MOUNTAIN TECH NORTH 4
WICP COMMERCIAL
2575 W 400 N
LINDON, UTAH 84042

PERMIT SET
26 MARCH 2025



ARCHITECTURE	CIVIL	STRUCTURAL	MECHANICAL	ELECTRICAL	LANDSCAPE	
MHTN ARCHITECTS, INC. 280 S 400 W SALT LAKE CITY, UT 84101 PHONE: (801) 595-6700	GREAT BASIN ENGINEERING 746 S 1475 E OGDEN, UT 84403 PHONE: (801) 394-4515	DYNAMIC STRUCTURES 744 S 400 E OREM, UT 84097 PHONE: (801) 229-9020	VANGUARD MECHANICAL PHONE: (801) 592-6231	JT ELECTRIC 4303 S 590 W MURRAY, UT 84123 PHONE: (801) 520-9149	MHTN ARCHITECTS, INC. 280 S 400 W SALT LAKE CITY, UT 84101 PHONE: (801) 595-6700	

MHTN
ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

MOUNTAIN TECH NORTH 4
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STATE OF UTAH
TROBERT A.
PINON
6430267-0301
LICENSED ARCHITECT
26 March 2025

MHTN PROJECT NO 2023556

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MOUNTAIN TECH NORTH 4
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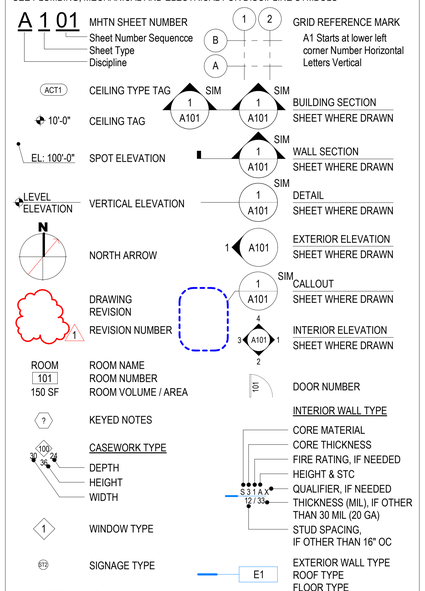
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26 MARCH 2025

ABBREVIATIONS

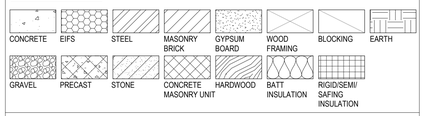
AC	AIR CONDITIONING
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
BD	BOARD
BLDG	BUILDING
BLKG	BLOCKING
BO	BOTTOM OF
BOT	BOTTOM
BRB	BUCKLING RESTRAINED BRACE
BRG	BEARING
CB	CATCH BASIN
CFMF	COLD FORMED METAL FRAMING
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT, CLEAR OPENING
COL	COLUMN
COMM	COMMUNICATION
CONC	CONCRETE
CONF	CONFERENCE
CONST	CONSTRUCT, CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CORR	CORRIDOR
CTR	CENTER
DB	DECK BEARING ELEVATION
DEMO	DEMOLITION
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DR	DOOR
DTL	DETAIL
DWG	DRAWING
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRICAL WATER COOLER
EXP	EXPANSION
EXT	EXTERIOR
FD	FLOOR DRAIN
FEC	FIRE EXTINGUISHER CABINET
FIN	FINISH
FIN FLR	FINISH FLOOR
FLR	FLOOR
FT	FOOT, FEET
GA	GAUGE, GAGE
GI	GALVANIZED IRON
GLULAM	GLUED-LAMINATED TIMBER
GYP BD	GYPSUM BOARD
HVAC	HEATING, VENTILATION, AIR CONDITIONING
ID	INSIDE DIAMETER
INT	INTERIOR
ISO	ISOMETRIC
JAN	JANITOR
JT	JOINT
KD	KNOCK DOWN
LAB	LABORATORY
LAV	LAVATORY
MAINT	MAINTENANCE
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFOI	OWNER FURNISHED OWNER INSTALLED
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OH	OVERHEAD
OH DR	OVERHEAD DOOR
OPP	OPPOSITE
PERP	PERPENDICULAR
PL	PLATE, PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLBG	PLUMBING
PLYWD	PLYWOOD
PR	PAIR
PREFAB	PREFABRICATED
QTY	QUANTITY
RD	ROOF DRAIN
RE:	REFER TO
REINF	REINFORCE, REINFORCING
REQD	REQUIRED
REF	REFRIGERATOR
RM	ROOM
RO	ROUGH OPENING
RTU	ROOF TOP UNIT
RV	ROOF VENT
SF	SQUARE FEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
THK	THICK, THICKNESS
TO	TOP OF
TOB	TOP OF BEAM
TOD	TOP OF DECK
TOS	TOP OF SLAB, TOP OF STRUCTURE
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VTR	VENT THROUGH ROOF
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
W	WIDE FLANGE
WH	WATER HEATER
WWF	WELDED WIRE FABRIC
XFMR	TRANSFORMER

GENERAL SYMBOLS

SEE PLUMBING, MECHANICAL AND ELECTRICAL FOR DISCIPLINE SYMBOLS



MATERIALS



VICINITY MAP



PROJECT DATA

CIVIL RIGHTS
ADA Standards for Accessible Design, 2010

APPLICABLE CODES
International Building Code, including Appendix J (IBC), 2021 ed.
International Mechanical Code (IMC), 2021 ed.
International Plumbing Code (IPC), 2021 ed.
National Electrical Code (NEC), 2020 ed.
International Energy Conservation Code (IECC), 2018 ed., Prescriptive
ICC/ANSI A117.1, 2017 ed.
International Fire Code (IFC), 2021 ed.
International Fuel Gas Code (IFGC), 2021 ed.

CRITERIA

Occupancy Classification	S-1
Separation of Occupancies	Non-separated
Construction Type	IIB (New Building Shell)
Sprinkled	Yes ESFR System
Building Height	
Allowable Height (Stories/Feet)	4 stories / 75' (for S-1)
Actual Building Height (Stories/Feet)	1 story / 34'
Building Area	
1st Floor	60, 224 sf

Allowable Building Area Calculation

The allowable building area is per IBC 507.5.
The area of a group B, F, M or S building not more than 2 stories above grade plan shall not be limited where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and is surrounded and adjoined by public ways or yards not less then 60 feet (18288 mm) in width.

Fire-Resistance Ratings for Building Elements (IBC Table 601)

Construction Type:	IIB
Primary Structural Frame	0
Exterior Bearing Walls	0
Interior Bearing Walls	0
Exterior Non-Bearing Walls	0
Interior Non-Bearing Walls	0
Floor Construction & Associated Secondary Members	0
Roof Construction & Associates Secondary Members	0

Climate Zone: 5

APPROVALS

APPROVERS NAME, TITLE DATE:

APPROVERS NAME, TITLE DATE:

APPROVERS NAME, TITLE DATE:

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G600	STANDARD DETAILS

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E701	ELECTRICAL RISER DIAGRAM
E801	ELECTRICAL SCHEDULES
E802	ELECTRICAL COMCHECK
E900	ELECTRICAL SPECIFICATIONS

PROJECT GENERAL NOTES

Building Codes: Comply with requirements of the adopted editions of the international code council codes, the codes and standards referenced within the ICC codes and the Americans with Disabilities Act.

Dimensions: Metal stud walls are dimensioned to face of metal stud, unless noted otherwise. Masonry walls are dimensioned to face of masonry.

Special Inspections: An Owner-provided, AHJ approved Independent Agency will provide Special Inspections of the following Architectural Components:

Per IBC Sec 1705.12.5 (in Seismic Design Category D, E, or F:
- Erection and Fastening of:
  - Exterior Cladding
  - Interior Nonbearing Walls
  - Exterior Nonbearing Walls

Per Section 1705.12.7 (in Seismic Design Category D, E, or F):
- Storage Racks 8 Feet or Higher

Per Section 1705.16:
- Application of Exterior Insulation and Finish Systems (EIFS)

Deferred Submittals:
- Automatic Fire Sprinkler System ESFR SYSTEM FOR RACKING
- Fire Alarm
- Seismic Restraints for Equipment (Mechanical, Plumbing, Electrical)

Specifications: Refer to the specifications for descriptions of products, materials and systems. The terms "SEE SPECS," "RE: SPECS" or similar references to the specifications have been omitted from drawing notes, but the requirement is still the same, to refer to the technical specifications for descriptions, installation requirements and other requirements as described therein.

Symbols: Where symbols and legends are used to indicate a product or system, provide those items in the quantity indicated by the symbol. Where plumbing fixtures, equipment, light fixtures and other similar products are shown on Architectural drawings, refer to the appropriate discipline drawings for type, utilities and other requirements.

Details: Terms such as "see specs," "re: mechanical" and so forth have been omitted from these details. All details require the general contractor and sub-contractors to refer to other drawings and specifications as required to understand and provide the items indicated and to provide supporting items that may or may not be shown.

The continuous nature of the materials shown in the details is inferred, though the word "continuous" may be omitted from the detail notes.

Masonry:
Bullnose Corners: Provide bullnose corners on outside corners. Typical at all interior masonry walls. Interior Masonry Hidden from View: Provide masonry units of same quality and color where hidden from view by objects that can change (e.g. cabinets, tackboards, whiteboards, etc.). Masonry above ceilings and hidden from view may, with the Architect's approval incorporate factory seconds and/or other colors provided structural integrity of the walls is not compromised.

MHTN ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

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WICP COMMERCIAL
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LINDON, UTAH 84042

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MHTN PROJECT NO 2023556

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INDEX SHEET

SHEET NUMBER
G001

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LEGEND - LIFE SAFETY

OCCUPANCY GROUP

AREA USE | A-3 | 38 | 150 SF | 7 NSF

OCCUPANT LOAD

OCCUPANT LOAD FACTOR
GROSS: GSF NET: NSF

SQUARE FOOTAGE

(75 FT) COMMON PATH OF TRAVEL

(75 FT) TRAVEL DISTANCE

(20 FT) DEAD END

EXIT | 183 | 335 | 67"

EXIT LOAD

EXIT WIDTH PROVIDED

EXIT CAPACITY

Maxium floor area allowance per occupant
Table 1004.1.2 - 500 per warehouse, 300 per mechanical
60,626 sf /500 = 122 occupants
557 sf /300 = 2 occupants
Total occupants 124

*Note: Acutal occupant load will be determined at future tenant improvement in core/shell.
Actual plumbing fixture count will be determined at future tenant improvement.

LIFE SAFETY PLAN GENERAL NOTES

References to sheets below are provided to aid in navigating the drawings.

RE: G500 for Interior Wall Types which indicate ratings, reference termination details, and require rated wall identification.

RE: G400 for floor/ceiling and roof/ceiling rated assemblies

RE: A600 for the Door Schedule and door ratings.

RE: A620 for Window Types and window ratings.

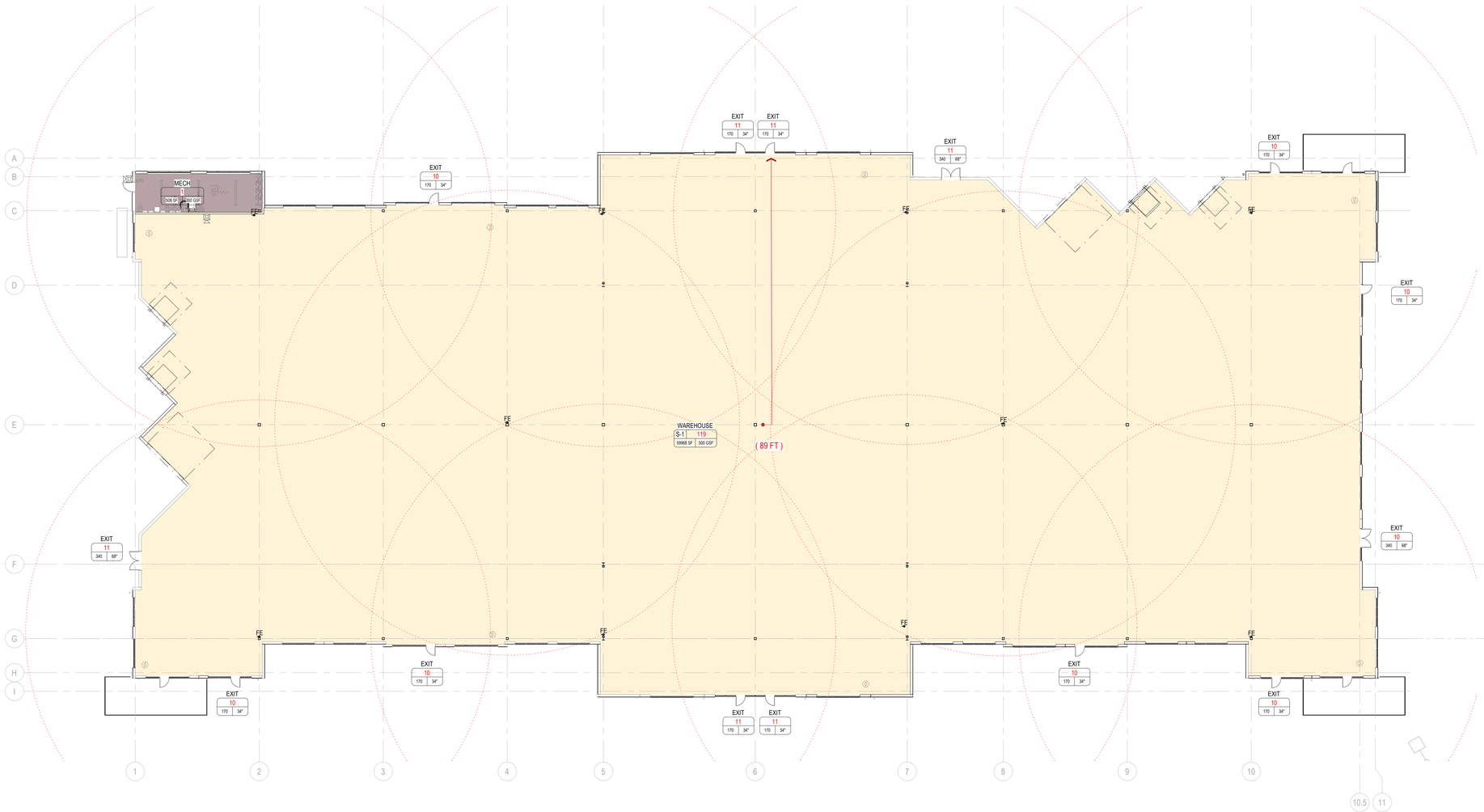
Include one of the following two statements:
Exit Width Capacity: Exit width capacities are based on 0.3" per occupant at stairways and 0.2" per occupant at other means of egress components.

Exit Width Capacity: This project includes an automatic sprinkler system and an emergency voice/alarm communications sytem. Exit width capacities are based on 0.2" per occupant at stairways and 0.15" per occupant at other means of egress components.

AREA FUNCTION (IBC TABLE 1004.1.2)

MECH

WAREHOUSE



FIRST FLOOR LIFE SAFETY PLAN

SCALE: 1/16" = 1'-0"

0 8' - 0" 16' - 0" 32' - 0"

N

MHTN ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
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ROBERTO G. FINON
6450267-0301
LICENSED ARCHITECT
18 FEB. 2025

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CODE ANAYLSIS & FIRST FLOOR LIFE SAFETY PLAN

SHEET NUMBER
G101

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MOUNTING HEIGHTS & CLEARANCES GENERAL NOTES

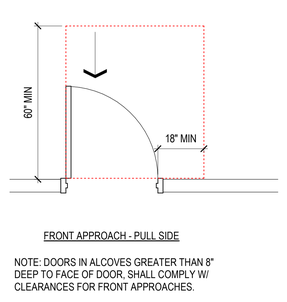
Diagrams on this sheet incorporate the ADA Standard, 2010 edition and ICC/ANSI A117.1, 2009 edition requirements for accessibility. The most restrictive requirement is shown where the two standards differ.

The purpose of this sheet is to provide general clearance, size and mounting height dimensions. If other drawings provide different information, that doesn't violate the accessibility standards, that information shall govern, however, nothing shown herein shall supersede the requirement of the standards listed above, nor of the IBC.

Prior to installation, coordinate toilet and bath accessory mounting heights with manufacturer's recommended heights and adjust as required to comply with ADA & ANSI requirements.

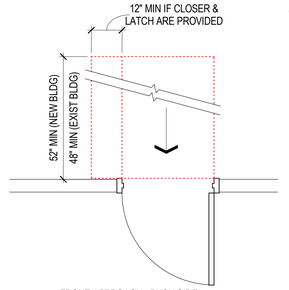
Where the accessibility standards indicate ranges of dimensions, or minimum or maximum dimensions, the dimensions on this sheet have been modified to indicate the preferred or the most restrictive of the dimensions. Where it is impractical to comply with a dimension, the dimension may be adjusted after review with the Architect and, provided the proposed change does not violate the accessibility standards.

Dimensions shown herein indicate face of wall, floor, ceiling and other building elements.



FRONT APPROACH - PULL SIDE

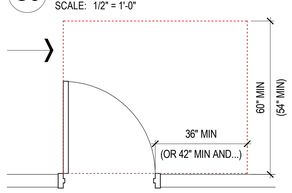
NOTE: DOORS IN ALCOVES GREATER THAN 8" DEEP TO FACE OF DOOR, SHALL COMPLY W/ CLEARANCES FOR FRONT APPROACHES.



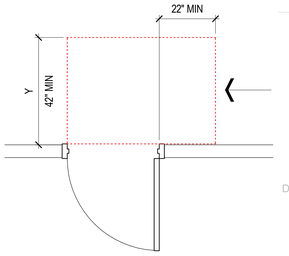
FRONT APPROACH - PUSH SIDE

C5 FRONT APPROACHES @ SWINGING DOORS

SCALE: 1/2" = 1'-0"



HINGE APPROACH - PULL SIDE

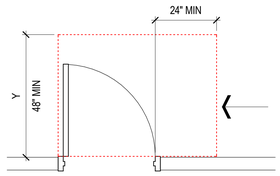


HINGE APPROACH - PUSH SIDE

Y = 48" MIN IF BOTH CLOSER AND LATCH ARE PROVIDED.

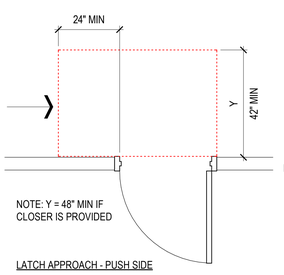
D5 HINGE SIDE APPROACHES @ SWINGING DOORS

SCALE: 1/2" = 1'-0"



NOTE: Y = 54" MIN IF CLOSER IS PROVIDED.

LATCH APPROACH - PULL SIDE



NOTE: Y = 48" MIN IF CLOSER IS PROVIDED

LATCH APPROACH - PUSH SIDE

E5 MANEUVERING CLEARANCES @ MANUAL DOORS

SCALE: 1/2" = 1'-0"

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ROBERTO Q. FINON
6430267-0301
LICENSED ARCHITECT
27 JUNE 2024

MHTN PROJECT NO. 2023556

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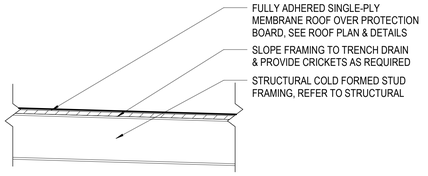
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SHEET NAME
MOUNTING HEIGHTS & CLEARANCES

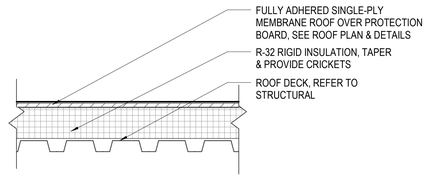
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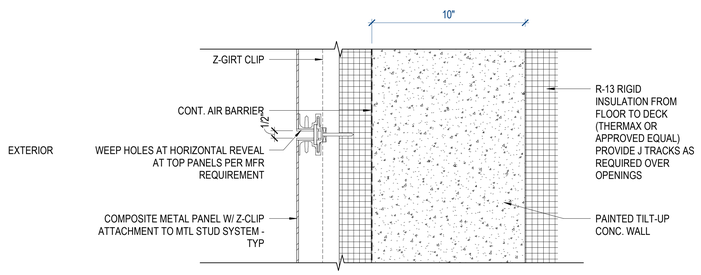
R2 ROOF TYPE 2

SCALE: 1 1/2" = 1'-0"



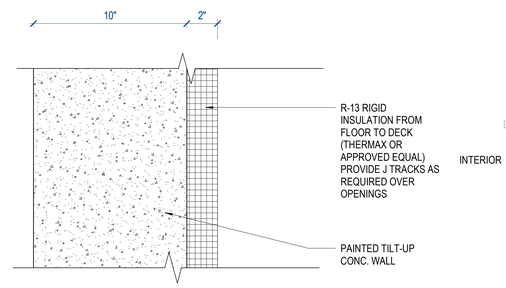
R1 ROOF TYPE 1

SCALE: 1 1/2" = 1'-0"



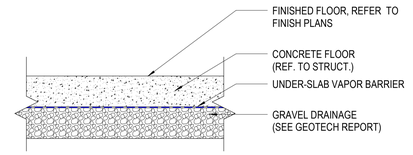
E2 EXTERIOR WALL TYPE 02

SCALE: 3" = 1'-0"



E1 EXTERIOR WALL TYPE 01

SCALE: 3" = 1'-0"



F1 FLOOR TYPE 2

SCALE: 1 1/2" = 1'-0"

MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MOUNTAIN TECH NORTH 4

WICP COMMERCIAL

2800 W 650 N
LINDON, UTAH 84042

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NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
EXTERIOR WALL, FLOOR AND ROOF TYPES

SHEET NUMBER
G400

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INTERIOR WALL TYPE SCHEDULE

TAG	CONSTRUCTION						FIRE RESISTANCE		ACOUSTICAL	
MARK	DESCRIPTION	WIDTH	TERMINATION	LIMITING HEIGHT	HEAD DETAIL	BASE DETAIL	FIRE RATING	STANDARD	SOUND BATT	STC
S6A	5/8" GB + 6" MTL STUD + 5/8" GB	7 1/4"	TO DECK	18'-0"	D4/G500	E4/G500	-		Yes	41

INTERIOR WALL TYPE GENERAL NOTES

RE: G500 for wall termination details which occur at metal deck/structure or at base of wall.

Continuity:
Wall type designations imply that the walls are continuous, typically from corner to corner and until another wall type is indicated. At the intersection of walls of dissimilar sound and/or fire-resistance ratings, the wall with the more restrictive requirements shall continue through, uninterrupted and shall take precedence.

Typical Interior Wall Type: S3A, UNO.

Glass-mat Tile Backing Board:
Where stud walls with tile finishes are scheduled, provide glass-mat tile backing board for the full height and width of the tile. Balance of wall to be gypsum board, UNO.

Water-resistant Gypsum Board:
Provide water-resistant gypsum board at walls in wet areas with non-tile finishes.

Acoustical Sealant:
At metal stud walls with an STC rating, provide acoustical sealant at top and bottom tracks.

Sound Attenuation Batts:
Where indicated, provide sound attenuation batts sized to fit snuggly in the wall cavity. Fill all voids in the wall, from floor to deck, including at wall intersections to prevent sound leakage into adjacent rooms.

Metal Stud Partitions:
Extend interior walls and partitions from floor to roof deck or floor deck above, unless noted otherwise. The specifications indicate a minimum metal stud gauge; increase the gauge above the minimum as required by the metal stud manufacturer for actual wall heights, deflection criteria and code required horizontal load.

Design requirements for metal stud walls: 5 PSF lateral load; L/240 deflection.
Stud Spacing: 16" on center, unless noted otherwise.

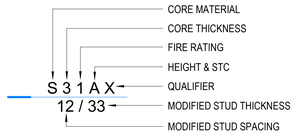
Provide bracing at 48" OC maximum at non-composite walls (walls that don't have gypsum board full height on each side of the stud).

Provide control joints at 30'-0" OC maximum. If not shown, coordinate location with Architect.

Rated Wall Identification:
Provide 3" high block letters (with 3/8" minimum stroke), stencil the fire resistance rating on the wall at 30' maximum intervals, measured horizontally and within 15' of the end of the wall. Provide one (1) label minimum per wall.
Locate identification in accessible concealed floor areas, if any and in the accessible space between ceiling and structure above.

Wall Schedule Abbreviations
CMU - Concrete Masonry Unit
GB - Gypsum Board
GTB - Glass-mat Tile Backing Board
IGB - Impact-resistant Gypsum Board

WALL TYPE TAG DESCRIPTION



Core Material:
S - Metal Stud
H - Metal CH Stud
M - Concrete Masonry (CMU)
B - Structural Clay Brick
C - Concrete
W - Wood

Core Thickness:
Metal Studs:
Number indicates metal stud thickness, rounded down where applicable
0 - 7/8"
1 - 1 5/8"
2 - 2 1/2"
3 - 3 5/8"
4 - 4"
6 - 6"
8 - 8"

Brick and CMU:
Number indicates nominal thickness
4 - 3 5/8"
6 - 5 5/8"
8 - 7 5/8"
0 - 9 5/8"
2 - 11 5/8"

Concrete:
Number corresponds to thickness in whole inches
8 - 8"
0 - 10"
2 - 12"

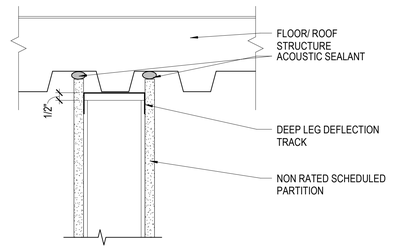
Wood:
Number indicates nominal size of 2x framing
4 - 2 x 4
6 - 2 x 6
8 - 2 x 8

Rating:
Number indicates the fire-resistive rating in hours. Unrated walls have no designation.

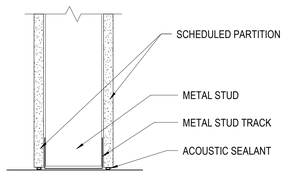
Height and STC:
A - Wall is continuous to the structural deck above and includes sound batt
B - Wall is continuous to the structural deck above with no sound batt
C - Wall extends to 6" above the ceiling and includes sound batt
D - Wall extends to 6" above the ceiling with no sound batt
E - Wall extends to finished ceiling and includes sound batt
F - Wall extends to finished ceiling with no sound batt
P - Wall is partial height {to 5'-0" AFF} {- RE: Floor Plan for top of wall}

Qualifiers:
H - CMU with honed face finish
S - CMU with split face finish

Asymmetric Modifiers:
X - Single side gypsum board
T - Glass-mat tile backing board with tile finish



D4 TOP OF WALL DETAIL
SCALE: 3" = 1'-0"



E4 BOTTOM OF WALL DETAIL
SCALE: 3" = 1'-0"

MHTN
ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

MOUNTAIN TECH NORTH 4
WICP COMMERCIAL
2800 W 650 N
LINDON, UTAH 84042

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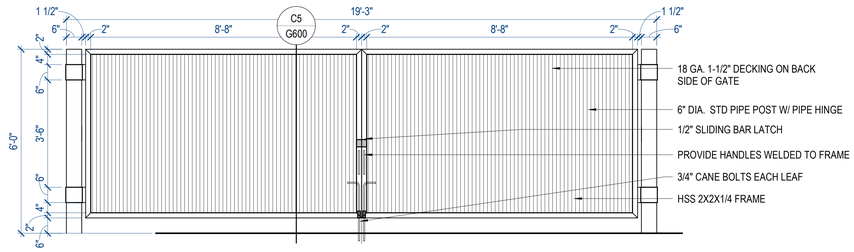
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ISSUE
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26 MARCH 2025

SHEET NAME
INTERIOR WALL TYPES

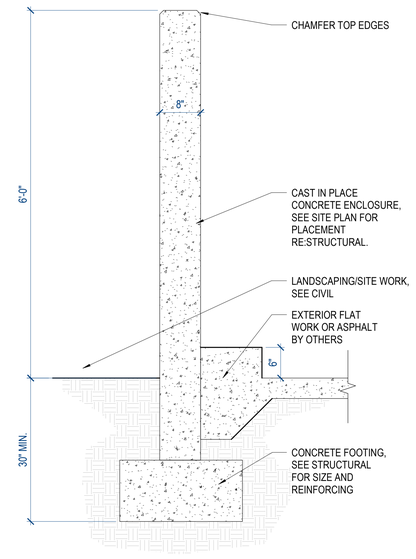
SHEET NUMBER
G500

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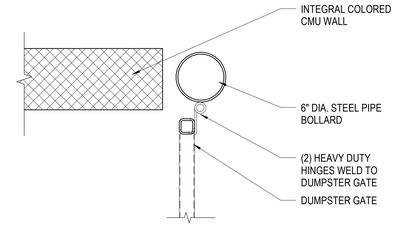
A4 DUMPSTER GATE

SCALE: 1/2" = 1'-0"



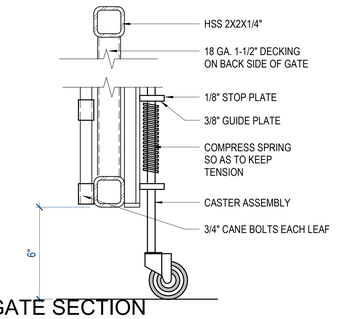
C4 DUMPSTER ENCLOSURE WALL

SCALE: 1" = 1'-0"



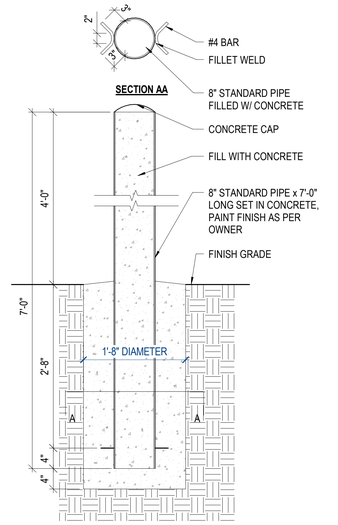
B5 DUMPSTER ENCLOSURE DETAIL

SCALE: 1 1/2" = 1'-0"



C5 GATE SECTION

SCALE: 3" = 1'-0"



E5 EXT. PIPE BOLLARD DETAIL

SCALE: 1" = 1'-0"

MHTN
ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

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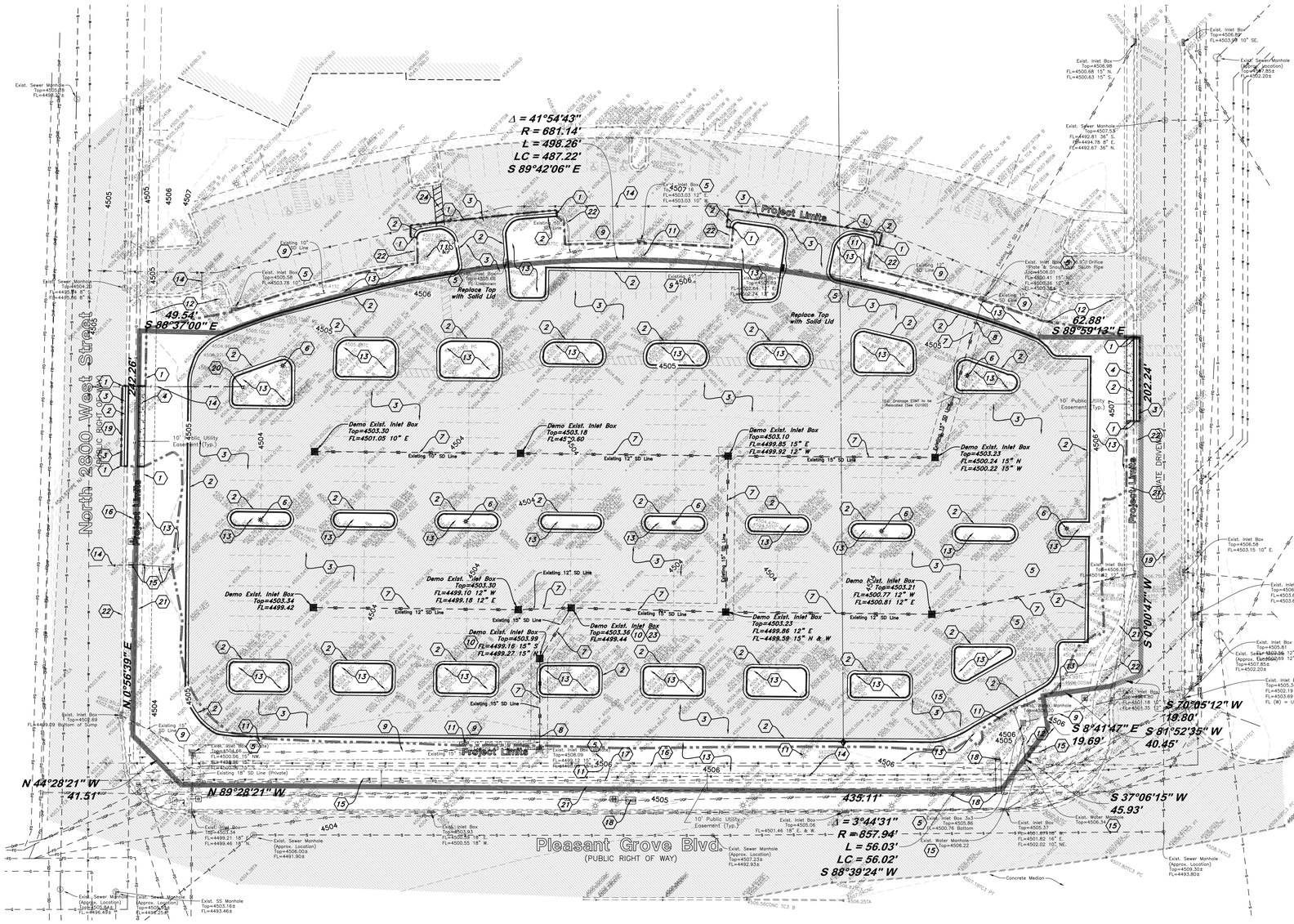
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ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
STANDARD DETAILS

SHEET NUMBER
G600

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Scale: 1" = 30'

30 0 15 30 40 50 60

Graphic Scale

Legend

(Note: All items may not appear on drawing)

San. Sewer Manhole	S
Water Manhole	W
Storm Drain Manhole	D
Cleanout	C
Electrical Manhole	E
Catch Basins	
Exist. Fire Hydrant	
Fire Hydrant	
Fire Department Connection	
Post Indicator Valve	
Exist. Water Valve	
Water Valve	
Sanitary Sewer	S
Culinary Water	W
Gas Line	G
Irrigation Line	IW
Storm Drain	SD
Telephone Line	T
Secondary Waterline	SW
Power Line	P
Fire Line	F
Land Drain	LD
Power pole	
Power pole w/guy	
Light Pole	
Fence	x x x
Flowline of ditch	
Overhead Power line	OHP
Corrugated Metal Pipe	CMP
Concrete Pipe	CP
Reinforced Concrete Pipe	RCP
Ductile Iron	DI
Polyvinyl Chloride	PVC
Top of Asphalt	TA
Edge of Asphalt	EA
Centerline	CL
Flowline	FL
Finish Floor	FF
Top of Curb	TC
Top of Wall	TWL
Top of Walk	TW
Top of Concrete	TCN
Natural Ground	NG
Finish Grade	FG
Match Existing	ME
Fire Department Connection	FDC
Finish Contour	90
Exist. Contour	90
Finish Grade	95.33TA
Exist. Grade	95.73TA
Ridge Line	R
Direction of Flow	
Existing Asphalt	
New Asphalt	
Existing Concrete	
New Concrete	
Spill Curb & Gutter	

Demolition Notes

1	Sawcut Exist. Asphalt, Curb & Gutter, or Sidewalk
2	Demo Curb & Gutter
3	Demo Asphalt Paving
4	Demo Concrete Sidewalk
5	Retain & Protect Exist. SD Box
6	Demo Light Pole
7	Demo Storm Drain Line
8	End Demo
9	Retain & Protect Exist. SD Line
10	Retain & Protect Exist. 6.4"ø Orifice Plate. Relocate per CU100.
11	Retain & Protect Exist. Light Pole
12	Retain & Protect Exist. Landscaping
13	Clear & Grub Exist. Landscaping
14	Retain & Protect Exist. Water Line
15	Retain & Protect Exist. Water Manholes, Other Water Facilities & Infrastructure, & All Exist. Water Lines
16	Retain & Protect Exist. Gas Line, Typ.
17	Retain & Protect Exist. Fiber Optic Lines, Typ.
18	Retain & Protect Exist. Power Lines & Infrastructure
19	Retain & Protect Exist. Sewer Line
20	Remove Exist. Hydrant. Retain & Relocate Per Utility Sheets.
21	Retain & Protect Exist. Sidewalk
22	Retain & Protect Exist. Curb & Gutter
23	Remove Exist. 6.4"ø Orifice Plate. See Utility Plan.
24	Blackout Crosswalk Striping

GENERAL DEMOLITION NOTES:

1. Demolition and site clearing for this contract are to include all areas shown within demolition limits or by note.
2. Refer to site improvement plans for more details on limits of removal.
3. All curbs, gutters, walks, slabs, walls, fences, flatwork, asphalt, light poles, buried cables, storm drain piping and structures to be cleared from site unless otherwise shown.
4. All utilities, sewer, water, gas, telephone and electrical services to be retained and protected unless otherwise shown.
5. Excavated areas to be backfilled with clean granular material compacted to 95% of maximum lab density as determined by ASTM D 1557-78. (Test results to be given to owner)
6. Clear and grub trees, shrubs, and vegetation within construction limits, disposal to be off-site except where noted otherwise.
7. DO NOT interrupt any services or disrupt the operation of any businesses shown outside the demolition limits.
8. If ASBESTOS is found in existing structures, the Asbestos must be removed in a legal manner by a contractor licensed to handle asbestos materials. (Not a part of contract)
9. Remove debris, rubbish, and other materials resulting from the demolition and site clearing operations from the site and dispose of in a legal manner.
10. The location and/or elevation of existing utilities as shown on these plans is based on records of the various utility companies and, where possible, measurements taken in the field. The information is not to be relied upon as being exact or complete. Contractor shall contact authorities having jurisdiction for field locations. Contractor shall be responsible for protection of in place and relocated utilities during construction.
11. Stockpiles shall be graded to maintain slopes not greater than 3 horizontal to 1 vertical. Provide erosion control as needed to prevent sediment transport to adjacent drainage ways.
12. Contractor shall be responsible for disposal of all waste material. Disposal shall be at an approved site for such material. Burning onsite is not permitted.
13. Contractor shall verify with city any street removal, curb cuts, and any restoration required for utility line removal.
14. Install traffic warning devices as needed in accordance with local standards.
15. Contractor shall obtain all permits necessary for demolition from City, County, State or Federal Agencies as required.

CAUTION NOTICE TO CONTRACTOR

The contractor is specifically cautioned that the location and/or elevation of existing utilities as shown on these plans are based on records of the various utility companies and, where possible, measurements taken in the field. The information is not to be relied on as being exact or complete. The contractor must call the appropriate utility company at least 48 hours before any excavation to request exact field location of utilities. It shall be the responsibility of the contractor to relocate all existing utilities which conflict with the propose improvements shown on the plans.

PRIVATE ENGINEER'S NOTICE TO CONTRACTORS

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the contractor shall defend, indemnify, and hold the owner and the 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.

ALL CONSTRUCTION TO CONFORM TO CITY STANDARDS AND SPECIFICATIONS IN RIGHT OF WAY

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MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

GREAT BASIN ENGINEERING INC
5746 South 1475 East - Suite 200
Ogden, Utah 84403 Main (801)394-4515
S.L.C (801)521-0222 FAX 801-392-7544
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MARK WELDON
WICP OREM NORTH BUILDING 4
2800 W 650 N
LINDON, UTAH 84042

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PROFESSIONAL ENGINEER — Heather Avner — 4226 — STATE OF UTAH

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NO.	DATE	DESCRIPTION

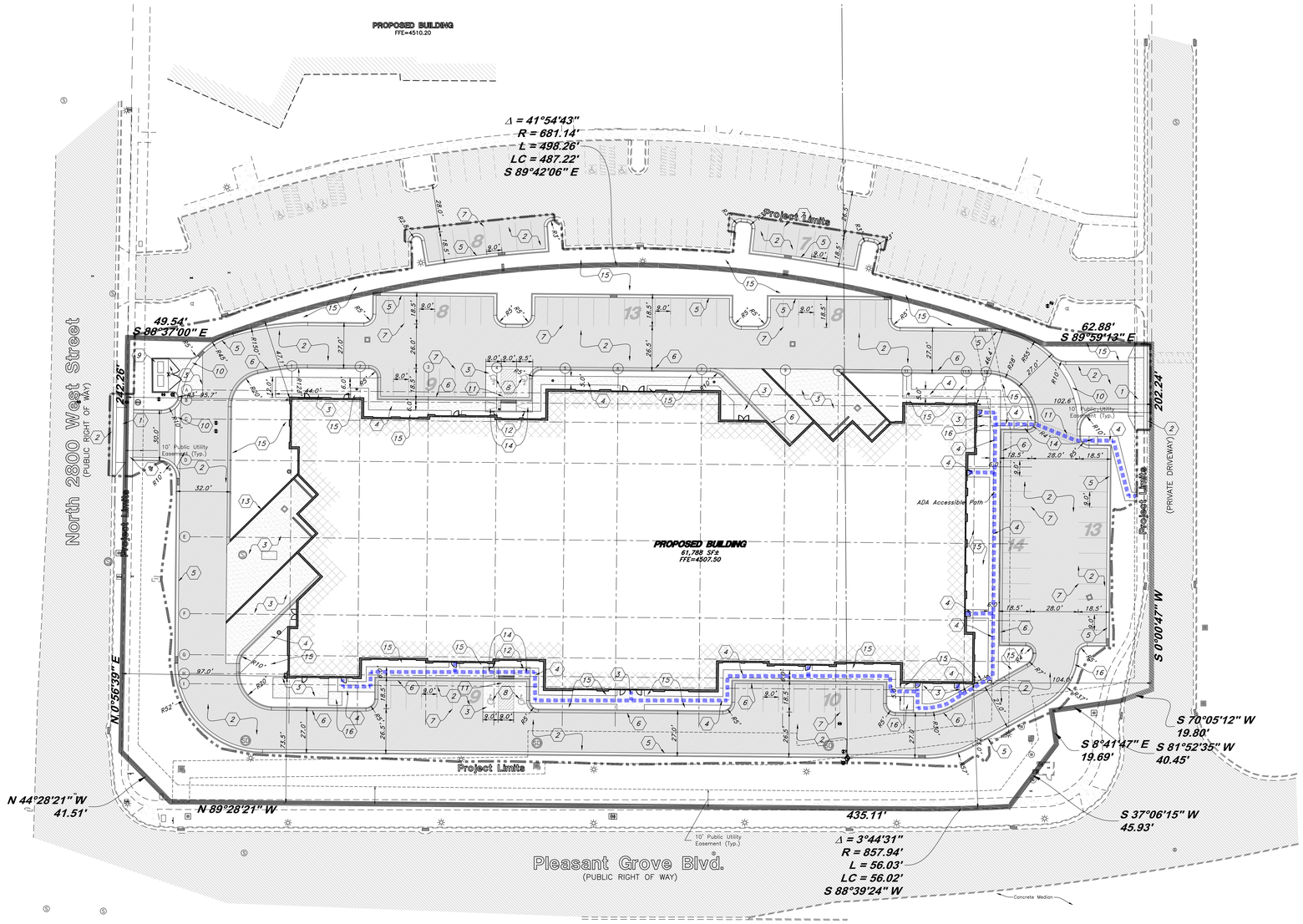
ISSUE
PERMIT SET
2 APRIL 2025

SHEET NAME
DEMOLITION PLAN

SHEET NUMBER
CD100

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Vicinity Map



Scale: 1" = 30'

30 0 15 30 40 50 60

Graphic Scale

Legend

(Note: All items may not appear on drawing)

San. Sewer Manhole	S
Water Manhole	W
Storm Drain Manhole	D
Cleanout	C
Electrical Manhole	E
Catch Basins	
Exist. Fire Hydrant	
Fire Hydrant	
Fire Department Connection	
Post Indicator Valve	
Exist. Water Valve	
Water Valve	
Sanitary Sewer	S
Culinary Water	W
Gas Line	G
Irrigation Line	IW
Storm Drain	SD
Telephone Line	T
Secondary Waterline	SW
Power Line	P
Fire Line	F
Land Drain	LD
Power pole	
Power pole w/guy	
Light Pole	
Fence	x x x
Flowline of ditch	
Overhead Power line	OHP
Corrugated Metal Pipe	CMP
Concrete Pipe	CP
Reinforced Concrete Pipe	RCP
Ductile Iron	DI
Polyvinyl Chloride	PVC
Top of Asphalt	TA
Edge of Asphalt	EA
Centerline	CL
Flowline	FL
Finish Floor	FF
Top of Curb	TC
Top of Wall	TW/L
Top of Walk	TW
Top of Concrete	TCN
Natural Ground	NG
Finish Grade	FG
Match Existing	ME
Fire Department Connection	FDC
Finish Contour	90
Exist. Contour	90
Finish Grade	95.33TA
Exist. Grade	95.73TA
Ridge Line	R
Direction of Flow	
Existing Asphalt	
New Asphalt	
Existing Concrete	
New Concrete	
Spill Curb & Gutter	
Accessible Path	

	Note	Detail Reference
1	Construct Drive Approach	11/CD500
2	Construct Asphalt Paving	1/CD500
3	Construct Concrete Paving	6/CD500
4	Construct Concrete Sidewalk	7/CD500
5	Construct 24" Standard Curb & Gutter	2/CD500
6	Construct 24" Spill Curb & Gutter	2/CD500
7	Construct 4" Wide White Striping	10/CD500
8	Const. ADA Striping	4/CD500
9	Construct Dumpster Enclosure	See Arch. Plans
10	Construct 3' Waterway	3/CD500
11	Construct "No Parking" or Crosswalk Striping	5/CD500
12	Construct ADA Parking Sign	8/CD500
13	Retaining Wall	See Structural & Arch. Plans
14	Construct ADA Ramp	9/CD500
15	Landscaping	See Landscaping Plans
16	8'x8' Concrete Pad for Bike Rack	6/CD500 See Arch or Landscape Plans for Bike Rack Details

SITE DATA TABLE:

Total Parking Stalls: 84
ADA Stalls: 4 (4 Van)
Standard Stalls: 80
Additional North Parcel Parking: 15

Available Bicycle Parking: 15 (5 Spots @ 3 Locations)

Overall Parcel Area: 3.99 ac

Overall Construction Area: 160,567 SF (3.69 ac)
Building Area: 60,714 SF (1.39 ac) (38%)
Occupancy: S-1
Construction Type: IIB
Hard Surface Area: 73,313 SF (1.68 ac) (45%)
Landscaping Area: 26,540 SF (0.61 ac) (17%)

GENERAL SITE NOTES:

1. Stalls designated as accessible will require a painted accessible symbol and sign. (See Details)
2. Fire lane markings and signs to be installed as directed by the Fire Marshall.
3. Aisle markings, directional arrows and stop bars will be painted at each driveway as shown on the plans.
4. Building sidewalks, ramps, and bollards are building contractor responsible items. See architectural plans.
5. All dimensions are to back of curb unless otherwise noted.
6. The applicant is responsible for compliance with all requirements of the Americans with Disabilities Act (ADA). Refer to the grading sheet for compliance.
7. All landscaped areas shall have an automatic, underground sprinkling system with a backflow prevention device and a backflow prevention device to the building, unless landscaping is served by the secondary water system.
8. Lindon Standard Specifications and Drawings apply to construction of public improvements that will be owned or maintained by Lindon City and take precedence over other standards.

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ALL CONSTRUCTION TO CONFORM TO CITY STANDARDS AND SPECIFICATIONS IN RIGHT OF WAY

Project Benchmark

Section Corner at the Back of Curb
Northing = 9,977.32'
Easting = 7,339.31'
Elevation = 4,505.00 (feet)

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ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

GREAT BASIN ENGINEERING INC
5746 South 1475 East - Suite 200
Ogden, Utah 84403 Main (801)394-4515
S.L.C (801)521-0222 FAX 801-392-7544
www.greatbasinengineering.com

MARK WELDON

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2800 W 650 N
LINDON, UTAH 84042

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PROFESSIONAL ENGINEER
Registered Engineer
No. 8154972-2202
HEATHER AVNER
4226
STATE OF UTAH

MHTN PROJECT NO. 2023556

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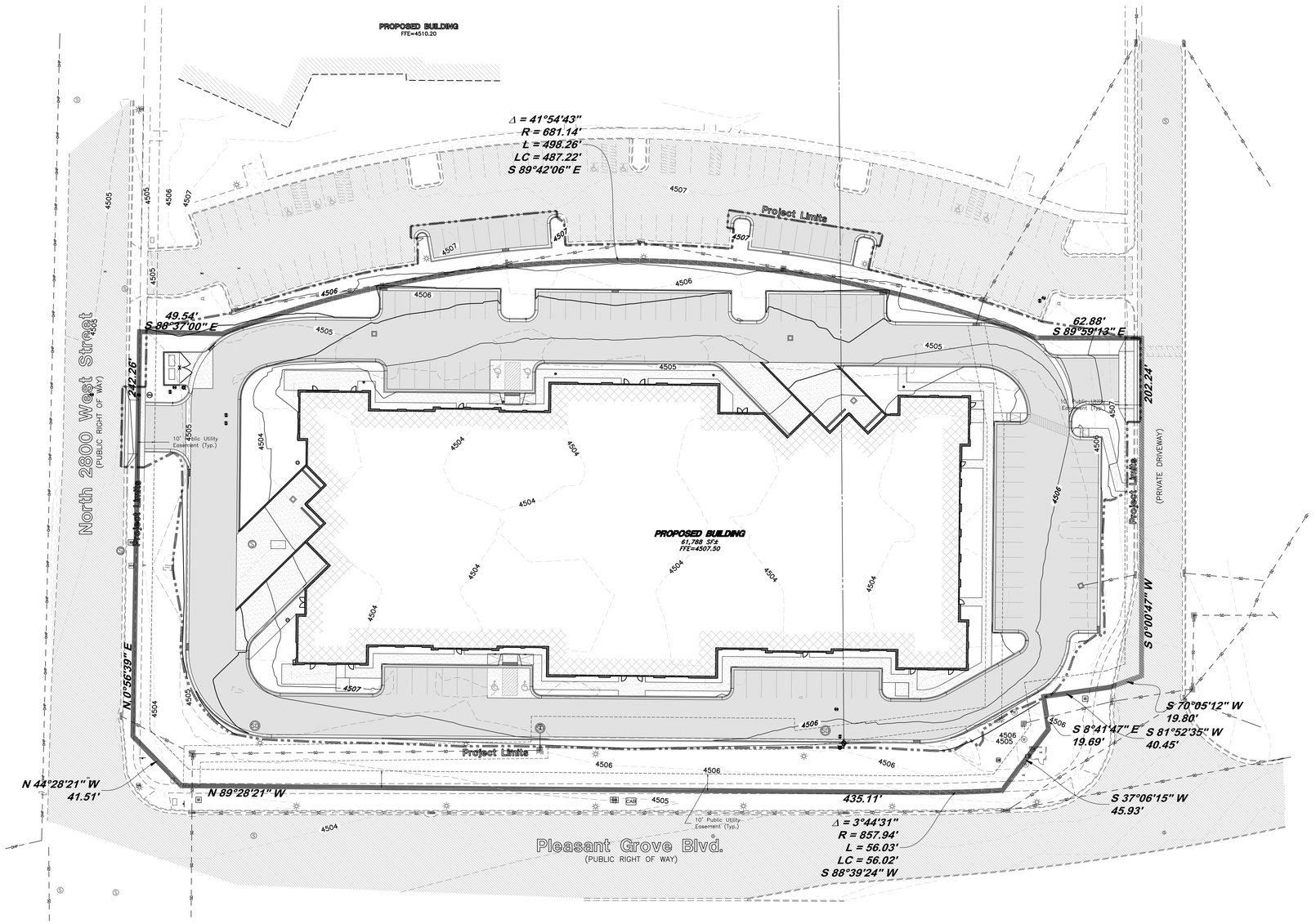
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2 APRIL 2025

SHEET NAME
SITE PLAN

SHEET NUMBER
CS100

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Legend

(Note: All items may not appear on drawing)

San. Sewer Manhole	S
Water Manhole	W
Storm Drain Manhole	D
Cleanout	C
Electrical Manhole	E
Catch Basins	
Exist. Fire Hydrant	
Fire Hydrant	
Fire Department Connection	FDC
Post Indicator Valve	
Exist. Water Valve	
Water Valve	
Sanitary Sewer	S
Culinary Water	W
Gas Line	G
Irrigation Line	IW
Storm Drain	SD
Telephone Line	T
Secondary Waterline	SW
Power Line	P
Fire Line	F
Land Drain	LD
Power pole	
Power pole w/guy	
Light Pole	
Fence	x x x
Flowline of ditch	
Overhead Power line	OHP
Corrugated Metal Pipe	CMP
Concrete Pipe	CP
Reinforced Concrete Pipe	RCP
Ductile Iron	DI
Polyvinyl Chloride	PVC
Top of Asphalt	TA
Edge of Asphalt	EA
Centerline	CL
Flowline	FL
Finish Floor	FF
Top of Curb	TC
Top of Wall	TWL
Top of Walk	TW
Top of Concrete	TCN
Natural Ground	NG
Finish Grade	FG
Match Existing	ME
Fire Department Connection	FDC
Finish Contour	90
Exist. Contour	90
Finish Grade	95.33TA
Exist. Grade	95.73TA
Ridge Line	R
Direction of Flow	
Existing Asphalt	
New Asphalt	
Existing Concrete	
New Concrete	
Spill Curb & Gutter	

GENERAL GRADING NOTES:

1. All work shall be in accordance with the City Public Works Standard.
2. Cut slopes shall be no steeper than 2 horizontal to 1 vertical.
3. Fill slopes shall be no steeper than 2 horizontal to 1 vertical.
4. Fills shall be compacted per the recommendations of the geotechnical report prepared for the project and shall be certified by the geotechnical engineer.
5. Areas to receive fill shall be properly prepared and approved by the City inspector and geotechnical Engineer prior to placing fill.
6. Fills shall be benched into competent material as per specifications and geotechnical report.
7. All trench backfill shall be tested and certified by the site geotechnical engineer per the grading code.
8. A geotechnical engineer shall perform periodic inspections and submit a complete report and map upon completion of the rough grading.
9. The final compaction report and certification from the geotechnical engineer shall contain the type of field testing performed. Each test shall be identified with the method of obtaining the in-place density, whether sand cone or drive ring and shall be so noted for each test. Sufficient maximum density determinations shall be performed to verify the accuracy of the maximum density curves used by the field technician.
10. Dust shall be controlled by watering.
11. The location and protection of all utilities is the responsibility of the permitee.
12. Approved protective measures and temporary drainage provisions must be used to protect adjoining properties during the grading project.
13. All public roadways must be cleared daily of all dirt, mud and debris deposited on them as a result of the grading operation. Cleaning is to be done to the satisfaction of the city engineer.
14. The site shall be cleared and grubbed of all vegetation and deleterious matter prior to grading.
15. The contractor shall provide shoring in accordance with OSHA requirements for trench walls.
16. Aggregate base shall be compacted per the geotechnical report prepared for the project.
17. Elevations shown on this plan are finish grades. Rough grades are the subgrades of the improvements shown hereon.
18. The recommendations in the following Geotechnical Engineering Report by EARTHTECH ENGINEERING are included in the requirements of grading and site preparation.
    The report is titled "GEOTECHNICAL STUDY OREM NORTH #4"
    Job No.: 2403636 Address: 625 North 2800 West
    Dated: June 17, 2024 Lindon, Utah
19. As part of the construction documents, owner has provided contractor with a topographic survey performed by manual or aerial means. Such survey was prepared for project design purposes and is provided to the contractor as a courtesy. It is expressly understood that such survey may not accurately reflect existing topographic conditions.
20. Erosion Control: Protect all inlet boxes, catch basins, etc. with straw bales or other approved method to strain the storm water during construction. Protect surrounding properties and streets from site runoff with sandbags and earth berms.

CURB AND GUTTER CONSTRUCTION NOTES:

1. Open face gutter shall be constructed where drainage is directed away from curb.
2. Open face gutter locations are indicated by shading and notes on site and grading plan.
3. It is the responsibility of the surveyor to adjust top of curb grades at the time construction staking.
4. Refer to the typical details for a standard and open face curb and gutter for dimensions.
5. Transitions between open face and standard curb and gutter are to be smooth. Hand form these areas if necessary.

ADA NOTES:

Contractor must maintain a running slope on Accessible routes no steeper than 5.0% (1:20). The cross slope for Accessible routs must be no steeper than 2.0% (1:50). All Accessible routes must have a minimum clear width of 36". If grades on plans do not meet this requirement notify Consultants immediately.

The Client, Contractor, and Subcontractor should immediately notify the Consultant of any conditions of the project that they believe do not comply with the current state of the ADA and/or FHAA.

PRELIMINARY EARTHWORK CALCULATIONS

CUT = 475 CY±
FILL = 11,795 CY±
REQUIRED IMPORT (CUT) = 2,156 CY±

NET FILL = 9,164 CY±

Project Benchmark

Section Corner at the Back of Curb
Northing = 9,977.32'
Easting = 7,339.31'
Elevation = 4,505.00 (feet)

PRIVATE ENGINEER'S NOTICE TO CONTRACTORS

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the contractor shall defend, indemnify, and hold the owner and the 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.

ALL CONSTRUCTION TO CONFORM TO CITY STANDARDS AND SPECIFICATIONS IN RIGHT OF WAY

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MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

GREAT BASIN ENGINEERING INC
5746 South 1475 East · Suite 200
Ogden, Utah 84403 Main (801)394-4515
S.L.C (801)521-0222 FAX 801-392-7544
www.greatbasinengineering.com

MARK WELDON

WICP OREM NORTH BUILDING 4

2800 W 650 N
LINDON, UTAH 84042

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PROFESSIONAL ENGINEER
No. 10344929-2202
HEATHER AVNER
4.2.25
STATE OF UTAH

MHTN PROJECT NO. 2023556

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REVISIONS
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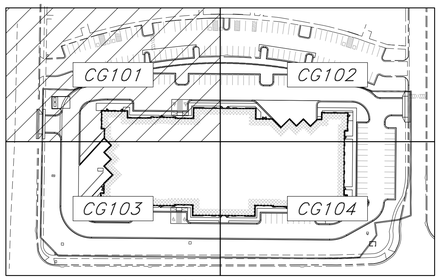
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2 APRIL 2025

SHEET NAME
OVERALL GRADING & DRAINAGE PLAN

SHEET NUMBER
CG100

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Key Map
Not to Scale

Scale: 1" = 10'

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Graphic Scale

Project Benchmark

Section Corner at the Back of Curb
Northing = 9,977.32'
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Elevation = 4,505.00 (feet)

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ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
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GREAT BASIN ENGINEERING INC
5746 South 1475 East - Suite 200
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S.L.C (801)521-0222 FAX 801-392-7544
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REGISTERED PROFESSIONAL ENGINEER
10 October 2002
HEATHER AVNER
4226
STATE OF UTAH

MHTN PROJECT NO. 2023556

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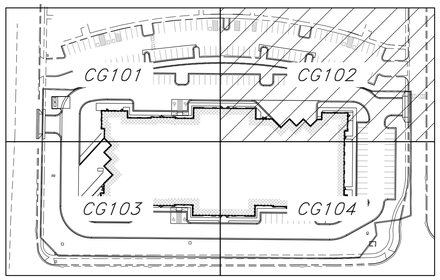
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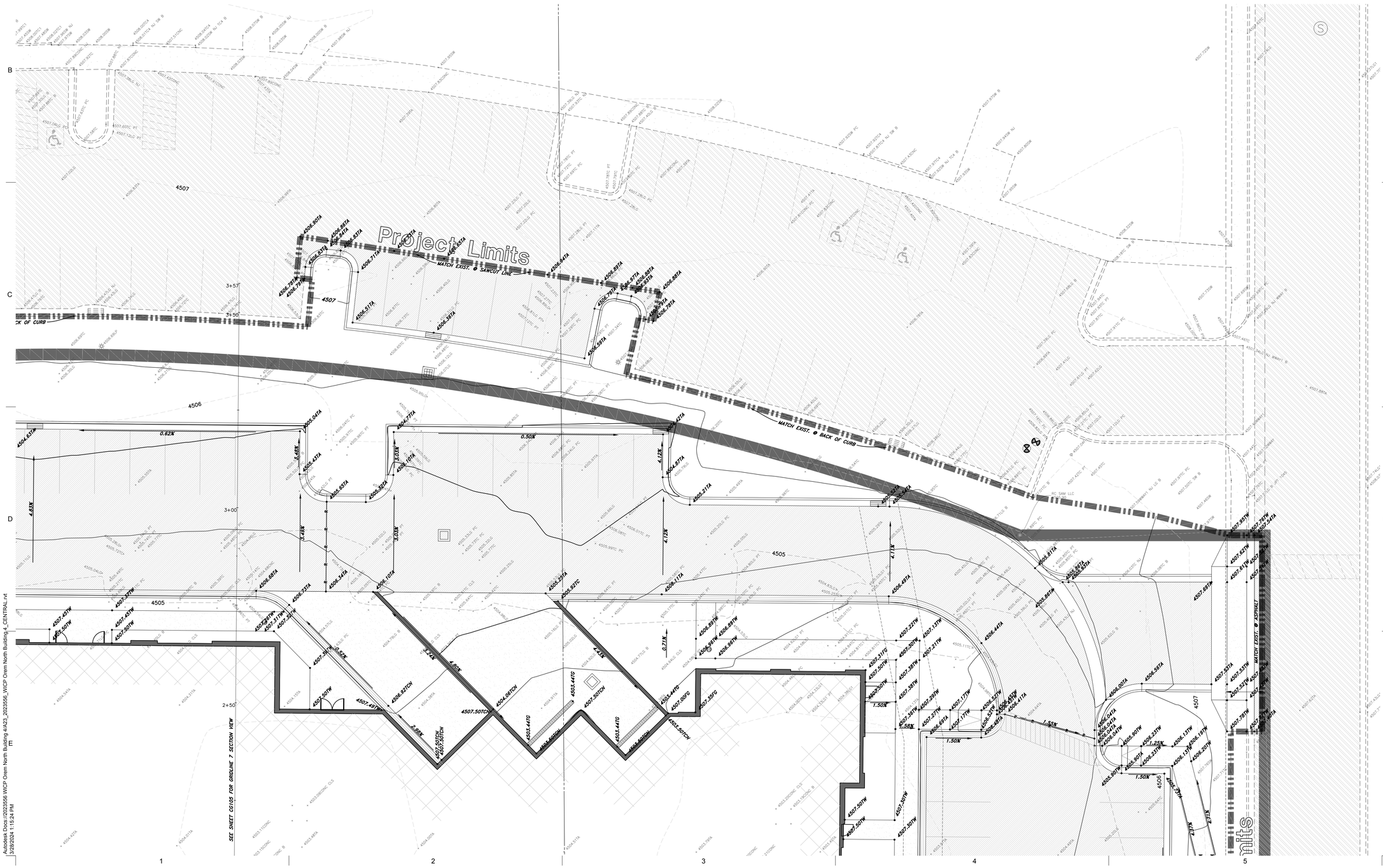
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Key Map
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Scale: 1" = 10'

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Graphic Scale

Project Benchmark

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ARCHITECTS
MHTN Architects, Inc.
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Telephone (801) 595-6700
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5746 South 1475 East - Suite 200
Ogden, Utah 84403 Main (801)394-4515
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No. 10304727-2202
HEATHER AVNER
4.2.25
STATE OF UTAH

MHTN PROJECT NO. 2023556

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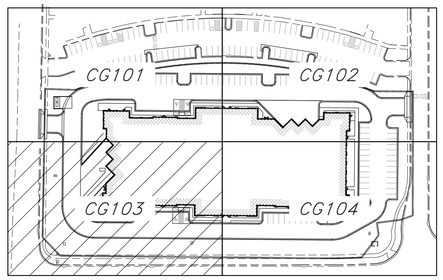
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SHEET NUMBER
CG102

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Key Map
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Scale: 1" = 10'

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Graphic Scale

Project Benchmark

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5746 South 1475 East - Suite 200
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PROFESSIONAL ENGINEER
No. 9354402-2202
HEATHER AVNER
4.2.25
STATE OF UTAH

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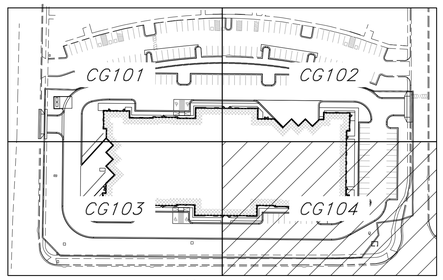
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SHEET NUMBER
CG103

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Key Map
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Project Benchmark

Section Corner at the Back of Curb
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Easting = 7,339.31'
Elevation = 4,505.00 (feet)

Scale: 1" = 10'

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Graphic Scale

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ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
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Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

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5746 South 1475 East - Suite 200
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HEATHER AVNER
4.2.25
STATE OF UTAH

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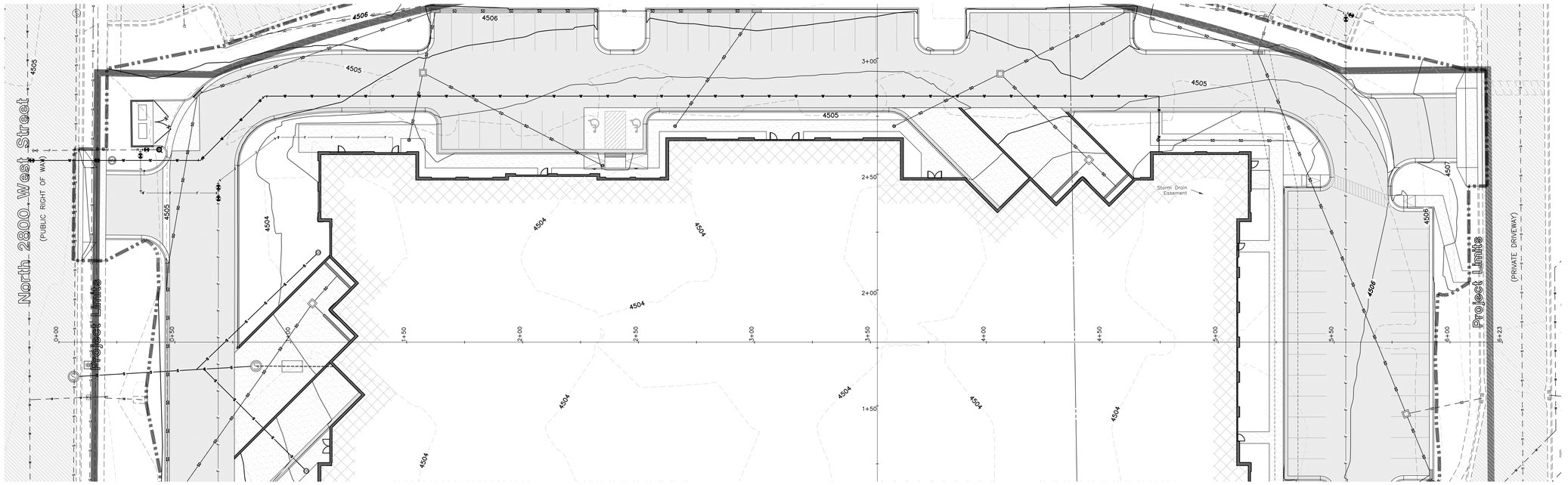
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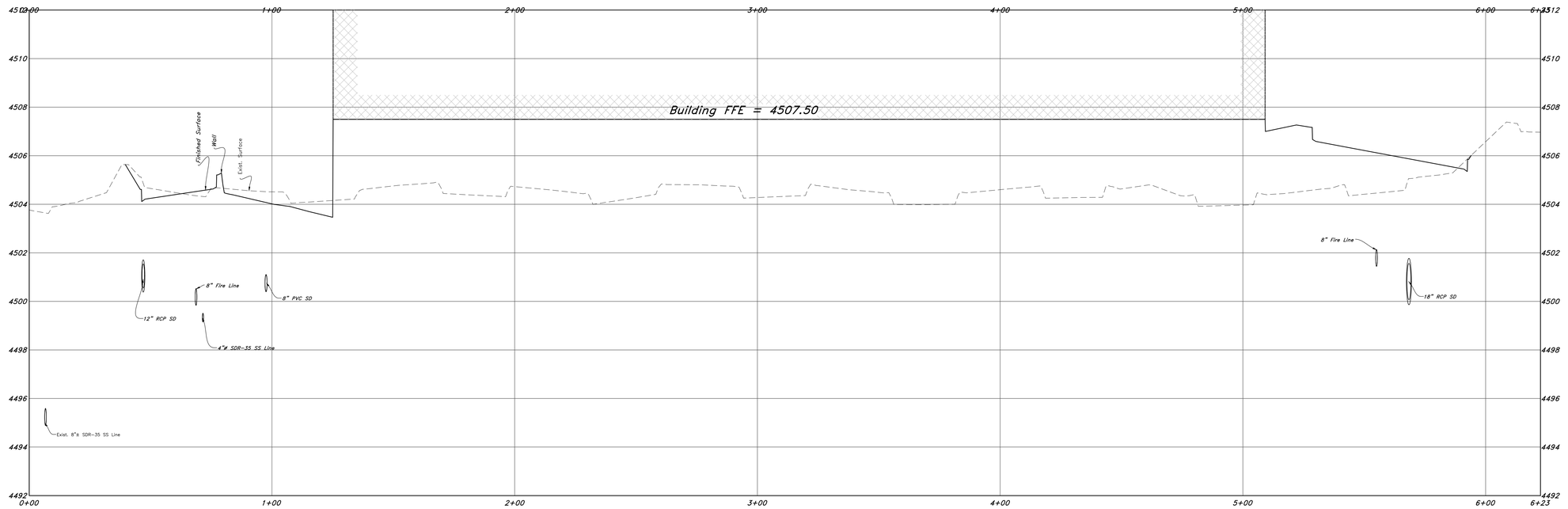
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Gridline E Section View



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www.mhtn.com

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Scale: 1" = 20'
Graphic Scale

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REGISTERED ENGINEER
January 2202
HEATHER
AVNER
4235
STATE OF UTAH

MHTN PROJECT NO. 2023556

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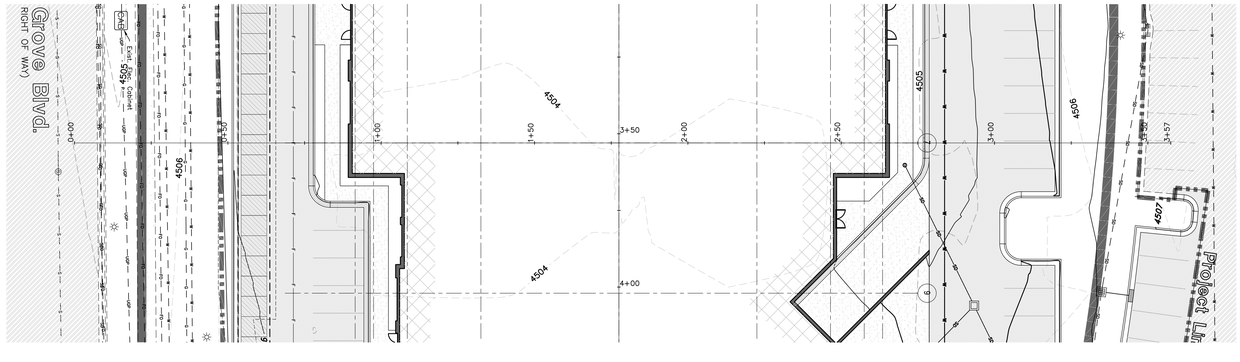
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2 APRIL 2025

SHEET NAME
Gridline E Section View

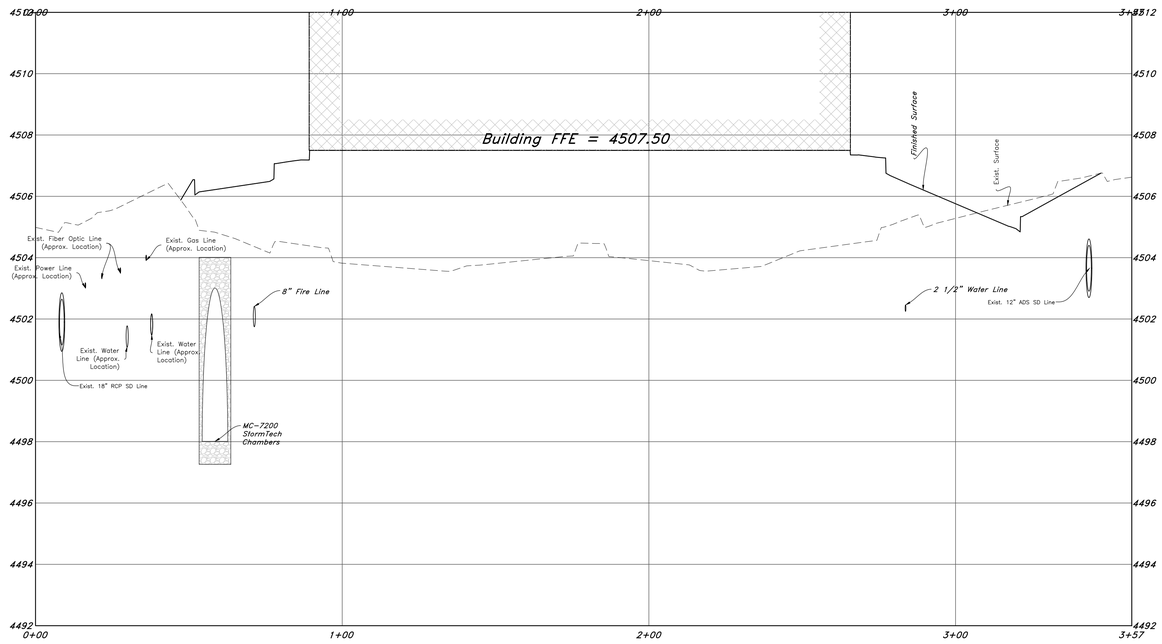
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Gridline 7 Section View



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Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

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Graphic Scale

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REGISTERED ENGINEER
January 2202
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423S
STATE OF UTAH

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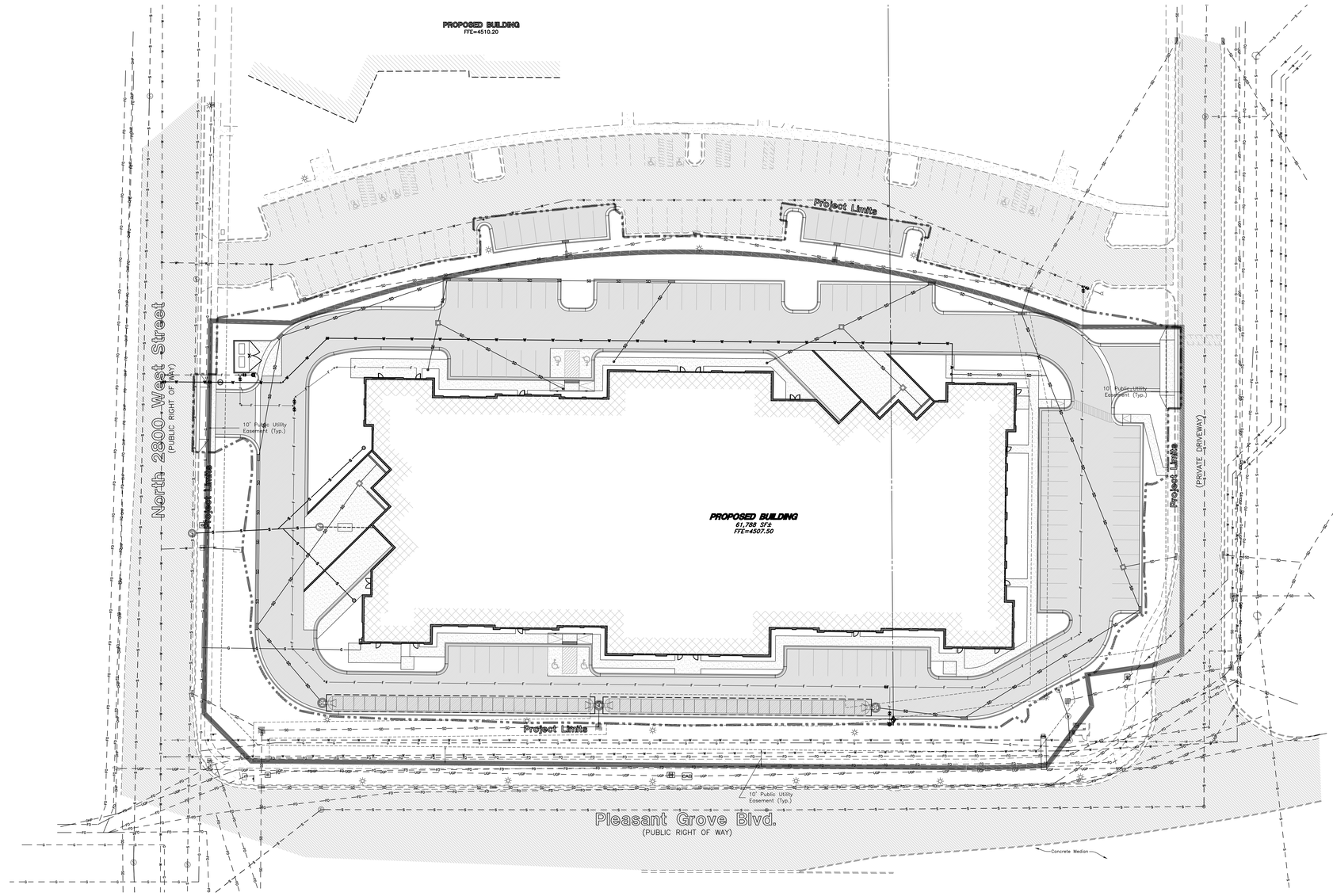
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SHEET NAME
Gridline 7 Section View

SHEET NUMBER
CG106

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Scale: 1" = 30'

30 0 15 30 40 50 60

Graphic Scale

Legend

(Note: All items may not appear on drawing)

San. Sewer Manhole	S
Water Manhole	W
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Cleanout	C
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Catch Basins	
Exist. Fire Hydrant	
Fire Hydrant	
Fire Department Connection	
Post Indicator Valve	
Exist. Water Valve	
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Gas Line	G
Irrigation Line	IW
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Telephone Line	T
Secondary Waterline	SW
Power Line	P
Fire Line	F
Land Drain	LD
Power pole	
Power pole w/guy	
Light Pole	
Fence	x x x
Flowline of ditch	
Overhead Power line	OHP
Corrugated Metal Pipe	CMP
Concrete Pipe	CP
Reinforced Concrete Pipe	RCP
Ductile Iron	DI
Polyvinyl Chloride	PVC
Top of Asphalt	TA
Edge of Asphalt	EA
Centerline	CL
Flowline	FL
Finish Floor	FF
Top of Curb	TC
Top of Wall	TWL
Top of Walk	TW
Top of Concrete	TCN
Natural Ground	NG
Finish Grade	FG
Match Existing	ME
Fire Department Connection	FDC
Finish Contour	90
Exist. Contour	90
Finish Grade	95.33TA
Exist. Grade	95.73TA
Ridge Line	R
Direction of Flow	
Existing Asphalt	
New Asphalt	
Existing Concrete	
New Concrete	
Spill Curb & Gutter	

DETENTION REQUIREMENTS:
Required Detention = 14,248 CF

Available Detention = 14,760± CF
StormTech Chamber (East) = 7,203 CF
StormTech Chamber (West) = 7,203 CF
Storm Drain Manholes = 354 CF±
Top of Water = 4504.01
(3) 5'ø Manholes @ 118± CF/MH

7.53"ø Orifice Plate Located at Outfall Manhole

GENERAL UTILITY NOTES:
1. Coordinate all utility connections to building with plumbing plans and building contractor.
2. Verify depth and location of all existing utilities prior to constructing any new utility lines. Notify Civil Engineer of any discrepancies or conflicts prior to any connections being made.
3. All catch basin and inlet box grates are to be bicycle proof.
4. All inlet boxes located in curb and gutter are to be placed parallel to the curb and gutter and set under the frame and grate. Improperly placed boxes will be removed and replaced at no additional cost to the owner. Precast or cast in place boxes are acceptable.
5. Refer to the site electrical plan for details and locations of electrical lines, transformers and light poles.
6. Gas lines, telephone lines, and cable TV lines are not a part of these plans unless otherwise noted.
7. Water meters are to be installed per city standards and specifications. It will be the contractor's responsibility to install all items required.
8. Water lines, valves, fire hydrants, fittings etc. are to be constructed as shown. Contractor is responsible to construct any vertical adjustments necessary to clear sewer, storm drain or other utilities as necessary including valve boxes and hydrant spools to proper grade.
9. Field verify all existing and/or proposed Roof Drain/Roof Drain down spout connections to Storm Water System with Civil, Plumbing & Architectural plans. Notify Engineer of any discrepancies.
10. All gravity flow utility lines shall be installed prior to any pressurized utilities unless written permission is obtained from the engineer of record before construction begins.
11. Water meters are to be located behind back of walk or back of curb in an area that is accessible, not located behind fenced areas or under covered parking.
12. Maintenance of fire hydrants on site is the responsibility of the owner. The City will require access to the site for hydrant testing
13. A percolation test performed by a qualified geotechnical engineer will be required prior to the Stormtech Chamber retention system being installed.
14. Unless noted otherwise, all utility lines located outside of the public right-of-way are considered private and will be privately owned and maintained in perpetuity.
15. An ESFR building fire sprinkler system will be used. Refer to mechanical and architectural plans.

UTILITY PIPING MATERIALS:
All piping to be installed per manufacturers recommendations. Refer to project specifications for more detailed information regarding materials, installation, etc.

CULINARY SERVICE LATERALS
1. 3/4" to 2" diameter pipe – CTS Poly (Blue)
2. Over 2" diameter pipe – AWWA C-900 Class 150 pipe

WATER MAIN LINES AND FIRE LINES
1. Pipe material as shown on utility plan view or to meet city standards.

SANITARY SEWER LINES
1. All sewer piping to be Polyvinyl Chloride (PVC) sewer pipe, ASTM D 3034, Type PSM, SDR 35

STORM DRAIN LINES
1. 12" pipes or smaller – Polyvinyl Chloride (PVC) sewer pipe, ASTM D3034, Type PSM, SDR 35
2. 12" or larger – Reinforced Concrete Pipe, ASTM C76, Class III up to 13' of cover, Class IV 13' to 21' of cover, Class V for 21' to 32' of cover, and Special Design for cover greater than 32' feet.
3. All inlet boxes and catch basins collecting surface runoff shall have a minimum 2' deep sump measured from the lowest invert elevation.
4. All pre-treatment structures must have a 3' deep minimum sump measured from the lowest invert elevation. Refer to plans for these locations.

NATURAL GAS SERVICE LATERALS (QUESTAR)
1. PLASTIC PIPING MATERIAL: Plastic polyethylene pipe materials and compression couplings must be approved for natural gas applications and must be installed underground. All plastic pipe and fittings must conform to ASTM D2513 (60 psi and above high density pipe approved 3408).
2. Plastic pipe must be joined by individuals qualified in the heat fusion method of connecting pipe and fittings or approved mechanical fittings. A minimum number 18 insulated yellow copper tracer wire shall be installed with underground nonmetallic gas piping and shall terminate above grade at each end. Tracer wire shall not come in contact with plastic piping.
3. Risers and prefabricated risers inserted with plastic pipe shall conform to ASTM D2513, shall be metallic, have a space of 10 inches from the bottom of the service valve and grade, and shall be wrapped or coated to a point at least 6 inches above grade or protected in an approved manner. When a riser connects underground to plastic pipe, the underground horizontal metallic portion of the riser shall extend at least 12 inches before connecting to the plastic pipe by means of an approved transition fitting, adapter or heat fusion.
4. Plastic pipe used underground for customer fuel lines must be approved polyethylene material and be buried a minimum of 12 inches. It shall not be used inside buildings or above ground. PVC (Polyvinyl Chloride) is not approved for piping systems in Questar Gas's service area. Individual gas lines (metallic or plastic) to single outside appliance (outside lights, grilles, etc.) shall be installed a minimum of 8 inches below grade, provided such installation is approved and installed in locations not susceptible to physical damage.

CAUTION NOTICE TO CONTRACTOR
The contractor is specifically cautioned that the location and/or elevation of existing utilities as shown on these plans are based on records of the various utility companies and, where possible, measurements taken in the field. The information is not to be relied on as being exact or complete. The contractor must call the appropriate utility company at least 48 hours before any excavation to request exact field location of utilities. It shall be the responsibility of the contractor to relocate all existing utilities which conflict with the propose improvements shown on the plans.

Project Benchmark

Section Corner at the Back of Curb
Northing = 9,977.32'
Easting = 7,339.31'
Elevation = 4,505.00 (feet)

PRIVATE ENGINEER'S NOTICE TO CONTRACTORS

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the contractor shall defend, indemnify, and hold the owner and the 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.

ALL CONSTRUCTION TO CONFORM TO CITY STANDARDS AND SPECIFICATIONS IN RIGHT OF WAY

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ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

GREAT BASIN ENGINEERING INC
5746 South 1475 East · Suite 200
Ogden, Utah 84403 Main (801)394-4515
S.L.C (801)521-0222 FAX 801-392-7544
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MARK WELDON

WICP OREM NORTH BUILDING 4

2800 W 650 N
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PROFESSIONAL ENGINEER
No. 9255417-2202
HEATHER AVNER
4.2.25
STATE OF UTAH

MHTN PROJECT NO. 2023556

Original drawing is 30 x 42. Do not scale contents of this drawing.

REVISIONS
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NO.	DATE	DESCRIPTION

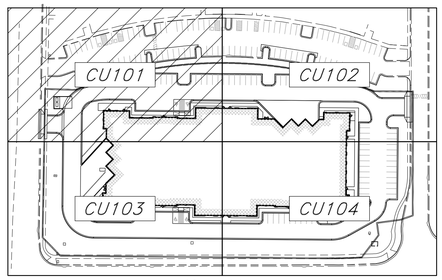
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SHEET NAME
UTILITY PLAN

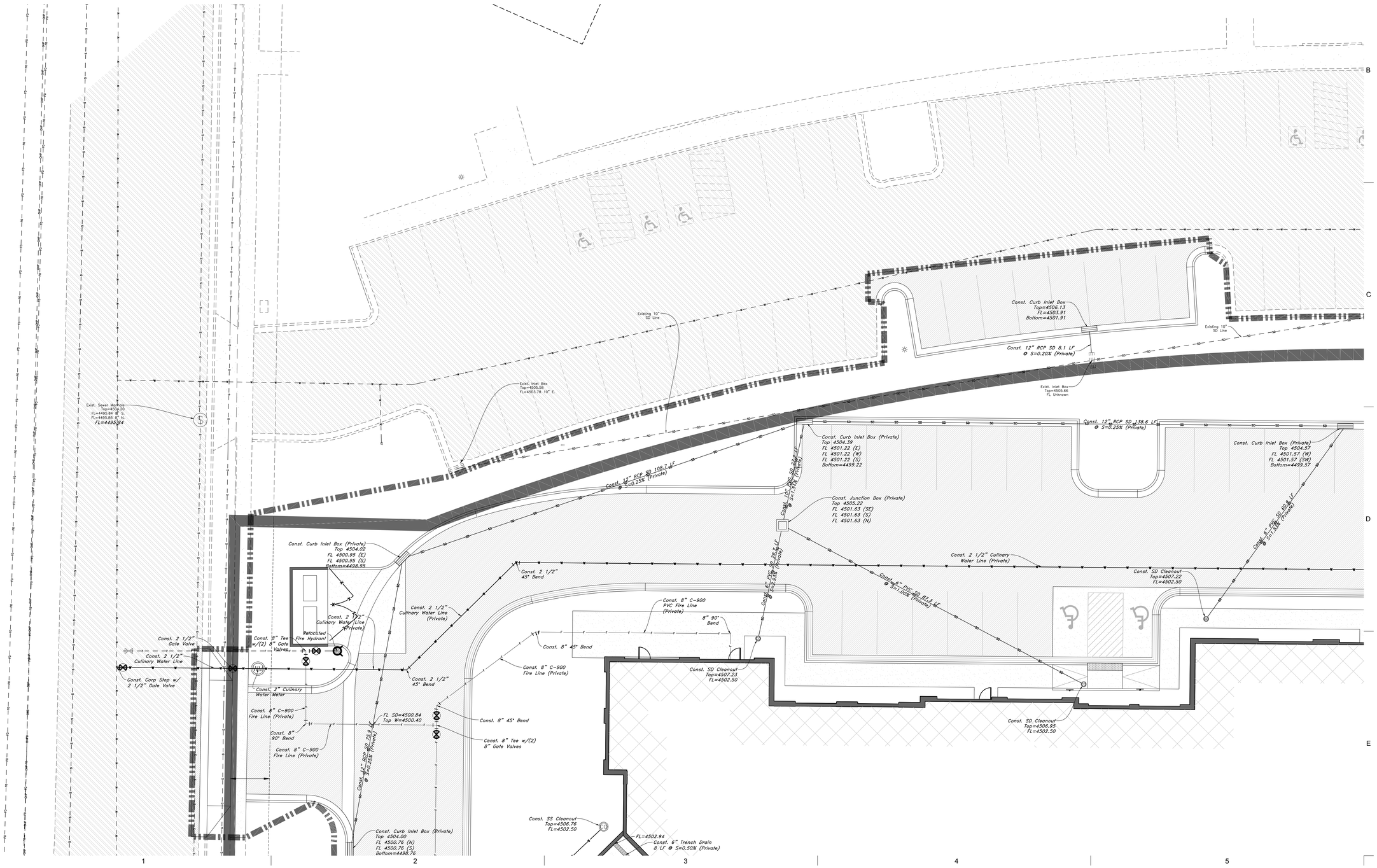
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Key Map
Not to Scale



Scale: 1" = 10'

10 0 5 10 15 20

Graphic Scale

Project Benchmark

Section Corner at the Back of Curb
Northing = 9,977.32'
Easting = 7,339.31'
Elevation = 4,505.00 (feet)

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ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
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Telephone (801) 595-6700
Telefax (801) 595-6717
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Ogden, Utah 84403 Main (801)394-4515
S.L.C (801)521-0222 FAX 801-392-7544
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MARK WELDON

WICP OREM NORTH BUILDING 4

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PROFESSIONAL ENGINEER
Heather Avner
10/04/2022
HEATHER AVNER
4225
STATE OF UTAH

MHTN PROJECT NO. 2023556

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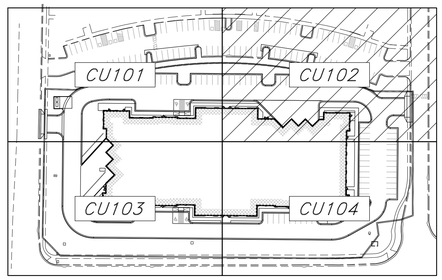
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SHEET NAME
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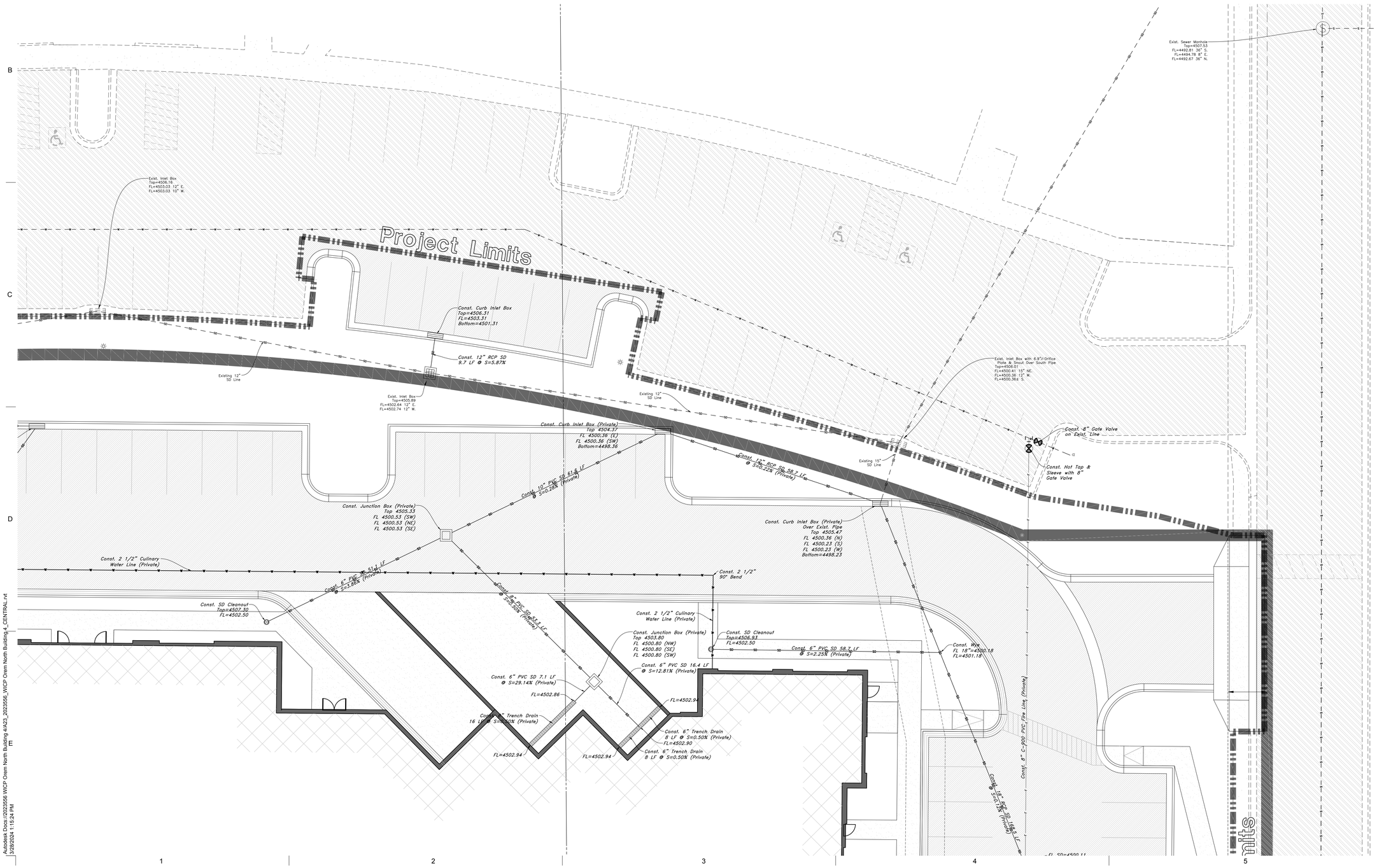
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10 0 5 10 15 20

Graphic Scale

Project Benchmark

Section Corner at the Back of Curb
Northing = 9,977.32'
Easting = 7,339.31'
Elevation = 4,505.00 (feet)

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ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
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Telephone (801) 595-6700
Telefax (801) 595-6717
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5746 South 1475 East - Suite 200
Ogden, Utah 84403 Main (801)394-4515
S.L.C (801)521-0222 FAX 801-392-7544
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MARK WELDON

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No. 9255417-2202
HEATHER AVNER
4.2.25
STATE OF UTAH

MHTN PROJECT NO. 2023556

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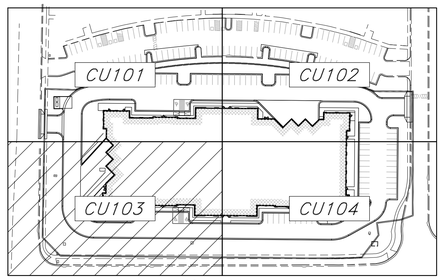
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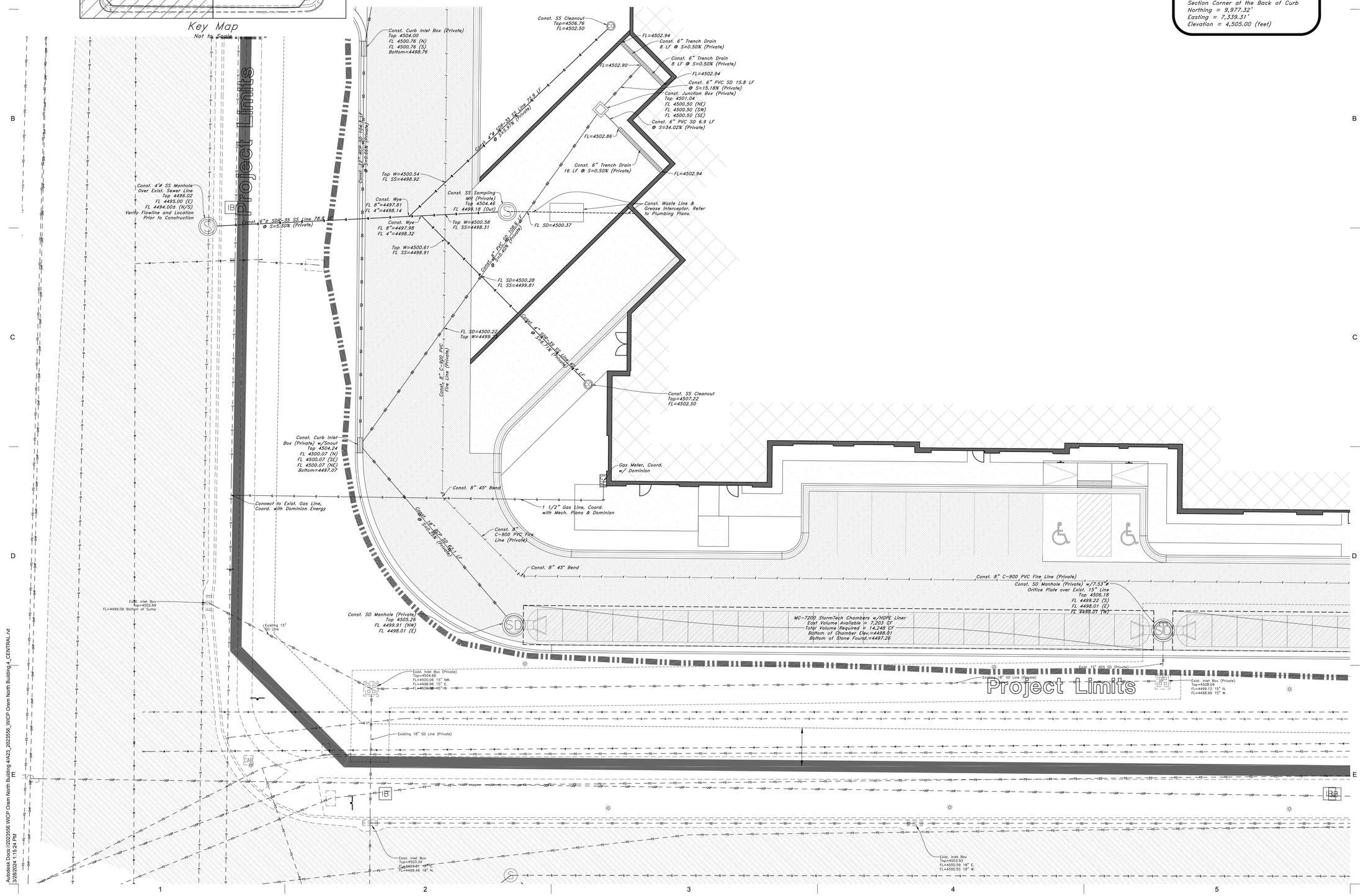
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UTILITY PLAN 'B'

SHEET NUMBER
CU102



Key Map
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Graphic Scale

Project Benchmark

Section Corner at the Back of Curb
Northing = 9,977.32'
Easting = 7,339.31'
Elevation = 4,505.00 (feet)

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5746 South 1475 East - Suite 200
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HEATHER AVNER
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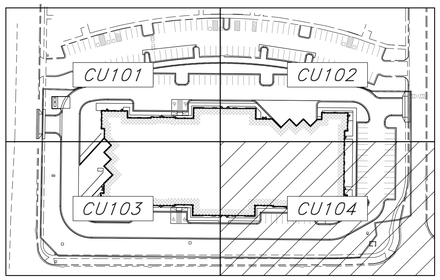
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SHEET NUMBER
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Key Map
Not to Scale

Project Benchmark

Section Corner at the Back of Curb
Northing = 9,977.32'
Easting = 7,339.31'
Elevation = 4,505.00 (feet)

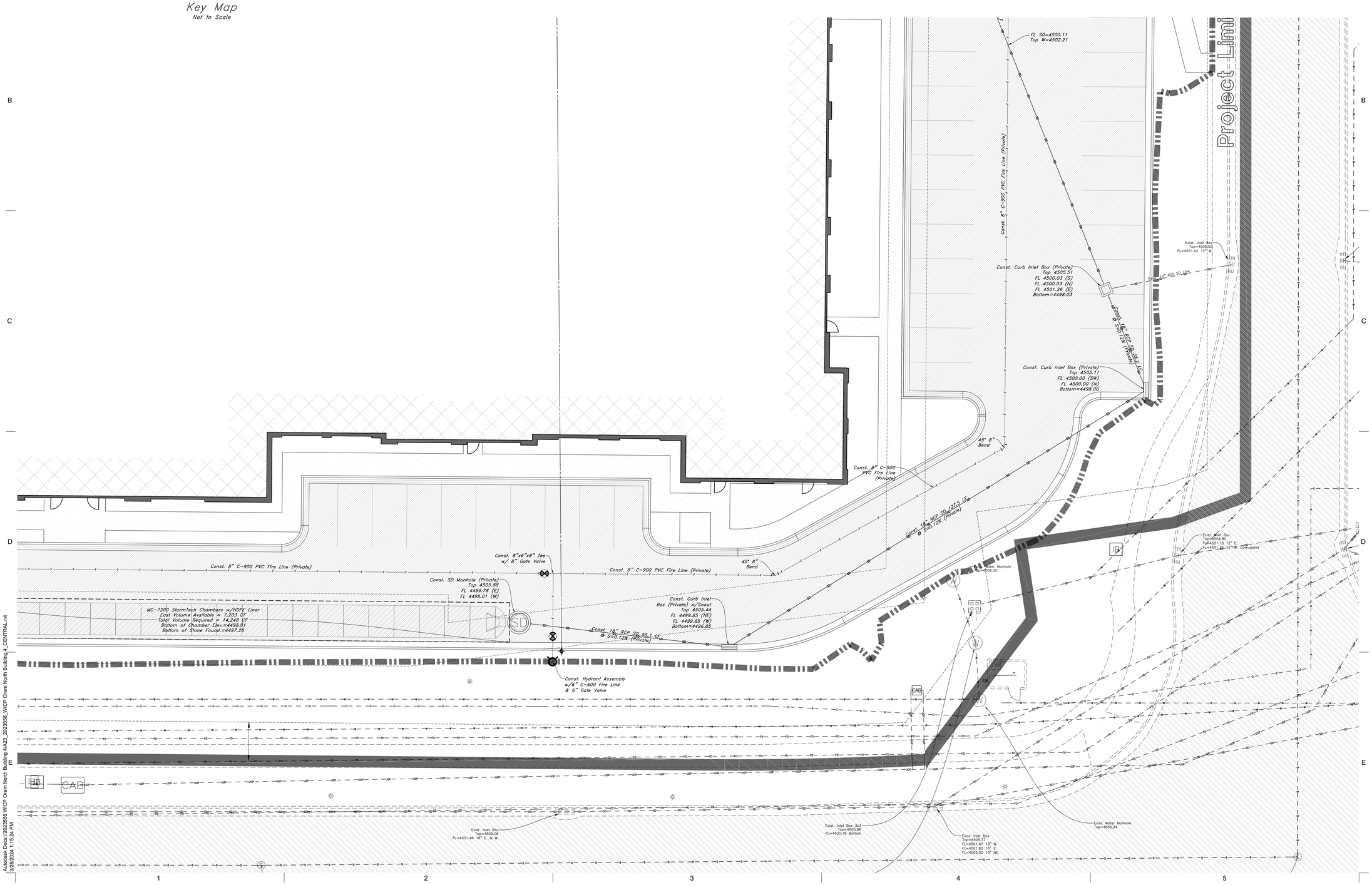
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PROFESSIONAL ENGINEER
I hereby certify that this document was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Utah.
HEATHER AVNER
4325
STATE OF UTAH

MHTN PROJECT NO. 2023556

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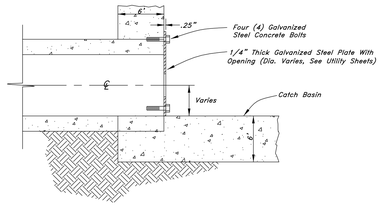
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UTILITY PLAN 'D'

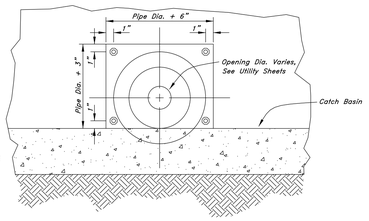
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MARK WELDON
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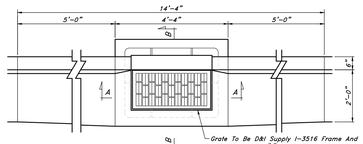
14 Typical Orifice Plate Detail

Not to Scale

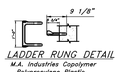
Notes:
1. All Boxes Must Be Formed Inside And Out. The City Inspector Must Observe Prior To Placing Concrete.
2. All Reinforcing Steel Shall Be Intermediate Grade 40, And Shall Have A Minimum Of Two Inches Cover Or Clearance From All Surfaces And Openings, Unless Otherwise Specified.
3. All Concrete Shall Be Class AA(AE), Unless Otherwise Specified.
4. Flowline Elevations, Pipe Sizes, And Locations Shall Be Shown On Other Drawings.
5. Rebar Splice Shall Not Be Less Than 18 Inches.
6. 2x4 Shear Keys Are Required As Shown.
7. Compact Base Material To 96% Of Maximum Dry Density Per ASTM D-1557.
8. Precast Storm Drain Box May Be Used In Lieu Of Cast-in-place. Must Provide Submittals To The Design Engineer For Approval Prior To Use.

STEEL SCHEDULE			
HEIGHT	VERT. STL.	HORIZ. STL.	WALL THICKNESS
0' - 4'	#3 @ 12" O.C.	#3 @ 12" O.C.	6" WALL
4' - 6'	#4 @ 12" O.C.	#4 @ 12" O.C.	6" WALL
6' - 8'	#5 @ 12" O.C.	#4 @ 12" O.C.	8" WALL
8' - 10'	#5 @ 12" O.C.	#4 @ 12" O.C.	8" WALL
10' - 12'	#5 @ 12" O.C.	#4 @ 12" O.C.	8" WALL

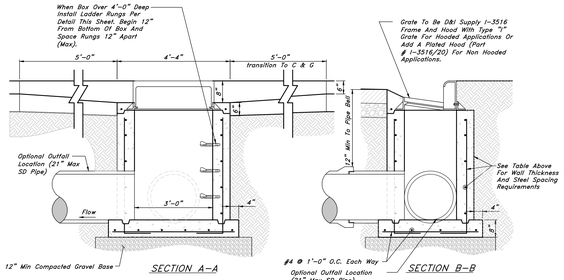
NOTE:
1) INSIDE FACE BARS TO BE STAGGERED W/ OUTSIDE FACE BARS.
2) USE DOUBLE CURTAIN REINF. FOR INLET BOXES 6' - 8' OR MORE DEEP



PLAN VIEW



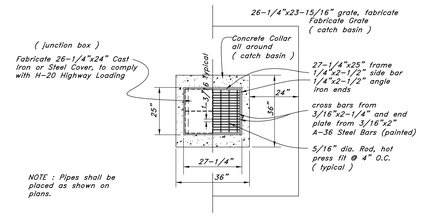
LADDER RUNG DETAIL
M.A. Industries Copolymer Polypropylene Plastic Steps Or Approved Equivalent.



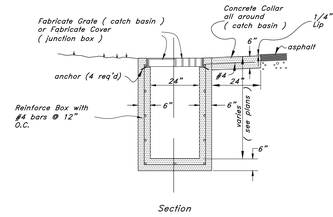
SECTION A-A SECTION B-B

13 Typical Inlet Box

In Curb & Gutter
Not to Scale



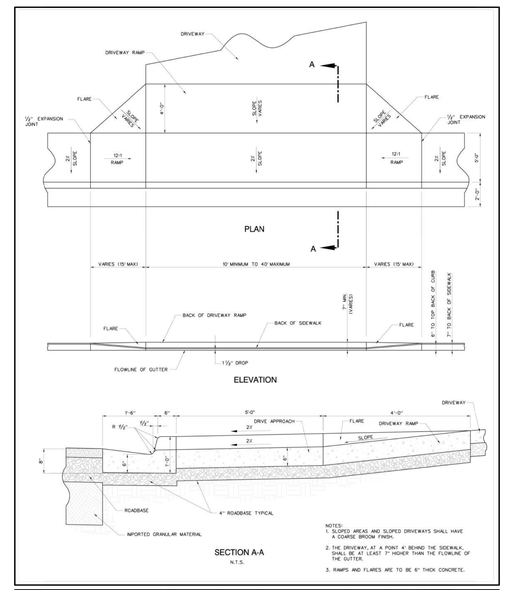
Plan



Section

12 Catch Basin/Junction Box

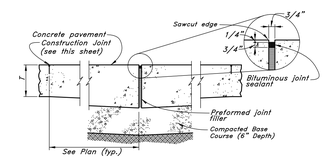
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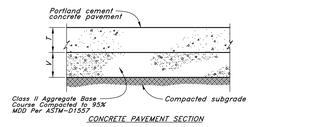
LINDON 100 NORTH STATE (801) 785-7687	TYPICAL DRIVE APPROACH	DESIGN: MDC DRAWN: MDC REVIEWED: ROOTPRO: 3/19/2012	5a

11 Typical Drive Approach

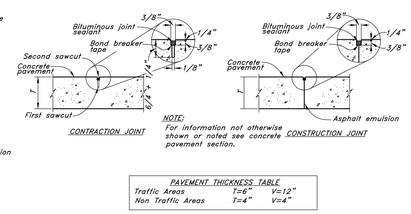
Not to Scale



EXPANSION JOINT



CONCRETE PAVEMENT SECTION



CONTRACTION JOINT

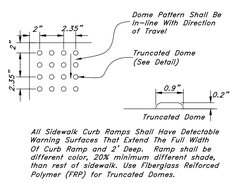
NOTE:
For information not otherwise shown or noted see concrete CONSTRUCTION JOINT pavement section.

PAVEMENT THICKNESS TABLE

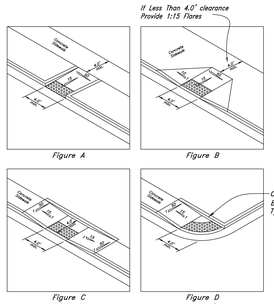
Traffic Areas	T=6"	V=12"
Non Traffic Areas	T=4"	V=4"

6 Portland Cement Concrete Pavement Drive & Parking Areas

Not to Scale



All Sidewalk Curb Ramps Shall Have Detectable Warning Surfaces That Extend The Full Width Of Curb Ramp and 2' Deep. Ramp shall be different color, 20% minimum different shade, than rest of sidewalk. Use Fiberglass Reiforced Polymer (FRP) for Truncated Domes.

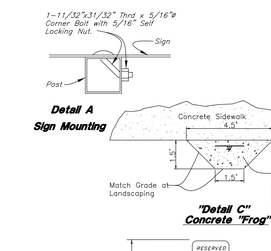


Truncated Domes Texture @ All Hazardous Routes.

Note: Curb Height Varies, See Civil Plans For Elevations.

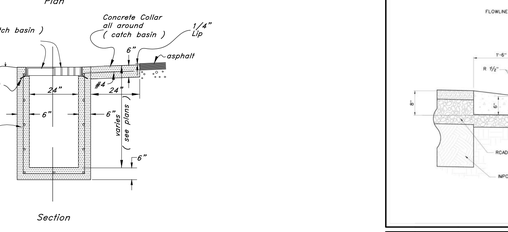
9 Typical Curb Ramp Detail

Not to Scale



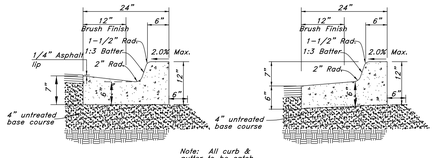
8 Accessible Parking Sign

Not to Scale



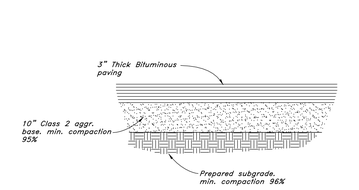
7 Concrete Sidewalk

Not to Scale



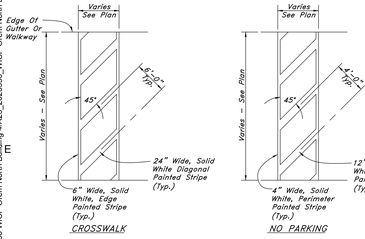
2 Typical Section - 24" Curb & Gutter

Not to Scale



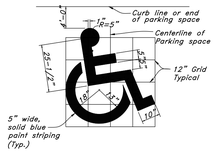
1 Typical Bituminous Pavement Section

Not to Scale



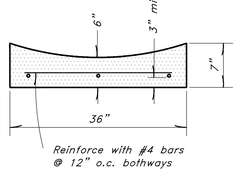
5 No Parking Striping

Not to Scale



4 Accessibility Symbol

Not to Scale



3 36" Waterway

Not to Scale

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MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

GREAT BASIN ENGINEERING INC
5746 South 1475 East - Suite 200
Ogden, Utah 84403 Main (801)394-4515
S.L.C (801)521-0222 FAX 801-392-7544
www.greatbasinengineering.com

MARK WELDON

WICP OREM NORTH BUILDING 4

2800 W 650 N
LINDON, UTAH 84042

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SEAL

PROFESSIONAL ENGINEER
No. 10334427-2202
HEATHER AVNER
4.2.25
STATE OF UTAH

MHTN PROJECT NO. 2023556

Original drawing is 30 x 42. Do not scale contents of this drawing.

REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD. USE REFLECT LAST REVISION DATE.

NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
2 APRIL 2025

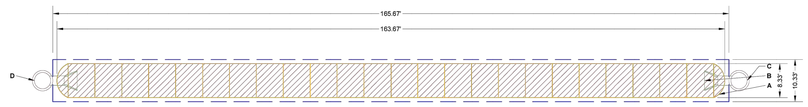
SHEET NAME
DETAIL SHEET

SHEET NUMBER
CD500

PROPOSED LAYOUT: EAST		PROPOSED ELEVATIONS	
24	STORMTECH MC-7200 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	30.75
2	STORMTECH MC-7200 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	29.25
12	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	29.75
9	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	29.75
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	29.75
7203	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	30.75
		TOP OF MC-7200 CHAMBER:	29.75
		24" ISOLATOR ROW PLUS INVERT:	28.94
1712	SYSTEM AREA (SF)	24" ISOLATOR ROW PLUS INVERT:	28.94
342.0	SYSTEM PERIMETER (ft)	BOTTOM OF MC-7200 CHAMBER:	28.75
		BOTTOM OF STONE:	28.75

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM PARTIAL CUT END CAP. PART#: MC7200EPP24B / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.26"	
	B	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP (TYP 2 PLACES)		
	C	CONCRETE STRUCTURE		
	D	CONCRETE STRUCTURE		
		(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		



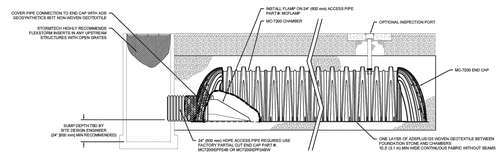
ISOLATOR ROW PLUS (SEE DETAIL)

NO WOVEN GEOTEXTILE

BED LIMITS

NOTES

1. THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
2. **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.



MC-7200 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

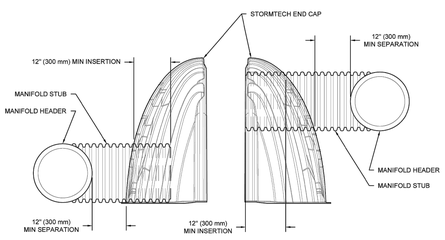
NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

3 MC-7200 ISOLATOR ROW PLUS DETAIL

SPACE INTENTIONALLY LEFT BLANK

MC-SERIES END CAP INSERTION DETAIL
NTS

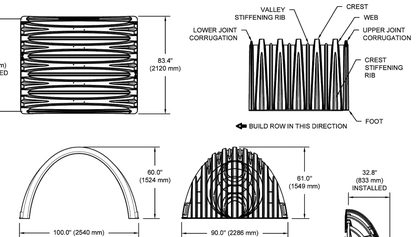


NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

4 MC-SERIES END CAP INSERTION DETAIL

SPACE INTENTIONALLY LEFT BLANK

MC-7200 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 79.1"	(2540 mm X 1524 mm X 2010 mm)
CHAMBER STORAGE	175.9 CUBIC FEET	(4.98 m³)
MINIMUM INSTALLED STORAGE*	267.3 CUBIC FEET	(7.56 m³)
WEIGHT (NOMINAL)	205 lbs.	(92.9 kg)

NOMINAL END CAP SPECIFICATIONS

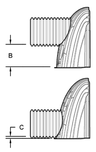
SIZE (W X H X INSTALLED LENGTH)	90.0" X 61.0" X 32.8"	(2286 mm X 1549 mm X 833 mm)
END CAP STORAGE	39.5 CUBIC FEET	(1.12 m³)
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m³)
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC7200EPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200EPP06B		---	0.86" (22 mm)
MC7200EPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200EPP08B		---	1.01" (26 mm)
MC7200EPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200EPP10B		---	1.33" (34 mm)
MC7200EPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200EPP12B		---	1.55" (39 mm)
MC7200EPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200EPP15B		---	1.70" (43 mm)
MC7200EPP18T	18" (450 mm)	29.36" (746 mm)	---
MC7200EPP18TW		---	---
MC7200EPP18B		---	1.97" (50 mm)
MC7200EPP18BW			
MC7200EPP24T	24" (600 mm)	23.05" (585 mm)	---
MC7200EPP24TW		---	---
MC7200EPP24B		---	2.26" (57 mm)
MC7200EPP24BW		---	---
MC7200EPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC7200EPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC7200EPP42BW	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



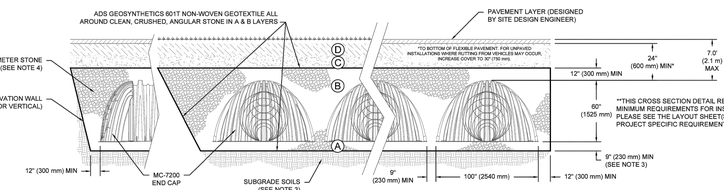
CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP OUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

2 MC-7200 TECHNICAL SPECIFICATION

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

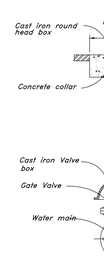
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



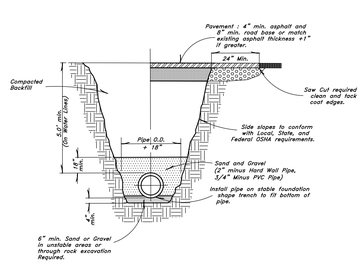
NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/% THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 MC-7200 CROSS SECTION DETAIL

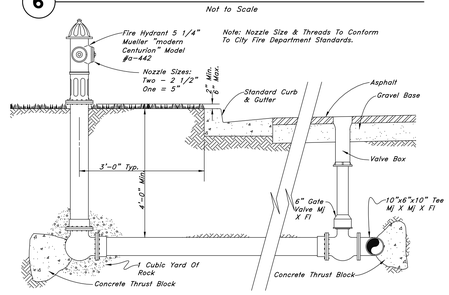


5 Typical Gate Valve
Not to Scale

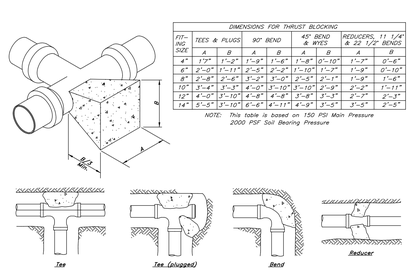


4 Typical Trench Detail
Not to Scale

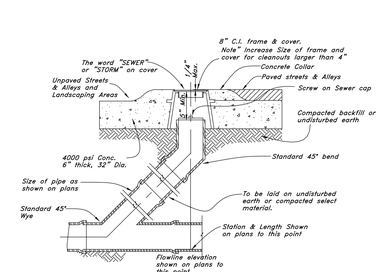
6 StormTech Chambers
Not to Scale



3 Typical Fire Hydrant & Valve Connection
Not to Scale



2 Thrust Blocking Details
Not to Scale



1 Sewer, Storm, and Roof Drain Cleanout Detail
Not to Scale

MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

GREAT BASIN ENGINEERING, Inc
5746 South 1475 East - Suite 200
Ogden, Utah 84403 Main (801)394-4515
S.L.C (801)521-0222 Fax 801-392-7544
www.greatbasinengineering.com

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CONTRACTOR TO CONTACT STORMTECH AT LEAST ONE WEEK PRIOR TO CONSTRUCTION TO ASSURE OPTIMUM PERFORMANCE OF THE SYSTEM. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH AND FOLLOW ALL STORMTECH RECOMMENDATIONS AT THE TIME OF BIDDING AND/OR CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE EOR TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

ADS.
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HILLIARD, OH 43026
1-800-733-7473

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SHEET
1 OF 2

MARK WELDON

WICP OREM NORTH BUILDING 4
2800 W 650 N
LINDON, UTAH 84042

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MHTN PROJECT NO. 2023556

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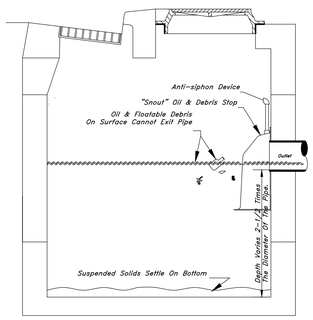
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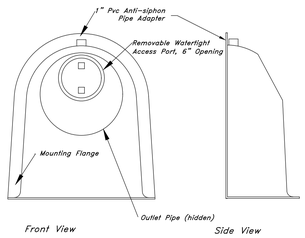
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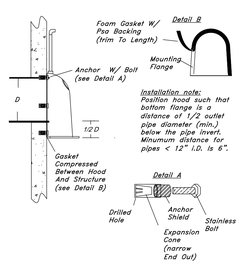
Configuration Detail

Notes:

1. *All hoods shall be equipped with a watertight access port, a mounting flange, and an anti-siphon vent as drawn.*
2. *The size and position of the hood shall be determined by outlet pipe size as per manufacturer's recommendation.*
3. *The anti-siphon vent shall extend above hood by minimum of 3" and a maximum of 24" according to structure configuration.*
4. *The surface of the structure where the hood is mounted shall be finished smooth and free of loose material.*
5. *The hood shall be securely attached to structure wall with 5/8" stainless steel bolts and oil-resistant gasket as supplied by manufacturer.*
6. *Installation instructions shall be furnished with manufacturer supplied installation kit. Installation kit shall include:*
   a. *Installation instructions*
   b. *Pvc anti-siphon vent pipe and adapter*
   c. *Oil-resistant crushed cell foam gasket with PSA backing*
   d. *3/8" stainless steel bolts*
   e. *Anchor shields*



Front View *Side View*



Installation note:
Position hood such that bottom flange is a distance of 1/2 outlet pipe diameter (min.) below the pipe invert. Minumum distance for pipes < 12" i.D. is 6".

1 ***Snout Detail***

Not to Scale

MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

GREAT BASIN INC
ENGINEERING
5746 South 1475 East - Suite 200
Ogden, Utah 84403 Main (801)394-4515
S.L.C (801)521-0222 FAX 801-392-7544
www.greatbasinengineering.com

MARK WELDON

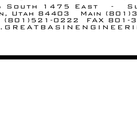
WICP OREM NORTH BUILDING 4

2800 W 650 N
LINDON, UTAH 84042

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MHTN PROJECT NO. 2023556

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REVISIONS
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CONCEPT PLANT SCHEDULE

EVERGREEN TREE
- *PICEA PUNGENS / COLORADO SPRUCE* — 2" CAL
- *PINUS FLEXILIS `VANDERWOLF`S PYRAMID` / VANDERWOLF`S PYRAMID PINE* — 2" CAL
- *PINUS NIGRA `ARNOLD SENTINEL` / ARNOLD SENTINEL AUSTRIAN BLACK PINE* — 2" CAL

LARGE TREE
- *CELTIS OCCIDENTALIS / COMMON HACKBERRY* — 2" CAL — 20' oc
- *GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST* — 2" CAL
- *TILIA CORDATA `GREENSPIRE` / GREENSPIRE LITTLELEAF LINDEN* — 2" CAL

MEDIUM TREE
- *ACER GRANDIDENTATUM / BIGTOOTH MAPLE* — 2" CAL — 20' oc
- *CERCIS CANADENSIS / EASTERN REDBUD* — 2" CAL
- *MALUS X `SPRING SNOW` / SPRING SNOW CRABAPPLE* — 2" CAL

SMALL TREE
- *ACER PLATANOIDES `COLUMNARE` / COLUMNAR NORWAY MAPLE* — 2" CAL
- *ACER PLATANOIDES `CRIMSON SENTRY` / CRIMSON SENTRY MAPLE* — 2" CAL

LARGE ORNAMENTAL GRASS
- *MISCANTHUS SINENSIS `GRACILLIMUS` / MAIDEN GRASS* — 5 GAL — 4" oc
- *MISCANTHUS SINENSIS `PURPURESCENS` / FLAME GRASS* — 5 GAL — 4" oc

LARGE SHRUB
- *JUNIPERUS HORIZONTALIS `BAR HARBOR` / BAR HARBOR CREEPING JUNIPER* — 5 GAL — 6" oc
- *PINUS MUGO / MUGO PINE* — 5 GAL — 5" oc
- *RHUS AROMATICA `AUTUMN AMBER` / AUTUMN AMBER SUMAC* — 5 GAL — 6" oc

MEDIUM SHRUB
- *PRUNUS BESSEYI `PAWNEE BUTTES` / SAND CHERRY* — 5 GAL — 5" oc
- *ROSA X `KNOCKOUT` TM / ROSE* — 5 GAL — 4" oc

ORNAMENTAL GRASS
- *CALAMAGROSTIS X ACUTIFLORA `KARL FOERSTER` / FEATHER REED GRASS* — 1 GAL.
- *CALAMAGROSTIS X ACUTIFLORA `OVERDAM` / OVERDAM FEATHER REED GRASS* — 1 GAL.
- *FESTUCA OVINA GLAUCA / BLUE SHEEP FESCUE* — 1 GAL. — 4" oc
- *PENNISETUM ALOPECUROIDES `LITTLE BUNNY` / LITTLE BUNNY FOUNTAIN GRASS* — 1 GAL.

SMALL SHRUB
- *BERBERIS THUNBERGII BAGATELLE / BAGATELLE RED BARBERRY* — 1 GAL.
- *CARYOPTERIS X CLANDONENSIS `DARK KNIGHT` / DARK KNIGHT BLUEBEARD* — 1 GAL.
- *HEMEROCALLIS X `STELLA DE ORO` / STELLA DE ORO DAYLILY* — 1 GAL.
- *MAHONIA AQUIFOLIUM `COMPACTA` / COMPACT OREGON GRAPE* — 1 GAL. — 4" oc

LAWN
- *SOD*
- *LAWN / SOD* — *FLAT*

GROUNDCOVER
- *ROCK, BARK, MULCH, OTHER*

IRRIGATION SUMMARY

ALL LANDSCAPED AREAS SHALL BE SERVICED BY A FULLY AUTOMATIC SPRINKLER SYSTEM WHICH WILL PROVIDE A MINIMUM OF 95% COVERAGE ON ALL LAWN AREAS AND 85% COVERAGE ON ALL SHRUBS OR GROUNDCOVER AREAS.

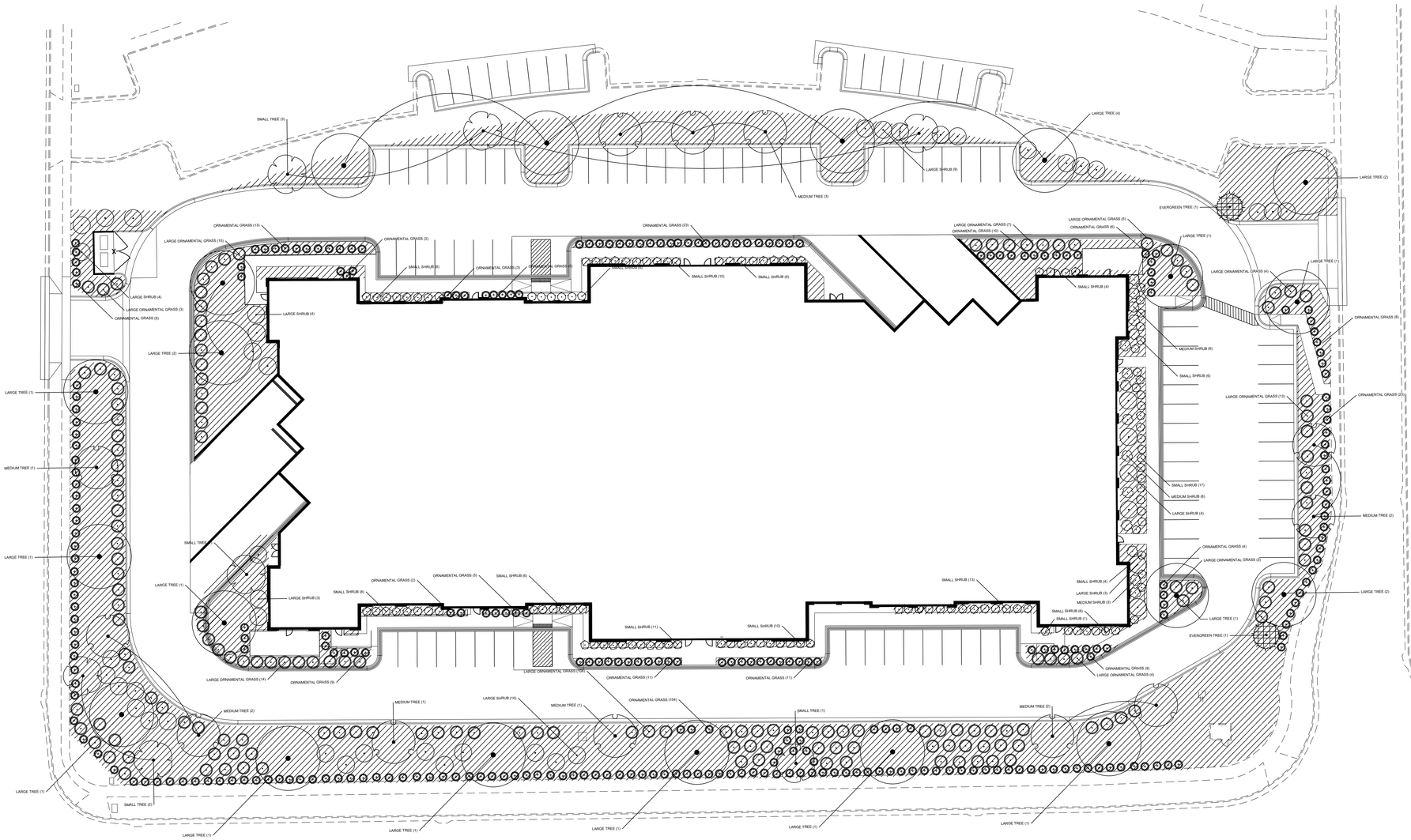
THE SYSTEM WILL OPERATE BETWEEN APRIL AND NOVEMBER AND PROVIDE AN ADEQUATE AMOUNT OF MOISTURE TO MAINTAIN ALL PLANT MATERIALS IN A HEALTHY CONDITION.

ALL PIPE ON MAIN AND LATERAL LINES SHALL BE NEW SCHEDULE 40 PVC PIPE. ALL PVC FITTINGS ON THE MAINLINE PIPE SHALL BE SCHEDULE 80 FITTINGS. ALL PVC FITTINGS ON LATERAL LINES SHALL BE SCHEDULE 40 ASTM 2466 FITTINGS. ALL LINES SHALL SLOPE TO DRAIN.

MAINLINES SHALL BE DRAINED BY THE USE OF BRASS SHUT-OFF VALVES. ALL LATERAL LINES SHALL BE DRAINED AND WINTERIZED USING COMPRESSED AIR TO REMOVE ALL THE WATER FROM THE SYSTEM TO PREVENT FREEZING.

IRRIGATION HEADS FOR SMALL AREAS SHALL BE COMMERCIAL GRADE 6" TO 12" HIGH POP UP HEADS WITH HEAVY DUTY SPRINGS. IRRIGATION HEADS FOR MEDIUM TO LARGE TURF AREAS SHALL BE GEAR DRIVEN ROTARY HEADS.

ALL VALVES SHALL BE HEAVY DUTY PVC COMMERCIAL GRADE ELECTRIC CONTROL VALVES. THE IRRIGATION CONTROLLERS SHALL BE SOLID STATE WITH MULTI-PROGRAM, FLEXIBLE PROGRAM AND WATER BUDGETING FEATURES.



00 LANDSCAPE PLAN
1" = 20'

N

MHTN ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

MOUNTAIN TECH NORTH 4

WICP COMMERCIAL

2800 W 650 N
LINDON, UTAH 84042

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ROBERTO G. PINON
6430267-0301
LICENSED ARCHITECT
18 FEB. 2025

MHTN PROJECT NO. 2023556

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GENERAL STRUCTURAL NOTES

1. IN ALL CASES, "CONTRACTOR" SHALL REFER TO THE CONTRACTOR OR SUB-CONTRACTOR RESPONSIBLE FOR THE TRADE SPECIFICALLY REFERRED TO IN THE NOTES (i.e. STEEL CONCRETE, MASONRY). THE "CONTRACTOR" SHALL MEET ALL NOTE REQUIREMENTS AND SHALL INCLUDE THE COSTS ASSOCIATED WITH THESE REQUIREMENTS IN HIS/HER BID. THE GENERAL CONTRACTOR, OR CONSTRUCTION MANAGER, IS ULTIMATELY RESPONSIBLE FOR COMPLIANCE WITH ALL NOTE REQUIREMENTS.
2. THE CONTRACTOR SHALL PERFORM HIS/HER TRADE AND DUTIES IN A MANNER CONFORMING TO THE PROCEDURES AND REQUIREMENTS AS STATED IN THE 2021 INTERNATIONAL BUILDING CODE (IBC), AND/OR LATEST CODE ADOPTED BY THE LOCAL BUILDING OFFICIAL, AND ALL LOCAL ORDINANCES.
3. THE GENERAL CONTRACTOR, OR PROJECT MANAGER, SHALL COORDINATE THE WORK PERFORMED BY ALL TRADES.
4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND/OR ARCHITECT OF ANY DISCREPANCIES, OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR THE SPECIFICATIONS BEFORE PROCEEDING WITH ANY WORK INVOLVED IN ALL CASES, UNLESS OTHERWISE DIRECTED, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN AND BE PERFORMED.
5. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS, SLOPES AND ELEVATIONS, ETC., AT THE JOB SITE AND SHALL COORDINATE THESE WITH THE ARCHITECT AND WITH ALL TRADES. CONSTRUCTION DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.
6. VISITS TO THE JOB SITE BY REPRESENTATIVES OF THE ENGINEER DO NOT CONSTITUTE APPROVAL OF THE WORK PERFORMED BY THE CONTRACTOR OR HIS SUBCONTRACTORS; THEY ARE MERELY FOR THE PURPOSE OF OBSERVATION.
7. SHOP DRAWINGS FOR ANY FABRICATED COMPONENTS OR COMPONENTS DESIGNED-BY-MANUFACTURER SHALL BE APPROVED BY THE ENGINEER AND ARCHITECT PRIOR TO FABRICATION AND ERECTION. SHOP DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE SAME STATE AS THE PROJECT.
8. THE CONTRACTOR SHALL VERIFY SIZES, LOCATIONS, LOADS, AND EQUIPMENT ANCHORAGE IN THE FIELD WITH THE EQUIPMENT MANUFACTURER (OR SUPPLIER) PRIOR TO FABRICATION OR INSTALLATION OF SUPPORTING STRUCTURES.
9. TEMPORARY SHORING (BRACING) SHALL BE PROVIDED WHERE NECESSARY. SHORING SHALL SUPPORT ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED (i.e. WIND). SHORING SHALL REMAIN IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY OR UNTIL ALL THE STRUCTURAL ELEMENTS ARE COMPLETED. ALL SHORING IS THE RESPONSIBILITY OF THE CONTRACTOR
10. DURING AND AFTER CONSTRUCTION, THE CONTRACTOR AND OWNER SHALL KEEP LOADS ON THE STRUCTURE WITHIN THE LIMITS OF THE DESIGN LOADS FOR THE OCCUPANCY. SEE STRUCTURAL PLANS AND CALCULATIONS FOR STRUCTURAL DESIGN LOADINGS AND CRITERIA.
11. ANY SPECIAL INSPECTION REQUIRED BY THE CONSTRUCTION DOCUMENTS, OR BY THE BUILDING OFFICIAL, OR BY THE IBC, IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ON BEHALF OF THE OWNER.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY AND PROTECTION WITHIN AND ADJACENT TO THE JOB SITE.
13. PRIOR APPROVAL, IN WRITING, FROM THE ENGINEER IS REQUIRED FOR ANY DEVIATION FROM THE STRUCTURAL PLANS AND/OR CONSTRUCTION DOCUMENTS. OPTIONAL MEMBER SIZES AND VARIATIONS IN THE FRAMING REQUIRE PRIOR APPROVAL OF THE ENGINEER, ARCHITECT AND OWNER. FAILURE TO FOLLOW PLANS AND CONSTRUCTION DOCUMENTS CONSTITUTES CHANGE IN PROJECT SCOPE.
14. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL NOTES AND REQUIREMENTS.
15. THE ENGINEER RESERVES THE RIGHT TO REQUEST REPLACEMENT OF ANY PORTION OF THE STRUCTURE DEVIATING FROM THE PLANS WHERE WRITTEN PRIOR APPROVAL HAS NOT BEEN OBTAINED AND WHERE INSPECTION BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE CHANGED PORTION HAS NOT HAPPENED.
16. ALL SITE WORK, GRADING, COMPACTION AND BACKFILL, ETC. SHALL BE DONE IN COMPLIANCE WITH A GEOTECHNICAL REPORT SPECIFIC TO THE SITE. IT IS THE GENERAL CONTRACTORS RESPONSIBILITY TO OBTAIN A GEOTECHNICAL REPORT, IF ONE HAS NOT ALREADY BEEN OBTAINED, AND SUBMIT A COPY TO THE ENGINEER FOR VERIFICATION.
17. ALL ANCHORING ADHESIVE SHALL BE SIMPSON SET-3G EPOXY OR HILTI HY-200V3 ADHESIVE. ANCHORS SHALL BE INSTALLED PER MANUFACTURERS INSTRUCTIONS. EPOXIED ANCHORS SHALL NOT BE INSTALLED IN CONCRETE LESS THAN 21 DAYS OLD
18. ALL NON-EPOXIED POST-INSTALLED ANCHORS TO BE SIMPSON STRONG-BOLT 2 WEDGE ANCHORS, TITEN HD SCREW ANCHORS, HILTI KWIK HUS-EZ SCREW ANCHORS, OR HILTI KWIK BOLT TZ2 ANCHORS. MECHANICAL ANCHORS SHALL NOT BE INSTALLED IN CONCRETE LESS THAN 7 DAYS OLD.
19. FASTENERS AND ANCHOR BOLTS USED IN PRESERVATIVE-TREATED WOOD SHALL BE HOT DIPPED ZINC-COATED GALVANIZED STEEL. THE COATING WEIGHTS SHALL BE IN ACCORDANCE WITH ASTM A 153.

GENERAL CONCRETE NOTES

1. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
2. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE 2021 IBC, ACI 318, AND LOCAL ORDINANCES.
3. CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO PLACING CONCRETE.
4. CONTRACTOR SHALL COORDINATE WITH MECHANICAL, ELECTRICAL, AND ARCHITECTURAL PRIOR TO PLACING CONCRETE. PROVIDE SLEEVES, BLOCK OUTS, ETC... AS REQUIRED.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER PLACEMENT OF ALL ANCHOR BOLTS, SEISMIC ANCHORS OR STRAPS, ETC.. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
6. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL FORM WORK, POUR STOPS, ETC. REQ'D TO CONSTRUCT ALL CONCRETE WORK. SUCH FORM WORK IS NOT NECESSARILY SHOWN ON THE STRUCTURAL PLANS OR DETAILS. THE CONTRACTOR SHALL SPECIFY ALL FORM WORK AND SHALL INCLUDE THE COST FOR SUCH IN HIS/HER ORIGINAL BID.
7. CONTRACTOR SHALL PROVIDE ALL SHORING AS REQUIRED.
8. SEE FOUNDATION PLAN FOR ADDITIONAL NOTES AND REQUIREMENTS.

CONCRETE & REINFORCEMENT

9. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS UNLESS NOTED OTHERWISE. FOOTINGS MAY HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.
10. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO THE STANDARD SPECIFICATIONS ASTM A615 GRADE 60. REINFORCING STEEL SHALL BE PROPERLY TIED INTO PLACE PRIOR TO PLACING CONCRETE.
11. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH THE ACI DETAILING MANUAL AND ACI STANDARDS (LATEST EDITION).
12. ALL SPLICES IN CONTINUOUS CONCRETE REINFORCING BARS SHALL LAP A MINIMUM OF 40 BAR DIAMETERS. ALL SPLICES SHALL BE MADE IN A COMPRESSION ZONE UNLESS NOTED. ALL CONTINUOUS REINFORCING SHALL TERMINATE WITH A 90 DEG. BEND OR WITH SEPARATE CORNER BARS.

FOUNDATION WALLS

13. SEE FOUNDATION WALL SCHEDULE, OR FOUNDATION PLAN, FOR SPECIFICATION OF FOUNDATION WALL REINFORCEMENT. SEE RETAINING WALL SCHEDULE, OR FOUNDATION PLAN, FOR SPECIFICATION OF RETAINING WALL REINFORCEMENT.
14. FOUNDATION WALLS HAVE BEEN DESIGNED USING AN EQUIVALENT FLUID PRESSURE. SEE STRUCTURAL PLANS AND CALCULATIONS FOR ACTUAL FLUID PRESSURE USED.
15. BACKFILL ADJACENT TO FOUNDATION WALLS OR IN LANDSCAPED AREAS SHALL BE PLACED IN LOOSE LIFTS A MAXIMUM OF EIGHT INCHES (8"). FILL SHALL HAVE A MOISTURE CONTENT WITHIN 2% OF OPTIMUM AND SHALL BE COMPACTED TO AT LEAST 90% MAXIMUM DENSITY (ASTM D 1557). HEAVY EQUIPMENT SHALL NOT BE USED TO BACKFILL WITHOUT PRIOR CONSENT OF THE ENGINEER.
16. THE CONTRACTOR SHALL COORDINATE STEPS IN WALLS WITH THE ARCHITECT, AND SHALL VERIFY WITH THE ENGINEER.

SLABS

17. REINFORCE ALL SLABS ON GRADE w/ № 4 BARS AT 18" O.C. EACH WAY.
18. RECESS FOUNDATION AND POUR SLABS THROUGH, TYPICAL AT ALL EXTERIOR DOORS AND STORE FRONT TYPE WINDOWS. SEE FOUNDATION DETAILS.
19. DEPRESS SLABS AS REQUIRED IN AREAS OF CERAMIC TILE, SPECIAL ENTRY MATS, HARDWOOD FLOORS, ETC. COORDINATE LOCATION AND DEPTH WITH THE ARCHITECT.
21. PROVIDE ISOLATION JOINTS AROUND COLUMNS/SPREAD FOOTINGS, AND CONTROL JOINTS AS REQUIRED, PARTICULARLY WHERE SLABS TRANSITION IN SIZE.
22. THE CONTRACTOR SHALL TAKE CARE THAT HEAVY EQUIPMENT, AND AREAS USED FOR STAGING, DOES NOT CRACK AND DAMAGE SLABS ON GRADE. DAMAGED SLABS SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL EXPENSE TO THE OWNER.
23. REFER TO THE CIVIL PLANS FOR SPECIFICATION OF ALL EXTERIOR FLAT WORK.

FOOTINGS

24. SEE FOOTING SCHEDULE FOR FOOTING SIZES AND REINFORCING REQUIREMENTS.
25. FOOTINGS HAVE BEEN DESIGNED USING AN ALLOWABLE BEARING PRESSURE AS SET FORTH IN THE PROJECT GEOTECHNICAL REPORT. CONTRACTOR TO FOLLOW ALL REQUIREMENTS AND RECOMMENDATIONS IN THE REPORT.
26. ALL EXTERIOR FOOTINGS SHALL BEAR BELOW FROST DEPTH. CONTRACTOR TO VERIFY.
27. THE CONTRACTOR SHALL COORDINATE STEPS IN FOOTINGS WITH THE ARCHITECT, AND SHALL VERIFY WITH THE ENGINEER.

STRUCTURAL FILL

28. STRUCTURAL FILL SHALL BE SPECIFIED AND APPROVED BY THE SOILS ENGINEER OF RECORD, BY WAY OF A GEOTECHNICAL REPORT, AS BEING APPROPRIATE FOR THE APPLICATION. STRUCTURAL FILL SHALL BE PROVIDED IN THE BUILDING PAD AND PAVEMENT AREAS AS NECESSARY.
29. STRUCTURAL FILL SHOULD BE PLACED IN LOOSE LIFTS A MAXIMUM OF EIGHT INCHES (8"). FILL SHALL HAVE A MOISTURE CONTENT WITHIN 2% OF OPTIMUM AND SHALL BE COMPACTED TO AT LEAST 95% MAXIMUM DENSITY (ASTM D 1557).
30 SEE NOTES ON FOUNDATION PLAN FOR STRUCTURAL FILL AND RAMMED AGGREGATE PIER REQUIREMENTS.
31. CONTRACTOR SHALL EMPLOY THE GEOTECHNICAL ENGINEER TO OBSERVE AND APPROVE THE EXCAVATION PRIOR TO PLACING STRUCTURAL FILL OR FORMING FOOTINGS.

GENERAL STEEL NOTES

1. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
2. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE 2021 IBC, AISC, AND LOCAL ORDINANCES.
3. ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION AND ERECTION.
4. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
5. SEE ARCHITECTURAL SHEETS FOR DECK BEARING ELEVATIONS. STRUCTURAL STEEL DETAILER SHALL DETERMINE ALL BEARING PLATE ELEVATIONS FROM ARCHITECTURAL DECK ELEVATIONS.
6. SEE ARCHITECTURAL SHEETS FOR ADDITIONAL DIMENSIONS.
7. SEE ARCHITECTURAL FOR ACCESS HATCHES, DRAFT STOPS, ETC.
8. SUBMIT SHOP DRAWINGS OF ALL STRUCTURAL STEEL, STEEL JOISTS, STEEL DECKING & MISCELLANEOUS STEEL TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
9. SEE FRAMING PLANS FOR ADDITIONAL NOTES AND REQUIREMENTS.
10. AT COMPLETION OF MANUFACTURE, THE STEEL JOIST MANUFACTURER SHALL SUBMIT A CERTIFICATE OF COMPLIANCE IN ACCORDANCE WITH 2021 18C SECTION 1704.2.5.2 STATING THAT WORK WAS PERFORMED IN ACCORDANCE WITH APPROVED CONSTRUCTION DOCUMENTS AND WITH SJI STANDARD SPECIFICATIONS.

STEEL JOISTS

11. STEEL JOISTS ARE CALLED OUT AS VULCRAFT (A DIVISION OF NUCOR CORP.) PRODUCTS ARE SPECIFIED FROM THEIR 2021 DESIGN MANUALS. EQUAL PRODUCTS FROM OTHER MANUFACTURERS. MEMBERS OF THE STEEL DECK AND STEEL JOIST INSTITUTE, WILL BE ACCEPTED WITH PRIOR APPROVAL. SUBMIT REQUEST TO ENGINEER WITH DESIGN MANUALS PRIOR TO FABRICATION.
12. JOIST SPECIFICATION AND DETAILS TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STEEL JOIST INSTITUTE AND MANUFACTURER SPECIFICATIONS AND RECOMMENDATIONS.
13. ALL JOISTS WITH SERIES DESIGNATION HAVE BEEN SELECTED TAKING INTO ACCOUNT ALL APPLIED ASD LOADS. JOISTS WITH TOTAL LOAD/LIVE LOAD DESIGNATION ARE TO BE DESIGNED BY JOIST SUPPLIER. JOISTS SUPPLIER SHALL DESIGN JOISTS TO CARRY STANDARD DESIGN LOADS PLUS INDICATED SNOW DRIFTING AND OTHER LOADS AS INDICATED ON THE PLANS. INDICATED LOADS ARE FOR ASD.
14. JOISTS, BRIDGING, BRACING, ETC. SHALL BE SPECIFIED AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
15. UNLESS OTHERWISE SPECIFIED, LIVE LOAD DEFLECTION OF STEEL JOISTS SHALL BE LIMITED BY THE FOLLOWING:
    - FLOORS . . . . . L / 360
    - ROOFS . . . . . L / 360 WHERE PLASTER CEILING IS SUPPORTED . . . . . L / 240 FOR ALL OTHER CASES
16. JOIST DESIGNER TO APPLY A 7,000 LB (ASD) SEISMIC AXIAL FORCE TO SHOE AND TOP CHORD OF JOISTS ANCHORED TO EXTERIOR WALLS.
17. DESIGN JOISTS FOR 10 PSF (0.6D + 0.6W ASD) NET UPLIFT.
18. PROVIDE 3 1/2" SHOES FOR ALL K-SERIES JOISTS.

STRUCTURAL STEEL

19. ALL WIDE FLANGE MEMBERS TO BE MANUFACTURED UNDER ASTM A992.
20. ALL STRUCTURAL PLATES, CHANNELS & ANGLES TO BE MANUFACTURED UNDER ASTM A36.
21. ALL HSS MEMBERS TO BE MANUFACTURED UNDER ASTM A500 GRADE C.
22. ALL PIPE COLUMNS TO BE MANUFACTURED UNDER ASTM A500 GRADE C.
23. ALL BOLTS FOR STEEL TO STEEL CONNECTIONS TO BE 3/4" DIA. MIN. A325-N HIGH STRENGTH BOLTS, UNLESS NOTED OTHERWISE. BOLTS EMBEDDED IN CONCRETE OR MASONRY SHALL BE F1554 GRADE 36 UNLESS NOTED OTHERWISE.
24. ALL JOIST WELDS TO BE E7024. ALL DECK WELDS TO BE E6022. ALL WELDS FOR SEISMIC SPECIFIC CONNECTIONS TO BE E7018. ALL OTHER WELDS TO BE 70 KSI MIN. ALL WELDS SHALL BE BY A CERTIFIED WELDER.
25. ALL WELDS AND BOLTING TO MEET APPROVAL OF SPECIAL INSPECTOR AS REQUIRED BY BUILDING OFFICIAL.
26. ALL STEEL SHALL BE PROPERLY PRIMED EXCEPT AREAS THAT REQUIRE FIELD WELDING (i.e. TOP OF BEAMS).
27. SEE ARCHITECTURAL, MECHANICAL & ELECTRICAL FOR ADDITIONAL STEEL MEMBERS (BRACKETS, ANGLES, ETC...) REQUIRED.
28. STEEL MEMBERS SHALL NOT BE CUT, DRILLED OR TORCHED FOR PIPES, ETC. UNLESS SPECIFICALLY DETAILED.
29. ANY MODIFICATION OF STRUCTURAL MEMBERS NOT SPECIFICALLY DETAILED ON THE STRUCTURAL PLANS IS NOT PERMITTED WITHOUT PRIOR APPROVAL.
30. ANY CONNECTIONS NOT DETAILED ON STRUCTURAL PLANS SHALL BE PROVIDED BY THE STEEL DETAILER. SHOP DRAWINGS FOR ALL FABRICATED STEEL CONNECTIONS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND INSTALLATION.

STEEL DECKING

31. STEEL DECK TO MEET REQUIREMENTS OF STEEL DECK INSTITUTE. ALL DECK SHALL BE PROVIDED TO SPAN A MINIMUM OF THREE SUPPORTS.
32. ROOF DECKING TO BE TYPE VERCO HSB 20 GA GALVANIZED UNLESS NOTED OTHERWISE.
33. FASTEN ROOF DECK w/ 3/4"dia PUDDLE WELDS 36/7 PATTERN AT SUPPORTS AND AT 12" O.C. EDGES. FASTEN PANEL SEAMS w/ 1 1/2" WELDED SIDE LAPS AT 12" O.C. REQUIRED DIAPHRAGM CAPACITY = 1,100 PLF (ASD). MECHANICAL FASTENERS MAY BE USED. SUBMIT DESIGN FOR APPROVAL.
34. REINFORCE DECK OPENING FOR SKYLIGHTS, ACCESS HATCHES, MECHANICAL UNITS, ETC... WITH STEEL ANGLE ON ALL UNSUPPORTED EDGES WELDED IN PLACE. ANGLES SHALL SPAN BETWEEN JOIST AND BETWEEN OTHER ANGLES AS REQUIRED. STRUCTURAL STEEL SUPPLIER SHALL INCLUDE OPENINGS OF THIS TYPE IN ITS BID. SEE PLANS FOR ADDITIONAL FRAMING REQUIREMENTS AT OPENINGS.
35. SUPPORT ALL DECKING AT RIDGES & VALLEYS w/ STEEL BENT PLATE. SEE PLANS & DETAILS.

GENERAL TILT UP CONCRETE NOTES:

1. TILT-UP SUBCONTRACTOR SHALL DETERMINE PANEL WIDTHS FOR OPTIMAL LIFTING IN COORDINATION w/ ARCHITECTURAL REQUIREMENTS. SUBMIT SHOP DRAWINGS COMPLYING w/ SPECIFICATIONS HEREIN TO ENGINEER FOR APPROVAL.
2. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE PCI DESIGN HANDBOOK - PRECAST AND PRE STRESSED CONCRETE, THE 2021 INTERNATIONAL BUILDING CODE AND LOCAL ORDINANCES.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION OF CONCRETE MEMBERS. CONTRACTOR SHALL COORDINATE PANEL WIDTHS w/ ARCHITECTURAL ELEVATIONS. SUBMIT SHOP DRAWINGS FOR APPROVAL.
4. CONCRETE FOR TILT-UP MEMBERS SHALL HAVE A MIN. COMPRESSIVE STRENGTH OF 4,000 PSI.
5. REINFORCING STEEL TO BE MANUFACTURED UNDER ASTM A615, GRADE 60, DEFORMED. ASTM A706 REQUIRED FOR REINFORCING STEEL WHICH REQUIRES WELDING. PREHEATING IS REQUIRED FOR REBAR WELDING.
6. WELDED WIRE MESH TO BE IN COMPLIANCE WITH ASTM A185, PLAIN, COLD DRAWN, AND DEFORMED STEEL WELDED WIRE FABRIC TO BE IN COMPLIANCE WITH ASTM A497, COLD DRAWN.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION BRACING, STRONG BACKS, SHORING, ETC... AS REQUIRED FOR PROJECT. BRACE WALLS UNTIL ROOFS AND FLOORS ARE PROPERLY CONNECTED.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER ERECTION OF ALL CONCRETE MEMBERS.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER PLACEMENT OF ALL EMBEDMENT PLATES, ANCHORS, BOLTS, ETC...
10. CONTRACTOR SHALL COORDINATE WITH OWNER FOR ALL PANEL FINISH REQUIREMENTS.
11. ALL EMBEDMENT PLATES AND OTHER CONNECTIONS NOT DETAILED, SHALL BE ENGINEERED AND DETAILED BY TILT-UP SUB CONTRACTOR. PROVIDE SHOP DRAWINGS AND CALCULATIONS FOR REVIEW.
12. SEE PLANS FOR TYPICAL WALL PANEL REINFORCING AND CONNECTIONS - TYP.
13. PATCH ALL BLEMISHES AND HONEY COMBING AS DIRECTED BY ENGINEER.
14. PANEL REINFORCING SHOWN IS FOR IN-PLACE REQUIREMENTS. TILT-UP SUB CONTRACTOR SHALL PROVIDE ANY ADDITIONAL STEEL REQUIRED FOR LIFTING PANELS.

DESIGN CRITERIA

1. GOVERNING BUILDING CODE: 2021 INTERNATIONAL BUILDING CODE (IBC)
2. ROOF LIVE LOADING:
    a. ROOF LIVE LOAD. . . . . 20 PSF
    b. ROOF SNOW LOAD. . . . . 20 PSF
        1. GROUND SNOW LOAD, Pg . . . . . 30 PSF
        2. SNOW EXPOSURE FACTOR, Ce 1.0
        3. IMPORTANCE FACTOR, Is 1.0
        3. THERMAL FACTOR, Ct 1.0
3. ROOF DEAD LOADS:
    a. FLAT ROOF. . . . . 20 PSF
4. EARTHQUAKE:
    a. RISK CATEGORY II
    b. SEISMIC DESIGN CATEGORY . . . . . D
    c. SPECTRAL RESPONSE ACCELERATIONS:
        S_S = 1.3g
        S_{DS} = 1.04g
        S_1 = 0.47g
        S_{D1} = 0.47g
    d. SOIL SITE CLASS: . . . . . E
        F_A = 1.2
        F_V = 1.5
    e. IMPORTANCE FACTOR, Ie 1.0
    f. DESIGN BASE SHEAR . . . . . Cs x W
    g. SEISMIC RESPONSE COEFFICIENT, Cs 0.117
    h. ANALYSIS PROCEDURE . . . . . EQUIV. LATERAL FORCE
    i. BASIC SEISMIC FORCE RESISTING SYSTEM . . . . . SPECIAL CONCERETE WALLS, SPECIAL BRACED FRAMES
    j. RESPONSE MODIFICATION FACTOR, R . . . . . VARIES
5. WIND:
    a. BASIC WIND SPEED (3 SECOND GUST) . . . . . 103 MPH (ULTIMATE)
    b. EXPOSURE C
    c. INTERNAL PRESSURE COEFFICIANT, GC Pi 0.18
    d. COMPONENTS AND CLADDING PRESSURE . . . . . VARIES
6. FOUNDATION:
    a. SOILS REPORT BY . . . . . EARTHTEC ENGINEERING
    b. DATED: . . . . . JUNE 17, 2024; JUNE 1, 2024
    c. SOIL BEARING PRESSURE . . . . . 2,000 PSF ON 36" STRUCTURAL FILL; 4,000 PSF ON RAMMED AGGREGATE PIERS

DEFERRED SUBMITTALS

1. THE CONTRACTOR SHALL SUBMIT THE FOLLOWING DOCUMENTS TO THE ARCHITECT AND ENGINEER OF RECORD FOR REVIEW AND APPROVAL. THE DOCUMENTS MUST BE PREPARED AND STAMPED BY AN ENGINEER LICENSED IN THE STATE OF UTAH. THE DOCUMENTS MAY BE SUBMITTED AFTER THE BUILDING PERMIT IS ISSUED, BUT MUST BE SUBMITTED AND APPROVED PRIOR TO COMMENCING FABRICATION OR CONSTRUCTION OF THE COMPONENTS.
    a. PRE-FAB ROOF JOISTS
    b. SEISMIC BRACING OF FIRE SUPRESSION PIPES
    c. SEISMIC ATTACHMENT OF ROOF TOP MECHANICAL EQUIPMENT

MHTN ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

DYNAMIC STRUCTURES
744 S 400 E Orem, UT 84097 | 801.229.9020

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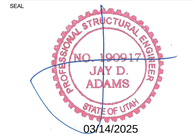
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SHEET NUMBER
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SPECIAL INSPECTION SCHEDULE

SOILS (IBC 1705.6)

REQ'D	TASK	INSPECTION FREQUENCY CONT.	INSPECTION FREQUENCY PERIODIC	COMMENTS:
X	VERIFY ADEQUATE MATERIALS BELOW FOOTINGS		♦	PRIOR TO PLACEMENT OF CONCRETE.
X	EXCAVATION EXTEND TO PROPER DEPTH AND MATERIALS		♦	PRIOR TO PLACEMENT OF COMPACTED FILL OR CONCRETE.
X	CLASSIFICATION AND TESTING OF FILL MATERIALS		♦	CHECK CLASSIFICATION AND GRADATIONS AT EACH LIFT, BUT NOT LESS THAN ONCE FOR EACH 10,000 FT^2 OF SURFACE AREA.
X	VERIFY PROPER FILL MATERIALS, LIFT THICKNESSES AND IN-PLACE DENSITIES	♦		
X	VERIFY PROPERLY PREPARED SITE AND SUBGRADE		♦	PRIOR TO PLACEMENT OF CONCRETE.

CONCRETE CONSTRUCTION (IBC 1705.3)

REQ'D	TASK	INSPECTION FREQUENCY CONT.	INSPECTION FREQUENCY PERIODIC	COMMENTS:
X	REINFORCING STEEL PLACEMENT		♦	VERIFY SIZE, CLEARANCES, SPLICES AND PROPER TIES.
	REINFORCING BAR WELDING a. WELDABILTY OF NON ASTM A706 BARS b. SINGLE PASS FILLED WELDS < $\frac{5}{16}$" c. ALL OTHER WELDS	♦	♦ ♦	
X	CAST IN ANCHORS		♦	VERIFY MIX DESIGN MEETS STRENGTH AND EXPOSURE REQUIREMENTS LISTED ON APPROVED PLANS.
X	POST-INSTALLED ANCHORS a. ADHESIVE ANCHORS INSTALLED HORIZ. or UPWARDLY INCLINED RESISTING SUSTAINED TENSION LOADS b. POST INSTALLED ANCHORS NOT DEFINED IN a.	♦	♦	IN ACCORDANCE WITH APPROVED ICC-ES REPORT. PERIODIC INSPECTIONS ALLOWED IF STATED IN ES REPORT.
X	VERIFY REQUIRED DESIGN MIX		♦	VERIFY MIX DESIGN MEETS STRENGTH AND EXPOSURE REQUIREMENTS LISTED ON APPROVED PLANS.
X	SLUMP, AIR + TEMPERATURE TESTS, PREPARE STRENGTH TEST SAMPLES	♦		
X	CONCRETE PLACEMENT	♦		INCLUDES SAMPLING FOR AIR, SLUMP, STRENGTH AND TEMPERATURE TECHNIQUES.
X	CURING TEMPERATURE MAINTENANCE		♦	
	PRESTRESSED CONCRETE a. PRESTRESSING FORCES b. GROUTING OF BONDED TENDONS	♦ ♦		
	ERECTION OF PRECAST MEMBERS		♦	
	POST-TENSIONED CONCRETE STRENGTH		♦	
X	INSPECT FORMWORK		♦	

COLD-FORMED STEEL CONSTRUCTION (IBC 1705.11.2 & 1705.12.3)

REQ'D	TASK	INSPECTION FREQUENCY CONT.	INSPECTION FREQUENCY PERIODIC	COMMENTS:
	COMPONENTS OF WIND AND SEISMIC-FORCE RESISTING SYSTEMS		♦	VERIFY PROPER SCREW ATTACHMENT, BOLTING AND ANCHORING OF SHEAR WALLS, BRACES AND HOLDOWNS HAVING A FASTENER SPACING ≤ 4" O.C.
	FIELD WELDING OF ELEMENTS OF MAIN LATERAL FORCE RESISTING SYSTEM.		♦	

OTHER THAN STRUCTURAL STEEL (IBC 1705.2.2)

REQ'D	TASK	INSPECTION FREQUENCY CONT.	INSPECTION FREQUENCY PERIODIC	COMMENTS:
	STEEL ROOF & FLOOR DECK:			
X	MATERIAL VERIFICATION OF STEEL DECK		♦	IDENTIFICATION MARKINGS PER APPLICABLE ASTM STANDARD
X	ROOF AND DECK WELDS		♦	VERIFY THAT WELDS CONFORM TO AWS D1.3.
	WELDING OF REINFORCING STEEL:			
X	VERIFICATION OF WELDABILITY (EXCEPT A706 BAR)		♦	VERIFY MATERIAL IS ABLE TO CONFORM TO AWS D1.4.

INSTALLATION OF OPEN-WEB STEEL JOISTS AND GIRDERS (IBC 1705.2.3)

REQ'D	TASK	INSPECTION FREQUENCY CONT.	INSPECTION FREQUENCY PERIODIC	COMMENTS:
X	END CONNECTIONS		♦	SJI 2207.1
X	BRIDGING - HORIZONTAL OR DIAGONAL a. STANDARD BRIDGING b. NON-STANDARD BRIDGING		♦ ♦	SJI 2207.1

MASONRY CONSTRUCTION (IBC 1705.4)

REQ'D	TASK	INSPECTION FREQUENCY CONT.	INSPECTION FREQUENCY PERIODIC	COMMENTS:
	MINIMUM TESTING (TMS - 402/602-16):			
	VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) FOR SELF-CONSOLIDATING GROUT.		♦	COMPRESSIVE STRENGTH TESTS PER ASTM C 1019 FOR SLUMP FLOW AND ASTM C 1611 FOR VSI.
	VERIFICATION OF F'_M		♦	DETERMINE COMPRESSIVE STRENGTH PER "UNIT STRENGTH" OR "PRISM TEST" AS SPECIFIED IN ARTICLE 1.4.B OF ACI 530.1 PRIOR TO CONSTRUCTION.
	PRIOR TO CONSTRUCTION (TMS - 402/602-16):			
	REVIEW MATERIAL CERTIFICATES, MIX DESIGNS, TEST RESULTS AND CONSTRUCTION PROCEDURES		♦	VERIFY MATERIALS CONFORM TO APPROVED CONSTRUCTION DOCUMENTS, MIX DESIGN, TEST RESULTS, MATERIAL CERTIFICATES, AND CONSTRUCTION PROCEDURES SHOULD BE SUBMITTED FOR REVIEW. MORTAR MIX DESIGNS SHALL CONFORM TO ASTM C 270 WHILE GROUT SHALL CONFORM TO ASTM C 476. MATERIAL CERTIFICATES SHALL BE PROVIDED FOR THE FOLLOWING: REINFORCEMENT; ANCHORS, TIES, FASTENERS, AND METAL ACCESSORIES; MASONRY UNITS; MORTAR AND GROUT MATERIALS. REVIEW COLD-WEATHER OR HOT-WEATHER CONSTRUCTION PROCEDURES.
	AS CONSTRUCTION BEGINS (TMS - 402/602-16):			
	PROPORTIONS OF SITE-PREPARED MORTAR		♦	VERIFY THAT MORTAR IS TYPE AND COLOR SPECIFIED ON APPROVED PLANS, IT CONFORMS TO ASTM C 270, AND IS MIXED PER ARTICLE 2.6.A OF ACI 530.1.
	CONSTRUCTION OF MORTAR JOINTS		♦	VERIFY MORTAR JOINTS MEET ARTICLE 3.3.B OF ACI 530.1.1
	GRADE AND SIZE OF PRE-STRESSING TENDONS AND ANCHORAGES		♦	VERIFY THAT PRE-STRESSING TENDONS CONFORM TO REQUIREMENTS OF ARTICLE 2.4B AND 2.4H OF ACI530.1
	LOCATION OF REINFORCEMENT, CONNECTORS AND ANCHORAGES.		♦	VERIFY REINFORCEMENT IS PLACED IN ACCORDANCE WITH ARTICLE 3.4 OF 530.1.
	PRE-STRESSING TECHNIQUE		♦	VERIFY PRE-STRESSING TECHNIQUE CONFORMS TO ARTICLE 3.6B OR ACI 530.1
	PROPERTIES OF THIN BED MORTAR FOR AAC MASONRY	♦	♦	VERIFY REINFORCEMENT IS PLACED IN ACCORDANCE WITH ARTICLE 3.4 OF 530.1.
	PRIOR TO GROUTING (TMS - 402/602-16):			
	GROUT SPACE		♦	VERIFY GROUT SPACE IS FREE OF MORTAR DROPPINGS, DEBRIS, LOOSE AGGREGATE, AND OTHER DELETERIOUS MATERIALS AND THAT CLEANOUTS ARE PROVIDED PER ARTICLE 3.2D AND 3.2F OF ACI 530.1
	GRADE, TYPE AND SIZE OF REINFORCEMENT, ANCHOR BOLTS AND ANCHORAGES.		♦	VERIFY REINFORCEMENT, JOINT REINFORCEMENT, ANCHOR BOLTS AND VENEER ANCHORS COMPLY WITH APPROVED PLANS AND SECTIONS 1.6 OF ACI 530.
	PLACEMENT OF REINFORCEMENT, CONNECTORS AND ANCHORAGES.		♦	VERIFY REINFORCEMENT, JOINT REINFORCEMENT, ANCHOR BOLTS AND VENEER ANCHORS ARE INSTALLED PER APPROVED PLANS AND ARTICLES 3.2.E, 3.4, AND 3.6.A OF ACI 530.1.
	PROPORTIONS OF SITE-PREPARED GROUT.		♦	VERIFY GROUT PROPORTIONS MEET ASTM C 476 AND A SLUMP BETWEEN 8-11 INCHES. SELF-CONSOLIDATED GROUT SHALL NOT BE PROPORTIONED ONSITE.
	CONSTRUCTION OF MORTAR JOINTS		♦	VERIFY MORTAR JOINTS PLACED IN ACCORDANCE WITH ARTICLE 3.3.B OF ACI 530.1.
	DURING CONSTRUCTION (TMS - 402/602-16):			
	SIZE AND LOCATION OF STRUCTURAL ELEMENTS		♦	VERIFY LOCATIONS OF STRUCTURAL ELEMENTS PER APPROVED PLANS AND CONFIRM TOLERANCES MEET ARTICLE 3.3.F OF ACI 530.1.
	TYPE, SIZE AND LOCATION OF ANCHORS, FRAMES, ETC.		♦	VERIFY CORRECT ANCHORAGES AND CONNECTIONS ARE PROVIDED PER APPROVED PLANS AND SECTIONS 1.16.4.3 AND 1.17.1 OF ACI 530.
	WELDING OF REINFORCEMENT	♦		VERIFY CONFORMANCE WITH SECTIONS 2.1.7.7.2, 3.3.3.4 (c) AND 8.3.3.4 (b) OF ACI 530
	APPLICATION AND MEASUREMENT OF PRE-STRESSING FORCE	♦		VERIFY CONFORMANCE WITH ARTICLE 3.6B OF ACI 530.1
	PLACEMENT OF GROUT	♦		
	PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (<40°F) OR HOT WEATHER (>90°F).		♦	VERIFY COLD-WEATHER CONSTRUCTION COMPLIES WITH ARTICLE 1.8.C OF ACI 530.1 AND HOT WEATHER CONSTRUCTION PER ARTICLE 1.8.D OF ACI 530.1.
	PLACEMENT OF GROUT AND PRE-STRESSING GROUT FOR BONDED TENDONS	♦		VERIFY COMPLIANCE WITH ARTICLE 3.5, 3.6C OF ACI 530.1
	OBSERVATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND / OR PRISMS.		♦	CONFIRM SPECIMENS/ PRISMS ARE PERFORMED AS REQUIRED BY ARTICLE 1.4 OF ACI 530.1.

WOOD CONSTRUCTION (IBC 1705.11.1)

REQ'D	TASK	INSPECTION FREQUENCY CONT.	INSPECTION FREQUENCY PERIODIC	COMMENTS:
	COMPONENTS OF WIND AND SEISMIC-FORCE RESISTING SYSTEMS		♦	VERIFY PROPER SCREW ATTACHMENT, BOLTING AND ANCHORING OF SHEAR WALLS, BRACES AND HOLDOWNS HAVING A FASTENER SPACING ≤ 4" O.C.
	FIELD GLUING OF MAIN LATERAL FORCE RESISTING SYSTEM	♦		

STRUCTURAL STEEL CONSTRUCTION (IBC 1705.2)

REQ'D	TASK	INSPECTION TYPE Q.C.	INSPECTION TYPE Q.A.	COMMENTS:
	PRIOR TO WELDING (TABLE N5.4-1, AISC 360-16):			
X	VERIFY WELDING PROCEDURES	P	P	
X	MANUFACTURER CERTIFICATIONS	P	P	
X	MATERIAL IDENTIFICATION	O	O	VERIFY TYPE AND GRADE OF MATERIAL.
X	WELDER IDENTIFICATION	O	O	VERIFY THERE IS A SYSTEM IN PLACE TO IDENTIFY THE WELDER WHO HAS WELDED A JOINT OR MEMBER.
X	FIT-UP GROOVE WELDS	O	O	VERIFY JOINT PREPARATION, DIMENSIONS, CLEANLINESS, TACKING AND BACKING.
X	ACCESS HOLES	O	O	VERIFY CONFIGURATION AND FINISH.
X	FIT-UP FILLET WELDS	O	O	VERIFY ALIGNMENT, GAPS AT ROOT, CLEANLINESS OF STEEL SURFACES, TACK WELD QUALITY AND LOCATION.
X	CHECK WELDING EQUIPMENT	O	O	
	DURING WELDING (TABLE N5.4-2, AISC 360-16):			
X	USE OF QUALIFIED WELDERS	O	O	VERIFY THAT WELDERS ARE APPROPRIATELY QUALIFIED.
X	CONTROL AND HANDLING OF WELDING CONSUMABLES	O	O	VERIFY PACKAGING AND EXPOSURE CONTROL.
X	CRACKED TACK WELDS	O	O	VERIFY WELDING IS NOT OVER A CRACKED TACK WELD.
X	ENVIRONMENTAL CONDITIONS	O	O	VERIFY WIND SPEED IS WITHIN LIMITS AS WELL AS PRECIPITATION AND TEMPERATURE.
X	WPS FOLLOWED	O	O	VERIFY ITEMS SUCH AS WELDING EQUIPMENT SETTINGS, TRAVEL SPEED, WELDING MATERIALS, SHIELDING GAS TYPE/FLOW RATE, PREHEAT APPLIED, INTERPASS TEMPERATURE MAINTAINED, AND PROPER POSITION.
X	WELDING TECHNIQUES	O	O	VERIFY INTERPASS AND FINAL CLEANING, EACH PASS IS WITHIN PROFILE LIMITATIONS, AND QUALITY OF EACH PASS.
	AFTER WELDING (TABLE N5.4-3, AISC 360-16):			
X	WELDS CLEANED	O	O	VERIFY THAT WELDS HAVE BEEN PROPERLY CLEANED.
X	SIZE, LENGTH AND LOCATION OF WELDS	P	P	
X	WELDS MEET VISUAL ACCEPTANCE CRITERIA	P	P	
X	ARC STRIKES	P	P	
	PRIOR TO BOLTING (TABLE N5.6-1 AISC 360-16):			
X	MANUFACTURERS CERTIFICATIONS FOR FASTENERS	O	P	
X	FASTENERS MARKED w/ ASTM REQUIREMENTS	O	O	
X	PROPER FASTENERS SELECTED FOR DETAIL	O	O	
X	PROPER PROCEDURE FOR DETAIL	O	O	
X	CONNECTING ELEMENTS	O	O	
X	PRE-INSTALLATION VERIFICATION TESTING	P	O	
X	PROPER STORAGE OF FASTENERS	O	O	
	DURING BOLTING (TABLE N5.6-2 AISC 360-16):			
X	FASTENER ASSEMBLIES	O	O	
X	JOINTS SNUG TIGHT PRIOR TO PRETENSIONING	O	O	
X	PROPER WRENCH USAGE	O	O	
X	FASTENERS PRETENSIONED	O	O	
	AFTER BOLTING (TABLE N5.6-3, AISC 360-16):			
X	STRUCTURAL STEEL DETAILS	P	P	

O- OBSERVE THESE ITEMS ON A RANDOM BASIS.

P- PERFORM THESE TASKS FOR EACH WELDED / BOLTED JOINT OR MEMBER (AISC 360-10 N5.4)

STATEMENT OF SPECIAL INSPECTIONS

1. THE PROJECT OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED BELOW. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. THESE INSPECTIONS ARE IN ADDITION TO THE INSPECTIONS REQUIRED BY THE BUILDING DEPARTMENT OF THE LOCAL JURISDICTION.

2. SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE WITH APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALE BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT A PHASE OF THE WORK. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL PRIOR TO THE START OF WORK.

3. SPECIAL INSPECTIONS FOR EACH TASK SHALL BE CARRIED OUT IN COMPLIANCE WITH REQUIREMENTS PER THE CURRENT IBC AND OTHER MATERIAL STANDARDS.

FABRICATION SHOP REQUIREMENTS

4. WHERE FABRICATION OF STRUCTURAL LOAD BEARING MEMBERS AND ASSEMBLIES IS BEING PERFORMED ON THE PREMISES OF A FABRICATORS SHOP, SPECIAL INSPECTIONS REQUIRED BELOW SHALL BE PROVIDED IN THE SHOP DURING THE FABRICATION PROCESS. THIS REQUIREMENT MAY BE EXCEPTED IF THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. A CERTIFICATE SHALL BE REQUIRED TO VERIFY SUCH APPROVAL. AT COMPLETION OF THE FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DRAWINGS.

MHTN ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

DYNAMIC STRUCTURES
744 S 400 E Orem, UT 84097 | 801.229.9020

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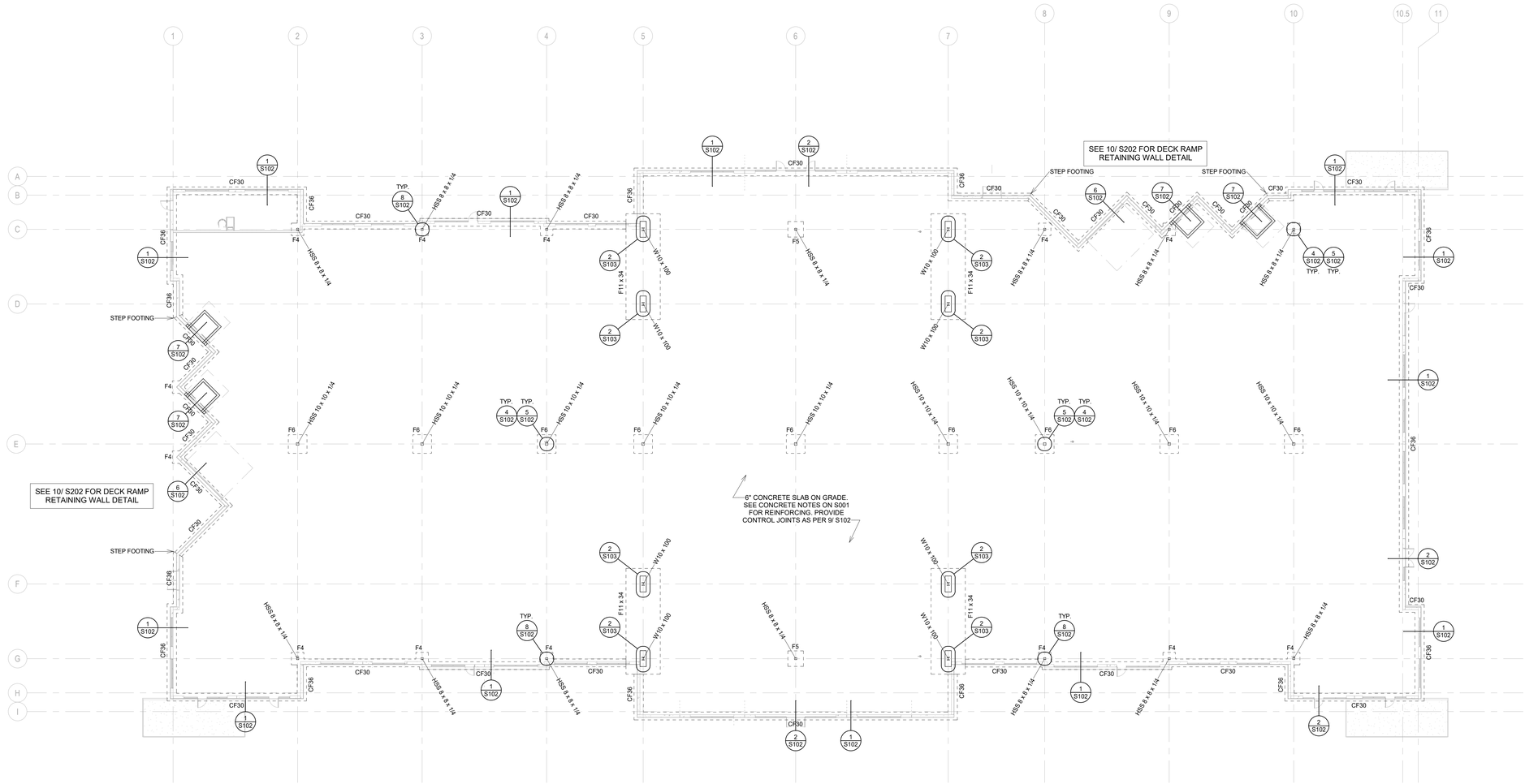
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NOTE:
PROVIDE 4" GRAVEL BASE PLUS 12" STRUCTURAL FILL UNDER SLAB ON GRADE
PROVIDE 36" STRUCTURAL FILL UNDER ALL CONTINUOUS WALLS UNDER TILT UP PANELS
PROVIDE RAMMED AGGREGATE PIERS WITH 4,000 PSF BEARING CAPACITY UNDER ALL SPOT FOOTINGS

FOOTING SCHEDULE

MARK	WIDTH	LENGTH	DEPTH	REINFORCING CROSS-WISE				REINFORCING LENGTH-WISE			
				No.	SIZE	LENGTH	SPACING	No.	SIZE	LENGTH	SPACING
CF30	30"	CONT.	12"	-	-	-	-	(3)	#5	CONT.	EQUAL
CF36	36"	CONT.	12"	-	-	-	-	(3)	#5	CONT.	EQUAL
F4	4'-0"	4'-0"	12"	(5)	#5	3'-6"	EQUAL	(5)	#5	3'-6"	EQUAL
F5	5'-0"	5'-0"	12"	(6)	#5	4'-6"	EQUAL	(6)	#5	4'-6"	EQUAL
F6	6'-0"	6'-0"	15"	(7)	#5	5'-6"	EQUAL	(7)	#5	5'-6"	EQUAL

MAT FOOTING SCHEDULE

MARK	WIDTH	LENGTH	DEPTH	REINFORCING CROSS-WISE				REINFORCING LENGTH-WISE			
				PLACEMENT	No.	SIZE	LENGTH	SPACING	PLACEMENT	No.	SIZE	LENGTH	SPACING
F11 x 34	11'-0"	34'-0"	42"	TOP	(26)	#7	10'-6"	EQUAL	TOP	(22)	#7	33'-6"	EQUAL
				BOTTOM	(52)	#7	10'-6"	EQUAL	BOTTOM	(22)	#8	33'-6"	EQUAL

1. TOP REINFORCEMENT SHOULD BE LOCATED 2" FROM TOP OF FOOTING
2. BOTTOM REINFORCEMENT SHOULD BE LOCATED 3" FROM BOTTOM OF FOOTING

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MOUNTAIN TECH NORTH 4

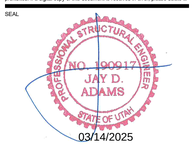
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PROJECT NO. 4950225

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REVISIONS
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NO	DATE	DESCRIPTION

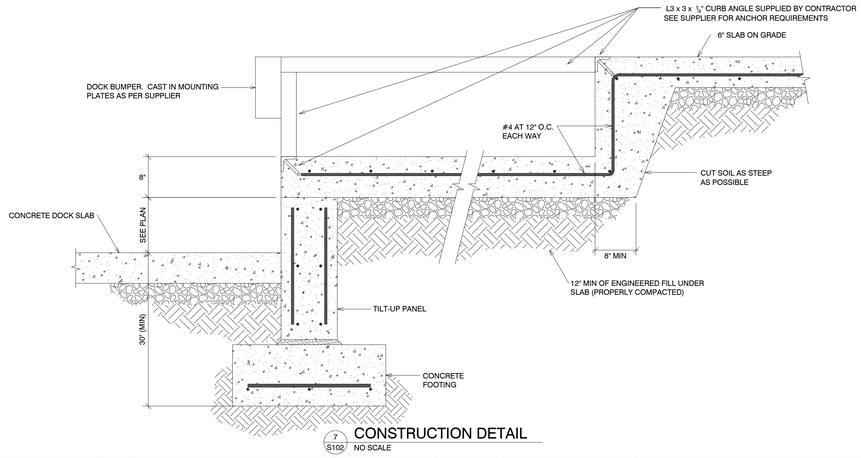
ISSUE
PERMIT SET

SHEET NAME
FOOTING & FOUNDATION PLAN

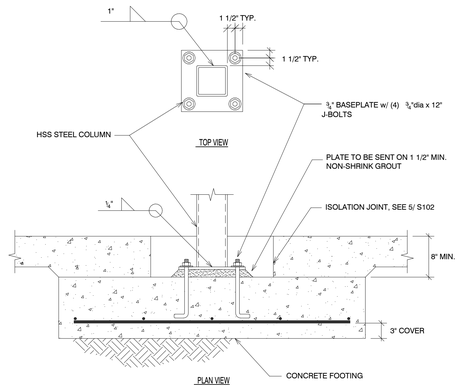
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SHEET NUMBER
S101

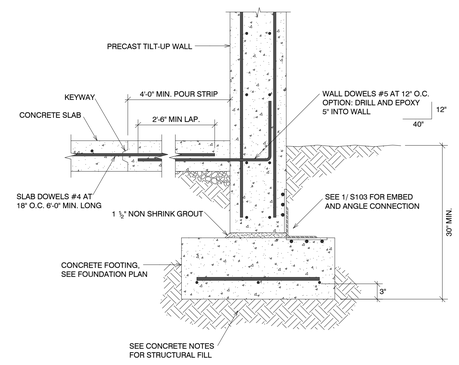
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7 S102 CONSTRUCTION DETAIL
NO SCALE

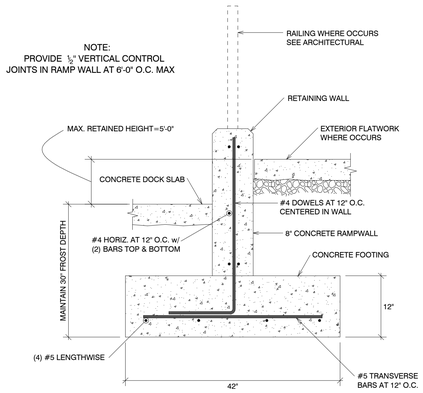


4 S102 CONSTRUCTION DETAIL
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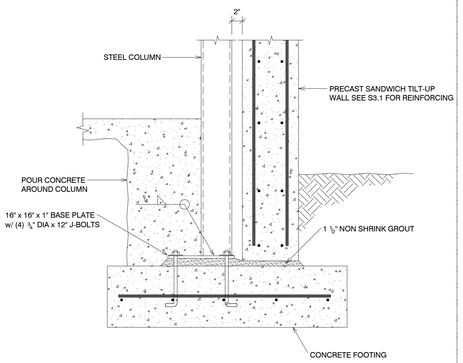


NOTE:
SEE DETAIL 3/ S102 FOR DETAIL AT
FULL HEIGHT WINDOW LOCATIONS

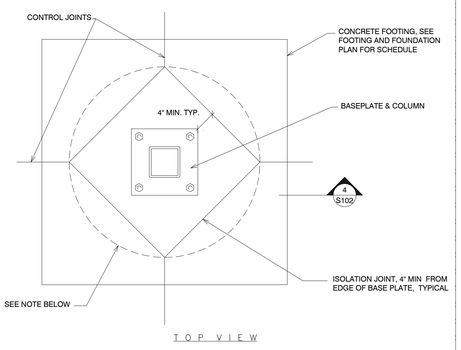
1 S102 CONSTRUCTION DETAIL
NO SCALE



10 S102 CONSTRUCTION DETAIL
NO SCALE

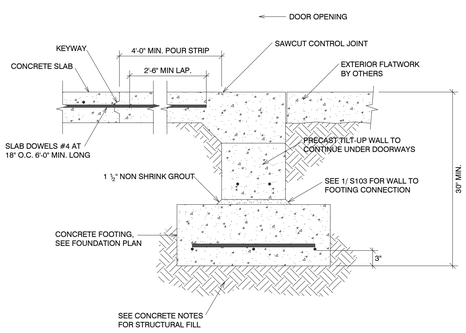


8 S102 CONSTRUCTION DETAIL
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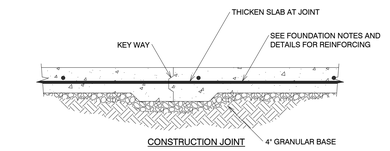


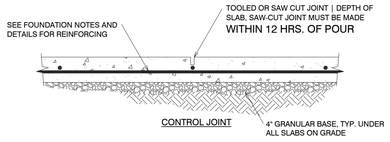
NOTE:
WHERE CONTROL JOINTS ARE NOT USED IN ALL FOUR DIRECTIONS, USE CIRCULAR ISOLATION JOINT.

5 S102 CONSTRUCTION DETAIL
NO SCALE



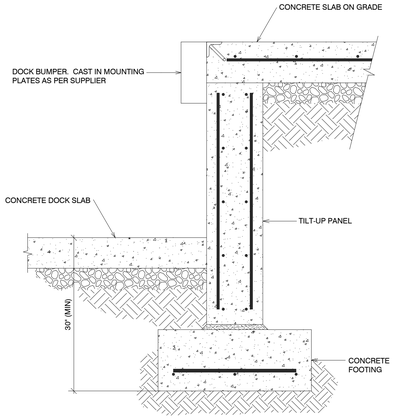
2 S102 CONSTRUCTION DETAIL
NO SCALE



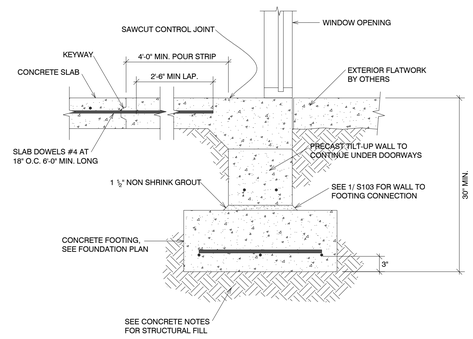


PROVIDE CONTROL JOINTS AT APPROX.
10'-0" EACH WAY SEE SPECIFICATIONS
FOR SUBGRADE TREATMENT

9 S102 CONSTRUCTION DETAIL
NO SCALE



6 S102 CONSTRUCTION DETAIL
NO SCALE



3 S102 CONSTRUCTION DETAIL
NO SCALE

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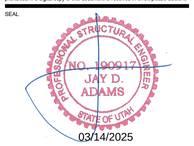
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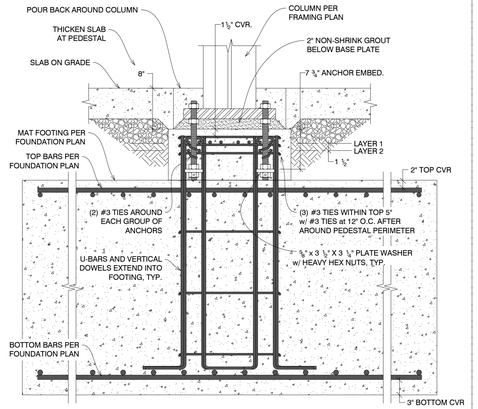
ISSUE
PERMIT SET

SHEET NAME
CONSTRUCTION DETAILS

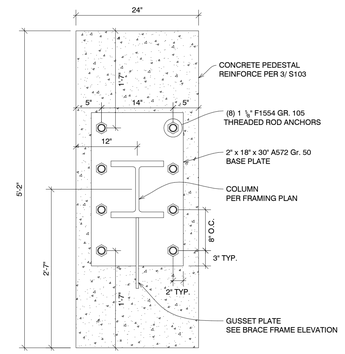
SCALE: AS SHOWN

SHEET NUMBER
S102

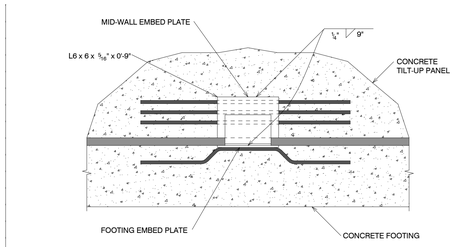
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5 S103 CONSTRUCTION DETAIL
NO SCALE

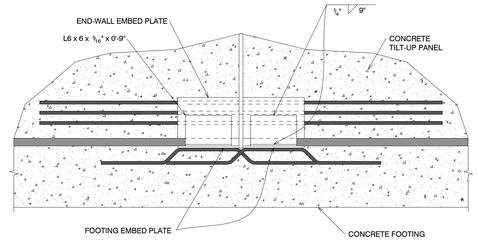


2 S103 CONSTRUCTION DETAIL
NO SCALE

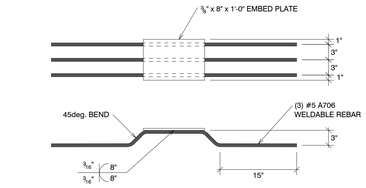


CONNECTION ALONG PANEL LENGTH

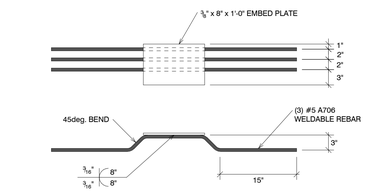
NOTE:
SEE TILT-UP PANEL ELEVATIONS FOR REQUIRED CONNECTION LOCATIONS



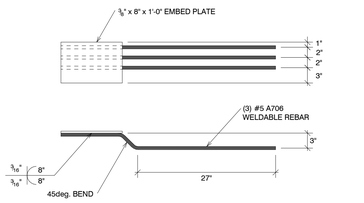
CONNECTION AT PANEL ENDS



FOOTING EMBED PLATE

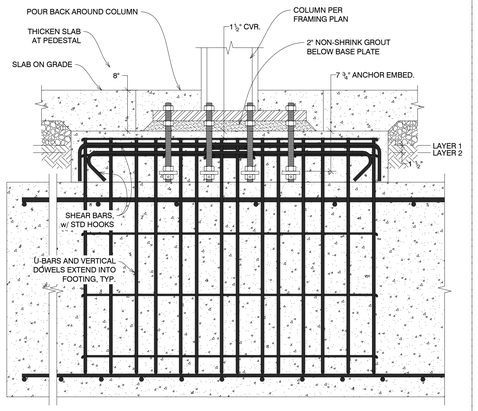


MID-WALL EMBED PLATE

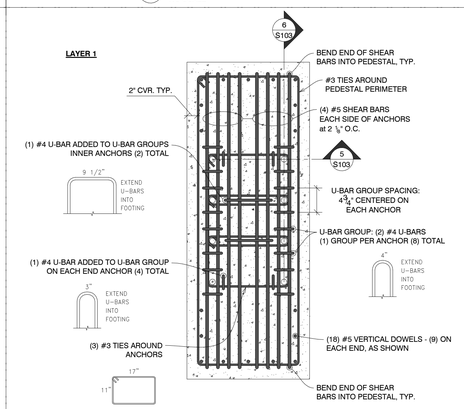


END WALL EMBED PLATE

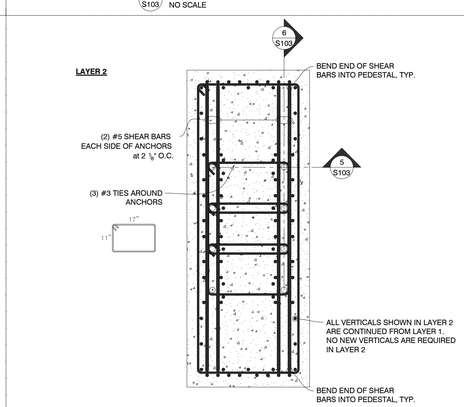
1 S103 CONSTRUCTION DETAIL
NO SCALE



6 S103 CONSTRUCTION DETAIL
NO SCALE



3 S103 CONSTRUCTION DETAIL
NO SCALE



4 S103 CONSTRUCTION DETAIL
NO SCALE

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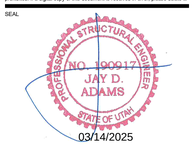
MOUNTAIN TECH NORTH 4

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NO.	DATE	DESCRIPTION

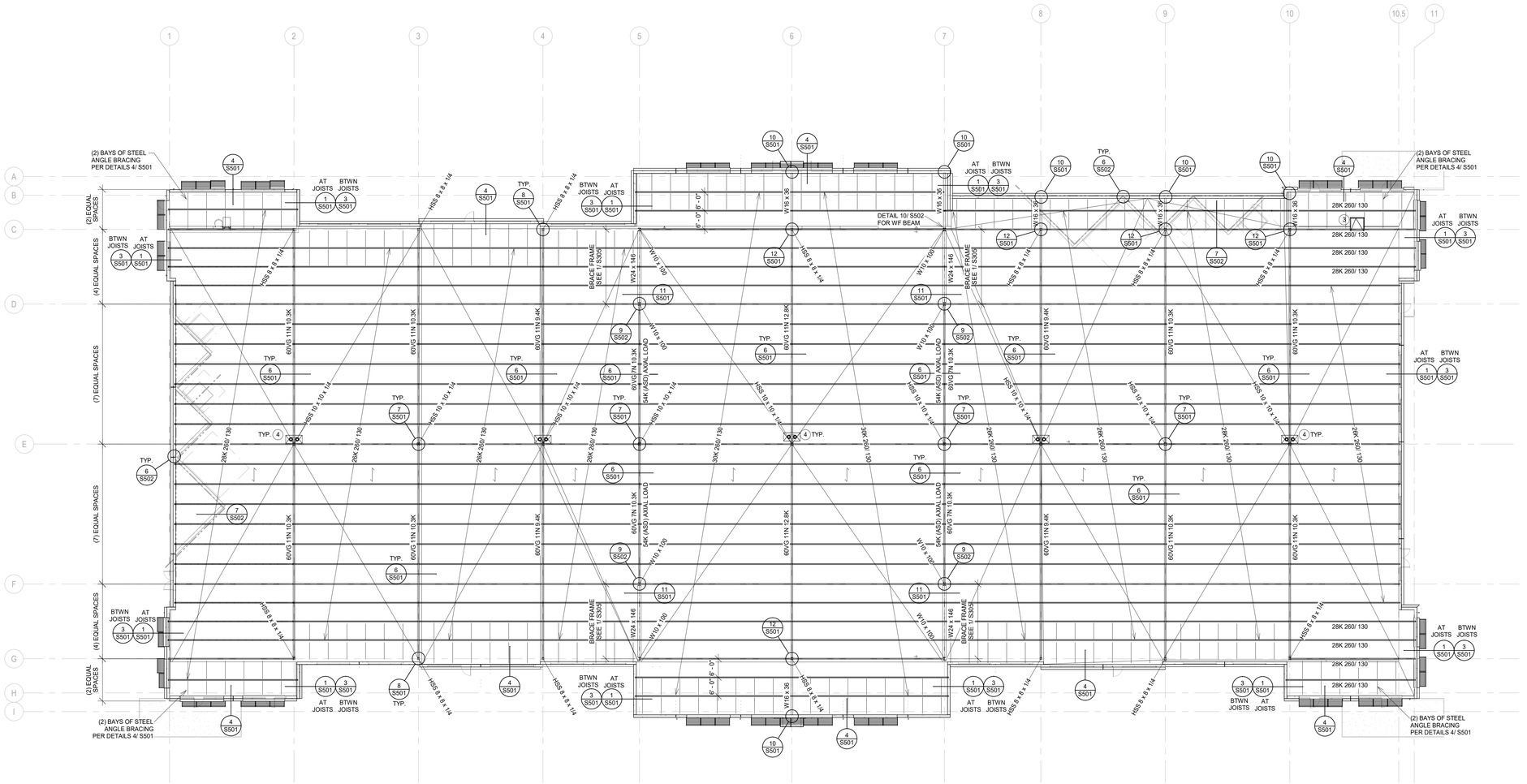
ISSUE
PERMIT SET

SHEET NAME
CONSTRUCTION DETAILS

SCALE: AS SHOWN

SHEET NUMBER
S103

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ROOF FRAMING NOTES

1. SEE NOTES ON S001 FOR ROOF DECK AND ROOF SHEATHING SPCIFICATIONS
2. ALL JOIST BRIDGING TO BE DETERMINED AND DETAILED BY JOIST SUPPLIER
3. SEE 1 AND 2/ S502 FOR DECK REINFORCING AROUND ALL ROOF PENETRATIONS IN METAL DECK
4. SEE 3/ S502 FOR DECK REINFORCING AROUND ALL ROOF DRAINS IN METAL DECK
5. DIRECTION OF DECK SPAN
6. JOIST DESIGNER TO ACCOUNT FOR WEIGHT OF MECHANICAL UNITS. SEE MECHANICAL DRAWINGS FOR LOCATIONS AND WEIGHTS. UNITS NOT SHOWN ON FRAMING PLAN
7. DESIGN JOISTS FOR 7,000 LBS. (ASD) AXIAL FORCE FROM OUT OF PLANE WALL FORCES
8. JOIST DESIGNER TO ACCOUNT FOR DRIFT LOAD AGAINST ALL PARAPET WALLS. SEE DIAGRAMS ON 8/ S502 FOR DRIFT LOADING PROFILES
9. ALL JOIST LOADS PROVIDED ARE ASD LEVEL

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MOUNTAIN TECH NORTH 4

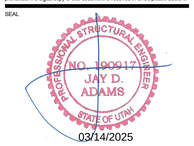
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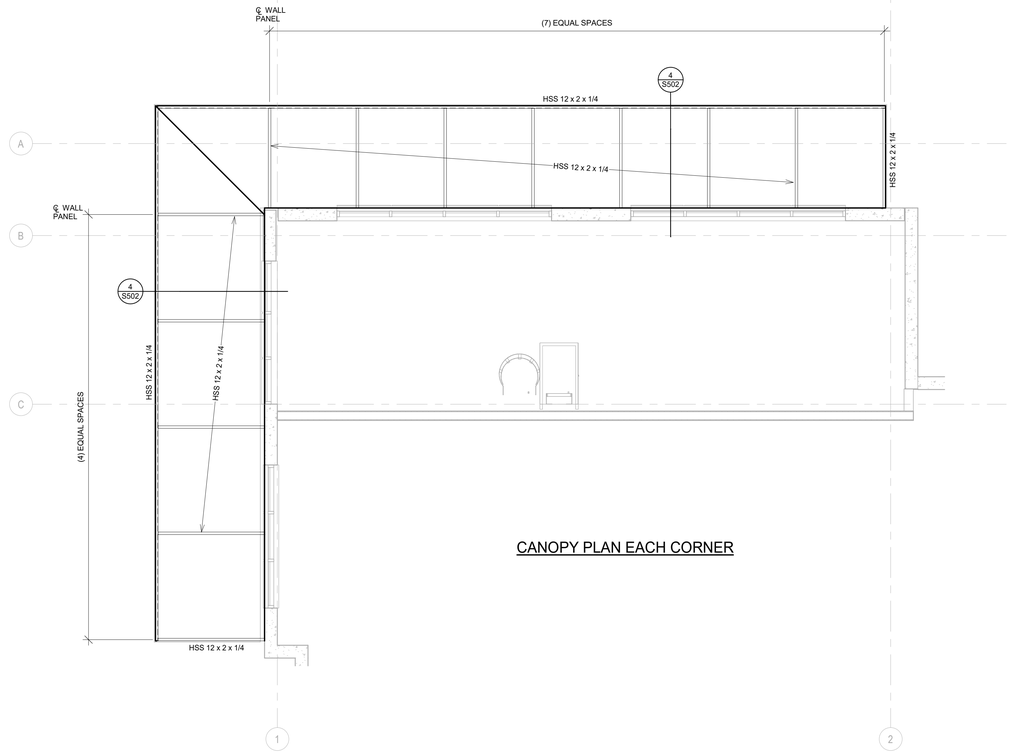
ISSUE
PERMIT SET

SHEET NAME
ROOF FRAMING PLAN

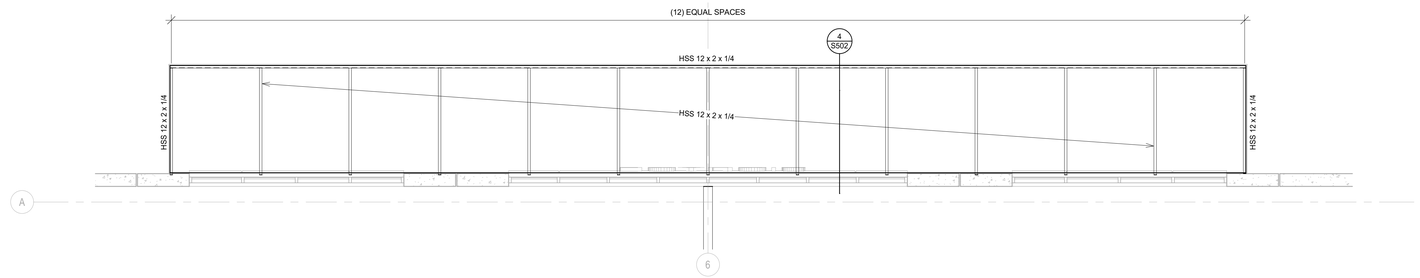
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SHEET NUMBER
S201

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CANOPY PLAN EACH CORNER



CANOPY PLAN FRONT AND BACK

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PROFESSIONAL STRUCTURAL ENGINEER
NO. 190917
JAY D. ADAMS
STATE OF UTAH
03/14/2025

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NO.	DATE	DESCRIPTION

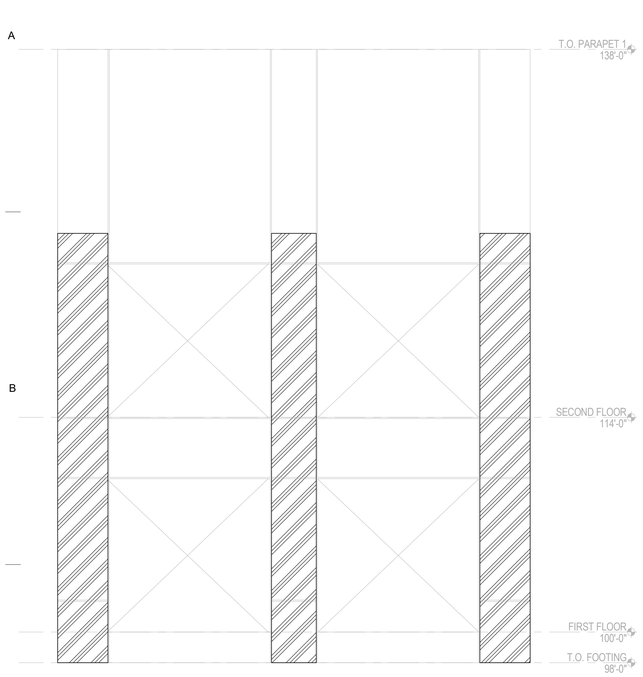
ISSUE
PERMIT SET

SHEET NAME
FIRST FLOOR PLAN - CANOPIES

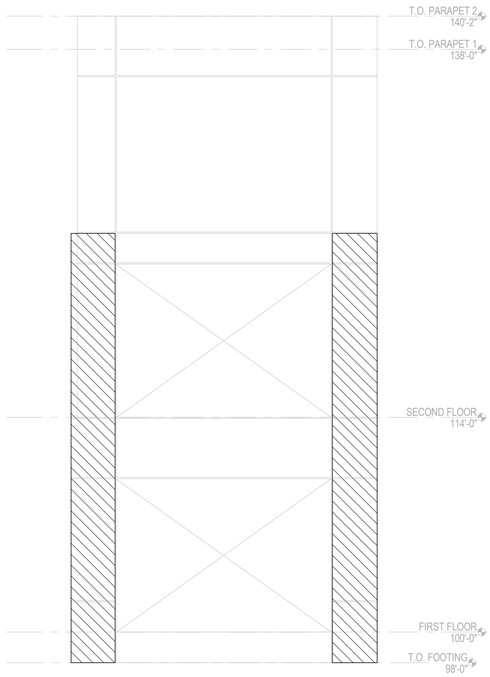
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SHEET NUMBER
S202

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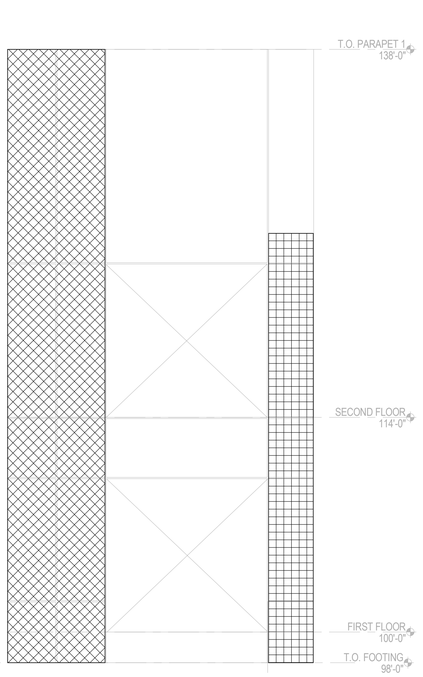


TILT UP PANEL 5

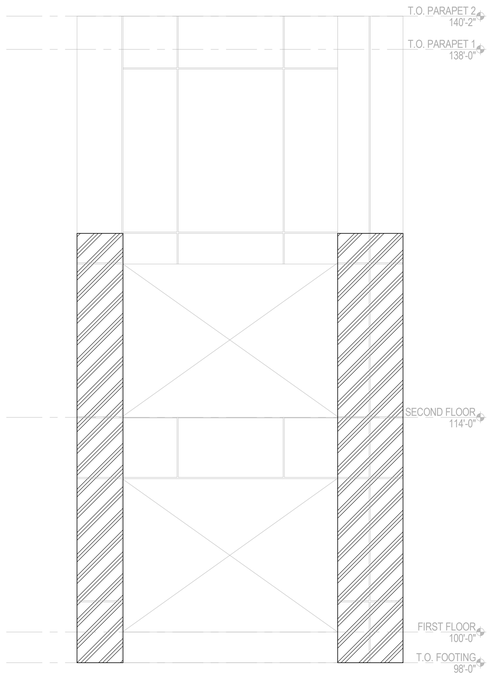


TILT UP PANEL 4

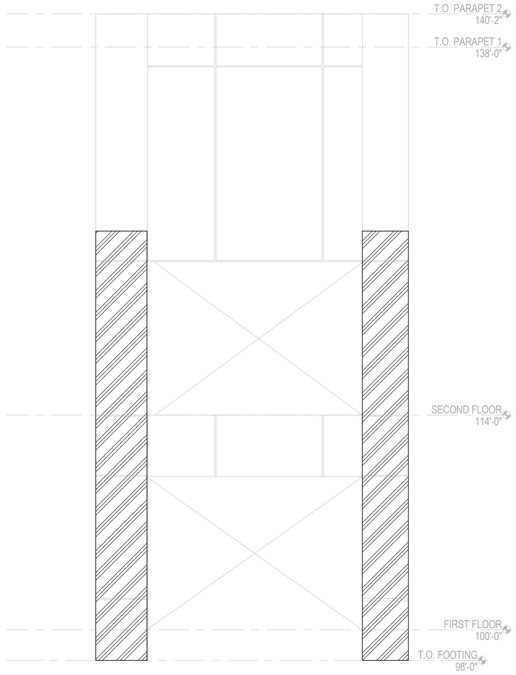
SEE S302 FOR NOTES LEGEND



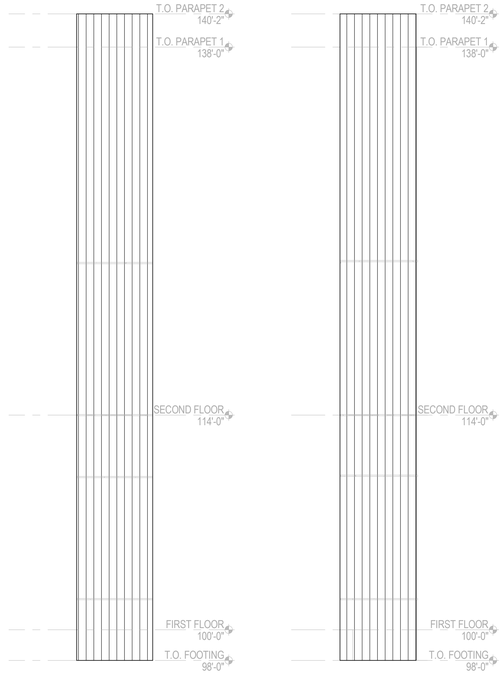
TILT UP PANEL 3



TILT UP PANEL 2.2

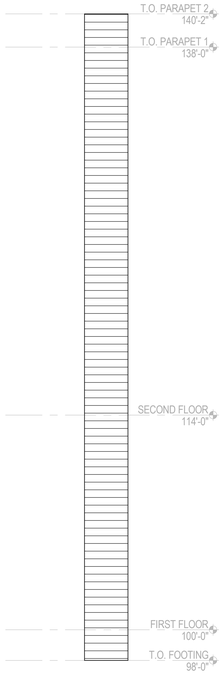


TILT UP PANEL 2

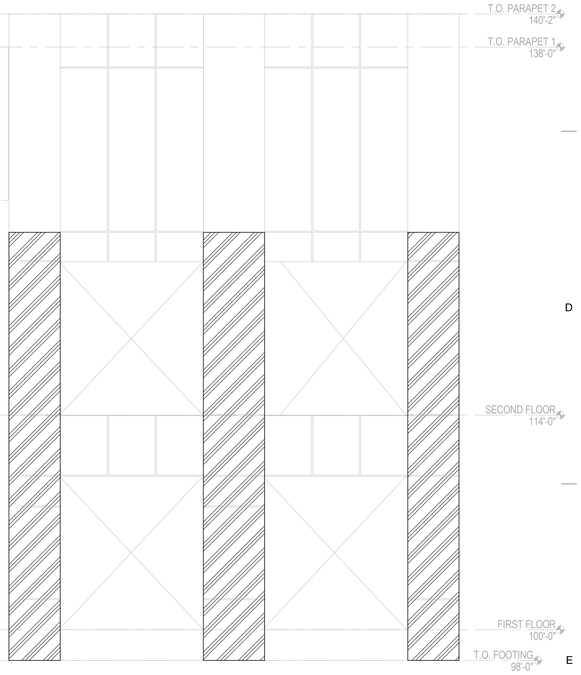


TILT UP PANEL 1.4

TILT UP PANEL 1.3



TILT UP PANEL 1.2



TILT UP PANEL 1

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Suite 250
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www.mhtn.com

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03/14/2025

PROJECT NO. 4950225

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REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET

SHEET NAME
TILT UP PANEL ELEVATIONS

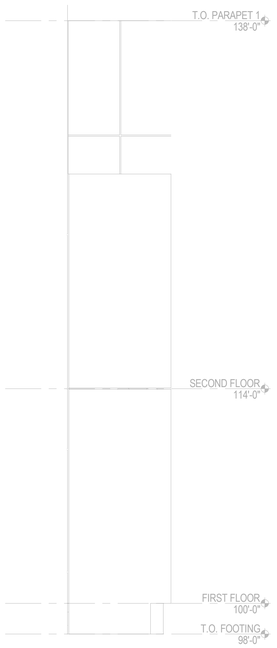
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SHEET NUMBER
S301

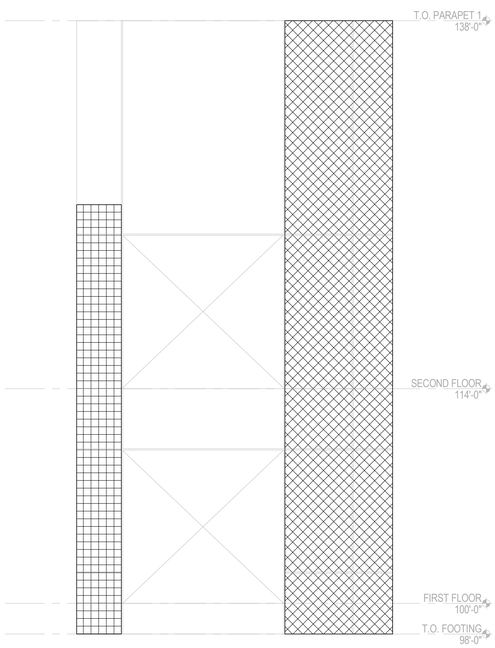
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SHEET NOTES

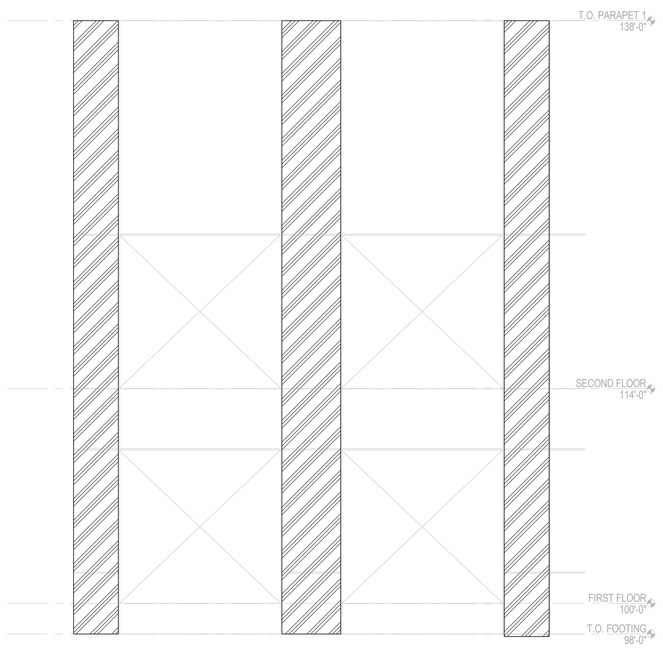
1. ALL PANELS TO BE: 10" THICK PANEL w/ #5 VERTICAL BARS AT 12" O.C. EACH FACE AND #4 HORIZONTAL BARS AT 12" O.C. EACH FACE. U.N.O.
2. SEE ARCHITECTURAL FOR PANEL AND OPENING DIMENSIONS.
3. PROVIDE (2) #4 x 48" DIAGONAL AT EACH CORNER.
4. PROVIDE 180deg. HOOK AT BOTTOM OF ALL VERTICAL AND HORIZONTAL BARS TERMINATING AT OPENING OR END OF PANEL.
5. TILT-UP CONTRACTOR TO PROVIDE ENGINEERING AND ADDITIONAL REINFORCING REQUIRED FOR LIFTING PANELS IN PLACE. REINFORCING SPECIFIED IS FOR IN PLACE LOADS.
6. TILT-UP CONTRACTOR TO PROVIDE SHOP DRAWINGS OF EACH TILT-UP PANEL SHOWING ALL REINFORCING. EMBED, ETC. SUBMIT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTING PANELS. SHOP DRAWINGS TO SHOW ANY CONNECTIONS NOT SPECIFICALLY DETAILED.
7. CONNECT PANELS PER DETAILS ON S401 AT QUARTER POINTS. (3) CONNECTIONS PER PANEL.
8. PROVIDE CONNECTION TO FOOTING AT EACH CORNER OF PANELS PER 1/ S103. NO MID-POINT PANEL CONNECTIONS REQUIRED
9. WHERE TIES ARE REQUIRED ADJACENT TO AN OPENING, CONTINUE TIES MIN. 24" ABOVE AND BELOW THE OPENING.
10. ALL HORIZONTAL BARS LESS THAN 6'-0" LONG TO HAVE END HOOKS AROUND VERTICAL BARS AT SIDES OF OPENINGS AND ENDS OF PANELS.
11. 10" THICK PANEL w/ #5 VERTICAL BARS AT 10" O.C. EACH FACE AND #4 CLOSED HOOPS AT 12" O.C.
12. 10" THICK PANEL w/ #5 VERTICAL BARS AT 7" O.C. EACH FACE AND #4 CLOSED HOOPS AT 6" O.C.
13. 10" THICK PANEL w/ #5 VERTICAL BARS AT 6" O.C. EACH FACE AND #4 CLOSED HOOPS AT 6" O.C.
14. 10" THICK PANEL w/ #5 VERTICAL BARS AT 5" O.C. EACH FACE AND #4 CLOSED HOOPS AT 6" O.C.
15. 10" THICK PANEL w/ #5 VERTICAL BARS AT 12" O.C. EACH FACE AND #4 CLOSED HOOPS AT 6" O.C.
16. 10" THICK PANEL w/ #5 VERTICAL BARS AT 12" O.C. EACH FACE AND #4 CLOSED HOOPS AT 10" O.C.
17. 10" THICK PANEL w/ #5 VERTICAL BARS AT 10" O.C. EACH FACE AND #4 HORIZONTAL BARS AT 12" O.C. EACH FACE



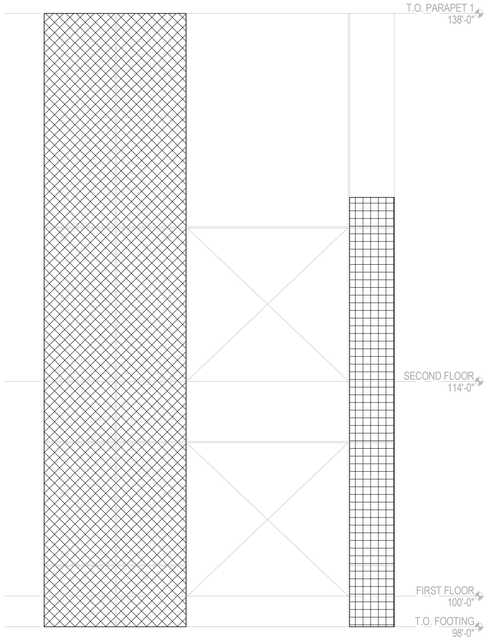
TILT UP PANEL 12



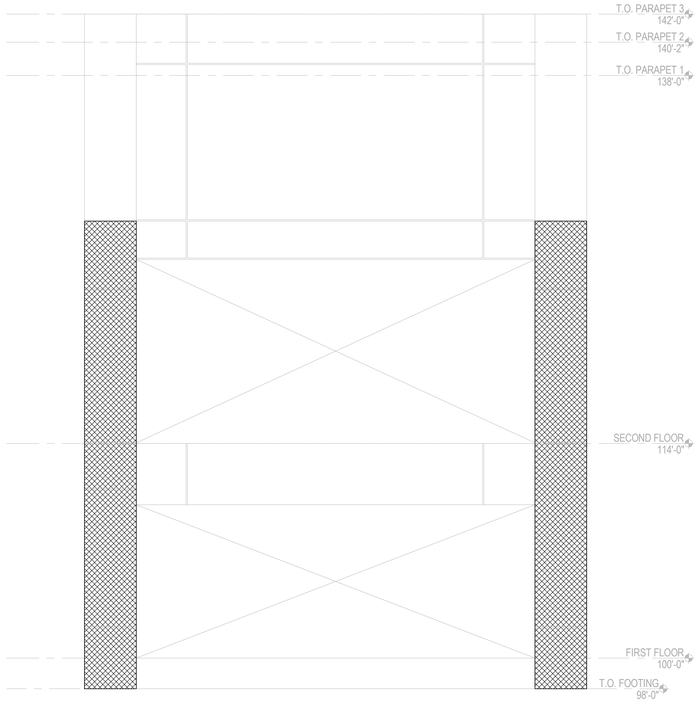
TILT UP PANEL 11



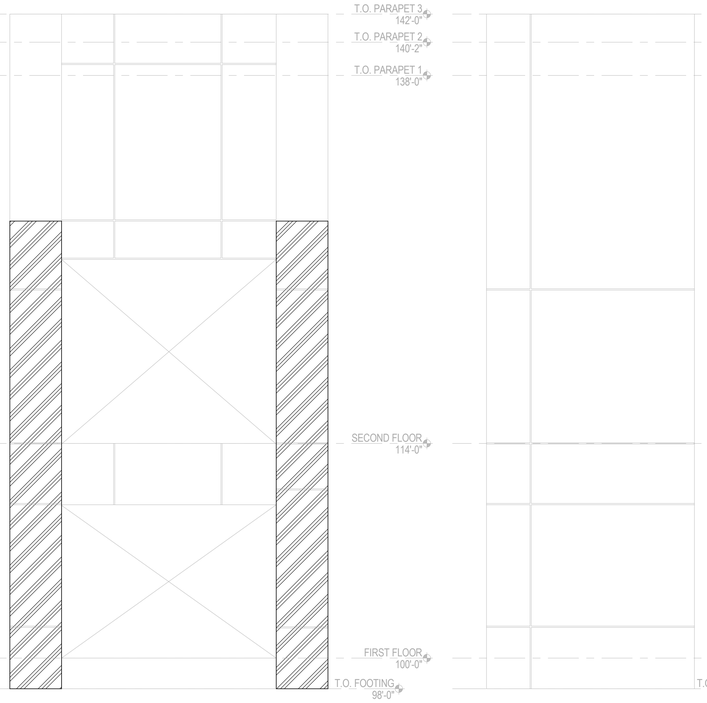
TILT UP PANEL 10



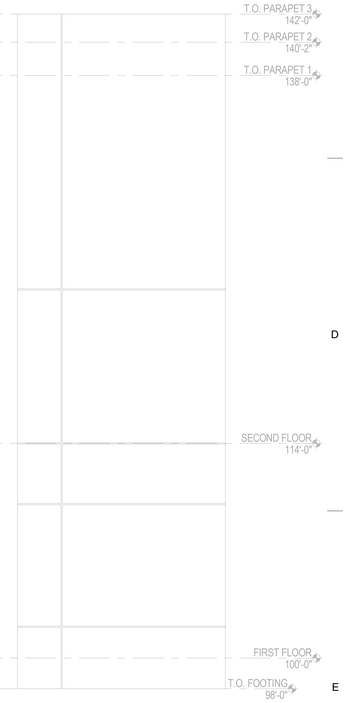
TILT UP PANEL 9



TILT UP PANEL 8



TILT UP PANEL 7



TILT UP PANEL 6

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Suite 250
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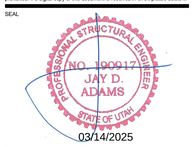
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PROJECT NO. 4950225

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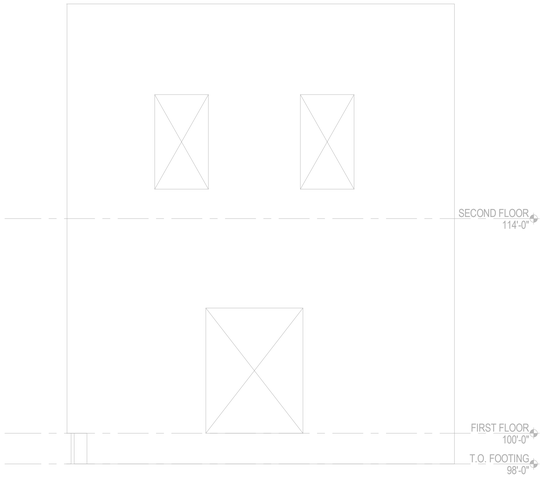
ISSUE
PERMIT SET

SHEET NAME
TILT UP PANEL ELEVATIONS

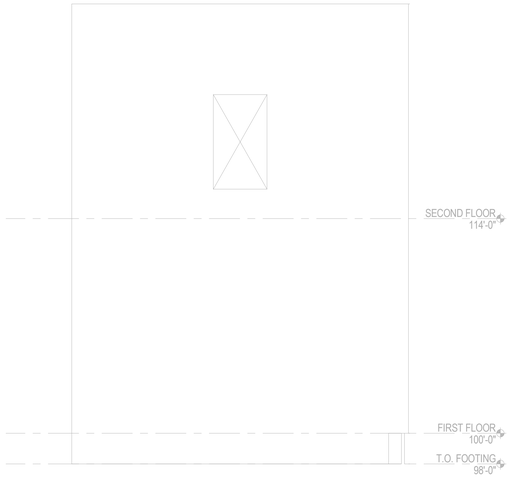
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SHEET NUMBER
S302

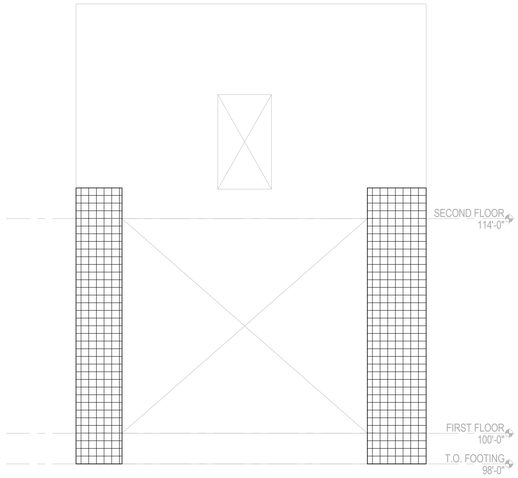
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TILT UP PANEL 19

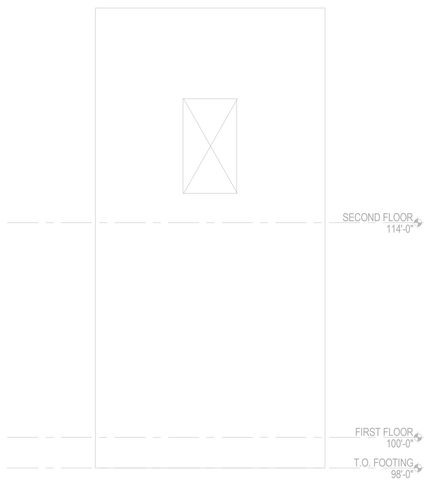


TILT UP PANEL 18

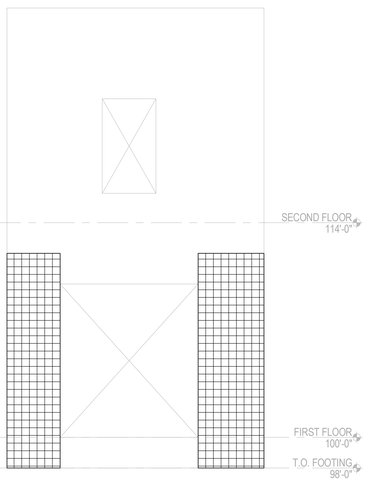


TILT UP PANEL 17

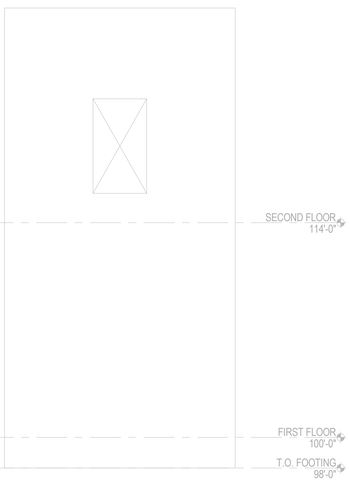
SEE S302 FOR NOTES LEGEND



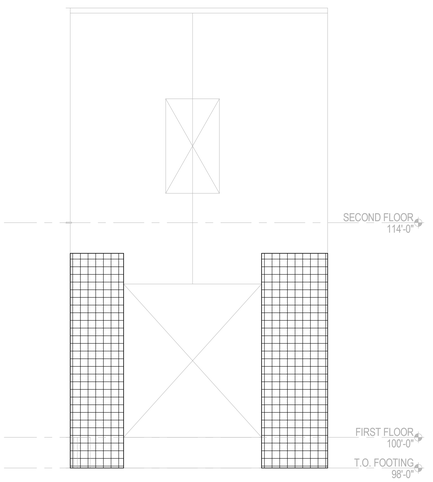
TILT UP PANEL 16



TILT UP PANEL 15



TILT UP PANEL 14



TILT UP PANEL 13

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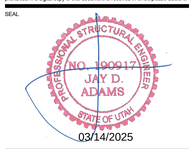
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03/14/2025

PROJECT NO. 4950225

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REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET

SHEET NAME
TILT UP PANEL ELEVATIONS

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

SHEET NUMBER
S303

Autodesk Docs://2023/56 WICP Orem North Building 4/Mountain Tech North 4 - Structural.rvt
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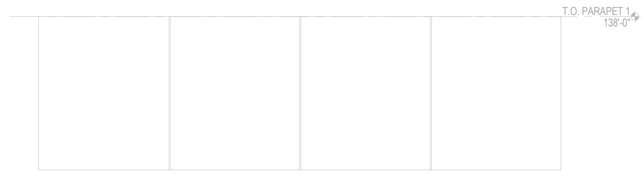
TILT UP PANEL 29



TILT UP PANEL 27

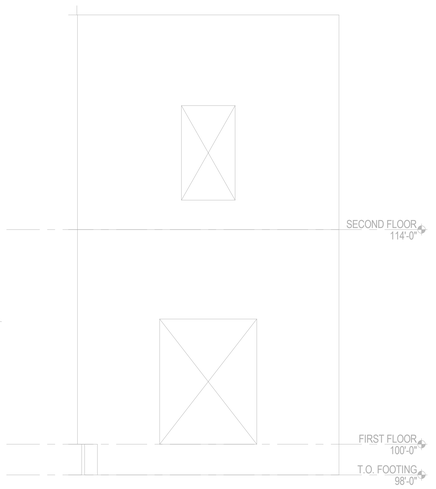


TILT UP PANEL 28

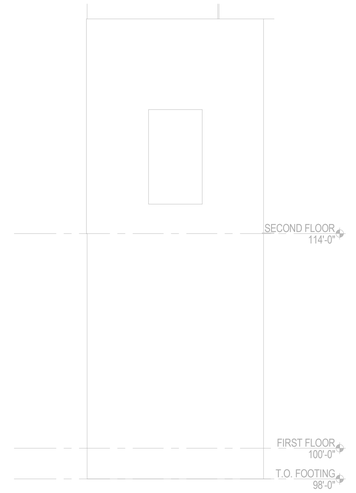


TILT UP PANEL 26

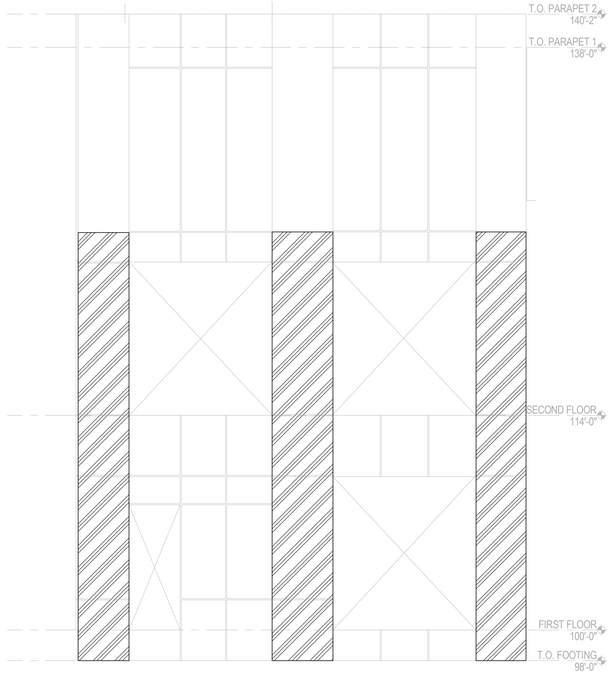
SEE S302 FOR NOTES LEGEND



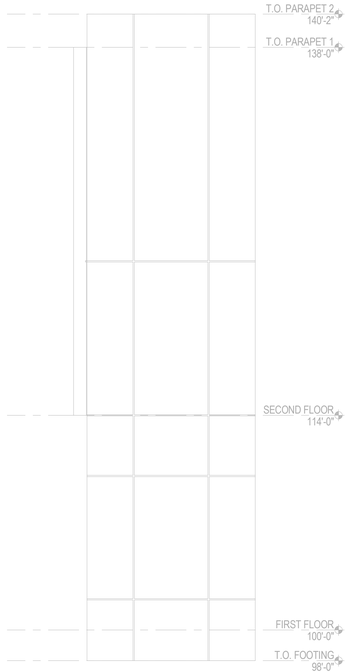
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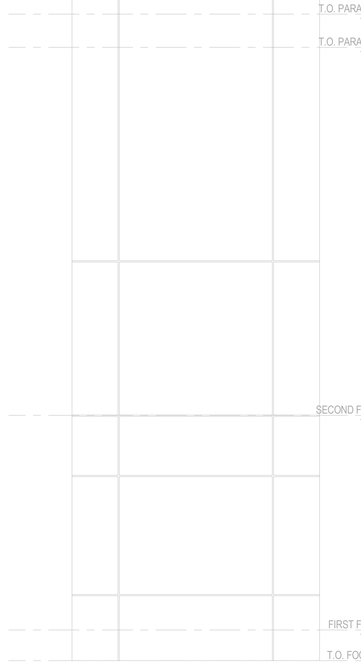
TILT UP PANEL 24



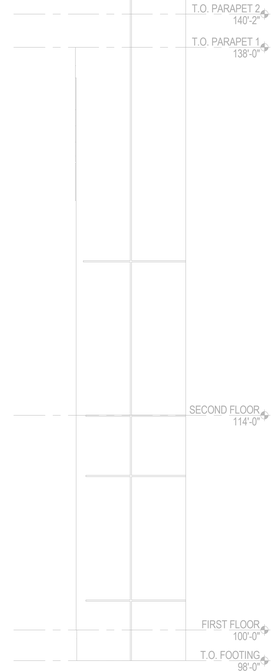
TILT UP PANEL 23



TILT UP PANEL 22



TILT UP PANEL 21



TILT UP PANEL 20

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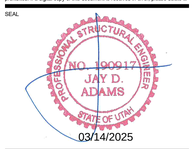
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REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

NO.	DATE	DESCRIPTION

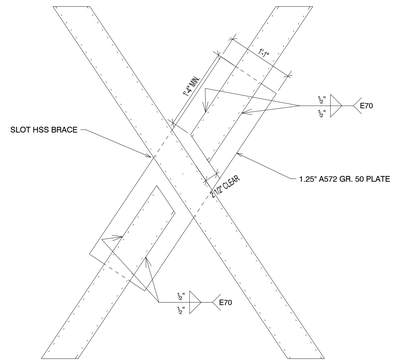
ISSUE
PERMIT SET

SHEET NAME
TILT UP PANEL ELEVATIONS

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

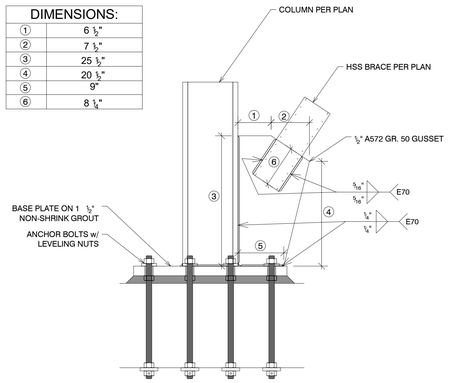
SHEET NUMBER
S304

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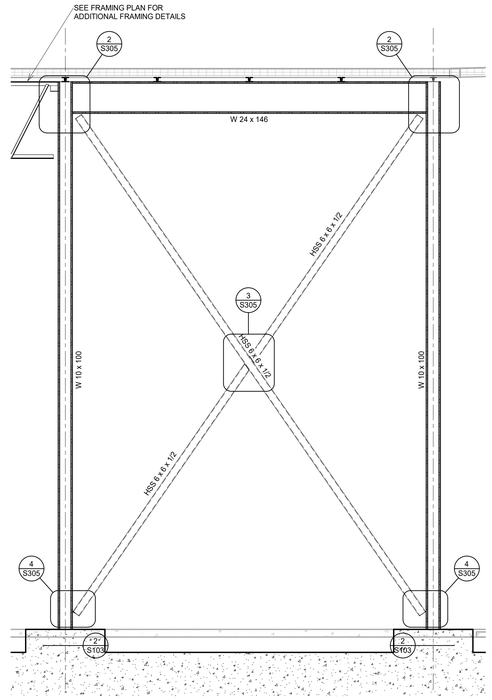


3 S305 CONSTRUCTION DETAIL
NO SCALE

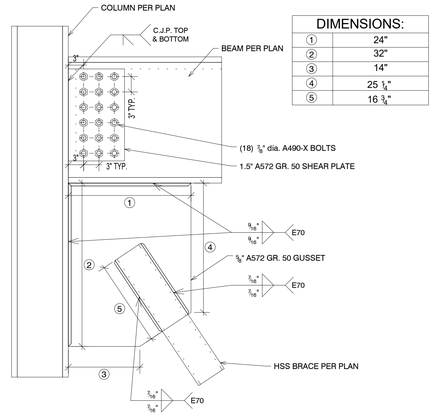
DIMENSIONS:	
1	6 1/2"
2	7 1/2"
3	25 1/2"
4	20 1/2"
5	9"
6	8 1/4"



4 S305 CONSTRUCTION DETAIL
NO SCALE



1 1/S305
1/4" = 1'-0"



DIMENSIONS:	
1	24"
2	32"
3	14"
4	25 1/4"
5	16 3/4"

2 S305 CONSTRUCTION DETAIL
NO SCALE

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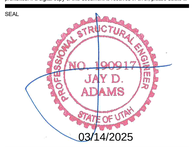
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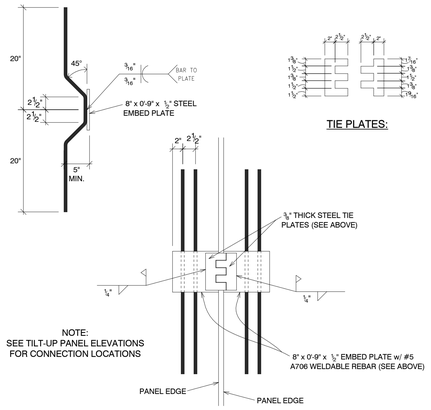
ISSUE
PERMIT SET

SHEET NAME
BRACE FRAME CONSTRUCTION

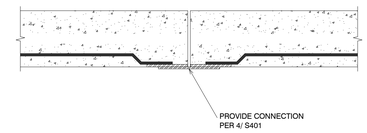
SCALE: AS SHOWN

SHEET NUMBER
S305

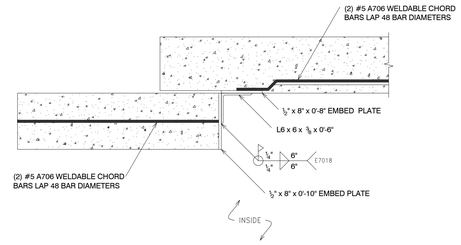
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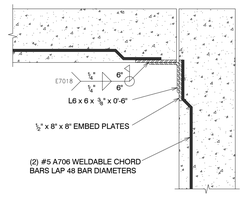
4 S401 CONSTRUCTION DETAIL
NO SCALE



1 S401 CONSTRUCTION DETAIL
NO SCALE



2 S401 CONSTRUCTION DETAIL
NO SCALE



3 S401 CONSTRUCTION DETAIL
NO SCALE

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Telephone (801) 595-6700
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MOUNTAIN TECH NORTH 4

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03/14/2025

PROJECT NO. 4950225

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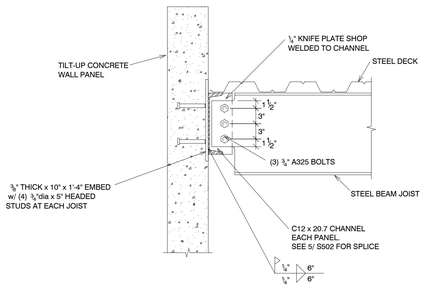
ISSUE
PERMIT SET

SHEET NAME
CONSTRUCTION DETAILS

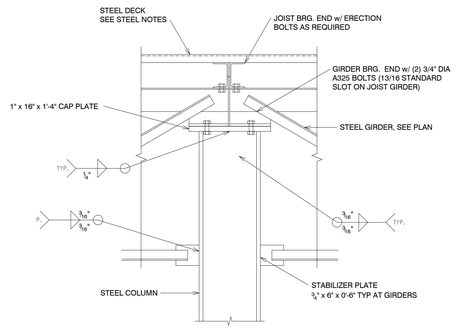
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SHEET NUMBER
S401

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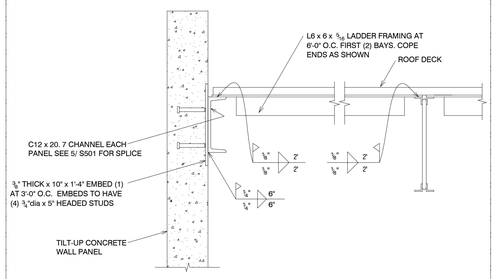


10/S501 CONSTRUCTION DETAIL
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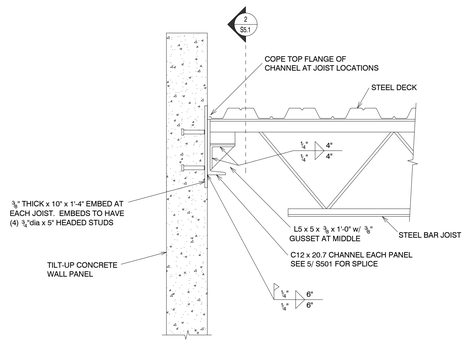
NOTE:
DO NOT WELD BOTTOM CHORDS TO STABILIZER PLATE.

7/S501 CONSTRUCTION DETAIL
NO SCALE



NOTE:
LINE UP ANGLE STRUT w/ CLOSEST DECK FLUTE.
PUDDLE WELD DECK TO ANGLE AT 6" O.C.

4/S501 CONSTRUCTION DETAIL
NO SCALE



1/S501 CONSTRUCTION DETAIL
NO SCALE

11/S501 CONSTRUCTION DETAIL
NO SCALE

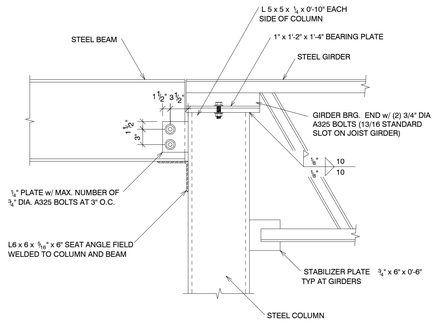
NOTE:
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8/S501 CONSTRUCTION DETAIL
NO SCALE

5/S501 CONSTRUCTION DETAIL
NO SCALE

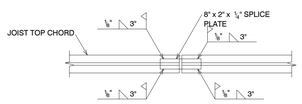
NOTE:
SEE 5/ S501 FOR CHANNEL SPLICES, AT PANEL JOINTS

2/S501 CONSTRUCTION DETAIL
NO SCALE

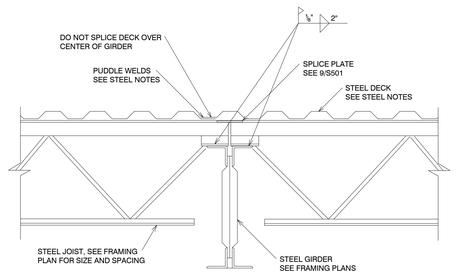


NOTE:
DO NOT WELD BOTTOM CHORDS TO STABILIZER PLATE.

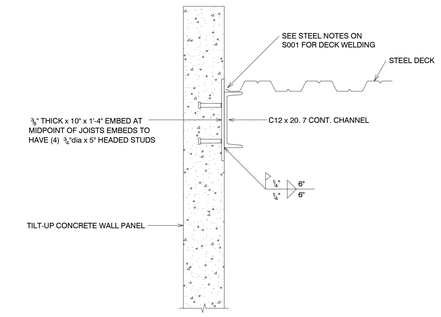
12/S501 CONSTRUCTION DETAIL
NO SCALE



9/S501 CONSTRUCTION DETAIL
NO SCALE



6/S501 CONSTRUCTION DETAIL
NO SCALE



3/S501 CONSTRUCTION DETAIL
NO SCALE

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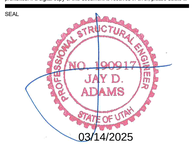
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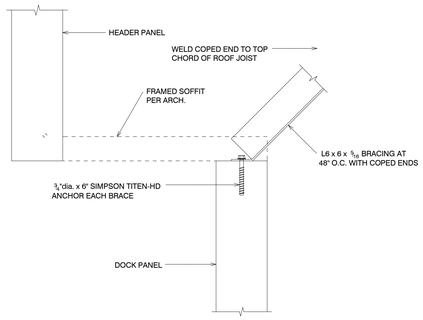
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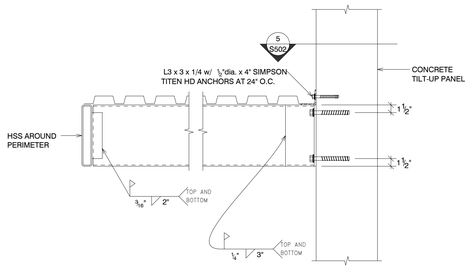
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SHEET NUMBER
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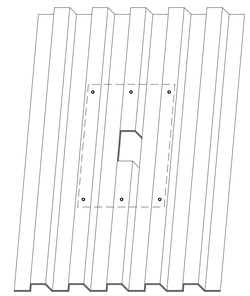
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7 S502 CONSTRUCTION DETAIL
NO SCALE



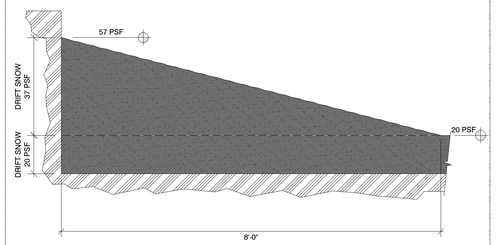
4 S502 CONSTRUCTION DETAIL
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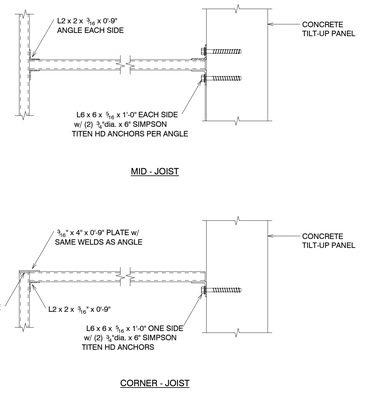
REINFORCING SCHEDULE:

ONE RIB REMOVED (6" DIA)	NO REINFORCING
8" DIA	0.045" PLATE (MIN.) (18 GA)
8" TO 13" DIA	0.057" PLATE (MIN.) (16 GA)
OVER 13"	FRAME OPENING (SEE DETAIL 2/ S502

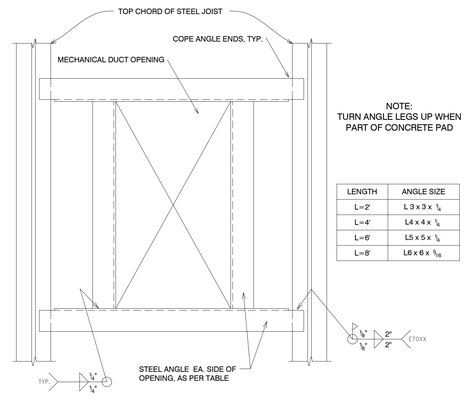
1 S502 CONSTRUCTION DETAIL
NO SCALE



8 S502 CONSTRUCTION DETAIL
NO SCALE



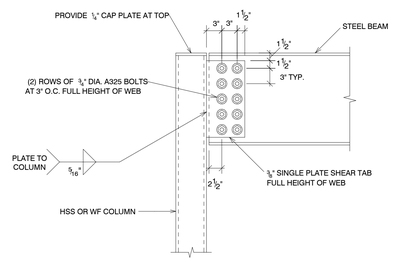
5 S502 CONSTRUCTION DETAIL
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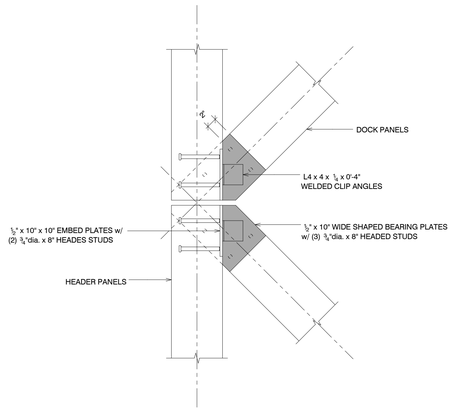
NOTE:
TURN ANGLE LEGS UP WHEN PART OF CONCRETE PAD

LENGTH	ANGLE SIZE
L=2'	L 3 x 3 x 1/4
L=4'	L4 x 4 x 1/4
L=6'	L5 x 5 x 1/4
L=8'	L6 x 6 x 5/16

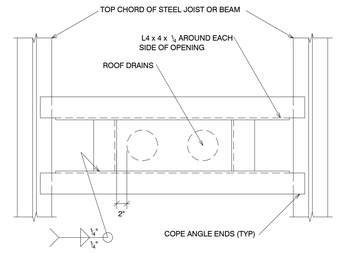
2 S502 CONSTRUCTION DETAIL
NO SCALE



9 S502 CONSTRUCTION DETAIL
NO SCALE



6 S502 CONSTRUCTION DETAIL
NO SCALE



NOTE:
COORDINATE ACTUAL CONFIGURATION w/ ROOF FRAMING. DRAINS MAY STRADDLE JOISTS

3 S502 CONSTRUCTION DETAIL
NO SCALE

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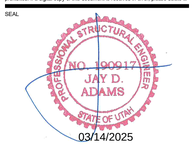
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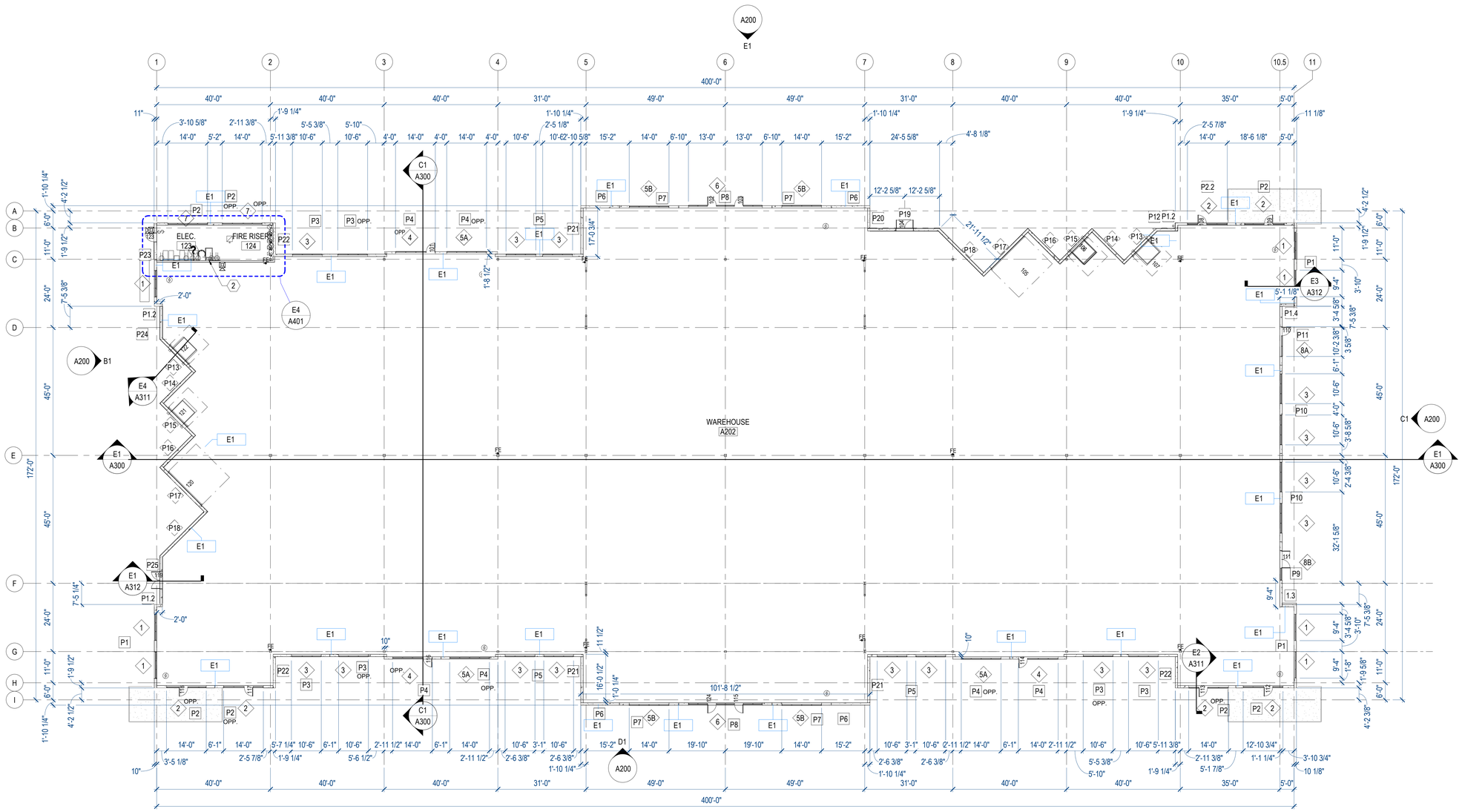
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S502

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KEYNOTES - FLOOR PLANS

2 VERTICAL STEEL ROOF-ACCESS LADDER W/ OFFSET LANDING, PROVIDE FALL ARREST SYSTEM ALONG ENTIRE HEIGHT OF LADDER



FIRST FLOOR PLAN

SCALE: 1/16" = 1'-0"

0 8' - 0" 16' - 0" 32' - 0"

N

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6430267-0301
LICENSED ARCHITECT
18 FEB. 2025

MHTN PROJECT NO. 2023556

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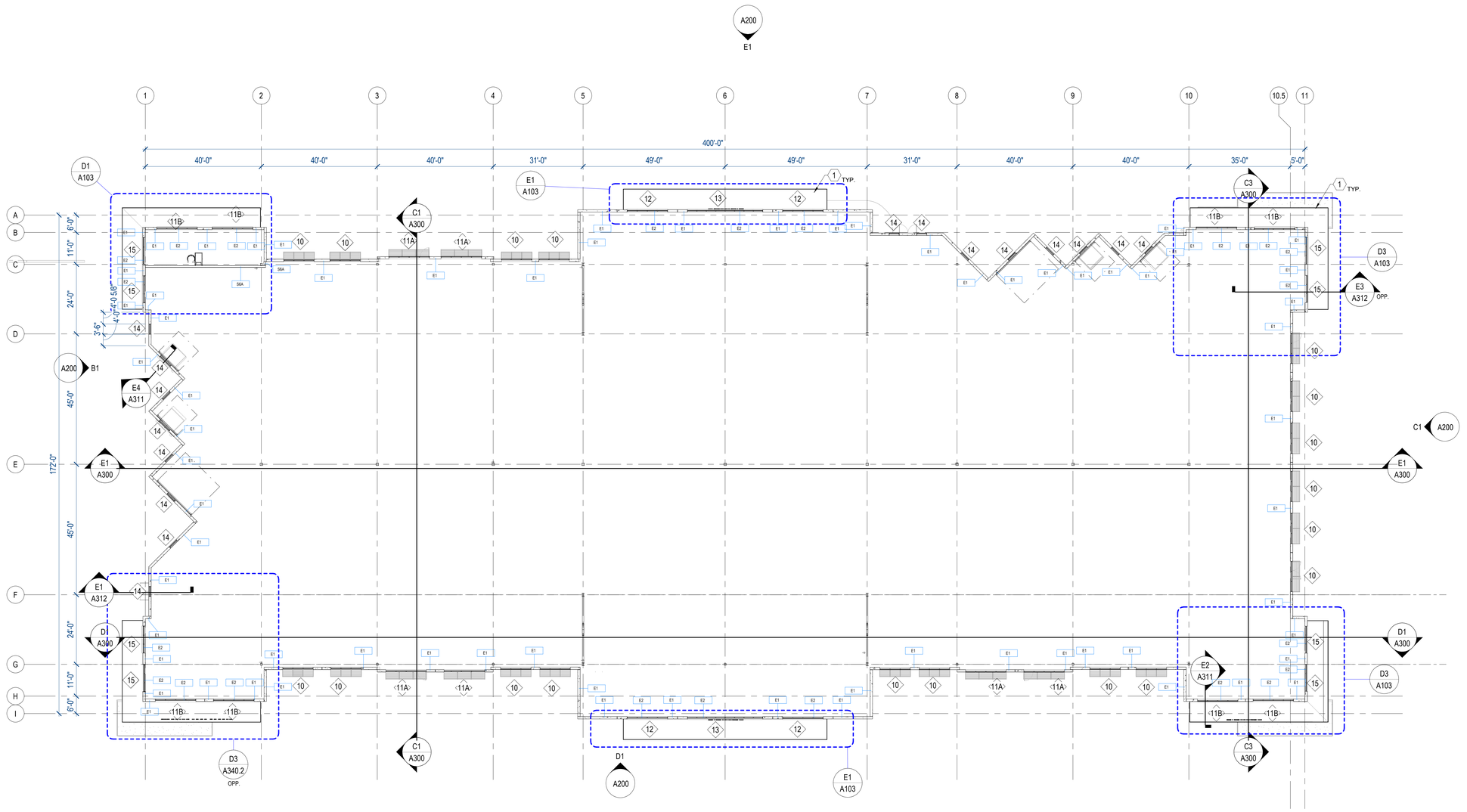
SHEET NAME
FIRST FLOOR PLAN - OVERALL

SHEET NUMBER
A101

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3/27/2025 10:16:21 AM

KEYNOTES - FLOOR PLANS

1 AWNING TYP., SEE DETAIL B2/A340



FIRST FLOOR PLAN - UPPER

SCALE: 1/16" = 1'-0"

0 8' - 0" 16' - 0" 32' - 0"

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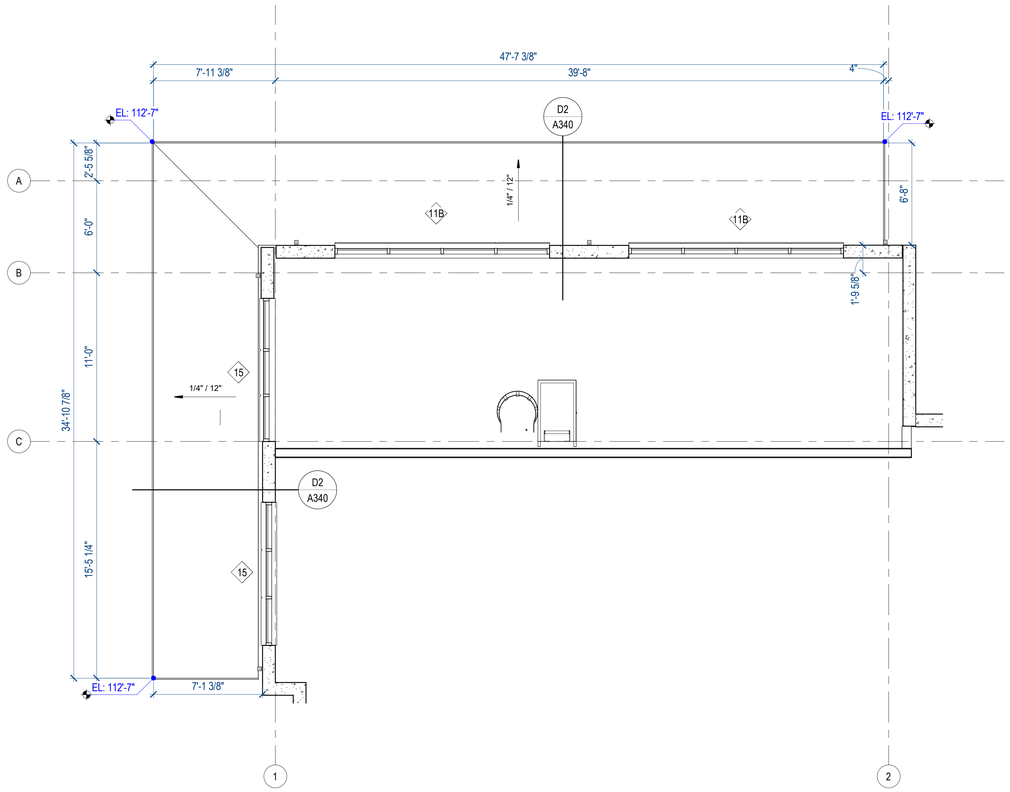
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ISSUE
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SHEET NAME
FIRST FLOOR PLAN - UPPER

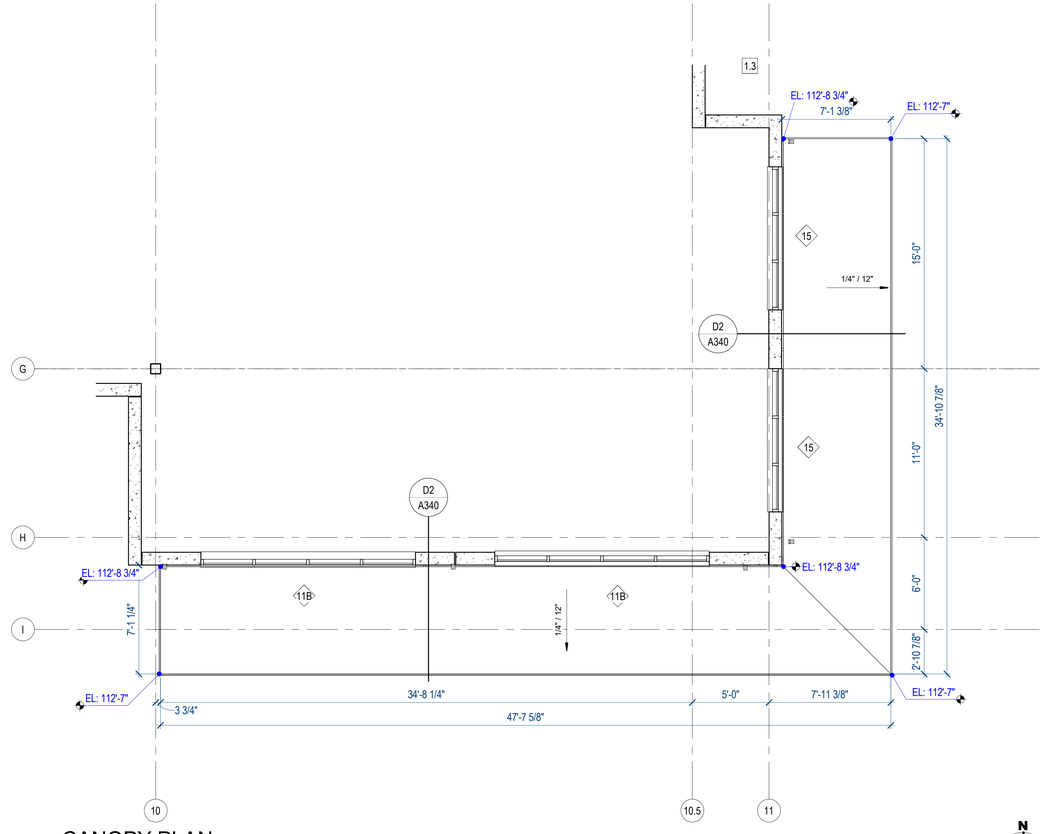
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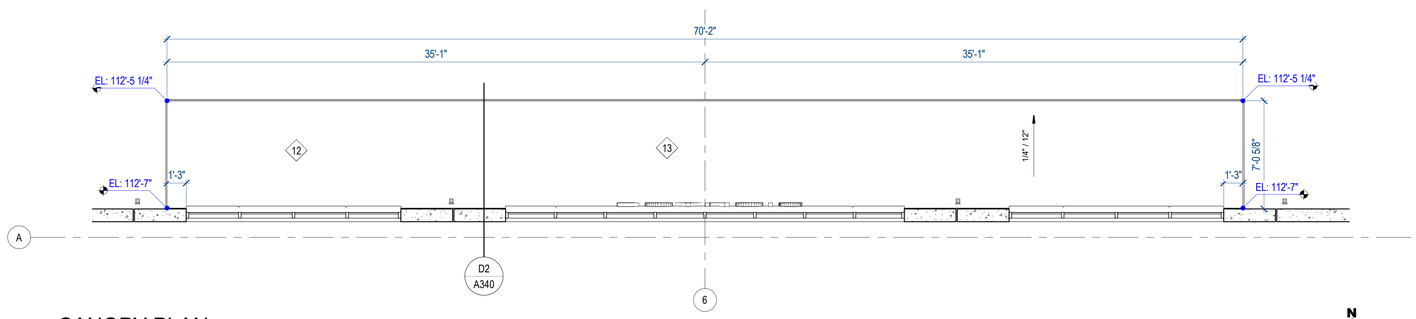
D1 CANOPY PLAN

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



D3 CANOPY PLAN

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



E1 CANOPY PLAN

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

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SHEET NAME
FIRST FLOOR
PLAN - CANOPIES

SHEET NUMBER
A103

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LEGEND - ROOF PLAN

- ROOF TYPE R-1 SINGLE-PLY MEMBRANE - SLOPE 1/4" PER FOOT MINIMUM UNO
- PRIMARY AND SECONDARY ROOF DRAINS
- DIRECTION OF SLOPE
- ROOF HATCH
- WALKWAY PAD, SEE DETAIL E3/A340

KEYNOTES

ROOF PLAN GENERAL NOTES

References to sheets below are provided to aid in navigating the drawings.

RE: G400 for Roof Types.

RE: A340 for Roof Details.

RE: Plumbing drawings for pipe vent quantities and locations. Provide flashing per roof and plumbing details.

Crickets: Provide crickets at roof top mechanical units, roof access hatches and other similar conditions for positive drainage.

Roof Deck Limitations: Do not use the steel roof deck to support loads from plumbing, HVAC ducts, light fixtures, architectural elements or equipment of any kind, UNO. Lightweight suspended acoustical ceilings with a total weight per wire not exceeding 50 pounds may be hung from the steel roof deck. Stagger the hangers to distribute the load over multiple deck flutes.

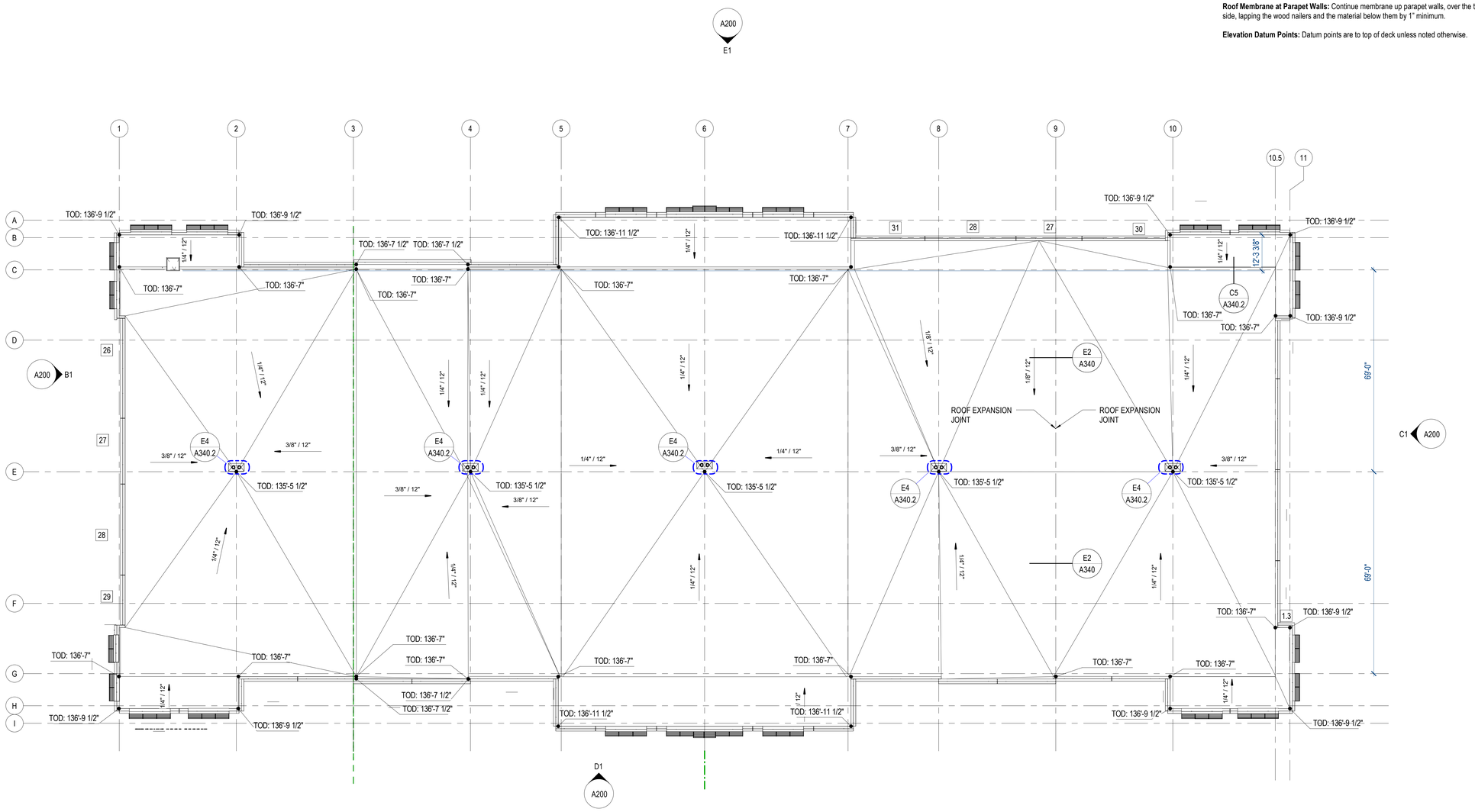
Roof Insulation: Provide R-30 minimum, unless noted otherwise.

Walkway Pads: Provide walkway pads as shown, and if not shown, provide pads from all points of roof access (ladders, doors, access hatches) to mechanical equipment, roof drains, and all other rooftop equipment. Adjust pathways as required to miss penetrations and rooftop equipment that may not be shown on the roof plan.

Slope: Provide ¼" per foot minimum slope across the roof.

Roof Membrane at Parapet Walls: Continue membrane up parapet walls, over the top and down the other side, lapping the wood nailers and the material below them by 1" minimum.

Elevation Datum Points: Datum points are to top of deck unless noted otherwise.



ROOF PLAN

SCALE: 1/16" = 1'-0"

0 8' - 0" 16' - 0" 32' - 0"

N

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SHEET NAME
ROOF PLAN

SHEET NUMBER
A120

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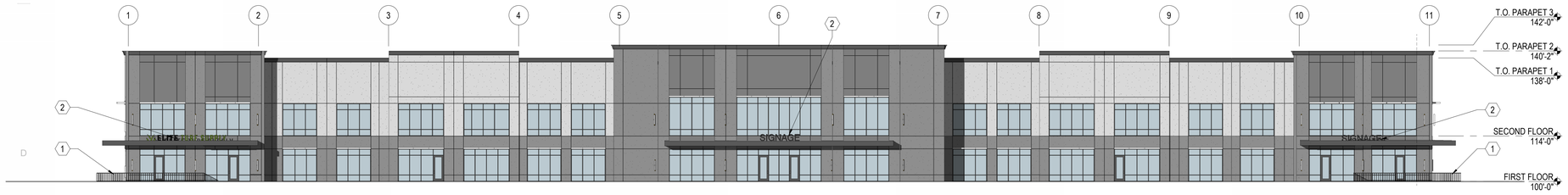
B1 WEST ELEVATION

SCALE: 1/16" = 1'-0"



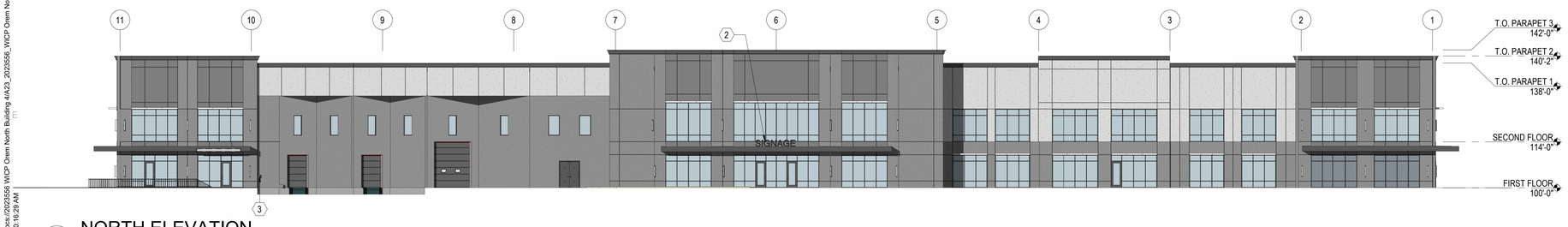
C1 EAST ELEVATION

SCALE: 1/16" = 1'-0"



D1 SOUTH ELEVATION

SCALE: 1/16" = 1'-0"



E1 NORTH ELEVATION

SCALE: 1/16" = 1'-0"

KEYNOTES - EXTERIOR ELEVATIONS

1 1 1/2" DIA. STEEL PIPE HANDRAIL/GUARDRAIL. T.O. HANDRAIL @ 36" ABOVE NOSE OF TREAD. T.O. @ 42" ABOVE NOSE OF TREAD. EXTERIOR GUARDRAILS TO BE PASSIVED STAINLESS STEEL.

2 BUILDING SIGNAGE FOR REFERENCE ONLY - TO BE SUBMITTED UNDER A SEPARATE SIGN PERMIT, PROVIDE POWER TO LOCATION

3 KNOX BOX FOR FIRE KEY

EXTERIOR ELEVATIONS GENERAL NOTES

Exterior Finishes: Provide exterior finishes, continuous until a transition is indicated. Provide on all similar elements, and on surfaces not shown in elevation such as back sides of piers, columns and other surfaces that may not be visible in the elevation view.

Lighting: Coordinate wall and soffit mounted lighting locations with Electrical drawings and with the Architect prior to rough-in.

LEGEND - EXTERIOR ELEVATION

- TERRANEO - EIFS COLOR: GLACIER
- TERRANEO - EIFS COLOR: VESUVIUS
- ALPOLIC ACM PANEL COLOR: METALIC SILVER
- TINTED GLAZING - CRYSTAL GRAY
- SPANDREL GLAZING - GRAY
- CMU - HONED
- BLACK ANODIZED ALUMINUM STOREFRONT FRAME

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MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

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STATE OF UTAH
ROBERTO G. PINON
6430267-0301
LICENSED ARCHITECT
18 FEB. 2025

MHTN PROJECT NO. 2023556

VIEW AND PRINT THIS DRAWING IN COLOR

Original drawing is 30 x 42. Do not scale contents of this drawing.

REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
EXTERIOR ELEVATIONS

SHEET NUMBER
A200

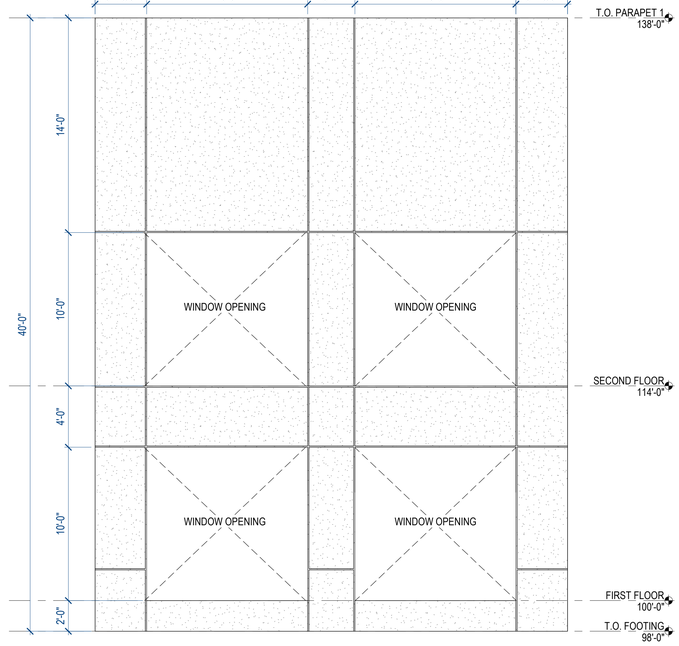
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PANEL ELEVATION GENERAL NOTES

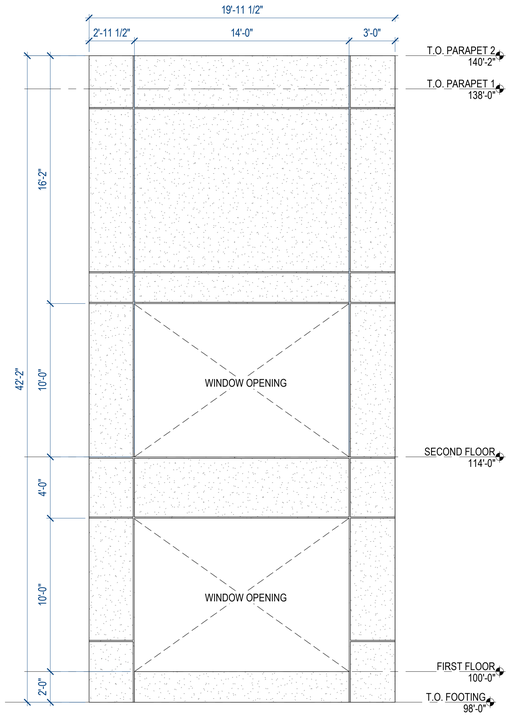
DOCKS: Contractor to verify all dimensions on dock leveler with manufacturers. Provide electrical conduit to future dock leveler.

Details: See details on sheet A330 for all details on concrete panels.

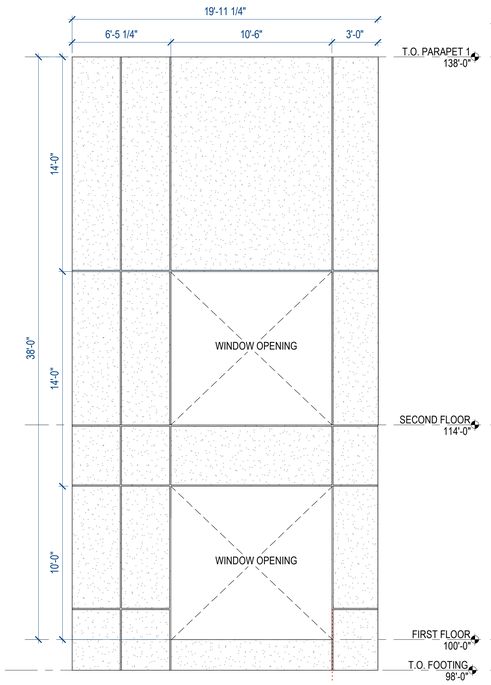
Reinforcement: See structural for all reinfocing on panels.



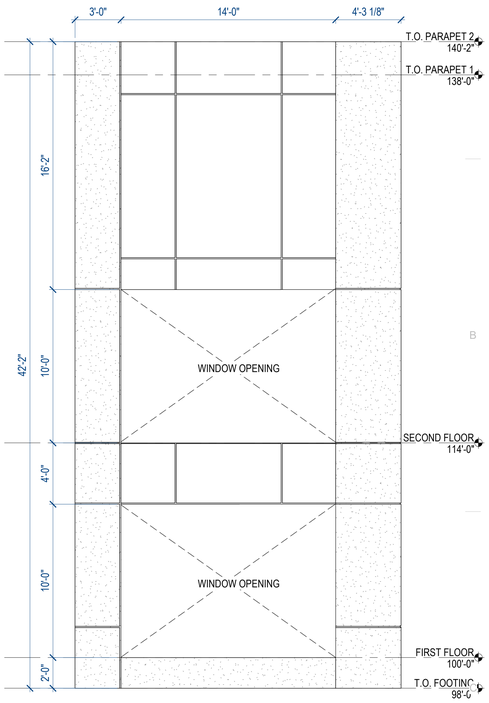
TILT UP PANEL 5



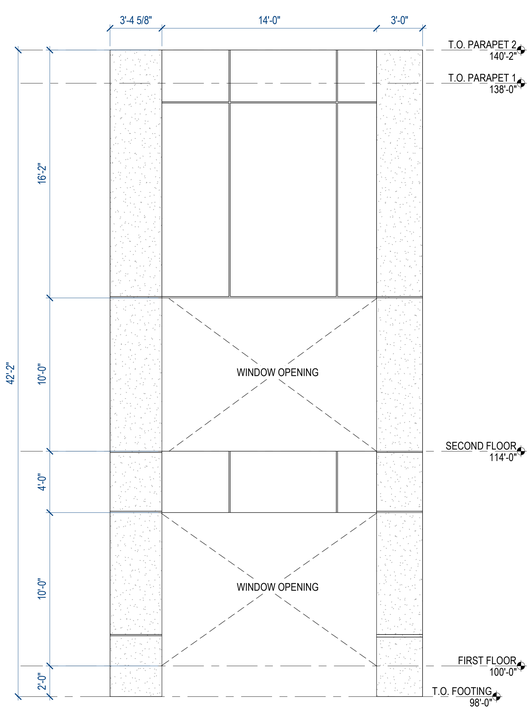
TILT UP PANEL 4



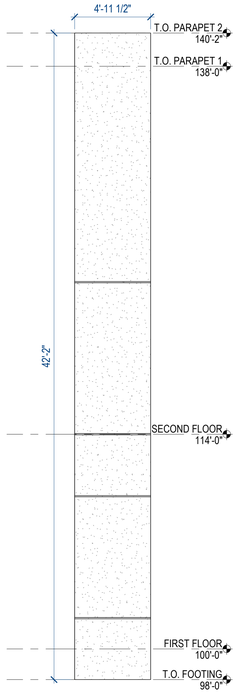
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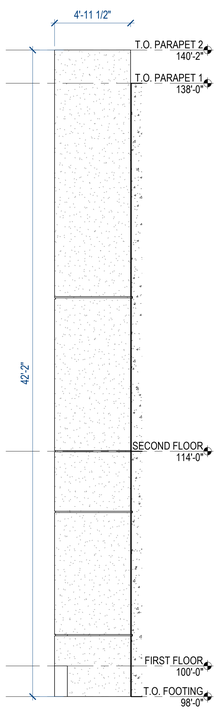
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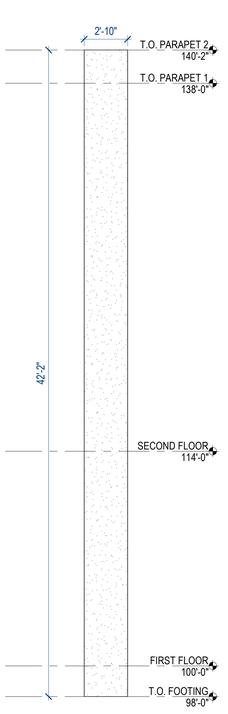
TILT UP PANEL 2



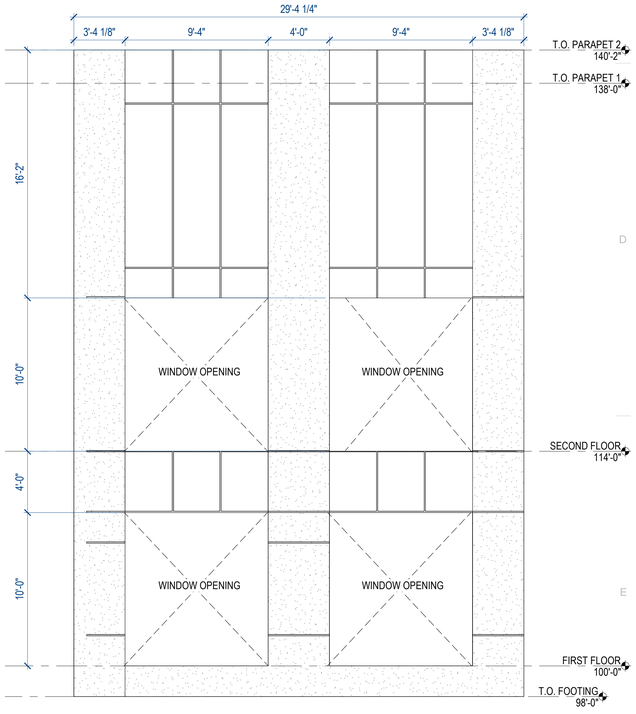
TILT UP PANEL 1.4



TILT UP PANEL 1.3



TILT UP PANEL 1.2



TILT UP PANEL 1

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280 South 400 West
Suite 250
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Telephone (801) 595-6700
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ROBERTO G. PINON
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MHTN PROJECT NO. 2023556

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REVISIONS
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NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
TILT UP PANEL ELEVATIONS

SHEET NUMBER
A201

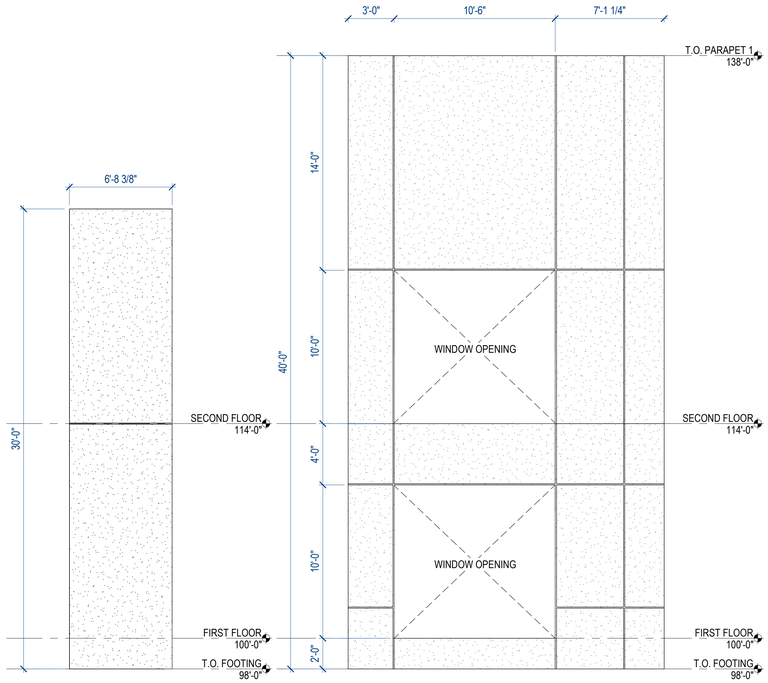
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PANEL ELEVATION GENERAL NOTES

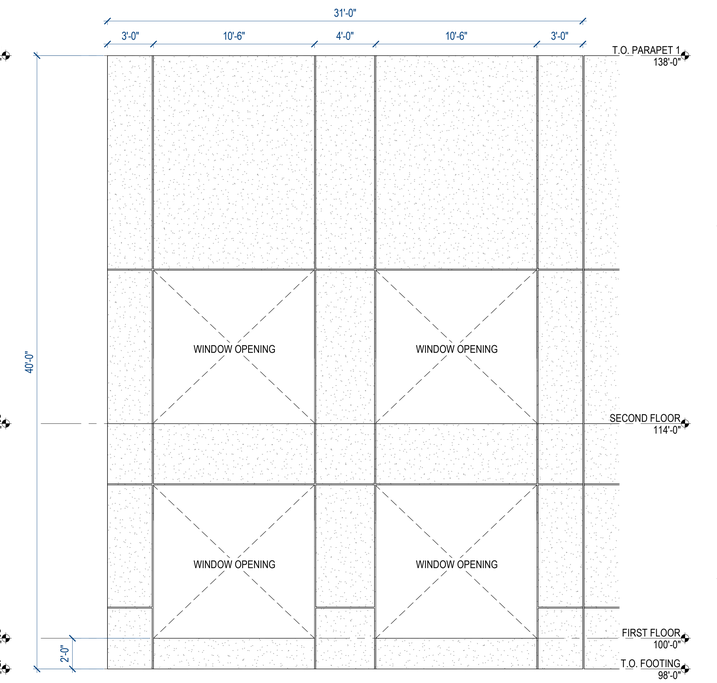
DOCKS: Contractor to verify all dimensions on dock leveler with manufacturers. Provide electrical conduit to future dock leveler.

Details: See details on sheet A330 for all details on concrete panels.

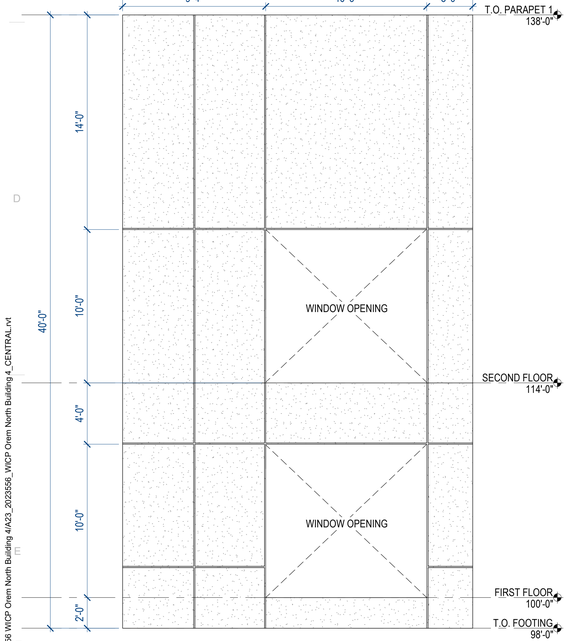
Reinforcement: See structural for all reinfocing on panels.



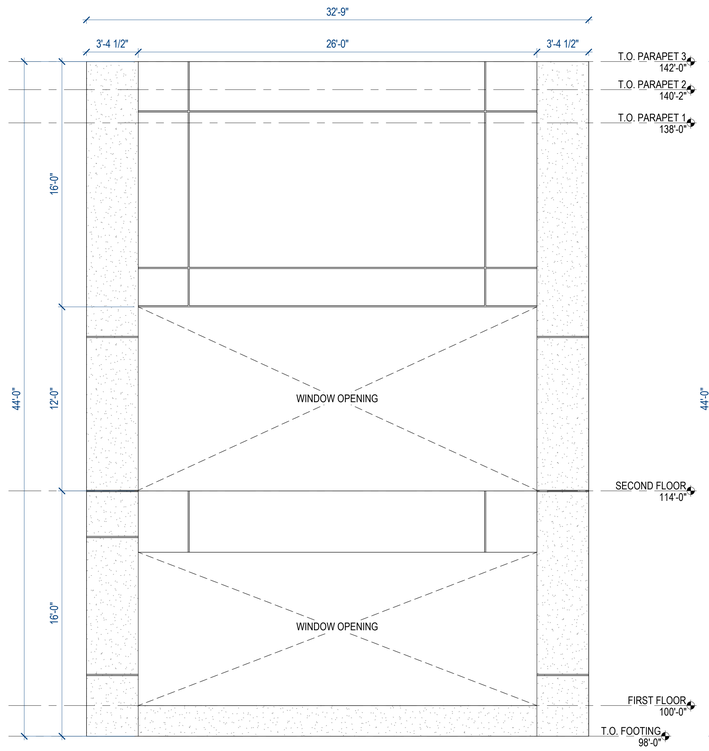
TILT UP PANEL 11



TILT UP PANEL 12

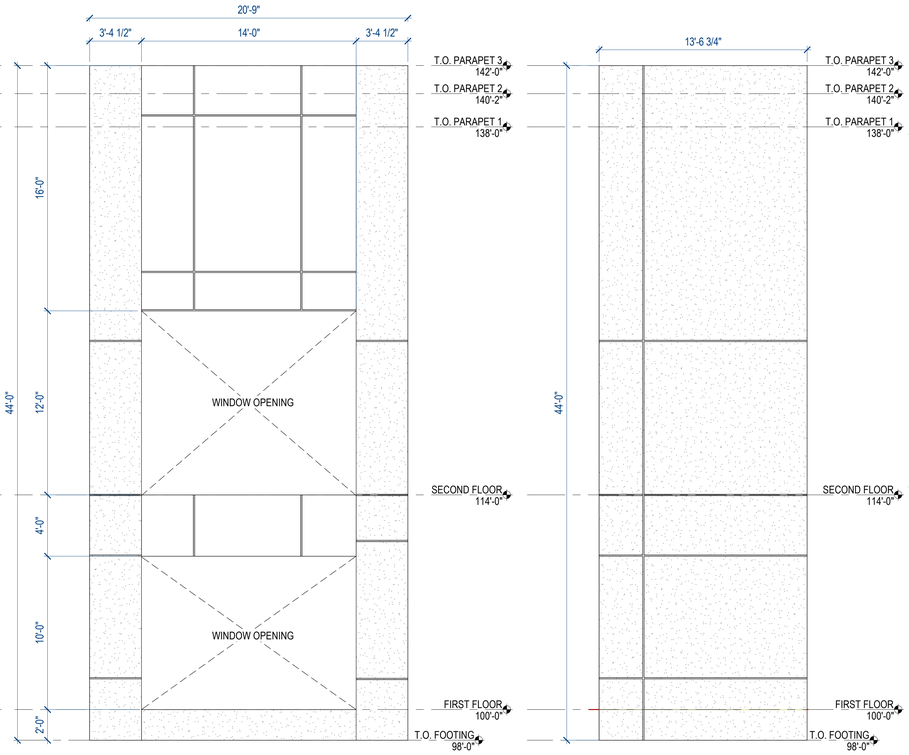


TILT UP PANEL 9



TILT UP PANEL 8

TILT UP PANEL 10



TILT UP PANEL 7

TILT UP PANEL 6

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Suite 250
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LICENSED ARCHITECT
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MHTN PROJECT NO. 2023556

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NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
TILT UP PANEL ELEVATIONS

SHEET NUMBER
A202

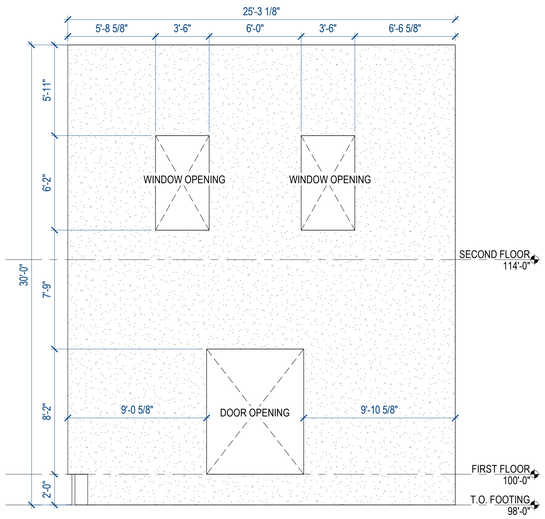
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PANEL ELEVATION GENERAL NOTES

DOCKS: Contractor to verify all dimensions on dock leveler with manufacturers. Provide electrical conduit to future dock leveler.

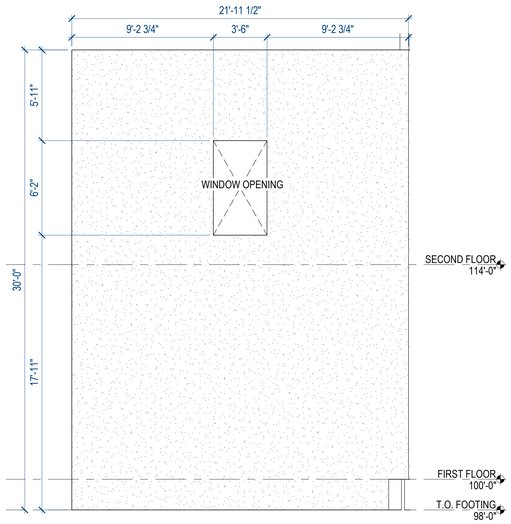
Details: See details on sheet A330 for all details on concrete panels.

Reinforcement: See structural for all reinfocing on panels.

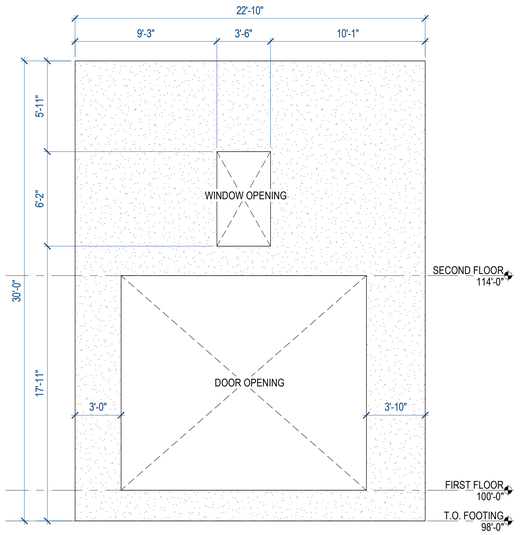


P19 TILT UP PANEL 19

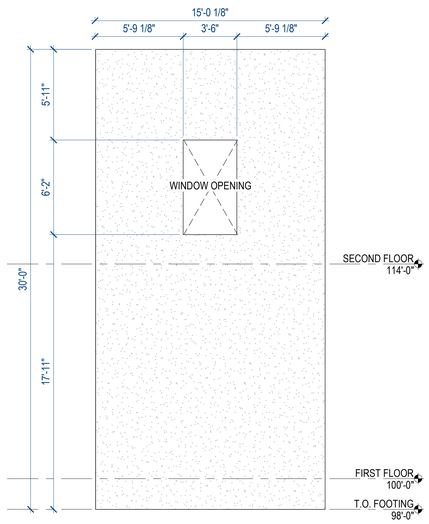
SCALE: 1/4" = 1'-0"



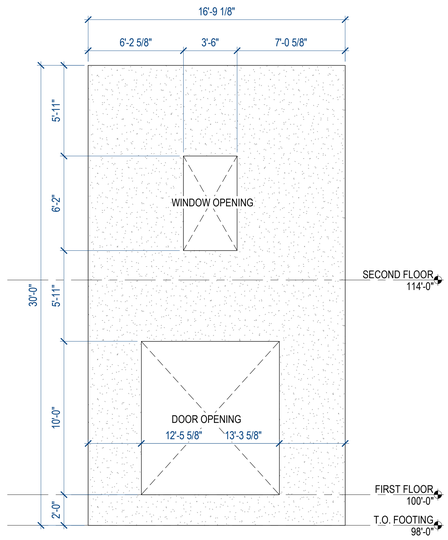
TILT UP PANEL 18



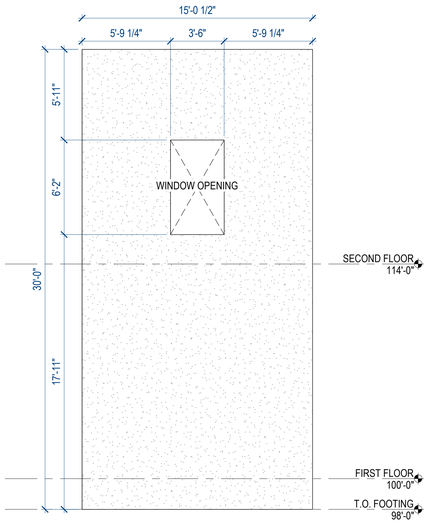
TILT UP PANEL 17



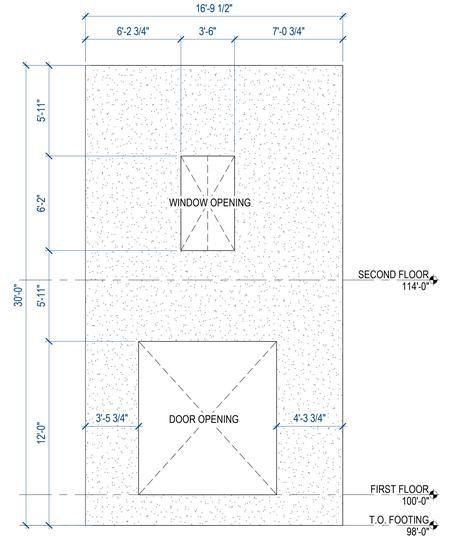
TILT UP PANEL 16



TILT UP PANEL 15



TILT UP PANEL 14



TILT UP PANEL 13

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NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
TILT UP PANEL ELEVATIONS

SHEET NUMBER
A203

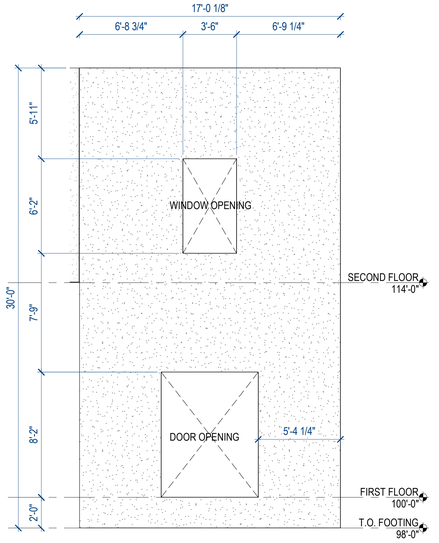
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PANEL ELEVATION GENERAL NOTES

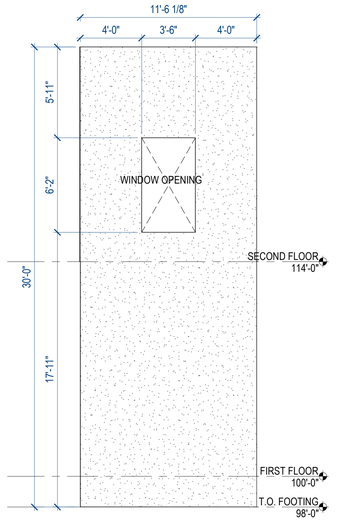
DOCKS: Contractor to verify all dimensions on dock leveler with manufacturers. Provide electrical conduit to future dock leveler.

Details: See details on sheet A330 for all details on concrete panels.

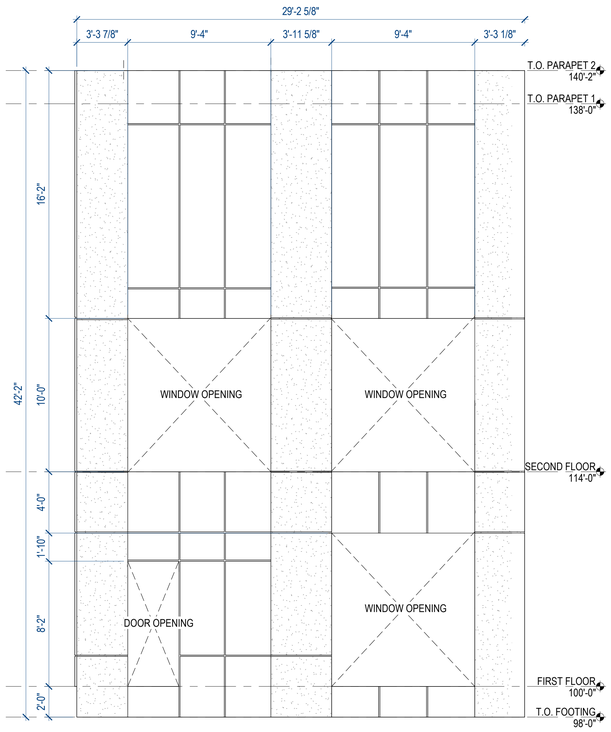
Reinforcement: See structural for all reinfocing on panels.



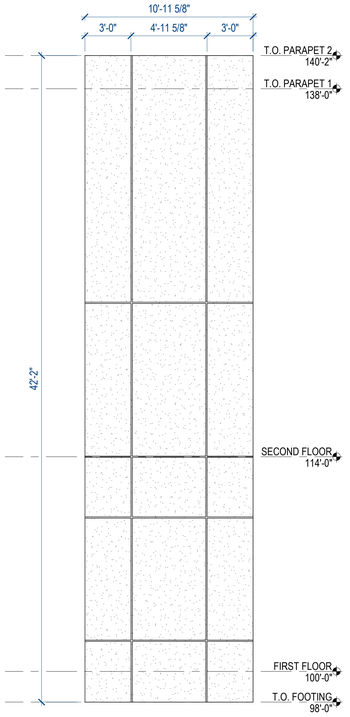
TILT UP PANEL 25



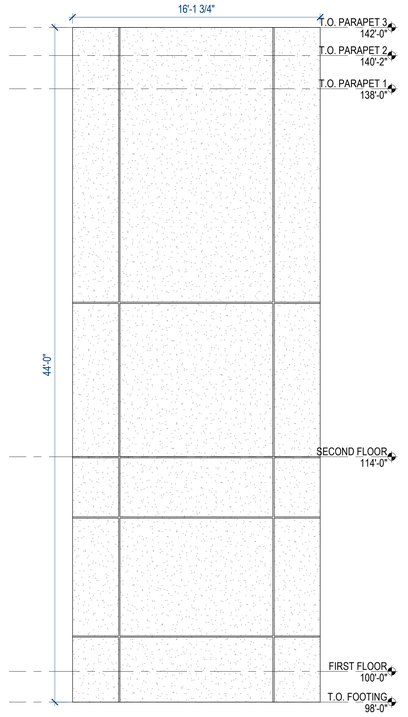
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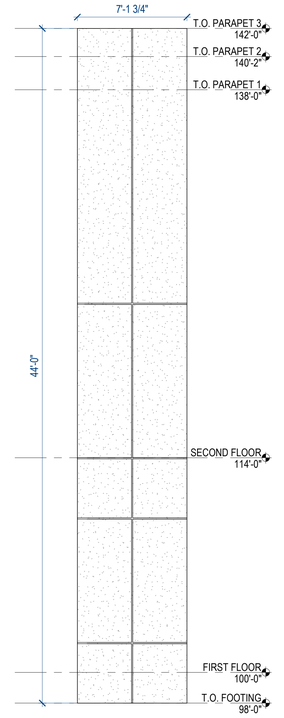
TILT UP PANEL 23



TILT UP PANEL 22



TILT UP PANEL 21



TILT UP PANEL 20

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ROBERTO G. PINON
6430267-0301
LICENSED ARCHITECT
18 FEB. 2025

MHTN PROJECT NO. 2023556

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REVISIONS
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NO.△	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
TILT UP PANEL ELEVATIONS

SHEET NUMBER
A204

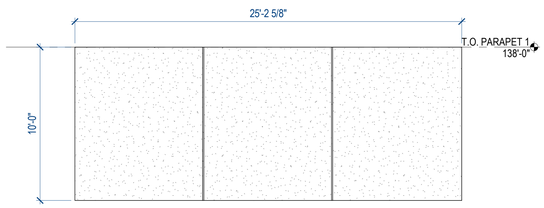
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3/27/2025 10:16:33 AM

PANEL ELEVATION GENERAL NOTES

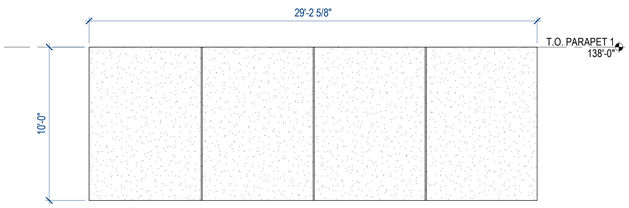
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Details: See details on sheet A330 for all details on concrete panels.

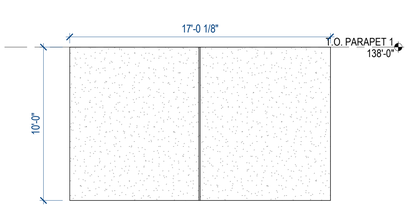
Reinforcement: See structural for all reinfocing on panels.



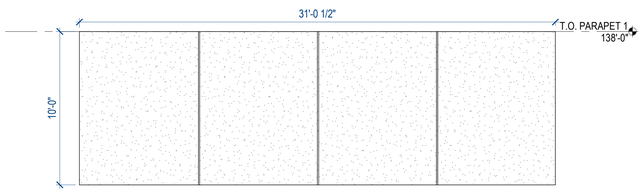
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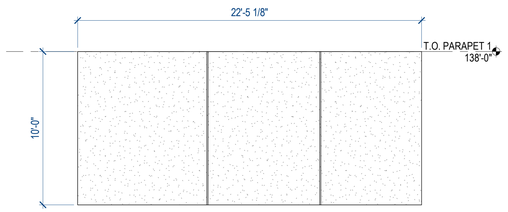
TILT UP PANEL 30



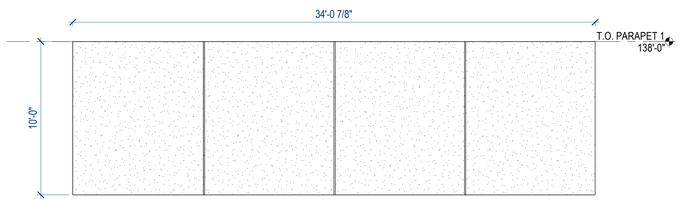
TILT UP PANEL 29



TILT UP PANEL 28



TILT UP PANEL 27



TILT UP PANEL 26

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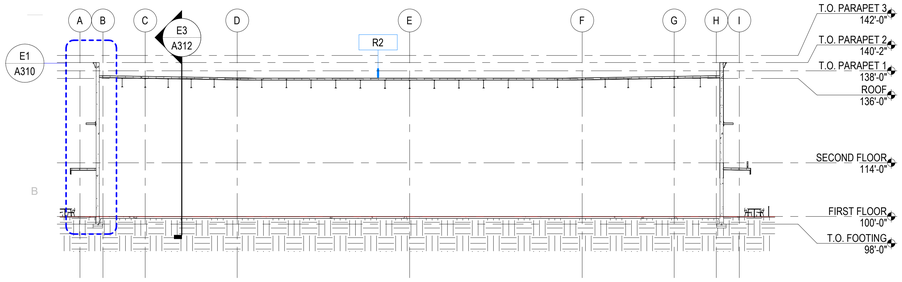
NO.△	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
TILT UP PANEL ELEVATIONS

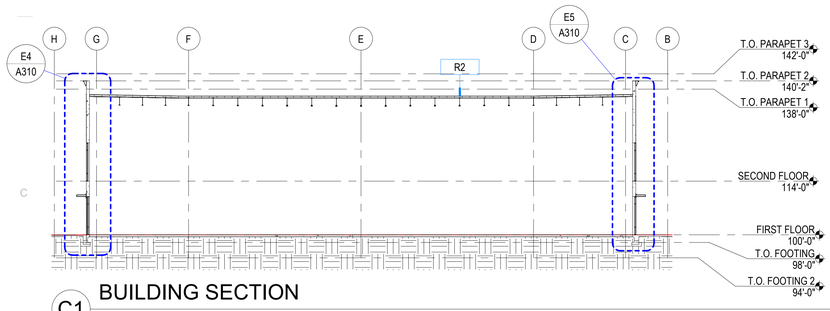
SHEET NUMBER
A205

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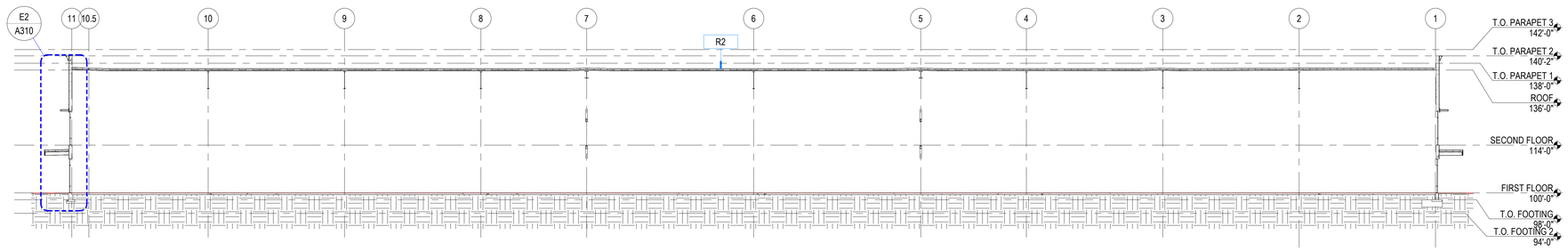
C3 BUILDING SECTION

SCALE: 1/16" = 1'-0"



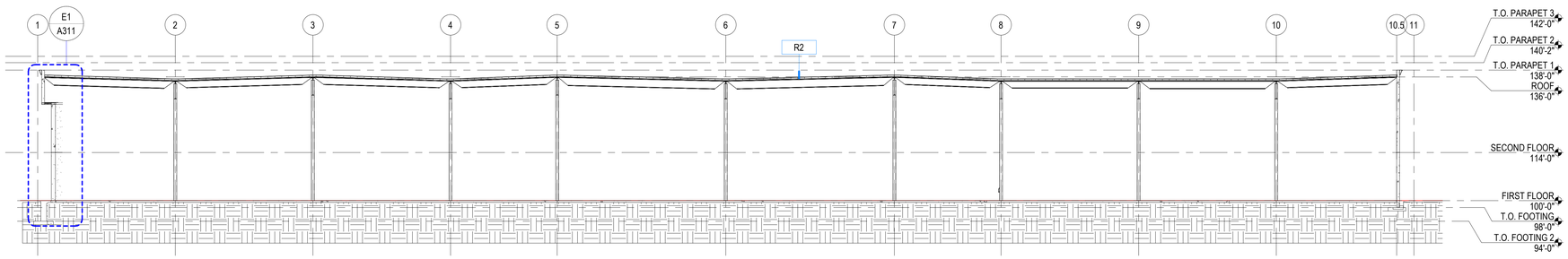
C1 BUILDING SECTION

SCALE: 1/16" = 1'-0"



D1 BUILDING SECTION

SCALE: 1/16" = 1'-0"



E1 BUILDING SECTION

SCALE: 1/16" = 1'-0"

WALL SECTION GENERAL NOTES

RE: Structural for concrete slab on grade thickness.

RE: G400 for Exterior Wall, Floor and Roof Types.

Air Barrier: Seal penetrations through the air barrier per manufacturer's details.

Spray-Applied Fireproofing: Where spray-applied fireproofing is removed for attachment of walls, hangers, clip angles, etc., re-apply the fireproofing material to re-establish the required level of protection.

MHTN
ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

MOUNTAIN TECH NORTH 4

WICP COMMERCIAL

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LINDON, UTAH 84042

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SEAL



MHTN PROJECT NO. 2023556

Original drawing is 30 x 42. Do not scale contents of this drawing.

REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
BUILDING SECTIONS

SHEET NUMBER
A300

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KEYNOTES

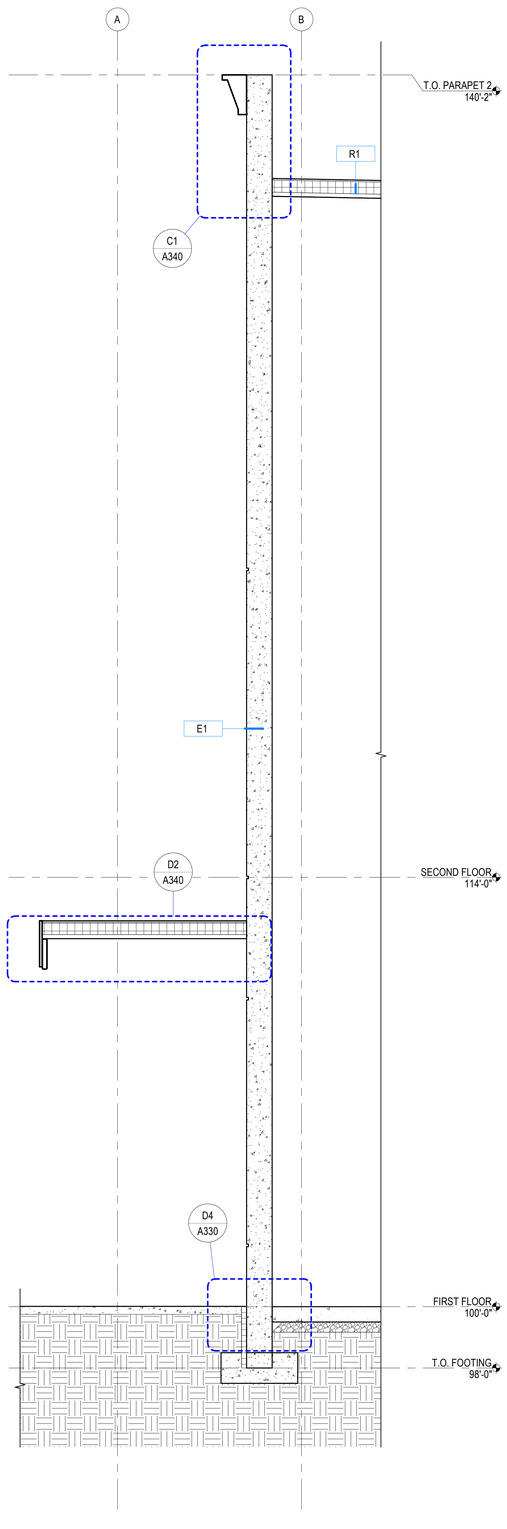
WALL SECTION GENERAL NOTES

RE: Structural for concrete slab on grade thickness.

RE: G400 for Exterior Wall, Floor and Roof Types.

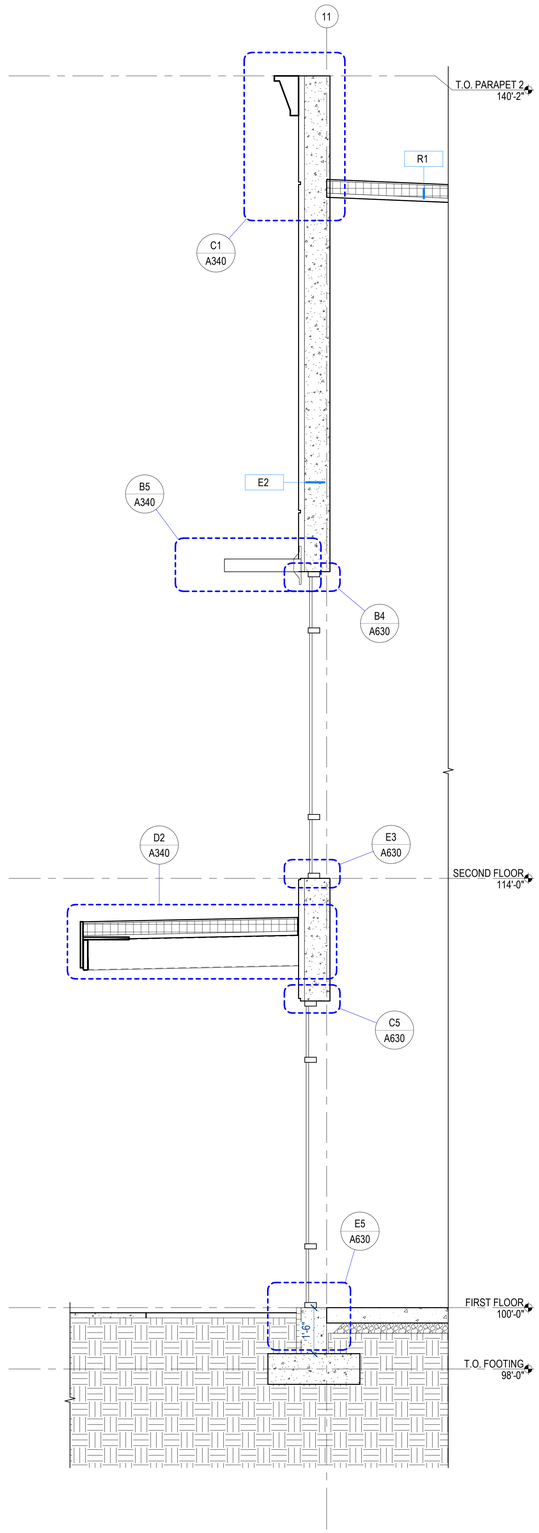
Air Barrier: Seal penetrations through the air barrier per manufacturer's details.

Spray-Applied Fireproofing: Where spray-applied fireproofing is removed for attachment of walls, hangers, clip angles, etc., re-apply the fireproofing material to re-establish the required level of protection.



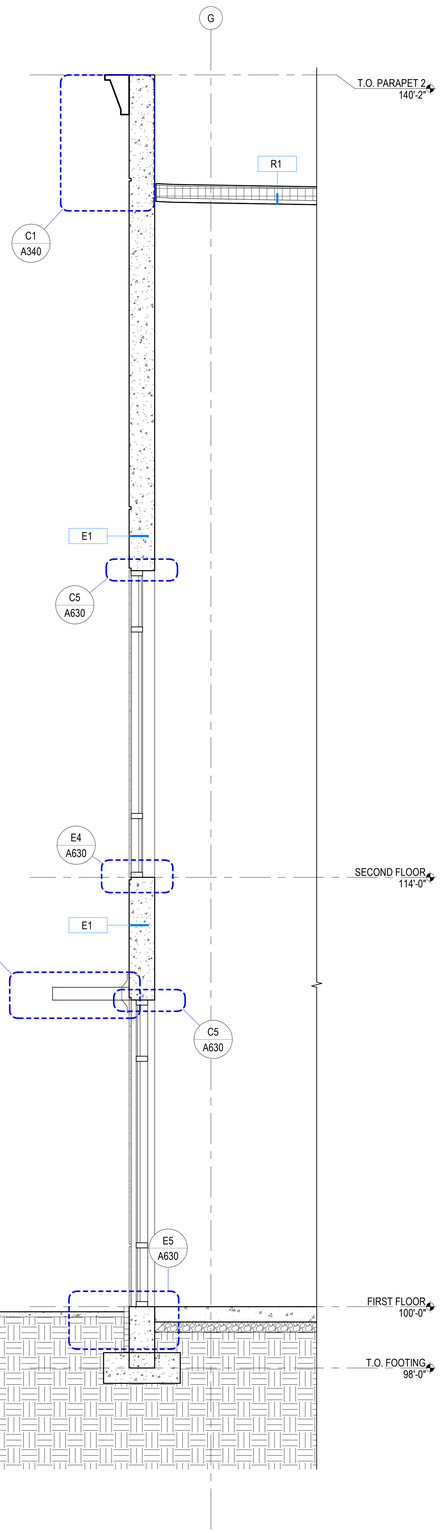
E1 WALL SECTION

SCALE: 1/2" = 1'-0"



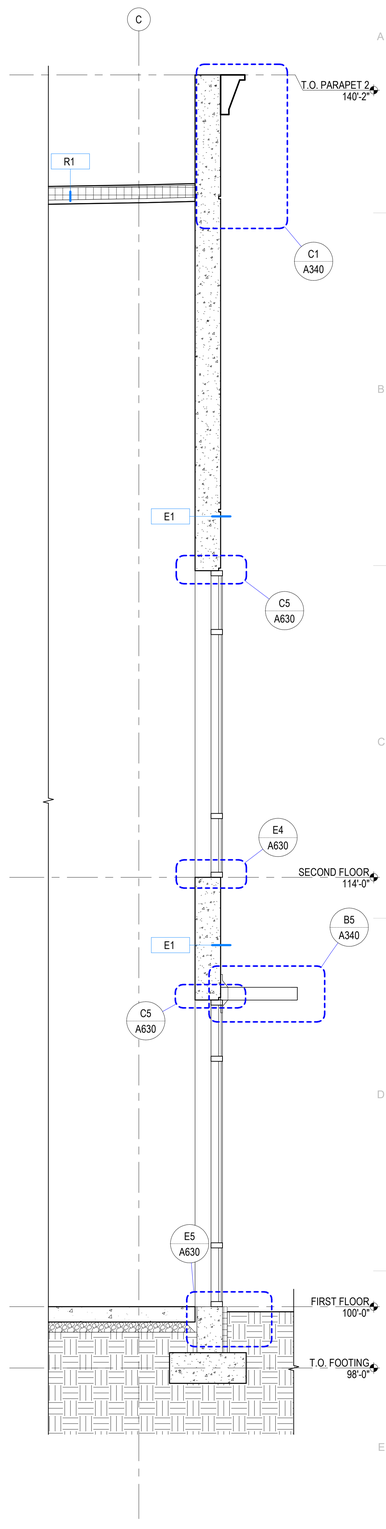
E2 WALL SECTION

SCALE: 1/2" = 1'-0"



E4 WALL SECTION

SCALE: 1/2" = 1'-0"



E5 WALL SECTION 3

SCALE: 1/2" = 1'-0"

MHTN ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

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STATE OF UTAH
ROBERTO G. PINON
6430267-0301
LICENSED ARCHITECT
18 FEB. 2025

MHTN PROJECT NO. 2023556

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REVISIONS
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NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
WALL SECTIONS

SHEET NUMBER
A310

Autodesk Docs://2023556 WICP Orem North Building 4/A23_2023556_WICP Orem North Building 4_CENTRAL.rvt
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KEYNOTES

WALL SECTION GENERAL NOTES

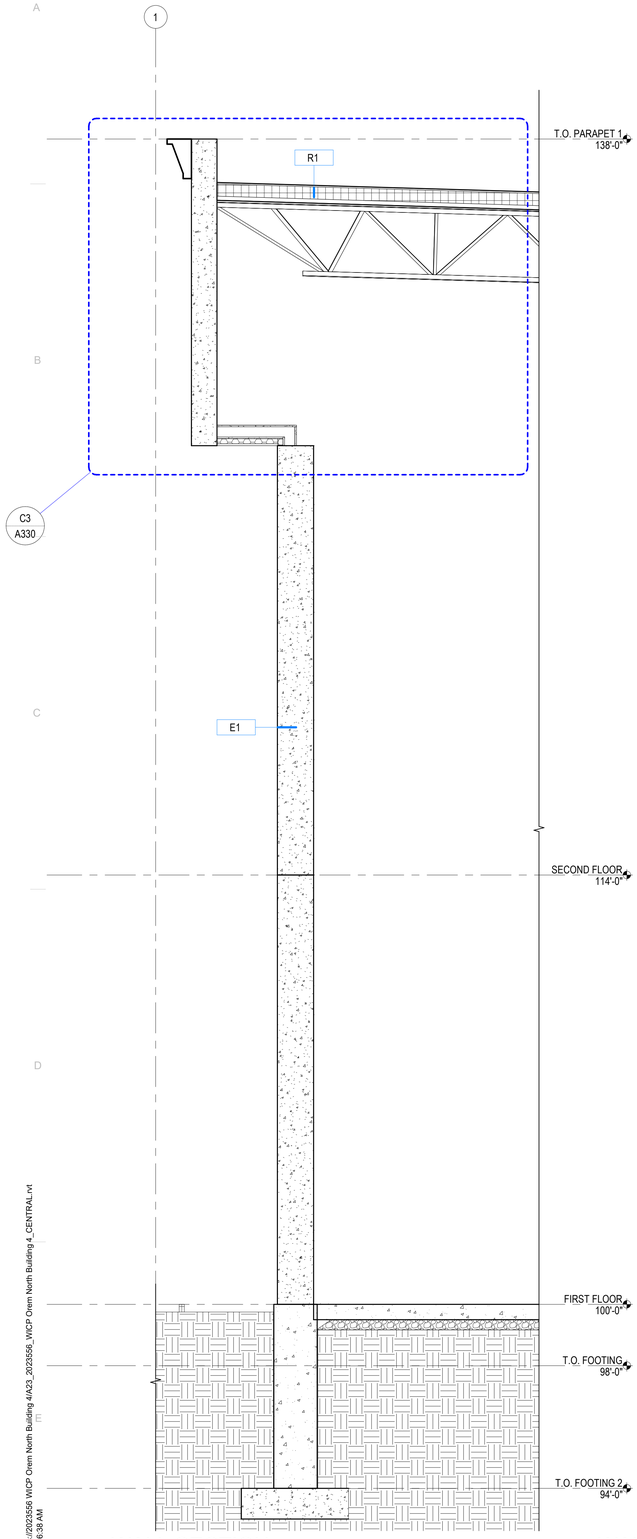
RE: Structural for concrete slab on grade thickness.

RE: G400 for Exterior Wall, Floor and Roof Types.

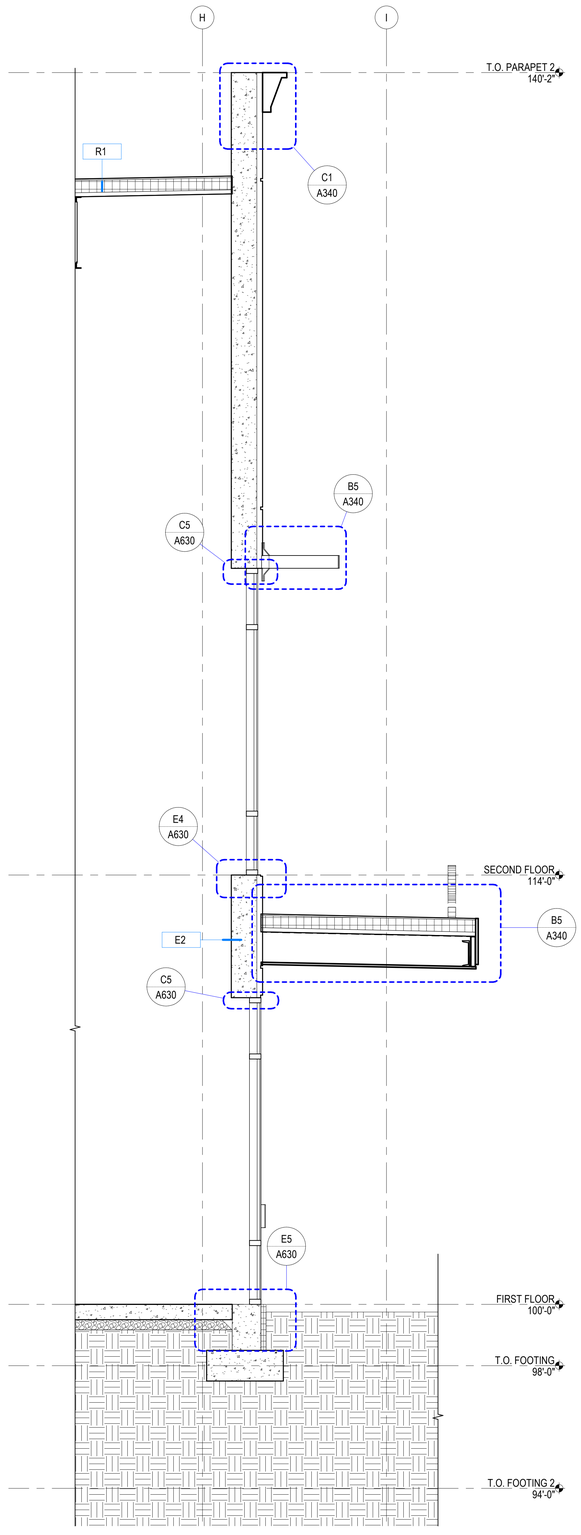
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Spray-Applied Fireproofing: Where spray-applied fireproofing is removed for attachment of walls, hangers, clip angles, etc., re-apply the fireproofing material to re-establish the required level of protection.

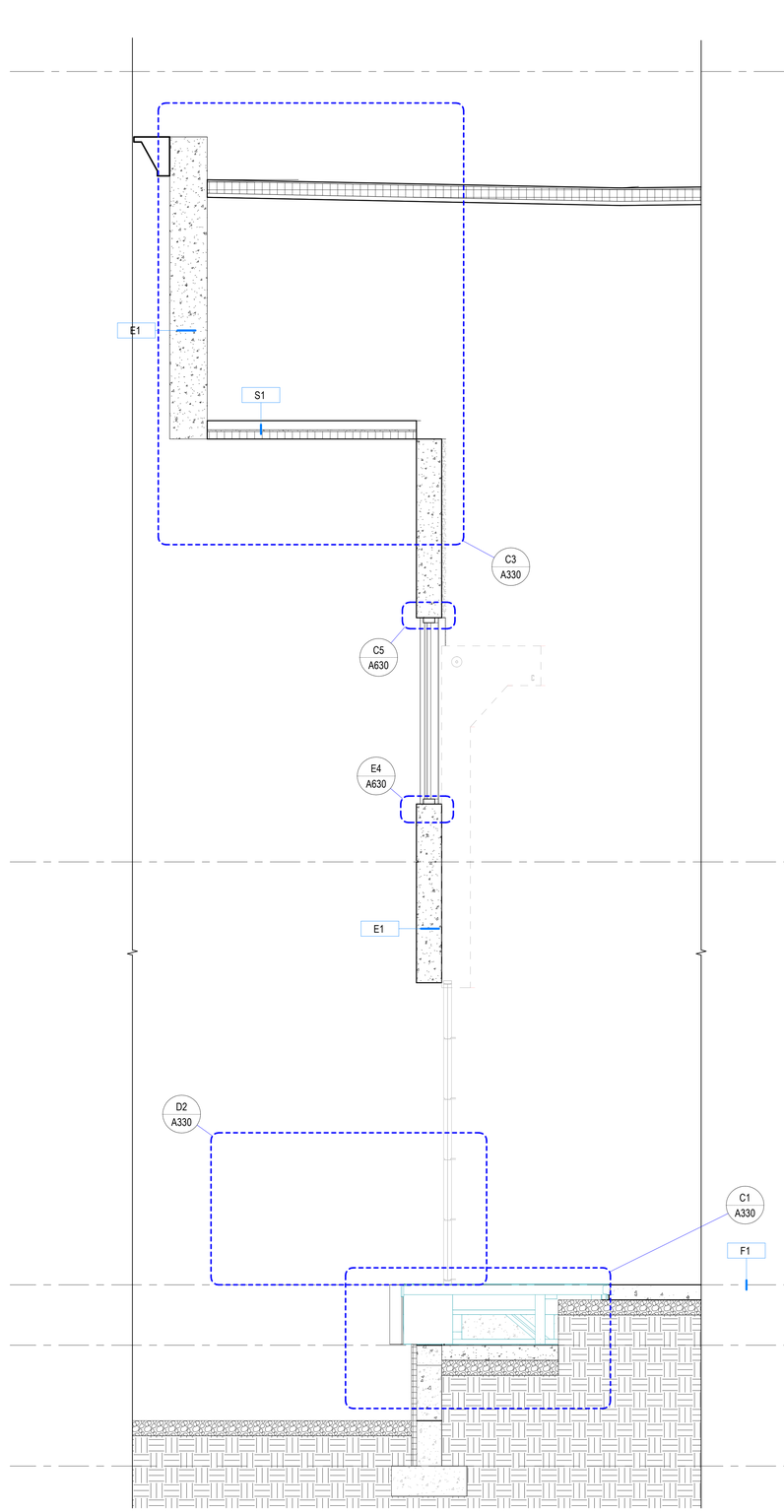
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MHTN Architects, Inc.
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Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
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E1 WALL SECTION
SCALE: 1/2" = 1'-0"



E2 WALL SECTION
SCALE: 1/2" = 1'-0"



E4 WALL SECTION
SCALE: 1/2" = 1'-0"

MOUNTAIN TECH NORTH 4

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STATE OF UTAH
ROBERTO G. PINON
6430267-0301
LICENSED ARCHITECT
18 FEB. 2025

MHTN PROJECT NO. 2023556

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REVISIONS
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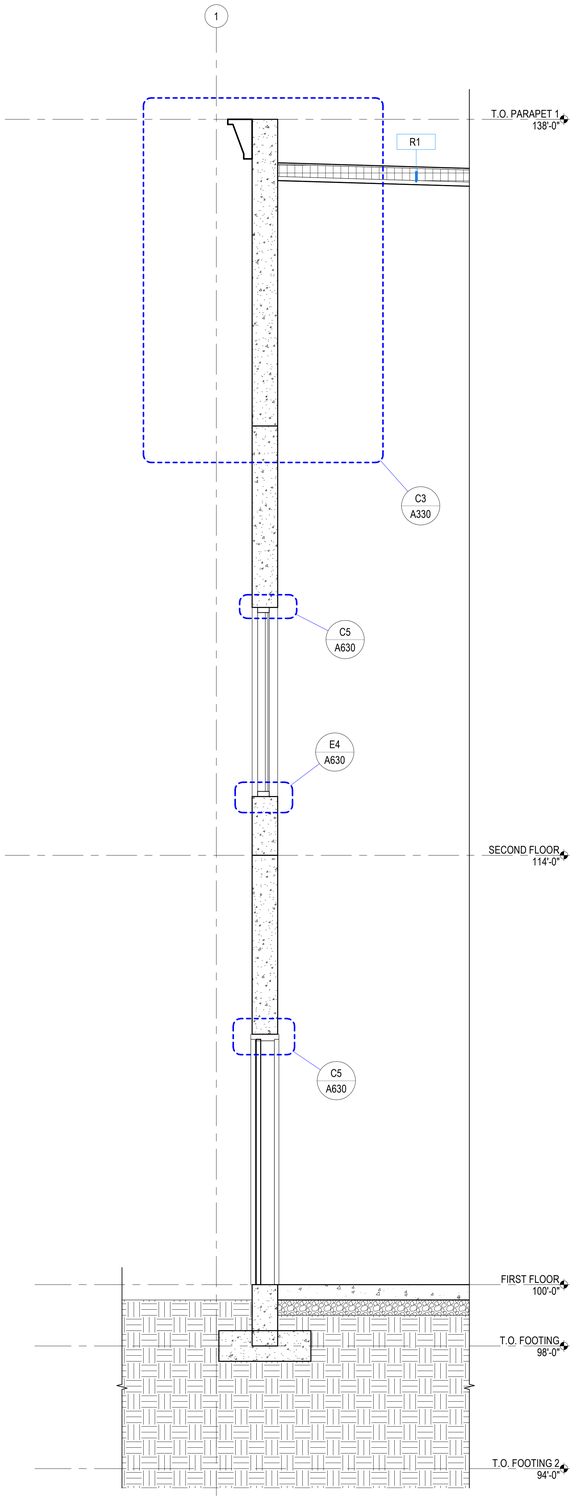
NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
WALL SECTIONS

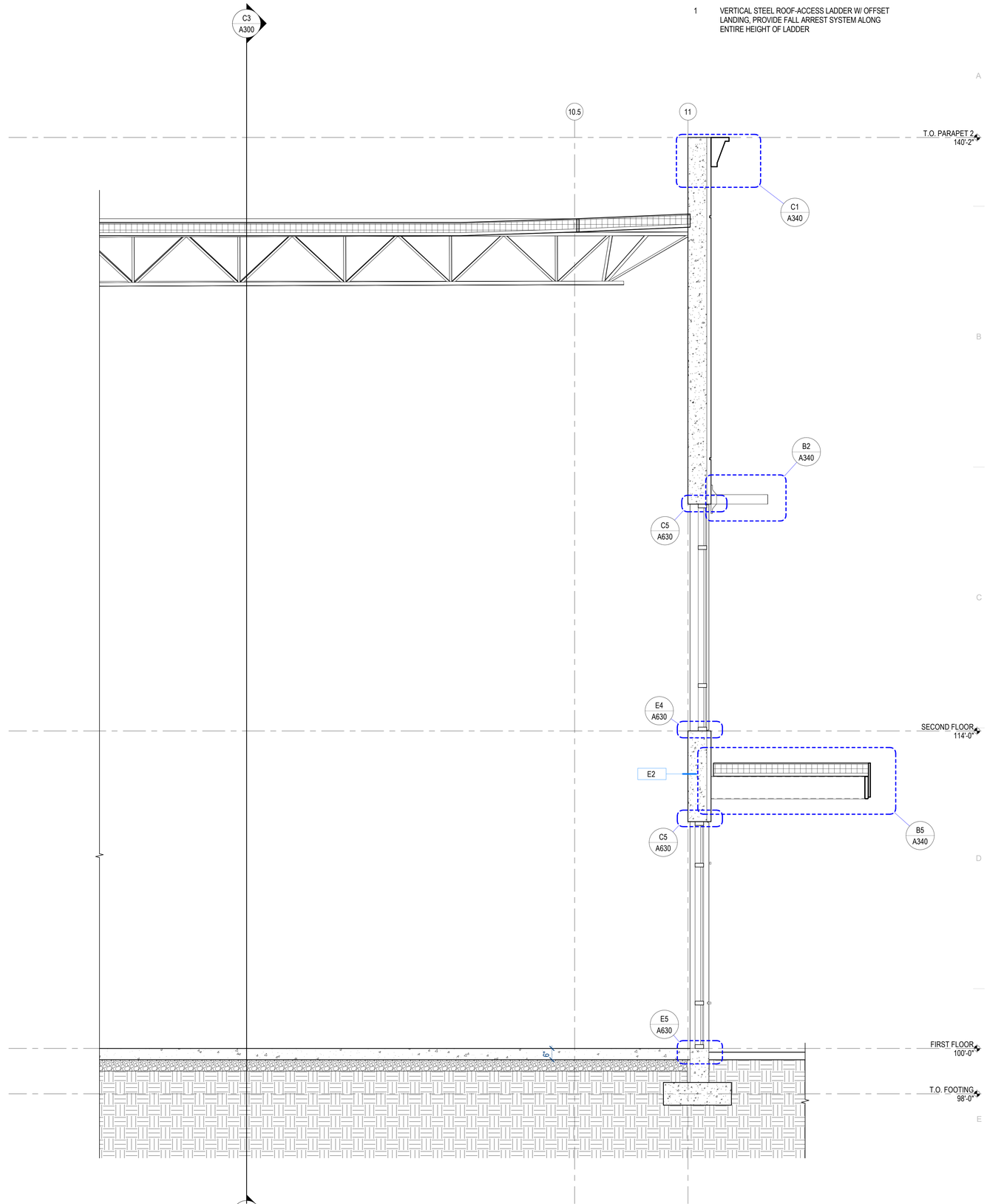
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A311

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3/27/2025 10:16:38 AM



E1 WALL SECTION

SCALE: 1/2" = 1'-0"



E3 WAL SECTION

SCALE: 1/2" = 1'-0"

KEYNOTES - INTERIOR

1 VERTICAL STEEL ROOF-ACCESS LADDER W/ OFFSET LANDING, PROVIDE FALL ARREST SYSTEM ALONG ENTIRE HEIGHT OF LADDER

MHTN
ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

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MHTN PROJECT NO. 2023556

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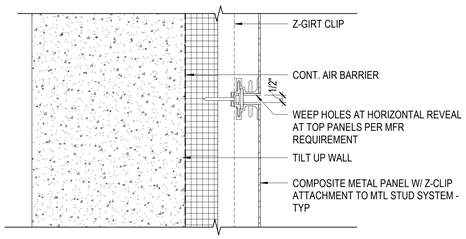
NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
WALL SECTIONS

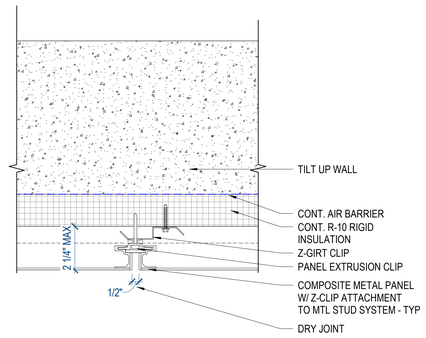
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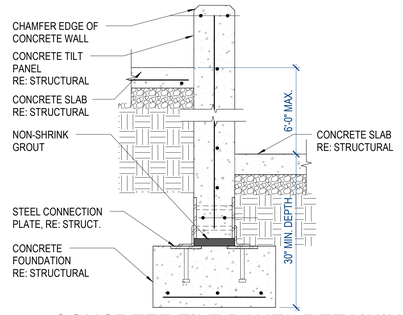
B2 METAL PANEL TYP HORIZ JOINT

SCALE: 3" = 1'-0"



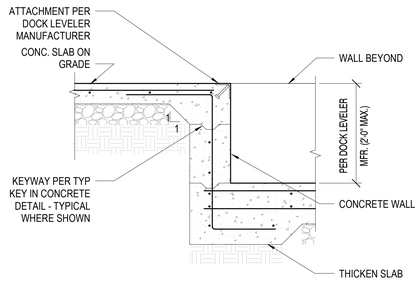
B3 METAL PANEL TYP VERT JOINT

SCALE: 3" = 1'-0"



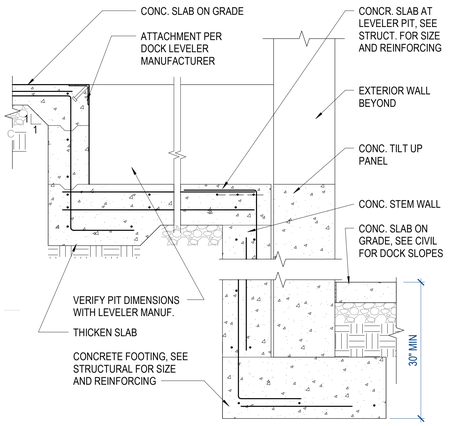
B4 CONCRETE TILT PANEL RETAINING

SCALE: 1" = 1'-0"



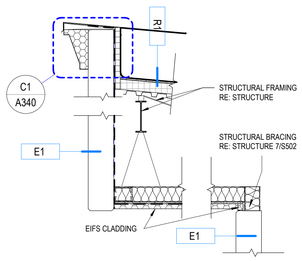
B5 CONC WALL AT DOCK LEVELER PIT

SCALE: 1" = 1'-0"



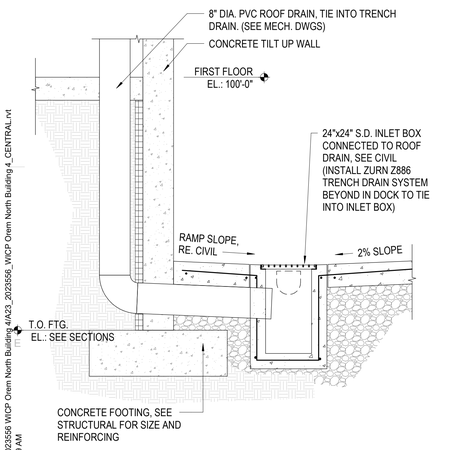
C1 CONC DOCK WALL AT LEVELER PIT

SCALE: 1" = 1'-0"



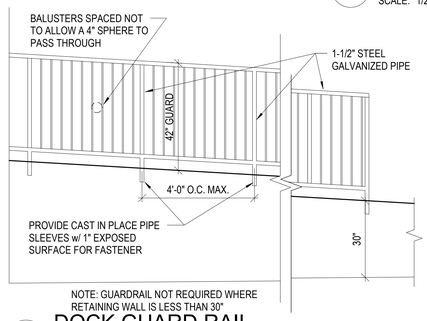
C3 SOFFIT DETAIL

SCALE: 1/2" = 1'-0"



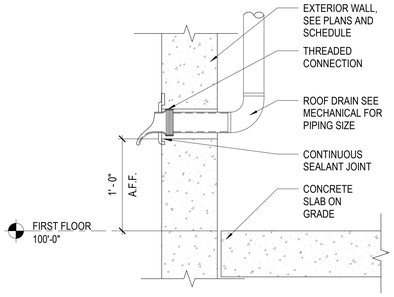
E1 TRENCH DRAIN AT DOCK DETAIL

SCALE: 3/4" = 1'-0"



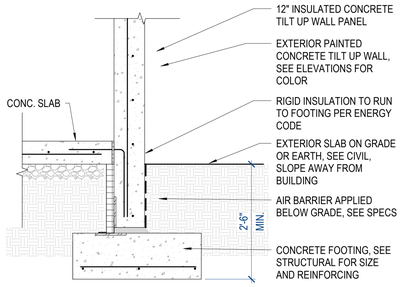
D2 DOCK GUARD RAIL

SCALE: 1/2" = 1'-0"



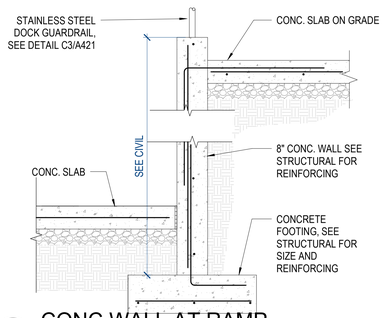
D3 OVERFLOW DRAIN

SCALE: 1 1/2" = 1'-0"



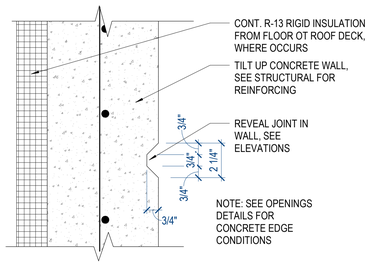
D4 CONC TILT UP WALL BELOW GRADE

SCALE: 3/4" = 1'-0"



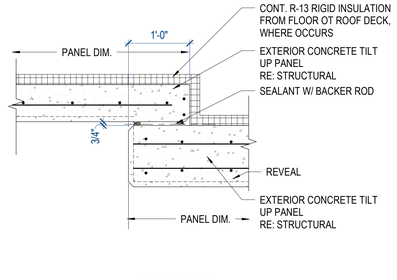
D5 CONC WALL AT RAMP

SCALE: 3/4" = 1'-0"



E2 TYPICAL 3/4 INCH REVEAL

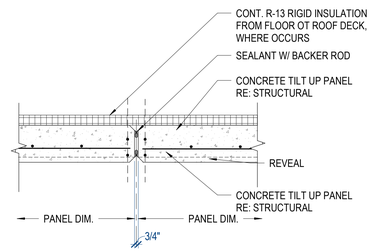
SCALE: 3" = 1'-0"



STAGGER JOINT

E3 STAGGER PANEL JOINT DETAIL

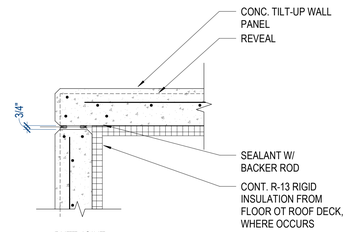
SCALE: 1" = 1'-0"



PANEL TO PANEL

E4 TYPICAL PANEL JOINT

SCALE: 1" = 1'-0"



BUTT JOINT

E5 TYPICAL CORNER JOINT

SCALE: 1" = 1'-0"

MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

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STATE OF UTAH
ROBERTO G. PINON
6450267-6301
LICENSED ARCHITECT
26 March 2025

MHTN PROJECT NO. 2023556

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REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

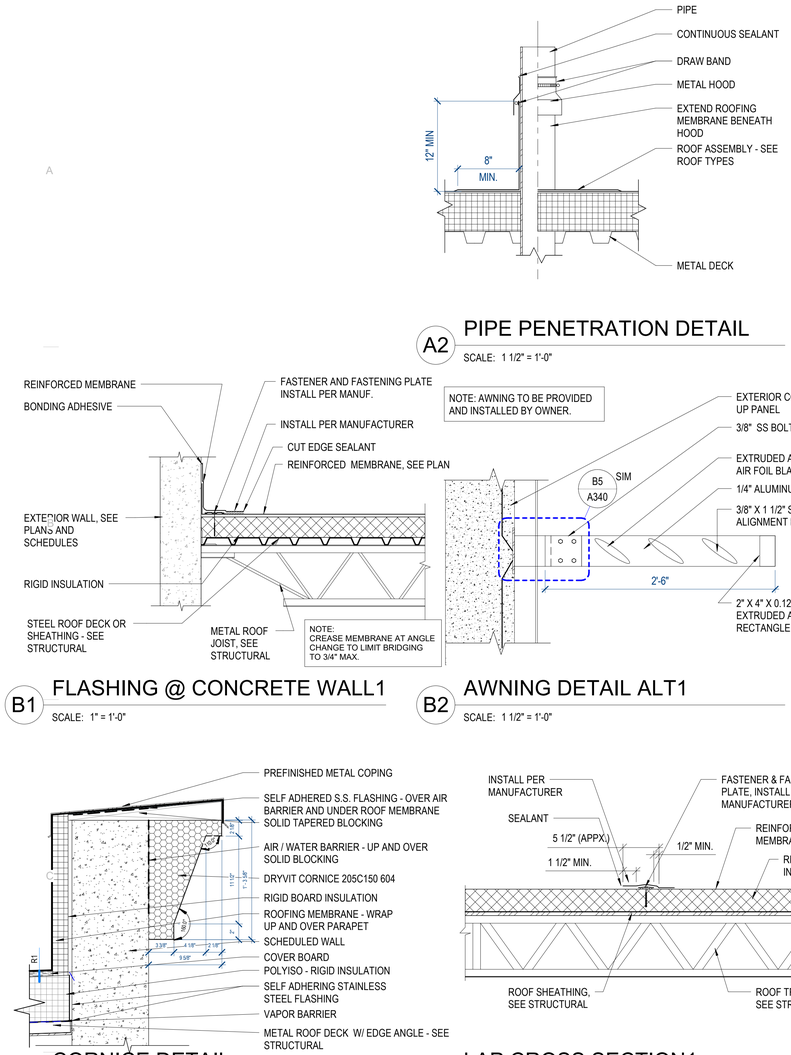
NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
ENVELOPE DETAILS

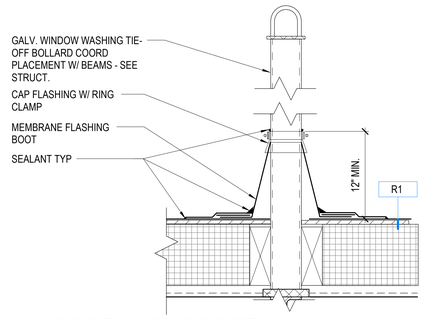
SHEET NUMBER
A330

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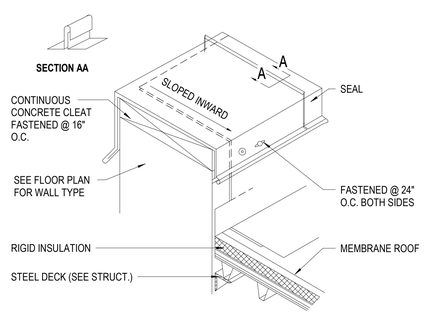
A2 PIPE PENETRATION DETAIL

SCALE: 1 1/2" = 1'-0"



A3 ROOF ANCHOR DETAIL

SCALE: 1 1/2" = 1'-0"



A4 COPING DETAIL1

SCALE: 1" = 1'-0"

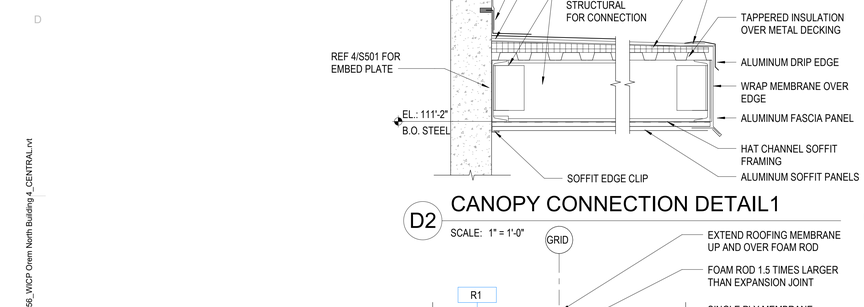
ROOF DETAIL GENERAL NOTES

Terms such as "SEE SPECS," "RE: MECHANICAL" and so forth have been omitted from these details. All details require the general contractor and sub-contractors to refer to other drawings and specifications as required to understand and provide the items indicated and to provide supporting items that may or may not be shown.

The continuous nature of the materials shown in the details is inferred, though the word "continuous" may be omitted from the detail notes.

Cleats: Unless specifically noted otherwise, provide continuous cleats.

Backer Rods: Provide backer rods at all joints that incorporate sealants.

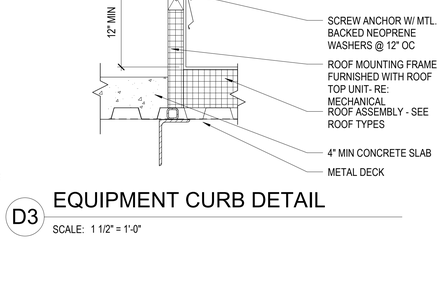


B1 FLASHING @ CONCRETE WALL1

SCALE: 1" = 1'-0"

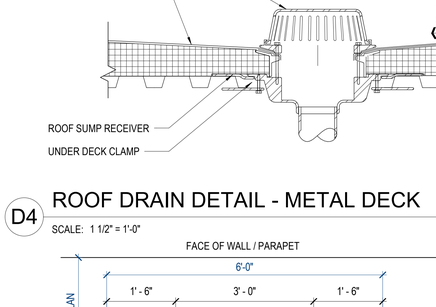
B2 AWNING DETAIL ALT1

SCALE: 1 1/2" = 1'-0"



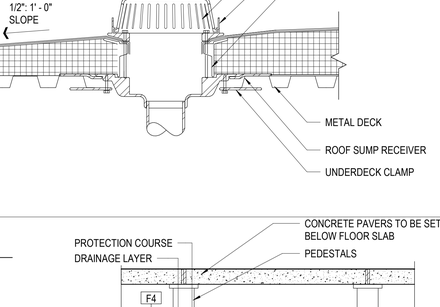
B3 AWNING DETAIL1

SCALE: 1 1/2" = 1'-0"



B4 AWNING CONN. DETAIL ALT1

SCALE: 3" = 1'-0"

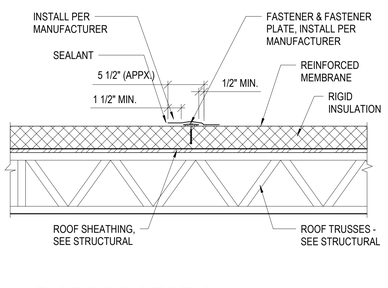


B5 AWNING CONN. DETAIL1

SCALE: 3" = 1'-0"

C1 CORNICE DETAIL

SCALE: 1 1/2" = 1'-0"



C2 LAP CROSS SECTION1

SCALE: 1" = 1'-0"

C3 CRICKET DETAIL1

SCALE: 1" = 1'-0"

C4 LADDER DETAIL

SCALE: 1" = 1'-0"

C5 ROOF HATCH DETAIL

SCALE: 3" = 1'-0"

D2 CANOPY CONNECTION DETAIL1

SCALE: 1" = 1'-0"

D3 EQUIPMENT CURB DETAIL

SCALE: 1 1/2" = 1'-0"

D4 ROOF DRAIN DETAIL - METAL DECK

SCALE: 1 1/2" = 1'-0"

E2 EXPANSION JOINT DECK TO DECK

SCALE: 1" = 1'-0"

E3 WALKWAY PAD DETAIL

SCALE: 1 1/2" = 1'-0"

E4 ROOF DRAIN PLAN

SCALE: 3/4" = 1'-0"

E5 DETAIL

SCALE: 1 1/2" = 1'-0"

MHTN ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

MOUNTAIN TECH NORTH 4

WICP COMMERCIAL

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LINDON, UTAH 84042

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STATE OF UTAH
ROBERTO G. PINON
6450267-0301
LICENSED ARCHITECT
18 FEB. 2025

MHTN PROJECT NO. 2023556

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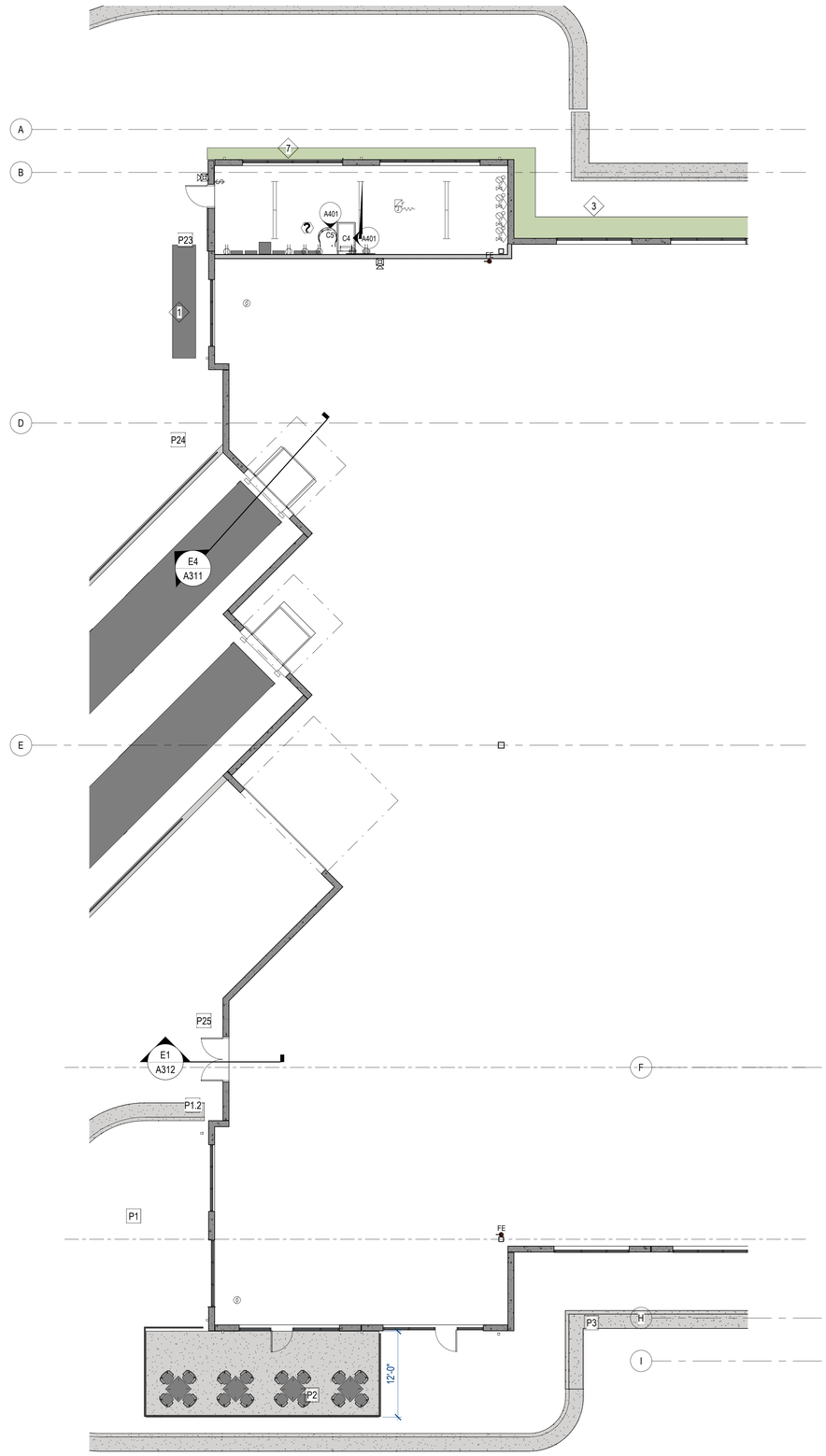
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SHEET NAME
ROOF DETAILS

SHEET NUMBER
A340

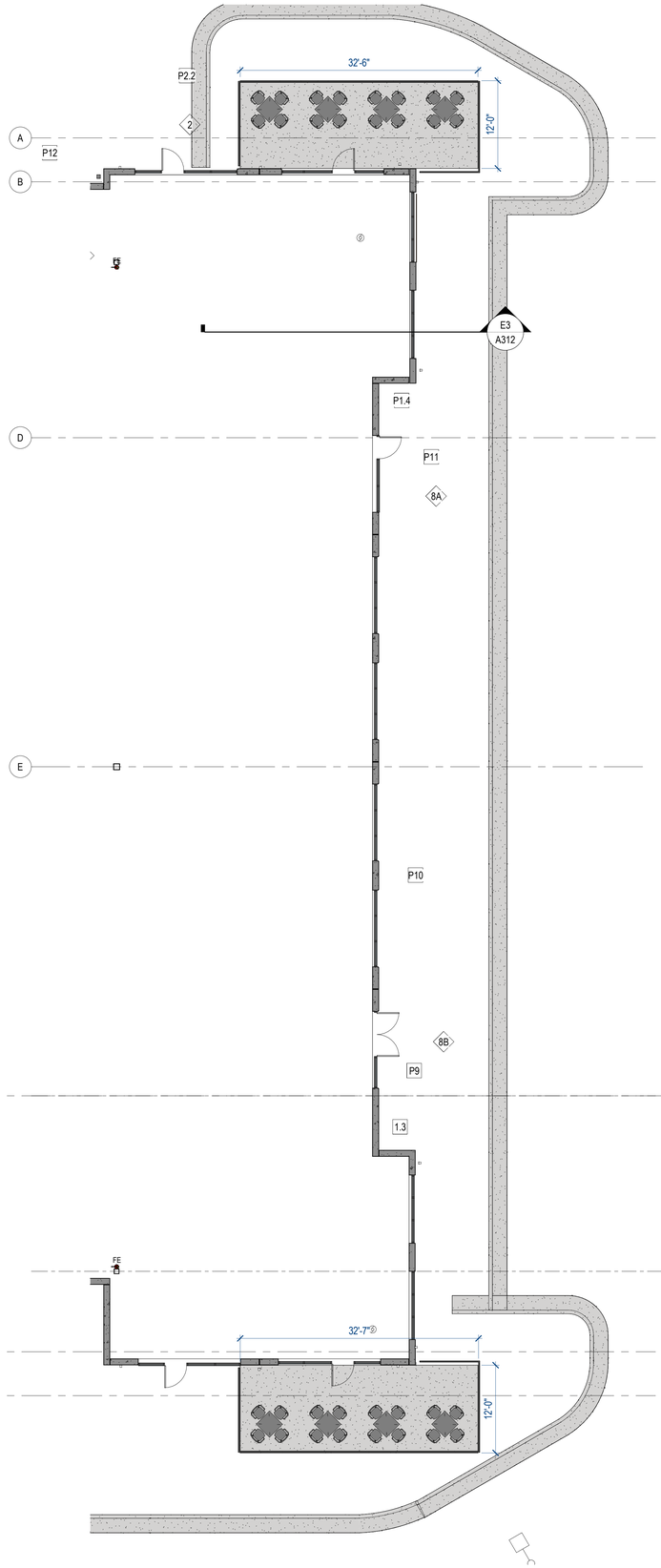
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E1 ENLARGED PATIO PLAN - WEST

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

0 4' - 0" 8' - 0" 16' - 0"



E4 ENLARGED PATIO PLAN - EAST

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

0 4' - 0" 8' - 0" 16' - 0"

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Telephone (801) 595-6700
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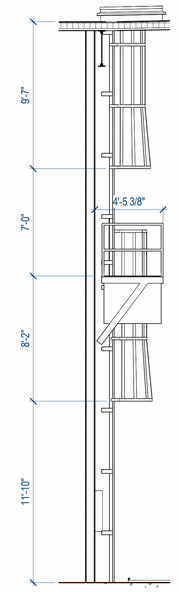
ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
ENLARGED PATIO PLANS

SHEET NUMBER
A400

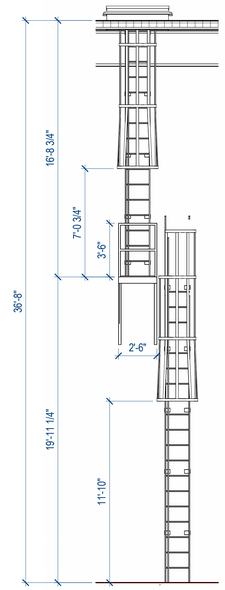
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KEYNOTES - FLOOR PLANS



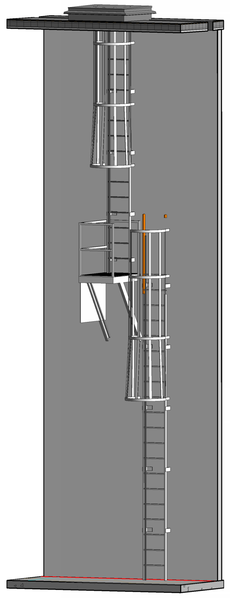
C4 LADDER ELEVATION

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



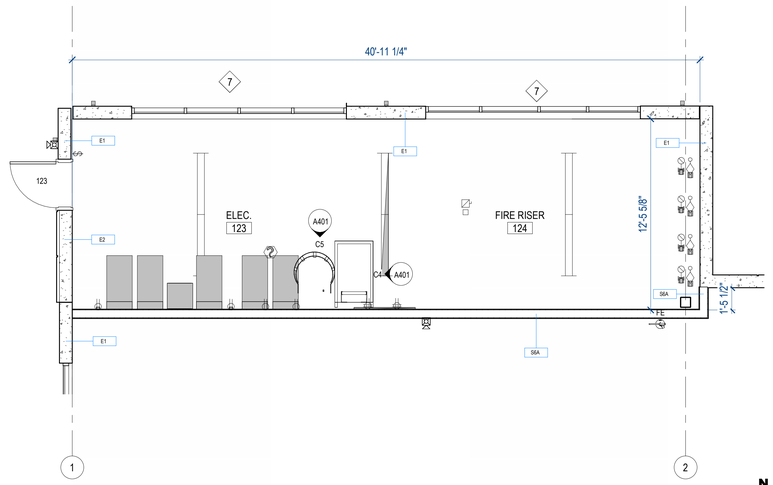
C5 LADDER ELEVATION

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



E3 LADDER 3D VIEW

SCALE:



E4 ENLARGED FIRE RISER + ELECTRICAL ROOM

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

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ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

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WICP COMMERCIAL

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DOOR AND FRAME SCHEDULE

DOOR #	DOOR TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR MATERIAL	FRAME TYPE	FRAME MATERIAL	HEAD DETAIL	JAMB DETAIL	SILL DETAIL	FIRE RATING (MIN)	HARDWARE SET	REMARKS	DOOR #
101	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		101
102	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		102
103	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		103
104	F	6'-0"	8'-0"	1 3/4"	HM	2	HM	D2/A610	D3/A610	C4/A610		02		104
105	OH2	16'-0"	14'-0"	3 1/8"	INSUL. METAL	3	MFR	D5/A610	E5/A610	-		01	DESIGNED FOR 115 MPH WIND 3 SECOND GUSTS, WIND EXPOSURE C	105
106	OH1	9'-0"	10'-0"	3 1/8"	INSUL. METAL	3	MFR	D5/A610	E5/A610	-		01	DESIGNED FOR 115 MPH WIND 3 SECOND GUSTS, WIND EXPOSURE C	106
107	OH1	9'-0"	10'-0"	3 1/8"	INSUL. METAL	3	MFR	D5/A610	E5/A610	-		01	DESIGNED FOR 115 MPH WIND 3 SECOND GUSTS, WIND EXPOSURE C	107
108	FG	3'-0"	8'-0"	1 3/4"		1	AL	E4/A610	E2/A610	C4/A610		A1		108
109	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		109
110	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		110
111	FG	6'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		111
112	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		112
113	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		113
114	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		114
115	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		115
116	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		116
117	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		117
118	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		118
119	F	6'-0"	8'-0"	1 3/4"	HM	2	HM	D2/A610	D3/A610	C4/A610		02		119
120	OH2	16'-0"	14'-0"	3 1/8"	INSUL. METAL	3	MFR	D5/A610	E5/A610	-		01	DESIGNED FOR 115 MPH WIND 3 SECOND GUSTS, WIND EXPOSURE C	120
121	OH1	9'-0"	10'-0"	3 1/8"	INSUL. METAL	3	MFR	D5/A610	E5/A610	-		01	DESIGNED FOR 115 MPH WIND 3 SECOND GUSTS, WIND EXPOSURE C	121
122	OH1	9'-0"	10'-0"	3 1/8"	INSUL. METAL	3	MFR	D5/A610	E5/A610	-		01	DESIGNED FOR 115 MPH WIND 3 SECOND GUSTS, WIND EXPOSURE C	122
123	F	3'-0"	8'-0"	1 3/4"	HM	1	HM	D2/A610	D3/A610	C4/A610		02		123
124	FG	3'-0"	8'-0"	1 3/4"	AL	1	AL	E4/A610	E2/A610	C4/A610		A1		124

Grand total: 24

DOOR SCHEDULE GENERAL NOTES

RE: A620 for the Glazing Schedule.

RE: Division 8 Section "Door Hardware" for hardware sets.

Door Leaves: At each door, provide the number of leaves shown on the plans. Where two leaves are shown, provide equal leaves, UNO.

Frame Depth: Coordinate hollow metal frame depth with wall thickness, wrapping stud framed walls. Provide depths as scheduled for masonry walls, UNO.

Abbreviations: Door and Frame Schedule Remarks abbreviations:

ADA	ADA Actuator
CR	Card Reader
DE	Delayed Egress
EL	Electric Latch
ES	Electric Strike
MO	Motor Operation
MFR	By Manufacturer
MHO	Magnetic Hold Open

HOLLOW METAL FRAME DEPTH SCHEDULE

CONCRETE DEPTH	FRAME DEPTH
6"	4 3/4"
7 1/4"	5 3/4"
8"	5 3/4"
9"	7 3/4"
10"	8 5/8"
11"/11.5"	8 3/4"
12"	9 1/4"

DOOR HARDWARE:

HARDWARE GROUP NO. 01 - RIM OR MORTISE CYLINDER AS REQUIRED
For use on Door #(s): OVERHEAD VERTICAL LIFT DOOR
Provide each RU door(s) with the following:

1	EA	MORTISE CYLINDER	20-001	626	SCH

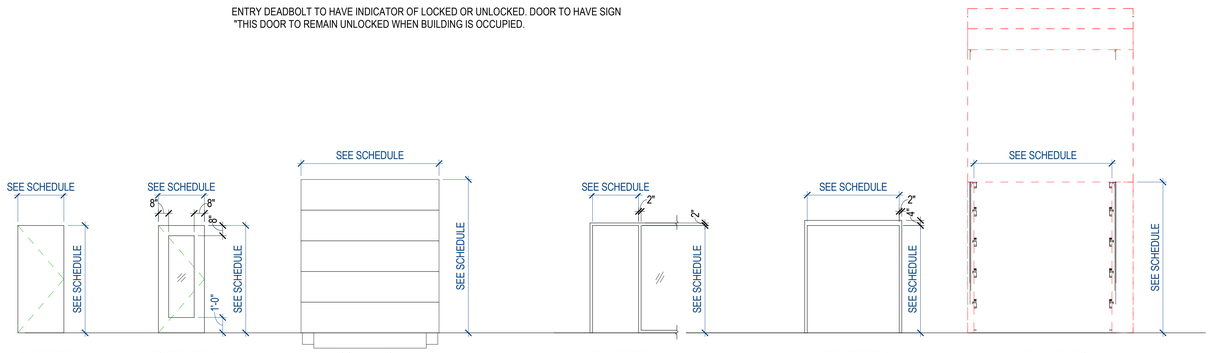
HARDWARE GROUP NO. 02 - EXIT/ENT
For use on Door #(s): 3'x8' HM FRAME & DOOR
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1HW 4.5x4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	19-RN-NL x 912L-LN-DANE	SP28	FL
1	EA	MORTISE CYLNDER	GMS M114 SC 26D	26D	CBEM
1	EA	SURFACE CLOSER	4040XP SCUSH MC TBWMS	689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30	689	LCN
1	EA	KICK PLATE	8400 10"x 2" LDW B-CS	630	IVE
1	EA	GASKETING	429AA-S	AA	ZER
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	545A-223	A	ZER

HARDWARE GROUP NO. A1 - EXIT/ENT
For use on Door #(s): STOREFRONT ENTRY DOOR
Provide each PR door(s) with the following:

1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	DEADBOLT	1851		ADR
1	EA	THRESHOLD BOLT	4015-18-IB		ADR
1	EA	HEADER BOLT	4085-02-IB		ADR
1	EA	RIM CYLINDER	MATCH EXISTING	626	TBD
1	EA	LONG DOOR PULL	9264 36" 20" STD	630-316	IVE
1	EA	SURFACE CLOSER	4040XP EDAW/62G	689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30	689	LCN

ENTRY DEADBOLT TO HAVE INDICATOR OF LOCKED OR UNLOCKED. DOOR TO HAVE SIGN "THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED.



(NO WINDOWS IN OH DOORS)

DOOR & FRAME TYPES

MHTN ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

MOUNTAIN TECH NORTH 4
WICP COMMERCIAL
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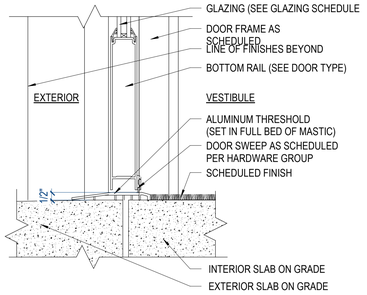
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SHEET NAME
DOOR SCHEDULE

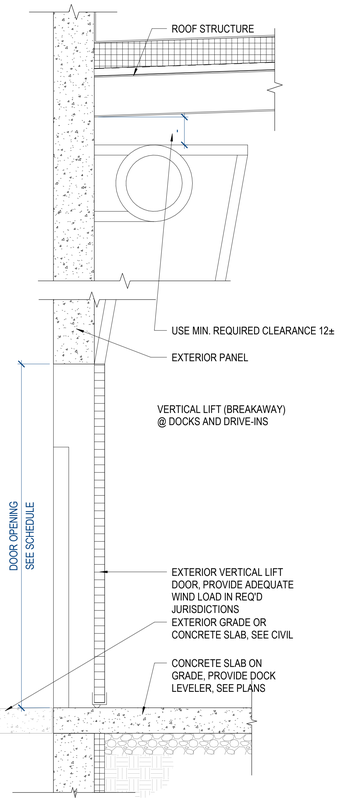
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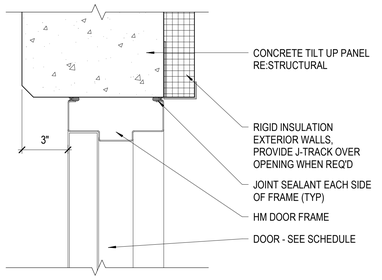
C4 DETAIL

SCALE: 3" = 1'-0"



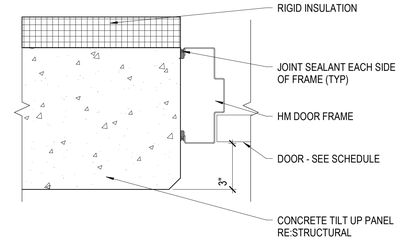
D5 HEAD AT SECTIONAL DOOR1

SCALE: 1" = 1'-0"



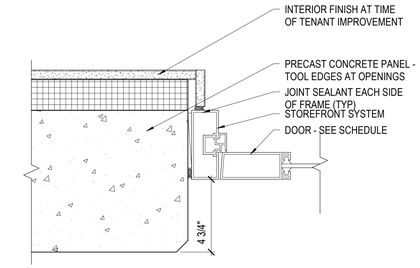
D2 DOOR HEAD DETAIL

SCALE: 3" = 1'-0"



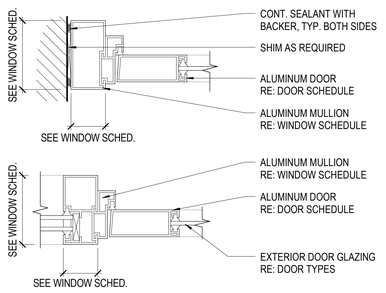
D3 DOOR JAMB DETAIL

SCALE: 3" = 1'-0"



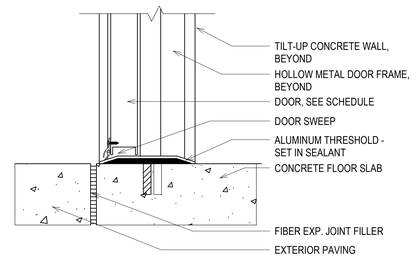
D4 DOOR JAMB DETAIL

SCALE: 3" = 1'-0"



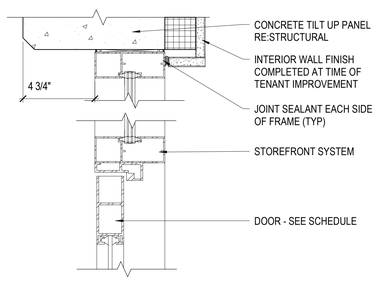
E2 TYP. JAMB DETAIL

SCALE: 3" = 1'-0"



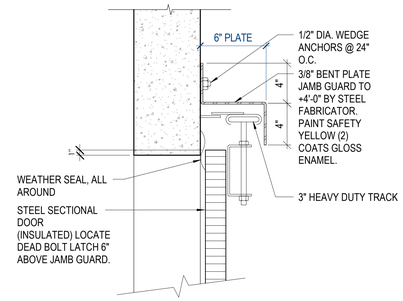
E3 THRESHOLD DETAIL

SCALE: 3" = 1'-0"



E4 DOOR HEAD DETAIL

SCALE: 3" = 1'-0"



E5 JAMB (SECTIONAL DOOR)1

SCALE: 1" = 1'-0"

MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MOUNTAIN TECH NORTH 4

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A610

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GLAZING SCHEDULE	
T22	1" LOW-E COATED, TINTED, TEMPERED, INSULATING VISION GLASS
T24	6mm CERAMIC COATED, TINTED, TEMPERED, SPANDREL GLASS

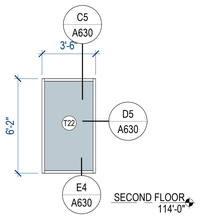
WINDOW TYPES GENERAL NOTES

Window Frames: Frames are aluminum storefront, UNO. Finish as specified.

Glass Type: Provide the following glass types, UNO:
- Exterior Window/Storefront/Curtainwall Systems: 14 (1" Low-E Coated, Clear Tempered Insulated Glass)
- Interior Window Systems: 2 (6mm Clear Tempered Float Glass)

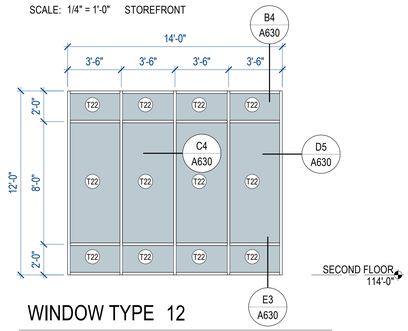
End Dams: Provide end dams at sill flashing.

Coordination: Coordinate all trades to provide complete systems, including, but not limited to framing, glazing, sealants, flashing, brake metal and backing.



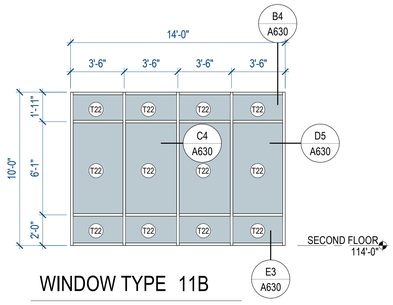
WINDOW TYPE 14

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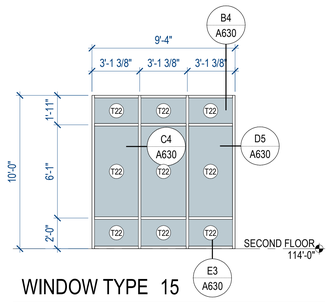
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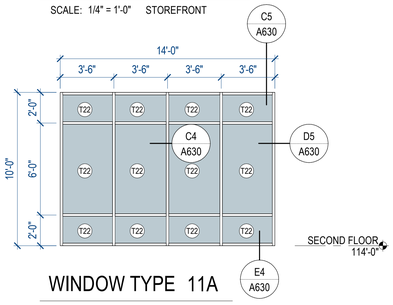
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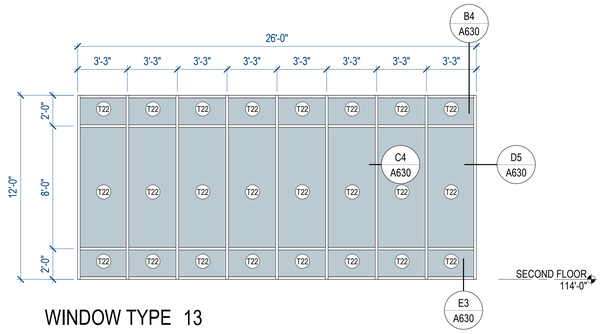
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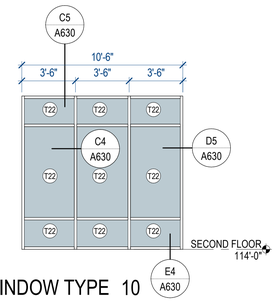
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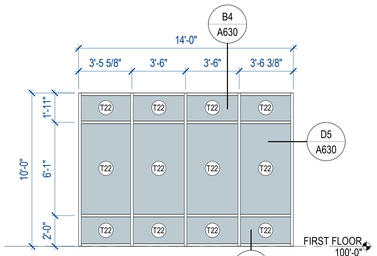
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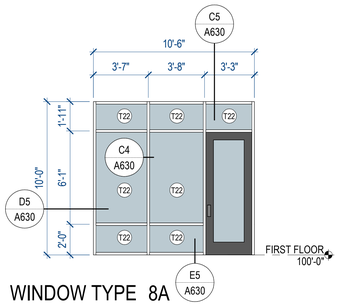
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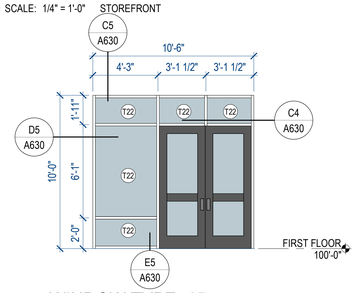
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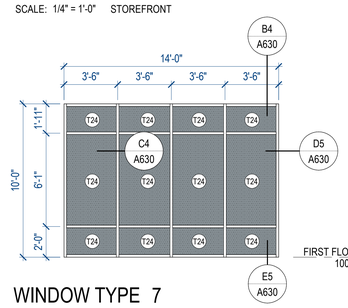
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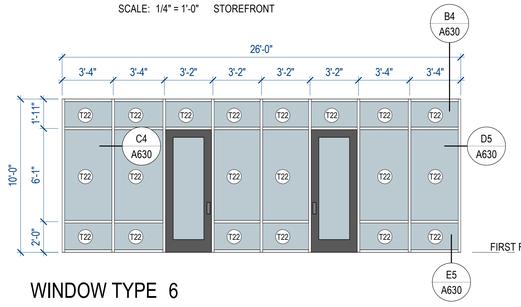
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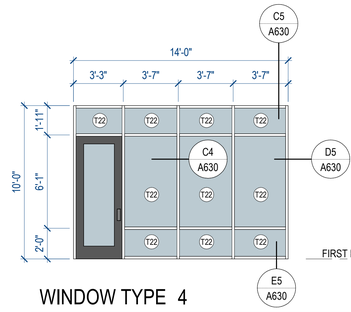
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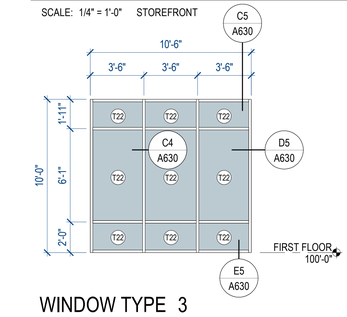
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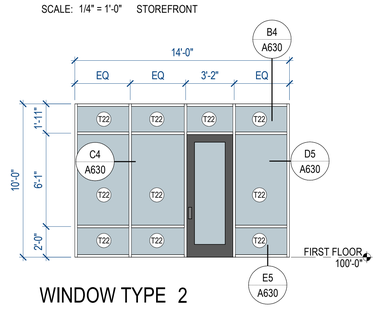
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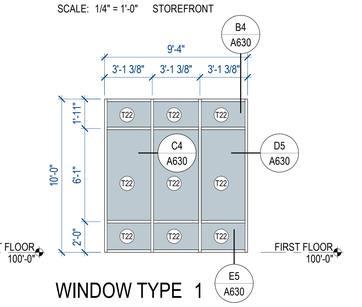
WINDOW TYPE 3

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



WINDOW TYPE 2

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



WINDOW TYPE 1

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

MHTN
ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

MOUNTAIN TECH NORTH 4

WICP COMMERCIAL

2800 W 650 N
LINDON, UTAH 84042

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STATE OF UTAH
ROBERTO G. PINON
6430267-0301
LICENSED ARCHITECT
18 FEB. 2025

MHTN PROJECT NO. 2023556

Original drawing is 30 x 42. Do not scale contents of this drawing.

REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

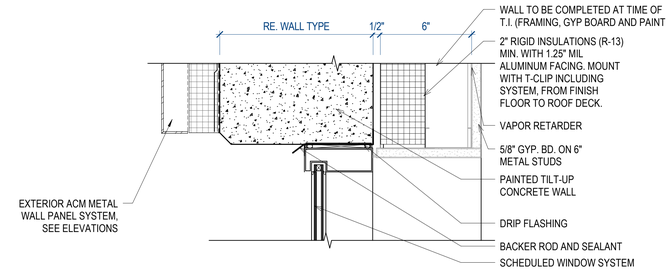
NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
26 MARCH 2025

SHEET NAME
WINDOW TYPES

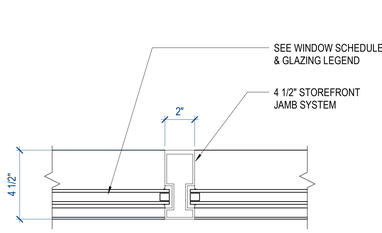
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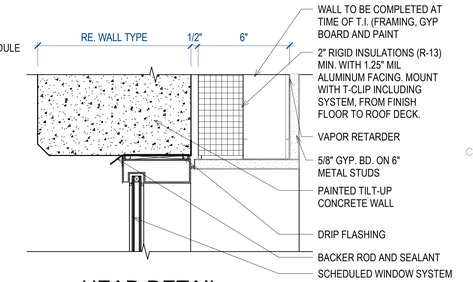
B4 HEAD DETAIL

SCALE: 3" = 1'-0"



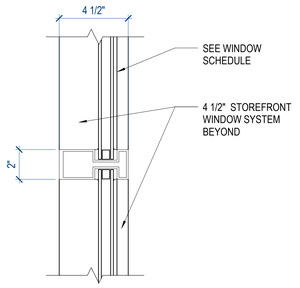
C4 VERTICAL MULLION DETAIL

SCALE: 3" = 1'-0"



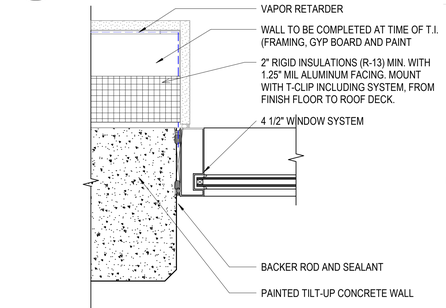
C5 HEAD DETAIL

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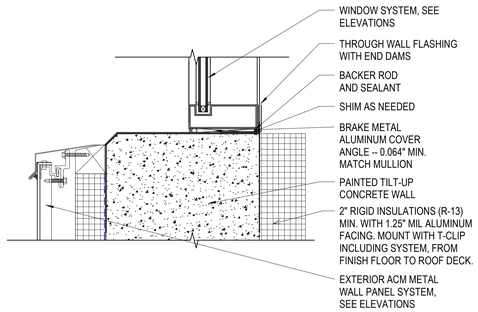
D4 HORITZONTAL MULLION DETAIL

SCALE: 3" = 1'-0"



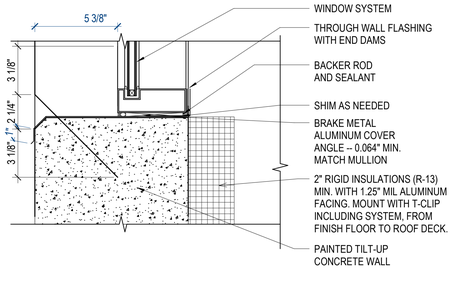
D5 JAMB DETAIL

SCALE: 3" = 1'-0"



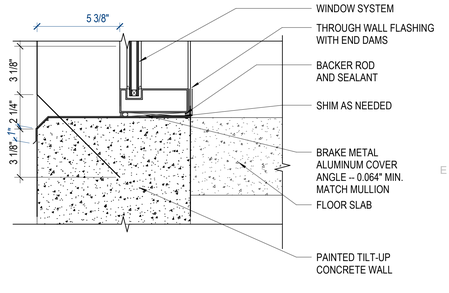
E3 SILL DETAIL

SCALE: 3" = 1'-0"



E4 SILL DETAIL

SCALE: 3" = 1'-0"



E5 SILL DETAIL

SCALE: 3" = 1'-0"

MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MOUNTAIN TECH NORTH 4

WICP COMMERCIAL

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6450267-0301
LICENSED ARCHITECT
26 March 2025

MHTN PROJECT NO. 2023556

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REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

NO.△	DATE	DESCRIPTION

ISSUE
PERMIT SET
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SHEET NAME
WINDOW DETAILS

SHEET NUMBER
A630

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LEGEND - REFLECTED CEILING PLANS

OTS — OPEN TO STRUCTURE

MECHANICAL DIFFUSERS
SEE MECHANICAL

LIGHT FIXTURES
SEE ELECTRICAL

REFLECTED CEILING PLAN GENERAL NOTES

RE: A710 for typical suspended ceiling details, including seismic bracing.

Ceiling Height: 9'-0" UNO. Where floor height varies in a room, ceiling height is shown at the entry to the room, UNO.

Ceiling Grid/Panel Alignment: The design intent of the Reflected Ceiling Plans is center ceiling grids or acoustical panels between walls in both directions, or to center grids in one direction, panels in the other. If the grid does not comply with the design intent, then coordinate with Architect to adjust the ceiling layout prior to installation.

Seismic Design Category: D: Heavy-duty suspension system required / Refer to Structural / Refer to Specifications.

Seismic Bracing: Rigid bracing required at ceilings over 1,000 SF and at all ceilings with fire sprinklers and other penetrations.

Seismic Control Joints: Provide seismic control joints in suspended acoustical ceilings greater than 2,500 SF.

Control Joints: Provide control joints in gypsum board ceilings at 30'-0" max spacing. Coordinate locations with Architect to align joints with other elements in the ceilings or on the walls.

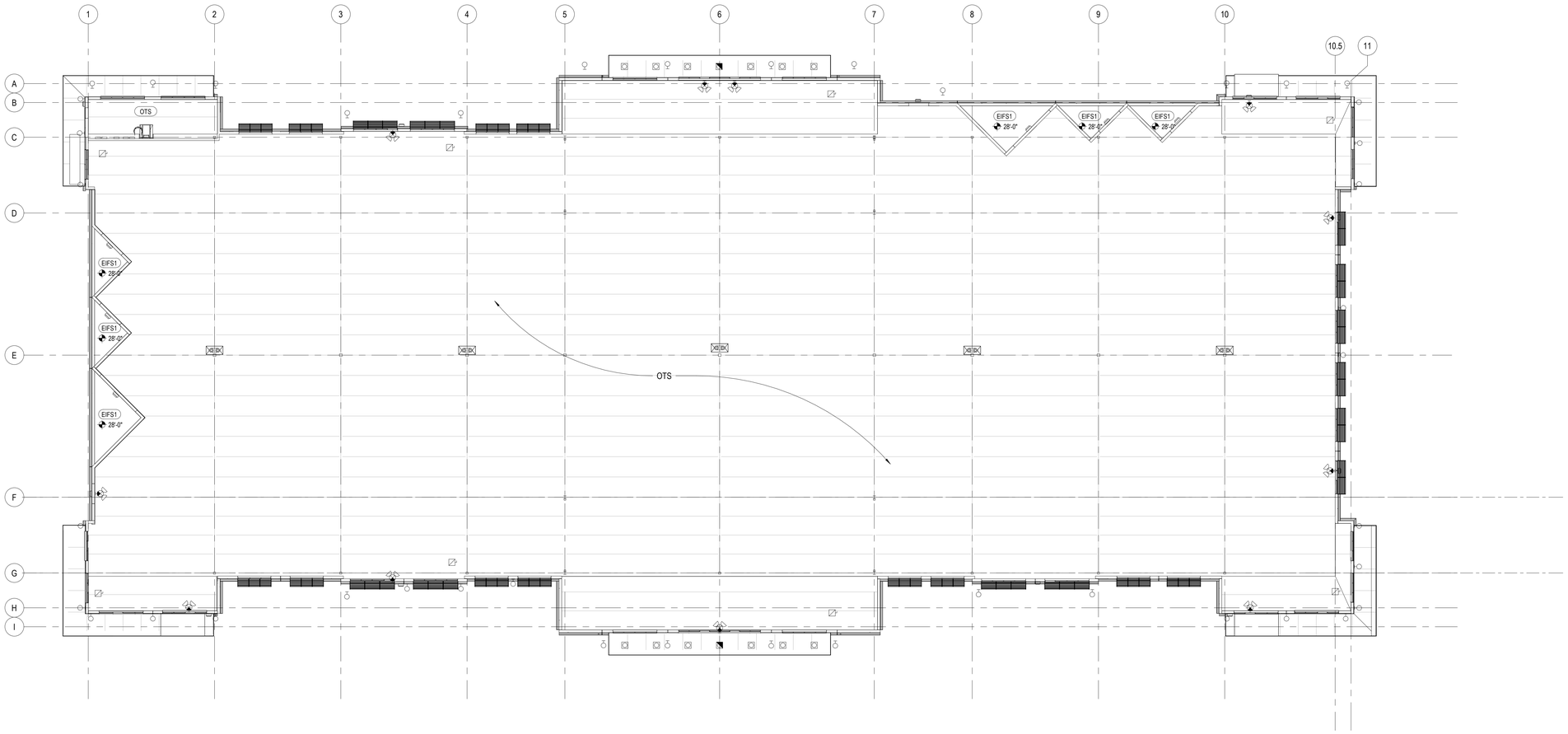
Exposed Elements: Paint exposed structure, pipe, conduit and HVAC duct at open ceilings and at open areas around ceiling clouds. Color: As selected by Architect.

Walls to Deck: Extend all walls to deck, including all components of the wall assembly, UNO.

Fire Sprinklers: Center sprinkler heads in acoustical panels; run in straight lines in orthogonal, rectangular spaces.

Electrical, Mechanical and other Devices: Center in acoustical panels. Coordinate feature lighting layout with Architect prior to rough-in.

Keynotes: Not all keynotes apply to this sheet.



FIRST FLOOR REFLECTED CEILING PLAN

SCALE: 1/16" = 1'-0"

0 8' - 0" 16' - 0" 32' - 0"

N

MHTN
ARCHITECTS
MHTN Architects, Inc.
280 South 400 West
Suite 250
Salt Lake City, Utah 84101
Telephone (801) 595-6700
www.mhtn.com

MOUNTAIN TECH NORTH 4

WICP COMMERCIAL

2800 W 650 N
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REVISIONS
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ISSUE
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SHEET NAME
REFLECTED CEILING PLAN

SHEET NUMBER
A701

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DIVISION 22/23 - PLUMBING/HVAC

SECTION 23 0500
COMMON WORK RESULTS FOR HVAC

GENERAL CONDITIONS :

The General Conditions of the Contract, with the amendments, supplements, forms and requirements in Division 1, and herewith made a part of this Division.

All sections of Division 23 shall comply with the Mechanical General Requirements. The standards established in this section as to quality of materials and equipment, the type and quality of workmanship, mode of operations, safety rules, code requirements, etc., shall apply to all sections of this Division as though they were repeated in each Division.

HVAC systems were designed in compliance with ASHRAE 90.1.

SCOPE OF WORK :

The project described herein is the WCP Orem North Building 4, Lindon, UT.
This work shall include all labor, materials, equipment, fixtures, and devices for the entire mechanical work and a complete operating, tested and commissioned installation.

Section 223 Index:

SECTION 23 0500 - COMMON WORK RESULTS FOR HVAC
SECTION 23 0553 - IDENTIFICATION FOR HVAC PIPING & EQUIPMENT
SECTION 23 0700 - HVAC INSULATION
SECTION 23 1123 - FACILITY NATURAL GAS PIPING
SECTION 23 2300 - REFRIGERANT PIPING
SECTION 23 5100 - BREECHINGS, CHIMNEYS AND STACKS
SECTION 23 7413 - PACKAGED, OUTDOOR, CENTRAL STATION AIR HANDLING UNITS
SECTION 23 3113 - METAL DUCTS
SECTION 23 3300 - AIR DUCT ACCESSORIES
SECTION 23 3423 - HVAC POWER VENTILATORS
SECTION 23 3713 - DIFFUSERS, REGISTERS, AND GRILLES
SECTION 23 0900 - INSTRUMENTATION AND CONTROLS FOR HVAC
SECTION 23 0593 - TESTING, ADJUSTING AND BALANCING FOR HVAC

SYSTEM DESCRIPTION :

CODES & ORDINANCES :

All work shall be executed in accordance with all underwriters, public utilities, local and state rules and regulations applicable to the trade affected. Should any change in the plans and Specifications be required to comply with these regulations, the Contractor shall notify the Engineer before the time of submitting his bid. After entering into contract, the Contractor will be held to complete all work necessary to meet these requirements without extra expense to the Owner. Where work required by drawings or specifications is above the standard required, it shall be done as shown or specified.

Applicable codes are as follows:
2021 International Mechanical Code
2021 International Building Code
2021 International Energy Code
2021 International Fuel Gas Code

SUBMITTALS AND SHOP DRAWINGS :

Submittals :

As soon as possible after the contract is awarded, but in no case more than 5 calendar days thereafter, the Contractor shall submit to the Engineer four (4) copies of the descriptive literature covering products and materials to be used in the installation of mechanical systems for this project. The review of the submitted data will require a minimum of [7] days. If the Contractors schedule requires return of submitted literature in less than the allotted time, the Contractor shall accelerate his submittal delivery date. The Contractor shall resubmit all items requiring re-review within 7 days of returned submittals. Refer to each specification section for items requiring submittal review. Written approval of the Owner's Representative shall be obtained before installing any such equipment or materials for the project. The submittals shall be prepared in an orderly manner, contained in a 3-ring loose-leaf binder with index and identification tabs each item or group of items and for each specification section. All items shall be submitted at one time except automatic temperature control drawings and seismic restraint drawings which may be submitted separately within 60 days of the contract award date. Partial submittals will not be reviewed until the complete submittal is received.

Submitted literature shall bear the Contractor's stamp, indicating that he has checked all equipment being submitted; that each item will fit into the available space with the accesses shown on the drawings; and, further, that each item conforms to the capacity and quality standards given in the contract documents.

Submitted literature shall clearly indicate performance, quality, and utility requirements; shall show dimension and size of connection points; and shall include derating factors that were applied for each item of equipment to provide capacity at job site elevation. Temperature control submittals shall include piping and wiring diagrams, sequence of operation and equipment. Equipment must fit into the available space with allowance for operation, maintenance, etc. Factory piped and wired equipment shall include shop drawings for all internal wiring and piping furnished with the unit.

Submitted literature shall clearly show all required field install wiring, piping, and accessory installations required by the Contractor to provide a complete operating system.

Review by the Owner's Representative is for general conformance of the submitted equipment to the project specification. In no way does such review relieve this Contractor of his obligation to furnish equipment and materials that comply in detail to the specification nor does it relieve the Contractor of his obligation to determine actual field dimensions and conditions that may affect his work. Regardless of any items overlooked by the submittal review, the requirements of the contract drawings and specifications must be followed and are not waived or superseded in any way by the review.

The contractor is to review equipment by description, catalog number, and manufacturer's names. Standards of quality have been established by the Engineer for certain manufactured equipment items and specialties that are to be furnished by this Division. Alternate products and equipment may be proposed for use only if specifically named in the specifications or if given written prior approval in published addenda. Design equipment is the equipment listed on the drawings or if not listed on the drawings is the equipment first named in the specifications.

Alternate Equipment :
The Contractor should protect himself with the supplier of alternate named equipment. Alternate named equipment will be reviewed only one time.

Should alternate equipment be submitted and be rejected, it shall not be resubmitted for review and it shall be the responsibility of this contractor. The contractor shall only submit on design equipment on future submittals. Incomplete submittal data will be rejected.

If the Engineer is required to do additional design work to incorporate changes caused by submitting equipment or products, different than the design equipment specified, as defined above, the contractor shall reimburse the engineer for additional time and expenses at the engineers current, recognized, hourly rates.

DRAWINGS AND MEASUREMENTS :

Drawings :

The contract document drawings show the general design, arrangements, and extent of the system. In certain cases, the drawings may include details that show more nearly exact locations and arrangements; however, the locations, as shown diagrammatically, are to be regarded as general.

It shall be the work of this Section to make such slight alterations as may be necessary to make adjustable parts fit to fixed parts, leaving all complete and in proper shape when done. All dimensions given on the drawings shall be verified as related to this work and with the Engineer's office before work is started.

This Section shall carefully study building sections, space, clearances, etc., and then provide offsets in piping or ductwork as required to accommodate the building structure without additional cost to the Owner. In any case and at any time, a change in location required by obstacles or the installation of other trades not shown on the mechanical plans shall be made without charge.

The drawings shall not be scaled for roughing in measurements nor shall they be used as shop drawings. Where drawings are required for these purposes or where drawings must be made from field measurements, the Contractor shall take the necessary measurements and prepare the drawings. Shop drawings of the various subcontractors shall be coordinated to eliminate all interferences and to provide sufficient space for the installation of all equipment, piping, ductwork, etc.

The drawings and specifications have been prepared to supplement each other and they shall be interpreted as an integral unit with items shown on one and not the other being furnished and installed as though shown and called out on both.

Record Drawings:

Record drawings for all systems and sections of this Division shall be furnished as work of this Section. Blue-line white prints of floor plans shall be furnished by the Engineer's office. These prints shall be accurately and neatly marked in colored pencil, showing all changes from schematics. Installation and commissioning checklists that are provided on the drawings are to be initialed and dated upon completion.

These drawings shall be reviewed with the Engineer's at least once each month, shall be submitted at time of final inspection, and shall be checked for accuracy. Failure to keep record drawings up-to-date shall be cause for withholding monthly payments.

CONTRACTOR'S USE OF BUILDING EQUIPMENT :

The Contractor may use equipment such as electric motors, fans, heat exchangers, filters, etc., with the written permission of the Owner. As each piece of equipment is used (such as electric motors and fans), maintenance procedures approved by the manufacturer are to be followed. A careful record is to be kept of the length of the time the equipment is used, maintenance procedures followed, and any difficulty encountered. The record is to be submitted to the Owner upon acceptance. All fan belts and filter media (such as bearings) shall be carefully inspected just prior to acceptance. Any excessive wear noted shall require replacement. Any damage by Contractor to be replaced by Contractor.

EXISTING CONDITIONS :

The Contractor shall carefully examine all existing conditions that might affect the mechanical system and shall compare these conditions with all drawings and specifications for work included under this contract. He shall, at such time, ascertain and check all conditions that may affect his work. No allowance shall subsequently be made in his behalf for an extra expense incurred as a result of his failure or neglect to make such examination. This Contractor shall include in his bid proposal all necessary allowances to repair or replace any item that will remain or will be removed, and any item that will be damaged or destroyed by new construction.

The Contractor shall remove all abandoned piping, etc. , required by new construction and cap or plug openings. No capping, etc., shall be exposed in occupied areas. All openings of items removed shall be sealed to match adjacent surfaces.

The Contractor shall verify the exact location of all existing services, utilities, piping, etc., and make connections to existing systems as required or as shown on the drawings. The exact location of each utility line, together with size and elevation, shall be established before any on-site lines are installed. Should elevation or size of existing main utility lines make connections to them impossible as shown on drawings, then notification of such shall immediately be given to the Owners Representative for a decision.

EQUIPMENT CAPACITIES :

Capacities shown for equipment in the specifications and on the drawings are the minimum acceptable. No equipment shall be considered as an alternate without prior approval of the design Engineer.
All equipment shall give the specified capacity and performance at the job-site elevation of [4200] feet above sea level. Manufacturers' standard ratings shall be adjusted accordingly. All capacities and performances listed on drawings or in specifications are for job-site conditions.

SEISMIC REQUIREMENTS FOR EQUIPMENT :

All equipment must be furnished structurally adequate to withstand seismic forces as outlined in the International Building Code for Seismic Design Category D. Equipment bases shall be designed for direct attachment of seismic snubbers and/or seismic anchors. Coordinate with structural.

COOPERATION WITH OTHER TRADES :

The general contractor shall be responsible for job site coordination. The Contractor shall refer to other drawings and parts of this specification that cover work of other trades that is carried on in conjunction with the mechanical work such that all work can proceed without interference resulting from lack of coordination.

The Contractor shall properly size and locate all openings, chases, sleeves, equipment bases, and accesses. He shall provide accurate wiring diagrams to the Electrical Contractor for all equipment furnished under this Division.

The ceiling cavity must be carefully reviewed and coordinated with all trades. In the event of conflict, the installation of the mechanical equipment and piping shall be in the following order: plumbing, waste, and soil lines; supply, return, and exhaust duckwork; water piping; medical gases; fire protection piping; and pneumatic control piping.

The mechanical Contractor shall insure that the installation of all piping, ducts and equipment is in compliance with Articles 110-16 and 384-4 of the National Electrical Code relative to proper clearances in front of and over all electrical panels and equipment. No piping or ductwork will be allowed to run over an electrical panel.

RESPONSIBILITY OF CONTRACTOR :

The Contractor is responsible for the installation of a satisfactory piece of work in accordance with the true intent of the drawings and specifications. He shall provide, as a part of his work and without expense, all incidental items required even though these items are not particularly specified or indicated. The installation shall be made so that its several component parts will function together as a workable system and shall be left with all equipment properly adjusted and in working order. (The Contractor shall familiarize the Owner's Representative with maintenance and lubrication instructions as prepared by the Contractor and shall explain and fully instruct him relative to operating, servicing, and maintenance of them.) Part of training package and P.M. program.

UNFIT OR DAMAGED WORK :

Any part of this installation that fails, is unfit, or becomes damaged during construction, shall be replaced or otherwise made good. The cost of such remedy shall be the responsibility of this Division and general contractor.

WORKMANSHIP :

Workmanship shall be the best quality of its kind for the respective industries, trades, crafts, and practices, and shall be acceptable in every respect to the Owner's representative. Nothing contained herein shall relieve the Contractor from making good and perfect work in all details in construction. All work shall be performed under the directories of any licensed journeyman. Contractor shall maintain a licensed journeyman on site at all times during construction.

SAFETY REGULATION:

The Contractor shall comply with all local and OSHA safety requirements in performance with this work. (See General Conditions). This Contractor shall be required to provide equipment, supervision, construction, procedures, and all other necessary items to assure safety to life and property.

ELECTRICAL SERVICES :

Motors:

All motors required under this Division shall be furnished and installed as work of this Division. All motor-starting equipment, unless otherwise specified in Division 22/23 shall be furnished as work of Division 26, Electrical. Motors shall be name plated with Class F insulation as manufactured by Lincoln Electric, US Motors, General Electric, Allis Chalmers, Century, or Reliance, designed for quiet continuous operations with maximum (Class B) 80oC resistance heating rise with 40oC ambient temperature at full load and rated speed and voltage individually specified with minimum 1.15 service factor. Motors shall be all of the same make except those incorporated in packaged units. All motors shall be provided with ball bearings and conduit connection boxes. Lifting eyes shall be provided on motors 1-1/2 horsepower and larger.

Unless otherwise specified, motors 3/4 horsepower and larger shall be 3 phase, 60 cycle, and motors 1/2 horsepower and smaller shall be single phase, 60 cycle. Contractor is to coordinate with available power voltage and phase. Refer to fan and equipment schedules on drawings for voltage characteristics, horsepower, size, etc. All single-phase motors shall have thermal overload protection. If motor-starting equipment is included in packaged units, all three phases shall have overload protection. All motors shall have a power factor of 85 percent or better. All motors 20 horsepower and larger shall be manufacturers Premium Efficiency grade and shall meet the NEMA MG 1-12.54* efficiency ratings for energy efficient motors. All two speed motors, unless otherwise specified, shall be 1800/1200 rpm dual winding type. All 3 phase motors shall be designed and manufactured to be capable of speed control through a variable frequency drive controller.

Motors and other electrical control equipment installed in damp or moist areas or in areas of other special conditions shall be designed and approved for the installation. Motors and electrical equipment in explosive locations shall be approved for those locations. Motors located outside buildings shall be totally enclosed.

Electric Wiring :

All equipment control wiring and all boiler control wiring, water heater control wiring, pump interlocks, automatic temperature control wiring including all necessary contacts, relays, and interlocks, whether low or line voltage, except power wiring, shall be furnished and installed as work of this Division.

All equipment that requires an electrical connection shall be furnished so that it will operate properly and deliver full capacity on the electrical service available and also satisfy the requirements under "Motors," as specified above.

The Mechanical Contractor must refer to the electrical control equipment and wiring shown on the diagrams. Any changes or additions required by specific equipment furnished shall be the complete responsibility of the Contractor furnishing the equipment.

The Mechanical Contractor must coordinate with the Electrical Contractor to insure that all required components of control work are included and fully understood. No additional cost shall accrue to the Owner as a result of lack of such coordination.

WORK, MATERIALS, AND QUALITY OF EQUIPMENT :

Unless otherwise specified, all materials shall be new and of the best quality of their respective kinds and all labor shall be done in a most thorough and workmanlike manner. Work shall be performed by a licensed electrician.

Products or equipment of any of the manufacturers cited herein or any of the products approved by the Addenda may be used. However, where lists of products are cited herein, the one first listed in the design equipment used in drawings and schedules to establish size, quality, function, and capacity standards. If other than design equipment is used, it shall be carefully checked for access to equipment, electrical and control requirements, valving, and piping. Should changes or additions occur in piping, valving, electrical work, etc., or if the work of other Contractors would be revised by the alternate equipment, the cost of all changes shall be borne as work of this Division.

Pipe of foreign manufacture will not be acceptable.

The access to equipment shown on the drawings are the minimum acceptable space requirements. No equipment that reduces or restricts accessibility to this or any other equipment will be considered.

DIVISION 23 - HVAC

SECTION 23 0500
COMMON WORK RESULTS FOR HVAC PIPING

PRODUCTS

SUBMITTALS

Product Data: For each type of pipe hanger, channel support system component, and thermal-hanger shield insert indicated.
Shop Drawings: Signed and sealed by a qualified professional engineer for multiple piping supports and trapeze hangers. Include design calculations and indicate size and characteristics of components and fabrication details.
Welding Certificates: Copies of certificates for welding procedures and operators.

QUALITY ASSURANCE

Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
Engineering Responsibility: Design and preparation of Shop Drawings and calculations for multiple pipe supports, trapeze, equipment anchorage, and seismic restraint by a qualified professional engineer.

Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of hangers and supports that are similar to those indicated for this Project in material, design, and extent.

SUPPORTING DEVICES

Hanger and Pipe Attachments: Factory fabricated with galvanized coatings; nonmetallic coated for hangers in direct contact with copper tubing.
Building Attachments: Powder-actuated-type, drive-pin attachments with pullout and shear capacities appropriate for supported loads and building materials; UL listing and FM approval for fire-protection systems.
Mechanical-Anchor Fasteners: Insert-type attachments with pullout and shear capacities appropriate for supported loads and building materials; UL listing and FM approval for fire-protection systems.

INSTALLATION

Install piping free of sags and bends.
Install fittings for changes in direction and branch connections.
Install sleeves for pipes passing through concrete walls, gypsum-board partitions, and concrete floor and roof slabs.
Exterior Wall, Pipe Penetrations: Mechanical sleeve seals installed in steel or cast-iron pipes for wall sleeves.
Fire-Barrier Penetrations: Seal pipe penetrations with through-penetration firestop systems specified in Division 7.
Install unions adjacent to each valve and at final connection to each piece of equipment.
Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals in water and steam piping.
Install building attachments within concrete or to structural steel. Install additional attachments at concentrated loads, including valves, flanges, guides, strainers, expansion joints, and at changes in direction of piping.
Install powder-actuated drive-pin fasteners in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than 4 inches thick.
Install mechanical-anchor fasteners in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than 4 inches thick.
Support fire-protection system piping independent of other piping.
Load Distribution: Install hangers and supports so piping live and dead loading and stresses from movement will not be transmitted to connected equipment.
Pipe Hanger and Support Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from building structure.
Channel Support System Installation: Arrange for grouping of parallel runs of piping and support together on field-assembled channel systems.
1. Field assemble and install according to manufacturer's written instructions.
Install building attachments within concrete slabs or attach to structural steel. Space attachments within maximum piping span length indicated in MSS SP-69. Install additional attachments at concentrated loads, including valves, flanges, guides, strainers, and expansion joints, and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.
Install mechanical-anchor fasteners in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
Install hangers and supports complete with necessary inserts, bolts, rods, nuts, washers, and other accessories.
Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and so maximum pipe deflections allowed by ASME B31.9, "Building Services Piping," is not exceeded.

PAINTING

Touching Up: Where cleaning and touch up painting is not specified in Division 9, Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils.

Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 23 0500

DIVISION 23 - HVAC

SECTION 23 0553
IDENTIFICATION FOR HVAC PIPING & EQUIPMENT

SUBMITTALS
Product Data: For identification materials and devices.
Samples: Of color, lettering style, and graphic representation required for each identification material and device.

QUALITY ASSURANCE
Comply with ASME A13.1, "Scheme for the Identification of Piping Systems" for lettering size, length of color field, colors, and viewing angles of identification devices.

PRODUCTS

Products specified are for applications referenced in other Division 23 Sections. If more than single type is specified for listed applications, selection is Installer's option.
Equipment Nameplates: Metal permanently fastened to equipment with data engraved or stamped.
Data: Manufacturer, product name, model number, serial number, capacity, operating and power characteristics, labels of tested compliances, and essential data
Location: Accessible and visible.
Stencils: Standard stencils, prepared with letter sizes conforming to recommendations of ASME A13.1. Minimum letter height is 1-1/4 inches for ducts, and 3/4 inch for access door signs and similar operational instructions.
Stencil Paint: Exterior, oil-based, alkyd gloss black enamel, unless otherwise indicated. Paint may be in pressurized spray-can form.
Identification Paint: Exterior, oil-based, alkyd enamel in colors according to ASME A13.1, unless otherwise indicated.
Snap-On Plastic Pipe Markers: Manufacturer's standard preprinted, semi-rigid, snap-on type. Include color-coding according to ASME A13.1, unless otherwise indicated.
Pipes with OD, Including Insulation, Less Than 6 Inches: Full-band pipe markers, extending 360 degrees around pipe at each location.
Pipes with OD, Including Insulation, 6 Inches and Larger: Either full-band or strip-type pipe markers, at least 3 times letter height and of length required for label.

Lettering: Manufacturer's standard preprinted captions as selected by Engineer.
Lettering: Use piping system terms indicated and abbreviate only as necessary for each application length.
Arrows: Either integrally with piping system service lettering, to accommodate both directions, or as separate unit, on each pipe marker to indicate direction of flow.
Plastic Duct Markers: Manufacturer's standard laminated plastic, in the following color codes:
Blue: Supply.
Red: Return
Green: Exhaust.
Yellow: Make up air.
Hazardous Material Exhausts: Use colors and designs recommended by ASME A13.1.
Terminology: Include direction of airflow; duct service such as supply, return, and exhaust; duct origin, duct destination, and design flow.
Plastic Tape: Manufacturer's standard color-coded, pressure-sensitive, self-adhesive, vinyl tape, at least 3 mils thick.
Width: 1-1/2 inches on pipes with OD, including insulation, less than 6 inches; 2-1/2 inches for larger pipes.
Color: Comply with ASME A13.1, unless otherwise indicated.
Valve Tags: Stamped or engraved with 1/4-inch letters for piping system abbreviation and 1/2-inch sequenced numbers. Include 5/32-inch hole for fastener.
Material: 0.032-inch- thick, polished brass.
Size: 1-1/2-inches diameter, unless otherwise required.
Indicate valve service and normal position on valve. Example Cold water, N.O.
Valve Tag Fasteners: Brass, wire-link or beaded chain; or brass S-hooks.
Valve Tag Fasteners: Brass, wire-link chain; beaded chain; or S-hooks.
Access Panel Markers: 1/16-inch- thick, engraved plastic-laminate markers, with abbreviated terms and numbers corresponding to concealed valve. Provide 1/8-inch center hole for attachment.
Plastic Equipment Markers: Manufacturer's standard laminated plastic, in the following color codes:
Green: Cooling equipment and components.
Yellow: Heating equipment and components.
Brown: Energy reclamation equipment and components.
Blue: Equipment and components that do not meet criteria above.
Hazardous Equipment: Use colors and designs recommended by ASME A13.1.
Terminology: Match schedules as closely as possible. Include the following:
(a) Name and plan number.
(b) Equipment service.
(c) Design capacity.
(d) Other design parameters such as pressure drop, entering and leaving conditions, and speed.
Size: 2-1/2 by 4 inches for control devices, dampers, and valves; 4-1/2 by 6 inches for equipment.
Lettering and Graphics: Coordinate names, abbreviations, and other designations used in mechanical identification with corresponding designations indicated. Use numbers, letters, and terms indicated for proper identification, operation, and maintenance of mechanical systems and equipment.
Multiple Systems: Identify individual system number and service if multiple systems of same name are indicated.

EXECUTION

Install pipe markers on each system. Include arrows showing normal direction of flow.
Marker Type: Stenciled markers with painted, color-coded bands complying with ASME A13.1.
Marker Type: Plastic markers, with application systems. Install on pipe insulation segment where required for hot, non-insulated pipes.
Fasten markers on pipes and insulated pipes by one of following methods:
Snap-on application of pre-tensioned, semi-rigid plastic pipe marker.
Adhesive lap joint in pipe marker overlap.
Laminated or bonded application of pipe marker to pipe or insulation.
Taped to pipe or insulation with color-coded plastic adhesive tape, not less than 3/4 inch wide, lapped a minimum of 1-1/2 inches at both ends of pipe marker, and covering full circumference of pipe.
Taped to pipe or insulation with color-coded plastic adhesive tape, not less than 1-1/2 inches wide, lapped a minimum of 3 inches at both ends of pipe marker, and covering full circumference of pipe.
Locate pipe markers and color bands where piping is exposed in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior nonconcealed locations according to the following:
Near each valve and control device.
Near each branch connection, excluding short takeoffs for fixtures and terminal units. Mark each pipe at branch, where flow pattern is not obvious.
Near penetrations through walls, floors, ceilings, or nonaccessible enclosures.
At access doors, manholes, and similar access points that permit view of concealed piping.
Near major equipment items and other points of origination and termination.
Spaced at a maximum of 50-foot intervals along each run. Reduce intervals to 25 feet in areas of congested piping and equipment.
On piping above removable acoustical ceilings, except omit intermediately spaced markers.

VALVE TAGS
Install on valves and control devices in piping systems, except check valves, valves within factory-fabricated equipment units, plumbing fixture supply stops, shutoff valves, faucets, convenience and lawn-watering hose connections, and HVAC terminal devices and similar roughing-in connections of end-use fixtures and units. Indicate service and normal position of all tagged valve and control devices. List tagged valves in valve schedule.
Tag Material: Brass.

EQUIPMENT SIGNS AND MARKERS

Install engraved plastic-laminate signs or equipment markers on or near each major item of mechanical equipment. Include signs for the following general categories of equipment:
Main control and operating valves, including safety devices and hazardous units such as gas outlets.
Fire department hose valves and hose stations.
Meters, gages, thermometers, and similar units.
Fuel-burning units, including furnaces and heaters.
Fans, blowers, primary balancing dampers, and mixing boxes.
Packaged HVAC central-station and zone-type units.
Tanks and pressure vessels.
Strainers, filters, water-treatment systems, and similar equipment.

Optional Sign Types: Stenciled signs may be provided instead of engraved plastic, at Installer's option, where lettering larger than 1-inch high is needed for proper identification because of distance from normal location of required identification.
Lettering Size: Minimum 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
Terms on Signs: Distinguish between multiple units, indicate operational requirements, indicate safety and emergency precautions, warn of hazards and improper operations, and identify units.

Duct Systems: Identify air supply, return, exhaust, intake, and relief ducts with duct markers; or provide stenciled signs and arrows showing service and direction of flow.

Location: Locate signs near points where ducts enter into concealed spaces and at maximum intervals of 50 feet in each space where ducts are exposed or concealed by removable ceiling system.

ADJUSTING AND CLEANING

Relocate mechanical identification materials and devices that have become visually blocked by work of this or other Divisions. Clean faces of identification devices and glass frames of valve charts.

END OF SECTION 23 0553

DIVISION 23 - HVAC

SECTION 23 0700
HVAC INSULATION

GENERAL

SECTION REQUIREMENTS
Submittals: Product Data for each type of mechanical insulation

Quality Assurance: Labeled with maximum flame-spread rating of 25 and maximum smoke- developed rating of 50 according to ASTM E 84.
Comply with ASHRAE 90.1 for pipe insulation thickness and conductivity requirements.

PRODUCTS

PIPE INSULATION

Preformed Glass-Fiber Pipe Insulation: ASTM C 547, Class 1, with factory-applied, all-purpose, vapor-retarder jacket.

EXECUTION

INSTALLATION

Install vapor barriers on insulated pipes with surface operating temperatures below 60 deg F.
Insulate fittings, valves, and specialties.
Seal vapor-barrier penetrations for hangers, supports, anchors, and other projections.
Coat glass-fiber pipe insulation ends with vapor-barrier coating.
Seal ends of flexible elastomeric cellular insulation with adhesive.
Roof Penetrations: Apply insulation for interior applications to a point even with the top of the roof flashing.

Interior Walls and Partitions Penetrations: Apply insulation continuously through walls and partitions, except fire-rated walls and partitions.

Fire-Rated Walls and Partitions Penetrations: Terminate insulation at penetrations through fire-rated walls and partitions. Seal around penetration with through-penetration firestop systems specified in Division 7.

Glass-Fiber Insulation Installation: Bond insulation to pipe with adhesive. Seal seams and joints with vapor-barrier compound.

Flexible Elastomeric Insulation Installation: Seal joints with adhesive.

Interior Piping System Applications: Insulate the following piping systems:
Domestic hot water and domestic cold water.
Refrigeration piping.

Do not apply insulation to the following systems, materials, and equipment:
Flexible connectors.
Piping specialties, including air chambers, unions, strainers, check valves, plug valves, and flow regulators.

Pipe Insulation Thickness Application Schedule: Insulate piping with the following materials and thicknesses:
Refrigeration piping: 3/4-inch Armaflex.

END OF SECTION 23 0700

DIVISION 23 - HVAC

SECTION 23 1123
FACILITY NATURAL GAS PIPING

GENERAL

Steel Pipe: ASTM

Gas Stops, 2" and Smaller: AGA-certified, bronze-body, plug type with bronze plug, ball type with chrome-plated brass ball, or butterfly valve with stainless-steel disc and fluorocarbon elastomer seal, for 2 psig or less natural gas. Include AGA stamp, flat or square head or lever handle, and threaded ends conforming to ASME

Gas Meters: Diaphragm-type, positive displacement, with aluminum cases, temperature compensated, with internal corrosion-resistant components. Include threaded ends conforming to ASME and flanged ends for and larger. Meter pressure ratings and flow volume in of natural gas at specific gravity are as indicated.
a. Capacity 500 ft³/hr or Less: ANSI
b. Capacity Greater than 500 ft³/hr: ANSI

Gas Pressure Regulators: ANSI smaller and flanged ends for 2 1/2" and larger. Regulator pressure ratings, inlet and outlet pressures, and flow volume in cubic feet per hour of natural gas at specific gravity are as indicated.
a. Service Pressure Regulators: Inlet pressure rating not less than natural gas distribution system service pressure.
b. Line Gas Pressure Regulators: Inlet pressure rating not less than system pressure.
c. Appliance Gas Pressure Regulators: Inlet pressure rating not less than system pressure, with capacity and pressure setting matching appliance.
d. Gas Pressure Regulator Vents: Factory- or field-installed corrosion-resistant screen in opening when not connected to vent piping.

Flexible Connectors: ANSI

Low-Pressure, .5 psig or Less, Natural Gas Systems: Use the following:
Z21.24, copper alloy.
a. 1" NPS and Smaller: Steel pipe, malleable-iron threaded fittings, and threaded joints.
b. 1.25 to 2" NPS: Steel pipe, malleable-iron threaded fittings, and threaded joints.

Medium-Pressure, .5 to 2 psig, Natural Gas Systems: Use the following:
a. 1" NPS and Smaller: Steel pipe, butt-welding fittings, and welded joints.
b. 1.25" and Larger: Steel pipe, butt-welding fittings, and welded joints.

High-Pressure, above 2 to 5 psig, Natural Gas Systems: Steel pipe, butt-welding fittings, and welded joints.

Underground Natural Gas Systems, All Pressures: Steel pipe, butt-welding fittings, and welded joints. Encase gas carrier piping in containment conduits.

Gas Service, above 5 psig, Natural Gas Piping at Gas Meters and Regulators: Steel pipe, butt-welding fittings, and welded joints.

END OF SECTION 23 1123

DIVISION 23 - HVAC

SECTION 23 5100
BREECHINGS, CHIMNEYS AND STACKS

1. Description: Double-wall gas vents complying with NFPA 211, Type B. Inner pipe of sheet aluminum, outer pipe of galvanized-steel sheet, each with the following minimum thicknesses:
a. Round, 6" and Smaller ID: 012" inner pipe, .0187" outer pipe.
b. Round, 7"-18" ID: 014" inner pipe, .0187" outer pipe.
2. Accessories: Tees, elbows, increasers, draft hood connectors, metal cap with bird barrier, adjustable roof flashing, storm collar, support assembly, thimbles, firestop spacers, and fasteners; fabricated of similar materials and designs as vent-pipe straight sections.

END OF SECTION 23 5100

DIVISION 23 - HVAC

SECTION 23 3300
AIR DUCT ACCESSORIES

GENERAL

1. Volume dampers: Factory fabricated with required hardware and accessories. Stiffen damper blades for stability. Include locking device to hold single-blade dampers in a fixed position without vibration. Close duct penetrations for damper components to seal duct consistent with pressure class.
2. Pressure Classifications of or Higher: End bearings or other seals for ducts with axles full length of damper blades and bearings at both ends of operating shaft.
3. Fire Dampers: Labeled to UL 555.
a. Fire Rating: One and one-half and three hours.
b. Frame: SMACNA Type B with blades out of airstream; fabricated with roll-formed, thick galvanized steel; with mitered and interlocking corners.
c. Provide access door though ductwork and other systems for damper access.
d. Fusible Link: Replaceable, 165° rated as indicated.
4. Manufactured Turning Vanes: Fabricate of 1.5" wide, curved blades set 3/4" o.c.; support with bars perpendicular to blades set 2" o.c.; and set into side strips suitable for mounting in ducts.
5. Flexible Ducts, Insulated: Factory-fabricated, insulated, round duct, with an outer jacket enclosing 1.5" thick, glass-fiber insulation around a continuous inner liner.

END OF SECTION 23 3300

DIVISION 23 - HVAC

SECTION 23 3423
HVAC POWER VENTILATORS

GENERAL
1. Fan description: Centrifugal fans designed for installing in ceiling or wall, or for concealed in-line applications.
2. Housing: Galvanized steel lined with acoustical insulation.
3. Fan Wheel: Centrifugal wheels directly mounted on motor shaft. Fan shrouds, motor, and fan wheel shall be removable for service.
4. Grille: Stainless-steel, louvered grille with flange on intake and thumbscrew attachment to fan housing.
5. Electrical Requirements: Junction box for electrical connection on housing and receptacle for motor plug-in.
6. Variable-Speed Controller: Solid-state control to reduce speed from 100 percent to less than 50 percent.
7. Accessories: Manufacturer's standard roof jack or wall cap, and transition fittings.
8. Provide wall cap and room grille with each fan.

END OF SECTION 23 3423

DIVISION 23 - HVAC

SECTION 23 3113
METAL DUCTS

GENERAL

1. Duct system design, as indicated, has been used to select and size air-moving and -distribution equipment and other components of air system. Supply and Return ducts have been sized to a pressure drop of 0.08" of water column loss per 100 ft. Changes to layout or configuration of duct system must be specifically approved in writing by Architect. Accompany requests for layout modifications with calculations showing that proposed layout will provide original design results without increasing system total pressure.
2. Duct material: galvanized, sheet steel, lock-forming quality; ASTM A 653/A 653M, coating designation; mill-phosphatized finish for surfaces of ducts exposed to view.
3. Underground duct shall be PVC pipe or PVC coated galvanized steel encased in concrete.
4. Duct liner: Comply with NFPA 90A or NFPA 90B and NAIMA's "Fibrous Glass Duct Liner Standard." ASTM C 1071 with coated surface exposed to airstream to prevent erosion of glass fibers.
a. Thickness: 1".
b. Thermal Conductivity (k-Value): .26 at 75 deg Fmean temperature.
c. Fire-Hazard Classification: Maximum flame-spread rating of 25 and smoke-developed rating of 50, when tested according to ASTM C 411.
d. Liner Adhesive: Comply with NFPA 90A or NFPA 90B and ASTM C 916.
5. Round duct: Diameter as applied to flat-oval ducts in this Article is the diameter of the size of round duct that has a circumference equal to perimeter of a given size of flat-oval duct.
a. Round Ducts: Fabricate supply ducts of galvanized steel according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible."
b. Branch supply ducts are to be Unico system low temperature insulated round duct supply kits.
c. Fittings are to be Unico system fittings.
6. Rectangular duct: Fabricate ducts, elbows, transitions, offsets, branch connections, and other construction with galvanized, sheet steel, according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible." Comply with requirements for metal thickness, reinforcing types and intervals, tie-rod applications, and joint types and intervals.
a. Lengths: Fabricate rectangular ducts in lengths appropriate to reinforcement and rigidity class required for pressure classification.
b. Materials: Free from visual imperfections such as pitting, seam marks, roller marks, stains, and discolorations.
7. Static-Pressure Classifications: Unless otherwise indicated, construct ducts to the following:
a. Supply Ducts: 2" wg.
b. Return Ducts: 2" wg, negative pressure.
c. Exhaust Ducts: 2" wg, negative pressure.
8. Cross Breaking or Cross Beading: Cross break or cross bead duct sides 18" and larger and .0359" thick or less, with more than 10Ω of unbraced panel area, unless ducts are lined.
9. Duct passing through fire partitions between guest rooms: Ensure that duct is constructed of sheet steel not less than No. 26 gage thickness continuously from fan to air terminal, in compliance with section 717.5.4 exception 4.

END OF SECTION 23 3113

DIVISION 23 - HVAC

SECTION 23 0900
TEMPERATURE CONTROLS

GENERAL
1. A 7 day programmable temperature thermostat shall be located in each zone and shall control the furnace in sequence to maintain the space temperature setpoint.

2. Exhaust fans shall operate based on a switch or occupancy sensor.

END OF SECTION 23 0900

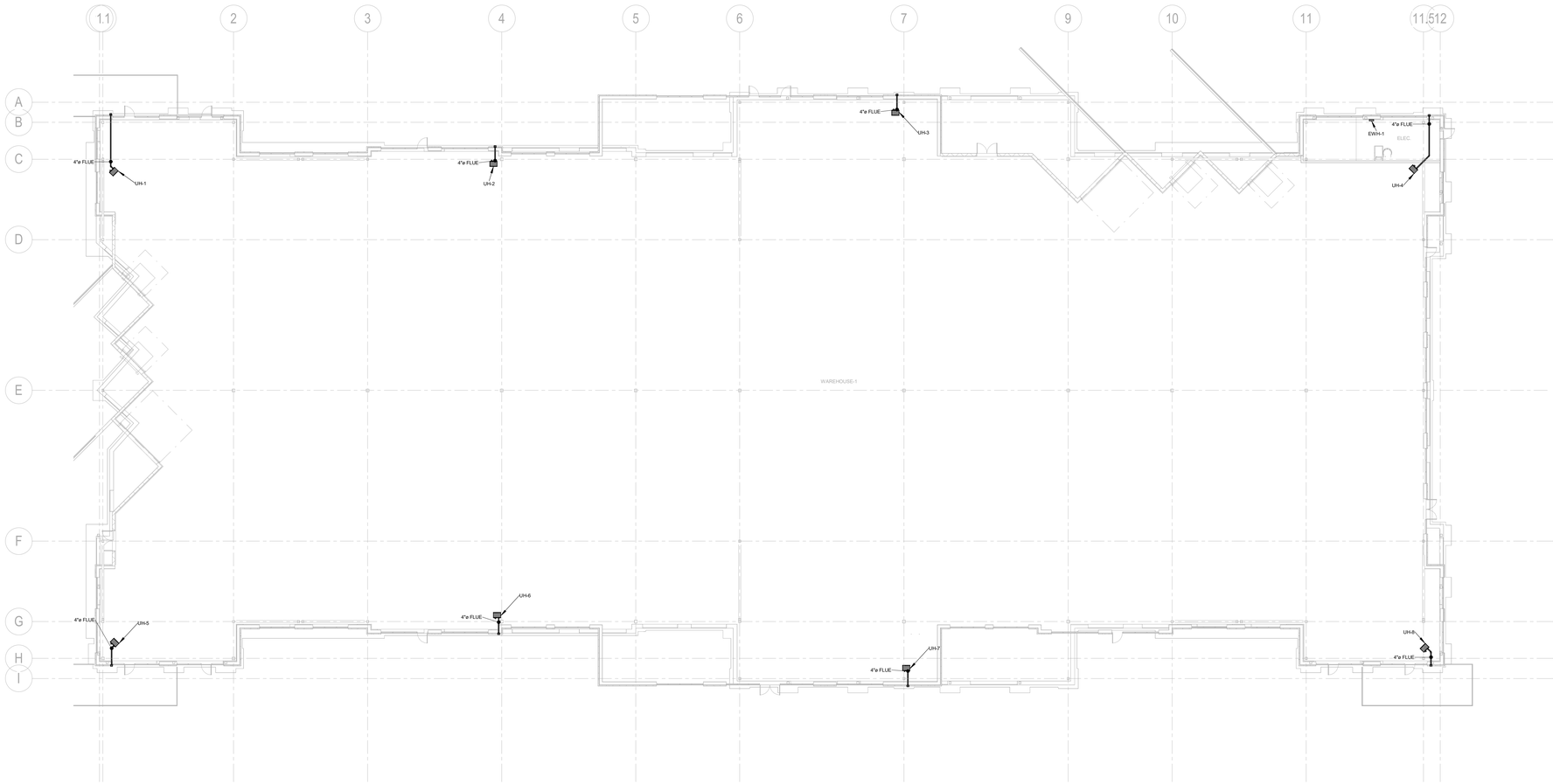
DIVISION 23 - HVAC

SECTION 23 0593
TESTING, ADJUSTING, BALANCING AND MAINTENANCE MANUALS

GENERAL

1. All air and water systems to be tested and balanced by an independent testing and balancing firm approved by the engineer. All systems shall be adjusted to perform within 5% of the design document requirements. A complete report shall be provided at the completion of the work.

2. Each system shall be commissioned to insure corre



1 M101 FIRST FLOOR MECHANICAL PLAN
1/16" = 1'-0"

MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MARK WELDON
MOUNTAIN TECH NORTH 4
2800 W 650 N
LINDON, UTAH 84042

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10713442-2202
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3/22/2025
STATE OF UTAH

MHTN PROJECT NO. 2023556

Original drawing is 30 x 42. Do not scale contents of this drawing.

REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

NO △	DATE	DESCRIPTION

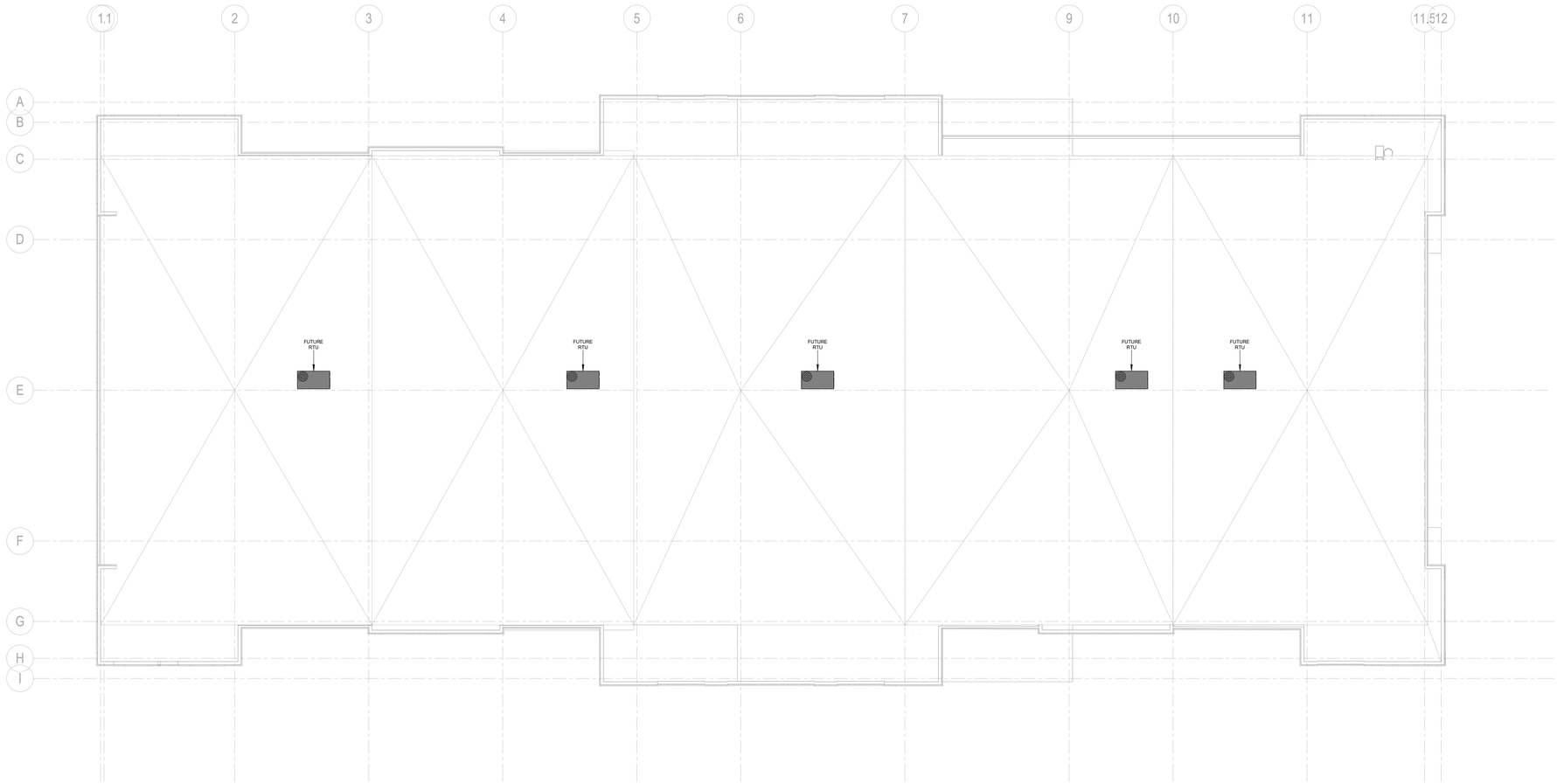
ISSUE
CONSTRUCTION DOCUMENTS
6/27/2024

SHEET NAME
FIRST FLOOR MECHANICAL PLAN

SHEET NUMBER
M101

PERMIT SET

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1 / M201 ROOF MECHANICAL PLAN
1/16" = 1'-0"

MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MARK WELDON
MOUNTAIN TECH NORTH 4
2800 W 650 N
LINDON, UTAH 84042

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SEAL

LICENSED PROFESSIONAL ENGINEER
12/13/14 - 7202
MICHAEL F. WYATT
3/22/2025
STATE OF UTAH

MHTN PROJECT NO. 2023556

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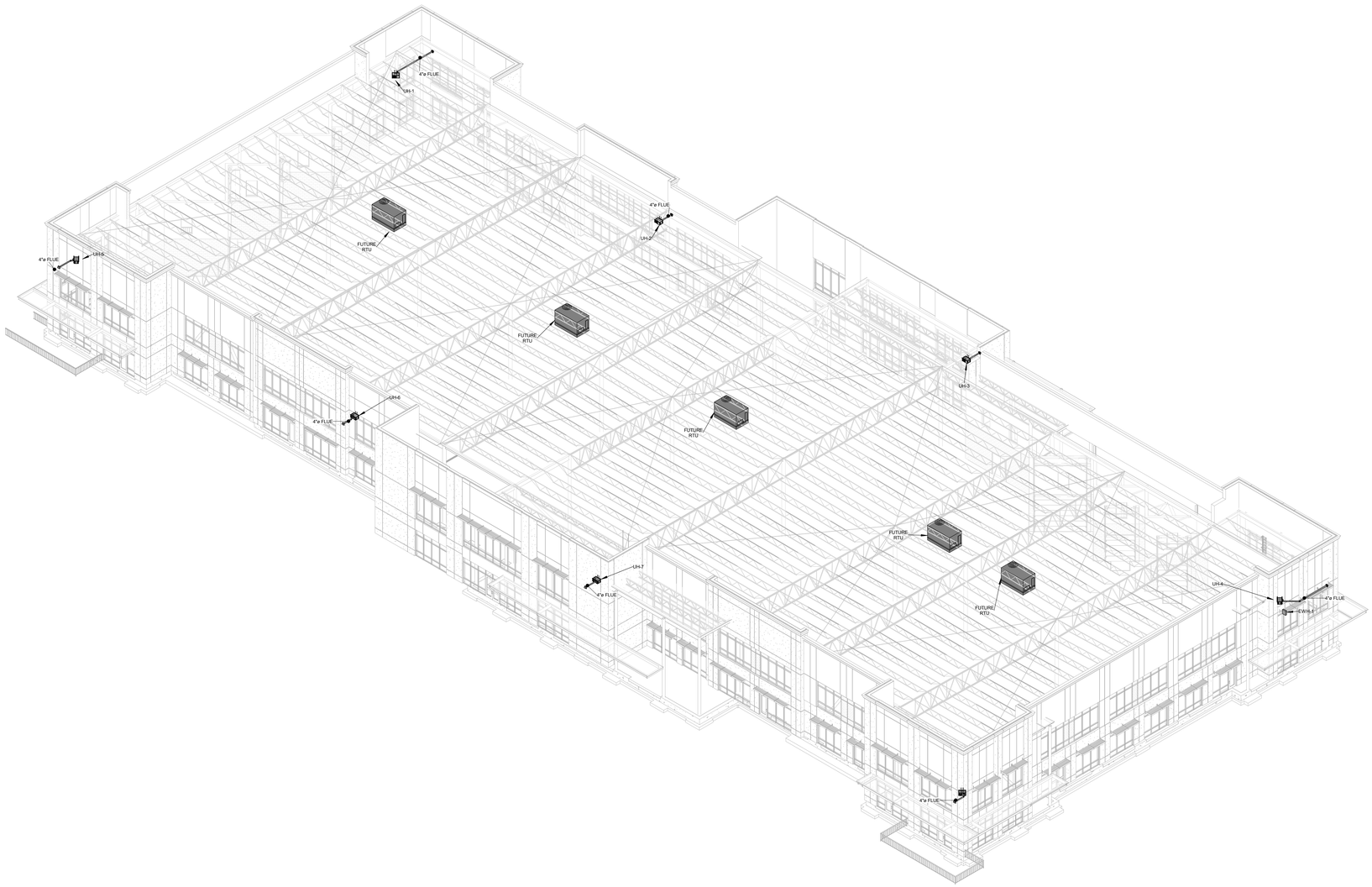
ISSUE
CONSTRUCTION DOCUMENTS
6/27/2024

SHEET NAME
ROOF MECHANICAL PLAN

SHEET NUMBER
M201

PERMIT SET

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1 M301 MECHANICAL ISOMETRIC

PERMIT SET

MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MARK WELDON

MOUNTAIN TECH NORTH 4

2800 W 650 N
LINDON, UTAH 84042

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LICENSED PROFESSIONAL ENGINEER
5571314-2202
MICHAEL F. WYATT
3/22/2025
STATE OF UTAH

MHTN PROJECT NO. 2023556

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REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

NO.	DATE	DESCRIPTION

ISSUE
CONSTRUCTION DOCUMENTS
6/27/2024

SHEET NAME
MECHANICAL ISOMETRIC

SHEET NUMBER
M301

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ELECTRIC WALL HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	TYPE	HEAT CAPACITY	WATTS	VOLTAGE	PHASE	HEIGHT	WIDTH	DEPTH
EWH-1	QMARK	CWH1101DSAF	ELECTRIC	3413 Btu/h	1000 W	120 V	1	19 3/16"	15 25/32"	5 5/16"

UNIT HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	BTUH INPUT	OUTPUT	GAS LINE SIZE	VENT DIAMETER	WEIGHT	COMBUSTION AIR SIZE	AIRFLOW (CFM)	VOLT/PH/HZ	MOTOR SIZE (HP)
UH-1	Modine	PDP150AE0130SBAN	122036 Btu/h	101514 Btu/h	1/2"	5"	200 lb	4"	1111	120/1/60	1/4
UH-2	Modine	PDP150AE0130SBAN	122036 Btu/h	101514 Btu/h	1/2"	5"	200 lb	4"	1111	120/1/60	1/4
UH-3	Modine	PDP150AE0130SBAN	122036 Btu/h	101514 Btu/h	1/2"	5"	200 lb	4"	1111	120/1/60	1/4
UH-4	Modine	PDP150AE0130SBAN	122036 Btu/h	101514 Btu/h	1/2"	5"	200 lb	4"	1111	120/1/60	1/4
UH-5	Modine	PDP150AE0130SBAN	122036 Btu/h	101514 Btu/h	1/2"	5"	200 lb	4"	1111	120/1/60	1/4
UH-6	Modine	PDP150AE0130SBAN	122036 Btu/h	101514 Btu/h	1/2"	5"	200 lb	4"	1111	120/1/60	1/4
UH-7	Modine	PDP150AE0130SBAN	122036 Btu/h	101514 Btu/h	1/2"	5"	200 lb	4"	1111	120/1/60	1/4
UH-8	Modine	PDP150AE0130SBAN	122036 Btu/h	101514 Btu/h	1/2"	5"	200 lb	4"	1111	120/1/60	1/4

PERMIT SET

MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MARK WEST MOUNTAIN
2800 W 650 N
LINDON, UTAH 84042

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LICENSED PROFESSIONAL ENGINEER
SECTION # 12002
MICHAEL F. WYATT
3/22/2025
STATE OF UTAH

MHTN PROJECT NO. 2023556

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REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

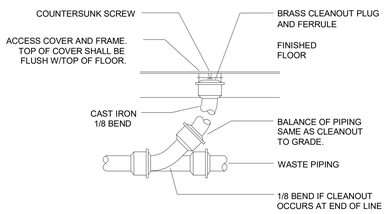
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ISSUE
CONSTRUCTION DOCUMENTS
6/27/2024

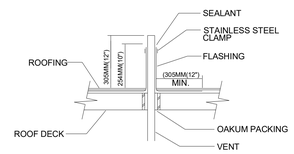
SHEET NAME
MECHANICAL SCHEDULES

SHEET NUMBER
M501

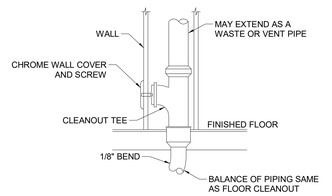
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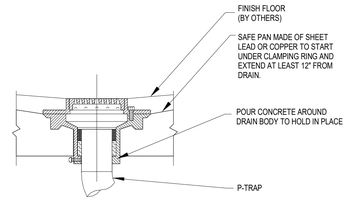
FLOOR CLEANOUT DETAIL
NO SCALE
1 M502



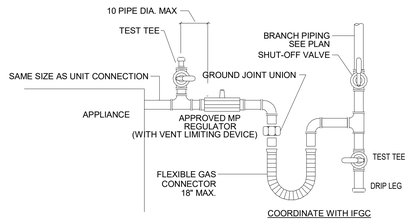
VENT THRU ROOF DETAIL
NO SCALE
2 M502



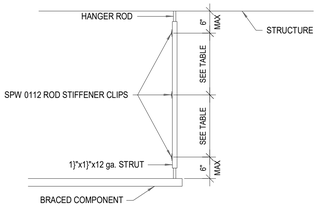
WALL CLEANOUT DETAIL
NO SCALE
3 M502



FLOOR DRAIN DETAIL
NO SCALE
4 M502



GAS CONNECTION DETAIL
NO SCALE
5 M502



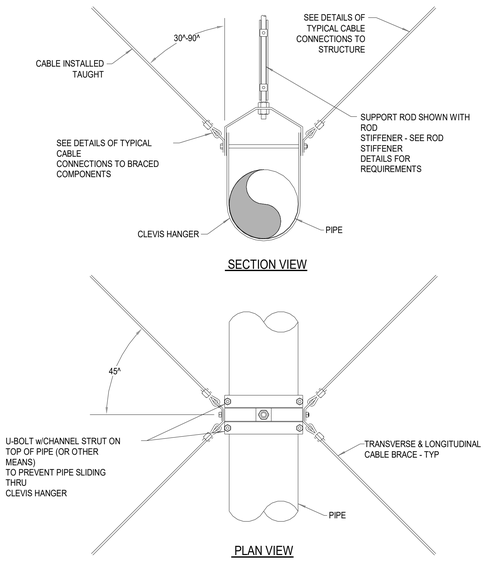
MAX. LENGTH OF 12 ga. 1 5/8" x 1 5/8" ROD STIFFENER STRUT IS 9 ft.

MAX. ROD LENGTH W/O STIFFENER	
ROD DIA	MAX. LENGTH
3/8"	16"
1/2"	22"
5/8"	28"
3/4"	34"
7/8"	40"
1"	46"
1 1/8"	52"
1 1/4"	55"

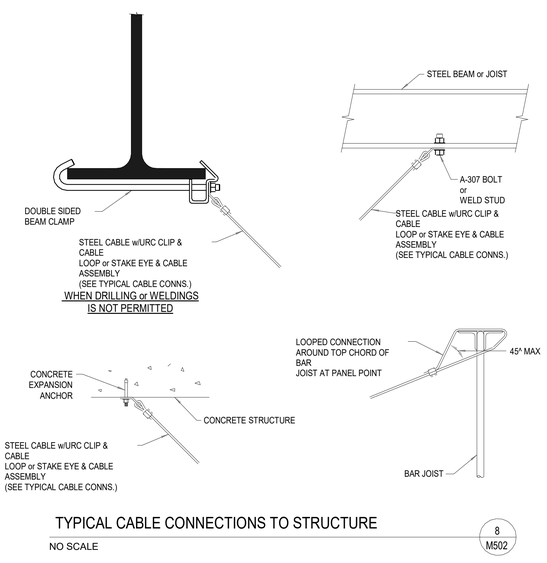
MAX. SPACING OF ROD STIFFENER CLIPS	
ROD DIA	MAX. LENGTH
3/8"	13"
1/2"	18"
5/8"	23"
3/4"	28"
7/8"	33"
1"	38"
1 1/8"	43"
1 1/4"	48"

ROD STIFFENER DETAILS & REQUIREMENTS
NO SCALE
6 M502

(AT SWAY BRACE LOCATIONS ONLY)



TRANSVERSE & LONGITUDINAL (4-WAY) BRACE FOR INSULATED or UNINSULATED PIPE ON CLEVIS TYPE HANGERS
NO SCALE
7 M502



TYPICAL CABLE CONNECTIONS TO STRUCTURE
NO SCALE
8 M502

MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MARK WELDON

MOUNTAIN TECH NORTH 4

2800 W 650 N
LINDON, UTAH 84042

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SEAL

MHTN PROJECT NO. 2023556

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REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

NO.	DATE	DESCRIPTION

ISSUE
CONSTRUCTION DOCUMENTS
6/27/2024

SHEET NAME
MECHANICAL AND PLUMBING DETAILS

SHEET NUMBER
M502

PERMIT SET

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SECTION 22 0500/23 0500
COMMON WORK RESULTS FOR PLUMBING/HVAC

GENERAL CONDITIONS :

The General Conditions of the Contract, with the amendments, supplements, forms and requirements in Division 1, and herewith made a part of this Division.

All sections of Division 22 & 23 shall comply with the Mechanical General Requirements. The standards established in this section as to quality of materials and equipment, the type and quality of workmanship, mode of operations, safety rules, code requirements, etc., shall apply to all sections of this Division as though they were repeated in each Division.

SCOPE OF WORK :

The project described herein is the WICP Orem North Building 4, Lindon, UT.
This work shall include all labor, materials, equipment, fixtures, and devices for the entire mechanical work and a complete operating, tested and commissioned installation.

Section 22/23 Index:

SECTION 22 0500 - COMMON WORK RESULTS FOR PLUMBING
SECTION 23 0500 - COMMON WORK RESULTS FOR HVAC
SECTION 22 0553 - IDENTIFICATION FOR PLUMBING PIPING & EQUIPMENT
SECTION 23 0553 - IDENTIFICATION FOR HVAC PIPING & EQUIPMENT
SECTION 22 0700 - PLUMBING INSULATION
SECTION 23 0700 - HVAC INSULATION
SECTION 22 0523 - GENERAL DUTY VALVES FOR PLUMBING PIPING
SECTION 22 0519 - METERS AND GAGES FOR PLUMBING PIPING
SECTION 22 1116 - DOMESTIC WATER PIPING
SECTION 22 1319 - SANITARY WASTE AND VENT PIPING
SECTION 22 4000 - PLUMBING FIXTURES
SECTION 22 1119 - DOMESTIC WATER PIPING SPECIALTIES
SECTION 22 1119 - SANITARY WASTE PIPING SPECIALTIES
SECTION 22 3400 - FUEL FIRED DOMESTIC WATER HEATERS
SECTION 23 1123 - FACILITY NATURAL GAS PIPING
SECTION 23 2300 - REFRIGERANT PIPING
SECTION 23 5100 - BREECHINGS, CHIMNEYS AND STACKS
SECTION 23 7413 - PACKAGED, OUTDOOR, CENTRAL STATION AIR HANDLING UNITS
SECTION 23 3113 - METAL DUCTS
SECTION 23 3300 - AIR DUCT ACCESSORIES
SECTION 23 3423 - HVAC POWER VENTILATORS
SECTION 23 3713 - DIFFUSERS, REGISTERS, AND GRILLES
SECTION 23 0900 - INSTRUMENTATION AND CONTROLS FOR HVAC
SECTION 23 0593 - TESTING, ADJUSTING AND BALANCING FOR HVAC

SYSTEM DESCRIPTION :

CODES & ORDINANCES :

All work shall be executed in accordance with all underwriters, public utilities, local and state rules and regulations applicable to the trade affected. Should any change in the plans and Specifications be required to comply with these regulations, the Contractor shall notify the Engineer before the time of submitting his bid. After entering into contract, the Contractor will be held to complete all work necessary to meet these requirements without extra expense to the Owner. Where work required by drawings or specifications is above the standard required, it shall be done as shown or specified.

Applicable codes are as follows:
2021 International Mechanical Code
2021 International Building Code
2021 International Energy Code
2021 International Fuel Gas Code
Utah State Boiler Code

SUBMITTALS AND SHOP DRAWINGS :
Submittals :

As soon as possible after the contract is awarded, but in no case more than 5 calendar days thereafter, the Contractor shall submit to the Engineer four (4) copies of the descriptive literature covering products and materials to be used in the installation of mechanical systems for this project. The review of the submitted data will require a minimum of [7] days. If the Contractors schedule requires return of submitted literature in less than the allotted time, the Contractor shall accelerate his submittal delivery date. The Contractor shall resubmit all items requiring re-review within 7 days of returned submittals. Refer to each specification section for items requiring submittal review. Written approval of the Owner's Representative shall be obtained before installing any such equipment or materials for the project. The submittals shall be prepared in an orderly manner, contained in a 3-ring loose-leaf binder with index and identification tabs each item or group of items and for each specification section. All items shall be submitted at one time except automatic temperature control drawings and seismic restraint drawings which may be submitted separately within 60 days of the contract award date. Partial submittals will not be reviewed until the complete submittal is received.

Submitted literature shall bear the Contractor's stamp, indicating that he has checked all equipment being submitted; that each item will fit into the available space with the accesses shown on the drawings; and, further, that each item conforms to the capacity and quality standards given in the contract documents.

Submitted literature shall clearly indicate performance, quality, and utility requirements; shall show dimension and size of connection points; and shall include derating factors that were applied for each item of equipment to provide capacity at job site elevation. Temperature control submittals shall include piping and wiring diagrams, sequence of operation and equipment. Equipment must fit into the available space with allowance for operation, maintenance, etc. Factory piped and wired equipment shall include shop drawings for all internal wiring and piping furnished with the unit.

Submitted literature shall clearly show all required field install wiring, piping, and accessory installations required by the Contractor to provide a complete operating system.

Review by the Owner's Representative is for general conformance of the submitted equipment to the project specification. In no way does such review relieve this Contractor of his obligation to furnish equipment and materials that comply in detail to the specification nor does it relieve the Contractor of his obligation to determine actual field dimensions and conditions that may affect his work. Regardless of any items overlooked by the submittal review, the requirements of the contract drawings and specifications must be followed and are not waived or superseded in any way by the review.

The contractor is to review equipment by description, catalog number, and manufacturer's names. Standards of quality have been established by the Engineer for certain manufactured equipment items and specialties that are to be furnished by this Division. Alternate products and equipment may be proposed for use only if specifically named in the specifications or if given written prior approval in published addenda. Design equipment is the equipment listed on the drawings or if not listed on the drawings is the equipment first named in the specifications.

Alternate Equipment :
The Contractor should protect himself with the supplier of alternate named equipment. Alternate named equipment will be reviewed only one time.

Should alternate equipment be submitted and be rejected, it shall not be resubmitted for review and it shall be the responsibility of this contractor. The contractor shall only submit on design equipment on future submittals. Incomplete submittal data will be rejected.

If the Engineer is required to do additional design work to incorporate changes caused by submitting equipment or products, different than the design equipment specified, as defined above, the contractor shall reimburse the engineer for additional time and expenses at the engineers current, recognized, hourly rates.

DRAWINGS AND MEASUREMENTS :

Drawings :

The contract document drawings show the general design, arrangements, and extent of the system. In certain cases, the drawings may include details that show more nearly exact locations and arrangements; however, the locations, as shown diagrammatically, are to be regarded as general.

It shall be the work of this Section to make such slight alterations as may be necessary to make adjustable parts fit to fixed parts, leaving all complete and in proper shape when done. All dimensions given on the drawings shall be verified as related to this work and with the Engineer's office before work is started.

This Section shall carefully study building sections, space, clearances, etc., and then provide offsets in piping or ductwork as required to accommodate the building structure without additional cost to the Owner. In any case and at any time, a change in location required by obstacles or the installation of other trades not shown on the mechanical plans shall be made without charge.

The drawings shall not be scaled for roughing in measurements nor shall they be used as shop drawings. Where drawings are required for these purposes or where drawings must be made from field measurements, the Contractor shall take the necessary measurements and prepare the drawings. Shop drawings of the various subcontractors shall be coordinated to eliminate all interferences and to provide sufficient space for the installation of all equipment, piping, ductwork, etc.

The drawings and specifications have been prepared to supplement each other and they shall be interpreted as an integral unit with items shown on one and not the other being furnished and installed as though shown and called out on both.

Record Drawings:

Record drawings for all systems and sections of this Division shall be furnished as work of this Section. Blue-line white prints of floor plans shall be furnished by the Engineer's office. These prints shall be accurately and neatly marked, in colored pencil, showing all changes from schematics. Installation and commissioning checklists that are provided on the drawings are to be initialed and dated upon completion.

These drawings shall be reviewed with the Engineer's at least once each month, shall be submitted at time of final inspection, and shall be checked for accuracy. Failure to keep record drawings up-to-date shall be cause for withholding monthly payments.

CONTRACTOR'S USE OF BUILDING EQUIPMENT :

The Contractor may use equipment such as electric motors, fans, heat exchangers, filters, etc., with the written permission of the Owner. As each piece of equipment is used (such as electric motors and fans), maintenance procedures approved by the manufacturer are to be followed. A careful record is to be kept of the length of the time the equipment is used, maintenance procedures followed, and any difficulty encountered. The record is to be submitted to the Owner upon acceptance. All fan belts and filter media (such as bearings) shall be carefully inspected just prior to acceptance. Any excessive wear noted shall require replacement. Any damage by Contractor to be replaced by Contractor.

EXISTING CONDITIONS :

The Contractor shall carefully examine all existing conditions that might affect the mechanical system and shall compare these conditions with all drawings and specifications for work included under this contract. He shall, at such time, ascertain and check all conditions that may affect his work. No allowance shall subsequently be made in his behalf for an extra expense incurred as a result of his failure or neglect to make such examination. This Contractor shall include in his bid proposal all necessary allowances to repair or replace any item that will remain or will be removed, and any item that will be damaged or destroyed by new construction.

The Contractor shall remove all abandoned piping, etc. , required by new construction and cap or plug openings. No capping, etc., shall be exposed in occupied areas. All openings of items removed shall be sealed to match adjacent surfaces.

The Contractor shall verify the exact location of all existing services, utilities, piping, etc., and make connections to existing systems as required or as shown on the drawings. The exact location of each utility line, together with size and elevation, shall be established before any on-site lines are installed. Should elevation or size of existing main utility lines make connections to them impossible as shown on drawings, then notification of such shall immediately be given to the Owners Representative for a decision.

EQUIPMENT CAPACITIES :

Capacities shown for equipment in the specifications and on the drawings are the minimum acceptable. No equipment shall be considered as an alternate without prior approval of the design Engineer.
All equipment shall give the specified capacity and performance at the job-site elevation of [4200] feet above sea level. Manufacturers' standard ratings shall be adjusted accordingly. All capacities and performances listed on drawings or in specifications are for job-site conditions.

SEISMIC REQUIREMENTS FOR EQUIPMENT :

All equipment must be furnished structurally adequate to withstand seismic forces as outlined in the International Building Code for seismic Zone 3. Equipment bases shall be designed for direct attachment of seismic snubbers and/or seismic anchors. Coordinate with structural.

COOPERATION WITH OTHER TRADES :

The general contractor shall be responsible for job site coordination. The Contractor shall refer to other drawings and parts of this specification that cover work of other trades that is carried on in conjunction with the mechanical work such that all work can proceed without interference resulting from lack of coordination.

The Contractor shall properly size and locate all openings, chases, sleeves, equipment bases, and accesses. He shall provide accurate wiring diagrams to the Electrical Contractor for all equipment furnished under this Division.

The ceiling cavity must be carefully reviewed and coordinated with all trades. In the event of conflict, the installation of the mechanical equipment and piping shall be in the following order: plumbing, waste, and soil lines; supply, return, and exhaust ductwork; water piping; medical gases; fire protection piping; and pneumatic control piping.

The mechanical Contractor shall insure that the installation of all piping, ducts and equipment is in compliance with Articles 110-16 and 384-4 of the National Electrical Code relative to proper clearances in front of and over all electrical panels and equipment. No piping or ductwork will be allowed to run over an electrical panel.

RESPONSIBILITY OF CONTRACTOR :

The Contractor is responsible for the installation of a satisfactory piece of work in accordance with the true intent of the drawings and specifications. He shall provide, as a part of his work and without expense, all incidental items required even though these items are not particularly specified or indicated. The installation shall be made so that its several component parts will function together as a workable system and shall be left with all equipment properly adjusted and in working order. The Contractor shall familiarize the Owner's Representative with maintenance and lubrication instructions as prepared by the Contractor and shall explain and fully instruct him relative to operating, servicing, and maintenance of them.) Part of training package and P.M. program.

UNFIT OR DAMAGED WORK :

Any part of this installation that fails, is unfit, or becomes damaged during construction, shall be replaced or otherwise made good. The cost of such remedy shall be the responsibility of this Division and general contractor.

WORKMANSHIP :

Workmanship shall be the best quality of its kind for the respective industries, trades, crafts, and practices, and shall be acceptable in every respect to the Owner's representative. Nothing contained herein shall relieve the Contractor from making good and perfect work in all details in construction. All work shall be performed under the directories of any licensed journeyman. Contractor shall maintain a licensed journeyman on site at all times during construction.

SAFETY REGULATION:

The Contractor shall comply with all local and OSHA safety requirements in performance with this work. (See General Conditions). This Contractor shall be required to provide equipment, supervision, construction, procedures, and all other necessary items to assure safety to life and property.

ELECTRICAL SERVICES :

Motors :

All motors required under this Division shall be furnished and installed as work of this Division. All motor-starting equipment, unless otherwise specified in Division 22/23 shall be furnished as work of Division 26, Electrical. Motors shall be name plated with Class F insulation as manufactured by Lincoln Electric, US Motors, General Electric, Allis Chalmers, Century, or Reliance, designed for quiet continuous operations with maximum (Class B) 90oC resistance heating rise with 40oC ambient temperature at full load and rated speed and voltage individually specified with minimum 1.15 service factor. Motors shall be all of the same make except those incorporated in packaged units. All motors shall be provided with ball bearings and conduit connection boxes. Lifting eyes shall be provided on motors 1-1/2 horsepower and larger.

Unless otherwise specified, motors 3/4 horsepower and larger shall be 3 phase, 60 cycle, and motors 1/2 horsepower and smaller shall be single phase, 60 cycle. Contractor is to coordinate with available power voltage and phase. Refer to fan and equipment schedules on drawings for voltage characteristics, horsepower, size, etc. All single-phase motors shall have thermal overload protection. If motor-starting equipment is included in packaged units, all three phases shall have overload protection. All motors shall have a power factor of 85 percent or better. All motors 20 horsepower and larger shall be manufacturers Premium Efficiency grade and shall meet the NEMA MG 1-12.54* efficiency ratings for energy efficient motors. All two speed motors, unless otherwise specified, shall be 1800/1200 rpm dual winding type. All 3 phase motors shall be designed and manufactured to be capable of speed control through a variable frequency drive controller.

Motors and other electrical control equipment installed in damp or moist areas or in areas of other special conditions shall be designed and approved for the installation. Motors and electrical equipment in explosive locations shall be approved for those locations. Motors located outside buildings shall be totally enclosed.

Electric Wiring :

All equipment control wiring and all boiler control wiring, water heater control wiring, pump interlocks, automatic temperature control wiring including all necessary contacts, relays, and interlocks, whether low or line voltage, except power wiring, shall be furnished and installed as work of this Division.

All equipment that requires an electrical connection shall be furnished so that it will operate properly and deliver full capacity on the electrical service available and also satisfy the requirements under "Motors," as specified above.

The Mechanical Contractor must refer to the electrical control equipment and wiring shown on the diagrams. Any changes or additions required by specific equipment furnished shall be the complete responsibility of the Contractor furnishing the equipment.

The Mechanical Contractor must coordinate with the Electrical Contractor to insure that all required components of control work are included and fully understood. No additional cost shall accrue to the Owner as a result of lack of such coordination.

WORK, MATERIALS, AND QUALITY OF EQUIPMENT :

Unless otherwise specified, all materials shall be new and of the best quality of their respective kinds and all labor shall be done in a most thorough and workmanlike manner. Work shall be performed by a licensed electrician.

Products or equipment of any of the manufacturers cited herein or any of the products approved by the Addenda may be used. However, where lists of products are cited herein, the one first listed in the design equipment used in drawings and schedules to establish size, quality, function, and capacity standards. If other than design equipment is used, it shall be carefully checked for access to equipment, electrical and control requirements, valving, and piping. Should changes or additions occur in piping, valving, electrical work, etc., or if the work of other Contractors would be revised by the alternate equipment, the cost of all changes shall be borne as work of this Division.

Pipe of foreign manufacture will not be acceptable.

The access to equipment shown on the drawings are the minimum acceptable space requirements. No equipment that reduces or restricts accessibility to this or any other equipment will be considered.

DIVISION 22/23 - PLUMBING/HVAC

SECTION 22 0500/23 0500
COMMON WORK RESULTS FOR PLUMBING/HVAC PIPING

PRODUCTS

SUBMITTALS

Product Data: For each type of pipe hanger, channel support system component, and thermal-hanger shield insert indicated.
Shop Drawings: Signed and sealed by a qualified professional engineer for multiple piping supports and trapeze hangers. Include design calculations and indicate size and characteristics of components and fabrication details.
Welding Certificates: Copies of certificates for welding procedures and operators.

QUALITY ASSURANCE

Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
Engineering Responsibility: Design and preparation of Shop Drawings and calculations for multiple pipe supports, trapeze, equipment anchorage, and seismic restraint by a qualified professional engineer.

Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of hangers and supports that are similar to those indicated for this Project in material, design, and extent.

SUPPORTING DEVICES

Hanger and Pipe Attachments: Factory-fabricated with galvanized coatings; nonmetallic coated for hangers in direct contact with copper tubing.
Building Attachments: Powder-actuated-type, drive-pin attachments with pullout and shear capacities appropriate for supported loads and building materials; UL listing and FM approval for fire-protection systems.
Mechanical-Anchor Fasteners: Insert-type attachments with pullout and shear capacities appropriate for supported loads and building materials; UL listing and FM approval for fire-protection systems.

INSTALLATION

Install piping free of sags and bends.
Install fittings for changes in direction and branch connections.
Install sleeves for pipes passing through concrete walls, gypsum-board partitions, and concrete floor and roof slabs.
Exterior Wall, Pipe Penetrations: Mechanical sleeve seals installed in steel or cast-iron pipes for wall sleeves.
Fire-Barrier Penetrations: Seal pipe penetrations with through-penetration firestop systems specified in Division 7.
Install unions adjacent to each valve and at final connection to each piece of equipment.
Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals in water and steam piping.
Install building attachments within concrete or to structural steel. Install additional attachments at concentrated loads, including valves, flanges, guides, strainers, expansion joints, and at changes in direction of piping.
Install powder-actuated drive-pin fasteners in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than 4 inches thick.
Install mechanical-anchor fasteners in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than 4 inches thick.
Support fire-protection system piping independent of other piping.
Load Distribution: Install hangers and supports so piping live and dead loading and stresses from movement will not be transmitted to connected equipment.
Pipe Hanger and Support Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from building structure.

Channel Support System Installation: Arrange for grouping of parallel runs of piping and support together on field-assembled channel systems.
1. Field assemble and install according to manufacturer's written instructions.
Install building attachments within concrete slabs or attach to structural steel. Space attachments within maximum piping span length indicated in MSS SP-69. Install additional attachments at concentrated loads, including valves, flanges, guides, strainers, and expansion joints, and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.
Install mechanical-anchor fasteners in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
Install hangers and supports complete with necessary inserts, bolts, rods, nuts, washers, and other accessories.
Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and so maximum pipe deflections allowed by ASME B31.9, "Building Services Piping," is not exceeded.

PAINTING

Touching Up: Where cleaning and touch up painting is not specified in Division 9, Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils.

Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

PROJECT COMPLETION :

Within 90 days of system acceptance the following items will be provided to the building owner.
A. As-built drawings which include as a minimum the location and performance data on each piece of equipment.
B. Operation and maintenance manuals
C. A list including the name and address of at least one service agency.
D. A complete narrative of how each system is intended to operate with recommendations for setpoints.

END OF SECTION 22 0500/23 0500

DIVISION 22/23 - PLUMBING/HVAC

SECTION 22 0553/23 0553
IDENTIFICATION FOR PLUMBING/HVAC PIPING & EQUIPMENT

SUBMITTALS
Product Data: For identification materials and devices.
Samples: Of color, lettering style, and graphic representation required for each identification material and device.

QUALITY ASSURANCE
Comply with ASME A13.1, "Scheme for the Identification of Piping Systems" for lettering size, length of color field, colors, and viewing angles of identification devices.

PRODUCTS

Products specified are for applications referenced in other Division 22/23 Sections. If more than single type is specified for listed applications, selection is Installer's option.
Equipment Nameplates: Metal permanently fastened to equipment with data engraved or stamped.
Data: Manufacturer, product name, model number, serial number, capacity, operating and power characteristics, labels of tested compliances, and essential data
Location: Accessible and visible.
Stencils: Stencil material, prepared with letter sizes conforming to recommendations of ASME A13.1. Minimum letter height is 1-1/4 inches for ducts, and 3/4 inch for access door signs and similar operational instructions.
Stencil Paint: Exterior, oil-based, alkyd gloss black enamel, unless otherwise indicated. Paint may be in pressurized spray-can form.
Identification Paint: Exterior, oil-based, alkyd enamel in colors according to ASME A13.1, unless otherwise indicated.
Snap-On Plastic Pipe Markers: Manufacturer's standard prepainted, semi-rigid, snap-on type. Include color-coding according to ASME A13.1, unless otherwise indicated.
Pipes with OD, Including Insulation, Less Than 6 Inches: Full-band pipe markers, extending 360 degrees around pipe at each location.
Pipes with OD, Including Insulation, 6 Inches and Larger: Either full-band or strip-type pipe markers, at least 3 times letter height and of length required for label.

Lettering: Manufacturer's standard preprinted captions as selected by Engineer.
Lettering: Use piping system terms indicated and abbreviate only as necessary for each application length.
Arrows: Either integrally with piping system service lettering, to accommodate both directions, or as separate unit, on each pipe marker to indicate direction of flow.
Plastic Duct Markers: Manufacturer's standard laminated plastic, in the following color codes:
Green: Cold-air supply.
Yellow: Hot-air supply.
Blue: Exhaust, outside, return, and mixed air.
Hazardous Material Exhausts: Use colors and designs recommended by ASME A13.1.
Terminology: Include direction of airflow; duct service such as supply, return, and exhaust; duct origin, duct destination, and design flow.
Plastic Tape: Manufacturer's standard color-coded, pressure-sensitive, self-adhesive, vinyl tape, at least 3 mils thick.
Widths: 1-1/2 inches on pipes with OD, including insulation, less than 6 inches; 2-1/2 inches for larger pipes.
Color: Comply with ASME A13.1, unless otherwise indicated.
Valve Tags: Stamped or engraved with 1/4-inch letters for piping system abbreviation and 1/2-inch sequenced numbers. Include 5/32-inch hole for fastener.
Material: 0.032-inch- thick, polished brass.
Size: 1-1/2-inches diameter, unless otherwise required.
Indicate valve service and normal position on valve. Example Cold water, N.O.
Valve Tag Fasteners: Brass, wire-link or beaded chain; or brass S-hooks.
Valve Tag Fasteners: Brass, wire-link chain; beaded chain; or S-hooks.
Access Panel Markers: 1/16-inch- thick, engraved plastic-laminate markers, with abbreviated terms and numbers corresponding to concealed valve. Provide 1/8-inch center hole for attachment.
Plastic Equipment Markers: Manufacturer's standard laminated plastic, in the following color codes:
Green: Cooling equipment and components.
Yellow: Heating equipment and components.
Brown: Energy reclamation equipment and components.
Blue: Equipment and components that do not meet criteria above.
Hazardous Equipment: Use colors and designs recommended by ASME A13.1.
Terminology: Match schedules as closely as possible. Include the following:
(a) Name and plan number.
(b) Equipment service.
(c) Design capacity.
(d) Other design parameters such as pressure drop, entering and leaving conditions, and speed.
Size: 2-1/2 by 4 inches for control devices, dampers, and valves; 4-1/2 by 6 inches for equipment.
Lettering and Graphics: Coordinate names, abbreviations, and other designations used in mechanical identification with corresponding designations indicated. Use numbers, letters, and terms indicated for proper identification, operation, and maintenance of mechanical systems and equipment.
Multiple Systems: Identify individual system number and service if multiple systems of same name are indicated.

EXECUTION

Install pipe markers on each system. Include arrows showing normal direction of flow.
Marker Type: Stenciled markers with painted, color-coded bands complying with ASME A13.1.
Marker Type: Plastic markers, with application systems. Install on pipe insulation segment where required for hot, non-insulated pipes.
Fasten markers on pipes and insulated pipes by one of following methods:
Snap-on application of pre-tensioned, semi-rigid plastic pipe marker.
Adhesive lap joint in pipe marker overlap.
Laminated or bonded application of pipe marker to pipe or insulation.
Taped to pipe or insulation with color-coded plastic adhesive tape, not less than 3/4 inch wide, lapped a minimum of 1-1/2 inches at both ends of pipe marker, and covering full circumference of pipe.
Taped to pipe or insulation with color-coded plastic adhesive tape, not less than 1-1/2 inches wide, lapped a minimum of 3 inches at both ends of pipe marker, and covering full circumference of pipe.
Locate pipe markers and color bands where piping is exposed in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior nonconcealed locations according to the following:
Near each valve and control device.
Near each branch connection, excluding short takeoffs for fixtures and terminal units. Mark each pipe at branch, where flow pattern is not obvious.
Near penetrations through walls, floors, ceilings, or nonaccessible enclosures.
At access doors, manholes, and similar access points that permit view of concealed piping.
Near major equipment items and other points of origination and termination.
Spaced at a maximum of 50-foot intervals along each run. Reduce intervals to 25 feet in areas of congested piping and equipment.
On piping above removable acoustical ceilings, except omit intermediately spaced markers.

VALVE TAGS
Install on valves and control devices in piping systems, except check valves, valves within factory-fabricated equipment units, plumbing fixture supply stops, shutoff valves, faucets, convenience and lawn-watering hose connections, and HVAC terminal devices and similar roughing-in connections of end-use fixtures and units. Indicate service and normal position of all tagged valve and control devices. List tagged valves in valve schedule.
Tag Material: Brass.

EQUIPMENT SIGNS AND MARKERS

Install engraved plastic-laminate signs or equipment markers on or near each major item of mechanical equipment. Include signs for the following general categories of equipment:
Main control and operating valves, including safety devices and hazardous units such as gas outlets.
Fire department hose valves and hose stations.
Meters, gages, thermometers, and similar units.
Fuel-burning units, including furnaces and heaters.
Fans, blowers, primary balancing dampers, and mixing boxes.
Packaged HVAC central-station and zone-type units.
Tanks and pressure vessels.
Strainers, filters, water-treatment systems, and similar equipment.

Optional Sign Types: Stenciled signs may be provided instead of engraved plastic, at Installer's option, where lettering larger than 1-inch high is needed for proper identification because of distance from normal location of required identification.
Lettering Size: Minimum 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
Terms on Signs: Distinguish between multiple units, indicate operational requirements, indicate safety and emergency precautions, warn of hazards and improper operations, and identify units.

Duct Systems: Identify air supply, return, exhaust, intake, and relief ducts with duct markers; or provide stenciled signs and arrows showing service and direction of flow.

Location: Locate signs near points where ducts enter into concealed spaces and at maximum intervals of 50 feet in each space where ducts are exposed or concealed by removable ceiling system.

ADJUSTING AND CLEANING

Relocate mechanical identification materials and devices that have become visually blocked by work of this or other Divisions.
Clean faces of identification devices and glass frames of valve charts.

END OF SECTION 22 0553/23 0553

DIVISION 22/23 - PLUMBING/HVAC

SECTION 22 0700/23 0700
PLUMBING/HVAC INSULATION

GENERAL

SECTION REQUIREMENTS
Submittals: Product Data for each type of mechanical insulation

Quality Assurance: Labeled with maximum flame-spread rating of 25 and maximum smoke- developed rating of 50 according to ASTM E 84.
Comply with ASHRAE 90.1 for pipe insulation thickness and conductivity requirements.

PRODUCTS

PIPE INSULATION

Preformed Glass-Fiber Pipe Insulation: ASTM C 547, Class 1, with factory-applied, all-purpose, vapor-retarder jacket.

EXECUTION

INSTALLATION

Install vapor barriers on insulated pipes with surface operating temperatures below 60 deg F.
Insulate fittings, valves, and specialties.
Seal vapor-barrier penetrations for hangers, supports, anchors, and other projections.
Coat glass-fiber pipe insulation ends with vapor-barrier coating.
Seal ends of flexible elastomeric cellular insulation with adhesive.
Roof Penetrations: Apply insulation for interior applications to a point even with the top of the roof flashing.

Interior Walls and Partitions Penetrations: Apply insulation continuously through walls and partitions, except fire-rated walls and partitions.

Fire-Rated Walls and Partitions Penetrations: Terminate insulation at penetrations through fire-rated walls and partitions. Seal around penetration with through-penetration firestop systems specified in Division 7.

Glass-Fiber Insulation Installation: Bond insulation to pipe with adhesive. Seal seams and joints with vapor-barrier compound.

Flexible Elastomeric Insulation Installation: Seal joints with adhesive.

Interior Piping System Applications: Insulate the following piping systems:
Domestic hot water and domestic cold water.
Refrigeration piping.

Do not apply insulation to the following systems, materials, and equipment:
Flexible connectors.
Fire-protection piping systems.
Sanitary drainage and vent piping.
Drainage piping located in crawl spaces, unless otherwise indicated.
Below-grade piping.
Chrome-plated pipes and fittings, except for plumbing fixtures for the disabled.
Piping specialities, including air chambers, unions, strainers, check valves, plug valves, and flow regulators.

Pipe Insulation Thickness Application Schedule: Insulate piping with the following materials and thicknesses:
Domestic Cold Water, Hot Water: 3/4-inch preformed glass-fiber pipe insulation.
Refrigeration piping: 3/4-inch Armaflex.

END OF SECTION 22 0700/23 0700

DIVISION 22 - PLUMBING

SECTION 22 0523
GENERAL DUTY VALVES FOR PLUMBING PIPING

PRODUCTS

GENERAL-DUTY VALVES

End Connections: Threads shall comply with ANSI B1.20.1. Flanges shall comply with ANSI B16.1 for cast-iron valves and ANSI B16.24 for bronze valves. Solder-joint connections shall comply with ANSI B16.18.
Ball Valves: Rated for 150-psig (1035-kPa) saturated steam pressure, 400-psig (2760-kPa) WOG pressure; 2-piece construction; with bronze body, standard (or regular) port, chrome-plated brass ball, replaceable "Teflon" or "TFE" seats and seals, blowout-proof stem, and vinyl-covered steel handle.
Plug Valves: Rated at 150-psig (1035-kPa) WOG; bronze body, with straightaway pattern, square head, and threaded ends.
Valves for Copper Tube: Solder ends, except provide threaded ends for heating hot water and low-pressure steam service.
Valves for Steel and Plastic Pipe: Threaded ends.

EXECUTION

INSTALLATION

Use gate and ball valves for shutoff duty; globe and ball for throttling duty.
Locate valves for easy access and provide separate support where necessary.
Install valves for each future and item of equipment.
Install three-valve bypass around each pressure-reducing valve using throttling-type valves.
Install valves in horizontal piping with stem at or above center of pipe.
Install valves in a position to allow full stem movement.
Install check valves for proper direction of flow in horizontal position with hinge pin level.

END OF SECTION 22 0523

DIVISION 22 - PLUMBING

SECTION 22 0519
METERS AND GAGES FOR PLUMBING PIPING

SUBMITTALS
Product Data: Include scale range, ratings, and calibrated performance curves for each meter, gage, fitting, specialty, and accessory specified.
Shop Drawings: Include schedule indicating manufacturer's number, scale range, fittings, and location for each meter and gage.
Product Certificates: Signed by manufacturers of meters and gages certifying accuracies under specified operating conditions and compliance with specified requirements.
Shop Drawings: For brackets for duct-mounting thermometers.
Maintenance Data: For meters and gages to include in maintenance manuals specified in Division 1. Include data for the following:
Water meters.

PRODUCTS

THERMOMETERS, GENERAL
Scale Range: Temperature ranges for services listed are as follows:
1. Domestic Hot Water: 30 to 240 deg F, with 2-degree scale divisions.
2. Domestic Cold Water: 0 to 100 deg F, with 2-degree scale divisions.
Accuracy: Plus or minus 1 percent of range span or plus or minus one scale division to maximum of 1.5 percent of range span.

DUCT THERMOMETER SUPPORT FLANGES
Description: Flanged-fitting bracket for mounting in hole of duct, with threaded end for attaching thermometer.
1. Extension-Neck Length: Nominal thickness of 2 inches, but not less than thickness of exterior insulation.
2. Insertion-Neck Length: Nominal thickness of 2 inches, but not less than thickness of insulation lining.

PRESSURE GAGES
Description: ASME B40.1, phosphor-bronze bourdon-tube type with bottom connection; liquid-filled-case type, where required.
Case: Drawn steel, brass, or aluminum with 4-1/2-inch- diameter, glass lens.
Connector: Brass, NPS 1/4.
Scale: White-coated aluminum with permanently etched markings.
Accuracy: Grade A, plus or minus 1 percent of middle 50 percent of scale.
1. Vacuum: 30 inches Hg of vacuum to 15 psig of pressure.
2. Fluids under Pressure: Two times the operating pressure.

WATER METERS
Description: AWWA C700, displacement type, bronze case. Registers flow in gallons.

EXECUTION

INSTALLATION, GENERAL
Install meters, gages, and accessories according to manufacturer's written instructions for applications where used.
Install thermometers and adjust vertical and tilted positions.
Install in the following locations:
1. Inlet and outlet of each thermal storage tank.
Use liquid in glass thermometers for liquids and bimetal dial thermometers for air.
Install separable sockets in vertical position in piping tees where fixed thermometers are indicated.
1. Install with socket extending to one-third of diameter of pipe.
2. Fill sockets with oil or graphite and secure caps.
Install thermometer wells in vertical position in piping tees where test thermometers are indicated.
1. Install with stem extending to one-third of diameter of pipe.
2. Fill wells with oil or graphite and secure caps.
Duct Thermometer Support Flanges: Install in wall of duct where duct thermometers are indicated. Attach to duct with screws. Seal duct penetrations air tight.
Install pressure gages in piping tees with pressure-gage valve located on pipe at most readable position.
Install pressure gages in the following locations:
1. Discharge of each pressure-reducing valve.
2. Building water-service entrance.
Install liquid-filled-type pressure gages at suction and discharge of each pump.
Install pressure-gage needle valve and snubber in piping to pressure gages.
1. Exception: Install syphon instead of snubber in piping to steam pressure gages.

CONNECTIONS
Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping and specialties. The following are specific connection requirements:
1. Install meters and gages adjacent to machines and equipment to allow service and maintenance.
2. Connect flowmeter transmitters to meters.

ADJUSTING AND CLEANING
Calibrate meters according to manufacturer's written instructions, after installation. Document calibration and include in O&M manuals.
Adjust faces of meters and gages to proper angle for best visibility.
Clean windows of meters and gages and clean factory-finished surfaces. Replace cracked and broken windows, and repair scratched and marred surfaces with manufacturer's touchup paint.

END OF SECTION 22 0519

DIVISION 22 - PLUMBING

SECTION 22 1116
DOMESTIC WATER PIPING

GENERAL

SECTION REQUIREMENTS

Performance Requirements: Unless otherwise indicated minimum pressure requirements for water piping are as follows:
Domestic Water Piping: 80 psig.
Comply with NSF 61 "Drinking Water System Components -- Health Effects."

PRODUCTS

PIPES AND TUBES
Hard Copper Tube: ASTM B 88, Types K and L, water tube, drawn temper.
Soft Copper Tube: ASTM B 88, Type L water tube, annealed temper.
Cross Linked Polyethylene (PEX).

FITTINGS
Wrought-Copper, Solder-Joint Pressure Fittings: ASME B 16.22.
Cast-Copper-Alloy, Solder-Joint Pressure Fittings: ASME B 16.18.
Bronze Flanges: ASME B 16.24, Classes 150 and 300.
Copper Unions: ASME B 16.18, cast-copper-alloy body, hexagonal stock, with ball-and-socket joint, metal-to-metal seating surfaces, and solder-joint, threaded, or solder-joint and threaded ends. Threads complying with ASME B 1.20.1.

JOINING MATERIALS

Solder Filler Metal: ASTM B 32, lead free.
Brazing Filler Metals: AWS A5.8, alloys to suit system requirements.
Welding Filler Metals: Comply with AWS D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.

EXECUTION

PIPING APPLICATIONS

Install listed pipe materials and joining methods below in the following applications:

Aboveground: Hard copper tube, Type L ; wrought-copper or cast-copper-alloy pressure fittings; copper unions; bronze flanges; and solder joints.

VALVE APPLICATIONS

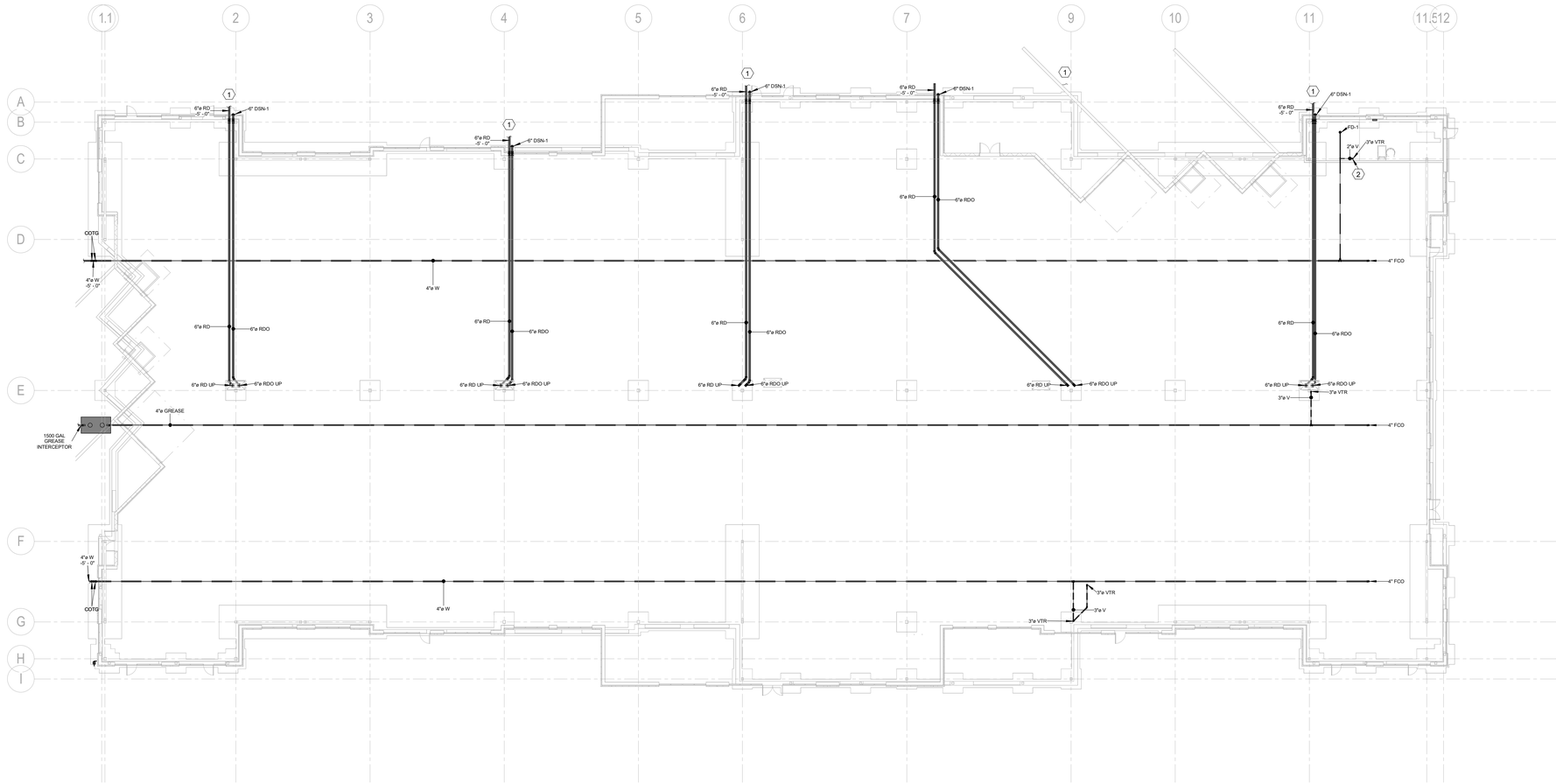
Install gate valves close to main on each branch and riser serving two or more plumbing fixtures or

KEYED NOTES

1 SEE SITE PLAN FOR CONTINUATION. TYPICAL.
2 TRANSITION TO 3" VTR BEFORE PASSING THROUGH ROOF.

PLUMBING FIXTURE SCHEDULE

TAG	DCW (IN)	DHW (IN)	W (IN)	V (IN)	REMARKS
COTG	0"	0"	0"	0"	CLEANOUT TO GRADE
FD-1	0"	0"	2"	2"	JR SMITH 2005
RD-1	0"	0"	0"	0"	ZURN Z-199
RDO-1	0"	0"	0"	0"	ZURN Z-199



1 / P101 FIRST FLOOR DWV PLAN
1/16" = 1'-0"

PERMIT SET

MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MARK WELDON
MOUNTAIN TECH NORTH 4
2800 W 650 N
LINDON, UTAH 84042

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LICENSED PROFESSIONAL ENGINEER
STATE OF UTAH
MICHAEL T. WYATT
3/22/2025

MHTN PROJECT NO. 2023556

Original drawing is 30 x 42. Do not scale contents of this drawing.

REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD. USE REFLECT LAST REVISION DATE.

NO △	DATE	DESCRIPTION

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CONSTRUCTION DOCUMENTS
6/27/2024

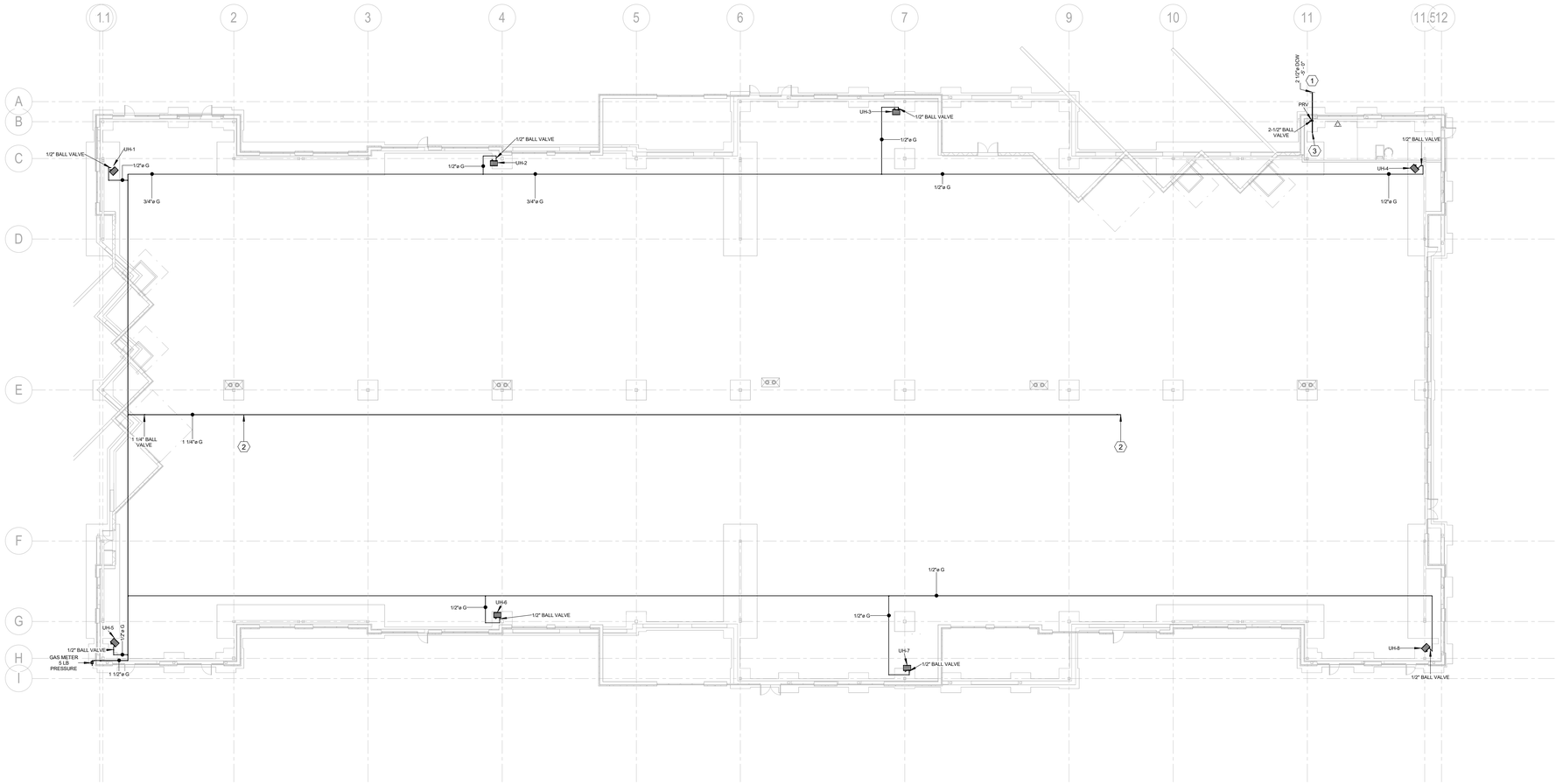
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FIRST FLOOR DWV & ROOF DRAIN PLAN

SHEET NUMBER
P101

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KEYED NOTES

1 SEE SITE PLAN FOR CONTINUATION. TYPICAL.
2 PIPE FOR FUTURE EQUIPMENT. VALVE AND CAP.
3 VALVE AND CAP FOR FUTURE.



1 FIRST FLOOR DOMESTIC WATER & GAS PLAN

MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MARK WELDON
MOUNTAIN TECH NORTH 4
2800 W 650 N
LINDON, UTAH 84042

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LICENSED PROFESSIONAL ENGINEER
10134202
MICHAEL F. WYATT
3/22/2025
STATE OF UTAH

MHTN PROJECT NO. 2023556

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REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

NO △	DATE	DESCRIPTION

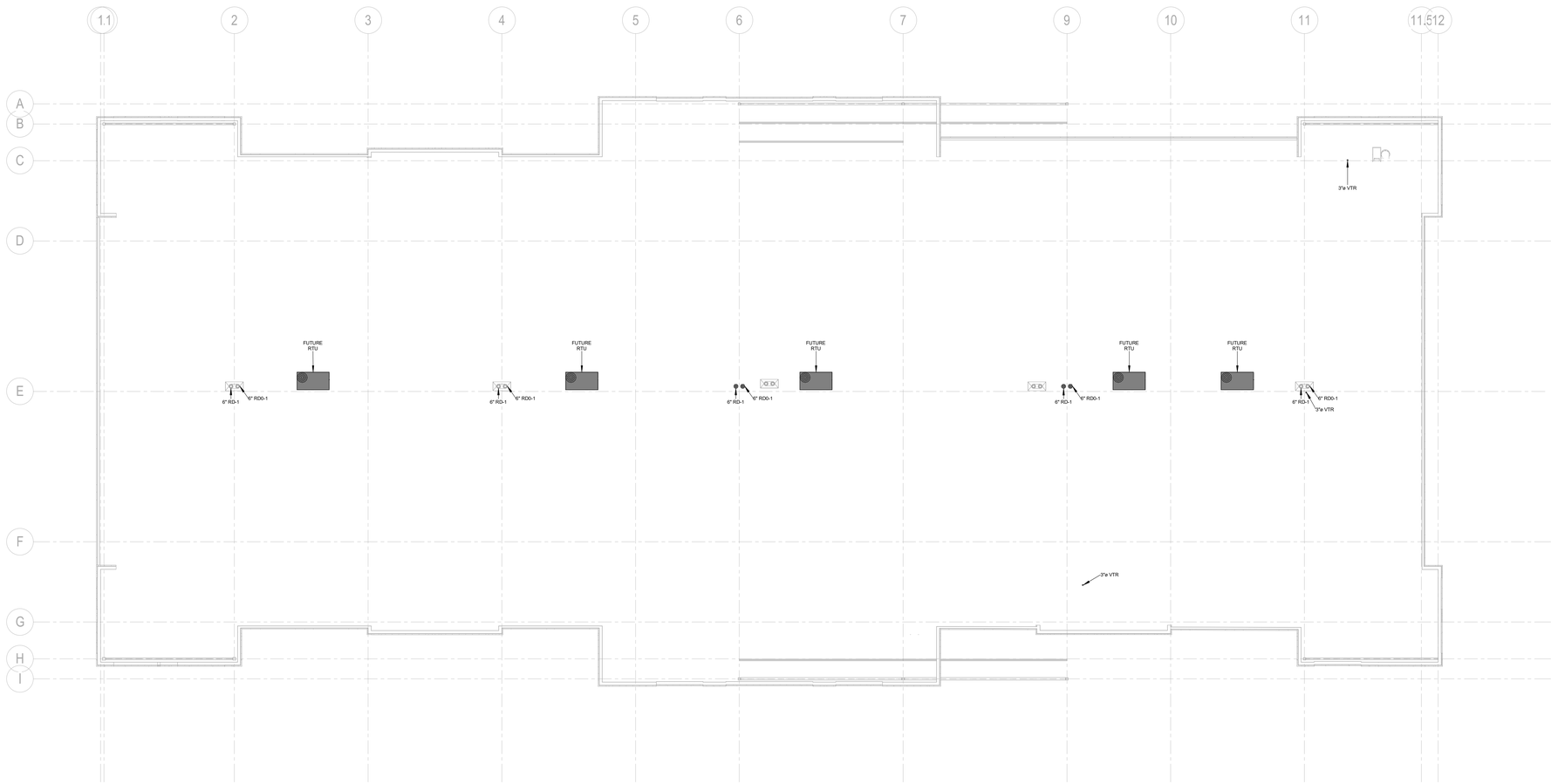
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SHEET NAME
FIRST FLOOR DOMESTIC WATER & GAS PLAN

SHEET NUMBER
P102

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1 P201 ROOF PLUMBING PLAN
1/16" = 1'-0"

MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MARK WELDON
MOUNTAIN TECH NORTH 4
2800 W 650 N
LINDON, UTAH 84042

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LICENSED PROFESSIONAL ENGINEER
5571314-2202
MICHAEL F. WYATT
3/22/2025
STATE OF UTAH

MHTN PROJECT NO. 2023556

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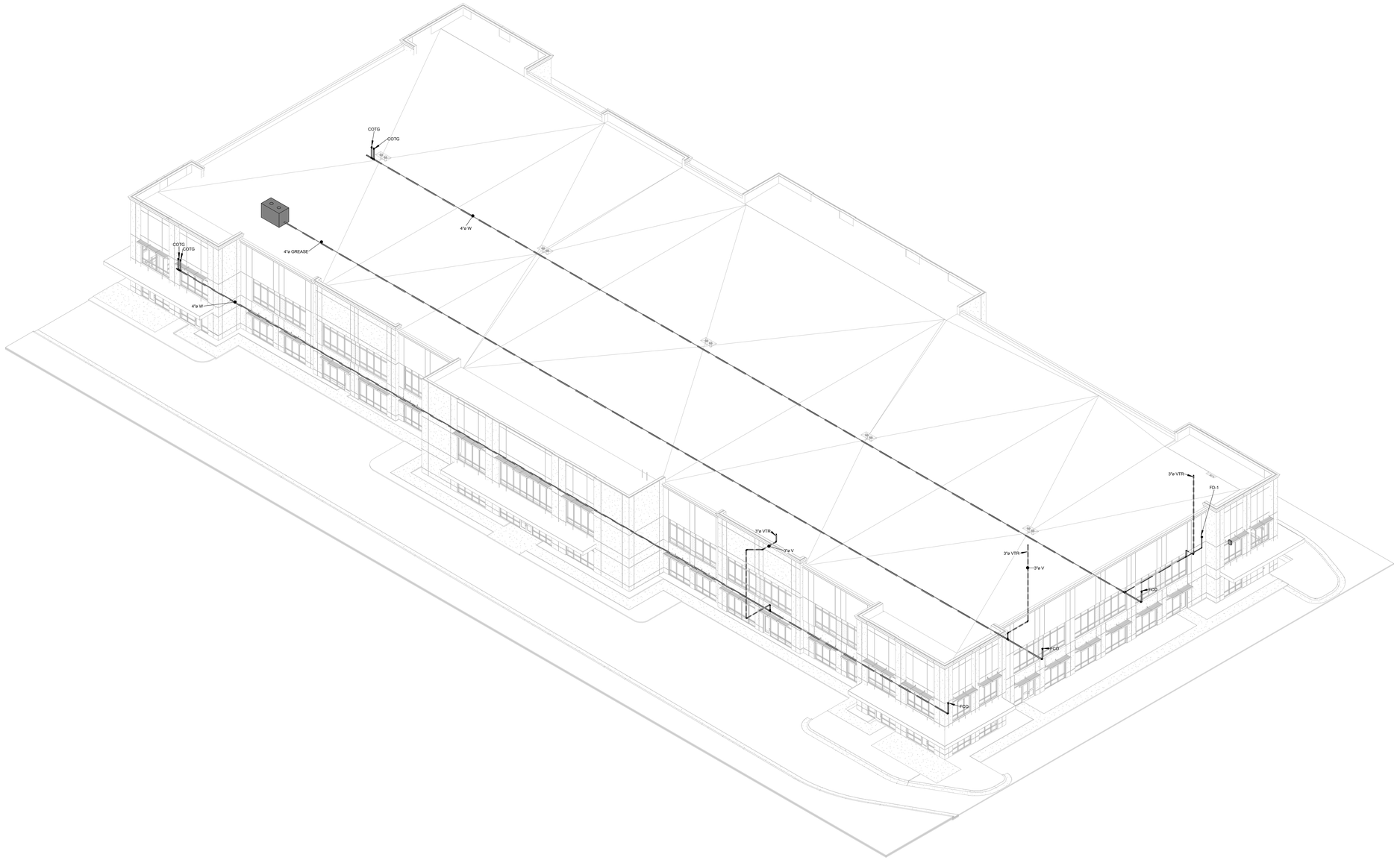
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CONSTRUCTION DOCUMENTS
6/27/2024

SHEET NAME
ROOF PLUMBING PLAN

SHEET NUMBER
P201

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1 P301 DWV ISOMETRIC

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MHTN
ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MARK WELDON

MOUNTAIN TECH NORTH 4

2800 W 650 N
LINDON, UTAH 84042

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DATE: 20-Jun-24
PROJECT: WICP Orem North Building 4
SUBJECT: Gas Pipe Sizing
LOCATION: Lindon, UT

Project Constants	
General Location:	Salt Lake
Specific Location:	Salt Lake
Pipe Type:	Schedule 40 Steel
Gas:	Natural Gas
Fitting Factor:	1.5
Conversion Factor (BTUH/CFH):	890

Gas Sizing Input		
Inlet Pressure (psig):	5	?
Pressure Drop (psi):	2.00	?
Pipe Length (ft) =	580.0	
Gas Load (MBTU) =	2,176.0	

Gas Sizing Output	
Pipe Size (in) =	1 1/2
CFH =	2,444.9
Equivalent Length =	870.0
Max MBTU for Pipe Size =	2,422.7
Max CFH for Pipe Size =	2,722.1

Clear

MBTU Sum
122
122
122
122
122
122
122
122
240
240
240
240
240
2,176

Clear

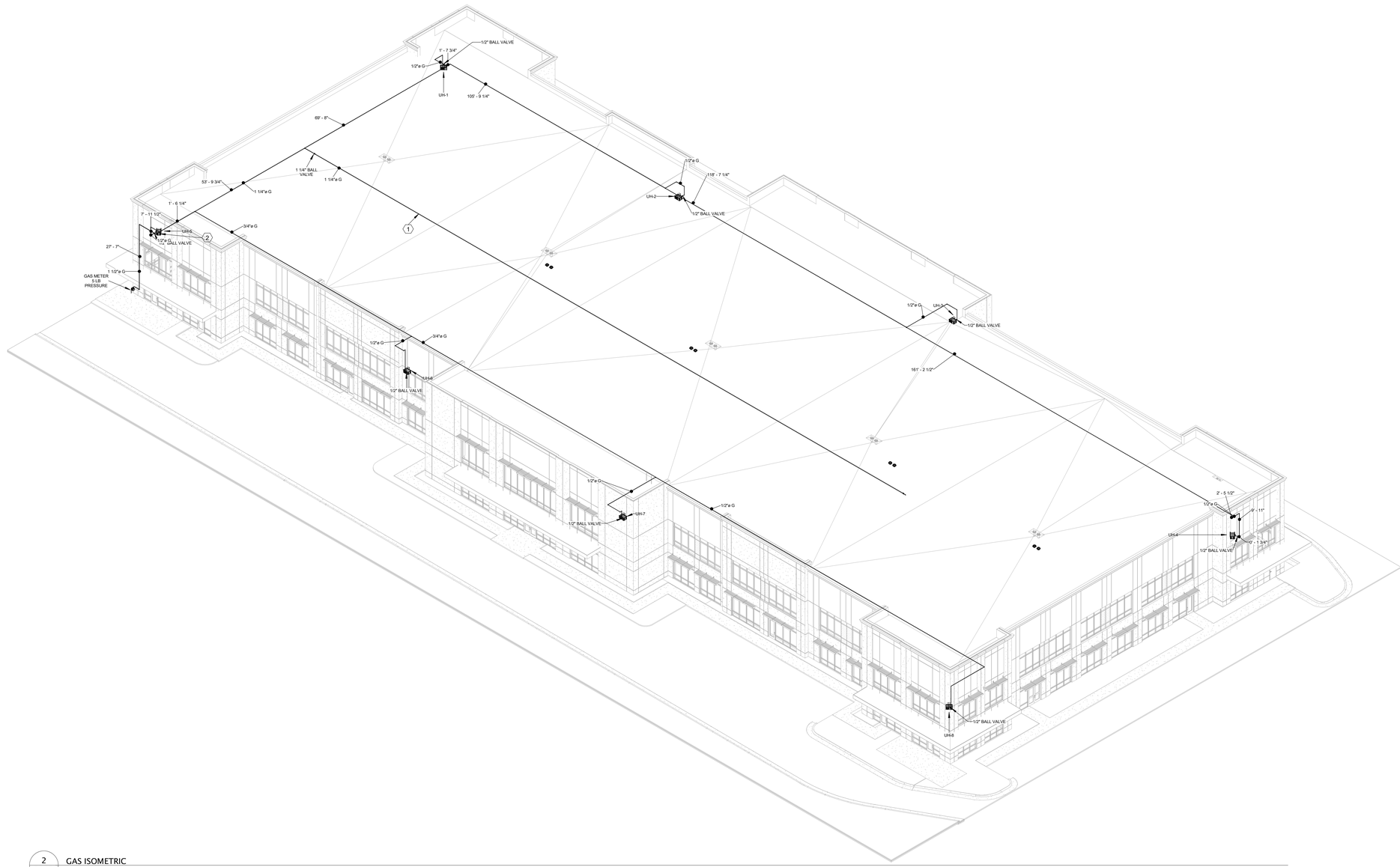
Length Sum
580.0
580.0

Pressure Conversions

1 psi	=	1 psi
1 psi	=	16 oz
1 psi	=	27.7 in H_2O
1 psi	=	2.036 in. Hg
1 psi	=	703.1 mm H_2O
1 psi	=	51.75 mm Hg
1 psi	=	0.0703 kg/cm^3
1 psi	=	0.0689 bar
1 psi	=	68.95 mbar
1 psi	=	6895 Pa
1 psi	=	6.895 kPa
1 psi	=	2.31 ft head

Convert From: 0.3 in H2O = To: psi

Result = 0.01083 psi



2 / P302 GAS ISOMETRIC

KEYED NOTES

1 PIPE FOR FUTURE EQUIPMENT. VALVE AND CAP.
2 PROVIDE PRESSURE REGULATOR. REGULATE PRESSURE ACCORDING TO EQUIPMENT REQUIREMENTS. TYPICAL.

MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

MARK WELDON
MOUNTAIN TECH NORTH 4
2800 W 650 N
LINDON, UTAH 84042

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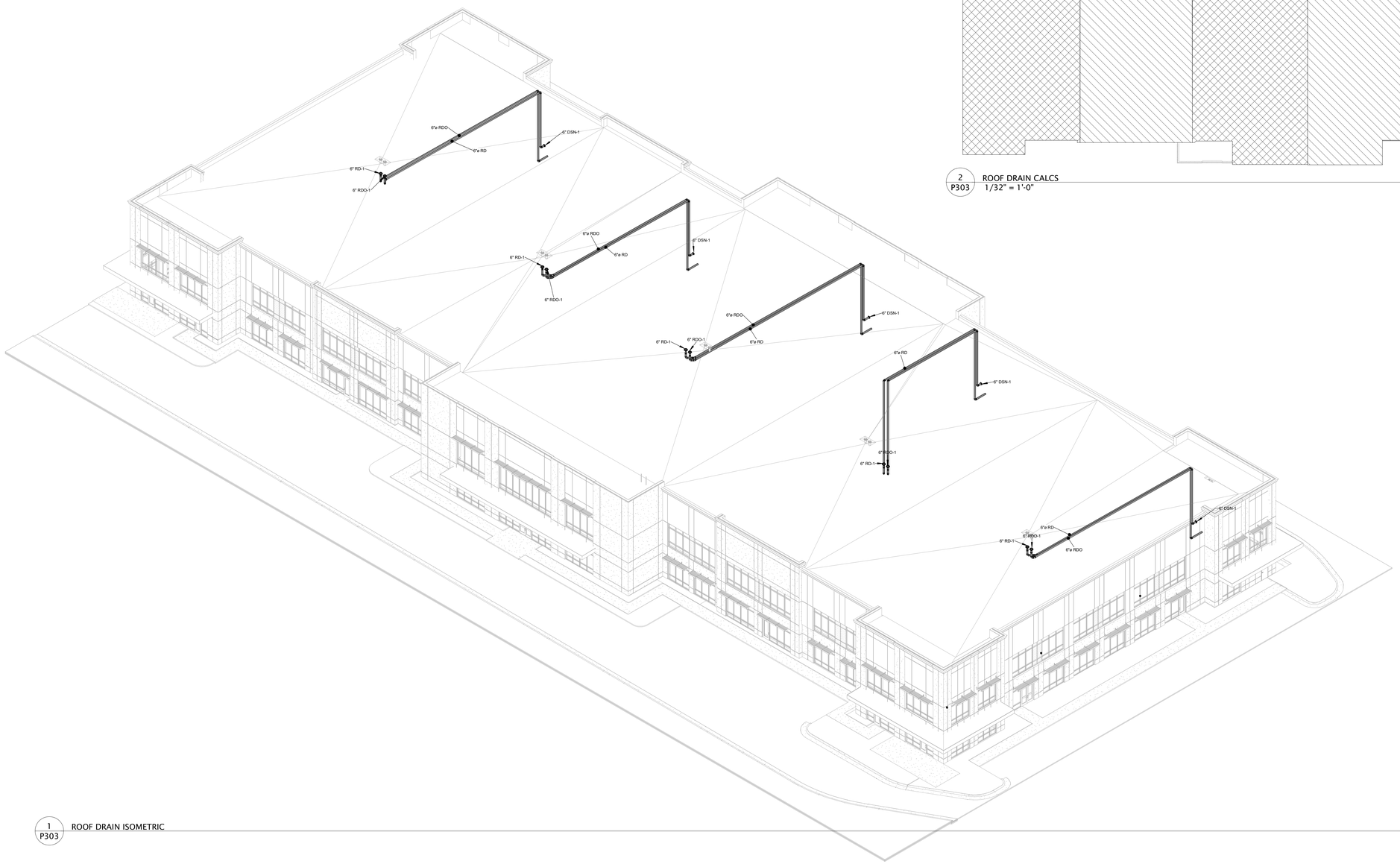
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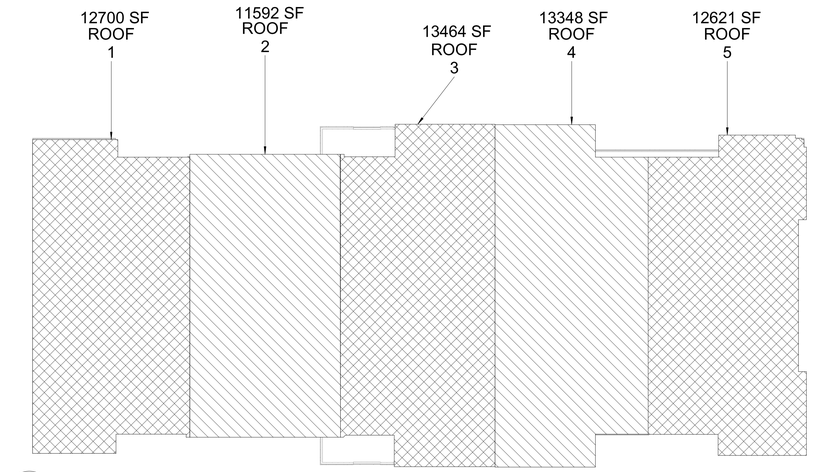
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ROOF DRAIN CALCULATIONS

ROOF AREA	RAINFALL RATE (IN/HR)	GPM	PIPE SIZE = 2"	PIPE SIZE = 3"	PIPE SIZE = 4"	PIPE SIZE = 5"	PIPE SIZE = 6"	PIPE SIZE = 8"	PIPE SIZE = 10"
12700 SF	1.5	198.4	0	0	0	0	1	0	0
11592 SF	1.5	181.1	0	0	0	0	1	0	0
13484 SF	1.5	210.7	0	0	0	0	1	0	0
13348 SF	1.5	208.6	0	0	0	0	1	0	0
12621 SF	1.5	197.2	0	0	0	0	1	0	0



1 P303 ROOF DRAIN ISOMETRIC



2 P303 ROOF DRAIN CALCS
1/32" = 1'-0"

MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
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MARK WELDON
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LINDON, UTAH 84042

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ELECTRICAL SYMBOL SCHEDULE

POWER DEVICES

	DUPLEX RECEPTACLE
	DOUBLE DUPLEX RECEPTACLE
	GFCI RECEPTACLE
	BOTTOM SWITCHED DUPLEX RECEPTACLE
C	COUNTER TOP DUPLEX RECEPTACLE
WP	WEATHER PROOF GFCI RECEPTACLE
	SPECIAL PURPOSE OUTLET
	DROP CORD
	JUNCTION BOX
	DUPLEX RECEPTACLE LOCATED IN A FLOOR BOX
	DUPLEX RECEPTACLE LOCATED IN THE CEILING
	WIRE MOLD
	PLUG MOLD
	ELECTRICAL FURNITURE CONNECTION

COMMUNICATION DEVICES

	VOICE OUTLET
	DATA OUTLET
	VOICE/DATA OUTLET
	VOICE/DATA OUTLET LOCATED IN FLOOR BOX
	VOICE/DATA OUTLET LOCATED IN CEILING
	TELEPHONE TERMINAL BOARD (1/2"x4'x4', PLYWOOD)
	DATA CONNECTION

EQUIPMENT HOOKUP/DISTRIBUTION

NAME	EQUIPMENT TAG
	NON-FUSED DISCONNECT
	FUSED DISCONNECT
	COMBINATION STARTER
	MAGNETIC STARTER
	MANUAL STARTER
	MOTOR ELECTRICAL CONNECTION
	ELECTRICAL EQUIPMENT HOOKUP
PNLB	ELECTRICAL PANEL
TX	TRANSFORMER
	PLUG-IN BUSWAY
	FEEDER BUSWAY

LIGHTING

	HALF SHADED LIGHTS REPRESENT AN EMERGENCY LIGHT OR A LIGHT FIXTURE WITH AN EMERGENCY BATTERY PACK
	2'x4' LIGHT FIXTURE
	2'x2' LIGHT FIXTURE
	4' WRAP LIGHT FIXTURE
	4' WALL MOUNT VANITY LIGHT FIXTURE
	UNDER COUNTER LIGHT FIXTURE
	4' STRIP LIGHT FIXTURE
	8' STRIP LIGHT FIXTURE
	DECORATIVE PENDENT HUNG LIGHT FIXTURE
	RECESSED CAN LIGHT FIXTURE
	RECESSED CAN WALL WASHER LIGHT FIXTURE
	SURFACE MOUNTED DOWN LIGHT
	WALL SCONCE
	TRACK LIGHT FIXTURE
	LED ROPE LIGHT
	EGRESS LIGHT FIXTURE
	WALL PACK LIGHT FIXTURE
	1,2,3 OR 4 HEAD POLE LIGHT FIXTURE
	BUG EYE LIGHT FIXTURE
	CEILING HUNG EXIT LIGHT
	WALL MOUNTED EXIT LIGHT
	BUG EYE LIGHT EXIT LIGHT
TYP. #	FIXTURE CALL OUT (# = QUANTITY OF FIXTURES IN AN AREA)

LIGHTING DEVICES

$	SINGLE POLE LIGHT SWITCH
$ 3/4	3/4-WAY LIGHT SWITCH
$ D	DIMMER LIGHT SWITCH
$ M	MASTER OVERRIDE SWITCH
$ OS	WALL OCCUPANCY SENSOR LIGHT SWITCH
OS	LINE VOLTAGE CEILING OCC. SENSOR
OS LV	NLIGHT CEILING OCC. SENSOR (NCM PDT 9 RJB)
DL	NLIGHT DAYLIGHT SENSOR (NCM PDT 9 RJB)
PP	NLIGHT POWER PACK (NPP16)
PP ER	NLIGHT EM. POWER PACK (NPP16 ER)
PP D	NLIGHT DIMMING POWER PACK (NPP16 D)
PP ER-D	CEILING OCCUPANCY SENSOR LIGHT SWITCH
NB	NLIGHT NETWORK BRIDGE (NBRG 8 KIT)
G	NLIGHT GATEWAY
$ LV	NLIGHT DIMMING SWITCH (NPODM WH)
	CAT6 CABLE
	0-10V CABLE

FIRE ALARM DEVICES

FIRE ALARM SYSTEM AND/OR MODIFICATIONS TO THE EXISTING FIRE ALARM SYSTEM WILL BE SUBMITTED FOR SEPARATE REVIEW AND APPROVAL IN ACCORDANCE WITH THE LOCAL AHJ.

FACP	FIRE ALARM CONTROL PANEL
ANN	REMOTE ANNUNCIATOR PANEL
NACP	FIRE ALARM REMOTE SIGNAL ANNUNCIATOR PANEL
P	PULL STATION
	WALL STROBE
	HORN STROBE
	SPEAKER STROBE
	CEILING HORN STROBE
	SMOKE DETECTOR
DD	DUCT DETECTOR
	HEAT DETECTOR
SD	FIRE SMOKE DAMPER
	TAMPER SWITCH
	FLOW SWITCH
PIV	POST INDICATOR VALVE
MM	MONITOR MODULE
RM	RELAY MODULE

HEARING IMPAIRED DEVICES

	HEARING IMPAIRED DOORBELL
$ H	HEARING IMPAIRED MASTER SWITCH
V	HEARING IMPAIRED VISUAL STROBE
T	HEARING IMPAIRED TRANSFORMER

BRANCH CIRCUIT VOLTAGE DROP TABLE

CONDUCTOR SIZE	MAX CONDUCTOR LENGTH AT LOAD INDICATED			
	15A	12A	9A	6A
120V CIRCUITS				
#12 AWG CU	60 FT	75 FT	100 FT	150 FT
#10 AWG CU	100 FT	125 FT	166 FT	249 FT
#8 AWG CU	153 FT	192 FT	256 FT	384 FT
#6 AWG CU	245 FT	306 FT	408 FT	612 FT
#4 AWG CU	287 FT	483 FT	644 FT	967 FT
277V CIRCUITS				
#12 AWG CU	130 FT	173 FT	230 FT	350 FT
#10 AWG CU	230 FT	285 FT	380 FT	590 FT
#8 AWG CU	350 FT	440 FT	590 FT	900 FT
#6 AWG CU	550 FT	700 FT	940 FT	1420 FT
#4 AWG CU	890 FT	1116 FT	1450 FT	2200 FT

NOTES:
REQUIRED WIRE SIZE IS FOR THE TOTAL DISTANCE OF THE RUN WITHIN THE CONDUIT AND SHALL BE CALCULATED FOR THE TOTAL DISTANCE OF THE PULL AND NOT THE PLAN DISTANCE CALCULATIONS ARE BASED ON DEDICATED NEUTRAL CONDUCTORS AND A 3% MAXIMUM ALLOWED VOLTAGE DROP. AS PER 210.19(A)(A) IN NO.4

GENERAL ELECTRICAL NOTES

1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE CURRENT LOCALLY ADOPTED NATIONAL ELECTRICAL CODE.
2. EQUIPMENT DIMENSIONS AND LOCATIONS SHALL BE VERIFIED BEFORE ROUGH-IN. CONDUIT WITH ALL TRADES DRAWINGS. CLEARANCES AROUND ALL ELECTRICAL EQUIPMENT SHALL BE INSURED PER N.E.C. BEFORE ELECTRICAL ROUGH-IN. NOTIFY ARCHITECT, ENGINEER AND GENERAL CONTRACTOR IF ANY DISCREPANCIES ARE FOUND.
3. ELECTRICAL CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT CONNECTIONS VOLTAGE, PHASE, LOADS, ETC. OF THE EQUIPMENT REQUIRED FOR THIS PROJECT. USE ALL APPROVED TRADES DRAWINGS BEFORE BEGINNING ELECTRICAL ROUGH-IN. NOTIFY ARCHITECT, ENGINEER AND GENERAL CONTRACTOR IF ANY DISCREPANCIES ARE FOUND.
4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR SO THAT NO MECHANICAL EQUIPMENT INTERFERES WITH ANY ELECTRICAL EQUIPMENT IN A WAY THAT WOULD VIOLATE THE CLEARANCES REQUIRED BY THE N.E.C FOR THE ELECTRICAL EQUIPMENT.
5. ALL ELECTRICAL LIGHTING DRAWINGS SHALL BE CROSS REFERENCED WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. NOTIFY ARCHITECT, ENGINEER AND GENERAL CONTRACTOR IF ANY DISCREPANCIES ARE FOUND.
6. FINISHES OF ALL LIGHT FIXTURES SHALL BE SUBMITTED TO THE ARCHITECTOWNER FOR THEIR APPROVAL.
7. SEE ALL TRADES DRAWINGS FOR ROUGH-IN LOCATIONS OF ALL EQUIPMENT, DEVICES AND LIGHTING.
8. ALL CONDUITS PENETRATING ROOF SHALL BE COORDINATED WITH GENERAL CONTRACTOR PRIOR TO ROUGH IN.
9. ALL ELECTRICAL BOXES SHALL LOCATED IN MASONRY SHALL BE COORDINATED WITH MASONRY CONTRACTOR PRIOR TO ROUGH IN.
10. ALL PENETRATIONS THROUGH FIRE RATED FLOORS, WALLS, AND CEILINGS BY ELECTRICAL MATERIAL SHALL BE SEALED TO MAINTAIN THE APPROVED FIRE RATING OF SURFACES THAT WERE PENETRATED. COORDINATE WITH GENERAL CONTRACTOR TO INSURE THE PROPER FIRE RATING WAS INSTALLED.
11. COLOR CODING FOR CONDUCTORS SHALL BE PROVIDED AS PER THE N.E.C REQUIRES.
12. CONDUITS SHALL BE SUPPORTED WITH IN LENGTHS OF 8' AND WITHIN 3' OF ANY CONNECTION. PROVIDE FLEXIBLE RACEWAY TO ALL MOTOR CONNECTIONS.
13. SUPPORT ALL LIGHT FIXTURES WITH A MINIMUM OF (2) 12 GAUGE STEEL SEISMIC WIRES RUN TO THE STRUCTURE. CONNECT ENDS OF SEISMIC WIRES TO OPPOSITE CORNERS OF THE LIGHT FIXTURE.
14. DIMENSIONS NOTED ON DEVICES ARE TO THE CENTER OF DEVICE.
15. SEISMIC BRACING FOR ALL ELECTRICAL EQUIPMENT, CONDUITS, CABLES, LIGHT FIXTURES, CABLE TRAY, ETC. SHALL BE AS PER IBC REQUIREMENTS.

SHEET LIST

E000	ELECTRICAL GENERAL NOTES
E100	ELECTRICAL SITE DEMO PLAN
E101	ELECTRICAL SITE PLAN
E200	OVERALL ELECTRICAL PLANS
E500	ENLARGED ELECTRICAL PLANS
E701	ELECTRICAL RISER DIAGRAM
E801	ELECTRICAL SCHEDULES
E802	ELECTRICAL COMCHECK
E900	ELECTRICAL SPECIFICATIONS

WORKING SPACE REQUIREMENTS

600 VOLTS, NOMINAL, OR LESS (SEE CURRENT AND LOCALLY ADOPTED NEC - ARTICLE 110.26)

DEPTH OF WORKING SPACE

NOMINAL VOLTAGE TO GROUND	CONDITION 1	CONDITION 2	CONDITION 3
0-150	3 FT	3 FT	3 FT
151-600	3 FT	3.5 FT	4 FT

CONDITION 1 — EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF WORKING SPACE OR EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE THAT ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS.

CONDITION 2 — EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE. CONCRETE, BRICK, TITLE WALLS SHALL BE CONSIDERED AS GROUNDED.

CONDITION 3 — EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE.

WIDTH OF WORKING SPACE

THE WIDTH OF THE WORKING SPACE SHALL BE THE WIDTH OF THE EQUIPMENT OR 30 IN. WHICHEVER IS GREATER. IN ALL CASES, THE WORK SPACE SHALL PERMIT A 90 DEGREE OPENING OF EQUIPMENT DOORS OR HINGED PANELS.

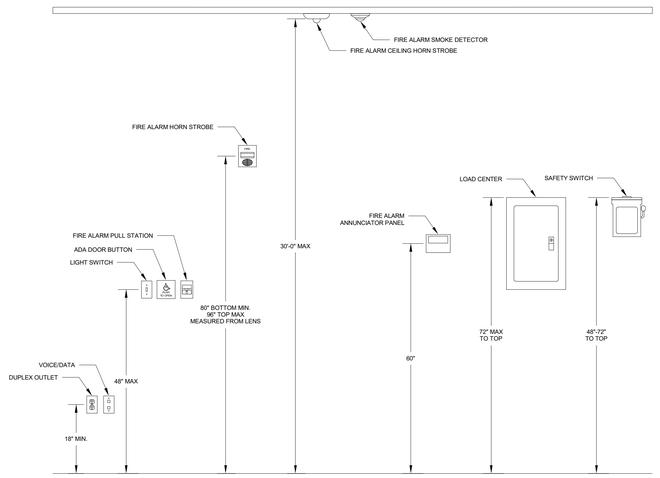
HEIGHT OF WORKING SPACE

THE WORK SPACE SHALL BE CLEAR AND EXTEND FROM THE GRADE, FLOOR, OR PLATFORM TO THE HEIGHT OF THE EQUIPMENT OR 6.5 FT WHICHEVER IS GREATER. DOORS OR HINGED PANELS.

EQUIPMENT RATED 1200 AMPS OR MORE

EQUIPMENT RATED 1200 AMPS OR MORE THAT CONTAINS OVERCURRENT DEVICES, SWITCHING DEVICES, OR CONTROL DEVICES, SHALL HAVE THE DEPTH OF THE WORK SPACE SHALL BE AS NOTED ABOVE WHEN TWO MEANS FOR EGRESS OR A DIRECT UNOBSTRUCTED EGRESS IS PROVIDED ELSE TWO TIMES THE DEPTH OF WORKING SPACE SHALL BE PROVIDED.

TYPICAL DEVICE ELEVATION DETAIL



MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

JT Electric, LLC.
4303 S. 590 W.
Murray, Utah, 84123
Telephone (801-440-0911)
www.jtelectric.com.com

MOUNTAIN TECH NORTH 4
WICP COMMERCIAL
2800 W 650 N
LINDON, UT 84042

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SHEET NUMBER
E000

JT ELECTRIC DESIGN BUILD 2025

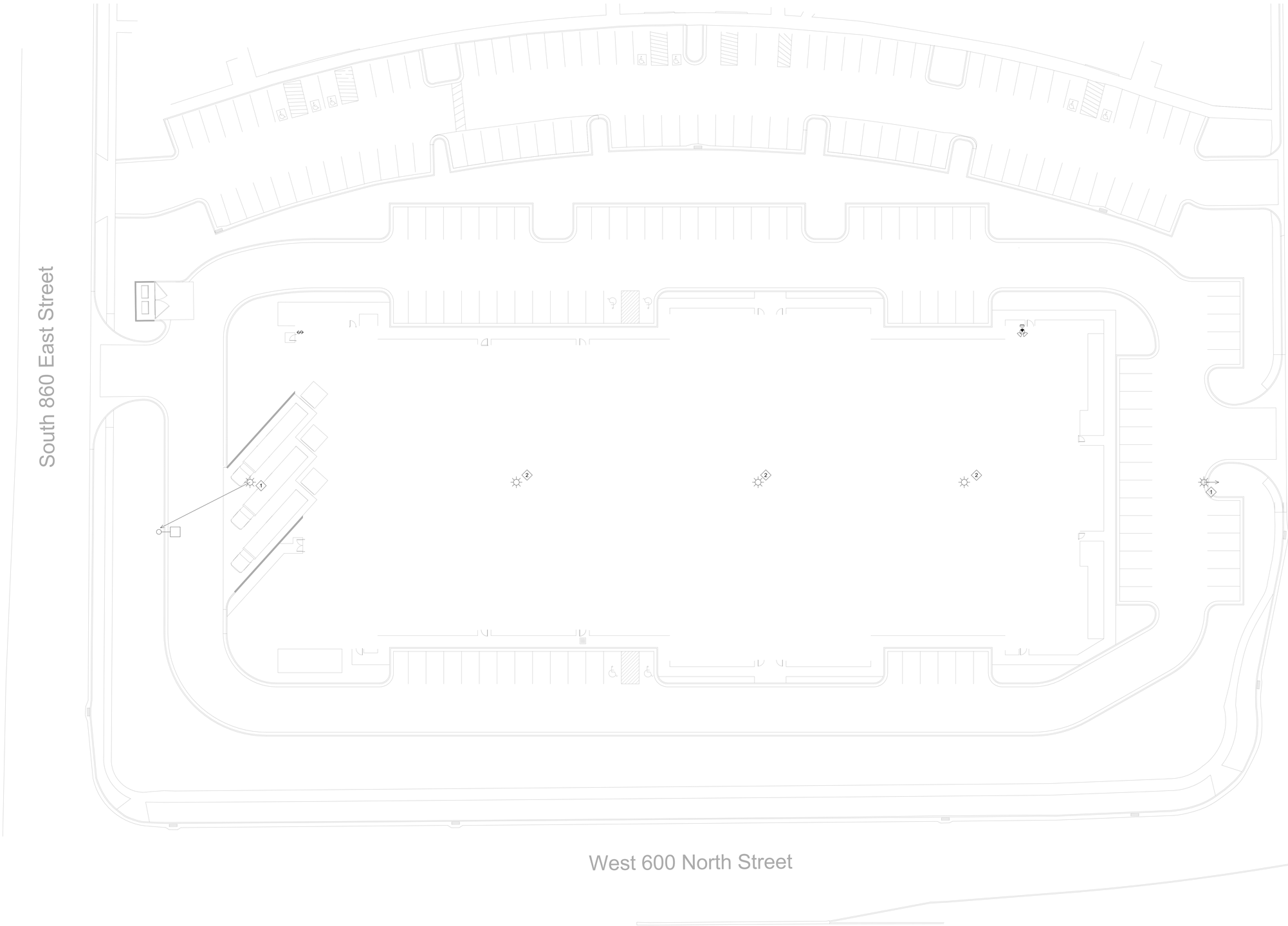
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REFERENCE NOTES:

1. RELOCATE LIGHT POLE TO NEW LOCATION. SEE E101 FOR NEW LIGHT POLE LOCATION.
2. SAFE OFF AND REMOVE LIGHT POLE. ASK OWNER WHERE THEY WANT THE LIGHT POLE STORED FOR FUTURE USE. EC TO MOVE POLE TO STORAGE FACILITY



1 ELECTRICAL SITE DEMO PLAN
SCALE: 1" = 20'-0"

MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

JT Electric, LLC.
4303 S. 590 W.
Murray, Utah, 84123
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MOUNTAIN TECH NORTH 4

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LINDON, UT 84042

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E100

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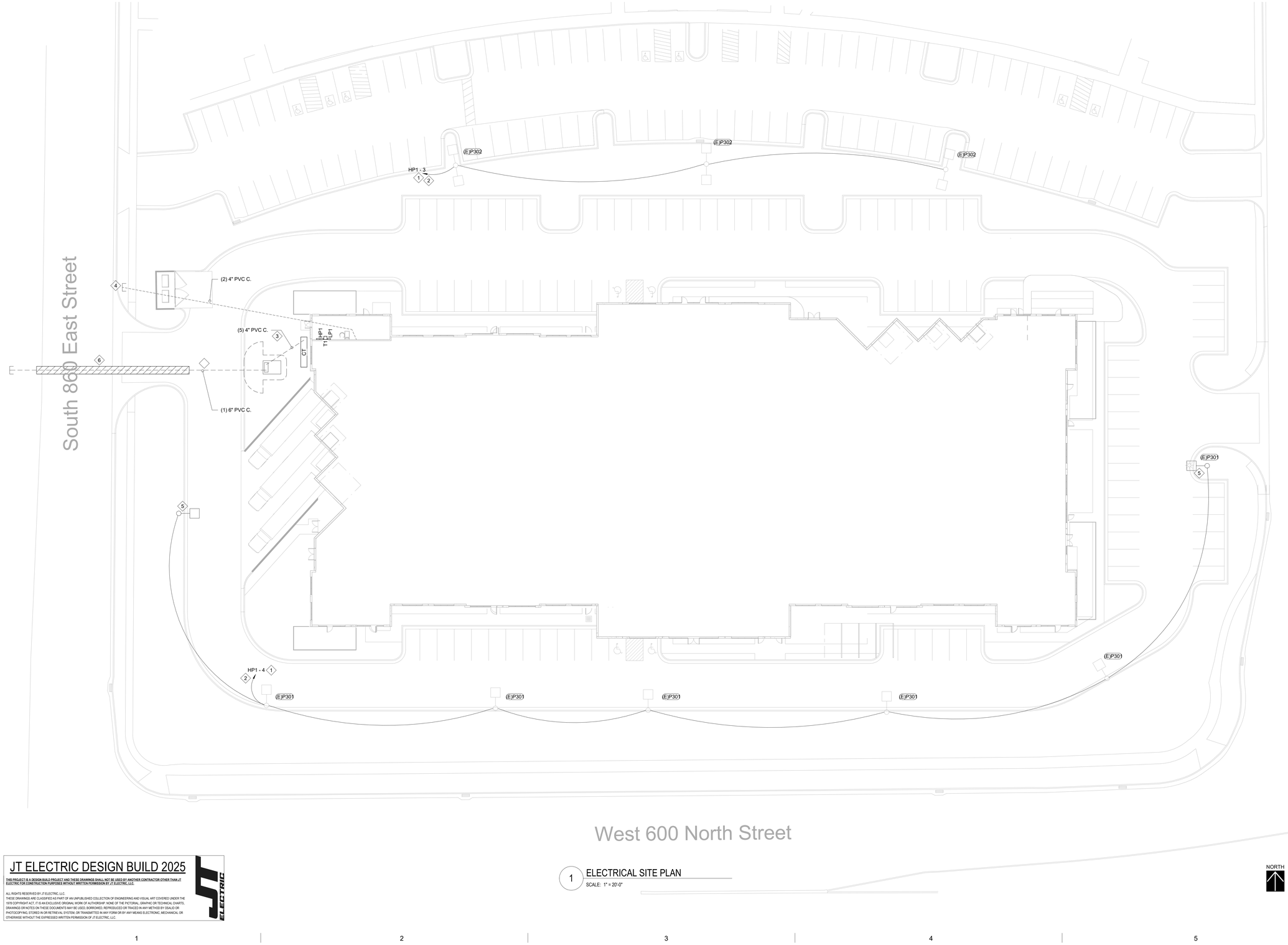
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GENERAL SHEET NOTES:

◇ REFERENCE NOTES:

1. VERIFY CONDUIT COUNT AND SIZE WITH THE RMP MAP PLAN PRIOR TO ROUGH-IN
1. EXTERIOR LIGHTING HOME RUNS TO BE ROUTED THROUGH LCP. FOR TIME CLOCK ON/OFF CONTROL. PROGRAM LIGHTS TO COME ON 1HR BEFOR SUNSET AND TURN OFF AT MIDNIGHT AND TO COME ON 2HR BEFORE SUNRISE AND TURN OFF 1 HR AFTER SUNRISE.
2. PULL NEW HOME RUNS TO EXISTING LIGHT POLES SO THAT LIGHTS ARE FED FROM NEW BUILDING
3. VERIFY CONDUIT COUNT AND SIZE WITH THE RMP MAP PLAN PRIOR TO ROUGH-IN
4. COORDINATE WITH OWNERS INTERNET PROVIDER FOR FINAL CONDUIT LOCATION.
5. POLE LIGHT IS TO BE RELOCATED TO THIS LOCATION FROM PARKING LOT LIGHTS BEING DEMOED. POLE BASE AND RELOCATION BY EC.
6. COORDINATE BORING UNDER EXISTNG ROAD WITH BORING CONTRACTOR. BORING BY EC.



1 ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"

NORTH

JT ELECTRIC DESIGN BUILD 2025

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MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

JT Electric, LLC.
4303 S. 590 W.
Murray, Utah, 84123
Telephone (801-440-0911)
www.jtelectric.com.com

MOUNTAIN TECH NORTH 4
WICP COMMERCIAL
2800 W 650 N
LINDON, UT 84042

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Jacob Duane Taft
License No.
278259-2202
Date Stamped:
03/24/2025
State of Utah

MHTN PROJECT NO. J24005

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SHEET NAME
ELECTRICAL SITE PLAN

SHEET NUMBER
E101

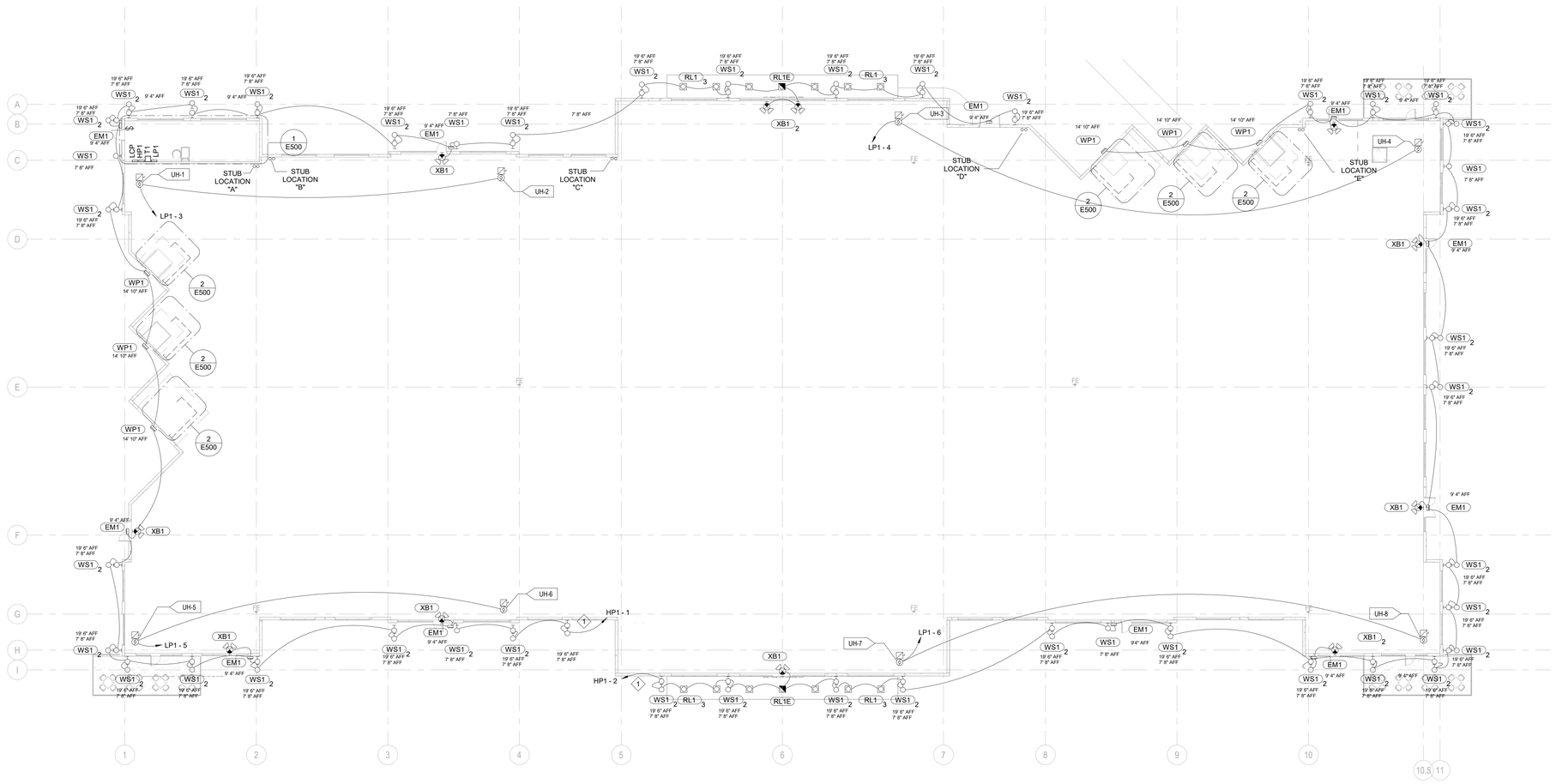
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GENERAL SHEET NOTES:

1. PROVIDE AN UNSWITCHED CONDUCTOR OF THE SAME CIRCUIT TO ALL EMERGENCY LIGHTS FOR WIRING OF EMERGENCY BATTERY.
2. ALL FIRE ALARM SHOWN IS GENERAL ARRANGEMENT ONLY. EC IS TO PROVIDE CODE COMPLIANT CITY APPROVED FIRE ALARM DRAWINGS. REFER TO CITY APPROVED FIRE ALARM DRAWINGS FOR ALL ROUGH IN AND WIRING OF FIRE ALARM SYSTEM
3. EC TO VERIFY MECHANICAL EQUIPMENT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGHIN.

◇ REFERENCE NOTES:

1. EXTERIOR LIGHTING HOME RUNS TO BE ROUTED THROUGH LCP. FOR TIME CLOCK ON/OFF CONTROL. PROGRAM LIGHTS TO COME ON 1HR BEFOR SUNSET AND TURN OFF AT MIDNIGHT AND TO COME ON 2HR BEFORE SUNRISE AND TURN OFF 1 HR AFTER SUNRISE



1 OVERALL ELECTRICAL PLAN

SCALE: 1/16" = 1'-0"

NORTH

MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

JT Electric, LLC.
4303 S. 590 W.
Murray, Utah, 84123
Telephone (801-440-0911)
www.jtelectric.com.com

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SHEET NAME
OVERALL ELECTRICAL PLANS

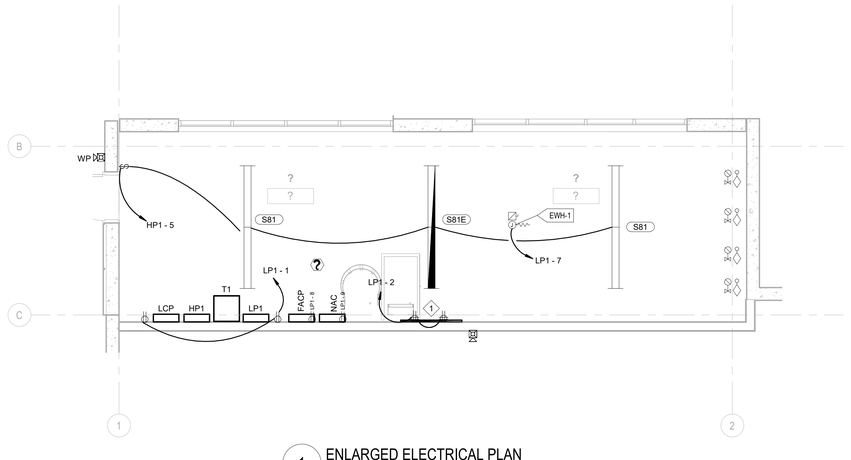
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E200

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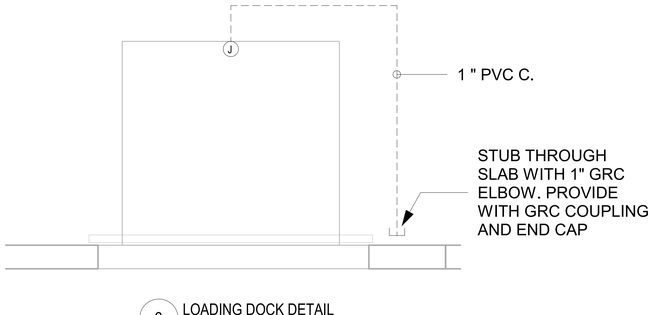
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1 ENLARGED ELECTRICAL PLAN

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



2 LOADING DOCK DETAIL

SCALE: NONE

GENERAL SHEET NOTES:

1. PROVIDE AN UNSWITCHED CONDUCTOR OF THE SAME CIRCUIT TO ALL EMERGENCY LIGHTS FOR WIRING OF EMERGENCY BATTERY.
2. ALL FIRE ALARM SHOWN IS GENERAL ARRANGEMENT ONLY. EC IS TO PROVIDE CODE COMPLIANT CITY APPROVED FIRE ALARM DRAWINGS. REFER TO CITY APPROVED FIRE ALARM DRAWINGS FOR ALL ROUGH IN AND WIRING OF FIRE ALARM SYSTEM
3. EC TO VERIFY MECHANICAL EQUIPMENT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGHIN.

◇ REFERENCE NOTES:

1. STUB COMM CONDUITS (2) 4" PVC C. TO PHONE BOARD IN MAIN ELECTRICAL ROOM.

JT ELECTRIC DESIGN BUILD 2025

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Suite 100
Salt Lake City, Utah 84111
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JT Electric, LLC.
4303 S. 590 W.
Murray, Utah, 84123
Telephone (801-440-0911)
www.jtelectric.com.com

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ENLARGED ELECTRICAL PLANS

SHEET NUMBER
E500

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WIRE AND CONDUIT SCHEDULE

AMPERAGE
CONDUCTOR TYPE
RACEWAY TYPE "R" (NOTE 5)
NUMBER OF CONDUCTORS
SUBSCRIPT (NOTE 4)

A C R N S

(E.G) 100 C E 4 SE

SYMBOL	OCPD	CONDUCTOR	CONDUIT	CONDUCTOR (NOTE 6)		IG	SE	NOTES
		AMPACITY	SIZE	SIZE	GR (CU)	(CU)	(CU)	
15 C X # -	15	15	3/4"	14	14	14	8	
20 C X # -	20	20	3/4"	12	12	12	8	
30 C X # -	30	30	3/4"	10	10	10	8	
40 C X # -	40	50	3/4"	8	10	10	8	
50 C X # -	50	50	3/4"	8	10	10	8	
60 C X # -	60	65	1"	6	10	10	8	
70 C X # -	70	85	1-1/4"	4	8	8	8	
80 C X # -	80	85	1-1/4"	4	8	8	8	
90 C X # -	90	100	1-1/4"	3	8	8	8	
100 C X # -	100	100	1-1/4"	3	8	8	8	
100 A X # -	100	100	1-1/2"	1	8	8	8	
110 C X # -	110	115	1-1/4"	2	6	6	8	
110 A X # -	110	120	2"	1/0	6	6	8	
125 C X # -	125	130	1-1/2"	1	6	6	6	
125 A X # -	125	135	2"	2/0	6	6	6	
150 C X # -	150	150	2"	1/0	6	6	6	
150 A X # -	150	155	2"	3/0	6	6	6	
200 C X # -	200	200	2"	3/0	6	6	4	
200 A X # -	200	205	3"	250	6	6	4	
225 C X # -	225	230	3"	4/0	4	4	2	
225 A X # -	225	230	3"	300	4	4	2	
250 C X # -	250	255	3"	250	4	4	2	
250 A X # -	250	250	3"	350	4	4	2	
300 C X # -	300	310	3"	350	4	4	2	
300 A X # -	300	310	4"	500	4	4	2	
350 C X # -	350	380	4"	500	3	3	1/0	
350 A X # -	350	360	(2) 3"	4/0	3	3	1/0	
400 C X # -	400	400	(2) 2"	3/0	3	3	1/0	
400 A X # -	400	410	(2) 3"	250	3	3	2	
600 C X # -	600	620	(2) 3"	350	1	1	2/0	
600 A X # -	600	620	(2) 4"	500	1	1	2/0	
700 C X # -	700	760	(2) 4"	500	1/0	1/0	2/0	
700 A X # -	700	750	(3) 3"	350	1/0	1/0	2/0	
800 C X # -	800	855	(3) 3"	300	1/0	1/0	3/0	
800 A X # -	800	810	(3) 3"	400	1/0	1/0	2/0	
1200 C X # -	1200	1240	(4) 3"	350	3/0	3/0	3/0	
1200 A X # -	1200	1240	(4) 4"	500	3/0	3/0	3/0	
1600 C X # -	1600	1675	(5) 3"	400	4/0	4/0	3/0	
1600 A X # -	1600	1620	(6) 3"	400	4/0	4/0	3/0	
2000 C X # -	2000	2010	(6) 3"	400	250	250	3/0	
2000 A X # -	2000	2000	(8) 3"	350	350	250	3/0	
2500 C X # -	2500	2660	(7) 4"	500	350	350	3/0	
2500 A X # -	2500	2790	(9) 4"	500	350	350	3/0	
3000 C X # -	3000	3040	(8) 4"	500	400	400	3/0	
3000 A X # -	3000	3100	(10) 4"	500	400	400	3/0	
4000 C X # -	4000	4180	(11) 4"	500	500	500	3/0	
4000 A X # -	4000	4030	(13) 4"	500	500	500	3/0	

WIRE AND CONDUIT SCHEDULE NOTES:

1. GROUND "GR" CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS.
2. EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED PER TABLE 250-122 (NEC 2005). WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
3. INDICATES THE QUANTITY OF CURRENT CARRYING CONDUCTOS (GROUND CONDUCTOR NOT INCLUDED) TO BE PULLED IN EACH RACEWAY.
4. WHEN SUBSCRIPT STATES "R" INSTALL RACEWAY ONLY. CONDUCTORS FURNISHED AND INSTALLED BY OTHERS. WHEN SUBSCRIPT STATES "SE" USE "SE" GROUND WIRE. WHEN SUBSCRIPT STATES "GR" USE "GR" GROUND WIRE. WHEN SUBSCRIPT STATES "IG" INCLUDE AN INSULATED GROUND CONDUCTOR "IG" ALONG WITH THE GROUND OR EQUIPMENT GROUND CONDUCTOTR. WHEN SUBSCRIPT STATES "NG" DO NOT INSTALL "GR,IG,SE" CONDUCTOR IN RACEWAY.
5. RACEWAY SUBSCRIPTS "R" ARE AS FOLLOWS: P=PVC SCH-40, E=EMT, R=RIGID, AF=ALUMINUM FLEX, SF=STEELE FLEX, LT=LIQUID TIGHT FLEX.
6. ALL COPPER CONDUCTORS SHOWN ARE THWN AND ALL ALUMINUM CONDUCTORS SHOWN ARE XHHW UNLESS OTHERWISE INDICATED.
7. "-" IN CALL OUT MEANS ITEM IS NA

SHORT CIRCUIT CALCULATIONS

Utility Transformer - RMP PROVIDED LET THROUGH CURRENT FOR THEIR XFRM

Name	I-S.C.	Volt-P	Volt-S	kVA						
UT	31,037.00	12470	480	500						

Metering Equipment

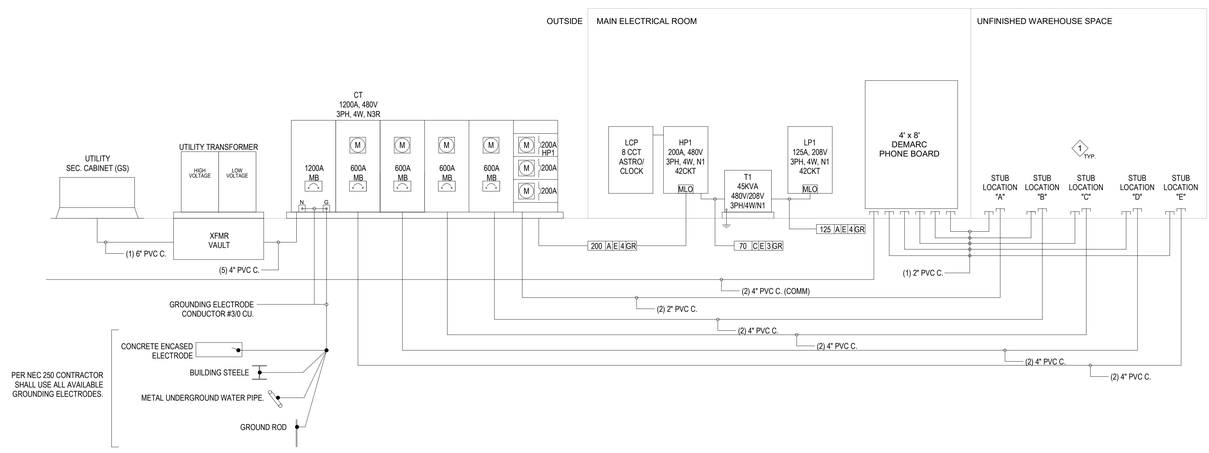
		Volt	NA	NA	Fed From	Dist From (L)	Amps	Conductor	Conductor "C"	Formulas
CT	29,130.46	480			UT	50	1200	AL PVC	85560	F3,F4,F5

Secondary Transformers

Name	I-S.C.	Volt-P	Volt-S	kVA	Fed From	Dist From (L)	Amps	Conductor	Conductor "C"	Formulas
T1	5,314.27	208	208	45	HP1	10	150	CU EMT	8924	F1,F2,F3,F4,F5

Branch Panels

Name	I-S.C.	Volt	NA	NA	Fed From	Dist From (L)	Amps	Conductor	Conductor "C"	Formulas
HP1	23,394.64	480			CT	30	200	AL PVC	12862	F3,F4,F5
LP1	4,943.84	208			T1	10	115	CU EMT	5906	F3,F4,F5



1 ELECTRICAL RISER
SCALE: 12" = 1'-0"

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420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
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4303 S. 590 W.
Murray, Utah, 84123
Telephone (801-440-0911)
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SHEET NAME
ELECTRICAL RISER DIAGRAM

SHEET NUMBER
E701

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LIGHT FIXTURE SCHEDULE

QTY	TYPE	DESCRIPTION	MANUFACTURER	MODEL	LAMP	VOLTAGE	WATTS	REMARKS
7	(E)P301	EXISITNG POLE LIGHT	EXISTING	EXISTING	LED	277 V	0 VA	
3	(E)P302	EXISITNG POLE LIGHT	EXISTING	EXISTING	LED	277 V	0 VA	
11	EM1	EGRESS MAN DOOR LIGHT	LITHONIA	AFF OEL DWHGXD UVOLT LTP SDRT WT	LED	<varies>	3 VA	
12	RL1	DOWN LIGHT	LITHONIA	LDN6 AL02 SWW1 LO6 AR LSS MVOLT UGZ	LED	277 V	19 VA	
2	RL1E	DOWN LIGHT	LITHONIA	LDN6 AL02 SWW1 LO6 AR LSS MVOLT UGZ	LED	277 V	19 VA	
2	S81	8' STRIP LIGHT FIXTURE	LITHONIA	CSS 8FT 4000LM 4000K 80CRI MVOLT WHITE	LED	277 V	19 VA	
1	S81E	8' STRIP LIGHT FIXTURE	LITHONIA	CSS 8FT 4000LM 4000K 80CRI MVOLT WHITE EM BATT	LED	277 V	19 VA	
6	WP1	WALL PACK	LITHONIA	WDGE3 LED P1 40K RFT MVOLT SRM PBBW	LED	<varies>	52 VA	
83	WS1	WALL SCONCE	VISA	VISA OW5513 L40(H) MVOLT FINSIH BY ARCH JBC	LED	277 V	32 VA	
11	XB1	EXIT BUGEYE	LITHONIA	LHQM LED G M6	LED	<varies>	4 VA	

EQUIPMENT SCHEDULE

QTY	EQUP. ID	DESCRIPTION	F&IB	VOLTAGE	PHASE	FLA	kW	DISCONNECT/SWITCHES	COMMENTS
1	EWH-1	ELECTRIC WALL HEATER	MECH	120 V	1	0.0	1000 VA	DF-30A/1PH/N1	
1	UH-1	UNIT HEATER	MECH	120 V	1	5.8	698 VA	DF-30A/1PH/N1	
1	UH-2	UNIT HEATER	MECH	120 V	1	5.8	698 VA	DF-30A/1PH/N1	
1	UH-3	UNIT HEATER	MECH	120 V	1	5.8	698 VA	DF-30A/1PH/N1	
1	UH-4	UNIT HEATER	MECH	120 V	1	5.8	698 VA	DF-30A/1PH/N1	
1	UH-5	UNIT HEATER	MECH	120 V	1	5.8	698 VA	DF-30A/1PH/N1	
1	UH-6	UNIT HEATER	MECH	120 V	1	5.8	698 VA	DF-30A/1PH/N1	
1	UH-7	UNIT HEATER	MECH	120 V	1	5.8	698 VA	DF-30A/1PH/N1	
1	UH-8	UNIT HEATER	MECH	120 V	1	5.8	698 VA	DF-30A/1PH/N1	

SWITCHBOARD: CT

LOCATION: SITE
SUPPLY FROM:
MOUNTING: PAD MOUNT
ENCLOSURE: NEMA 3R

VOLTS: 480/277 Wye
PHASES: 3
WIRES: 4

A.I.C. RATING: 35K
MAINS TYPE: MB
MAINS RATING: 1200 A

NOTES:

CKT	CIRCUIT DESCRIPTION	AMPS	POLES	LOAD	REMARKS
1	HP1	200 A	3	11396 VA	
2	FUTURE TENATN METER	200 A	1	0 VA	
3	FUTURE TENATN METER	200 A	1	0 VA	
4	FUTURE TENATN METER	600 A	1	0 VA	
5	FUTURE TENATN METER	600 A	1	0 VA	
6	FUTURE TENATN METER	600 A	1	0 VA	
7	FUTURE TENATN METER	600 A	1	0 VA	
8					
9					
10					
				11396 VA	
				14 A	

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Equipment	5584 VA	100.00%	5584 VA		
Other	47 VA	100.00%	47 VA	TOTAL CONN. LOAD:	11396 VA
Receptacle	1440 VA	100.00%	1440 VA	TOTAL EST. DEMAND:	12227 VA
Lighting	3325 VA	125.00%	4156 VA	TOTAL CONNECTED CURRENT:	14 A
Power	1000 VA	100.00%	1000 VA	TOTAL EST. DEMAND CURRENT:	15 A

NOTES:

BRANCH PANEL: HP1

LOCATION: MAIN ELECTRICAL ROOM
SUPPLY FROM: CT
MOUNTING: SURFACE/WALL
ENCLOSURE: NEMA 1

VOLTS: 480/277 Wye
PHASES: 3
WIRES: 4

A.I.C. RATING: 35K
LUG TYPE: MLO (BOT)
MAINS RATING (AMPS): 200A

NOTES:

CKT	CIRCUIT DESCRIPTION	AMPS	POLES	A	B	C	POLES	AMPS	CIRCUIT DESCRIPTION	CKT
1	LIGHTING - WEST EXTERIOR	20 A	1	1709 VA	1606 VA		1	20 A	LIGHTING - EAST EXTERIOR	2
3	LIGHTING - NORTH POLE LIGHTS	20 A	1	0 VA	0 VA		1	20 A	LIGHTING - SOUTH POLE LIGHTS	4
5	Lighting	20 A	1			58 VA				6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33										34
35										36
37				2260 VA			3	70 A	T1	38
39					2972 VA		--	--	--	40
41						2792 VA	--	--	--	42
			TOTAL LOAD:	5574 VA	2972 VA	2850 VA				
			TOTAL AMPS:	20 A	11 A	10 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Equipment	5584 VA	100.00%	5584 VA		
Other	47 VA	100.00%	47 VA	TOTAL CONN. LOAD:	11396 VA
Receptacle	1440 VA	100.00%	1440 VA	TOTAL EST. DEMAND:	12227 VA
Lighting	3325 VA	125.00%	4156 VA	TOTAL CONNECTED CURRENT:	14 A
Power	1000 VA	100.00%	1000 VA	TOTAL EST. DEMAND CURRENT:	15 A

Notes:

BRANCH PANEL: LP1

LOCATION: MAIN ELECTRICAL ROOM
SUPPLY FROM: T1
MOUNTING: SURFACE/WALL
ENCLOSURE: NEMA 1

VOLTS: 120/208 Wye
PHASES: 3
WIRES: 4

A.I.C. RATING: 10K
LUG TYPE: MB (BOTTOM)/FT
MAINS RATING (AMPS): 125A

NOTES:

CKT	CIRCUIT DESCRIPTION	AMPS	POLES	A	B	C	POLES	AMPS	CIRCUIT DESCRIPTION	CKT
1	OUTLET - ELECTRICAL ROOM	20 A	1	360 VA	720 VA		1	20 A	OUTLET - DEMAR OUTLETS	2
3	UNIT HEATERS - 1,2	20 A	1		1396 VA	1396 VA	1	20 A	UNIT HEATERS - 3,4	4
5	UNIT HEATERS - 5,6	20 A	1			1396 VA	1396 VA	1	20 A	UNIT HEATERS - 7,8	6
7	ELECTRIC WALL HEATER	20 A	1	1000 VA	180 VA			1	20 A	Receptacle	8
9	Receptacle	20 A	1		180 VA						10
11											12
13											14
15											16
17											18
19											20
21											22
23											24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42
			TOTAL LOAD:	2260 VA	2972 VA	2792 VA				
			TOTAL AMPS:	19 A	25 A	24 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Equipment	5584 VA	100.00%	5584 VA		
Receptacle	1440 VA	100.00%	1440 VA	TOTAL CONN. LOAD:	8024 VA
Power	1000 VA	100.00%	1000 VA	TOTAL EST. DEMAND:	8024 VA
				TOTAL CONNECTED CURRENT:	22 A
				TOTAL EST. DEMAND CURRENT:	22 A

Notes:

MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

JT Electric, LLC.
4303 S. 590 W.
Murray, Utah, 84123
Telephone (801-440-0911)
www.jtelectric.com.com

MOUNTAIN TECH NORTH 4

WICP COMMERCIAL
2800 W 650 N
LINDON, UT 84042

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SEAL

Professional Engineer
Jacob Duane Taft
2782592-2202
State of Utah

MHTN PROJECT NO. J24005

Original drawing is 30 x 42. Do not scale contents of this drawing.

REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT LAST REVISION DATE.

NO.	DATE	DESCRIPTION

ISSUE
PERMIT SET
03/24/2025

SHEET NAME
ELECTRICAL SCHEDULES

SHEET NUMBER
E801

JT ELECTRIC DESIGN BUILD 2025

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COM*check* Software Version COMcheckWeb

Envelope Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: WCP Orem North Building 4
Location: Provo, Utah
Climate Zone: 5b
Project Type: New Construction

Construction Site:
2575 W 400 N
Lindon, Utah 84042

Owner/Agent:

Designer/Contractor:
Brian Ramos
JT Electric
4303 S 590 W
Murray, Utah 84123
(385)249-5550
jtinfo@jtelectric.com

Additional Efficiency Package(s)

Credits: 10.0 Required 0.0 Proposed

Building Area	Floor Area
1-Warehouse : Nonresidential	61978

Envelope Assemblies

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

Envelope TBD: Efficiency package credits below minimum required

COM*check* Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: WCP Orem North Building 4
Project Type: New Construction

Construction Site:
2575 W 400 N
Lindon, Utah 84042

Owner/Agent:

Designer/Contractor:
Brian Ramos
JT Electric
4303 S 590 W
Murray, Utah 84123
(385)249-5550
jtinfo@jtelectric.com

Additional Efficiency Package(s)

Credits: 10.0 Required 0.0 Proposed

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Warehouse Storage:Smaller, Hand-Carried Items	558	0.69	385
		Total Allowed Watts =	385

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-Warehouse Storage:Smaller, Hand-Carried Items				
LED: S81: STRIP LIGHT: Other:	1	2	19	38
LED: S81E: STRIP LIGHT: Other:	1	1	19	19
LED: X81: EXIT BUG EYE: Other:	1	12	4	48
			Total Proposed Watts =	105

Interior Lighting PASSES: Design 73% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2021 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Brian Granda
Name - Title

Signature

06/26/24
Date

COM*check* Software Version COMcheckWeb

Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: WCP Orem North Building 4
Project Type: New Construction
Exterior Lighting Zone 2 (Light industrial area with limited nighttime use (LZ2))

Construction Site:
2575 W 400 N
Lindon, Utah 84042

Owner/Agent:

Designer/Contractor:
Brian Ramos
JT Electric
4303 S 590 W
Murray, Utah 84123
(385)249-5550
jtinfo@jtelectric.com

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Parking area	55727 ft2	0.04	Yes	2229
			Total Tradable Watts (a) =	2229
			Total Allowed Watts =	2229
			Total Allowed Supplemental Watts (b) =	400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Parking area (55727 ft2): Tradable Wattage				
LED: (E)P301: LIGHT POLE: Other:	1	7	25	175
LED: (E)P302: LIGHT POLE: Other:	1	3	25	75
LED: EM1: MAN DOOR: Other:	1	10	3	30
LED: WP1: WALL PACK: Other:	1	3	52	156
LED: WS1: WALL SCONCE: Other:	1	85	15	1275
LED: RL1: RECESSED CAN: Other:	1	12	19	228
LED: RL1E: RECESSED CAN: Other:	1	2	19	38
			Total Tradable Proposed Watts =	1977

Exterior Lighting PASSES: Design 25% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2021 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Brian Granda
Name - Title

Signature

06/26/24
Date

COM*check* Software Version COMcheckWeb

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 38.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COM*check* Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C103.2 [PR8][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406 [PR9][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3.1 [EL22][1]	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1, C405.2.1.1 [EL18][1]	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, corridors, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.2 [EL19][1]	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more within 20 minutes of when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor. Lights not turned off by occupant sensors is done so by time-switch.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.3 [EL20][1]	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) general lighting in each zone permitted to turn on upon occupancy in control zone, 3) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 4) are configured so that general lighting power in a control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.2, C405.2.2.1 [EL21][1]	Each area not served by occupancy sensors (per C405.2.1.1) have time-switch controls and functions detailed in sections C405.2.2.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.4, C405.2.4.1, C405.2.4.2 [EL23][1]	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.5 [EL27][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.7 [EL28][1]	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.7 [EL26][1]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.8 [EL27][1]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.9.1, C405.9.2 [EL28][1]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.10 [EL29][1]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.1.1 [EL30][1]	At least 90% of dwelling unit permanently installed lighting shall have lamp efficacy >= 65 lm/W or luminaires with efficacy >= 45 lm/W or comply with C405.2.4 or C405.3.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.11, C405.11.1 [EL31][1]	50% of 15/20 amp receptacles installed in enclosed offices, conference rooms, copy rooms, break rooms, classrooms and workstations and > 25% of branch circuit feeders for modular furniture will have automatic receptacle control in accordance with C405.11.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][1]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.5.1 [FI19][1]	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Exterior Lighting fixture schedule for values.*
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5 [FI16][1]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

JT ELECTRIC DESIGN BUILD 2025

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MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

JT Electric, LLC.
4303 S. 590 W.
Murray, Utah, 84123
Telephone (801-440-0911)
www.jtelectric.com

MOUNTAIN TECH NORTH 4

WICP COMMERCIAL

2800 W 650 N
LINDON, UT 84042

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Professional Engineer
Expiration Date: 03/31/2026
Jacob Duane Taft
Licence No.
278259-2202
Date Stamped:
03/24/2025
State of Utah

MHTN PROJECT NO. J24005

Original drawing is 30 x 42. Do not scale contents of this drawing.

REVISIONS
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NO.	DATE	DESCRIPTION

ISSUE
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03/24/2025

SHEET NAME
ELECTRICAL COMCHECK

SHEET NUMBER
E802

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ELECTRICAL SPECIFICATIONS

1. SCOPE

A. THE DESCRIPTIONS OF WORK UNDER THIS SECTION SHALL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT TO COMPLETE THE ELECTRICAL INSTALLATION AS SHOWN ON THE ACCOMPANYING DRAWINGS.

1. THE ELECTRICAL CONTRACTOR SHALL INCLUDE ANY CONDITIONS REQUESTED DURING THE BIDDING REQUIREMENTS

B. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE ACCOMPANYING DRAWINGS AND SPECIFICATIONS.

C. ALL LABOR, MATERIAL OR EQUIPMENT NEEDED FOR THE INSTALLATION AND COMPLETION OF THE ELECTRICAL WORK DESCRIBED IN THE ACCOMPANYING DRAWINGS AND SPECIFICATIONS SHALL BE PROVIDED EVEN IF NOT SHOWN ON THE ACCOMPANYING DRAWINGS.

1. ELECTRICAL SERVICE AND FEEDERS
2. BRANCH WIRING AND GROUNDING
3. WIRING DEVICES
4. ELECTRICALLY OPERATED MOTORS AND EQUIPMENT HOOK-UP
5. HVAC EQUIPMENT HOOK-UP
6. ELECTRICAL DISTRIBUTION EQUIPMENT
7. LIGHTING FIXTURES WITH LAMPS
8. COMMUNICATION RACEWAY AND LOW VOLTAGE SYSTEMS AS SHOWN
9. GENERATOR, EMERGENCY DISTRIBUTION AND EMERGENCY BRACH WIRING
10. FIRE ALARM SYSTEM

2. MATERIALS AND EQUIPMENT

A. ALL MATERIALS AND EQUIPMENT FURNISHED AND INSTALLED SHALL BE UL LISTED.

B. ELECTRICAL CONTRACTOR SHALL SUBMIT A SET OF SHOP DRAWINGS AND CATALOG CUT SHEETS ON THE FOLLOWING ITEMS TO THE ARCHITECT AND GENERAL CONTRACTOR FOR APPROVAL.

1. DISTRIBUTION EQUIPMENT
2. LIGHTING FIXTURES
3. DEVICES
4. SYSTEMS

C. IF A SUBSTITUTION OF ANY MATERIALS IS PROPOSED BY THE ARCHITECT OR GENERAL CONTRACTOR, IT MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ANY CHANGES BEING MADE.

3. STANDARD OF INSTALLATION

A. THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE, THE CITY, STATE, OR ANY LOCAL ORDINANCES AND UTILITY REGULATIONS ARE A PART OF THIS SPECIFICATION.

4. PERMITS AND UTILITY COSTS

A. ANY CITY, STATE, OR LOCAL ORDINANCE ELECTRICAL PERMITS AND INSPECTIONS SHALL BE OBTAINED AND PAID FOR BY THE ELECTRICAL CONTRACTOR UNLESS THE ELECTRICAL PERMIT IS OBTAINED THROUGH THE GENERAL CONTRACTOR. UTILITY CONNECTION FEES ARE NOT INCLUDED IN ELECTRICAL CONTRACT UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.

5. DRAWINGS

A. THE ELECTRICAL DRAWINGS ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS AND SCOPE OF WORK TO BE PREFORMED AND ARE NOT CONSIDERED AS COMPLETE. THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL WORK INDICATED ON DRAWINGS AND SPECIFICATIONS WITHOUT ADDITIONAL COST.

B. BEFORE STARTING WORK THE ELECTRICAL CONTRACTOR SHALL EXAMINE THE PLANS AND INFORM THE ENGINEER OF ANY DISCREPANCIES BETWEEN THEM AND THE SPECIFICATIONS. IF DISCREPANCIES ARE FOUND HE SHALL REPORT THEM TO THE ENGINEER IN WRITING SO THE ENGINEER CAN PRODUCE INSTRUCTIONS FOR CHANGES IN WORK. DISCREPANCIES SHOULD BE SUBMITTED PRIOR TO BID AS TO RESOLVE ISSUES PRIOR TO CONSTRUCTION.

6. TESTS

A. THE ELECTRICAL CONTRACTOR SHALL COMPLETE ALL TESTS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.

B. THE COSTS OF ALL TESTS, THE REPLACING AND REPAIRING OF ANY DAMAGE RESULTING FROM TESTS AND ANY WORK NEEDED TO ADDRESS TEST RESULTS, ETC. NOT IN ACCORDANCE WITH ELECTRICAL CODE, SPECIFICATIONS, AND THE ACCOMPANYING DRAWINGS, SHALL BE THE ELECTRICAL CONTRACTOR RESPONSIBILITY.

C. SHOULD THE ELECTRICAL CONTRACTOR REFUSE OR NEGLECT TO MAKE ANY TESTS NECESSARY TO SATISFY THE ENGINEER OR HIS REPRESENTATIVE, THE ENGINEER MAY RUN THE TESTS AND ALL COSTS WILL BE THE ELECTRICAL CONTRACTORS RESPOSIBILITY.

7. GUARANTEE

A. THE ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK EXCEPT FOR LIGHT FIXTURE LAMPS UNDER THIS CONTRACT, TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM THE PROJECT COMPLETION DATE. ALL DEFECTS OF ELECTRICAL SCOPE WITHIN THAT (1) YEAR PERIOD WILL BE HANDLED BY THE ELECTRICAL CONTRACTOR AT HIS OWN EXPENSE.

B. LIGHT FIXTURE LAMPS SHALL CARRY THE STANDARD FACTORY GUARANTEE.

8. IDENTIFICATION

A. ALL PANELBOARDS, STARTERS, DISCONNECT SWITCHES, MAIN CIRCUIT BREAKERS, MAJOR JUNCTION BOXES AND OTHER SPECIALTY EQUIPMENT ITEMS INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE IDENTIFIED WITH PERMANENTLY ATTACHED ENGRAVED PLASTIC NAMEPLATE.

B. THE LABEL SHALL IDENTIFY THE EQUIPMENT NAME ON THE FIRST LINE AND THE PANEL IT IS FED FROM ON THE SECOND.

9. ELECTRICAL SERVICE

A. COORDINATE AND ASSIST THE UTILITY COMPANY IN THE INSTALLATION OF THE ELECTRICAL SERVICE BASED OFF THE ACCOMPANYING DRAWINGS. VERIFY LOCATION, REQUIREMENTS AND ELECTRICAL SERVICE SIZE AS INDICATED BY THE DRAWINGS.

B. PROVIDE METERING CONDUIT AND EQUIPMENT AS REQUIRED BY LOCAL UTILITY COMPANY.

10. GROUNDING

A. PROVIDE GROUNDING FOR ENTIRE ELECTRIC INSTALLATION AS INDICATED BY DRAWINGS AND SPECIFICATIONS.

B. PROVIDE GROUNDING FOR ELECTRICAL SERVICE, EQUIPMENT, ENCLOSURES, CONDUITS, SWITCHBOARDS, MCC'S, PANELBOARDS, TRANSFORMERS, LOW VOLTAGE CABINETS, ETC.

C. GROUNDING SIZE AND TYPE OF GROUND CONDUCTOR AS PER NATIONAL ELECTRICAL CODE, ARTICLE 250. CONNECTIONS SHALL BE MADE WITH APPROVED CLAMPS AT MAIN WATERLINE SERVICE ENTRANCE.

D. MEET ALL GROUNDING REQUIREMENTS AS PER THE CURRENT N.E.C.

11. ELECTRIC WIRING

A. GENERAL

1. ROUTING OF CONDUIT SHALL BE SUITED TO THE JOB CONDITIONS AND UP TO THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. ALL TRADES DRAWINGS SHOULD BE CLOSELY REVIEWED FOR TYPE OF CONSTRUCTION AND RUNNING OF CONDUITS. NO STRUCTURAL MEMBERS WILL BE CUT WITHOUT APPROVAL FROM STRUCTURAL ENGINEER. ALL CONDUIT WILL BE INSTALLED AT RIGHT ANGLES TO THE BUILDING.
2. ROUGH-IN OF ELECTRICALLY OPERATED UNITS SHALL BE COORDINATED WITH THE SUPPLIERS OF EQUIPMENT.
3. HEIGHTS AND LOCATIONS OF SWITCHES, PLUGS WALL FIXTURES, ETC. SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS, GENERAL CONTRACTOR, AND ALL SUBCONTRACTORS AS REQUIRED.

B. RACEWAYS OR CONDUITS

1. ALL CONDUIT EXPOSED TO MECHANICAL DAMAGE SHALL BE RIGID GALVANIZED STEEL, IMC, OR AS NOTED ON THE DRAWINGS. ALL OTHER CONDUITS MAY BE ELECTRICAL METALLIC TUBING. PVC CONDUIT SHALL BE SCHEDULE 40 OR AS NOTED ON DRAWINGS. EXPANSION COUPLINGS SHALL BE USED AT ALL EXPANSION JOINTS.
2. ALL CONDUIT SHALL BE INSTALLED IN A NEAT WORKMANLIKE MANNER AND SHALL BE ANCHORED EVERY (8') BY MEANS OF AN APPROVED METHOD OF CONDUIT SUPPORTING.
3. ALL CONDUIT SIZES SHALL BE IN STRICT ADHERENCE WITH THE CURRENT NATIONAL ELECTRICAL CODE, UNLESS WHERE THE DRAWINGS HAVE OVER SIZED THE MINIMUM REQUIREMENTS, THEN THE LARGER SIZE SHALL APPLY.

C. WIRE

1. ALL CONDUCTORS RATED UNDER 100A SHALL BE COPPER UNLESS NOTED OTHERWISE ON THE DRAWINGS. ALL ALUMINUM WIRE TERMINATIONS WILL HAVE NOLOX OR EQUAL ANTI-OXIDANT JOINT COMPOUND APPLIED TO THE TERMINATION.
2. ALL WIRE SIZES #14 TO #10 SHALL BE TYPE THWN/THHN. THHN RATED WIRE SHALL NOT BE USED IN AREAS SUBJECT TO WATER SUCH AS IN CONDUITS BELOW GRADE.
3. ALL WIRE SIZES #8 OR LARGER SHALL BE TYPE THWN OR THHN STRANDED UNLESS NOTED OTHERWISE.
4. WIRE INSTALLED IN FIXTURE PANS SHALL BE TYPE AWM OR THHN.
5. FURNISH AND INSTALL GROUND CONDUCTOR PER THE CURRENT NEC WHEN NON-METALLIC CONDUIT IS USED OR AS NOTED ON THE DRAWINGS.
6. PROVIDE METALLIC SHEATH CABLE, MC OR AC AS PER THE CURRENT N.E.C. ARTICLE 333 AND 334. MC OR AC CABLE SHALL ONLY BE USED INSIDE FRAMED WALLS OR ABOVE HARD LOT-CORD CEILINGS.
7. BRANCH CIRCUITS FOR WHICH THE DISTANCE FROM PANELBOARD TO THE NEAREST DEVICE ARE MORE THAN 100' THE ELECTRICAL CONTRACTOR MUST UPSIZE HIS BRANCH WIRING ACCORDING TO THE VOLTAGE DROP TABLE ON THE ACCOMPANYING DRAWINGS.

D. BOXES AND FITTINGS

1. ALL CONDUIT BOXES AND ASSOCIATED MATERIAL SHALL BE GALVANIZED AND UL LISTED.
2. ALL CONDUIT CONNECTORS OR CONDUIT CONNECTION POINTS MUST BE INSULATED TO PROVIDE PROTECTION TO THE WIRING.
3. ALL FITTINGS FOR CONDUIT SHALL BE WATER TIGHT OR STEEL SET SCREW.
4. OUTLETS IN PLASTERED PANELS AND FURRED FINISH SHALL BE EQUIPPED WITH PLASTERED RINGS AND EXTENSION OF SUCH DEPTH TO BRING OUTLET FLUSH WITH SURFACE FINISH.
5. SURFACE MOUNTED BOXES IN DAMP OR WET LOCATIONS, AND BOXES MOUNTED ON A CONDUIT STUB-UP SHALL BE TYPE "FS" OR "FD" BOXES WITH THREADED HUBS, MOUNTING EARS AND WEATHERPROOF COVERS.

E. WIRING PROCEDURE

1. ALL WIRING IN CONDUIT SHALL HAVE NO MORE THAN THREE (3) CIRCUITS PER HOME RUN, UNLESS DERATED AS PER NEC 310-15-NOTE 8.
2. THE ARCHITECT / ENGINEER RESERVES RIGHT TO MAKE ANY REASONABLE CHANGES IN THE LOCATION OF OUTLETS BEFORE ROUGHING-IN WITHOUT ADDITIONAL EXPENSES TO THE OWNER.
3. THE LAYOUT OF THE WIRING SYSTEM AS INDICATED IS GENERALLY SCHEMATIC AND LOCATION OF OUTLETS SHALL BE CHECKED WITH MILL WORK, EQUIPMENT SUPPLIERS, AND GENERAL CONTRACTOR.

12. MOTORS AND ELECTRICALLY OPERATED EQUIPMENT

A. IT IS THE INTENT OF THESE SPECIFICATIONS THAT ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS SHALL BE BE WIRED UNDER DIVISION 16 ELECTRICAL AND AS NOTED ON THE ELECTRICAL DRAWINGS.

B. CHECK SUPPLIERS EQUIPMENT FOR COMPLETE WIRING DETAILS.

C. CONNECT ALL MOTORS WITH FLEXIBLE CONDUIT AS PER THE CURRENT NEC.

D. CHECK MOTOR STARTER FOR HEATER SIZES AND FUSED DISCONNECTS FOR FUSE SIZES.

13. HEATING AND VENTILATING EQUIPMENT

A. THE ELECTRICAL CONTRACTOR SHALL PERFORM ALL LINE VOLTAGE CONNECTIONS FOR ALL HVAC AND BUILDING EQUIPMENT AS PER THE ELECTRICAL EQUIPMENT HOOK-UP SCHEDULE.

B. ALL HVAC CONTROL WIRING AND RELATED EQUIPMENT FOR HEATING AND VENTILATING SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED.

C. THE HEATING AND VENTILATING SPECIFICATIONS SHALL BE A PART OF THESE SPECIFICATIONS AND THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL STARTERS FOR MECHANICAL EQUIPMENT WHICH ARE NOT SPECIFICALLY DESIGNATED AS BEING FURNISHED BY THE ELECTRICAL CONTRACTOR. SEE ELECTRICAL EQUIPMENT SCHEDULE.

D. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECT SWITCHES THAT ARE REQUIRED BY THE NATIONAL ELECTRICAL CODE FOR ALL MECHANICAL EQUIPMENT AS PER ELECTRICAL EQUIPMENT SCHEDULE UNLESS FACTORY FURNISHED WITH MECHANICAL EQUIPMENT.

14. LIGHTING FIXTURES

A. ALL LIGHTING FIXTURES SHALL BE FURNISHED WITH THE PROPER MOUNTING ACCESSORIES TO SUIT INTENDED APPLICATION.

1. ALL OUTDOOR FIXTURES SHALL RATED FOR THE APPROPRIATE CONDITIONS.
2. ALL LIGHTING FIXTURES SHALL UL LISTED.
3. BEFORE ORDERING LIGHT FIXTURES THE ELECTRICAL CONTRACTOR WILL VERIFY EACH FIXTURES MOUNTING EQUIPMENT AND AND INFORM THE ENGINEER IF THERE ARE DISCREPANCIES WITH THE MOUNTING HARDWARE AND THE MOUNTING SURFACE OF THE LIGHT FIXTURE. IF THIS IS NOT DONE THE COSTS TO CHANGE THE MOUNTING EQUIPMENT AND LABOR WILL BE THE ELECTRICAL CONTRACTOR RESPONSIBILITY.
4. RECESSED FIXTURES SHALL BE SECURED TO THE BUILDING STRUCTURE. DROP IN FIXTURES SHALL BE SUPPORTED WITH WIRE SUPPORTS WITH A MINIMUM OF TWO (2) PER FIXTURE WITH ONE AT OPPOSITE ENDS OF EACH OTHER. WIRES TO BE SECURED TO THE BUILDING STRUCTURE AND PROVIDE FOUR (4) EARTHQUAKE CLIPS PER FIXTURE.
5. ELECTRICAL CONTRACTOR TO VERIFY WITH GENERAL CONTRACTOR IF FIRE RATED BOOTS ARE REQUIRED FOR RECESSED LIGHT FIXTURES PRIOR TO BID. NO EXTRAS WILL BE ALLOWED FOR THIS WORK.

B. LAMPS SHALL BE SUPPLIED WITH FIXTURES AND SHALL BE THE TYPE AS SHOWN ON LIGHT FIXTURE SCHEDULE AND AS MANUFACTURED BY GENERAL ELECTRIC, PHILLIPS, SYLVANIA.

15. PANELBOARDS

A. PANEL BOARDS AND SWITCHBOARDS SHALL BE SQUARE D, SIEMENS, G.E. OR CUTLER HAMMER. THE PANELS SHALL BE HOUSED IN A GALVANIZED STEEL CAN WITH HINGED COVER DOOR. THE DOOR SHALL BE KEYED DOOR LOCK WITH ALL KEYS ALIKE. ALL PAINTED SURFACES SHALL BE BONDERIZED AND PAINTED WITH THREE (3) COATS OF PRIMER AND FINISH PAINT. THE PANELS SHALL BE TOP OR BOTTOM FEED AS REQUIRED. THE PANEL SHALL HAVE A SOLID BUSING AND NEUTRAL TERMINAL PLATE, AND SHALL BE BRACED TO WITHSTAND THE MAXIMUM SHORT CIRCUIT INTERRUPTING CAPACITY OF ANY DEVICE MOUNTED THEREIN.

B. A WRITTEN CIRCUIT DATA SHALL BE PROVIDED IDENTIFYING OUTLET AND EQUIPMENT CONTROLLED PER CIRCUIT NUMBER ON CARD PROVIDED WITH PANEL. DIRECTORY HOLDER SHALL BE FURNISHED ON INNER FACE OF HINGED DOOR. CONTRACTOR SHALL PROVIDE TYPED CIRCUIT DIRECTORY CARD AT COMPLETION OF PROJECT.

C. ALL PANEL BOARDS SHALL HAVE A GROUND BUS WITH LUGS AS REQUIRED. FURNISH ALL FUSES, SPARE FUSES AND FUSE CABINET AS NOTED ON DRAWINGS.

16. WIRING DEVICES

A. RELATED DOCUMENTS: THE GENERAL PROVISIONS OF THE CONTRACT AND THE GENERAL CONDITIONS APPLY TO THE WORK SPECIFIED IN THIS SECTION.

B. DUPLEX RECEPTACLES

1. ALL DUPLEX RECEPTACLES SHALL BE 3-POLE GROUNDING TYPE WITH THE THIRD POLE "U" SHAPED AND GROUNDED TO THE CONDUIT SYSTEM AND SHALL BE P&S, HUBBELL, LEVITON OR AN APPROVED EQUAL TO.

C. TOGGLE SWITCHES

1. ALL TOGGLE SWITCHES SHALL BE COMMERCIAL/INDUSTRIAL TYPE 15 & 20 AMP, 120/277 VAC AND SHALL BE P&S, HUBBELL, LEVITON OR APPROVED EQUAL TO.

D. WIRING DEVICE COVERS

1. COVERS SHALL BE P&S TYPE TP SERIES COLOR AS SELECTED BY ARCHITECT TO MATCH DEVICE(S) COVERED. EXCEPT THAT OUTLETS MOUNTED IN TOE SPACE OR NEXT TO FLOOR SHALL HAVE STAINLESS STEEL COVERS. SURFACE OUTLETS SHALL HAVE GALVANIZED COVERS.
2. WIRING DEVICE COVERPLATES LOCATED ON EXTERIOR WALLS OR IN AREAS OF EXCESSIVE MOISTURE SHALL BE WEATHER PROOF.
3. ALL FLOOR RECEPTACLES SHALL INCLUDE CARPET OR TILE FLANGE COMPLETE.

17. DRY-TYPE TRANSFORMERS

A. RELATED DOCUMENTS: RELATED DOCUMENTS: THE GENERAL PROVISIONS OF THE CONTRACT AND THE GENERAL CONDITIONS APPLY TO THE WORK SPECIFIED IN THIS SECTION.

B. GENERAL

1. FURNISH AND INSTALL DRY-TYPE TRANSFORMERS AS INDICATED ON THE PLANS AND AS SPECIFICATIONS.

C. DESCRIPTION

1. TRANSFORMERS SHALL HAVE A MINIMUM 4-12% FULL CAPACITY PRIMARY TAPS.
2. TRANSFORMERS SHALL BE 150°C TEMPERATURE RISE ABOVE 40 C AMBIENT.
3. PROVIDE TRANSFORMERS 500 KVA AND LARGER WITH 4 VIBRATION ISOLATING SYSTEM DESIGNED TO PROVIDE A PERMANENT PERMANENT FASTENING AT THE CORE AND COIL OF THE ENCLOSURE. SOUND LEVEL SHALL BE GUARANTEED BY THE MANUFACTURER NOT TO EXCEED NEMA AND ANSI STANDARDS

18. MOTOR STARTERS

1. STARTERS SHALL BE LINE VOLTAGE, NON-REVERSING, 3-POLE TYPE WITH THERMAL OVERLOAD, SINGLE-PHASE, AND LOW LOW VOLTAGE PROTECTION WITH A NORMALLY OPEN AND CLOSED AUXILIARY CONTACT AND RESET BUTTON IN THE FACE. THE COIL VOLTAGE SHALL BE RATED FOR 120 VAC. PROVIDE FUSED CONTROL TRANSFORMER WHEN 120 VAC IS NOT AVAILABLE. SEE ELECTRICAL EQUIPMENT SCHEDULE AND DRAWINGS FOR H.O.A 'S, PILOT LIGHTS, ETC.

19. SAFETY SWITCHES

A. ALL SAFETY SWITCHES 30 AMPS AND LARGER SHALL BE HORSE POWER RATED, EXTERNALLY OPERATED WITH PROVISION FOR PADLOCK, QUICK MAKE-QUICK BREAK AND SHALL BE FUSIBLE / NON-FUSIBLE / NEMA 1 / NEMA 3R AS NOTED ON DRAWINGS. EACH SAFETY SWITCH SHALL BE CLEARLY MARKED FOR MAXIMUM VOLTAGE / CURRENT / HORSEPOWER RATING.

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MHTN ARCHITECTS
MHTN Architects, Inc.
420 East South Temple
Suite 100
Salt Lake City, Utah 84111
Telephone (801) 595-6700
Telefax (801) 595-6717
www.mhtn.com

JT Electric, LLC.
4303 S. 590 W.
Murray, Utah, 84123
Telephone (801-440-0911)
www.jtelectric.com.com

MOUNTAIN TECH NORTH 4
WICP COMMERCIAL
2800 W 650 N
LINDON, UT 84042

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SEAL

Professional Engineer
Expiration Date: 05/31/2025
Jacob Duane Taft
Number
378259-2202
Date Stamped: 03/24/2025
State of Utah

MHTN PROJECT NO J24005

Original drawing is 30 x 42. Do not scale contents of this drawing.

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SHEET NUMBER
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