STUDIO MELEE

To: All Plan Holders and Prospective Bidders

Re: State Center Fire Department
Renovation & Addition – Redesign
109 E Main Street
State Center, Iowa 50247

ADDENDUM #01

January 06, 2026

This addendum incorporates the following changes to the bid documents dated 18 December 2025. To be considered, bidders shall indicate on the Bid Form that this communication was received and that all changes were included in their bid total. It is the responsibility of the contractor to contact the owner's representative prior to bid date to verify the issuing of any and all clarifying addenda.

These items shall supersede all statements to the contrary in the drawings and project manual (specifications) and shall take precedence over those documents. These items are not listed in any particular order and are intended to add, omit, revise and/or clarify the original scope of work.

Addendum #1: **68 Pages Total**

Please feel free to contact me via phone at 515-460-5431 or email at chris@studiomelee.com if you have any questions or comments concerning this addendum or if you require additional information/clarification.

Respectfully submitted,

Christopher P. Wernimont, AIA

STUDIO MELEE

Architectural Addendum:

Item #A1: **PRE-BID MEETING AGENDA & SIGN-IN SHEET**

1. **For Reference:** Pre-bid agenda and sign-in provided.

Item #A2: **000210 – FORM OF PROPOSAL UPDATED**

1. **Revise** Form of Proposal to include correct Allowances, Unit Prices, and Alternates. Updated Form of Proposal attached.

Item #A3: **084113 – ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS – SUNSHADE CLARIFICATION**

1. **Omit** parentheses note following Aluminum-Sun Shades in paragraph 1.2.A.2 referencing "Intent is for future installation…".
2. **Note of Clarity:** Intent is for storefront provider/installer to provide aluminum sunshades as part of the window system covered by the base bid.

Item #A4: **095123 – ACOUSTICAL TILE CEILINGS – ACT1 CLARIFICATION**

1. **Revise** Product series number, NRC, Edge/Joint Detail, and Thickness as follows:
    a. Product #: 3251 (not 3254)
    b. NRC: 0.95
    c. Edge/Joint Detail: Square Tegular 15/16".
    d. Thickness: 1"
2. **Note of Clarity:** Intent would be to use the 15/16" Prelude grid with this tile.

Item #A5: **095123 – ACOUSTICAL TILE CEILINGS – ACT1 & ACT2 APPROVED SUBSTITUTIONS**

1. **ACT1:**
    a. USG, Mars 90 (High NRC Tile)
    Product #: 88138 (or 89138)
    NRC: 0.90
    CAC: 30
    Edge/Joint: SLT
    Thickness: 1"
    Color: Flat White (050)
    Grid: USG DX/DXL, 15/16"
2. **ACT2:**
    a. USG, Radar Ceramic
    Product #: 56644
    NRC: 0.50
    CAC: 40
    Edge/Joint: SQ
    Thickness: 5/8"
    Color: Flat White (050)
    Grid: USG ZXLA, 15/16"

STUDIO MELEE

Item #A6: **133400 – ENGINEERED LADDER FRAMED STRUCTURES – APPROVED SUBSTITUTION**

1. **Approved Manufacturer:** Pro-Line Building Group of Iowa.
2. **Note:** See approval note on substitution request form (attached).

Item #A7: **EXISTING PRE-ENGINEERED METAL BUILDING (PEMB) DRAWINGS**

1. **For Reference:** Original Fire Station PEMB drawings are attached.
2. **Note:** it is recommended that all interested bidders visit the project site prior to bid since existing drawings may not convey the existing built conditions fully.

Item #A8: **GEOTECHNICAL REPORT – PROVIDED FOR REFERENCE**

1. **For Reference:** Geotechnical Evaluation Report conducted by Team Services on 19 February 2025.

Item #A9: **SHEET A9.1 FINISH PLANS & SCHEDULE – VINYL ACCESSORIES CLARIFICATION**

1. **Omit** VN-TR (transition strip) from Finish Legend- product not used.
2. **Revise** manufacturer name for VN-RD (reducer strip) and VN-WB (wall base) from Mannington Commercial to Johnsonite in Finish Legend.

Item #A10: **BIDDER QUESTIONS & DESIGN TEAM RESPONSES**

1. Q: Does this project require a construction warranty other than what's required specifically by manufacturers?
   A: Yes, a **(1) year construction warranty is required** by all entities, unless specifically extended by individual specification section.
2. Q: Can alternate building manufacturers be used for the new engineered wood structure?
   A: Yes, alternate building manufacturers will be considered. If a pre-approved manufacturer is not listed in section 133400, please submit a substitution request for consideration. Note: only approved manufacturers prior to bid are permitted.

End of Architectural Addendum

Civil Addendum:

Item #C1: **SHEET C.110 – EXISTING CONDITIONS & DEMOLITION PLAN – MODIFIED SCOPE**

1. **Revise** drawing C.110 as noted below and attached:
   a. **Remove** additional street paving & curbs for removal of sanitary & water services (existing opera house utilities).
   b. **Remove** additional sidewalk paving for demolition of sanitary & water services (existing opera house utilities).
   c. **Remove** water service (existing opera house utility) and cap at main. Remove and salvage existing curb stop- turn over to City.
   d. **Remove** sanitary service (existing opera house utility) and cap at main.

End of Civil Addendum

State Center Fire Department – Renovation & Addition – Redesign

Pre-bid Agenda

109 E. Main Street, State Center, IA 50247

City of State Center Contacts:

Brad Pantz, Fire Chief – brad@6fonts.net – 641.485.8911 (cell)
Lori Bearden, sccityclerk@partnercom.net – 641.483.2559 (city hall)

Studio MELEE – Architect Contacts:

Chris Wernimont, AIA – chris@studiomelee.com – 515.460.5431 (cell)
Nate Nall, Assoc. AIA – nall@studiomelee.com – 319.470.8924 (cell)

Agenda

1. For plans, contact Iowa Reprographics - 515.244.5705 – https://iowarepro.com/plan-distributions
    a. Documents are also available for viewing through Master Builders of Iowa and other plan rooms.
2. Bid Submission and Opening:
   Bid Date: Thursday, 15 January 2026.
   Bid Time: 2:00 PM, Local Time.
   Location: 118 Main Street East, State Center, IA 50247, City Hall.
   Attention: Lori Bearden, State Center City Clerk
3. Site walk through: Today, 30 December 2025 @ 10:00 AM, otherwise additional walk-throughs will need to be scheduled with the City and Fire Department.
4. Any inconsistencies, ambiguities, questions, etc. should be brought to the Architect's attention in writing at least 72 hours (3 business days) prior to receipt of bids.
5. No oral interpretations of any part of the documents will be made. All questions shall be in writing, and all interpretations and/or clarifications will be issued by addendum.
6. Requests for substitutions need to be made far enough in advance for Architect and Owner's representative to make a determination at least (7) days prior to bid date. A substitution request form is included in the specification manual – no other substitution forms will be accepted.
7. Proposal forms and other forms are included in documents.
8. Note that all proposals received shall be accompanied by a bid bond.
9. Bid bonds are in the amount of (5) % of the bid total. See specification manual for forms of bid security that are acceptable.
10. Bids shall be signed by an officer of the company and notarized.
11. Each bid shall include the non-collusion Affidavit and Certificate of Insurance.
12. See instructions to bidders for how to include bid forms in an outer and inner envelope.
13. Bids may be withdrawn up to the established time of bid opening (noted above) by person signing bid and by written request.
14. Bids may not be withdrawn for a period of (45) days following bid opening.
15. No modifications of bids will be accepted, once submitted.
16. The Owner reserves the right to accept the bid which, in their judgement, appears to be the most responsive / responsible.
17. Complete all blanks on the bid form. Bid Alternates, Allowances, and Unit Pricing applies to this project.
18. Documents required (24) hours after receipt of bids from the apparent low bidder:
    a. List of subcontractors & suppliers.
    b. Background information.
    c. Preliminary Schedule.
    d. Schedule of Values.
19. All building and trade permits and other fees shall be paid for by the awarded Contractor.

20. Sales and use taxes shall be **EXCLUDED** in the bid amount. Contractor shall request appropriate certifications from the City.
21. Bidders shall familiarize themselves with all state and local laws, ordinances and regulations which may apply.
22. Contractor to provide all insurance as stipulated in Article 11 of the A232 General Conditions which is included for Contractors review in the Project Manual.
23. The documents state the time of substantial & final completion of the project. See Section 000310-1.1.B.2.
24. Each contractor is responsible to maintain work areas. Installation and removal of all temporary fences, interior dust partitions, etc. will be by Contractor. Contractor shall repair all damages to existing surfaces identified to remain.
25. See Section 015000 for temporary facilities and controls.
26. After award, contractor shall furnish performance and payment bonds in an amount of (100) % of the contract. All costs for bonds shall be included in the bid amount.
27. Schedule will be worked as laid out in the specifications.
28. Contractor shall have a competent superintendent on site at all times. See documents for requirements.
29. Changes in the work:
    a. Three methods –
        i. Owner Requested Changes.
        ii. Unknown Conditions.
        iii. Correction of Documents.
30. Schedule of values shall be submitted prior to first application of payment.
31. Electronic (pdf) pay applications shall be used.
32. Construction Schedule:
    a. Preliminary, within (10) days of notice of award.
    b. Detailed schedule, prior to the first application of payment.
        i. Detailed schedule shall be updated frequently (every 2 weeks) throughout the duration of the project.
33. Substantial completion as scheduled – warranty begins – (1) year period for all entities unless specifically extended by specification section.
34. Issuance of Keys – to prime contractors only. Keys will be issued by the City.
35. Discussion of project work and work restrictions.
    a. The Fire Department will vacate the building prior to commencement of construction.
    b. The City will have concurrent work during the project- see specification.
    c. Notify the City of all public utility work and closures of streets and/or ROWs no less than 48 hours before commencement of work.
    d. The Union-Pacific Railroad owns and maintains the tracks and easements just north of the fire station. It is recommended that work does not interfere with this property unless necessary. If deemed necessary, it will be the Contractor's responsibility to notify and obtain permission in writing from the railroad to access and/or gain use of the property.
36. **Open to Architect:**
    a. Existing Building:
        i. Stran PEMB structure c. 1977, ~60'x60'. Existing drawings available for review at City Hall or at Studio MELEE's office. Electronic copies of drawings available upon request.
        ii. Floor slab demolition- coordinate work with existing hairpin reinforcing- see structural.
    b. Existing Site:
        i. Existing opera house has been razed. Existing utilities, foundations and additional on-site paving has been removed prior to bid.
        ii. Geotechnical Report. Pockets of expansive soils and a layer of soft soil were found during the geotechnical study. Overexcavation is planned below footprint of new structure. Reference geotechnical report and structural.
        iii. Allowance & Unit Pricing is included for soil remediation. Test pits are identified in work to help identify extents of soft soil layer requiring remediation- reference geo. Report, structural & spec.
37. **Open to Bidders:** questions.
38. Tour of building and grounds.

State Center Fire Department – Renovation & Addition – Redesign

Pre-Bid Meeting

109 E. Main Street, State Center, IA 50247

SIGN-IN SHEET

DATE: 30 December 2025 @ 10:00 AM

☑	NAME:	COMPANY:	CONTACT:
	Chris Wernimont, AIA	STUDIO MELEE	PHONE: 515.460.5431 EMAIL: CHRIS@STUDIOMELEE.COM
	Nate Nall, Assoc. AIA	STUDIO MELEE	PHONE: 319.470.8924 EMAIL: NALL@STUDIOMELEE.COM
	CHRIS WULKOW	TJADEN ELEC	PHONE: 515-782-2762 EMAIL: CWULKOW@TJADENELECTRIC.COM
	Kyle Millner	Breiholz Construction	PHONE: 515-782-0579 EMAIL: kylem@breiholz.com
	Kjirsten Van Pelt	GTG Construction	PHONE: 515-478-0132 EMAIL: KVanPelt@gtgcompanies.com
	Justin Sheridan	Reliable 1	PHONE: 641-648-2327 EMAIL: justin@reliable1iowa.com
	Colin Pratt	Nig Koch Gen. Cont.	PHONE: 814-352-5356 EMAIL: colin@kochcontractors.com
	Ryan Huizer	Dean Snyder const	PHONE: 515-240-3526 EMAIL: rhuizer@deansnyder.com
	Taylor Myer	Dean Snyder Const	PHONE: 317-408-5115 EMAIL: tmyer@deansnyder.com
	Cody Kynion	Keystone Construction	PHONE: 515 720 7768 EMAIL: Cody.kynion@Keystone-cs
	MATT CULLINS	GRAPHITE CONST	PHONE: 515.480.2597 EMAIL: MCULLINS@GRAPHITEGRP.com
	ERIC HAMMER	R.H. GRABAU	PHONE: 515-432-6935 EMAIL: erhammer64@yahoo.com
	Jacob Triplett	Eick & Day	PHONE: 515-402-7000 EMAIL: estimating@eick-day.com
	LUKE DANIELSON	BOYD JONES	PHONE: 515-361-1399 EMAIL: LDANIELSON@BOYDJONES.BIZ
	Dave Dewitt	Pro-Tech Bldg.	PHONE: 641-637-4035 EMAIL: ddewitt@pt6co.com
	Michael Berst	Iowa Demolition	PHONE: 515-250-4191 EMAIL: mike.berst@iowademolition.com
	SAM SODDERS	BAU TEAM	PHONE: 515-720-4098 EMAIL: SSODDERS@BUILDWITHBAU.com
			PHONE: EMAIL:
			PHONE: EMAIL:
			PHONE: EMAIL:

DOCUMENT 000210 – FORM OF PROPOSAL

PROJECT NAME: State Center Fire Department – Renovation & Addition – Redesign
115 Main Street East
State Center, Iowa 50247

TO: City of State Center
118 Main Street East
State Center, Iowa 50247

SUBMITTED BY: _____
Name of Bidder

City of State Center:

The undersigned has carefully examined the site, the proposed Contract Documents prepared by Studio MELEE, StructureFy Engineering, Inc., Modus Engineering, Clapsaddle-Garber Associates, Inc. pertinent to the construction of the above referenced Project. Further, being familiar with all other conditions affecting the Work, the undersigned hereby proposes and agrees to furnish and provide all labor, materials, supervision, transportation, tools, equipment, services and other facilities necessary and required for the expeditious completion of the Work indicated above in strict conformity with said conditions and documents.

The undersigned has reviewed the work outlined in the documents and fully understands the scope of work required in this Proposal. The undersigned acknowledges that the Proposal includes the work of all trades required for the work. The undersigned understands that each bidder who is awarded a Contract shall be in fact a Prime Contractor, not a Subcontractor to the City of State Center.

The undersigned agrees to complete the work required within the time indicated in the documents.

Enclosed **in a separate envelope** is a Non-Collusion Affidavit, verification that the contractor can provide the necessary insurance, and a Bid Security for five percent (5%) of the amount of the Base Bid, made payable to the order of the City of State Center. It is to be left in escrow with the Owner as a guarantee that the undersigned will enter into a Contract and will furnish the specified insurance and bonds. The undersigned has notified the Owner Representative of any discrepancies or omissions, or of any doubt about the meaning of any of the Contract Documents and has contacted the Owner Representative before bid date to verify the issuing of any clarifying Addenda.

The undersigned further acknowledges receipt of the following Addenda:

NO._____ DATE _____

NO._____ DATE _____

NO._____ DATE _____

(Bidder must acknowledge All Addenda issued)

_____
Contractor Name

PROPOSAL FORM TO BE SUBMITTED IN INNER ENVELOPE

BASE BID – General Construction

BASE BID: Dollars ($)

The undersigned proposes to provide and construct the Work required, in accordance with said Contract Documents for the lump sum price indicated above and agrees to complete the work in accordance with the schedule requirement to achieve Substantial Completion no later than the date indicated in the Project Manual Section 000310. (Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern).

SCHEDULE OF ALLOWANCES

ALLOWANCE NO 1: Soil Improvement Contingency Allowance (See also 012110 Allowances)

A. Contingency Allowance: General Contractor shall include a lump-sum allowance for removal & disposal of unsatisfactory soil and replacement with imported fill. Test pits as specified in structural drawings and geotechnical review shall be used to determine extents of soil removal.

B. Allowance Total: Thirty-Thousand Dollars ($30,000.00), EXCLUDING ALL SALES TAXES.

SCHEDULE OF UNIT PRICES

UNIT PRICE NO 1: Removal of Unsatisfactory Soils; $/CY (See also 012200 Unit Prices)

A. Removal & disposal of unsatisfactory soil and replacement with imported fill ($) per cubic yard, EXCLUDING ALL SALES TAXES.

SCHEDULE OF BID ALTERNATES

ALTERNATE NO 1: Remove & Replace Mid-Section of PCC Pavement in Main Street per Civil Drawings (See also 012300 Alternates)

A. The undersigned proposes to provide work under this alternate as described for the lump sum price of:

(ADD) Dollars

($), **EXCLUDING SALES TAXES.**

Contractor Name

PROPOSAL FORM TO BE SUBMITTED IN INNER ENVELOPE

LIST OF SUBCONTRACTORS AND SUPPLIERS OF LABOR AND MATERIAL

The lowest bidder for each contract shall, within twenty-four (24) hours following the bid opening, provide the Owner with the List of Subcontractors and Suppliers of Labor and Material. Subcontractor is any entity performing 1-1/2% or more of the contract value. The List shall detail the quotations used in the preparation of the bid and whose services are proposed to be used in construction of the project. The List must be complete showing all sections in the Construction Documents. Failure to submit the List may preclude the bid from further consideration by the Owner. The Owner reserves the right to either disclose or not disclose the List of the successful Bidder.

Each Bidder shall identify and fully disclose on the List all those subcontractors and suppliers proposed for the work with which the Bidder is connected either directly or indirectly as part owner, participant in profits and losses or in any other manner financially or economically.

The forms for the List of Subcontractors and Suppliers of Labor and Materials are included in the Instructions to Bidders, Section 000200.

AGREEMENT

It is understood and agreed that if written notice of the Owner's acceptance of this proposal is mailed, telegraphed, or delivered to the undersigned after the opening of the bid, and within forty-five (45) days, or at any time thereafter before this bid is withdrawn, the undersigned will execute and deliver to the Owner an Agreement in accordance with the bid as accepted. The undersigned will also furnish and deliver to the Owner the Payment Bond, Performance Bond and Certificate of Insurance as specified in the Contract Documents, all within ten (10) working days after receipt of Notice of Contract Award. The work under the Contract shall be commenced by the undersigned bidder, if awarded the Contract, on the date to be stated in a Notice to Proceed, issued to the Contractor and shall be completed by the Contractor in the time specified in the Contract Documents. In the event the bidder to whom an award is made fails or refuses to execute the Contract within the specified time frame; the Owner may declare the bidder's bid security forfeited as damages caused by the failure of the bidder to enter into the Contract.

If this proposal is determined to be (preliminarily) the lowest responsible bid, the undersigned shall submit a listing of subcontractors and major materials suppliers in accordance with the Instructions to Bidders. Section 000200 within 24 hours of being notified of such finding by the Owner Representative.

The undersigned acknowledges the fact that the Owner reserves the right to accept or reject any and all proposals, to waive any informality in receipt of this proposal, with or without cause or reason, and award the Contract on the basis stated in the Instructions to Bidders.

The bidder is ( ) or is not ( ) an Iowa resident bidder as defined in Section 73A.21 of the Iowa code. If not a resident bidder, the bidder states that it is a non-resident bidder from the state of _____. This state does ( ) or does not ( ) provide for a bidder preference for resident bidders. This state does ( ) or does not ( ) provide a labor preference for resident labor. If the state in which your company is a resident allows for either a bidder preference or a labor preference, please provide the citation to the code section, and the details of each preference allowed in your resident state.

NOTE: If bidder is a corporation, the legal name of the corporation shall be set forth below, together with the signatures of authorized officers or agents. If bidder is a partnership, the true name of the firm shall be set forth below together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership. If bidder is an individual, his signature shall be placed below.

_____

Contractor Name

PROPOSAL FORM TO BE SUBMITTED IN INNER ENVELOPE

PROPOSAL SUBMITTED BY: _____
(Name of Bidder)

Address: _____

_____

Phone #: _____ Email: _____

Contractors, License No.: _____ _____
Signature

License Expiration Date: _____ _____
Position

If Corporation: State of Incorporation: _____

AFFIX CORPORATE SEAL HERE
(IF APPLICABLE)

THIS STATEMENT MUST BE NOTARIZED.

STATE OF IOWA, _____COUNTY, ss:

Subscribed and sworn to before me by the said _____on this

_____ day of _____, 20__.

_____
Notary Public in and for the State of Iowa

_____
Contractor Name

END OF DOCUMENT 000210

PROPOSAL FORM TO BE SUBMITTED IN INNER ENVELOPE

SUBSTITUTION REQUEST FORM

We hereby submit for your review & consideration the following product in lieu of the specified item for the following project:

PROJECT TITLE: State Center Fire Department – Renovation & Addition – Redesign

	SECTION	TITLE	PARAGRAPH	ITEM
SPECIFICATION	095123	Acoustical Tile Ceilings	2.3	Armstrong Optima – ~~90~~ 95 NRC

	NUMBER	TITLE	ITEM
DRAWING			

Proposed Substitution: USG Mars High-NRC – 90 NRC.

Complete the attached information on changes to the Specifications and/or Drawings for the proposed substitution. Provide additional information for any changes required for proper installation of the proposed substitution.

Submit, as requested, all necessary samples and backup information to prove equal quality and performance to that which is specified. Clearly mark manufacturer's literature to indicate equality in performance. Failure to do so will result in a returned, non-reviewed substitution request form.

Substitutions of the materials and equipment described in the Bid Documents will be considered during the bidding period only. Substitution requests shall be reviewed and approved by the Design Professional prior to the date set for receipt of bids as described in the front end of the specification.

CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY FOR EQUAL PERFORMANCE

The undersigned states that the function, appearance, and quality are equivalent or superior to the specified item.

Submitted by: Tara Garbe.

Signature: Tara Garbe. Title: Sales Administrator.

Organization: Golden Valley Supply.

Address: 1000 Zane Ave N, Minneapolis, MN 55422.

Telephone: 763-544-8907. Email: TaraGarbe@goldenvalleysupply.com. Date: 12/23/25.

Signature shall be by person having authority to legally bind his firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

For Use by Design Professional:

_____Approved __X__ Approved as Noted
_____Not Approved _____ Received Too Late

Note: substitution is approved as submitted. Contractor and/or ACT supplier/installer shall provide all necessary grids, trims, and accessories for a complete installation complying with design intent.

Signed by: . Date: 28 December 2025.

SUBSTITUTION REQUEST FORM

We hereby submit for your review & consideration the following product in lieu of the specified item for the following project:

PROJECT TITLE: State Center Fire Department – Renovation & Addition – Redesign

	SECTION	TITLE	PARAGRAPH	ITEM
SPECIFICATION	095123	Acoustical Tile Ceilings	2.4	Armstrong Ceramaguard – 2x2, unperforated

	NUMBER	TITLE	ITEM
DRAWING			

Proposed Substitution: USG Radar Ceramic #56644 (perforated).

Complete the attached information on changes to the Specifications and/or Drawings for the proposed substitution. Provide additional information for any changes required for proper installation of the proposed substitution.

Submit, as requested, all necessary samples and backup information to prove equal quality and performance to that which is specified. Clearly mark manufacturer's literature to indicate equality in performance. Failure to do so will result in a returned, non-reviewed substitution request form.

Substitutions of the materials and equipment described in the Bid Documents will be considered during the bidding period only. Substitution requests shall be reviewed and approved by the Design Professional prior to the date set for receipt of bids as described in the front end of the specification.

CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY FOR EQUAL PERFORMANCE

The undersigned states that the function, appearance, and quality are equivalent or superior to the specified item.

Submitted by: Tara Garbe.

Signature: Tara Garbe. Title: Sales Administrator.

Organization: Golden Valley Supply.

Address: 1000 Zane Ave N, Minneapolis, MN 55422.

Telephone: 763-544-8907. Email: TaraGarbe@goldenvalleysupply.com. Date: 12/23/25.

Signature shall be by person having authority to legally bind his firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

For Use by Design Professional:

_____Approved __X__ Approved as Noted
_____Not Approved _____ Received Too Late

Note: substitution is approved as submitted. Contractor and/or ACT supplier/installer shall provide all necessary grids, trims, and accessories for a complete installation complying with design intent.

Signed by:  . Date: 28 December 2025.

SUBSTITUTION REQUEST FORM

We hereby submit for your review & consideration the following product in lieu of the specified item for the following project:

PROJECT TITLE: State Center Fire Department – Renovation & Addition – Redesign

	SECTION	TITLE	PARAGRAPH	ITEM
SPECIFICATION	133400	Manufacturers	2.1 A	Approved Builder

	NUMBER	TITLE	ITEM
DRAWING			

Proposed Substitution: The Pro-Line Building Company of Iowa.

Complete the attached information on changes to the Specifications and/or Drawings for the proposed substitution. Provide additional information for any changes required for proper installation of the proposed substitution.

Submit, as requested, all necessary samples and backup information to prove equal quality and performance to that which is specified. Clearly mark manufacturer's literature to indicate equality in performance. Failure to do so will result in a returned, non-reviewed substitution request form.

Substitutions of the materials and equipment described in the Bid Documents will be considered during the bidding period only. Substitution requests shall be reviewed and approved by the Design Professional prior to the date set for receipt of bids as described in the front end of the specification.

CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY FOR EQUAL PERFORMANCE

The undersigned states that the function, appearance, and quality are equivalent or superior to the specified item.

Submitted by: Jason LeRue

Signature: _____ Title: President

Organization: The Pro-Line Company

Address: 1385 Hwy 63 New Sharon IA 50207

Telephone: 641-637-4075 Email: jlerue@plbc.com Date: 1/5/26

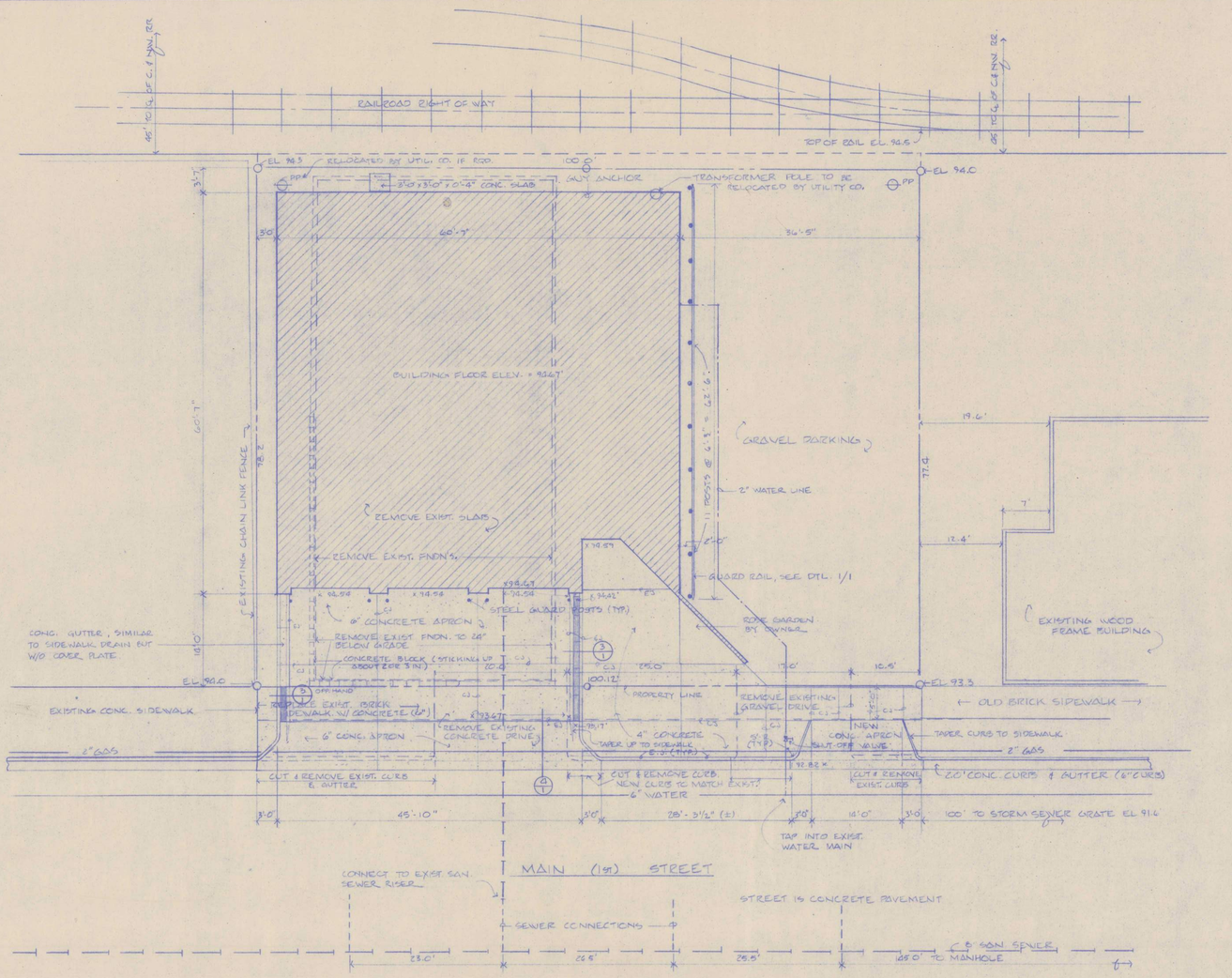
Signature shall be by person having authority to legally bind his firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

For Use by Design Professional:

_____ Approved _____X_____ Approved as Noted
_____ Not Approved _____ Received Too Late

Signed by: _____ Date: 06 Jan. 2026

As a building manufacturer and installer, Pro-Line is considered an approved equal. Approval does not permit deviation from the basis-of-design products, including metal roof and wall panels (exterior and liner), or other building system accessories and components. Any proposed alternate products will require separate substitution requests for review and approval.



SITE PLAN
1" = 10'-0"

PLAN NORTH

NORTH

BM-17 ELEV. 99.62
'M' OF MUELLER CN HYDRANT
S.E. CORNER 2ND ST. SE & 2ND AVE. SE

BM-17A ELEV. 101.03
TOP CAP BOLT FIRE HYDRANT
NW CORNER MAIN & 2ND AVE. SE

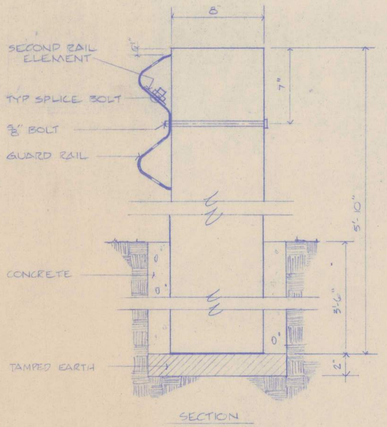
0 5 15 35
SCALE (1" = 10'-0")

SURVEYOR'S NOTES:

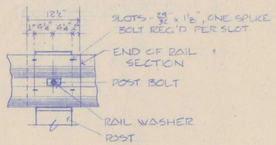
ELECTRIC SERVICE - CITY OF STATE CENTRE
GAS - IOWA ELECTRIC LIGHT & POWER CO., MARSHALLTOWN, IOWA
WATER & SEWER - CONDITION & LOCATION OF PREVIOUS SERVICE CONNECTIONS NOT DETERMINED.
SEWER RECORDS SHOW RISERS (?) AT ALL SEWER CONNECTIONS.
SEWER LINE IS 8.5' DEEP.

LEGEND

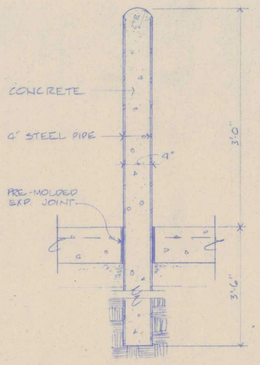
- PROPERTY LINE
- WATER LINE
- SEWER LINE
- EJ — PAVING EXPANSION JOINT
- CJ — PAVING CONTROL JOINT
- EXIST. FOUNDATION - TO BE REMOVED SEE NOTES ON PLAN.



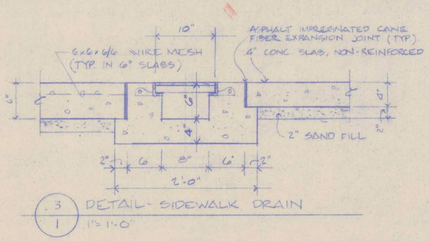
1/1 DETAILS - GUARD RAILING
NTS



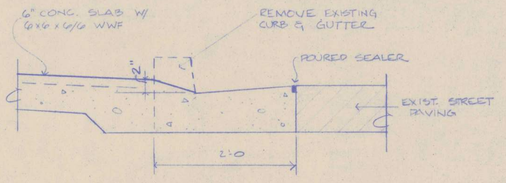
RAIL SPLICE DETAIL



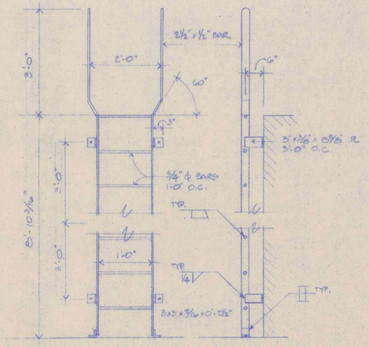
2/1 DETAIL - STEEL GUARD POSTS
1" = 1'-0"



3/1 DETAIL - SIDEWALK DRAIN
1" = 1'-0"



4/1 SECTION - DRIVEWAY APRON
1" = 1'-0"



5/1 DETAILS - METAL LADDER
½" = 1'-0"

Project

A
FIRE STATION
FOR THE CITY OF
STATE CENTRE, IOWA
SITUATE ON
LOTS 3 & 4, BLOCK 14
O.P. STATE CENTRE,
MARSHALL COUNTY, IA.

Owner

THE CITY OF
STATE CENTRE,
IOWA

The Voorhees-Shelton Architects P.C.

West Towers Suite 409
1200 35th Street
West Des Moines, Iowa 50265
515-225-3469

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS PERTAINING TO THIS DRAWING AT THE SITE, AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT AT ONCE.

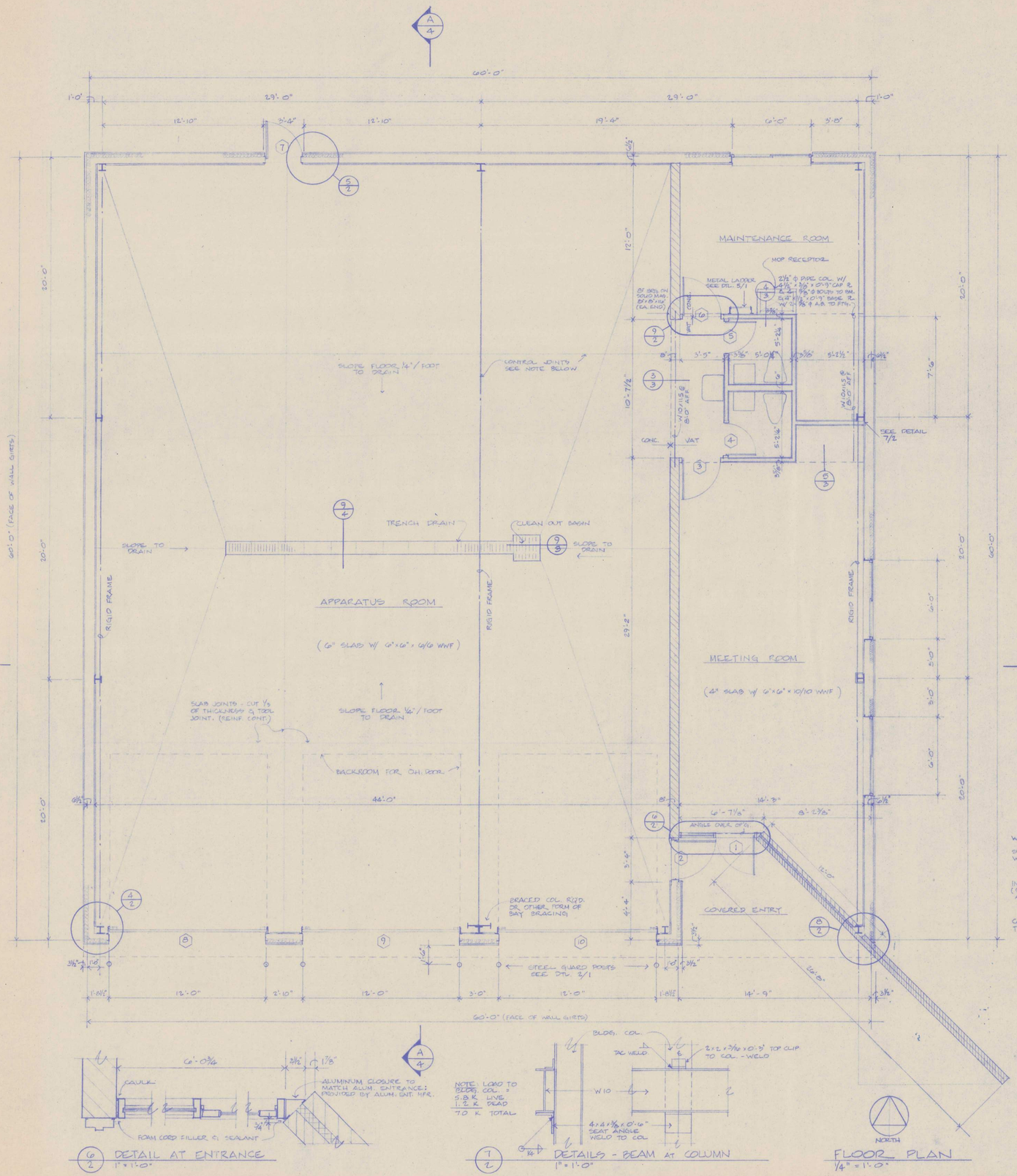
No.	Revision	Date

Description
SITE PLAN

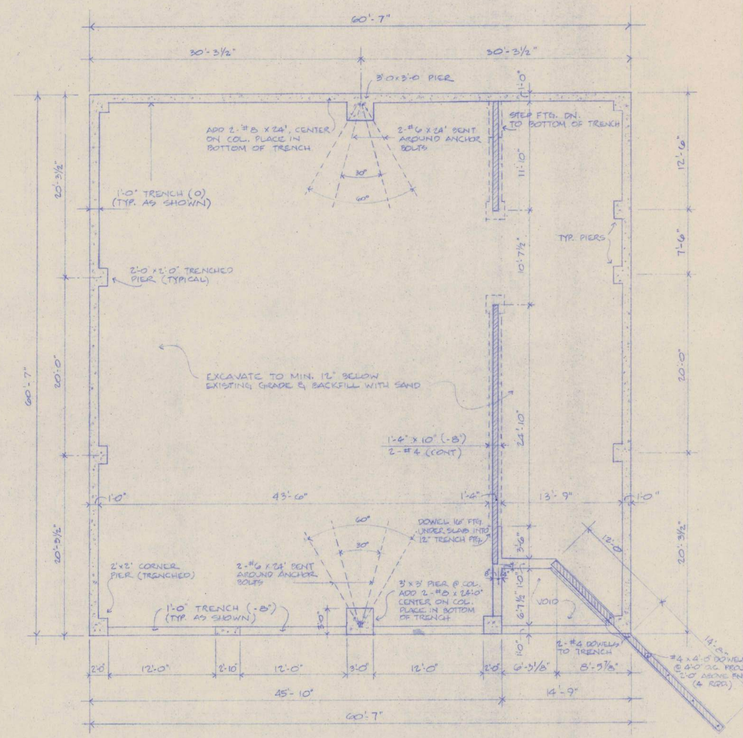
Date	File No.
20 DEC. 77	7704
Scale	**Drawing No.**
As NOTED	1

Preliminary ☐
Construction ■
As Built ☐

of Sheets

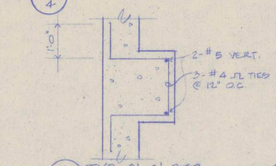


FLOOR PLAN
1/4" = 1'-0"

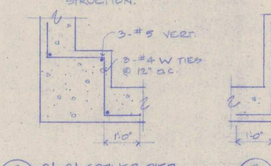


FOOTING & FOUNDATION PLAN
⅛" = 1'-0"

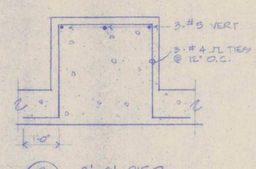
NOTE: BLDG. SUPPLIER TO SUBMIT ENGR. LOADS TO ARCHITECT FOR REVIEW PRIOR TO CONSTRUCTION.



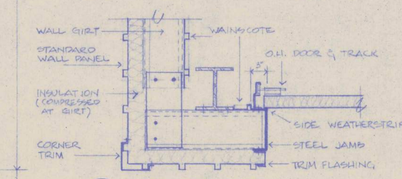
1/2 TYP. 2'x2' PIER
½" = 1'-0"



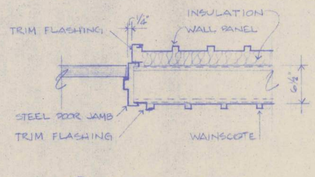
2/2 2'x2' CORNER PIER
½" = 1'-0"



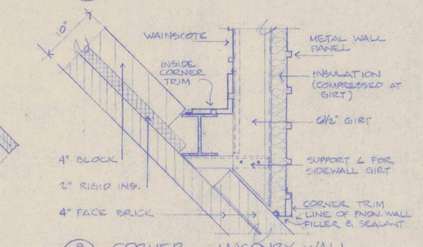
3/2 3'x3' PIER
½" = 1'-0"



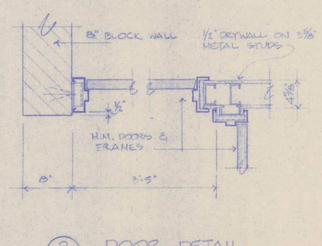
4/2 CORNER DETAIL
1" = 1'-0"



5/2 DOOR JAMB
1" = 1'-0"



8/2 CORNER AT MASONRY WALL
1" = 1'-0"



9/2 DOOR DETAIL
1" = 1'-0"

6/2 DETAIL AT ENTRANCE
1" = 1'-0"

7/2 DETAILS - BEAM AT COLUMN
1" = 1'-0"

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515-225-3469

STRUCTURAL NOTES

1. STRUCT. STEEL: ASTM A36
2. DESIGN LIVE LOADS:
   SNOW - 30 PSF
   WIND - 25 PSF
   LOFT - 100 PSF
3. METAL STRUCTURE DESIGNED IN ACCORDANCE WITH IOWA STATE BUILDING CODE. SUBMIT DETAIL DRAWINGS TO ARCHITECT.
4. CONCRETE: FNDN. - 3000 PSI
   OTHER - 4000 PSI
   (AT 28 DAYS)
5. REINF. STEEL: ASTM A615 GR. 40 - NEW BILLET LAP CONT. BARS 30 DIA. OR 16" MIN. @ CORNERS, SPLICES, STEPS.
6. FOOTING TO BEAR IN FIRM, DRY, UNDISTURBED NATURAL SOIL. MAX. DESIGN SOIL PRESSURE: 2000 PSF
7. TRENCHES TO BE KEPT FREE OF LOOSE OR FROZEN EARTH OR DEBRIS.

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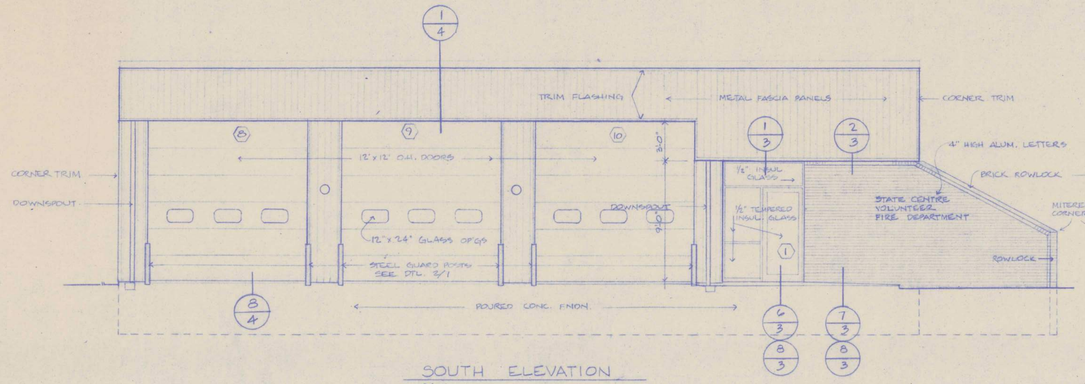
No.	Revision	Date

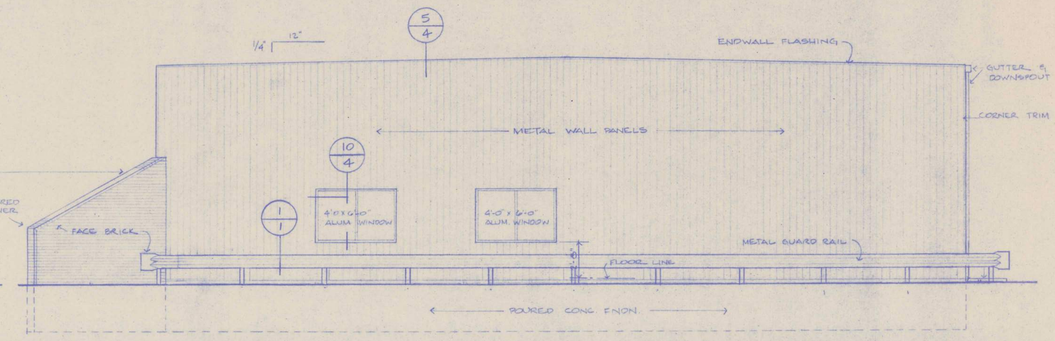
Description: PLANS & DETAILS

Date: 30 DEC., 1977
File No.: 7704
Scale: AS NOTED
Drawing No.: 2 of Sheets

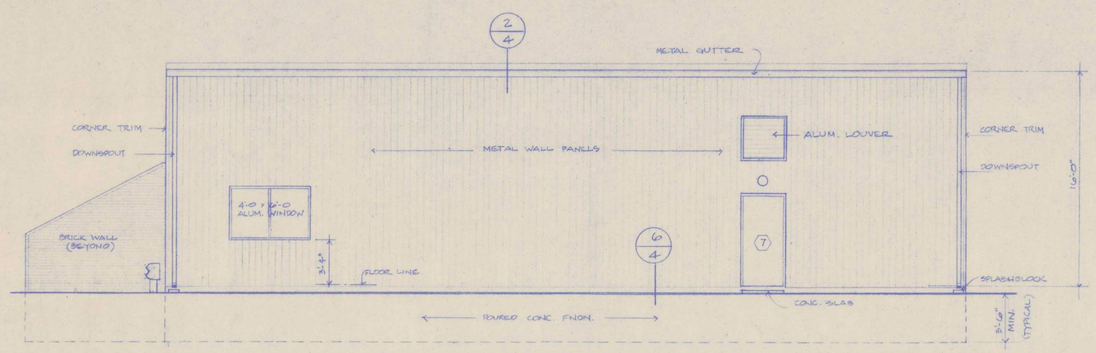
Preliminary ☐
Construction ■
As Built ☐



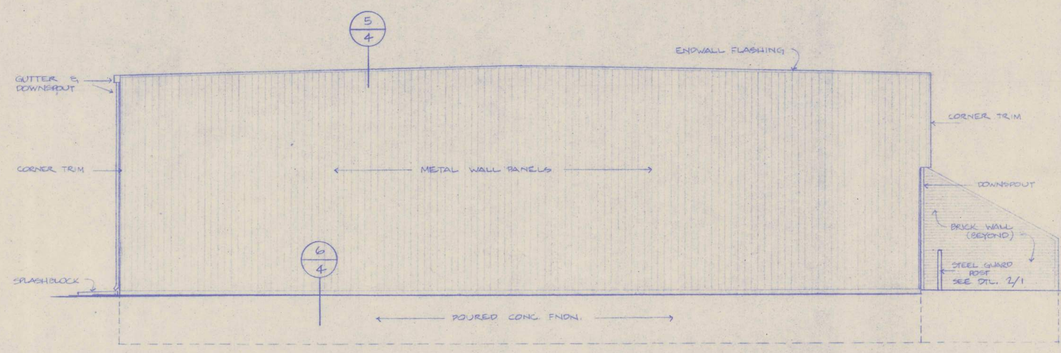
SOUTH ELEVATION
3/16" = 1'-0"



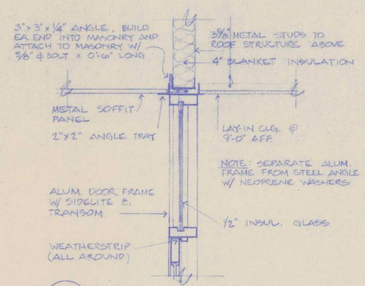
EAST ELEVATION
3/16" = 1'-0"



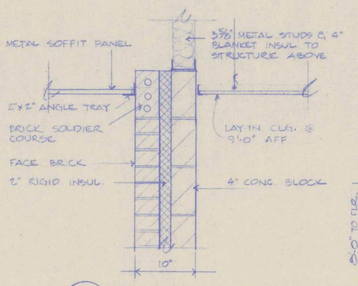
NORTH ELEVATION
3/16" = 1'-0"



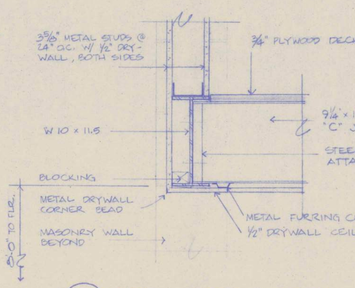
WEST ELEVATION
3/16" = 1'-0"



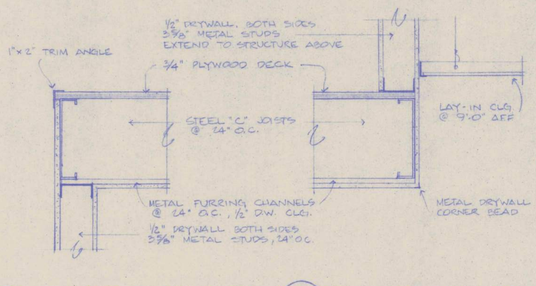
1/3 ALUM. ENT. - HEAD DTL.
1" = 1'-0"



2/3 DTL. - CLG. AT ENTRY
1" = 1'-0"



3/3 DTL. - LOFT AT BEAM
1 1/2" = 1'-0"



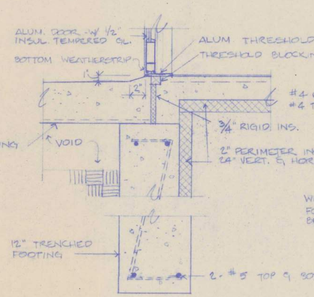
4/3 DTL. - LOFT AT MAINT. RM.
1 1/2" = 1'-0"

5/3 DTL. - LOFT AT MTG. RM.
1 1/2" = 1'-0"

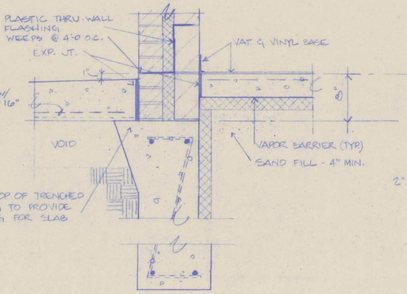
ROOM FINISH SCHEDULE

ROOM	WALLS N	WALLS S	WALLS E	WALLS W	FLR.	BASE	CLG.	REMARKS
COVERED ENTRY	#	—	S	4	CONC.	—	METAL	# ALUM. ENTRANCE
MEETING RM.	2	1	4	1	VAT.*	VIN.	LAY-IN	# SEE ALT. NO. 4
HALL	2	2	2	—	V.A.T.	VIN.	D.W.	
MENS TOILET	2	2	2	2	V.A.T.	VIN.	D.W.	
WOMENS "	2	2	2	2	V.A.T.	VIN.	D.W.	
MAINTENANCE	4	2*	4	1	CONC.	—	—	* FORMICA PANEL ON WALL BEHIND MOP SINK
LOFT (STOR.)	—	3	4	3	PLYWD.	—	—	
APPARATUS RM.	4	4	1	4	CONC.	—	—	

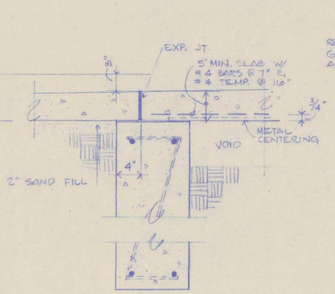
WALL FINISHES
1. CONC. BLOCK - PAINTED
2. DRYWALL - PAINTED
3. DRYWALL - TAPED, NOT PAINTED.
4. METAL WAINSCOTE - PRE FINISHED
5. BRICK



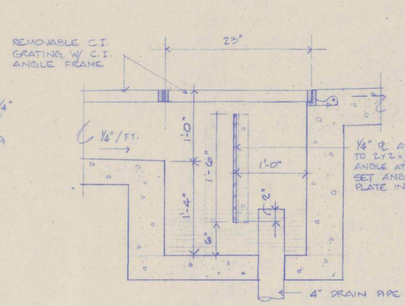
6/3 ALUM. ENT. - SILL DTL.
1" = 1'-0"



7/3 DTL. - FNDN AT ENTRY WALL
1" = 1'-0"



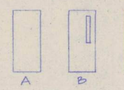
8/3 DTL. - FNDN. AT ENTRY
1" = 1'-0"



9/3 DTL. - CLEAN-OUT BASIN
1" = 1'-0"

DOOR SCHEDULE

MK	LOCATION	DOOR WD.	DOOR HT.	DOOR THK.	DOOR MAT.	DOOR LAB.	DOOR EL.	FRAME MAT.	FRAME LAB.	FRAME TYPE	HARDWARE BUTTS	LOCK	LATCH	CLOS.	PUSH	PULL	STOP	THRES.	REMARKS
1	MTG. RM. TO ENTRY	3'-0"	7'-0"		AL.		C	AL.		3	1 1/2 PR.	✓		✓	✓	✓	✓		
2	APP. RM. TO ENTRY	3'-0"	7'-0"	1 3/8	H.M.		B	H.M.		1	1 1/2 PR.	✓	✓	✓			1/2	✓	LOUVER
3	HALL TO MTG. RM.	3'-0"	6'-8"	1 3/8	H.M.		D	H.M.		2	1 1/2 PR.	✓	✓				✓		
4	HALL TO WOMEN'S T.	2'-6"	6'-8"	1 3/8	H.M.		A	H.M.		2	1 1/2 PR.	✓	✓				✓		
5	HALL TO MEN'S T.	2'-6"	6'-8"	1 3/8	H.M.		A	H.M.		2	1 1/2 PR.	✓	✓				✓		
6	HALL TO MAINT.	3'-0"	6'-8"	1 3/8	H.M.		A	H.M.		2	1 1/2 PR.	✓	✓				✓		
7	APP. RM. TO EXT.	3'-0"	6'-8"	1 3/8	H.M.		A	H.M.		1	1 1/2 PR.	✓	✓	✓			1/2	✓	HOLDER
8	APPARATUS RM.	12'-0"	12'-0"							*	—								# SEE 4/2
9	"	"	"							*	—								
10	"	"	"							*	—								



A B C
DOOR ELEVS.

TYPE 1

TYPE 2

TYPE 3

FRAME TYPES

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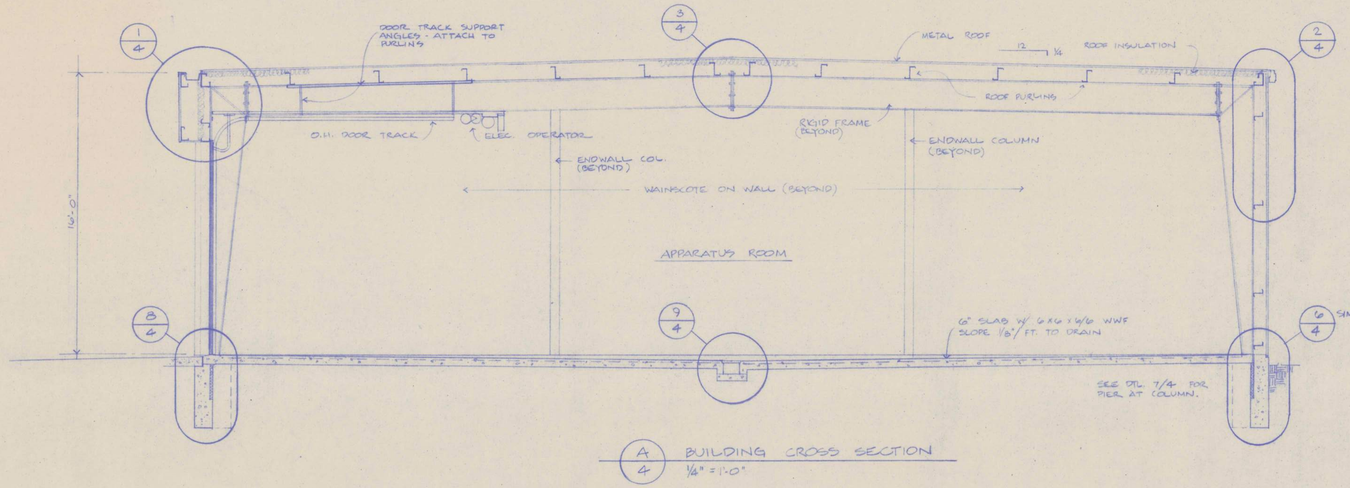
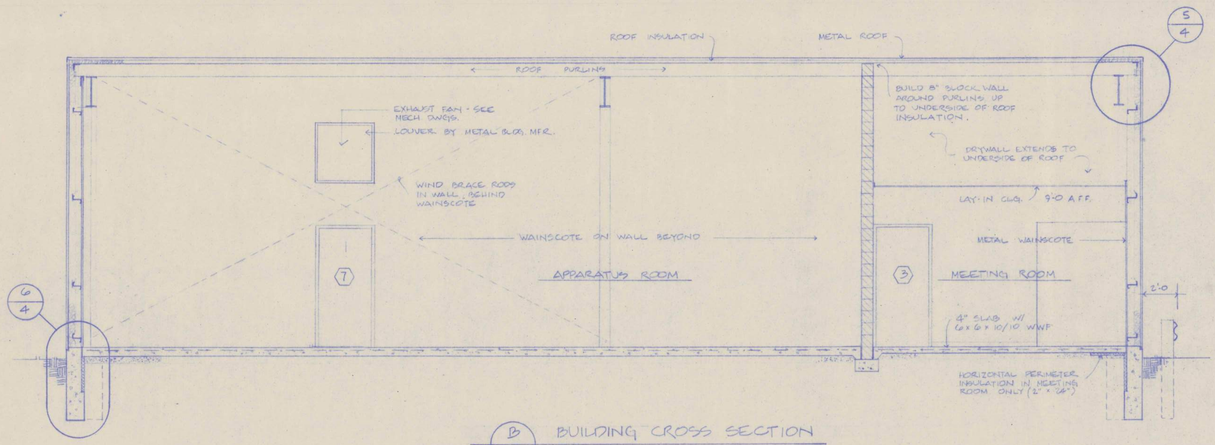
515-225-3469

Description
ELEVATIONS, DETAILS & SCHEDULES

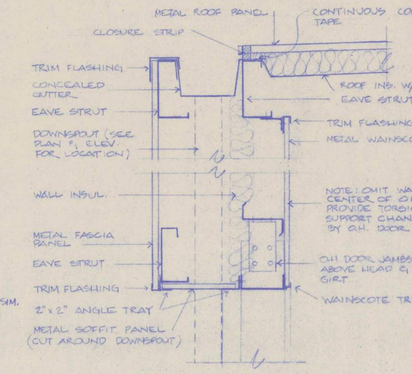
Date 30 DEC. 1977
File No. 7704
Scale AS NOTED
Drawing No. 3
Preliminary ☐
Construction ■
As Built ☐
of Sheets



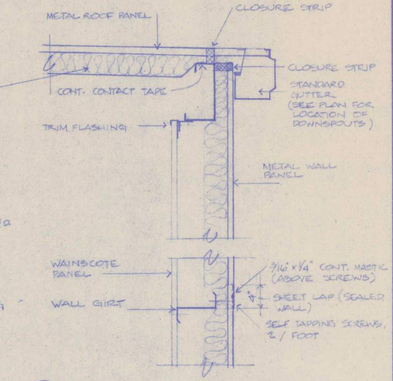
A/4 BUILDING CROSS SECTION
1/8" = 1'-0"



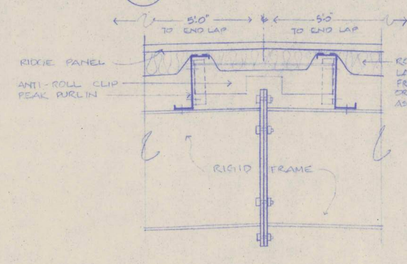
B/4 BUILDING CROSS SECTION
1/4" = 1'-0"



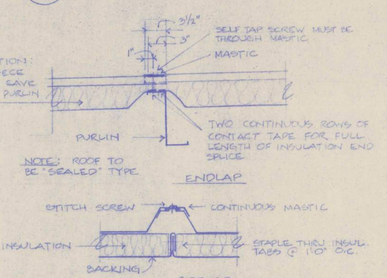
1/4 SECTION AT CANOPY
1" = 1'-0"



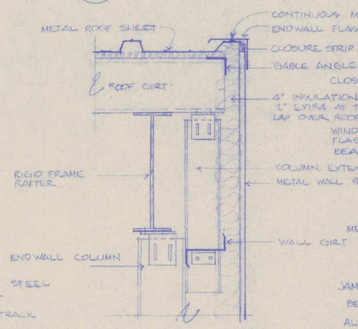
2/4 SECTION AT GUTTER
1" = 1'-0"



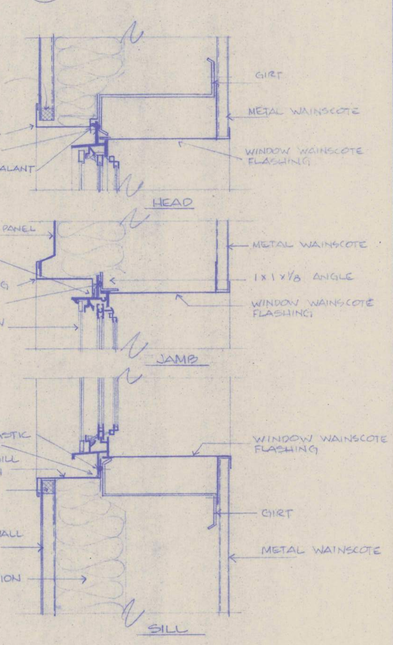
3/4 SECTION AT RIDGE PEAK
1" = 1'-0"



4/4 ROOF LAP DETAILS

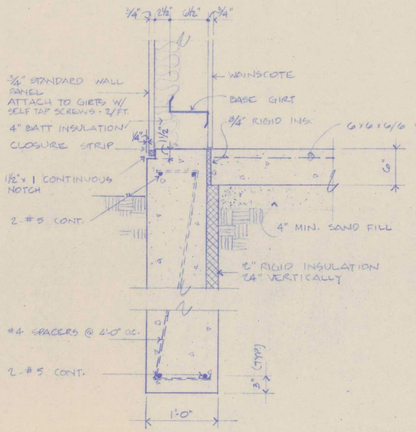


5/4 ENDWALL DETAIL
1" = 1'-0"

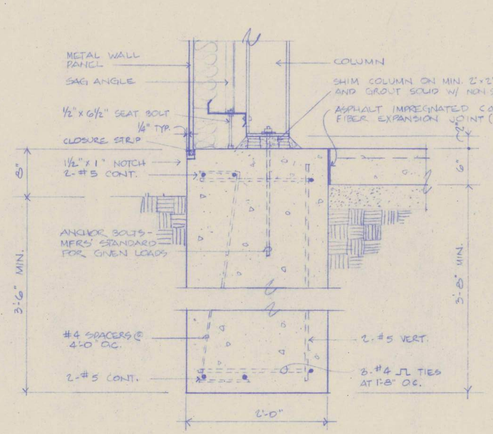


10/4 WINDOW DETAILS
3" = 1'-0"

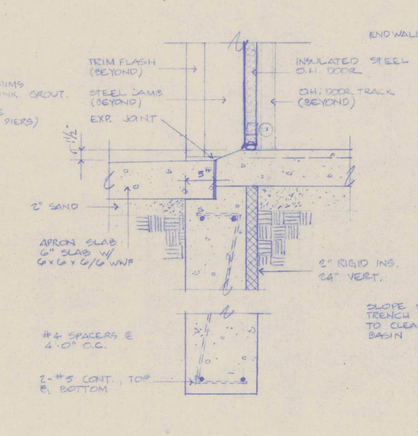
NOTE: CARE SHALL BE TAKEN THAT ALUMINUM WINDOW FRAME DOES NOT DIRECTLY CONTACT STEEL BUILDING COMPONENTS.



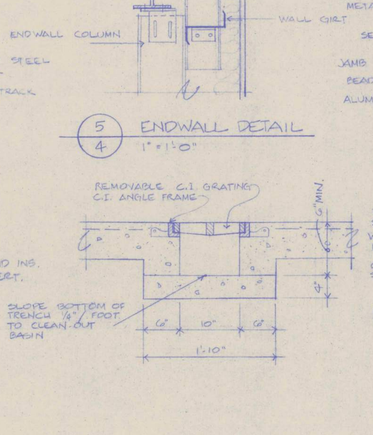
6/4 FNDN. WALL DETAIL
1" = 1'-0"



7/4 FNDN. DTL. AT PIER
1" = 1'-0"



8/4 FNDN. DTL. AT O.H. DOOR
1" = 1'-0"



9/4 DTL. - TRENCH DRAIN
1" = 1'-0"

BRUNING 44-132 32651

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SITUATE ON
LOTS 3 & 4, BLOCK 14
O.P. STATE CENTRE, MARSHALL COUNTY, IA.

Owner
THE CITY OF
STATE CENTRE, IOWA

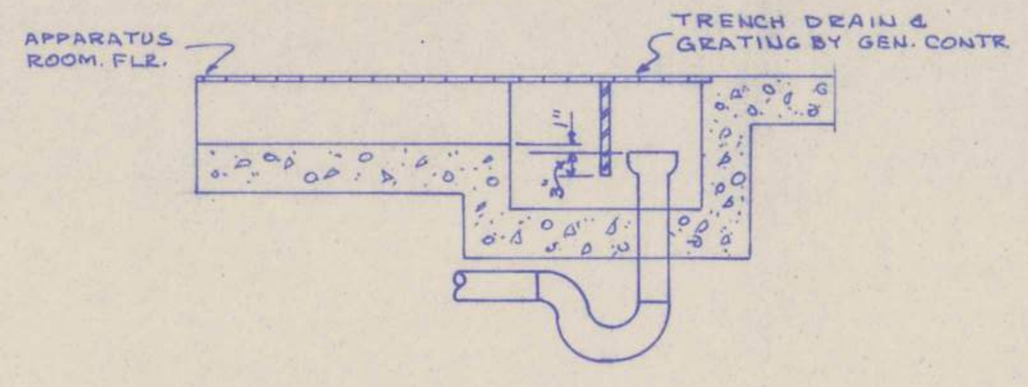
The Voorhees-Shelton Architects, P.C.
West Towers Suite 409
1200 35th Street
West Des Moines, Iowa 50265
515-225-3469

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS PERTAINING TO THIS DRAWING AT THE SITE, AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT AT ONCE.

No.	Revision	Date

Description
SECTIONS & DETAILS

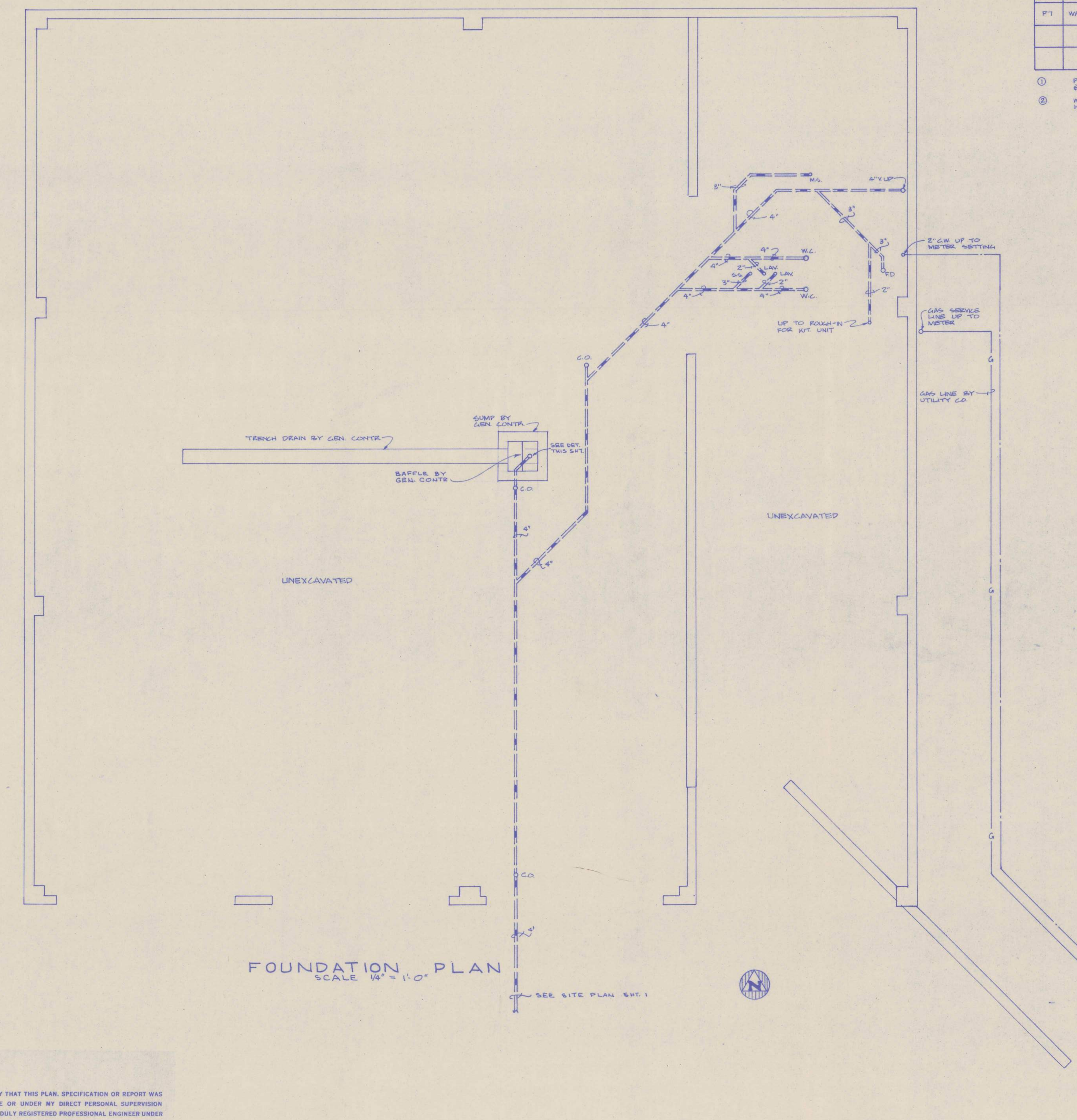
Date 30 DEC. 1977
File No. 7704
Scale AS NOTED
Drawing No. 4
Preliminary ☐
Construction ■
As Built ☐
of Sheets



SUMP PIPING
SCALE 1/2" = 1'-0"

PLUMBING & PIPING

1. ALL WORK TO CONFORM TO IOWA STATE PLUMBING CODE AND STATE CENTRE PLUMBING CODE.
2. ALL MATERIAL TO BE NEW
3. SOIL, WASTE, VENT BELOW GRADE OR UNDER SLAB: CAST IRON STD. WEIGHT OR AS NOTED ON DRAWINGS.
4. SOIL, WASTE, VENT ABOVE GRADE: CAST IRON, COPPER OR SCHEDULE 40 PVC AS APPROVED.
5. DOMESTIC WATER SERVICE: CAST IRON WATER MAIN WITH APPROVED MECHANICAL JOINTS OR TYPE K COPPER.
6. DOMESTIC COLD AND HOT WATER LINES: TYPE L. COPPER
7. NATURAL GAS LINES: SCHEDULE 40 BLACK IRON
8. BALL VALVES: FULL LINE SIZE PORT AND BE COMPATABLE WITH PIPE MATERIAL AND FOR SERVICE DESIGNATED.



FOUNDATION PLAN
SCALE 1/4" = 1'-0"

PLUMBING FIXTURE SCHEDULE

MARK	ITEM	MFGR.	MODEL & NO.	COLOR/ FINISH	TRAP	W.	V.	C.W.	H.W.	TRIM	REMARKS/NOTES
P1	WATER CLOSET	KOHLER	BOLTON K-3475-EB	WHITE	—	4"	—	1/2"	—	K-4670-S OPEN FRONT. SELF-SUST.	BOLT CAPS. SIPHON JET, ELONG.
P2	LAVATORY	" "	GREENWICH K-2022	"	1 1/4"	2"	2"	1/2"	1/2"	K-7401-T CENTRA	
P3	SERVICE SINK	" "	BANNON K-6718	"	3"	3"	1 1/2"	1/2"	1/2"	K-8905 WALL MTD ROUGH PLAT. W/VAC. BRKR	24" X 20" W/ K6673 INSIDE ENAM. TRAP STD. ②
P4	MOP SINK	FIAT	MSB-3624	WHITE W/ BLACK	3"	3"	—	1/2"	1/2"	830-AA FAUCET W/ VAC. BRKR.	VINYL BUMPER GUARDS FRONT & 2 SIDES ①
P5	FLOOR DRAIN	J.R. SMITH	2010-A	NICKEL BRONZE	3"	3"	—	—	—	SEDIMENT BUCKET 7" STRAINER	
P6	WATER HEATER	A.O. SMITH	PGC-50	—	—	—	—	3/4"	3/4"	4" VENT	36.8 GPH RECOVERY AGA 44 MBH INPUT NAT GAS
P7	WALL HYDRANT	WOODFORD	85	ROUGH BRASS	—	—	—	3/4"	—		

① PROVIDE T&S BRASS NO. B-955 SPRAY UNIT W/ 5 FT. HOSE & 3/4" I.P.S. FEMALE & NO. B-104-D WALL HOOK.

② WALL MTD BUBBLER ON R.H. SIDE OF S.S. @ +42". VERIFY EXACT LOC. W/ARCHITECT. HALSEY TAYLOR 3744-A.

PLUMBING SYMBOLS

- SOIL OR WASTE LINE
- SOIL OR WASTE LINE BELOW GRADE
- PLUMBING VENT
- PLUMBING VENT BELOW GRADE
- DOMESTIC COLD WATER LINE
- DOMESTIC HOT WATER LINE
- GAS LINE
- DRAIN LINE
- GATE VALVE
- BALL VALVE
- COCK OR BALANCING VALVE
- FLOOR DRAIN (F.D.)
- WALL HYDRANT
- THERMOSTAT
- C.O. CLEAN OUT
- V.T.R. VENT THRU ROOF
- LAV. LAVATORY
- W.C. WATER CLOSET
- S.S. SERVICE SINK
- M.S. MOP SINK

DUCTWORK SYMBOLS

	SUPPLY DUCT IN SECTION		RETURN OR EXHAUST DUCT IN SECTION
	FLEXIBLE CONNECTION		SUPPLY DUCT TAP FROM BOTTOM OF DUCT
	RETURN OR EXH. DUCT TAP FROM BOTTOM OF DUCT		DAMPER IN DUCT AS NOTED
	SQUARE CEILING DIFF. SIZE AS NOTED		VANED ELBOW

- SUPPLY AIR FLOW
- RETURN OR EXHAUST AIR FLOW
- THERMOSTAT
- M.D. MANUAL DAMPER
- F.D. FIRE DAMPER
- S.A. SUPPLY AIR
- R.A. RETURN AIR
- S.R. SUPPLY REGISTER
- R.R. RETURN REGISTER
- C.D. CEILING DIFFUSER

RALPH R. SCHILLING REGISTERED 2898 IOWA PROFESSIONAL ENGINEER

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNED Ralph R. Schilling DATE JAN. 17 1978
RALPH R. SCHILLING, P.E. IOWA REG. No. 2898

Project
A FIRE STATION FOR THE CITY OF STATE CENTRE, IOWA
SITUATE ON LOTS 3 & 4, BLOCK 14 OF STATE CENTRE, MARSHALL COUNTY, IA.

Owner
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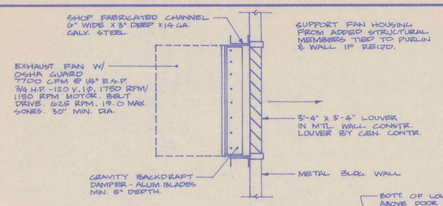
STEVENSON & SCHILLING CONSULTING ENGINEERS
633 INS. EXCH. BLDG.
DES MOINES, IOWA

No.	Revision	Date

Description
FOUNDATION PLAN - MECHANICAL

Date: 30 DEC. 1977
File No.: 7704
Scale: AS NOTED
Drawing No.: 5 of 7 Sheets
Preliminary ☐
Construction ■
As Built ☐



EXHAUST FAN DETAIL
SCALE - APPROX. 1½"=1'-0"

U.H.-1, U.H.-2 — 75,000 BTUH INPUT, 60,000 OUTPUT, NAT. GAS, 920 CFM ELECTRIC IGNITION, 100% SAFETY SHUT-OFF, ADJ LOUVERS, STAT w/ 40 - 80 RANGE - LOW VOLT., REZNOR XB-75 OR EQUAL.

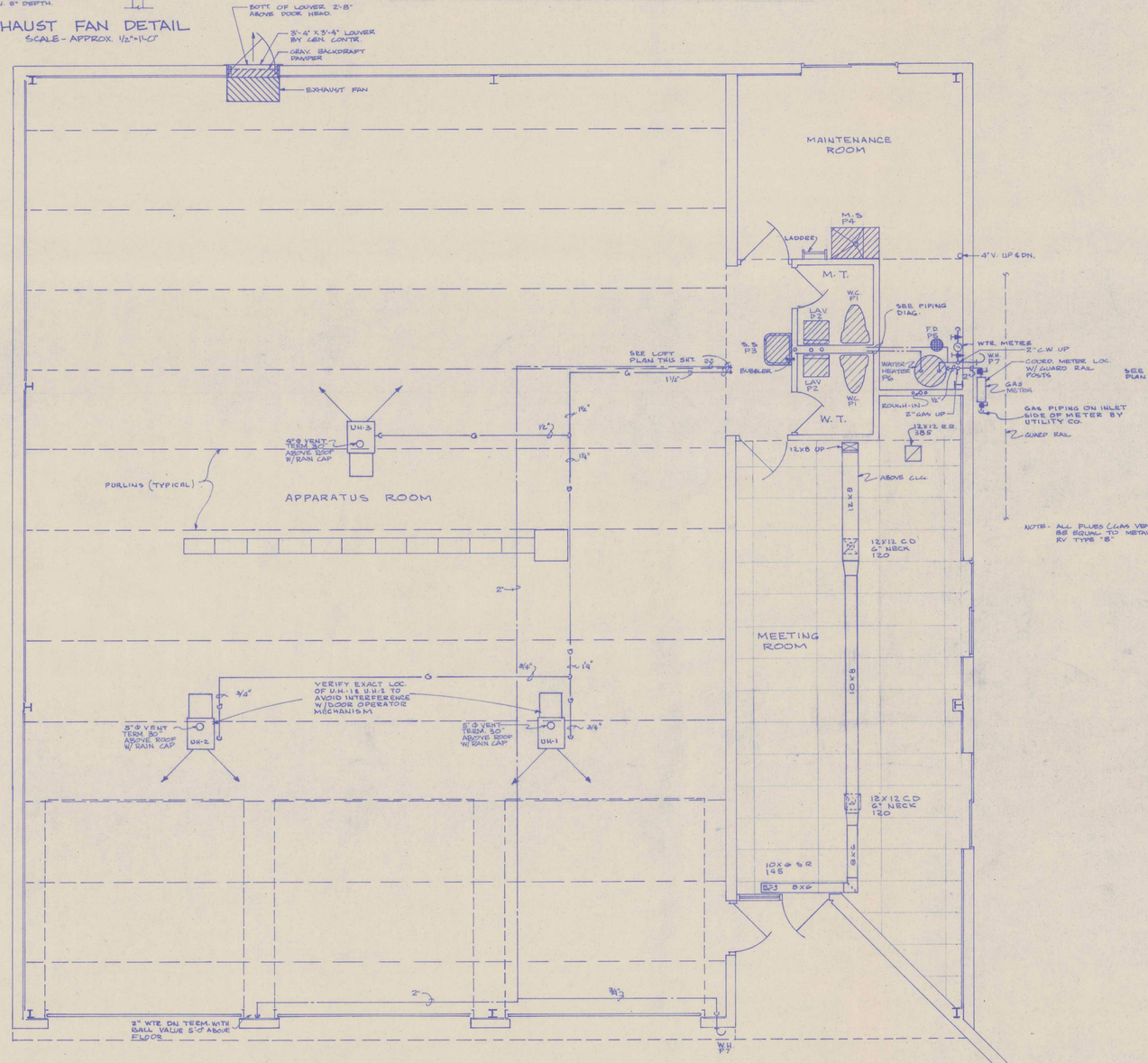
U.H.-3 — 50,000 BTUH INPUT, 40,000 BTUH OUTPUT, NAT. GAS, 615 CFM ELECTRIC IGNITION, 100% SAFETY SHUT-OFF, ADJ LOUVERS, STAT w/ 40 - 80 RANGE - LOW VOLT., REZNOR XB-50 OR EQUAL.

FURNACE — 55,000 BTUH INPUT, 44,000 BTUH OUTPUT, NAT. GAS, 615 CFM @ 0.40" E.S.P. STAT w/ PROVISION FOR COOLING ADD-ON-LOW VOLT. LENNOX GI2D2-55 OR EQUAL.

EXH. FANS E-1 & E-2 — 80 CFM w/MAX. 3.5 SONES, ANOD. ALUM. GRILLE, NUTONE 8832 OR EQUAL.

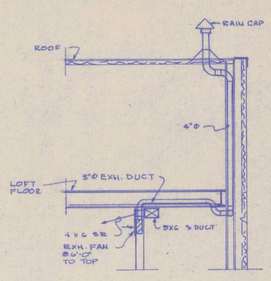
MECHANICAL SPECIFICATIONS

1. CONFORM TO LOCAL MECHANICAL CODE.
2. ALL MATERIAL TO BE NEW.
3. ALL DUCTWORK CONFORM TO LATEST N.E.S.C.A. STANDARDS.
4. SUPPLY REGISTERS: HART & COOLEY 92 VHV DOUBLE DEFLECTION WITH VOLUME CONTROL FINISH WHITE OR OFF-WHITE.
5. RETURN REGISTERS: HART & COOLEY 881 FINISH WHITE OR OFF-WHITE.
6. CEILING DIFFUSERS: HART & COOLEY 52R FINISH WHITE OR OFF-WHITE.
7. UNIT HEATERS AND FURNACE - SEE SCHEDULE.
8. EXHAUST FANS - SEE SCHEDULE.

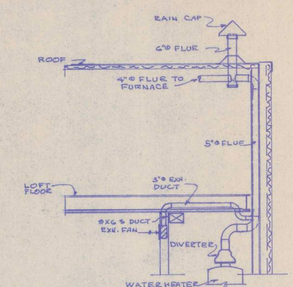


FLOOR PLAN — MECHANICAL
SCALE 1/4" = 1'-0"

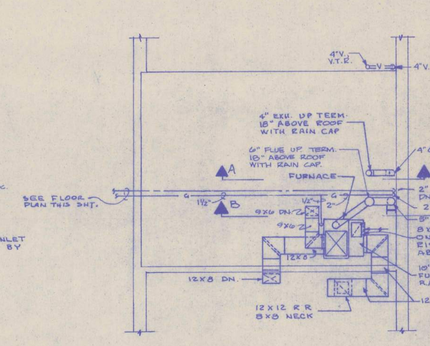
NOTE - ALL FLUES (GAS VENTS) TO BE EQUAL TO METAL-BESTOS RV TYPE "B"



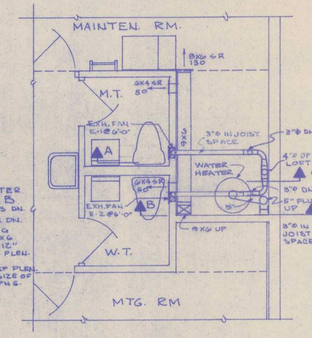
SECTION A-A
SCALE 1/4" = 1'-0"



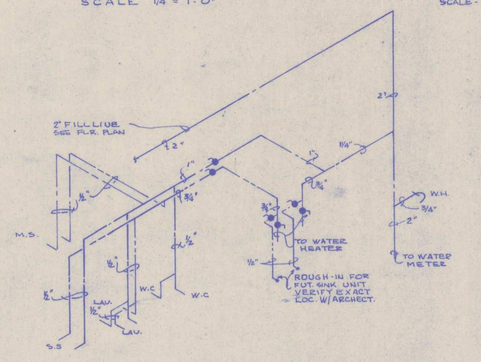
SECTION B-B
SCALE 1/8" = 1'-0"



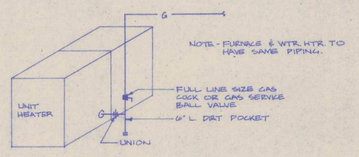
LOFT PLAN
SCALE 1/4" = 1'-0"



PART FIRST FLOOR PLAN
SCALE - 1/4" = 1'-0"



WATER PIPING DIAGRAM
NOT TO SCALE



UNIT HEATER GAS PIPING
NOT TO SCALE

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SIGNED Ralph R. Schilling DATE JAN. 17 1978

RALPH R. SCHILLING, P.E. IOWA REG. No. 2898

RALPH R. SCHILLING REGISTERED 2898 IOWA PROFESSIONAL ENGINEER

BRUNING 44-132-32651

Project
A FIRE STATION
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IOWA
SITUATE ON
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STEVENSON & SCHILLING CONSULTING ENGINEERS
633 INS. EXCH. BLDG.
DES MOINES, IOWA

No.	Revision	Date

Description
FLOOR PLAN MECHANICAL

Date	File No.
30 DEC., 1977	7704
Scale: AS NOTED	Drawing No. 6
Preliminary ☐	
Ce ■	

of 7 Sheets

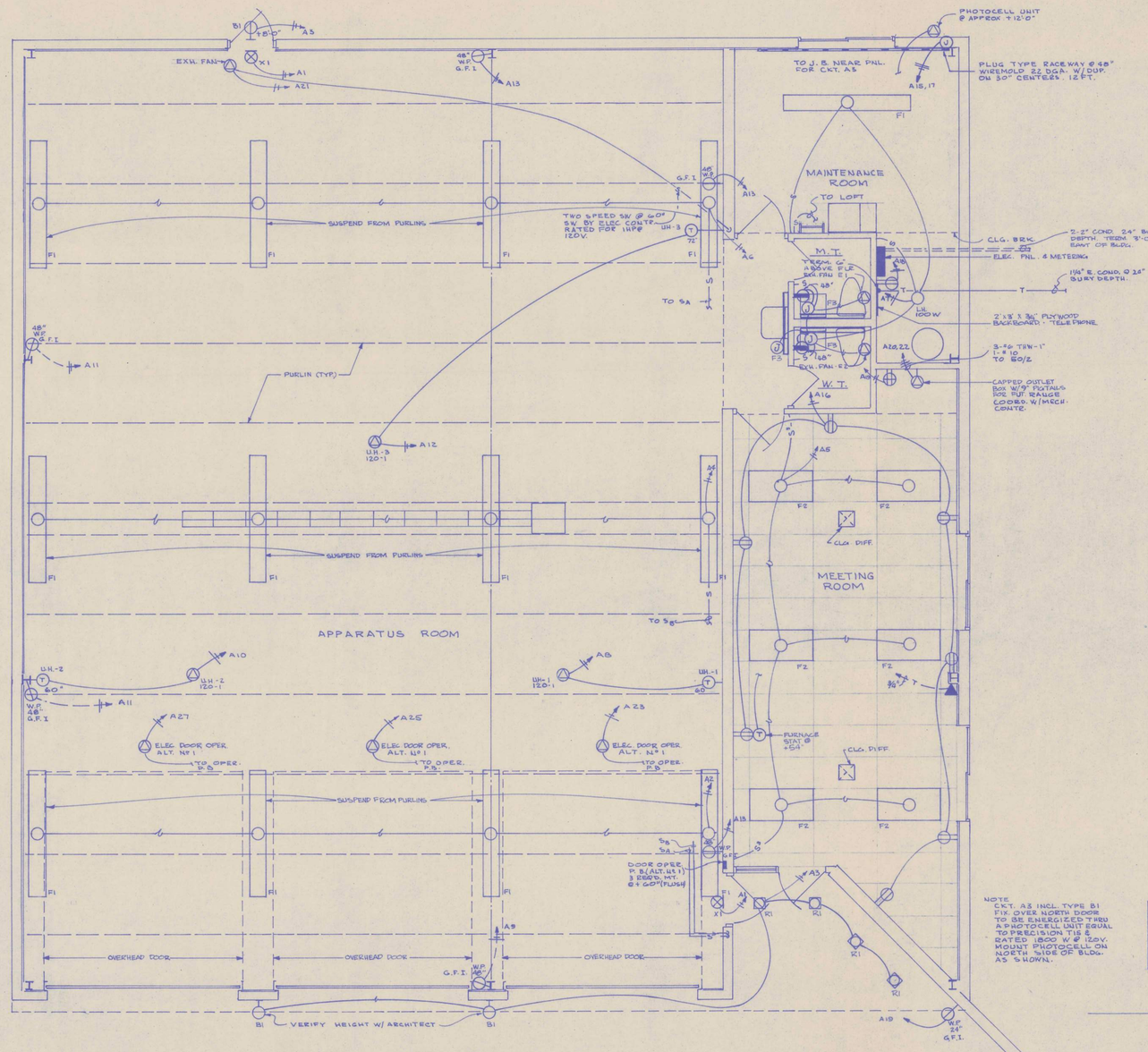
ELECTRICAL SPECIFICATIONS

1. ALL WORK TO CONFORM TO 1978 N.E.C. AND STATE CENTRE ELECTRICAL CODE.
2. ALL MATERIAL SHALL BE NEW. NO USED MATERIAL ACCEPTED.
3. SWITCHES, CIRCUIT BREAKERS, PANELS, BY P-P-E, G.E., G-T-E, SQUARE-D, WESTINGHOUSE.
4. DEVICES BY G.E., HUBBELL, LEVITTON, SIERRA, SLATER, P. & S.
   CONVENIENCE OUTLET - 15A. WITH GRND. IVORY DUPLEX SPEC. GRADE, G.F.I. AS NOTED.
   SWITCHES - 15A BROWN - SPEC GRADE
   PLATES - SMOOTH PLASTIC. MATCH COLOR OF DEVICE.
5. LIGHTING FIXTURES - SEE FIXTURE SCHEDULE.
6. MAKE CONNECTIONS TO ALL EQUIPMENT AS SHOWN.

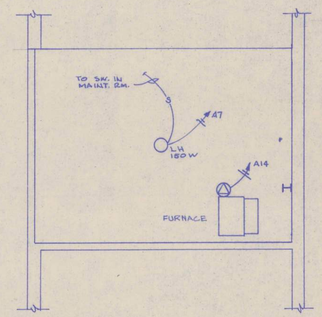
FIXTURE SCHEDULE

TYPE	SURFACE	WALL MTD.	RECESSED	SPECIAL	MFGR	MFGR'S MODEL	FINISH	INCAND.	FLUOR.	H.I.D.	LAMP DATA	REMARKS
B1		●			PRESCOLITE	4440	BLK TRIM	●			100W I.F.	
F1	●			●	LITHONIA	EJA 296 HO	WHITE		●		2F96 T12/HO	CHAIN SUSPENDED
F2			●		LITHONIA	2GP 440 A12	WHITE		●		4-40W T12	FOR GRID CLG.
F3		●			DAY-BRITE	5240 W	WHITE		●		2-40W T12	
R1			●		PRESCOLITE	21K-55	WHITE TRIM	●			150W R40FL	
LH	●				P. & S.	110	WHITE	●			AS NOTED	
X1		●			LITHONIA	ESIR EL	ALUM/BLK	●			WITH FIX.	

NOTE - ALL FLUOR. BALLASTS FOR 120V. PRIMARY



FLOOR PLAN — ELECTRICAL
SCALE 1/8" = 1'-0"

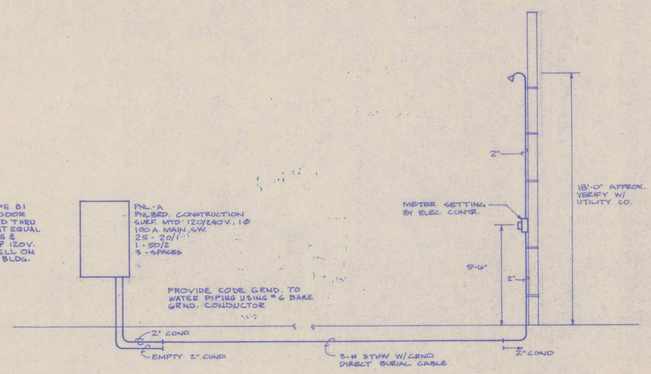


LOFT PLAN
SCALE 1/4" = 1'-0"

NOTE
CKT. A3 INCL. TYPE B1 FIX. OVER NORTH DOOR TO BE ENERGIZED THRU A PHOTOCELL UNIT EQUAL TO PRECISION T15 & RATED 1800 W @ 120V. MOUNT PHOTOCELL ON NORTH SIDE OF BLDG. AS SHOWN.

ELECTRICAL SYMBOLS

- FLUORESCENT FIXTURE - NOMINAL 1'x4' OR AS NOTED
- FLUORESCENT FIXTURE - NOMINAL 2'x4'
- INCANDESCENT FIXTURE - TYPE AS NOTED
- INCANDESCENT FIXTURE - WALL MTD. - TYPE AS NOTED
- INCANDESCENT FIXTURE - RECESSED - TYPE AS NOTED
- EXIT FIXTURE - TYPE AS NOTED
- JUNCTION BOX
- DUPLEX CONVENIENCE OUTLET ⊜ G.F.I.
- DUPLEX CONVENIENCE OUTLET 8" ABOVE COUNTER TOP
- W.P. G.F.I. DUPLEX CONVENIENCE OUTLET - WEATHER PROOF TYPE.
- SPECIAL OUTLET.
- TELEPHONE OUTLET
- MOTOR OUTLET
- LIGHTING PANEL
- EXPOSED CONDUIT OR RACEWAY
- CONDUIT CONCEALED IN CEILING OR WALL
- CONDUIT IN FLOOR CONSTRUCTION.
- LIGHTING OR POWER HOME RUN
- T TELEPHONE SYSTEM HOME RUN
- SWITCH LEG TO SINGLE POLE SWITCH
- SWITCH LEG TO THREE WAY SWITCH.
- SWITCHED LEG - CONCEALED CONDUIT
- SWITCHED LEG. EXPOSED CONDUIT
- PLUG TYPE RACEWAY



FEEDER DIAGRAM
NOT TO SCALE

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SIGNED Ralph R. Schilling DATE JAN. 17 1978

RALPH R. SCHILLING, P.E. IOWA REG. No. 2898

RALPH R. SCHILLING REGISTERED 2898 IOWA PROFESSIONAL ENGINEER

BRUNING 44-172 32651

Project
A FIRE STATION FOR THE CITY OF STATE CENTRE, IOWA
SITUATE ON LOTS 3 & 4, BLOCK 14 OF STATE CENTRE, MARSHALL COUNTY, IA.

Owner
THE CITY OF STATE CENTRE IOWA

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STEVENSON & SCHILLING CONSULTING ENGINEERS
633 INS. EXCH. BLDG.
DES MOINES, IOWA

No.	Revision	Date

Description
FLOOR PLAN - ELECTRICAL

Date	File No.
30 DEC., 1977	7704
Scale: AS NOTED	Drawing No. 7
Preliminary ☐	
Constr...	

...7 Sheets

Geotechnical Evaluation Report

Subsurface Exploration
Fire Station Addition
State Center, IA

February 19, 2025

Prepared for:
City of State Center

Prepared by:
TEAM Services, Inc.
Des Moines, Iowa

February 19, 2025

TEAM Services
Geotech Report

City of State Center
118 E Main Street, P.O. Box 668
State Center, IA 50247

Attn: Craig Pfantz, Fire Chief

Re: Subsurface Exploration
Fire Station Addition
State Center, IA
TEAM Project No. 1-5630

Dear Mr. Pfantz:

We have completed the subsurface exploration for the proposed new structure and pavements. The accompanying geotechnical report presents the findings of the subsurface exploration, our recommendations concerning design and construction of the new addition, and subgrade preparation recommendations for new parking.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service to you in any way, please do not hesitate to contact us.

Sincerely yours,
TEAM Services

Clinton Halverson, P.E.
Principal Engineer

Cc: Chris Wernimont, AIA, Studio Melee

LICENSED PROFESSIONAL ENGINEER Clinton Halverson 19928 IOWA	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa. Clinton Halverson, P.E. License Number 19928 Date: 2/19/2025 My license renewal date is December 31, 2025. Pages covered by this seal: All Pages .

TABLE OF CONTENTS

PROJECT INFORMATION

Project information has been provided by Studio Melee through email. The project will consist of building a single-story, slab-on-grade, pre-engineered metal building addition onto the existing fire station at 113 W Main Street, State Center, Iowa. Documents provided by email include a preliminary street view of the addition and a floor plan. An existing slab-on-grade opera house resides in a portion of the addition area. New parking is planned directly east of the addition.

Grading and structural loads have not been provided. For the purposes of this report, it is assumed that the finished floor elevations will be similar to that of the existing fire station and that wall and column loads will be on the orders of 5 klf and 50 kips, respectively, or less.

SITE CONDITIONS

The site is mostly gravel-surfaced or taken up by the existing opera house, although a strip of grass is present alongside the opera house. There was about 1 foot of elevation difference between our boring locations. The grades were able to support our truck-mounted drilling rig without difficulty.

FIELD EXPLORATION

A total of 3 borings were conducted at this site to depths of about 7 to 20 feet below existing grades on February 3, 2025. The locations of borings were determined using visual offsets from existing site features. The boring elevations were shot using a surveying rod and scope and those elevations were correlated to the finished floor elevation of the existing fire station. An arbitrary reference elevation of 100.0 feet was assigned to the existing fire station finished floor elevation. The approximate boring locations are indicated on the Boring Plan enclosed in the Appendix. Boring elevations are noted on their respective Boring Logs. The locations and elevations of the borings should be considered accurate only to the degree implied by the means and methods used to define them.

Our drilling equipment consisted of a truck-mounted auger drilling rig. The borings were made by mechanically twisting a continuous flight hollow stem steel auger into the soil. At assigned intervals, the center drive bit of the auger was removed and soil samples were obtained.

Representative samples were obtained using thin-walled tube and split-barrel sampling procedures in general accordance with ASTM Specifications D 1587 and D 1586, respectively. In the thin-walled tube sampling procedure, a thin-walled, seamless steel tube with a sharp cutting edge is pushed hydraulically into the ground to obtain relatively undisturbed samples of cohesive or moderately cohesive soils. In the split-barrel sampling procedure, a standard 2-inch O.D. split-barrel sampling spoon is driven into the ground with a 140-pound hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the standard penetration resistance value. These values are indicated on the Boring Logs at the depths of occurrence. Soil cuttings from the upper approximate foot of soils were often retained in jars. The samples were tagged for identification, sealed and returned to the laboratory for testing and classification.

An automatic hammer was used to perform the Standard Penetration Tests in the borings. In the automatic hammer system, the cathead and rope used traditionally in the manual test procedure is replaced with an automatic lifting mechanism for the 140-pound driving weight. The reduction in system friction with the automatic hammer system results in a significant increase in the driving energies. This results in significantly greater driving efficiencies and a corresponding decrease in the number of blows in the Standard Penetration Test results. We have taken the driving efficiency of the automatic hammer system into account when analyzing this data.

Field logs of the borings were prepared by the drill crew. These logs included visual classifications of the materials encountered during drilling, as well as the driller's interpretation of the subsurface conditions between samples. Final Boring Logs included with this report represent an interpretation of the field logs and include modifications based on laboratory observation and tests of the samples.

LABORATORY TESTING

Based on the driller's field records and examination of the samples in the laboratory, a soil testing program was developed to collect more information about the soil conditions at the site. The following is a brief description of the specific tasks completed for this project.

Natural Moisture Content -- The natural moisture content of selected samples was determined in general accordance with ASTM D 2216. The moisture content of the soil is the ratio, expressed as a percentage, of the weight of water in a given mass of soil to the weight of the soil particles. The results are presented on the Boring Logs at the depths from which the samples were obtained.

Unit Weight -- In the laboratory, selected undisturbed samples of the site soils were measured and weighed to determine gross weight and volume of the samples. Where possible, the samples are placed in a template and trimmed at each end to fit the template. The moisture content of each specimen was then determined, and the dry unit weight was calculated. The results of these tests are also presented on the Boring Logs at the appropriate sample depths.

Unconfined Compressive Strength -- A calibrated hand penetrometer was used to estimate the approximate unconfined compressive strength of the Shelby tube samples and select split spoon samples. The calibrated hand penetrometer has been correlated with unconfined compression tests and provides a better estimate of soil consistency than visual examination alone.

Plasticity (Atterberg Limits) Tests -- Selected soil samples were tested for Plastic Index. A soil's Plastic Index (PI) is bracketed by the Liquid Limit (LL) and the Plastic Limit (PL). The LL is the moisture content at which the soil will flow as a heavy viscous fluid. The PL is the moisture content at which the soil begins to crumble when rolled into a small thread. These tests are conducted in general accordance with ASTM D 4318. The results are indicated on the Boring Logs at the depths where the samples were obtained.

Torvane Shear Tests -- The Torvane test was performed on a precut flat soil sample surface with a calibrated, hand-held spring-loaded dial device with thin flanges in a radial array which can be pressed into the soil sample. The vanes are pressed into the soil sample, and the dial face is twisted slowly until the vanes begin to shear the soil. This test gives a direct dial reading of soil shear strength when the sample fails. The test is especially useful for estimating the shear strength of soft cohesive soils. Torvane shear test results are noted on the Boring Logs at the depths of the samples tested.

As part of the testing program, the samples were classified in the laboratory based on visual observation, texture and plasticity. The descriptions of the soils indicated on the Boring Logs are in accordance with the enclosed *General Notes* and the *Unified Soil Classification System*. Estimated

group symbols according to the *Unified Soil Classification System* are given on the Boring Logs. A brief description of this classification system is attached to this report.

SUBSURFACE CONDITIONS

Subsurface conditions encountered during this exploration are indicated on the individual Boring Logs. Based on the results of the borings, subsurface conditions on the project site can be generalized as follows.

Boring locations 1 and 2 were surfaced with silty gravel or silty sand.

Fill soils were encountered below the surfacing at Boring 1 and at the ground surface of Boring 3. The fill soils were variable and included sandy lean clay, lean to fat clay, sandy lean to fat clay, and fat clay soil types. The existing fill extended to depths ranging from 2 to 6 feet below existing grades.

Topsoil was buried beneath the surfacing at Boring 2 and below the fill soils in Boring 3. The topsoil was stiff lean to fat clay which extended to depths of about 3 to 5 feet below existing grades.

Loess soils were encountered below the fill and topsoil in all borings. These wind-deposited soils were soft to stiff lean clay. All borings terminated in the loess soils.

The above descriptions provide a general summary of the subsurface conditions encountered. The attached Boring Logs contain detailed information recorded at each boring location. These Boring Logs represent our interpretation of the field logs based on engineering examination of the field samples. The lines designating the interfaces between various strata represent approximate boundaries, and the transition between strata may be gradual. It should be noted that the soil conditions will vary between the boring locations.

GROUNDWATER CONDITIONS

The borings were monitored while drilling and shortly after completion for the presence and level of groundwater. Groundwater indications were only observed in Boring 2, the deepest boring. At

Boring 2, water seepage was noted at a depth of about 18 feet. After stabilizing for about half an hour, the water level was measured at a depth of about 17 feet.

It should be recognized that longer-term observations may be necessary for a groundwater level to develop and stabilize in the borehole, especially when clay soils are present. Longer-term monitoring in cased holes or piezometers would be required for a more accurate evaluation of the groundwater conditions at this site.

Fluctuation of groundwater levels can occur due to seasonal variations in the amount of rainfall, runoff, surface drainage, subsurface drainage, site topography, irrigation practices, ground cover (pavement or vegetation), and other factors not evident at the time the borings were conducted. Normally, the highest groundwater levels occur in late winter and spring time while the lowest levels occur in late summer and fall time. The fluctuation of the groundwater levels should be considered when developing the design and construction plans for this project.

CONCLUSIONS AND RECOMMENDATIONS

Geotechnical Concerns Overview

In general, the site appears suitable for the proposed project with some concerns and recommended mitigation.

Most slab areas and some foundations will bear above elevations where existing fill is present. Most layers of fill appeared to be satisfactorily compacted, but there was a layer of poorly compacted fill identified in Boring 1 that warrants delineation and removal beneath the building area as further discussed in the **Existing Fill Considerations** report section.

Moderately expansive soils were encountered in the topsoil and some of the fill strata sampled by borings. However, the soils had high enough moisture contents (pre-swelled) and low enough plasticity (relatively low expansive potential) that no mitigations of existing soils for expansive reduction purposes are recommended in this report. This assumed expansive soil movements of up to ¾ inch are acceptable for this project.

Considering the variability of existing fill soils, compressibility of topsoil layers, and relatively low strength of loess soils at this site; the maximum allowable bearing pressure recommended at this site is limited to 1,500 psf. Even with this relatively low bearing pressure, soft loess may require some removal and replacement beneath footings if encountered very near a foundation's bearing elevation.

This report section is an overview. Reading this report in its entirety is necessary to understand recommendations and risks involved with this project.

Existing Fill Considerations

Fill soils were encountered below the surfacing at Boring 1 and at the ground surface of Boring 3. The fill soils were variable and included sandy lean clay, lean to fat clay, sandy lean to fat clay, and fat clay soil types. The existing fill extended to depths ranging from 2 to 6 feet below existing grades with the deep fill located near the existing fire station at Boring 1. Most layers of fill appeared to be satisfactorily compaction, but the one exception was a layer of poorly compacted fill identified in Boring 1 between depths of about 2 and 3 feet. This layer of poorly compacted fill warrants delineation and removal beneath the building area.

TEAM Services recommends that shallow (about 3 feet deep) test pits should be dug near Boring 1 and radiating out as the poorly compacted layer dictates. Test pits could be dug either before or during construction to identify the layer of poorly compacted soil and then remove the layer beneath the building area. The extents of this layer are currently unknown and therefore the owner should be made aware of the cost variables. It should also be noted that although the unsuitable fill identified in Boring only extended to a depth of about 3 feet, unsuitable materials may be deeper at other locations.

Other than the single layer of soils which appeared to be poorly compacted, the fill soils at the site appeared to be satisfactorily compacted based on resistance to penetration and manual assessment. Satisfactory compaction would result in suitable stiffness to adequately support foundations without a bearing capacity failure and with reasonably low settlement.

Man-made fills have an inherently high risk of variability and careful construction inspection will be necessary to assure adequate support performance. In areas where fill is encountered, we recommend that additional testing be conducted by TEAM Services at the time of construction to further explore the suitability of the existing fill. In our opinion, foundations and slabs may be placed

above existing fill where testing confirms suitability. If unsuitable soils are encountered, these soils should be removed and replaced with engineered compacted and tested fill or concrete.

It should be noted that the most conservative approach in dealing with unknowns within the existing fill would be to completely remove the fill and replace it with new fill which is placed with compaction testing controls to check that the soil is compacted at an appropriate moisture content and that the soils reach specified compaction densities. In our opinion, arbitrary removal of all fill is unnecessary at this site considering the suitability of soils encountered in the subsurface exploration, but some risk will need to be assumed by the owner in order to allow construction above existing fill soils.

Site Preparation

Subgrade preparation should begin with the removal of any organic-laden soils, vegetation, and any loose, soft, or otherwise unsuitable materials present at the site. As discussed in the previous report section, a layer of poorly compacted fill identified in Boring 1 should be removed from beneath the building area.

For planning purposes, we recommend a minimum stripping depth of 6 inches for grass areas to remove the soils with the densest root growth. The actual depth of stripping should be determined in the field in consultation with TEAM Services personnel. Any near surface soils with organics could be used for landscaping purposes in non-critical areas where support for foundations, slabs, or parking is not required.

Any abandoned utility lines or other buried elements from the previous site use should be completely removed along with their associated backfill material and replaced with engineered compacted fill. Consideration should be given to rerouting any existing utilities which will remain in service to locations outside the planned building area so that they will be easily accessible for maintenance.

After stripping and removal, the exposed grades in both cut and fill areas should be proofrolled or inspected by TEAM Services personnel. Proofrolling should be performed at the lowest cut grade, prior to any fill placement. Proofrolling should be conducted with a fully loaded tandem axle dump truck having a minimum gross weight of 25 tons. Where proofrolling is not possible due to poor access or excessive disturbance to the existing soils, these soils should be probed and visually inspected by TEAM Services to determine the suitability of the subgrade. Any unsuitable soils

identified during this process should be removed and replaced with suitable engineered compacted and tested fill which meets or exceeds the Class 1 Construction Application requirements in Table A in the following **Fill Placement** report section.

It should be noted that initial subgrade preparation for some soil types may not be suitable under repeated heavy construction vehicle loads and may require stabilization to greater depths or placement of crushed rock with or without geogrid. Stabilization of subgrade soils with fly ash, cement or lime could also be considered. Contract allowances should be made for some remedial work at the site related to subgrade preparation. The amount of such work cannot be defined at this time. Therefore, the owner should be informed of these cost variables.

Fill Placement

Fill and backfill placed for support of the proposed structure and parking should consist of approved materials which are free of organic matter and debris. Brick, concrete, rocks or other solid pieces with a maximum dimension of 3 inches or larger should not be placed in the newly placed fill sections. We recommend that low-plasticity cohesive soil or granular material be used for general fill placement. For this site, low-plasticity cohesive soil for this site should have a liquid limit of less than 45 and a plasticity index of less than 25. In our opinion, the near-surface cohesive soils at this site often do not meet these criteria and robust testing and delineation would be necessary to use a portion of the soils as low plasticity fill. More suitable lean clay loess soils are present with depth but would require significant excavations to access and also can be expected to require drying to reach an acceptable moisture content for compaction. Therefore, off-site borrow materials would likely be the most plausible option to source suitable fill for grading. Any off-site potential borrow materials should be evaluated by TEAM Services prior to their use as engineered compacted and tested fill.

The following Table A lists recommended minimum compaction requirements for cohesive and cohesionless fill materials for specific applications. For cohesive soils, moisture contents within a range of 0 to +4 percent of the material's optimum moisture content (as determined by Standard Proctor ASTM D 698) are necessary to achieve the desired fill qualities for general grading and utility backfill. Sometimes, cohesive subgrade soils have difficulty passing proofroll or supporting construction traffic if significantly wet of optimum. For the upper foot of subgrade soils, it can be permissible to place low-plasticity cohesive soils up to 2 percent dry of optimum moisture content. Granular materials with sufficient fines content to be moisture-sensitive should be placed within 3

percent of the material's optimum moisture content. Clean granular materials are not moisture sensitive.

The on-site soils can be excavated utilizing conventional excavation equipment. Granular soils can generally be suitably compacted with vibratory compaction equipment. Proper compaction of cohesive soils can be achieved with sheepsfoot or pneumatic type compactors within the above moisture content ranges. The soils should be placed in a maximum loose thickness of 12 inches and at a thickness compatible with the equipment being utilized. Where manually operated compaction equipment is used, a maximum lift thickness of 4 inches is typical. Sufficient density tests should be performed on each lift of engineered compacted fill placed to verify that adequate compaction is achieved.

TABLE A
RECOMMENDED DEGREE OF COMPACTION GUIDELINES

Construction Application		Standard Proctor (ASTM D698) Cohesive Soil	Standard Proctor (ASTM D698) Cohesionless Soil [2]	Relative Density (ASTM D4253 & D4254) Cohesionless Soil [1,2]
Class 1	Subgrade preparation for foundations, slabs, pavement, and other critical backfill areas	95%	98%	70%
Class 2	Backfill adjacent to structures not supporting other structures or pavements. Minor subsidence possible.	90%	93%	45%
Class 3	Backfill in non-critical areas. Moderate subsidence possible.	85%	88%	20%

1. Use Relative Density technique (ASTM D4253 & D4254) where Standard Proctor technique (ASTM D698) does not result in a definable maximum dry density and optimum moisture content.
2. Clean gravel should be inspected visually during compaction by a qualified engineering technician to confirm adequate compactive effort and appropriate lift thicknesses in lieu of density testing.

Upon completion of the filling operation, care should be taken to maintain the subgrade moisture content prior to construction of foundations, slabs, or pavement. If the subgrade should become desiccated, frozen or otherwise disturbed, the affected material should be removed or these materials should be scarified, moistened, recompacted and retested. As a general guideline, fills which dry to a moisture content less than 2/3 of their optimum moisture content as determined by the Standard Proctor Test (ASTM D 698) in their upper 2 inches are candidates for reconditioning as described above.

If water seepage, water accumulation, or easily disturbable soil is observed at the bottoms of excavations, it will likely be beneficial to place a lift of at least 6 inches of clean, crushed concrete or limestone gravel to provide a firm working surface for constructing foundations or placing additional lifts of backfill. The clean gravel can be well compacted in the presence of water, will drive through and reinforced shallow (1 or 2 inches) cohesive soils which have become softened by water exposure or disturbance, and can accumulate water seepage to flow to a peripheral sump pit to be pumped out of the excavation area. If the granular working surface becomes completely embedded in the existing soils, a geotextile may need to be employed as separation. Further recommendations regarding water seepage can be found in the **Construction Dewatering** section of this report.

Shallow Foundation Design

The foundations for the new structure may bear in the existing fill, loess, or newly placed fill. In our opinion, these soils which do not appear to be unsuitably soft, poorly compacted (see note below), or otherwise unsuitable as determined during construction inspection by TEAM Services should provide adequate support for shallow foundations. Foundations may be designed for a maximum net allowable soil bearing pressure of 1,500 pounds per square foot.

It should be noted that a layer of poorly compacted fill soil was encountered in Boring 1 which requires removal beneath structures as discussed in the **Existing Fill Considerations** section of this report. Also, soft loess soils were encountered at the site which could require some mitigation if located in close proximity to a foundation's bearing elevation. However, no soft loess soils were encountered near anticipated foundation bearing elevations in any of the borings. The need for overexcavation and replacement would be determined during construction-stage inspections, although some delineation and removal could be performed early with exploratory test pits.

The net bearing pressure is the pressure in excess of the minimum adjacent overburden pressure at the foundation level. These bearing capacities may be increased by 33% for the total foundation load, which considers transient forces such as wind. We estimate maximum settlements, due to the assumed structural loads, will be less than 1 inch and differential settlement may be on the order of 2/3 of the total settlement when bearing on suitable, approved soils.

Continuous foundations should be adequately reinforced to limit deflections caused by non-uniform soil support characteristics. All perimeter foundations and foundations in unheated areas should

extend at least 42 inches below the lowest adjacent finished grade for frost protection and reduce movements associated with changes in soil moisture content. Interior footings located in permanently frost-free environments should have at least 18 inches of protective embedment below lowest adjacent finished grade. We recommend that isolated spread footings should have a minimum width of 24 inches, continuous formed footings a minimum width of 16 inches and trench footings a minimum width of 12 inches. It should be noted that trenches may not be stable if extended through sand or gravel.

Where addition foundations are constructed adjacent to the existing structure's foundations, the proposed foundation bearing elevation should be the same as the existing structure's foundation bearing elevation. If unsuitable soils are present at this depth, then TEAM Services should be retained to develop recommendations to provide adequate foundation support without undermining the existing foundations. More discussion on safe excavation geometry is presented in the following report section. Architectural and structural connections should be designed to accommodate the potential differential settlement that may occur between the addition and the existing structure. Where new foundations are placed next to existing foundations, the differential settlement between the two would approach the total settlement expected for the new foundations.

Overexcavation Undermining Considerations

The sides of excavations can gradually or suddenly slough depending on the sidewall slope, soil type, groundwater influence, consistency of the soils, loads supported near the sides of the excavation, and other factors. To avoid undermining the soils supporting nearby structures, all excavations should ideally remain in the safe zone for excavation, illustrated in Figure 1. If excavations outside of the safe zone are desired and the owner does not wish to relocate the structure requiring overexcavation then there are options available to allow the excavation to continue. Underpinning the existing at-risk structure's foundations and slabs with helical piers or micropiles could be considered to completely support the structural elements in case of a sidewall failure. Another option would be to shore the sides of the excavation to allow a vertical cut, such as with a soldier or sheet pile style wall (which has been properly designed by a licensed structural engineer in consultation with TEAM Services). Generally, excavations extending beneath an existing structure are not feasible.

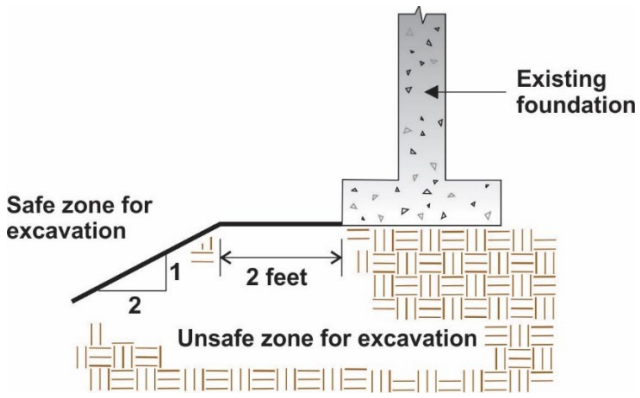


Figure 1.

Shallow Foundation Construction

We recommend that the bases of all foundation excavations be observed and tested by the geotechnical engineer prior to placement of concrete. During this process, if soft, organic, or otherwise unsuitable materials are encountered at foundation elevations, we recommend that the foundations extend through the unsuitable soils and bear on undisturbed, suitable soils below or an overexcavation and replacement procedure be performed. The overexcavation and backfill procedure would include removal of these unsuitable materials and replacement with suitable engineered compacted fill soils prepared in accordance with the recommendations in the **Fill Placement** section of this report. The following Figure 2 shows a typical cross-sectional view of this overexcavation and backfill procedure.

In general, the overexcavation is widened 2/3 of a foot laterally on each side of the foundation per each foot of excavation that is below the foundation bearing elevation. The depth of overexcavation (shown as "D" in Figure 2) should be determined in consultation with the geotechnical engineer. Backfill materials should be suitable cohesive or granular soil, prepared and compacted in accordance with the recommendations in the **Fill Placement** section of this report. Another option would be to remove the unsuitable soils down to suitable soils and replace the excavated area with lean concrete (minimum 50 psi compressive strength), in which case widening of the excavation is typically not required. An exception would be where overexcavation depths reach soils which are not suitable for direct support in which case widening of the overexcavation may still be necessary for concrete or lean concrete backfill in order to distribute the foundation load over a broader area. The geotechnical engineer can provide further guidance concerning suitable overexcavation geometry during construction inspections.

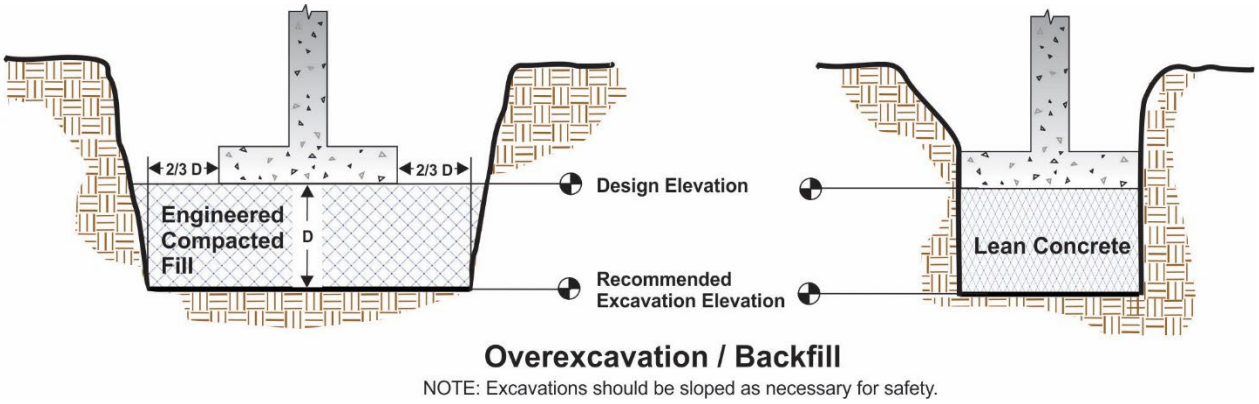


Figure 2.

Footing excavations should be kept free of water accumulation to prevent softening of subgrade soils and conducted in a manner which avoids disturbance of soils beneath existing foundations. Concrete should be placed as soon as possible after excavating to minimize bearing soil disturbance. Should the soils at bearing level become excessively dry, saturated, or otherwise disturbed; the affected soil should be removed prior to placing concrete.

Floor Slabs

Interior floor slabs can be adequately supported on a subgrade prepared in accordance with the **Existing Fill Considerations**, **Site Preparation**, and **Fill Placement** sections of this report. As previously discussed in this report, a layer of poorly compacted fill soil was encountered in Boring 1 which requires removal beneath structures (including below slabs) as discussed in the **Existing Fill Considerations** section of this report

During construction, slab subgrade areas may have been disturbed by construction equipment, etc. Therefore, it is recommended that the subgrade areas be proofrolled or probed and tested where proofrolling cannot be conducted to delineate zones of soft soils present near the surface which may require additional removal or compaction prior to construction of the slab. If the exposed subgrade has been disturbed since the original subgrade preparation, the subgrade should be scarified to the maximum depth of unsuitable materials, moisture conditioned (if needed), and recompacted to meet or exceed the Class 1 Construction Application requirement given in Table A in the **Fill Placement** section. If the depth of unsuitable materials exceeds 9 inches, then the upper soils should be removed to allow treatment of soils in appropriate lift thicknesses.

To avoid localized slab failures, it is important that interior backfill around foundations and in plumbing trenches be properly compacted. Therefore, all fill materials placed beneath the proposed slabs are to meet or exceed the Class 1 Construction Application requirement given in Table A.

In order to allow successful use of a variety of interior floor systems, measures to control vapor transmission through the interior floor slab are recommended where moisture sensitive floor coverings are a possibility. This would include use of a vapor barrier/retarder with a minimum thickness of 10 mils placed between the slab and an underlying capillary break material. The vapor barrier/retarder should be strong enough to resist puncturing by the capillary break materials.

We recommend that the capillary break consist of clean manufactured sand or crushed limestone (drainable material) beneath interior floor slabs. The capillary break should be at least 4 inches thick and contain less than 6 percent material finer than the U.S. No. 200 sieve.

Slabs in areas not subject to frost action placed above subgrade soils which pass inspections as recommended in this report may be designed with a modulus of subgrade reaction, k, of 150 pci when subgrade soils, backfill lifts and capillary breaks are constructed in accordance with the recommendations of this report. Where additional granular materials are placed, an improved modulus of subgrade reaction would result. TEAM Services can be retained to specify a design modulus of subgrade reaction for a specific application if desired.

We recommend that continuous wire mesh reinforcement or a regular rebar schedule be provided for the interior floor slab and that crack control joints be sawn with a regular spacing not greater than about 10 feet. Isolation joints should be provided between the floor slabs and perimeter or interior foundations so that they can move independently without damage. These measures are taken with the intent of allowing the floor slab to deflect somewhat without experiencing large differential movements across slab joints and to channel the cracking of the floor slabs to the crack control joints so that they are not perceived as building distress. Otherwise, if the slab is tied to the foundations, then the structural engineer should provide adequate reinforcement so that there isn't slab or foundation distress resulting from the restrained slab.

Parking and Drives Subgrade Preparation

After stripping the upper soils, we expect the subgrade soils which will be encountered to support the parking and drive sections will consist of existing fill or topsoil. In order to provide satisfactory

pavement or granular surfacing performance, it is important that the subgrade support be relatively uniform with no abrupt changes in the subgrade support. Therefore, we recommend that the prepared subgrade depth be at least 9 inches deep after surface stripping and fine grading or trimming and extend 2 feet beyond the edges of the parking and drives.

In cut areas, it is recommended that the subgrade area be cut to design subgrade level or stripping depth (whichever is deeper) and that the exposed subgrade be scarified to a minimum depth of 9 inches, moisture conditioned (if needed), and compacted. In fill areas, the subgrade after stripping should be proofrolled to delineate zones of soft or loose soils present near the surface which may require additional removal or compaction, prior to fill placement. We recommend that reworked existing soils and newly placed engineered compacted cohesive soils be placed and compacted in accordance with the **Fill Placement** section of this report. The finished subgrade elevation should be made to pass a proofroll inspection. Suitable engineered compacted cohesive subgrade would provide a design support capability equivalent to a CBR value of 2 or a modulus of subgrade reaction value of 60 pounds per cubic inch.

It should be noted that initial subgrade preparation for some soil types may not be suitable under repeated heavy construction vehicle loads and may require stabilization to greater depths or stabilization with crushed rock with or without geogrid. The use of fly ash, cement or lime treatment could also be considered as well. The subgrade preparation should be completed shortly before paving operations commence and is to be maintained in suitable condition until paved. Damage caused by construction traffic or deterioration due to adverse weather are to be repaired prior to paving or surfacing placement. Subgrade compaction, moisture content and depth should be verified by a TEAM Services representative.

Where construction traffic is required on the proposed subgrade, the subgrade should be proofrolled immediately prior to pavement or surfacing placement with a fully loaded, tandem axle dump truck. Areas that yield should be removed and replaced with engineered compacted and tested fill.

Surface drainage a is important to long-term subgrade performance. Curbs should be backfilled as soon as possible, once adequate pavement strength is achieved. The adjacent backfill should be compacted and sloped to prevent water from ponding and infiltrating into the subgrade. Water allowed to pond adjacent to the pavement or gravel surfacing could saturate the subgrade and contribute to premature deterioration.

Temporary Excavation Support

All excavations should comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P, "Excavations and Trenches" and other applicable codes. This document states that excavation safety is the responsibility of the contractor. Reference to this OSHA requirement should be included in the job specifications.

Construction Dewatering

During construction activities, care should be taken to maintain positive drainage at the site to ensure that drainage is directed away from excavations. Based on the groundwater readings from the site, groundwater seepage seems unlikely to be encountered during construction. Seepage would be more likely if there has been recent precipitation. If seepage is encountered then we recommend that construction groundwater control be established prior to excavating the final foot of soils. Groundwater seepage in cohesive soils can be provided by digging a system of trenches leading to a gravity outfall or temporary construction sumps to be pumped outside the perimeters of the excavations. Water bearing sand with ongoing seepage may be dewatered using a system of well points. Any ponded water should be removed as soon as possible.

Where seepage is observed, a granular working surface of at least 6 inches of clean, crushed concrete or limestone gravel may be useful to provide a firm working surface for constructing foundations or placing additional lifts of backfill, as previously mentioned in the **Fill Placement** section of this report. The clean gravel can be well compacted in the presence of water, will drive through and reinforced shallow (1 or 2 inches) cohesive soils which have become softened by water exposure or disturbance, and can accumulate water seepage to flow to a peripheral sump pit to be pumped out of the excavation area. If the granular working surface becomes completely embedded in the cohesive soils, a geotextile may need to be employed as separation.

If groundwater control is required but is lost during construction, disturbance of the upper few inches to few feet below grade is possible in the soils at the site. In these circumstances, it will be necessary to reestablish groundwater control and remove the disturbed soils. TEAM Services should be consulted regarding the extent of remedial action which is necessary.

Site Drainage

Positive site drainage should be maintained to direct runoff away from the perimeters of the structures, slabs, drives, and parking. Down spouts, gutters, and roof drains should discharge away from building perimeters. Site grading should direct surface water away from excavations, completed foundations, and critical subgrade soils during construction and after site development is completed.

QUALIFICATION OF REPORT

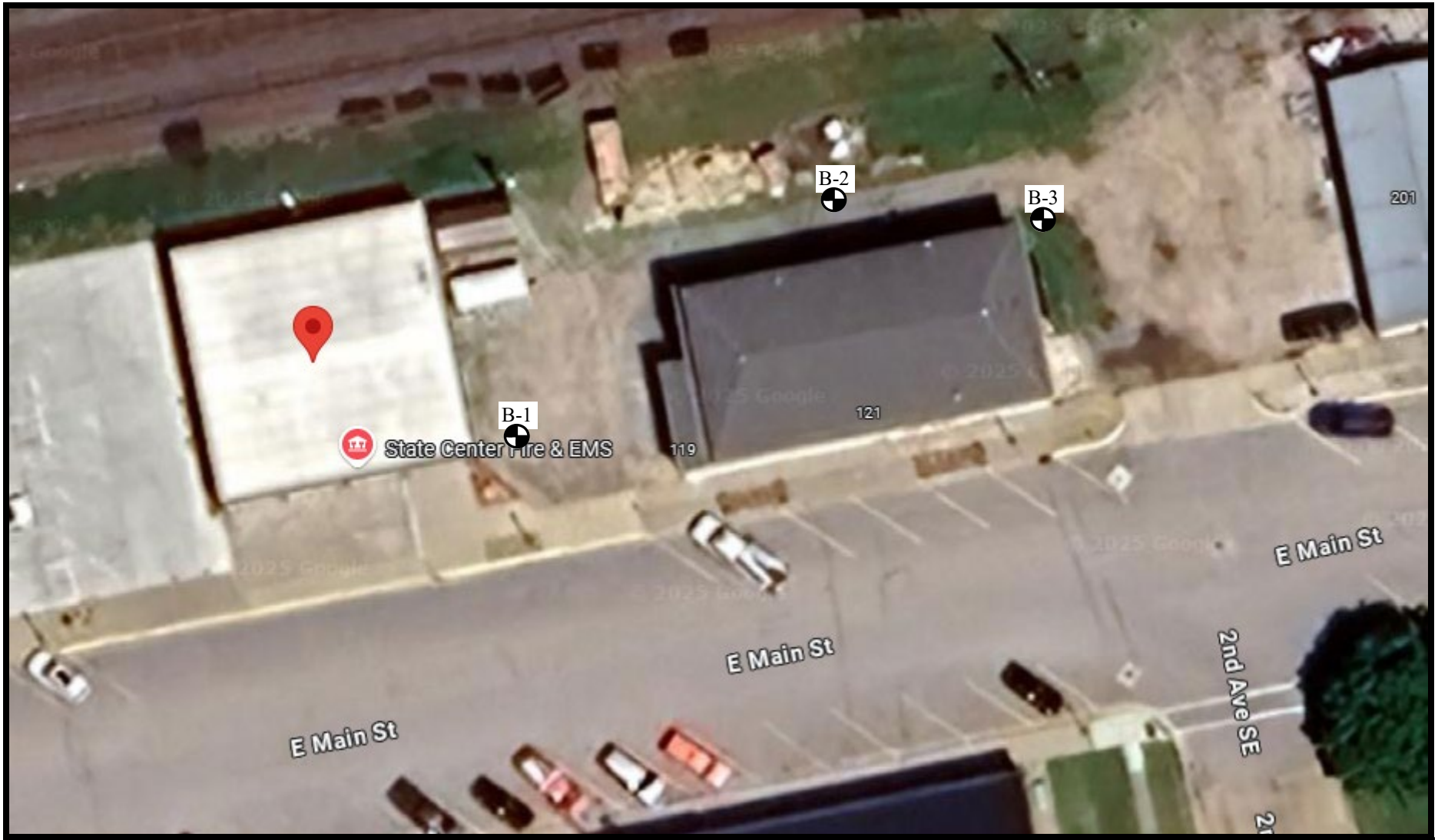
Our evaluation of support conditions has been based on our understanding of the site and project information and the data obtained in our exploration. The general subsurface conditions utilized in our evaluation have been based on interpolation of subsurface data between the borings. In evaluating the boring data, we have examined previous correlations between soil properties and pressures observed in soil conditions similar to those at your site. The discovery of any site or subsurface conditions during construction which deviate from the data outlined in this exploration should be reported to us for our evaluation. The assessment of site environmental conditions or the presence of pollutants in the soil, rock, and groundwater of the site was beyond the scope of this exploration.

Support on existing fill is discussed in this report. Existing fills are potentially much more inconsistent than natural soil deposits. Support upon existing fills carries with it a degree of risk that unsuitable materials may be buried within the fill and not be detected in the inspection and testing program recommended herein. Unsuitable materials in the fill may experience settlement and cause distress to elements supported on the fill. Elimination of this risk would require removal of the fill. This is costly, and we believe the risks at this site are low enough that the owner could reasonably accept this risk and keep the resultant savings of not removing all existing fill soils where thorough construction-stage testing by TEAM Services indicates suitability.

It is recommended that the geotechnical engineer be retained to review the plans and specifications so that comments can be provided regarding the interpretation and implementation of the geotechnical recommendations in the design and specifications. It is further recommended that the geotechnical engineer be retained for testing and observation during the foundation construction phase to help determine that the design requirements are fulfilled.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No other warranty is provided. In the event that any changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report modified or verified in writing by the geotechnical engineer.

Background Imagery Provided by Google Earth 2025



TEAM *Services*, Inc. **717 SE 6th Street** **Des Moines, IA 50309**	**Fire Station Addition** State Center, Iowa BORING PLAN	Project No. 1-5630 February 19, 2025

BORING LOG No. 1

PROJECT Fire Station Addition

SITE State Center, IA

Approx. Surface Elevation (ft): 99.3
Site Datum: FFE Existing Fire Station (100.0')
Drilling Method: HS

DESCRIPTION	USCS SYMBOL	DEPTH (ft.)	SAMPLES: NUMBER	TYPE	RECOVERY	SPT - N (BLOWS / FT.)	TESTS: MOISTURE, %	DRY DENSITY (PCF)	UNCONFINED STRENGTH (PSF)	OTHER
Fill - Silty GRAVEL, with sand, gray	GM	0	1	AS			7.9			
1.0 / 98.3										
Fill - Sandy lean CLAY, with gravel, very dark gray	CL		2A	SS	10	Frozen	8.2			
2.0 / 97.3			2B	SS			32.4		1500*	
Fill - Lean to fat CLAY, with varying sand contents, very dark gray	CL-CH	3								
3.0 / 96.3			3	SS	5	10	26.8		6000*	Atterberg Limits LL=50, PI=26
Fill - Fat CLAY, very dark gray, gray, yellowish brown, and dark grayish brown	CH									
6.0 / 93.3		6	4	SS	13	4	21.8		1500*	
Loess - Lean CLAY, gray and yellowish brown, medium stiff	CL									
-- becomes soft after 8.5'		9	5	ST	21		30.5	92	1000*	Torvane= 500 psf
-- becomes medium stiff after 12'		12								
			6	SS	18	4	27		1500*	
15.0 / 84.3										
Bottom of Boring										

Notes:

* Calibrated hand penetrometer

Hammer Type: Automatic

Water Level:

- None Ft. While Drilling
- None Ft. After Drilling
- Ft.

TEAM Services
Geotechnical and Construction Material Consultants

Boring Started: 2/3/2025
Boring Completed: 2/3/2025
Rig: Truck **Foreman:** JH
Approved: CH **Job #:** 1-5630

1-5630.geo TSBORE16A.fdt 5/16/2016

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

BORING LOG No. 2

PROJECT Fire Station Addition

SITE State Center, IA

Approx. Surface Elevation (ft): 98.3
Site Datum: FFE Existing Fire Station (100.0')
Drilling Method: HS

GRAPHIC LOG	DESCRIPTION	USCS SYMBOL	DEPTH (ft.)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY	SAMPLES SPT - N (BLOWS / FT.)	TESTS MOISTURE, %	TESTS DRY DENSITY (PCF)	TESTS UNCONFINED STRENGTH (PSF)	TESTS OTHER
	Fill - Silty SAND, with gravel, very dark gray	SM	0	1	AS			25			
	1.0 97.3										
	Buried Topsoil - Lean to fat CLAY, dark gray, stiff	CL-CH		2	SS	11	Frozen	27.7		3500*	Atterberg Limits LL=45, PI=21
			3								
				3	SS	4	7			2500*	
	5.0 93.3										
	Loess - Lean CLAY, gray and yellowish brown, medium stiff	CL									
			6	4	ST	17		26.8	97	1000*	Torvane= 600 psf
			9	5	SS	14	5	31.1		2500*	
			12								
				6	SS	16	4	30.5		1500*	
			15								
	-- color change to gray after 17'										
			18								
				7	SS	18	7	27.4		1500*	
	20.0 78.3										
	Bottom of Boring										

Notes:

* Calibrated hand penetrometer

Hammer Type: Automatic

Water Level:

18	Ft.	While Drilling
16	Ft.	After Drilling
17	Ft.	.5 Hr

TEAM Services
Geotechnical and Construction Material Consultants

Boring Started: 2/3/2025
Boring Completed: 2/3/2025
Rig: Truck **Foreman:** JH
Approved: CH **Job #:** 1-5630

1-5630.geo TSBORE16A.tit 5/16/2016

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

BORING LOG No. 3

PROJECT Fire Station Addition

SITE State Center, IA

Approx. Surface Elevation (ft): 98.1
Site Datum: FFE Existing Fire Station (100.0')
Drilling Method: HS

GRAPHIC LOG	DESCRIPTION	USCS SYMBOL	DEPTH (ft.)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY	SAMPLES SPT - N (BLOWS / FT.)	TESTS MOISTURE, %	TESTS DRY DENSITY (PCF)	TESTS UNCONFINED STRENGTH (PSF)	TESTS OTHER
	0.5 Fill - Sandy lean CLAY, with gravel, trace brick and glass, very dark gray 97.6	CL	0	1	AS			24.1			
	Fill - Sandy lean CLAY, very dark gray and dark yellowish brown	CL									
	2.0 96.1			2	SS	10	Frozen	32.5		2500*	
	3.0 Buried Topsoil - Lean to fat CLAY, very dark gray, stiff 95.1	CL-CH	3								
	Loess - Lean CLAY, grayish brown, stiff	CL		3	ST	10		25		2500*	
	5.5 92.6										
	Loess - Lean CLAY, gray and yellowish brown, soft	CL	6	4	SS	5	2	33		500*	
	7.0 91.1										
	Bottom of Boring										

Notes:

* Calibrated hand penetrometer

Hammer Type: Automatic

Water Level:

None	Ft.	While Drilling	
None	Ft.	After Drilling	
	Ft.		

TEAM Services
Geotechnical and Construction Material Consultants

Boring Started: 2/3/2025
Boring Completed: 2/3/2025
Rig: Truck **Foreman:** JH
Approved: CH **Job #:** 1-5630

1-5630.geo TSBORE16A.tdt 5/16/2016

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

UNIFIED SOIL CLASSIFICATION SYSTEM

TEAM Services Geotech Report

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests[A]					Soil Classification	
					Group Symbol	Group Name[B]
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines[C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$[E]		GW	Well-graded gravel[F]
			$Cu < 4$ and/or $1 > Cc > 3$[E]		GP	Poorly graded gravel[F]
		Gravels with Fines More than 12% fines[C]	Fines classify as ML or MH		GM	Silty gravel[F, G, H]
			Fines classify as CL or MH		GC	Clayey gravel[F, G, H]
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines[E]	$Cu \leq 6$ and $1 \leq Cc \leq 3$[E]		SW	Well-graded sand[I]
			$Cu < 6$ and/or $1 > Cc > 3$[E]		SP	Poorly graded sand[I]
		Sands with Fines More than 12% fines[D]	Fines classify as ML or MH		SM	Silty sand[G, H, I]
			Fines classify as CL or CH		SC	Clayey sand[G, H, I]
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays Liquid limit less than 50	Inorganic:	PI > 7 and plots on or above "A" line[J]		CL	Lean clay[K, L, M]
			PI < 4 or plots below "A" line[J]		ML	Silt[K, L, M]
		Organic:	Liquid limit – oven dried	< 0.75	OL	Organic clay[K, L, M, N]
			Liquid limit – not dried			Organic silt[K, L, M, O]
	Silts and Clays Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line		CH	Fat clay[K, L, M]
			PI plots below "A" line		MH	Elastic silt[K, L, M]
		Organic:	Liquid limit – oven dried	< 0.75	OH	Organic clay[K, L, M, P]
			Liquid limit – not dried			Organic silt[K, L, M, Q]
Highly Organic Soils	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-in. (75-mm) sieve.
[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C] Gravels with 5 to 12% fines require dual symbols:
GW-GM well-graded gravel with silt
GW-GC well-graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay

[D] Sands with 5 to 12% fines require dual symbols:
SW-SM well-graded sand with silt
SW-SC well-graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay

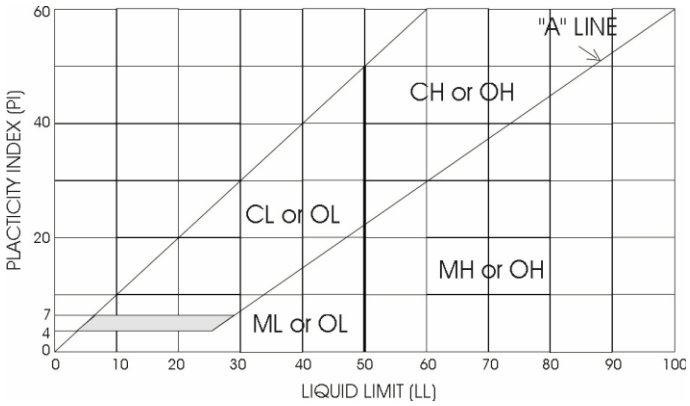
[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains $\geq$ 15% sand, add "with sand" to group name.
[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[H] If fines are organic, add "with organic fines" to group name.
[I] If soil contains > 15% gravel, add "with gravel" to group name.
[J] If Atterberg limits plots in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel", whichever is predominant.
[L] If soil contains $\geq$ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains $\geq$ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
[N] PI $\geq$ 4 and plots on or above "A" line.
[O] PI < 4 or plots below "A" line.
[P] PI plots on or above "A" line.
[Q] PI plots below "A" line.

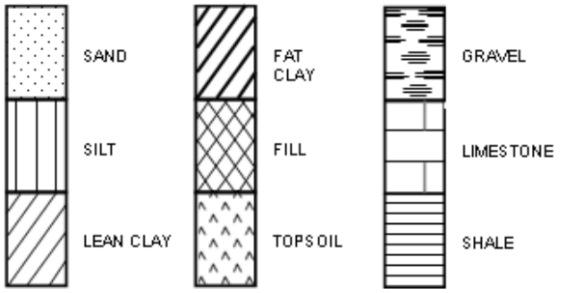
For classification of fine-grained soils and fine grained fraction of coarse-grained soils.

Equation of "A" Line:
Horizontal at PI = 4 to LL + 25.5.
then PI = 0.73 (LL-20)



GENERAL NOTES

TEAM Services
Geotech Report

SOIL and ROCK TYPES	DRILLING & SAMPLING SYMBOLS
	**SS** Split Spoon - 1 1/2" I.D., 2" O.D., unless otherwise noted **ST** Thin-Walled Tube - 3" O.D., unless otherwise noted **PA** Power Auger **HA** Hand Auger **DB** Diamond Bit - 4", N, B **AS** Auger Sample **HS** Hollow Stem Auger **WS** Wash Sample **RB** Rock Bit **BS** Bulk Sample **DC** Dutch Cone **WB** Wash Bore **AR** Air Rotary

STRENGTH TERMS

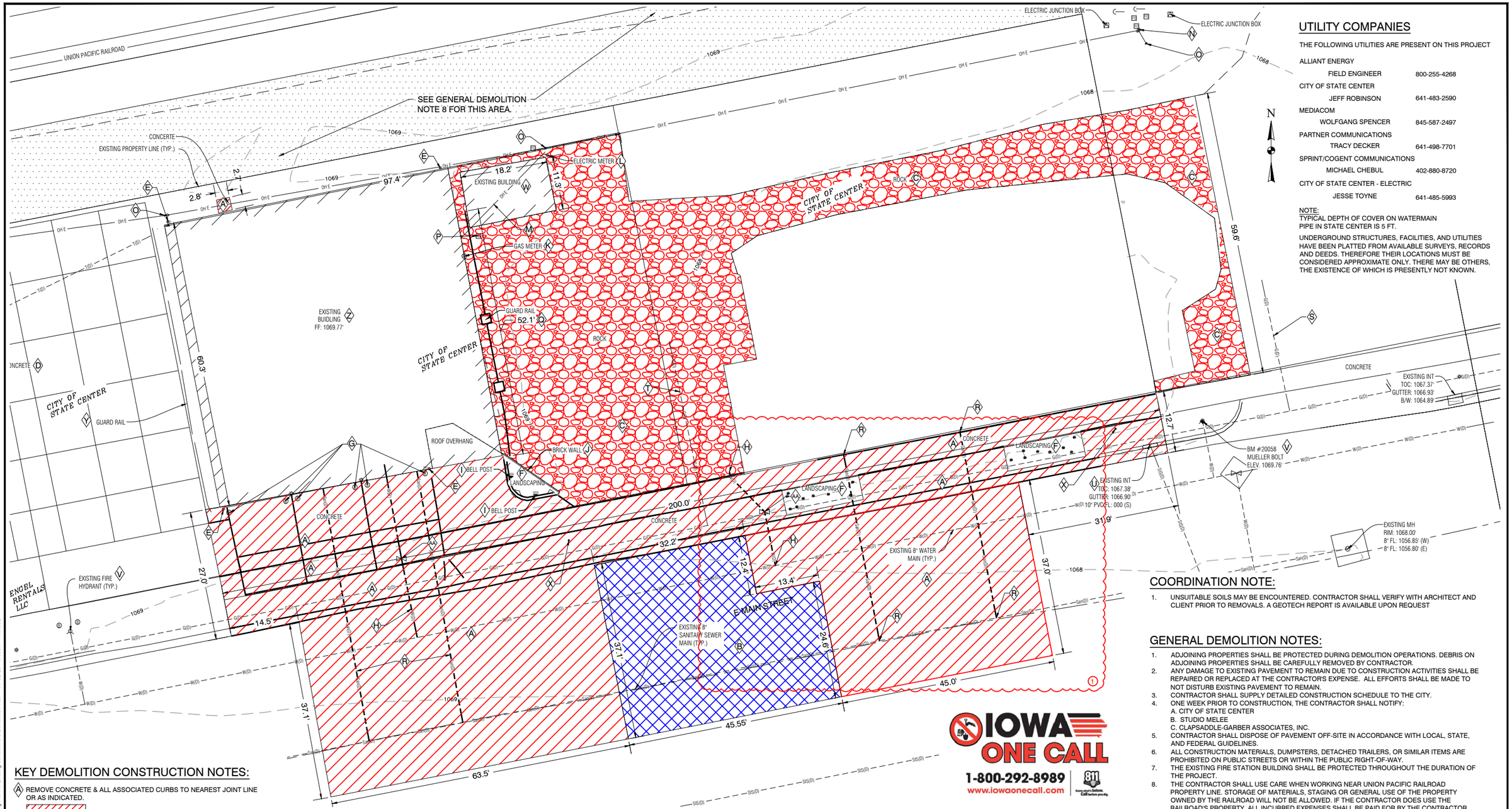
CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing No. 200 sieve)			RELATIVE DENSITY OF COARSE-GRAINED SOILS (50% or more retained No. 200 sieve)	
Consistency	**Unconfined Compressive Strength, Qu, psf**	**N-Blows/ft* (Approx. Correlation)**	**Relative Density**	**N-Blows/ft. ***
Very Soft	< 500	0 - 2	Very Loose	0 - 4
Soft	500 - 1,000	3 - 4	Loose	5 - 10
Medium	1,001 - 2,000	5 - 8	Medium Dense	10 - 29
Stiff	2,001 - 4,000	9 - 15	Dense	30 - 49
Very Stiff	4,001 - 8,000	16 - 30	Very Dense	50 - 80
Hard	8,001 - 16,000	31 - 50	Extremely Dense	80 +
Very Hard	> -16,000	50 +		

* Standard "N" Penetration Blows per foot of a 140 pound hammer falling 30 inches on a 2-inch OD split spoon, except where noted.

RELATIVE PROPORTIONS OF SAND AND GRAVEL		RELATIVE PROPORTIONS OF FINES		GRAIN SIZE TERMINOLOGY	
Descriptive Term(s) (of components also present in sample)	**Percent of Dry Weight**	**Descriptive Term(s) (of components also present in sample)**	**Percent of Dry Weight**	**Major Component of Sample**	**Size Range**
Trace	< 15	Trace	< 5	Boulders	Over 12 in. (300 mm)
With	15 - 29	With	5 - 12	Cobbles	12 in. to 3 in. (300 mm to 4.75 mm)
Modifier	> 30	Modifier	> 12	Gravel	3 in. to #4 sieve (75 mm to 4.75 mm)
WATER LEVELS:	WD = While Drilling AD = After Drilling			Sand	#4 to #200 sieve (4.75 mm to 0.075 mm)
▽	Depth groundwater first encountered during drilling			Silt or Clay	Passing #200 sieve (0.075 mm)
▼	Groundwater level after 24 hours (unless otherwise noted, i.e. "AD" -- after drilling)				

TERMS DESCRIBING SOIL STRUCTURE

Parting:	paper thin in size	Fissured:	containing shrinkage cracks, frequently filled with fine sand or silt, usually more or less vertical.
Seam:	1/8" to 3" in thickness		
Layer:	greater than 3" in thickness	Interbedded:	composed of alternate layers of different soil types.
Ferrous:	containing appreciable quantities of iron	Laminated:	composed of thin layers of varying color and texture.
Well-Graded:	having wide range in grain size and substantial amounts of all intermediate sizes.	Slickensided:	having inclined planes of weakness that are slick and glossy in appearance.
Poorly-Graded:	predominately one grain size or having a range of sizes with some intermediate sizes missing.	NOTE:	Clays possessing slickensided or fissured structure may exhibit lower unconfined strength than indicated above. Consistency of such soil is interpreted using the unconfined strength along with pocket penetrometer results.



UTILITY COMPANIES

THE FOLLOWING UTILITIES ARE PRESENT ON THIS PROJECT

ALLIANT ENERGY	
FIELD ENGINEER	800-255-4268
CITY OF STATE CENTER	
JEFF ROBINSON	641-483-2590
MEDIACOM	
WOLFGANG SPENCER	845-587-2497
PARTNER COMMUNICATIONS	
TRACY DECKER	641-498-7701
SPRINT/COGENT COMMUNICATIONS	
MICHAEL CHEBUL	402-880-8720
CITY OF STATE CENTER - ELECTRIC	
JESSE TOYNE	641-485-5993

NOTE:
TYPICAL DEPTH OF COVER ON WATERMAIN PIPE IN STATE CENTER IS 5 FT.

UNDERGROUND STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN PLATTED FROM AVAILABLE SURVEYS, RECORDS AND DEEDS. THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.

COORDINATION NOTE:

1. UNSUITABLE SOILS MAY BE ENCOUNTERED. CONTRACTOR SHALL VERIFY WITH ARCHITECT AND CLIENT PRIOR TO REMOVALS. A GEOTECH REPORT IS AVAILABLE UPON REQUEST

GENERAL DEMOLITION NOTES:

1. ADJOINING PROPERTIES SHALL BE PROTECTED DURING DEMOLITION OPERATIONS. DEBRIS ON ADJOINING PROPERTIES SHALL BE CAREFULLY REMOVED BY CONTRACTOR.
2. ANY DAMAGE TO EXISTING PAVEMENT TO REMAIN DUE TO CONSTRUCTION ACTIVITIES SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. ALL EFFORTS SHALL BE MADE TO NOT DISTURB EXISTING PAVEMENT TO REMAIN.
3. CONTRACTOR SHALL SUPPLY DETAILED CONSTRUCTION SCHEDULE TO THE CITY.
4. ONE WEEK PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY:
   A. CITY OF STATE CENTER
   B. STUDIO MELEE
   C. CLAPSADDLE-GARBER ASSOCIATES, INC.
5. CONTRACTOR SHALL DISPOSE OF PAVEMENT OFF-SITE IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL GUIDELINES.
6. ALL CONSTRUCTION MATERIALS, DUMPSTERS, DETACHED TRAILERS, OR SIMILAR ITEMS ARE PROHIBITED ON PUBLIC STREETS OR WITHIN THE PUBLIC RIGHT-OF-WAY.
7. THE EXISTING FIRE STATION BUILDING SHALL BE PROTECTED THROUGHOUT THE DURATION OF THE PROJECT.
8. THE CONTRACTOR SHALL USE CARE WHEN WORKING NEAR UNION PACIFIC RAILROAD PROPERTY LINE. STORAGE OF MATERIALS, STAGING OR GENERAL USE OF THE PROPERTY OWNED BY THE RAILROAD WILL NOT BE ALLOWED. IF THE CONTRACTOR DOES USE THE RAILROAD'S PROPERTY, ALL INCURRED EXPENSES SHALL BE PAID FOR BY THE CONTRACTOR.

KEY DEMOLITION CONSTRUCTION NOTES:

(A) REMOVE CONCRETE & ALL ASSOCIATED CURBS TO NEAREST JOINT LINE OR AS INDICATED.

(B) BID ADD ALTERNATE #1: REMOVE CONCRETE & ALL ASSOCIATED CURBS TO THE NEAREST JOINT LINE OR AS INDICATED

(C) REMOVE & SALVAGE EXISTING GRAVEL TO CITY

(D) EXISTING PAVEMENT TO REMAIN AND BE PROTECTED THOUGH THE DURATION OF THE PROJECT.

(1)

(E) REMOVE EXISTING DOWNSPOUT.

(F) COMPLETELY REMOVE EXISTING LANDSCAPING AND MULCH, DISPOSE OF OFFSITE. BACKFILL DEPRESSIONS WITH SUITABLE SOIL.

(G) REMOVE BOLLARDS & ASSOCIATED FOUNDATIONS. BACKFILL HOLES WITH SUITABLE SOIL. DISPOSE OF OFF-SITE.

(H) EXISTING WATER SERVICE TO BE REMOVED AND DISCONNECTED AT MAIN.

(I) REMOVE AND SALVAGE EXISTING BELL & POSTS TO THE OWNER.

(J) REMOVE BRICK RETAINING WALL

(K) RELOCATE EXISTING GAS METER FOR PROPOSED BUILDING EXPANSION, COORDINATE RELOCATION WITH RESPECTIVE UTILITY OWNER. SEE MECHANICAL PLAN.

(L) EXISTING ELECTRIC METER TO BE RELOCATED, COORDINATE RELOCATION WITH RESPECTIVE UTILITY OWNER. SEE ELECTRICAL PLAN.

(M) EXISTING POWER LINES TO BE REMOVED (BY OTHERS).

(N) EXISTING POWER POLES TO BE PROTECTED THROUGHOUT THE DURATION OF THE THE PROJECT.

(O) EXISTING POWER POLE TO BE REMOVED (BY OTHERS).

(P) REMOVE EXISTING AC UNIT AND ASSOCIATED PIPING. BACKFILL HOLES WITH SUITABLE SOIL. DISPOSE OF OFF-SITE. SEE MECHANICAL PLAN.

(Q) REMOVE AND SALVAGE EXISTING BARRICADE TO OWNER. BACKFILL HOLES WITH SUITABLE SOIL.

(R) EXISTING SANITARY SEWER SERVICE TO BE DISCONNECTED, REMOVED, AND CAPPED AT THE MAIN.

(S) EXISTING GAS SERVICE TO BE ABANDONED IN PLACE.

(T) EXISTING GAS SERVICE TO BE USED FOR PROPOSED EXPANSION, PROTECT THROUGHOUT THE DURATION OF THE PROJECT.

(U) REMOVE & REPLACE EXISTING STORM INTAKE TOP CASTING, CONTRACTOR SHALL PROTECT INTAKE BOX THROUGHOUT THE DURATION OF THE PROJECT.

(V) EXISTING FIRE HYDRANT TO BE PROTECTED THROUGH OUT THE DURATION OF CONSTRUCTION.

(W) EXISTING STORAGE SHED TO BE RELOCATED BY OTHERS PRIOR TO CONSTRUCTION.

(X) EXISTING LIGHT POLE TO BE REMOVED AND RELOCATED (BY OTHERS). CONTRACTOR SHALL VERIFY LOCATION WITH CITY.

(Y) EXISTING BARRICADE SHALL BE REMOVED AND REINSTALLED TO COMPLETE BUILDING IMPROVEMENTS. IF BUILDING IMPROVEMENTS CAN BE COMPLETED WITHOUT REMOVING BARRICADE, BARRICADE SHALL BE PROTECTED DURING CONSTRUCTION

(Z) EXISTING BUILDING TO REMAIN, CONTRACTOR SHALL PROTECT THE BUILDING THOUGH THE DURATION OF THE THE PROJECT. FOR MORE INFORMATION REFER TO ARCHITECTURAL PLAN.

(AA) EXISTING WATER SERVICE CURB STOP, TO BE REMOVED AND SALVAGED TO THE CITY.

(1)

EXISTING SERVICE NOTE:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING SANITARY AND WATER SERVICE THAT ONCE SERVED THE OPERA HOUSE. DEMOLITION OF THE OPERA HOUSE IS TO BE COMPLETED (BY OTHERS). THE EXACT LOCATION OF THE END OF THE SERVICE SHALL BE FIELD VERIFIED PRIOR TO BEGINNING DEMOLITION.

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

GRAPHIC SCALE
0 10' 20' 30'

NO.	REVISION	BY	DATE
1	ADDENDUM #1	KMN	

NO.	REVISION	BY	DATE

CGA
Clapsaddle-Garber Associates, Inc
16 East Main Street
Marshalltown, Iowa 50158
Ph 641-752-6701
www.cgaconsultants.com

DESIGNED: ---- DATE: ----
DRAWN: ---- DATE: ----
CHECKED: ---- DATE: ----
APPROVED: ---- DATE: ----

STATE CENTER FIRE STATION IMPROVEMENTS
109 E MAIN ST, STATE CENTER, IOWA

EXISTING CONDITIONS & DEMOLITION PLAN

PROJECT NO. 24-DS-0627
SHEET NO. C.110

J:\24-DS-0627\Hwrgt\S...Sheets\C.110 Existing Conditions & Demolition Plan.dwg - C.110 Existing Conditions & Demolition Plan - 01-02-26 - 9:03am - KMN352

STRUCTUREFY

SCFD – Addendum #1 Changes

- Sheet S001
  - No changes
- Sheet S101
  - Added notes to Foundation Plan to clarify trench drain slopes.
  - Added note to Foundation Plan to indicate footing penetrations
- Sheet S102
  - Revised note on Plan View to clarify pre-engineered wood building as a part of project

  Sheet S501
  - Revised notes in Details 7, 8, 9, 12, 14, and 15 to clarify pre-engineered wood building as a part of project
  - Revised Detail 10 to clarify trench drain slopes and reinforcement clear cover dimensions
  - Added Note to Detail 18 to give contractor option to use leveling sand between existing slab and new topping slab
- Sheet S502
  - Added Details 12 – 15 for footing penetrations

STRUCTUREFY ENGINEERING, INC
515.991.4176 | bjb@structurefy.com | www.structurefy.com
5550 Wild Rose Ln, Suite 400, West Des Moines, IA 50266

DESIGN CODES:

A. INTERNATIONAL BUILDING CODE (IBC) 2015 ADDITION & ADOPTED AMENDMENTS BY THE CITY OF STATE CENTER, IOWA
B. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE/SEI 7-16)
C. SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360-16)
D. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-14)
  1. HOT WEATHER CONCRETE: ACI 305
  2. COLD WEATHER CONCRETE: ACI 306
E. BUILDING CODE FOR MASONRY STRUCTURES (TMS 402-2016)
F. NORTH AMERICAN SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBER (AISI S100-16)
G. NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION (NDS 2016)
H. STEEL JOIST INSTITUTE STANDARD SPECIFICATION FOR OPEN WEB STEEL JOISTS, LONG-SPAN JOISTS, DEEP LONG-SPAN JOISTS, AND JOIST GIRDERS
I. MBMA METAL BUILDING SYSTEMS MANUAL 2018

DESIGN LOADS:

A. OCCUPANCY CATEGORY: "IV"
B. ROOF LIVE LOADS:
  1. GROUND SNOW Pg = 30 psf
  2. EXPOSURE FACTOR Ce = 1.0
  3. IMPORTANCE FACTOR I = 1.20
  4. THERMAL FACTOR Ct = 1.0
  5. MINIMUM ROOF SNOW LOAD Pf = 28.8 psf
  6. DRIFTING/SLIDING SNOW Pd = AS INDICATED ON DRAWINGS
C. FLOOR LIVE LOADS:
  1. SLABS ON GRADE 100 psf
D. PRE-ENGINEERED BUILDING LOADS:
  1. ALL LOCATIONS: 5 psf
    a. LIGHTING: 1 psf
    b. INSULATION: 1 psf
    c. SPRINKLER: 3 psf
E. WIND LOADS:
  1. ULTIMATE WIND SPEED (3 SEC GUST) 122 MPH
  2. IMPORTANCE FACTOR I = 1.0
  3. EXPOSURE CATEGORY C
  4. INTERNAL PRESSURE COEFFICIENT ± 0.18
  5. WALLS (**1.0W**)
    a. INTERIOR: 27 psf
    b. END: 29 psf
  6. ROOF (**1.0W**)
    a. INTERIOR: -33 psf
    b. EDGE: -44 psf
    c. CORNER: -44 psf
    d. NOTE: SUBTRACT 10 psf FOR NET UPLIFT LOADING, UNO
F. SEISMIC LOADS:
  1. SITE CLASS D
  2. DESIGN CATEGORY A
  3. RESISTING SYSTEM WOOD SHEAR WALLS
  4. RESPONSE MODIFICATION R = 6.5
  5. IMPORTANCE FACTOR I = 1.5
  6. SHORT PERIOD SS = 0.059 g
  7. 1-SECOND PERIOD S1 = 0.050 g
  8. SHORT PERIOD SDS = 0.063 g
  9. 1-SECOND PERIOD SD1 = 0.080 g
  10. RESPONSE COEFFICIENT CS = 0.015
  11. DESIGN BASE SHEAR 3.1 KIPS
  12. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
G. GEOTECHNICAL REPORT
  1. BY TEAM SERVICES
  2. REPORT NUMBER 1-5630
  3. DATE FEBRUARY 19, 2025
H. NET ALLOWABLE BEARING PRESSURES
  1. ISOLATED FOOTINGS 1500 PSF PER GEOTECH
  2. CONTINUOUS FOOTINGS 1500 PSF PER GEOTECH
I. FOUNDATION ITEMS
  1. FROST DEPTH BELOW GRADE 42”
  2. OVER-EXCAVATION REQUIRED YES, POORLY COMPACTED FILL EXISTS ON SITE AT BORING #1 OF GEOTECHNICAL REPORT, NEAR SW CORNER OF ADDITION, TO A DEPTH OF APPROXIMATELY 3'-0 BELOW EXISTING GRADE. SITE EXTENTS AND DEPTH TO BE FIELD VERIFIED DURING SPECIAL INSPECTIONS. CONTRACTOR TO OBTAIN OVER-EXCAVATION COST ON A PER-UNIT BASIS FOR BIDDING.
    a. FOOTINGS YES, POORLY COMPACTED FILL TO BE COMPLETELY REMOVED. SEE GEOTECHNICAL REPORT.
    b. SLAB YES, POORLY COMPACTED FILL TO BE COMPLETELY REMOVED. SEE GEOTECHNICAL REPORT.
    c. EXISTING SITE SOILS ARE NOT SUITABLE FOR FILL.
  3. DEEP FOUNDATIONS REQUIRED NO, ASSUMED
  4. LARGE FILL DEPTH (SETTLEMENT) NO, ASSUMED. NOTIFY EOR.

GENERAL:

A. THESE DRAWINGS REPRESENT THE COMPLETED PROJECT WHICH HAS BEEN DESIGNED FOR THE LOADS AND MATERIALS INDICATED ON THE DRAWINGS. THE STRUCTURAL ENGINEER HAS ONLY REVIEWED STABILITY OF THE STRUCTURE IN ITS COMPLETED FORM. DETERMINATION OF ALLOWABLE CONSTRUCTION LOADS AND DESIGN OF CONSTRUCTION FALSEWORK, FORMWORK, STAGING, BRACING, SHEETING AND SHORING, ETC. IS SOLELY THE CONTRACTOR'S RESPONSIBILITY.
B. STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR THE DESIGN OF SYSTEMS NOT SHOWN ON THE STRUCTURAL DOCUMENTS, INCLUDING BUT NOT LIMITED TO STEEL STAIRS, HANDRAILS, PRE-ENGINEERED WOOD BUILDING, CURTAINWALL/WINDOW WALL SYSTEMS, OR COLD-FORMED METAL FRAMING. SUCH SYSTEMS SHALL BE DESIGNED, FURNISHED, AND INSTALLED BY OTHERS. STRUCTURAL ENGINEER OF RECORD IS NOT RESPONSIBLE FOR CONNECTION OF THESE SYSTEMS TO THE STRUCTURE BUT THESE SYSTEM DESIGNERS SHALL CONFORM WITH THE DESIGN INTENT DEPICTED IN THE STRUCTURAL DOCUMENTS. REVIEW OF SHOP DRAWINGS FOR SUCH SYSTEMS BY THE STRUCTURAL ENGINEER OF RECORD SHALL BE FOR GENERAL CONFORMANCE WITH THE PROJECT PARAMETERS AS INDICATED ON THE DRAWINGS AND IN THE STRUCTURAL NOTES.
C. ALTERNATE PRODUCTS OF SIMILAR STRENGTH, NATURE AND FORM FOR SPECIFIED ITEMS MAY BE SUBMITTED WITH SUPPORTING TECHNICAL DOCUMENTATION, INCLUDING CALCULATIONS IF APPLICABLE, TO THE STRUCTURAL ENGINEER FOR REVIEW. ALTERNATES THAT DEVIATE SIGNIFICANTLY FROM THE DESIGN INTENT MAY BE REJECTED. ALTERNATES THAT REQUIRE SUBSTANTIAL REVIEW TIME WILL NOT BE REVIEWED UNLESS AUTHORIZED BY THE OWNER.
D. IF APPLICABLE, EXISTING BUILDING INFORMATION SHOWN IS AS INDICATED ON EXISTING BUILDING DRAWINGS OR FIELD MEASUREMENTS BY OTHERS. FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF AY DISCREPANCIES PRIOR TO STARTING WORK.
E. DO NOT CUT/MODIFY ANY BEAMS, COLUMNS, JOISTS, AND SLABS WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.
F. CONTRACTOR HAS SOLE RESPONSIBILITY FOR MEANS AND METHODS, SAFETY, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION. CONTRACTOR HAS SOLE RESPONSIBILITY TO COMPLY WITH ALL OSHA REGULATIONS
G. DO NOT SCALE DRAWINGS OR MEASURE OBJECTS IN ELECTRONIC FILES TO DETERMINE DIMENSIONS. NOTIFY ARCHITECT/STRUCTURAL ENGINEER OF ANY DISCREPANCIES OR REQUIREMENTS FOR ADDITIONAL DIMENSIONS NOT SHOWN.
H. WHERE CONFLICTS EXIST BETWEEN STRUCTURAL DOCUMENTS THE STRICTEST REQUIREMENTS SHALL GOVERN.
I. CONTRACTOR SHALL NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF DISCREPENCIES WITHIN STRUCTURAL DOCUMENTS AND BETWEEN DISCIPLINES OF THE DESIGN TEAM.
J. STRUCTUREFy ENGINEERING DOES NOT PROVIDE ANY WARRANTY, EXPRESSED OR IMPLIED, FOR CAD OR BIM FILES PROVIDED TO THE CONTRACTOR NOR ANY GUARANTEE OF THE ACCURACY OF INFORMATION FURNISHED VIA ELECTRONIC FORM. IN ALL CASES, THE HARD COPY OF THE STRUCTURAL CONTRACT DOCUMENTS SUPERSEDES ANY AND ALL CAD OR BIM FILES.

SUBMITTALS:

A. SUBMITTAL OF SHOP DRAWINGS, ERECTION LAYOUTS, DETAILS, FITMENT, PLACEMENT AND PRODUCT DATA ARE REQUIRED FOR ITEMS INDICATED BELOW. SUBMITTALS MAY BE PROVIDED ELECTRONICALLY OR HARD COPY.
B. SUBMITTALS SHALL BE MADE IN TIME TO PROVIDE A MINIMUM OF TWO WEEKS FOR REVIEW PRIOR TO THE ONSET OF FABRICATION. REVIEW TIME BY ENGINEER MAY BE LONGER THAN TWO WEEKS FOR LARGE SUBMITTALS. REVIEW OF MULTIPLE SUBMITTALS CONCURRENTLY WILL EXTEND THE REVIEW TIME. IN THESE INSTANCES, CONTRACTOR SHALL SUBMIT A PRIORITIZED LIST OF SHOP DRAWINGS REQUIRING REVIEW, TO BE REVIEWED IN PRIORITIZED ORDER.
C. PRIOR TO SUBMISSION TO THE ENGINEER, THE CONTRACTOR SHALL REVIEW THE SUBMITTAL FOR COMPLETENESS. DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER AND THEREFORE MUST BE VERIFIED BY THE GENERAL CONTRACTOR. CONTRACTOR SHALL PROVIDE ANY NECESSARY DIMENSIONAL DETAILS REQUESTED BY THE DETAILER AND PROVIDE THE CONTRACTOR’S REVIEW STAMP AND SIGNATURE BEFORE FORWARDING THE SUBMITTAL TO THE ENGINEER.
D. ONCE THE CONTRACTOR HAS COMPLETED HIS REVIEW, THE ENGINEER WILL REVIEW THE SUBMITTAL FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND THE CONTRACT DOCUMENTS OF THE BUILDING AND WILL STAMP THE SUBMITTAL ACCORDINGLY. MARKUPS OR COMMENTS SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM COMPLIANCE WITH THE PROJECT PLANS AND SPECIFICATIONS, NOR DEPARTURES THERE FROM.
E. REQUIRED SUBMITTALS:
  1. CONCRETE
    a. MIX DESIGNS WITH TESTING DATA
    b. REINFORCEMENT SIZE AND PLACEMENT
  2. MASONRY
    a. GROUT AND MORTAR MIX DESIGNS
    b. UNIT MATERIAL PROPERTIES (COMPRESSIVE STRENGTH, ETC)
    c. UNIT LAYOUT
    d. REINFORCEMENT SIZE AND PLACEMENT
    e. BOND BEAM LINTEL DETAILS
  3. COLD FORMED FRAMING
    a. PRODUCT DATA DETAILS
F. DEFERRED DESIGN SUBMITTALS THAT REQUIRE DRAWINGS, DETAILS, CONNECTIONS, AND SUBMITTALS SHALL BE STAMPED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE THE PROJECT IS WITHIN.
G. DEFERRED DESIGN ITEMS SHALL BE DESIGNED TO RESIST THE LOADS INDICATED ON THE PLANS AND DETAILS INCLUDING: DEAD, LIVE, SNOW, WIND, NET UPLIFT, OTHERS INDICATED.
H. DEFERRED DESIGN SUBMITTALS ARE DESIGNED BY THE CONTRACTOR:
  1. PRE-ENGINEERED WOOD BUILDING
    a. LAYOUT AND DETAILS
    b. CALCULATIONS

SPECIAL-INSPECTIONS & TESTING:

A. SPECIAL INSPECTIONS ARE REQUIRED PER IBC CHAPTER 17 AND AS SPECIFIED IN THE SPECIAL INSPECTION STATEMENT AND PROJECT SPECIFICATIONS.
B. SPECIAL INSPECTORS SHALL BE EMPLOYED BY THE OWNER TO PROVIDE SPECIAL INSPECTIONS FOR THE PROJECT. SPECIAL INSPECTIONS MAY BE SCHEDULED AND COORDINATED BETWEEN OWNER AND CONTRACTOR.
C. SPECIAL INSPECTION REPORTS SHALL BE FURNISHED TO THE BUILDING OFFICIAL, ARCHITECT, AND STRUCTURAL ENGINEER. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR, AND, IF NOT CORRECTED, SHALL BE REPORTED TO THE BUILDING OFFICIAL, ARCHITECT, AND STRUCTURAL ENGINEER.
D. SPECIAL INSPECTOR SHALL SUBMIT A FINAL REPORT STATING THAT THE STRUCTURAL WORK WAS, TO THE BEST OF THEIR KNOWLEDGE, PERFORMED IN ACCORDANCE WITH THE APPROVED DRAWINGS, SPECIFICATIONS, AND THE BUILDING CODE.
E. SPECIAL INSPECTIONS ARE REQUIRED FOR THE FOLLOWING ITEMS:
  1. SOILS
  2. CONCRETE
  3. COLD FORMED METAL FRAMING

SPECIAL INSPECTION SCHEDULE: SOILS

INSPECTION TASK	REQUIRED	FREQUENCY	
		CONTINUOUS	PERIODIC
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	X	-	X
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	X	-	X
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	X	-	X
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X	X	-
PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	X		X

SPECIAL INSPECTION SCHEDULE: CIP FOUNDATION ELEMENTS

INSPECTION TASK	REQUIRED	FREQUENCY	
		CONTINUOUS	PERIODIC
ISOLATED SPREAD CONCRETE FOOTINGS	X	-	X
CONTINUOUS CONCRETE FOOTINGS SUPPORTING WALLS	X	-	X
CONCRETE FOUNDATION WALLS	X	-	X

SPECIAL INSPECTION SCHEDULE: CONCRETE CONSTRUCTION

INSPECTION TASK	REQUIRED	FREQUENCY	
		CONTINUOUS	PERIODIC
INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT	X	-	X
REINFORCING BAR WELDING			
1. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706	X	-	X
2. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"	X	-	X
3. INSPECT ALL OTHER WELDS	X	X	-
INSPECT ANCHORS CAST IN CONCRETE	X	-	X
INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBER			
1. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	X	X	-
2. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE	X	-	X
VERIFY USE OF REQUIRED DESIGN MIX	X	-	X
PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	X	-
INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	X	-
VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	X	-	X
INSPECT PRESTRESSED CONCRETE FOR			
1. APPLICATION OF PRESTRESSING FORCES	X	X	-
2. GROUTING OF BONDED PRESTRESSING TENDONS	X	X	-
INSPECT ERECTION OF PRECAST CONCRETE MEMBERS	X	-	X
VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	X	-	X
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	X	-	X

SPECIAL INSPECTION SCHEDULE: COLD FORMED METAL FRAMING

INSPECTION TASK	REQUIRED	FREQUENCY	
		CONTINUOUS	PERIODIC
INSPECT MATERIAL GRADE AND THICKNESS	X	-	X
INSPECT FRAMING AND DETAILS			
1. FRAMING LAYOUT, MEMBER SIZES AND BEARING LENGTHS	X	-	X
2. BLOCKING, BRIDGING AND WEB STIFFENERS	X	-	X
3. HOLES	X	-	X
INSPECT CONNECTIONS			
1.BOLTED AND SCREWED CONNECTIONS, INCLUDING DIAMETER, LENGTH, SPACING AND EDGE DISTANCE	X	-	X
2. WELDED CONNECTIONS	X	-	X
3. PROPRIETARY HANGERS AND FRAMING ANCHORS, INCLUDING FASTENER SIZES AND QUANTITIES	X	-	X
4. TIE-DOWN ANCHORS, INCLUDING ANCHOR ROD SIZES AND FASTENER SIZES AND QUANTITIES	X	-	X
INSPECT SHEAR WALLS AND DIAPHRAGMS			
1. PANEL GRADE AND THICKNESS	X	-	X
2. STEEL STRAPPING SIZE, GRADE AND THICKNESS	X	-	X
3. FASTENER SIZE, LENGTH AND SPACING	X	-	X
4. FRAMING MEMBER SIZES AT PANEL EDGES	X	-	X
5. BLOCKING AT PANEL EDGES	X	-	X
INSPECT COLD FORMED METAL TRUSSES			
1. TEMPORARY INSTALLATION RESTRAINT/BRACING FOR TRUSSES SPANNING 60 FEET OR MORE	X	-	X
2. PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT/BRACING FOR TRUSSES SPANNING 30 FEET OR MORE	X	-	X

CONCRETE AND REINFORCEMENT:

A. CONCRETE SHALL CONFORM TO CHAPTER 19 OF THE IBC AND BE PLACED IN ACCORDANCE WITH "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318)" AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301)" U.N.O.
B. MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c):
  1. FOOTINGS 3,500 psi
  2. FOUNDATION WALLS 4,000 psi
  3. ALL OTHER CONCRETE 4,000 psi
C. MAXIMUM WATER/CEMENT RATIO FOR GIVEN f'c:
  1. 3,500 psi 0.50
  2. 4,000 psi 0.45
  3. 5,000 psi 0.40
D. CONCRETE SLUMP:
  1. WITHOUT WATER REDUCER 3"-5"
  2. WITH WATER REDUCER 6"-8"
E. AIR CONTENT:
  1. EXPOSED TO EARTH OR WEATHER 6% PLUS OR MINUS 1.5%
  2. ALL OTHER CONCRETE NATURAL
F. MATERIAL REQUIREMENTS:
  1. PORTLAND CEMENT ASTM C595, TYPE IL
  2. NORMAL WEIGHT AGGREGATES ASTM C33
  3. MAXIMUM AGGREGATE SIZE 1"
  4. POTABLE WATER ASTM C94
  5. DEFORMED BARS ASTM A615, GRADE 60
  6. WELDED DEFORMED BARS ASTM A706, GRADE 60
  7. WELDED WIRE FABRIC (MATS ONLY) ASTM A185
G. CONCRETE COVER OVER REINFORCING:
  1. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
  2. EXPOSED TO EARTH OR WEATHER 2"
  3. NOT EXPOSED TO EARTH OR WEATHER OR IN CONTACT WITH THE GROUND 2"
H. FLY ASH SHALL NOT EXCEED 15% OF ALL CEMENTITIOUS MATERIALS FOR ALL CONCRETE.
I. ALL ADMIXTURES TO BE INCLUDED IN THE CONCRETE MIX DESIGN SUBMITTAL FOR REVIEW/APPROVAL. NO ADMIXTURES TO BE USED WITHOUT APPROVAL BY STRUCTURAL ENGINEER.
J. NO ADMIXTURES OR MATERIALS CONTAINING CALCIUM CHLORIDE, SALT OR ANTIFREEZE IS PERMITTED TO BE USED IN CONCRETE.
K. DETAIL AND PLACE REINFORCING STEEL IN ACCORDANCE WITH "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" (ACI 315) U.N.O.
L. REINFORCING STEEL SHALL BE SECURED IN PLACE AND PROPERLY SUPPORTED PRIOR TO PLACING CONCRETE.
M. REINFORCING SPLICES SHALL HAVE CLASS B TENSION SPLICES U.N.O.
N. CORNER BARS TO BE PROVIDED AT ALL INTERSECTIONS OF HORIZONTAL REINFORCING IN WALLS AND FOOTINGS. LAP CORNER BARS 2'-0" EACH SIDE, MATCH SIZE AND SPACING OF SPACING OF HORIZONTAL BARS
O. VERTICAL REINFORCING TO BE CONTINUOUS WITHOUT SPLICES, U.N.O.
P. HORIZONTAL REINFORCEMENT TO BE CONTINUOUS THROUGH PILASTERS, COLUMNS, AND WALL INTERSECTIONS.
Q. PROVIDE 2 @ #5 x4’-0” DIAGONAL BARS AT EACH OPENING CORNER IN WALLS AND FLOOR SLABS, U.N.O. DIAGONAL BARS SHALL BE CENTERED AT OPENING CORNERS.
R. ALL EXPOSED EDGES TO HAVE A 3/4" CHAMFER, U.N.O.
S. SLABS-ON-GRADE:
  1. POORLY COMPACTED FILL SOILS THAT REQUIRE FULL OVER EXCAVATION AND BACKFILL ARE KNOWN TO BE IN THE AREA. EXISTING SITE SOILS ARE NOT SUITABLE FOR BACKFILL. THE AREA NEAR THE SW CORNER OF THE ADDITION, BORING #1 IN THE GEOTECHNICAL REPORT, IS WHERE THESE SOILS WERE FOUND. EXTENTS ON THE SITE ARE UNKNOWN, BUT ARE TO BE DETERMINED DURING SPECIAL INSPECTIONS. CONTRACTOR TO PROVIDE COST ON A PER-UNIT BASIS DURING BIDDING.
  2. NEW IMPORTED BACKFILL TO BE COMPACTED IN 12" LOOSE LIFTS WHERE LARGE CONSTRUCTION EQUIPMENT IS USED, AND 4" LOOSE LIFTS WHERE MANUAL EQUIPMENT IS USED.
  3. NEW SLAB CONSTRUCTION SHALL BE 6” THICK OVER VAPOR BARRIER (SEE ARCHITECT) OVER NEW COMPACTED BACKFILL. SLAB SHALL BE REINFORCED WITH #4 @ 18" O.C. PLACED ON CHAIRS TO LOCATE THE REINFORCEMENT 1 1/2” FROM THE TOP OF SLAB. LOCATED AT MID-SLAB THICKNESS AT CONSTRUCTION JOINTS.
  4. TOPPING SLAB OVER EXISTING SLAB ON GRADE SHALL BE 4" THICK OVER BOND BREAKER. SLAB SHALL BE REINFORCED WITH 6x6 W2.9xW2.9 WWF PLACED ON CHAIRS TO LOCATE THE REINFORCEMENT 1 1/2" AWAY FROM THE TOP OF SLAB. LOCATED AT MID-SLAB THICKNESS AT CONSTRUCTION JOINTS.
  5. WET BURLAP CURE IS STRONGLY RECOMMENDED FOR ALL SLABS ON GRADE AND NEW CONCRETE TOPPING SLAB. ALTERNATES MAY BE PROVIDED BY THE CONTRACTOR.
  6. PROVIDE 1/2" EXPANSION JOINT BETWEEN SLABS-ON-GRADE AND ALL COLUMNS, WALLS, AND VERTICAL SURFACES
  7. PROVIDE 1/8" X 1/4" DEEP CONTROL JOINTS OR FULL DEPTH CONSTRUCTION JOINTS IN SLABS-ON-GRADE. MAXIMUM SPACING IN OF CONTROL/CONSTRUCTION JOINTS TO BE 30 TIMES THE SLAB THICKNESS.
  8. CONSTRUCTION JOINTS IN SLABS-ON-GRADE SHALL BE AT CONTROL JOINT LOCATIONS AS IDENTIFIED ABOVE WHEN ENTIRE FLOOR SLAB IS NOT PLACED IN ONE SEQUENCE. SEE DETAILS FOR PLATE DOWEL REQUIREMENTS.
  9. SEE ARCHITECTURAL DRAWINGS FOR SLAB SLOPES AND DEPRESSIONS.
  10. USE IMPORTED SAND FOR EXPOSED SLAB ON GRADE AND FOUNDATION WALLS.
T. FLOOR FLATNESS:
  1. GENERAL / OFFICE (CARPET):
    A. OVERALL FF: 25
    B. OVERALL FL: 20
    C. LOCAL FF: 35
    D. LOCAL FL: 20

PRE-ENGINEERED BUILDING:

A. PRE-ENGINEERED BUILDINGS (PEB) SHALL CONFORM TO CHAPTER 22 OF THE IBC AND APPLICABLE BUILDING SYSTEMS MANUAL.
B. PEB FRAMING MATERIALS AND STRENGTHS:
  1. BY PEB MANUF.
C. CONNECTIONS SHALL BE AS DIRECTED IN PEB DOCUMENTS.
D. TEMPORARY BRACING OF STRUCTURAL ELEMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR. STRUCTURAL STABILITY SHALL BE MAINTAINED AT ALL TIMES DURING THE ERECTION PROCESS. CONSTRUCTION SHALL CONFORM TO OSHA GUIDELINES.
E. NOTIFY SUPPLIER AND ENGINEER OF ANY FABRICATION OR ERECTION ERRORS OR DEVIATIONS. WRITTEN APPROVAL IS REQUIRED BEFORE ANY FIELD CORRECTIONS ARE MADE.
F. PROVIDE ONE SHOP COAT OF PRIMER ON ALL STEEL EXCEPT FOR ITEMS TO BE HOT-DIP GALVANIZED OR SPRAY FIREPROOFED.
G. DIMENSIONS, BUILDING SIZE, COLUMN LOCATIONS, AND WALL SIZE TO MATCH AND BE COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS. DEVIATION REQUESTS MUST BE SUBMITTED FOR APPROVAL PRIOR TO CHANGES BEING MADE.
H. ALL COMPONENTS AND ASSEMBLIES TO BE DESIGNED AND DETAILED BY THE MANUFACTURER TO RESIST THE LOADING ON THE DRAWINGS. NOTE THAT SOME MUNICIPALITIES DEVIATE SNOW AND OTHER LOADING FROM THE IBC AND SHALL BE INCLUDED IN THE DESIGN.
I. MAXIMUM ALLOWABLE DEFLECTION LIMITS:
  1. ARCHITECTURAL
    a. JOISTS/BEAMS: SPAN / 240
    b. ROOF PANELS: SPAN / 180
    c. WALL FRAMING: SPAN / 240
    d. WALL FRAMING WITH BRICK: SPAN / 600
    e. RIGID FRAME DRIFT: HEIGHT / 400
J. MEMBERS SUPPORTING BRICK AND OTHER BRITTLE CLADDING SHALL BE DESIGNED FOR HORIZONTAL AND VERTICAL DEFLECTION: SPAN / 600.
K. DEFLECTION OF PRIMARY MEMBERS SHALL BE ACCOMMODATED WITHIN DESIGN OF OTHER FRAMING COMPONENTS AND SYSTEMS.
L. ADJACENT BUILDING IS PRESENT:
  1. YES. A BUILDING EXPANSION JOINT IS REQUIRED BETWEEN THE BUILDING TO ACCOUNT FOR 2” OF BUILDING DIFFERENTIAL MOVEMENT UNLESS PEB SUPPLIER ENGINEER DESIGNS THE BUILDINGS TO CONNECT, ACT, AND MOVE CONGRUENTLY.

COLD FORMED METAL FRAMING (CFMF)

A. COLD FORMED METAL FRAMING SHALL CONFORM TO CHAPTER 22 OF THE IBC.
B. ALL COLD FORMED METAL FRAMING SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND IN ACCORDANCE WITH THE LATEST EDITION OF “NORTH AMERICAN SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS” BY AISI.
C. COLD FORM METAL FRAMING MATERIALS AND STRENGTHS:
  1. 18-GAGE OR THINNER: ASTM A653, 33 KSI
  2. 16-GAGE OR THICKER: ASTM A653, 50 KSI
D. ALL MEMBERS TO BE HOT-DIP GALVANIZED STEEL. COATING TO CONFORM TO ASTM A924 DESIGNATION G60. IN HIGHLY CORROSIVE ENVIRONMENTS G90 SHALL BE USED.
E. THESE STRUCTURAL DRAWINGS TYPICALLY SHOW ONLY THE PRIMARY STRUCTURAL FRAMING ELEMENTS OF THE SYSTEM. CONTRACTOR SHALL PROVIDE ALL ACCESSORIES INCLUDING TRACKS, WEB STIFFENERS, BLOCKING, HEADERS, CLIP ANGLES, REINFORCEMENTS, FASTENING DEVICES, BRACING, AND OTHER ACCESSORIES AS RECOMMENDED BY THE MANUFACTURER TO PROVIDE A COMPLETE FRAMING SYSTEM.
F. THE COLD FORMED METAL STUD FRAMING CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF COLD FORMED METAL FRAMING IF INDICATED IN THE SUBMITTALS SECTION OF THE GENERAL NOTES. IF LISTED, SHOP DRAWINGS SHOWING PLANS, ELEVATIONS, SECTIONS AND DETAILS SHALL BE SUBMITTED WITH CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE THE PROJECT IS LOCATED.
G. FASTENING OF COMPONENTS SHALL BE WITH SELF-TAPPING SCREWS OR WELDS. ALL WELDS OF GALVANIZED FRAMING SHALL BE TOUCHED UP WITH ZINC-RICH PAINT. ALL WELDS OF CARBON SHEET STEEL SHALL BE TOUCHED UP WITH RUST INHIBITIVE PAINT.
H. SCREWS WHICH ARE REMOVED SHALL BE REPLACED BY A SCREW OF A LIGHTER DIAMETER WHERE THE REPLACEMENT IS MADE INTO AN EXISTING HOLE. REPLACE ALL SCREWS WHICH STRIP OUT MATERIAL. SCREWS SHALL BE SPACED NO CLOSER THAN 5/8” ON CENTER AND WITH A MINIMUM FREE EDGE DISTANCE OF 1/2".
I. ALL WELDING SHALL BE PERFORMED BY WELDERS EXPERIENCED IN COLD-FORMED METAL FRAMING WORK. ALL WELDING SHALL USE E60 SERIES ELECTRODES AND SHALL CONFORM WITH THE LATEST AMERICAN WELDING SOCIETY STANDARDS.
J. DO NOT CUT OR OTHERWISE DAMAGE LOAD-BEARING STUDS, JOISTS, OR RAFTERS DURING INSTALLATION OF WORK BY OTHER TRADES.
K. EXTERIOR WALL STUDS:
  1. THE MINIMUM SIZE AND SPACING SHALL BE AS INDICATED IN THE PLANS.
  2. ALL STUDS SHALL BE SECURELY SEATED FOR FULL END BEARING ON TOP AND BOTTOM TRACK. PROVIDE DOUBLE STUDS AT ALL JAMBS, CORNERS, INTERSECTIONS, AND BEAM BEARING LOCATIONS, UNLESS NOTED OTHERWISE.
  3. WALL STUD BRIDGING AS RECOMMENDED BY THE STUD MANUFACTURERS SHALL BE INSTALLED TO PREVENT BOTH WEAK AXIS BENDING AND STUD ROTATION AT 4’-0” MAX INTERVALS. WALLS 8’-0” AND SHORTER SHALL HAVE A SINGLE ROW OF BRIDGING AT MID-HEIGHT. ADDITIONALLY, BRIDGING SHALL BE PROVIDED AT ROOF LINES AND WHERE NOTED ON THE PLANS. SOLID BLOCKING SHALL BE INSTALLED IN LIEU OF BRIDGING WHERE NOTED ON DRAWINGS.
  4. BRIDGING: FASTBRIDGE CLIPS FB43 WITH 2 @ #10 SCREWS PER CLIP, UNO, OR UNLESS PART OF DEFERRED SUBMITTAL.
  5. WALL STUDS SHALL BE LIMITED IN DEFLECTION TO:
    a. WALLS WITH BRICK: HEIGHT/600
    b. WALLS WITH STUCCO: HEIGHT/360
    c. OTHER WALLS: HEIGHT/240
  6. WALL STUDS SHALL ALIGN WITH FLOOR AND ROOF FRAMING MEMBERS IN LOAD-BEARING STUD APPLICATIONS.
L. JOISTS AND RAFTERS:
  1. THE MINIMUM SIZE AND SPACING SHALL BE AS INDICATED IN THE PLANS.
  2. JOISTS SHALL BE REINFORCED WITH WEB STIFFENERS AT ALL LOAD-BEARING LOCATIONS.
  3. JOIST FLANGES MUST BE FASTENED TO ALL SUPPORTS.
  4. STRAPPING OR FULL-HEIGHT BLOCKING SHALL BE LOCATED AT 8’-0” ON CENTER MAXIMUM WHEN SHEATHING IS APPLIED ONLY TO THE COMPRESSION FLANGE. IF STRAPPING IS USED, FULL-HEIGHT BLOCKING BETWEEN JOISTS AT 10’-0” ON CENTER IS REQUIRED ALONG THE LENGTH OF THE STRAPPING.
  5. FLOOR JOISTS SHALL BE LIMITED IN DEFLECTION TO:
    a. TOTAL LOAD: SPAN/240
    b. LIVE LOAD WITH BRITTLE FINISH ON TOP: SPAN/480
    c. LIVE LOAD: SPAN/360
M. BUILT-UP MEMBERS (MULTIPLE MEMBERS) MUST BE FASTENED TOGETHER TO ACT AS ONE UNIT TO RESIST THE APPLIED LOADING. THIS IS TO BE DESIGNED BY THE COMPONENT DESIGNER, UNLESS DETAILED OTHERWISE ON THE DRAWINGS.

FOUNDATIONS:

A. EXCAVATIONS OF BURIED ITEMS, KNOWN OR UNKNOWN PRIOR TO CONSTRUCTION, SHALL BE BACKFILLED WITH ENGINEERED FILL IN COMPACTED LOOSE LIFTS OF 12” OR LESS, OR AS GUIDED BY THE GEOTECHNICAL ENGINEER.
B. FOUNDATIONS SHALL BEAR ON NATIVE SOIL OR ON COMPACTED ENGINEERED FILL. BEARING CAPACITY AND EXPANSIVE SOIL PROPERTIES TO BE VERIFIED BY QUALIFIED GEOTECHNICAL ENGINEER AS PART OF THE SPECIAL INSPECTION AND TESTING PROGRAM PRIOR TO INSTALLATION OF FOOTINGS/FOUNDATIONS.
C. EXPANSIVE SOILS THAT REQUIRE OVER EXCAVATION AND BACKFILL ARE KNOW TO BE IN THE AREA. REQUIRED DEPTH OF OVER EXCAVATION AND ENGINEERED FILL REQUIREMENTS TO BE DETERMINED BY GEOTECHNICAL ENGINEER AS PART OF THE SPECIAL INSPECTION AND TESTING PROGRAM.
D. ALL EXTERIOR FOOTINGS TO EXTEND BELOW FROST LINE. SEE DESIGN REQUIREMENTS FOR FROST DEPTH. DURING WINTER CONSTRUCTION ALL FOOTINGS TO EXTEND BELOW FROST LINE. CONTACT STRUCTURAL ENGINEER FOR REVISED REINFORCING.
E. IF INDICATED ON ARCHITECTURAL DRAWINGS, PROVIDE 2” RIGID INSULATION ON INSIDE FACE OF FOUNDATION WALL/FOOTINGS EXTENDING FROM TOP OF FOUNDATION TO FROST DEPTH, AND EXTENDING FROM INSIDE EDGE OF FOUNDATION TO 24” TOWARD MIDDLE OF THE STRUCTURE BELOW FLOOR SLAB.
F. FOOTINGS TO BE CENTERED UNDER WALLS/COLUMNS U.N.O.
G. DO NOT BACKFILL WALLS UNTIL BOTH TOP AND BOTTOM OF WALLS ARE ADEQUATELY BRACED BY SLAB OR FLOOR FRAMING. ANY REQUIRED TEMPORARY BRACING FOR BACKFILLING OF WALLS IS THE RESPONSIBILITY OF THE CONTRACTOR.
H. COORDINATE ALL CLEANOUTS, CONNECTIONS, AND DISCHARGE OF DRAIN TILE WITH CIVIL AND MECHANICAL DRAWINGS.

SHEET INDEX

No.	NAME
S001	GENERAL NOTES
S101	FOUNDATION PLAN
S102	FRAMING PLAN
S201	OVEREXCAVATION PLAN
S501	DETAILS
S502	DETAILS

BRANT J
BRISTOW
18967

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PROFESSIONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF IOWA

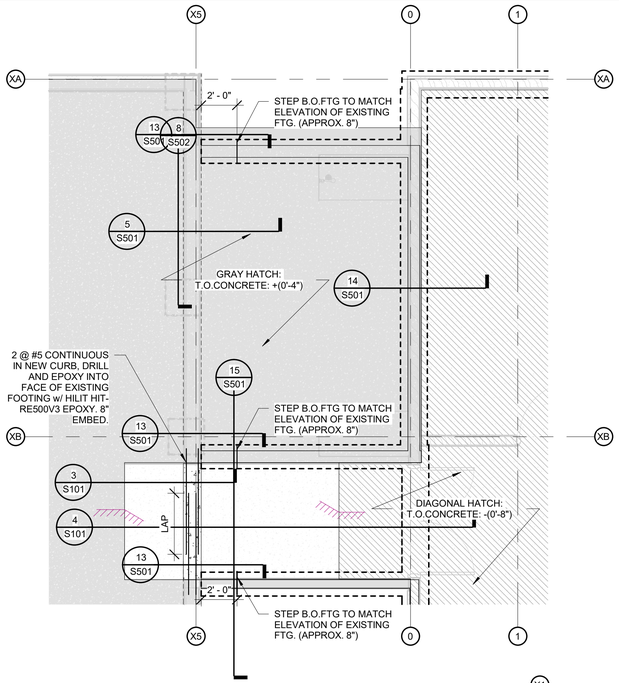
THIS NOTICE COVERS SHEETS:
S-SHEETS
SIGNATURE: Brant Bristow
NAME: BRANT J. BRISTOW
DATE: 06 JAN 2026
MY REGISTRATION EXPIRES IN IOWA: 12/31/2025

S T U D I O M E L E E
1 3 9 4 t h S T R E E T
D E S M O I N E S , I O W A 5 0 2 6 5

PROJECT:
SCFD - RENOVATION & ADDITION
ADDRESS:
109 E MAIN STREET; STATE CENTER, IA50247
CLIENT:
STATE CENTER FIRE & EMS

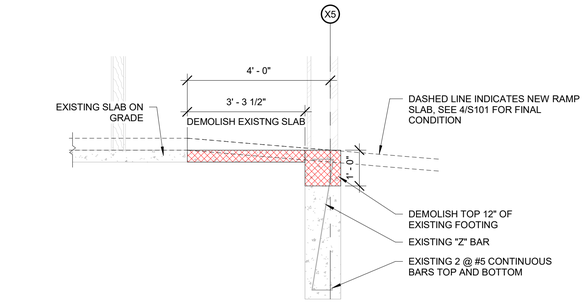
PHASE:
ADD. 1
PRINT DATE:
01/06/2026
SHEET NAME:
GENERAL NOTES

S001



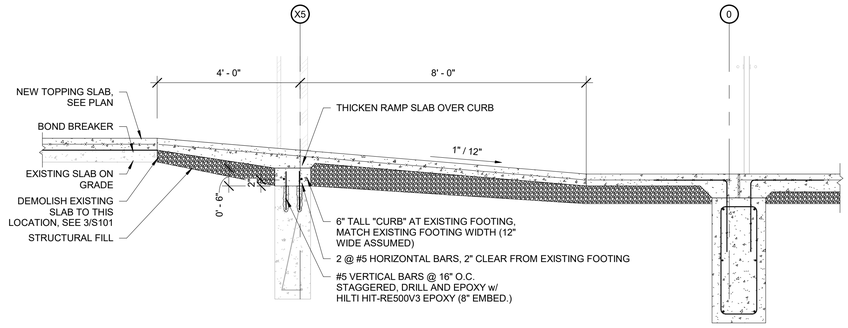
2 - FOUNDATION PLAN - LINK

SCALE: 1/4" = 1'-0"



③ LONGITUDINAL SECTION THROUGH RAMP-DEMOLITION PLAN

1/2" = 1'-0"

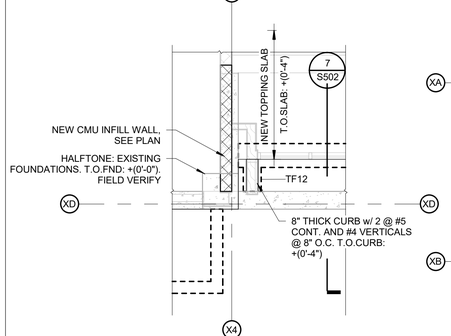


④ LONGITUDINAL SECTION THROUGH RAMP

1/2" = 1'-0"

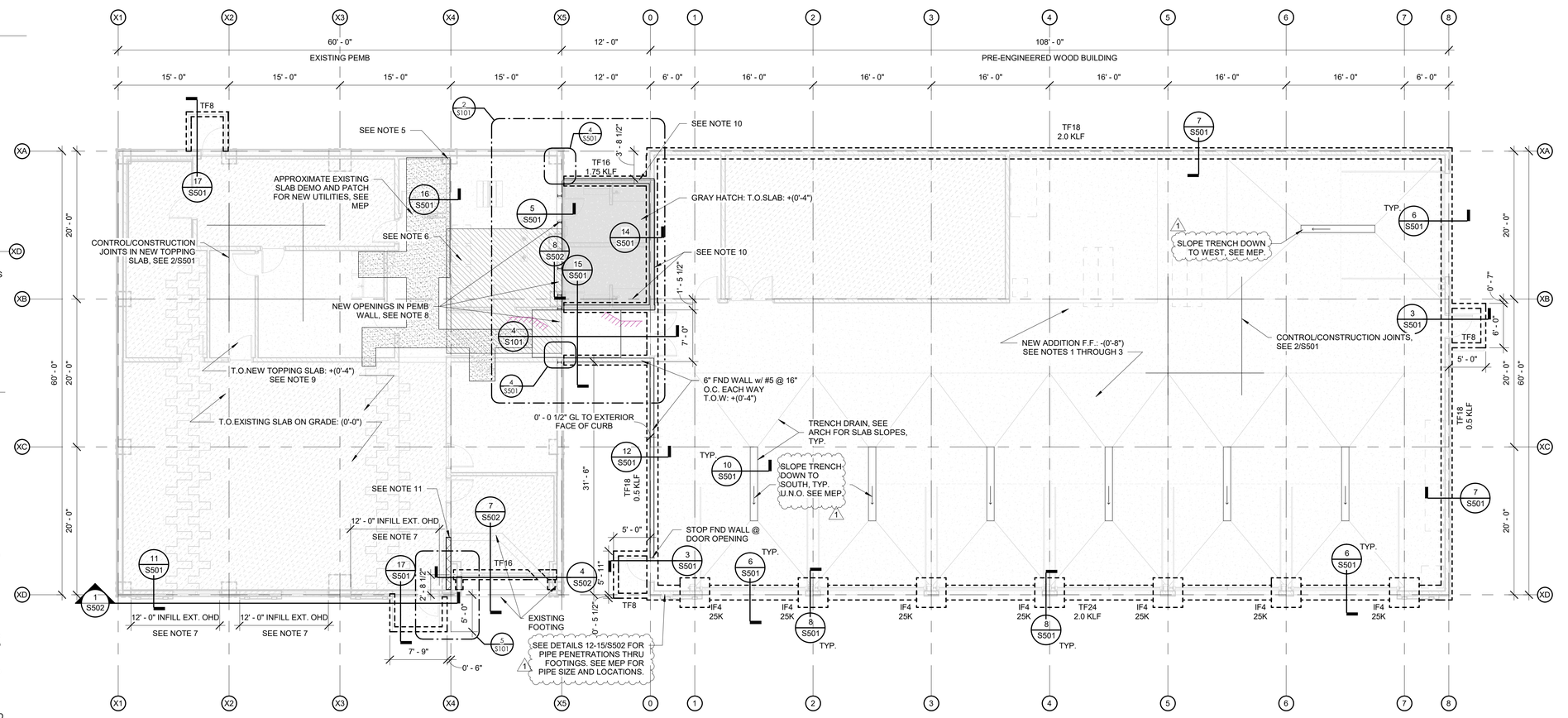
CONTINUOUS FOOTING SCHEDULE			
TYPE	WIDTH	THICKNESS	REINFORCING
TF8	0' - 8"	3' - 6"	2 @ #5 TOP & BOTTOM CONT. w/ #4 VERT. @ 24" OC
TF12	1' - 0"	3' - 6"	2 @ #5 TOP & BOTTOM & #4 @ MID. CONT. w/ #4 VERT. @ 24" OC
TF16	1' - 4"	3' - 6"	2 @ #5 TOP & BOTTOM & #4 @ MID. CONT. w/ #4 VERT. @ 24" OC
TF18	1' - 6"	3' - 6"	2 @ #5 TOP & BOTTOM & 2 @ #4 @ MID. CONT. w/ #3 TIES. @ 24" OC
TF24	2' - 0"	3' - 6"	2 @ #5 TOP & BOTTOM & 2 @ #4 @ MID. CONT. w/ #3 TIES. @ 24" OC

ISOLATED FOOTING SCHEDULE				
TYPE	WIDTH	LENGTH	THICKNESS	REINFORCING
IF4	4' - 0"	4' - 0"	3' - 6"	4 @ #5 VERT. w/ #3 TIES @ 12" OC



5 - WING WALL FND @ ENTRY

SCALE: 1/4" = 1'-0"



FOUNDATION PLAN

SCALE: 1/8" = 1'-0"

NOTES:

1. F.F. ELEVATION:
   - +(0'-0") CORRESPONDS TO TOP OF EXISTING SLAB ON GRADE AND CIVIL ELEVATION 1069.77'. VERIFY w/ CIVIL DRAWINGS.
   - +(0'-4") CORRESPONS TO TOP OF NEW TOPPING SLAB AND CIVIL ELEVATION 1070.1'
   - -(0'-8") CORRESPONDS TO TOP OF SLAB @ ADDITION AND CIVIL ELEVATION 1069.1'
2. SLAB ON GRADE IS INTENDED TO HAVE SEALED SURFACE. VERIFY WITH ARCHITECTURAL DRAWINGS. SEE GENERAL NOTES FOR OVERALL AND LOCAL FF & FL NUMBERS
3. 6" SLAB ON GRADE w/ #4 BARS @ 18" O.C. EACH WAY. SEE GENERAL NOTES AND DETAIL 1/SS01 FOR SUBGRADE PREPARATION.
4. T.O.FTG. TO BE -(1'-4") U.N.O.
5. CAREFUL SLAB DEMOLITION IS CRITICAL @ HAIRPIN LOCATIONS. HYDRO DEMOLITION AND/OR USE OF HAND TOOLS IS REQUIRED. CONTRACTOR TO IMPLEMENT X-RAY OR SIMILAR TESTING PROCEDURES TO LOCATE REINFORCEMENT PRIOR TO DEMOLITION
6. HATCHED AREA INDICATES APPROXIMATE LOCATION OF EXISTING MEZZANINE TO BE DEMOLISHED. CMU WALL TO BE DEMOLISHED, CARE TO BE TAKEN @ HAIRPIN LOCATIONS. SEE NOTE 5. EXISTING W SHAPES AND ASSOCIATED CONNECTION ANGLES TO BE REMOVED
7. 600S200-54 STUDS @ 16" O.C. 1/2" APA RATED SHEATHING TO OUTSIDE FACE OF STUDS w/ #8 SCREWS @ 6" O.C. PERIMETER AND 12" O.C. FIELD
8. 2 @ 600S200-54 STUDS EACH SIDE OF NEW OPENING. EXTEND STUDS TO FIRST WALL GIRT ABOVE OPENING. SEE 8/S502
9. NEW 4" THICK CONCRETE TOPPING OVER EXISTING SLAB ON GRADE. REINFORCE TOPPING SLAB w/ 6x6 W2.9XW2.9 W.W.F. BOND BREAKER TO BE APPLIED TO TOP OF EXISTING SLAB ON GRADE PRIOR TO PLACING TOPPING SLAB
10. 8" THICK CONCRETE FOUNDATION WALL w/ #5 @ 16" O.C. EACH WAY. T.O.W: -(0'-4")
11. NEW 8" CMU WALL w/ #5 VERTICAL IN GROUTED CELLS AT EACH END AND 48" O.C. TOP OF WALL SLOPES WITH EXISTING FRAME ABOVE. SEE DETAIL 5/S502 FOR BASE CONNECTION AND 6/S502 FOR TOP CONNECTION

STUDIO MELEE
139 4th STREET
DES MOINES, IOWA 50265

PROJECT: SCFD - RENOVATION & ADDITION
ADDRESS: 109 E MAIN STREET, STATE CENTER, IA50247
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PHASE: ADD. 1
PRINT DATE: 01/06/2026
SHEET NAME: FOUNDATION PLAN

S101

CFMF BOX HEADER SCHEDULE			
MARK	VERTICAL MEMBERS	HORIZONTAL MEMBERS	JAMB
H1	2 @ 800S162-54	2 @ 600T200-54	2 @ 600S162-54 (KING STUDS)

CFMF BOX HEADER NOTES

1. HEADERS ARE FOR THE WALL FRAMING BELOW THE LEVEL SHOWN
2. EACH MEMBER OF MULTI MEMBER HEADERS/JAMBS TO BE FASTENED TOGETHER WITH 2 @ #12 SCREWS @ 12" O.C. U.N.O.

LINTEL SCHEDULE	
MARK	SIZE
L1	2 @ L3 1/2x3 1/2x5/16

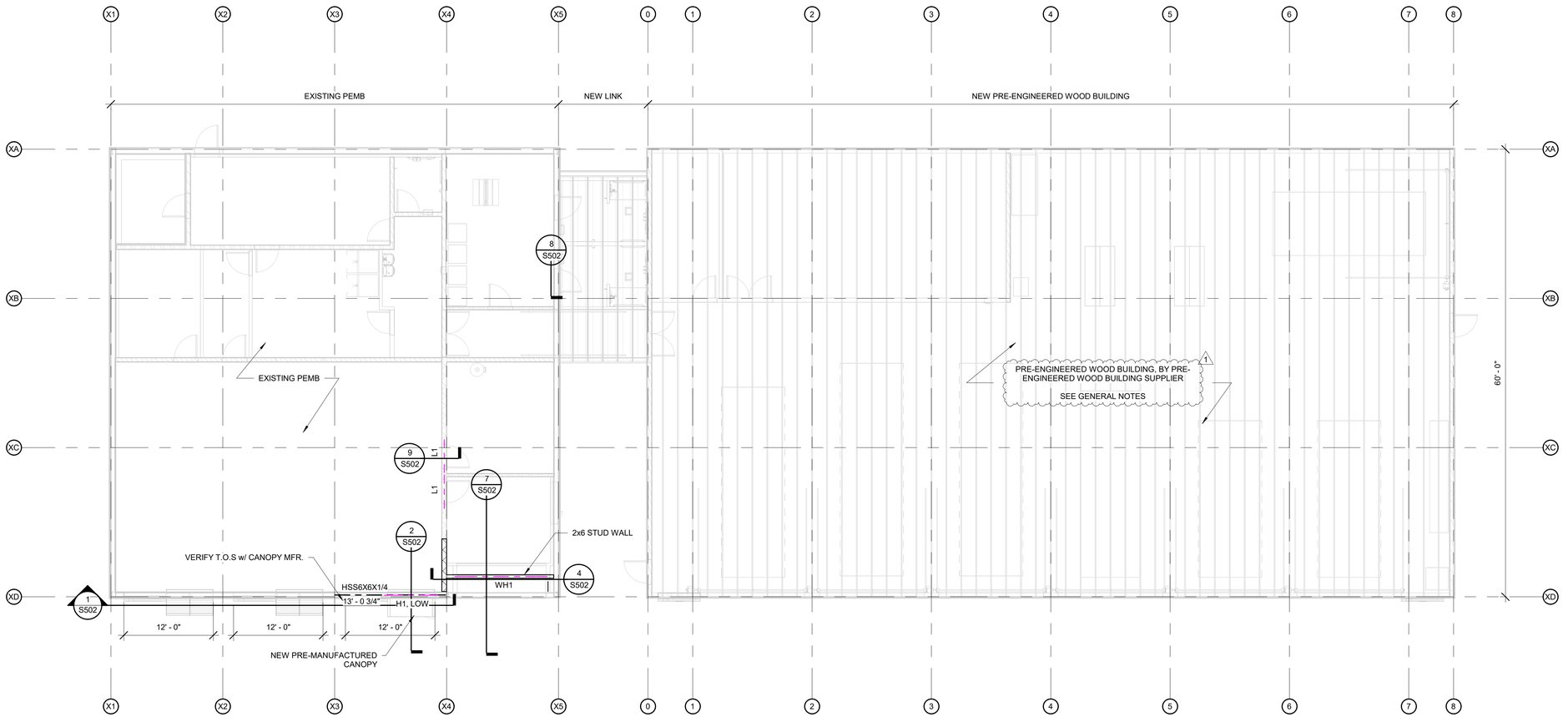
LINTEL NOTES

1. LINTELS ARE FOR THE WALL FRAMING BELOW THE LEVEL SHOWN
2. LINTELS TO BEAR A MINIMUM OF 1" PER FOOT OF OPENING LENTH OR 6", EACH END
3. SEE GENERAL NOTES FOR LINTEL NOT CALLED OUT ON PLAN

WOOD HEADER SCHEDULE	
MARK	SIZE
WH1	3 @ 11 7/8" LVL

WOOD HEADER NOTES

1. HEADERS ARE FOR WALL FRAMING BELOW THE LEVEL SHOWN
2. ALL HEADERS TO BE SUPPORTED BY A MINIMUM OF (3) STUDS U.N.O. (1 KING, 2 JACK)
3. ALL MULTI-PLY FLUSH (F) HEADERS TO BE FASTENED TOGETHER w/ 3 ROWS OF SIMPSON SDW2250 SCREWS @ 12" O.C. U.N.O.



FRAMING PLAN

SCALE: 1/8" = 1'-0"

STUDIO MELEE
139 4th STREET
DES MOINES, IOWA 50265

PROJECT:
SCFD - RENOVATION & ADDITION
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STATE CENTER FIRE & EMS

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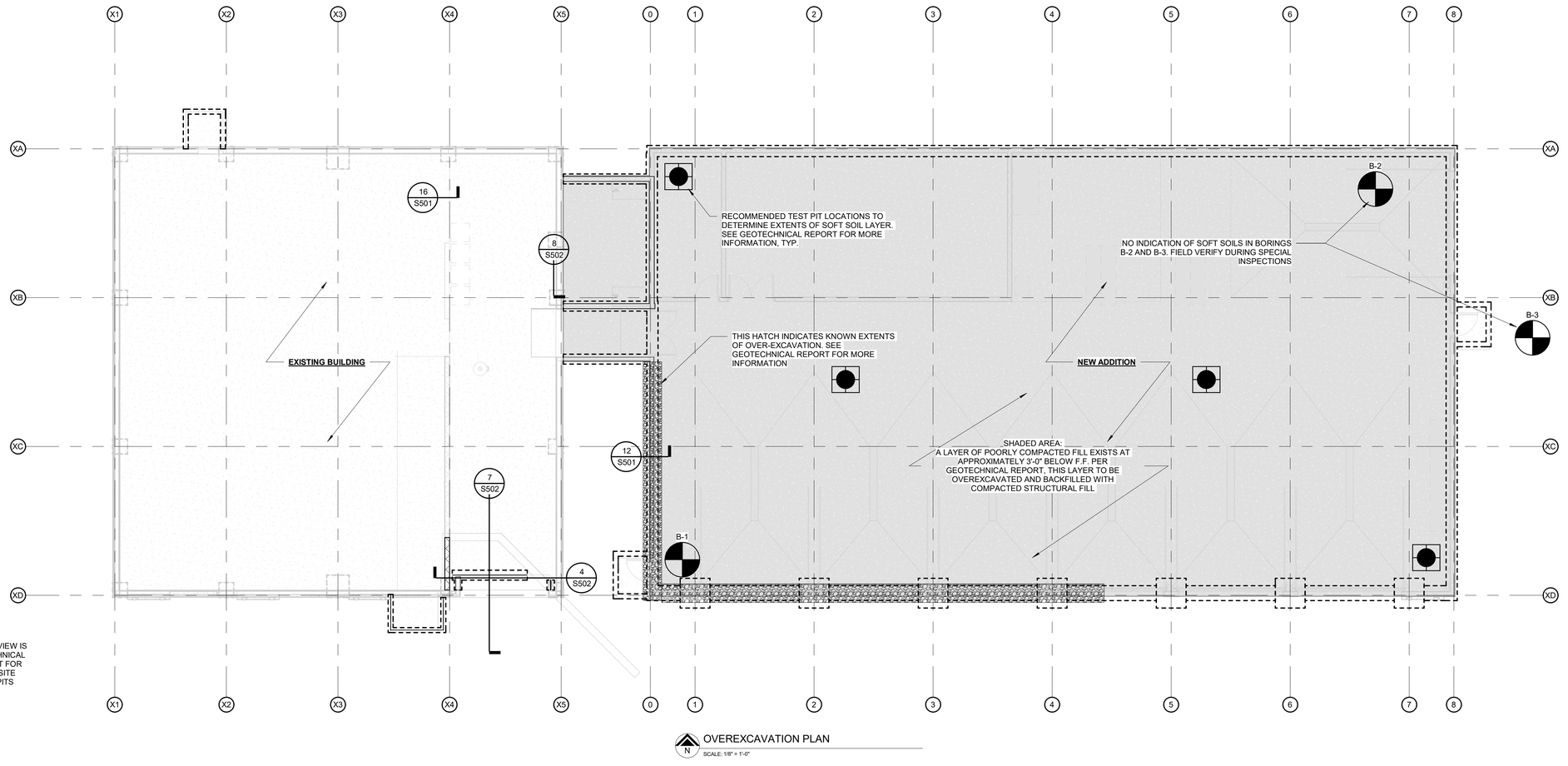
PRINT DATE:
01/06/2026
SHEET NAME:
FRAMING PLAN

S102



OVEREXCAVATION PLAN

SCALE: 1/8" = 1'-0"

NOTES:

1. INFORMATION SHOWN ON THIS PLAN VIEW IS TO BE USED IN ADDITION TO GEOTECHNICAL REPORT. SEE GEOTECHNICAL REPORT FOR MORE INFORMATION REGARDING ON-SITE SOILS, OVEREXCAVATION, AND TEST PITS

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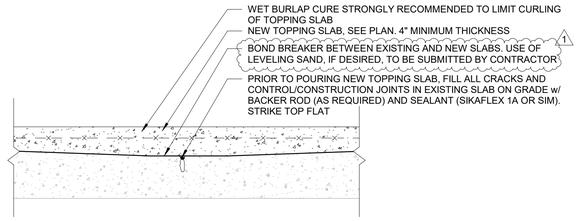
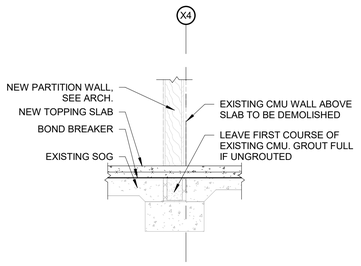
CLIENT: STATE CENTER FIRE & EMS

PRINT DATE: 01/06/2026
PHASE: ADD. 1
SHEET NAME: OVEREXCAVATION PLAN

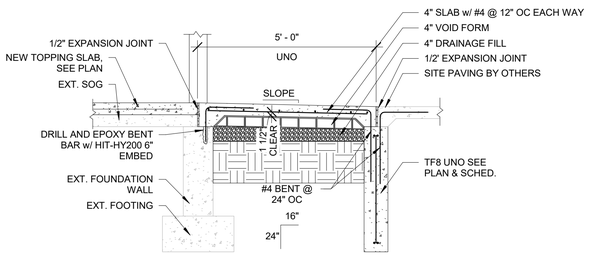
S201



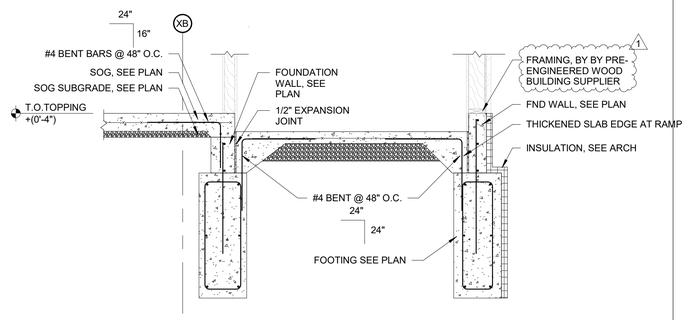
18 TOPPING SLAB OVER EXT. SOG
1" = 1'-0"



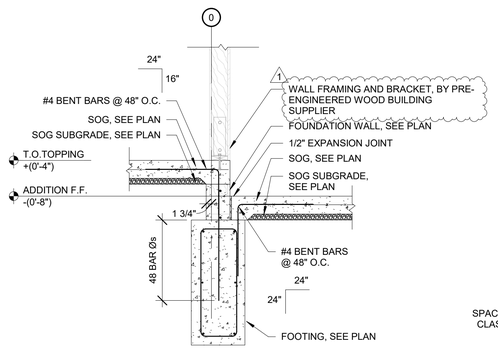
16 EXIST CMU WALL DEMO
1/2" = 1'-0"



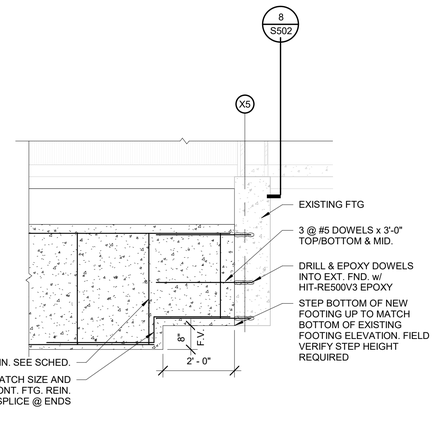
17 2040B STOOP @ EXT FOOTING
1/2" = 1'-0"



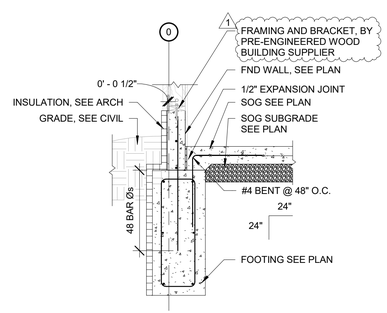
15 RAMP CROSS SECTION
1/2" = 1'-0"



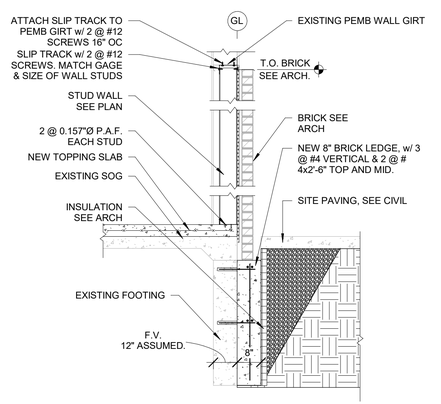
14 SLAB STEP @ CONNECTOR BAY
1/2" = 1'-0"



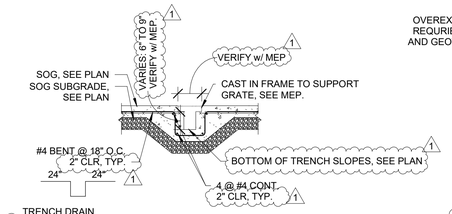
13 FTG STEP @ EXISTING
1/2" = 1'-0"



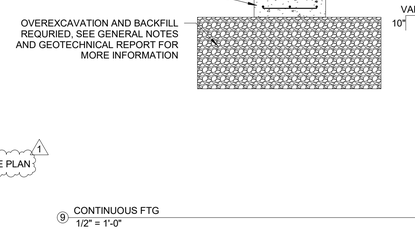
12 CURB DETAIL
1/2" = 1'-0"



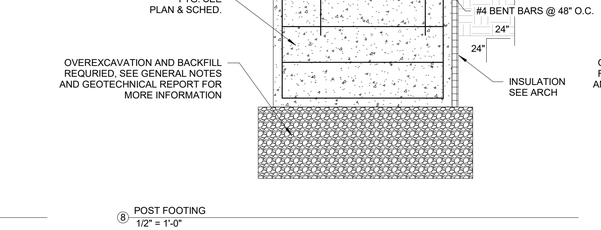
11 EXIST. PEMB CONTINUOUS FOOTING w/ BRICK
1/2" = 1'-0"



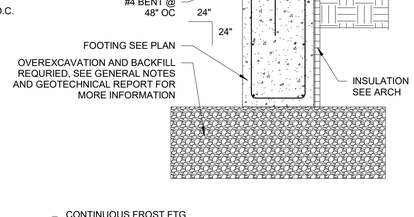
10 TRENCH DRAIN
1/2" = 1'-0"



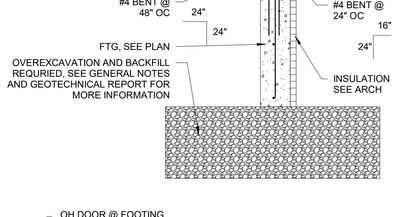
9 CONTINUOUS FTG
1/2" = 1'-0"



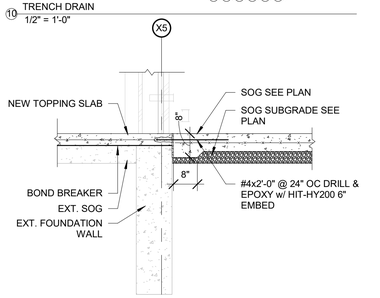
8 POST FOOTING
1/2" = 1'-0"



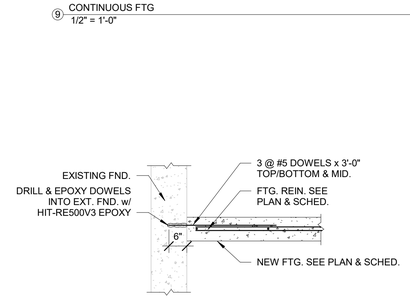
7 CONTINUOUS FROST FTG
1/2" = 1'-0"



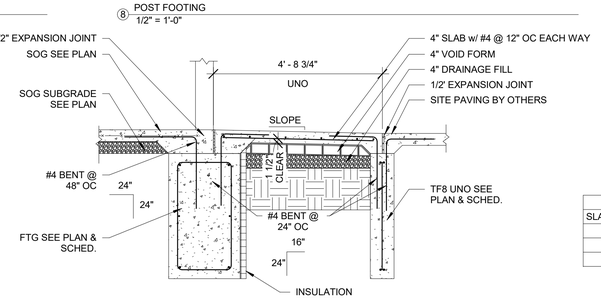
6 OH DOOR @ FOOTING
1/2" = 1'-0"



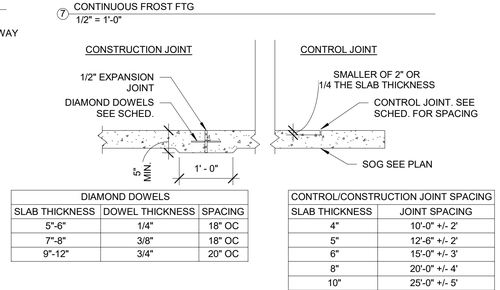
5 SLAB TIE IN
1/2" = 1'-0"



4 TF8,12,16 FOOTING TIE IN
1/2" = 1'-0"



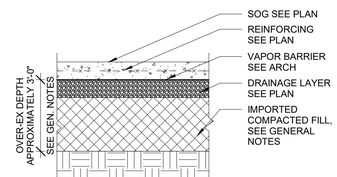
3 STOOP FOOTING
1/2" = 1'-0"



DIAMOND DOWELS		
SLAB THICKNESS	DOWEL THICKNESS	SPACING
5"-6"	1/4"	18" OC
7"-8"	3/8"	18" OC
9"-12"	3/4"	20" OC

CONTROL/CONSTRUCTION JOINT SPACING	
SLAB THICKNESS	JOINT SPACING
4"	10'-0" +/- 2'
5"	12'-6" +/- 2'
6"	15'-0" +/- 3'
8"	20'-0" +/- 4'
10"	25'-0" +/- 5'
12"	30'-0" +/- 6'

2 CONTROL/CONSTRUCTION JOINTS
3/4" = 1'-0"



1 SOG SUBGRADE
3/4" = 1'-0"

STUDIO MELEE
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PHASE: ADD. 1
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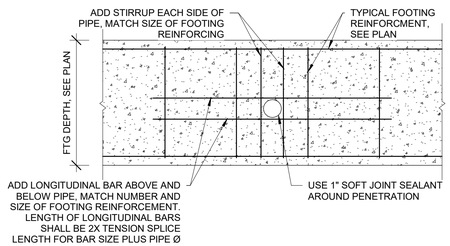
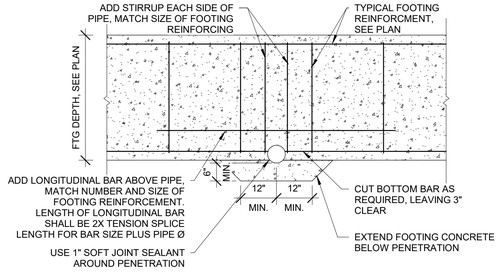
SHEET NAME: DETAILS

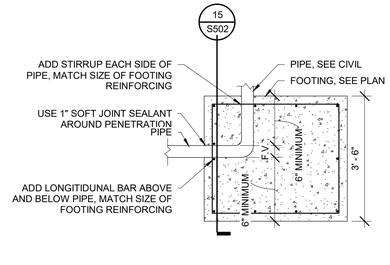
S501



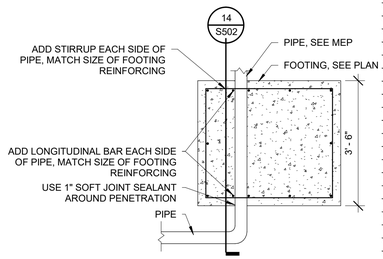
19 PENETRATION THRU FOOTING ELEVATION - 2
1/2" = 1'-0"



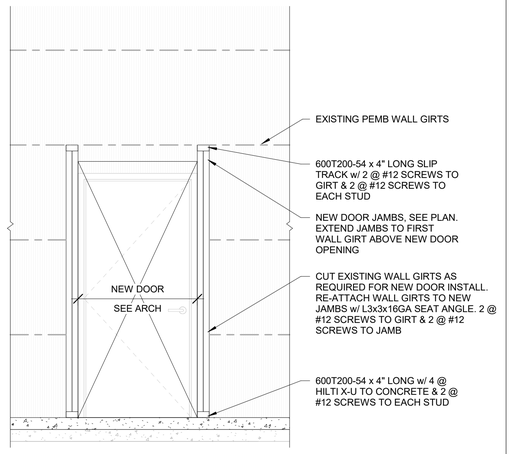
14 PENETRATION THRU FOOTING ELEVATION - 1
1/2" = 1'-0"



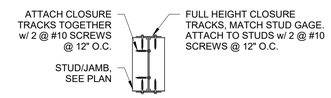
13 PENETRATION THRU FOOTING - 2
1/2" = 1'-0"

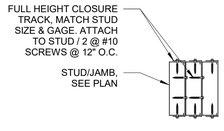


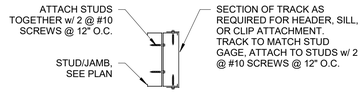
12 PENETRATION THRU FOOTING - 1
1/2" = 1'-0"



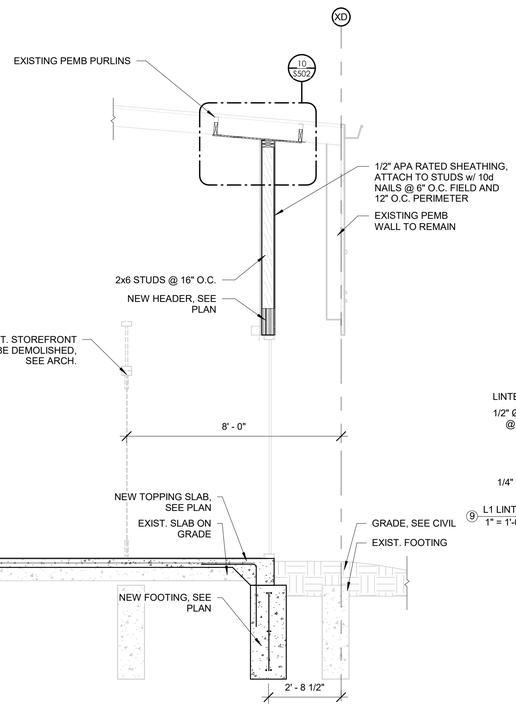
8 NEW DOOR OPENINGS
1/2" = 1'-0"



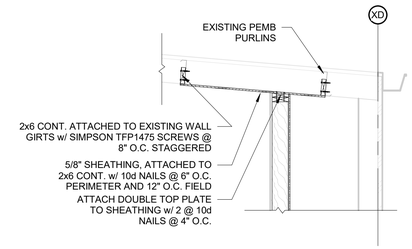




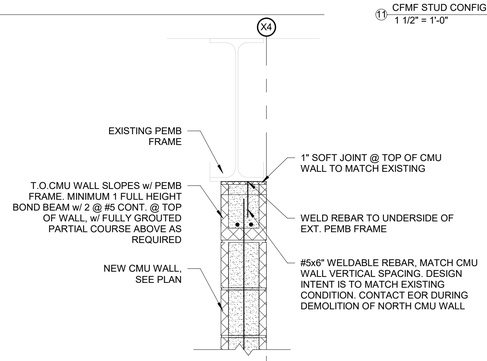
11 CFMF STUD CONFIGURATIONS CONTRACTOR OPTION
1 1/2" = 1'-0"



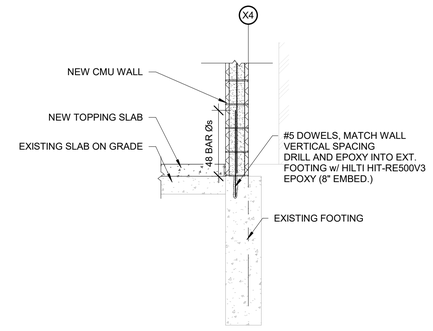
7 SECTION @ NEW ENTRY
3/8" = 1'-0"



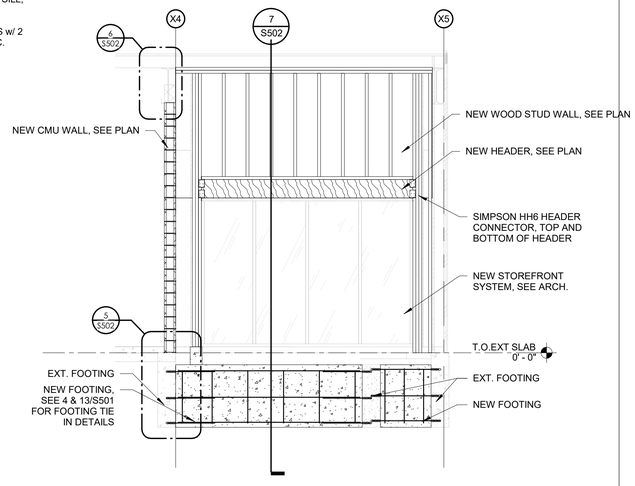
10 TOP OF WOOD WALL @ EXT. PEMB
1/2" = 1'-0"



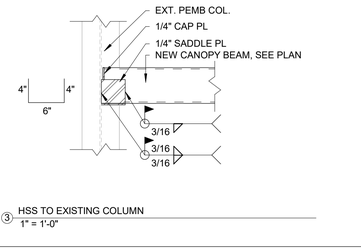
6 T.O.CMU WALL
1" = 1'-0"



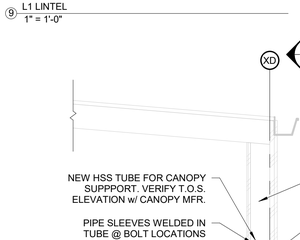
5 NEW CMU @ EXT. FOOTING
1/2" = 1'-0"



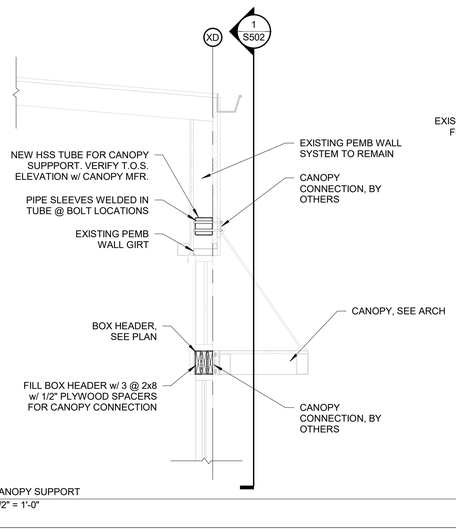
4 NEW FRAMING @ ENTRY
1/4" = 1'-0"



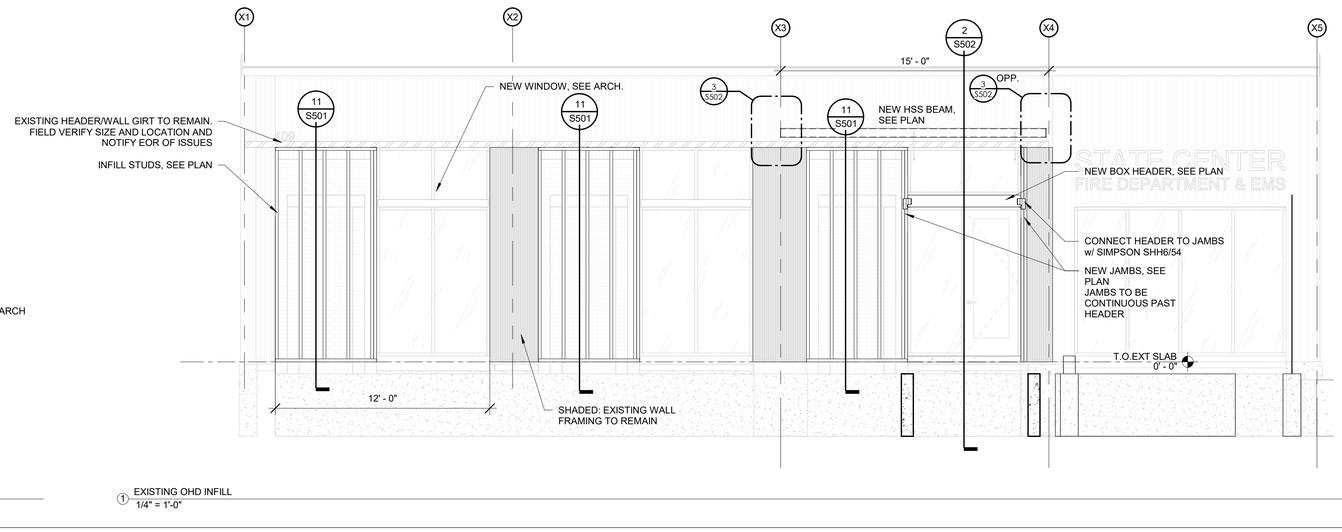
3 HSS TO EXISTING COLUMN
1" = 1'-0"



9 L1 LINTEL
1" = 1'-0"



2 CANOPY SUPPORT
1/2" = 1'-0"



1 EXISTING OHD INFILL
1/4" = 1'-0"

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S502

Addendum #1

Project:	State Center Fire Station	Project Number:	23-006	Date:	January 6, 2026

Note { *This addendum has been issued to modify and/or interpret the bidding documents, including the drawings and specifications. Unless otherwise instructed, the information contained on the addendum shall take precedence over anything contrary on the original bidding documents and shall be hereinafter considered as a party of the bidding documents.*

Specifications

Section 22 1119 – Domestic Plumbing Specialties

1. **DELETE** Part 1.01.M. Catch Basin.
2. **REVISE** Part 2.03 to read, "Trench Drain – Frame and Grate"
3. **REVISE** Part 2.03.A.1 to read, "Zurn Z712"
4. **REVISE** Part 2.03.B to read, "Zurn Z712, 12" wide reveal frame and grate system with powder coated heavy-duty carbon steel frame. Channels are 120" long with 12" wide reveal and have a 8-1/2" clear opening. Provide Ductile Iron Slotted Grate Class E per the DIN EN1433 top load classifications that locks down to frame for a secure fit."
5. **ADD** Part 2.03.C to read, "Total trench length shall be as indicated on drawings."
6. **DELETE** Part 2.04 CATCH BASIN (CB-1)

Section 23 3417 – High Volume, Low Speed Fans

1. **ADD** section in its entirety.

Section 23 3418 – Destratification Fans

1. **DELETE** section in its entirety.

Plans

Sheet ME1.1 –Roof Plan

1. New Addition
    A. **REVISE** 4" vents from Sand Oil Interceptor location to be at least 10 ft from combustion air duct and in line with radiant heater combustion air duct and flue.

Sheet P1.0 – Piping Underfloor Plan

1. Plumbing Underfloor Plan:
    A. **REVISE** location of gas piping layout from site main to new gas meter so not to run under door stoop.
    B. **REVISE** Note on 6" CW site main to read, "Maintain proper clearances between water and sanitary piping mains; Coordinate with Iowa DNR requirements and local plumbing inspector."
    C. **REVISE** 2" and 4" vents from Sand Oil Interceptor to route up in south wall of Apparatus Bay.
2. Referenced Notes:
    A. **REVISE** Reference Note 1 to read, "Provide new trench drain. Refer to architectural documents for more information on proposed sloped floor slab extents and proposed trench drain rim elevations."

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Sheet P1.1 – Piping Plan

1. Apparatus Bay 112
    A. **ADD** Referenced Note 2 at GUH-2.
    B. **REVISE** 2" and 4" vents from Sand Oil Interceptor to route up in south wall. Combine as 4" routed up in attic space to north peak in line with other roof penetrations. Maintain 10 ft from combustion air.

Sheet M1.1 – Mechanical Plan

1. Referenced Notes
    A. **REVISE** Note 24 to read, "Provide a Network Honeywell 301-C-DLC Gas Detection Control Panel, wiring and accessories required to monitor and control the associated gas sensors, intake louver damper, and purge exhaust fan EF-4."

Sheet E2.1 – Electrical Lighting Plan

1. Lighting Plan
    A. **ADD** "3" tag to line voltage dimmer in EMT DAYROOM (FUTURE) 107, indicating 3-way switching of dimming switch.
    B. **ADD** "G" (typical) lighting sequence of operations tags to exterior wallpack lights.

Sheet E6.1 – Electrical Schedules

1. Lighting Fixture Schedule
    A. **ADD** the following equal manufacturers:
        a. Type EC – Sure-Lites
        b. Type PA – Metalux
        c. Type ZA – Modern Forms
        d. Type ZB – Modern Forms
        e. Type ZC – Modern Forms

Vendor Approvals

Section 22 1119 – Domestic Plumbing Specialties

1. Trench Drains
    A. MiFab
    B. ABT, Inc.

Section 23 3423 – HVAC Power Ventilators

1. Exhaust Fans
    A. CaptiveAire

Section 23 5533 – Low Intensity Radiant Unit Heaters

1. Radiant Heaters
    A. Superior Radiant Products (SRP)

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Attachments

Specification Section – 23 3417 High Volume, Low Speed Fans… (4 pages)

Sheet ME1.1 – Roof Plan… (24 x 36)

Sheet P1.0 – Piping Underfloor Plan… (24 x 36)

Sheet P1.1 – Piping Plan… (24 x 36)

Sheet M1.1 – Mechanical Plan… (24 x 36)

Sheet E2.1 – Electrical Lighting Plan… (24 x 36)

Sheet E6.1 – Electrical Schedules… (24 x 36)

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SECTION 23 3417
HIGH VOLUME, LOW SPEED FANS (ADDENDUM #1)

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Destratification fans

1.02 RELATED SECTIONS

A. Specification Section 21 1300 Fire Suppression Sprinkler Systems
B. Specification Section 23 0000 Heating, Ventilating, and Air Conditioning (HVAC)
C. Specification Section 26 0000 Electrical

1.03 REFERENCES

A. National Fire Protection Agency (NFPA)
B. Underwriters Laboratory (UL)
C. Restriction of Hazardous Substances (ROHS)
D. International Organization for Standardization (ISO)
E. National Electrical Manufacturers Association (NEMA).
F. AMCA 301 - Methods for Calculating Fan Sound Ratings from Laboratory Test Data.
G. NEMA MG1 - Motors and Generators.
H. NFPA 70 - National Electrical Code.
I. SMACNA - HVAC Duct Construction Standards - Metal and Flexible.

1.04 SUBMITTALS

A. All submitted documents shall be:
    1. Digital (scanned documents are not acceptable)
    2. Current, within last 5 years
    3. Complete and in sufficient detail to allow ready determination of compliance with contract documents
    4. Have options clearly indicated as applicable to each submittal
B. Construction submittal
    1. Provide (1) submittal including all products listed in this specification section. Provide the following for each product.
        a. Product Data indicating fan power, fan RPM, sound power levels, electrical characteristics, connection requirements, mounting recommendations and controller information.
        b. Shop Drawings indicating product dimensions, weight, and attachment methods.
C. Closeout submittal
    1. After project substantial completion, provide (1) submittal including all products listed in this specification section. Provide the following for each product.
        a. Warranty documentation, fully filled out and including start-up and start date information.
        b. Operation and Maintenance Information

1.05 QUALITY ASSURANCE

A. Certifications
    1. The fan assembly, as a system, shall be ETL-certified and built pursuant to the guidelines set forth by UL standard 507 and CSA standard 22.2 No. 113-08.

2. The fan shall be compliant with NFPA 13-Standard for the Installation of Sprinkler Systems, NFPA 72-National Fire Alarm and Signaling Code, and NFPA 70-2011-National Electric Code (NEC).
3. Controllers shall comply with National Electrical Code (NEC) and Underwriters Laboratory (UL) standards and shall be labeled where required by code.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver product in original, undamaged packaging with identification labels intact. The fan shall be new, free from defects, and factory tested.

B. The fan and its components must be stored in a safe, dry location until installation.

1.07 WARRANTY

A. Airfoils Lifetime (Parts)

B. Hub Fan Hub 7 years (Parts)

C. Motor 7 years (Parts)

D. Gearbox 7 years (Parts)

E. Controller 7 years (Parts)

F. All other fan components 7 years (Parts)

G. Electrical 3 years (Parts)

H. Labor 1 year

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Big Ass Fans

B. Hunter

C. ThermoTek

D. VividAir

E. CaptiveAire

F. MacroAir

G. Skyblade

H. Engineer approved equal.

2.02 HIGH VOLUME, LOW SPEED FANS

A. Complete Unit
1. Regulatory Requirements: The entire fan assembly shall be ETL-certified and built pursuant to the construction guidelines set forth by UL standard 507 and CSA standard 22.2.
2. The fan components shall be designed specifically for high volume, low speed fans to ensure lower operational noise. Sound levels from the fan operating at maximum speed measured in a laboratory setting shall not exceed 55 dBA. Actual results of sound measurements in the field may vary due to sound reflective surfaces and environmental conditions.

B. Onboard Fan Control
1. The onboard fan controller shall be constructed using a variable frequency drive (VFD) that is pre-wired to the motor and factory-programmed to minimize the starting and braking torques for smooth and efficient operation.

C. Airfoil System
1. The fan shall be equipped with airfoils of extruded aluminum alloy.

D. Motor

1. The fan motor shall be an AC induction type inverter rated. Mounting Post
2. The fan shall be equipped with a mounting post that provides a structural connection between the fan assembly and extension tube.

E. Mounting System
1. The fan mounting system shall be designed for quick and secure installation on a variety of structural supports. The mounting yoke shall be of welded construction and made from low carbon steel no less than 3/16” thick, per ASTM A36, and be powder coated for appearance and resistance to corrosion.
2. All mounting bolts shall be SAE Grade 8 or equivalent.

F. Hub
1. The fan hub shall be made of cut aluminum for high strength and light weight.

G. Safety Cable
1. The fan shall be equipped with a safety cable that provides an additional means of securing the fan assembly to the building structure. The safety cable shall be Ø3/8” diameter and fabricated out of 7 x 19 zinc galvanized steel cable.
2. Field construction of safety cables is not permitted.

H. Control
1. The fan is equipped with a wall control providing 100% control of all fan functions. The wall control shall be a digital keypad device mounted. The cover shall be capable of mounting to a standard switch box.
2. Equipped with touchpad controls and an LED display for controlling the fan’s direction, operation, speed, and programming.
3. Equipped with a simple diagnostic program to identify faults in the system. Provisions shall be made for retrieving fan operation and diagnostic data (fault messages) through the remote wall control.
4. Fans shall have automatic control with temperature sensor at ceiling level and occupied space level to automatically adjust fan speed in both summer and winter mode.

I. Fire Control Panel Integration
1. Includes a 10-30 VDC pilot relay for seamless fire control panel integration. The pilot relay can be wired Normally Open or Normally Closed in the field.

J. Guy Wires
1. Included for installations with extension tubes 4 ft or longer to limit the potential for lateral movement.

PART 3 EXECUTION

3.01 PREPARATION

A. Fan location must have a bar joist or I-beam structure from which to mount the fan. Additional mounting options may be available.

B. Mounting structure must be able to support weight and operational torque of fan.

C. Fan location must be free from obstacles such as lights, cables, or other building components.

D. Check fan location for proper electrical requirements. Consult installation guide for appropriate circuit requirements.

E. Each fan requires dedicated branch circuit protection.

3.02 INSTALLATION

A. Install the fan according to the manufacturer’s Installation Guide, which includes acceptable structural dimensions and proper sizing and placement of angle iron for bar joist applications.

B. Minimum Distances

1. Airfoils must be at least 10 ft above the floor.
2. Installation area must be free of obstructions such as lights, cables, sprinklers or other building structures with the airfoils at least 2 ft clear of all obstructions.
3. The structure the fan is attached to shall be capable of supporting a torque load of up to 300 ft-lb of torque.

C. The fan shall not be located where it will be continuously subjected to wind gusts or near the outputs of HVAC systems or radiant heaters.

D. In buildings equipped with sprinklers, including ESFR sprinklers, fan installation shall comply with all the following:
1. The maximum fan diameter shall be 24 ft.
2. The HVLS fan shall be centered approximately between four adjacent sprinklers.
3. The vertical clearance from the HVLS fan to the sprinkler deflector shall be a minimum of 3 ft.
4. All HVLS fans shall be interlocked to shut down immediately upon receiving a waterflow signal from the alarm system in accordance with the requirements of NFPA 72 - National Fire Alarm and Signaling Code.

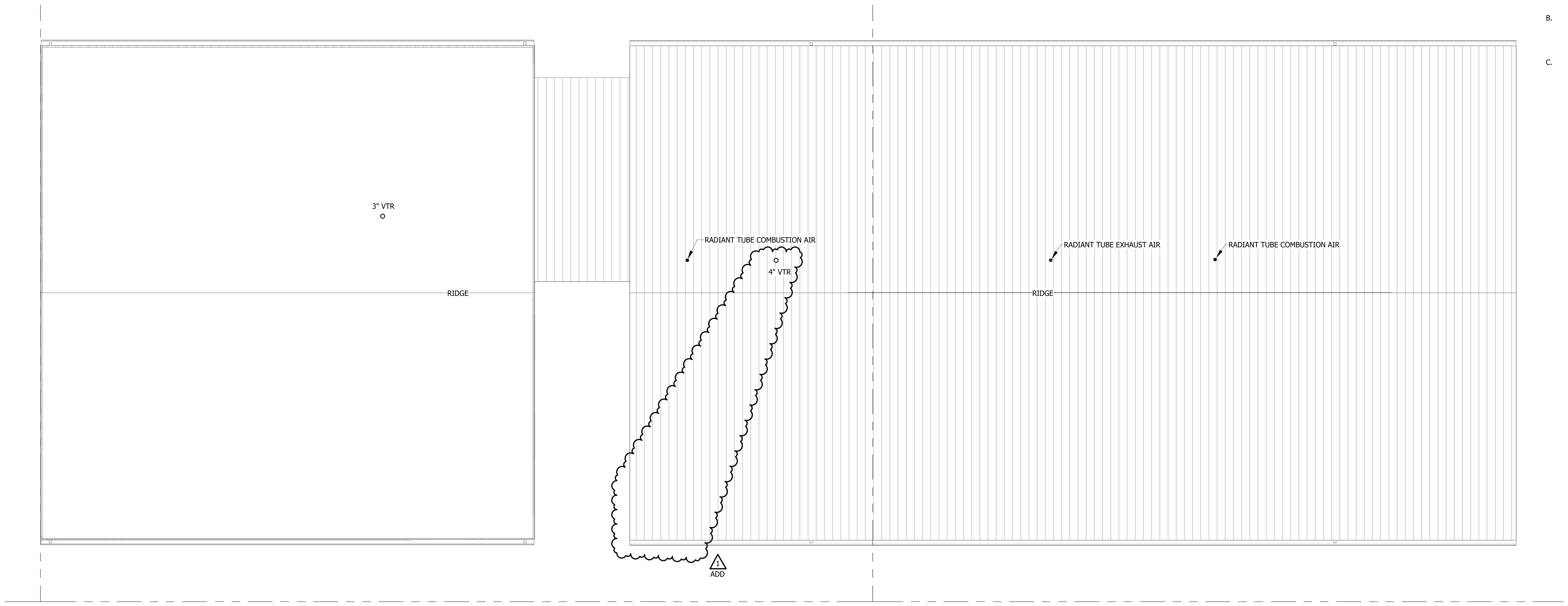
END OF SECTION

GENERAL NOTES:

A. LAYOUT AND ROUTING SHOWN IS DIAGRAMMATIC AND SCHEMATIC IN NATURE. NOT ALL OFFSETS MAY BE SHOWN. CONTRACTOR SHALL VERIFY EXACT ROUTING REQUIRED AND NUMBER OF OFFSETS AND TRANSITIONS.

B. ALL ROOFTOP PENETRATIONS SHALL OCCUR NORTH OF ROOF RIDGE LINE. PROVIDE & INSTALL BOOT FLASHING AND OTHER ASSOCIATED ACCESSORIES AS REQUIRED FOR PROPER OPERATION AND INSTALLATION. **PAINT ALL PIPE PENETRATIONS TO MATCH FINISH OF METAL ROOF PANELS.**

C. DESIGN INTENT SHALL BE ALL MECHANICAL, ELECTRICAL, & PLUMBING RUNS WITHIN NEW ADMIN AREA, LOCKER ROOM & RESTROOMS SHALL BE RUN WITHIN NEW WALL ASSEMBLIES, ABOVE FINISH CEILING ASSEMBLIES OR TIGHT TO UNDERSIDE OF STRUCTURE UNLESS NOTED OTHERWISE. COORDINATE ANY EXPOSED ROUTING WITHIN THESE SPACES WITH ARCHITECT & ENGINEER PRIOR TO FABRICATION & INSTALLATION.



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1 ROOF PLAN
1/8" = 1'-0"

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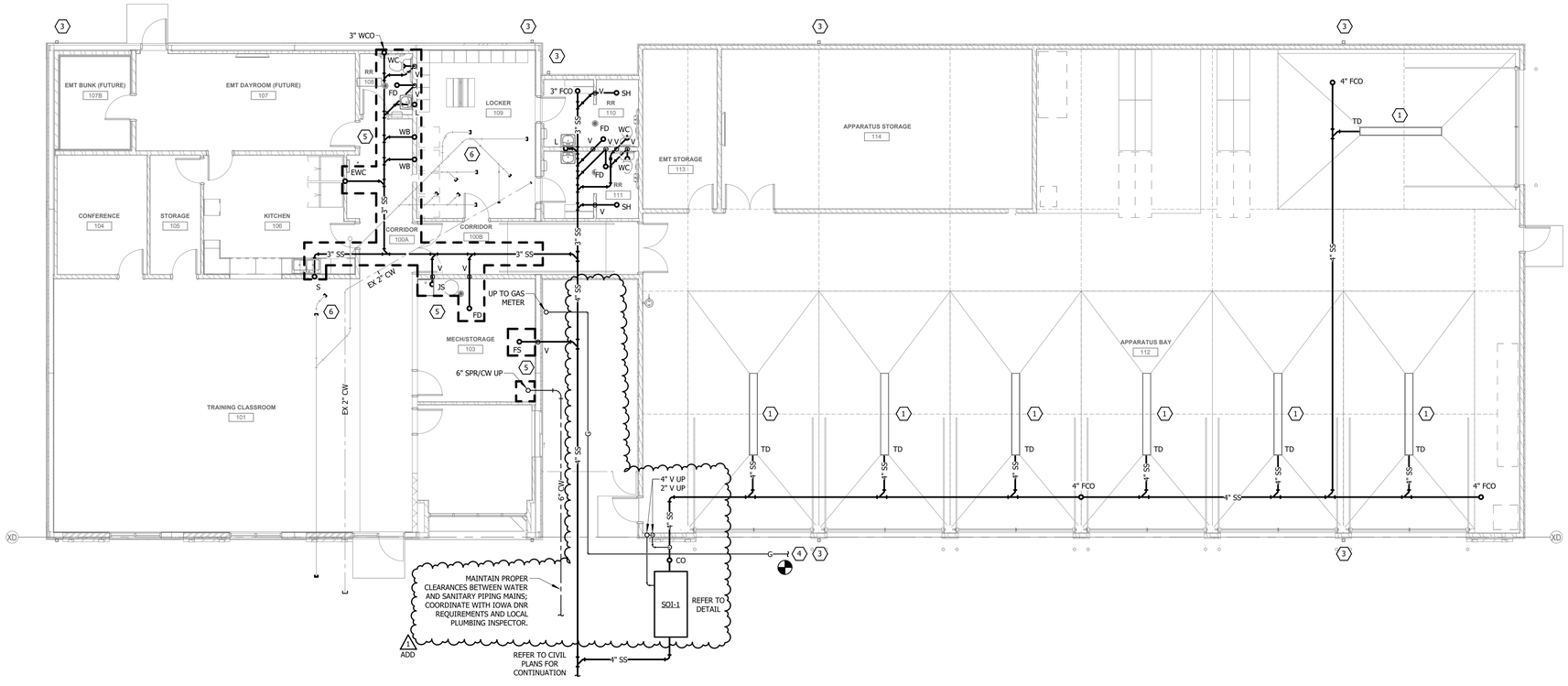
ME1.1



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1 PLUMBING UNDERFLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES:

A. INSTALLATION PLANS ARE SCHEMATIC IN NATURE. CONTRACTOR TO VERIFY PLACEMENT OF NEW EQUIPMENT/FIXTURES PRIOR TO INSTALLATION.

B. MAINTAIN SERVICE CLEARANCE AROUND ALL MECHANICAL EQUIPMENT AND ABOVE ELECTRICAL EQUIPMENT. DO NOT ROUTE PIPING IN CLEARANCE SPACE.

C. COORDINATE PIPING LAYOUT AND ELEVATIONS WITH FOOTINGS, FLOW LINES, LOCAL PLUMBING CODE AND THE SPECIFICATIONS.

D. VERIFY ALL SITE CONDITIONS PRIOR TO START OF WORK.

E. COORDINATE ALL PLUMBING AND PIPING ROUTING WITH BUILDING STRUCTURE AND OTHER TRADES PRIOR TO INSTALLATION TO ALLOW FOR PROPER CLEARANCES AND FLOW REQUIREMENTS.

F. ALL CONDENSATE DRAIN PIPING SHALL BE 3/4" COPPER WITH INSULATION UNLESS NOTED OTHERWISE. WHITE IN APPARATUS BAY AND BLACK IN ADMIN ADDITION.

G. COORDINATE ALL VENTS THROUGH ROOF WITH STRUCTURAL DRAWINGS AND MAINTAIN 10FT REQUIRED DISTANCE FROM MECHANICAL EQUIPMENT INTAKES. OFFSET PIPING AS NECESSARY.

H. COORDINATE ALL EXPOSED PIPE ROUTING WITH DESIGN TEAM PRIOR TO ROUGH-IN. SPECIFIC RACKING REQUIREMENTS MAY BE REQUIRED.

I. COORDINATE ALL FLOOR DRAIN LOCATIONS WITH MECHANICAL EQUIPMENT AND RESPECTIVE TRADES PRIOR TO ROUGH-IN.

J. COORDINATE STORM AND SANITARY SEWER CONNECTIONS WITH STRUCTURAL & CIVIL DRAWINGS TO MAINTAIN REQUIRED SLOPING AND PROPER ELEVATIONS.

K. SEE PLUMBING FIXTURE CONNECTION SCHEDULE FOR FIXTURE CONNECTION SIZES.

L. FIELD VERIFY ALL NEW AND EXISTING PIPE ROUTING WITH EXISTING CONDITIONS PRIOR TO ROUGH-IN. MAKE NECESSARY OFFSETS AS REQUIRED.

M. COORDINATE ALL WALL CLEANOUT LOCATIONS WITH DESIGN TEAM PRIOR TO ROUGH-IN. COORDINATE ALL FLOOR CLEANOUT LOCATIONS BEING INSTALLED IN CARPET OR OTHER SPECIALTY FLOOR AREAS WITH DESIGN TEAM PRIOR TO ROUGH-IN.

O. PROVIDE ISOLATION BALL VALVES ON BRANCH PIPING TAPS FROM MAIN ON ALL COLD AND HOT WATER PIPES. ENSURE VALVES ARE INSTALLED IN ACCESSIBLE LOCATIONS.

P. PROVIDE A INSULATED PLUMBING VENT BOOT FLASHING IN LOCATIONS THRU THERMAL ENVELOPE.

Q. ALL ROOF PENETRATIONS TO OCCUR NORTH OF ROOF RIDGE OR THRU EXTERIOR WALLS. ANY PENETRATIONS NOT SHOWN ON ARCHITECTURAL ELEVATIONS SHALL BE COORDINATED WITH ARCHITECT & ENGINEER PRIOR TO INSTALLATION.

REFERENCED NOTES: (#)

1. NEW TRENCH DRAINS AND CATCH BASINS. REFER TO ARCHITECTURAL DOCUMENTS FOR MORE INFORMATION ON PROPOSED SLOPED FLOOR SLAB EXTENTS & PROPOSED TRENCH DRAIN RIM ELEVATIONS.
2. EXTEND 2" CW UNDERSLAB TO NEW METER AND BACKFLOW LOCATION.
3. COORDINATE STORM DOWNSPOUT PIPING WITH CIVIL SITE PLANS.
4. COORDINATE NEW GAS PIPE ROUTING WITH CIVIL SITE PLANS. CONNECT TO EXISTING GAS MAIN.
5. CUT AND PATCH EXISTING FLOOR SLAB TO MATCH EXISTING. REFER TO ALL BID DOCUMENTS FOR ADDITIONAL INFORMATION.
6. CAP EXISTING UNDERFLOOR PIPING BELOW FLOOR IN EXISTING BUILDING AFTER PIPING IS BLOWN OUT AND COMPLETELY DISCONNECTED FROM SYSTEM MAINS. PATCH CONCRETE TO MATCH EXISTING.

PLUMBING FIXTURE CONNECTION SCHEDULE

ITEM	WASTE SIZE	VENT SIZE	WATER SIZE HOT	WATER SIZE COLD
WATER CLOSET (TANK)	3"	2"	-	3/4"
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
SINK	1-1/2"	1-1/2"	1/2"	1/2"
JANITOR SINK	3"	1-1/2"	3/4"	3/4"
DRINKING FOUNTAIN	1-1/2"	1-1/2"	-	1/2"
SHOWER	2"	1-1/2"	3/4"	3/4"
WASHER BOX	2"	1-1/2"	1/2"	1/2"
TYPICAL WASTE STACK	4"	-	-	-
TYPICAL VENT STACK	-	3"	-	-

NOTES:
1. ALL SANITARY SEWER BELOW GRADE SHALL BE A MINIMUM OF 3" UNLESS OTHERWISE NOTED.
2. ALL VENT BELOW GRADE SHALL BE A MINIMUM OF 2" UNLESS OTHERWISE NOTED.

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P1.0

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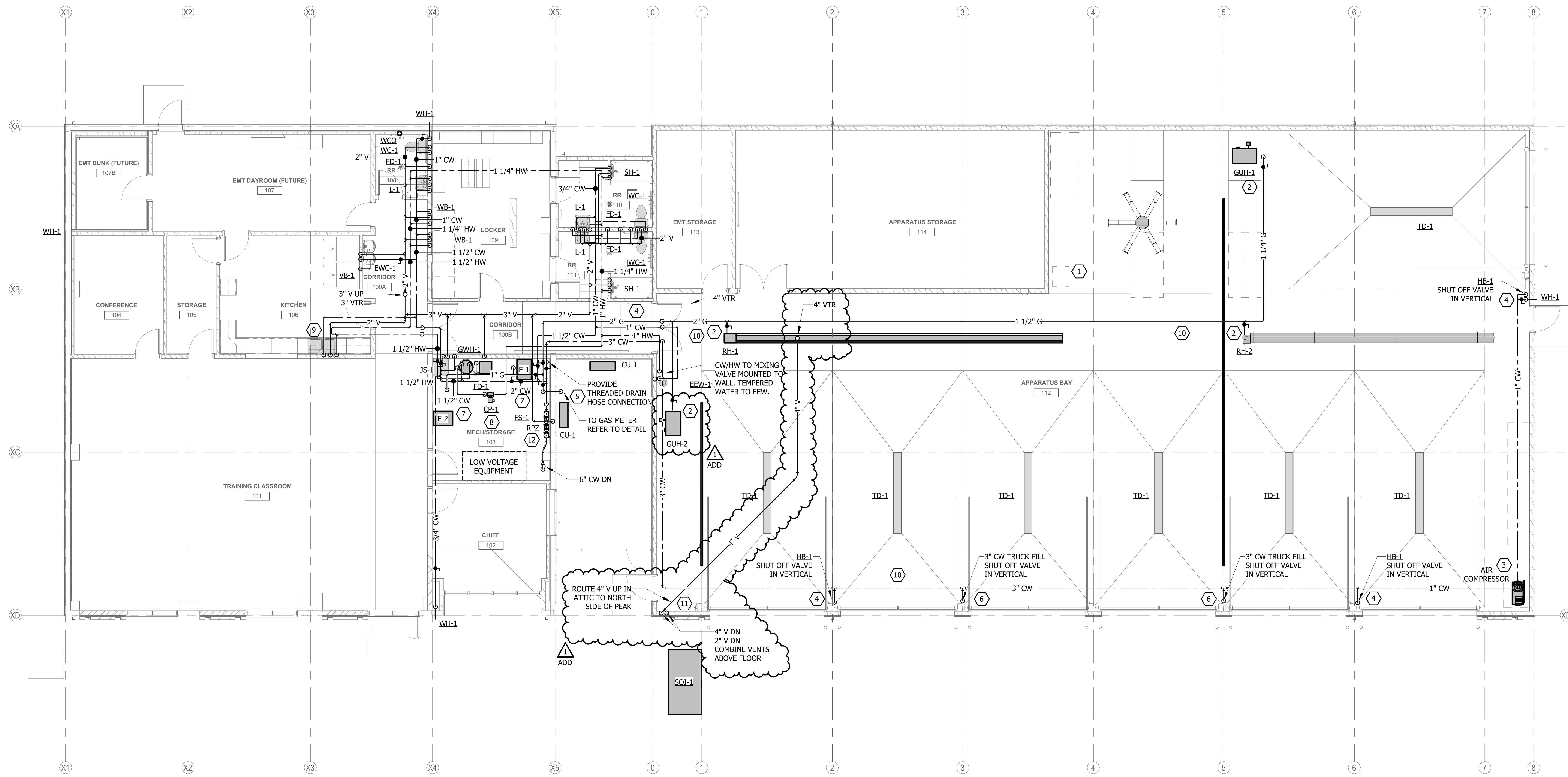

1 PIPING PLAN
1/8" = 1'-0"

GENERAL NOTES:

A. INSTALLATION PLANS ARE SCHEMATIC IN NATURE. CONTRACTOR TO VERIFY PLACEMENT OF NEW EQUIPMENT/FIXTURES PRIOR TO INSTALLATION.

B. MAINTAIN SERVICE CLEARANCE AROUND ALL MECHANICAL EQUIPMENT AND ABOVE ELECTRICAL EQUIPMENT. DO NOT ROUTE PIPING IN CLEARANCE SPACE.

C. COORDINATE PIPING LAYOUT AND ELEVATIONS WITH FOOTINGS, FLOW LINES, LOCAL PLUMBING CODE AND THE SPECIFICATIONS.

D. VERIFY ALL SITE CONDITIONS PRIOR TO START OF WORK.

E. COORDINATE ALL PLUMBING AND PIPING ROUTING WITH BUILDING STRUCTURE AND OTHER TRADES PRIOR TO INSTALLATION TO ALLOW FOR PROPER CLEARANCES AND FLOW REQUIREMENTS.

F. ALL CONDENSATE DRAIN PIPING SHALL BE 3/4" COPPER WITH INSULATION UNLESS NOTED OTHERWISE. WHITE IN APPARATUS BAY AND BLACK IN ADMIN ADDITION.

G. COORDINATE ALL VENTS THROUGH ROOF WITH STRUCTURAL DRAWINGS AND MAINTAIN 10FT REQUIRED DISTANCE FROM MECHANICAL EQUIPMENT INTAKES. OFFSET PIPING AS NECESSARY.

H. COORDINATE ALL EXPOSED PIPE ROUTING WITH DESIGN TEAM PRIOR TO ROUGH-IN. SPECIFIC RACKING REQUIREMENTS MAY BE REQUIRED.

I. COORDINATE ALL FLOOR DRAIN LOCATIONS WITH MECHANICAL EQUIPMENT AND RESPECTIVE TRADES PRIOR TO ROUGH-IN.

J. COORDINATE STORM AND SANITARY SEWER CONNECTIONS WITH STRUCTURAL & CIVIL DRAWINGS TO MAINTAIN REQUIRED SLOPING AND PROPER ELEVATIONS.

K. SEE PLUMBING FIXTURE CONNECTION SCHEDULE FOR FIXTURE CONNECTION SIZES.

L. FIELD VERIFY ALL NEW AND EXISTING PIPE ROUTING WITH EXISTING CONDITIONS PRIOR TO ROUGH-IN. MAKE NECESSARY OFFSETS AS REQUIRED.

M. COORDINATE ALL WALL CLEANOUT LOCATIONS WITH DESIGN TEAM PRIOR TO ROUGH-IN. COORDINATE ALL FLOOR CLEANOUT LOCATIONS BEING INSTALLED IN CARPET OR OTHER SPECIALTY FLOOR AREAS WITH DESIGN TEAM PRIOR TO ROUGH-IN.

O. PROVIDE ISOLATION BALL VALVES ON BRANCH PIPING TAPS FROM MAIN ON ALL COLD AND HOT WATER PIPES. ENSURE VALVES ARE INSTALLED IN ACCESSIBLE LOCATIONS.

P. PROVIDE A INSULATED PLUMBING VENT BOOT FLASHING IN LOCATIONS THRU THERMAL ENVELOPE.

Q. ALL ROOF PENETRATIONS TO OCCUR NORTH OF ROOF RIDGE OR THRU EXTERIOR WALLS. ANY PENETRATIONS NOT SHOWN ON ARCHITECTURAL ELEVATIONS SHALL BE COORDINATED WITH ARCHITECT & ENGINEER PRIOR TO INSTALLATION.

REFERENCED NOTES:

1. COORDINATE OWNER PROVIDED FILL TANK WITH OWNER PRIOR TO ROUGH-IN OF 2" PVC INTAKE TO EXTERIOR WITH 90° TERMINATION ELBOW.
2. PROVIDE SHUT OFF VALVE AND GAS PRESSURE REGULATOR (WHERE REQUIRED) TO HEATER. COORDINATE ACTUAL EQUIPMENT AND GAS CONNECTION LOCATION.
3. OWNER FURNISHED, OWNER INSTALLED AIR COMPRESSOR AND ASSOCIATED PIPING AND HOSE REEL.
4. PROVIDE ISOLATION VALVE IN VERTICAL PIPING FOR ACCESSIBILITY.
5. COORDINATE UNDERGROUND GAS PIPING AND GAS METER WITH ELECTRICAL UTILITIES. SEE CIVIL DRAWINGS FOR SITE GAS ROUTING.
6. PROVIDE 3" TRUCK FILL WITH AN ISOLATION VALVE IN VERTICAL. TERMINATE WITH A 2.5" NH/NST CONNECTION. OWNER SHALL FURNISH, CONTRACTOR SHALL INSTALL A SLOW CLOSE VALVE SIMILAR TO 2.5" NHF SWIVEL ROCKER INLET, 2.5" NMH RIGID OUTLET.
7. ROUTE CONDENSATE PIPING FROM FURNACE TO NEAREST FLOOR DRAIN.
8. REFER TO P5.2 PIPING DETAILS FOR SYSTEM PIPING SCHEMATICS.
9. ROUGH-IN SS, V, CW, HW PIPING TO FUTURE SINK. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
10. ALL DOMESTIC COLD WATER AND GAS PIPING IN THE NEW ADDITION SHALL NOT BE LOCATED IN ATTIC AND SHALL BE EXPOSED BELOW METAL CEILING. REFER TO ARCHITECTURAL DOCUMENTS FOR PAINTING REQUIREMENTS.
11. PROVIDE CAST IRON VENT PIPING ABOVE FLOOR IN THIS AREA FOR DURABILITY.
12. PLUMBING CONTRACTOR SHALL COORDINATE STACKED DOMESTIC AND SPRINKLER ENTRANCE ON THIS WALL WITH SPRINKLER CONTRACTOR PRIOR TO ROUGH-IN OF PIPING.

PLUMBING FIXTURE CONNECTION SCHEDULE

ITEM	WASTE SIZE	VENT SIZE	WATER SIZE	
			HOT	COLD
WATER CLOSET (TANK)	3"	2"	-	3/4"
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
SINK	1-1/2"	1-1/2"	1/2"	1/2"
JANITOR SINK	3"	1-1/2"	3/4"	3/4"
DRINKING FOUNTAIN	1-1/2"	1-1/2"	-	1/2"
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WASHER BOX	2"	1-1/2"	1/2"	1/2"
TYPICAL WASTE STACK	4"	-	-	-
TYPICAL VENT STACK	-	3"	-	-

NOTES:
1. ALL SANITARY SEWER BELOW GRADE SHALL BE A MINIMUM OF 3" UNLESS OTHERWISE NOTED.
2. ALL VENT BELOW GRADE SHALL BE A MINIMUM OF 2" UNLESS OTHERWISE NOTED.

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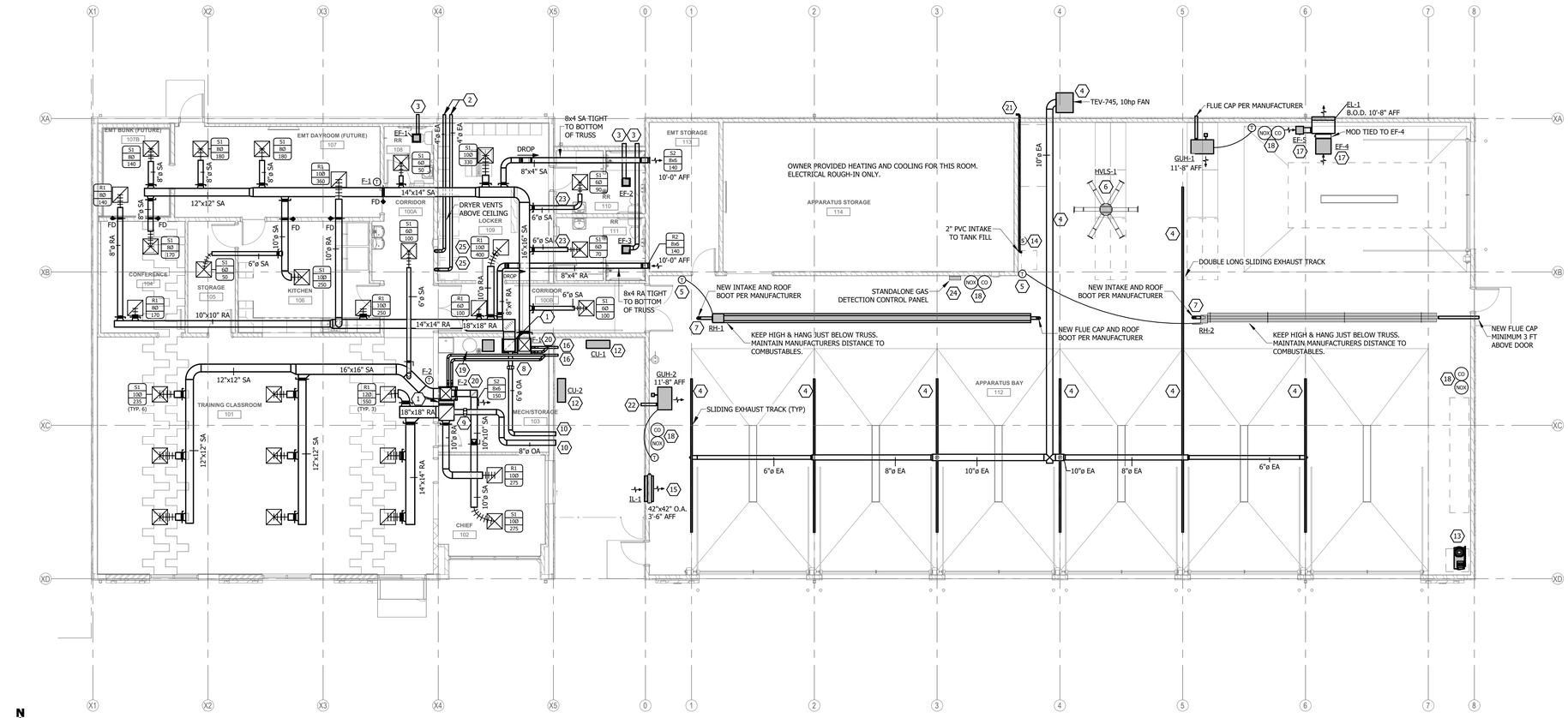
P1.1



1 HVAC PLAN
1/8" = 1'-0"

GENERAL NOTES:

A. LAYOUT AND ROUTING SHOWN IS DIAGRAMMATIC AND SCHEMATIC IN NATURE. NOT ALL OFFSETS MAY BE SHOWN. CONTRACTOR SHALL VERIFY EXACT ROUTING REQUIRED AND NUMBER OF OFFSETS AND TRANSITIONS.

B. MAINTAIN SERVICE CLEARANCE IN FRONT OF AND ABOVE ELECTRICAL EQUIPMENT AND ACCESS. DO NOT INSTALL EQUIPMENT OR ROUTE DUCTS IN CLEARANCE SPACE. REFER TO EQUIPMENT INSTALLATION AND INSTRUCTIONS.

C. COORDINATE THERMOSTAT LOCATIONS WITH CASEWORK, WALL TYPES, AND FURNISHINGS PRIOR TO ROUGH-IN. COORDINATE FINAL LOCATIONS WITH OWNER.

D. PROVIDE VOLUME CONTROL BALANCING DAMPERS ON ALL SUPPLY, RETURN, EXHAUST AIR TAPS IN ACCESSIBLE LOCATIONS FOR AIR BALANCING. INSTALL CABLE OPERATED DAMPER OR ACCESS PANEL IF DAMPER IS LOCATED ABOVE GYP CEILINGS.

E. COORDINATE DUCT ROUTING WITH STRUCTURAL AND ALL TRADES.

F. COORDINATE ALL EXPOSED DUCTWORK ROUTING WITH DESIGN TEAM PRIOR TO ROUGH-IN.

G. COORDINATE SUPPLY, RETURN, AND EXHAUST GRILLE/DIFFUSER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN AND ALL TRADES.

H. ALL ROOFTOP PENETRATIONS SHALL OCCUR NORTH OF ROOF RIDGE LINE. PROVIDE & INSTALL BOOT FLASHING AND OTHER ASSOCIATED ACCESSORIES AS REQUIRED FOR PROPER OPERATION AND INSTALLATION. **PAINT ALL PIPE PENETRATIONS TO MATCH FINISH OF METAL ROOF PANELS.**

I. COORDINATE DUCT ROUTING IN LOCATIONS WITH EXISTING CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ROUGH-IN.

J. DESIGN INTENT SHALL BE ALL MECHANICAL, ELECTRICAL, & PLUMBING RUNS WITHIN NEW ADMIN AREA, LOCKER ROOM & RESTROOMS SHALL BE RUN WITHIN NEW WALL ASSEMBLIES, ABOVE FINISH CEILING ASSEMBLIES OR TIGHT TO UNDERSIDE OF STRUCTURE UNLESS NOTED OTHERWISE. COORDINATE ANY EXPOSED ROUTING WITHIN THESE SPACES WITH ARCHITECT & ENGINEER PRIOR TO FABRICATION & INSTALLATION.

REFERENCED NOTES: (#)

1. PROVIDE AND INSTALL MERV 11 25"x20"x2" SIDE RETURN FILTER RACK.
2. 4" ALUMINUM DRYER VENT WALL CAP WITH PRE-FINISHED METAL BACKPLATE TO MATCH METAL SIDING AS REQUIRED FOR PROPER SEAL TO BUILDING ENVELOPE.
3. 6" ALUMINUM BATH FAN WALL CAP WITH PRE-FINISHED METAL BACKPLATE TO MATCH METAL SIDING AS REQUIRED FOR PROPER SEAL TO BUILDING ENVELOPE.
4. PLYMOVENT SYSTEM (TRACKS, FAN, DUCTING & CONTROLS) BY OWNER. SHOWN FOR COORDINATION.
5. PROVIDE NEW HEATING ONLY DIGITAL THERMOSTAT, WIRING & CONDUIT FOR NEW RADIANT TUBE HEATER. EACH HEATER CONTROLLED BY ITS OWN STAT.
6. MOUNT HVLS-1 HIGH. COORDINATE FINAL LOCATION TO NOT INTERFERE WITH PLYMOVENT AND LIGHTING.
7. DUCT NEW RADIANT TUBE HEATERS COMBUSTION AIR UP AND OUT NORTH SIDE OF ROOF RIDGE.
8. FIELD CONTROLS 100cfm 6" FAVC DAMPER, SENSORS AND CONTROLLER SET TO ECONOMY MODE FOR NORTHERN CLIMATE.
9. FIELD CONTROLS 200cfm 8" FAVC DAMPER, SENSORS AND CONTROLLER SET TO ECONOMY MODE FOR NORTHERN CLIMATE.
10. BROAN 6" ROUND INTAKE AIR HOOD MODEL 641FA. KEEP A MINIMUM 10' FROM EXHAUST OUTLETS AND MAINTAIN REQUIRED CLEARANCE FROM GAS METER PRESSURE REGULATOR.
11. BROAN 8" ROUND INTAKE AIR HOOD MODEL 643FA. KEEP A MINIMUM 10' FROM EXHAUSTS.
12. G.C. TO INSTALL 4" HOUSEKEEPING PAD FOR CONDENSING UNITS. COORDINATE SIZE WITH FINAL EQUIPMENT.
13. RELOCATED EXISTING AIR COMPRESSOR AND HOSE REEL. COORDINATE FINAL MOUNTING LOCATION OF RELOCATED HOSE REEL WITH OWNER.
14. FIXED WALL MOUNT SPEED CONTROLLER FOR HVLS-1 FAN.
15. NEW WALL SLEEVE, INTAKE LOUVER & MOTOR OPERATED DAMPER TIED INTO PURGE CONTROL AND EF-4.
16. PROVIDE AND INSTALL MANUFACTURERS CONCENTRIC WALL VENT.
17. SEE DETAIL 6 ON SHEET M5.1. KEEP FAN HIGH AS POSSIBLE & INSTALL WITH INLET GUARD SCREEN.
18. CO SENSOR MOUNTED APPROXIMATELY 4' ABOVE FINISHED FLOOR. NOX SENSOR MOUNTED APPROXIMATELY 2' FROM CEILING. TIED INTO EF-4 AND IL-1 MOD.
19. PVC WATER HEATER VENT AND COMBUSTION INTAKE SIZED PER WATER HEATER MANUFACTURER, UP AND OUT NORTH SIDE OF ROOF RIDGE. FLASH AND SEAL WATER TIGHT.
20. ROUTE F-2 CONDENSATE TO MOP SINK. ROUTE F-1 CONDENSATE TO FLOOR DRAIN NEAR WATER HEATER.
21. 2" PVC INTAKE FILL FOR OXYGEN TANK FILL. VERIFY SIZE WITH UNIT MANUFACTURER. KEEP 10' FROM ALL EXHAUST SOURCES.
22. NEW GUH FLUE AND CAP OUT WALL PER MANUFACTURER. MAINTAIN MINIMUM OF 10' FROM ALL FRESH AIR INTAKES.
23. ROUTE 6"Ø SA IN WOOD JOIST WEBBING. FIELD COORDINATE EXACT LOCATION.
24. PROVIDE A STANDALONE HONEYWELL 301C GAS DETECTION CONTROL PANEL, RELAYS, AND ACCESSORIES REQUIRED TO MONITOR AND CONTROL THE ASSOCIATED GAS SENSORS, INTAKE LOUVER DAMPER, AND PURGE EXHAUST FAN EF-4. (ADD 1)
25. PROVIDE RECESSED DRYER BOX IN WALL.

STUDIO MIELE
139 4th STREET
DES MOINES, IOWA 50265

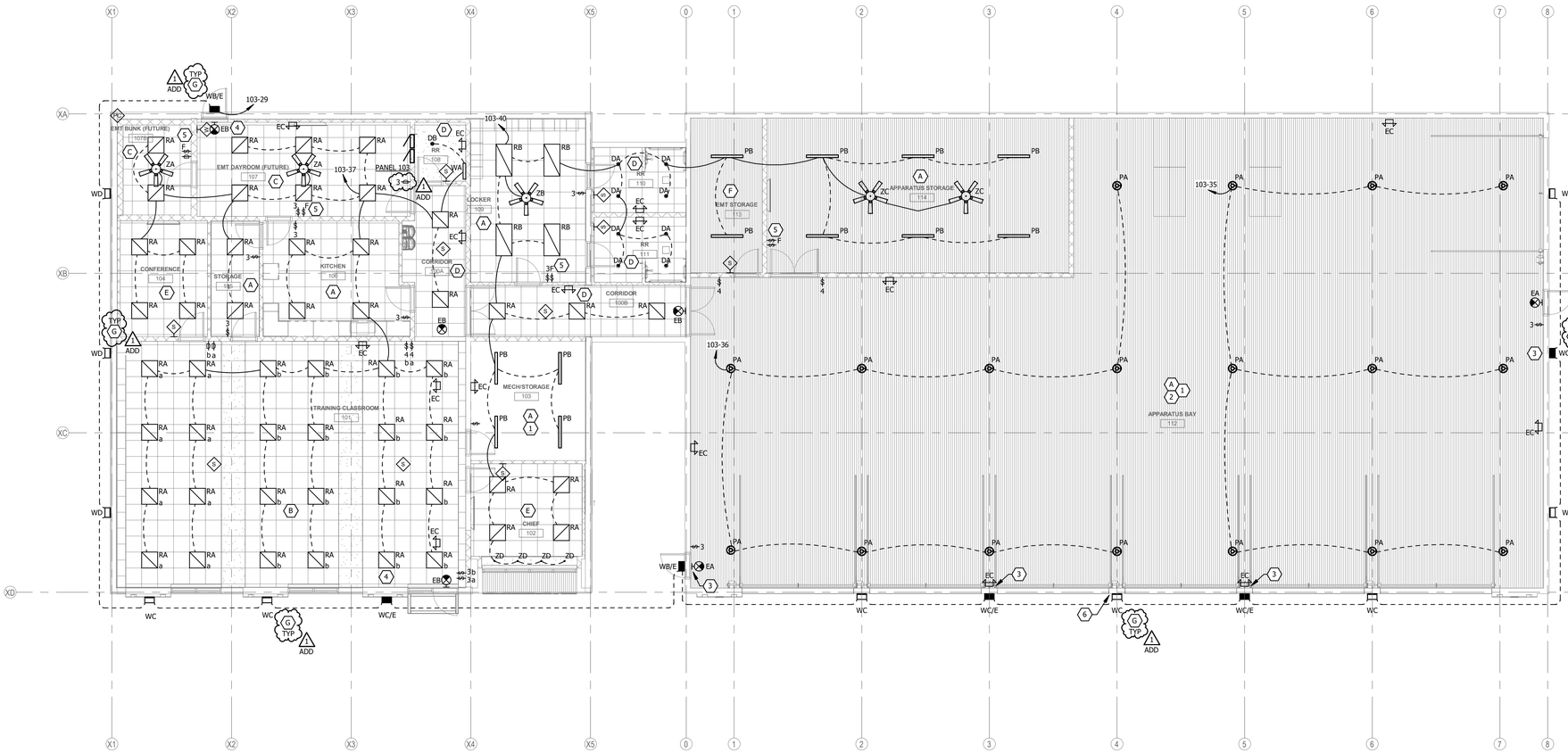
PROJECT: STATE CENTER FIRE STATION
ADDRESS: 109 E MAIN STREET; STATE CENTER, IA 50247
CLIENT: STATE CENTER FIRE DEPARTMENT

PRINT DATE: 12.18.2025
PHASE: CD
SHEET NAME: MECHANICAL PLAN

M1.1

MODUS
WATERLOO | DES MOINES | IOWA CITY
214 EAST 4TH ST. WATERLOO, IOWA (319)235-0650
130 EAST 3RD ST. DES MOINES, IOWA (515)251-7280
118 EAST COLLEGE ST. IOWA CITY, IOWA (319)248-4600

23-006 STATE CENTER FIRE STATION



N

1 LIGHTING PLAN
1/8" = 1'-0"

LIGHTING GENERAL NOTES:

A. SURFACE RACEWAY SHALL NOT BE USED IN ANY FINISHED AREAS WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

B. INSTALL DEVICES SUCH THAT NO TWO DEVICES ON OPPOSITE SIDES OF SAME WALL ARE WITHIN 6" OF EACH OTHER.

C. COORDINATE ALL DEVICES WITH ARCHITECTURAL PLANS AND CASEWORK SUBMITTALS.

D. ALL LIGHTING FIXTURES SHALL BE INSTALLED IN SUCH WAY THAT DRIVERS ARE ACCESSIBLE WITHOUT CUTTING OF CEILING. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF AREAS WHERE THIS IS NOT POSSIBLE.

E. ALL WALL-MOUNTED FIXTURES SHALL HAVE EXACT ROUGH-IN LOCATION DETERMINED BY DESIGN TEAM PRIOR TO ROUGH-IN.

F. THE ELECTRICAL CONTRACTOR SHALL EXTEND AN "UNSWITCHED" HOT CONDUCTOR FROM THE NEAREST NORMAL LIGHTING CIRCUIT TO EVERY UL924 LISTED EMERGENCY LIGHT AND EXIT SIGN REQUIRED FOR EMERGENCY EGRESS OPERATION. THE "UNSWITCHED" HOT CONDUCTOR SHALL BE USED FOR SENSING PURPOSES ONLY.

G. UNLESS NOTED OTHERWISE BY DESIGNATED "LIGHTING CONTROL ZONES", SWITCHLEG WIRING, AND LOWERCASE LETTER SWITCHLEG TAGS, SWITCHES SHOWN WILL CONTROL ALL FIXTURES IN THE ROOM SHOWN.

H. ALL LIGHTING CONTROL SHALL OPERATE "MANUAL ON/AUTO OFF" PER CODE (IECC OR ASHRAE 90.1) UNLESS OTHERWISE NOTED IN THE SEQUENCE OF OPERATIONS OR THESE REFERENCE NOTES.

I. REFER TO ARCHITECTURAL ELEVATIONS AND REFLECTED CEILING PLANS FOR SPECIFIC DEVICE ROUGH-IN AND PLACEMENT. ANY DEVIATIONS FROM THE ARCHITECTURAL ELEVATIONS AND RCP'S SHALL BE REVIEWED AND APPROVED BY THE ARCHITECT PRIOR TO ROUGH-IN. IF A DEVICE IS REQUIRED PER SPECIFICATION, REQUIRED FOR OPERATION, OR IS DIFFERENT IN CONFIGURATION THAN SHOWN ON ELEVATIONS AND RCP'S, CLARIFICATION AND DIRECTION MUST BE GIVEN BY THE ARCHITECT BEFORE ROUGH-IN. DEVIATIONS OR ADDITIONAL DEVICES NOT APPROVED PRIOR TO INSTALLATION SHALL BE CORRECTED AT CONTRACTORS EXPENSE. THIS INCLUDES BUT IS NOT LIMITED TO THERMOSTATS, CONTROL SYSTEM SENSORS, ELECTRICAL DEVICES, SWITCHES, DIMMERS, TECHNOLOGY DEVICES, A/V DEVICES, SPEAKERS, FIRE ALARM DEVICES, ETC.

J. CEILING CONTRACTOR SHALL PROVIDE AND INSTALL CEILING ACCESS PANELS FOR ACCESSIBILITY TO ELECTRICAL JUNCTION BOXES, PLUMBING VALVES, BALANCING DAMPERS, CIRCUIT SETTERS, ETC. WHERE ABSOLUTELY NECESSARY. LOCATIONS WILL NEED TO BE APPROVED AND COORDINATED WITH THE DESIGN TEAM PRIOR TO INSTALLATION.

K. REFER TO ARCHITECTURAL EXTERIOR ELEVATIONS FOR WALLPACK LIGHTING HEIGHTS AFG.

L. SENSORS SHALL BE INSTALLED CENTERED IN CEILING TILES WHERE APPLICABLE.

M. EXISTING SITE LIGHTING TO BE REMOVED AS WORK BY THE CITY. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE CITY TO AVOID INTERRUPTING THIS WORK.

LIGHTING REFERENCED NOTES: (#)

(NOT ALL NOTES MAY BE APPLICABLE TO THIS SHEET)

1. COORDINATE LIGHTING MOUNTED IN THIS AREA WITH MECHANICAL EQUIPMENT. LIGHTING SHALL BE MOUNTED BELOW EQUIPMENT AT ALL TIMES. OFFSET AS REQUIRED. REFER TO ARCHITECTURAL ELEVATIONS FOR INSTALLATION HEIGHTS.
2. COORDINATE FINAL LIGHT LOCATIONS WITH DESIGN TEAM PRIOR TO FINAL INSTALLATION. OFFSET AS NEEDED FOR MECHANICAL EQUIPMENT AND PLYMOVENT SYSTEM. LIGHTS SHALL BE INSTALLED WITH SURFACE BRACKET TO BOTTOM OF METAL LID, UNLESS DIRECTED OTHERWISE BY DESIGN TEAM. THERE SHALL BE A PRE-INSTALLATION MEETING FOR CEILING SYSTEMS IN THE APPARATUS BAY.
3. REMOTE BACKUP BATTERY SERVING EXTERIOR EMERGENCY LUMINAIRE SHALL BE INSTALLED ON INTERIOR WALL AT AN ACCESSIBLE LOCATION BEHIND LUMINAIRE. COORDINATE WITH OTHER EQUIPMENT OR WALL DEVICES.
4. REMOTE BACKUP BATTERY SERVING EXTERIOR EMERGENCY LUMINAIRE SHALL BE INSTALLED ABOVE CEILING AT AN ACCESSIBLE LOCATION BEHIND LUMINAIRE.
5. FAN CONTROL DEVICE. DEVICE SHALL BE GANGED WITH LIGHTING CONTROL SWITCH. SEE LIGHTING FIXTURE SCHEDULE FOR MORE INFORMATION.
6. PROVIDE ROUGH-IN FOR FUTURE WARNING LIGHT. COORDINATE LOCATION WITH DESIGN TEAM PRIOR TO ROUGH-IN FOR FINAL COORDINATION WITH EMERGENCY LIGHT FIXTURE.

LIGHTING CONTROL - SEQUENCE OF OPERATION (A)

(HEXAGONAL TAGS WITH LETTERS INDICATE LIGHTING CONTROL SEQUENCES)

TAG	ACTIVATION	DESCRIPTION	SCHEDULE
A	MANUAL ON / OFF	MANUAL LINE VOLTAGE TOGGLE SWITCH(ES). PROVIDE 3- OR 4-WAY SWITCHING AS SHOWN ON PLANS. TOGGLE SWITCH GANGED WITH CEILING FAN CONTROL WHERE APPLICABLE.	N/A
B	MANUAL ON / AUTO OFF w/ DIMMING	MANUAL ON / AUTO OFF w/ DIMMING VIA LINE VOLTAGE WALL CONTROL STATION WITH 0-10V CAPABILITY, LINE VOLTAGE TOGGLE SWITCHES, AND LINE VOLTAGE CEILING CENSOR(S). SEE LOWERCASE LETTER SWITCHLEG TAGS WHERE APPLICABLE.	30 MINUTE TIMEOUT
C	MANUAL ON / OFF w/ DIMMING	MANUAL ON / MANUAL OFF w/ DIMMING VIA LINE VOLTAGE WALL CONTROL STATION WITH 0-10V CAPABILITY. WALL CONTROL STATION GANGED WITH CEILING FAN CONTROL WHERE APPLICABLE.	N/A
D	AUTO ON / AUTO OFF	AUTO ON / AUTO OFF VIA LINE VOLTAGE WALL OR CEILING MOUNTED SENSOR(S), AS APPROPRIATE.	30 MINUTE TIMEOUT
E	MANUAL ON / AUTO OFF w/ DIMMING	MANUAL ON / AUTO OFF w/ DIMMING VIA LINE VOLTAGE WALL SENSOR / SWITCH COMBINATION DEVICE WITH 0-10V DIMMING CAPABILITY.	30 MINUTE TIMEOUT
F	MANUAL ON / AUTO OFF	MANUAL ON / AUTO OFF VIA LINE VOLTAGE WALL SENSOR / SWITCH COMBINATION DEVICE.	30 MINUTE TIMEOUT
G	AUTO ON / AUTO OFF	AUTO ON / AUTO OFF VIA LINE VOLTAGE PHOTOCELL.	DUSK TO DAWN

STUDIO MELEE
139 4th STREET
DES MOINES, IOWA 50265

PROJECT: STATE CENTER FIRE STATION
ADDRESS: 109 E MAIN STREET; STATE CENTER, IA 50247
CLIENT: STATE CENTER FIRE DEPARTMENT

PRINT DATE: 12.18.2025
PHASE: CD
SHEET NAME: ELECTRICAL LIGHTING PLAN

E2.1

MODUS
WATERLOO | DES MOINES | IOWA CITY
214 EAST 4TH ST. WATERLOO, IOWA (319)235-0650
130 EAST 3RD ST. DES MOINES, IOWA (515)251-7280
118 EAST COLLEGE ST. IOWA CITY, IOWA (319)248-4600

BRANCH MDP

Location: EMT DAYROOM (FUTURE)...
Supply From:
Mounting: Surface
Enclosure: Type 1
Available Isc: UTILITY 19,046 A

Volts: 120/208 Wye
Phases: 3
Wires: 4

S.C.C.R. Rating: 22,000 AIC
Mains Type: MCB
Mains Rating: 400 A
MCB Rating: 400 A
SPD: NONE

Notes:
PANEL SHALL BE RATED FOR SERVICE ENTRANCE

CKT	Circuit Description	Type	Trip	Poles	A		B		C		Poles	Trip	Type	Circuit Description	CKT
MDP-1	PANEL 103	N	100 A	3	7020	3358					3	40 A	N	TEV-745	MDP-2
MDP-3	--	--	--	--			7306	3358			--	--	--	--	MDP-4
MDP-5	--	--	--	--					6344	3358	--	--	--	--	MDP-6
MDP-7	RANGE	N	50 A	2	4725	3536					2	50 A	N	TANK FILLER	MDP-8
MDP-9	--	--	--	--			4725	3536			--	--	--	--	MDP-10
MDP-11	CU-1	N	35 A	2					3012	3012	2	40 A	N	CU-2	MDP-12
MDP-13	--	--	--	--	3012	3012					--	--	--	--	MDP-14
MDP-15	DRYER	G	30 A	2			2496	2496			2	30 A	G	DRYER	MDP-16
MDP-17	--	--	--	--					2496	2496	--	--	--	--	MDP-18
MDP-19	EF-4	N	25 A	2	1298	0					2	20 A	N	EXR MINI-SPLIT	MDP-20
MDP-21	--	--	--	--			1298	0			--	--	--	--	MDP-22
MDP-23	WELDING RECEPTACLE	N	50 A	2					4160	4160	2	50 A	N	WELDING RECEPTACLE	MDP-24
MDP-25	--	--	--	--	4160	4160					--	--	--	--	MDP-26
MDP-27	WELDING RECEPTACLE	N	50 A	2			4160	800			1	20 A	N	FRIDGE	MDP-28
MDP-29	--	--	--	--					4160	800	1	20 A	N	FRIDGE	MDP-30
MDP-31	F-1	N	20 A	1	1094	1382					1	25 A	N	F-2	MDP-32
MDP-33	GUH-1	N	15 A	1			1440	1440			1	15 A	N	GUH-2	MDP-34
MDP-35	RH-1	N	20 A	1					576	576	1	20 A	N	RH-2	MDP-36
MDP-37	WASHER	G	20 A	1	1920	1920					1	20 A	G	WASHER	MDP-38
MDP-39	AIR COMPRESSOR	N	20 A	1			1900	1900			1	20 A	N	AIR COMPRESSOR	MDP-40
MDP-41	CP-1	N	20 A	1					700	180	1	20 A	N	GWH-1	MDP-42
MDP-43	KITCHEN RECEPTS	N	20 A	1	360	180					1	20 A	N	KITCHEN RECEPTS	MDP-44
MDP-45	OVERHEAD DOOR	N	20 A	1			1130	1130			1	20 A	N	OVERHEAD DOOR	MDP-46
MDP-47	OVERHEAD DOOR	N	20 A	1					1130	1130	1	20 A	N	OVERHEAD DOOR	MDP-48
MDP-49	OVERHEAD DOOR	N	20 A	1	1130	1130					1	20 A	N	OVERHEAD DOOR	MDP-50
MDP-51	OVERHEAD DOOR	N	20 A	1			1130	36			1	15 A	N	HVLS-1	MDP-52
MDP-53	EF-1	N	20 A	1					20	20	1	20 A	N	EF-3	MDP-54
MDP-55	EF-2	N	20 A	1	20	70					1	20 A	N	EF-5	MDP-56
MDP-57	EF-4 DAMPER	N	20 A	1			18	0			1	20 A	N	SPARE	MDP-58
MDP-59	SPARE	N	20 A	1					0	0	1	20 A	N	SPARE	MDP-60
MDP-61	SPARE	N	20 A	1	0	0					1	20 A	N	SPARE	MDP-62
MDP-63	SPACE		--	1			--	--			1	--		SPACE	MDP-64
MDP-65	SPACE		--	1					--	--	1	--		SPACE	MDP-66
MDP-67	SPACE		--	1	--	--					1	--		SPACE	MDP-68
MDP-69	SPACE		--	1			--	--			1	--		SPACE	MDP-70
MDP-71	SPACE		--	1					--	--	1	--		SPACE	MDP-72
			Total Load:		43487 VA		40300 VA		38330 VA						
			Total Amps:		365 A		338 A		319 A						

Type Legend:
N=NORMAL G=GFI M=MOTORIZED E=EXISTING ST=SHUNT TRIP A=ARC FAULT H=HANDLE LOCK

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	27991 VA	100.00%	27991 VA		
Motor	12410 VA	103.83%	12885 VA	**Total Conn. Load:**	122.1 kVA
Other	720 VA	100.00%	720 VA	**Total Est. Demand:**	117.7 kVA
Power	3805 VA	100.00%	3805 VA	**Total Conn. Current:**	339 A
Heating	3456 VA	100.00%	3456 VA	**Total Est. Demand Current:**	327 A
Receptacles	20232 VA	74.71%	15116 VA		
Water Heater	180 VA	125.00%	225 VA		
Electric Clothes Dryer	21632 VA	100.00%	21632 VA		
Lighting - Exterior	240 VA	125.00%	300 VA		
Equipment	15392 VA	100.00%	15392 VA		
Kitchen Equipment	11050 VA	90.00%	9945 VA		
Lighting	5009 VA	125.00%	6261 VA		

Notes:
PANEL SHALL BE RATED FOR SERVICE ENTRANCE

LIGHTING FIXTURE SCHEDULE

TYPE	BOD MANUFACTURER	MODEL NUMBER	DESCRIPTION	LAMP/CCT/CRI	CONTROL	DELIVERED LUMENS	WATTS	VOLTS	EQUALS
DA	GOTHAM	EVO4SH-3S/10-DFR-SOL-MVOLT-EZ1	4-INCH APERTURE RECESSED LED SHOWER DOWNLIGHT. BATWING DISTRIBUTION. TEXTURED LENS.	LED/3500K/85	NON-DIM	843	8.8	UNV	PRESCOLITE, LIGHTOLIER, PORTFOLIO
DB	GOTHAM	IVO4-D-10LM-35K-80CRI-WD-MIN10-MVOLT-ZT-NCH-P-AR-LSS-F	4-INCH APERTURE OPEN RECESSED LED DOWNLIGHT. 75-DEGREE DISTRIBUTION. CLEAR PARABOLIC REFLECTOR WITH SEMI-SPECULAR FINISH.	LED/3500K/80	NON-DIM	991	9.8	UNV	PRESCOLITE, LIGHTOLIER, PORTFOLIO
EA	DUAL-LITE	EVE-U-X-X-E	THERMOPLASTIC LED EXIT SIGN. UNIVERSAL MOUNTING. BACKUP BATTERY FOR 90-MINUTE EMERGENCY RUNTIME. FINISH AND LETTER COLOR SELECTED BY ARCHITECT DURING SUBMITTALS.	LED/COLOR	N/A	N/A	N/A	UNV	LITHONIA, EVENLITE, MULE, SURE-LITES
EB	COMPASS	CELR1XNE	ARCHITECTURAL EDGE-LIT LED EXIT SIGN. RECESSED MOUNTING FOR CEILING OR WALL. BACKUP BATTERY FOR 90-MINUTE EMERGENCY RUNTIME. BRUSHED ALUMINUM FINISH. LETTER COLOR SELECTED BY ARCHITECT DURING SUBMITTALS.	LED/COLOR	N/A	N/A	N/A	UNV	LITHONIA, EVENLITE, MULE, SURE-LITES
EC	DUAL-LITE	EV-2	LED BATTERY LIGHT FOR EMERGENCY LIGHTING. 90-MINUTE RUNTIME. WALL OR CEILING MOUNT. WHITE STANDARD, OPTIONAL BLACK FINISH TO BE SELECTED BY ARCHITECT DURING SUBMITTALS.	LED	N/A	N/A	N/A	UNV	LITHONIA, EVENLITE, MULE, SURE-LITES
PA	LITHONIA	REBL-ALO13-WD-UVOLT-SWW9-80CRI-L/DIM-X-REBLSMB1-X-M10	ROUND LED HIGH BAY LIGHT. SELECTABLE LUMENS AND CCT. SET SELECTABLE LUMENS TO 15,000. SET SELECTABLE CCT TO 5000K. SURFACE MOUNT BRACKET. FINISH TO BE SELECTED BY ARCHITECT DURING SUBMITTALS.	LED/SELECTABLE/80	NON-DIM	12,693 - 18,852	80 - 117	UNV	METALUX
PB	LITHONIA	CSS-L48-ALO3-MVOLT-SWW3-80CRI-HC36 M12	4-FT CHAIN-HUNG LED STRIP LIGHT. SELECTABLE LUMENS AND CCT. SET SELECTABLE LUMENS AND CCT TO OWNER'S PREFERENCES.	LED/SELECTABLE/80	NON-DIM	3,851 - 5,884	27 - 43	UNV	COLUMBIA, DAY-BRITE CFI, METALUX
RA	COLUMBIA	CBT22-A-LSCS-EDD	2x2 RECESSED LED FLAT PANEL FOR LAY-IN CEILING INSTALLATION. SELECTABLE LUMENS AND CCT. SET SELECTABLE LUMENS AND CCT TO OWNER'S PREFERENCES.	LED/SELECTABLE/80	0-10V TO 1%	2,750 - 4,600 (NOM)	24 - 38	UNV	LITHONIA, DAY-BRITE CFI, METALUX
RB	COLUMBIA	CBT24-A-LSCS-EDD	2x4 RECESSED LED FLAT PANEL FOR LAY-IN CEILING INSTALLATION. SELECTABLE LUMENS AND CCT. SET SELECTABLE LUMENS AND CCT TO OWNER'S PREFERENCES.	LED/SELECTABLE/80	0-10V TO 1%	3,300 - 5,800 (NOM)	28 - 48	UNV	LITHONIA, DAY-BRITE CFI, METALUX
WA	LUX ILLUMINAIRE	EOS 2.0-W-D-ASY-375-2-35K-8-UNV-S1-X	2-INCH APERTURE LED LINEAR WALL-MOUNT LIGHT FOR VANITY. ASYMMETRIC DISTRIBUTION. REFER TO ARCHITECTURAL ELEVATIONS FOR INSTALLATION HEIGHT. FINISH SELECTED BY ARCHITECT DURING SUBMITTALS.	LED/3500K/80	NON-DIM	750 (NOM)	6.8	UNV	AXIS, LEDALITE, STARTEK
WB/E	CONTRACTOR TO HOLD AN ALLOWANCE OF $750 IN THEIR BID FOR WALL-MOUNTED LOW-PROFILE WALLPACK WITH EMERGENCY BACKUP. DIE-CAST ALUMINUM HOUSING, POLYESTER POWDER COAT FINISH. TYPE 2 DISTRIBUTION. IP65. REMOTE BACKUP BATTERY. REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS. FINISH SELECTED BY ARCHITECT DURING SUBMITTALS.								
WC	CONTRACTOR TO HOLD AN ALLOWANCE OF $750 IN THEIR BID FOR WALL-MOUNTED LOW-PROFILE WALLPACK. DIE-CAST ALUMINUM HOUSING, POLYESTER POWDER COAT FINISH. TYPE 3 DISTRIBUTION. IP65. REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS. FINISH SELECTED BY ARCHITECT DURING SUBMITTALS.								
WC/E	CONTRACTOR TO HOLD AN ALLOWANCE OF $750 IN THEIR BID FOR WALL-MOUNTED LOW-PROFILE WALLPACK WITH EMERGENCY BACKUP. DIE-CAST ALUMINUM HOUSING, POLYESTER POWDER COAT FINISH. TYPE 3 DISTRIBUTION. IP65. REMOTE BACKUP BATTERY. REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS. FINISH SELECTED BY ARCHITECT DURING SUBMITTALS.								
WD	CONTRACTOR TO HOLD AN ALLOWANCE OF $750 IN THEIR BID FOR WALL-MOUNTED LOW-PROFILE WALLPACK. DIE-CAST ALUMINUM HOUSING, POLYESTER POWDER COAT FINISH. TYPE 4 DISTRIBUTION. IP65. REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS. FINISH SELECTED BY ARCHITECT DURING SUBMITTALS.								
ZA	RP LIGHTING + FANS	FAN: 1037-1-WW-WW LIGHT UNIT: 1RP98LED WALL CONTROL: WC-8	3-BLADE, 44" SWEEP AC MOTOR CEILING FAN. 12-3/8" DEPTH. INTEGRAL LIGHT UNIT WITH DIMMING. WHITE FINISH. WALL 3-SPEED AND LIGHT ON/OFF/DIM SLIDE CONTROL STATION TO BE INCLUDED WITH EACH FAN.	LED/3000K/90	WALL STATION	843	45	120	MODERN FORMS
ZB	RP LIGHTING + FANS	FAN: 1037-1-WW-WW WALL CONTROL: WC-13	3-BLADE, 44" SWEEP AC MOTOR CEILING FAN. 12-3/8" DEPTH. NO LIGHT UNIT. WHITE FINISH. WALL 4-SPEED SINGLE FAN SLIDE CONTROL STATION TO BE INCLUDED WITH EACH FAN.	NONE	WALL STATION	N/A	33	120	MODERN FORMS
ZC	RP LIGHTING + FANS	FAN: 1037-1-WW-WW WALL CONTROL: WC-4	3-BLADE, 44" SWEEP AC MOTOR CEILING FAN. 12-3/8" DEPTH. NO LIGHT UNIT. WHITE FINISH. WALL 3-SPEED MULTIPLE FAN SLIDE CONTROL STATION - (1) TO BE INCLUDED FOR APPARATUS STORAGE 114.	NONE	WALL STATION	N/A	33	120	MODERN FORMS
ZD	CONTRACTOR TO HOLD AN ALLOWANCE OF $100 IN THEIR BID FOR 120V LED LOW-PROFILE BUTTON LIGHT. DIE-CAST ALUMINUM WITH ACRYLIC DIFFUSER. SURFACE OR RECESS MOUNTED. (3) CCT SELECTABLE.								

1 ADD
1 ADD

NOTES:

1. PROVIDE ALL PARTS AND PIECES FOR A COMPLETE AND FULLY FUNCTIONAL LIGHTING SYSTEM.
2. CONTRACTOR SHALL INSTALL ALL FIXTURES PER MANUFACTURER RECOMMENDATIONS IN LOCATIONS SHOWN ON DRAWING AND NOTIFY DESIGN TEAM IF THIS IS NOT POSSIBLE PRIOR TO ROUGH-IN.
3. VERIFY ALL WALL MOUNTED FIXTURE LOCATIONS WITH THE LIGHTING DESIGNER AND ARCHITECT PRIOR TO ROUGH-IN.
4. ARCHITECT SHALL SELECT ALL FINISH/COLORS FROM MANUFACTURER STANDARDS AT TIME OF SUBMITTAL.
5. COORDINATE ALL DRIVERS WITH CONTROLS TO ENSURE FULL COMPATIBILITY.
6. VERIFY ALL FINAL CEILING TYPES AND MOUNTING CONFIGURATIONS PRIOR TO RELEASE OF FIXTURES.
7. PROVIDE LINE ITEM PRICING TO DISTRIBUTOR FOR INDIVIDUAL LIGHT FIXTURE TYPES. LIGHT FIXTURE PACKAGE AND LIGHTING CONTROLS PACKAGE SHALL BE QUOTED SEPARATELY UNDER THEIR RESPECTIVE SPECIFICATION SECTIONS.
8. LIGHTING PRODUCTS SHALL BE PROVIDED THROUGH THE AUTHORIZED LIGHTING MANUFACTURER'S REPRESENTATIVE WITHIN THE PROJECT LOCATION.
9. SUBMITTALS SHALL BE PRODUCED AND SUBMITTED BY LOCAL AUTHORIZED LIGHTING MANUFACTURER'S REPRESENTATIVE. SUBMITTAL SHALL CONTAIN LETTERHEAD WITH REPRESENTATIVES' CONTACT INFORMATION, PROJECT NAME, AND PROJECT LOCATION.

LIGHT FIXTURE SCHEDULE BY: ADAM VANDER HELM, LC - AVANDERHELM@MODUS-ENG.COM

BRANCH PANEL 103

Location: EMT DAYROOM (FUTURE)...
Supply From: MDP
Mounting: Surface
Enclosure: Type 1
Available Isc:

Volts: 120/208 Wye
Phases: 3
Wires: 4

S.C.C.R. Rating: 22,000
Mains Type: MLO
Mains Rating: 225 A
MCB Rating: NONE
SPD: NONE

Notes:
225 A PANEL MAIN FED FROM A 100 A BREAKER IN MDP IN ORDER TO ACHIEVE MORE BREAKER CAPACITY.

CKT	Circuit Description	Type	Trip	Poles	A		B		C		Poles	Trip	Type	Circuit Description	CKT
103-1	EMT DAYROOM RECEPTS	N	20 A	1	840	360					1	20 A	N	EMT BUNK RECEPTS	103-2
103-3	CONFERENCE RECEPTS	N	20 A	1			840	360			1	20 A	N	STORAGE & KITCHEN...	103-4
103-5	TRAINING CLASSROOM...	N	20 A	1					840	360	1	20 A	N	TRAINING CLASSROOM...	103-6
103-7	CORRIDOR RECEPTS	N	20 A	1	540	720					1	20 A	N	TRAINING CLASSROOM...	103-8
103-9	BATHROOM RECEPTS	N	20 A	1			1080	100			1	20 A	N	FACP	103-10
103-11	EWC-1	G	20 A	1					700	1000	1	20 A	N	IT RACK	103-12
103-13	CHIEF OFFICE RECEPTS	N	20 A	1	660	360					1	20 A	N	EXT RECEPTS	103-14
103-15	EMT STORAGE RECEPTS	N	20 A	1			540	840			1	20 A	N	APPARATUS STORAGE...	103-16
103-17	APPARATUS STORAGE...	N	20 A	1					540	18	1	20 A	N	GAS DETECTION	103-18
103-19	APPARATUS BAY...	N	20 A	1	738	360					1	20 A	N	EXT RECEPTS	103-20
103-21	CLING DROP-DOWN...	G	20 A	1			180	180			1	20 A	G	CLING DROP-DOWN...	103-22
103-23	CLING DROP-DOWN...	G	20 A	1					180	180	1	20 A	G	CLING DROP-DOWN...	103-24
103-25	CLING DROP-DOWN...	G	20 A	1	180	180					1	20 A	G	CLING DROP-DOWN...	103-26
103-27	CLING DROP-DOWN...	G	20 A	1			180	180			1	20 A	G	PLUG MOLD	103-28
103-29	EXTERIOR LIGHTS	N	20 A	1					240	180	1	20 A	G	PLUG MOLD	103-30
103-31	CARD READER	N	20 A	1	25	180					1	20 A	G	PLUG MOLD	103-32
103-33	BEV COOLER	G	20 A	1			800	180			1	20 A	G	PLUG MOLD	103-34
103-35	APP BAY LIGHTS	N	20 A	1					1053	1053	1	20 A	N	APP BAY LIGHTS	103-36
103-37	WEST LIGHTS	N	20 A	1	1777	100					1	20 A	N	FUTURE LIGHTS	103-38
103-39	APPARATUS BAY...	N	20 A	1			720	1126			1	20 A	N	CENTRAL LIGHTS	103-40
103-41	SPARE	N	20 A	1					0	0	1	20 A	N	SPARE	103-42
103-43	SPARE	N	20 A	1	0	0					1	20 A	N	SPARE	103-44
103-45	SPARE	N	20 A	1			0	0			1	20 A	N	SPARE	103-46
103-47	SPACE		--	1					--	--	1	--		SPACE	103-48
103-49	SPACE		--	1	--	--					1	--		SPACE	103-50
103-51	SPACE		--	1			--	--			1	--		SPACE	103-52
103-53	SPACE		--	1					--	--	1	--		SPACE	103-54
			Total Load:		7020 VA		7306 VA		6344 VA						
			Total Amps:		59 A		62 A		53 A						

Type Legend:
N=NORMAL G=GFI M=MOTORIZED E=EXISTING ST=SHUNT TRIP A=ARC FAULT H=HANDLE LOCK

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	36 VA	100.00%	36 VA		
Other	720 VA	100.00%	720 VA	**Total Conn. Load:**	20.7 kVA
Power	3445 VA	100.00%	3445 VA	**Total Est. Demand:**	21.4 kVA
Receptacles	11220 VA	94.56%	10610 VA	**Total Conn. Current:**	57 A
Lighting - Exterior	240 VA	125.00%	300 VA	**Total Est. Demand Current:**	59 A
Lighting	5009 VA	125.00%	6261 VA		

Notes:
225 A PANEL MAIN FED FROM A 100 A BREAKER IN MDP IN ORDER TO ACHIEVE MORE BREAKER CAPACITY.

FLOOR BOX SCHEDULE

TYPE	MANUFACTURER	MODEL	DIMENSION	DEVICES	DESCRIPTION
FB-1	LEGRAND HUBBELL STEEL CITY	880CS2 SERIES B4233 SERIES 642 SERIES	8.5"L x 5.5"W x 4"D	2-GANG: (1) POWER, (1) DATA/AV	STANDARD FULLY ADJUSTABLE FLUSH TYPE FLOOR BOX FOR INSTALLATION IN CONCRETE SLAB OR FOR SLAB ON-GRADE APPLICATIONS, CAST IRON, DIE CAST BRUSHED ALUMINUM COVER ASSEMBLY, VERIFY FLANGE TYPE WITH ARCHITECT DURING SHOP DRAWING REVIEW. REFER TO DRAWINGS FOR TELECOM TERMINATION REQUIREMENTS AND TYPES.

MODUS
WATERLOO | DES MOINES | IOWA CITY
214 EAST 4TH ST. WATERLOO, IOWA (319)235-0650
130 EAST 3RD ST. DES MOINES, IOWA (515)251-7280
118 EAST COLLEGE ST. IOWA CITY, IOWA (319)248-4600

MODUS STUDIO MELEE
139 4th STREET
DES MOINES, IOWA 50265

PROJECT: STATE CENTER FIRE STATION
ADDRESS: 109 E MAIN STREET; STATE CENTER, IA 50247
CLIENT: STATE CENTER FIRE DEPARTMENT

PRINT DATE: 12.18.2025

PHASE: CD
SHEET NAME: ELECTRICAL SCHEDULES

E6.1