

INTERMOUNTAIN HEALTHCARE ALTA VIEW HOSPITAL WATER FEATURE

INTERMOUNTAIN HEALTHCARE



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20201123.03.01 7:00 INTERMOUNTAIN HEALTHCARE ALTA VIEW HOSPITAL WATER FEATURE CONSTRUCTION DOCUMENTS

ABBREVIATIONS

NOT ALL ABBREVIATIONS MAY BE USED

& @	AND AT	LAV	LAVATORY
ACT	ACOUSTICAL CEILING TILE	LB / LBS	POUND (S)
ADJ	ADJUSTABLE	MAT	MATERIAL (S)
AFF	ABOVE FINISH FLOOR	MAX	MAXIMUM
ALT	ALTERNATE	MECH	MECHANICAL
AL / ALUM	ALUMINUM	MEMB	MEMBRANE
APPROX	APPROXIMATE	MEZZ	MEZZANINE
ARCH	ARCHITECTURAL	MFR	MANUFACTURER
BD	BOARD	MGR	MANAGER
BLDG	BUILDING	MIN	MINIMUM
BLK	BLOCKING	MIR	MIRROR
BD	BOTTOM OF	MISC	MISCELLANEOUS
BRG	BEARING	MO	MASONRY OPENING
BSMT	BASEMENT	MTO	MOUNT (ED)
BS	BOTH SIDES	MTL	METAL
BW	BOTH WAYS	MW	MICROWAVE
CAB	CABINET	N	NORTH
CB	CATCH BASIN	NIC	NOT IN CONTRACT
CCSA	CUSTOM COLOR SELECTED BY ARCHITECT	NO	NUMBER
CG	CORNER GUARD	NOM	NOMINAL
CHAM	CHAMFER	NRC	NOISE REDUCTION COEFFICIENT NOT TO SCALE
CJ	CONTROL JOINT	OC	ON CENTER
CL	CENTERLINE	OD	OUTSIDE DIAMETER
CLG	CEILING	OCFI	OWNER FURNISHED/ CONTRACTOR INSTALLED
CLR	CLEAR	OP	OVERFLOW DRAIN
CM	CONSTRUCTION MANAGER	OFD	OVERHEAD
COL	COLUMN	OH	OPENING
COMP	COMPUTER	OPG	OPPOSITE
CONC	CONCRETE	OPP	ORIENTED STRAND BOARD
CONT	CONTINUOUS	OSB	ORIENTED STRAND BOARD
CMU	CONCRETE MASONRY UNIT	OZ	OUNCE
CSBA	COLOR SELECTED BY ARCHITECT	PERI	PERIMETER
CT	CERAMIC TILE	PERM	PERMANENT
D	DEPTH	PL	PLATE
DB	DECK BEARING	PLAM	PLASTIC LAMINATE
DBL	DOUBLE	PNL	PANEL
DEPT	DEPARTMENT	PNT	PAINT (ED)
DF	DRINKING FOUNTAIN	P.O.	POINT OF
DIA	DIAMETER	PR	PAIR
DM	DIMENSION	PT	POST TENSIONED
DN	DOWN	PART	PARTITION
DRN	DRAIN	PLY	PLYWOOD
DTL/DET	DETAIL	QT	QUARRY TILE
DW	DISHWASHER	R / RAD	RADIUS
DWG	DRAWING	RCP	REFLECTED CEILING PLAN
E	EAST	REC	RECESSED
(E)	EXISTING	REF	REFERENCE
EA	EACH	REFG	REFRIGERATOR
EIFS	EXTERIOR INSULATION SYSTEM	REINF	REINFORCE (ED)
EJ	EXPANSION JOINT	REM	REMOVE (ED)
ELEC	ELECTRICAL	REP	REPLACE
ELEV	ELEVATION	REQD	REQUIRED
EQ	EQUAL	REV	REVISION (S)
EQUIP	EQUIPMENT	RW	ROUGH OPENING
EVAP	EVAPORATIVE	S	SOUTH
EXIST	EXISTING	SALV	SALVAGE (ED)
EXP	EXPANSION	SECT	SECTION
EXT	EXTERIOR	SE	SQUARE FOOT
EW	ELECTRIC WATER COOLER	SF	SQUARE
FA	FIRE ALARM	SIM	SIMILAR
FD	FLOOR DRAIN	SINT	SIMILAR
FDN	FOUNDATION	SPED	SPECIFICATION (S)
FE	FIRE EXTINGUISHER	SQ	SQUARE
FEC	FIRE EXTINGUISHER CABINET	SS	STAINLESS STEEL
FG	FINISH GRADE	STC	SOUND TRANSMISSION CLASS
FH	FIRE HYDRANT	STD	STANDARD
FN	FINISHED	STL	STEEL
FLR	FLOOR	STOR	STORAGE
F.O.	FACE OF	STRUC	STRUCTURE (AL)
FT	FOOT, FEET	SUSP	SUSPENDED
FRP	FIBER REINFORCED PANEL	SYM	SYMMETRY (ICAL)
FRT	FIRE RETARDANT TREATED WOOD	T	THICKNESS
FTG	FOOTING	T & B	TOP AND BOTTOM
FV	FIELD VERIFY	T & G	TONGUE AND GROOVE
GA	GAUGE	TBD	TO BE DETERMINED
GALV	GALVANIZED	TEMP	TEMPORARY
GB	GRAB BAR	THRU	THROUGH
GC	GENERAL CONTRACTOR	T.O.	TOP OF
GFR	GLASSFIBER REINFORCED PANEL	TRANS	TRANSFORMER
GYP	GYPSONUM	TS	TUBE STEEL
GWB	GYPSONUM WALLBOARD	TYP	TYPICAL
HB	HOSE BIB	UNF	UNFINISHED
HC	HANDICAP ACCESSIBLE	UNO	UNLESS OTHERWISE NOTED
HDW	HARDWARE	VAR	VARIES
HDF	HIGH DENSITY FIBERBOARD	VB	VAPOR BARRIER
HM	HOLLOW METAL	VCT	VINYL COMPOSITION TILE
H	HEIGHT	VERT	VERTICAL
HOR	HORIZONTAL	VEST	VESTIBULE
ID	INSIDE DIAMETER	VVC	VINYL WALL COVERING
ICF	INSULATED CONCRETE FORM	W	WEST
IN	INCH	W	WIDTH
INCL	INCLUDE	WI	WITH
INFO	INFORMATION	WC	WATER CLOSET
INT	INTERIOR	WD	WOOD
INSUL	INSULATE, (D), (ICN)	W/O	WITHOUT
INV	INVERT	WSCT	WAINSCOT
JST	JOIST	WWF	WELDED WIRE FABRIC
JT	JOINT		

UTILITY CONTACTS

power
ROCKY MOUNTAIN POWER

natural gas
DOMINION ENERGY

telephone
CENTURYLINK

PROJECT TEAM

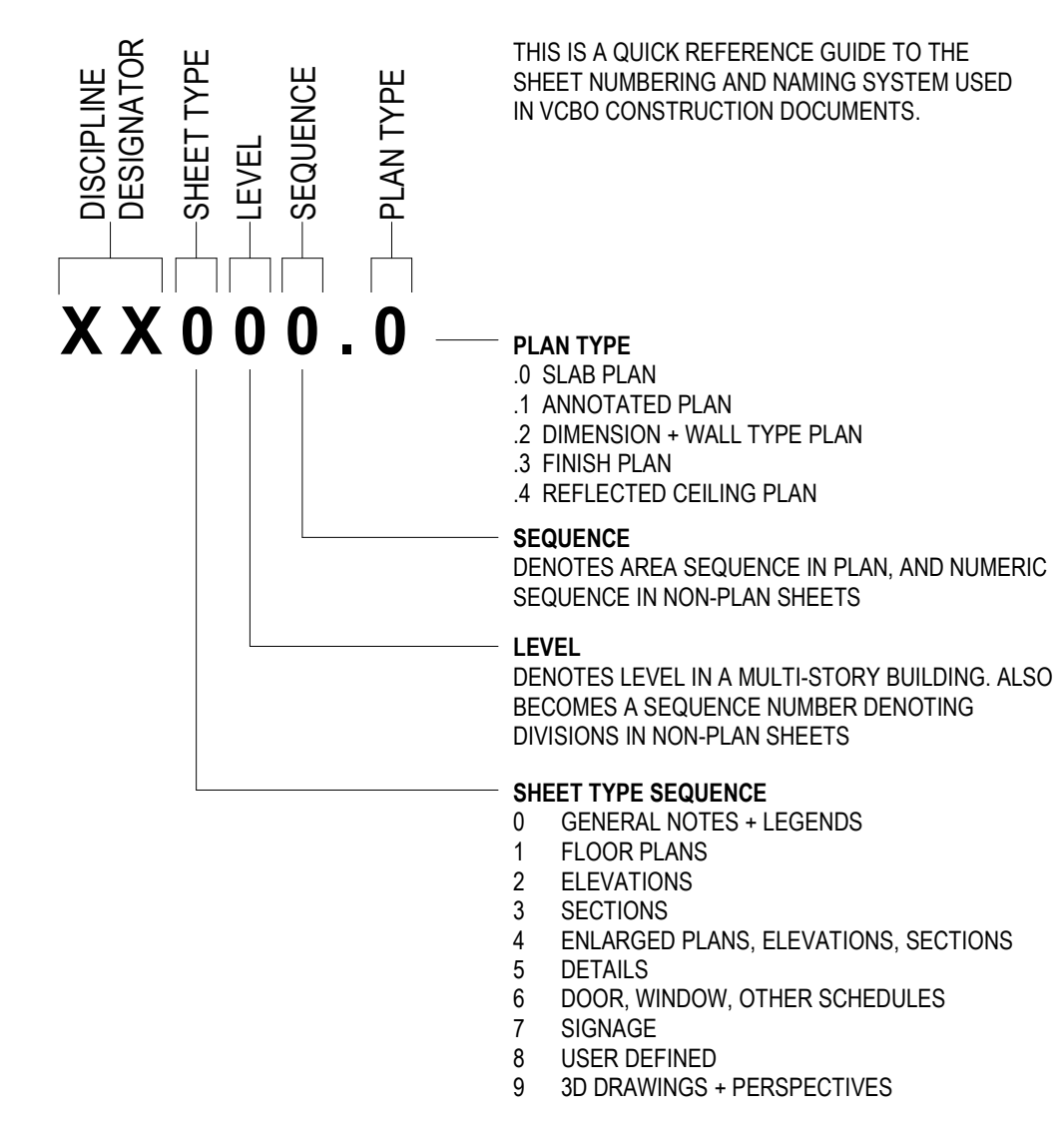
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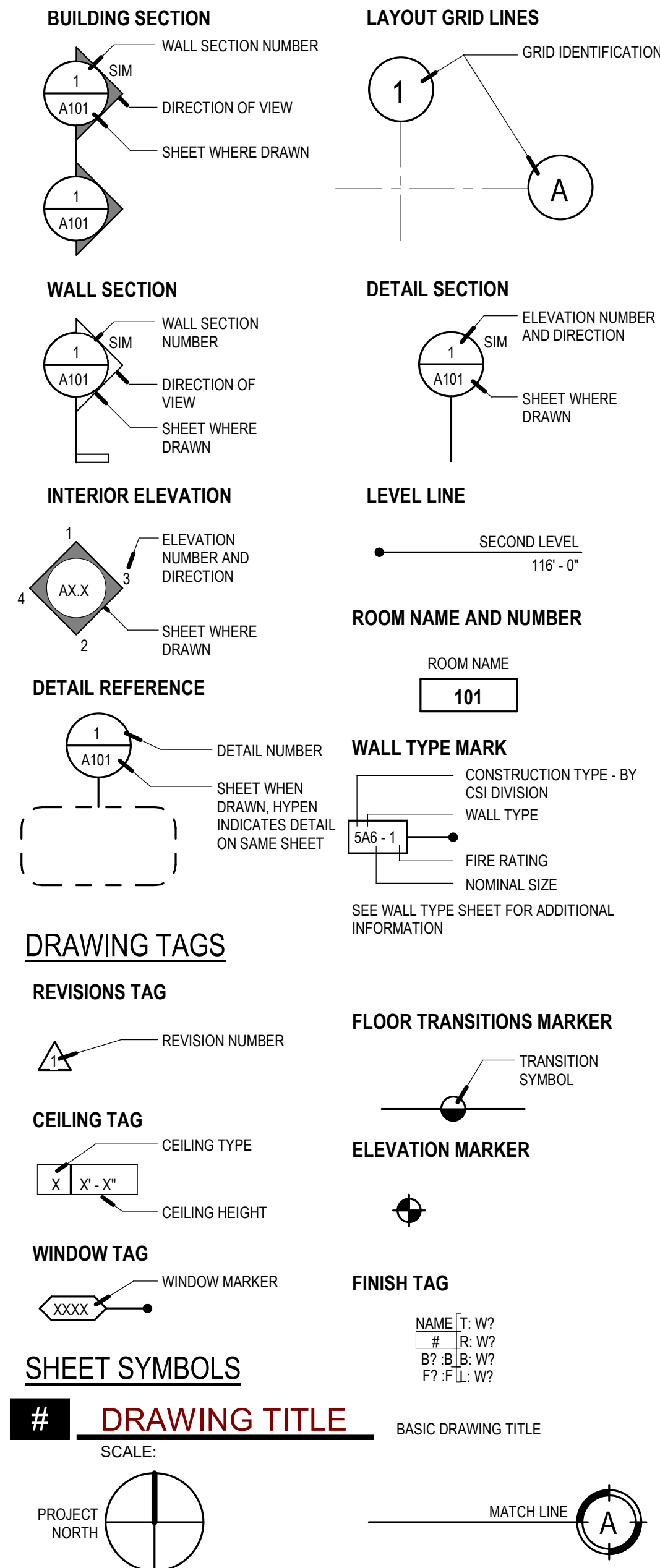
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SHEET NUMBERING + NAMING



REFERENCE SYMBOL LEGEND



DESIGN DATA

GOVERNING BUILDING CODES:
IBC 2018, to include Appendix J, IRC 2015, ANSI 117-1.2009, NFPA 101 LIFE SAFETY 2015, IMC 2018, IPC 2018, IECC 2018, for commercial projects, IFGC 2018, NEC 2017

OCCUPANCY TYPE - CH 3:
NOT APPLICABLE (WATER FEATURE ONLY)

ALLOWABLE BUILDING HEIGHT: PER TABLE 504.3:
NOT APPLICABLE (WATER FEATURE ONLY)

ALLOWABLE STORIES ABOVE GRADE PLANE: PER TABLE 504.4:
NOT APPLICABLE (WATER FEATURE ONLY)

BUILDING AREA: PER TABLE 506.2:
NOT APPLICABLE (WATER FEATURE ONLY)

UNLIMITED AREA BUILDINGS: PER SECTION 507:
NOT APPLICABLE (WATER FEATURE ONLY)

MIXED USE NONSEPARATED OCCUPANCIES: PER SECTION 508.3:
NOT APPLICABLE (WATER FEATURE ONLY)

MIXED USE OCCUPANCY SEPARATIONS: PER SECTION 508:
NOT APPLICABLE (WATER FEATURE ONLY)

PROTECTION: PER SECTION 509.4.2:
NOT APPLICABLE (WATER FEATURE ONLY)

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS:
NOT APPLICABLE (WATER FEATURE ONLY)

AUTOMATIC SPRINKLER SYSTEM: PER SECTION 903:
NOT APPLICABLE (WATER FEATURE ONLY)

DESIGN OCCUPANCY LOAD: PER SECTION 1004:
NOT APPLICABLE (WATER FEATURE ONLY)

EGRESS WIDTH FOR OCCUPANCY SERVED: PER 1005:
NOT APPLICABLE (WATER FEATURE ONLY)

EXIT ACCESS - CH 10:

COMMON PATH OF EGRESS TRAVEL: PER TABLE 1006.2.1:
NOT APPLICABLE (WATER FEATURE ONLY)

2 EXITS REQUIRED - PER 1008.3.2:
NOT APPLICABLE (WATER FEATURE ONLY)

THROUGH INTERVENING SPACES: PER 1016.2:
NOT APPLICABLE (WATER FEATURE ONLY)

TRAVEL DISTANCE: PER TABLE 1017.2:
NOT APPLICABLE (WATER FEATURE ONLY)

CORRIDOR FIRE RESISTANCE RATING: PER TABLE 1020.1:
NOT APPLICABLE (WATER FEATURE ONLY)

MINIMUM CORRIDOR WIDTH: PER TABLE 1020.2 IN INCHES:
NOT APPLICABLE (WATER FEATURE ONLY)

DEAD ENDS: PER 1020.4:
NOT APPLICABLE (WATER FEATURE ONLY)

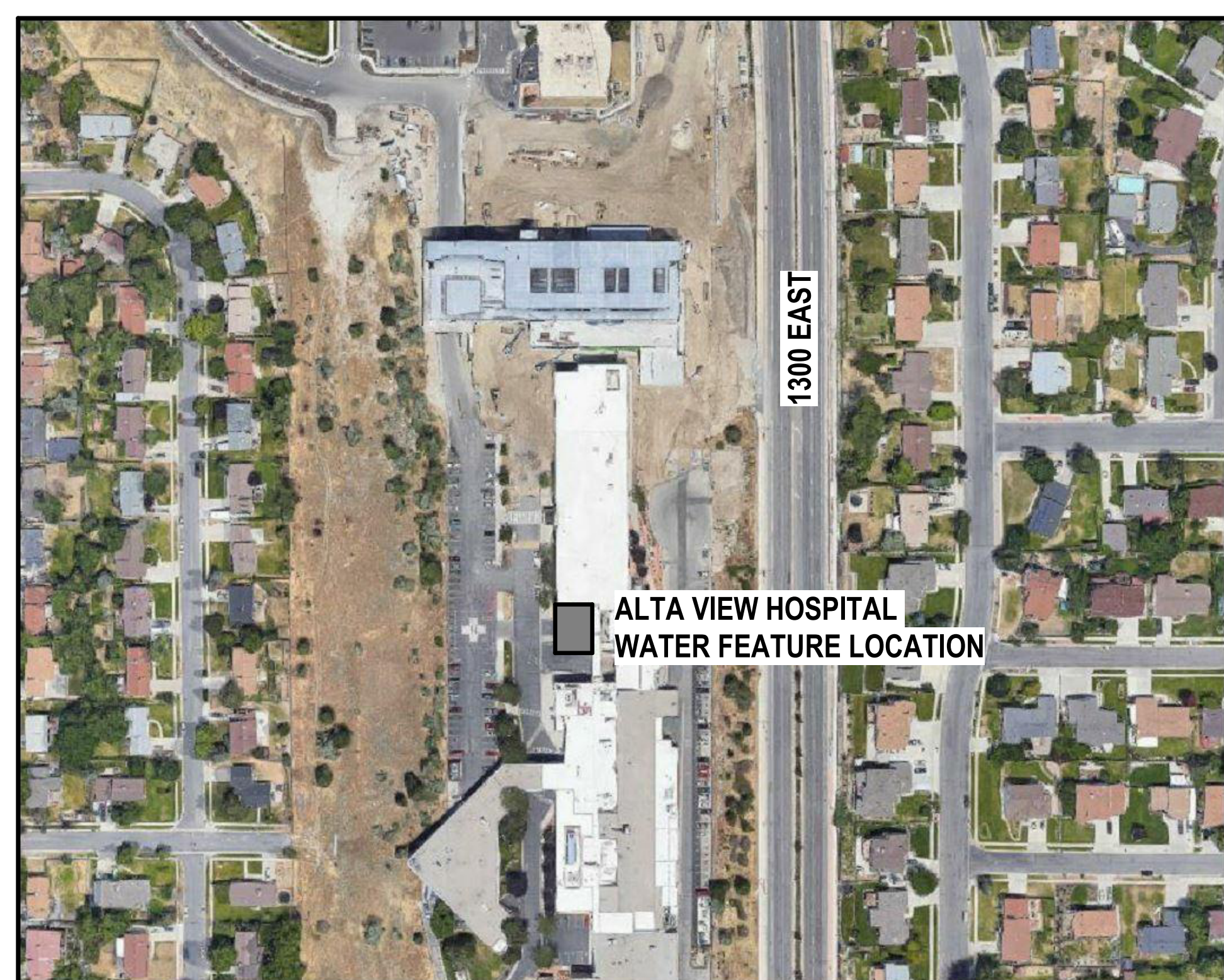
INTERIOR WALL & CEILING FINISH REQUIREMENTS:
NOT APPLICABLE (WATER FEATURE ONLY)

INTERIOR FLOORS FINISH: PER 804:
NOT APPLICABLE (WATER FEATURE ONLY)

SHEET INDEX

GENERAL	COVER
G001	GENERAL INFORMATION + INDEX
ARCHITECTURAL	SPECIFICATIONS
A100	OVERALL PLAN
A110	ENLARGED PLAN + ELEVATIONS
PLUMBING	
P101	LEVEL 1 PLUMBING PLAN
ELECTRICAL	
E001	SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES
E001	SPECIFICATION
E002	SPECIFICATIONS
E100	POWER PLAN - LEVEL 1 - OVERALL
Grand total:	9

VICINITY MAP

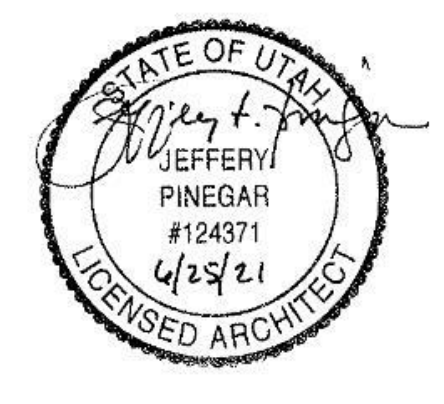


GENERAL NOTES

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW AND COORDINATE THE WORK OF ALL SUB-CONTRACTORS, TRADES AND SUPPLIERS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BEFORE COMMENCING CONSTRUCTION, AND TO ASSURE THAT ALL PARTIES ARE AWARE OF ALL REQUIREMENTS, REGARDLESS OF WHERE THE REQUIREMENTS OCCUR IN THE CONTRACT DOCUMENTS, WHICH MIGHT AFFECT THE WORK OF THAT PARTY.
- AS PART OF THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE WORK OF ALL SUB-CONTRACTORS, TRADES AND SUPPLIERS, THE CONTRACTOR SHALL ENDEAVOR TO IDENTIFY AND NOTIFY THE ARCHITECT OF ANY CONFLICTS BETWEEN THE WORK OF DIFFERENT PARTIES AT THE EARLIEST POSSIBLE DATE SO AS TO ALLOW REASONABLE AND ADEQUATE TIME FOR THE CONFLICT TO BE RESOLVED WITHOUT DELAYING THE WORK. ALL DEVIATIONS FROM THAT WHICH IS REQUIRED BY THE CONTRACT DOCUMENTS MUST BE APPROVED IN ADVANCE BY THE ARCHITECT.
- THE ARCHITECTURAL DRAWINGS ESTABLISH AND COORDINATE THE FINISHED APPEARANCE AND EXACT LOCATION OF ALL EXPOSED ELEMENTS OF THE WORK OF ALL THE TRADES, INCLUDING THAT WORK WHICH IS ILLUSTRATED PRIMARILY ON DRAWINGS OF OTHER DISCIPLINES. QUANTITIES ARE TO BE PROVIDED AS SHOWN ON DRAWINGS OF OTHER DISCIPLINES BUT LOCATIONS SHOWN ON OTHER DRAWINGS ARE SCHEMATIC, UNLESS OTHERWISE NOTED ON THE ARCHITECTURAL DRAWINGS. THE ARCHITECTURAL DRAWINGS TAKE PRECEDENCE FOR THE FINISHED APPEARANCE AND EXACT LOCATION OF ALL PARTS OF THE WORK.
- EXCEPT WHERE DIRECTED TO PLACE ITEMS OF WORK AT THE APPROXIMATE LOCATION SHOWN, DO NOT SCALE DRAWINGS FOR DIMENSIONAL INFORMATION. ALL ELEMENTS OF THE DRAWINGS MAY NOT BE DRAWN TO EXACT SCALE. ALL DIMENSIONS REQUIRED ARE SHOWN OR MAY BE DERIVED FROM THOSE SHOWN ON THE FLOOR PLANS, DETAIL PLANS, ELEVATIONS, SECTIONS, DETAILS, SCHEDULES AND SPECIFICATIONS. IF DIMENSIONS ARE NOT PRESENT, THE ARCHITECT IS TO BE NOTIFIED SO THAT A CLARIFICATION CAN BE ISSUED.
- CONTRACTOR TO FOLLOW CURRENT ANSI 117-1 STANDARDS AS REPRESENTED ON SHEET G301, GENERAL ACCESSIBILITY GUIDELINES. NOTIFY ARCHITECT IF THE DESIGN DRAWINGS CONFLICT WITH THIS SHEET.

NOTES TO BIDDERS

- THIS SHEET CONTAINS A LIST OF DRAWINGS WHICH COMPRISE A FULL SET OF DRAWINGS FOR THIS PROJECT. ANY CONTRACTOR, SUBCONTRACTOR, VENDOR OR ANY OTHER PERSON PARTICIPATING IN OR BIDDING ON THIS PROJECT SHALL BE RESPONSIBLE FOR THE INFORMATION CONTAINED IN ANY AND ALL SHEETS OF DRAWINGS AND SPECIFICATIONS. IF ANY PERSON, PARTY OR ENTITY ELECTS TO SUBMIT BIDS FOR ANY PORTION, OR ALL, OF THIS PROJECT, THAT PERSON, PARTY OR ENTITY SHALL BE RESPONSIBLE FOR ANY AND ALL INFORMATION CONTAINED IN THESE DRAWINGS AND SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO, ANY SUBSEQUENT ADDENDUMS OR CLARIFICATIONS THAT MAY BE ISSUED.
- THESE DOCUMENTS SHOW THE DESIGN INTENT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE EVERYTHING SHOWN ON THE DRAWINGS OR SPECIFIED REGARDLESS OF WHERE IT IS SHOWN ON THE DRAWINGS OR IN THE SPECIFICATIONS. FOR EXAMPLE: SOME MILLWORK DETAILS HAVE STEEL FRAMES WHICH MAY BE PROVIDED BY DIVISION 05 OR WITH THE MILLWORK AT THE CONTRACTOR'S DISCRETION, BUT IT SHALL BE PROVIDED AS PART OF THE CONTRACT.
- EVERYTHING CALLED FOR IN THESE DOCUMENTS SHALL BE "NEW" AND PROVIDED BY THE CONTRACTOR, SUBCONTRACTOR, VENDOR OR ANY OTHER PERSON PARTICIPATING IN OR BIDDING ON THIS PROJECT UNLESS NOTED OTHERWISE AS EXISTING (EXIST), NOT IN CONTRACT (NIC) OR FOR REFERENCE ONLY. FURNISHINGS SHOWN DASHED SHALL BE FOR REFERENCE ONLY.



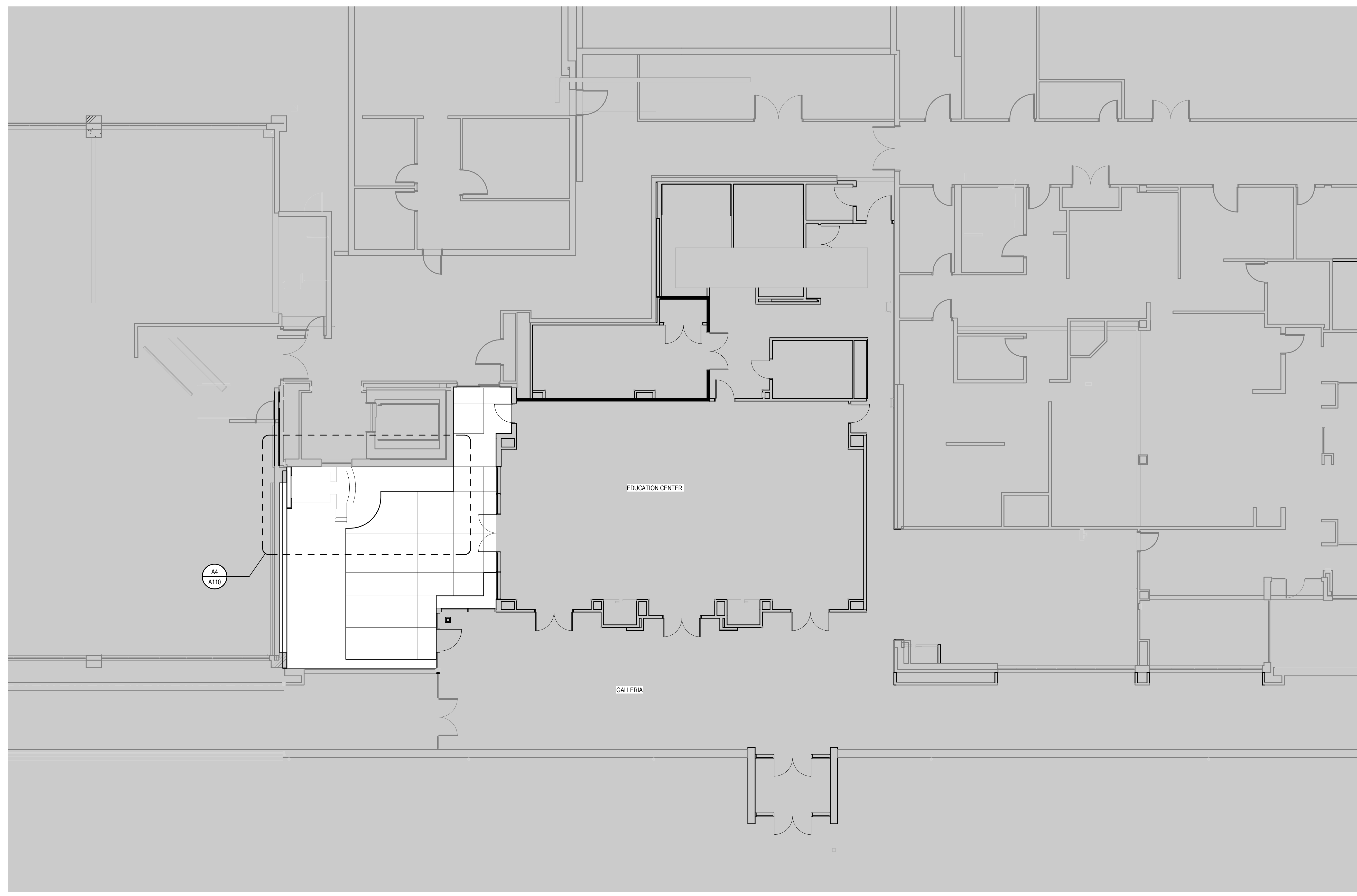
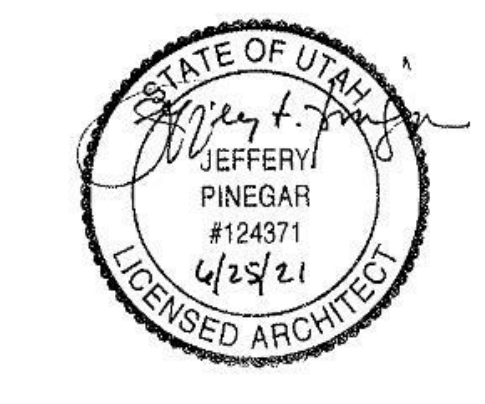
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VCBO NUMBER: 21010
CLIENT NUMBER: 00000
DATE: 2021.06.25

INTERMOUNTAIN HEALTHCARE ALTA VIEW HOSPITAL WATER FEATURE
 INTERMOUNTAIN HEALTHCARE
 CONSTRUCTION DOCUMENTS

GENERAL INFORMATION + INDEX

G001

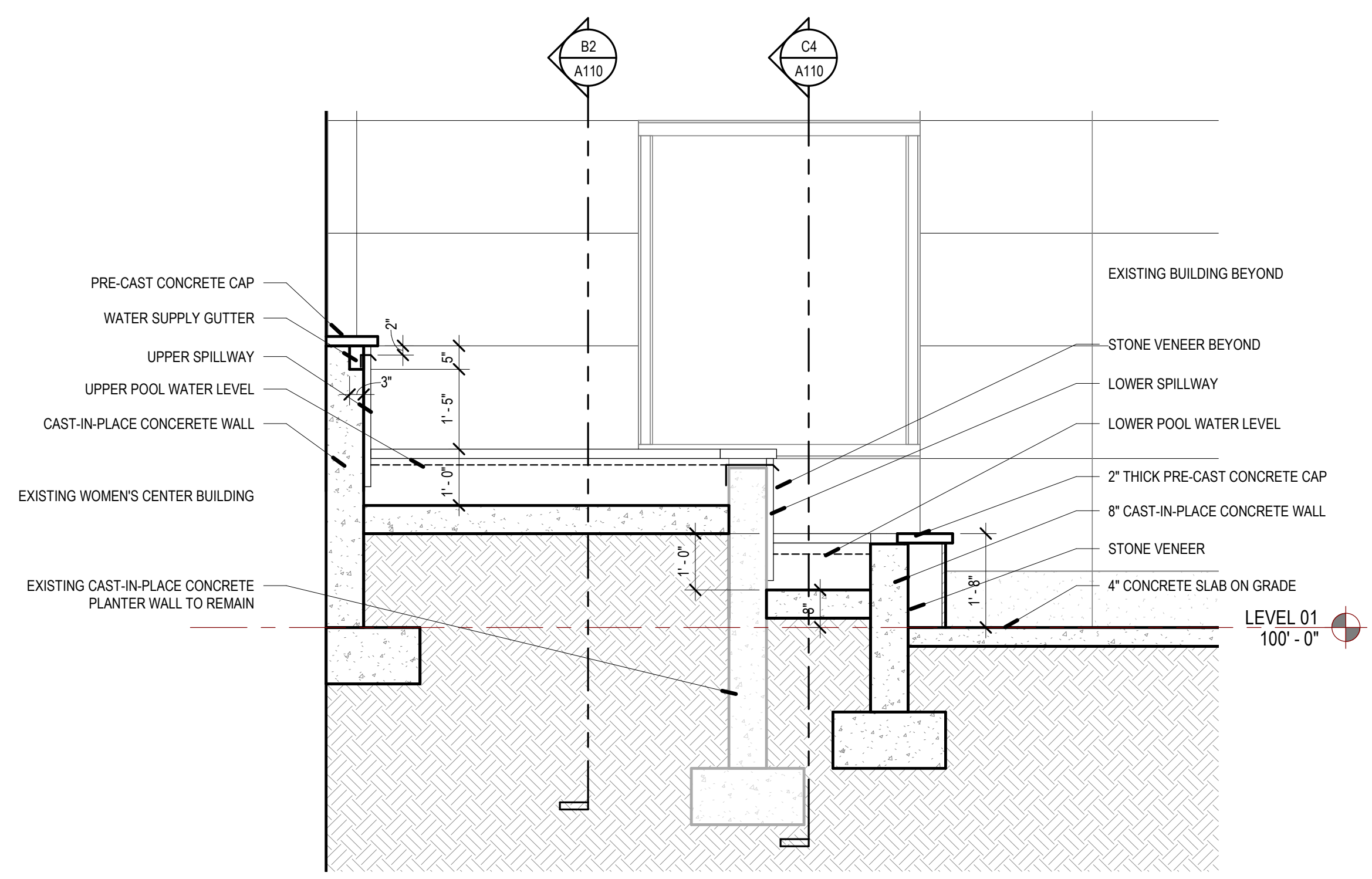
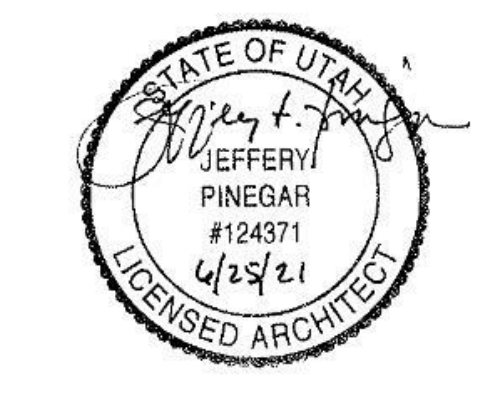


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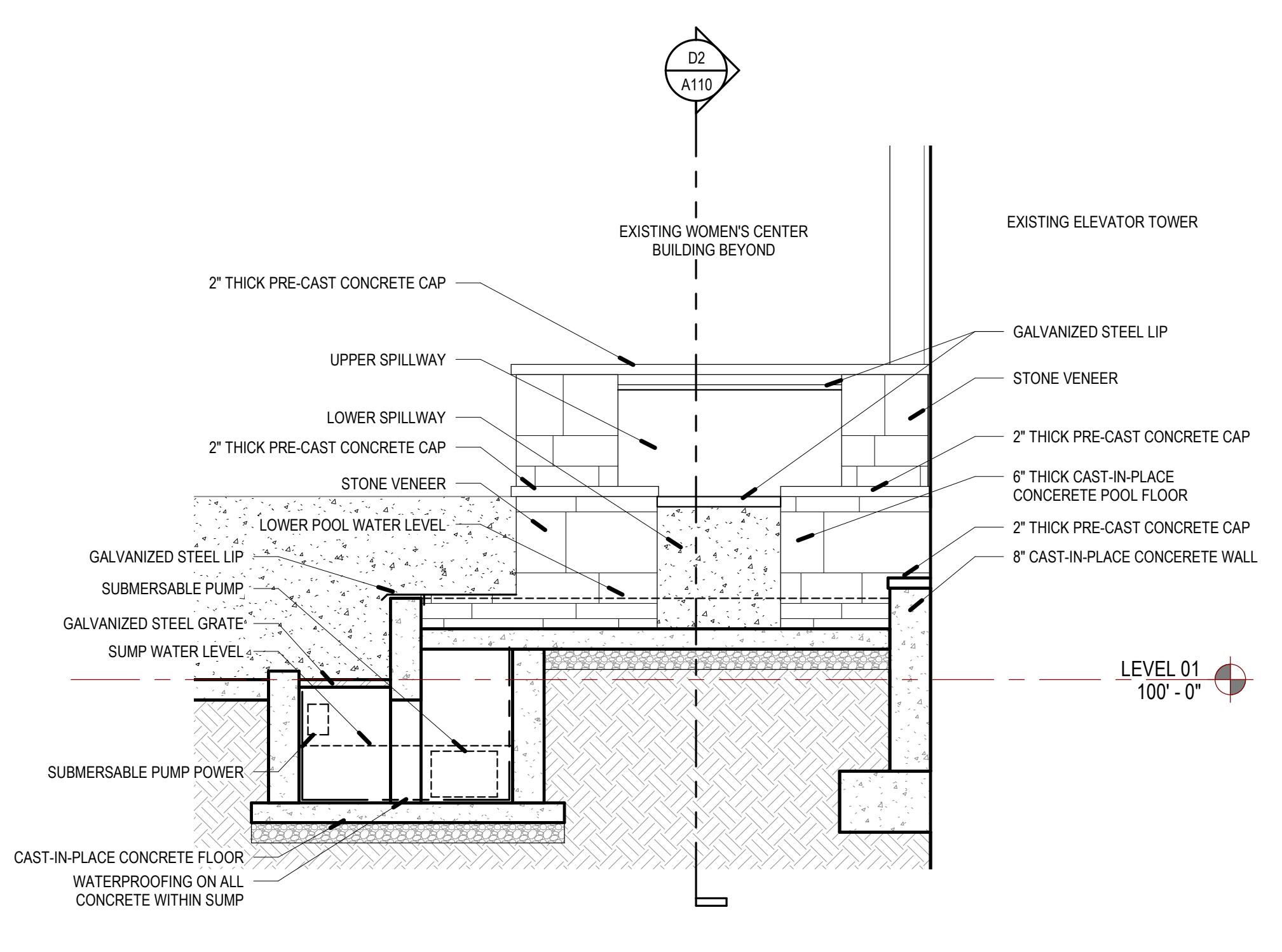
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INTERMOUNTAIN HEALTHCARE ALTA VIEW HOSPITAL WATER FEATURE
 INTERMOUNTAIN HEALTHCARE
 CONSTRUCTION DOCUMENTS

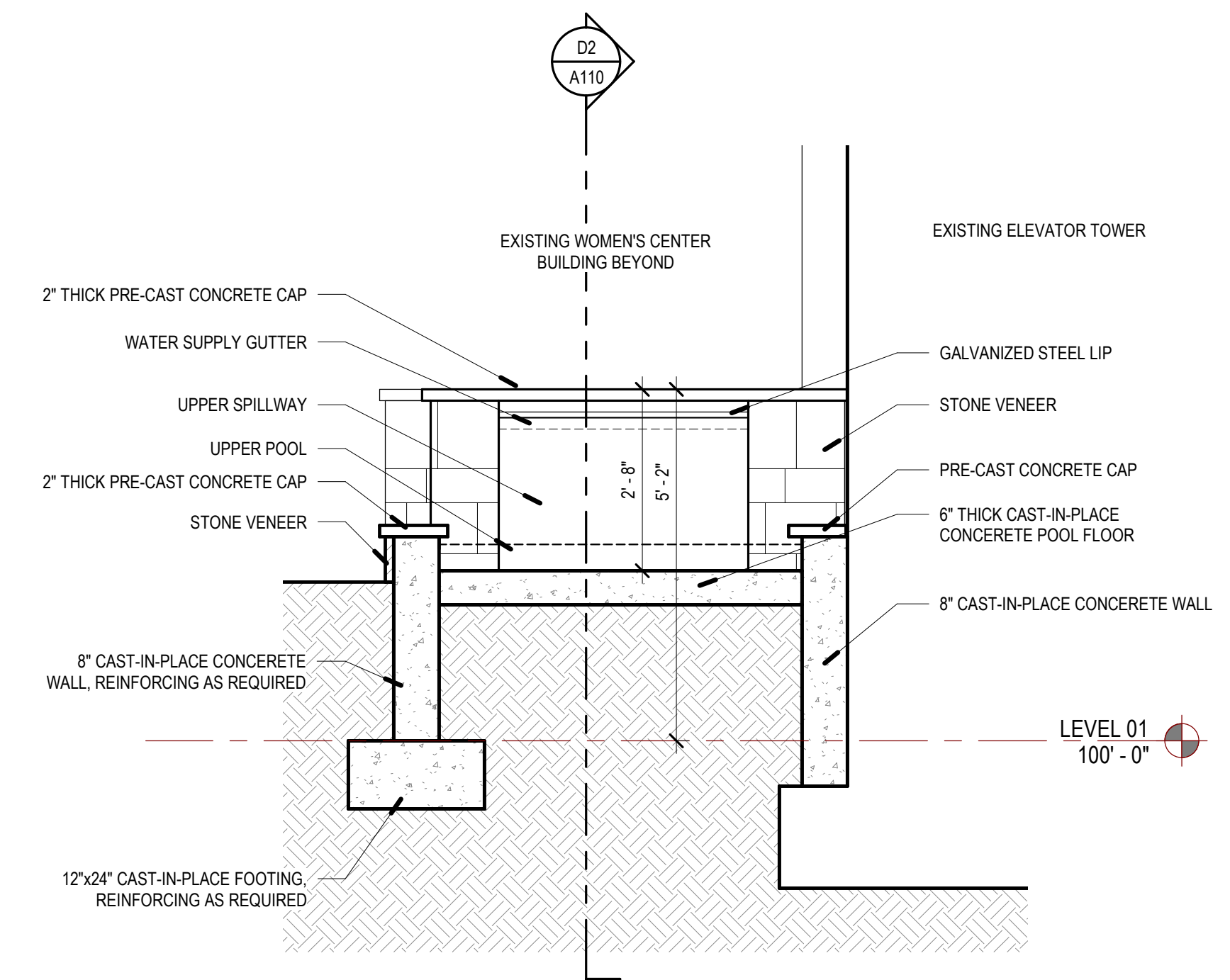
A2 PLAN - LEVEL 01 - OVERALL
 SCALE: 1/8" = 1'-0"



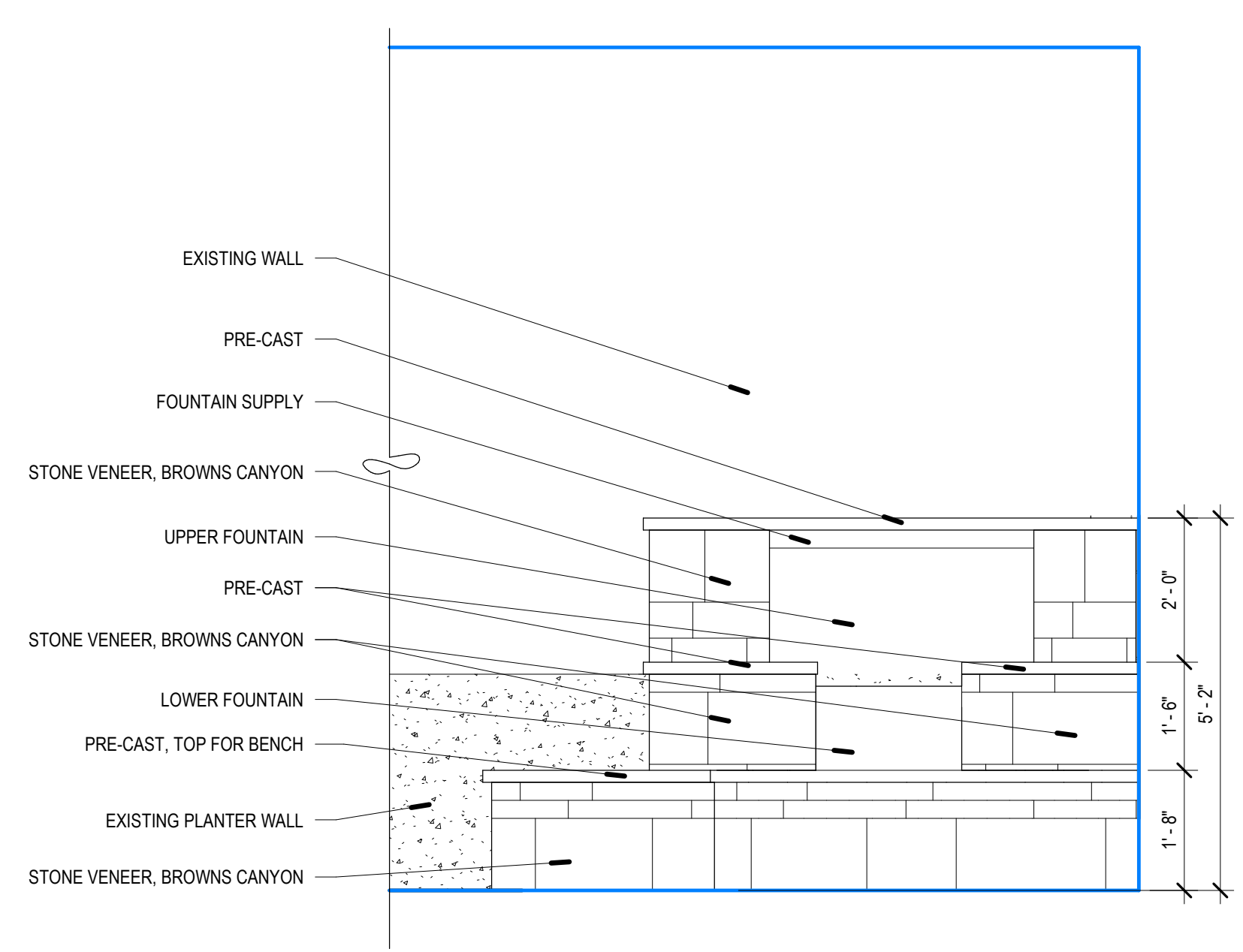
D2 FOUNTAIN SECTION 2
SCALE: 1/2" = 1'-0"



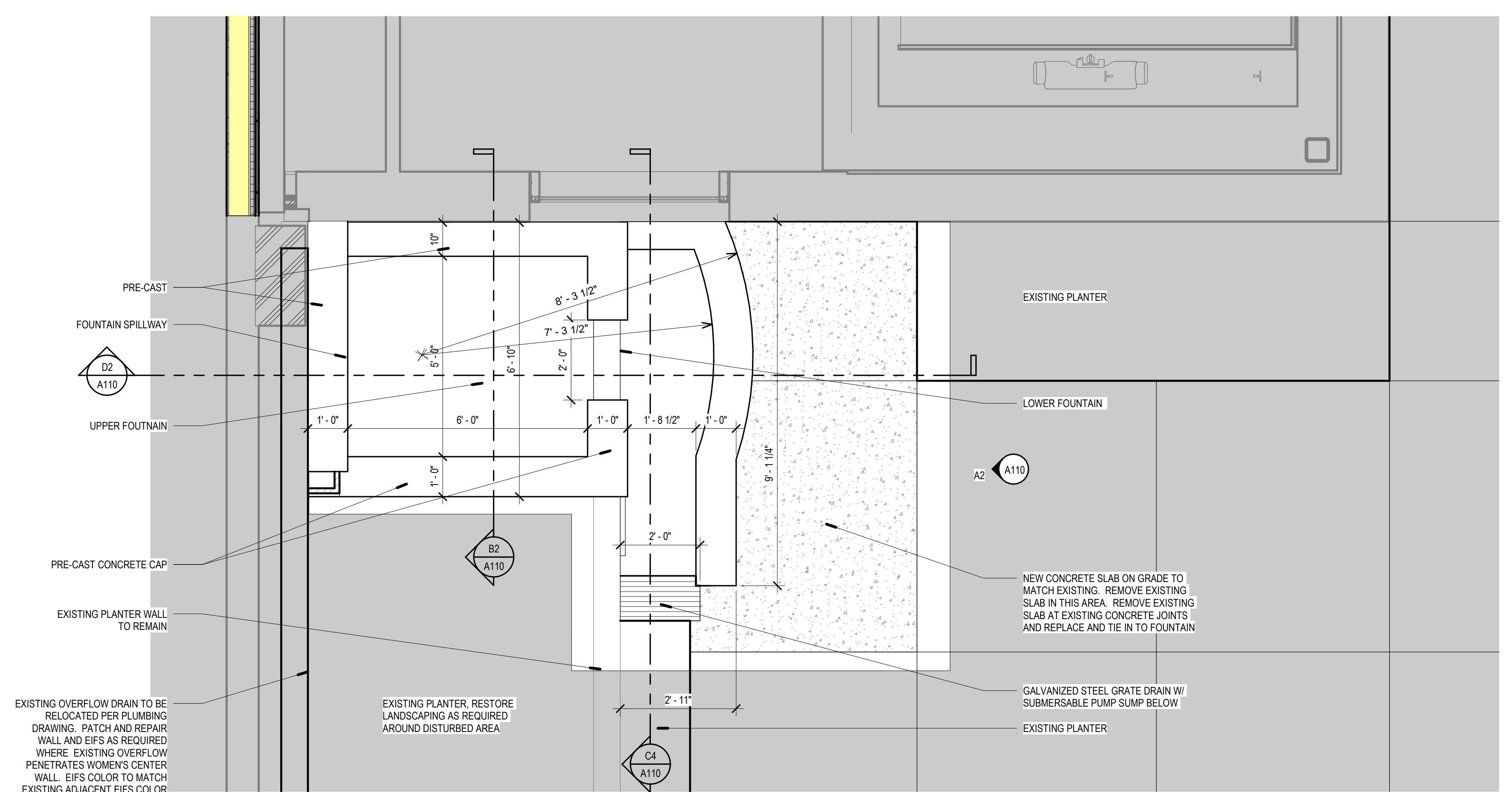
C4 FOUNTAIN SECTION 3
SCALE: 1/2" = 1'-0"



B2 FOUNTAIN SECTION 1
SCALE: 1/2" = 1'-0"



A2 ELEVATION - FOUNTAIN
SCALE: 1/2" = 1'-0"



A4 PLAN - ENLARGED
SCALE: 1/2" = 1'-0"

REV	DATE	DESCRIPTION

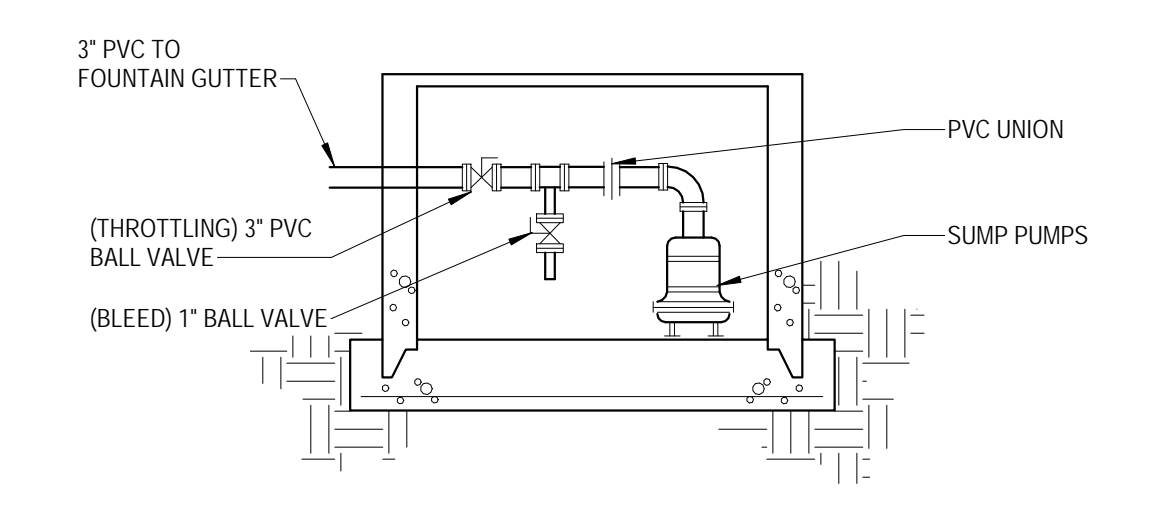
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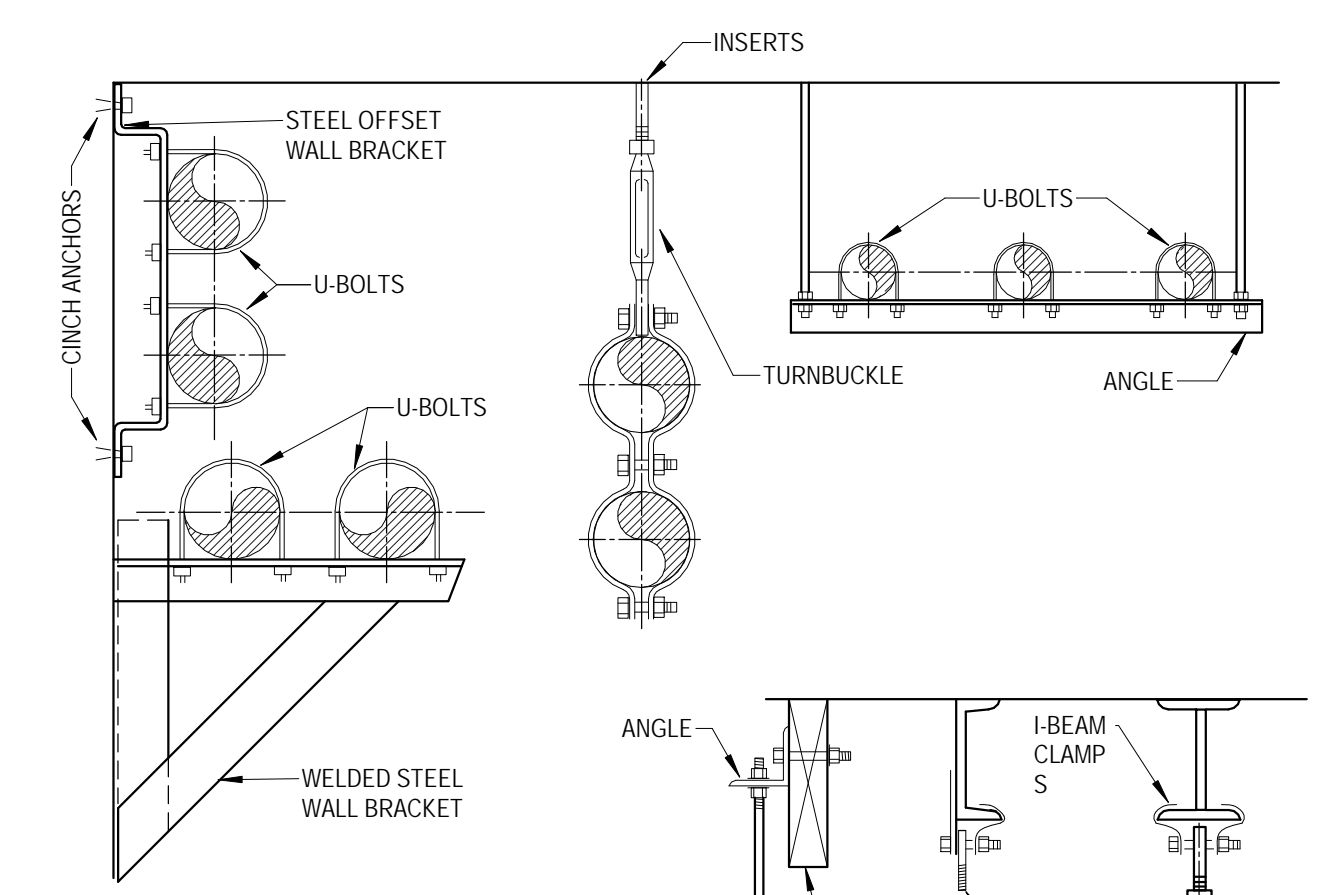
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KEYNOTES

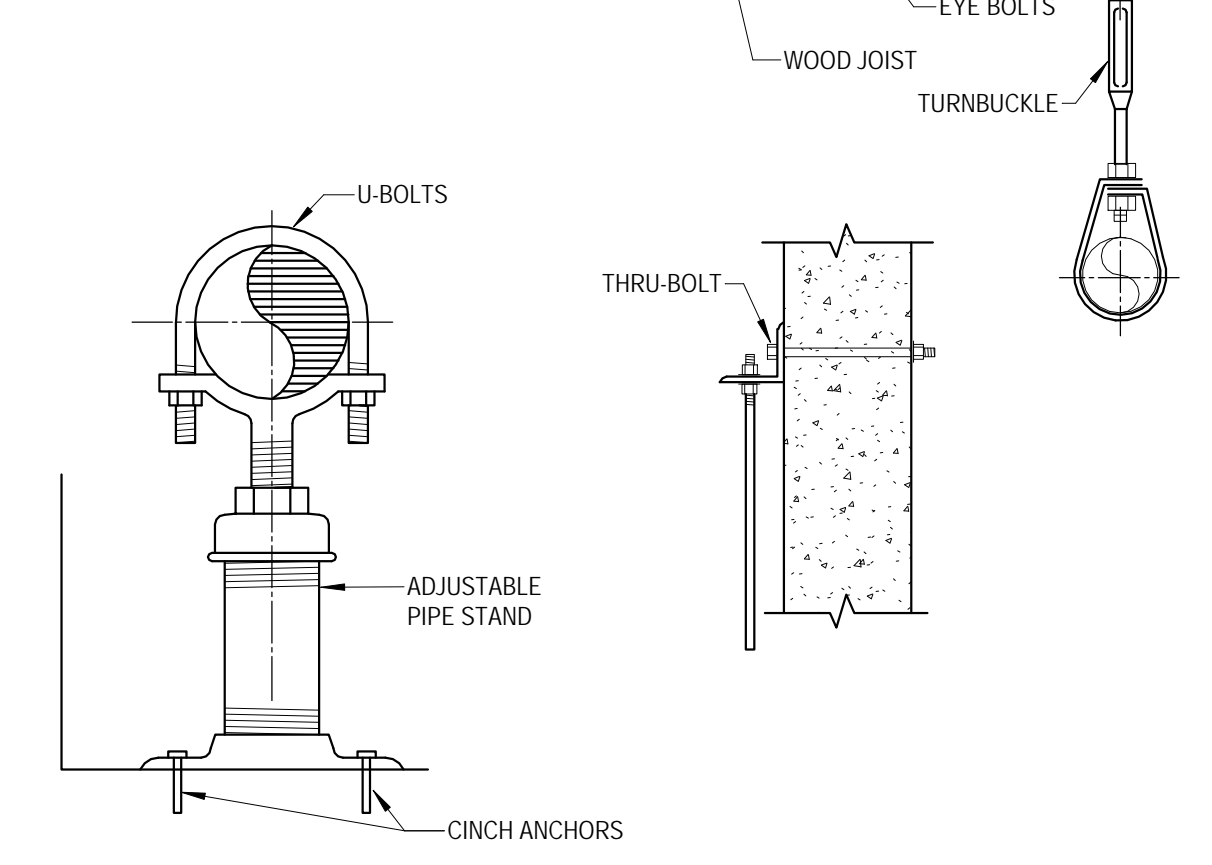
1. REROUTE EXISTING ROOF DRAIN PIPING AS SHOWN. RELOCATE EXISTING DOWNSPOUT NOZZLE. ROOF DRAIN PIPING IS TO BE HEBLESS CAST IRON PIPE AND FITTINGS. HEAVY DUTY SHELDED STAINLESS STEEL COUPLINGS AND COUPLED JOINTS. PIPING IS TO BE ALSO BE PROVIDED WITH 1" INSULATION. PIPING AND INSULATION IS TO MATCH EXISTING. NEW DOWNSPOUT NOZZLE TERMINATION POINT IS TO ALIGN WITH EXISTING CATCH BASIN.
2. PROVIDE FOUNTAIN PEOPLE SUB-BP-015 SUBMERSIBLE PUMP OR APPROVED EQUIVALENT AND INSTALL IN SUMP. SEE PIPING DETAIL. CONTRACTOR TO ADJUST THROTTLE AND BLEED OFF VALVES IN ORDER TO REGULATE WATER FLOW WHERE LAUNDRY WATER SHEET FLOWS OUT OF TOP SPILLWAY.
3. PROVIDE AND INSTALL UNDERGROUND PIPING AS SHOWN. PIPING IS TO BE SOLID WALL PVC PIPE WITH PVC SOCKET FITTINGS AND SOLVENT-CEMENTED JOINTS.
4. BRANCH PIPING TO FOUNTAIN GUTTER IS TO BE CONFIGURED AS SHOWN. BRANCHES ARE TO HAVE EQUAL AMOUNTS OF FITTINGS AND EQUAL AMOUNT OF LENGTHS OF PIPING.
5. PIPING IS TO BE PRE-CASTED INTO CONCRETE AND TO BE TERMINATE INTO GUTTER AS SHOWN. PROVIDE AND INSTALL ELBOWS FOR PUMPED DISCHARGED WATER TO TERMINATE HORIZONTALLY. INCLUDE 3" OF STRAIGHT PIPING OFF OF ELBOW INTO GUTTER.
6. ROOF DRAIN PIPING IS TO BE REMOVED AS SHOWN. EXISTING DOWNSPOUT NOZZLE IS TO BE SALVAGED AND REUSED. PATCH AND REPAIR EXISTING HOLE THROUGH EXTERIOR WALL.



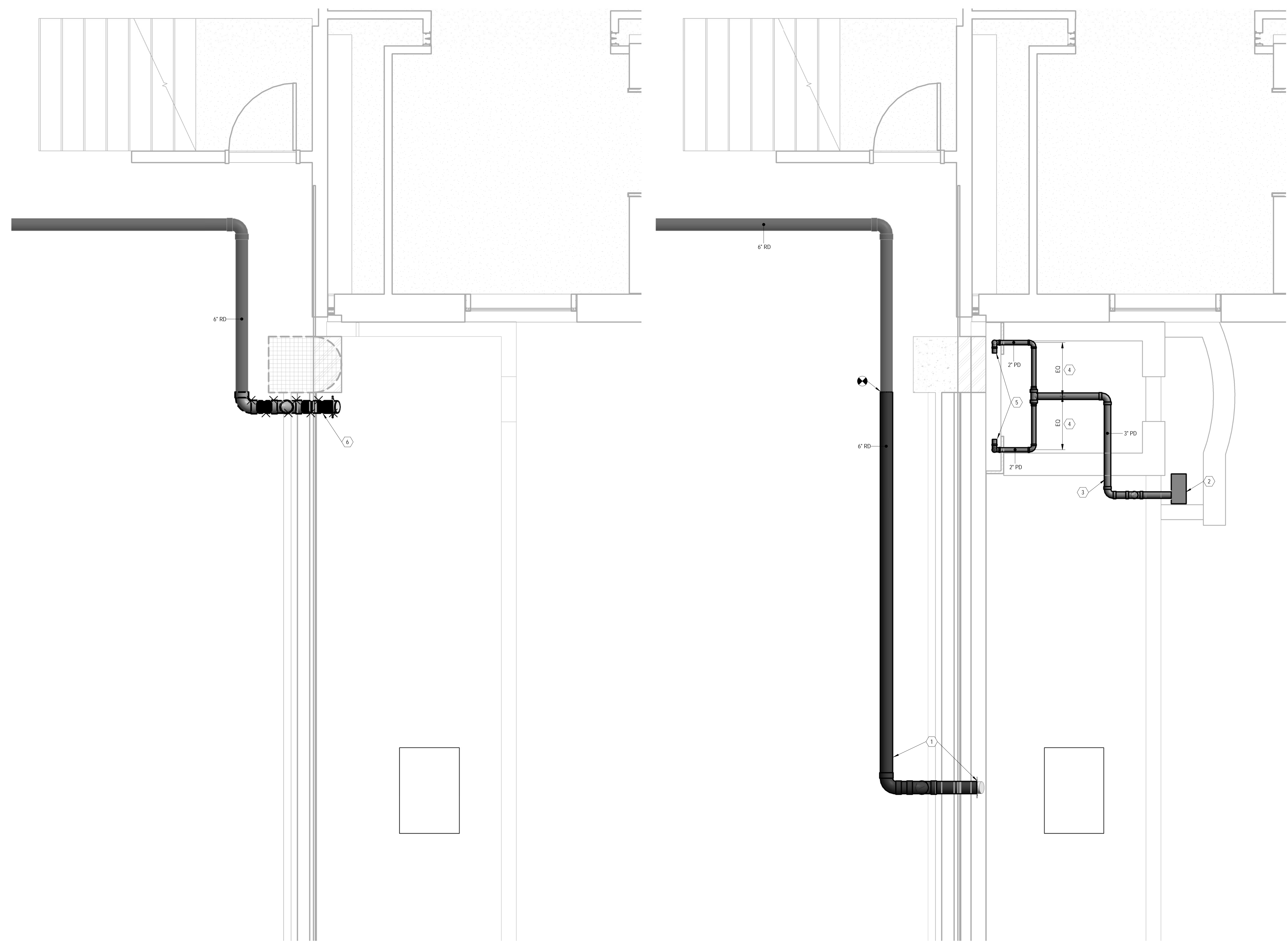
3 SUMP PUMP DETAIL
12" = 1'-0"



4 TYPICAL PIPE SUPPORT DETAIL
12" = 1'-0"



5 DOWNSPOUT NOZZLE DETAIL
12" = 1'-0"



1 LEVEL 1 PLUMBING DEMOLITION PLAN
1/2" = 1'-0"

2 LEVEL 1 PLUMBING PLAN
1/2" = 1'-0"

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

PART 1 - GENERAL

1.1 DEFINITIONS

- A. **Outlet Box:** Electrical box used to support utilization equipment such as a receptacle or light fixture.
- B. **Pull Box:** Electrical box through which branch circuit or feeder conductors are run but are not spliced.
- C. **Junction Box:** Electrical box used for splicing branch circuit or feeder conductors.
- D. **Multewire Branch Circuit:** A branch circuit as defined by the National Electrical Code that shares a grounded conductor between two or more phase conductors.

PART 2 - PRODUCTS

2.1 SINGLE CONDUCTORS

- A. **Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Alpha Wire Company.
 - 2. Belden Inc.
 - 3. Cenro Wire LLC.
 - 4. Encore Wire Corporation.
 - 5. General Cable; General Cable Corporation.
 - 6. Southwire Company.
 - 7. Thomas & Betts Corporation; A Member of the ABB Group.
- B. **Aluminum and Copper Conductors:** Comply with NEMA WC 70/IEA S-95-658.
- C. **Conductor Insulation:** Comply with NEMA WC 70/IEA S-95-658 for Type THHN/THWN-2, Type XHHW-2 and Type SO.

2.2 CONNECTORS AND SPLICES

- A. **Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. 3M.
 - 2. AFC Cable Systems; a part of Alkore International.
 - 3. Hubbell Power Systems, Inc.
 - 4. Ideal Industries, Inc.
 - 5. ILSCO.

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CBALES 26 05 19 - 1

- 6. O-2/Gedney; a brand of Emerson Industrial Automation.

- B. **Description:** Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

2.3 SYSTEM DESCRIPTION

- A. **Electrical Components, Devices, and Accessories:** Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. **Branch Circuits:** Copper, solid or stranded for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

3.2 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- B. Complete raceway installation between conductor and cable termination points according to Section 26 05 33 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values. Do not use pulling compounds or lubricant for installation of branch circuit conductors for Isolated Power Systems.
- D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- F. Support cables according to Section 26 05 29 "Hangers and Supports for Electrical Systems."

3.3 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CBALES 26 05 19 - 2

- B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
 - 1. Use oxide inhibitor in each splice, termination, and tap for aluminum conductors.

- C. **Wiring at Outlets:** Install conductor at each outlet, with at least 12 inches (300 mm) of slack.

3.4 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 26 05 53 "Identification for Electrical Systems."
- B. Identify each spare conductor at each end with panel and circuit number and identify as spare conductor.

3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

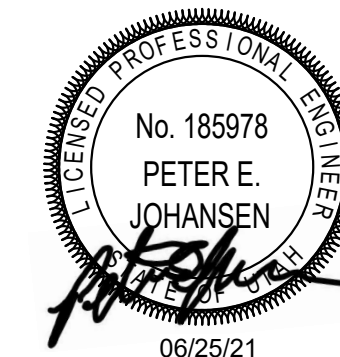
- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 26 05 44 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.6 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 07 84 13 "Penetration Firestopping."

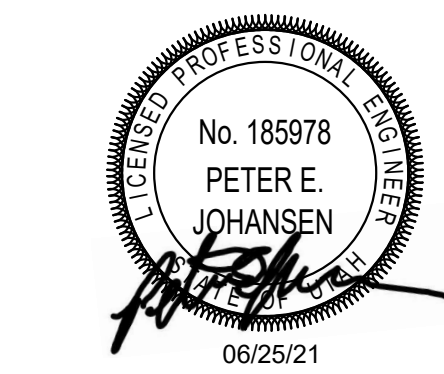
END OF SECTION

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CBALES 26 05 19 - 3



REV	DATE	DESCRIPTION
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VCBO NUMBER: 21010
CLIENT NUMBER: 00000
DATE: 2021 06 25



REV	DATE	DESCRIPTION

VCBO NUMBER:	21010
CLIENT NUMBER:	00000
DATE:	2021 06 25

SECTION 26 05 33 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 DEFINITIONS

- A. ARC: Aluminum rigid conduit.
- B. GRC: Galvanized rigid steel conduit.
- C. IMC: Intermediate metal conduit.

1.2 ACTION SUBMITTALS

- A. Product Data: For color coded EMT conduit, surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. LEED Submittals:
 - 1. Product Data for Credit IEQ 4.1: For solvent cements and adhesive primers, documentation including printed statement of VOC content.
 - 2. Laboratory Test Reports for Credit IEQ 4: For solvent cements and adhesive primers, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.
- D. Samples: For receptacle raceways and for each color and texture specified, 12 inches (300 mm) long.

PART 2 - PRODUCTS

2.1 METAL CONDUITS, TUBING, AND FITTINGS

- A. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. GRC: Comply with ANSI C80.1 and UL 6.
- C. ARC: Comply with ANSI C80.5 and UL 6A.
- D. IMC: Comply with ANSI C80.6 and UL 1242.

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- E. EMT: Comply with ANSI C80.3 and UL 797. Factory applied color finish available in black, orange, green, purple, red, yellow, blue, and white. Refer to Specification Section 26 05 33 "Identification for Electrical Systems" for color coding of raceways.
- F. FMC: Comply with UL 1; zinc-coated steel.
- G. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.

- H. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
 - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886 and NFPA 70.
 - 2. Fittings for EMT:
 - a. Material: Steel.
 - b. Type: compression.
 - 3. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.
- I. Joint Compound for IMC, GRC, or ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.2 NONMETALLIC CONDUITS, TUBING, AND FITTINGS

- A. Listing and Labeling: Nonmetallic conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.
- C. LFNC: Comply with UL 1660.
- D. Continuous HDPE: Comply with UL 651B.
- E. RTRC: Comply with UL 1684A and NEMA TC 14.
- F. Fittings for RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.
- G. Fittings for LFNC: Comply with UL 514B.
- H. Solvent cements and adhesive primers shall have a VOC content of 510 and 550 g/L or less, respectively, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- I. Solvent cements and adhesive primers shall comply with the testing and product requirements of the California Department of Health Services "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

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2.3 METAL WIREWAYS AND AUXILIARY GUITERS

- A. Description: Sheet metal, complying with UL 870 and NEMA 250, Type 1 unless otherwise indicated, and sized according to NFPA 70.
 - 1. Metal wireways installed outdoors shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- C. Wireway Covers: Hinged type unless otherwise indicated.
- D. Finish: Manufacturer's standard enamel finish.

2.4 BOXES, ENCLOSURES, AND CABINETS

- A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- C. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, aluminum, Type FD, with gasketed cover.
- D. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.
- E. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- F. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, cast aluminum with gasketed cover.
- G. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
- H. Pull boxes behind monitors: Minimum 6 inches square by 3-1/2 inches deep with two-gang ring.
- I. Handholes and Boxes for Exterior Underground Wiring: Refer to Specification Section 26 05 43 "Underground Ducts and Raceways for Electrical Systems".
 - 1. 3M Company.
 - 2. Hilli

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
 - 1. Exposed Conduit: GRC or IMC.

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- 2. Concealed Conduit, Aboveground: EMT.
- 3. Underground Conduit for branch circuits: RNC, Type EPC-40-PVC, direct buried.
- 4. Underground Conduit for feeders: Refer to Specification Section 26 05 43 "Underground Ducts and Raceways for Electrical Systems".
- 5. Raceways Embedded in slabs or composite steel and concrete decks are prohibited.
- 6. Connection to Vibrating Equipment (including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor Driven Equipment): LFMC.
- 7. Boxes and Enclosures, Aboveground: NEMA 250, Type 4X, 304 stainless steel.

B. Indoors: Apply raceway products as specified below unless otherwise indicated:

- 1. Exposed, Not Subject to Physical Damage: EMT.
- 2. Exposed, Not Subject to Severe Physical Damage: EMT.
- 3. Exposed and Subject to Severe Physical Damage: GRC or IMC. Raceway locations include the following:
 - a. Loading dock.
 - b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
 - c. Mechanical rooms below 8 feet.
 - d. Gymnasiums.
- 4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
- 5. Feeder Raceways under Slabs: RNC, Type EPC-40-PVC encased in not less than 2 inches of 3000 psi concrete. Change from RNC, Type EPC-40-PVC to GRC or IMC before rising above floor.
- 6. Branch Circuit Raceways under Slabs: Refer to Specifications Section 26 05 19 "Low-Voltage Electrical Power Conductors and Cables" for allowable application of under slab raceways, RNC, Type EPC-40-PVC direct buried. Change from RNC, Type EPC-40-PVC to GRC or IMC before rising above floor.
- 7. Raceways Embedded in slabs or composite steel and concrete decks are prohibited.
- 8. Connection to Vibrating Equipment (including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
- 9. Damp or Wet Locations: GRC or IMC.
- 10. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4X, 304 stainless steel in kitchens and damp or wet locations.
- 11.
 - C. Minimum Raceway Size: 3/4-inch (21-mm) trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
 - 1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
 - 2. EMT: Use setscrew or compression steel fittings. Comply with NEMA FB 2.10.
 - 3. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.
- E. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.
- F. Install surface raceways only where indicated on Drawings.

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3.2 INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- B. Separation of Life Safety and Critical Branch Wiring: Comply with NFPA 70 Article 517.
- C. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- D. Complete raceway installation before starting conductor installation.
- E. Comply with requirements in Section 26 05 29 "Hangers and Supports for Electrical Systems" for hangers and supports.
- F. Arrange stub-ups so curved portions of bends are not visible above finished slab except where concealed in chases.
- G. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches (300 mm) of changes in direction.
- H. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- I. Support conduit within 12 inches (300 mm) of enclosures to which attached.
- J. Raceways Embedded in Slabs are prohibited.
- K. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- L. Coat field-cut threads on PVC-coated raceway with a corrosion-preventing conductive compound prior to assembly.
- M. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
- N. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch (35mm) trade size and insulated throat metal bushings on 1-1/2-inch (41-mm) trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- O. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- P. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

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- Q. Cut conduit perpendicular to the length. For conduits 2-inch (53-mm) trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.

- R. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

- S. Surface Raceways:
 - 1. Install surface raceway with a minimum 2-inch (50-mm) radius control at bend points.
 - 2. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inches (1200 mm) and with no less than two supports per straight raceway section. Support surface raceway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.

- T. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.

- U. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:
 - 1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
 - 2. Where an underground service raceway enters a building or structure.
 - 3. Where otherwise required by NFPA 70.

- V. Comply with manufacturer's written instructions for solvent welding RNC and fittings.

- W. Expansion (Seismic)-Joint Fittings:
 - 1. Install flexible metal conduit at all locations where conduits cross building or structure expansion joints. Allow for minimum 4 inches deflection in all directions or greater if expansion joint exceeds 4 inches. Provide droop in flexible conduit to accommodate movement. Do not loop the flexible conduit. When calculating total bend degrees in conduit runs with expansion fittings use minimum 60 degrees for each expansion-joint fitting.
 - 2. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

- X. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches (1830 mm) of flexible conduit for recessed and semi-recessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
 - 1. Use LFMC in damp or wet locations.

- Y. Mount boxes at heights indicated on Drawings; if mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.

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- Z. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box.

- AA. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

- BB. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

3.3 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 26 05 44 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.4 FIRESTOPPING AND SOUND TRANSMISSION MITIGATION

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 07 84 13 "Penetration Firestopping."
- B. Install putty pads with acoustical and firestopping capabilities on all boxes that are installed in wall or partition cavities and in gypsum board ceilings.

3.5 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - 2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION

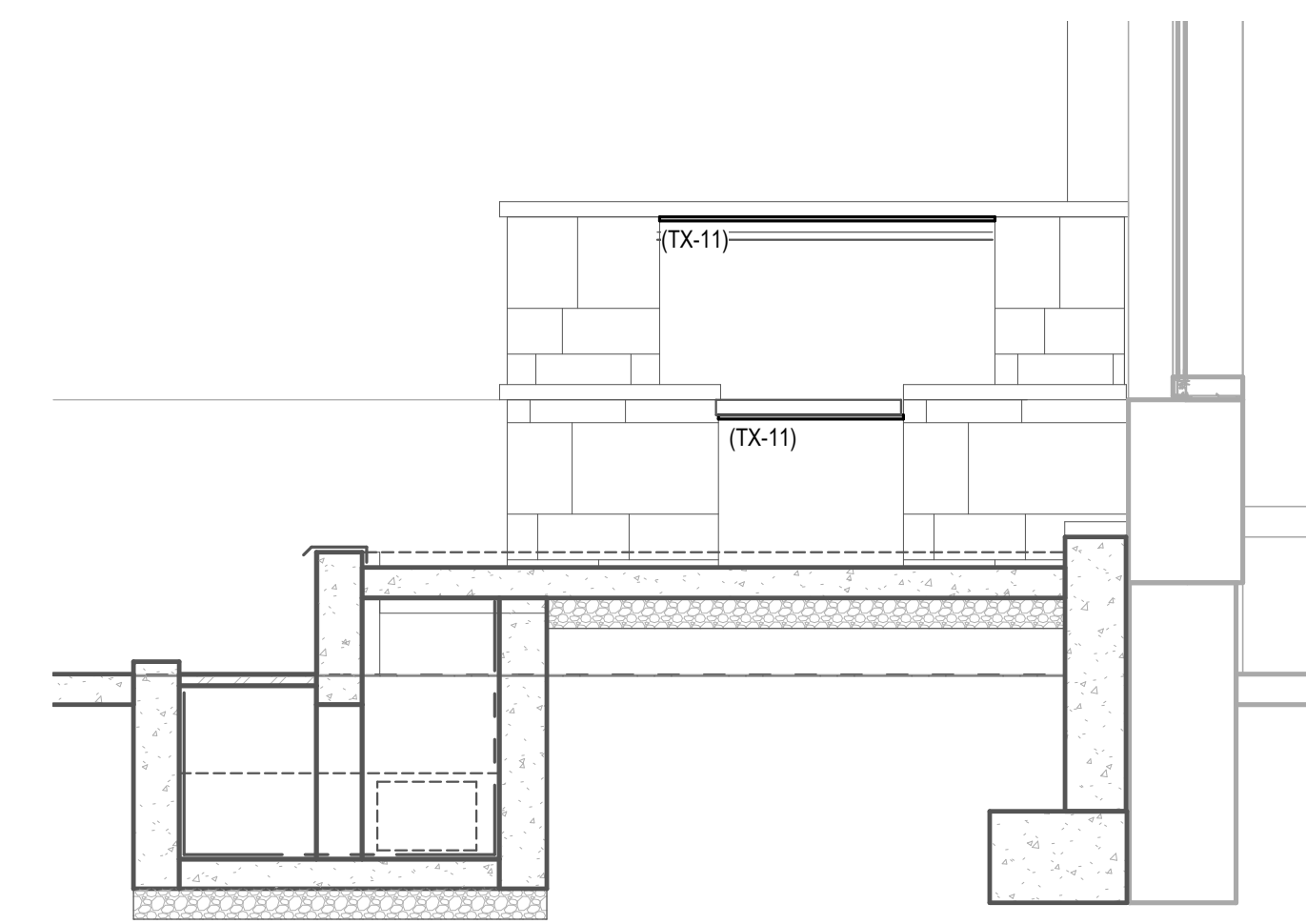
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GENERAL SHEET NOTES

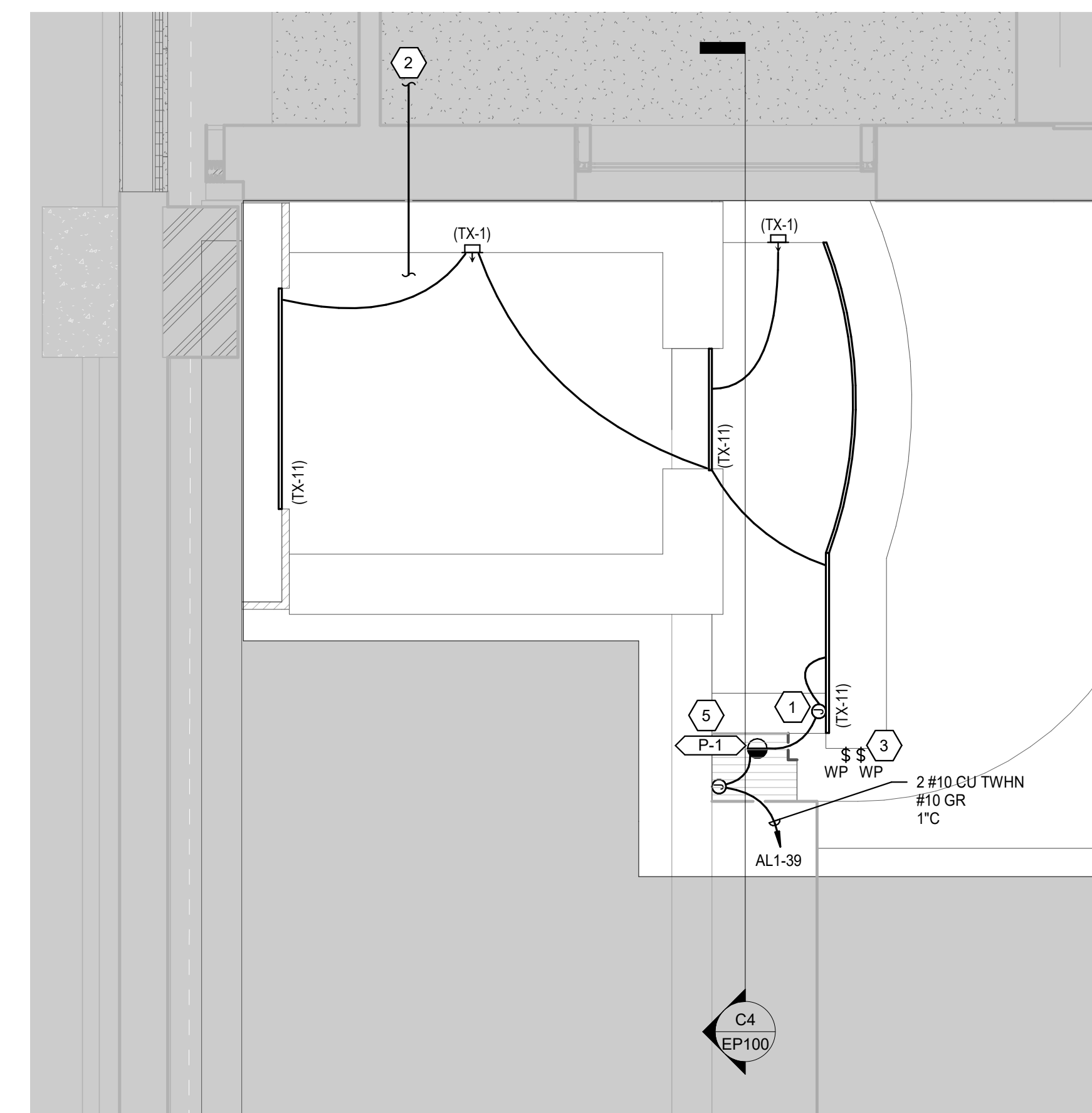
1 CIRCUIT FOR FOUNTAIN CONDUCTORS: TWO #10 CU TWHN, #10 GR, .75" CONDUIT.

SHEET KEYNOTES

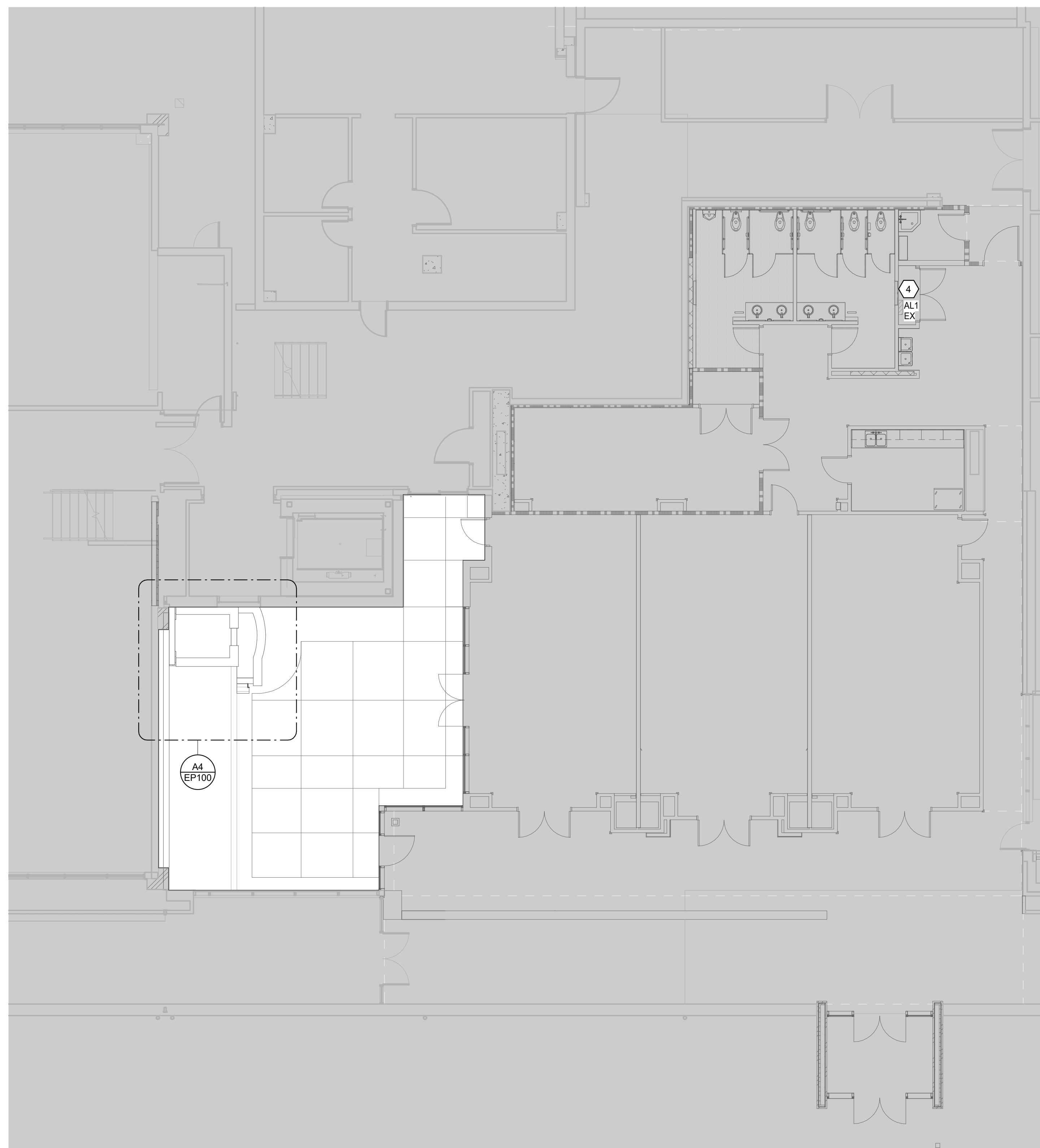
- 1 PROVIDE A DOUBLE GANG J-BOX LISTED FOR UNDERWATER APPLICATIONS (JP-SS314) OR EQUIVALENT. LIGHTS AND PUMP WILL RUN BACK TO THE SAME J-BOX, BUT WILL BE SWITCHED SEPARATELY.
- 2 STUB CONDUIT OUT HERE TO FEED THE FOUNTAIN.
- 3 PROVIDE DISCONNECT TOGGLE SWITCHES IN WEATHER PROOF ENCLOSURE FOR PUMP AND FOUNTAIN LIGHTS. RECESS J-BOX FOR SWITCH WITH WEATHERPROOF COVER INTO STONE WALL OF FOUNTAIN. DO NOT USE SURFACE MOUNT RACEWAY.
- 4 PROVIDE GFI BREAKER IN EXISTING PANEL AL1.
- 5 3/4 HP 120 VOLT FOUNTAIN PUMP.



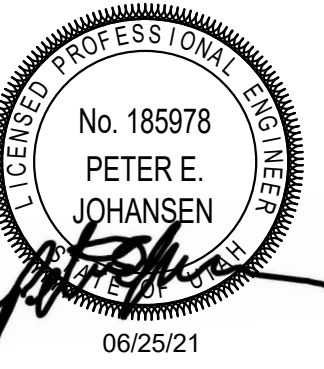
C4 FOUNTAIN SECTION
SCALE: 1/2" = 1'-0"



A4 POWER PLAN - ENLARGED
SCALE: 1/2" = 1'-0"



A1 POWER PLAN - LEVEL 1 - OVERALL
SCALE: 1/8" = 1'-0"



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