



**Utah Community Action™**

1307 South 900 West Salt Lake City, Utah 84104  
(801) 977-1122 | [utahca.org](http://utahca.org)

**REQUEST FOR BID**  
**UCA Magna EHS Classroom Addition 2024**

**PART 1: INTRODUCTION AND INSTRUCTIONS**

**PURPOSE OF REQUEST FOR BID (RFB)**

Utah Community Action (UCA) is seeking competitive bids to add 2 Early Head Start Classrooms to an existing facility according to the scope of work in attachment A. The site is located at 8275 West 3500 South, Magna, UT 84044. The purpose of this document is to provide detailed on the required specifications and to establish the basis for a fixed price contract between UCA and the contractor.

**AGENCY BACKGROUND**

Utah Community Action's mission is to empower individuals, strengthen families and build communities through self-sufficiency and education programs. Utah Community Action is a multi-faceted agency that helps low-income individuals and families overcome barriers to self-sufficiency. The agency has approximately 600 employees, and annual revenues of approximately \$50M.

Utah Community Action helps remove these barriers through six core programs:

**Adult Education** – Helps adults with low- to moderate-income levels get access to courses and certifications that can help them work toward self-sufficiency.

**Head Start** – Provides education and health services to young children who would otherwise not be prepared for Kindergarten.

**HEAT** – Helps struggling households pay their utility bills. Both yearly application and emergency need services are available.

**Case Management & Housing** – Through deposit and emergency rental assistance, landlord-tenant mediation, homelessness services and holistic case management, our Case Management and Housing Program helps clients to obtain and maintain safe, stable and affordable housing.

**Nutrition** – Helps feed households in need, provides meals for Head Start classrooms, and offers educational programs to teach better eating habits.

**Weatherization** – Helps low-income households reduce energy costs and increase comfort and safety in their homes.

Utah Community Action complies with the required federal regulations on procurement, as set forth in the Uniform Guidance 2 CFR Part 200. Efforts, including affirmative steps prescribed by federal regulation (if applicable), will be made by UCA to utilize small and minority-owned businesses, women's business enterprises, and labor surplus area firms when possible. A firm qualifies as a small business firm if it meets the definition of "small business" as established by the Small Business Administration (13 CFR 121.201, Subsector 541512) by having average annual receipts for the last three fiscal years not exceeding \$27.5 million.

### **PROPOSAL SUBMISSIONS REQUIREMENTS**

By submitting a proposal, Interested Parties acknowledge and agree that the scope of work, and evaluation process outlined herein are fair, equitable, and understood. Interested Parties further acknowledge that they have read this RFB, along with any attached or referenced documents.

To ensure a competitive and consistent review process each proposal submitted should include the following items and be organized with the outline provided below:

- a. Submit a letter outlining the general overview of the business information and individuals who will be involved in the RFB process. This letter should be a maximum of 1 page and clearly identify the qualifications of personnel that will be involved in the project and billing contact information. It should also include a date through which the bid is valid (recommended 60 days).
- b. Submit pricing based upon the RFB specifications outlined in the **-Attachment A scope of work and plans. Proposal must be submitted as a fixed price contract with fixed price profit clearly indicated.**
- c. Proof of liability and workers compensation insurance.
- d. Bonding as outlined below.

All costs incurred by Interested Parties in the preparation and submission of a proposal, including any costs incurred during interviews, presentations, or demonstrations are the responsibility of the Interested Parties and will not be reimbursed.

### **Pre-Bid Meeting:**

A non-mandatory pre-bid meeting will be held at the site located at 8275 West 3500 South, Magna, UT 84044 on January 26, 2024 at 2:00 pm.

A submission of a bid by the Contractor is considered a representation that the Contractor has visited the site and has carefully examined the conditions that will be encountered when performing the work.

The purpose of the pre-bid meeting is to allow an open forum for discussion and questioning with UCA staff and the Architect regarding the RFB with all prospective proposers having an equal opportunity to hear and participate. Oral questions will receive oral responses, neither of which will be official, or become part of the RFB. Only written responses to written questions will be considered official and will be included as part of the RFB as an addendum.

### **WRITTEN QUESTIONS**

Questions regarding the RFB must be received in writing by February 2, 2024 by 4:00 pm and should can be submitted to:

Stacy Weight, Chief Administrative Officer

[stacy.weight@utahca.org](mailto:stacy.weight@utahca.org)

### **SUPPLEMENTARY TECHNICAL SPECIFICATIONS**

- A. The Contractor shall file and pay for all the required permits and inspections necessary to complete the project outside of the initial building permit, which shall be paid by Utah Community Action.
- B. This project's building permit is expected to be issued in January 2024 and completion date/occupancy of classroom space must occur no later than July 26, 2024. The Contractor agrees to proceed with the work expeditiously without any delay or cessation, except such as may reasonably be beyond his control, and to employ a force of workmen sufficient so to perform the work covered by this Contract in such manner as to expedite the work of such other Contractors.
- C. The Contractor shall supply all materials, labor, tools and equipment, as specified in this Contractors Manual, required under this contract for a complete, neat and skilled installation.
- D. Contractor shall remove and dispose of all debris and materials resulting from work.
- E. Contractor shall be responsible for the repair of any adjoining work on which his work, in any way, is dependent for its proper installation.
- F. Contractor shall take all the necessary measures and precautions to protect surroundings and attachments (interior and exterior) and shall be liable for all damages that may be caused by his actions and work.

- G. The Contractor shall perform all other work as required to deliver a completed and satisfactory job using skilled craftsmen. All measurements and the Scope of Work must be verified on the job by the contractor.
- H. The contractor shall be responsible for securing the premises during the course of construction and shall not permit entry by any person or persons other than his employees, sub-contractors and/or suppliers and be responsible for same.
- I. The contractor shall follow all OSHA requirements, which state that under the OSH Act, employers are responsible for providing a safe and healthful workplace.
- J. Said work falls under the Davis-Bacon Act. The contractor shall supply Utah Community Action with certified payroll documentation. The Davis-Bacon and Related Acts apply to contractors and subcontractors performing construction, alteration, or repair with federally funded or assisted contracts in excess of \$2,000. Davis-Bacon Act and Related Act contractors and subcontractors must pay their laborers and mechanics employed under the contract no less than the locally prevailing wages and fringe benefits for corresponding work on similar projects in the area. The Davis-Bacon Act directs the Department of Labor to determine such locally prevailing wage rates. All bids should be based on the labor costs outlined in Davis Bacon Act WD #UT20240085 Modification 8 published January 5, 2024 and listed in Attachment B of this document.

**SUBMISSION INSTRUCTIONS:** All bids need to be submitted in sealed hard copy format. Bids must be submitted prior to the deadline at the following address:

Utah Community Action  
Attn: Stacy Weight, CAO  
1307 South 900 West  
Salt Lake City, UT 84104

Proposals must be received by 4:00 pm on Thursday, February 15, 2024. Proposals received after the deadline will not be accepted. Proposals can be submitted via hard copy or electronic copy to the address provided below.

**Proposal Rejection:** Utah Community Action reserves the right to reject a proposal if the proposal is conditional or incomplete, deemed non-responsive, or if it contains any alterations of form or other irregularities of any kind. UCA may reject any or all proposals or waive any immaterial deviation in a proposal. UCA's waiver of an immaterial deviation shall in no way modify the RFB document or excuse the Vendor from full compliance with all other requirements if awarded the contract. A proposal is considered responsive if it follows the required format and meets all deadlines and other requirements outlined in this RFB.



## **PROPOSAL KEY DATES**

<b>RFB Released</b>	<b>January 9, 2024</b>
<b>Mandatory Pre-Bid Meeting</b>	<b>January 26, 2024 2:00 pm</b>
<b>Last Day for Receipt Written Questions</b>	<b>February 2, 2024 by 4:00 pm</b>
<b>Proposals Due</b>	<b>February 15, 2024 by 4:00 pm</b>
<b>Bidders Interviews (if necessary)</b>	<b>February 20, 2024</b>
<b>Selection</b>	<b>February 21, 2024</b>

Utah Community Action may request interviews or meetings with any of the proposers to clarify any proposals.

## **PART 2: Contract Provisions**

**Equal Employment Opportunity** - All construction contracts awarded in excess of \$10,000 shall contain a provision requiring compliance with E.O. 11246, "Equal Employment Opportunity," as amended by E.O. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

**Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S. C. 276c)** - All contracts and subgrants in excess of \$2000 for construction or repair shall include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874), as supplemented by Department of Labor regulations (29 CFR part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or sub-recipient shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he is otherwise entitled. All suspected or reported violations shall be reported to the Federal awarding agency.

**Davis-Bacon Act, as amended (40 U.S.C. 276a to a-7)** - When required by Federal grant program legislation, all construction contracts awarded by Recipients and sub-recipients of more than \$2000 shall include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 276a to a-7) and as supplemented by Department of Labor regulations (29 CFR part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction"). Under this Act, contractors shall be required to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the Secretary of Labor. In addition, contractors shall be required to pay wages not less than once a week. The Recipient shall place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation and the award of a contract shall be conditioned upon the acceptance of the wage

determination. All suspected or reported violations shall be reported to the Federal awarding agency.

**Contract Work Hours and Safety Standards Act (40 U.S. C. 327-330)** - Where applicable, all construction contracts awarded in excess of \$100,000. Contracts that involve the employment of mechanics or laborers shall include a provision for compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330), as supplemented by Department of Labor regulations (29 CFR part 5). Under Section 102 of the Act, each contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than 1 1/2 times the basic rate of pay for all hours worked in excess of 40 hours in the work week. Section 107 of the Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous on federal and federally financed and assisted construction projects. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

**Patent Rights to Inventions Made Under a Contract or Agreement** - Contract agreements for the performance of experimental, developmental, or research work shall provide for the patent rights of the Federal Government and the Recipient in any resulting invention in accordance with 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

**Clean Air Act {42 U.S.C. 7401 et seq.} and the Federal Water Pollution Control Act {33 U.S.C. 1251 et seq.}, as amended** - Contracts and sub-grants of amounts in excess of \$100,000 shall contain a provision that requires compliance with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.). Violations shall be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

**Termination:** The owner may, at any time, terminate the Contract for owner's convenience and without cause.

**Debarment and Suspension:** Contractors submitting a proposal must certify that neither it nor its principals are presently or have ever been debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this contract, by any governmental entity.

**Bonding Requirements:**

UCA will require bonding to help ensure the interest of the organization and funding sources are protected. Minimum requirements will include the following:

- A bid guarantee in the form of a bid bond, certified check, or other negotiable instrument from each bidder equivalent to five percent of the bid price assuring that the bidder will, upon acceptance of the bid, execute such contractual documents as may be required within the time specified.
- A performance bond on the part of the contractor for 100 percent of the contract price, to be executed in connection with a contract to secure fulfillment of all the contractor's obligations under the contract.
- A payment bond for 100 percent of the contract price, executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in execution of the work provided for in the contract.

**Payment:**

Vendor will bill UCA at the conclusion of each month's services and invoices will be paid net 30 upon receipt of invoice by Utah Community Action and completed Davis Bacon paperwork for that month.

Billing system must indicate location, date and type of service provided. All Davis Bacon paperwork must be submitted with each invoice. Davis Bacon paperwork will be reviewed for completeness prior to payment being issued.

**Insurance Requirements:**

Vendor must provide proof insurance for the following types and amounts:

**Workers Compensation**

**Commercial General Liability** - \$1,000,000 single limit per occurrence

**Automobile Liability** - \$500,000 Each Occurrence Owned/non-owned/hired automobile included.

**Taxes:**

Utah Community Action is a tax exempt 501c3 organization and cannot pay sales tax.

**SELECTION PROCESS**

Proposals will be opened and evaluated by a UCA committee on February 21, 2024 at 4:00 pm. The location of this meeting will be 1307 South 900 West, Salt Lake City, Utah 84104.

Selection will be made to the proposer who is the most advantageous to Utah Community Action based on the selection criteria outlined above. UCA reserves the right to not select any proposer. Following the closure of the RFB all proposers will be notified of the selection.

## **Attachment A**

### **Scope of Work**

#### **UCA Magna Early Head Start Classroom Addition 2024**

**8275 West 3500 South, Magna, UT 84044**

#### **Project Overview**

The project consists of the addition of two Early Head Start Classrooms to an existing facility per the attached bid set of drawings.

## Attachment B

### Davis Bacon Wage Decision Number: UT20240085

"General Decision Number: UT20240085 01/05/2024

Superseded General Decision Number: UT20230085

State: Utah

Construction Type: Building

County: Salt Lake County in Utah.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered   into on or after January 30,   2022, or the contract is   renewed or extended (e.g., an   option is exercised) on or   after January 30, 2022:             	. Executive Order 14026   generally applies to the   contract.   . The contractor must pay   all covered workers at   least \$17.20 per hour (or   the applicable wage rate   listed on this wage   determination, if it is   higher) for all hours   spent performing on the   contract in 2024. 
If the contract was awarded on   or between January 1, 2015 and   January 29, 2022, and the   contract is not renewed or   extended on or after January   30, 2022:             	. Executive Order 13658   generally applies to the   contract.   . The contractor must pay all   covered workers at least   \$12.90 per hour (or the   applicable wage rate listed   on this wage determination,   if it is higher) for all   hours spent performing on   that contract in 2024. 

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for

performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024

CARP0801-002 12/01/2022

	Rates	Fringes
CARPENTER (Drywall Hanging and Metal Stud Installation Only).....	\$ 31.66	13.97

ELEC0354-001 06/11/2023

	Rates	Fringes
ELECTRICIAN (Low Voltage Wiring Only).....	\$ 27.65	14.73+1.5%
ELECTRICIAN.....	\$ 39.00	1.3%+16.55

ELEV0038-003 01/01/2023

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 50.87	37.335+a+b

FOOTNOTE:

a: Vacation Pay: 8% with 5 or more years based on regular hourly rate for all hours worked, 6% under 5 years based on regular hourly rate for all hours worked. b: Paid holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Veteran's Day; Thanksgiving Day; Friday after Thanksgiving and Christmas Day

PAIN0077-003 07/01/2022

	Rates	Fringes
DRYWALL FINISHER/TAPER.....	\$ 31.00	8.44

PAIN0077-004 08/01/2022

	Rates	Fringes
PAINTER (Brush, Roller, and Spray, excluding Drywall/Finisher and Taper).....	\$ 22.50	8.93

PLUM0140-001 08/01/2023

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 42.00	15.02

SFUT0669-003 01/01/2023

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers).....	\$ 38.17	25.54

SHEE0312-002 07/01/2022

	Rates	Fringes
SHEET METAL WORKER (Including HVAC Duct Installation).....	\$ 39.26	11.67

SUUT2012-017 07/29/2014

	Rates	Fringes
CARPENTER (Acoustical Ceiling Installation Only).....	\$ 21.25	2.15
CARPENTER (Form Work Only).....	\$ 16.93 **	1.93
CARPENTER, Excludes Acoustical Ceiling Installation, Drywall Hanging, Form Work, and Metal Stud Installation.....	\$ 20.66	7.47
CEMENT MASON/CONCRETE FINISHER...	\$ 15.00 **	0.00
IRONWORKER, STRUCTURAL.....	\$ 20.21	3.22
LABORER: Common or General.....	\$ 13.84 **	0.00
LABORER: Mason Tender - Brick...	\$ 16.38 **	1.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 14.94 **	0.00
LABORER: Pipelayer.....	\$ 13.57 **	0.00
LABORER: Landscape and Irrigation.....	\$ 9.50 **	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 14.48 **	0.00
OPERATOR: Loader.....	\$ 19.34	0.00
PLASTERER.....	\$ 18.36	0.00



ROOFER.....	\$ 13.22 **	0.00
TILE FINISHER.....	\$ 13.54 **	0.00
TILE SETTER.....	\$ 23.50	0.00
TRUCK DRIVER: Dump Truck.....	\$ 15.50 **	0.00

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular

rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of

each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor

200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"



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4

5

D

C

B

A

LOCATION MAP

N.T.S.

UTAH COMMUNITY ACTION  
MAGNA HEAD START BUILDING ADDITION  
8259 WEST 3500 SOUTH  
MAGNA, UT 84044

DECEMBER 2023

PERMIT SET

PREPARED BY

architecture • sustainability • design services

420 West 1500 South  
Bountiful, UT 84010  
(385) 777-2972

1

2

3

4

5

D

C

B

A

CODE ANALYSIS

APPLICABLE CODES

	Year		Year
International Building Code	2021	National Electrical Code	2020
International Mechanical Code	2021	Uniform Code for Building Conservation	2021
International Plumbing Code	2021	ADA Accessibility Guidelines	2017
International Fire Code	2021		
International Energy Conservation Code	2021		

A. Occupancy and Group: E

Change in Use: Yes ☐ No ☒ Mixed Occupancy: Yes ☐ No ☒  
Special Use and Occupancy (e.g. High Rise, Covered Mall): NA

B. Seismic Design Category: D Design Wind Speed: 115 mph

C. Type of Construction (circle one):  
☐ I/A ☐ I/B ☒ II/A ☐ II/B ☐ III/A ☐ III/B ☐ IV/HT ☐ V/A ☐ V/B

D. Fire Resistance Rating Requirements for the Exterior Walls based on the fire separation distance (in hours):  
North: 0 South: 0 East: 0 West: 0

E. Mixed Occupancies: NO Nonseparated Uses: NA

F. Sprinklers:  
Required: YES Provided: YES Type of Sprinkler System: NFPA #13

G. Number of Stories: 1 Building Height: 27'-3" (EXISTING)

H. Actual Area per Floor (square feet): 12,012SF(EXISTING) + 1,837SF(NEW) = 13,849SF

I. Tabular Area: 38,000 SF

J. Area Modifications: NOT REQUIRED

K. Fire Resistance Rating Requirements for Building Elements (hours).

Element	Hours	Assembly Listing	Element	Hours	Assembly Listing
Exterior Bearing Walls	0	N.A.	Floors - Ceiling Floors	0	N.A.
Interior Bearing Walls	0	N.A.	Roofs - Ceiling Roofs	0	N.A.
Exterior Non-Bearing Walls	0	N.A.	Exterior Doors and Windows	0	N.A.
Structural Frame	0	N.A.	Shaft Enclosures	0	N.A.
Partitions - Permanent	0	N.A.	Fire Walls	0	N.A.
Fire Barriers	0	N.A.	Fire Partitions	0	N.A.
	0	N.A.	Smoke Partitions	0	N.A.

L. Design Occupant Load: EX:(167) NEW:(34)  
Exit Width Required: 44" Exit Width Provided: 60"

M. Minimum Number of Required Plumbing Facilities:  
a) Water Closets - Provided (m) 0 (f) 0 (CHILD) 2  
b) Lavatories - Provided (m) 0 (f) 0 (CHILD) 2  
c) Bath Tubs or Showers: 0  
d) Drinking Fountains: 0 Service Sinks: 0

N. Fire Sprinkler: Contractor to Modify Existing Sprinkler System to Meet Building Code, Fire Code & Local Codes as Required Including Raising, Lowering, Relocating or Adding Heads. Contractor to prepare and submit Fire Sprinkler design and calculations to the Fire Marshal for review and approval prior to the commencement of any work.

O. Fire Alarm Contractor to Provide Design / Build drawings to Meet Building Code, Fire Code & Local Codes as Required and submit to the Fire Marshal for approval.

FOOTNOTES:  
1) In case of conflict with the U.S. Department of Justice Federal Registers Parts I through V - ADA Guidelines and specific reference to the International Building Code Accessibility Chapters, the more restrictive requirement shall govern.  
2) All locations where the continuous air barrier must be penetrated shall be caulked, gasketed, or otherwise sealed in a manner compatible with the construction materials and location per IECC C402.5.1.1.

DEFERRED SUBMITTALS

- Fire Sprinkler plans and calculations.
- Fire Alarm plans
- Seismic bracing for ducts, piping and equipment above the ceiling meeting the requirements of IBC Section 1613.01.

CLIENT

Utah Community Action

MAGNA HEAD START – ADDITION  
8275 W. 3500 S.  
MAGNA, UT 84044

DESIGNER

ARCHIPLEX GROUP

architecture • sustainability • design services  
420 West 1500 South  
Bountiful, UT 848010  
(385) 777-2972

CONSULTANTS

STRUCTURAL

MEP

epic

2766 SOUTH MAIN  
SALT LAKE CITY, UTAH 84115  
P: (801) 355-5656  
F: (801) 355-5950

EPIC ENGINEERING  
50 EAST 1ST STREET  
HEBER CITY, UTAH 84032  
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PROFESSIONAL SEAL

STATE OF UTAH

PRESTON L. CROXFORD

No. 8624006

0301

LICENSED ARCHITECT

Preston L. Croxford

ISSUE

MARK	DATE	DESCRIPTION

ARCHIPLEX PROJECT NO:

2312.01

DRAWN BY:

K. MULLER

CHECKED BY:

P.CROXFORD

SCALE:

AS SHOWN

DATE:

DECEMBER 2023

KEY PLAN

SHEET TITLE

COVER SHEET

G000

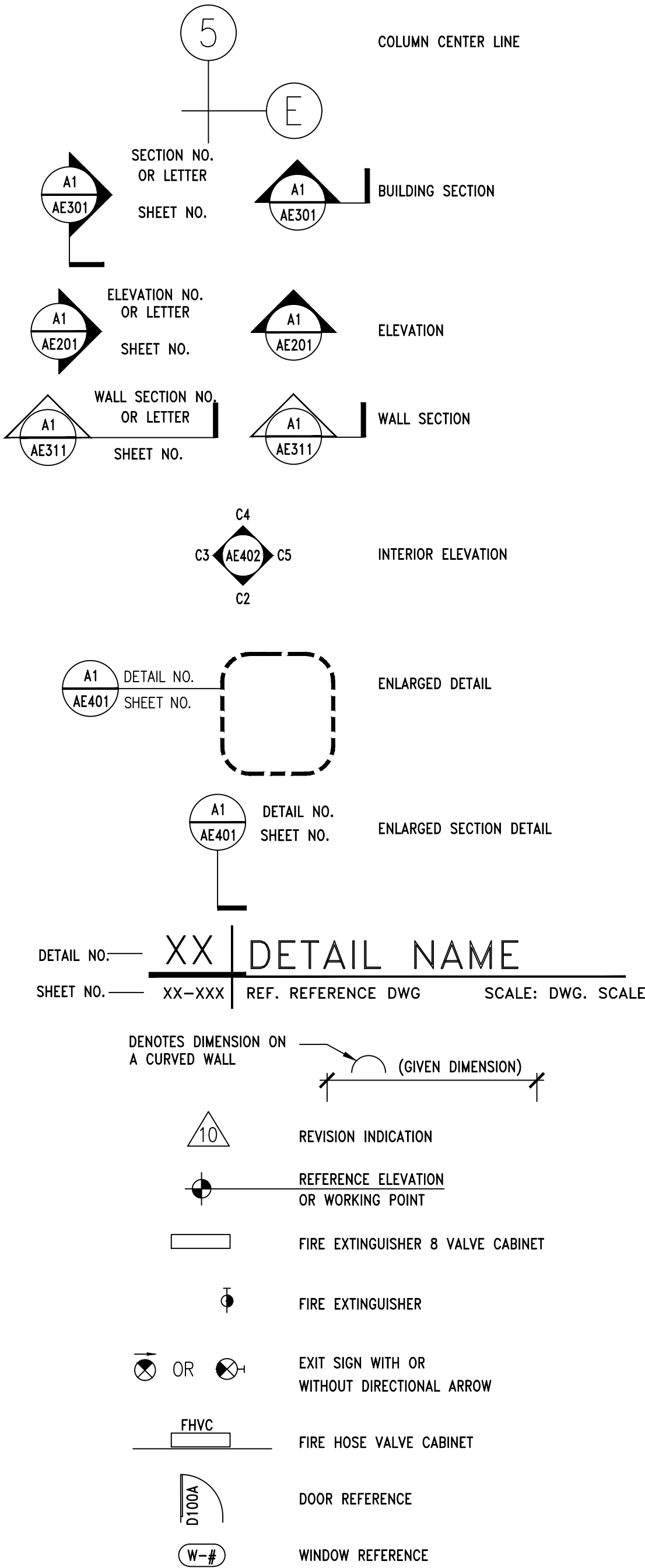


GENERAL NOTES

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ARCHITECTURAL SYMBOLS LEGEND



ABBREVIATIONS

ALT.	ALTERNATE	KIT.	KITCHEN	UNF.	UNFINISHED
ALUM.	ALUMINUM			U.N.O.	UNLESS NOTED OTHERWISE
A.B.	ANCHOR BOLT	LAM.	LAMINATE		
&	AND	LAV.	LAVATORY	VAR.	VARY OR VARIES
ARCH.	ARCHITECTURAL	LT.	LIGHT	VERT.	VERTICAL
⊙	AT OR AT THE	L.P.	LOW POINT	V.T.R.	VENT THROUGH ROOF
				V.I.F.	VERIFY IN FIELD
BM.	BEAM	MAINT.	MAINTENANCE		
BLK.	BLOCK	MFR.	MANUFACTURER	W/	WITH
BLKG.	BLOCKING	M.O.	MASONRY OPENING	WD.	WOOD
BD.	BOARD	MAX.	MAXIMUM	WP.	WATERPROOF
B.O.	BOTTOM OF	MECH.	MECHANICAL	WSC.	WAINSCOT
BOT.	BOTTOM	MEMB.	MEMBRANE	W/O	WITHOUT
BLDG.	BUILDING	MEN	MEN'S TOILET	W.P.	WORKING POINT
		MTL./MET.	METAL	W.R.	WATER RESISTANT
CLKG.	CAULKING	MIN.	MINIMUM		
C.I.	CAST IRON	MIR.	MIRROR		
CLG.	CEILING	MISC.	MISCELLANEOUS		
CEM.	CEMENT	MTD.	MOUNTED		
CTR.	CENTER	MUL.	MULLION		
	CENTER LINE				
CER.	CERAMIC	NOM.	NOMINAL		
C.T.	CERAMIC TILE	N.	NORTH		
CFCI	CONTRACTOR FURNISH, CONTRACTOR INSTALL	N.I.C.	NOT IN CONTRACT		
	CONTRACTOR FURNISH, OWNER INSTALLED	N.T.S.	NOT TO SCALE		
CFOI		NO. OR #	NUMBER		
CLR.	CLEAR/CLEARANCE				
CLO.	CLOSET	OFOI	OWNER FURNISH, OWNER INSTALL		
COL.	COLUMN	OFCI	OWNER FURNISH, CONTRACTOR INSTALL		
CONC.	CONCRETE	OFF.	OFFICE		
CMU	CONCRETE MASONRY UNIT	O.C.	ON CENTER		
CONN.	CONNECTION	OPNG.	OPENING		
CONSTR.	CONSTRUCTION	OPP.	OPPOSITE		
CONT.	CONTINUE/CONTINUOUS	OPP. H.	OPPOSITE HAND		
CONTR.	CONTRACTOR	O.D.	OUTSIDE DIAMETER		
C.J.	CONTROL JOINT				
CORR.	CORRIDOR	PTD.	PAINTED		
CNTR.	COUNTER	PR.	PAIR		
CTSK.	COUNTERSUNK	PART.	PARTITION		
		PED.	PEDESTRIAN		
DET.	DETAIL	PLAS.	PLASTER		
DIA.	DIAMETER	P. LAM.	PLASTIC LAMINATE		
DIM.	DIMENSION	PL	PLATE		
DN.	DOWN	PM	PRESSED METAL		
D.S.	DOWNSPOUT	PLYWD.	PLYWOOD		
DWG.	DRAWING	PLUMB.	PLUMBING		
D.F.	DRINKING FOUNTAIN	PT.	POINT		
		Q.T.	QUARRY TILE		
EA.	EACH				
ELEC.	ELECTRIC (AL)	RAD.	RADIUS		
ELEV./EL.	ELEVATION	R.W.L.	RAIN WATER LEADER		
EQ.	EQUAL	RE:	REFER TO		
EQUIP.	EQUIPMENT	REFL.	REFLECTED		
EXP.	EXPANSION	REINF.	REINFORCING		
EXT.	EXTERIOR	REQ.	REQUIRED		
EW	EACH WAY	REV.	REVISED		
		R.	RISER		
FIN.	FINISH	R.D.	ROOF DRAIN		
F.A.	FIRE ALARM	RM.	ROOM		
F.E.	FIRE EXTINGUISHER	R.O.	ROUGH OPENING		
F.E.C.	F.E. CABINET				
FLR./FL.	FLOOR	SCHED.	SCHEDULE		
F.D.	FLOOR DRAIN	SEAL.	SEALANT		
FTG.	FOOTING	SECT.	SECTION		
FDN.	FOUNDATION	S.S.K.	SERVICE SINK		
FV.	FIELD VERIFY	SHT.	SHEET		
		SIM.	SIMILAR		
GALV.	GALVANIZED	SL./SLP.	SLOPE		
G.I.	GALVANIZED IRON	S.C.	SOLID CORE		
GA.	GAUGE	SPEC.	SPECIFICATIONS		
GL.	GLASS/GLAZING	SQ.	SQUARE		
GR.	GRADE	STD.	STANDARD		
GND.	GROUND	STL.	STEEL		
GYP.	GYPSON	STOR.	STORAGE		
GYP. BD.	GYPSON BOARD	STRUCT.	STRUCTURAL/STRUCTURE		
		SYM.	SYMMETRICAL		
HDWR.	HARDWARE	S.STL.	STAINLESS STEEL		
HDWD.	HARDWOOD				
HT.	HEIGHT	TEL.	TELEPHONE		
H.P.	HIGH POINT	TEMP.	TEMPORARY/TEMPERED		
HORIZ.	HORIZONTAL	THK.	THICK (NESS)		
H.B.	HOSE BIBB	T & G	TONGUE AND GROOVE		
HM	HOLLOW METAL	T/CONC.	TOP OF CONCRETE		
HR.	HOURS (FIRE RATING)	T/CURB	TOP OF CURB		
		T.O.P.	TOP OF PLATE		
IN.	INCH	T/WALL	TOP OF WALL		
I.D.	INSIDE DIAMETER	T.	TREAD		
INSUL.	INSULATION	TYP.	TYPICAL		
INT.	INTERIOR	T.O.	TOP OF		
JAN.	JANITOR				
JT.	JOINT				
J-BOX	JUNCTION BOX				

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STRUCTURAL

ELECTRICAL

MECHANICAL / PLUMBING

CLIENT



MAGNA HEAD START – ADDITION  
8275 W. 3500 S.  
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ARCHIPLEX PROJECT NO:	2312.01
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DATE:	DECEMBER 2023

KEY PLAN

SHEET TITLE

GENERAL NOTES

G001



# G002









A1 | EXIT AND OCCUPANT LOAD PLAN

0004 REF. NA

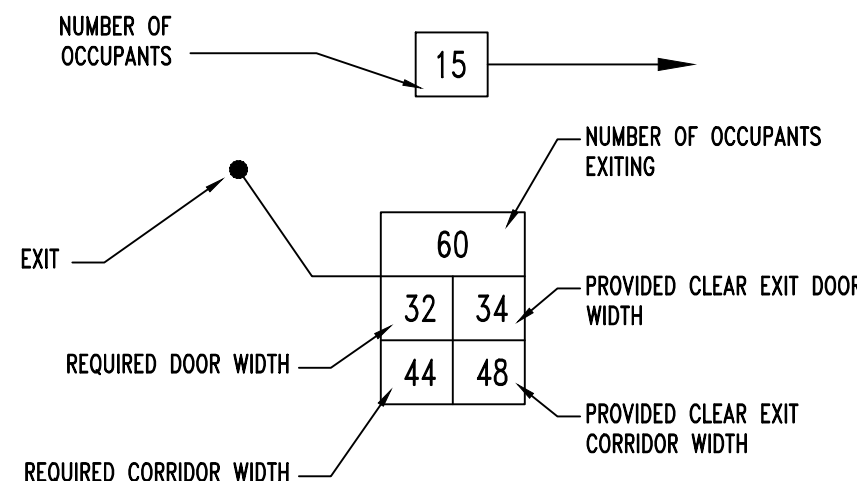
SCALE: 1/8" = 1'-0"



### GENERAL NOTES

1. FIELD VERIFY ALL EXISTING CONDITIONS AND THEIR COMPATIBILITY WITH NEW CONSTRUCTION PRIOR TO THE COMMENCEMENT OF WORK. COORDINATE DISCREPANCIES WITH ARCHITECT.
2. DO NOT SCALE DRAWINGS.
3. SEE CIVIL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR MORE INFORMATION.
4. DIMENSIONS ARE FROM FACE STUD / CMU - U.N.O.
5. SHADED AREA INDICATES EXISTING BUILDING OUTSIDE PROJECT AREA. THESE AREAS ARE TO REMAIN UNDISTURBED EXCEPT AS REQUIRED TO COMPLETE NEW CONSTRUCTION.

### EXITING LEGEND



EXITING TABLE					EXIT WIDTH REQUIRED	EXIT WIDTH PROVIDED
ROOM #	ROOM NAME	NET SF	LOAD FACTOR	OCC. LOAD	DOOR	DOOR
130	CORRIDOR	650	-	-	-	-
132	RESTROOM	78	-	-	-	-
133	NEW CLASSROOM	588	35	17	32	36
134	RESTROOM	84	-	-	-	-
135	NEW CLASSROOM	554	35	16	32	36

EXISTING BUILDING					
101	VESTIBULE	96	-	-	-
102	LOBBY	233	-	-	-
103	CORRIDOR	1217	-	-	-
104	CONFERENCE	222	15	15	32
105	RESTROOM	53	-	-	-
106	RESTROOM	53	-	-	-
107	TEACHER WORK ROOM	256	150	2	32
108	ADMINISTRATION OFFICE	102	150	1	32
109	ADMINISTRATION OFFICE	102	150	1	32
110	BREAK ROOM	177	150	2	32
111	CLASSROOM	674	35	20	32
112	OFFICE	99	150	1	32
113A	BOYS RESTROOM	82	-	-	-
113B	GIRLS RESTROOM	82	-	-	-
114	CLASSROOM	705	35	21	32
115	OFFICE	93	150	1	32
116	BOYS RESTROOM	82	-	-	-
117	GIRLS RESTROOM	82	-	-	-
118	OFFICE	102	150	1	32
119	MECHANICAL ROOM	106	300	1	32
120	ELECTRICAL ROOM	66	300	1	32
121	JANITOR'S ROOM	33	300	1	32
122	LAUNDRY	164	100	2	32
123	WARMING KITCHEN	169	200	1	32
124	PARENT TRAINING/MEETING	767	15	52	32
125	RECEPTION	102	150	1	32
126	REMODELED CLASSROOM	795	35	23	32
127A	RESTROOM	77	-	-	-
127B	RESTROOM	53	-	-	-
127C	RESTROOM	46	-	-	-
127D	RESTROOM	50	-	-	-
128	NEW CLASSROOM	771	35	22	32
129	OFFICE	108	150	1	32
130	CORRIDOR	650	-	-	-
131	CLOSET	32	-	-	-

EXISTING TOTAL # 170  
TOTAL # 203

CLIENT



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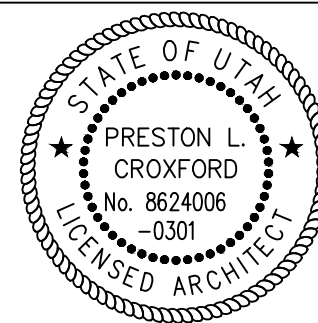
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KEY PLAN

SHEET TITLE

EXITING AND  
OCCUPANT LOAD PLAN

G004



GENERAL NOTES

1. ALL CONSTRUCTION MUST STRICTLY FOLLOW THE STANDARDS AND SPECIFICATIONS SET FORTH BY: GOVERNING UTILITY MUNICIPALITY; GOVERNING CITY; APWA, INDIVIDUAL PRODUCT MANUFACTURERS, THE DESIGN ENGINEER, AND UTAH DEPARTMENT OF TRANSPORTATION (UDOT). THE ORDER LISTED ABOVE IS ARRANGED BY SENIORITY. IF A CONSTRUCTION PRACTICE IS NOT SPECIFIED BY ANY OF THE LISTED SOURCES, CONTRACTOR MUST CONTACT DESIGN ENGINEER FOR DIRECTION.
2. TRAFFIC CONTROL, STRIPING & SIGNAGE TO CONFORM TO CURRENT UDOT TRANSPORTATION ENGINEER'S MANUAL AND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
3. ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO OWNER.
4. CONSULT ALL OF THE DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BEFORE COMMENCING CONSTRUCTION.
5. AT ALL LOCATIONS WHERE EXISTING PAVEMENT ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING PAVEMENT SHALL BE SAWCUT TO A CLEAN, SMOOTH EDGE.
6. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE MOST RECENT, ADOPTED EDITION OF ADA ACCESSIBILITY GUIDELINES.
7. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED THOROUGHLY REVIEWED PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
8. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND NOTIFYING ENGINEER OR INSPECTING AUTHORITY 48 HOURS IN ADVANCE OF COVERING UP ANY PHASE OF CONSTRUCTION REQUIRING OBSERVATION.
9. ANY WORK IN THE PUBLIC RIGHT-OF-WAY WILL REQUIRE PERMITS FROM THE APPROPRIATE, CITY, COUNTY OR STATE AGENCY CONTROLLING THE ROAD, INCLUDING OBTAINING REQUIRED INSPECTIONS.
10. ALL DIMENSIONS, GRADES & UTILITY DESIGNS SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES.
11. CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS BEFORE BIDDING AND BRING UP ANY QUESTIONS BEFOREHAND.
12. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH BY THE ENGINEER.
13. CATCH SLOPES SHALL BE GRADED AS SPECIFIED ON GRADING PLANS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FLAGGING, CAUTION SIGNS, LIGHTS, BARRICADES, FLAGMEN, AND ALL OTHER DEVICES NECESSARY FOR PUBLIC SAFETY.
15. CONTRACTOR SHALL, AT THE TIME OF BIDDING AND THROUGHOUT THE PERIOD OF THE CONTRACT, BE LICENSED IN THE STATE OF UTAH AND SHALL BE BONDABLE FOR AN AMOUNT EQUAL TO OR GREATER THAN THE AMOUNT BID AND TO DO THE TYPE OF WORK CONTEMPLATED IN THE PLANS AND SPECIFICATIONS. CONTRACTOR SHALL BE SKILLED AND REGULARLY ENGAGED IN THE GENERAL CLASS AND TYPE OF WORK CALLED FOR IN THE PLANS AND SPECIFICATIONS.
16. CONTRACTOR SHALL INSPECT THE SITE OF THE WORK PRIOR TO BIDDING TO SATISFY THEMSELVES BY PERSONAL EXAMINATION OR BY SUCH OTHER MEANS AS THEY MAY PREFER OF THE LOCATION OF THE PROPOSED WORK AND OF THE ACTUAL CONDITION OF AND AT THE SITE OF WORK. WHERE THE COURSE OF THE EXAMINATION, A BIDDER FINDS FACTS OR CONDITIONS WHICH APPEAR TO BE IN CONFLICT WITH THE LETTER OR SPIRIT OF THE PROJECT PLANS AND SPECIFICATIONS, THEY SHALL CONTACT THE ENGINEER FOR ADDITIONAL INFORMATION AND EXPLANATION BEFORE SUBMITTING THEIR BID. SUBMISSION OF A BID BY THE CONTRACTOR SHALL CONSTITUTE ACKNOWLEDGMENT THAT, IF AWARDED THE CONTRACT, THEY HAVE RELIED AND IS RELYING ON THEIR OWN EXAMINATION OF (1) THE SITE OF THE WORK, (2) ACCESS TO THE SITE, AND (3) ALL OTHER DATA AND MATTERS REQUISITE TO THE FULFILLMENT OF THE WORK AND ON THEIR OWN KNOWLEDGE OF EXISTING FACILITIES ON AND IN THE VICINITY OF THE SITE OF THE WORK TO BE CONSTRUCTED UNDER THIS CONTRACT. THE INFORMATION PROVIDED BY THE ENGINEER IS NOT INTENDED TO BE A SUBSTITUTE FOR, OR A SUPPLEMENT TO, THE INDEPENDENT VERIFICATION BY THE CONTRACTOR TO THE EXTENT SUCH INDEPENDENT INVESTIGATION OF SITE CONDITIONS IS DEEMED NECESSARY OR DESIRABLE BY THE CONTRACTOR. CONTRACTOR SHALL ACKNOWLEDGE THAT THEY HAVE NOT RELIED SOLELY UPON OWNER- OR ENGINEER-FURNISHED INFORMATION REGARDING SITE CONDITIONS IN PREPARING AND SUBMITTING THEIR BID.
17. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL WATER, POWER, SANITARY FACILITIES AND TELEPHONE SERVICES AS REQUIRED FOR THE CONTRACTOR'S USE DURING CONSTRUCTION.
18. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE OWNER, ENGINEER, AND/OR GOVERNING AGENCIES.
19. CONTRACTOR SHALL EXERCISE DUE CAUTION AND SHALL CAREFULLY PRESERVE BENCH MARKS, CONTROL POINTS, REFERENCE POINTS AND ALL SURVEY STAKES, AND SHALL BEAR ALL EXPENSES FOR REPLACEMENT AND/OR ERRORS CAUSED BY THEIR UNNECESSARY LOSS OR DISTURBANCE.
20. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOBSITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY SCHEDULING INSPECTION AND TESTING OF ALL FACILITIES CONSTRUCTED UNDER THIS CONTRACT. ALL TESTING SHALL CONFORM TO THE REGULATORY AGENCY'S STANDARD SPECIFICATIONS. ALL TESTING AND INSPECTION SHALL BE PAID FOR BY THE OWNER; ALL RE-TESTING AND/OR RE-INSPECTION SHALL BE PAID FOR BY THE CONTRACTOR.
22. IF EXISTING IMPROVEMENTS NEED TO BE DISTURBED AND/OR REMOVED FOR THE PROPER PLACEMENT OF IMPROVEMENTS TO BE CONSTRUCTED BY THESE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING IMPROVEMENTS FROM DAMAGE. COST OF REPLACING OR REPAIRING EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS REQUIRING REMOVAL AND/OR REPLACEMENT. THERE WILL BE NO EXTRA COST DUE TO THE CONTRACTOR FOR REPLACING OR REPAIRING EXISTING IMPROVEMENTS.
23. WHENEVER EXISTING FACILITIES ARE REMOVED, DAMAGED, BROKEN, OR CUT IN THE INSTALLATION OF THE WORK COVERED BY THESE PLANS OR SPECIFICATIONS, SAID FACILITIES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE WITH MATERIALS EQUAL TO OR BETTER THAN THE MATERIALS USED IN THE ORIGINAL EXISTING FACILITIES. THE FINISHED PRODUCT SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER, THE ENGINEER, AND THE RESPECTIVE REGULATORY AGENCY.
24. CONTRACTOR SHALL MAINTAIN A NEATLY MARKED SET OF FULL-SIZE AS-BUILT RECORD DRAWINGS SHOWING THE FINAL LOCATION AND LAYOUT OF ALL STRUCTURES AND OTHER FACILITIES. AS-BUILT RECORD DRAWINGS SHALL REFLECT CHANGE ORDERS, ACCOMMODATIONS, AND ADJUSTMENTS TO ALL IMPROVEMENTS CONSTRUCTED. WHERE NECESSARY, SUPPLEMENTAL DRAWINGS SHALL BE PREPARED AND SUBMITTED BY THE CONTRACTOR. PRIOR TO ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL DELIVER TO THE ENGINEER ONE SET OF NEATLY MARKED AS-BUILT RECORD DRAWINGS SHOWING THE INFORMATION REQUIRED ABOVE. AS-BUILT RECORD DRAWINGS SHALL BE REVIEWED AND THE COMPLETE AS-BUILT RECORD DRAWING SET SHALL BE CURRENT WITH ALL CHANGES AND DEVIATIONS REDLINED AS A PRECONDITION TO THE FINAL PROGRESS PAYMENT APPROVAL AND/OR FINAL ACCEPTANCE.

GENERAL NOTES CONT.

25. WHERE THE PLANS OR SPECIFICATIONS DESCRIBE PORTIONS OF THE WORK IN GENERAL TERMS BUT NOT IN COMPLETE DETAIL, IT IS UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL AND THAT ONLY MATERIALS AND WORKMANSHIP OF THE FIRST QUALITY ARE TO BE USED.
26. CONTRACTOR SHALL BE SKILLED AND REGULARLY ENGAGED IN THE GENERAL CLASS AND TYPE OF WORK CALLED FOR IN THE PROJECT PLANS AND SPECIFICATIONS. THEREFORE, THE OWNER IS RELYING UPON THE EXPERIENCE AND EXPERTISE OF THE CONTRACTOR. PRICES PROVIDED WITHIN THE CONTRACT DOCUMENTS SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY AND PROPER FOR THE WORK CONTEMPLATED AND THAT THE WORK BE COMPLETED IN ACCORDANCE WITH THE TRUE INTENT AND PURPOSE OF THESE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE COMPETENT, KNOWLEDGEABLE AND HAVE SPECIAL SKILLS IN THE NATURE, EXTENT AND INHERENT CONDITIONS OF THE WORK TO BE PERFORMED. CONTRACTOR SHALL ALSO ACKNOWLEDGE THAT THERE ARE CERTAIN PECULIAR AND INHERENT CONDITIONS EXISTENT IN THE CONSTRUCTION OF THE PARTICULAR FACILITIES WHICH MAY CREATE, DURING THE CONSTRUCTION PROGRAM, UNUSUAL OR UNSAFE CONDITIONS HAZARDOUS TO PERSONS, PROPERTY AND THE ENVIRONMENT. CONTRACTOR SHALL BE AWARE OF SUCH PECULIAR RISKS AND HAVE THE SKILL AND EXPERIENCE TO FORESEE AND TO ADOPT PROTECTIVE MEASURES TO ADEQUATELY AND SAFELY PERFORM THE CONSTRUCTION WORK AND AVOID SUCH HAZARDS.
27. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL STRIPING AND/OR PAVEMENT MARKINGS NECESSARY TO TIE EXISTING STRIPING INTO FUTURE STRIPING. METHOD OF REMOVAL SHALL BE BY GRINDING OR SANDBLASTING.
28. CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING, SLOPING OR OTHER PROVISIONS NECESSARY TO PROTECT WORKERS FOR ALL AREAS TO BE EXCAVATED TO A DEPTH OF 4' OR MORE. FOR EXCAVATIONS 4 FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL COMPLY WITH INDUSTRIAL COMMISSION OF UTAH SAFETY ORDERS SECTION 68 - EXCAVATIONS, AND SECTION 69 - TRENCHES, ALONG WITH ANY LOCAL CODES OR ORDINANCES.
29. ALL EXISTING GATES AND FENCES TO REMAIN UNLESS OTHERWISE NOTED ON PLANS. PROTECT ALL GATES AND FENCES FROM DAMAGE.
30. UNCLASSIFIED EXCAVATION SHALL BE PROPERLY DISPOSED OF PER GOVERNMENT REGULATIONS.
31. THE IMPROVEMENTS SHOULD BE CONSTRUCTED BASED ON SURVEY OF EXISTING CONDITION USED AS BASIS OF DESIGN. CONTRACTOR TO ENSURE STANDARD RFI PROCESS IF THEY DISCOVER A DISCREPANCY IN THE ACTUAL CONDITION OR NOT AS SURVEYED.
32. CONTRACTOR TO CONTACT PROPERTY OWNERS AT LEAST 5 DAYS PRIOR TO CLOSING AND/OR REPLACING DRIVEWAYS. CONTRACTOR TO INFORM PROPERTY OWNERS THEY WILL NOT HAVE ACCESS TO THEIR DRIVE DURING CONSTRUCTION.
33. CONTRACTOR TO VIDEO AND DOCUMENT ENTIRE LENGTH OF PROJECT TO DOCUMENT EXISTING CONDITIONS.

UTILITY NOTES

1. EXISTING UTILITIES HAVE BEEN SHOWN ON THE PLANS USING A COMBINATION OF ON-SITE SURVEYS. PRIOR TO COMMENCING ANY WORK, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE EACH UTILITY COMPANY LOCATE, IN THE FIELD, THEIR MAIN AND SERVICE LINES. THE CONTRACTOR SHALL NOTIFY BLUE STAKES AT 1-800-662-4111 48 HOURS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK. THE CONTRACTOR SHALL RECORD THE BLUE STAKES ORDER NUMBER AND FURNISH ORDER NUMBER TO OWNER AND ENGINEER PRIOR TO ANY EXCAVATION. IT WILL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DIRECTLY CONTACT ANY OTHER UTILITY COMPANIES THAT ARE NOT MEMBERS OF BLUE STAKES. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROTECT ALL EXISTING UTILITIES SO THAT NO DAMAGE RESULTS TO THEM DURING THE PERFORMANCE OF THIS CONTRACT. ANY REPAIRS NECESSARY TO DAMAGED UTILITIES SHALL BE PAID FOR BY THE CONTRACTOR. THE CONTRACTOR SHALL BE REQUIRED TO COOPERATE WITH OTHER CONTRACTORS AND UTILITY COMPANIES INSTALLING NEW STRUCTURES, UTILITIES AND SERVICE TO THE PROJECT. CONTRACTOR SHALL NOT HOLE ALL UTILITIES TO DETERMINE IF CONFLICTS EXIST PRIOR TO BEGINNING ANY EXCAVATION. NOTIFY ENGINEER OF ANY CONFLICTS. CONTRACTOR SHALL VERIFY LOCATION AND INVERTS OF EXISTING UTILITIES TO WHICH NEW UTILITIES WILL BE CONNECTED. PRIOR TO COMMENCING ANY EXCAVATION WORK THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN ACCORDANCE WITH THE REQUIRED PROCEDURES.
2. CARE SHOULD BE TAKEN IN ALL EXCAVATIONS DUE TO POSSIBLE EXISTENCE OF UNRECORDED UTILITY LINES. EXCAVATION REQUIRED WITHIN PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT THEIR EXPENSE.
3. ALL VALVES AND MANHOLE COVERS IN THE IMPROVEMENT AREA SHALL BE RAISED OR LOWERED TO MEET FINISHED GRADE.
4. CONTRACTOR SHALL CUT PIPES OFF FLUSH WITH THE INSIDE WALL OF THE BOX OR MANHOLE.
5. CONTRACTOR SHALL GROUT AT CONNECTION OF PIPE TO BOX WITH NON-SHRINKING GROUT, INCLUDING PIPE VOIDS LEFT BY CUTTING PROCESS, TO A SMOOTH FINISH.
6. CONTRACTOR SHALL GROUT WITH NON-SHRINK GROUT BETWEEN GRADE RINGS AND BETWEEN BOTTOM OF INLET LID FRAME AND TOP OF CONCRETE BOX.
7. SILT AND DEBRIS IS TO BE CLEANED OUT OF ALL STORM DRAIN BOXES. CATCH BASINS ARE TO BE MAINTAINED IN A CLEANED CONDITION AS NEEDED UNTIL AFTER THE FINAL BOND RELEASE INSPECTION.
8. CONTRACTOR SHALL CLEAN ASPHALT, TAR OR OTHER ADHESIVES OFF OF ALL MANHOLE LIDS AND INLET GRATES TO ALLOW ACCESS.
9. EACH TRENCH SHALL BE EXCAVATED SO THAT THE PIPE CAN BE LAID TO THE ALIGNMENT AND GRADE AS REQUIRED. THE TRENCH WALL SHALL BE SO BRACED THAT THE WORKERS MAY WORK SAFELY AND EFFICIENTLY. ALL TRENCHES SHALL BE DRAINED SO THE PIPE LAYING MAY TAKE PLACE IN DEWATERED CONDITIONS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE COST OF DEWATERING AND NO COST CHANGE WILL BE PROVIDED.
10. CONTRACTOR SHALL PROVIDE AND MAINTAIN AT ALL TIMES AMPLE MEANS AND DEVICES WITH WHICH TO REMOVE PROMPTLY AND TO PROPERLY DISPOSE OF ALL WATER ENTERING THE TRENCH EXCAVATION.
11. MAINTAIN A MINIMUM 18" VERTICAL SEPARATION DISTANCE BETWEEN ALL UTILITY CROSSINGS.
12. CONTRACTOR SHALL START INSTALLATION AT LOW POINT OF ALL NEW GRAVITY UTILITY LINES.
13. ALL BOLTED FITTINGS MUST BE GREASED AND WRAPPED.
14. UNLESS SPECIFICALLY NOTED OTHERWISE, MAINTAIN AT LEAST 2 FEET OF COVER OVER ALL STORM DRAIN LINES AT ALL TIMES (INCLUDING DURING CONSTRUCTION).
15. ALL WATER LINES SHALL BE INSTALLED A MINIMUM OF 48" OF COVER TO TOP OF PIPE BELOW FINISHED GRADE.
16. ALL SEWER LINES AND SEWER SERVICES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET, PIPE EDGE TO PIPE EDGE, FROM THE WATER LINES.
17. CONTRACTOR SHALL INSTALL THRUST BLOCKING AT ALL WATERLINE ANGLE POINTS AND TEES.
18. ALL UNDERGROUND UTILITIES SHALL BE IN PLACE PRIOR TO INSTALLATION OF CURB, GUTTER, SIDEWALK AND STREET PAVING.
19. CONTRACTOR SHALL INSTALL MAGNETIC LOCATING TAPE CONTINUOUSLY OVER ALL NONMETALLIC PIPE.
20. UNDER NO CIRCUMSTANCE SHALL THE PIPE OR ACCESSORIES BE DROPPED INTO THE TRENCH
21. ALL IRRIGATION SYSTEMS ARE TO REMAIN FUNCTIONAL DURING CONSTRUCTION. CAP BROKEN LINES UNTIL REPAIR, SO THAT SYSTEM IS FUNCTIONAL.

LEGEND

SYMBOL/LINETYPE	DESCRIPTION	HATCH LEGEND
	LIMITS OF DISTURBANCE	EXISTING CONCRETE
	EXISTING FENCE	EXISTING RUBBERIZED PLAY AREA
	EXISTING WATER VALVE	EXISTING BUILDING
	EXISTING WATER METER	PROPOSED ASPHALT
	EXISTING FIRE HYDRANT	PROPOSED CONCRETE
	EXISTING ELECTRICAL BOX	PROPOSED GRASS (LANDSCAPING BY OWNER)
	EXISTING LIGHT POLE	PROPOSED ARTIFICIAL TURF (LANDSCAPING BY OWNER)
	EXISTING TELECOMMUNICATIONS VAULT	
	MISCELLANEOUS MANHOLE	
	EXISTING SANITARY SEWER MANHOLE	
	EXISTING GAS METER	
	EXISTING STORM DRAIN STRUCTURES	
	EXISTING WATER LINE	
	EXISTING SEWER PIPE	
	EXISTING STORM DRAIN PIPE	
	EXISTING PROPERTY LINE	
	EXISTING POWER POLE	
	EXISTING GUY WIRE	
	EXISTING SIGN	
	EXISTING TREE	
	PROPOSED LIGHT POLE	
	PROPOSED OBJECT MARKERS SIGN	
	PROPOSED STORM DRAIN STRUCTURES	
	PROPOSED STORM DRAIN LINE	
	PROPOSED FENCE	
	PROPOSED SAWCUT LINE	

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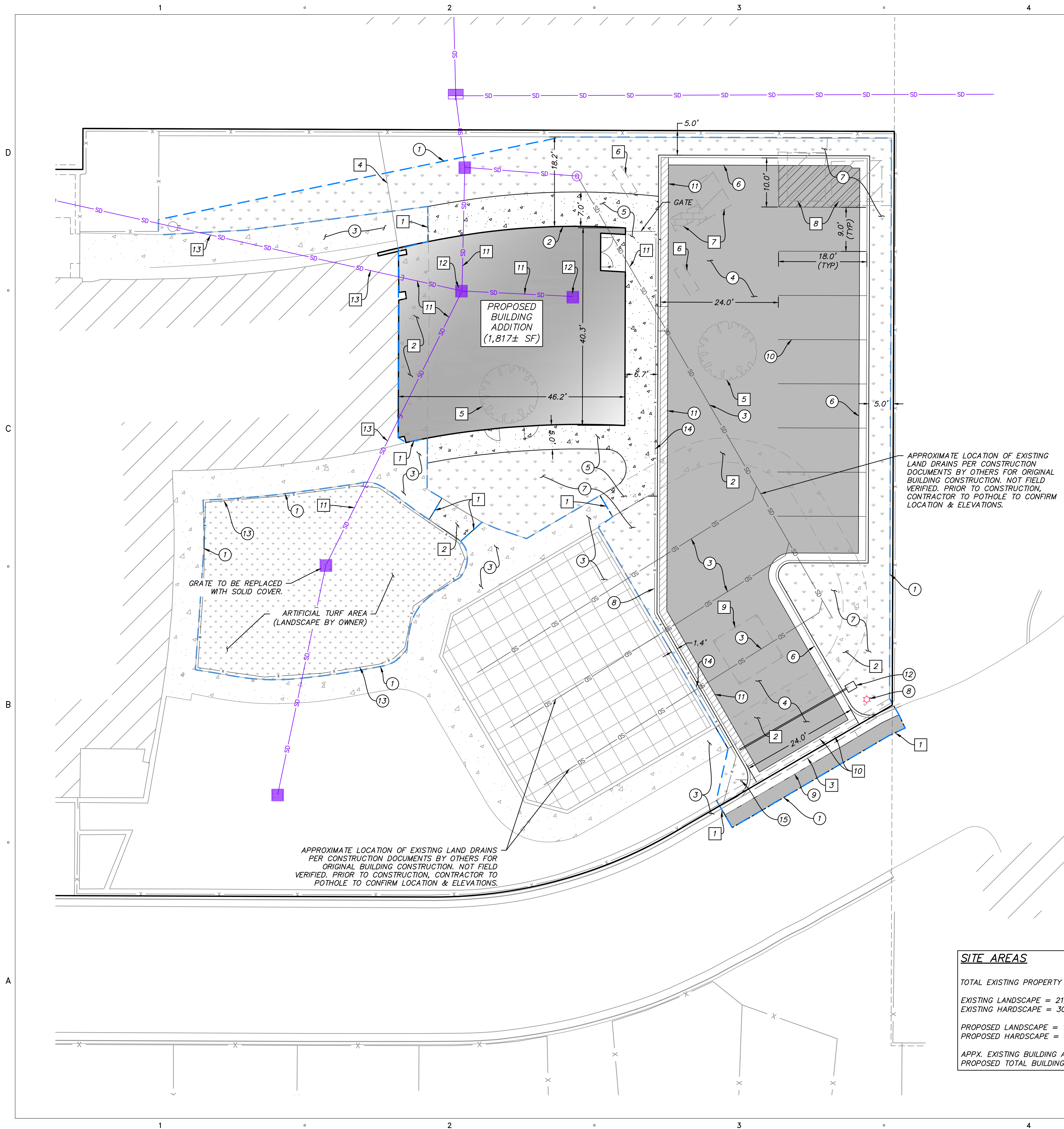
KEY PLAN

SHEET TITLE

GENERAL NOTES

C001





**DEMOLITION GENERAL NOTES:**

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR LOCATING AND PROTECTING FROM DAMAGE ALL EXISTING UTILITIES AND IMPROVEMENTS WHETHER OR NOT SHOWN ON THESE PLANS. THE FACILITIES AND IMPROVEMENTS ARE BELIEVED TO BE CORRECTLY SHOWN BUT THE CONTRACTOR IS REQUIRED TO SATISFY THEMSELVES AS TO THE COMPLETENESS AND ACCURACY OF THE LOCATIONS. ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE THEMSELVES WITH THE SITE AND SHALL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY, OR INDIRECTLY, FROM THEIR OPERATIONS, WHETHER OR NOT SAID FACILITIES ARE SHOWN ON THESE PLANS.

**DEMOLITION KEY NOTES:**

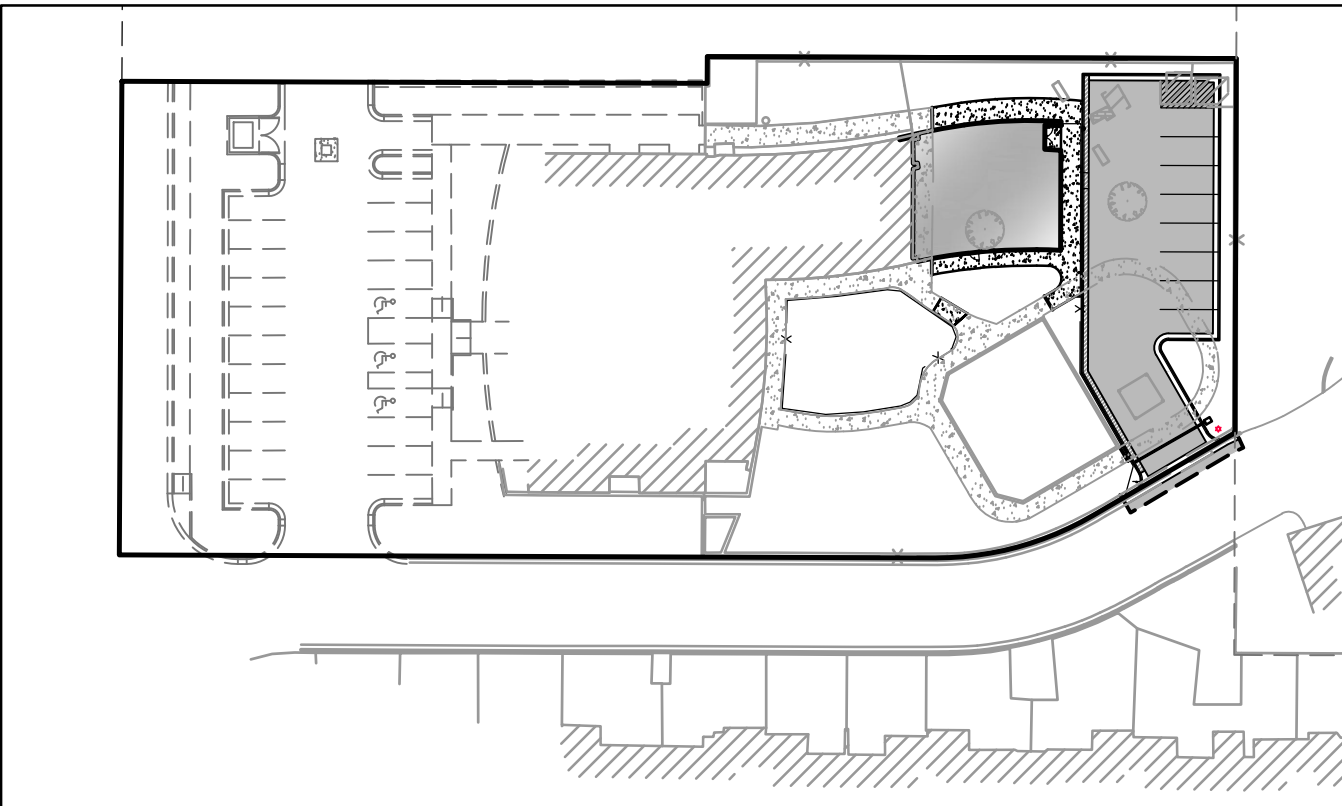
- 1 SAWCUT, TIE INTO EXISTING GRADE.
- 2 REMOVE/PROPERLY DISPOSE OF CONCRETE PAVEMENT.
- 3 REMOVE/PROPERLY DISPOSE OF CONCRETE CURB AND GUTTER.
- 4 REMOVE/REPLACE CHAIN LINK FENCE FOR INSTALLATION OF NEW STORM DRAIN PIPE. SEE SHEET C300.
- 5 REMOVE/PROPERLY DISPOSE OF EXISTING TREE.
- 6 REMOVE/RELOCATE PLANTER BOX. COORDINATE WITH OWNER.
- 7 REMOVE/RELOCATE PLAY HOUSE AND ASSOCIATED PAVERS. COORDINATE WITH OWNER.
- 8 REMOVE/RELOCATE SHEDS. COORDINATE WITH OWNER.
- 9 REMOVE/RELOCATE SHADE STRUCTURE AND SAND BOX. COORDINATE WITH OWNER.
- 10 REMOVE/PROPERLY DISPOSE OF EXISTING MASONRY WALL AND ASSOCIATED CONCRETE APRON.
- 11 REMOVE/PROPERLY DISPOSE OF EXISTING STORM DRAIN PIPE.
- 12 REMOVE/PROPERLY DISPOSE OF EXISTING STORM DRAIN INLET.
- 13 CAP/ABANDON IN PLACE EXISTING STORM DRAIN PIPE PER SALT LAKE COUNTY STANDARDS.

**SITE GENERAL NOTES:**

PROVIDE, INSTALL AND/OR CONSTRUCT THE FOLLOWING PER THE SPECIFICATIONS GIVEN OR REFERENCED, THE DETAILS NOTED, AND/OR AS SHOWN ON THE CONSTRUCTION DRAWINGS:

**SITE KEY NOTES:**

- 1 APPROXIMATE LIMITS OF DISTURBANCE.
- 2 PROPOSED BUILDING FOOTPRINT. REFER TO ARCHITECTURAL PLANS.
- 3 PROTECT IN PLACE EXISTING IMPROVEMENTS. IF DAMAGED, REPLACE AT CONTRACTOR'S EXPENSE.
- 4 INSTALL ASPHALT PAVING SECTION. SEE DETAIL A, SHEET C703.
- 5 INSTALL CONCRETE SIDEWALK PER APWA PLAN NO. 231. SEE SHEET C700.
- 6 INSTALL TYPE E CURB AND GUTTER PER APWA DETAIL 205.1. SEE SHEET C700.
- 7 INSTALL LANDSCAPING, LANDSCAPING BY OWNER.
- 8 NEW LIGHT POLE - SEE ELECTRICAL PLANS
- 9 INSTALL 4' WATERWAY PER APWA STANDARD PLAN NO. 211. SEE SHEET C700.
- 10 INSTALL PARKING STALL STRIPING PER M.U.T.C.D. STANDARDS.
- 11 INSTALL MODIFIED TYPE E CURB AND GUTTER. SEE DETAIL B, SHEET C703.
- 12 SWING GATE WITH SENSOR & SCANNER PER MANUFACTURES RECOMMENDATIONS.
- 13 INSTALL 4' WROUGHT IRON FENCE.
- 14 INSTALL 6' WROUGHT IRON FENCE.
- 15 INSTALL "NO LEFT TURN" SIGN



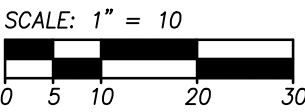
OVERALL SITE  
SCALE = 1"=60'

**SITE AREAS**

TOTAL EXISTING PROPERTY AREA = 51,555 SF (1.18 AC)  
EXISTING LANDSCAPE = 21,247 SF± - 41%  
EXISTING HARDSCAPE = 30,308 SF± - 59%  
PROPOSED LANDSCAPE = 14,932 SF - 29%  
PROPOSED HARDSCAPE = 36,623 SF - 71%  
APPX. EXISTING BUILDING AREA = 10,736 SF±  
PROPOSED TOTAL BUILDING AREA = 12,553 SF±

**PARKING**

EXISTING STALLS (INCLUDING ADA) = 22  
PROPOSED STALLS = 8  
PROPOSED TOTAL STALLS = 30  
TOTAL ADA STALLS = 3 (EXISTING)



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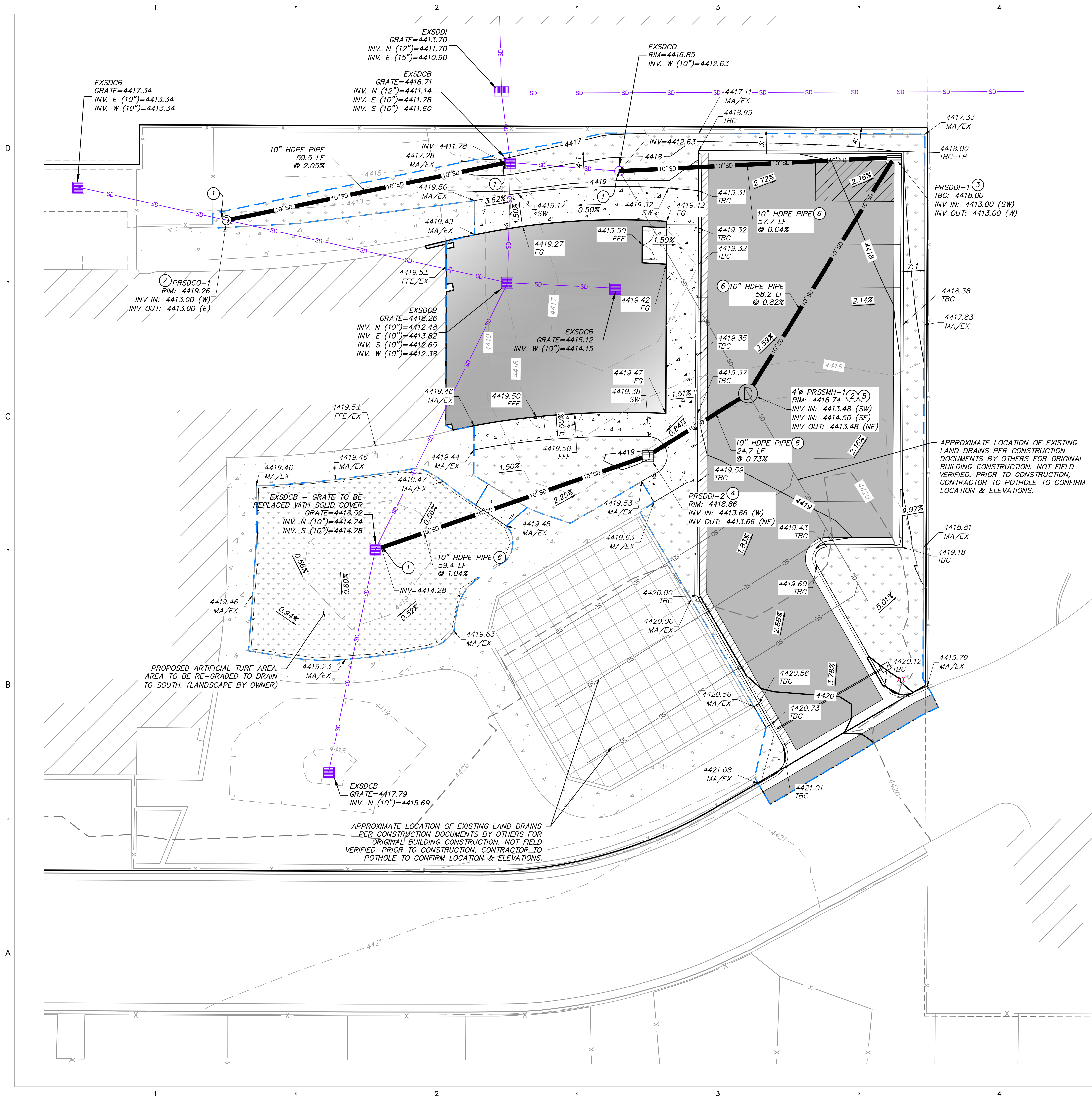
KEY PLAN

SHEET TITLE

DEMOLITION  
& SITE PLAN

C200





GRADING GENERAL NOTES:

SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING THEM WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM TEST D-1557. MOISTURE CONTENT AT TIME OF PLACEMENT SHALL NOT EXCEED 2% ABOVE NOR 3% BELOW OPTIMUM. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED REGISTERED GEOTECHNICAL ENGINEER, VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS.

CONTRACTOR SHALL BECOME FAMILIAR WITH EXISTING SOIL CONDITIONS.

THE CONTRACTOR IS TO USE BEST MANAGEMENT PRACTICES FOR PROVIDING EROSION CONTROL AND DUST SUPPRESSION FOR CONSTRUCTION OF THIS PROJECT.

ABBREVIATIONS:

EX	EXISTING GRADE
MA	MATCH
SW	EDGE OF SIDEWALK
TBC	TOP BACK OF CURB
TW	TOP OF WALL
BW	BOTTOM OF WALL
TS	TOP OF STAIRS
BS	BOTTOM OF STAIRS
FG	FINISHED GRADE
FFE	FINISHED FLOOR ELEVATION
BP	BOTTOM OF POND

UTILITIES:

CONTRACTOR IS TO COORDINATE ALL UTILITIES WITH PLUMBING DRAWINGS.

ALL NEW STORM DRAIN CONSTRUCTION TO BE DONE IN ACCORDANCE WITH SALT LAKE COUNTY STANDARDS AND APWA STANDARDS & SPECIFICATIONS.

EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED UPON RECORD INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF PLANS. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND LOCATION OF THOSE UTILITIES SHOWN ON THESE PLANS OR INDICATED IN THE FIELD BY LOCATING SERVICES. ANY ADDITIONAL COSTS INCURRED AS A RESULT OF CONTRACTOR'S FAILURE TO VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION IN THEIR VICINITY SHALL BE BORNE BY THE CONTRACTOR AND ASSUMED INCLUDED IN THE CONTRACT.

LOCATION OF ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR IS TO VERIFY CONNECTION POINTS WITH EXISTING UTILITIES. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED TO EXISTING UTILITIES AND UTILITY STRUCTURES THAT ARE TO REMAIN.

ALL SURFACE IMPROVEMENTS DISTURBED BY CONSTRUCTION SHALL BE RESTORED OR REPLACED, INCLUDING TREES, DECORATIVE SHRUBS, SOD, FENCES, WALLS AND STRUCTURES, WHETHER OR NOT THEY ARE SPECIFICALLY SHOWN ON THE CONTRACT DOCUMENTS.

UTILITY KEY NOTES:

- CONNECT TO EXISTING PIPE/STRUCTURE.
- INSTALL WITH FRAME AND COVER PER APWA STANDARD PLAN NO. 302.1. SEE SHEET C701.
- INSTALL CATCH BASIN PER APWA STANDARD PLAN NO. 315.1. SEE SHEET C701.
- INSTALL 2'x2' PRECAST BOX WITH GRATE PER APWA STANDARD PLAN NO. 332. SEE SHEET C701.
- INSTALL 4" PRECAST MANHOLE PER APWA STANDARD PLAN NO. 341.1. SEE SHEET C702.
- INSTALL HDPE PIPE, TRENCH BACKFILL AND PIPE ZONE BACKFILL PER APWA STANDARD PLAN NO. 381 AND 381. SEE SHEET C702.
- INSTALL 12" NYLOPLAST DRAIN BASIN (OR APPROVED EQUAL) WITH SOLID LID. SEE SHEET C703.

LEGEND:

----	EXISTING ELEVATION CONTOURS
----	EXISTING ELEVATION CONTOURS
----	EXISTING ELEVATION CONTOURS
----	PROPOSED ELEVATION CONTOURS

NOTE:

FLOODPLAIN DESIGNATION: AREA OF MINIMAL FLOOD HAZARD, ZONE X, DESCRIBED AS "AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN", AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP (FIRM) NUMBER 49035C0275G, EFFECTIVE 9/24/2009.

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KEY PLAN

SHEET TITLE

GRADING &  
DRAINAGE PLAN

C300







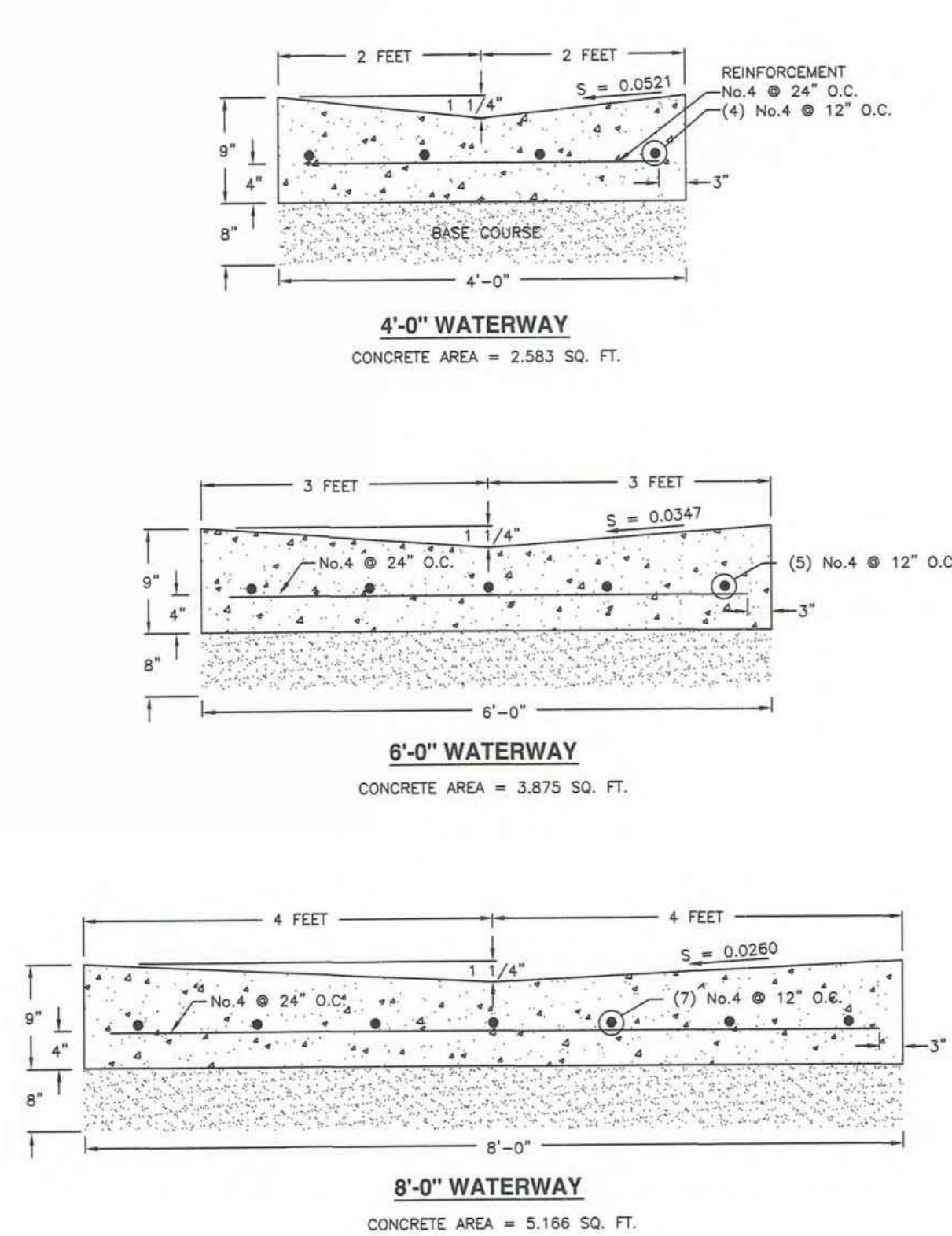




### Waterway

- ## GENERAL
- A. Variance from specified dimensions and slopes must be acceptable to the ENGINEER. System configuration may be changed at ENGINEER's discretion.
  - B. Unless indicated otherwise, width of waterway as follows.
    - 1) 4 feet for a residential street.
    - 2) 6 feet for a non-residential street.
    - 3) If wider than 6 feet, offset the flow line in the waterway to match (line up with) the curb and gutter flow line. Adjust cross slopes to match existing slopes.
  - C. Additional requirements are specified in APWA Section 32 16 13.
- ## 2. PRODUCTS
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
  - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73.
  - C. Concrete: Class 4000, APWA Section 30 30 04. If necessary, provide concrete that achieves design strength in less than 7 days. Use caution; however, as concrete cures (spider cracks) may develop if air temperature exceeds 90 degrees F.
  - D. Reinforcement: Galvanized or epoxy coated, deformed, 60 ksi yield grade steel, ASTM A615.
  - E. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 30 39 00.
- ## 3. EXECUTION
- A. Base Course Placement: APWA Section 32 05 10. Thickness is 6-inches if flow-line grade is 0.5 percent ( $\leq 0.005$ ) or greater. If slope is less, provide 8-inches. Minimum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
  - B. Concrete Placement: APWA Section 30 30 10.
    - 1) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface. Expansion joints are not required in concrete placement using slip-form construction.
    - 2) Install contraction joints vertical, 1/8-inch wide or 1/4 slab thickness if the slab is greater than 8-inches thick. Match joint location in adjacent Portland-cement concrete roadway surface.
    - 3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
  - C. Protection and Repair: Protect concrete from deicing chemicals during cure. Repair construction that does not drain. If necessary, fill flow-line with water to verify.

## 211



# C700

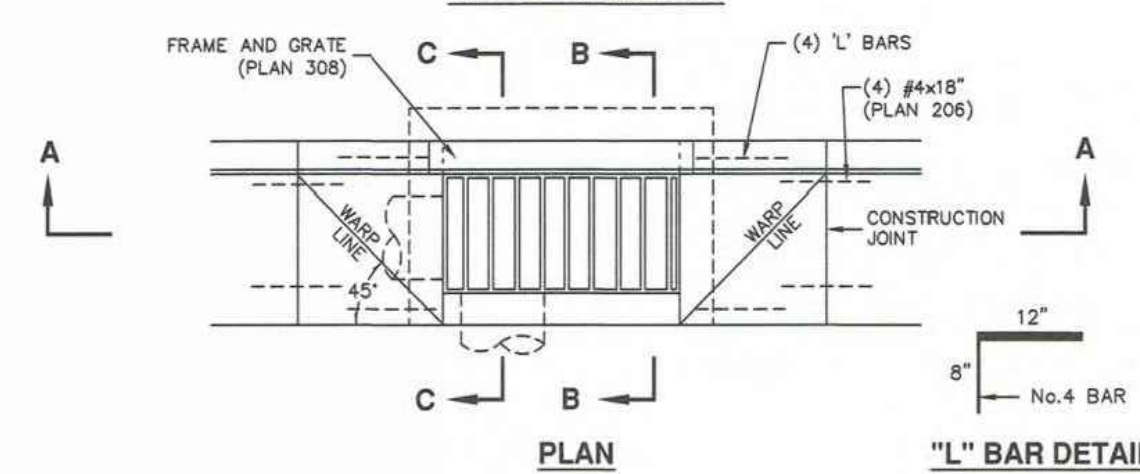


**Precast box**

## 1. GENERAL

- A. The drawing shows typical pipe connections. Refer to construction drawings for connection locations or refer to field location of existing piping when engineering pipe connection to the box.
  - B. This drawing is acceptable where the water table elevation is less than 3 feet above the floor of the box. If elevation of water table is higher, engineering calculations and drawings must be submitted to and approved by the ENGINEER.
  - C. Submit bar design detail for ENGINEER's review.
- 2. PRODUCTS**
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
  - B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
  - C. Precast Concrete: Class 4000 precast, APWA Section 03 40 00.
  - D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615. Coated steel is not required for small drainage structures shown on this drawing.
  - E. Frame and Cover (or Grate): Use the appropriate unit indicated in the Contract Documents.
  - F. Joint Sealant: Rubber-based, compressible.
- 3. EXECUTION**
- A. Concrete Placement: Provide 2-inches of concrete cover over reinforcing steel.
  - B. Lifting Points: Provide at least 2 lifting points per section that avoid interference with the reinforcing steel and that are designed according to PCI (Prestressed Concrete Institute) design handbook. Lift only from the engineered lifting points.
  - C. Depth: Drainage boxes and riser combinations that exceed 8-feet from finished grade to the bottom of the box requires ENGINEER's approval. Submit design calculations and shop drawings.
  - D. Core Holes:
    - 1) Provide core holes that are at least 4" larger than attaching outer pipe diameter. Cut core holes at the manufacturing plant unless ENGINEER permits field core holes.
    - 2) Center core holes to leave 2" of concrete measured horizontally from inside wall of the box to core hole. Locate core hole vertically so bottom of core hole will be at or above floor elevation with at least 5-inches of concrete directly above the core hole to the top of the box.
    - 3) Deviations from core hole tolerances require shop drawings. Shop drawings will identify lifting point number and location.
  - E. Precast Top: Design precast top for AASHTO HL-93 live loads and submit rebar detail and stamped design drawings to ENGINEER. Show connection detail for frame and grate or cover.

## 332



**SECTION A-A**

FLOW LINE DROP (NOTE 3B)

1" BAR

DO NOT USE 1" BARS FOR FRAME SUPPORT

3" MIN

3" MIN

6" MIN

3" - 11 1/2"

6"

6"

BACKFILL

BASE COURSE

Y

Y

CURB HEIGHT

INVERT OF GUTTER

BOTTOM OF GUTTER

**SECTION B-B**

4" MIN CURB OPENING (NOTE 3B)

1" BAR

MATCH BACK OF HOOD WITH INSIDE FACE OF BOX

#4 BAR @ 12" O.C. EACH WAY ALL AROUND

6" - 2'-0" - 6"

3'-0"

**SECTION C-C**

5'-0" MAX

12" MIN

6"

1" BAR

**SECTION C-C**



## SECTION B-B

OBLIQUE

BOX SIZE	(a)	(b)
1.5 x 4	18"	48"
2 x 2	24"	24"
2 x 3	24"	36"
2.5 x 4	30"	48"
3 x 3	36"	36"
3 x 3.5	36"	42"
4 x 4	48"	48"

NOTE: OTHER BOX SIZES (LESS THAN 48") WITH DIFFERENT a AND b DIMENSIONS ARE ACCEPTABLE

## REINFORCING STEEL LAYOUT

PROVIDE 2" MIN. COVER ON ALL BARS	
BAR (E)	BAR (F)
	

---

ARCHIPLEX PROJECT NO: 2312.01DRAWN BY: C. FRANZWA/J. BAISCH

CHECKED BY: D. BOUROUE

CHECKED BY:	D. BOORQUE
SCALE	AS SHOWN

SCALE: \_\_\_\_\_ AS SHOWN

DATE: DECEMBER 2023

## KEY PLAN

---

C701



**Pipe zone backfill**

## 1. GENERAL

- A. Install the pipe in the center of the trench or no closer than 6-inches from the wall of the pipe to the wall of the trench.
- 2. PRODUCTS**
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
  - B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
  - C. Concrete: APWA Section 03 30 04.
  - D. Flowable Fill: Target is 60 psi in 28 days with 90 psi maximum in 28 days, APWA Section 31 05 15. It must flow easily requiring no vibration for consolidation.
  - E. Stabilization-Separation Geotextile: Moderate or high at CONTRACTOR's choice, APWA Section 31 05 19.
- 3. EXECUTION**
- A. Excavate the Pipe Zone: Width is measured at the pipe spring line and includes any necessary sheathing. Provide width recommended by pipe manufacturer. Follow manufacturer's recommendations when using trench boxes.
  - B. Foundation Stabilization: Get ENGINEER's permission before installing common fill. Vibrate to stabilize. Installation of stabilization-separation geotextile will be required to separate backfill material and native subgrade materials if common fill cannot provide a working surface or prevent soils migration.
  - C. Bedding: Follow APWA Section 33 05 20 requirements and the following provisions:
    - 1) Furnish untreated base course material unless specified otherwise by pipe manufacturer.
    - 2) Maximum fill thickness is 8-inches.
    - 3) Bedding immediately under the pipe should not be compacted, but loosely placed.
    - 4) Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
    - 5) When using concrete, provide at least Class 2,000, APWA Section 03 30 04.
  - D. Pipe Zone: DO NOT use any of the following: pea gravel, or recycled RAP aggregate in the pipe zone. Water jetting is NOT allowed.
    - 1) Maximum fill thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26 unless pipe manufacturer requires more stringent installation.
    - 2) Submission of quality control compaction test result data developed for the haunch zone may be requested by ENGINEER at any time. CONTRACTOR is to provide results of tests immediately upon request.
  - E. Flowable Fill (when required and if allowed by pipe manufacturer):
    - 1) Place the controlled low strength material, APWA Section 31 05 15.
    - 2) Prevent pipe flotation by installing in lifts and providing pipe restraints as required by pipe manufacturer.
    - 3) Reset pipe to line and grade if pipe "floats" out of position.

## 382

NARRATIVE: THIS PLAN SHOWS VARIOUS SLOPES RECOMMENDED FOR VARIOUS TYPES OF SLOPE STABILITY PROBLEMS. THE VERTICAL TEXT INDICATES VARIOUS MATERIALS THAT MAY BE ENCOUNTERED. THE SERVICES OF A PROFESSIONAL SOILS ENGINEER SHOULD BE USED TO VERIFY SLOPE STABILITY.

The diagram consists of two parts: an Elevation View at the top and a Section A-A at the bottom.

**Elevation View:** This side-view diagram shows a trench being repaired. A horizontal pipe is shown with two bell-and-spigot joints. The area between the joints is labeled "PIPE ZONE". The area around the pipe is labeled "FOUNDATION AND BEDDING MATERIAL". Arrows labeled "A" point to the joints, indicating the location of Section A-A. A note states: "MAKE BELL HOLES BEFORE LAYING BELL AND SPIGOT PIPE IN PIPE ZONE".

**SECTION A-A:** This cross-sectional diagram shows the trench and its components. The central circular feature is the pipe. The area immediately surrounding the pipe is the "PIPE SPRING LINE". The area between the pipe and the trench walls is "BACKFILL (NOTE 3D)". The trench walls are labeled "TRENCH WALL". The area below the pipe is "BEDDING (NOTE 3C)". The area below the bedding is "FOUNDATION STABILIZATION (NOTE 3B)". The width of the pipe zone is labeled "PIPE ZONE (NOTE 3A)". The height of the pipe zone is labeled "PIPE ZONE". A note indicates a "6\" minimum" for the bedding thickness.

**SECTION A-A**

## INSTALLATION

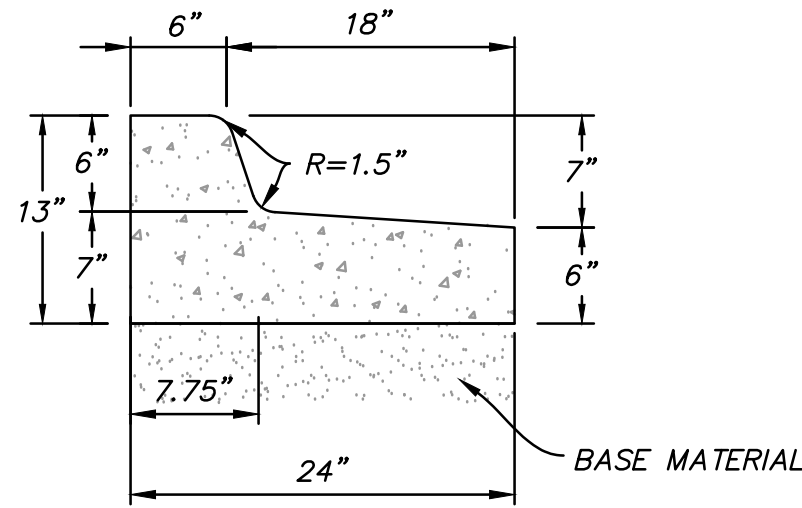
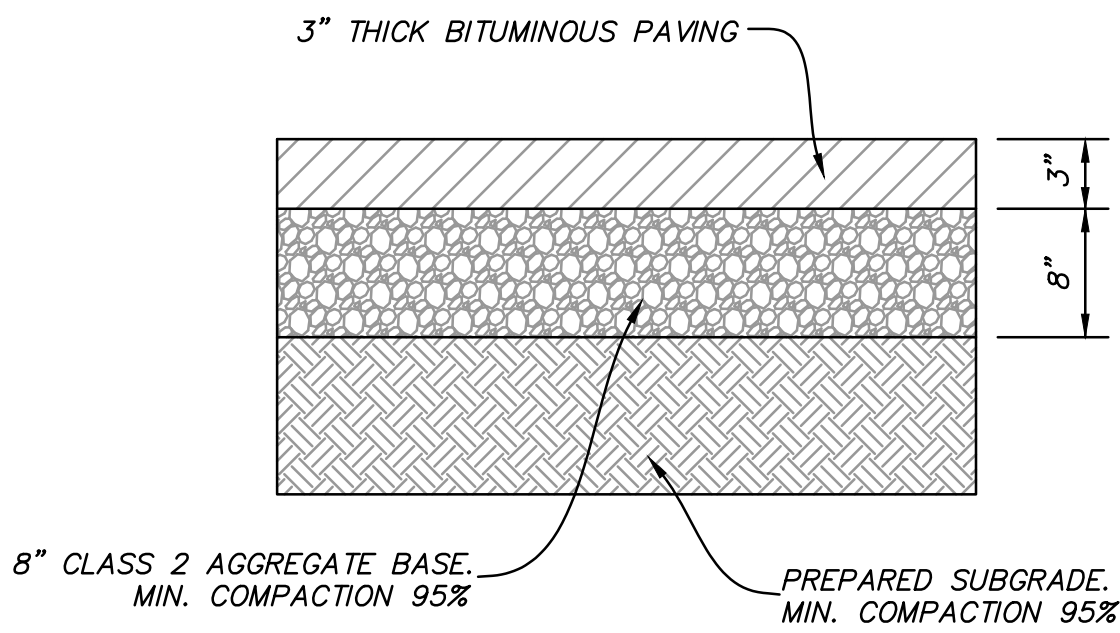
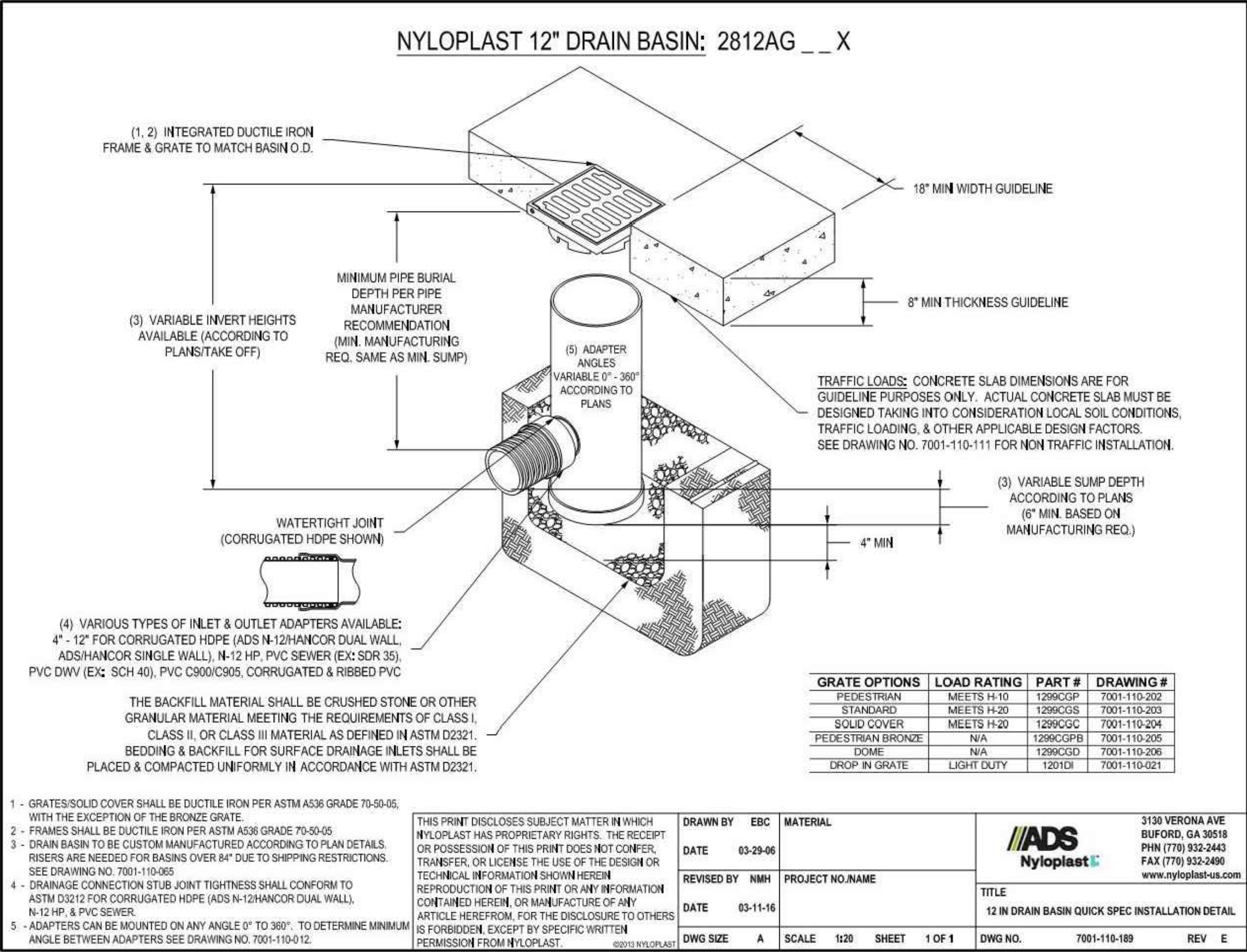
CONCRETE PIPE: FOLLOW ASTM C 1479  
"STANDARD PRACTICE FOR INSTALLATION OF PRECAST CONCRETE SEWER, STORM DRAIN, AND CULVERT PIPE USING STANDARD INSTALLATIONS.

PLASTIC PIPE: FOLLOW ASTM D 2321  
"STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS"

CORRUGATED METAL PIPE: FOLLOW ASTM A 798  
"STANDARD PRACTICE FOR INSTALLING FACTORY-MADE CORRUGATED STEEL PIPE FOR SEWERS AND OTHER APPLICATIONS."

VITRIFIED CLAY PIPE: FOLLOW ASTM C 12.  
"STANDARD RECOMMENDED PRACTICE FOR INSTALLING VITRIFIED CLAY PIPE LINES."





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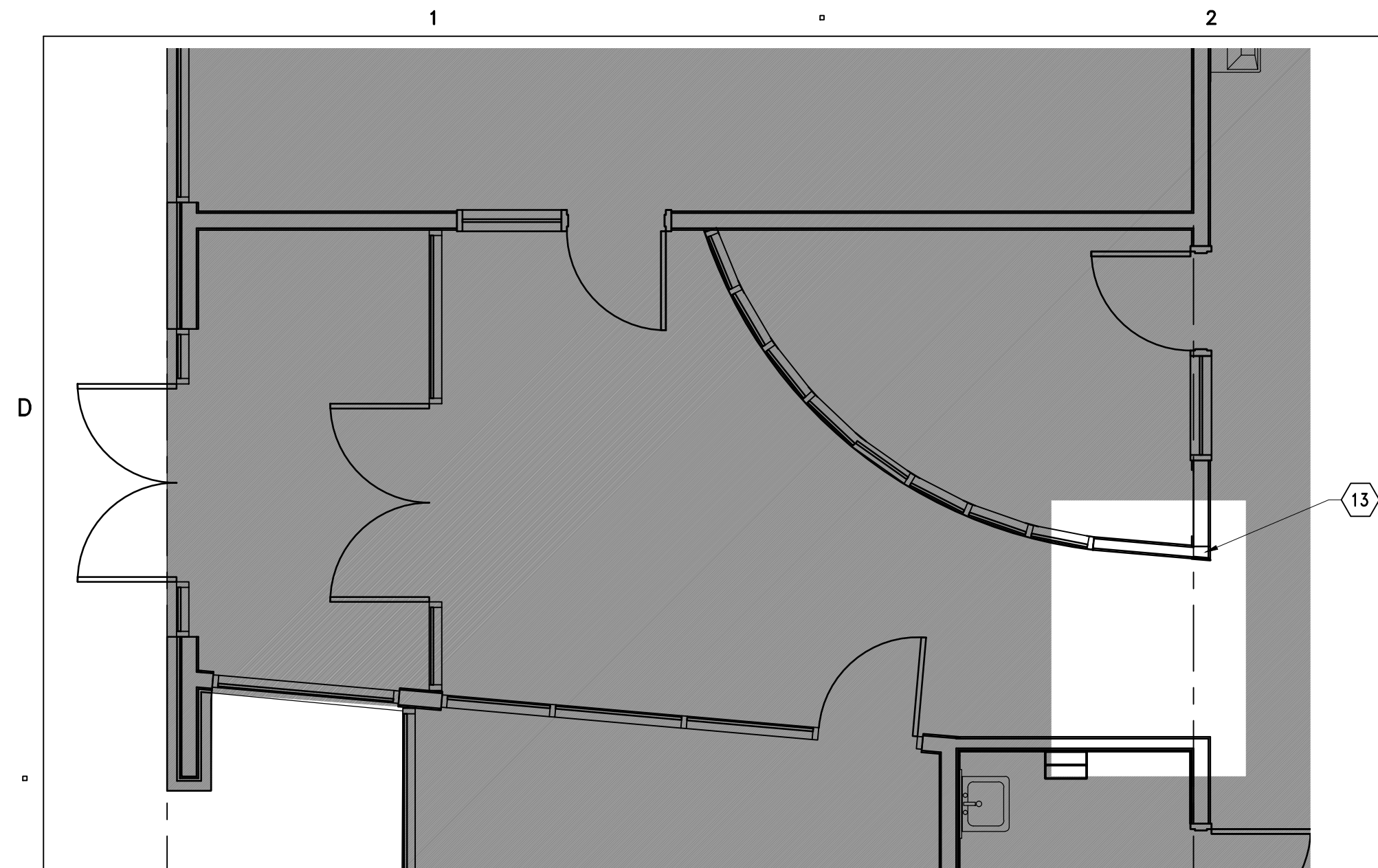
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SHEET TITLE

DETAILS

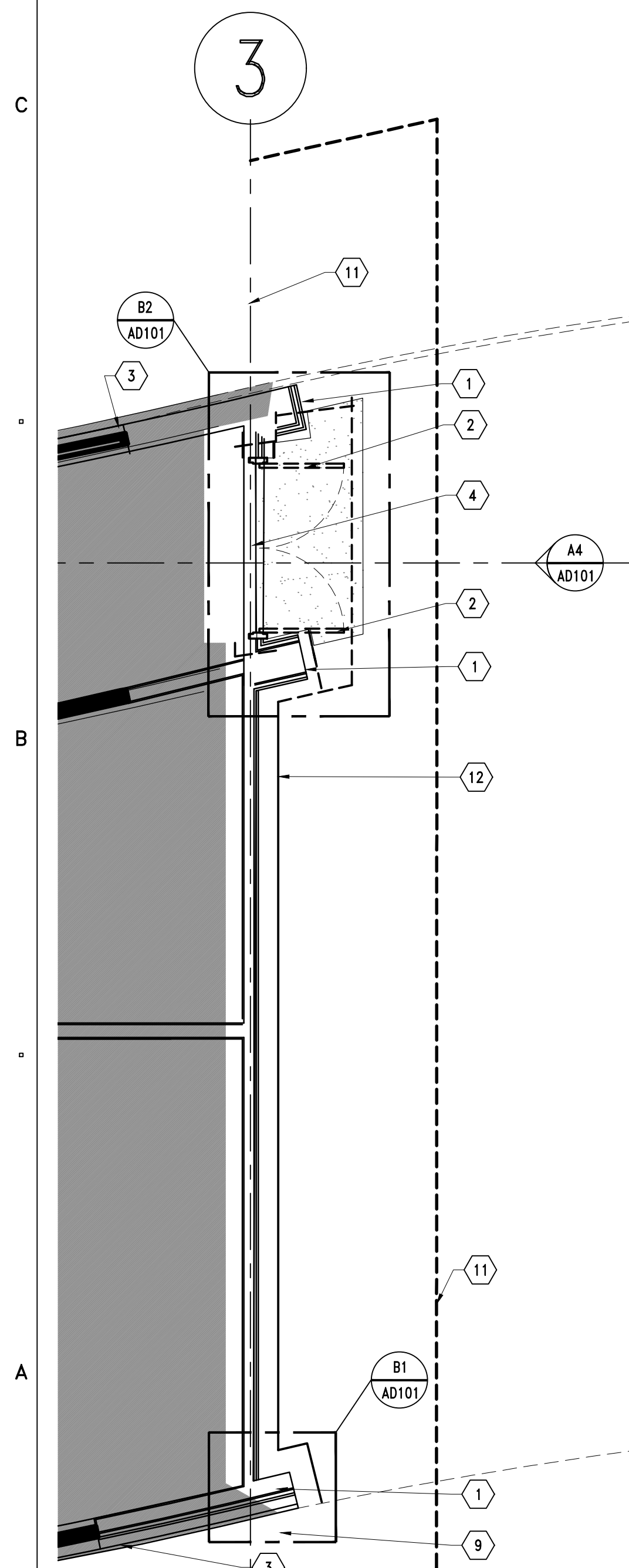
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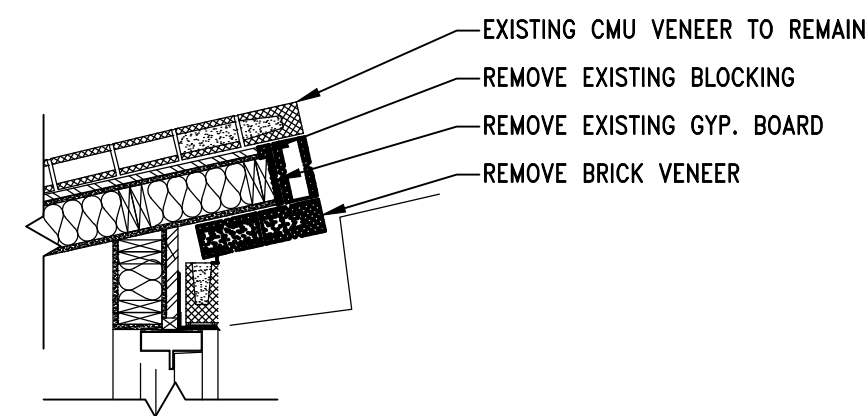
C1 DEMOLITION FLOOR PLAN @ MAIN ENTRY LOBBY

AD101 REF. NO REFERENCE SCALE: 1/4" = 1'-0"



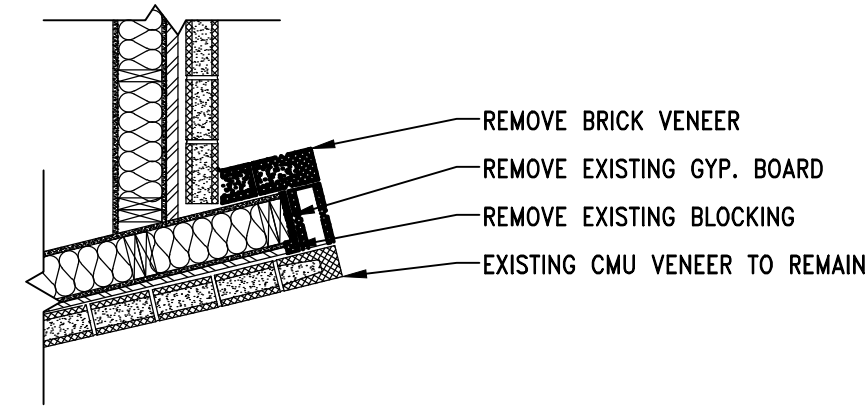
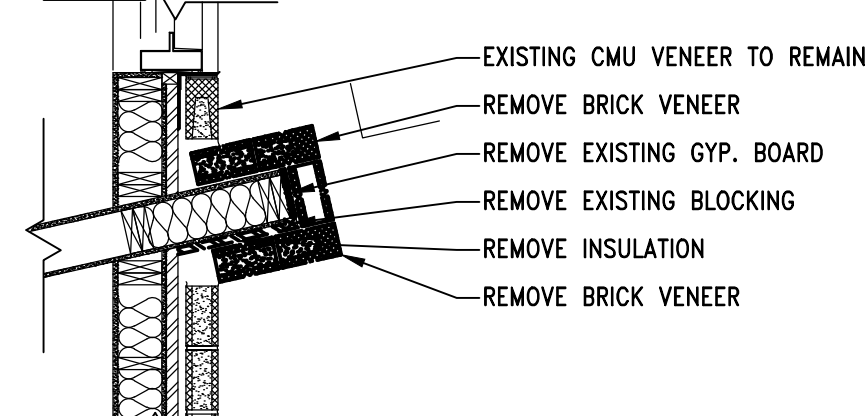
A1 DEMOLITION FLOOR PLAN

AD101 REF. NO REFERENCE SCALE: 1/4" = 1'-0"



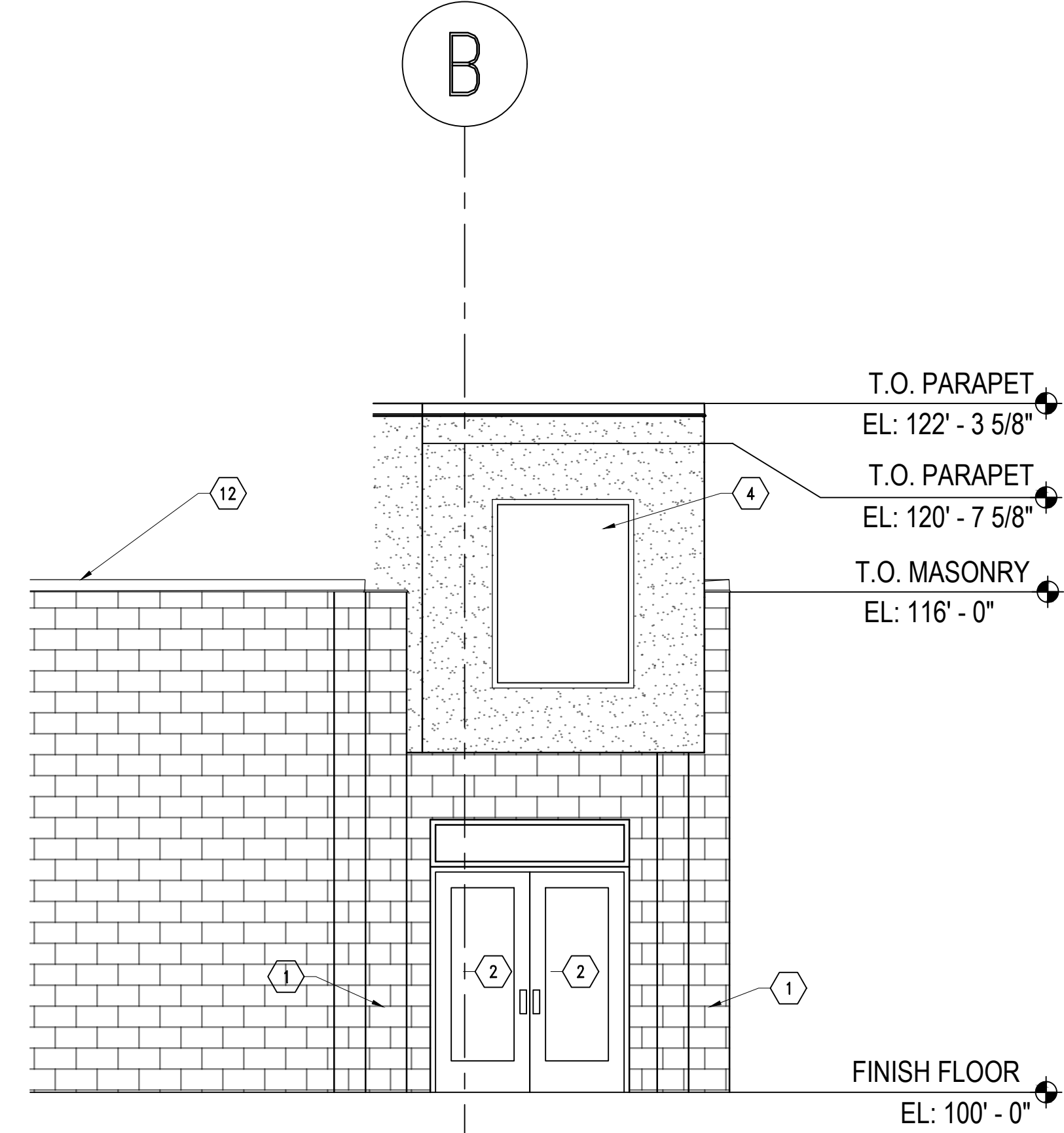
B2 DEMOLITION BRICK WALL DETAIL W/DOOR

AD101 REF. NO REFERENCE SCALE: 1/2" = 1'-0"



A2 DEMOLITION BRICK WALL DETAIL

AD101 REF. NO REFERENCE SCALE: 1/2" = 1'-0"



A4 DEMOLITION ELEVATION

AD101 REF. A1/AD101 SCALE: 1/4" = 1'-0"

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### DEMO KEYNOTES

1. REMOVE VENEER ON ENDCAP BUTTRESS WALLS (TO ATTACH NEW WALL)(SEE CALLOUT A2/AD101, B2/AD101 FOR DETAIL).
2. DOOR TO BE REMOVED AND SALVAGED FOR RE-USE. FRAME TO REMAIN.
3. EXISTING WALLS TO REMAIN UNDISTURBED.
4. EXISTING WINDOW TO BE COMPLETELY REMOVED AND SALVAGED FOR RE-USE.
5. DOOR, FRAME AND GLAZING ABOVE TO REMAIN.
6. CANOPY, COLUMN AND ROUND CONCRETE BASE TO REMAIN UNDISTURBED.
7. EXISTING PLAYGROUND AND CANOPY TO REMAIN.
8. SANDBOX AND CANOPY TO BE REMOVED AND RETURNED TO OWNER. TO BE REMOVED.
9. EXISTING CONCRETE WALKWAY TO REMAIN - PROTECT DURING CONSTRUCTION.
10. APPROXIMATE LINE OF NEW BUILDING OUTLINE. SEE SHEET AE101.
11. REMOVE EXISTING SIDEWALK BACK TO NEAREST EXISTING CONTROL JOINT.
12. EXISTING PARAPET FLASHING TO REMAIN.
13. PREPARE OPENING FOR ALUMINUM STORE FRONT.

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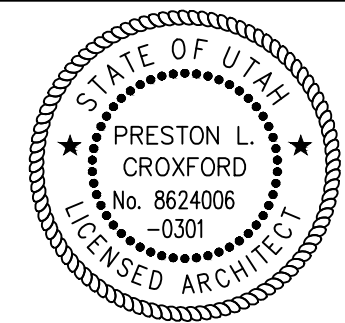
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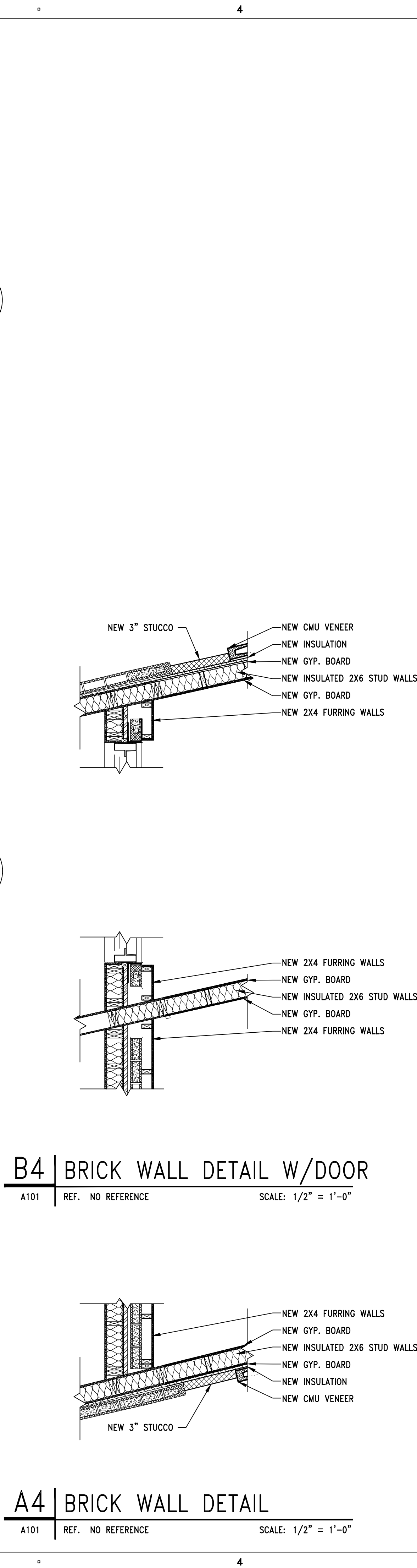
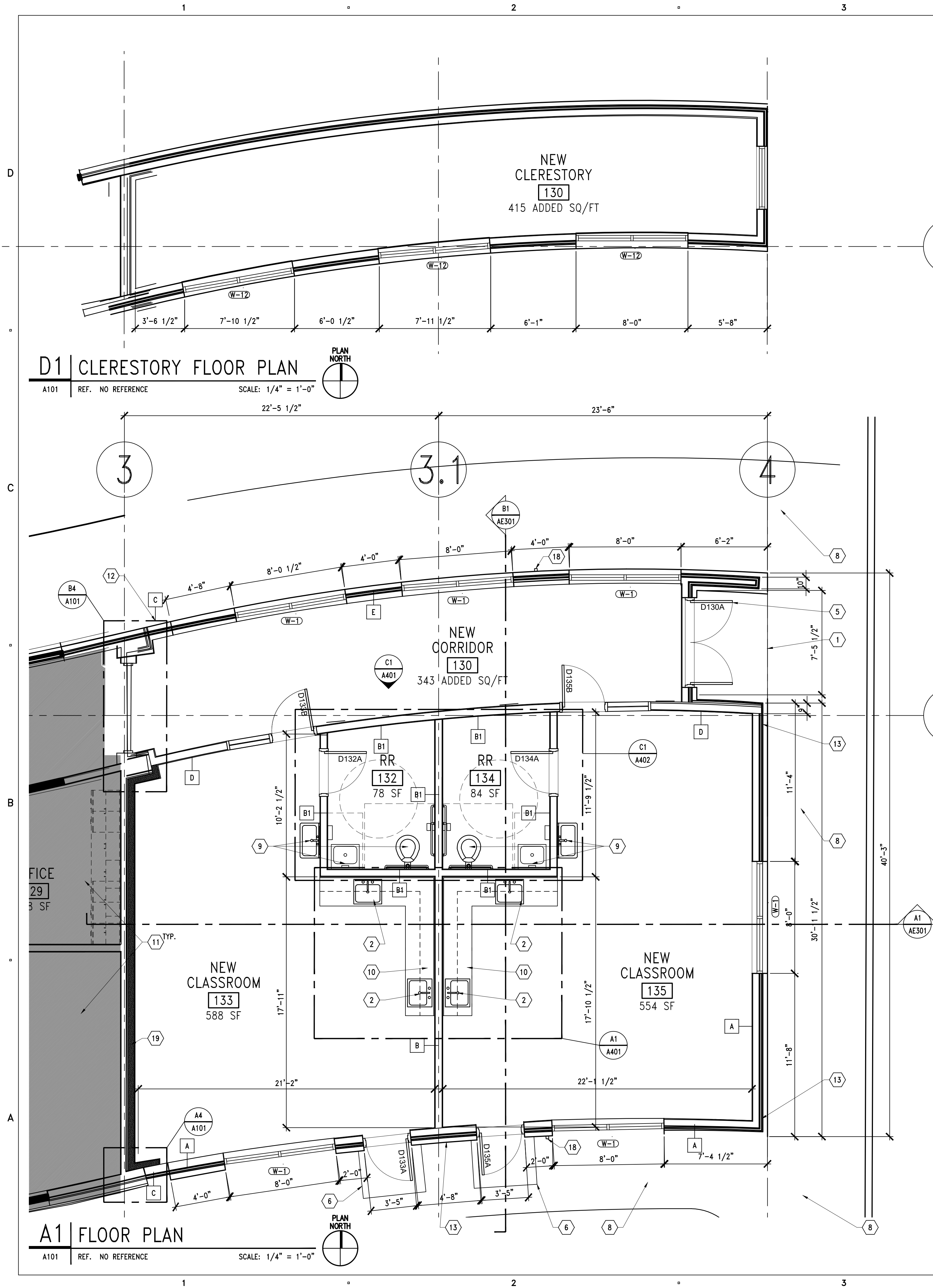
KEY PLAN

SHEET TITLE

DEMOLITION  
FLOOR PLAN

AD101






GENERAL NOTES	
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FLOOR PLAN KEYNOTES	
1.	RE-USED WINDOW - SEE AE601.
2.	NEW PLUMBING FIXTURES (SEE B1/G003 FOR REQUIREMENTS) SEE PLUMBING FOR DETAILS.
3.	NOT USED.
4.	NOT USED.
5.	RE-USED EXTERIOR DOOR AND FRAME - SEE AE601.
6.	NEW CANOPY WITHOUT COLUMN AND CONCRETE BASE - MATCH EXISTING MATERIAL AND DIMENSION WITH EXISTING CANOPY.
7.	EXISTING CONCRETE WALKWAY.
8.	NEW CONCRETE WALKWAY - SEE CIVIL FOR DETAILS.
9.	NEW PLUMBING FIXTURES (SEE A1/G003 FOR REQUIREMENTS) - SEE PLUMBING FOR DETAILS.
10.	NEW UPPER AND LOWER CABINET - SEE AE401 FOR DETAILS.
11.	HATCHED AREA DENOTES EXISTING.
12.	EIFS - COLOR TO BE MATCHED WITH EXISTING CLERESTORY.
13.	SPLIT FACE CMU VENEER - COLOR SELECTION BY ARCHITECT.
14.	O.F.C.I TACK BOARD
15.	NOT USED.
16.	2A-10BC FIRE EXTINGUISHER IN SEMI-RECESSED CABINET (MATCH EXISTING)
17.	NOT USED.
18.	LOCATION OF ROOF DRAIN.
19.	NEW 1 1/2" WOOD FURRING ON EXISTING OVER VENEER WITH 3/8" GYPSUM BOARD.

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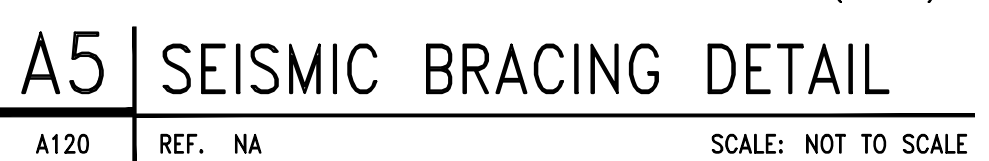
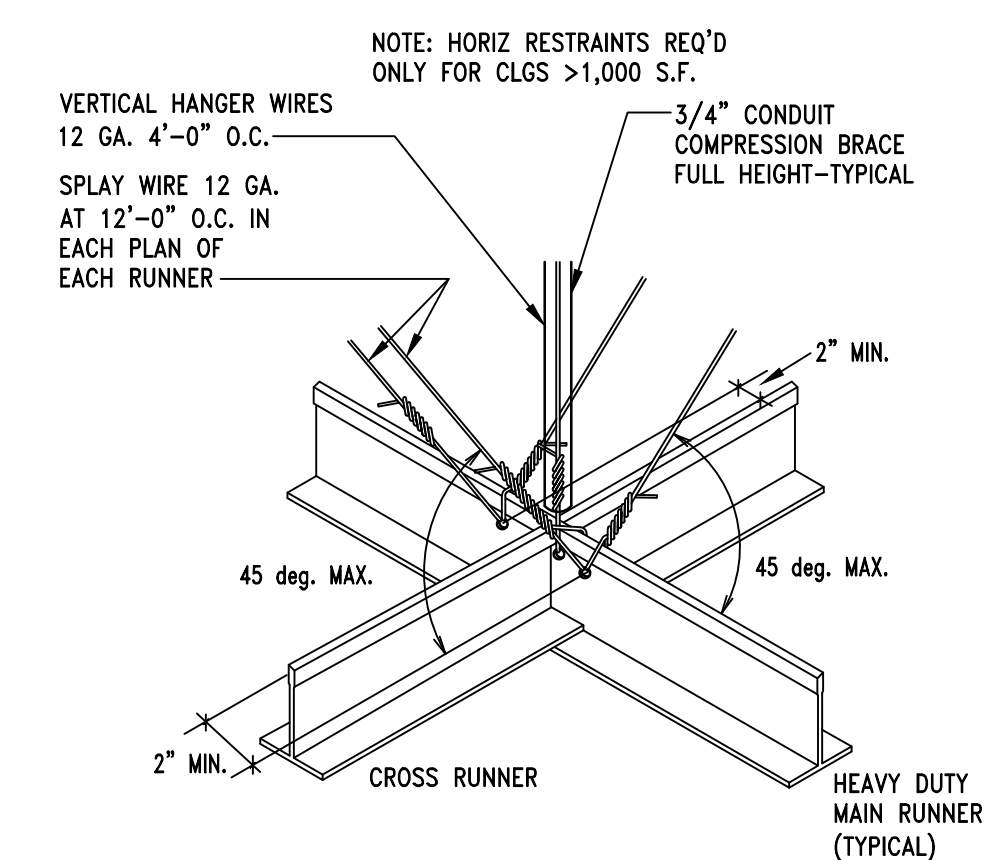
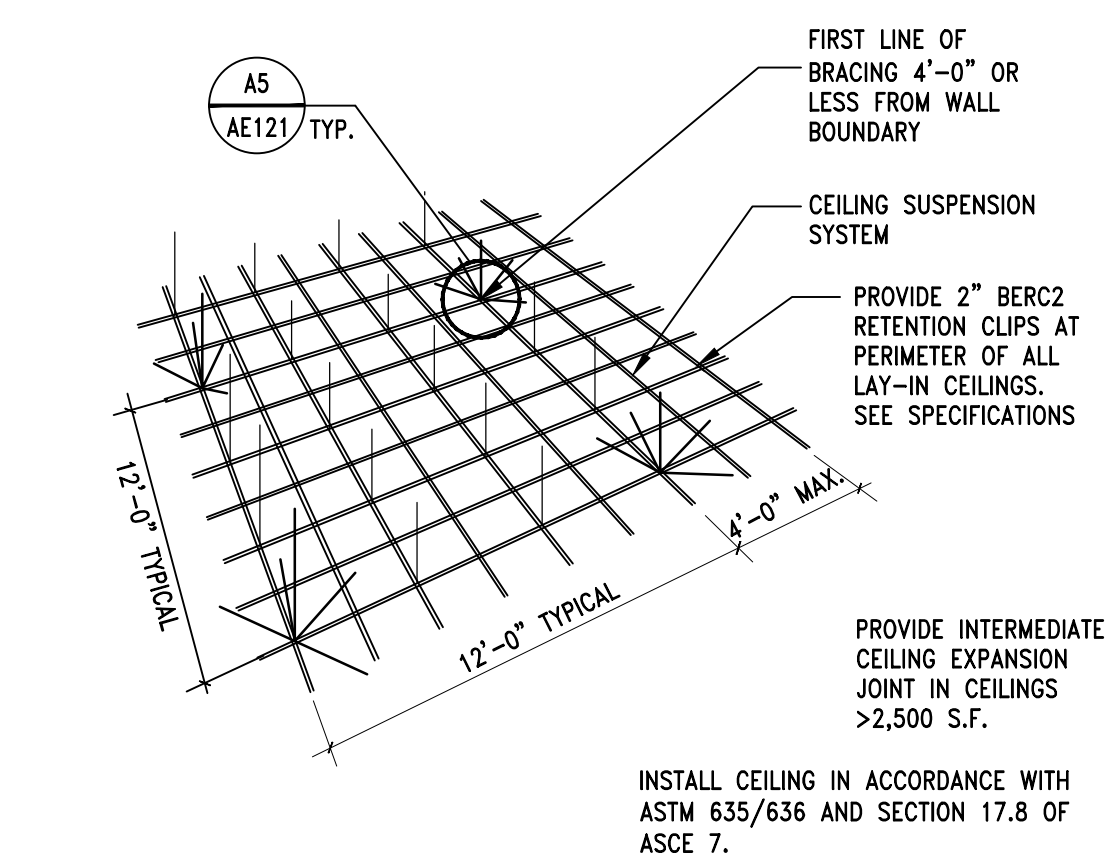
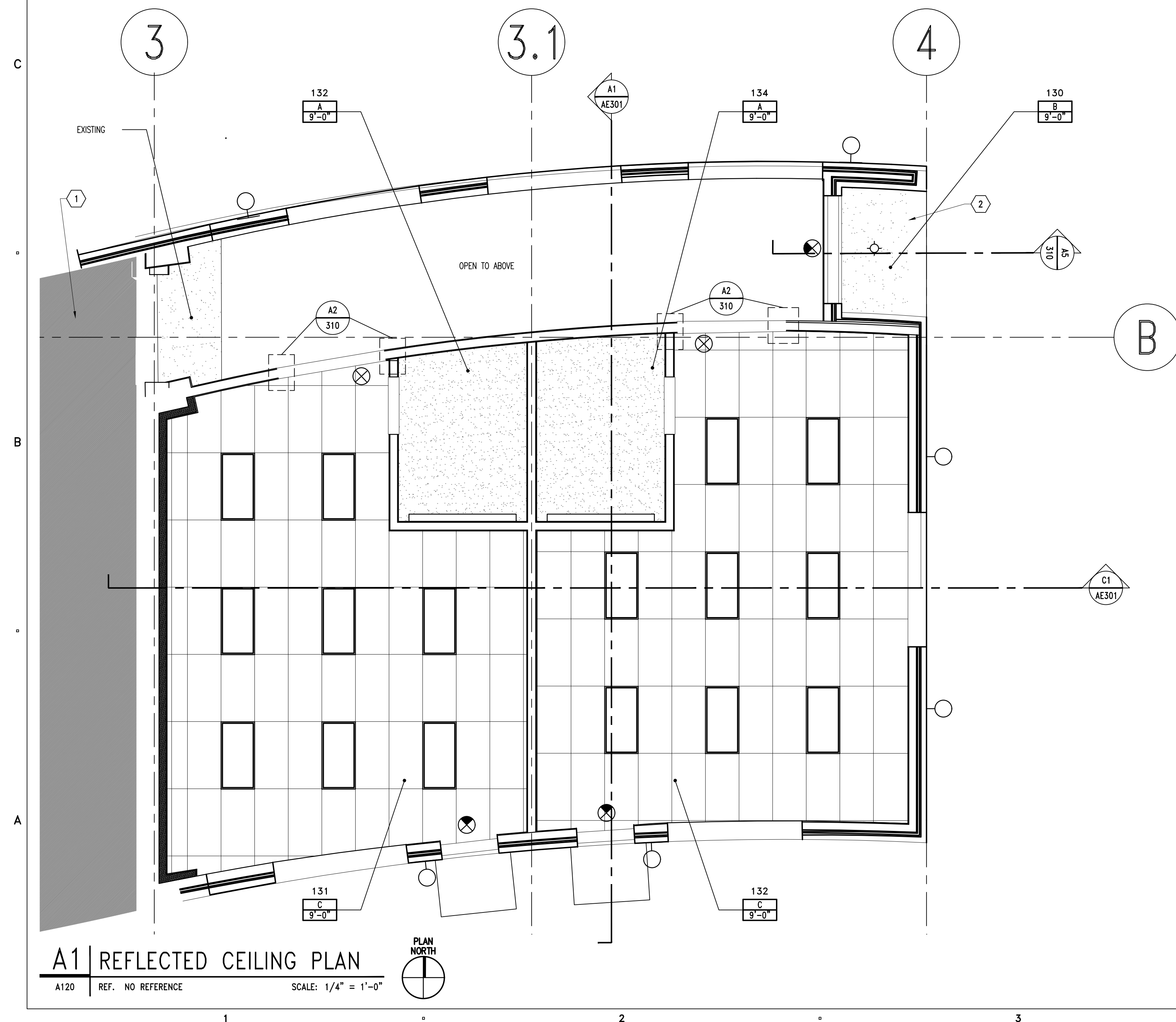
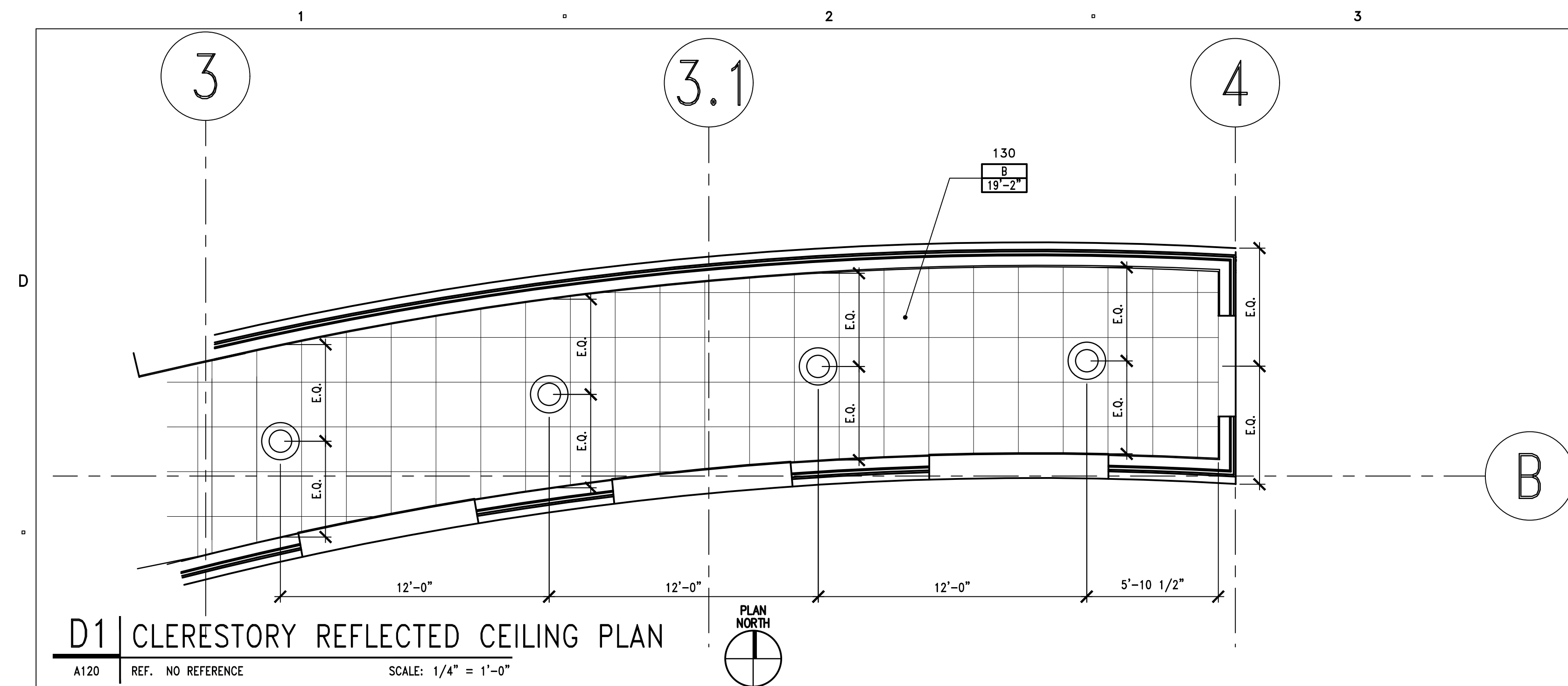
KEY PLAN

SHEET TITLE

FLOOR PLAN

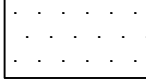
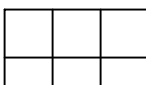
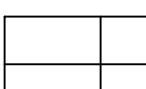
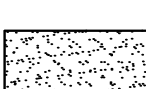






A101





- ## GENERAL NOTES
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- | GENERAL CEILING NOTES |   |
|-----------------------|---|
| 1.                    | SEE DETAILS A5/A120 FOR SEISMIC BRACING REQUIREMENTS FOR CEILING SYSTEMS.   |
| 2.                    | CONTRACTOR TO VERIFY NEW BEAM LOCATION PRIOR TO PLACING CEILING GRID. SHIFT GRID AS REQUIRED TO PLACE LIGHT AND CLEAR BEAM. |
| 3.                    | SEE ELECTRICAL LIGHTING FLOOR PLAN FOR MORE INFORMATION.  |
| 4.                    | EXISTING EXTERIOR RECESSED SOFFIT LIGHTING IS TO REMAIN & BE INCORPORATED INTO THE WORK.                                    |
| 5.                    | SUSPENDED CEILING SHALL BE INSTALLED ACCORDING TO 2012 IBC 808 AND ASCE 7-10.   |

- | CEILING SYMBOLS   |   |
|---|---|
|    | SOFFIT  |
|    | 2' x 2' ACOUSTICAL CEILING TO MATCH EXISTING HALLWAY                            |
|    | 2' x 4' LAY IN ACOUSTICAL CEILING PANELS WITH GRID TO MATCH EXISTING CLASSROOMS |
|    | GYP. BD. CEILING - PAINTED  |
|    | 2' x 4' LED LIGHT FIXTURE. SEE ELECTRICAL                                       |
|    | HANGING PENDANT FIXTURE. SEE ELECTRICAL   |
|    | WALL MOUNTED LIGHT FIXTURE. SEE ELECTRICAL                                      |
|    | 6" ROUND DOWNLIGHT FOR OUTSIDE. SEE ELECTRICAL                                  |
|   | ILLUMINATED EXIT SIGN. SEE ELECTRICAL   |
|  | EXTERIOR LIGHTING FIXTURE. SEE ELECTRICAL                                       |

<h1>REFLECTED CEILING PLAN LEGEND</h1>		ROOM # <b>131</b> TYPE <b>A</b> ELEVATION <b>VARIES</b> A.F.F.
TYPE A	5/8" GYPSUM BOARD PAINTED - COLOR BY ARCHITECT	
TYPE B	2' X 2' SUSPENDED ACOUSTICAL PANEL CEILING	
TYPE C	2' X 4' LAY-IN ACOUSTICAL CEILING	

-  CEILING PLAN KEYED NOTES

1. SHADED AREA TO REMAIN UNDISTURBED.
2. NEW 1½" EIFS SOFFIT

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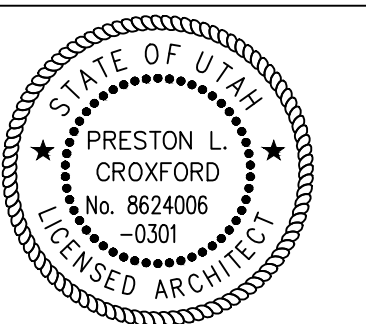
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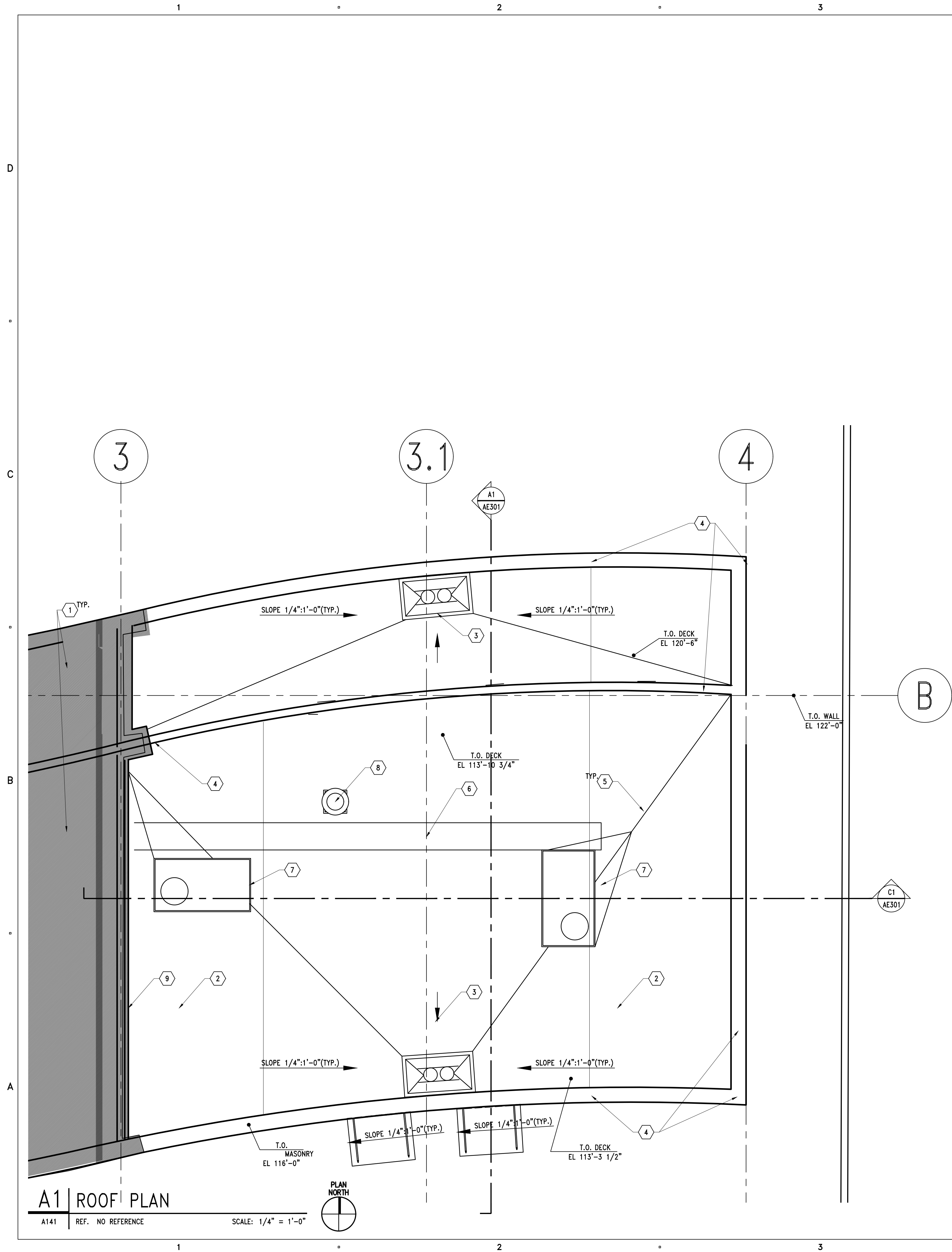
## KEY PLAN

SHEET TITLE

REFLECTED  
CEILING PLAN

# A120





GENERAL NOTES

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ROOF PLAN KEYNOTES

1. SHADED AREA DENOTES EXISTING ROOF.
2. NEW ROOFING MEMBRANE ON 6" RIGID INSULATION (MIN) ON PLYWOOD DECK ON STRUCTURE - SEE STRUCTURAL DRAWINGS.
3. PRIMARY AND SECONDARY ROOF DRAIN - SEE PLUMBING.
4. PRE-FINISHED CONTINUOUS METAL PARAPET CAP - MATCH EXISTING.
5. CRICKET - ALL TAPERED INSULATION TO HAVE A MIN. SLOPE OF 1/4" PER FT. OR AS REQUIRED TO PROVIDE A MIN. SLOPE OF 1/8" PER FT. IN VALLEYS.
6. MAINTENANCE WALKWAY.
7. ROOFTOP UNIT.
8. ROOF VENT.
9. EXISTING PARAPET FLASHING TO REMAIN.

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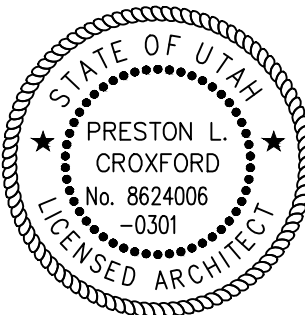
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ROOF PLAN

A141





C1 | SOUTH PERSPECTIVE VIEW

A200 REF. NA SCALE: N/A



A1 | NORTHEAST VIEW

A200 REF. NA SCALE: N/A



C3 | EAST VIEW

A200 REF. NA SCALE: N/A



A3 | SOUTHEAST VIEW

A200 REF. NA SCALE: N/A

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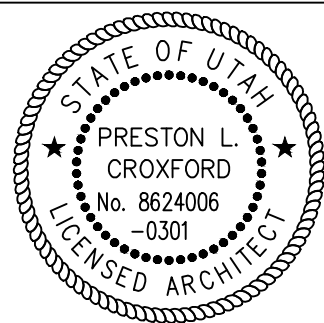
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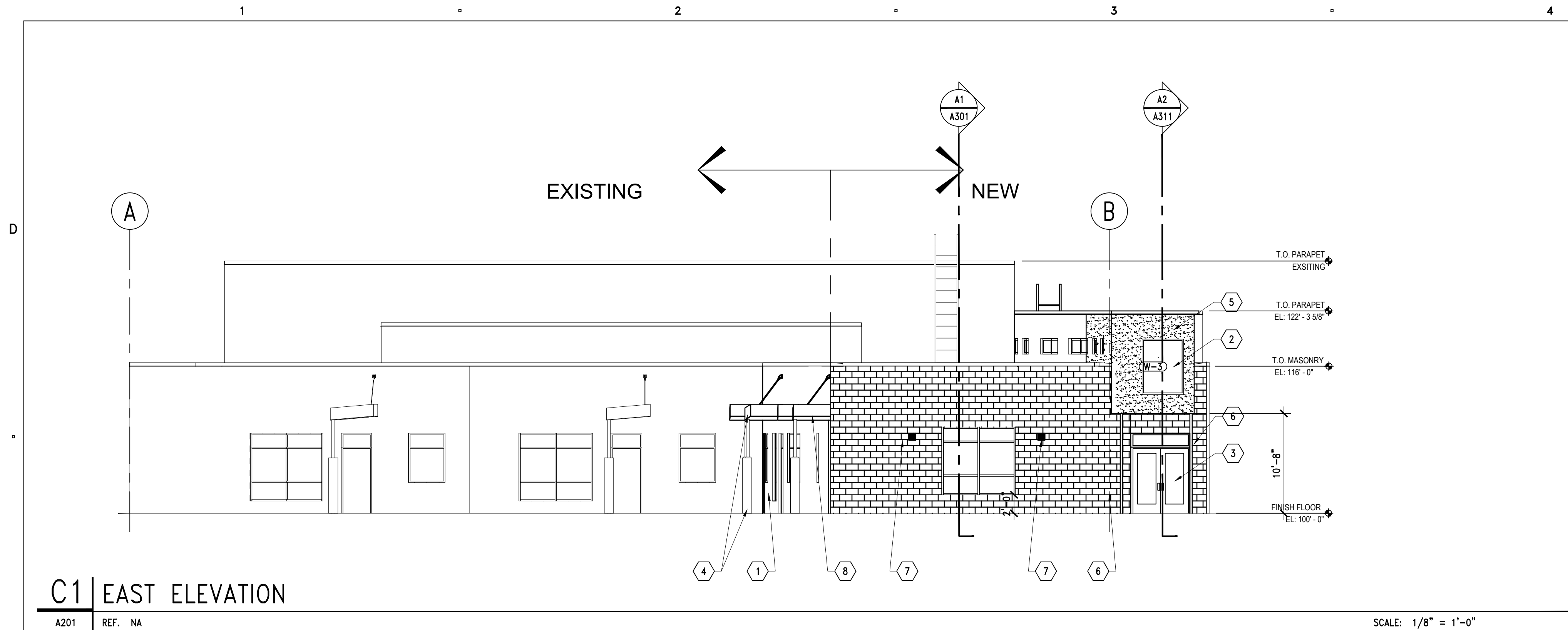
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PERSPECTIVES  
(FOR REFERENCE ONLY)

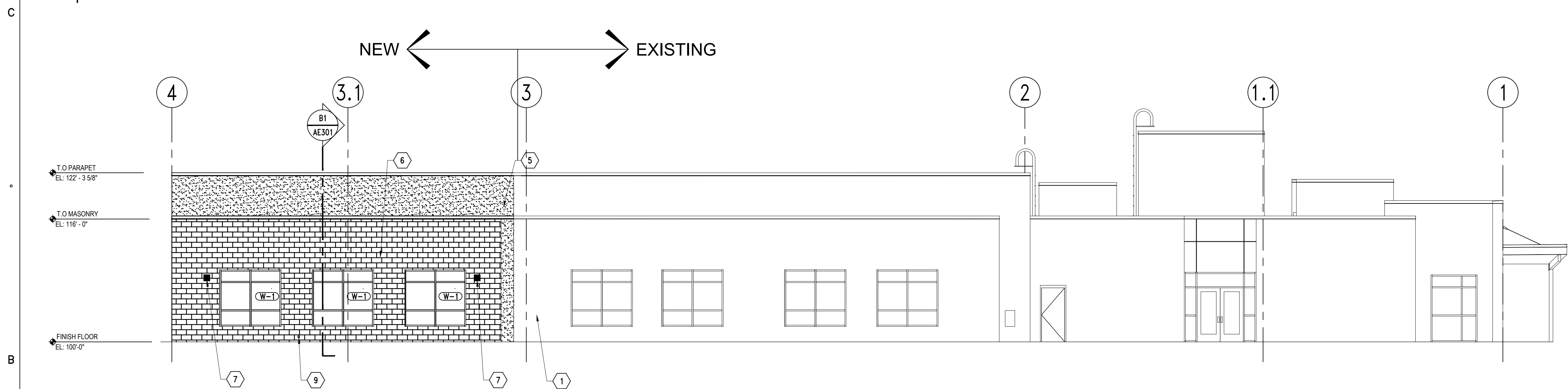
A200





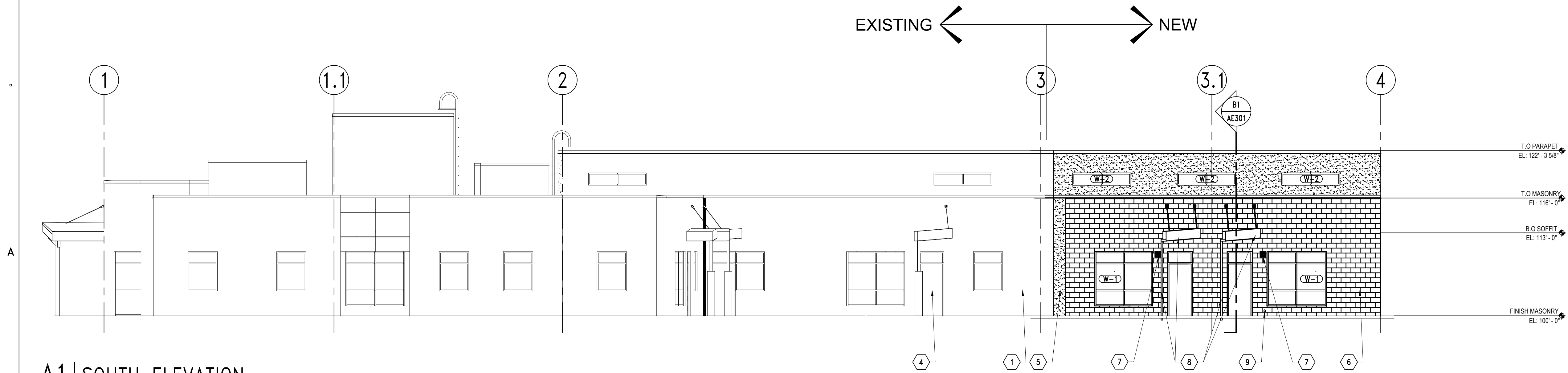
C1 | EAST ELEVATION

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



B1 | NORTH ELEVATION

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



A1 | SOUTH ELEVATION

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

## GENERAL NOTES

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2. DO NOT SCALE DRAWINGS.
3. SEE CIVIL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR MORE INFORMATION.
4. DIMENSIONS ARE FROM FACE STUD / CMU - U.N.O.
5. SHADED AREA INDICATES EXISTING BUILDING OUTSIDE PROJECT AREA. THESE AREAS ARE TO REMAIN UNDISTURBED EXCEPT AS REQUIRED TO COMPLETE NEW CONSTRUCTION.

## EXTERIOR ELEVATION KEYNOTES

1. EXISTING MASONRY TO REMAIN UNDISTURBED AND PROTECTED DURING CONSTRUCTION.
2. REINSTALL SALVAGED WINDOW, FRAME AND INSULATED GLASS. SEE DEMOLITION ELEVATION.
3. REINSTALL SALVAGED DOOR, DOOR FRAME AND GLAZING. SEE DOOR 3 DETAIL.
4. EXISTING CANOPY, COLUMN, AND CONCRETE BASE TO REMAIN.
5. NEW EIFS WALL FINISH TO MATCH EXISTING- SEE AD101 FOR DETAILS.
6. NEW CMU MASONRY TO MATCH EXISTING.
7. EXTERIOR SAFETY LIGHTING (8'-8" AFF).
8. NEW CANOPY WITH CABLE SUPPORTS, AND DOWNSPOUT GUTTER.
9. NEW OVERFLOW ROOF DRAIN - SEE PLUMBING DRAWINGS.
10. NEW WINDOW. SEE WINDOW SCHEDULE.

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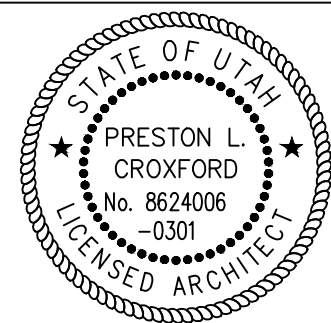
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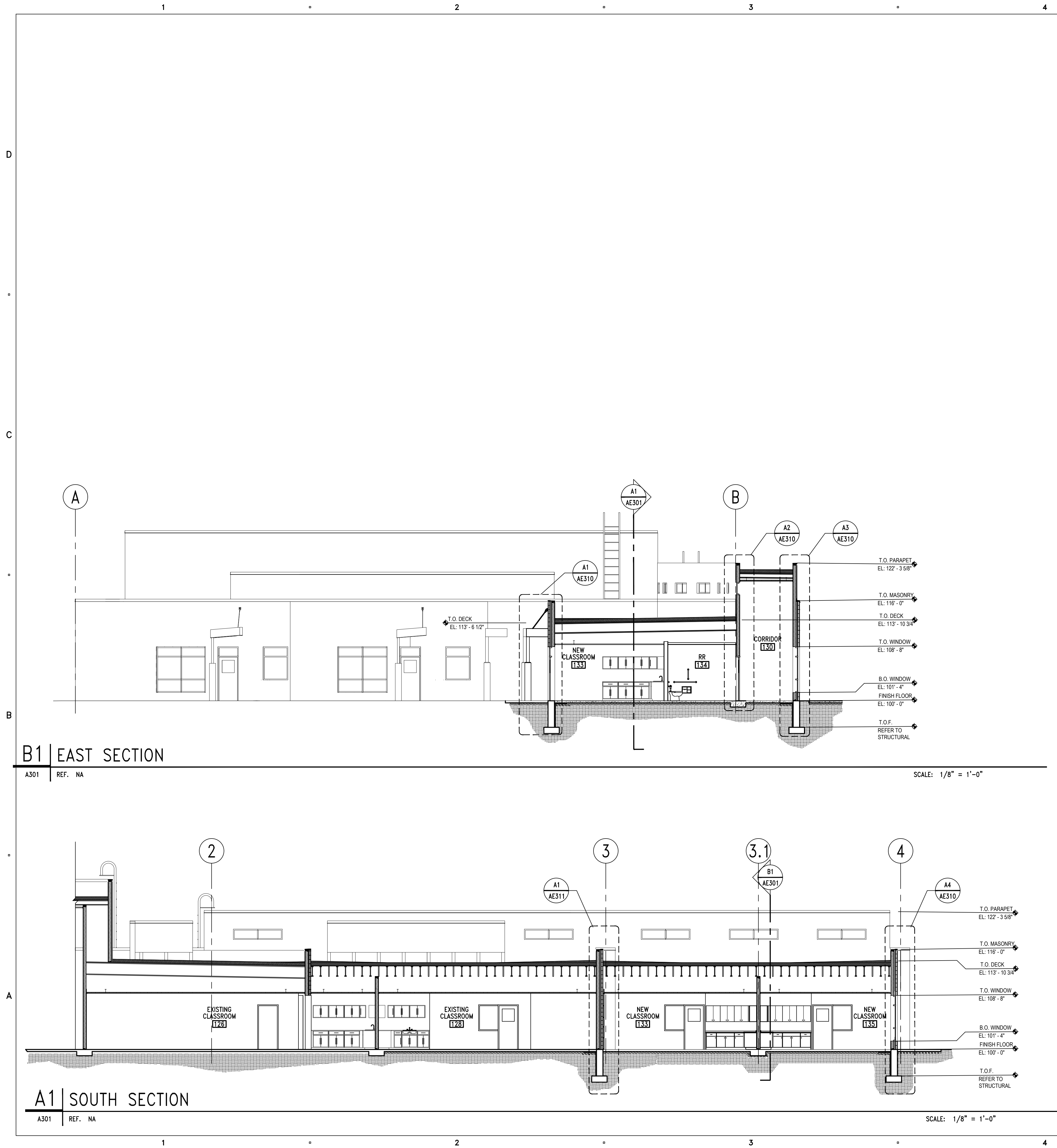
KEY PLAN

SHEET TITLE

EXTERIOR ELEVATION

A201





GENERAL NOTES

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5. SHADED AREA INDICATES EXISTING BUILDING OUTSIDE PROJECT AREA. THESE AREAS ARE TO REMAIN UNDISTURBED EXCEPT AS REQUIRED TO COMPLETE NEW CONSTRUCTION.

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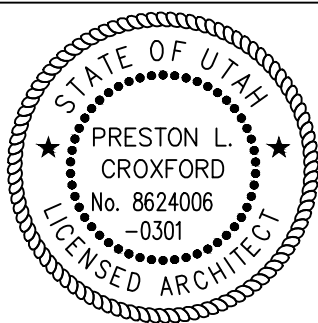
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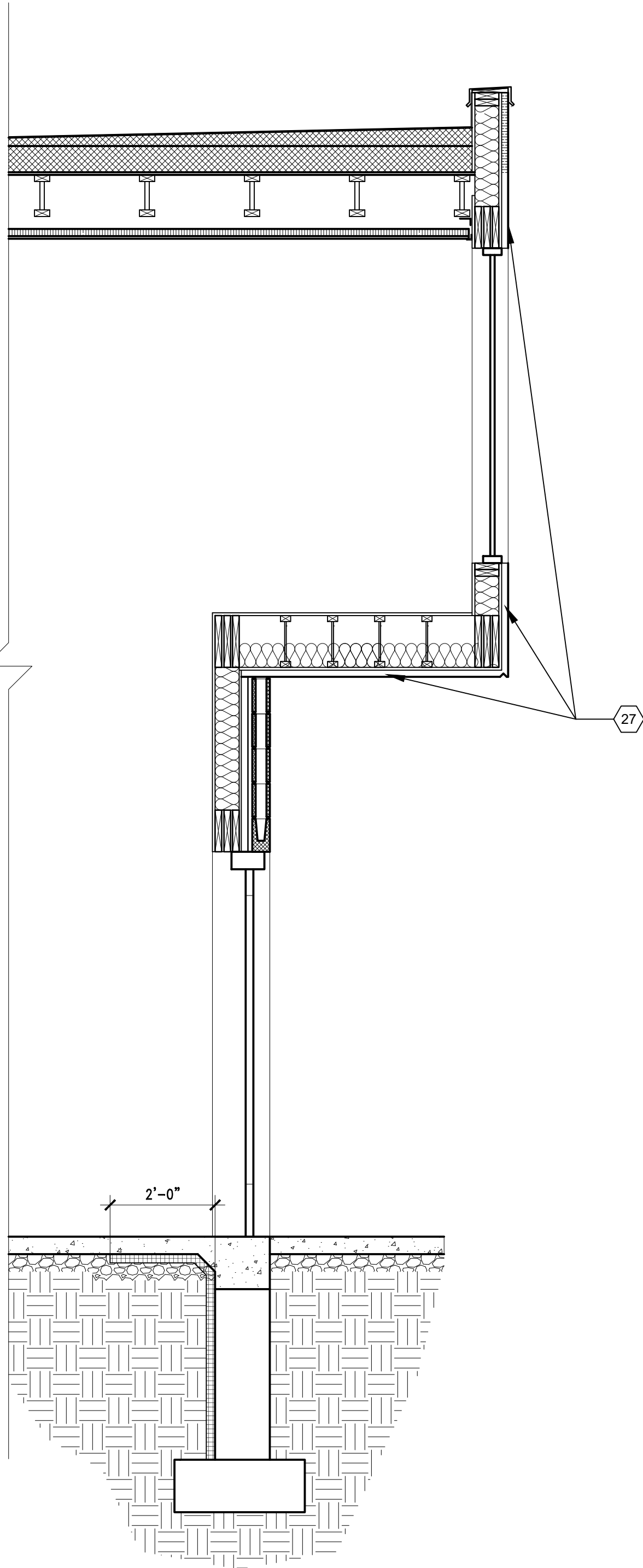
SHEET TITLE

BUILDING SECTIONS

A301







WALL SECTION KEYNOTES	WALL SECTION KEYNOTES
<ol style="list-style-type: none"> <li>1. CMU VENEER OVER RIGID INSULATION (R-10) ON BUILDING WRAP OVER EXTERIOR SHEATHING.</li> <li>2. ROOF MEMBRANE.</li> <li>3. ROOF SHEATHING – SEE STRUCTURAL.</li> <li>4. 1-1/2" EIFS (R-7.5).</li> <li>5. EXTERIOR SHEATHING.</li> <li>6. CABLES FOR CANOPY.</li> <li>7. WINDOW SYSTEM – SEE DOOR AND WINDOW SCHEDULE.</li> <li>8. DOOR AND FRAME – SEE DOOR AND WINDOW SCHEDULE.</li> <li>9. SUSPENDED ACOUSTICAL TILE CEILING.</li> <li>10. ROOF JOIST – SEE STRUCTURAL.</li> <li>11. REINFORCED CONCRETE FOOTING – SEE STRUCTURAL.</li> <li>12. CONCRETE SLAB – SEE STRUCTURAL.</li> <li>13. REINFORCED CONCRETE FOUNDATION WALL – SEE STRUCTURAL.</li> <li>14. PRE-FINISHED CONTINUOUS METAL CAP (MATCH EXISTING).</li> </ol>	<ol style="list-style-type: none"> <li>15. BATT INSULATION (R-13).</li> <li>16. (NOT USED).</li> <li>17. VAPOR RETARDER.</li> <li>18. 4" GRAVEL BASE.</li> <li>19. TAPERED RIGID INSULATION ON 6" RIGID INSULATION (R-30) ON VAPOR RETARDER ON PLYWOOD DECKING ON STRUCTURE – SEE STRUCTURAL DRAWING.</li> <li>20. EXTEND 2" RIGID INSULATION (R-10) ON INSIDE FACE OF CONCRETE FOUNDATION WALL DOWN TO TOP OF FOOTING. UP TO TOP OF SLAB.</li> <li>21. STANDING SEAM METAL ROOF. OVER ICE AND WATER-SHIELD</li> <li>22. TJI FRAMING – REFER TO STRUCTURAL.</li> <li>23. REMOVE EXISTING WINDOW AND SAME FOR RE-USED (SEE NOTE 24.)</li> <li>24. NEW LOCATION OF EXISTING WINDOW TO BE RELOCATED. (SEE NOTE 23.)</li> <li>25. EXISTING CMU VENEER.</li> <li>26. NEW 1½" Burring WITH 5/8" GYPSUM BORED TO 6" ABOVE CEILING.</li> <li>27. REMOVE AND SALVAGE EXISTING METAL CAPPING CAP. RE-INSTALL CAPPING AFTERNEW ROOFING HAS BEEN INSTALLED OVER THE EXISTING PARAPET.</li> </ol>



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*Pat Giff*

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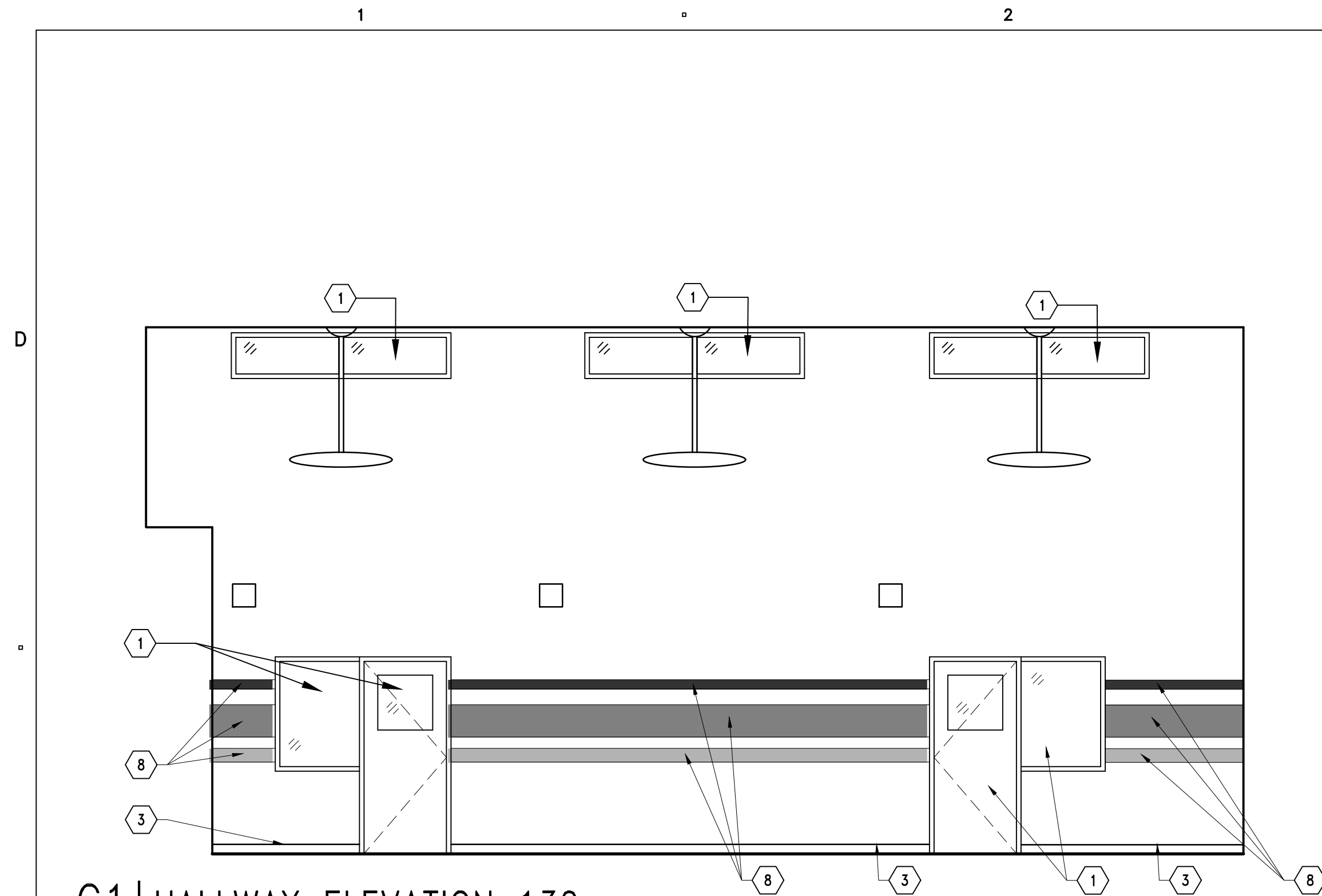
SHEET TITLE

## WALL SECTIONS

# A311

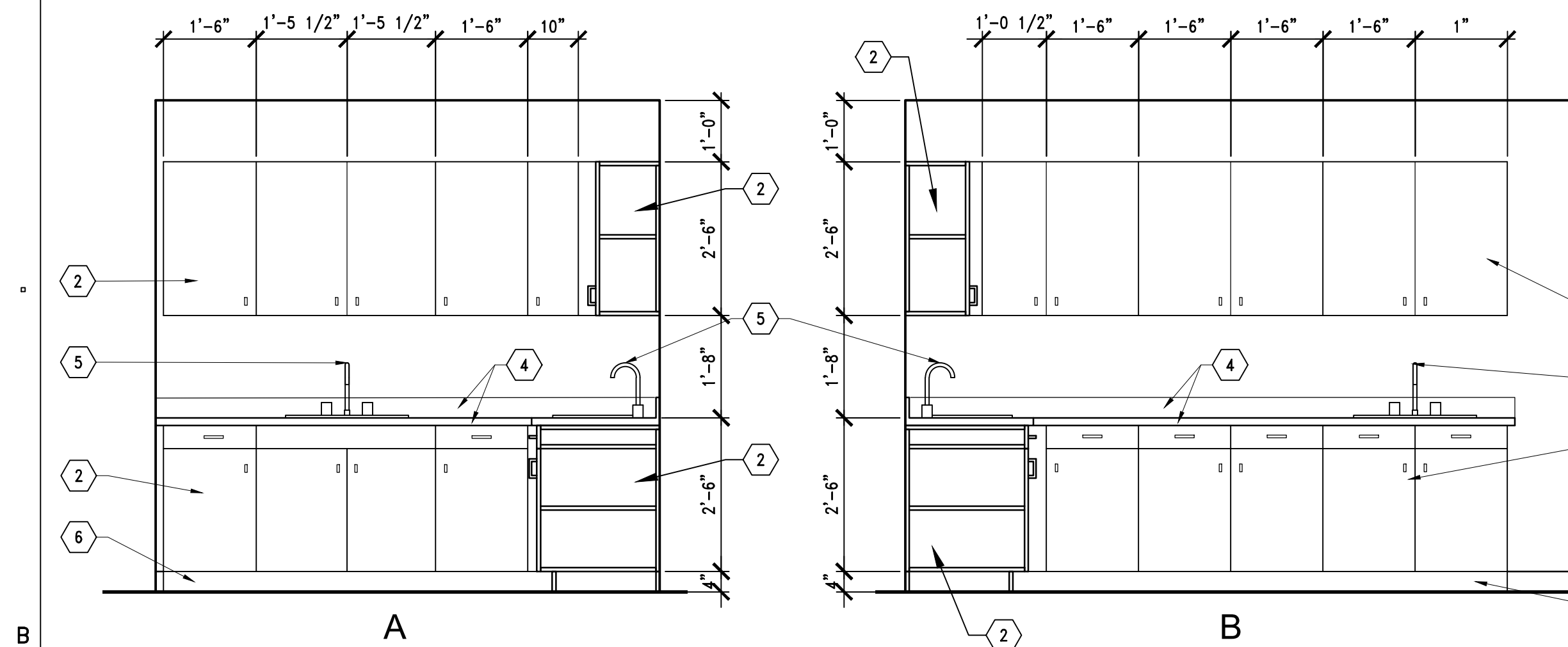






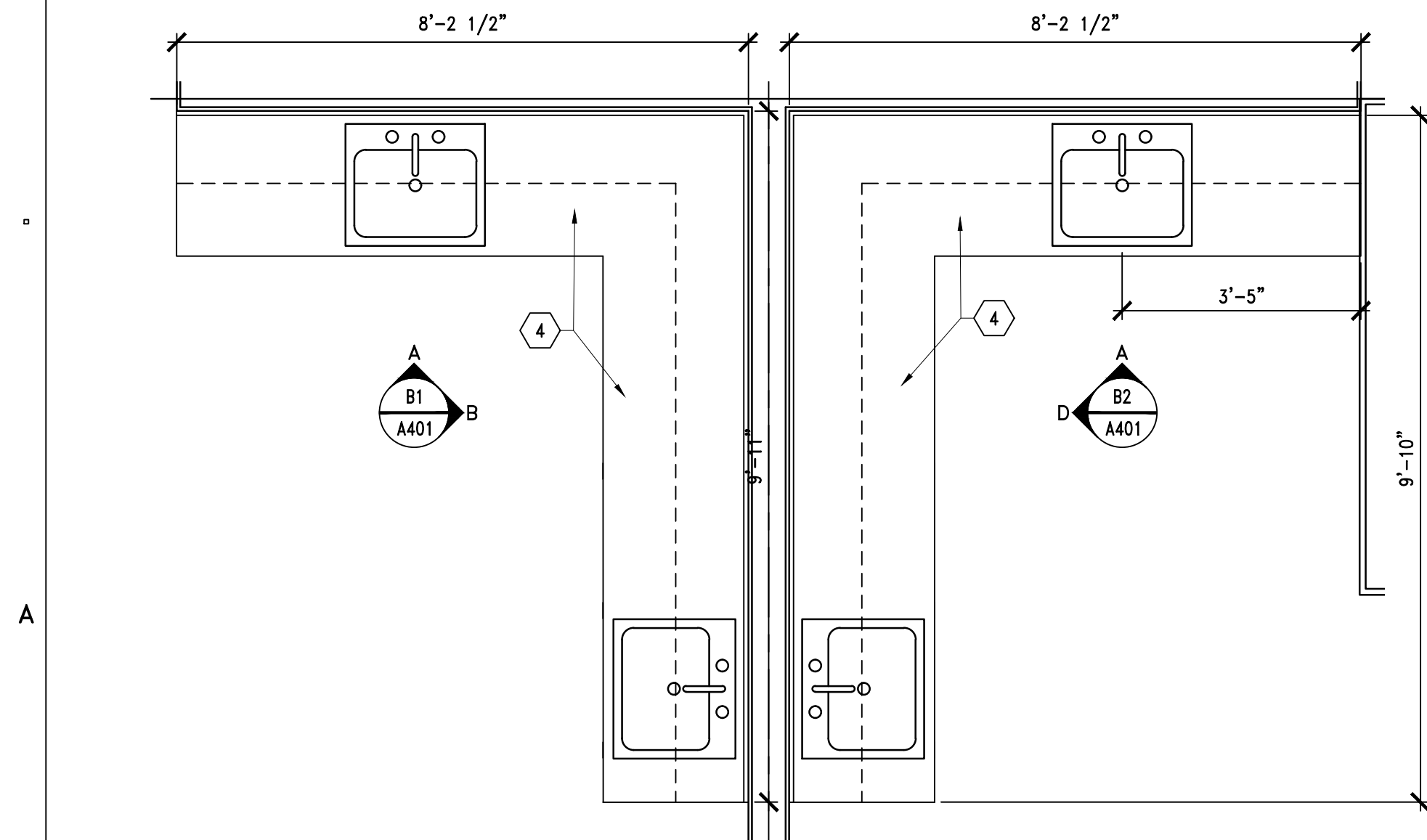
C1 | HALLWAY ELEVATION 130

A401 REF. A101 SCALE: 1/4" = 1'-0"



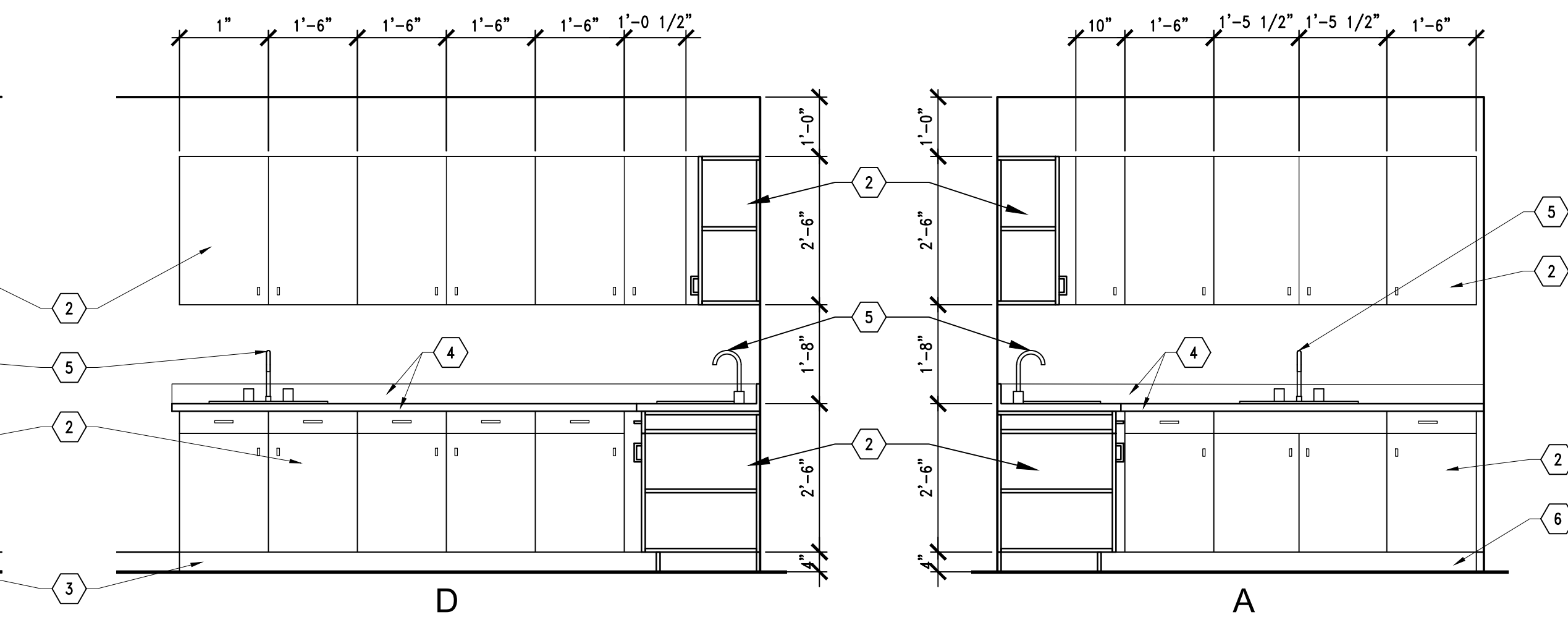
B1 | MILLWORK ELEVATIONS 133

A401 REF. A401 SCALE: 1/2" = 1'-0"



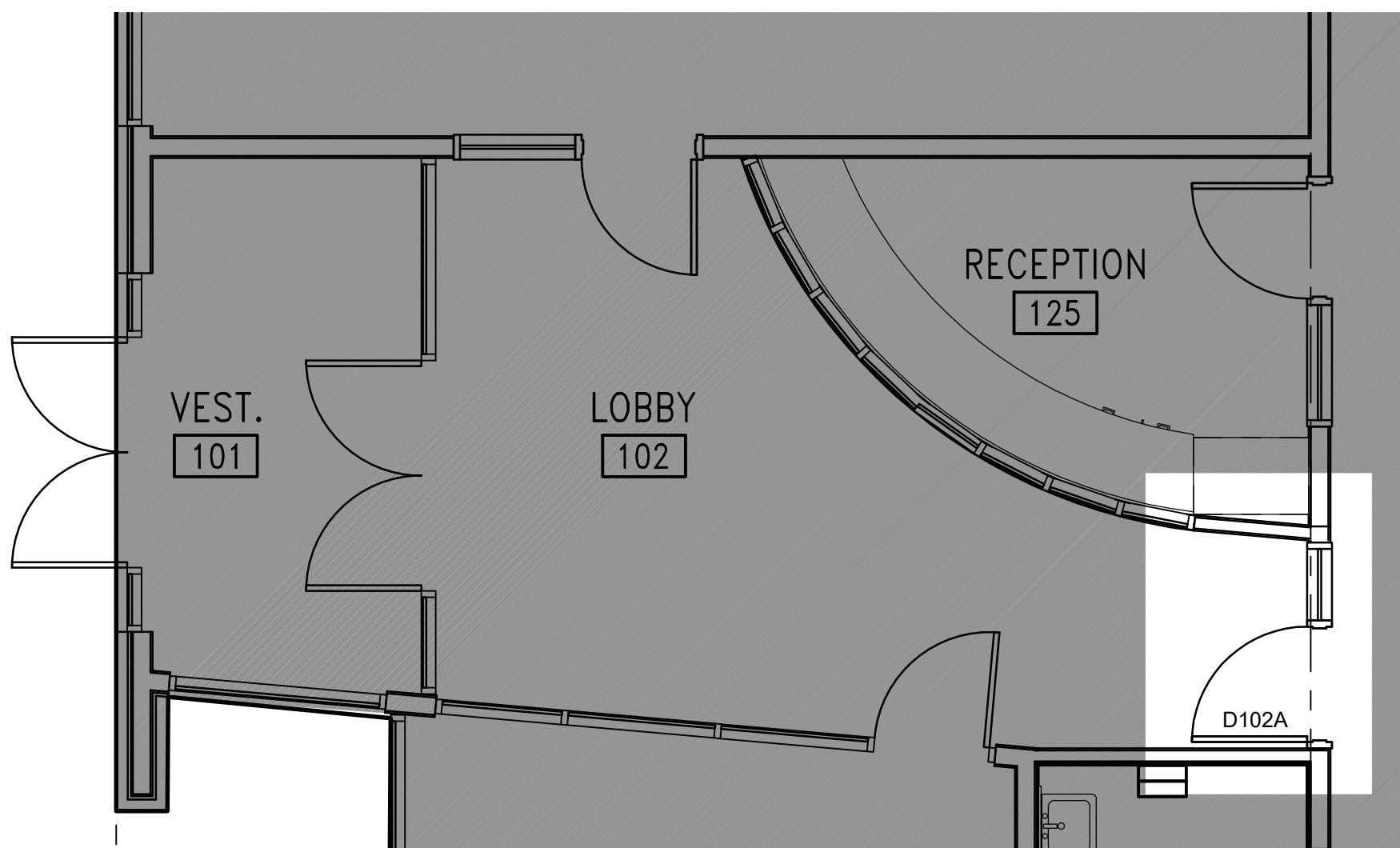
A1 | MILLWORK ENLARGED PLAN

A401 REF. A101 SCALE: 1/2" = 1'-0"



B2 | MILLWORK ELEVATIONS 135

A401 REF. A401 SCALE: 1/2" = 1'-0"



A3 | ENTRY FLOOR PLAN

A102 REF. NO REFERENCE SCALE: 1/4" = 1'-0"

## GENERAL NOTES

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## INTERIOR ELEVATION KEYNOTES

1. DOOR AND WINDOW SYSTEM - SEE DOOR AND WINDOW SCHEDULE FOR DETAILS.
2. PLASTIC LAMINATE BASE AND UPPER CABINETS - SEE FINISH SCHEDULE FOR DETAILS.
3. 4" BASE AS SCHEDULED - SEE FINISH SCHEDULE FOR DETAILS.
4. PLASTIC LAMINATE COUNTERTOP WITH 4" SPLASH - SEE FINISH SCHEDULE FOR DETAILS.
5. SINK FACET- SEE PLUMBING DRAWINGS.
6. 4" TOEKICK.
7. APPROX LOCATION OF O.F.C.I. TACK BOARD, PROVIDE BLOCKING IN WALL FOR ATTACHMENT. COORDINATE EXACT LOCATION WITH OWNER.
8. PAINTED STRIPES ON WALL TO MATCH EXISTING.
9. EXPOSED CMU MASONRY.

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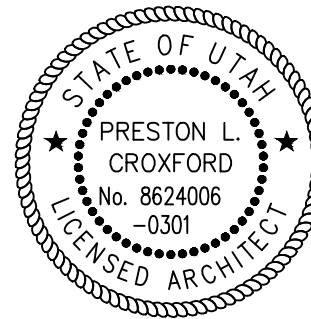
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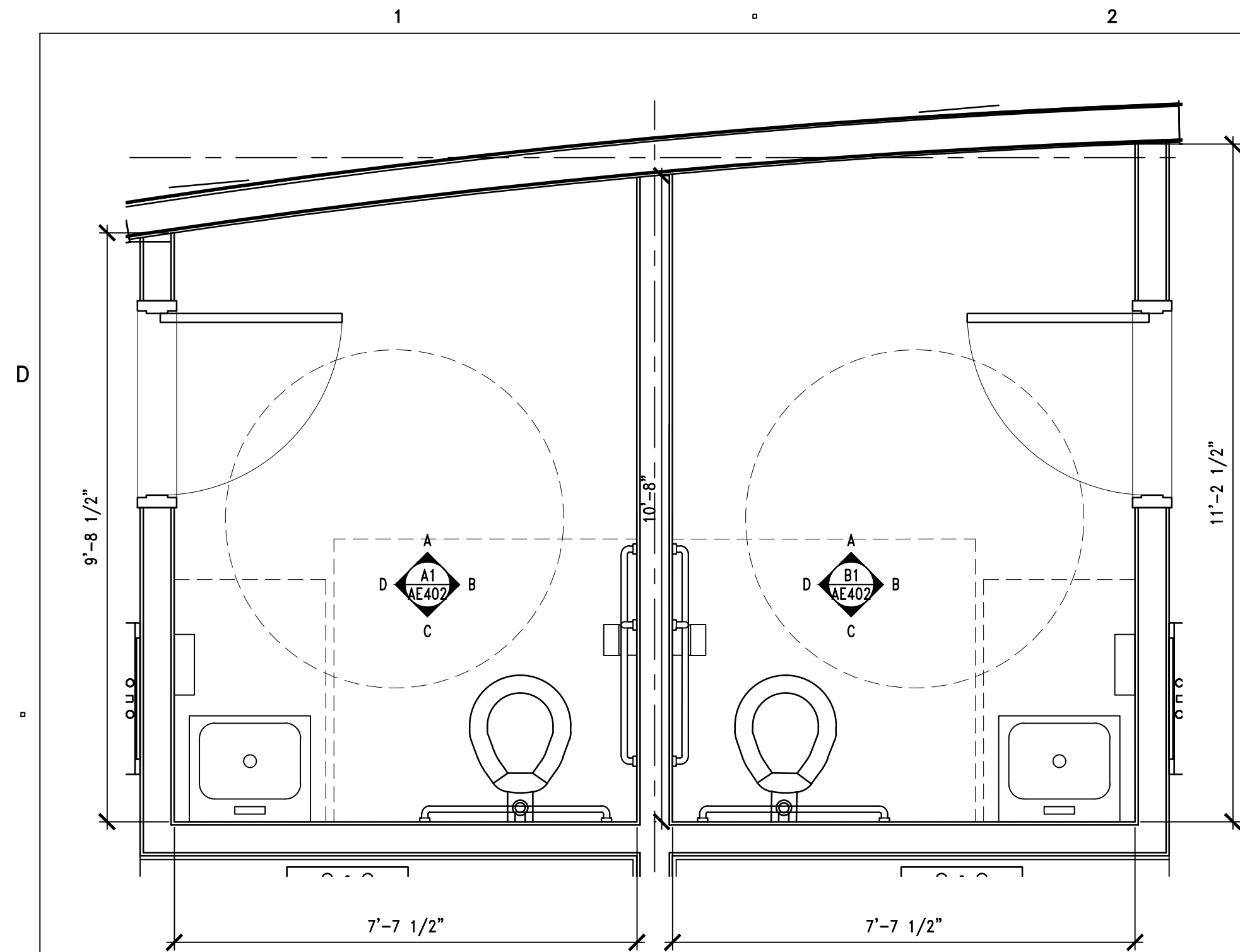
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KEY PLAN

SHEET TITLE

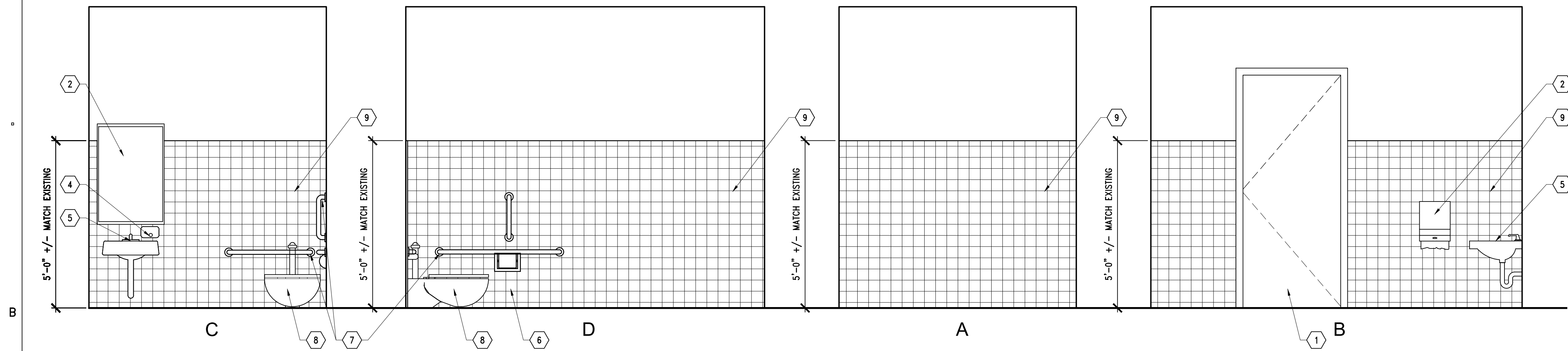
ENLARGED  
FLOOR PLAN

A401



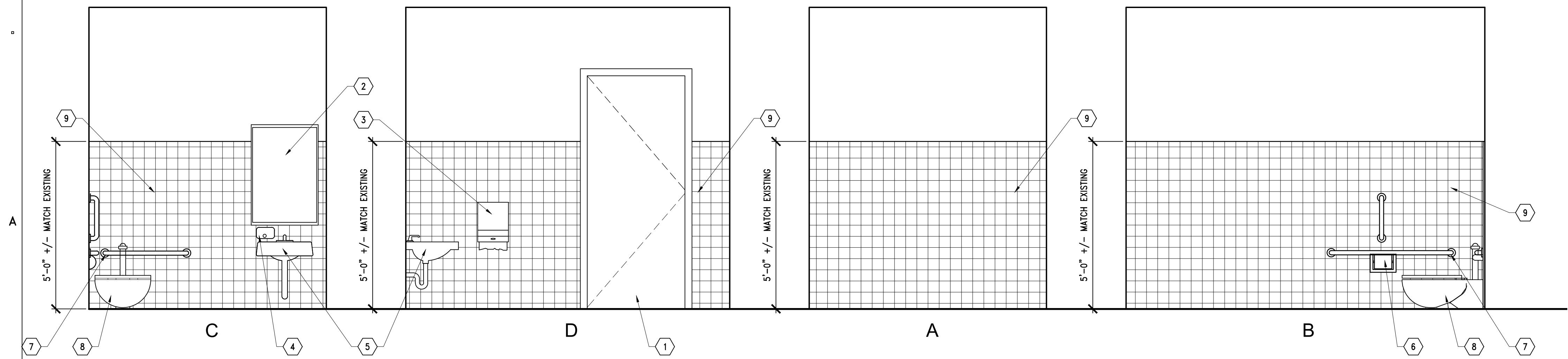
C1 | ENLARGED FLOOR PLAN

A401 REF. A101 SCALE: 1/2" = 1'-0"



B1 | RESTROOM ELEVATIONS 134

A401 REF. A401 SCALE: 1/2" = 1'-0"



A1 | RESTROOM ELEVATIONS 132

A401 REF. A401 SCALE: 1/2" = 1'-0"

### GENERAL NOTES

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### ENLARGED RESTROOM PLAN ELEVATION KEYNOTES

1. DOOR AND HOLLOW METAL FRAME - SEE DOOR AND WINDOW SCHEDULE - AE601
2. MIRROR (24"x36"). SEE G003 FOR MOUNTING HIGHTS
3. PAPER TOWEL DISPENSER - SEE G003 FOR MOUNTING HEIGHT
4. SOAP DISPENSER - SEE G003 FOR MOUNTING HEIGHT
5. INSTALLED WALL HUNG SINK WITH INSULATED PIPES - SEE G003 FOR MOUNTING HEIGHT
6. TOILET PAPER DISPENSER- SEE G003 FOR MOUNTING HEIGHT
7. GRAB BAR - SEE G003 FOR MOUNTING HEIGHT
8. NEW PLUMBING FIXTURE - SEE PLUMBING DRAWINGS
9. WALL TILE (4"x4")

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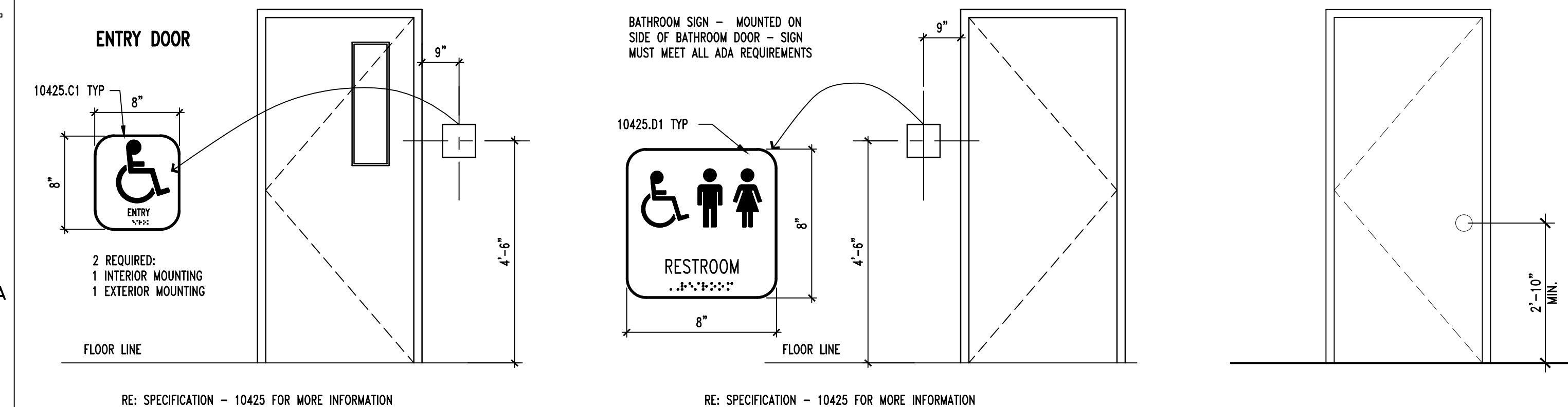
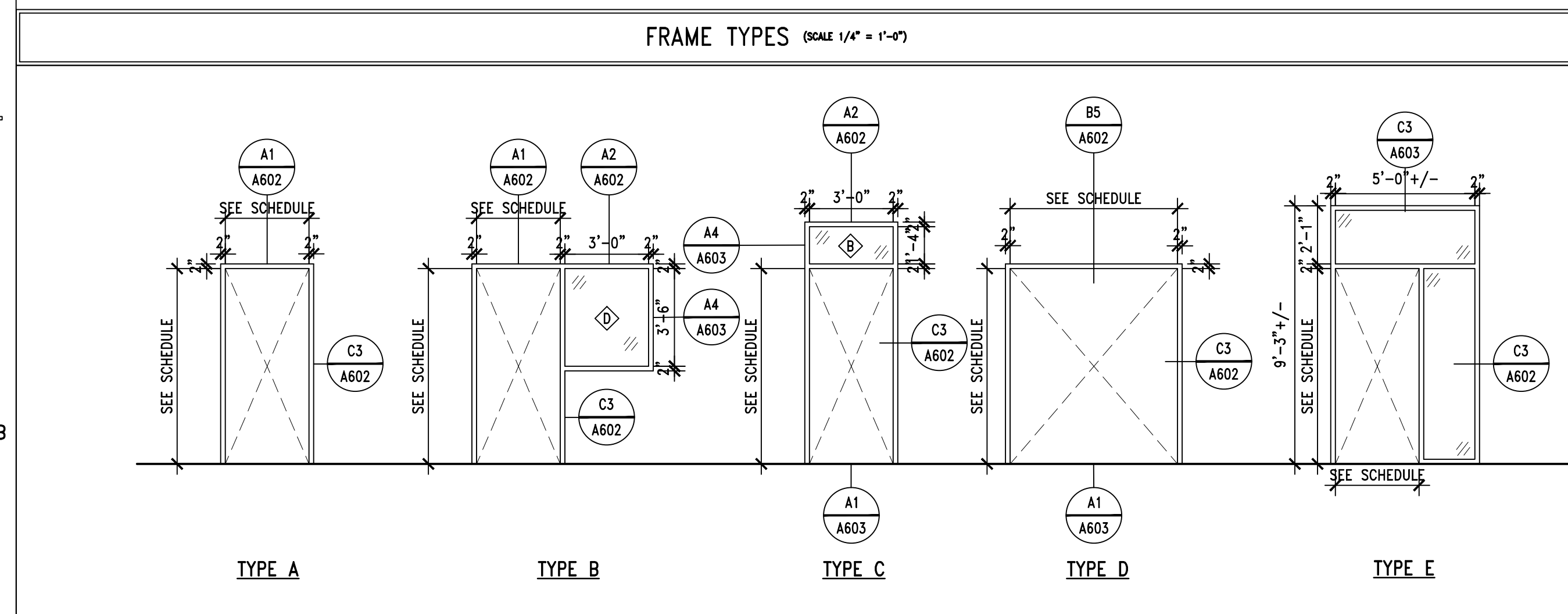
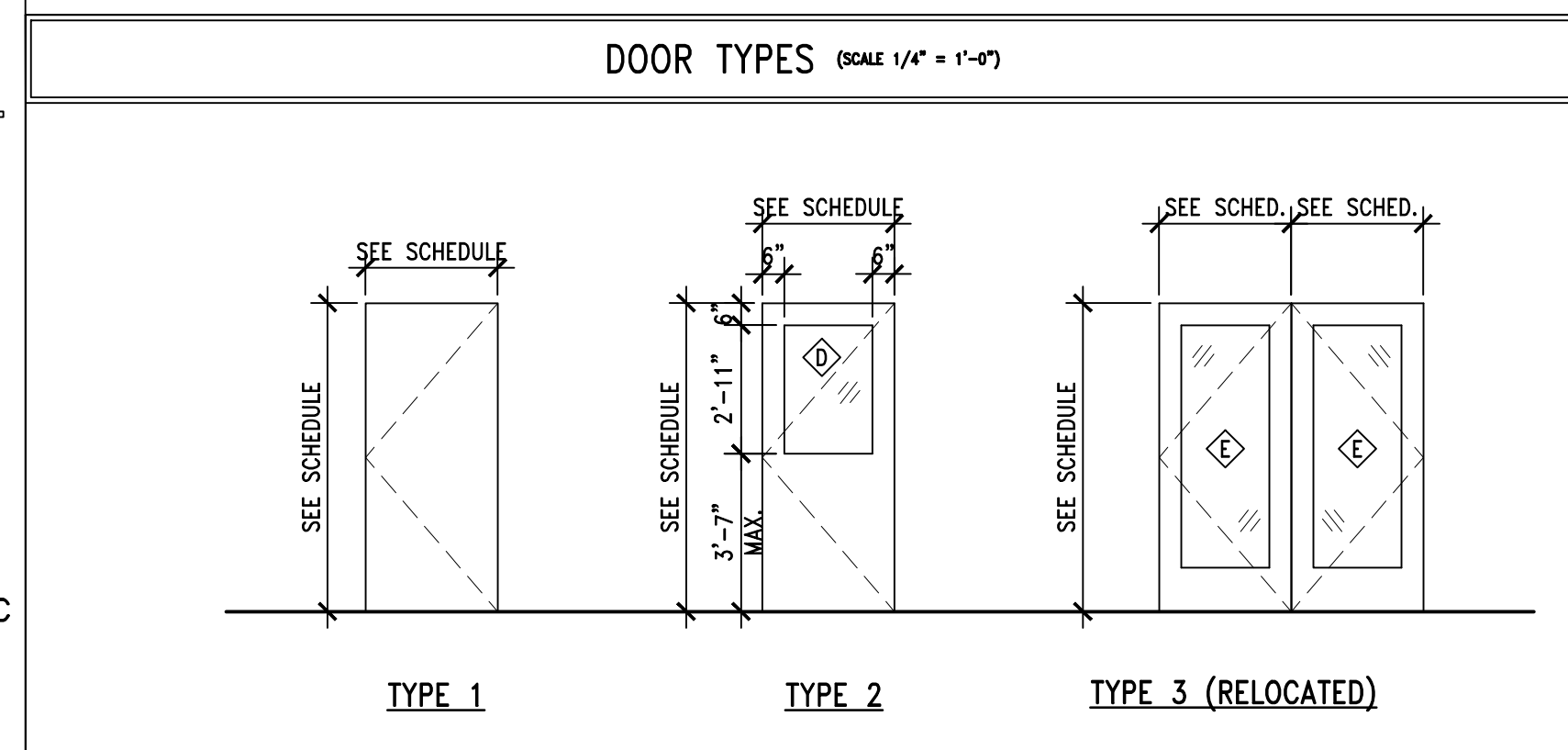
SHEET TITLE

ENLARGED  
RESTROOM  
FLOOR PLAN  
& ELEVATIONS

A402



DOOR SCHEDULE														REMARKS				
DOORS						FRAMES						DETAILS					REMARKS	
DOOR #	TYPE	WIDTH	HEIGHT	THICK.	MATERIAL	FINISH	TYPE	WIDTH	HEIGHT	DEPTH	MATERIAL	FINISH	JAMB	HEADER	THRESHOLD	RATING	HARDWARE	
D102A	1	3'-0"	7'-0"	1 3/4"	ALUM	-	E	5'-4"	9'-3"	4 1/2"	ALUM	-	C1-A603	C2-A603	-	-	1	-
D130A	3	(PR)3'-0"	7'-0"	1 3/4"	ALUM	-	D	6'-4"	7'-4"	4 1/2"	ALUM	-	C4-A602	B5-A602	A1-A603	-	2	RE-USE EXISTING DOUBLE DOOR
D132A	1	3'-0"	7'-0"	1 3/4"	WD	P.F.IN	A	3'-4"	7'-2"	7 3/4"	HM	PNT	C3-A602	A1-A602	C5-A603	-	3	-
D133A	1	3'-0"	7'-0"	1 3/4"	HM	PNT	C	3'-4"	7'-2"	5 3/4"	HM	PNT	C4-A602	B5-A602	A1-A603	-	4	-
D133B	2	3'-0"	7'-0"	1 3/4"	WD	P.F.IN	B	6'-6"	7'-2"	7 3/4"	HM	PNT	C3-A602	A1-A602	-	-	5	-
D134A	1	3'-0"	7'-0"	1 3/4"	WD	P.F.IN	A	3'-4"	7'-2"	7 3/4"	HM	PNT	C3-A602	A1-A602	C5-A603	-	3	-
D135A	1	3'-0"	7'-0"	1 3/4"	HM	PNT	C	3'-4"	7'-2"	5 3/4"	HM	PNT	C4-A602	B5-A602	A1-A603	-	4	-
D135B	2	3'-0"	7'-0"	1 3/4"	WD	P.F.IN	B	6'-6"	7'-2"	7 3/4"	HM	PNT	C3-A602	A1-A602	-	-	5	-
WD = SOLID CORE WOOD    ALUM = ALUMINUM    STN = STAIN    PNT = PAINT    P.F.IN = PRE-FINISHED AT FACTORY    HM = HOLLOW METAL																		



4
5

## WINDOW TYPES (SCALE 1/4" = 1'-0")

**GLAZING LEGEND**

- A 1" INSULATED GLASS, LOW E, COATED
- B 1" INSULATED TEMPERED, LOW E, COATED
- C 1/4" THICK GLAZING
- D 1/4" THICK TEMPERED GLAZING
- E 1/2" INSULATED TEMPERED, LOW E GLAZING

**WINDOW 1**  
(ALUMINUM)

**WINDOW 2**  
(ALUMINUM)

**WINDOW 3**  
(ALUMINUM  
SALVAGED)

**FIELD VERIFY EXISTING DIMENSIONS**

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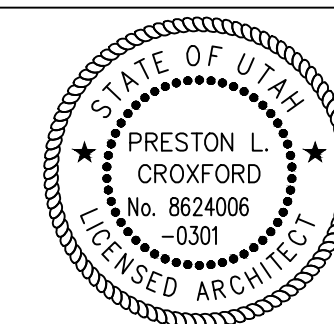
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*Paul G. [Signature]*

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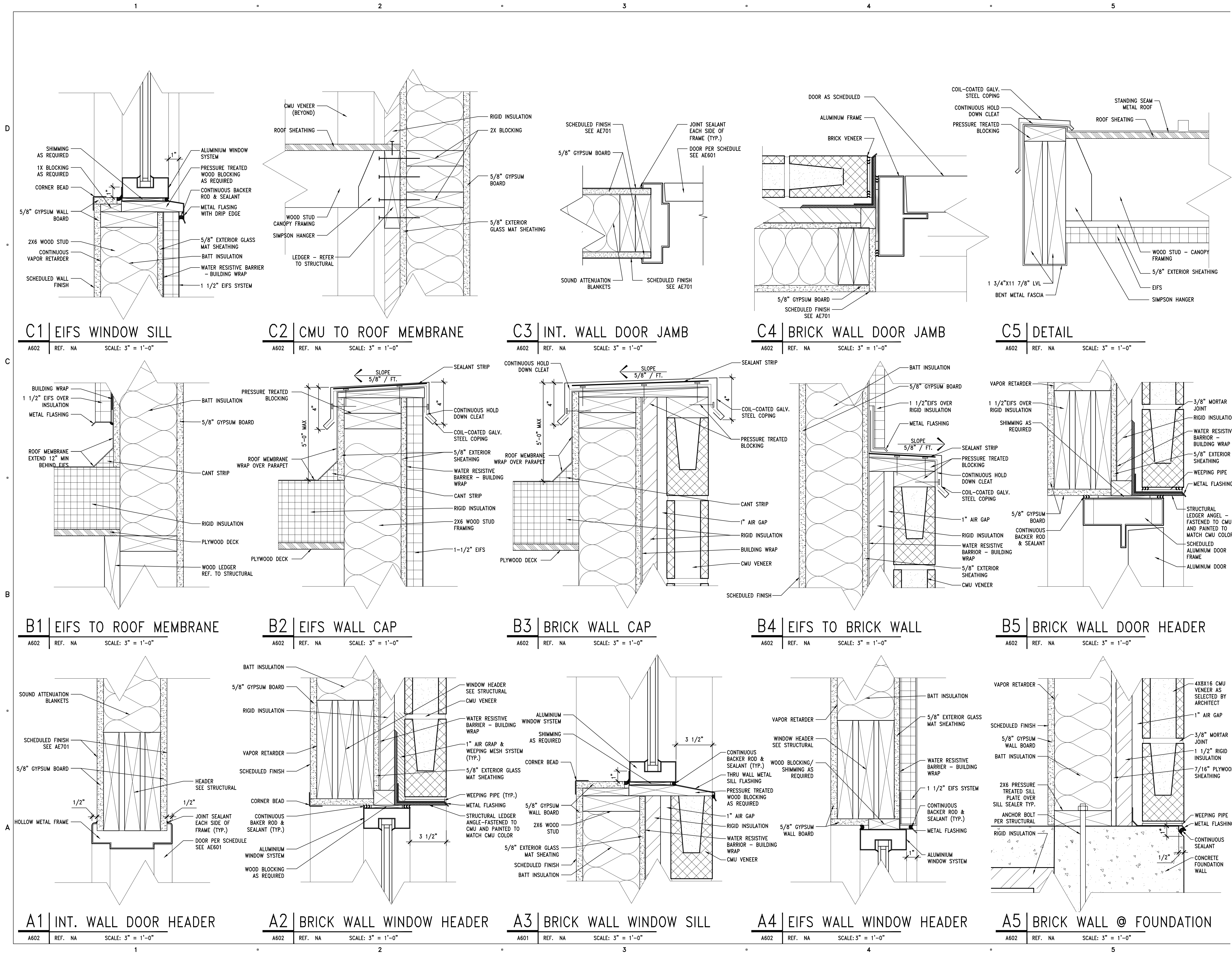
## KEY PLAN

SHEET TITLE

## DOOR/WINDOW SCHEDULES

A601





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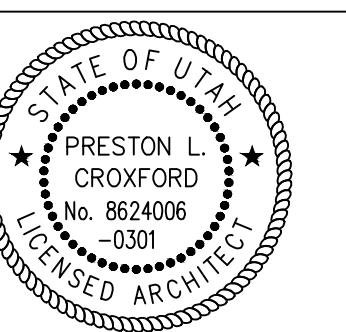
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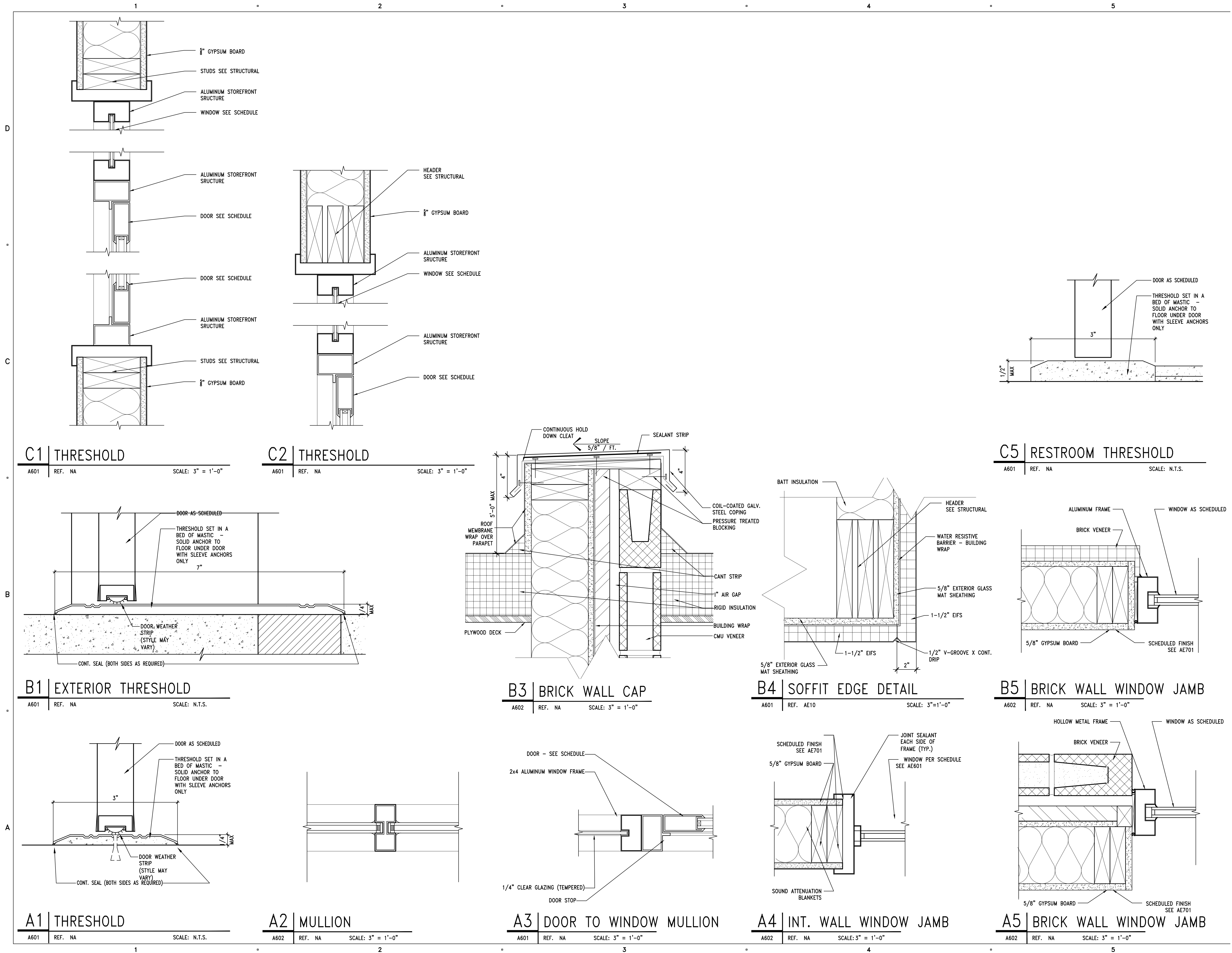
KEY PLAN

SHEET TITLE

DETAILS

A602





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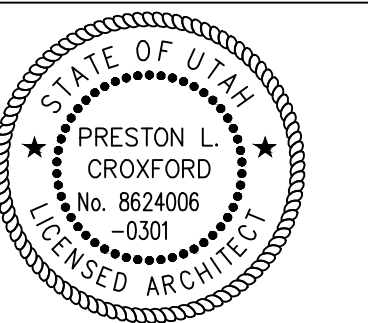
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ISSUE

MARK	DATE	DESCRIPTION

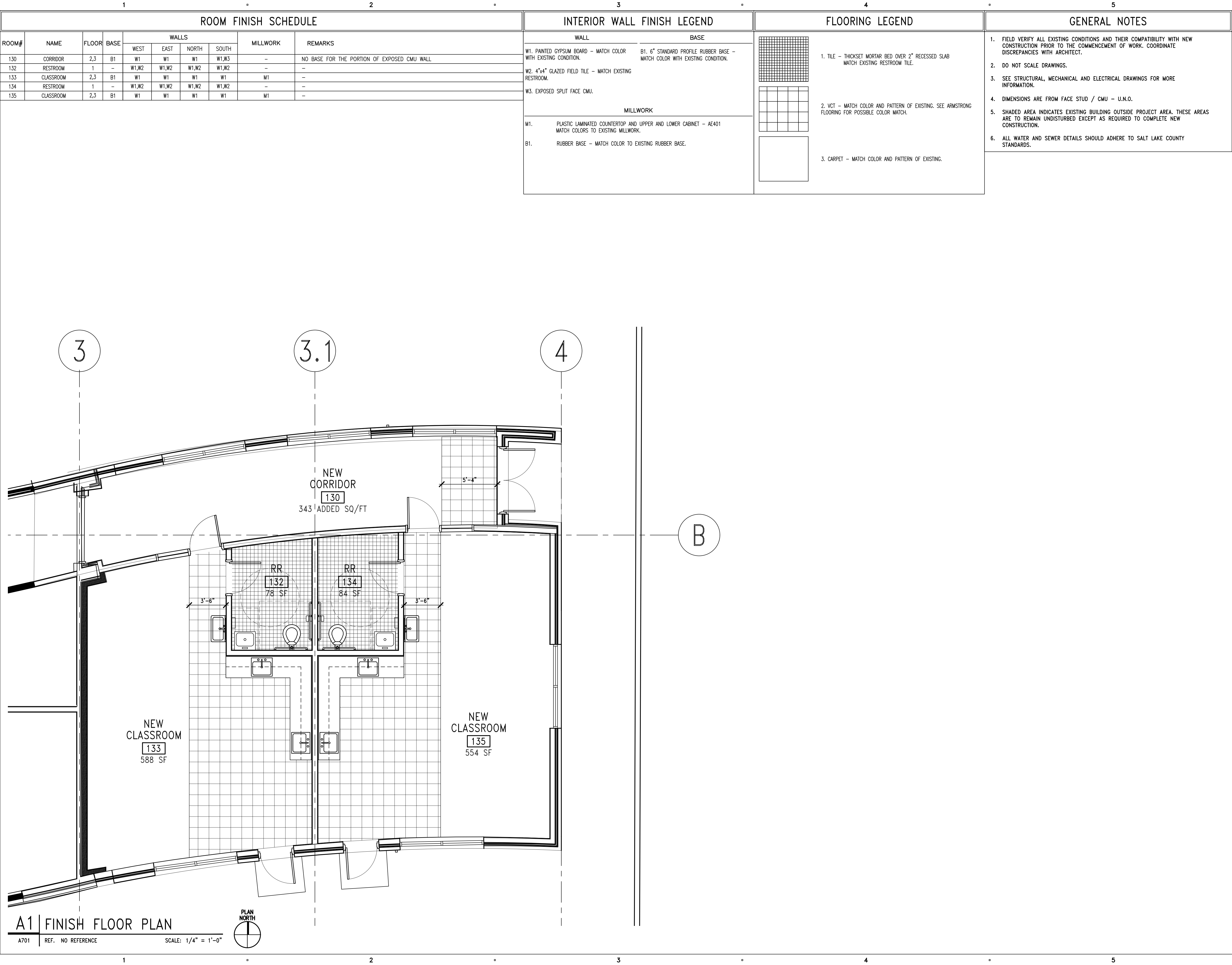
ARCHIPLEX PROJECT NO:	2312.01
DRAWN BY:	C.BACK
CHECKED BY:	P.CROXFORD
SCALE:	AS SHOWN
DATE:	DECEMBER 2023

KEY PLAN

SHEET TITLE

DETAILS

A603





## CONCRETE

1. GENERAL REQUIREMENTS: STRUCTURAL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI. EXPOSURE CLASS OF CONCRETE OR SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AND A MAXIMUM WATER/CEMENT RATIO OF 0.55 MINIMUM CEMENT CONTENT SHALL BE 5 SACKS/CY. MAXIMUM AGGREGATE SHALL BE 3/4" INCLUDE 4% TO 6% MAXIMUM AIR ENTRAINMENT TO BE EXCEEDED 4". BELOW ALL HEARTHS AND FIREPLACES AT THE FOUNDATION, ENSURE FOOTING PROJECTS FROM FACE OF EARTH FIREPLACE A MINIMUM OF 6" AND IS REINFORCED WITH A MINIMUM OF #5 AT 12" O/C EACH WAY. U.N.O.
2. CAST IN PLACE CONCRETE
  - A. FORM WORK: CONCRETE FORM WORK TO BE OF ADEQUATE SIZE AND STRENGTH, PROPERLY PLACED TO PREVENT SAGGING OR BULGING. PROVIDE ALL COORDINATES TO THE ENGINEER. TEMPERATURES. REFER TO DRAWINGS FOR DIMENSIONS OF CONCRETE MEMBERS AND SIZE AND LOCATION OF ALL REINFORCEMENT.
  - B. FOOTINGS: NO FOOTINGS SHALL BE PLACED ON DISTURBED (OR FROZEN) SOIL. (IF DISTURBED, COMPACT SOIL IN WITH S&W TO 95% OF MAXIMUM DRY DENSITY PER ASTM D1557). FOOTINGS SHALL BE STEPPED DOWN ONE (1) VERTICALLY TO ONE AND ONE HALF (1 1/2) HORIZONTALLY, UNLESS BULK HEADED & STOPPED VERTICALLY.
  - C. FOUNDATION WALL REINFORCE PER DRAWINGS. DO NOT BACKFILL WALLS UNTIL MAIN FLOOR IS FRAMED, THE SUBFLOOR INSTALLED, SHEATHED AND CONCRETE HAS CURED A MINIMUM OF 7 DAYS. SEE SPECIAL PROVISIONS FOR WEATHER PROTECTION. S&W. USE HAND OPERATED COMPACTION EQUIPMENT ADJACENT TO NEWLY PLACED CONCRETE BASEMENT WALLS.
  - D. CONCRETE PADS AND THICKENED SLABS: REFER TO DRAWINGS AS TO SIZE AND REINFORCEMENT.
  - E. CONCRETE SLAB EDGE: REFER TO DRAWINGS AS TO SIZE AND REINFORCEMENT.
  - F. REINFORCING BARS: REINFORCEMENT SHALL BE PER ASTM A615, GRADE 60 FOR #5 BARS AND LARGER, GRADE 40 FOR #3 AND #4 BARS. ALL REINFORCED 20 TIMES DIAMETER, BEAR AT FOOTINGS TO HAVE 3" CLEAR COVER OF CONCRETE (U.N.O. ON DRAWINGS). PROVIDE CORNER BARS WITH 18" LEGS AT THE CORNERS OF ALL WALLS AND FOOTINGS, SIZE AND PLACEMENT TO MATCH HORIZONTAL REINFORCEMENT.
  - G. COLD-WEATHER CONCRETING: CONTRACTOR SHALL SUBMIT TO ENGINEER FOR REVIEW THE

**FRAMING LUMBER**

6. WALL FRAMING

A. WOOD WALLS SHALL BE CONSTRUCTED OF 2X MEMBERS @ 16" O.C., U.N.O.

7. WOOD SHEAR WALLS

A. NO 14 GAGE STAPLES WITH MINIMUM 7/16 OD CORN AND 1-1/2" LENGTH MAY BE USED ONE FOR ONE IN LINE OF 8d NAILS. WHERE SUBSTITUTING FOR 10d NAILS USE 3 STAPLES FOR EACH 2 NAILS.

B. WHERE PLYWOOD PANELS ARE APPLIED TO BOTH SIDES OF SHEAR WALL, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS, OR FRAMING MEMBERS SHALL BE 3" (NOMINAL) WIDE AND NAILS ON EACH SIDE SHALL BE STAGGERED

C. ALLOWABLE SHEAR VALUES IN SHEAR WALL TABLE ARE FOR DOUGLAS FIR FRAMING MEMBER (GROUP II); NO SUBSTITUTION OF LESSER GROUPS WILL BE ALLOWED. FASTENERS EXPOSED TO WEATHER SHALL BE ZINC COATED BY HOT DIP GALVANIZING, MECHANICALLY DEPOSITED, OR ELECTRO-DEPOSITED.

8. STRUCTURAL WOOD COLUMNS

A. PROVIDE SOLID BLOCKING AT THE VOID WITHIN THE FLOOR SPACE BETWEEN WOOD COLUMNS.

B. INSTALL WOOD COLUMNS REFERENCED ON THE PLANS AT ALL THE WALLS ON THE FOUNDATION LEVEL. TYP., UNLESS NOTED OTHERWISE ON THE PLANS.

9. PRE-FABRICATED TRUSS

A. CONTRACTOR RESPONSIBLE FOR INTERIOR WALL AND TRUSS CONNECTIONS TO ALLOW FOR TRUSS BOTTOM CHORD MOVEMENT DUE TO ARCHING AND/OR THERMAL EFFECTS. REFER TO SIMPSON STC ROOF TRUSS CLIPS, PAGE 269 OF 2017-18 CATALOG FOR OPTION TO NEGATE THE EFFECTS OF TRUSS BOTTOM CHORD ARCHING.

**STRUCTURAL STEEL AND MISCELLANEOUS METALS**

1. STRUCTURAL STEEL SHAPES SHALL CONFORM TO THE FOLLOWING:

A. WF BEAMS & WF GIRDER: ASTM A992 (Fy = 50 ksi)

B. WIDE FLANGE COLUMNS, ASTM A992 (Fy = 50 ksi)

C. RECT. HSS: ASTM A500, GR B (Fy = 46 ksi)

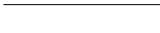










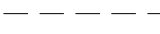



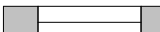
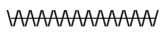

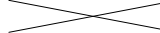
D. PIPE COLUMNS: ASTM-A53, TYPES E OR S, GRADE 60 (Fy = 36 ksi)

E. PLATES & BARS & MISCELLANEOUS SHAPES: ASTM A36

2. ALL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STEEL STRUCTURES" AND THE AISC 341 SEI

STRUCTURAL TAGS LEGEND	
TAG	DESCRIPTION
AB-1	ANCHOR BOLT. SEE ANCHOR BOLT SCHEDULE
CB-1	CONCRETE BEAM. SEE CONCRETE BEAM SCHEDULE
CC-1	CONCRETE COLUMN. SEE CONCRETE COLUMN SCHEDULE
CF-1	CONCRETE FOOTING. SEE CONCRETE FOOTING SCHEDULE
CS-1	CONCRETE SLAB. SEE CONCRETE SLAB SCHEDULE
CW-1	CONCRETE WALL. SEE CONCRETE WALL SCHEDULE
DB-1	COLD-FORMED STEEL DECK. SEE COLD-FORMED STEEL DECK SCHEDULE
DJ-1	COLD-FORMED STEEL JOIST. SEE COLD-FORMED STEEL JOIST SCHEDULE
DW-1	COLD-FORMED STEEL WALL. SEE COLD-FORMED STEEL WALL SCHEDULE
MC-1	MASONRY COLUMN. SEE MASONRY COLUMN SCHEDULE
ML-1	MASONRY LINTEL. SEE MASONRY LINTEL SCHEDULE
MW-1	MASONRY WALL. SEE MASONRY WALL SCHEDULE
SB-1	STEEL BEAM. SEE STEEL BEAM SCHEDULE
SC-1	STEEL COLUMN. SEE STEEL COLUMN SCHEDULE
SD-1	STEEL DECK. SEE STEEL DECK SCHEDULE
SJ-1	STEEL JOIST. SEE STEEL JOIST SCHEDULE
WB-1	WOOD BEAM. SEE WOOD BEAM SCHEDULE
WC-1	WOOD COLUMN. SEE WOOD COLUMN SCHEDULE
WJ-1	WOOD JOIST. SEE WOOD JOIST SCHEDULE

STRUCTURAL PLAN LEGEND	
	JOIST OR TRUSS
	BEAM OR GIRDER
	PURLIN
	STEEL COLUMN
	
	
	MASONRY COLUMN
	CONCRETE COLUMN
	
	
	
	CONCRETE FOOTING
	RECESSED FOUNDATION WALL
	NON-BEARING STRUCTURAL WALL
	BEARING WALL
	BEAM IN WALL
	STEEL STRAP
	STEEL DECK
	OWS JOIST CROSS BRIDGING

ACCELERATOR & CONCRETE MAINTAINED AT 50° MINIMUM FOR 7 DAYS. AVOID MORE THAN 25° TEMPERATURE CHANGE PER DAY WHEN HEATING OR COOLING.

H. ANCHOR BOLTS AND HOLDOWN: ANCHOR BOLTS TO BE ASTM F1554 GR. 36, 5/8"ØX10' EMBEDDED IN FOUNDATION WALLS PER SHEAR WALL SCHEDULE (SEE FOUNDATION PLAN FOR REQUIREMENTS AT WALL ENDS). WALL BOLTS: 1/2" WITHIN 1'-0" OF SILL PLATES ENDS (COORDINATE WITH GENERAL CONTRACTOR). MINIMUM OF TWO ANCHOR BOLTS PER SILL PLATE.

a. ALL POSTS SUPPORTED BY ISOLATED FOOTINGS TO HAVE POST ANCHORS UNLESS SPACED IN STUD WALLS.

b. REFER TO DRAWINGS FOR HOLDOWN REQUIREMENTS. INSTALL REQUIRED EMBEDDED ITEMS PER MANUFACTURER'S CATALOG TO ENDS OF WALLS.

I. CONSTRUCTION AND CRACK CONTROL JOINTS: ALL SURFACES OF CONSTRUCTION JOINTS SHALL BE CLEANED TO REMOVE DUST, CHIPS AND OTHER FOREIGN MATERIAL PRIOR TO PLACING ADJACENT CONCRETE. CRACK CONTROL JOINTS IN SLABS SHALL HAVE A MAXIMUM SPACING OF 15'-0" IN BOTH DIRECTIONS. THE CONTRACTOR SHALL SUBMIT THE DETAILS AND PROPOSED LOCATIONS OF CONSTRUCTION JOINTS AND CRACK CONTROL JOINTS FOR REVIEW BEFORE STARTING CONSTRUCTION.

J. VAPOR BARRIER: VAPOR BARRIER TO BE 10 MIL. POLYETHYLENE SHEET PLACED ON UNDISTURBED SOIL. VAPOR BARRIER UNDER SLAB ON GRADE: PLACE 10 MIL. POLYETHYLENE SHEET OVER 1'-1/2" OF DAMP SAND BETWEEN POLYETHYLENE VAPOR BARRIER AND CONCRETE.

K. EMBEDDED HOLDOWNS: EMBEDDED ITEMS FOR HD TYPE HOLDOWN TO BE ASTM A307 HEX HEAD BOLT IN CONCRETE. EMBEDDED ITEMS FOR THE MANUFACTURER FOR THE HD. ALL BOLTS TO HAVE 3' MIN. CONCRETE SIDE COVER. EMBEDMENT DEPTHS ARE 15" FOR BOLTS UP TO AND INCLUDING 3/4" DIA., 24" DEPTH FOR BOLTS OVER 3/4" U.N.O. TO 1 1/4" DIA. EMBEDMENT TO PASS UNINTERRUPTED ALONGSIDE HOLD DOWN AS APPLICABLE. COUPLER NUTS MAY BE USED TO EXTEND THE HOLD DOWN ANCHOR THROUGH THE FLOOR PLATE TO THE SHEAR WALL. CHORD

L. ANCHORS: ANCHORS TO BE 3/4" DIA. SHALL BE A TWO-COMPONENT HIGH-SOLIDS, EPOXY SYSTEM SUPPLIED IN MANUFACTURER'S STANDARD CARTRIDGE AND DISPENSED THROUGH A STATIC-MIXING NOZZLE SUPPLIED BY THE MANUFACTURER. ANCHORS TO BE EMBEDDED SHALL HAVE BEEN TESTED AND QUALIFIED FOR PERFORMANCE IN CRACKED CONCRETE PER ICCS AC308. ADHESIVE SHALL BE SET-3G EPOXY-TIE ADHESIVE FROM SIMPSON STRONG-TIE. INSTALLATION, CAUTION: THE ADHESIVE SHALL BE INSTALLED PER SIMPSON STRONG-TIE INSTRUCTIONS FOR SET-3G EPOXY-TIE ADHESIVE. NOTE: THE USE OF EPOXY ANCHORS REQUIRES SPECIAL INSPECTION OR INSTALLATION PER COUNCIL OF ICBO REQUIREMENTS. CONTRACTOR TO PROVIDE SPECIAL INSPECTION REPORTS TO ENGINEER, BUILDING OFFICIAL, & ARCHITECT.

M. CONCRETE LINTELS AND BEAM: ALL CONCRETE LINTELS AND BEAM TO HAVE #3 STIRRUPS AT 12" MAXIMUM SPACING. ALL BEAMS TO HAVE #4 LINTEL OR BEAM MINUS 2" DIVIDED BY 2. (H-2)/2, NOT GREATER THAN 12" O.C. TYP., UNLESS NOTED OTHERWISE ON PLANS.

BY AWS CERTIFIED WELDERS

3. BUTT WELDS: COMPLETE PENETRATION, GRIND SMOOTH.

4. PLACE NON-SHRINK GROUT UNDER ALL BASE PLATE BEFORE ADDING VERTICAL LOAD.

5. ERECT ALL STRUCTURAL STEEL PLUMB AND TRUE TO LINE.

6. INSTALL TEMPORARY BRACING AND LEAVE IN PLACE UNTIL OTHER MEANS ARE PROVIDED TO ADEQUATE BRACE STRUCTURE.

7. HOLES FOR UNFINISHED BOLTS OR RIVETS: SAME NOMINAL DIAMETER AS BOLT OR RIVET PLUS 1/16".

8. BOLT LOCATIONS: STANDARD AISC GAUGE AND PITCH, UNO.

9. HIGH STRENGTH BOLTS: 3/4" DIAMETER A325-N TYP. UNO. SEE AISC SPECIFICATION FOR STRUCTURAL JOINT USING ASTM A325 OR A490 BOLTS.

10. BOLTED CONNECTIONS: SNUG-TIGHTENED UNO.

11. SHORING IS NOT REQUIRED FOR COMPOSITE METAL DECKING, BEAMS, OR GIRDERS UNO.

12. DO NOT PAINT TOPS OF BEAMS & GIRDERS.

13. WELD ALL TUBE STEEL AND PIPE CONTINUOUSLY TO SEAM.

14. HOLES IN WF BEAM WEBS: 1"Ø MAXIMUM, LOCATED 24" MIN. FROM BEARING POINTS AND WITHIN MIDDLE THIRD OF WEB. SPACE MULTIPLE HOLES 8" MIN.

15. ALL STEEL ANCHORS, TIES AND OTHER MEMBERS TO BE EMBEDDED IN CONCRETE OR MASONRY SHALL BE UNPAINTED. ALL MACHINE BOLTS SHALL BE ASTM A307 UNO. (SEE CONNECTION SCHEDULE FOR A325 BOLTS) AND SHALL BE PROVIDED WITH LOCK WASHERS UNDER NUTS OR SELF LOCKING NUTS. A NUTS, BOLTS, WASHERS AND MISC. STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED.

16. WELDED HEADED STUDS (WHWS) TYPICAL WELD OF WHS TO STEEL SHALL BE FILLET WELD ALL AROUND STUDS EQUAL TO ONE-HALF THE DIAMETER OF THE STUD.

**JOB SAFETY**

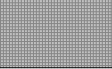


THE ENGINEER HAS NOT BEEN RETAINED NOR COMPENSATED TO PROVIDE DESIGN AND/OR CONSTRUCTION REVIEW SERVICES RELATED TO THE CONTRACTOR'S SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES FOR THE CONTRACTOR TO PERFORM HIS WORK. THE UNDERTAKINGS OF PERIODIC SITE VISITS BY THE ENGINEER SHALL NOT BE CONSTRUED AS SUPERVISION OF ACTUAL CONSTRUCTION NOR MAKE HIM RESPONSIBLE FOR PROVIDING A SAFE PLACE FOR THE PERFORMANCE OF WORK BY THE CONTRACTOR, SUBCONTRACTORS, SUPPLIERS OR THEIR EMPLOYEES, OR FOR ANY ACCESS, VISIT, USE WORK, OR OCCUPANCY BY ANY PERSON.

**MISCELLANEOUS**

1. PROPRIETARY PRODUCTS SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.

**SHOP DRAWINGS**


1. CONCRETE AND STEEL REINFORCING CONTRACTOR, TRUSS FABRICATOR, AND STEEL FABRICATOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.

	<p>"H" INDICATES LOCATION OF HOLDOWN IDENTIFIED ON LEVEL ABOVE</p> <p>SNOW DRIFT AREA AND LOAD, ON TOP OF BASE SNOW LOAD. DRIFT LOAD IS 0 PSF AT DOTTED LINE AND INCREASES LINEARLY TO MAXIMUM LOAD.</p>
	<p>SHEATHING</p>
	<p>PERMANENT EQUIPMENT</p>
<p><b>COMMON ACRONYMS AND ABBREVIATIONS</b></p>	
<p>TYP</p>	<p>TYPICAL</p>
<p>SIM</p>	<p>SIMILAR</p>
<p>FTAO</p>	<p>FORCE TRANSFER AROUND OPENINGS</p>
<p>GPF</p>	<p>GARAGE PORTAL FRAMING</p>
<p>GYP</p>	<p>GYPSUM OR GYPSUM BOARD</p>
<p>THRU</p>	<p>THROUGH</p>
<p>LLV</p>	<p>LONG LEG VERTICAL</p>
<p>LLH</p>	<p>LONG LEG HORIZONTAL</p>
<p>CJP</p>	<p>COMPLETE JOINT PENETRATION</p>
<p>SS</p>	<p>STAINLESS STEEL</p>
<p>GR</p>	<p>GRADE</p>
<p>GA</p>	<p>GAGE OR GAUGE</p>
<p>PL</p>	<p>PLATE</p>
<p>TS</p>	<p>TUBE STEEL (ANTIQUATED, SEE HSS)</p>
<p>HSS</p>	<p>HOLLOW STRUCTURAL STEEL</p>
<p>CFS</p>	<p>COLD-FORMED STEEL/STUD</p>
<p>CMD</p>	<p>CORRUGATED METAL DECKING</p>
<p>DBL</p>	<p>DOUBLE</p>
<p>AHJ</p>	<p>AUTHORITY HAVING JURISDICTION</p>
<p>ARCH</p>	<p>ARCHITECT OR ARCHITECTURAL PLANS</p>
<p>EOR</p>	<p>ENGINEER OF RECORD</p>
<p>OOP</p>	<p>OUT-OF-PLANE</p>
<p>C&amp;C</p>	<p>COMPONENTS AND CLADDING</p>

CONSTRUCTION NOTES

DATE

DECEMBER 7, 2023



REVISIONS


MARK	DATE	DESCRIPTION

DRAWN: CC

DESIGNER: SP

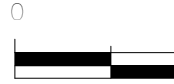
REVIEWED: JD

PROJECT #  
23SM1182.04



SCALES

As indicated



1" = 4'-0" UNLESS OTHERWISE NOTED  
FULL SIZE SHEET: ADJUST  
1/8" = 1'-0" IF NOT SPECIFIED

PROJECT NAME:

MAGNA HEAD  
START-ADDITION

PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

SHEET TITLE:

STRUCTURAL NOTES

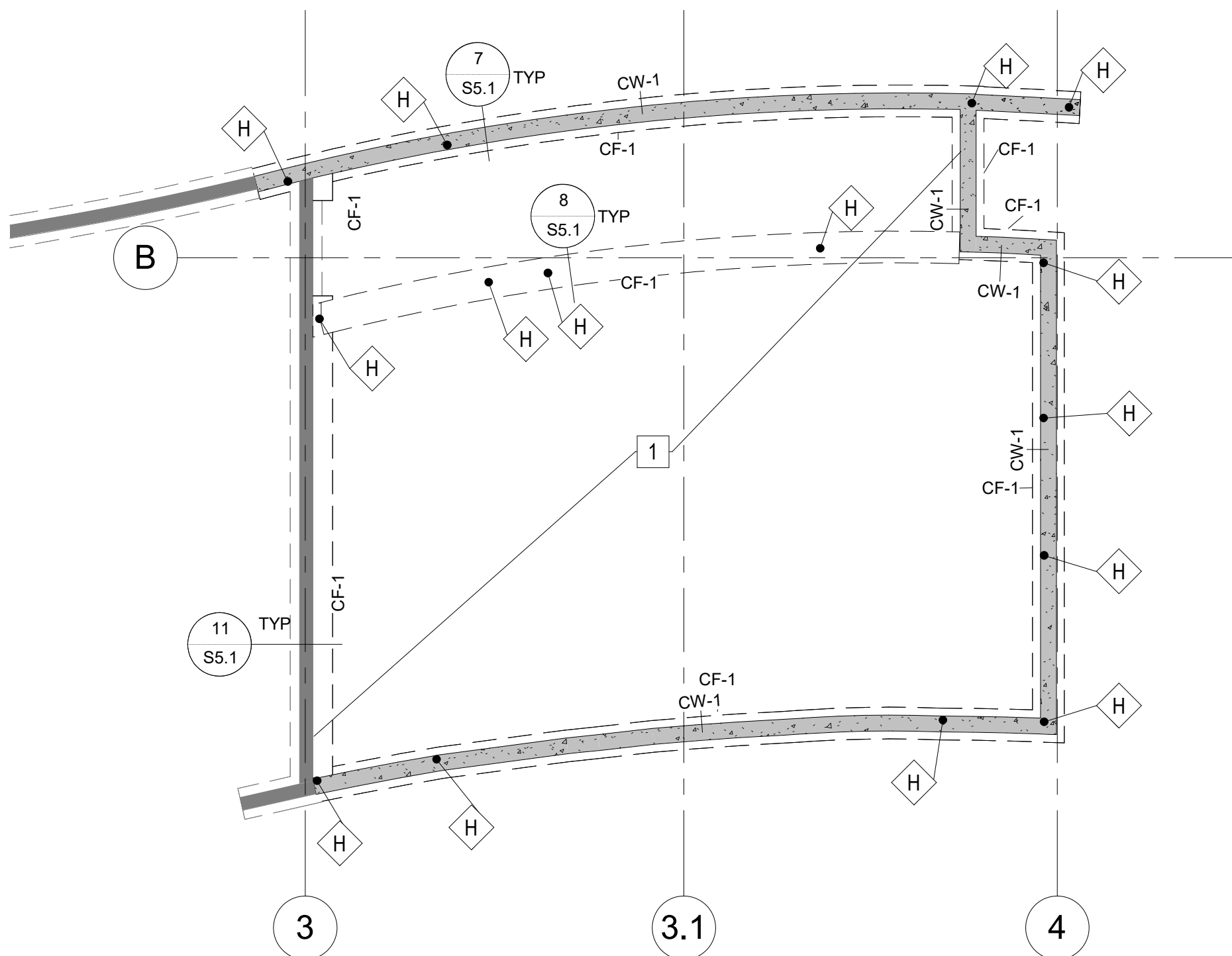
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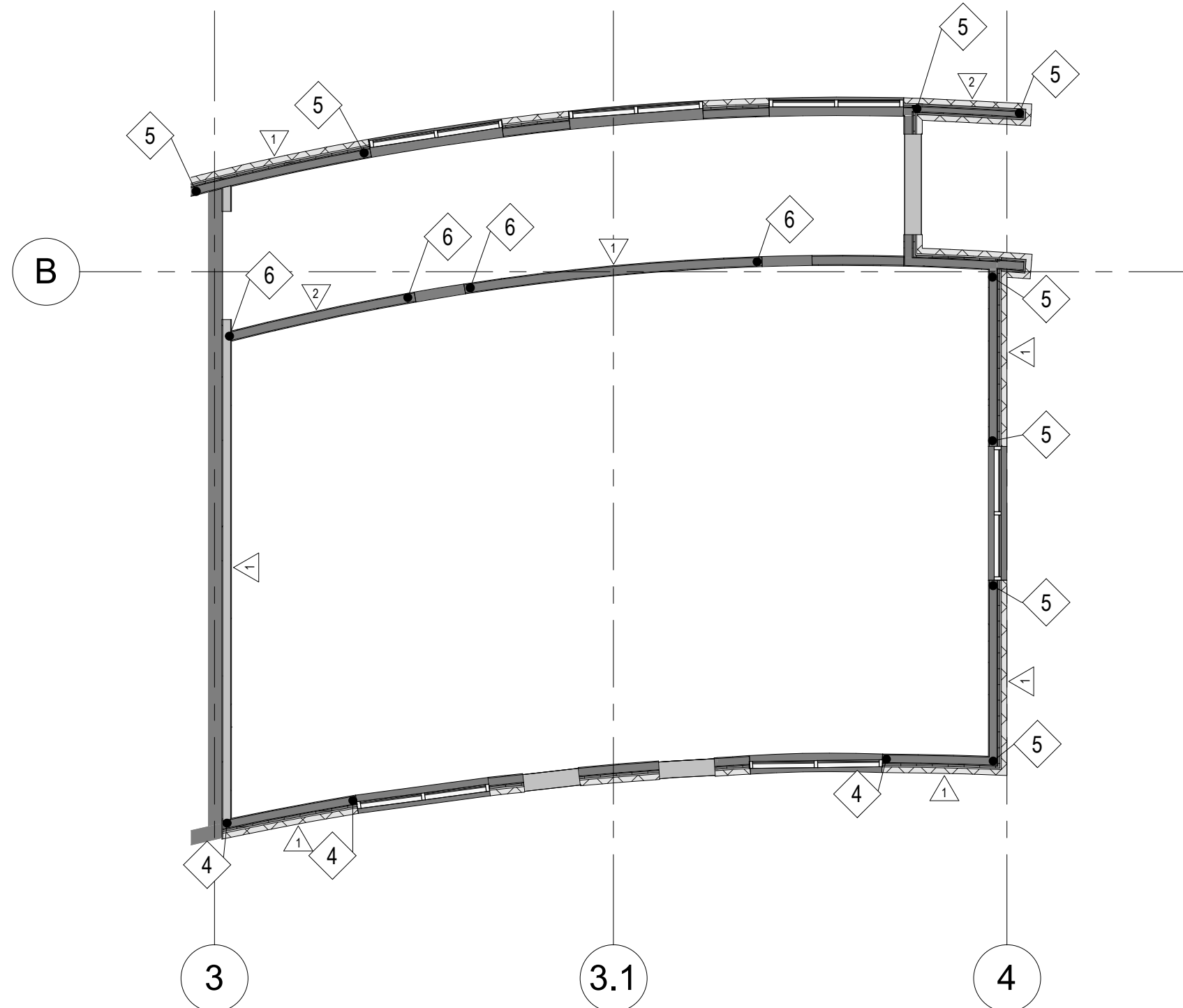
SHEET

S0.1

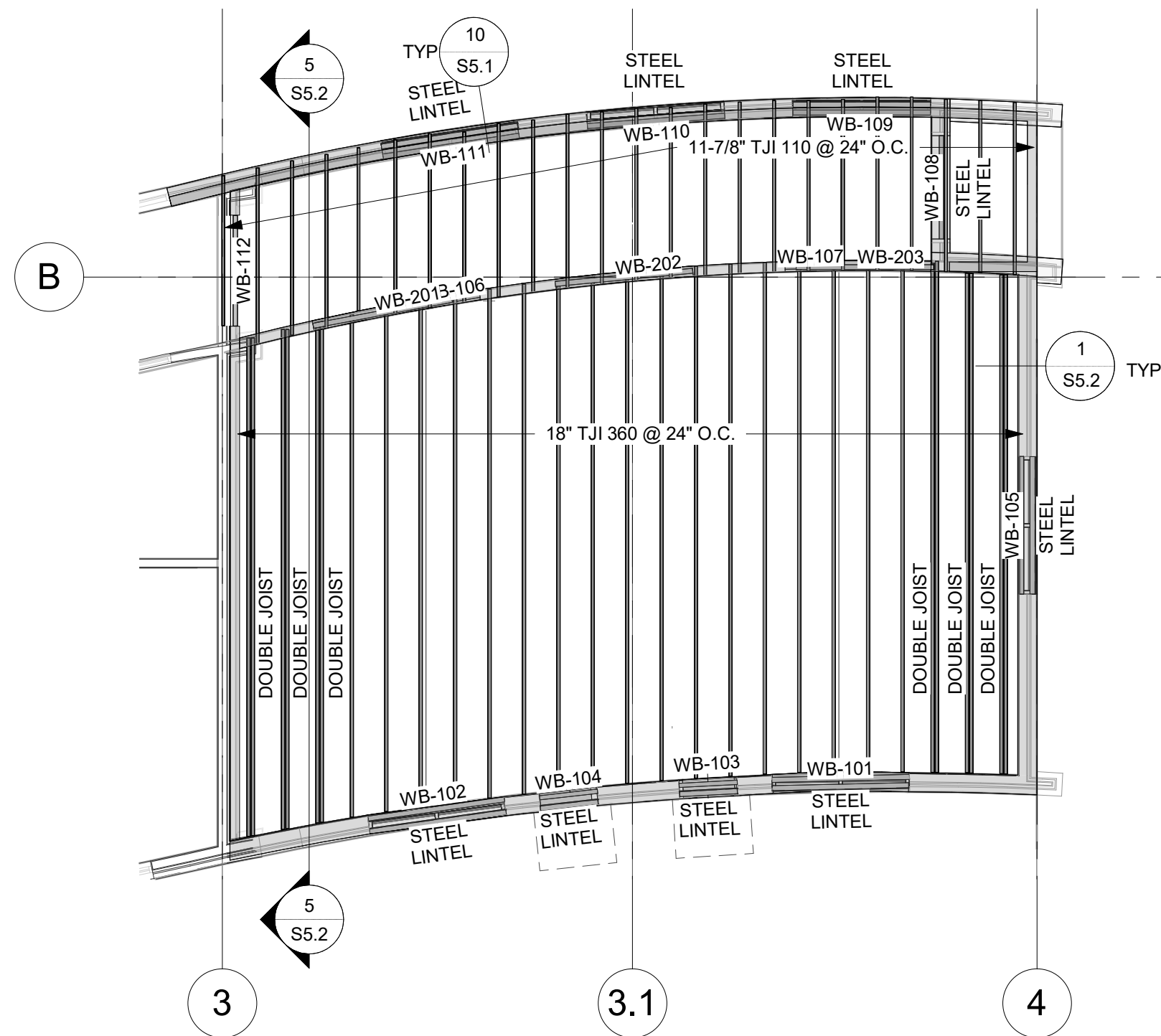




1 FOUNDATION PLAN  
1/8" = 1'-0"



2 SHEARWALL PLAN  
1/8" = 1'-0"



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

CONCRETE FOOTING SCHEDULE						
MARK	WIDTH	LENGTH	THICK	LONG REINF	PERP REINF	REMARKS
CF-1	2'-0"	<varies>	10"	(3)#4 CONT.	NA	

CONCRETE WALL SCHEDULE				
MARK	THICKNESS	HORIZ REINF	VERT REINF	REMARKS
CW-1	1'-0"	(2) MATS OF #4 @ 18" O.C.	(2) MATS OF #4 @ 18" O.C.	

ANCHOR BOLT SCHEDULE					
MARK	DIAMETER	BOLT TYPE	SPACING	EMBED DEPTH	REMARKS
AB-1	5/8"	J-BOLT	4' - 0"	8"	3" x 3" PLATE WASHERS
AB-2	5/8"	F1554 GR 36 THREADED ROD W/ SIMPSON SET-XP EPOXY	N/A	8"	INSTALLED PER SIMPSON SPECIFICATIONS
AB-3	5/8"	SSTB16	N/A	12-5/8"	INSTALLED PER SIMPSON SPECIFICATIONS
AB-4	5/8"	SSTB20	N/A	16-5/8"	INSTALLED PER SIMPSON SPECIFICATIONS
AB-5	5/8"	SSTB24	N/A	20-5/8"	INSTALLED PER SIMPSON SPECIFICATIONS
AB-6	1"	PAB8	N/A	9"	14" CONCRETE WALL REQUIRED. INSTALLED PER SIMPSON SPECIFICATIONS
AB-7	1"	PAB8H	N/A	8"	24" CONCRETE WALL REQUIRED. INSTALLED PER SIMPSON SPECIFICATIONS
AB-8	5/8"	F1554 GR 36 Heavy Hex Bolt	N/A	4"	INSTALLED PER SIMPSON SPECIFICATIONS
AB-9	5/8"	F1554 GR 36 THREADED ROD W/ SIMPSON AT-XP EPOXY	N/A	10"	INSTALLED PER SIMPSON SPECIFICATIONS

NOTE: ALL WOOD STUD WALL ANCHORS TO BE TYPE AB-1, TYP., U.N.O.

HOLD DOWN SCHEDULE						
MARK	COUNT	TYPE	ANCHOR BOLT	MIN POST THICKNESS	FASTENERS	REMARKS
4	3	SIMPSON HDU2	AB-3	3"	(6) 1/4 x 2 1/2 SDS	
5	8	SIMPSON HDU4	AB-4	3"	(10) 1/4 x 2 1/2 SDS	
6	4	SIMPSON HDU5	AB-5	3"	(14) 1/4 x 2 1/2 SDS	
H	15	HOLD DOWN, SEE SHEAR WALL PLAN		0"		

SHEAR WALL SCHEDULE						
MARK	SHEATHING	BOTH SIDES?	EDGE NAILING	FIELD NAILING	NOTES	SOLE PLATE NAILING
1	7/16"	NO	8d @ 6" OC	8d @ 12" OC	2,3	16d NAILS @ 6" O.C.
2	7/16"	NO	8d @ 4" OC	8d @ 12" OC	2,3	16d NAILS @ 4" O.C.

NOTES:

- WHERE 3X STUDS ARE INDICATED, PROVIDE 3X STUDS AT ALL PANEL EDGES. IN LIEU OF A SINGLE 3X STUD, (2) 2X STUDS ARE PERMITTED. PROVIDE STAGGERED NAILING EVERY 2'.
- BLOCK ALL EDGES
- ALL ANCHOR BOLTS TO HAVE 3" X 3" X 1/4" PLATE WASHERS, TYP., U.N.O.
- ALL EXTERIOR WALLS TO BE SHEATHED AS TYPE "1", TYP., U.N.O.

STEEL LINTEL FOR MASONRY VENEER		
MAX OPENING WIDTH	LINTEL	REMARKS
6'-0"	L3x3x3/16	
9'-0"	L5x3x1/4	
12'-0"	L6x3-1/2x3/8	
16'-0"	L8x4x1	

WOOD BEAM SCHEDULE					
MARK	SIZE	WOOD SPECIES	END SUPPORT(S)		REMARKS
			END 1	END 2	
WB-101	(2)1 3/4x9 1/2	LVL 2.0E	(1) TRIMMER (2) KING STUDS	(1) TRIMMER (2) KING STUDS	
WB-102	(2)1 3/4x9 1/2	LVL 2.0E	(1) TRIMMER (2) KING STUDS	(1) TRIMMER (2) KING STUDS	
WB-103	(2) 2x8	DF-L #2	(1) TRIMMER (1) KING STUD	(1) TRIMMER (1) KING STUD	
WB-104	(2) 2x8	DF-L #2	(1) TRIMMER (1) KING STUD	(1) TRIMMER (1) KING STUD	
WB-105	(2) 2x12	DF-L #2	(1) TRIMMER (2) KING STUDS	(1) TRIMMER (2) KING STUDS	
WB-106	(2)1 3/4x9 1/2	LVL 2.0E	(1) TRIMMER (1) KING STUD	(1) TRIMMER (1) KING STUD	
WB-107	(2)1 3/4x9 1/2	LVL 2.0E	(1) TRIMMER (1) KING STUD	(1) TRIMMER (1) KING STUD	
WB-108	(2) 2x12	DF-L #2	(1) TRIMMER (2) KING STUDS	(1) TRIMMER (2) KING STUDS	
WB-109	(2)1 3/4x9 1/2	LVL 2.0E	(1) TRIMMER (2) KING STUDS	(1) TRIMMER (2) KING STUDS	
WB-110	(2)1 3/4x9 1/2	LVL 2.0E	(1) TRIMMER (2) KING STUDS	(1) TRIMMER (2) KING STUDS	
WB-111	(2)1 3/4x9 1/2	LVL 2.0E	(1) TRIMMER (2) KING STUDS	(1) TRIMMER (2) KING STUDS	
WB-112	(2) 2x12	DF-L #2	(1) TRIMMER (2) KING STUDS	(1) TRIMMER (2) KING STUDS	
WB-201	(2)1 3/4x9 1/2	LVL 2.0E	(1) TRIMMER (2) KING STUDS	(1) TRIMMER (2) KING STUDS	
WB-202	(2)1 3/4x9 1/2	LVL 2.0E	(1) TRIMMER (2) KING STUDS	(1) TRIMMER (2) KING STUDS	
WB-203	(2)1 3/4x9 1/2	LVL 2.0E	(1) TRIMMER (2) KING STUDS	(1) TRIMMER (2) KING STUDS	

STRUCTURAL KEYNOTES	
MARK	REMARKS
1	4" CONCRETE SLAB WITH OPTIONAL 6x6xW1.4 WIRE MESH OVER 4" FREE DRAINING GRAVEL OVER PREPARED SUB GRADE. PROVIDE CONTROL JOINTS AT 10' MAX

CONSTRUCTION NOTES

- THIS IS ONE PAGE OF A SET OF PROJECT DOCUMENTS AND MAY NOT BE USED ALONE. THE CONTRACTOR, SUBCONTRACTORS AND OWNER SHALL REVIEW AND BE RESPONSIBLE FOR ALL INFORMATION CONTAINED IN ALL PROJECT DOCUMENTS PRIOR TO INITIATION OF ANY WORK ON THE PROJECT.
- ALL FOUNDATION WALLS SHALL BE BRACED BY FLOOR DIAPHRAGM OR BY OTHER MEANS BEFORE BACK FILLING.
- CONTRACTOR TO VERIFY DIMENSIONS W/ ARCHITECTURAL PLANS

DATE

DECEMBER 7, 2023



REVISIONS

MARK	DATE	DESCRIPTION
------	------	-------------

DRAWN: CRC  
DESIGNER: SP, LM  
REVIEWED: JD

PROJECT #  
23SM1182.04



SCALES

1/8" = 1'-0"



PROJECT NAME:

MAGNA HEAD  
START-ADDITION

PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

SHEET TITLE:

STRUCTURAL PLAN

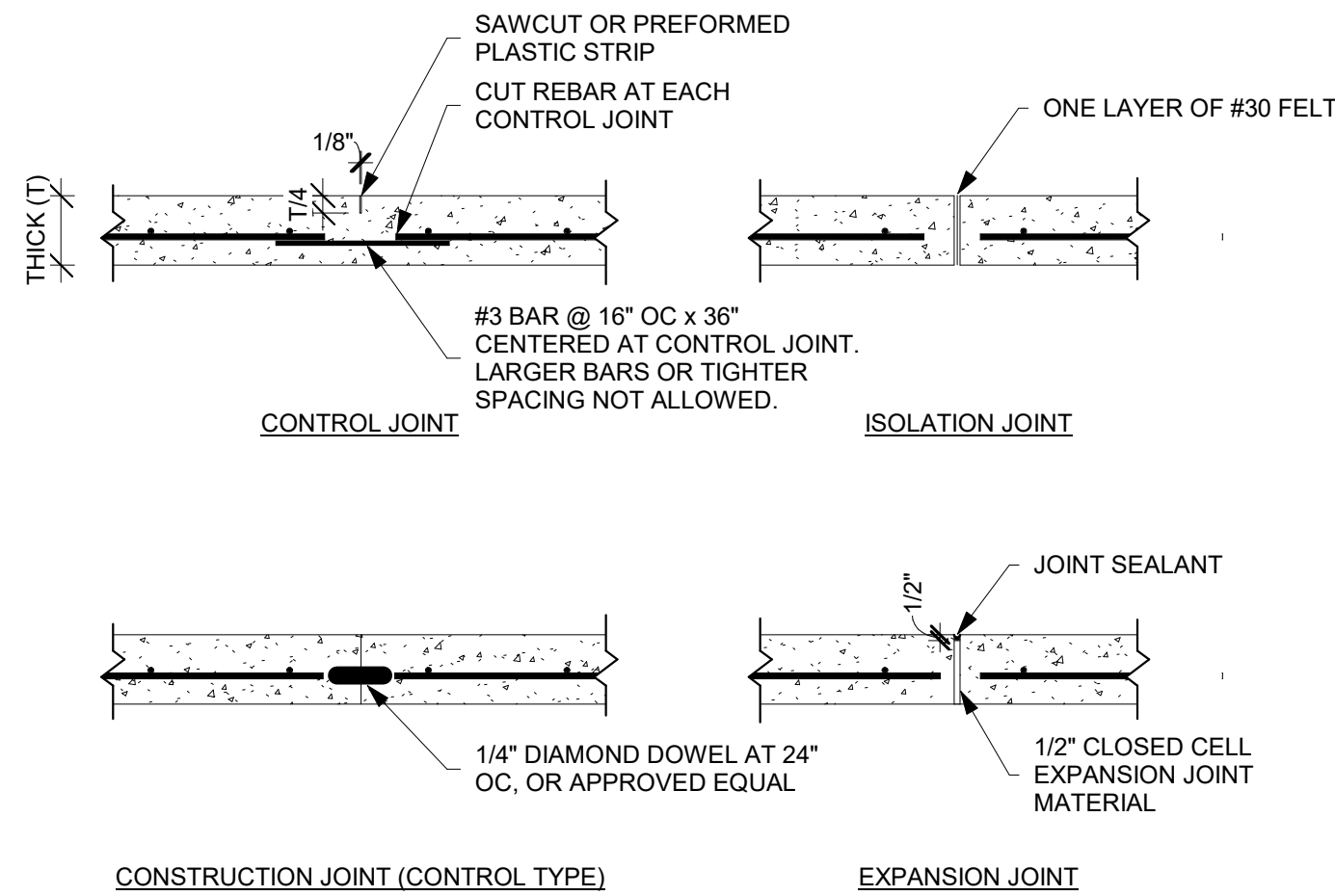
PLAN SET:

90%

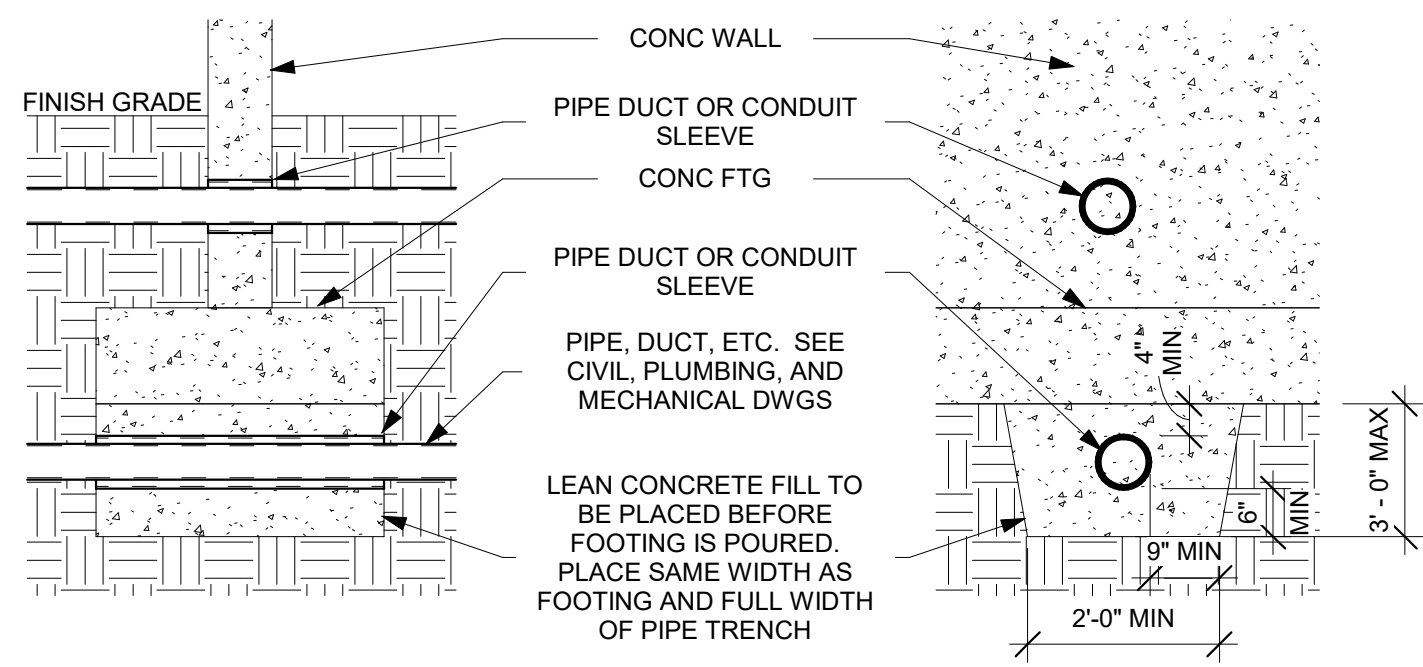
SHEET

S1.1

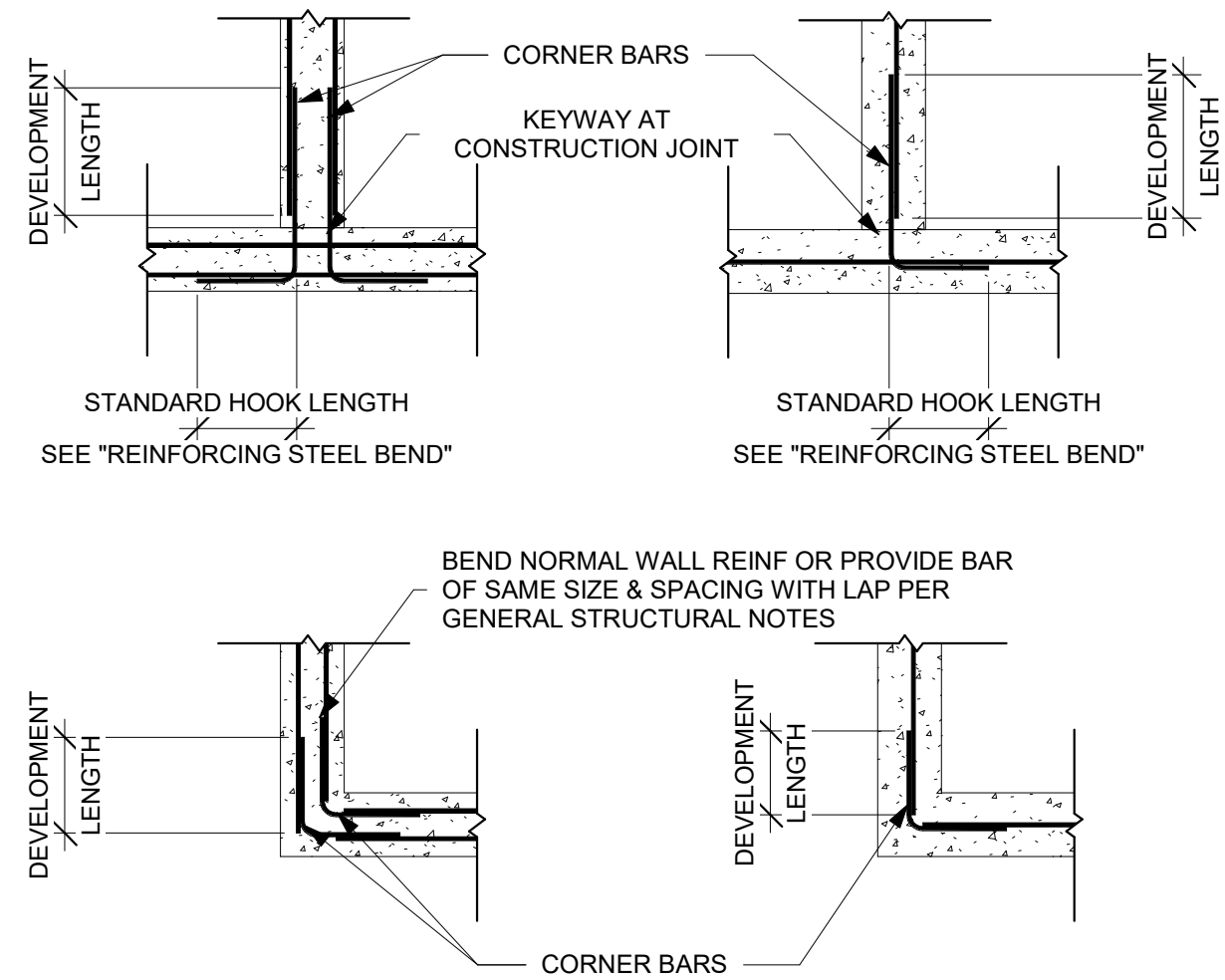




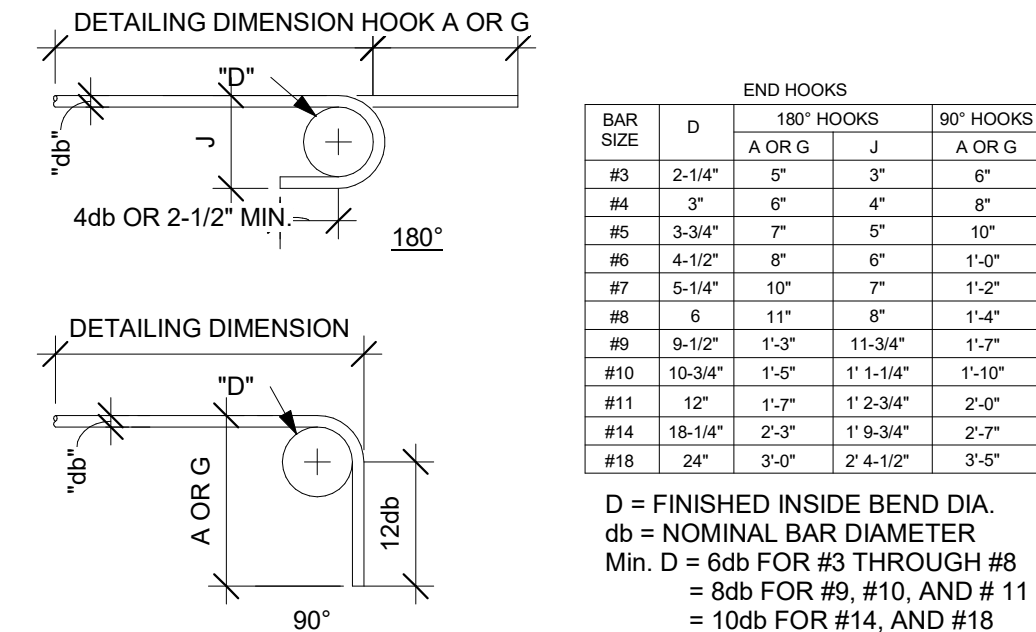
1 CONCRETE JOINTS (SLABS)  
N.T.S.



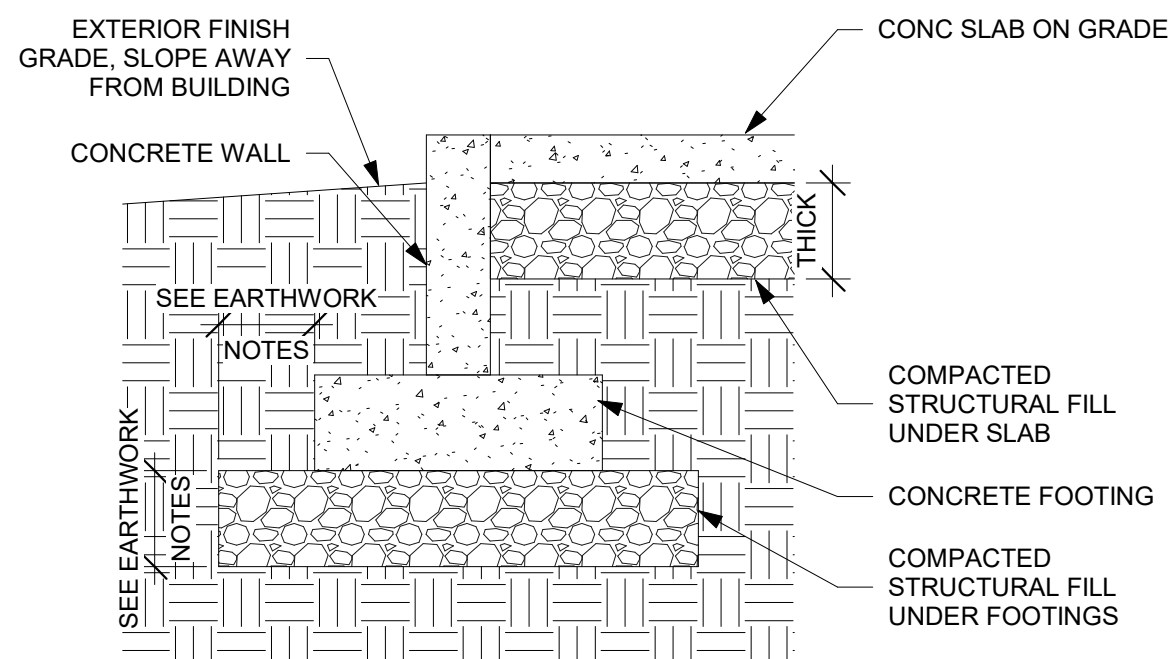
2 PIPE @ FOOTINGS & FOUNDATION WALLS  
N.T.S.



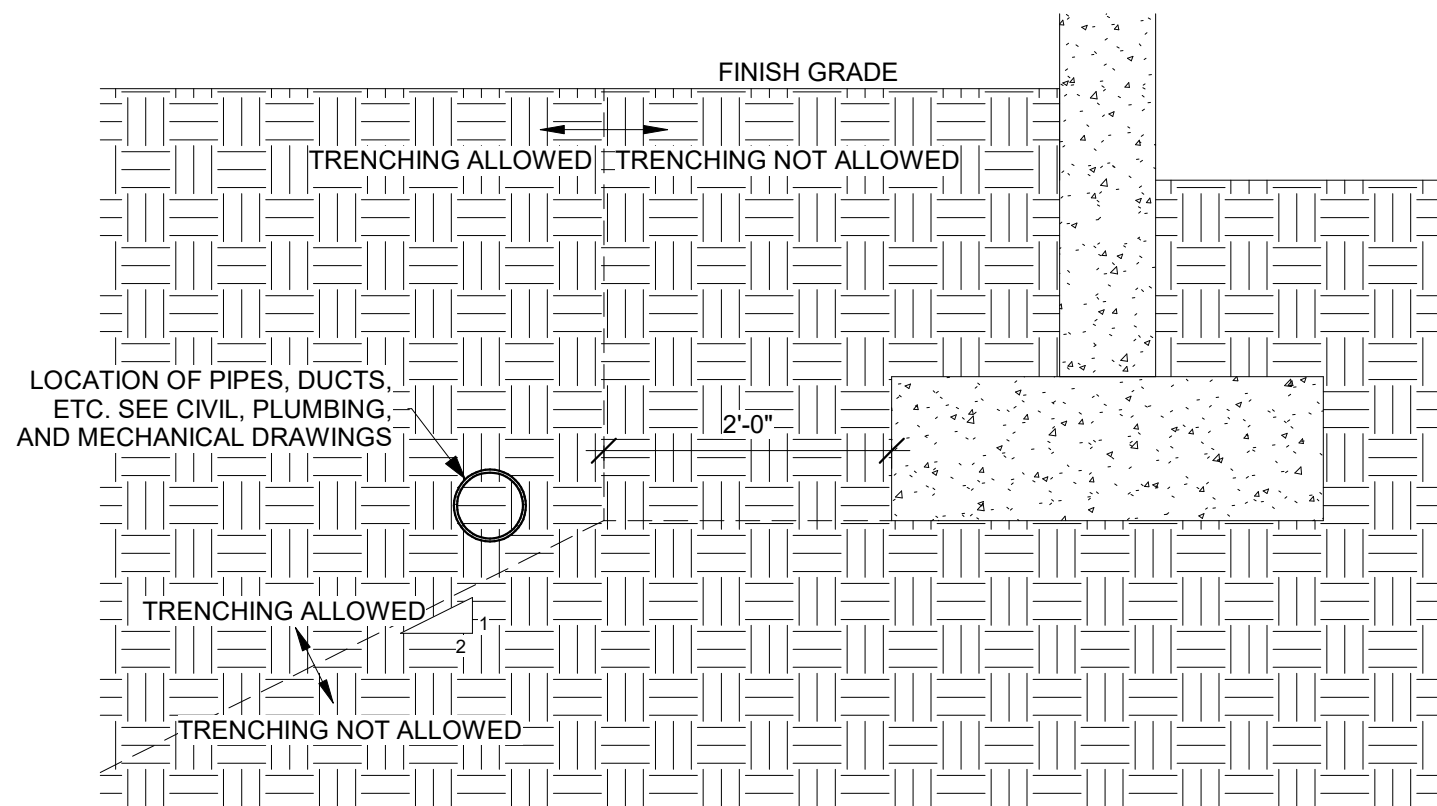
3 REINFORCEMENT AT TYPICAL WALL CORNERS & INTERSECTIONS  
N.T.S.



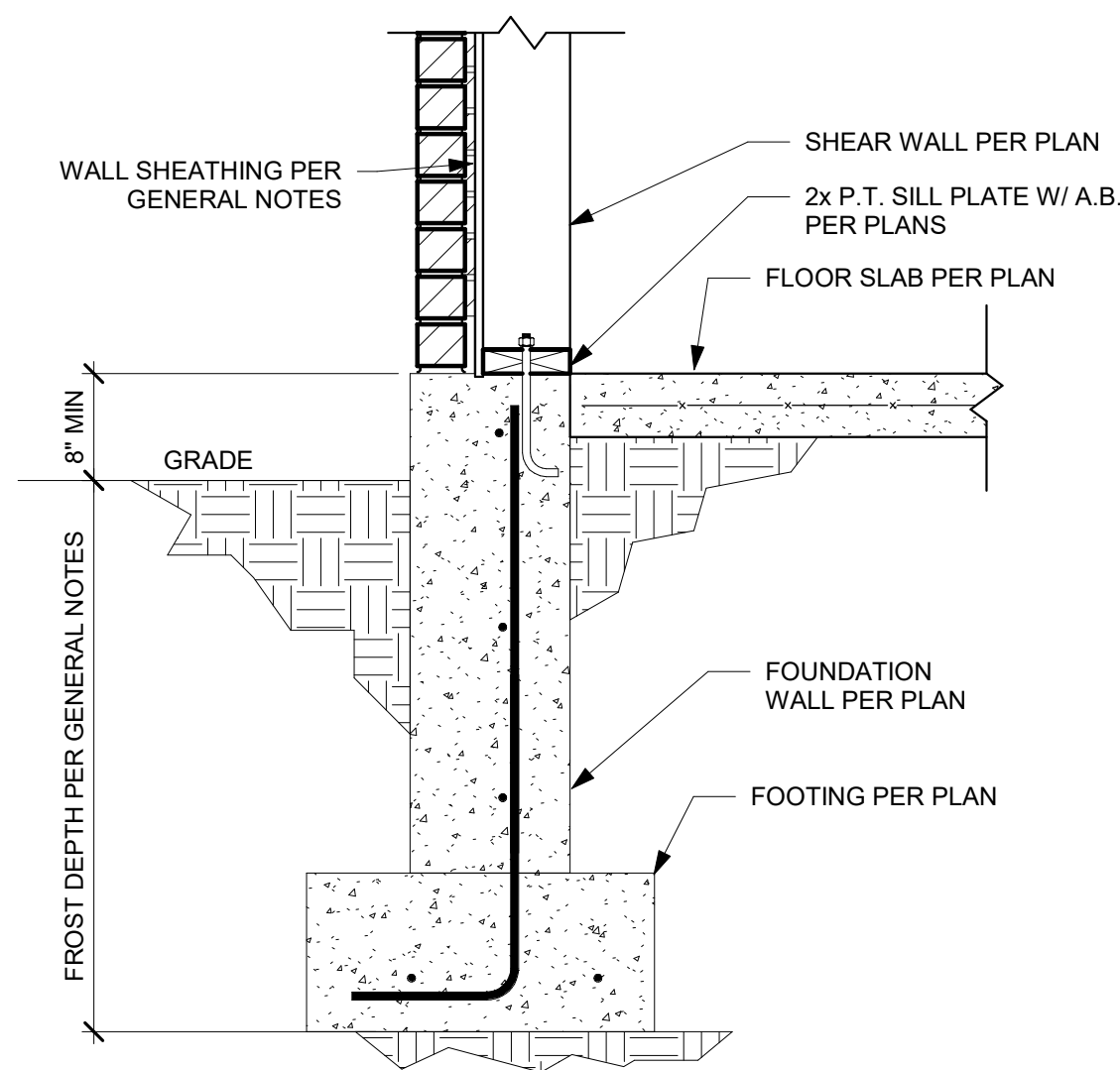
4 REINFORCING STEEL BEND  
N.T.S.



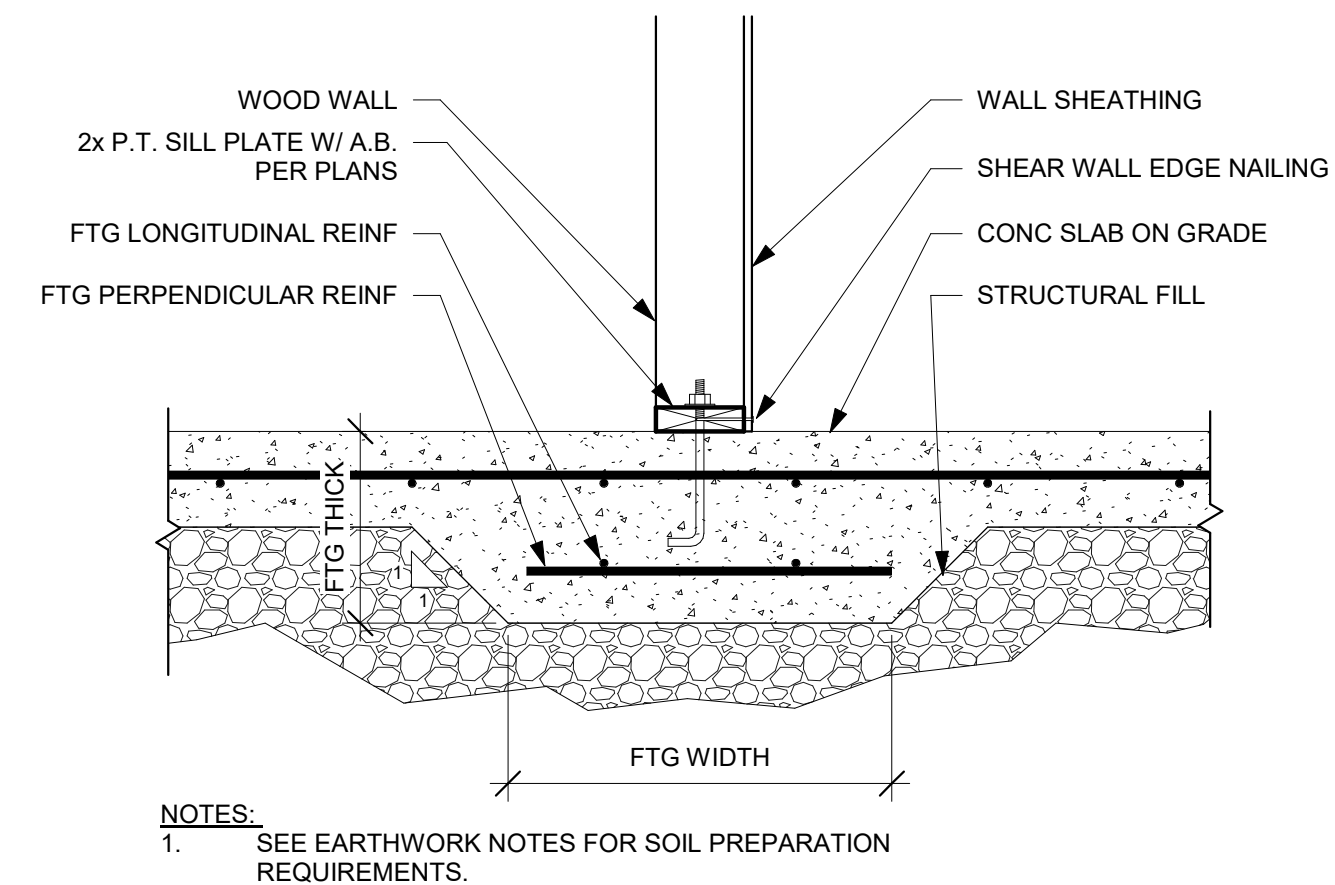
5 STRUCTURAL FILL PLACEMENT  
N.T.S.



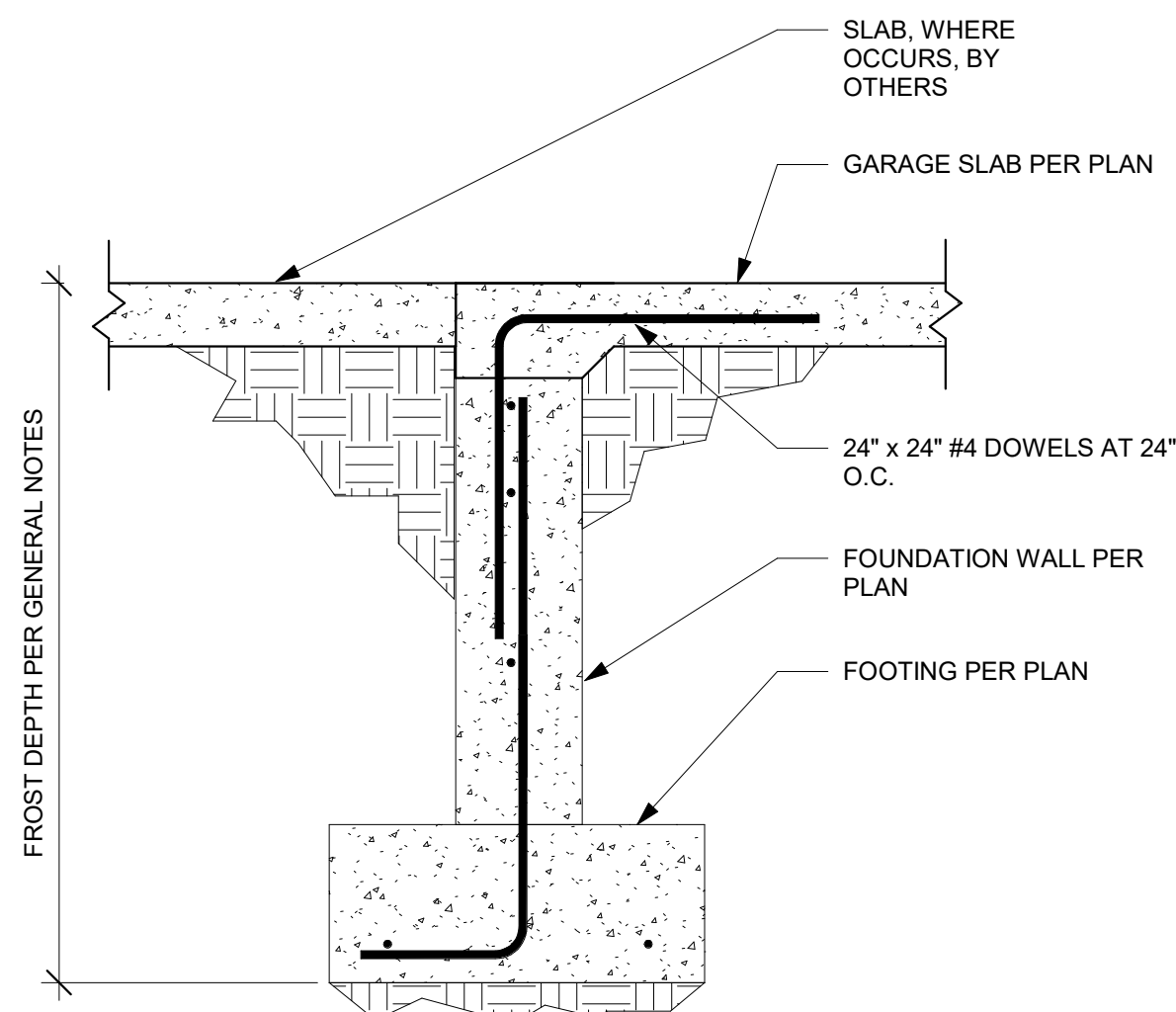
6 TRENCH NEAR FOOTING  
N.T.S.



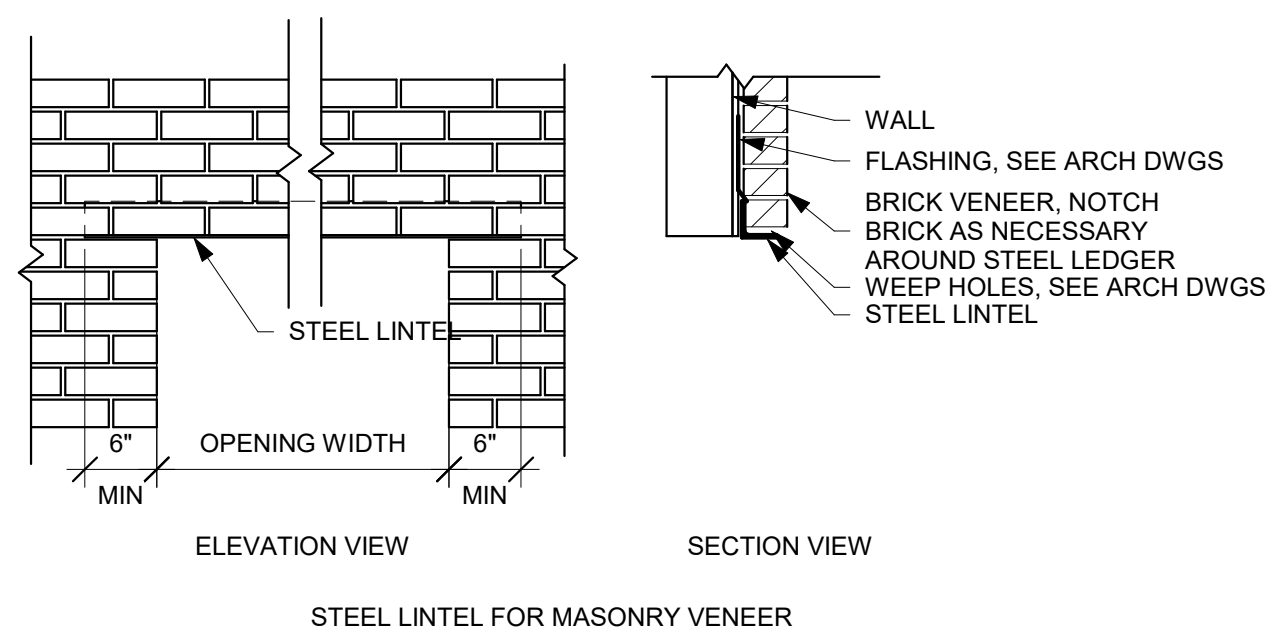
7 WOOD WALL ON CONCRETE FDN WALL W/ FLOOR SLAB  
N.T.S.



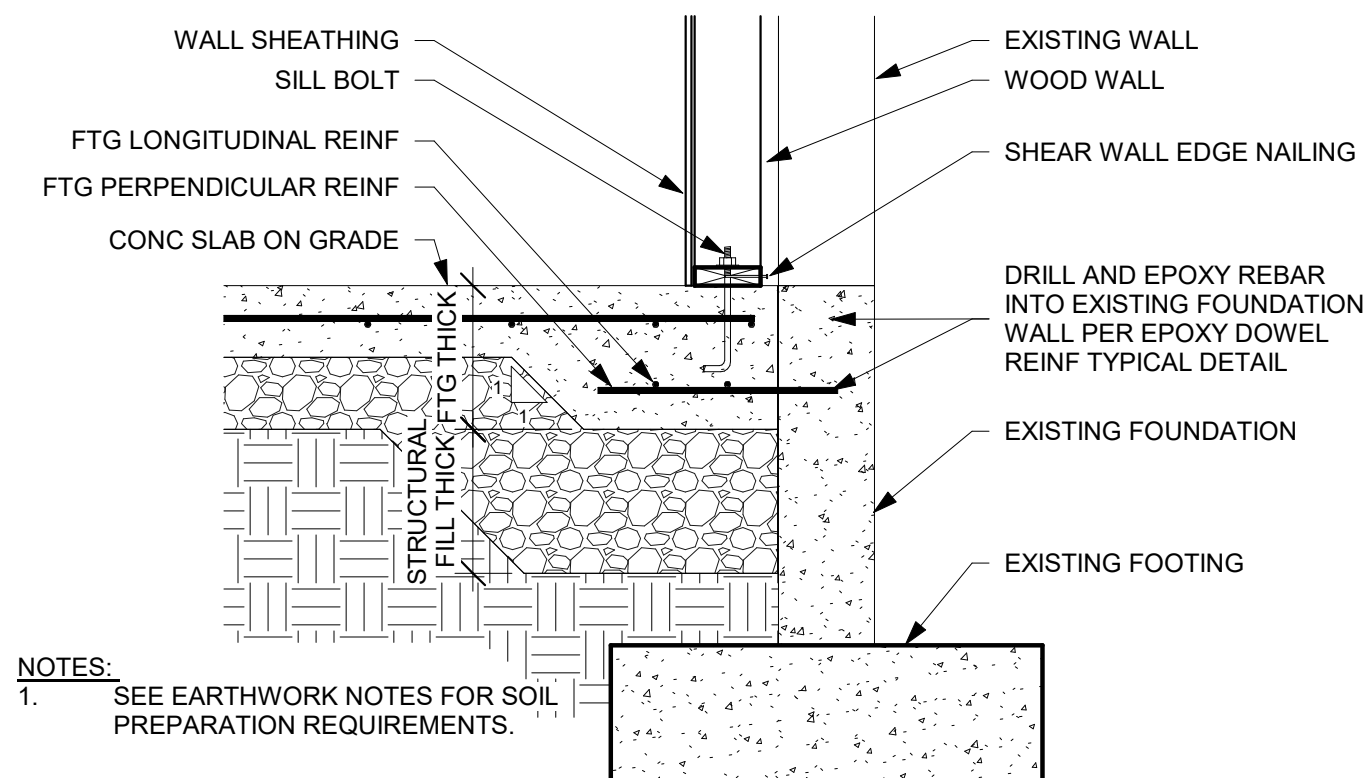
8 WOOD SHEAR WALL ON TURNDOWN FOOTING  
N.T.S.



9 RECESSED FOUNDATION WALL AT OPENINGS  
N.T.S.



10 STEEL LINTEL FOR MASONRY VENEER  
N.T.S.

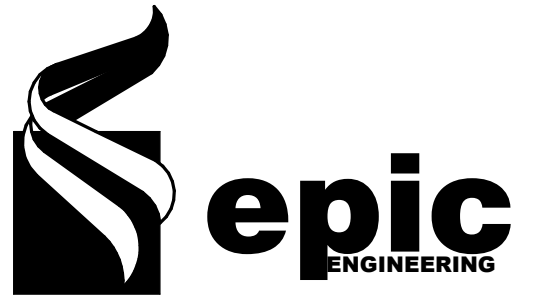


11 WOOD WALL ON TURNDOWN FOOTING AT EXISTING WALL  
N.T.S.

## CONSTRUCTION NOTES

### DATE

DECEMBER 7, 2023



### REVISIONS

MARK DATE DESCRIPTION

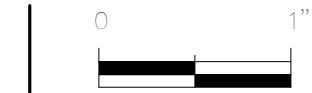
DRAWN: EPIC  
DESIGNER: EPIC  
REVIEWED: EPIC

PROJECT #  
23SM1182.04



### SCALES

As indicated



### PROJECT NAME:

MAGNA HEAD  
START-ADDITION

### PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

### SHEET TITLE:

STRUCTURAL DETAILS

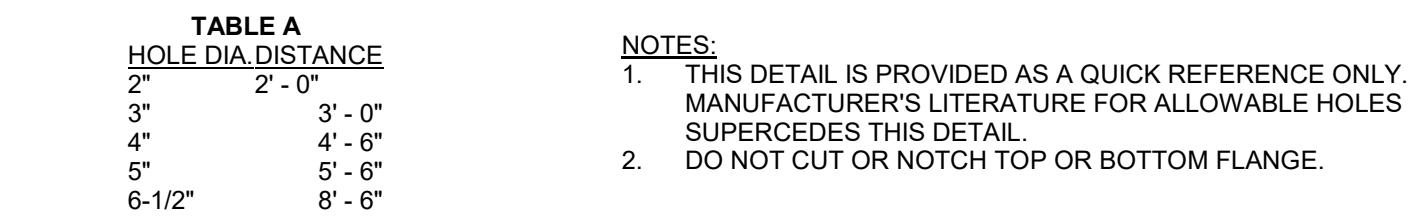
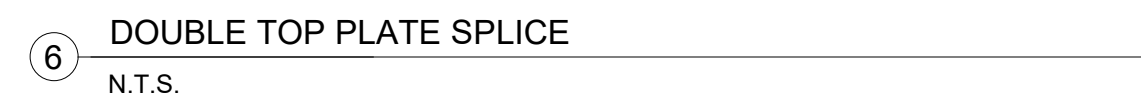
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90%

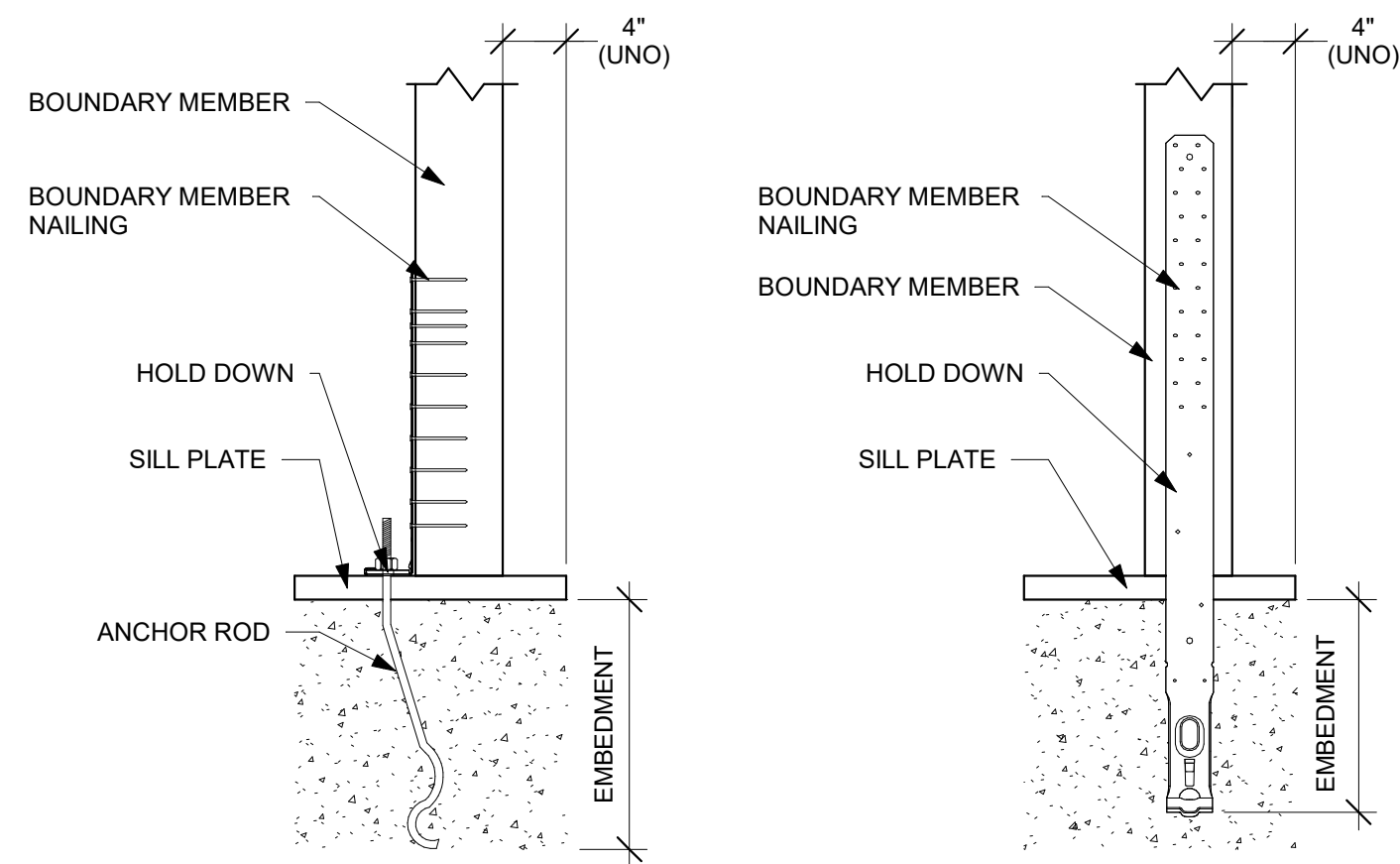
### SHEET

S5.1

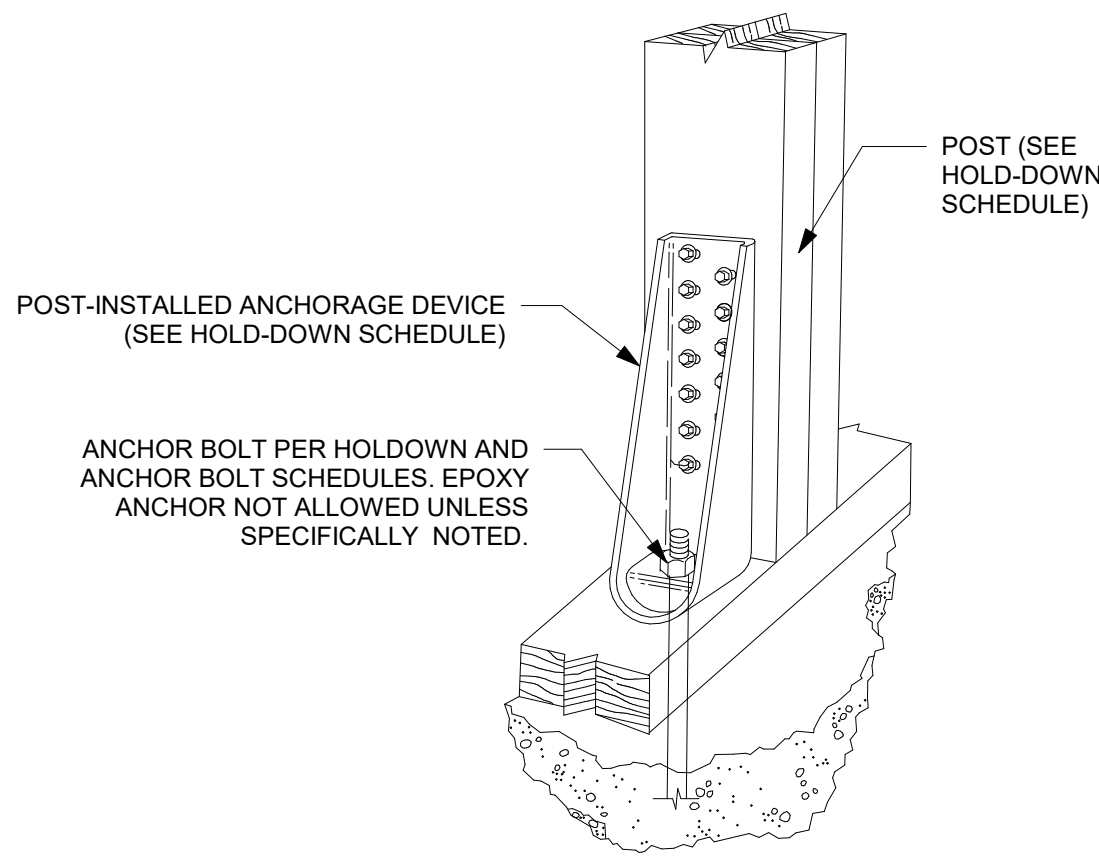




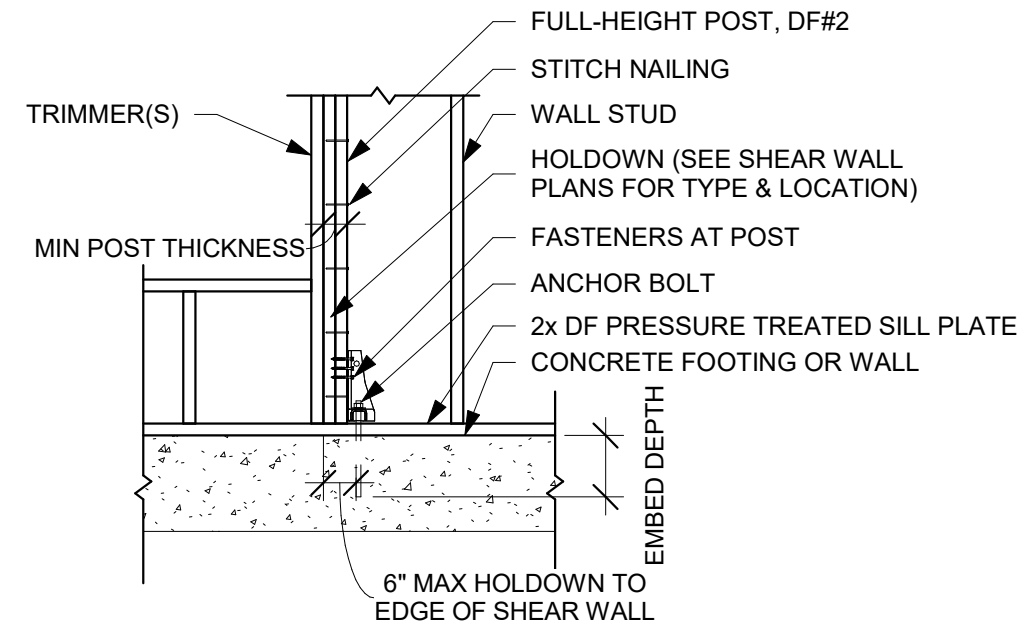
## S5.2



① HOLD DOWNS  
N.T.S.

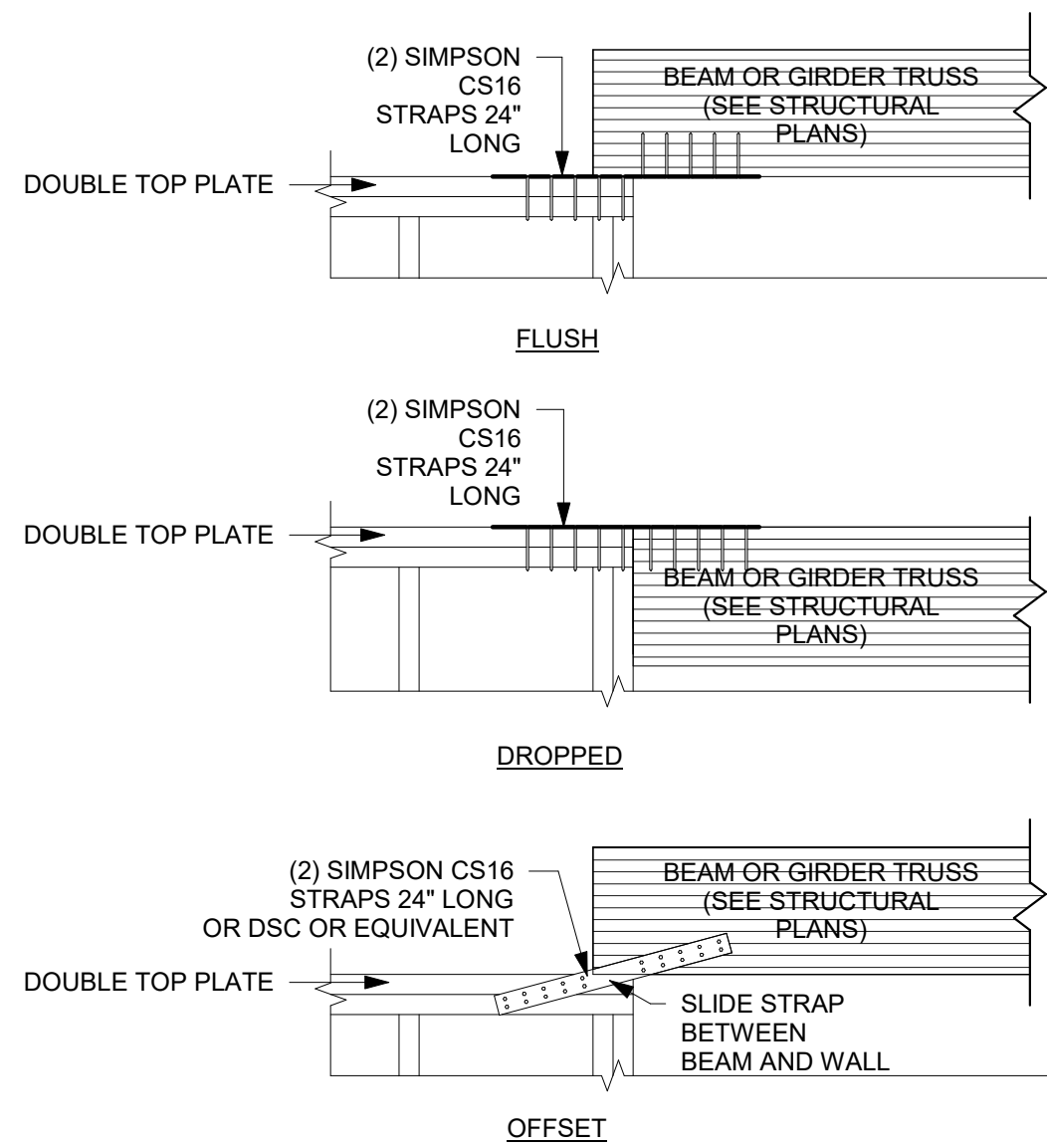


② HOLD DOWN PREDEFLECTED  
N.T.S.



- NOTES:
1. WALL SHEATHING NOT SHOWN FOR CLARITY.
  2. HOLDOWNS SHALL BE INSTALLED WITHIN 6" OF EDGE OF SHEAR WALL OR EDGE OF OPENING.
  3. PROVIDE SHEAR WALL EDGE NAILING TO FULL-HEIGHT POST.
  4. HOLDOWNS AND STRAPS ON MULTI-STORY BUILDINGS SHALL BE ALIGNED TO PROVIDE A CONTINUOUS VERTICAL LOAD PATH TO THE FOUNDATION.
  5. FASTENERS IN PRESERVATIVE-TREATED AND FIRE-RETARDANT-TREATED WOOD SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL, SILICON BRONZE OR COPPER

③ HOLD DOWN AT FOUNDATION, PREDEFLECTED  
N.T.S.

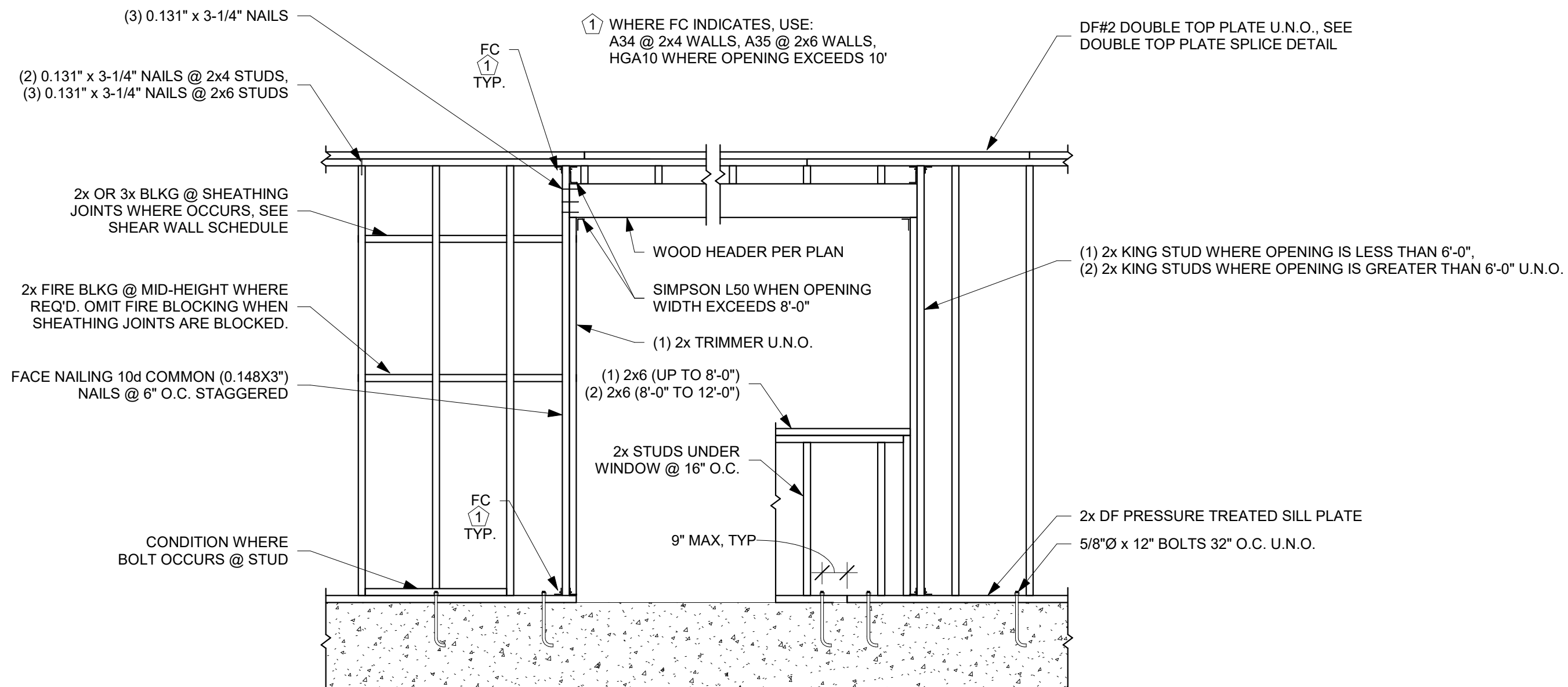


④ CHORD/COLLECTOR STRAP  
N.T.S.

PENNY WEIGHT DESIGNATION	EQUIVALENT SPACING (INCHES)		
	COMMON NAIL	BOX NAIL	16 GAGE STAPLE
6d	4	4	3 1/2
	6	6	5
	8	8	6 1/2
	10	10	8 1/2
	12	12	10
8d	3	3	2
	4	4	2 1/2
	6	6	4
	8	8	5 1/2
	10	10	6 1/2
10d	4	4	2
	6	6	3 1/2
	8	8	4 1/2
	10	10	5 1/2
	12	12	6 1/2

- NOTES:
1. SPACING VALID FOR LATERAL LOAD ONLY, 7/16 STRUCTURAL II PLYWOOD OR OSB SHEATHING.
  2. STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF 7/16 INCH.
  3. INTERNATIONAL BUILDING CODE (IBC) TABLE 2306.4.1.
  4. ICC EVALUATION SERVICE REPORT NO. 1539, TABLE 14.
  5. LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY RESEARCH REPORT NO. 23633, TABLE 1.
  6. FASTENERS IN PRESERVATIVE-TREATED AND FIRE-RETARDANT-TREATED WOOD SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL, SILICON BRONZE OR COPPER (2015 IBC 2304.9.5).

⑤ EQUIVALENT SHEATHING FASTENERS  
N.T.S.



⑥ WALL FRAMING  
N.T.S.

## CONSTRUCTION NOTES

## DATE

DECEMBER 7, 2023



## REVISIONS

MARK DATE DESCRIPTION

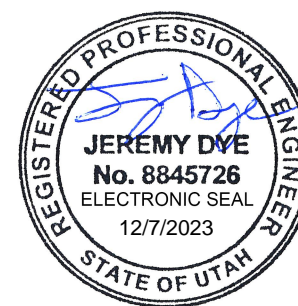
DRAWN: CC

DESIGNER: LM

REVIEWED: JD

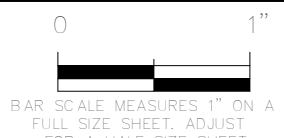
PROJECT #

23SM1182.04



## SCALES

As indicated



## PROJECT NAME:

MAGNA HEAD  
START-ADDITION

## PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

## SHEET TITLE:

STRUCTURAL DETAILS

## PLAN SET:

90%

## SHEET

S5.3



SECTION 01 00 00 - GENERAL REQUIREMENTS

- DRAWINGS ARE DIAGRAMMATIC AND SHOULD NOT BE SCALED FOR EXACT DIMENSIONS; EXACT DIMENSIONS AND LOCATIONS SHALL BE DETERMINED BY MEASUREMENTS IN THE FIELD AND SHALL BE SUBJECT TO APPROVAL BY THE ARCHITECT/ENGINEER. THE CONTRACTOR SHALL VERIFY DIMENSION PRIOR TO ORDERING EQUIPMENT AND MATERIAL.
- BEFORE SUBMITTING A BID, IT WILL BE NECESSARY FOR EACH CONTRACTOR TO VISIT THE SITE AND ASCERTAIN FOR HIMSELF/HERSELF THE CONDITIONS TO BE MET IN INSTALLING THE WORK AND MAKE PROVISIONS FOR THE CONDITIONS IN THE FINAL PRICE. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL NOT BE CONSIDERED JUSTIFICATION FOR THE OMISSION OR FAILURE OF INSTALLATION OF ANY WORK. BY SUBMITTING A BID, THE CONTRACTOR IS STATING THAT THE BID COVERS ALL WORK NECESSARY TO PROPERLY INSTALL THE SYSTEM INDICATED.
- IN CASE OF DISAGREEMENT BETWEEN THE DRAWINGS AND SPECIFICATIONS, OR WITHIN THE DRAWINGS OR SPECIFICATIONS, THE BID SHALL INCLUDE THE GREATER AMOUNT OF WORK AND THE MATTER SHALL BE REFERRED TO THE ARCHITECT/ENGINEER.
- THE CONTRACTOR SHALL SECURE AND PAY ALL FEES ASSOCIATED WITH ANY AND ALL NECESSARY PERMITS, LICENSES, AND INSPECTIONS REQUIRED FOR THE WORK.
- ALL WORK SHALL COMPLY WITH ALL PERTINENT NATIONAL, STATE AND LOCAL ORDINANCES AND CODES, AND ALL AMERICAN DISABILITIES ACT (ADA) REQUIREMENTS, AND ANY AMENDMENTS. NOTHING WITHIN THE DRAWINGS OR SPECIFICATIONS SHALL BE CONSTRUED AS WAIVING ANY OF THE RULES, REGULATIONS, OR REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION. IN THE EVENT OF A CONFLICT, THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION SHALL GOVERN. THE CONFLICT SHALL BE REPORTED TO THE ARCHITECT/ENGINEER IMMEDIATELY, AND NECESSARY MODIFICATION SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER OR ARCHITECT/ENGINEER.
- IF THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS ARE IN EXCESS OF THOSE REQUIRED BY CODE, THE PROVISIONS OF THE CONSTRUCTION DOCUMENTS SHALL TAKE PRECEDENCE.
- ALL EQUIPMENT AND MATERIALS FOR WHICH APPROVAL STANDARDS HAVE BEEN ESTABLISHED BY UNDERWRITERS' LABORATORIES, INC (UL), FACTORY MUTUAL (FM), AND AMERICAN STANDARD CODES SHALL BE SO APPROVED AND SHALL BEAR APPROVAL LABELS.
- ALL WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE SAFETY REGULATIONS.
- SHOULD ANY DOUBT ARISE AS TO THE TRUE MEANING OF THE DRAWINGS OR SPECIFICATIONS, REFERENCE SHALL BE MADE TO THE ARCHITECT/ENGINEER. WHEN A DECISION SHALL BE FINAL, THE ARCHITECT/ENGINEER WILL RESPOND WITHIN 10 BUSINESS DAYS AFTER RECEIPT OF REQUEST FOR INFORMATION. THE CONTRACTOR SHALL CONFORM TO THESE RESPONSES AS PART OF THE CONTRACT WITH NO ADDITIONAL COST TO THE OWNER OR ARCHITECT/ENGINEER. NO ALLEGED STATEMENT BY THE ARCHITECT/ENGINEER IS ACCEPTABLE EXCUSE FOR INFERIOR WORK.
- THE LISTING OF PRODUCT MANUFACTURERS, MATERIALS AND METHODS IS INTENDED TO ESTABLISH A STANDARD OF QUALITY. PRODUCTS BY OTHER MANUFACTURERS MAY BE ACCEPTED PROVIDED THEY HAVE THE EQUIVALENT CAPACITY, CONSTRUCTION, AND PERFORMANCE. THE ARCHITECT/ENGINEER SHALL BE THE SOLE JUDGE OF QUALITY AND EQUIVALENCE OF EQUIPMENT, MATERIALS, AND METHODS. HOWEVER, UNDER NO CIRCUMSTANCES SHALL ANY SUBSTITUTION BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER PRIOR TO BIDDING. EQUIPMENT HAS BEEN CHOSEN TO FIT WITHIN THE AVAILABLE SPACE WHERE SUBSTITUTED OR ALTERNATIVE EQUIPMENT IS PROPOSED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE EQUIPMENT WILL FIT WITHIN THE SPACE AVAILABLE, INCLUDING ALL REQUIRED CODE AND MAINTENANCE CLEARANCES, AND TO COORDINATE ALL EQUIPMENT REQUIREMENTS WITH OTHER CONTRACTORS.
- OBTAIN ALL EQUIPMENT OR MATERIAL OF EACH TYPE THROUGH ONE SOURCE, LOCAL IF POSSIBLE, FROM A SINGLE MANUFACTURER. SUBSTITUTIONS: PRODUCTS OF EQUAL PERFORMANCE CHARACTERISTICS MAY BE CONSIDERED. CONTRACTORS WISHING TO SUBSTITUTE A PRODUCT OR MATERIAL SHALL SUBMIT EACH REQUEST TO THE ARCHITECT/ENGINEER IN WRITING AT LEAST 7 DAYS PRIOR TO BIDS BEING DUE. REQUESTS SHALL NOT BE CONSIDERED AFTER THAT TIME. THE ARCHITECT/ENGINEER SHALL REVIEW THE REQUEST AND IF ACCEPTABLE WILL ISSUE A LETTER ALLOWING THE SUBSTITUTION. ANY ANTICIPATED USE OF A NON-SPECIFIED PRODUCT WITHOUT WRITTEN APPROVAL IS STRICTLY THE RISK OF THE CONTRACTOR. IF A REQUEST IS REJECTED, THE CONTRACTOR SHALL FURNISH THE SPECIFIED PRODUCT OR MATERIAL. EACH CONTRACTOR IS RESPONSIBLE FOR COSTS INCURRED BY OTHER TRADES AS A RESULT OF ANY SUBSTITUTION MADE BY THE CONTRACTOR.
- SUBMITTALS: SUBMIT THE FOLLOWING IN ACCORDANCE WITH DIVISION 1 SPECIFICATIONS AND THE REQUIREMENTS OF THIS SECTION FOR EACH PIECE OF EQUIPMENT AND EACH TYPE OF COMPONENT AND MATERIAL.
  - SUBMIT PRODUCT DATA FOR EACH TYPE OF PRODUCT SPECIFIED.
  - SUBMIT SHOP/COORDINATION DRAWINGS AT A MINIMUM SCALE OF 1/4"= 1'-0" DETAILING ALL MAJOR EQUIPMENT, COMPONENT, AND SYSTEMS IN RELATION TO WORK OF OTHER TRADES, INDICATING INSTALLATION, CODE, AND WORKING CLEARANCES AND ACCESS FOR ALL EQUIPMENT AND COMPONENTS.
  - SUBMIT SAMPLES OF COLOR, LETTERING, AND GRAPHICS FOR EACH IDENTIFICATION PRODUCT.
  - CONTRACTOR SHALL SEPARATE SUBMITTALS TO CONTAIN NO MORE THAN ONE SPECIFICATION SECTION.
  - WITHIN 30 DAYS AFTER AWARD OF CONTRACT, THE CONTRACTOR SHALL SUBMIT A MINIMUM OF FOUR (4) COPIES OF EACH SUBMITTAL WITH COVERSHEET TO THE ARCHITECT/ENGINEER. IF ACCEPTABLE TO THE ARCHITECT/OWNER, AN ELECTRONIC VERSION CONTAINING THE COVERSHEET AND ALL SUBMITTAL DATA WITHIN ONE FILE MAY BE SUBMITTED IN LIEU OF THE 4 COPIES.
- EACH SUBMITTAL SHALL INCLUDE THE FOLLOWING INFORMATION. SUBMITTALS THAT DO NOT COMPLY WITH THE FOLLOWING REQUIREMENTS WILL BE MARKED "REJECTED" AND RETURNED.
  - COVERSHEET: INDICATING THE NAMES AND ADDRESS OF THE PROJECT, ARCHITECT, ENGINEER, AND CONTRACTOR, AND THE SUBMITTAL NAME AND NUMBER. NUMBER SHALL BE BASED ON THE SPECIFICATION SECTION, SUBMITTAL SEQUENCE NUMBER, AND A REVISION SEQUENCE NUMBER IS APPLICABLE. EX: 262726-02-R1 IS THE 1ST VERSION TO THE 2ND SUBMITTAL FOR SECTION 26 27 26.
  - LIST OF VARIATIONS: THIS PAGE SHALL LIST ALL VARIATIONS INCLUDING FURNISHED/UNFURNISHED OPTIONS AND FEATURES BETWEEN THE SUBMITTED ITEM AND THE SCHEDULED/SPECIFIED ITEM. IF THERE ARE NO VARIATIONS, THE PAGE SHALL STATE "NO VARIATIONS."
  - PRODUCT INFORMATION: CLEARLY INDICATE MANUFACTURER'S NAME, DESIGNATION, SIZE, PERFORMANCE AND CAPACITY DATA, DIMENSIONAL DATA, SUFFICIENT PICTORIAL AND DIAGRAMMATIC DATA TO SHOW CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. APPLICABLE INFORMATION SHALL BE CLEARLY INDICATED AND NON-APPLICABLE INFORMATION SHALL BE STRUCK-OUT.
  - WARRANTY INFORMATION: MANUFACTURER'S WARRANTY CERTIFICATE THAT MEETS OR EXCEED THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS.
  - CERTIFICATION BY THE GENERAL AND SUB-CONTRACTOR OR THAT MATERIAL SUBMITTED IS IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS, SIGNED AND DATED.
- SUBMITTAL REVIEW TIME IN THE ARCHITECT'S/ENGINEER'S OFFICE WILL BE A MINIMUM OF 10 WORKING DAYS PER REVIEW. THE CONTRACTOR SHALL CONSIDER THIS REVIEW TIME WHEN SCHEDULING WORK.

- EACH SUBMITTAL WILL BE MARKED WITH ONE OF THE FOLLOWING:
  - NO EXCEPTIONS TAKEN - SUBMITTAL WAS REVIEWED AND NO DEVIATIONS WERE FOUND.
  - EXCEPTIONS NOTED, SUBMIT RESPONSE - SUBMITTAL WAS REVIEWED AND FOUND TO HAVE MINOR DEVIATIONS OR MISSING INFORMATION. A RE-SUBMITTAL IS NOT REQUIRED; HOWEVER, A WRITTEN RESPONSE TO ALL REVIEW COMMENTS SHALL BE SUBMITTED.
  - EXCEPTIONS NOTED, RESUBMIT - SUBMITTAL WAS REVIEWED AND MAJOR DEVIATIONS WERE NOTED. THE SUBMITTAL SHALL BE REVISED TO ADDRESS THE NOTED DEVIATIONS AND RESUBMITTED.
  - REJECTED - SUBMITTAL WAS REVIEWED AND IS NOT IN CONFORMANCE OR IS NOT IN THE CORRECT FORMAT. A REVISED SUBMITTAL THAT IS IN CONFORMANCE SHALL BE RESUBMITTED.
- INADEQUATE OR INCOMPLETE SUBMITTALS WILL NOT BE REVIEWED AND WILL BE RETURNED MARKED "REJECTED."
- THE ARCHITECT'S/ENGINEER'S REVIEW OF A SUBMITTAL SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF ERRORS, OMISSIONS, OVERSIGHTS, OR DEVIATIONS THAT MAY BE CONTAINED WITHIN THE SUBMITTAL. IF THE CONTRACTOR PROCEEDS BASED ON UNDETECTED ERRORS, OMISSIONS, OVERSIGHTS, OR DEVIATIONS, IT IS AT HIS/HER SOLE RESPONSIBILITY. REGARDLESS OF ANY INFORMATION CONTAINED IN THE SUBMITTAL OR THE ARCHITECT'S/ENGINEER'S REVIEW THEREOF, THE CONTRACT DOCUMENTS SHALL GOVERN THE WORK AND NEITHER WAIVED NOR SUSPENDED BY THE SUBMITTAL REVIEW.
- EQUIPMENT AND MATERIAL PURCHASED WITHOUT A "NO EXCEPTIONS TAKEN" SUBMITTAL REVIEW IS AT THE RISK OF THE CONTRACTOR. THE COST OF REMOVAL AND REPLACEMENT OF SUCH ITEMS WHICH IS JUDGED UNSATISFACTORY BY THE ARCHITECT/ENGINEER FOR ANY REASON SHALL BE AT THE CONTRACTOR'S EXPENSE.
- OPERATIONS AND MAINTENANCE REQUIREMENTS (PER ENERGY CODE): CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE RECORD DRAWINGS OF THE ACTUAL INSTALLATION BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER. RECORD DRAWING SHALL INCLUDE AS A MINIMUM THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT. GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES.
- MANUALS. CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT AN OPERATING MANUAL AND A MAINTENANCE MANUAL BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE. THESE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY-ACCEPTED STANDARDS AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
  - SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
  - OPERATIONS MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. THE CONTRACTOR SHALL SUBMIT AS PART OF THE PROJECT, REQUIRED ROUTING MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED, NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY.
  - HVAC CONTROLS SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS. DESIRED OR FIELD-DETERMINED SET-POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS.
  - A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SUGGESTED SET-POINTS.
- RECORD DRAWINGS: THE CONTRACTOR SHALL MAINTAIN A SET OF CLEARLY MARKED RECORD DRAWING PRINTS AT THE SITE, WHICH INDICATE ALL ALTERATIONS AND CHANGES. WITHIN 30 DAYS AFTER COMPLETION OF WORK, THE CONTRACTOR SHALL PROVIDE A REPRODUCIBLE SET IN OWNER'S REQUESTED FORMAT (PLOTS, CAD, PDF, ETC.) WITH THE ARCHITECT'S/ENGINEER'S SEAL STRUCK-OUT AND EACH DRAWING MARKED WITH THE GENERAL AND ASSOCIATED SUB-CONTRACTOR'S NAMES AND DATE.
- ALL EQUIPMENT AND MATERIAL SHALL BE INSTALLED, CONNECTED, AND ADJUSTED PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES PRIOR TO SYSTEM INSTALLATION. THE CONTRACTOR SHALL REFER TO OTHER TRADE PLANS FOR OTHER WORK THAT MAY IMPACT HIS/HER WORK.
- IF THE SPACE REQUIREMENTS CONFLICT, THE FOLLOWING ORDER OF PRECEDENCE SHALL BE USED.
  - BUILDING LINES AND STRUCTURAL MEMBERS.
  - SOIL, DRAIN, AND CONDENSATE PIPING.
  - GREASE - RATED DUCTWORK.
  - REFRIGERANT AND VENT PIPING.
  - HVAC DUCTWORK.
  - HVAC AND DOMESTIC WATER PIPING.
  - FIRE PROTECTION (SPRINKLER & STANDPIPE) PIPING.
  - ELECTRICAL CONDUIT.
- THE CONTRACTOR SHALL TAKE CARE DURING WORK TO AVOID DAMAGE TO WORK BY OTHER TRADES.
- THE CONTRACTOR SHALL KEEP THE PREMISES FREE OF DEBRIS AND RUBBISH CAUSED BY HIS/HER WORK ON A DAILY BASIS. THIS DEBRIS AND RUBBISH SHALL BE REMOVED FROM THE BUILDING AND SITE.
- THE CONTRACTOR SHALL GUARANTEE THE ENTIRE INSTALLATION TO BE IN PROPER WORKING ORDER FOR A PERIOD OF ONE (1) YEAR, UNLESS NOTED OTHERWISE, AFTER FINAL ACCEPTANCE AND SHALL FURNISH FREE OF CHARGE ALL MATERIALS AND LABOR NECESSARY TO COMPLY WITH THIS GUARANTEE.
- DEMOLITION: WHERE ACCESSIBLE WORK IS TO BE DEMOLISHED, IT SHALL BE REMOVED IN ITS ENTIRETY TO A POINT OF PERMANENT CONCEALMENT. WHERE THE WORK IS NOT ACCESSIBLE, REMOVE SYSTEM TO 2" BELOW THE SURFACE, CAP, AND PATCH SURFACE TO MATCH EXISTING. WHERE WORK TO REMAIN IS DAMAGED, REMOVE THE DAMAGED PORTIONS AND INSTALL NEW OF EQUAL CAPACITY, QUALITY, AND FUNCTION.
- WORK WITHIN EXISTING BUILDING: CONSTRUCTION SHALL BE ARRANGED TO MINIMIZE THE DISRUPTION AND INTERFERENCE TO THE OCCUPANTS. THE CONTRACTOR SHALL ADVISE THE OCCUPANTS WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT/OWNER/ TENANT. A MINIMUM OF 5 WORKING DAYS PRIOR TO THE INTERRUPTION. WHERE DISRUPTION OF A SERVICE BECOMES NECESSARY, PROVISIONS SHALL BE MADE TO PROVIDE TEMPORARY SERVICE THROUGHOUT THE INTERRUPTION OF THE PRIMARY SERVICE.

SECTION 26 00 00 - GENERAL REQUIREMENTS FOR ELECTRICAL SYSTEMS

- ALL ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES SHALL BE LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- PRODUCT SELECTION FOR RESTRICTED SPACE: DRAWINGS INDICATE DIMENSIONS OF SELECTED EQUIPMENT AND ACCESSORIES INCLUDING CLEARANCES BETWEEN EQUIPMENT, ADJACENT SURFACES AND OTHER ITEMS. THE CONTRACTOR IS RESPONSIBLE TO VERIFY FIELD DIMENSIONS AND NOTIFY THE ARCHITECT/ENGINEER IF REQUIRED CLEARANCES CANNOT BE MAINTAINED.
- DO NOT DELIVER OR INSTALL EQUIPMENT AND DEVICES UNTIL SPACES ARE ENCLOSED AND WEATHERTIGHT, WORK IN SPACES IS COMPLETE AND DRY, AND WORK ABOVE EQUIPMENT IS COMPLETE.
- INTERRUPTION OF EXISTING ELECTRIC SERVICE: DO NOT INTERRUPT ELECTRIC SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AFTER CONSULTATION AND ARRANGING TO PROVIDE TEMPORARY ELECTRIC SERVICE ACCORDING TO REQUIREMENTS INDICATED.
  - NOTIFY ARCHITECT AND OWNER NO FEWER THAN FIVE BUSINESS DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF ELECTRIC SERVICE.
  - DO NOT PROCEED WITH INTERRUPTION OF ELECTRIC SERVICE WITHOUT ARCHITECT'S OR OWNER'S WRITTEN PERMISSION.
  - COMPLY WITH NFPA 70E.
- STORE EQUIPMENT, COMPONENTS, AND MATERIALS IN A CLEAN, DRY LOCATION WHICH PROVIDES PROTECTION AGAINST THE WEATHER. ITEMS WHICH BECOME DAMAGED DUE TO WEATHER OR EXPOSURE SHALL BE REPLACED PRIOR TO INSTALLATION.
- PROVIDE ALL TEMPORARY FACILITIES REQUIRED TO SUPPORT CONSTRUCTION POWER AND LIGHTING, AND MAINTAIN FACILITIES IN A MANNER THAT WILL PROTECT THE PUBLIC AND WORKMEN THAT COMPLIES WITH ALL APPLICABLE LAWS AND REGULATIONS. IN GENERAL, PROVIDE ONE (1) 150W INCANDESCENT LIGHT FIXTURE AND ONE (1) DUPLEX RECEPTACLE FOR EVERY 400-SQUARE FEET AREA (MINIMUM OF ONE EACH PER ROOM.) UPON COMPLETION OF THE WORK, REMOVE ALL TEMPORARY FACILITIES FROM THE SITE.
- TEST ALL WIRING AND CONNECTIONS FOR PROPER CONFIGURATION PRIOR TO ENERGIZING ANY CIRCUIT.
- VACUUM DIRT AND DEBRIS FROM WITHIN ENCLOSURES; DO NOT USE COMPRESSED AIR TO ASSIST IN CLEANING.
- AT COMPLETION OF INSTALLATION, INSPECT EXPOSED FINISHES. REMOVE BURRS, DRIFT AND CONSTRUCTION DEBRIS AND REPAIR DAMAGED FINISH, INCLUDING CHIPS, SCRATCHES, AND ABRASIONS BACK TO THE ORIGINAL FINISH.

SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

- CONDUCTORS AND CABLES: CONDUCTOR SHALL BE 30 CONDUCTORS OR MORE, ANNEALED WITH 98% CONDUCTIVITY OR ALUMINUM WITH THHN/THWN INSULATION.
- MULTI-CONDUCTOR CABLE: METAL-CLAD CABLE, TYPE MC ONLY. ALL MULTI-CONDUCTOR CABLES SHALL BE PROVIDED WITH AN INTERNAL EQUIPMENT GROUNDING CONDUCTOR. THE CABLE SHEATHING SHALL NOT BE USED FOR AS AN EQUIPMENT GROUND.
- CONNECTORS AND SPLICES: UL-LISTED, FACTORY-FABRICATED CONNECTORS AND SPLICES OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS FOR APPLICATION AND SERVICE INDICATED.
- CONDUCTOR MATERIAL APPLICATIONS:
  - FEEDERS: COPPER FOR FEEDERS SMALLER THAN #4 AWG, COPPER OR ALUMINUM FOR FEEDERS #4 AWG AND LARGER. SOLID FOR #10 AWG AND SMALLER. STRANDED FOR #8 AWG AND LARGER. CONDUCTOR SIZES INDICATED ON DRAWINGS ARE COPPER UNLESS NOTED OTHERWISE.
  - BRANCH CIRCUITS: COPPER, SOLID FOR #10 AWG AND SMALLER; STRANDED FOR # 8 AWG AND LARGER.
- CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS:
  - FEEDERS (EXPOSED AND CONCEALED) & BRANCH CIRCUIT (EXPOSED): TYPE THHN/THWN, SINGLE CONDUCTORS IN RACEWAY.
  - BRANCH CIRCUITS - INTERIOR, CONCEALED IN CEILINGS, WALLS, AND PARTITIONS: TYPE THHN/THWN, SINGLE CONDUCTORS IN RACEWAY OR METAL-CLAD CABLE, TYPE MC.
    - TYPE MC CABLE MAY BE INSTALLED ONLY IN THE FOLLOWING INSTALLATIONS.
      - SINGLE-PHASE CIRCUITS ONLY.
      - CONNECTION TO RECESSED LIGHTING FIXTURES WITH A MAXIMUM LENGTH OF 6'
      - CONNECTION TO NEMA 5-15R AND 5-20R RECEPTACLES WITH A MAXIMUM LENGTH OF THE DISTANCE BETWEEN THE RECEPTACLE AND THE FINISH CEILING PLUS 8"
    - CLASS 2 CONTROL CIRCUITS: TYPE THHN/THWN, IN RACEWAY.
    - CLASS 2 CONTROL CIRCUITS: TYPE THHN/THWN, IN RACEWAY OR POWER-LIMITED CABLE, CONCEALED IN BUILDING FINISHES OR POWER-LIMITED TRAY CABLE, IN CABLE TRAY.
  - CONCEAL CABLES IN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.
  - CONDUCTORS MAY BE RUN IN PARALLEL, ON SIZE #10 THROUGH 750 KCMIL INCLUSIVE, PROVIDED ALL PARALLEL CONDUCTORS ARE THE SAME SIZE, LENGTH, AND TYPE OF INSULATION, AND THEY SHALL BE SO ARRANGED AND TERMINATED AS TO ENSURE EQUAL DIVISION OF THE TOTAL CURRENT BETWEEN ALL PARALLEL CONDUCTORS INVOLVED.
  - CONDUCTOR SIZES INDICATED IN THE CONSTRUCTION DRAWINGS ARE MINIMUM SIZES. CONTRACTOR SHALL INCREASE CONDUCTOR SIZES ABOVE THOSE INDICATED TO LIMIT THE DROP IN VOLTAGE POTENTIAL FROM THE PANELBOARD TO THE FARTHEST POINT ON THE CIRCUIT FROM EXCEEDING 3% AT MAXIMUM LOAD FOR ALL LIGHTING AND POWER BRANCH CIRCUITS.
  - INSTALL SEPARATE GROUNDING (NEUTRAL) CONDUCTOR FOR ALL BRANCH CIRCUITS AS REQUIRED BY THE NEC.
  - KEEP CONNECTIONS AND SPLICES TO A MINIMUM. SPLICES ARE NOT PERMITTED IN FEEDER CONDUCTORS UNLESS SPECIFICALLY INDICATED ON PLAN.
  - ALL CONNECTIONS AND SPLICES SHALL OCCUR WITHIN OUTLET BOXES, JUNCTION BOXES, SPLICE BOXES, OR OTHER DEVICES APPROVED FOR THIS PURPOSE.
  - MAKE SPLICES AND TAPS THAT ARE COMPATIBLE WITH CONDUCTOR MATERIAL AND THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH, CURRENT-CARRYING, AND INSULATION RATINGS THAN UNSPLICED CONDUCTORS. USE OXIDE INHIBITOR IN EACH SPLICE AND TAP CONDUCTOR FOR ALUMINUM CONDUCTORS.

SECTION 26 05 26 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

- INSULATED CONDUCTORS: COPPER OR TINNED-COPPER WIRE OR CABLE INSULATED FOR 600V UNLESS OTHERWISE REQUIRED BY APPLICABLE CODE. INSTALL SOLID CONDUCTOR FOR #8 AWG AND SMALLER, AND STRANDED CONDUCTORS FOR #6 AWG AND LARGER, UNLESS OTHERWISE INDICATED.
- BARE COPPER BONDING CABLE: 28 KCMIL, 14 STRANDS OF #17 AWG CONDUCTORS, 1/4" IN DIAMETER.
- BARE COPPER BONDING CONDUCTOR: #4 OR #6 AWG, STRANDED CONDUCTOR.
- BOLTED CONNECTORS FOR CONDUCTORS AND PIPES: COPPER OR COPPER ALLOY, BOLTED PRESSURE-TYPE, WITH AT LEAST TWO BOLTS, SIZE FOR CONDUCTOR AND MATERIAL PIPE THICKNESS.
- INSTALL INSULATED EQUIPMENT GROUNDING CONDUCTORS WITH OIL FEEDERS AND BRANCH CIRCUITS.
- HVAC AND PLUMBING EQUIPMENT: INSTALL A SEPARATE INSULATED EQUIPMENT GROUNDING CONDUCTOR TO EACH PIECE OF EQUIPMENT OPERATING AT 120 V AND MORE, INCLUDING AIR CLEANERS, HEATERS, DAMPERS, HUMIDIFIERS, WATER HEATERS, PUMPS, ETC. BOND CONDUCTOR TO EACH UNIT AND TO DUCT AND/OR CONNECTED METALLIC PIPING. INSTALL BONDING JUMPER TO BOND ACROSS FLEXIBLE CONNECTIONS TO ACHIEVE CONTINUITY.
- ROUTE GROUNDING CONDUCTORS ALONG SHORTEST AND STRAIGHTEST PATHS POSSIBLE, UNLESS OTHERWISE INDICATED OR REQUIRED BY CODE. AVOID OBSTRUCTING ACCESS OR PLACING CONDUCTORS WHERE THEY MAY BE SUBJECTED TO STRAIN, IMPACT, OR DAMAGE.
- BONDING STRAPS AND JUMPERS: COPPER OR TINNED-COPPER TAPE, BRAIDED CONDUCTORS, TERMINATED WITH COPPER FERRULES: 1-5/8" WIDE AND 1/16" THICK, INSTALLED IN LOCATIONS ACCESSIBLE FOR INSPECTION AND MAINTENANCE, EXCEPT WHERE ROUTED THROUGH SHORT LENGTHS OF CONDUIT.
  - BONDING TO STRUCTURE: BOND STRAPS DIRECTLY TO BASIC STRUCTURE, TAKING CARE NOT TO PENETRATE ANY ADJACENT PARTS.
  - BONDING TO EQUIPMENT MOUNTED ON VIBRATION ISOLATION HANGERS AND SUPPORTS: INSTALL SO VIBRATION IS NOT TRANSMITTED TO RIGIDLY MOUNTED EQUIPMENT.

SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

- DESIGN SUPPORTS FOR MULTIPLE RACEWAYS AND EQUIPMENT CAPABLE OF SUPPORTING COMBINED WEIGHT OF SUPPORTED SYSTEMS, ITS CONTENTS, AND COMPONENTS; ADEQUATE TO RESIST MAXIMUM LOADS IMPOSED FOR THIS PROJECT, WITH A MINIMUM STRUCTURAL SAFETY FACTOR OF FIVE TIMES THE APPLIED FORCE. STEEL SLOTTED SUPPORT SYSTEMS: HOT-DIP GALVANIZED, FACTORY-FABRICATED COMPONENTS FOR FIELD ASSEMBLY WITH CHANNEL DIMENSIONS SELECTED FOR APPLICABLE LOAD CRITERIA.
- CONDUIT AND CABLE SUPPORT DEVICES: STEEL AND MALLEABLE-IRON HANGERS, CLAMPS, AND ASSOCIATED FITTINGS, DESIGNED FOR TYPES AND SIZES OF RACEWAY OR CABLE TO BE SUPPORTED.
- SUPPORT FOR CONDUCTORS IN VERTICAL CONDUIT: FACTORY-FABRICATED ASSEMBLY CONSISTING OF MALLEABLE-IRON, THREADED BODY AND INSULATING WEDGING PLUG OR PLUGS FOR NON-ARMORED ELECTRICAL CONDUCTORS OR CABLES IN RISER CONDUITS. PLUGS SHALL HAVE NUMBER, SIZE, AND SHAPE OF CONDUCTOR GRIPPING PIECES AS REQUIRED TO SUI INDIVIDUAL CONDUCTORS OR CABLES SUPPORTED. POWDER-ACTUATED FASTENERS: THREADED-STEEL STUD, FOR USE IN HARDENED PORTLAND CEMENT CONCRETE, STEEL, OR WOOD, WITH TENSION, SHEAR, AND PULL-OUT CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS WHERE USED.
- MECHANICAL-EXPANSION ANCHORS: INSERT-WEDGE-TYPE, ZINC-COATED STEEL, FOR USE IN HARDENED PORTLAND CEMENT CONCRETE WITH TENSION, SHEAR, AND PULL-OUT CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS IN WHICH USED.
- MAXIMUM SUPPORT SPACING AND MINIMUM HANGER ROD SIZE FOR RACEWAY: SPACE SUPPORTS FOR EMT, IMC, AND RMC AS NFPA 70. MINIMUM ROD SIZE SHALL BE 1/4" IN DIAMETER.
- MULTIPLE RACEWAYS OR CABLES: INSTALL TRAPEZE-TYPE SUPPORTS FABRICATED WITH STEEL SLOTTED SUPPORT SYSTEM, SIZED SO CAPACITY CANNOT BE EXCEEDED BY AT LEAST 25% IN FUTURE WITHOUT EXCEEDING SPECIFIED DESIGN LOAD LIMITS. SECURE RACEWAYS AND CABLES TO THESE SUPPORTS WITH TWO-BOLT CONDUIT CLAMPS OR SINGLE-BOLT CONDUIT CLAMPS USING SPRING FRICTION ACTION FOR RETENTION IN SUPPORT CHANNEL.
- SPRING-STEEL CLAMPS DESIGNED FOR SUPPORTING SINGLE CONDUITS WITHOUT BOLTS MAY BE USED FOR 1-1/2" AND SMALLER RACEWAYS SERVING BRANCH CIRCUITS AND COMMUNICATION SYSTEMS ABOVE SUSPENDED CEILINGS AND FOR FASTENING RACEWAYS TO TRAPEZE SUPPORTS.
- STRENGTH OF SUPPORT ASSEMBLIES: SELECT SIZES OF COMPONENTS SO STRENGTH WILL BE ADEQUATE TO CARRY WEIGHT OF SUPPORTED COMPONENTS PLUS 200 LB. MINIMUM.

- MOUNTING AND ANCHORAGE OF SURFACE-MOUNTED EQUIPMENT AND CONDUITS: ANCHOR AND FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTS TO BUILDING STRUCTURAL ELEMENTS BY THE FOLLOWING METHODS UNLESS OTHERWISE INDICATED BY CODE:
  - TO WOOD: FASTEN WITH LAG SCREWS OR THROUGH BOLTS.
  - TO EXISTING CONCRETE: EXPANSION ANCHOR FASTENERS OR PRECASTER-INSTALLED DRIVEN THREADED STUDS PROVIDED WITH LOCK WASHERS AND NUTS MAY BE USED IN EXISTING STANDARD-WEIGHT CONCRETE 4" THICK OR GREATER. DRILL HOLES FOR EXPANSION ANCHORS IN CONCRETE AT LOCATIONS AND TO DEPTHS THAT AVOID REINFORCING BARS.
- STRUCTURAL STEEL: BEAM CLAMPS COMPLYING WITH MSS SP-89.
- TO LIGHT STEEL: SHEET METAL SCREWS.
- ITEMS MOUNTED ON HOLLOW WALLS AND NONSTRUCTURAL BUILDING SURFACES: MOUNT EQUIPMENT AND ENCLOSURES ON SLOTTED-CHANNEL RACKS ATTACHED TO SUBSTRATE.
- CONSTRUCT CONCRETE BASES WITH 3000-PSI, 28-DAY COMPRESSIVE-STRENGTH CONCRETE WITH DIMENSIONS INDICATED BUT NOT LESS THAN 4" LARGER IN BOTH DIRECTIONS THAN SUPPORTED UNIT.

SECTION 26 05 33 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

- INDOORS, UNLESS OTHERWISE INDICATED:
  - EXPOSED, NOT SUBJECT TO PHYSICAL DAMAGE: RIGID STEEL CONDUIT OR EMT.
  - EXPOSED AND SUBJECT TO PHYSICAL DAMAGE: RIGID STEEL CONDUIT OR IMC. INCLUDES RACEWAYS IN AREAS WITH HEAVY TRAFFIC AND MECHANICAL ROOMS.
  - CONCEALED IN CEILINGS AND INTERIOR WALLS AND PARTITIONS: RIGID STEEL, IMC, OR EMT. RMC MAY BE USED IN NON-ENVIRONMENTAL AIR PLenums.
  - CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC PNEUMATIC, ELECTRIC SOLENOID OR MOTOR-DRIVEN EQUIPMENT): FMC, EXCEPT USE LFMC IN DAMP OR WET LOCATIONS.
  - DAMP OR WET LOCATIONS: RIGID STEEL CONDUIT OR IMC.
  - BOXES: SHEET-METAL, TYPE 1, EXCEPT USE CAST-METAL, TYPE 4, IN DAMP OR WET LOCATIONS.
- MINIMUM RACEWAY SIZE: RACEWAY SIZE SHALL BE AS FOLLOWS UNLESS OTHERWISE INDICATED:
  - UNDER SLAB AND UNDERGROUND: 1"
  - HOMERUNS TO PANELBOARDS: 3/4"
  - ALL OTHER RACEWAY: 1"
- METAL WIREWAYS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: COOPER B-LINE AND HOFFMAN.
  - DESCRIPTION: SHEET METAL WITH STANDARD ENAMEL FINISH, SIZED AND SHAPED AS INDICATED, TYPE 1 (INTERIOR) OR 3R (EXTERIOR), UNLESS OTHERWISE INDICATED.
  - FITTINGS AND ACCESSORIES: INCLUDE COUPLINGS, ELBOWS, ADAPTERS, END CAPS, AND OTHER FITTINGS THAT MATCH WIREWAYS AS REQUIRED FOR COMPLETE SYSTEM.
  - WIREWAY COVERS: SCREW-COVER TYPE, UNLESS OTHERWISE INDICATED.
- RACEWAY FITTINGS: COMPATIBLE WITH RACEWAYS AND SUITABLE FOR USE AND LOCATION.
  - RIGID AND INTERMEDIATE STEEL CONDUIT: USE THREADED RIGID STEEL CONDUIT FITTINGS, UNLESS OTHERWISE INDICATED.
  - EMT CONDUITS: SET-SCREW TYPE EXCEPT IN DAMP AND WET LOCATIONS. COMPRESSIVE-TYPE.

- INSTALL RACEWAY LEVEL AND SQUARE AND AT PROPER ELEVATION TO PROVIDE ADEQUATE HEADROOM. KEEP RACEWAYS AT LEAST 6" AWAY FROM PARALLEL RUNS OF FLUES AND STEAM OR HOT-WATER PIPES. INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER PIPING. INSTALL MORE THAN THE EQUIVALENT OF FOUR 90-DEGREE BENDS IN ANY CONDUIT RUN.
- CONCEAL CONDUIT AND CABLES WITHIN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.
- MAKE BENDS AND OFFSETS SO THE INSIDE DIAMETER IS NOT EXCEED 16 SQUARE INCHES, WITH A MAXIMUM OF 100 SQUARE INCHES OF OPENING PER 100 SQUARE FEET OF PARTITION AREA. TO BE INSTALLED TOGETHER. DO NOT USE SECTIONAL BOXES.
- PROVIDE PHYSICAL BARRIERS TO SEPARATE WIRING OF DIFFERENT SYSTEMS.
- INSTALL TEMPORARY CLOSURES ON ALL RACEWAYS DURING CONSTRUCTION TO AVOID DIRT, WATER, AND DEBRIS FROM ENTERING THE RACEWAY SYSTEM.
- PROVIDE KNOCKOUT PLUGS IN ALL UNUSED OPENINGS IN BOXES, WIREWAYS, AND ENCLOSURES.
- INSTALL SLEEVES FOR PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES UNLESS OPENINGS COMPATIBLE WITH FIRESTOP SYSTEM USED ARE FABRICATED DURING CONSTRUCTION OF FLOOR OR WALL. CUT SLEEVES TO LENGTH FOR MOUNTING FLUSH WITH BOTH WALL SURFACES AND END SLEEVES INSTALLED IN FLOORS 2" ABOVE FINISHED FLOOR LEVEL.
- MAINTAIN REQUIRED FIRE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT RACEWAY PENETRATIONS.
- SEAL ROOF PENETRATION OF INDIVIDUAL RACEWAYS WITH FLEXIBLE, BOOT-TYPE FLASHING UNITS APPLIED IN COORDINATION WITH ROOFING WORK.

ELECTRICAL SYMBOL LEGEND

ALL SYMBOLS MAY NOT BE USED AND OTHER SYMBOLS AS DEFINED ON PLANS. REFER TO SPECIFICATIONS/NOTES FOR OTHER REQUIREMENTS.

CONDUIT & CIRCUITRY

	HOMERUN TO PANELBOARD "X" DENOTES PANELBOARD NAME - "H" DENOTES CIRCUIT NUMBER ABOVE/ UNDERGROUND CONDUIT WITH WIRE COUNT
	LINE (HOT OR SWITCH LEG)
	NEUTRAL
	EQUIPMENT GROUND
	ISOLATED GROUND
	CONDUIT STUB-UP TO LEVEL ABOVE
	CONDUIT STUB-UP FROM BELOW GRADE

EQUIPMENT

	PANELBOARD - CONNECTED TO NORMAL POWER (VOLTAGE AND PANEL RATING PER PLAN)
	TRANSFORMER - MOUNTING PER PLAN (VOLTAGE AND EQUIP RATING PER PLAN)
	ELECTRICAL METER - (UTILITY OR OWNER - KW OR DEMAND)
	DISTRIBUTION/ METERING SWITCHGEAR/ SWITCHBOARD (VOLTAGE AND EQUIP RATING PER PLAN)
	NON-FUSED DISCONNECT SWITCH (SIZE, # POLES, ENCLOSURE RATING PER PLAN)
	FUSED DISCONNECT SWITCH (SIZE, # POLES, ENCLOSURE RATING PER PLAN)
	LIGHTING CONTACTOR/ LIGHTING CONTROL PANEL
	TIMECLOCK/ LIGHTING TIMER
	LIGHTING CONTACTOR/ LIGHTING CONTROL PANEL

WIRING DEVICES (REFER TO SPECIFICATIONS/NOTES FOR MOUNTING HEIGHTS)

	5-20R SIMPLEX RECEPTACLE	"XX" DENOTES CONFIG, TYPE, OR MOUNTING HEIGHT
	5-20R DUPLEX RECEPTACLE	
	5-20R QUADRAPLEX RECEPTACLE	GFCI - GROUND FAULT CIRCUIT INTERRUPTER WP - WEATHERPROOF IG - ISOLATED GROUND
	SPECIAL RECEPTACLE	
	5-20R SIMPLEX FLOOR/ CEILING RECEPTACLE (TYPE PER PLAN)	
	5-20R DUPLEX FLOOR/ CEILING RECEPTACLE (TYPE PER PLAN)	
	5-20R QUADRAPLEX FLOOR/ CEILING RECEPTACLE (TYPE PER PLAN)	
	SPECIAL FLOOR/ CEILING RECEPTACLE (TYPE PER PLAN)	
	JUNCTION BOX/ HARD WIRED EQUIPMENT CONNECTION	
	POWER POLE - COORDINATE W/ UTILITY COMPANY	
	SINGLE POLE TOGGLE SWITCH	
	3-WAY TOGGLE SWITCH	
	4-WAY TOGGLE SWITCH	
	KEYED SINGLE POLE TOGGLE SWITCH	
	DIMMER SWITCH	
	WALL OCCUPANCY SENSOR - AUTO/ MANUAL ON; AUTO OFF	
	CEILING OCCUPANCY SENSOR - AUTO ON; AUTO OFF	
	LOW VOLTAGE SWITCHING POWER PACK	

COMMUNICATION DEVICES (REFER TO SPECIFICATIONS/NOTES FOR MOUNTING HEIGHTS)

	COMBINATION CABLE TV & DATA RECEPTACLE W/ 1" TO ACCESSIBLE LOCATION - "H" DENOTES NUMBER OF DATA CABLES
	DATA RECEPTACLE W/ 1" TO ACCESSIBLE LOCATION - "H" DENOTES NUMBER OF DATA CABLES

LIGHTING ("X" DENOTES TYPE, REFER TO FIXTURE SCHEDULE)

	LINEAR FIXTURE - RECESSED OR SURFACE (2'X4' SHOWN, OTHERS SIMILAR, LAMP PER PLAN)
	EMERGENCY FIXTURE (2'X4' LINEAR SHOWN, OTHERS SIMILAR, LAMP PER PLAN)
	STRIP FIXTURE (4' SHOWN, OTHERS SIMILAR, LAMP PER PLAN)
	DOWNLIGHT/ SURFACE/ WALL WASH FIXTURE (LAMP PER PLAN)
	WALL SCONCE - VERIFY MOUNTING HEIGHT W/ OWNER/ ARCHITECT (LAMP PER PLAN)
	TRACK SECTION & HEADS/ BATH VANITY - PROVIDE ALL APPURTENANCES - (LAMP PER PLAN)
	EXTERIOR WALL PACK - MOUNTING HEIGHT PER PLAN (LAMP PER PLAN)
	EXIT/ EMERGENCY EXIT COMBO (LAMP PER PLAN)
	EXTERIOR POLE LIGHT - HEIGHT PER PLAN (LAMP PER PLAN)

CONSTRUCTION NOTES

- ALL ELECTRICAL INSTALLATIONS SHALL COMPLY WITH THE CURRENTLY ADOPTED EDITION OF THE NATIONAL ELECTRIC CODE.

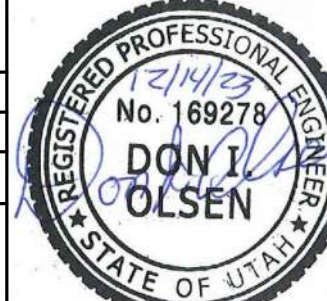
DATE  
DEC 2023



REVISIONS		
MARK	DATE	DESCRIPTION

DRAWN: MB  
DESIGNER: KDC  
REVIEWED: DIO

PROJECT #  
235M1182.04



SCALES

1" = 100'-0"	
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PROJECT NAME:

MAGNA HEAD  
START-ADDITION

PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

SHEET TITLE:

ELECTRICAL SYMBOLS  
& NOTES

PLAN SET:

PERMIT

SHEET

E0.1



S:\Projects\235M1182\4 Magna Head Start Addition\Drawings\Revit\DWG\235M1182.04 Magna Head Start Addition.rvt

SECTION 26 22 00 - LOW-VOLTAGE TRANSFORMERS

- SUBJECT TO COMPLIANCE WITH REQUIREMENTS. MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: ACME ELECTRIC, EATON CUTLER-HAMMER, GE, SIEMENS, AND SQUARE D.
- GENERAL TRANSFORMER REQUIREMENTS: FACTORY-ASSEMBLED AND -TESTED, AIR-COOLED UNITS FOR 60-HZ SERVICE, WITH ONE RAIN-ORIENTED, NON-AGING SILICON STEEL CORE PER LEG AND CONTINUOUS WINDINGS WITHOUT SPLICES EXCEPT FOR TAPS. CORES AND COILS SHALL BE ENCAPSULATED WITHIN RESIN COMPOUND, SEALING OUT MOISTURE AND AIR. ENCLOSURE SHALL BE VENTILATED, NEMA TYPE 2, EXCEPT FOR EXTERIOR INSTALLATION SHALL BE TYPE 3R.
- GENERAL PURPOSE DISTRIBUTION TRANSFORMERS
  - WINDINGS: ONE COIL PER PHASE IN PRIMARY AND SECONDARY.
  - TAPS FOR TRANSFORMERS 7.5 TO 24 KVA: ONE 5 PERCENT TAP ABOVE AND ONE 5 PERCENT TAP BELOW NORMAL FULL CAPACITY.
  - TAPS FOR TRANSFORMERS 25 KVA AND LARGER: TWO 2.5 PERCENT TAPS ABOVE AND TWO 2.5 PERCENT TAPS BELOW NORMAL FULL CAPACITY.
  - INSULATION CLASS: 220 DEG C, UL-COMPONENT-RECOGNIZED INSULATION SYSTEM WITH A MAXIMUM OF 150 DEG C RISE ABOVE 40 DEG C AMBIENT TEMPERATURE.
  - TRANSFORMERS SHALL HAVE AN EFFICIENCY RATING IN COMPLIANCE WITH NEMA TP1, CLASS 1 EFFICIENCY LEVELS.
- DRAWINGS INDICATE DIMENSIONS FOR SELECTED PANEL BOARDS INCLUDING CLEARANCES. COORDINATE LAYOUT AND INSTALLATION OF TRANSFORMERS WITH OTHER CONSTRUCTION THAT PENETRATES WALLS OR IS SUPPORTED BY THEM. MAINTAIN REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS.
- INDOOR FLOOR-MOUNTED TRANSFORMER ON CONCRETE HOUSEKEEPING PAD WITH VIBRATION ISOLATION PADS TO PREVENT TRANSMISSION OF TRANSFORMER VIBRATION. INCOMING AND OUTGOING RACEWAY SHALL BE FLEXIBLE TO PREVENT TRANSMISSION OF TRANSFORMER VIBRATION. INSTALL BONDING JUMPER ON EXTERIOR OF THE FLEXIBLE RACEWAY.
- GROUND EQUIPMENT ACCORDING TO NFPA 70 FOR A SEPARATELY DERIVED SYSTEM AND DIVISION 26 SECTION "GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS."
- RECORD TRANSFORMER SECONDARY VOLTAGE AT EACH UNIT LOCATION AT LEAST 48 HOURS AFTER EACH PERIOD ADJUST TRANSFORMER TAPS TO PROVIDE OPTIMUM VOLTAGE CONDITIONS AT SECONDARY TERMINALS. OPTIMUM IS DEFINED AS NOT EXCEEDING NAMEPLATE VOLTAGE PLUS 10 PERCENT AND NOT BEING LOWER THAN NAMEPLATE VOLTAGE MINUS 3 PERCENT AT MAXIMUM LOAD CONDITIONS. SUBMIT RECORDING AND TAP SETTINGS AS TEST RESULTS.

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

- VERIFY IDENTITY OF EACH ITEM BEFORE INSTALLING IDENTIFICATION PRODUCTS.
- APPLY IDENTIFICATION DEVICES TO SURFACES THAT REQUIRE FINISH OR CLEANING AFTER COMPLETING WORK.
- ATTACH SIGNS AND PLASTIC LABELS WITH MECHANICAL FASTENERS APPROPRIATE TO THE LOCATION AND SUBSTRATE. COLORED CONDUCTORS IN ENCLOSURES AND BOXES, USING COLOR-CODING TO IDENTIFY THE PHASE, FACTORY APPLIED OR FIELD APPLIED CONDUCTOR TAPE OR CABLE TIES FOR SIZES LARGER THAN #8 AWG. LOCATE BANDS OF TAPE OR TIES WITHIN 6" FROM TERMINATION AND AVOID OBSCURING FACTORY LABELING.
- COLORS FOR 208/120V CIRCUITS:
  - PHASE A: BLACK
  - PHASE B: RED
  - PHASE C: BLUE
  - NEUTRAL: WHITE
  - GROUND: GREEN
- COLORS FOR 480/277V CIRCUITS:
  - PHASE A: BROWN
  - PHASE B: PURPLE
  - PHASE C: YELLOW
  - NEUTRAL: GRAY
  - GROUND: GREEN
- APPLY SELF-ADHESIVE FACTORY PRINT CIRCUIT NUMBER FOR CIRCUIT DESIGNATION AT EACH ENCLOSURE, BOX, AND DEVICE.
- IDENTIFY THE COVERS OF EACH JUNCTION AND PULL BOX OF THE FOLLOWING SYSTEMS WITH FIELD-APPLIED PAINT. AFTER PAINT HAS BEEN APPLIED, PROVIDE PERMANENT WRITTEN IDENTIFICATION OF THE SOURCE AND CIRCUIT NUMBER, SIZES OF LETTERS SHALL BE APPROPRIATE FOR VIEWING FROM THE SYSTEM COORDINATING OFFICIALS SHALL BE AS FOLLOWS:
  - GENERAL POWER: NO COLOR
  - FIRE ALARM AND PROTECTION: RED
  - SECURITY SYSTEM: BLUE
  - TELECOMMUNICATION: ORANGE
- ON EACH MARKER TAPE TO CONDUCTORS TO BE EXTENDED IN THE FUTURE AND LIST THEIR USAGE.
- INSTALL 2" WIDE PRESSURE-SENSITIVE VINYL FLOOR MARKING TAPE WITH BLACK AND YELLOW STRIPES TO SHOW WORKING CLEARANCES IN THE DIRECTION OF ACCESS TO LIVE PARTS. WORKSPACE SHALL BE AS REQUIRED BY NFPA 70 AND 29 CFR 1926.403. INSTALL WARNING LABEL ON EQUIPMENT WHICH READS "WARNING - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES." DISTANCE INDICATED SHALL BE AS DEFINED IN NFPA 70. DO NOT INSTALL FLOOR MARKINGS OR WARNING SIGNS IN FINISHED SPACES.
- INSTALL UNDERGROUND-LINE WARNING TAPE AS RECOMMENDED BY MANUFACTURER FOR THE METHOD OF INSTALLATION AND SUITABLE TO IDENTIFY AND LOCATE UNDERGROUND POWER AND COMMUNICATIONS UTILITY LINES. USE RED-COLOR TAPES FOR ELECTRICAL WITH INSCRIPTION OF "ELECTRICAL LINE - HIGH VOLTAGE" AND ORANGE-COLORED TAPES FOR COMMUNICATION WITH INSCRIPTION OF "TELEPHONE CABLE, CAV CABLE, OR COMMUNICATION CABLE." DURING BACKFILLING OF TRENCHES, INSTALL CONTINUOUS UNDERGROUND-LINE WARNING TAPE DIRECTLY ABOVE LINE AT 6" BELOW FINISHED GRADE.
- INSTALL UNIQUE DESIGNATION ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL WITH STAINLESS-STEEL MACHINE SCREWS WITH NUTS ON EACH PIECE OF EQUIPMENT. PROVIDE A SINGLE LINE OF TEXT WITH 1/2" HIGH LETTERS ON 1-1/2" HIGH LABEL WHERE TWO LINES OF TEXT ARE REQUIRED, USE LABELS 2" HIGH FOR ELEVATED COMPONENTS, INCREASE SIZES OF LABELS AND LETTERS TO THOSE APPROPRIATE FOR VIEWING FROM THE FLOOR. LABEL SHALL INDICATE EQUIPMENT OR ITEM NAME/DESIGNATION, SERVICE VOLTAGE, SOURCE OF SERVICE, AND FOR SEPARATELY DERIVED SYSTEM, EQUIPMENT SUPPLIED BY SYSTEM. LABEL THE FOLLOWING EQUIPMENT:
  - SWITCHBOARDS, SWITCHGEAR, MOTOR CONTROL CENTERS, PANELBOARDS, AND OVERCURRENT PROTECTION DEVICES WITHIN THEM.
  - CONTACTORS, PUSH-BUTTONS, ENCLOSURES, CABINETS, ENCLOSED SWITCHES AND CONTROLLERS.
  - TRANSFORMERS
  - MONITORING AND CONTROL EQUIPMENT.

SECTION 26 24 16 - PANELBOARDS

- SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: EATON CUTLER-HAMMER, GE, SIEMENS, AND SQUARE D.
- ENCLOSURES: SURFACE-MOUNTED CABINETS, RATED FOR ENVIRONMENTAL CONDITIONS. INSTALL LOCATION: BACK BOX AND TRIM/DOOR SHALL BE GALVANIZED STEEL, WITH MANUFACTURER'S STANDARD BAKED-ON FINISH APPLIED TO THE TRIM/DOOR.
- TRIM/DOOR: PROVIDE TRIM WITH ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITH HINGED TRIM COVER. DOOR SHALL SECURE WITH VAULT-TYPE LATCH WITH TUMBLER LOCK, ALL KEYS ALIKE. PROVIDE METAL FRAMED DIRECTORY CARD WITH TRANSPARENT PROTECTIVE COVER ON INSIDE OF DOOR.
- BUSING: HARD-DRAWN, 98% CONDUCTIVITY COPPER OF CAPACITY INDICATED WHERE INDICATED PROVIDE OVERSIZED NEUTRAL BUSSING, PROVIDE EQUIPMENT GROUND BUS OF ADEQUATE SIZE FOR ALL CONDUCTOR TERMINATIONS, BONDED TO BOX WHERE INDICATED, PROVIDE ISOLATED GROUND BUS OF ADEQUATE SIZE FOR ALL CONDUCTOR TERMINATIONS, INSULATED FROM BOX.
- MAINS: CIRCUIT BREAKER OR LUGS ONLY, AS INDICATED. CONDUCTOR CONNECTIONS SHALL BE COMPRESSION TYPE, SUITABLE FOR USE WITH CONDUCTOR MATERIAL AND SIZES. PROVIDE FEED-THROUGH LUGS AT THE OPPOSITE END OF BUS FROM INCOMING MAINS, WHERE INDICATED.
- INSTALL SERVICE IDENTIFICATION LABEL FOR PANELBOARDS WITH ONE OR MORE MAIN SERVICE DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES.
- PANEL BOARD SHORT-CIRCUIT CURRENT RATING: RATED FOR SERIES CONNECTED SYSTEM WITH INTEGRAL OR REMOTE UPSTREAM OVERCURRENT PROTECTIVE DEVICES.
- BRANCH OVERCURRENT PROTECTIVE DEVICES: BOLT-ON MOLDED-CASE CIRCUIT BREAKERS. PANELBOARD SHALL HAVE MOUNTING BRACKETS, BUS CONNECTIONS, FILLER PLATES, AND NECESSARY APPURTENANCES REQUIRED FOR FUTURE INSTALLATION OF DEVICES WITHOUT DISRUPTING EXISTING DEVICES.
- MOLDED-CASE CIRCUIT BREAKER (MCCB): WITH INTERRUPTING CAPACITY TO LIST AVAILABLE FAULT CURRENTS AND APPLICATION LISTED FOR CONNECTED LOAD.
  - MCCB NOT RATED FOR THERMAL-MAGNETIC CIRCUIT BREAKER, INVERSE TIME-CURRENT ELEMENT FOR LOW-LEVEL OVERLOADS, AND INSTANTANEOUS MAGNETIC TRIP ELEMENT FOR SHORT CIRCUITS. ADJUSTABLE MAGNETIC TRIP SETTING FOR CIRCUIT-BREAKER FRAME SIZES 200A AND LARGER.
  - MCCB 400A AND LARGER: ELECTRONIC TRIP CIRCUIT BREAKER WITH RMS SENSING, FIELD-REPLACEABLE RATING PLUG OR FIELD-REPLACABLE ELECTRONIC TRIP, AND THE FOLLOWING FIELD-ADJUSTABLE INSTANTANEOUS TRIP, LONG- AND SHORT-TIME PICKUP LEVELS, LONG- AND SHORT-TIME TIME ADJUSTMENTS, GROUND-FAULT PICKUP LEVEL, TIME DELAY, AND 12T RESPONSE.
  - LUGS: MECHANICAL STYLE, SUITABLE FOR NUMBER, SIZE, TRIP RATINGS, AND CONDUCTOR MATERIALS.
  - MULTI-POLE UNITS ENCLOSED HAVE A SINGLE HOUSING.
  - GROUND-FAULT CIRCUIT INTERRUPTION (GFI): WHERE INDICATED OR REQUIRED, CLASS A GROUND-FAULT PROTECTION (6-MA TRIP) INTEGRALLY MOUNTED RELAY AND TRIP UNIT WITH ADJUSTABLE PICKUP AND TIME DELAY.
- SHUNT TRIP: WHERE INDICATED, 120V TRIP COIL ENERGIZED FROM SEPARATE CIRCUIT, SET TO TRIP AT 75% OF RATED VOLTAGE.
- KEY LOCK: LOCATE NOT MORE THAN 18 INCHES FROM THE REMOVED LOCK WHERE INDICATED, EXTERNALLY MOUNTED TO PROHIBIT CIRCUIT-BREAKER OPERATION; KEY SHALL BE REMOVABLE ONLY WHEN CIRCUIT BREAKER IS IN OFF POSITION.
- SET FIELD-ADJUSTABLE CIRCUIT-BREAKER TRIP RANGES AS INDICATED.
- MOUNT PANELBOARD CABINET PLUMB AND RIGID WITHOUT DISTORTION OF BOX WITH TOP OF TRIM 72" AFF.
- DRAWINGS INDICATE DIMENSIONS FOR SELECTED PANELBOARDS INCLUDING CLEARANCES. COORDINATE LAYOUT AND INSTALLATION OF PANELBOARDS AND COMPONENTS WITH OTHER CONSTRUCTION THAT PENETRATES WALLS OR IS SUPPORTED BY THEM. MAINTAIN REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS.
- SURFACE-MOUNTED PANELBOARDS: INSTALL ENCLOSURE WITH 1/4" MINIMUM GAP BETWEEN ENCLOSURE AND WALL SURFACE.
- INSTALL FILLER PLATES IN UNUSED SPACES.
- WHEN ADDING NEW OVERCURRENT PROTECTION DEVICES TO EXISTING PANELBOARDS, INSTALL DEVICES OF THE SAME INTERRUPTING RATING, STYLE AND FROM THE SAME MANUFACTURER AS THE REMAINDER OF THE PANELBOARD.
- CREATE A DIRECTORY TO INDICATE INSTALLED CIRCUIT LOADS AFTER BALANCING PANELBOARD LOADS; INCORPORATE FINAL ROOM DESIGNATIONS. USE A COMPUTER OR TYPEWRITER TO CREATE DIRECTORY.
- LOAD BALANCING: AFTER SUBSTANTIAL COMPLETION, BUT NOT MORE THAN 60 DAYS AFTER FINAL ACCEPTANCE, MEASURE LOAD BALANCING AND MAKE CIRCUIT CHANGES TO BALANCE PHASE LOADS TO LESS THAN 20% PHASE IMBALANCE. MEASURE DURING PERIOD OF NORMAL SYSTEM LOADING, HOWEVER, PERFORM LOAD-BALANCING CIRCUIT CHANGES OUTSIDE NORMAL OCCUPANCY/WORKING SCHEDULE AT TIME DIRECTED, AFTER CIRCUIT CHANGES, RECHECK LOADS DURING NORMAL LOAD PERIOD AND RE-BALANCE AS NEEDED. RECORD ALL LOAD READINGS BEFORE AND AFTER CHANGES AND SUBMIT TEST RECORDS.

SECTION 26 27 26 - WIRING DEVICES

- SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: COOPER, HUBBELL, LEVITON, LITTON, AND PASS & SEYMOUR. THE FOLLOWING MODEL NUMBERS FOR PASS & SEYMOUR ARE FOR REFERENCE. DEVICE SHALL MATCH EXISTING BUILDING STANDARD, IF APPLICABLE. IF DEVICE STYLE IS NOT INDICATED BY THE ARCHITECT, THEY SHALL BE "DECORATOR" STYLE AS INDICATED BELOW.
- CONVENIENCE RECEPTACLES, 125V, 20A: NEMA 5-20R, P&S #26361 (SINGLE), P&S #26362 (DUPEX).
- GFI RECEPTACLES, 125V, 20A: NEMA 5-20R, P&S #2094. STRAIGHT BLADE, NON-FEED-THROUGH TYPE, INCLUDING INDICATOR LIGHT THAT IS LIGHTED WHEN DEVICE IS TRIPPED.
- 1-1/2" HIGH LABEL: WHERE TWO LINES OF TEXT ARE REQUIRED, USE LABELS 2" HIGH. FOR ELEVATED COMPONENTS, INCREASE SIZES OF LABELS AND LETTERS TO THOSE APPROPRIATE FOR VIEWING FROM THE FLOOR. LABEL SHALL INDICATE EQUIPMENT OR ITEM NAME/DESIGNATION, SERVICE VOLTAGE, SOURCE OF SERVICE, AND FOR SEPARATELY DERIVED SYSTEM, EQUIPMENT SUPPLIED BY SYSTEM. LABEL THE FOLLOWING EQUIPMENT:
  - WALL-SWITCH SENSORS: HUBBELL #LHMTS1, ADAPTIVE-, DUAL TECHNOLOGY TYPE, 120/277 V, ADJUSTABLE TIME DELAY UP TO 30 MINUTES, 360-DEGREE FIELD OF VIEW, WITH A MINIMUM COVERAGE AREA OF 2000 SQ. FT. PROVIDE HUBBELL #JPI UNIVERSAL VOLTAGE POWER SWITCH PACK TO POWER SENSORS AND CONTROL LIGHTING CIRCUIT. CONNECT MULTIPLE SENSORS TO SINGLE POWER SWITCH PACK AS INDICATED.
  - CEILING-MOUNTED SENSORS: HUBBELL #MMN-DT, ADAPTIVE-, DUAL TECHNOLOGY TYPE, SELF-ADJUSTING TIME DELAY UP TO 30 MINUTES, 360-DEGREE FIELD OF VIEW, WITH A MINIMUM COVERAGE AREA OF 2000 SQ. FT. PROVIDE HUBBELL #JPI UNIVERSAL VOLTAGE POWER SWITCH PACK TO POWER SENSORS AND CONTROL LIGHTING CIRCUIT. CONNECT MULTIPLE SENSORS TO SINGLE POWER SWITCH PACK AS INDICATED.

- WALL PLATES: SINGLE AND COMBINATION TYPES TO MATCH CORRESPONDING WIRING DEVICES. DO NOT USE OVERSIZED OR EXTRA-DEEP PLATES. REPAIR WALL FINISHES AND REMOUNT OUTLET BOXES WHEN STANDARD DEVICE PLATES DO NOT FIT FLUSH OR DO NOT COVER ROUGH WALL OPENING.

- PLATE-SECURING SCREWS: METAL WITH HEAD COLOR TO MATCH PLATE FINISH.
- FINISHED SPACES: SMOOTH, HIGH-IMPACT THERMOPLASTIC.
- UNFINISHED SPACES: GALVANIZED STEEL.
- DAMP AND WET LOCATIONS: CAST ALUMINUM WITH SPRING-LOADED LIFT COVER, AND LISTED AND LABELED FOR USE IN "WET LOCATIONS."
- DEVICE COLOR: WIRING DEVICE CATALOG NUMBERS IN SECTION TEXT DO NOT DESIGNATE DEVICE COLOR, UNLESS INDICATED OTHERWISE ON ARCHITECTURAL DRAWINGS, PROVIDE THE FOLLOWING COLORS:
  - DEVICES CONNECTED TO NORMAL POWER: MATCH EXISTING OR WHITE, UNLESS OTHERWISE INDICATED OR REQUIRED BY NFPA 70.
  - DEDICATED DEVICE CONNECTED TO NORMAL POWER: ORANGE.
- MOUNTING HEIGHT: UNLESS INDICATED OTHERWISE, INSTALL DEVICES AT THE FOLLOWING HEIGHTS ABOVE FINISH FLOOR TO THE CENTER OF THE BOX. (VERIFY HEIGHTS WITH ARCHITECT PRIOR TO INSTALL.)
  - GENERAL RECEPTABLES: 18".
  - LIGHTING SWITCHES AND DIMMERS: 42".
  - ABOVE-COUNTER RECEPTABLES: 42" OR 6" ABOVE COUNTER HEIGHT, WHICHEVER IS HIGHER.
- PROTECTION: KEEP OUTLET BOXES FREE OF PLASTER, DRYWALL JOINT COMPOUND, MORTAR, CEMENT, CONCRETE, DUST, PAINT, OR OTHER MATERIAL THAT MAY CONTAMINATE THE RACEWAY SYSTEM, CONDUCTORS, AND CABLES. INSTALL WIRING DEVICES AFTER ALL WALL PREPARATION, INCLUDING PAINTING, IS COMPLETE.
- REPLACE ALL DEVICES THAT HAVE BEEN IN TEMPORARY USE DURING CONSTRUCTION OR THAT SHOW SIGNS THAT THEY WERE INSTALLED BEFORE BUILDING FINISHING OPERATIONS WERE COMPLETE.
- WHEN CONDUCTORS LARGER THAN #12 AWG ARE INSTALLED ON 15A OR 20A CIRCUITS, SPLICE #12 AWG PITGAILS FOR DEVICE CONNECTIONS.
- WHEN MOUNTING INTO METAL BOXES, REMOVE THE FIBER OR PLASTIC WASHERS USED TO HOLD DEVICE MOUNTING SCREWS IN YOKES, ALLOWING METAL-TO-METAL CONTACT.
- INSTALL GROUND PIN OF VERTICALLY MOUNTED RECEPTABLES UP, AND ON HORIZONTAL MOUNTED RECEPTABLES TO THE LEFT.
- WHEN CIRCUIT VOLTAGE DROPS TO 80% OF NOMINAL VOLTAGE, REPAIR WALL FINISHES AND REMOUNT OUTLET BOXES WHEN STANDARD DEVICE PLATES DO NOT FIT FLUSH OR DO NOT COVER ROUGH WALL OPENING.
- ARRANGEMENT OF DEVICES: GROUP ADJACENT SWITCHES UNDER SINGLE, MULTIGANG WALL PLATES.
- IDENTIFY PANELBOARD AND CIRCUIT NUMBER FROM WHICH SERVED. USE DURABLE WIRE MARKERS OR TAGS INSIDE OUTLET BOXES.
- TEST CONVENIENCE RECEPTABLES WITH DIGITAL WIRING ANALYZER WITH DIGITAL OR LED INDICATORS.
  - LINE VOLTAGE: ACCEPTABLE RANGE IS 105V TO 132V.
  - PERCENT VOLTAGE DROP UNDER 15A LOAD: A VALUE OF 6% OR HIGHER IS NOT ACCEPTABLE.
  - GFI TRIP: TEST FOR TRIPPING VALUES SPECIFIED IN UL 1436 AND UL 943.
  - USING THE TEST PLUG, VERIFY THAT THE DEVICE AND ITS OUTLET BOX ARE SECURELY MOUNTED.

SECTION 26 28 13 - FUSES

- SUBMITTAL: IN ADDITION TO THE REQUIREMENTS OF DIVISION 1 PROVIDE CURRENT-LIMITATION CURVES, TIME-CURRENT COORDINATION CURVES (AVERAGE MELT), CURRENT-LIMITATION CURVES (INSTANTANEOUS PEAK LET-THROUGH CURRENT), AND COORDINATION CHARTS AND TABLES FOR EACH TYPE AND RATING OF FUSE.
- EXTRA MATERIALS: FURNISH EXTRA FUSES; AT LEAST 10% OF QUANTITY INSTALLED FOR EACH TYPE AND SIZE, BUT NOT LESS THAN 3 OF EACH; THAT MATCH PRODUCTS INSTALLED.
- SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: BUSSMANN AND LITTEL FUSE.
- CARTRIDGE FUSES: NON-RENEWABLE CARTRIDGE FUSES WITH VOLTAGE RATINGS CONSISTENT WITH CIRCUIT VOLTAGES.
  - SERVICE ENTRANCE: CLASS T, FAST ACTING.
  - FEEDERS: CLASS RK1, FAST ACTING.
  - MOTOR BRANCH CIRCUITS: CLASS RK1, TIME DELAY.
  - OTHER BRANCH CIRCUITS: CLASS RK5, TIME DELAY.
  - CONTROL CIRCUITS: CLASS CC, FAST ACTING.
- EXAMINE EQUIPMENT, FUSES, AND HOLDERS BEFORE INSTALLATION FOR CHARACTERISTICS, TOLERANCES, AND DAMAGED LABELS INDICATING FUSE REPLACEMENT INFORMATION OR PHYSICALLY DAMAGED. INSTALL FUSES OF SIZES AND WITH CHARACTERISTICS APPROPRIATE FOR EACH PIECE OF EQUIPMENT.
- INSTALL FUSES IN FUSIBLE DEVICES. ARRANGE FUSES SO RATING INFORMATION IS READABLE WITHOUT REMOVING FUSE.
- LOAD BALANCING: AFTER SUBSTANTIAL COMPLETION, BUT NOT MORE THAN 60 DAYS AFTER FINAL ACCEPTANCE, MEASURE LOAD BALANCING AND MAKE CIRCUIT CHANGES TO BALANCE PHASE LOADS TO LESS THAN 20% PHASE IMBALANCE. MEASURE DURING PERIOD OF NORMAL SYSTEM LOADING, HOWEVER, PERFORM LOAD-BALANCING CIRCUIT CHANGES OUTSIDE NORMAL OCCUPANCY/WORKING SCHEDULE AT TIME DIRECTED, AFTER CIRCUIT CHANGES, RECHECK LOADS DURING NORMAL LOAD PERIOD AND RE-BALANCE AS NEEDED. RECORD ALL LOAD READINGS BEFORE AND AFTER CHANGES AND SUBMIT TEST RECORDS.
- SPARE-FUSE CABINET: WALL-MOUNTED STEEL UNIT WITH FULL-LENGTH, RECESSED PIANO-HINGED DOOR AND KEY-CODED CAM LOCK AND PULL SIZED FOR ADEQUATE STORAGE OF SPARE FUSES SPARED WITH 15% SPARE CAPACITY MINIMUM. PROVIDE 2 FUSE PULLERS FOR EACH SIZE OF FUSE FROM FUSE MANUFACTURER.

SECTION 26 28 16 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

- SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: EATON CUTLER-HAMMER, GE, SIEMENS, AND SQUARE D.
- FUSIBLE / NON-FUSIBLE SWITCHES
  - FUSIBLE SWITCH - HEAVY DUTY, SINGLE THROW, 600V: UL 98 AND NEMA KS 1, HORSEPOWER RATED, WITH CLIPS OR BOLT TIGHTENING MODELS. PROVIDE THREE PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.
  - NON-FUSIBLE SWITCH - HEAVY DUTY, SINGLE THROW, 600V: UL 98 AND NEMA KS 1, HORSEPOWER RATED, LOCKABLE HANDLE AND INTERLOCKED WITH COVER IN CLOSED POSITION.
- EQUIPMENT GROUND KIT: INTERNALLY MOUNTED AND LABELED FOR COPPER AND ALUMINUM GROUND CONDUCTORS.
- GROUND SWITCH KIT: INTERNALLY MOUNTED, INSULATED, CAPABLE OF BEING GROUNDED AND BONDED, LABELED FOR COPPER AND ALUMINUM NEUTRAL CONDUCTORS.
- SERVICE-RATED SWITCHES: WHERE APPLICABLE, LABELED FOR USE AS SERVICE EQUIPMENT.
- OPERATE DIRECTIONAL SWITCHES FOR SELECTED PANELBOARDS INCLUDING CLEARANCES. COORDINATE LAYOUT AND INSTALLATION OF SWITCHES AND BREAKERS WITH OTHER CONSTRUCTION THAT PENETRATES WALLS OR IS SUPPORTED BY THEM. MAINTAIN REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS.
- INSTALL INDIVIDUAL WALL-MOUNTED SWITCHES AND CIRCUIT BREAKERS WITH TOPS AT UNIFORM HEIGHT UNLESS OTHERWISE INDICATED.
- INSTALL FUSES IN FUSIBLE DEVICES.

SECTION 26 51 00 - INTERIOR LIGHTING

- SUBMITTAL: IN ADDITION TO THE REQUIREMENTS OF DIVISION 1 PROVIDE FOR EACH TYPE OF LIGHTING FIXTURE, ARRANGED IN ORDER OF FIXTURE DESIGNATION, THE FOLLOWING:
  - EMERGENCY LIGHTING UNITS INCLUDING BATTERY AND CHARGER.
  - BALLAST, INCLUDING BF.
  - LIFE, OUTPUT DIMENSIONS, CCT, AND CRI), AND ENERGY-EFFICIENCY DATA FOR LAMPS.
  - PHOTOMETRIC DATA BASED ON LABORATORY TESTS OF EACH LIGHTING FIXTURE TYPE, BY A CERTIFIED MANUFACTURER'S LABORATORY.
  - SPECIAL WARRANTY.
- SPECIAL WARRANTY PERIODS: 10 YEARS FOR EMERGENCY LIGHTING UNIT BATTERIES AND 7 YEARS FOR EMERGENCY FLUORESCENT BALLAST AND SELF-POWERED EXIT SIGN BATTERIES. WARRANTIES SHALL BE FROM DATE OF FINAL ACCEPTANCE, FULL WARRANTY SHALL APPLY FOR FIRST YEAR, AND PRORATED WARRANTY FOR THE REMAINING YEARS.
- SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, PRODUCT(S) INDICATED ON THE LIGHTING FIXTURE SCHEDULE.
- DIFFUSERS, LENSES AND GLOBES: ACRYLIC SHALL BE 1/8" MINIMUM, 100 % VIRGIN UV STABILIZED ACRYLIC PLASTIC WITH A HIGH RESISTANCE TO YELLOWING AND OTHER CHANGES DUE TO AGING, EXPOSURE TO HEAT, AND UV RADIATION. GLASS SHALL BE ANNEALED CRYSTAL GLASS UNLESS OTHERWISE INDICATED.
- FACTORY-APPLIED LABELS: INDICATE RECOMMENDED LAMPS AND BALLASTS, INCLUDING LAMP TYPE AND WATTAGE AND BALLAST TYPE. LABELS SHALL BE LOCATED WHERE THEY WILL BE READILY VISIBLE TO SERVICE PERSONNEL, BUT NOT SEEN FROM NORMAL VIEWING ANGLES WHEN LAMPS ARE IN PLACE.
- LINEAR FLUORESCENT BALLASTS: ELECTRONIC INSTANT-START TYPE, DESIGNED FOR FULL LIGHT OUTPUT OF THE TYPE AND QUANTITY OF LAMPS SERVED. THE BALLAST FACTOR SHALL BE 0.9 OR HIGHER AND THE POWER FACTOR SHALL BE 0.98 OR HIGHER WITH LESS THAN 10% TOTAL HARMONIC DISTORTION. WHEN SERVING MULTIPLE LAMPS, BALLAST SHALL BE CONNECTED TO MAINTAIN FULL LIGHT OUTPUT ON SURVIVING LAMPS IF ONE OR MORE LAMPS FAIL.
- BALLAST FOR OCCUPANCY SENSOR CONTROLLED FIXTURES: PROGRAMMED-START BALLAST.
- BALLASTS FOR LOW-TEMPERATURE ENVIRONMENTS (0 DEG F AND HIGHER): ELECTRONIC TYPE RATED FOR 0 DEG F STARTING AND OPERATING TEMPERATURE WITH INDICATED LAMP TYPES.
- COMPACT FLUORESCENT BALLASTS: ELECTRONIC PROGRAMMED RAPID-START TYPE, DESIGNED FOR FULL LIGHT OUTPUT OF THE TYPE AND QUANTITY OF LAMPS SERVED. BALLAST SHALL HAVE LAMP END-OF-LIFE DETECTION AND SHUTDOWN CIRCUIT AND AUTOMATIC LAMP STARTING AFTER LAMP REPLACEMENT. THE BALLAST FACTOR SHALL BE 0.95 OR HIGHER AND THE POWER FACTOR SHALL BE 0.98 OR HIGHER WITH LESS THAN 20% TOTAL HARMONIC DISTORTION.
- EMERGENCY FLUORESCENT POWER UNIT: INTERNAL, SELF-CONTAINED, MODULAR, BATTERY-INVERTER UNIT, FACTORY MOUNTING SYSTEM, SELF-TESTING, THERMOSTATICALLY CONTROLLED, THERMOSTATICALLY CONTROLLED EMERGENCY OPERATION SHALL BE ONE LAMP CONTINUOUSLY AT A MINIMUM OUTPUT OF 1100 LUMENS. CONNECT UNSWITCHED CIRCUIT TO BATTERY-INVERTER UNIT AND SWITCHED CIRCUIT TO FIXTURE BALLAST. PROVIDE TEST BUTTON AND INDICATOR LIGHT WHERE VISIBLE AND ACCESSIBLE WITHOUT OPENING FIXTURE OR ENTERING CEILING SPACE. TEST BUTTON SHALL SIMULATE LOSS OF NORMAL POWER AND DEMONSTRATE UNOPERABILITY. INDICATOR LIGHT SHALL BE LED AND SHALL INDICATE NORMAL POWER "ON," 90 MINUTE BATTERY SHALL BE SEALED, NICKEL-CADMIUM TYPE WITH FULLY AUTOMATIC, SOLID STATE, CONSTANT-CURRENT TYPE CHARGER WITH SEALED POWER TRANSFER RELAY. PROVIDE FACTORY-INSTALLED INTEGRAL SELF-TEST DEVICE TO AUTOMATICALLY INITIATE CODE-REQUIRED TEST OF UNIT EMERGENCY OPERATION AT REQUIRED INTERVALS. TEST FAILURE IS ANNUNCIATED BY AN INTEGRAL AUDIBLE ALARM AND A FLASHING RED LED. BALLAST SHALL AUTOMATICALLY ENERGIZE LAMP FROM BATTERY WHEN CIRCUIT VOLTAGE DROPS TO 80% OF NOMINAL VOLTAGE OR BELOW. WHEN NORMAL VOLTAGE IS RESTORED, BATTERY IS AUTOMATICALLY RECHARGED AND FLOATED ON CHARGER.
- LAMPS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE GE, PHILIPS, AND OSRAM-SYLVANIA. PROVIDE LAMPS WITH MINIMUM PERFORMANCE AS INDICATED IN THE LIGHTING FIXTURE SCHEDULE. LAMP COLOR, BEAM ANGLE, WATTAGE AND OTHER PERFORMANCE CHARACTERISTICS SHALL BE CONFIRMED WITH BUILDING STANDARDS AND EXISTING FIXTURES IN THE AREA.
- SET LUMINAIRES LEVEL, PLUMB, AND SQUARE WITH CEILINGS AND WALLS UNLESS OTHERWISE INDICATED AND INSTALL LAMPS ONCE LUMINAIRE INSTALLATION IS COMPLETE.
- LAY-IN CEILING FIXTURES MAY USE THE GRID AS A SUPPORT ELEMENT. ADDITIONALLY, INSTALL CEILING SUPPORT SYSTEM RODS OR WIRES, INDEPENDENT OF THE CEILING SUSPENSION DEVICES, FOR EACH KEY ITEM LOCATED NOT MORE THAN 18 INCHES FROM THE CEILING.
- FIXTURES OF SIZES LESS THAN CEILING GRID: INSTALL AS INDICATED ON REFLECTED CEILING PLANS OR CENTER IN ACOUSTICAL PANEL, AND SUPPORT FIXTURES INDEPENDENTLY.
- TEMPORARY LIGHTING: IF IT IS NECESSARY, AND APPROVED BY ARCHITECT, TO USE PERMANENT LUMINAIRES FOR TEMPORARY LIGHTING, INSTALL AND ENERGIZE THE MINIMUM NUMBER OF LUMINAIRES NECESSARY TO PROVIDE SUFFICIENTLY COMPLETE, REMOVE THE TEMPORARY LUMINAIRES, DISASSEMBLE, CLEAN THOROUGHLY, INSTALL NEW LAMPS, AND REINSTALL.
- TEST EMERGENCY LIGHTING BY INTERRUPTING POWER SUPPLY TO DEMONSTRATE PROPER OPERATION. VERIFY TRANSFER FROM NORMAL POWER TO BATTERY AND RETRANSFER TO NORMAL.
- ADJUST ALL AIMABLE LUMINAIRES IN THE PRESENCE OF ARCHITECT/OWNER. ADDITIONALLY, WHEN REQUESTED WITHIN 3 MONTHS OF DATE OF FINAL ACCEPTANCE, PROVIDE ON-SITE ASSISTANCE IN ADJUSTING AIMABLE LUMINAIRES TO SUIT ACTUAL OCCUPIED CONDITIONS.

SECTION 28 31 11 - DIGITAL, ADDRESSABLE FIRE ALARM SYSTEM

- SYSTEM DESCRIPTION: NON-CODED ADDRESSABLE SYSTEM, WITH AUTOMATIC SENSITIVITY CONTROL OF CERTAIN SMOKE DETECTORS AND MULTIPLEXED SIGNAL TRANSMISSION, DEDICATED TO FIRE-ALARM SERVICE ONLY.
- SUBMITTALS SHALL BE PREPARED BY PERSONS TRAINED AND CERTIFIED BY MANUFACTURER AND LICENSED BY AUTHORITIES HAVING JURISDICTION. PRIOR TO SUBMISSION TO THE ARCHITECT/ENGINEER, THE SUBMITTALS SHALL BE APPROVED BY AUTHORITIES HAVING JURISDICTION. IN ADDITION TO THE REQUIREMENTS OF DIVISION 1 PROVIDE THE FOLLOWING:
  - FLOOR PLANS TO INDICATE FINAL DEVICE AND APPLIANCE LOCATIONS SHOWING ADDRESS OF EACH ADDRESSABLE DEVICE.
  - INSTALLATION DETAILS, VOLTAGE DROP CALCULATIONS FOR NOTIFICATION APPLIANCE CIRCUITS, BATTERY-SIZE CALCULATIONS.
  - DRAWINGS SHOWING THE LOCATION OF EACH DETECTOR AND RATINGS OF EACH. SPACING AND SENSITIVITY CALCULATIONS SHALL COMPLY WITH NFPA 72.
  - COMPLY WITH RECOMMENDATIONS IN THE "DOCUMENTATION" SECTION OF THE "FUNDAMENTALS OF FIRE ALARM SYSTEMS" CHAPTER IN NFPA 72.
  - QUALIFICATION DATA FOR INSTALLER.
- OBTAIN FIRE-ALARM SYSTEM FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.
- NFPA CERTIFICATION: OBTAIN CERTIFICATION ACCORDING TO NFPA 72 BY ON NRTL.
- SYSTEMS OPERATIONAL DESCRIPTION.
  - FIRE-ALARM SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND SYSTEMS:
    - MANUAL STATIONS.
    - DUCT SMOKE DETECTORS.
    - VERIFIED AUTOMATIC ALARM OPERATION OF SMOKE DETECTORS.
    - AUTOMATIC SPRINKLER SYSTEM WATER FLOW.
    - HEAT DETECTORS IN ELEVATOR SHAFT AND PIT.
  - FIRE-ALARM SIGNAL SHALL INITIATE THE FOLLOWING ACTIONS:
    - CONTINUOUSLY OPERATE ALARM NOTIFICATION APPLIANCES.
    - IDENTIFY ALARM AT FIRE-ALARM CONTROL UNIT AND REMOTE ANNUNCIATORS, IF APPLICABLE.
    - TRANSFERS ALARM SIGNAL TO THE REMOTE ALARM RECEIVING STATION.
    - UNLOCK ELECTRIC DOOR LOCKS IN DESIGNATED EGRESS PATHS.
    - ACTIVATE VOICE/ALARM COMMUNICATION SYSTEM.
    - SWITCH HEATING, VENTILATING, AND AIR-CONDITIONING EQUIPMENT CONTROLS TO FIRE-ALARM MODE.
    - CLOSE SMOKE DAMPERS IN AIR DUCTS OF DESIGNATED AIR-CONDITIONING DUCT SYSTEMS.
    - ACTIVATE EMERGENCY SHUTOFFS FOR GAS AND FUEL SUPPLIES.
    - RECORD EVENTS IN THE SYSTEM MEMORY, WITH AT LEAST TWO 3/4" METAL CHANNELS SPANNING AND SECURED TO CEILING TEES.
  - SUPERVISORY SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND ACTIONS:
    - VALVE SUPERVISORY SWITCH.
  - SYSTEM TROUBLE SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND ACTIONS:
    - OPEN CIRCUITS, SHORTS, AND GROUNDS IN DESIGNATED CIRCUITS.
    - OPERATE DIRECTIONAL SWITCHES FOR SELECTED PANELBOARDS AND SUPERVISORY SIGNAL-INITIATING DEVICES.
    - LOSS OF PRIMARY POWER AT FIRE-ALARM CONTROL UNIT.
    - GROUND OR A SINGLE BREAK IN FIRE-ALARM CONTROL UNIT INTERNAL CIRCUITS.
    - ABNORMAL AC VOLTAGE AT FIRE-ALARM CONTROL UNIT.
    - FAILURE OF BATTERY CHARGING.
    - ABNORMAL POSITION OF ANY SWITCH AT FIRE-ALARM CONTROL UNIT OR ANNUNCIATOR.
  - SYSTEM TROUBLE AND SUPERVISORY SIGNAL ACTIONS: INITIATE NOTIFICATION APPLIANCE AND ANNUNCIATE AT FIRE-ALARM CONTROL UNIT AND REMOTE ANNUNCIATORS, IF APPLICABLE. RECORD THE EVENT ON SYSTEM PRINTER.

- FIRE ALARM CONTROL UNIT: FIELD PROGRAMMABLE, MICROPROCESSOR-BASED, MODULAR, POWER-LIMITED DESIGN WITH ELECTRONIC MODULES, COMPLYING WITH UL 864 AND LISTED AND LABELED BY AN NRTL. ADDRESSABLE INITIATION DEVICES THAT COMMUNICATE DEVICE IDENTITY AND STATUS AND ADDRESSABLE CONTROL CIRCUITS FOR OPERATION OF MECHANICAL EQUIPMENT. THE FOLLOWING ITEMS SHALL BE INCLUDED AS PART OF THE FIRE ALARM CONTROL UNIT:
  - ALPHANUMERIC DISPLAY AND SYSTEM CONTROLS: ARRANGED FOR INTERFACE BETWEEN HUMAN OPERATOR AT FIRE-ALARM CONTROL UNIT AND ADDRESSABLE SYSTEM COMPONENTS INCLUDING ANNUNCIATION AND SUPERVISION, DISPLAY ALARM, SUPERVISORY, AND COMPONENT STATUS MESSAGES AND THE PROGRAMMING AND CONTROL MENU.
  - INITIATING DEVICE, NOTIFICATION APPLIANCE, AND SIGNALING LINE CIRCUITS: PROVIDE STYLE 6 SIGNALING LINE CIRCUITS. INSTALL NO MORE THAN 50 ADDRESSABLE DEVICES ON EACH SIGNALING LINE CIRCUIT.
  - TRANSMISSION TO REMOTE ALARM RECEIVING STATION: DIGITAL ALARM COMMUNICATOR TRANSMITTER AUTOMATICALLY TRANSMITS ALARM, SUPERVISORY, AND TROUBLE SIGNALS TO A REMOTE ALARM STATION; IF SERVICE ON THE LINE IS INTERRUPTED FOR LONGER THAN 45 SECONDS, TRANSMITTER SHALL INITIATE A LOCAL TROUBLE SIGNAL AND TRANSMIT THE SIGNAL INDICATING LOSS OF TELEPHONE LINE TO THE REMOTE ALARM RECEIVING STATION OF THE REMAINING LINE. TRANSMITTER SHALL AUTOMATICALLY REPORT TELEPHONE SERVICE RESTORATION TO THE CENTRAL STATION. THE DIGITAL DATA TRANSMISSION SHALL INCLUDE ADDRESS OF THE ALARM-INITIATING DEVICE, ADDRESS OF THE SUPERVISORY SIGNAL, ADDRESS OF THE TROUBLE-INITIATING DEVICE, LOSS OF AC SUPPLY OR LOSS OF POWER, LOW BATTERY, ABNORMAL TEST SIGNAL, AND COMMUNICATION BUS FAILURE. SECONDARY POWER SHALL BE BY MEANS OF INTEGRAL RECHARGEABLE BATTERY AND AUTOMATIC CHARGER. UNIT SHALL CONDUCT SELF-TEST EVERY 24 HOURS AND TRANSMIT REPORT TO CENTRAL STATION.
  - PRIMARY POWER: 24-V DC OBTAINED FROM 120-V AC SERVICE AND A POWER-SUPPLY MODULE. INITIATING DEVICES, NOTIFICATION APPLIANCES, SIGNALING LINES, TROUBLE SIGNALS, SUPERVISORY SIGNALS SHALL BE POWERED BY 24-V DC SOURCE. ALARM CURRENT DRAW OF ENTIRE FIRE-ALARM SYSTEM SHALL NOT EXCEED 80 PERCENT OF THE POWER-SUPPLY MODULE RATING.
  - SECONDARY POWER: 24-V DC SUPPLY SYSTEM WITH BATTERIES, AUTOMATIC BATTERY RECHARGER, AND AUTOMATIC TRANSFER SWITCH. BATTERIES SHALL BE SEALED LEAD-CALCIUM. MANUAL FIRE-ALARM BOXES: COMPLY WITH UL 38. BOXES SHALL BE FINISHED IN RED WITH MOLDED, RAISED-LETTER OPERATING INSTRUCTIONS IN CONTRASTING COLOR; SHALL SHOW VISUAL INDICATION OF OPERATION; AND SHALL BE MOUNTED ON RECESSED OUTLET BOX. DOUBLE-ACTION MECHANISM REQUIRING TWO ACTIONS TO INITIATE AN ALARM, FULL-LEVER TYPE, WITH INTEGRAL ADDRESSABLE MODULE CAPABLE OF COMMUNICATE MANUAL-STATUS (NORMAL, ALARM, OR TROUBLE) TO FIRE-ALARM CONTROL UNIT. STATION RESET SHALL BE BY KEY OR WRENCH OPERATED SWITCH.
  - VISUAL AND AUDIBLE NOTIFICATION APPLIANCES ARE TO BE CONNECTED TO NOTIFICATION APPLIANCE SIGNAL CIRCUITS, ZONED AS REQUIRED, WITH SCREW TERMINALS FOR SYSTEM CONNECTIONS. WHEN INDICATED PROVIDE FACTORY-INTEGRATED AUDIBLE AND VISIBLE DEVICES IN A SINGLE MOUNTING ASSEMBLY. UNITS SHALL MATCH THE EXISTING APPLIANCES IN STYLE, FINISH, AND COLOR. FOR UNITS WITH GUARDS TO PREVENT PHYSICAL DAMAGE, LIGHT OUTPUT RATINGS SHALL BE DETERMINED WITH GUARDS IN PLACE.
  - VISIBILITY NOTIFICATION APPLIANCES: XENON STROBE LIGHTS COMPLY WITH UL 1971, WITH CLEAR OR NOMINAL WHITE POLYCARBONATE LENS. THE WORD "FIRE" IS ENGRAVED IN MINIMUM 1/4" HIGH LETTERS ON THE FRONT OF THE SIGNALING PLATE. STROBES SHALL BE FIELD-ADJUSTABLE. IF NOT INDICATED OTHERWISE, RATED LIGHT OUTPUT SHOULD BE SET TO 110 CD. FLASHING SHALL BE IN A TEMPORAL PATTERN, SYNCHRONIZED WITH OTHER UNITS. INSTALL ON CEILING OR ON WALL ADJACENT TO EACH ALARM HORN AND AT LEAST 6" BELOW THE CEILING.
  - AUDIBLE HORNS: ELECTRIC-VIBRATING-POLARIZED TYPE, 24V DC, WITH PROVISION FOR HOUSING THE OPERATING MECHANISM BEHIND A GRILLE. COMPLY WITH UL 464. HORNS SHALL PRODUCE A SOUND PRESSURE LEVEL OF 90 DBA, MEASURED 10' FROM THE HORN, USING THE CODED SIGNAL PRESCRIBED IN UL 464 TEST PROTOCOL. INSTALL ON CEILING OR ON WALL NOT LESS THAN 6" BELOW THE CEILING. INSTALL BELLS AND HORNS ON FLUSH-MOUNTED BOX BOXES WITH THE DEVICE-OPERATING MECHANISM CONCEALED BEHIND A GRILLE.
  - INTERFACING: FIRE-ALARM SYSTEMS SHALL MATCH THOSE OF FIRE-ALARM CONTROL UNIT FOR ALARM, SUPERVISORY, AND TROUBLE INDICATIONS. MANUAL SWITCHING FUNCTIONS SHALL MATCH THOSE OF FIRE-ALARM CONTROL UNIT, INCLUDING ACKNOWLEDGING, SILENCING, RESETING, AND TESTING.
  - ADDRESSABLE INTERFACE DEVICE: MICROELECTRONIC MONITOR MODULE, NRTL LISTED FOR USE IN NOTIFICATION APPLIANCE. ADDRESSABLE INTERFACE DEVICES ARE NRTL LISTED FOR USE WITH NORMALLY OPEN CONTACTS. INTEGRAL RELAY SHALL BE CAPABLE OF PROVIDING A DIRECT SIGNAL TO ELEVATOR CONTROLLER TO INITIATE ELEVATOR RECALL AND/OR TO CIRCUIT-BREAKER SHUNT TRIP FOR POWER SHUTDOWN.
  - WHERE SUBJECT TO DAMAGE OR ABUSE, PROVIDE FACTORY-FABRICATED WELDED WIRE MESH GUARDS OF SIZE AND SHAPE FOR THE DEVICE OR APPLIANCE, WITH MATCHING FINISH AND COLOR.
  - COMPLY WITH NFPA 72 FOR INSTALLATION OF FIRE-ALARM EQUIPMENT.
  - SURFACE-MOUNT CONTROL UNIT(S) AND ANNUNCIATOR(S) WITH TOPS OF CABINETS NOT MORE THAN 72 INCHES ABOVE FINISHED FLOOR.
  - VERIFY THAT HOWEVER THE DEVICES ARE NRTL LISTED FOR USE WITH FIRE-ALARM SYSTEM IN THIS SECTION BEFORE MAKING CONNECTIONS.
  - GROUND FIRE-ALARM CONTROL UNIT AND ASSOCIATED CIRCUITS; COMPLY WITH IEEE 1100. INSTALL A GROUND WIRE FROM MAIN SERVICE GROUND TO FIRE-ALARM CONTROL UNIT.
  - FIELD TESTS SHALL BE WITNESSED BY AUTHORITIES HAVING JURISDICTION AND OWNER'S REPRESENTATIVE.
  - ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS, AND TO ASSIST IN TESTING.
    - CONDUCT VISUAL INSPECTION PRIOR TO TESTING.
    - INSPECTION SHALL BE BASED ON COMPLETED RECORD DRAWINGS AND SYSTEM DOCUMENTATION THAT IS REQUIRED BY NFPA 72 IN ITS "COMPLETION DOCUMENTS, PREPARATION" TABLE IN THE "DOCUMENTATION" SECTION OF THE "FUNDAMENTALS OF FIRE ALARM SYSTEMS" CHAPTER.
    - COMPLY WITH "VISUAL INSPECTION FREQUENCIES" TABLE IN THE "INSPECTION" SECTION OF THE "INSPECTION, TESTING AND MAINTENANCE" CHAPTER IN NFPA 72; RETAIN THE ARCHITECT/ENGINEER. THE SUBMITTALS SHALL BE APPROVED BY AUTHORITIES HAVING JURISDICTION IN ADDITION TO THE REQUIREMENTS OF DIVISION 1 PROVIDE THE FOLLOWING:
      - FLOOR PLANS TO INDICATE FINAL DEVICE AND APPLIANCE LOCATIONS SHOWING ADDRESS OF EACH ADDRESSABLE DEVICE.
      - INSTALLATION DETAILS, VOLTAGE DROP CALCULATIONS FOR NOTIFICATION APPLIANCE CIRCUITS, BATTERY-SIZE CALCULATIONS.
      - DRAWINGS SHOWING THE LOCATION OF EACH DETECTOR AND RATINGS OF EACH. SPACING AND SENSITIVITY CALCULATION SHALL COMPLY WITH NFPA 72.
      - COMPLY WITH RECOMMENDATIONS IN THE "DOCUMENTATION" SECTION OF THE "FUNDAMENTALS OF FIRE ALARM SYSTEMS" CHAPTER IN NFPA 72.
      - QUALIFICATION DATA FOR INSTALLER.
    - OBTAIN FIRE-ALARM SYSTEM FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.
    - NFPA CERTIFICATION: OBTAIN CERTIFICATION ACCORDING TO NFPA 72 BY ON NRTL.
    - SYSTEMS OPERATIONAL DESCRIPTION.
      - FIRE-ALARM SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND SYSTEMS:
        - MANUAL STATIONS.
        - DUCT SMOKE DETECTORS.
        - VERIFIED AUTOMATIC ALARM OPERATION OF SMOKE DETECTORS.
        - AUTOMATIC SPRINKLER SYSTEM WATER FLOW.
        - HEAT DETECTORS IN ELEVATOR SHAFT AND PIT.
      - FIRE-ALARM SIGNAL SHALL INITIATE THE FOLLOWING ACTIONS:
        - CONTINUOUSLY OPERATE ALARM NOTIFICATION APPLIANCES.
        - IDENTIFY ALARM AT FIRE-ALARM CONTROL UNIT AND REMOTE ANNUNCIATORS, IF APPLICABLE.
        - TRANSFERS ALARM SIGNAL TO THE REMOTE ALARM RECEIVING STATION.
        - UNLOCK ELECTRIC DOOR LOCKS IN DESIGNATED EGRESS PATHS.
        - ACTIVATE VOICE/ALARM COMMUNICATION SYSTEM.
        - SWITCH HEATING, VENTILATING, AND AIR-CONDITIONING EQUIPMENT CONTROLS TO FIRE-ALARM MODE.
        - CLOSE SMOKE DAMPERS IN AIR DUCTS OF DESIGNATED AIR-CONDITIONING DUCT SYSTEMS.
        - ACTIVATE EMERGENCY SHUTOFFS FOR GAS AND FUEL SUPPLIES.
        - RECORD EVENTS IN THE SYSTEM MEMORY, WITH AT LEAST TWO 3/4" METAL CHANNELS SPANNING AND SECURED TO CEILING TEES.
      - SUPERVISORY SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND ACTIONS:
        - VALVE SUPERVISORY SWITCH.
      - SYSTEM TROUBLE SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND ACTIONS:
        - OPEN CIRCUITS, SHORTS, AND GROUNDS IN DESIGNATED CIRCUITS.
        - OPERATE DIRECTIONAL SWITCHES FOR SELECTED PANELBOARDS AND SUPERVISORY SIGNAL-INITIATING DEVICES.
        - LOSS OF PRIMARY POWER AT FIRE-ALARM CONTROL UNIT.
        - GROUND OR A SINGLE BREAK IN FIRE-ALARM CONTROL UNIT INTERNAL CIRCUITS.
        - ABNORMAL AC VOLTAGE AT FIRE-ALARM CONTROL UNIT.
        - FAILURE OF BATTERY CHARGING.
        - ABNORMAL POSITION OF ANY SWITCH AT FIRE-ALARM CONTROL UNIT OR ANNUNCIATOR.
      - SYSTEM TROUBLE AND SUPERVISORY SIGNAL ACTIONS: INITIATE NOTIFICATION APPLIANCE AND ANNUNCIATE AT FIRE-ALARM CONTROL UNIT AND REMOTE ANNUNCIATORS, IF APPLICABLE. RECORD THE EVENT ON SYSTEM PRINTER.

SECTION 28 31 11 - DIGITAL, ADDRESSABLE FIRE ALARM SYSTEM

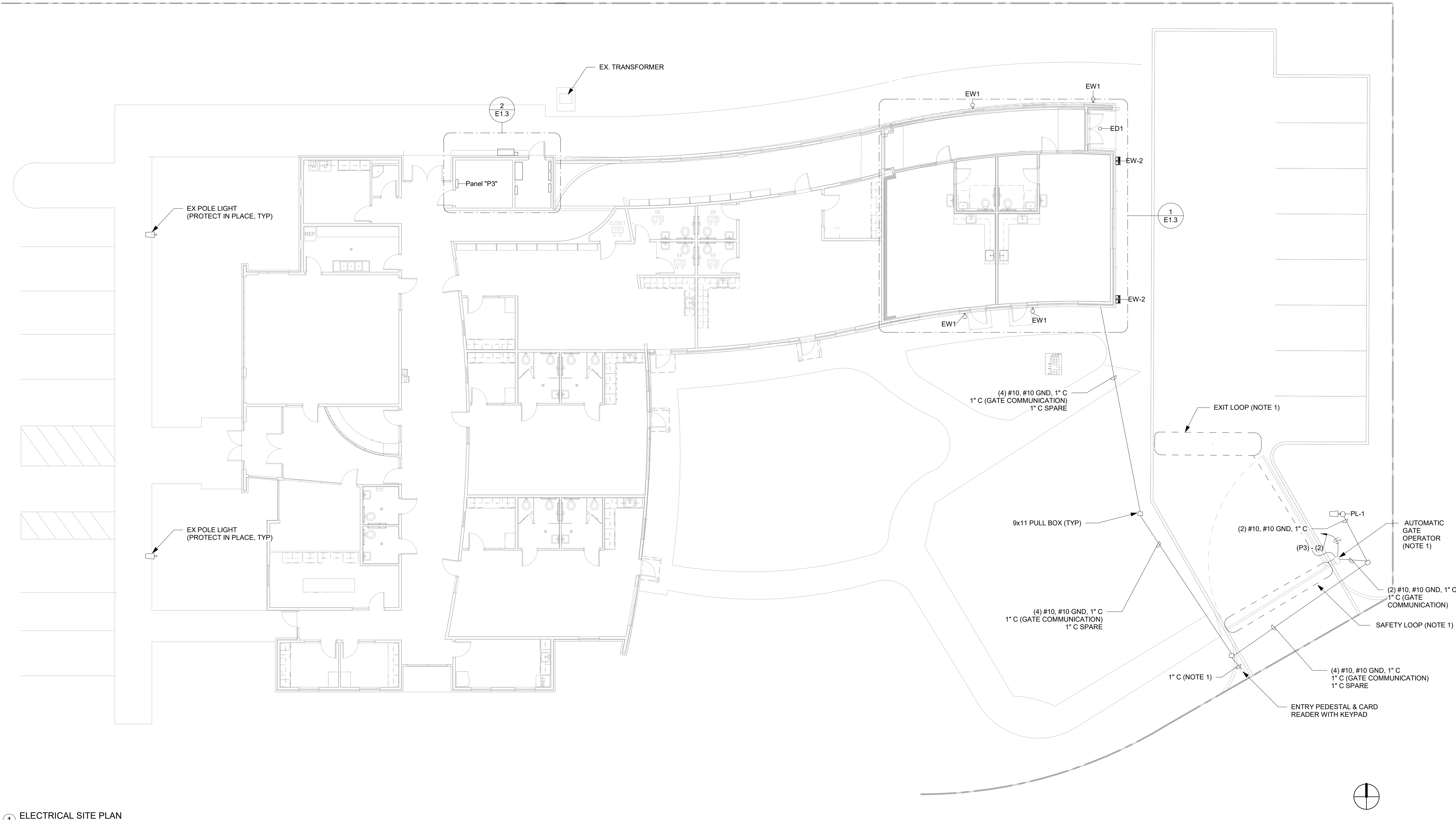
- SYSTEM DESCRIPTION: NON-CODED ADDRESSABLE SYSTEM, WITH AUTOMATIC SENSITIVITY CONTROL OF CERTAIN SMOKE DETECTORS AND MULTIPLEXED SIGNAL TRANSMISSION, DEDICATED TO FIRE-ALARM SERVICE ONLY.
- SUBMITTALS SHALL BE PREPARED BY PERSONS TRAINED AND CERTIFIED BY MANUFACTURER AND LICENSED BY AUTHORITIES HAVING JURISDICTION. PRIOR TO SUBMISSION TO THE ARCHITECT/ENGINEER, THE SUBMITTALS SHALL BE APPROVED BY AUTHORITIES HAVING JURISDICTION IN ADDITION TO THE REQUIREMENTS OF DIVISION 1 PROVIDE THE FOLLOWING:
  - FLOOR PLANS TO INDICATE FINAL DEVICE AND APPLIANCE LOCATIONS SHOWING ADDRESS OF EACH ADDRESSABLE DEVICE.
  - INSTALLATION DETAILS, VOLTAGE DROP CALCULATIONS FOR NOTIFICATION APPLIANCE CIRCUITS, BATTERY-SIZE CALCULATIONS.
  - DRAWINGS SHOWING THE LOCATION OF EACH DETECTOR AND RATINGS OF EACH. SPACING AND SENSITIVITY CALCULATION SHALL COMPLY WITH NFPA 72.
  - COMPLY WITH RECOMMENDATIONS IN THE "DOCUMENTATION" SECTION OF THE "FUNDAMENTALS OF FIRE ALARM SYSTEMS" CHAPTER IN NFPA 72.
  - QUALIFICATION DATA FOR INSTALLER.
- OBTAIN FIRE-ALARM SYSTEM FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.
- NFPA CERTIFICATION: OBTAIN CERTIFICATION ACCORDING TO NFPA 72 BY ON NRTL.
- SYSTEMS OPERATIONAL DESCRIPTION.
  - FIRE-ALARM SIGNAL INITIATION SHALL



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LIGHTING FIXTURE SCHEDULE					
Mark	Manufacturer	Description	Model	Wattage (MAX)	Lamp
ED1	Lithonia	5'D x 9" H EXTERIOR RATED SURFACE MOUNTED CYLINDER LIGHT WITH EMERGENCY PACK	SPC0611LEDXT 20L 40K WD DS10X WL 6454XT CY SO PM48 EMCP7W MB	25 W	LED
EW1		EXTERIOR WALL MOUNTED LIGHT FIXTURE. TO MATCH EXISTING WALL MOUNTED LIGHT FIXTURES. SOME TO HAVE EMERGENCY BATTERY PACK RATED FOR OUTDOOR AND COLD TEMP.		20 W	LED
EW-2	Lithonia	EXTERIOR WALL PACK (FULL CUT-OFF)	DSXW1 LED 20C 1000 MVOLT	73 W	LED
EX1	Evenlite	GREEN LED EXIT SIGN WITH BATTERY PACK. ARROW INDICATES THE DIRECTION OF EXIT. MULTI VOLTAGE	TLX-EM-GU-W	2 W	LED
P1	Lithonia	27" DIAMETER PENDANT LIGHT TO MATCH EXISTING PENDANT IN THE HALLWAY.	EP-C2-0-A3-C-V-WHITE	40 W	LED
PL-1	LITHONIA	POLE LIGHT W/ FULL CUT-OFF FIXTURE (H=16')	DSXO-LED-P5-30K-T4M-MVOT	131 W	LED
R1	Lithonia	LED 2'x4' VOLUMETRIC LIGHT FIXTURE. SOME TO HAVE EMERGENCY BATTERY	2BLT4 48L SDSM EZ1 LP840	45 W	LED
W-1	Lithonia	4' LED CONTEMPORARY VANITY CYLINDER 3000K	FMVCL 48IN 40K MVOLT	34 W	LED



1 ELECTRICAL SITE PLAN  
1" = 10'-0"

CONSTRUCTION NOTES

- COORDINATE AUTOMATIC GATE REQUIREMENTS & PREFERENCES W/ OWNER. MINIMUM REQUIREMENTS ARE SHOWN. GATE SHALL BE HEAVY DUTY, COMMERCIAL GRADE, FAST OPENING W/ AUTOMATIC EXIT LOOP, SAFETY LOOPS, & CARD READER/KEYPAD. ENTRY PEDESTAL PROVIDE (12) MIN KEY CARDS

DATE

DEC 2023

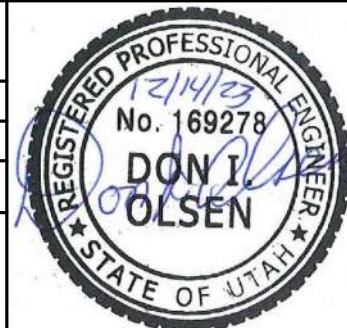


REVISIONS

MARK	DATE	DESCRIPTION
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DRAWN: MB  
DESIGNER: KDC  
REVIEWED: DIO

PROJECT #  
23SM1182.04



SCALES

1" = 10'-0"



PROJECT NAME:

MAGNA HEAD  
START-ADDITION

PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

SHEET TITLE:

ELECTRICAL SITE PLAN

PLAN SET:

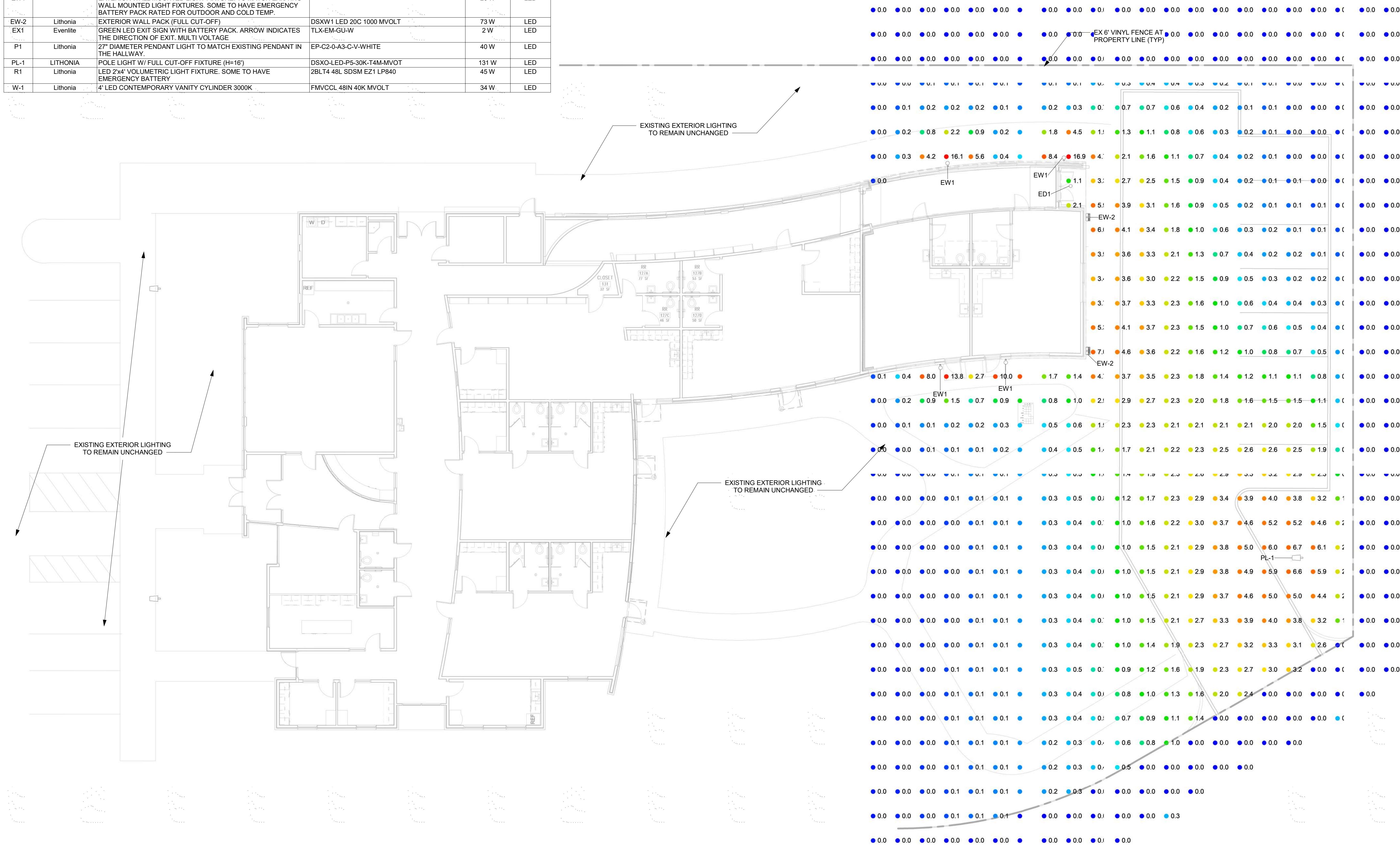
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SHEET

E1.1



LIGHTING FIXTURE SCHEDULE					
Mark	Manufacturer	Description	Model	Wattage (MAX)	Lamp
ED1	Lithonia	5'D x 9" H EXTERIOR RATED SURFACE MOUNTED CYLINDER LIGHT WITH EMERGENCY PACK	SPC0611LEDXT 20L 40K WD DS10X WL 6454XT CY SO PM48 EMCP7W MB	25 W	LED
EW1		EXTERIOR WALL MOUNTED LIGHT FIXTURE. TO MATCH EXISTING WALL MOUNTED LIGHT FIXTURES. SOME TO HAVE EMERGENCY BATTERY PACK RATED FOR OUTDOOR AND COLD TEMP.		20 W	LED
EW-2	Lithonia	EXTERIOR WALL PACK (FULL CUT-OFF)	DSXW1 LED 20C 1000 MVOLT	73 W	LED
EX1	Evenlite	GREEN LED EXIT SIGN WITH BATTERY PACK. ARROW INDICATES THE DIRECTION OF EXIT. MULTI VOLTAGE	TLX-EM-GU-W	2 W	LED
P1	Lithonia	27" DIAMETER PENDANT LIGHT TO MATCH EXISTING PENDANT IN THE HALLWAY.	EP-C2-0-A3-C-V-WHITE	40 W	LED
PL-1	LITHONIA	POLE LIGHT W/ FULL CUT-OFF FIXTURE (H=16')	DSXO-LED-P5-30K-T4M-MVOT	131 W	LED
R1	Lithonia	LED 2'x4' VOLUMETRIC LIGHT FIXTURE. SOME TO HAVE EMERGENCY BATTERY	2BLT4 48L SDSM EZ1 LP840	45 W	LED
W-1	Lithonia	4' LED CONTEMPORARY VANITY CYLINDER 3000K	FMVCCL 48IN 40K MVOLT	34 W	LED



**CONSTRUCTION NOTES**  
1. GRID VALUES SHOWN ARE FOOT-CANDLES AT GROUND LEVEL.

**DATE**  
DEC 2023

REVISIONS		
MARK	DATE	DESCRIPTION

DRAWN: MB DESIGNER: KDC REVIEWED: DIO	
PROJECT # 23SM1182.04	

**SCALES**  
1" = 10'-0"

**PROJECT NAME:**  
MAGNA HEAD  
START-ADDITION

**PROJECT LOCATION:**  
8259 W 3500 S MAGNA,  
UT 84044

**SHEET TITLE:**  
PHOTOMETRIC SITE  
LIGHTING PLAN

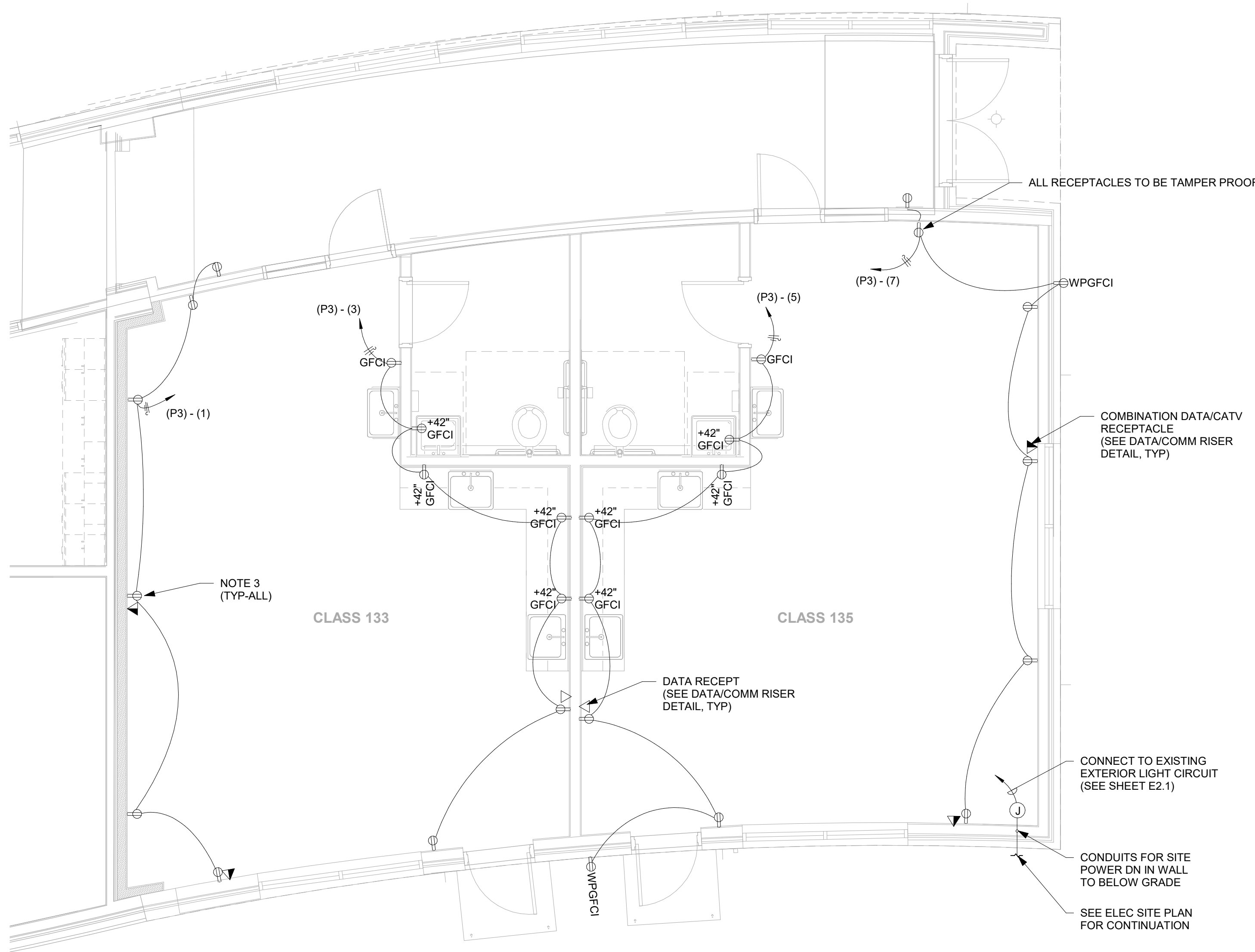
<b>PLAN SET:</b> PERMIT	<b>SHEET</b> E1.2
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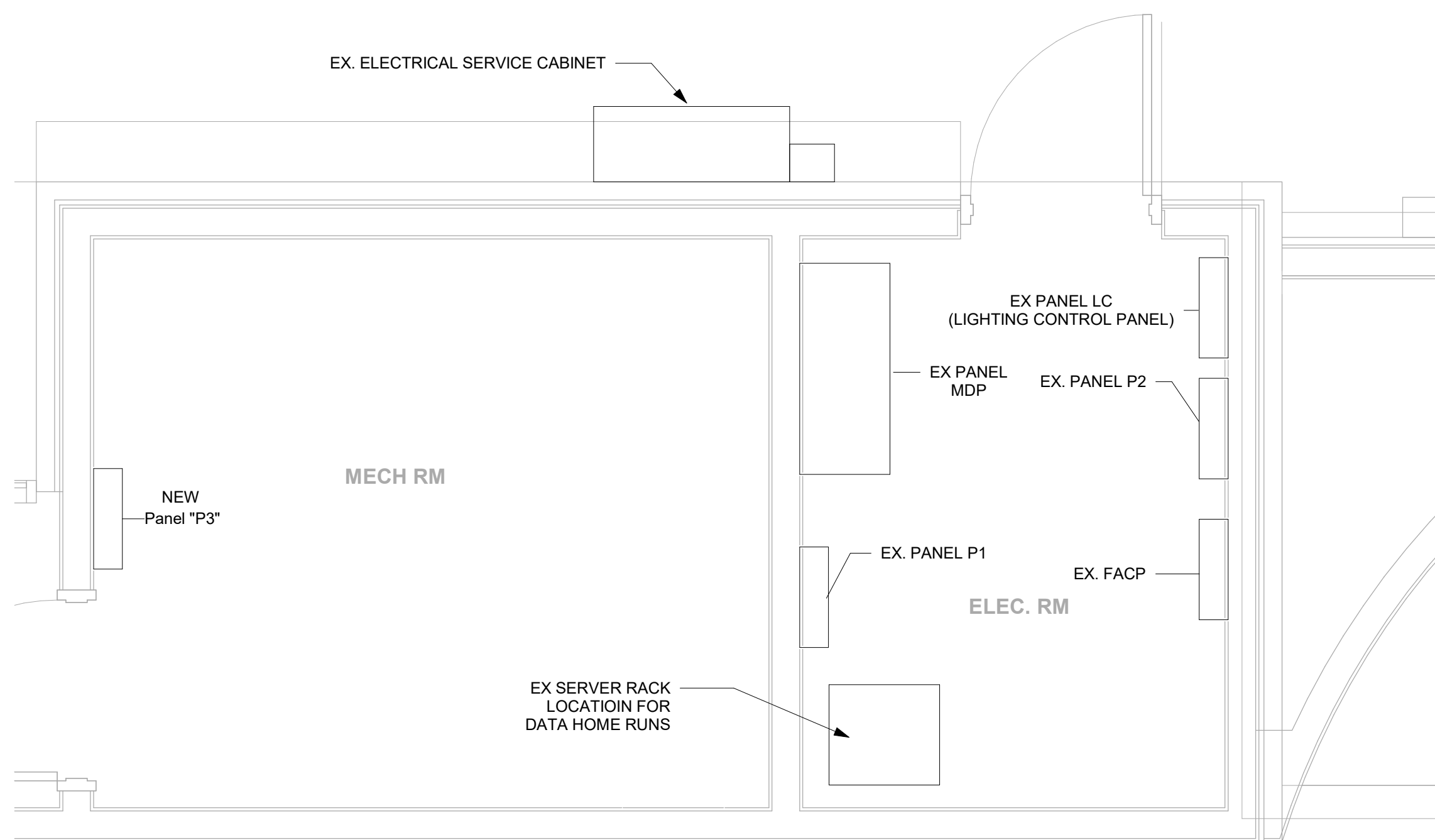
NOTE: CONTRACTOR MAY UTILIZE EXISTING SPARE CIRCUITS IN LIEU OF INSTALLING NEW PANEL 'P3'. EXISTING PANEL SCHEDULES SHOW THE FOLLOWING CIRCUITS AS SPARE/SPACE:

- PANEL P1: 27,34,35,41
- PANEL P2: 3,5,31,32,33,35
- PANEL MDP: (3)-POLE SPACES; (2) 1-POLE SPACES; (1) 225 a SPARE

CONTRACTOR SHALL VERIFY CIRCUIT AVAILABILITY & PROVIDE UPDATED PANEL SCHEDULES WITH ALL CIRCUITS (NEW & EXISTING) IDENTIFIED.



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



2 ELECTRICAL ROOM ELECTRICAL PLAN  
1/2" = 1'-0"

CONSTRUCTION NOTES

1. FIRE ALARM SYSTEM SHALL BE DESIGN-BUILD BY CONTRACTOR AND EQUIPMENT SUPPLIER.
2. LOW VOLTAGE SYSTEMS SHALL BE DESIGN-BUILD BY CONTRACTOR. CONFIRM ALL FIXTURE LOCATIONS SHOWN WITH OWNER.
3. ALL RECEPTACLES SUBJECT TO NEC 406.12 SHALL BE TAMPER RESISTANT AS REQUIRED.

DATE

DEC 2023

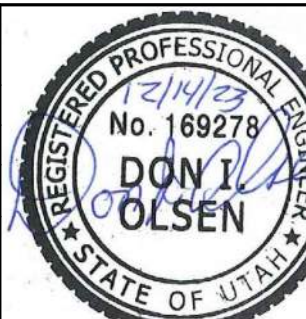


REVISIONS

MARK	DATE	DESCRIPTION
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DRAWN: MB  
DESIGNER: KDC  
REVIEWED: DIO

PROJECT #  
23SM1182.04



SCALES

As indicated



PROJECT NAME:

MAGNA HEAD  
START-ADDITION

PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

SHEET TITLE:

ELECTRICAL PLAN

PLAN SET:

PERMIT

SHEET

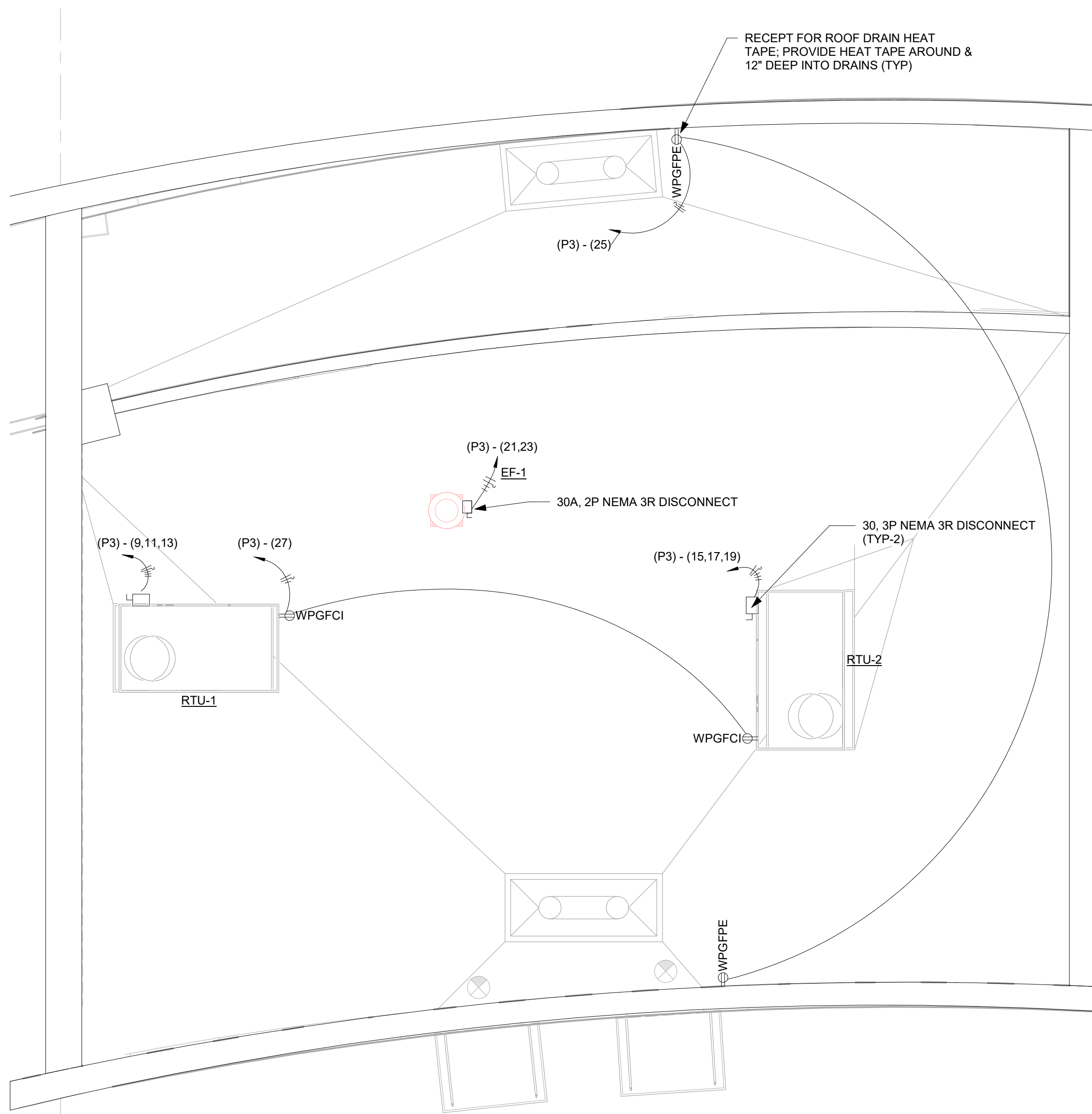
E1.3



NOTE: CONTRACTOR MAY UTILIZE EXISTING SPARE CIRCUITS IN LIEU OF INSTALLING NEW PANEL 'P3'. EXISTING PANEL SCHEDULES SHOW THE FOLLOWING CIRCUITS AS SPARE/SPACE:

- PANEL P1: 27,34,35,41
- PANEL P2: 3,5,31,32,33,35
- PANEL MDP: (3)-POLE SPACES; (2) 1-POLE SPACES; (1) 225 a SPARE

CONTRACTOR SHALL VERIFY CIRCUIT AVAILABILITY & PROVIDE UPDATED PANEL SCHEDULES WITH ALL CIRCUITS (NEW & EXISTING) IDENTIFIED.



1 ROOF ELECTRICAL PLAN  
1/4" = 1'-0"

#### CONSTRUCTION NOTES

1. FIRE ALARM SYSTEM SHALL BE DESIGN-BUILD BY CONTRACTOR AND EQUIPMENT SUPPLIER.
2. LOW VOLTAGE SYSTEMS SHALL BE DESIGN-BUILD BY CONTRACTOR. CONFIRM ALL FIXTURE LOCATIONS SHOWN WITH OWNER.
3. ALL RECEPTACLES SUBJECT TO NEC 406.12 SHALL BE TAMPER RESISTANT AS REQUIRED.

#### DATE

DEC 2023

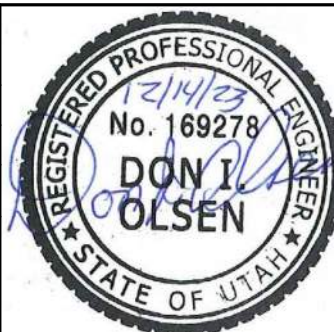


#### REVISIONS

MARK	DATE	DESCRIPTION
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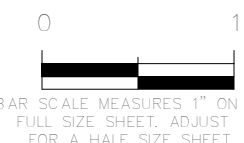
DRAWN: MB  
DESIGNER: KDC  
REVIEWED: DIO

PROJECT #  
23SM1182.04



#### SCALES

1/4" = 1'-0"



#### PROJECT NAME:

MAGNA HEAD  
START-ADDITION

#### PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

#### SHEET TITLE:

ROOF ELECTRICAL  
PLAN

#### PLAN SET:

PERMIT

#### SHEET

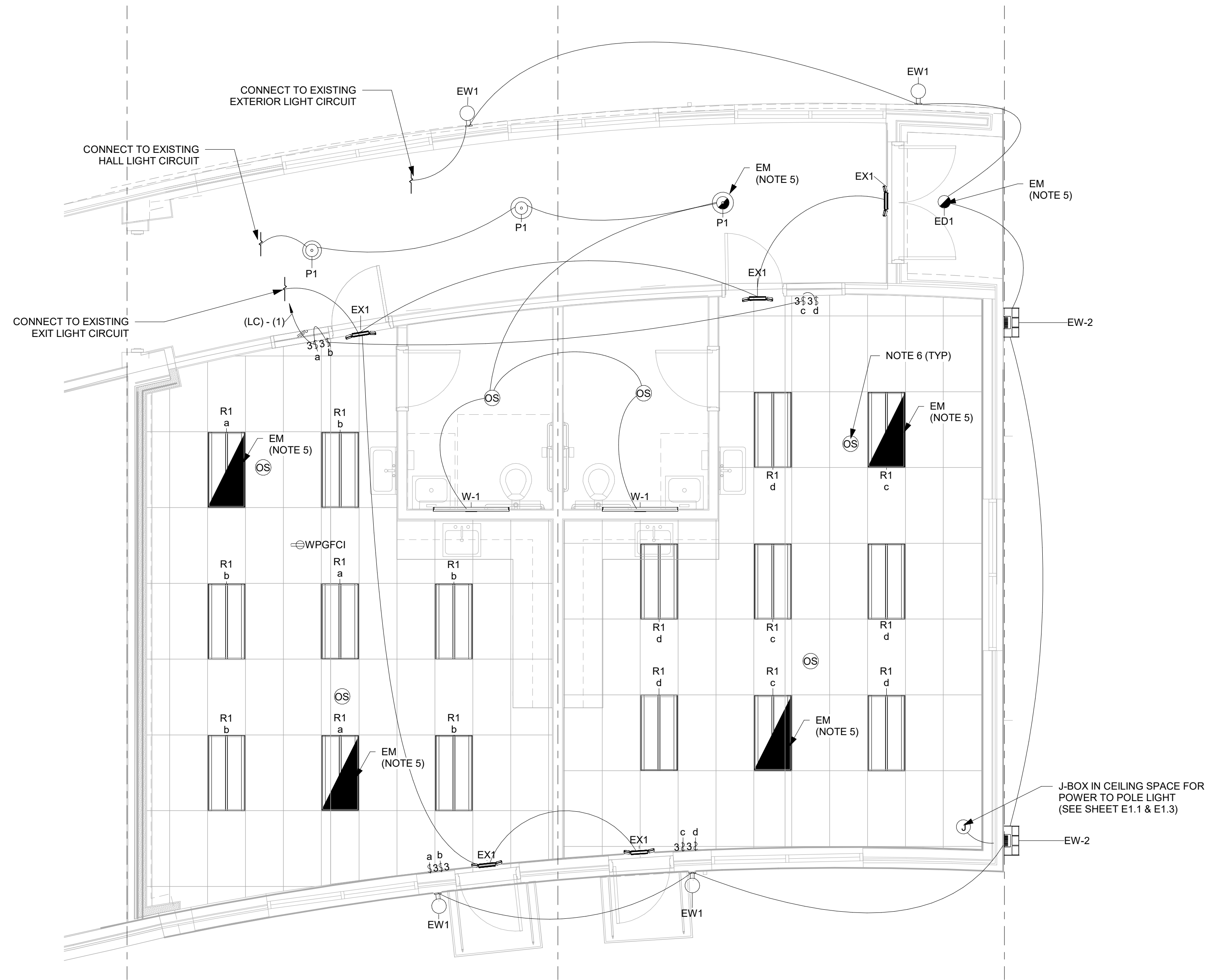
E1.4



NOTE: CONTRACTOR MAY UTILIZE EXISTING SPARE CIRCUITS IN LIEU OF INSTALLING NEW PANEL 'P3'. EXISTING PANEL SCHEDULES SHOW THE FOLLOWING CIRCUITS AS SPARE/SPACE:

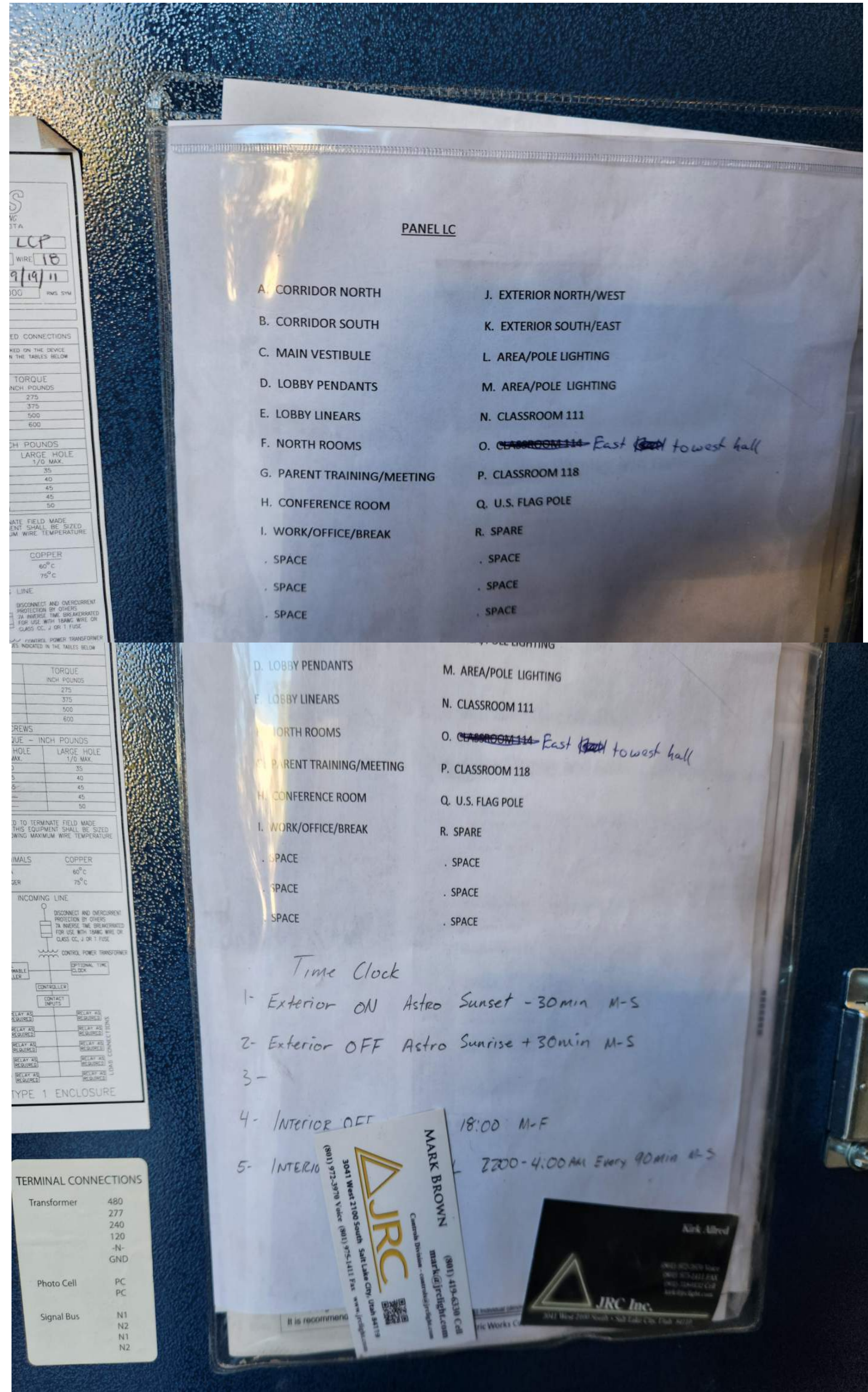
- PANEL P1: 27,34,35,41
- PANEL P2: 3,5,31,32,33,35
- PANEL MDP: (3)-POLE SPACES; (2) 1-POLE SPACES; (1) 225 a SPARE

CONTRACTOR SHALL VERIFY CIRCUIT AVAILABILITY & PROVIDE UPDATED PANEL SCHEDULES WITH ALL CIRCUITS (NEW & EXISTING) IDENTIFIED.



1 FIRST LEVEL LIGHTING PLAN  
1/4" = 1'-0"

LIGHTING FIXTURE SCHEDULE					
Mark	Manufacturer	Description	Model	Wattage (MAX)	Lamp
ED1	Lithonia	5"D x 9" H EXTERIOR RATED SURFACE MOUNTED CYLINDER LIGHT WITH EMERGENCY PACK	SPC0611LEDXT 20L 40K WD DS10X WL 6454XT CY SO PM48 EMCP7W MB	25 W	LED
EW1		EXTERIOR WALL MOUNTED LIGHT FIXTURE. TO MATCH EXISTING WALL MOUNTED LIGHT FIXTURES. SOME TO HAVE EMERGENCY BATTERY PACK RATED FOR OUTDOOR AND COLD TEMP.		20 W	LED
EW-2	Lithonia	EXTERIOR WALL PACK (FULL CUT-OFF)	DSXW1 LED 20C 1000 MVOLT	73 W	LED
EX1	Evenlite	GREEN LED EXIT SIGN WITH BATTERY PACK. ARROW INDICATES THE DIRECTION OF EXIT. MULTI VOLTAGE	TLX-EM-GU-W	2 W	LED
P1	Lithonia	27" DIAMETER PENDANT LIGHT TO MATCH EXISTING PENDANT IN THE HALLWAY.	EP-C2-0-A3-C-V-WHITE	40 W	LED
PL-1	LITHONIA	POLE LIGHT W/ FULL CUT-OFF FIXTURE (H=16')	DSXO-LED-P5-30K-T4M-MVOT	131 W	LED
R1	Lithonia	LED 2'x4' VOLUMETRIC LIGHT FIXTURE. SOME TO HAVE EMERGENCY BATTERY	2BLT4 48L SDSM EZ1 LP840	45 W	LED
W-1	Lithonia	4' LED CONTEMPORARY VANITY CYLINDER 3000K	FMVCL 48IN 40K MVOLT	34 W	LED



EX LIGHTING CONTROL PANEL RELAY SCHEDULE

#### CONSTRUCTION NOTES

- A LIGHTING CONTROL PANEL OR TIMER SHALL BE PROVIDED FOR ALL LIGHTING CIRCUITS NOT CONTROLLED BY OCCUPANCY SENSORS WHERE AUTOMATIC SHUT-OFF WOULD NOT POSE DANGER TO PERSONNEL.
- WALL OCCUPANCY SENSORS SHALL HAVE SELECTABLE MODES FOR AUTOMATIC AND MANUAL ON.
- PROVIDE PHOTO SENSOR WITH AUTOMATIC DIMMING IN DAYLIGHT AREAS.
- HARD WIRE SECURITY LIGHT FIXTURE TO REMAIN ON CONTINUOUSLY.
- PROVIDE BATTERY BACK-UP FOR A MINIMUM OF 1100 LUMENS FOR 90 MINUTES.
- CEILING OCCUPANCY SENSORS SHOWN IN AREAS WITH MANUAL SWITCHES SHALL BE WIRED TO OVERRIDE MANUAL SWITCHES WITH AUTOMATIC SHUT-OFF. SEE LV LIGHTING SCHEMATIC ON ELECTRICAL DETAIL SHEET.
- ROUTE ALL EXTERIOR LIGHT CIRCUITS THROUGH LIGHTING CONTROL PANEL FOR ADDITIONAL CONTROL CAPABILITY AS REQ'D BY THE ECC. A MASTER PHOTOCELL MAY BE PROVIDED IN LIEU OF SEPARATE PHOTOCELLS FOR EACH CIRCUIT SHOWN.

#### DATE

DEC 2023

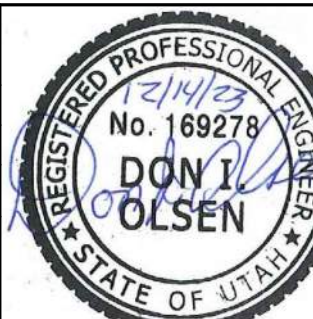


#### REVISIONS

MARK	DATE	DESCRIPTION
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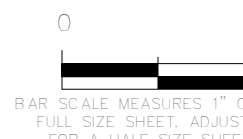
DRAWN: MB  
DESIGNER: KDC  
REVIEWED: DIO

PROJECT #  
23SM1182.04



#### SCALES

1/4" = 1'-0"



#### PROJECT NAME:

MAGNA HEAD  
START-ADDITION

#### PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

#### SHEET TITLE:

FIRST LEVEL LIGHTING  
PLAN

#### PLAN SET:

PERMIT

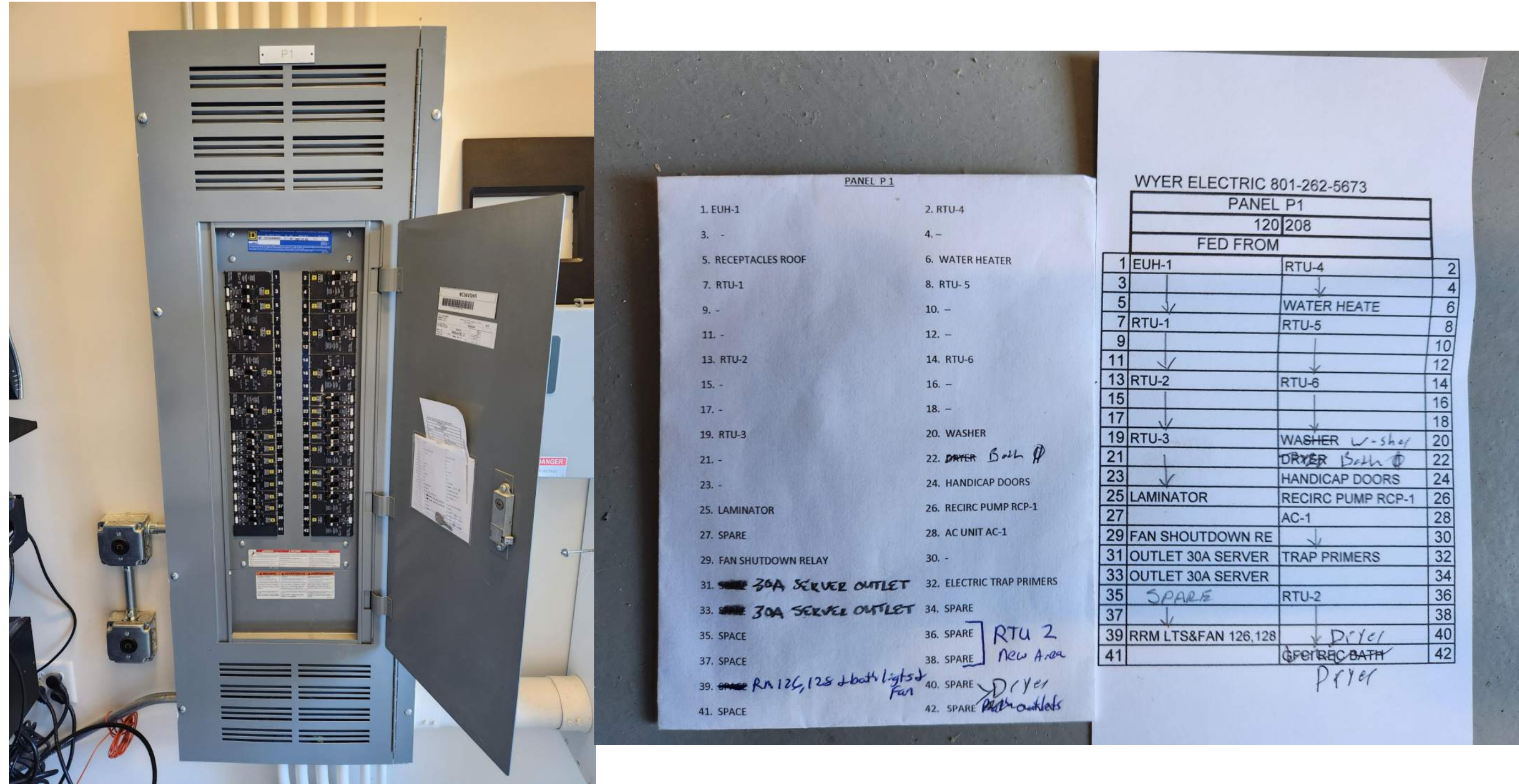
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E2.1

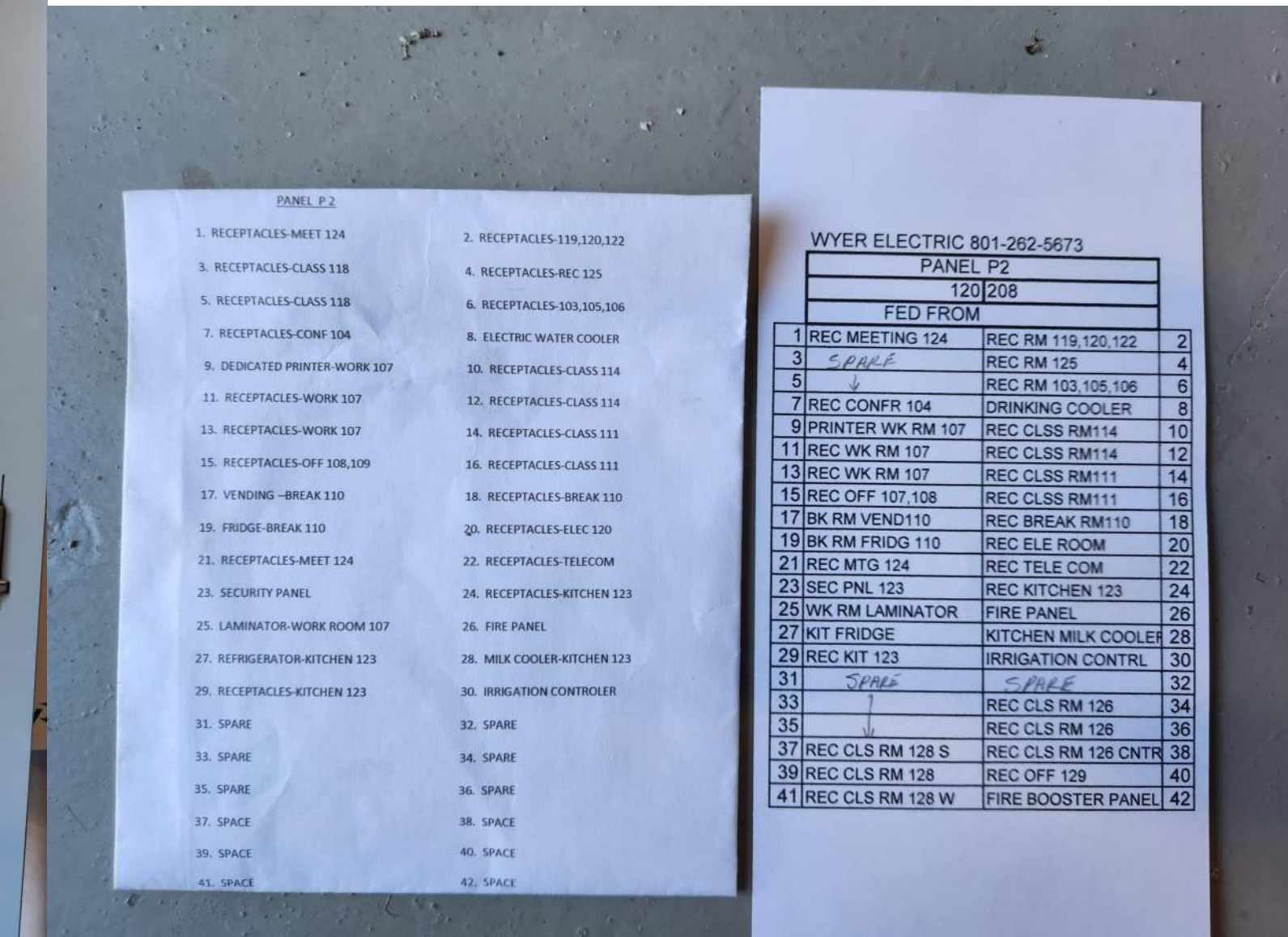


Branch Panel: P3															
Location: MECH RM 136					Volts: 120/208 Wye					A.I.C. Rating: 22,000 A					
Supply From:					Phases: 3					Mains Type: MAINS					
Mounting: Surface					Wires: 4					Mains Rating: 225 A					
Enclosure: Type 1															
Notes:															
CKT	Circuit Description	Trip	Wire Size	Poles	A		B		C		Poles	Wire Size	Trip	Circuit Description	CKT
1	RECEPT - CLASS 133 (W)	20 A	1-#12, 1-#12, 1-#12	1	1,080 VA	1,200 VA					1	1-#8, 1-#8, 1-#8	20 A	GATE OPENER	2
3	RECEPT - CLASS 133 (E)	20 A	1-#10, 1-#10, 1-#10	1			1,260 VA	0 VA			1	--	20 A	Spare	4
5	RECEPT - CLASS 135 (W)	20 A	1-#10, 1-#10, 1-#10	1					1,440 VA	--	1	--	--	Space	6
7	RECEPT - CLASS 135 (E)	20 A	1-#10, 1-#10, 1-#10	1	1,260 VA	--					1	--	--	Space	8
9							2,759 VA	--			1	--	--	Space	10
11	RTU-3	25 A	3-#10, 1-#10, 1-#10	3					2,759 VA	--	1	--	--	Space	12
13					2,759 VA	--					1	--	--	Space	14
15							2,423 VA	--			1	--	--	Space	16
17	RTU-4	30 A	3-#10, 1-#10, 1-#10	3					2,423 VA	--	1	--	--	Space	18
19					2,423 VA	--					1	--	--	Space	20
21	EF-1	20 A	2-#12, 1-#12, 1-#12	2			125 VA	--			1	--	--	Space	22
23									125 VA	--	1	--	--	Space	24
25	HEAT TRACE	20 A	1-#10, 1-#10, 1-#10	1	1,000 VA	--					1	--	--	Space	26
27	RECEPT - ROOF	20 A	1-#12, 1-#12, 1-#12	1			360 VA	--			1	--	--	Space	28
29	Space	--	--	1					--	--	1	--	--	Space	30
31	Spare	20 A	--	1	0 VA	--					1	--	--	Space	32
33	Spare	20 A	--	1			0 VA	--			1	--	--	Space	34
35	Spare	20 A	--	1					0 VA	--	1	--	--	Space	36
37	Space	--	--	1	--	0 VA					1	--	20 A	Spare	38
39	Space	--	--	1			--	0 VA			1	--	20 A	Spare	40
41	Space	--	--	1					--	0 VA	1	--	20 A	Spare	42
Total Load:					9722 VA		6927 VA		6747 VA						
Total Amps:					81 A		58 A		56 A						
Legend:															
Load Classification					Connected Load		Demand Factor		Estimated Demand		Panel Totals				
Motor					1200 VA		100.00%		1200 VA						
Power					15797 VA		100.00%		15797 VA		Total Conn. Load: 23397 VA				
Receptacle					6400 VA		100.00%		6400 VA		Total Est. Demand: 23397 VA				
											Total Conn. Current: 65 A				
											Total Est. Demand Current: 65 A				
Notes:															

EXISTING PANEL 'P1'



EXISTING PANEL 'P2'



NOTE: CONTRACTOR MAY UTILIZE EXISTING SPARE CIRCUITS IN LIEU OF INSTALLING NEW PANEL P3. EXISTING PANEL SCHEDULES SHOW THE FOLLOWING CIRCUITS AS SPARE/SPACE:

- PANEL P1: 27,34,35,41
- PANEL P2: 3,5,31,32,33,35
- PANEL MDP: (3)-POLE SPACES; (2) 1-POLE SPACES; (1) 225 a SPARE

CONTRACTOR SHALL VERIFY CIRCUIT AVAILABILITY & PROVIDE UPDATED PANEL SCHEDULES WITH ALL CIRCUITS (NEW & EXISTING) IDENTIFIED.

EXISTING PANEL 'MDP'



CONSTRUCTION NOTES

DATE

DEC 2023



REVISIONS

MARK DATE DESCRIPTION

DRAWN: MB  
DESIGNER: KDC  
REVIEWED: DIO  
PROJECT #  
23SM1182.04



SCALES



PROJECT NAME:

MAGNA HEAD  
START-ADDITION

PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

SHEET TITLE:

PANEL SCHEDULES

PLAN SET:

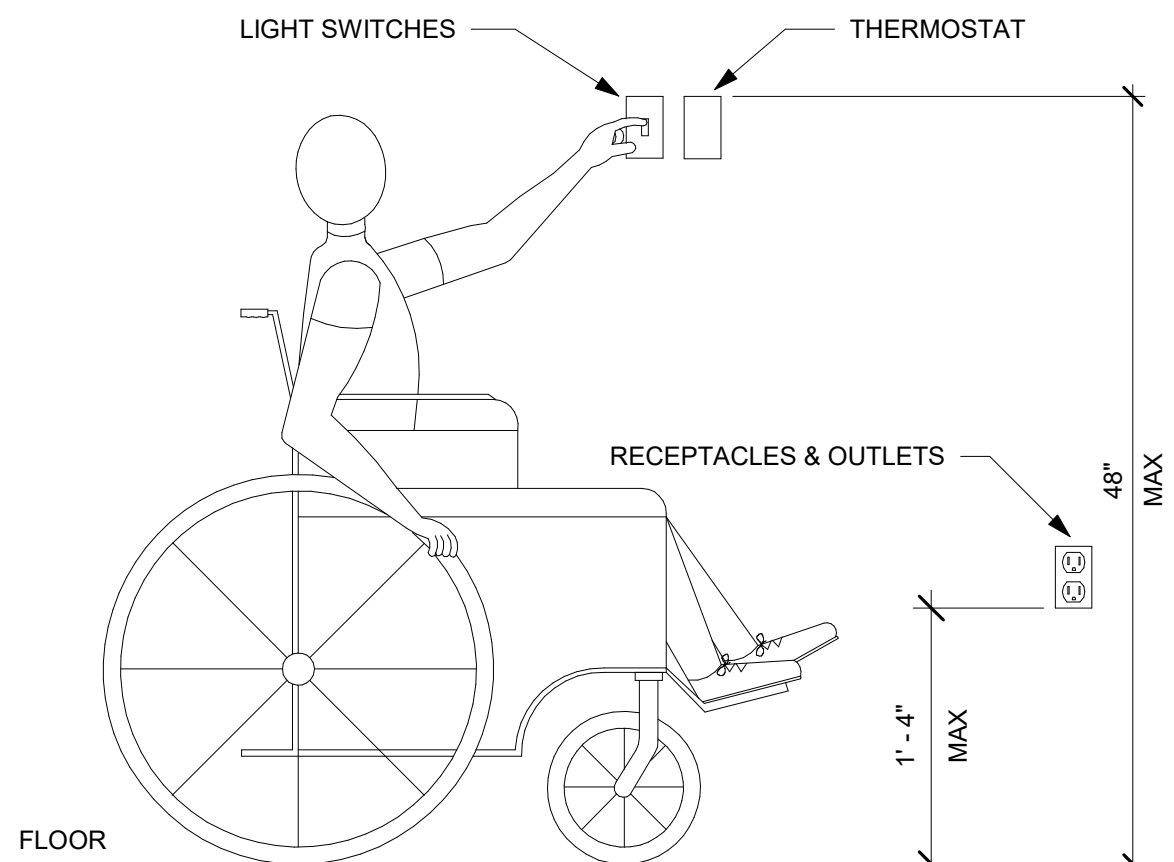
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SHEET

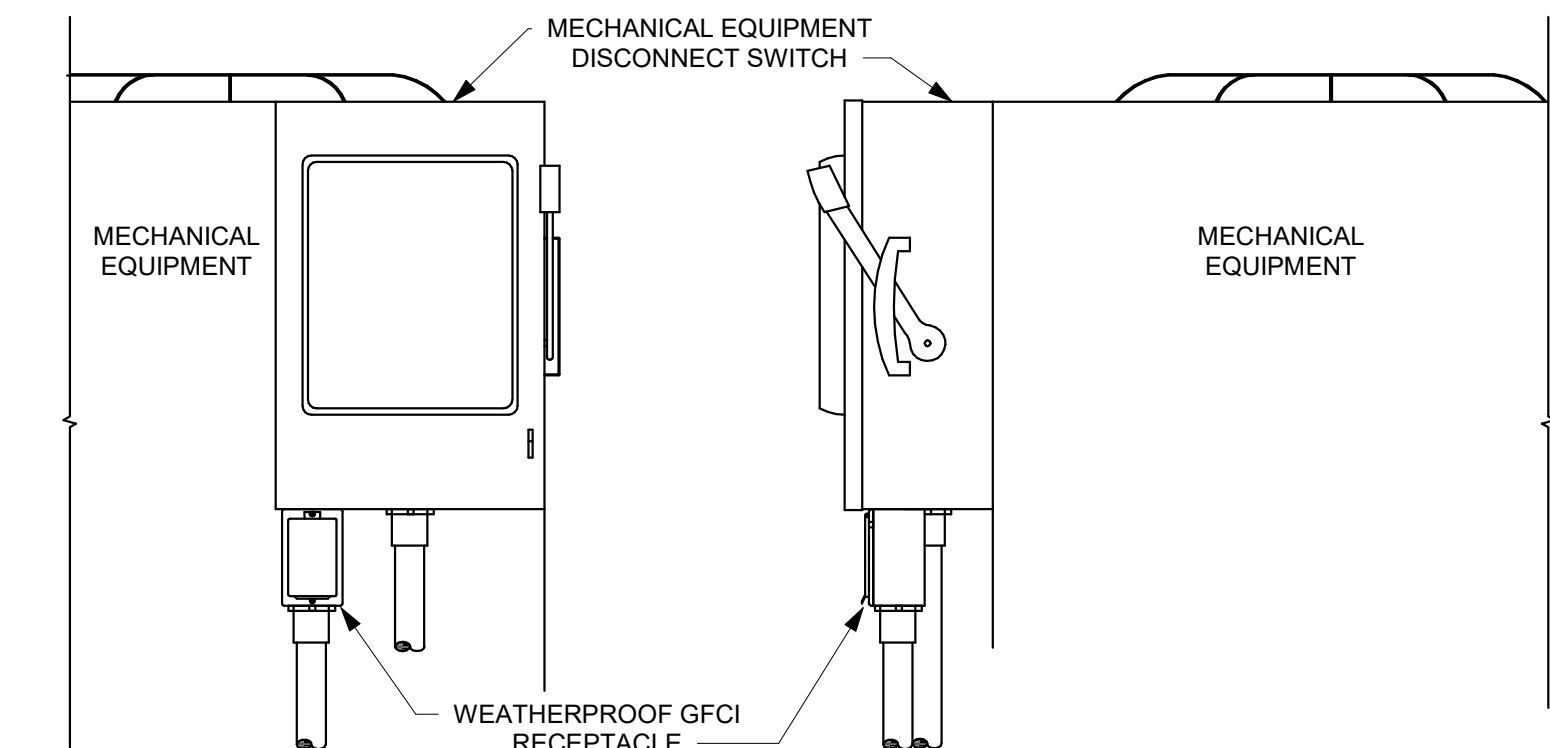
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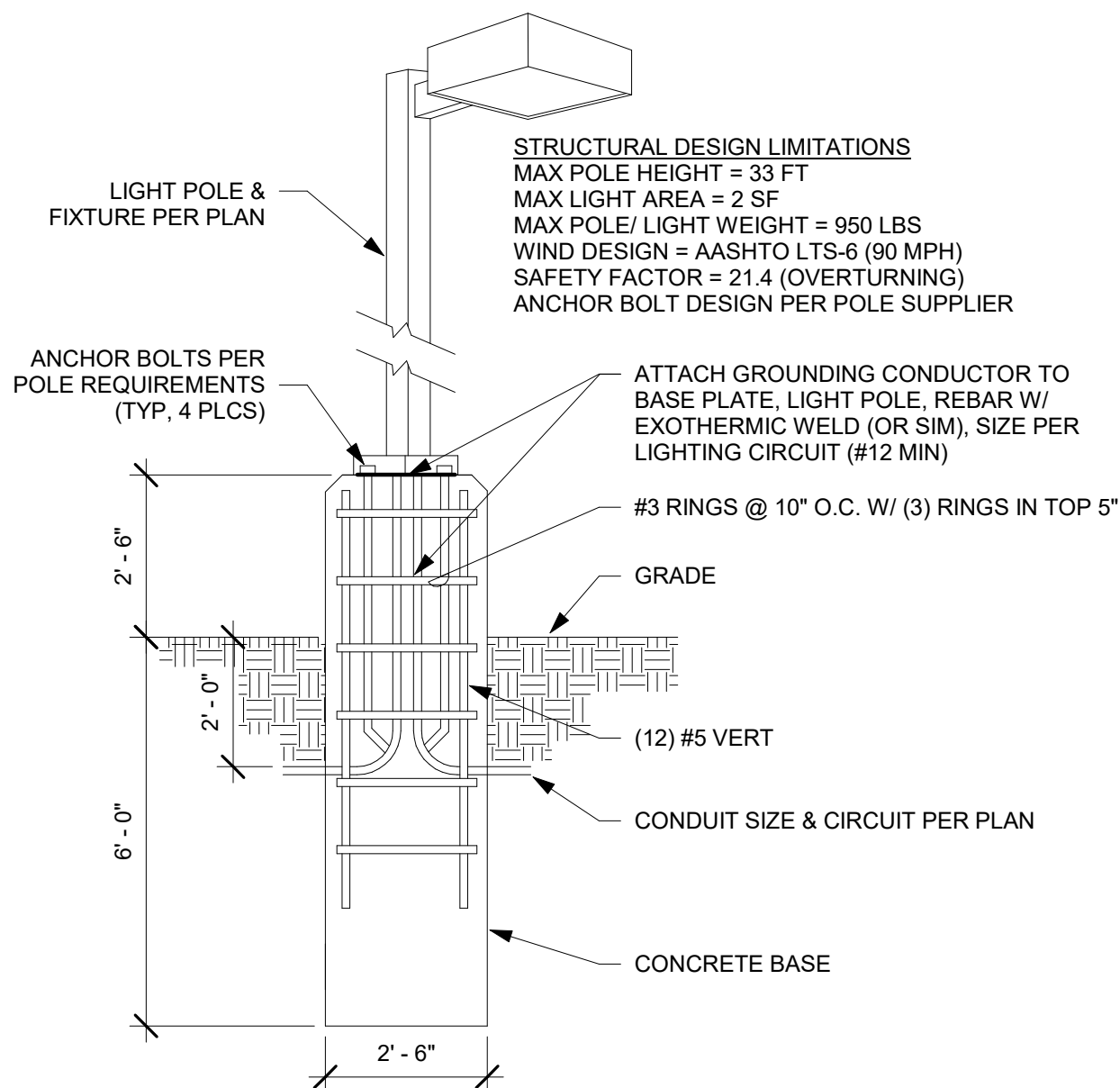
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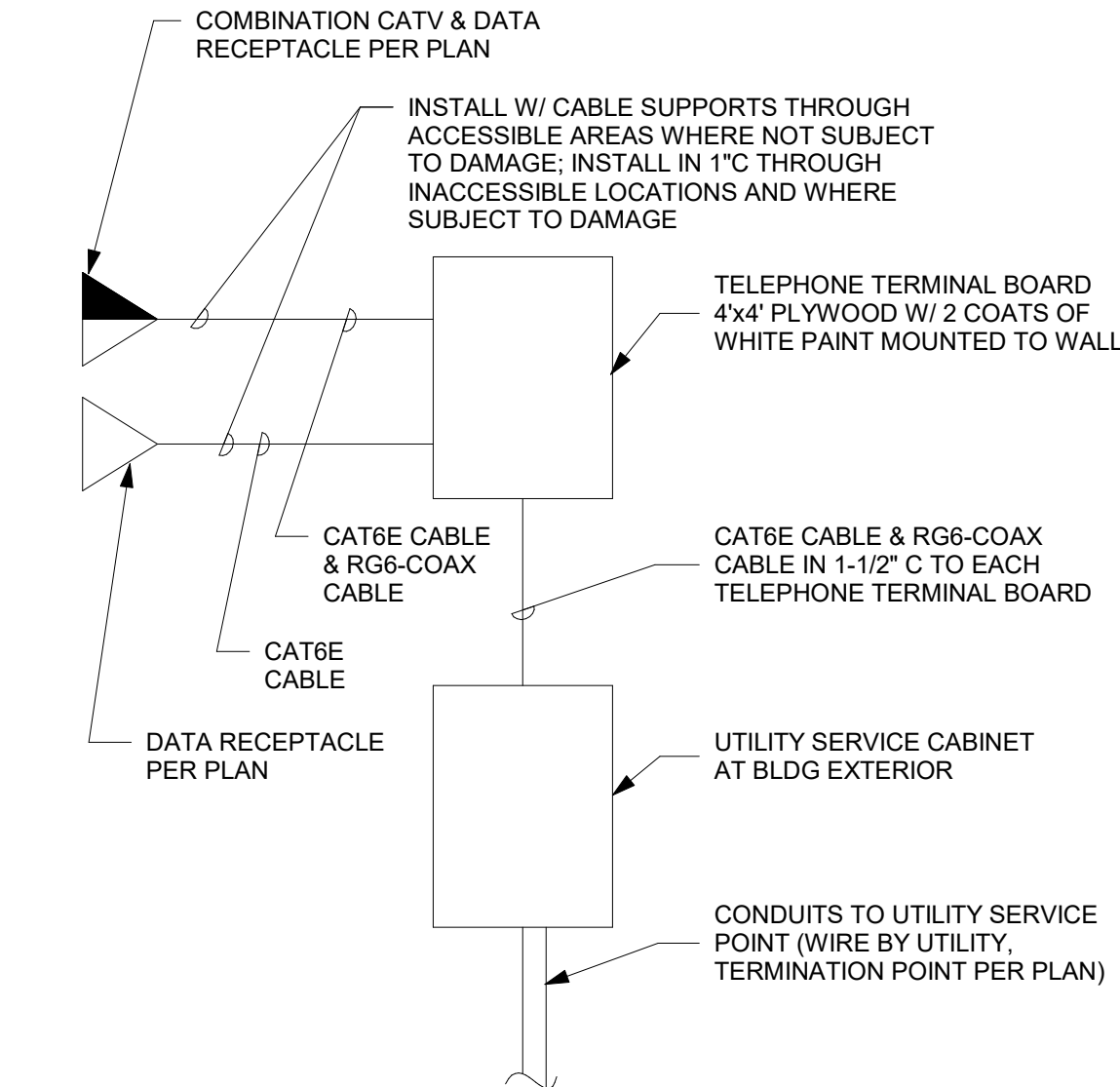
1 MOUNTING HEIGHTS DETAIL  
N.T.S.



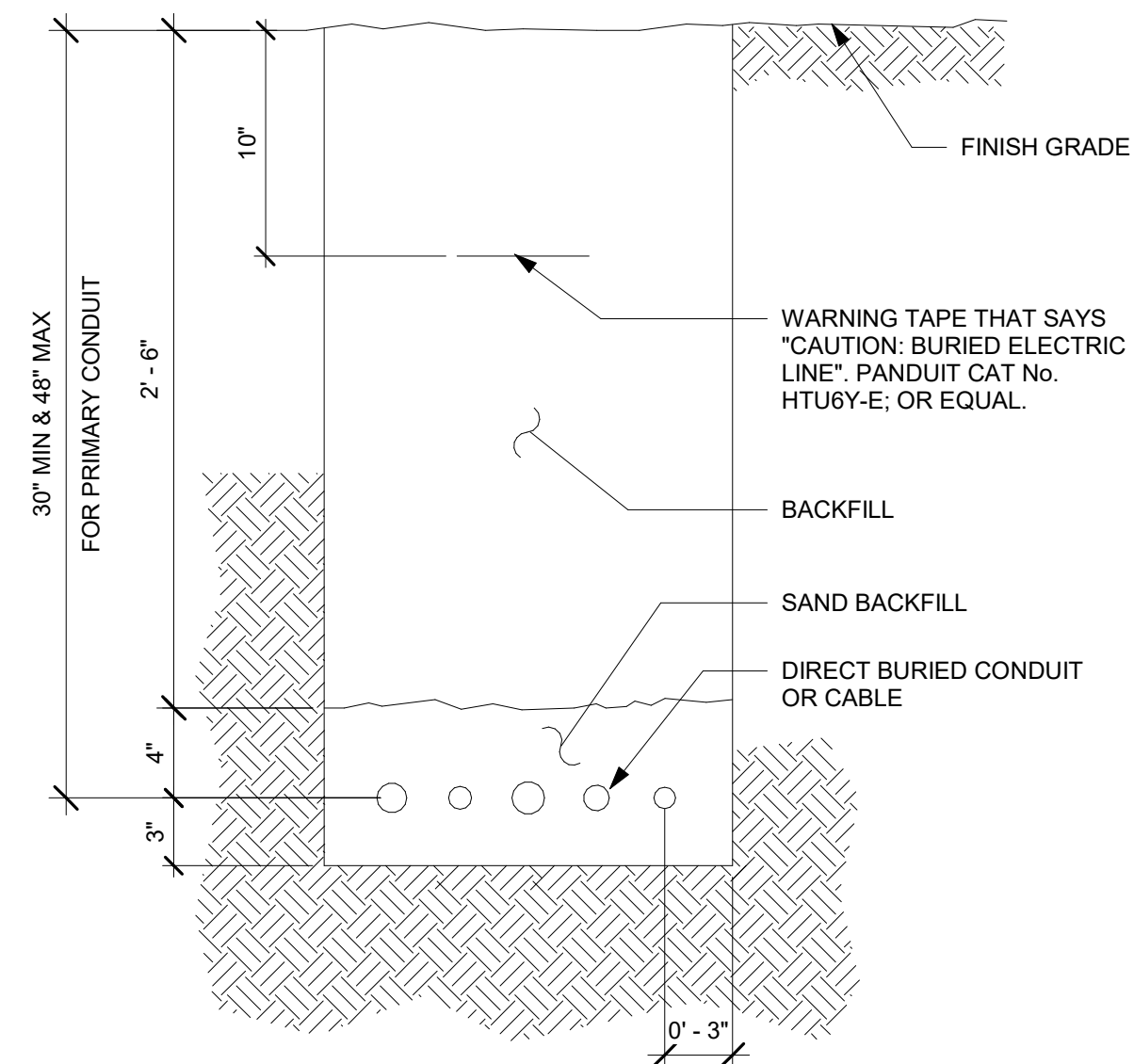
3 WEATHER PROOF RECEPTACLE MOUNTING DETAIL  
N.T.S.



4 LIGHT POLE BASE DETAIL  
N.T.S.



7 DATA/COMM RISER DETAIL  
N.T.S.

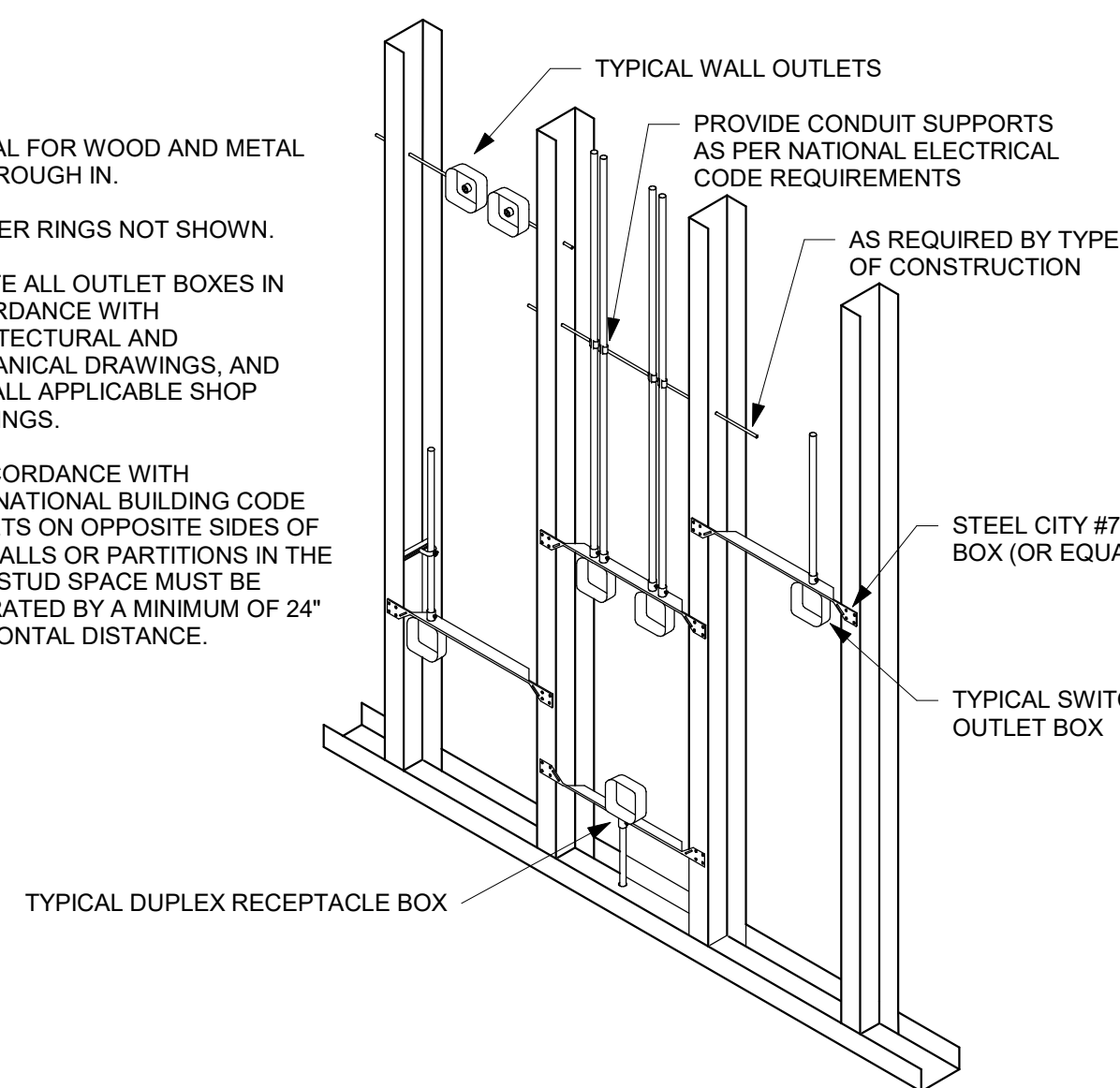


NOTES:  
1. ALL DIMENSIONS ARE MINIMUM UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

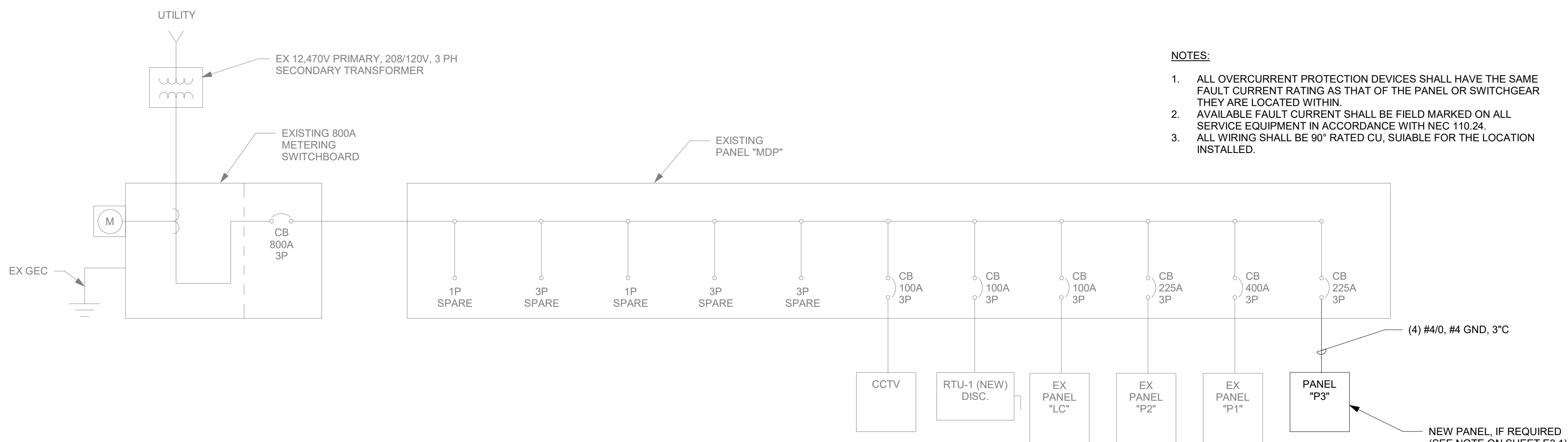
5 DIRECT BURY CONDUIT DETAIL  
N.T.S.

NOTES:

1. TYPICAL FOR WOOD AND METAL STUD ROUGH IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE OUTLETS ON OPPOSITE SIDES OF THE WALLS OR PARTITIONS IN THE SAME STUD SPACE MUST BE SEPERATED BY A MINIMUM OF 24" HORIZONTAL DISTANCE.



9 TYPICAL ROUGH-IN REQUIREMENTS DETAIL  
N.T.S.



8 SINGLE LINE DIAGRAM\_SWITCHBOARD  
N.T.S.

#### FAULT CURCUIT CALCS

Name	Source	Length	Size	Conduit	Wire Material	n	I <sub>sc</sub>
MDP	Transformer	60 ft	300	EMT	CU	3	30,139 A
PANEL "P3"	MDP	30 ft	300	EMT	CU	1	21,311 A

Power	Transformer kVA	%Z	I <sub>sc</sub>
120/208 3Ø	300	2.00%	41,636 A

NOTES:

1. ALL OVERCURRENT PROTECTION DEVICES SHALL HAVE THE SAME FAULT CURRENT RATING AS THAT OF THE PANEL OR SWITCHGEAR THEY ARE LOCATED WITHIN.
2. AVAILABLE FAULT CURRENT SHALL BE FIELD MARKED ON ALL SERVICE EQUIPMENT IN ACCORDANCE WITH NEC 110.24.
3. ALL WIRING SHALL BE 90° RATED CU, SUABLE FOR THE LOCATION INSTALLED.

#### CONSTRUCTION NOTES

DATE

DEC 2023



REVISIONS

MARK DATE DESCRIPTION

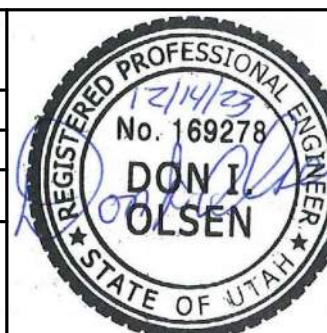
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DESIGNER: KDC

REVIEWED: DIO

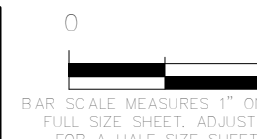
PROJECT #

23SM1182.04



SCALES

As indicated



PROJECT NAME:

MAGNA HEAD  
START-ADDITION

PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

SHEET TITLE:

ELECTRICAL DETAILS

PLAN SET:

PERMIT

SHEET

E4.1

S:\Projects\23SM1182.04 Magna Head Start Addition\Drawings\Revit\MDP\23SM1182.04 MAGNA HEAD START ADDITION.rvt



**PART 1 – GENERAL**

1. THE MECHANICAL CONTRACTOR SHALL BE AN EXPERIENCED FIRM, REGULARLY ENGAGED IN THE INSTALLATION OF COMMERCIAL MECHANICAL SYSTEMS IN ACCORDANCE WITH LOCAL CODES. THE OWNER'S REPRESENTATIVE MAY REJECT ANY PROPOSED CONTRACTOR WHO CANNOT SHOW EVIDENCE OF SUCH QUALIFICATIONS

2. VISIT THE JOBSITE PRIOR TO BIDDING, PRIOR TO MATERIAL FABRICATION, AND PRIOR TO EQUIPMENT PROCUREMENT TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS, INTERFERENCES, AND ANY DISCREPANCIES.

3. THE MECHANICAL CONTRACTOR SHALL PROVED ALL LABOR, MATERIAL, EQUIPMENT, EQUIPMENT SUPPORTS, DIFFUSERS, AND GRILLES FOR THE HVAC SYSTEMS FINISH AS REQUIRED TO ENSURE A COMPLETE AND OPERABLE HVAC SYSTEM. FURNISH ALL PAINT, LABOR, EQUIPMENT, APPLIANCES, AND MATERIALS, AND PERFORM ALL OPERATIONS IN CONNECTION WITH THE INSTALLATION OF THE HEATING, VENTILATION, AND AIR CONDITIONING SYSTEMS IN STRICT ACCORDANCE WITH THE DRAWINGS. SUCCESSFUL, TROUBLE-FREE OPERATION OF VIBRATION-FREE SYSTEM IS A PERQUISITE.

4. THE MECHANICAL CONTRACTOR SHALL SCHEDULE ALL WORK SO AS NOT TO INTERFERE AND/OR DISRUPT THE DAILY ACTIVITIES AND/OR OPERATING HOURS OR NEARBY BUILDINGS. COORDINATE AS REQUIRED WITH THE GENERAL CONTRACTOR AND THE OWNER'S REPRESENTATIVE.

5. THE MECHANICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL FEES AND PERMITS RELATING TO HIS WORK.

6. THE NEW HVAC SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH STATE AND LOCAL CODES, OSHA, NFPA, SMACNA, AND ASHRAE GUIDELINES.

**PART 2 – DUCTWORK**

1. ALL DUCT SHALL BE FABRICATED FROM GALVANIZED STEEL IN ACCORDANCE WITH SMANCA STANDARDS AND REQUIREMENTS. NONMETALLIC DUCTWORK SHALL NOT BE USED. CONCEALED SUPPLY AND RETURN DUCTWORK SHALL BE GALVANIZED STEEL.

2. PROVIDE FLEXIBLE CONTRACTORS BETWEEN DUCTWORK AND HVAC EQUIPMENT (AIR HANDLING EQUIPMENT).

3. ALL NEW RECTANGULAR SUPPLY AND RETURN AIR DUCTWORK SHALL HAVE 1" THICK ACOUSTIC DUCT LINER INSULATION. DUCT DIMENSIONS SHOWN ON THE DRAWINGS REPRESENT INSIDE DUCT SIZE.

4. MANUAL BALANCING DAMPERS SHALL BE OPPOSED BLADE TYPE, GALVANIZED STEEL, AND SHALL HAVE LOCKING QUADRANT OPERATORS OR EXTENDED CONCEALED CEILING OPERATORS WHERE ACCESS IS LIMITED AND/OR AT GYPSUM BOARD CEILINGS.

5. PROVIDE TURNING VANES IN ALL NEW RECTANGULAR SUPPLY AND RETURN AIR DUCTWORK ELBOWS. PROVED VOLUME DAMPERS WITH LOCKING QUADRANTS AT EACH NEW SUPPLY AIR BRANCH TAKE-OFF, SEAL ALL DUCT JOINTS. WHERE THE VOLUME DAMPER IS NOT ACCESSIBLE, PROVIDE YOUNG NO. 817A OR 817B, CONSISTING OF AN 3/8" SQUARE SHAFT, AND A 3/8" REGULATOR (LENGTH AS REQUIRED) FOR OPERATING THE VOLUME DAMPER FROM SUSPENDED CEILING.

6. THE REQUIRED FIRE HAZARD CLASSIFICATION IS: FLAME SPREAD NOT OVER 25, FUEL CONTRIBUTED NOT OVER 50, SMOKE DEVELOPED NOT OVER 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84.

7. THE REQUIRED FIRE HAZARD CLASSIFICATION IS: FLAME SPREAD NOT OVER 25, FUEL CONTRIBUTED NOT OVER 50, SMOKE DEVELOPED NOT OVER 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84

**DUCT SIZE:** GAUGE: SUPPORT: SPACING:

12" AND UNDER 26 GA. (2) 1"X 22 GA. STRAPS EVERY 10 FT.

13" TO 30" 24 GA. (2) 1"X 18GA. STRAPS EVERY 10 FT.

31" TO 40" 22 GA. (2) 1"X 18GA. STRAPS EVERY 10 FT.

40" AND OVER 20 GA. (2) 1"X 18GA. STRAPS EVERY 10 FT.

**PART 3- DUCTWORK INSULATION**

1. ALL RECTANGULAR SUPPLY AND RETURN DUCTWORK IN THE CEILING SPACE SHALL HAVE ACOUSTIC DUCT LINER INSULATION. ALL ROUND RIGID METAL TAKE-OFF DUCTWORK IN THE CEILING SPACE SHALL HAVE 1" THICK EXTERNAL DUCT-WRAP INSULATION WITH VAPOR BARRIER.

2. THE FINISH DUCT LINING SHALL BE ONE INCH THICK FIBERGLASS, 1-1/2 POUNDS PER CUBIC FOOT DENSITY, NOISE ATTENUATION FACTOR OF NRC =0.10 WITH THE AIR STREAM SURFACE FACED WITH A BLACK COATED MATTE.

3. THE DUCT-WRAP INSULATION SHALL BE ONE INCH THICK FIBERGLASS 1-1/2 POUNDS PER CUBIC FOOT DENSITY, NOISE ATTENUATION FACTOR OF NRC = 0.10 WITH THE AIR STREAM SURFACE FACED WITH A BLACK COATED MATTE.

4. THE DUCT-WRAP INSULATION SHALL HAVE A THERMAL CONDUCTANCE OF 0.24 BTUH PER SQUARE FOOT PER DEGREE F. AT A MEAN TEMPERATURE OF 50 DEGREES F.

5. THE REQUIRED FIRE HAZARD CLASSIFICATION IS: FLAME SPREAD NOT OVER 25, FUEL CONTRIBUTED NOT OVER 50, SMOKE DEVELOPED NOT OVER 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84.

6. INSULATED FLEXIBLE DUCTWORK MEETING CLASS 1 REQUIREMENTS OF NFPA 90A AND U.L. LABELED MAY BE USED ONLY AT THE CEILING DELIVER EQUIPMENT AND MATERIAL TO SITE AND PROTECT AGAINST DIRT, WATER, AND CHEMICAL OR MECHANICAL INJURY. EQUIPMENT AND MATERIAL SHALL BE READILY ACCESSIBLE FOR INSPECTION. STORE ITEMS SUBJECT TO MOISTURE DAMAGE (SUCH AS CONTROLS) IN A DRY HEATED SPACE.

7. APPROVED ACOUSTIC DUCT LINER MANUFACTURERS ARE:

A. OWENS CORNING QUIETR ROTARY DUCT LINER

8. APPROVED EXTERNAL INSULATION MANUFACTURERS ARE:

A. MANVILLE MICROLITE FSK

B. CSG TYPE IV STANDARD DUCT INSULATION

C. OWENS CORNING FRK

D. KNAUF (DUCT WRAP FSK)

9. INSTALL INSULATION IN A NEAT AND WORKMANLIKE MANNER WITH NO FISHTAILS. FINISH SHALL BE SMOOTH WITH ALL JOINTS PROPERLY TAPED, INSULATION SHALL BE FULL THICKNESS UNCOMPRESSED EXCEPT WHERE REQUIRED TO PASS STRUCTURAL INTERFERENCES.

**PART 4 – LINE VOLTAGE WIRING**

1. LINE VOLTAGE WIRING AND CONDUIT IS TO BE PROVIDED THE ELECTRICAL CONTRACTOR WHO SHALL FURNISH ANY DISCONNECT SWITCHES THAT ARE NOT PROVIDED WITH THE MECHANICAL EQUIPMENT, AS REQUIRED, FOR THE MECHANICAL EQUIPMENT. COORDINATE AS REQUIRED WITH THE ELECTRICAL CONTRACTOR AND THE GENERAL CONTRACTOR.

**PART 5 – TEMPERATURE CONTROLS AND WIRING**

1. AUTOMATIC TEMPERATURE CONTROLS AND ASSOCIATED CONDUIT AND CONTROL WIRING SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR WHO SHALL PROVIDE ALL DEVICES, COMPONENTS, CONDUIT, CONTROL WIRING REQUIRED TO ENSURE COMPLETE OPERABLE AUTOMATIC TEMPERATURE CONTROL SYSTEMS. NEW FURNACE UNIT SHALL HAVE NEW PROGRAMMABLE THERMOSTATS WITH AUTOMATIC CHANGEOVER AND NIGHT SET-BACK CONTROL. NEW UNIT HEATERS SHALL HAVE HEATING THERMOSTATS WITH SUMMER FAN SWITCH CONTROL.

2. VERIFY THERMOSTAT ROUGH-IN LOCATIONS AS SHOWN ON THE MECHANICAL PLAN DRAWING WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN INSTALLATION.

3. ALL TEMPERATURE CONTROLS ARE TO BE TESTED, ADJUSTED AND CALIBRATED FOR PROPER OPERATION

4. REFER TO THE MECHANICAL EQUIPMENT SCHEDULE FOR ADDITIONAL TEMPERATURE CONTROL REQUIREMENTS.

**PART 6 – INSTALLATION**

1. COORDINATE THE NEW HVAC EQUIPMENT LOCATIONS WITH THE BUILDING STRUCTURE, THE OWNER'S REPRESENTATIVE, ARCHITECT, STRUCTURAL ENGINEER, AND THE GENERAL CONTRACTOR AS REQUIRED PRIOR TO INSTALLATION

2. COORDINATE THE EQUIPMENT, CONTROLS AND CUTORWK INSTALLATIONS WITH THE OTHER TRADES, PLUMBING PIPING, CONDUIT, ETC., COORDINATE THE CEILING DIFFUSER RETURN AIR GRILLES AND EXHAUST GRILLE LOCATIONS, WITH THE ELECTRICAL DRAWINGS AND THE ARCHITECTURAL REFLECTED CEILING PLAN. ROUTE THE DUCTWORK SO AS NOT TO INTERFERE WITH THE STRUCTURE OR THE REMOVING AND SERVICES OF LIGHT FIXTURES. CHANGES REQUIRED AS A RESULT OF NEGLECT TO COORDINATE INTERFERENCES WILL BE MADE AT THE MECHANICAL CONTRACTOR'S EXPENSE.

3. RUN ALL NEW DUCTWORK AS TIGHT AS POSSIBLE TO THE BOTTOM OF THE STRUCTURE IN THE DROPPED CEILING SPACE IN ORDER TO MAINTAIN THE FINISHED CEILING HEIGHTS AS SCHEDULES ON THE ARCHITECTURAL DRAWINGS. VERIFY THE DUCT HEIGHT DIMENSIONS WITH AVAILABLE CEILING SPACE AND MODIFY THE DUCT SIZES IF NECESSARY (KEEPING THE SAME DUCT AREA AS SHOWN ON THE MECHANICAL DRAWINGS – DUCT HEIGHT DIMENSION SHALL NOT BE LESS THAN 8") TO ACCOMMODATE ANY INTERFERENCES. COORDINATE THE NEW DUCTWORK IN THE SPACE WITH CONDUIT AND PIPING. FIELD VERIFY THE ROUTING OF DUCTWORK AND EQUIPMENT AND PIPING.

4. LOCATE ALL EXHAUST AIR OUTLETS AND FLUE VENTS 10'-0" MINIMUM DISTANCE FROM MECHANICAL EQUIPMENT OUTSIDE AIR INTAKES.

5. IT IS UNDERSTOOD THAT WHILE DRAWINGS ARE TO BE FOLLOWED AS CLOSELY AS CIRCUMSTANCES PERMIT, THE MECHANICAL CONTRACTOR WILL BE HELD RESPONSIBLE FOR INSTALLATION OF SYSTEMS ACCORDING TO THE TRUE INTENT AND MEANING OF CONTRACT DOCUMENTS. ANYTHING NOT CLEAR OR IN CONFLICT WILL BE EXPLAINED BY MAKING APPLICATION TO ARCHITECT. SHOULD CONDITION ARISE WHERE CERTAIN CHANGES WOULD BE ADVISABLE SECURE APPROVAL OF THOSE CHANGES BEFORE PROCEEDING WITH WORK.

6. ARRANGE DUCTS AND EQUIPMENT TO PERMIT READY ACCESS TO VALVES, UNIONS, TRAPS, STARTERS, MOTORS, CONTROL COMPONENTS, AND TO CLEAR OPENING OF DOORS AND ACCESS PANELS.

7. FURNISH AND INSTALL HANGERS AND SUPPORTS REQUIRED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED. FURNISH SLEEVES, SUPPORTS, AND EQUIPMENT THAT ARE INTEGRAL PART OF OTHER CONTRACTOR'S WORK IN SUFFICIENT TIME TO BE BUILT INTO CONSTRUCTION AS THE WORK PROCEEDS. LOCATE THESE ITEMS AND SEE THAT THEY ARE PROPERLY INSTALLED. EXPENSE RESULTING FROM IMPROPER LOCATION OR INSTALLATION OF ITEMS ABOVE SHALL BE BORNE BY THE MECHANICAL CONTRACTOR.

8. ADJUST THE LOCATION OF THE FINISH DUCTS, EQUIPMENT, ETC., TO ELIMINATE INTERFERENCE ANTICIPATED AND ENCOUNTERED. DETERMINE EXACT ROUTE AND LOCATION OF DUCTWORK PRIOR TO FABRICATIONS. MAKE OFFSETS, TRANSITIONS, AND CHANGES IN DIRECTION OF DUCTS AS REQUIRED TO MAINTAIN PROPER CLEARANCES WHETHER OR NOT INDICATED ON THE DRAWINGS. FURNISH AND INSTALL FITTINGS AS REQUIRED TO EFFECT THESE OFFSETS, TRANSITIONS, AND CHANGES IN DIRECTION.

9. ENSURE THE NEW HVAC EQUIPMENT TO BE FURNISHED ALONG WITH THE DUCTWORK FIT IN SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN AND SPACE REQUIREMENTS INCLUDING THOSE FOR CONNECTIONS AND FURNISH AND INSTALL EQUIPMENT OF SIZE AND SHAPE SO THAT FINAL INSTALLATION REFLECTS TRUE INTENT AND MEANING OF CONTRACT DOCUMENTS.

10. FOLLOW MANUFACTURER'S DIRECTION IN DELIVERY, STORAGE, PROTECTION, AND INSTALLATION OF EQUIPMENT AND MATERIALS. PROMPTLY NOTIFY ARCHITECT AND/OR OWNER'S REPRESENTATIVE IN WRITING OF CONFLICTS BETWEEN REQUIREMENTS OF CONTRACT DOCUMENTS AND MANUFACTURER'S DIRECTIONS AND OBTAIN ARCHITECT'S AND/OR OWNER'S REPRESENTATIVE WRITTEN INSTRUCTION BEFORE PROCEEDING WITH WORK. BEAR EXPENSES FOR CORRECTING DEFICIENCIES OF WORK THAT DO NOT COMPLY WITH MANUFACTURER'S DIRECTIONS OR WRITTEN INSTRUCTIONS.

11. DELIVER EQUIPMENT AND MATERIAL TO SITE AND PROTECT AGAINST DIRT, WATER, AND CHEMICAL OR MECHANICAL INJURY. EQUIPMENT AND MATERIAL SHALL BE READILY ACCESSIBLE FOR INSPECTION. STORE ITEMS SUBJECT TO MOISTURE DAMAGE (SUCH AS CONTROLS) IN A DRY HEATED SPACE.

12. ALL MECHANICAL EQUIPMENT SHALL BE ISOLATED FROM THE STRUCTURE WITH EITHER VIBRATION ISOLATION PADS OR SPRING TYPE ISOLATORS AS APPLICABLE TO THE INSTALLATION, WHETHER MOTOR IS INTERNALLY ISOLATED OR NOT.

13. CONTRACTOR TO VERIFY AND PROVIDE MECHANICAL PIPING FOR HEATING AND COOLING SYSTEMS TO BE THERMALLY INSULATED PER IECC C402.2.10. MECHANICAL CONTRACTOR TO VERIFY MAXIMUM AND MINIMUM TEMPERATURES OF THE MECHANICAL PIPING SO MINIMUM INSULATIONS REQUIREMENTS CAN BE MET.

**PART 7 – SUBMITTALS**

1. BY DESCRIPTION, CATALOG NUMBER AND SPECIFIC DESIGNATION, STANDARDS ARE ESTABLISHED FOR MANUFACTURED ITEMS SUCH AS SPECIALTIES, FIXTURES AND EQUIPMENT WHICH THE CONTRACTOR SHALL FURNISH AS REQUIRED BY THIS SECTION. PRIOR TO APPROVAL IS REQUIRED FOR SUBSTITUTION OF EQUIPMENT AND MATERIALS PRIOR TO BID. SUBSTITUTION OF PRODUCTS SHOWN SHALL BE SUBMITTED TO THE ARCHITECT, THE OWNER'S REPRESENTATIVE OR ENGINEER FOR WRITTEN APPROVAL.

A. ACCEPTABLE HVAC EQUIPMENT MANUFACTURERS ARE: YORK, CARRIER, LENNOX AND TRANE.

2. SHOP DRAWINGS AND UP-TO-DATE ENGINEERING DATA SHEETS AND CATALOG INFORMATION SHALL BE FURNISHED ON THE FOLLOWING ITEMS OF EQUIPMENT. PROVIDE (6) COPIES FOR REVIEW.

1) HVAC EQUIPMENT

2) AUTOMATIC TEMPERATURE CONTROLS.

3) ALL DIFFUSERS, GRILLES, ETC.

4) DUCTWORK FABRICATION METHODS.

5) EXHAUST FANS.

**PART 8 – FILTERS**

1. INSTALL THROW-AWAY FILTERS AT THE NEW FURNACE HEATING AND COOLING UNIT AFTER SYSTEM START-UP. INSTALL 30% EFFICIENT 2-INCH THICK PLEATED FILTERS – SIZE AND QUALITY SHALL BE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S WRITTEN INSTRUCTIONS.

**PART 9 – CUTTING AND PATCHING**

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REQUIRED CUTTING, AND PATCHING INCIDENT TO WORK FOR THIS DIVISION THE COST OF WHICH SHALL BE PAID FOR BY THE MECHANICAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL MAKE REQUIRED REPAIRS AFTERWARDS TO SATISFACTION OF ARCHITECT AND/OR OWNER'S REPRESENTATIVE. CUT CAREFULLY TO MINIMIZE NECESSITY FOR REPAIRS TO EXISTING WORK. DO NO CUT BEAMS, COLUMNS OR TRUSSES. PATCH AND REPAIR WALLS, FLOORS, CEILING, AND ROOFS WITH MATERIALS OF SAME QUALITY AND APPEARANCE AS ADJACENT SURFACES UNLESS OTHERWISE SHOWN. SURFACE FINISHES SHALL EXACTLY MATCH EXISTING FINISHES OF SAME MATERIALS. THE MECHANICAL CONTRACTOR SHALL BEAR EXPENSE OF CUTTING, PATCHING, REPAIRING, AND REPLACING OF WORK OF OTHER CONTRACTORS REQUIRED BECAUSE OF ITS FAULT, ERROR, TARDINESS, OR BECAUSE OF DAMAGE DONE BY MECHANICAL CONTRACTOR.

**PART 10 – FIRE ASSEMBLY PENETRATIONS**

1. COORDINATE REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR, GENERAL CONTRACTOR, ARCHITECT, THE OWNER'S REPRESENTATIVE AND THE LOCAL AUTHORITIES HAVING JURISDICTION.

2. PROVIDE U.L. FIRE PENETRATION SYSTEM NUMBER WL1002, FC1002, FC2008, FC3001 OR FC1001 FOR COMBUSTIBLE CONSTRUCTION OR SYSTEM NUMBER WL1002, WL2002, FA5001, OR FA5001 FOR NON-COMBUSTIBLE CONSTRUCTION OF THE U.L. BUILDING MATERIALS DIRECTORY AND AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.

3. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL COMPLY WITH U.L. FIRE RESISTANCE DIRECTORY, LATEST ADOPTED EDITION.

4. PROVIDE U.L. LISTED FIRE DAMPERS WITH FUSIBLE LINKS CONSTRUCTED TO U.L. STANDARD 33 AND U.L. LISTED FIRE SMOKE DETECTORS CONFORMING TO NFPA 90A AND MEETING UL555 REQUIREMENTS AS REQUIRED BY STATE AND LOCAL CODES, INCLUDING ANY ADDITIONAL FIRE DAMPERS AND/OR FIRE/SMOKE DAMPERS WITH SMOKE DETECTORS THAT MAY BE REQUIRED, EVEN IF NOT SHOWN ON THE MECHANICAL DRAWINGS. PROVIDE FIRESTOP SYSTEM AS REQUIRED BY LOCAL CODES AND ORDINANCES.

5. PROVIDE SMOKE DETECTORS AND WIRING CONTROL AS REQUIRED FOR OPERATION OF FIRE/SMOKE DAMPERS.

**PART 11 – SEISMIC BRACING**

1. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL REQUIRED SEISMIC BRACING, RESTRAINTS, EQUIPMENT ISOLATORS, ETC. FOR HIS INSTALLED EQUIPMENT. ALL OF WHICH SHALL COMPLY WITH PPIC AND SMACNA GUIDELINES FOR THE LOCAL SEISMIC ZONE REQUIREMENTS AND IN ACCORDANCE WITH THE AUTHORITIES HAVING JURISDICTION.

**PART 12 – AS-BUILT DRAWINGS**

1. THE MECHANICAL CONTRACTOR SHALL KEEP A RECORD SET OF DRAWINGS NEATLY MARKED WITH ALL CHANGES FROM THE ORIGINAL DESIGN AND DRAWINGS. THESE DRAWINGS SHALL BE DELIVERED TO THE ARCHITECT AND/OR OWNER'S REPRESENTATIVE AT THE COMPLETION OF THE PROJECT AND PRIOR TO RECEIVING FINAL PAYMENT.

**PART 13 – CHECK, TEST AND START-UP**

1. THE MECHANICAL CONTRACTOR SHALL PROVIDE MATERIAL AND LABOR REQUIRED TO PERFORM START-UP OF EACH RESPECTIVE ITEM OF EQUIPMENT AND SYSTEM PRIOR TO THE BEGINNING OF TEST, ADJUST AND BALANCE PROCEDURES. SUBMIT START-UP REPORT TO THE ARCHITECT AND/OR OWNER'S REPRESENTATIVE.

**PART 14 – TESTING, ADJUSTING AND BALANCING.**

1. THE MECHANICAL CONTRACTORS SHALL PAY FOR THE SERVICES OF AN INDEPENDENT AIR BALANCING CONTRACTOR WHO IS CERTIFIED AND APPROVED BY THE ARCHITECT AND/OR THE OWNER'S REPRESENTATIVE PRIOR TO BIDDING TO PERFORM TESTING ADJUSTING AND BALANCING OF NEW HVAC SYSTEMS SUBMIT AIR BALANCE REPORT AND AABC STANDARDS FOR FIELD MEASUREMENT & INSTRUCTION, LATEST ADOPTED EDITION.

2. THE MECHANICAL CONTRACTOR SHALL MAKE CHANGES TO PULLEYS, BELTS AND DAMPERS AS RECOMMENDED BY THE BALANCING CONTACTOR.

**PART 15 – EQUIPMENT IDENTIFICATION**

1. EQUIPMENT IDENTIFICATION SIGNS MADE OF LAMINATED PLASTIC WITH 1/8" OR LARGER ENGRAVED LETTERS. SIGNS SHALL BE SECURELY ATTACHED BY RUST PROOF SCREWS OR SOME OTHER PERMANENT MEANS.

2. ALL HVAC EQUIPMENT SHALL HAVE EQUIPMENT IDENTIFICATION. INFORMATION ON THE SIGNS SHALL INCLUDE: MECHANICAL EQUIPMENT SCHEDULE SYMBOL, NAME OF EQUIPMENT, RATING, ELECTRICAL CHARACTERISTICS AND ANY OTHER IMPORTANT DATA.

**PART 16 – OPERATION AND MAINTENANCE MANUALS**

1. PROVIDE THREE (3) SETS OF BOUND OPERATION AND MAINTENANCE MANUALS COVERING ALL NEW HVAC EQUIPMENT FOR THE OWNER'S USE. O&M MANUALS SHALL HAVE THE FOLLOWING FORMAT:

A. SIZE: 8-1/2"X 11"

B. PAPER: MANUFACTURER'S PRINTED DATA, OR NEATLY TYPE WRITTEN.

C. PROVIDE REINFORCED PUNCHED BINDER TAB, BIND IN WITH TEXT.

D. PROVIDE FLY-LEAF FOR EACH SEPARATE PRODUCT, OR EACH PIECE OF OPERATING EQUIPMENT. PROVIDE TYPED DESCRIPTION OF PRODUCT, AND MAJOR COMPONENT PARTS OF EQUIPMENT, PROVIDE INDEXED TABS.

E. COVER: IDENTIFY EACH VOLUME WITH TYPED OR PRINTED TITLE: "OPERATION AND MAINTENANCE INSTRUCTION", LIST TITLE OF PROJECT, IDENTITY OF GENERAL SUBJECT MATTER COVERED IN THE MANUAL

F. BINDERS: COMMERCIAL QUALITY THREE-RING BINDERS WITH DURABLE AND CLEANABLE PLASTIC COVERS.

G. PROVIDE NEATLY TYPEWRITTEN TABLE OF CONTENTS, LIST CONTRACTOR NAME, ADDRESS AND PHONE NUMBER. LIST EACH PRODUCT BY PRODUCT NAME AND OTHER IDENTIFYING SYMBOLS AS SET FORTH IN CONTRACT DOCUMENTS.

H. INCLUDE COPY OF EACH WARRANTY, BOND AND SERVICE CHART WITH MAINTENANCE SCHEDULE, TEMPERATURE CONTROL DIAGRAMS, SEQUENCE OF OPERATION AND PROVIDE LOGICAL SEQUENCE OF INSTRUCTION FOR EACH PROCEDURE.

**PART 17 – INSTRUCTIONS**

1. PRIOR TO FINAL INSPECTION OR ACCEPTANCE, FULLY INSTRUCT THE OWNER'S DESIGNATED OPERATION AND MAINTENANCE PERSONNEL IN THE OPERATION, ADJUSTMENT AND MAINTENANCE OF PRODUCTS, EQUIPMENT AND SYSTEMS. (MINIMUM 2-HOURS INSTRUCTION REQUIRED OR MORE IF REQUESTED BY THE OWNER'S REPRESENTATIVE).

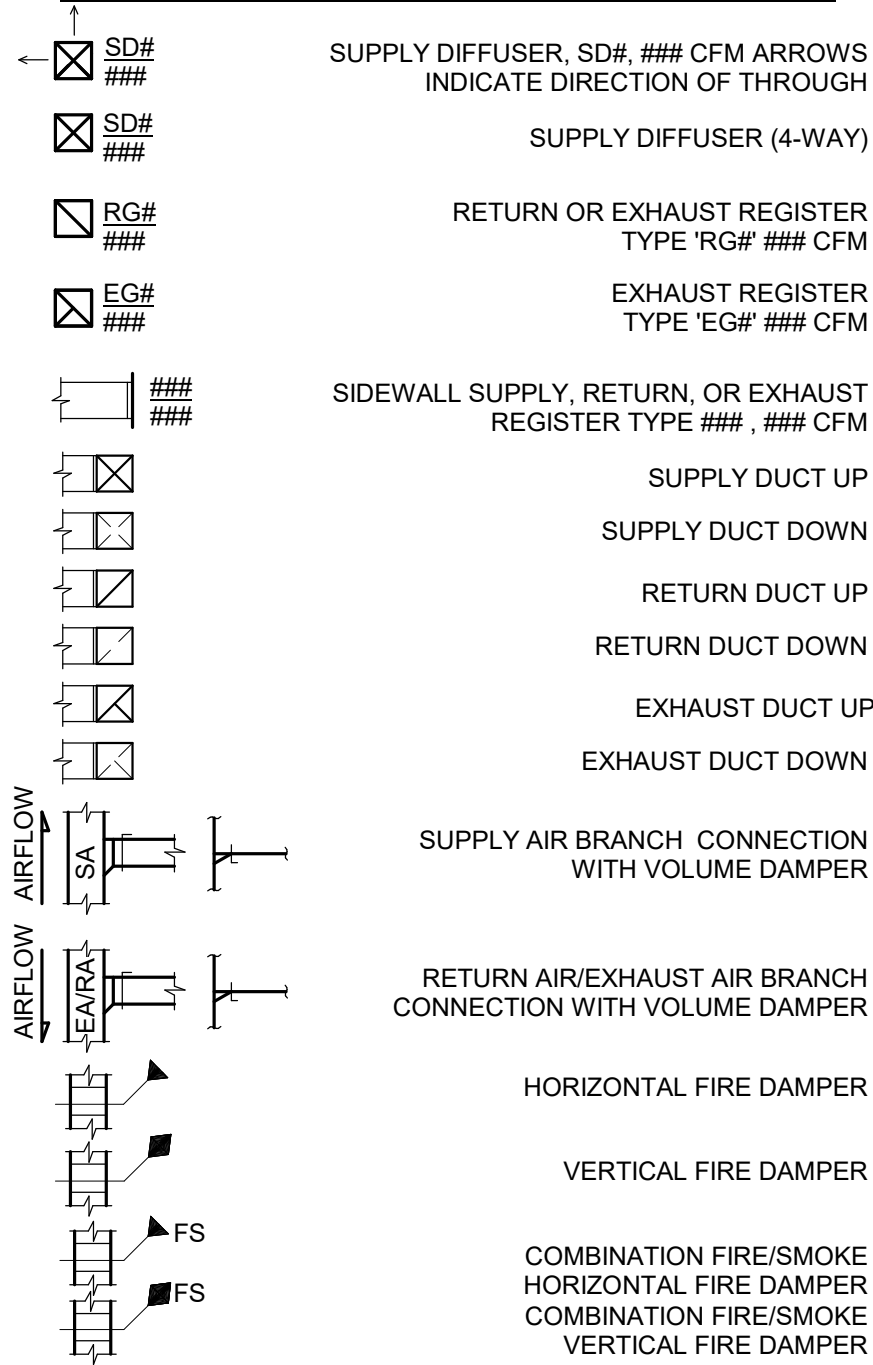
**PART 18 – WARRANTY AND GUARANTEE**

1. DELIVER EQUIPMENT AND MATERIAL TO SITE AND PROTECT AGAINST DIRT, WATER, AND CHEMICAL OR MECHANICAL INJURY. EQUIPMENT AND MATERIAL SHALL BE READILY ACCESSIBLE FOR INSPECTION. STORE ITEMS SUBJECT TO MOISTURE DAMAGE (SUCH AS CONTROLS) IN A DRY HEATED SPACE.

12. ALL MECHANICAL EQUIPMENT SHALL BE ISOLATED FROM THE STRUCTURE WITH EITHER VIBRATION ISOLATION PADS OR SPRING TYPE ISOLATORS AS APPLICABLE TO THE INSTALLATION, WHETHER MOTOR IS INTERNALLY ISOLATED OR NOT.

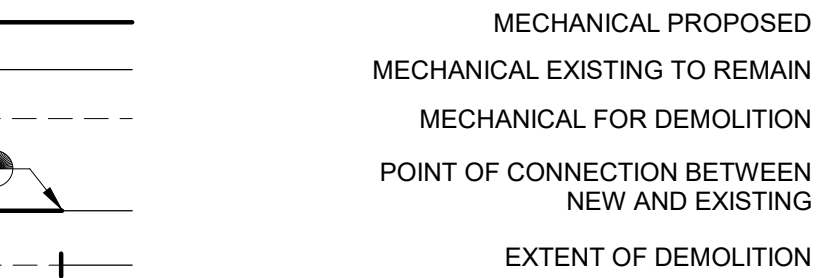
13. CONTRACTOR TO VERIFY AND PROVIDE MECHANICAL PIPING FOR HEATING AND COOLING SYSTEMS TO BE THERMALLY INSULATED PER IECC C402.2.10. MECHANICAL CONTRACTOR TO VERIFY MAXIMUM AND MINIMUM TEMPERATURES OF THE MECHANICAL PIPING SO MINIMUM INSULATIONS REQUIREMENTS CAN BE MET.

## MECHANICAL SYMBOLS



## MECHANICAL PHASING

(SINGLE LINES SHOWN SIMILAR FOR DOUBLE LINED WORK)



## MECH. ABBREVIATIONS

EXISTING (E)  
ABOVE FINISHED FLOOR AFF  
AIR HANDLING UNIT AHU  
BRITISH THERMAL UNIT BTU  
COMBUSTION AIR CA  
CUBIT FEET PER MINUTE CFM  
CONDENSING UNIT CU  
CABINET UNIT HEATER CUH  
DOWN DN  
EXHAUST AIR EA  
EXHAUST VENTILATOR EV  
FAN COIL UNIT FCU  
HORSE POWER HP  
KILOWATT KW  
1,000 BTUS MBH  
NATURAL GAS NG  
OUTSIDE AIR OA  
PACKAGED TERMINAL AIR CONDITIONER PTAC  
RETURN AIR RA  
REFRIGERANT REF  
RETURN GRILLE RG  
RADIANT HEATER RH  
ROOF TOP UNIT RTU  
SUPPLY AIR SA  
SUPPLY DIFFUSER SD  
SUPPLY GRILLE SG  
TRANSFER GRILLE TG  
12,000 BTUS TON  
TYPICAL TYP  
UNIT HEATER UH  
WATTS W

## CONSTRUCTION NOTES

### DATE

DEC 2023



### REVISIONS

MARK	DATE	DESCRIPTION
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DRAWN: MB  
DESIGNER: DF  
REVIEWED: DIO

PROJECT #

23SM1182.04



### SCALES

12" = 1'-0"



### PROJECT NAME:

MAGNA HEAD  
START-ADDITION

### PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

### SHEET TITLE:

MECHANICAL GENERAL  
NOTES

### PLAN SET:

PERMIT

### SHEET

M0.1



Project Name: Munga Head Start Prepared by: Epic Eng		<b>Air System Sizing Summary for CLASS 133</b>		12/13/2023 11:41AM	
<b>Air System Information</b>					
Air System Name	CLASS 133	Number of zones	554		
Equipment Class	UNDEF	Floor Area	1 ft <sup>2</sup>		
Air System Type	SCZAV	Location	Salt Lake City, Utah		
<b>Sizing Calculation Information</b>					
Calculation Months	Jan to Dec	Zone CFM Sizing	Sum of space airflow rates		
Sizing Data	Calculated	Space CFM Sizing	Individual peak space loads		
<b>Central Cooling Coil Sizing Data</b>					
Total coil load	1.8 Tons	Load occurs at	Aug 1400		
Total coil load	21.8 MBH	OA DB / WB	95.2 / 61.7 °F		
Sensible coil load	21.8 MBH	Entering DB / WB	85.9 / 60.8 °F		
Coil CFM at Aug 1400	705 CFM	Leaving DB / WB	65.5 / 48.6 °F		
Max block CFM	705 CFM	Coil ADP	51.7 °F		
Sum of peak zone CFM	705 CFM	Bypass Factor	0.100		
Sensible heat ratio	1.000	Resulting RH	37 %		
CFM/Ton	388.3	Design supply temp.	54.0 °F		
RT/(hr·ft <sup>2</sup> )	362.5	Zone T-stat Check	1 of 1 OK		
BTU/(hr·ft <sup>2</sup> )	33.1	Max zone temperature deviation	0.0 °F		
Water flow @ 10.0 °F rise	4.36 gpm				
<b>Central Heating Coil Sizing Data</b>					
Max coil load	30.9 MBH	Load occurs at	Des Htg		
Coil CFM at Des Htg	705 CFM	BTU/(hr·ft <sup>2</sup> )	74.0		
Max coil CFM	705 CFM	DB / LGV DB	27.5 / 17.9 °F		
Water flow @ 20.0 °F drop	3.09 gpm				
<b>Supply Fan Sizing Data</b>					
Actual max CFM	705 CFM	Fan motor BHP	0.00 BHP		
Standard CFM	604 CFM	Fan motor kW	0.00 kW		
Actual max CFM <sup>1a</sup>	1.07 CFM <sup>1a</sup>	Fan static	0.00 in wg		
<b>Outdoor Ventilation Air Data</b>					
Design airflow CFM	467 CFM	CFM/person	19.34 CFM/person		
CFM <sup>1b</sup>	0.71 CFM <sup>1b</sup>				

Project Name: Manga Head Start		Air System Sizing Summary for CLASS 135		12/13/2023	
Prepared by: Epic Eng				11:41AM	
<b>Air System Information</b>					
Air System Name	CLASS 135	Number of zones	975 ft²		
Equipment Class	UNDEF	Floor Area	975 ft²		
Air System Type	SZCAV	Location	Salt Lake City, Utah		
<b>Sizing Calculation Information</b>					
Calculation Months	Jan to Dec	Zone CFM Sizing	Sum of space airflow rates		
Sizing Data	Calculated	Space CFM Sizing	Individual peak space loads		
<b>Central Cooling Coil Sizing Data</b>					
Total coil load	3.0 Tons	Load occurs at	Aug 1400		
Total coil load	36.3 MBH	OA DB / WB	95.2 / 61.7 °F		
Sensible coil load	36.3 MBH	Entering DB / WB	86.8 / 60.4 °F		
Coil CFM at Aug 1400	1194 CFM	Leaving DB / WB	54.0 / 48.3 °F		
Max block CFM	1194 CFM	Coil ADP	50.4 °F		
Sum of peak zone CFM	1194 CFM	0.100			
Sensible heat ratio	1.000	Resulting RH	36 %		
CFM/Ton	396.3	Design supply temp.	54.0 °F		
BTU/(hr·ft²)	324.1	Zone T-stat Check	0.01 in OK		
Water flow @ 10.0 °F rise	37.0 gpm	Max zone temperature deviation	0.1 °F		
<b>Central Heating Coil Sizing Data</b>					
Max coil load	53.4 MBH	Load occurs at	Des Htg		
Coil CFM at Des Htg	1194 CFM	BTU/(hr·ft²)	84.5		
Max coil CFM	1194 CFM	Ent DB / Lvg DB	34.4 / 92.7 °F		
Water flow @ 20.0 °F drop	53.4 gpm				
<b>Supply Fan Sizing Data</b>					
Actual max CFM	1194 CFM	Fan motor BHP	0.00 BHP		
Standard CFM	1023 CFM	Fan motor kW	0.00 kW		
Actual max CFM/m²	1.22 CFM/m²	Fan static	0.01 in wg		
<b>Outdoor Ventilation Air Flow</b>					
Design airflow CFM	658 CFM	CFM/person	20.93 CFM/person		
CFM/m²	0.67 CFM/m²				

Project Name: Munga Head Start  
Prepared by: Epic Eng

## Zone Sizing Summary for CLASS 133

12/13/2023  
11:41AM

### Air System Information

Air System Name \_\_\_\_\_ CLASS 133  
Equipment Class \_\_\_\_\_ UNDEF  
Air System Type \_\_\_\_\_ SZCAV

Number of zones \_\_\_\_\_ 1  
Floor Area \_\_\_\_\_ 658.4 ft<sup>2</sup>  
Location \_\_\_\_\_ Salt Lake City, Utah

### Sizing Calculation Information

Calculation Months \_\_\_\_\_ Jan to Dec  
Sizing Data \_\_\_\_\_ Calculated

Zone CFM Sizing \_\_\_\_\_ Sum of space airflow rates  
Space CFM Sizing \_\_\_\_\_ Individual peak space loads

### Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft <sup>2</sup>	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	705	705	1.07	0.0	0.00	0.0	0.00	0

### Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft <sup>2</sup> )
Zone 1	13.7	Oct 1400	3.6	658.4

### Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft <sup>2</sup> )	Space CFM/ft <sup>2</sup>
Zone 1							
133 CLASS	1	12.9	Oct 1400	663	3.6	579.6	1.14
133 REST	1	0.8	Jan 1100	42	0.0	78.7	0.54

Project Name: Manga Head Start  
Prepared by: Epic Eng

## Zone Sizing Summary for CLASS 135

12/13/2023  
11:41AM

### Air System Information

Air System Name  
Equipment Class  
Air System Type

CLASS 135  
UNDEF  
SCAV

Number of zones  
Floor Area  
Location

1  
979.5 ft<sup>2</sup>  
Salt Lake City, Utah

### Sizing Calculation Information

Sizing Calculation Months  
Sizing Data

Jan to Dec  
Calculated

Zone CFM Sizing  
Space CFM Sizing

Sum of space airflow rates  
Individual peak space loads

### Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM <sup>1/2</sup>	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1194	1194	1.22	0.0	0.00	0.0	0.00	0

### Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft <sup>2</sup> )
Zone 1	22.9	Aug 1400	15.2	979.5

### Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft <sup>2</sup> )	Space CFM <sup>1/2</sup>
<b>Zone 1</b>							
135 CLASS	1	13.6	Sep 1400	699	5.7	551.0	1.27
135 REST	1	0.9	Jan 1100	46	0.0	85.5	0.54
130 CORR	1	8.7	Jul 1400	449	9.5	343.1	1.31

Project Name: Munga Head Start Prepared by: Epic Eng				Air System Design Load Summary for CLASS 133				12/13/2023 11:41AM	
DESIGN COOLING				DESIGN HEATING					
COOLING DATA AT Avg 1400				HEATING DATA AT DES 1000					
COOLING Qa DB / WB 95.2 °F / 61.7 °F				HEATING Qa DB / WB 6.0 °F / 3.8 °F					
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	95 ft²	2686	-	95 ft²	-	-	-	-	-
Wall Transmission	215 ft²	399	-	215 ft²	754	-	-	754	-
Roof Transmission	580 ft²	469	-	580 ft²	732	-	-	732	-
Window Transmission	95 ft²	399	-	95 ft²	163	-	-	163	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-	-	0	-
Door Loads	21 ft²	297	-	21 ft²	490	-	-	490	-
Floor Transmission	580 ft²	0	-	580 ft²	0	-	-	0	-
Partitions	0 ft²	0	-	0 ft²	0	-	-	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-	-	0	-
Overhead Lighting	632 W	1845	0	0	0	-	-	0	-
Task Lighting	0 W	0	0	0	0	-	-	0	-
Electric Equipment	790 W	2528	-	0	0	-	-	0	-
People	21	4125	4393	0	0	-	-	0	0
Infiltration	-	0	0	-	0	-	-	0	0
Miscellaneous	-	0	0	-	0	-	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	-	-	0	0
>> Total Zone Loads	-	13750	4393	-	3611	0	-	3611	0
Zone Conditioning	-	-	4393	-	-	3414	0	-	-
Plenum Wall Load	0%	0	-	0	0	-	-	0	-
Plenum Roof Load	0%	0	-	0	0	-	-	0	-
Plenum Lighting Load	0%	0	-	0	0	-	-	0	-
Return Fan Load	705 CFM	0	-	705 CFM	0	-	-	0	-
Ventilation Load	467 CFM	8067	-4393	467 CFM	27504	0	-	27504	0
Supply Fan Load	705 CFM	-	0	705 CFM	0	-	-	0	-
Space Fan Coil Fans	-	0	-	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-	-	0	-
>> Total System Loads	-	21793	0	-	30918	0	-	30918	0
Central Cooling Coil	-	21793	0	-	-	30918	-	-	0
Central Heating Coil	-	0	-	-	-	30918	-	-	0
>> Total Conditioning	-	21793	0	-	30918	0	-	30918	0
Key:	Positive values are c/g loads Negative values are h/g loads			Positive values are h/g loads Negative values are c/g loads					

Project Name: Munga Head Start Prepared by: Epic Eng		Air System Design Load Summary for CLASS 135										12/13/2023 11:41AM										

### CONSTRUCTION NOTES

DATE \_\_\_\_\_

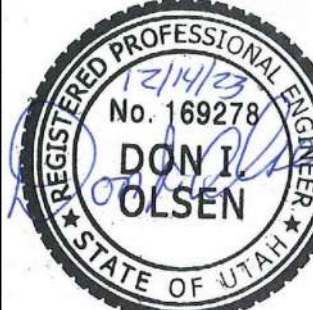
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## REVISIONS

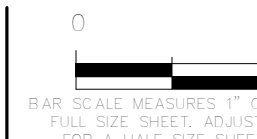
MARK	DATE	DESCRIPTION
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DRAWN:	MB
DESIGNER:	DF
REVIEWED:	DIO



PROJECT #  
**23SM1182.04**

## SCALES

**PROJECT NAME:**

## MAGNA HEAD START-ADDITION

### PROJECT LOCATION

8259 W 3500 S MAGNA,  
UT 84044

**SHEET TITLE:**

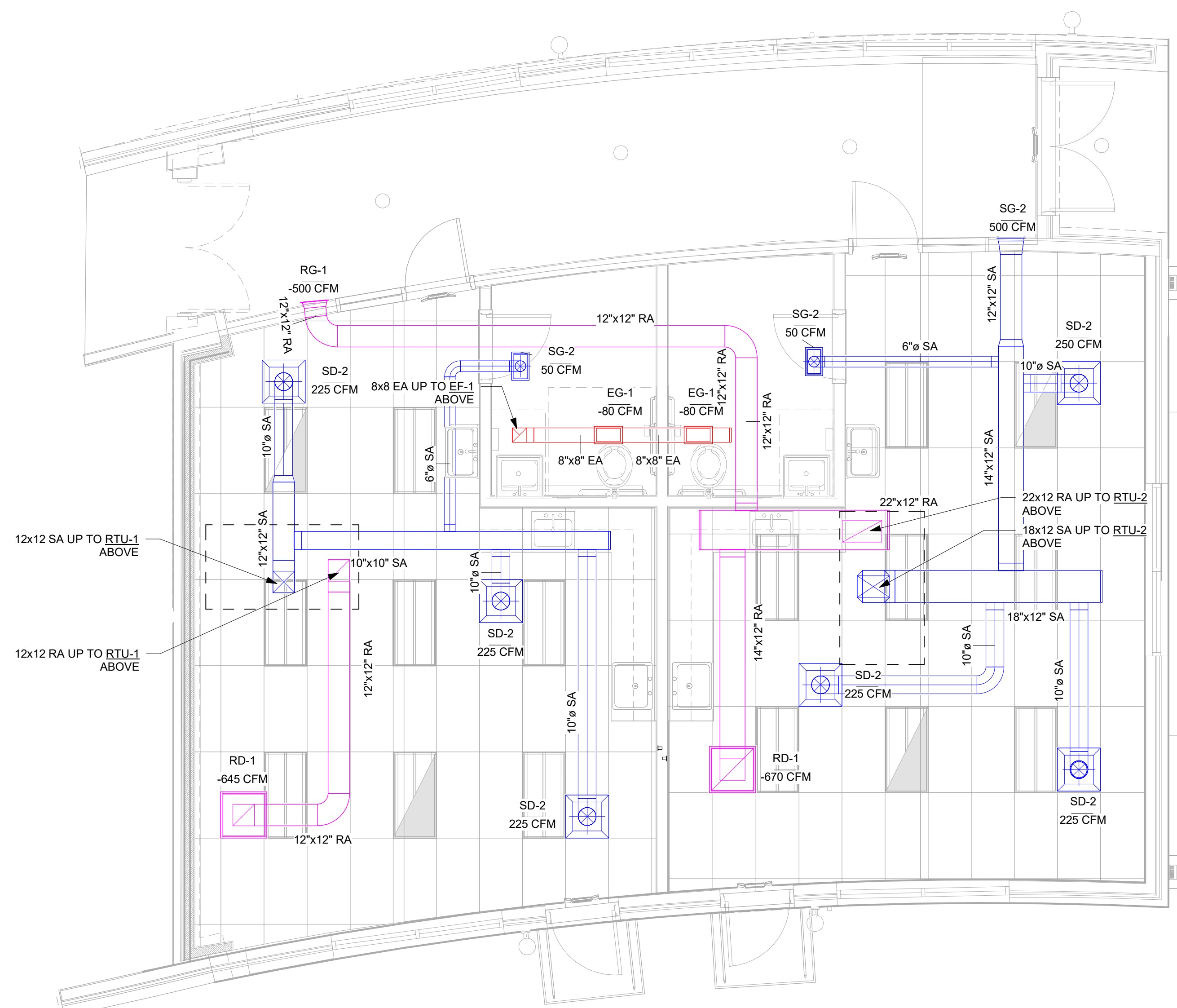
## HEAT LOSS CALCS

**PLAN SET:****PERMIT**

**SHEET**

## MO.2





① FIRST LEVEL MECHANICAL PLAN  
1/4" = 1'-0"

### MECHANICAL GENERAL NOTES

1. ALL DRAWINGS SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL ASPECTS OF THE CONTRACT DOCUMENTS PRIOR TO SUBMITTING PRICING. ANY AND ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO AN INSTALLATION SUCH THAT CLARIFICATION OR BE REQUIRED.
2. ANY WORK PERFORMED OR MATERIAL USED WHICH IS SHOWN TO BE IN CONFLICT WITH THE CONTRACT DRAWINGS, SPECIFICATIONS OR ANY APPLICABLE CODE OR GOVERNING REGULATION SHALL BE REMOVED AND REPLACED OR CORRECTED AT THE CONTRACTOR'S EXPENSE.
3. ALL SYMBOLS, ABBREVIATIONS AND NOTATIONS ON THE DRAWINGS ARE CONSIDERED CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH ANY WORK.
4. DO NO SCALE THE DRAWINGS. ALL EXISTING CONDITIONS AND DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO FABRICATION OF MATERIALS OR ERECTION OF ASSEMBLIES. IF DISCREPANCIES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.
5. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR AND EQUIPMENT, TRANSPORTATION AND SERVICES REQUIRED FOR COMPLETION OF THE WORK.
6. ANY WORK PERFORMED AFTER THE INSTALLATION SHALL BE IN STRICT COMPLIANCE WITH ALL LOCAL CODES AND GOVERNING REGULATIONS.
7. ALL PERMITS AND FEES WHICH ARE REQUIRED FOR THIS WORK SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR.
8. ALL PLUMBING AND MECHANICAL INSTALLATIONS SHALL ADHERE TO THE 2021 IBC.
9. PROVIDE OPERATION AND MAINTENANCE MANUALS TO OWNER OR ALL NEWLY INSTALLED EQUIPMENT PER 2021 IECC. O&M MANUALS SHALL BE BOUND IN THREE RING BINDER UTILIZING LABELS TO SEPARATE EQUIPMENT SECTIONS.
10. UNLESS NOTED OTHERWISE, ALL EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AND MECHANICAL ACCESSORIES SHALL REMAIN. NO CHANGES UNLESS NOTED.
11. CONTRACTOR SHALL BE RESPONSIBLE TO CLEAN THE SURFACE OF ALL SUPPLY, RETURN, EXHAUST, AND TRANSFER DIFFUSERS/GRILLES AT COMPLETION OF PROJECT.
12. DUCTWORK SHALL BE FABRICATED TO NFPA 90A STANDARDS. TYPICAL LOW PRESSURE DUCTWORK SHALL BE ASTM A653M GALVANIZED STEEL SHEET, LOCK FORMING QUALITY, HAVING ZINC COATING OF 1.25 OUNCS/SF FOR EACH SIDE PER ASTM A90.
13. FABRICATE AND SUPPORT DUCTWORK IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCTWORK INSTALLATION STANDARDS AND ASHRAE HANDBOOKS. ALL BRANCH DUCTWORK SHALL MATCH CONNECTION SIZE OF DIFFUSERS UNLESS NOTED OTHERWISE.

### CONSTRUCTION NOTES

DATE \_\_\_\_\_

DEC 2023



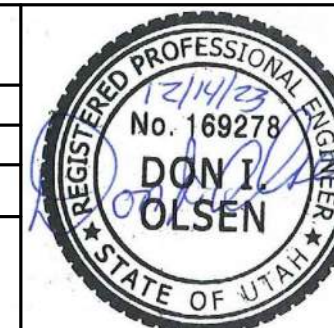
## REVISIONS

MARK	DATE	DESCRIPTION
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DRAWN:	MB
DESIGNER:	DF
REVIEWED:	DIO

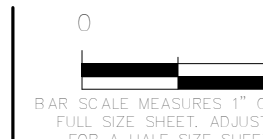
PROJECT #	
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23SM1182.04



## SCALES

As indicated

**PROJECT NAME:**

## MAGNA HEAD START-ADDITION

**PROJECT LOCATION:**

**8259 W 3500 S MAGNA,  
UT 84044**

**SHEET TITLE:**

### FIRST LEVEL MECHANICAL PLAN

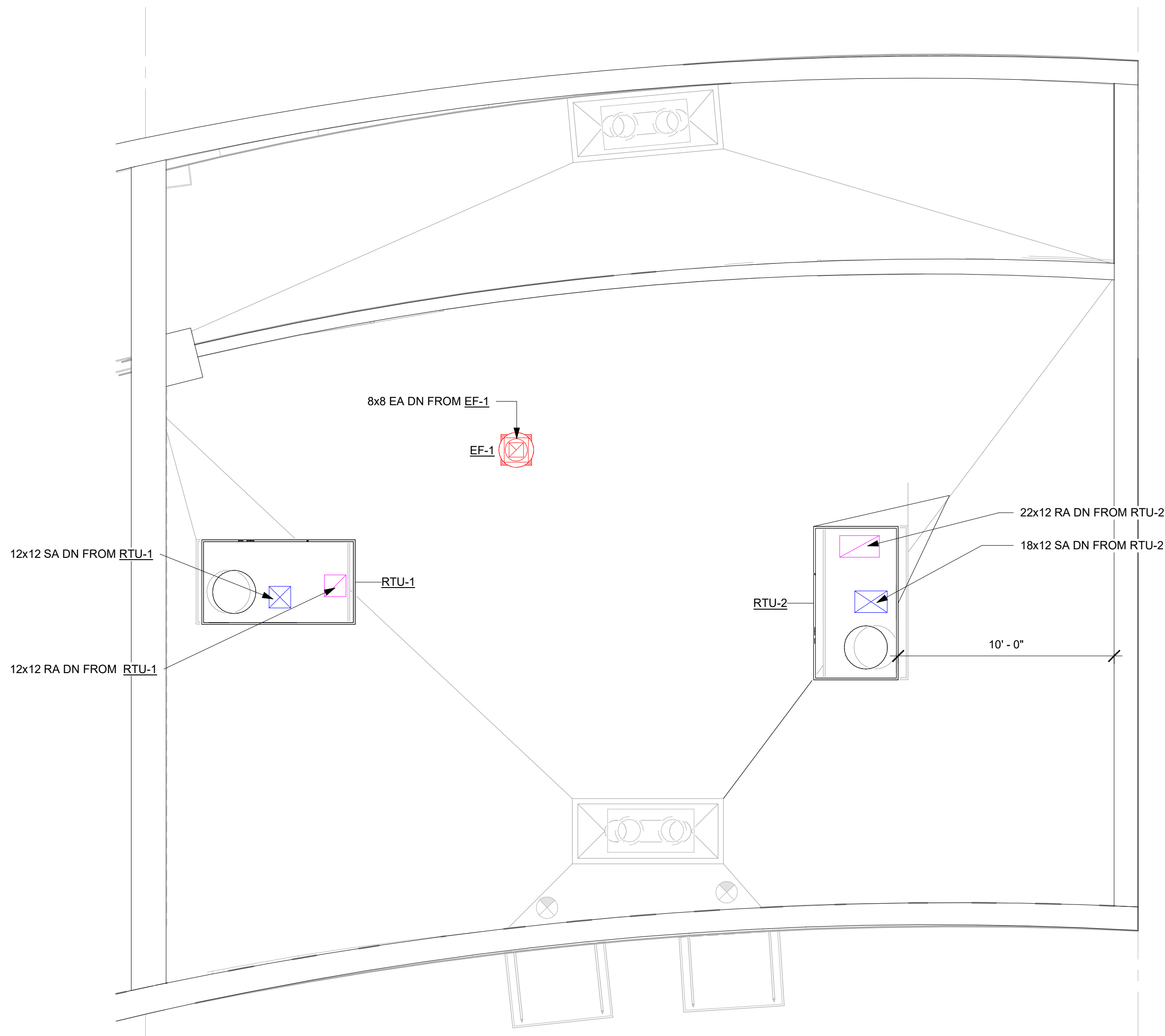
**PLAN SET:**

PERMIT

SHEET

## M1.1





1 ROOF MECHANICAL PLAN  
1/4" = 1'-0"

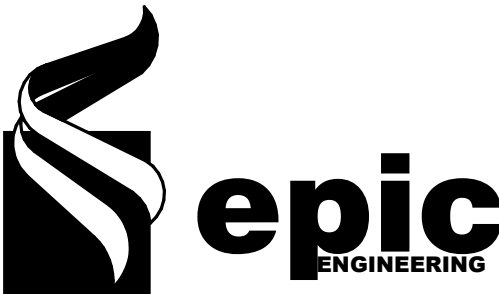
MECHANICAL GENERAL NOTES

- ALL DRAWINGS SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL ASPECTS OF THE CONTRACT DOCUMENTS PRIOR TO SUBMITTING PRICING. ANY AND ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO AN INSTALLATION SUCH THAT CLARIFICATIONS CAN BE ISSUED.
- ANY WORK PERFORMED OR MATERIAL USED WHICH IS SHOWN TO BE IN CONFLICT WITH THE CONTRACT DRAWINGS, SPECIFICATIONS OR ANY APPLICABLE CODE OR GOVERNING REGULATION SHALL BE REMOVED AND REPLACED OR CORRECTED AT THE CONTRACTOR'S EXPENSE.
- ALL SYMBOLS AND ABBREVIATIONS USED ON THE CONTRACT DRAWINGS ARE CONSIDERED CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH ANY WORK.
- DO NO SCALE THE DRAWINGS: ALL EXISTING CONDITIONS AND DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO FABRICATION OF MATERIALS OR ERECTION OF ASSEMBLIES. IF DISCREPANCIES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.
- THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR AND EQUIPMENT, TRANSPORTATION AND SERVICES REQUIRED FOR COMPLETION OF THE WORK. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE DONE IN STRICT COMPLIANCE WITH ALL LOCAL CODES AND GOVERNING REGULATIONS.
- ALL PERMITS AND FEES WHICH ARE REQUIRED FOR THIS WORK SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR.
- ALL PLUMBING AND MECHANICAL INSTALLATIONS SHALL ADHERE TO THE 2021 IECC.
- PROVIDE OPERATION AND MAINTENANCE MANUALS TO OWNER OR ALL NEWLY INSTALLED EQUIPMENT PER 2021 IECC. O&M MANUALS SHALL BE BOUND IN THREE RING BINDER UTILIZING LABELED TABS TO SEPARATE EQUIPMENT SECTIONS.
- UNLESS NOTED OTHERWISE, ALL EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AND MECHANICAL ACCESSORIES SHALL REMAIN. NO CHANGES UNLESS NOTED.
- CONTRACTOR SHALL BE RESPONSIBLE TO CLEAN THE SURFACE OF ALL SUPPLY, RETURN, EXHAUST, AND TRANSFER DIFFUSERS/GRILLES AT COMPLETION OF PROJECT.
- DUCTWORK SHALL BE FABRICATED TO NFPA 90A STANDARDS. TYPICAL LOW PRESSURE DUCTWORK SHALL BE ASTM A653M GALVANIZED STEEL SHEET LOCK FORMING QUALITY, HAVING ZINC COATING OF 1.25 OUNCES/SF FOR EACH SIDE PER ASTM A90.
- FABRICATE AND SUPPORT DUCTWORK IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS AND ASHRAE HANDBOOKS.
- ALL BRANCH DUCTWORK SHALL MATCH CONNECTION SIZE OF DIFFUSERS UNLESS NOTED OTHERWISE.

CONSTRUCTION NOTES

DATE

DEC 2023

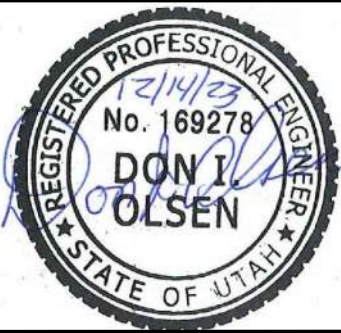


REVISIONS

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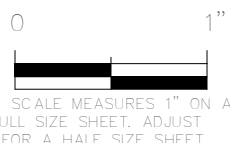
DRAWN: MB  
DESIGNER: DF  
REVIEWED: DIO

PROJECT #  
23SM1182.04



SCALES

As indicated



PROJECT NAME:

MAGNA HEAD  
START-ADDITION

PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

SHEET TITLE:

ROOF MECHANICAL  
PLAN

PLAN SET:

PERMIT

SHEET

M1.2





## EXHAUST FAN SCHEDULE

## GRILLE AND DIFFUSER SCHEDULE

TAG	MANUFACTURER	MODEL	TYPE	FACE SIZE	NECK SIZE	MATERIAL	NOTES
EG-1	TITUS	350RL	EXHAUST GRILLE	15 3/4" x 9 3/4"	8"x14"	Steel	
RD-1	TITUS	350RL	RETURN GRILLE	25 3/4" x 25 3/4"	24"x24"	Steel	
RG-1	TITUS	350RL	RETURN GRILLE	15 3/4" x 9 3/4"	8"x14"	Steel	
SD-2	TITUS	TMS	SUPPLY DIFFUSER	24" x 24"	10"ø	Steel	
SG-2	TITUS	300RS	SUPPLY GRILLE	15 3/4" x 9 3/4"	14"x8"	Steel	

## CONSTRUCTION NOTES

**DATE**

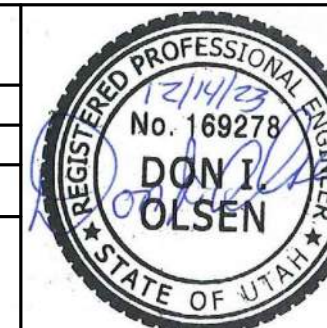
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## REVISIONS

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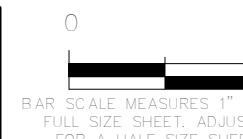
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DESIGNER:	DF
REVIEWED:	DIO



PROJECT #  
**23SM1182.04**

## SCALES

12" = 1'-0"

**PROJECT NAME:**

## MAGNA HEAD START-ADDITION

**PROJECT LOCATION:**

8259 W 3500 S MAGNA,  
UT 84044

**SHEET TITLE:**

## MECHANICAL DETAILS

**PLAN SET:****PERMIT**

**SHEET**

## M5.1



- PART 1 – GENERAL**
- THE PLUMBING SYSTEM SHALL BE INSTALLED IN STRICT ACCORDANCE WITH LOCAL, STATE, AND REGIONAL PLUMBING CODES, STATE AND LOCAL HEALTH DEPARTMENT REGULATIONS, AND OSHA REGULATIONS.
  - IT SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO PAY FOR ALL FEES AND PERMITS RELATING TO HIS WORK.
    - THE PLUMBING CONTRACTOR SHALL COORDINATE WITH THE LOCAL GAS COMPANY AND SHALL ARRANGE FOR THE INSTALLATION OF THE NEW GAS METERS. THE NEW GAS PIPING SUPPLYING THE GAS-FIRED HVAC EQUIPMENT IS SIZED FOR 4 OUNCE GAS PRESSURE.
    - THE PLUMBING CONTRACTOR SHALL BE AN EXPERIENCED FIRM REGULARLY ENGAGED IN THE INSTALLATION OF COMMERCIAL PLUMBING SYSTEMS IN ACCORDANCE WITH LOCAL CODES. THE OWNER'S REPRESENTATIVE MAY REJECT ANY PROPOSED CONTRACTOR WHO CANNOT SHOW EVIDENCE OF SUCH QUALIFICATIONS.
    - VISIT THE JOBSITE PRIOR TO BIDDING THE PROJECT TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND ANY INTERFERENCE. SHOULD A CONDITION ARISE WHERE A CHANGE WOULD BE ADVISABLE, SECURE APPROVAL OF CHANGE BEFORE PROCEEDING WITH WORK.

- PART 2 – PIPING MATERIALS AND VALVES**
- PIPING MATERIALS SHALL BE AS FOLLOWS:
    - NEW DOMESTIC WATER PIPING SHALL BE ASTM B88 TYPE L HARD DRAWN COPPER WITH ANSI B16.22 WROUGHT COPPER FITTINGS AND 95-5 SOLDER ABOVEGROUND, AND TYPE K SOFT COPPER BELOWGROUND.
    - NEW WASTE AND VENT PIPING 1-1/2" AND SMALLER SHALL BE ASTM A120 GRADE A SCHEDULE GALVANIZED STEEL PIPE WITH THREADED CAST IRON DRAINAGE FITTINGS, 2" AND LARGER SHALL BE CAST IRON, ASTM A-888 'NO-HUB' WITH ASTM C-1277 STANDARD NEOPRENE GASKETS AND TYPE 304 STAINLESS STEEL CONNECTOR BANDS ABOVEGROUND OR FM 1680 CLASS II HEAVY DUTY TYPE 304 STAINLESS STEEL CONNECTOR BANDS CAPABLE OF WITHSTANDING 125 IN-LBS OF TORQUE BELOWGROUND.
    - ALTERNATE WASTE AND VENT PIPING SHALL BE EITHER ASTM D2661 OR ASTM D2665 PVC PIPING OR FITTING, THE INSTALLATION SHALL COMPLY WITH IPMIO IS9. UNDERGROUND ABS OR PVC PIPING SHALL BE LAID IN 6-INCH DEEP BED OF SAND.
    - NEW GAS PIPING SHALL BE ASTM A53 SCHEDULE 40 BLACK STEEL PIPE WITH ANSI 16.3 150 LB. MALLEABLE IRON FITTINGS ABOVEGROUND AND POLYETHYLENE AS APPROVED BY THE LOCAL GAS UTILITY COMPANY FOR BELOW GROUND INSTALLATION.
  - VALVES:

ALL VALVES MUST BE ACCESSIBLE. VALVES LOCATED ABOVE A HARD CEILING OR IN A WALL SHALL HAVE AND APPROVED ACCESS DOOR. VALVE STEMS SHALL BE INSTALLED HORIZONTAL OR HIGHER THAN THE VALVE. ALL VALVES SHALL BE OF THE SAME MANUFACTURER.

    - BALL VALVES: 2" AND SMALLER SHALL BE RATED FOR 125 PSIG WOG AT 220 DEGREE F. BRONZE CONSTRUCTION CONFORMING TO ASTM B62. SOLDER ENDS, BUBBLE TIGHT TEFLON SEAT (AT 100 PSIG UNDER WATER), WITH A HARD CHROME PLATED BRASS OR STAINLESS STEEL BALL. THE VALVE SHALL OPERATE WITH FLOW IN EITHER DIRECTION AND SHALL BE SUITABLE FOR THROTTLING AND TIGHT SHUT OFF. PROVIDE WATTS B-6001.

- PART 3 – FIXTURES, EQUIPMENT, DRAINS AND TRIM**
- APPROVED MANUFACTURERS FOR FIXTURES AND TRIM:
    - FIXTURES: AMERICAN STANDARD, KOHLER, ELJER, AND ELKAY
    - CARRIERS, ETC.: J.R. SMITH, JOSAM, WADE, AND ZURN.
    - TRIM: AMERICAN STANDARD, CHICAGO FAUCETS, ELKAY, KOHLER AND T&S BRASS
    - FLUSH VALVES: SLOAN, DELANEY, AND ZURN 26000 SERIES.
  - ALL WATER FAUCETS SHALL MEET N.S.F. STANDARD SECTION 9 FOR DRINKING WATER FAUCETS AND SHALL BE CERTIFIED BY UNDERWIRERS LABORATORY. THE PRODUCT SHALL BE MANUFACTURED FROM BRASS CONSTRUCTION, BRASS COMPONENTS WHICH CONTACT WITHIN THE FAUCET SHALL BE FROM BRASS WHICH CONTAINS NO MORE THAN 3% LEAD BY DRY WEIGHT.
  - WATER HEATERS SHALL BE SHOWN ON THE PLUMBING DRAWINGS.

- PART 4 – PIPING INSULATION**
- PIPING INSULATION SHALL CONFORM TO THE CURRENT ENERGY CODE AS ADOPTED BY THE STATE. NO INSULATION SHALL BE APPLIED UNTIL ALL PRESSURE TESTS ARE COMPLETE, LEAKS REPAIRED, AND THE SYSTEM IS SUCCESSFULLY RETESTED. INSULATION SHALL BE ASTM C547, CLASS 1 FIBERGLASS ONE-PIECE PREFORMED PIPE INSULATION WITH AN ASTM C921 ALL PURPOSE (FASJ) FIRE RETARDANT JACKET. IN LIEU OF FIBERGLASS INSULATION, ASTM 3552, TYPE II, CLASS 2 FOAM GLASS OR ASTM C534, TYPE 1 THERMACELL OR EXPANDED POLYURETHANE MAY BE USED. FIRE AND SMOKE HAZARD FOR THE COMPLETE INSULATION SYSTEM SHALL NOT EXCEED: FLAME SPREAD – 25, FUEL CONTRIBUTION – 50, SMOKE DEVELOPMENT – 450 IN ACCORDANCE WITH ASTM E84 TEST METHODS.
  - PIPING INSULATION THICKNESS FOR NEW PIPING SHALL BE AS FOLLOWS:
- | PIPE SIZES  |        |          |             |
|-------------|--------|----------|-------------|
| PIPE TYPE   | BRANCH | UP TO 2" | 2-1/2" & UP |
| DOM. HOT    | --     | 1.0"     | 1.5"        |
| DOM. COLD-- | 0.5"   | 0.5"     |             |
- INSULATION PROTECTION SHIELDS EQUAL TO GRINNELL FIGURE 167 SHALL BE INSTALLED ON ALL INSULATED PIPE 1" AND LARGER. HANGERS SHALL NOT CONTACT THE PIPE WHERE INSULATION IS SPECIFIED. INSERT INSULATION SHALL BE THE SAME THICKNESS AS THE ADJOINING PIPE INSULATION.

- PART 5 – INSTALLATION**
- NEW HORIZONTAL WASTE PIPE SHALL BE GIVEN A GRADE OF 1/4" PER FOOT. 1/8" PER FOOT SLOPE MUST BE APPROVED BY THE AUTHORITY HAVING JURISDICTION. ROOF DRAIN PIPING SHALL BE GIVEN A GRADE OF 1/8" PER FOOT.
  - VENT INLETS ON THE FLOOR DRAINS AND FLOOR SINKS SHALL BE ABOVE THE WEIR OF THE TRAPS THEY SERVE.
  - ALL PLUMBING FIXTURE SUPPLIES WITH STOPS, P-TRAPS, AND TRAP ARMS SHALL BE CHROME PLATED.
  - VERIFY THE LOCATIONS AND SIZES OF THE EXISTING DOMESTIC WATER, GAS, AND WASTE AND MAKE NECESSARY NEW CONNECTIONS AS REQUIRED. REFER TO THE CIVIL ENGINEERING DRAWINGS AND COORDINATE WITH THE GENERAL CONTRACTOR OR THE OWNER'S REPRESENTATIVE.
  - THE PLUMBING CONTRACTOR SHALL PERIODICALLY REMOVE ALL DEBRIS AND WASTE RELATED TO HIS WORK IN ORDER TO MAINTAIN SAFE WORKING AND OPERATING CONDITIONS, AND SHALL DISPOSE OF THE SAME IN A APPROVED MANNER AT THE COMPLETION OF WORK, HE SHALL REMOVE ALL HIS RUBBISH, TOOLS, AND SURPLUS MATERIAL FROM AND ABOUT THE SITE, LEAVING HIS WORK CLEAN AND THE AREA READY FOR OCCUPANCY.
  - CLEANOUTS SHALL BE THE SAME SIZE AS THE PIPE. WHERE CLEANOUTS IN CONNECTION WITH THREADED PIPE ARE ACCESSIBLE, THEY SHALL BE CAST IRON DRAINAGE T-PATTER 90 DEGREE BRANCH FITTING WITH EXTRA HEAVY BRASS SCREW PLUGS OF THE SAME SIZE AS THE PIPE (4" CLEANOUT MAXIMUM).
  - ALL CLEANOUTS SHALL BE FLUSH WITH WALL OR COLOR COMPLETE WITH STAINLESS STEEL COVER PLATE FOR WALL CLEANOUTS AND NICKEL BRONZE FOR FLOOR CLEANOUTS.
  - ARRANGE NEW PIPING TO PERMIT READY ACCESS TO VALVES, UNIONS, TRAPS, AND TO CLEAR OPENING OF DOORS AND ACCESS PANELS.
  - ADJUST LOCATION OF PIPES, ETC. TO ACCOMMODATE WORK FROM INTERFERENCE ANTICIPATED AND ENCOUNTERED. DETERMINE EXACT ROUTE AND LOCATION OF EACH PIPE PRIOR TO FABRICATION. MAKE OFFSETS, TRANSITION, AND CHANGES IN DIRECTION OF PIPES AS REQUIRED TO MAINTAIN PROPER HEAD ROOM AND PITCH OF SLOPING LINES WHETHER OR NOT INDICATED ON DRAWINGS.
  - INSURE THAT ITEMS TO BE FURNISHED FIT IN SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS INCLUDING THOSE FOR CONNECTIONS AND FURNISH AND INSTALL EQUIPMENT OF SIZE AND SHAPE SO FINAL INSTALLATION SHALL SUIT TRUE INTENT AND MEANING OF CONTRACT DOCUMENTS.
  - FOLLOW MANUFACTURER'S DIRECTIONS IN DELIVERY, STORAGE, PROTECTION, AND INSTALLATION OF MATERIALS. PROMPTLY NOTIFY ARCHITECT IN WRITING OF CONFLICTS BETWEEN REQUIREMENTS OF CONTRACT DOCUMENTS AND MANUFACTURER'S DIRECTIONS AND OBTAIN ARCHITECTS WRITTEN INSTRUCTION BEFORE PROCEEDING WITH WORK. BEAR EXPENSES ARISING FROM CORRECTING DEFICIENCIES OF WORK THAT TO DO NOT COMPLY WITH MANUFACTURER'S DIRECTION OR SUCH WRITTEN INSTRUCTION FROM ARCHITECT AND/OR OWNER'S REPRESENTATIVE.
  - DELIVER MATERIAL TO SITE AND TIGHTLY COVER AND PROTECT AGAINST DIRT, WATER, AND CHEMICAL OR MECHANICAL INJURY BUT HAVE READILY ACCESSIBLE FOR INSPECTION. STORE ITEMS SUBJECT TO MOISTURE DAMAGE IN A DRY HEATED SPACE.
  - VERTICAL PIPING SHALL BE SECURED AT SUFFICIENTLY CLOSE INTERVALS TO KEEP PIPE ALIGNMENT AND CARRY THE WEIGHT OF THE PIPE AND CONTENTS. STACKS SHALL BE SUPPORTED AT THEIR BASES WITH APPROVED METAL CLAMPS OR HANGERS.
  - SUPPORT HORIZONTAL PIPING AT SUFFICIENTLY CLOSE INTERVALS TO MAINTAIN ALIGNMENT AND PREVENT SAGGING OR GRADE REVERSALS IN ACCORDANCE WITH LOCAL PLUMBING CODE. SUPPORT EACH LENGTH OF PIPE BY AN APPROVED HANGER LOCATED NOT MORE THAN 18" FROM THE JOINT. APPROVED MANUFACTURERS ARE ITT GRINNELL FEE & MASON MFG. CO., B-LINE, OR KIN-LINE, INC.
  - SUPPORT TERMINAL ENDS OF ALL HORIZONTAL RUNS OR BRANCHES AND EACH CHANGE OF DIRECTION OR ALIGNMENT BY AN APPROVED HANGER.
  - ALL EXTERIOR GAS PIPING EXPOSED TO WEATHER SHALL BE PAINTED WITH A GRAY COLOR ENAMEL PAINT WITH RUST INHIBITOR.
  - CHANGES IN DIRECTION OF HORIZONTAL WASTE AND VENT SHALL BE MADE WITH THE APPROPRIATE USE 45 DEGREE WYES, HALF WYES, LONG SWEEP 1/4 BENDS, 1/6, 1/8, OR 1/16 BENDS, EXCEPT THAT SANITARY TEES MAY BE USED ON WASTE LINES WHERE CHANGE IN DIRECTION OF FLOW IS FROM THE HORIZONTAL TO THE VERTICAL.
  - COMPLETE THE INSTALLATION OF EACH PLUMBING FIXTURE INCLUDING CHROME-PLATED TRAP AND ACCESSORIES WITH ACCESSIBLE CHROME-PLATE TRAP AND ACCESSORIES WITH ACCESSIBLE CHROME-PLATED STOP OR CONTROL VALVE IN EACH HOT AND A COLD WATER BRANCH SUPPLY LINE. MAKE JOINT BETWEEN WATER CLOSET AND FLOOR FLANGE TIGHT WITH APPROVED FIXTURE SETTING COMPOUND OR GASKET. INTERIOR EXPOSED PIPE, VALVES, AND COMPLETION OF PROJECT. CAULK BETWEEN FIXTURES AND WALL AND COMPOUND, POINT ALL EDGES. INSTALL FIXTURE AS PER LOCAL CODES AND MANUFACTURER'S INSTRUCTIONS. DO NOT USE FLEXIBLE WATER PIPING.
  - ACCESS PANELS SHALL BE PROVIDED IN WALLS OR GWB CEILINGS WHERE REQUIRED TO ACCESS VALVES OR CONCEALED EQUIPMENT ACCESS DOORS SHALL BE HINGED AND CONSTRUCTED OF METAL WITH A SCREWDRIWER LATCH. ALL ACCESS PANELS SHALL BE 18" X 18", UNLESS OTHERWISE NOTED ON THE DRAWINGS. FIRE-RATED ACCESS PANELS SHALL BE INSTALLED IN FIRE-RATED ASSEMBLIES. INSTALLATION SHALL BE IN NEAT IN FINAL APPEARANCE.

- PART 6 – SUBMITTALS**
- BY DESCRIPTION, CATALOG NUMBER AND SPECIFIC DESIGNATION, STANDARDS ARE ESTABLISHED FOR MANUFACTURED ITEMS WHICH THE CONTRACTOR SHALL FURNISH AS REQUIRED BY THIS SECTION. SUBSTITUTIONS MUST BE SUBMITTED AND APPROVED BY THE ARCHITECT AND/OR OWNER'S REPRESENTATIVE OF PRODUCTS PRIOR TO BID FOR CONSIDERATION. SUBSTITUTIONS OF PRODUCTS SHOWN SHALL BE SUBMITTED TO THE ARCHITECT, THE OWNER'S REPRESENTATIVE OR ENGINEER FOR WRITTEN APPROVAL.
  - SHOP DRAWINGS AND UP-TO-DATE ENGINEERING DATA SHEETS AND CATALOG INFORMATION SHALL BE FURNISHED ON THE FOLLOWING ITEMS OF EQUIPMENT. PROVIDE (6) COPIES FOR REVIEW.
    - FIXTURES AND TRIM
    - WATER HEATER
    - PLUMBING EQUIPMENT AND SPECIALTIES
    - VALVES, STRAINERS, ETC.

- PART 7 – CUTTING AND PATCHING**
- CUTTING AND PATCHING OF FLOORS, ROOF AND WALLS TO FACILITATE THE PLUMBING SYSTEM INSTALLATION SHALL BE BY THE GENERAL CONTRACTOR, THE COST OF WHICH SHALL BE PAID FOR BY THE PLUMBING CONTRACTOR THE PLUMBING CONTRACTOR SHALL COORDINATE ALL CUTTING AND PATCHING WITH THE GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE.
  - THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR REQUIRED DIGGING, BACKFILLING AND COMPACTION.
  - THE GENERAL CONTRACTOR SHALL BE PERFORM THE REQUIRED CUTTING, AND PATCHING INCIDENT TO THIS WORK, AND MAKE REQUIRED REPAIRS AFTERWARD TO SATISFACTION OF ARCHITECT AND THE OWNER'S REPRESENTATIVE. CUT CAREFULLY TO MINIMIZE NECESSITY FOR REPAIRS TO EXISTING WORK. DO NOT CUT BEAMS, COLUMNS, OR TRUSSES. PATCH AND REPAIR WALLS, FLOORS, CEILING AND ROOFS WITH MATERIALS OF SAME QUALITY AND APPEARANCE AS ADJACENT SURFACES UNLESS OTHERWISE SHOWN. SURFACE FINISHES SHALL EXACTLY MATCH EXISTING FINISHES OF SAME MATERIALS. THE PLUMBING CONTRACTOR SHALL BEAR EXPENSE OF CUTTING, PATCHING, REPAIRING, AND REPLACING OF WORK OF OTHER CONTRACTORS REQUIRED BECAUSE OF HIS FAULT, ERROR, TARDINESS, OR BECAUSE OF DAMAGE DONE BY THE PLUMBING CONTRACTOR. WORK SO AS NOT TO INTERFERE AND/OR DISRUPT THE DAILY ACTIVITIES AND/OR OPERATING HOURS OF NEARBY BUILDINGS OR OPERATIONS. COORDINATE AS REQUIRED WITH GENERAL CONTRACTOR AND THE OWNER'S REPRESENTATIVE.
  - SCHEDULE ALL WORK SO AS NOT TO INTERFERE AND/OR DISRUPT THE DAILY ACTIVITIES AND/OR OPERATING HOURS OF NEARBY BUILDINGS OR OPERATIONS. COORDINATE AS REQUIRED WITH GENERAL CONTRACTOR AND THE OWNER'S REPRESENTATIVE.

- PART 8 – FIRE ASSEMBLY PENETRATIONS**
- COORDINATE THE REQUIREMENTS WITH OTHER TRADES, GENERAL CONTRACTOR, ARCHITECT, THE OWNER'S REPRESENTATIVE AND THE LOCAL AUTHORITIES HAVING JURISDICTION.
  - PROVIDE SLEEVE AT ALL FLOOR PIPING PENETRATIONS, PROVIDE U.L. FIRE PENETRATION SYSTEM NUMBER FC1002, FC2008, FC3007, FC7001, WL002 OR WL2002 FOR COMBUSTIBLE CONSTRUCTION OR SYSTEM NUMBER FA5001, FA8001, WL1002 OR WL2002 FOR NON-COMBUSTIBLE CONSTRUCTION OF THE U.L. BUILDING MATERIALS DIRECTORY AND AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
  - ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL COMPLY WITH U.L. FIRE RESISTANCE DIRECTORY, LATEST EDITION.
  - ACCESS PANELS SHALL BE PROVIDED IN WALLS OR GWB CEILINGS WHERE REQUIRED TO ACCESS DAMPERS OR CONCEALED EQUIPMENT. ACCESS DOORS SHALL BE HINGED AND CONSTRUCTED OF METAL WITH A SCREWDRIWER LATCH. ALL ACCESS PANELS SHALL BE MINIMUM OF 18" X 18" UNLESS OTHERWISE NOTED ON DRAWINGS, OR LARGER IF REQUIRED FOR THE REMOVAL OF EQUIPMENT. FIRE-RATED ACCESS PANELS SHALL BE INSTALLED IN FIRE-RATED ASSEMBLIES. INSTALLATION SHALL BE NEAT IN FINAL APPEARANCE.

- PART 9 – SEISMIC BRACING**
- THE PLUMBING CONTRACTORS SHALL FURNISH AND INSTALL REQUIRED SEISMIC BRACING, RESTRAINTS, EQUIPMENT ISOLATORS, ETC. FOR HIS INSTALLED EQUIPMENT, PIPING, ETC. ALL OF WHICH SHALL COMPLY WITH PPIC AND SMACNA GUIDELINES FOR THE LOCAL SEISMIC ZONE REQUIREMENTS AND IN ACCORDANCE WITH AUTHORITIES HAVING JURISDICTION.

- PART 10 - AS-BUILT DRAWINGS**
- THE PLUMBING CONTRACTOR SHALL KEEP A RECORD SET OF DRAWINGS NEATLY MARKED WITH CHANGES FROM THE ORIGINAL DESIGN AND DRAWINGS. THESE DRAWINGS SHALL BE DELIVERED TO THE ARCHITECT AND/OR OWNER'S REPRESENTATIVE AT THE COMPLETION OF THE PROJECT AND PRIOR TO RECEIVING FINAL PAYMENT.

- PART 11 – CHECK, TEST AND START-UP**
- ALL NEW, ALTERED, EXTENDED OR REPLACED PLUMBING SHALL BE LEFT UNCOVERED AND UNCONCEALED UNTIL IT HAS BEEN TESTED OR APPROVED. WHERE SUCH WORK HAS BEEN COVERED OR CONCEALED BEFORE IT IS TESTED AND APPROVED, IT SHALL BE EXPOSED AT THE PLUMBING CONTRACTOR'S EXPENSE FOR TESTING AND APPROVAL.
  - EACH SYSTEM SHALL BE ADJUSTED TO INSURE PROPER FUNCTIONING AND SHALL BE LEFT IN FIRST CLASS OPERATING CONDITION. CONTRACTOR SHALL PERFORM ALL TESTS IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE.
    - HYDROSTATICALLY TEST THE NEW WASTE AND VENT SYSTEM INDOORS TO HOLD NOT LESS THAN 5 PSIG OR 10 FEET OF HEAD PRESSURE FOR 2 HOURS WITH NO DECREASE IN PRESSURE.
    - TEST THE NEW DOMESTIC WATER SYSTEMS TO HOLD NOT LESS THAN 100 PSIG (OR 1-1/2 TIMES THE WORKING PRESSURE IN THE PIPE, WHICHEVER IS GREATER) AIR PRESSURE (OR HYDROSTATIC) FOR 4 HOURS WITH NO DECREASE IN PRESSURE.
    - GAS PIPING SHALL BE TEST AT 60 PSIG FOR NO LESS THAN 30 MINUTES IN ACCORDANCE WITH THE LOCAL GAS COMPANY'S GOOD PRACTICES. ALL TESTS SHALL BE MAINTAINED WITHOUT LEAKS OR PRESSURE LOSS FOR THE SPECIFIED TIME, WITH ALLOWANCE FOR THE TEMPERATURE CHANGES. REPAIR ALL LEAKS AND REPEAT TESTS WHERE REQUIRED.
  - THE PLUMBING CONTRACTOR SHALL PROVIDE MATERIAL AND LABOR REQUIRED TO PERFORM START-UP OF EACH RESPECTIVE ITEM OF EQUIPMENT, FIXTURES AND SYSTEMS. SUBMIT TEST AND START-UP REPORT TO THE ARCHITECT AND/OR THE OWNER'S REPRESENTATIVE AS APPLICABLE.
  - CLEAN ALL PIPING, EQUIPMENT, ETC. REMOVE ALL GREASE, DIRT AND STAINS THAT HAVE ACCUMULATED DURING THE CONSTRUCTION PERIOD.

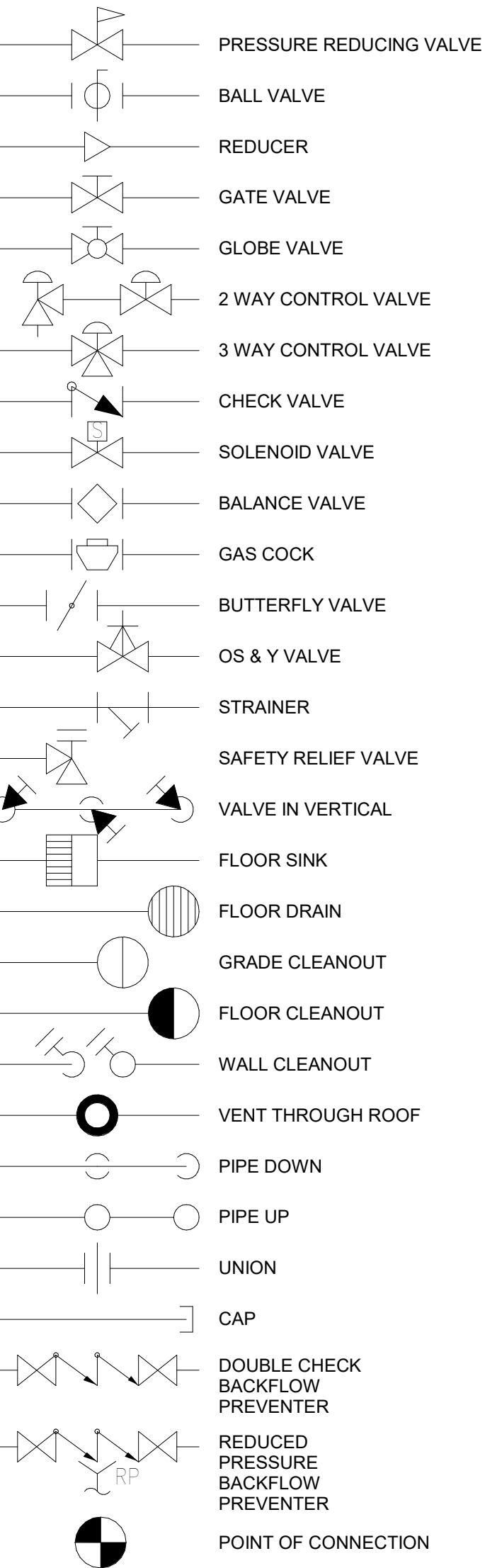
- PART 12 – STERILIZATION**
- STERILIZE DOMESTIC WATER SYSTEM WITH SOLUTION CONTAINING 250 PARTS PER MILLION MINIMUM OF AVAILABLE CHLORINE. INTRODUCE CHLORINATING MATERIAL INTO SYSTEM A MANNER APPROVED BY THE ARCHITECT AND LOCAL DEPARTMENT OF HEALTH. ALLOW STERILIZATION SOLUTION TO REMAIN FOR 24 HOURS AND OPEN AND CLOSE VALVES AND FAUCETS SEVERAL TIMES DURING THAT TIME. AFTER STERILIZATION, FLUSH SOLUTION FROM SYSTEM WITH CLEAN WATER UNTIL RESIDUAL CHLORINE CONTENT IS LESS THAN 0.2 PARTS PER MILLION. WATER SYSTEM WILL NOT BE ACCEPTED UNTIL NEGATIVE BACTERIOLOGICAL TEST IS MADE ON WATER TAKEN FROM SYSTEM. REPEAT DOSE UNTIL SUCH NEGATIVE TEST IS ACCOMPLISHED. SUCH NEGATIVE TEST IS ACCEPTABLE TO THE LOCAL DEPARTMENT OF HEALTH. PROVIDE REPORT TO OWNER'S REPRESENTATIVE FOR APPROVAL.

- PART 13 – OPERATION AND MAINTENANCE MANUALS**
- PROVIDE THREE (3) SETS OF O&M MANUALS COVERING ALL NEW VALVES, EQUIPMENT AND APPURTENANCES FOR THE OWNER'S USE AS APPLICABLE. THE FORMAT SHALL BE AS FOLLOWS:
    - SIZE: 8 1/2X11 INCHES
    - PAPER: MANUFACTURER'S PRINTED DATA, OR NEATLY TYPE-WRITTEN
    - PROVIDE REINFORCED PUNCHED BINDER TABS, BOUND IN WITH TEXT.
    - PROVIDE FLY-LEAF FOR EACH SEPARATE PRODUCT, OR EACH PIECE OF OPERATING EQUIPMENT. PROVIDE TYPED DESCRIPTION OF PRODUCT, AND MAJOR COMPONENT PARTS OF EQUIPMENT. PROVIDE INDEXED TABS.
    - COVER: IDENTIFY EACH VOLUME WITH TYPED OR PRINTED TITLE: "OPERATION AND MAINTENANCE INSTRUCTION". LIST TITLE OF PROJECT, IDENTITY OF GENERAL SUBJECT MATTER COVER IN THE MANUAL.
    - BINDERS: COMMERCIAL QUALITY THREE-RING BINDERS WITH DURABLE AND CLEANABLE PLASTIC COVERS
    - PROVIDE NEATLY TYPE WRITTEN TABLE OF CONTENTS. LIST PRODUCT BY PRODUCT NAME AND OTHER IDENTIFYING SYMBOLS AS SET FOR IN CONTRACT DOCUMENTS.
    - INCLUDE COPY OF EACH WARRANTY, BOND AND SERVICE CONTRACT ISSUED. INCLUDE PARTS LISTS, LUBRICATION CHART WITH MAINTENANCE SCHEDULE.

- PART 14 – INSTRUCTIONS**
- PRIOR TO FINAL INSPECTION OR ACCEPTANCE, FULLY INSTRUCT THE OWNER'S DESIGNATED OPERATION AND MAINTENANCE PERSONNEL IN THE OPERATION, ADJUSTMENT AND MAINTENANCE OF PRODUCTS, EQUIPMENT AND SYSTEMS. (MINIMUM 2-HOURS INSTRUCTION PERIOD REQUIRED OR MORE IF REQUESTED BY THE OWNER'S REPRESENTATIVE).

- PART 15 – WARRANTY AND GUARANTEE**
- THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE NEW PLUMBING SYSTEMS INSTALLATION AND SHALL PROVIDE A ONE (1) YEAR PARTS AND LABOR WARRANTY FOR HIS PERFORMED WORK AFTER EQUIPMENT START-UP AND THE OWNER'S REPRESENTATIVE'S ACCEPTANCE. SHOULD ANY TROUBLE DEVELOP DURING THIS PERIOD DUE TO DEFECTIVE MATERIALS OR FAULTY WORKMANSHIP, THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR AND MATERIALS TO CORRECT THE TROUBLE WITHOUT ANY COST TO THE OWNER. ANY MATERIALS FOUND TO BE DEFECTIVE DURING THE GUARANTEE PERIOD SHALL BE CORRECTED IMMEDIATELY TO THE ENTIRE SATISFACTION OF THE OWNER.
  - THE CONTRACT SHALL BE RESPONSIBLE FOR ALL DAMAGE TO ANY PART OF THE PREMISES CAUSE BY LEAK OR BREAKS IN PIPE OR EQUIPMENT FURNISHED AND/OR INSTALLED BY THIS CONTRACTOR FOR A PERIOD OF (1) YEAR FROM THE DATE OF ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR SHALL MAKE ALL NECESSARY REPAIRS TO THE OWNER'S REPRESENTATIVE'S SATISFACTION AND AT NO ADDITIONAL COST.

## PLUMBING SYMBOLS



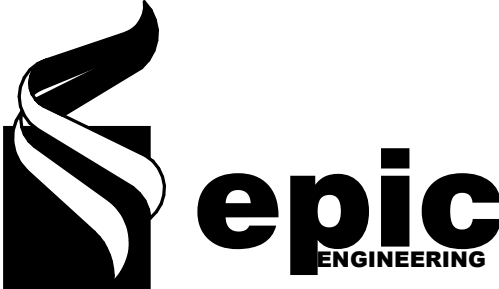
## PLUMBING ABBREVIATIONS

EXISTING	(E)
AIR ADMITTANCE VALVE	A.A.V.
ABOVE FINISHED FLOOR	A.F.F.
CONDENSATE	COND
COLD WATER	CW
DOWN	DN
DOMESTIC	DOM
FLOOR CLEAN OUT	FCO
HOT WATER	HW
HOT WATER RETURN	HWR
NATURAL GAS	NG
REFRIGERANT	REF
SANITARY	SAN
TEMPERED WATER	TW
VENT	V
VENT THROUGH ROOF	VTR
WALL CLEAN OUT	WCO

### CONSTRUCTION NOTES

#### DATE

DEC 2023

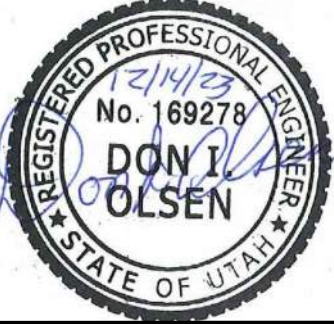


#### REVISIONS

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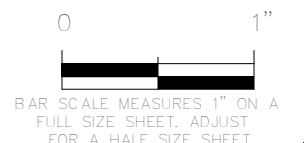
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DESIGNER: DF  
REVIEWED: DIO

PROJECT #  
23SM1182.04



#### SCALES

1 1/2" = 1'-0"



#### PROJECT NAME:

**MAGNA HEAD  
START-ADDITION**

#### PROJECT LOCATION:

**8259 W 3500 S MAGNA,  
UT 84044**

#### SHEET TITLE:

**PLUMBING GENERAL  
NOTES**

#### PLAN SET:

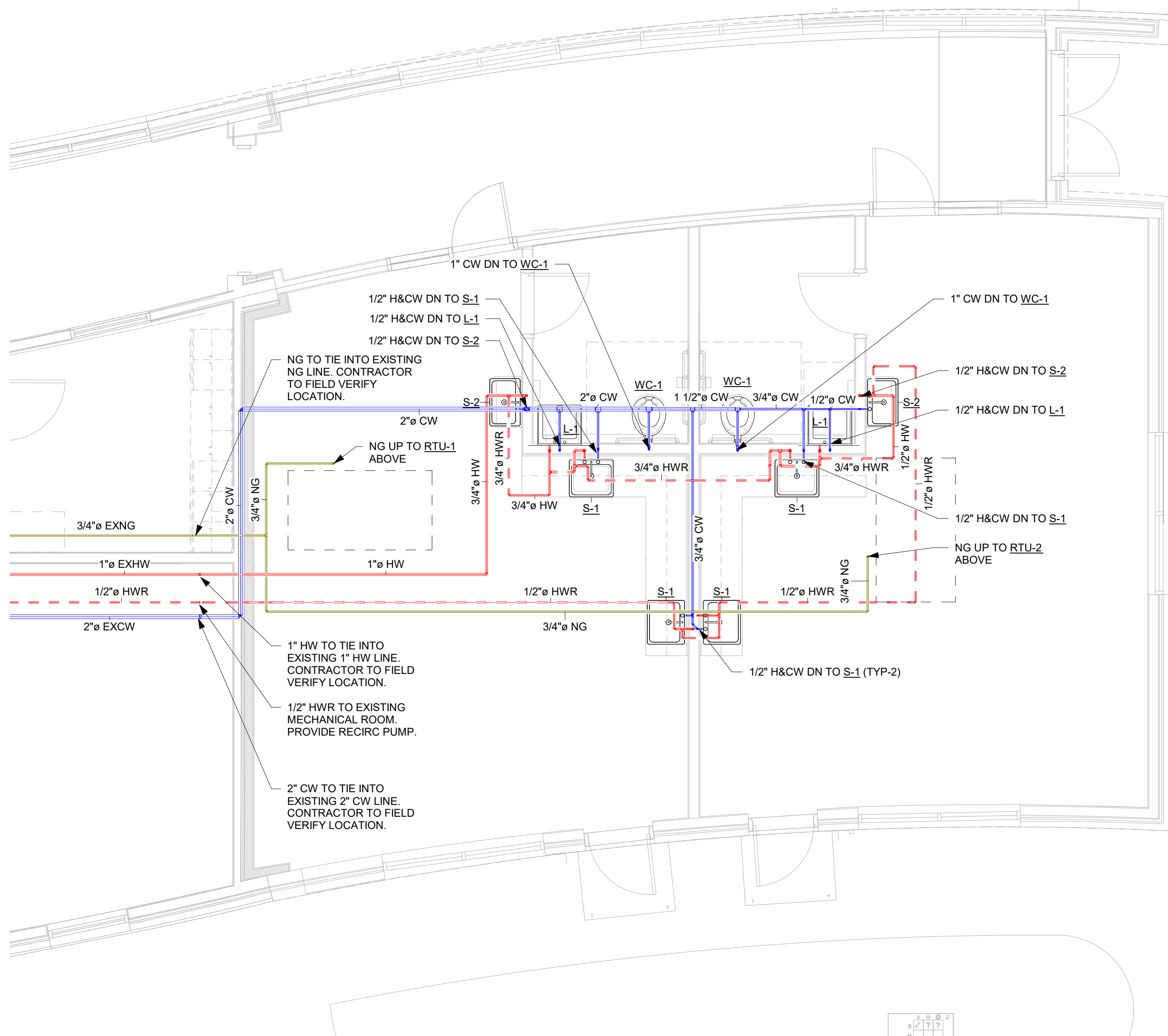
**PERMIT**

#### SHEET

**P0.1**



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1 FIRST LEVEL PLUMBING PLAN  
1/4" = 1'-0"

PLUMBING GENERAL NOTES

1. VERIFY EXISTING SIZES AND LOCATIONS OF ALL PIPING BEFORE BEGINING CONSTRUCTION. NOTIFY OWNER/ENGINEER OF ANY DISCREPANCIES.
2. ALL HORIZONTAL SANITARY PIPING SHOWN IS LOCATED BELOW FLOOR OF ASSOCIATED LEVEL UNLESS NOTED OTHERWISE.
3. ALL HORIZONTAL DOMESTIC, GAS, REFRIGERANT, AND VENT PIPING SHOWN IS LOCATED IN CEILING SPACE OF ASSOCIATED LEVEL UNLESS NOTED OTHERWISE.
4. BRANCH PIPE SIZE SHALL MATCH FIXTURE CONNECTION SIZE UNLESS NOTED OTHERWISE. SEE PLUMBING FIXTURE SCHEDULE FOR DETAIL.
5. PROVIDE ISOLATION VALVES ON ALL PLUMBING FIXTURES AND EQUIPMENT FOR SERVICE.
6. PROVIDE GAS REGULATOR AT ALL NATURAL GAS EQUIPMENT UNLESS EQUIPMENT IS RATED FOR GAS SERVICE PRESSURE.

CONSTRUCTION NOTES

DATE

DEC 2023

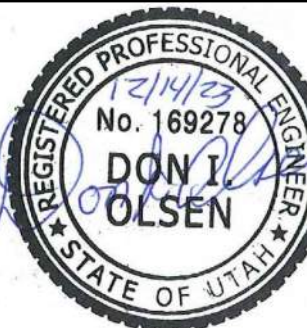


REVISIONS

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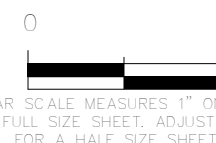
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DESIGNER: DF  
REVIEWED: DIO

PROJECT #  
23SM1182.04



SCALES

As indicated



PROJECT NAME:

MAGNA HEAD  
START-ADDITION

PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

SHEET TITLE:

FIRST LEVEL  
PLUMBING PLAN

PLAN SET:

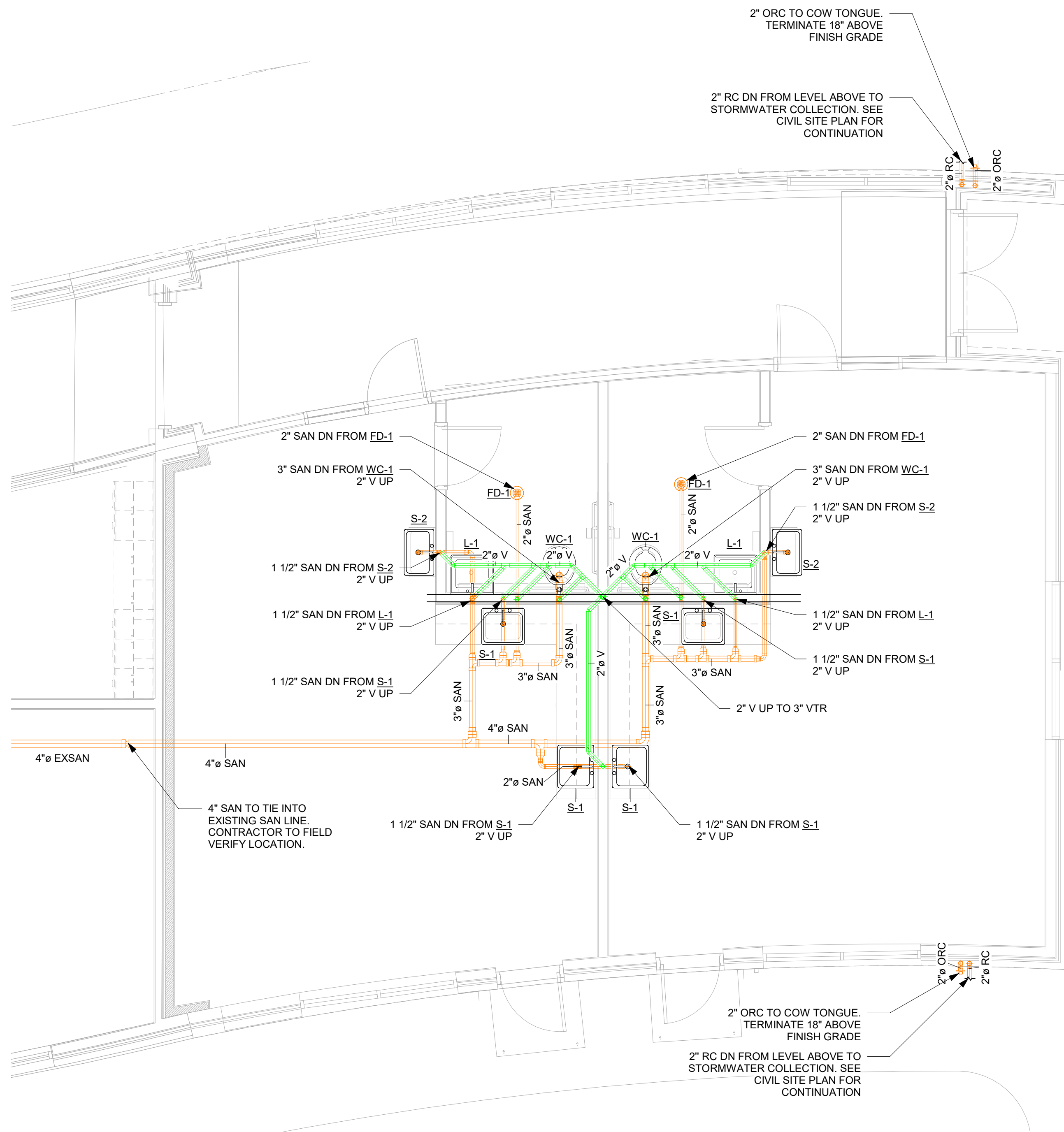
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SHEET

P1.1



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1 FIRST LEVEL SANITARY PLAN  
1/4" = 1'-0"

PLUMBING GENERAL NOTES

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3. ALL HORIZONTAL DOMESTIC, GAS, REFRIGERANT, AND VENT PIPING SHOWN IS LOCATED IN CEILING SPACE OF ASSOCIATED LEVEL UNLESS NOTED OTHERWISE.
4. BRANCH PIPE SIZE SHALL MATCH FIXTURE CONNECTION SIZE UNLESS NOTED OTHERWISE. SEE PLUMBING FIXTURE SCHEDULE FOR DETAIL.
5. PROVIDE ISOLATION VALVES ON ALL PLUMBING FIXTURES AND EQUIPMENT FOR SERVICE.
6. PROVIDE GAS REGULATOR AT ALL NATURAL GAS EQUIPMENT UNLESS EQUIPMENT IS RATED FOR GAS SERVICE PRESSURE.

CONSTRUCTION NOTES

DATE

DEC 2023

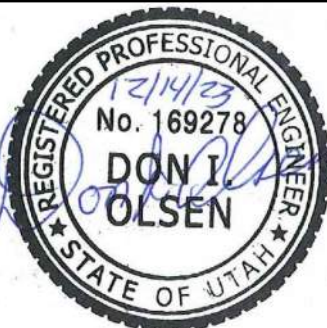


REVISIONS

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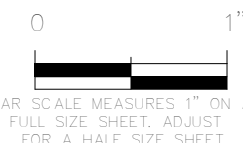
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REVIEWED: DIO

PROJECT #  
23SM1182.04



SCALES

As indicated



PROJECT NAME:

MAGNA HEAD  
START-ADDITION

PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

SHEET TITLE:

FIRST LEVEL SANITARY  
PLAN

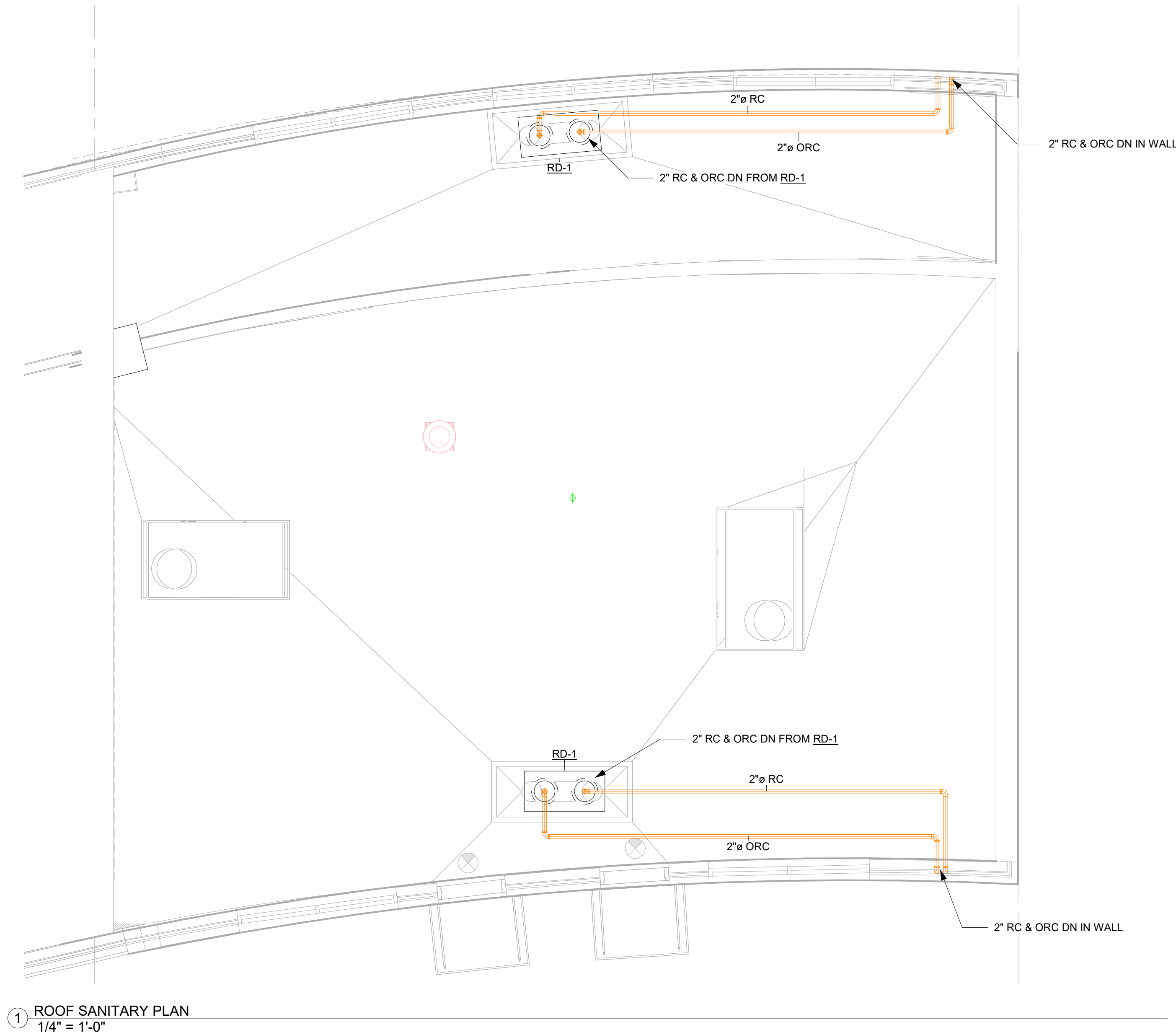
PLAN SET:

PERMIT

SHEET

P2.1





1 ROOF SANITARY PLAN  
1/4" = 1'-0"

PLUMBING GENERAL NOTES

1. VERIFY EXISTING SIZES AND LOCATIONS OF ALL PIPING BEFORE BEGINNING CONSTRUCTION. NOTIFY OWNER/ENGINEER OF ANY DISCREPANCIES.
2. ALL HORIZONTAL SANITARY PIPING SHOWN IS LOCATED BELOW FLOOR OF ASSOCIATED LEVEL UNLESS NOTED OTHERWISE.
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5. PROVIDE ISOLATION VALVES ON ALL PLUMBING FIXTURES AND EQUIPMENT FOR SERVICE.
6. PROVIDE GAS REGULATOR AT ALL NATURAL GAS EQUIPMENT UNLESS EQUIPMENT IS RATED FOR GAS SERVICE PRESSURE.

CONSTRUCTION NOTES

DATE

DEC 2023

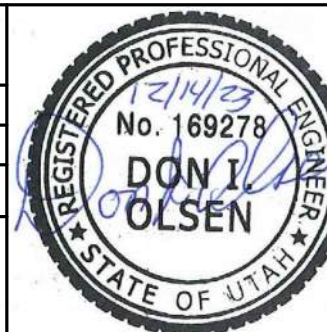


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DRAWN: MB  
DESIGNER: DF  
REVIEWED: DIO

PROJECT #  
23SM1182.04



SCALES

As indicated



PROJECT NAME:

MAGNA HEAD  
START-ADDITION

PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

SHEET TITLE:

STORM WATER PLAN

PLAN SET:

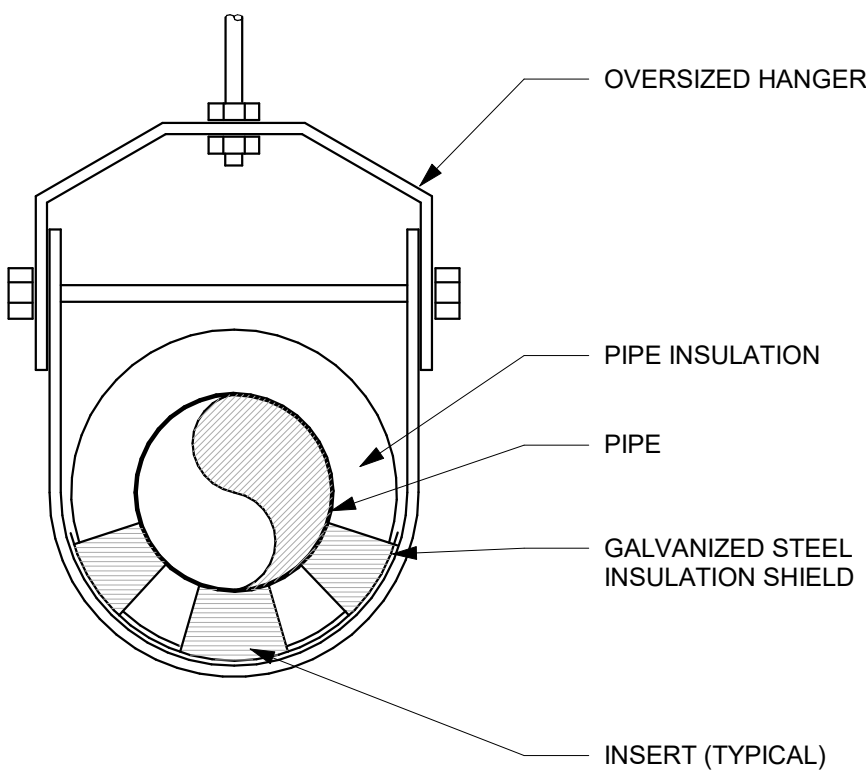
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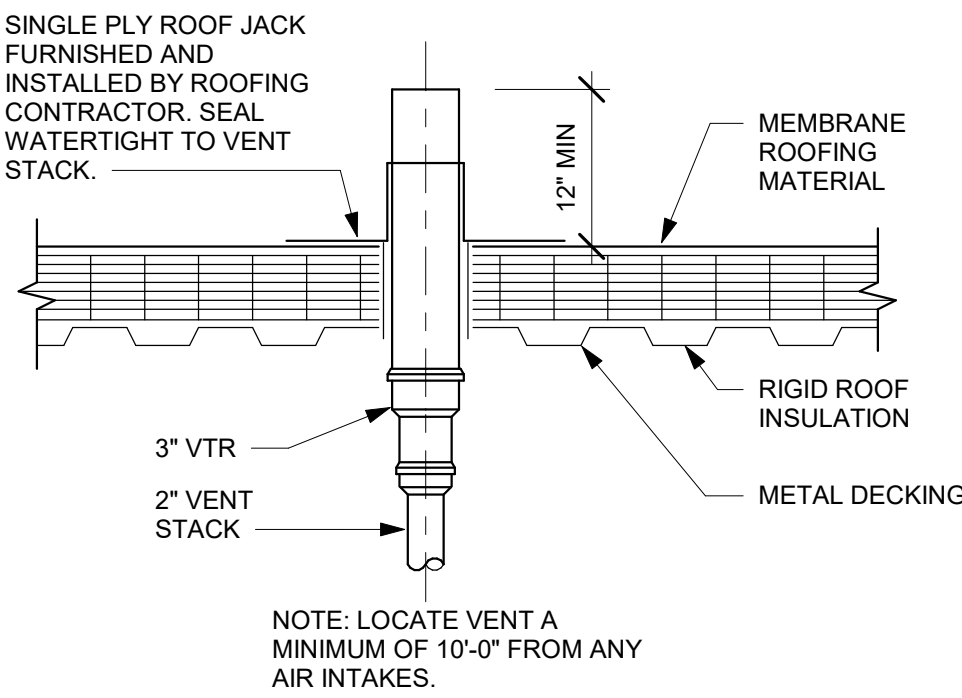
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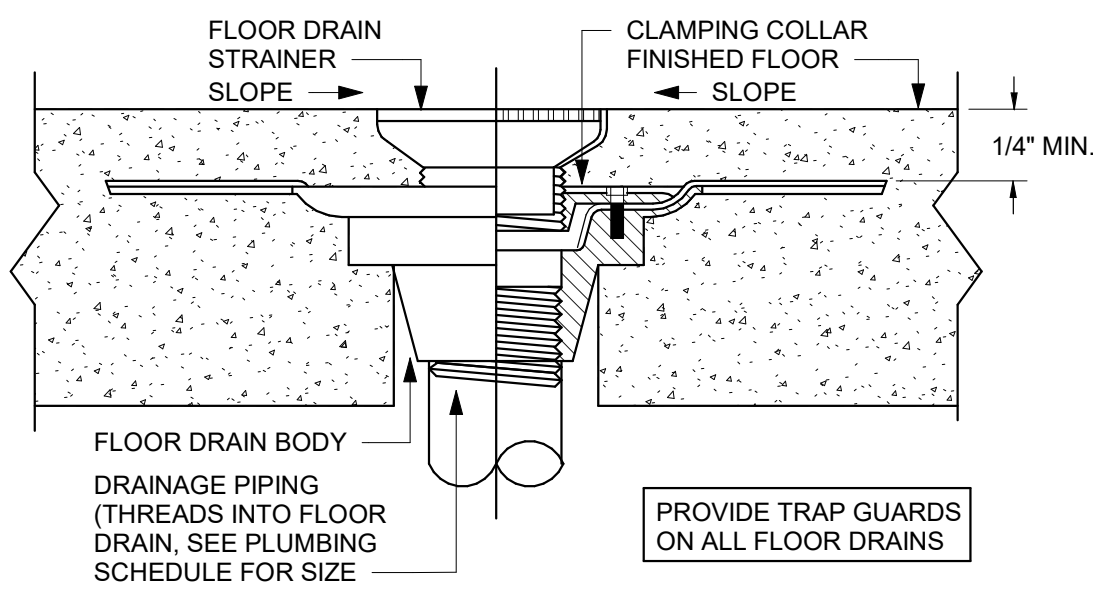
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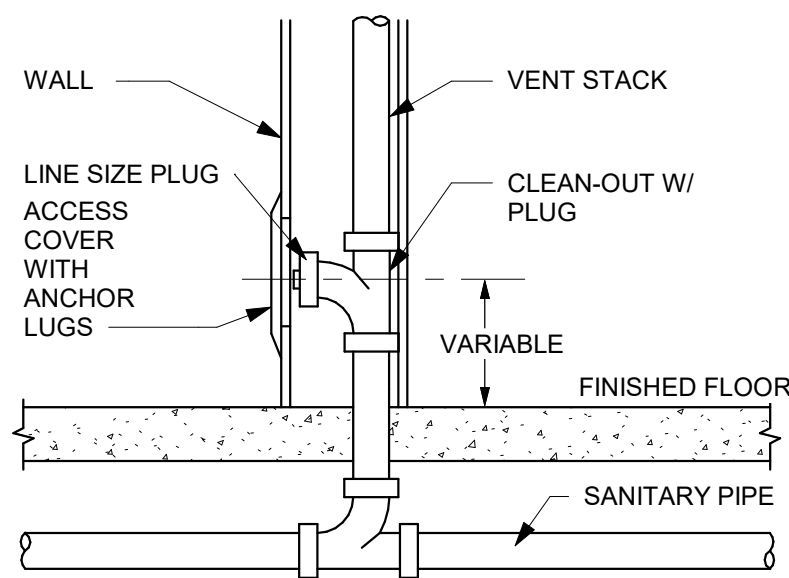
1 PIPE HANGER DETAIL  
N.T.S.



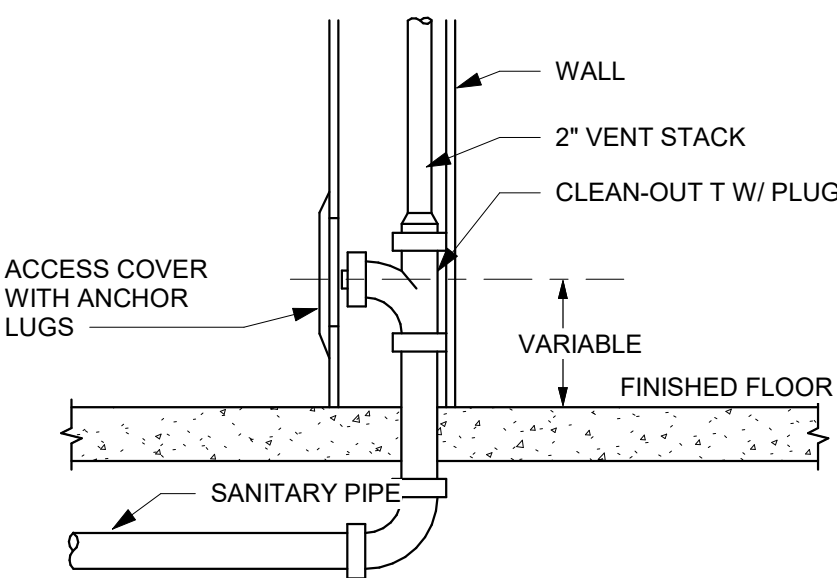
2 VENT THROUGH ROOF DETAIL  
N.T.S.



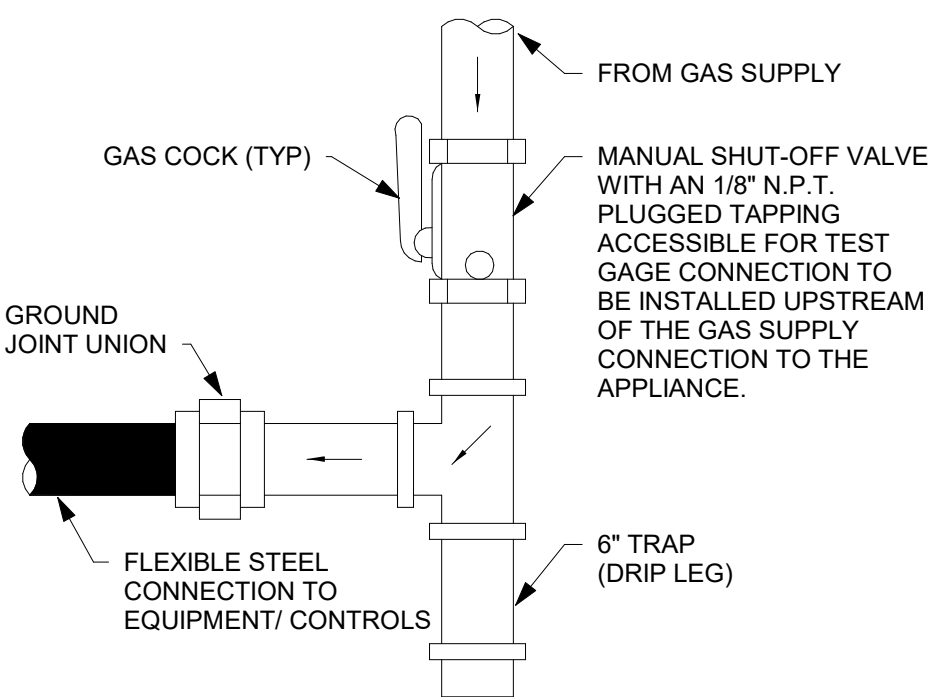
3 FLOOR DRAIN DETAIL  
N.T.S.



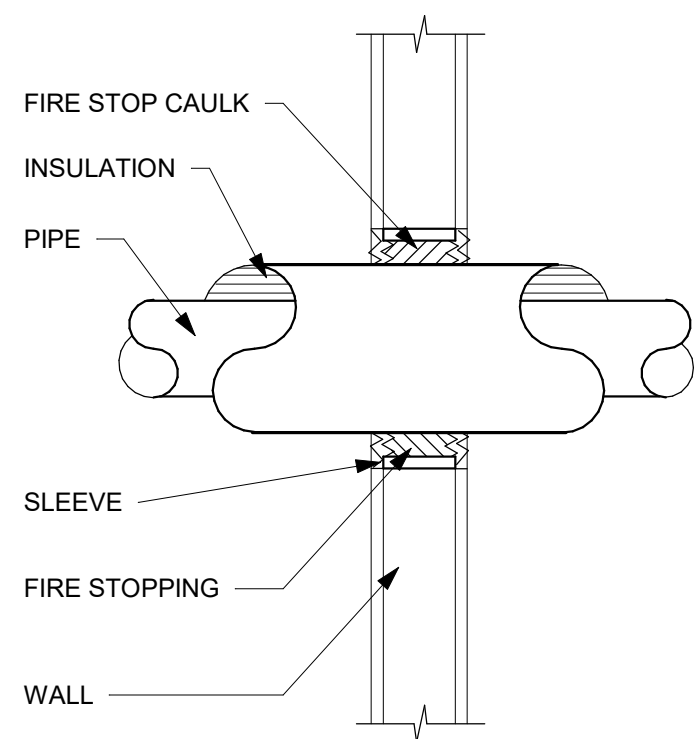
4 WALL CLEAN-OUT DETAIL (MID LINE)  
N.T.S.



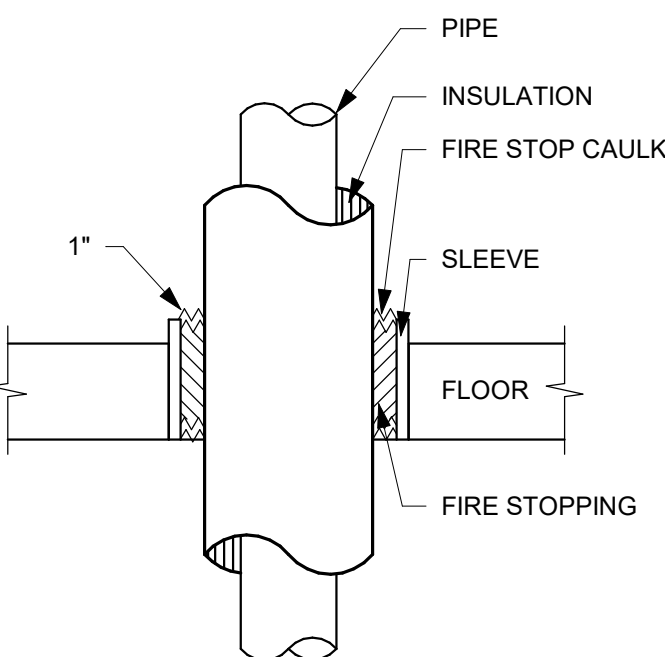
5 WALL CLEAN-OUT DETAIL (END LINE)  
N.T.S.



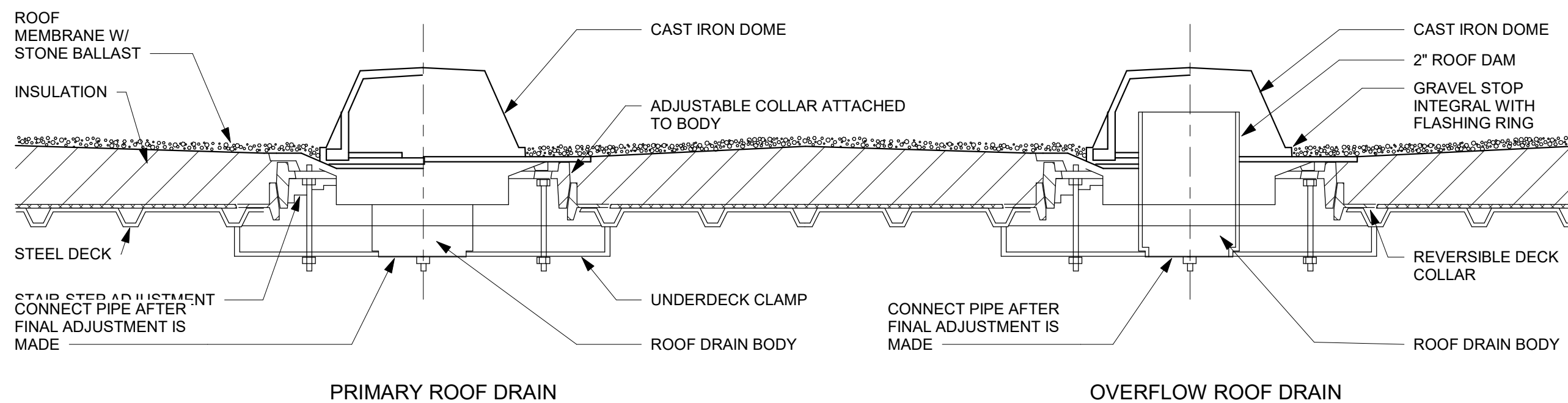
6 GAS CONNECTION  
N.T.S.



7 PIPE WALL PENetration DETAIL  
N.T.S.



8 PIPE FLOOR PENetration DETAIL  
N.T.S.



9 PRIMARY/OVERFLOW ROOF DRAIN DETAIL  
N.T.S.

GAS SCHEDULE			
GAS PIPING SIZED IN ACCORDANCE WITH 2021 IFGC TABLE 402.4(5) WITH THE FOLLOWING CRITERIA:			
DEVELOPED LENGTH: 300 FT			
INLET PRESSURE: 2.0 PSI			
PRESSURE DROP: 1.0 PSI			
SPECIFIC GRAVITY: 0.60			
TAG	BTU INPUT	BTU INPUT	
RTU-1	63,000 Btu/h	63,000 Btu/h	
RTU-2	84,000 Btu/h	84,000 Btu/h	
		147,000 Btu/h	

#### PLUMBING FIXTURE SCHEDULE

##### GENERAL FIXTURE NOTES:

- THE PLUMBING CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF ALL PLUMBING EQUIPMENT AND THE RELATED ROUGH IN LOCATIONS WITH THE MECHANICAL AND ARCHITECTURAL PLANS AND SPECIFICATIONS. PROVIDE ALL ACCESSORIES AND OPTIONS REQUIRED TO PROVIDE THE OWNER A COMPLETELY FUNCTIONAL PLUMBING SYSTEM.
- ALL WALL HUNG PLUMBING FIXTURES SHALL BE SUPPORTED BY FLOOR MOUNTED CARRIERS BY WADE, SMITH, JOSHAM, MIFAB, OR WATTS. CARRIERS SHALL BE CONSTRUCTED UTILIZING ALL METAL COMPONENTS WITH SUPPORT FEET SECURELY ANCHORED TO THE FLOOR STRUCTURE. FIXTURES' ARMS SHALL SUPPORT FIXTURE INDEPENDENT FROM WALL STRUCTURE.
- EACH INDIVIDUAL FIXTURE SUPPLY SHALL BE PROVIDED WITH A CHROME-PLATED QUARTER TURN STOP VALVE BRASSCRAFT MODEL KTCR OR ENGINEER APPROVED EQUAL.
- FIXTURES AND ACCESSORIES SHALL BE AS SCHEDULED. EACH ITEM SHALL BE COMPLETE WITH CHROME-PLATED BRASS TRIM.
- ADA COMPLIANT FIXTURES SHALL BE INSTALLED WITH PRE-FORMED INSULATION AND PROTECTIVE COVERS ON P-TRAPS AND STOPS, COVERS TO BE MANUFACTURED BY BUCKAROOS OR TRUEBRO.
- CAULK ALL FIXTURES TO THE WALL OR FLOOR WITH APPLICABLE SILICONE COMPOUND. UTILIZE MULTIPLE BEADS TO FILL GAPS AND FINISH TO SMOOTH, FILLETED EDGE. USE APPROPRIATE TOOLS TO PROVIDE PROFESSIONAL APPEARANCE.
- ALL PLUMBING SHALL BE INSTALLED TO CONFORM TO THE LATEST ADOPTED EDITION OF THE INTERNATIONAL PLUMBING CODE INCLUDING LOCAL AMENDMENTS. CONSULT AUTHORITIES HAVING JURISDICTION.
- PROVIDE TEMPORARY TOILET FACILITIES DURING CONSTRUCTION PER IPC SECTION 311.1 AND ANSI Z4.3.
- ALL LAVATORIES TO BE PROVIDED WITH WATER-TEMPERATURE LIMITING DEVICE IN COMPLIANCE WITH ASSE 1070
- WATER HAMMER ARRESTORS ARE TO BE PROVIDED AT ALL QUICK CLOSING VALVES AND FLUSHOMETERS PER IPC 604.9

TAG	CW	HW	SAN	VENT	MANUFACTURER	MODEL	DESCRIPTION
			2"	2"	ZURN	Z199	COW TONGUE DRAIN
FD-1			2"	2"	SELECTED BY OWNER	SELECTED BY OWNER	FLOOR DRAIN - PROVIDE WITH TRAP PRIMER
L-1	1/2"	1/2"	1 1/4"	1 1/4"	SELECTED BY OWNER	SELECTED BY OWNER	LAVATORY - WALL MOUNTED. PROVIDE WITH THERMOSTATIC AND PRESSURE MIXING VALVE.
RD-1			2"		SELECTED BY OWNER	SELECTED BY OWNER	ROOF DRAIN - Z100 OR EQUAL WITH DOME STRAINER. SECONDARY
S-1	1/2"	1/2"	1 1/2"	1 1/2"	SELECTED BY OWNER	SELECTED BY OWNER	SINK - COUNTER MOUNTED. PROVIDE WITH THERMOSTATIC AND PRESSURE MIXING VALVE.
S-2	1/2"	1/2"	1 1/2"	1 1/2"	SELECTED BY OWNER	SELECTED BY OWNER	WALL MOUNTED SINK - PROVIDE WITH THERMOSTATIC AND PRESSURE MIXING VALVE
WC-1	1"		3"	2"	SELECTED BY OWNER	SELECTED BY OWNER	ADA COMPLIANT, FLOOR MOUNTED, FLUSH VALVE WATER CLOSET WITH MAP SCORE OF 1000. KOHLER PRIMARY OR EQUAL

#### CONSTRUCTION NOTES

##### DATE

DEC 2023



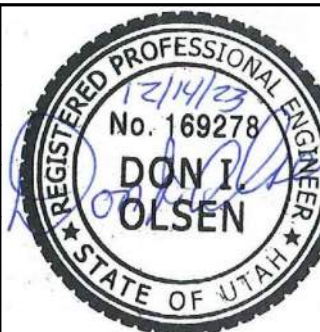
##### REVISIONS

MARK	DATE	DESCRIPTION
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DRAWN: MB  
DESIGNER: DF  
REVIEWED: DIO

PROJECT #

23SM1182.04



##### SCALES

12" = 1'-0"



##### PROJECT NAME:

MAGNA HEAD  
START-ADDITION

##### PROJECT LOCATION:

8259 W 3500 S MAGNA,  
UT 84044

##### SHEET TITLE:

PLUMBING DETAILS  
AND SCHEDULES

##### PLAN SET:

PERMIT

##### SHEET

P5.2