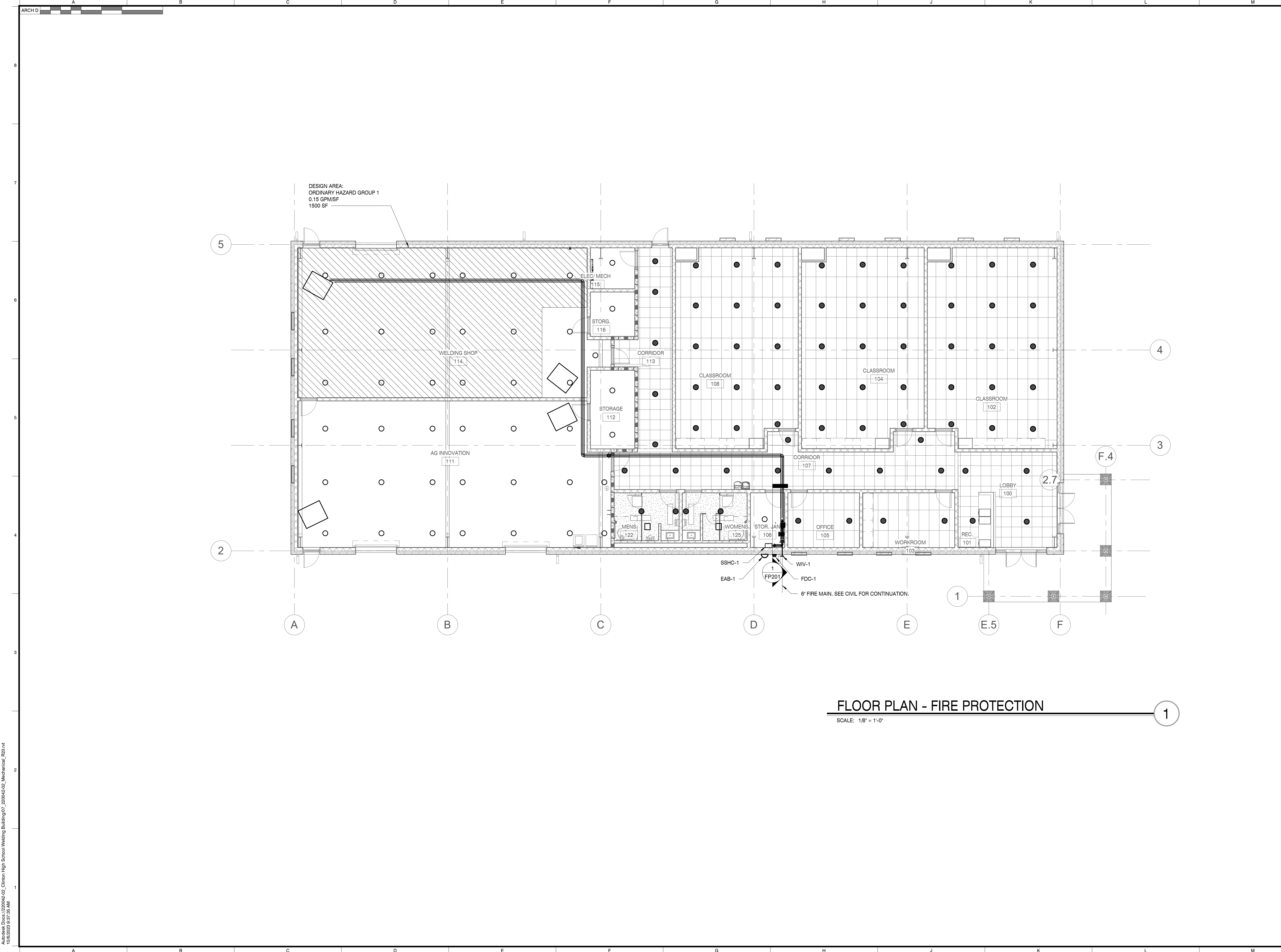
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FLOOR PLAN - FIRE PROTECTION

SHEET NO.:

FP101



FLOOR PLAN - FIRE PROTECTION

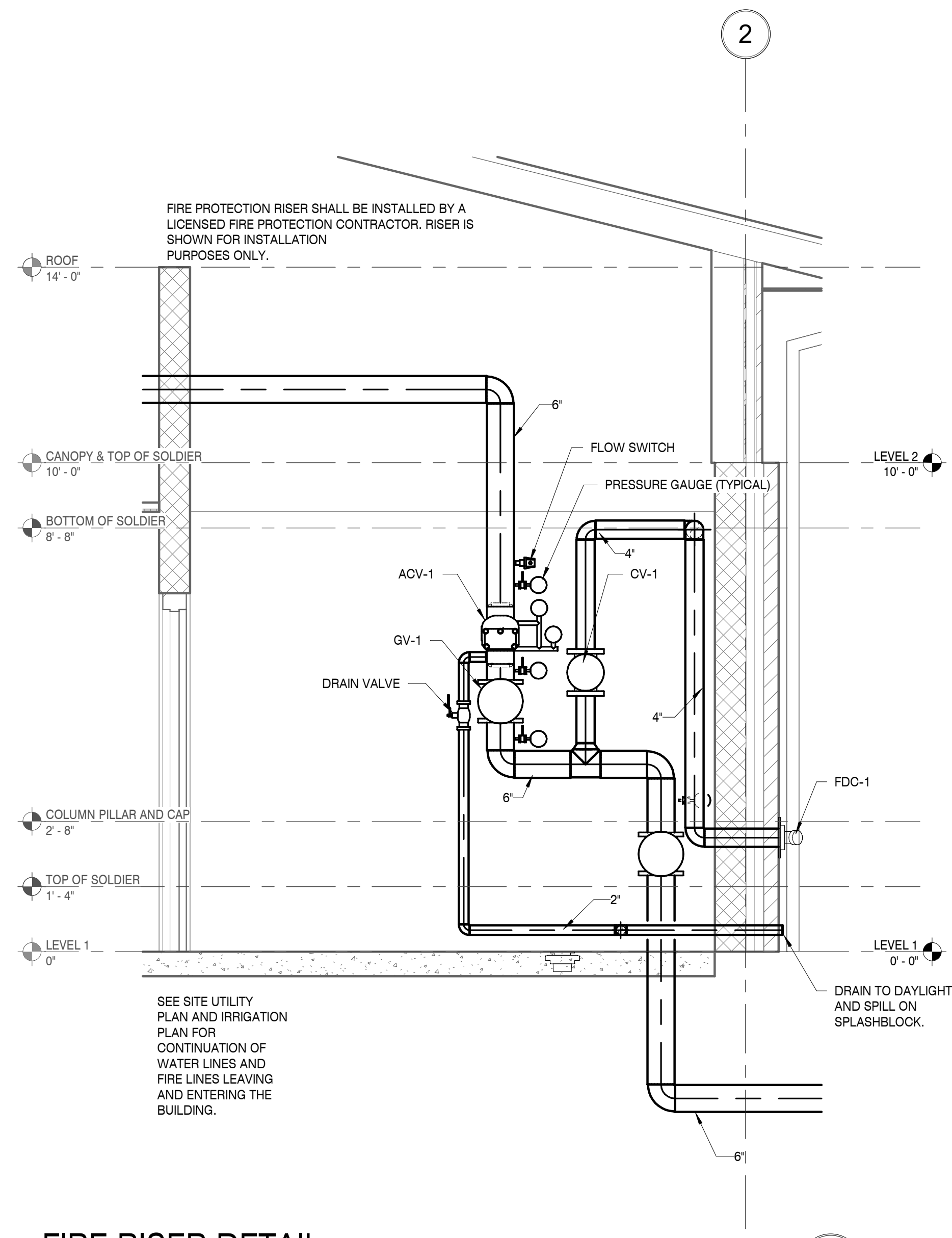
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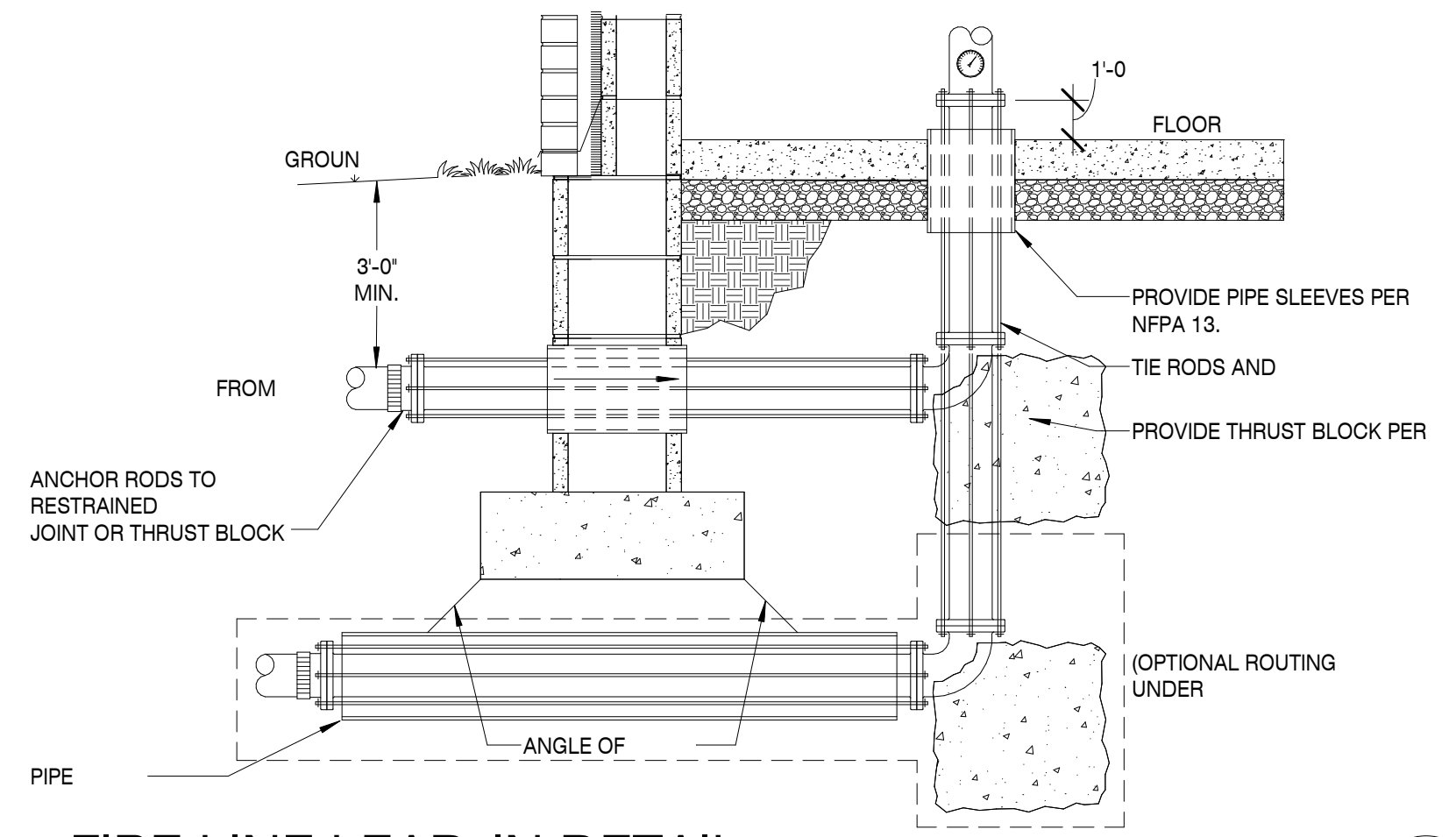
FIRE PROTECTION VALVE SCHEDULE				
ID	DESCRIPTION	PIPE SIZE	MANUFACTURER & MODEL #	REMARKS
GV-1	GATE VALVE	6"	VICTAULIC SERIES 771F	1, 2
CV-1	CHECK VALVE	4"	VICTAULIC SERIES 717	1
FDC-1	FIRE DEPARTMENT CONNECTION	4"	CROKER 6440	1
SSHC-1	SPARE SPRINKLER HEAD CABINET	N/A	VICTAULIC SA1-000-0000	1
EAB-1	ELECTRIC ALARM BELL	N/A	POTTER MBA-8-24	1
ACV-1	ALARM CHECK VALVE	6"	VICTAULIC SERIES UMC	1

NOTES:
 1. SEE FIRE PROTECTION SPECIFICATIONS ON SHEET FP0.1 FOR MORE INFORMATION.
 2. PROVIDE TAMPER SWITCH AND CONNECT TO FIRE ALARM.



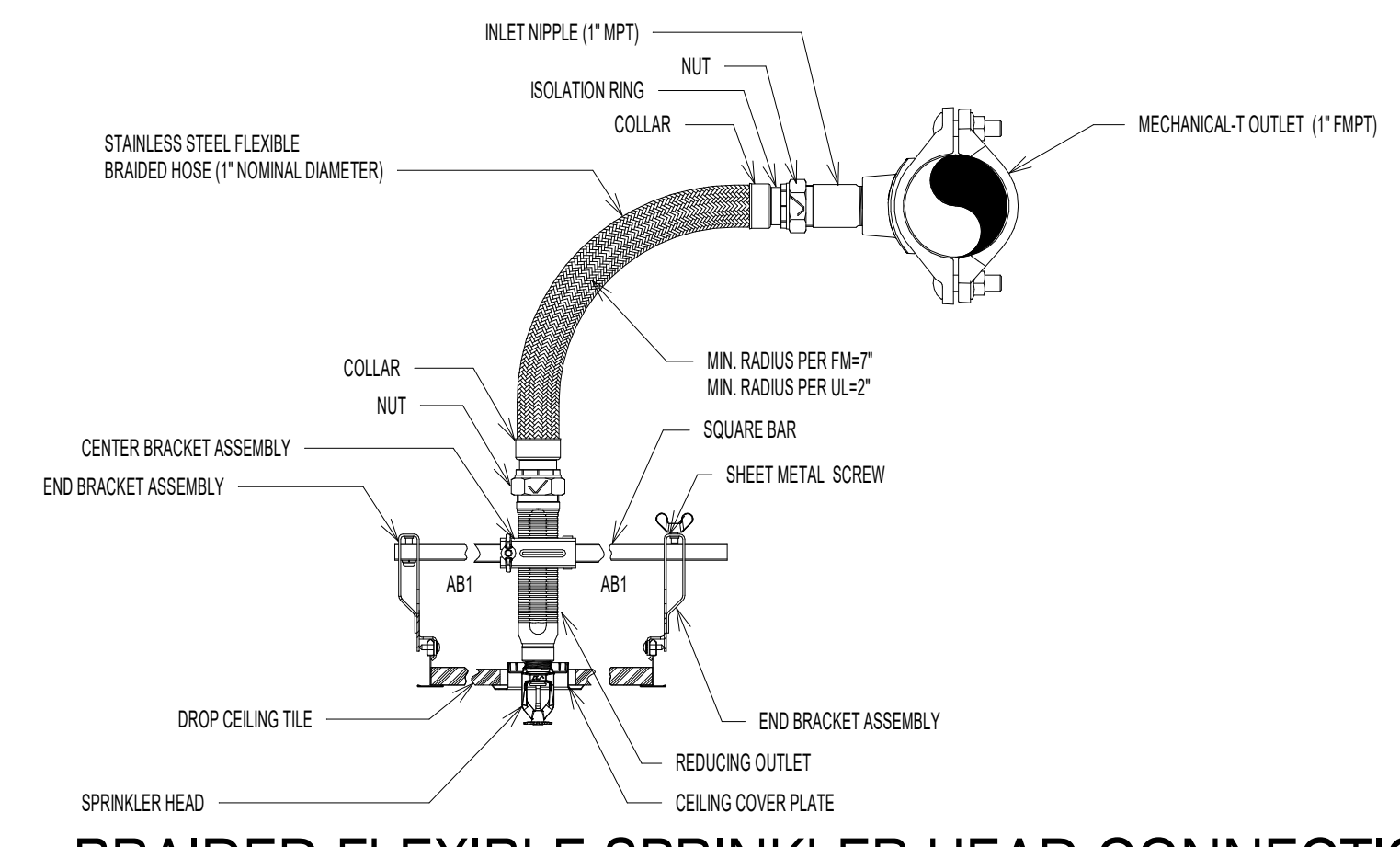
FIRE RISER DETAIL

SCALE: 1/2" = 1'-0"



FIRE LINE LEAD-IN DETAIL

SCALE: 1/8" = 1'-0"



BRAIDED FLEXIBLE SPRINKLER HEAD CONNECTION

SCALE: 1/2" = 1'-0"

SEISMIC RESTRAINT FOR PIPING

BRAACING OF PIPES:

A. VERTICAL PIPING

- (1) ATTACHMENT - VERTICAL PIPING SHALL BE SECURED AT SUFFICIENTLY CLOSE INTERVALS TO KEEP THE PIPE IN ALIGNMENT AND CARRY THE WEIGHT OF THE PIPE AND CONTENTS. STACKS SHALL BE SUPPORTED AT THEIR BASES AND IF OVER 2 STORIES IN HEIGHT AT EACH FLOOR BY APPROVED METAL FLOOR CLAMPS.
- (2) SCREWED PIPE - SCREWED PIPE (I.P.S.) SHALL BE SUPPORTED AT NOT - LESS THAN EVERY OTHER STORY HEIGHT.
- (3) COPPER TUBING - COPPER TUBING SHALL BE SUPPORTED AT EACH STORY FOR PIPING 1 1/2" AND LARGER DIAMETER, AT NOT MORE THAN 6 FOOT INTERVALS FOR PIPING 1 1/2" AND SMALLER IN DIAMETER.
- (4) PIPES OF OTHER APPROVED MATERIAL SHALL BE SUPPORTED IN ACCORDANCE WITH THEIR APPROVED INSTALLATION STANDARDS.
- (5) VERTICAL RISERS SHALL BE SUPPORTED WITH A RISER CLAMP AT EACH FLOOR. WHERE THERMAL EXPANSION OCCURS, ANCHOR THE RISER AT THE MIDPOINT OR AT THE NEXT FLOOR ABOVE THE MIDPOINT WITH ADDITIONAL SUPPORTS ADJACENT TO THE TOP AND BOTTOM OF THE RISER; INSTALL GUIDES ON THE RISER AT EACH IMMEDIATE FLOOR. RISERS IN HIGH RISE BUILDINGS (SIX STORIES AND ABOVE) SHALL BE DESIGNED INDIVIDUALLY.

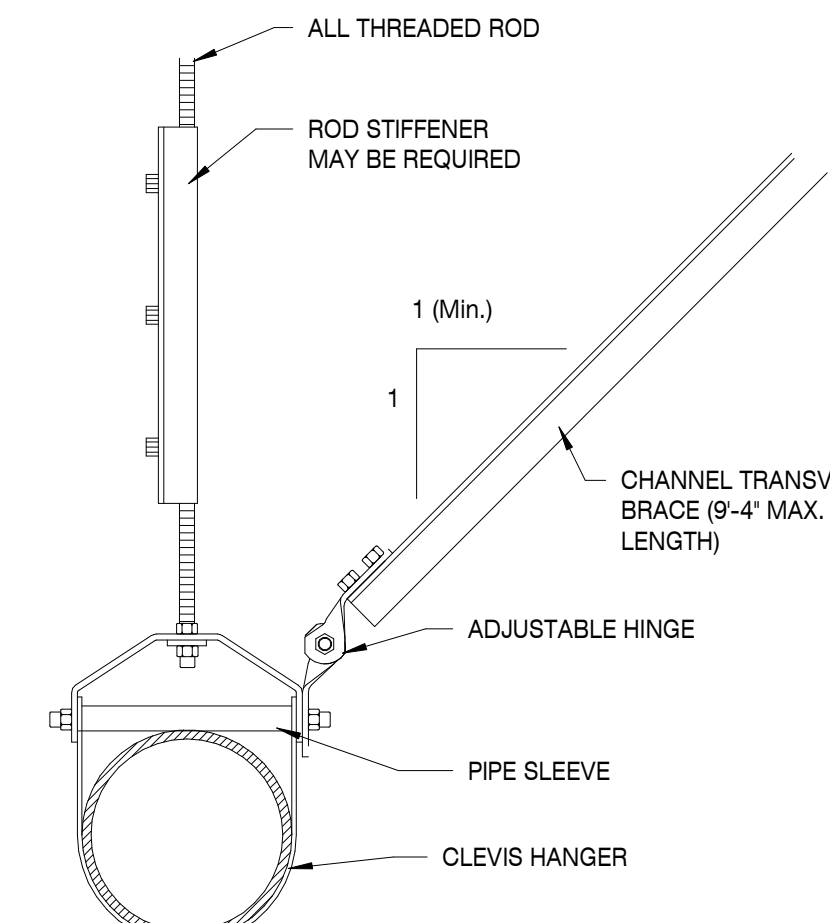
B. HORIZONTAL PIPING

- (1) SUPPORTS - HORIZONTAL PIPING SHALL BE SUPPORTED AT SUFFICIENTLY CLOSE INTERVALS TO KEEP IT IN ALIGNMENT AND PREVENT SAGGING.
- (2) SCREWED PIPE - SCREWED PIPE (I.P.S.) OR FLANGED PIPE SHALL BE SUPPORTED AT APPROXIMATELY 10 FOOT INTERVALS.
- (3) COPPER TUBING - COPPER TUBING SHALL BE SUPPORTED AT APPROXIMATELY 6 FOOT INTERVALS FOR TUBING 1 1/2" AND SMALLER IN DIAMETER AND 10 FOOT INTERVALS FOR TUBING 2" AND LARGER IN DIAMETER.
- (4) PIPES OF OTHER APPROVED MATERIALS SHALL BE SUPPORTED IN ACCORDANCE WITH THEIR APPROVED INSTALLATION STANDARDS.

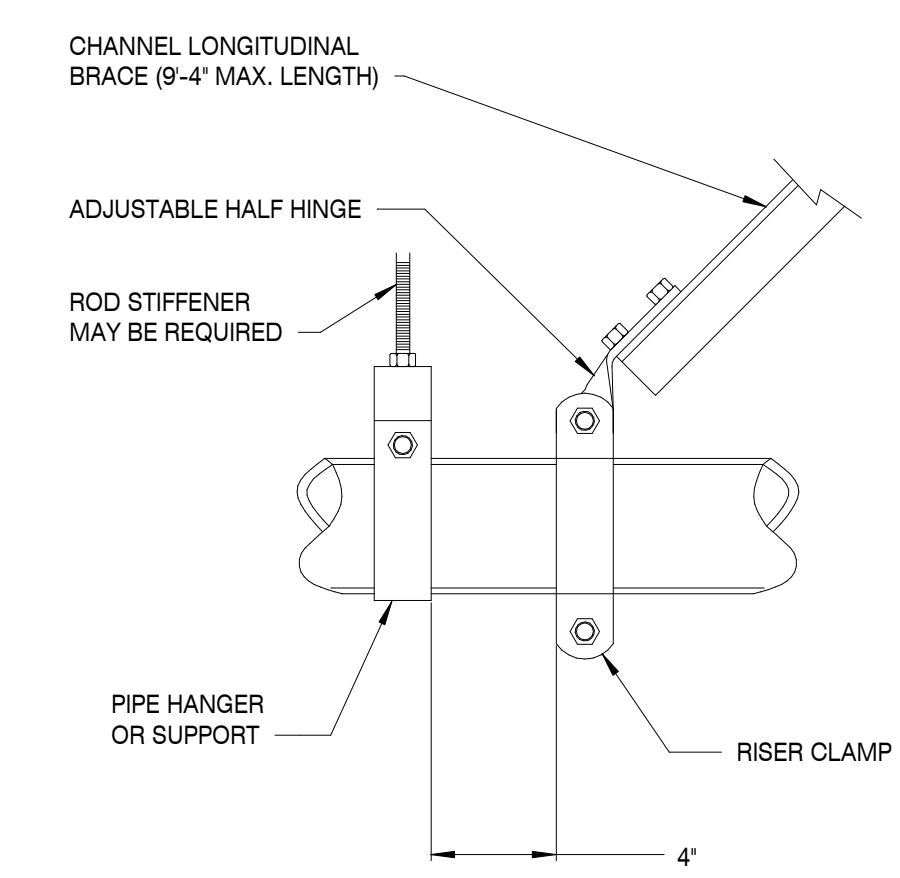
3. TRANSVERSE BRACING AT 40' - 0" O.C. MAXIMUM UNLESS OTHERWISE NOTED.
4. LONGITUDINAL BRACING AT 80' - 0" O.C. MAXIMUM UNLESS OTHERWISE NOTED. WHEN THERMAL EXPANSION OR CONTRACTION IS INVOLVED, PROVIDE LONGITUDINAL BRACINGS AT ANCHOR POINTS. THE LONGITUDINAL BRACES AND THE CONNECTIONS MUST BE CAPABLE OF RESISTING THE FORCE INDUCED BY EXPANSION AND CONTRACTION.
5. TRANSVERSE BRACING FOR ONE PIPING SECTION MAY ALSO ACT AS LONGITUDINAL BRACING FOR THE PIPING SECTION CONNECTED PERPENDICULAR TO IT, IF THE BRACING IS INSTALLED 24" OF THE ELBOW OR TEE OF SIMILAR SIZE.
6. FOR THREADED PIPING THE FLEXIBILITY MAY BE PROVIDED BY THE INSTALLATION OF SWING JOINTS. IN WELDED OR SOLDER JOINT PIPING THE FLEXIBILITY SHALL BE PROVIDED BY EXPANSION LOOPS OR MANUFACTURED FLEXIBLE CONNECTORS. FOR PIPING WITH MANUFACTURED BALL JOINTS SELECT LENGTH OF PIPING OFFSET USING 'SEISMIC DRIFT' IN PLACES OF 'EXPANSION PER JOINT MANUFACTURERS' SELECTION TABLE. SEISMIC DRIFT = 0.015 FT. PER FOOT OF HEIGHT.
7. DO NOT USE BRANCH LINES TO BRACE MAIN LINES.
8. TRAPEZE HANGERS MAY BE USED. PROVIDE FLEXIBILITY IN JOINTS WHERE PIPES PASS THROUGH BUILDING SEISMIC OR EXPANSION JOINTS, OR WHERE RIGIDLY SUPPORTED PIPES CONNECT TO EQUIPMENT WITH VIBRATION ISOLATORS.
9. A RIGID PIPING SYSTEM SHALL NOT BE BRACED TO DISSIMILAR PARTS OF A BUILDING OR TWO DISSIMILAR BUILDING SYSTEMS THAT MAY RESPOND IN A DIFFERENT MODE DURING AN EARTHQUAKE. EXAMPLES: WALL AND A ROOF; SOLID CONCRETE WALL AND A METAL DECK WITH LIGHTWEIGHT CONCRETE FILL.
10. PROVIDE LARGE ENOUGH PIPE SLEEVES THROUGH WALLS OR FLOORS TO ALLOW FOR ANTICIPATED DIFFERENTIAL MOVEMENTS.
11. AT VERTICAL PIPE RISERS, WHEREVER POSSIBLE, SUPPORT THE WEIGHT OF THE RISER AT A POINT OR POINTS ABOVE THE CENTER OF GRAVITY OF THE RISER. PROVIDE LATERAL GUIDES AT THE TOP AND BOTTOM OF THE RISER, AND AT INTERMEDIATE POINTS NOT TO EXCEED 30' - 0" ON CENTER.
12. FOR GAS PIPING, THE BRACING DETAILS, SCHEDULES AND NOTES IN THE SMACNA GUIDE MAY BE USED EXCEPT THAT TRANSVERSE BRACING SHALL BE AT 20' - 0" O.C. MAXIMUM AND LONGITUDINAL BRACING AT 40' - 0" O.C. MAXIMUM. ALSO 1" 1/4", 1 1/2", AND 2" DIAMETER PIPES SHALL BE BRACED THE SAME AS 2 1/2" DIAMETER PIPE IN THE SMACNA GUIDE. (NO BRACING IS REQUIRED FOR PIPES 3/4" DIAMETER AND SMALLER).

PIPING SEISMIC BRACING DETAIL

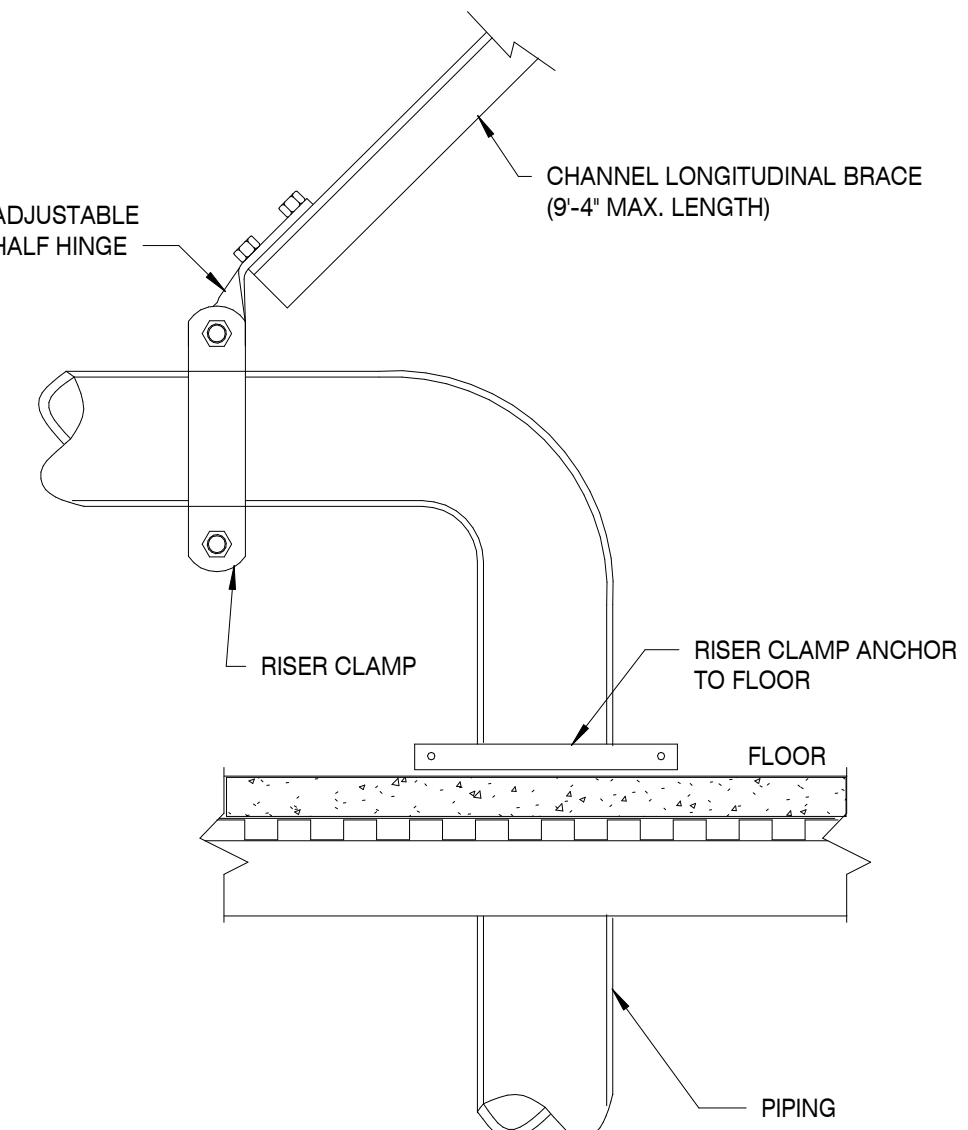
SCALE: N.T.S.



CLEVIS TRANSVERSE NTS



LONGITUDINAL NTS



TOP OF RISER NTS

MBI

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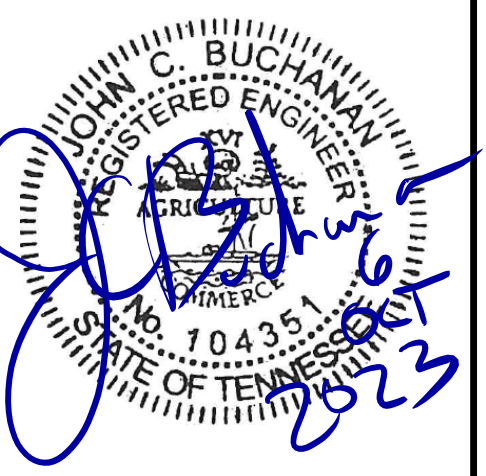
KEY PLAN

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 REVIEWED BY: JCB
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FIRE PROTECTION DETAILS

SHEET NO.: FP201



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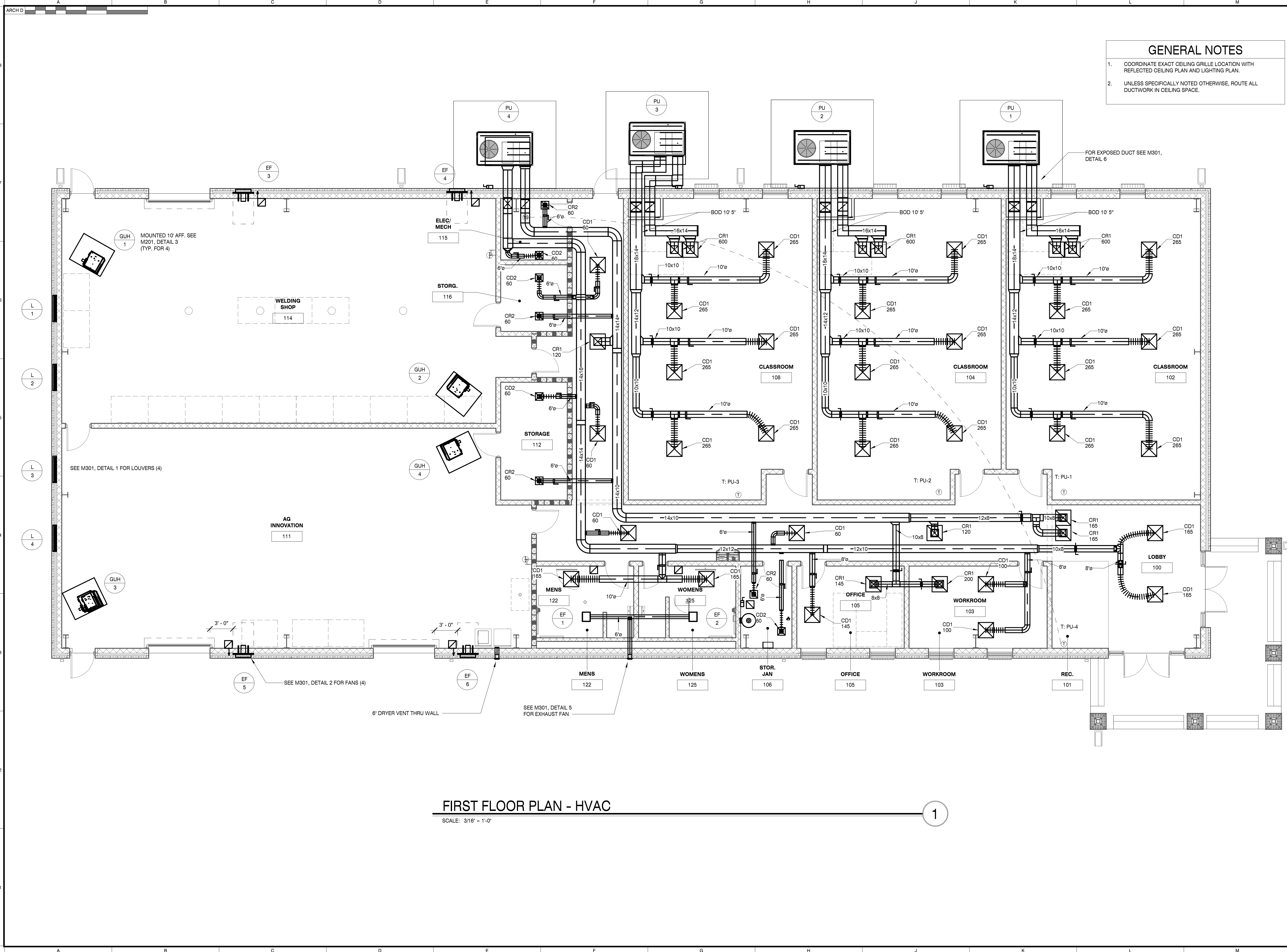
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DRAWN BY: DRJ
REVIEWED BY: JCB
SHEET TITLE:

FLOOR PLAN - HVAC
SHEET NO.:

M101

GENERAL NOTES

- COORDINATE EXACT CEILING GRILLE LOCATION WITH REFLECTED CEILING PLAN AND LIGHTING PLAN.
- UNLESS SPECIFICALLY NOTED OTHERWISE, ROUTE ALL DUCTWORK IN CEILING SPACE.

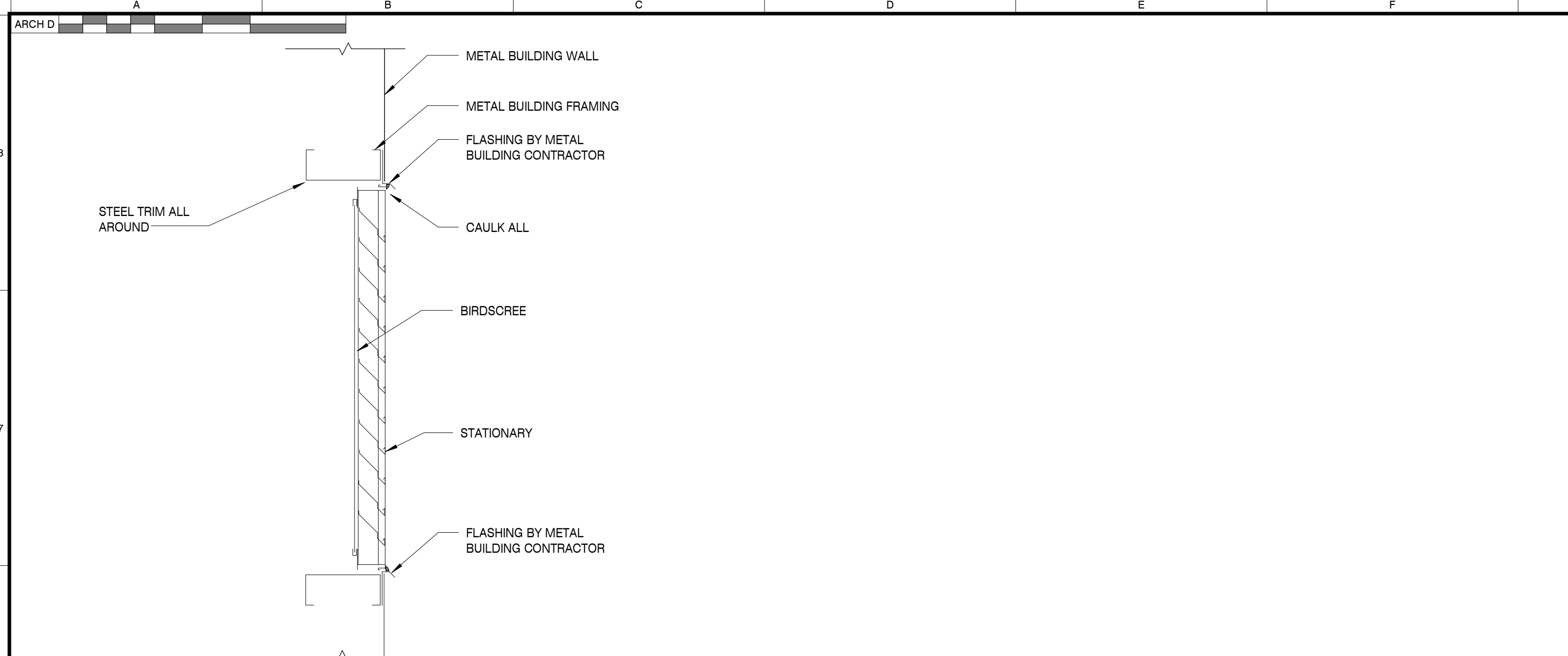


FIRST FLOOR PLAN - HVAC

SCALE: 3/16" = 1'-0"

1

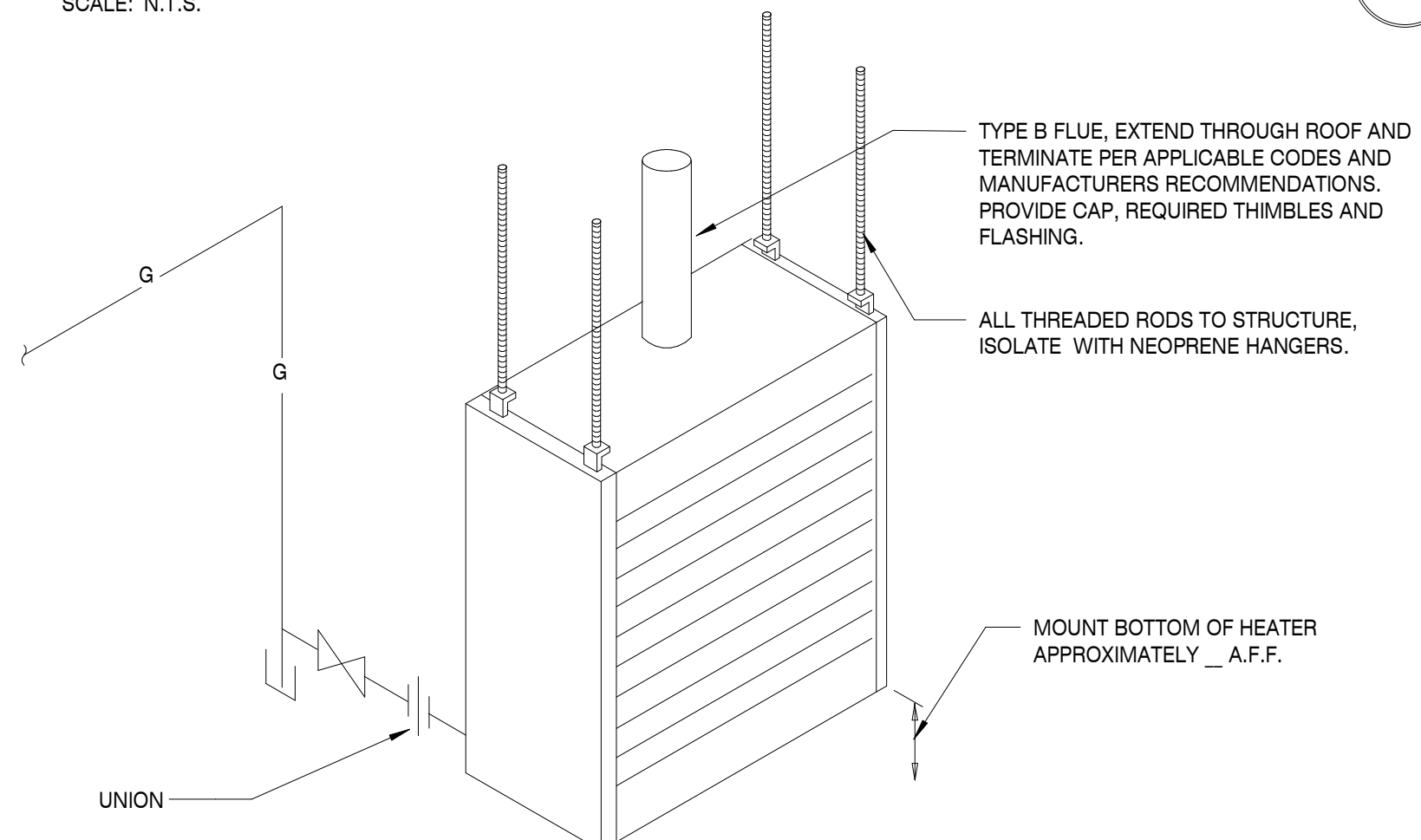
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WALL LOUVER INSTALLATION DETAIL

SCALE: N.T.S.

1

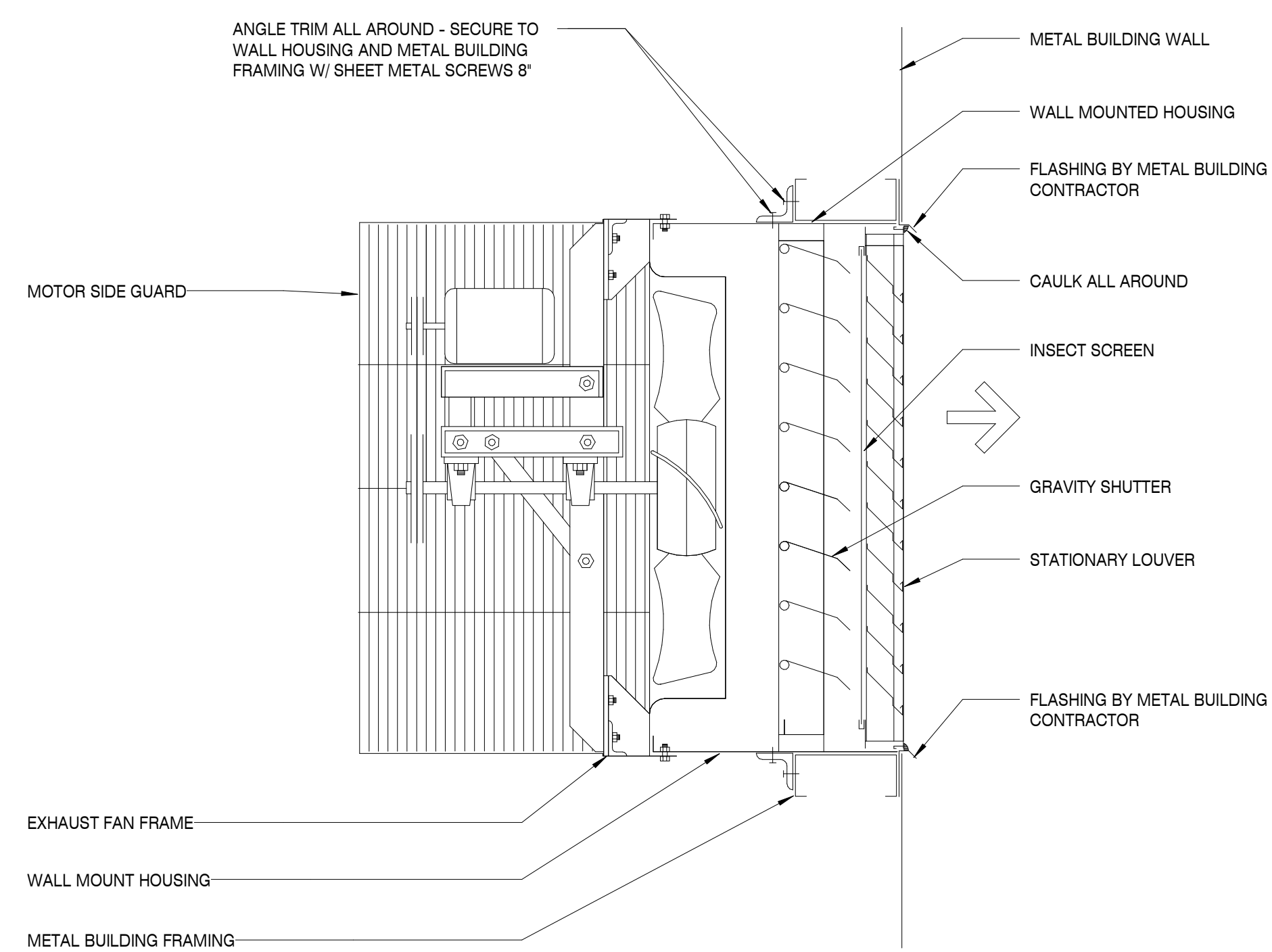


- SUSPEND THE UNIT HEATER DEAD LEVEL BOTH VERTICALLY AND HORIZONTALLY.
- SUSPEND THE UNIT HEATER SO THAT IT MAY BE EASILY DISCONNECTED AND REMOVED FOR SERVICE.
- LUBRICATE AS RECOMMENDED BY THE MANUFACTURER.
- CHECK OPERATION OF THERMOSTAT.
- CHECK PROPELLER BLADES FOR BALANCING BY RUNNING FAN AND CHECKING VIBRATION.
- ADJUST PIPE HANGERS SO THAT PIPING DOES NOT REST ON UNIT HEATER.
- ADJUST SUPPORT RODS SO THAT UNIT DOES NOT REST ON PIPING.

GAS FIRED UNIT HEATER DETAIL

SCALE: N.T.S.

2



WALL EXHAUST FAN DETAIL

SCALE: N.T.S.

3

GAS FIRED PACKAGED UNIT WITH DX COOLING SCHEDULE

DRAWING SYMBOL	SUPPLY AIR			OUTSIDE AIR CFM	COOLING				HEATING		SMOKE DETECTORS			EFFICIENCIES		SINGLE POINT ELECTRICAL		WEIGHT (LBS.)	MFR MODEL NUMBER	
	TOTAL CFM	EXT. SP (IN. WG)	FAN HP		TEMPS (°F) @ 95°F AMBIENT		CAPACITIES (MBH)		INPUT	OUTPUT	SUPPLY	RETURN	EER	SEER	AFUE	MCA	MOCP			VOLTAGE
					UNIT ENT AIR	COIL LGV AIR	TOTAL	SENS												
PU 1	1600	0.75	1.0	317	80.00 DB / 67.00 WB	58.46 DB / 56.78 WB	48.35	35.07	60.00	49.00	YES	YES	13	17.5	82	30.0	40.0	208/3/60	763	TRANE YHC047E3RLA
PU 2	1600	0.75	1.0	317	80.00 DB / 67.00 WB	58.46 DB / 56.78 WB	48.35	35.07	60.00	49.00	YES	YES	13	17.5	82	30.0	40.0	208/3/60	763	TRANE YHC047E3RLA
PU 3	1600	0.75	1.0	317	80.00 DB / 67.00 WB	58.46 DB / 56.78 WB	48.35	35.07	60.00	49.00	YES	YES	13	17.5	82	30.0	40.0	208/3/60	763	TRANE YHC047E3RLA
PU 4	1485	0.75	1.0	300	80.00 DB / 67.00 WB	58.46 DB / 56.78 WB	48.35	35.07	60.00	49.00	YES	YES	13	17.5	82	30.0	30.0	208/3/60	763	TRANE YHC047E3RLA

ACCESSORIES AND FEATURES:

- 5 YEAR COMPRESSOR WARRANTY.
- FILTER RACK AND THROW-AWAY 1" THICK FILTER FURNISHED WITH UNIT.
- ROOF CURB COMPATIBLE WITH ROOF SYSTEM INSTALLED.
- UNITS SHALL BE TRANE OR APPROVED SUBSTITUTE.
- COOLING CAPACITIES ARE SCHEDULED AT 80/67 DEGREES INDOOR AND 95 DEGREES OUTDOOR TEMPERATURE.
- EQUIPMENT TO BE ARI CERTIFIED AND U.L. AND A.G.A. APPROVED.
- AUTOMATIC CHANGEOVER THERMOSTAT WITH LOCKING PLASTIC COVER.
- PROVIDE DUCT SMOKE DETECTORS WHERE SCHEDULED ABOVE. INSTALL PER NFPA & ALL LOCAL CODES.
- COOLING CAPACITIES DO NOT HAVE FAN MOTOR HEAT DEDUCTED.
- ECONOMIZER W/ POWERED EXHAUST
- HOT GAS BEHEAT

EXHAUST FAN SCHEDULE

DRAWING SYMBOL	USE	AMCA CFM	S.P. IN. WG	RPM	TIP SPEED	WATTS/HP	TYPE	VOLTAGE	SONES	WEIGHT (LBS.)	MANUFACTURER MODEL NO.
EF 1	122 - MENS	180	0.266	1400	1,590	48 W	CEILING EXHAUST FAN	115/60/1	1.5	24	GREENHECK SP-A190
EF 2	125 - WOMENS	180	0.266	1400	1,590	48 W	CEILING EXHAUST FAN	115/60/1	1.5	24	GREENHECK SP-A190
EF 3	114 - WELDING SHOP	3,000	0.25	947	5,982	3/4 HP	WALL AXIAL EXHAUST FAN	115/60/1	9.9	80	GREENHECK AER-24-02-315-VG
EF 4	114 - WELDING SHOP	3,000	0.25	947	5,982	3/4 HP	WALL AXIAL EXHAUST FAN	115/60/1	9.9	80	GREENHECK AER-24-02-315-VG
EF 5	111 - AG SHOP	3,000	0.25	947	5,982	3/4 HP	WALL AXIAL EXHAUST FAN	115/60/1	9.9	80	GREENHECK AER-24-02-315-VG
EF 6	111 - AG SHOP	3,000	0.25	947	5,982	3/4 HP	WALL AXIAL EXHAUST FAN	115/60/1	9.9	80	GREENHECK AER-24-02-315-VG

ACCESSORIES AND FEATURES:

- ROOF FANS: ROUND LOW SILHOUETTE ALUMINUM HOUSING; CENTRIFUGAL ALUMINUM WHEEL; BIRDSCREEN & BACKDRAFT DAMPER; SAFETY DISCONNECT @ FAN; PREFAB CURB TO MATCH ROOF CONSTRUCTION AND SLOPE; WALL SWITCH OR STARTER.
- CEILING FANS: ALUMINUM INLET GRILLE; LINED HOUSING; CENTRIFUGAL FAN; BACKDRAFT DAMPER; FLAT ROOF CAP OR ROOF JACK AS APPLICABLE; SOLID STATE SPEED CONTROLLER MTD. TO UNIT FOR BALANCING AND WALL SWITCH FOR ON/OFF CONTROL.
- WALL FANS: WALL SHUTTER (HEAVY DUTY); WALL COLLAR; MOTOR SIDE GUARD; DISCONNECT @ FAN

LOUVER SCHEDULE

DRAWING SYMBOL	LOUVER SIZE (WIDTH x HEIGHT)	CFM	MINIMUM SQ/FT FREE AREA	MAXIMUM PRESSURE DROP (IN. WG)	MANUFACTURER & MODEL NO.
L 1	36 X 42	3000	3.73	0.12	RUSKIN ELF211D
L 2	36 X 42	3000	3.73	0.12	RUSKIN ELF211D
L 3	36 X 42	3000	3.73	0.12	RUSKIN ELF211D
L 4	36 X 42	3000	3.73	0.12	RUSKIN ELF211D

ACCESSORIES AND FEATURES: (BY EQUIPMENT INSTALLER)

- LOUVERS SHALL BE BEAR AMCA SEAL AND SHALL BE TESTED IN ACCORDANCE WITH AMCA 5111.
- WATER PENETRATION THROUGH LOUVER SHALL NOT OCCUR BELOW 1000 FPM (FREE AREA)

GAS UNIT HEATER SCHEDULE

DRAWING SYMBOL	TYPE	CFM	HEAT (MBH)		VOLTAGE FAN HP	WEIGHT (LBS)	MANUFACTURER MODEL NO.
			IN	OUT			
GUH 1	NATURAL GAS SEPARATED COMB. LOW STATIC	456	30	24.6	115/10 0.06	58	REZNOR UDZ - A
GUH 2	NATURAL GAS SEPARATED COMB. LOW STATIC	456	30	24.6	115/10 0.06	58	REZNOR UDZ - A
GUH 3	NATURAL GAS SEPARATED COMB. LOW STATIC	456	30	24.6	115/10 0.06	58	REZNOR UDZ - A
GUH 4	NATURAL GAS SEPARATED COMB. LOW STATIC	456	30	24.6	115/10 0.06	58	REZNOR UDZ - A

ACCESSORIES AND FEATURES:

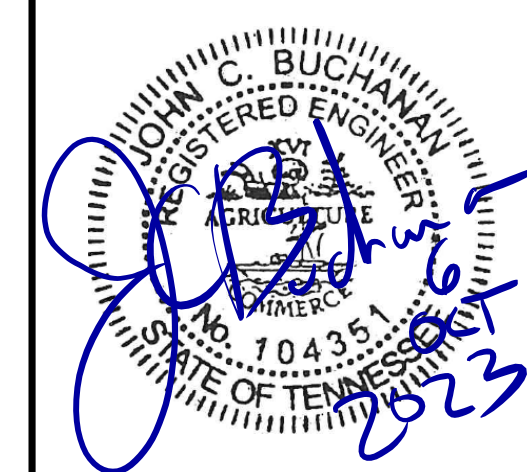
- PROVIDE MOUNTING HARDWARE.
- ELECTRONIC IGNITION, PROVIDE 120V SUPPLY WITH 24 VOLT CONTROL TRANSFORMER.
- ALTERNATIVE MANUFACTURERS: MODINE
- PROVIDE GAS TRAIN PIPING INCLUDING MANUAL SHUT OFF. GAS CONTROL VALVE PACKAGE, UNION AND DIRT LEG.
- PROVIDE CONCENTRIC VENT KIT AND VENT IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
- PROVIDE TYPE B GAS VENT WITH ROOF THIMBLE AND CAP.
- PROVIDE 2-WAY DISCHARGE LOUVERS.

MBI

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PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

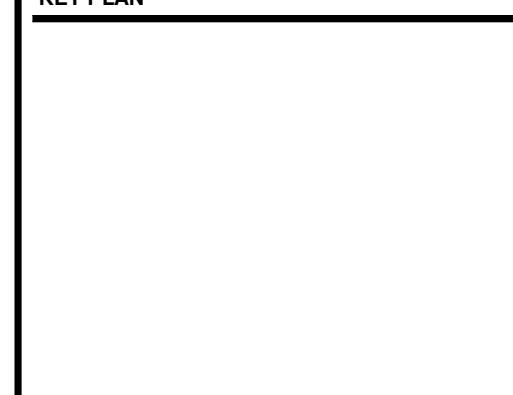
ACTIVE DESIGN PHASE

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REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN



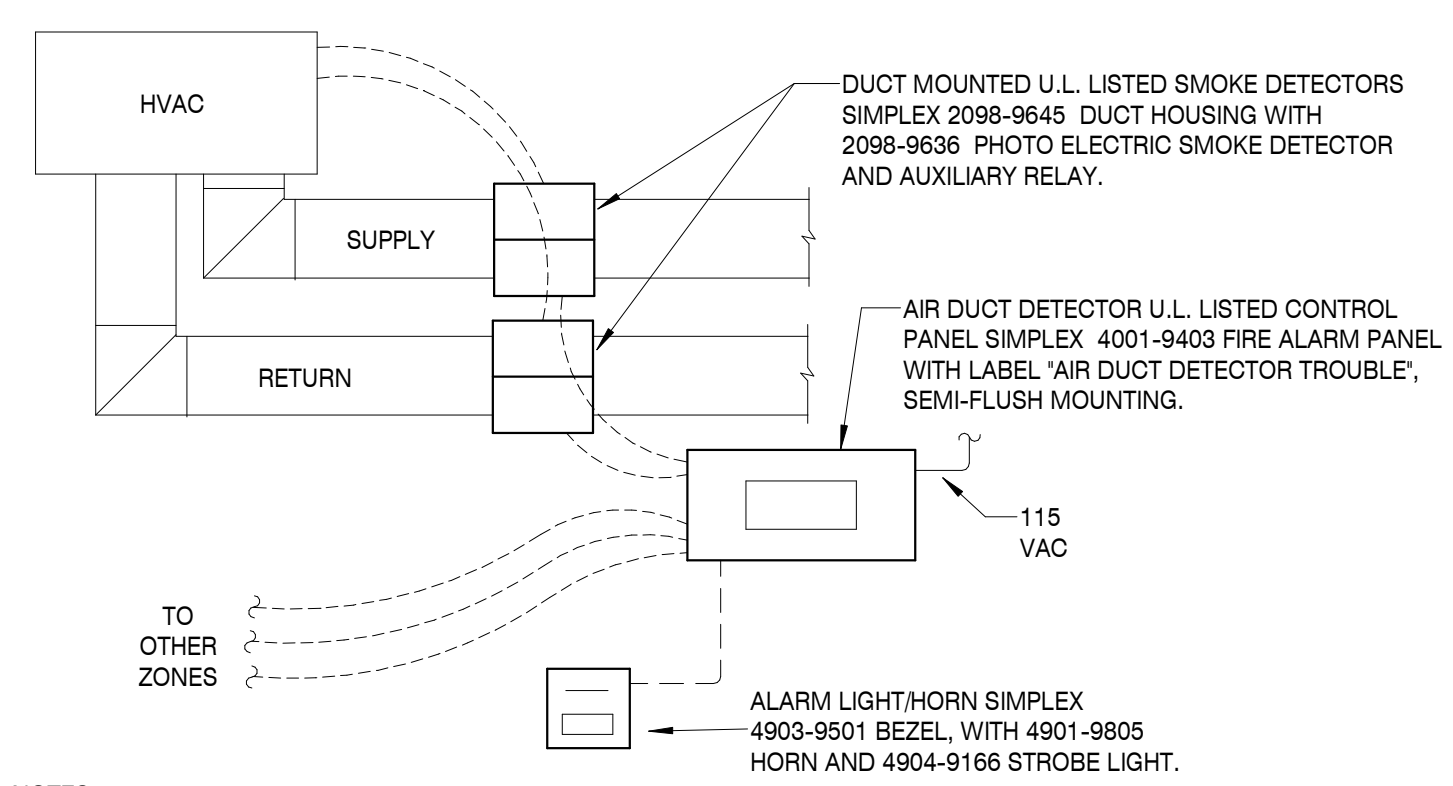
SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: DRJ
DRAWN BY: DRJ
REVIEWED BY: JCB
SHEET TITLE:

HVAC SCHEDULES

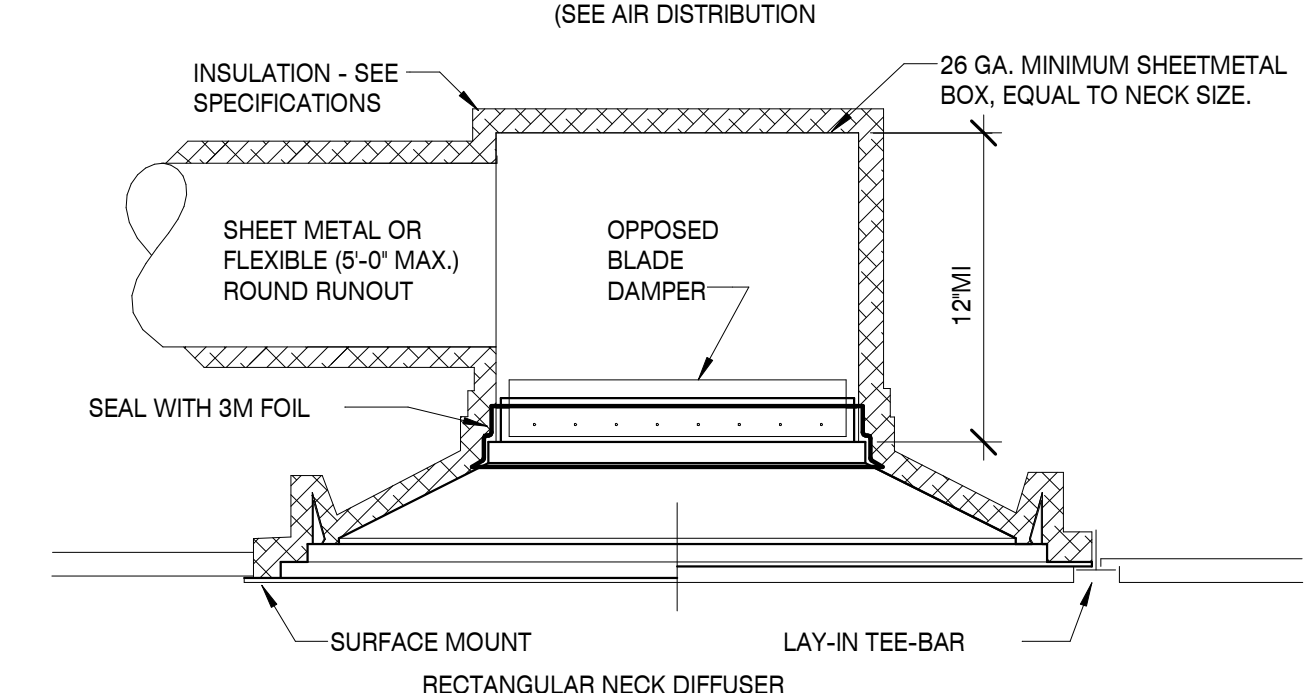
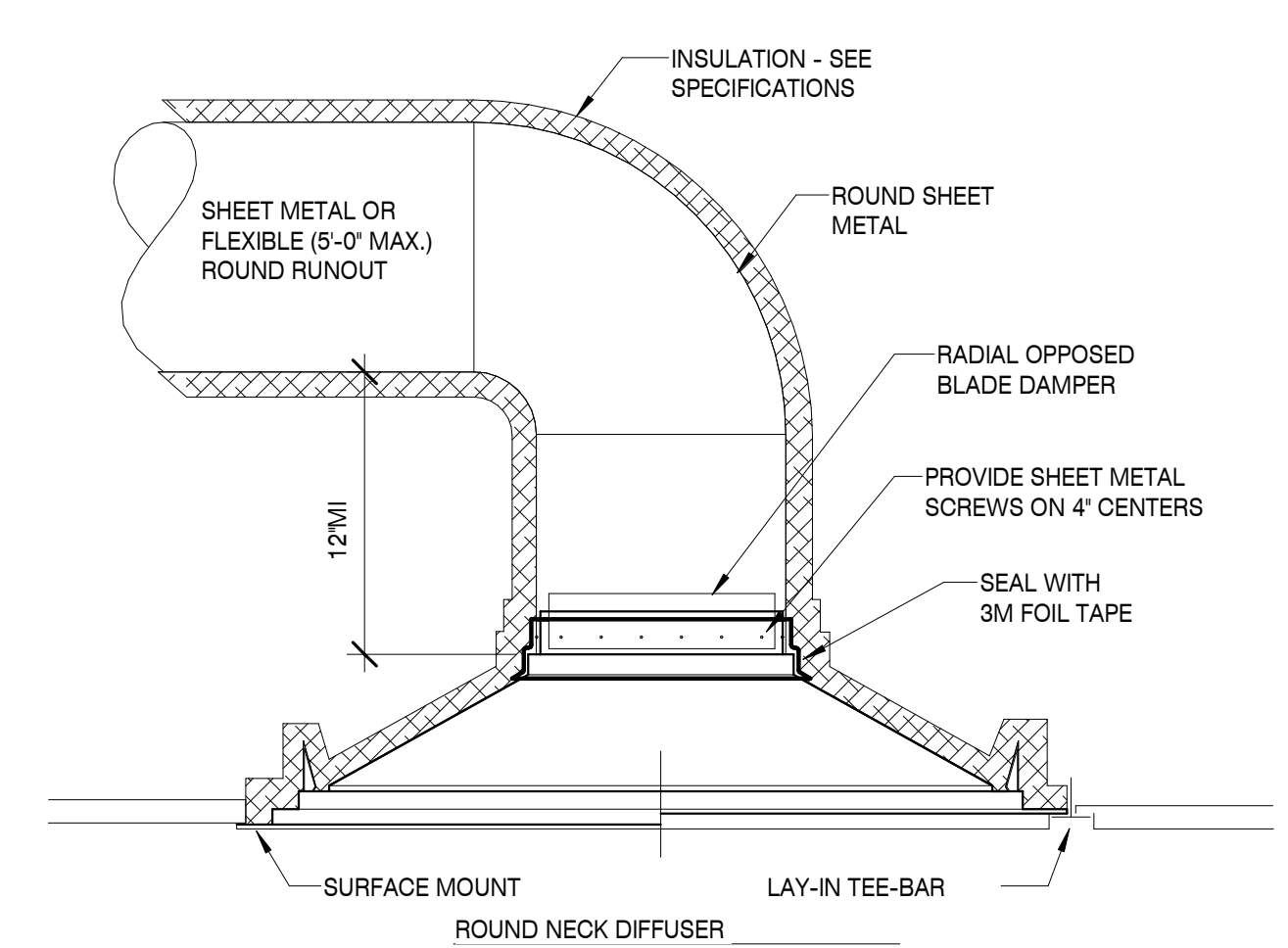
SHEET NO.:

M201



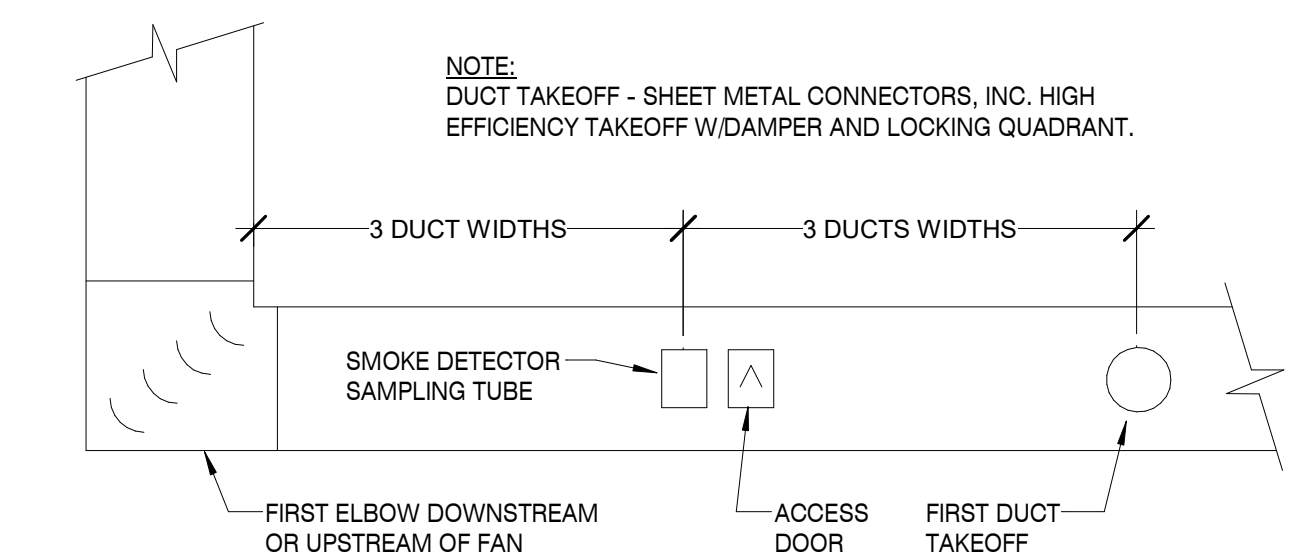
NOTES:
 1. LOCATE FIRE ALARM CONTROL PANEL AND HORN / LIGHT AS INDICATED ON THE DRAWINGS.
 2. INTERLOCK HVAC UNIT TO SHUT DOWN UPON AN ALARM CONDITION.
 3. ALL HVAC UNITS SHALL SHUT DOWN UPON AN ALARM FROM ANY DEVICE.
 4. ALL PANELS AND CONTROL WIRING TO EQUIPMENT SHALL BE BY THE MECHANICAL INSTALLER.
 5. SMOKE DETECTORS AND WIRING TO BE SUPERVISED AND GIVE A TROUBLE ALARM AND LIGHT IF A PROBLEM IS DETECTED.

FIRE ALARM CONTROL DETAIL 10
 SCALE: 1/8" = 1'-0"



NOTE: WHERE SPACE LIMITATIONS DO NOT PERMIT THE ABOVE ROUND INSTALLATION, AN INSTALLATION SIMILAR TO THE SQUARE NECK MAY BE USED.

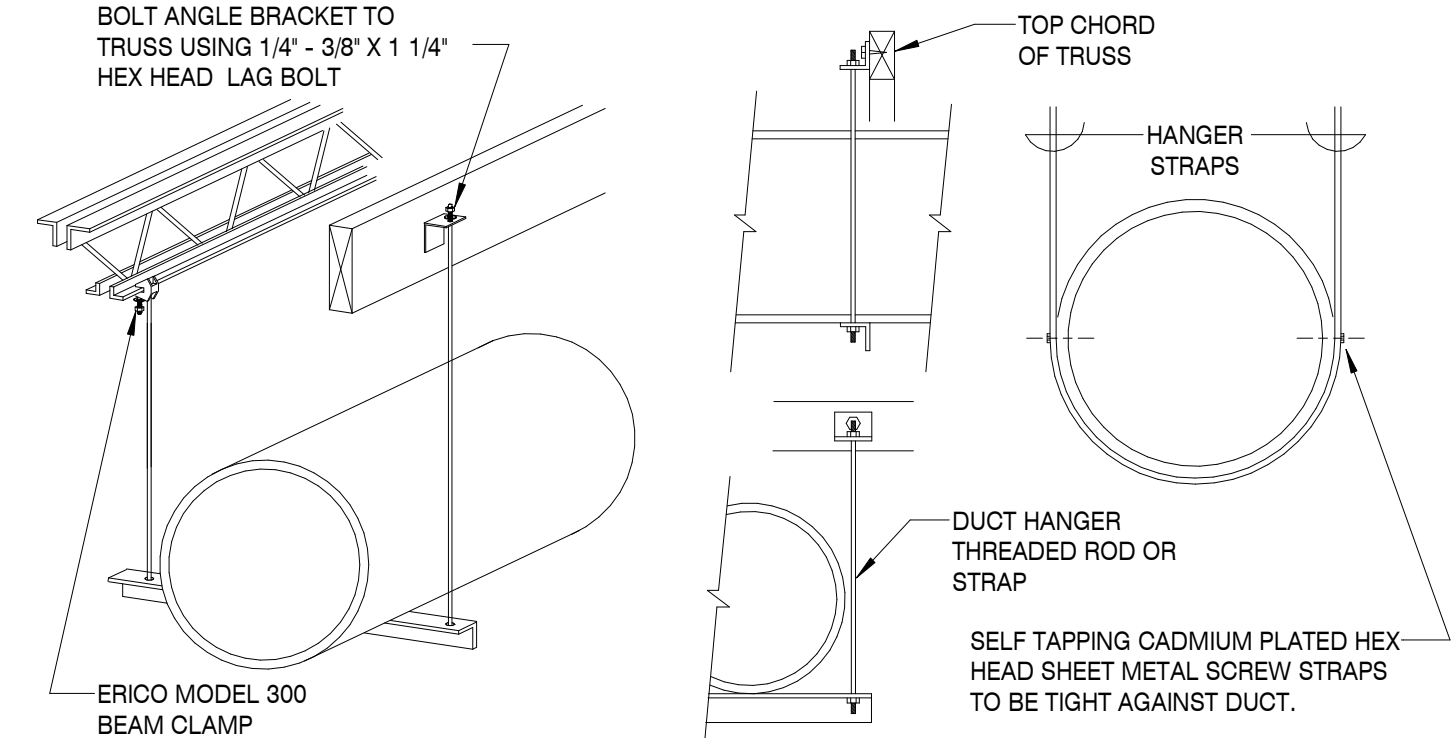
TYPICAL CEILING DIFFUSER DETAIL 9
 SCALE: N.T.S.



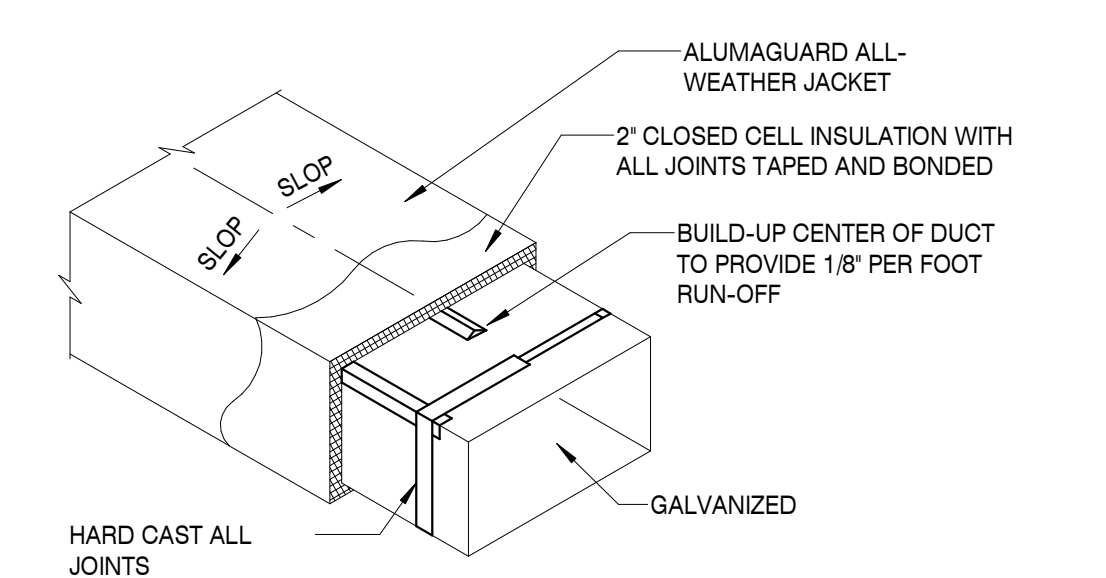
DUCT DETECTOR DETAIL 8
 SCALE: N.T.S.

HANGER SIZES FOR ROUND DUCT			
MAX SIDE	HANGE	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
30	1"x 18-GAGE	1-1/2"x1/2"x1/	10'-
36	1/4" ROUND	1-1/2"x1/2"x1/	8'-0
48	1/4" ROUND	2"x2"x1/	8'-0
60	5/16" ROUND	2"x2"x1/	8'-0
84	5/16" ROUND	2"x2"x1/	8'-0

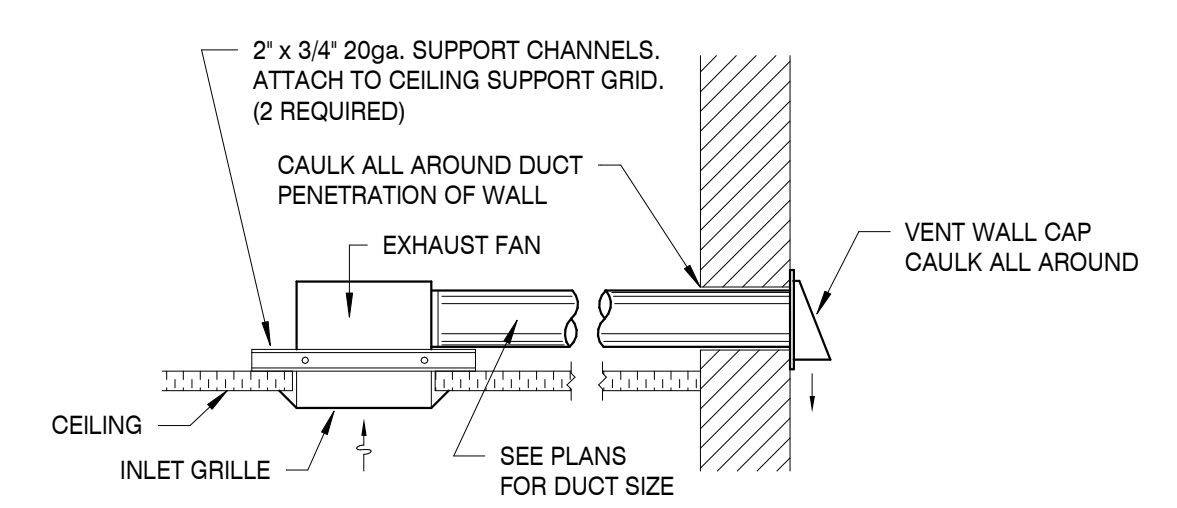
NOTE: ALL SUPPLY AIR DUCTS SHALL BE WRAPPED EXTERNALLY AS PER SPECIFICATIONS.
 NO POP RIVETS.



ROUND DUCT HANGER DETAIL 7
 SCALE: 1/8" = 1'-0"

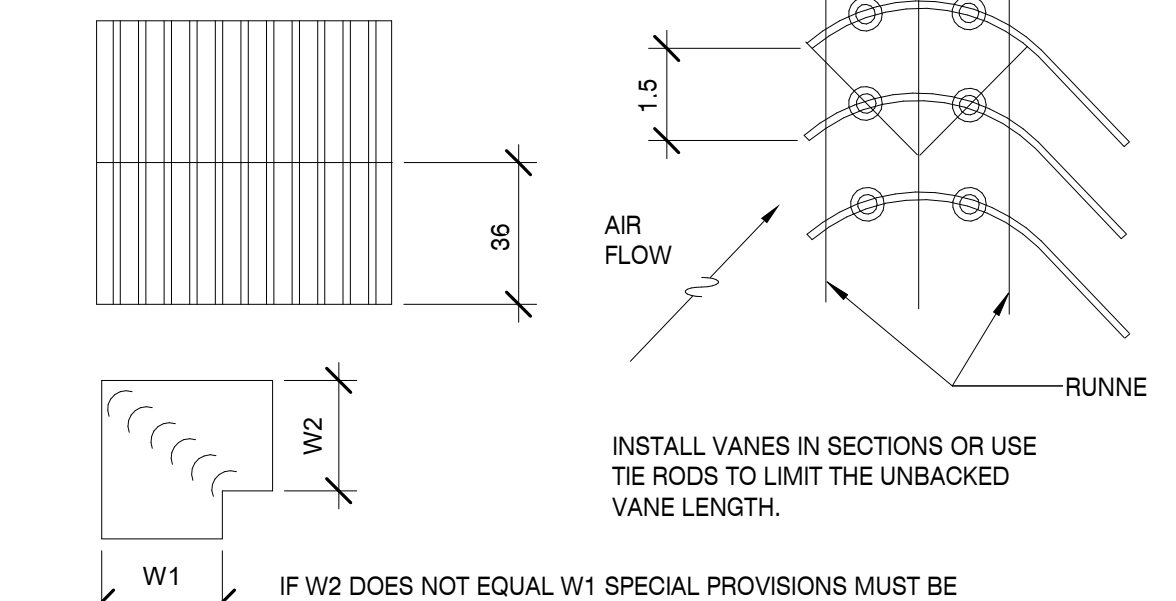


DUCT EXPOSED TO WEATHER DETAIL 6
 SCALE: N.T.S.



CEILING EXHAUST FAN DETAIL 5
 SCALE: N.T.S.

NOTES:
 - VANES SHALL BE SECURELY FASTENED TO RUNNERS.
 - ALL VANES SHALL BE SECURE AND STABLE IN INSTALLED OPERATING POSITION.
 - CARE MUST BE EXERCISED WHEN INSTALLING VANES IN DUCTWORK TO BE LINED AND IN FIBROUS GLASS DUCT.
 - MAXIMUM UNSUPPORTED VANE

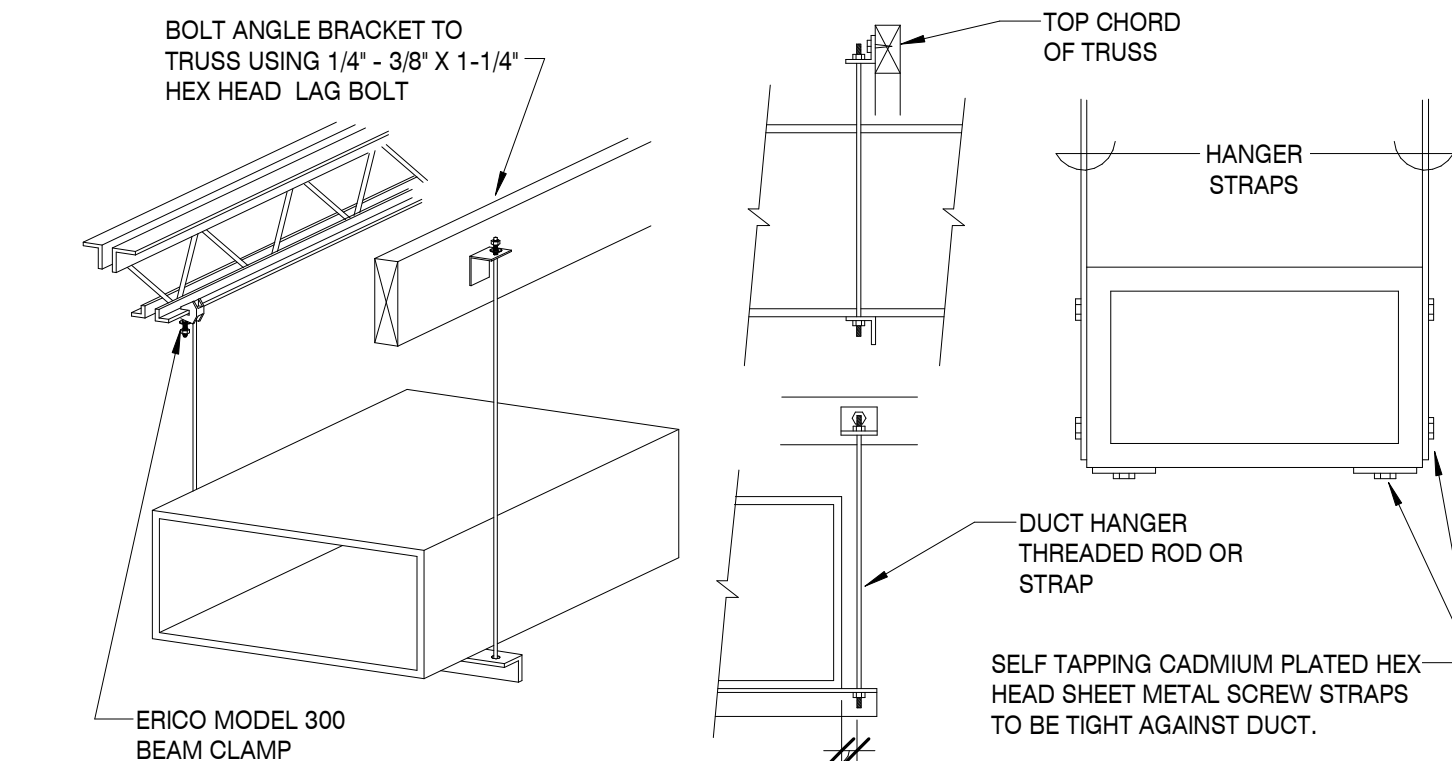


INSTALL VANES IN SECTIONS OR USE THE RODS TO LIMIT THE UNBACKED VANE LENGTH.
 IF W2 DOES NOT EQUAL W1 SPECIAL PROVISIONS MUST BE MADE IN VANE SHAPE OR ANGLE OF ENTRY AND EXIT.

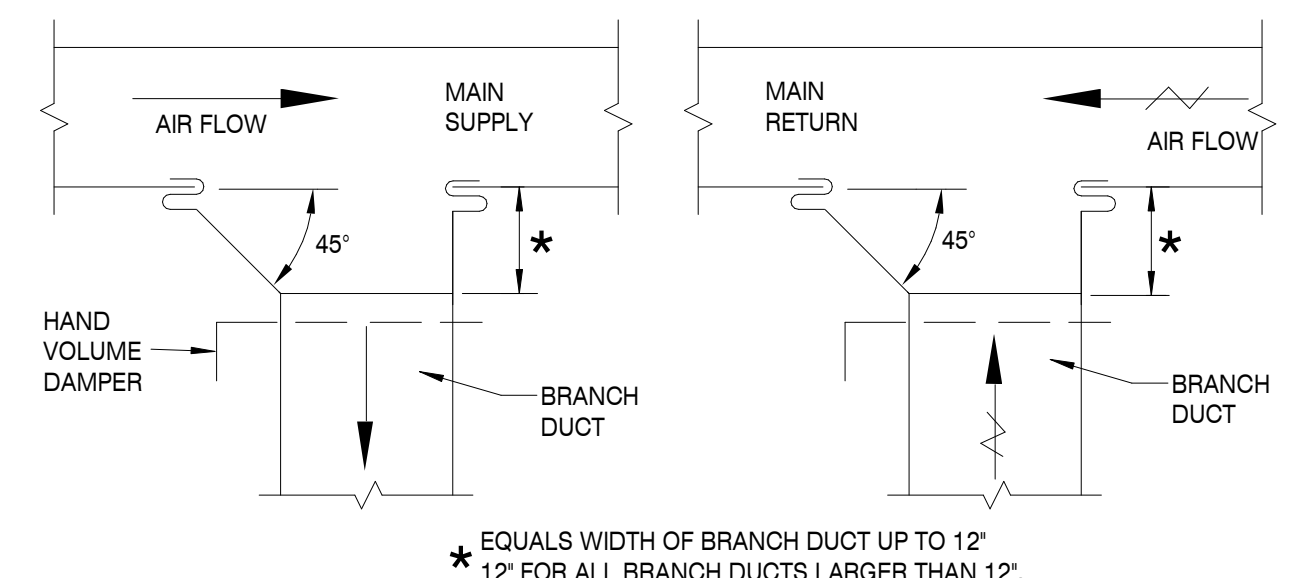
TURNING VANES DETAIL 1
 SCALE: N.T.S.

HANGER SIZES FOR ROUND DUCT			
MAX SIDE	HANGE	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
30	1"x 18-GAGE	NONE REQUIRED	10'-
36	1/4" ROUND	1-1/2"x1/2"x1/8"	8'-0
48	1/4" ROUND	1-1/2"x1/2"x1/8"	8'-0
60	5/16" ROUND	2"x2"x1/8"	8'-0

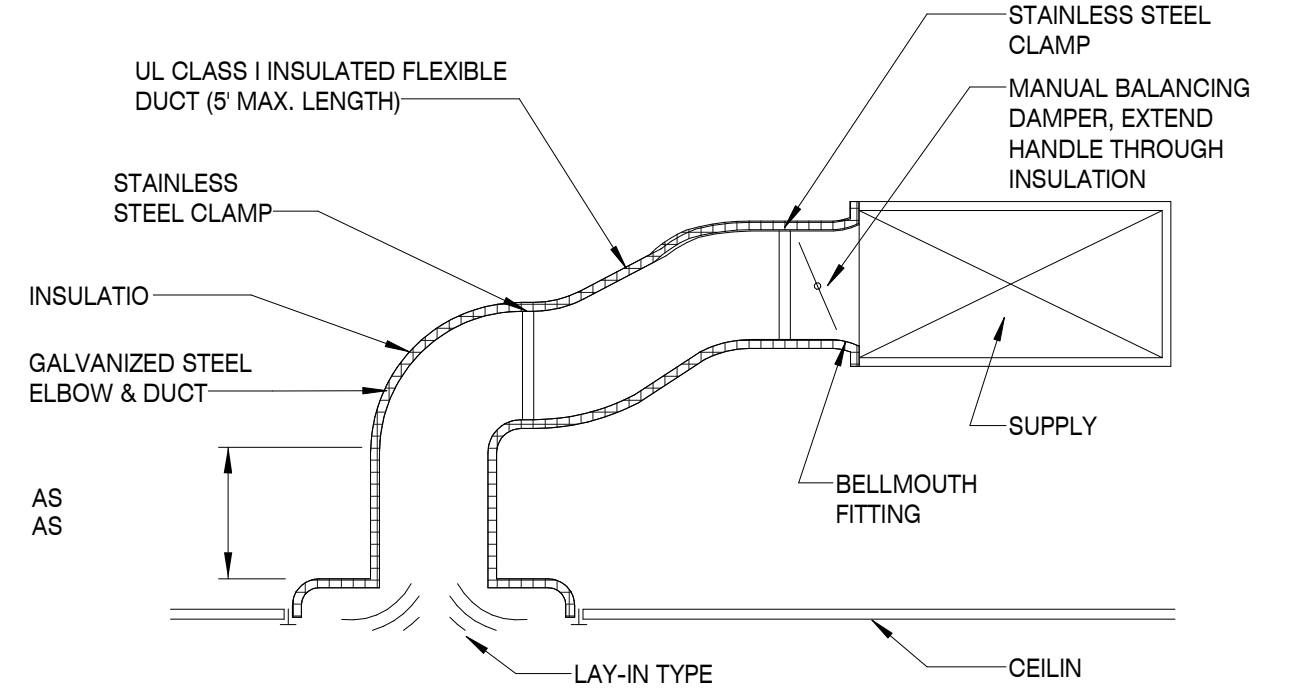
NOTE: ALL SUPPLY AIR DUCTS SHALL BE WRAPPED EXTERNALLY AS PER SPECIFICATIONS.
 NO POP RIVETS.



RECTANGULAR DUCT HANGER DETAIL 2
 SCALE: N.T.S.



BRANCH DUCT TAKE-OFF DETAIL 3
 SCALE: N.T.S.

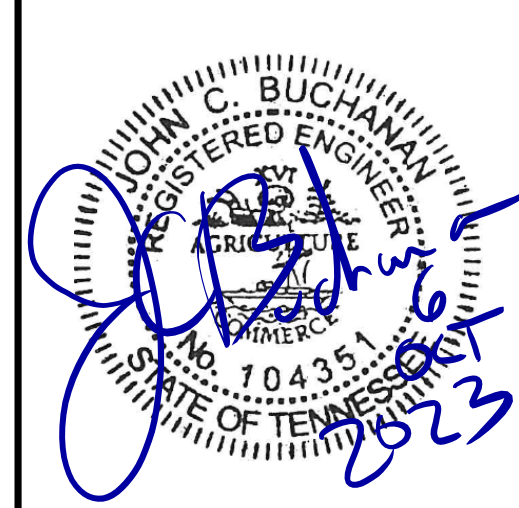


SUPPLY BRANCH TAKE-OFF DETAIL 4
 SCALE: N.T.S.

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PROJECT ADDRESS: 411 DOUGLAS LN CLINTON, TN 37716

PROJECT NO.: 220042-02

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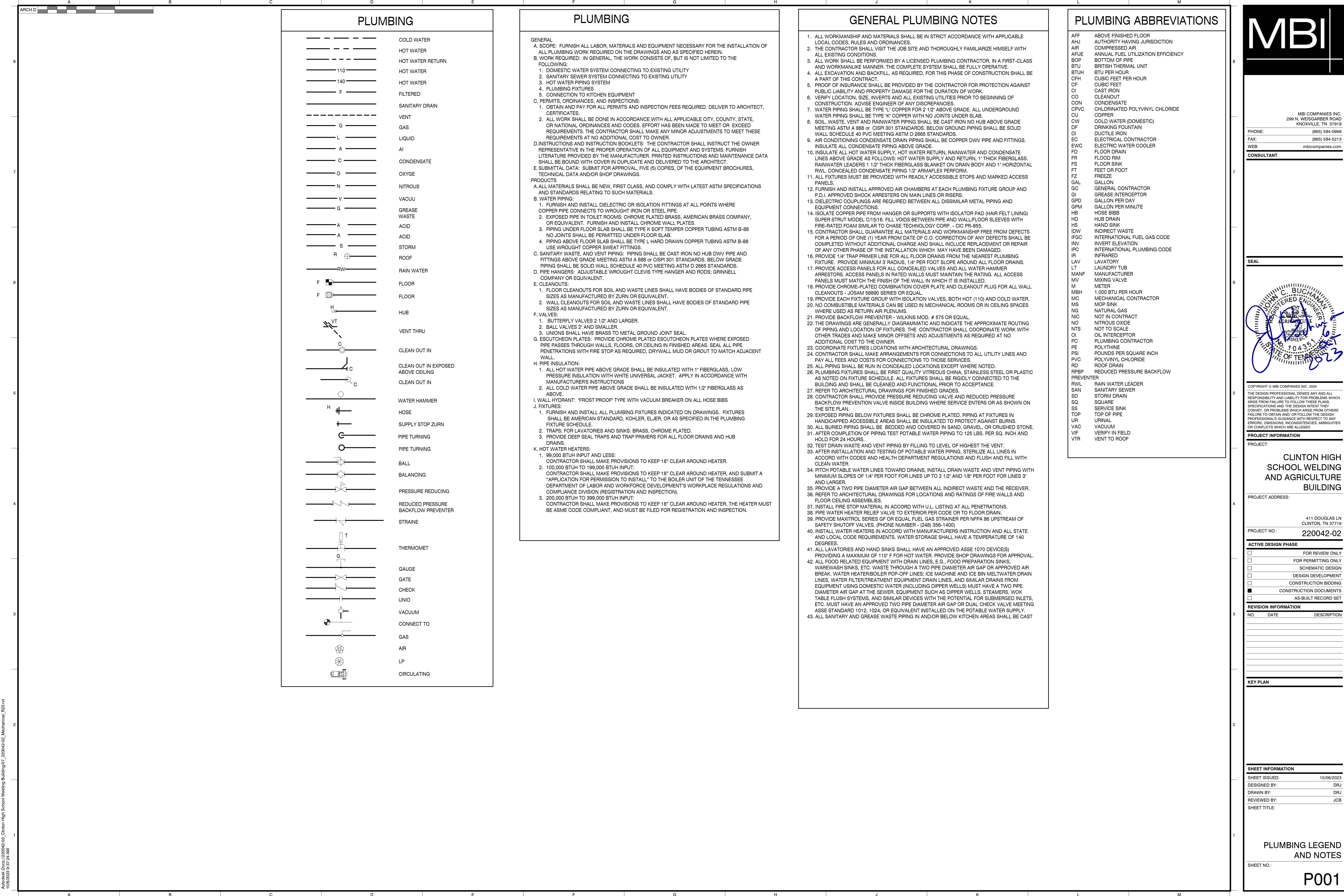
KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 10/06/2023
 DESIGNED BY: DRJ
 DRAWN BY: DRJ
 REVIEWED BY: JCB
 SHEET TITLE:

HVAC DETAILS

SHEET NO.: M301



PLUMBING	
	COLD WATER
	HOT WATER
	HOT WATER RETURN
	110
	140
	F
	SANITARY DRAIN
	VENT
	GAS
	L
	AI
	C
	O
	N
	V
	G
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PLUMBING	
GENERAL	
A. SCOPE: FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF ALL PLUMBING WORK REQUIRED ON THE DRAWINGS AND AS SPECIFIED HEREIN.	
B. WORK REQUIRED: IN GENERAL, THE WORK CONSISTS OF, BUT IS NOT LIMITED TO THE FOLLOWING:	
1. DOMESTIC WATER SYSTEM CONNECTING TO EXISTING UTILITY	
2. SANITARY SEWER SYSTEM CONNECTING TO EXISTING UTILITY	
3. HOT WATER PIPING SYSTEM	
4. PLUMBING FIXTURES	
5. CONNECTION TO KITCHEN EQUIPMENT	
C. PERMITS, ORDINANCES, AND INSPECTIONS:	
1. OBTAIN AND PAY FOR ALL PERMITS AND INSPECTION FEES REQUIRED. DELIVER TO ARCHITECT, CERTIFICATES.	
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE CITY, COUNTY, STATE, OR NATIONAL ORDINANCES AND CODES. EFFORT HAS BEEN MADE TO MEET OR EXCEED REQUIREMENTS. THE CONTRACTOR SHALL MAKE ANY MINOR ADJUSTMENTS TO MEET THESE REQUIREMENTS AT NO ADDITIONAL COST TO OWNER.	
D. INSTRUCTIONS AND INSTRUCTION BOOKLETS: THE CONTRACTOR SHALL INSTRUCT THE OWNER REPRESENTATIVE IN THE PROPER OPERATION OF ALL EQUIPMENT AND SYSTEMS. FURNISH LITERATURE PROVIDED BY THE MANUFACTURER. PRINTED INSTRUCTIONS AND MAINTENANCE DATA SHALL BE BOUND WITH COVER IN DUPLICATE AND DELIVERED TO THE ARCHITECT.	
E. SUBMITTAL DATA: SUBMIT FOR APPROVAL, FIVE (5) COPIES, OF THE EQUIPMENT BROCHURES, TECHNICAL DATA AND/OR SHOP DRAWINGS.	
F. PRODUCTS:	
A. ALL MATERIALS SHALL BE NEW, FIRST CLASS, AND COMPLY WITH LATEST ASTM SPECIFICATIONS AND STANDARDS RELATING TO SUCH MATERIALS.	
B. WATER PIPING:	
1. FURNISH AND INSTALL DIELECTRIC OR ISOLATION FITTINGS AT ALL POINTS WHERE COPPER PIPE CONNECTS TO WROUGHT IRON OR STEEL PIPE.	
2. EXPOSED PIPE IN TOILET ROOMS: CHROME PLATED BRASS, AMERICAN BRASS COMPANY, OR EQUIVALENT. FURNISH AND INSTALL CHROME WALL PLATES.	
3. PIPING UNDER FLOOR SLAB SHALL BE TYPE K SOFT TEMPER COPPER TUBING ASTM B-88 NO JOINTS SHALL BE PERMITTED UNDER FLOOR SLAB.	
4. PIPING ABOVE FLOOR SLAB SHALL BE TYPE L HARD DRAWN COPPER TUBING ASTM B-88 USE WROUGHT COPPER SWEAT FITTINGS.	
C. SANITARY WASTE, AND VENT PIPING: PIPING SHALL BE CAST IRON NO HUB DWV PIPE AND FITTINGS ABOVE GRADE MEETING ASTM A 889 OR CISPI 301 STANDARDS. BELOW GRADE PIPING SHALL BE SOLID WALL SCHEDULE 40 PVC MEETING ASTM D 2665 STANDARDS.	
D. PIPE HANGERS: ADJUSTABLE WROUGHT CLEVIS TYPE HANGER AND RODS; GRINNELL COMPANY OR EQUIVALENT.	
E. CLEANOUTS:	
1. FLOOR CLEANOUTS FOR SOIL AND WASTE LINES SHALL HAVE BODIES OF STANDARD PIPE SIZES AS MANUFACTURED BY ZURN OR EQUIVALENT.	
2. WALL CLEANOUTS FOR SOIL AND WASTE LINES SHALL HAVE BODIES OF STANDARD PIPE SIZES AS MANUFACTURED BY ZURN OR EQUIVALENT.	
F. VALVES:	
1. BUTTERFLY VALVES 2 1/2" AND LARGER.	
2. BALL VALVES 2" AND SMALLER.	
3. UNIONS SHALL HAVE BRASS TO METAL JOINT SEAL.	
G. ESCUTCHEON PLATES: PROVIDE CHROME PLATED ESCUTCHEON PLATES WHERE EXPOSED PIPE PASSES THROUGH WALLS, FLOORS, OR CEILING IN FINISHED AREAS. SEAL ALL PIPE PENETRATIONS WITH FIRE STOP AS REQUIRED, DRYWALL MUD OR GROUT TO MATCH ADJACENT WALL.	
H. PIPE INSULATION:	
1. ALL HOT WATER PIPE ABOVE GRADE SHALL BE INSULATED WITH 1" FIBERGLASS, LOW PRESSURE INSULATION WITH WHITE UNIVERSAL JACKET. APPLY IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.	
2. ALL COLD WATER PIPE ABOVE GRADE SHALL BE INSULATED WITH 1/2" FIBERGLASS AS ABOVE.	
I. WALL HYDRANT: "FROST PROOF" TYPE WITH VACUUM BREAKER ON ALL HOSE BIBS	
J. FIXTURES:	
1. FURNISH AND INSTALL ALL PLUMBING FIXTURES INDICATED ON DRAWINGS. FIXTURES SHALL BE AMERICAN STANDARD, KOHLER, ELIER, OR AS SPECIFIED IN THE PLUMBING FIXTURE SCHEDULE.	
2. TRAPS: FOR LAVATORIES AND SINKS: BRASS, CHROME PLATED.	
3. PROVIDE DEEP SEAL TRAPS AND TRAP PRIMERS FOR ALL FLOOR DRAINS AND HUB DRAINS.	
K. HOT WATER HEATERS:	
1. 99,000 BTUH INPUT AND LESS: CONTRACTOR SHALL MAKE PROVISIONS TO KEEP 18" CLEAR AROUND HEATER.	
2. 100,000 BTUH TO 199,000 BTUH INPUT: CONTRACTOR SHALL MAKE PROVISIONS TO KEEP 18" CLEAR AROUND HEATER, AND SUBMIT A "APPLICATION FOR PERMISSION TO INSTALL" TO THE BOILER UNIT OF THE TENNESSEE DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT'S WORKPLACE REGULATIONS AND COMPLIANCE DIVISION (REGISTRATION AND INSPECTION).	
3. 200,000 BTUH TO 399,000 BTUH INPUT: CONTRACTOR SHALL MAKE PROVISIONS TO KEEP 18" CLEAR AROUND HEATER, THE HEATER MUST BE ASME CODE COMPLIANT, AND MUST BE FILED FOR REGISTRATION AND INSPECTION.	

GENERAL PLUMBING NOTES	
1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, RULES AND ORDINANCES.	
2. THE CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.	
3. ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR, IN A FIRST-CLASS AND WORKMANLIKE MANNER. THE COMPLETE SYSTEM SHALL BE FULLY OPERATIVE.	
4. ALL EXCAVATION AND BACKFILL, AS REQUIRED, FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.	
5. PROOF OF INSURANCE SHALL BE PROVIDED BY THE CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF WORK.	
6. VERIFY LOCATION, SIZE, INVERTS AND ALL EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION. ADVISE ENGINEER OF ANY DISCREPANCIES.	
7. WATER PIPING SHALL BE TYPE "L" COPPER FOR 2 1/2" ABOVE GRADE. ALL UNDERGROUND WATER PIPING SHALL BE TYPE "K" COPPER WITH NO JOINTS UNDER SLAB.	
8. SOIL, WASTE, VENT AND RAINWATER PIPING SHALL BE CAST IRON NO HUB ABOVE GRADE MEETING ASTM A 889 OR CISPI 301 STANDARDS. BELOW GROUND PIPING SHALL BE SOLID WALL SCHEDULE 40 PVC MEETING ASTM D 2665 STANDARDS.	
9. AIR CONDITIONING CONDENSATE DRAIN PIPING SHALL BE COPPER DWV PIPE AND FITTINGS. INSULATE ALL CONDENSATE PIPING ABOVE GRADE.	
10. INSULATE ALL HOT WATER SUPPLY, HOT WATER RETURN, RAINWATER AND CONDENSATE LINES ABOVE GRADE AS FOLLOWS: HOT WATER SUPPLY AND RETURN, 1" THICK FIBERGLASS, RAINWATER LEADERS 1 1/2" THICK FIBERGLASS BLANKET ON DRAIN BODY AND 1" HORIZONTAL RWL. CONCEALED CONDENSATE PIPING 1/2" ARMAFLEX PERFORM.	
11. ALL FIXTURES MUST BE PROVIDED WITH READILY ACCESSIBLE STOPS AND MARKED ACCESS PANELS.	
12. FURNISH AND INSTALL APPROVED AIR CHAMBERS AT EACH PLUMBING FIXTURE GROUP AND P.D.I. APPROVED SHOCK ARRESTERS ON MAIN LINES OR RISERS.	
13. DIELECTRIC COUPLINGS ARE REQUIRED BETWEEN ALL DISSIMILAR METAL PIPING AND EQUIPMENT CONNECTIONS.	
14. ISOLATE COPPER PIPE FROM HANGER OR SUPPORTS WITH ISOLATOR PAD (HAIR FELT LINING) SUPER STRUT MODEL C/15/16. FILL VOIDS BETWEEN PIPE AND WALL/FLOOR SLEEVES WITH FIRE-RATED FOAM SIMILAR TO CHASE TECHNOLOGY CORP. - C/C PR-855.	
15. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF C.O. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED.	
16. PROVIDE 1/4" TRAP PRIMER LINE FOR ALL FLOOR DRAINS FROM THE NEAREST PLUMBING FIXTURE. PROVIDE MINIMUM 3" RADIUS, 1/4" PER FOOT SLOPE AROUND ALL FLOOR DRAINS.	
17. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND ALL WATER HAMMER ARRESTERS. ACCESS PANELS IN RATED WALLS MUST MAINTAIN THE RATING. ALL ACCESS PANELS MUST MATCH THE FINISH OF THE WALL IN WHICH IT IS INSTALLED.	
18. PROVIDE CHROME-PLATED COMBINATION COVER PLATE AND CLEANOUT PLUG FOR ALL WALL CLEANOUTS - JOSAM 58990 SERIES OR EQUAL.	
19. PROVIDE EACH FIXTURE GROUP WITH ISOLATION VALVES, BOTH HOT (110) AND COLD WATER.	
20. NO COMBUSTIBLE MATERIALS CAN BE USED IN MECHANICAL ROOMS OR IN CEILING SPACES WHERE USED AS RETURN AIR PLENUMS.	
21. PROVIDE BACKFLOW PREVENTER - WILKINS MOD. # 575 OR EQUAL.	
22. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATE THE APPROXIMATE ROUTING OF PIPING AND LOCATION OF FIXTURES. THE CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES AND MAKE MINOR OFFSETS AND ADJUSTMENTS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.	
23. COORDINATE FIXTURES LOCATIONS WITH ARCHITECTURAL DRAWINGS.	
24. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR CONNECTIONS TO ALL UTILITY LINES AND PAY ALL FEES AND COSTS FOR CONNECTIONS TO THOSE SERVICES.	
25. ALL PIPING SHALL BE RUN IN CONCEALED LOCATIONS EXCEPT WHERE NOTED.	
26. PLUMBING FIXTURES SHALL BE FIRST QUALITY VITREOUS CHINA, STAINLESS STEEL OR PLASTIC AS NOTED ON FIXTURE SCHEDULE. ALL FIXTURES SHALL BE RIGIDLY CONNECTED TO THE BUILDING AND SHALL BE CLEANED AND FUNCTIONAL PRIOR TO ACCEPTANCE.	
27. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED GRADES.	
28. CONTRACTOR SHALL PROVIDE PRESSURE REDUCING VALVE AND REDUCED PRESSURE BACKFLOW PREVENTION VALVE INSIDE BUILDING WHERE SERVICE ENTERS OR AS SHOWN ON THE SITE PLAN.	
29. EXPOSED PIPING BELOW FIXTURES SHALL BE CHROME PLATED. PIPING AT FIXTURES IN HANDICAPPED ACCESSIBLE AREAS SHALL BE INSULATED TO PROTECT AGAINST BURNS.	
30. ALL BURIED PIPING SHALL BE BEDDED AND COVERED IN SAND, GRAVEL, OR CRUSHED STONE.	
31. AFTER COMPLETION OF PIPING TEST POTABLE WATER PIPING TO 125 LBS. PER SQ. INCH AND HOLD FOR 24 HOURS.	
32. TEST DRAIN WASTE AND VENT PIPING BY FILLING TO LEVEL OF HIGHEST THE VENT.	
33. AFTER INSTALLATION AND TESTING OF POTABLE WATER PIPING, STERILIZE ALL LINES IN ACCORD WITH CODES AND HEALTH DEPARTMENT REGULATIONS AND FLUSH AND FILL WITH CLEAN WATER.	
34. PITCH POTABLE WATER LINES TOWARD DRAINS. INSTALL DRAIN WASTE AND VENT PIPING WITH MINIMUM SLOPES OF 1/4" PER FOOT FOR LINES UP TO 2 1/2" AND 1/8" PER FOOT FOR LINES 3" AND LARGER.	
35. PROVIDE A TWO PIPE DIAMETER AIR GAP BETWEEN ALL INDIRECT WASTE AND THE RECEIVER.	
36. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND RATINGS OF FIRE WALLS AND FLOOR CEILING ASSEMBLIES.	
37. INSTALL FIRE STOP MATERIAL IN ACCORD WITH U.L. LISTING AT ALL PENETRATIONS.	
38. PIPE WATER HEATER RELIEF VALVE TO EXTERIOR PER CODE OR TO FLOOR DRAIN.	
39. PROVIDE MAXITROL SERIES GF OR EQUAL FUEL GAS STRAINER PER NFPA 86 UPSTREAM OF SAFETY SHUTOFF VALVES. (PHONE NUMBER - (248) 356-1400)	
40. INSTALL WATER HEATERS IN ACCORD WITH MANUFACTURERS INSTRUCTION AND ALL STATE AND LOCAL CODE REQUIREMENTS. WATER STORAGE SHALL HAVE A TEMPERATURE OF 140 DEGREES.	
41. ALL LAVATORIES AND HAND SINKS SHALL HAVE AN APPROVED ASSE 1070 DEVICE(S) PROVIDING A MAXIMUM OF 110' F FOR HOT WATER. PROVIDE SHOP DRAWINGS FOR APPROVAL.	
42. ALL FOOD RELATED EQUIPMENT WITH DRAIN LINES, E.G., FOOD PREPARATION SINKS, WAREWASH SINKS, ETC. WASTE THROUGH A TWO PIPE DIAMETER AIR GAP OR APPROVED AIR BREAK. WATER HEATER/BOILER POP-OFF LINES; ICE MACHINE AND ICE BIN MELT/WATER DRAIN LINES, WATER FILTER/TREATMENT EQUIPMENT DRAIN LINES, AND SIMILAR DRAINS FROM EQUIPMENT USING DOMESTIC WATER (INCLUDING DIPPER WELLS) MUST HAVE A TWO PIPE DIAMETER AIR GAP AT THE SEWER. EQUIPMENT SUCH AS DIPPER WELLS, STEAMERS, WOK TABLE FLUSH SYSTEMS, AND SIMILAR DEVICES WITH THE POTENTIAL FOR SUBMERGED INLETS, ETC. MUST HAVE AN APPROVED TWO PIPE DIAMETER AIR GAP OR DUAL CHECK VALVE MEETING ASSE STANDARD 1012, 1024, OR EQUIVALENT INSTALLED ON THE POTABLE WATER SUPPLY.	
43. ALL SANITARY AND GREASE WASTE PIPING IN AND/OR BELOW KITCHEN AREAS SHALL BE CAST	

PLUMBING ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AIR	COMPRESSED AIR
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CFH	CUBIC FEET PER HOUR
CF	CUBIC FEET
CI	CAST IRON
CO	CLEANOUT
CON	CONDENSATE
CPVC	CHLORINATED POLYVINYL CHLORIDE
CU	COPPER
CW	COLD WATER (DOMESTIC)
DF	DRINKING FOUNTAIN
DI	DUCTILE IRON
EC	ELECTRICAL CONTRACTOR
EW/C	ELECTRIC WATER COOLER
FD	FLOOR DRAIN
FR	FLOOR RIM
FS	FLOOR SINK
FT	FEET OR FOOT
FZ	FREEZE
GAL	GALLON
GC	GENERAL CONTRACTOR
GI	GREASE INTERCEPTOR
GPD	GALLON PER DAY
GPM	GALLON PER MINUTE
HB	HOSE BIBB
HD	HUB DRAIN
HS	HAND SINK
DW	INDIRECT WASTE
IFGC	INTERNATIONAL FUEL GAS CODE
INV	INVERT ELEVATION
IPC	INTERNATIONAL PLUMBING CODE
IR	INFRARED
LAV	LAVATORY
LT	LAUNDRY TUB
MANF	MANUFACTURER
MV	MIXING VALVE
M	METER
MBH	1,000 BTU PER HOUR
MC	MECHANICAL CONTRACTOR
MS	MOP SINK
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NITROUS OXIDE
NTS	NOT TO SCALE
OI	OIL INTERCEPTOR
PC	PLUMBING CONTRACTOR
PH	POLYTHENE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
RD	ROOF DRAIN
RBPB	REDUCED PRESSURE BACKFLOW PREVENTER
RWL	RAIN WATER LEADER
SAN	SANITARY SEWER
SD	STORM DRAIN
SQ	SQUARE
SS	SERVICE SINK
TOP	TOP OF PIPE
UR	URINAL
VAC	VACUUM
VIF	VERIFY IN FIELD
VTR	VENT TO ROOF

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PROJECT INFORMATION

PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS: 411 DOUGLAS LN CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

FOR REVIEW ONLY
 FOR PERMITTING ONLY
 SCHEMATIC DESIGN
 DESIGN DEVELOPMENT
 CONSTRUCTION BIDDING
 CONSTRUCTION DOCUMENTS
 AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

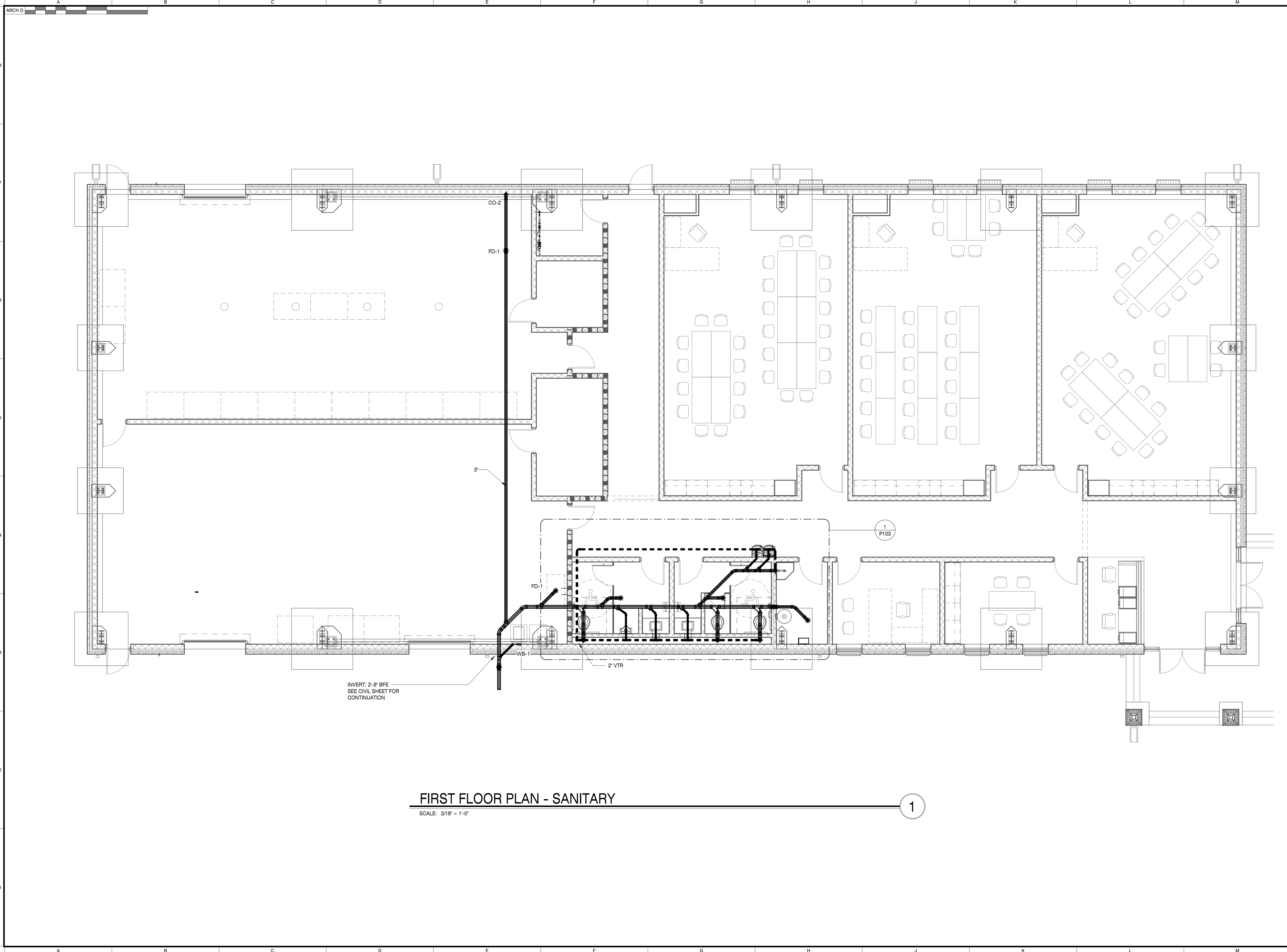
SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: DRJ
DRAWN BY: DRJ
REVIEWED BY: JCB
SHEET TITLE:

PLUMBING LEGEND AND NOTES

SHEET NO.: P001

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FIRST FLOOR PLAN - SANITARY

SCALE: 3/16" = 1'-0"

1

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PROJECT ADDRESS:

411 DOUGLAS LN
 CLINTON, TN 37716

PROJECT NO.: **220042-02**

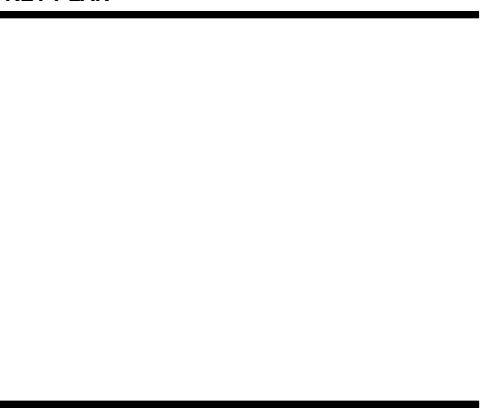
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- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

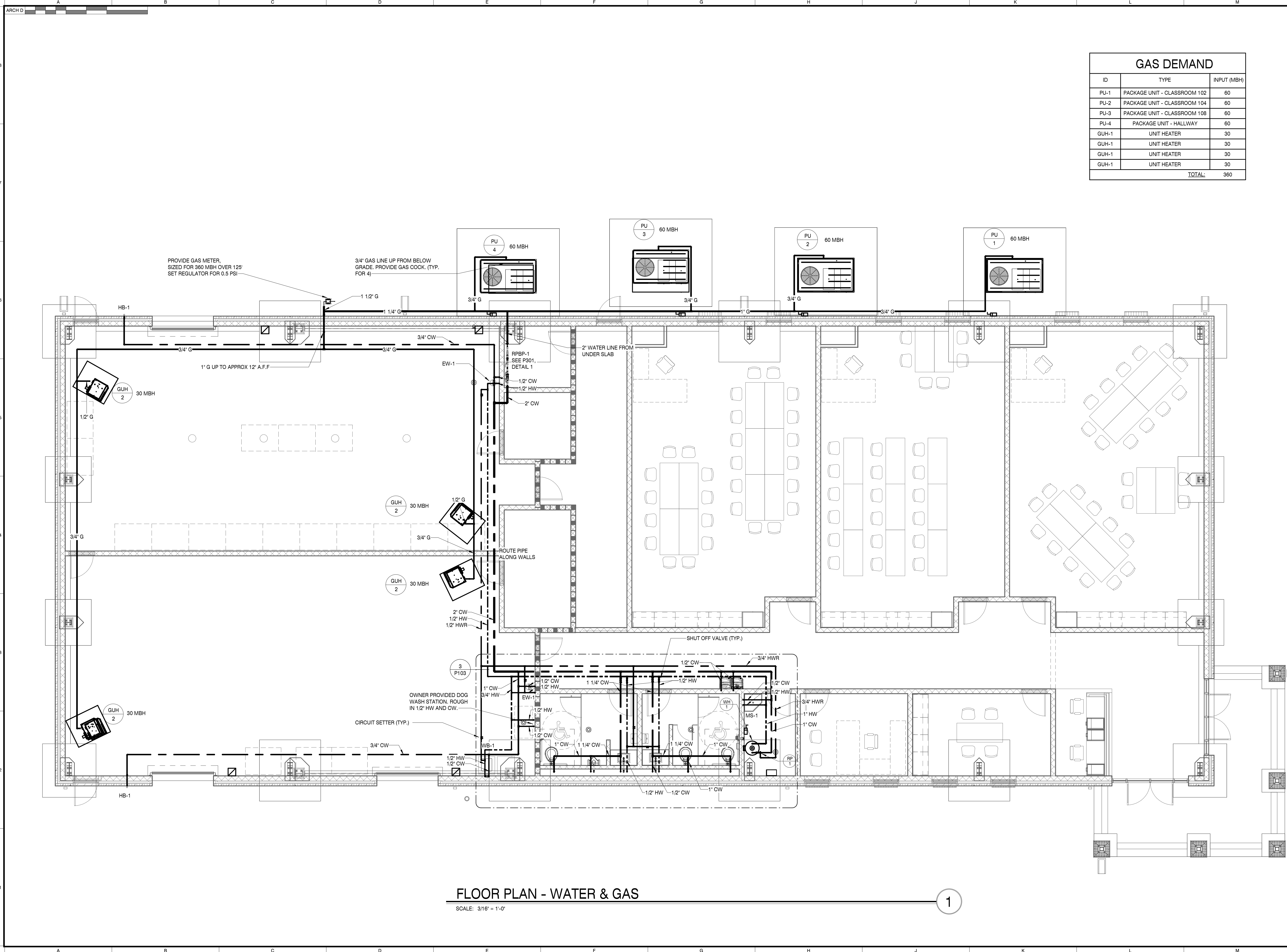


SHEET INFORMATION

SHEET ISSUED: 10/06/2023
 DESIGNED BY: DRJ
 DRAWN BY: DRJ
 REVIEWED BY: JCB
 SHEET TITLE:

FLOOR PLAN - SANITARY

SHEET NO.: **P101**



GAS DEMAND		
ID	TYPE	INPUT (MBH)
PU-1	PACKAGE UNIT - CLASSROOM 102	60
PU-2	PACKAGE UNIT - CLASSROOM 104	60
PU-3	PACKAGE UNIT - CLASSROOM 108	60
PU-4	PACKAGE UNIT - HALLWAY	60
GUH-1	UNIT HEATER	30
GUH-1	UNIT HEATER	30
GUH-1	UNIT HEATER	30
GUH-1	UNIT HEATER	30
TOTAL:		360

FLOOR PLAN - WATER & GAS

SCALE: 3/16" = 1'-0"

1

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REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 10/06/2023

DESIGNED BY: DRJ

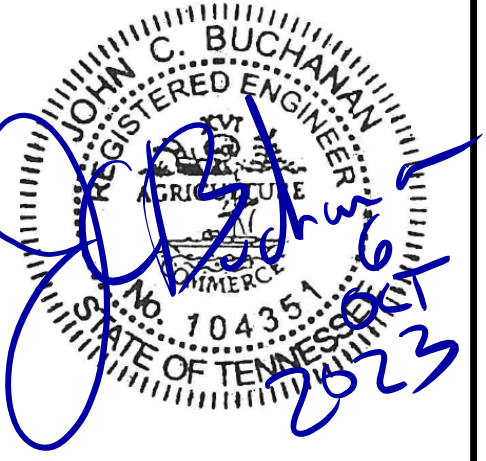
DRAWN BY: DRJ

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SHEET TITLE:

FLOOR PLAN - WATER

P102



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PROJECT NO.: **220042-02**

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REVISION INFORMATION

NO.	DATE	DESCRIPTION

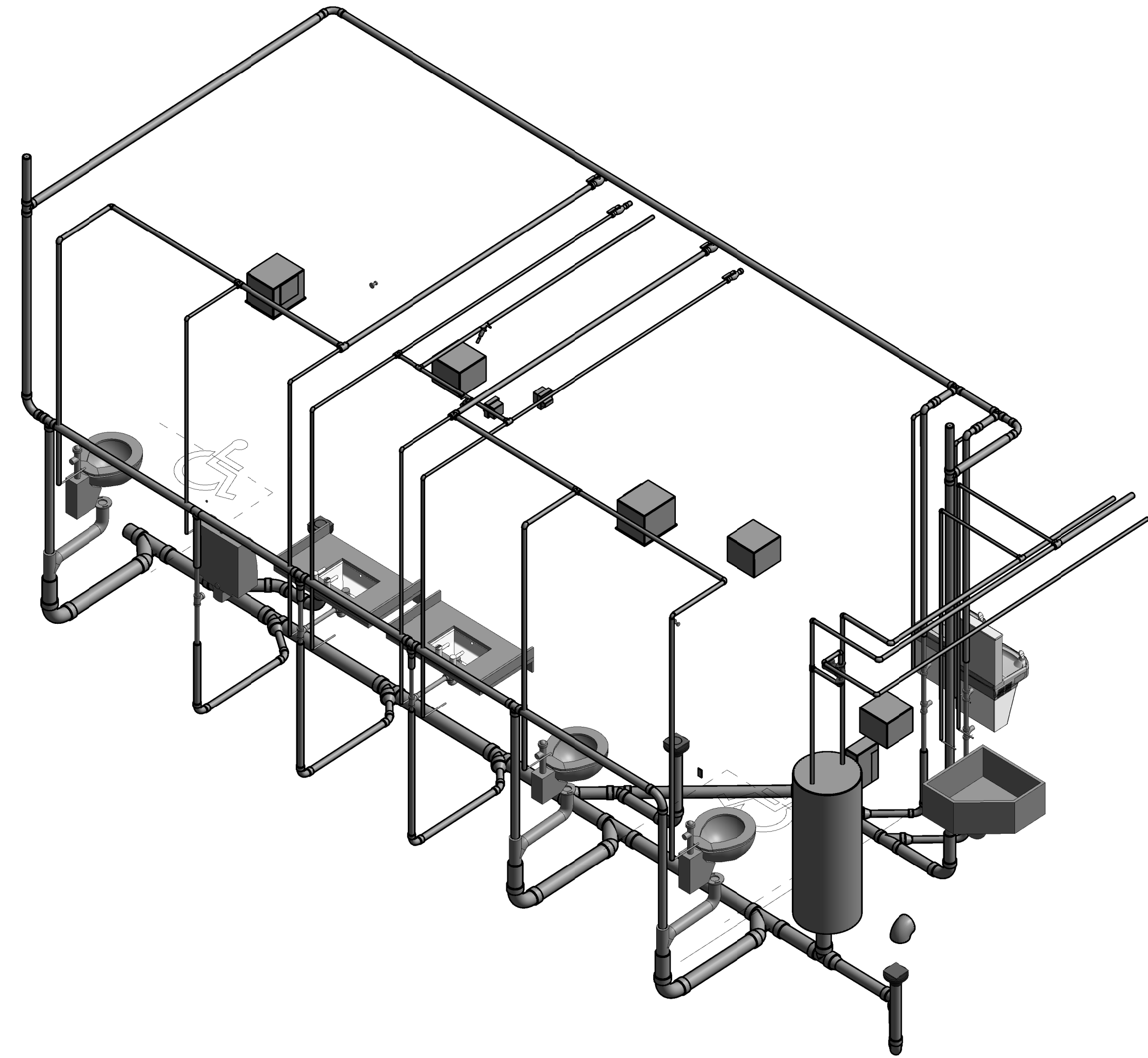
KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: DRJ
DRAWN BY: DRJ
REVIEWED BY: JCB
SHEET TITLE:

ENLARGED BATHROOM PLAN

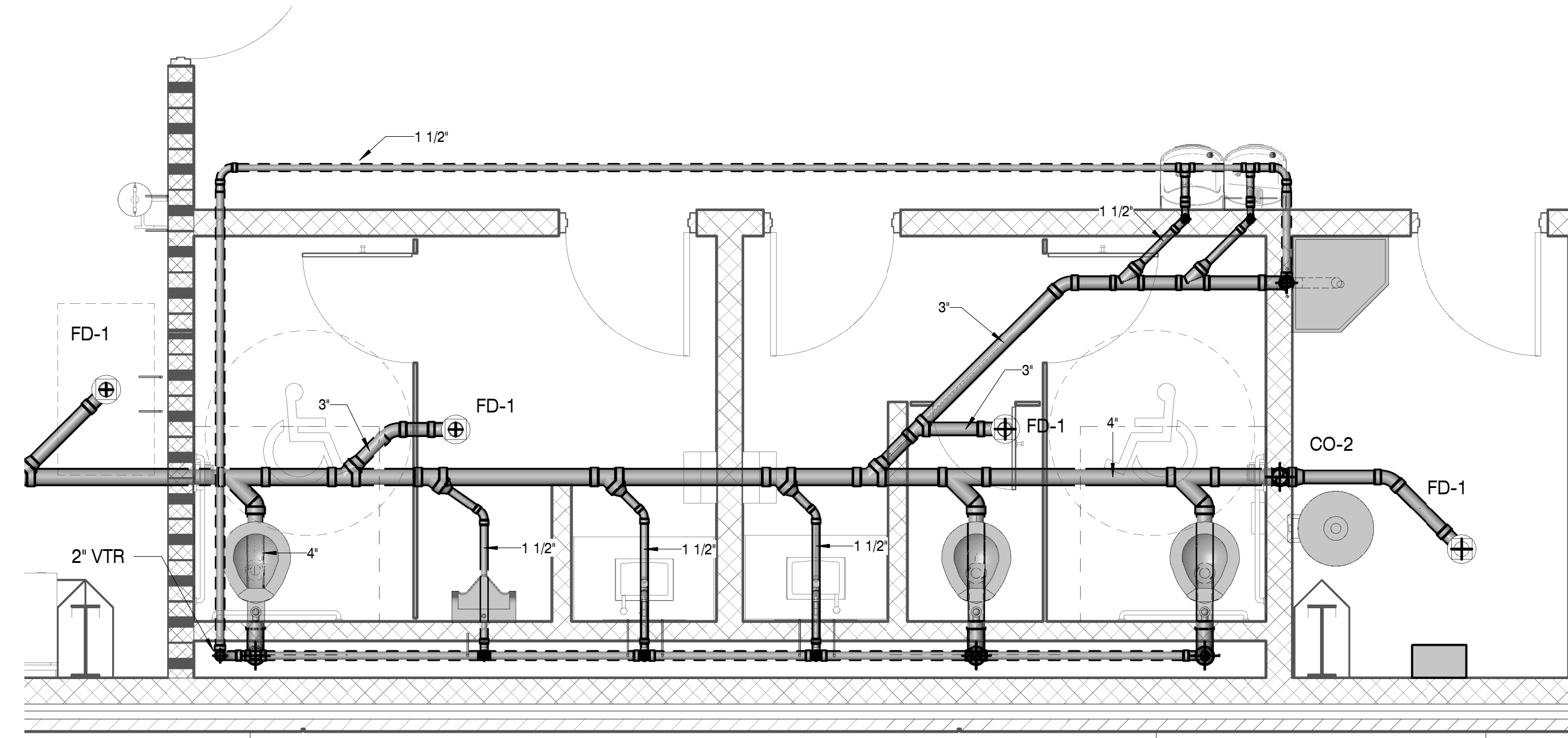
SHEET NO.: **P103**



BATHROOM RISER

SCALE:

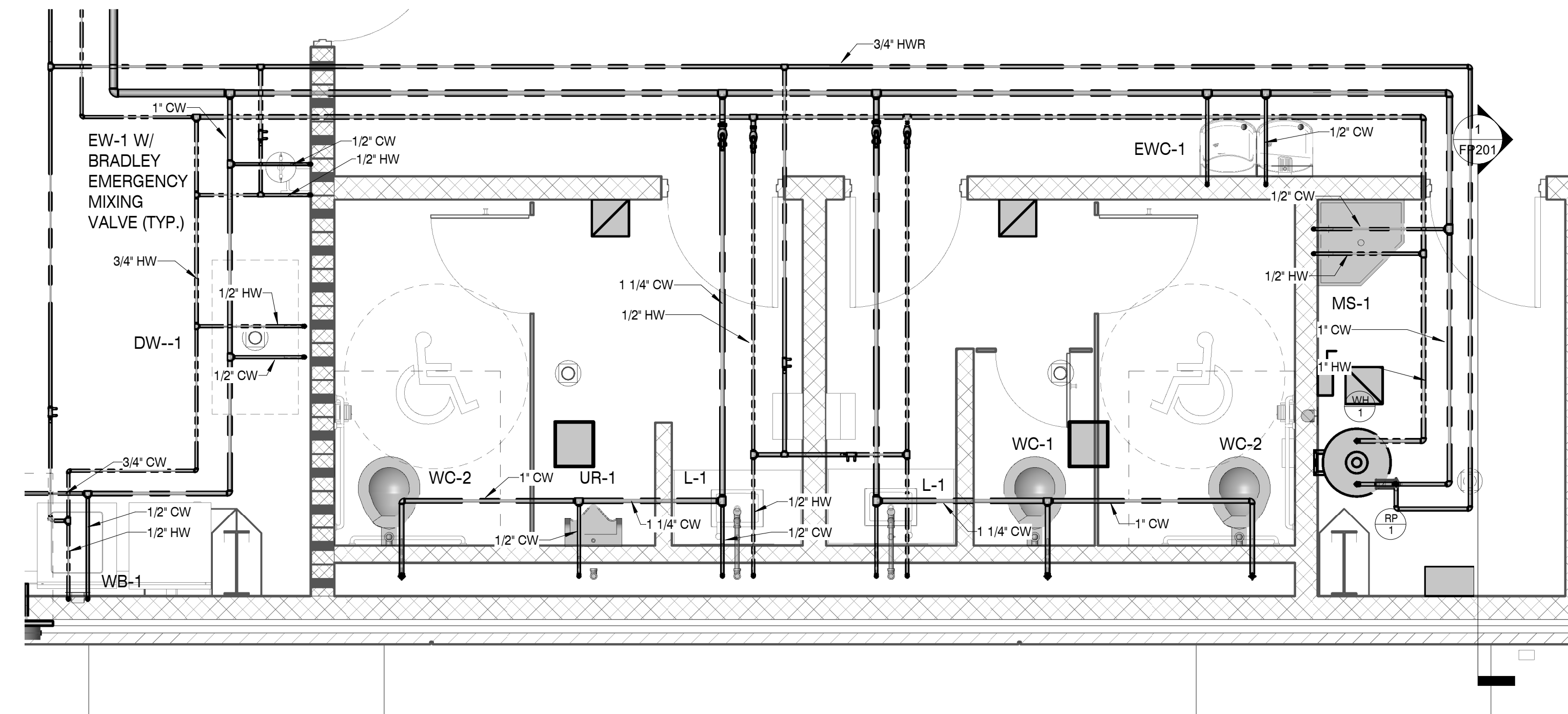
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BATHROOM SANITARY PLAN

SCALE: 3/8" = 1'-0"

1



BATHROOM WATER PLAN

SCALE: 3/8" = 1'-0"

3

PLUMBING FIXTURE SCHEDULE

**TRIM PRODUCTS (STOPS, PTRAPS, SUPPLIES ETC.) SHALL BE FROM SAME MANUFACTURER. ANY CONFLICTS WITH THE SCHEDULE AND THE CONSTRUCTION DOCUMENTS SHALL BE DIRECTED TO THE ENGINEER OF RECORD A MIN THREE (3) DAYS BEFORE BID DATE. CONTRACTOR SHALL PROVIDE A MIN OF THREE (3) COPIES OF SHOP DRAWINGS FOR APPROVAL. SEE SPECIFICATIONS

EQUAL PRODUCTS AND ALTERNATE MANUFACTURERS LISTED SHALL ALSO BE CONSIDERED: SLOAN, JOSAM, LEONARD, GUARDIAN, DURA-TRENCH, OASIS, HALSEY-TAYLOR, WILLOUGHBY

ITEM	DESCRIPTION	SPECIFICATION	CW (inch)	HW (inch)	W (inch)	V (inch)	REMARK
RPBP-1	BACKFLOW PREVENTER	WILKINS, MODEL # 975XL2TCUSAG REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER "Y" PATTERN BODY, PROVIDED WITH "Y" STAINER ON INLET SIDE OF DEVICE AND PROVIDED WITH AIRGAP AND TEST COCKS FACING UP FOR TESTER. INSTALLED HEIGHT MIN 4'-0" A.F.F. MAX 7'-0" A.F.F.					SEE PLUMBING AND IRRIGATION DRAWINGS FOR SIZE OF DEVICE
	PRESS. RED. VALVE	WILKINS, MODEL # 500 SERIES BRONZE BODY CONSTRUCTION SERVICEABLE INLINE. CAN BE INSTALLED IN ANY POSITION. INSTALL ON INLET SIDE OF RP2 BACKFLOW DEVICE.					
	PRESSURE GAUGE	WILKINS, MODEL # 2004-25-300, 0-300 POUND GAUGE TO BE INSTALLED ON INLET AND OUTLET SIDE OF PRV.					
UR-1	URINAL - HC	ZURN, Z5755-U OMNI-FLOW .125 TO 1GPF WALL MOUNTED TOP SPUD ASYMMETRIC BACK WALL URINAL WITH INTEGRAL P-TRAP AND VANDAL RESISTANT OUTLET STRAINER	3/4'		2'	1-1/2'	
	VALVE	ZURN, ZER6003AV-WS1-CCP AQUAVANTAGE BATTERY OPERATED SENSOR FLUSH VALVE 1 GPF CLOG RESISTANT TRIPLE FILTERED BY-PASS, DUAL SEAL AND CHLORAMINE RESISTANT INTERNAL PARTS. SENSOR TO HAVE 6VDC MOTOR WITH OVERRIDE BUTTON					
	CARRIER	ZURN, MODEL #ZR-1222 SUPPORT W/BEARING PLATE					
	HAMMER ARRESTOR	ZURN, MODEL #Z-1700-100 PLUMBING DRAINAGE INSTITUTE RATING 'A' (1-11 FU)					
WC-1	WATER CLOSET	ZURN, Z5655-BWL1 1.6GPF SIPHON JET FLUSH ACTION FLOOR MOUNTED STANDARD HEIGHT WATER CLOSET WITH 2-1/8" FULLY GLAZED TRAPWAY	1'		4'	2'	
	CLOSET FLANGE	ZURN MODEL # CF2982 CAST IRON TORQUE SET CLOSET FLANGE WITH INTEGRAL TEST CAP					
	VALVE	ZURN, ZER6000AV-WS1-CCP AQUAVANTAGE BATTERY OPERATED SENSOR FLUSH VALVE 1.6 GPF CLOG RESISTANT TRIPLE FILTERED BY-PASS, DUAL SEAL AND CHLORAMINE RESISTANT INTERNAL PARTS. SENSOR TO HAVE 6VDC MOTOR WITH OVERRIDE BUTTON					
	SEAT	ZURN, Z5955SS-EL-STS ELONGATED WHITE OPEN FRONT TOILET SEAT LESS COVER WITH SELF SUSTAINING STAINLESS STEEL CHECK HINGE					
	HAMMER ARRESTOR	ZURN, MODEL #Z-1700-100 PLUMBING DRAINAGE INSTITUTE RATING 'A' (1-11 FU)					
WC-2	WATER CLOSET	ZURN, Z5665-BWL1 1.6GPF ADA SIPHON JET FLUSH ACTION FLOOR MOUNTED ADA HEIGHT WATER CLOSET WITH 2-1/8" FULLY GLAZED TRAPWAY	1'		4'	2'	
	CLOSET FLANGE	ZURN MODEL # CF2982 CAST IRON TORQUE SET CLOSET FLANGE WITH INTEGRAL TEST CAP					
	VALVE	ZURN, ZER6000AV-WS1-CCP AQUAVANTAGE BATTERY OPERATED SENSOR FLUSH VALVE 1.6 GPF CLOG RESISTANT TRIPLE FILTERED BY-PASS, DUAL SEAL AND CHLORAMINE RESISTANT INTERNAL PARTS. SENSOR TO HAVE 6VDC MOTOR WITH OVERRIDE BUTTON					
	SEAT	ZURN, Z5955SS-EL-STS ELONGATED WHITE OPEN FRONT TOILET SEAT LESS COVER WITH SELF SUSTAINING STAINLESS STEEL CHECK HINGE					
	HAMMER ARRESTOR	ZURN, MODEL #Z-1700-100 PLUMBING DRAINAGE INSTITUTE RATING 'A' (1-11 FU)					
WB-1	WASHER BOX	SYMMONS, MODEL #LM-600-F-A LAUNDRY MATE SUPPLY & DRAIN 2" P-TRAP, PROVIDE VACUUM BREAKERS & HOSE CONNECTION WASTE 2", VENT	1/2'	1/2'	2'	1-1/2'	

ITEM	DESCRIPTION	SPECIFICATION	CW (inch)	HW (inch)	W (inch)	V (inch)	REMARK
CO-1	CLEANOUT	ZURN, MODEL #ZN-1400 INTERIOR FINISH FLOOR, 5" ROUND NICKEL BRONZE TOP					
CO-2	CLEANOUT	ZURN LC, MODEL #CO2413-PVC-ST 3 X 4" WALL CLEANOUT BODY AND PLUG					
	WALL PLATE	ZURN LC, MODEL #CO2530-SS7 7" ROUND STAINLESS STEEL ACCESS COVER W/ SECURING SCREW.					
EW-1	EMERGENCY EYE WASH UNIT	BRADLEY, MODEL #S19-214EW EMERGENCY EYE WASH UNIT WINLINE FILTER AND DRAIN DOWN EYE WASH SYSTEM	1/2'	1/2'			
	MIXING VALVE	BRADLEY, MODEL #S19-2000 EMERGENCY FIXTURE THERMOSTATIC MIXING VALVE WITH COLD WATER BYPASS					
	TRAP	2" P-TRAP					
EWC-1	ELEC. WTR. COOLER-HC	ELKAY, MODEL # LZSTL8WSLP BI-LEVEL WALL MOUNTED NON-PRESSURIZED WATER COOLER W/ FLEX GUARD BUBBLE, 3000 GAL. FILTER AND BOTTLE FILLER. 1.1 GPM 115V/60HZ 4.0AMP 370 WATTS. COOLER SHALL BE ALL METAL CONSTRUCTION, WATER LINES, REFRIGERANT LINES AND SOLID CONNECTION TO DRAIN. PROVIDE IN LIGHT GRAY	1/2'		1-1/4"	1-1/4"	
	SUPPLY	ZURN, Z8804-XL-LRLKA-PC 1/2" X 3/8" COMP X COMP LAVATORY SUPPLY KIT WITH ESCUTCHEON, 1/4 TURN CHROME PLATED STOP AND CHROME PLATED COPPER TUBE SUPPLY LINE					
	CARRIER	PROVIDE WITH APPROPRIATE ZURN CARRIER					
	P-TRAP	ZURN, Z8700-PC 1-1/4" CAST BRASS 17GA P-TRAP WITH CLEANOUT					
FD-1	FLOOR DRAIN	ZURN, MODEL #ZN415-6S21 GENERAL SERVICE DRAIN WITH 6" SQUARE STRAINER& SEDIMENT BUCKET			3"	1-1/2"	
	TRAP GUARD	ZURN, Z1072 ZSHIELD TRAP GUARD					
	TRAP	ZURN, MODEL #Z-1000-P DEEP SEAL TRAP					
HB-1	HOSE BIBB	ZURN, MODEL #Z-1321-P34-PC-BFP CHROME PLATED HOSE BIBB WITH WHEEL HANDLE AND VACUUM BREAKER. 3/4" MALE PIPE THREAD INLET CONNECTION, AND 3/4" MALE HOSE CONNECTION.	3/4"				
L-1A	LAVATORY FAUCET	ZURN, Z5114 OVAL 20"X17" 4"CC VITREOUS CHINA DROP IN LAVATORY SYMMONS, S-20-0-1.5 SYMMETRIX SINGLE HANDLE 4CC LAVATORY FAUCET WITH 1.5GPM AERATOR AND CERAMIC DISC CARTRIDGE	1/2'	1/2'	1-1/4"	1-1/4"	
	THERMOSTATIC MIXING VALVE	SYMMONS, 7-210-CK MAXLINE 3/8" THERMOSTATIC ASSE 1017/1070 MIXING VALVE					
	DRAIN	ZURN, Z8743-PC 1-1/4" CHROME PLATED CAST BRASS 17GA GRID DRAIN					
	P-TRAP	ZURN, Z8700-PC 1-1/4" CAST BRASS 17GA P-TRAP WITH CLEANOUT					
	SUPPLY	ZURN, Z8804-XL-LRLKQ-PC 1/2" X 3/8" COMP X COMP LAVATORY SUPPLY KIT WITH ESCUTCHEONS, 1/4 TURN CHROME PLATED STOPS AND CHROME PLATED COPPER TUBE SUPPLY LINES					
L-1B	LAVATORY FAUCET	ZURN, Z5344 20"X18" WALL HUNG 4"CC VITREOUS CHINA CONCEALED ARM LAVATORY SYMMONS, S-20-0-1.5 SYMMETRIX SINGLE HANDLE 4CC LAVATORY FAUCET WITH 1.5GPM AERATOR AND CERAMIC DISC CARTRIDGE	1/2'	1/2'	1-1/4"	1-1/4"	
	THERMOSTATIC MIXING VALVE	SYMMONS, 7-210-CK MAXLINE 3/8" THERMOSTATIC ASSE 1017/1070 MIXING VALVE					
	DRAIN	ZURN, Z8743-PC 1-1/4" CHROME PLATED CAST BRASS 17GA GRID DRAIN					
	P-TRAP	ZURN, Z8700-PC 1-1/4" CAST BRASS 17GA P-TRAP WITH CLEANOUT					
	SUPPLY	ZURN, Z8804-XL-LRLKQ-PC 1/2" X 3/8" COMP X COMP LAVATORY SUPPLY KIT WITH ESCUTCHEONS, 1/4 TURN CHROME PLATED STOPS AND CHROME PLATED COPPER TUBE SUPPLY LINES					
	TRAP WRAP	ZURN, Z8946-1-NT COMBINATION TRAP WRAP KIT WITH ONE TRAP AND TWO SUPPLY PROTECTION WRAPS					
	CARRIER	PROVIDE WITH APPROPRIATE APPROVED ZURN CARRIER					
LT-1	LAUNDRY TUB	ZURN, MODEL # MS2620-F SINGLE BASIN MOLDED STONE LAUNDRY TUB WITH ENAMELED ANGLE LEGS.	1/2'	1/2'	1-1/2"	1-1/2"	
	FAUCET	ZURN, MODEL # Z812-XL-N1 4"CC SOLID BRASS FAUCET WITH 2-1/2" HANDLES AND 6" CAST BRASS SPOUT WITH VACUUM BREAKER.					
	TRAP AND SUPPLY	ZURN, MODEL # Z9904.000.0.19 B5.0 1-1/2" CAST BRASS P-TRAP WITH CLEANOUT, 1/2" NOM X 3/8" OD STOPS WITH 20" BRAIDED STAINLESS STEEL SUPPLY LINES AND ESCUTCHEONS.					
MS-1	MOP SINK	STERN WILLIAMS, MODEL # HL-1800-T35-T40-D 24" X 24" X 12" TERRAZZO "HILLOW" SQUARE SERVICE SINK W/ISS CAP. PROVIDE 18" HIGH STAINLESS STEEL BACK SPLASH, CAULK EDGES FOR WATER TIGHT SEAL. PROVIDE WITH HOSE AND WALL BRACKET, S.S. MOP HANGER 24" LENGTH WITH 3 SPRING LOADED RUBBER GRIPS	1/2'	1/2'	3"	1-1/2"	
	FAUCET	ZURN, MODEL # Z841M1-RC SERVICE SINK FAUCET W/VACUUM BREAKER SPOUT AND INTEGRAL 3/4" HOSE THREADED OUTLET, PAIL HOOK AND WALL BRACE.					
	TRAP	ZURN, MODEL # Z-1000, 3" DEEP SEAL TRAP W/TRAP PRIMER Z-1022					

WATER HEATER SCHEDULE (ELECTRIC)

DRAWING SYMBOL	STORAGE CAPACITY	NUMBER OF ELEMENTS	KILOWATT PER	VOLTAGE	RECOVERY GPH @ 70° RISE	MANUFACTURER & MODEL #	DIMENSIONS
(WH) 1	50 GAL.	1	24.0	208/3/60	142	AO SMITH DRE-52-24	21.75" X 55.75"

ACCESSORIES AND FEATURES:

- ALTERNATE MANUFACTURERS: LOCHINVAR, STATE IND.
- UNIT SHALL BE ASME LISTED
- PROVIDE ASSE 1016/1017 DEVICE SET AT MAX 110° F
- NON-SIMULTANEOUS OPERATION

RECIRCULATION PUMP SCHEDULE

DRAWING SYMBOL	HP	VOLTAGE	MOTOR RPM	WEIGHT (LBS.)	MANUFACTURER & MODEL #	SYSTEM
(RP) 1	1/12	115	2,650	11.6	BELL & GOSSETT PL-30B	HW-RECRIC

ACCESSORIES AND FEATURES:

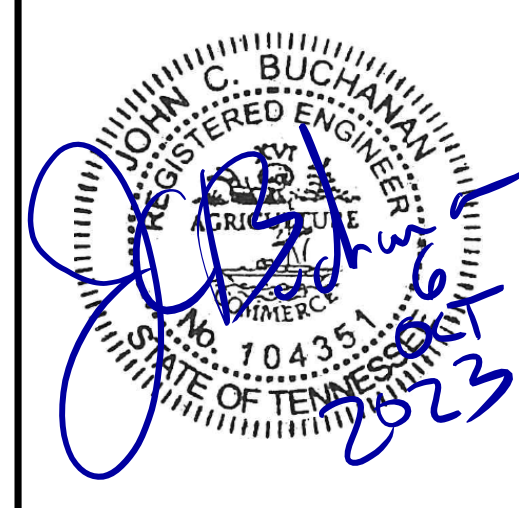
- ALL BRONZE CIRCULATOR PUMP
- PROVIDE WITH FLANGED BALL VALVES ON INLET AND OUTLET.
- SEE SPECIFICATIONS FOR OTHER PERTINENT INFORMATION.



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PROJECT INFORMATION

PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:
411 DOUGLAS LN
CLINTON, TN 37716
PROJECT NO.: **220042-02**

ACTIVE DESIGN PHASE

- FOR REVIEW ONLY
- FOR PERMITTING ONLY
- SCHEMATIC DESIGN
- DESIGN DEVELOPMENT
- CONSTRUCTION BIDDING
- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN



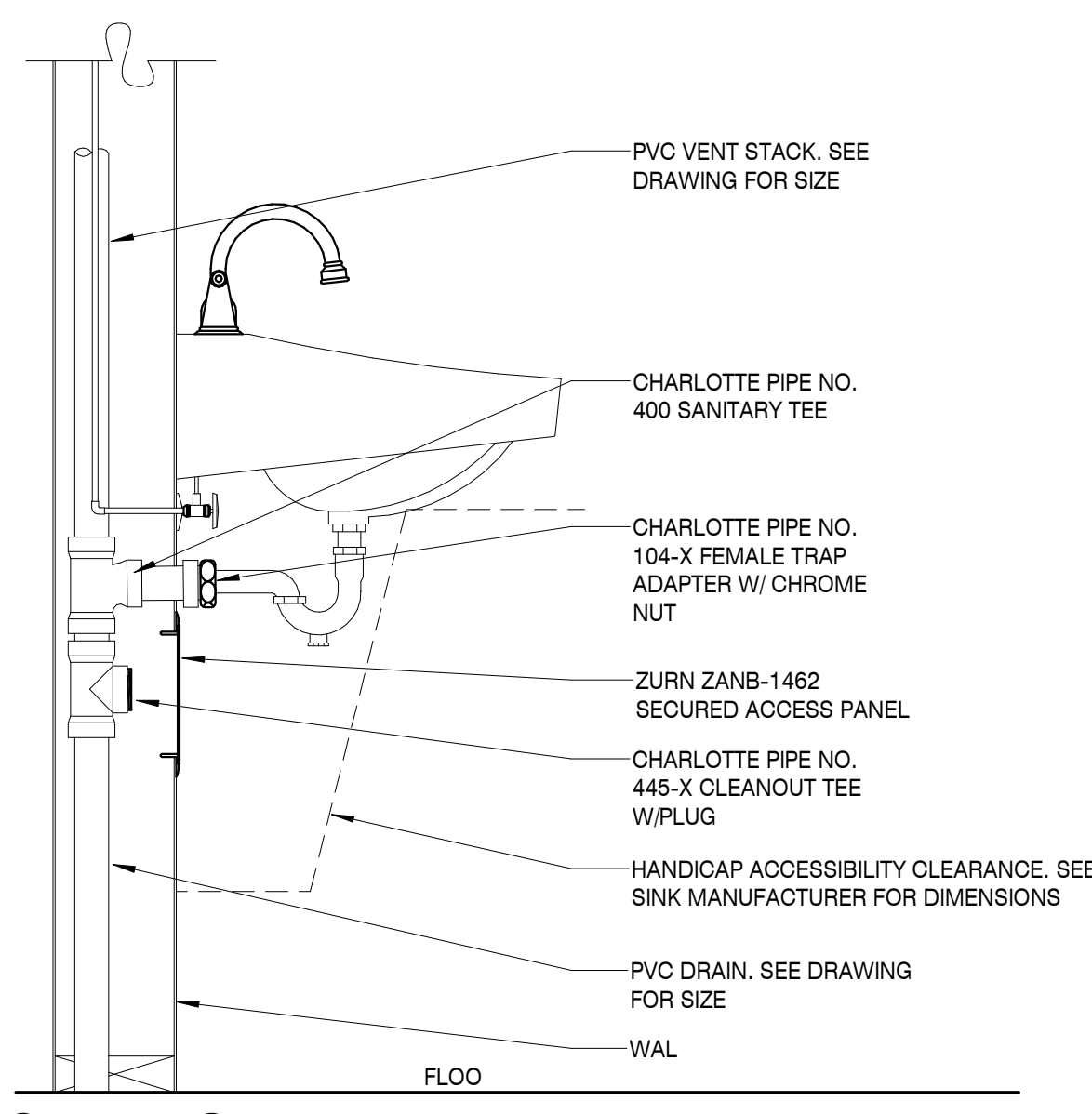
SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: DRJ
DRAWN BY: DRJ
REVIEWED BY: JCB
SHEET TITLE:

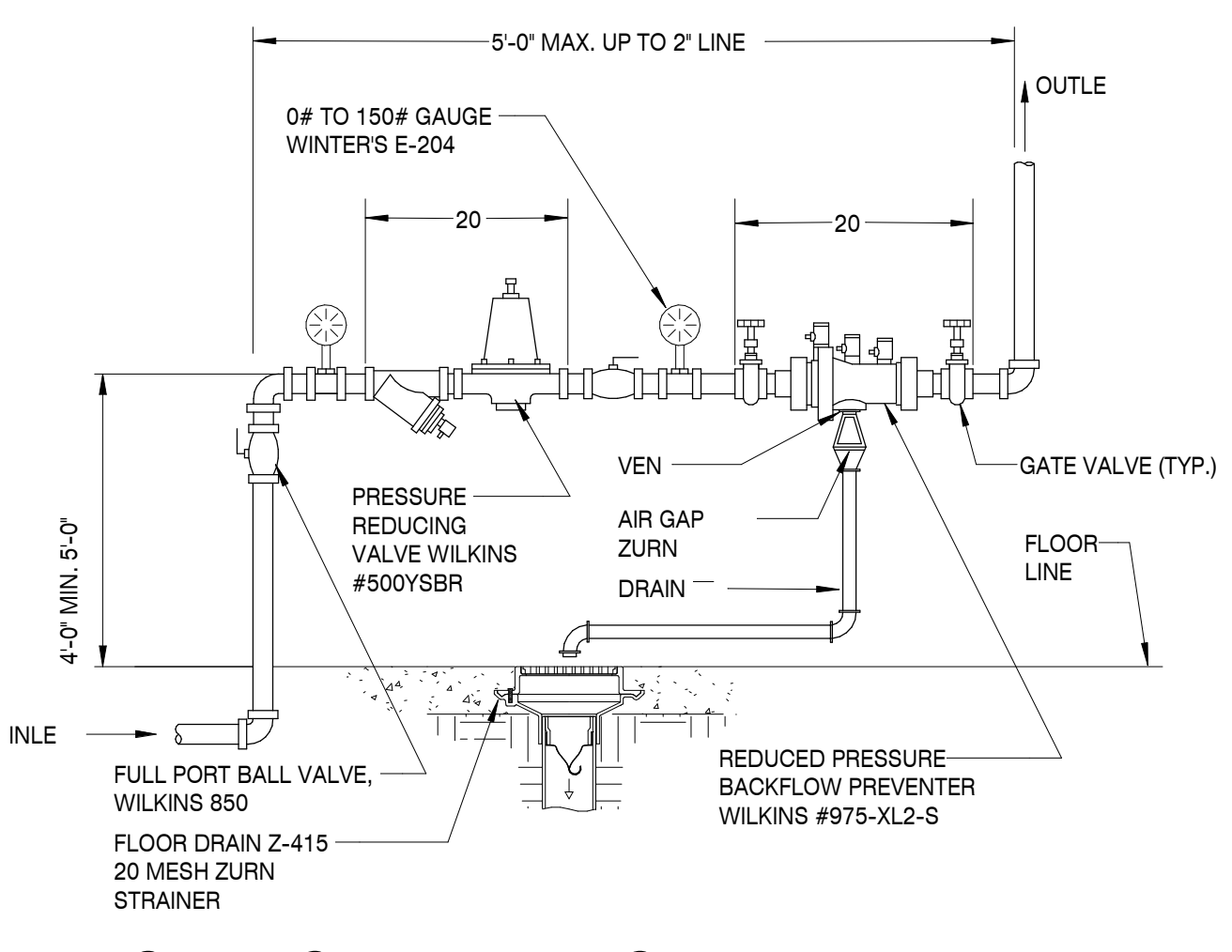
PLUMBING SCHEDULES

SHEET NO.: **P201**

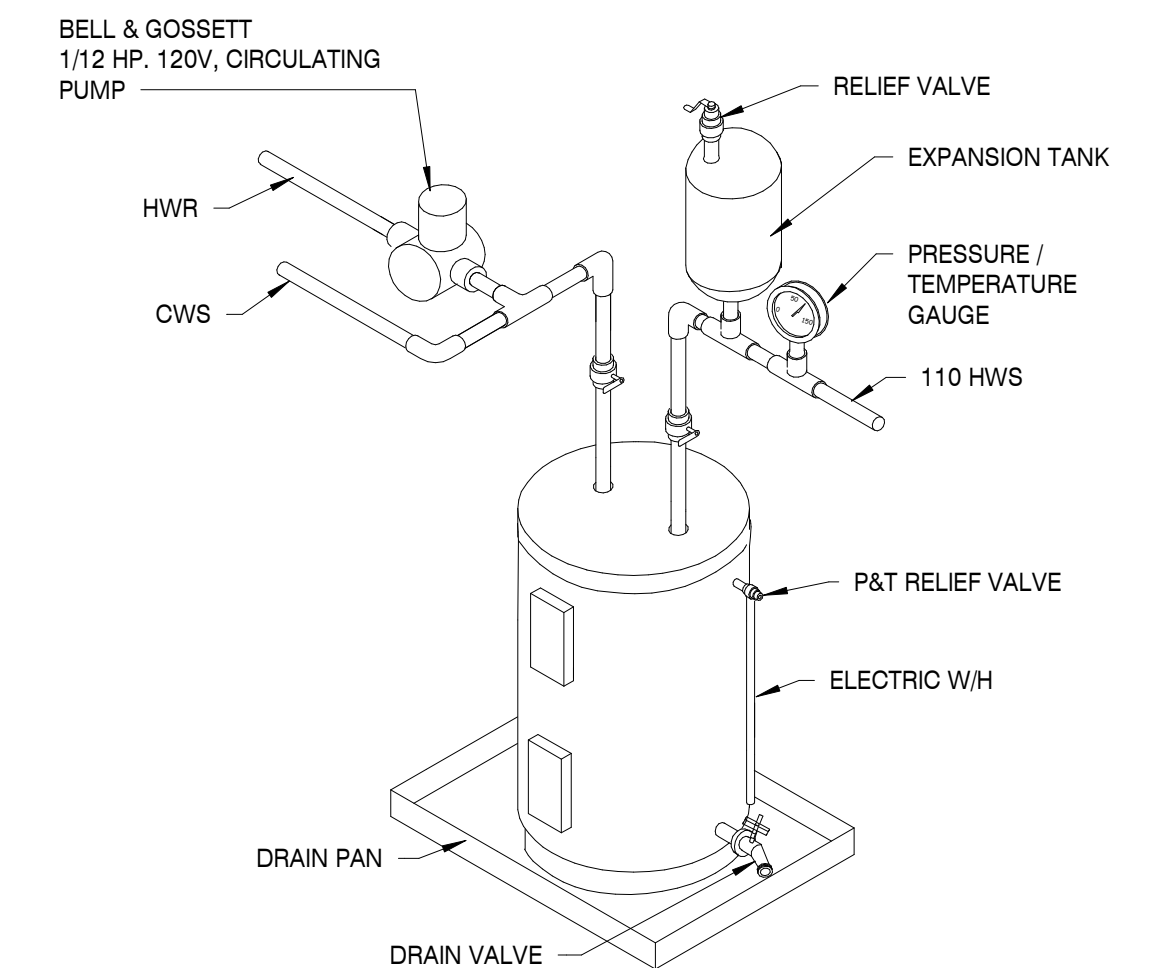
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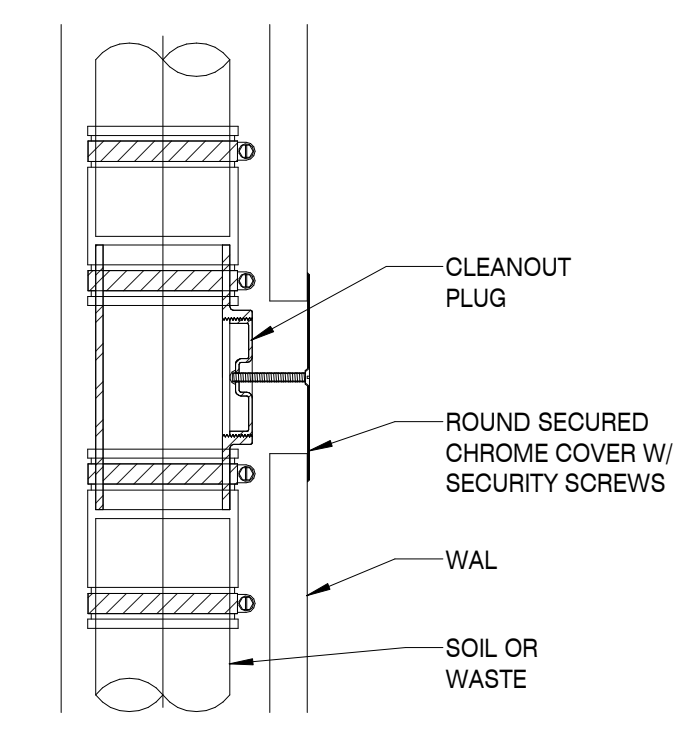
STACK CLEANOUT DETAIL
SCALE: 1/8" = 1'-0" **4**



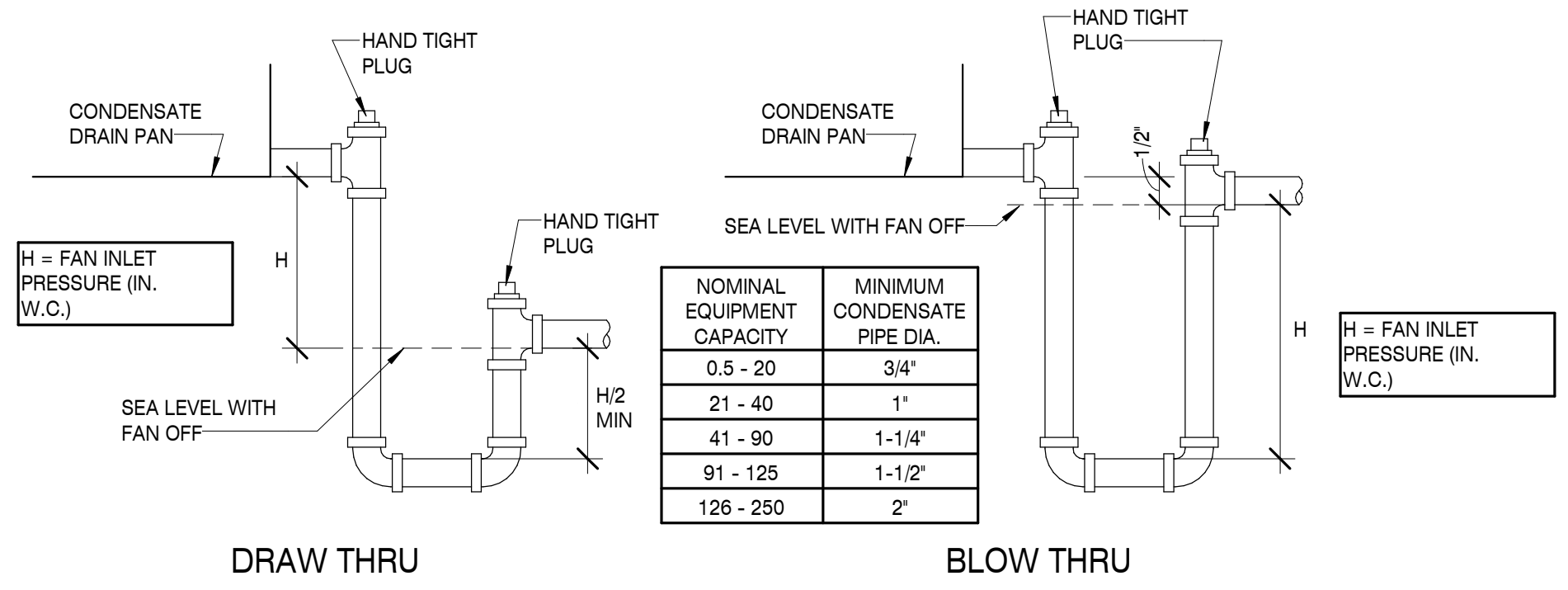
WATER SERVICE ENTRANCE DETAIL
SCALE: 1/8" = 1'-0" **1**



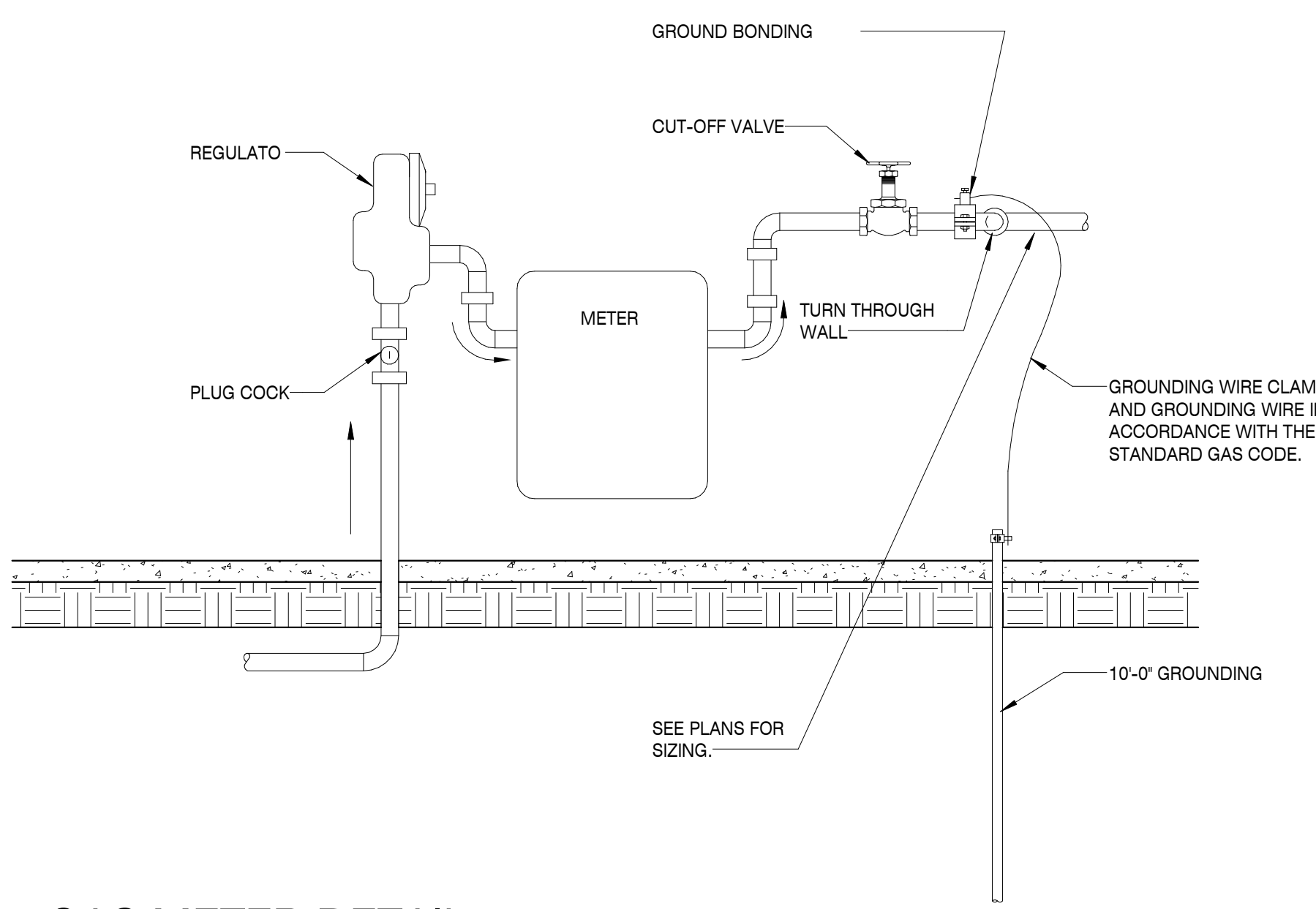
ELECTRIC WATER HEATER DETAIL
SCALE: N.T.S. **5**



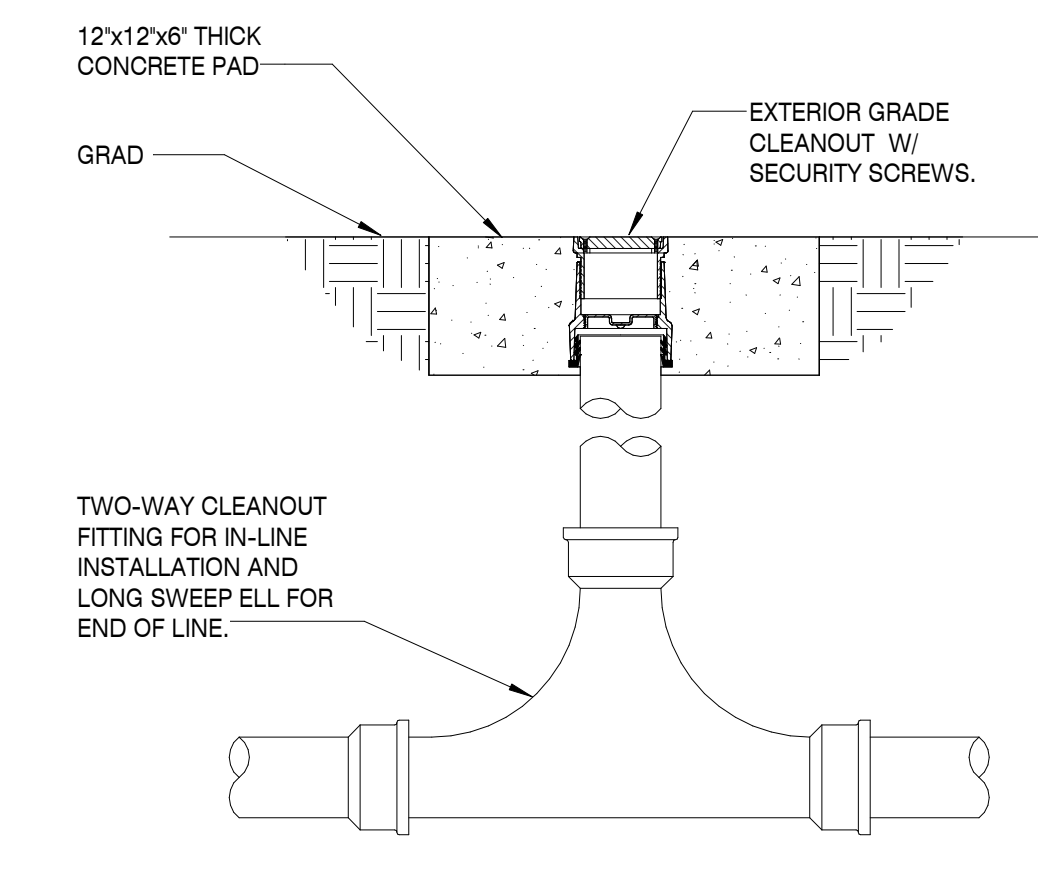
WALL CLEANOUT
SCALE: N.T.S. **2**



CONDENSATE TRAP DETAIL
SCALE: 1/8" = 1'-0" **7**



GAS METER DETAIL
SCALE: N.T.S. **6**

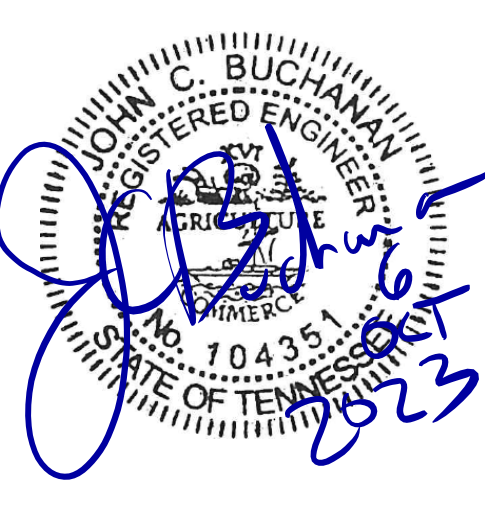


EXTERIOR GRADE CLEANOUT
SCALE: N.T.S. **3**

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PROJECT INFORMATION

PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS: 411 DOUGLAS LN CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- FOR REVIEW ONLY
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- SCHEMATIC DESIGN
- DESIGN DEVELOPMENT
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- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: DRJ
DRAWN BY: DRJ
REVIEWED BY: JCB
SHEET TITLE:

PLUMBING DETAILS

SHEET NO.: **P301**

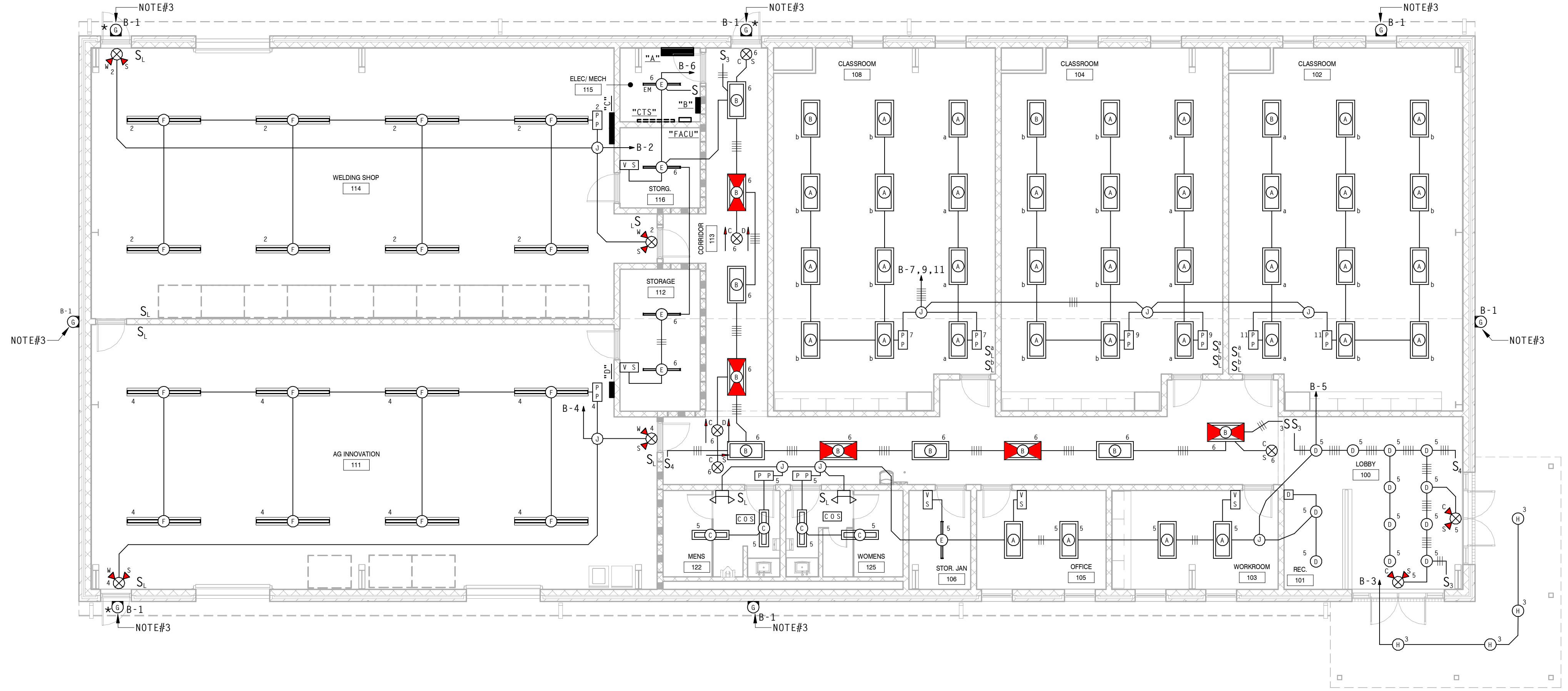
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 10/06/2023 09:27:33 AM

LIGHTING NOTES:

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATIONS OF ALL LIGHTING FIXTURES.
2. EXIT SIGNS, BUILT-IN BATTERY PACKS AND EXTERIOR EMERGENCY LIGHTS SHALL BE CONNECTED TO LOCAL UNSWITCHED LIGHTING CIRCUITS AS INDICATED ON DRAWINGS.
3. WIRING ROUTING TO EXTERIOR LIGHTING FIXTURE NOT SHOWN FOR DRAWING CLARITY. PROVIDE 20 AMPERE BRANCH CIRCUIT INDICATED TO THIS FIXTURE, SIMILAR TO OTHER LIGHTING CIRCUITS SHOWN ON PLANS.

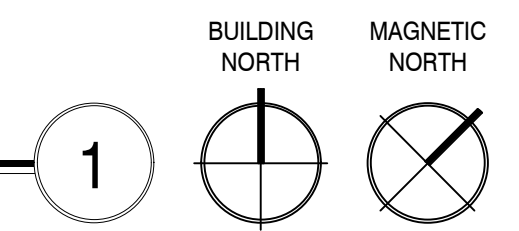
WALL LEGEND

	EXTERIOR WALL - BRICK VENEER ON MTL STUD WALL
	WALL PARTITION - MTL STUD WALL
	WALL PARTITION - SOUND BARRIER - MTL STUD WALL
	WALL PARTITION - 1 HOUR - MTL STUD WALL - SEE ULXXXX
	WALL PARTITION - 2 HOUR - MTL STUD WALL - SEE ULXXXX
	WALL PARTITION - SMOKE BARRIER - MTL STUD WALL
	WALL PARTITION - CMU WALL
	WALL PARTITION - 2 HOUR - CMU WALL - SEE ULXXXX



FIRST FLOOR PLAN - LIGHTING

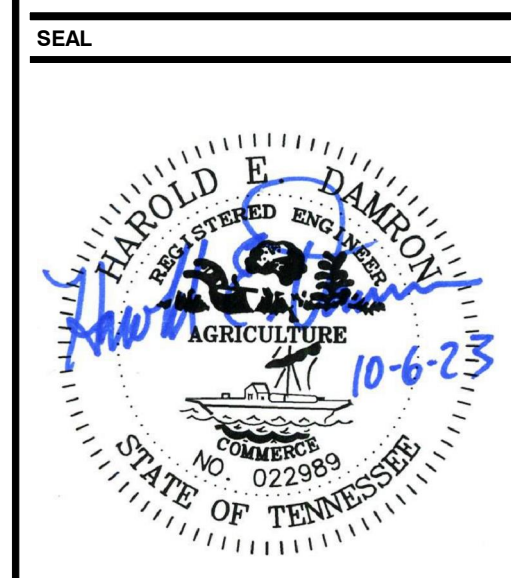
SCALE: 1/8" = 1'-0"



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VEI Job No. 23193



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PROJECT ADDRESS: 411 DOUGLAS LN CLINTON, TN 37716

PROJECT NO.: 220042-02

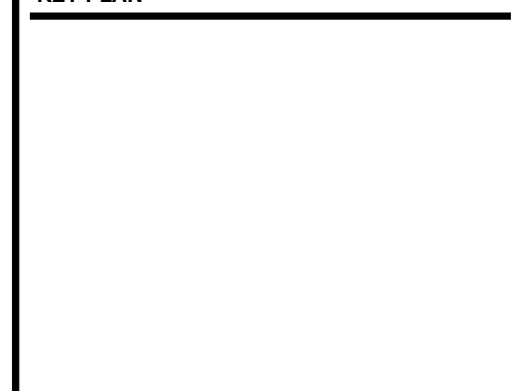
ACTIVE DESIGN PHASE

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- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN



SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: HED
DRAWN BY: VEI
REVIEWED BY: HED
SHEET TITLE:

FIRST FLOOR PLAN - LIGHTING

SHEET NO.:

E101

Autodesk Revit: 10/24/2023 10:00:00 AM, Clinton High School Welding Building, E101_220042-02.rvt, 10/24/2023 10:00:00 AM

- POWER NOTES:**
1. RECESSED OUTLET BOXES ON OPPOSITE SIDES OF FIRE RATED PARTITIONS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF AT LEAST 24 INCHES.
 2. PROVIDE NEMA 14-30R RECEPTACLE FOR ELECTRIC DRYER.
 3. "AC" BY DEVICE INDICATES DEVICE TO BE MOUNTED ABOVE COUNTER SUCH THAT BOTTOM OF BOX IS 2" ABOVE COUNTER OR COUNTER BACKSPLASH, AS APPLICABLE. REFER TO ARCHITECTURAL INTERIOR ELEVATIONS FOR COUNTER DETAILS.
 4. "DC" BY JUNCTION BOX INDICATES RETRACTABLE POWER CORD, 120-VOLT, 20 AMPERE, SIMILAR AND EQUAL TO DANIEL WOODHEAD CO. INDUSTRIAL DUTY CORD REEL WITH MINIMUM 20'-0" 12/3 RETRACTABLE CORD, RATED 600 VOLT AC. EQUIP EACH CORD REEL WITH 20 AMPERE PENDANT OUTLET BOX WITH NEMA 5-20R DUPLEX RECEPTACLE. CONFIRM EXACT LOCATIONS OF CORD REELS WITH ARCHITECT/OWNER PRIOR TO INSTALLATION. PROVIDE SUITABLE MOUNTING SUPPORT AT CEILING/STRUCTURE FOR CORD REEL, COORDINATE WITH GC.

WALL LEGEND

	EXTERIOR WALL - BRICK VENEER ON MTL STUD
	WALL PARTITION - MTL STUD WALL
	WALL PARTITION - SOUND BARRIER - MTL STUD WALL
	WALL PARTITION - 1 HOUR - MTL STUD WALL - SEE ULXXX
	WALL PARTITION - 2 HOUR - MTL STUD WALL - SEE ULXXX
	WALL PARTITION - SMOKE BARRIER - MTL STUD WALL
	WALL PARTITION - CMU WALL
	WALL PARTITION - 2 HOUR - CMU WALL - SEE ULXXX

MBI

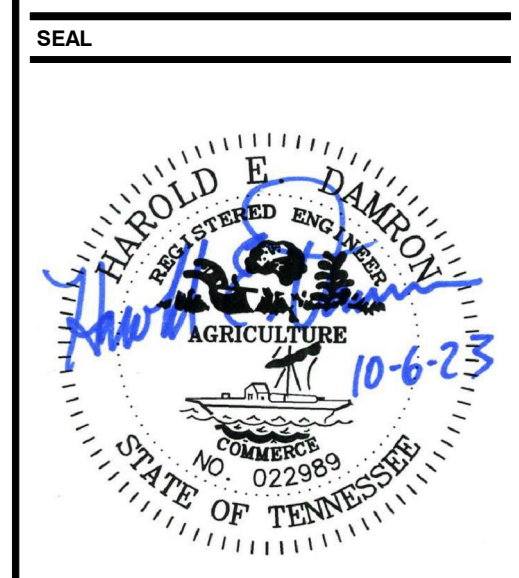
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PROJECT NO.: 220042-02

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 - SCHEMATIC DESIGN
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 - CONSTRUCTION BIDDING
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 - AS-BUILT RECORD SET

REVISION INFORMATION

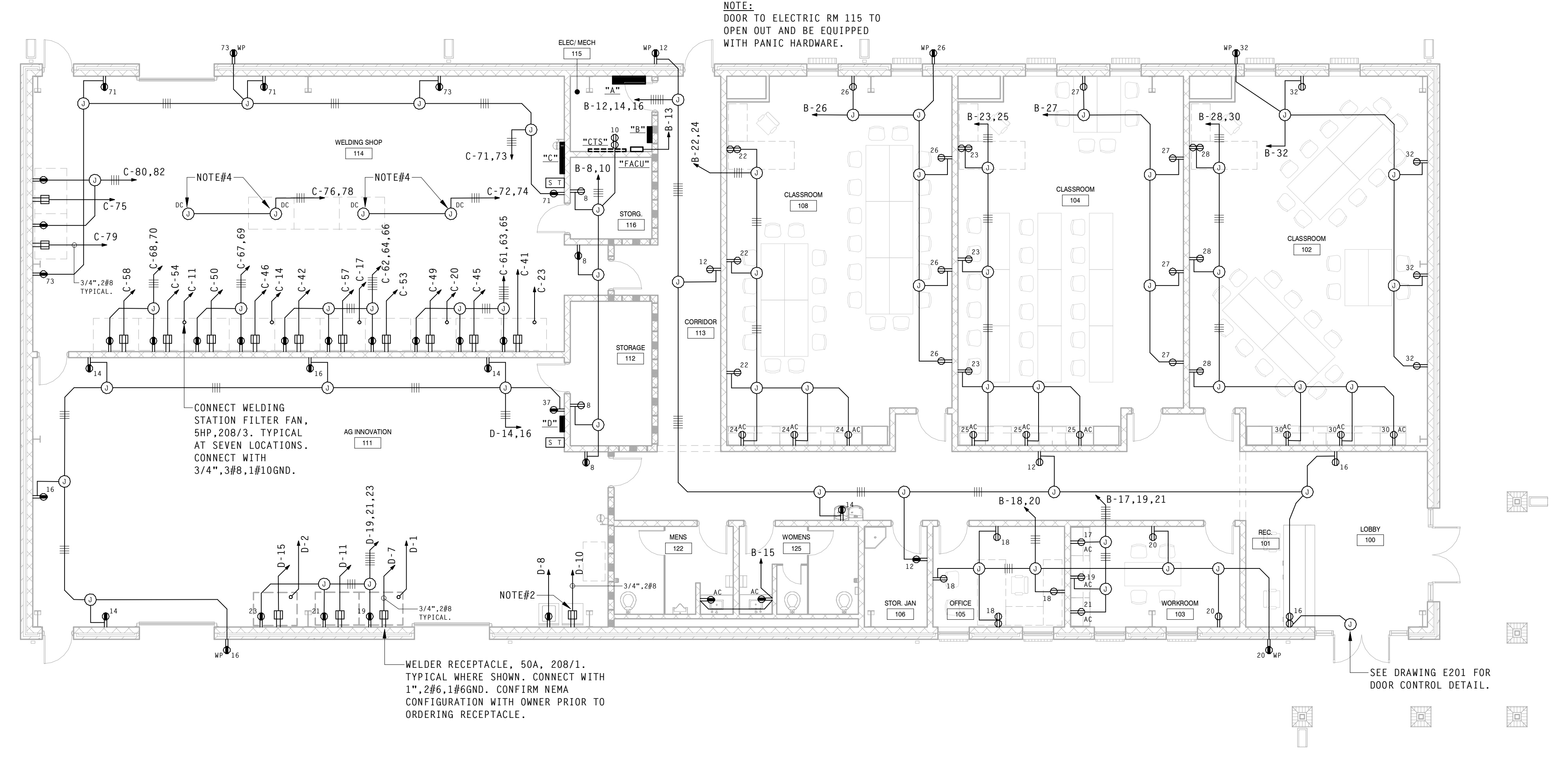
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KEY PLAN

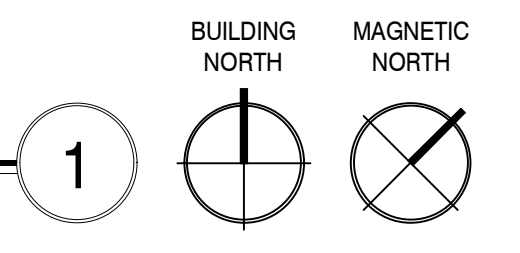
SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: HED
DRAWN BY: VEI
REVIEWED BY: HED
SHEET TITLE:

FIRST FLOOR PLAN - POWER
SHEET NO.: E102



FIRST FLOOR PLAN - POWER
SCALE: 1/8" = 1'-0"



Autodesk Revit 2024.02.02_Clinton High School Welding Building E102_20042-02.rvt
10/06/2023 9:48:32 AM

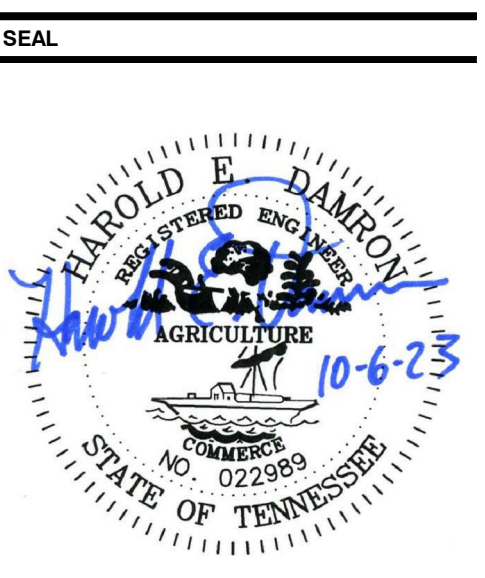
WALL LEGEND	
	EXTERIOR WALL - BRICK VENEER ON MTL STUD
	WALL PARTITION - MTL STUD WALL
	WALL PARTITION - SOUND BARRIER - MTL STUD WALL
	WALL PARTITION - 1 HOUR - MTL STUD WALL - SEE ULXXXX
	WALL PARTITION - 2 HOUR - MTL STUD WALL - SEE ULXXXX
	WALL PARTITION - SMOKE BARRIER - MTL STUD WALL
	WALL PARTITION - CMU WALL
	WALL PARTITION - 2 HOUR - CMU WALL - SEE ULXXXX



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PROJECT INFORMATION

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CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:
411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: **220042-02**

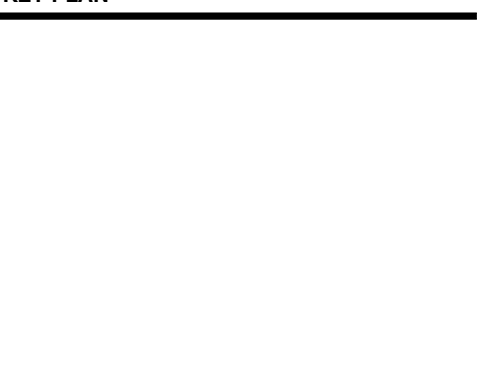
ACTIVE DESIGN PHASE

- FOR REVIEW ONLY
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- DESIGN DEVELOPMENT
- CONSTRUCTION BIDDING
- CONSTRUCTION DOCUMENTS
- AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN



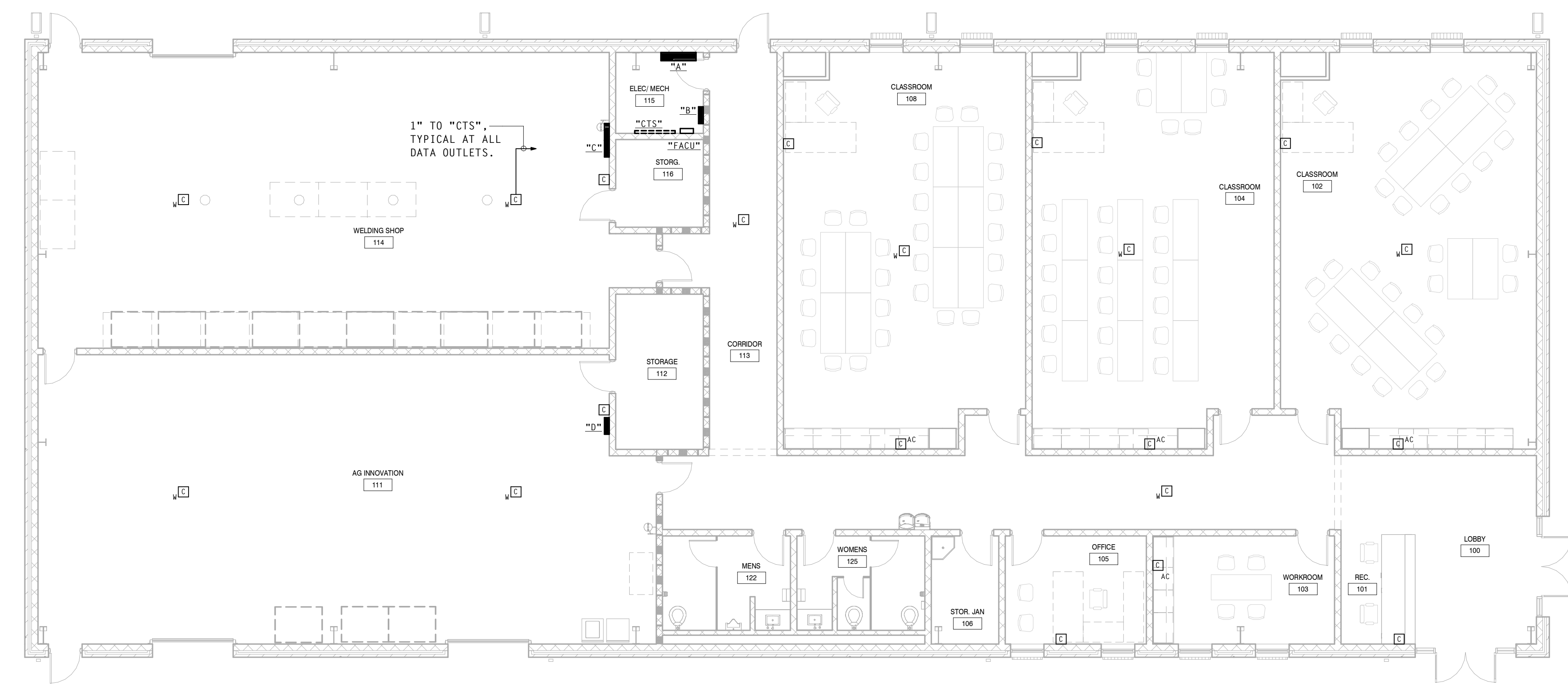
SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: HED
DRAWN BY: VEI
REVIEWED BY: HED
SHEET TITLE:

FIRST FLOOR PLAN - COMMUNICATIONS

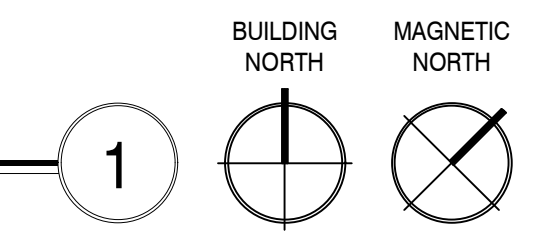
SHEET NO.:

E103



FIRST FLOOR PLAN - COMMUNICATIONS

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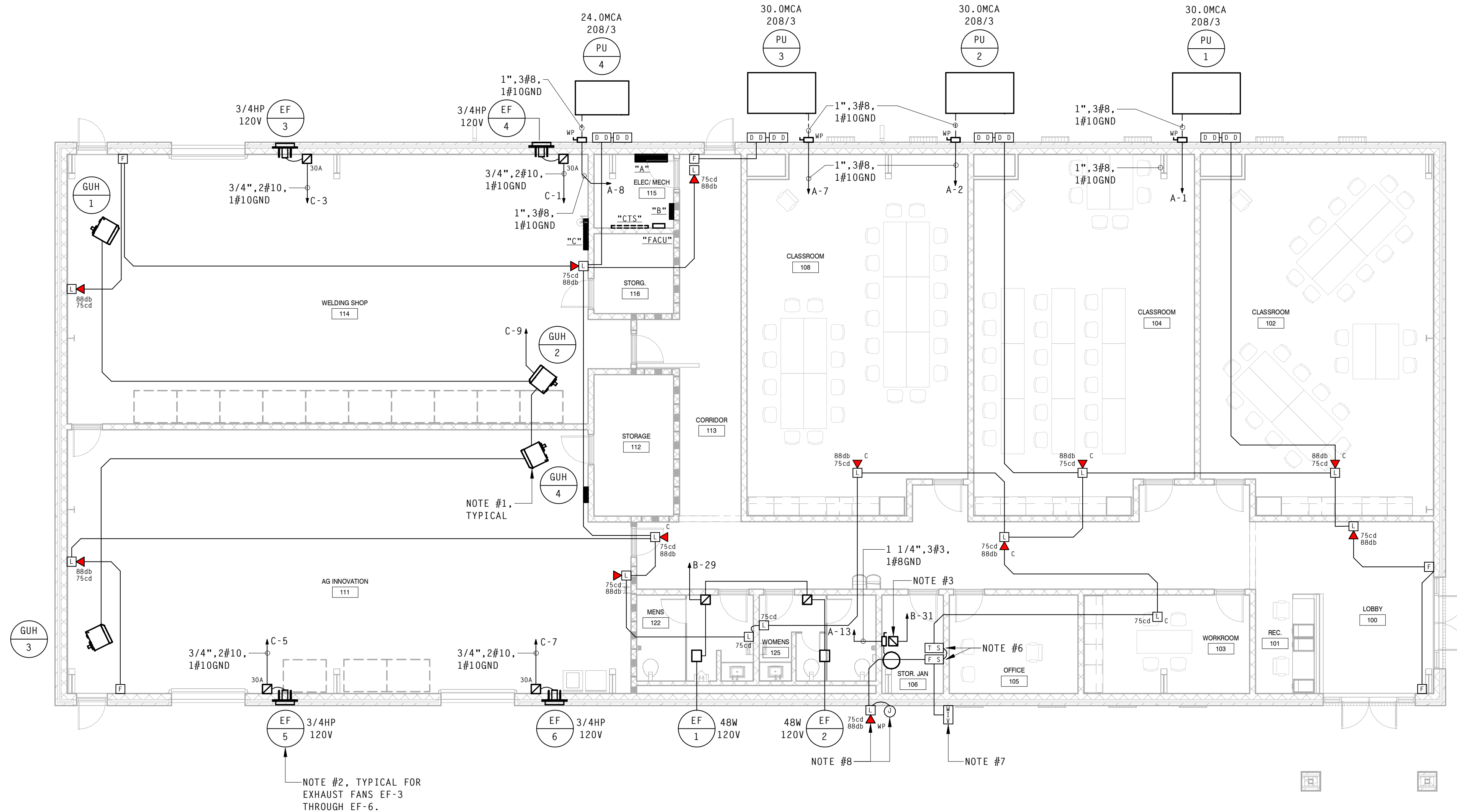


Autodesk Revit: 10/24/2023 9:48:29 AM, Clinton High School Welding Building E103_200042-02.rvt, 10/20/2023 9:48:29 AM

- FIRE ALARM AND HVAC WIRING NOTES:**
1. GAS FIRED UNIT HEATER PROVIDED BY HVAC CONTRACTOR. EACH "GUH" IS RATED 0.06HP. 120V. PROVIDE A 20 AMP, 120V. PROVIDE A 20 AMP, 120V TOGGLE SWITCH AT EACH "GUH" AND CONNECT AS REQUIRED.
 2. EXHAUST FANS EF-3, EF-4, EF-5, AND EF-6 PROVIDED BY HVAC CONTRACTOR WITH FUSED SAFETY SWITCH. CONNECT AS REQUIRED.
 3. CONNECT WATER HEATER, 24.0KW, 208/3 AND RECIRCULATING PUMP, 1/12HP, 120V.
 4. PRIOR TO BEGINNING CONDUIT INSTALLATION FOR HVAC/PLUMBING EQUIPMENT ELECTRICAL CONTRACTOR SHALL CONFIRM WITH MECHANICAL/PLUMBING CONTRACTOR THE VOLTAGES FOR ALL HVAC/PLUMBING EQUIPMENT REQUIRING ELECTRICAL SERVICE. ELECTRICAL CONTRACTOR SHALL CALL ANY DISCREPANCIES BETWEEN ELECTRICAL DRAWINGS AND VOLTAGE INFORMATION PROVIDED BY MECHANICAL/PLUMBING CONTRACTOR TO THE ATTENTION OF ENGINEER PRIOR TO PROCEEDING WITH WORK.
 5. CONFIRM EXACT ROUGH-IN LOCATIONS FOR ALL HVAC/PLUMBING EQUIPMENT WITH MECHANICAL/PLUMBING CONTRACTOR PRIOR TO INSTALLATION OF CONDUIT.
 6. CONNECT ALL SPRINKLER FLOW/TAMPER SWITCHES TO BUILDING FIRE ALARM SYSTEM. QUANTITIES SHOWN ARE DIAGRAMMATIC ONLY. CONFIRM EXACT QUANTITIES WITH SPRINKLER SYSTEM SUBCONTRACTOR.
 7. EXTEND 3/4" WITH FIRE ALARM WIRING TO WALL INDICATOR VALVE (WIV). CONNECT TAMPER SWITCH AT PIV TO BUILDING FIRE ALARM SYSTEM. REFER TO FIRE PROTECTION/SITE UTILITY DRAWINGS FOR EXACT LOCATION OF WIV.
 8. CONNECT SPRINKLER ALARM BELL ON EXTERIOR OF BUILDING. COORDINATE ROUGH-IN AND CONNECTION REQUIREMENTS WITH SPRINKLER SUBCONTRACTOR. PROVIDE "WEATHERPROOF" FIRE ALARM A/V DEVICE ON EXTERIOR OF BUILDING ADJACENT TO SPRINKLER BELL.

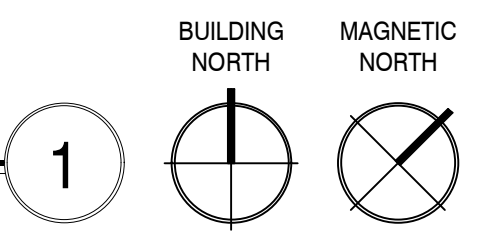
WALL LEGEND

	EXTERIOR WALL - BRICK VENEER ON MTL STUD
	WALL PARTITION - MTL STUD WALL
	WALL PARTITION - SOUND BARRIER - MTL STUD WALL
	WALL PARTITION - 1 HOUR - MTL STUD WALL - SEE ULXXX
	WALL PARTITION - 2 HOUR - MTL STUD WALL - SEE ULXXX
	WALL PARTITION - SMOKE BARRIER - MTL STUD WALL
	WALL PARTITION - CMU WALL
	WALL PARTITION - 2 HOUR - CMU WALL - SEE ULXXX



FIRST FLOOR PLAN - FIRE ALARM AND HVAC WIRING

SCALE: 1/8" = 1'-0"



Autodesk Revit: 10/26/2023 10:26:02 AM
 10/26/2023 9:48:35 AM
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PROJECT INFORMATION
 PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING
 PROJECT ADDRESS:
 411 DOUGLAS LN
 CLINTON, TN 37716
 PROJECT NO.: **220042-02**

ACTIVE DESIGN PHASE
 FOR REVIEW ONLY
 FOR PERMITTING ONLY
 SCHEMATIC DESIGN
 DESIGN DEVELOPMENT
 CONSTRUCTION BIDDING
 CONSTRUCTION DOCUMENTS
 AS-BUILT RECORD SET

REVISION INFORMATION		
NO.	DATE	DESCRIPTION

KEY PLAN

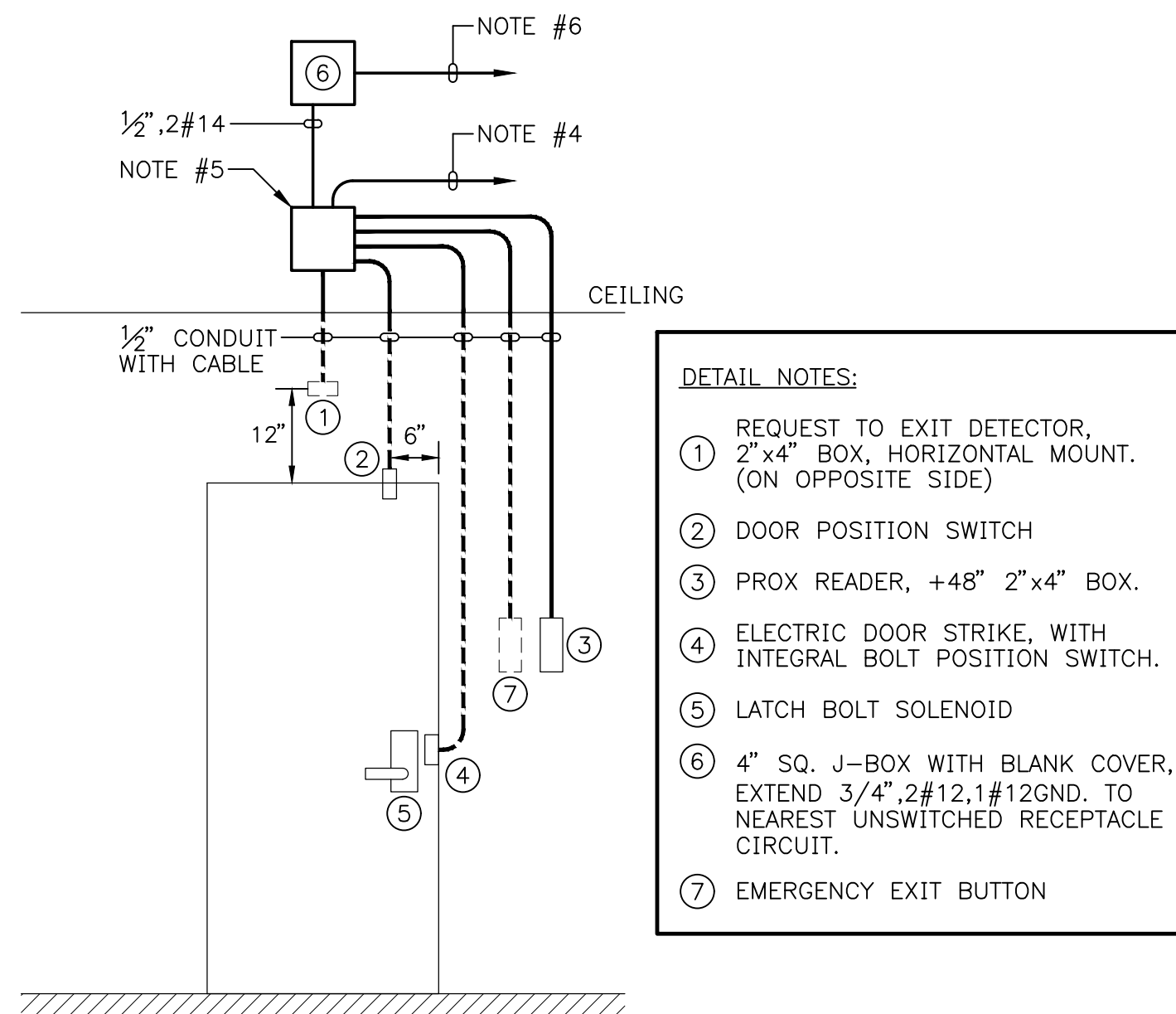
SHEET INFORMATION
 SHEET ISSUED: 10/06/2023
 DESIGNED BY: HED
 DRAWN BY: VEI
 REVIEWED BY: HED
 SHEET TITLE:

FIRST FLOOR PLAN - FIRE ALARM AND HVAC WIRING
 SHEET NO.: **E104**

LIGHTING FIXTURE SCHEDULE

DESIGNATION	ILLUMINATION				MOUNTING			DESCRIPTION: SHIELDING, TYPE MATERIALS, FINISH, MOUNTING	MANUFACTURER'S PRODUCT ITEM		*EQUAL PRODUCT PERMITTED	REMARKS		
	WATTS	DELIVERED LUMENS	COLOR TEMPERATURE (°K)	MINIMUM CRI	PENDANT STEM LENGTH	CEILING			COMPANY	CATALOG NO.			YES	NO
						SURFACE RECESSED	HEIGHT ABOVE FINISHED FLOOR OR GRADE							
A	36.7	4660	3500	80	-	-	-	2X4, FLAT PANEL	LITHONIA	CPX 2X4 4000LM 80CRI 35K A12 MIN10 ZT MVOLT	•			
B	24.6	3180	3500	80	-	-	-	2X4, FLAT PANEL	LITHONIA	CPX 2X4 3000LM 80CRI 35K A12 MIN10 ZT MVOLT E10WLCF	•	PROVIDE BATTERY BACKUP, WHERE SHOWN ON PLANS.		
C	29.3	3251	3500	80	-	-	-	1X4, FLANGED, FLAT PANEL	LITHONIA	CPX 1X4 3200LM 80CRI 35K A12 MIN10 ZT MVOLT DGA14	•			
D	29.5	3077	3500	80	-	-	-	6" DOWNLIGHT	GOHAM	EVO6 35/30 AR LSS WD MVOLT GZ10	•			
E	26.5	3000	3500	80	-	-	-	4FT., LENSED STRIP	LITHONIA	CLX L48 3000LM SEF FDL WD MVOLT GZ10 35K 80CRI E10WLCF	•	PROVIDE BATTERY BACKUP, WHERE NOTED WITH "EM" ON PLANS.		
F	81	7300	3500	80	-	-	-	8FT., LENSED STRIP	LITHONIA	PTNSL 8" WD MVOLT OSR2 35K 80CRI DNA	•			
G	51	6615	4000	70	-	-	-	WALL PACK, FULL CUT-OFF	LITHONIA	ARC2 LED P5 40K MVOLT EBCW DDBXD	•	PROVIDE BATTERY BACKUP, WHERE SHOWN ON PLANS.		
H	29.5	3077	4000	80	-	-	-	6" DOWNLIGHT, EXTERIOR	GOHAM	EVO6 40/30 AR LSS WD MVOLT GZ10	•			

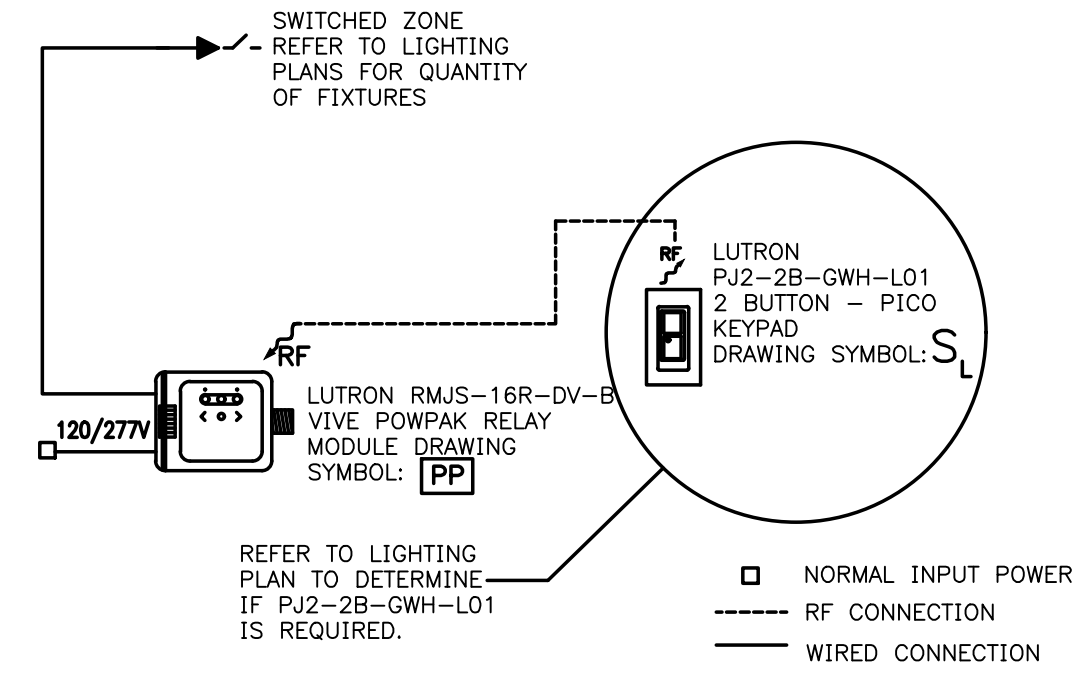
* UNLESS NOTED, EQUAL PRODUCT TO THAT SPECIFIED WILL BE ACCEPTED. THE DESIGN PROFESSIONAL SHALL HAVE SOLE JUDGEMENT CONCERNING EQUIVALENCY OF SUBSTITUTION.



- DETAIL NOTES:**
- REQUEST TO EXIT DETECTOR, 2"x4" BOX, HORIZONTAL MOUNT. (ON OPPOSITE SIDE)
 - DOOR POSITION SWITCH
 - PROX READER, +48" 2"x4" BOX.
 - ELECTRIC DOOR STRIKE, WITH INTEGRAL BOLT POSITION SWITCH.
 - LATCH BOLT SOLENOID
 - 4" SQ. J-BOX WITH BLANK COVER, EXTEND 3/4" .2#12, #12GND. TO NEAREST UNSWITCHED RECEPTACLE CIRCUIT.
 - EMERGENCY EXIT BUTTON

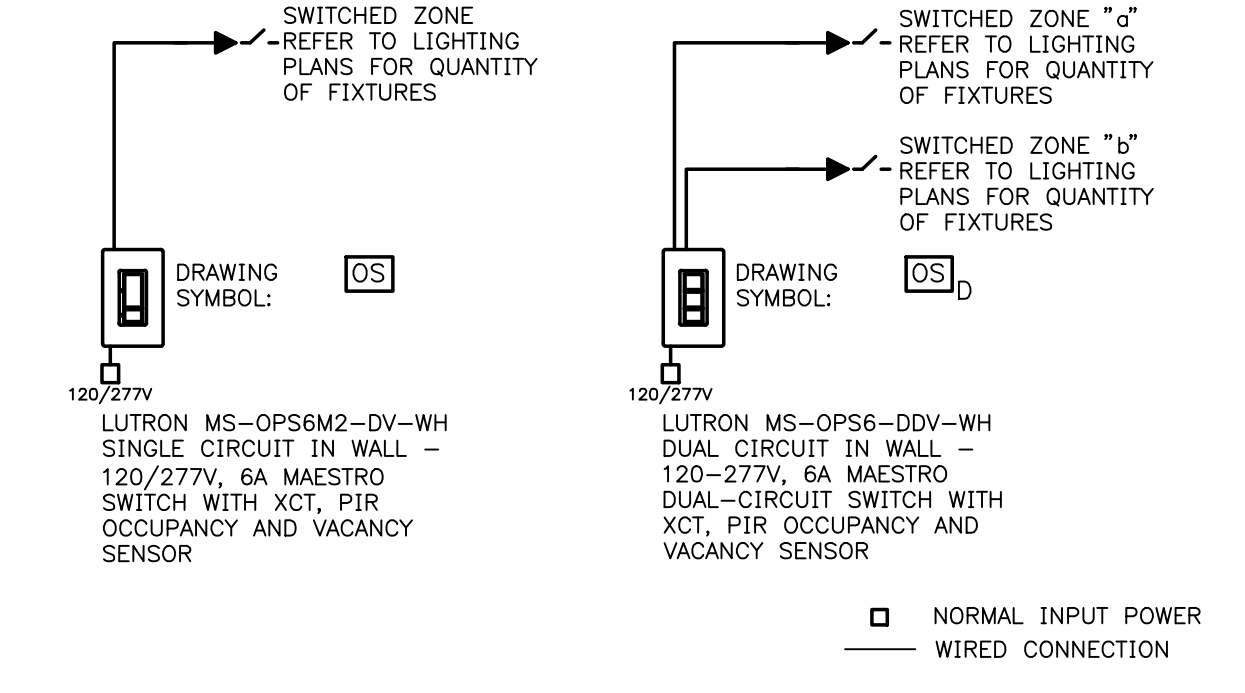
- NOTES:**
- CONTRACTOR TO PROVIDE ALL CONDUIT, LOW VOLTAGE CABLE, AND JUNCTION BOXES NECESSARY FOR ROUGH-IN. MAKE FINAL CONNECTIONS. COORDINATE WITH DOOR HARDWARE SUPPLIER.
 - VERIFY ALL LOCATIONS PRIOR TO ROUGH-IN.
 - ALL DOOR HARDWARE AND ELECTRONIC EQUIPMENT IS PROVIDED BY OTHERS.
 - 3/4" CONDUIT WITH CABLE; EXTEND TO DOOR INTERFACE IN COMM. ROOM..
 - 4" SQ. JUNCTION BOX TO BE LOCATED ABOVE ADJACENT LAY-IN (ACCESSIBLE) CEILING OR FLUSH IN WALL OR CEILING. DRAWING SYMBOL: [DC]
 - 1/2" .2#12, #12G; CONNECT TO NEAREST 120V UNSWITCHED CIRCUIT.
 - DETAIL IS ILLUSTRATED FROM ENTRY SIDE, AS INDICATED BY SOLID LINES. DASHED LINES INDICATE WORK ON SECURED AREA SIDE.
 - ANY LOSS OF POWER SHALL AUTOMATICALLY UNLOCK DOOR.

DOOR CONTROL DETAIL
NO SCALE

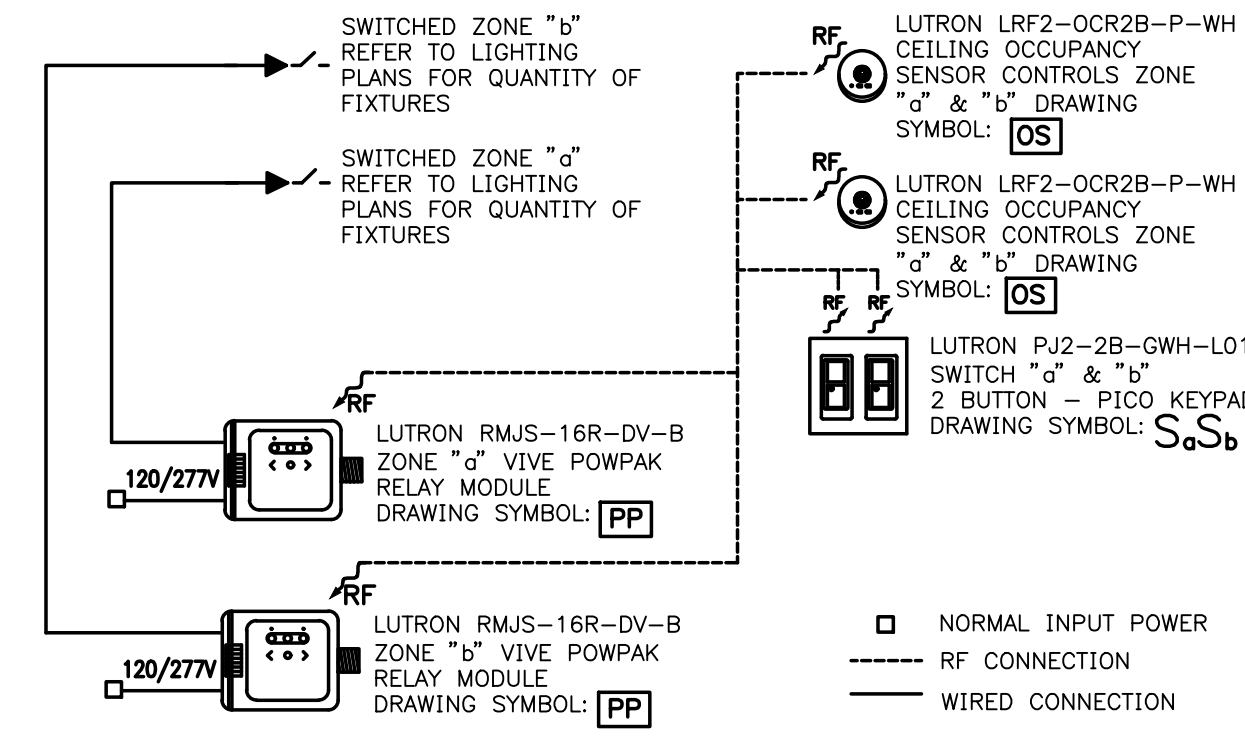


TYPICAL CEILING MOUNTED SENSOR LIGHTING CONTROL DETAIL
NO SCALE

NOTE:
1. DETAIL ABOVE DEPICTS "WIRELESS" ARRANGEMENT FOR SENSORS AND SWITCHES. ALTERNATE SYSTEMS UTILIZING LOW VOLTAGE WIRING FROM POWER PACKS TO CEILING SENSORS AND SWITCHES SHALL BE ACCEPTABLE FOR USE PROVIDED THAT FUNCTIONALITY OF SPACE MATCHES WORK INDICATED ON THIS DETAIL AND SHOWN ON DRAWINGS.



TYPICAL IN WALL SENSOR LIGHTING CONTROL DETAIL
NO SCALE



TYPICAL BI-LEVEL SWITCHING LIGHTING CONTROL DETAIL
NO SCALE

NOTE:
1. DETAIL ABOVE DEPICTS "WIRELESS" ARRANGEMENT FOR SENSORS AND SWITCHES. ALTERNATE SYSTEMS UTILIZING LOW VOLTAGE WIRING FROM POWER PACKS TO CEILING SENSORS AND SWITCHES SHALL BE ACCEPTABLE FOR USE PROVIDED THAT FUNCTIONALITY OF SPACE MATCHES WORK INDICATED ON THIS DETAIL AND SHOWN ON DRAWINGS.

LEGEND

SYMBOL	DESCRIPTION
[M]	MANUAL MOTOR STARTER TO CONTROL MOTOR INDICATED, SAME MOUNTING HEIGHT AS WALL SWITCH WHERE STARTER IS WALL MOUNTED. "2P" BY STARTER INDICATES TWO POLE STARTER TO BE PROVIDED FOR 208-VOLT, SINGLE-PHASE EQUIPMENT.
[D]	FUSED DISCONNECT SWITCH, HEAVY DUTY "HP" RATED, PROVIDE NEMA 3R ENCLOSURE OUTDOORS.
[F]	FIRE ALARM MANUAL PULL STATION, TOP OF BOX 48" AFF.
[V]	WALL MOUNTED FIRE ALARM VISUAL STROBE UNIT, CANDELA RATING AS NOTED ON DRAWINGS. PROVIDE BACKBOX FOR STROBE SUCH THAT BOTTOM OF STROBE LENS IS 81" ABOVE FINISHED FLOOR, COORDINATE BACKBOX TYPE AND EXACT MOUNTING HEIGHT WITH FIRE ALARM EQUIPMENT SUPPLIER. "WG" BY STROBE INDICATES CONTRACTOR TO PROVIDE WIRE GUARD.
[H]	CEILING MOUNTED FIRE ALARM HEAT DETECTOR.
[C]	FIRE ALARM VISUAL STROBE UNIT, CANDELA RATING AS NOTED ON DRAWINGS. "C" INDICATES STROBE UNIT TO BE CEILING MOUNTED. "WG" BY DEVICE INDICATES CONTRACTOR TO PROVIDE WIRE GUARD.
[S]	FIRE ALARM COMBINATION SPEAKER/STROBE UNIT, CANDELA AND DBA RATING AS NOTED ON DRAWINGS. "C" INDICATES SPEAKER/STROBE UNIT TO BE CEILING MOUNTED. "WG" BY DEVICE INDICATES CONTRACTOR TO PROVIDE WIRE GUARD.
[L]	WALL MOUNTED FIRE ALARM COMBINATION SPEAKER/STROBE UNIT, CANDELA AND DBA RATING AS NOTED ON DRAWINGS. PROVIDE BACKBOX SUCH THAT BOTTOM OF STROBE LENS IS 81" ABOVE FINISHED FLOOR, COORDINATE BACKBOX TYPE AND EXACT MOUNTING HEIGHT WITH FIRE ALARM EQUIPMENT SUPPLIER. "WG" BY SPEAKER/STROBE INDICATES CONTRACTOR TO PROVIDE WIRE GUARD.
[A]	WALL MOUNTED FIRE ALARM REMOTE ANNUNCIATOR PANEL, TOP 54" AFF.
[R]	WALL MOUNTED FIRE ALARM CENTRAL CONTROL UNIT, TOP 6'-0" AFF.
[D]	FIRE ALARM DUCT SMOKE DETECTOR, FURNISHED BY ELECTRICAL, INSTALLED DUCTWORK BY MECHANICAL, CONNECTED TO FIRE ALARM SYSTEM BY ELECTRICAL, CONNECT TO SHUT UNIT DOWN UPON ALARM. FURNISH AND INSTALL "LED" REMOTE STATUS INDICATOR, FIELD VERIFY LOCATION.
[W]	SPRINKLER SYSTEM WALL MOUNTED INDICATOR VALVE, CONNECT TO SEPARATE ZONE IN BUILDING FIRE ALARM SYSTEM.
[T]	SPRINKLER SYSTEM TAMPER SWITCH, CONNECT TO SEPARATE ZONE IN BUILDING FIRE ALARM SYSTEM.
[F]	SPRINKLER SYSTEM FLOW SWITCH, CONNECT TO SEPARATE ZONE IN BUILDING FIRE ALARM SYSTEM.
[G]	GAS FIRED UNIT HEATER, KW AND VOLTAGE AS INDICATED ON PLANS, PROVIDE DISCONNECT SWITCH AND CONNECT.
[O]	DATA/VOICE OUTLET, PROVIDE 4 11/16" SQUARE BOX WITH SINGLE-GANG DEVICE RING AND BLANK COVERPLATE, EXTEND EMPTY 1" CONDUIT FROM OUTLET BOX TO POINT ABOVE ACCESSIBLE LAY-IN CEILING AND TERMINATE WITH BUSHING. LOCATE OUTLET BOX 3" ABOVE BACKSPASH AT WORK COUNTERS AND +18" AFF ELSEWHERE UNLESS NOTED TO A DIFFERENT HEIGHT ON DRAWINGS. "W" BY DEVICE INDICATES DEVICE TO BE DEDICATED FOR WIRELESS ACCESS POINT USE.
[C]	COMMUNICATION TERMINAL SPACE, 3/4" PLYWOOD BOLTED TO WALL, TOP 6'-FEET ABOVE FINISHED FLOOR.

LEGEND

SYMBOL	DESCRIPTION
[A]	LED LIGHTING FIXTURE; "A" REFERS TO DESIGNATION IN THE LIGHTING FIXTURE SCHEDULE; "B" REFERS TO SWITCH CONTROL AND "3" REFERS TO CIRCUIT NUMBER. ASTERISK (*) INDICATES LUMINAIRE TO BE EQUIPPED WITH BATTERY PACK FOR EGRESS LIGHTING.
[B]	LED LIGHTING FIXTURE; "B" REFERS TO DESIGNATION IN THE LIGHTING FIXTURE SCHEDULE; "d" REFERS TO SWITCH CONTROL; AND "2" REFERS TO CIRCUIT NUMBER.
[E]	LED LIGHTING FIXTURE WITH BUILT-IN EMERGENCY BATTERY PACK TO PROVIDE LIGHTING UPON LOSS OF NORMAL POWER. PROVIDE SEPARATE UNSWITCHED ENERGIZED CONDUCTOR TO BATTERY PACK IN ORDER TO ALLOW NORMAL SWITCHING OF LIGHTING FIXTURES WITHOUT DISCHARGING BATTERY
[W]	WALL-MOUNTED TWIN-HEAD EMERGENCY LIGHTING FIXTURE, CONNECT TO UNSWITCHED LIGHTING CIRCUIT, MOUNT 7'-6" AFF EXCEPT NOT LESS THAN 6" BELOW CEILING. "WG" BY DEVICE INDICATES WIRE GUARD TO BE PROVIDED.
[P]	WALL SWITCH; SINGLE POLE UNLESS NOTED 3- OR 4-WAY; "P" INDICATES EQUIPPED WITH PILOT LIGHT TO INDICATE WHEN SWITCH IS ON; W/P, INDICATES WEATHERPROOF; "K" INDICATES KEY OPERATED SWITCH; +48/- ABOVE FLOOR EXCEPT IN MASONRY WALLS WHERE HEIGHT SHALL BE ADJUSTED TO HAVE BOX EDGE OCCUR AT A MASONRY JOINT. PROVIDE NEUTRAL CONDUCTOR IN ADDITION TO LINE AND SWITCHED CONDUCTORS.
[D]	WALL MOUNTED DIMMER TO CONTROL LIGHTING FIXTURES INDICATED, SAME MOUNTING HEIGHT AS REGULAR WALL SWITCH. PROVIDE NEUTRAL CONDUCTOR IN ADDITION TO LINE AND SWITCHED CONDUCTORS.
[W]	EXIT SIGN, "W" INDICATES WALL MOUNTING, "C" INDICATES CEILING MOUNTING, "S" INDICATES SINGLE FACE, "D" INDICATES DOUBLE FACE, "P" INDICATES PENDANT MOUNTED, "D" INDICATES DOUBLE FACE, "P" INDICATES PENDANT MOUNTED. PROVIDE DIRECTIONAL ARROWS ON EXIT SIGNS AS INDICATED ON PLANS. "WG" BY DEVICE INDICATES WIRE GUARD TO BE PROVIDED. UNIT EQUIPPED WITH BATTERY BACK-UP. CONNECT TO UNSWITCHED, "HOT", LIGHTING CIRCUIT.
[W]	EXIT SIGN WITH BUILT-IN TWIN HEAD EMERGENCY LIGHT, "W" INDICATES WALL MOUNTING, "C" INDICATES CEILING MOUNTING, "S" INDICATES SINGLE FACE, "D" INDICATES DOUBLE FACE, "P" INDICATES PENDANT MOUNTED. PROVIDE DIRECTIONAL ARROWS ON EXIT SIGNS AS INDICATED ON PLANS. "WG" BY DEVICE INDICATES WIRE GUARD TO BE PROVIDED. UNIT EQUIPPED WITH BATTERY BACK-UP. CONNECT TO UNSWITCHED, "HOT", LIGHTING CIRCUIT.
[R]	DUPLEX PLUG RECEPTACLE; 120-VOLTS; 20-AMPERES; MOUNT 3" ABOVE BACKSPASH AT WORK COUNTERS AND LAVATORIES AND +18" AFF ELSEWHERE UNLESS NOTED TO A DIFFERENT HEIGHT. TAMPER RESISTANT, UNLESS NOT REQUIRED BY CODE.
[R]	SPECIAL PURPOSE 208-VOLT, SINGLE-PHASE RECEPTACLE, MOUNT +18" AFF UNLESS NOTED OTHERWISE, SEE PLANS FOR ADDITIONAL INFORMATION.
[R]	SPECIAL PURPOSE 208-VOLT, THREE-PHASE RECEPTACLE, MOUNT +18" AFF UNLESS NOTED OTHERWISE, SEE PLANS FOR ADDITIONAL INFORMATION.
[R]	QUADRAPLEX PLUG RECEPTACLE 120-VOLTS, 20-AMPERES, MOUNT 3" ABOVE BACKSPASH AT WORK COUNTERS/LAVATORIES AND +18" AFF ELSEWHERE UNLESS NOTED TO A DIFFERENT HEIGHT. TAMPER RESISTANT, UNLESS NOT REQUIRED BY CODE.
[R]	DUPLEX PLUG RECEPTACLE, 120-VOLTS, 20-AMPERES, SHADED CENTER INDICATES EQUIPPED WITH BUILT-IN GROUND FAULT CIRCUIT INTERRUPTER, MOUNT 3" ABOVE BACKSPASH AT WORK COUNTERS/LAVATORIES AND +18" AFF ELSEWHERE UNLESS NOTED TO A DIFFERENT HEIGHT. PROVIDE WEATHER RESISTANT DEVICE AND WEATHERPROOF "EXTRA DUTY WHILE IN USE" COVER WHERE LOCATED OUTDOORS. TAMPER RESISTANT, UNLESS NOT REQUIRED BY CODE.
[P]	PANELBOARD, RECESSED OR SURFACE MOUNTED AS INDICATED ON DRAWINGS, TOP 6'-FEET ABOVE FINISHED FLOOR ADJUSTED TO OCCUR AT A MASONRY JOINT, SEE PANELBOARD SCHEDULE FOR EQUIPMENT CONTAINED.
[A]	CONDUIT AND CONDUCTORS EXTENDED TO PANELBOARD A, CIRCUITS 1, 3, AND 5. CROSS LINES INDICATE #12 AWG PHASE AND NEUTRAL CONDUCTORS WHERE MORE THAN TWO. SINGLE CIRCUIT BRANCH CIRCUIT WIRING RUNS SHOWN WITHOUT CROSS LINES SHALL BE PROVIDED WITH 2#12, #12G. EACH 20 AMPERE BRANCH CIRCUIT SHALL BE PROVIDED WITH SEPARATE NEUTRAL CONDUCTOR. SHARING OF NEUTRAL CONDUCTORS SHALL NOT BE PERMITTED. PROVIDE EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT RUN.
[A]	CONDUIT IN THE FLOOR CONSTRUCTION OR UNDERGROUND SHOWN TURNING UP.
[A]	CONDUIT IN THE WALL OR CEILING CONSTRUCTION SHOWN TURNING DOWN.
[J]	JUNCTION BOX, SIZE AND USE AS REQUIRED; COVERPLATE SHALL OVERLAP THE BOX EDGE BY 1/2" WHERE RECESSED IN WALL WITH CONCEALED WIRING.
[S]	OCCUPANCY/VACANCY SENSOR FOR LIGHTING CONTROL, CEILING OR WALL MOUNTED AS INDICATED ON PLANS. MOUNT WALL-MOUNTED SENSOR AT SAME HEIGHT AS WALL SWITCH (+48" ABOVE FINISHED FLOOR). "D" BY SENSOR ON PLANS INDICATES DUAL RELAY TYPE SENSOR ALLOWING INDEPENDENT CONTROL OF TWO SEPARATE LIGHTING LOADS. PROVIDE NEUTRAL CONDUCTOR IN ADDITION TO LINE AND SWITCHED CONDUCTORS.
[PP]	POWER PACK ROOM CONTROLLER FOR CEILING MOUNTED OCCUPANCY SENSOR SYSTEM, SEE PLANS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
[S]	LOW-VOLTAGE WALL SWITCH, SAME MOUNTING HEIGHT AS REGULAR WALL SWITCH. REFER TO DETAIL THIS SHEET.
[E]	WALL MOUNTED EXTERIOR LED EMERGENCY LIGHTING UNIT FULL CUTOFF "DARK SKY" COMPLIANT TYPE, WITH BUILT-IN NICKEL CADMIUM BATTERY FOR EMERGENCY OPERATION ONLY UPON LOSS OF NORMAL UTILITY POWER, WET LOCATION LISTED, WITH INTERNAL BATTERY HEATER. VERIFY FINISH AND EXACT MOUNTING HEIGHT WITH ARCHITECT. UNIT SHALL BE SIMILAR AND EQUAL TO MULE LIGHTING MERU-LED-EM-FIN-IH. UNIT SHALL HAVE TWO LED LAMPS FOR REDUNDANCY, TOTAL 11 WATTS.
[ST]	SHUNT-TRIP OPERATOR FOR EMERGENCY SHUT DOWN OF PANELBOARD.

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PROJECT INFORMATION

PROJECT: **CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING**

PROJECT ADDRESS: 411 DOUGLAS LN, CLINTON, TN 37716

PROJECT NO.: **220042-02**

ACTIVE DESIGN PHASE

<input type="checkbox"/>	FOR REVIEW ONLY
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REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED: 10/06/2023
DESIGNED BY: HED
DRAWN BY: VEI
REVIEWED BY: HED
SHEET TITLE:

LEGEND, SCHEDULES, DETAILS

SHEET NO.: **E201**

E201 - CHS WELDING - LEGEND, SCHEDULES, DETAILS.dwg
A.L.S. 10/06/23 9:40 AM HD 23193(AS)

ELECTRICAL SPECIFICATIONS:

- SCOPE: FURNISH PLANT, LABOR, MATERIAL, SERVICES, AND EQUIPMENT NECESSARY FOR AND REASONABLY INCIDENTAL TO THE INSTALLATION OF ELECTRICAL FACILITIES SHOWN ON THE DRAWINGS AND CALLED FOR HEREINAFTER.
- CODES AND PERMITS: SECURE NECESSARY PERMITS, PAY NECESSARY FEES, CONFORM TO ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES.
- POWER SERVICE: POWER SERVICE SHALL BE TAKEN UNDERGROUND FROM A NEW UTILITY COMPANY PAD MOUNTED TRANSFORMER AT 120/208-VOLTS, 3-PHASE, 4-WIRE, WYE. REFER TO DRAWINGS FOR ADDITIONAL INFORMATION. CAREFULLY COORDINATE POWER SERVICE ARRANGING, METERING, ETC., WITH UTILITY COMPANY PRIOR TO COMMENCING WORK. INCLUDE ALL UTILITY COMPANY "AID TO CONSTRUCTION" CHARGES IN BID PRICE.
- 600-VOLT WIRING: EXTERIOR UNDERGROUND CONDUIT RUNS OR CONDUIT RUNS IN OR BELOW CONCRETE FLOOR SLAB INSIDE BUILDING SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT WITH GALVANIZED RIGID STEEL ELBOWS WHERE CONDUITS TURN UP THROUGH CONCRETE FLOOR SLAB. NO PVC CONDUIT WILL BE PERMITTED ABOVE FLOOR LEVEL INSIDE THE BUILDING. EXPOSED CONDUIT ON THE EXTERIOR OF THE BUILDING SHALL BE GALVANIZED RIGID STEEL OR INTERMEDIATE METAL CONDUIT. FINAL CONNECTIONS TO HVAC EQUIPMENT SHALL BE MADE USING LIQUID-TIGHT FLEXIBLE CONDUIT (SEALTITE). OTHERWISE, ALL OVERHEAD WIRING INSIDE THE BUILDING IN DRY LOCATIONS SHALL BE INSTALLED IN ELECTRIC-METALLIC TUBING (EMT). METAL CLAD (MC) CABE SHALL BE PERMISSIBLE FOR FINAL CONNECTIONS TO LAY-IN LIGHTING FIXTURES FROM LOCAL JUNCTION BOXES IN INDIVIDUAL LENGTHS NOT EXCEEDING 6'. ALL CONDUCTORS ON THE PROJECT SHALL BE COPPER WITH "THHN/THWN" INSULATION. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE REQUIREMENTS. WIRING SHALL BE INSTALLED CONCEALED TO THE MAXIMUM EXTENT PRACTICABLE. ALL WIRING SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL OR PERPENDICULAR TO BUILDING STRUCTURAL ELEMENTS. NO OVERHEAD DIAGONAL RUNS WILL BE PERMITTED.
- PANELBOARDS: FURNISH AND INSTALL NEW PANELBOARDS WHERE INDICATED ON DRAWINGS. PANELBOARDS SHALL BE SIMILAR AND EQUAL TO EATON POW-R-LINE PANELBOARDS, RATED 120/208-VOLTS, 3-PHASE, 4-WIRE, WYE. SIMILAR AND EQUAL EQUIPMENT BY SQUARE D, SIEMENS, OR GENERAL ELECTRIC WILL BE APPROVED FOR USE. AIC RATING OF PANELBOARD SHALL BE AS INDICATED ON DRAWINGS. ALL PANELBOARD BUSING SHALL BE COPPER. UTILIZE MOLDED CASE, BOLT-ON TYPE CIRCUIT BREAKERS. THE USE OF "PLUG-IN" STYLE CIRCUIT BREAKERS SHALL NOT BE PERMISSIBLE. PROVIDE EACH PANELBOARD WITH A TYPED CIRCUIT DIRECTORY INDICATING LOADS SERVED. PROVIDE ENGRAVED NAMEPLATE ON EACH PANELBOARD INDICATING PANELBOARD DESIGNATION, VOLTAGE, AND FEEDER SERVICE ORIGINATION LOCATION.
- SAFETY SWITCHES: FURNISH AND INSTALL HEAVY-DUTY FUSIBLE TYPE SAFETY SWITCHES WHERE INDICATED ON DRAWINGS. SAFETY SWITCHES SHALL BE HORSEPOWER RATED, QUICK-MAKE, QUICK-BREAK, WITH ARC SHIELDS. SAFETY SWITCHES LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURES. SAFETY SWITCHES LOCATED INSIDE SHALL HAVE NEMA 1 ENCLOSURES. WHERE SAFETY SWITCHES ARE REQUIRED TO BE INSTALLED AWAY FROM WALLS, CONTRACTOR SHALL PROVIDE A SUITABLE SUPPORT TO ALLOW THE SWITCH TO BE IN A POSITION OF 4-1/2" ABOVE FLOOR OR FINISHED GRADE. WHERE NECESSARY, PROVIDE A STEEL FRAME ATTACHED TO FLOOR/GROUND. SWITCHES MAY BE MOUNTED ON EQUIPMENT WHERE SPECIFIC APPROVAL IS PROVIDED BY EQUIPMENT SUPPLIER. COORDINATE EXACT ROUGH-IN LOCATIONS OF SAFETY SWITCHES WITH HVAC CONTRACTOR PRIOR TO INSTALLATION. PROVIDE FUSING IN SAFETY SWITCHES TO MATCH MOCIP RATINGS INDICATED ON UNIT NAMEPLATE DATA.
- MANUAL MOTOR STARTERS: FURNISH AND INSTALL MANUAL MOTOR STARTERS FOR 120-VOLT EXHAUST FANS AS SHOWN ON DRAWINGS AND AS CALLED FOR HEREINAFTER. MANUAL MOTOR STARTERS SHALL BE EQUIPPED WITH MELTING ALLOY THERMAL OVERLOAD RELAY. UNIT SHALL BE SIMILAR AND EQUAL TO SQUARE D COMPANY 2510 SERIES, CATALOG NO. FF-1P. PROVIDE 2-POLE MANUAL MOTOR STARTERS TO SERVE 208-VOLT, SINGLE-PHASE EQUIPMENT WHERE INDICATED ON DRAWINGS.
- LIGHTING FIXTURES: FURNISH AND INSTALL LIGHTING FIXTURES AS SHOWN ON DRAWINGS COMPLETE WITH LAMPS. REFER TO LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION. CATALOG NUMBERS INDICATED ON LIGHTING FIXTURE SCHEDULE INDICATE THE MINIMUM STANDARD OF QUALITY EXPECTED FOR EACH LIGHTING FIXTURE TYPE. SIMILAR AND EQUAL EQUIPMENT BY OTHER MANUFACTURERS WILL BE ACCEPTABLE FOR USE.
- OCCUPANCY SENSORS: FURNISH AND INSTALL OCCUPANCY SENSORS FOR CONTROL OF LIGHTING WHERE INDICATED ON DRAWINGS. REFER TO DETAILS ON DRAWINGS FOR ADDITIONAL INFORMATION.
- WIRING DEVICES: FURNISH AND INSTALL WIRING DEVICES (WALL SWITCHES, DUPLEX PLUG RECEPTACLES, GFCI DUPLEX RECEPTACLES, TAMPER-RESISTANT DUPLEX RECEPTACLES, ETC., AS INDICATED ON DRAWINGS). ALL 120-VOLT DEVICES SHALL HAVE A MINIMUM RATING OF 20-AMPERES. THE USE OF 15-AMPERE RATED DEVICES SHALL NOT BE PERMISSIBLE. COLOR OF DEVICES SHALL BE IVORY, WHITE, OR GRAY AS DIRECTED BY ARCHITECT. UTILIZE STAINLESS STEEL COVERPLATES. REFER TO DRAWINGS FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL CONFIRM THAT ALL DEVICES, INCLUDING OCCUPANCY SENSORS, HAVE SAME FINISH.
- COMMUNICATIONS RACEWAY FACILITY: FURNISH AND INSTALL A SYSTEM OF EMPTY CONDUIT AND BOXES FOR COMMUNICATIONS SYSTEMS USE IN THE BUILDING. OWNER WILL EMPLOY THE SERVICES OF A SEPARATE LOW-VOLTAGE VENDOR FOR INSTALLATION OF ALL LOW-VOLTAGE WIRING WITH THE EXCEPTION OF FIRE ALARM SYSTEM. COORDINATE EXACT ROUGH-IN LOCATIONS FOR COMMUNICATIONS SYSTEM EQUIPMENT PRIOR TO ROUGH-IN. PROVIDE #1/0 AWG GROUND FROM EACH COMMUNICATIONS TERMINAL SPACE TO THE MAIN ELECTRICAL SERVICE GROUND IN THE BUILDING. PROVIDE COPPER GROUNDING BAR AT EACH COMMUNICATIONS TERMINAL SPACE TO TERMINATE #1/0 AWG COPPER GROUNDING CONDUCTOR.
- EXIT SIGNS/EMERGENCY LIGHTING: FURNISH AND INSTALL EXIT SIGNS AND EMERGENCY LIGHTING AS INDICATED ON DRAWINGS. ALL EXIT SIGNS SHALL BE LED, POLYCARBONATE HOUSING WITH MATTE WHITE FINISH AND GREEN LETTERS. EACH EXIT SIGN SHALL BE EQUIPPED WITH A MAINTENANCE-FREE, NICKEL-CADMIUM STANDBY BATTERY BACKUP. EXIT SIGNS SHALL BE SIMILAR AND EQUAL TO LITHONIA NO. 1. LOW-S-W-3-R-INVOLT-FI-N. PROVIDE COMBO EXIT SIGNS/TWIN HEAD EMERGENCY LIGHTS WHERE NOTED ON PLANS. LITHONIA CO. NO. LHOM-LED-R-M6. TWIN-HEAD EMERGENCY LIGHTING UNITS SHALL BE MATTE WHITE FINISH, THERMOPLASTIC HOUSING, WITH TWO 1.5-WATT LED LAMPS AND SEALED MAINTENANCE-FREE, NICKEL-CADMIUM BATTERY, SIMILAR AND EQUAL TO LITHONIA NO. ELM2L LED. INSTALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. EXTERIOR EMERGENCY LIGHTING SHALL BE PROVIDED VIA BUILT-IN BATTERY PACKS IN THE EXTERIOR LIGHTING FIXTURES BEING PROVIDED. SEE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
- FIRE ALARM SYSTEM: FURNISH AND INSTALL A COMPLETE ADDRESSABLE VOICE EVACUATION STYLE FIRE ALARM SYSTEM FOR THE BUILDING. EQUIPMENT SPECIFIED HEREIN IS THAT BY JOHNSON CONTROLS (SIMPLEX). SIMILAR AND EQUAL EQUIPMENT BY OTHER MANUFACTURERS WILL BE ACCEPTABLE FOR USE.
 - NEW CONTROL PANEL SHALL BE ANALOG ADDRESSABLE WITH BATTERY SUPPLY, INCLUDING CHARGER. USE SIMPLEX GRINNELL 4010-9101. PROVIDE VOICE EVAC PANEL WITH NECESSARY AMPLIFIER RATING TO SERVE SPEAKERS IN BUILDING. VISIBLE ALARM SIGNALS AND PRE-RECORDED VOICE ANNOUNCEMENT SHALL BE PROVIDED THROUGHOUT BUILDING UPON ALARM CONDITION IN ACCORDANCE WITH NFPA 72, NFPA 101, AND IBC.
 - REMOTE ANNUNCIATOR SHALL BE LCD, 80-CHARACTER, SIMPLEXGRINNELL 4603-9101.
 - MANUAL STATIONS SHALL BE ADDRESSABLE SIMPLEXGRINNELL MODEL NO. 4099-9001.
 - CEILING-MOUNTED SMOKE DETECTORS SHALL BE ANALOG, INTELLIGENT, PHOTOELECTRIC TYPE, SIMPLEX GRINNELL MODEL 4098-9710.
 - HEAT DETECTORS SHALL BE COMBINATION RATE-OF-RISE, FIXED TEMPERATURE TYPE.
 - BASIS FOR INTELLIGENT DETECTOR SHALL BE SIMPLEX GRINNELL 4098-9792.
 - DUCT DETECTORS SHALL BE PHOTOELECTRIC, ANALOG, INTELLIGENT TYPE, SIMPLEX GRINNELL 4098-9753. PROVIDE WEATHERPROOF HOUSINGS WHERE LOCATED OUTDOORS. PROVIDE REMOTE TEST SWITCH FOR EACH DUCT DETECTOR. EQUIP EACH DUCT DETECTOR WITH NECESSARY SAMPLING TUBES. DUCT DETECTORS WILL BE FURNISHED BY ELECTRICAL TRADE, INSTALLED IN DUCTWORK BY MECHANICAL TRADE, AND CONNECTED TO FIRE ALARM SYSTEM BY ELECTRICAL TRADE. ARRANGE FOR UNIT SHUTDOWN WITH MECHANICAL CONTRACTOR AS REQUIRED. PROVIDE ADDRESSABLE MONITOR AND CONTROL MODULES AS REQUIRED.
 - PROVIDE FLASHING STROBE LIGHTS AS INDICATED ON DRAWINGS. STROBE LIGHTS SHALL BE SIMPLEX GRINNELL MODEL 4904 SERIES, CANDELA RATING AS NOTED ON DRAWINGS.
 - CEILING-MOUNTED COMBINATION AUDIO/VISUAL DEVICES SHALL BE PROVIDED WHERE SHOWN IN THE OFFICE AREA. UNITS SHALL BE SIMPLEX GRINNELL 4903 SERIES WITH CANDELA RATING AS NOTED ON DRAWINGS WITH 25-VOLT RMS SPEAKERS. INSTALLATION SHALL BE IN STRICT COMPLIANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS. COLOR CODE ALL CONDUCTORS. ALL CONDUCTORS SHALL BE INSTALLED IN METALLIC RACEWAY SYSTEM, MINIMUM SIZE 3/4". PLENUM-RATED "OPEN" CABLING SHALL BE PERMISSIBLE ABOVE ACCESSIBLE LAY-IN CEILINGS PROVIDED THAT NEC REQUIRED SUPPORTING MEANS FOR ALL CABLING IS PROVIDED. AT COMPLETION OF WORK, PROVIDE COMPLETE TESTING OF SYSTEM. INCLUDE SUCCESSFUL TEST REPORTS AS PART OF PROJECT CLOSE-OUT DOCUMENTS.
- GROUNDING: PROVIDE GROUNDING OF NEW ELECTRICAL SERVICE AS DESCRIBED HEREINAFTER. PROVIDE THREE DRIVEN 3/4" X 10' LONG COPPERWELD GROUND RODS. LOCATE GROUND RODS MINIMUM 15' APART FROM EACH OTHER. PROVIDE A #3/0 AWG BARE COPPER GROUNDING CONDUCTOR BONDED TO GROUND RODS AND EXTENDED TO MAIN DISTRIBUTION PANEL AND BONDED TO GROUND BUS/SYSTEM NEUTRAL. ALL BONDING CONNECTIONS TO GROUND RODS SHALL BE BY CADWELD PROCESS. ALSO, EXTEND A #3/0 AWG COPPER GROUNDING CONDUCTOR FROM MAIN ELECTRICAL SERVICE GROUND AND BOND MAIN METALLIC COLD WATER PIPE AT POINT WHERE ENTERS BUILDING. PROVIDE GROUNDING OF STRUCTURAL STEEL FOOTING TO MAIN ELECTRICAL SERVICE GROUND IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE REQUIREMENTS. GROUND MAIN TELECOMMUNICATIONS SPACE AS NOTED ELSEWHERE IN THESE SPECIFICATIONS. PROVIDE A CODE-SIZED EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDER AND BRANCH CIRCUIT WIRING RUNS. SEPARATE GROUNDING CONDUCTOR IS GENERALLY NOT INDICATED ON DRAWINGS BUT SHALL BE REQUIRED. GROUND BY DIRECT CONNECTION ALL INTERIOR PIPING SYSTEMS. GROUND EQUIPMENT AND LIGHTING FIXTURES IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.
- SURGE PROTECTIVE DEVICE: AT PANELS NOTED IN DRAWINGS, PROVIDE A SURGE PROTECTIVE DEVICE (SPD). SPD SHALL MEET REQUIREMENTS OF U.L. 1449 AND 1283, ANSI/IEEE C62.41-1991 AND C62.45-1992, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION NEMA LS-1 REVISION 2007, AND NFPA 70. SPD MANUFACTURER SHALL BE ISO 9000 CERTIFIED. SPD SHALL INCORPORATE 200KA 8/20 MICROSECOND MOV PROTECTION PER PHASE.
- FIRESTOPPING: ELECTRICAL CONTRACTOR SHALL PROVIDE FIRESTOPPING OF ALL CONDUIT PENETRATIONS OF RATED WALLS AND FLOORS PER DETAILS. REFER TO ARCHITECTURAL DRAWINGS.
- SUBMITTALS: PROVIDE ELECTRICAL SUBMITTALS AS CALLED FOR HEREINAFTER. SUBMITTALS SHALL INCLUDE MANUFACTURER'S CUTSHEET WITH SPECIFIC MODEL NUMBERS IDENTIFIED AS THEY APPLY TO THIS PROJECT. SUBMITTALS SHALL INCLUDE LIGHTING, LIGHTING CONTROLS, WIRING DEVICES, AND SWITCHGEAR.
- GUARANTY: GUARANTEE ALL WORK TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR AFTER DATE OF FINAL ACCEPTANCE.

PANEL B		MAINS: 100A						VOLTAGE/PHASE: 120/208V, 3Φ, 4W						MOUNTING: SURFACE	
SERVES		LOAD (kVA)			BREAKER			LOAD (kVA)			SERVES			ENTRY: BOTTOM	
CKT. NO.		#A	#B	#C	TRIP	POLE	#A	#B	#C		#A	#B	#C		CKT. NO.
1	EXTERIOR LIGHTING	0.7			20	1	1	20	0.8					LTG-WELDING SHOP	2
3	EXTERIOR CANOPY LTG.	0.4			20	1	1	20	0.8					LTG-AG INNOVATION	4
5	LTG-LOBBY/OFFICE			1.0	20	1	1	20		0.8				REC-STORAGE HALLWAY	6
7	LTG-CLASSROOM	0.6			20	1	1	20	0.8					RECEPTACLES	8
9	LTG-CLASSROOM			0.6	20	1	1	20		0.4				RECEPTACLE-CTS	10
11	LTG-CLASSROOM			0.6	20	1	1	20		0.8				RECEPTACLES	12
13	FACU	0.5			20	1	1	20	1.0					WATER FOUNTAIN	14
15	TOILET RECEPTACLES			0.4	20	1	1	20		0.6				RECEPTACLES	16
17	RECEPTACLES			0.2	20	1	1	20		1.0				RECEPTACLES	18
19	RECEPTACLES	0.2			20	1	1	20	0.6					RECEPTACLES	20
21	RECEPTACLES			0.2	20	1	1	20		0.8				REC-CLASSROOM	22
23	REC-CLASSROOM			0.8	20	1	1	20		0.6				REC-CLASSROOM	24
25	REC-CLASSROOM	0.6			20	1	1	20	1.0					REC-CLASSROOM	26
27	REC-CLASSROOM			1.0	20	1	1	20		0.8				REC-CLASSROOM	28
29	EF-1 / EF-2			0.4	20	1	1	20		0.6				REC-CLASSROOM	30
31	RECIRCULATION PUMP	0.2			20	1	1	20	1.0					REC-CLASSROOM	32
33	SPARE				20	1	1	20						SPARE	34
35	SPARE				20	1	1	20						SPARE	36
37	SPARE				20	1	1	20						SPARE	38
39	SPARE				20	1	1	20						SPARE	40
41	SPARE				20	1	1	20						SPARE	42
SUB TOTAL CONNECTED		2.8	2.6	3.0				5.2	3.4	3.8	SUB TOTAL CONNECTED				
SUB TOTAL CONNECTED #A: 8.0		SUB TOTAL CONNECTED #B: 6.0			SUB TOTAL CONNECTED #C: 6.8			TOTAL CONNECTED: 20.8							

PANEL D		MAINS: 200A						VOLTAGE/PHASE: 120/208V, 3Φ, 4W						MOUNTING: SURFACE	
SERVES		LOAD (kVA)			BREAKER			LOAD (kVA)			SERVES			ENTRY: BOTTOM	
CKT. NO.		#A	#B	#C	TRIP	POLE	#A	#B	#C		#A	#B	#C		CKT. NO.
1	WELDING FILTER	1.7			40	3	3	40	1.7					WELDING FILTER	2
3				1.7						1.7					4
5				1.7						1.7					6
7	WELDER RECEPTACLE	4.0			50	2	1	20	1.0					CLOTHES WASHER	8
9				4.0						4.0				CLOTHES DRYER	10
11	WELDER RECEPTACLE			4.0	50	2				4.0					12
13		4.0							0.8					AG INNOVATION RECEPTS.	14
15	WELDER RECEPTACLE			4.0	50	2				0.6				AG INNOVATION RECEPTS.	16
17				4.0										SPARE	18
19	WELDING CONV. RECEPTACLE	0.4			20	1	1	20						SPARE	20
21	WELDING CONV. RECEPTACLE			0.4	20	1	1	20						SPARE	22
23	WELDING CONV. RECEPTACLE			0.4	20	1	1	20						SPARE	24
25	SPARE				20	1	1	20						SPARE	26
27	SPARE				20	1	1	20						SPARE	28
29	SPARE				20	1	1	20						SPARE	30
31	SPACE ONLY													SPACE ONLY	32
33	SPACE ONLY													SPACE ONLY	34
35	SPACE ONLY													SPACE ONLY	36
37	SPACE ONLY													SPACE ONLY	38
39	SPACE ONLY													SPACE ONLY	40
41	SPACE ONLY													SPACE ONLY	42
SUB TOTAL CONNECTED		10.1	10.1					3.5	6.3	5.7	SUB TOTAL CONNECTED				
SUB TOTAL CONNECTED #A: 13.6		SUB TOTAL CONNECTED #B: 16.4			SUB TOTAL CONNECTED #C: 15.8			TOTAL CONNECTED: 45.8							

NOTES:
1. PROVIDE "SHUNT TRIP" TYPE MAIN BREAKER. PROVIDE INTERLOCK WIRING WITH WALL MOUNTED SHUNT TRIP OPERATOR, SEE FEEDER DIAGRAM.

PANEL A		MAINS: 1000A						VOLTAGE/PHASE: 120/208V, 3Φ, 4W						MOUNTING: SURFACE	
SERVES		LOAD (kVA)			BREAKER			LOAD (kVA)			SERVES			ENTRY: BOTTOM	
CKT. NO.		#A	#B	#C	TRIP	POLE	#A	#B	#C		#A	#B	#C		CKT. NO.
1	HVAC UNIT PU-1	2.9			50	3	3	50	2.9					HVAC UNIT PU-2	2
3				2.9											4
5				2.9											6
7	HVAC UNIT PU-3	2.9			50	3	3	50	2.9					HVAC UNIT PU-4	8
9				2.9											10
11				2.9											12
13	WATER HEATER	8.0			90	3	3	100	8.0					PANEL "B"	14
15				8.0											16
17				8.0											18
19	PANELBOARD "D"	13.6			200	3	3	600	43.1					PANEL "C"	20
21				16.4											22
23				15.8											24
25	SPACE ONLY													SPACE ONLY	26
27															28
29															30
31	SPACE ONLY													SPACE ONLY	32
33															34
35															36
37	SURGE PROTECTIVE DEVICE (SPD)				50	3	3							SPACE ONLY	38
39															40
41															42
SUB TOTAL CONNECTED		27.4	30.2	29.6				56.9	56.5	61.0	SUB TOTAL CONNECTED				
SUB TOTAL CONNECTED #A: 84.3		SUB TOTAL CONNECTED #B: 86.7			SUB TOTAL CONNECTED #C: 90.6			TOTAL CONNECTED: 261.6							

PANEL C		MAINS: 600A						VOLTAGE/PHASE: 120/208V, 3Φ, 4W						MOUNTING: SURFACE	
SERVES		LOAD (kVA)			BREAKER			LOAD (kVA)			SERVES			ENTRY: BOTTOM	
CKT. NO.		#A	#B	#C											