

PROJECT INFORMATION

CONSTRUCTION TYPE: _____ TYPE V-B
 OCCUPANCY TYPE: _____ A-3
 NUMBER OF STORIES: _____ 1 STORY

STANDARD LOADINGS:

SNOW LOAD (GROUND): _____ 25 PSF
 ROOF DEAD LOAD: _____ 16 PSF
 ROOF LIVE LOAD: _____ 20 PSF
 WIND LOAD: _____ 110 MPH, VULT. EXP. C
 SEISMIC DESIGN: _____ SEE STRUCTURAL SPECIFICATIONS

BUILDING AREA:

TOTAL AREA: _____ 2406 SQ. FT.

OCCUPANT LOAD (IBC TABLE 1004.1.1):

ASSEMBLY AREA: _____ 87
 (UNCONCENTRATED - 1292 SQ. FT. / 15 SQ. FT. / OCC)
 EDUCATIONAL AREA: _____ 18
 (UNCONCENTRATED - 356 SQ. FT. / 20 SQ. FT. / OCC)
 TOTAL OCCUPANT LOAD: _____ 105

CODE REQUIREMENTS:

*BUILDING CONSTRUCTED AS SINGLE USE, NON-SEPARATED OCCUPANCY
 *NON-SPRINKLED

OWNER:

TRACEY GLOVER
 KANE COUNTY SHERIFFS OFFICE

PROJECT LOCATION:

971 E. KANEPLEX DRIVE
 KANAB, UT 84741

SPECIAL INSPECTION REQUIREMENTS:

- SPECIAL INSPECTION OF ALL EPOXY APPLICATIONS REQ'D

ALL CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING CODES:

- THE 2018 INTERNATIONAL PLUMBING CODE (IPC)
- THE 2018 INTERNATIONAL MECHANICAL CODE (IMC)
- THE 2018 INTERNATIONAL BUILDING CODE (IBC)
- THE 2018 INTERNATIONAL FIRE CODE (IFC)
- 2006 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
- 2017 NATIONAL ELECTRIC CODE (NEC)
- 2009 ANSI 117.1



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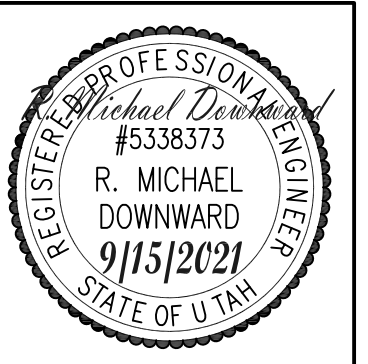
TITLE SHEET

971 E. KANEPLEX DRIVE
 KANAB, UT 84741

SHEET INDEX

Sheet Number	Sheet Title
A001	TITLE SHEET
A100	FLOOR PLAN
A200	ELEVATIONS
A201	ELEVATIONS
A300	CROSS SECTIONS
M0.1	MECHANICAL COVER SHEET
M0.2	MECHANICAL SPECIFICATIONS
M0.3	MECHANICAL SCHEDULES
M1.0	MECHANICAL PLANS
E0.1	ELECTRICAL COVER SHEET
E0.2	ELECTRICAL SPECIFICATIONS
E0.3	ELECTRICAL PANEL SCHEDULES
E1.0	ELECTRICAL LIGHTING PLAN
E1.1	ELECTRICAL POWER PLAN
P0.1	PLUMBING COVER SHEET
P0.2	PLUMBING SPECIFICATIONS
P0.3	PLUMBING SCHEDULE
P1.0	PLUMBING DRAIN PLAN
P1.1	PLUMBING PIPING PLAN
P2.0	PLUMBING DETAIL SHEET
S0.1	STRUCTURAL SPECIFICATIONS
S1.0	FOUNDATION PLAN
S2.0	ROOF FRAMING PLAN
S3.0	FOUNDATION DETAILS
S4.0	FRAMING DETAILS

INITIAL SUBMITTAL: 09/15/2021
 REV#: _____ DATE: _____ DESCRIPTION: _____



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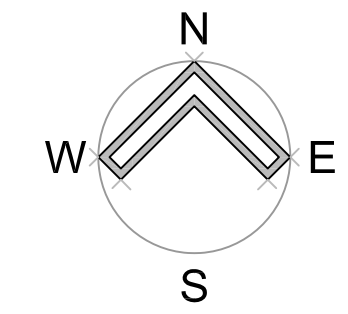
SCALE: NTS

SHEET:

A001

PLAN KEYNOTE LEGEND

- 1 EDGE OF SLAB AT PATIO
- 2 STEEL POST, PER STRUCTURAL TYP. OF (6)
- 3 ACORN_1418FA-CT-2, FORWARD FACING, PRISON TOILET COMBO UNIT. (OR EQUIVALENT)
- 4 ACORN_1449FA-LO, ADA TOILET-LAVATORY COMBO W/OFFSET TOILET. (OR EQUIVALENT). GRAB BARS AND FLOOR CLEARANCES PER D1/A100 AND D2/A100
- 5 OPTIONAL RAISED PLATFORM. HEIGHT NOT TO EXCEED 7" w/o ADDITIONAL STAIRS
- 6 TOILET ACCESS OPENINGS. ADJUST SIZE AS NECESSARY.

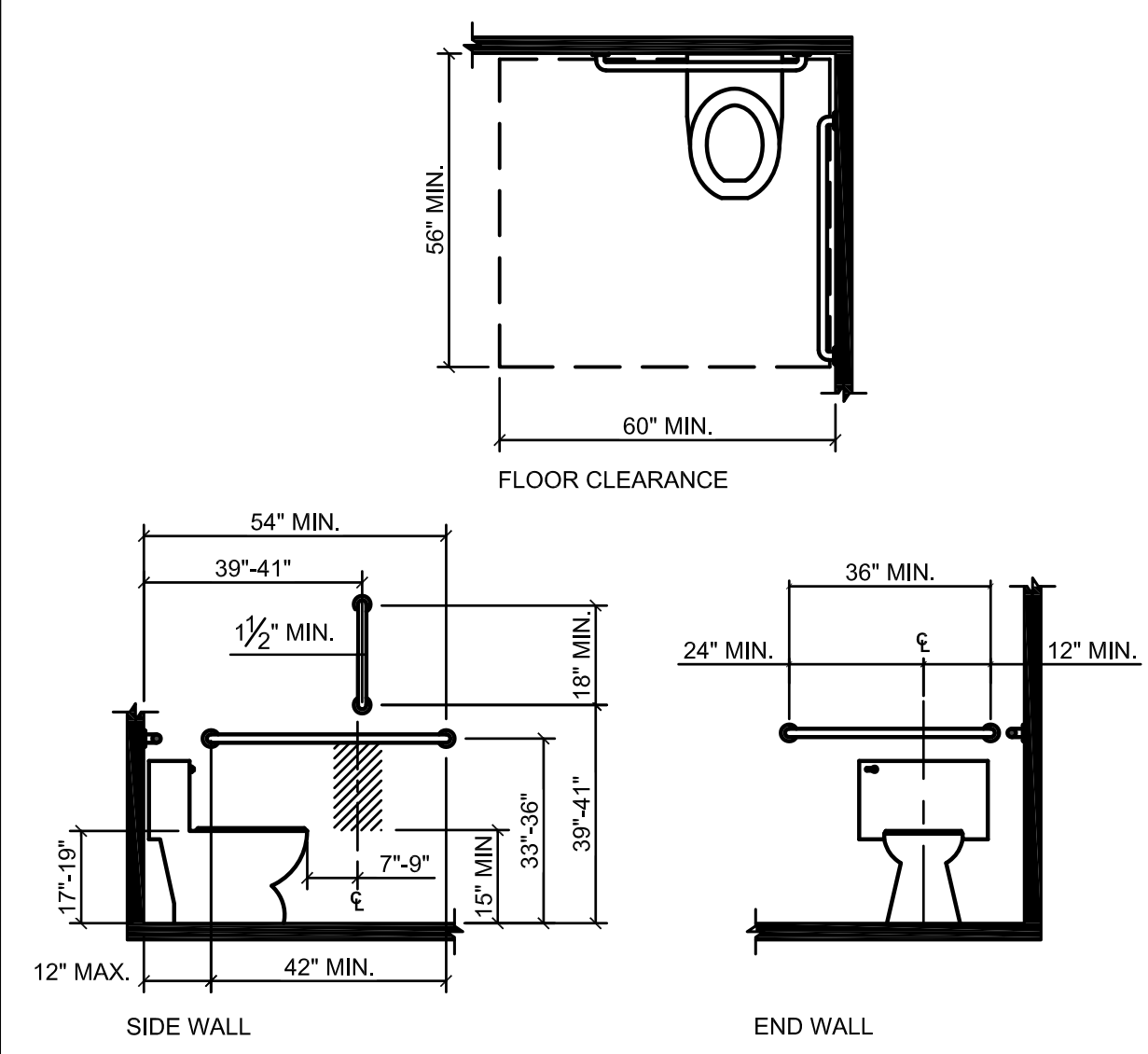


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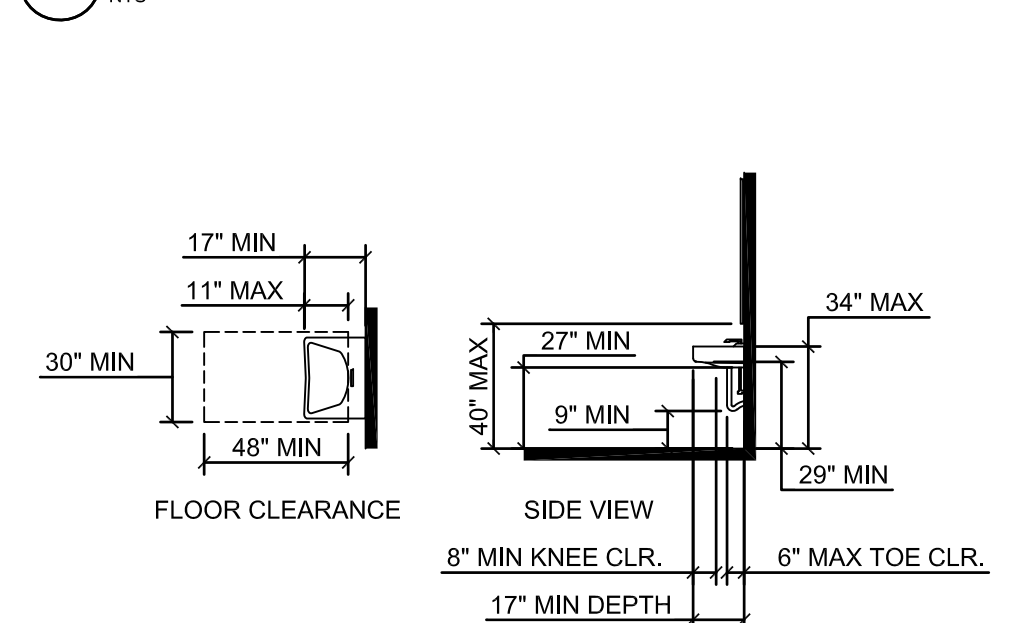
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FLOOR PLAN
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- DETAIL NOTES:**
- REINFORCEMENT MUST BE SUFFICIENT TO PERMIT THE INSTALLATION OF REAR AND SIDE WALL GRAB BARS THAT FULLY MEET ALL ACCESSIBILITY REQUIREMENTS INCLUDING LENGTH, HEIGHT, AND STRUCTURAL STRENGTH
 - FLUSH CONTROLS SHALL BE HAND OPERATED OR AUTOMATIC. HAND OPERATED FLUSH CONTROLS SHALL BE LOCATED ON THE OPEN SIDE OF THE WATER CLOSET.
 - WHERE AN ADMINISTRATIVE AUTHORITY REQUIRES FLUSH CONTROLS FOR FLUSH VALVES TO BE LOCATED IN A POSITION THAT CONFLICTS WITH THE LOCATION OF THE REAR GRAB BAR, THEN THE REAR GRAB BAR SHALL BE PERMITTED TO BE SPLIT OR SHIFTED TO THE OPEN SIDE OF THE TOILET AREA.
 - DISPENSERS SHALL NOT BE OF A TYPE THAT CONTROLS DELIVERY OR THAT DOES NOT ALLOW CONTINUOUS PAPER FLOW.
 - TOILET SHALL BE EQUIPPED WITH A SEAT OF SMOOTH, NON-ABSORBANT MATERIAL. SEAT SHALL BE OF THE HINGED OPEN-FRONT TYPE. INTEGRAL SEATS SHALL BE OF THE SAME MATERIAL AS THE FIXTURE.

D2 ACC. WATER CLOSET - TYP. GRAB BARS & CLEARANCE



- DETAIL NOTES:**
- 1. LAVATORY FAUCET AND SOAP DISPENSER CONTROLS SHALL HAVE A MAXIMUM REACH DEPTH OF 11"
 - 2. INSULATE ALL EXPOSED DRAIN PIPES TO PROTECT AGAINST CONTACT
 - 3. CABINETRY IN RESIDENTIAL DWELLING UNITS MAY BE PERMITTED IF THE FOLLOWING CRITERIA ARE MET:
 - a. CABINETRY CAN BE REMOVED WITHOUT REMOVAL OR REPLACEMENT OF THE FIXTURE
 - b. THE FINISH FLOOR EXTENDS UNDER THE CABINETRY
 - c. THE WALLS BEHIND AND SURROUNDING THE CABINETRY ARE FINISHED

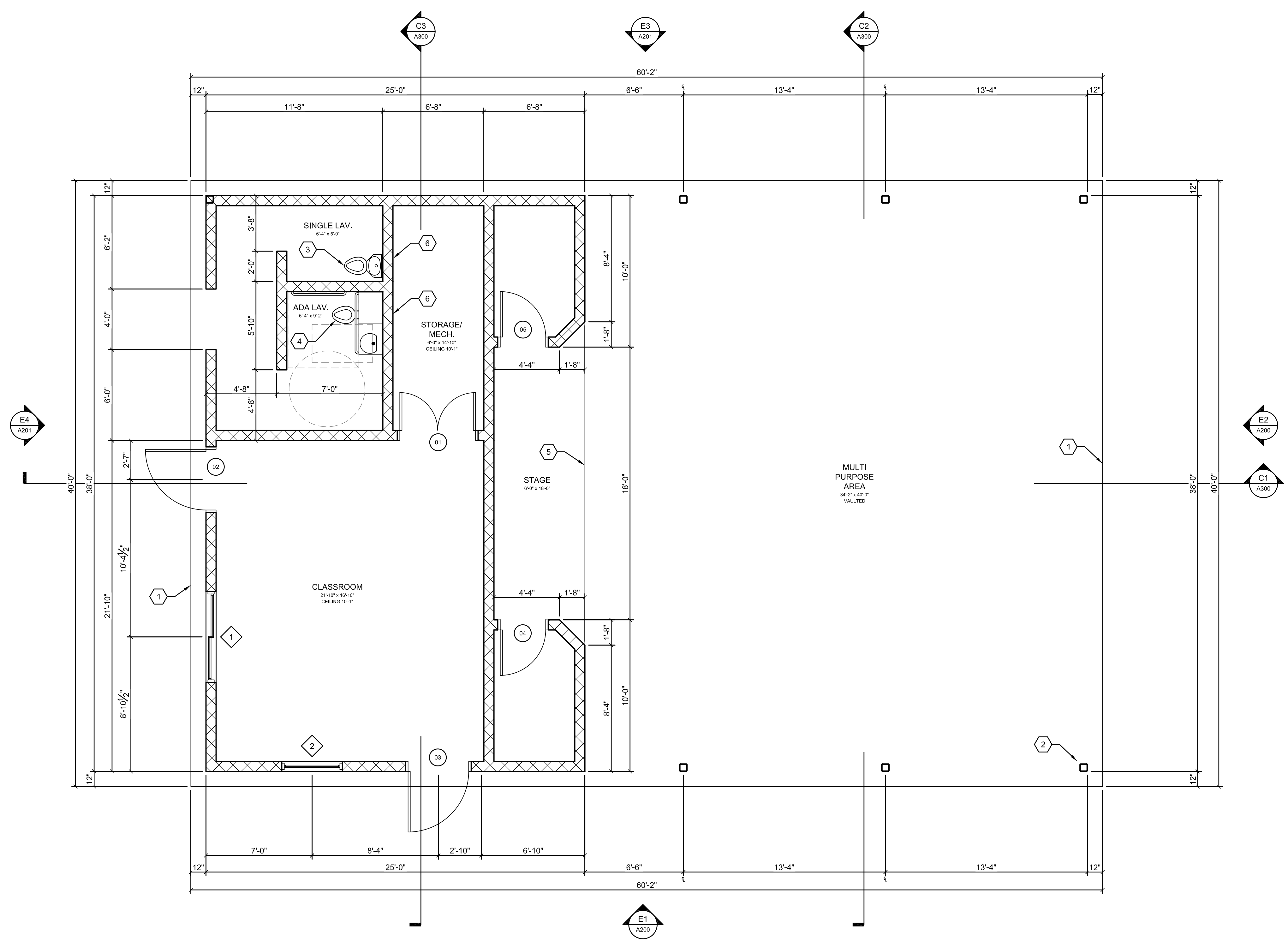
D1 ACC. LAVATORY - TYP. SIZE & CLEARANCE

WINDOW SCHEDULE

MARK	SIZE		HEAD HGT	TYPE	NOTES
	WD	HGT			
1	6'-0"	5'-0"	7'-0"	SLIDING	TEMPERED
2	4'-0"	5'-0"	7'-0"	PICTURE	TEMPERED

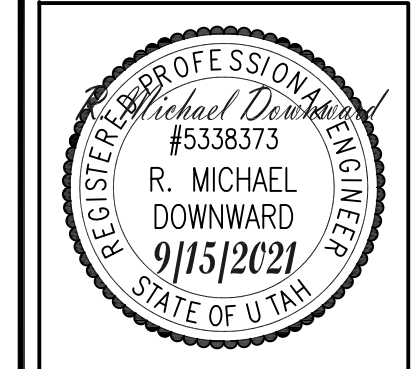
DOOR SCHEDULE

MARK	DOOR SIZE		STYLE	MAT.	NOTES
	WD	HGT			
1	5'-0"	7'-0"	HINGED - DOUBLE - EXTERIOR	STEEL	LOCKING - DEADBOLT
2	4'-0"	7'-0"	HINGED - SINGLE - EXTERIOR	STEEL	LOCKING - DEADBOLT
3	4'-0"	7'-0"	HINGED - SINGLE - EXTERIOR	STEEL	LOCKING - DEADBOLT
4	3'-0"	6'-8"	HINGED - SINGLE	STEEL	LOCKING - DEADBOLT
5	3'-0"	6'-8"	HINGED - SINGLE	STEEL	LOCKING - DEADBOLT



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DRAWN BY: HRR
SCALE: 1/4" = 1'
SHEET: **A100**



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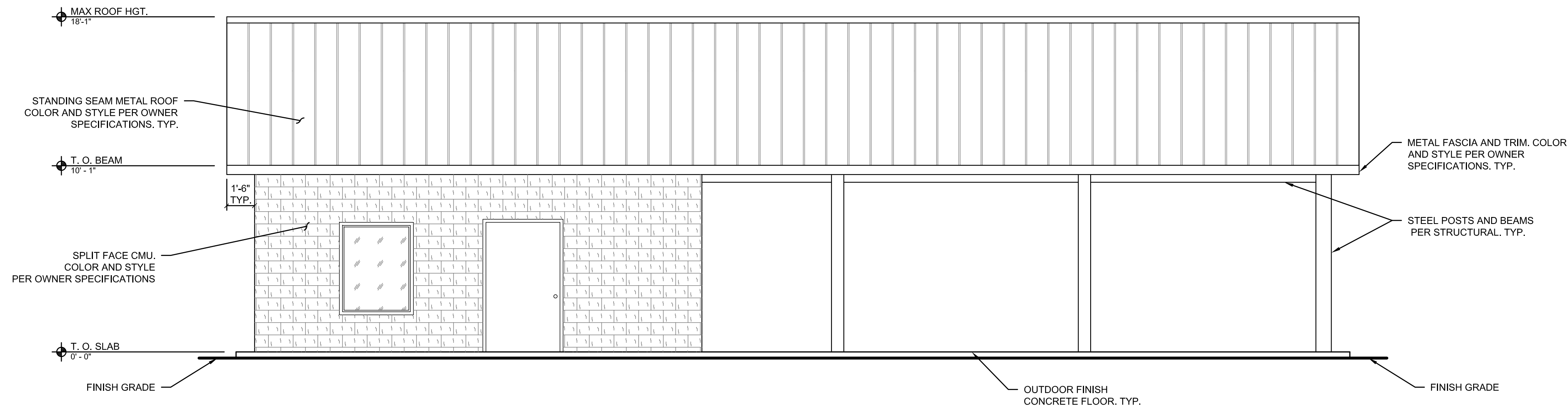
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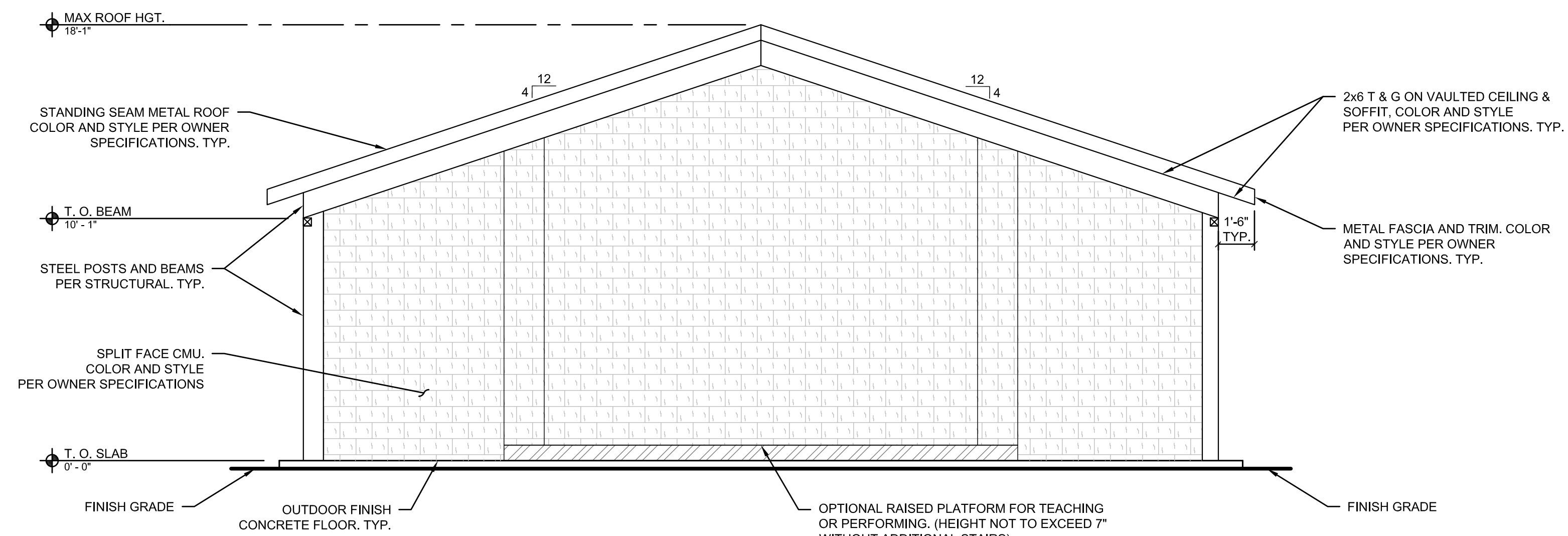
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ELEVATIONS

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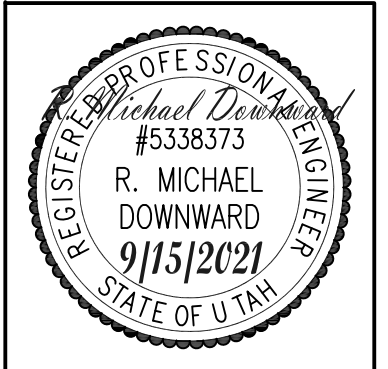
E1 SOUTH ELEVATION
1/4" = 1'



E2 EAST ELEVATION
1/4" = 1'

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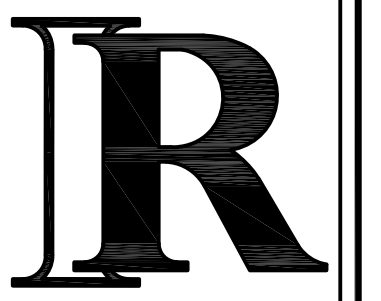
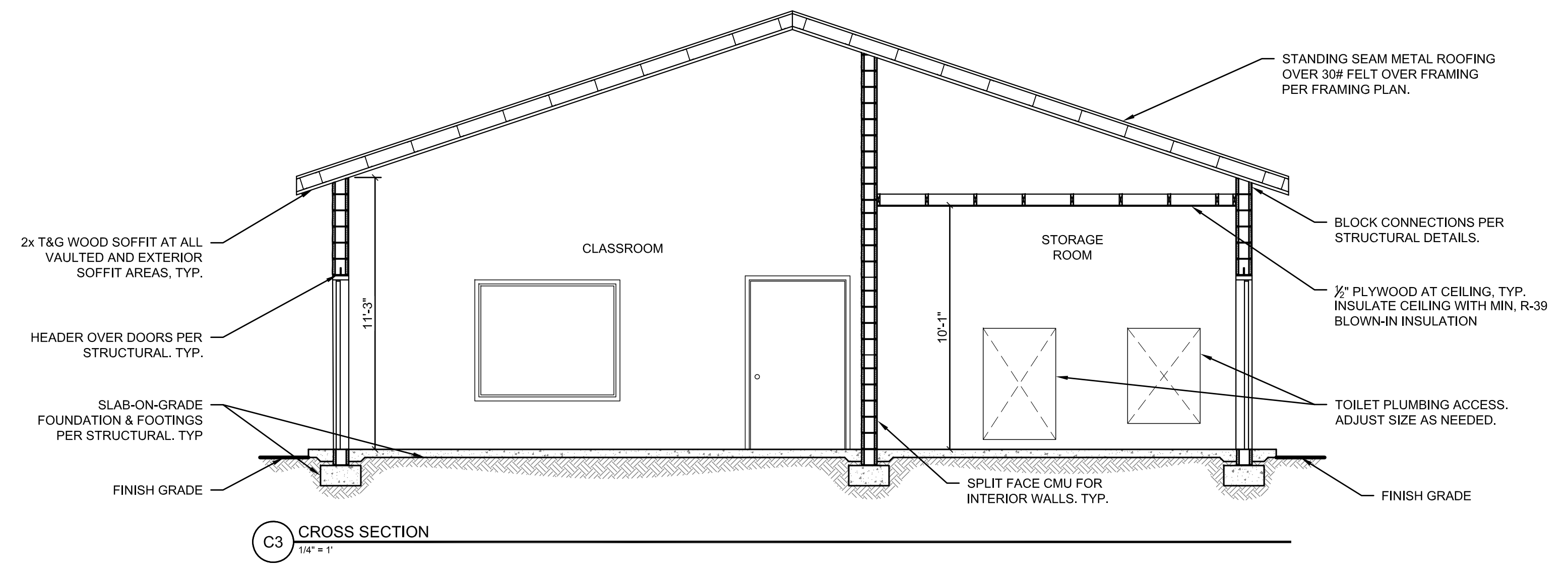
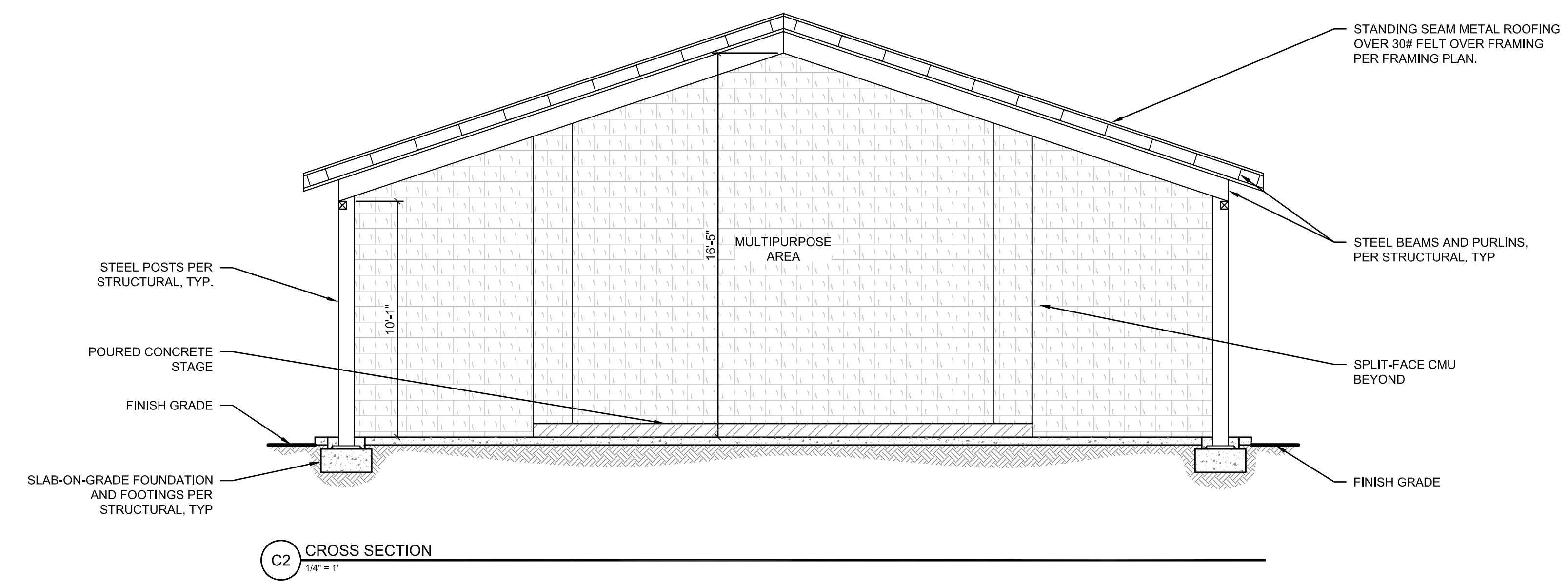
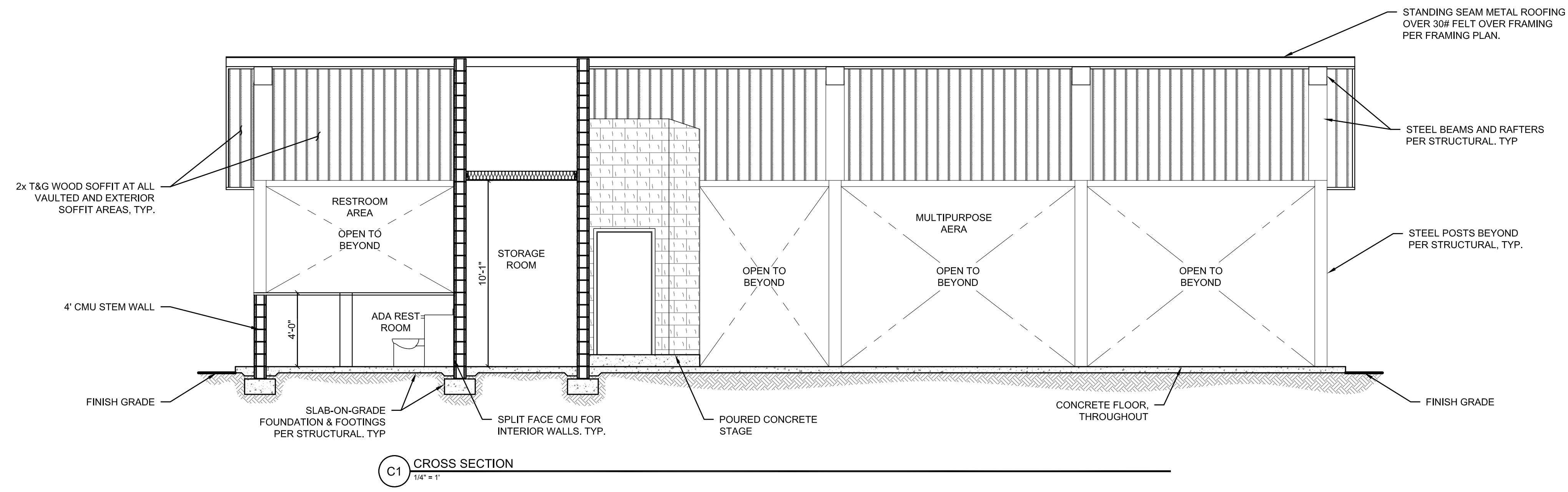
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SCALE: AS NOTED

SHEET:

A200



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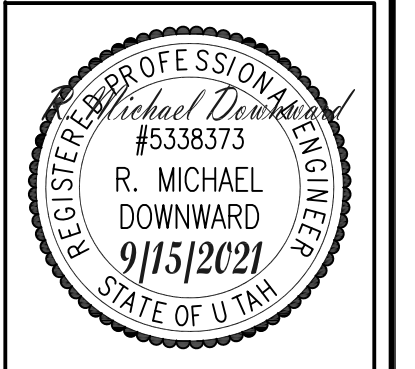
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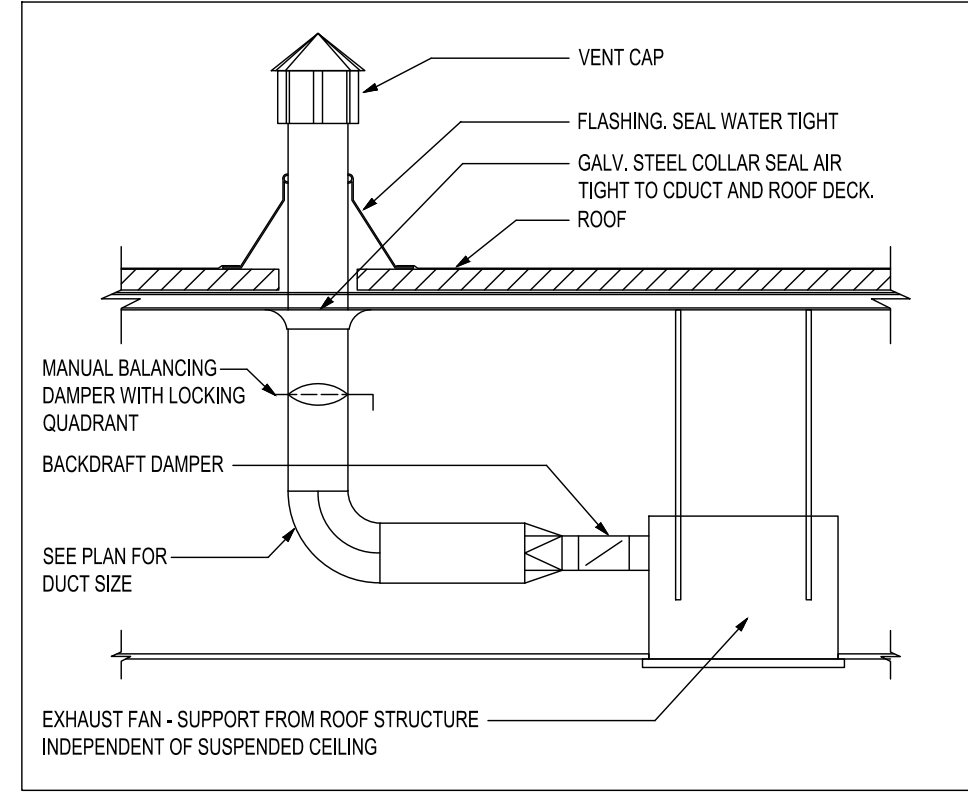
A300

GENERAL NOTES

- DO NOT SCALE DRAWINGS.
- CONTRACTOR SHALL COORDINATE WORK INDICATED HEREIN W / PLUMBING , ELECTRICAL & FIRE PROTECTION SECTIONS. SUBMIT 1/4" SCALE SHOP DRAWINGS FOR DUCT SYSTEMS, DIMENSIONED TO INCORPORATE THE WORK OF OTHER TRADES. INDICATE SPACES RESERVED FOR FIRE SPRINKLER, PIPING & ELECTRICAL CONDUIT MAINS.
- UNLESS NOTED OTHERWISE, BRANCH DUCTS TO INDIVIDUAL TERMINALS, DIFFUSERS AND GRILLS SHALL BE SAME SIZE AS NECK INLET.
- PROVIDE EQUIPMENT SCHEDULED OR INDICATED ON THE DRAWINGS BUT NOT INCLUDED WITHIN THE SPECIFICATIONS. INSTALLATION SHALL CONFORM TO MANUFACTURERS RECOMMENDATIONS AND APPLICABLE CODES. PROVIDE SUBMITTALS.
- ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT SHALL BE VERIFIED WITH ELECTRICAL DRAWINGS PRIOR TO EQUIPMENT ORDER RELEASE. ADDITIONAL ELECTRICAL WORK RESULTING FROM EQUIPMENT SUBSTITUTIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- LENGTH OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO 5'-0" MAX. HORIZONTAL RUN WITH ONLY ONE 90° ELL. PERMITTED. SECURE FLEXIBLE DUCTWORK WITH SCREWS & DRAWBANDS.
- DUCT SIZES INDICATED ARE NET INSIDE CLEAR DIMENSIONS.
- PROVIDE CEILING OPERATORS FOR INACCESSIBLE M.V.D.'S WHERE INDICATED, EQUAL TO YOUNG REGULATOR, REMOTE GEAR OPERATED, WITH CEILING ESCUTCHEON.
- ITEM DESIGNATIONS INDICATED HEREIN ARE FOR PURPOSES OF THESE DOCUMENTS ONLY. CONTRACTOR SHALL VERIFY W/ OWNERS REPRESENTATIVE ACTUAL "TAGGING" INFORMATION TO BE PROVIDED FOR EACH ITEM OF MECHANICAL EQUIP. PRIOR TO NAMEPLATE ORDER RELEASE.
- CEILING DIFFUSERS SHALL BE 36" MIN. FROM CEILING MOUNTED SMOKE DETECTORS. COORDINATE W/ ELECTRICAL DIVISION.
- SECURE DIFFUSERS AND GRILLS TO T-BAR CEILINGS, WHERE APPLICABLE. SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO BEGINNING WORK.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ACTUAL LOCATION OF GRILLS & DIFFUSERS IN CEILING, AS WELL AS ACCESS DOORS.
- COORDINATE EQUIPMENT DIMENSIONS AND LAYOUT W/ PLUMBING SECTION WHERE FLOOR SINKS ARE INDICATED.
- PIPES PASSING THRU FIRE RATED WALLS & FLOORS SHALL BE SEALED WITH U.L. LISTED MATERIAL EQUAL TO 3M FIRE BARRIER, CAULK OR PUTTY. SEALANT'S RATING SHALL MATCH THE RATING OF THE ASSEMBLY.
- PROVIDE VALVE TAGS AND PIPE IDENTIFICATION BANDS. TAGS SHALL BE BRASS W/ CHAIN. IDENTIFICATION BANDS SHALL BE LOCATED EVERY 25 FEET AND ON EITHER SIDE OF INTERMEDIATE BARRIER.
- PROVIDE 18" X 18" MIN. ACCESS DOOR IN INACCESSIBLE CEILINGS AND WALLS FOR EQUIPMENT REQUIRING ACCESS OR ADJUSTMENT. COORDINATE LOCATIONS AND SUBMIT TO ARCHITECT FOR APPROVAL PRIOR TO BEGINNING WORK.
- TURNING VALVE RUNNERS SHALL HAVE A VANE IN EVERY SLOT IN STRICT CONFORMANCE WITH MFR'S INSTRUCTIONS AND SMACNA DUCT CONSTRUCTION STANDARDS.
- VERIFY FIT OF DUCTWORK AND PIPING PRIOR TO FABRICATION.
- INSULATED PIPING EXPOSED TO VIEW (THROUGHOUT THE FACILITY) SHALL BE COVERED FINISHED W/ PVC JACKET EQUAL TO MANVILLE PVC / PERMA-WELD PIPE JACKETING SYSTEM USING 30 MIL THICK JACKET. FITTINGS, FLANGES & ACCESSORIES SHALL BE JACKETED. INSTALL PER MANUFACTURER'S INSTRUCTIONS W/ SEAM ON TOP OF PIPE SO AS NOT TO BE VISIBLE FROM OCCUPIED SPACE.
- DUCTWORK LOCATED BELOW 7'-6" IN MECHANICAL ROOMS SHALL BE EQUIPPED W/PADDING MATERIAL ON ALL CORNERS, EDGES & OTHER SURFACES WHICH MAY BE HAZARDOUS.
- COORDINATE & VERIFY ACTUAL APPROVED EQUIPMENT DIMENSIONS PRIOR TO POURING EQUIPMENT PADS.
- DUCT MOUNTED SMOKE DETECTORS SHALL BE ZERO VELOCITY TYPE WHERE INDICATED ON DRAWINGS.
- DRAIN PIPING FROM A.C. EQUIPMENT SHALL BE ROUTED SO AS NOT TO CREATE A TRIPPING HAZARD. COORDINATE ACTUAL DRAIN CONNECTIONS WITH PLUMBING SECTION. COORDINATE FLOOR SINK LOCATIONS ACCORDINGLY.
- CONDENSATE DRAIN TRAPS SHALL BE 3" DEEP MINIMUM.
- COORDINATE ALL CHASE, SLEEVE, AND SLAB BLOCK-OUT REQUIREMENTS BEFORE CONCRETE IS POURED OR BLOCK IS SET.
- PROVIDE ACCESS DOOR IN DUCTWORK UPSTREAM OF EACH REHEAT COIL..
- DUCTWORK VISIBLE BEHIND DIFFUSERS, REGISTERS, OR GRILLS SHALL BE PAINTED FLAT BLACK.
- REFER TO EQUIPMENT DRAWINGS, SPECIFICATIONS, & SHOP DRAWINGS FOR CONNECTIONS TO EQUIPMENT.
- MANUAL VOLUME DAMPERS AND VALVES ON INSULATED DUCTWORK AND PIPING SHALL HAVE EXTENDED STEMS TO ALLOW FOR THE INSULATION THICKNESS. PROVIDE MIN 12" LONG RED RIBBON QUADRANT LOCATOR ON VOLUME DAMPER HANDLES.
- CONTRACTOR TO NOTIFY ENGINEER OF ANY INCORRECT ASSUMPTIONS PRIOR TO STARTING ANY WORK.
- ALL DIFFUSER GRILLS/REGISTERS SHALL HAVE MANUALLY ADJUSTABLE DAMPERS INSTALLED IN DUCT IMMEDIATELY PRIOR GRILL FOR SYSTEM BALANCING.
- ALL CEILING HUNG UNITS TO BE ATTACHED TO FLOOR SYSTEM WITH VIBRATION DAMPING MOUNTS.
- ROOF TOP EQUIPMENT TO BE INSTALLED A MINIMUM OF 10' FROM THE ROOF EDGE, OR HAVE A GUARD INSTALLED WHICH IS A MINIMUM 42" TALL AND EXTENDS A MINIMUM OF 30" BEYOND EACH EDGE OF EQUIPMENT OR HAVE INSTALLED FALL/ARREST RESTRAINT ANCHORAGE CONNECTOR (IN COMPLIANCE WITH ANSI/ASSE Z 359.1).

LEGEND

T-STAT		THERMOSTAT
FLFD		FUSIBLE LINK FIRE DAMPER
DD		DUCT MOUNTED SMOKE DETECTOR
FSDT-STAT		COMBINATION FIRE/ SMOKE DETECTOR (GREENHAECK CFSD-211/ SEE DETAIL 12, SHEET M201)
AUTO D		MOTORIZED DAMPER
MVD		MANUAL VOLUME DAMPER
SA	<input checked="" type="checkbox"/>	SUPPLY AIR
RA	<input checked="" type="checkbox"/>	RETURN AIR
EA	<input checked="" type="checkbox"/>	EXHAUST AIR
OA	<input checked="" type="checkbox"/>	OUTSIDE AIR
EF	<input checked="" type="checkbox"/>	EXHAUST FAN
		HVAC SHAFTS
		SUPPLY DUCT - NEW
		SUPPLY DUCT - EXISTING
		SUPPLY DUCT - DEMO
		SUPPLY DUCT - NEW
		SUPPLY DUCT - EXISTING
		SUPPLY DUCT - DEMO
		EXHAUST DUCT - NEW
		EXHAUST DUCT - EXISTING
		EXHAUST DUCT - DEMO
MECHANICAL CALL-OUTS		
EQUIPMENT		-TYPE -UNIT CALL-OUT
		DUCT TERMINATION -TYPE -FLOW (CFM) XXXX -SIZE



1 CEILING EXHAUST FAN DETAIL
NO SCALE

CODES & DESIGN CRITERIA

JURISDICTION:	KANAB, UTAH
MECHANICAL CODE:	2018 INTERNATIONAL MECHANICAL CODE
ENERGY CODE:	2018 INTERNATIONAL ENERGY CODE
ELEVATION:	4,553 FT. ABOVE SEA LEVEL
WINTER DESIGN DB:	26.6 DEG. F.
SUMMER DESIGN TEMP DB/ WAB:	106.3 DEG. F. / 66.2 DEG. F.
DB DESIGN FOR AIR COOLED EQUIPMENT:	93.6 DEG. F.

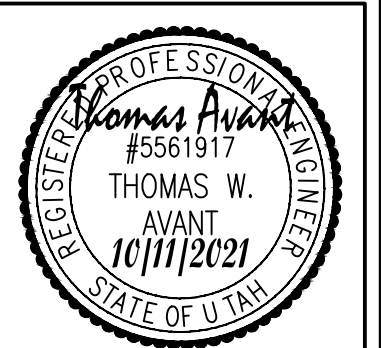


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**KANE COUNTY JAIL YARD IMPROVEMENTS
MECHANICAL COVER
SHEET**
KANAB, UT 84741

INITIAL SUBMITTAL:	02/23/2021
REV#:	
DATE:	
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DRAWN BY: GA

SCALE: NTS

SHEET:

M0.1

MECHANICAL SPECIFICATIONS

GENERAL SPECIFICATIONS

1. SCOPE:

PROVIDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO INSTALL AND MAKE READY FOR OWNER'S USE COMPLETE SYSTEMS OF HEATING, VENTILATION, AIR CONDITIONING (HVAC), PLUMBING, FOR THE PROPOSED WORK AND BUILDING RENOVATIONS AS SHOWN ON THE DRAWINGS AND CALLED FOR IN THESE SPECIFICATIONS.

VISIT THE SITE TO OBTAIN DIMENSIONS, EXISTING LAYOUTS AND LOCATIONS AND EXISTING CONSTRUCTION DETAILS NOT SHOWN ON THESE DRAWINGS.

2. BIDDERS RESPONSIBILITY:

EXAMINE THE DRAWINGS AND SPECIFICATIONS AND VISIT THE WORK SITE. BECOME FAMILIAR WITH THE CHARACTER OF THE WORK, THE COORDINATION WITH OTHER TRADES REQUIRED, AND ANY OTHER CONDITIONS THAT AFFECT THE COMPLETION OF THIS WORK.

3. PERMITS, CODES AND LAWS:

APPLY FOR ALL PERMITS AND PAY ALL FEES.

ALL WORK SHALL BE IN ACCORDANCE WITH LATEST EDITIONS OF THE FOLLOWING RULES AND REGULATIONS, HEREIN REFERRED TO AS "CODES":

THE LATEST OR ADOPTED EDITION OF THE APPLICABLE LOCAL, STATE, AND FEDERAL BUILDING, MECHANICAL, SANITATION, PLUMBING, ETC. CODES.
UNDERWRITERS LABORATORIES, INC. (U.L.)
NATIONAL FIRE PROTECTION ASSOCIATION (N.F.P.A.)
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A.)

WHERE ANY OF THESE CODES ARE AT VARIANCE WITH THE DRAWINGS AND SPECIFICATIONS, THEIR REQUIREMENTS SHALL TAKE PRECEDENCE, UNLESS THE DRAWINGS AND SPECIFICATIONS REQUIREMENTS EXCEED THESE CODES. INCLUDE ANY COST NECESSARY TO MEET THESE CODES IN THE BID PRICE.

4. MECHANICAL PLANS:

THE MECHANICAL PLANS ARE DIAGRAMMATIC AND BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT. VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO BE USED.

INSTALLATION SHALL BE WITHIN THE LIMITATIONS IMPOSED BY THE ARCHITECTURAL, STRUCTURAL, HVAC, ELECTRICAL, AND PLUMBING REQUIREMENTS WITH ADEQUATE SPACE FOR MAINTENANCE.

5. QUESTIONS AND CLARIFICATIONS OF BID DOCUMENTS:

BIDDERS SHALL NOT RELY ON ANY ORAL CLARIFICATION OF THE DRAWINGS OR SPECIFICATIONS. ANY QUESTIONS OR CLARIFICATIONS SHALL BE REFERRED IN WRITING TO THE ARCHITECT.

6. GUARANTEES:

ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP SHALL BE GUARANTEED IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. WARRANTIES SHALL BE IN WRITING AND SHALL INCLUDE FACTORY WARRANTIES FOR EACH PIECE OF EQUIPMENT. PROVIDE A CERTIFICATE FOR EACH PIECE OF EQUIPMENT. CLEARLY INDICATE ON EACH THE MODEL NO., SERIAL NO., LOCATION, AND OWNER'S NAME.

7. COMPLETE SYSTEM:

ALL PRODUCTS, MATERIALS AND ACCESSORIES SHALL BE FURNISHED AND INSTALLED AS REQUIRED FOR A COMPLETE SYSTEM READY FOR OWNER'S BENEFICIAL USE.

8. WORKMANSHIP:

ALL WORK SHALL BE PERFORMED BY COMPETENT MECHANICS USING PROPER TOOLS AND EQUIPMENT TO PRODUCE FIRST QUALITY WORK. ALL WORK SHALL BE NEATLY INSTALLED, ACCESSIBLE FOR MAINTENANCE, AND COMPLETE WITH ALL ACCESSORIES REQUIRED.

9. ACCESSIBILITY:

INSTALL ALL EQUIPMENT AND THEIR APPURTENANCES SUCH AS, BUT NOT LIMITED TO, VALVES, COILS, DRAIN PANS, DRAINS, DAMPERS, CONTROLS, MOTORS, CONTROLLERS, ETC., SO THAT THEY CAN BE SERVICED, RESET, REPLACED OR RE-CALIBRATED, ETC. INSTALL ALL NECESSARY ACCESS PANELS AND BUILDING ACCESS DOORS, AS BELOW WHERE REQUIRED TO ACCOMPLISH THIS. IF ANY EQUIPMENT OR COMPONENTS DO NOT FIT WHERE INTENDED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING, REQUESTING FURTHER GUIDANCE.

PROVIDE BUILDING ACCESS DOORS FOR ALL MECHANICAL EQUIPMENT REQUIRING SERVICE, INCLUDING BUT NOT LIMITED TO, AHU'S, FANS, DAMPERS, DUCT ACCESS PANELS, CONTROLS, PIPING, VALVES, REGULATORS, TRAPS, ETC. INSTALLED ABOVE HARD CEILING, BEHIND WALLS, AND BELOW FLOORS, FOR INSTALLATION BY OTHER DIVISIONS OF THE WORK. BUILDING ACCESS DOORS ARE NOT REQUIRED WHERE THE MECHANICAL EQUIPMENT IS INSTALLED ABOVE LAY-IN AND ACCESSIBLE SPLINE CEILING. OTHER TYPES OF SPLINE CEILING REQUIRE BUILDING ACCESS DOORS.

SIZE THE BUILDING ACCESS DOORS FOR THE USE INTENDED, BUT NOT LESS THAN 12 INCHES BY 12 INCHES. WHERE HUMAN ACCESS IS REQUIRED, PROVIDE 24 INCHES BY 24 INCHES, OR LARGER.

WHERE BUILDING ACCESS DOORS CANNOT BE INSTALLED FOR STRUCTURAL OR ARCHITECTURAL REASONS, NOTIFY THE ARCHITECT.

PRIME COAT BUILDING ACCESS DOORS IN PAINTED AREAS WITH FINISH PAINTING AS SPECIFIED IN OTHER DIVISIONS. IN WET AREAS, TOILET ROOMS OR AREAS WITH CERAMIC TILE FLOORS OR WALLS, PROVIDE STAINLESS STEEL BUILDING ACCESS DOORS.

PROVIDE BUILDING ACCESS DOORS WITH A CONCEALED KEY OPERATED LOCK AND CONCEALED HINGES. ALL LOCKS SHALL BE KEYED ALIKE.

PROVIDE BUILDING ACCESS DOORS AS SPECIFIED IN OTHER DIVISIONS OF THE WORK OR PROVIDE MILCOR DOORS, OR EQUIVALENT, SUITABLE FOR THE INSTALLATION INTENDED. PROVIDE FIRE RATED DOORS FOR ALL FIRE RATED WALL PARTITIONS, AND CEILING.

10. WORK BY OTHER TRADES:

FURNISH ALL SLEEVE FRAMES, BUILDING ACCESS DOORS, PREFABRICATED EQUIPMENT CURBS, ROOF CURBS, ETC. FOR INSTALLATION BY OTHER TRADES.

INSTALL ALL MOTORS AND FURNISH THE STARTING EQUIPMENT AND DISCONNECTS TO THE ELECTRICAL SUBCONTRACTOR FOR INSTALLATION. CONTROL WIRING, INCLUDING SWITCHES, THERMOSTATS, INTERLOCKS, ETC. SHALL BE FURNISHED BY MECHANICAL SUBCONTRACTOR. ENSURE THAT THE ELECTRICAL EQUIPMENT MOUNTED NEAR THE MECHANICAL EQUIPMENT DOES NOT BLOCK ACCESS TO SERVICE AREAS OF THE MECHANICAL EQUIPMENT. DO NOT ALLOW ANY EQUIPMENT TO BE INSTALLED ON THE HVAC EQUIPMENT ENCLOSURES.

11. FIRE STOPPING:

ALL PENETRATIONS OF FLOORS AND OTHER FIRE-RELATED ASSEMBLIES SHALL BE FIRE AND SMOKE-STOPPED IN STRICT ACCORDANCE WITH THE APPLICABLE CODES.

12. FOUNDATIONS AND SPECIAL SUPPORTS:

FURNISH AND INSTALL ALL SPECIAL FOUNDATIONS AND SUPPORTS REQUIRED FOR EQUIPMENT INSTALLED UNDER THIS SECTION, UNLESS THEY ARE A PART OF THE BUILDING STRUCTURE AND ARE SHOWN IN OTHER SECTIONS.

13. CLEANING AND PAINTING:

THOROUGHLY CLEAN ALL EQUIPMENT AND REMOVE ALL TRASH, CARTONS, ETC. MAKE ANY NECESSARY CORRECTIONS OR REPAIR/REPLACE ANY DAMAGED MATERIALS OR EQUIPMENT. LEAVE THE ENTIRE SYSTEM IN A THOROUGHLY CLEAN AND ORDERLY MANNER.

ANY FINISHED SURFACES THAT HAVE BEEN SCRATCHED OR DISCOLORED SHALL BE TOUCHED-UP OR REPAINTED BREAK TO BREAK WITH PAINT TO MATCH THE ORIGINAL COLOR. TOUCH UP PAINTED SURFACES OR REPAINT THE ENTIRE SURFACE IF TOUCH UP IS UNACCEPTABLE. SEE ARCHITECTURAL PAINTING SPECIFICATIONS.

ALL METAL ITEMS SUBJECT TO RUSTING, INSIDE OR EXPOSED TO WEATHER SHALL BE GIVEN ONE COAT OF PROPER TYPE RUST PREVENTATIVE PRIMER AS SOON AS INSTALLED. APPLY TWO FINISH COATS WITH COLOR TO BE SELECTED BY THE ARCHITECT.

FOR ALL INTERIOR OR EXTERIOR STRUCTURAL GALVANIZED STEEL, COLD GALVANIZE ALL EXPOSED METAL. CUT ENDS, HOLES, WELDS, SCRATCHES, ETC., OR HOT DIP GALVANIZE THE ENTIRE STRUCTURE OR FRAME AFTER FABRICATION AND MOUNTING HOLES ARE CUT.

UPON COMPLETION OF THE INSTALLATION, BUT NOT BEFORE, AND BEFORE ACCEPTANCE, THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, PIPING, DUCTWORK, INSULATION JACKETS, ETC. REMOVE ALL STICKERS, LABELS, MARKINGS, WRITING, IDENTIFICATION, ADHESIVE, SEALER, GLUE, RUST, CORROSION, ETC. FROM THEIR EXTERIOR SURFACES.

THE CLEANLINESS AND PAINTING ACCEPTABILITY IS AT THE SOLE DISCRETION OF THE ARCHITECT AND MAY REQUIRE ADDITIONAL CLEANING AND COATS OF PAINT BEFORE ANY SURFACE IS ACCEPTED.

14. SUBMITTALS:

SUBMITTAL AND SHOP DRAWINGS:

SUBMIT MANUFACTURER'S CERTIFIED DATE RELATIVE TO ALL EQUIPMENT, PIPING, DUCTWORK, CONTROLS, ETC. REQUIRED FOR THE INSTALLATION OF THE HVAC, PLUMBING, AND FIRE PROTECTION SYSTEMS. SUBMIT FOR REVIEW ALL NECESSARY ENGINEERING, PRODUCT AND INSTALLATION DATA, SHOP DRAWINGS, SAMPLES ETC. FOR ALL EQUIPMENT MATERIAL, AND SYSTEMS TO ASCERTAIN COMPLIANCE WITH THE TECHNICAL REQUIREMENTS OF THE CONTRACT DOCUMENTS.

SUBMIT ELECTRONIC COPIES OF ALL NECESSARY DATA, CUTS, MANUFACTURER'S SELECTIONS, CATALOGS, BULLETINS, INSTALLATION INSTRUCTIONS, DRAWINGS, DIAGRAMS, CURVES, ETC. CLEARLY INDICATE ON THE SUBMITTED DATA, THE MANUFACTURER'S NAME, PRODUCT NUMBER(S), OPTIONS, EQUIPMENT CAPACITY, DIMENSIONAL DATA, WEIGHTS, AND OTHER APPLICABLE TECHNICAL DATA FOR THE PROJECT.

TRADE NAMES, MANUFACTURERS, AND CATALOGUE NUMBERS ARE MENTIONED HEREIN AND ON THE FOLLOWING DRAWINGS SOLELY IN ORDER TO ESTABLISH A STANDARD FOR THE TYPE OF GENERAL DESIGN, AND QUALITY OF PRODUCT REQUIRED. OTHER PRODUCTS SIMILAR IN DESIGN OF EQUIVALENT QUALITY CAPABLE OF FITTING WITHIN THE SPACES ALLOCATED AND COMPLYING WITH THE DRAWINGS AND SPECIFICATION WILL BE CONSIDERED AFTER THE CONTRACT IS LET UNLESS "PRIOR APPROVAL" REQUIREMENTS ARE SET FORTH IN THESE DOCUMENTS.

WHERE TWO OR MORE MANUFACTURERS OR MATERIALS ARE NAMED, THE CONTRACTOR MAY SUBMIT ANY OF THOSE NAMES, PROVIDED THEY CONFORM TO THE SPECIFICATIONS AND DESIGN INTENT. CONTRACTORS SHALL INCLUDE WITH THE SUBMITTAL A LIST OF ALL COMPARATIVE FEATURES INDICATING COMPLIANCE WITH THE SPECIFICATIONS.

THE ARCHITECT AND/OR ENGINEER MAY REQUIRE THE SUBMISSION OF SAMPLES, PARTICULARLY WHEREVER EQUIPMENT OR APPLIANCES ARE VISIBLE IN FINISHED AREAS SUCH AS CEILING, INTERIOR AND EXTERIOR WALLS. THE CONTRACTOR AND SUPPLIER SHALL ARRANGE FOR DEMONSTRATIONS OF INSTALLATION OF ANY OF THESE PRODUCTS AND THEIR ABILITY TO PERFORM AS SPECIFIED, IF REQUIRED.

REVIEW OF SUBMITTALS AND SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR FITTING THE EQUIPMENT IN THE SPACE ALLOTTED WITH SPACE FOR ALL CONNECTIONS AND SERVICING AND FOR THE COORDINATION OF THE WORK WITH WORK OF OTHER TRADES.

THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS AND SHOP DRAWINGS AND INDICATE BY STAMP OR LETTER THAT HE HAS REVIEWED THEM, BEFORE FORWARDING THEM TO THE ARCHITECT AND/OR ENGINEER. SUBMITTALS AND DRAWINGS WILL BE RETURNED AFTER REVIEW INDICATING WHETHER EXCEPTIONS ARE TAKEN, THE SUBMITTAL RETURNED WITH CORRECTIONS, OR IS COMPLETELY REJECTED. RESUBMISSION OF REVISED SUBMITTALS AND SHOP DRAWINGS, IF REQUIRED, SHALL BE DONE BEFORE INSTALLATION AND CONSTRUCTION IS BEGUN.

CORRECTIONS OR COMMENTS MADE ON THE SUBMITTALS AND DRAWINGS DURING THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THIS REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION PROCESSES, TECHNIQUES OF CONSTRUCTION, COORDINATING THE WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING WORK IN A SAFE AND SATISFACTORY MANNER. REVIEW OF THE SUBMITTALS SHALL NOT PERMIT ANY DEVIATION FROM PLANS AND SPECIFICATIONS.

SUBMITTALS FOR A SPECIFIC CLASS OF PRODUCTS, SYSTEMS, INSTALLATIONS PROCEDURES, SHOP DRAWINGS, ETC. WILL BE REVIEWED BY THE ENGINEER ONE TIME AND ITS RE-SUBMITTAL ONE TIME, IF NECESSARY, AS ABOVE, AT NO COST TO THE CONTRACTOR. THE CONTRACTOR WILL BEAR THE FULL COST FOR ALL SUBSEQUENT RE-SUBMITTAL REVIEWS AT THE ENGINEER'S STANDARD HOURLY RATES. PAYMENT WILL BE REQUIRED AT COMPLETION OF RESPECTIVE REVIEW.

REQUIRED SHOP DRAWINGS:

SUBMIT THE FOLLOWING SHOP DRAWINGS BEFORE ANY MECHANICAL DUCTWORK, PIPING, EQUIPMENT, ETC. IS FABRICATED AND INSTALLED. SUBMIT THESE SHOP DRAWINGS IN 1/4 INCH PER FOOT MINIMUM SCALE WITH NECESSARY PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ISOMETRICS. SUBMIT ELECTRONIC AND ONE (1) CD-ROM WITH ALL THESE DRAWINGS IN AUTO CAD DRAWING DWG FILES, LATEST AUTOCAD FORMAT.

SOON AFTER AWARD OF THE CONTRACT, DETERMINE WHERE THERE MAY BE INSTALLATION, SPACE CONCERNS, AND/OR WHERE OTHER CONFLICTS MAY OCCUR. SUBMIT COORDINATION DRAWINGS, RELATING TO THESE CONFLICTS WITH THE MECHANICAL EQUIPMENT, DUCT, PIPING, ELECTRICAL, STRUCTURAL AND ARCHITECTURAL SYSTEMS ETC., SHOWING CLEARANCES AND RELATIONSHIP TO STRUCTURAL MEMBERS, PIPING, LIGHTS, CONDUITS, ELECTRICAL EQUIPMENT, AND BUILDING COMPONENTS. IN PREPARING THESE SHOP DRAWINGS, ESTABLISH LINES AND LEVELS FOR ALL DIVISIONS OF THE WORK IN THE AFFECTED AREA. IMMEDIATELY CALL TO THE ATTENTION OF THE ARCHITECT ANY INTERFERENCE OR CONFLICT FOR CLARIFICATION IN WRITING.

SUBMIT SHOP DRAWINGS FOR ALL DUCT WORK.

SUBMIT LAYOUT DRAWINGS OF EACH MECHANICAL SYSTEM SHOWING THE LOCATION, ARRANGEMENT, ETC. OF ALL EQUIPMENT, ALL TRADES ETC. TO BE INSTALLED RELATED TO THE RESPECTIVE SYSTEM.

MAINTAIN DAILY UPDATED DRAWINGS SHOWING DEVIATIONS FROM CONSTRUCTION DOCUMENTS. AT THE END OF THE PROJECT, PROFESSIONALLY PREPARE AS-BUILT DRAWINGS AND SUBMIT THREE COPIES, ONE REPRODUCIBLE.

15. AS-BUILT DRAWINGS:

MAINTAIN DAILY UPDATED DRAWINGS SHOWING DEVIATIONS FROM CONSTRUCTION DOCUMENTS. AT THE END OF THE PROJECT, PROFESSIONALLY PREPARE AS-BUILT DRAWINGS AND SUBMIT THREE COPIES, ONE REPRODUCIBLE.

16. OPERATION AND MAINTENANCE MANUALS:

UPON COMPLETION OF THE PROJECT, SUBMIT THREE COPIES OF ALL OPERATION AND MAINTENANCE MANUALS, WARRANTIES, SPARE PARTS LIST, AS BUILT DRAWINGS, TEST AND BALANCE REPORTS, AND LETTER OF GUARANTEE ALL BOUND IN THREE RING BINDERS, CLEARLY SHOWING WHICH EQUIPMENT WAS SUPPLIED TO THE JOB.

17. PROJECT COMPLETION:

BEFORE STARTING AND TESTING ANY SYSTEM, HVAC, OR PLUMBING, TO PREVENT INADVERTENT OPERATION OF THE MECHANICAL EQUIPMENT BEFORE THE MANUFACTURERS INSPECTION AND TESTING THE CONTRACTOR SHALL:

VERIFY THAT ALL ELECTRICAL POWER IS OFF TO ALL MECHANICAL EQUIPMENT, INCLUDING THE AHU'S, ACCU'S, BOOSTER PUMP, FIRE PUMPS, ETC.

LOCK OUT EACH SYSTEM USING SETON MODEL NUMBER 70329; "DO NOT OPERATE" LOCK ON LOCKOUT TAGS, OR EQUIVALENT. INSTALL LOCKOUT TAGS AT EACH PIECE OF EQUIPMENT, ELECTRICAL DISCONNECTS, STARTERS, SWITCHES, ETC.

REMOVE THESE TAGS ONLY WHEN THE MANUFACTURER APPROVES OF THE EQUIPMENT INSTALLATION IN WRITING.

EACH MANUFACTURER OR THEIR REPRESENTATIVE SHALL INSPECT THEIR EQUIPMENT FOR COMPLIANCE TO THEIR INSTALLATION REQUIREMENTS AND RECOMMENDATIONS.

IN ADDITION, THE COMPRESSOR MANUFACTURER SHALL INSPECT EACH REFRIGERANT PIPING INSTALLATION FOR THE ADHERENCE TO THE APPROVED REFRIGERANT PIPING DIAGRAMS, ROUTING.

EACH MANUFACTURER SHALL PREPARE A PUNCH LIST OF ALL DEFICIENCIES, IN WRITING WITH COPIES TO THE ARCHITECT AND CONTRACTOR.

EACH MANUFACTURER SHALL RE-INSPECT THE THE EQUIPMENT AFTER THE CONTRACTOR HAS CORRECTED ALL DEFICIENCIES.

WHEN THE MANUFACTURER HAS GIVEN THEIR WRITTEN APPROVAL WITH COPIES TO THE ARCHITECT AND CONTRACTOR, THE CONTRACTOR MAY REMOVE THE LOCKOUT TAGS, SAFELY START, AND TEST THE EQUIPMENT, AS REQUIRED HEREIN.

CONTRACTOR SHALL PROVIDE FOR ALL NECESSARY DRILLING OF WALL STUDS, CEILING JOISTS, PLATES, FINISHES, ETC. TO ACCOMMODATE ROUTING AND INSTALLATION OF ALL PIPING, DUCT, ETC.

DIVISION 23 SPECIFICATIONS:

HVAC EQUIPMENT, METHODS AND MATERIALS

18. DUCTWORK GENERAL:

DUCT SIZES SHOWN ON THE DRAWINGS ARE INSIDE DIMENSIONS AND DO NOT TAKE INTO ACCOUNT LINING THICKNESS. DUCTWORK SHALL BE GALVANIZED SHEET METAL WITH GAUGES, CONSTRUCTION DETAILS AND INSTALLATION ACCORDING TO N.F.P.A. STANDARD 90A ASHRAE, AND SMACNA DUCT CONSTRUCTION MANUALS AND REQUIREMENTS.

PROVIDE FLEXIBLE CONNECTIONS AT AIR HANDLING UNITS AND FANS.

PROVIDE SINGLE THICKNESS TURNING VANES IN ELBOWS.

ALL DUCTS 18" AND OVER SHALL BE CROSS-BROKEN

PAINT DUCTS, SLEEVES, PLENUMS, ETC. INTERIORS VISIBLE THROUGH AIR DEVICES WITH A MINIMUM OF ONE COAT OF PROPER TYPE RUST PREVENTATIVE PRIMER, SUITABLE FOR GALVANIZED STEEL, AND TWO FINISH COATS OF FLAT BLACK PAINT.

19. DUCT CONSTRUCTION MATERIALS:

RECTANGULAR SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST: LINED GALVANIZED SHEET METAL ROUND DUCT AND RUN-OUTS EXTERNALLY INSULATED GALVANIZED SHEET METAL DUCTS WITH SPIRAL LOCK SEAMS. FLEXIBLE DUCT: PRE-INSULATED FLEXIBLE DUCT, NO FLEXIBLE DUCT RUNS LONGER THAN 5 FEET.

PROVIDE DRYER VENT PIPING INSTALLED AS REQUIRED BY THE MANUFACTURER AND PER CODE USING 4 INCH ROUND GALVANIZED STEEL, SEALED AND SUPPORTED. THE USE OF FLEXIBLE DRYER VENT PIPE IS PROHIBITED.

20. FABRICATION, ERECTION AND SUPPORT:

ALL DUCTWORK SHALL BE FABRICATED, ERECTED AND SUPPORTED IN STRICT ACCORDANCE WITH THE LATEST EDITIONS OF SMACNA AND ASHRAE REQUIREMENTS.

21. ACOUSTIC LINED DUCTWORK:

ACOUSTICALLY AND THERMALLY LINE 10' OF RECTANGULAR SUPPLY RETURN, OUTSIDE AIR AND EXHAUST DUCT AND PLENUMS WITH 1-1/2" THICK, 1-1/2" PCF FIBERGLASS DUCT LINER (R-6 MIN.) APPLIED PER THE MANUFACTURER'S AND NAIMA REQUIREMENTS. DUCT LINER SHALL MEET OR EXCEED ASHRAE'S I.A.Q. STANDARD 62 AND IECC. USE WELDED STICK CLIPS, IN LIEU OF ADHESIVE TYPE FASTENERS AND FULL COVERAGE ADHESIVE. PROVIDE EDGE NOSINGS WHERE REQUIRED. COAT ALL EXPOSED FIBERGLASS WITH HARDCAST "LAG-GRIP 61".

22. JOINT SEALINGS:

SEAL ALL DUCT JOINTS AND SEAMS (LONGITUDINAL AND TRANSVERSE) WITH HIGH PRESSURE DUCT SEALER, HARDCAST "IRON-GRIP 60" OR APPROVED EQUIVALENT. REINFORCED FOIL BACKED TAPES, CLOTH OR PLASTIC BACKED TAPES (DUCT TAPE) ARE NOT ACCEPTABLE.

23.FLEXIBLE AIR DUCT:

DUCT SHALL BE UL LISTED UL-181, CLASS 1 AIR DUCT MATERIAL AND SHALL COMPLY WITH N.F.P.A. 90A AND 90B AND ALL LOCAL REQUIREMENTS, DUCT SHALL HAVE AN OPERATING AIR PRESSURE OF 6 INCHES WG POSITIVE AND 4 INCHES WG NEGATIVE, ACOUSTICAL DOUBLE LAMINATED INNER FABRIC BONDED TO STEEL HELIX WIRE. OUTER JACKET FIRE RETARDANT REINFORCED ALUMINUM MYLAR WITH FIBERGLASS INSULATION. FLEXMASTER TYPE "SM" ACOUSTICAL INSULATED OR EQUIVALENT.

MAKE ALL FLEXIBLE DUCT CONNECTIONS TO HARD DUCT USING STAINLESS STEEL, SCREW CLAMPING BANDS AND SEALED AIR TIGHT WITH HIGH PRESSURE DUCT SEALER. PLASTIC BANDS ARE NOT ACCEPTABLE.

24. AIR DISTRIBUTION DEVICES:

COORDINATE THE EXACT LOCATIONS OF ALL AIR DEVICE NEEDS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION. COORDINATE THE EXACT LOCATION OF EACH OUTLET WITH THE ARCHITECT WITH REGARD TO CEILING AND WALL SPACING, CENTERING ALONG SOFFITS, WALLS, ETC.

FURNISH AND INSTALL WHERE SHOWN ON THE DRAWINGS ALL DIFFUSERS, GRILLES, AND REGISTERS OF THE SIZE, TYPE, AND CAPACITY AS INDICATED ON THE AIR DEVICE SCHEDULE.

ELBOWS:

25. TURNING VANES AND SMOOTH RADIUS ELBOW (WITHOUT VANES):

AT ALL DUCT TURNS OF 45 DEGREES OR MORE, PROVIDE SINGLE THICKNESS TURNING VANES PER SMACNA REQUIREMENTS. ALTERNATIVELY, USE SMOOTH RADIUS ELBOW (R/W = 1.5).

26. BRANCH TAKEOFF FITTINGS:

AT ALL MAIN BRANCH DUCT TAPS, TAKEOFFS, OR RUN-OUTS PROVIDE 45 DEGREE ENTRANCE TAPS, AS DETAILED BY SMACNA STANDARDS.

27. DUCT MOUNTED ACCESS PANELS:

INSTALL ACCESS PANELS AS FOLLOWS:

AT INLET OF EACH DUCT MOUNTED FIRE AND MOTORIZED DAMPER.

FOR DUCT MOUNTED CONTROLS.

AS REQUIRED AND DIRECTED BY THE TEST AND BALANCE CONTRACTOR.

WHERE REQUIRED FOR DUCT INSPECTION, MAINTENANCE, AND CLEANING.

ACCESS PANELS SHALL BE 18 INCHES X 18 INCHES OR LARGEST DUCT WILL ALLOW. NORMALLY CENTER THE ACCESS PANEL ON THE BOTTOM OF THE DUCT AS CLOSE AS POSSIBLE TO THE DUCT MOUNTED DEVICE. ACCESS PANELS MAY BE INSTALLED ON THE SIDE OF THE DUCT, WHERE NECESSARY.

ACCESS PANELS SHALL BE DOUBLE WALL INSULATED HINGED WITH NEOPRENE GASKETS AND CAM LOCKS ON EACH UNHINGED SIDE. WHERE REQUIRED BECAUSE OF PANEL OPENING CLEARANCE, SUBSTITUTE UNHINGED ACCESS PANELS WITH CAM LOCKS ON EACH SIDE AND CAPTIVE CHAIN. ACCESS PANELS SHALL BE FLEXMASTER "TBSM-TAB DOOR" GREENHECK MODEL "HAD-10" OR EQUIVALENT.

INSULATION:

28. GENERAL

THIS SECTION APPLIES TO ALL MECHANICAL WORK.

ALL INSULATION SHALL BE IN STRICT ACCORDANCE WITH ASHRAE STANDARDS AND ALL LOCAL AND STATE ENERGY CODES.

THE INSULATION WORK SHALL BE PERFORMED BY A FIRM REGULARLY ENGAGED IN THIS TYPE OF WORK USING MECHANICS SKILLED IN THE TRADE.

INSTALL ALL MATERIALS AS RECOMMENDED BY THE MANUFACTURER FOR THE SERVICE INTENDED. ALL INSULATION MATERIAL, INCLUDING SEALER MATERIAL, ADHESIVES, COVERING MATERIAL, FINISH, ETC. SHALL HAVE A U.L. LISTED FLAME SPREAD RATING NOT OVER 24 WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION AND WITH A SMOKE DEVELOPED RATING NOT HIGHER THAN 50. ALL COATINGS AND COVERINGS FOR HOT SERVICE SHALL BE BREATHER TYPE AND VAPOR BARRIER TYPE FOR COLD SERVICE.

29. EQUIPMENT:

CAPACITY, PERFORMANCE AND CHARACTERISTICS OF EQUIPMENT SHALL BE AS INDICATED ON THE DRAWINGS AND AS SPECIFIED OR IMPLIED HEREIN. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INCREASED COST TO HIMSELF OR OTHERS FOR EQUIPMENT WHICH DEVIATES FROM THAT SCHEDULED OR IMPLIED HEREIN. REGARDLESS OF COST AFFECT, THE ARCHITECT MUST APPROVE ANY DEVIATION FROM THE DRAWINGS AND THE SPECIFICATION.

30. MOTORS AND STARTERS:

ALL ELECTRIC MOTORS SHALL BE HIGH EFFICIENCY TYPE WITH MAXIMUM OF 1750 RPM WITH OPEN DRIP PROOF OR TFC ENCLOSURES, UNLESS OTHERWISE NOTED. MOTORS LOCATED ON AIR HANDLING UNITS SHALL BE MOUNTED IN RUBBER SUPPORTS OR THE FAN SHALL BE INDEPENDENTLY SUPPORTED ON SPRING ISOLATORS. MOTORS LOCATED IN THE CONDITIONED SPACE SHALL BE SELECTED FOR QUIET OPERATION AND SHALL NOT PRODUCE AN OBJECTIONABLE "MOTOR NOISE" IN THE SPACE.

ELECTRICAL CHARACTERISTIC SHALL BE VERIFIED FROM THE ELECTRICAL DRAWINGS, PRIOR TO BIDDING, AND VERIFIED ON THE JOB WITH THE ELECTRICAL SUB-CONTRACTOR. IF A CONFLICT ARISES, THE ELECTRICAL DRAWINGS SHALL BE THE AUTHORITY.

PROVIDE MOTOR STARTS AND PROPER HEATER ELEMENTS SIZED IN ACCORDANCE WITH NFPA 70. STARTERS SHALL BE SQUARE-D OR EQUIVALENT WITH OVERLOAD TRIP ELEMENT IN EACH PHASE. LARGER MOTORS AND THEIR STARTS SHALL MEET THE REQUIREMENTS OF THE UTILITY COMPANY AS TO INRUSH ALLOWABLE AND THE TYPE OF STARTING PERMITTED.

SHOULD ANY MECHANICAL EQUIPMENT REQUIRE EXTRA WORK BY OTHER TRADES, FOR PROPER INSTALLATION, THIS CONTRACTOR SHALL BEAR ALL COSTS, SUCH AS INCREASED ELECTRICAL, STRUCTURAL, ROOFING, ETC.

SYSTEMS TEST AND BALANCE:

31. GENERAL REQUIREMENTS:

THE REQUIRED TEST AND BALANCE OF THE HVAC SYSTEM SHALL BE PERFORMED BY AN APPROVED INDEPENDENT TESTING AGENCY AS SPECIFIED BELOW AND IN ACCORDANCE WITH THE 2015 IECC C408.2.

32. AGENCY QUALIFICATIONS:

TEST & BALANCE AGENCY (TBA) SHALL BE PERFORMED BY AN INDEPENDENT AGENCY ENGAGED SOLELY IN TEST AND BALANCE WORK. AGENCY SHALL BE MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) AND NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).

SUBMIT A WRITTEN REPORT WITHIN 30 DAYS OF COMMENCING WORK, WITH ANY RECOMMENDED CHANGES TO INSURE BALANCING CAPABILITY.

SUBMIT A DETAILED TEST PLAN TO THE ARCHITECT ILLUSTRATING ALL FORMATS, DRAWINGS, AND TEST PROCEDURE TO BE USED FOR TESTING THE COMPLETED SYSTEM. THE APPROVED PLAN WILL BE USED FOR TESTING THE SYSTEMS. PROCEDURES SHALL INCLUDE REQUIREMENTS LISTED IN AABC/NEBB STANDARDS, LATEST EDITION AND ANY SPECIAL REQUIREMENTS FOR THIS PROJECT.

MAKE PROJECT VISITS AS REQUIRED DURING CONSTRUCTION PERIOD INSPECTING FOR PROPER INSTALLATION OF THE SYSTEM AND RELATED BALANCING DEVICES. PROJECT VISIT REPORTS SHALL BE MADE TO THE ARCHITECT IN WRITING.

33. CONTRACTORS REQUIREMENTS PRIOR TO TEST & BALANCE:

THE CONTRACTOR SHALL PERFORM ALL REQUIRED PRELIMINARY TESTS AND OTHER PREPARATORY WORK, INCLUDING BUT NOT LIMITED TO:

MAKE SURE ALL FANS ARE OPERATING, CHECK ROTATION, RPM, AND AMPS.
CHECK ALL DAMPERS FOR OPERATION.
PUT ALL HVAC EQUIPMENT IN FULL OPERATION INCLUDING AIR UNITS, ACCU'S AND FANS.
MAKE SURE ALL HVAC CONTROLS ARE INSTALLED AND FULLY OPERATIONAL.
CLEAN/REPLACE FILTERS JUST PRIOR TO TESTING.
PROVIDE ALL BALANCING DEVICE AND DRIVE CHANGES THAT ARE DEEMED NECESSARY BY T&B AGENCY FOR BALANCE AT NO ADDITIONAL COST TO THE OWNER.

34. TEST AND BALANCE:

TEST & BALANCE AGENCY SHALL BALANCE ALL AIR SYSTEMS FOR OPERATION WITHIN DESIGN CRITERIA. PRIME MOVERS SHALL BE WITHIN 5% OF DESIGN AND TERMINALS WITHIN 10% OF DESIGN.

AIR SYSTEMS SHALL BE BALANCED AS DESCRIBED HEREIN.

35. TEST REPORT:

THE TBA SHALL PREPARE FIVE (5) COPIES OF A FINAL COMPREHENSIVE TEST REPORT IN THE FOLLOWING FORMAT.

REPORT SHALL BE BOUND 8-1/2" X 11" WITH SUBSTANTIAL COVERS USING APPROVED FORMS, TYPED OR COMPUTER GENERATED REPORTS ARE ACCEPTABLE.

REPORT SHALL BE INDEXED.

TABLE OF CONTENTS SHALL LIST ALL REPORTS.

ALL AIR OUTLETS SHALL BE LOCATED ON CODED DRAWINGS PREPARED BY THE T&B AGENCY. AIR OUTLETS FORMS SHALL BE PREPARED AND CORRELATED TO THE CODED DRAWINGS.

TEST SUMMARY SHALL DESCRIBE FINAL TEST PROCEDURES AND SPECIAL CONDITIONS DURING TESTS (SUCH AS THERMOSTAT OUTSIDE/RETURN AIR RELATIONSHIP, AND DUCT STATIC PRESSURE.)

DESCRIBE OTHER DATA THAT MAY ASSIST OPERATING PERSONNEL IN THE CONTINUING OPERATION OF THE SYSTEM.

T&B CONTRACTOR SHALL TAKE AND RECORD ALL NECESSARY READINGS AT THE FINAL BALANCE POINTS, SUCH AS BUT NOT LIMITED TO: AIR QUANTITIES, PRESSURES, SET POINTS, ENTERING AND LEAVING COIL TEMPERATURES, SPACE INDOOR AND OUTSIDE WET AND DRY BULB TEMPERATURES, OUTDOOR WEATHER CONDITIONS, ELECTRICAL READINGS OF ALL NEW AND EXISTING MOTORS, COMPRESSORS, ETC.

TEST REPORT SHALL CONTAIN TBA CERTIFICATION OF TEST DATA AND SYSTEM CONDITIONS.

SUBMIT THE TEST REPORTS FOR REVIEW BEFORE SUBSTITUTIONAL COMPLETION.



Building on Solid Foundations

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KANE COUNTY JAIL YARD IMPROVEMENTS

MECHANICAL SPECIFICATIONS

KANAB, UT 84741

INITIAL SUBMITTAL: 02/23/2021

DESCRIPTION:

REV#:

DATE:

UNDERSINK ELECTRIC WATER HEATER										
TAG	LOCATION/ SERVICE	MANUFACTURER/ MODEL NO.	TYPE	WATTS	AMPS	VOLTS	PHASE	TEMP RANGE	WATER CONNECTION	DIMENSIONS
WH 1	BATHROOM	CHRONOMITE LABS	TANKLESS	2400	20	120	1	90° - 120°	3/8" COMPRESSION	9-5/8"W, 6-1/4"H, 2-3/4"D

*OR APPROVED EQUIVALENT

ELECTRIC HEATER UNITS										
TAG	LOCATION/ SERVICE	MANUFACTURER/ MODEL NO.	KW	BTUH	VOLTS	PHASE	AMPS	TYPE	WALL OPENING	NOTES
EH 1	BATHROOM/ STORAGE	BROAN	2	2560	208	1	10.8	RECESSED	14-1/4"W, 18"H, 3-3/4"D	ALL APPLY

1. THERMOSTAT, WATTAGE CONVERTIBLE, OVERLOAD PROTECTOR, PERMANENTLY LUBRICATED MOTOR
2. UL LISTED

*OR APPROVED EQUIVALENT

INDOOR UNIT SCHEDULE*										
ITEM	MANUFACTURER/MODEL	COOLING CAPACITY (KBTU/H)	HEATING CAPACITY (KBTU/H)	LOCATION	TYPE	WEIGHT (LB)	MCA (A)	HZ	VOLT/PHASE	OVERALL DIMENSIONS
IU 1	mitsubishi MSZ-GL15NA	5.0	5.6	CONFERENCE ROOM	WALL MOUNTED	22	1.0	60	208V/1Ø	11-5/8"H X 31-7/16"W X 9-1/8"D

*OR APPROVED EQUIVALENT

OUTDOOR UNIT SCHEDULE*										
ITEM	MANUFACTURER/MODEL	COOLING CAPACITY (KBTU/H)	HEATING CAPACITY (KBTU/H)	LOCATION	WEIGHT (LB)	MCA (A)	HZ	VOLT/PHASE	OVERALL DIMENSIONS	
OU 1	mitsubishi MUZ-GL15NA	14.0	18.0	CONFERENCE ROOM	22	4.5	60	208V/1Ø	21-5/8"H X 31-1/2"W X 11-1/4"D	

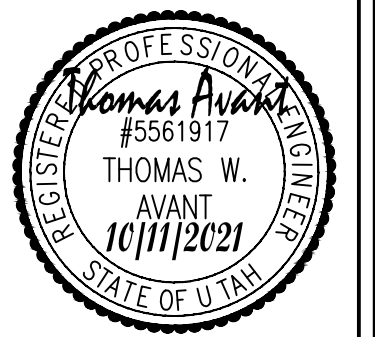
*OR APPROVED EQUIVALENT



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KANE COUNTY JAIL YARD IMPROVEMENTS
MECHANICAL SCHEDULES
KANAB, UT 84741

INITIAL SUBMITTAL:	02/23/2021	
REV#	DATE	DESCRIPTION



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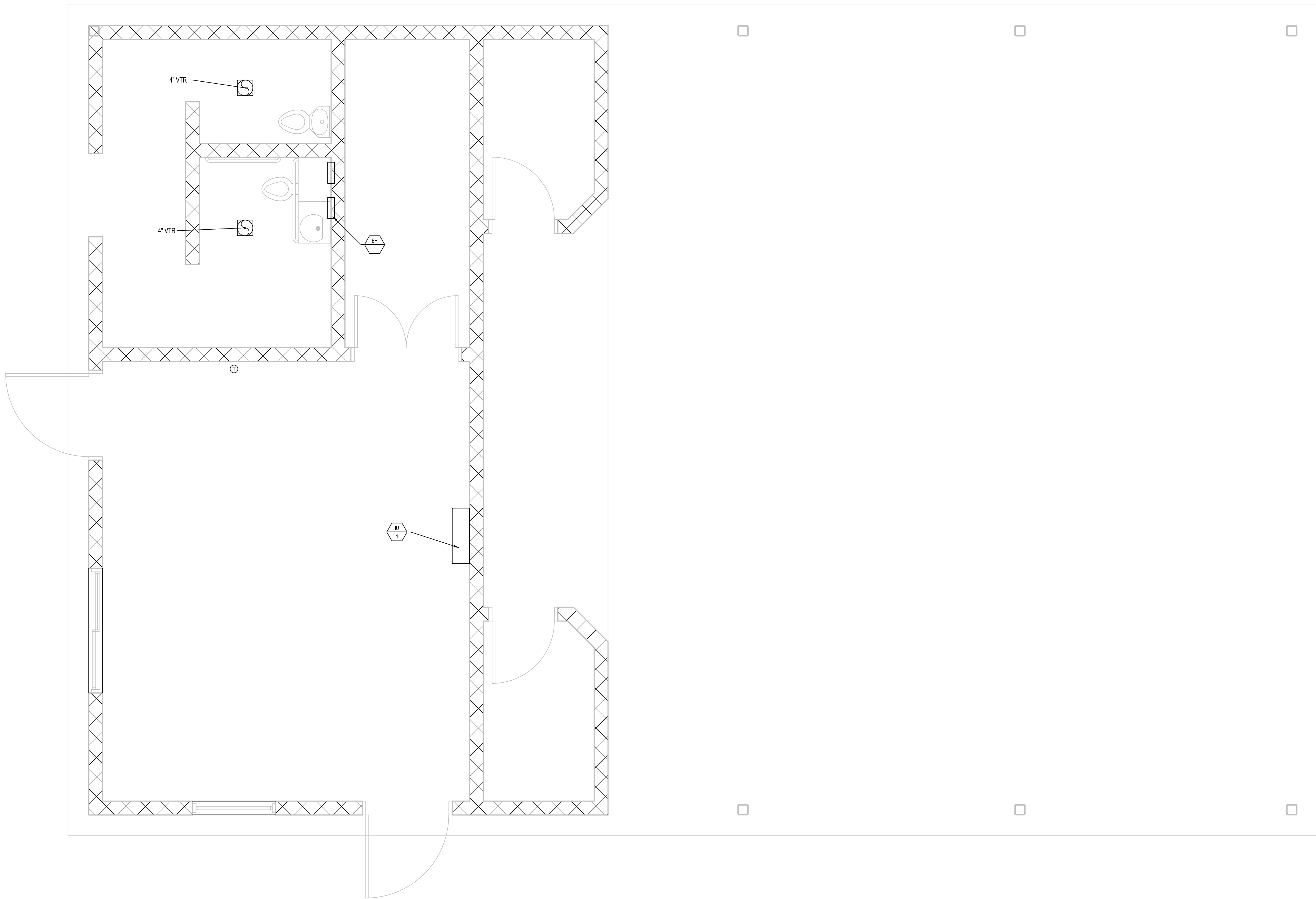
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KANE COUNTY JAIL YARD IMPROVEMENTS

MECHANICAL PLAN

KANAB, UT 84741

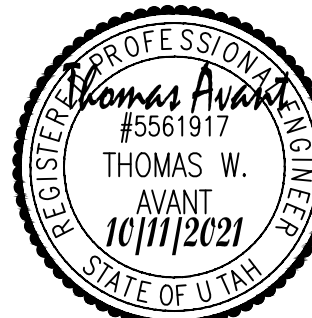


INITIAL SUBMITTAL: 02/23/2021

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GENERAL NOTES

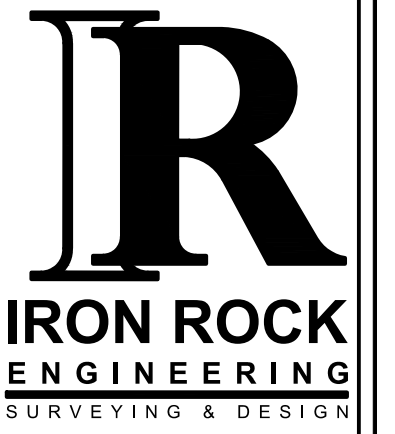
1. FINAL CONNECTIONS & ROUGH-IN REQUIREMENTS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
2. CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL, MECHANICAL AND OTHER DRAWINGS PRIOR TO BID.
3. CONTRACTOR SHALL VISIT SITE PRIOR TO BID AND VERIFY THAT CONDITIONS ARE AS INDICATED. CONTRACTOR SHALL REPORT DISCREPANCIES TO THE ARCHITECT AND INCLUDE IN HIS BID ALL COSTS REQUIRED TO MAKE HIS WORK MEET EXISTING CONDITIONS.
4. PROPOSED SUBSTITUTIONS OF ELECTRICAL EQUIPMENT OR REQUEST FOR "OR EQUAL" OR "APPROVED EQUAL" LISTING SHALL BE SUBMITTED TO ARCHITECT NOT LESS THAN TEN (10) WORKING DAYS PRIOR TO BID.
5. WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE ARCHITECT.
6. WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES AND ORDINANCES.
7. PROVIDE PERMITS AND INSPECTIONS REQUIRED.
8. PROVIDE RECORD DRAWINGS TO ARCHITECT. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, RE-ROUTINGS, ETC.
9. VERIFY EXACT LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
10. SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO THE OWNER.
11. WIRE SHALL BE COPPER, 75°C RATED FOR GENERAL USE. FOR HID FIXTURES AND WIRING WITHIN 3 INCHES OF FLUORESCENT BALLASTS WIRE SHALL BE COPPER, MINIMUM 90°C RATED, SIZES INDICATED ARE FOR INSTALLATION IN A MAXIMUM 30°C AMBIENT INSTALLATIONS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING PROVIDED UNDER THIS SECTION OR FACTORY WIRING IN EQUIPMENT PROVIDED UNDER THIS SECTION.
13. CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS OR EQUIPMENT.
14. SYSTEMS SHALL BE COMPLETE, OPERABLE AND READY FOR CONTINUOUS OPERATION. LIGHTS, SWITCHES, RECEPTACLES, MOTORS, ETC. SHALL BE CONNECTED AND OPERABLE.
15. VERIFY EXACT LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES, PIPING AND RACEWAY SYSTEMS PRIOR TO TRENCHING. PROVIDE NECESSARY TRENCHING, BACKFILL, EXCAVATION, SUPPORTS, SERVICE FEEDERS (CONDUIT AND/OR WIRE), PULL BOXES, TRANSFORMER PADS, SAW CUTTING, AND PATCHING, CONCRETE PAVING, ETC., REQUIRED. BACKFILL TRENCHES TO 90% COMPACTION AND PATCH TO MATCH EXISTING. CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS.
16. PROVIDE MAINTENANCE RECEPTACLE WITHIN 25"-0" OF ALL MECHANICAL OR MOTORIZED EQUIPMENT.
17. SEE MECHANICAL DRAWINGS FOR PLACEMENT OF MECHANICAL EQUIPMENT. PROVIDE SERVICE TO AND CONNECT EQUIPMENT AS REQUIRED. PROVIDE FUSES OR HACR-TYPE CIRCUIT BREAKERS FOR AIR CONDITIONING EQUIPMENT SIZED IN ACCORDANCE WITH MANUFACTURERS NAMEPLATE.
18. PROVIDE ENGRAVED NAMEPLATES ON PANEL BOARDS, DISCONNECT SWITCHES, ETC. INDICATING EQUIPMENT DESIGNATION (OR DESIGNATION OF EQUIPMENT SERVED) AND VOLTAGE. NAMEPLATES TO BE MECHANICALLY FASTENED.
19. PANEL DIRECTORIES SHALL BE TYPED AND INSTALLED UNDER CLEAR PLASTIC COVERS.
20. ALL WIRING SHALL BE INSTALLED IN LISTED METALLIC RACEWAYS. RACEWAYS IN SLAB-ON-GRADE OR BELOW GRADE SHALL BE SCHEDULED 40 PVC. TRANSITIONS FROM BELOW TO ABOVE GRADE SHALL BE WITH RIGID STEEL ELBOWS WITH P.V.C. JACKET OR APPROVED EQUAL PROTECTION.
21. EMT, NON-METALLIC AND FLEXIBLE METAL CONDUITS SHALL HAVE A CODE SIZED COPPER GROUNDING CONDUCTOR. INCREASE CONDUIT SIZE AS REQUIRED.
22. FIRE ALARM, SOUND, TELEPHONE, COMPUTER, AND SIMILAR SYSTEMS CONDUITS LARGER THAN 1" SHALL HAVE LONG RADIUS SWEEPS (12 TIMES THE DIAMETER)
23. ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.L.
24. WIRE TERMINATION PROVISIONS FOR PANEL BOARDS, CIRCUIT BREAKERS, SAFETY SWITCHES, AND ALL OTHER ELECTRICAL APPARATUS SHALL BE LISTED AND SUITABLE FOR 75°C.
25. RECEPTACLES INSTALLED OUTSIDE, ON THE BUILDING EXTERIOR OR ROOF, WITHIN 6' OF A SINK OR WATER COOLER CONNECTION, VENDING MACHINES, AND KITCHEN AREAS SHALL BE GFCI TYPE OR PROTECTED BY GFCI CIRCUIT BREAKER PER NEC 511.12.
26. ALL NEW EQUIPMENT SUCH AS SWITCHBOARDS, DISTRIBUTION BOARDS, DISCONNECT SWITCHES, TRANSFORMERS AND PANEL BOARDS SHALL BE BY THE SAME MANUFACTURER.
27. ELECTRICAL CONTRACTOR SHALL SUBMIT 5 COPIES OF ALL ELECTRICAL EQUIPMENT AND LIGHT FIXTURES TO ENGINEER VIA GENERAL CONTRACTOR FOR APPROVAL PRIOR TO ORDERING.
28. ELECTRICAL CONTRACTOR TO PROVIDE FINAL CONNECTION OF OWNER FURNISHED EQUIPMENT. VERIFY EXACT REQUIREMENTS PRIOR TO ROUGH IN.
29. ELECTRICAL CONTRACTOR SHALL PROVIDE DESIGN BUILD ENGINEERED FIRE ALARM SYSTEM TO BE INSTALLED. PROVIDE DEVICES, CONDUIT, WIRES, CABLE, PROGRAMMING AND TESTING AS DIRECTED BY EQUIPMENT MANUFACTURER AND LOCAL FIRE DEPARTMENT FOR A CODE COMPLIANT FIRE ALARM/DETECTION SYSTEM. MATERIALS EQUIPMENT AND WORKMANSHIP SHALL MEET PREVAILING CODES. THE SYSTEM SHALL BE COMPLETE AND OPERABLE. SUBMIT ONE LINE DIAGRAM OF SYSTEM WITH SHOP DRAWINGS. ONE LINE SHALL SHOW DEVICES, CONDUIT, WIRE, CABLE SIZES, AND BATTERY CALCULATIONS. EQUIPMENT TO BE NEW AND SHALL BE STAMPED, SIGNED, CALIBRATED AND TESTED BY FACTORY CERTIFIED TECHNICIAN.
30. HANDLE TIES SHALL BE PROVIDED FOR ALL MULTI-WIRED BRANCH CIRCUITS UNLESS INDIVIDUAL NEUTRAL CONDUCTORS ARE PROVIDED PER NEC 210.4(B)
31. PRIOR TO BID, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE LOCAL AHJ (AREA HAVING JURISDICTION) TO ENSURE TYPE NM CABLE IS SUITABLE FOR USE. IF APPROVED BY THE LOCAL AHJ THE USE OF TYPE NM CABLE SHALL BE PERMITTED PER NEC ARTICLE 334
32. TYPE NM CABLE SHALL BE PROTECTED FROM PHYSICAL DAMAGE IN ACCORDANCE TO NEC ARTICLE 300.4
33. TYPE NM AND/OR NON-METALLIC WIRING CABLE SHALL NOT BE PERMITTED ABOVE DROP CEILINGS OR IN POOL/MECH ROOMS PER NEC 2014 ARTICLE 334.12
34. EXIT SIGNS SHALL BE REQUIRED AT FLOOR LEVEL PER IBC 1011.2
35. TAMPER RESISTANT RECEPTACLES SHALL BE INSTALLED IN GUEST ROOMS AND SUITES OF HOTELS AND MOTELS PER NEC 2014 ARTICLE 406.12(B)
36. GFCI RECEPTACLE SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION PER NEC 2014 ARTICLE 210.8

LEGEND

SYMBOL	DESCRIPTION
GRND	INDICATED GROUND
PNL	INDICATED PANEL
WP	INDICATED WEATHER-PROOF (NEMA 3R)
S	SWITCH
S ₃	3 WAY SWITCH
⊕	RECEPTACLE
⊕ GFI	GFI RECEPTACLE
⊕ ARC	ARC FAULT RECEPTACLE
⊕ WP	WEATHER PROOF RECEPTACLE
□	JUNCTION BOX
☒	EXHAUST FAN W/ LIGHT
▬▬▬	ELECTRICAL PANEL
□	48" LED SURFACE LIGHT - LITHONIA LIGHTING - LBL4 4000LM 40K

CODES & DESIGN CRITERIA

JURISDICTION:	KANAB, UTAH
MECHANICAL CODE:	2017 (NEC) NATIONAL ELECTRICAL CODE
ENERGY CODE:	2018 IECC

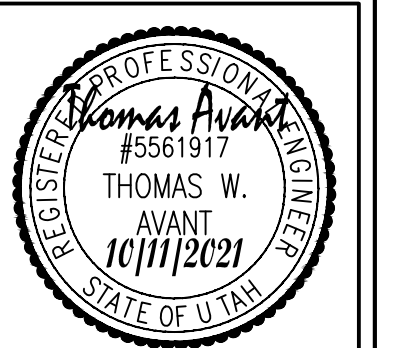


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ELECTRICAL SPECIFICATIONS

DIVISION 26 – ELECTRICAL SPECIFICATIONS

GENERAL

- GENERAL CONDITIONS:**
 - THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS AND SPECIAL CONDITIONS ARE A PART OF THIS CONTRACT AND APPLY TO THIS SECTION AS FULLY AS IF REPEATED HEREIN.
- SCOPE:**
 - THIS SECTION OF SPECIFICATIONS INCLUDES, BUT IS NOT LIMITED TO:
 - ALL LABOR, TOOLS, APPLIANCES, MATERIALS AND EQUIPMENT REQUIRED TO FURNISH AND INSTALL THE COMPLETE INSTALLATION SHOWN ON THE DRAWINGS FOR THIS SECTION OF THE WORK AND/OR IN THE FOLLOWING SPECIFICATIONS, INCLUDING THAT WHICH IS REASONABLY INFERRED.
- CODES AND REGULATIONS**
 - ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF PUBLIC AUTHORITIES HAVING JURISDICTION AND UTILITIES FURNISHING SERVICES.
 - CODES GOVERNING THIS WORK INCLUDE BUT ARE NOT LIMITED TO THE LATEST APPROVAL EDITION OF THE FOLLOWING:
 - NATIONAL FIRE PROTECTION ASSOCIATION'S NATIONAL ELECTRICAL CODE (NEC).
 - OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
 - LOCAL ORDINANCES AND REGULATIONS.
- STANDARDS:**
 - ELECTRICAL MATERIAL AND EQUIPMENT SHALL HAVE BEEN TESTED AND LISTED OR LABELED AS CONFORMING TO APPROVED PUBLISHED STANDARDS BY UNDERWRITERS LABORATORIES WHERE SUCH LISTING OR LABELING SERVICE IS AVAILABLE FOR THE CLASS OF MATERIALS OR EQUIPMENT. WHERE APPLICABLE, LISTING OR LABELING SHALL APPLY TO THE COMPLETE ASSEMBLED EQUIPMENT AND NOT TO THE COMPONENTS ALONE.
- SUBMITTALS:**
 - ELECTRONIC (PDF) OF MATERIALS LIST, SHOP DRAWINGS AND DATA SHEETS SHALL BE SUBMITTED TO ARCHITECT &/OR CONSTRUCTION MANAGER FOR REVIEW. SUBMITTALS SHALL BE MADE AND FAVORABLE REVIEW SECURED BEFORE MATERIAL AND EQUIPMENT IS INSTALLED.
 - MATERIALS LIST SHALL INCLUDE FIXTURES, SWITCHGEAR, PANELS, DEVICES, WIRE WAYS, DISCONNECTS, LAMPS AND ALL OTHER SPECIFIED OR UNSPECIFIED STANDARD CATALOGED MATERIALS TO BE USED. THE LIST SHALL INCLUDE MANUFACTURER, TYPE AND SUCH OTHER DESCRIPTIVE DATA AS MAY BE REQUIRED TO DETERMINE THE ACCEPTABILITY OF EACH ITEM.
 - SHOP DRAWINGS AND DATA SHEETS FOR EQUIPMENT AND SYSTEMS SHALL BE SUBMITTED WHERE REQUIRED IN THE SPECIFICATION FOR THOSE ITEMS. INCLUDE INFORMATION ON EACH COMPONENT, WIRING DIAGRAMS, LAYOUTS, DIMENSIONS, AND SUFFICIENT OTHER DATA TO ESTABLISH COMPLIANCE WITH THE SPECIFICATIONS AND ACCEPTABILITY OF THE EQUIPMENT OR SYSTEM.
- PERMITS AND DRAWINGS:**
 - PERMITS AND INSPECTIONS SHALL BE BY THE GENERAL CONTRACTOR.
- AS-BUILT DRAWINGS:**
 - ON A SET OF CONTRACT DRAWINGS, KEPT AT THE SITE DURING CONSTRUCTION, MARK ALL WORK THAT IS INSTALLED DIFFERENTLY FROM THAT SHOWN, INCLUDING ANY REVISED CIRCUITRY, MATERIAL OR EQUIPMENT. UPON COMPLETION OF WORK, DELIVER TO OWNER'S REP, CONSTRUCTION MANAGER A SET OF SIGNED AND DATED "AS-BUILT" DRAWINGS.
- GUARANTEE:**
 - ALL WORK SHALL BE GUARANTEED FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. THE GUARANTEE PERIOD FOR CERTAIN ITEMS SHALL BE LONGER, AS INDICATED IN THE SPECIFICATION FOR THOSE ITEMS.
 - SHOULD ANY MALFUNCTION DEVELOP DURING THE GUARANTEE TIME PERIOD DUE TO DEFECTIVE MATERIAL, FAULTY WORKMANSHIP, OR NON-COMPLIANCE WITH PLANS, SPECIFICATIONS, CODES OR DIRECTIONS OF THE OWNER, ARCHITECT, ENGINEER OR INSPECTOR, THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR AND MATERIALS TO CORRECT THE MALFUNCTION WITHOUT ADDITIONAL CHARGES.

PRODUCTS

- DRY TYPE TRANSFORMERS: (IF NOT SHOWN ON PLANS)**
 - DRY PACK TRANSFORMERS SHALL BE CONVECTION AIR COOLED INSULATED WINDING TYPE, CONSTRUCTED SO THAT ALL APPLICABLE STANDARDS ARE MET OR EXCEEDED (I.E., VENT OPENINGS, CORROSION RESISTANCE, CABLE BENDING SPACE, GROUND PROVISIONS, SOUND LEVELS AND SURFACE AND TEMPERATURE RISE). ACCEPTABLE MANUFACTURERS WILL BE SQUARE D, SEMENS, GENERAL ELECTRIC, CUTLER HAMMER OR APPROVED EQUAL.
 - TRANSFORMERS SHALL BE PROVIDED WITH: (6) 2 1/2 TAPS (FOUR FCBN AND TWO FCAN), CLASS H INSULATION FOR 115°C TEMP RISE, VENTILATED SHEET METAL ENCLOSURE, MOUNTING RAILS AND RUBBER VIBRATION ISOLATOR BETWEEN CORE AND COIL.
 - COILS SHALL BE INSULATED WITH THERMOSETTING VARNISH IN ACCORDANCE WITH NEMA ST20 STANDARDS FOR 200°C INSULATION SYSTEM AS RECOGNIZED BY UNDERWRITERS LABORATORIES.
 - TRANSFORMER SHALL BE WOUND FOR 480 VOLT, 3 PHASE, 3 WIRE DELTA PRIMARY AND 208/120 VOLT, 3 PHASE, 4 WIRE WYE SECONDARY. TRANSFORMER SHALL BE DESIGNED FOR OPERATION AS 60 HERTZ AND SOUND LEVELS SHALL NOT EXCEED 60 DECIBELS.
- PANELBOARDS:**
 - PANELBOARDS SHALL BE FACTORY ASSEMBLED CIRCUIT BREAKER TYPE. THE NUMBER OF POLES, TYPE, VOLTAGE AND AMPERE RATINGS SHALL BE AS INDICATED ON THE DRAWINGS. BUSSING SHALL BE ALUMINUM OR COPPER (SEE PANEL SCHEDULES).
 - NEUTRAL WIRES SHALL BE CONNECTED TO A COMMON NEUTRAL BUS WITH BONDING SCREWS OR LUGS. THE NEUTRAL BUS SHALL BE ISOLATED FROM THE CABINET. GROUND WIRES SHALL BE CONNECTED TO A COMMON EQUIPMENT GROUND BUS WITH BONDING SCREWS OR LUGS. THE GROUND BUS SHALL BE BONDED TO THE CABINET.
 - CABINETS SHALL BE FLUSH OR SURFACE MOUNTED (REFER TO PANEL SCHEDULES). CABINETS SHALL BE CONSTRUCTED OF GALVANIZED STEEL CONFORMING TO UL AND NEC STANDARDS.
 - FRONTS OF CABINETS SHALL BE NOT LESS THAN 12 GAUGE STEEL, FASTENED WITH SCREWS IN COUNTERSINK WASHERS, OR WITH APPROVED CONCEALED SPRING CLAMPS. CABINET FRONTS SHALL HAVE HINGED LOCKABLE DOORS WITH MILLED KEYS (ALL PANELS SHALL BE KEYPED ALIKE) AND CIRCUIT SCHEDULE HOLDERS WITH CLEAR PLASTIC WINDOWS. PROVIDE TYPEWRITTEN SCHEDULES IN HOLDERS AND SUBMIT COPIES FOR RECORD PURPOSES. DOORS SHALL BE FASTENED TO TRIM WITH FULL LENGTH FLUSH HINGES. PANEL FRONTS SHALL BE SHOP PAINTED WITH 2 COATS OF PRIMER AND A FINISH COAT OF GRAY ENAMEL.
 - CHECK LOAD BALANCE OF PANELBOARD UNDER NORMAL OPERATION. IF LOAD IMBALANCE EXCEEDS 10% BETWEEN PHASES, INITIATE CORRECTIVE MEASURES.
 - ALL CONDUCTOR TERMINALS AND EQUIPMENT ENCLOSURES SHALL BE UL LISTED FOR USE WITH MINIMUM 75°C RATED CONDUCTORS.
 - PANELBOARD DIRECTORY FOR EACH PANEL SHALL BE NEATLY TYPED INDICATING ACTUAL LOAD FOR EACH BRANCH CIRCUIT.
 - PROVIDE SIGNAGE FOR ALL PANELBOARDS & SWITCHBOARDS WARNING QUALIFIED PERSONS OF POTENTIAL FLASH HAZARD AS REQUIRED IN NEC 110.
- CIRCUIT BREAKERS:**
 - CIRCUIT BREAKERS SHALL BE BY THE SAME MANUFACTURER THAT FURNISHES THE MAIN SERVICE EQUIPMENT AND PANELBOARDS.
 - BREAKERS SHALL BE MOLDED CASE BOLT-ON TYPE. CLAMP-ON, PUSH-ON, OR PLUG-IN TYPES ARE NOT ACCEPTABLE. REMOVABLE HANDLE TIES AND DUAL, QUAD OR TANDEM BREAKERS ARE NOT ACCEPTABLE. MOUNTING HARDWARE, ACCESSORIES FACEPLATES AND ENCLOSURES SHALL BE PROVIDED AS NECESSARY FOR THE INTENDED USE.
 - SHORT CIRCUIT INTERRUPTING CAPACITY SHALL BE AS INDICATED ON THE PLANS AND SHALL IN NO CASE BE LESS THAN 10,000 RMS SYMMETRICAL AMPS AT THE APPLIED VOLTAGE.
- DISCONNECT SWITCHES:**
 - SWITCHES SHALL BE BY SQUARE-D, CUTLER HAMMER, OR EQUIVALENT.
 - SWITCHES AND ENCLOSURES SHALL BE GENERAL DUTY. THEY SHALL BE EXTERNALLY OPERATED, QUICK-MAKE, BLADE TYPE, OF NUMBERS OF POLES AND RATING INDICATED OR REQUIRED.
 - ENCLOSURES SHALL BE NEMA 1 FOR DRY, INTERIOR LOCATIONS AND NEMA 3R FOR DAMP, WET OR EXTERIOR LOCATIONS. FINISH SHALL BE ANSI 61. COVERS SHALL HAVE A DEFEATABLE INTERLOCK. OPERATING HANDLES SHALL BE PADLOCK-ABLE.
 - SHORT CIRCUIT WITHSTAND RATINGS SHALL BE 200,000 RMS SYMMETRICAL AMPS.
 - SWITCHES SHALL ACCEPT FUSES OF THE RATING AND UL OR NEMA CLASS INDICATED.
 - SUBMIT DATA SHEETS OF THE DISCONNECT SWITCHES AS REQUIRED UNDER "SUBMITTALS".
 - ALL CONDUCTOR TERMINALS AND EQUIPMENT ENCLOSURES SHALL BE UL LISTED FOR USE WITH MINIMUM 75°C RATED CONDUCTORS.

5. MANUAL MOTOR STARTERS:

- WHERE SHOWN ON THE PLANS, FRACTIONAL HORSEPOWER MOTORS SHALL TOGGLE TYPE MANUAL STARTERS WITH THERMAL OVERLOAD PROTECTION IN EACH PHASE. WHERE THE MOTOR IS OUT OF SIGHT OF THE SWITCH PROVIDE A PILOT LIGHT IN THE COVER TO INDICATE SWITCH IS CLOSED.
- SUBMIT DATA ON STARTERS AS REQUIRED UNDER "SUBMITTALS".

6. SNAP SWITCHES:

- GENERAL USE SNAP SWITCHES SHALL BE TOGGLE HANDLE, QUIET OPERATING, PREMIUM OR HEAVY DUTY SPECIFICATION GRADE, UL LISTED AND VERIFIED TO MEET FEDERAL SPECIFICATION W-5-69E-D AND NEMA HEAVY DUTY TESTS. COLOR SHALL BE IVORY.
- ALL SWITCHES SHALL BE RATED 120/277 VOLTS. FOR THE 20 AMP SIZE, HP RATINGS SHALL BE 1 FOR 120V AND 2 FOR 240V.
- SWITCHES SHALL BE AS LISTED BELOW:
 - 20A SPST – HUBBELL 1221, LEVITON 1221 OR P & S 521
- DISCONNECTS REQUIRED BUT NOT LISTED SHALL HAVE EQUIVALENT QUALITY AS THOSE LISTED ABOVE.

7. RECEPTACLE OUTLETS:

- RECEPTACLE OUTLETS SHALL BE STANDARD NEMA CONFIGURATION, GROUNDING TYPE.
- GENERAL CONVENIENCE OUTLETS SHALL BE 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDING. OUTLETS SHALL BE UL LISTED AND VERIFIED TO MEET FEDERAL SPECIFICATION W-C-596-C AND NEMA HEAVY DUTY PERFORMANCE TESTS.
- CONVENIENCE OUTLETS FRONTS SHALL BE IVORY. COLOR SHALL BE BROWN ON STAINED WOOD ANELED WALLS. **CONFORM COLOR WITH ARCHITECT.**
- OUTLETS SHALL BE AS LISTED BELOW. (NUMBERS DO NOT INCLUDE COLOR DESIGNATION OR OPTIONS)
 - 20A CONVENIENCE – HUBBELL 5352, LEVITON 5362, OR P & S 5362
- SPECIAL OUTLETS NOT LISTED ABOVE, SHALL BE STANDARD NEMA CONFIGURATION FOR THE APPLICATION SHOWN AND SHALL BE OF EQUIVALENT GRADE AND QUALITY TO THOSE LISTED ABOVE. AN APPROVED CORD CAP OR PLUG SHALL BE FURNISHED WITH EACH RECEPTACLE OUTLET EXCEPT GENERAL CONVENIENCE TYPE. PLUG SHALL BE OF THE SAME GRADE, QUALITY AND MANUFACTURER AS THE OUTLET.

8. DEVICE & BOX COVER PLATES:

- PROVIDE A PLATE FOR EACH OUTLET, RECEPTACLE, SWITCH, DEVICE AND BOX.
- PLATES FOR FLUSH INTERIOR GENERAL USE SHALL BE IVORY PLASTIC. COLOR SHALL BE BROWN ON STAINED WOOD paneled walls. **CONFORM PLATE COLORS WITH ARCHITECT PRIOR TO ORDERING.**
- ALL PLATES FOR EXTERIOR USE SHALL BE LISTED AND LABELED "SUITABLE FOR WET LOCATION WHILE IN USE".
- DANGED DEVICES SHALL HAVE GANG PLATES EXACTLY MATCHING THE ARRANGEMENT AND QUALITY OF DEVICES.
- SPECIAL PLATES, ENGRAVING OR APPLICATION SHALL BE AS INDICATED ON THE DRAWINGS OR OTHERWISE SPECIFIED.

9. OUTLET AND JUNCTION BOXES:

- THE SIZE OF EACH OUTLET OR JUNCTION BOX SHALL BE DETERMINED BY THE NUMBER AND SIZES OF WIRES AND CONDUITS ENTERING THE BOX PER NEC, BUT SHALL BE NOT LESS THAN 4-INCH SQUARE AND 1-1/8 INCHES DEEP UNLESS OTHERWISE NOTED.
- OUTLET AND JUNCTION BOXES FOR INTERIOR USE SHALL BE GALVANIZED, ONE-PIECE PRESSED OR WELDED STEEL, KNOCKOUT TYPE, EXCEPT WHERE OTHER TYPES OF BOXES ARE INDICATED OR SPECIFIED. IN MASONRY OR CONCRETE CONSTRUCTION WATERPROOF BOXES MANUFACTURED FOR THAT PURPOSE SHALL BE USED. PLASTIC, FIBER OR COMPOSITION BOXES WILL NOT BE PERMITTED.
- OUTLET AND JUNCTION BOXES FOR SURFACE EXTERIOR USE SHALL BE CAST BOXES, CROUSE HINDS FS TYPE, OR APPROVED EQUIVALENT.

10. CONDUITS AND FITTINGS:

- STANDARD WEIGHT RIGID METAL CONDUIT SHALL BE HOT DIPPED GALVANIZED. ALL FITTINGS SHALL BE OF THE SCREW THREAD TYPE. COUPLINGS, LOCKNUTS, BRUSHINGS, ETC., SHALL BE HOT DIPPED GALVANIZED.
- ELECTRICAL METALLIC TUBING (EMT) SHALL BE GALVANIZED. COUPLINGS AND CONNECTORS SHALL BE GALVANIZED. FITTING SHALL BE COMPRESSION TYPE WITH GLAND SEALING RINGS OR SET SCREW TYPE.
- FLEXIBLE CONDUIT SHALL BE GALVANIZED STEEL OR ALUMINUM. WHERE USED IN DAMP OR WET LOCATIONS FLEXIBLE CONDUIT SHALL BE OF THE LIQUID-LIGHT TYPE WITH OUTER NEOPRENE JACKET AND SUITABLE LIQUID-TIGHT FITTINGS.
- RIGID NON-METALLIC CONDUIT SHALL BE PVC SCHEDULE 40, UL APPROVED. ALL COUPLINGS, FITTINGS, SOLVENT CEMENT, ETC.

11. WIRE AND CABLE:

- WIRE AND CABLE FOR USE ON SYSTEMS OF 50 VOLTS TO 600 VOLTS SHALL BE 600 VOLT RATED TYPE THW OR THWN FOR BRANCH CIRCUITS. FEEDERS SHALL BE THIN OR THWN (SEE RISE).
- WIRE AND CABLE FOR USE ON SYSTEMS OF BELOW 50 VOLTS SHALL BE 300 VOLT PVC INSULATED AND SUITABLE FOR THE CLASS OF WIRING EXCEPT AS OTHERWISE INDICATED OR SPECIFIED.
- ALL CONDUCTORS SHALL BE COPPER, RATED 75°C MINIMUM.
- ALL WIRING TO BE COLOR CODED AS FOLLOWS:

208/120V	480/277V
PHASE A – BLACK	PHASE A – BROWN
PHASE B – RED	PHASE B – ORANGE
PHASE C – BLUE	PHASE C – YELLOW
NEUTRAL – WHITE	NEUTRAL – WHITE/TRACER OR GREY
- ALL WIRE SHALL BE SIZED TO ACCOMMODATE VOLTAGE DROP IN COMPLIANCE WITH NEC REQUIREMENTS.
20 AMP CIRCUIT: 0'-100' = #12 AWG; 100'-150' = #10 AWG; GREATER THAN 150' = #8 AWG

12. LIGHTING FIXTURES AND LAMPS:

- FIXTURES SHALL BE COMPLETE WITH ALL REQUIRED ACCESSORIES AND EQUIPMENT, INCLUDING LAMPS, NECESSARY FOR A COMPLETE INSTALLATION. CONTRACTOR SHALL RECEIVE, UNPACK, ASSEMBLE AND INSTALL FIXTURES INDICATED AS BEING FURNISHED BY OTHERS.
- FLUORESCENT BALLASTS SHALL BE CBM/ETL CERTIFIED, HIGH FREQUENCY ELECTRONIC TYPE WITH A THD OR LESS THAN 20%. FIXTURES SHALL COMPLY WITH LOCAL LIGHTING CODES.
- 4' FLUORESCENT LAMPS SHALL BE F32 T8 TYPE BY PHILLIPS, GE OR SYLVANIA, COLOR AS INDICATED ON PANS. ALL A-TYPE LAMPS SHALL BE 130 VOLT.
- VERIFY THE CEILING OR WALL CONSTRUCTION, VOLTAGE AND THE MOUNTING REQUIREMENTS OF EACH FIXTURE AND PROVIDE PLASTER FRAMES, SPECIAL FLANGES, CONCRETE FOUR HOUSINGS, BOXES, BRACKETS, ADAPTERS, HANGERS, STEMS, CANNERS, SPECIAL BALLASTS OR LENSES AND OTHER MATERIALS NECESSARY TO PROPERLY PURCHASE AND MOUNT THE FIXTURE.
- SUBMIT SHOP DRAWINGS ON ALL FIXTURES AS REQUIRED UNDER "SUBMITTALS"; "SHOP DRAWINGS" MAY BE CATALOG DATA SHEETS IF COMPLETE INFORMATION INCLUDING MOUNTING HARDWARE IS SHOWN AND IDENTIFIED. SHOP DRAWINGS SHALL INCLUDE MOUNTING DETAILS AND SHOW COMPATIBILITY WITH THE CEILING OR OTHER EQUIPMENT.

13. NAMEPLATES AND LABELS:

- NAMEPLATES SHALL BE PROVIDED FOR CIRCUIT BREAKERS IN THE MAIN SWITCHBOARD, SWITCHES AND TO IDENTIFY EACH PANELBOARD AND SIMILAR ITEMS WHICH ARE FURNISHED OR INSTALLED UNDER THIS SECTION.
- NAMEPLATES SHALL BE ENGRAVED LAMINATED PLASTIC WITH CHARACTERS CUT THROUGH THE BLACK TOP LAYER TO WHITE LAYER BELOW.

14. PHOTO ELECTRIC SWITCHES:

- PHOTO ELECTRIC SWITCHES AND PHOTO CONTROLLERS SHALL BE HONEYWELL, TORK OR EQUIVALENT. TYPE OF MOUNTING, POLES, VOLTAGE, INTERFACE RATING AND ARRANGEMENT SHALL BE AS SHOWN ON PLANS.
- SUBMIT SHOP DRAWINGS AS REQUIRED UNDER "SUBMITTALS". CATALOG SHEETS WILL BE ADEQUATE IF ALL INFORMATION IS SHOWN.

15. TIME SWITCHES:

- TIME SWITCHES SHALL BE INTERMATIC OR TORK. TYPE OF MOUNTING, POLES, VOLTAGE, AMPACITY AND ARRANGEMENT SHALL BE AS SHOWN ON DRAWINGS AND IDENTIFIED. TIME SWITCHES CONTROLLING LIGHTING SHALL HAVE BATTERY BACKUP AND ANY OTHER FEATURES SHOWN ON THE PLANS OR REQUIRED FOR PROPER OPERATION AND COMPLIANCE WITH ENERGY CODE.
- ENCLOSURES SHALL BE NEMA 1 FOR INTERIOR DRY LOCATIONS.

16. MAGNETIC MOTOR STARTERS:

- MOTOR STARTERS SHALL BE HORSEPOWER RATED NON-REVERSING, FULL VOLTAGE OF TYPE REQUIRED BY MOTOR WITH OVERLOAD THERMAL PROTECTION.
- SUBMIT SHOP DRAWINGS AS REQUIRED UNDER "SUBMITTALS".

17. RELAYS:

- RELAYS FOR MOTOR CONTROL SHALL BE HEAVY-DUTY INDUSTRIAL TYPE, MAGNETICALLY HELD, WITH BOTH NORMALLY OPEN AND CLOSED CONTACTS.
- SUBMIT SHOP DRAWINGS AS REQUIRED UNDER "SUBMITTALS".

EXECUTION

1. INSTALLATION AND CONNECTION OF ELECTRICAL EQUIPMENT:

- EQUIPMENT FURNISHED BY OTHERS SHALL BE COMPLETELY CONNECTED TO THE ELECTRICAL SYSTEM EXCEPT AS NOTED ON THE DRAWINGS. ALL FUSES, BREAKERS AND DISCONNECTS SHALL BE PROVIDED AS NECESSARY FOR PROPER PROTECTION. PROVIDE ALL FLEXIBLE CONDUIT, BOXES, FITTINGS, RECEPTABLES, CORDS, PLUGS AND OTHER MATERIAL REQUIRED FOR PROPER INSTALLATION. REFER TO MANUFACTURER'S DIRECTIONS WHERE APPLICABLE.

2. WORK ON HVAC AND PLUMBING SYSTEMS:

- COMPLETE POWER CIRCUITS, INCLUDING BREAKERS, SWITCHES, DISCONNECTS, WIRE AND CONDUIT, OUTLETS AND CONNECTIONS TO HVAC AND PLUMBING EQUIPMENT SHALL BE PROVIDED UNDER THIS SECTION.
- STARTERS AND CONTROLLERS SHALL BE PROVIDED UNDER THIS SECTION EXCEPT WHERE PART OF A PACKAGE UNIT OR PANEL SPECIFIED IN DIVISION 15.
- HVAC AND PLUMBING CONTROL AND INTERLOCK WIRING REGARDLESS OF VOLTAGE, AND CONDUITS FOR SAME, WILL BE WIRED AND CONNECTED UNDER THIS SECTION.

3. INSTALLATION OF CONDUIT:

- STANDARD WEIGHT RIGID METAL CONDUIT SHALL BE USED WHERE EXPOSED TO THE WEATHER, PLACED UNDERGROUND BELOW CONCRETE SLAB, IN CONCRETE OR MASONRY CONSTRUCTION IN CONTACT WITH EARTH, AND WHERE SHOWN ON THE PLANS.
- GALVANIZED STEEL ELECTRICAL METALLIC TUBING SHALL BE USED IN ABOVE GROUND, INTERIOR, DRY LOCATIONS PROTECTED FROM WEATHER AND PHYSICAL DAMAGE, AND MAY BE USED IN CONCRETE OR MASONRY CONSTRUCTION NOT IN CONTACT WITH EARTH.
- FLEXIBLE METALLIC CONDUIT SHALL BE USED WHERE SHOWN ON THE PLANS AND TO CONNECT CONDUIT SYSTEMS TO MOTORS, DIRECT WIRING AND VIBRATING EQUIPMENT AND AS A FINAL CONNECTION TO LIGHTING FIXTURES (8' MAX) IN ACCESSIBLE CEILING. IT MAY BE USED AS A WIRING SYSTEM INSTEAD OF EMT IN INTERIOR WALLS ONLY (DRY FRAME OR STUD CONSTRUCTION), WHEN ALLOWED BY LANDLORD AND/OR OWNER.
- LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE USED FOR FINAL ELECTRICAL CONNECTION TO ROOF TOP OR OTHER EQUIPMENT EXPOSED TO THE ENVIRONMENT.
- RIGID NON-METALLIC CONDUIT MAY BE USED FOR ALL UNDERSLAB OR UNDERGROUND WORK IN PLACE OF STANDARD WEIGHT RIGID METAL AND WHERE SPECIFICALLY SPECIFIED. ALL RUNS OF RIGID NON-METALLIC CONDUIT SHALL CONTAIN A SEPARATE GREEN GROUND WIRE ADEQUATELY SIZED FOR SERVICE INTENDED. WHERE REQUIRED TO CONTINUE ABOVE SLAB, STUB NON-METALLIC CONDUIT 6" ABOVE SLAB THEN MAKE PROPER TRANSITION TO METAL CONDUIT.
- ALL RIGID STEEL CONDUIT INSTALLED IN THE GROUND SHALL BE WRAPPED WITH HUNT'S PROCESS NO. 3, PVC COATED OR ENCASED IN 3" CONCRETE ON ALL SIDES.
- THE MINIMUM SIZES OF CONDUIT SHALL BE CODE SIZE FOR THE NUMBER AND SIZE OF CONDUCTORS, UNLESS A LARGER SIZE IS SHOWN, IN WHICH CASE SUCH LARGER SIZE SHALL BE USED.
- ALL FINAL CONNECTIONS TO MOTORS SHALL BE FLEXIBLE METAL CONDUIT AND AS SHOWN ON DRAWINGS.
- WHERE PORTIONS OF RACEWAYS OR SLEEVES ENTER AREAS SUCH AS COLD STORAGE OR WHERE PASSING FROM THE INTERIOR TO THE EXTERIOR OF A BUILDING, THE RACEWAY OR SLEEVE SHALL BE FITTED WITH AN APPROVED MATERIAL TO PREVENT THE CIRCULATION OF WARM AIR TO A COOLER SECTION OF THE RACEWAY SLEEVE.

4. INSTALLATION AND CONNECTION OF WIRING:

- NM (ROMEX) CABLE WILL BE PERMITTED ON THIS PROJECT, ONLY WHERE SPECIFIED ON DRAWINGS. ALL WIRING SHALL BE INSTALLED IN CONDUIT (EXCEPT FOR NM IN CONCEALED SPACES), EXCEPT WHERE OTHER RACEWAY SYSTEMS OR METHODS ARE SPECIFICALLY SHOWN.
- CLEAN OUT AND DRY ALL CONDUIT AND WIREWAYS BEFORE PULLING ANY WIRES. USE NO LUBRICANT EXCEPT AS RECOMMENDED BY THE WIRE OR CABLE MANUFACTURER.
- MAKE ALL CONNECTIONS AND SPLICES NECESSARY TO PROPERLY COMPLETE THE ELECTRICAL WIRING. CONNECTIONS AND SPLICES SHALL BE MADE ONLY IN PULL, JUNCTION, OR OUTLET BOXES, OR IN SWITCHBOARDS, WIREWAYS OR PANELS HAVING SUFFICIENT CODE SIZED GUTTER SPACE. CONNECTIONS AND SPLICES IN WIRES SMALLER THAN NO. 6 AWG SHALL BE MADE WITH SPRING TYPE CONNECTORS, AND IN WIRES NO. 6 AWG AND LARGER SHALL BE MADE WITH COMPRESSION, VISE TYPE, OR SPLIT BOLT SOLDERLESS CONNECTORS, INSULATED AND TAPED.

5. TELEPHONE SYSTEM:

- FURNISH AND INSTALL COMPLETE CONDUIT AND TERMINAL SYSTEM FOR TELEPHONE SERVICE AS INDICATED ON DRAWINGS.
- INSTALL A 1/8-INCH POLYETHYLENE PULL-IN WIRE IN EACH CONDUIT RUN.
- TELEPHONE WALL OUTLETS SHALL BE 4-11/16 INCH SQUARE BY 2-1/8 INCH DEEP METAL BOXES, WITH PLASTER RING AND SINGLE BUSHED OUTLET FLUSH TELEPHONE PLATE.
- FURNISH AND INSTALL 3/4 -INCH CONDUIT FROM THE TELEPHONE EQUIPMENT ROOM MAIN TELEPHONE BACKBOARD TO NEAREST ACCESSIBLE BUILDING GROUND. THIS CONDUIT SHOULD BE TERMINATED IN SUCH A MANNER THAT ACCESS TO GROUNDING DEVICE MAY BE HAD AT ANY TIME IN THE FUTURE.
-PER NEC 250 & NEC 800

6. GROUNDING:

- MAKE GOOD MECHANICAL AND ELECTRICAL CONTACT AT ALL POLES, PANELBOARDS, SWITCHBOARDS, OUTLET BOXES, JUNCTION BOXES, AND WHEREVER THE CONDUIT RUN IS CONNECTED. PERMANENTLY AND EFFECTIVELY GROUND ALL CONDUIT, FIXTURES, MOTORS AND OTHER EQUIPMENT AS REQUIRED BY ALL APPLICABLE CODES, REGULATIONS, AND STANDARDS. NEC 250.

7. CLEANING AND PROTECTION OF PRODUCTS AND PREMISES:

- AT FREQUENT INTERVALS DURING THE TIME OF CONSTRUCTION, THE CONTRACTOR SHALL CLEAN UP AFTER HIS WORK AND REMOVE HIS DEBRIS FROM THE PREMISES, LEAVING THE BUILDING AND GROUNDS CLEAN TO THE OWNER'S SATISFACTION.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL MATERIALS, EQUIPMENT AND PROPERTY, WHETHER ELECTRICAL OR NOT, FROM DAMAGE AS A RESULT OF HIS WORK.

8. CHECKING AND TESTING OF EQUIPMENT AND SYSTEMS:

- PANELS, DISCONNECTS, STARTERS AND OTHER EQUIPMENT INSTALLED UNDER THIS SECTION SHALL BE INSPECTED FOR DEFECTS AND TESTED FOR PROPER OPERATION.
- SYSTEMS SHALL BE TREATED FOR SHORT CIRCUITS, OPEN CIRCUITS AND WRONG CONNECTIONS AND SHALL BE FREE FROM MECHANICAL AND ELECTRICAL DEFECTS. CIRCUITS SHALL BE TESTED FOR PROPER NEUTRAL AND GROUND CONNECTIONS.

9. TEMPORARY CONSTRUCTION POWER & TELEPHONE:

- ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, COST AND MATERIALS REQUIRED FOR INSTALLATION AND MAINTENANCE OF TEMPORARY CONSTRUCTION POWER AND TELEPHONE. CONSTRUCTION POWER SHALL BE MINIMUM OF 100A, 120/208V 1PHASE, 4W, WITH PROVISIONS FOR ONE 50A, 208 V, 2P, 4W GROUNDING RECEPTACLE AND FOUR 120V, 20A, 1P RECEPTABLES.

10. SUBSTITUTIONS:

- ALTERNATIVE MANUFACTURERS WILL BE CONSIDERED FOR ELECTRICAL DEVICES, SWITCHES, OUTLETS, ETC. NOT PROVIDED BY OWNER.
- CATALOGS, DATA SHEETS OR SHOP DRAWINGS SHALL BE SUBMITTED TO THE CONSTRUCTION MANAGER FOR ALL ALTERNATIVE MANUFACTURED EQUIPMENT AS REQUIRED UNDER "SUBMITTALS".

11. LIGHTING CONTROL SYSTEM:

- AT A MINIMUM, PROVIDE LIGHTING CONTROL SYSTEM AS INDICATED ON PLANS. PROVIDE ADDITIONAL CONTROLS AS REQUIRED BY LANDLORD, JURISDICTION AND ENERGY CODE.
- PROVIDE ALL COMMISSIONING OF THE LIGHTING SYSTEM AS REQUIRED FOR A COMPLETE SYSTEM AND IN ACCORDANCE WITH THE LOCAL ENERGY CODE.
- PROVIDE ALL FUNCTIONAL COMMISSION REQUIRED AND AS DIRECTED BY THE ELECTRICAL ENGINEER. THIS SHALL INCLUDE COMPLETING ALL DOCUMENTATION AS REQUIRED BY THE ELECTRICAL ENGINEER.
- PRIOR TO INSTALL OF TENANT LIGHTING CONTROLS E.C. SHALL CONDUCT PRE-INSTALLATION MEETING WITH LIGHTING CONTROL MANUFACTURER.
- E.C. SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL FOR TENANT LIGHTING CONTROLS SHOWING ALL DEVICES, WIRING, CONTROLS, AND INTERFACE WITH BUILDING SYSTEMS.

12. FIRE PENETRATIONS:

- ALL UL LISTED FIRE CALLING AND/OR FIRE STOP AT ALL PENETRATIONS THROUGH ALL FIRE WALL BARRIERS.
- PROVIDE UL LISTED FIRE PROTECTION FOR ALL BOXES LOCATED IN FIRE WALLS.
- ALL UL LISTED FIRE PROTECTION TO BE SUBMITTED TO/AND APPROVED BY THE ENGINEER.



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KANE COUNTY JAIL YARD IMPROVEMENTS

ELECTRICAL SPECIFICATIONS

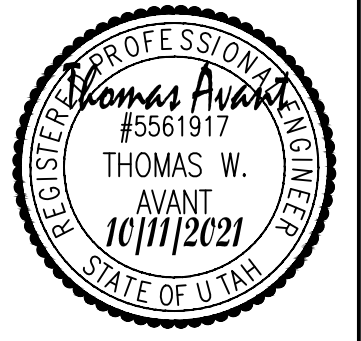
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INITIAL SUBMITTAL: 02/23/2021

DESCRIPTION:

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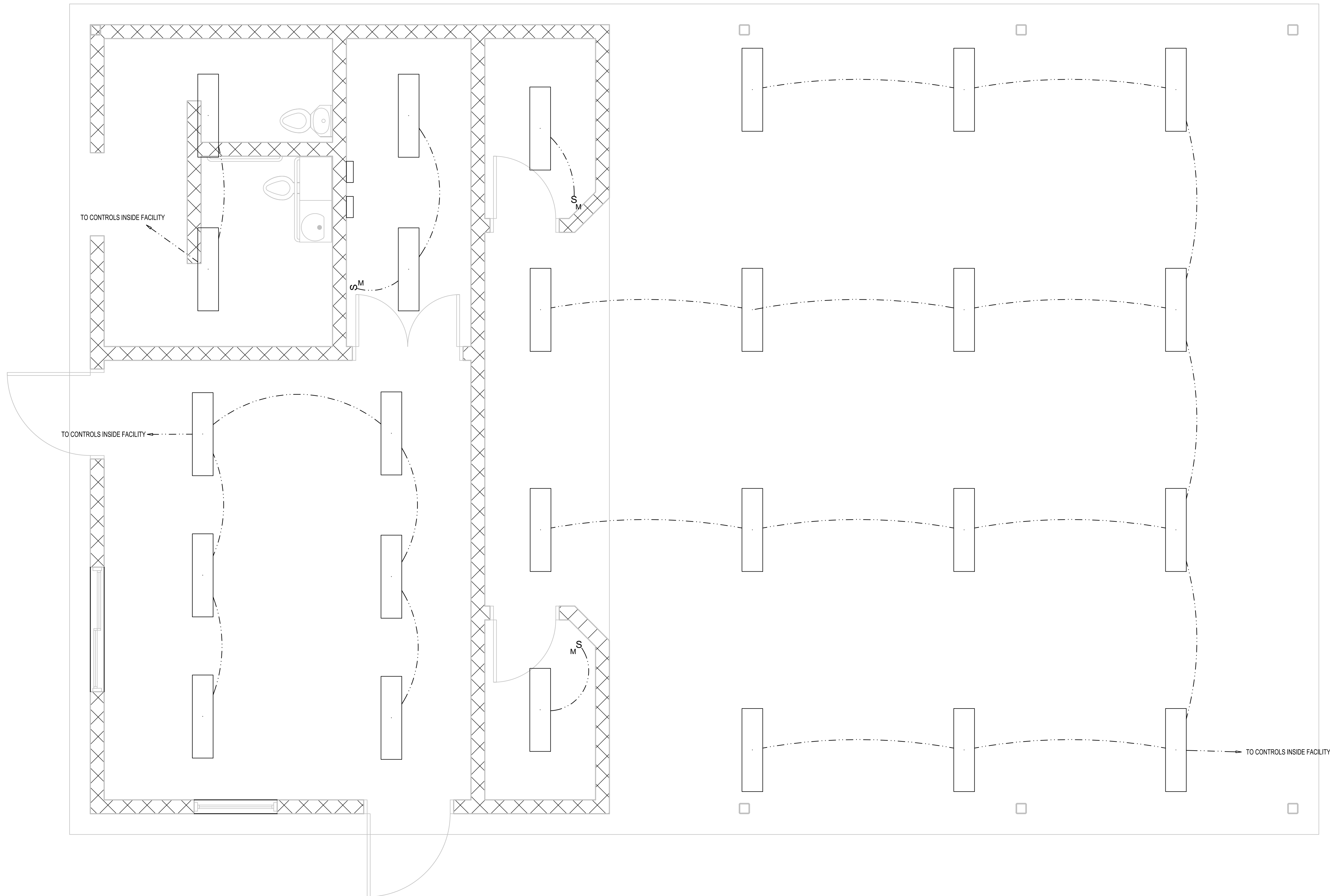


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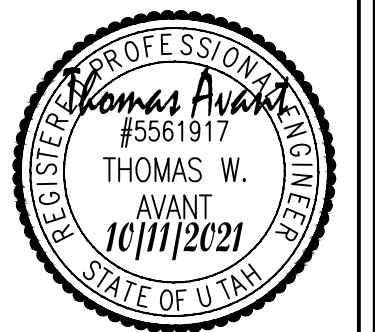
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KANE COUNTY JAIL YARD IMPROVEMENTS
ELECTRICAL LIGHTING PLAN
KANAB, UT 84741



INITIAL SUBMITTAL: 02/23/2021

REVISIONS:



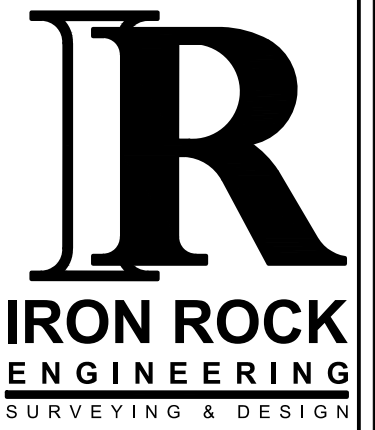
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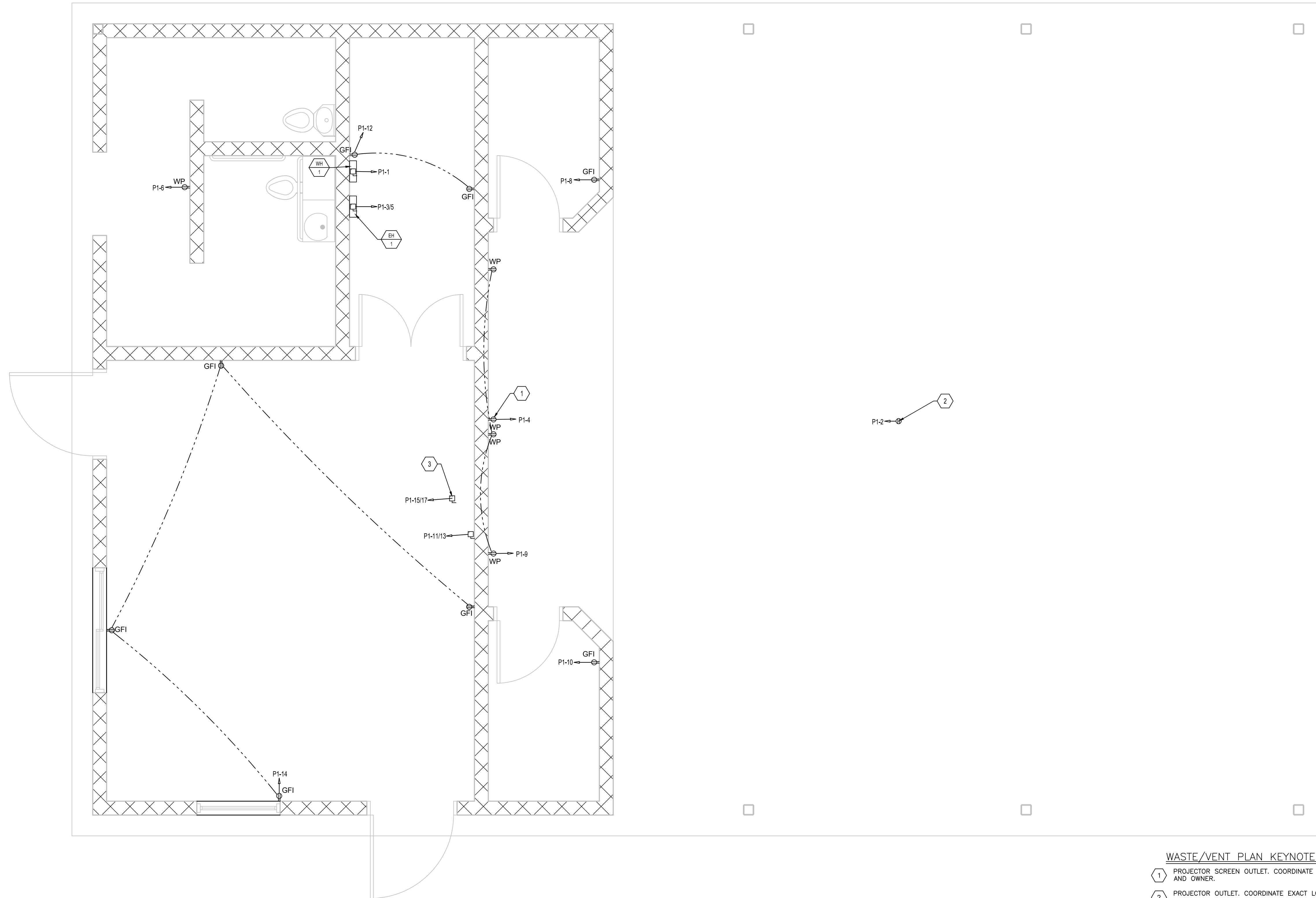


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KANE COUNTY JAIL YARD IMPROVEMENTS
ELECTRICAL POWER PLAN
KANAB, UT 84741



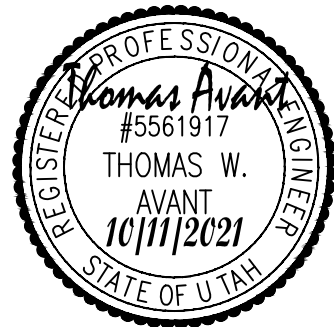
WASTE/VENT PLAN KEYNOTE

- 1 PROJECTOR SCREEN OUTLET. COORDINATE EXACT LOCATION BETWEEN CONTRACTOR AND OWNER.
- 2 PROJECTOR OUTLET. COORDINATE EXACT LOCATION BETWEEN CONTRACTOR AND OWNER.
- 3 CONNECTION FOR ROOFTOP EXTERIOR HVAC COMPRESSOR. SPECIFY EXACT LOCATION BETWEEN OWNER AND CONTRACTOR.

INITIAL SUBMITTAL: 02/23/2021

REVISIONS:

REV#	DATE	DESCRIPTION



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SCALE: 3/8" = 1'

SHEET:

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GENERAL NOTES

1. DO NOT SCALE DRAWINGS
2. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT PLUMBING FIXTURE LOCATIONS AND MOUNTING HEIGHTS. OBTAIN EXACT FLOOR DRAIN AND FLOOR SINK LOCATIONS FROM MECHANICAL DRAWINGS.
3. VTR'S SHALL BE MIN. 10'-0" FROM OA INTAKES. COORDINATE WITH MECHANICAL SECTION.
4. VERIFY LOCATION OF HANDICAPPED FIXTURES WITH ARCHITECTURAL DRAWINGS.
5. PROVIDE CHROME PLATED ESCUTCHEONS AT PIPE SLEEVES FOR EXPOSED BARE PIPE.
6. PROVIDE ACCESS DOORS IN GYP. BOARD CEILINGS AND INACCESSIBLE WALLS FOR VALVES AND CLEANOUTS. COORDINATE WITH ARCHITECT FOR EXACT SIZE AND LOCATION OF ACCESS DOORS.
7. PLUMBING FIXTURES SHALL BE SUBMITTED TO ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO ORDER RELEASE. CONTRACTOR SHALL VERIFY PLUMBING FIXTURES WITH ARCHITECT PRIOR TO BID.
8. AT HANDICAP LAVATORIES & SINKS, COVER OFFSET WASTE, P-TRAP, HOT AND COLD WATER ANGLE STOPS & SUPPLIES WITH WHITE SKAL GARD MODEL SG-102,103 & 104. (EQUAL BY PROWRAP).
9. ARRANGE WATER HEATERS TO PROVIDE EASE OF DISASSEMBLY & MAINTENANCE.
10. PIPES PASSING THRU 1 HR. FIRE RATES WALLS & FLOORS SHALL BE SEALED W/U.L. LISTED MATERIAL EQUAL TO 3M FIRE BARRIER, CAULK OR PUTTY.
11. EQUIPMENT START-UP SHALL BE BY MANUFACTURER'S AUTHORIZED REPRESENTATIVES.
12. FLOOR SINKS SHALL BE LOCATED SO AS NOT TO CREATE TRIPPING HAZARD WHEN ROUTING DRAIN LINES @ FLOOR LEVEL. VERIFY EXACT DRAIN LINE ROUTING PRIOR TO FLOOR SINK ROUGH-IN.
13. PLUMBING RISER ISOLATION & DRAIN VALVES SHALL BE LOCATED WITHIN EASY REACH OF CEILING, WHERE CEILINGS OCCUR BELOW & DROPPED TO WITHIN A MAX. 10'-0" OF FINISHED FLOOR WHERE NO CEILING OCCURS.
14. PIPING SHALL BE SEISMICALLY BRACED IN ACCORDANCE WITH SMACNA GUIDELINES FOR SEISMIC RESTRAINT.
15. WHERE HANDICAPPED WATER CLOSET INDICATED (VERIFY WITH ARCH. DWGS), LOCATE FLUSH VALVE ON WIDE SIDE OF STALL PER ADA STANDARDS.
16. INSULATED PIPING EXPOSED TO VIEW THROUGHOUT THE FACILITY SHALL BE COVERED AND FINISHED WITH PVC JACKET EQUAL TO MANVILLE PVC/PERMAPPE JACKETING SYSTEM USING 30 MIL THICK JACKET. INSTALL PER MANUFACTURER'S INSTRUCTIONS WITH SEAM ON TOP OF PIPE SO AS TO NOT BE VISIBLE FROM OCCUPIED SPACE.
17. PROVIDE WALL CLEANOUTS AT SINKS AND URINALS IN ACCORDANCE WITH APPLICABLE SECTIONS OF IPC.
18. TRAP PRIMER EQUAL TO PRECISION PRODUCTS CO. "PRIME-RITE" SHALL BE INSTALLED AT FLOOR SINKS & FLOOR DRAINS IN MECHANICAL ROOMS. PIPE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
19. PROVIDE 1/2" SOV AHEAD OF EACH TRAP PRIMER.
20. PROVIDE A 6 MIL. POLYETHYLENE SLEEVE SYSTEM EQUAL TO IPS WATER-TITE FOR COPPER DOMESTIC WATER PIPE BELOW SLAB.
21. HOT & COLD WATER SOV'S SHALL BE LOCATED TO BE EASILY ACCESSED.
22. CONTRACTOR SHALL VERIFY SIZE & LOCATION OF UNDERGROUND UTILITIES, COORDINATE WITH OTHER TRADES AND MAKE FINAL CONNECTION.
23. PROVIDE WATER HAMMER ARRESTORS EQUAL TO WATTS REGULATOR NO. 15 SERIES. PROVIDE ON HOT & COLD WATER PIPING SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION RECOMMENDATIONS. DEVICES SHALL BE PDI CERTIFIED AND ANSI APPROVED
24. PLUMBER SHALL MAKE FINAL CONNECTIONS TO ALL PLUMBING FIXTURES.
25. WATER PIPING SHALL BE ROUTED "AROUND" ELECTRICAL ROOMS.
26. ALL REQUIRED CLEANOUTS NOT LOCATED IN MECHANICAL ROOMS SHALL BE LOCATED IN WALLS AS REQUIRED. NO FLOOR CLEANOUTS ARE TO BE INSTALLED IN PUBLIC AREAS, CORRIDORS AND UNITS. CLEANOUTS SHOWN REPRESENT APPROXIMATE LOCATIONS. CONTRACTOR RESPONSIBLE FOR EXTENDING WASTE LINES TO NEAREST WALL AND PROVIDE WALL CLEANOUT AS REQUIRED. COORDINATE LOCATION AND COVER FINISHES WITH ARCHITECT PRIOR TO ORDER RELEASE AND STARTING WORK.
27. CONTRACTOR TO PROVIDE FREEZE PROOF HOSE BIBBS AS REQUIRED AROUND EXTERIOR OF BUILDING. COORDINATE EXACT LOCATIONS WITH ARCHITECT PRIOR TO STARTING WORK.
28. COORDINATE ROUTING OF UNDERGROUND PIPING WITH STRUCTURAL FOOTINGS PRIOR TO COMMENCING WORK.
29. ALL PUBLIC LAVATORIES TO SHALL BE PROVIDED WITH A TEMPERATURE LIMITING VALVE WHICH CONFORMS TO ASSE 1070 AND LIMITS THE MAXIMUM WATER TEMPERATURE TO 110°F.
30. ALL SHOWERS TO A COMBINATION BALANCED-PRESSURE/THERMOSTATIC VALVE WHICH CONFORMS TO ASSE 1016 AND LIMITS THE MAXIMUM WATER TEMPERATURE TO 120°F.

LEGEND

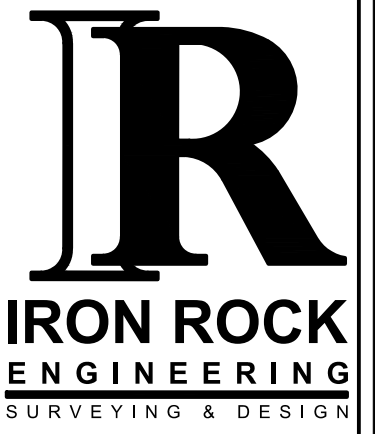
ABBR.	SYMBOL	DESCRIPTION
SAN OR W	—W—	SANITARY, WASTE OR SEWER
CW	—CW—	COLD WATER
HW	—HW—	HOT WATER
SOV	—X—	SHUT-OFF VALVE
G	—PG—	NATURAL GAS PIPING
BTUH		BRITISH THERMAL UNITS
MBH		1000 BRITISH THERMAL UNITS
WCO		CLEANOUT
WHA	⊕	WATER HAMMER ARRESTOR

PLUMBING DESIGN CRITERIA

<p>DOMESTIC WATER: BUILDING FOR NEW CONSTRUCTION REQUIRES 1" CW SUPPLY MAIN FLUSH TANK SYSTEMS</p> <p>TOTAL CONNECTED DOMESTIC WATER LOAD = 24 WSFU = 37.4 GPM EQUIVALENT DEVELOPED PIPE LENGTH 50 FT (X1.2 FITTING FACTOR) = 60 FT EQUIVALENT LENGTH</p> <p>PER IPC TABLE E201.1: 1" COLD WATER TAP, 3/4" COLD WATER PIPING DISTRIBUTION REQUIRED. PROVIDE NEW PRESSURE REDUCING VALVE AND NEW REDUCED PRESSURE PRINCIPLE TYPE BACK-FLOW PREVENTER.</p> <p>ASSUMED 90 PSI AVAILABLE STATIC WATER PRESSURE</p>
<p>SANITARY SEWER: TOTAL CONNECTED LOAD = 13 DFU. NEW 4" BUILDING SEWER REQUIRED, CONNECT NEW BUILDING DRAINS AS SHOWN ON PLANS. 1/8" PER FOOT SLOPE ON WASTE PIPES 3" AND LARGER SIZES.</p>

CODES & DESIGN CRITERIA

JURISDICTION:	KANAB, UTAH
MECHANICAL CODE:	2018 INTERNATIONAL PLUMBING CODE
ENERGY CODE:	2018 INTERNATIONAL FUEL GAS CODE
HEALTH DEPARTMENT:	KANE COUNTY PUBLIC HEALTH DEPARTMENT

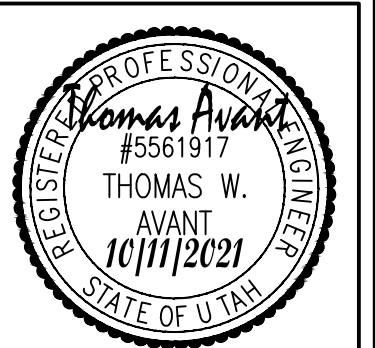


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PLUMBING SPECIFICATIONS

DIVISION 22 SPECIFICATIONS:

PLUMBING EQUIPMENT, METHODS AND MATERIALS

PRODUCTS

1. GENERAL

ALL PRODUCTS USED SHALL COMPLY WITH THE APPLICABLE SECTIONS OF THE PLUMBING CODE IN EFFECT IN THE BUILDING LOCATION. WHERE BIDDER IS NOT SURE, HE IS ADVISED TO DETERMINE WHAT LIMITATIONS, IF ANY, ARE IMPOSED AT THE SITE.

2. WATER DISTRIBUTION PIPE

PIPE 4" AND SMALLER SHALL BE CPVC PLASTIC PIPE WITH CPVC FITTINGS FOR PIPE NOT IN OR UNDER FLOOR SLABS.

DIELECTRIC UNIONS SHALL BE INSTALLED WHEREVER ANY DISSIMILAR METALS ARE USED.

3. SANITARY SOIL WASTE AND VENT SYSTEMS

SOIL AND WASTE PIPE SHALL BE SCHEDULE 40 PVC OR ABS PLASTIC PIPE WHERE USED ABOVE GRADE AND SHALL BE SCHEDULE 40 ABS BELOW GRADE AS APPROVED BY CODE FOR THIS DUTY. NO VENT STACK SHALL BE LESS THAN 2" IN DIAMETER.

4. SLEEVES AND ESCUTCHEONS

PROVIDE GALVANIZED SHEET METAL SLEEVES FOR ALL PIPES AT FLOORS, CEILINGS AND PARTITIONS. PROVIDE PIPE SLEEVES TWO PIPE SIZES LARGER THAN PIPE OR INSULATION AT PENETRATIONS. CAULK AND INSTALL ESCUTCHEONS AS SPECIFIED.

PROVIDE NICKEL PLATED BRASS ESCUTCHEONS WITH SPRING LOCKS OR SET SCREWS AT CEILINGS, FLOORS, AND WALLS FOR ALL PIPES. DO NOT USE CHROME PLATED FERROUS METAL ESCUTCHEONS.

5. VALVES

VALVES SHALL BE SOLID BRONZE THROUGH 2" SIZE AND BRONZE FITTED FOR LARGER SIZES.

PROVIDE FULL PORT BALL VALVES WITH SOLDER CONNECTIONS.

VALVES SHALL BE RATED AT 125 PSI SWP/200 PSI WOG EQUIVALENT TO NIBCO, STOCKHAM, CRANE OR APPROVED EQUIVALENT.

6. CLEANOUTS AND COVERS

PROVIDE CLEANOUTS AT THE BASE OF EACH STACK AND AS SHOWN ON THE DRAWINGS. SPACING SHALL NOT BE GREATER THAN 50 FEET APART. PROVIDE CLEANOUT AT EACH CHANGE OF DIRECTION OF THE WASTE LINE GREATER THAN 45 DEGREES AND AS REQUIRED TO PROPERLY ROD THE SYSTEM.

CLEANOUT COVER SHALL BE THE PROPER TYPE FOR THE LOCATION AS ACCEPTED BY THE TRADE AS GOOD PRACTICE, THAT IS, FLUSH SCORED TOP FOR TILE AREAS, RECESSED TOP FOR VINYL FLOOR AREAS, DEEP CUT FOR TERRAZZO AREAS, FLUSH MOUNTED ON FLOOR UNDER CARPET WITH SCREW MARKER, CHROME PLATED COVER PLATE FOR FINISHED WALLS, ETC.

7. ROOF FLASHING FOR ROOF DRAINS AND VENT STACKS

FLASHING SHALL BE LEAD OF NOT LESS THAN FOUR POUNDS PER SQUARE FEET AND SHALL BE TALL ENOUGH TO TURN INTO THE TOP OF THE VENT PIPE 12" ON EACH SIDE OR AS DIRECTED BY THE ARCHITECT.

8. UNIONS

UNIONS 2" AND SMALLER SHALL BE GROUND JOINT TYPE WITH FLANGES BEING USED IN PIPES LARGER THAN 2".

9. FIXTURES AND EQUIPMENT GENERAL

FURNISH ALL PLUMBING FIXTURES, DRAINS AND EQUIPMENT AS SHOWN ON THE DRAWINGS. IF THE ARCHITECTURAL DRAWINGS DIFFER FROM THE PLUMBING DRAWINGS, THE ARCHITECT SHALL BE NOTIFIED PRIOR TO BIDDING. FURNISH FIXTURES AND OTHER EQUIPMENT COMPLETE WITH ALL REQUIRED AND NECESSARY TRIM, FITTINGS, AND OTHER DEVICES FOR A COMPLETE FINISHED PROJECT AND AS DIRECTED BY THE ARCHITECT.

FIXTURES AND EQUIPMENT SHALL HAVE THE MANUFACTURER'S NAME OR TRADE MARK IMPRINTED ON OR ATTACHED BY METALLIC NAME PLATE. ALL FIXTURES AND ALL TRIM SHALL BE BY THE SAME MANUFACTURER UNLESS NOTED OTHERWISE. TRIM MAY BE OF DIFFERENT MANUFACTURER THAN FIXTURES, BUT EQUIVALENT TO THAT SPECIFIED.

ALL EXPOSED TRIM SHALL BE CHROME PLATED. TOPS OF ALL FLOOR DRAINS SHALL BE CHROME OR NICKEL BRONZE UNLESS OTHERWISE NOTED.

FURNISH BOLT CAPS FOR ALL TOILETS AND URINALS.

10. PLUMBING FIXTURES

GENERAL: THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PLUMBING FIXTURES, WITH ALL ASSOCIATED VALVES, TRIM, CONNECTORS, ETC. SHOWN ON THE ACCOMPANYING DRAWINGS. ALL FIXTURES MUST BE DELIVERED TO THE BUILDING PROPERLY CRATED. ESCUTCHEONS SHALL BE CHROME PLATED BRASS OR STAINLESS STEEL. TRAPS SHALL BE 17-GAUGE AND SHALL HAVE COUNTER SUNK CLEANOUT PLUG.

EXECUTION

11. GENERAL

ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL GOVERNING CODES AND THE BEST PRACTICES AND ALL PRODUCTS INSTALLED AS DIRECTED BY THE MANUFACTURER THROUGH THEIR WRITTEN INSTRUCTIONS.

12. DISINFECT

DISINFECT NEW WATER PIPING (AND EXISTING WATER PIPING AFFECTED BY THE CONTRACTOR'S OPERATION) IN ACCORDANCE WITH AWWA C601. FILL PIPING SYSTEMS WITH SOLUTION CONTAINING A MINIMUM OF 50 PARTS PER MILLION OF AVAILABLE CHLORINE AND ALLOW SOLUTION TO STAND FOR A MINIMUM OF 24 HOURS. FLUSH SOLUTION FROM SYSTEMS WITH CLEAN WATER UNTIL MAXIMUM RESIDUAL CHLORINE CONTENT IS NOT GREATER THAN 0.2 PARTS PER MILLION.

13. EXCAVATION AND BACKFILLING

DO ALL EXCAVATION AND BACKFILLING REQUIRED. TRENCHES SHALL BE WIDE ENOUGH FOR PROPER INSTALLATION OF THE PIPE. GRADE THE DITCH BOTTOM FOR PROPER SLOPE AND PROVIDE BELL HOLES TO ALLOW THE FULL BEARING OF THE PIPE BARREL. COMPLY WITH ALL HEALTH AND SAFETY REGULATIONS RELATING TO DITCHING.

DEWATER TO EXTENT NECESSARY TO GIVE PROPER COMPACTION UNDER ALL PIPES. CONTINUE DEWATERING OPERATION UNTIL SYSTEM HAS BEEN TESTED, APPROVED, BACKFILLED AND COMPACTED.

EXCAVATE 6" BELOW THE PIPE AND FILL WITH COMPACTED OR WETTED SAND TO PIPE GRADE.

NO EXCAVATION SHALL BE UNDER OR NEAR FOOTINGS WITHOUT APPROVAL OF THE ARCHITECT.

BACKFILL WITH CLEAN DIRT OR SAND, NO ROCKS, CLODS OR TRASH. TAKE CARE NOT TO DISTURB THE PIPE GRADE OR ALIGNMENT. COMPACT AROUND AND UNDER THE PIPE CAREFULLY. FINISH BACKFILL WITH APPROVED MATERIAL AND LEAVE SLIGHTLY MOUNDED. CLEAN UP AROUND THE DITCH AREA TO REMOVE TRASH AND ANY EXCESS DIRT.

WHERE DITCH IS UNDER FUTURE PAVEMENT, FINISH SURFACES, OR FOOTINGS, THE FILL SHALL BE COMPACTED IN 6" LAYERS WITH A POWER TAMPER.

14. CONTRACTOR'S RESPONSIBILITIES

THE CONTRACTOR'S RESPONSIBILITIES INCLUDE BUT ARE NOT LIMITED TO:

SETTING FLOOR AND WALL SLEEVES IN PROPER LOCATIONS.

INFORMING OTHER TRADES OF LOCATION OF AND SIZE OF CHASES, STACKS, CLEANOUTS, ETC. THAT WILL LATER RELATE TO THEIR WORK.

PROVIDING ACCESS TO ALL ITEMS REQUIRING ROUTINE SERVICE.

SETTING THE ELEVATION OF FLOOR DRAIN TOPS TO PROVIDE FOR A SLOPE OF 1/16" PER FOOT TOWARD THE DRAIN. THIS REQUIRES COORDINATION WITH THE CONCRETE SUBCONTRACTOR AND RECHECKING AT THE TIME THE POUR IS BEING MADE.

INSULATION

15. GENERAL

THIS SECTION APPLIES TO ALL PLUMBING WORK.

ALL INSULATION SHALL BE IN STRICT ACCORDANCE WITH ALL LOCAL AND STATE ENERGY CODES.

THE INSULATION WORK SHALL BE PERFORMED BY A FIRM REGULARLY ENGAGED IN THIS TYPE OF WORK USING MECHANICS SKILLED IN THE TRADE.

INSTALL ALL MATERIALS AS RECOMMENDED BY THE MANUFACTURER FOR THE SERVICE INTENDED. ALL INSULATION MATERIAL, INCLUDING SEALER MATERIAL, ADHESIVES, COVERING MATERIAL, FINISH ETC. SHALL HAVE A U.L. LISTED FLAME SPREAD RATING NOT OVER 24 WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION AND WITH A SMOKE DEVELOPED RATING NOT HIGHER THAN 50. ALL COATINGS AND COVERINGS FOR HOT SERVICE SHALL BE BREATHER TYPE AND VAPOR BARRIER TYPE FOR COLD SERVICE.

16. DOMESTIC HOT AND COLD WATER

DOMESTIC HOT AND COLD WATER PIPE ABOVE GRADE SHALL BE INSULATED USING ALL SERVICE JACKET WITH SELF-SEALING LAPS. THICKNESS FOR ALL SIZES OF PIPE SHALL BE 3/4" THICK FIBERGLASS FOR NON-HOT WATER RECIRCULATING SYSTEMS AND 1" THICK FOR PIPING SYSTEM WITH HOT WATER RECIRCULATION. INSULATION SHALL MEET OR EXCEED IECC. FITTINGS SHALL BE COVERED WITH FORMED SECTIONS OF MATERIAL.

17. COLD DRAIN LINES

INSULATE ALL HORIZONTAL DRAIN LINES WHICH CAN RECEIVE COLD CONDENSATE WITH 1" THICK (3/4 LBS/CU. FT. DENSITY). DUCT WRAP WITH ALUMINUM ALL SERVICE JACKET, VAPOR BARRIER.

18. WATER DISTRIBUTION PIPING

EXTEND FROM THE WATER ENTRANCE TO EVERY FIXTURE, WATER HEATER, OR OUTLET REQUIRING HOT OR COLD WATER. PROVIDE STOP VALVE AND A DRAIN FOR THE SYSTEM. EVERY LOW POINT SHALL BE DRAINED WITH A CAP OR PLUG AND DRAIN VALVE.

PIPE SIZES SHOWN ON THE DRAWINGS ARE INTERNAL DIAMETER.

EVERY FIXTURE CONNECTION SHALL BE PROVIDED WITH A STOP VALVE AND AN 8" X 15" HIGH AIR CHAMBER VERTICALLY AT THE FIXTURE CONNECTION.

AT CONTRACTOR'S OPTION, EXISTING BRANCH (NOT MAIN) DOMESTIC WATER PIPING MAY BE REUSED WITHIN UNIT OF TESTED AND PROVEN TO BE IN PROPER CONDITION WITH APPROVAL OF ARCHITECT.

19. BUILDING DRAIN, WASTE AND VENT SYSTEM

THE WASTE AND VENT SYSTEM SHALL BE GENERALLY AS SHOWN ON THE DRAWINGS WITH CHANGES ON THE JOB AS REQUIRED TO MEET JOB CONDITIONS. ANY MAJOR CHANGE FROM THAT SHOWN ON THE DRAWINGS SHALL BE SUBMITTED FOR APPROVAL BY THE ARCHITECT.

A FIXTURE SHALL WASH THE BOTTOM OF ALL STACKS WHETHER REQUIRED BY LOCAL CODE OR NOT.

EXTEND VENT STACKS 12" ABOVE THE ROOF AND FLASH WITH FLASHING. TURN THE TOP OF FLASHING INTO THE STACK.

THERE SHALL BE NO HORIZONTAL OFFSET IN VENTS LESS THAN 6" ABOVE THE FLOOD RIM OF THE HIGHEST FIXTURE IN THE GROUP.

20. TESTING

NOTIFY ARCHITECT THREE WORKING DAYS BEFORE ANY TESTS ARE MADE. NO JOINTS OR FITTINGS SHALL BE CONCEALED UNTIL TESTED AND APPROVED. REPEAT TEST AS NECESSARY UNTIL PROVEN SATISFACTORY.

THE FOLLOWING TEST AS DESCRIBED IN THE INTERNATIONAL PLUMBING CODE, SECTION 312, SHALL BE PERFORMED:

SEWER SYSTEM:

WATER TEST - FILL SYSTEM WITH WATER AND HOLD FOR 45 MINUTES WITHOUT DROP IN WATER LEVEL.

MINIMUM HEAD SHALL BE 10 FEET OF WATER.

BALL TEST - PASS A WOODEN SEWER BALL THROUGH THE SYSTEM USING ONLY WATER TO ASSIST.

WATER SYSTEM:

IMPOSE 150 PSI WATER PRESSURE ON THE SYSTEM WITH SYSTEM FULL OF WATER AND HOLD FOR FOUR HOURS WITHOUT PRESSURE DROP. IN FREEZING WEATHER ONLY, USE 150 PSI AIR PRESSURE AND HOLD FOR 8 HOURS WITHOUT DROP IN PRESSURE BEYOND THAT EXPECTED FROM TEMPERATURE CHANGES. INSTALL PRESSURE GAUGE FOR EITHER TEST AND LEAVE IN PLACE UNTIL WATER SUPPLY IS CONNECTED.

21. SCREWED PIPE FITTINGS

CUT THREADS TO FULL DEPTH AND MAKE UP USING TEFLON TAPE. USE DRAINAGE PATTERN FITTINGS FOR WASTE AND VENT SYSTEMS.

22. CAST IRON PIPE FITTINGS.

FITTINGS MAY BE NO-HUB, PUSH TYPE, OR LEAD AND OAKUM. INSTALL AS RECOMMENDED BY THE MANUFACTURER USING TOOLS AS RECOMMENDED BY THEM. CARE SHALL BE TAKEN TO PREVENT SHIFTING OR SETTLING OF PIPE.

23. SOLDER TYPE FITTINGS.

BRAZE USING J.W. HARRIS "DYNAFLOW" 6% SILVER BRAZING ALLOY.

CLEAN PIPE AND FITTINGS BRIGHT WITH SAND PAPER OR WIRE BRUSH AND APPLY PASTE FLUX (LIQUID FLUX IS NOT ACCEPTABLE) AND ASSEMBLE JOINT. APPLY HEAT EVENLY TO THE PIPE AND FITTINGS AND APPLY SOLDER TO FILL THE JOINT BY CAPILLARY ACTION. CLEAN JOINT OF EXCESS SOLDER BEFORE IT COOLS. FITTINGS DISCOLORED BY HEAT SHALL BE REMOVED AND THE JOINT REMADE.

24. GRADES

PIPE SHALL GRADE IN DIRECTION OF FLOW NOT LESS THAN THE FOLLOWING:

BUILDING SEWER AND BUILDING DRAIN - 1/8" PER FOOT.

WASTE AND VENT 2-1/2" AND SMALLER - 1/4" PER FOOT.

WASTE AND VENT 3" AND LARGER - 1/8" PER FOOT.

25. PIPE SLEEVES

TIGHTLY CAULK ALL ANNULAR SPACES BETWEEN PIPES (OR INSULATION) AND SLEEVES WITH SILICONE TYPE SEALANT.

SLEEVES PASSING THROUGH FLOORS SHALL EXTEND 2" ABOVE THE FLOOR LEVEL TO PREVENT WATER PENETRATION AROUND PIPE. THE SLEEVE SHALL ALSO BE SEALED TO THE FLOOR.

26. PROTECTION OF PIPE BELOW SLABS.

ALL STEEL AND COPPER PIPES INSTALLED BELOW A FLOOR SLAB AND NOT INSULATED SHALL BE GIVEN ONE HEAVY TROWEL COAT OF MASTIC EQUIVALENT TO COOPERS NO. 50. THE THREADS SHALL BE GIVEN A SECOND COAT.

27. INSTALLATION OF PIPES

ALL THREADED PIPES SHALL BE REAMED TO REMOVE ALL CUTTING LIPS FROM THE INSIDE EDGE AND SHALL BE THREADED WITH CLEAN DIES TO THE PROPER DEPTH. CUTS SHALL BE CLEAN AND NOT COUGED OR ROUGH. APPLY LUBRICANT TO MALE THREAD ONLY.

ALL COPPER PIPES SHALL BE REAMED TO REMOVE ALL CUTTING LIPS FROM INSIDE EDGE.

PIPE SHALL BE LAID OR SUPPORTED IN A STRAIGHT AND TRUE MANNER WITH FITTINGS USED TO MAKE ALL CHANGES IN DIRECTION.

ALL PIPE SHALL BE CUT CLEAN AT PRECISE ANGLE, HAND CUTTING OF PVC PIPE SHALL NOT ACCEPTABLE.

28. PIPE HANGERS AND SUPPORTS

SUPPORT ALL SUSPENDED PIPE WITH PROPER ADJUSTABLE SWIVEL HANGERS WITH MAXIMUM SPACING AS FOLLOWS:

CAST IRON - ONE HANGER FOR EACH SECTION OF CAST IRON PIPE. SCREWED AND SOLDER PIPE - 6-FOOT SPACING FOR PIPE 1-1/2" AND SMALLER AND 10 FEET OR LARGER.

ALL THREAD HANGER RODS SHALL BE USED AS FOLLOWS:

PIPE 2" AND SMALLER - 3/8"

PIPE 2-1/2" TO 4" - 1/2" PIPE ABOVE 4" - 5/8"

SUPPORT ALL VERTICAL PIPE WITH KNEE ANCHORS OR FLOOR CLAMPS AND BRACE AS REQUIRED.

CLAMPS AND HANGERS ON INSULATED PIPE SHALL BE PROVIDED WITH A HEAVY GALVANIZED BEARING PLATE NOT LESS THAN FOUR INSULATION DIAMETERS LONG.

BARE COPPER PIPES SHALL BE SUPPORTED WITH COPPER PLATED HANGERS.

SUPPORT HANGERS FROM BEAM CLAMPS, INSERTS IN CONCRETE, JOIST CLAMPS, ETC. AS NECESSARY TO SUPPORT THE WEIGHT. NO WIRE OR STRAPS ARE TO BE USED FOR HANGERS.

29. PROTECTION DURING CONSTRUCTION

INSTALL TEST PLUGS, WOOD PLUGS OR CAPS IN ALL OPEN PIPES AT TIME OF INSTALLATION AND DO NOT REMOVE UNTIL PIPE IS CONNECTED.

MAINTAIN PRESSURE AND PRESSURE GAUGE ON ALL WATER LINES DURING CONSTRUCTION. USE WATER EXCEPT IN COLD WEATHER.

DRAIN ALL WATER FROM LINES TO PREVENT FREEZING.

PROTECT ALL FINISHED SURFACES OF FIXTURES AND BRASS FROM ANY DAMAGE. FIXTURES OR BRASS OF ANY TYPE THAT IS DAMAGED, SCRATCHED, OR DISCOLORED SHALL BE REMOVED AND REPLACED AT THIS CONTRACTOR'S EXPENSE.

30. PROPANE GAS SYSTEM

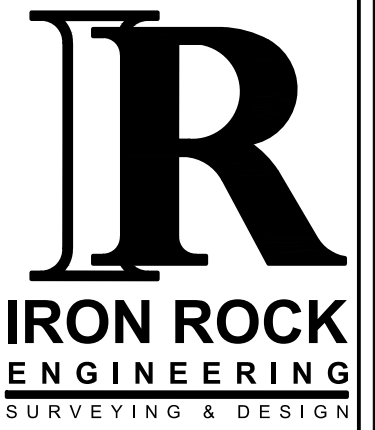
GAS PIPING ROUTED WITHIN THE BUILDING, 2" AND BELOW, SHALL BE BLACK STEEL SCHEDULE 40 WITH MALLEABLE FITTINGS, GAS PIPING 2-1/2" AND ABOVE SHALL BE BLACK STEEL SCHEDULE 40, WITH WELD FITTINGS. GAS PIPING INSTALLATION SHALL CONFORM IN ALL RESPECT TO APPLICABLE BUILDING CODES. PROVIDE DRIP LEGS WHEREVER DIRECTION CHANGES FROM HORIZONTAL TO VERTICAL. GAS PLUG COCKS SHALL BE ROCKWELL, NORDSTRUM, DEZURICK OR APPROVED EQUAL.

VENT ALL GAS REGULATORS TO OUTDOORS.

EACH PIECE OF EQUIPMENT TO BE PROVIDED W/GAS COCK AND UNION IN ACCORDANCE TO CODE.

FIRE SPRINKLER SYSTEMS

31. TO BE PROVIDED BY THE FIRE SPRINKLER CONTRACTOR.



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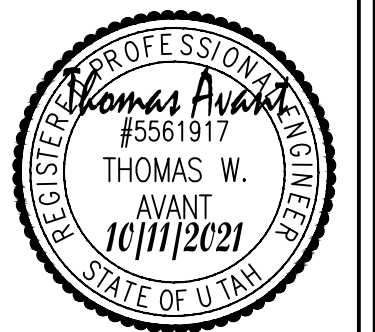
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www.ironrockeng.com

KANE COUNTY JAIL YARD IMPROVEMENTS

PLUMBING SPECIFICATIONS

KANAB, UT 84741

INITIAL SUBMITTAL:	02/23/2021
DESCRIPTION:	
DATE:	
REV#:	



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PLUMBING FIXTURE SCHEDULE									
MARK	DESCRIPTION	MFR/MODEL	ROUGH-IN						NOTES
			HW	CW	V	TRAP	S/W	WALL CLEANOUT	
FD-1	CAST IRON FLOOR DRAIN WITH DOUBLE DRAINAGE FLANGE, AND WEEPHOLES WHERE WATERPROOF MEMBRANES OCCUR, MEDIUM DUTY CAST IRON STRAINER, PROVIDE TRAP GUARD	FLOOR DRAIN = J.R. SMITH SAFE SET BUCKET FLOOR DRAIN 2350				MATCH WASTE DRAIN	MATCH WASTE DRAIN		SET DRAIN FLUSH AND LEVEL WITH FINISHED SURFACES, COORDINATE PLACEMENT WITH OTHER TRADES. COVER DRAIN DURING CONSTRUCTION TO PREVENT FOREIGN OBSTACLES FROM ENTERING DRAIN. FLOOR DRAIN CONNECTION SIZE AS NOTED ON PLANS.
HB-1	Frostproof Wall Hydrant, Inlet Size 3/4 in FNPT, Wall Thickness 8 in, Recommended Wall Opening 2 in x 3-7/8 in, Length 12 in, Includes Vacuum Breaker and Key, Handle Type Loose Key, Casing Material Polished Brass, Outlet Size 3/4 in Hose, Max. Pressure 125 psi, Max. Temp. 120 Degrees F, Standards ASSE, GOVERNMENT SPEC WW-P-541b, IAPMO	WOODFORD MFG./65P-8		3/4"					
WC-1	Front Access, 18 Inch Comby with Toilet and Oval Lavatory Bowl	ACORN/1418FA							
WC-2	Rear Mount, ADA Compliant Comby with Offset Toilet and D-Shaped Lavatory Bowl	ACORN/1449							



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PLUMBING SCHEDULE

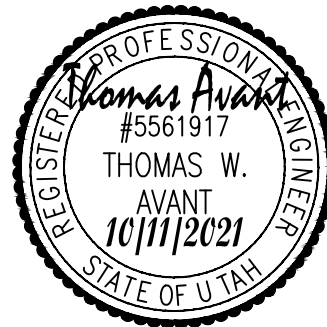
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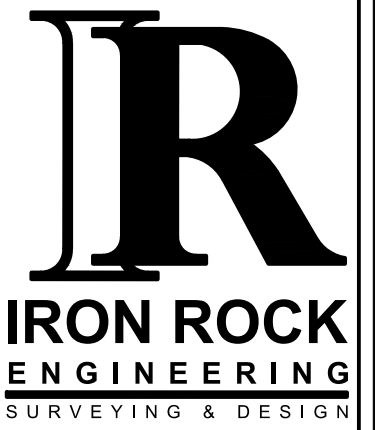
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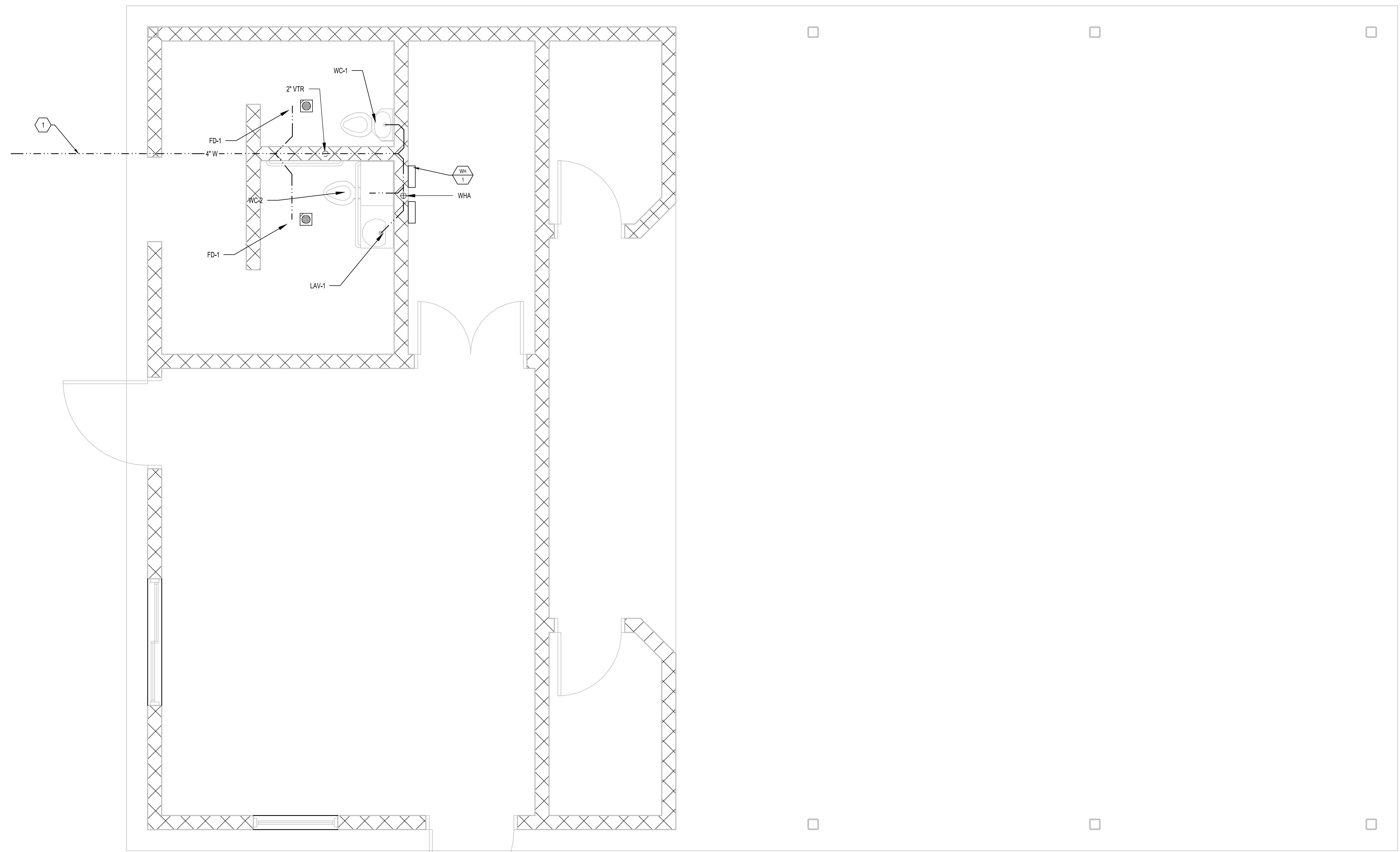


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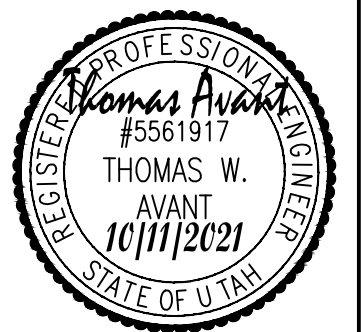
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PLUMBING DRAIN PLAN

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SCALE: 3/8" = 1'

SHEET:

P1.0

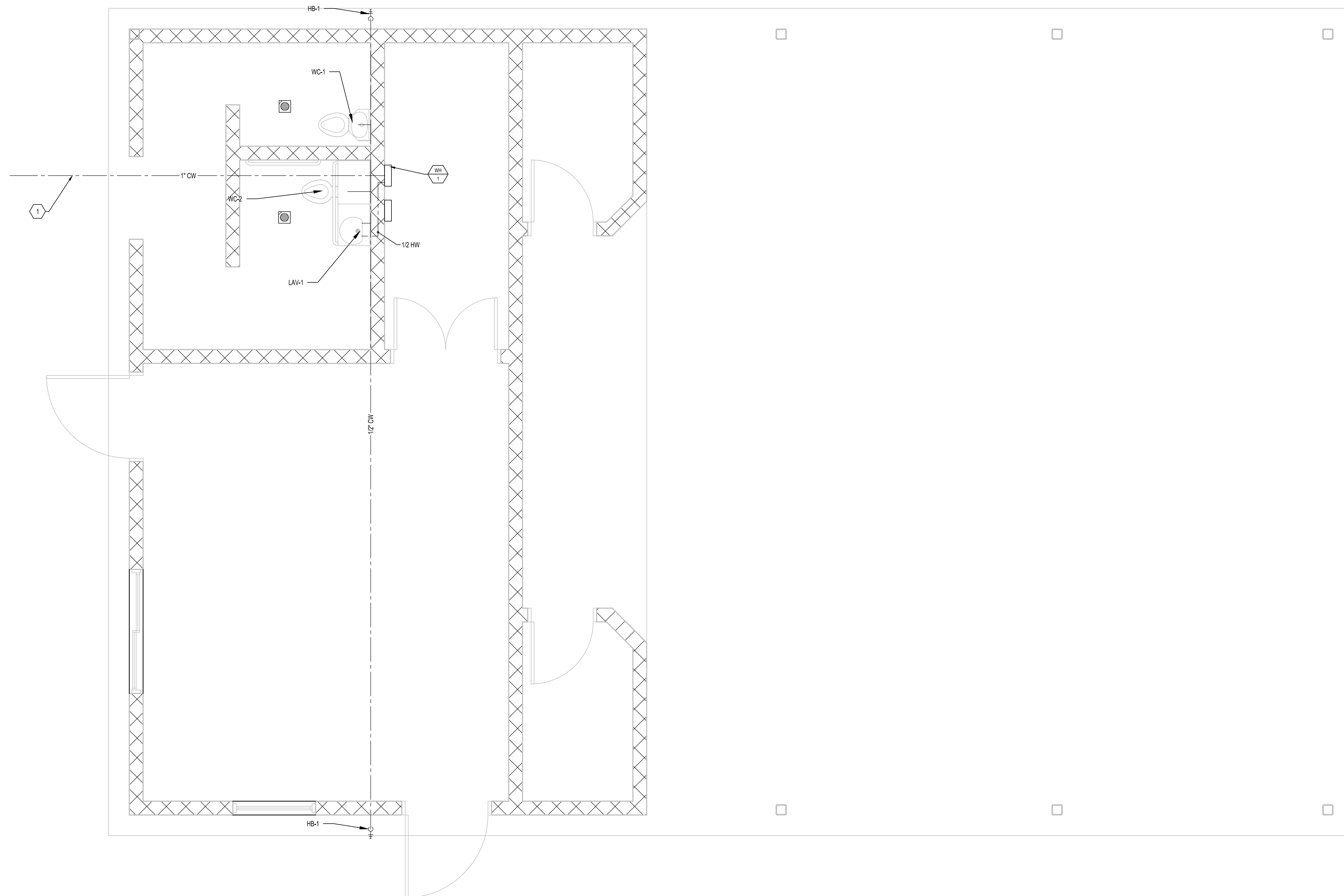


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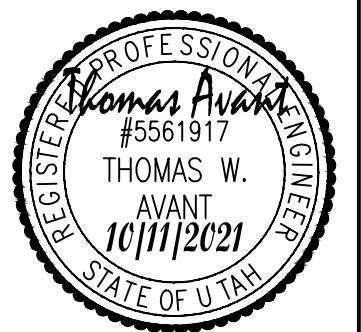
KANE COUNTY JAIL YARD IMPROVEMENTS
PLUMBING PIPING PLAN

KANAB, UT 84741



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REVISIONS: DATE: DESCRIPTION:



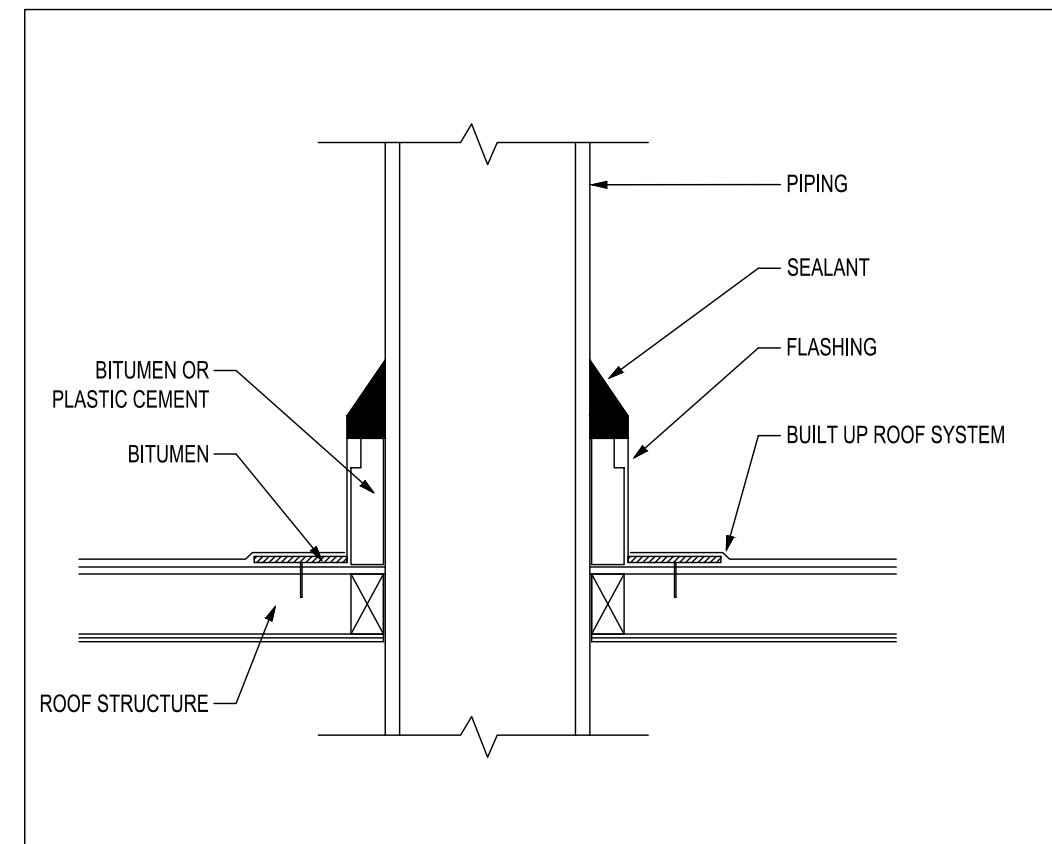
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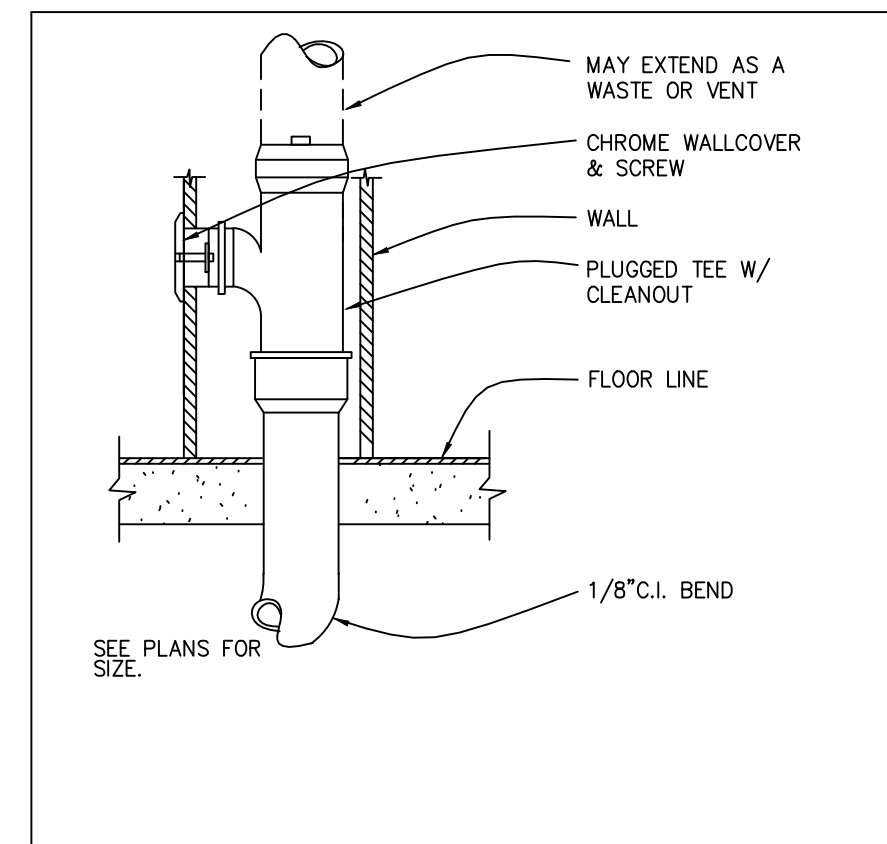
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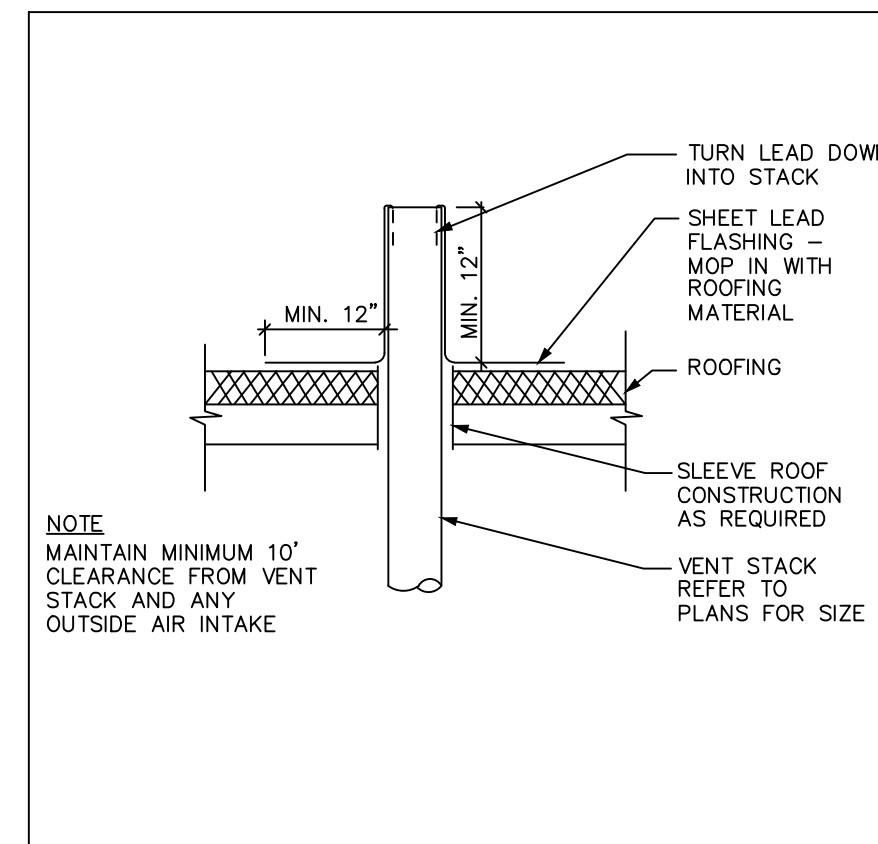
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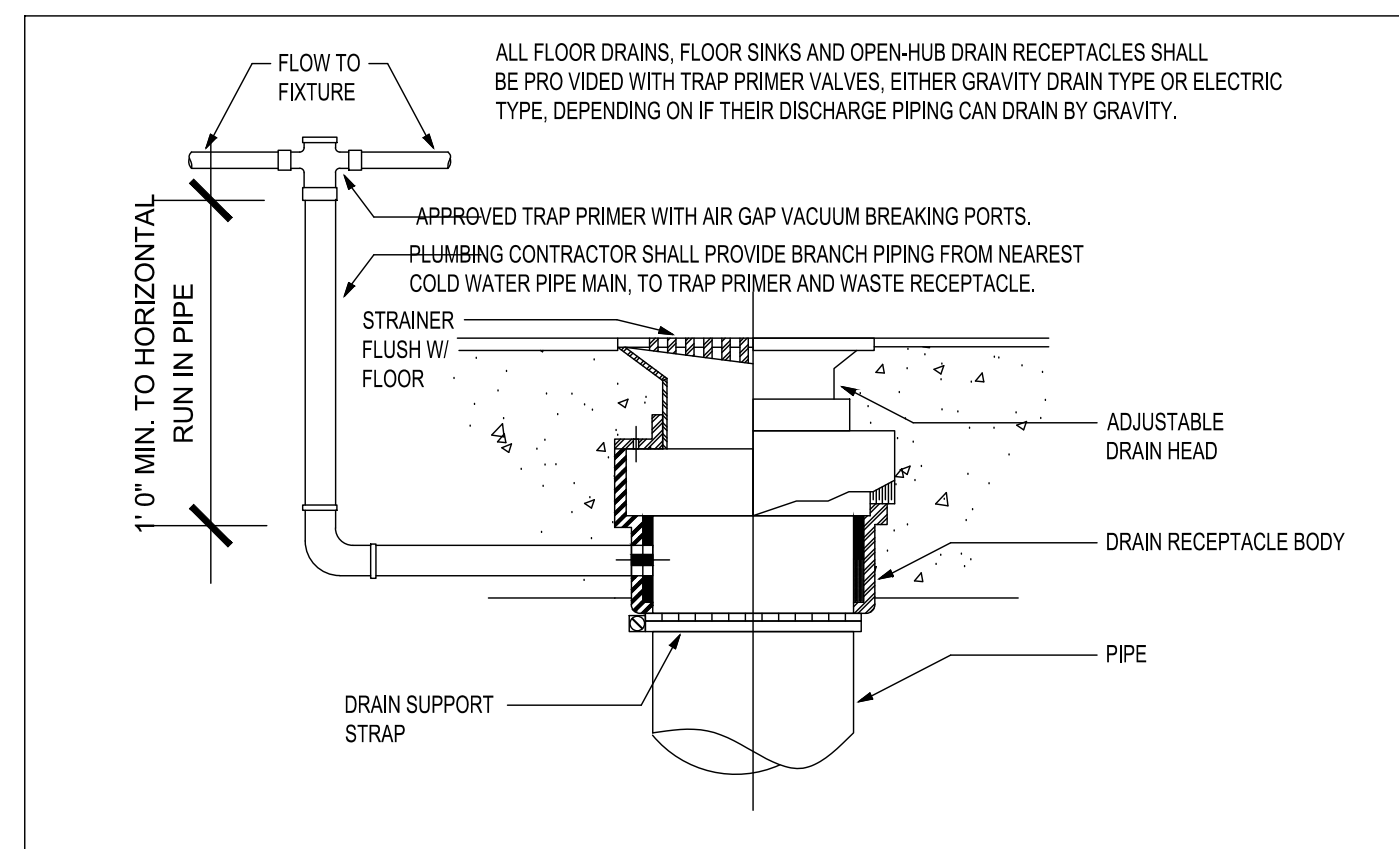
1 PIPE THRU ROOF DETAIL
NO SCALE



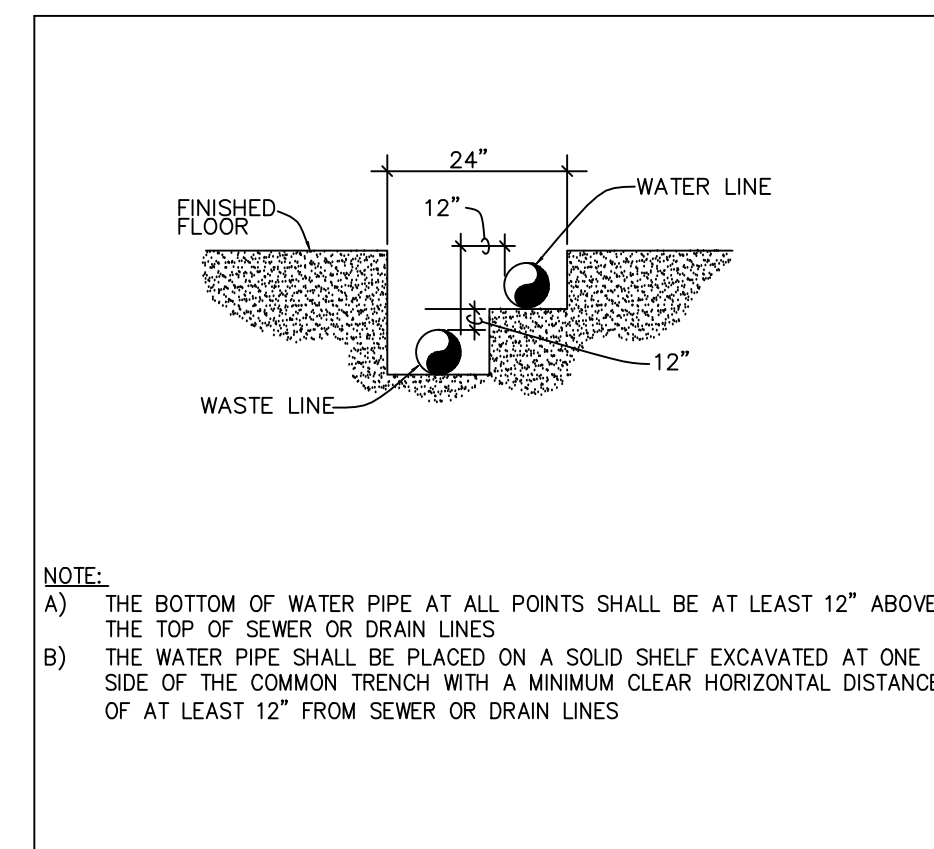
2 WALL CLEANOUT DETAIL
NO SCALE



3 VENT THROUGH ROOF DETAIL
NO SCALE



4 FLOOR DRAIN/TRAP PRIMER DETAIL
NO SCALE



5 SANITARY WASTE AND WATER LINE DETAIL
NO SCALE



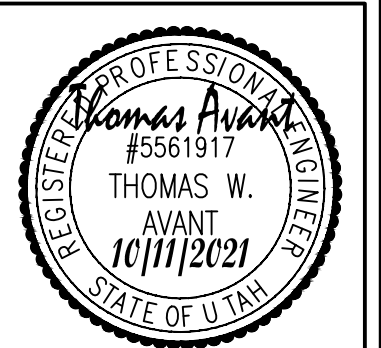
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GENERAL NOTES

- DESIGN SNOW LOADS:
GROUND = 25 PSF
IMPORTANCE FACTOR = 1.0
- BASIS FOR WIND DESIGN:
2018 INTERNATIONAL BUILDING CODE / ASCE 7-16
WIND = 110 MPH (V_{ult}) BASIC WIND SPEED, EXPOSURE C.
WIND USE GROUP = II

- SEISMIC - SITE CLASS D
SEISMIC DESIGN CATEGORY D
S_s = 0.391 S_{ds} = 0.387 C_s-c_{mu} = 0.194
S₁ = 0.127 S_{d1} = 0.193 C_s-S_{TL} = 0.31

LATERAL FORCE RESISTING SYSTEM:
SPECIAL REINFORCED CMU BEARING WALLS AND ORDINARY STEEL MOMENT FRAMES

- THESE STRUCTURAL NOTES DO NOT SUPERSEDE THE PLAN NOTES. CONSULT THE PLAN NOTES SPECIFIC TO FOUNDATION AND FRAMING FOR ADDITIONAL REQUIREMENTS IN EACH SECTION. IF CONFLICT BETWEEN NOTES AND SPECIFICATIONS OCCURS, THE MOST STRINGENT REQUIREMENT GOVERNS. NOTES AND DETAILS ON DRAWINGS TAKE PRECEDENCE OVER GENERAL NOTES, TYPICAL DETAILS, AND SPECIFICATIONS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. DURING CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OR CONSTRUCTION IN ANY AREA. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES, OMISSIONS, OR INCONSISTENCIES. IN CASE OF CONFLICT, FOLLOW THE MOST STRINGENT REQUIREMENTS AS DIRECTED BY THE ARCHITECT AND ENGINEER WITHOUT ADDITIONAL COST TO THE OWNER. DO NOT SCALE DRAWINGS!
- ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE INTERNATIONAL BUILDING CODE, ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK, AND THE CODES AND STANDARDS LISTED IN THESE NOTES AND SPECIFICATIONS. ALL SPECIFICATIONS NOTED SHALL BE THE LATEST APPROVED REVISION OR EDITION. THE GENERAL CONTRACTOR SHALL REVIEW AND APPROVE ALL SHOP DRAWINGS PRIOR TO SUBMITTING THEM TO THE ARCHITECT. A REVIEWED COPY OF ALL SHOP DRAWINGS SHALL BE KEPT AT THE CONSTRUCTION SITE FOR REFERENCE. THE SHOP DRAWING REVIEW SHALL NOT RELIEVE THE GENERAL CONTRACTOR OF ANY RESPONSIBILITY FOR COMPLETION OF THE PROJECT ACCORDING TO THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL INVESTIGATE THE SITE DURING CLEARING, EXCAVATION OR OTHER EARTH WORK OPERATIONS FOR FILLED EXCAVATIONS, BURIED STRUCTURES OR UNNATURAL SOIL CONDITIONS.
- STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, NOT THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO: BRACING, SHORING, ETC. SHORING AND BRACING SHALL REMAIN IN PLACE UNTIL ALL PERMANENT MEMBERS ARE IN PLACE AND CONNECTIONS COMPLETE. OBSERVATION VISITS TO THE SITE BY THE ENGINEER OR HIS REPRESENTATIVE SHALL NOT INCLUDE INSPECTION OF THESE ITEMS. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOADS SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. PROVIDE ADEQUATE SHORING OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
- THE STRUCTURAL DRAWINGS ARE A PORTION OF THE COMPLETE SET OF CONSTRUCTION DOCUMENTS AND ARE NOT INTENDED TO CONVEY ABSOLUTELY ALL INFORMATION RELATED TO THE PRIMARY STRUCTURE AS AN INDEPENDENT SET OF DOCUMENTS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE WITH ALL TRADES, ANY AND ALL ITEMS THAT ARE TO BE INTEGRATED INTO THE STRUCTURAL SYSTEM.
- SEE ARCH'L DRAWINGS FOR THE FOLLOWING: (UNLESS NOTED SPECIFICALLY ON STRUCTURAL DRAWINGS)
 - SIZE AND LOCATION OF DOOR, WINDOW, FLOOR, AND ROOF OPENINGS
 - SIZE AND LOCATION OF ALL INTERIOR AND EXTERIOR NON-BEARING PARTITIONS
 - FLOOR AND ROOF FINISHES
 - STAIR FRAMING AND DETAILS (EXCEPT AS SHOWN).
 - DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS
- SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR THE FOLLOWING: (UNLESS SHOWN OR NOTED)
 - PIPE RUNS, SLEEVES, TRENCHES, HANGERS, WALL AND SLAB OPENINGS, ETC.
 - ELECTRICAL CONDUITS, BOXES, AND OUTLETS IN WALLS AND SLABS.
 - CONCRETE INSERT REQUIREMENTS FOR MECHANICAL AND ELECTRICAL.
 - SIZE AND LOCATION OF MACHINE OR EQUIP. BASES, ANCHOR BOLT REQUIREMENTS, ETC.
- OPENINGS LARGER THAN 6 IN. SHALL NOT BE PLACED IN SLABS, DECKS, WALLS, ETC., UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS. NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW ABOVE CONDITIONS LOCATED IN STRUCTURAL MEMBERS.
- OBSERVATION VISITS BY THE ENGINEER OR HIS REPRESENTATIVE SHALL NEITHER BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.

FOUNDATIONS

- FOUNDATION AND FOOTINGS ARE DESIGNED BASED ON A BEARING PRESSURE OF 1500 PSF AS PER 2018 IBC RECOMMENDATIONS. FOUNDATION DESIGNED FOR NON-EXPANSIVE SOIL. IF IT IS DISCOVERED EXPANSIVE SOILS EXISTING ON SITE, CONTRACT ENGINEER OF RECORD FOR RE-EVALUATION
- THE CONTRACTOR SHALL PROVIDE FOR PROPER DE-WATERING OF ANY AND ALL EXCAVATIONS IF REQUIRED.
- THE CONTRACTOR SHALL PROVIDE FOR THE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING, AND SHORING REQUIRED TO SAFELY AND ADEQUATELY RETAIN ANY EXCAVATIONS.
- ALL RETAINING WALLS, BUILDING WALLS, PITS, ETC. MUST HAVE ATTAINED THEIR DESIGN STRENGTH AND/OR SUPPORT PRIOR TO BACKFILLING. EXCEPTION - IF BRACING IS TO BE USED TO SUPPORT WALLS AND ETC. FOR EARLY BACKFILLING, CONTRACTOR IS RESPONSIBLE FOR DESIGN, PERMITS AND INSTALLATION OF SUCH BRACING.
- GRADING SHALL ALLOW FOR POSITIVE DRAINAGE (2 PERCENT MINIMUM) AWAY FROM THE BUILDING, OTHER FOOTINGS AND FOUNDATIONS, DRIVES AND SIDEWALKS. ALL DOWN SPOUTS SHALL DRAIN ONTO 3 FOOT LONG SPLASH BLOCKS SLOPING AWAY FROM FOUNDATIONS.
- EXCESSIVE WETTING OR DRYING OF THE FOUNDATION EXCAVATION AND THE FLOOR SLAB AREAS SHOULD BE AVOIDED DURING CONSTRUCTION.
- ALL FILL SUPPORTING CONCRETE SLABS, FOOTINGS, OR ETC. SHALL BE MOISTENED AND COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 (MODIFIED PROCTOR). ALL OTHER FILL SHALL BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF NINETY (90) PERCENT OF MAXIMUM DRY DENSITY. COMPACTION TESTING SHALL BE PERFORMED BY AN APPROVED TESTING AGENCY AND THE RESULTS SUBMITTED TO THE STRUCTURAL ENGINEER. SUFFICIENT FIELD DENSITY TESTS SHALL BE PERFORMED TO CERTIFY BUILDING PADS ARE CONFORMING TO THE SPECIFICATIONS.
- FOOTINGS SHALL BE PLACED ON A MINIMUM OF 18" OF STRUCTURAL FILL COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED PROCTOR ASTM D-1557.

WOOD CONSTRUCTION

- ALL PHASES OF WORK PERTAINING TO WOOD FRAMING OR WOOD CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS LISTED IN CHAPTER 23 OF THE I.B.C.
- ALL WOOD BEAMS, JOISTS AND COLUMNS SHALL BE #2 DOUGLAS FIR (D.F.) GRADE LUMBER OR BETTER (U.N.O.) MICRO-LAM BEAMS SHALL HAVE A MINIMUM ALLOWABLE BENDING STRESS OF 2,800 psi.
- ALL GLUE LAMINATED TIMBER MEMBERS SHALL HAVE THE FOLLOWING MINIMUM STRESS GRADE LUMBER:
 - BENDING = 2400 psi
 - TENSION = 1100 psi
 - COMPRESSION PARALLEL TO GRAIN = 1650 psi

WOOD CONSTRUCTION - CONT'D.

- GLUE LAMINATED STRUCTURAL MEMBERS SHALL CONFORM TO THE U.S. DEPARTMENT OF COMMERCE COMMERCIAL STANDARD PS-56 AND SECTION 2312, TABLES 23-1-C AND 23-1-D OF THE I.B.C.
- ALL STRUCTURAL PLYWOOD SHALL BE STRUCTURAL I OR STRUCTURAL II GRADE. A.P.A. PERFORMANCE RATED WATERBOARD, COMPOSITE BOARD, AND ORIENTED STRAND BOARD (BUT NOT STRUCTURAL PARTICLE BOARD) ARE ACCEPTED AS EQUIVALENT TO PLYWOOD, PROVIDING SPECIFIED SPAN RATINGS AND OTHER SPECIFIED REQUIREMENTS FOR PLYWOOD ARE MET.
- ALL PLATES OR OTHER LUMBER IN CONTACT WITH CONCRETE OR WITHIN 6 INCHES OF EARTH SHALL BE FOUNDATION REDWOOD ALL MARKED OR BRANDED BY THE REDWOOD INSPECTION SERVICE OR PRESSURE TREATED FOR MOISTURE PROTECTION.
- PROVIDE APPROVED BRIDGING AT A MAXIMUM OF 8 FEET O.C. BETWEEN FLOOR JOIST SUPPORTS FOR ALL SPANS OVER 14 FEET.
- TRUSSES AND/OR WEB JOISTS SHALL HAVE ALL BLOCKING, BRACING, BRIDGING, AND ETC. AS RECOMMENDED BY THE MANUFACTURER.
- WALLS SHALL RUN CONTINUOUS BETWEEN HORIZONTAL SUPPORT POINTS, UNLESS ADEQUATE APPROVED BRACING IS PROVIDED.
- REQUIRED MINIMUM NAILING SCHEDULE FOR USE WHERE NOT NOTED OTHERWISE ON PLANS OR DETAILS: (SEE IBC TABLE NO. 23-Q)
 - STUD TO PLATES.....TOE NAIL 4-8d OR END NAIL 2-16d
 - DOUBLE TOP PLATES.....FACE NAIL 16" O.C. STAGGERED 1-16d w/ 2-16d at LAPS AND INTERSECTIONS.
 - DOUBLE STUDS.....FACE NAIL 24" O.C. 16d
 - CORNER STUD AND ANGLES.....24" O.C. 16d
 - JOIST TO SILL OR GIRDS.....TOE NAIL 3-8d OR 2-16d
 - SOLE PLATE TO JOIST/BLOCKING.....FACE NAIL 16" O.C. 16d
 - BRIDGING TO JOIST.....TOE NAIL EACH END 2- 8d
 - PLYWOOD TO ROOF JOISTS, TRUSSES OR STUDS - SEE NAILING SCHEDULE.
- NAILS OR OTHER APPROVED SHEATHING CONNECTORS SHALL BE DRIVEN FLUSH BUT SHALL NOT BREAK THE SURFACE OF THE SHEATHING.
- CONNECT ALL WOOD TO CONCRETE, WOOD TO STEEL, AND WOOD TO WOOD (EXCEPT STUD TO PLATE) WITH SIMPSON OR EQUAL CONNECTORS U.N.O.

CONCRETE

- ALL PHASES OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL CONFORM TO THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318) AND THE SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 318) LATEST APPROVED EDITIONS, WITH MODIFICATIONS AS NOTED IN THE DRAWINGS OR SPECIFICATIONS.
- CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY. ALL CONCRETE IN CONTACT WITH THE EARTH SHALL CONTAIN TYPE V PORTLAND CEMENT UNLESS NOTED OTHERWISE (UNO). ALL CONCRETE SHALL BE AIR ENTRAINED BY 5% +/- 1%.
- CALCIUM CHLORIDE SHALL NOT BE USED.
- CONCRETE SHALL HAVE THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS WITHIN 28 DAYS AFTER PLACEMENT (UNO):
 - FOOTINGS 4,000 psi
 - FOUNDATION 4,000 psi
 - INTERIOR FLATWORK 4,000 psi
 - ALL EXTERIOR CONCRETE 4,500 psi
- MAXIMUM CONCRETE SLUMP SHALL NOT EXCEED 4 INCHES. +/- 1"
- ALL CONCRETE SHALL BE THOROUGHLY CURED ACCORDING TO ACI RECOMMENDATIONS. FOLLOW ACI 308R "COLD WEATHER CONCRETING" AND ACI 305R "HOT WEATHER CONCRETING" FOR ALL CONCRETE AND MASONRY WORK WHEN REQUIRED BY CURRENT WEATHER CONDITIONS.
- CONDUITS AND PIPES EMBEDDED IN CONCRETE SHALL CONFORM TO THE REQUIREMENTS IN SECTION 1906.3 OF THE INTERNATIONAL BUILDING CODE.
- NO ALUMINUM OR ANY METAL INJURIOUS TO CONCRETE SHALL BE EMBEDDED IN CONCRETE.
- BOTH INTERIOR AND EXTERIOR CONCRETE SLABS-ON-GRADE SHALL BE A MINIMUM OF 4 INCHES IN THICKNESS UNO, WITH SAWN OR TOOLED JOINTS A MAXIMUM 12 FEET IN EACH DIRECTION. SAWN JOINTS SHALL BE 1/4 SLAB THICKNESS IN DEPTH AND SHALL BE CUT AS SOON AS SURFACE ALLOWS AND NOT MORE THAN 12 HOURS AFTER CONCRETE PLACEMENT. BRIDGING TO JOISTS SHALL BE MADE AND LOCATED AS TO LEAST IMPAIR ALL REINFORCING, AND BARS SHALL BE CONTINUOUS THROUGH JOINTS (UNO).
- CLEAR COVERAGE OF CONCRETE OVER OUTER REINFORCEMENT BARS SHALL BE AS FOLLOWS (UNO):
 - FOR CONCRETE PLACED DIRECTLY AGAINST EARTH, 3 IN. COVER
 - FOR CONCRETE SURFACES EXPOSED TO WEATHER, 1 1/2 IN. COVER
 - FOR CONCRETE SURFACES EXPOSED TO GROUND AFTER REMOVAL OF FORMS, 2" COVER.
 - FOR CONCRETE SURFACES NOT EXPOSED TO THE GROUND OR WEATHER: SLABS AND WALLS, 3/4 IN. COVER; JOISTS OR WAFFLE BEAMS, 1 IN. COVER; BEAMS, PIERS, AND COLUMNS, 1 1/2 IN. COVER.
- WHERE CONCRETE GIRTHS, BEAMS, OR WALLS ARE CONTINUOUS AROUND A CORNER, ADD CORNER BARS TO LAP 40 BAR DIAMETERS IN EACH DIRECTION. REINFORCING BARS IN THE INTERIOR FACES SHALL EXTEND TO WITHIN 2 IN. OF THE OUTER FACE AND SHALL TERMINATE IN A STANDARD HOOK OR BEND.
- AROUND OPENINGS IN CONCRETE SLABS, UNLESS OTHERWISE SCHEDULED, ADD REINFORCING EQUIVALENT TO BARS CUT BY OPENING. THE BARS PARALLEL TO THE MAIN REINFORCEMENT SHALL RUN THE FULL LENGTH OF THE SPAN. THE BARS PARALLEL TO THE TEMPERATURE STEEL SHALL RUN 40 BAR DIAMETERS EACH WAY BEYOND THE OPENING.

REINFORCING STEEL (FOR CONCRETE AND MASONRY)

- ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318 LATEST EDITION) AND THE MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION (1973 EDITION) BY THE CRSI AND THE WCRSL, AS MODIFIED BY THE PROJECT DRAWINGS AND SPECIFICATIONS.
- CHAIRS, SUPPORTS AND TIE BARS REQUIRED IN ADDITION TO THE SCHEDULED REINFORCING SHALL BE FURNISHED BY THE CONTRACTOR.
- ALL STEEL REINFORCEMENT SHALL CONFORM TO ASTM A615 GRADE 60 WITH A MINIMUM YIELD STRENGTH OF 60,000 psi, WITH THE FOLLOWING THREE EXCEPTIONS:
 - #3 AND #4 COLUMN TIES AND BEAM STIRRUPS AND BREAKOUT DOWELS SHALL BE GRADE 40 WITH A MINIMUM YIELD STRENGTH OF 40,000 psi.
 - ANY AND ALL REINFORCING THAT IS TO BE WELDED SHALL BE DEFORMED WELDABLE BAR (DWB) THAT CONFIRMS TO ASTM A706 GRADE 60.
 - UNLESS NOTED OTHERWISE (UNO) ON DRAWINGS.
- WELDING OF REINFORCING SHALL BE WITH LOW HYDROGEN ELECTRODES IN CONFORMANCE WITH RECOMMENDED PRACTICES FOR WELDING REINFORCING STEEL AMERICAN WELDING SOCIETY, AWS-D1.4.
- SPLICES OF REINFORCING BAR, IF REQUIRED, SHALL BE AVOIDED AT POINTS OF MAXIMUM STRESS. ALL SPLICES AND LAPS IN REINFORCING BARS SHALL CONFORM TO TYPICAL DETAIL B/SO.1. SPLICES SHALL BE MADE IN A REGION OF COMPRESSION, UNLESS SHOWN OTHERWISE.
- REINFORCING BARS SHALL NEITHER BE WELDED NOR BENT BY HEATING. WHERE INSERTS REQUIRED WELDING TO PLATES, ANGLES OR THE LIKE, DEFORMED WELDABLE BARS SHALL BE USED.

REINFORCING STEEL (FOR CONCRETE AND MASONRY) - CONT'D.

- ALL HOOKS IN REINFORCING BARS SHALL BE BENT 180 DEGREES WITH AN INSIDE DIAMETER OF 6 BAR DIAMETERS FOR BARS UP TO 1 IN. AND 8 BAR DIAMETERS FOR BARS OVER 1 IN. IN DIAMETER. EXTEND BARS A MINIMUM OF 4 BAR DIAMETERS BEYOND BEND. REFER TO STANDARD REBAR BEND DETAILS (A/SO.1) AND TYP. REBAR LAP LENGTH DETAILS (B/SO.1) FOR CLARIFICATION
 - WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WITH A YIELD STRENGTH OF 65000 psi, OR ASTM A497 WITH A YIELD STRENGTH OF 70000 psi.
 - MINIMUM LAP OF WELDED WIRE FABRIC SHALL BE 6 INCHES OR ONE FULL MESH AND ONE HALF, WHICHEVER IS GREATER.
 - DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE, AND SPACING OR NUMBER AS THE VERTICAL REINFORCING, RESPECTIVELY, UNO.
- MASONRY**
- SPECIFIED COMPRESSIVE STRENGTH OF MASONRY, f_m, SHALL BE 1900 PSI. ALL CONCRETE BLOCK GROUT, AND MORTAR SHALL CONFORM TO IBC TABLE 2105.2.2.1.2 TO ACHIEVE THE SPECIFIED COMPRESSIVE STRENGTH
 - STRUCTURAL MASONRY SHALL BE HOLLOW, NORMAL-WEIGHT LOAD-BEARING CONCRETE MASONRY UNITS CONFORMING TO ASTM C90. ALL BLOCKS SHALL BE PLACED IN RUNNING BOND CONSTRUCTION (UNO) WITH ALL VERTICAL CELLS IN ALIGNMENT
 - MORTAR MIX SHALL CONFORM TO ASTM C270, TYPE M OR S. USE TYPE S MORTAR WHERE MASONRY IS IN CONTACT WITH SOIL
 - GROUT SHALL CONFORM TO REQUIREMENTS OF ASTM C476. MINIMUM GROUT COMPRESSIVE STRENGTH SHALL MATCH OR EXCEED f_m BUT SHALL NOT BE LESS THAN 2,000 psi. USE SUFFICIENT WATER FOR GROUT TO FLOW INTO ALL JOINTS OF THE MASONRY WITHOUT SEGREGATION. HOLD GROUT DOWN 1-3/8" BELOW TOP OF BLOCK AT GROUT LIFT JOINTS. VIBRATE ALL GROUTED CELLS.
 - LAP REINFORCING BARS PER LAP SCHEDULE
 - REINFORCING SHALL BE SECURED IN ITS PROPER POSITION WITHIN THE CELL TO PREVENT LATERAL DISPLACEMENT PRIOR TO AND DURING GROUTING.
 - ALL MASONRY CELLS CONTAINING REINFORCING SHALL BE SOLID GROUTED. MASONRY CELLS NOT CONTAINING REINFORCEMENT SHALL NOT BE REQUIRED TO BE SOLID GROUTED
 - VERTICAL CONTROL JOINTS PER DETAILS T1/SO.2 AND T2/SO.2 SHALL BE PROVIDED AT A MAXIMUM SPACING OF 40'-0" o.c. ALONG BUILDING LENGTH
 - (1) #4 CONTINUOUS HORIZONTAL BAR SHALL BE PROVIDED IN CONT. BOND BEAM AT THE LESSER OF ONE THIRD THE HEIGHT OF THE MASONRY WALL PIER OR 32" o.c. MAX. AND AT TOP AND BOTTOM OF ALL OPENINGS IN CMU WALL
 - PROVIDE VERTICAL REINFORCING BARS AT EA. CORNER AND AT A MAXIMUM SPACING OF 48" o.c. AS NOTED ON FOUNDATION AND FRAMING PLAN NOTES AND AS SHOWN ON PLANS
 - ALL HORIZONTAL SHEAR REINFORCEMENT SHALL BE HOOKED AROUND VERTICAL BARS AT EA. SHEAR WALL PIER w/ 180 DEGREE HOOK OR AS NOTED ON PLANS AND DETAILS

STRUCTURAL STEEL

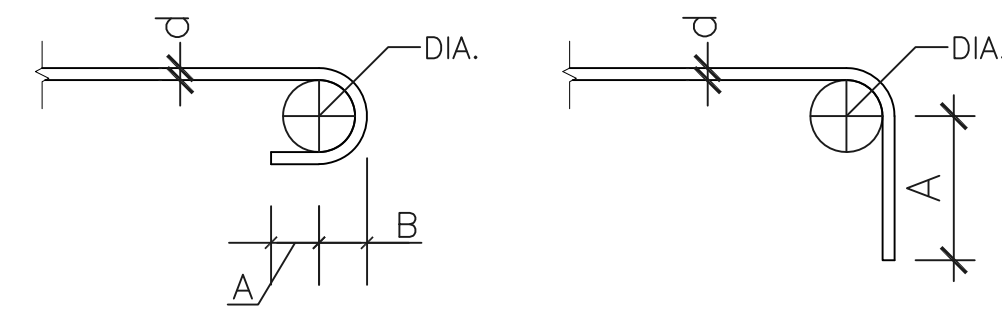
- STRUCTURAL STEEL STRENGTH REQUIREMENTS:
WIDE FLANGE SHAPES (W SECTIONS) - ASTM A992, GRADE 50, F_y = 50 KSI
END PLATE AT MOMENT RESISTANT CONNECTIONS - ASTM A992, GRADE 50, F_y = 50 KSI
CHANNELS, ANGLES, PLATES, RODS, AND BARS - A36, F_y = 46 KSI
SQUARE AND RECTANGULAR TUBES ASTM A500 - GRADE B, F_y = 46 KSI
PIPES ASTM A53 - GRADE B, F_y = 36 KSI
- ANCHOR BOLTS AND THREADED RODS SHALL CONFORM TO ASTM A36 OR A307
- DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO THE REQUIREMENTS OF THE AISC MANUAL OF STEEL CONSTRUCTION, LRFD, 13TH EDITION
- BEAM SIMPLE SHEAR CONNECTIONS NOT DETAILED ON STRUCTURAL DRAWINGS SHALL BE DESIGNED BY STEEL SUPPLIER FOR LOADS SHOWN ON DRAWINGS OR FOR REACTIONS DETERMINED BY USING THE ALLOWABLE UNIFORM LOAD AS TABULATED IN PART 2 OF THE AISC MANUAL OF STEEL CONSTRUCTION FOR THE SECTION, SPAN AND STRENGTH OF STEEL SPECIFIED.
CONNECTIONS: 3/4" DIAMETER BOLTS, ASTM A325, TIGHTENED TO A SNUG-TIGHT CONDITION PER AISC REQUIREMENTS, TYPICAL U.N.O.
- WHERE STEEL MEMBERS ARE WELDED AND NO SIZE IS SPECIFIED, PROVIDE FULL LENGTH FILLET WELDS BOTH SIDES OF MEMBER. WELD SIZES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
MEMBER THICKNESS (INCHES).....WELD SIZE (INCHES)
3/16.....3/16
1/4.....3/16
- SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ENGINEER AS TO LOCATION AND TYPE OF SPLICE TO BE MADE. ANY MEMBER HAVING A SPLICE NOT SHOWN AND DETAILED ON SHOP DRAWINGS WILL BE REJECTED
- ALL WELDING SHALL CONFORM TO THE AWS CODE. E70 SERIES ELECTRODES SHALL BE USED FOR ALL STRUCTURAL STEEL WELDS
- STRUCTURAL STEEL SHALL BE PUNCHED BY THE STEEL FABRICATOR FOR ALL BOLTED CONNECTIONS, WOOD BLOCKING, NAILERS, CLIPS AND TIES IN ACCORDANCE WITH ARCHITECTURAL/STRUCTURAL DETAILS
- ULTRASONIC INSPECTION BY THE TESTING LABORATORY SHALL BE PROVIDED FOR ALL WELDS CALLED FOR ON THE STRUCTURAL DRAWINGS OR SHOP DRAWINGS AS PARTIAL OR FULL PENETRATION WELDS. ALL FIELD WELDS SHALL BE INSPECTED BY AN AWS CWI INSPECTOR
- COMPLETE STEEL FABRICATION SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION PROCESS
- ALL STEEL EXPOSED TO VIEW SHALL BE CLASSIFIED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) AS DEFINED BY THE AISC CODE OF STANDARD PRACTICE AND SHALL BE TREATED AS SUCH
- ALL BOLTS IN STEEL TO STEEL CONNECTIONS (EXCEPT SHEAR CONNECTIONS) SHALL BE TORQUED OR PRETENSIONED TO MEET THE REQUIREMENTS FOUND IN "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".

SPECIAL INSPECTION

- SPECIAL INSPECTION AND QUALITY ASSURANCE, AS REQUIRED BY SECTION 1704 THRU 1709 OF THE IBC, SHALL BE PROVIDED BY AN INDEPENDENT AGENCY EMPLOYED BY THE OWNER UNLESS WAIVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE REQUIRED INSPECTIONS. ALL TESTING AND INSPECTION REPORTS SHALL BE SENT WITHIN 24 HOURS OF THE TEST TO THE ARCHITECT, ENGINEER, BUILDING OFFICIAL AND CONTRACTOR FOR REVIEW. SPECIAL INSPECTION DURING FABRICATION IS NOT REQUIRED IF THE FABRICATOR IS REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. ITEMS REQUIRING SPECIAL INSPECTION AND QUALITY ASSURANCE ARE:
 - CONCRETE PLACEMENT (IBC 1704.4)
 - CONTINUOUS SPECIAL INSPECTION SHALL BE PROVIDED.
 - CYLINDERS, SLUMP, TEMPERATURE AND AIR-ENTRAINMENT SHALL BE DONE FOR EVERY 50 CUBIC YARDS OR EACH DAY'S PRODUCTION IF THE DAY'S PRODUCTION IS LESS THAN 50 CUBIC YARDS
 - PROTECTION OF CONCRETE DURING COLD AND HOT WEATHER.
 - BOLTS INSTALLED IN CONCRETE (IBC 1704.4)
 - ALL BOLTS SHALL BE SPECIAL INSPECTED PRIOR TO AND DURING CONCRETE PLACEMENT.

SPECIAL INSPECTION - CONT'D.

- STRUCTURAL WELDING, INCLUDING STEEL DECK (IBC 1707.2 AND 1704.3)
 - PERIODIC SPECIAL INSPECTION OF ROOF DECKS
 - PERIODIC SPECIAL INSPECTION OF SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 3/8"
 - CONTINUOUS SPECIAL INSPECTION OF SINGLE PASS FILLET WELDS GREATER THAN 3/8" AND MULTI-PASS FILLET WELDS.
 - CONTINUOUS SPECIAL INSPECTION OF COMPLETE AND PARTIAL PENETRATION WELDS.
- CONCRETE REINFORCING STEEL PLACEMENT (IBC 1704.4)
 - ALL REINFORCING SHALL BE SPECIAL INSPECTED PRIOR TO CONCRETE PLACEMENT.
- STRUCTURAL MASONRY SHALL HAVE LEVEL 1 SPECIAL INSPECTION (IBC 1704.5.2)
 - PERIODIC SPECIAL INSPECTION SHALL BE PERFORMED FOR:
 - PROPORTIONS OF SITE PREPARED MORTAR. CONSTRUCTION OF MORTAR JOINTS
 - LOCATION OF REINFORCEMENT AND CONNECTORS
 - SIZE AND LOCATION OF STRUCTURAL ELEMENTS
 - TYPE, SIZE AND LOCATION AND PLACEMENT OF ANCHORS
 - SIZE, GRADE AND TYPE AND PLACEMENT OF REINFORCEMENT
 - VERIFY GROUT SPACE IS CLEAN PRIOR TO GROUTING
 - PROTECTION OF MASONRY DURING COLD AND HOT WEATHER
 - CONTINUOUS SPECIAL INSPECTION SHALL BE PROVIDED FOR GROUT PLACEMENT AND PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS AND PRISMS.
 - QUALITY ASSURANCE SHALL BE ACCORDING TO LEVEL 2 QUALITY ASSURANCE (TABLE 1.14.1.2 OF ACI 530/ASCE 5/TMS 402)
 - PRIOR TO CONSTRUCTION, A LETTER OF STRENGTH CERTIFICATION FROM THE SUPPLIERS OF THE MASONRY UNITS AND GROUT SHALL BE SUBMITTED.
 - DURING CONSTRUCTION, THE BLOCK, GROUT AND MORTAR SHALL BE TESTED FOR EVERY 5000 SQUARE FEET OF MASONRY CONSTRUCTED.
 - THE CONTRACTOR HAS THE OPTION OF USING THE "MASONRY PRISM TEST METHOD" PER IBC SECTION 2105.2.2.2 IN LIEU OF THE "UNIT STRENGTH METHOD."
- EPOXY ANCHORS (IBC 1704.13)
 - SPECIAL INSPECTION SHALL VERIFY ALL DRILLED HOLES' SIZE AND DEPTH PRIOR TO INSTALLATION OF EPOXY AND ANCHOR ROD.



BAR SIZE	d (BAR DIA.)	DIA.	180° HOOKS		90° BENDS
			A	B	A
#3	3/8"	2 1/4"	2 1/2"	1 1/2"	4 1/2"
#4	1/2"	3"	2 1/2"	2"	6"
#5	5/8"	3 3/4"	2 1/2"	2 1/2"	7 1/2"
#6	3/4"	4 1/2"	3"	3"	9"

A STANDARD REBAR BENDS DETAIL

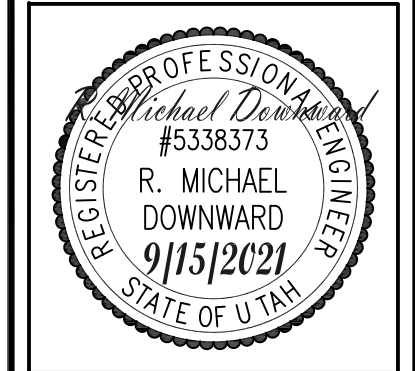
BAR SIZE	d (BAR DIA.)	LAP LENGTH	HOOK EMBED
#3	3/8"	15"	6 1/2"
#4	1/2"	19 1/2"	8 1/2"
#5	5/8"	24"	10 1/2"
#6	3/4"	29"	12 1/2"

B TYP. REBAR LAP LENGTHS

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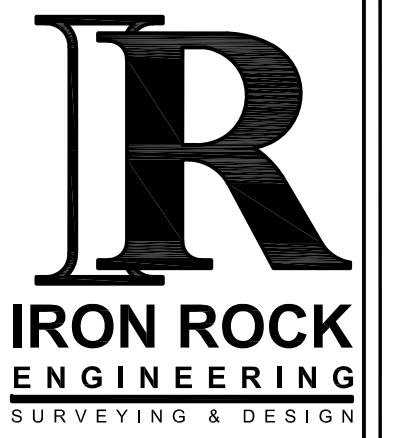
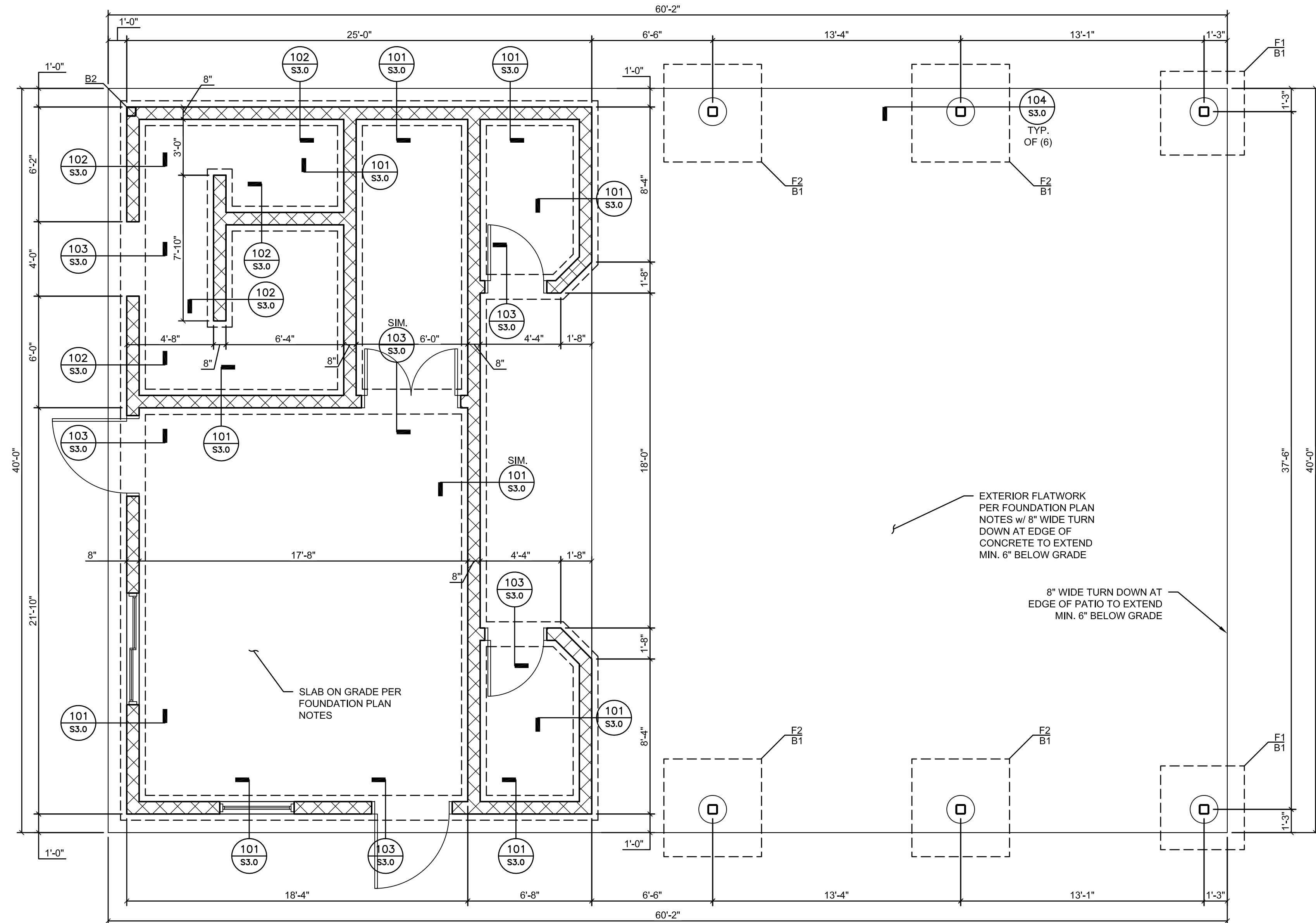
KANE COUNTY JAIL PAVILION
STRUCTURAL SPECIFICATIONS
971 E. KANEPLEX DRIVE
KANAB, UT 84741

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REV#:		DATE:					



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SCALE: NTS
SHEET: **S0.1**

Sheet List Table	
Sheet Number	Sheet Title
S0.1	STRUCTURAL SPECIFICATIONS
S1.0	FOUNDATION PLAN
S2.0	ROOF FRAMING PLAN
S3.0	FOUNDATION DETAILS
S4.0	FRAMING DETAILS



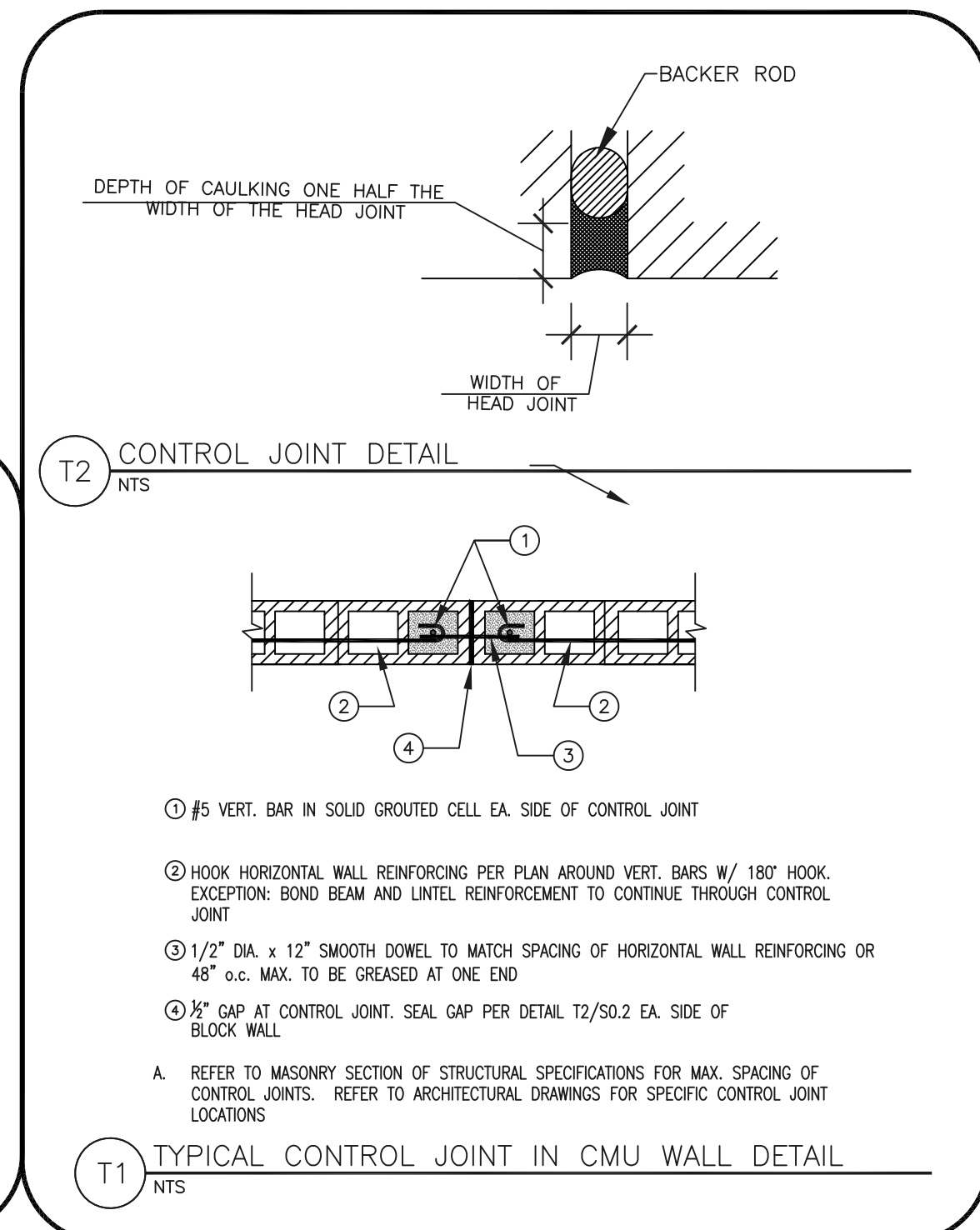
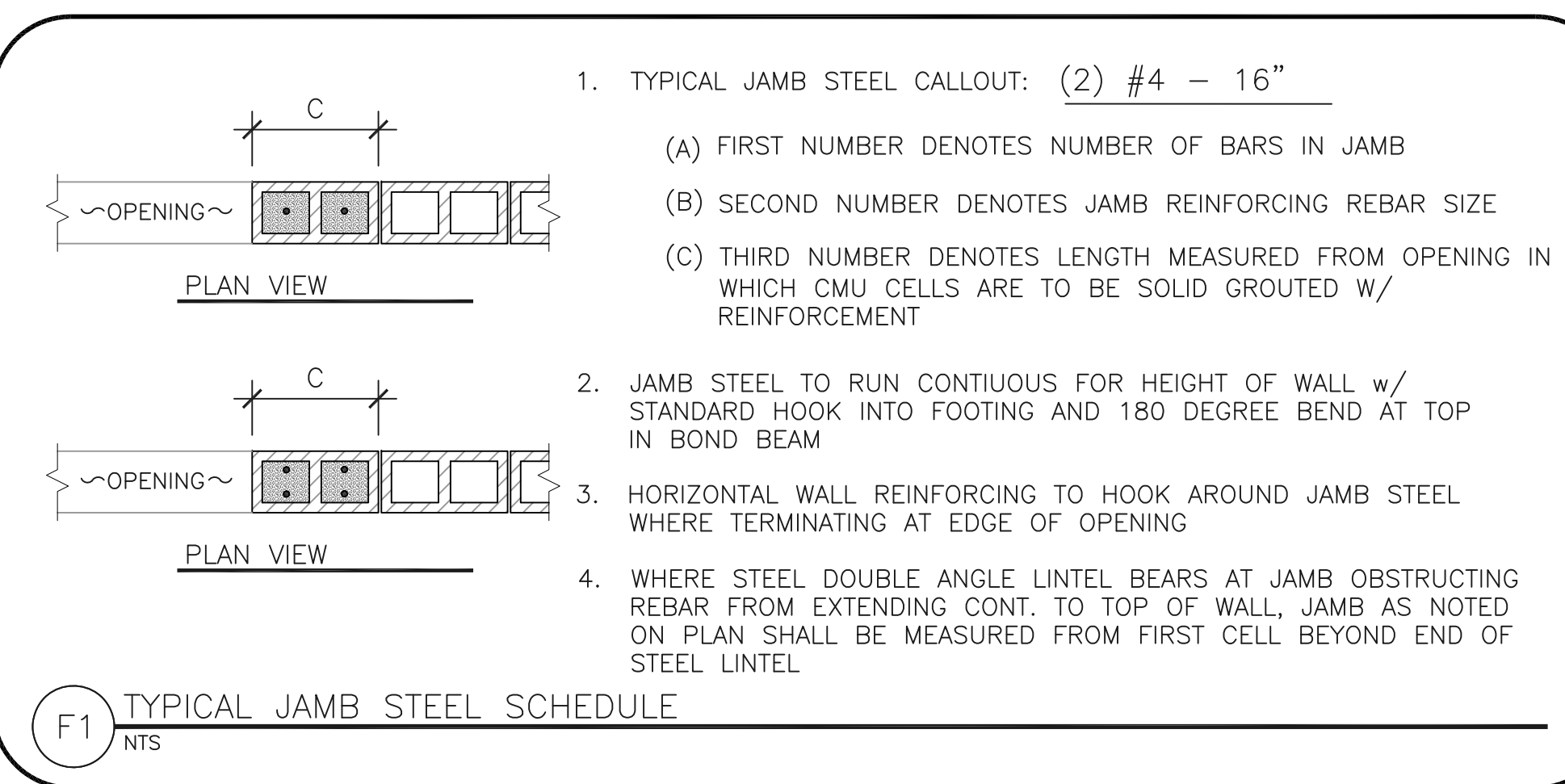
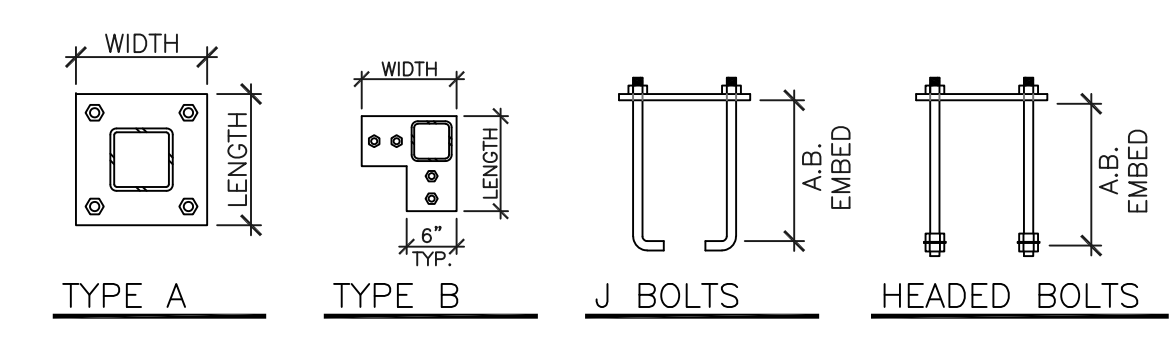
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KANE COUNTY JAIL PAVILION
FOUNDATION PLAN
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FOOTING SCHEDULE			
FOOTING LABEL	FOOTING LENGTH/WIDTH	FOOTING THICKNESS	REQ'D REINFORCING
F1	4'-6" x 4'-6" SQ.	PER DETAIL	(6) #4 BARS E.W. BOTTOM
F2	5'-3" x 5'-3" SQ.	PER DETAIL	(7) #4 BARS E.W. BOTTOM

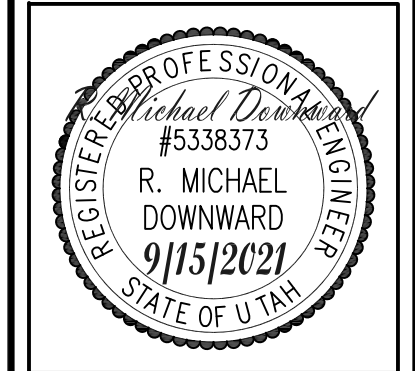
BASEPLATE SCHEDULE					
B.P. LABEL	B.P. TYPE	B.P. LENGTH/WIDTH	B.P. THICKNESS	ANCHOR BOLTS	A.B. EMBED DEPTH/TYP
B1	A	PER DETAIL	PER DETAIL	PER DETAIL	PER DETAIL
B2	B	12"x12"	1/4"	3/4" DIA. HEADED	8" MIN.

- ALL EDGE DISTANCE, END DISTANCE, AND BOLT SPACINGS SHALL BE PER MINIMUM AISC SPECIFICATIONS.
- ALL BOLT EMBED DEPTHS ARE TO BE MEASURED FROM TOP OF CONCRETE
- EPOXY USED FOR EPOXY ANCHORS SHALL BE SIMPSON SET EPOXY OR APPROVED ALTERNATE AND SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATION

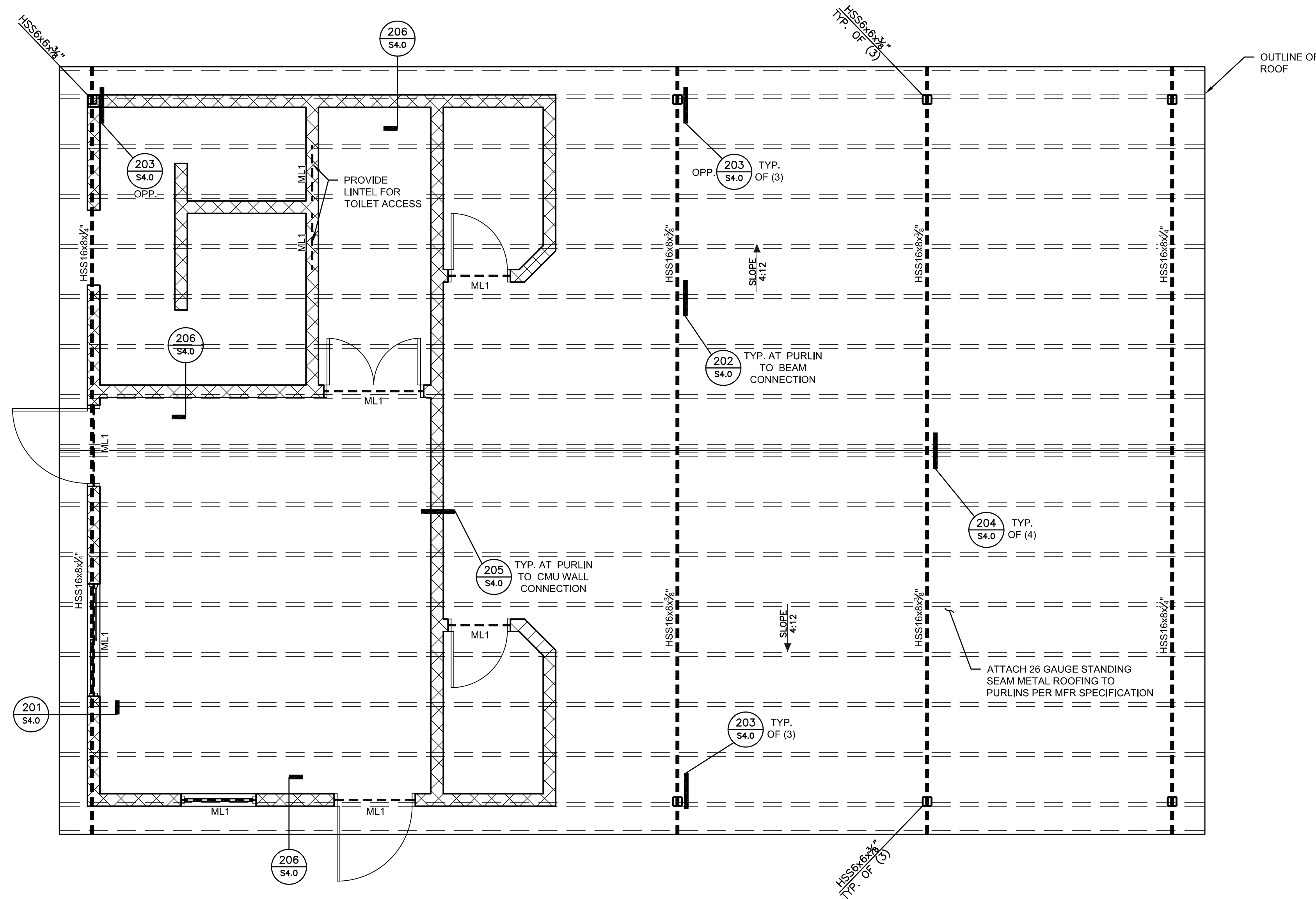


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SHEET: **S1.0**



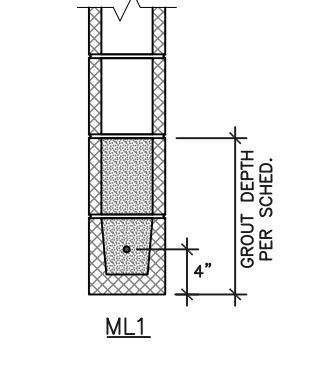
FRAMING SCHEDULE:
 (A) 6" DEEP x 2 1/2" FLANGE 14 GAU. PURLINS SPACED AT 32" o.c. MAX. PURLINS SHALL BE LAPPED MIN. 2'-0" EA. DIRECTION (TOTAL 4' LAP) AND FASTENED TOGETHER w/ (4) 1/2" DIA. A307 BOLTS ((2) BOLTS EA. END OF LAP)

- FRAMING PLAN NOTES:**
- REFER TO PLANS AND DETAILS FOR ALL NAILING REQUIREMENTS. WHERE NAILING IS NOT SPECIFIED ON DRAWINGS, REFER TO TABLE 2304.10.1 OF THE 2018 IBC FOR MINIMUM NAILING REQUIREMENTS
 - REFER TO PLANS AND DETAILS FOR ALL FASTENING AND WELDING REQUIREMENTS. WHERE FASTENING OR WELDING IS NOT SPECIFIED ON DRAWINGS, REFER TO STRUCTURAL STEEL SECTION OF STRUCTURAL SPECIFICATIONS FOR GENERAL REQUIREMENTS
 - REFER TO STRUCTURAL STEEL SECTION IN STRUCTURAL SPECIFICATIONS LOCATED ON SHEET SO.1 FOR ALL STEEL STRENGTH REQUIREMENTS, U.N.O. ON PLANS OR DETAILS
 - ALL WELDS SHOWN ON PLANS AND DETAILS SHALL BE SHOP WELDED AND INSPECTED BY AN AWS CERTIFIED WELDING INSPECTOR, U.N.O.
 - ALL BOLTS IN STEEL TO STEEL CONNECTIONS (EXCEPT SHEAR CONNECTIONS) SHALL BE TORQUED OR PRETENSIONED TO MEET THE REQUIREMENTS FOUND IN "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".
 - EXTERIOR WALLS SHALL BE 8" CMU w/ REINFORCEMENT PER FOUNDATION PLAN OR #5 CONT. VERT. BARS AT 32" o.c. MAX., WHICHEVER IS MORE STRINGENT. REFER TO STRUCTURAL SPECIFICATIONS FOR MASONRY REQUIREMENTS. SOLID GROUT ALL CELLS
 - MASONRY LINTELS/BEAMS SHALL BE NOTED ON PLANS AS FOLLOWS: M1, M2, M3..... REFER TO CMU MASONRY LINTEL SCHEDULE FOR LINTEL REINFORCING REQUIREMENTS
 - TOP COURSE OF MASONRY WALL SHALL BE SOLID GROUTED w/ (1) CONT. #5 BARS TO FORM CONTINUOUS BOND BEAM AROUND PERIMETER OF BUILDING
 - REFER TO FOUNDATION PLAN FOR TYPICAL JAMB REINFORCEMENT REQUIREMENTS
 - TYP. ROOF SHEATHING SHALL BE 19/32" THICK PLYWOOD OR O.S.B. APA RATED STRUCTURAL GRADE 1 w/ 8d NAILS AT 6" o.c. EDGES AND 12" o.c. FIELD U.N.O. ON PLANS OR DETAILS
 - ALL HARDWARE SHALL BE SIMPSON STRONG TIE OR APPROVED EQUAL. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH MFR'S WRITTEN INSTRUCTIONS USING THE TYPE, SIZE AND NUMBER OF FASTENERS SPECIFIED FOR EACH CONNECTOR.
 - STRUCTURAL FRAMING MEMBERS SHALL NOT BE NOTCHED, DRILLED OR OTHERWISE ALTERED WITHOUT WRITTEN PERMISSION OF THE STRUCTURAL ENGINEER.
 - SHEAR PANEL BLOCKING CONSTRUCTION AS NOTED ON PLAN SHALL CONSIST OF 2x4 MEMBERS ON ALL (4) SIDES OF PANEL SHEATHED w/ MIN. 3/8" THICK OSB OR PLYWOOD SHEATHING w/ 8d EDGE NAILING AT 6" o.c. MAX. AROUND PERIMETER.

CMU MASONRY LINTEL SCHEDULE

LINTEL LABEL	MIN. GROUT DEPTH	TOP REINFORCING	BOTTOM REINFORCING	STIRRUPS	DOUBLE ANGLE
ML1	1'-4"	---	(1) #5 CONT. BAR	---	---

- LINTEL WIDTH AND TYPE OF MATERIAL SHALL MATCH WALL IN WHICH LINTEL IS CONSTRUCTED
- TOP AND BOTTOM STEEL SHALL EXTEND A MIN. 24" BEYOND EA. END OF LINTEL IN SOLID GROUTED CELLS
- EXTEND VERTICAL WALL REINFORCING OF WALL ABOVE LINTEL INTO FULL DEPTH OF LINTEL OR 48 BAR DIAMETERS, WHICHEVER IS LESS
- SHEAR REINFORCEMENT SHALL BE HOOKED AT TOP AND BOTTOM w/ STANDARD 90 DEGREE HOOK OR 180 DEGREE HOOK
- REFER TO STRUCTURAL SPECIFICATIONS FOR ADDITIONAL INFORMATION



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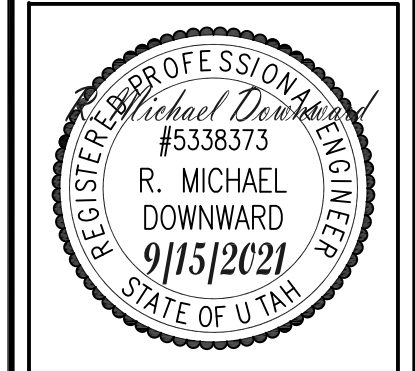
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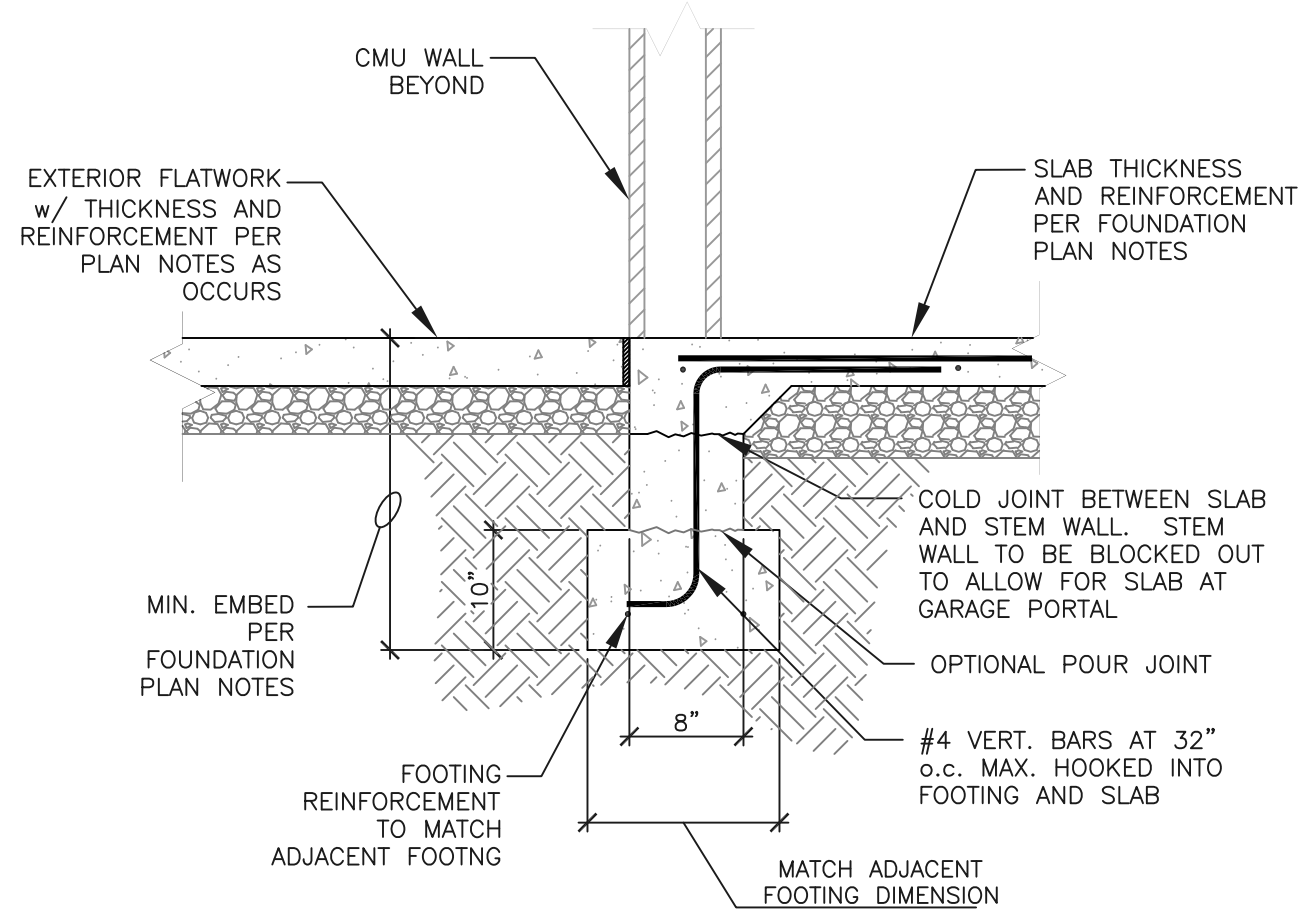
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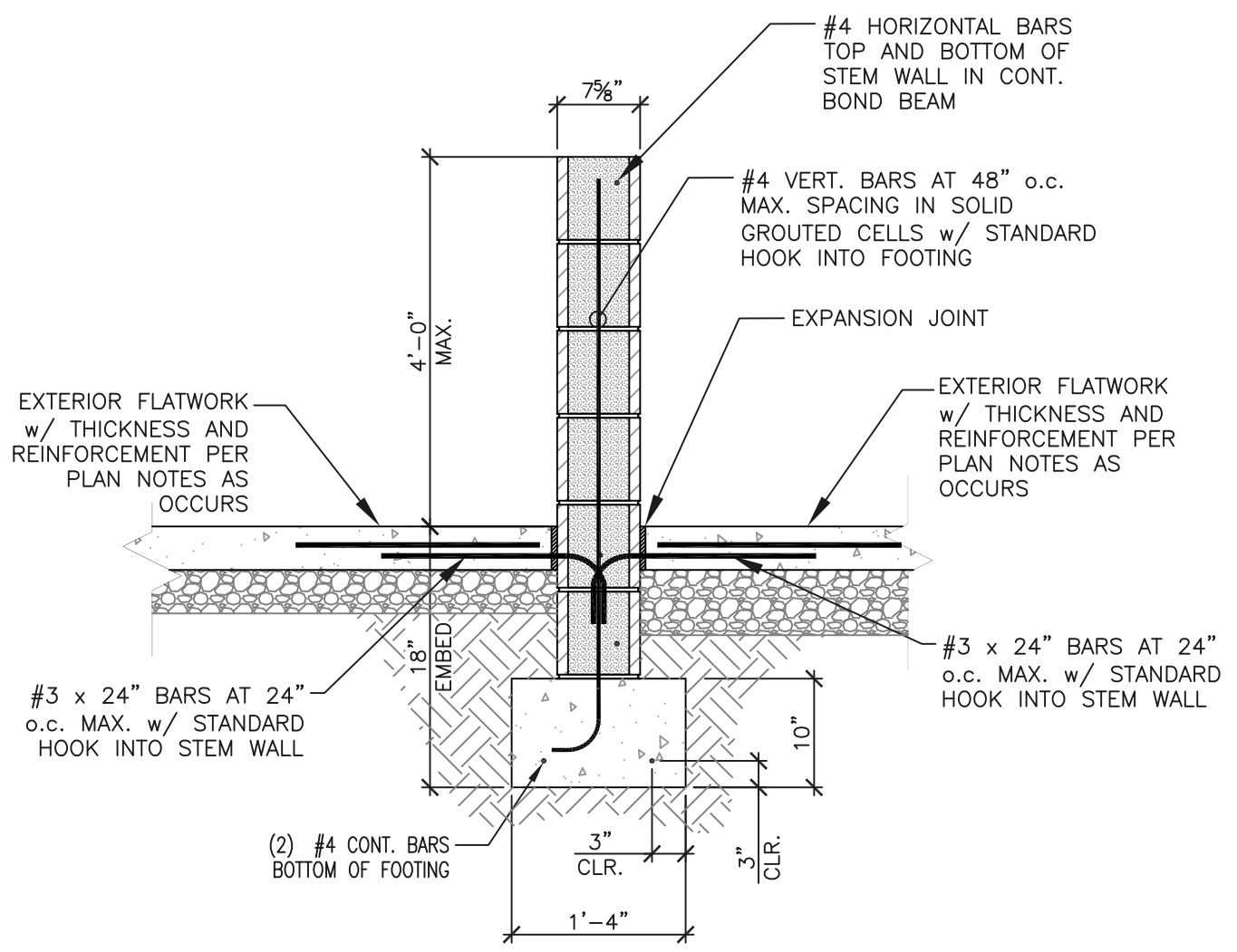
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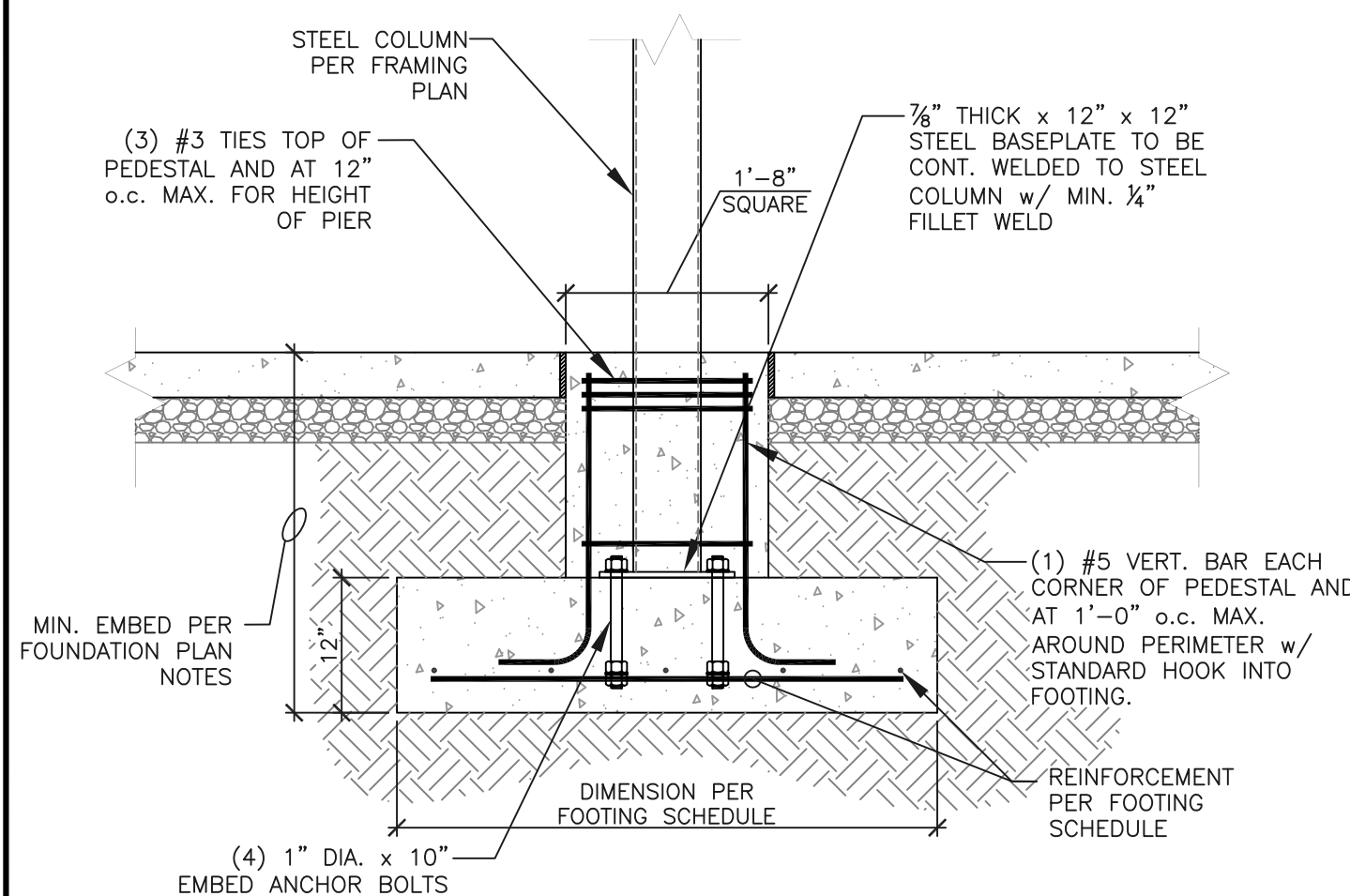
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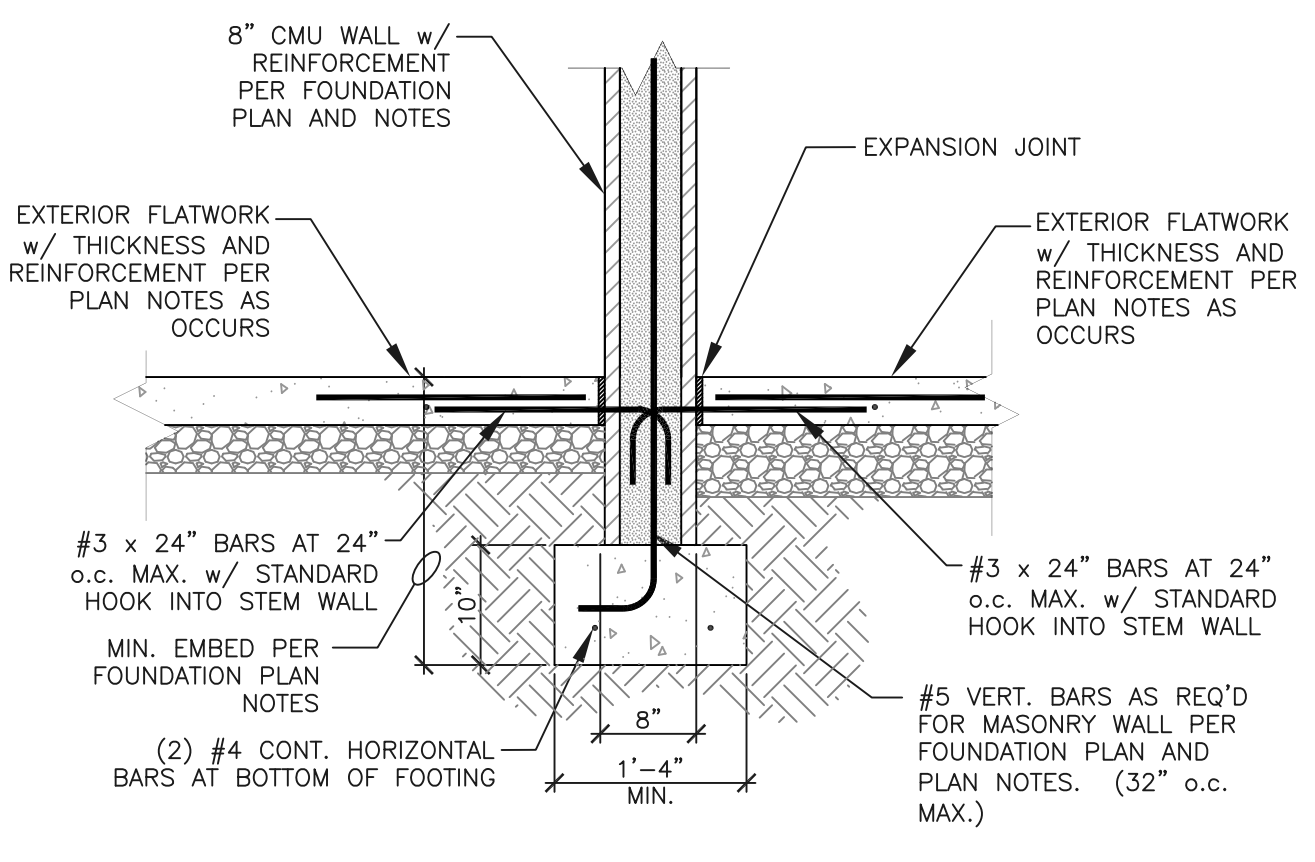
103 TYP. FOOTING AT WALL OPENING
N.T.S.



102 4'-0" MAX. HEIGHT CMU SCREEN WALL
N.T.S.



104 TYP. FOOTING AT CANTILEVER ROOF COLUMN
N.T.S.

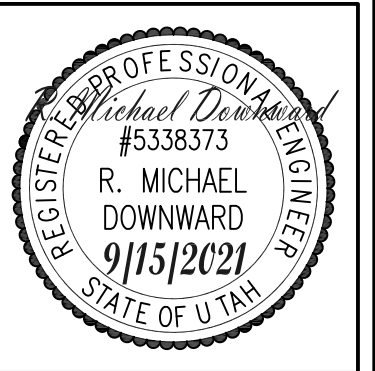


101 CMU WALL AT EXT. PERIMETER FOOTING
N.T.S.

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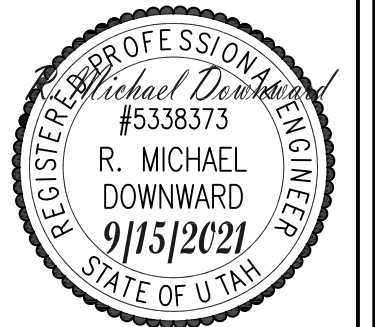
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SHEET:

S3.0

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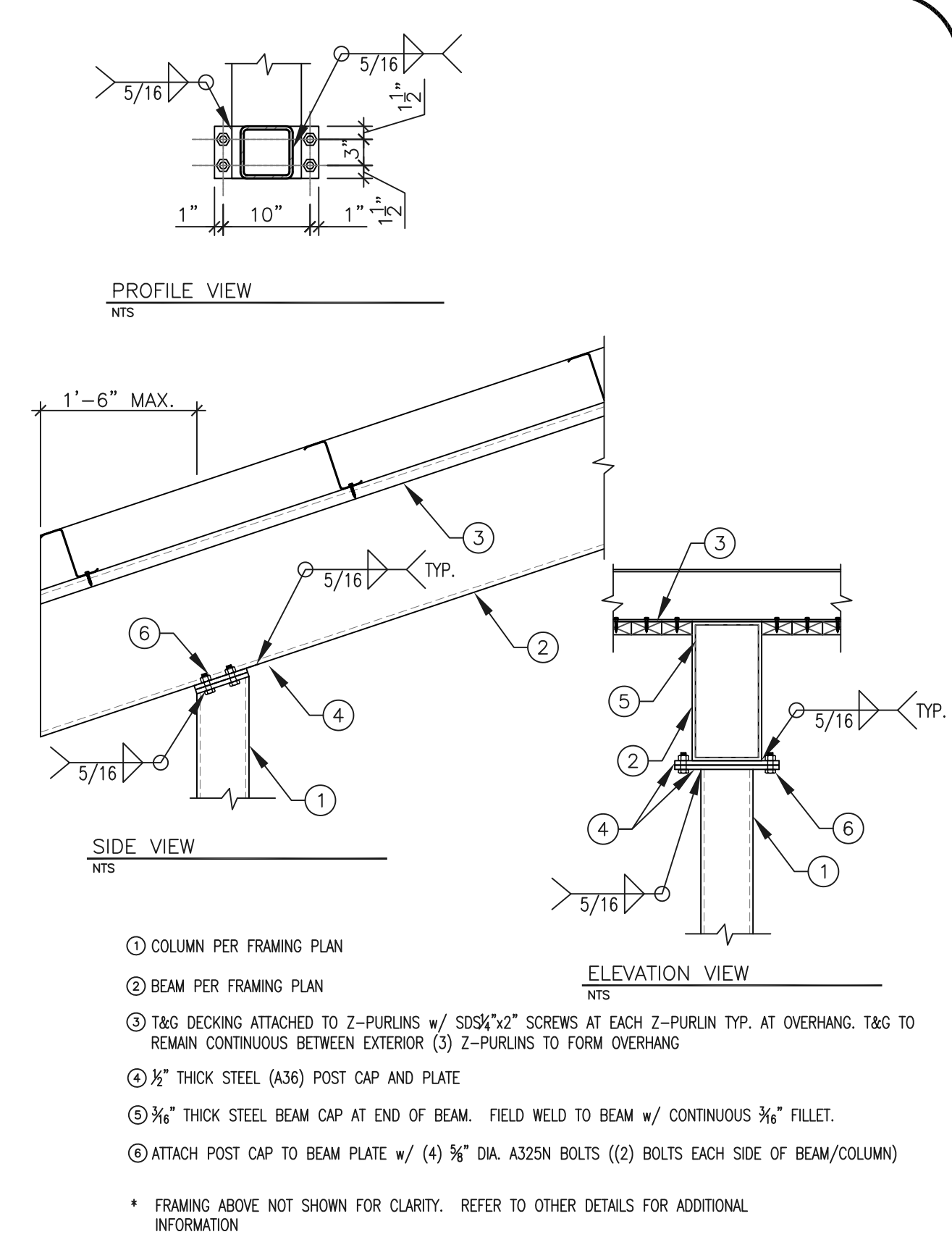
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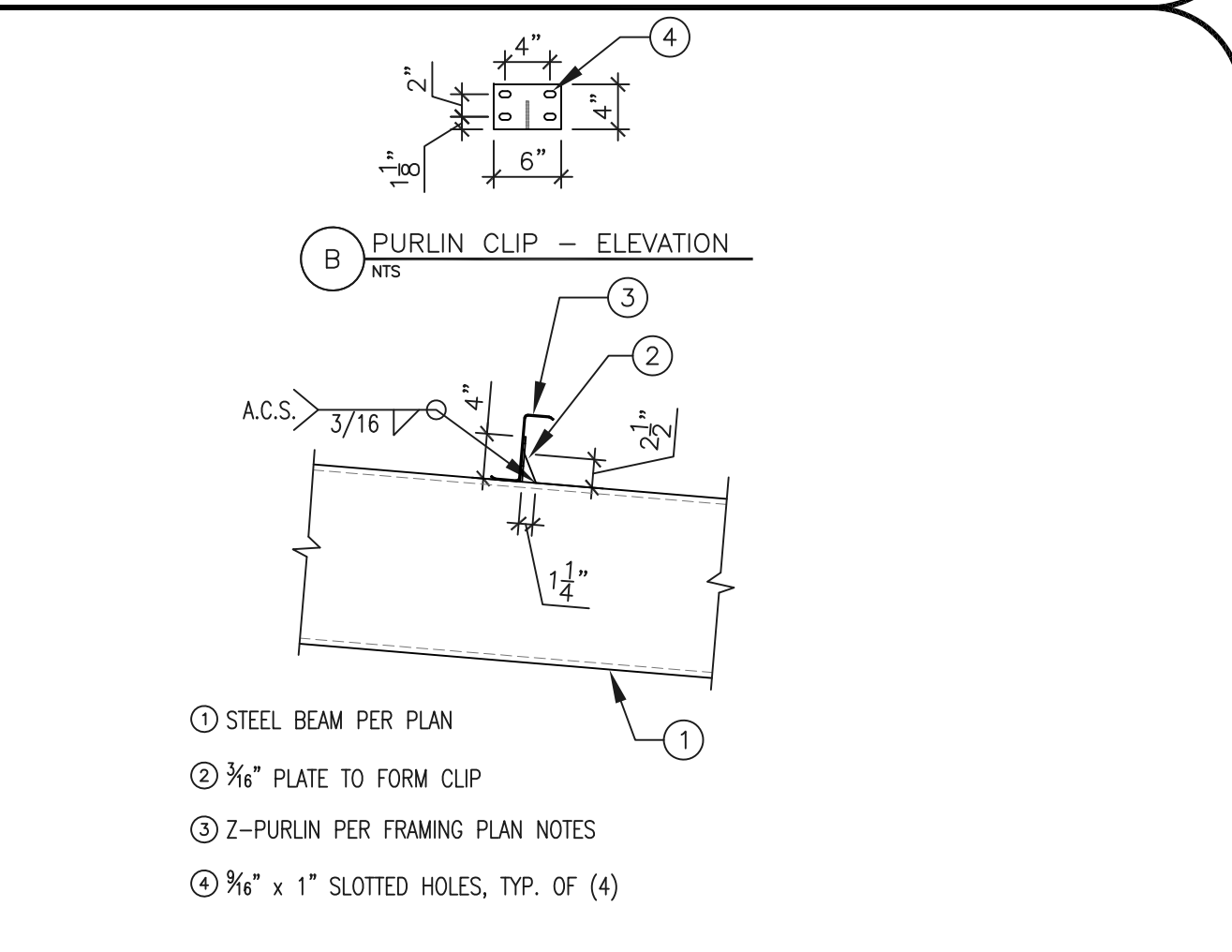
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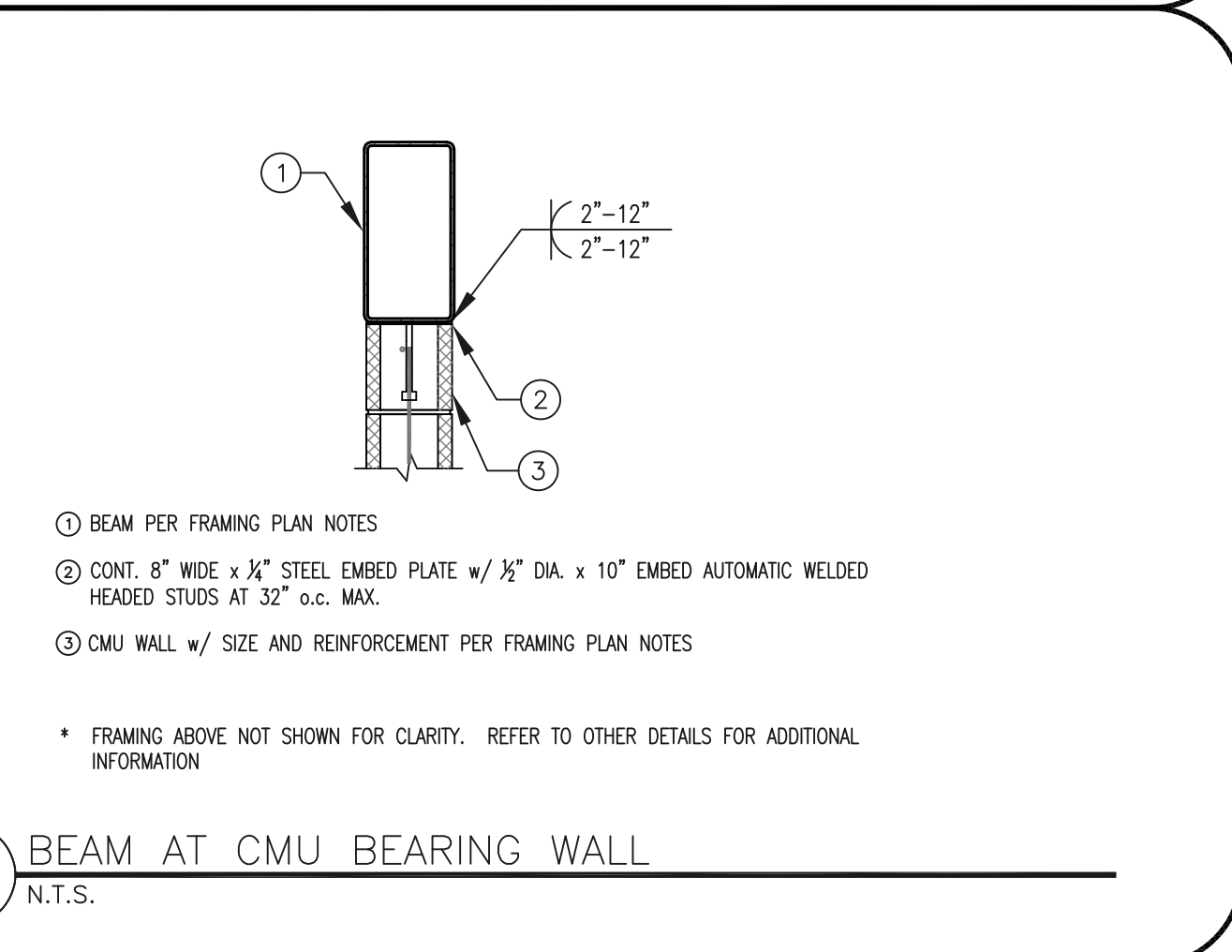
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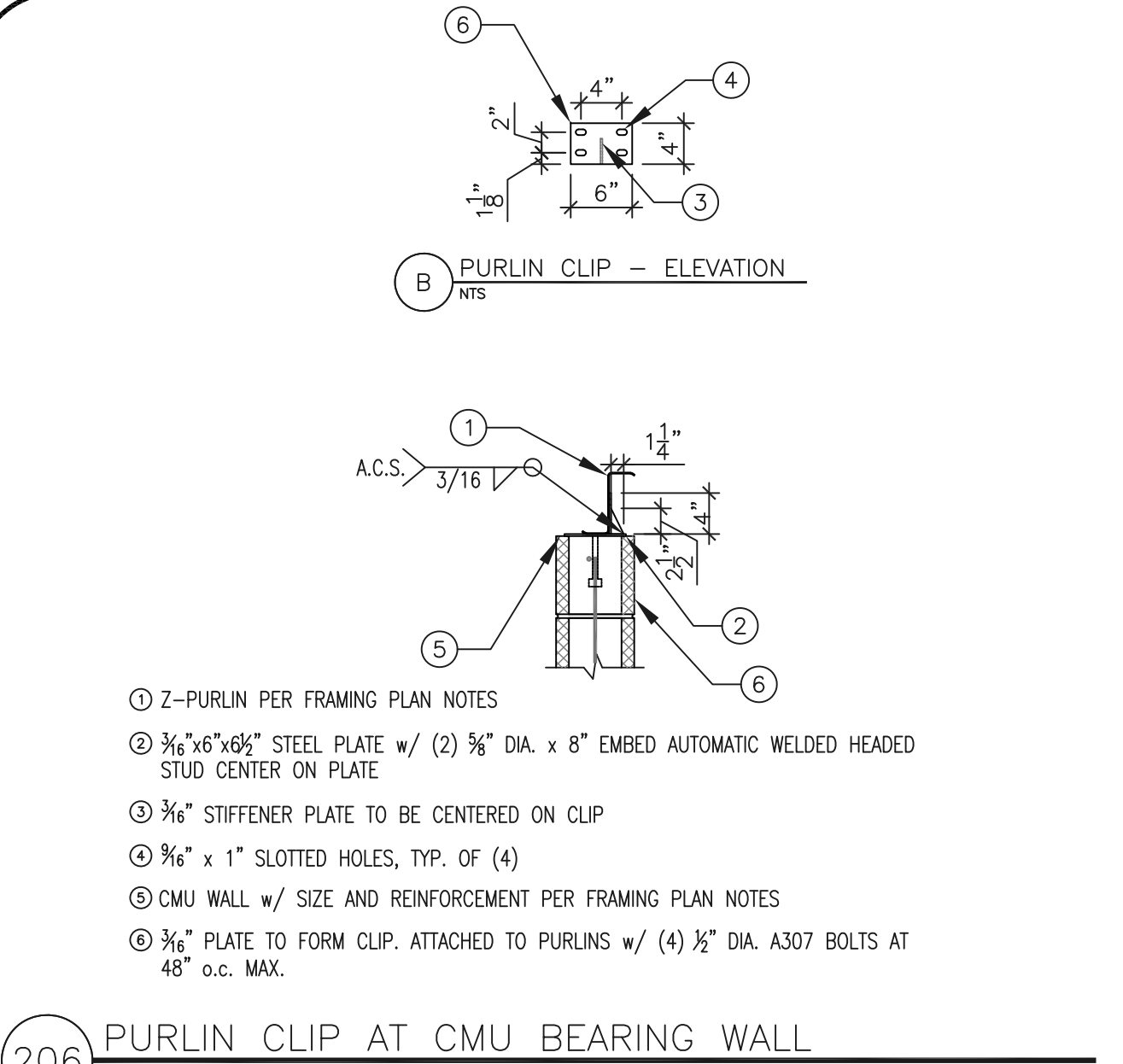
203 STEEL BEAM TO COLUMN CONNECTION
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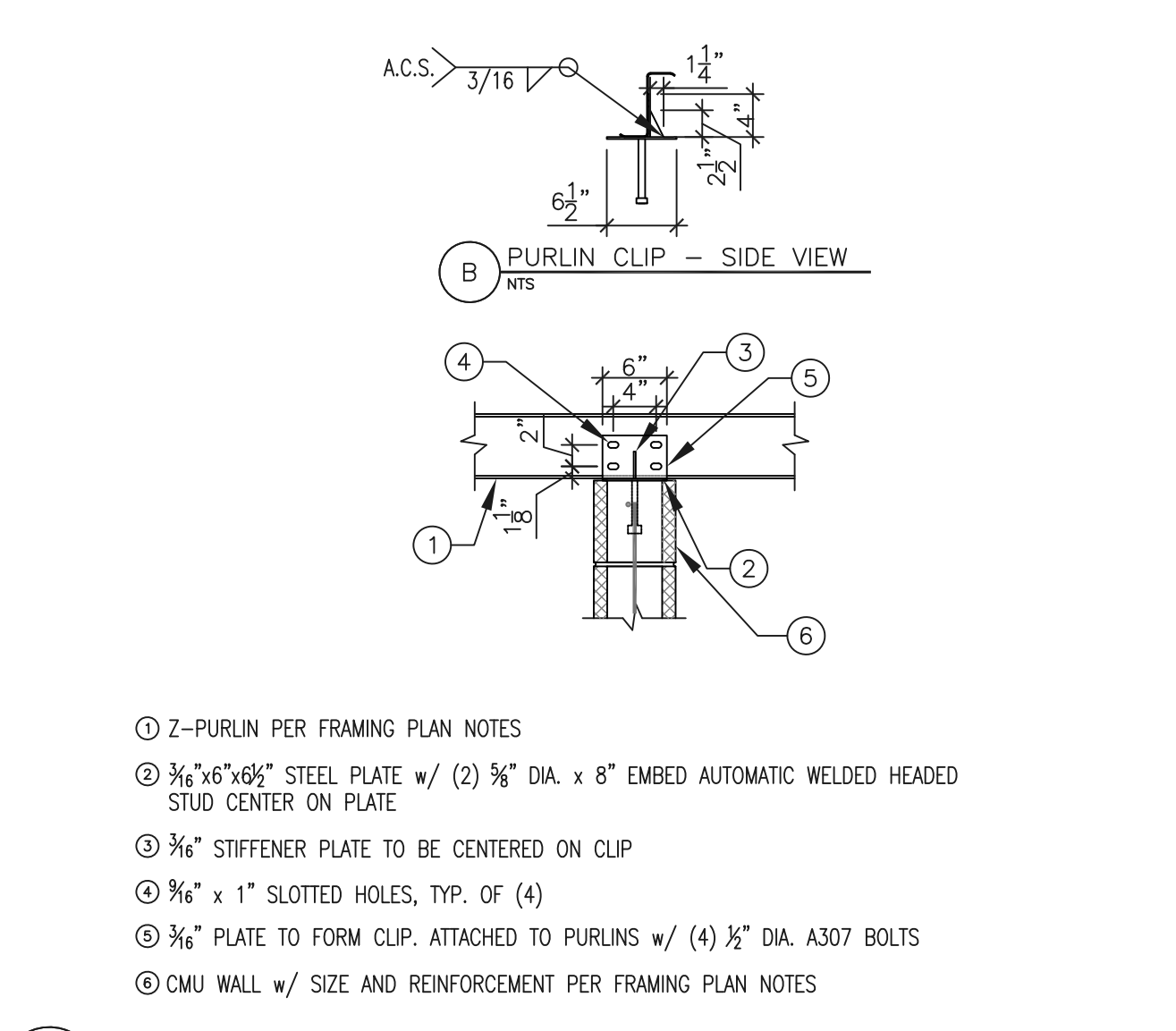
202 PURLIN CLIP AT STEEL BEAM
N.T.S.



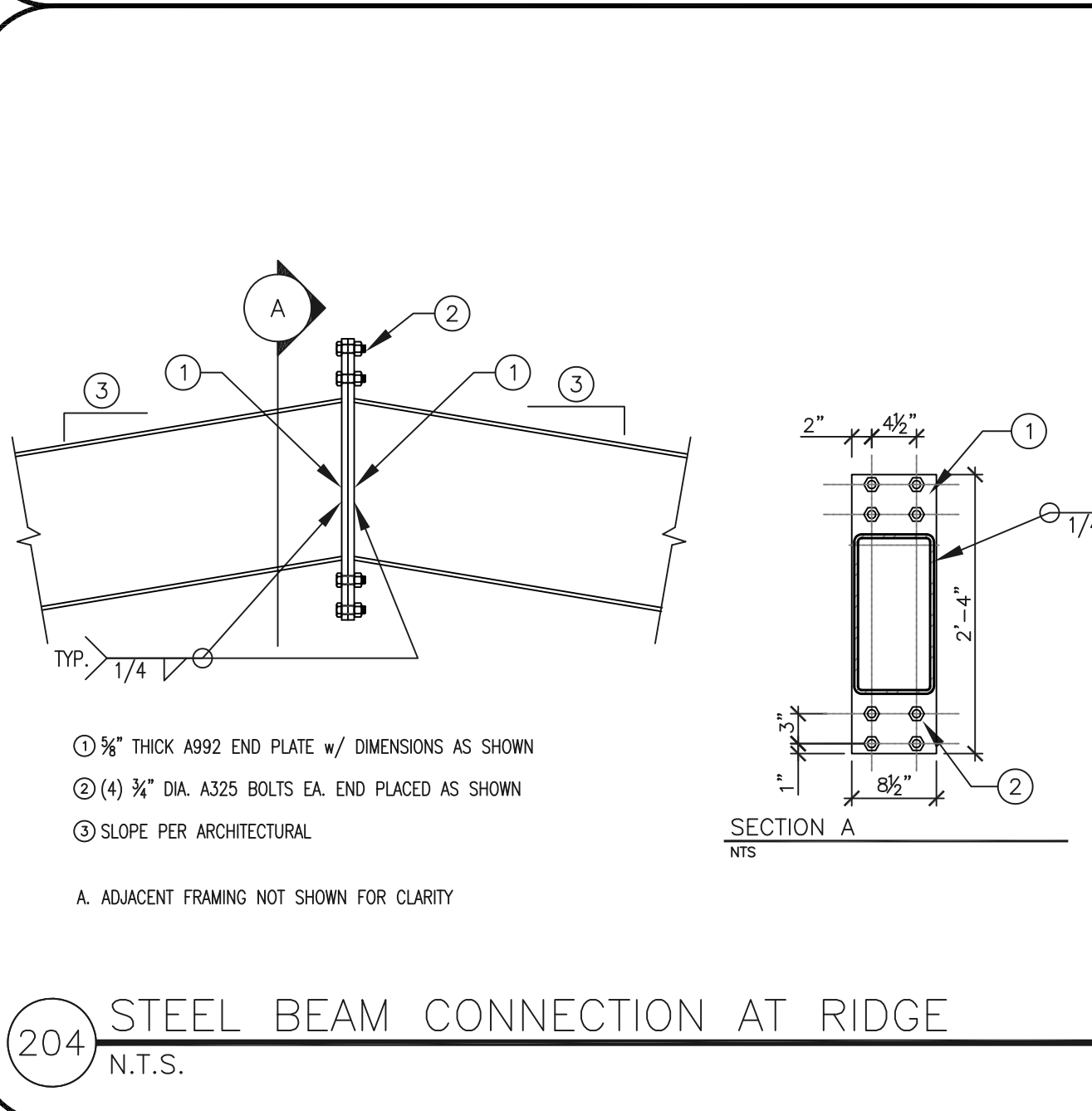
201 BEAM AT CMU BEARING WALL
N.T.S.



206 PURLIN CLIP AT CMU BEARING WALL
N.T.S.



205 PURLIN CLIP AT CMU BEARING WALL
N.T.S.



204 STEEL BEAM CONNECTION AT RIDGE
N.T.S.