

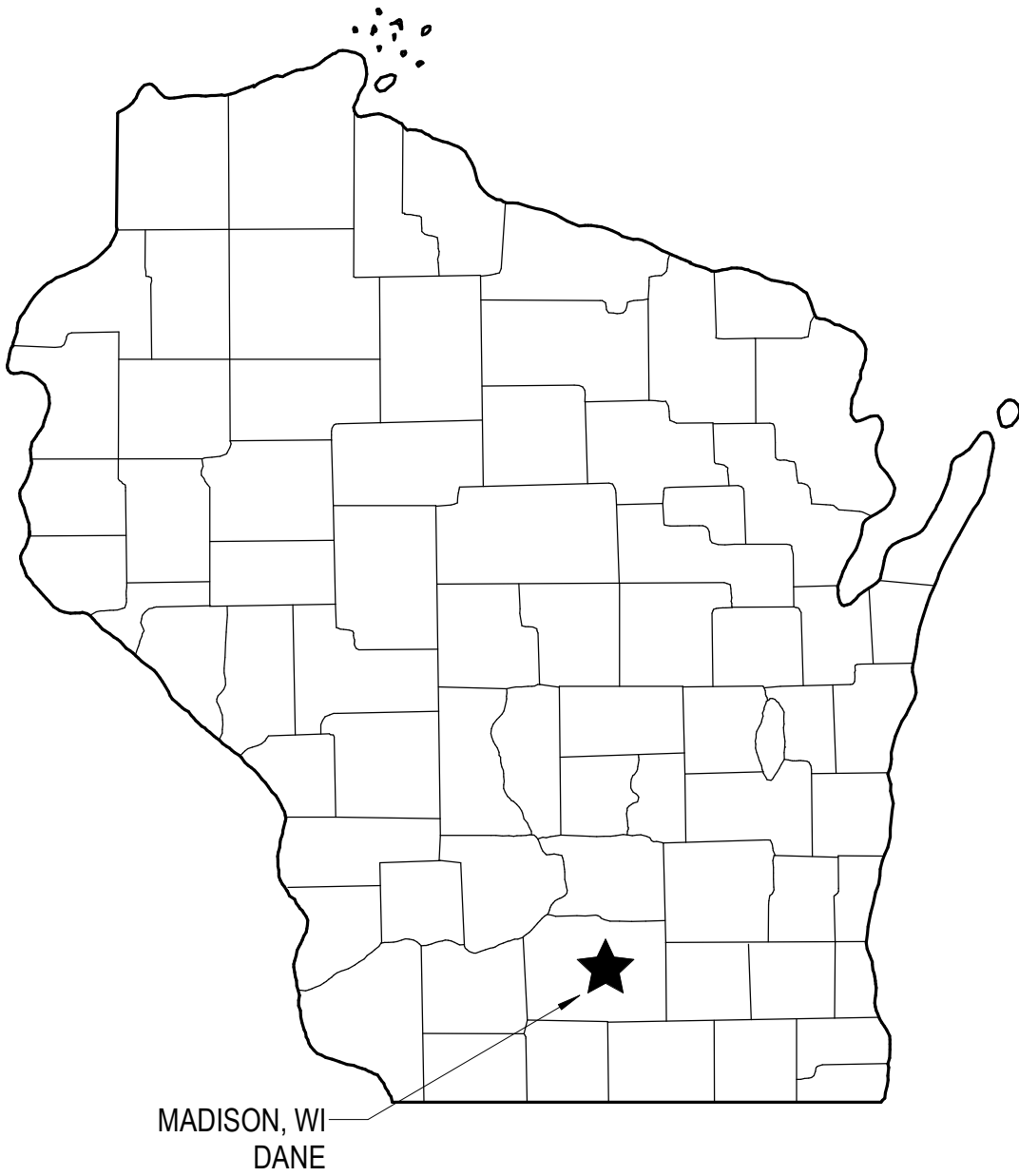
UNIT WELL 19 TREATMENT SYSTEM ADDITION MADISON, WISCONSIN

CONTRACT NO. 9289
PROJECT NO. 10448
MUNIS NO. 10448-86-140



PROJECT LOCATION MAP

BID OPENING:
WATER UTILITY
119 E. Olin
Avenue, Madison,
WI 53713-1431



WISCONSIN



Madison Water Utility

**PUBLIC IMPROVEMENT
PROJECT APPROVED
FEB. 28, 2023**

**BY THE COMMON COUNCIL
OF MADISON, WI**

BIDDING DOCUMENTS



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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SEH Project	MADWU 167818
Checked By	MS
Drawn By	LAP

Project Status	Issue Date
BIDDING DOCUMENTS	OCTOBER, 2023

REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

TITLE SHEET

G001

GENERAL SHEETS

G001	TITLE SHEET
G002	SHEET INDEX
GC001	EXISTING SITE CONDITIONS
GL001	LANDSCAPE PLAN
GS001	GENERAL STRUCTURAL ABBREVIATIONS, SYMBOLS AN...
GS002	GENERAL STRUCTURAL NOTES
GS003	GENERAL STRUCTURAL NOTES
GP001	GENERAL PROCESS NOTES
GP002	PROCESS FLOW DIAGRAM
GM1	MECHANICAL SYMBOLS AND ABBREVIATIONS
GM2	MECHANICAL SCHEDULES
GM3	MECHANICAL SCHEDULES
GE1	GENERAL ELECTRICAL NOTES

CIVIL SHEETS

C 100	SITE PLAN
C 101	STAGING PLAN
C 102	GRADING PLAN
C 103	UTILITY PLAN
C 104	PLAN & PROFILE
C 105	FIRE ACCESS PLAN
C 106	EROSION CONTROL PLAN

LANDSCAPE SHEETS

L101	LANDSCAPE PLAN
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(01) WELLHOUSE 19 SHEETS

01 S101	FOUNDATION FLOOR PLAN
01 S102	ROOF PLAN
01 S301	BUILDING SECTIONS
01 A001	GENERAL INFORMATION
01 A002	CODE PLAN
01 A100	DEMOLITION DRAWINGS
01 A101	FLOOR AND ROOF PLANS
01 A201	EXTERIOR ELEVATIONS
01 A301	BUILDING SECTIONS
01 A401	ENLARGED PLAN, SCHEDULES AND DETAILS
01 A402	DOOR AND WINDOW DETAILS
01 A501	WALL TYPES, EXTERIOR DETAILS
01 A502	DETAILS
01a A801	ALT BID #1 PLANS, SECTIONS AND DETAILS
01a A802	ALT BID #1 PANEL REPLACEMENT LOCATIONS
01a AR000	ALT BID #1 STR SEG COVER SHEET
01a AR100	ALT BID #1 STR SEG OVERALL ROOF PLAN
01a AR101	ALT BID #1 STR SEG ROOF REPAIR PLAN
01a AR200	ALT BID #1 STR SEG DETAIL REFERENCE ELEVATIONS
01a AR500	ALT BID #1 STR SEG ROOFING DETAILS A500-A503
01a AR501	ALT BID #1 STR SEG ROOFING DETAILS A504-A507
01a AR502	ALT BID #1 STR SEG ROOFING DETAILS A508-A510
01 P101	PROCESS FLOOR PLAN
01 P301	PROCESS SECTIONS
01 P302	PROCESS SECTIONS
01 P901	PROCESS ISOMETRIC 3D VIEWS FOR REFERENCE ONLY AND PHOTOS
01 FP101	FIRE PROTECTION PLAN
01 M071	MECHANICAL DEMOLITION PLAN
01 M101	FIRST LEVEL HVAC PLAN
01 M102	ROOF MECHANICAL PLAN
01 M201	FIRST LEVEL DOMESTIC WATER AND GAS PLAN
01 M202	FIRST LEVEL SANITARY WASTE AND VENT PLAN
01 M301	RISER DIAGRAMS
01 E070	OVERALL REMOVAL PLAN
01 E101	ELECTRICAL SITE PLAN - REMOVAL
01 E102	ELECTRICAL SITE PLAN
01 E201	LIGHTING PLAN
01 E301	POWER PLAN
01 E401	SYSTEMS PLAN
01 E501	ONE-LINE DIAGRAM
01 E502	ONE-LINE DIAGRAM
01 E503	ONE-LINE DIAGRAM
01 E504	ONE-LINE DIAGRAM
01 E505	NETWORK DIAGRAM
01 E601	SCHEMATICS
01 E602	SCHEMATICS
01 E701	SCHEDULES

(02) BACKWASH RECLAIM TANK SHEETS

02 S101	BACKWASH TANK PLANS
02 S301	BACKWASH TANK SECTIONS
02 P101	PROCESS FLOOR PLAN
02 P301	PROCESS SECTIONS
02 E301	POWER PLAN - BACKWAS...

TYPICAL DETAILS

DC 001	CIVIL DETAILS
DC 002	CIVIL DETAILS
DC 003	CIVIL DETAILS
DC 004	CIVIL DETAILS
DC 005	CIVIL DETAILS
DC 006	CIVIL DETAILS
DC 007	CIVIL DETAILS
DL001	LANDSCAPE DETAILS
DS501	FOUNDATION DETAILS
DS502	FOUNDATION DETAILS
DS511	FRAMING DETAILS
DS512	FRAMING DETAILS
DS531	STEEL DETAILS
DP 501	PROCESS PIPING WALL PENETRATION...
DP 502	PROCESS PIPING DETAILS
DP 503	PROCESS PIPING SUPPORT DETAILS
DP 504	MISCELLANEOUS PROCESS DETAILS
DM1	MECHANICAL DETAILS
DM2	MECHANICAL DETAILS
DE01	ELECTRICAL DETAILS
DE02	ELECTRICAL DETAILS
DE03	ELECTRICAL DETAILS



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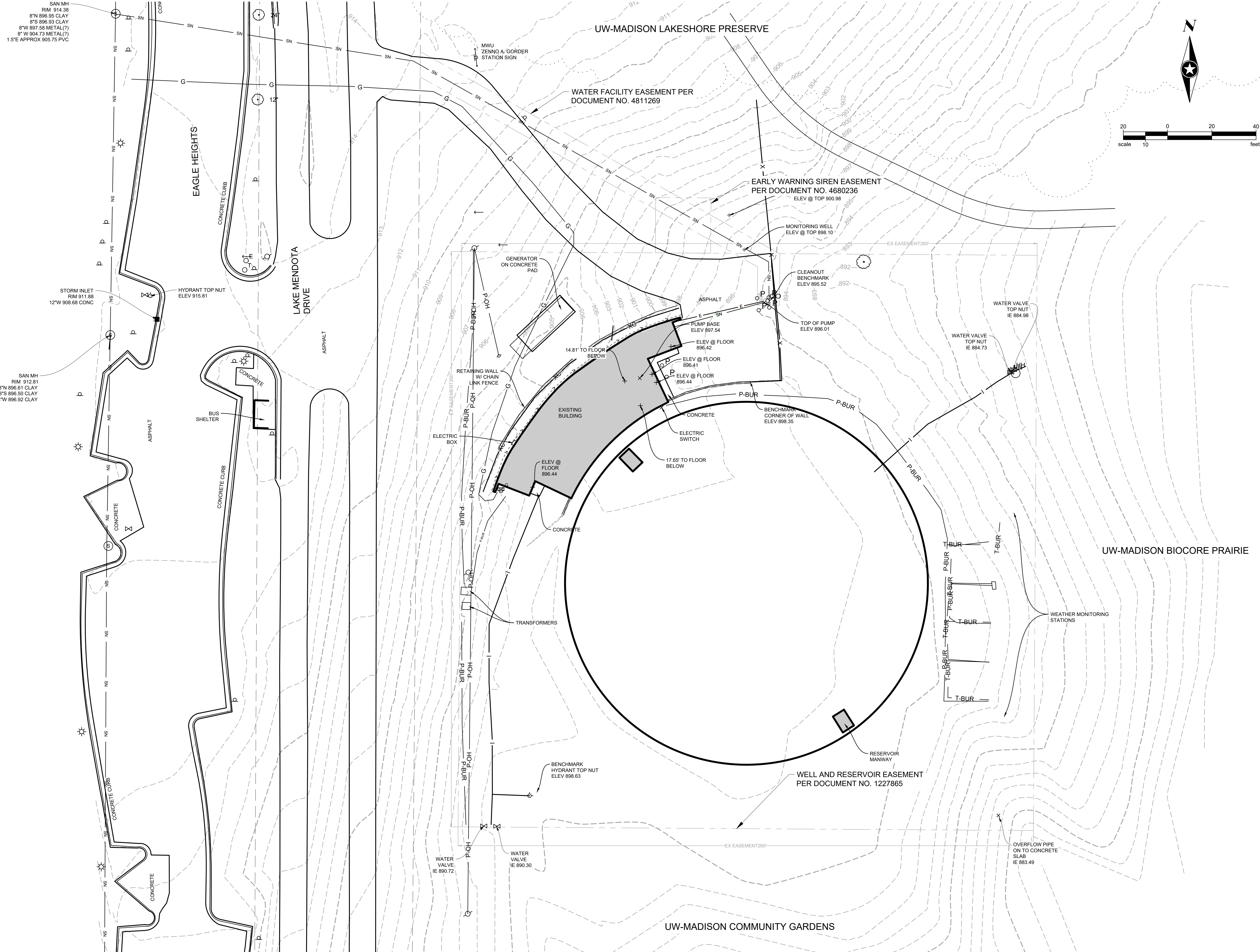
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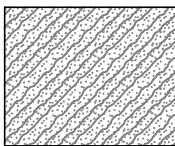
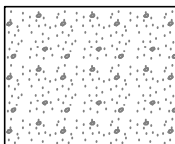
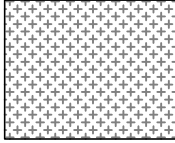
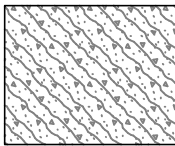
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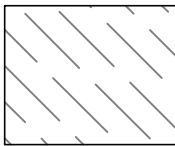
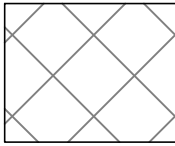

SHEET INDEX



PERENNIAL PLANTING AREA SCHEDULE

	NATIVE PRAIRIE MIX - PLUGS @12" O.C. BOUTELOUA CURTIPENDULA / SIDE OATS GRAMA BOUTELOUA GRACILIS / BLUE GRAMA GRASS COREOPSIS LANCEOLATA / LANCELEAF TICKSEED ECHINACEA PURPUREA / CONEFLOWER MONARDA FISTULOSA / BERGAMOT RUDBECKIA TRILOBA / BROWN EYED SUSAN SCHIZACHYRIUM SCOPARIUM / LITTLE BLUESTEM	482 SF 76 76 51 51 51 51 151
	UNDERSTORY MIX 1 PLUGS @ 12" O.C. ASARUM CANADENSE / WILD GINGER MERTENSIA VIRGINICA / VIRGINIA BLUEBELLS POLYGONATUM BIFLORUM / SOLOMON'S SEAL	731 SF 342 76 342
	JOE-PYE WEED PLUGS @ 12" O.C. EUPATORIUM MACULATUM / JOE PYE WEED	158 SF 165
	UNDERSTORY MIX 2 PLUGS @12" O.C. CAREX BICKNELLII / PRAIRIE SEDGE GERANIUM MACULATUM / SPOTTED GERANIUM RUDBECKIA HIRTA / BLACK-EYED SUSAN TRADESCANTIA OHIENSIS / OHIO SPIDERWORT	509 SF 212 159 80 80

SEED MIXES

	NO MOW TURF MIX BASIS OF DESIGN: PRAIRIE NURSERY NO MOW LAWN SEED MIX	1,200 sf
	REINFORCED TURF GRASS SEE 2/L201. TURF SEED TO MATCH TURF GRASS SEEDING AREA.	1,817 sf
	TURF GRASS BASIS OF DESIGN: WISCONSIN DOT NO. 40 SEED MIX	4,804 sf

PLANT SYMBOL SCHEDULE

ORNAMENTAL TREES	BOTANICAL / COMMON NAME	SIZE	QTY
PV	Prunus virginiana / Chokecherry	1.5" Cal	11
VL	Viburnum lentago / Nannyberry	1.5" Cal	4
SHADE TREES	BOTANICAL / COMMON NAME	SIZE	QTY
CR	Carpinus caroliniana / American Hornbeam	2.5" CAL	3
QB	Quercus bicolor / Swamp White Oak	2.5" CAL	3
QM	Quercus macrocarpa / Burr Oak	2.5" CAL	3
SHRUBS	BOTANICAL / COMMON NAME	SIZE	QTY
AR	Aralia racemosa / American Spikenard	3 gal.	13
AM	Aronia melanocarpa `Iroquois Beauty` TM / Black Chokeberry	3 gal.	11
CO	Cornus racemosa / Gray Dogwood	3 gal.	6
CA	Corylus americana / American Hazelnut	3 gal.	8
DI	Diervilla lonicera / Dwarf Bush Honeysuckle	3 gal.	3
PERENNIALS	BOTANICAL / COMMON NAME	SIZE	QTY
cn	Conoclinium coelestinum / Wild Ageratum	1 gal.	16
ep	Echinacea pallida / Pale Purple Coneflower	1 gal.	7
pn	Panicum virgatum 'Northwind' / Northwind Switch Grass	1 gal.	2

TREE REMOVAL TABLE

NO.	SPECIES	SIZE
T1	Picea pungens / Blue Spruce	APPROX 12" DBH, >20 FT HT
T2	Acer sp. / Maple	APPROX 10" DBH, >15 FT HT
Notes Incidental clearing of small diameter Tilia americana, (American Basswood/Linden), Fraxinus spp (Ash), and Acer negundo (boxwood) may occur in conjunction with driveway construction and hydrant installation. UW Madison Facilities & Development staff have reviewed these locations with the Design Team on-site and determined that no heritage trees exist in these locations. Tree locations estimated through review of 2020 aerial photography and confirmed by staff site visits. Trees were not included in site survey but locations will be confirmed prior to construction.		

LANDSCAPE NOTES:

- CONTRACTOR TO VERIFY PLANTS REQUIRED AS REFLECTED ON PLAN. QUANTITIES LISTED IN PLANT SCHEDULE ARE FOR REFERENCE ONLY. IF THERE IS A DISCREPANCY BETWEEN QUANTITIES LISTED IN PLANT SCHEDULE AND QUANTITIES SHOWN ON PLAN SHEETS, PLAN SHEETS SHALL GOVERN.
- CONTRACTOR IS RESPONSIBLE FOR ON-GOING MAINTENANCE OF ALL NEWLY INSTALLED MATERIALS UNTIL TIME OF OWNER ACCEPTANCE. ANY ACTS OF VANDALISM OR DAMAGE WHICH MAY OCCUR PRIOR TO OWNER ACCEPTANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- NO PLANT MATERIAL SUBSTITUTIONS WILL BE ACCEPTED UNLESS PRIOR APPROVAL IS REQUESTED OF THE LANDSCAPE ARCHITECT BY THE LANDSCAPE CONTRACTOR PRIOR TO THE SUBMISSION OF A BID AND/OR QUOTATION.
- CONTRACTOR SHALL VISIT AND INSPECT SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS RELATING TO THE NATURE AND SCOPE OF WORK PRIOR TO SUBMITTING BID.
- ALL PLANT BEDS SHALL BE EDGED USING SPADED GARDEN EDGE UNLESS OTHERWISE NOTED ON PLANS.
- MULCH SHALL BE INCIDENTAL TO PLANT MATERIALS.
- ALL PLANTING AREAS SHALL RECEIVE 6" DEPTH OF PREPARED TOPSOIL.
- TREE SHALL BE PLANTED IN PITS 3 TIMES THE WIDTH OF THE ROOT BALL WITH ROOT CROWN SET 2" ABOVE FINAL GRADE. BACKFILL WITH TOPSOIL AS SPECIFIED.
- ORNAMENTAL AND SHADE TREE ROOTS SHALL BE B&B OR CONTAINER GROWN.
- SHRUBS AND PERENNIALS SHALL BE CONTAINER GROWN.
- ALL PLANTING AREAS SHALL BE MULCHED WITH SHREDDED HARDWOOD, NATURAL COLOR ACCORDING TO LANDSCAPE DETAILS
- PLANT PERENNIAL PLANTING AREAS AS PLUGS AT 12" O.C. RANDOMIZE PLANTINGS IN GROUPS OF 1-5.

LANDSCAPING & SCREENING CALCULATIONS PER MADISON ORDINANCE 28.142
LANDSCAPING AND SCREENING REQUIREMENTS

Required	Provided
Landscape Calculations & Distribution: Provide 5 landscape points for each three hundred square feet of developed area	
Developed Area = 10,265 SF (10,265 SF/300) x 5 = 172 Required landscape points	748 Points (See City of Madison Landscape Worksheet)
Planting beds must have at least 75% vegetative cover	Planting beds will have at least 75% vegetative cover as shown on sheet L101.
No single tree species may comprise more than 33% of trees used to meet screening requirements	Maximum percentage of a single tree species: 33%
Development Frontage Landscaping	
1 overstory canopy tree and five shrubs shall be planted for each thirty lineal feet of lot frontage.	
243 LF Lot Frontage, 1 x (243/30=8 canopy trees; 5 x (243/30 = 40 shrubs	9 canopy trees, 15 ornamental trees, and 41 shrubs are provided along site perimeter are provided in addition to existing mature tree canopy and woodland understory along road frontage. Trees and shrubs are located to provide maximum screening for adjacent trail uses as well as views from roadway.
Interior Parking Lot Landscaping: Pavement is for maintenance access only, no formal parking spaces provided. Plantings at pavement perimeter screen driveway from adjacent trails	
Foundation Plantings	
Foundation plantings shall be installed along building facades	Maintenance activities associated with well infrastructure and filtration equipment preclude planting against building foundations. The existing building currently does not have any foundation plantings. Instead planting has been shifted to the driveway perimeter to more effectively screen the building and site without sacrificing well operations and maintenance,



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119 E OLIN AVE
MADISON, WI 53713

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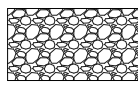
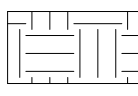
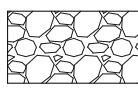
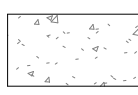
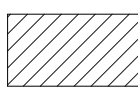

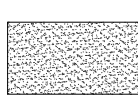
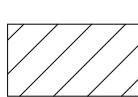




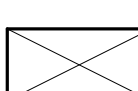
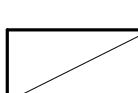

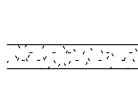


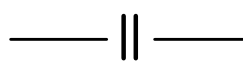

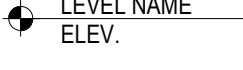

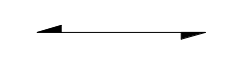

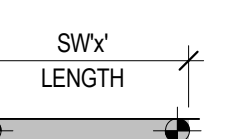
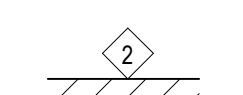
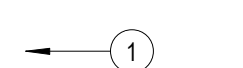
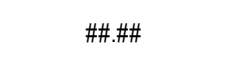


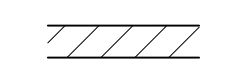
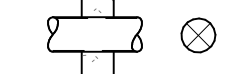
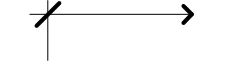




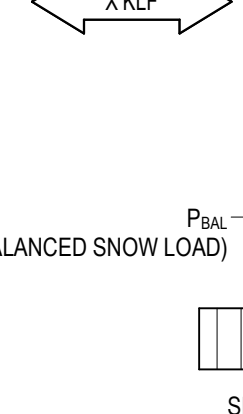
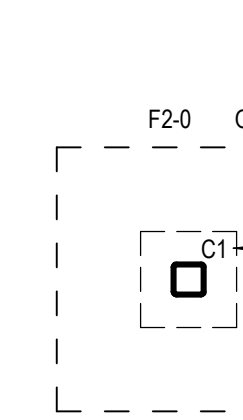
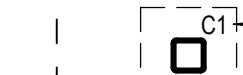
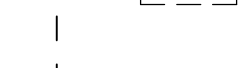
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LANDSCAPE SCHEDULES & NOTES

GL001

ABBREVIATIONS			MATERIAL SYMBOLS			ANNOTATION SYMBOLS			STRUCTURAL TABLES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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GENERAL STRUCTURAL NOTES

- These notes do not replace the specifications but are to be read in conjunction with them. Any discrepancies or conflicts between the two shall be brought to the attention of the Structural Engineer of Record (SER) for resolution. In these Notes and the Specifications, the word "shall" means "has a duty to."
- These drawings are for this specific project (SEH project number MADWU-167818) and no other use is authorized. Contact SER, Saura Just 651.302.7663.

GOVERNING BUILDING CODE:

2018 Wisconsin Commercial Building Code
2015 International Building Code as adopted and amended by the state building code

DESIGN CODES AND STANDARDS:

ACI Manual of Concrete Practice
ACI 318, 301 Building Code Requirements & Specifications for Structural Concrete
ACI 350 Environmental Engineering Concrete Structures
ACI 530 / TMS 402 / ASCE 5 Building Code Requirements & Specifications for Masonry Structures
AISC 360, 303 Specification for Structural Steel Buildings
CRSI Manual of Standard Practice
PCI MNL 116 PCI Manual for Quality Control
PCI MNL 120 PCI Design Handbook - Precast and Prestressed Concrete
PCI MNL 123 PCI Connections Manual

DESIGN LOADS PER ASCE 7-10

Risk category III	
1. Live load:	
Floor slabs	150 PSF UNO
Elevator walkways	100 PSF
Roof live load	20 PSF
2. Dead load:	
Superimposed roof load	15 PSF
3. Snow loads:	
Ground snow load	30 PSF
Importance factor	1.10
Roof snow load (Wellhouse)	23.1 PSF + drifting & unbalanced
Roof snow load (Backwash Tank)	25.4 PSF
Snow exposure factor	1.0
Thermal factor (Wellhouse)	1.0
Thermal factor (Backwash Tank)	1.1
4. Wind loads:	
Wind speed (3 sec gust)	120 mph
Wind exposure	C
Mean roof height	15 feet
Kd	0.85
Kzt	1.0
G	0.85 (rigid building)
Structure is:	Enclosed
Internal press coef	+0.18
Interior walls	5 PSF lateral load
5. Seismic loads:	
Site class	C
Ss	0.084 g
Si	0.046 g
Fa	1.2
Fv	1.7
Sds	0.067 g
Sd1	0.052 g
Ie	1.25
6. Seismic design category	A
7. Soil conditions:	
Allowable soil bearing pressure(assumed)	2,500 PSF
Measured groundwater elevation at the time of drilling	NOT ENCOUNTERED AT THE TIME OF DRILLING
Dewater as required to keep excavations dry	
Frost depth	48 inches (heated building) 60 inches (unheated structure)
Anticipated max differential settlement	1/2 inch
Anticipated max total settlement	1 inch
8. Subgrade conditions:	
Sand backfill (assumed/per geotechnical report):	
Wet unit weight	120 PCF
Angle of Internal Friction	30 degrees
At-rest pressure coefficient, k0	0.5
Subgrade modulus Wellhouse	100 PCI
Subgrade modulus Backwash Tank	150 PCI
9. Precast plank loading, where not noted on drawings:	
Superimposed dead load indicated above (roofs)	5 PSF
Leaving live load (suspended MEPP)	10 PSF
Lifting loads	Loads as shown on the drawings
Roof live load	20 PSF
If mechanical units shown on the drawings are greater than 20 PSF within their footprints apply the difference within their footprints.	

DESIGN / CONSTRUCTION CRITERIA

- The contractor shall verify dimensions and conditions before construction and notify the engineer of any discrepancies, inconsistencies, or difficulties affecting the work before proceeding.
- All material, workmanship, and details shall be in accordance with typical competent construction practices, current manufacturer's recommendations, and all applicable codes and government regulations.
- Any material used in contact with drinking water shall be demonstrated to meet NSF 61.
- The contractor shall coordinate all disciplines, verifying size and location of all openings, whether shown on structural drawings or not, as called for on process, architectural, mechanical, electrical or other drawings. All conflicts, inconsistencies, or other difficulties affecting structural work shall be called to the architect and engineer's attention for direction before proceeding.
- Equipment and structural anchor rod sizes, types, embedment, and patterns shall be verified with the manufacturer or fabricator. All anchor patterns shall be templated to ensure accuracy of placement.
- The contractor shall supply all necessary temporary bracing, shoring, guying, or other means to avoid excessive stresses and to hold structural elements in place during construction.
- Job site safety (including excavations) is the sole responsibility of the general contractor and their subcontractors.
- The engineer is not responsible for construction means, methods, techniques or practices. Where drawings and details imply this, they are provided to show final construction. If contractor desires to use different means and methods than implied by these drawings, submit similar details for review.
- Standard or typical structural details are intended to illustrate design concepts and to specify material and required physical dimensions matching or similar to the referenced locations in the drawing set. Standard details apply whether or not they are cut on the drawings.
- There is no provision for future vertical or horizontal expansion in the design.

EXISTING CONSTRUCTION

- Before proceeding with any work within the existing facility, the contractor shall familiarize himself with existing structural and other conditions. It shall be the contractor's responsibility to design, provide, and erect all necessary bracing, shoring and other safeguards to maintain all parts of the existing work in a safe condition during the process of demolition and construction and to protect from damage those portions of the existing work which are to remain.
- The contractor shall find verify the dimensions, elevations, etc. necessary for the proper construction and alignment of the new portions of the work to the existing work. The contractor shall make all measurements necessary for fabrication and erection of structural members. Any discrepancy shall be immediately brought to the attention of the engineer.
- Any existing construction damaged in the removal of adjacent elements shall be replaced at the contractor's expense. Where existing concrete elements are to be demolished and reinforcing is not required to remain, cut existing reinforcing flush with concrete to remain and coat with epoxy, unless covered with concrete in final construction.

FOUNDATIONS

- CAUTION: Existing underground utilities may exist anywhere on the site. Notify owner and Digger's hotline (800) 242-8511 prior to disturbing any grade or excavation.
- Material Definitions and Gradations:
 - Non-frost-susceptible fill
 - 100% passing 1" sieve
 - < 50% passing #40 sieve
 - < 6% passing #200 sieve
 - < 2% organic content
 - Aggregate Base
 - 100% passing 1" sieve
 - 70-100% passing 3/4" sieve
 - 45-90% passing #10 sieve
 - 35-80% passing #4 sieve
 - 20-65% passing #10 sieve
 - 10-35% passing #40 sieve
 - 3-10% passing #200 sieve
 - < 2% organic content
 - Large aggregates through #4 have minimum 25% fractured faces or crushed (per gradation)
 - Aggregate Filter/Base
 - 100% passing 1" sieve
 - 85-100% passing 3/4" sieve
 - 45-90% passing 3/8" sieve
 - 20-60% passing #4 sieve
 - 0-10% passing #10 sieve
 - 0-6% passing #200 sieve
 - < 2% organic content
 - Granular Structural Backfill
 - 100% passing 1" sieve
 - 0-65% passing #10 sieve
 - 0-65% passing #40 sieve
 - 0-10% passing #200 sieve
 - < 2% organic content
- Structural foundations consist of wall and spread footings established on material capable of safely supporting 2,500 PSF as recommended by COC inc testing in report C22051-110 dated 01/20/2023. The structural engineer is not responsible for the accuracy or content of the subsurface soil conditions described in the specifications, test borings, or geotechnical report. A licensed geotechnical engineer shall be present during construction to test, inspect and verify all assumed soil conditions as required.
- Subgrade tank walls shall be backfilled with Granular Structural Backfill or Non-Frost Susceptible Fill (as defined above) within 2 feet of the wall. Tank walls are not designed to resist lateral load (leak testing or backfilling) until the wall concrete has achieved its full design strength, 14 days minimum. Submit concrete testing verifying this before leak testing or backfilling.
- Foundation walls shall be adequately braced during backfilling and compaction to prevent movement or structural damage. Bracing shall remain in place until permanent bracing is in place and until concrete achieves sufficient strength to resist imposed loads.
- When placing compacted fill adjacent to foundation walls and piers, place backfill at equal rates on both sides to prevent overturning or structural damage.
- Refer to the specifications for a list of structures that require leak testing prior to backfilling.
- Away from walls, place fill in 8 inch loose lifts and compact to 95 percent Modified Proctor beneath foundations. When placing compacted fill adjacent to foundation walls and piers, place backfill at equal rates on both sides to prevent overturning or structural damage.
- Contractor shall provide for dewatering at excavations from either surface water or seepage.
- Moisture content in soils beneath building locations should not be allowed to vary after footing excavations and after grading for slabs on grade are completed to a degree that would de-stabilize the compacted soil. If subgrade materials become desiccated or softened by water or other conditions, remove and replace with engineered fill as recommended by the geotechnical engineer. Do not place concrete on frozen ground, nor allow ground beneath foundations to freeze. All foundation work shall be placed on substrate approved and tested by geotechnical engineer of record.
- Do not place backfill on frozen subgrade. Do not place frozen backfill.
- Slabs on grade shall be constructed on a subgrade of native material compacted to at least 95 percent modified proctor, and 6 inches of Aggregate Base or Aggregate Filter/Base (as defined above) or WisDOT base aggregate course (dense) below the slab compacted to 95 percent modified proctor density unless noted otherwise in geotechnical report. In wet or potentially wet situations, use Aggregate Filter/Base (as defined above).
- Grading: where not specifically shown on the plans, it is intended that all excavated and backfilled areas shall be graded to slope away from buildings and other structures.

CONCRETE

- An independent testing agency shall cast 4 six inch test cylinders (5 if 56 day strength is allowed) or an additional cylinder if four inch cylinders are used, for each 75 cubic yards of each concrete mix placed or for each day's operation, whichever is the lesser amount. The testing agency shall cast, cure, and test the specimens in accordance with ASTM C31 and ASTM C39. Air, temperature, and slump shall be tested at minimum for the first truck and every third truck thereafter (1st, 4th, 7th, etc.) or when a change in properties is noticed, at the final location (test after pump, not at truck).
- The contractor shall be responsible for the design of formwork to comply with the dimensions indicated on the plans, maintaining proper alignment during concrete pouring operations. Special care shall be taken with formwork for self-consolidating concrete.
- All concrete except as noted in the following paragraphs shall meet the following requirements:
 - Compressive Strength
 - F_c = 4,000 PSI min at 28 days
 - Water / (cement + pozzolan) ratio
 - 0.45 max (0.40 max if exposed to sulfates)
- Concrete used in exterior flatwork and stoop slabs shall meet the following requirements:
 - Compressive Strength
 - F_c = 4,500 PSI min at 28 days
 - Water / (cement + pozzolan) ratio
 - 0.45 max
 - Portland cement content
 - 450 pounds per cubic yard min
- Grout fill used in hydraulic structures shall meet the following requirements:
 - Compressive Strength
 - F_c = 3,000 PSI min at 28 days
 - Water / (cement + pozzolan) ratio
 - 0.45 max
 - Macro-fibers
 - per specifications
- Concrete and grout exposed to frost (including foundation walls) shall be air entrained 6% +/- 1%.
- Slump shall be 4 inches +/- 1 inch without water reducing admixtures. With water reducing admixtures, concrete mix design shall state design slump and field tests shall be +/- 1 inch. Slump is used primarily as a measure of concrete consistency, truck to truck. If slump is outside these ranges, water content (water:cementitious ratio) shall be checked against allowable; and concrete rejected, accepted, or adjusted on that basis.
- Water-reducing admixtures conforming to ASTM C494 added to the mix at manufacturer's dosage rates may be used for improved workability.
- Do not add water to concrete at the jobsite without written approval of the SER, and in no case in excess of the water in the approved mix design.
- No chloride containing admixtures are allowed.
- Concrete used in tank slabs and walls shall have Xypex, Euclid Vandex AM-10, Penetron, or BASF Masterlife 300d admixture added to the mix at manufacturer's dosage rates (minimum 2% of cementitious content; maximum of 2 percent of cementitious content in potable water tanks). Concrete used in areas subject to de-icing salts (including stoop slabs and aprons) shall have Cortec MC1 added to the mix at manufacturer's recommended dosage rates.
- All concrete is normal weight unless specifically noted otherwise.
- Cement shall be Portland cement type 1 conforming to ASTM C150 or Portland Limestone Cement type 1L conforming to ASTM C595. Up to 30% cement can be replaced with flyash and up to 50% with GGBFS (50% combined max.). Aggregate for normal weight concrete shall conform to ASTM C33. Water is to be potable or demonstrated to have no harmful effects on concrete. Fly ash shall be demonstrated by test to contain minimum 18 percent CAO except as noted in next paragraph. When fly ash is used in concrete to be air entrained, air entraining shall be adjusted as required for LOI per recent experience of ready mix supplier.
- Measured from the time water and cement are batched together, no more than 90 minutes shall elapse until concrete is placed. This time shall be reduced by two minutes for every degree that concrete temperature exceeds 75 degrees Fahrenheit. These criteria may be relaxed by the use of set-controlling admixtures.
- Protect concrete in accordance with ACI 305 and ACI 306 for hot weather concreting and cold weather concreting respectively. In cold weather, heat is required if outside temperature falls below 30 degrees any time during first three days. Reinforcing shall be 40 degrees or warmer at time of concrete placement. Concrete temperature shall be recorded every morning and shall be kept above 40 degrees in all locations for 7 days. Concrete shall not be exposed to combustion products (use electric heat, ducted heater or ground thaw). Keep protection in place minimum 24 hours after cessation of heating to provide gradual cool-down.
- When air temperature is above 85 degrees, provide mist, shading, windscreens and other protection as required for 12 hours after placing.
- Concrete being placed shall be protected from rain. If rain falls on concrete before it has set, or within 3 hours of placement in any event, contractor shall bear cost of testing to prove concrete is unaffected, and shall remove and replace affected concrete to the satisfaction of the engineer.

- Wet cure (poly and burlap or proprietary blankets kept moist daily) for a minimum of 7 days; sides of footings may be buried after 24 hours. Add one day of cure for flyash in excess of 15 percent or GGBFS in excess of 10 percent of cementitious. Contractor is responsible for staining caused by burlap in visible areas. Spray-on curing compounds shall not be used as a substitute for wet curing without written permission of the SER except as follows: Liquid-containing structures must use a wet cure on all surfaces. Spray-on curing compounds may be substituted for wet curing in areas of non-liquid-holding structures that are not visible in the final condition and in liquid holding structures in winter conditions where water curing may be hazardous or difficult. When spray-on curing compounds are used, they should be applied in two layers perpendicular to each other and according to manufacturer's instructions.
- Cementitious grout shall be non-shrink and non-metallic grout. Place according to manufacturer's recommendations and trim neatly where visible.
- Coordinate with other trades for sleeves, conduit, electrical grounding wires, inserts, underground utilities, and other items to be embedded into concrete and verify that they are properly installed and supported before casting concrete. Holes through slab or wall shall leave minimum 1 inch clear to reinforcing; shift reinforcing as required. Placement of such items shall be coordinated with reinforcing placement where they would otherwise displace each other. For instance, in areas with a single mat of reinforcing, east-west conduit should be placed with east-west reinforcing and north-south conduit is placed with north-south reinforcing.
- Embedments shall not significantly impair the strength of the structure and shall not reduce fire protection. In no case shall embedments violate the required concrete cover. Conduit and pipes, with their fittings, embedded in concrete shall not be larger in outside dimension than 1/3 the overall thickness of slab, wall, or beam in which they are embedded and shall not be spaced closer than three diameters on center. Conduit and pipes placed within 2 feet below bottom of slabs and footings shall not be spaced closer than three diameters on center and shall be encased in CLSM or concrete vibrated to flow around conduit.
- No uncoated aluminum items shall be embedded in any concrete. All aluminum surfaces in direct contact with concrete shall receive one coat of 8-12 mil dry film thickness blastastic.
- Unless shown on drawings, concrete shall be placed without construction joints except where specifically shown on shop drawings approved by the engineer. The contractor shall submit shop drawings showing additional or alternate construction joint locations to the engineer for approval.
- Bevel all exposed corners of concrete 3/4"x3/4".
- Verify size and location of all equipment bases and housekeeping pads.
- All cast-in-place concrete floors on grade shall be provided with a min. 1/8" per FT slope to floor drains unless noted otherwise. All interior slabs on grade 10 MIL vapor retarder meeting ASTM E1745, class A, with joints welded or lapped and sealed according to manufacturer's recommendations. Vapor retarder shall permit less than 0.01 perm after conditioning. All damage and penetrations shall be sealed according to manufacturer's recommendations.
- All concrete to be trowel finished shall be tested for air content, whether or not it is purposely air entrained. If concrete contains more than 2 percent entrained air, delay start of finishing to preclude weakened air-rich plane just below surface.
- Where placing new concrete against previously existing concrete, bush-hammer existing to leave a profile of 1/8 inch and blow clean with oil-free compressed air or water blast. To the extent possible, leave a smooth zone under hydrophilic waterstop; see next section. This roughening does not apply to recently placed concrete at a keyed construction joint.
- All slabs and stairs not shown otherwise shall be 5" thick with #4 bars at 16" on center each way. All exterior stoops not otherwise detailed may be constructed in any standard manner, solid or hollow, but must be reinforced with epoxy coated #4 bars at 12" on center each way minimum. Porches and stoops shall be dowelled to adjacent walls or grade beams with #4 bars at 16" on center, hooked or embedded 40 diameters into both members. Slope stoops minimum 1/8" per foot for drainage unless noted otherwise.
- Unless specifically noted otherwise, building sections may not illustrate all dowels, keyways, or waterstops required by design. All base slab or footing to wall joints shall have vertical dowels crossing the joint. All elevated slabs (including base slabs above the lowest base slab elevation) to tank or foundation walls shall have horizontal dowels crossing the joint. Slabs on grade may either be independent (with expansion joint) or doweled in; provide dowels where slabs on grade are shown to bear on walls in sections. Refer to typical details in the drawings for design intent.

JOINTS IN CONCRETE STRUCTURES

- Because of the effects of concrete consolidation, workmanship, detailing, cure, temperature, aggregate size, and other factors; Contractor is responsible for cracking in base slabs and walls of liquid-holding structures, and shall repair any leaking cracks by sealing, injecting, or otherwise filling them. Where sealing is judged necessary by either Contractor or Engineer, Contractor shall submit material and description of sealing to be used for review by Engineer. Note that crystalline waterproofing will heal light cracks (less than approximately 1/64") over time in warm temperatures, but wide cracks or leak tests attempted in cold temperatures will require additional measures. Any wall which is or may be subject to external groundwater is considered liquid holding. Contractor is encouraged to use well-graded aggregate larger than 7/8" fiber reinforcing; shrinkage reducing admixtures; crystalline waterproofing; extended moist cure; and other means to reduce shrinkage. If used, crystalline waterproofing shall be used at the manufacturer's recommended dosage.
- Concrete walls in liquid-holding structures:
 - Concrete walls in liquid-holding structures shall have waterstopped construction joints at a maximum spacing of 20 feet for concrete proportioned according to these Notes and the specification. Full horizontal reinforcing shall extend through these joints and be developed each side of joint. At least 36 hours shall pass between adjacent wall pours in liquid-holding structures. Joint spacing in walls shall be measured at the inside surface between corners in a straight line or along a curve, but not around corners. For example, an 18" square box is required to have one joint, but a 22" square box is required to have one in each wall. For this purpose, a T-intersection counts as a corner at the intersecting wall but not at the continuing wall.
 - Alternatively, a low-shrinkage mix may be proposed, and shrinkage measured for the specific concrete mix to be used in the walls, and the maximum construction joint spacing determined by the equation: Spacing = 2.0 / (sh + 0.03), where "sh" is the shrinkage in percent from the 35-day shrinkage test described below; and the spacing is limited to 50 feet. Concrete placed in the walls shall have the same or lesser water content as that used in the test. If a Shrinkage Reducing Admixture or Shrinkage Compensating Admixture is used, it shall be used at the manufacturer's recommended dosage. Measurement of shrinkage shall be according to ASTM C157, except that the specimens should be cured in a time saturated bath for 7 days rather than 28 days. Shrinkage shall be reported based on measurements at the end of the 7-day moist cure, and at 28 days after cessation of curing. If Shrinkage Compensating Admixture is used, initial measurement shall be 12 hours after placing rather than 7 days; full 7-day time bath cure and 28-day drying shall still be followed.
- Concrete base slabs in liquid-holding structures:
 - Concrete base slabs in liquid-holding structures shall have waterstopped construction joints at a maximum spacing of 40 feet in each direction, with full reinforcing through the joint and developed each side of each joint. At least 36 hours shall pass between adjacent slab pours in liquid-holding structures.
 - Alternatively, shrinkage may be measured as specified above for the specific concrete mix to be used in the base slab, and the maximum spacing determined by the equation: Spacing = 4.0 / (sh + 0.03), where "sh" is the shrinkage in percent from the 35-day shrinkage test described above and the spacing is limited to 100 feet. Concrete placed in the base slab shall have the same or lesser water content as that used in the test. If a Shrinkage Reducing Admixture is used, it shall be used at the manufacturer's recommended dosage.
- Concrete slabs on grade in non-liquid-holding structures:
 - Contraction joint spacing in non-liquid-holding steel-reinforced slabs on grade (building floors) shall be spaced at a maximum of 24 x Thickness, but not more than 15 feet, in each direction. Contraction joint spacing in fiber-reinforced slabs on grade shall be spaced at a maximum of 30 x Thickness, but not more than 18 feet, in each direction. A slab of dimension 20 feet or less does not need to be divided by a contraction joint in that direction except as required by aspect ratio. The aspect ratio of any panel shall not exceed 1.50. Unless noted on drawings, contraction joint spacing for review. Joints shall intersect columns. Where slab is reinforced with bars #4 or greater, cut or interrupt every other bar at each contraction joint. Joint depth shall be slab thickness / 4, with a minimum of 1". If sawcut, joints shall be cut as soon as it is possible to do so without raveling the concrete, but no later than 12 hours after placement.
 - Contraction joint spacing in steel-reinforced slabs on grade (building floors) with two mats of reinforcing shall have a 1 1/2" chamfer strip at bottom of slab and a sawcut or formed joint 1 1/2" deep at same location, top of slab. Cut or interrupt every other bar of each mat at each contraction joint.
 - Construction joints in building floor slabs on grade shall provide for shear transfer across the joint, using plate dowels such as Diamond dowels. Round square dowels shall not be used. Reinforcing bars may be used when shown on drawings, e.g. at stoop or apron joints. Plate dowels shall be used in accordance with the recommendations and spaced at manufacturer's recommended spacing (18 inches max for wheeled traffic on slab, 24 inches max otherwise). If subject to de-icing salt, plate dowels shall be galvanized or epoxy coated.
- Concrete in non-liquid-holding structures other than slabs on grade:
 - Concrete walls in non-liquid-holding structures shall have construction or contraction joints at a maximum spacing of 60 feet.
 - Footings carrying such walls shall have construction or contraction joints at a maximum spacing of 120 feet.
 - Half the longitudinal reinforcing shall be interrupted at these joints unless noted otherwise.
 - Space control joints at maximum 10'-0" on center each way for topping slabs on precast plank.

WATERSTOPS

- Waterstops in new construction shall be 6-inch PVC, center bulb, ribbed, unless specifically noted otherwise.
- At splices, meter all intersecting connections at 45 degrees and use a manufacturer approved heating iron to make full contact butt joints. At areas under more than 10 feet of hydrostatic head, all welded field splices shall receive a bead of flowable hydrophilic waterstop such as Adeka P-201 on each side of waterstop at weld.
- For construction joints at hardened concrete, hydrophilic waterstops may be proposed by the contractor in lieu of adhered split-T PVC waterstop. Such material shall be selected considering water head to be resisted, concrete cover in all directions, reinforcing present through the joint, and whether waterstop is continually immersed. Contractor's proposal shall include waterstop information and contact information for a technical representative of the waterstop supplier along with the representative's written recommendation of the type of waterstop to be used. Hydrophilic waterstop shall not be used unless this process is followed.

PRECAST CONCRETE

- Prior to installation, the precast concrete manufacturer shall submit structural calculations and plans to the architect/engineer for review. The structural calculations shall contain an original Professional Engineer's seal and signature by the design engineer licensed in the state where the project is located. Where precast is used as a structural shear diaphragm, calculations shall include shear capacity data for the members in question, topped or untopped.
- Precast concrete units shall be designed for all potential loading conditions including initial handling and erection stresses, all superimposed dead, live, and lateral loads shown on the contract drawings, and all concentrated loads from mechanical equipment and lifting points. General contractor shall verify mechanical loads with the mechanical contractor and provide to precast designer and SER before design.
- The precast concrete manufacturer shall be responsible for the design and installation of all precast connection hardware including hangers, embed plates, anchors, clip angles, headers or openings, etc. that are cast into or form a part of the precast units. Precast manufacturer shall provide 1/8 inch thick continuous bearing strips beneath hollowcore slabs and masonry or concrete supports.
- All roof and wall opening dimensions and locations shown on the plans shall be verified by the contractor and roof manufacturer. Wall openings not contained within a panel width shall be protected by posts or other means during transport and erection.
- Precast wall panels shall be fully grouted at base.
- Joints between planks shall be pulled flush and grouted. Maximum distance between edges of planks is 4 inches at any joint. Where partial width planks are required, edge of ripped plank shall be smooth and straight.

- Where topping is called for, plank shall receive a transverse broom finish at plant and shall have keys grouted minimum 4 days before topping is placed. Immediately before placing topping, pressure-wash surface of plank and blow clean with oil-free compressed air, then rub with cement slurry as a bonding agent, working just ahead of concrete placement. Surface to be free of standing water but slurry must be wet when topping is placed. Wet cure topping (burlap/poly) for a minimum of 7 days. Topping slabs shall be reinforced with 6x6 - W2.9 x W2.9 welded wire fabric (flat sheets only) macrosynthetic fibrous reinforcement integral to the mix.
- All horizontal joints and reveals in wall panels shall align within 1/2 inch or 1/2 of joint dimension, whichever is less, at all joints between panels.
- All exposed connection components shall be stainless steel type 316 / painted steel / steel with three coat paint system: moisture-cured zinc-rich urethane primer, epoxy, urethane. (pick one)

REINFORCING STEEL

- All concrete is reinforced concrete unless specifically called out as unreinforced. Reinforce all concrete not otherwise shown with same steel as in similar sections or areas. Any details not shown shall be detailed per ACI 315 and meet requirements of ACI 318, current editions.
- All reinforcing steel shall conform to the requirements of ASTM A615 grade 60 steel. Reinforcing steel shall not be welded without authorization of the SER, and if welded shall be A706 grade 60 steel. Reinforcing to be welded shall only be welded to structural steel, not other reinforcing, unless specifically noted on the drawings. Welded plain wire fabric shall be supplied in sheets, not rolls, and conform to the requirements of ASTM A185.
- Clear minimum cover of concrete over reinforcing steel shall be as follows unless specifically noted otherwise:
 - 3" Concrete placed against earth
 - 2" Top mat of base slabs to receive waterstops at wall joint
 - 2" All other concrete
- All reinforcing shall be tied to crossing reinforcing on at least every other bar (every bar at perimeter), and sufficiently to resist displacement from workers and placement of concrete.
- All footing dowels shall be accurately positioned and wired in place before casting footing concrete. Where not noted, provide and install hooked dowels of same size and spacing as vertical reinforcing in all columns and walls. Position all anchor bolts with templates.
- Bar lap table can be found on the first general sheet of the structural drawings.
- Bar lap lengths in concrete and 90 degree and hooks shall be in accordance with the bar lap table unless noted otherwise. This table lists class 'B' laps. For epoxy coated reinforcing steel, increase lap length by 50% with c-c bar spacing < 6db and cover to center of bar < 3db, otherwise increase by 20%. For masonry reinforcing, use fc = 3000 psi values.
- Bars marked continuous, corner bars, and all vertical steel shall be lapped in accordance with table above at splices and embedments, unless shown otherwise. Splice top bars near midspan and splice bottom bars over supports, unless noted otherwise.
- Bar support accessories shall be as specified in latest edition of the ACI detailing handbook and the concrete reinforcing steel institute design handbook. Maximum accessory spacing shall be 4'-0" on center, and all accessories on exposed surfaces shall have plastic coated ends. Chairs shall be supported on sand plates as required to keep from sinking into subgrade. WWF shall be supported by continuous bolsters or bars on chairs sufficiently close to prevent sheets from sagging appreciably during concrete placement. Support rebar used at contractor's option shall be extra bars supplied by contractor, not taken from design reinforcing.
- Where potentially exposed to de-icing salts, stoop, apron, sidewalk and floor reinforcing shall be epoxy coated.

CONCRETE REPAIR

- Locate and remove areas of loose, delaminated, or damaged concrete. Saw cut outside perimeter of damaged areas to a minimum depth of approximately 3/4 inch; do not cut reinforcing. Tally areas removed for payment. Sandblast area to be patched and blow clean. Protect surroundings and workers from dust and hazards associated with this work.
- Where half or more of the perimeter of reinforcing bar is exposed, bond between reinforcing bar and surrounding concrete is broken, or reinforcing bar is corroded, remove concrete from entire perimeter of bar to provide minimum 2 inch x 3/4 inch clearance behind bar. Clean and coat exposed surface of bar with bonding agent (Sika Ammatec 110, Sonoprep, or Euclid Cor-Bond).
- Dampen patch area and apply mortar scrub coat, keeping moist until patch is applied.
- Patch with polymer-modified cementitious patching mortar (Dayton Superior HD-50, Euclid Verti-coat, Master Builders Emaco R320, Sikadep 1201, or Sonopatch 100). Cure according to manufacturer's recommendations.

CONCRETE BLOCK MASONRY

- Concrete block used in exterior walls or load bearing walls shall meet the following minimum requirements:
 - Masonry units: f_c = 2,000 PSI
 - Concrete masonry units: 2,000 PSI
 - Mortar, ASTM C-270-10 Type S UNO
 - Grout, ASTM C-476-10 f_g = 3,000 PSI, Slump: 8-11 inches
- The contractor shall provide adequate temporary bracing for all masonry walls during construction.
- Concrete block shall be laid in running bond pattern typical unless noted otherwise. No vertical (head) joint shall be continuous for more than one block height. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course on footings and foundation walls and in all courses of piers, columns and pilasters, and where adjacent to cells or cavities which are to be reinforced or to be filled with concrete or grout.
- Plasters and columns shall be laid up in running bond in each direction to provide a monolithic unit.
- All joints shall be concave tooled joints above and below grade.
- Masonry walls shall be reinforced with hot dipped galvanized truss horizontal reinforcing (per ASTM A153) with 9 gage side and cross rods. Reinforcing shall be continuous in horizontal joints every other block course (16 inches OC) in walls, every course (8 inches OC) in parapets, with prefabricated corner and tee sections.
- Unless noted otherwise, concrete block shall be reinforced as follows in 6", 8", 10", and 12" walls:
 - Vertical reinforcing shall be a minimum of (1) #5 bar in 6" and 8" walls and (2) #4 bars in 10" and 12" walls at 4'-0" on center.
 - Provide bar or bars of same size as wall reinforcing at each corner, at each door, window, and opening jamb, each side of control joints and in the end void of each length of wall.
 - Lap splices for masonry vertical reinforcing shall be according to the table above, for "wall top bar."
 - Stack bond CMU shall have continuous horizontal bond beams at 48" OC, reinforced with (2) #4 continuous.
 - Continuous horizontal bars shall be included per section or detail in bond beam or optional running bond beam where noted. Where not detailed, use (2) #5 continuous. Where bond beams are continuous at corners of walls, supply corner bars matching size of horizontal bars. All bond beam reinforcing shall have standard laps or hooked development reinforcing bars at wall corners and intersections.
- Grouting and reinforcing: all masonry, grouting, and reinforcing work shall be performed by mason craft workers who have successfully completed the International Masonry Institute (1-800-MI-0988) training course for grouting and reinforced masonry construction, or equal.
- When grouting is stopped for more than one hour, stop grout approximately 1 1/2 inches below top of CMU to provide key. Masonry block cells with vertical reinforcing and bond beams with horizontal reinforcing shall be grouted solid. Mortar is not an acceptable corefill. Provide a cleanout hole at the base of all grouted cells where grout lift exceeds 5'-4". Account for sheat in grout during winter construction by protecting and heating as required to assure set and strength gain.
- Non-load bearing concrete block walls shall be isolated from adjacent structural elements with vertical 1/2 inch control joints and at the top of the wall with minimum 1/2 inch air space or compressible material and support per details on the drawings.
- Unless otherwise covered on architectural plans or specifications, vertical control joints in masonry construction shall be 3/8" wide, full height of wall. Joints shall be spaced at a maximum of 16'-0" on center and coordinated with the architect/engineer. Install control joints in locations as required and as directed by engineer/architect.
- All horizontal joint reinforcing shall be discontinuous at control joints in masonry. All bond beam horizontal reinforcing shall be continuous through control joints.
- Lintels over all openings in walls not otherwise noted, of 4'-0" span or less, shall be one L6 x 3-1/2 x 5/16 angle for each 4" of masonry (2 angles for 12" CMU); or an 8 inch deep bond beam with 2 - #5. All exterior steel lintels to be hot-dip galvanized. Bear minimum 8 inches on jambs grouted and reinforced full height.
- Walls shall be anchored at bottom by hooked dowels matching wall vertical reinforcing (unless noted otherwise) set on footing bottom mat. Where walls rest on cast-in-place concrete foundation walls, dowels may be straight and lapped with concrete wall reinforcing below. Non-bearing walls shall be anchored at top by bracing angles per details on drawings.
- Bond beam lintels shall be standard horse collar type (U shaped) block. Continuity bond beams may be, and upper courses of multi-course bond beams shall be, flow through block.



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2525 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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SEH Project MADWU 167818
Checked By NRD
Drawn By ALM

Project Status Issue Date
BIDDING DOCUMENTS OCTOBER, 2023

REVISION SCHEDULE
REV. # DESCRIPTION DATE

GENERAL STRUCTURAL
NOTES

GS002



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2626 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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GENERAL STRUCTURAL
NOTES

GS003

POST-INSTALLED ANCHOR RODS AND DOWELS

- Unless noted otherwise, anchors and reinforcing dowels installed in concrete or concrete masonry shall be as noted below. Post-installed anchors shall only be used where shown on the construction documents. Anchors not shown or noted on the drawings, those required by the contractor solely for his means and methods, or those required by mechanical/electrical and carrying less than 100 pounds of non-safety-related items, do not require special inspection.
 - Approved manufacturers are: HILTI, ITW / Redhead, Simpson, Dewart / Powers, and Rawl.
 - Post installed anchors shall have current ICC approval in accordance with ACI 355 and ICC-ES corresponding to anchor base material.
 - Submit product data and current ICC-ES report or IAPMO report showing product is compliant with project code requirements for review.
 - Contractor shall arrange for manufacturer's rep to train all installers on the complete installation process. A letter of procedure stating method of drilling, the product for use, the complete installation procedure, manufacturer training date and a list of the personnel trained on anchor installation shall be submitted to the engineer.
 - Substitution requests of alternate products must be approved in writing by structural engineer of record prior to use by providing technical data that the substituted product is capable of meeting performance requirements of specified products including but not limited to the following basis of design parameters ACI 355.2 or ACI 355.4 qualifications.
 - Permanent anchors exposed to earth, weather, or corrosive environments, including all anchors in wet areas of WWTP and water treatment plant work, and anchors engaging stainless steel or aluminum members, shall be stainless steel type AISI 304 or 316; anchors in contact with sewage or chloride deicer runoff shall be type 316. Otherwise, anchors shall be zinc plated, minimum ASTM A36 material unless ASTM A193 grade B7 is noted in the drawings, and shall be according to ASTM F1554. Reinforcing dowels shall be of the same size (U.N.O.), material and coating (if any) as the continuing reinforcing.
 - Where expansion anchors are called for, contractor may substitute screw type anchors with self-tapping threads or adhesive anchors of the same size and embedment, subject to review of capacity by the engineer for the product substituted. Where adhesive anchors are called for, other types shall not be substituted. Screw type anchors shall not be re-used on permanent work.
 - Adhesive shall have a current ICC-ES report. Use high viscosity adhesive and placement devices in consultation with the manufacturer for overhead work. Adhesive anchors in overhead or horizontal installation shall be subject to continuous special inspection during installation and shall only be performed by installers certified per ACI/CRSI Adhesive Anchor Certification Program Section 17.8.2 or Engineer approved equivalent. Use low temperature formulations for cold weather work. Do not apply load to anchors until their capacity has been assured.
 - Anchors installed in concrete masonry and precast hollow core concrete shall be installed in cores grouted solid. Minimum grout strength f_g = 3,000 PSI. Minimum 12 inches of grout each way along horizontal cores from anchor. Vertical cores shall be grouted full height. Anchors installed in masonry shall not be installed within 1 1/2 inches of any head joint unless block are square end and mortared across full width of head joint, or filled bond beam.
 - Holes shall be drilled dry, cleaned, and maintained until installation in accordance with manufacturer's recommendations and ICC-ES report using standard rotary-impact bits and oil-free compressed air. Diamond core bits shall not be used unless specifically approved by the manufacturer.
 - The general contractor shall engage a testing company to locate existing reinforcing bars, PT tendons, and embedded items, by non-destructive means (GPR, X-ray, or other approved means) prior to drilling for installation of anchors. Notify EOR of any conflicts with existing embedded items. Do not cut or damage existing reinforcing or embedded items unless approved by the EOR.
 - Maintain critical spacing and edge/corner distances as recommended by manufacturer unless specifically noted otherwise in the drawings.
 - Unless noted otherwise, anchors shall be installed to the following minimum embedments:

	Diameter	Grout Concrete	Grouted CMU
Expansion:	3/8 inch	3 inches	
	1/2 inch	3 1/4 inches	4 1/2 inches
	5/8 inch	4 inches	5 inches
	3/4 inch	4 3/4 inches	6 1/4 inches
Screw:	3/8 inch	3 inches	
	1/2 inch	4 1/2 inches	
	5/8 inch	4 3/4 inches	
	3/4 inch	6 1/4 inches	
Adhesive*:	3/8 inch	3 3/8 inches	
	1/2 inch	4 1/2 inches	5 1/2 inches
	5/8 inch	5 5/8 inches	5 5/8 inches
	3/4 inch	6 3/4 inches	6 3/4 inches
- *For adhesive at reinforcing bars, increase embedment above by 33%.
- Except as noted, all anchors shall have intermittent special structural inspection by one of the following. Load tests shall be to 150 percent of service capacity or 75 percent of ultimate strength, with no appreciable slip, permanent deformation, or concrete damage. Anchors which fail this test shall be replaced at no cost to the project. Two failures in a given installation shall result in mandatory load testing at double the rate noted below.
 - Expansion and screw anchors:
 - Witness installation with torque wrench according to manufacturer's recommendations and requirements of ICC report;
 - Test all anchors with torque wrench after installation (including load test of 5 percent of installed anchors); or
 - Load test of 10 percent of installed anchors by supplier or third party inspector
 - Adhesive anchor rods and dowels:
 - Witness installation according to manufacturer's recommendations and requirements of ICC report; or
 - Load test of 10 percent of installed anchors by supplier or third party inspector

STRUCTURAL METALS/ FRP

- All structural steel shall be as follows:
 - Wide flange beams and columns shall be ASTM A992, grade 50 steel.
 - All miscellaneous steel (angles, channels, plate) shall be ASTM A992, A529, or A36 steel (min. F_y = 36 KSI).
 - Rectangular steel tubes (HSS) shall be ASTM A500, grade C steel (F_y = 50 KSI).
 - Pipe shall be ASTM A53 (F_y = 35 KSI) unless A500 grade C (46 KSI) is noted.
 - Other shapes shall be ASTM A36 (36 KSI).
- Splicing or modification of members in the field is prohibited without prior written approval of the SER.
- All primary member bolted connections shall be two bolt minimum.
- Fabrication and erection shall be in accordance with the latest edition of the AISC Manual of Steel Construction, Code of Standard Practice for Steel Buildings and Bridges, except as follows:
 - To paragraph 3.1, add "The project architectural drawings are a part of the structural steel design drawings by reference and must be used concurrently with the structural steel design drawings for any information not shown on the structural steel design drawings".
 - Delete paragraph 3.2 and insert the following: "architectural, process, electrical and mechanical plans shall be used as a supplement to the structural steel design drawings to define detail configurations and construction information".
 - Paragraph 3.3 modify the last sentence to read, "in case of discrepancies between the structural steel plans and plans of other disciplines or existing conditions, such discrepancies shall be called to the architect / engineer's attention for resolution".
- All aluminum shapes shall be ASTM B209, B308, alloy 6061-T6, except handrail may be 6063-T5 or -T6. All welding shall be performed by a certified welder using compatible electrodes in accordance with the requirements of AWS D1.2 and visually inspected. Where designed by the fabricator, aluminum alloy and temper shall be stated on shop drawings.
- All steel shall receive a primer coat unless galvanized, refer to specification manual.
- Unless galvanized, all steel shall receive a three coat paint system: moisture-cured zinc-rich urethane primer, epoxy, urethane. Existing steel in area to be re-decked / All steel shall be cleaned to SSPC SP-10 (near white blast clean) and maintained in this state until painted. Refer to specification manual.
- All exposed steel shall be galvanized. Damaged galvanizing shall be repaired by application of cold galvanizing compound such as ZRC (minimum 3 coats). Paint finish per architectural.
- All steel welding shall be performed by a certified welder using E70 electrodes in accordance with the requirements of AWS D1.1 "Structural Welding Code" and visually inspected. Full-pen welds shall also be inspected by NDT methods such as ultrasonic, mag particle, or dye pen.
- All field welded connections shall be chipped, ground where required, wire brush cleaned and painted to match the paint system.
- All bolts not otherwise specified shall be 3/4" diameter high strength (ASTM A325-N). All bolts shall be fully pretensioned. Any non-twist off bolts shall have 10 percent checked with a torque wrench by the special inspector. All beam connections shall be designed per the AISC Manual of Steel Construction "Framed Beam Connections" for the indicated reactions but at least 0.60 x beam total shear capacity shown in the allowable uniform load tables, whichever is greater.
- All copes shall be made with a 1 inch minimum radius.
- All anchor rods shall be minimum 3/4" diameter ASTM F1554 grade 36 / ASTM A276 Stainless Steel type 304 OR 306 unless noted otherwise. Where headed rods are noted or specified, bent rods shall not be furnished; rods may be headed or nutted, with the nut tack welded at the bottom end of the anchor or double nutted.
- Metal/FRP stairways, platforms and grates shall be provided and constructed with adequate design characteristics (100 PSF live load capacity UNO) and structural configurations in accordance with the fabricator's shop drawings as approved by the engineer. All stairways, platforms and grates shall satisfy all requirements of the project documents. All stair runs longer than 10 feet between laterally rigid supports, and all two-post bents, shall have diagonal bracing fastened to the bottom flanges of the stringers and center of posts UNO.
- All cut or raw surfaces of FRP shall be coated with compatible epoxy meeting NSF 61.

METAL DECK

- Metal deck shall span a minimum of two continuous spans UNO. Deck design is based on products of Vulcraft Corporation, and any substitutions shall meet that standard. Where not explicitly noted, roof deck is wide rib.
- Openings through deck which cut one flute need not be reinforced. Openings which cut two flutes shall be reinforced with a hot rolled equal-leg angle the size of the deck depth, minimum 1/8 inch thick, extending 12 inches past the opening, on each side of the opening, fastened with minimum 2 - #10 screws each side of opening. Openings which cut more than two flutes shall be framed to surrounding supports with frames as detailed in the drawings.
- Manufacturer shall be a member of the Steel Deck Institute (SDI). Detail, manufacture, and install deck and accessories in accordance with SDI and OSHA.
- Welding and welder qualifications shall be in accordance with AWS D1.3.
- Deck shall be fastened to underlying framing with 5/8 inch diameter puddle welds at spacing as indicated on the drawings, unless headed studs are to be applied. Contractor may submit shot pins (PAF) for approval as a substitute for puddle welds. Side lap edges shall be joined with minimum of one #10 screw in each deck span, unless more screws are indicated in the drawings.
- Where spray-on fireproofing is required, the general contractor shall verify that the deck finish is compatible with fireproofing. Coordinate with architect.
- All roof opening dimensions and locations shown on the plans shall be verified by the contractor and roof manufacturer.

SHOP DRAWING REVIEW

- Short Elliott Hendrickson Inc. (SEH) will review the general contractor's (GC) shop drawings and related submittals (as indicated below) with respect to the ability of the detailed work, when complete, to be a properly functioning integral element of the overall structural system designed by SEH. In general, submittals will not be reviewed for correct quantities or construction considerations. SEH shall review shop drawings and related materials with comments provided that each submission has met the requirements herein. SEH shall return without comment unrequired material or submissions without GC approval stamp.
- Any items requiring submittal of calculation packages shall have calculations submitted prior to or as part of the shop drawing submittal they accompany. Shop drawings submitted prior to submittal of required calculations will be rejected. All calculations shall be sealed and signed by an engineer licensed in the state of the project. The supplier's engineer must provide calculations for all systems and connections that differ from the drawings. Design shall comply with the requirements in these notes, the drawings and the specifications.
- Prior to submittal of a shop drawing or any related material to SEH, the GC shall:
 - Review each submission for conformance with the means, methods, techniques, sequences and operations of construction and safety precautions and programs incidental thereto, all of which are the sole responsibility of the GC.
 - Review and approve each submission.
 - Stamp each submission as approved.
- SEH shall assume that no submission comprises a variation from the contract documents unless the GC advises SEH with written documentation. Should SEH require more than ten (10) working days to perform the review, SEH shall so notify the GC. Submittals shall include drawings and related material (if any) as indicated below.
 - Concrete mix designs and material certificates including admixtures, compounds applied to the concrete after placement, and associated product data. See specifications.
 - Aggregate tests and concrete test history for each mix design, with the submission of concrete mix designs.
 - Reinforcing steel shop drawings including erection drawings and bending details. Bar list will not be reviewed for correct quantities. Include elevations of all reinforced concrete masonry walls and all concrete walls with footing steps or other elevation changes, at a scale no smaller than 1/8" = 1'-0" showing all required reinforcing.
 - Grout mix designs (for CMU) and CMU block certification.
 - Structural steel and metal fabrication shop drawings including erection drawings and piece details.
 - Stairs and railing. Details on the drawings for the following items have been designed by the SER: railing systems, connection of railings and stringers to the primary structure. All other items shall be designed by the supplier's engineer to match intent of the construction drawings.
 - Metal deck shop drawings.
 - Precast shop drawings including reinforcing, bearing details, and design calculations.

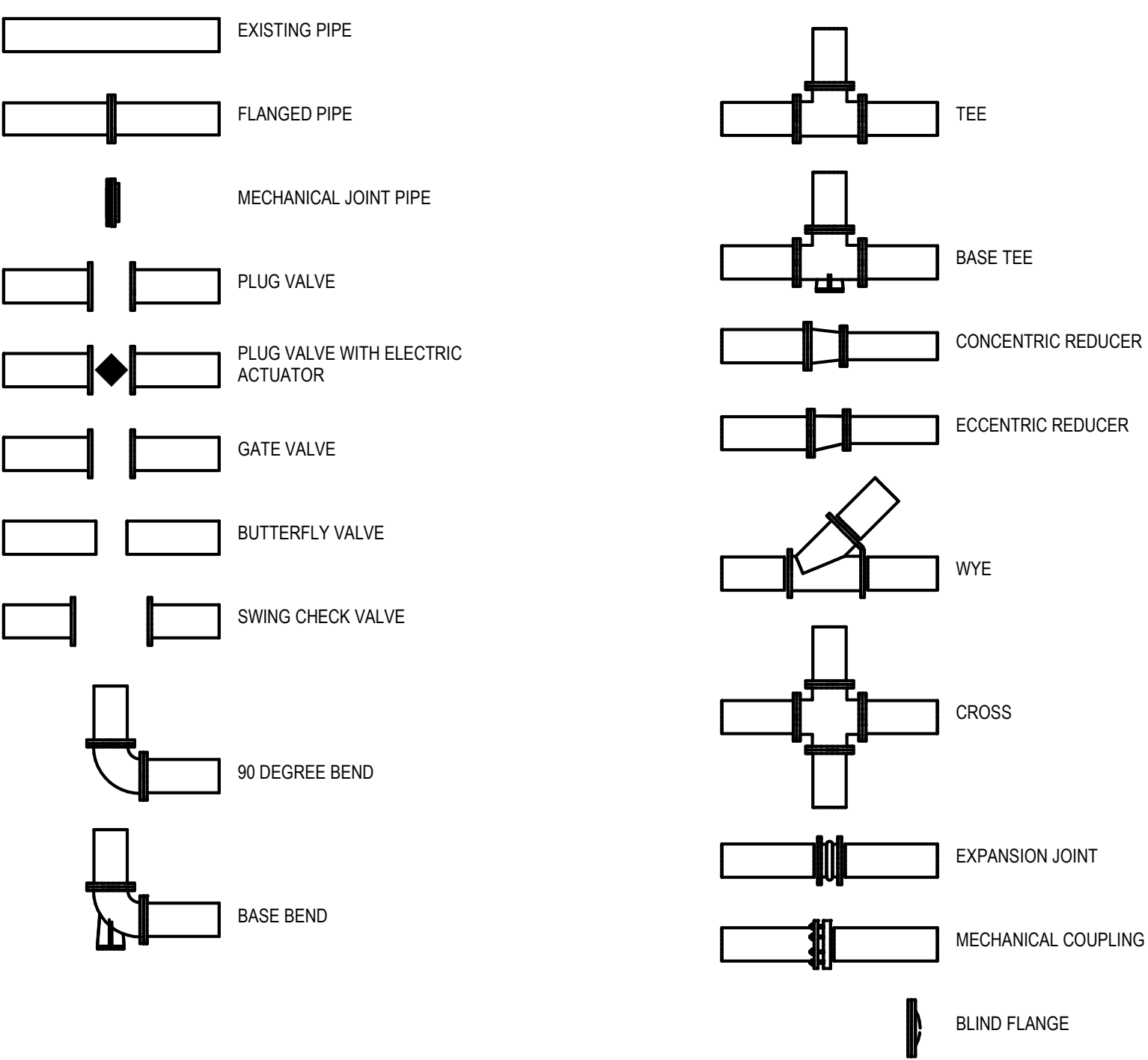
REQUIRED INSPECTION

- Required inspection and testing is required according to the table on the first general sheet of the structural drawings. Refer to specification section 01 45 10 for responsibilities. Contractor shall coordinate with SER, testing agency and geotechnical engineer throughout the project.
 - Required Inspections shall be performed in accordance with IBC Chapter 17.
 - Required Inspection of reinforcing steel and anchor rod placement shall be performed prior to concrete placement or during anchor rod installation for adhesive anchors.
 - Continuous inspection during concrete placement is required.
 - Conduct concrete slump tests in accordance with ASTM C143.
 - Obtain set of a four (4) concrete test cylinders each time concrete is placed. Make test cylinders in accordance with ASTM C39.
 - See these Notes for testing of Post-Installed anchors and rebar where installation is not witnessed.
 - It is assumed that shop welding will be performed on the premises of a fabricator registered and approved to perform such work without Required Inspection. G/C shall submit fabricator documents, standards, and procedures in accordance with IBC 1705.2.
 - It is assumed that precast concrete will be cast on the premises of a fabricator registered and approved to perform such work without Required Inspection. G/C shall submit fabricator documents, standards, and procedures in accordance with IBC 1705.2.
 - Reports of Required Inspections shall be provided, at the frequency noted above, to the Owner, Contractor, and Engineer of Record by the firm contracted to perform Required Inspections.
 - Special Inspection criteria presented above and in specification shall apply to all footings and foundation walls, but does not apply to non-structural slab on grade and site work concrete.

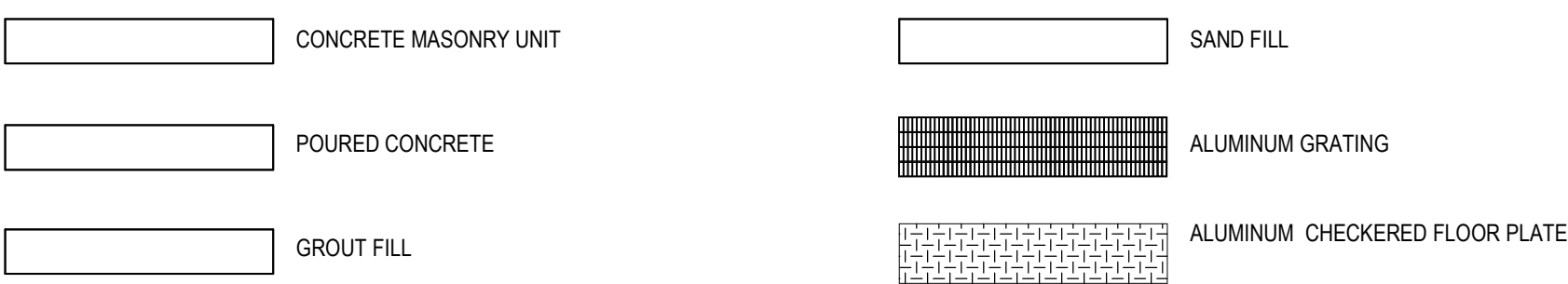
ABBREVIATION LIST

AF	ADAPTER FLANGE	MECH	MECHANICAL
AL/ALUM	ALUMINUM	MFRS	MANUFACTURERS
APPROX	APPROXIMATELY	MIN	MINIMUM
BF	BLIND FLANGE	MV	MUD VALVE
BFV	BUTTERFLY VALVE	N	NORTH
BLDG	BUILDING	N/A	NOT APPLICABLE
BLV	BALL VALVE	NOM	NOMINAL
BF	BLIND FLANGE	NO	NUMBER
BLK	BLOCK	NPW	NON-POTABLE WATER
BOT	BOTTOM	NTS	NOT TO SCALE
CHL	CHLORINE	OC	ON CENTER
CI	CAST IRON	OPNG	OPENING
CKD	CHECKERED	P	PLUG
CL	CENTERLINE	PC	PIPE COUPLING
CMU	CONCRETE MASONRY UNIT	PPC	PRESTRESSED PRECAST CONCRETE
CO	CLEAN-OUT	PR	PRESSURE REDUCER
CONC	CONCRETE	PRV	PRESSURE RELIEF VALVE
CONT	CONTINUOUS	PNT	PAINT
CTE	CONNECT TO EXISTING	PV	PLUG VALVE
CJ	CONTROL JOINT	PV & B	PLUG VALVE & BOX
CPE	CORRUGATED POLYETHYLENE	PVC	POLYVINYL CHLORINE
CV	CHECK VALVE	PW	PLANT WATER
DIP	DUCTILE IRON PIPE	R, RAD	RADIUS
E	EAST	RD	ROOF DRAIN
EL	ELEVATION	RAS	RETURN ACTIVATED SLUDGE
EQUIP	EQUIPMENT	RCP	REINFORCED CONCRETE PIPE
EX	EXISTING	RECIRC	RECIRCULATION
FD	FLOOR DRAIN	REINF	REINFORCE(D)
FFE	FINISHED FLOOR ELEVATION	SEC	SECTION
FM	FORCEMAIN	SHT	SHEET
FRP	FIBERGLASS REINFORCED	SF	SQUARE FOOT / SQUARE FEET
FTG	FITTING/FOOTING	SP	SLIDE PLATE
GV	GATE VALVE	SO	GATE VALVE
GV & B	GATE VALVE & BOX	SS	STAINLESS STEEL
H	HIGH	SQ	SQUARE
HWL	HIGH WATER LEVEL	TH	THICK
ID	INSIDE DIAMETER	TK	TANK
INS	INSIDE	TOW	TOP OF WEIR
INV	INVERT	TYP	TYPICAL
JT	JOINT	UON	UNLESS OTHERWISE NOTED
L	LONG	W	WIDE
LL	LIQUID LEVEL	WAS	WASTE ACTIVATED SLUDGE
LT	LEFT	WL	WATER LEVEL
M	METER	WSE	WATER SURFACE LEVEL
MAX	MAXIMUM		

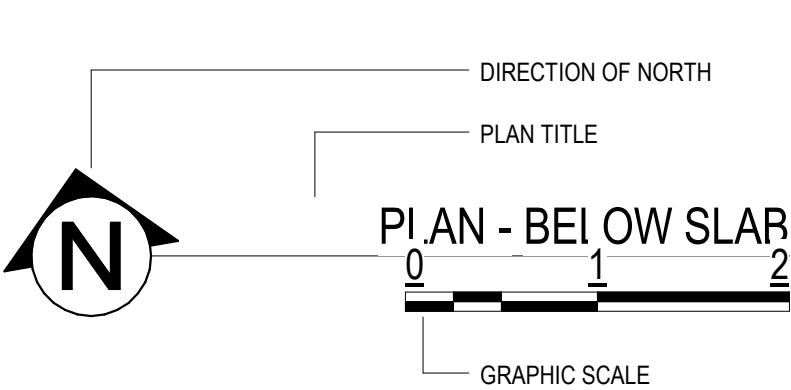
PROCESS PIPE LEGEND



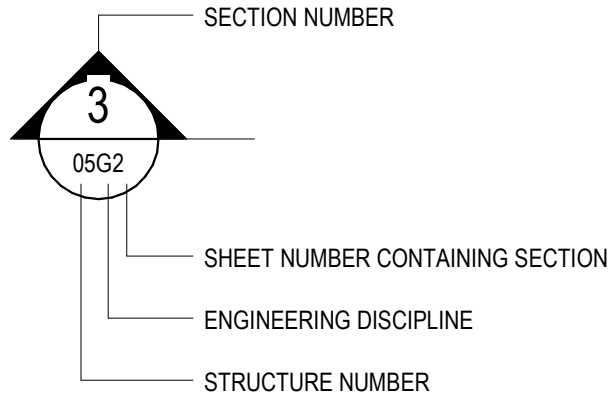
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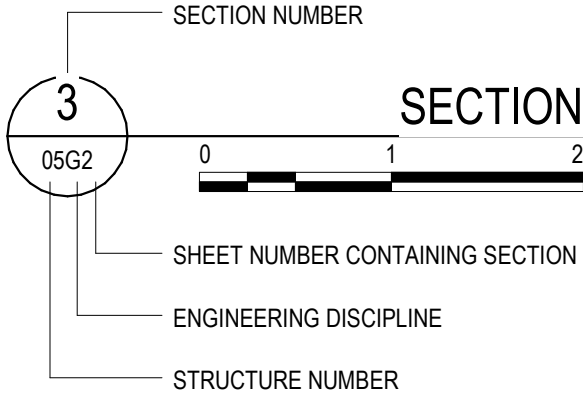
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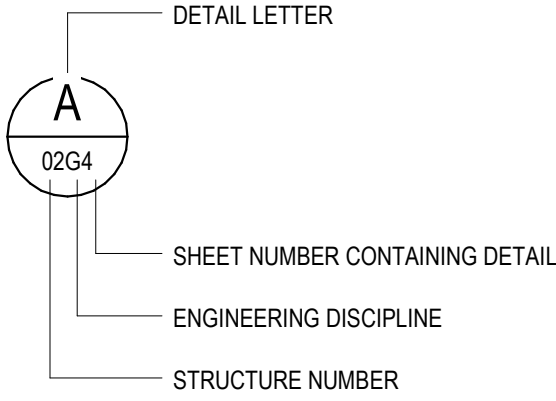
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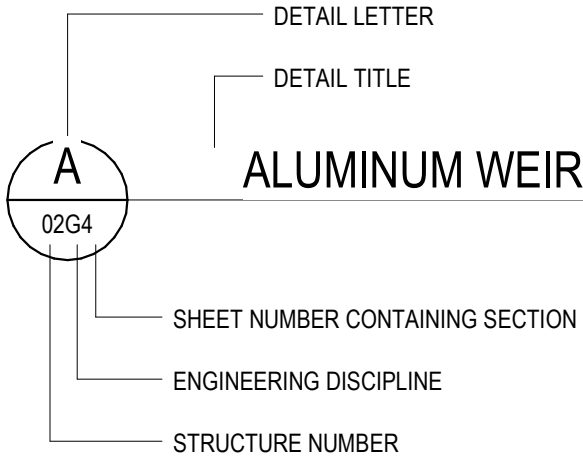
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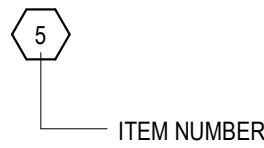
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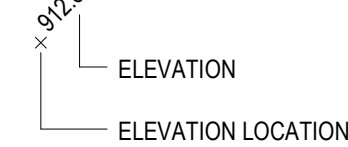
DETAIL INDICATOR



DETAIL TITLE



KEYNOTE INDICATOR



SPOT ELEVATION

GENERAL NOTES

- SEE STRUCTURAL PLANS FOR ROOF, SLAB, WALL, FOUNDATION, BEAM AND REINFORCING STEEL INFORMATION AND CONCRETE DIMENSIONS.
- ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL RECEIVE 8-12 MIL DRY FILM THICKNESS OF BITUMASTIC.
- ALL ANCHOR BOLTS, NUTS FASTENERS, ETC. SHALL BE 304 STAINLESS STEEL, UNLESS OTHERWISE NOTED.
- ALTHOUGH NOT SPECIFICALLY NOTED ON THE PLANS, CONTRACTOR SHALL INSTALL PIPING USING SUPPORTS, PIPE COUPLINGS AND ANY OTHER PIPING APPURTENANCES REQUIRED FOR COMPLETE AND PROPER INSTALLATION. IN ADDITION, PROVIDE PIPE SUPPORTS IN LOCATIONS SPECIFICALLY IDENTIFIED ON PLANS.
- TYPICAL DETAILS: ARE INTENDED TO SHOW GENERAL DESIGN CONCEPT. SPECIAL INFORMATION CONCERNING ELEVATIONS AND DIMENSIONS SHOWN ON THESE DETAILS PERTAIN TO A PARTICULAR BUILDING OR STRUCTURE.
- INFORMATION REGARDING EXISTING CONSTRUCTION WAS COMPILED FROM THE ORIGINAL CONSTRUCTION DOCUMENTS AND PRELIMINARY FIELD INVESTIGATIONS. ALL CONDITIONS, DIMENSIONS AND SIZES ARE TO BE FIELD VERIFIED BY THE CONTRACTOR TO ENSURE FIT BETWEEN THE NEW AND EXISTING. NOTIFY THE ENGINEER OF DISCREPANCIES NOTED BEFORE AND DURING CONSTRUCTION.
- DRAWINGS SHALL NOT TAKE PRECEDENCE OVER FIELD MEASUREMENTS.
- DUE TO REPRODUCTIVE PROCESSES, DRAWINGS MAY NOT BE ACCURATE TO SCALE. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN AND IN NON CASE SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS, ELEVATIONS OR DETAILS.
- ALL WORK SHALL BE COORDINATED WITH OTHER TRADES. THE CONTRACTOR SHALL CONSULT ALL DRAWINGS AND VARIOUS CONSTRUCTION TRADES TO ACQUAINT SELF WITH THE PROJECT. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES NOTED BEFORE AND DURING CONSTRUCTION. THE ENGINEER RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS IN LAYOUT TO AVOID CONFLICT WITH THE WORK OF OTHER TRADES AND FOR THE PROPER EXECUTION OF THE WORK AT NO ADDITIONAL COST TO THE OWNER.
- ALL WORK SHALL BE CONDUCTED WITHIN THE LIMITS OF CONSTRUCTION. CONTRACTOR SHALL REPAIR AND RESTORE ANY PAVEMENT, UTILITIES, OR OTHER FEATURES OUTSIDE THE LIMITS OF CONSTRUCTION THAT ARE DAMAGED DUE TO THE CONTRACTOR'S ACTS OR NEGLIGENCE AT THE CONTRACTOR'S OWN EXPENSE.
- THE CONTRACTOR SHALL COMPLY WITH ALL CITY, COUNTY, AND STATE ROAD RESTRICTIONS FOR HAULING AND EQUIPMENT MOBILIZATION.
- THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY ADDITIONAL COSTS WHICH MAY RESULT FROM UNAUTHORIZED DEVIATIONS FROM THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL PROTECT ALL EXISTING AND INSTALLED PIPING, EQUIPMENT, AND STRUCTURES DURING CONSTRUCTION NOT NOTED TO BE REMOVED. ALL DAMAGED ITEMS SHALL BE REPAIRED OR REPLACED WITH NO ADDITIONAL COST TO THE OWNER.
- ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES SHALL BE ADHERED TO THROUGHOUT THE CONSTRUCTION PROJECT.
- SIZE OF FITTINGS AND VALVES SHALL CORRESPOND TO THE SIZE OF ADJACENT PIPING. JOINTS AND FITTING MATERIAL SHALL BE AS SHOWN FOR ADJACENT PIPING.
- PROVIDE PROPER PLUGS, CAPS, AND RESTRAINTS WHEN ANY PIPING IS TERMINATED.
- THE EXACT LOCATION OF UNDERGROUND UTILITIES SUCH AS NATURAL GAS, TELEPHONE, FIBEROPTIC, ELECTRIC, CABLE TV, AND PIPE LINES ARE UNKNOWN. CONTRACTOR SHALL CONTACT GOPHER STATE ONE, CALL AT (800) 252-1166 BEFORE COMMENCING ANY EXCAVATION.
- SOME ITEMS HAVE BEEN ROTATED INTO THE PLANE OF PROJECTION ON TYPICAL SECTIONS FOR CLARITY.
- 7.5 FOOT COVER MINIMUM UNLESS OTHERWISE NOTED. PIPE BURIED WITH LESS THAN 7.5 FOOT OF COVER SHALL BE INSULATED IN ACCORDANCE WITH SECTION 40 42 13 - PROCESS PIPING INSULATION.



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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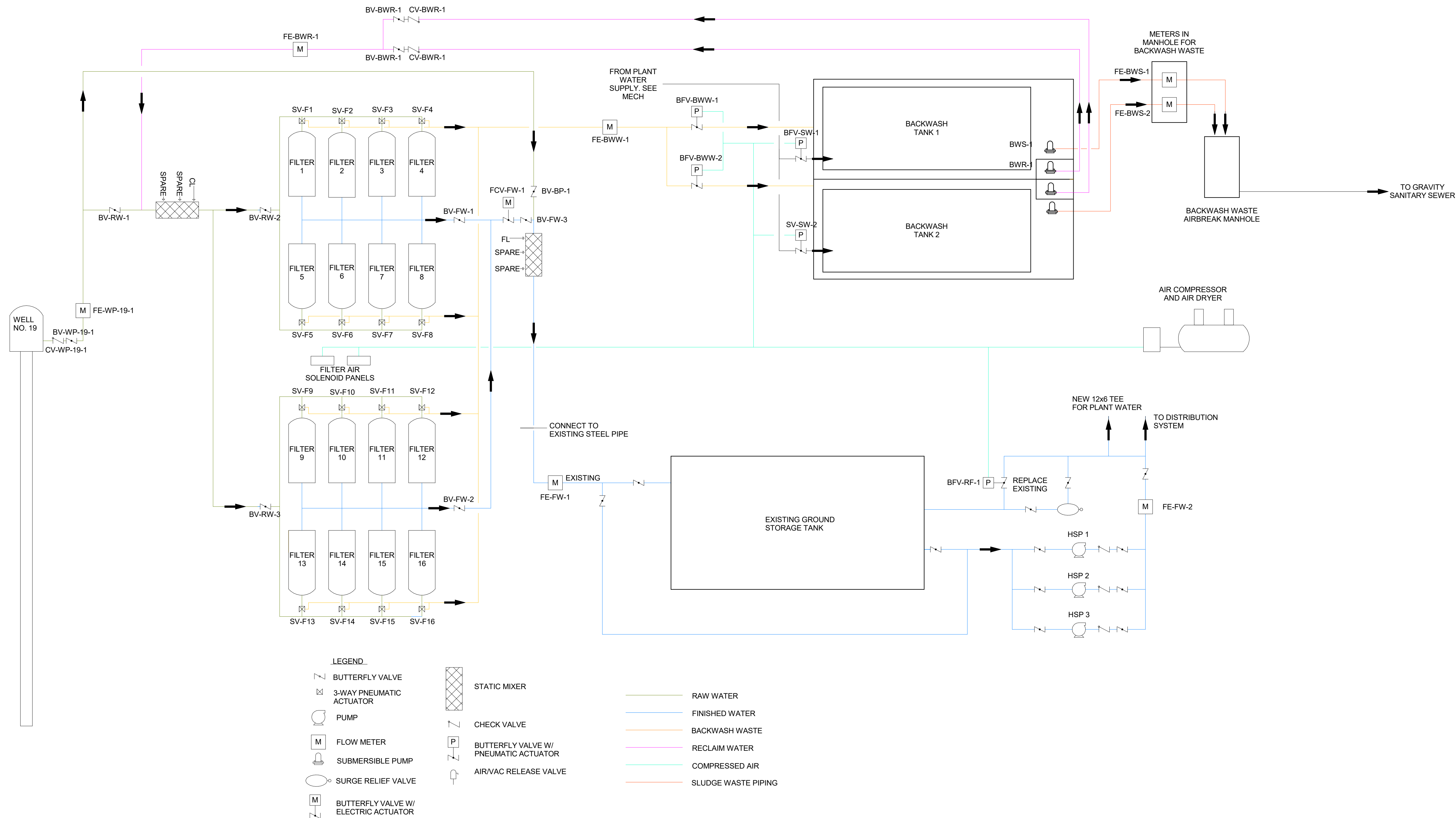
Project Status Issue Date
BIDDING DOCUMENTS OCTOBER, 2023

REVISION SCHEDULE
REV. # DESCRIPTION DATE

GENERAL PROCESS
INFORMATION

GP001

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Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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Project Status BIDDING DOCUMENTS
Issue Date OCTOBER, 2023

REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

PROCESS FLOW DIAGRAM

GP002

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GENERAL NOTES	GENERAL ABBREVIATIONS	MECHANICAL EQUIPMENT	PLUMBING AND PIPING SYMBOLS	GENERAL MECHANICAL SYMBOLS
<div>MECHANICAL GENERAL NOTES</div> <div><div>1.</div><div>ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND CURRENT STATE BUILDING, PLUMBING, MECHANICAL, FUEL GAS, FIRE AND ENERGY CODES, ALL LOCAL CODES, STANDARDS, AND REGULATIONS GOVERNING THE WORK.</div></div> <div><div>2.</div><div>ALL CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE MECHANICAL DRAWINGS AND SPECIFICATIONS PRIOR TO BID. PROVIDE ALL EQUIPMENT, MATERIALS, AND LABOR AS REQUIRED FOR THE COMPLETE INSTALLATION FOR ALL WORK AS SHOWN AND PROVIDE FOR A COMPLETE, OPERABLE SYSTEM. ALL WORK SHALL BE PERFORMED IN A CLEAN, RECTILINEAR AND WORKMANLIKE MANNER.</div></div> <div><div>3.</div><div>THE DRAWINGS ARE DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF WORK AND TO INDICATE THE GENERAL ARRANGEMENT AND APPROXIMATE ROUTING. CERTAIN BASIC ITEMS SUCH AS OFFSETS, FITTINGS, ACCESS PANELS, HANGERS, AND SLEEVES MAY NOT BE SHOWN. WHERE SUCH ITEMS ARE REQUIRED FOR PROPER INSTALLATION OF THE WORK, SUCH ITEMS SHALL BE INCLUDED. CONTRACTOR SHALL VERIFY CONNECTIONS, CLEARANCES, AND SERVICES PRIOR TO INSTALLATION.</div></div> <div><div>4.</div><div>COORDINATE FINAL LOCATIONS OF DUCTWORK, PIPING AND MECHANICAL EQUIPMENT WITH OTHER TRADES PRIOR TO BEGINNING WORK TO AVOID INTERFERENCES WITH EQUIPMENT, STRUCTURE, PIPING, LIGHTING, CONDUIT, ETC. PROVIDE OFFSETS AS REQUIRED TO MEET SPACE REQUIREMENTS AND TO AVOID INTERFERENCES. NO PIPING SHALL BE RUN OVER THE TOP OF ANY ELECTRICAL PANELS OR ELECTRICAL EQUIPMENT.</div></div> <div><div>5.</div><div>EQUIPMENT AND MATERIALS SHALL BE PROTECTED FROM WEATHER, PAINTING, PLASTER, ETC. UNTIL THE PROJECT IS COMPLETE. DAMAGE FROM RUST, PAINT, SCRATCHES, ETC., SHALL BE REPAIRED AS REQUIRED TO RESTORE EQUIPMENT TO ORIGINAL CONDITION AT NO COST TO OWNER.</div></div> <div><div>6.</div><div>CONTRACTOR SHALL COORDINATE ALL WALL AND ROOF OPENINGS AS IT RELATES TO THEIR WORK. CUTTING OF STRUCTURAL SUPPORT MEMBERS WILL NOT BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. EXTENT OF CUTTING SHALL BE MINIMIZED TO PROVIDE THE NEAT MINIMUM OPENING REQUIRED PATCHING SHALL MATCH ADJACENT MATERIALS AND SURFACES.</div></div> <div><div>7.</div><div>TEMPORARY SHUT DOWNS OF MECHANICAL SYSTEMS, IF REQUIRED, SHALL BE COORDINATED WITH THE OWNER IN ORDER TO MINIMIZE THE INTERRUPTIONS TO THE OWNER.</div></div> <div><div>8.</div><div>NO MECHANICAL SERVICES OR EQUIPMENT SHALL BE LOCATED OVER ELECTRICAL EQUIPMENT, ELEVATOR EQUIPMENT, OR TELEPHONE EQUIPMENT ROOM.</div></div> <div><div>9.</div><div>CONTRACTOR SHALL INSTALL AS MUCH OF THE NEW SYSTEM AS POSSIBLE, PRIOR TO REMOVING EXISTING SYSTEMS IN ORDER TO MINIMIZE THE AMOUNT OF DOW TIME. REFER TO SPECIFICATIONS.</div></div>	<div>ABV ABOVE</div> <div>AC AIR CONDITIONING</div> <div>AD AREA DRAIN</div> <div>ADD ADDENDUM</div> <div>AFF ABOVE FINISHED FLOOR</div> <div>AFUE ANNUAL FUEL UTILIZATION EFF.</div> <div>ALT ALTERNATE</div> <div>AP ACCESS PANEL</div> <div>APD AIR PRESSURE DROP</div> <div>ARCH ARCHITECT/ARCHITECTURAL</div> <div>BCO BUILDING CLEANOUT</div> <div>BFF BELOW FINISHED FLOOR</div> <div>BLW BELOW</div> <div>BTU BRITISH THERMAL UNITS</div> <div>BTUH BTU PER HOUR</div> <div>CAP CAPACITY</div> <div>CB CATCH BASIN</div> <div>CC COOLING COIL</div> <div>CFM CUBIC FEET PER MINUTE</div> <div>CLG CEILING</div> <div>CO CLEAN OUT</div> <div>D DEGREE</div> <div>DB DRY BULB</div> <div>DIA DIAMETER</div> <div>DN DOWN</div> <div>E, EX EXISTING</div> <div>EA EXHAUST AIR</div> <div>EAT ENTERING AIR TEMPERATURE</div> <div>ELEC ELECTRICAL</div> <div>EQUIP EQUIPMENT</div> <div>EWT ENTERING WATER TEMP.</div> <div>F DEGREES FAHRENHEIT</div> <div>FCO FLOOR CLEAN OUT</div> <div>FD FLOOR DRAIN</div> <div>FD FIRE DAMPER</div> <div>FDV FIRE DEPARTMENT VALVE</div> <div>FL FLOOR</div> <div>FPM FEET PER MINUTE</div> <div>FS FLOOR SINK</div> <div>FSD FIRE SMOKE DAMPER</div> <div>FT FEET</div> <div>FT HD FEET OF HEAD</div> <div>FTR FIN TUBE RADIATION</div> <div>GA GAUGE</div> <div>GAL GALLON</div> <div>GC GENERAL CONTRACTOR</div> <div>GPH GALLONS PER HOUR</div> <div>GPM GALLONS PER MINUTE</div> <div>HB HOSE BIB</div> <div>HP HORSE POWER</div> <div>IN INCH</div> <div>INV INVERT</div> <div>LAT LEAVING AIR TEMPERATURE</div> <div>LAV LAVATORY</div> <div>LB POUND</div> <div>LB/HR POUNDS PER HOUR</div> <div>LWT LEAVING WATER TEMPERATURE</div> <div>MAT MIXED AIR TEMPERATURE</div> <div>MAX MAXIMUM</div> <div>MBH THOUSAND BTUH</div> <div>MCF THOUSAND CUBIC FEET</div> <div>MD MOTORIZED DAMPER</div> <div>MECH MECHANICAL</div> <div>MFR MANUFACTURER</div> <div>MIN MINIMUM</div> <div>MISC MISCELLANEOUS</div> <div>MTR MOTOR</div> <div>MUA MAKE-UP AIR</div> <div>NC NOISE CRITERIA</div> <div>NC NORMALLY CLOSED</div> <div>NIC NOT IN CONTRACT</div> <div>NO NORMALLY OPEN</div> <div>NTS NOT TO SCALE</div> <div>O OXYGEN</div> <div>ORD OVERFLOW ROOF DRAIN</div> <div>Ø ROUND</div> <div>OA OUTSIDE AIR</div> <div>ORD OVERFLOW ROOF DRAIN</div> <div>PD PRESSURE DROP</div> <div>PIV POST INDICATOR VALVE</div> <div>PLBG PLUMBING</div> <div>PRESS PRESSURE</div> <div>PRV PRESSURE REDUCING VALVE</div> <div>PSI POUNDS PER SQUARE INCH</div> <div>PSIG POUNDS PER SQUARE INCH GAUGE</div> <div>RA RETURN AIR</div> <div>RD ROOF DRAIN</div> <div>RH RELATIVE HUMIDITY</div> <div>RM ROOM</div> <div>RPM REVOLUTIONS PER MINUTE</div> <div>SA SUPPLY AIR</div> <div>SD SMOKE DAMPER</div> <div>SF SQUARE FOOT</div> <div>SK SINK</div> <div>SP STATIC PRESSURE</div> <div>T THERMOSTAT</div> <div>TD TEMPERATURE DROP</div> <div>TDR TRENCH DRAIN</div> <div>TEMP TEMPERATURE</div> <div>TYP TYPICAL</div> <div>UG UNDERGROUND</div> <div>UR URINAL</div> <div>V VENT</div> <div>VAC VACUUM</div> <div>VTR VENT THROUGH ROOF</div> <div>WB WET BULB</div> <div>WC WATER CLOSET</div> <div>WCO WALL CLEAN OUT</div> <div>WG WATER GAUGE</div> <div>WH WALL HYDRANT</div> <div>WPD WATER PRESSURE DROP</div>	<div>MECHANICAL EQUIPMENT TAG</div> <div>EQUIPMENT TYPE (SEE TABLE BELOW)</div> <div>XXX-1</div> <div>EQUIPMENT NUMBER</div> <div>AC AIR COMPRESSOR</div> <div>ACC AIR COOLED CONDENSER</div> <div>ACCH AIR COOLED CHILLER</div> <div>AHU AIR HANDLING UNIT</div> <div>AS AIR SEPARATOR</div> <div>B BOILER</div> <div>BC BOOSTER COIL (HOT WATER)</div> <div>CH CHILLER</div> <div>CHWC CHILLED WATER COIL</div> <div>CHWP CHILLED WATER PUMP</div> <div>CP CONDENSATE PUMP</div> <div>CRU COMPUTER ROOM UNIT</div> <div>CT COOLING TOWER</div> <div>CU CONDENSING UNIT</div> <div>CUH CABINET UNIT HEATER</div> <div>CWP CONDENSER WATER PUMP</div> <div>DBP DOMESTIC WATER BOOSTER PUMP</div> <div>DCP DOMESTIC WATER CIRC. PUMP</div> <div>DEH DEHUMIDIFIER</div> <div>DSF DESTRATIFICATION FAN</div> <div>DG DOOR GRILLE</div> <div>DL DRUM LOUVER</div> <div>DRP DOMESTIC RECIRCULATION PUMP</div> <div>DS DUCT SILENCER</div> <div>DU DEHUMIDIFICATION UNIT</div> <div>DXC DX COIL</div> <div>EBB ELECTRIC BASE BOARD HEATER</div> <div>ECH ELECTRIC COVE HEATER</div> <div>EDH ELECTRIC DUCT HEATER</div> <div>EF EXHAUST FAN</div> <div>EG ELECTRIC HUMIDIFIER</div> <div>ERV ENERGY RECOVERY VENTILATOR</div> <div>ET EXPANSION TANK</div> <div>EUH ELECTRIC UNIT HEATER</div> <div>EVP REMOTE EVAPORATOR</div> <div>EWC ELECTRIC WATER COOLER</div> <div>EWH ELECTRIC WALL HEATER</div> <div>EWH ELECTRIC WATER HEATER</div> <div>F FAN</div> <div>FCU FAN COIL UNIT</div> <div>FP FINNED TUBE RADIATION</div> <div>GHMD GAS FIRED HUMIDIFIER</div> <div>GF GAS FURNACE</div> <div>GI GREASE INTERCEPTOR</div> <div>GRH GAS FIRED RADIANT HEATER</div> <div>GRV GRAVITY ROOF VENTILATOR</div> <div>GUH GAS FIRED UNIT HEATER</div> <div>HB HOSE BIBB</div> <div>HP HEAT PUMP UNIT (AIR-AIR)</div> <div>HS HAND SINK</div> <div>HWC HW CONVECTOR</div> <div>HWHC HOT WATER HEATING COIL</div> <div>HWUH HOT WATER UNIT HEATER</div> <div>HX HEAT EXCHANGER</div> <div>HYD WALL HYDRANT</div> <div>L LAVATORY</div> <div>L LOUVER</div> <div>LBG LINEAR BAR GRILLE</div> <div>MAU MAKEUP AIR UNIT</div> <div>P PUMP</div> <div>PRV POWER ROOF VENTILATOR</div> <div>RTU ROOFTOP AIR HANDLING UNIT</div> <div>RCP RECIRCULATING PUMP</div> <div>RD ROUND DIFFUSER</div> <div>RG RETURN GRILLE</div> <div>RTF RETURN FAN</div> <div>RTU ROOFTOP UNIT</div> <div>RV ROOF VENT</div> <div>SD SLOT DIFFUSER</div> <div>SEP SEWAGE EJECTOR PUMP</div> <div>SF SUPPLY FAN</div> <div>SG SUPPLY GRILLE</div> <div>SP SUMP PUMP</div> <div>TF TRANSFER FAN</div> <div>TG TRANSFER GRILLE</div> <div>UH UNIT HEATER</div> <div>UV UNIT VENTILATOR</div> <div>VAV VAV BOX (WITH OR WITHOUT COIL)</div> <div>VP VACUUM PUMP</div> <div>WH WATER HEATER</div> <div>WS WATER SOFTENER</div>	<div>NEW CONSTRUCTION</div> <div>EXISTING PIPE TO BE REMOVED</div> <div>EXISTING PIPE TO REMAIN</div> <div>UNDERGROUND PIPING</div> <div>HWS HYDRONIC HOT WATER SUPPLY</div> <div>HWR HYDRONIC HOT WATER RETURN</div> <div>CHWS CHILLED WATER SUPPLY</div> <div>CHWR CHILLED WATER RETURN</div> <div>REF REFRIGERANT SUCTION / LIQUID CONDENSATE</div> <div>CD CD</div> <div>CW COLD WATER</div> <div>H-CW HARD COLD WATER</div> <div>S-CW SOFTENED COLD WATER</div> <div>HW DOMESTIC HOT WATER</div> <div>RHW RECIRCULATED HOT WATER</div> <div>RO REVERSE OSMOSIS WATER</div> <div>T TEMPERED EYEWASH WATER</div> <div>G NATURAL GAS</div> <div>NPW NON-POTABLE WATER</div> <div>W1 POTABLE WATER</div> <div>W2 NON-POTABLE WATER</div> <div>W3 PLANT EFFLUENT</div> <div>OSD OVERFLOW STORM DRAIN</div> <div>SD STORM DRAIN</div> <div>SAN SANITARY SEWER DRAIN</div> <div>V VENT</div> <div>CWV COMBINATION WASTE AND VENT</div> <div>IW INDIRECT WASTE</div> <div>PD PUMP DISCHARGE</div> <div>LPS LOW PRESSURE STEAM</div> <div>LPC LOW PRESSURE CONDENSATE</div> <div>SCHEMATIC SYMBOLS</div> <div>ELBOW UP</div> <div>ELBOW DOWN</div> <div>TEE UP</div> <div>TEE DOWN</div> <div>CAPPED OR PLUGGED PIPE</div> <div>FLUID FLOW</div> <div>UNION</div> <div>STRAINER</div> <div>PIPE ANCHOR</div> <div>PIPE EXPANSION JOINT</div> <div>PIPE PITCH DOWN</div> <div>BALL VALVE</div> <div>GATE VALVE</div> <div>STOP VALVE</div> <div>GLOBE VALVE</div> <div>BUTTERFLY VALVE</div> <div>CHECK VALVE</div> <div>BACKFLOW PREVENTER</div> <div>RELIEF VALVE</div> <div>PRESSURE REDUCING VALVE</div> <div>PRESSURE GAUGE</div> <div>PIPE THERMOMETER</div> <div>2-WAY CONTROL VALVE</div> <div>3-WAY CONTROL VALVE</div> <div>BALANCING VALVE</div> <div>DRAIN VALVE</div> <div>PUMP</div> <div>FLOOR SINK SYMBOL</div> <div>FLOOR DRAIN SYMBOL</div> <div>STORM DRAIN SYMBOL</div>	<div>REVISION NUMBER</div> <div>REVISION CLOUD</div> <div>PLAN KEYNOTE</div> <div>CONTINUATION SYMBOL</div> <div>ROOM NAME AND NUMBER</div> <div>CONNECT TO EXISTING</div> <div>NUMBER OF DETAIL ON SHEET</div> <div>SHEET WHERE DETAIL APPEARS</div> <div>PLUMBING FIXTURES</div> <div>PLUMBING FIXTURE TAG</div> <div>FIXTURE TYPE (SEE TABLE BELOW AND PLUMBING FIXTURE SCHEDULE)</div> <div>XXX-1</div> <div>FIXTURE NUMBER</div> <div>BS BEAUTY SINK</div> <div>BT BATH TUB</div> <div>BPW BEDPAN WASHER</div> <div>CSS CLINIC SERVICE SINK</div> <div>DF DRINKING FOUNTAIN</div> <div>DW DISHWASHER</div> <div>EW EYE WASH STATION</div> <div>EWC ELECTRIC WATER COOLER</div> <div>FDC FIRE DEPARTMENT CONN.</div> <div>GD GARBAGE DISPOSAL</div> <div>HB HOSE BIBB</div> <div>HS HAND SINK</div> <div>L LAVATORY</div> <div>LS LAB SINK</div> <div>LT LAUNDRY TUB</div> <div>MB MOP BASIN</div> <div>SH SHOWER</div> <div>SK SINK</div> <div>SS SAFETY SHOWER</div> <div>SSEW SAFETY SHOWER EYE WASH</div> <div>SSK SERVICE SINK</div> <div>UR URINAL</div> <div>W LAUNDRY WASHER BOX</div> <div>WC WATER CLOSET</div> <div>WDF WASH DOWN FAUCET</div> <div>WDR WASH DOWN REEL</div> <div>WF WASH FOUNTAIN</div> <div>WH WALL HYDRANT</div> <div>WO WALL OUTLET (LAMB'S TONGUE)</div> <div>DRAIN TAGS</div> <div>DRAIN CONNECTION SIZE</div> <div>X" XX-1</div> <div>DRAIN TYPE (SEE TABLE BELOW AND PLUMBING FIXTURE SCHEDULE)</div> <div>AD AREA DRAIN</div> <div>DW DISHWASHER</div> <div>FD FLOOR DRAIN</div> <div>FS FLOOR SINK</div> <div>FFD FUNNEL FLOOR DRAIN</div> <div>ORD OVERFLOW ROOF DRAIN</div> <div>OSD OPEN SIGHT DRAIN</div> <div>RD ROOF DRAIN</div> <div>TD TRENCH DRAIN</div> <div>TTFD TELL-TALE FLOOR DRAIN</div>
<div>PLUMBING GENERAL NOTES</div> <div><div>1.</div><div>PIPE OPENINGS THROUGH FIRE RATED WALLS SHALL BE CAULKED WITH AN INTUMESCENT MATERIAL.</div></div> <div><div>2.</div><div>EXCAVATE UNDER FLOOR TRENCH, INSTALL PIPING AND BACK FILL WITH CLEAN SAND. COMPACT AND REPLACE FLOOR TO MATCH EXISTING.</div></div> <div><div>3.</div><div>PIPING SHOWN IS SCHEMATIC TO SHOW SIZES AND GENERAL LOCATIONS. ROUTE PIPING AS REQUIRED FOR CLEARANCE WITH STRUCTURAL CONDITIONS.</div></div> <div><div>4.</div><div>INSTALL PIPING TO MAINTAIN HEADROOM, CONSERVE SPACE, AND NOT INTERFERE WITH USE OF SPACE. GROUP PIPING WHERE PRACTICAL AT COMMON ELEVATIONS. ROUTE PIPING IN A RECTILINEAR, ORDERLY MANNER AND MAINTAIN GRADIENT. ROUTE PIPING PARALLEL AND PERPENDICULAR TO WALL IN CEILING SPACE.</div></div> <div><div>5.</div><div>COORDINATE ROUGH-IN AND FINAL LOCATIONS OF NEW AND RELOCATED PIPING WITH EXISTING LIGHTING, STRUCTURE, PROCESS, PIPING AND DUCTWORK, ETC. PROVIDE OFFSETS ANIOR EASEMENTS AS REQUIRE TO AVOID CONFLICTS WITH WORK OF ALL OTHER TRADES.</div></div> <div><div>6.</div><div>INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTION PIPING.</div></div> <div><div>7.</div><div>PROVIDE CLEARANCE IN HANGERS AND FROM STRUCTURE AND OTHER EQUIPMENT FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.</div></div> <div><div>8.</div><div>ROUGH-IN AND CONNECT ALL PLUMBING TO FIXTURES AND EQUIPMENT FURNISHED AND INSTALLED BY OTHERS.</div></div> <div><div>9.</div><div>PROVIDE SHUT-OFF VALVES AT ALL EQUIPMENT AND ALL BRANCH PIPING OFF OF THE MAINS.</div></div>	<div>DEMOLITION MECHANICAL GENERAL NOTES</div> <div><div>1.</div><div>THESE NOTES SHALL APPLY TO ALL DEMOLITION MECHANICAL SHEETS. ALL CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE MECHANICAL DRAWINGS AND SPECIFICATIONS PRIOR TO BID.</div></div> <div><div>2.</div><div>EXISTING EQUIPMENT, DUCTWORK, AND OR PIPING, ACCESSORIES, ETC., SHOWN ON THESE PLANS ARE BASED ON FIELD OBSERVATIONS AND PARTIAL REMODEL PLANS. MECHANICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT, DUCTWORK AND OR PIPING LOCATIONS AND THE SIZES IN THE FIELD.</div></div> <div><div>3.</div><div>CONTRACTOR SHALL PERFORM A SITE OBSERVATION SURVEY PRIOR TO BID IN ORDER TO DETERMINE LOCATIONS AND OR CONFLICTS RELATIVE TO THE EXECUTION OF HIS WORK. VERIFY EXTENT OF DEMOLITION AND EXACT DETAIL OF INSTALLATION REQUIRED TO PROVIDE SYSTEMS SHOWN ON THESE PLANS WITHIN THE INTENDED SPACE.</div></div> <div><div>4.</div><div>DEMOLITION WORK REQUIRED BY THE WORK INCLUDES, BUT IS NOT NECESSARILY LIMITED TO THE FOLLOWING: PLUMBING FIXTURES AND EQUIPMENT, SANITARY, DOMESTIC, HEATING AND COOLING SYSTEM PIPING, VALVES, OTHER PIPING, ETC., DUCTWORK, HEATING AND OR COOLING VENTILATION EQUIPMENT, CONTROLS AND ALL ACCESSORIES, CONTROL TUBING AND WIRING.</div></div> <div><div>5.</div><div>REMOVE EXISTING DUCTWORK TO THE EXTENT INDICATED, CAP OPEN ENDS AND SEAL AIR TIGHT. INSULATE CAPS.</div></div> <div><div>6.</div><div>ABOVE GROUND PRESSURIZED PIPING, DRAIN WASTE AND VENT PIPING TO BE DEMOLISHED SHALL BE REMOVED TO THE EXTENT INDICATED ON THE PLANS BACK TO THE POINT OF PIPING TO REMAIN IN SERVICE AND SHALL BE CAPPED OR PLUGGED TIGHT, AS APPROPRIATE, AS CLOSE AS POSSIBLE TO THE POINT OF CONNECTION TO THE 'LIVE' PIPE.</div></div> <div><div>7.</div><div>ALL EXISTING SERVICES SHALL BE MAINTAINED AT ALL TIMES, UNLESS OTHERWISE INDICATED ON THE PLANS. DISRUPTION OF SERVICES SHALL BE COORDINATED WITH GENERAL CONTRACTOR AND THE OWNER IN ORDER TO PROVIDE AN ACCEPTABLE DATE AND TIME FORSERVICE DISRUPTION.</div></div> <div><div>8.</div><div>NO CUTTING OF STRUCTURAL MEMBERS OR STRUCTURE WHICH DETERIORATE THE INTEGRITY AND STRENGTH OF THE BUILDING SHALL BE ALLOWED WITH OUT THE WRITTEN APPROVAL OF A STRUCTURAL ENGINEER.</div></div> <div><div>9.</div><div>SAW CUT OR CORE DRILL OPENING THROUGH WALL AND FLOORS AS REQUIRED TO ACCOMMODATE NEW OR RELOCATED DUCTWORK, PIPING, CONNECTIONS AND ROUTING. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING AND PATCHING NEW OPENINGS THROUGH EXISTING WALLS AND OR FLOORS UNLESS NOTED OTHERWISE ON PLANS.REPAIRS TO MATCH EXISTING AND MAINTAIN 1 HR FIRE RATING. WALL FINISHED BY OTHERS.</div></div> <div><div>10.</div><div>INSPECT ALL EXISTING DUCTWORK AND HVAC EQUIPMENT. VACUUM EXISTING DUCTWORK FROM DISCHARGE POINT BACK TO MAIN AS FAR AS POSSIBLE. HVAC EQUIPMENT IS TO BE I INSPECTED AND BROUGHT UP TO PROPER OPERATING CONDITION.</div></div> <div><div>11.</div><div>CONTRACTOR SHALL INSTALL AS MUCH OF THE NEW SYSTEM AS POSSIBLE PRIOR TO REMOVING EXISTING SYSTEMS IN ORDER TO MINIMIZE THE AMOUNT OF DOW TIME.</div></div>	<div>HVAC SYMBOLS</div> <div>SUPPLY AIR DUCT UP/DOWN</div> <div>RETURN AIR DUCT UP/DOWN</div> <div>EXHAUST AIR DUCT UP/DOWN</div> <div>RECTANGULAR DUCT SIZE TAG (WIDTH / HEIGHT)</div> <div>ROUND DUCT SIZE TAG (DIAMETER)</div> <div>SUPPLY AIR DIFFUSER</div> <div>RETURN AIR/EXHAUST AIR GRILLE</div> <div>LINEAR DIFFUSER</div> <div>TEMPERATURE SENSOR / THERMOSTAT</div> <div>HUMIDISTAT</div> <div>SPEED SWITCH</div> <div>CO2 SENSOR</div> <div>FIRE DAMPER</div> <div>SMOKE DAMPER</div> <div>FIRE/SMOKE DAMPER</div> <div>CEILING RADIATION DAMPER</div> <div>VOLUME DAMPER</div> <div>MOTORIZED DAMPER</div> <div>FLEXIBLE DUCT</div> <div>TURNING VANES</div> <div>ABBREVIATIONS</div> <div>CD CEILING DIFFUSER</div> <div>DG DOOR GRILLE</div> <div>DL DRUM LOUVER</div> <div>EG EXHAUST GRILLE</div> <div>L LOUVER</div> <div>LBG LINEAR BAR GRILLE</div> <div>RD ROUND DIFFUSER</div> <div>RG RETURN GRILLE</div> <div>SD SLOT DIFFUSER</div> <div>SG SUPPLY GRILLE</div> <div>TG TRANSFER GRILLE</div> <div>TYPICAL SUPPLY DIFFUSER TAG</div> <div>DUCT CONNECTION SIZE</div> <div>DIFFUSER MARK</div> <div>AIRFLOW</div> <div>CD1 8" 200 CFM</div> <div>TYPICAL GRILLE TAG</div> <div>GRILLE SIZE</div> <div>GRILLE MARK</div> <div>AIRFLOW</div> <div>RG1 8/8 200 CFM</div>	<div>AIR DEVICES TAGS</div> <div>ABBREVIATIONS</div> <div>CD CEILING DIFFUSER</div> <div>DG DOOR GRILLE</div> <div>DL DRUM LOUVER</div> <div>EG EXHAUST GRILLE</div> <div>L LOUVER</div> <div>LBG LINEAR BAR GRILLE</div> <div>RD ROUND DIFFUSER</div> <div>RG RETURN GRILLE</div> <div>SD SLOT DIFFUSER</div> <div>SG SUPPLY GRILLE</div> <div>TG TRANSFER GRILLE</div> <div>TYPICAL SUPPLY DIFFUSER TAG</div> <div>DUCT CONNECTION SIZE</div> <div>DIFFUSER MARK</div> <div>AIRFLOW</div> <div>CD1 8" 200 CFM</div> <div>TYPICAL GRILLE TAG</div> <div>GRILLE SIZE</div> <div>GRILLE MARK</div> <div>AIRFLOW</div> <div>RG1 8/8 200 CFM</div>	
<div>HVAC GENERAL NOTES</div> <div><div>1.</div><div>FABRICATE AND SUPPORT ALL DUCTWORK IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE, CURRENT EDITION.</div></div> <div><div>2.</div><div>ALL DUCTWORK IS SHOWN IN SCHEMATIC FORM. NOT ALL RISES AND DROPS ARE SHOWN. PROVIDE OFFSETS AS REQUIRED TO MEET SPACE REQUIREMENTS AND TO AVOID INTERFERENCES WITH OTHER TRADES.</div></div> <div><div>3.</div><div>ELBOWS SHALL BE SQUARE ELBOWS CONSTRUCTED WITH TURNING VANES. RADIUS ELBOWS WITH CENTERLINE RADIUS OF NOT LESS THAN 1.5 TIMES THE DUCT WIDTH MAY BE USED WHERE SPACE CONDITIONS PERMIT OR WHERE INDICATED ON DRAWINGS.</div></div> <div><div>4.</div><div>ALL BRANCH DUCT TAPS SHALL BE CONICAL FITTINGS ON ROUND MAINS AND SHALL BE 45 DEG ENTRY FITTINGS ON RECTANGULAR MAINS.</div></div> <div><div>5.</div><div>MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED 5'-0" FLEXIBLE DUCT SHALL BE METALFLEX FLEXIBLE DUCT WITH 1" EXTERNAL FIBERGLASS INSULATION AND VAPOR BARRIER JACKET.</div></div> <div><div>6.</div><div>MANUAL VOLUME DAMPERS SHALL BE PROVIDED ON ALL RETURN, SUPPLY AND EXHAUST BRANCH DUCTS.</div></div> <div><div>7.</div><div>SUPPORT ALL DUCTWORK, EQUIPMENT, ETC., FROM TOP CHORD OF BAR JOISTS OR STEEL FRAMING BEAMS.</div></div> <div><div>8.</div><div>ALL DUCTWORK IN CHEMICAL STORAGE ROOMS SHALL BE FIBERGLASS (FRP) WITH FIBERGLASS HANGERS AND HARDWARE.</div></div> <div><div>9.</div><div>ALL DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS. INCREASE SHEET METAL SIZE TO ACCOMMODATE DUCT LINER AS REQUIRED BY THE SPECIFICATIONS.</div></div> <div><div>10.</div><div>ALL SHEET METAL CONNECTIONS AND JOISTS SHALL BE SEALED TO SMACNA CLASS A.</div></div> <div><div>11.</div><div>DIFFUSER, GRILLE, AND REGISTER LOCATIONS. SHALL BE COORDINATED WITH THE ARCHITECT'S REFLECTED CEILING PLANS AND ELECTRICAL LIGHTING PLAN.</div></div> <div><div>12.</div><div>CHANGE DUCT SIZES GRADUALLY. LIMIT SLOPES FOR TRANSITIONS TO A MAXIMUM OF 1 INCH CHANGE IN WIDTH FOR EVERY 3 INCHES OF LENGTH OF APPROXIMATELY 15 DEG. A MAXIMUM OF 30 DEG IS ACCEPTABLE DIRECTLY ADJACENT TO EQUIPMENT.</div></div>				<div>NOTE</div> <div>ALL GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET. THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.</div>



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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MECHANICAL SYMBOLS
AND ABBREVIATIONS

GM1

ELECTRIC UNIT HEATER SCHEDULE								
EQUIPMENT NUMBER	MANUFACTURER	MODEL	SERVES	FAN			ELECTRICAL	NOTES
				CFM	KW	V/PH/CY		
EUH-1	INDEECO	TRIAD	CHLORINE 103	650	5	480/3/60	8.0	1,2,3,4,7
EUH-2	INDEECO	TRIAD	STORAGE 104	1100	10	480/3/60	14.0	1,2,3,4,7
EUH-3	INDEECO	TRIAD	FLUORIDE 105	650	5	480/3/60	8.0	1,2,3,4,7
EWH-1	QMARK	CWH34083F	VESTIBULE 100	65	4	208/3/60	11.1	1,5,6
EWH-2	QMARK	CWH3408F	TOILET 102	65	2	208/1/60	9.6	1,5,6
NOTES: <div>1) FACTORY DISCONNECT 2) FACTORY WALL MOUNT THERMOSTAT 3) SWIVEL WALL BRACKET 4) STAINLESS STEEL WASHDOWN CONSTRUCTION 5) MOUNT ON WALL WITH SURFACE MOUNTING KIT 6) INTEGRAL THERMOSTAT 7) ALL COMPONENTS TO BE EPOXY COATED</div>								

MOTORIZED DAMPER SCHEDULE									
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	SERVES	LOUVER/INTAKE	WIDTH (IN.)	HEIGHT (IN.)	CFM	POSITION	NOTES
MD-1	RUSKIN	CD50	CHLORINE ROOM 103	LV-1	22	20	700	N.C.	ALL
MD-2	RUSKIN	CD50	STORAGE 104	LV-2	14	10	220	N.C.	ALL
MD-3	RUSKIN	CD50	FLUORIDE ROOM 105	LV-3	12	8	100	N.C.	ALL
NOTES: <div>1) ALUMINUM, LOW LEAKAGE, OPPOSED BLADE TYPE. 2) 120 V NEMA 4X ACTUATOR, POWER OPEN - SPRING RETURN. 3) PROVIDE BAKED ENAMEL COATING FOR CORROSION PROTECTION.</div>									

FAN SCHEDULE											
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	TYPE	SERVES	CFM	E.S.P. (IN. W.G.)				WEIGHT (LBS.)	N O ...
							HP/WATTS	RPM	V/PH/CY		
EF-1	GREENHECK	G-098-VG	ROOF MOUNTED UPBLAST EXHAUST	CHLORINE ROOM 103	700	0.5	1/6 HP	1725	115/1/60	32	1,2,3
EF-2	GREENHECK	GB-097-6	ROOF MOUNTED UPBLAST EXHAUST	STORAGE 104	220	0.5	1/6 HP	1477	115/1/60	54	1,2,3
EF-3	FANTECH	FR100	INLINE EXHAUST FAN	FLUORIDE ROOM 105	100	0.5	21.5 W	2950	115/1/60	7	2,5
EF-4	GREENHECK	SP-A110	CEILING EXHAUST FAN	TOILET 102	100	0.2	17 W	950	115/1/60	17	2,4
NOTES: <div>1) PROVIDE 18" PITCHED ROOF CURB, BIRDSCREEN, BACKDRAFT DAMPER. 2) FACTORY MOUNTED AND WIRED DISCONNECT. 3) HI-PRO POLYESTER CORROSION RESISTANT COATING. 4) PROVIDE DESIGNER CEILING GRILLE. 5) CORROSION RESISTANT CONSTRUCTION.</div>											

DEHUMIDIFIER SCHEDULE									
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	SERVES	CFM	MOISTURE REMOVAL (PINTS/DAY @ 80 F, 60% RH)	ELECTRICAL		OPERATING RANGE °F	NOTES
						AMPS	V/PH/CY		
DEH-1	THERMASTOR	HI-E-DRY 195	FILTER ROOM 101	540	192	12	115/1/60	33 - 110	1
DEH-2	THERMASTOR	HI-E-DRY 195	FILTER ROOM 101	540	192	12	115/1/60	33 - 110	1
DEH-3	THERMASTOR	HI-E-DRY 195	FILTER ROOM 101	540	192	12	115/1/60	33 - 110	1
DEH-4	THERMASTOR	HI-E-DRY 195	FILTER ROOM 101	540	192	12	115/1/60	33 - 110	1
DEH-5	THERMASTOR	HI-E-DRY 195	EXISTING PROCESS AREA	540	192	12	115/1/60	33 - 110	1
DEH-6	THERMASTOR	HI-E-DRY 195	EXISTING PROCESS AREA	540	192	12	115/1/60	33 - 110	1
NOTES: <div>1) MERV 8 FILTER</div>									

GAS UNIT HEATER										
EQUIPMENT NUMBER	MFR.	SERVES	MODEL NUMBER	SUPPLY AIR (CFM)	INPUT (MBH)	OUTPUT (MBH)	THERMAL EFF. (%)	GAS RATE (CFH)	ELECTRICAL	
									V/PH/CY	AMPS
GUH-1	REZNOR	EXISTING PROCESS AREA	UDX-175	1793	175.0	145.2	83	175	115/1/60	9.6
GUH-2	REZNOR	FILTER ROOM 101	UDZ-30	769	30.0	24.6	82	30	115/1/60	1.9
GUH-3	REZNOR	FILTER ROOM 101	UDZ-30	769	30.0	24.6	82	30	115/1/60	1.9
NOTES: <div>1) POWER VENTED, SEPARATED COMBUSTION. 2) STAINLESS STEEL HEAT EXCHANGER AND BURNER. 3) MANUFACTURER'S VERTICAL CONCENTRIC VENT KIT. 4) WALL MOUNTED NEMA 4X THERMOSTAT. 5) FACTORY MOUNTED AND WIRED DISCONNECT. 6) POWER VENTED, LOW STATIC BLOWER.</div>										

LOUVER SCHEDULE										
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	SERVES	WIDTH (IN.)	HEIGHT (IN.)	FREE AREA (%)	VELOCITY (FPM)	MATERIAL	SCREEN	NOTES
LV-1	RUSKIN	ELF375DX	CHLORINE ROOM 103	22	20	50	500	ALUMINUM	INSECT SCREEN	1
LV-2	RUSKIN	ELF375DX	STORAGE 104	14	10	50	500	ALUMINUM	INSECT SCREEN	1
LV-3	RUSKIN	ELF375DX	FLUORIDE ROOM 105	12	8	50	500	ALUMINUM	INSECT SCREEN	1
LV-4	RUSKIN	ELF375DX	FLUORIDE ROOM 105	20	20	50	500	ALUMINUM	BIRDSCREEN	1
NOTES: <div>1) KYNAR FINISH. COLOR SELECTED BY ARCHITECT.</div>										



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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OBJ

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REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

MECHANICAL SCHEDULES

PLUMBING FIXTURE SCHEDULE								
FIXTURE NUMBER	MANUFACTURER	MODEL NUMBER	DESCRIPTION	CONNECTIONS				
				WASTE MATCH ADJAC...	VENT	C.W.	H.W.	T.W. NOTE S
CO-1	ZURN	ZN-1400-HD	CAST IRON FLOOR CLEANOUT WITH ADJUSTABLE COLLAR AND NICKALOY COVER		-	-	-	-
ESW-1	GUARDIAN EMERGENCY SHOWER AND EYEWASH	G1992	GUARDIAN CORROSION RESISTANT COMBINATION SHOWER/EYEWASH G1992, 2" PVC SCHEDULE 80 SOCKET WELDED PIPE AND FITTINGS, SUPPLY INLET AND WASTE OUTLET, DRENCH SHOWER, 10" DIAMETER IMPACT RESISTANT PLASTIC SHOWER HEAD, PVC COATED BRASS STAY OPEN BALL VALVE WITH PVC COATED ACTUATING ARM AND PULL ROD, EYE/FACE WASH, 12" DIAMETER IMPACT RESISTANT PLASTIC BOWL WITH CHROME PLATED BRASS SPRAY HEADS, 3 GPM, MOUNTED ON PVC COATED SUPPLY ARMS, PVC COATED BRASS STAY OPEN BALL VALVE, 1/2" SUPPLY WITH EPOXY COATED ALUMINUM FLAG HANDLE.	-	-	-	-	1-1/4"
WH-1	WOODFORD	B67	AUTOMATIC DRAINAGE AND FREEZELESS WALL HYDRANT, BACKFLOW PROTECTION AND FLUSH WALL BOX.	-	-	3/4"	-	-
TMV-1	GUARDIAN	G-3802LF	EMERGENCY EYEWASH/SHOWER MIXING VALVE, BUILT IN PRIMARY AND SECONDARY CW BYPASS SUITABLE FOR EMERGENCY SHOWER/EYEWASH USE, STAINLESS STEEL SURFACE MOUNT CABINET.	-	-	-	-	1-1/4"
WC-1	AMERICAN STANDARD	MADERA	MADERA™ 3043001.02 1.1 – 1.6 GPF (4.2 – 6.0 LPF) CHAIR HEIGHT TOP SPUD ELONGATED BOWL, FLOOR-MOUNT, ELONGATED FLUSHOMETER BOWL, LESS SEAT, HIGH EFFICIENCY TOILET (HET) OPERATES IN THE RANGE OF 1.1 GPF – 1.6 GPF (4.2 LPF – 6.0 LPF), MAXIMUM PERFORMANCE (MAP) SCORE OF 1,000 GRAMS AT 1.1 - 1.6 GPF, 16-1/2" (419 MM) CHAIR HEIGHT FOR ACCESSIBLE APPLICATIONS, STATIC WEIGHT LOAD OF 2,500 LBS (1,134 KG), 2-1/8" (54 MM) FULLY-GLAZED TRAPWAY, 10" (254 MM) OR 12" (305 MM) ROUGH-IN, CONDENSATION CHANNEL, POWERFUL DIRECT-FED SIPHON JET ACTION, 1-1/2" (38 MM) INLET SPUD, 1.28 GPF MANUAL FLUSH VALVE, AMERICAN STANDARD MODEL 6047.121.002.	4"	2"	1-1/4"	-	-
LAV-1	AMERICAN STANDARD	LUCERN	LUCERN WALL HUNG ADA LAVATORY, VITREOUS CHINA, FAUCET LEDGET, SELF DRAINING DECK WITH BACK AND SIDE SPLASH SHIELDS, FAUCET HOLES ON 4" CENTERS, 6-1/2" BOWL DEPTH, WHITE FINISH, REMOVABLE KEY ANGLE STOPS, BRASS P-TRAP WITH CLEANOUT AND ADA TRAP WRAP INSULATION, INCLUDE AMERICAN STANDARD "MONTERAY" TWO HANDLE ADA FAUCET, VANDAL RESISTANT WRIST BLADE HANDLES, GRID STRAINER DRAIN, AND ASSE 1070 POINT OF USE MIXING VALVE.	1-1/2"	1-1/4"	1/2"	1/2"	-
SK-1	SINK PROVIDED BY COUNTERTOP MANUFACTURER	-	EPOXY UNDERMOUNT LAB SINK, POLYPROPYLENE SINK OUTLET SHALL BE PROVIDED WITH POLY STRAINER, INCLUDE CHROME PLATED BRASS RISER TUBES, SPEARS LAB WASTE CPVC 1-1/2" DIAMETER P-TRAP AND WASTE DRAIN, PROVIDE CHICAGO 930-317XKCP, SINGLE-HOLE, DECK MOUNTED MANUFAL LABORATORY FAUCET WITH VACCUUM BREAKER.	1-1/2"	1-1/4"	1/2"	1/2"	-
MSB-1	FIAT	MSB 2424	MOP BASIN, ONE PIECE MOLDED STONE MOP BASIN, INTEGRAL 3" DRAIN WITH REMOVABLE STAINLESS STEEL STRAINER, 24"X24" OVERALL DIMMENSIONS WITH 10" DEEP BOWL, PROVIDE CHICAGO MODEL 897-RCF FAUCET WITH HOSE CONNECTION AND VACUUM BREAKER.	3"	1-1/2"	3/4"	3/4"	-
FD-1	ZURN	Z-550	9" DIA DURA-COATED CAST IRON BODY, FLASHING COLLAR, CAST IRON BAR GRATE, ACID-RESISTANT COATING, SEDIMENT BUCKET.	SEE PLAN	2"	-	-	-
FD-2	ZURN	Z-415B	5" DIAMETER DURA-COATED CAST IRON BODY, FLASHING COLLAR, ADJUSTABLE NICKEL BRONZE STRAINER.	3"	2"	-	-	-
TD-1	ZURN	Z812-SF	"FLO-THRU" PRE-SLOPED 12" WIDE HIGH DENSITY POLYETHYLENE DRAINAGE SYSTEM, Z-812-RFS REINFORCED STAINLESS STEEL SLOTTED GRATE, MINIMUM DIN CLASS C FOR GRATING AND CHANNEL.	4"	3"	-	-	-
RPZ-1	WATTS	909LF	4" - LEAD FREE REDUCED PRESSURE ZONE BACKFLOW PREVENTER, 1/4 TURN FULL PORT BALL VALVES ON INLET AND OUTLET WITH STRAINER, STAINLESS STEEL CHECK MODULES AND STAINLESS STEEL TRIM, AIR GAP WITH DRAIN PIPED TO NEAREST FLOOR DRAIN, NON-RISING VALVE STEMS.	-	-	4"	-	-
HB-1	WOODFORD	26	3/4" BACKFLOW PROTECTED HOSE BIBB, CHROME FINISH, METAL WHEEL HANDLE OPERATOR, 3/4" NPT INLET, AUTOMATIC DRAINING.	-	-	3/4"	-	-
NOTES: 1) ADA COMPLIANT								

TANKLESS GAS FIRED WATER HEATER SCHEDULE										
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	CAPACITY GAL.'S	RECOVERY AT 67 F RISE	WATER CONNECTION	GAS INPUT MBH	GAS CONNECTION	VIPH/ICY	WEIGHT LBS	NOTES
GWH-1	NAVIER	NPE-240A2	11.2	5.6 GPH	3/4"	200	3/4"	120/1/60	82	1, 2
NOTES: 1) CPVC VERTICAL CONCENTRIC VENT. 2) FACTORY FREEZE PROTECTION TO -20 DEG F. 3) PROVIDE ASME PRESSURE REDUCING VALVE. 4) EXTEND CONDENSATE DRAIN LINE TO NEAREST FLOOR DRAIN.										

PUMP SCHEDULE												
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	SERVES	LOCATION	CONNECTION SIZE	GPM	FT OF HEAD	MOTOR				NOTES
								HP	RPM	FLA	VIPH/ICY	
RCP-1	BELL & GOSSETT	NBF-12U	HOT WATER RECIRC	FILTER ROOM 101	3/4"	5	8	FRAC	2800	0.48	120 / 1 / 60	1
NOTES: 1) PROVIDE TC-1 TIMER KIT AND AQS AQUASTAT.												



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Issue Date
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REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

MECHANICAL SCHEDULES

ELECTICAL ABBREVIATIONS LIST									
1P	1 POLE (2P, 3P, 4P, ETC.)	CTR	CENTER	HTG	HEIGHT	NEMA	NATIONAL ELECTRICAL	SWBD	SWITCHBOARD
AMP	AMPERE	CU	COPPER	HT	HEATING		MANUFACTURERS ASSOCIATION	SYM	SYMMETRICAL
AC	ABOVE COUNTER OR AIR	DCP	DOMESTIC WATER CIRCULATING PUMP	HTR	HEATER	NFDS	NON-FUSED SAFETY DISCONNECT	SYS	SYSTEM
	CONDITIONER	DEPT	DEPARTMENT	HV	HIGH VOLTAGE		SWITCH	TEL	TELEPHONE
ACLG	ABOVE CEILING	DET	DETAIL	HVAC	HEATING, VENTILATING AND AIR	NFCS	NOT IN CONTRACT	TEL/DATA	TELEPHONE/DATA
ADO	AUTOMATIC DOOR OPENER	DIA	DIAMETER		CONDITIONING	NL	NIGHT LIGHT	TERM	TERMINAL
AF	AMP FRAME	DISC	DISCONNECT	HWP	HYDRONIC WATER PUMP	N.O.	NORMALLY OPEN	TL	TWIST LOCK
AFF	ABOVE FINISHED FLOOR	DIST	DISTRIBUTION	IC	INTERRUPTING CAPACITY	NPF	NORMAL POWER FACTOR	TR	TAMPER RESISTANT
AFG	ABOVE FINISHED GRADE	DN	DOWN	IG	ISOLATED GROUND	NTS	NOT TO SCALE	T-STAT	THERMOSTAT
AFI	ARC FULF CIRCUIT	DPR	DAMPER	IMC	INTERMEDIATE METAL CONDUIT	OH	OVERHEAD	TTC	TELEPHONE TERMINAL CABINET
	INTERRUPTER	DS	SAFETY DISCONNECT SWITCH	INCAND	INCANDESCENT	OL	OVERLOADS	TV	TELEVISION
AHU	AIR HANDLING UNIT	DT	DOUBLE THROW	IR	INFRARED	PA	PUBLIC ADDRESS	TVTC	TELEVISION TERMINAL CABINET
AL	ALUMINUM	DWG	DRAWING	IW	INTERLOCK WITH	PB	PULL BOX OR PUSHBUTTON	TYC	TYPICAL
ALT	ALTERNATE	EC	ELECTRICAL CATALOG	J-BOX	JUNCTION BOX	PE	PENEUMATIC ELECTRIC	UP	UNDER COUNTER
AMP	AMPERE	ELEC	ELECTRIC, ELECTRICAL	KV	KILOVOLT	PE	PEDESTAL	UE	UNDERGROUND ELECTRICAL
AMPL	AMPLIFIER	ELEV	ELEVATOR	KVA	KILOVOLT-AMPERE	PF	POWER FACTOR	UG	UNDERGROUND
ANNU	ANNUNCIATOR	EM	EMERGENCY	KVAR	KILOVOLT-AMPERE REACTIVE	PH	PHASE	UH	UNIT HEATER
APPROX	APPROXIMATELY	EMS	ENERGY MANAGEMENT SYSTEM	KW	KILOWATT	PIV	PIST INDICATING VALVE	UH	UNDERGROUND TELEPHONE
AQ-STAT	AQSTAT	EMT	ELECTRICAL METALLIC TUBING	KWH	KILOWATT HOUR	PNL	PANEL	UTIL	UTILITY
ARCH	ARCHITECT, ARCHITECTURAL	EP	ELECTRIC PNEUMATIC	LOC	LOCATE OR LOCATION	PP	POWER POLE	UV	UNIT VENTILATOR OR
AS	AMP SWITCH	EQUIP	EQUIPMENT	LT	LIGHT	PR	PAIR		ULTRAVIOLET
AT	AMP TRIP	EW	ELECTRIC WATER COOLER	LTG	LIGHTING	PR	PRIMARY	V	VOLT
ATS	AUTOMATIC TRANSFER SWITCH	EXT	EXISTING	LTNG	LIGHTNING	PROJ	PROJECTION	VA	VOLT-AMPERES
AUTO	AUTOMATIC	EXH	EXHAUST	LTV	LOW VOLTAGE	PRV	POWER ROOF VENTILATOR	VDT	VIDEO DISPLAY TERMINAL
AUX	AUXILIARY	EXP	EXPLOSION PROOF	LIV	LOW VOLTAGE	PT	POTENTIAL TRANSFORMER	VERT	VERTICAL
AV	AUDIO VISUAL	FA	FIRE ALARM	MAG.S	MAGNETIC STARTER	PVC	POLYVINYL CHLORIDE (CONDUIT)	VFD	VARIABLE FREQUENCY DRIVE
AWG	AMERICAN WIRE GAUGE	FABP	FIRE ALARM BOOSTER POWER	M/C	MOMENTARY CONTACT	PWR	POWER	VOL	VOLUME
BATT	BATTERY		SUPPLY PANEL	MC	MECHANICAL CONTRACTOR	QUAN	QUANTITY	W	WATT
BD	BOARD	FACP	FIRE ALARM CONTROL PANEL	MCB	MAIN CIRCUIT BREAKER	RCP	RECEPTACLE	W/	WITH
BLDG	BUILDING	FCU	FAN COIL UNIT	MCC	MOTOR CONTROL CENTER	REQD	REQUIRED	WG	WIRE GUARD
BMS	BUILDING MANAGEMENT SYSTEM	KIT	FIXTURE	MDC	MAIN DISTRIBUTION CENTER	RM	ROOM	WH	WATER HEATER
C	CONDUIT	FLR	FLOOR	MDF	MAIN DISTRIBUTION PANEL	RSC	RIGID STEEL CONDUIT	W/O	WITHOUT
CAB	CABINET	FLUR	FLOOR	MFR	MANUFACTURER	RTU	ROOF TOP UNIT	W/	WEATHERPROOF
CAT	CATALOG	FU	FUSE	MFS	MAIN FUSED DISCONNECT SWITCH	SC	SURFACE CONDUIT	XFRM	TRANSFORMER
CBV	CABLE TELEVISION	FUDS	FUSED SAFETY DISCONNECT SWITCH	MH	MANHOLE	SEC	SECONDARY	XFR	TRANSFER
CB	CIRCUIT BREAKER	GA	GAUGE	MIC	MICROPHONE	SHT	SHEET		
CCTV	CLOSED CIRCUIT TELEVISION	GAL	GALLON	MIN	MINIMUM	SIM	SIMILAR		
CKT	CIRCUIT	GALV	GALVANIZED	MISC	MISCELLANEOUS	SIN	SOLID NEUTRAL		
CLG	CEILING	GC	GENERAL CONTRACTOR	MLO	MAIN LUGS ONLY	SPEC	SPECIFICATION	∠	ANGLE
COMB	COMBINATION	GEN	GENERATOR	MMS	MANUAL MOTOR STARTER	SPKR	SPEAKER	@	AT
CMPR	COMPRESSOR	GFI	GROUND FAULT CIRCUIT INTERRUPTER	MOA	MULTI-OUTLET ASSEMBLY	SP	SPARE	▲	DELTA
CONN	CONNECTION	GFP	GROUND FAULT PROTECTOR	MSS	MOT/PT STARTER PANELBOARD	SR	SURFACE RACEWAY	F	FEET
CONST	CONSTRUCTION	GND	GROUND	MSB	MAIN SWITCHBOARD	SS	STAINLESS STEEL	"	INCHES
CONT	CONTINUATION OR CONTINUOUS	GRS	GALVANIZED RIGID STEEL (CONDUIT)	MT	MOUNT	SSW	SELECTOR SWITCH	#	NUMBER
CONTR	CONTRACTOR	GY BD	GYPSUM BOARD	M.T.C	EMPTY CONDUIT	S/S	STOP/START PUSHBUTTONS	Ø	PHASE
CONV	CONVECTOR	HOA	HANDS-OFF-AUTOMATIC SWITCH	MTS	MANUAL TRANSFER SWITCH	STA	STATION	C	CENTER LINE
CP	CIRCULATING PUMP	HORIZ	HORIZONTAL	MTR	MOTOR, MOTORIZED	STD	STANDARD	P	PLATE
CR	CATHODE-RAY TUBE	HP	HORSEPOWER	N.C.	NORMALLY CLOSED	SURF	SURFACE MOUNTED		
CT	CURRENT TRANSFORMER	HPF	HIGH POWER FACTOR	N.E.	NATIONAL ELECTRICAL CODE	SW	SWITCH		

ELECTRICAL SYMBOL NOTES

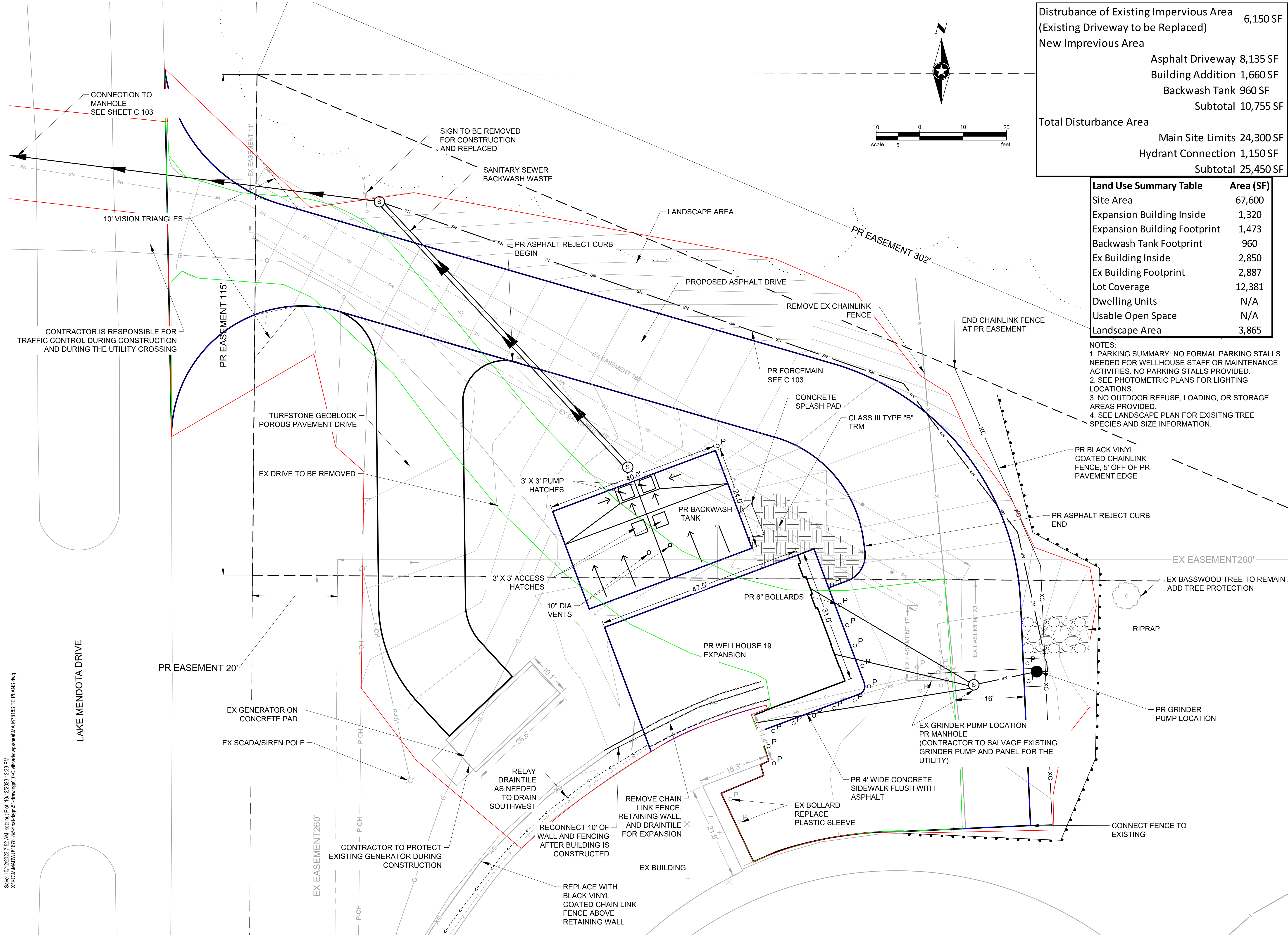
The diagram shows a switch symbol, which is a rectangle with a diagonal line from the bottom-left to the top-right. Four callout lines point to different parts of the symbol:

- FIXTURE TYPE**: Points to the top-left corner of the rectangle.
- CIRCUIT NUMBER**: Points to the number "12b" located to the right of the rectangle.
- SWITCH DESIGNATION**: Points to the diagonal line inside the rectangle.
- SHADE = EXIT FACE**: Points to the bottom-left corner of the rectangle.

Below the main diagram, there are three additional symbols with callouts:

- EXIT SYMBOL**: A circle with an "X" inside. Callouts include:
 - FIXTURE TYPE**: Points to the top-left corner of the circle.
 - CHEVRON DIRECTION**: Points to the "X" inside the circle.
- EXIT SYMBOL**: A circle with the number "16" inside. Callouts include:
 - SHADE = EXIT FACE**: Points to the bottom-left corner of the circle.
 - CIRCUIT NUMBER**: Points to the number "16" inside the circle.
- SWITCH SYMBOL**: A circle with a diagonal line from the bottom-left to the top-right. Callouts include:
 - SWITCH IDENTIFICATION**: Points to the number "d" located to the right of the circle.

GE1



Distrubance of Existing Impervious Area (Existing Driveway to be Replaced)	6,150 SF
New Imprevious Area	
Asphalt Driveway	8,135 SF
Building Addition	1,660 SF
Backwash Tank	960 SF
Subtotal	10,755 SF
Total Disturbance Area	
Main Site Limits	24,300 SF
Hydrant Connection	1,150 SF
Subtotal	25,450 SF

Land Use Summary Table	Area (SF)
Site Area	67,600
Expansion Building Inside	1,320
Expansion Building Footprint	1,473
Backwash Tank Footprint	960
Ex Building Inside	2,850
Ex Building Footprint	2,887
Lot Coverage	12,381
Dwelling Units	N/A
Usable Open Space	N/A
Landscape Area	3,865

NOTES:
1. PARKING SUMMARY: NO FORMAL PARKING STALLS NEEDED FOR WELLHOUSE STAFF OR MAINTENANCE ACTIVITIES. NO PARKING STALLS PROVIDED.
2. SEE PHOTOMETRIC PLANS FOR LIGHTING LOCATIONS.
3. NO OUTDOOR REFUSE, LOADING, OR STORAGE AREAS PROVIDED.
4. SEE LANDSCAPE PLAN FOR EXISITNG TREE SPECIES AND SIZE INFORMATION.



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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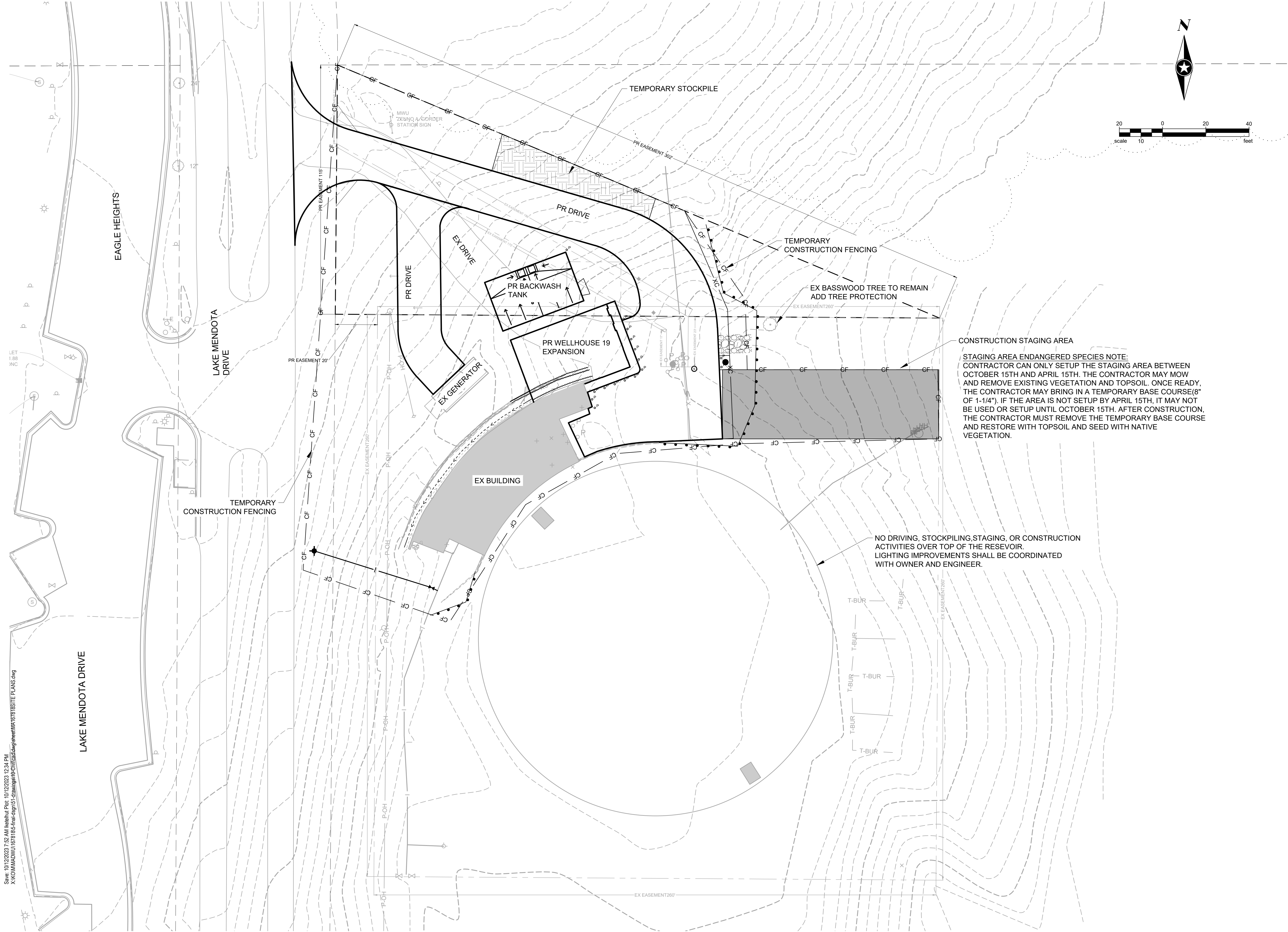
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SITE PLAN

C 100



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119 E OLIN AVE
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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
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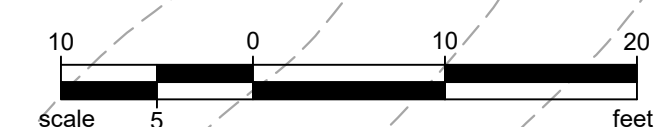
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STAGING PLAN



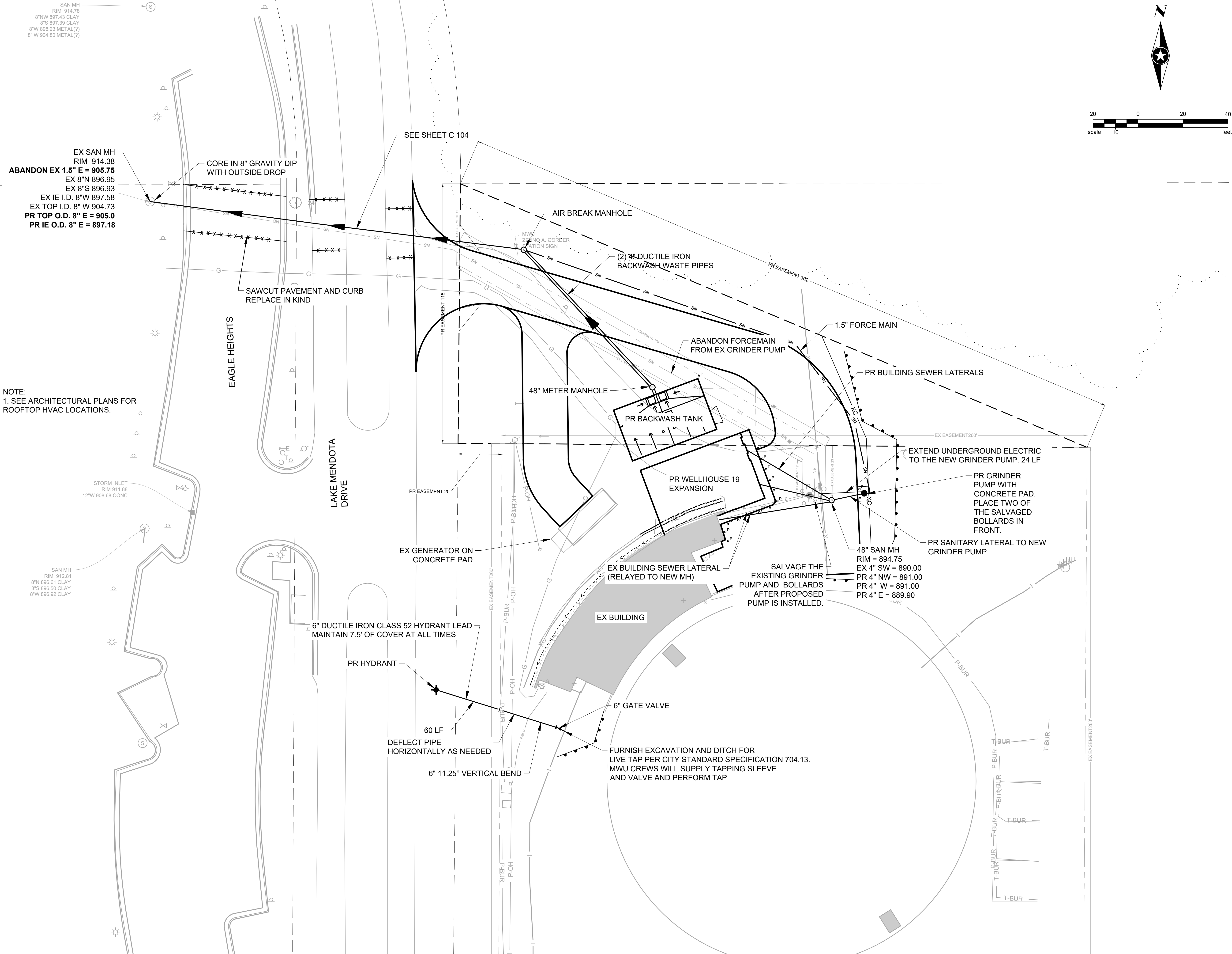
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UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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GRADING PLAN

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CITY OF MADISON WATER UTILITY
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UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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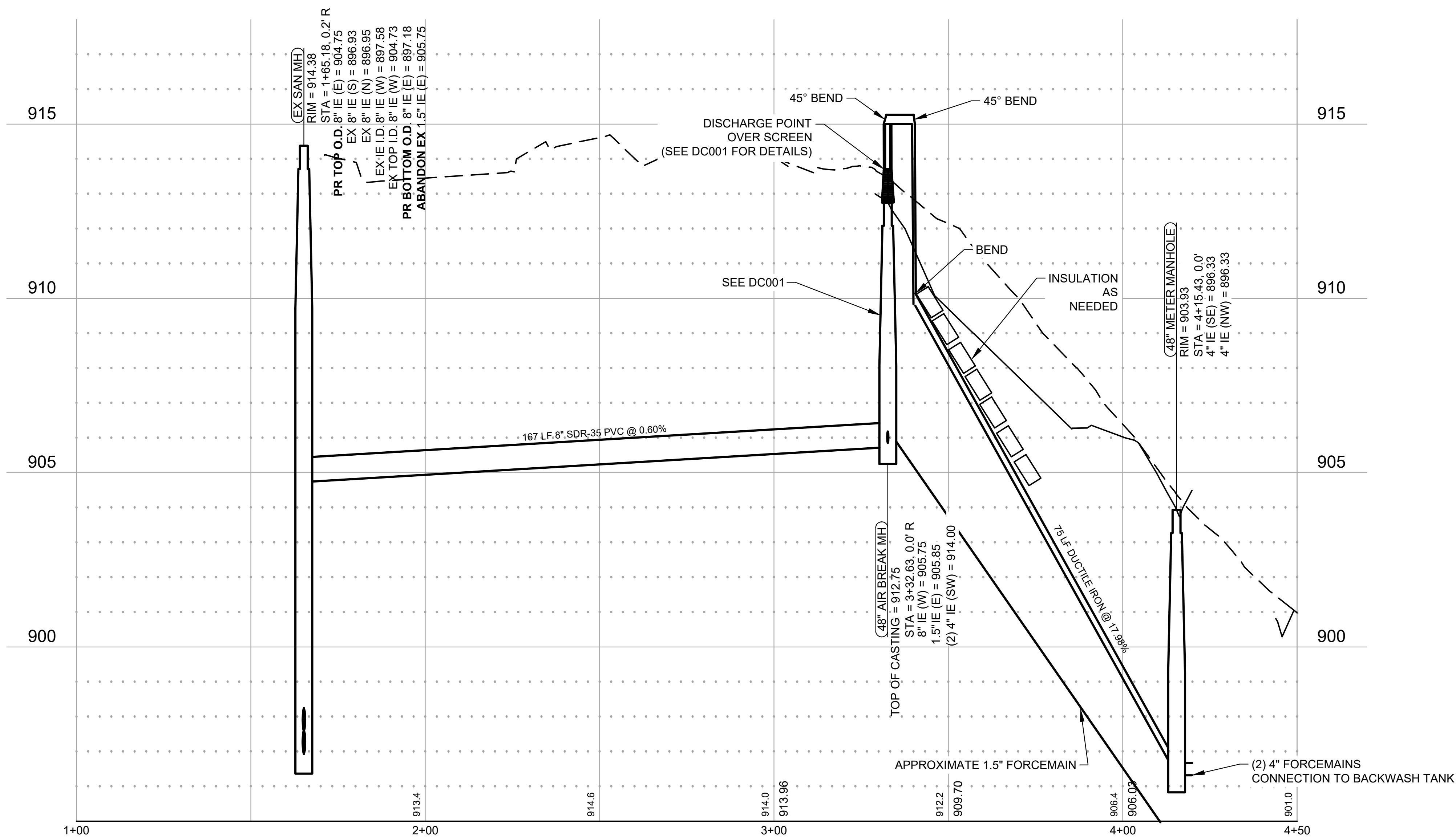
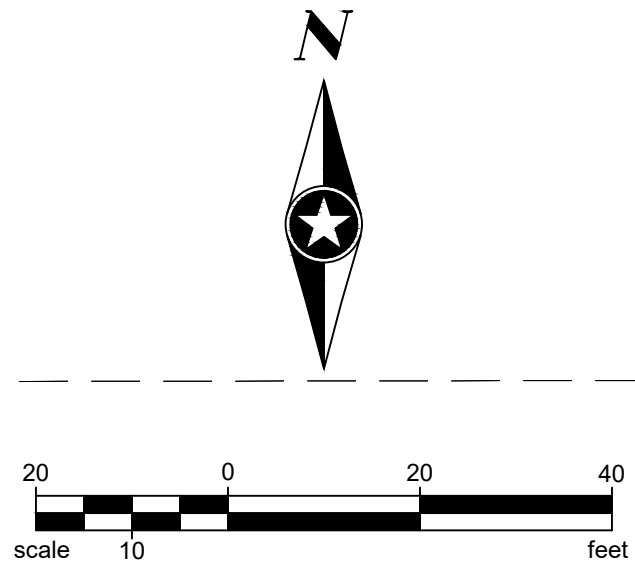
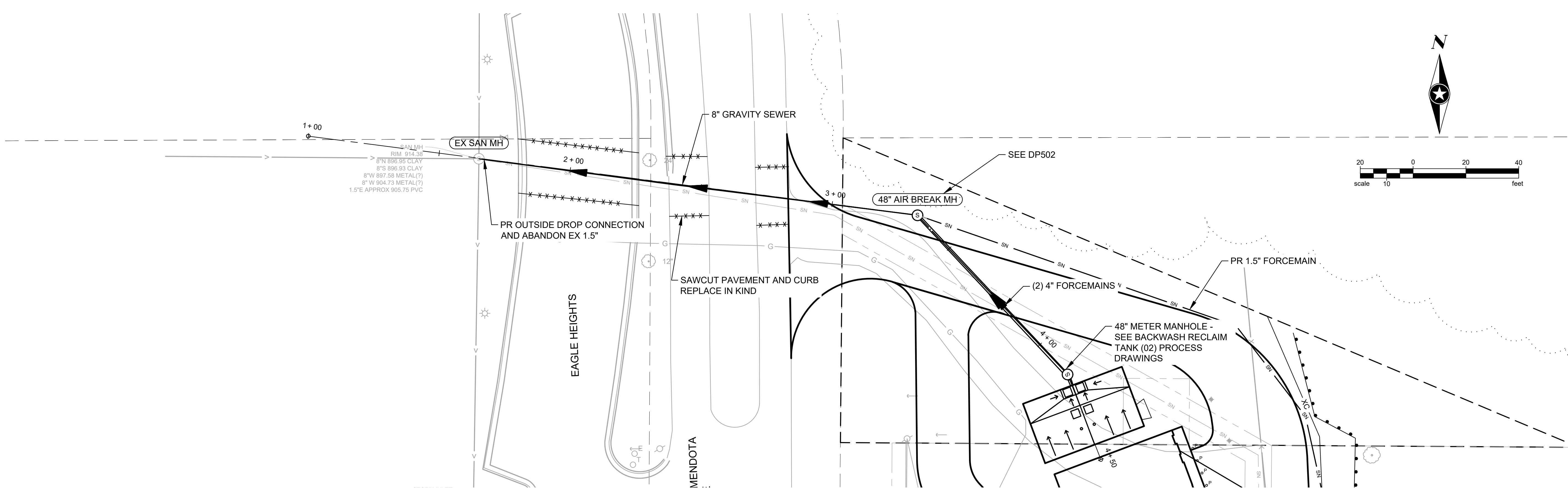
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UTILITY PLAN

C 103

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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
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MADISON, WISCONSIN

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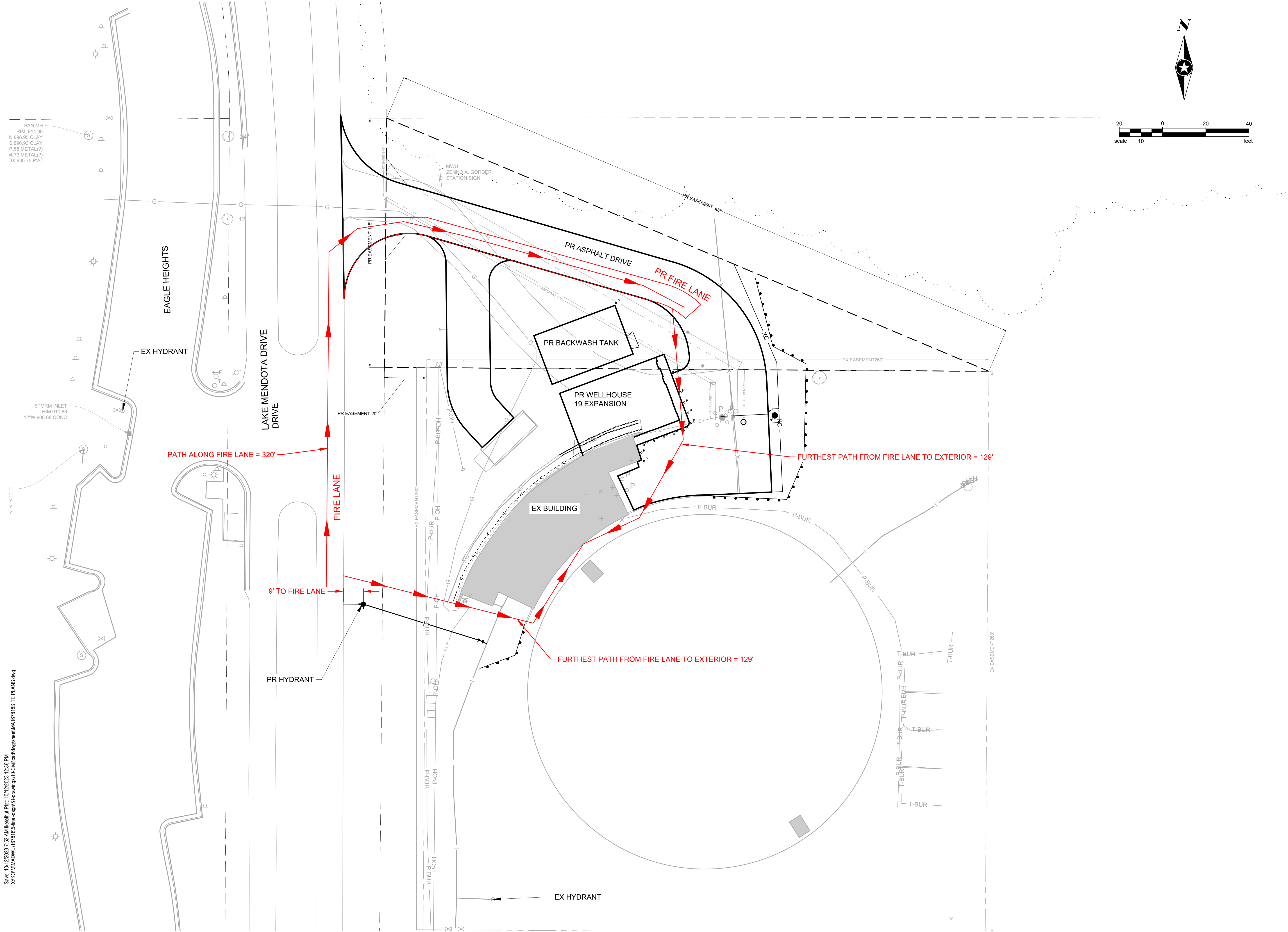
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PLAN & PROFILE

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MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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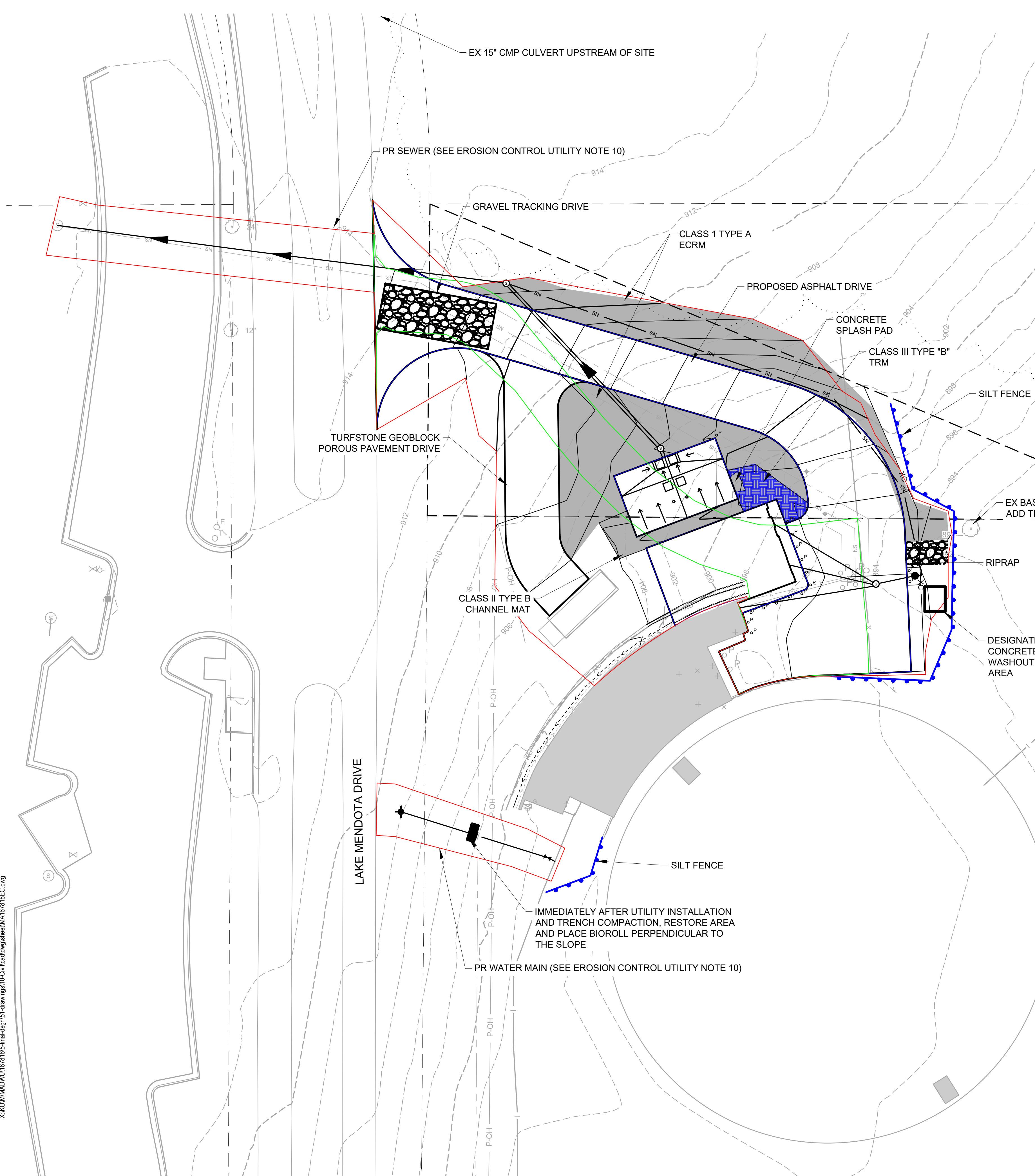
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REV. #	DESCRIPTION	DATE

FIRE ACCESS PLAN

C 105

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Disturbance of Existing Impervious Area (Existing Driveway to be Replaced)	6,150 SF
New Impervious Area	
Asphalt Driveway	8,135 SF
Building Addition	1,660 SF
Backwash Tank	960 SF
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Ex Building Footprint	2,887
Lot Coverage	12,381
Dwelling Units	N/A
Usable Open Space	N/A
Landscape Area	3,865

EROSION CONTROL:

1. CONSTRUCT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE "WISCONSIN STORMWATER CONSTRUCTION AND POST-CONSTRUCTION TECHNICAL STANDARDS".
2. SEDIMENT CONTROL MEASURES MAY NEED TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION.
3. INSPECT AND MAINTAIN ALL SEDIMENT CONTROL STRUCTURES WEEKLY AND AFTER SITE RECEIVES 1/2" OR MORE OF RAIN IN A 24-HOUR PERIOD TO ENSURE PROPER WORKING CONDITION. SEDIMENT CONTROL MEASURES ARE TO BE IN WORKING CONDITION AT THE END OF EACH DAY.
4. INSPECT SEDIMENT CONTROL STRUCTURES FOR INTEGRITY AFTER ANY SIGNIFICANT RAINFALL OF 1/2" OR MORE. **CORRECT ANY DAMAGED STRUCTURES IMMEDIATELY.**
5. DO NOT REMOVE ANY SEDIMENT/EROSION CONTROL MEASURES UNTIL THE AREAS SERVED HAVE 80% OR MORE ESTABLISHED VEGETATIVE COVER AS DETERMINED BY THE ENGINEER.
6. ALL TRACKED SOIL ON ADJACENT STREETS FROM THIS PROJECT MUST BE CLEANED ON A DAILY BASIS, MINIMUM. CONTRACTORS ARE REQUIRED TO USE THE TRACKING DRIVE SHOWN ON PLAN FOR ACCESS TO AND FROM THE SITE.
7. ALL SIDE SLOPES 5:1 OR STEEPER SHALL BE RESTORED WITH CLASS I - TYPE 'A' EROSION MATTING, AND ALL AREAS OF CONCENTRATED FLOW SHALL BE RESTORED WITH CLASS II - TYPE 'B' CHANNEL MATTING, UNLESS OTHERWISE NOTED.
8. ALL SLOPES PROTECTED ONLY BY SILT FENCE MUST BE FULLY RESTORED WITHIN 30 DAYS OF DISTURBANCE.
9. PREVENT OVERLAND FLOW FROM LEAVING ANY PORTION OF THE WORK SITE BY INSTALLING SEDIMENT LOGS OR SILT FENCING PARALLEL TO THE SLOPE DOWNHILL FROM THE WORK AREA.
8. STABILIZE ALL NON-ACTIVE STOCKPILES WITH TEMPORARY SEED & MULCH WITHIN 14 DAYS OF INACTIVITY. INSTALL SILT FENCING AROUND ALL DOWN SLOPE AND SIDE SLOPES OF TOPSOIL STOCKPILES. STOCKPILES NOT SHOWING ADEQUATE VEGETATION BY NOV 1 SHOULD BE DORMANT SEEDED AND COVERED WITH A WISDOT PAL TYPE A SOIL STABILIZER (FOR SLOPES 3 FEET HORIZONTAL TO 1 FOOT VERTICAL OR FLATTER) OR EROSION CONTROL MAT IF THEY ARE INACTIVE.
9. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 14 DAYS OF INACTIVITY. THIS MAY BE DONE USING TEMPORARY AND/OR PREEMINENT RESTORATION TECHNIQUES, DEPENDING ON PROGRESS OF GRADING ACTIVITIES OF THE AREA(S). THIS INCLUDES AREAS OF SITE DEVELOPMENT **AND** UTILITY CONSTRUCTION.
10. SEDIMENT CONTROL FOR UTILITY CONSTRUCTION
A. PLACE EXCAVATED TRENCH MATERIAL ON HIGH SIDE OF THE TRENCH.
B. BACKFILL, COMPACT, AND STABILIZE THE TRENCH IMMEDIATELY AFTER UTILITY INSTALLATION.
11. CONCRETE MANAGEMENT PLAN
A. CONCRETE WASTE SHALL BE DISPOSED OF IN THE DESIGNATED WASHOUT AREA
B. WASHOUT AREA SHALL INCLUDE A CONTROLLED WASTE BOX. GROUND BASED WASHOUT IS NOT PERMITTED.

GENERAL NOTES:

1. DEWATERING IS NOT ANTICIPATED DURING CONSTRUCTION. IF DEWATERING IS REQUIRED, CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND FOLLOW WDNr DEWATERING STANDARD #1061.
2. ALL EROSION CONTROL PRACTICES MUST COMPLY WITH WDNr TECHNICAL STANDARDS AND BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF PRODUCING RAINFALL AS WELL AS SNOW MELT AND WINTER THAW (1/2" OR MORE), AND AT LEAST ONCE PER WEEK.
3. ALL TEMPORARY SOIL STOCKPILES SHALL NOT BE LOCATED WITHIN 25 FEET OF A DRAINAGE WAY OR A WETLAND (NO WETLANDS ON SITE), SHALL BE PROTECTED WITH SILT FENCING AROUND THE DOWNSLOPE AND SIDESLOPES OF THE PILE, AND STABILIZED WITH TEMPORARY SEEDING IF LEFT INACTIVE FOR 14 DAYS OR MORE.
4. CUT AND FILL SLOPES WILL BE 3:1 MAX. OR FLATTER OUTSIDE THE ROAD RIGHT-OF-WAY, UNLESS OTHERWISE NOTED.
5. TEMPORARY SEEDING TO CONFORM WITH SECTION 630.2.1.5.1.2 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
6. RESTORATION SHALL BE 6" TOPSOIL (REASONABLY FREE OF STONES, STICKS, ROOTS, AND OTHER OBJECTIONABLE MATTER AND DEBRIS). ONCE TOPSOIL HAS BEEN SPREAD, THE AREA SHALL BE SEEDED WITH SEED MIXTURE NO. 40 IN SECTION 630 OF THE "STATE SPECIFICATIONS", UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL APPLY A FERTILIZER (20-0-0) OVER THE SEEDED AREA AT A RATE OF 7 POUNDS PER 1000 SQUARE FEET. THIS AREA SHALL BE MAINTAINED BY THE CONTRACTOR. STRAW MULCH SHALL BE PLACED IN ACCORDANCE WITH METHODS "B" OR "C", AS DESCRIBED IN SECTION 627 OF THE "STATE SPECIFICATIONS", EXCEPT THAT THE MULCH SHALL BE PLACED WITHIN ONE (1) DAY AFTER THE SEEDING HAS BEEN COMPLETED.

DEWATERING NOTES:

1. CONTRACTOR TO OBTAIN ALL NECESSARY PERMIT(S).
2. NOTIFY WDNr IF DEWATERING IS SCHEDULED TO OCCUR IN AREAS OF SOIL AND/OR GROUNDWATER CONTAMINATION, OR IF DEWATERING WILL OCCUR FROM A HIGH CAPACITY WELL (70 GPM OR MORE). DEWATER ONLY AFTER THE APPROPRIATE WDNr DEWATERING DISCHARGE PERMIT HAS BEEN OBTAINED.
3. PROVIDE ANTI-SCOUR PROTECTION AND MAINTAIN NON-EROSIVE FLOW DURING DEWATERING. LIMIT PUMPING RATES TO EITHER (A) THE SEDIMENT BASIN/TRAP DESIGN DISCHARGE RATE, OR (B) THE BASIN DESIGN RELEASE RATE WITH THE CORRECTLY-FITTED HOSE AND GEOTEXTILE FILTER BAG. PERFORM DEWATERING OF ACCUMULATED SURFACE RUNOFF IN ACCORDANCE WITH WDNr TECHNICAL STANDARD DE-WATERING #1061.
4. ALL DEWATERING DISCHARGE TO BE DIRECTED TO A 12"x10' (MIN) TYPE I DEWATERING FILTRATION BAG THEN DISCHARGE SHALL PASS THROUGH AN EXISTING VEGETATIVE BUFFER FILTER STRIP OR A PROTECTIVE LINER SHALL BE PLACED OVER DISTURBED GROUND. DISCHARGE SHALL NOT BE ALLOWED TO FLOW OVER UNPROTECTED GROUND.



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY UNIT WELL 19 TREATMENT SYSTEM ADDITION 2526 LAKE MENDOTA DRIVE MADISON, WISCONSIN

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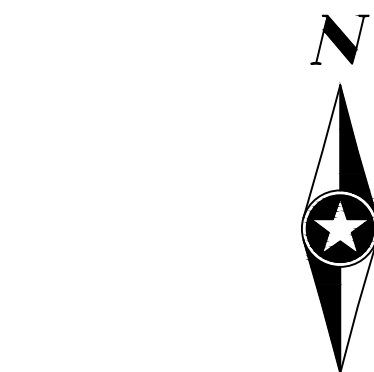
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EROSION CONTROL PLAN

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LAKE MENDOTA DRIVE

240 FT LOT FRONTAGE



LANDSCAPE PLAN NOTES:

1. SEE LANDSCAPE NOTES ON SHEET GL001 AND DETAILS ON SHEET DL001.
2. SEE CITY OF MADISON LANDSCAPE CALCULATIONS ON SHEET GL001.
3. SEE PLANTING AND SEEDING SCHEDULES ON SHEET GL001.

PLANT SYMBOL LEGEND

ORNAMENTAL TREES

PV
VL

BOTANICAL / COMMON NAME

PRUNUS VIRGINIANA / CHOKECHERRY
VIBURNUM LENTAGO / NANNYBERRY

SHADE TREES

CR
QB
QM

BOTANICAL / COMMON NAME

CARPINUS CAROLINIANA / AMERICAN HORNBEAM
QUERCUS BICOLOR / SWAMP WHITE OAK
QUERCUS MACROCARPA / BURR OAK

SHRUBS

AR
AM

BOTANICAL / COMMON NAME

ARALIA RACEMOSA / AMERICAN SPIKENARD
ARONIA MELANOCARPA 'IROQUOIS BEAUTY'
TM / BLACK CHOKEBERRY
CORNUS RACEMOSA / GRAY DOGWOOD
CORYLUS AMERICANA / AMERICAN HAZELNUT
DIERVILLA LONICERA / DWARF BUSH HONEYSUCKLE

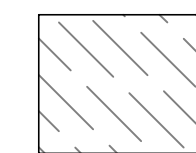
PERENNIALS

cn
ep
pn

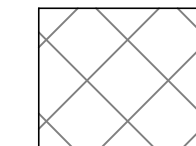
BOTANICAL / COMMON NAME

CONOCLINIUM COELESTINUM / WILD AGERATUM
ECHINACEA PALLIDA / PALE PURPLE CONEFLOWER
PANICUM VIRGATUM 'NORTHWIND' /
NORTHWIND SWITCH GRASS

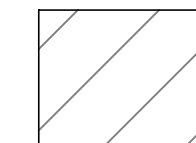
SEED MIX LEGEND



NO MOW TURF MIX

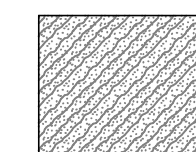


REINFORCED TURF GRASS

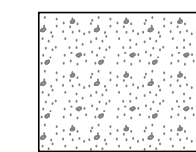


TURF GRASS

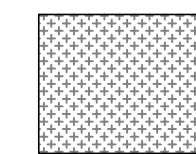
PERENNIAL PLANTING AREA LEGEND



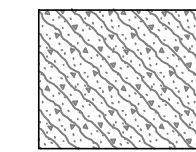
NATIVE PRAIRIE MIX -
PLUGS @ 12" O.C.



UNDERSTORY MIX 1
PLUGS @ 12" O.C.

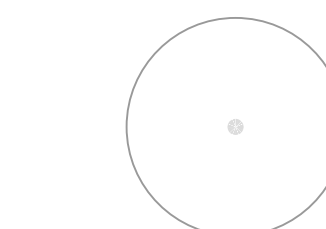


JOE-PYE WEED
PLUGS @ 12" O.C.

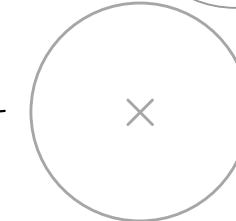


UNDERSTORY MIX 2
PLUGS @ 12" O.C.

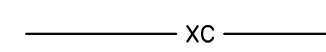
LEGEND



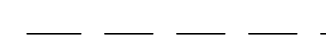
EXISTING TREE
TO REMAIN



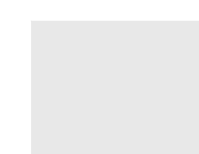
EXISTING TREE
TO REMOVE



BLACK CHAIN
LINK FENCE



PROPERTY
BOUNDARY



DEVELOPED AREA
10,265 SF
AS DEFINED BY CITY OF
MADISON ZONING CODE
ORD. 28.142 (4)

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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SEH Project MADWU 167818
Checked By MGW
Drawn By CB

Project Status BIDDING DOCUMENTS
Issue Date OCTOBER, 2023

REVISION SCHEDULE
REV. # DESCRIPTION DATE

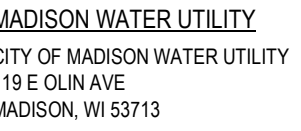
LANDSCAPE PLAN

L101



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

WELLHOUSE 19
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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SEH Project MADWU 167818
Checked By NRD, SMJ
Drawn By ALM

Project Status	Issue Date
BIDDING DOCUMENTS	OCTOBER, 2023

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE
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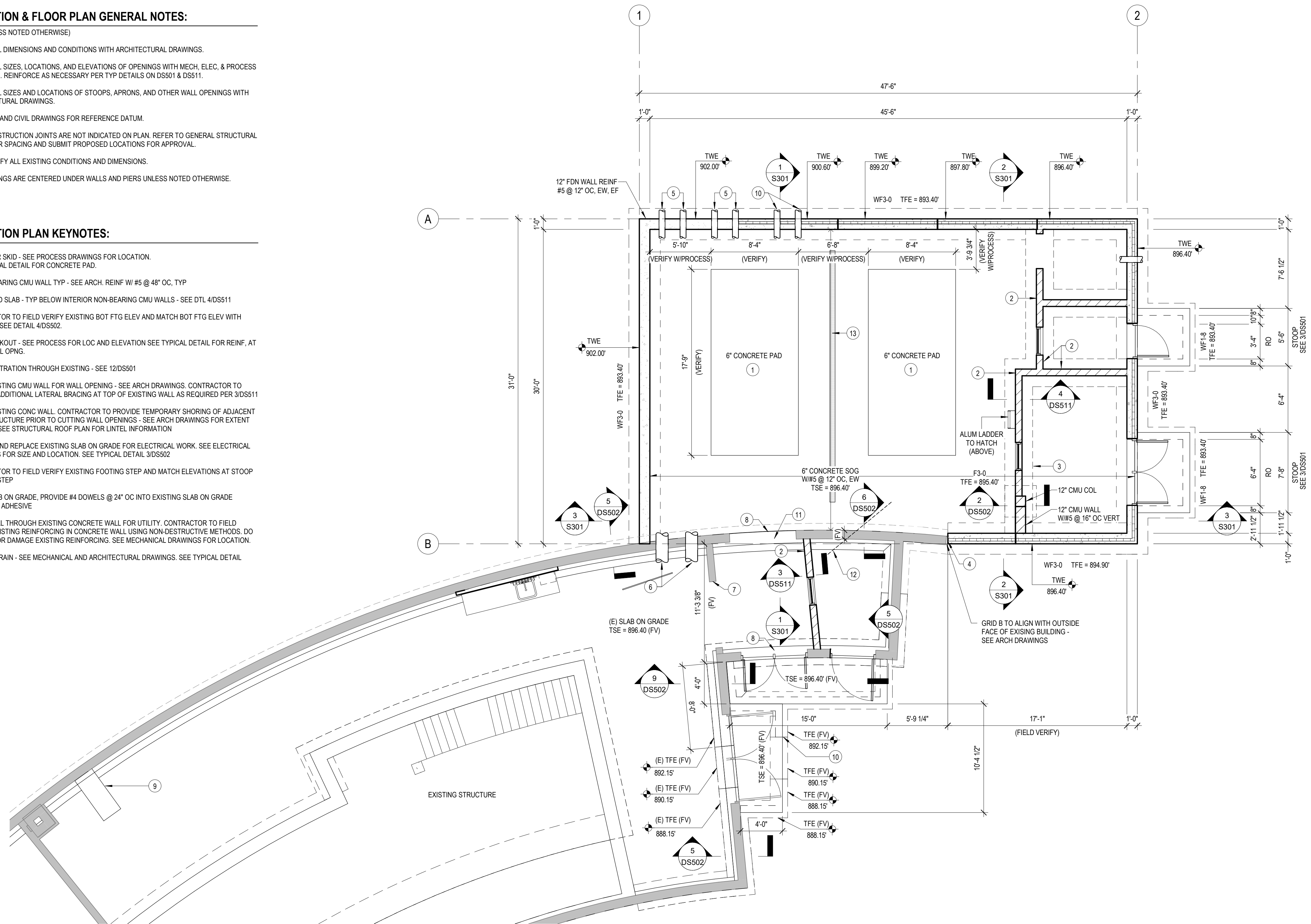
FOUNDATION & FLOOR
PLAN

01
S101

(TYPICAL UNLESS NOTED OTHERWISE)

1. VERIFY ALL DIMENSIONS AND CONDITIONS WITH ARCHITECTURAL DRAWINGS.
2. VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS WITH MECH. ELEC. & PROCESS DRAWINGS. REINFORCE AS NECESSARY PER TYP DETAILS ON DSS01 & DSS11.
3. VERIFY ALL SIZES AND LOCATIONS OF STOOPS, APRONS, AND OTHER WALL OPENINGS WITH ARCHITECTURAL DRAWINGS.
4. SEE ARCH AND CIVIL DRAWINGS FOR REFERENCE DATUM.
5. SLAB CONSTRUCTION JOINTS ARE NOT INDICATED ON PLAN. REFER TO GENERAL STRUCTURAL NOTES FOR SPACING AND SUBMIT PROPOSED LOCATIONS FOR APPROVAL.
6. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS.
7. ALL FOOTINGS ARE CENTERED UNDER WALLS AND PIERS UNLESS NOTED OTHERWISE.

- 1 96K FILTER SKID - SEE PROCESS DRAWINGS FOR LOCATION. SEE TYPICAL DETAIL FOR CONCRETE PAD.
- 2 8" NON-BEARING CMU WALL TYP - SEE ARCH. REINF W/ #5 @ 48" OC, TYP
- 3 THICKENED SLAB - TYP BELOW INTERIOR NON-BEARING CMU WALLS - SEE DTL 4/DS511
- 4 CONTRACTOR TO FIELD VERIFY EXISTING BOT FTG ELEV AND MATCH BOT FTG ELEV WITH EXISTING. SEE DETAIL 4/DS502.
- 5 PIPE BLOCKOUT - SEE PROCESS FOR LOC AND ELEVATION SEE TYPICAL DETAIL FOR REINF, AT CONC WALL OPNG.
- 6 PIPE PENETRATION THROUGH EXISTING - SEE 12/DS501
- 7 DEMO EXISTING CMU WALL FOR WALL OPENING - SEE ARCH DRAWINGS. CONTRACTOR TO PROVIDE ADDITIONAL LATERAL BRACING AT TOP OF EXISTING WALL AS REQUIRED PER 3/DS511
- 8 DEMO EXISTING CONC WALL. CONTRACTOR TO PROVIDE TEMPORARY SHORING OF ADJACENT ROOF STRUCTURE PRIOR TO CUTTING WALL OPENINGS - SEE ARCH DRAWINGS FOR EXTENT AND LOC. SEE STRUCTURAL ROOF PLAN FOR LINTEL INFORMATION
- 9 REMOVE AND REPLACE EXISTING SLAB ON GRADE FOR ELECTRICAL WORK. SEE ELECTRICAL DRAWINGS FOR SIZE AND LOCATION. SEE TYPICAL DETAIL 3/DS502
- 10 CONTRACTOR TO FIELD VERIFY EXISTING FOOTING STEP AND MATCH ELEVATIONS AT STOOP FOOTING STEP
- 11 AT (E) SLAB ON GRADE, PROVIDE #4 DOWELS @ 24" OC INTO EXISTING SLAB ON GRADE WITH RUSTIC ADHESIVE
- 12 CORE DRILL THROUGH EXISTING CONCRETE WALL FOR UTILITY. CONTRACTOR TO FIELD VERIFY EXISTING REINFORCING IN CONCRETE WALL USING NON-DESTRUCTIVE METHODS. DO NOT CUT OR DAMAGE EXISTING REINFORCING. SEE MECHANICAL DRAWINGS FOR LOCATION.
- 13 TRENCH DRAIN - SEE MECHANICAL AND ARCHITECTURAL DRAWINGS. SEE TYPICAL DETAIL 12/DS502.



1 FOUNDATION & FLOOR PLAN



FOOTING SCHEDULE		
MARK	SIZE	REINFORCING
	<varies>	<varies>
F3-0	3'-0" x 3'-0" x 1'-0"	(3) #5 EA WAY, BOTTOM
WF1-8	1'-8" WIDE x 1'-0" DEEP x CONTINUOUS	(2) #5 REBAR CONTINUOUS, BOTTOM
WF3-0	3'-0" WIDE x 1'-0" DEEP x CONTINUOUS	(3) #5 REBAR CONTINUOUS, BOTTOM

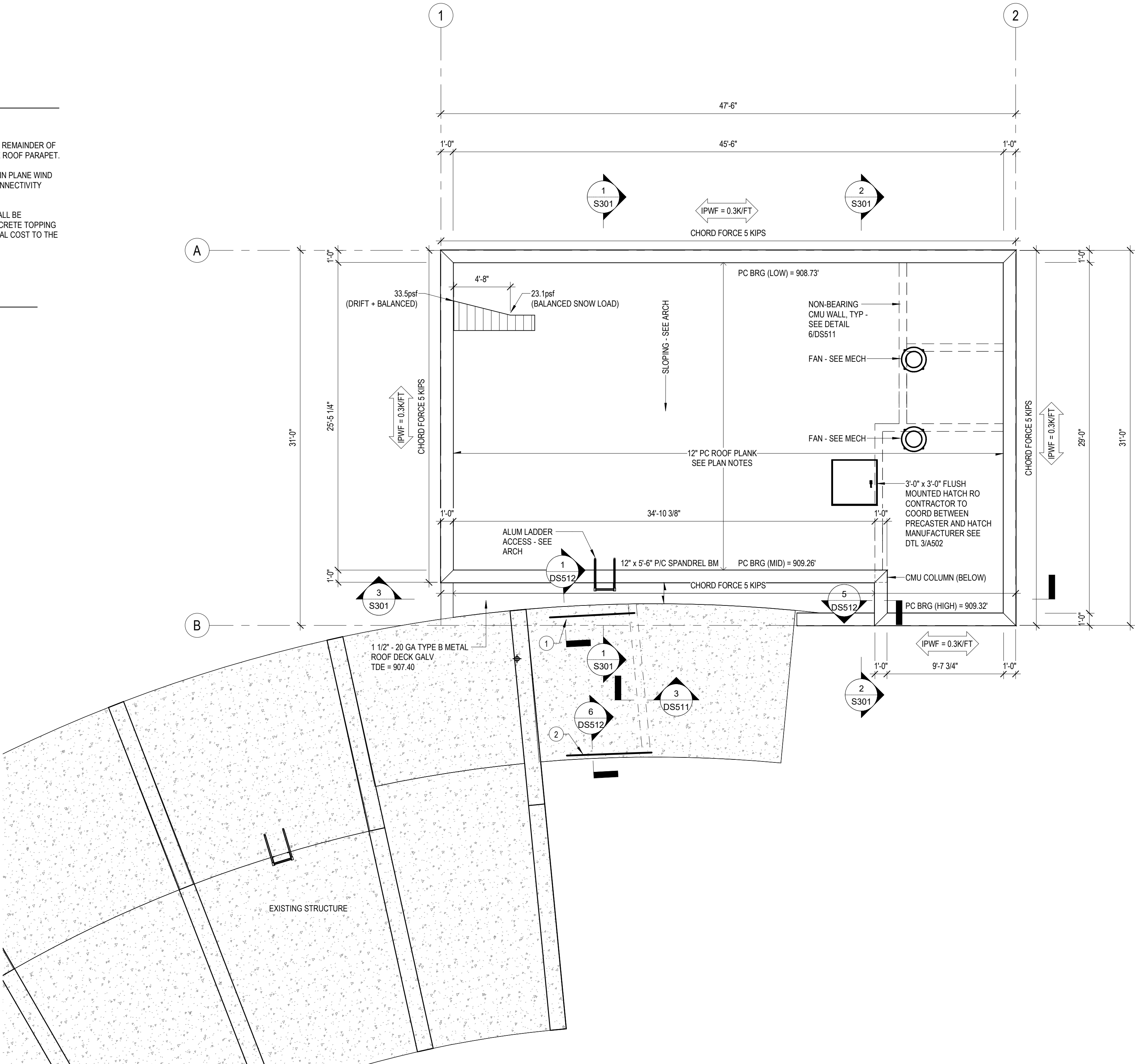
ROOF PLAN GENERAL NOTES:

(TYPICAL UNLESS NOTED OTHERWISE)

- LOADS THUS:
- ARE SNOW DRIFT LOADS AND BALANCED OR FLAT ROOF SNOW LOAD FOR THE REMAINDER OF THE ROOF. THEY ARE TYPICAL AROUND THE PERIMETER OF THE ROOF AT THE ROOF PARAPET.
 - PRECAST DESIGN LOADS: - OUT OF PLANE WIND: 27.1PSF (STRENGTH). IPWF = IN PLANE WIND FORCE PER ASCE 7-10 (STRENGTH LEVEL). MINIMUM PRECAST DIAPHRAGM CONNECTIVITY $T_u = 0.3 \text{ K/FT}$ AND $V_u = 0.3 \text{ K/FT}$
 - HORIZONTAL PRECAST ROOF TO RECEIVE ADHERED MEMBRANE ROOFING SHALL BE WARRANTABLE BY CONTRACTOR'S ROOF OR SHALL RECEIVE MINIMUM 2" CONCRETE TOPPING SUFFICIENT TO MEET ROOFER'S WARRANTY REQUIREMENTS, AT NO ADDITIONAL COST TO THE OWNER.

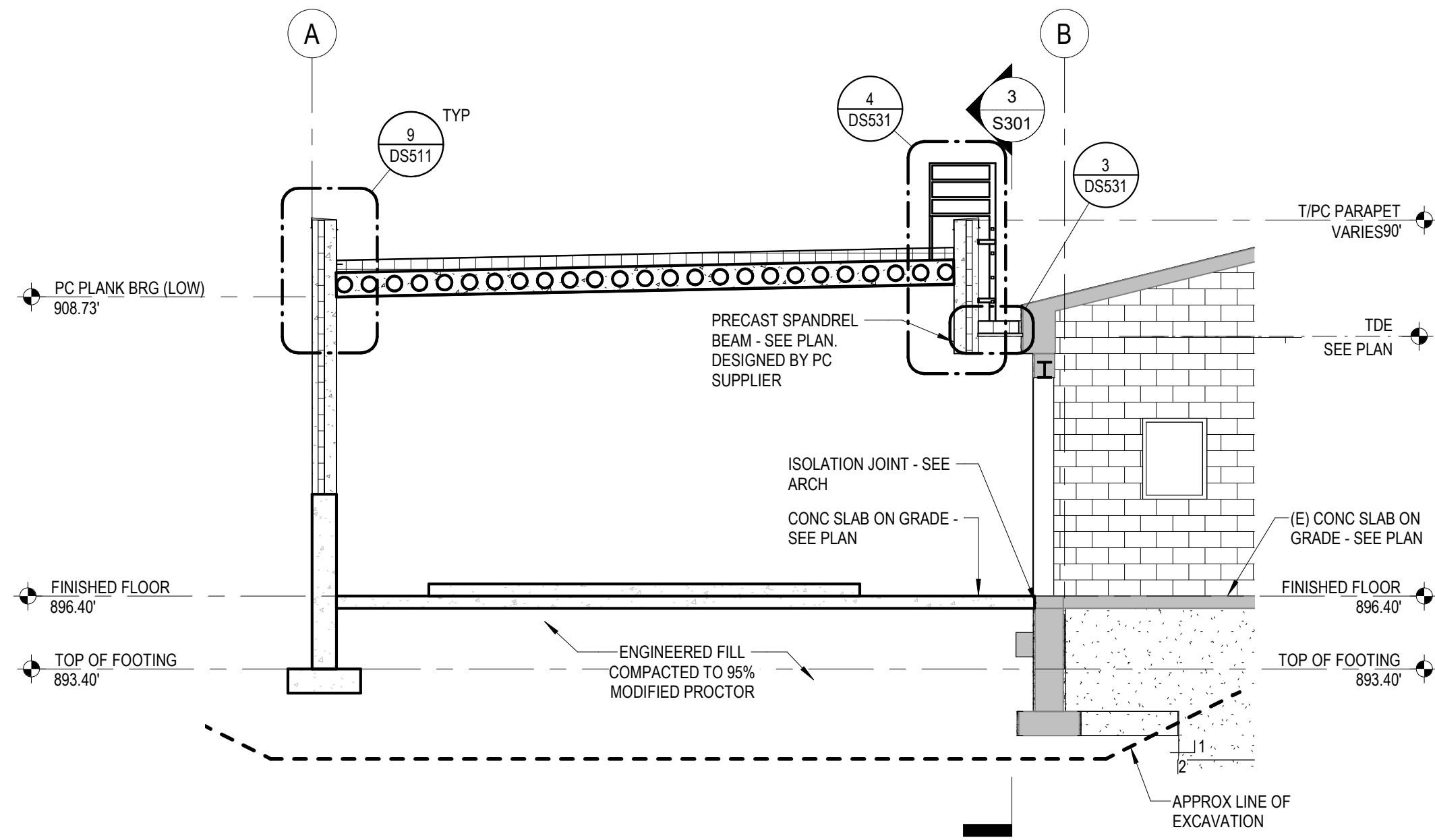
ROOF PLAN KEYNOTES:

- W8x24 GALV LINTEL CURVED TO MATCH (E) CONC WALL.
- (2) HSS 14x4x3/8 GALV LINTEL CURVED TO MATCH (E) CONC WALL.



1 ROOF PLAN
S102 3/16" = 1'-0"



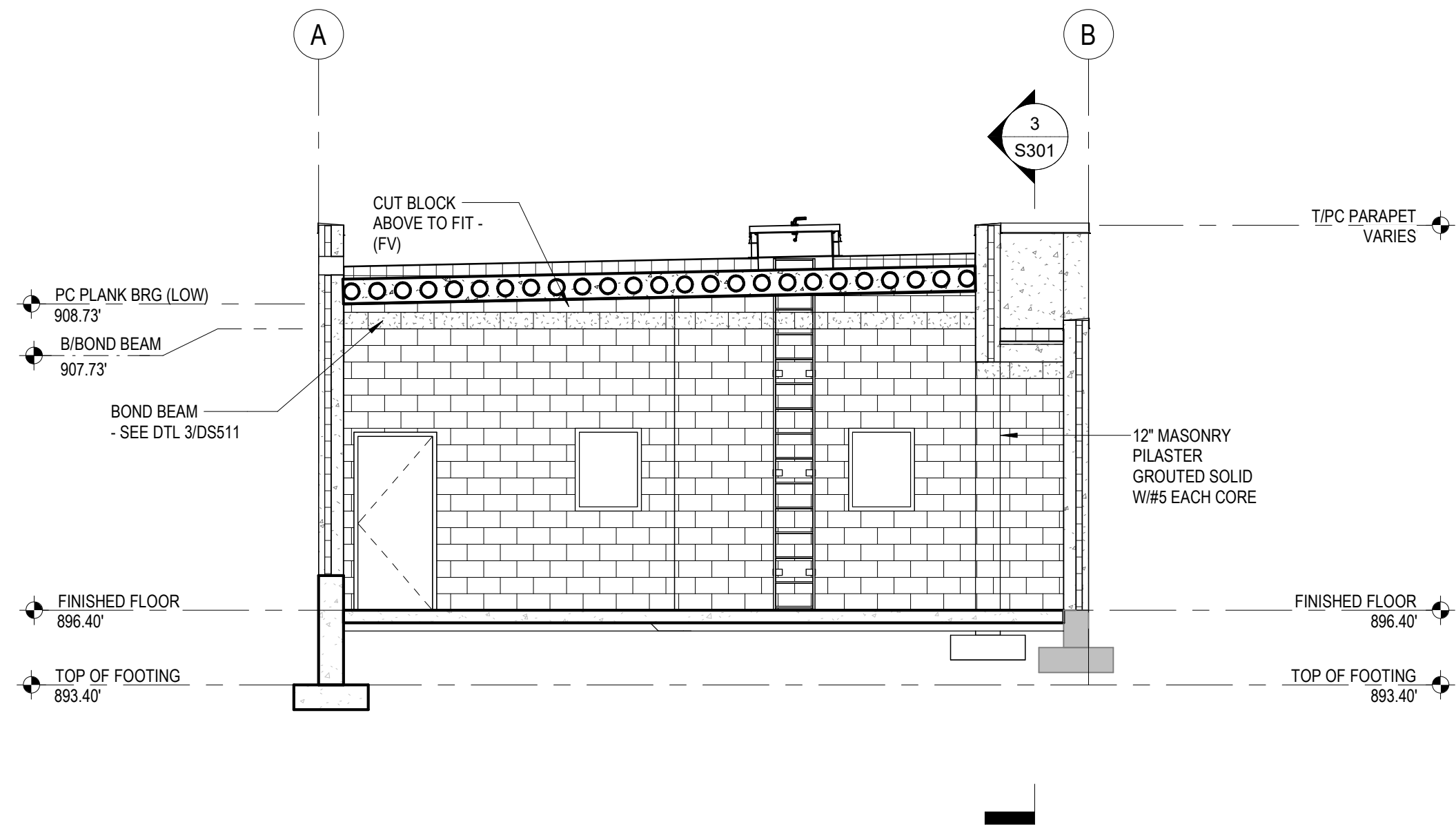


1 BUILDING SECTION

3/16" = 1'-0"

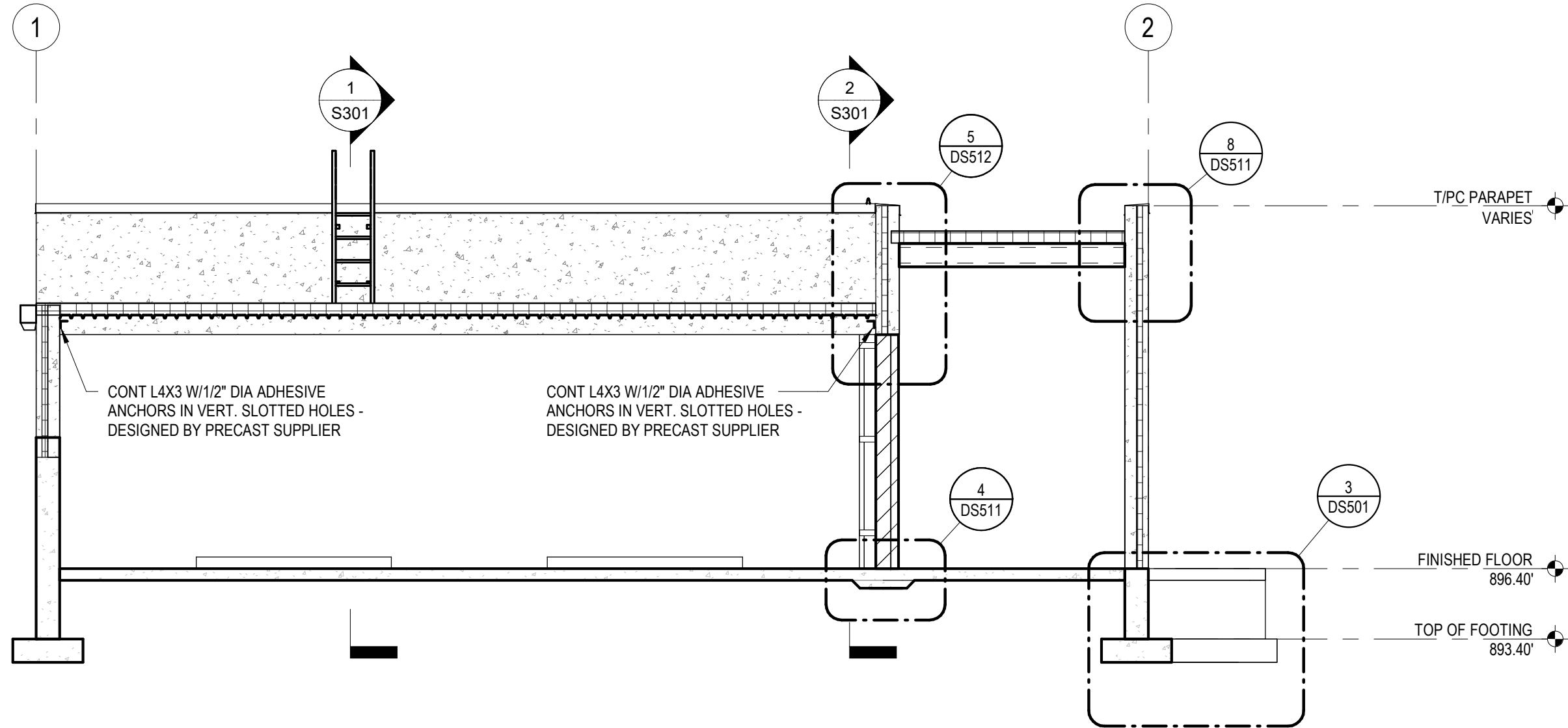
NOTES:

- DO NOT BACKFILL PORTION OF FOUNDATION WALL ABOVE FFE UNTIL SOG IS POURED.
- SOIL CORRECTION AND EXCAVATION INFO SHOWN IN THIS SECTION IS REPRESENTATIVE OF THE ENTIRE BUILDING. THIS INFORMATION IS NOT SHOWN IN OTHER SECTIONS VIEWS, BUT SHOULD BE ACCOUNTED THERE ALSO. GEOTECHNICAL ENGINEER TO CONFIRM LIMITS OF EXCAVATION.



2 BUILDING SECTION

3/16" = 1'-0"



3 BUILDING SECTION

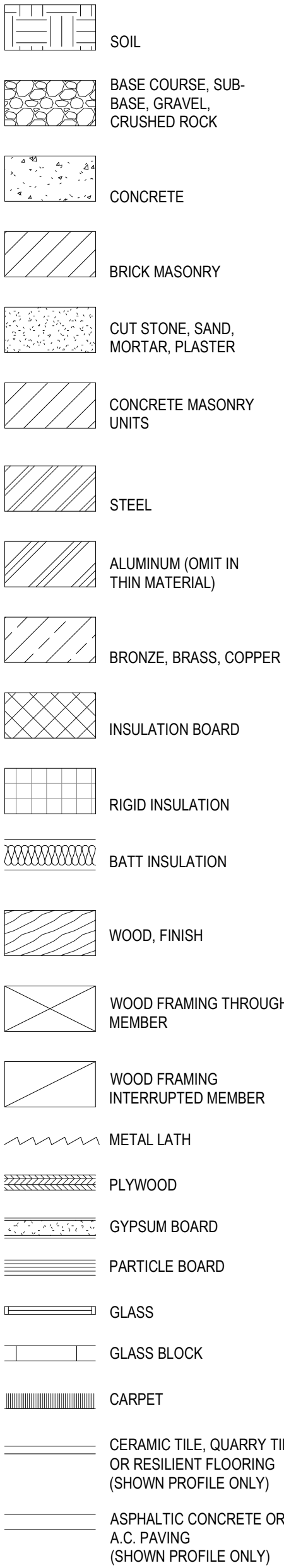
3/16" = 1'-0"

10/10/2023 5:26:09 AM

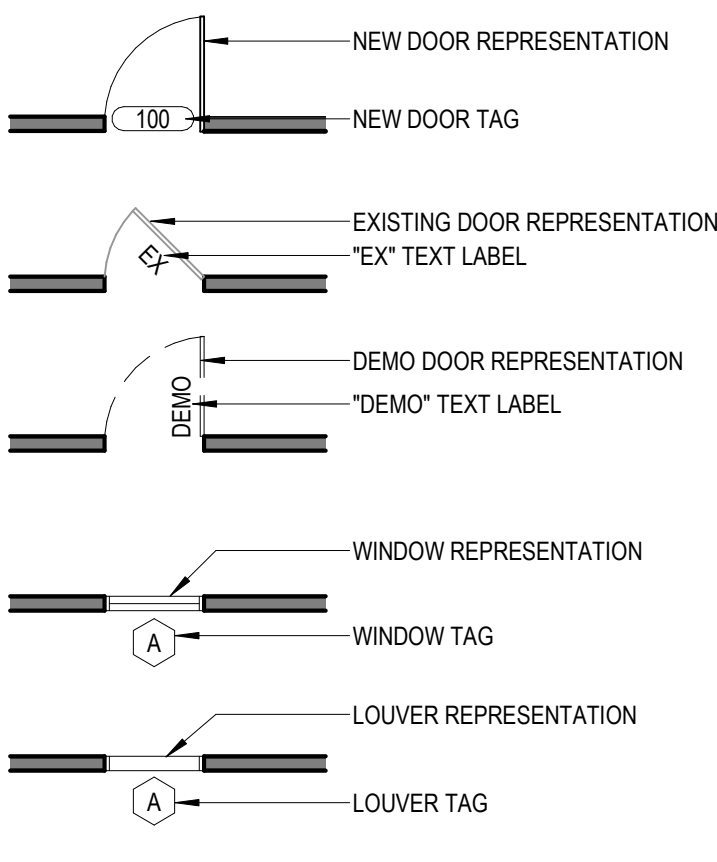
ABBREVIATIONS

& L @ (L (E) # +/- ft SQ	AND ANGLE AT CENTERLINE DIAMETER/ROUND EXISTING POUND/NUMBER PLUS OR MINUS PROPERTY LINE SQUARE	E. EA. E.A.C. E.C. E.F. E.F.S. E.G.C.B. E.G.S.B. E.I.F.S. E.J. EL. ELAS. ELEC. ELEV. EMER. ENCL. E.O.S. E.P. E.Q. EQPT. E.W. E.W.C. EXH. EXP. EXPO. EXIST. EXT.	EAST EACH EXHAUST AIR REGISTER ELASTOMERIC COATING/ EXPOSED CONSTRUCTION EXHAUST FAN EXTERIOR FINISH SYSTEM EXTERIOR GYPSUM CEILING BOARD EXTERIOR GYPSUM SHEATHING BOARD EXTERIOR INSULATION & FINISH SYSTEM EXPANSION JOINT ELEVATION ELASTOMERIC ELECTRICAL ELEVATOR EMERGENCY ENCLOSURE E.O.S. ELECTRIC PANEL E.P. EQUIPMENT EACH WAY ELECTRIC WATER COOLER EXHAUST EXPANSION EXPOSED EXISTING EXTERIOR	JAL. JAN. J.B. JOIST JT. K.D. KG. KIT. KM. K.O. KW. L. LAB. LAM. LAV. LB. L.F. LIQ. LKR. LOC. L.P. LTG. LVR. M. MAT'L. MAX. M.B. M.C. MECH. MEMB. MET. MFR. MH. MIN. MIR. MISC. MLDG. MM. M.O. MOD. M.R. MTD. MTG. N. N.I.C. N.L. NOM. N.S. N.T.S. O. O.C. O.A. O.A.G. OBS. O.D. O.F./C.I. O.F. O.F. O.F.M. O.S. O.F./O.I. OPNG. OPP. OPQ. OPR. OVHD. PASS. P.C. P.C.A. PC. P.D. PERIM. PERP. PH. P.I.P. PL. PLAM. PLAS. PLBG. PLYWD. PNL. PR. P.R.B.P. PRCST. PREFAB. PREP. PROP. P.R.V. P.S.F. PT. P.T.D. P.T.D.R. PTN. P.T.R. PVC. Q.T. R. RAD. R.B. RB.HK. R.C.P. R.D. REBAR. REF. REFL. REFR. REINF. REQ. RESIL. REST. REV.	JALOUSIE JANITOR JUNCTION BOX JOIST JOINT KNOCK DOWN KILOGRAM KITCHEN KILOMETER KNOCK-OUT KILOWATT LENGTH/LONG LABORATORY LAMINATE/LAMINATED LAVATORY POUND LINEAL FOOT LIQUOR LOCKER LOCATION LAMINATED PLASTIC LIGHTING LOUVER MALE MATERIAL MAXIMUM MACHINE BOLT MEDICINE CABINET MECHANICAL MEMBRANE METAL MANUFACTURER MANHOLE MINIMUM MIRROR MISCELLANEOUS MLDG. MILLIMETER MASONRY OPENING MODULAR MOISTURE RESISTANT MOUNTED STANDARD STEEL STORAGE STRUCTURE/STRUCTURAL SURROUND SUSPEND/SUSPENDED SERVICE SWITCH SYMMETRICAL SYSTEM T. T&G T./S. TACKBD. T.B. T.D. T.E. T.F. T.H. T.HRESHOLD T.I.T. T.O. T.O.C. T.O.F. T.O.P. T.O.S. T.O.W. T.P.B. T.P.D. T.P.H. TRAN. TRANS. T.S. T.S.C.D. T.SH. TV. TYP. UC. U.L. UNF. U.N.O. U.P. URINAL VAL. VAR. V.C.T. VERT. VEST. V.L.V. VOL. V.V. V.T.R. W. W/O W.C. WC. WD. WD.P. WDW. W.G.L. W.H. W.O. WP. WP.M. W.S. W.R. WRB. WSCCT. W.S.P. WT. W.W.F.	R.F. RFG. RGR. R.H. RLG. RM. R.O. RECESSED WASTE RECEPTACLE REDWOOD RAIN WATER LEADER S. S.A. S.C. SCALE SCHD. SCUPPER S.C.R. S.D. SECT. S.F. S.H. SHOWER SHT. SHTG. SIM. SL. SLDG. SLNT. S.M. S.M.H. S.N.D. S.N.R. S.P. SPEC. SPKR. SPRKR. SQ. S.S.K. S.STL. ST. STA. STD. STL. STOR. STRUCT. SURR. SUSP. SVC. SW. SYM. SYS. T. T&G T./S. TACKBD. T.B. T.D. T.E. T.F. T.H. THR. T.I.T. T.O. T.O.C. T.O.F. T.O.P. T.O.S. T.O.W. T.P.B. T.P.D. T.P.H. TRAN. TRANS. T.S. T.S.C.D. T.SH. TV. TYP. UC. U.L. UNF. U.N.O. U.P. URINAL VAL. VAR. V.C.T. VERT. VEST. V.L.V. VOL. V.V. V.T.R. W. W/O W.C. WC. WD. WD.P. WDW. W.G.L. W.H. W.O. WP. WP.M. W.S. W.R. WRB. WSCCT. W.S.P. WT. W.W.F.	RESILIENT FLOORING ROOFING REGISTER ROUND HEAD RAILING ROOM ROUGH OPENING RECESSED WASTE RECEPTACLE REDWOOD RAIN WATER LEADER SOUTH SINGLE ACTING SOLID CORE SCALE SCHEDULE SCUPPER SHOWER CURTAIN ROD SMOKE DETECTOR SECTION SQUARE FEET SHELF SHOWER SHEET SHEATHING SIMILAR SLOPE SLIDING SEALANT SQUARE METER SEWER MANHOLE SANITARY NAPKIN DISPENSER SANITARY NAPKIN RECEPTACLE SOLID PLASTIC SPECIFICATIONS SPEAKER SPRINKLER SQUARE SERVICE SINK STAINLESS STEEL STONE STATION STANDARD STEEL STORAGE STRUCTURE/STRUCTURAL SURROUND SUSPEND/SUSPENDED SERVICE SWITCH SYMMETRICAL SYSTEM TREAD TONGUE AND GROOVE TUB/SHOWER TACKBOARD TOWEL BAR TRENCH DRAIN TELEPHONE TEMPERED/TEMPORARY TEMP. TER. TFMR. TRANSFORMER THICK/THICKNESS THRESHOLD TOILET TOILET PAPER DISPENSER TOILET PAPER HOLDER TRANSITION TRANSPARENT TUBE STEEL TOILET SEAT COVER DISPENSER TOWEL SHELF TELEVISION TYPICAL UNDERCUT UNDERWRITERS LABORATORIES, INC. UNFINISHED UNLESS NOTED OTHERWISE UPHOLSTERED PANELS URINAL VALANCE VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VALVE VOLUME VENEER PLASTER VENT THROUGH ROOF WEST/WIDTH/WIDE/WASHER WITH WITHOUT WATER CLOSET WALLCOVERING WOOD WOOD PANELING WINDOW WIRE GLASS WATER HEATER WARNOCK HERSEY WHERE OCCURS/ WINDOW OPENING WATERPROOF WATERPROOF MEMBRANE WOOD SCREWS WATER RESISTANT WARDROBE WAINSCOT WET STAND PIPE WEIGHT WELED WIRE FABRIC
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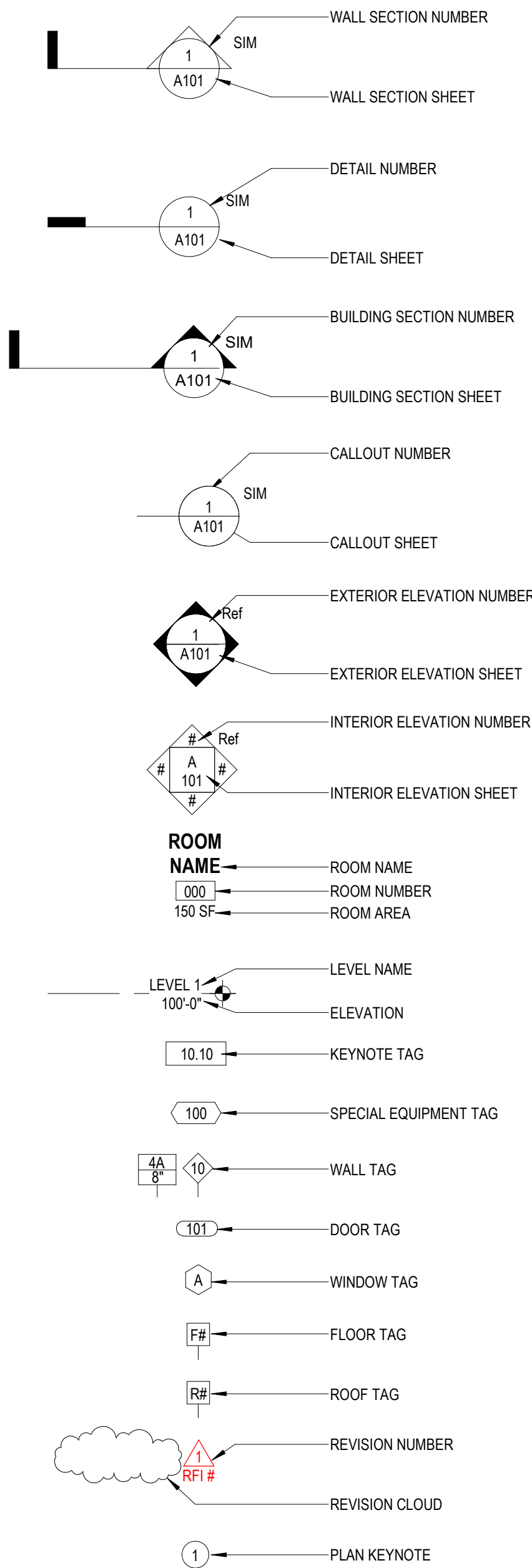
MATERIAL SYMBOLS



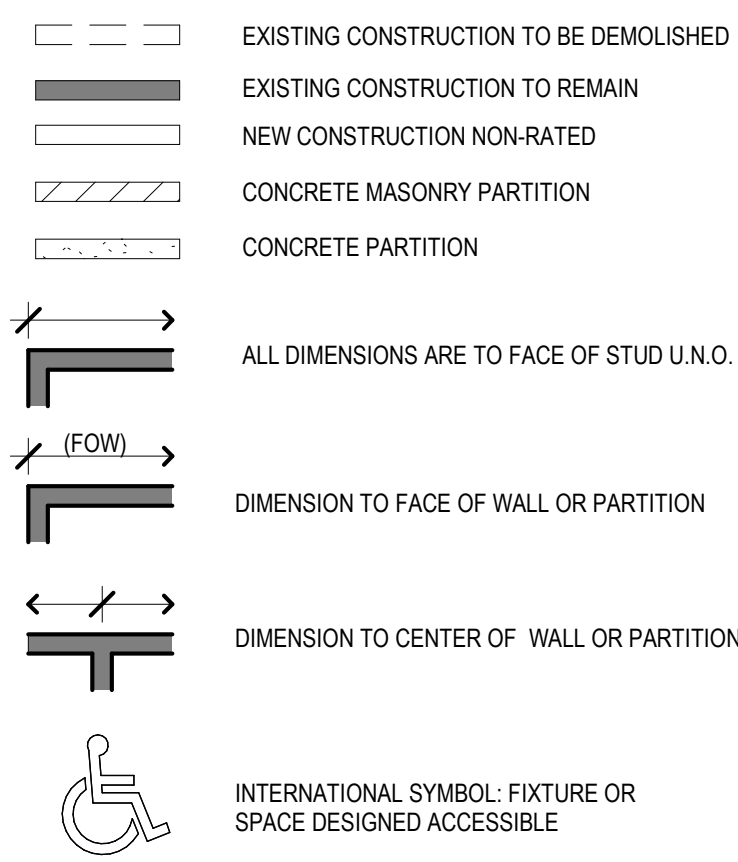
OPENING SYMBOLS



CALLOUT SYMBOLS



GENERAL SYMBOLS



GENERAL NOTES

- THESE DRAWINGS ARE LEGAL INSTRUMENTS OF SERVICE FOR THE USE OF THE OWNER AND ITS AUTHORIZED AGENTS AND VENDORS ON THE DESIGNATED PROJECT ONLY.
- GC RESPONSIBLE FOR KNOWLEDGE OF RELATIVE INFORMATION CONTAINED IN THESE DOCUMENTS AND THE CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED.
- CAREFULLY AND THOROUGHLY EXAMINE THE PROJECT SITE, FIELD VERIFY ALL CONDITIONS, GRADES, ELEVATIONS AND DIMENSIONS OF THE VARIOUS FEATURES OF THE SITE AND COMPARE DRAWINGS WITH THE EXISTING CONDITIONS. ANY DISCREPANCIES AND/OR CONDITIONS NEEDING CLARIFICATION SHALL BE REPORTED IN WRITING TO THE ARCHITECT BEFORE STARTING WORK.
- ALL CONSTRUCTION, FABRICATION AND INSTALLATION SHALL CONFORM TO THE LATEST LOCALLY ADOPTED EDITIONS OF THE IBC, IPC, IMC, NEC, NFPA, OSHA AND ANY FEDERAL, STATE AND LOCAL CODES, REGULATIONS, STANDARDS AND ORDINANCES OF GOVERNING AGENCIES HAVING JURISDICTION. SUCH APPLICABLE CODES, ETC. ARE THOSE WHICH ARE IN EFFECT AT THE TIME THE PROJECT PERMIT APPLICATION IS RECORDED.
- ALL TRADES ARE CONSIDERED SPECIALISTS IN THEIR RESPECTIVE FIELD/TRADE AND SHALL, BEFORE SUBMISSION OF BID OR PERFORMANCE OF WORK, NOTIFY THE CONTRACTOR IN WRITING OF ANY WORK ON THE DRAWINGS OR IN THE SPECIFICATIONS WHICH CANNOT BE FULLY WARRANTED OR CONSTRUCTED AS DETAILED OR SPECIFIED. THE CONTRACTOR WILL NOTIFY THE ARCHITECT OF SUCH CONDITIONS IN WRITING.
- DUE TO REPRODUCTION PROCESSES, DRAWINGS MAY NOT BE ACCURATE TO SCALE. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN AND IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS, ELEVATIONS OR DETAILS.
- THE STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS ARE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. DISCREPANCIES BETWEEN THE VARIOUS DRAWINGS SHALL BE REPORTED BY THE CONTRACTOR TO THE ARCHITECT IN WRITING.
- BEFORE STARTING WORK, COORDINATE WITH THE OWNER'S REPRESENTATIVE FOR INSTALLATION OF EQUIPMENT INDICATED N.I.C. ON DRAWINGS. VERIFY EQUIPMENT LOCATIONS WITH THE OWNER'S PRESENTATIVE. VERIFY DIMENSIONS, UTILITIES, ETC. WITH EQUIPMENT MANUFACTURERS ROUGH - IN DATA PRIOR TO FORMING THE SLAB.
- PRODUCTS AND MANUFACTURED ITEMS SHALL BE PROVIDED AS SPECIFIED. SUBSTITUTIONS WILL BE PERMITTED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN THE SPECIFICATIONS.
- WHERE DETAILS ARE NOT SHOWN OR NOTED, GC IS TO PROVIDE A WRITTEN REQUEST FOR INFORMATION TO CLARIFY SPECIFIC DETAIL CONDITIONS.
- ALL INDICATED EXISTING UTILITIES OR STRUCTURES ARE BASED ON INFORMATION OF RECORD. TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES NOT OF RECORD OR NOT SHOWN. BE RESPONSIBLE FOR ANY AND ALL DAMAGE WHICH MAY OCCUR DUE TO FAILURE TO LOCATE AND PROTECT ALL CONCEALED UTILITIES.
- COMPLY WITH ALL JURISDICTIONAL AGENCY REQUIREMENTS AND REGULATIONS. PERFORM ALL WORK ON THIS PROJECT IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS 29 CFR 1910 AND 1926 OF THE U.S. DEPARTMENT OF LABOR AND THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.
- FINAL CONNECTIONS TO EQUIPMENT SHALL BE AS PER MANUFACTURER'S WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. BE RESPONSIBLE TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
- PROVIDE PERMITS AND INSPECTIONS REQUIRED BY JURISDICTIONAL AGENCIES.
- PROVIDE SET OF RECORD DRAWINGS TO ARCHITECT. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTINGS, ETC.
- SERVICE SHALL BE MAINTAINED TO EXISTING AREAS DURING CONSTRUCTION. PROVIDE PORTABLE GENERATORS, CABLES, OUTLETS ETC., TO MAINTAIN CONTINUITY OF SERVICE PLACEMENT OF SUCH PORTABLE EQUIPMENT SHALL BE SUBJECT TO OWNER APPROVAL.
- PATCH AND MATCH ALL NEW WORK W/ EXISTING WHERE NEW TO EXISTING INTERFACE OCCURS.
- SUBMIT SAMPLES OF ALL EXPOSED PRODUCTS, MATERIALS, PAINTING SYSTEMS, ETC. FOR ARCHITECT'S REVIEW, COLOR SELECTION OR COLOR VERIFICATION PRIOR TO ORDERING ITEMS.
- SEAL ALL DUCTS, LOUVERS, VENTS, OPENINGS AND CEILING SPACES BETWEEN CONSTRUCTION AREA AND REMAINDER OF SHELLED SPACES TO PREVENT DUST, DIRT, CONTAMINATION OR DEBRIS FROM ENTERING.
- DO NOT ALLOW DIRT, DEBRIS OR DISCARDED MATERIALS TO ACCUMULATE ON SITE. REMOVE PROMPTLY EACH DAY.
- VERIFY SERVICES TO BE ABANDONED, REMOVED OR CUT HAVE BEEN PROPERLY AND SAFELY SHUT OFF, CAPPED OR SEALED.
- KEEP NOISE AND VIBRATION PRODUCING ACTIVITIES AT A MINIMUM WHEN WORKING WITHIN OR ON THE EXISTING BUILDING. APPROPRIATE TIMES OF SUCH ACTIVITIES SHALL BE COORDINATED WITH OWNER IN WRITING AT BEGINNING OF PROJECT.
- IN THE EVENT THAT NOISE AND VIBRATION PRODUCING ACTIVITIES WILL OCCUR DURING TIMES OTHER THAN THOSE NOTED ABOVE, OBTAIN PERMISSION FROM THE OWNER IN WRITING A MINIMUM OF 72 HOURS PRIOR TO COMMENCEMENT OF ACTIVITIES.
- KEEP UTILITY AND SERVICE OUTAGES TO A MINIMUM. MAKE WRITTEN OUTAGE REQUESTS AT LEAST FIVE DAYS BEFORE DATE OF PROPOSED OUTAGE. STATE IN THE REQUEST HOURS OF OUTAGE, CONFIRM DATE 48 HOURS IN ADVANCE OF STARTING DATE.
- ASSIGN THE WORK OF MOVING, REMOVAL, CUTTING, PATCHING AND REPAIR TO TRADES UNDER CONTRACTOR SUPERVISION TO CAUSE THE LEAST DAMAGE TO EACH TYPE OF WORK ENCOUNTERED.
- PATCHING OF FINISH MATERIALS TO MECHANICS SKILLED IN THE WORK OF THE FINISH TRADE INVOLVED.
- PROTECT REMAINING FINISHES, EQUIPMENT AND ADJACENT WORK FROM DAMAGE CAUSED BY CUTTING, MOVING AND REMOVAL AND PATCHING OPERATIONS. PROTECT SURFACES WHICH WILL REMAIN A PART OF THE FINISHED WORK.
- PROTECT EXISTING AND NEW WORK FROM WEATHER DURING CUTTING, MOVING, REMOVAL CONSTR. PROVIDE WEATHER PROTECTION AND OTHER FACILITIES AND PROTECTION AS NEEDED TO PREVENT DAMAGE TO NEW WORK AND TO REMAINING OLD WORK.
- PROVIDE ADEQUATE SUPPORT OR SUBSTRATE FOR PATCHING FINISHES.
- USE OF HAZARDOUS MATERIALS SHALL CONFORM WITH 29 CFR 1910.120 AND 1926.65 OF THE OSHA CODE.
- REMOVAL OF HAZARDOUS WASTE SHALL COMPLY WITH CURRENT FEDERAL, STATE AND LOCAL REGULATIONS, STANDARDS, LAWS AND REQUIREMENTS.



Project Owner

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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Drawn By JRL

Project Status Issue Date
BIDDING DOCUMENTS OCTOBER, 2023

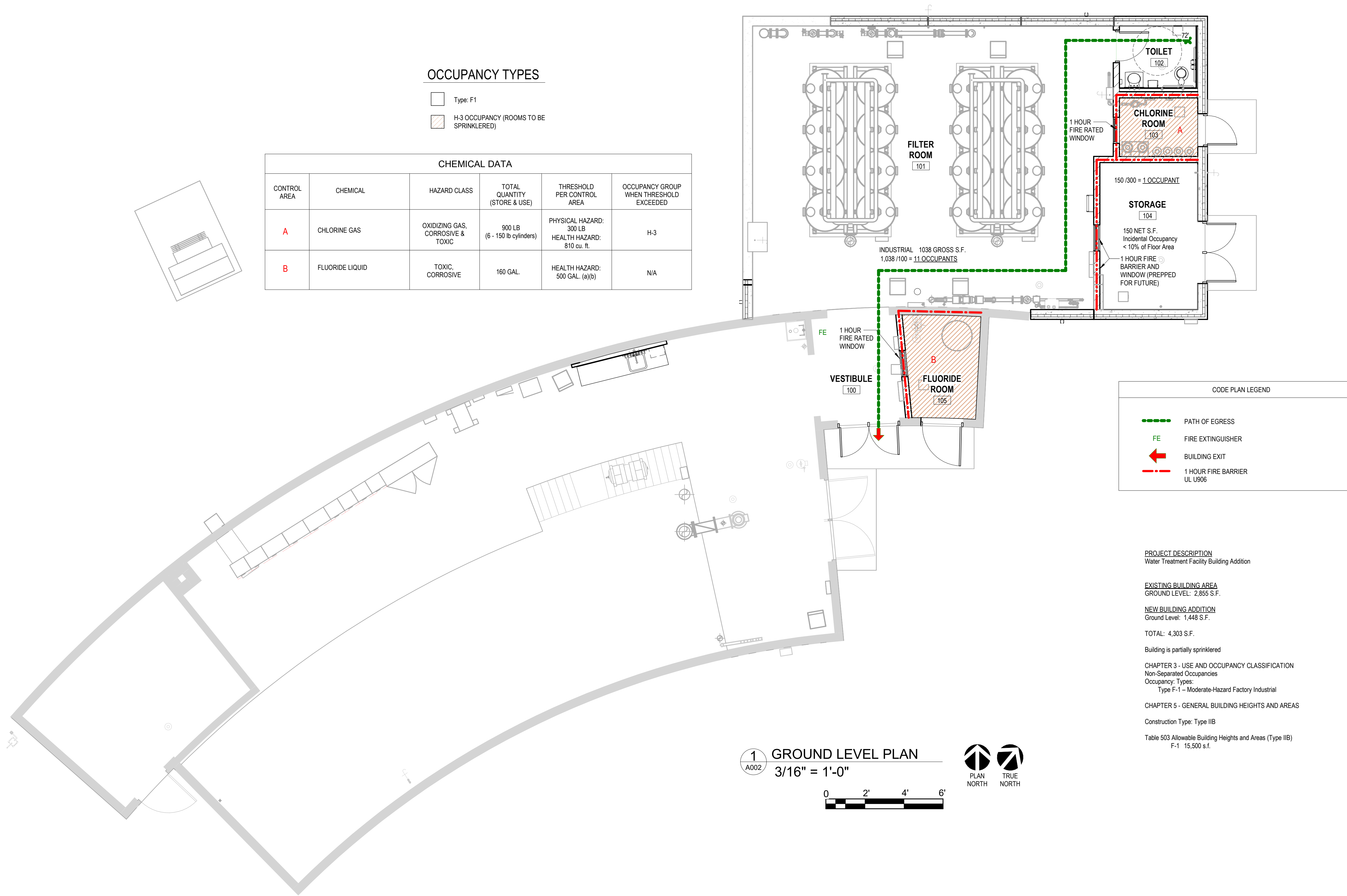
REVISION SCHEDULE

REV. # DESCRIPTION DATE

GENERAL INFORMATION

01
A001

10/10/2023 8:28:38 AM



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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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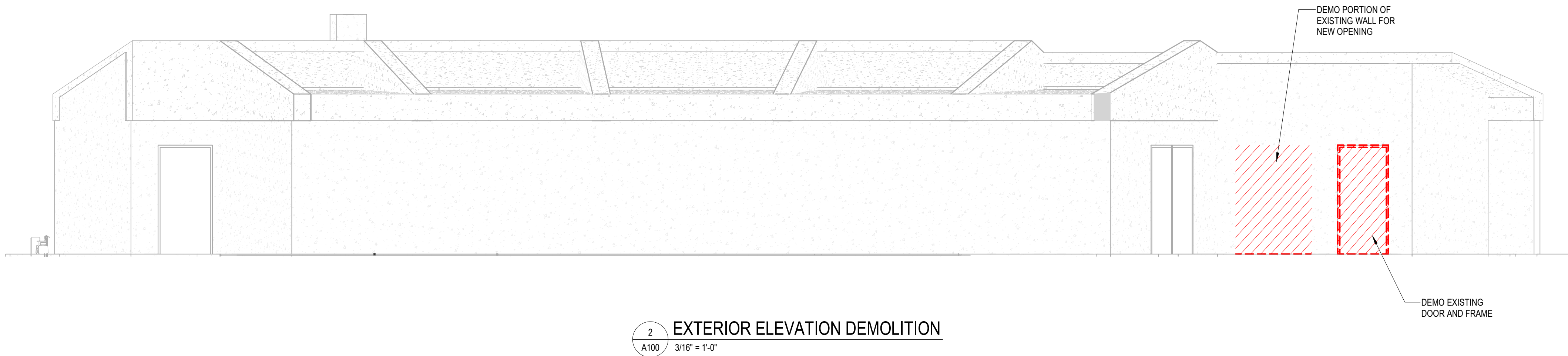
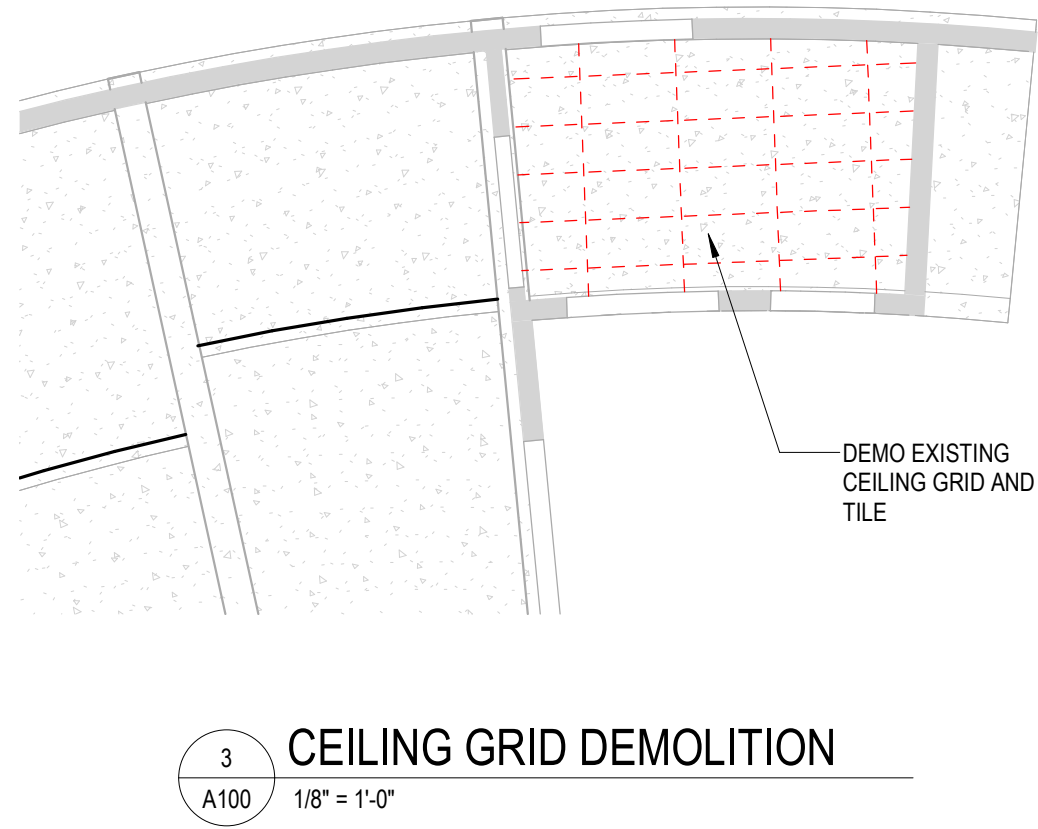
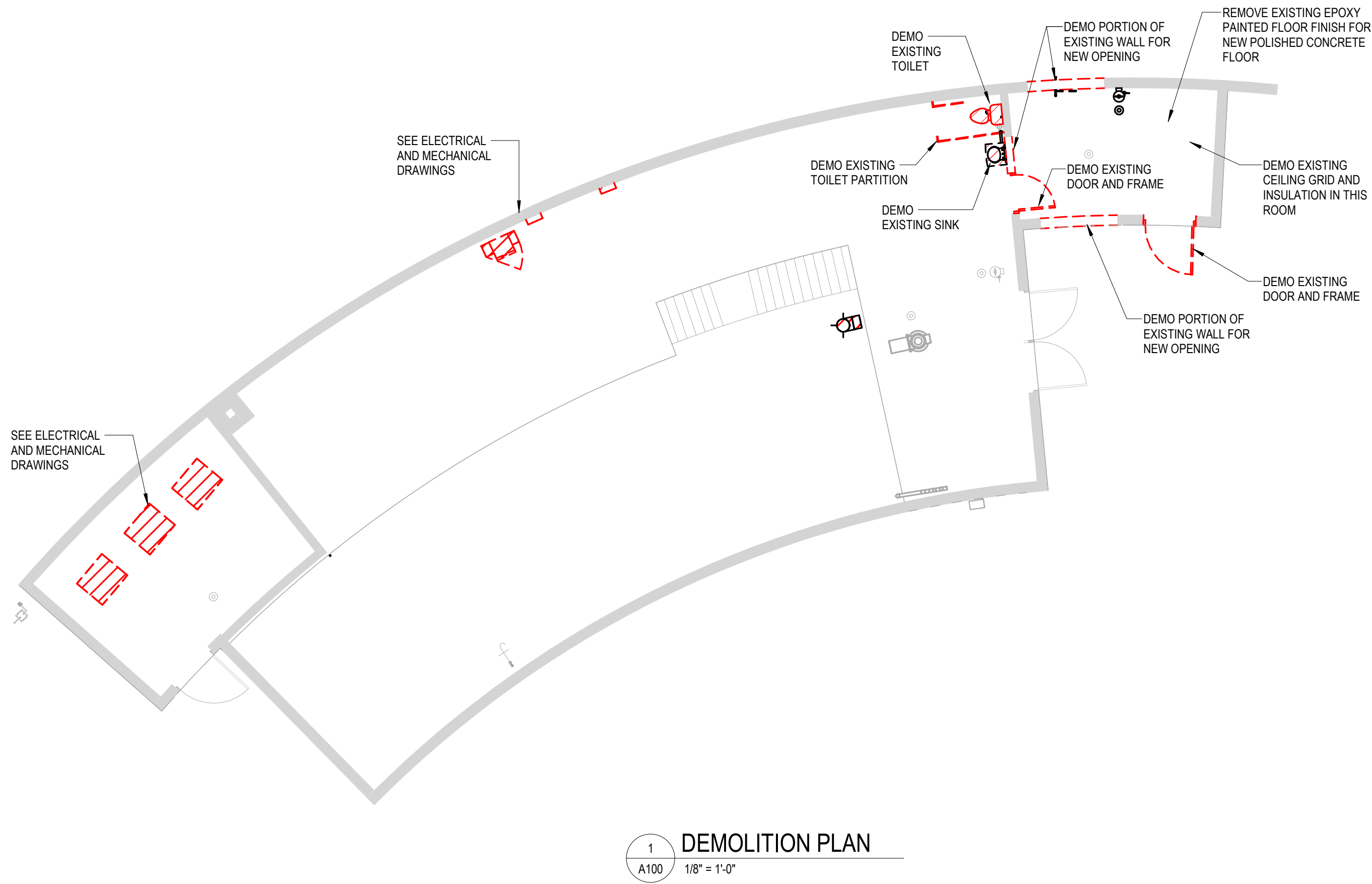
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE
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CODE PLAN

01
A002

10/10/2023 8:28:43 AM



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UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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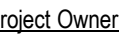
Project Status BIDDING DOCUMENTS
Issue Date OCTOBER, 2023

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE
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DEMOLITION DRAWINGS

01
A100



CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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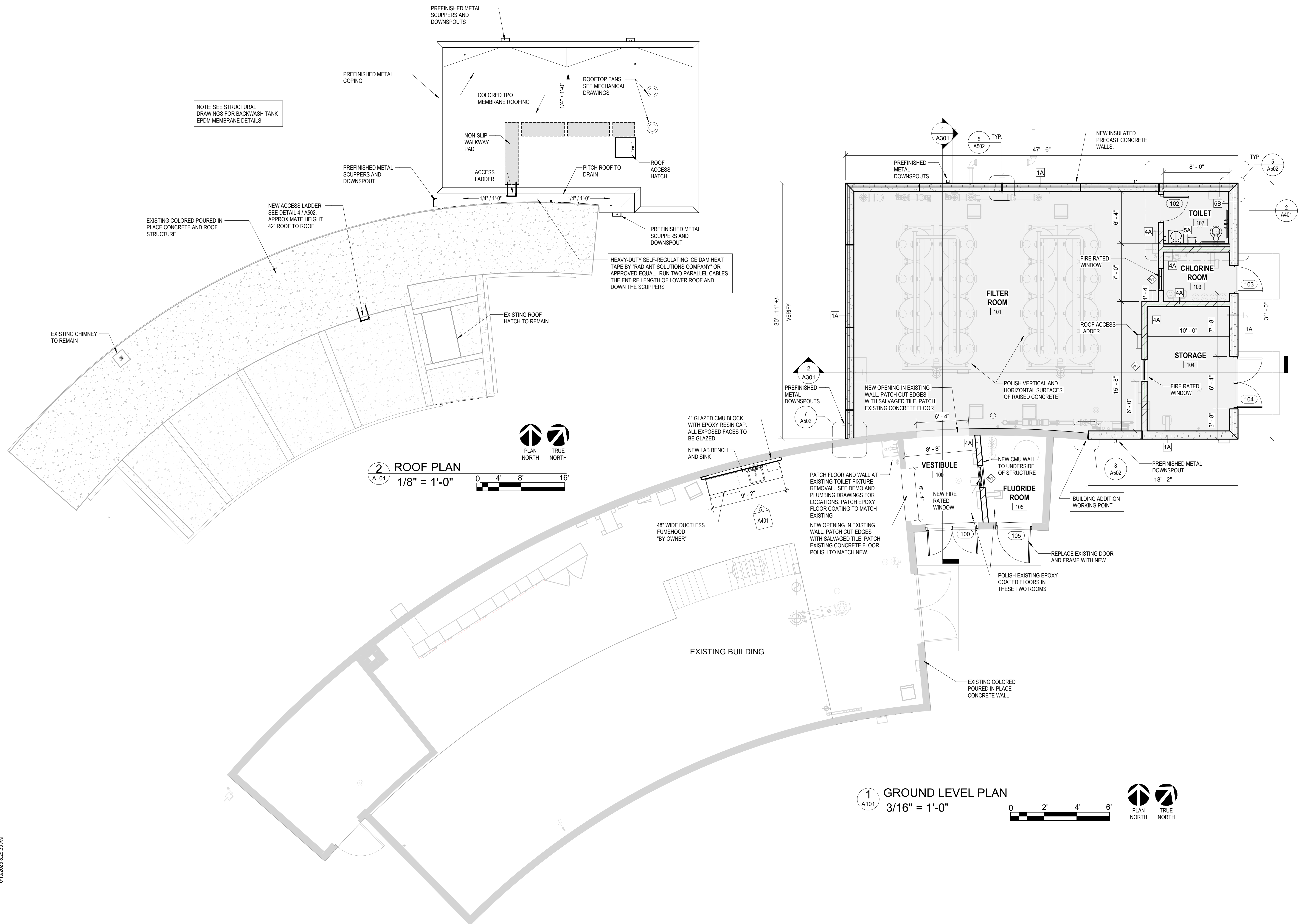
EH Project	MADWU 167818
Checked By	
Drawn By	JRL

Project Status	Issue Date
BIDDING DOCUMENTS	OCTOBER, 2023

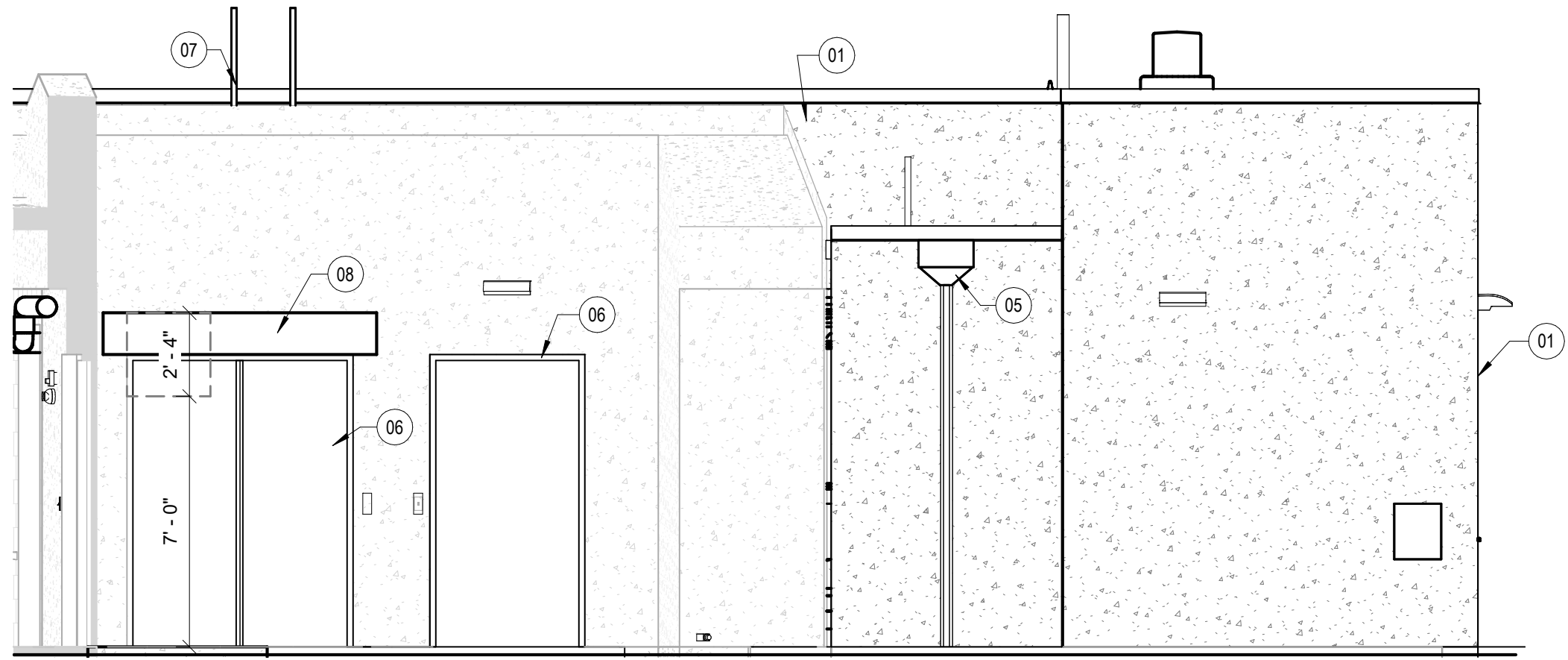
REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

FLOOR AND ROOF PLANS

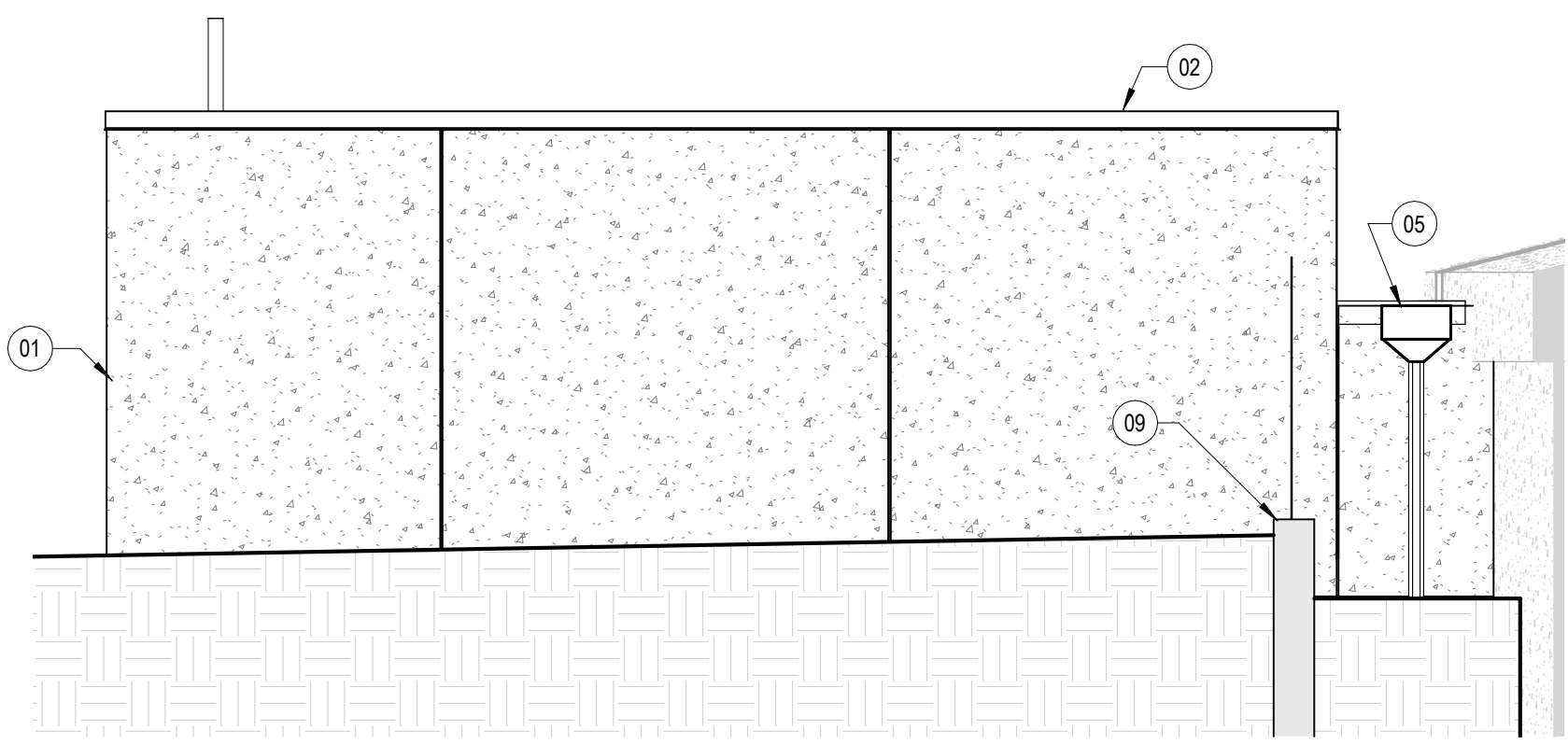
01
A101



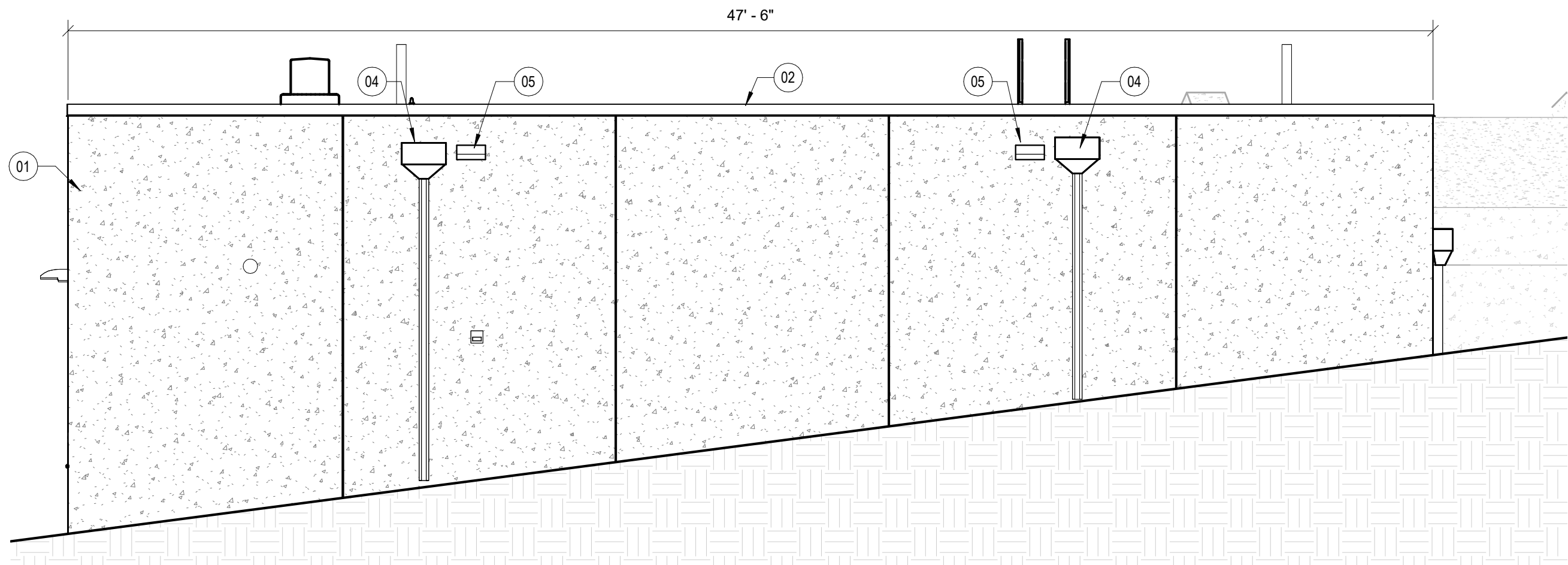
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1
A201
EXTERIOR ELEVATION
1/4" = 1'-0"

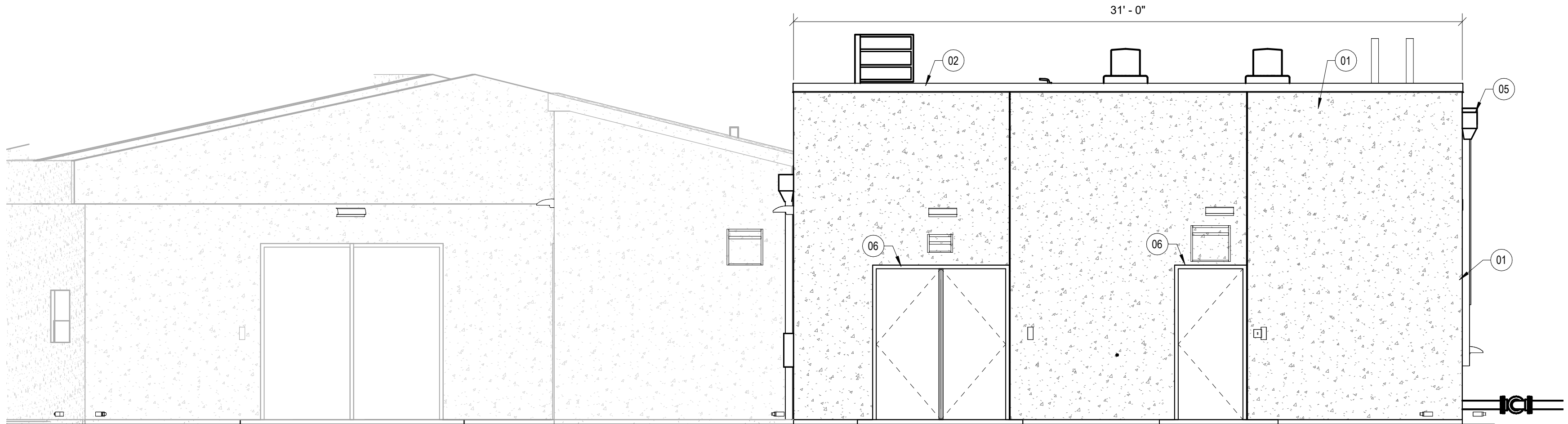


2
A201
EXTERIOR ELEVATION
1/4" = 1'-0"



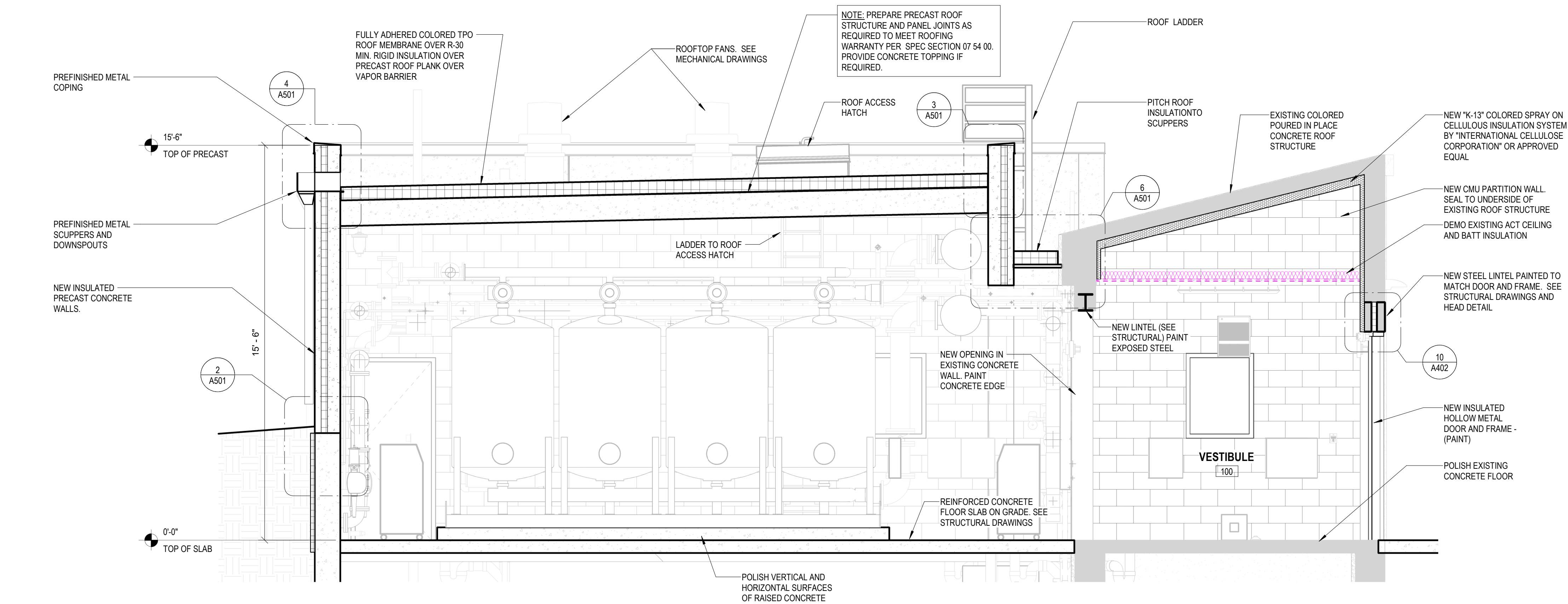
3
A201
EXTERIOR ELEVATION
1/4" = 1'-0"

- (X) KEYNOTES
- 01 INSULATED PRECAST CONCRETE WALL PANEL
 - 02 PREFINISHED METAL ROOF COPING- SLOPE TOP FOR DRAINAGE- TYP
 - 04 PREFINISHED METAL THRU-WALL DRAIN SCUPPER WITH OPEN FACED DOWNSPOUT- PROVIDE SPLASH BLOCK AT GRADE DISCHARGE POINT
 - 05 PREFINISHED METAL THRU-WALL OVERFLOW SCUPPER. LOCATED 2" ABOVE THRU WALL DRAIN
 - 06 INSULATED HOLLOW METAL DOOR AND FRAME (PAINT)
 - 07 ALUMINUM ROOF LADDER
 - 08 NEW STEEL LINTEL FOR NEW DOOR. PAINT TO MATCH NEW DOOR AND FRAME. (SEE STRUCTURAL DRAWINGS)
 - 09 SEE CIVIL DRAWING FOR RETAINING WALL AND CHAINLINK FENCE REMOVAL AND RECONSTRUCTION

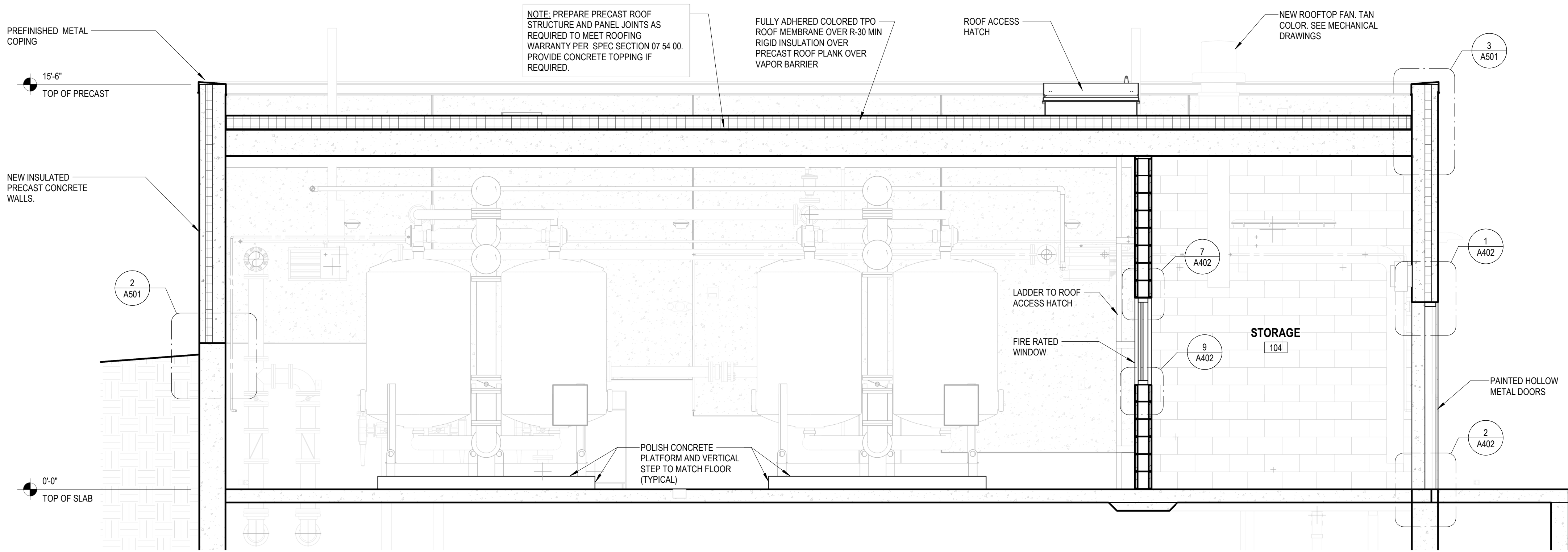


4
A201
EXTERIOR ELEVATION
1/4" = 1'-0"

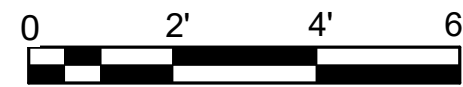
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1
A301
BUILDING SECTION
3/8" = 1'-0"



2
A301
BUILDING SECTION
3/8" = 1'-0"



Project Owner

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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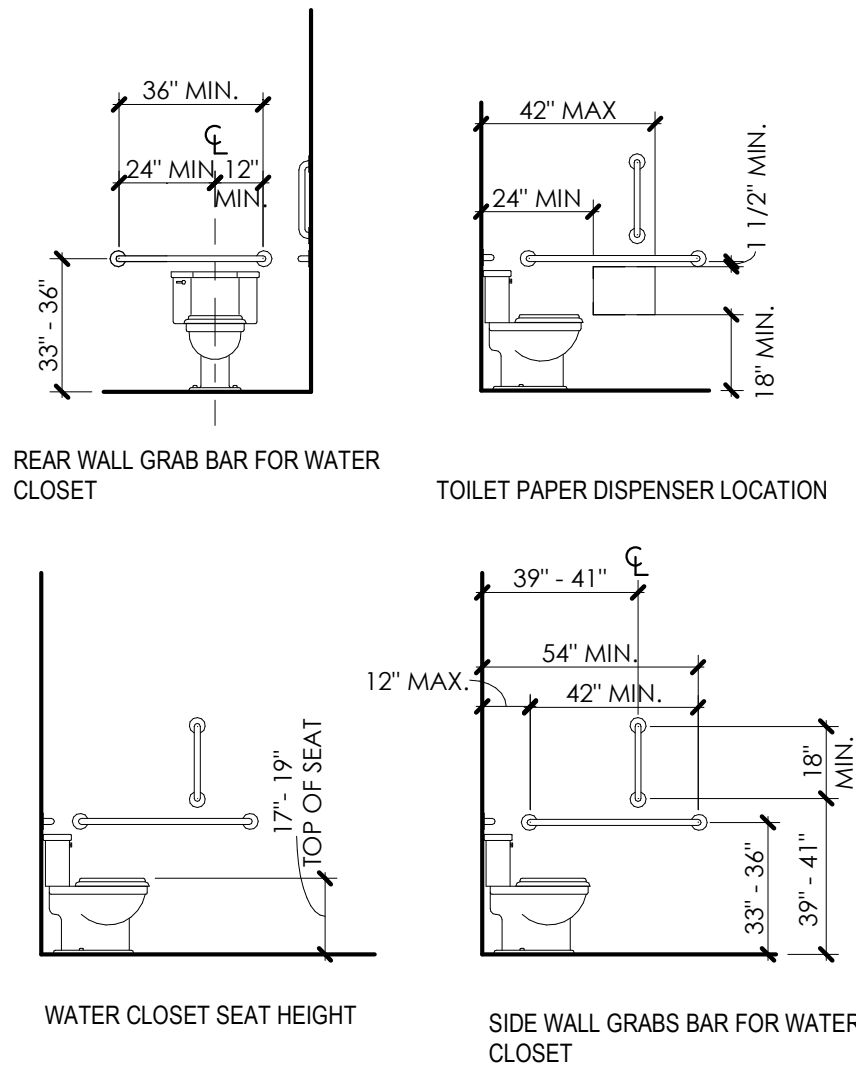
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Issue Date OCTOBER, 2023

REVISION SCHEDULE
REV. # DESCRIPTION DATE

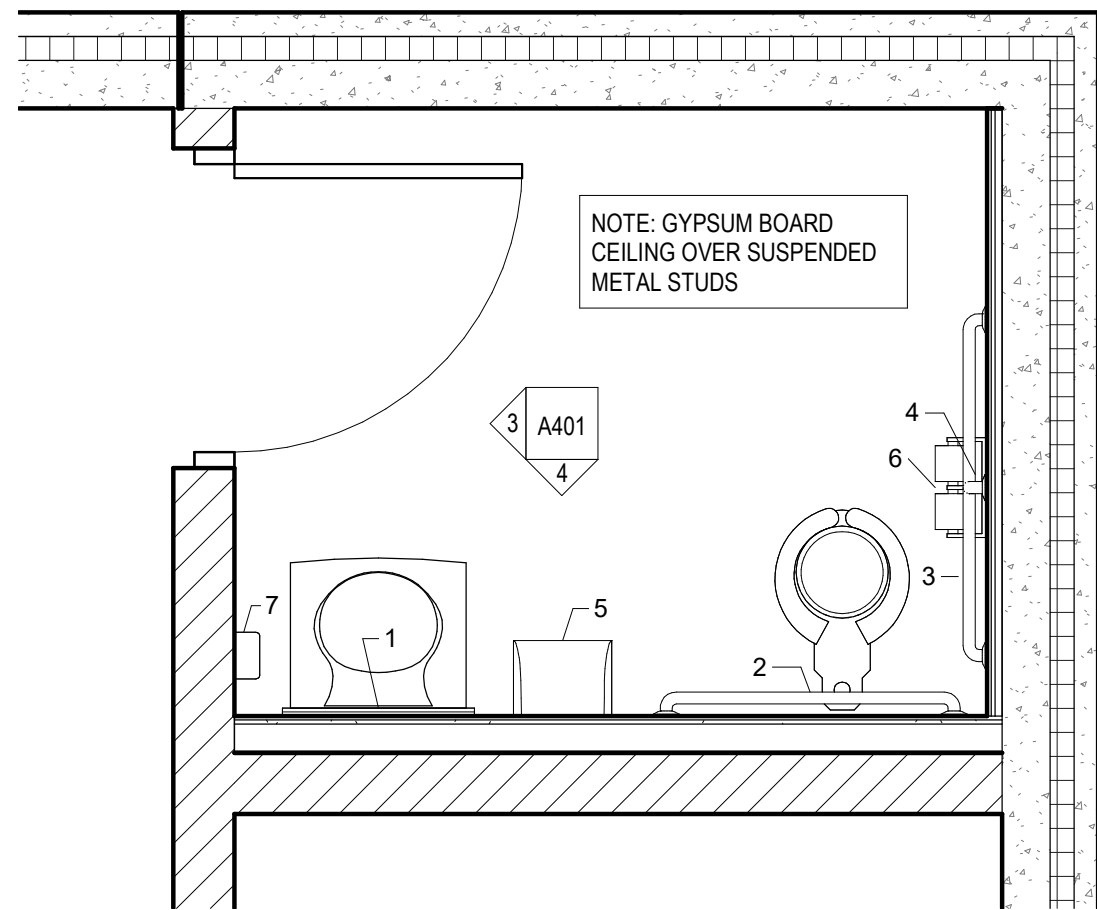
BUILDING SECTIONS

01
A301

10/10/2023 8:30:22 AM



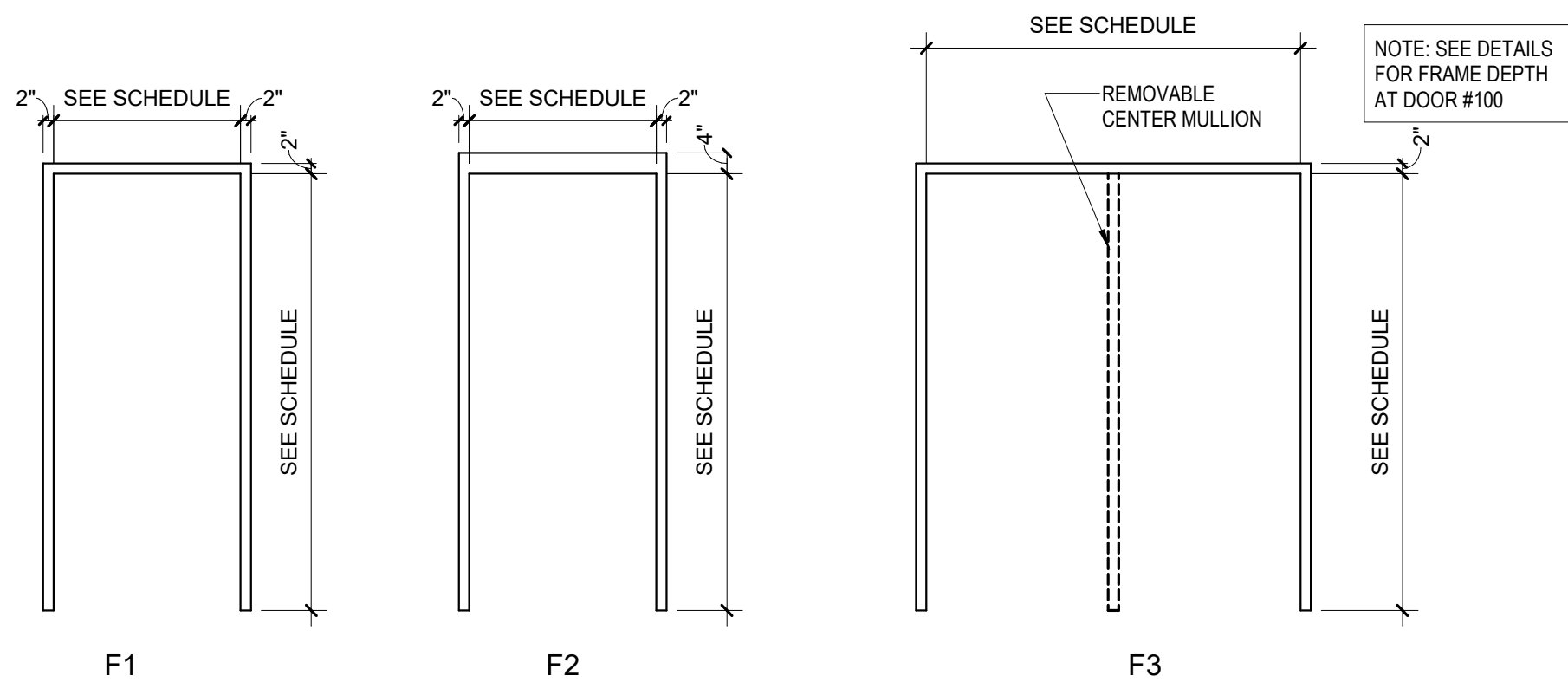
1 TOILET ROOM STANDARDS
A401 1/4" = 1'-0"



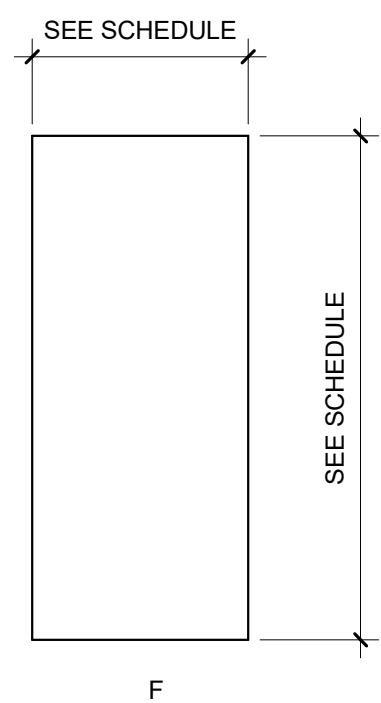
2 ENLARGED PLAN
A401 1/2" = 1'-0"

ROOM FINISH SCHEDULE										
ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL FINISH				CEILINGS		REMARKS
				NORTH	SOUTH	EAST	WEST	FINISH	MATERIAL	
100	VESTIBULE	PLSH	-	PT	PT	PT	PT	-	S.T.I.	POLISH EXISTING CONCRETE FLOOR
101	FILTER ROOM	PLSH	-	PT	PT	PT	PT	PT	STRUCT	
102	TOILET	PLSH	CT	PT	CT	CT	PT	PT	GYP	
103	CHLORINE ROOM	PLSH	-	PT	PT	PT	PT	PT	STRUCT	
104	STORAGE	PLSH	-	PT	PT	PT	PT	PT	STRUCT	
105	FLUORIDE ROOM	PLSH	-	PT	PT	PT	PT	-	S.T.I.	POLISH EXISTING CONCRETE FLOOR

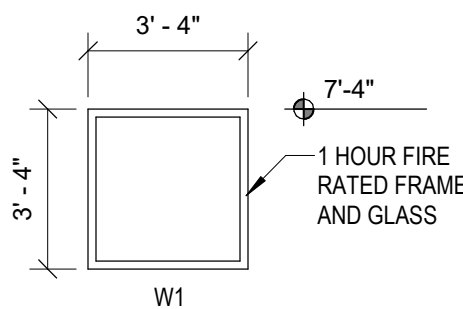
PLSH: POLISHED CONCRETE FLOOR
CT: CERAMIC TILE
PT: PAINT
S.T.I.: SPRAYED CELLULOSE THERMAL INSULATION



FRAME TYPES

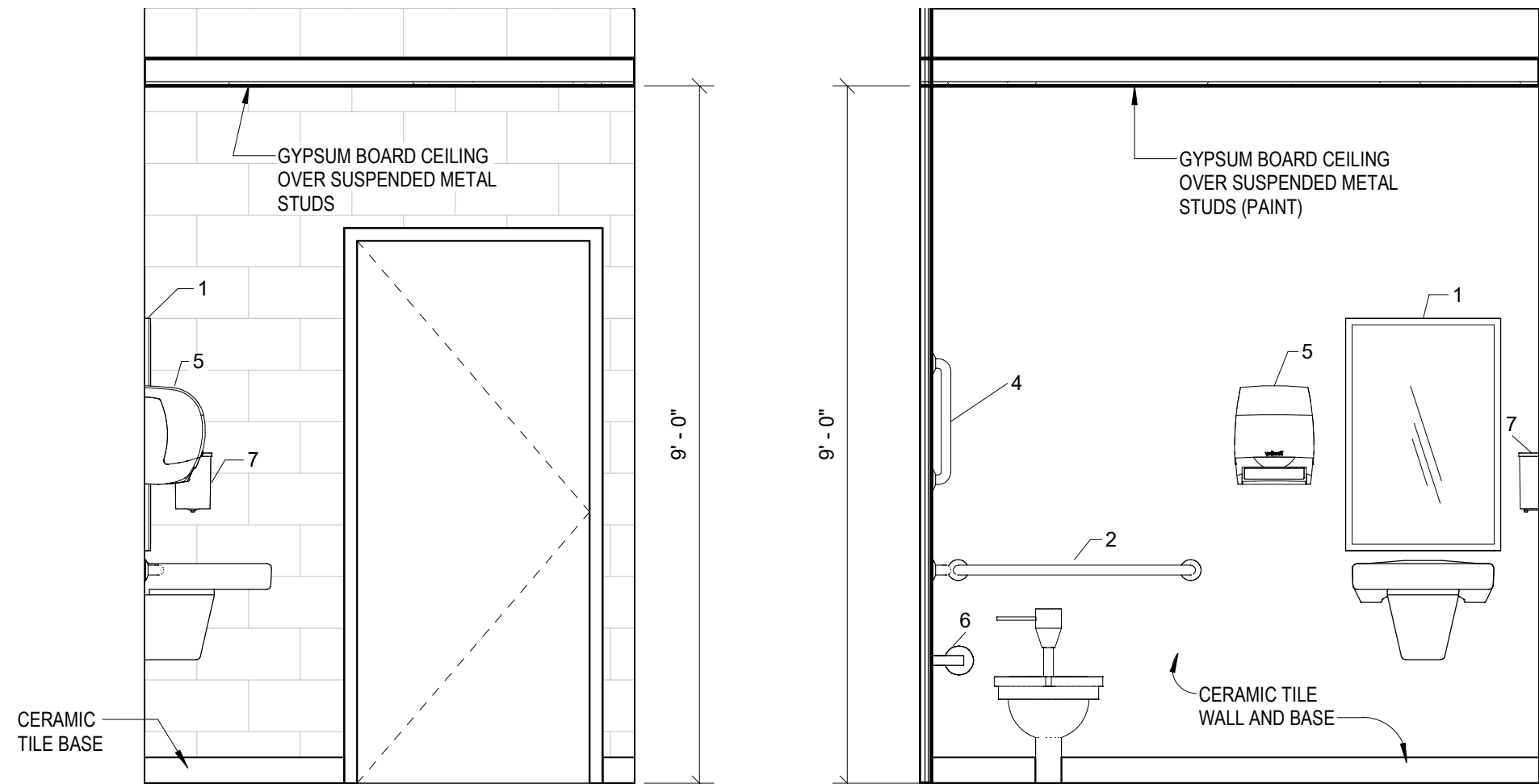


DOOR TYPES



INTERIOR DETAILS:
JAMB: 8 / A402
HEAD: 7 / A402
SILL: 9 / A402

WINDOW TYPES

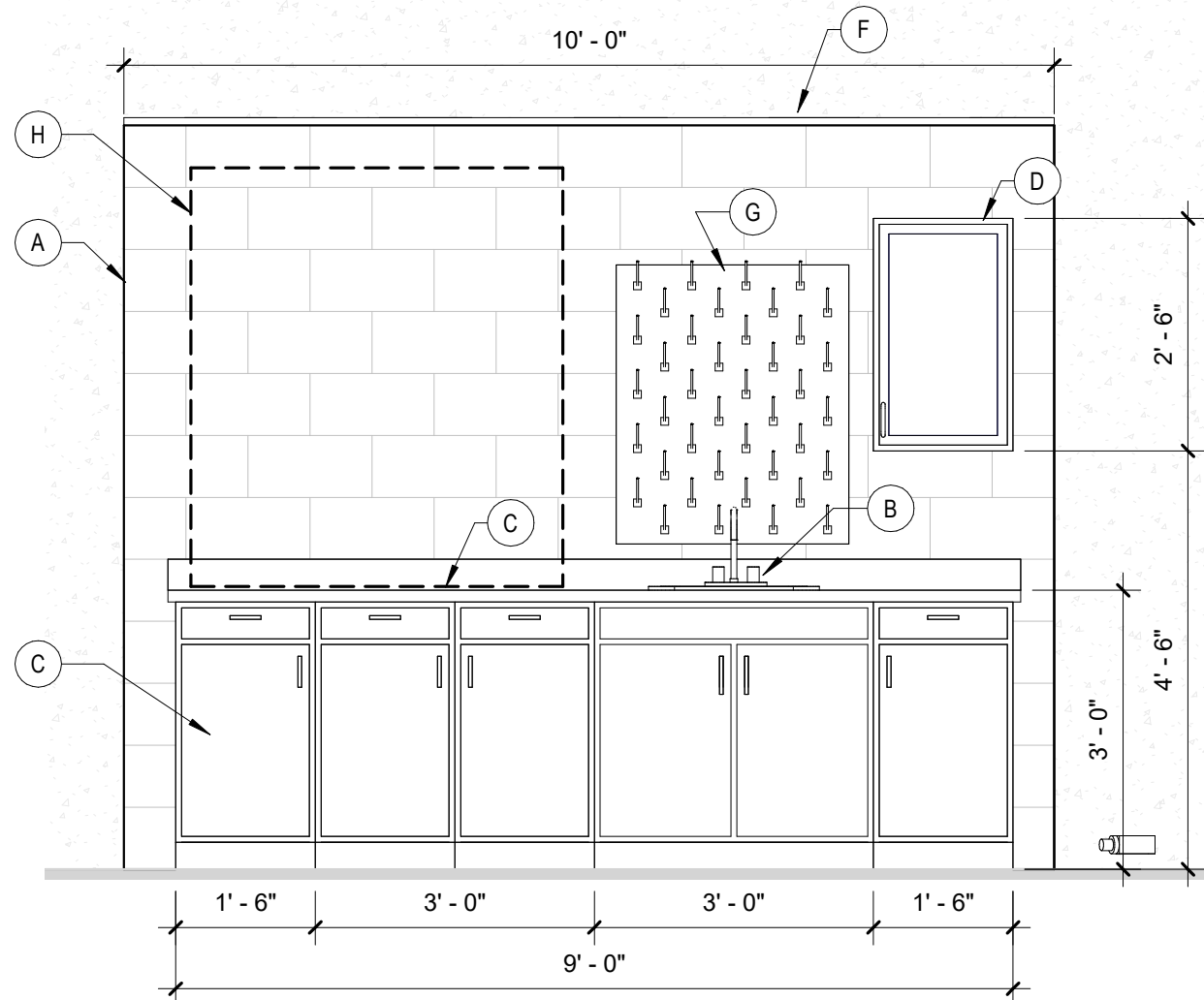


3 TOILET ROOM ELEVATION
A401 1/2" = 1'-0"

4 TOILET ROOM ELEVATION
A401 1/2" = 1'-0"

SPECIALTIES SCHEDULE	
KEYNOTE	DESCRIPTION
1	24" x 36" MIRROR
2	36" GRAB BAR (HORIZONTAL)
3	42" GRAB BAR (HORIZONTAL)
4	18" GRAB BAR (VERTICAL)
5	PAPER TOWEL DISPENSER
6	TOILET PAPER DISPENSER
7	SOAP DISPENSER

DOOR SCHEDULE												
DOOR NUMBER	DOOR				FRAME		FIRE RATING	HW GROUP	DETAILS			REMARKS
	HEIGHT	WIDTH	MAT'L	TYPE	MAT'L	TYPE			HEAD	JAMB	SILL	
100	8' - 0"	6' - 0"	HM	F	HM	F3	-	1	10/A402	11/A402	2/A402	REMOVABLE CENTER MULLION (PAINT)
102	7' - 0"	3' - 0"	HM	F	HM	F2	-	3	3/A402	4/A402		
103	7' - 0"	3' - 0"	HM	F	HM	F1	-	2	1/A402	1/A402	2/A402	
104	7' - 0"	6' - 0"	HM	F	HM	F3	-	1	1/A402	1/A402	2/A402	REMOVABLE CENTER MULLION (PAINT)
105	8' - 0"	4' - 0"	HM	F	HM	F1	-	4	5/A402	6/A402	2/A402	



KEY NOTES

- (A) 4" GLAZED CMU BLOCK. ALL EXPOSED FACES TO BE GLAZED.
- (B) UNDER-MOUNT EPOXY RESIN SINK BASIN
- (C) 30" DEEP METAL BASE CABINET- TYP
- (D) METAL UPPER WALL CABINET- TYP
- (E) EPOXY RESIN COUNTERTOP WITH 4" BACKSPLASH
- (F) 1" EPOXY RESIN CAP. MATCH THE CURVE OF EXISTING WALL
- (G) LAB PEGBOARD DRYING RACK
- (H) DUCTLESS FUME HOOD (BY OWNER)

5 INTERIOR ELEVATION
A401 1/2" = 1'-0"



Project Owner

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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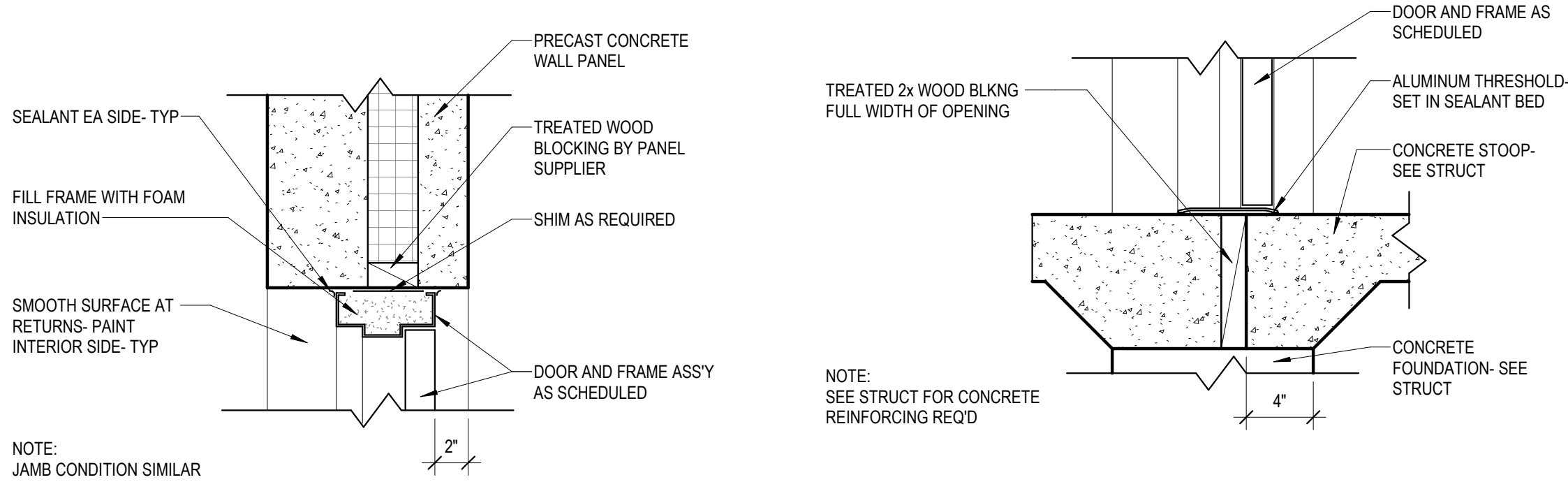
Project Status BIDDING DOCUMENTS
Issue Date OCTOBER, 2023

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REV. #	DESCRIPTION	DATE

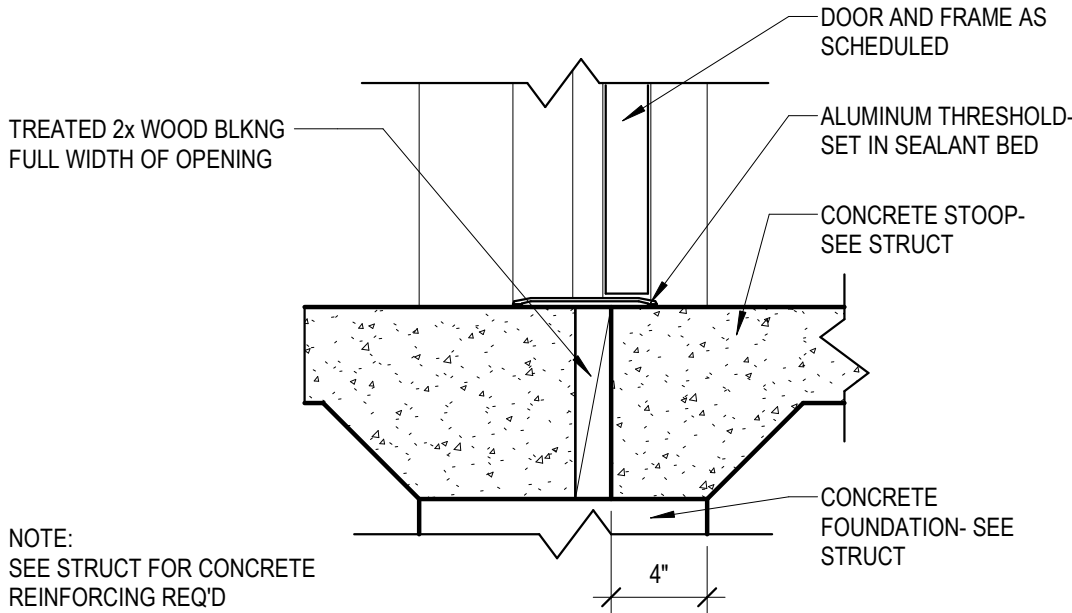
ENLARGED PLAN,
SCHEDULES AND DETAILS

01
A401

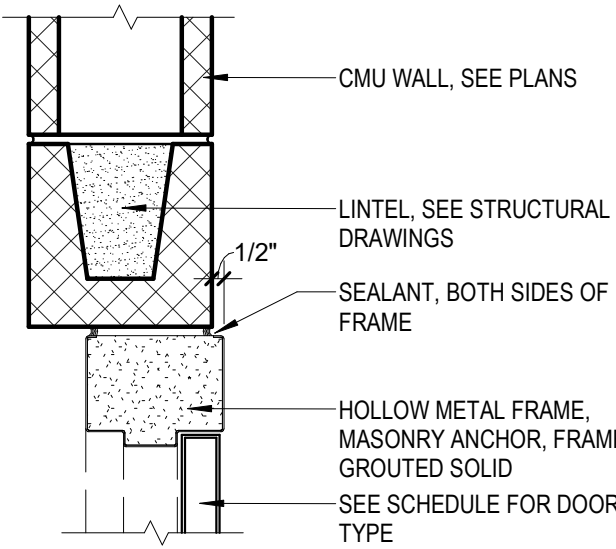
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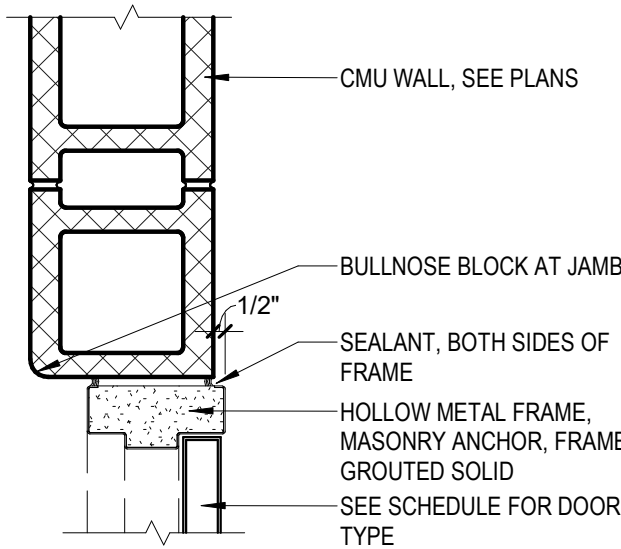
1
A402
DETAIL - DOOR HEAD AT PRECAST
1 1/2" = 1'-0"



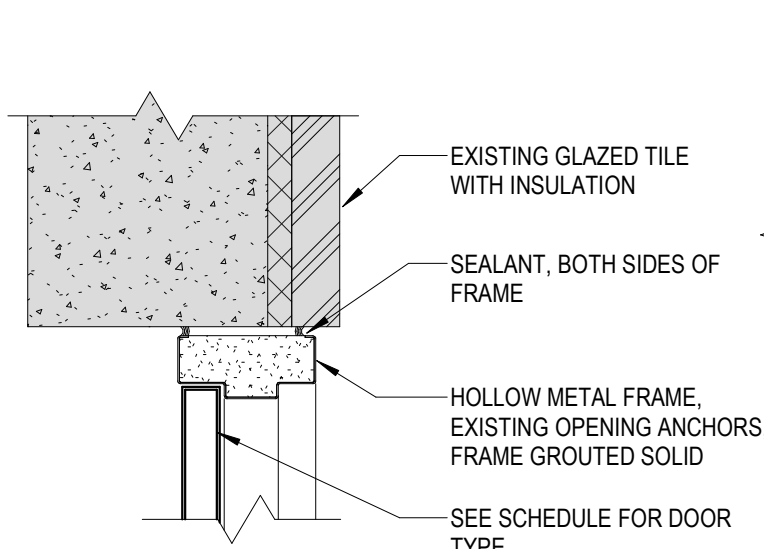
2
A402
DETAIL - DOOR THRESHOLD AT PRECAST
1 1/2" = 1'-0"



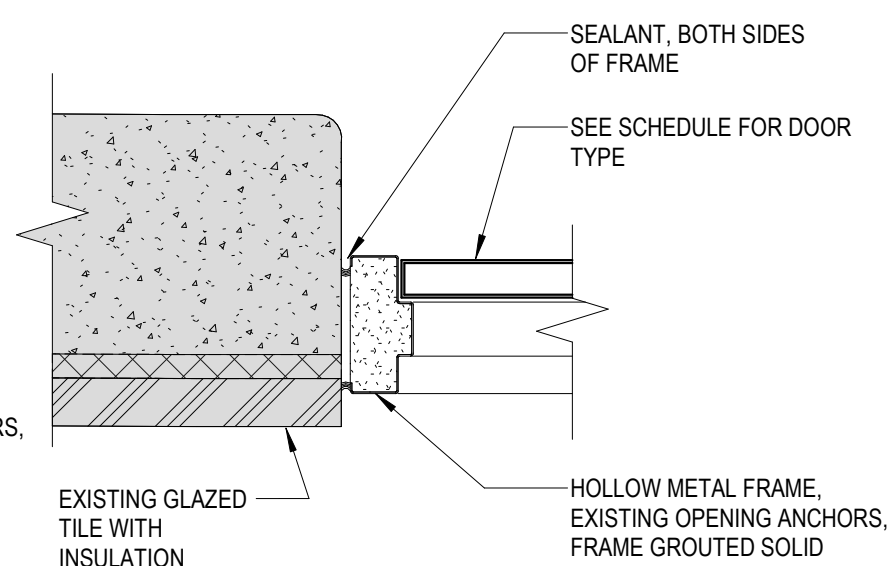
3
A402
HEAD DETAIL
1 1/2" = 1'-0"



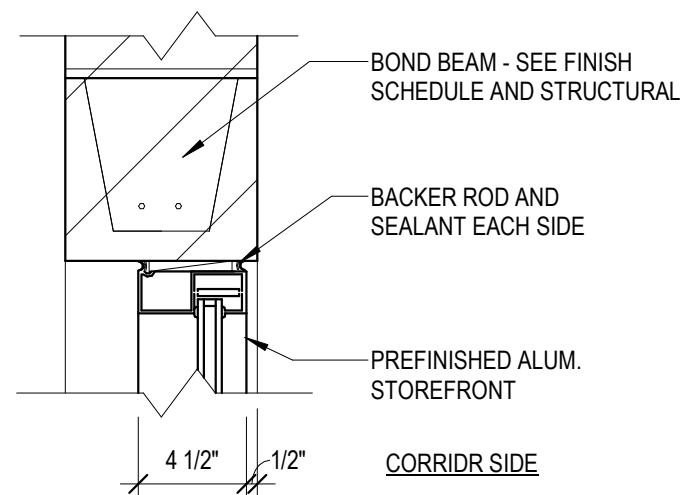
4
A402
JAMB DETAIL
1 1/2" = 1'-0"



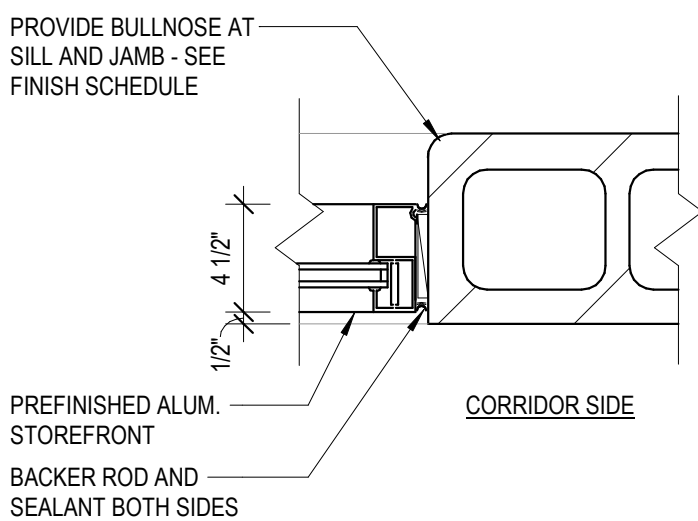
5
A402
HEAD DETAIL
1 1/2" = 1'-0"



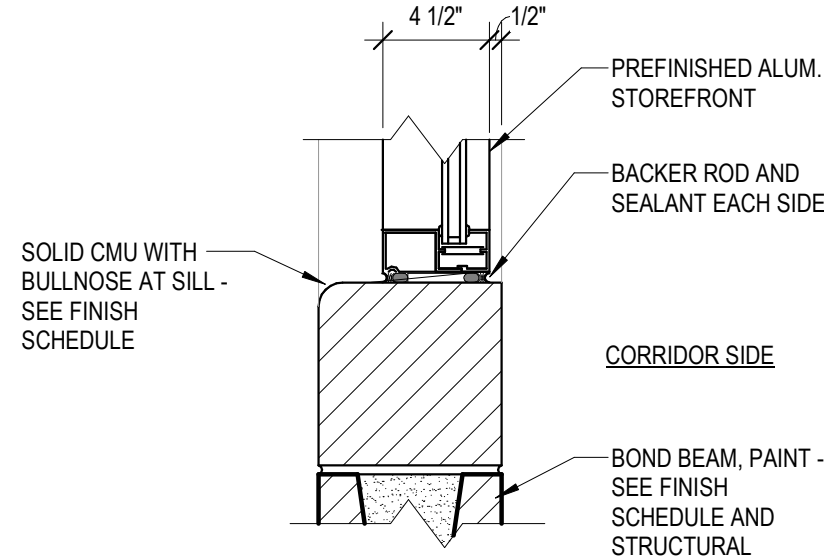
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A402
JAMB DETAIL
1 1/2" = 1'-0"



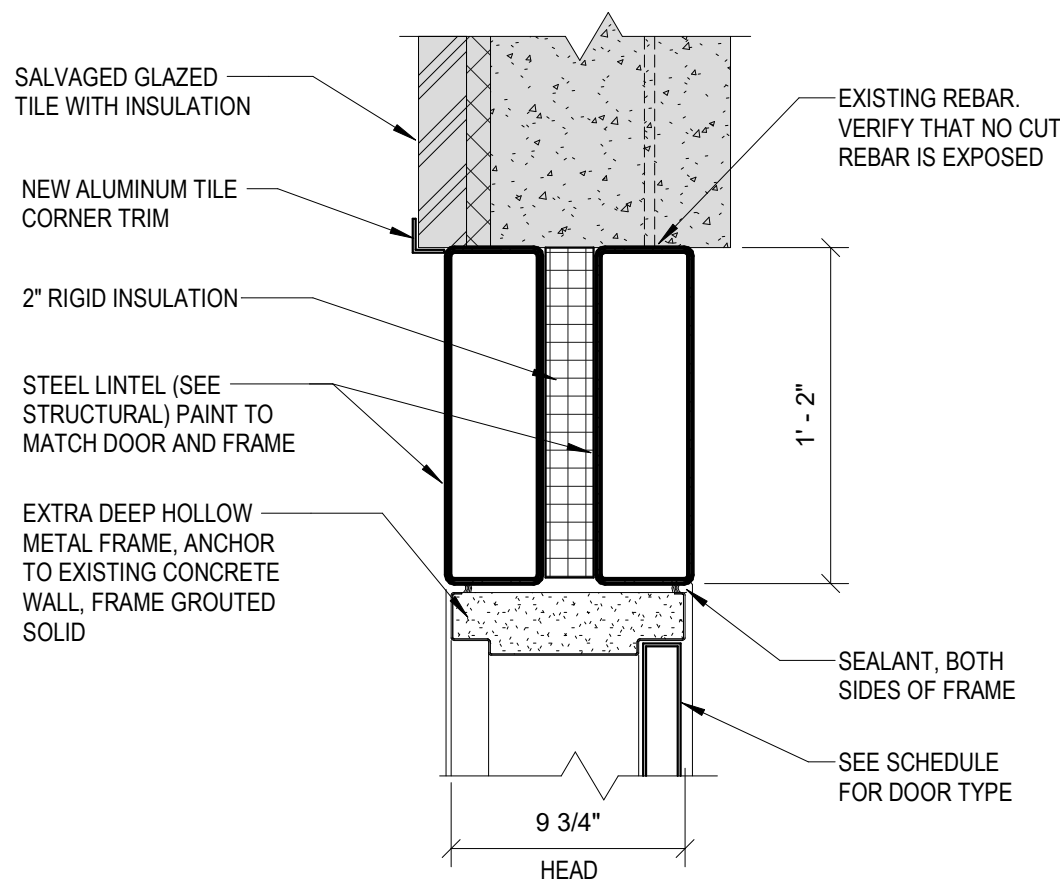
7
A402
INTERIOR WINDOW HEAD
1 1/2" = 1'-0"



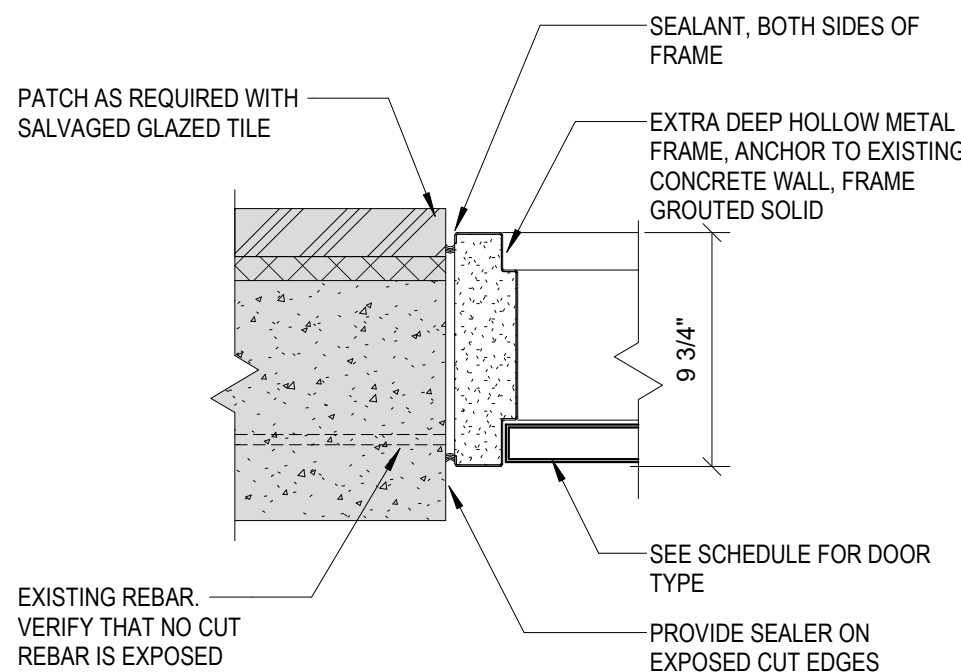
8
A402
INTERIOR WINDOW JAMB
1 1/2" = 1'-0"



9
A402
INTERIOR WINDOW SILL
1 1/2" = 1'-0"



10
A402
HEAD DETAIL
1 1/2" = 1'-0"



11
A402
JAMB DETAIL
1 1/2" = 1'-0"

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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MADWU 167818
JRL

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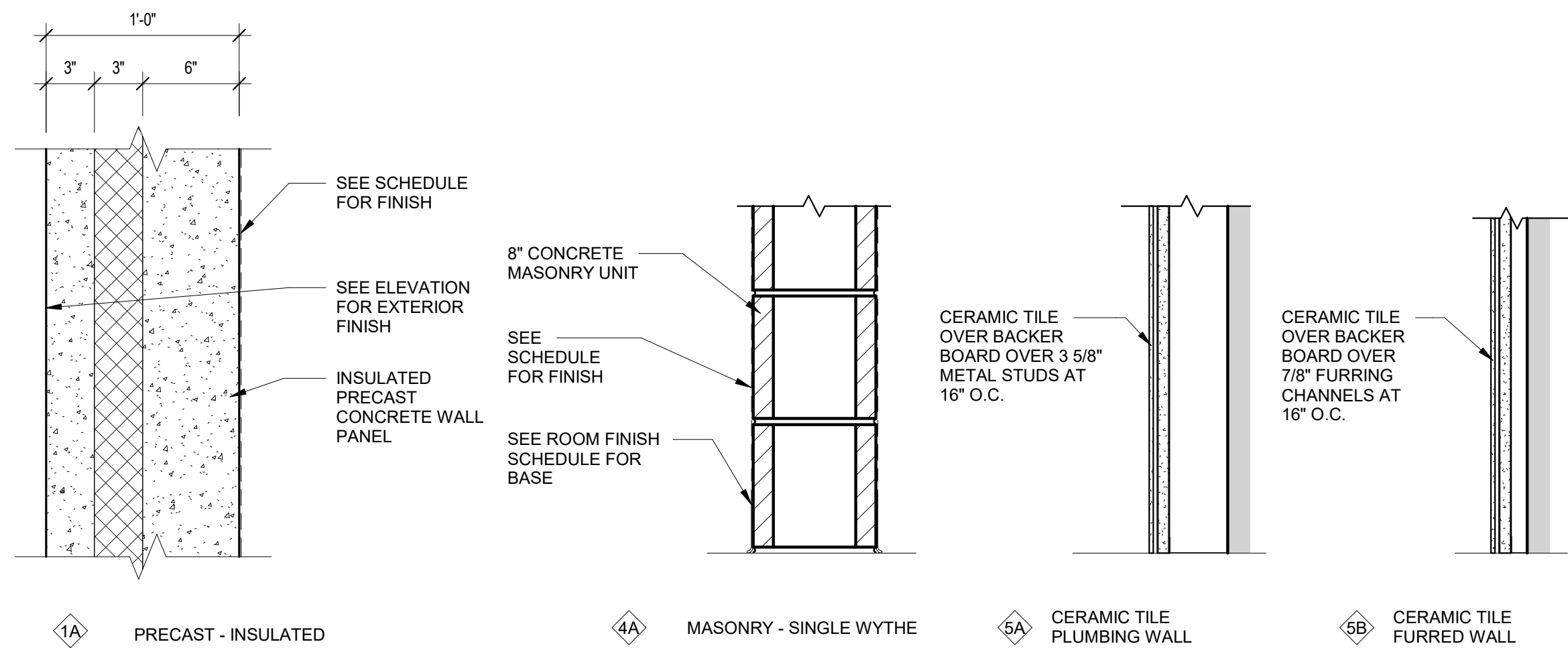
DOOR AND WINDOW
DETAILS

01
A402

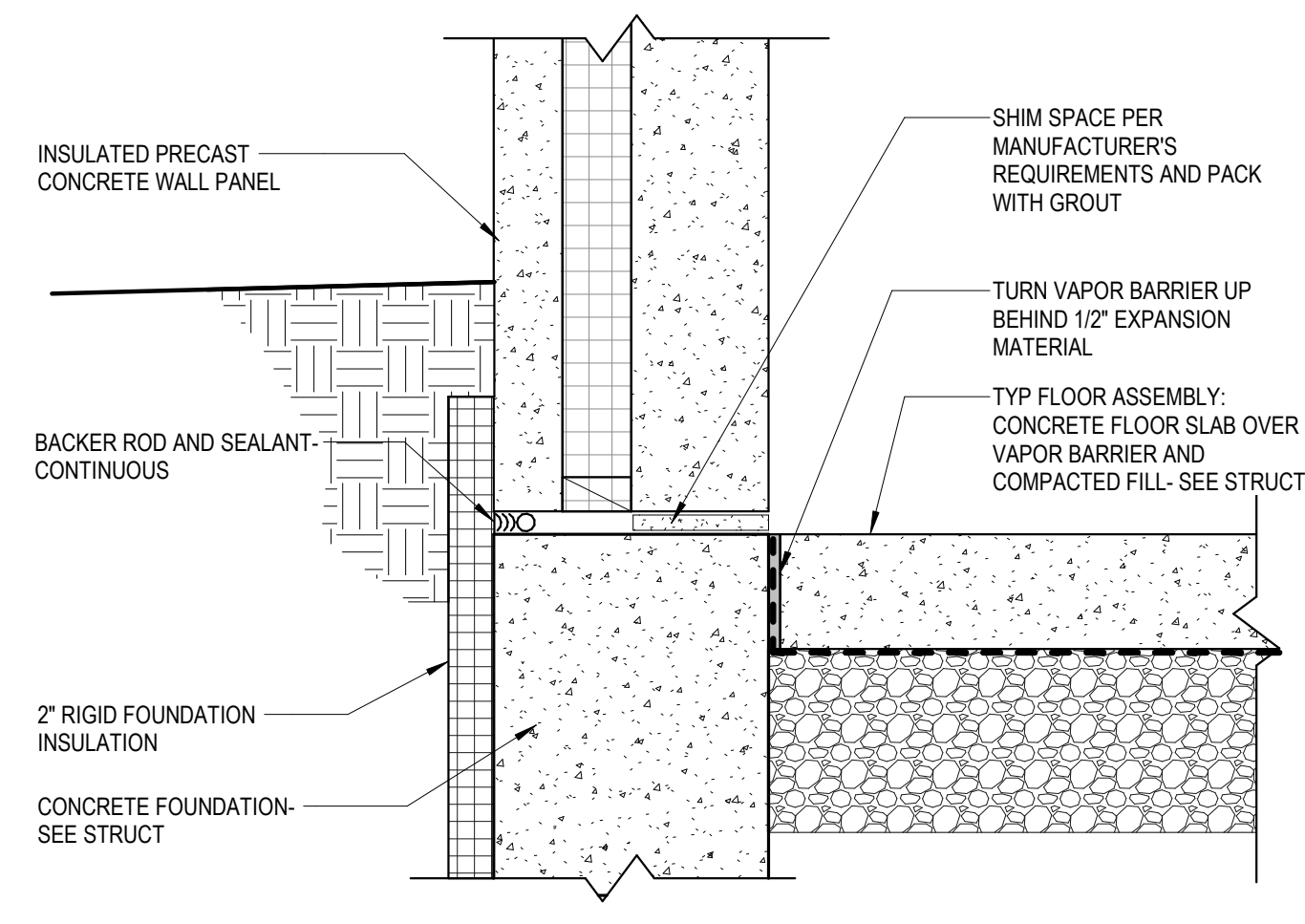


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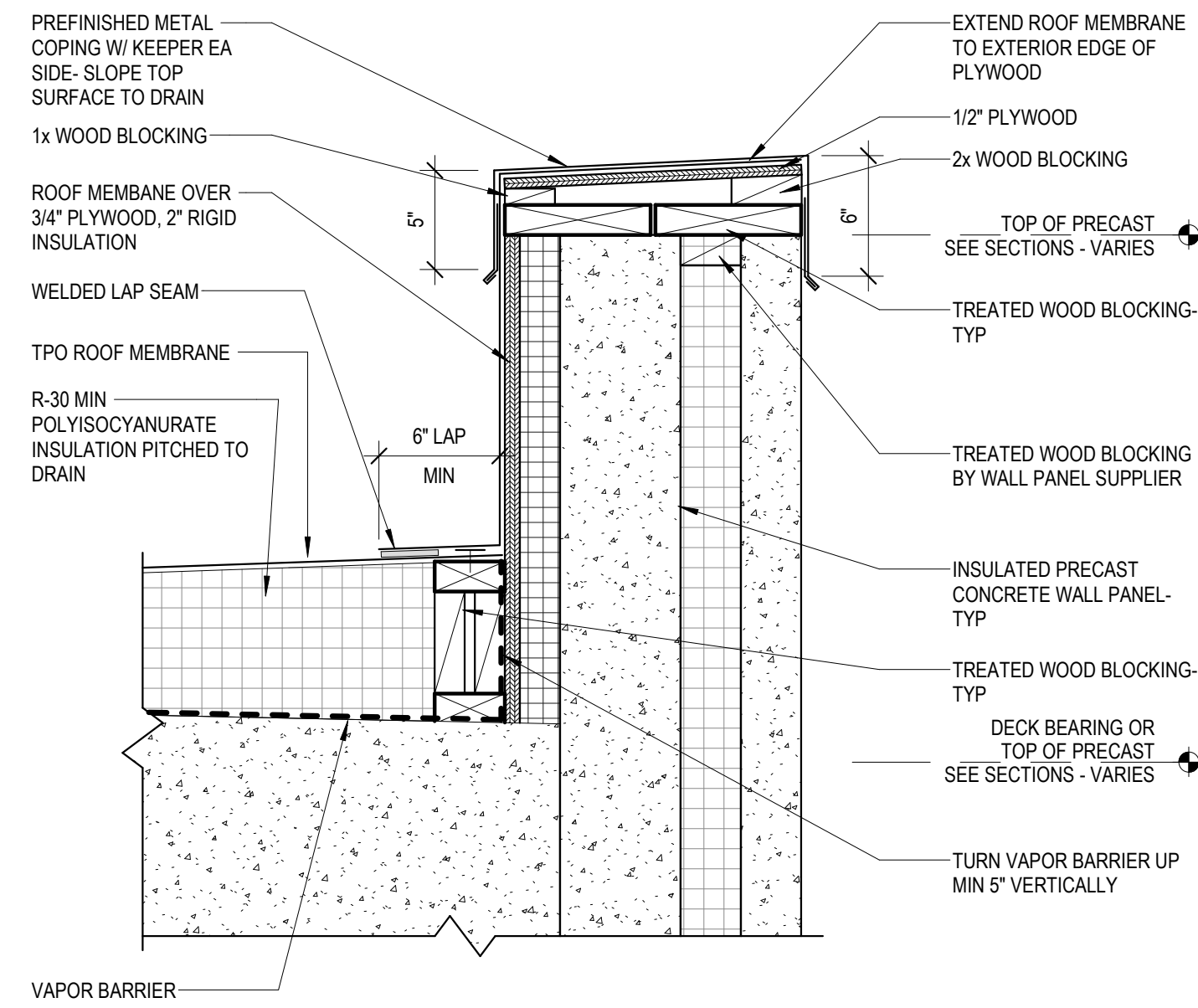
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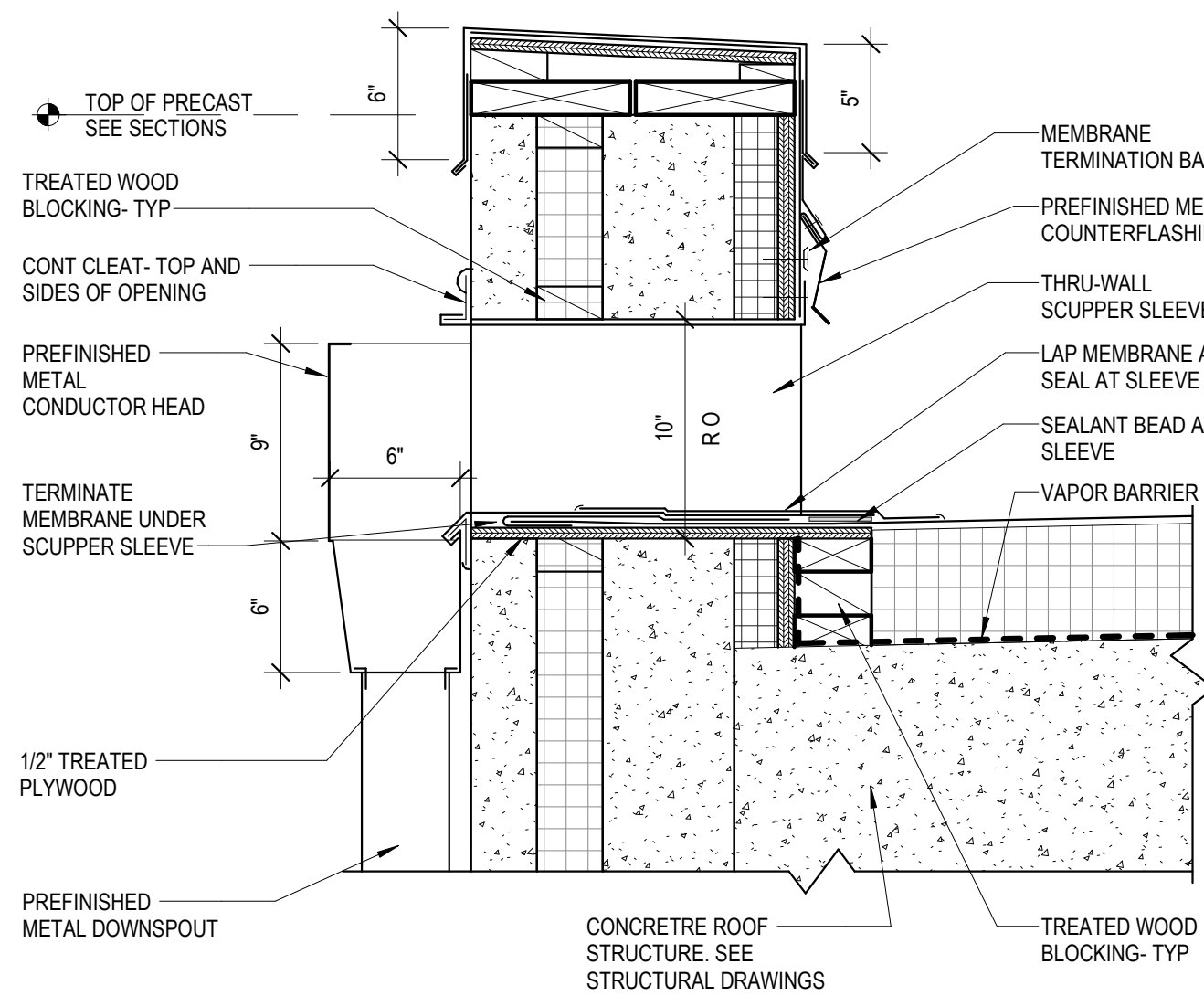
1 WALL TYPES
A501 1 1/2" = 1'-0"



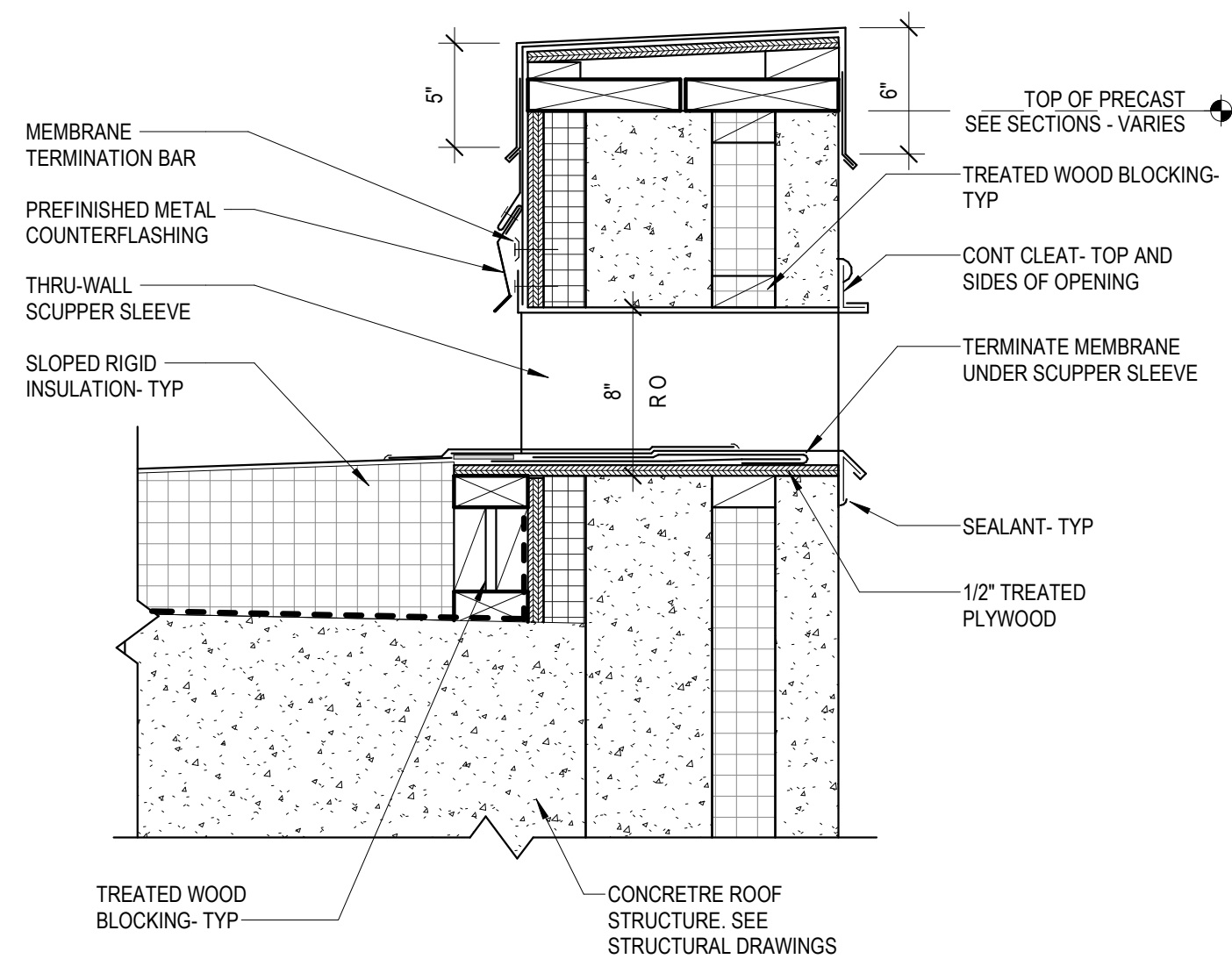
2 DETAIL - TYPICAL BASE OF PRECAST
A501 1 1/2" = 1'-0"



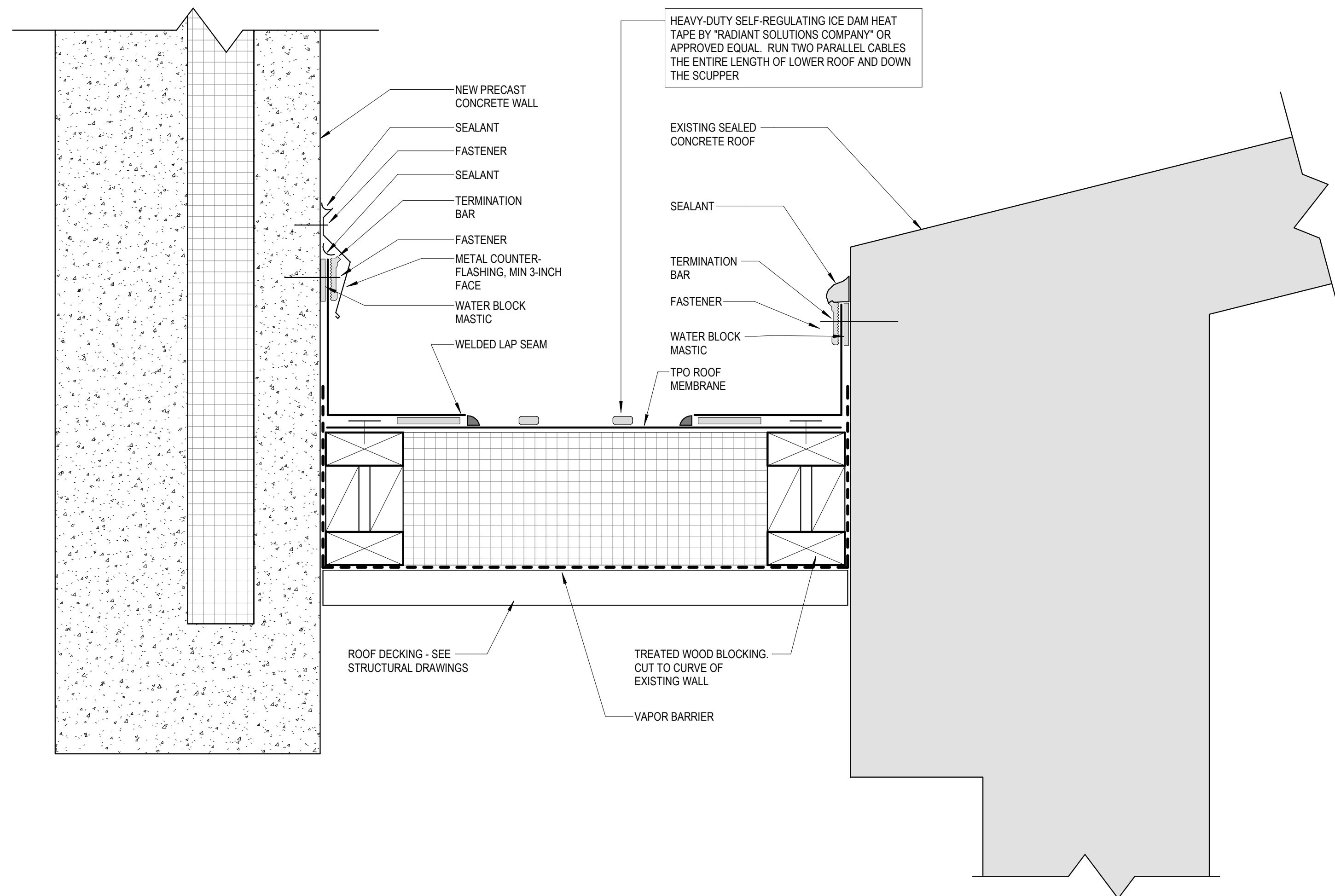
3 DETAIL - TYPICAL PARAPET
A501 1 1/2" = 1'-0"



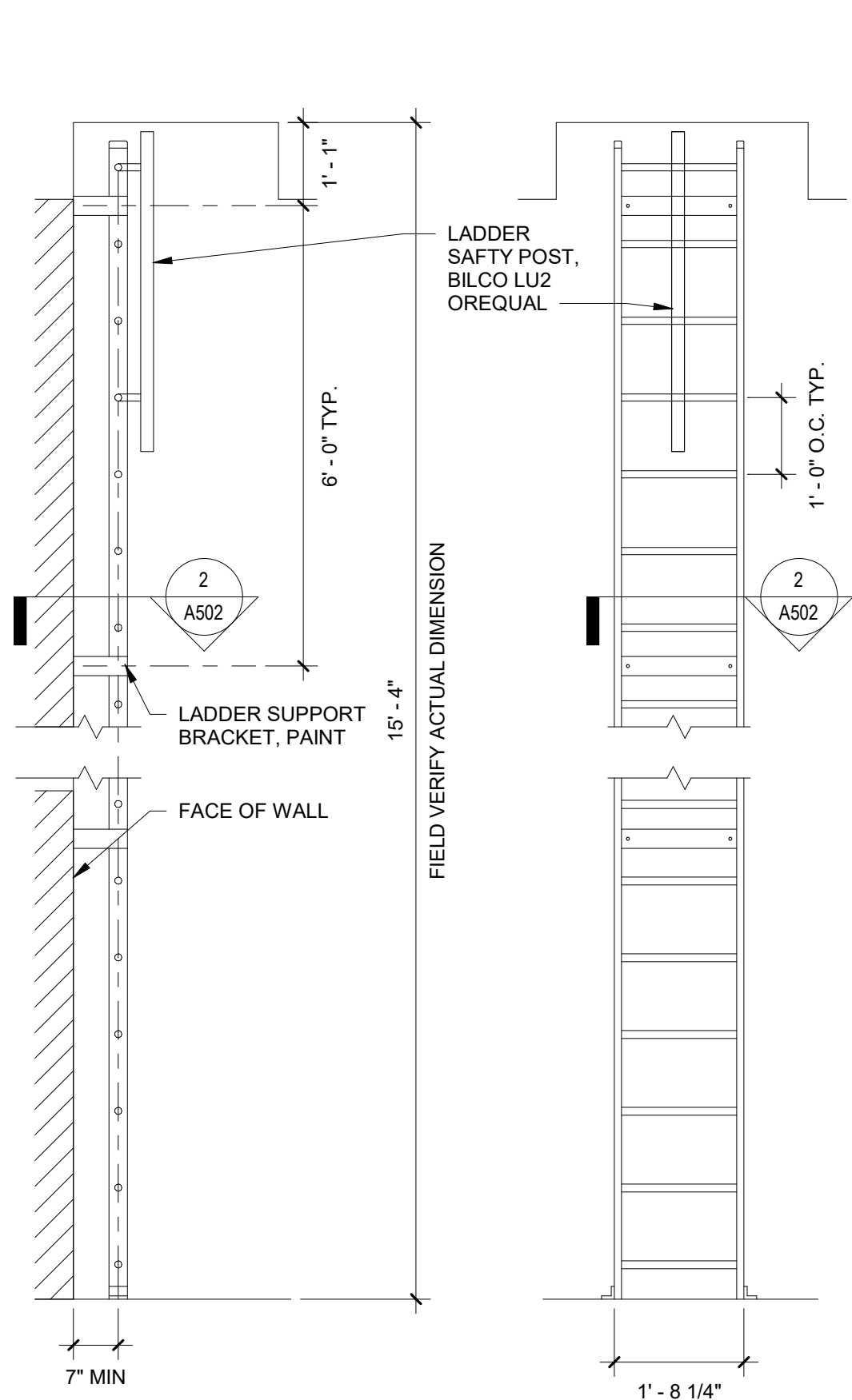
4 DETAIL - TYPICAL DRAIN SCUPPER
A501 1 1/2" = 1'-0"



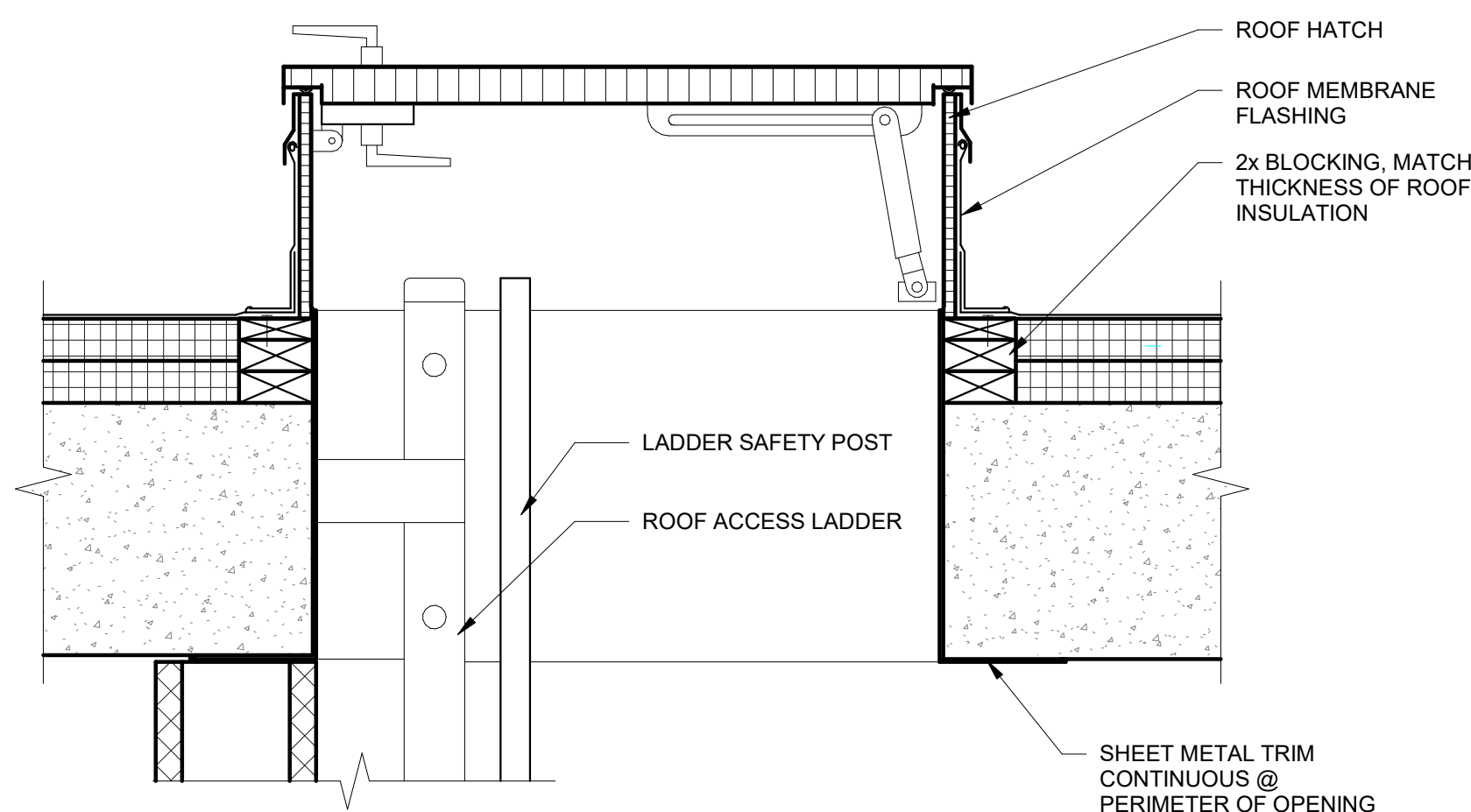
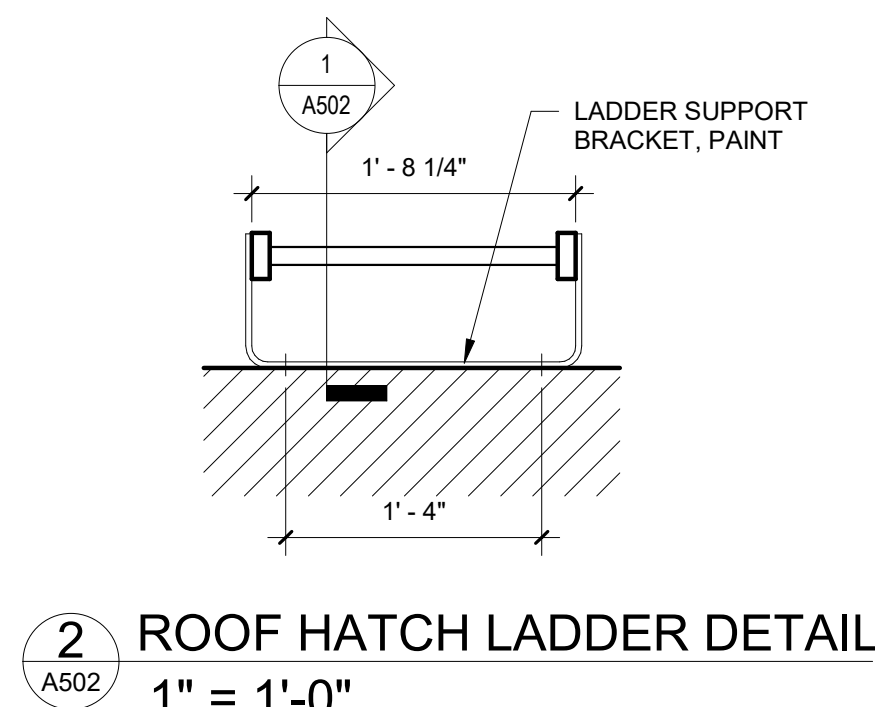
5 DETAIL - TYPICAL OVERFLOW SCUPPER
A501 1 1/2" = 1'-0"



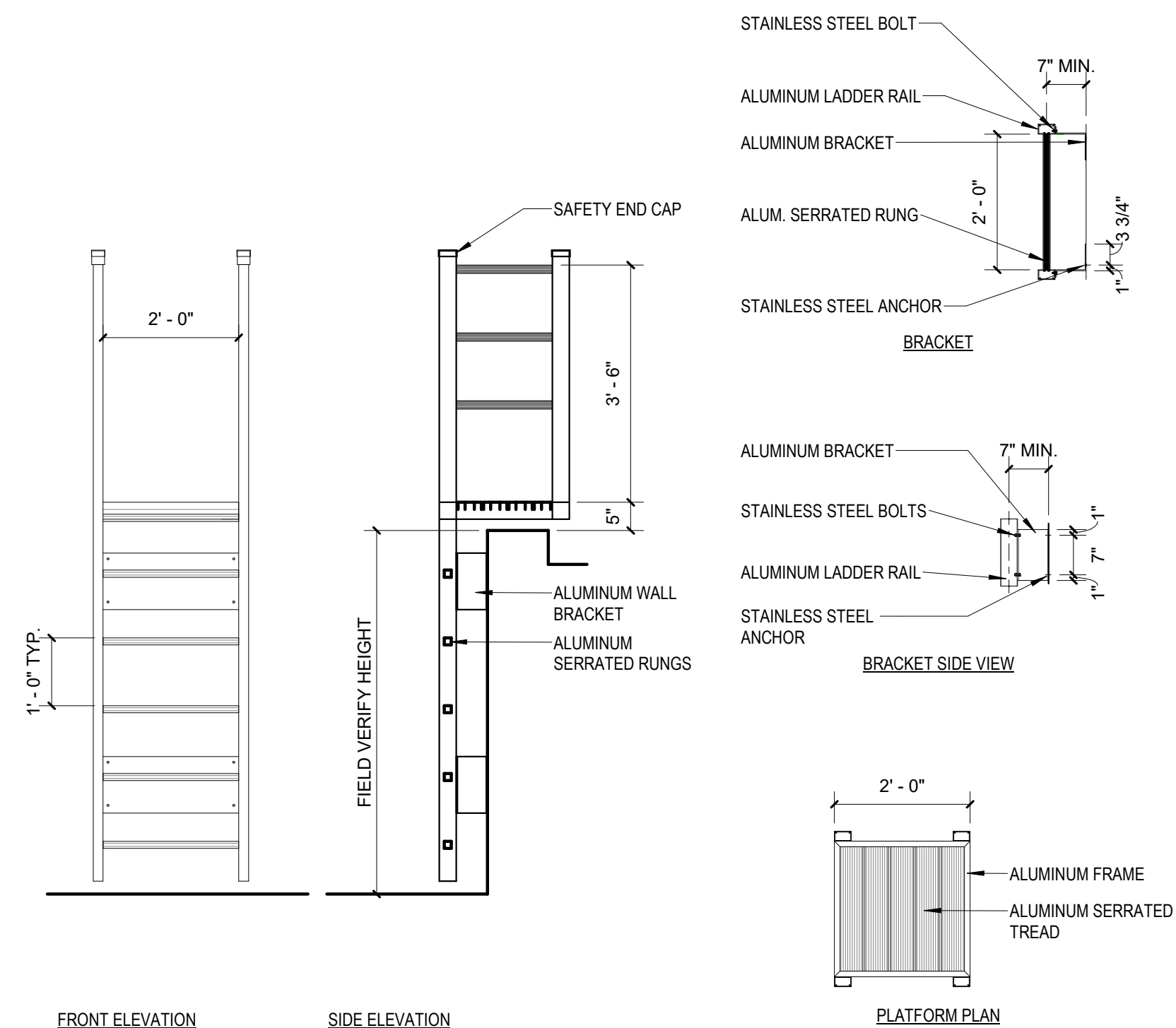
6 DETAIL - ROOF TRANSITION
A501 3" = 1'-0"



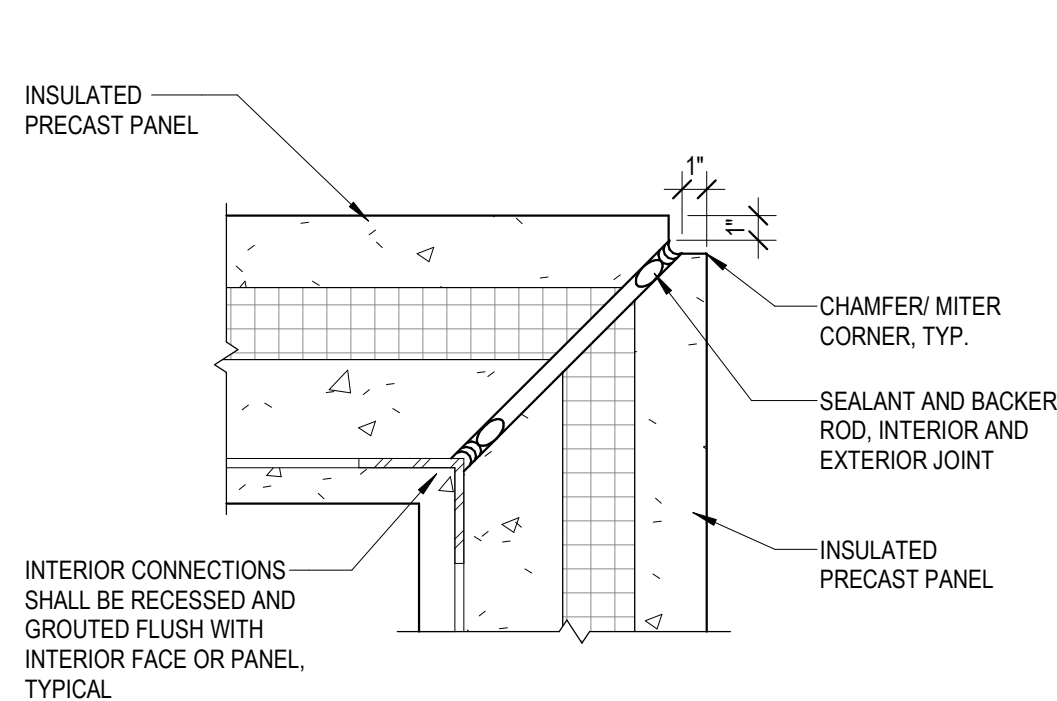
1 ROOF HATCH LADDER SECTION
1/2" = 1'-0"



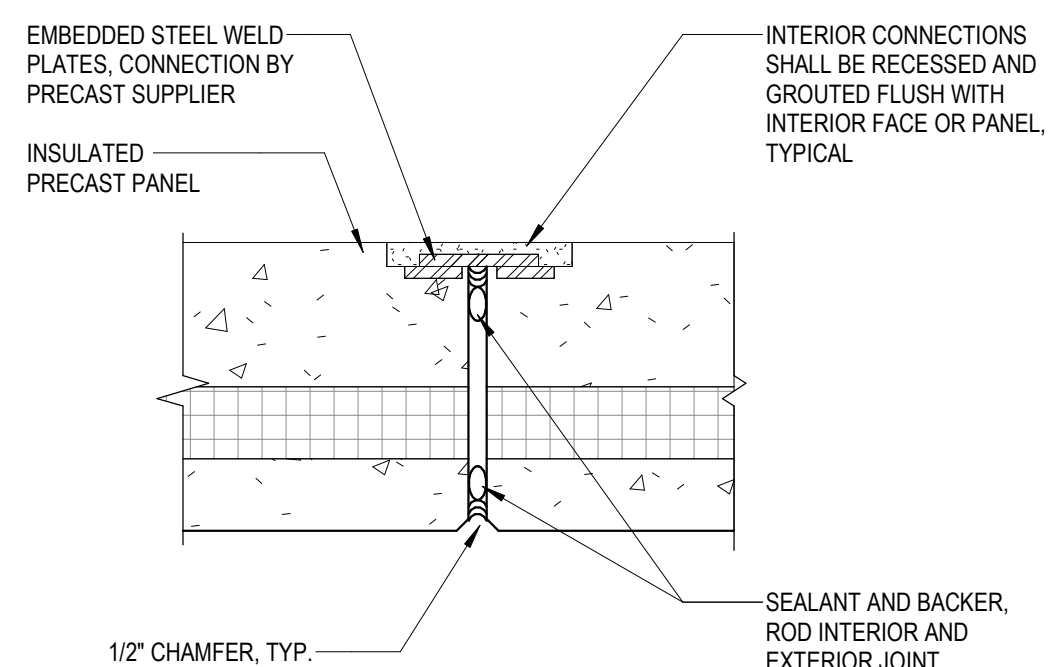
3 ROOF HATCH DETAIL
1 1/2" = 1'-0"



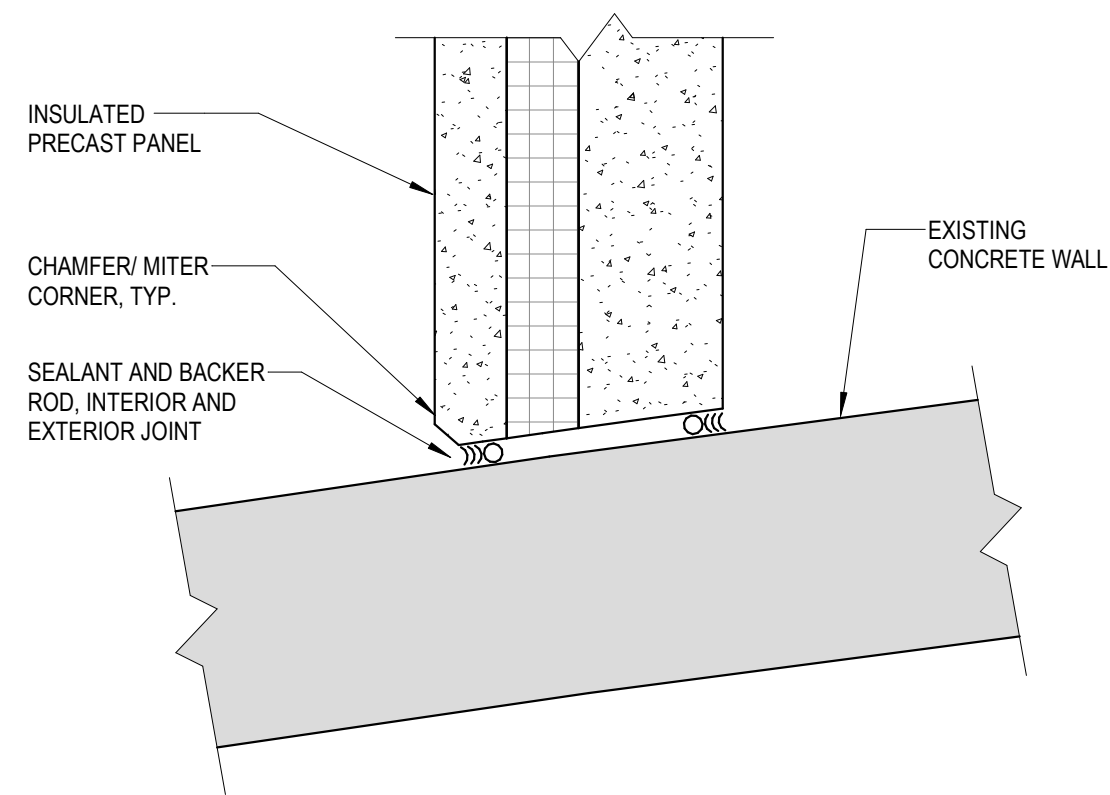
4 ROOF LADDER DETAILS
1/2" = 1'-0"



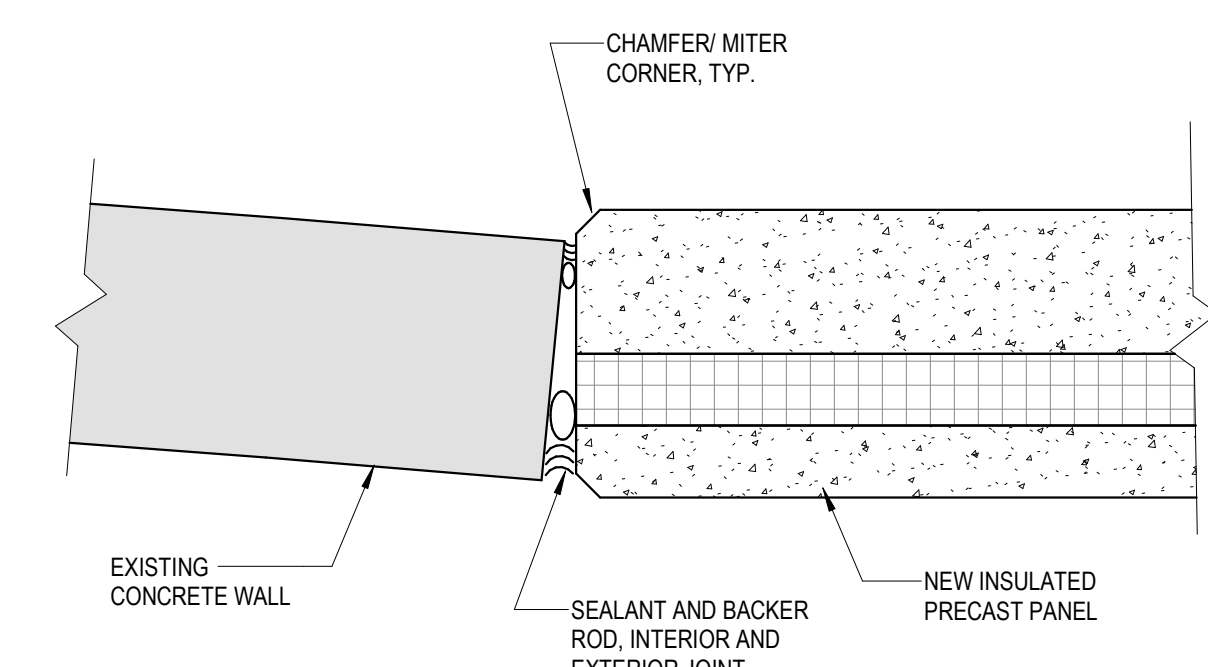
5 PC CORNER JOINT
1 1/2" = 1'-0"



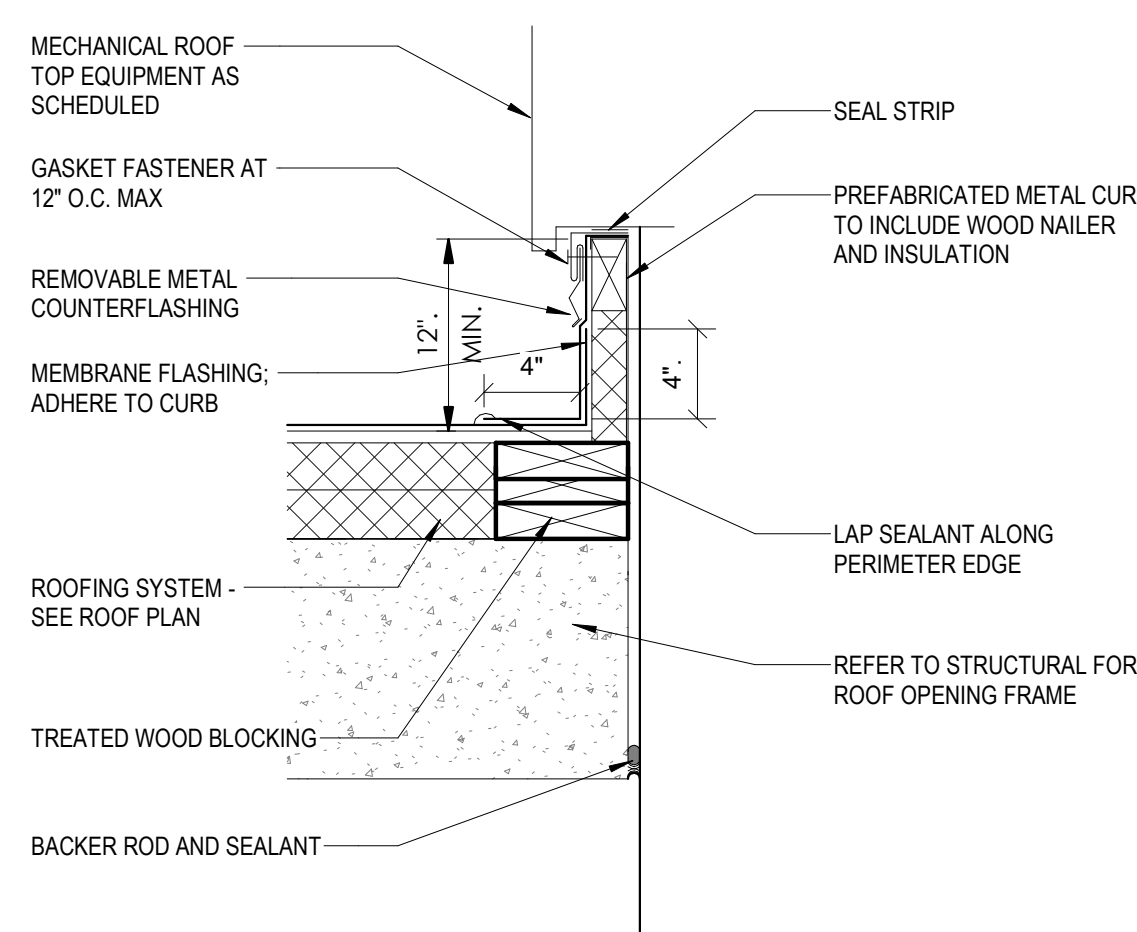
6 PC PANEL JOINT (INTERIOR)
1 1/2" = 1'-0"



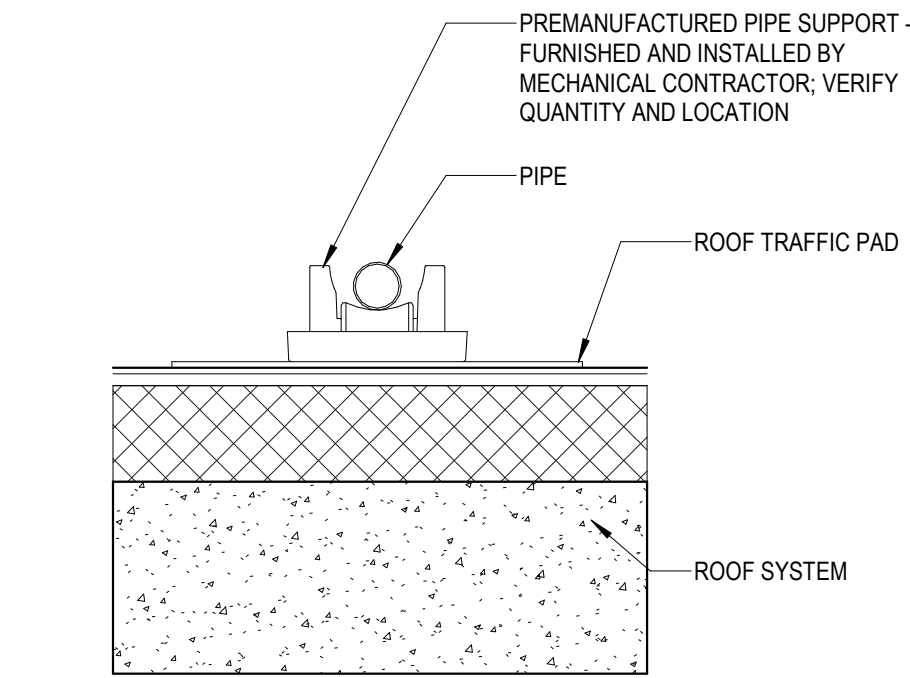
7 WALL DETAIL AT EXISTING
1 1/2" = 1'-0"



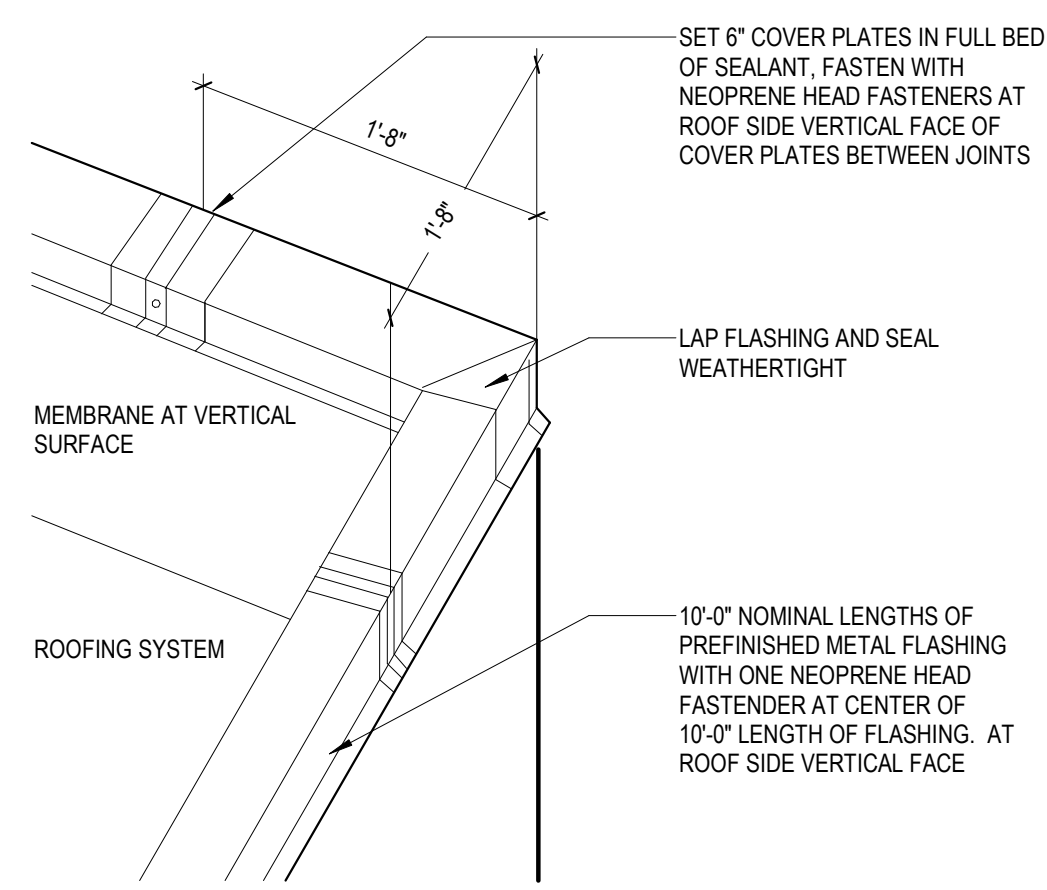
8 WALL DETAIL AT EXISTING
1 1/2" = 1'-0"



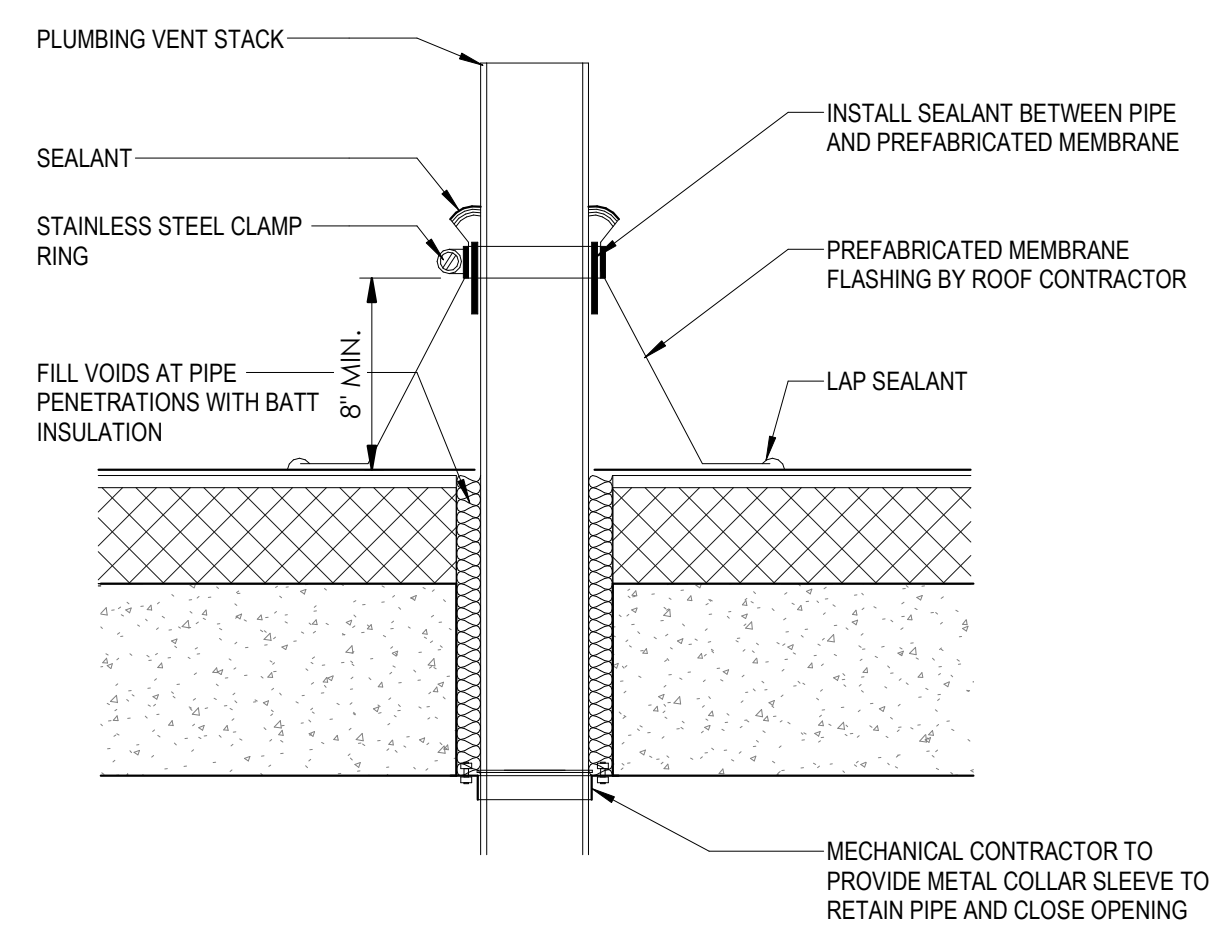
9 TYPICAL EQUIPMENT CURB DETAIL
1 1/2" = 1'-0"



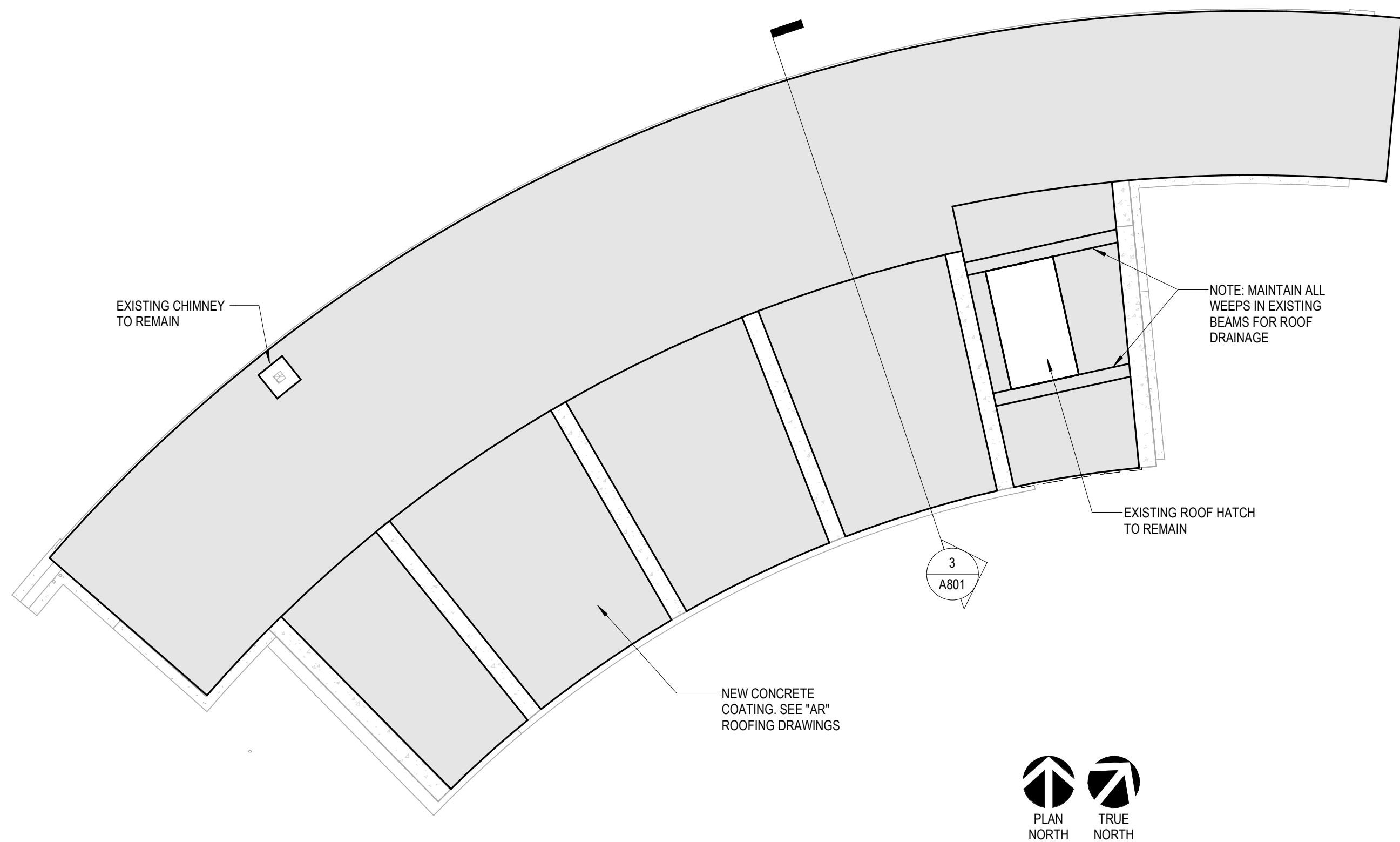
10 TYPICAL PIPE SUPPORT DETAIL
1 1/2" = 1'-0"



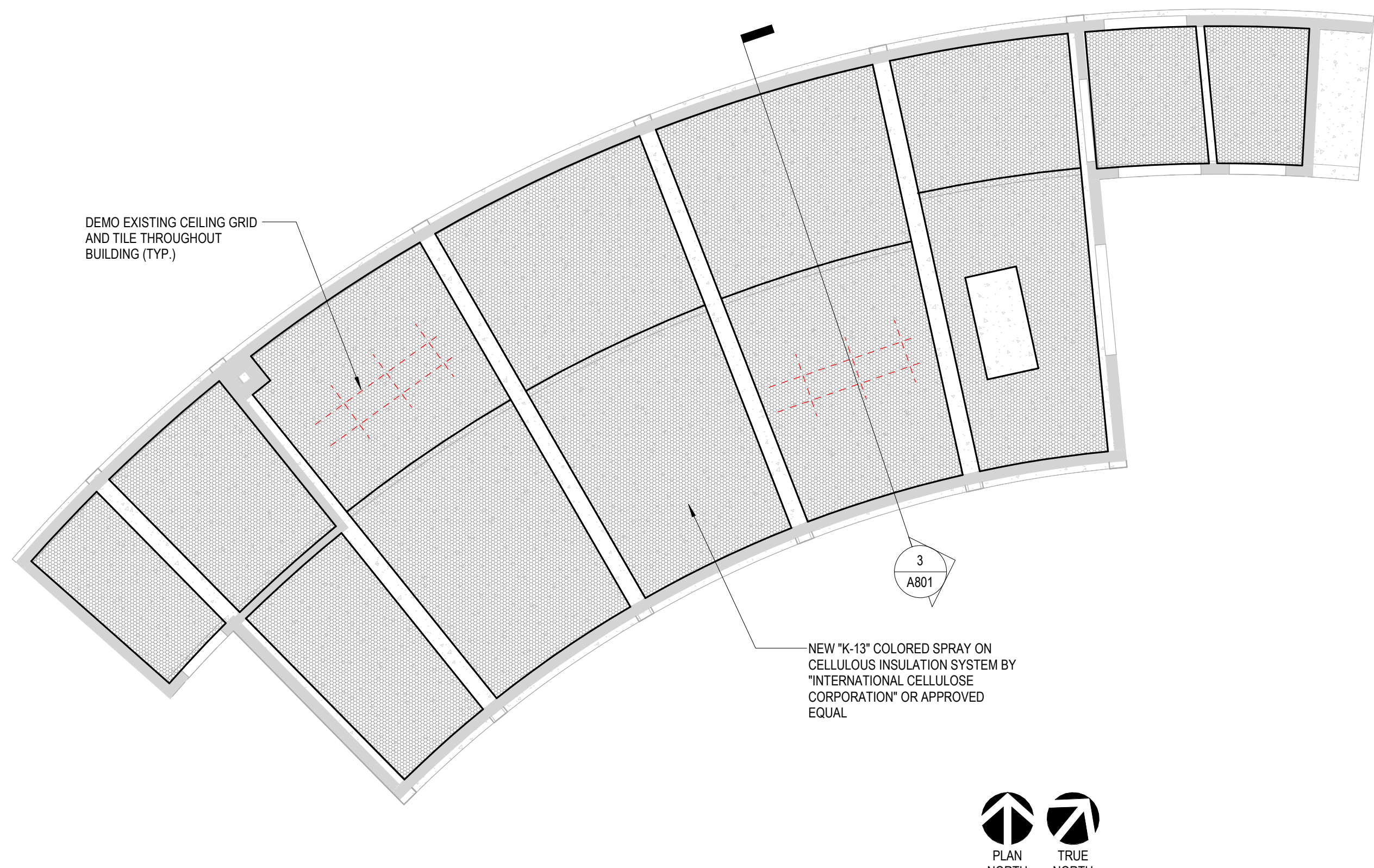
11 TYPICAL ROOF COPING DETAIL
1 1/2" = 1'-0"



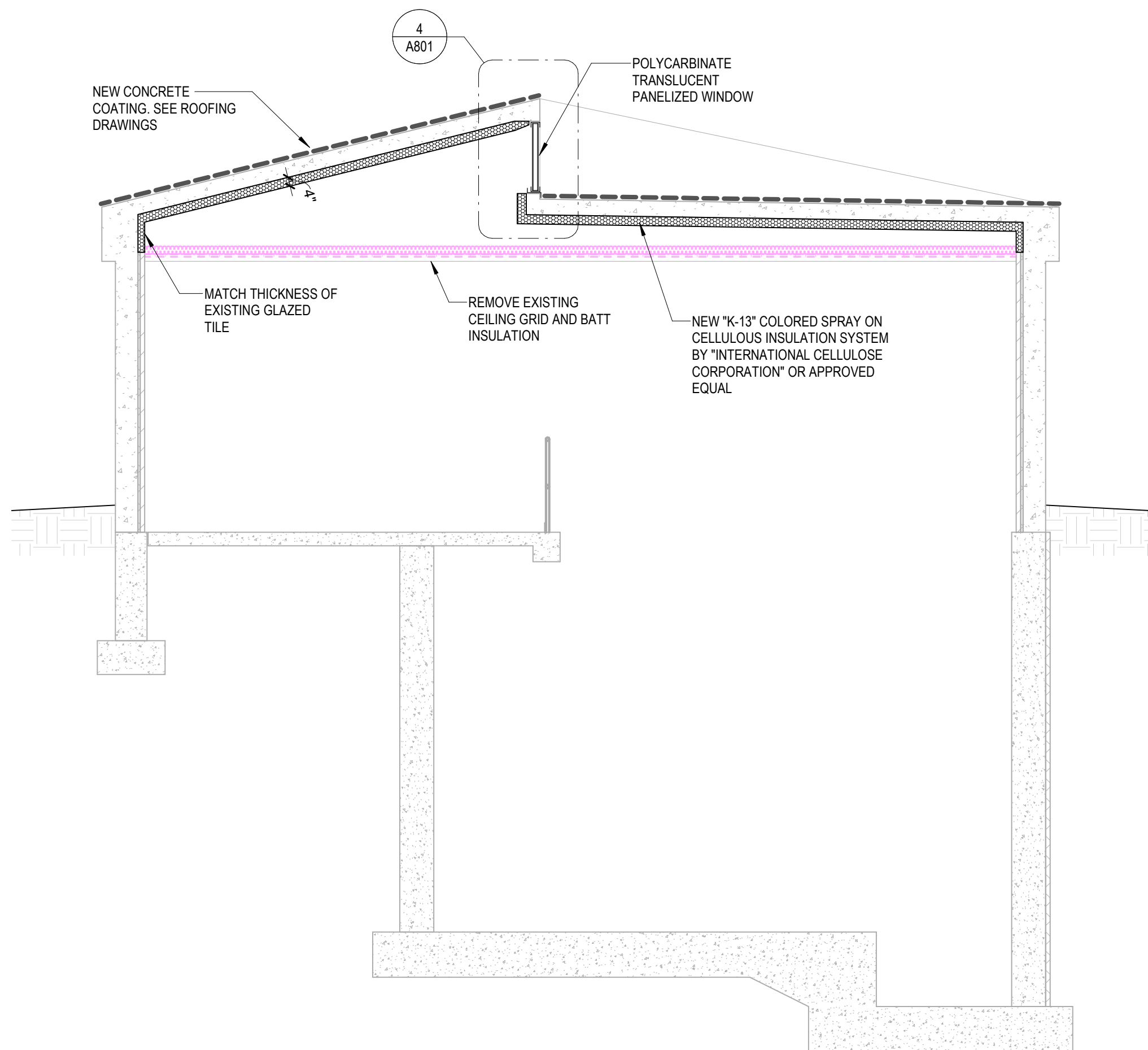
12 TYPICAL PLUMBING VENT PENETRATION
1 1/2" = 1'-0"



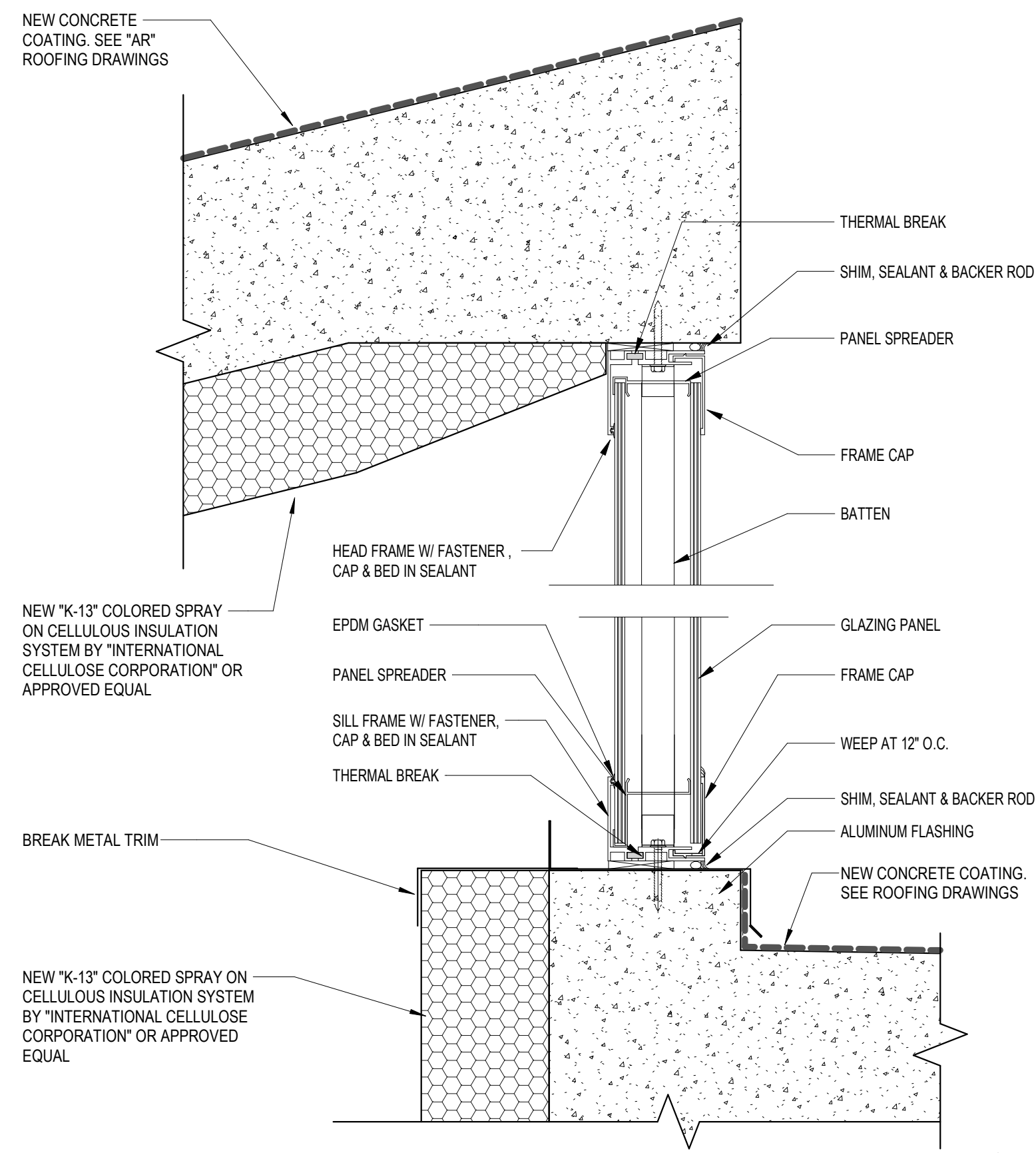
1 ALT BID#1 - ROOF RECOATING PLAN
1/8" = 1'-0"



2 ALT BID#1 - CEILING INSULATION PLAN
1/8" = 1'-0"

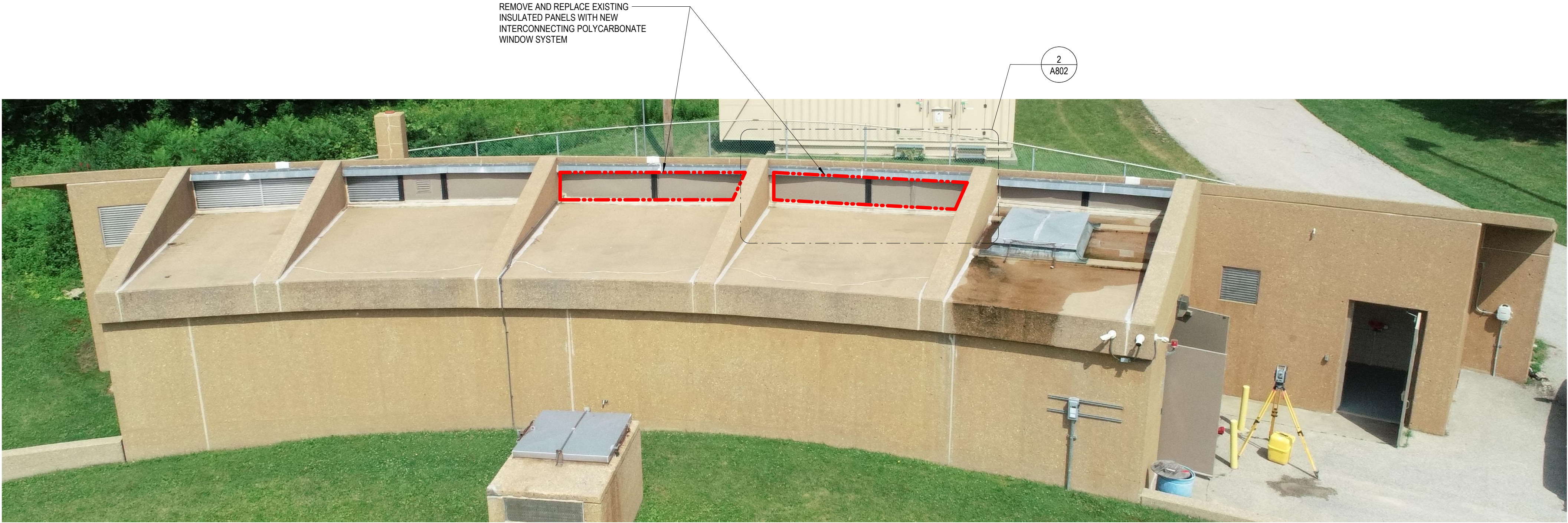


3 ALT BID#1 - EXISTING BUILDING SECTION
1/4" = 1'-0"

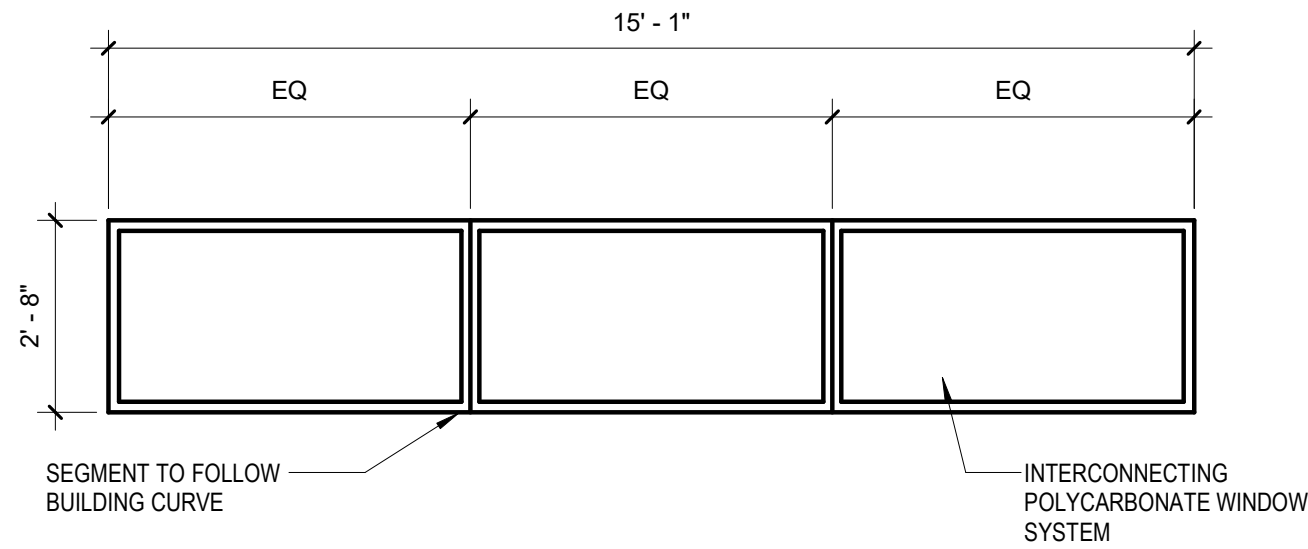


4 ALT BID#1 - TRANSLUCENT WINDOW DETAILS
3" = 1'-0"

10/10/2023 9:55:39 AM



1
A802
EXISTING PHOTO - PANEL REPLACEMENT
NOT TO SCALE



2
A802
WINDOW ELEVATION
3/8" = 1'-0"



Project Owner

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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BIDDING DOCUMENTS OCTOBER 2023

REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

ALT BID #1 PANEL
REPLACEMENT LOCATIONS

01a
A802

Madison Well #19

Project No. 15480 Date: 7/25/23

**STR
SEG** | SPECIALTY ENGINEERING GROUP LLC
122 E. OLIN AVENUE, SUITE 190
MADISON, WI 53713
TEL: 262 253 4700 | www.str-seg.com

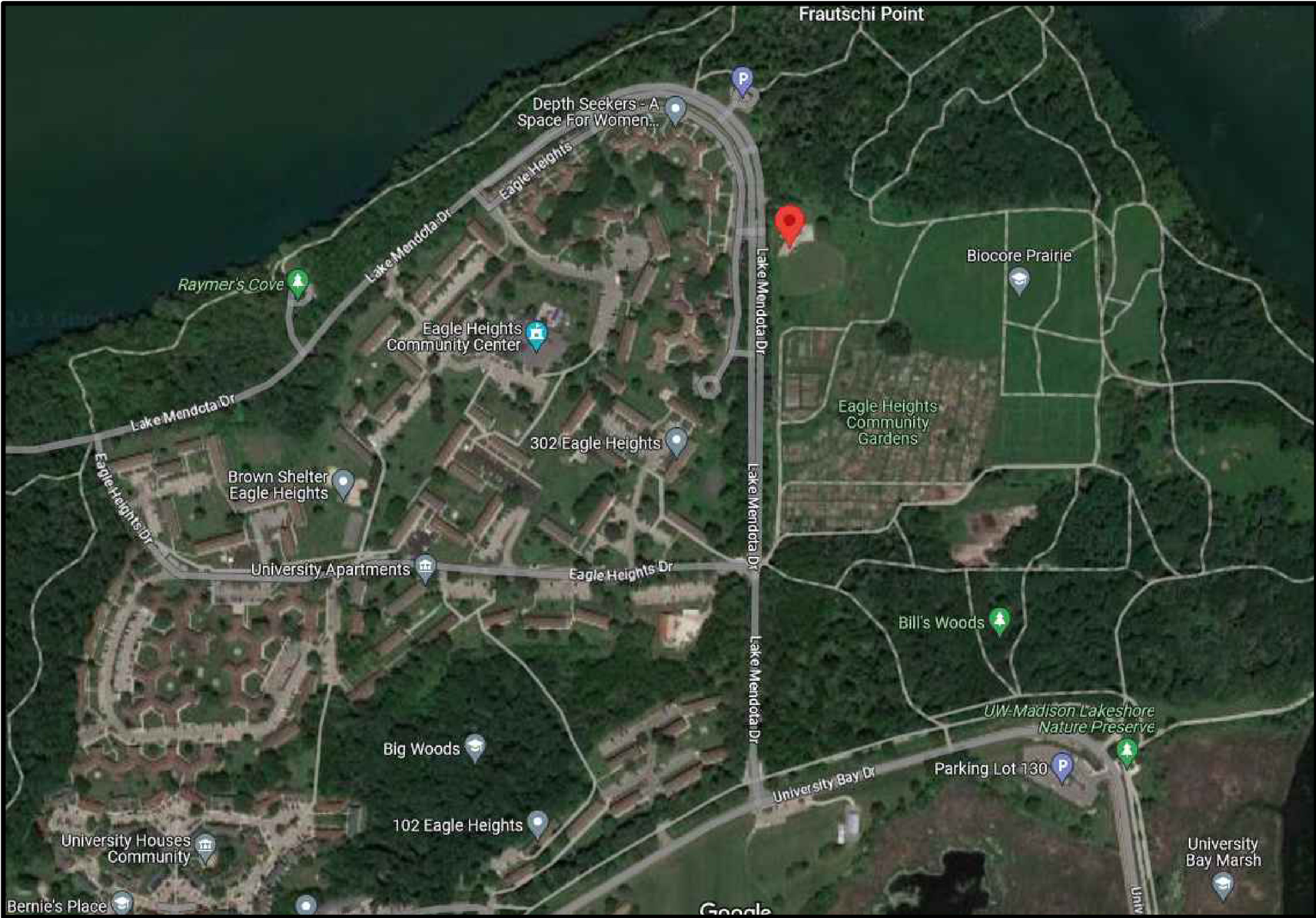
Madison Well #19
3020 Lake Mendota Dr., Madison, WI 53719

Short Elliot Hendrickson

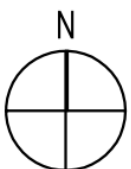
Project Owner

DRAWING INDEX

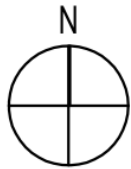
- COVER SHEET
A100
A200
A500 THRU A510
- OVERALL ROOF PLAN
DETAIL REFERENCE ELEVATIONS
ROOFING DETAILS



LOCATION MAP



AERIAL SITE PHOTO



CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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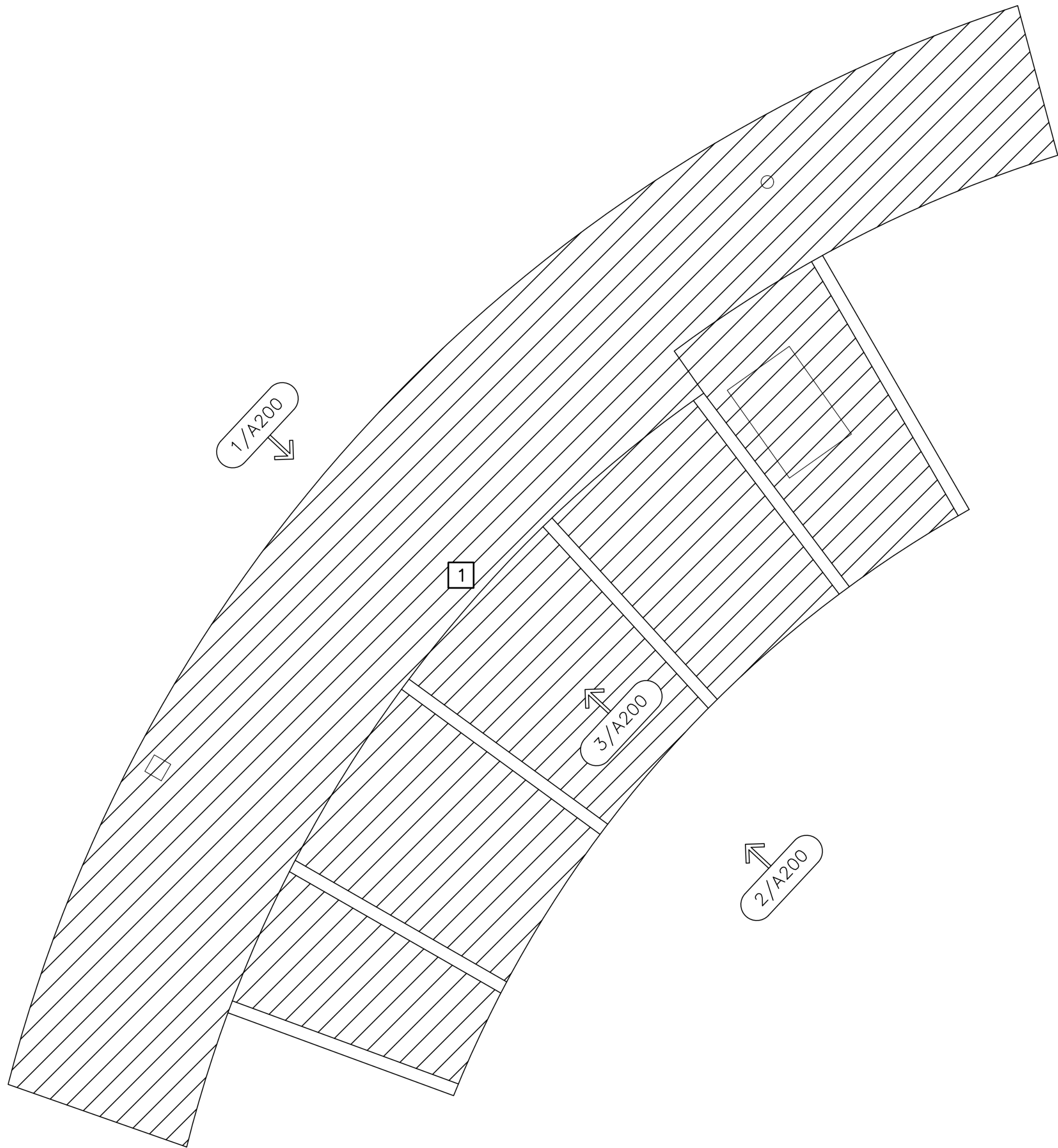
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REVISION SCHEDULE
REV. # DESCRIPTION DATE

ALT BID #1 - STR SEG
COVER SHEET

01a
AR000

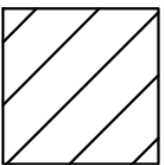


KEY

- 1 - ROOF AREA DESIGNATION
- 2 - ROOF DRAIN
- 3 - THRU-WALL SCUPPER
- 4 - ROOF EDGE SCUPPER
- 5 - GUTTER EDGE
- 6 - CURBED OPENING
- 7 - H.V.A.C. CURB
- 8 - ROOF HATCH
- 9 - SKYLIGHT
- 10 - CURBED STACK
- 11 - CHIMNEY
- 12 - PIPE PORTAL CURB
- 13 - ROOF LADDER
- 14 - PIPE VENT
- 15 - SOIL STACK
- 16 - SMALL PIPE PENETRATION
- 17 - PITCH PAN
- 18 - EXPANSION JOINT
- 19 - SLOPE TRANSITION
- 20 - ABANDONED EQUIPMENT

AREA SIZES

AREA NO.	SQ. FT.
1	2,925
TOTAL	2,925



AREA OF WORK

SCALE:



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Madison Well #19 Roof Design

Madison Well #19
3020 Lake Mendota Dr., Madison, WI 53719

OVERALL ROOF PLAN

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BF

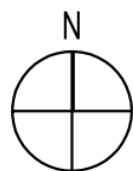
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REVISION SCHEDULE

REV. # DESCRIPTION DATE

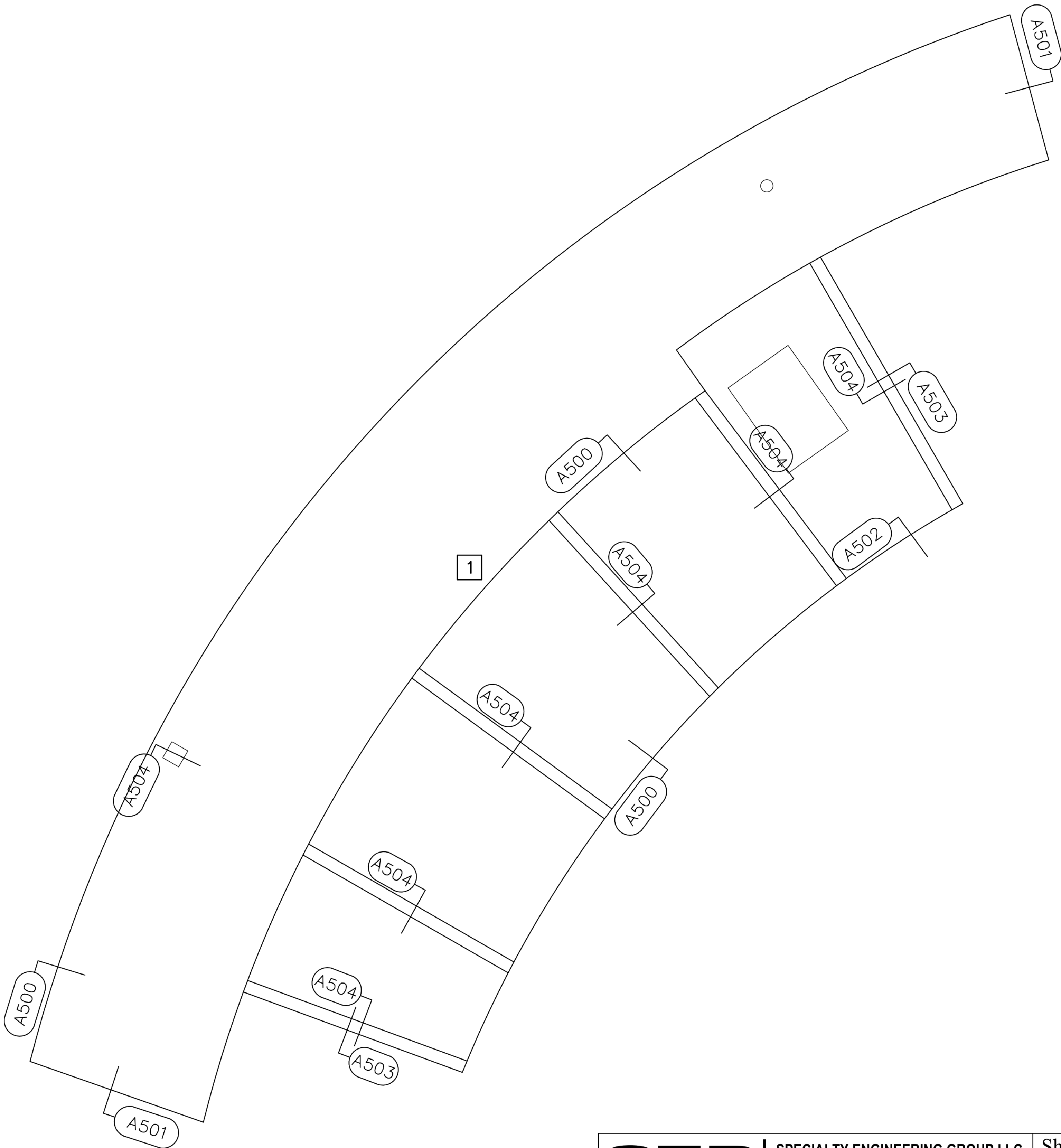
ALT BID #1 - STR SEG ROOF
REPAIR PLAN

01a
AR101



KEY

- ROOF AREA DESIGNATION
- ROOF REPAIR DESIGNATION
- ROOF DRAIN
- THRU-WALL SCUPPER
- ROOF EDGE SCUPPER
- GUTTER EDGE
- CURBED OPENING
- H.V.A.C. CURB
- ROOF HATCH
- SKYLIGHT
- CURBED STACK
- CHIMNEY
- PIPE PORTAL CURB
- ROOF LADDER
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- PITCH PAN
- EXPANSION JOINT
- SLOPE TRANSITION
- AB — ABANDONED EQUIPMENT



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Short Elliott Hendrickson
Madison Well #19 Bldg Roof Design

Madison Well #19 Building
3020 Lake Mendota Dr., Madison, WI 53719

ROOF REPAIR PLAN

Drawn by CLK
Checked by BF

Sheet No.
A101

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CITY OF MADISON WATER UTILITY
UNIT WELL #19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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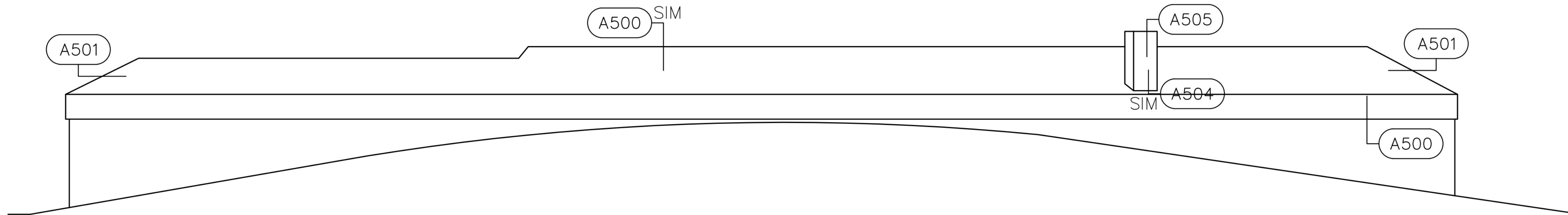
SEH Project MADWU 167818
Checked By JRL
Drawn By

Project Status Issue Date
BIDDING DOCUMENTS OCTOBER 2023

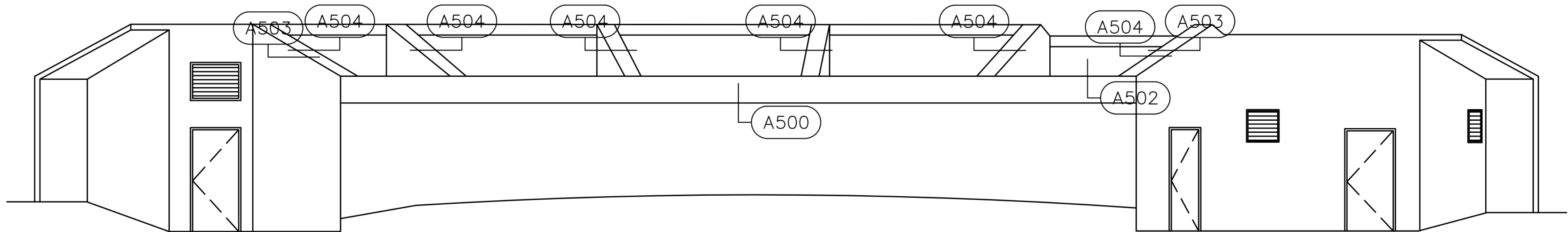
REVISION SCHEDULE
REV. # DESCRIPTION DATE

ALT BID #1 - STR SEG
DETAIL REFERENCE
ELEVATIONS

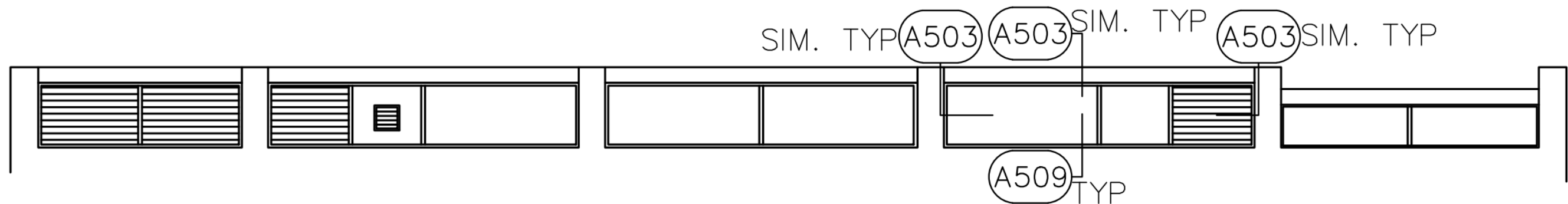
01a
AR200



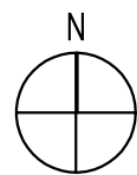
1 NORTHWEST ELEVATION



2 SOUTHEAST ELEVATION



3 SOUTHEAST ELEVATION



KEY

- X - ROOF AREA DESIGNATION
- ⊕ - ROOF DRAIN
- ⊕ - THRU-WALL SCUPPER
- ⊕ - ROOF EDGE SCUPPER
- ⊕ - GUTTER EDGE
- ⊕ - CURBED OPENING
- ⊕ - H.V.A.C. CURB
- ⊕ - ROOF HATCH
- ⊕ - SKYLIGHT
- ⊕ - CURBED STACK
- ⊕ - CHIMNEY
- ⊕ - PIPE PORTAL CURB
- ⊕ - ROOF LADDER
- ⊕ - PIPE VENT
- ⊕ - SOIL STACK
- ⊕ - SMALL PIPE PENETRATION
- ⊕ - PITCH PAN
- ⊕ - EXPANSION JOINT
- ⊕ - SLOPE TRANSITION
- AB - ABANDONED EQUIPMENT



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Short Elliott Hendrickson
Madison Well #19 Roof Design

7/25/23

Project No. 15480

Madison Well #19 Building
3020 Lake Mendota Dr., Madison, WI 53719

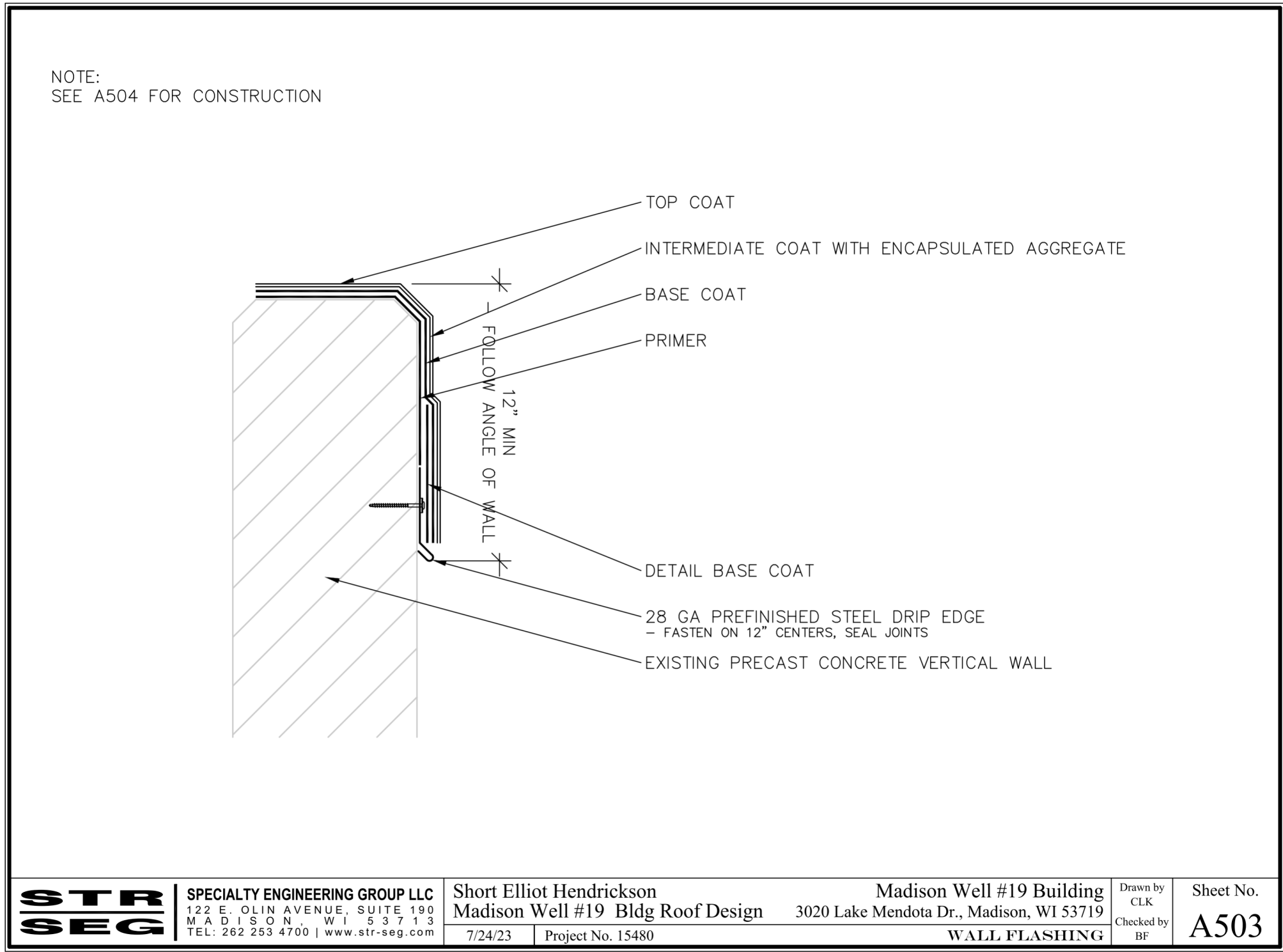
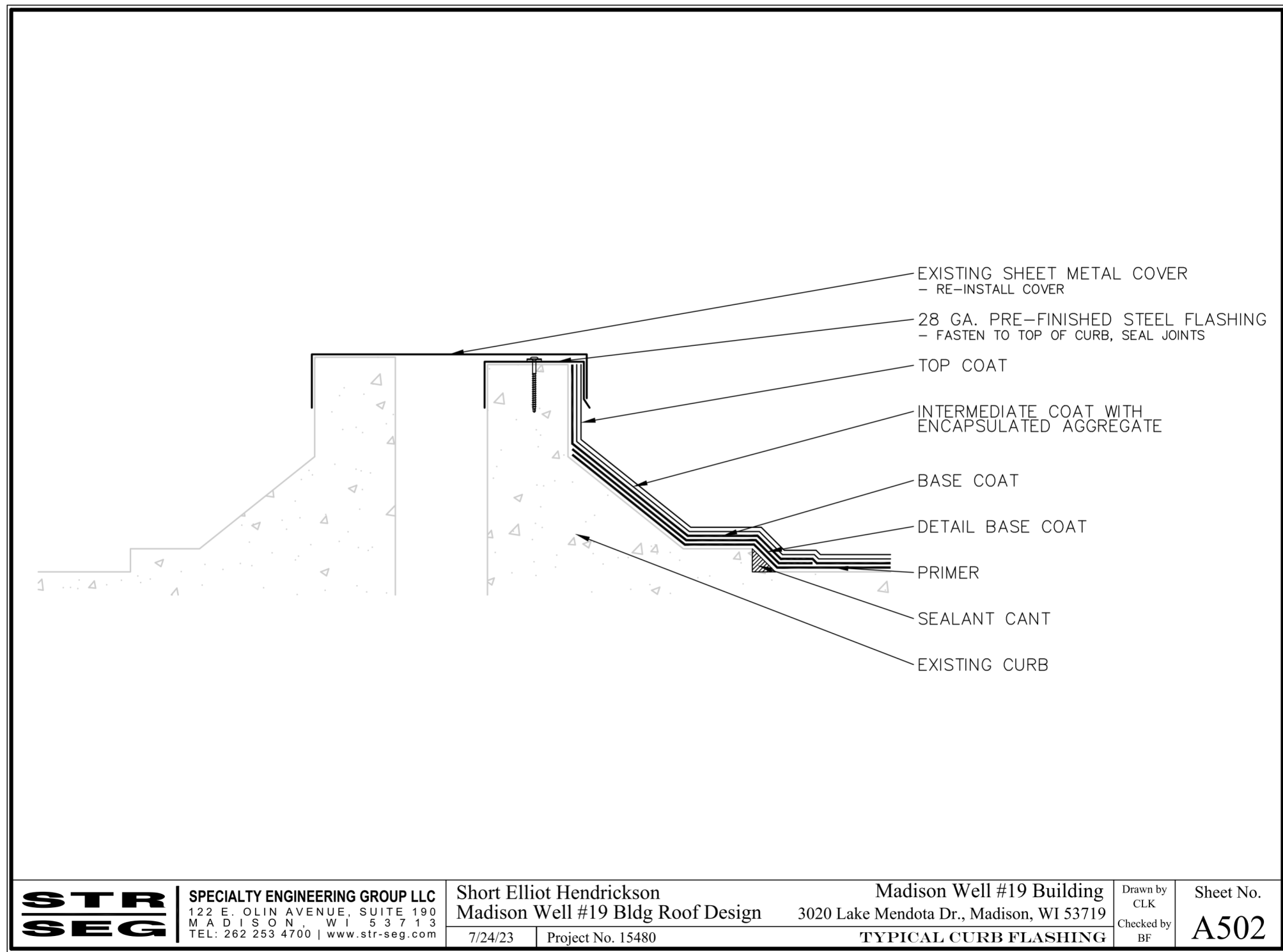
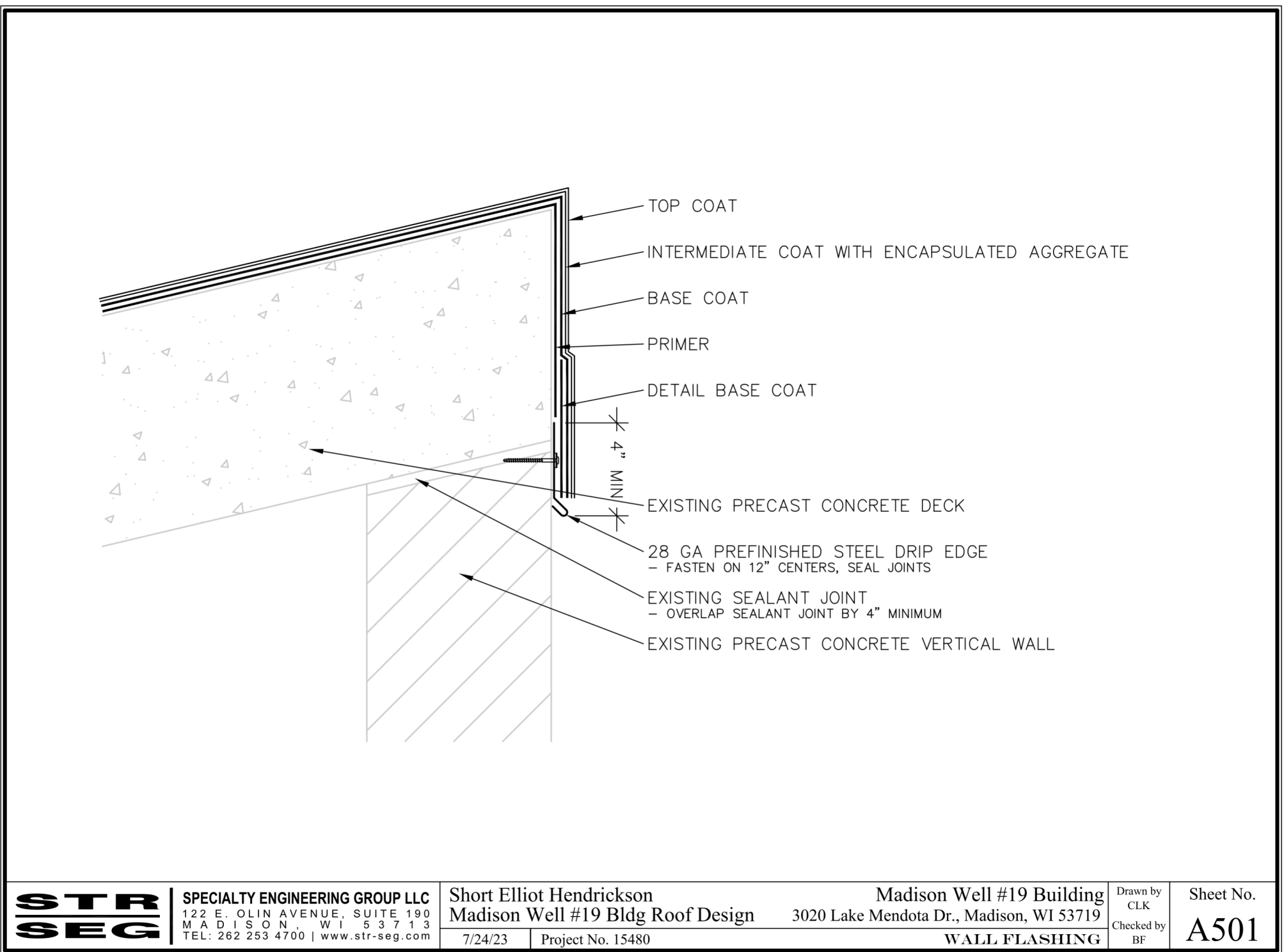
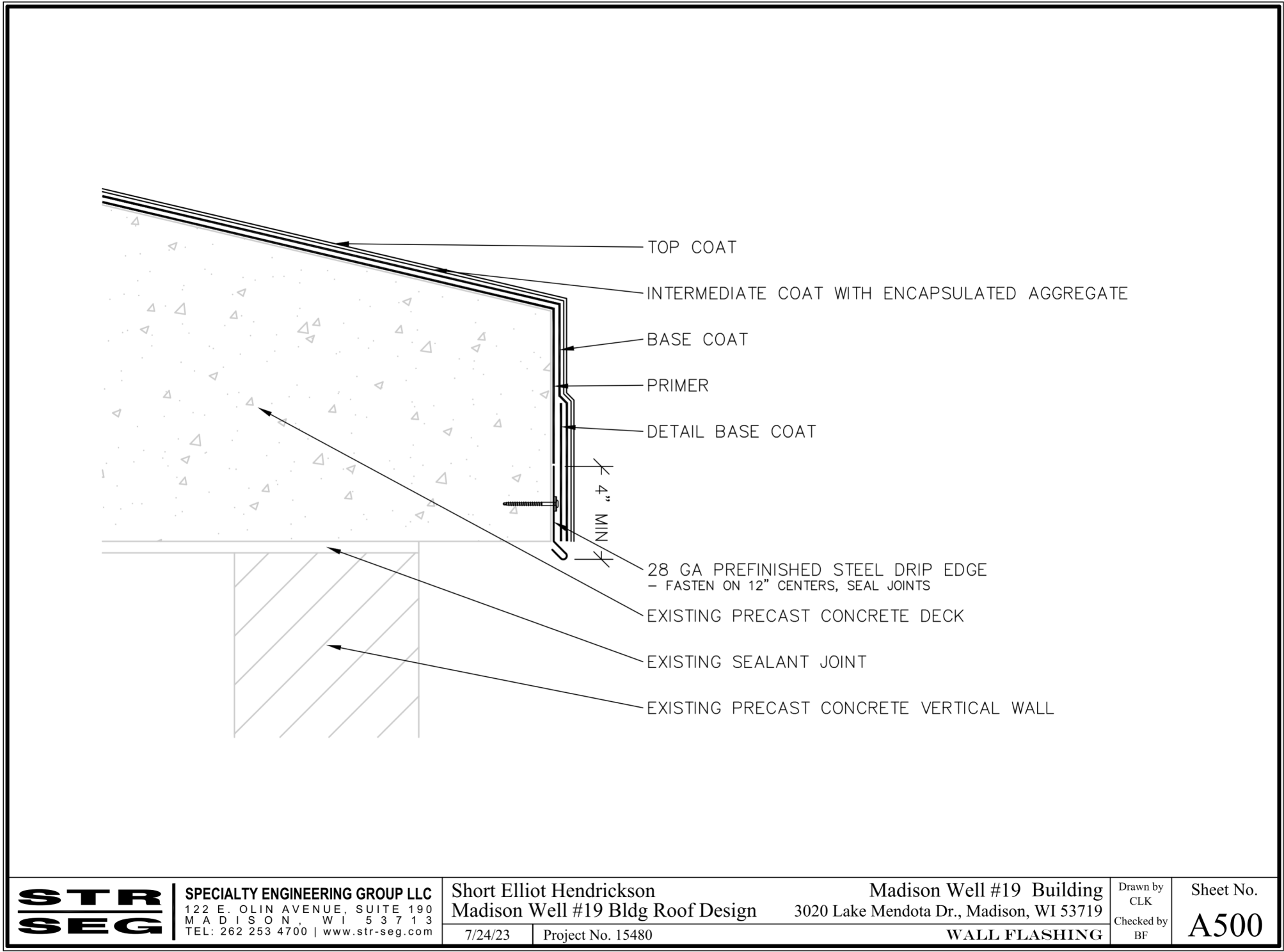
DETAIL REFERENCE ELEVATIONS

Drawn by
CLK
Checked by
BF

Sheet No.

A200

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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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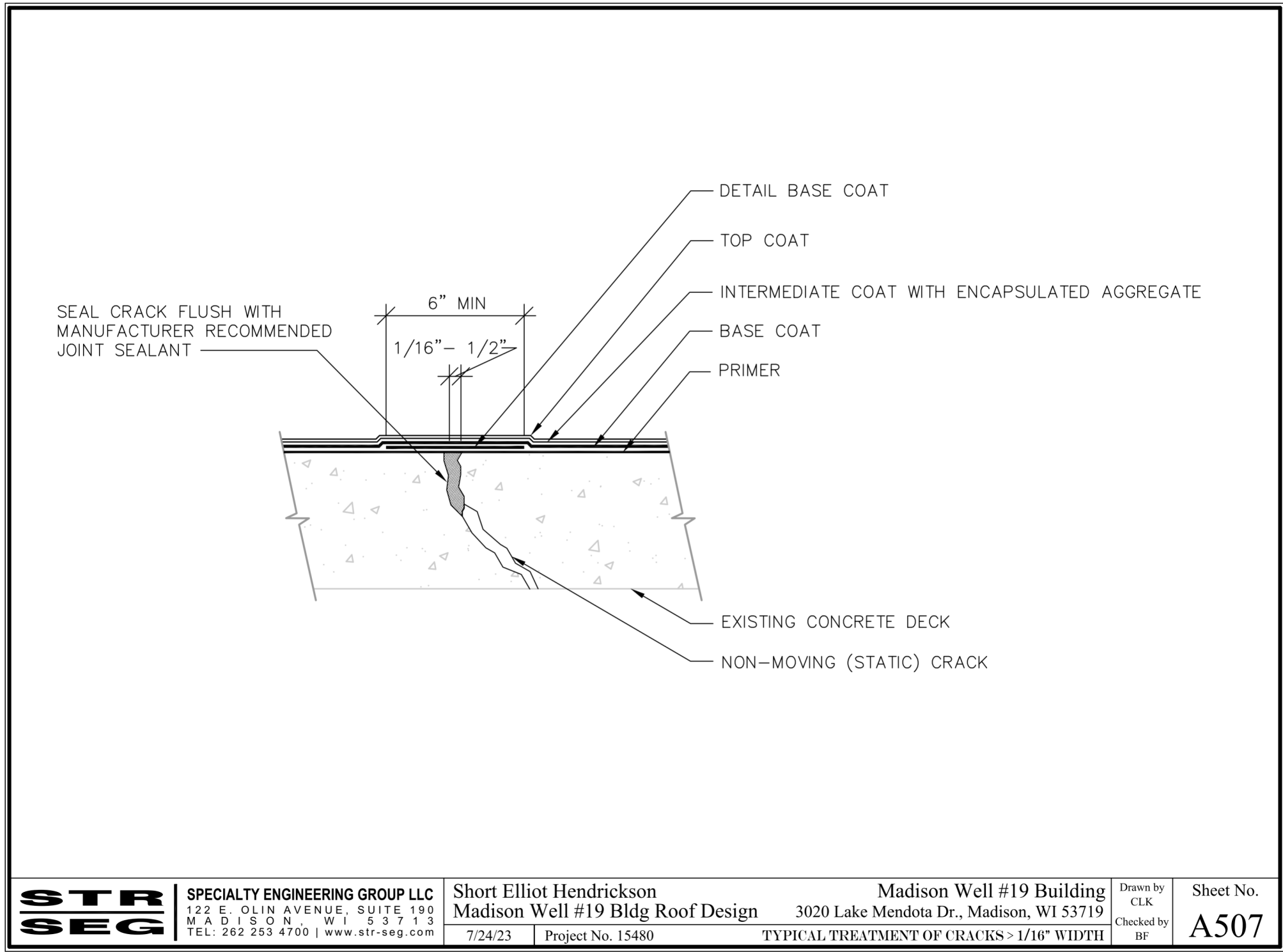
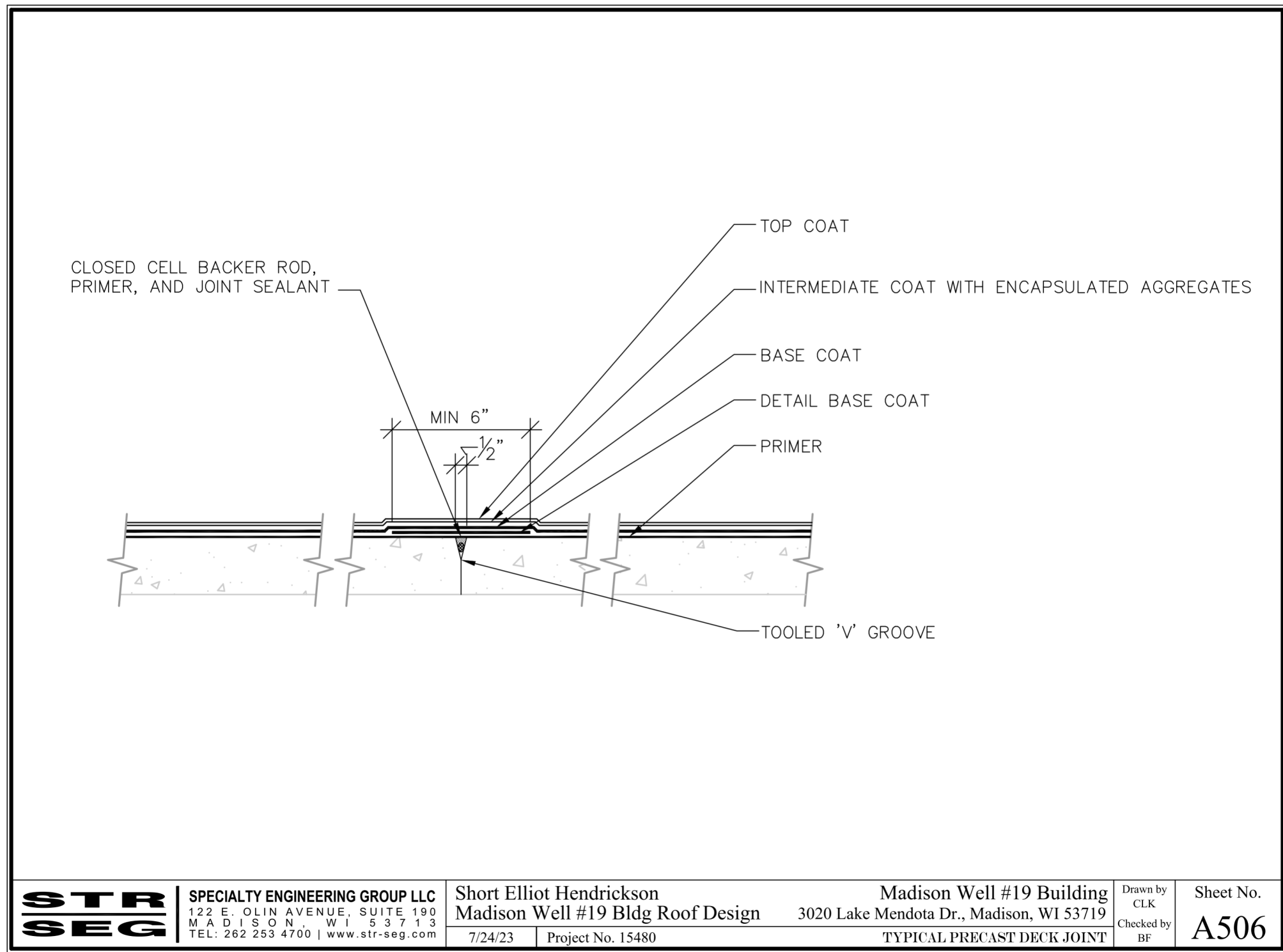
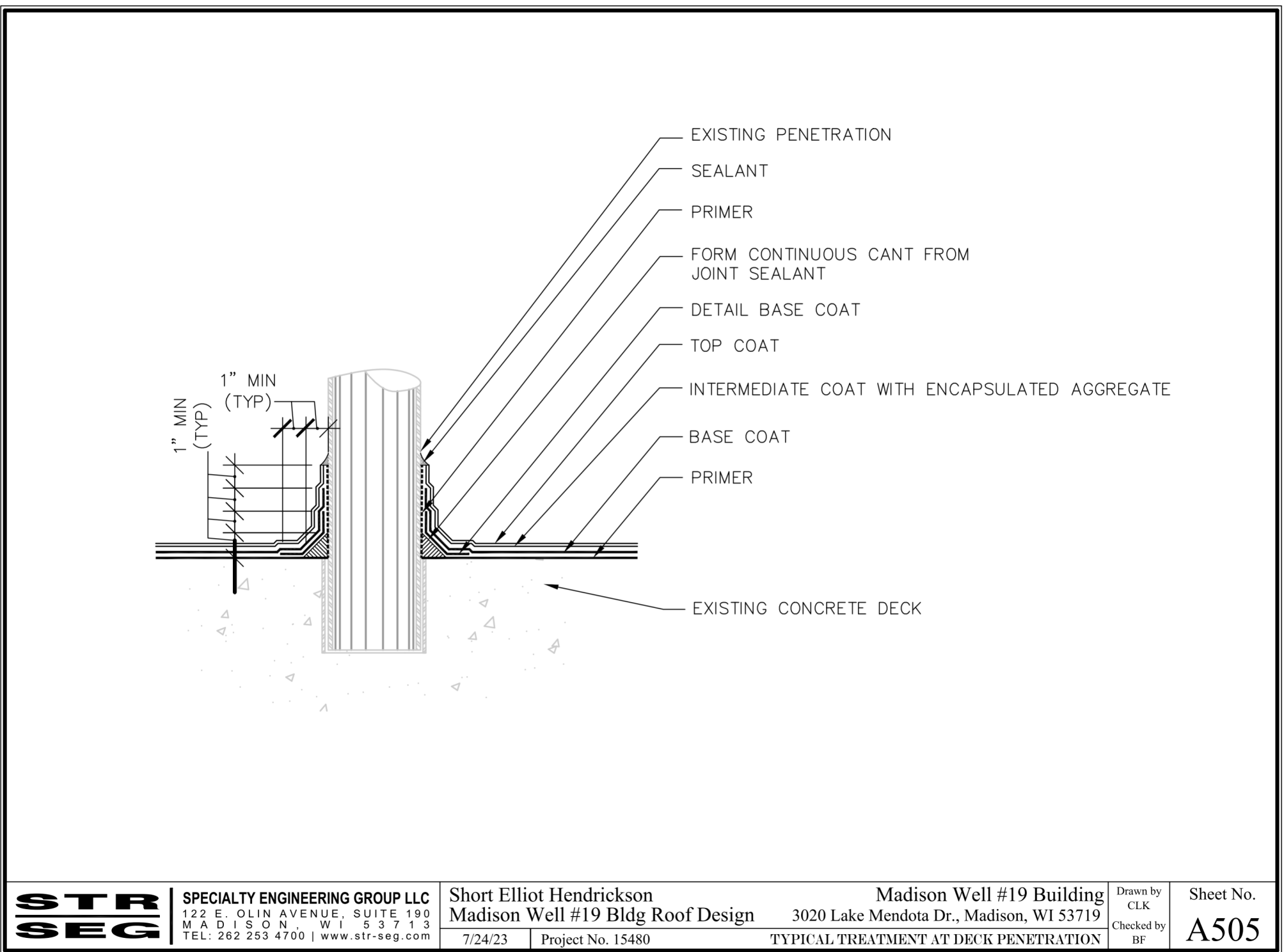
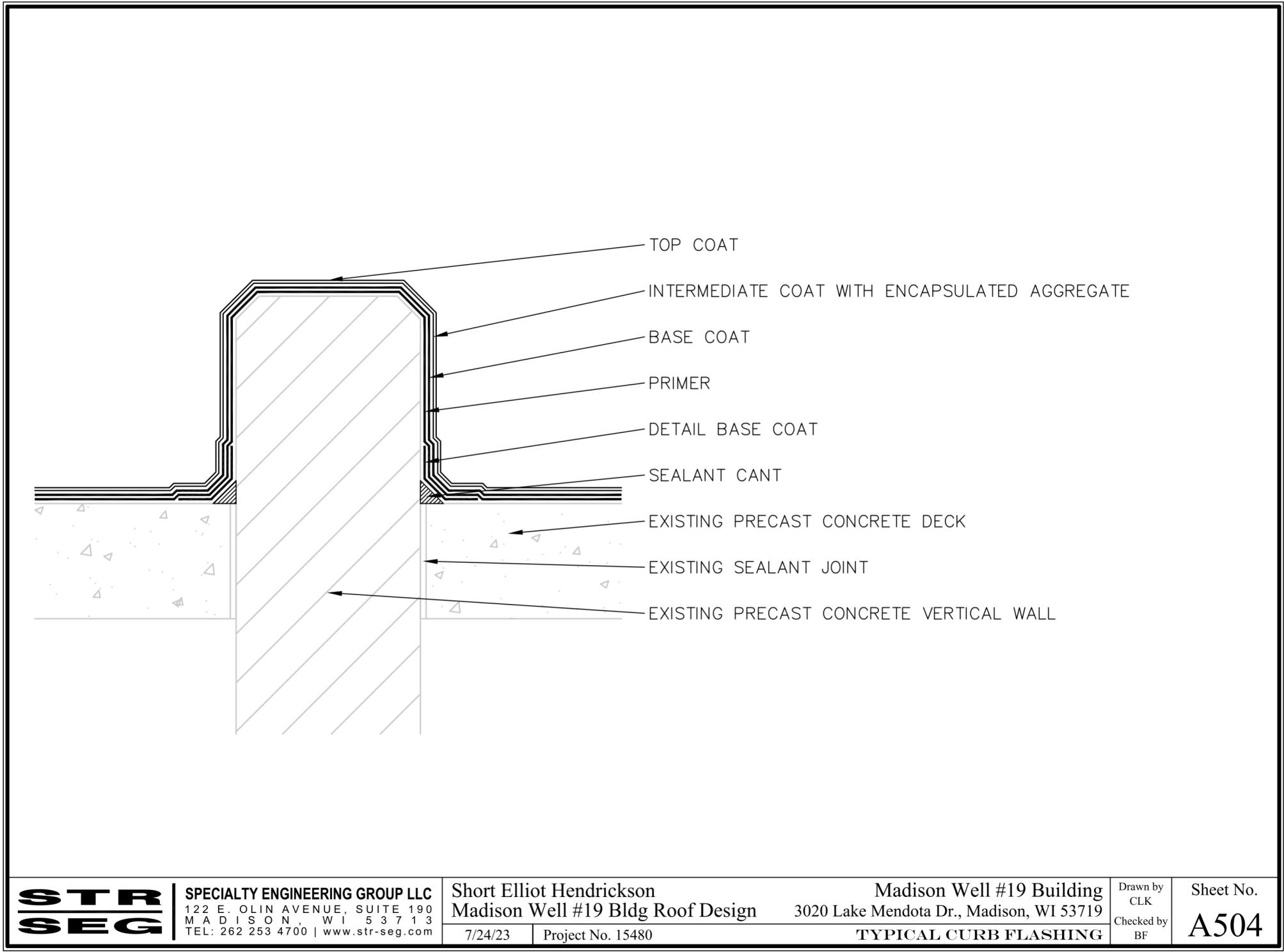
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE
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ALT BID #1 - STR SEG
ROOFING DETAILS
A500-A503

01a
AR500

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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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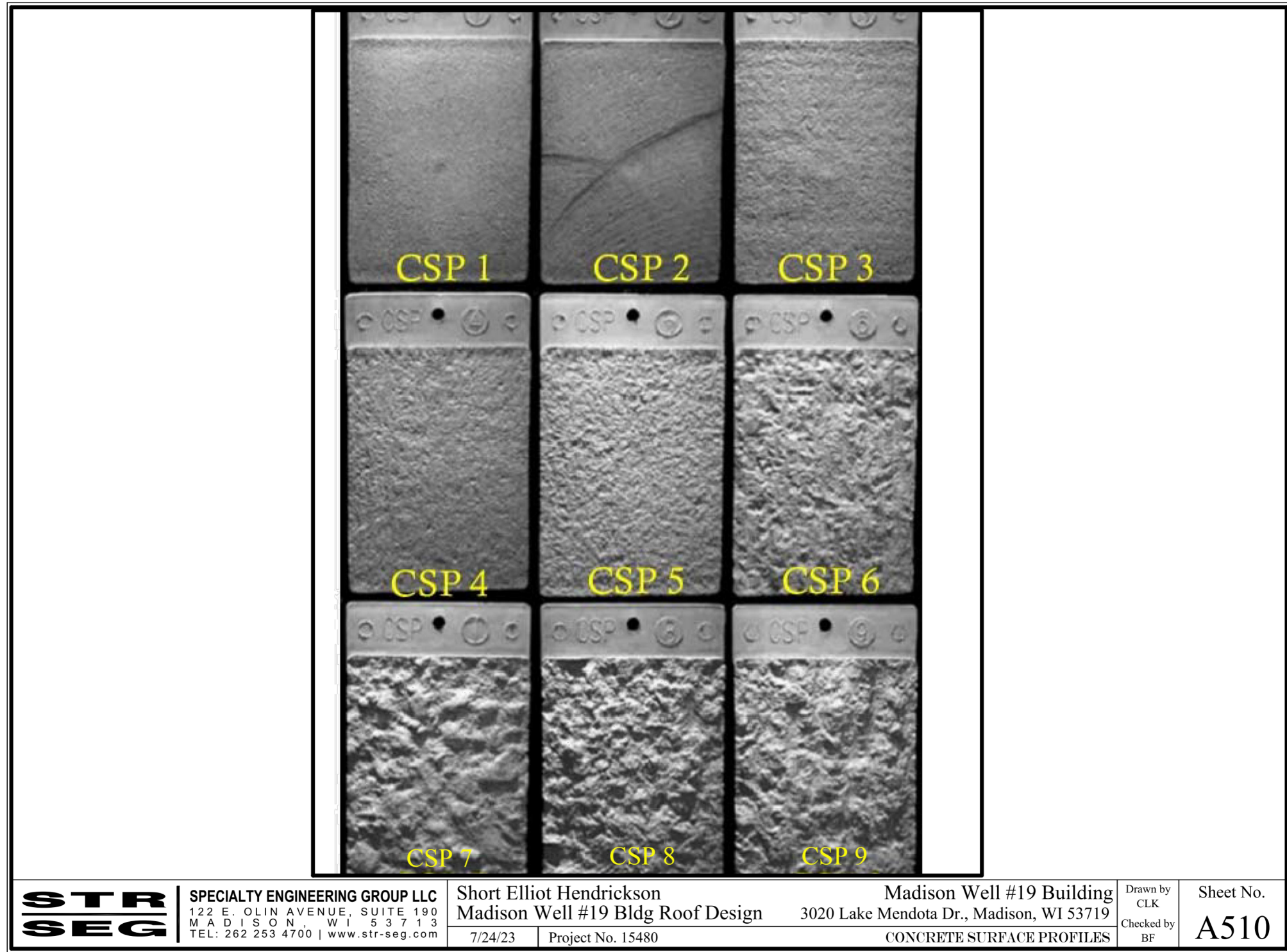
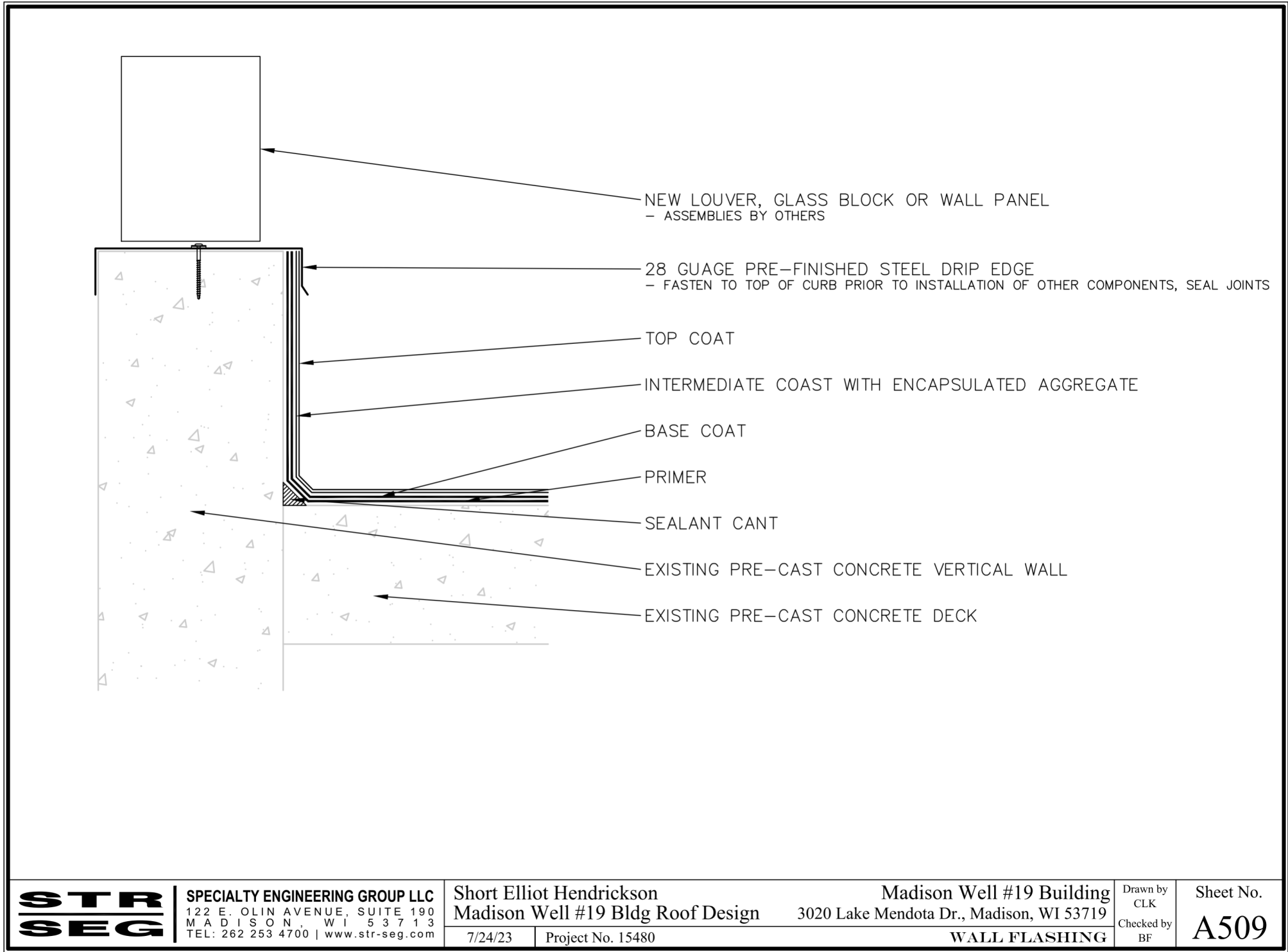
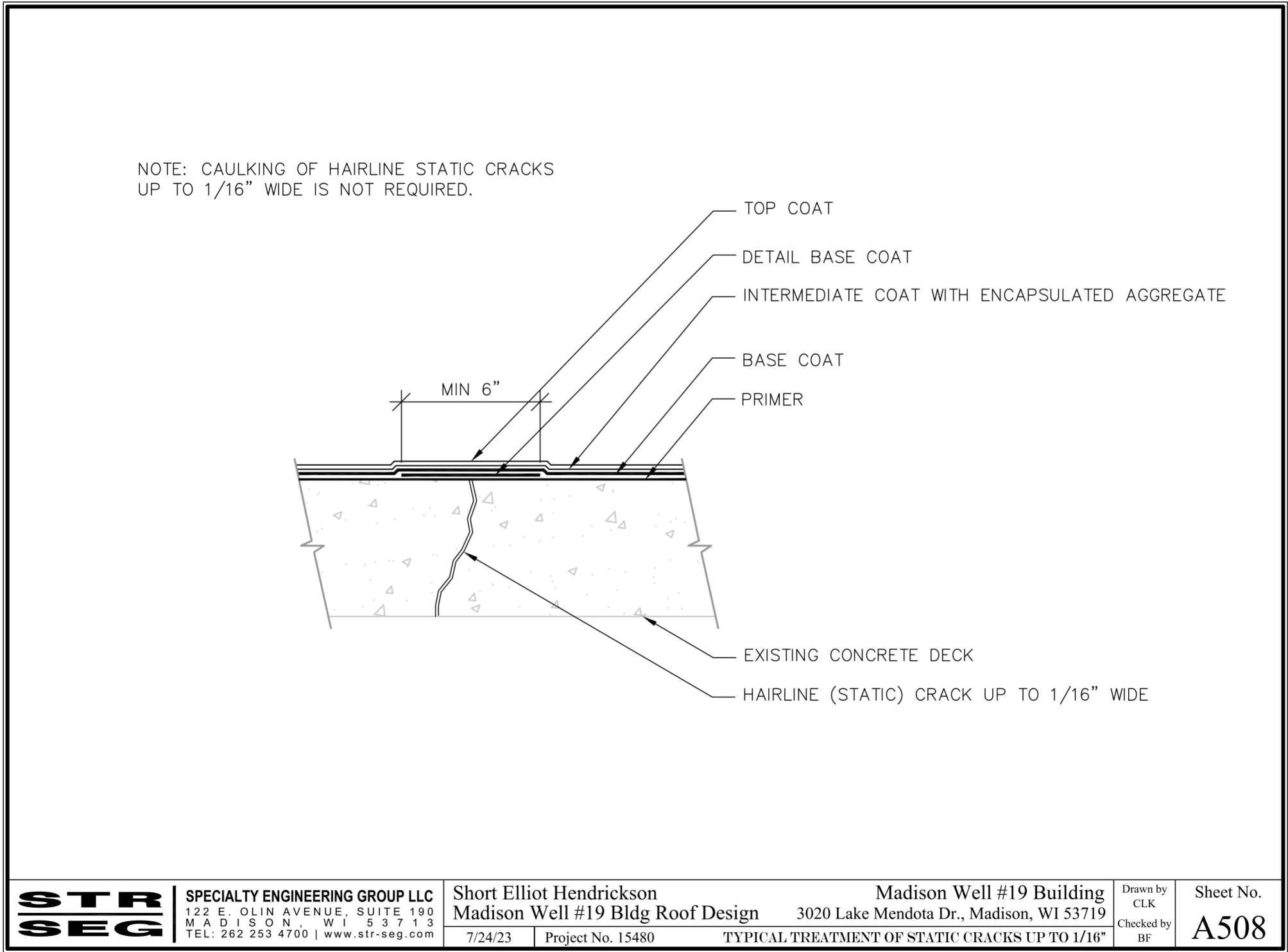
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE
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ALT BID #1 - STR SEG
ROOFING DETAILS
A504-A507

01a
AR501

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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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OCTOBER 2023

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ALT BID #1 - STR SEG
ROOFING DETAILS
A508-A510

01a
AR502

KEYNOTES

- 1

FILTER SKID
- 2

12" BUTTERFLY VALVE FILTER BYPASS VALVE w/ CHAINWHEEL OPERATOR
- 3

EXISTING VERTICAL TURBINE WELL PUMP
- 4

TAP PIPE FOR 4" VERTICAL PIPE FOR AIR-VACUUM RELEASE
- 5

INSTALL 12" CHECK VALVE
- 6

REPLACE EXISTING 14" GATE VALVE IN KIND
- 7

12" MAGNETIC FLOW METER w/ REMOTE READOUT
- 8

6" MAGNETIC FLOW METER w/ REMOTE READOUT
- 9

12" FLANGED STATIC MIXER w/ CHEMICAL INJECTION PORTS - ORIENT MIXER SUCH THAT INJECTION PORTS ARE INDEXED 45° DOWN FROM HORIZONTAL - INSTALL VALVE ON FEED LINE TO ALLOW CHEMICAL TUBE REPLACEMENT
- 10

CUT IN 12x6 TEE INTO EXISTING RESERVOIR FILL LINE - SEE MECH. FOR CONT.
- 11

CHEMICAL TANKS. PROVIDE CHAIN RAILING TO ENSURE SECUREMENT OF TANKS. 2 TANKS IN USE, 4 TANKS IN STORAGE.
- 12

COAT THE INSIDE OF THE CONTAINMENT WELL (FLOOR, SIDE WALLS, AND TOPS OF PARTIAL HEIGHT WALLS) WITH CHEMICAL-RESISTANT COATING
- 13

CONTAINMENT CURB
- 14

EMERGENCY EYE WASH STATION- REFER TO PLUMBING DRAWINGS
- 15

1.5" SCH. 80 PVC CHLORINE SOLUTION PIPE
- 16

DUAL 150 POUND CHLORINE GAS CYLINDER SCALE w/ CYLINDER SWITCHING UNIT
- 17

STORAGE AREA FOR FOUR GAS CYLINDERS WITH SAFETY CHAINS
- 18

CHLORINE SOLUTION MAKEUP PANEL
- 19

4x4 TEE WITH BLIND FLANGE TAPPED FOR 1" SCH 80 PVC MOTIVE WATER
- 20

1.5" SCH 80 PVC NON-POTABLE MOTIVE WATER PIPE
- 21

12x8 ECCENTRIC REDUCER w/ FLAT ON TOP
- 22

160 GALLON FLUORIDE TANK
- 23

REPLACE EXISTING MANUAL 6" BUTTERFLY VALVE WITH 6" PNEUMATICALLY OPERATED BUTTERFLY VALVE - VALVE IN VERTICAL - SEE PAGE 01P901
- 24

REPLACE EXISTING AIR COMPRESSOR AND DRYER LOCATED UNDER STAIRS
- 25

REPLACE EXISTING HIGH SERVICE PUMPS (HSP) - SEE PAGE 01P901
- 26

PROPOSED BACKWASH TANK (STRUCTURE 02)
- 27

12" ELECTRICALLY MODULATING FILTER INFLUENT RATE CONTROL VALVE
- 28

CONNECT 4" TO 4" RPZ - SEE MECHANICAL FOR CONTINUATION
- 29

VENT CHLORINE THROUGH WALL ABOVE DOOR
- 30

2" SCH 40 PVC FLUORIDE TANK VENT THROUGH WALL
- 31

MOUNT FLUORIDE CHEMICAL FEED EQUIPMENT ON WALL SHELF ABOVE CONTAINMENT
- 32

ROUTE FLUORIDE CHEMICAL FEED TUBING TO INJECTION CONNECTION ON STATIC MIXER
- 33

SEE PHOTO 2 ON SHEET 01/P901 FOR EXISTING VALVES REPLACEMENT
- 34

REPLACE TWO BUTTERFLY VALVES AND ONE CHECK VALVE ON EACH PUMP INLET AND OUTLET - SEE PHOTO 3 ON SHEET 01/P901 FOR EXISTING VALVES REPLACEMENT
- 35

CONNECT CHLORINE SOLUTION WATER TO CHEMICAL INJECTION POINT ON THE STATIC MIXER
- 36

EXISTING FLOW METER TO BE USED AS FINISHED WATER FLOW METER
- 37

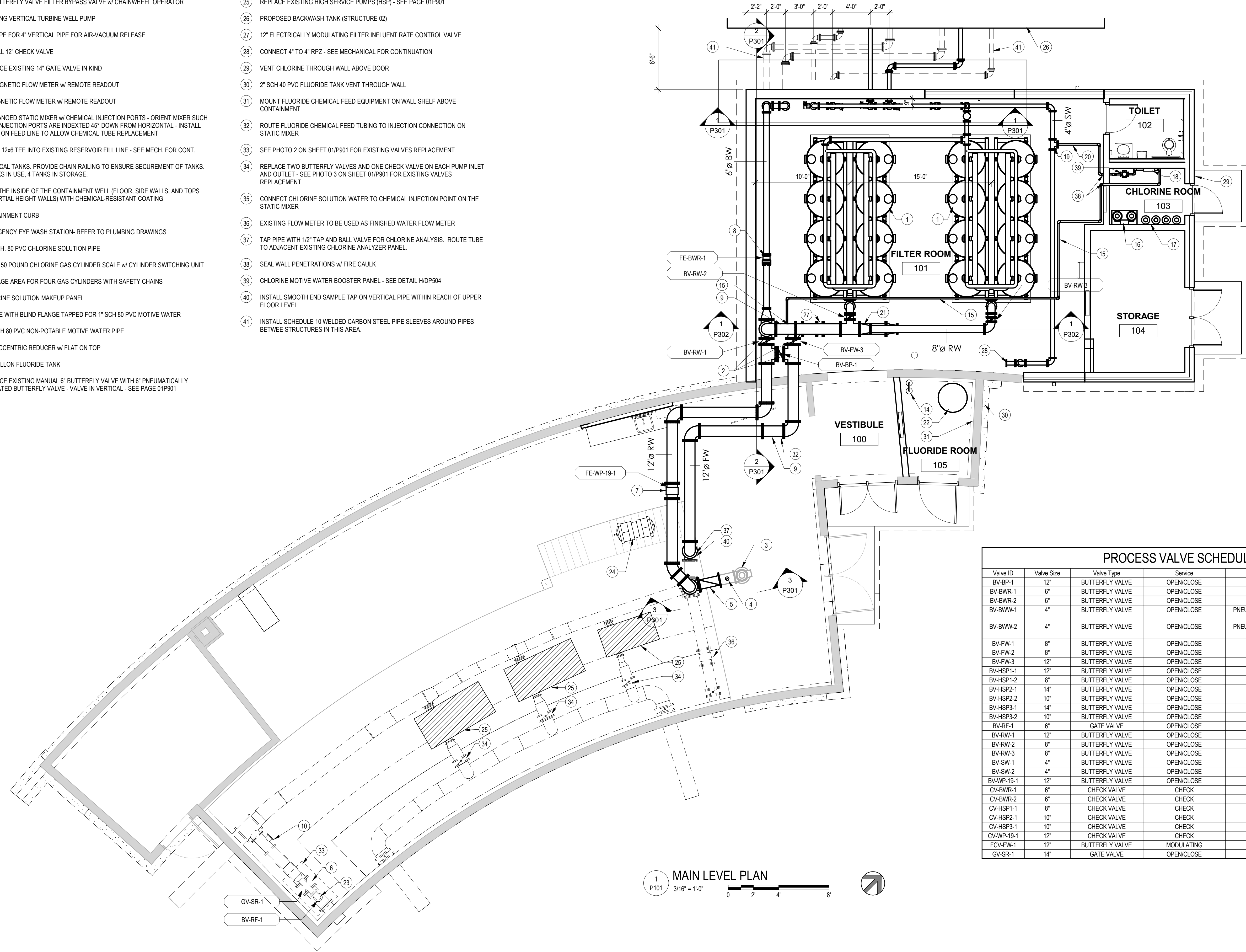
TAP PIPE WITH 1/2" TAP AND BALL VALVE FOR CHLORINE ANALYSIS. ROUTE TUBE TO ADJACENT EXISTING CHLORINE ANALYZER PANEL.
- 38

SEAL WALL PENETRATIONS w/ FIRE CAULK
- 39

CHLORINE MOTIVE WATER BOOSTER PANEL - SEE DETAIL H/DP504
- 40

INSTALL SMOOTH END SAMPLE TAP ON VERTICAL PIPE WITHIN REACH OF UPPER FLOOR LEVEL
- 41

INSTALL SCHEDULE 10 WELDED CARBON STEEL PIPE SLEEVES AROUND PIPES BETWEEN STRUCTURES IN THIS AREA.



PROCESS VALVE SCHEDULE				
Valve ID	Valve Size	Valve Type	Service	Operator Type
BV-BP-1	12"	BUTTERFLY VALVE	OPEN/CLOSE	CHAIN WHEEL
BV-BWR-1	6"	BUTTERFLY VALVE	OPEN/CLOSE	LEVER
BV-BWR-2	6"	BUTTERFLY VALVE	OPEN/CLOSE	LEVER
BV-BWW-1	4"	BUTTERFLY VALVE	OPEN/CLOSE	PNEUMATIC ACTUATOR w/ HARD STOPS TO BE SET DURING STARTUP
BV-BWW-2	4"	BUTTERFLY VALVE	OPEN/CLOSE	PNEUMATIC ACTUATOR w/ HARD STOPS TO BE SET DURING STARTUP
BV-FW-1	8"	BUTTERFLY VALVE	OPEN/CLOSE	CHAIN WHEEL
BV-FW-2	8"	BUTTERFLY VALVE	OPEN/CLOSE	CHAIN WHEEL
BV-FW-3	12"	BUTTERFLY VALVE	OPEN/CLOSE	CHAIN WHEEL
BV-HSP1-1	12"	BUTTERFLY VALVE	OPEN/CLOSE	HAND WHEEL
BV-HSP1-2	8"	BUTTERFLY VALVE	OPEN/CLOSE	ELECTRIC ACTUATOR
BV-HSP2-1	14"	BUTTERFLY VALVE	OPEN/CLOSE	HAND WHEEL
BV-HSP2-2	10"	BUTTERFLY VALVE	OPEN/CLOSE	ELECTRIC ACTUATOR
BV-HSP3-1	14"	BUTTERFLY VALVE	OPEN/CLOSE	HAND WHEEL
BV-HSP3-2	10"	BUTTERFLY VALVE	OPEN/CLOSE	ELECTRIC ACTUATOR
BV-RF-1	6"	GATE VALVE	OPEN/CLOSE	PNEUMATIC ACTUATOR
BV-RW-1	12"	BUTTERFLY VALVE	OPEN/CLOSE	CHAIN WHEEL
BV-RW-2	8"	BUTTERFLY VALVE	OPEN/CLOSE	HAND WHEEL
BV-RW-3	8"	BUTTERFLY VALVE	OPEN/CLOSE	HAND WHEEL
BV-SW-1	4"	BUTTERFLY VALVE	OPEN/CLOSE	PNEUMATIC ACTUATOR
BV-SW-2	4"	BUTTERFLY VALVE	OPEN/CLOSE	PNEUMATIC ACTUATOR
BV-WP-19-1	12"	BUTTERFLY VALVE	OPEN/CLOSE	CHAIN WHEEL
CV-BWR-1	6"	CHECK VALVE	CHECK	DAMPENED SWING
CV-BWR-2	6"	CHECK VALVE	CHECK	DAMPENED SWING
CV-HSP1-1	8"	CHECK VALVE	CHECK	DAMPENED SWING
CV-HSP2-1	10"	CHECK VALVE	CHECK	DAMPENED SWING
CV-HSP3-1	10"	CHECK VALVE	CHECK	DAMPENED SWING
CV-WP-19-1	12"	CHECK VALVE	CHECK	DAMPENED SWING
FCV-FW-1	12"	BUTTERFLY VALVE	MODULATING	ELECTRIC MODULATOR
GV-SR-1	14"	GATE VALVE	OPEN/CLOSE	HAND WHEEL

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
WELLHOUSE 19
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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Drawn By LAP

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BIDDING DOCUMENTS OCTOBER, 2023

REVISION SCHEDULE
REV. # DESCRIPTION DATE

PROCESS PLAN

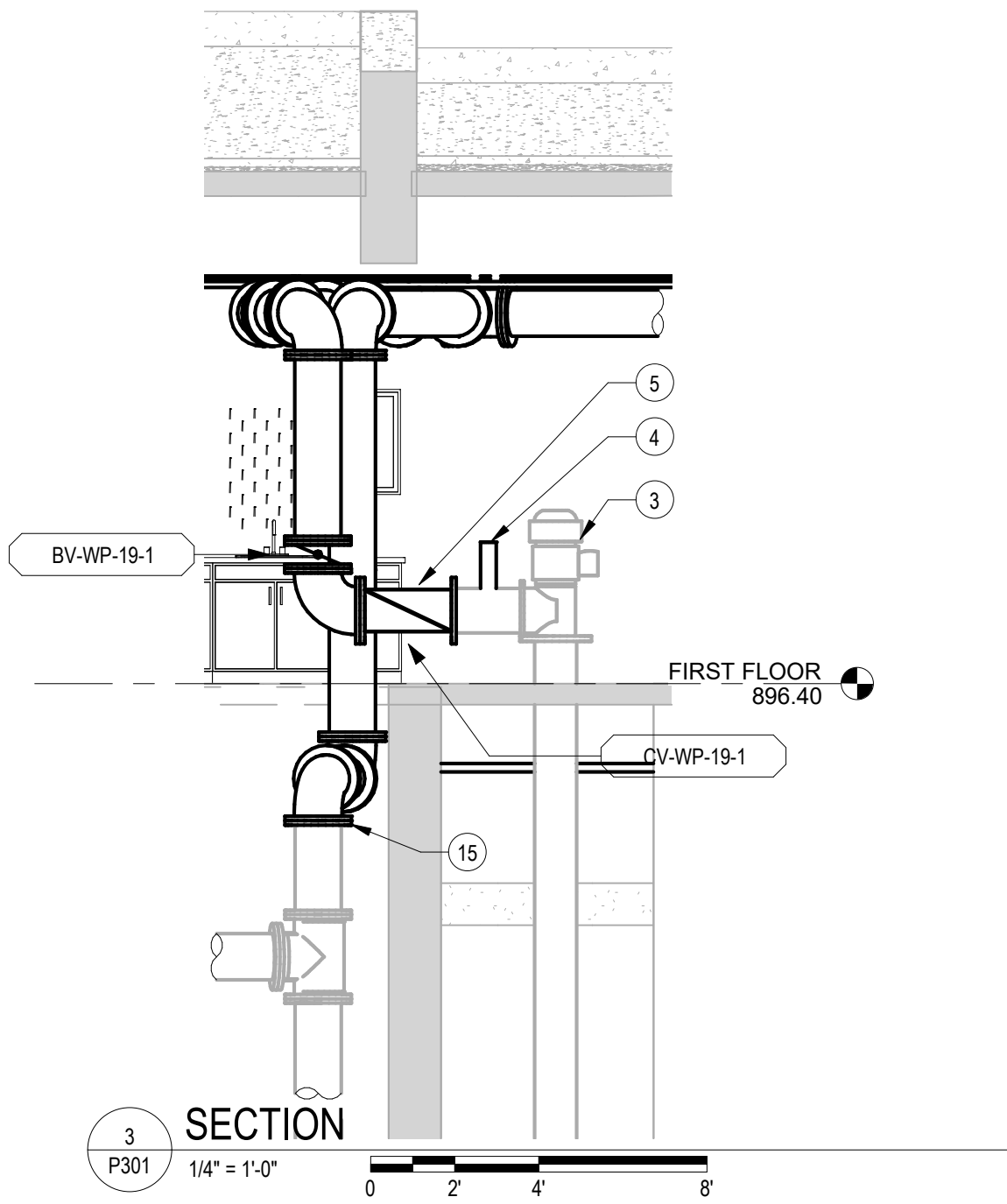
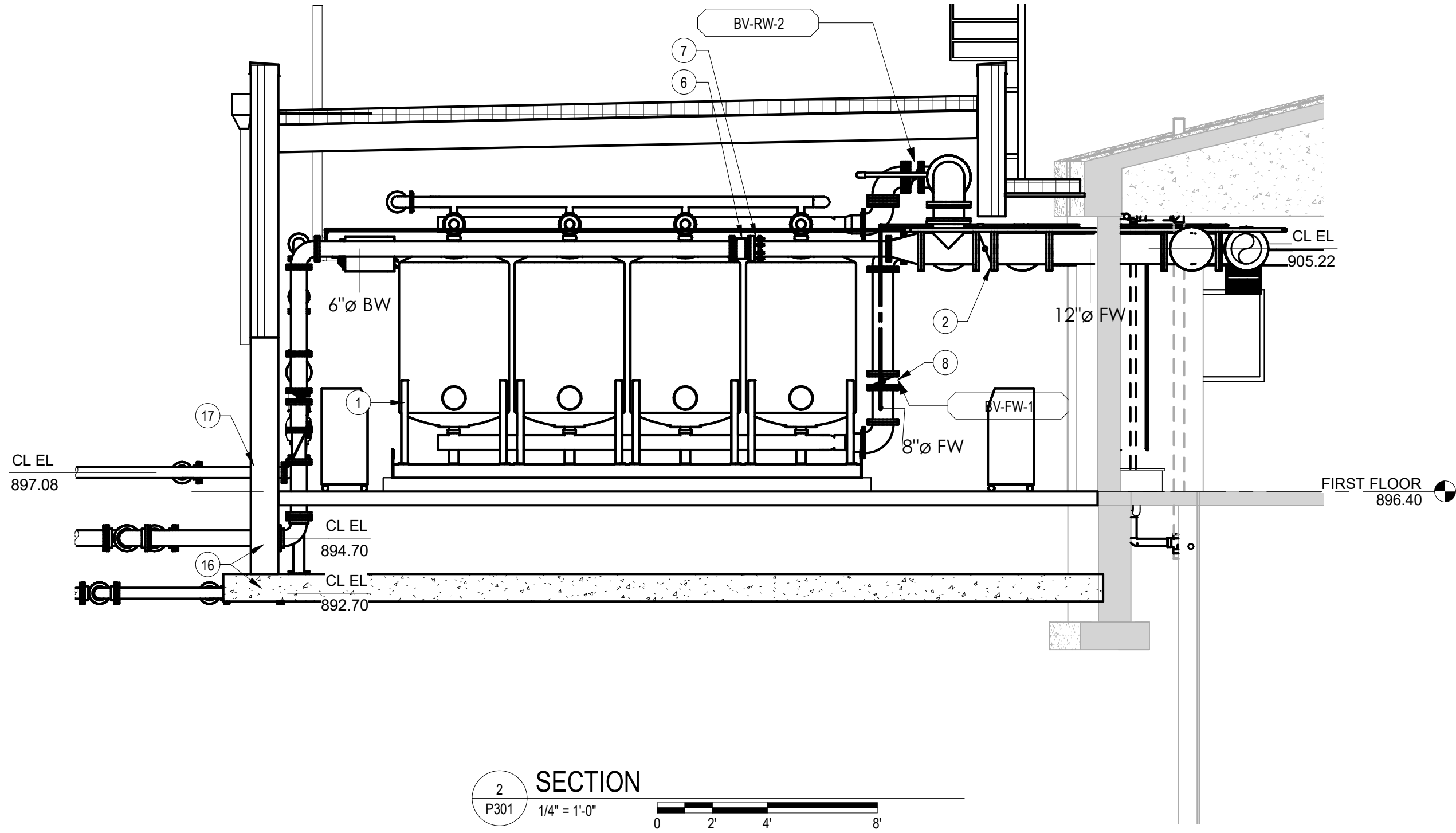
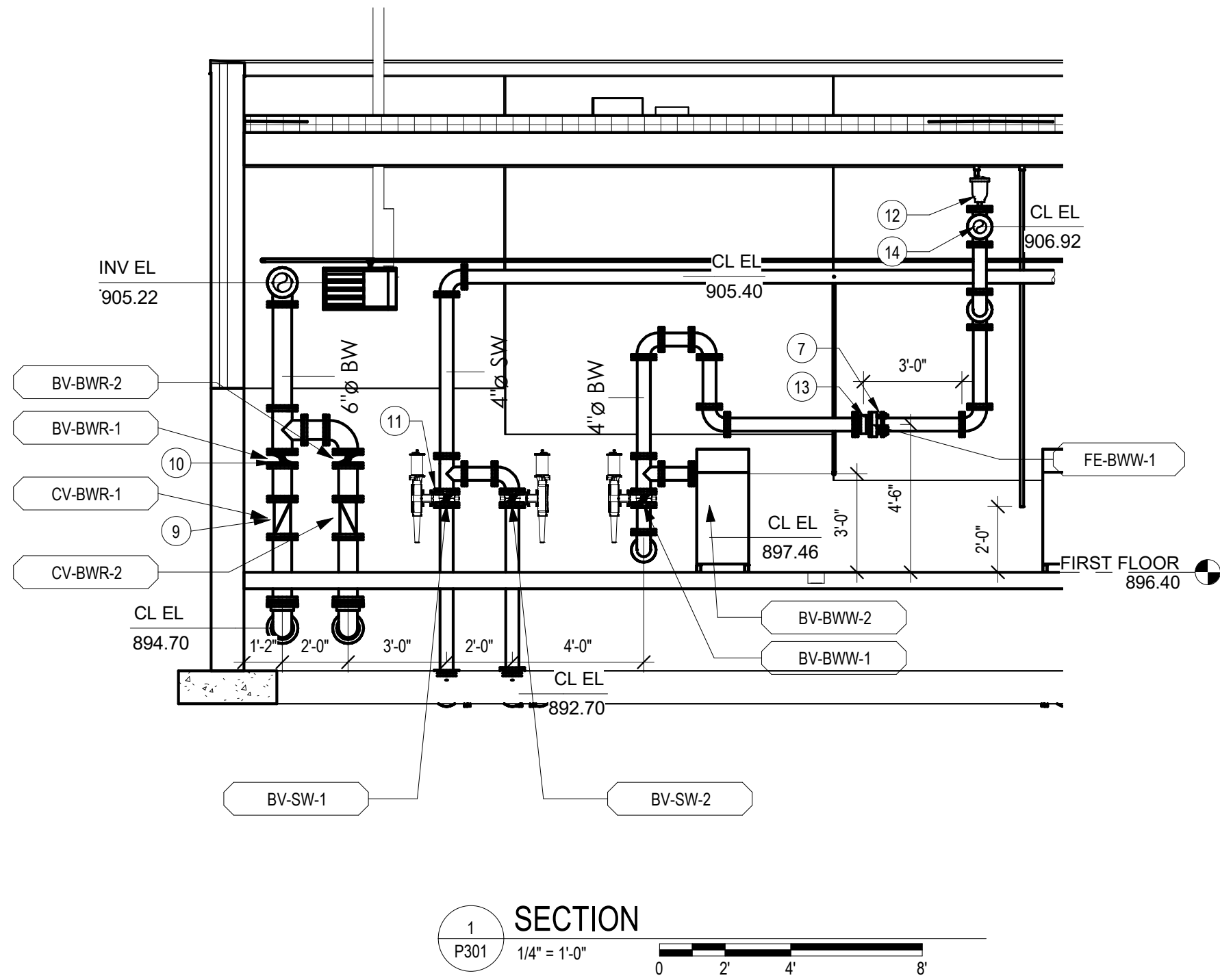
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P101

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Project Owner
MADISON WATER UTILITY

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KEYNOTES

- 1 FILTER SKID
- 2 12" BUTTERFLY VALVE FILTER BYPASS VALVE w/ CHAINWHEEL OPERATOR
- 3 EXISTING VERTICAL TURBINE WELL PUMP
- 4 TAP PIPE FOR 4" VERTICAL PIPE FOR AIR-VACUUM RELEASE
- 5 INSTALL 12" CHECK VALVE
- 6 6" MAGNETIC FLOW METER w/ REMOTE READOUT
- 7 FLANGED COUPLING ADAPTER
- 8 8" FILTER SHUTOFF BUTTERFLY VALVE w/ HANDWHEEL OPERATOR
- 9 6" SWING CHECK VALVE
- 10 6" PLUG VALVE w/ LEVER OPERATOR
- 11 4" PNEUMATICALLY OPERATED BUTTERFLY VALVE - TYP. FOR BACKWASH WASTE AND SPRAY WASH PIPES
- 12 AIR AND VACUUM RELIEF VALVE
- 13 4" BACKWASH WASTE FLOW METER
- 14 CONTRACTOR TO VERIFY ELEVATION AFTER FILTER EQUIPMENT INSTALLED
- 15 CONNECT TO EXISTING 12" WELDED STEEL WELLHOUSE PIPING
- 16 CONSTRUCT 12" SQUARE BLOCKOUT IN FOUNDATION TO PASS PIPE THROUGH
- 17 FLxMJ WALL PIPE



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
WELLHOUSE 19
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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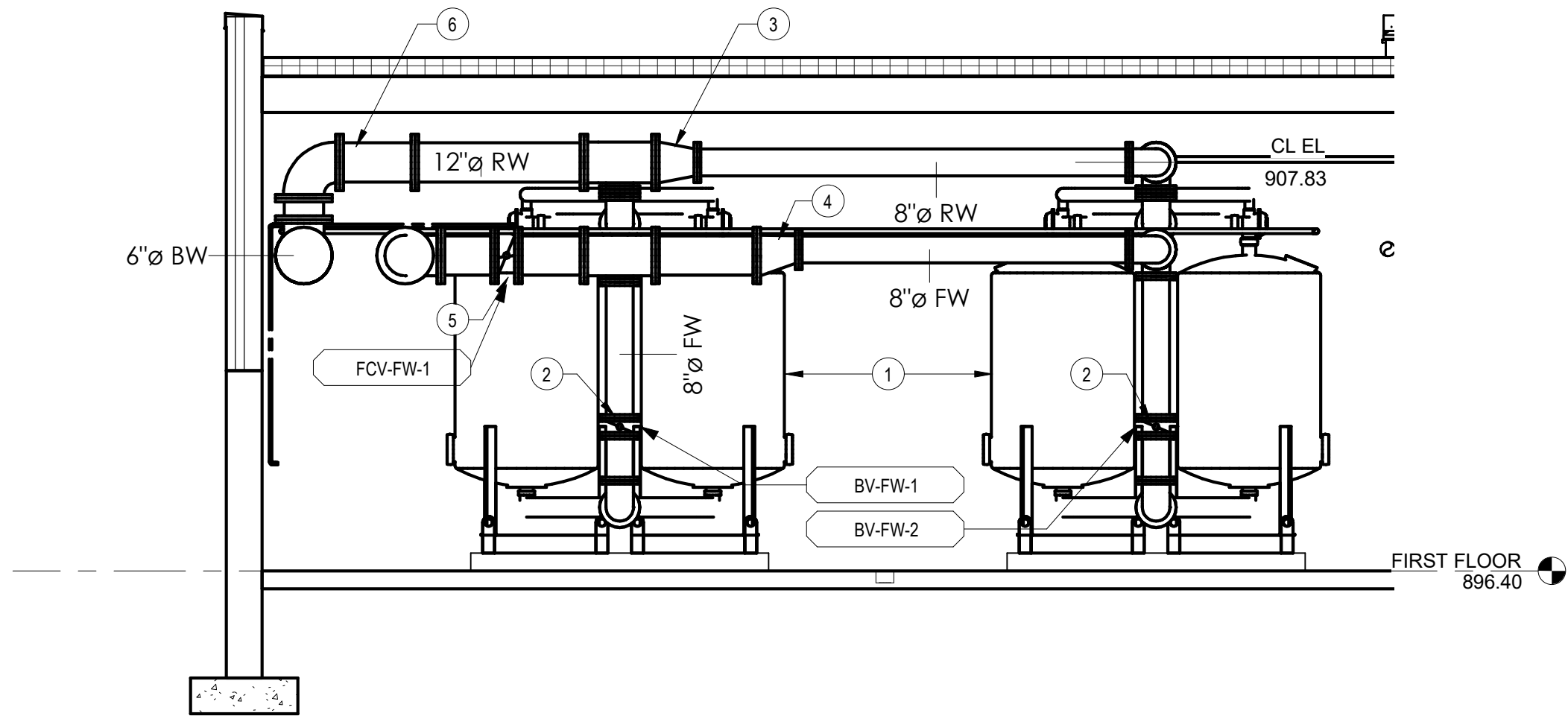
Project Status BIDDING DOCUMENTS
Issue Date OCTOBER, 2023

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REV. # DESCRIPTION DATE

PROCESS SECTIONS

01
P301

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1 SECTION
P302 1/4" = 1'-0"
0 2 4 8'

KEYNOTES

- 1 FILTER SKID
- 2 8" BUTTERFLY VALVE FILTER SHUTOFF VALVE w/ HANDWHEEL OPERATOR
- 3 12"x8" CONCENTRIC REDUCER
- 4 12"x8" ECCENTRIC REDUCER w/ FLAT ON TOP
- 5 12" ELECTRICALLY MODULATING FILTER RATE CONTROL VALVE
- 6 12" FLANGED STATIC MIXER w/ CHEMICAL INJECTION PORTS



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
WELLHOUSE 19
2525 LAKE MENOTA DRIVE
MADISON, WISCONSIN

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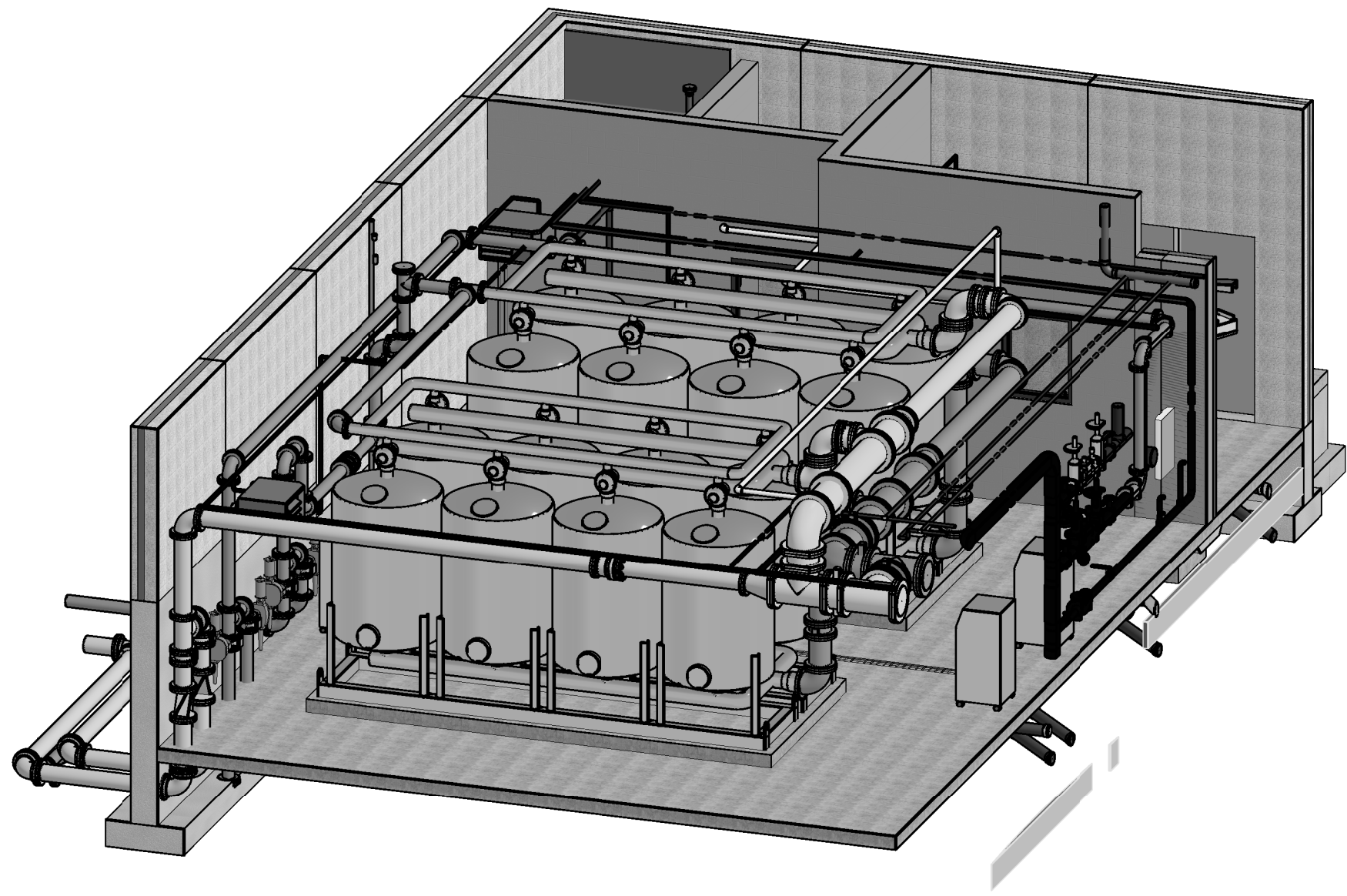
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REV. #	DESCRIPTION	DATE

PROCESS SECTIONS

01
P302



1
P901
FILTER ISOMETRIC FOR REFERENCE ONLY
NOT TO SCALE



REPLACE EXISTING 6" GATE VALVE WITH 6" GATE VALVE w/ PNEUMATIC ACTUATOR

REPLACE EXISTING 14" GATE VALVE IN KIND

REPLACE EXISTING 12" MANUAL BUTTERFLY VALVE IN KIND

REPLACE EXISTING 10" SURGE RELIEF VALVE IN KIND

2
P901
RESERVIOR FILL VALVE
NOT TO SCALE



REPLACE MANUAL BUTTERFLY VALVE - 12" ON HSP1 & 14" ON HSP2 AND 3

REPLACE ELECTRICALLY ACTUATED BUTTERFLY VALVE - 8" ON HSP1 & 10" ON HSP2 AND 3

REPLACE CHECK VALVE - 8" ON HSP1 & 10" ON HSP2 AND 3

REPLACE PUMP AND MOTOR IN KIND

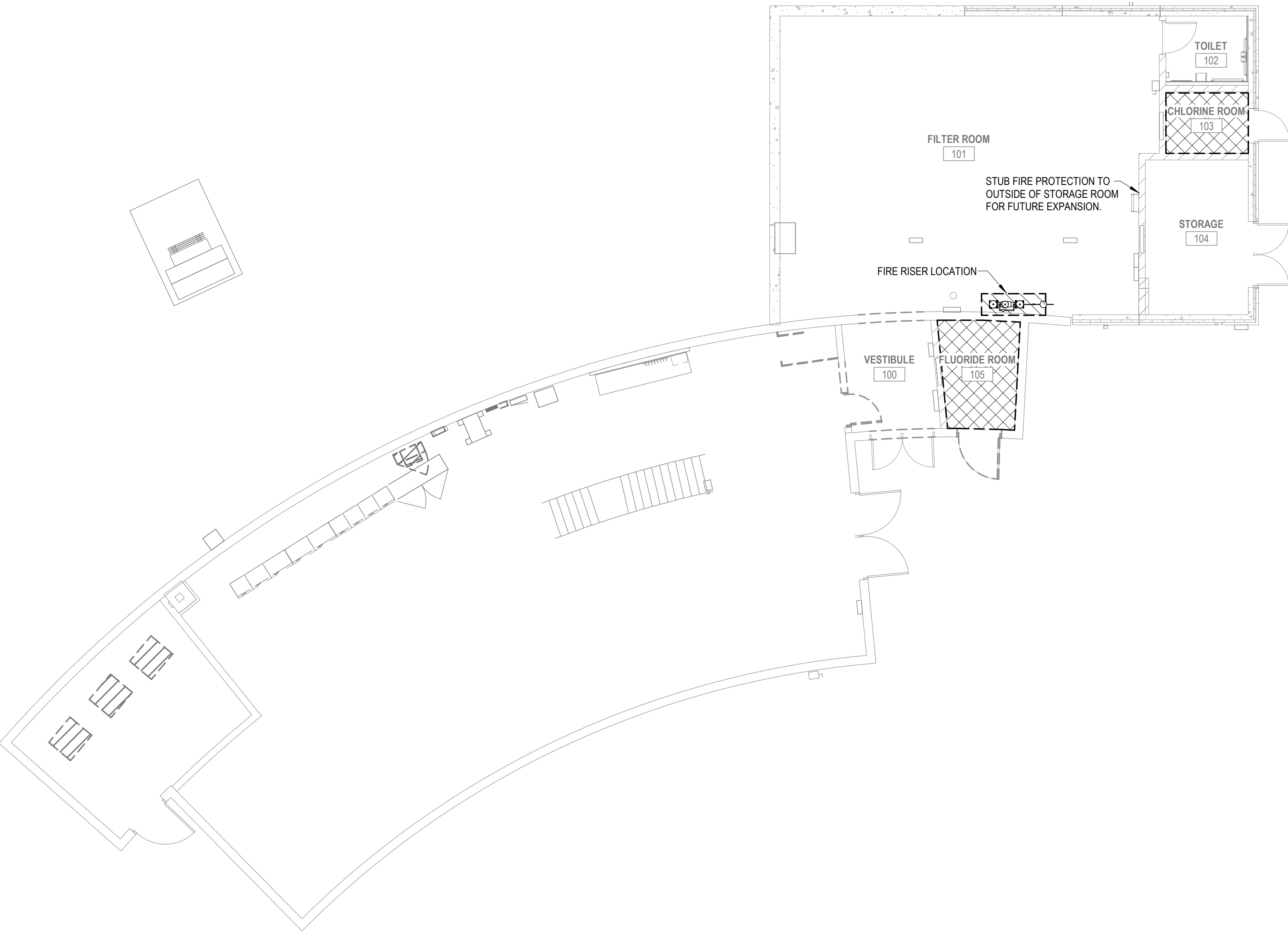
3
P901
HSP PUMP PHOTO -TYP. OF 3
NOT TO SCALE



SEE PHOTO 3/01P901 FOR TYPICAL REPLACEMENT NOTES

4
P901
THREE HSP'S PHOTO
NOT TO SCALE

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FIRE PROTECTION RISER
NOT TO SCALE

- NOTE: THIS DETAIL IS FOR REFERENCE ONLY. FIRE SPRINKLER CONTRACTOR SHALL DESIGN THE SPRINKLER RISER. FINAL SIZING AND ASSEMBLY SHALL BE BY SPRINKLER CONTRACTOR.
1.

4" TO REMOTE FIRE DEPARTMENT CONNECTION.
2.

ELECTRIC HORN AND STROBE.
3.

WATER FLOW INDICATOR
4.

TEE CONNECTION
5.

PRESSURE GAUGE
6.

2" MAIN DRAIN VALVE
7.

ELBOW OUT THROUGH EXTERIOR AND ELBOW DOWN FOR SYSTEM MAIN DRAIN
8.

DOUBLE CHECK DETECTOR ASSEMBLY WITH UL/FM OS&Y VALVES WITH TAMPER SWITCHES.
9.

6" FIRE PROTECTION SERVICE FROM FINISHED WATER MAIN.
10.

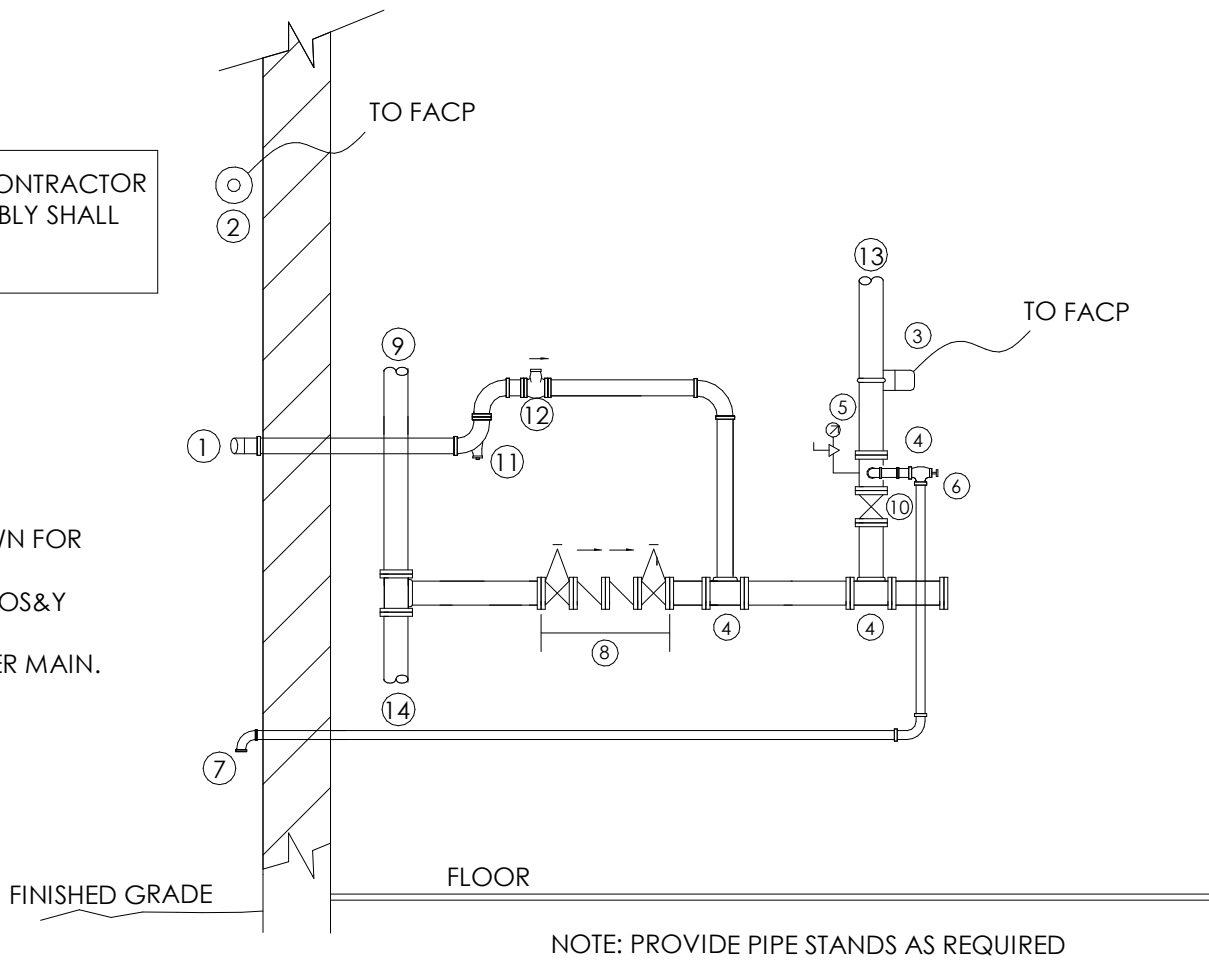
SUPERVISED BUTTERFLY VALVE
11.

BALL DRIP
12.

CHECK VALVE
13.

WET SYSTEM MAIN
14.

6" COMBINED SERVICE TO NPW AND DOMESTIC WATER (SEE 02/M201)



SPRINKLER SYSTEM SCHEDULE						
AREA	HAZARD CLASS	MINIMUM DENSITY (GPM/SQ FT)	MINIMUM SPRINKLER HYDRAULIC DESIGN AREA (SQ FT)	HOSE STREAM DEMAND (GPM)	DURATION (MIN)	NOTES
	ORDINARY GROUP 2	0.20	1500	250	90	

GENERAL NOTES:

1. FIRE SPRINKLER PIPING LAYOUT AND SIZING SHALL BE DETERMINED BY HYDRAULIC CALCULATION IN ACCORDANCE WITH NFPA 13 PER SPECIFICATION 21.00.00. FINAL HYDRAULIC CALCULATIONS SHALL BE BASED ON ACTUAL FLOW TEST DATA TO BE PERFORMED BY CONTRACTOR.
2. SPRINKLER SYSTEM SHALL BE DESIGNED AS REQUIRED BY NFPA 13 FOR THE OCCUPANCIES IDENTIFIED. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE ACTUAL NUMBER OF SPRINKLERS AND SPACING REQUIREMENTS TO PROTECT THE AREA IN ACCORDANCE WITH NFPA 13 FOR THE OCCUPANCY HAZARD CLASSIFICATION.
3. RISER TO SERVE THE ZONE SHALL BE COORDINATED WITH THE CONSTRUCTION; DO NOT OBSTRUCT CORRIDORS, DOORWAYS, ETC. INSTALL RISERS AS CLOSE AS PRACTICAL TO ROOM CORNERS, WALLS, ETC. RISER LOCATION SHOWN MAY BE REVISED BY THE CONTRACTOR AS REQUIRED.
4. THE ARCHITECTURAL BACKGROUND PROVIDED ON THIS SHEET IS FOR GENERAL REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL BACKGROUNDS WITH THE ARCHITECTURAL SHEETS. REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATED WALKWAYS, STAIRWAYS, BRIDGES, ETC.
5. COORDINATE SPRINKLER INSTALLATION IN AREAS WITHOUT CEILINGS. PROVIDE ADDITIONAL SPRINKLERS AS REQUIRED TO AVOID OBSTRUCTIONS TO DISCHARGE FORMED BY DUCT WORK, LIGHT FIXTURES, STRUCTURE, WATER TREATMENT EQUIPMENT, MECHANICAL EQUIPMENT, ETC.
6. PROVIDE SPRINKLER GUARDS ON ALL SPRINKLERS LESS THAN 7'-0" AFF.
7. PROVIDE INSPECTORS TEST CONNECTION AT REMOTE POINT FOR EACH ZONE. ROUTE TEST AND DRAIN PIPES TO GRADE. PIPE SHALL TERMINATE WITH SMOOTHER BORE CORROSION RESISTANT OUTLET.
8. COORDINATE LOCATION OF FIRE DEPARTMENT CONNECTION WITH CITY OF MADISON FIRE DEPARTMENT.
9. PROVIDE BALL DRIP VALVE AT BASE OF FIRE DEPARTMENT CONNECTION.
10. INSTALL HIGH TEMPERATURE SPRINKLERS IN CLOSE PROXIMITY TO UNIT HEATERS PER NFPA 13.
11. SPRINKLER HEADS IN CHEM ROOMS SHALL BE WAX COATED AGAINST CORROSION. ALL PIPING SHALL BE FIELD PAINTED IN ACCORDANCE WITH DIVISION 9.
12. SPRINKLER MAINS SHALL BE MINIMUM SCHEDULE 10 STEEL PIPE. BRANCH PIPING SHALL BE MINIMUM SCHEDULE 40 STEEL PIPE. NO THIN WALLED PIPING WILL BE ACCEPTED. REFER TO 21.13.13 FOR DETAILS.
13. ALL PIPING PENETRATIONS SHALL BE SEALED WITH FIRE STOP.
14. AREAS WITH LAY-IN OR GYPSUM CEILINGS SHALL HAVE RECESSED OR SEMI-RECESSED SPRINKLER HEADS.
15. AREAS WITHOUT CEILINGS SHALL HAVE UPRIGHT OR PENDANT TYPE SPRINKLER HEADS.
16. ALL CHEMICAL ROOM SPACES SHALL HAVE WAX COATED UPRIGHT OR PENDANT TYPE SPRINKLER HEADS.

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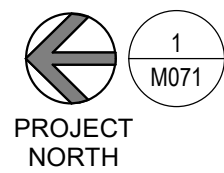
SEH Project	MADWU 167818
Checked By	NJB
Drawn By	OBJ

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BIDDING DOCUMENTS	OCTOBER, 2023

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REV. #	DESCRIPTION	DATE

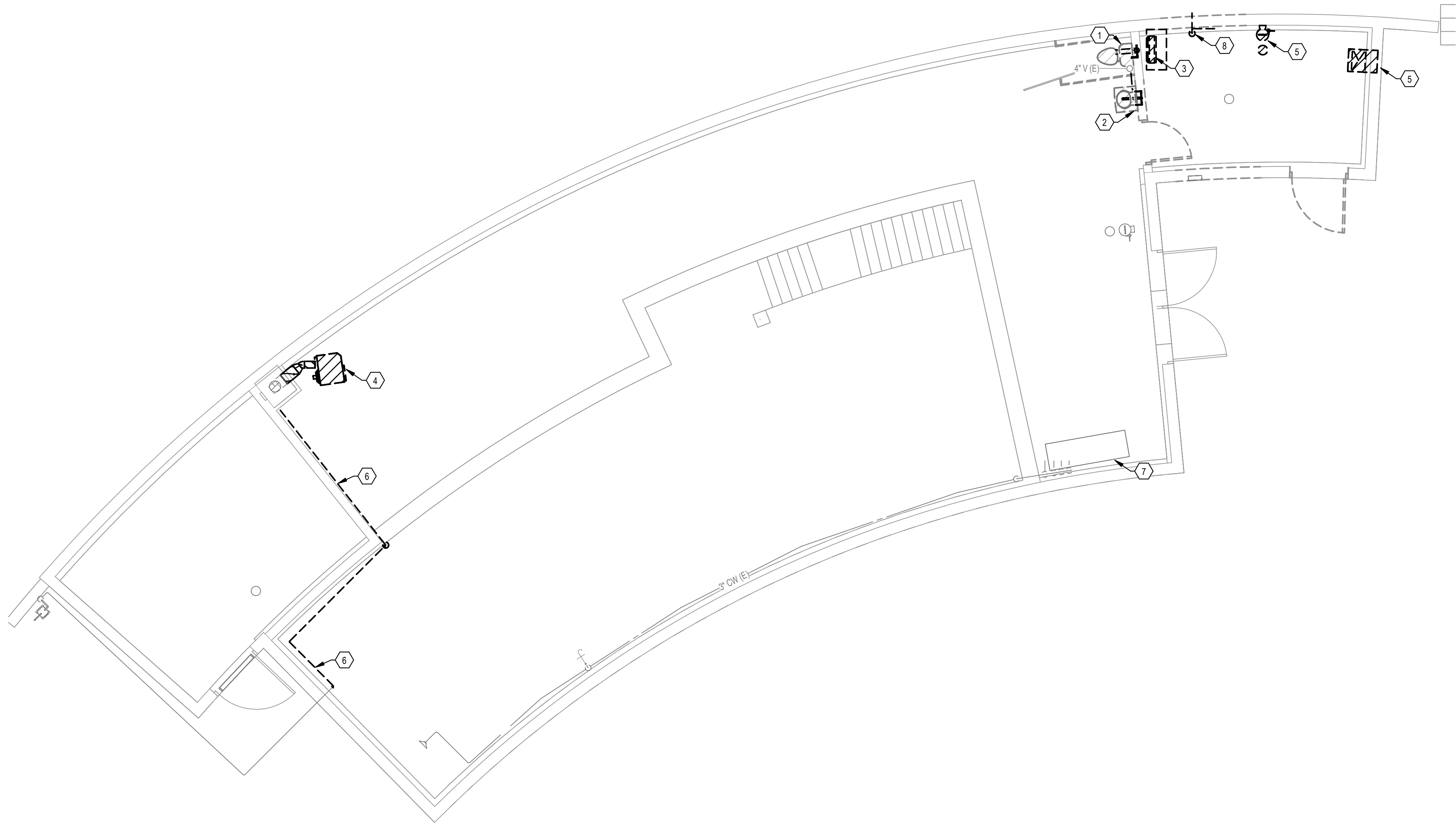
FIRE PROTECTION PLAN

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MECHANICAL DEMOLITION PLAN

3/16" = 1'-0"



KEYNOTES:

1. REMOVE EXISTING WATER CLOSET AND ASSOCIATED SUPPORTS. REMOVE ALL ASSOCIATED SUPPLY, WASTE, AND VENT PIPING. VENT PIPING SHALL BE REMOVED BACK TO MAIN AND CAPPED ABOVE CEILING. SUPPLY AND WASTE PIPING SHALL BE REMOVED TO FLOOR LEVEL AND SHALL BE SEALED AIR AND WATER TIGHT BELOW FLOOR. REFER TO ARCHITECTURAL FOR WALL AND FLOOR REPAIR AND FINISHES.
2. REMOVE EXISTING SINK AND ASSOCIATED SUPPORTS. REMOVE ALL ASSOCIATED SUPPLY, WASTE, AND VENT PIPING. VENT PIPING SHALL BE REMOVED BACK TO MAIN AND CAPPED ABOVE CEILING. SUPPLY AND WASTE PIPING SHALL BE REMOVED TO FLOOR LEVEL AND SHALL BE SEALED AIR AND WATER TIGHT BELOW FLOOR. REFER TO ARCHITECTURAL FOR WALL AND FLOOR REPAIR AND FINISHES.
3. REMOVE EXISTING ELECTRIC UNIT HEATER AND ASSOCIATED CONTROLS. REMOVE ASSOCIATED HANGERS AND SUPPORTS AND PREPARE LOCATION FOR INSTALLATION OF NEW UNIT HEATER.
4. REMOVE EXISTING GAS UNIT HEATER AND ASSOCIATED GAS PIPING, VENTING, AND CONTROLS. REMOVE ALL HANGERS AND SUPPORTS. PREPARE LOCATION FOR INSTALLATION OF NEW UNIT HEATER.
5. REMOVE EXISTING EXHAUST FAN AND ASSOCIATED DUCTWORK, LOUVER AND CONTROLS. EXISTING WALL PENETRATION SHALL REMAIN FOR CONNECTION TO NEW FAN, LOUVER, AND DUCT WORK. REMOVE ALL ASSOCIATED HANGERS AND SUPPORTS. REFER TO ARCHITECTURAL FOR WALL REPAIR AND FINISHES.
6. REMOVE EXISTING GAS PIPING TO THE EXTENT SHOWN. REMOVE ALL HANGERS AND SUPPORTS.
7. EXISTING AIR HANDLING UNIT TO REMAIN.
8. REMOVE EXISTING POTABLE WATER AND HOSE BIBBS. REMOVE PIPING TO CHEMICAL FEED EQUIPMENT. SUPPLY PIPING SHALL BE REMOVED TO FLOOR LEVEL AND SHALL BE SEALED AIR AND WATER TIGHT BELOW FLOOR. REFER TO ARCHITECTURAL FOR FLOOR AND WALL REPAIRS AND FINISHES.



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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MECHANICAL REMOVAL
PLAN

01
M071

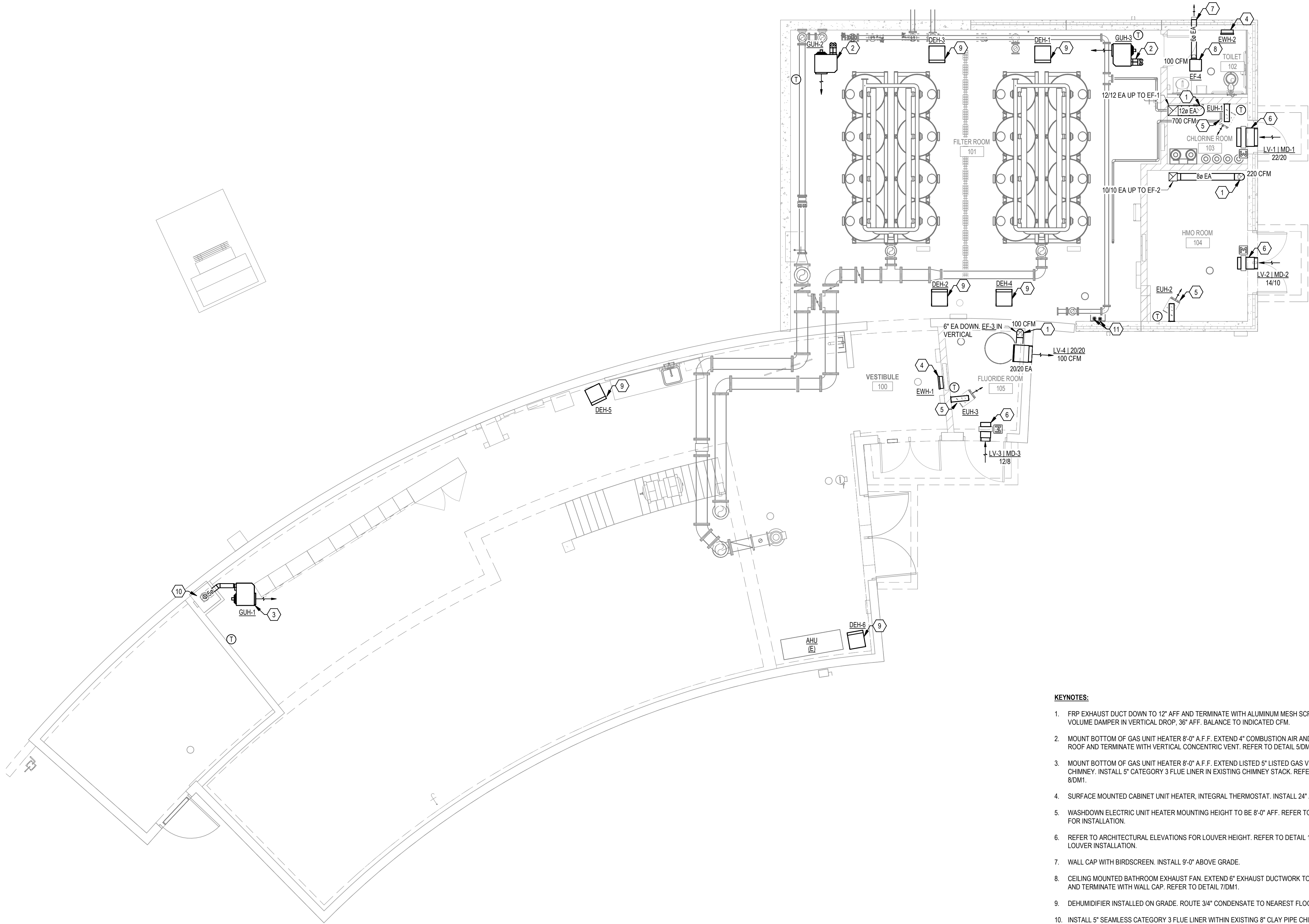
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MAIN LEVEL HVAC PLAN

3/16" = 1'-0"

0 4' 8' 12'



KEYNOTES:

- FRP EXHAUST DUCT DOWN TO 12" AFF AND TERMINATE WITH ALUMINUM MESH SCREEN. PROVIDE VOLUME DAMPER IN VERTICAL DROP, 36" AFF. BALANCE TO INDICATED CFM.
- MOUNT BOTTOM OF GAS UNIT HEATER 8'-0" A.F.F. EXTEND 4" COMBUSTION AIR AND 4" FLUE TO ROOF AND TERMINATE WITH VERTICAL CONCENTRIC VENT. REFER TO DETAIL 5/DM1.
- MOUNT BOTTOM OF GAS UNIT HEATER 8'-0" A.F.F. EXTEND LISTED 5" LISTED GAS VENT TO EXISTING CHIMNEY. INSTALL 5" CATEGORY 3 FLUE LINER IN EXISTING CHIMNEY STACK. REFER TO DETAIL 8/DM1.
- SURFACE MOUNTED CABINET UNIT HEATER, INTEGRAL THERMOSTAT. INSTALL 24" AFF.
- WASHDOWN ELECTRIC UNIT HEATER MOUNTING HEIGHT TO BE 8'-0" AFF. REFER TO DETAIL 2/DM1 FOR INSTALLATION.
- REFER TO ARCHITECTURAL ELEVATIONS FOR LOUVER HEIGHT. REFER TO DETAIL 1/DM1 FOR LOUVER INSTALLATION.
- WALL CAP WITH BIRDSCREEN. INSTALL 9'-0" ABOVE GRADE.
- CEILING MOUNTED BATHROOM EXHAUST FAN. EXTEND 6" EXHAUST DUCTWORK TO EXTERIOR WALL AND TERMINATE WITH WALL CAP. REFER TO DETAIL 7/DM1.
- DEHUMIDIFIER INSTALLED ON GRADE. ROUTE 3/4" CONDENSATE TO NEAREST FLOOR DRAIN.
- INSTALL 5" SEAMLESS CATEGORY 3 FLUE LINER WITHIN EXISTING 8" CLAY PIPE CHIMNEY. REFER TO DETAIL 8/DM1.
- 2" COMBUSTION AIR INTAKE AND EXHAUST FROM GWH-1 UP TO CONCENTRIC VENT THROUGH ROOF.



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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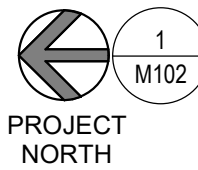
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FIRST LEVEL HVAC PLAN

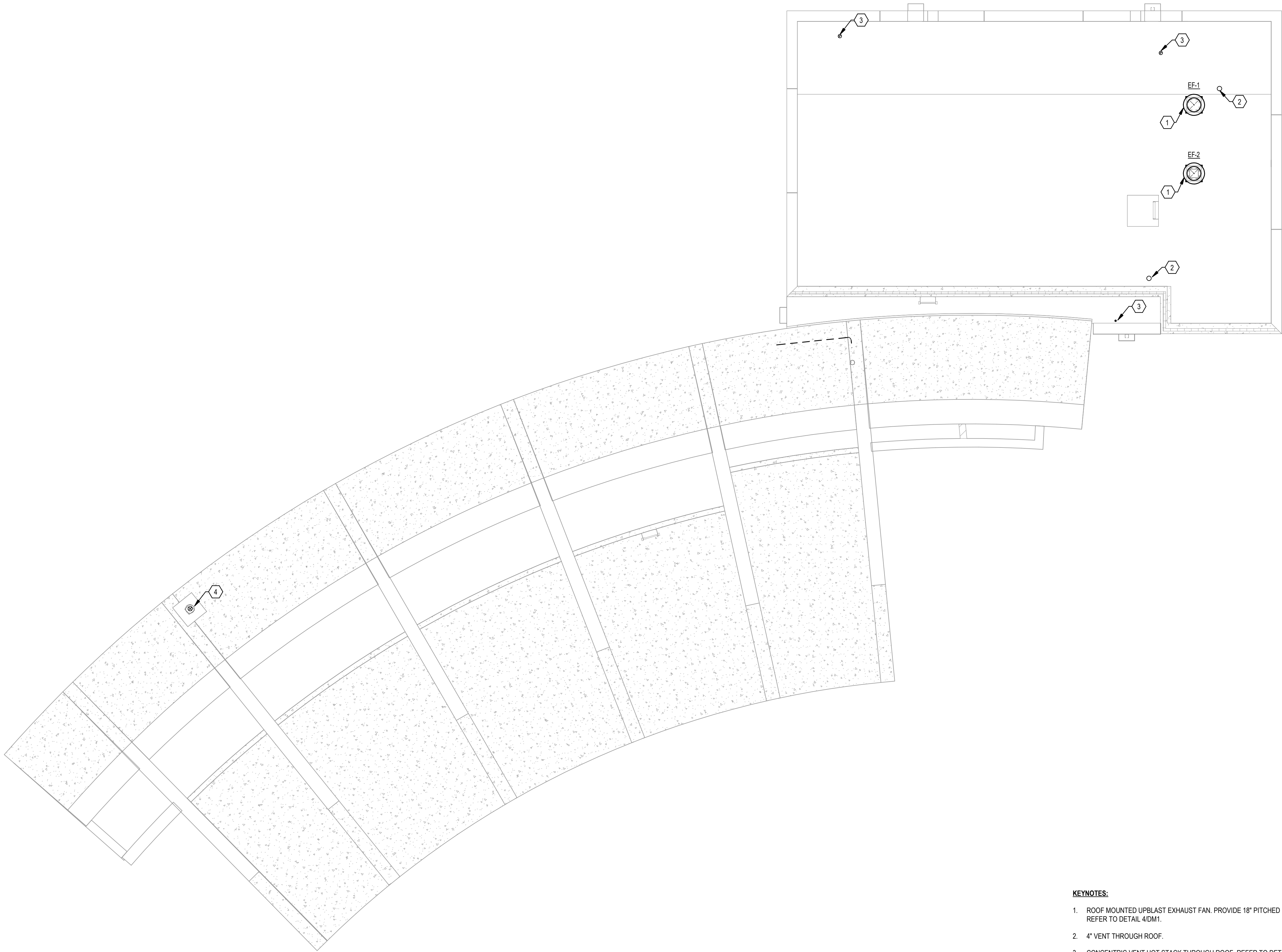
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M101

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ROOF MECHANICAL PLAN

3/16" = 1'-0"



KEYNOTES:

1. ROOF MOUNTED UPBLAST EXHAUST FAN. PROVIDE 18" PITCHED ROOF CURB WITH WOOD NAILOR. REFER TO DETAIL 4/DM1.
2. 4" VENT THROUGH ROOF.
3. CONCENTRIC VENT HOT STACK THROUGH ROOF. REFER TO DETAIL 5/DM1 AND 6/DM1.
4. 5" DIA CHIMNEY SLEEVE FROM GUH-1. ROUTE THROUGH EXISTING CHIMNEY.



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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ROOF MECHANICAL PLAN

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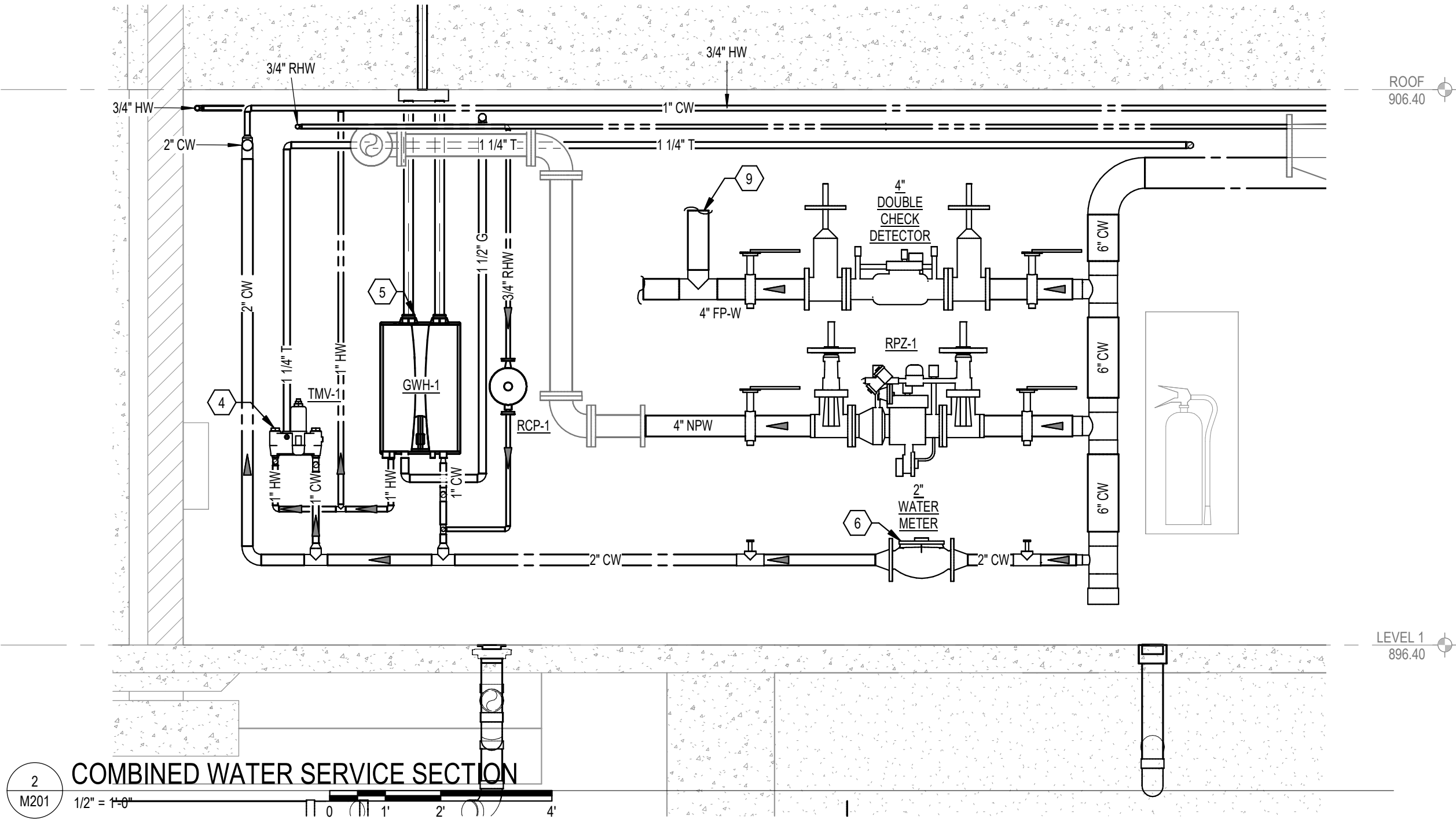
PROJECT
NORTH

1
M201

MAIN LEVEL DOMESTIC WATER AND GAS PLAN

3/16" = 1'-0"

0 4' 8' 12'



COMBINED WATER SERVICE SECTION

2
M201 1/2" = 1'-0"

0 1' 2' 3' 4'

STUB 3/4\"/>

INSTALL BOP 9'-4\"/>

ROUTE PIPING TIGHT TO STRUCTURAL MEMBERS THROUGH OPENING.

INSTALL BOP 8'-0\"/>

INSTALL BOP 9'-2\"/>

CONNECT 6\"/>

2\"/>

3\"/>

6\"/>

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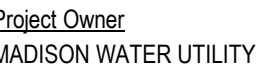
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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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FIRST LEVEL SANITARY
WASTE AND VENT PLAN

KEYNOTES:

1. 2" VENT UP TO 4" VENT THROUGH ROOF.
2. TRENCH DRAIN. REFER TO DETAIL 4/D/M2.
3. EXTEND 2" V AND 2" SAN TO CONNECT MSB-1 AND SK-1 TO EXISTING SANITARY AND VENT STACK FROM REMOVED TOILET.
4. EXTEND 3/4" CONDENSATE LINE FROM GWH-1 TO NEAREST FLOOR DRAIN.
5. 3" VENT UP TO 4" VENT THROUGH ROOF.
6. 2" VENT UP TIGHT TO WALL.

KEYNOTES:

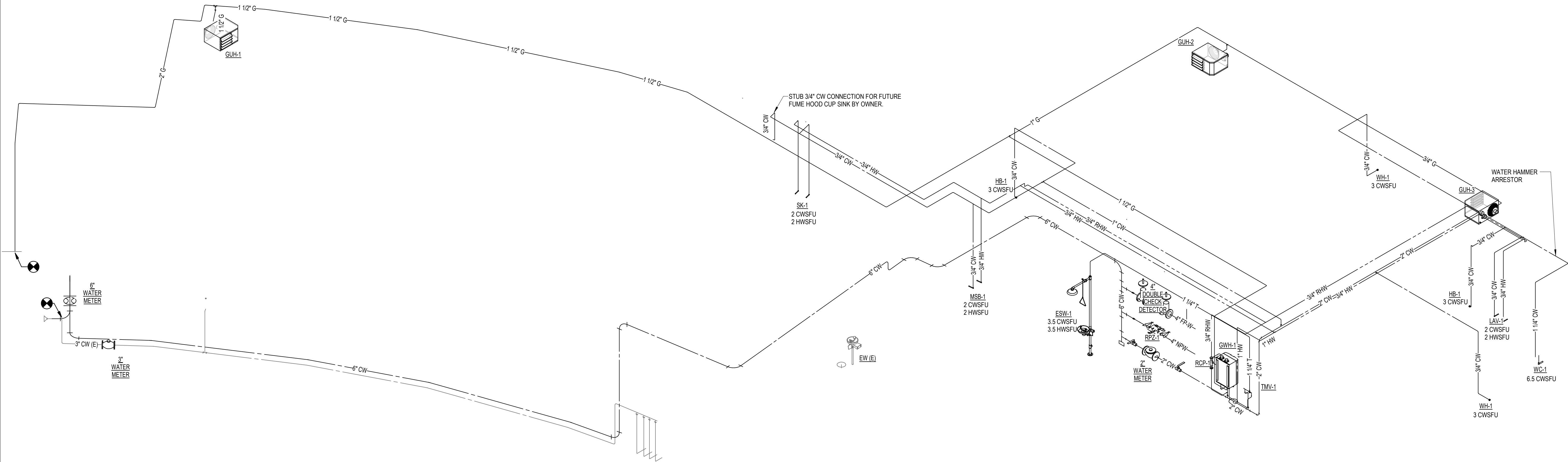
1. 2" VENT UP TO 4" VENT THROUGH ROOF.
2. TRENCH DRAIN. REFER TO DETAIL 4/D/M2.
3. EXTEND 2" V AND 2" SAN TO CONNECT MSB-1 AND SK-1 TO EXISTING SANITARY AND VENT STACK FROM REMOVED TOILET.
4. EXTEND 3/4" CONDENSATE LINE FROM GWH-1 TO NEAREST FLOOR DRAIN.
5. 3" VENT UP TO 4" VENT THROUGH ROOF.
6. 2" VENT UP TIGHT TO WALL.
7. CORE DRILL THROUGH EXISTING FOUNDATION WALL ABOVE TOP OF FOOTING.

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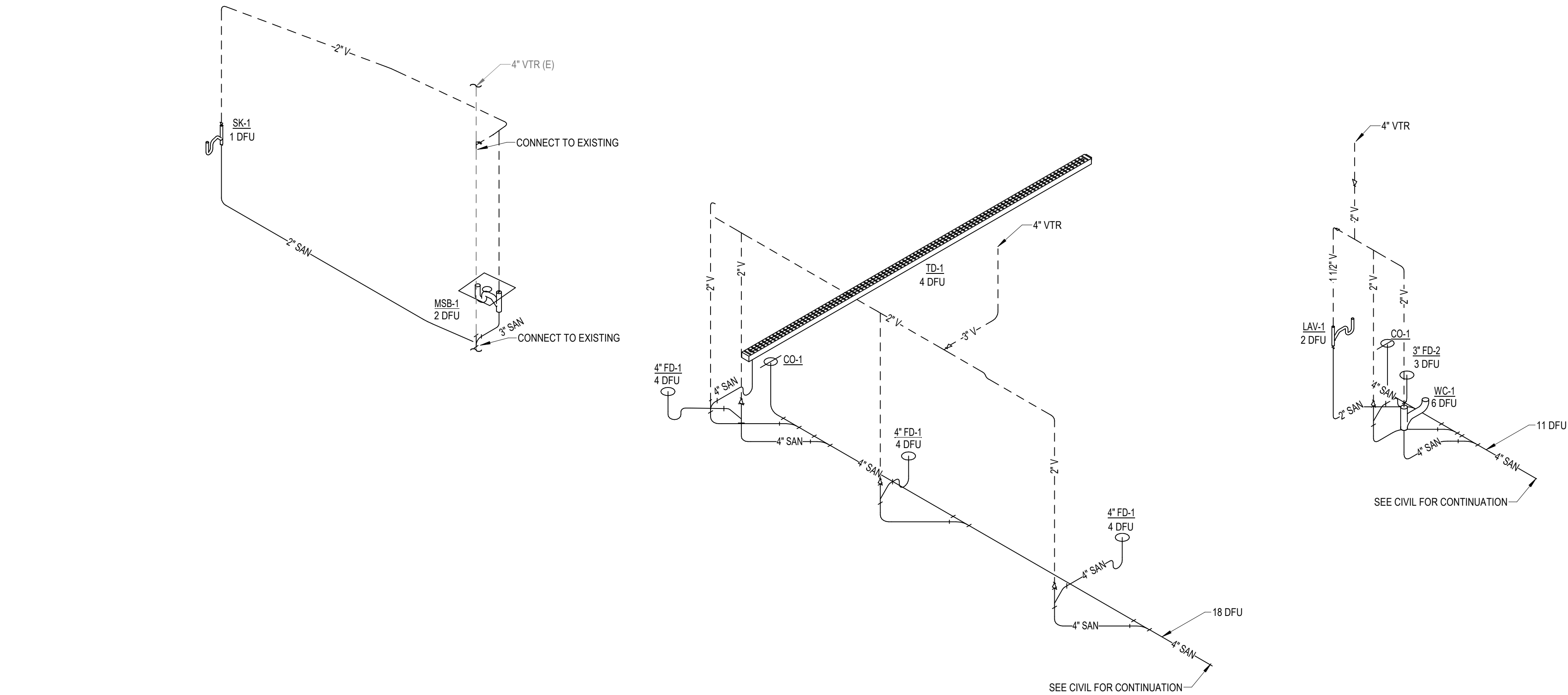


MAIN LEVEL SANITARY WASTE AND VENT PLAN

$$3/16'' = 1'-0''$$



1 DOMESTIC WATER AND GAS RISER
M301 NOT TO SCALE



2 SANITARY WASTE AND VENT RISER
M301 NOT TO SCALE



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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RISER DIAGRAMS

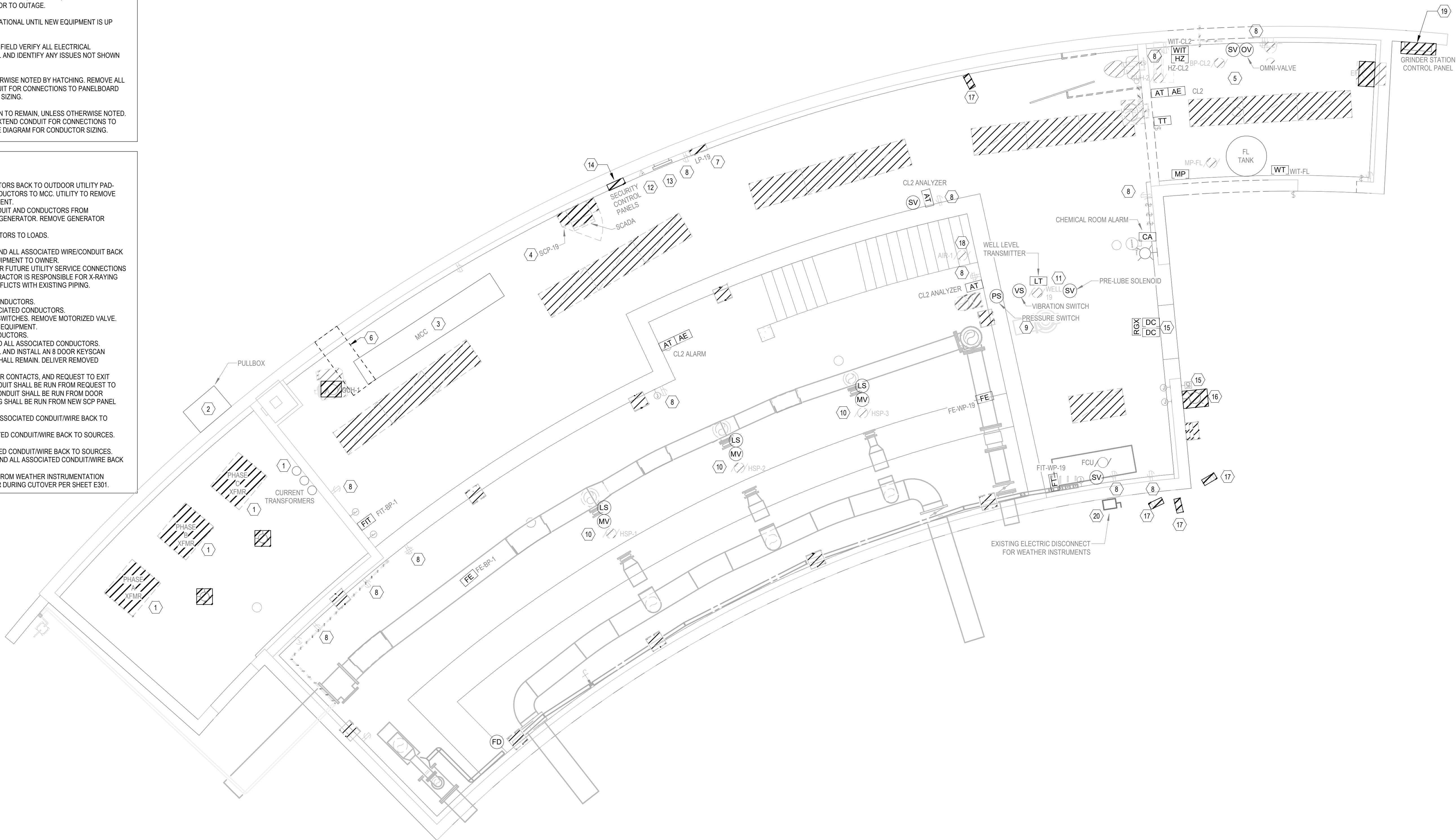
01
M301

REMOVAL GENERAL NOTES

- A. SEE SPECIFICATION SECTION 01 12 16 FOR WORK SEQUENCE DETAILS.
- B. SEE SPECIFICATION SECTIONS 26 00 00 AND 26 05 01 FOR ADDITIONAL REMOVAL DETAILS.
- C. COORDINATE ALL REMOVAL WORK WITH ALL OTHER CONTRACTORS.
- D. ALL OUTAGES SHALL BE COORDINATED WITH OWNER, ENGINEER, AND GENERAL CONTRACTOR AT A MINIMUM OF 5 DAYS PRIOR TO OUTAGE.
- E. ALL EXISTING EQUIPMENT TO REMAIN OPERATIONAL UNTIL NEW EQUIPMENT IS UP AND RUNNING.
- F. ELECTRICAL CONTRACTOR IS REQUIRED TO FIELD VERIFY ALL ELECTRICAL EQUIPMENT LOCATIONS PRIOR TO REMOVAL AND IDENTIFY ANY ISSUES NOT SHOWN ON PLANS.
- G. EXISTING LIGHTS TO REMAIN, UNLESS OTHERWISE NOTED BY HATCHING. REMOVE ALL ASSOCIATED CONDUCTORS. EXTEND CONDUIT FOR CONNECTIONS TO PANELBOARD LP-1 IF NEEDED. SEE E701 FOR CONDUCTOR SIZING.
- H. EXISTING MEASUREMENT INSTRUMENTATION TO REMAIN, UNLESS OTHERWISE NOTED. REMOVE ALL ASSOCIATED CONDUCTORS. EXTEND CONDUIT FOR CONNECTIONS TO PANELBOARD LP-1 IF NEEDED. SEE ONE LINE DIAGRAM FOR CONDUCTOR SIZING.

KEYNOTES

1. REMOVE TRANSFORMER PRIMARY CONDUCTORS BACK TO OUTDOOR UTILITY PAD-MOUNT SWITCH. REMOVE SECONDARY CONDUCTORS TO MCC. UTILITY TO REMOVE TRANSFORMERS AND CT METERING EQUIPMENT.
2. REMOVE UNDERGROUND GENERATOR CONDUIT AND CONDUCTORS FROM CONNECTION AT TRANSFORMERS BACK TO GENERATOR. REMOVE GENERATOR PULLBOX.
3. REMOVE MCC AND ALL ASSOCIATE CONDUCTORS TO LOADS.
4. REMOVE SCADA CONTROL PANEL SCP-19.
5. REMOVE ALL CHEMICAL FEED EQUIPMENT AND ALL ASSOCIATED WIRE/CONDUIT BACK TO SOURCES. DELIVER CHEMICAL FEED EQUIPMENT TO OWNER.
6. SAW-CUT CONCRETE TO ALLOW ACCESS FOR FUTURE UTILITY SERVICE CONNECTIONS TO NEW MCC. WIDTH TO BE 24" WIDE. CONTRACTOR IS RESPONSIBLE FOR X-RAYING FLOOR BEFOREHAND TO CONFIRM ANY CONFLICTS WITH EXISTING PIPING.
7. REMOVE PANELBOARD LP-19 AND REPLACE.
8. REMOVE RECEPTACLE AND ASSOCIATED CONDUCTORS.
9. REMOVE PRESSURE SWITCH AND ALL ASSOCIATED CONDUCTORS.
10. PUMP TO BE REPLACED ALONG WITH LIMIT SWITCHES. REMOVE MOTORIZED VALVE.
11. REPLACE WELL PUMP AND ALL ASSOCIATED EQUIPMENT.
12. REMOVE DATA JACK AND ASSOCIATED CONDUCTORS.
13. REMOVE OLD ANALOG METERS/GUAGES AND ALL ASSOCIATED CONDUCTORS.
14. REMOVE EXISTING 4 DOOR KEYSKAN PANEL AND INSTALL AN 8 DOOR KEYSKAN PANEL. EXISTING POWER SUPPLY PANELS SHALL REMAIN. DELIVER REMOVED KEYSKAN PANEL TO OWNER.
15. DOOR ACCESS SYSTEM CARD READER, DOOR CONTACTS, AND REQUEST TO EXIT SENSOR TO REMAIN. NEW WIRING AND CONDUIT SHALL BE RUN FROM REQUEST TO EXIT TO CARD ACCESS. NEW WIRING AND CONDUIT SHALL BE RUN FROM DOOR CONTACTS TO NEW SCP PANEL. NEW WIRING SHALL BE RUN FROM NEW SCP PANEL BACK TO CARD ACCESS.
16. REMOVE CHLORINE ALARM LIGHT AND ALL ASSOCIATED CONDUIT/WIRE BACK TO SOURCE(S).
17. REMOVE EXISTING CAMERAS AND ASSOCIATED CONDUIT/WIRE BACK TO SOURCES. DELIVER CAMERAS TO OWNER.
18. REMOVE VACUUM PUMP AND ALL ASSOCIATED CONDUIT/WIRE BACK TO SOURCES.
19. REMOVE GRINDER PUMP CONTROL PANEL AND ALL ASSOCIATED CONDUIT/WIRE BACK TO SOURCES.
20. REMOVE CONDUIT/WIRE BACK TO SOURCE FROM WEATHER INSTRUMENTATION DISCONNECT. PROVIDE TEMPORARY POWER DURING CUTOVER PER SHEET E301.



1
E070
REMOVAL PLAN
1/4" = 1'-0"



Project Owner

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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REVISION SCHEDULE		
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OVERALL REMOVAL PLAN

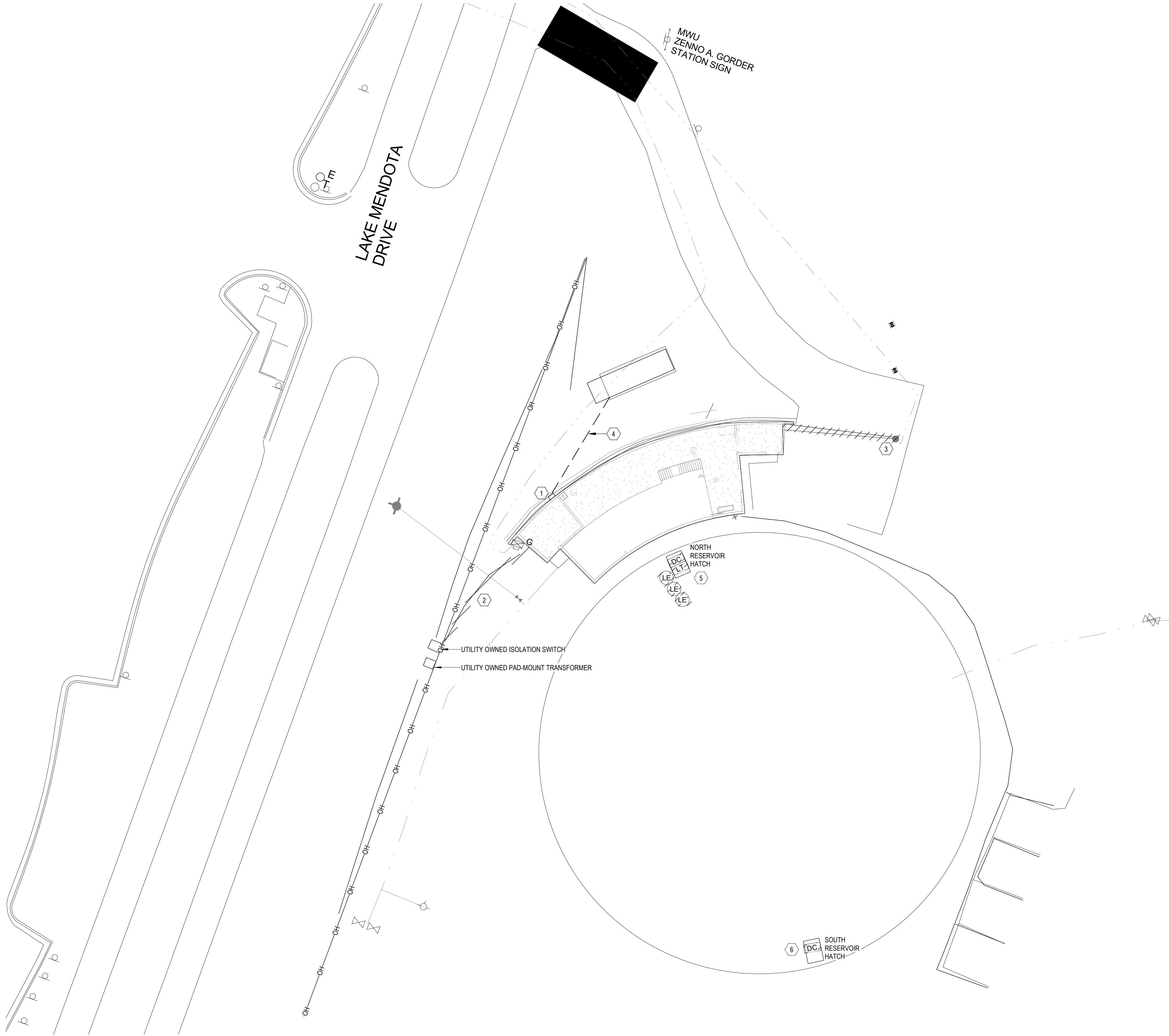
01
E070

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1
E101

ELECTRICAL SITE PLAN - REMOVAL

1" = 20'-0"



SITE REMOVAL GENERAL NOTES

- A. SEE SPECIFICATION SECTION 01 12 16 FOR WORK SEQUENCE DETAILS.
- B. SEE SPECIFICATION SECTIONS 26 00 00 AND 26 05 01 FOR ADDITIONAL REMOVAL DETAILS.
- C. COORDINATE ALL REMOVAL WORK WITH ALL OTHER CONTRACTORS.
- D. ALL OUTAGES SHALL BE COORDINATED WITH OWNER, ENGINEER, AND GENERAL CONTRACTOR AT A MINIMUM OF 5 DAYS PRIOR TO OUTAGE.
- E. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ELECTRICAL UTILITY ON REMOVAL OF THEIR EQUIPMENT.
- F. ALL EXISTING EQUIPMENT TO REMAIN OPERATIONAL UNTIL NEW EQUIPMENT IS UP AND RUNNING.
- G. ELECTRICAL CONTRACTOR IS REQUIRED TO FIELD VERIFY ALL ELECTRICAL EQUIPMENT LOCATIONS PRIOR TO REMOVAL AND IDENTIFY ANY ISSUES NOT SHOWN ON PLANS.

KEYNOTES

1. REMOVE PULLBOX AND ALL ASSOCIATED CONDUCTORS. REPLACE WITH C.T. CABINET.
2. REMOVE BURIED CONDUIT AND ASSOCIATED CONDUCTORS BETWEEN THE BUILDING AND EXISTING ISOLATION SWITCH.
3. REMOVE GRINDER PUMP AND ALL ASSOCIATED CONDUIT/WIRE BETWEEN WET WELL AND CONTROL PANEL.
4. UTILITY OWNED GENERATOR CONDUIT/WIRE. COORDINATE WITH UTILITY TO MAKE CONNECTION IN NEW METERING CABINET. UTILITY WILL PROVIDE CIRCUIT AND MAKE TERMINATIONS TO THE MAIN FEEDER.
5. REMOVE EXISTING LEVEL TRANSDUCER, (3) FLOATS, FLOAT TREE MOUNTING ASSEMBLY, AND DOOR CONTACT. REMOVE ALL ASSOCIATED CONDUCTORS BACK TO SOURCES. CONDUIT MAY BE RE-USED BUT EXTENDED INSIDE THE BUILDING TO THE NEW SCP LOCATION.
6. REMOVE EXISTING DOOR CONTACT. REMOVE ALL ASSOCIATED CONDUCTORS BACK TO SOURCES. CONDUIT MAY BE RE-USED BUT EXTEND INSIDE THE BUILDING TO THE NEW SCP LOCATION.



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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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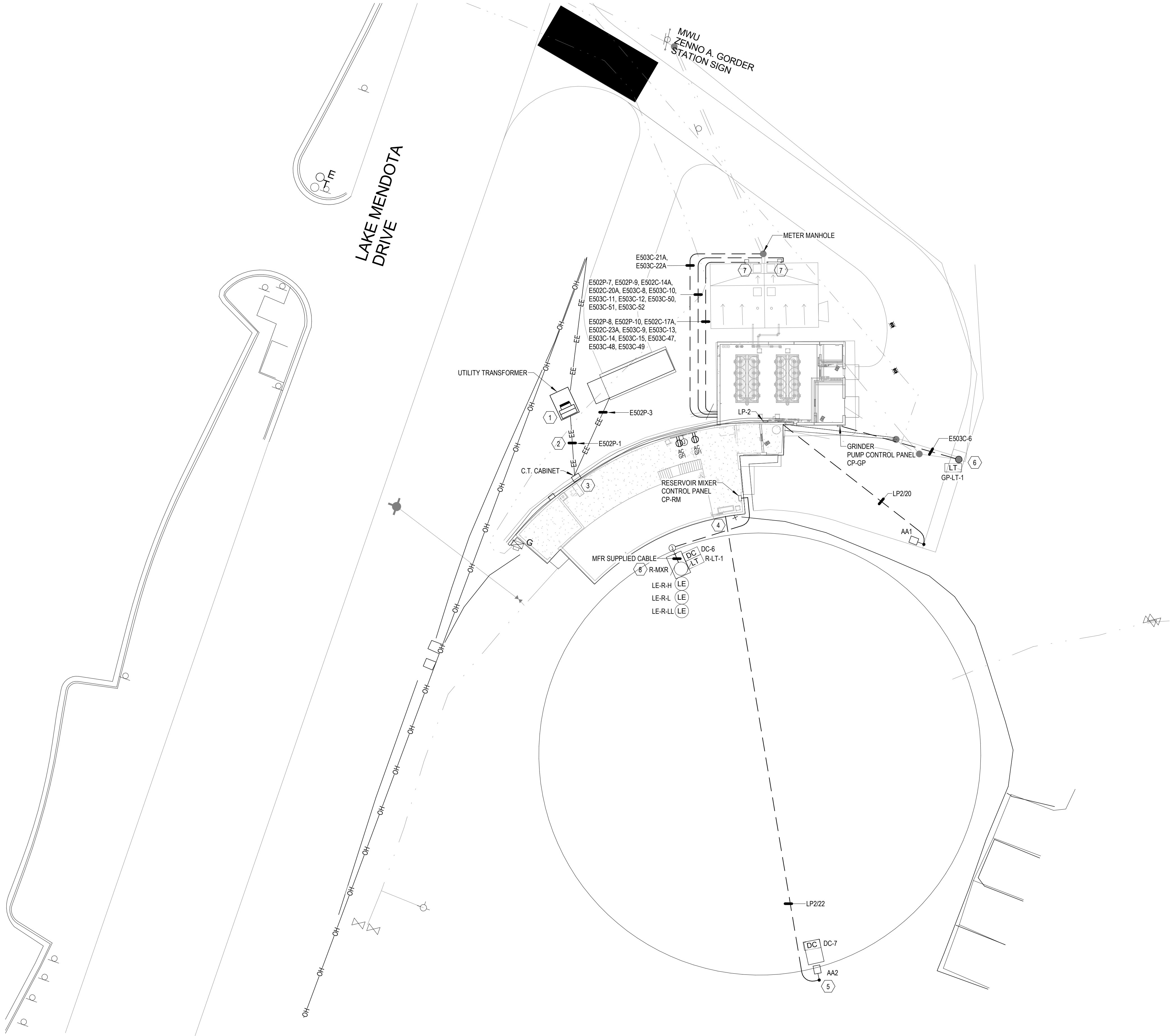
ELECTRICAL SITE PLAN -
REMOVAL

01
E101



10/11/2023 11:46:39 AM

1
E102
ELECTRICAL SITE PLAN
1" = 20'-0"



SITE LIGHTING GENERAL NOTES

- INSTALL 1-1/2" CONDUIT FOR ALL SITE LIGHTING FIXTURES.
- SEE LIGHT FIXTURE POLE AND LIGHT FIXTURE POLE CONCRETE BASE DETAILS ON SHEET DE02.
- SEE LIGHT FIXTURE SCHEDULE ON SHEET E701
- SEE PANELBOARD SCHEDULES ON SHEET E701 FOR ALL CONDUIT AND WIRING REQUIREMENTS.

SITE POWER GENERAL NOTES

- ALL CONDUIT SHOWN IS APPROXIMATE. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH ALL OTHER TRADES AND UTILITIES TO AVOID CONFLICTS WITH NEW WORK AND EXISTING CONDITIONS PRIOR TO INSTALLATION.
- ALL HANDHOLE LOCATIONS AND QUANTITIES ARE APPROXIMATE. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT HANDHOLE LOCATIONS PRIOR TO INSTALLATION. ELECTRICAL CONTRACTOR SHALL DETERMINE IF ADDITIONAL HANDHOLES ARE REQUIRED DUE TO SITE CONDITIONS OR PULLING REQUIREMENTS. PROVIDE AND INSTALL IF ADDITIONAL HANDHOLES ARE INDEED REQUIRED.
- COORDINATE ALL ELECTRICAL SERVICE REQUIREMENTS INCLUDING, BUT NOT LIMITED TO, UTILITY TRANSFORMER, PRIMARY AND SECONDARY CONDUIT AND WIRING, AND METERING WITH ELECTRICAL UTILITY. SEE SPECIFICATION SECTION 26 00 00 FOR MORE INFORMATION.
- SEE ONE-LINE DIAGRAMS FOR CONDUIT/WIRE REQUIREMENTS. SEE SHEET E502.
- SEE DETAIL 5/DE03 FOR DIRECT BURIED CONDUIT DETAILS.

KEYNOTES 1

- PROVIDE PAD MOUNTED TRANSFORMER.
- CONNECT TRANSFORMER TO C.T. CABINET WITH BURIED CONDUIT. ENSURE NO CONFLICT WITH EXISTING GAS AND WATER LINES. COORDINATE WITH OWNER AND UTILITY COMPANY. SEE DETAIL 5/DE03.
- PROVIDE UNDERGROUND CONNECTION BETWEEN C.T. CABINET AND MCC-1. SEE DETAIL 6/DE03.
- PROVIDE 2" CONDUIT FOR CONNECTIONS TO RESERVOIR MANWAY INSTRUMENTATION AND LIGHT POLE. ENSURE NO CONFLICT WITH RESERVOIR. COORDINATE WITH OWNER. SEE DETAIL 2/DE02 FOR CONDUIT ENTRY INTO BUILDING.
- SEE DETAILS 3/DE02 AND 4/DE02 FOR LIGHT POLE AND CAMERA INSTALLATION. CAMERA TO MONITOR SOUTH HATCH. CAMERA TO BE TYPE P3267-LVE. CONFIRM WITH OWNER MOUNTING HEIGHT AND AIMING.
- PROVIDE CONNECTIONS TO GRINDER CONTROL PANEL AND NEW GRINDER PUMPS. SEE SHEET 02 E301 FOR DEVICES AT THIS TANK.
- FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR RESERVOIR MIXER. CONNECT MIXER TO CONTROL PANEL CP-RM FROM JUNCTION BOX. PROVIDE DIRECT BURIED CONDUIT BETWEEN JUNCTION BOX AND CONTROL PANEL. SEE DETAIL 2/DE02 FOR CONDUIT ENTRY INTO BUILDING.



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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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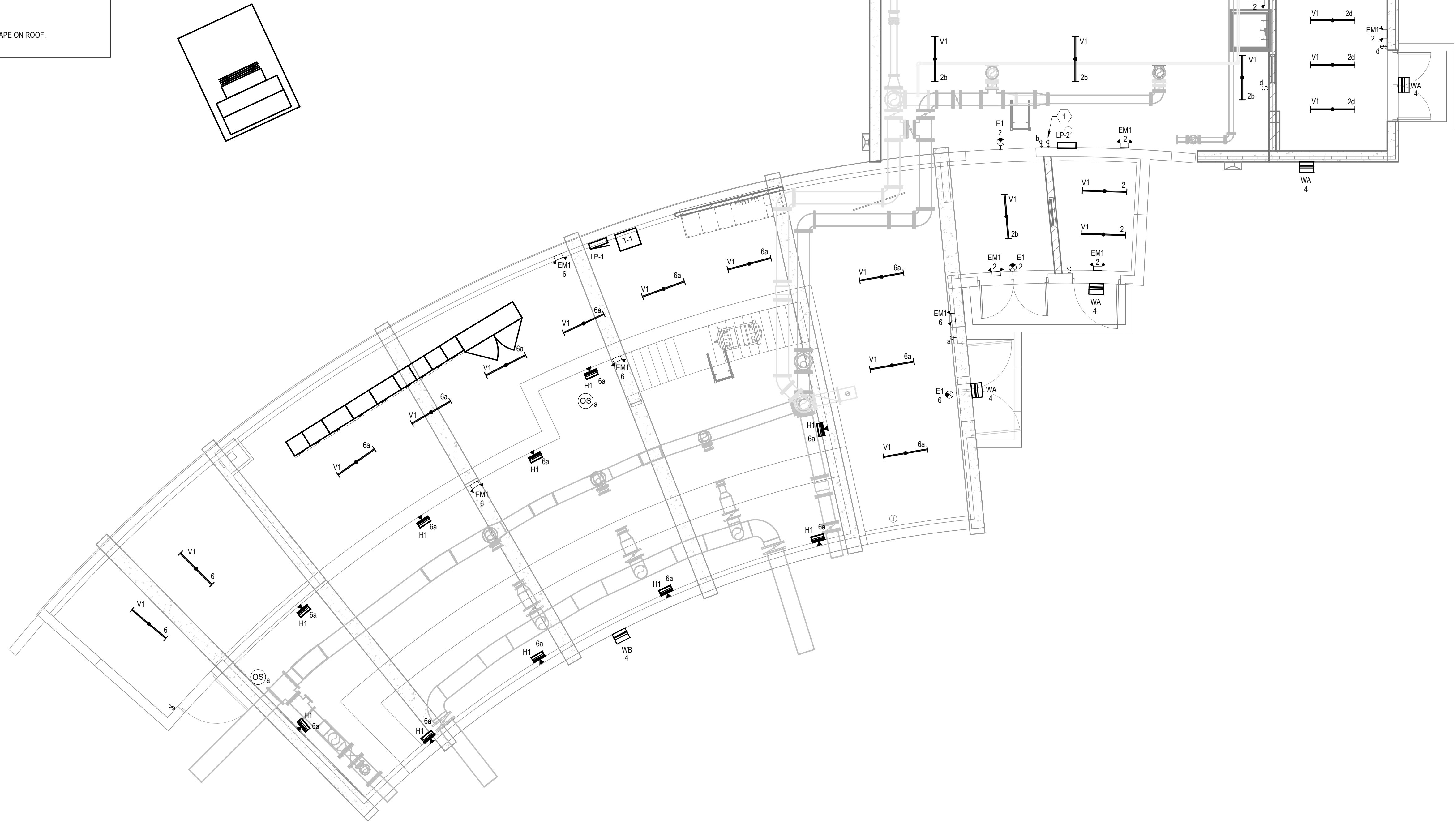
ELECTRICAL SITE PLAN



01
E102

- LIGHTING GENERAL NOTES
- A. ALL MOUNTING HEIGHTS ARE FOR LIGHTING FIXTURES ARE TO THE BOTTOM OF THE FIXTURE UNLESS OTHERWISE NOTED.
- B. REFER TO SPECIFICATION SECTION 26 05 19 FOR MINIMUM CONDUCTOR SIZE ADJUSTMENTS FOR VOLTAGE DROP.
- C. CIRCUIT NUMBERS SHOWN AT LIGHT FIXTURE LOCATIONS CORRESPOND TO PANELBOARD BREAKERS. SEE PANELBOARD SCHEDULES ON SHEET E701.
- D. ALL ROOM LIGHTING FIXTURES WITH EMERGENCY BATTERY PACKS SHALL BE SWITCHED WITH THE ROOM LIGHTING CIRCUIT. EMERGENCY BATTERY PACKS SHALL BE FED FROM AN UNSWITCHED LEG OF THE ROOM LIGHTING CIRCUIT.
- E. EXIT FIXTURES SHALL BE FED FROM AN UNSWITCHED LEG OF THE ROOM LIGHTING CIRCUIT.
- F. WIRE FOR CIRCUIT CONDUCTORS NOT SHOWN. PROVIDE PROPER NUMBER OF CONDUCTORS TO ACHIEVE CIRCUIT AND SWITCHING CONNECTIONS SHOWN.
- G. SEE LIGHT FIXTURE SCHEDULE ON SHEET E701.
- H. INTERIOR LIGHTING SHALL BE INSTALLED WITH OCCUPANCY SENSORS. SEE DETAIL 1/DE03.

- KEYNOTES
1. PROVIDE SWITCH AND ON INDICATOR LIGHT FOR HEAT TAPE ON ROOF.



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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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LIGHTING PLAN -
WELLHOUSE 19

01
E201

10/17/2023 11:46:41 AM

2
E201
LIGHTING PLAN
3/16" = 1'-0"

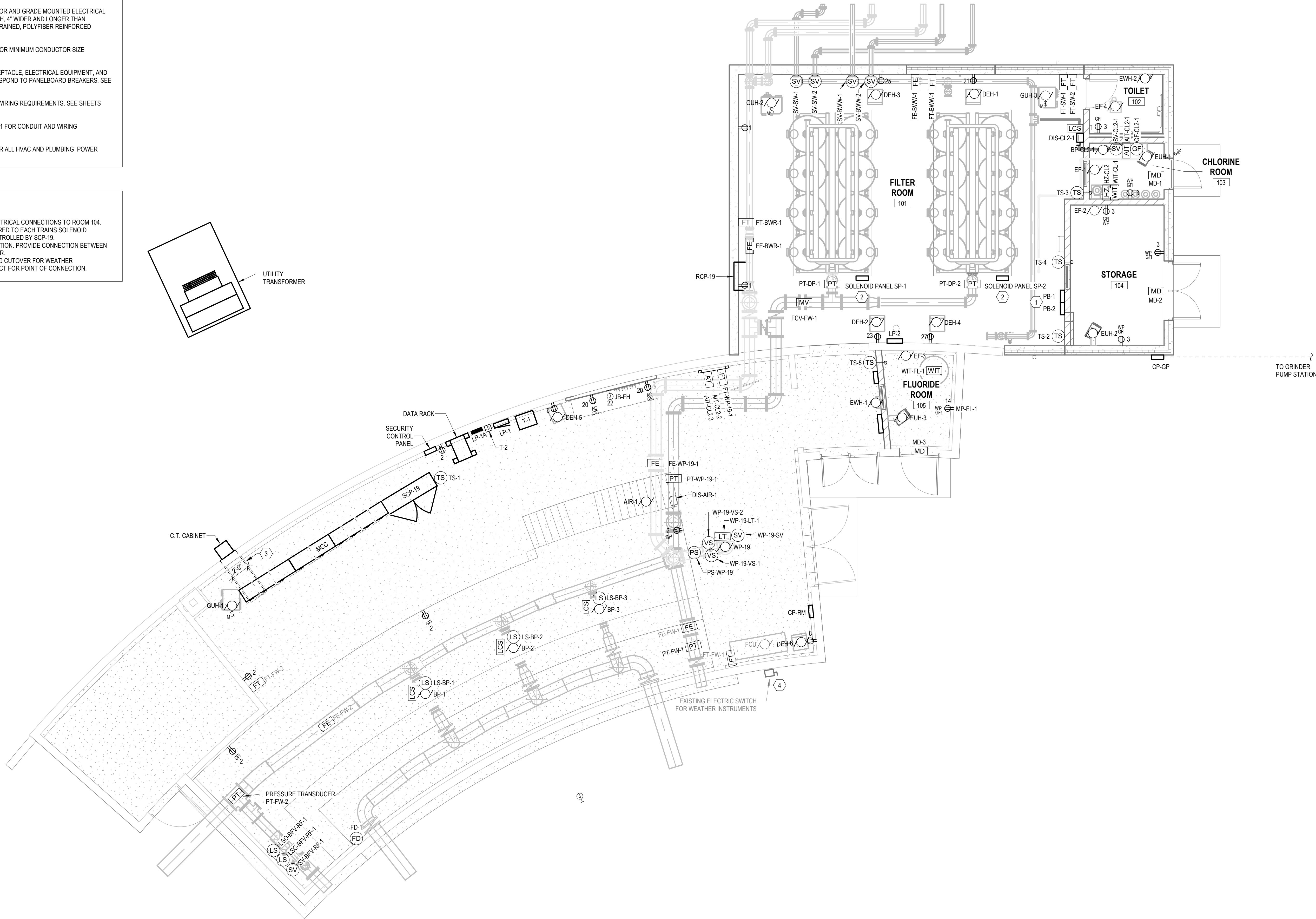
0 4' 8' 12'

POWER GENERAL NOTES

- A. PROVIDE HOUSE KEEPING PADS FOR ALL FLOOR AND GRADE MOUNTED ELECTRICAL EQUIPMENT. MINIMUM REQUIREMENTS: 4" HIGH, 4" WIDER AND LONGER THAN EQUIPMENT TO BE PLACED ON IT, 4% AIR ENTRAINED, POLYFIBER REINFORCED CONCRETE.
- B. REFER TO SPECIFICATION SECTION 26 05 19 FOR MINIMUM CONDUCTOR SIZE ADJUSTMENTS FOR VOLTAGE DROP.
- C. CIRCUIT NUMBERS SHOWN AT GENERAL RECEPTACLE, ELECTRICAL EQUIPMENT, AND MECHANICAL EQUIPMENT LOCATIONS CORRESPOND TO PANELBOARD BREAKERS. SEE PANELBOARD SCHEDULES ON SHEET E701.
- D. SEE ONE-LINE DIAGRAMS FOR CONDUIT AND WIRING REQUIREMENTS. SEE SHEETS E502, E503, AND E504.
- E. SEE PANELBOARD SCHEDULES ON SHEET E701 FOR CONDUIT AND WIRING REQUIREMENTS.
- F. SEE MECHANICAL PLANS AND SCHEDULES FOR ALL HVAC AND PLUMBING POWER REQUIREMENTS AND DETAILS.

KEYNOTES

1. PROVIDE TWO PULLBOXES FOR FUTURE ELECTRICAL CONNECTIONS TO ROOM 104.
2. FILTER TRAIN VALVE SOLENOIDS ARE PRE-WIRED TO EACH TRAINS SOLENOID TERMINATION PANEL. SOLENOIDS TO BE CONTROLLED BY SCP-19.
3. SEE DETAIL 6/DE03 FOR DUCT BANK INSTALLATION. PROVIDE CONNECTION BETWEEN C.T. CABINET AND MCC MAIN CIRCUIT BREAKER.
4. PROVIDE TEMPORARY UTILITY POWER DURING CUTOVER FOR WEATHER INSTRUMENTATION. USE EXISTING DISCONNECT FOR POINT OF CONNECTION.

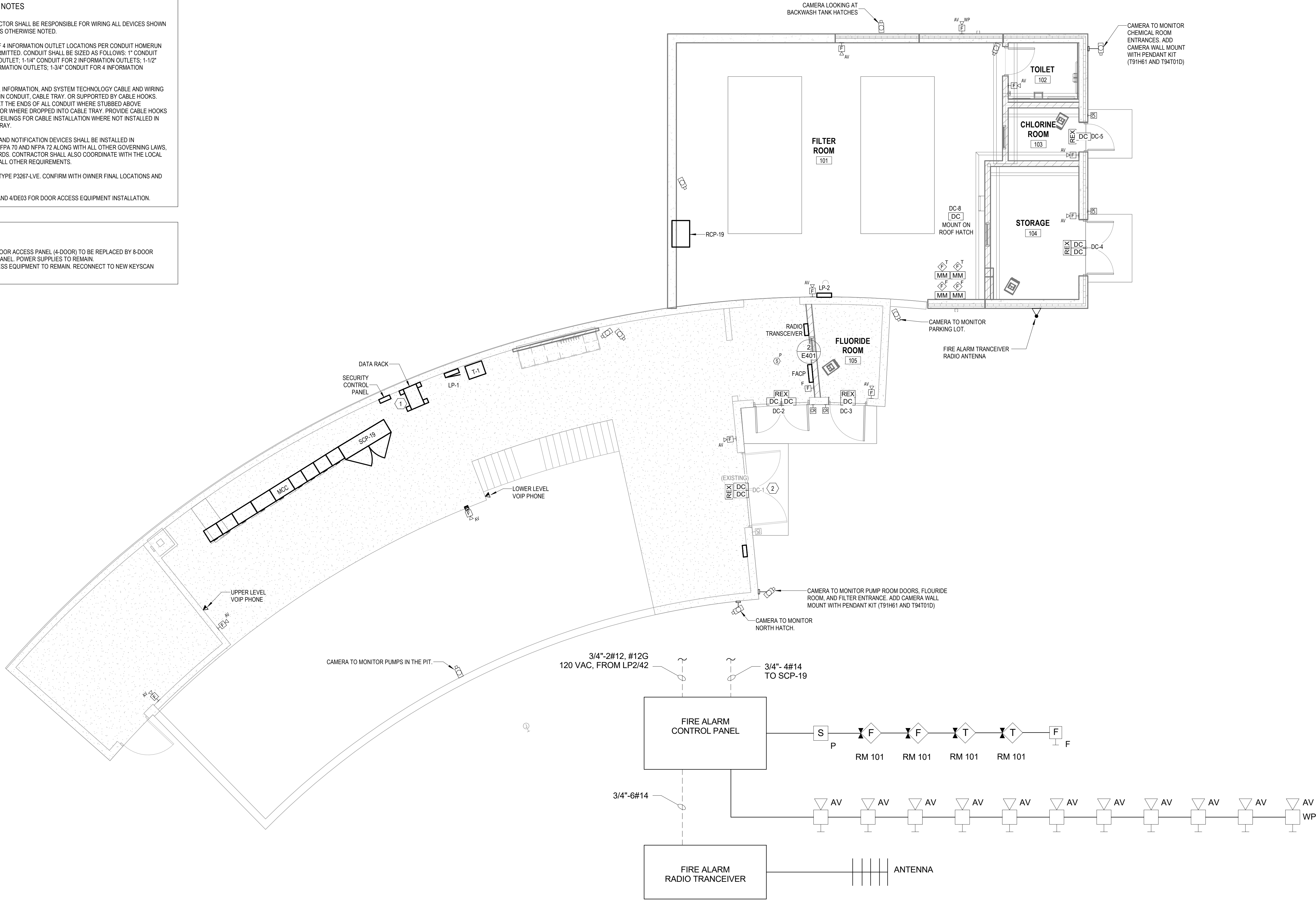


SYSTEMS GENERAL NOTES

- A. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR WIRING ALL DEVICES SHOWN ON THIS PLAN, UNLESS OTHERWISE NOTED.
- B. MAXIMUM NUMBER OF 4 INFORMATION OUTLET LOCATIONS PER CONDUIT HOMERUN TO MDF OR IDF IS PERMITTED. CONDUIT SHALL BE SIZED AS FOLLOWS: 1" CONDUIT FOR 1 INFORMATION OUTLET; 1-1/4" CONDUIT FOR 2 INFORMATION OUTLETS; 1-1/2" CONDUIT FOR 3 INFORMATION OUTLETS; 1-3/4" CONDUIT FOR 4 INFORMATION OUTLETS.
- C. ALL COMMUNICATION, INFORMATION, AND SYSTEM TECHNOLOGY CABLE AND WIRING SHALL BE INSTALLED IN CONDUIT, CABLE TRAY, OR SUPPORTED BY CABLE HOOKS. PROVIDE BUSHINGS AT THE ENDS OF ALL CONDUIT WHERE STUBBED ABOVE ACCESSIBLE CEILINGS OR WHERE DROPPED INTO CABLE TRAY. PROVIDE CABLE HOOKS ABOVE ACCESSIBLE CEILINGS FOR CABLE INSTALLATION WHERE NOT INSTALLED IN CONDUIT OR CABLE TRAY.
- D. ALL FIRE DETECTION AND NOTIFICATION DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70 AND NFPA 72 ALONG WITH ALL OTHER GOVERNING LAWS, CODES, AND STANDARDS. CONTRACTOR SHALL ALSO COORDINATE WITH THE LOCAL FIRE MARSHALL FOR ALL OTHER REQUIREMENTS.
- E. ALL CAMERAS TO BE TYPE P3267-LVE. CONFIRM WITH OWNER FINAL LOCATIONS AND AIMING DIRECTIONS.
- F. SEE DETAILS 3/DE03 AND 4/DE03 FOR DOOR ACCESS EQUIPMENT INSTALLATION.

KEYNOTES

1. EXISTING KEYSCAN DOOR ACCESS PANEL (4-DOOR) TO BE REPLACED BY 8-DOOR KEYSCAN CONTROL PANEL. POWER SUPPLIES TO REMAIN.
2. EXISTING DOOR ACCESS EQUIPMENT TO REMAIN. RECONNECT TO NEW KEYSCAN PANEL.



2 FIRE ALARM RISER DIAGRAM
E401 NOT TO SCALE



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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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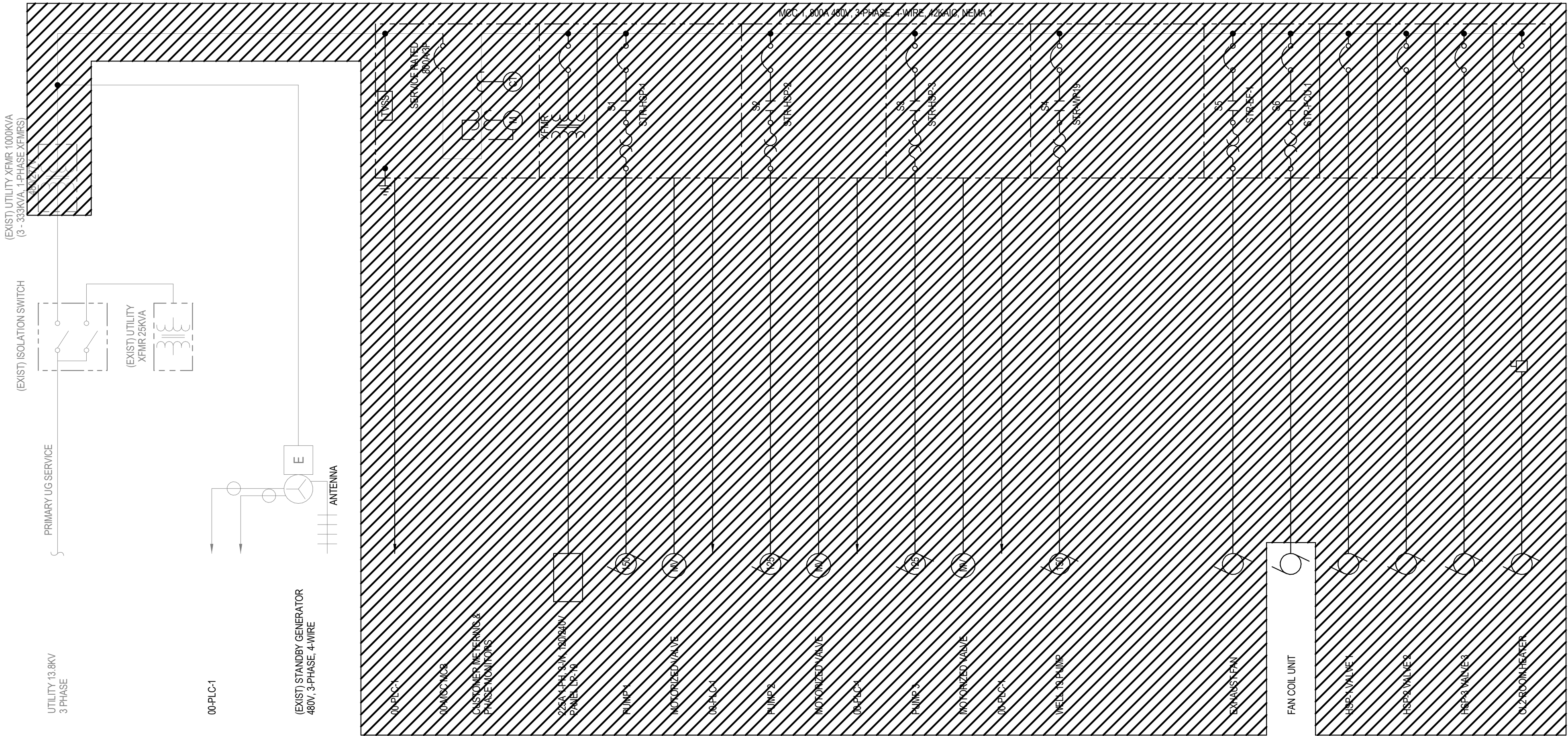
SYSTEMS PLAN -
WELLHOUSE 19

01
E401

10/11/2023 11:46:49 AM

1 SYSTEMS PLAN
E401 3/16" = 1'-0"

0 4' 8' 12'



1
E501
NOT TO SCALE

EXISTING MCC ONE-LINE DIAGRAM - REMOVAL



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CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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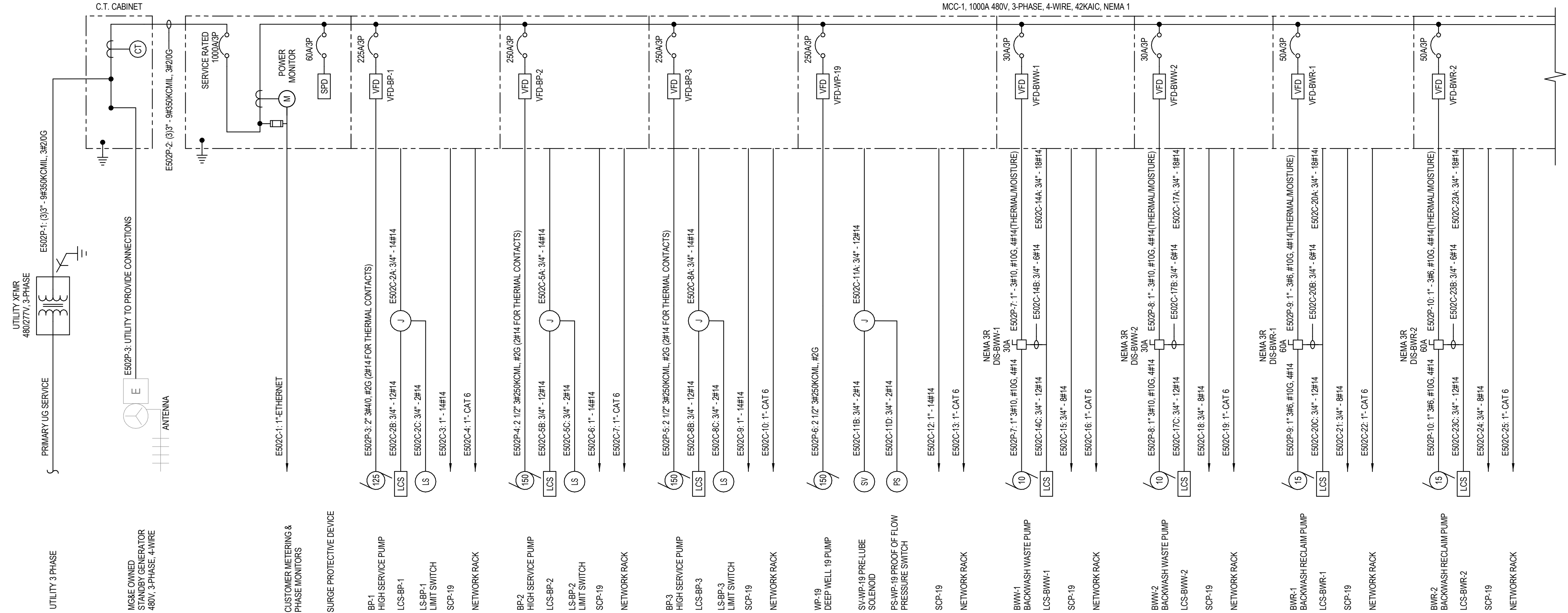
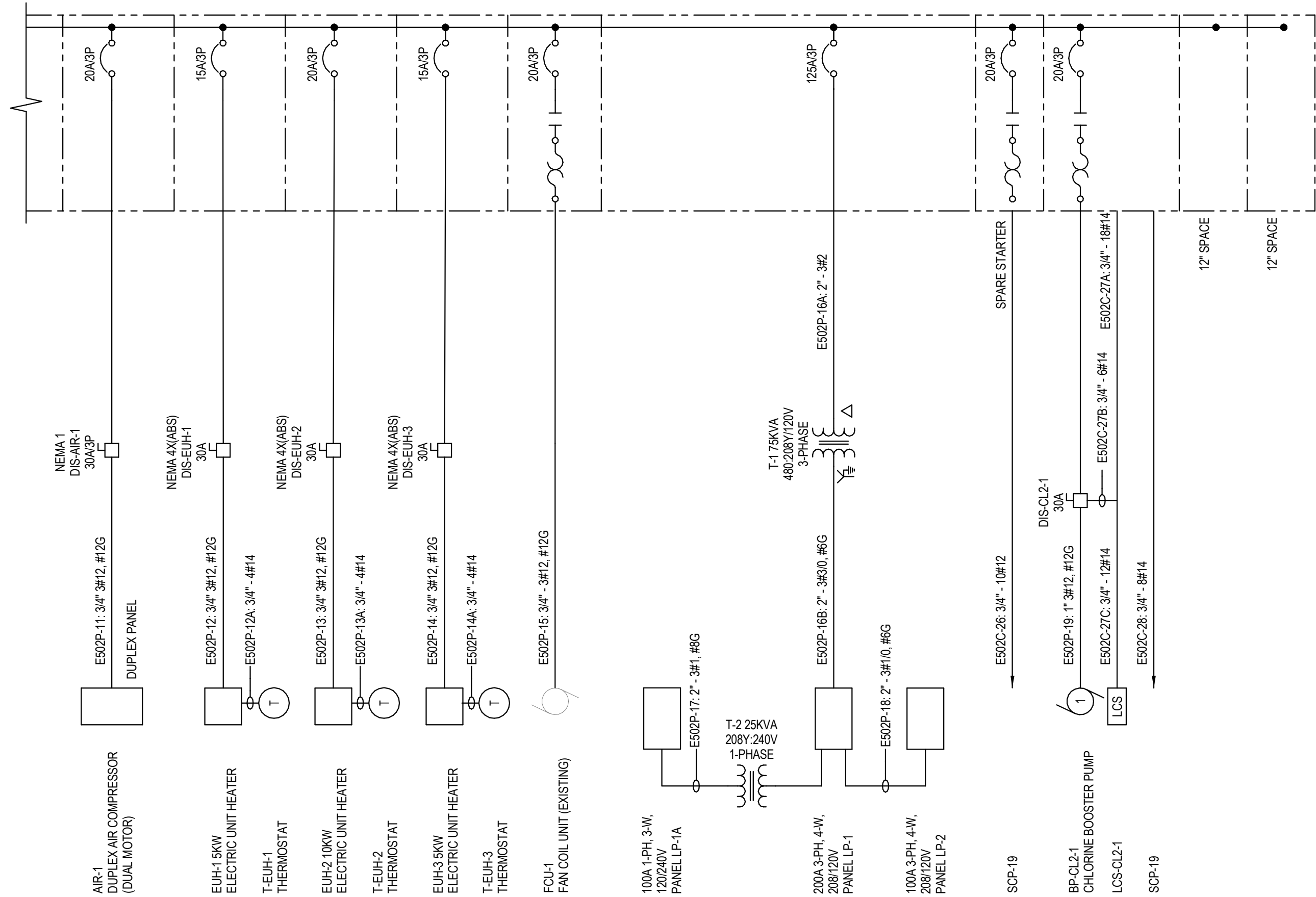
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ONE-LINE DIAGRAM

01
E501



CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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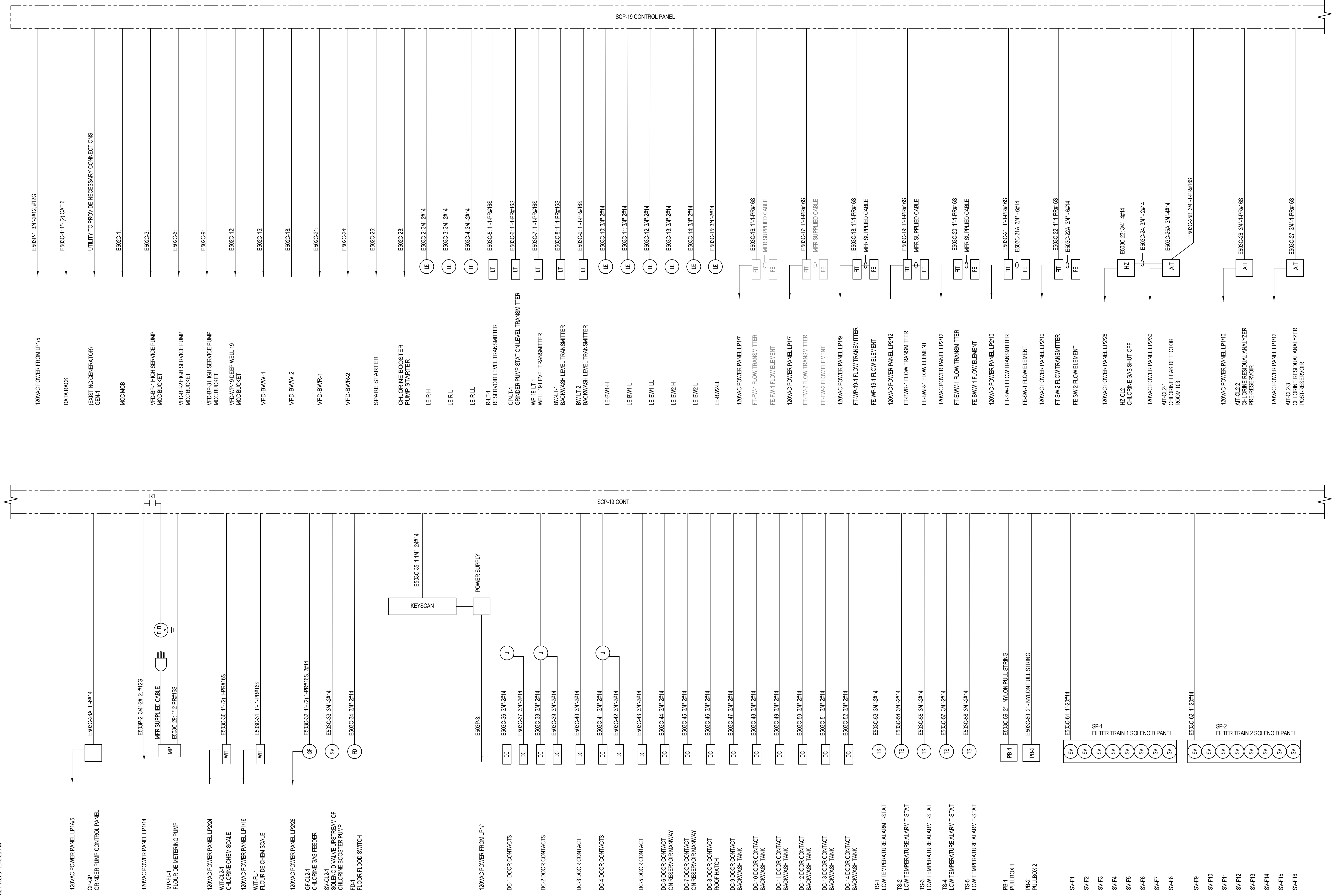
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ONE-LINE DIAGRAM

SCP-19 ONE-LINE DIAGRAM

NOT TO SCALE



CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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ONE-LINE DIAGRAM

01
E503

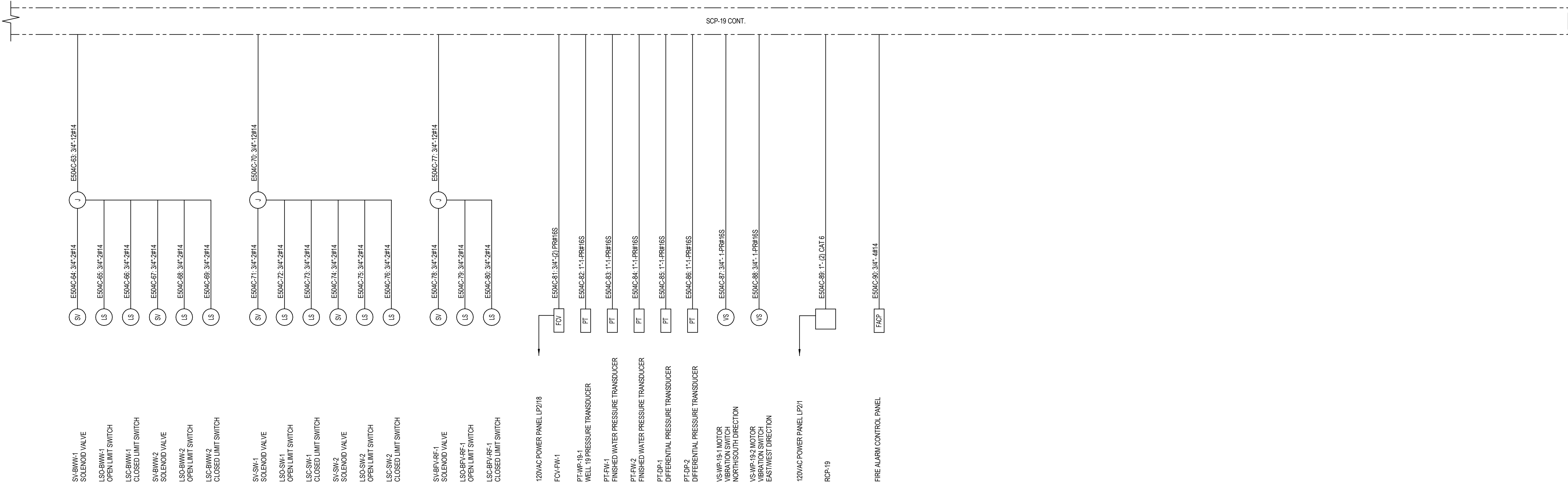
Project Owner



1
E504

SCP-19 ONE-LINE DIAGRAM CONTINUED

NOT TO SCALE



CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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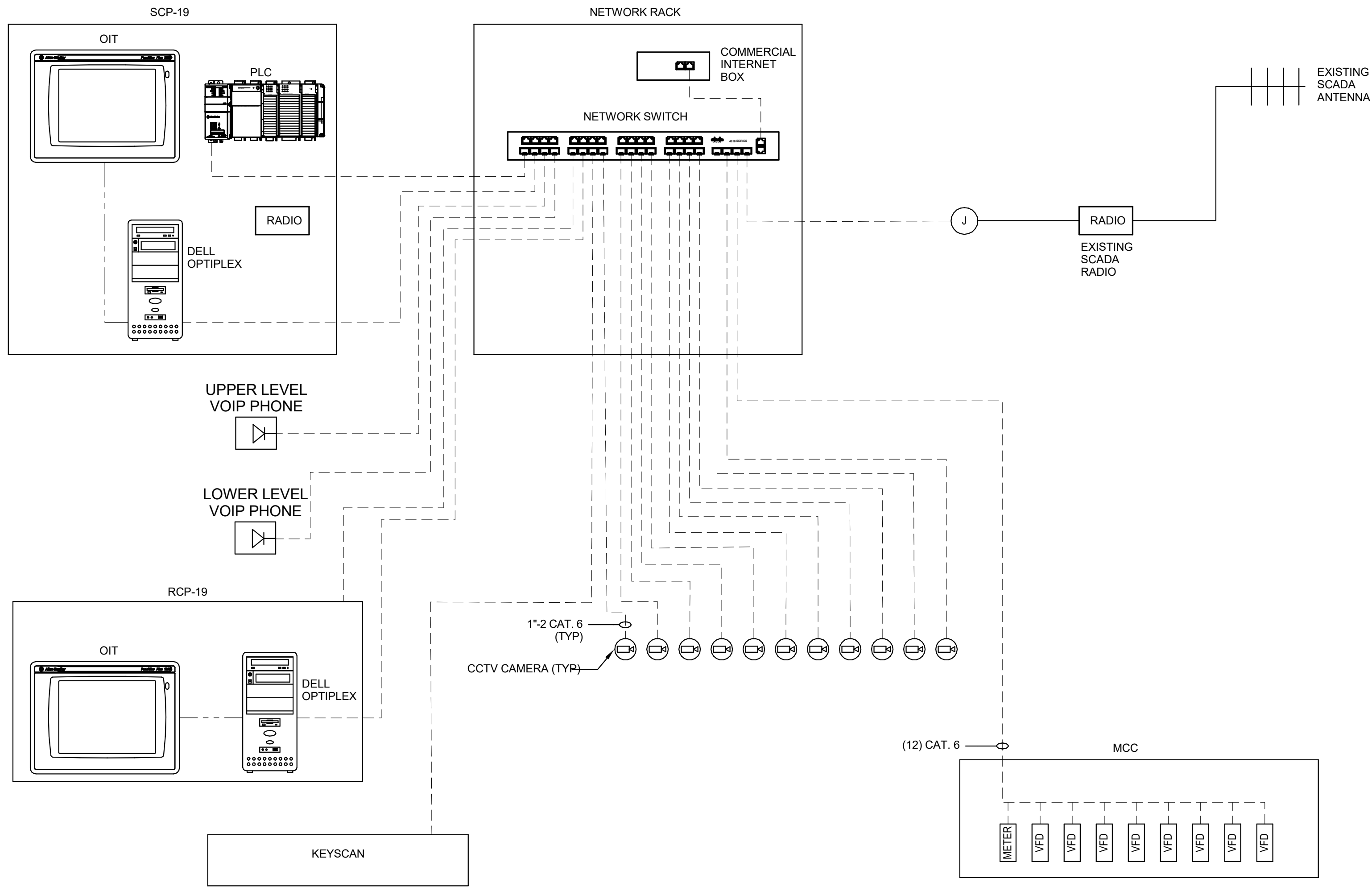
ONE-LINE DIAGRAM

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E504



Project Owner

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GENERAL NOTES

A. ALL ETHERNET CABLES SHOWN SHALL BE INSTALLED IN MINIMUM 3/4" CONDUITS. WHERE MULTIPLE ETHERNET CABLES ARE RUN IN THE SAME CONDUIT, SIZE CONDUIT PER MANUFACTURERS RECOMMENDATION.

1 NETWORK DIAGRAM
E505 NOT TO SCALE

NETWORK SYMBOLS LEGEND	
-----	HDMI CABLE
-----	EXIST HDMI CABLE
-----	ETHERNET CABLE
-----	EXIST ETHERNET CABLE
-----	FIBER
-----	EXIST FIBER
-----	FIELD WIRING



CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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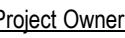
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REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

NETWORK DIAGRAM

01
E505



CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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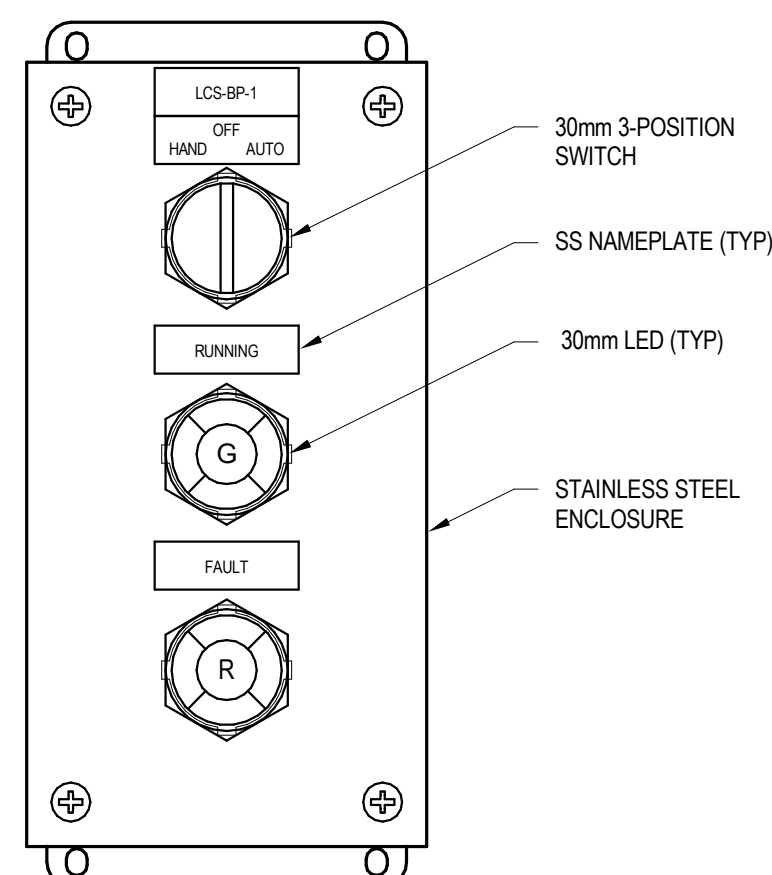
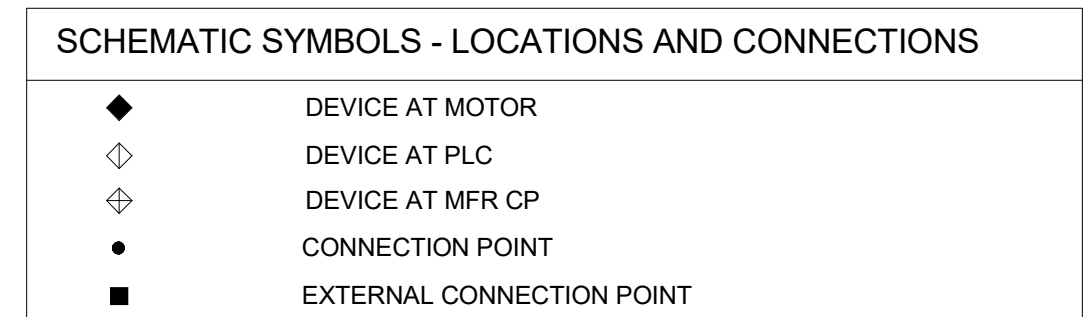
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SCHEMATICS

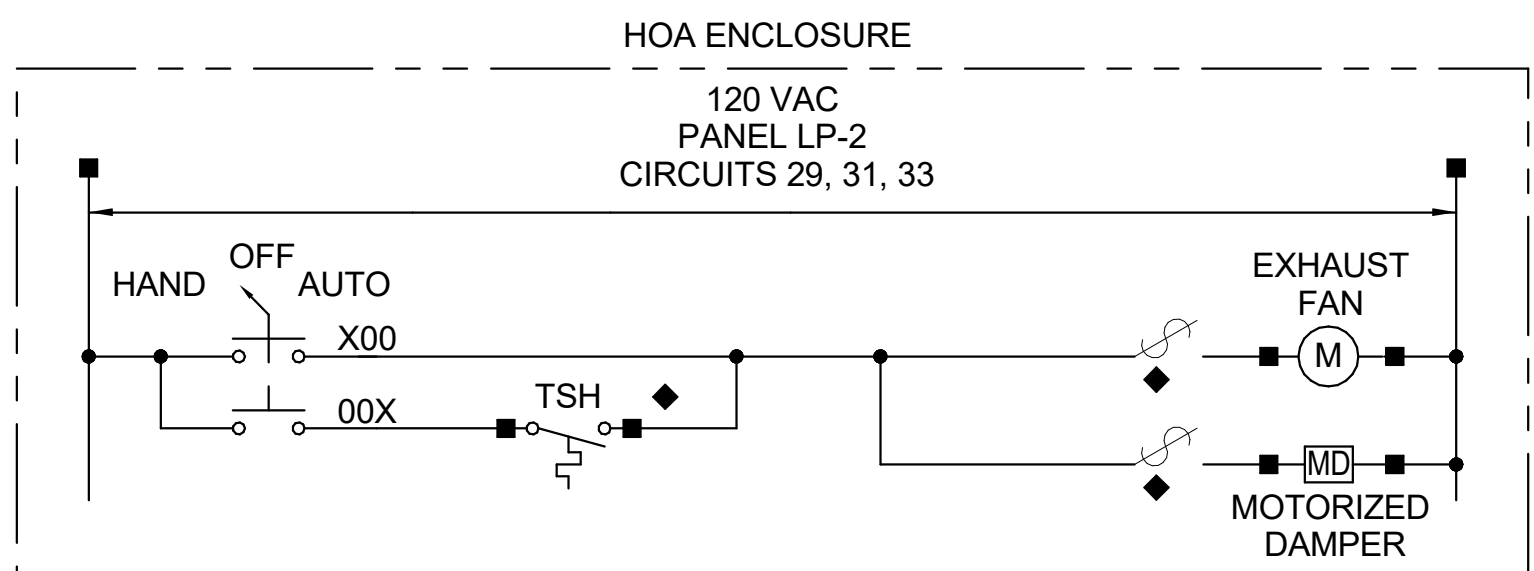
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E601



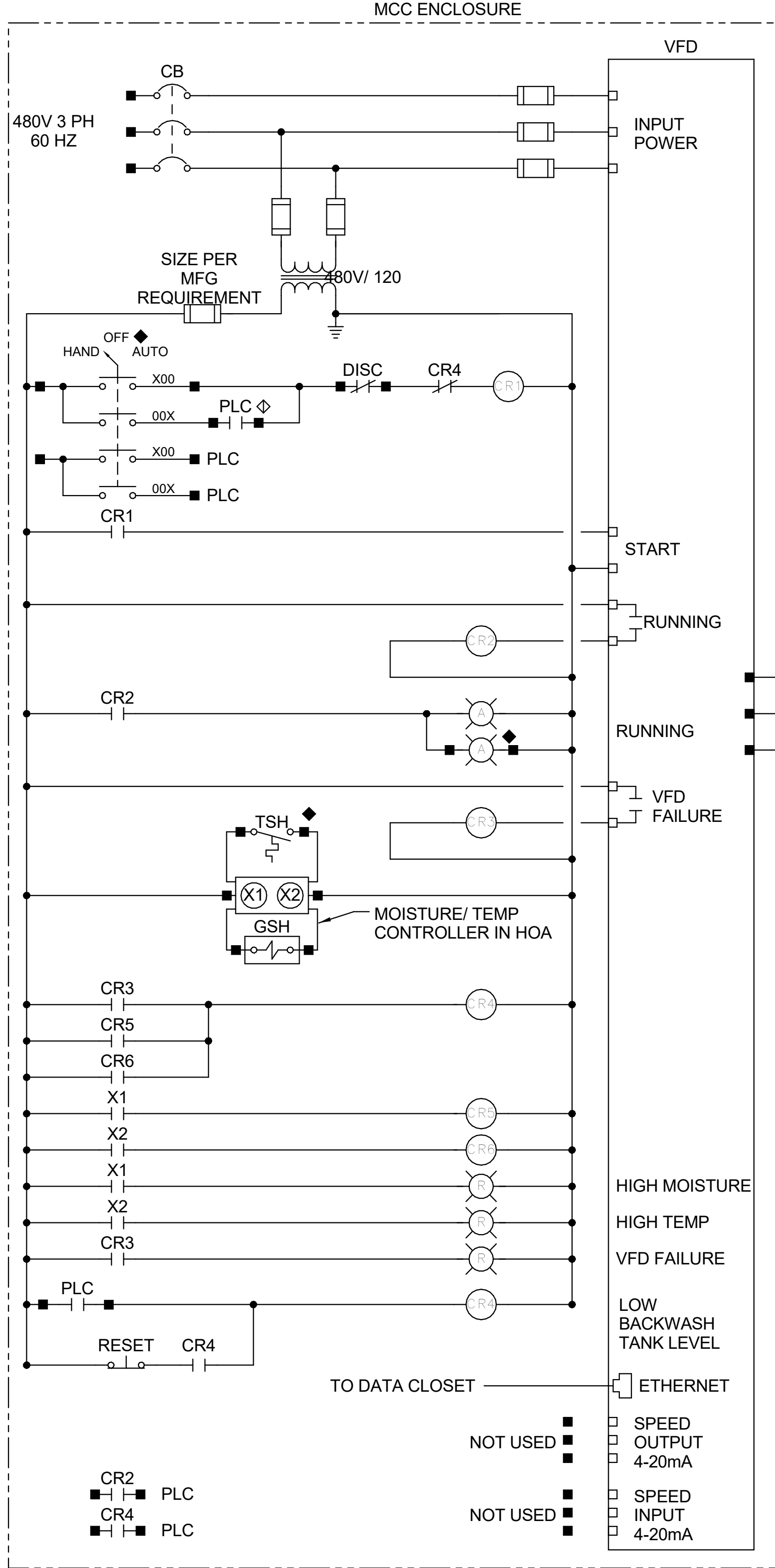
3 LOCAL CONTROL STATION BP-1,2,3
E601 NOT TO SCALE

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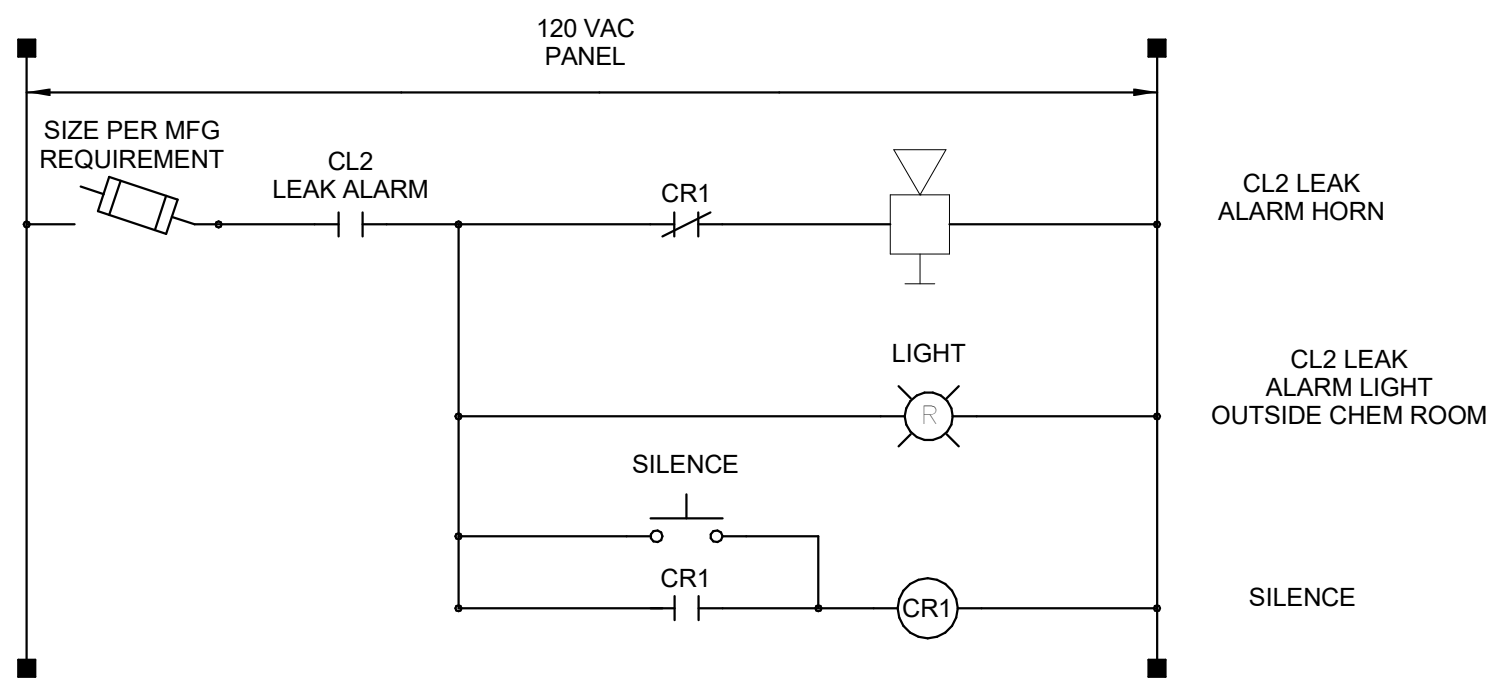
1
E602
BACKWASH WASTE PUMP SCHEMATIC BWW-1,2
NOT TO SCALE



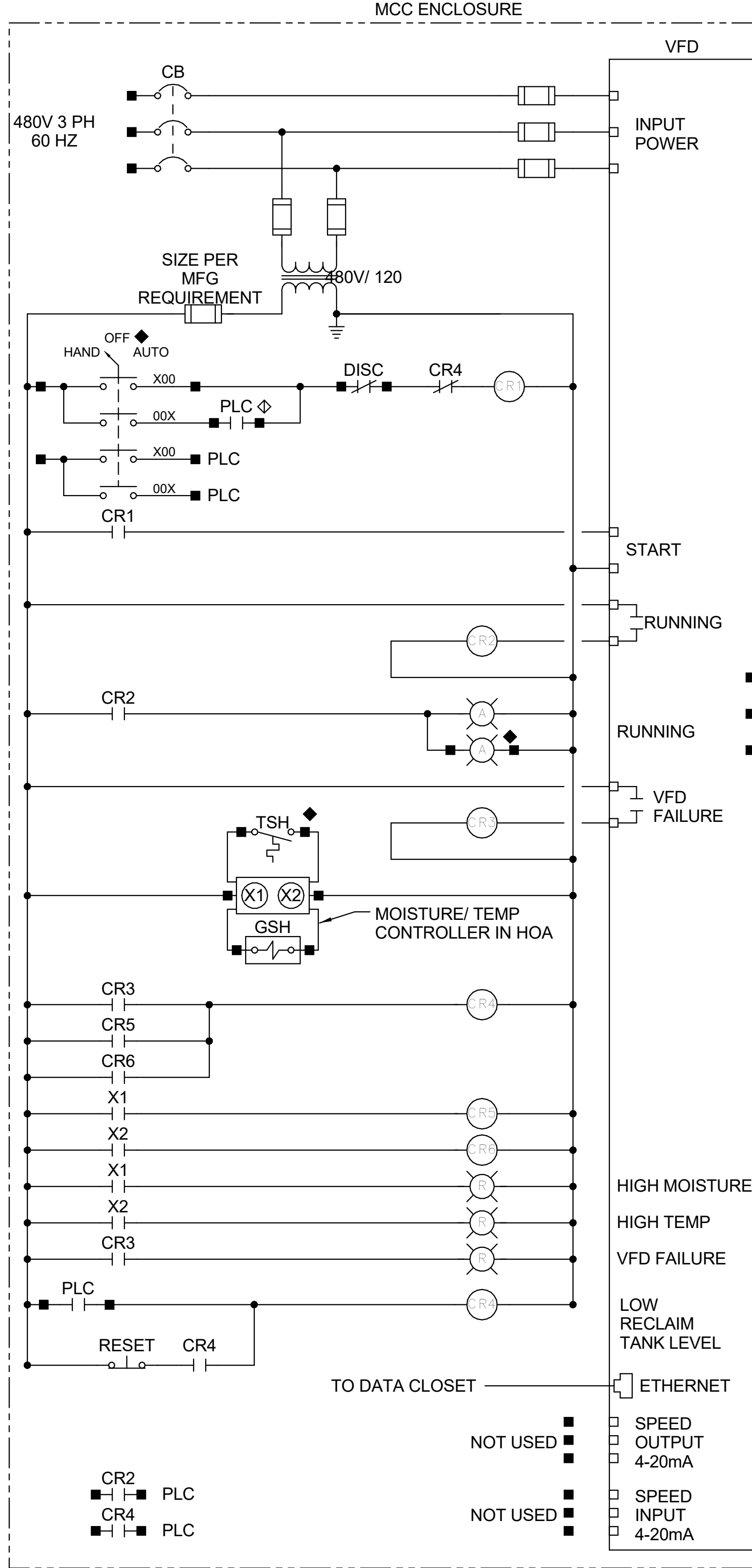
6
E602
MOTORIZED DAMPER AND EXHAUST FAN SCHEMATIC
NOT TO SCALE



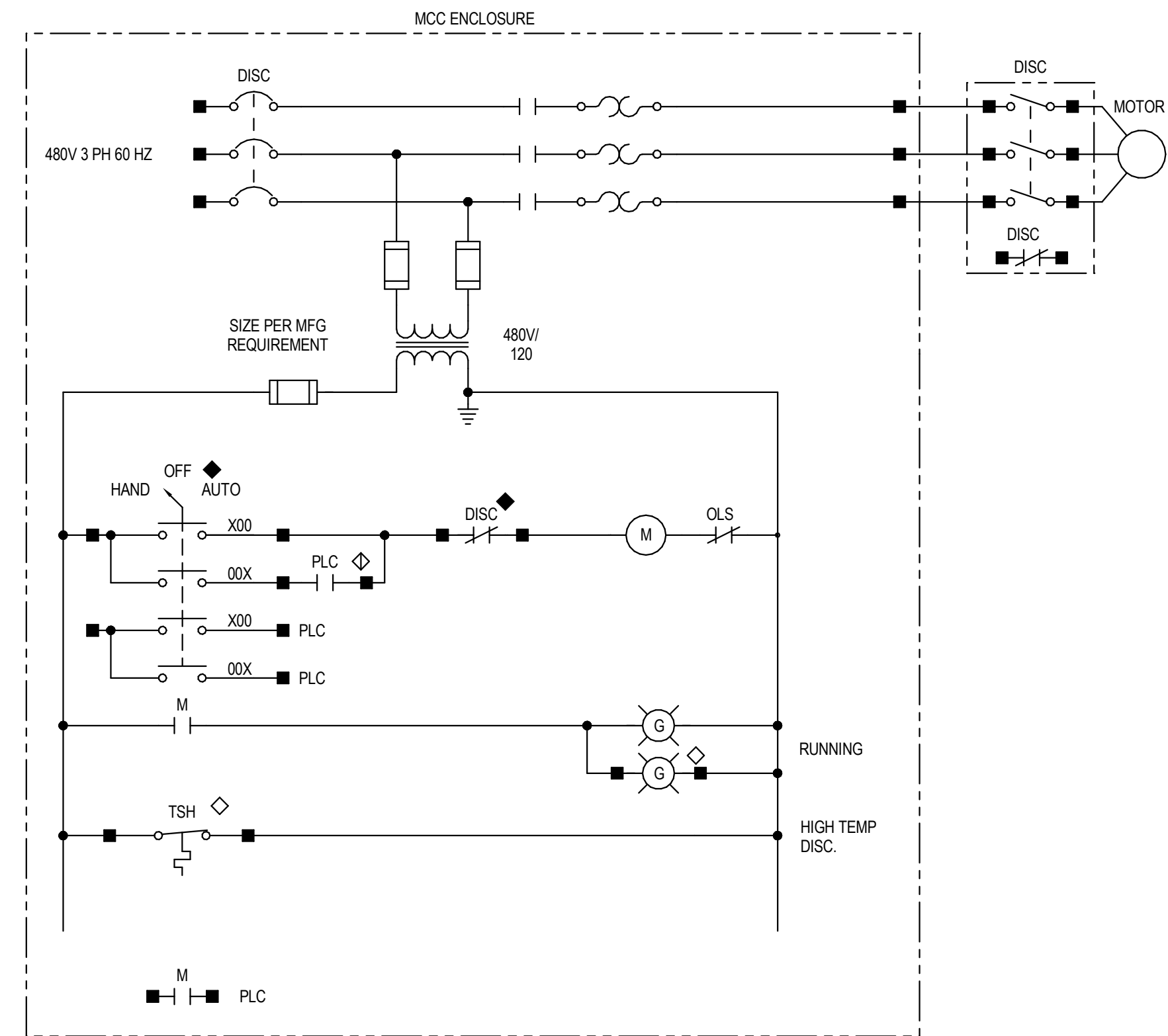
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E602
RECLAIM PUMP SCHEMATIC BWR-1,2
NOT TO SCALE



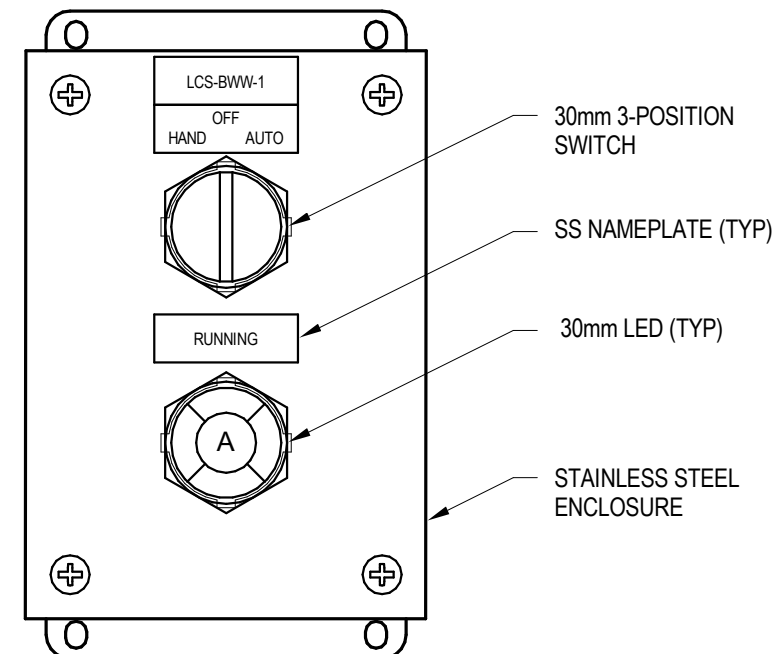
4
E602
CHLORINE ROOM LEAK ALARM SCHEMATIC
NOT TO SCALE



5
E602
CHLORINE BP, FCU, AND SPARE STARTER SCHEMATIC
NOT TO SCALE



3
E602
LOCAL CONTROL STATION BWW-1,2 & BWR-1,2 & BP-CL2-1
NOT TO SCALE



SCHEMATIC SYMBOLS - LOCATIONS AND CONNECTIONS

- ◆ DEVICE AT MOTOR
- ◇ DEVICE AT PLC
- ◇ DEVICE AT MFR CP
- CONNECTION POINT
- EXTERNAL CONNECTION POINT

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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SEH Project MADJW 167818
Checked By CBW
Drawn By DDH

Project Status BIDDING DOCUMENTS
Issue Date OCTOBER, 2023

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE
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SCHEMATICS

01
E602



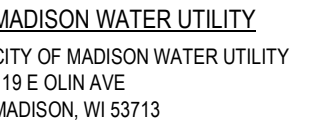
Project Owner

PANELBOARD: LP-1															
LOCATION: Space 6					VOLTAGE: 208Y/120 V, 3 ø 4 W.										
MOUNTING: RECESSED NEMA1					A.I.C. RATING: 10,000 AMPS SYMMETRICAL										
MAIN DEVICE: 200.0 A MAIN CB					SPECIAL:										
BUS AMPS: 200 AMPS															
CONDUIT/ WIRE	LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION	CONDUIT/ WIRE			
3/4" - 2#12, #12G	KEYSCAN POWER SUPPLY	20 A	1	1	0.0	0.0		2	1	20 A	RCPT: WELL 19 BLDG	3/4" - 2#12, #12G			
3/4" - 2#12, #12G	DATA RACK POWER SUPPLY	20 A	1	3			0.0	0.0	4	1	20 A	GUH-1	3/4" - 2#12, #12G		
3/4" - 2#12, #12G	SCP-19	20 A	1	5				0.0	0.0	6	1	20 A	DEH-5	3/4" - 2#12, #12G	
3/4" - 2#12, #12G	FT-FW-1, FT-FW-2	20 A	1	7	0.0	0.0				8	1	20 A	DEH-6	3/4" - 2#12, #12G	
3/4" - 2#12, #12G	FT-WP-19-1	20 A	1	9			0.0	0.0		10	1	20 A	AIT-CL2-2	3/4" - 2#12, #12G	
3/4" - 2#12, #12G	SECURITY CONTROL PANEL	20 A	1	11				0.0	0.0	12	1	20 A	AIT-CL2-3	3/4" - 2#12, #12G	
3/4" - 2#12, #12G	DATA RACK RECEPTACLE	20 A	1	13	0.0	0.0				14	1	20 A	RCPT: MP-FL-1	3/4" - 2#12, #12G	
	SPARE	20 A	1	15			0.0	0.0		16	1	20 A	WIT-FL-1 FLUORIDE TANK SCALE	3/4" - 2#12, #12G	
	SPARE	20 A	1	17				0.0	0.0	18	1	20 A	R-MXR RESERVOIR MIXER	3/4" - 2#12, #12G	
	SPARE	20 A	1	19	0.0	0.0				20	1	20 A	RCPT: FUME HOOD COUNTERTOP	3/4" - 2#12, #12G	
	SPARE	20 A	1	21			0.0	0.0		22	1	20 A	JB-FH FUME HOOD CONNECTION	3/4" - 2#12, #12G	
	SPARE	20 A	1	23				0.0	0.0	24	1	20 A	SPARE		
	SPARE	20 A	1	25	0.0	0.0				26	1	20 A	SPARE		
	SPARE	20 A	1	27			0.0	0.0		28	1	20 A	SPARE		
	SPARE	20 A	1	29				0.0	0.0	30	1	20 A	SPARE		
	SPARE	20 A	1	31	0.0	0.0				32	1	20 A	SPARE		
1 1/4" - 2#1/0	LP-1A	150 A	2	33			0.0	0.0		34	1	20 A	SPARE		
				35				0.0	0.0		36	1	20 A	SPARE	
					0.0	0.0				38	1	20 A	SPARE		
2" - 3#1/0, #6G	LP-2	100 A	3	39			0.0	0.0		40	1	20 A	SPARE		
				41				0.0	0.0		42	1	20 A	SPARE	
		TOTAL LOAD:		0 kVA		0 kVA		0 kVA							
		TOTAL AMPS:		0 A		0.0 A		0 A							
LOAD CLASSIFICATION		CONNECTED			DEMAND			ESTIMATED			PANEL TOTALS				
Other		0 VA			0.00%			0 VA			CONNECTED LOAD: 0 VA				
Receptacle		0 VA			0.00%			0 VA			ESTIMATED DEMAND: 0 VA				
											CONNECTED CURRENT: 0.0 A				
											EST. DEMAND CURRENT: 0.0 A				
NOTES:															

PANELBOARD: LP-1A													
LOCATION: Space 6					VOLTAGE: 120/240 V, 1 ø 3 W.								
MOUNTING: SURFACE NEMA 1					A.I.C. RATING: 10,000 AMPS SYMMETRICAL								
MAIN DEVICE: 100.0 A MCB					SPECIAL:								
BUS AMPS: 100 AMPS													
CONDUIT/ WIRE	LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		CKT	P	BKR	LOAD DESCRIPTION	CONDUIT/ WIRE
3/4" - 3#10, #10G	GRINDER PUMPS	30 A	2	1	0.0	0.0			2				
				3			0.0	0.0	4	2	60 A	WEATHER INSTRUMENTATION	1" - 3#4, #10G
3/4" - 3#12, #12G	CP-GP GRINDER CONTROL PANEL	20 A	1	5	0.0	--			6	1	--	SPACE	
	SPACE	--	1	7			--	--	8	1	--	SPACE	
	SPACE	--	1	9	--	--			10	1	--	SPACE	
	SPACE	--	1	11			--	--	12	1	--	SPACE	
	SPACE	--	1	13	--	--			14	1	--	SPACE	
	SPACE	--	1	15			--	--	16	1	--	SPACE	
		TOTAL LOAD:			0 kVA		0 kVA						
		TOTAL AMPS:			0 A		0.0 A						
LOAD CLASSIFICATION		CONNECTED			DEMAND		ESTIMATED		PANEL TOTALS				
									CONNECTED LOAD: 0 VA				
									ESTIMATED DEMAND: 0 VA				
									CONNECTED CURRENT: 0.0 A				
									EST. DEMAND CURRENT: 0.0 A				
NOTES:													

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PANELBOARD: LP-2															
LOCATION:					VOLTAGE: 208Y/120 V, 3 ø 4 W.										
MOUNTING: SURFACE NEMA1					A.I.C. RATING: 10,000 AMPS SYMMETRICAL										
MAIN DEVICE: 100.0 A MLO					SPECIAL:										
BUS AMPS: 100 AMPS															
CONDUIT/ WIRE	LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION	CONDUIT/ WIRE
3/4" - 2#12, #12G	RCPT: FILTER ROOM	20 A	1	1	0.0	0.3					2	1	20 A	LTS: FILTER/CHEM ROOM	3/4" - 2#12, #12G
3/4" - 2#12, #12G	RCPT: HMO, CL2, TOILET	20 A	1	3			0.0	0.0			4	1	20 A	EXTERIOR LIGHTING	3/4" - 2#12, #12G
	SPARE	20 A	1	5					0.0	0.9	6	1	20 A	LTS: PUMP ROOM	3/4" - 2#12, #12G
3/4" - 3#12, #12G	EWH-1	20 A	3	7	1.5	0.0					8	1	20 A	SPARE	
				9			1.5	0.0			10	1	20 A	FT-SW-1, FT-SW-2	3/4" - 2#12, #12G
				11					1.5	0.0	12	1	20 A	FT-BWR-1, FT-BWW-1	3/4" - 2#12, #12G
3/4" - 2#12, #12G	EWH-2	20 A	2	13	1.1	0.0					14	1	20 A	SOLENOID PANEL 1	3/4" - 2#12, #12G
3/4" - 2#12, #12G	GUH-2	20 A	1	15			1.1	0.0			16	1	20 A	SOLENOID PANEL 2	3/4" - 2#12, #12G
3/4" - 2#12, #12G	GUH-3	20 A	1	17					0.0	0.0	18	1	20 A	FCV-FW-1	3/4" - 2#12, #12G
3/4" - 2#12, #12G	DEH-1	20 A	1	19	0.0	0.0					20	1	20 A	POLE LIGHT AA1	3/4" - 2#10, #12G
3/4" - 2#12, #12G	DEH-2	20 A	1	21			0.0	0.0			22	1	20 A	POLE LIGHT AA2	3/4" - 2#10, #12G
3/4" - 2#12, #12G	DEH-3	20 A	1	23					0.0	0.0	24	1	20 A	WIT-CL2-1 SCALE	3/4" - 2#12, #12G
3/4" - 2#12, #12G	DEH-4	20 A	1	25	0.0	0.0					26	1	20 A	GF-CL2-1	3/4" - 2#12, #12G
3/4" - 2#12, #12G	DEH-4	20 A	1	27			0.0	0.0			28	1	20 A	HZ-CL2-1	3/4" - 2#12, #12G
3/4" - 2#12, #12G	EF-1 AND MD-1	20 A	1	29					0.0	0.0	30	1	20 A	AIT-CL2-1	3/4" - 2#12, #12G
3/4" - 2#12, #12G	EF-2 AND MD-2	20 A	1	31	0.0	0.0					32	1	20 A	SV-CL2-1	3/4" - 2#12, #12G
3/4" - 2#12, #12G	EF-3 AND MD-3	20 A	1	33			0.0	0.0			34	1	20 A	SPARE	
3/4" - 2#12, #12G	EF-4	20 A	1	35					0.0	0.0	36	1	20 A	SPARE	
	SPARE	20 A	1	37	0.0	0.0					38	1	20 A	RCPT: BACKWASH TANKS	3/4" - 2#12, #12G
	SPARE	20 A	1	39			0.0	0.0			40	1	20 A	REMOTE SCADA PANEL RCP-19	3/4" - 2#12, #12G
	SPARE	20 A	1	41					0.0	0.0	42	1	20 A	FACP	3/4" - 2#12, #12G
		TOTAL LOAD:			3 kVA		3 kVA		2 kVA						
		TOTAL AMPS:			25 A		21.9 A		20 A						
LOAD CLASSIFICATION		CONNECTED			DEMAND			ESTIMATED			PANEL TOTALS				
LITES		1284 VA			125.00%			1605 VA							
Receptacle		0 VA			0.00%			0 VA							
											CONNECTED LOAD: 1284 VA				
											ESTIMATED DEMAND: 1605 VA				
											CONNECTED CURRENT: 3.6 A				
											EST. DEMAND CURRENT: 4.5 A				
NOTES:															



BACKWASH TANK
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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BACKWASH TANK PLANS

BACKWASH TANK PLANS



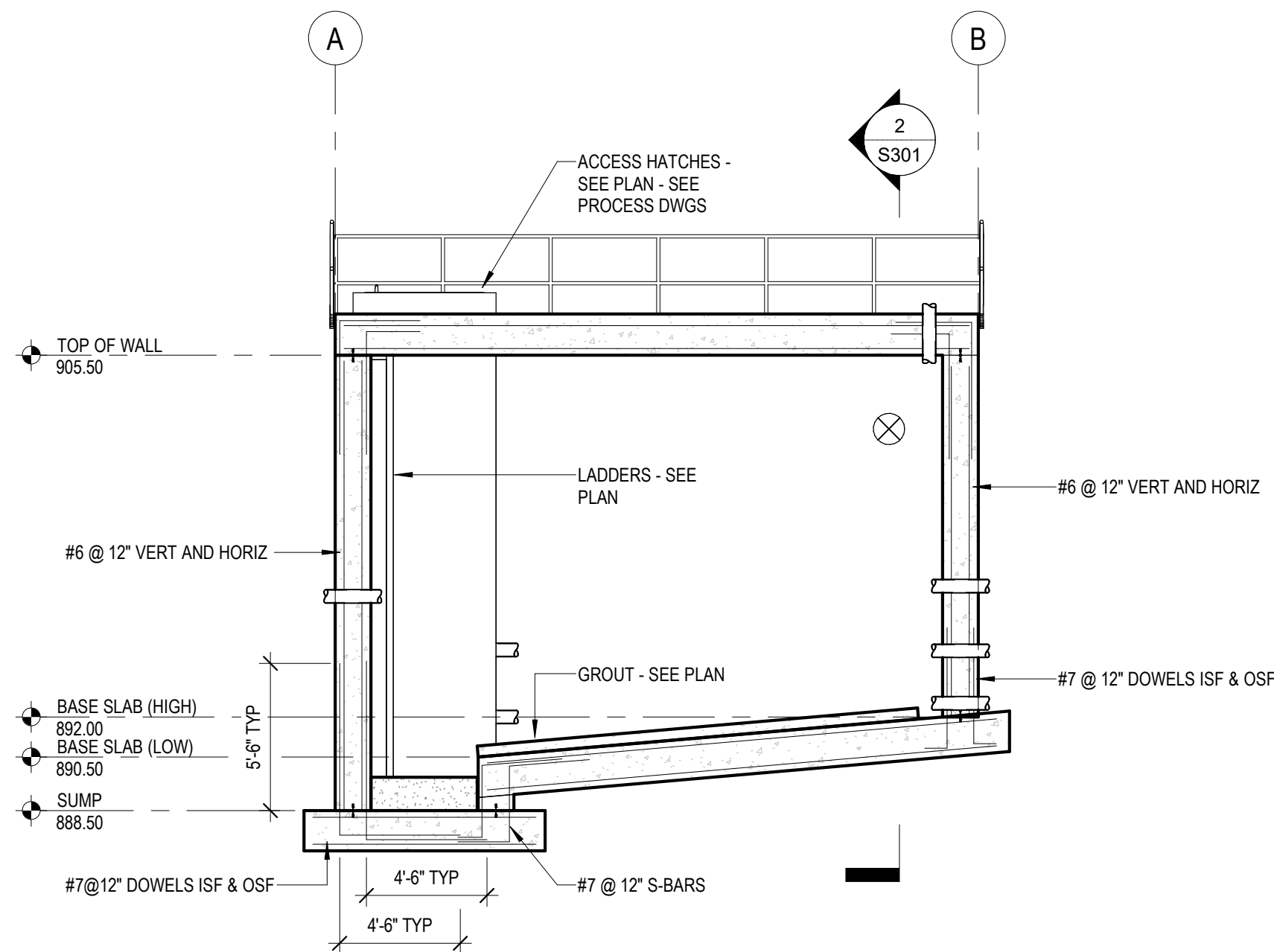
(TYPICAL UNLESS NOTED OTHERWISE)

- ① FRP LADDER - SEE TYP DETAIL - SEE PROCESS FOR LOC.
- ② PIPING PENETRATIONS - SEE PROCESS DRAWINGS FOR LOCATION AND INVERT ELEV. SEE TYPICAL DETAIL FOR ADDITIONAL REINFORCING AT CONC. WALL OPENINGS.
- ③ CONCRETE SPLASH PAD - SEE CIVIL & DETAIL 6/DC1.

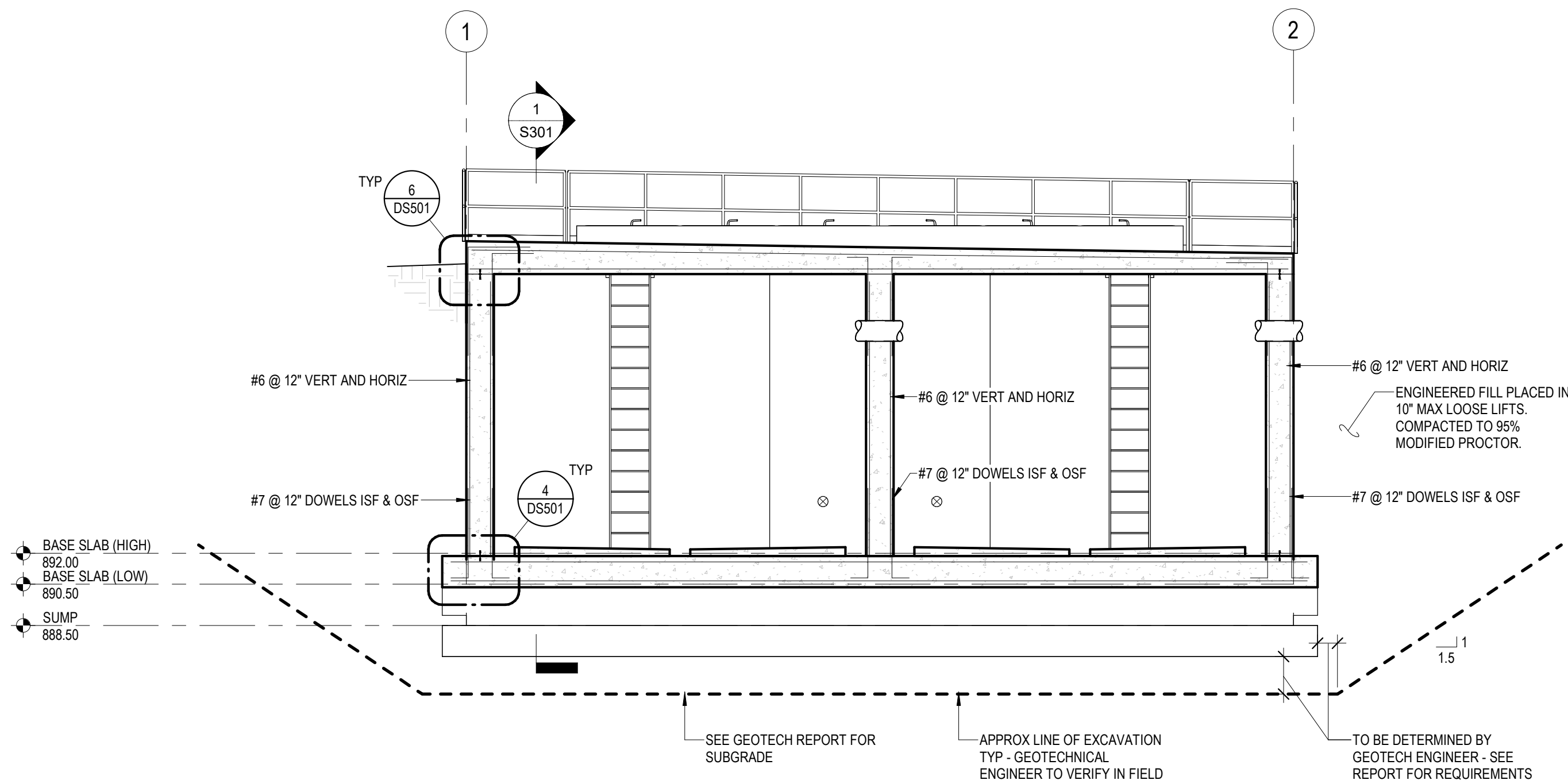


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1
S301
BACKWASH TANK SECTION
3/16" = 1'-0"
0 4' 8' 12'



2
S301
BACKWASH TANK SECTION
3/16" = 1'-0"
0 4' 8' 12'

GENERAL NOTES:

(TYPICAL UNLESS NOTED OTHERWISE)

1. SOIL CORRECTION AND EXCAVATION INFORMATION SHOWN IN THIS DETAIL IS REPRESENTATIVE OF THE ENTIRE BUILDING.

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1
P301

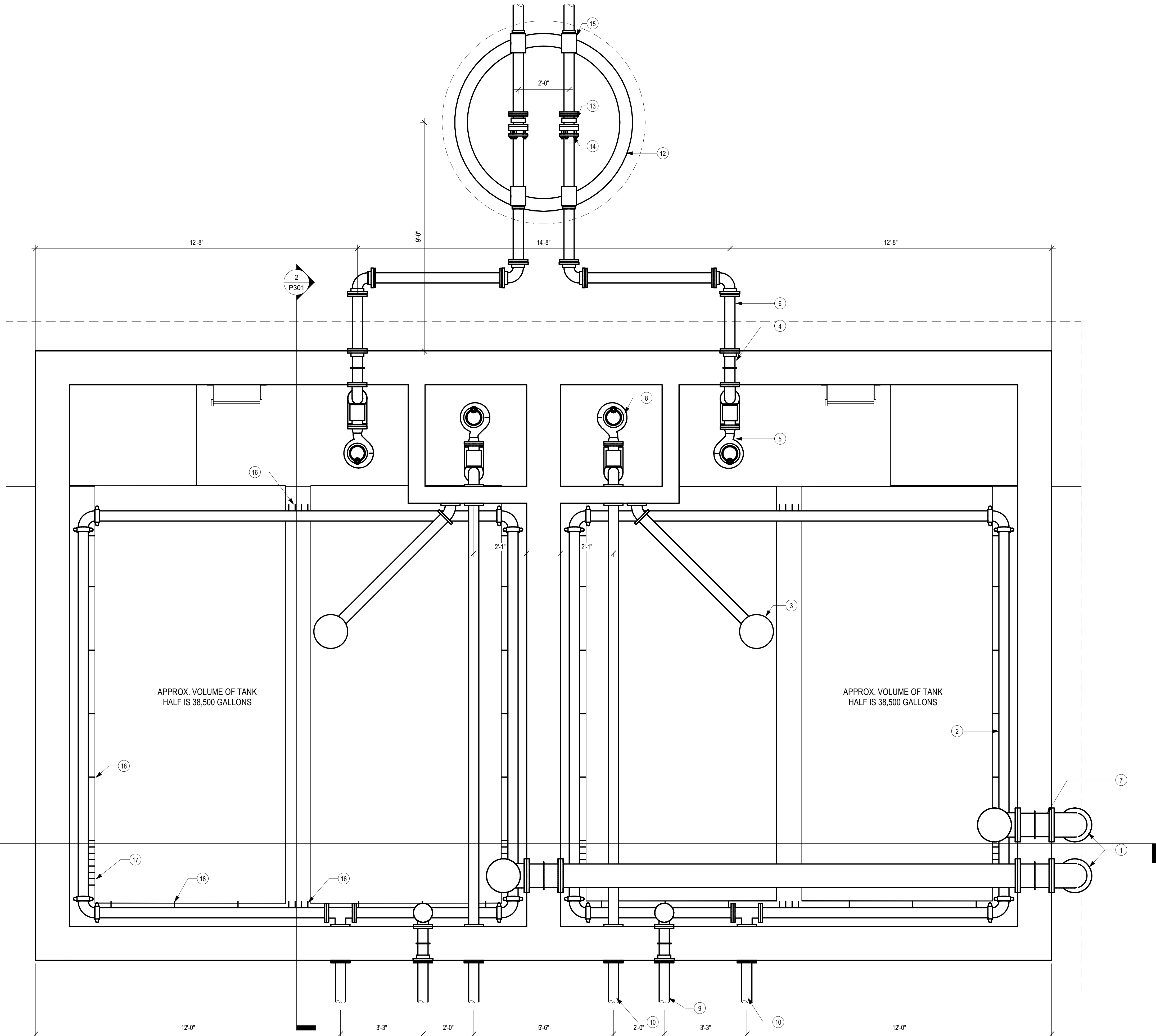
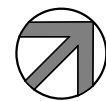
2
P301

1
P101

BACKWASH TANK BOTTOM PROCESS PLAN

1/2" = 1'-0"

0 1' 2' 4'



KEYNOTES

- 10" OVERFLOW PIPE - TYPICAL FOR EACH CELL - SCREEN OUTLET SIMILAR TO DETAIL VDP1. TERMINATE OVERFLOW NO LESS THAN 24" ABOVE SPLASH PAD.
- 4" PERIMETER SPRAYWASH PIPE - TYPICAL FOR EACH CELL. USE VICTAULIC FITTINGS ON ELBOWS TO SPIN WITH SLOPE OF TANK BOTTOM
- FLOATING SUCTION STRAINER - TYPICAL FOR EACH CELL
- 4" FLxMJ WALL PIPE
- SLUDGE TO WASTE PUMP - TYPICAL FOR EACH CELL
- 4" SLUDGE TO WASTE PIPE - SEE SITE PLAN FOR CONTINUATION - TYPICAL FOR EACH CELL
- 10" FLxFL WALL PIPE
- 4" BACKWASH RECLAIM PUMP TO WELLHOUSE - SEE SITE PLAN FOR CONTINUATION - TYPICAL FOR EACH CELL
- 4" BACKWASH WASTE FROM WELLHOUSE - TYPICAL FOR EACH CELL
- 4" SPRAYWASH PIPE FROM WELL HOUSE - TYPICAL FOR EACH CELL.
- 4" BACKWASH RECLAIM PIPE TO WELL HOUSE - TYPICAL FOR EACH CELL.
- 6" DIA CONCRETE MH, RIM = 904.50, INV = 894.50. LID TO HAVE 30" SQUARE TRAFFIC RATED HATCH
- 4" MAGNETIC FLOW METER - TYP OF TWO
- FLANGED COUPLING ADAPTER - TYP FOR EACH METER
- MANHOLE BOOT
- FOUR NOZZLES @ 3" OC CENTERED ABOVE CENTER GROUT TROUGH
- EIGHT NOZZLES @ 3" OC @ HIGH END OF TANK BOTTOM
- NOZZLES @ 30" OC



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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SEH Project
Checked By
Drawn By

167818
MS
LAP

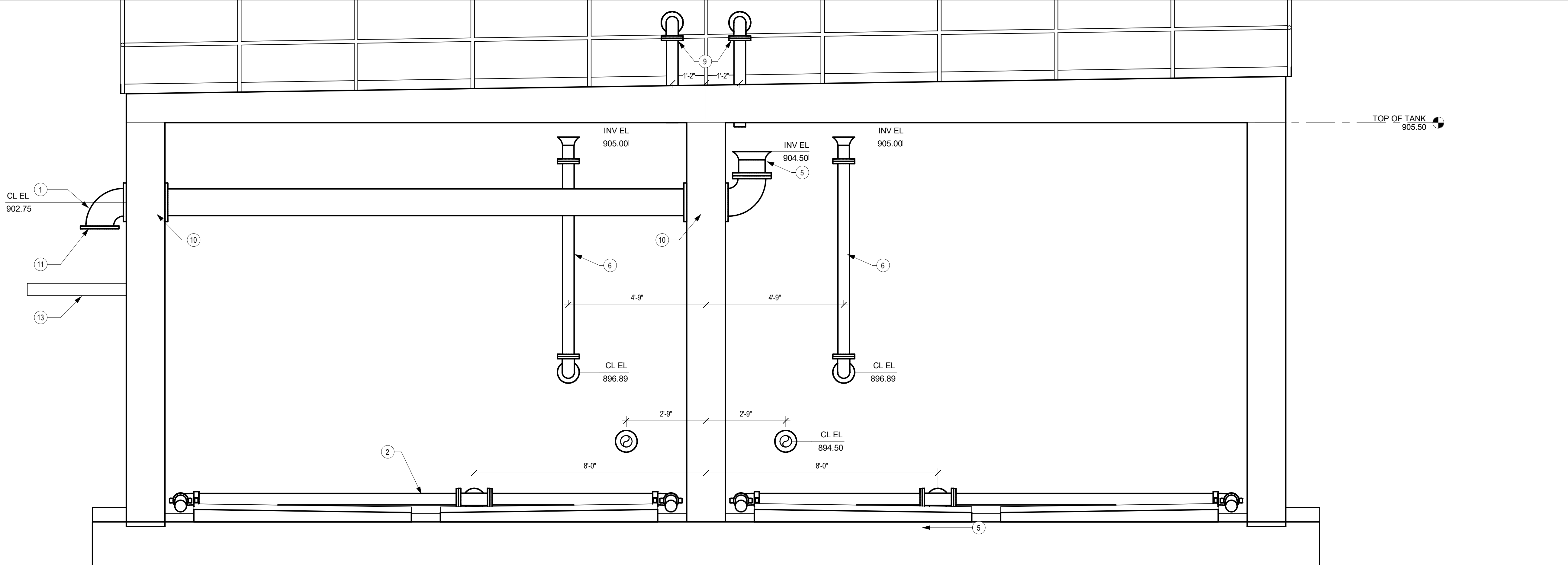
Project Status
BIDDING DOCUMENTS

Issue Date
OCTOBER, 2023

REVISION SCHEDULE
REV. # DESCRIPTION DATE

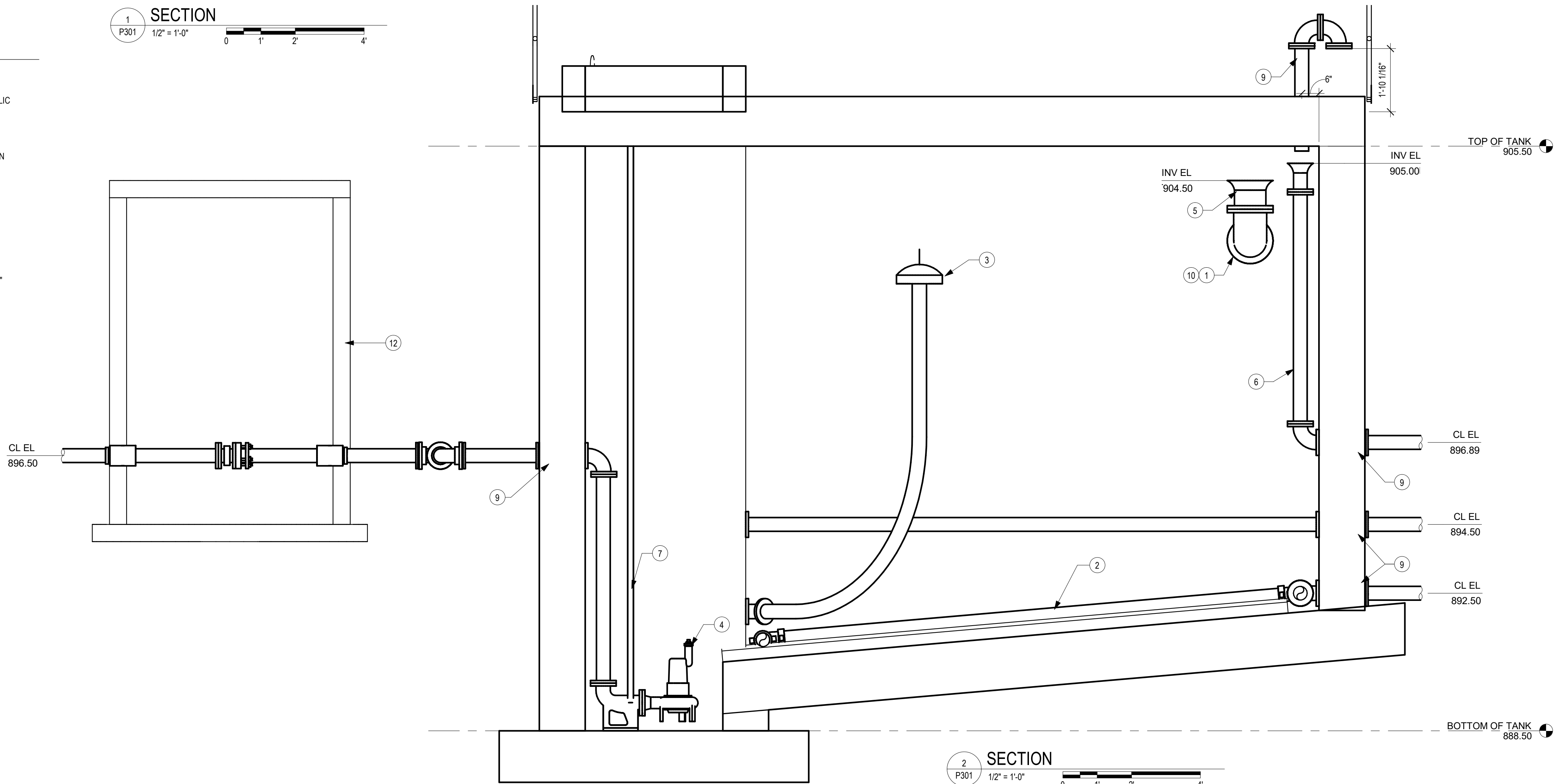
PLAN

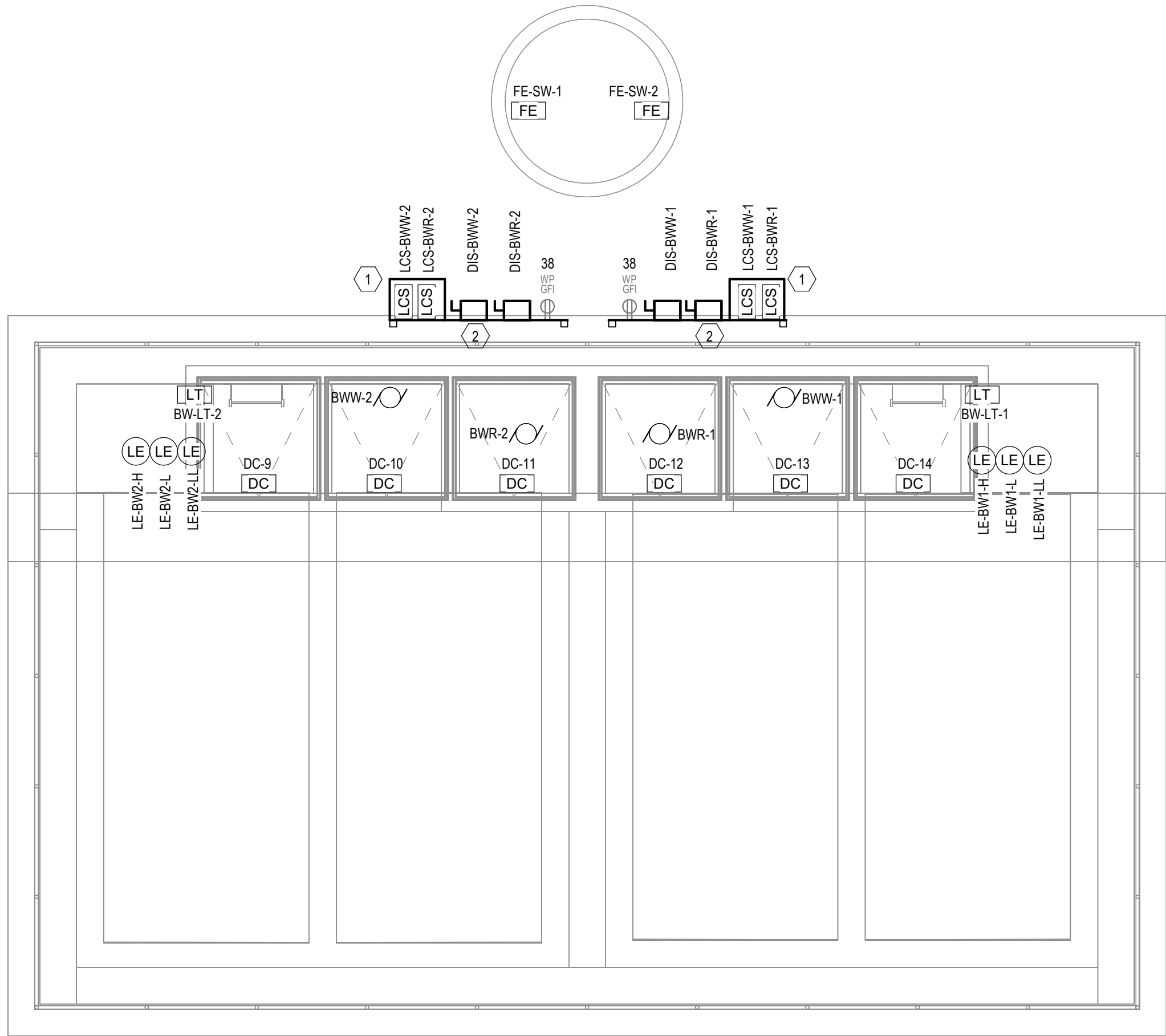
02
P101



KEYNOTES

- 10" OVERFLOW PIPE - TYPICAL FOR EACH CELL
- 4" PERIMETER SPRAYWASH PIPE - TYPICAL FOR EACH CELL. INSTALL VICTAULIC FITTINGS ON ELBOWS TO SLOPE PIPE WITH TANK BOTTOM
- FLOATING SUCTION STRAINER - TYPICAL FOR EACH CELL
- 4" BACKWASH SLUDGE TO WASTE PUMP TO SANITARY SEWER - SEE SITE PLAN FOR CONTINUATION - TYPICAL FOR EACH CELL
- 10" STRAIGHT FLANGED FLARE
- 4" BACKWASH WASTE FROM WELLHOUSE - TYPICAL FOR EACH CELL
- SUBMERSIBLE BACKWASH RECLAIM PUMP - TYPICAL FOR EACH CELL
- GROUT FILLED SLOPED BOTTOM NOT SHOWN IN THIS CELL FOR CLARITY
- 4" FLANGED VENT PIPE w/ STAINLESS STEEL #24 SCREEN - TERMINATE MIN 24" ABOVE TANK LID
- FLX MJ WALL PIPE - SEE DETAIL D/DP501
- #24 STAINLESS STEEL SCREEN SEE SIMILAR DETAIL E/DP504
- 6" DIA CONCRETE MH, RIM = 905.00, INV = 894.50. LID TO HAVE 30" SQUARE TRAFFIC RATED HATCH
- PROVIDE SPLASH PAD ON EACH OVERFLOW 18" VERTICAL FROM DISCHARGE





POWER GENERAL NOTES

- A. PROVIDE HOUSE KEEPING PADS FOR ALL FLOOR AND GRADE MOUNTED ELECTRICAL EQUIPMENT. MINIMUM REQUIREMENTS: 4" HIGH, 4" WIDER AND LONGER THAN EQUIPMENT TO BE PLACED ON IT, 4% AIR ENTRAINED, POLYFIBER REINFORCED CONCRETE.
- B. REFER TO SPECIFICATION SECTION 26 05 19 FOR MINIMUM CONDUCTOR SIZE ADJUSTMENTS FOR VOLTAGE DROP.
- C. CIRCUIT NUMBERS SHOWN AT GENERAL RECEPTACLE, ELECTRICAL EQUIPMENT, AND MECHANICAL EQUIPMENT LOCATIONS CORRESPOND TO PANELBOARD BREAKERS. SEE PANELBOARD SCHEDULES ON SHEET 01/E701.
- D. SEE ONE-LINE DIAGRAMS FOR CONDUIT AND WIRING REQUIREMENTS. SEE SHEETS 01/E502, 01/E503 AND 01/E504.
- E. SEE PANELBOARD SCHEDULES ON SHEET 01/E701 FOR CONDUIT AND WIRING REQUIREMENTS.
- F. SEE MECHANICAL PLANS AND SCHEDULES FOR ALL HVAC AND PLUMBING POWER REQUIREMENTS AND DETAILS.

KEYNOTES

1. PROVIDE DEVICES IN LOCKABLE NEMA 3R ENCLOSURE. MOUNT ON PEDESTAL. SEE DETAIL 04/DE01.
2. PEDESTAL. SEE DETAIL 05/DE01.

1
E301
POWER PLAN
1/4" = 1'-0"
0 2 4 8



Project Owner

CITY OF MADISON WATER UTILITY
MADISON UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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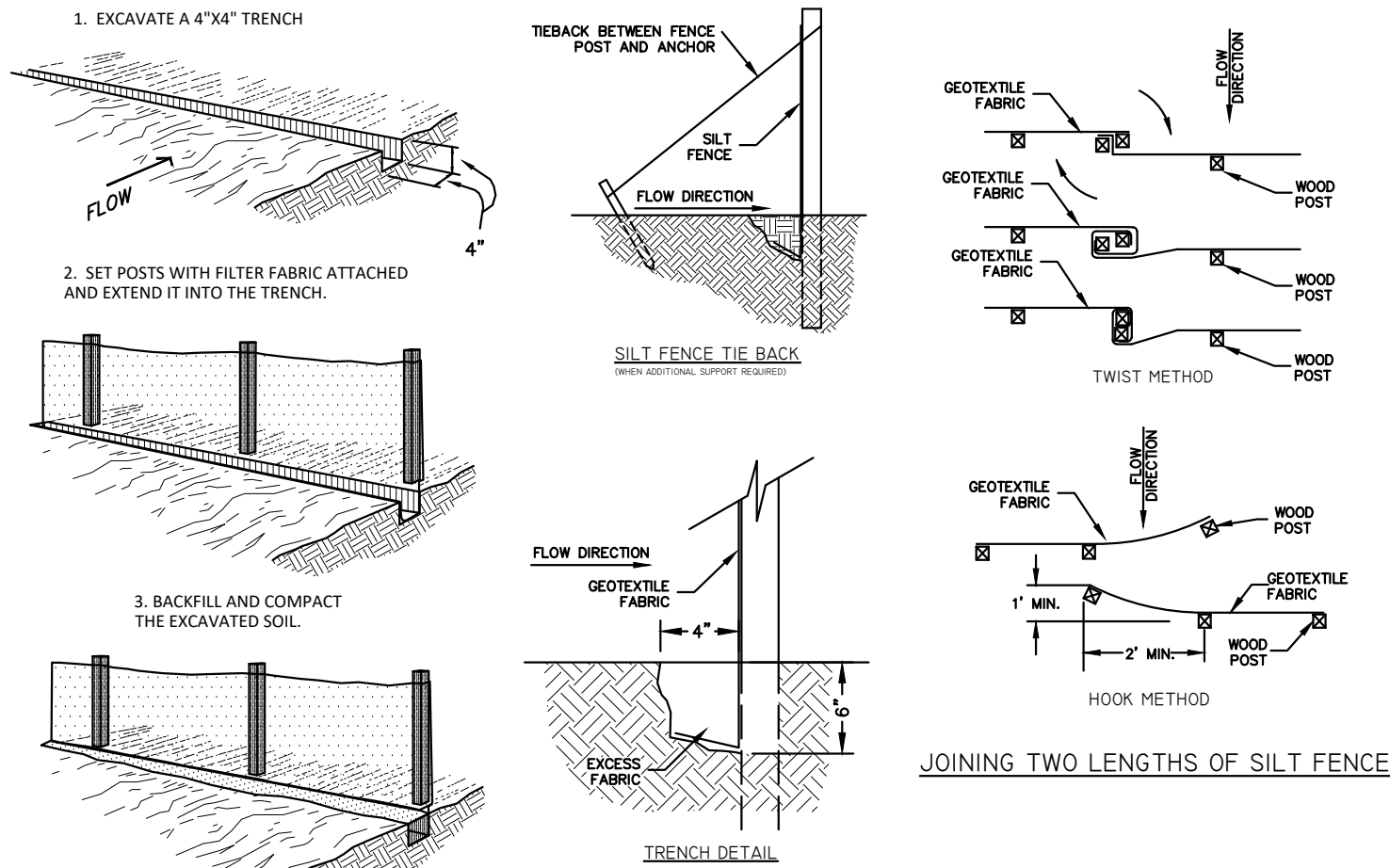
Project Status BIDDING DOCUMENTS
Issue Date OCTOBER, 2023

REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

POWER PLAN - BACKWASH
TANK

02
E301

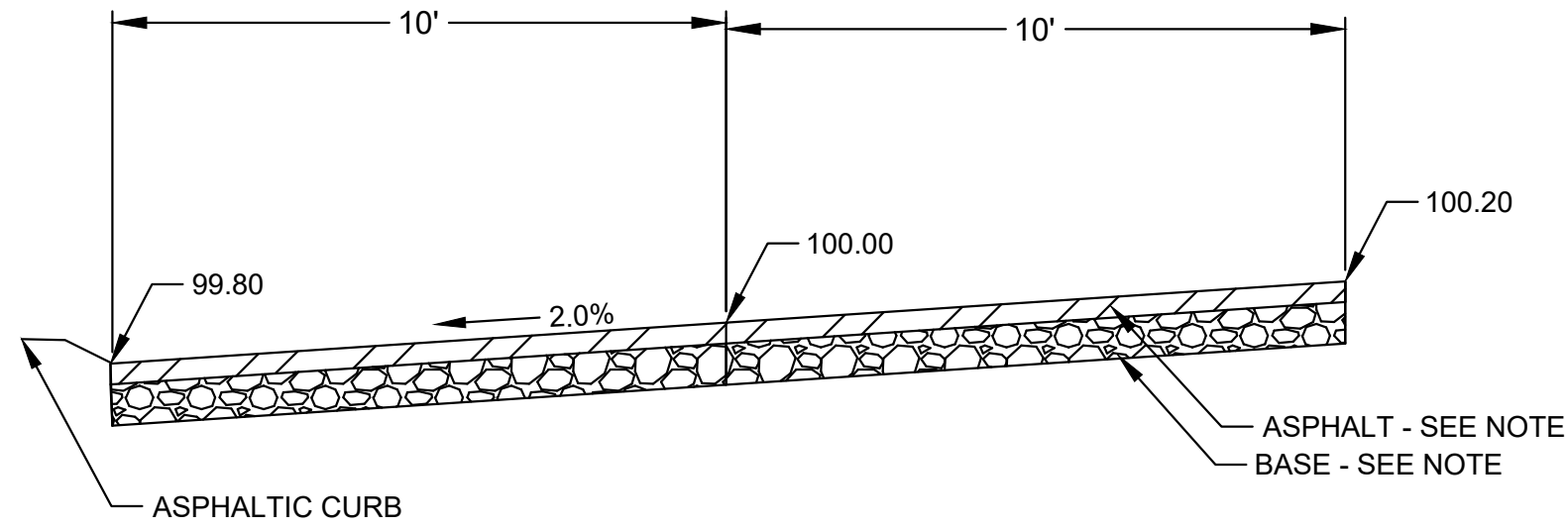
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- GENERAL NOTES
1. INSTALL AND MAINTAIN PER DNR TECHNICAL STANDARD 1056
 2. TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
 3. WOOD POST SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
 4. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY, USE ONE OF THE FOLLOWING TWO METHODS:
A) TWIST METHOD -- OVERLAP THE END POST AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, OR
B) HOOK METHOD -- HOOK THE END OF EACH SILT FENCE LENGTH.
 5. HORIZONTAL BRACE REQUIRED WITH A 2"x4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
 6. SILT FENCE TO EXTEND ACROSS THE TOP OF PIPE.

1 SILT FENCE DETAIL

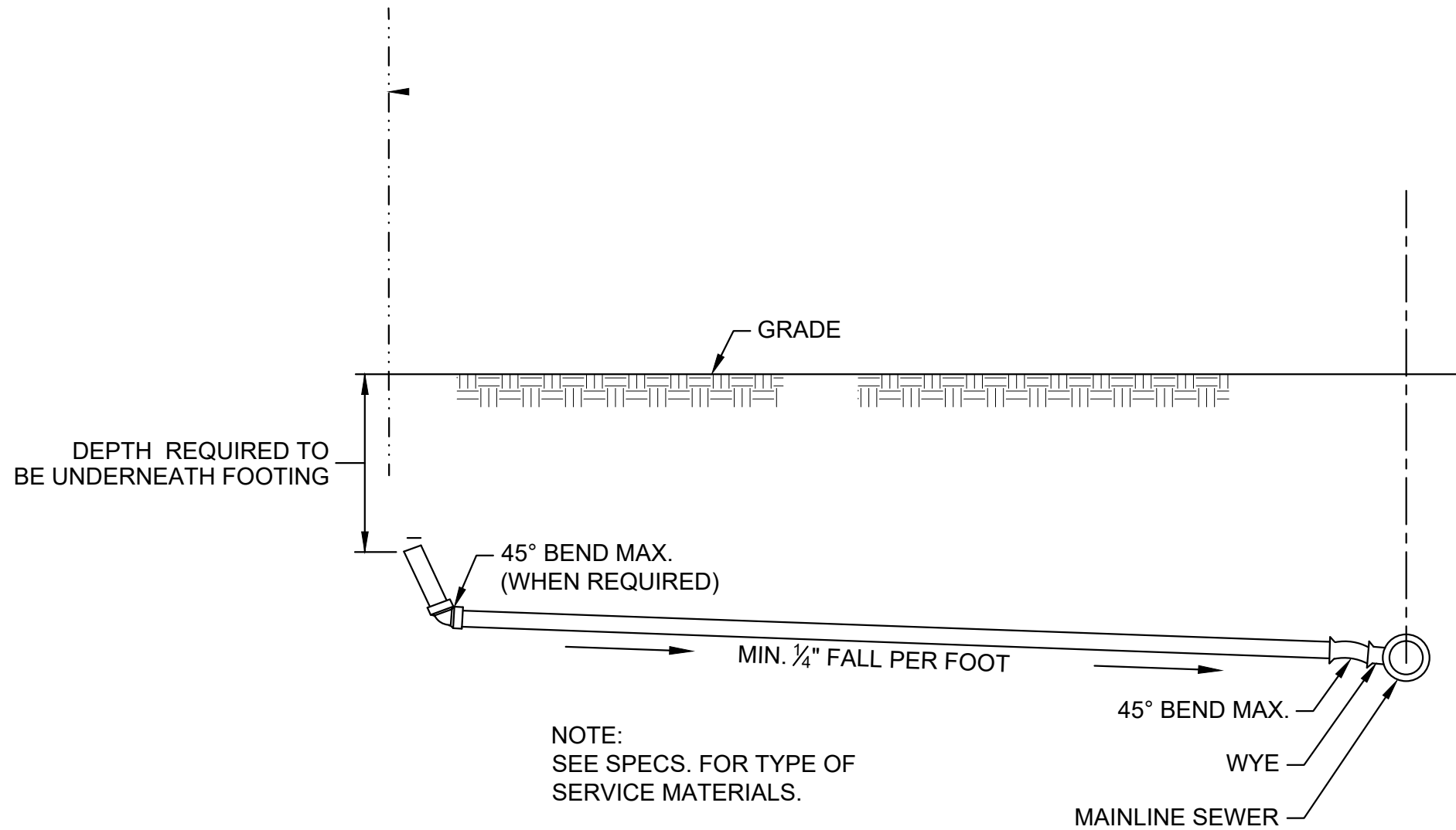
DC1 NOT TO SCALE



ASPHALT DRIVE NOTES:
ASPHALT - 1-1/2" SURFACE, 2-1/2" BINDER
BASE - 10" 1-1/4" CRUSHED AGGREGATE

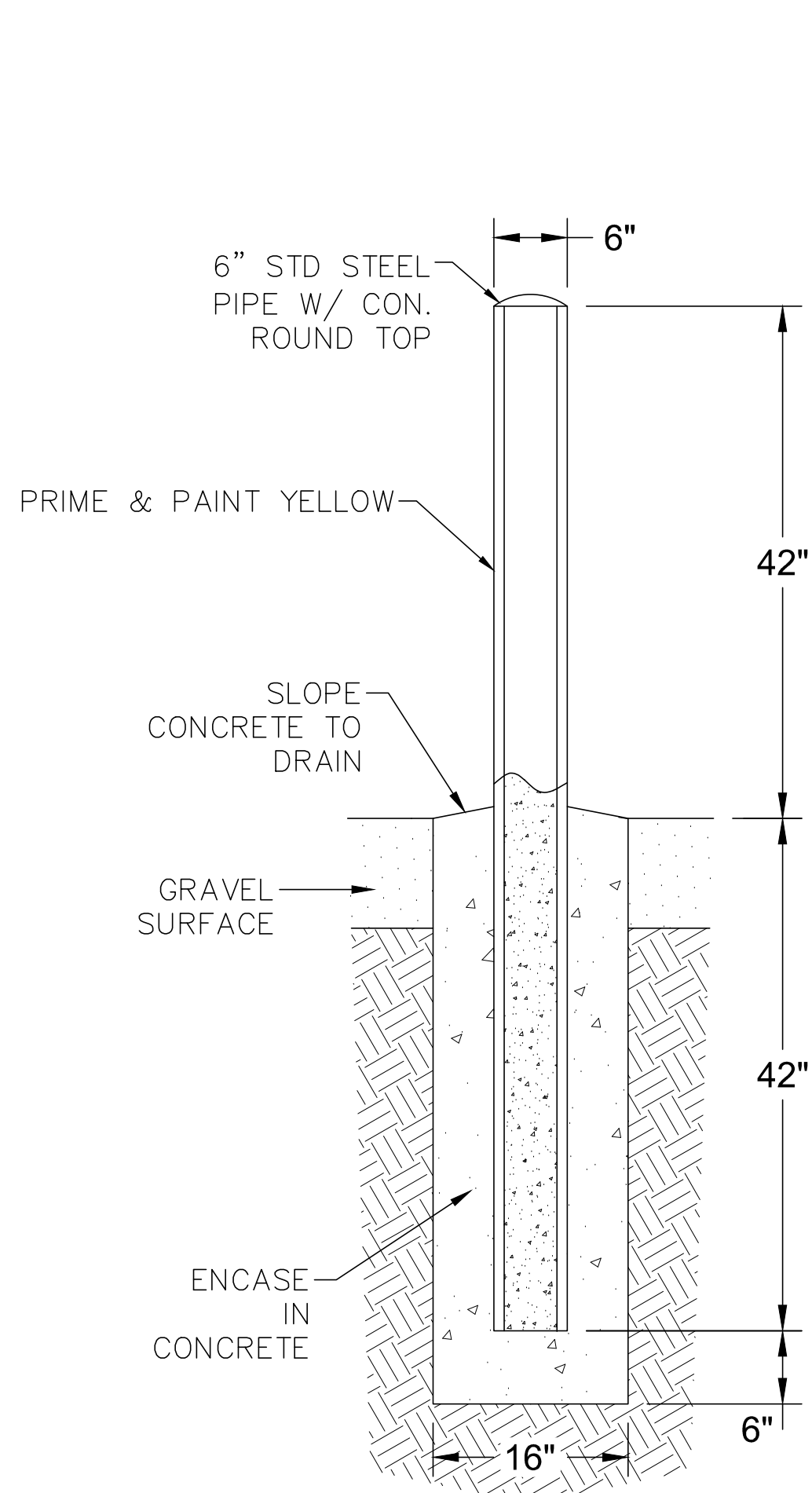
2 ASPHALT DRIVE DETAIL

DC1 NOT TO SCALE



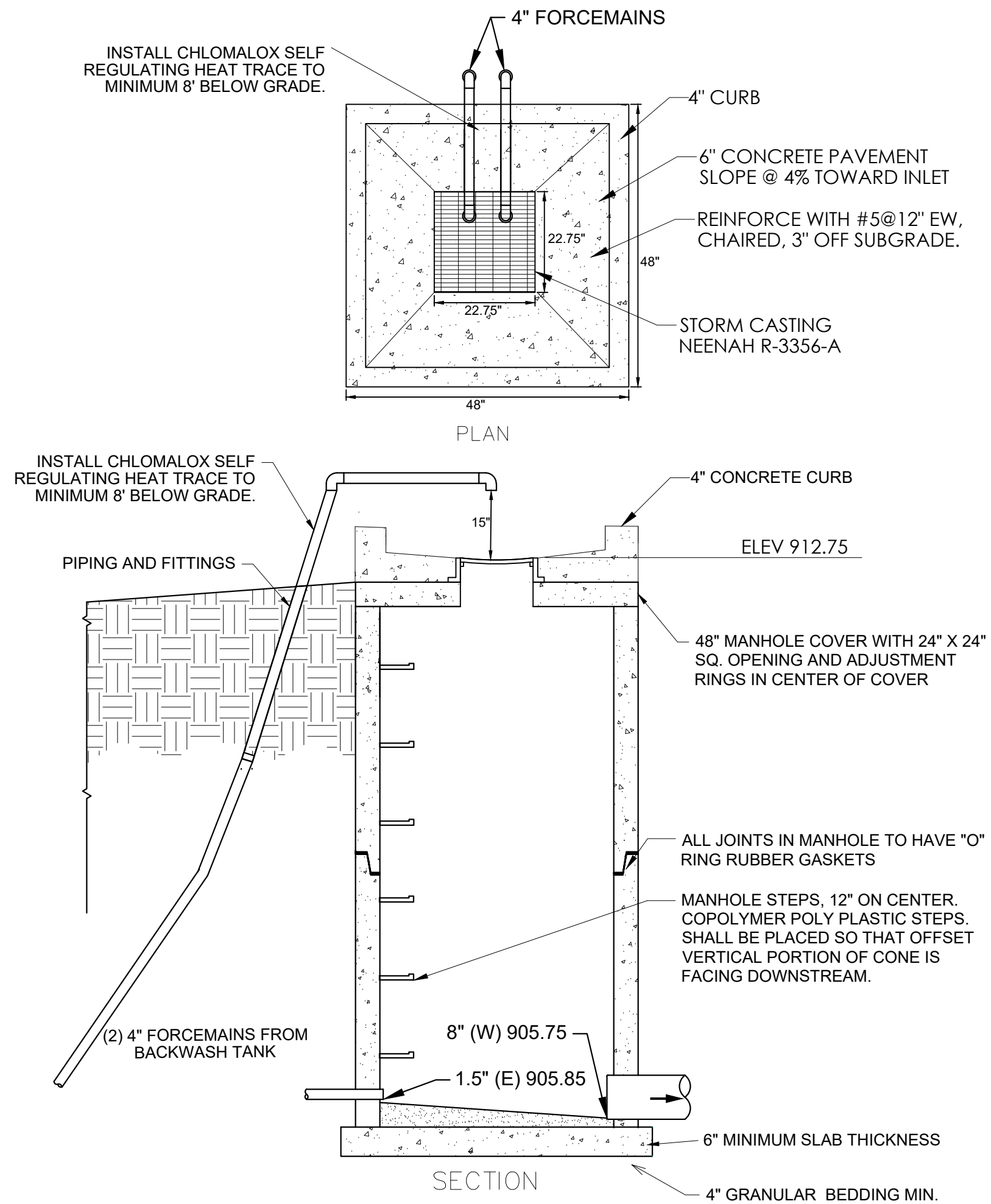
3 SANITARY SEWER SERVICE DETAIL

DC1 NOT TO SCALE



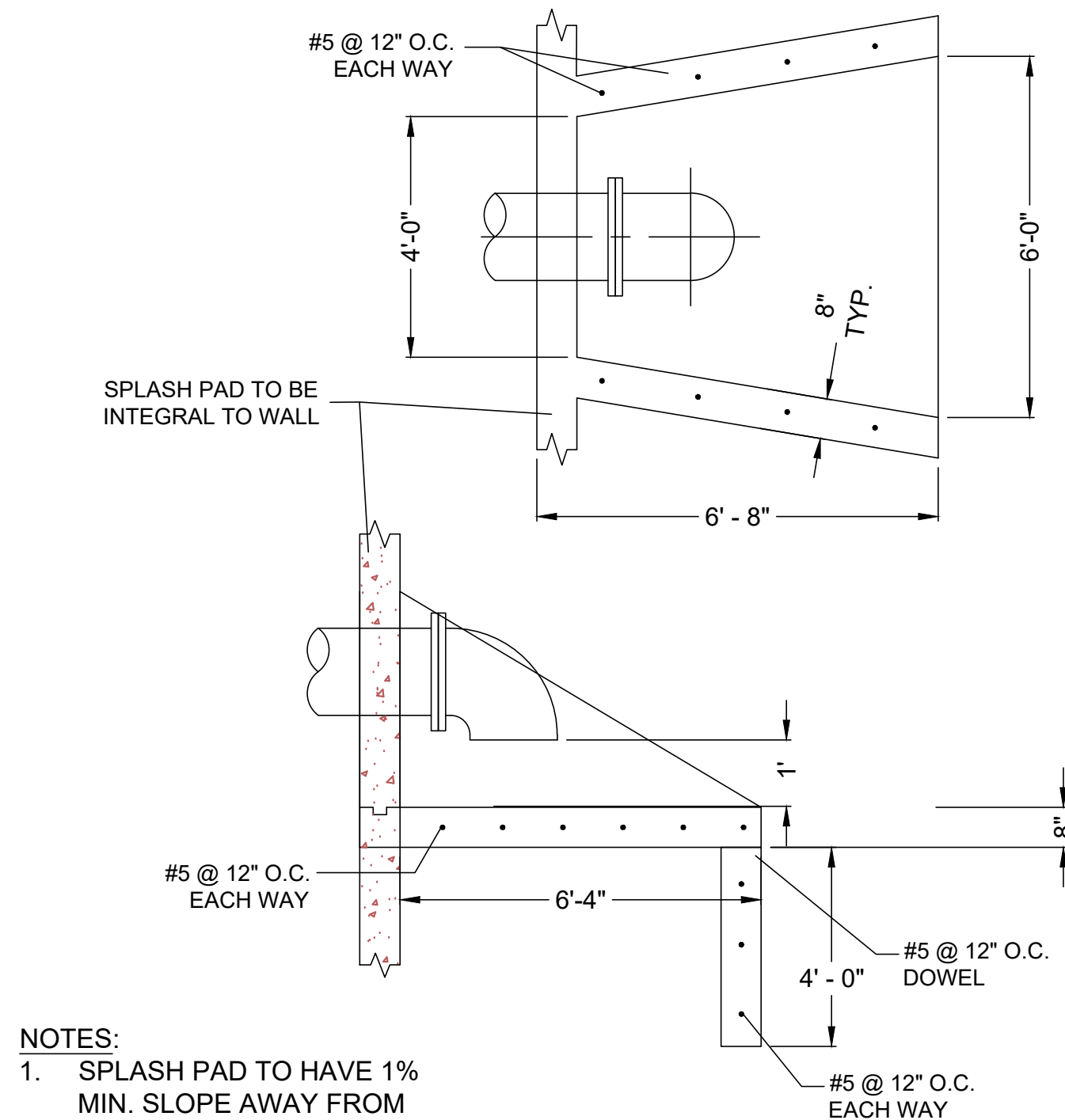
4 BOLLARD DETAIL

DC1 NOT TO SCALE



5 48" AIR RELEASE MANHOLE DETAIL

DC1 NOT TO SCALE



- NOTES:
1. SPLASH PAD TO HAVE 1% MIN. SLOPE AWAY FROM OVERFLOW PIPE
 2. ALL DOWELS TO BE EPOXY COATED

6 SPLASH PAD DETAIL

DC1 NOT TO SCALE



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY UNIT WELL 19 TREATMENT SYSTEM ADDITION 2526 LAKE MENDOTA DRIVE MADISON, WISCONSIN

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SEH Project Checked By Drawn By
MADWU 167818

Project Status BIDDING DOCUMENTS
Issue Date OCTOBER 2023

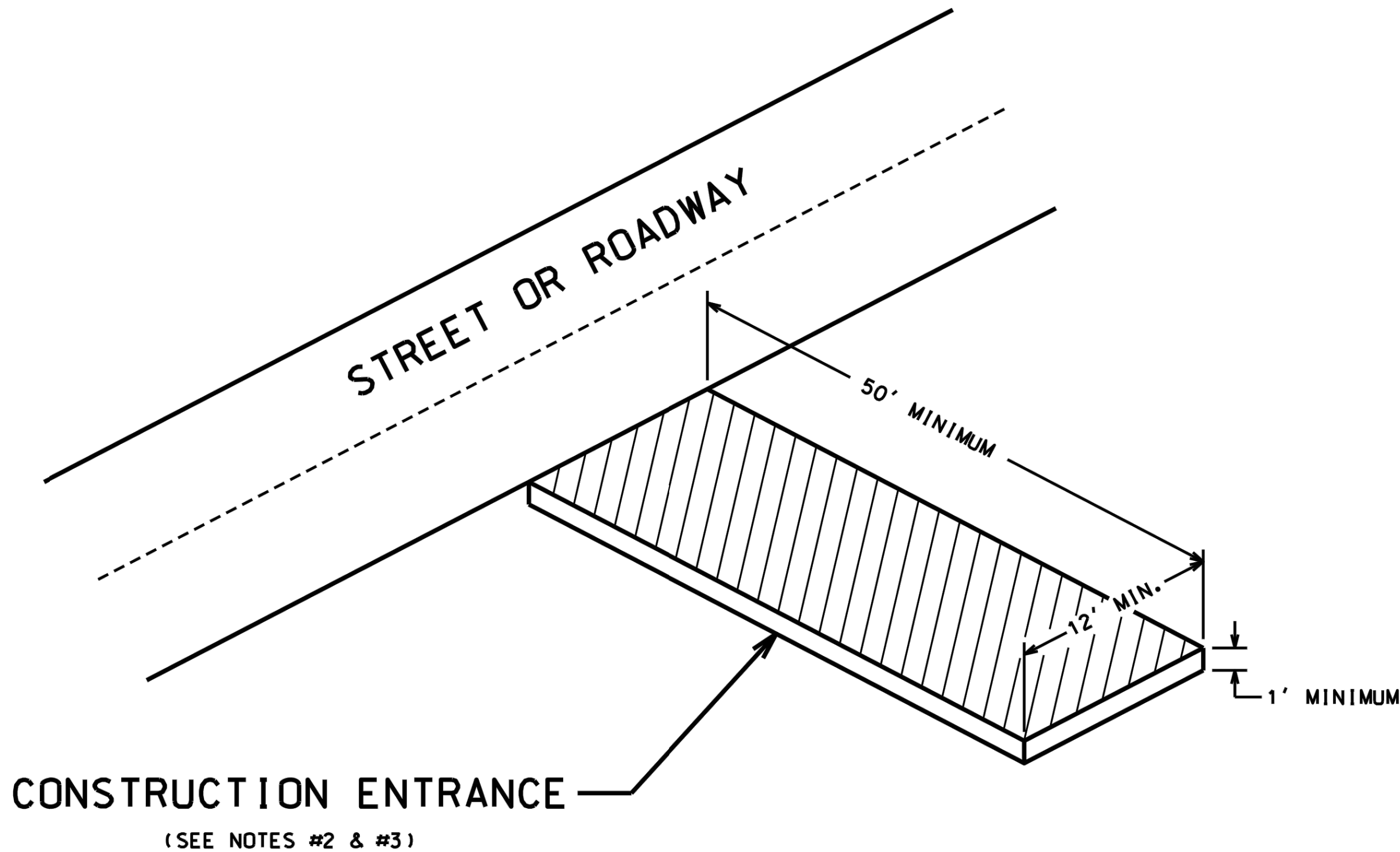
REVISION SCHEDULE
REV. # DESCRIPTION DATE

DETAILS

DC 001

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1.07



GENERAL NOTES FOR TYPICAL STONE TRACKING PADS:

1. CONSTRUCTION ENTRANCE TRACKOUT CONTROLS MUST BE INSTALLED PRIOR TO ANY TRAFFIC LEAVING THE SITE.
2. THE AGGREGATE FOR THE CONSTRUCTION ENTRANCE SHALL BE HARD, DURABLE, ANGULAR STONE OR RECYCLED CONCRETE MEETING THE FOLLOWING GRADATION, LISTED BY SIEVE SIZE IN INCHES (PERCENT BY WEIGHT PASSING): 3" (100% PASSING), 2.5" (90-100% PASSING), 1.5" (25-60% PASSING), 3/4" (0-20% PASSING), AND 3/8" (0-5% PASSING).
3. WHERE WARRANTED DUE TO SOIL TYPE OR HIGH GROUNDWATER, UNDERLAY THE STONE TRACKING PAD WITH GEOTEXTILE FABRIC TO MINIMIZE MIGRATION OF UNDERLYING SOIL INTO THE STONE. SELECT FABRIC TYPE HR OR FF GEOTEXTILE FABRIC BASED ON SOIL CONDITIONS AND VEHICLE LOADING. IF UNDERLAY IS REQUIRED IT SHALL BE INCLUDED IN CONSTRUCTION ENTRANCE COST.
4. INSTALL THE STONE TRACKING PAD TO ENSURE VEHICLES THAT DRIVE OVER EXPOSED SOIL EXIT ALONG THE FULL LENGTH OF THE PAD.
5. AGGREGATE SHALL BE PLACED IN A LAYER AT LEAST 12 INCHES THICK. DO NOT COMPACT, GROUT, OR CAUSE SMOOTHING OF TRACKING PAD SURFACE.
6. INSTALL THE TRACKING PAD ACROSS THE FULL WIDTH OF THE ACCESS POINT, OR RESTRICT EXITING TRAFFIC TO A DEDICATED EGRESS LANE WITH A DRIVING SURFACE AT LEAST 12 FEET WIDE.
7. SURFACE WATERS MUST BE PREVENTED FROM PASSING THROUGH THE CONSTRUCTION ENTRANCE. FLOWS SHALL BE DIVERTED AWAY FROM THE CONSTRUCTION ENTRANCE OR CONVEYED UNDER AND AROUND BY USE OF A CULVERT, DIVERSION BERM OR OTHER PRACTICES AS APPROVED BY THE CONSTRUCTION ENGINEER.
8. RUNOFF FROM TRACKING PAD MUST BE DIRECTED TO SEDIMENT CONTROL PRACTICES.
9. MAINTAIN A LOOSENED, ROUGH SURFACE BY SCRAPING, LOOSENING, OR TOP-DRESSING WITH ADDITIONAL AGGREGATE.
10. ALTERNATIVE TRACKOUT CONTROL DEVICES MUST MEET THE REQUIREMENTS OF WDNR STANDARD FOR TRACKOUT CONTROL PRACTICES (1057) AND HAVE APPROVAL OF CITY OF MADISON ENGINEERING PRIOR TO IMPLEMENTATION.

2018	
CITY OF MADISON ENGINEERING DIVISION	
CONSTRUCTION ENTRANCE	
STANDARD DETAIL DRAWING 1.07	



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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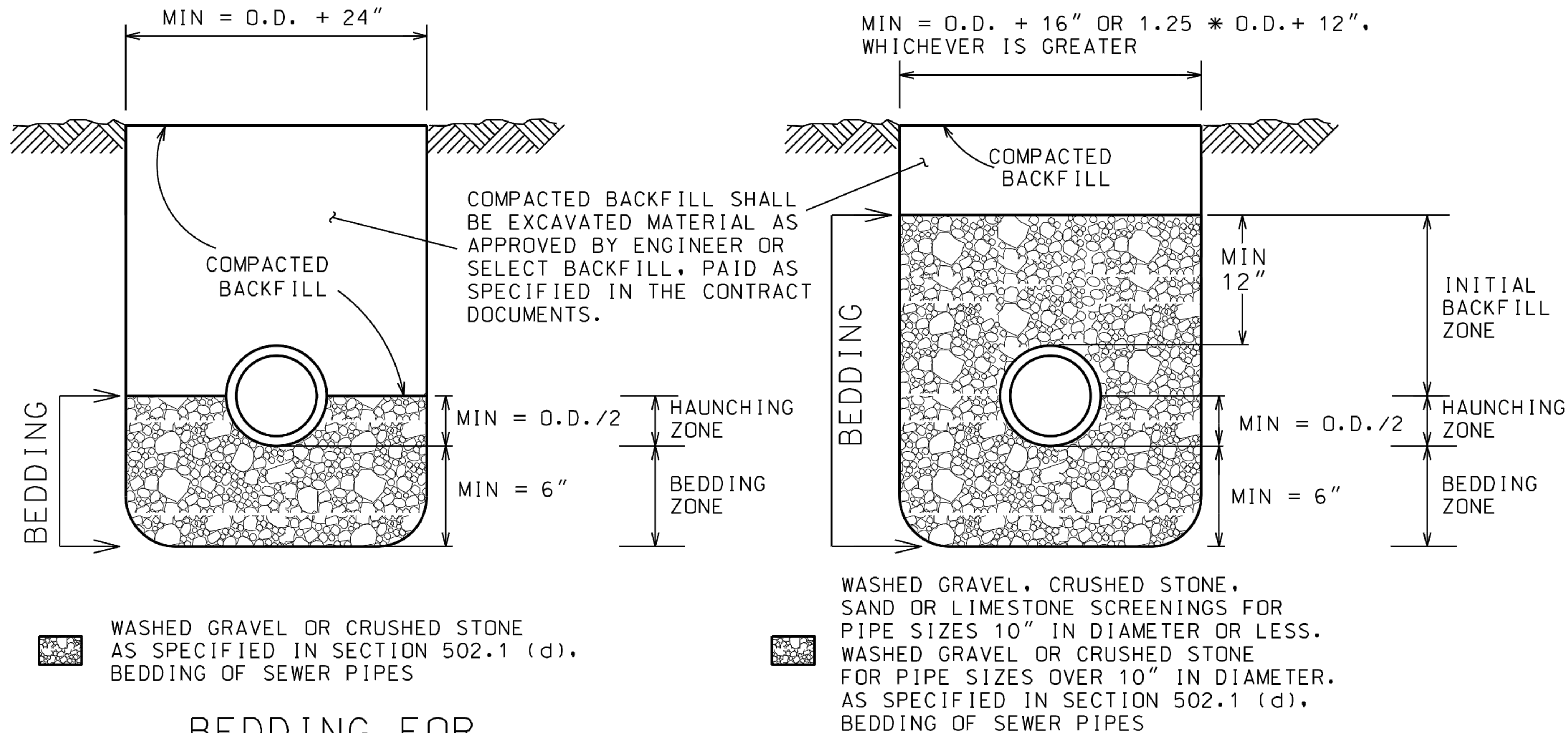
Issue Date
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REV. # DESCRIPTION DATE

DETAILS

DC 002

5.2.1



BEDDING FOR REINFORCED CONCRETE SEWER PIPES

BEDDING FOR SANITARY PIPE

NOTES:

UNLESS OTHERWISE SPECIFIED, ALL SANITARY PIPES, INCLUDING LATERALS AND LEADS, SHALL BE INSTALLED WITH THE TYPE OF BEDDING SHOWN FOR THE TYPE AND SIZE OF PIPE INSTALLED.

THE COSTS OF BEDDING SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE PIPE.
FOR RCP, BEDDING INCLUDES THE HAUNCHING & BEDDING ZONES.
FOR PLASTIC PIPES, THE BEDDING INCLUDES THE HAUNCHING, BEDDING & INITIAL BACKFILL ZONES.
THE BEDDING SHALL BE INSTALLED & COMPACTED IN 6" MAXIMUM LIFTS.

ALL TRENCHES SHALL BE HAND BACKFILLED TO A POINT 12" ABOVE THE TOP OF THE PIPE. ALL BEDDING SHALL BE MECHANICALLY COMPACTED.

PAYMENT SHALL NOT BE MADE FOR BACKFILL WITH EXCAVATED MATERIAL, IF APPROVED.
SELECT FILL, IF REQUIRED, SHALL BE PAID PER CONTRACT.

THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE 3 * O.D.. THE MINIMUM TRENCH WIDTH AS SPECIFIED, AND SHALL APPLY FROM THE BOTTOM OF THE TRENCH TO A POINT 12" ABOVE THE TOP OF THE PIPE. WHERE THIS WIDTH IS EXCEEDED, THE CONTRACTOR SHALL FURNISH AND INSTALL A HIGHER TYPE OF BEDDING AT **NO EXTRA COST**. THE TYPE OF BEDDING SHALL BE DETERMINED BY THE ENGINEER.

O.D. EQUALS THE OUTSIDE DIAMETER OF THE PIPE.

DRAWING NOT TO SCALE

2016

CITY OF MADISON
ENGINEERING DIVISION

PIPE BEDDING
AND BACKFILL

STANDARD DETAIL DRAWING 5.2.1



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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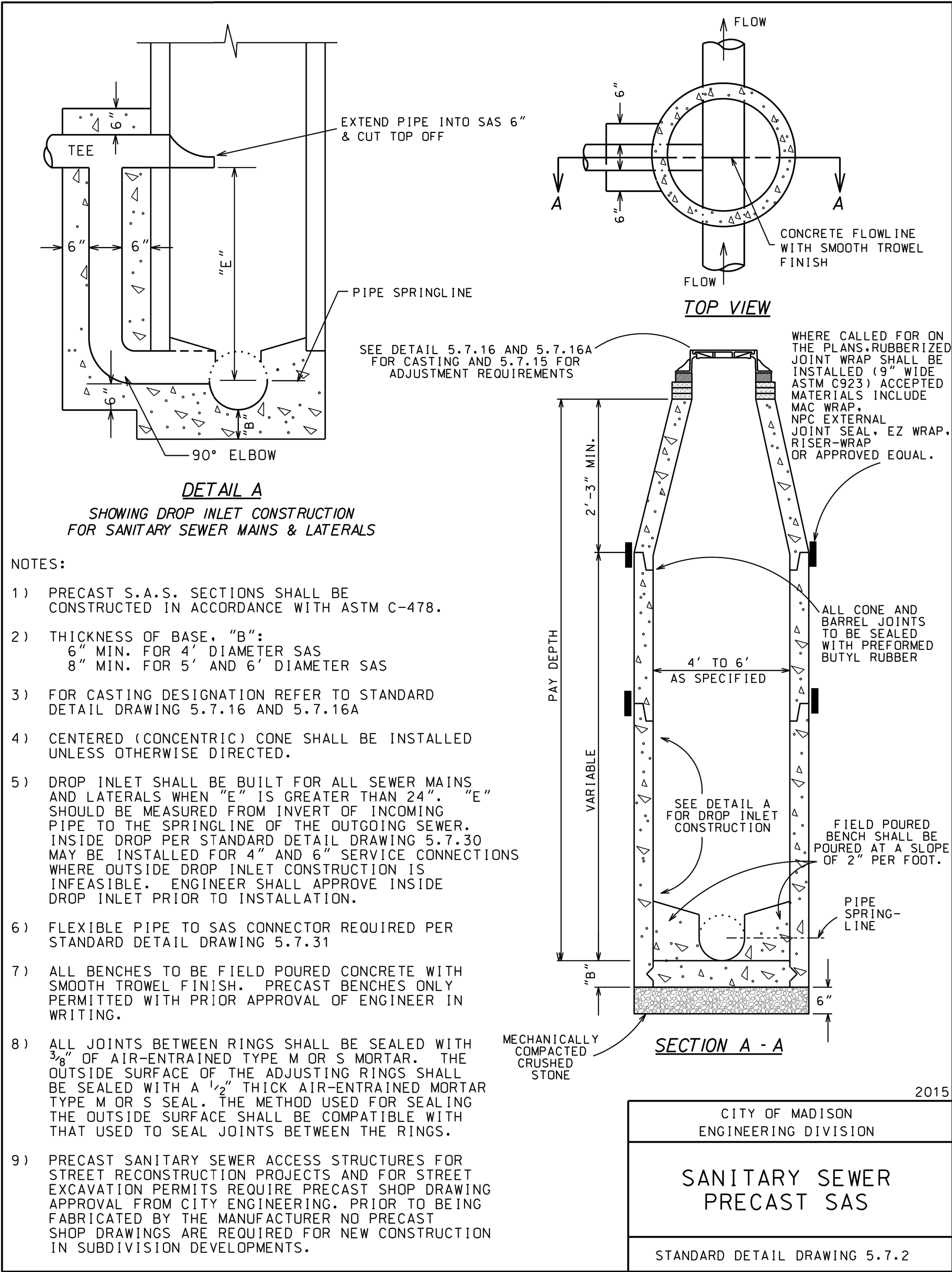
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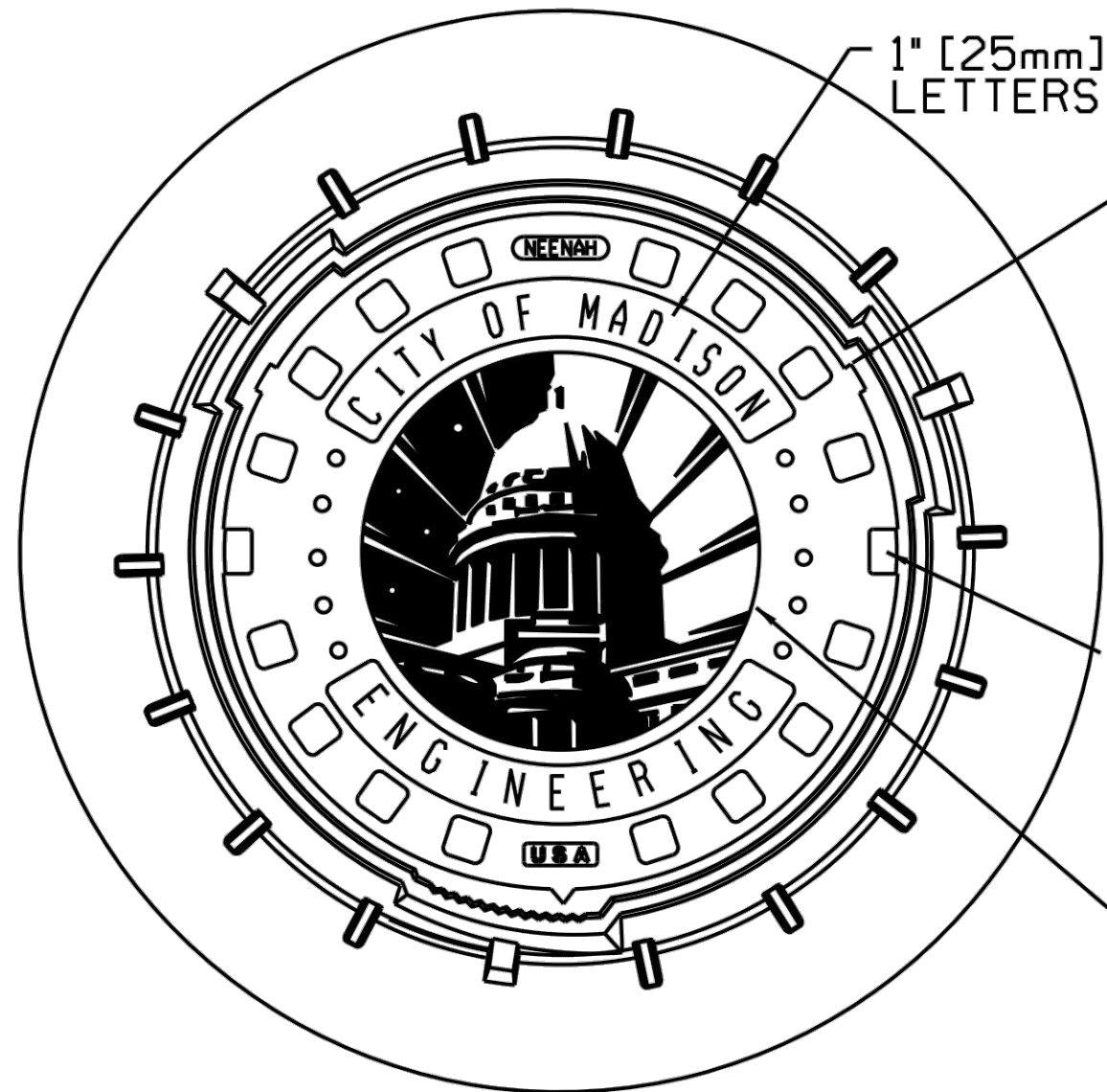
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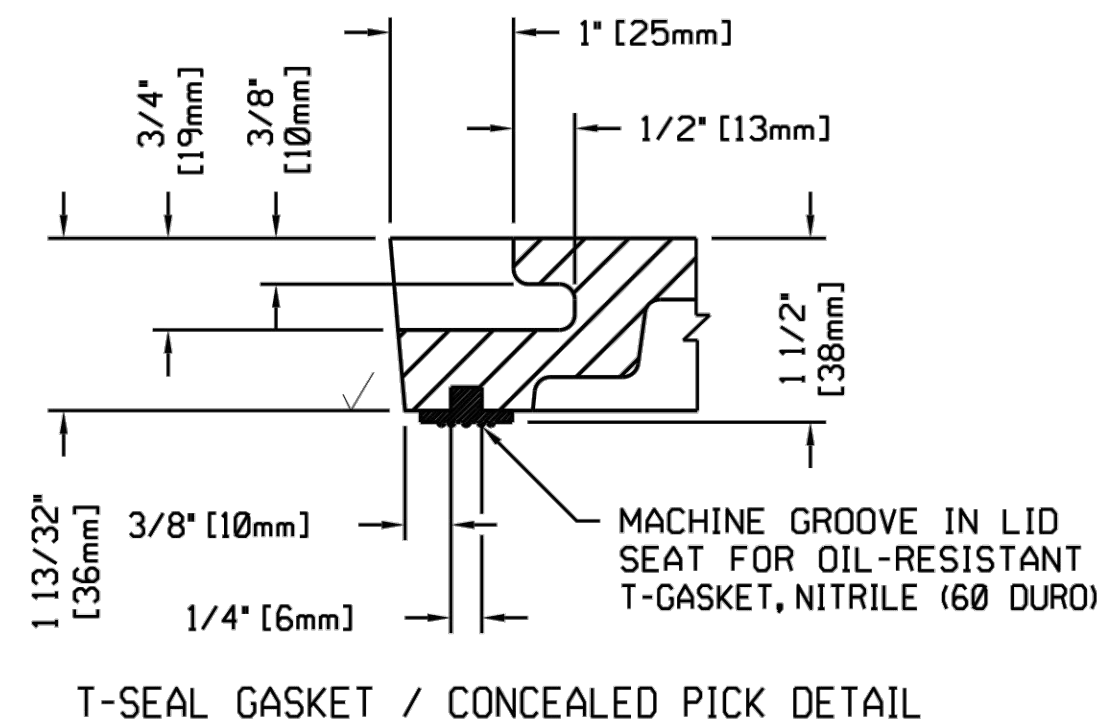
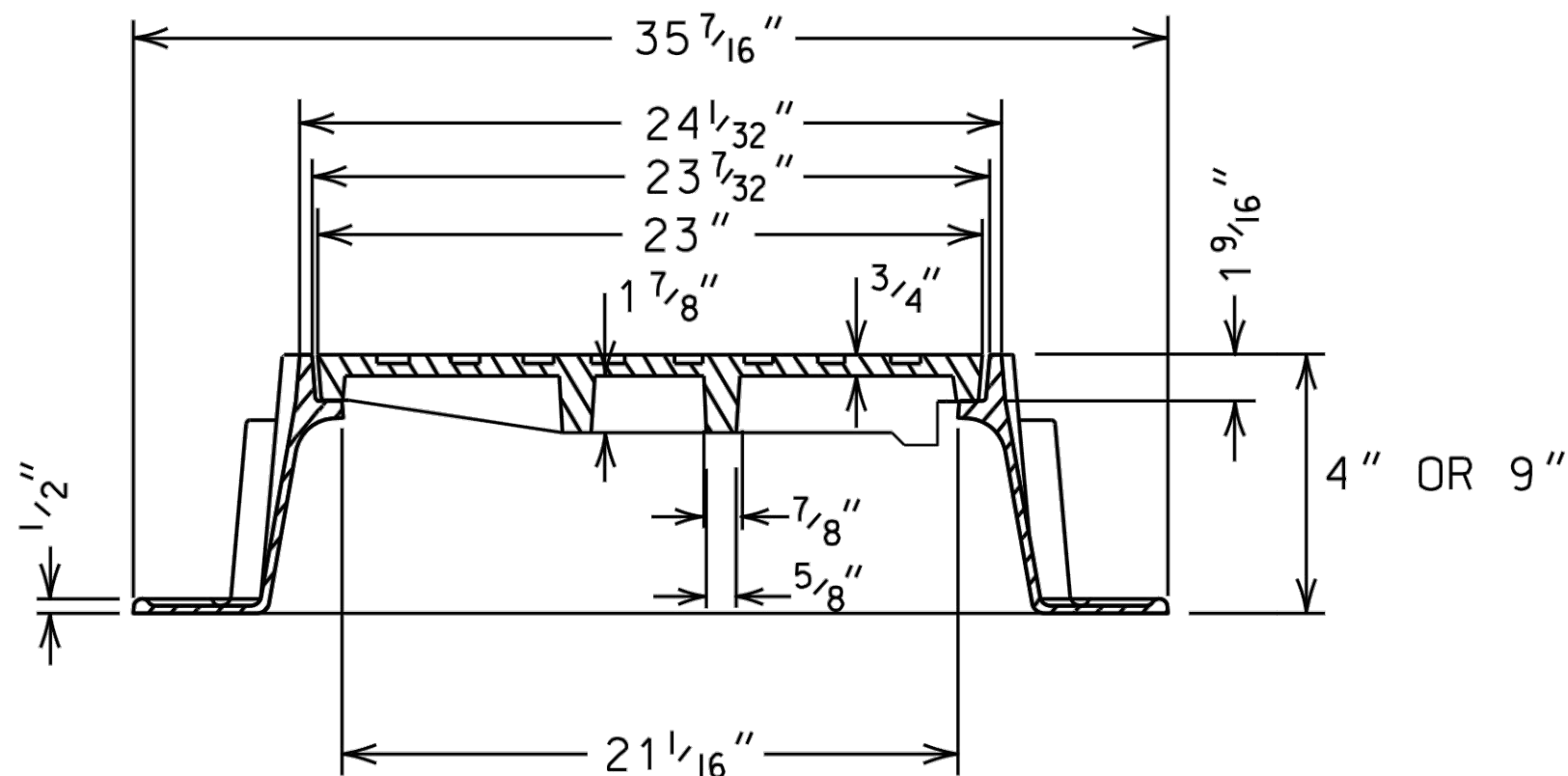
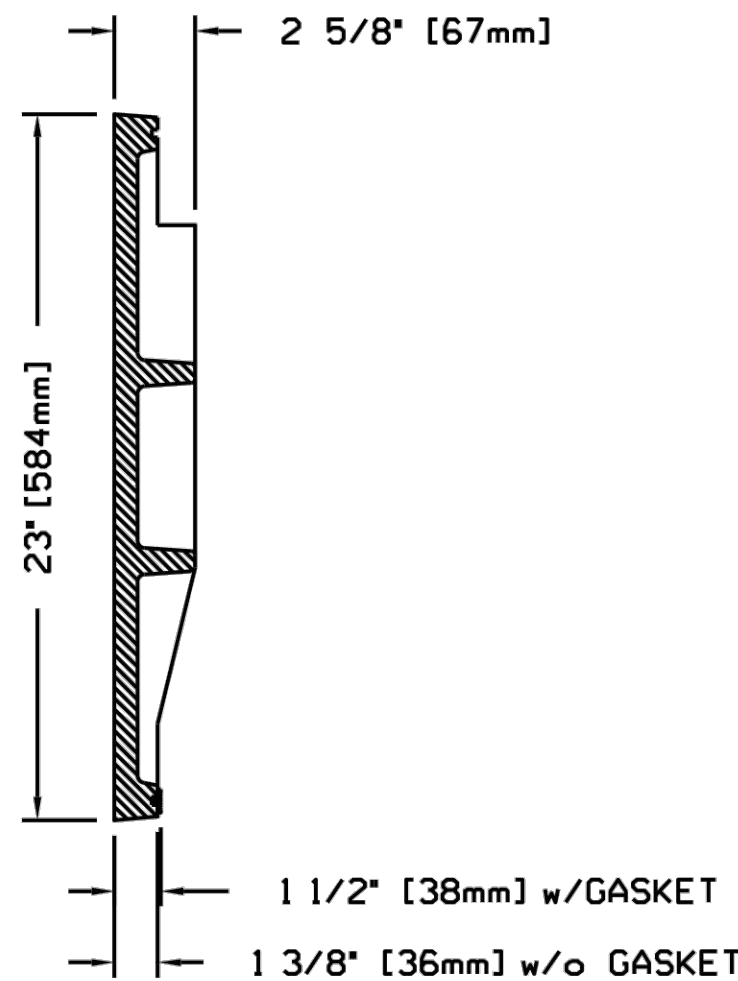
5.7.16



LOGO DETAIL



CITY OF MADISON ENGINEERING LOGO.
SHADED AREA REPRESENTS RECESSED AREA



NOTES:

APPROXIMATE TOTAL WEIGHTS:
R-1550 R-1050 FRAME w/ LOGO LID 1550-0054, 9" FRAME AND LID = 240 LBS.
R-1689 FRAME w/ LOGO LID 1550-0054, 4" FRAME AND LID = 279 LBS.

IF LOCKABLE LID IS NECESSARY, R-1916 C, 8 3/4" FRAME AND LID = 300 LBS
THERE IS NO CITY OF MADISON LOGO LID AVAILABLE FOR THIS
FRAME AND CASTING.

THE FOLLOWING NEENAH FOUNDRY CASTINGS (OR EQUAL CASTINGS)
SHALL BE ACCEPTABLE:

1. R-1050, 9" NON-ROCKING ACCESS STRUCTURE FRAME.
2. R-1689, 4" NON-ROCKING ACCESS STRUCTURE FRAME
(WHEN REQUESTED BY THE CITY CONSTRUCTION ENGINEER).
3. R-1916 C LOGO WITH A LOCKING CASTING AS WELL AS A LOCKING FRAME.
THIS CASTING SHALL BE USED IN GREENWAYS AND EASEMENTS
(SEE SDD 5.7.16a)

1. FRAME AND COVER SHALL BE MACHINED AND
FITTED SO THAT ROCKING AND CHATTERING
WILL BE ELIMINATED.
2. ALL LIDS SHALL BE SELF-SEALING EXCEPT
FOR STORM SEWER.
3. ALL LIDS SHALL HAVE CITY OF MADISON LOGO
AS SHOWN IN DETAIL (R-1050-0054 OR EQUIV.)

LID NOTES: ALL DIMENSIONS SHOWN ARE IN ENGLISH AND [METRIC]
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 40A

2015

CITY OF MADISON ENGINEERING DIVISION
SAS FRAME & COVER
STANDARD DETAIL DRAWING 5.7.16



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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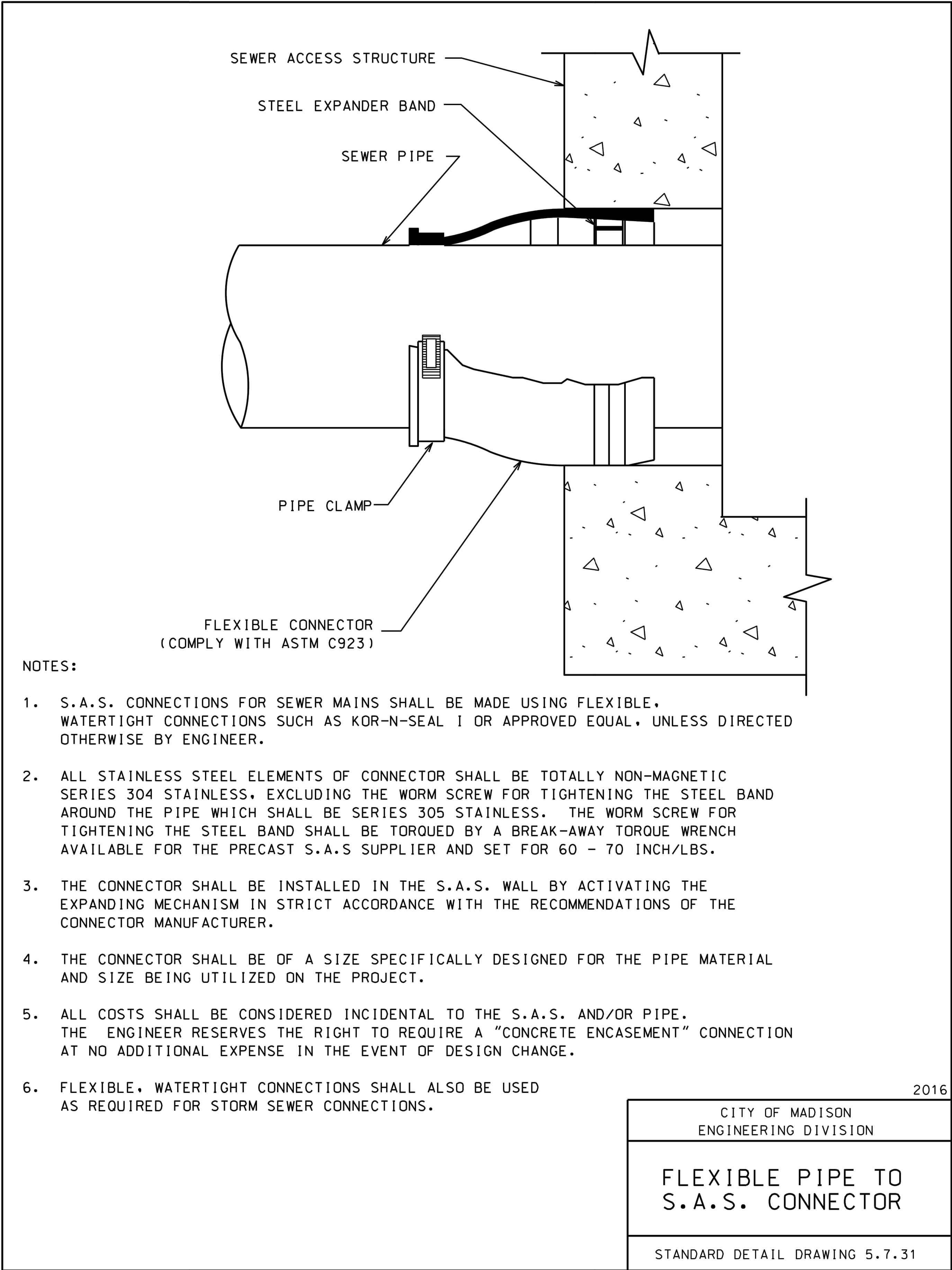
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DETAILS

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5.7.31



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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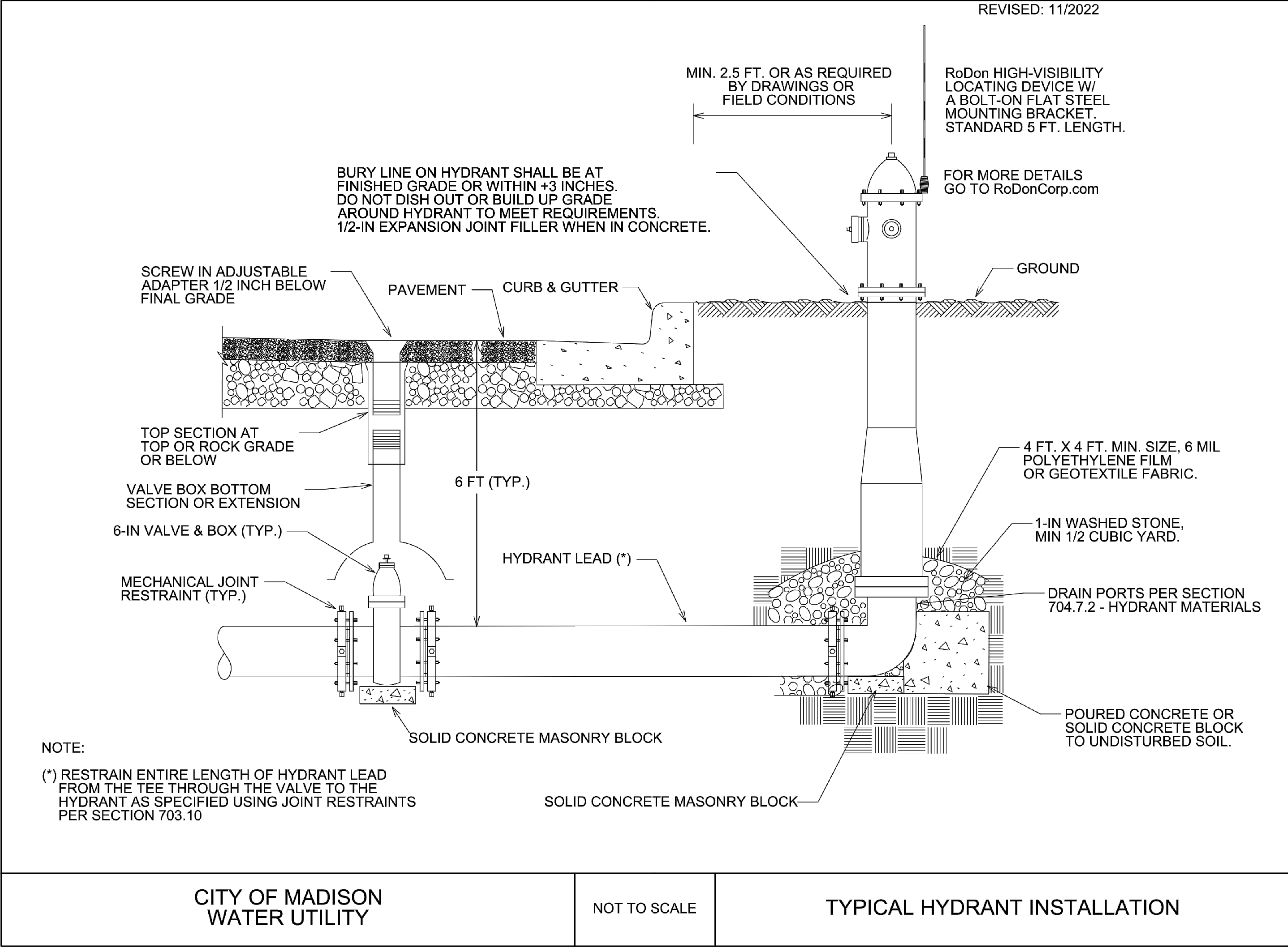
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DETAILS

DC 006

PART VII - WATER MAINS AND SERVICE LATERALS

DETAIL DRAWING NO. 7.04
REVISED: 11/2022



City of Madison Standard Specifications for Public Works Construction

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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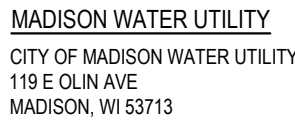
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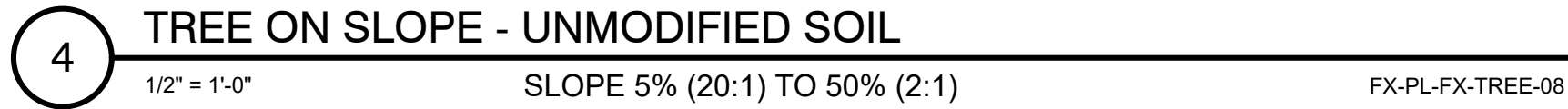
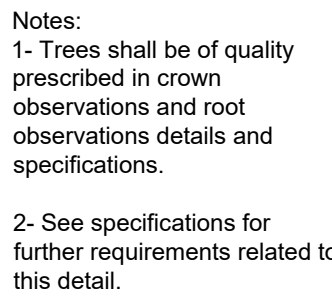
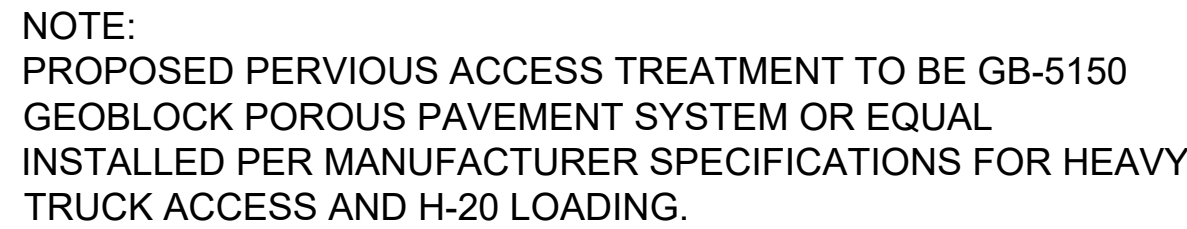
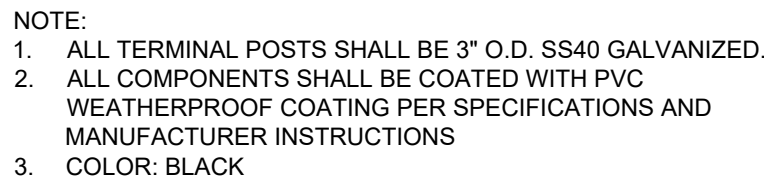
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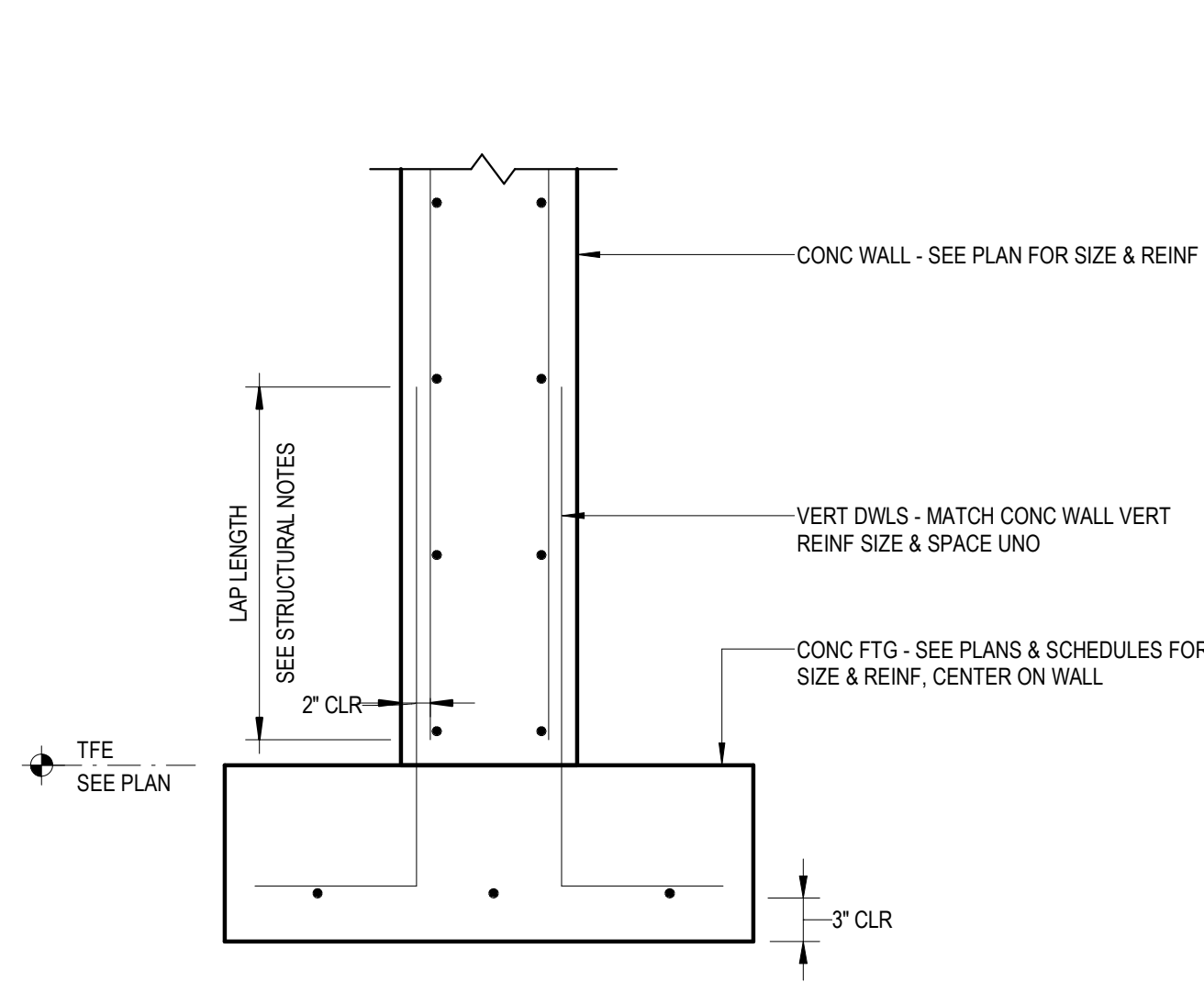
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REV. #	DESCRIPTION	DATE

DL001

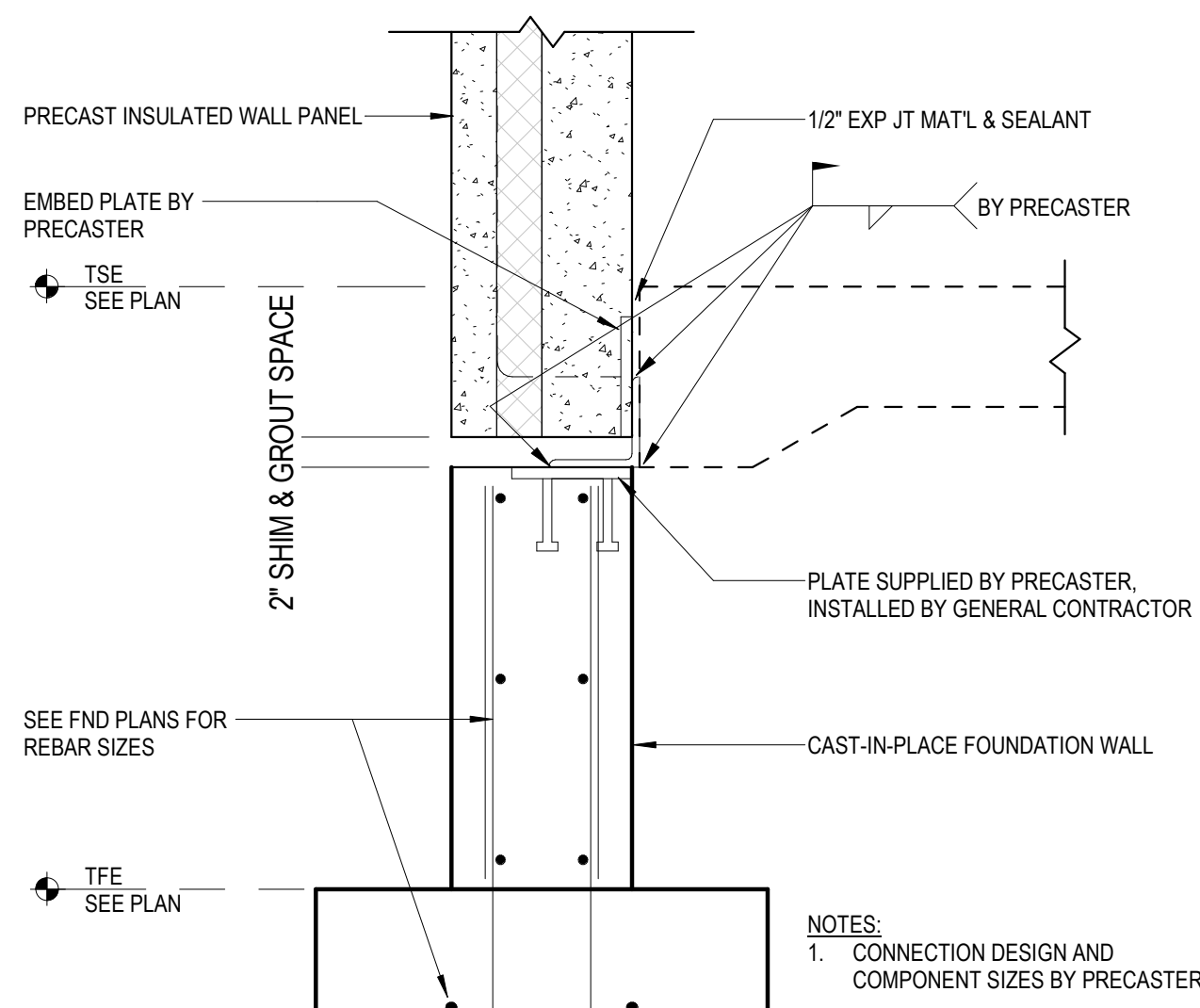


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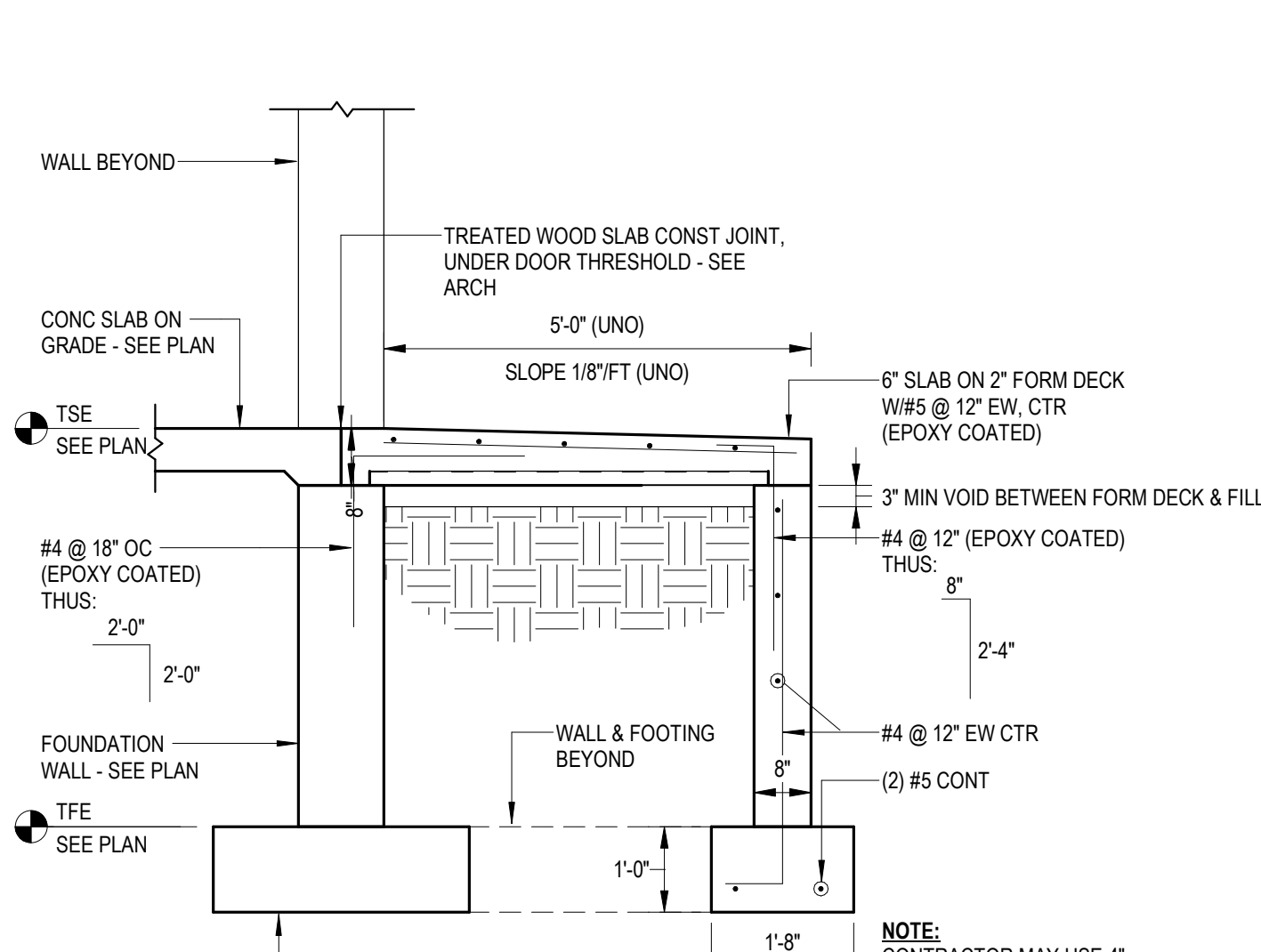
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DS501 / NOT TO SCALE

TYPICAL CONC WALL TO FTG DETAIL



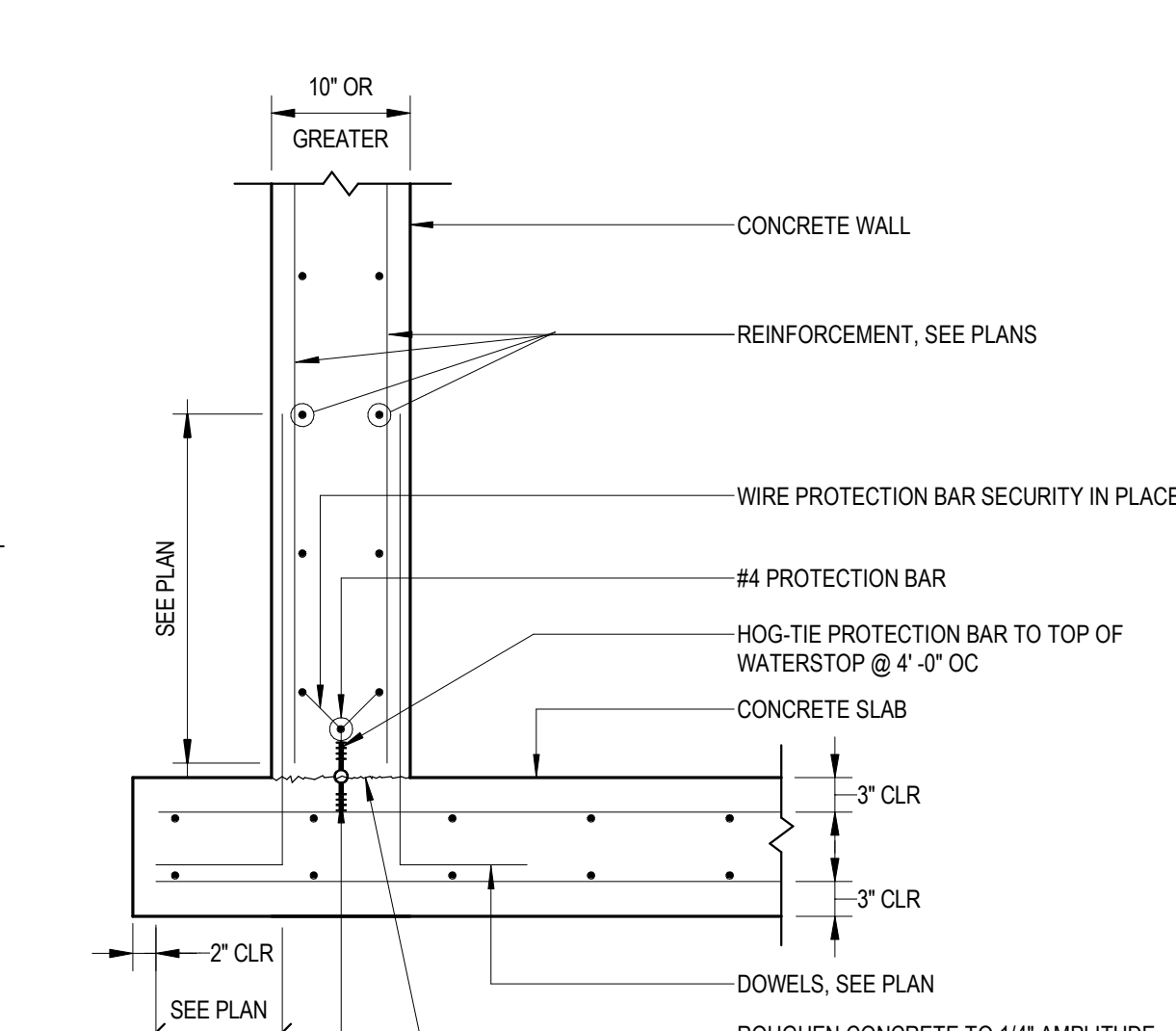
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FOUNDATION WALL SECTION



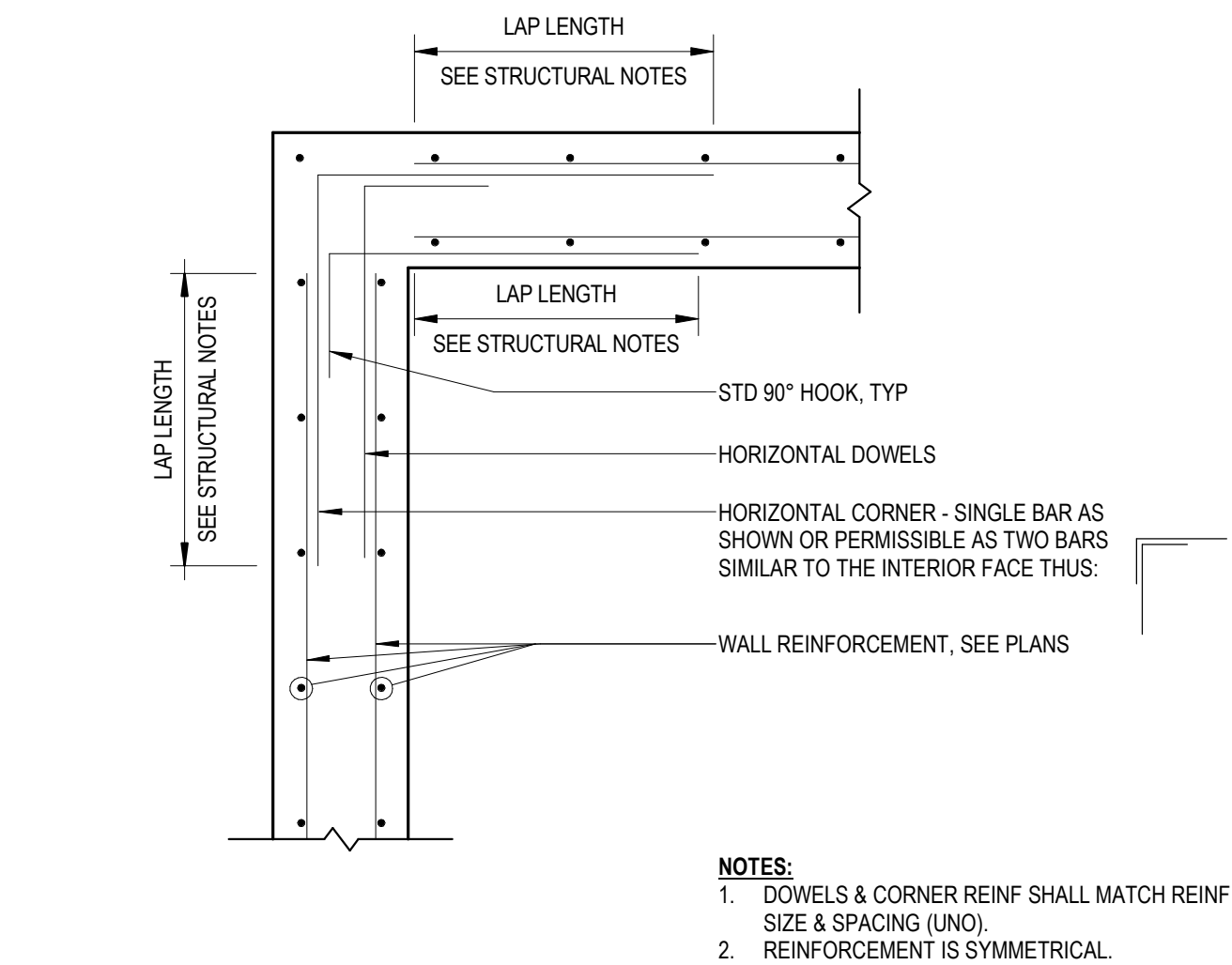
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CONCRETE STOOP DETAIL



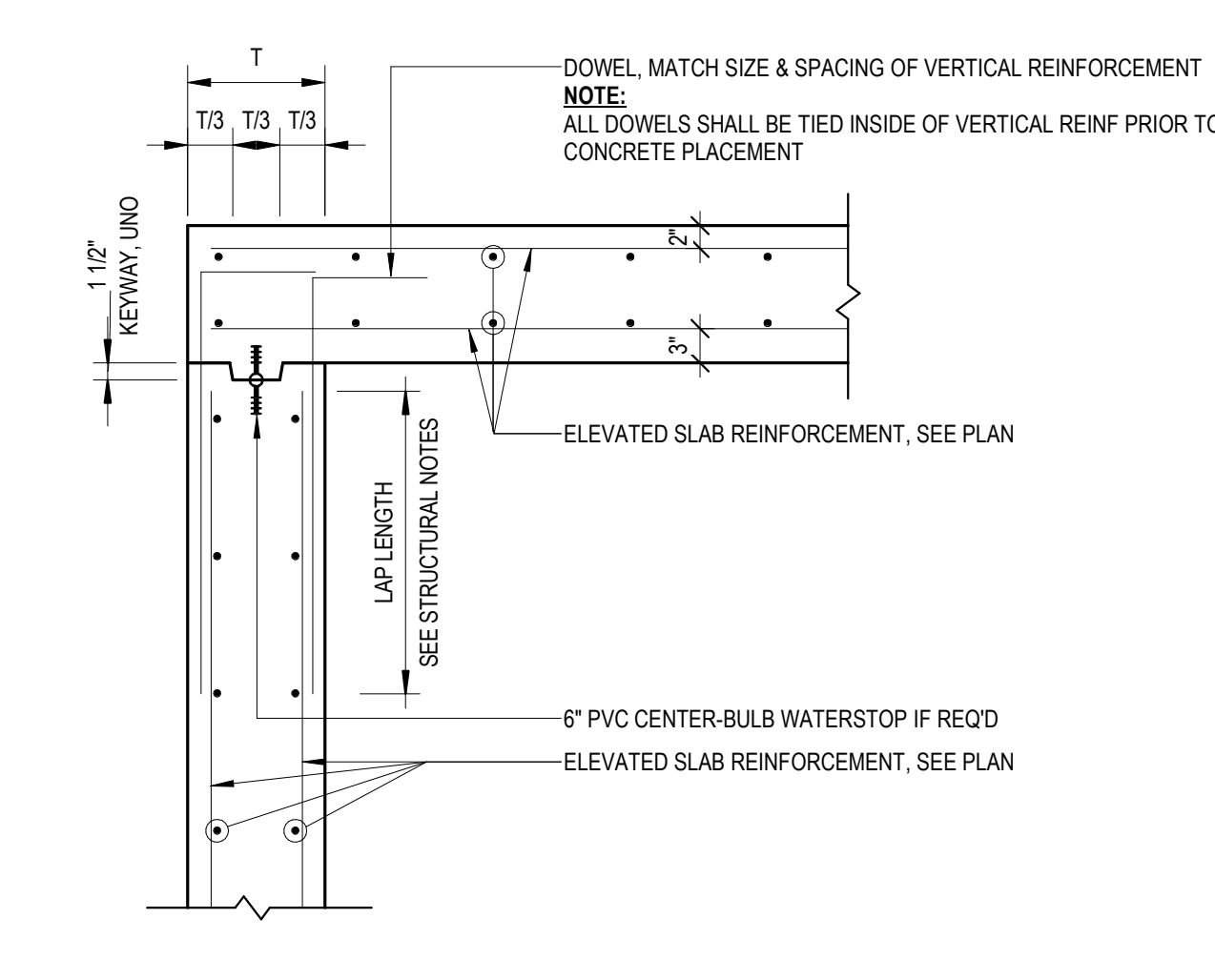
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WALL TO SLAB JOINT DETAIL



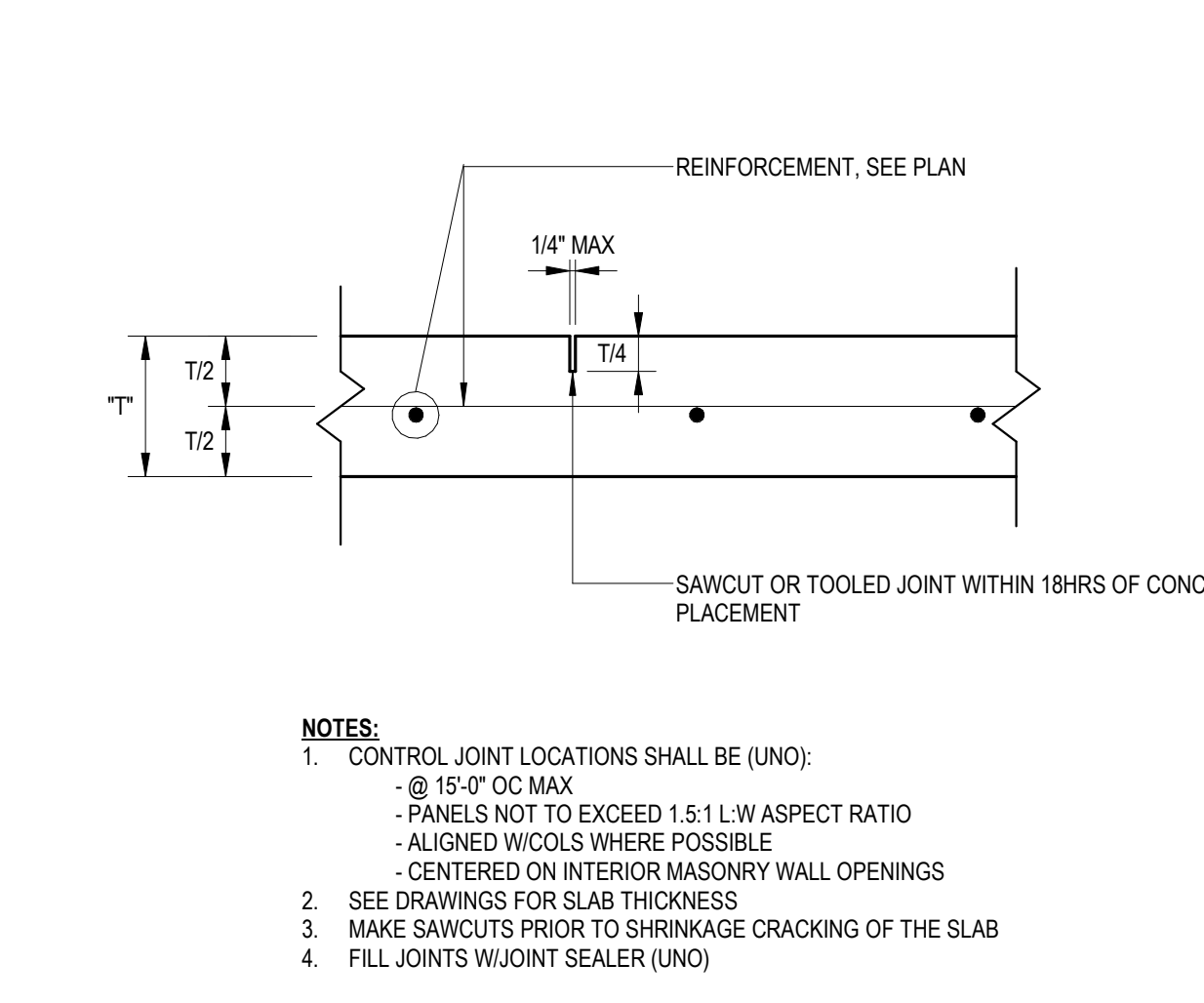
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DS501 / NOT TO SCALE

WALL CORNER REINFORCEMENT DETAIL



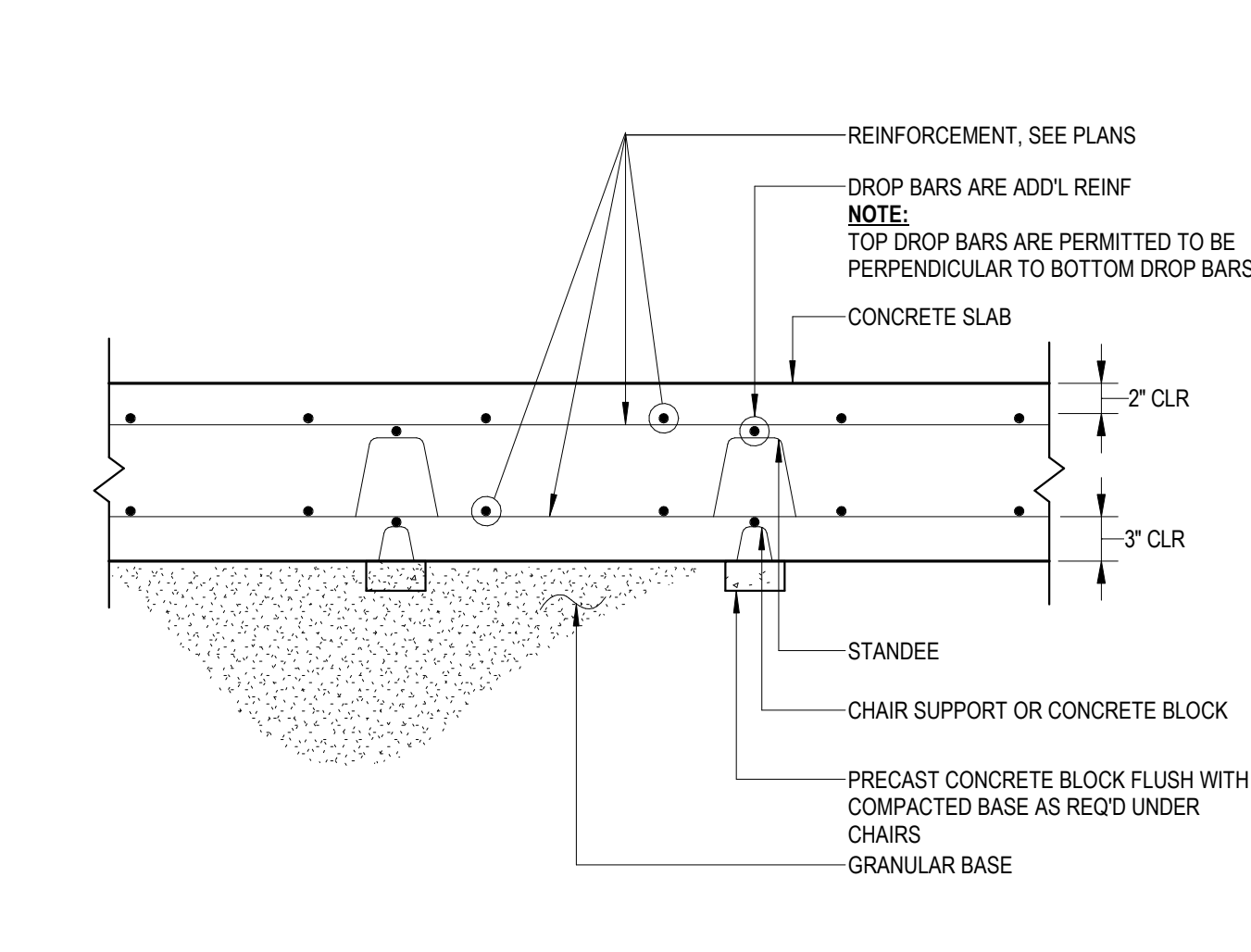
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ELEVATED SLAB CONNECTION DETAIL



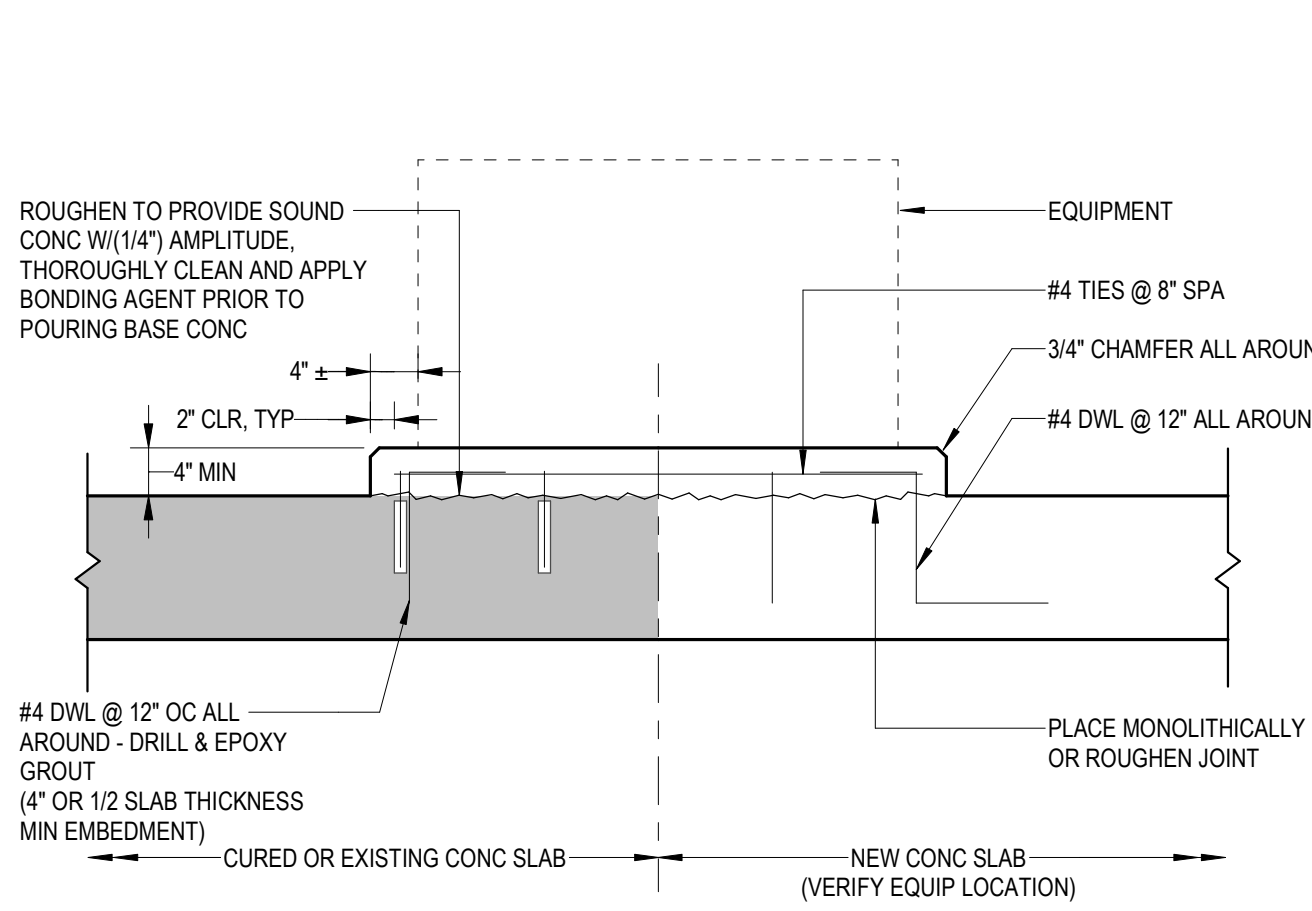
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SLAB ON GRADE CONTROL JOINT



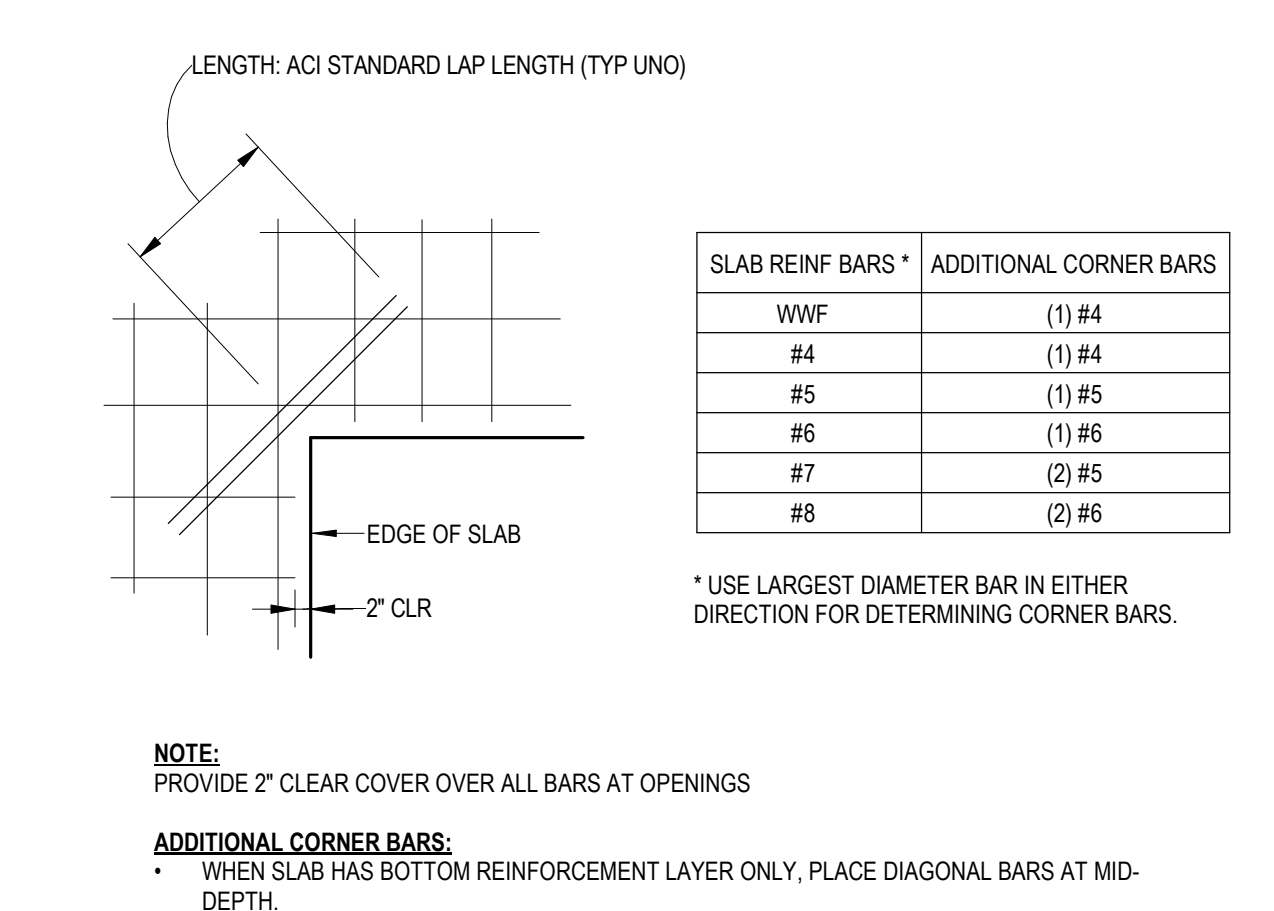
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SOG REINFORCEMENT SUPPORT DETAIL



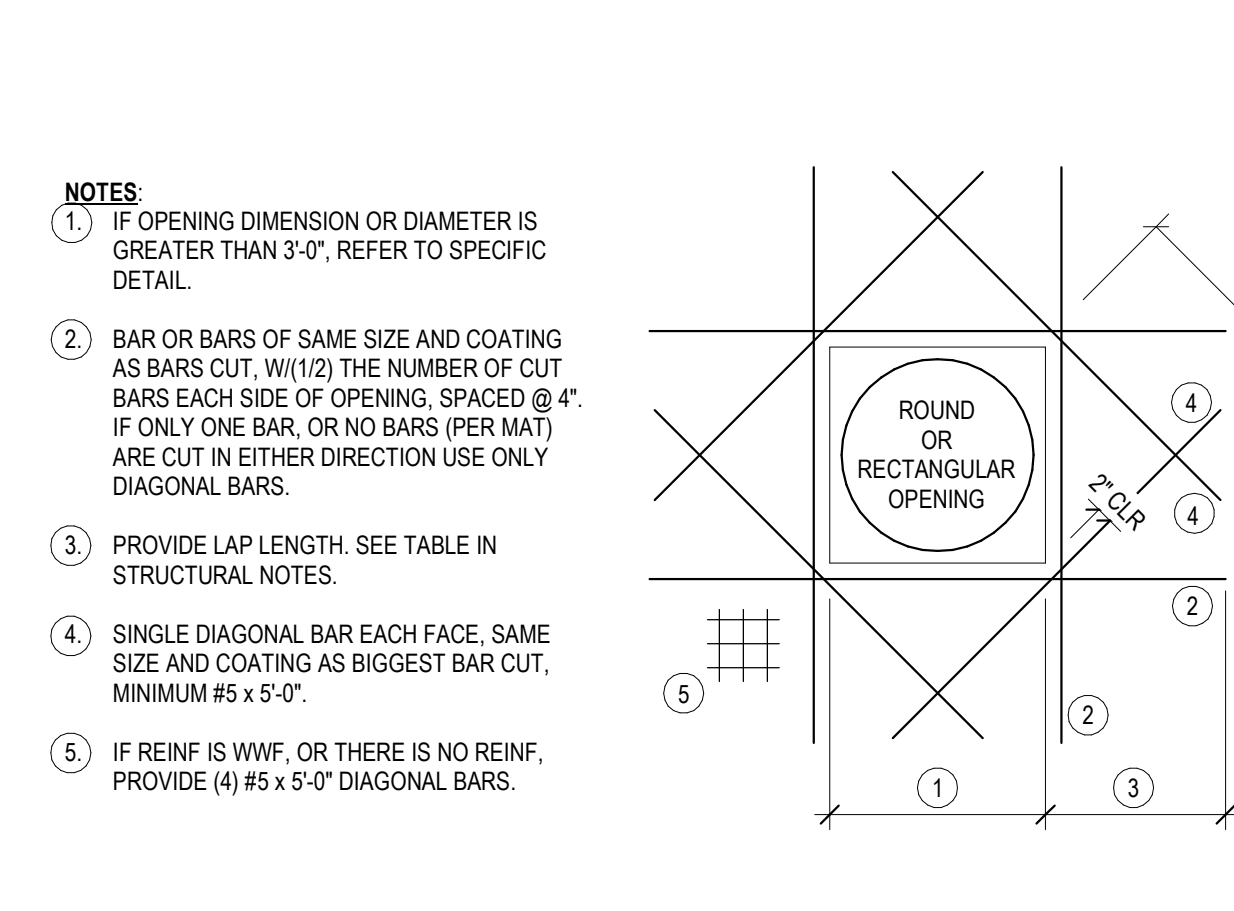
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CONC EQUIPMENT PAD DETAIL



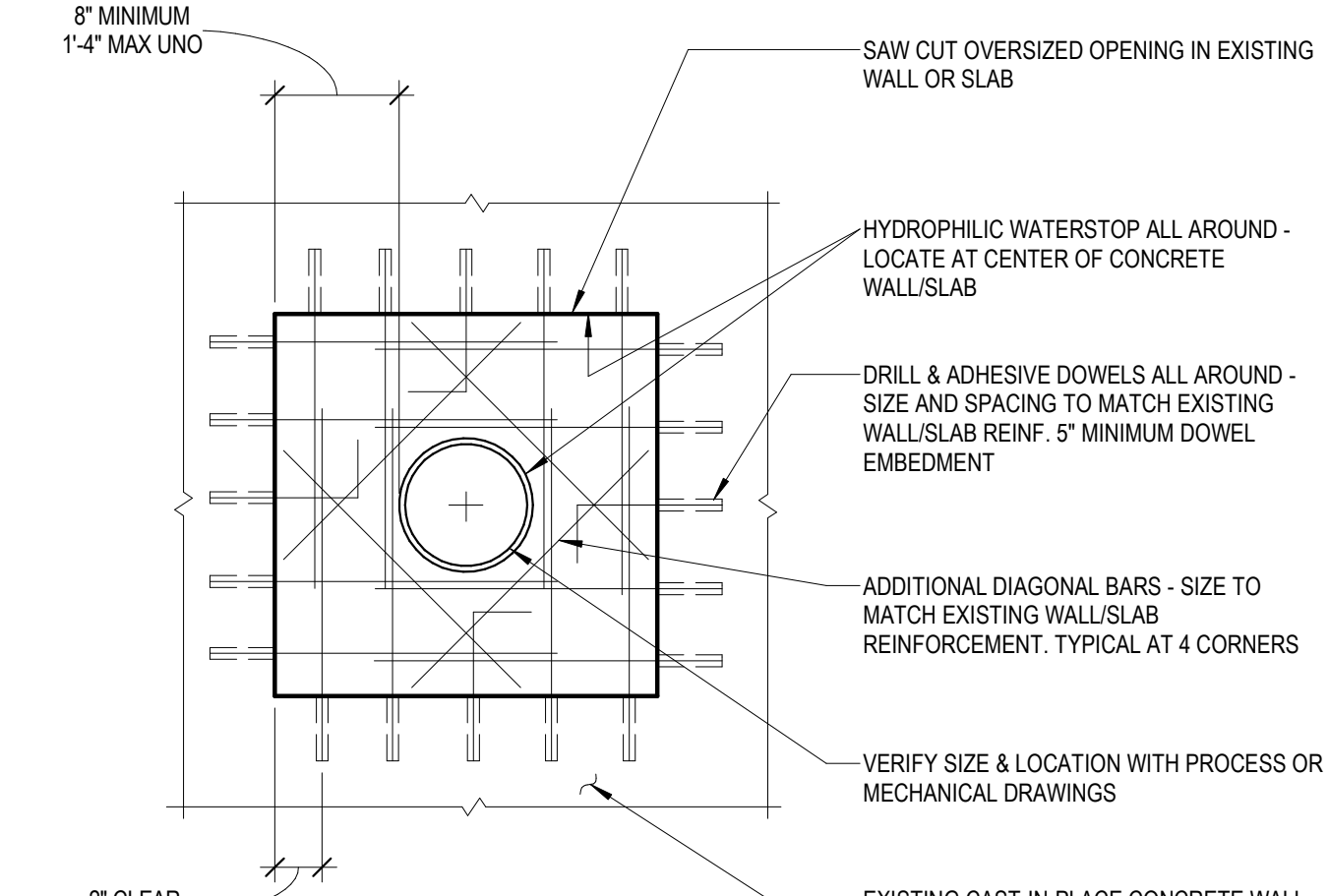
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SLAB REENTRANT CORNER DETAIL



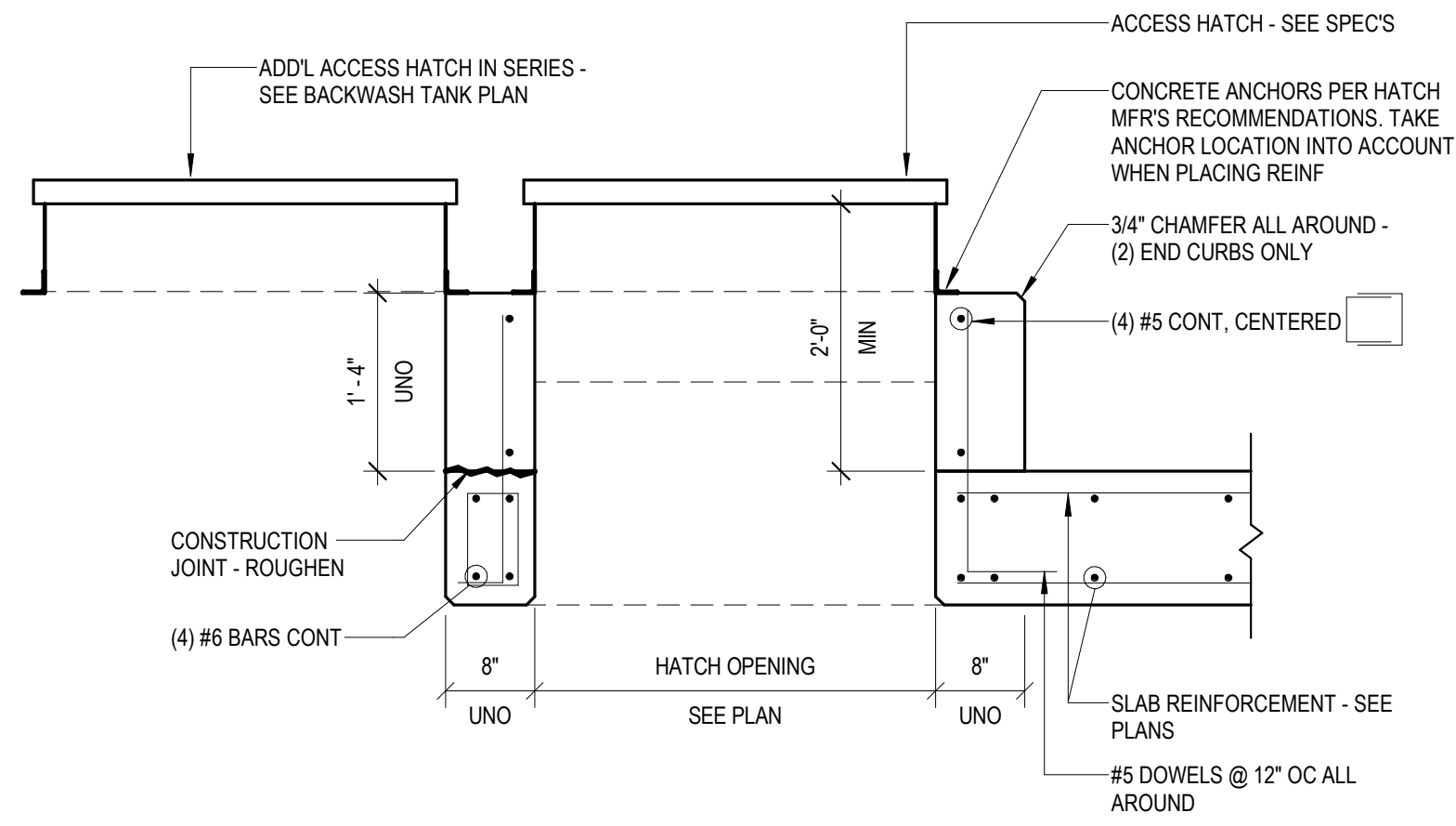
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DS501 / NOT TO SCALE

OPENING REINFORCEMENT DETAIL

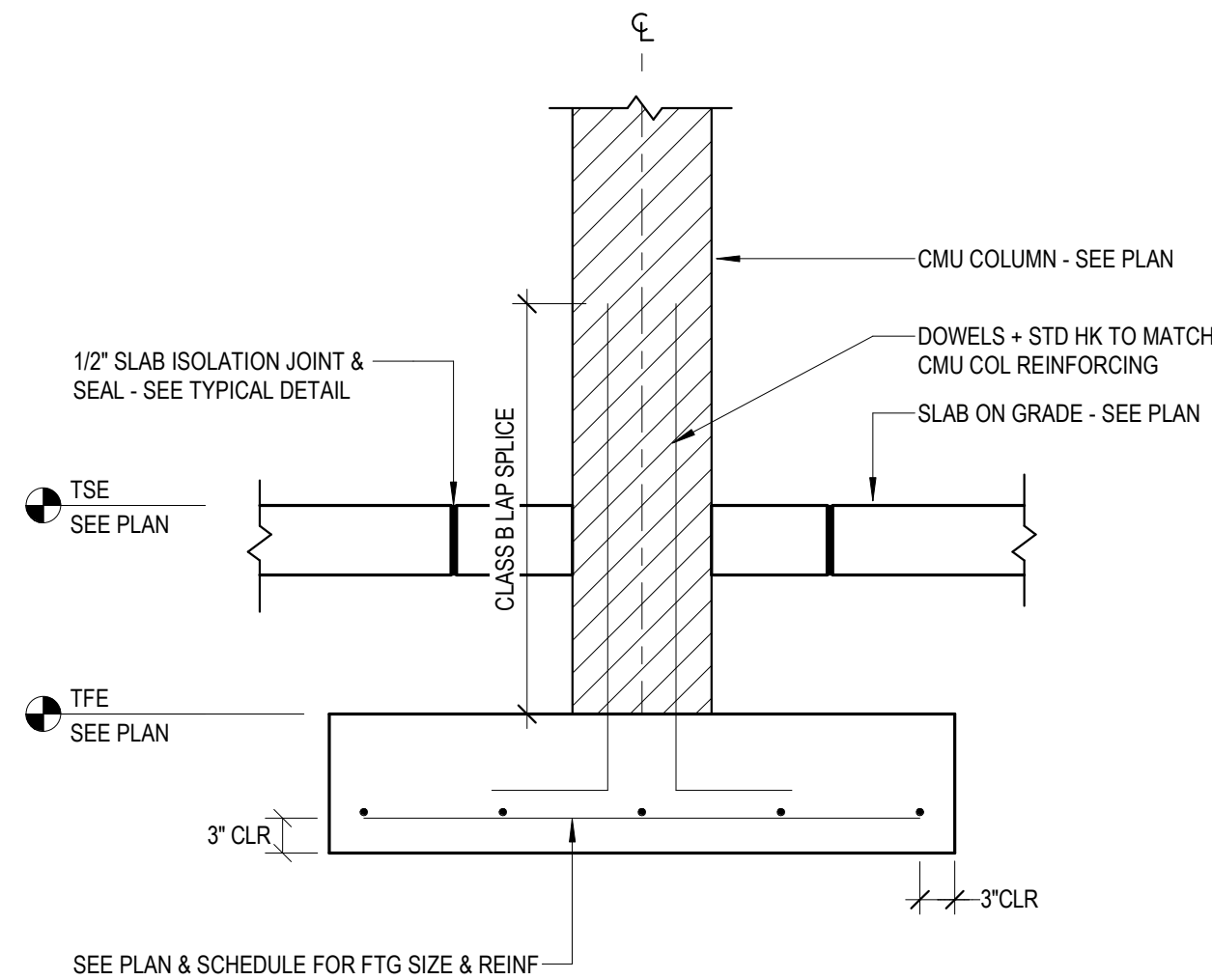


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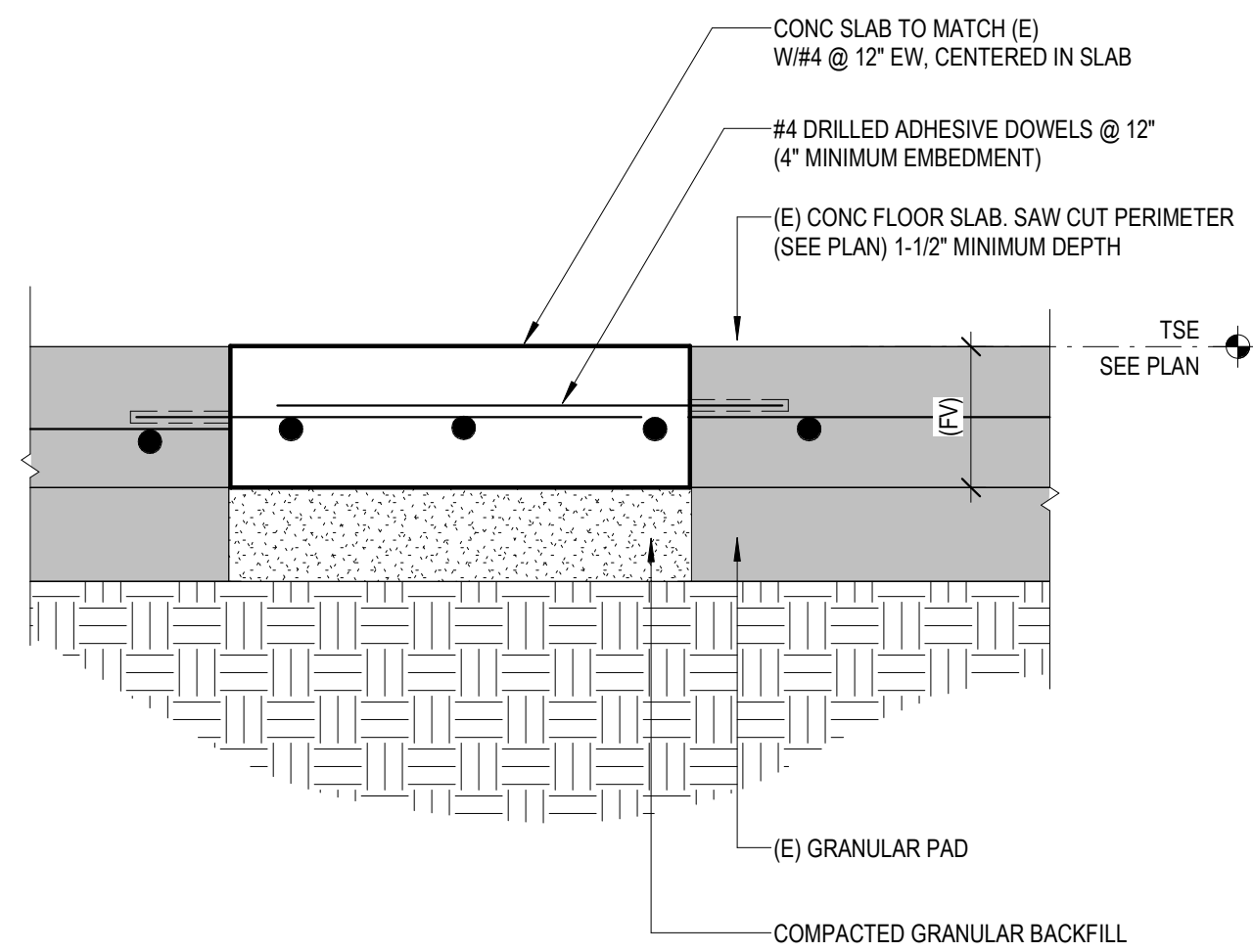
PENETRATION AT EXISTING CIP WALL OR SLAB



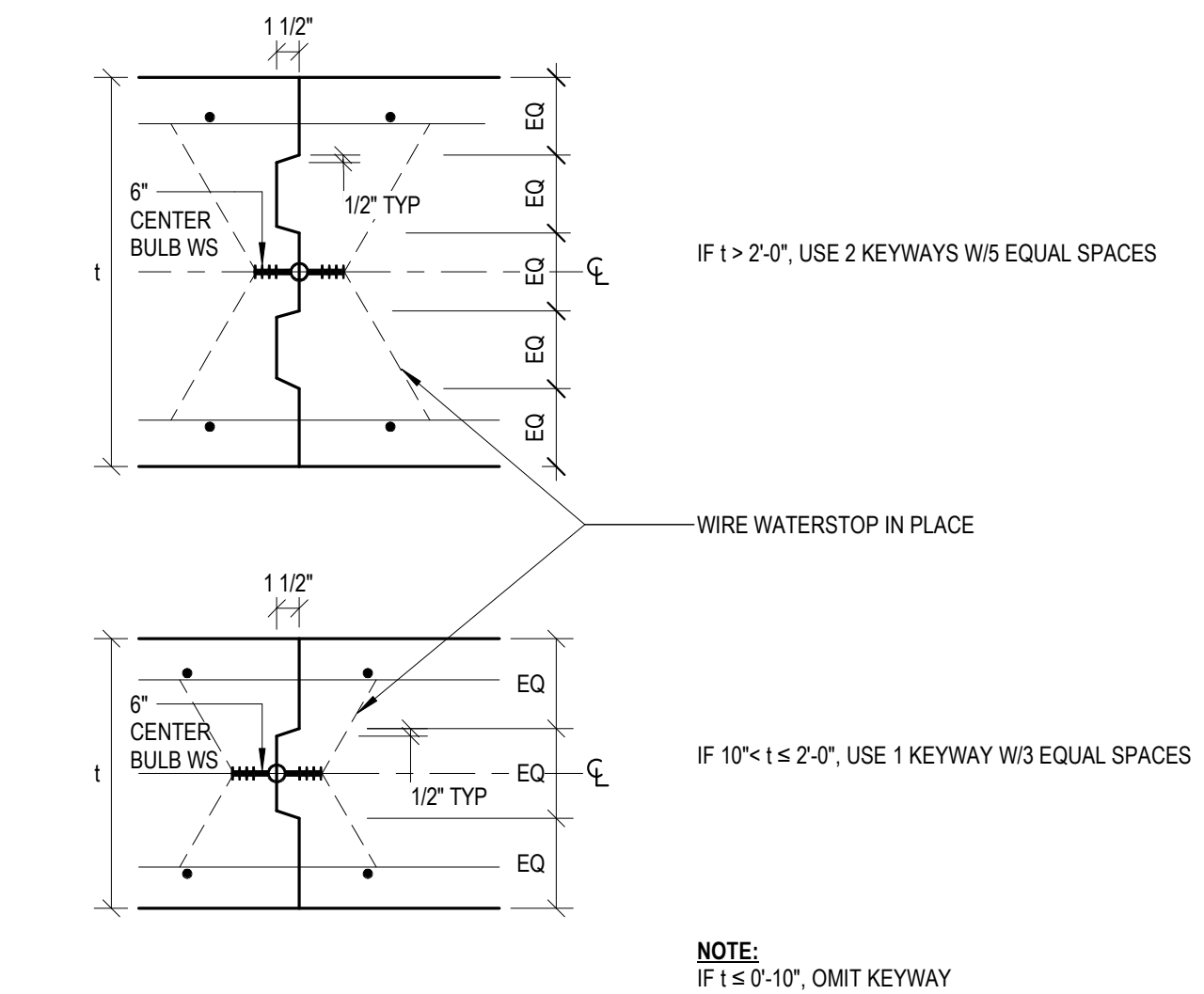
1 ACCESS HATCH CURB DETAIL
DS502 NOT TO SCALE



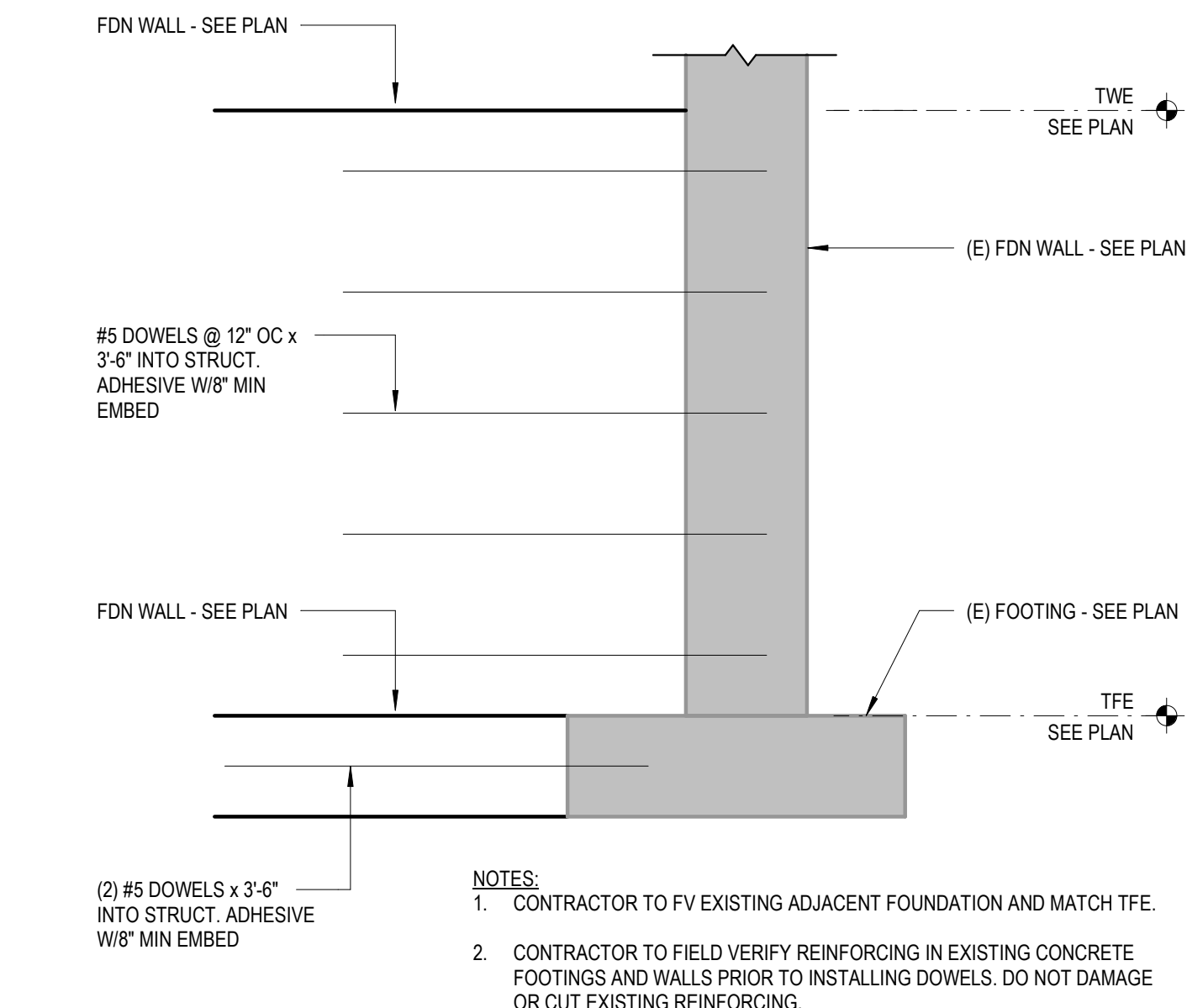
2 INTERIOR COLUMN FOOTING DETAIL
DS502 NOT TO SCALE



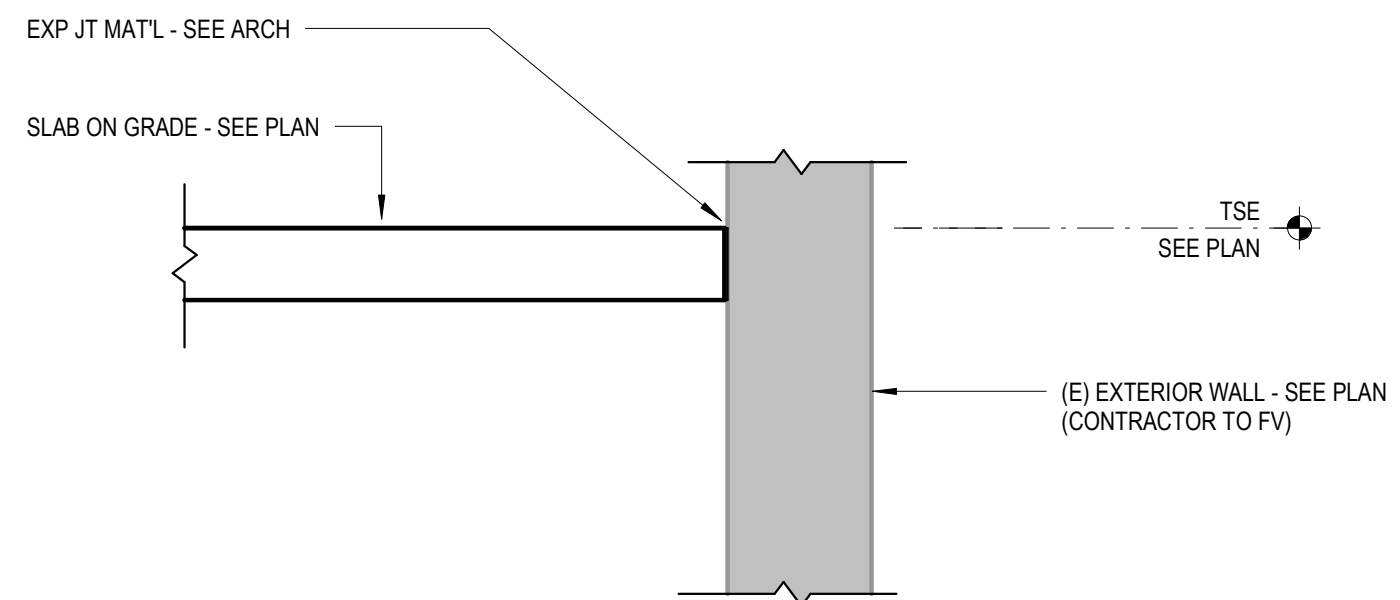
3 DETAIL AT EXISTING SLAB ON GRADE
DS502 NOT TO SCALE



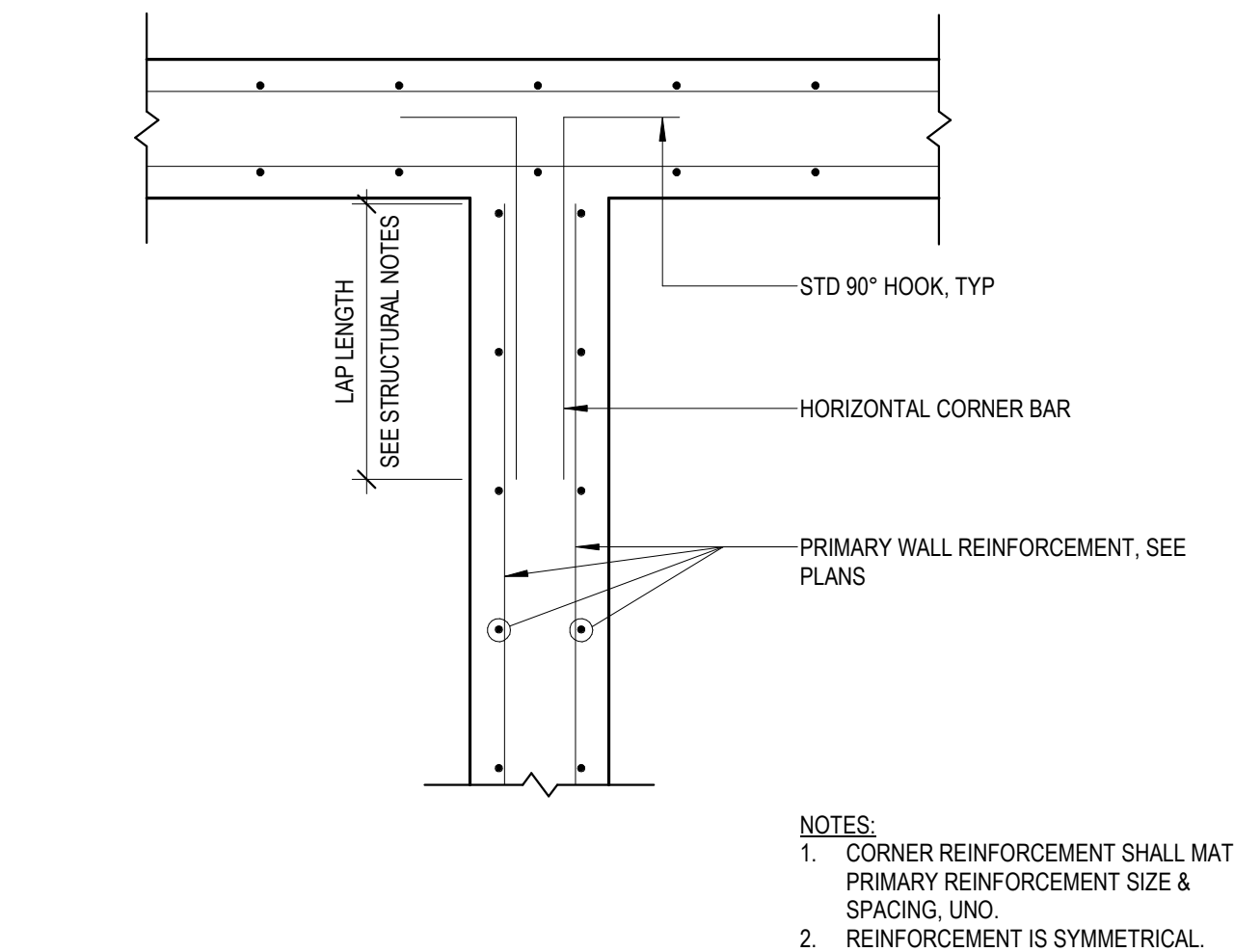
4 WALL CONSTRUCTION JOINT DETAIL
DS502 NOT TO SCALE



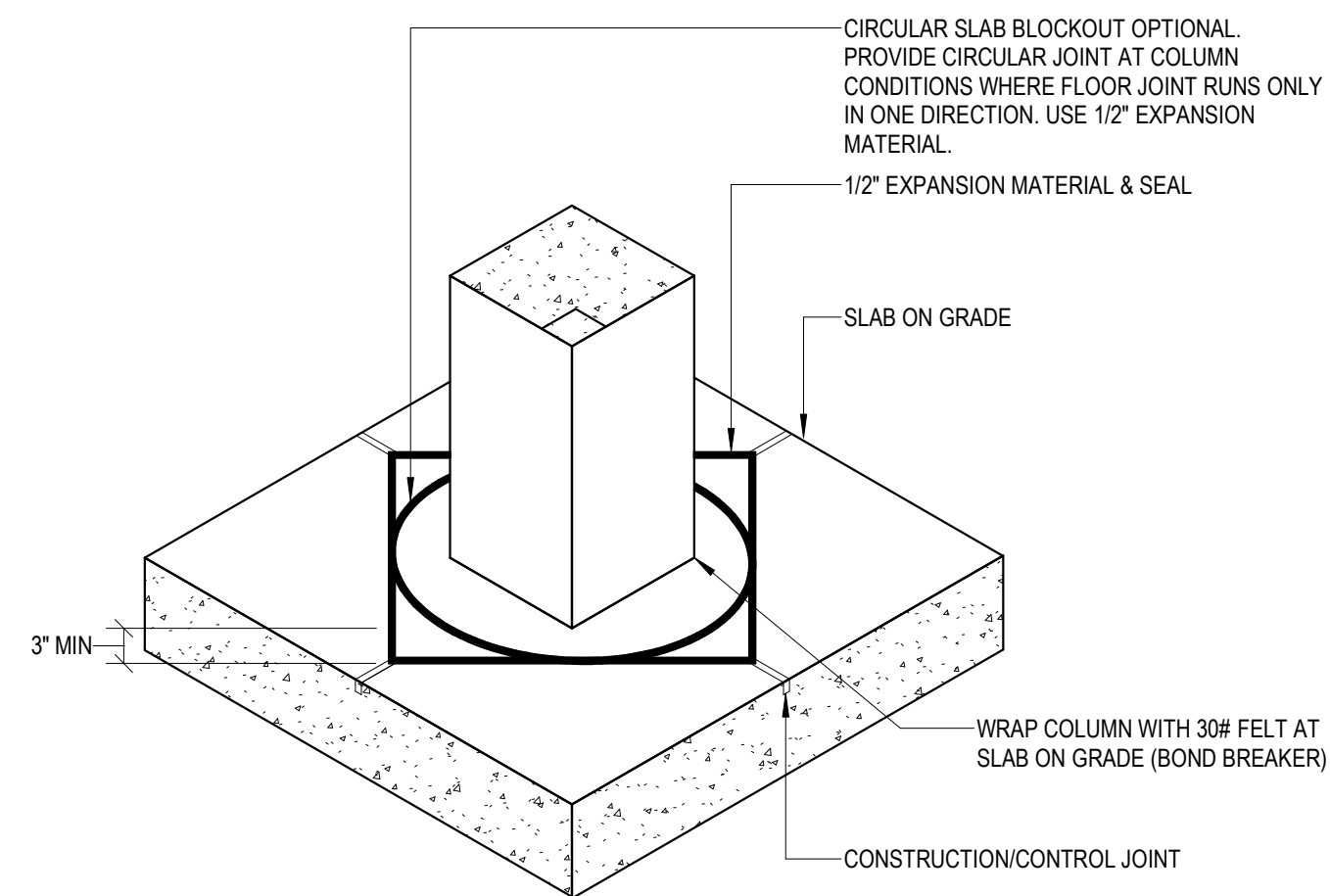
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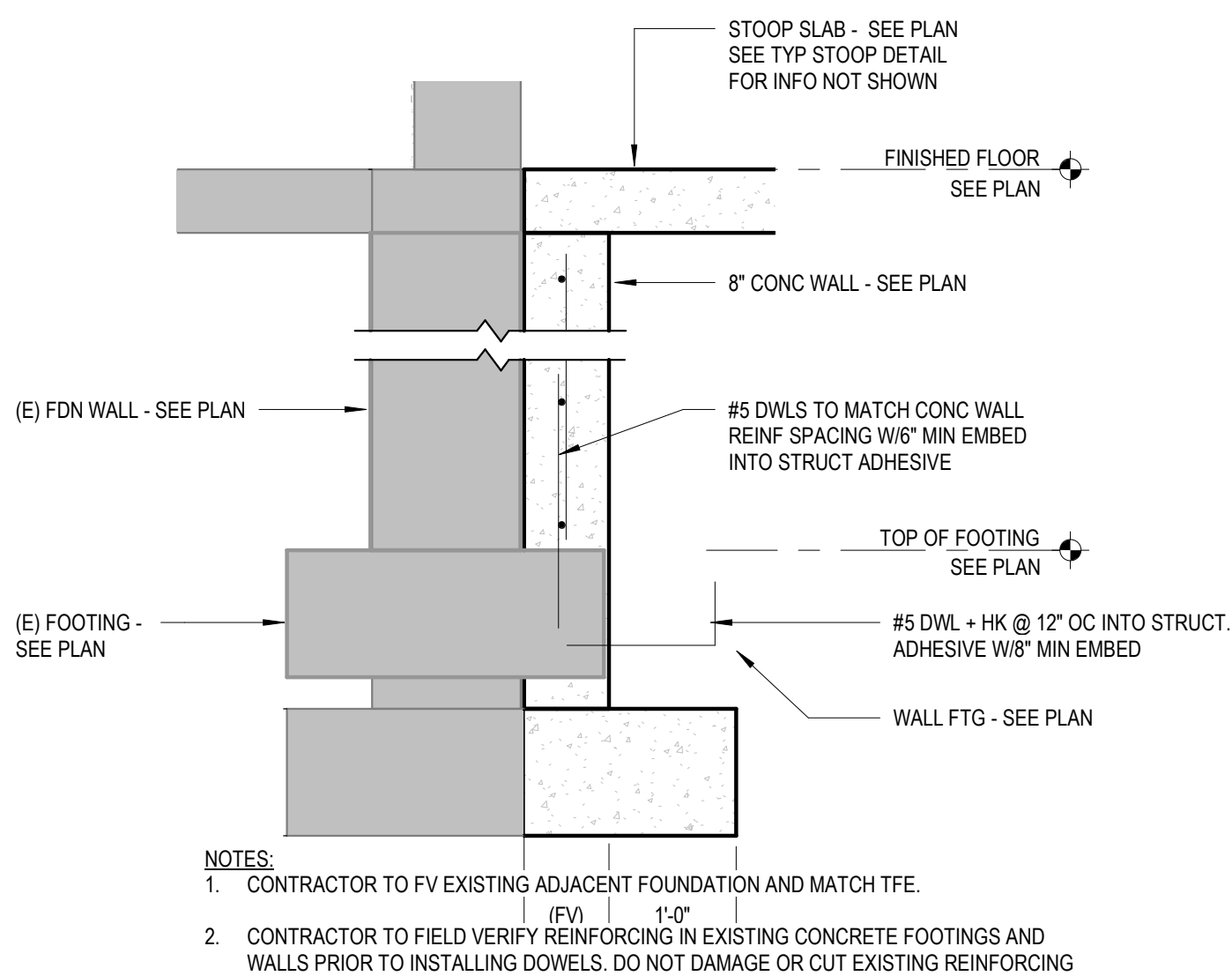
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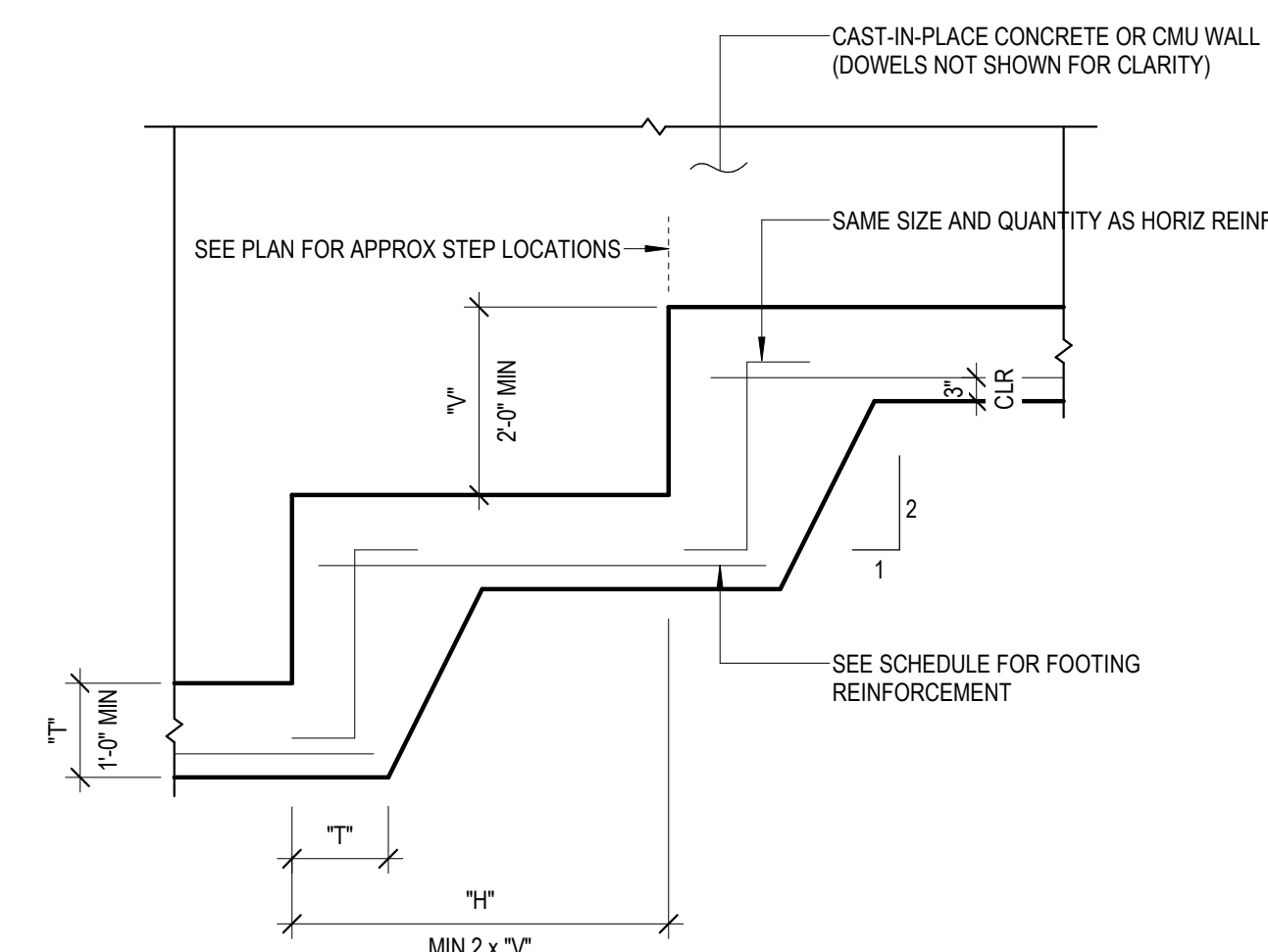
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DS502 NOT TO SCALE



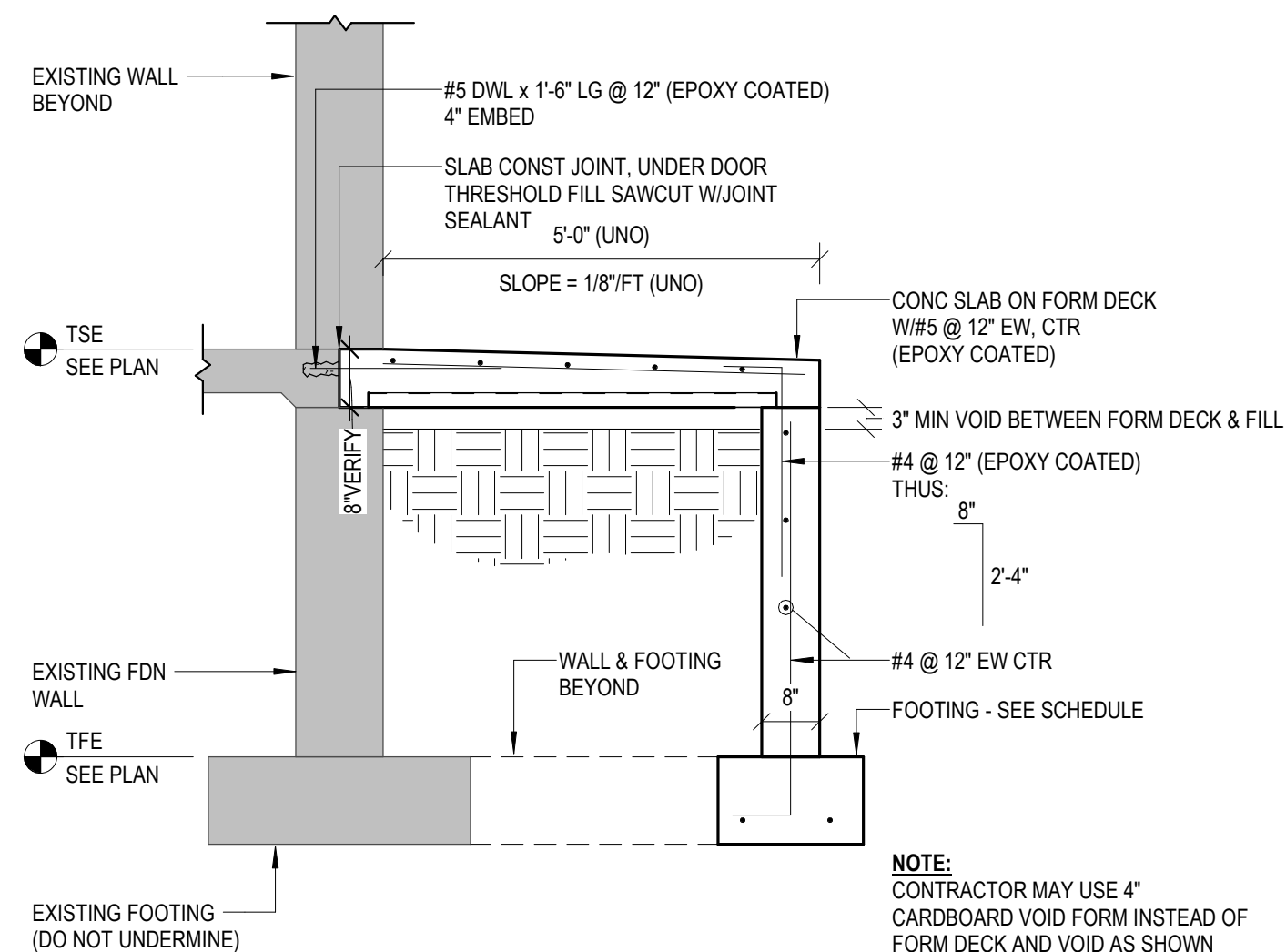
8 ISOLATION JOINT DETAIL AT CONCRETE COLUMN
DS502 NOT TO SCALE



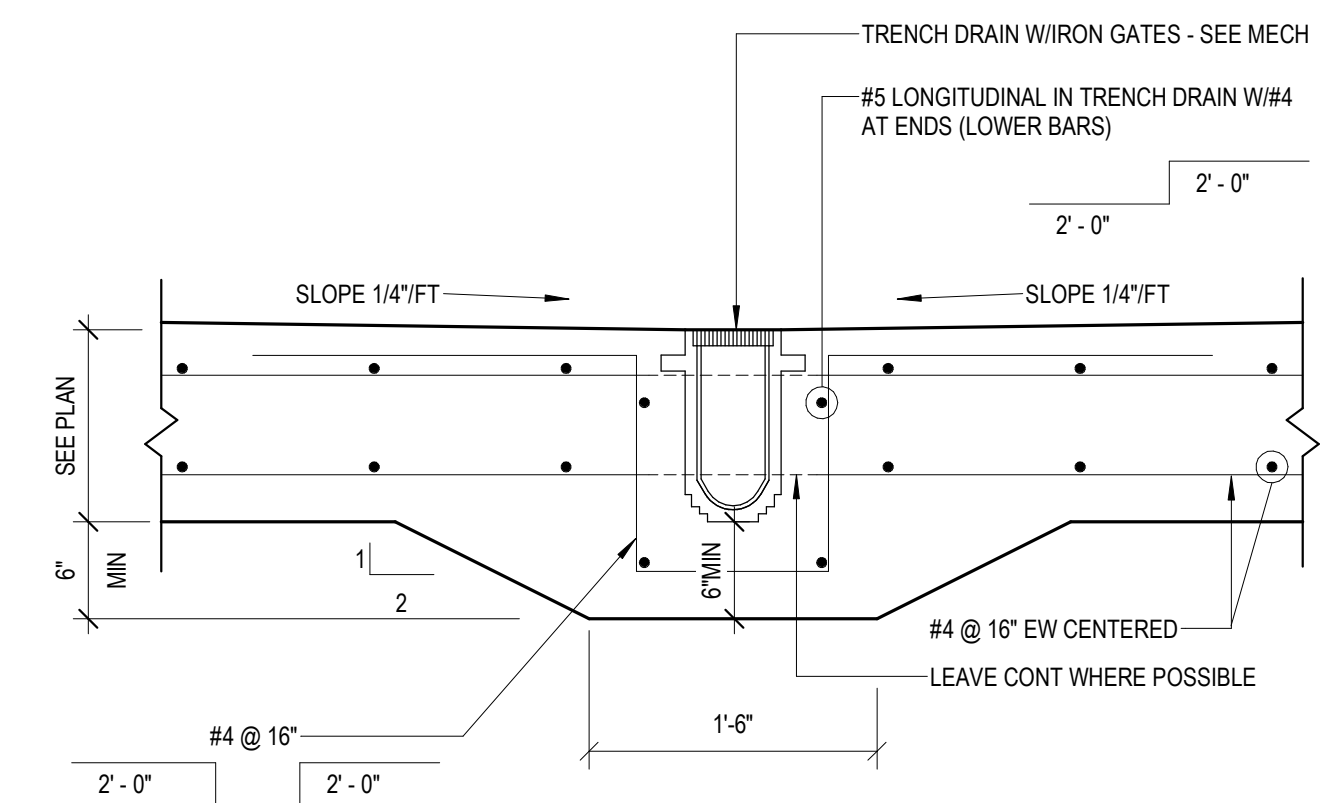
9 SECTION
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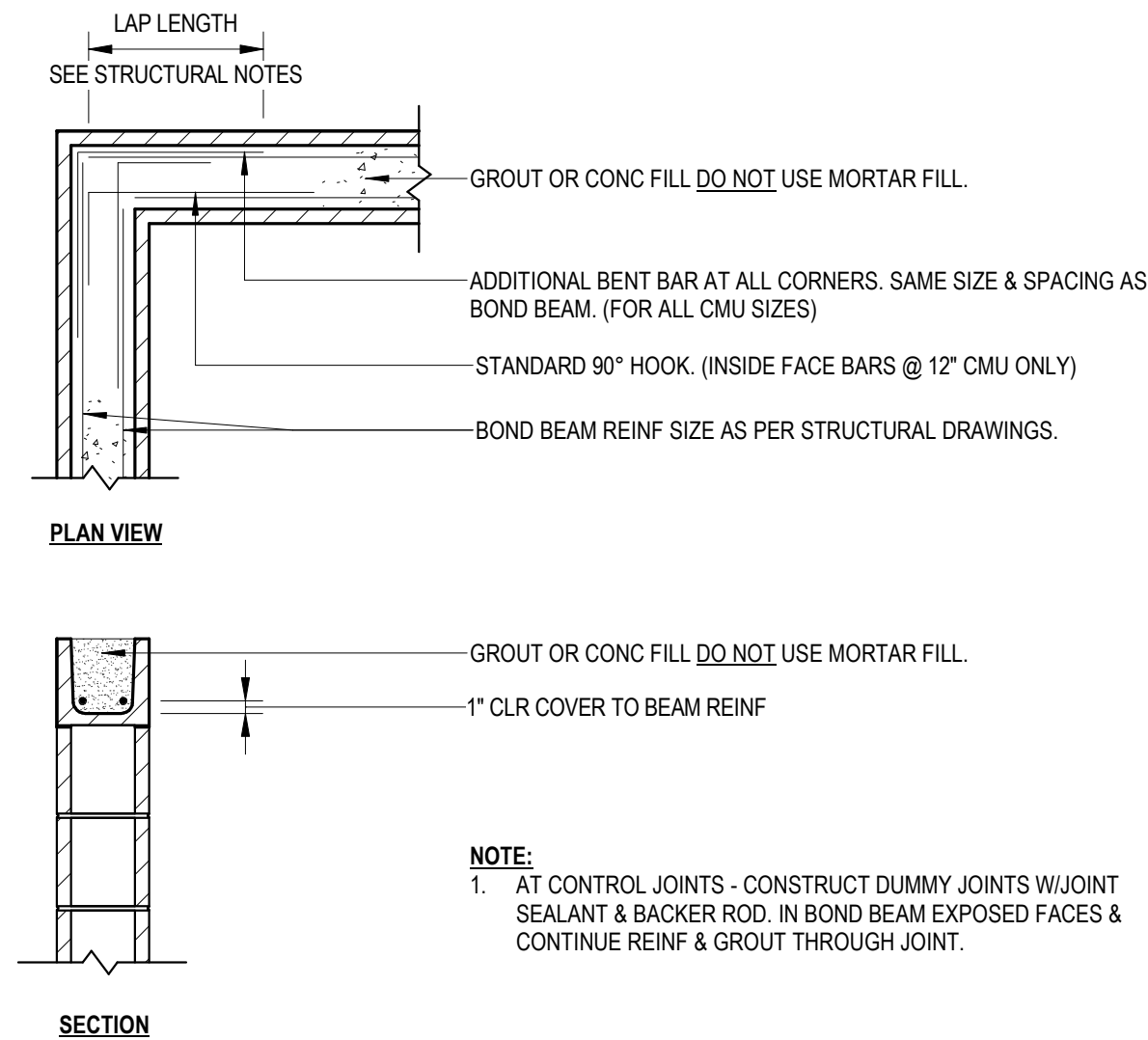
10 FOOTING STEP DETAIL
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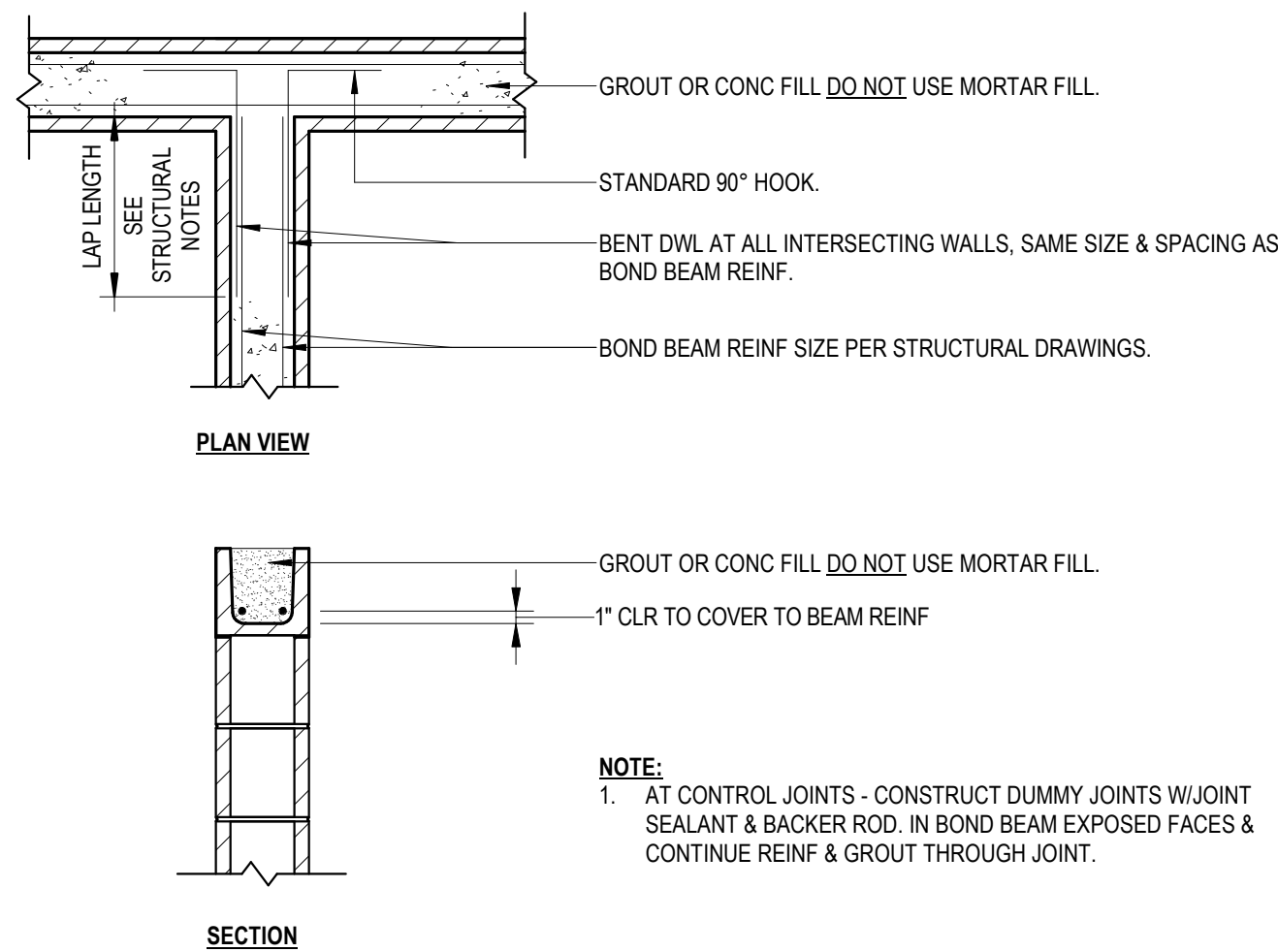
11 CONCRETE STOOP AT EXISTING BUILDING
DS502 NOT TO SCALE



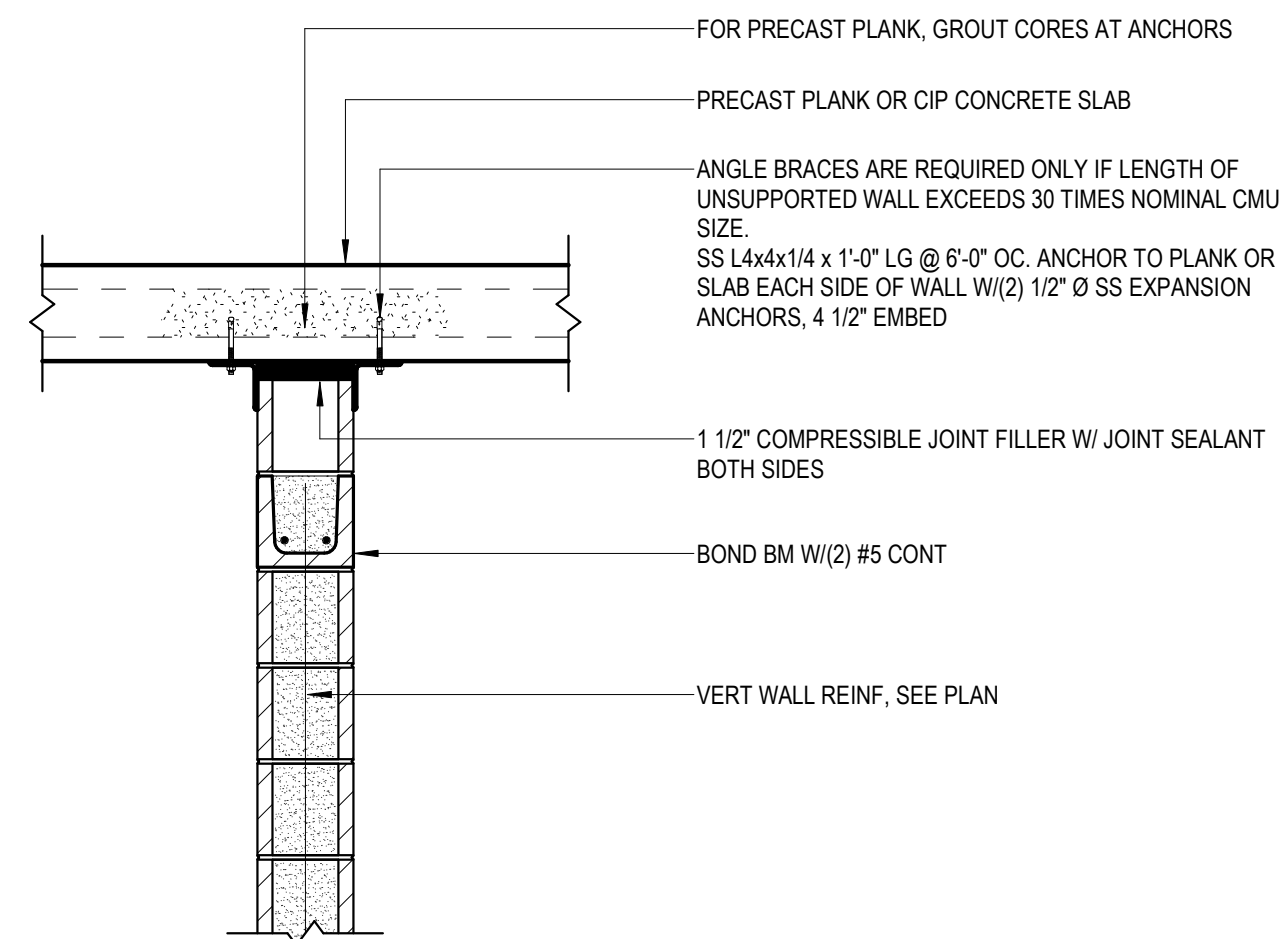
12 TRENCH DRAIN DETAIL 12\"/>



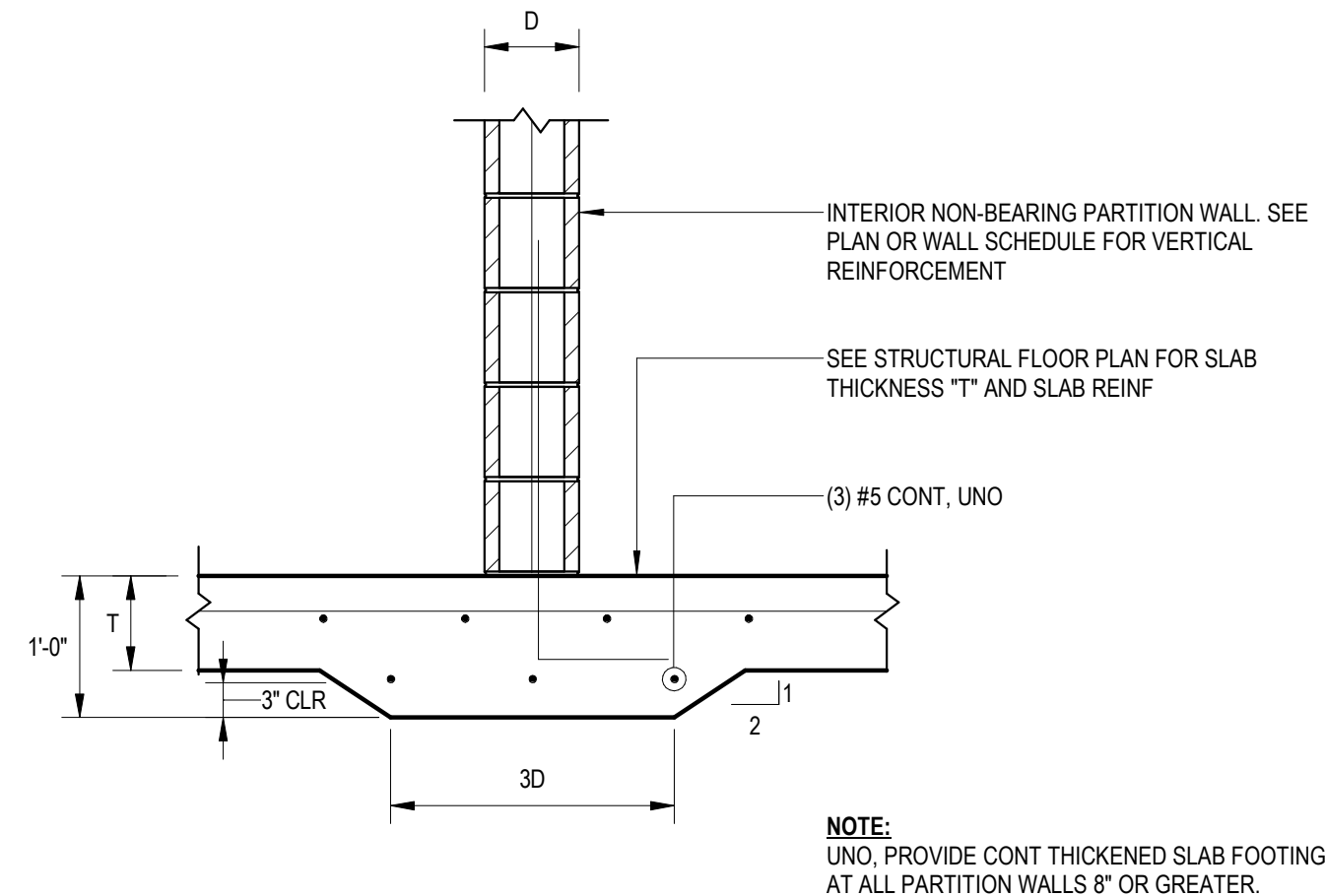
1 BOND BEAM CORNER REINF. DETAIL
DS511 NOT TO SCALE



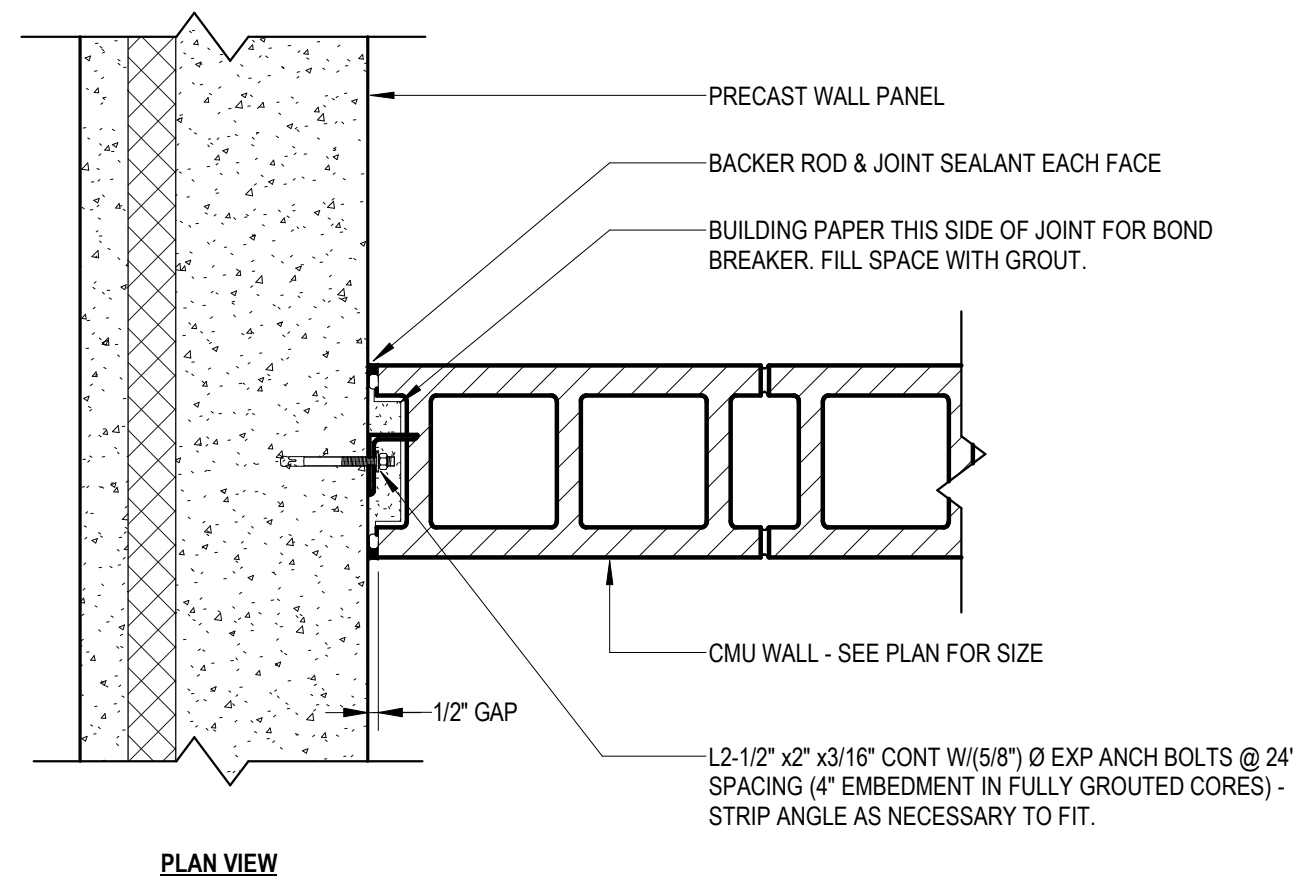
2 BOND BEAM INTERSECTION REINF. DETAIL
DS511 NOT TO SCALE



3 CMU PARTITION WALL TOP DETAIL
DS511 NOT TO SCALE



4 THICKENED SLAB AT NON-BEARING CMU WALL
DS511 NOT TO SCALE

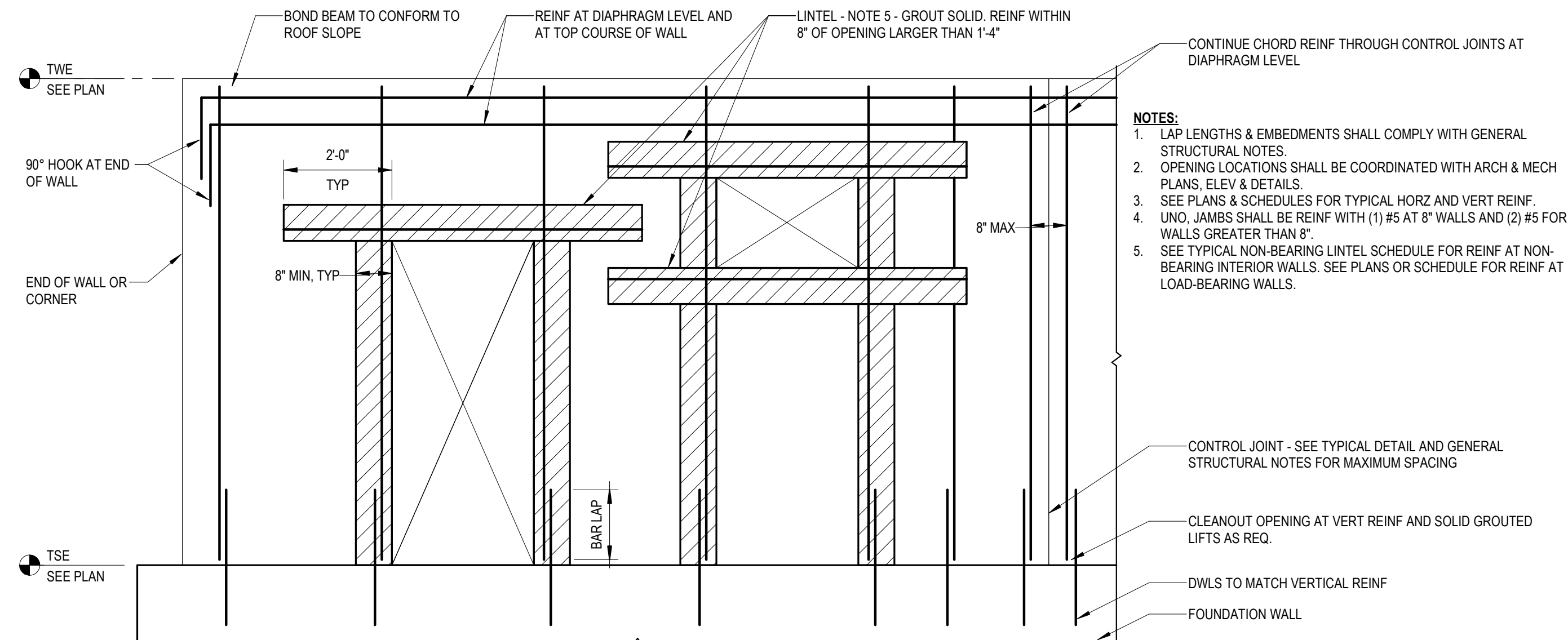


5 CMU TO PRECAST WALL CONNECTION DETAIL
DS511 NOT TO SCALE

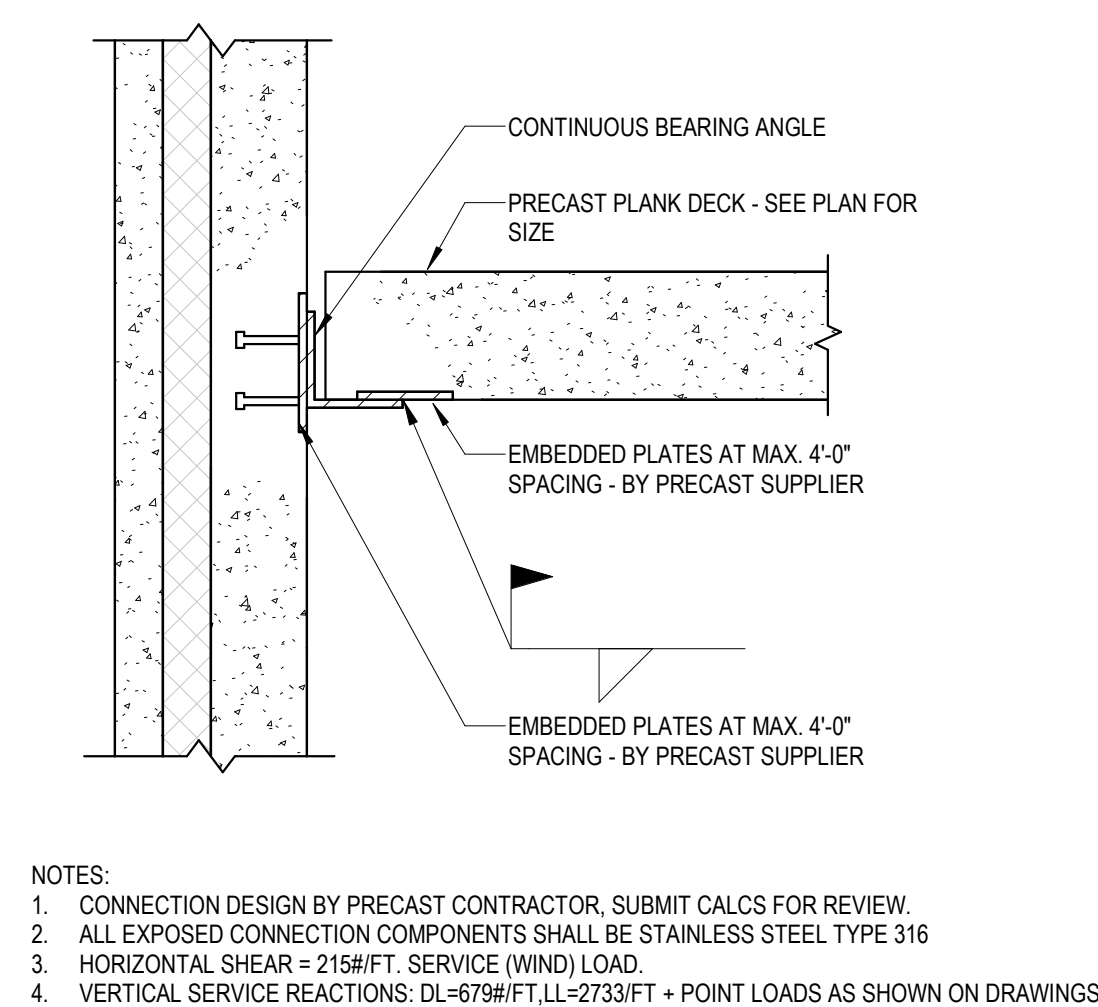
NON-BEARING MASONRY LINTEL SCHEDULE						
	6" CMU WALL	8" CMU WALL	12" CMU WALL	16" CMU WALL		
ROUGH OPENING WIDTH (LINTEL SPAN)						
0'-0" - 3'-4"	(1) #4	(2) #4	(2) #4	(2) #4		
3'-5" - 6'-4"		(2) #4	(2) #4		(2) #4	
6'-5" - 8'-4"		(2) #5	(2) #5		(2) #5	

MASONRY LINTEL NOTES:
1. LINTEL BLOCKS SHALL BE GROUTED SOLID. DO NOT USE MORTAR. F_g = 3000 PSI MIN
2. 8" MIN BEARING EACH END FOR BLOCK LINTELS. CORES BENEATH LINTEL BEARING SHALL BE GROUTED SOLID. PROVIDE (2) VERTICAL WALL BARS (#5 MIN) BELOW EACH BEARING END UNO.

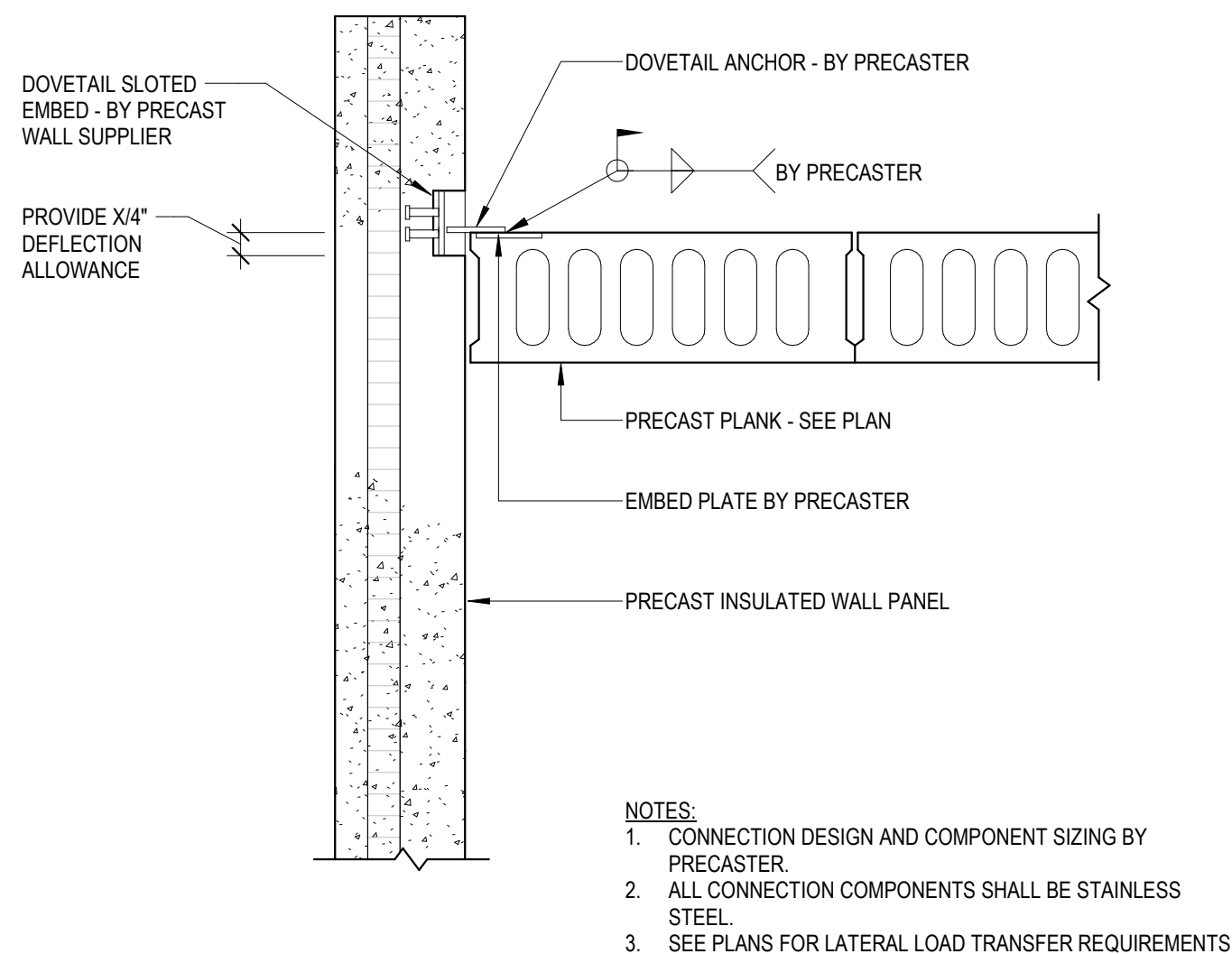
6 NON-BEARING MASONRY LINTEL SCHEDULE
DS511 NOT TO SCALE



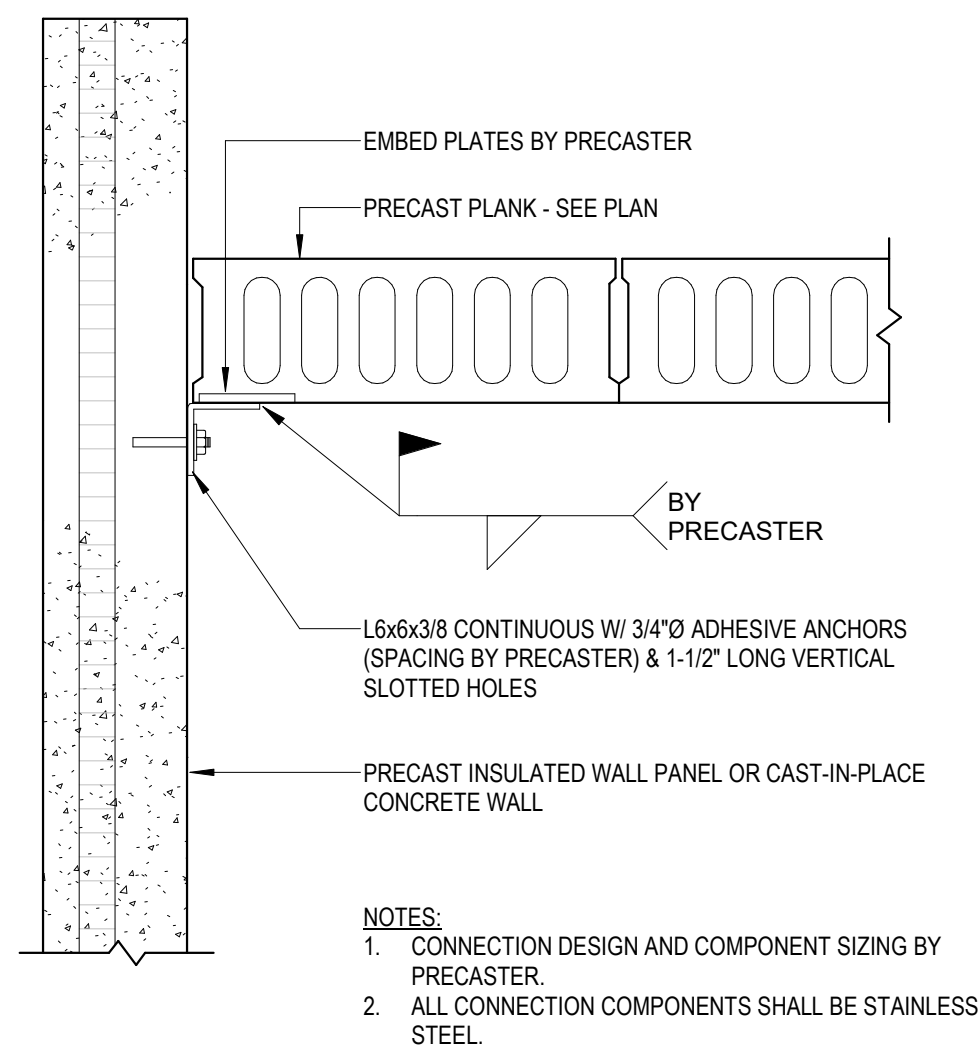
7 CMU WALL REINFORCING SCHEMATIC
DS511 NOT TO SCALE



8 PLANK TO WALL PANEL BEARING CONNECTION
DS511 NOT TO SCALE

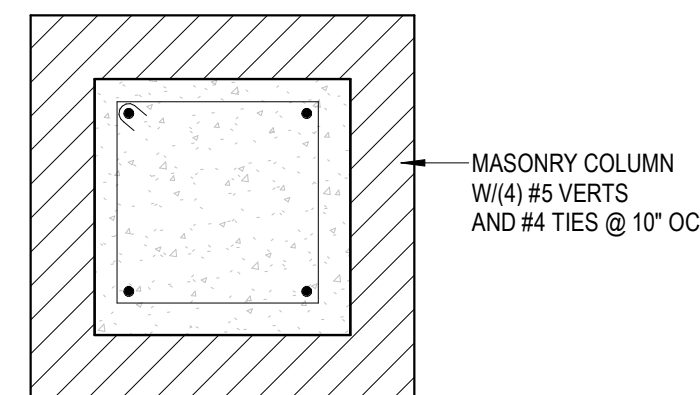


9 WALL PANEL TO ROOF PLANK CONNECTION
DS511 NOT TO SCALE

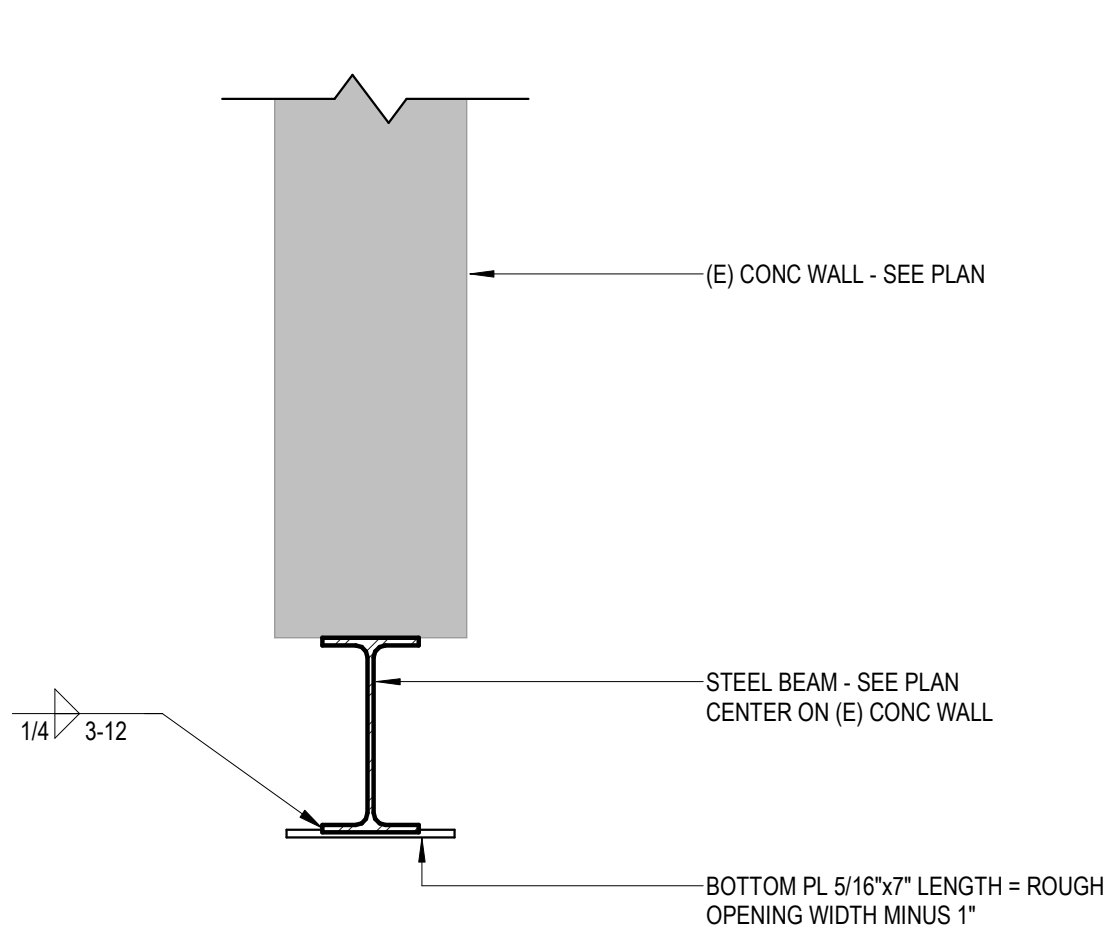


10 WALL PANEL TO ROOF PLANK CONNECTION
DS511 NOT TO SCALE

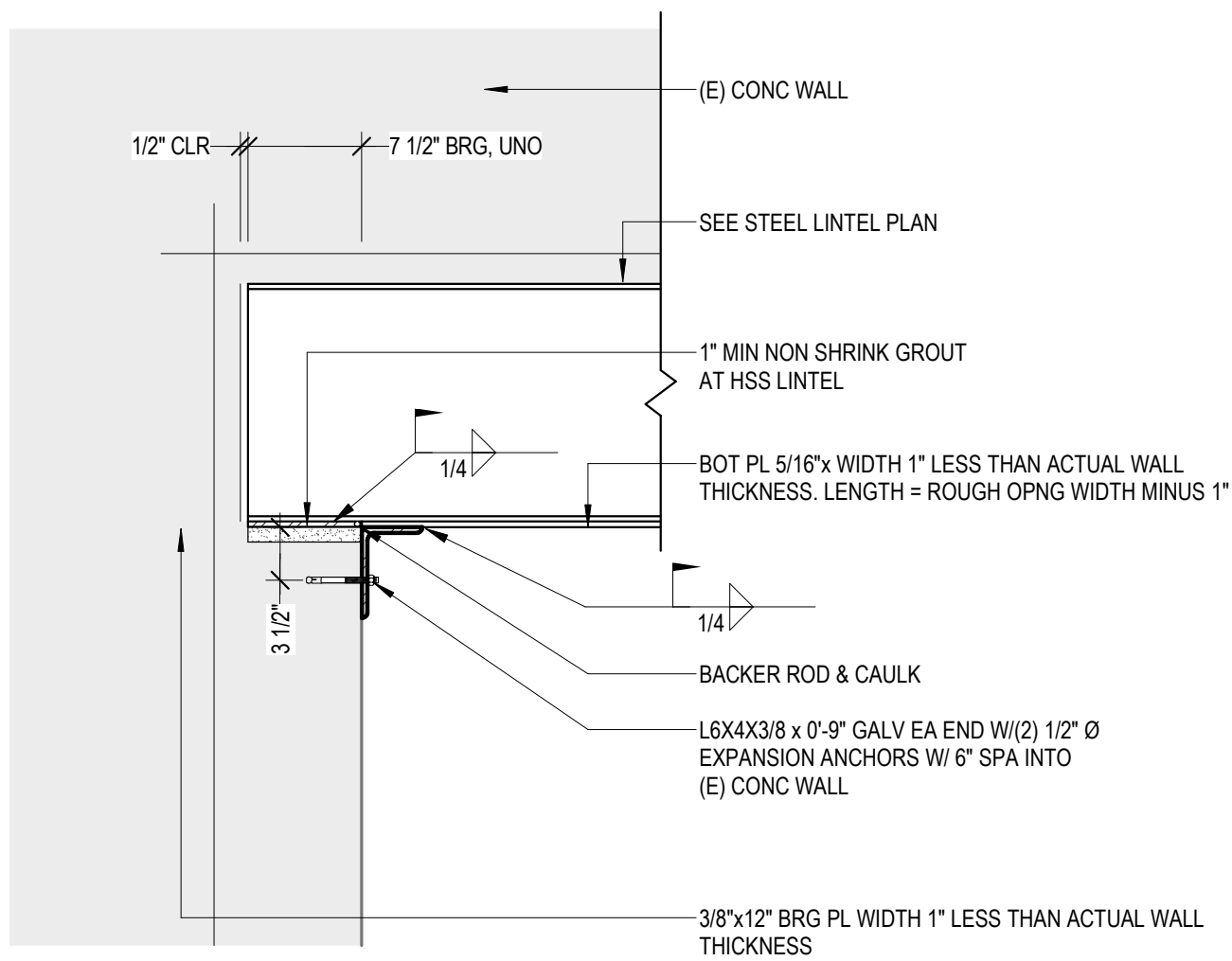
NOTES:
1. PROVIDE HOOKED DOWELS TO FOUNDATION TO LAP WITH VERTICAL REINFORCING. MATCH SIZE AND NUMBER OF VERTICAL REINFORCING BARS.



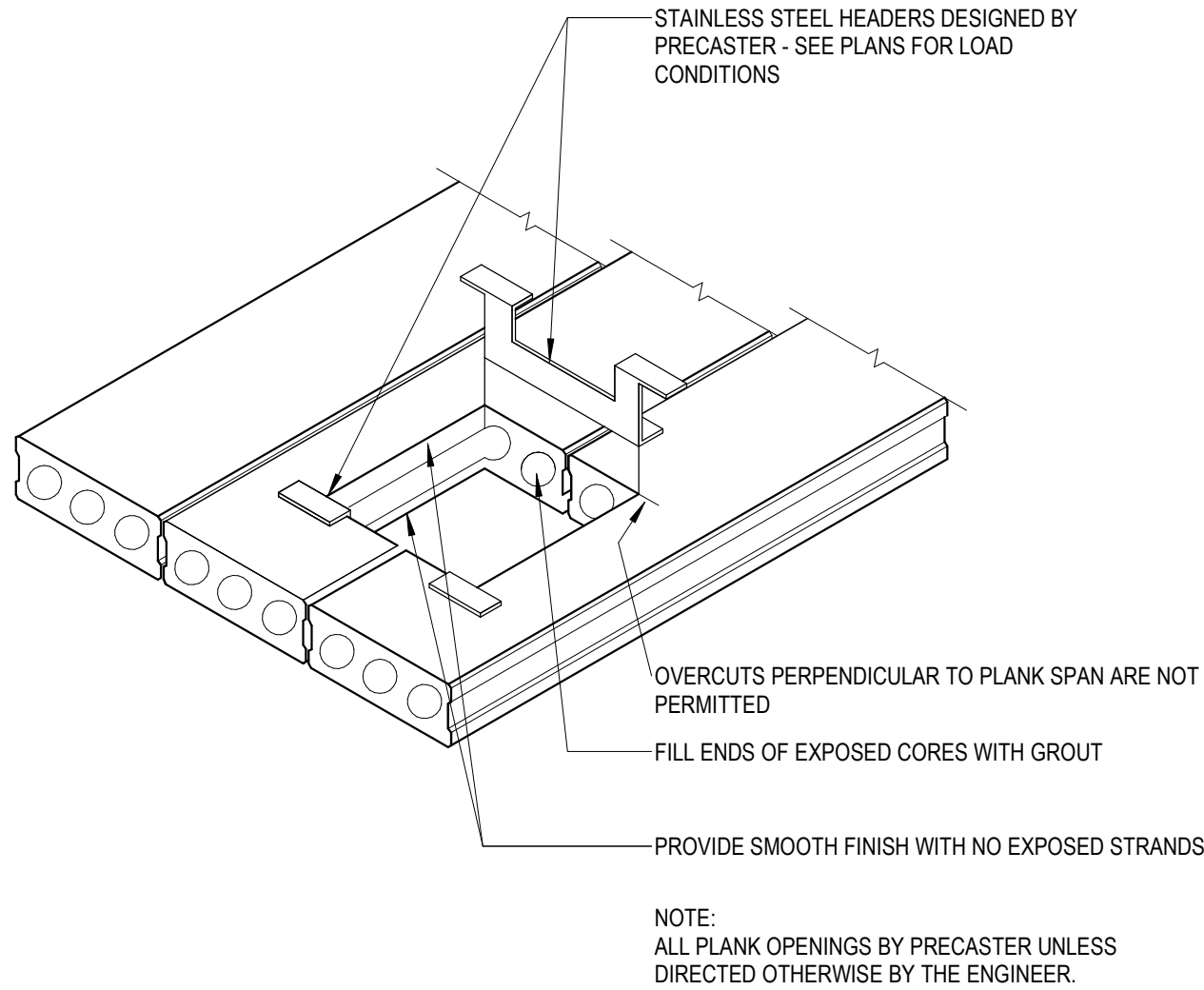
11 MASONRY COLUMN DETAIL
DS511 NOT TO SCALE



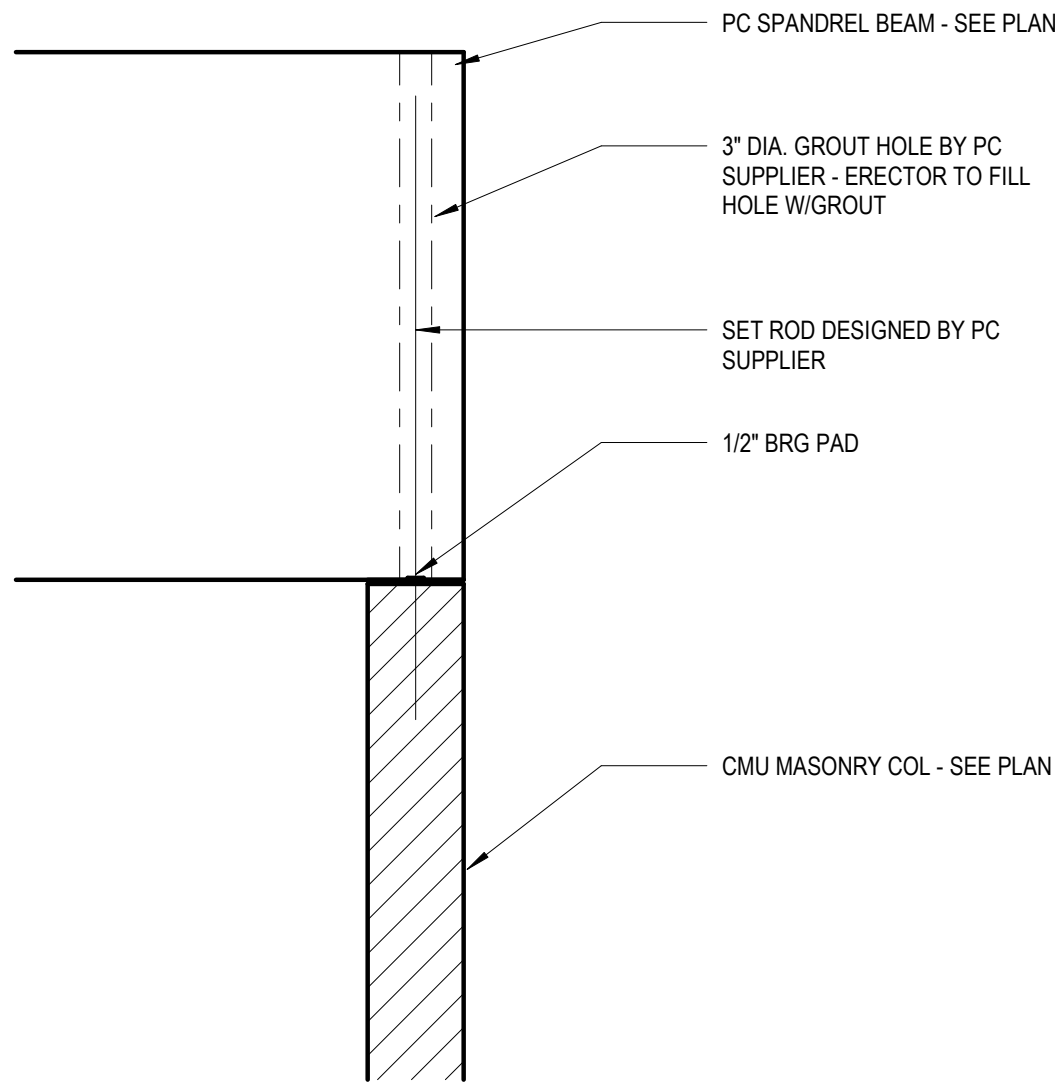
1 STEEL LINTEL SECTION
DS512 NOT TO SCALE



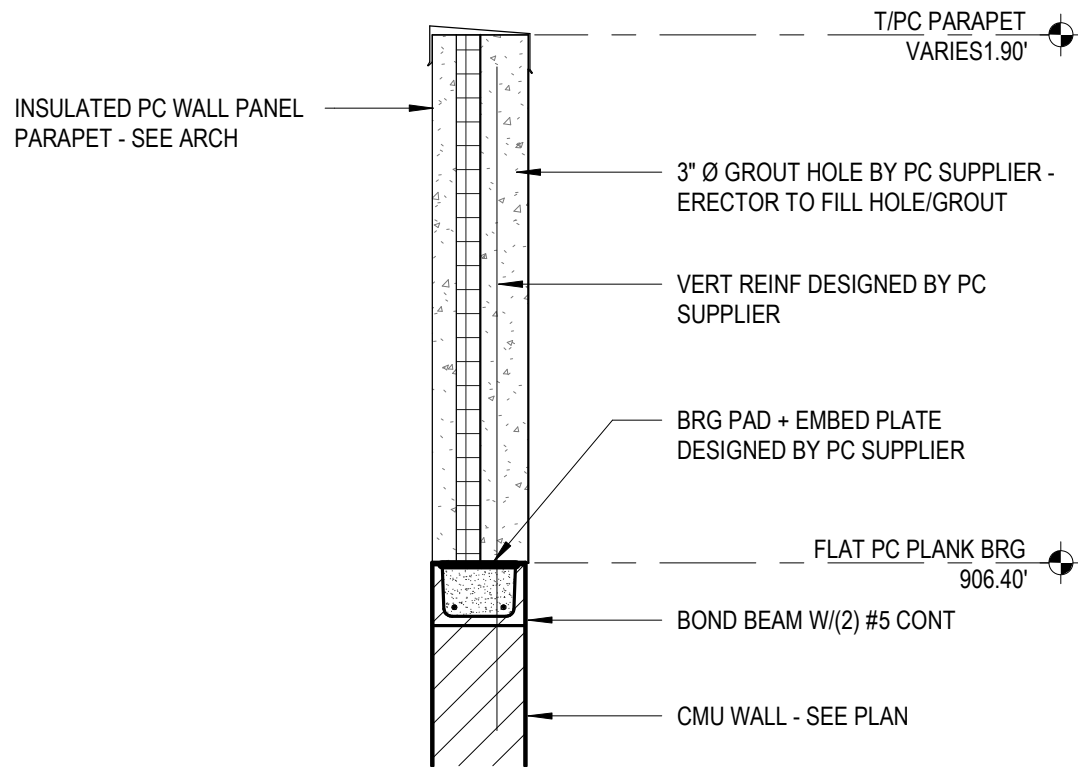
2 STEEL LINTEL ELEVATION
DS512 NOT TO SCALE



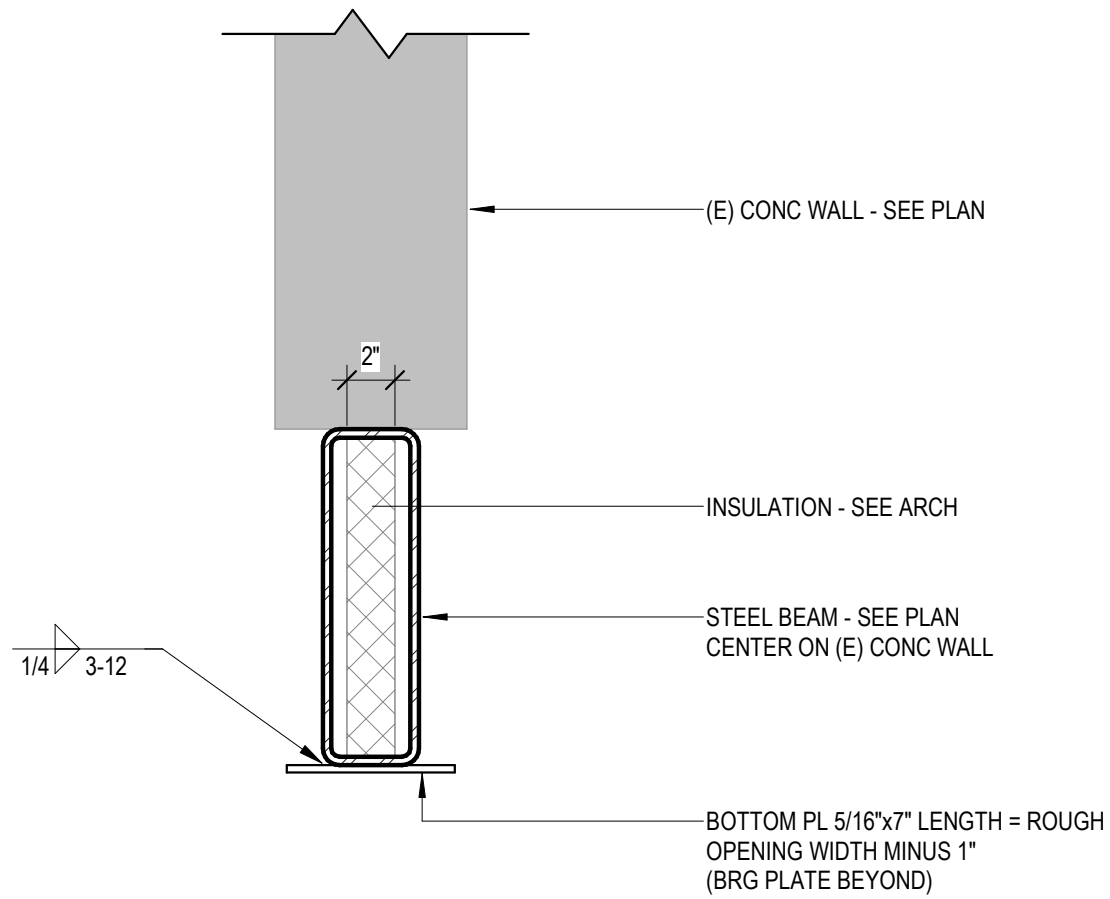
3 TYPICAL PLANK OPENING WITH HEADERS
DS512 NOT TO SCALE



4 PC SPANDREL TO CMU COL
DS512 NOT TO SCALE



5 PC SPANDREL TO CMU WALL
DS512 NOT TO SCALE



NOTES
1. SEE DETAIL 2/S512 FOR INFO NOT SHOWN

6 STEEL LINTEL SECTION
DS512 NOT TO SCALE



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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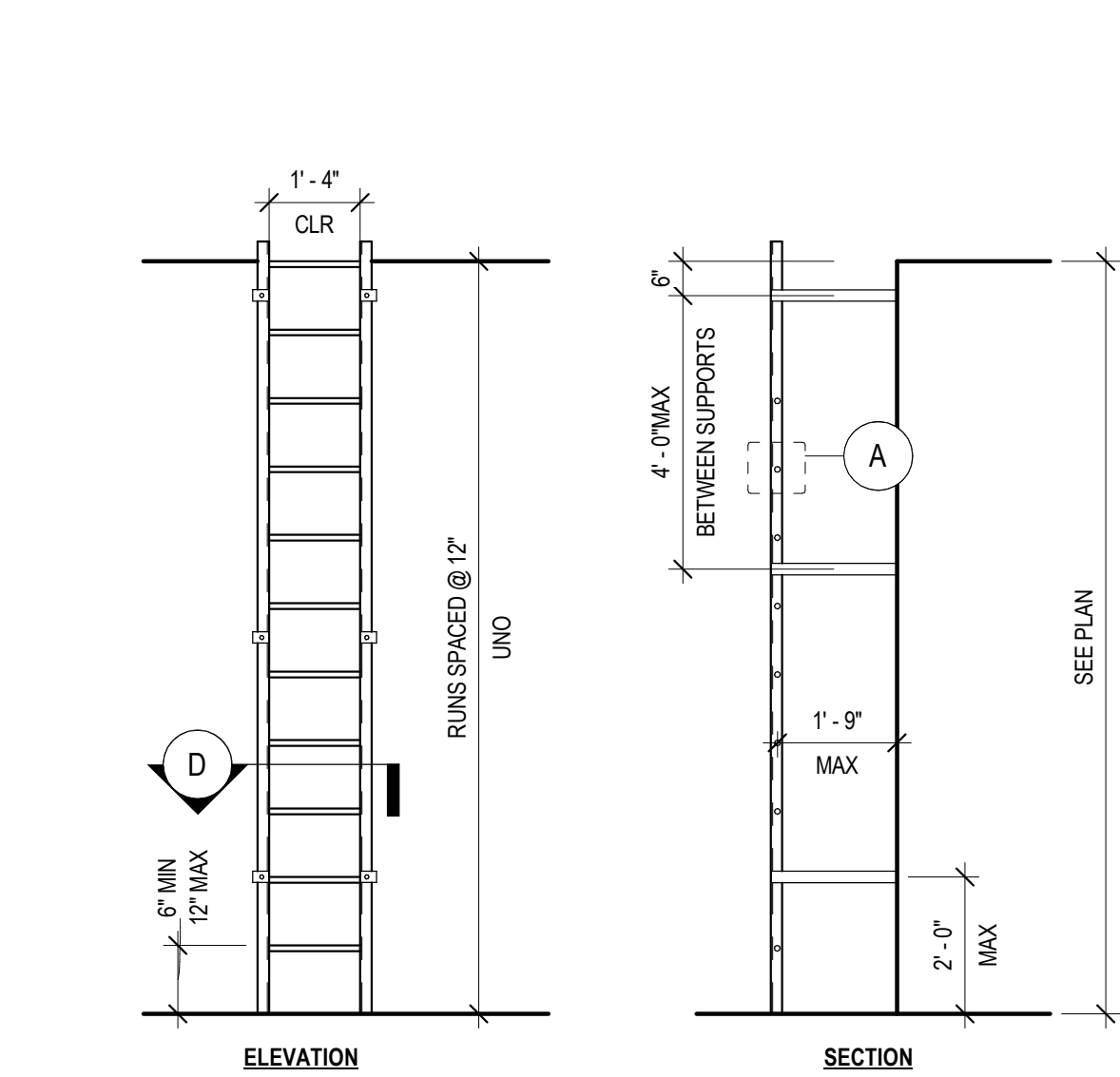
SEH Project MADWU 167818
Checked By NRD, SMJ
Drawn By ALM

Project Status Issue Date
BIDDING DOCUMENTS OCTOBER, 2023

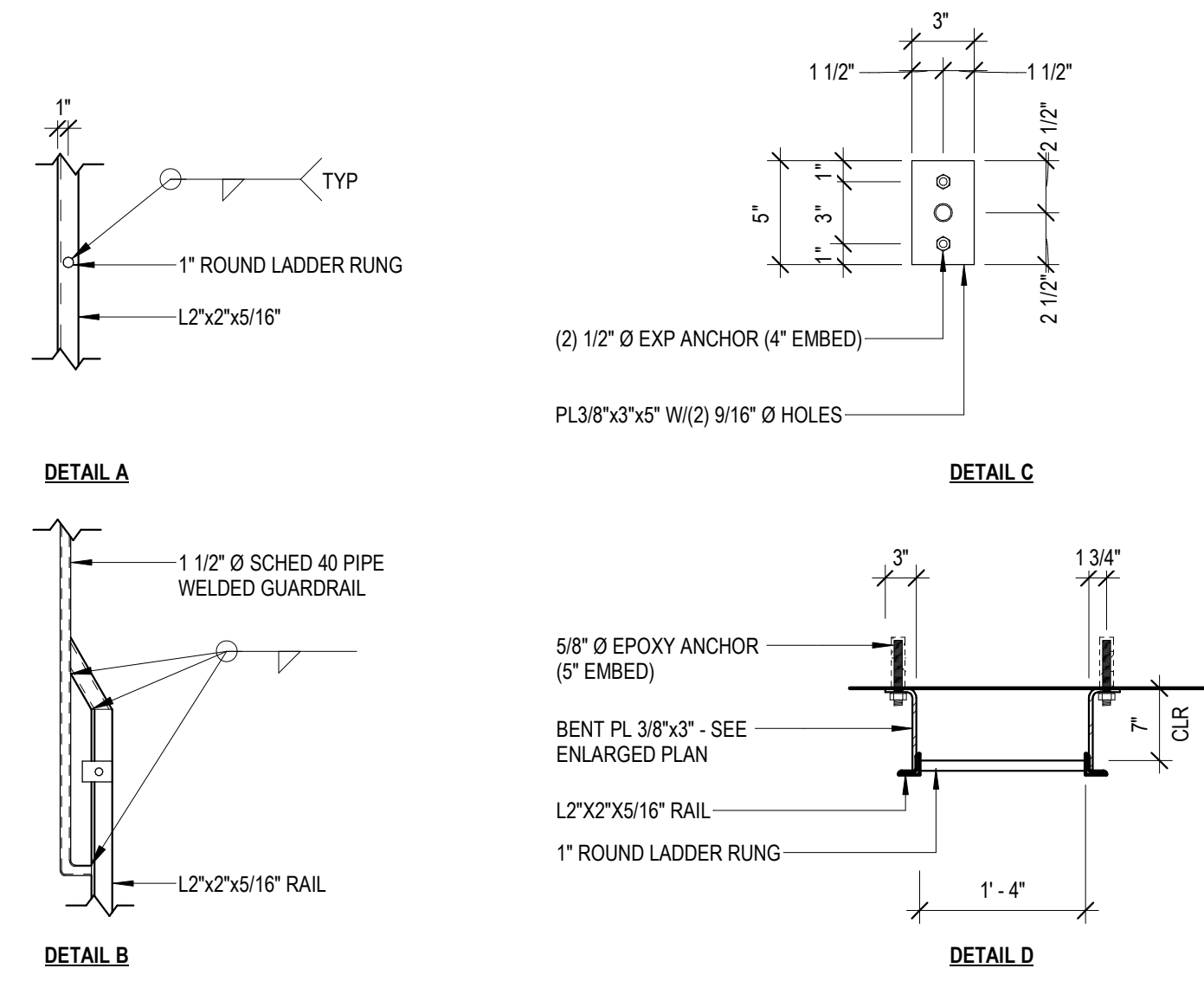
REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

FRAMING DETAILS

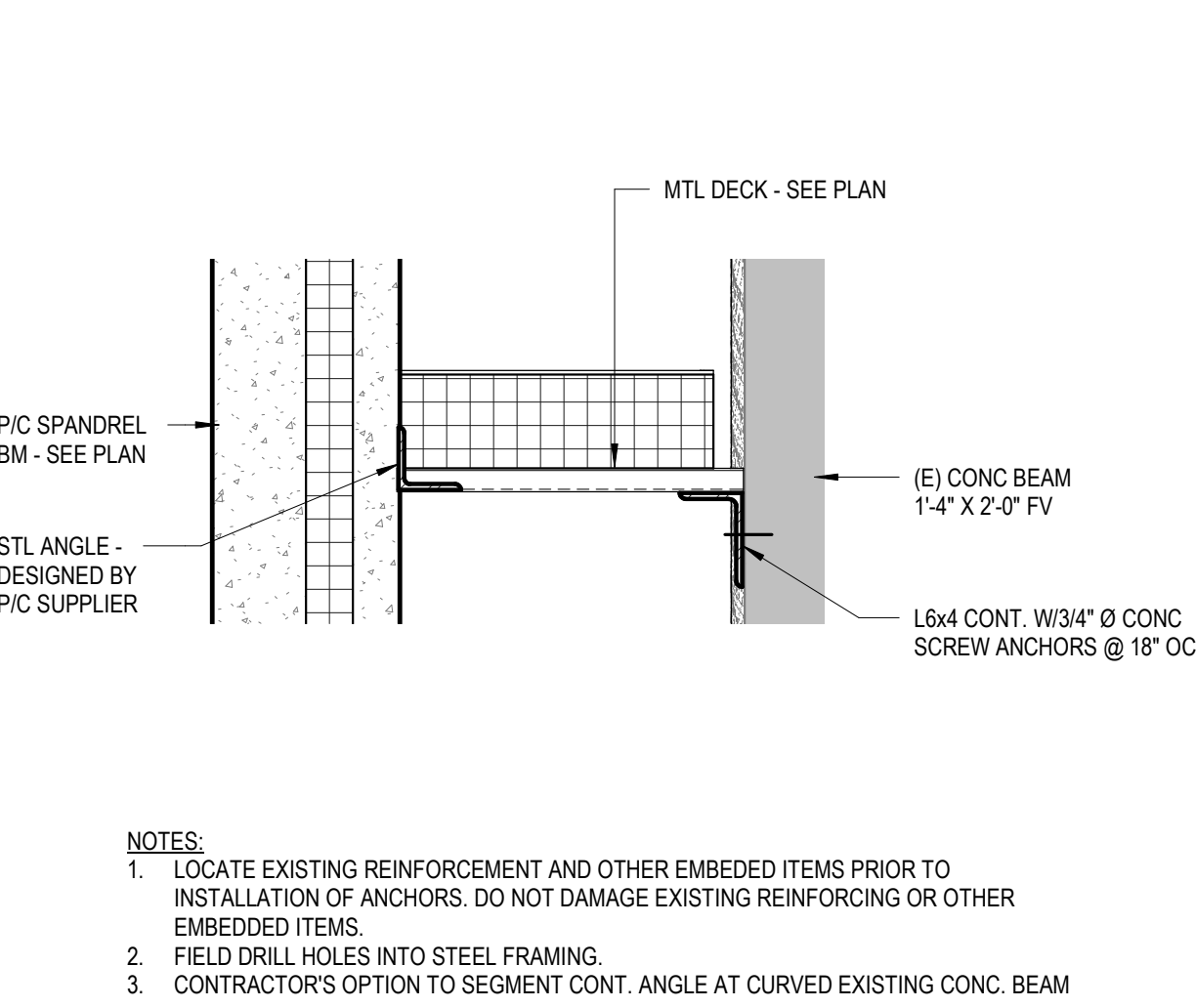
DS512



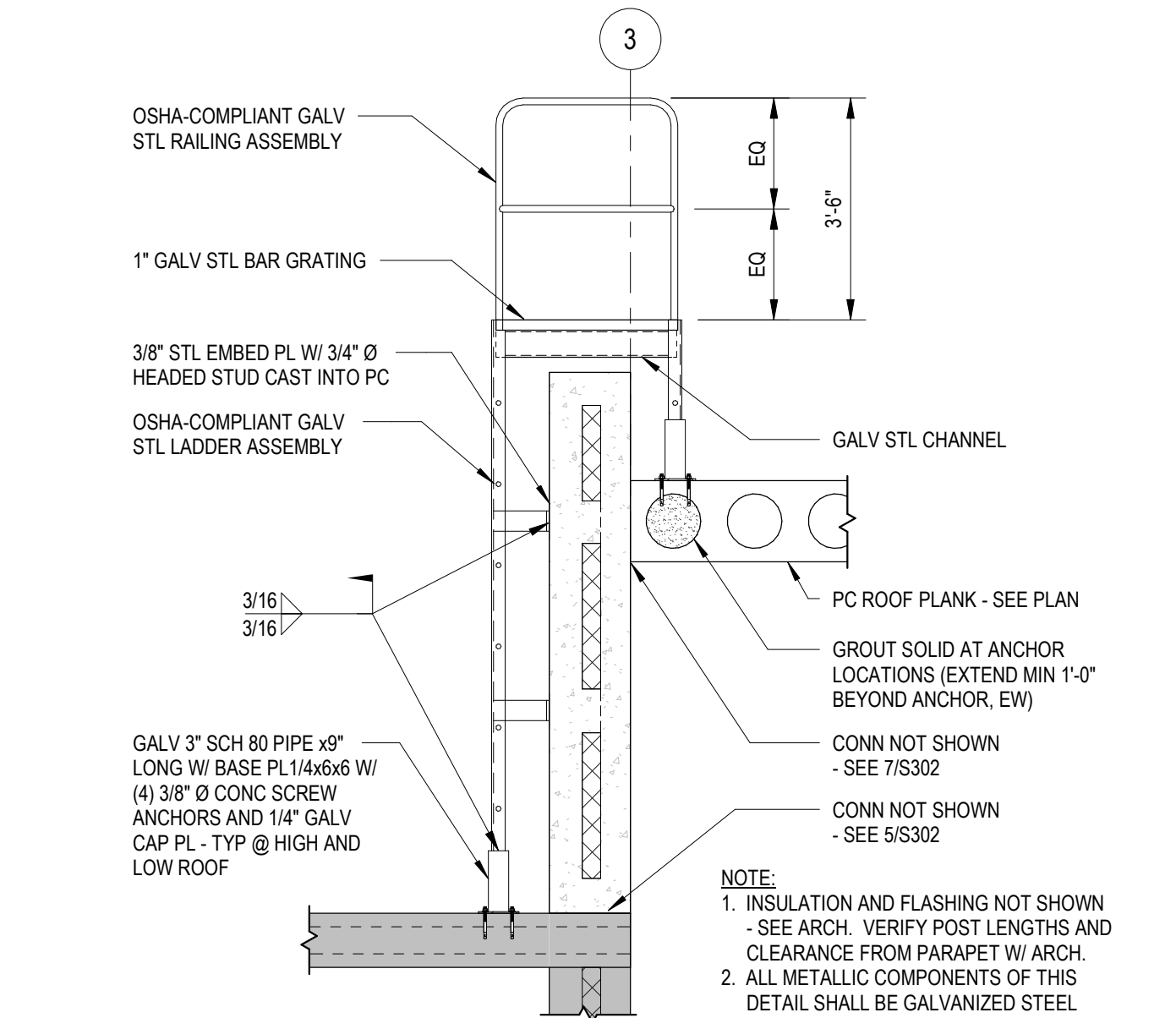
1 ALUMINUM LADDER DETAIL
DS531 NOT TO SCALE



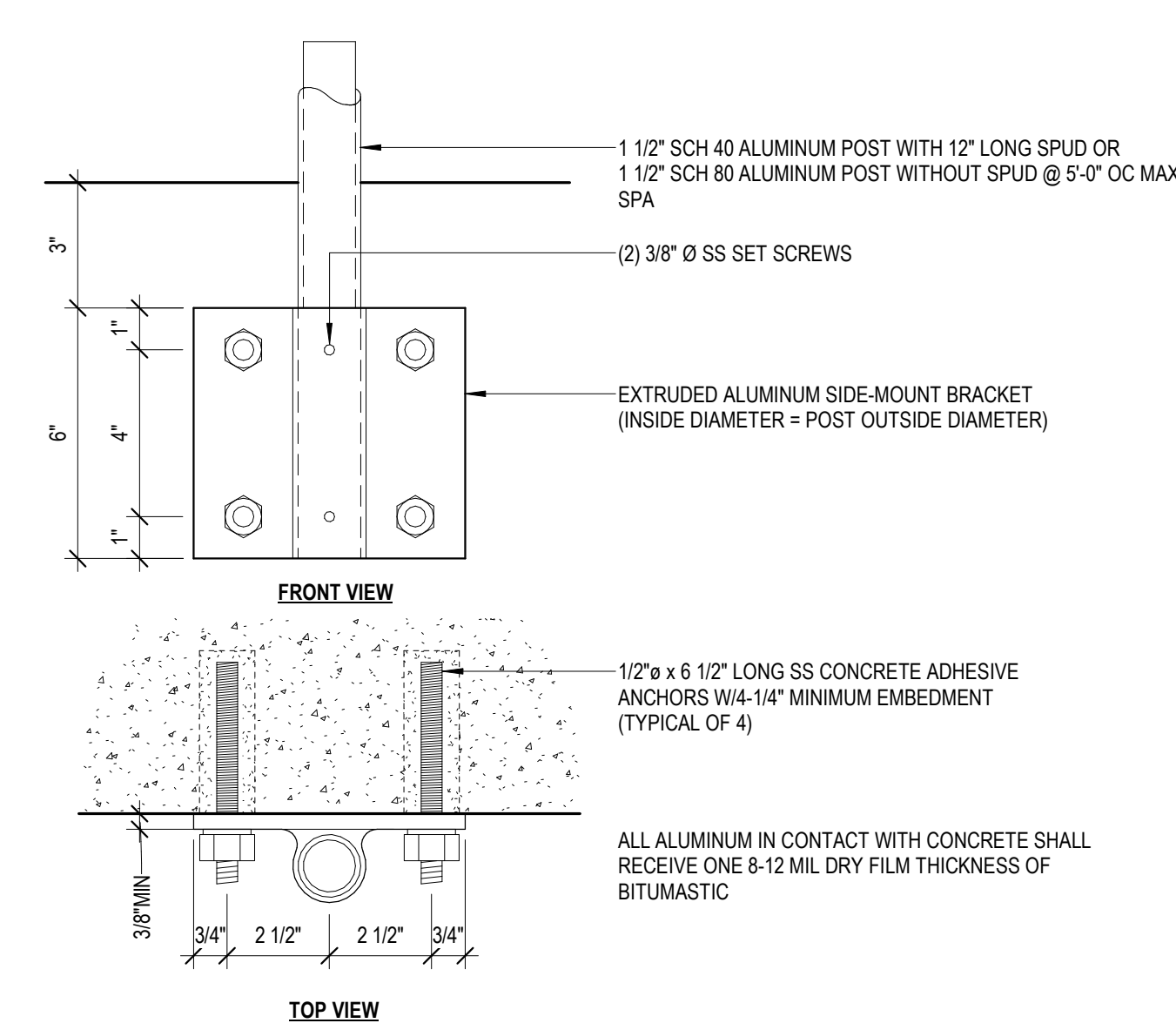
2 FRP LADDER DETAIL
DS531 NOT TO SCALE



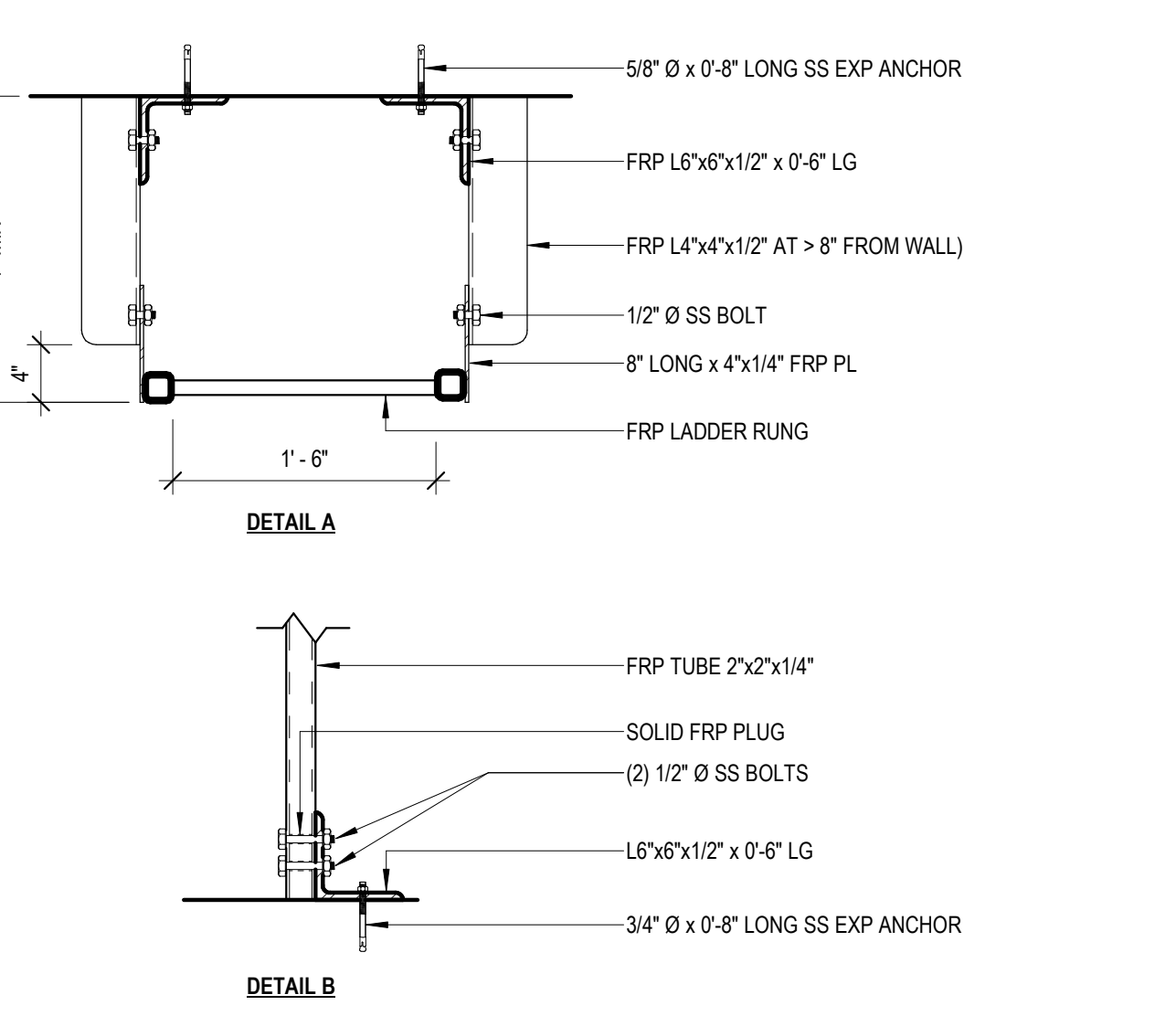
3 SECTION
DS531 NOT TO SCALE



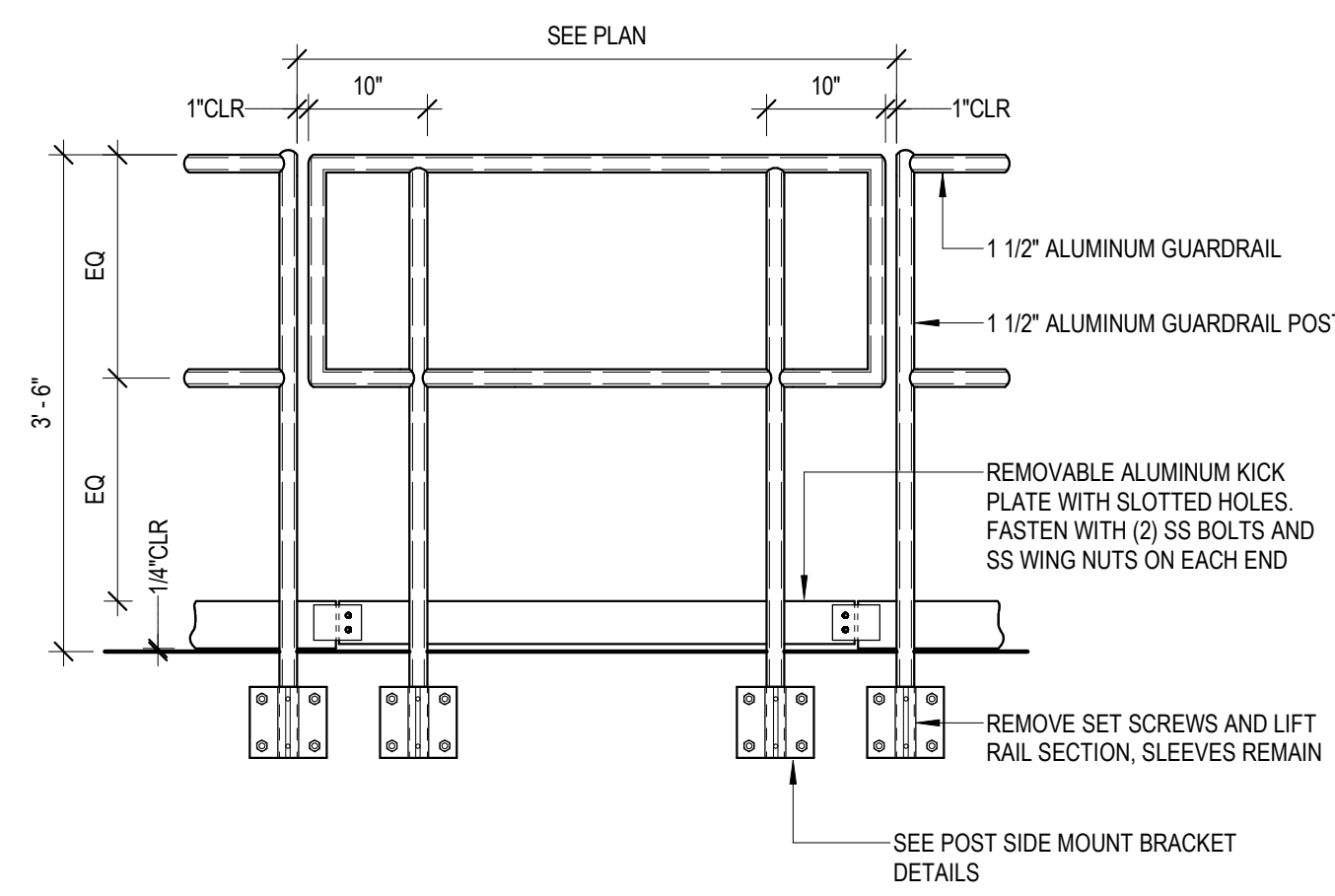
4 LADDER CONNECTION DETAIL
DS531 NOT TO SCALE



5 ALUM POST SIDE-MOUNT BRACKET
DS531 NOT TO SCALE



6 ALUM POST SIDE-MOUNT BRACKET AT REMOVABLE SECTION
DS531 NOT TO SCALE



7 ALUMINUM REMOVABLE GUARDRAIL SECTION (2 RAILS)
DS531 NOT TO SCALE



MADISON WATER UTILITY
CITY OF MADISON WATER UTILITY
119 E OLIN AVE
MADISON, WI 53713

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION
2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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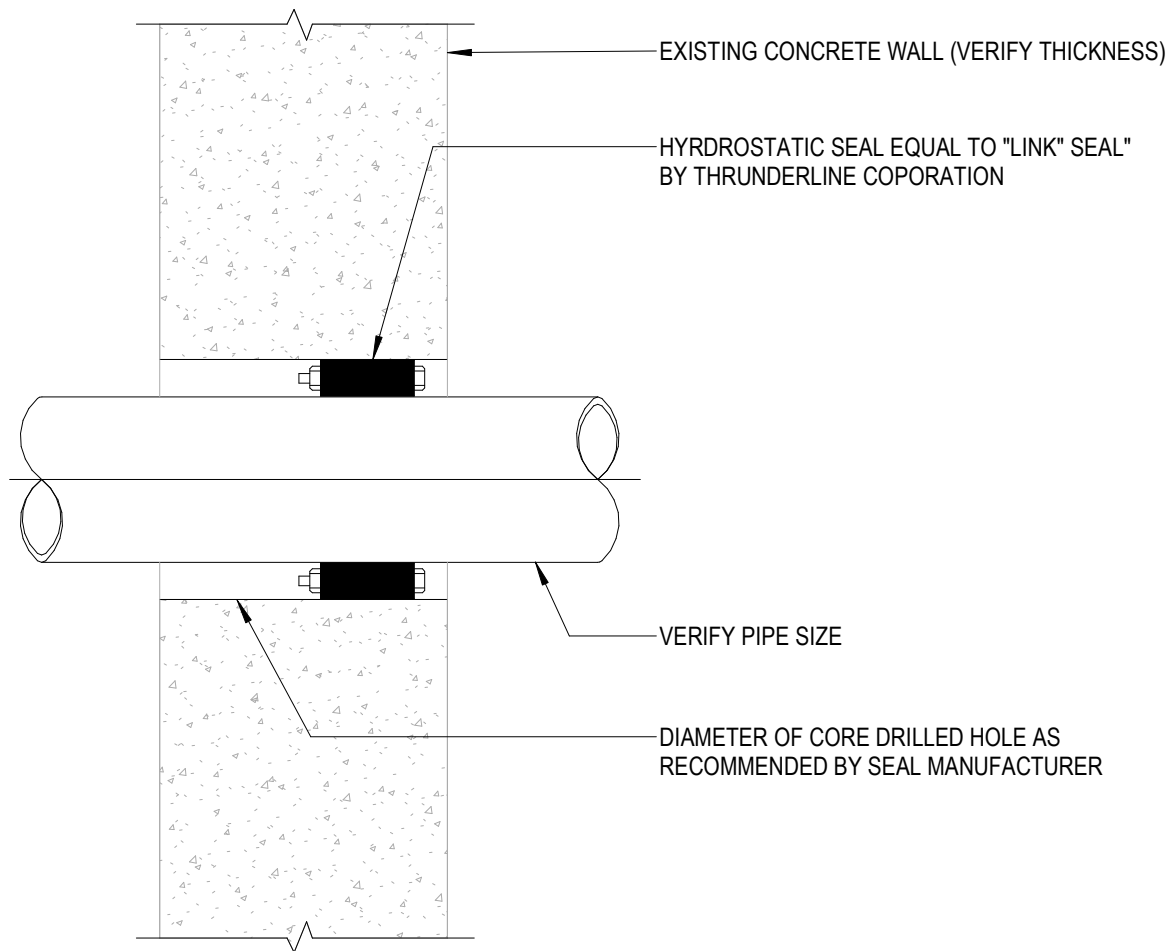
SEH Project MADWU 167818
Checked By NRD, SMJ
Drawn By ALM

Project Status BIDDING DOCUMENTS
Issue Date OCTOBER, 2023

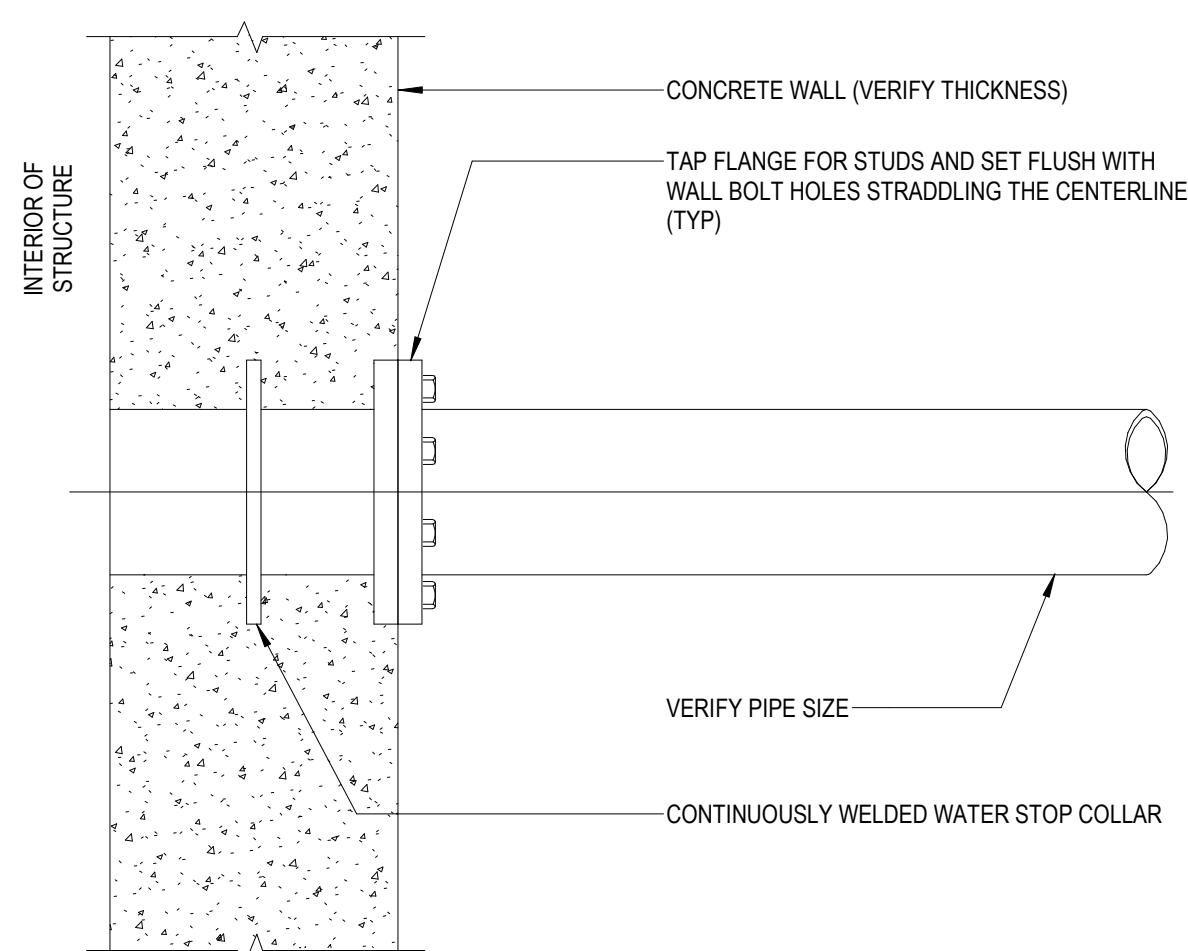
REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

STEEL DETAILS

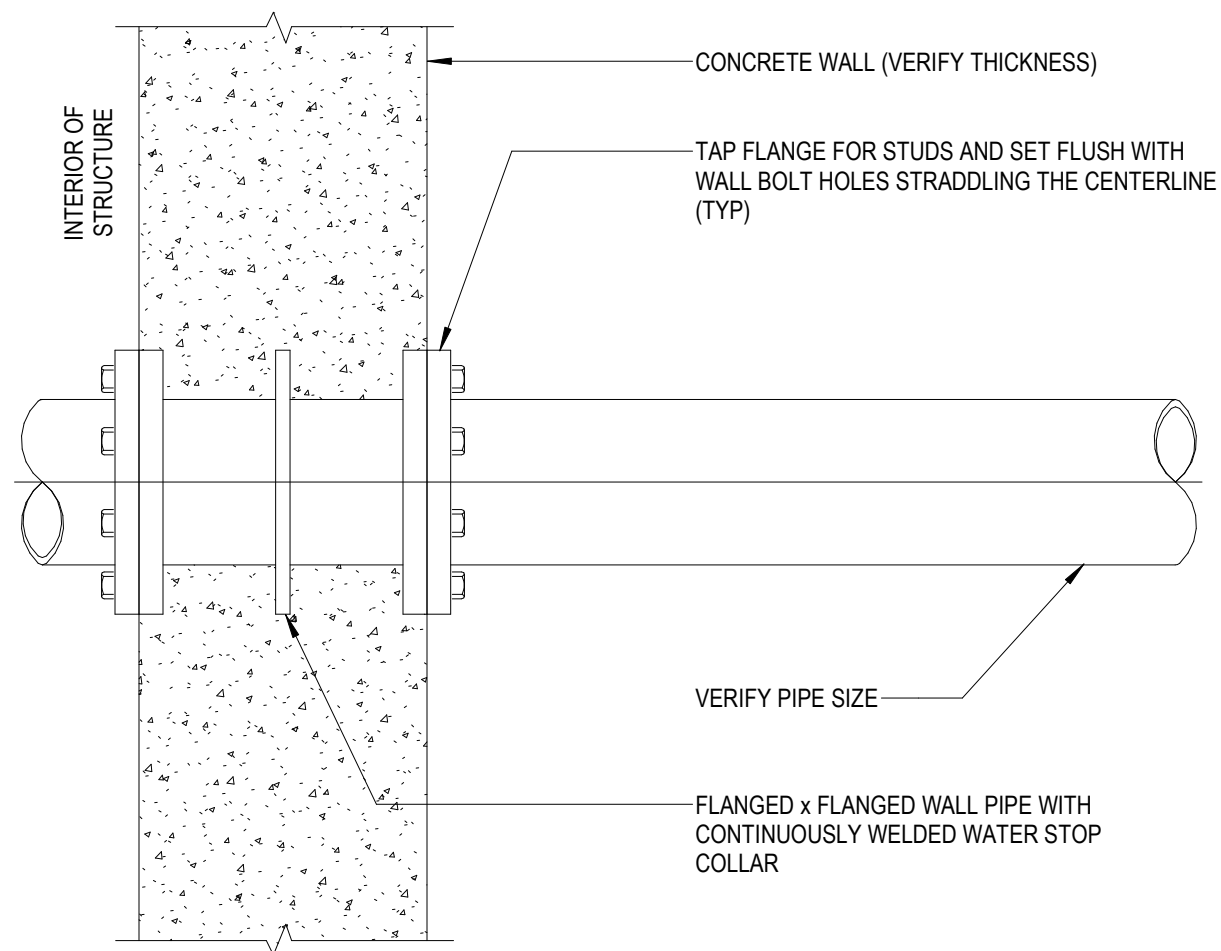
DS531



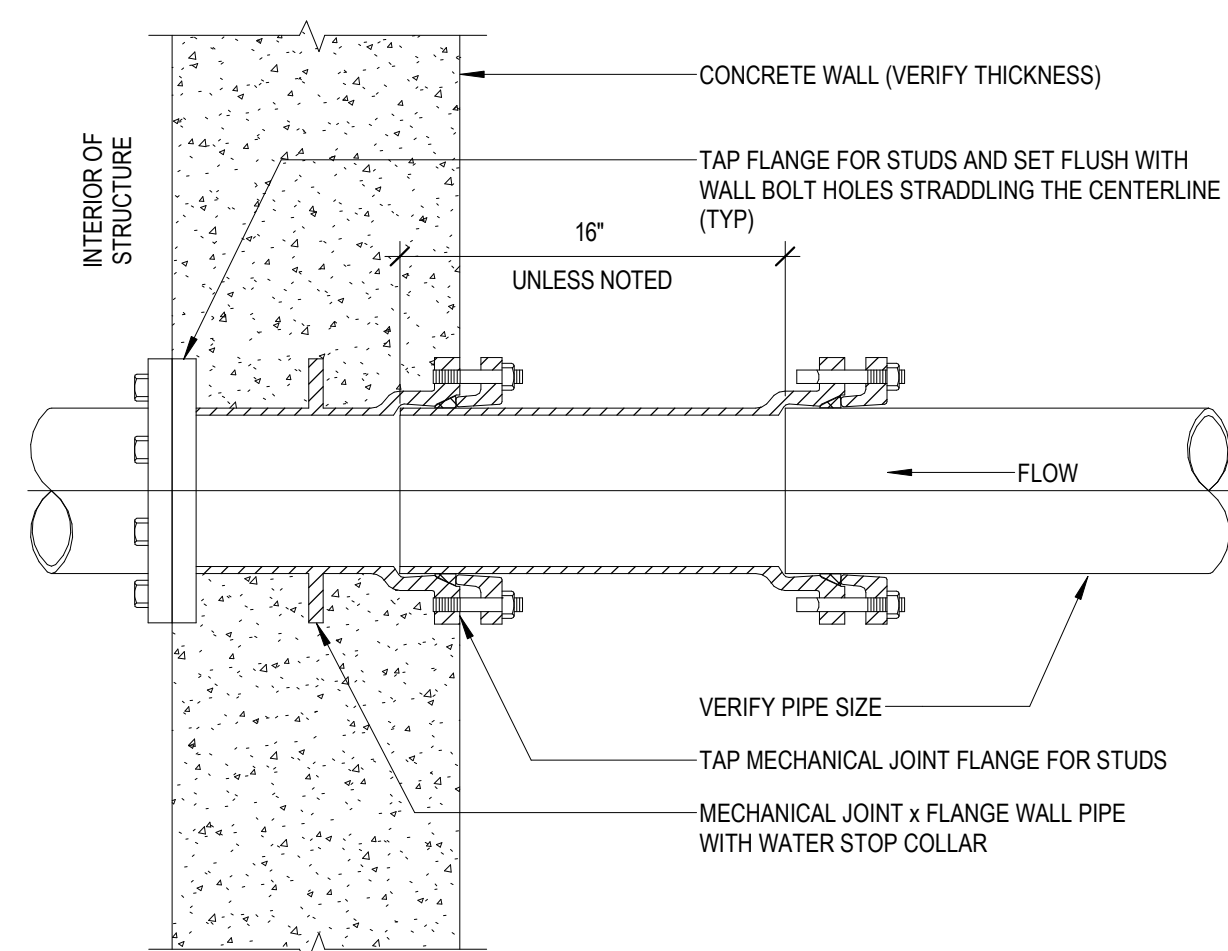
A CORE DRILLED PIPE PENETRATION DETAIL
DP501



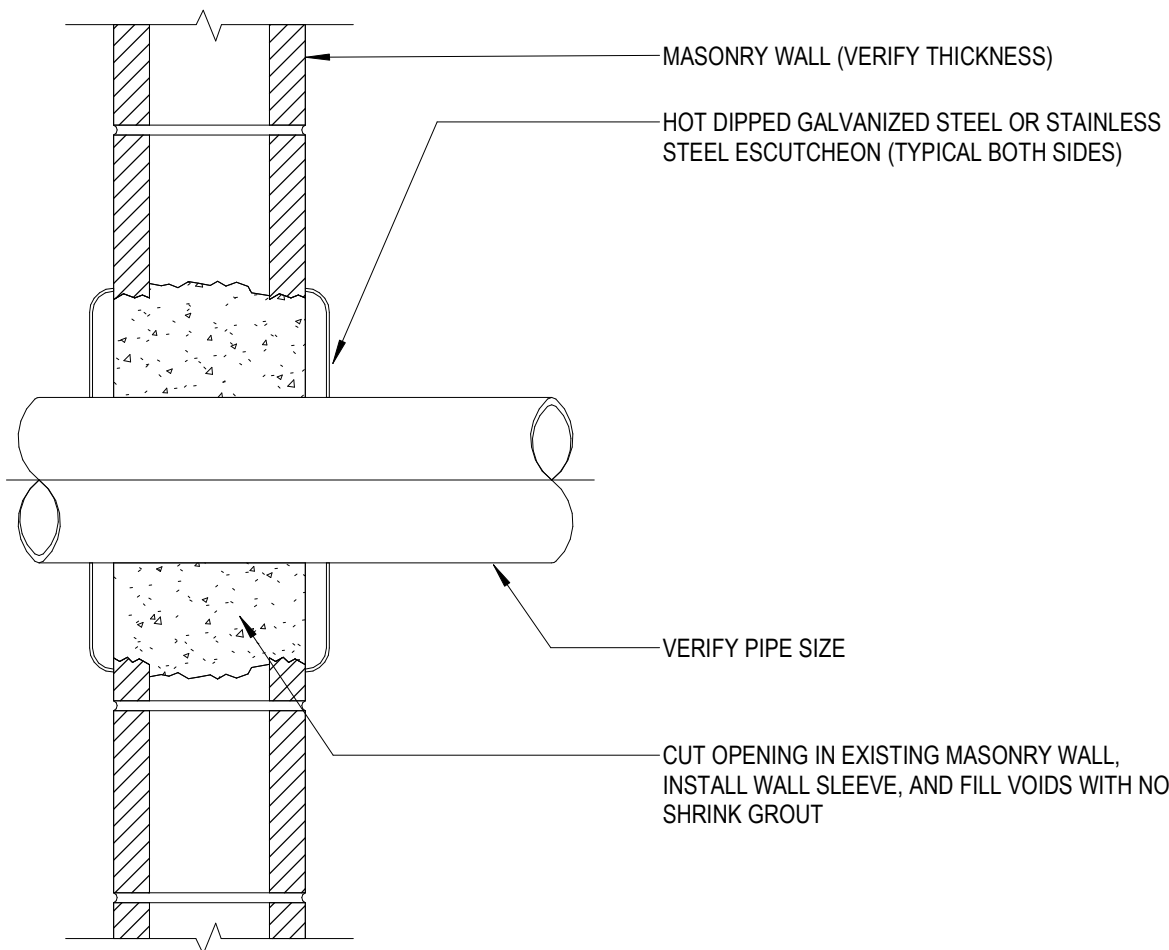
B FL x PE WALL PIPE
DP501



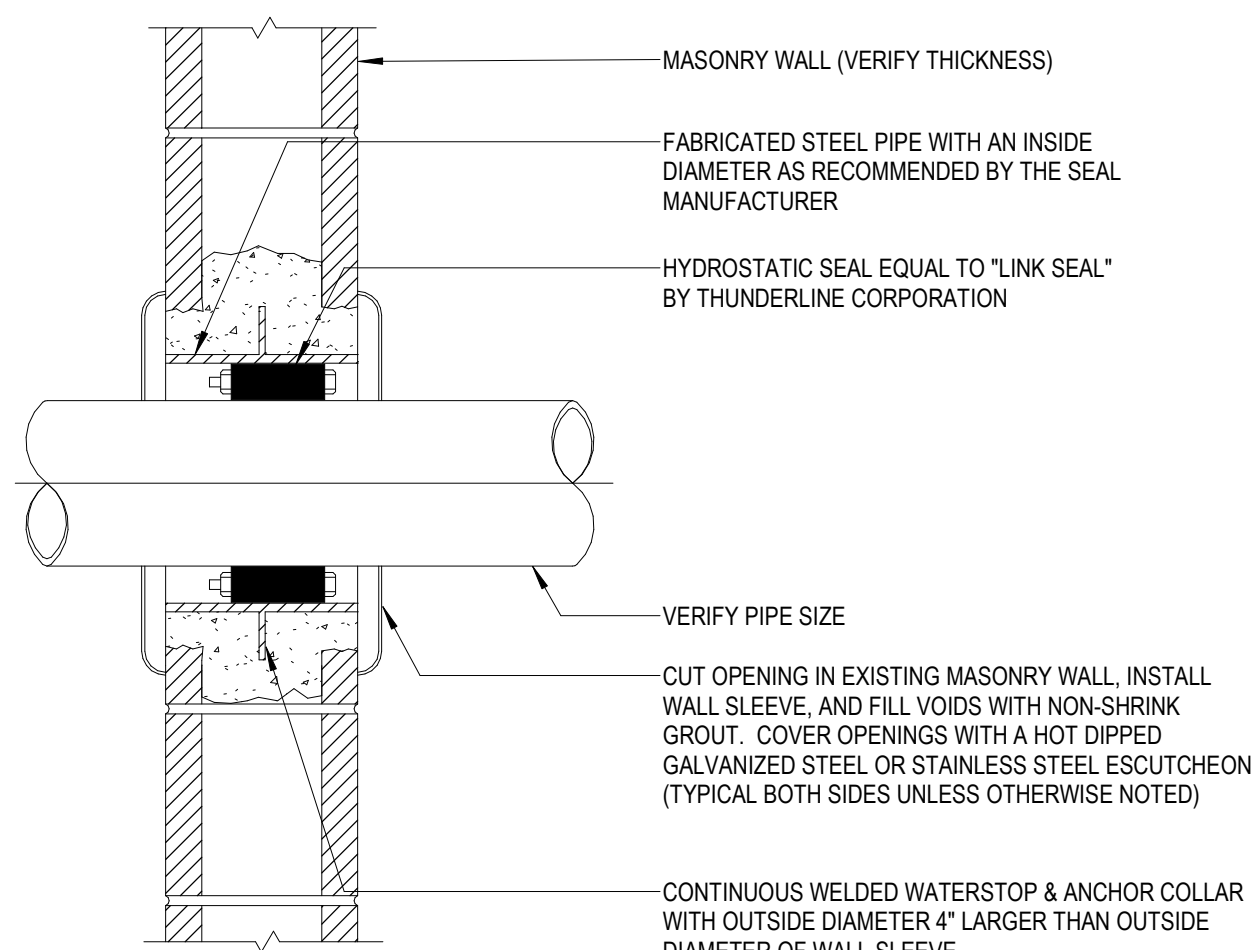
C FL x FL WALL PIPE
DP501



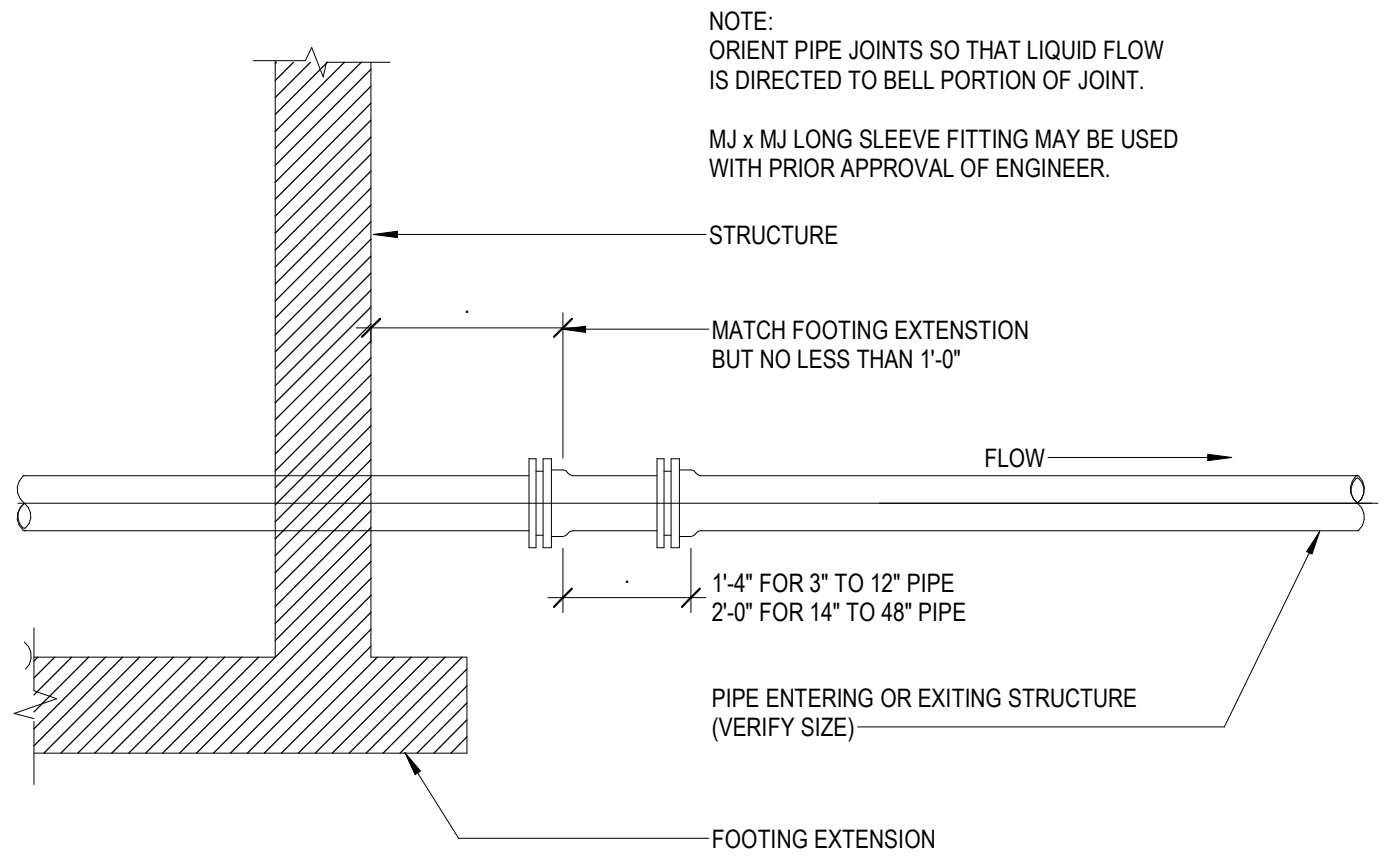
D FL x MJ WALL PIPE
DP501



E SEALED MASONRY WALL PENETRATION DETAIL
DP501

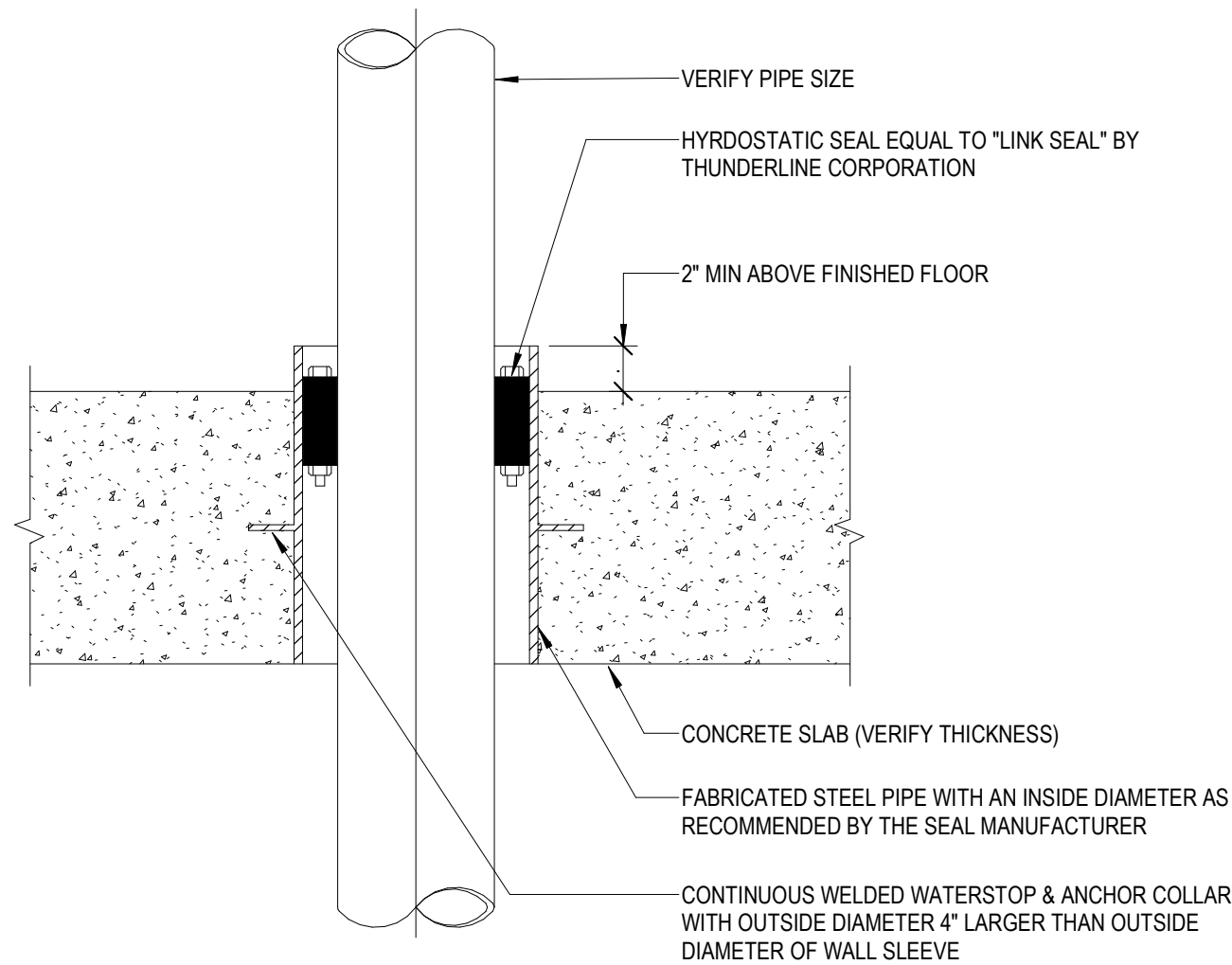


F SEALED MASONRY WALL PENETRATION - TYPE 2 DETAIL
DP501



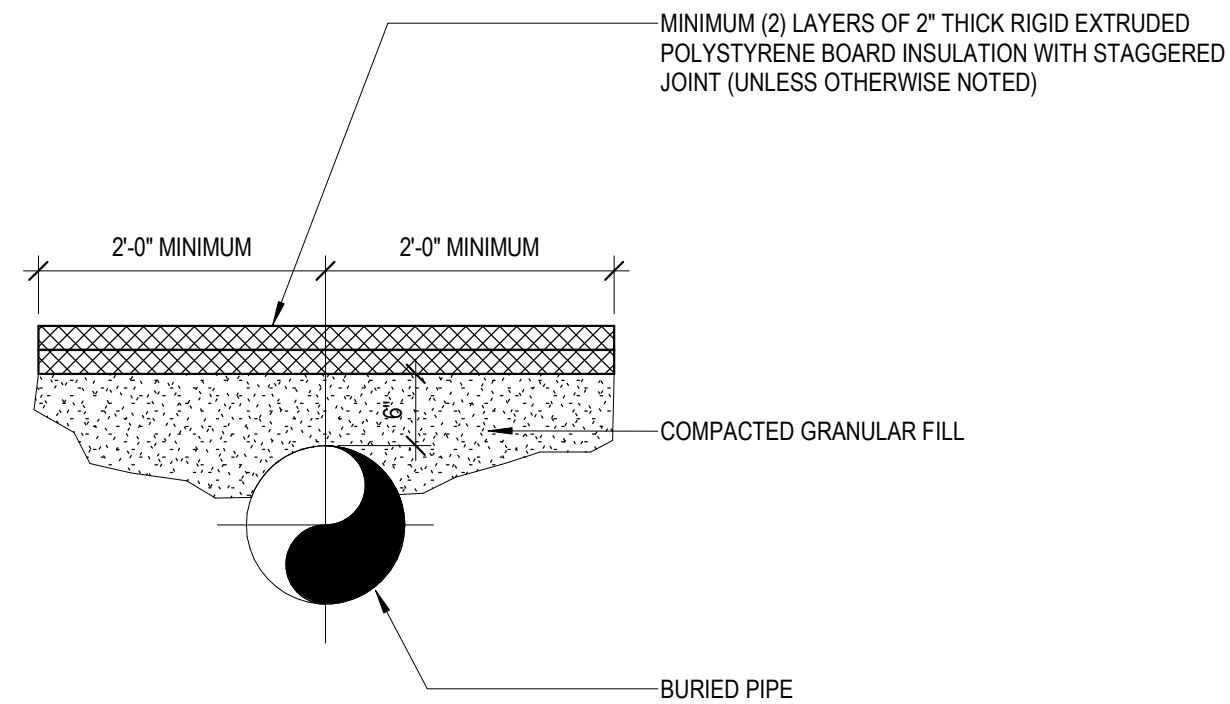
A PIPE CONNECTION - TYPE 2 DETAIL

DP502



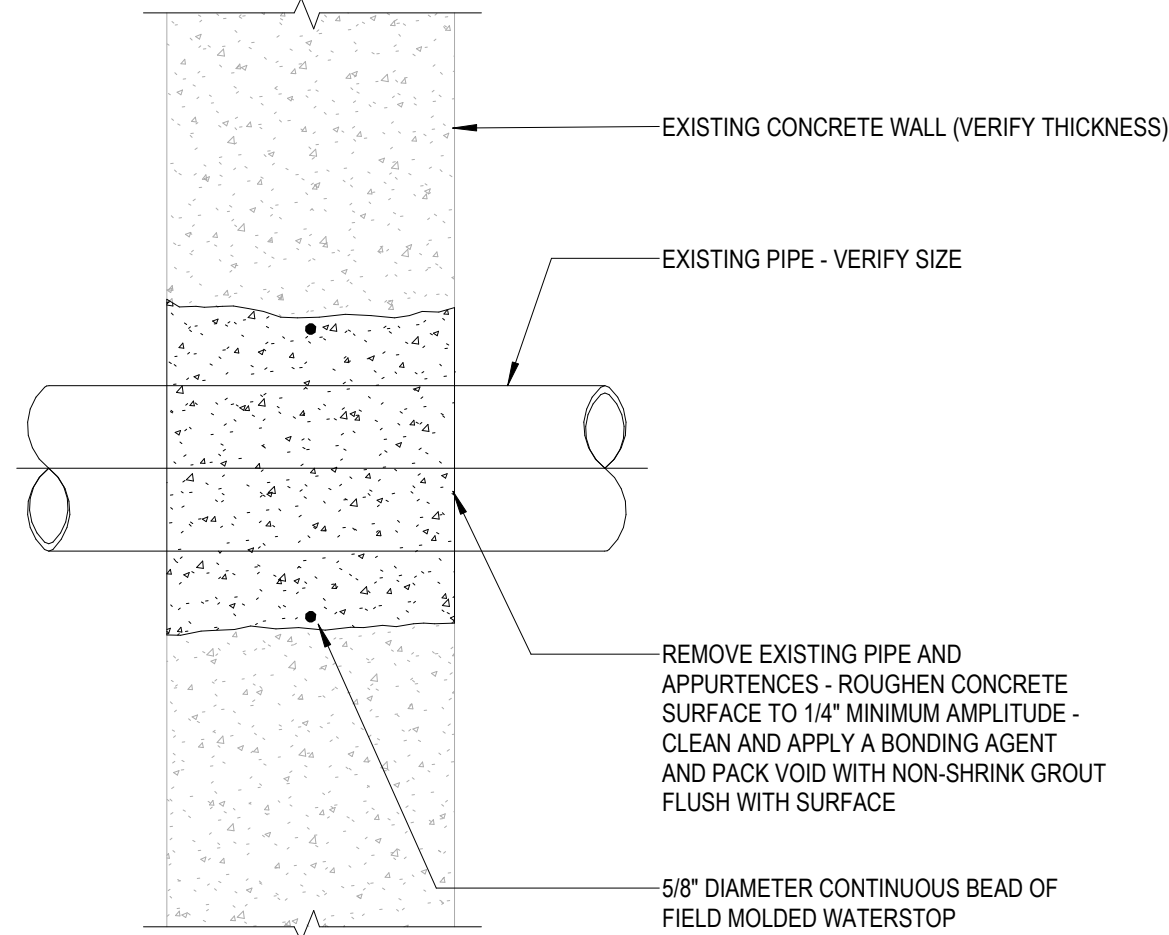
B SEALED FLOOR SLEEVE DETAIL

DP502



C PIPE INSULATION DETAIL

DP502



D EXISTING PIPE OPENING PATCH DETAIL

DP502



NOTES:

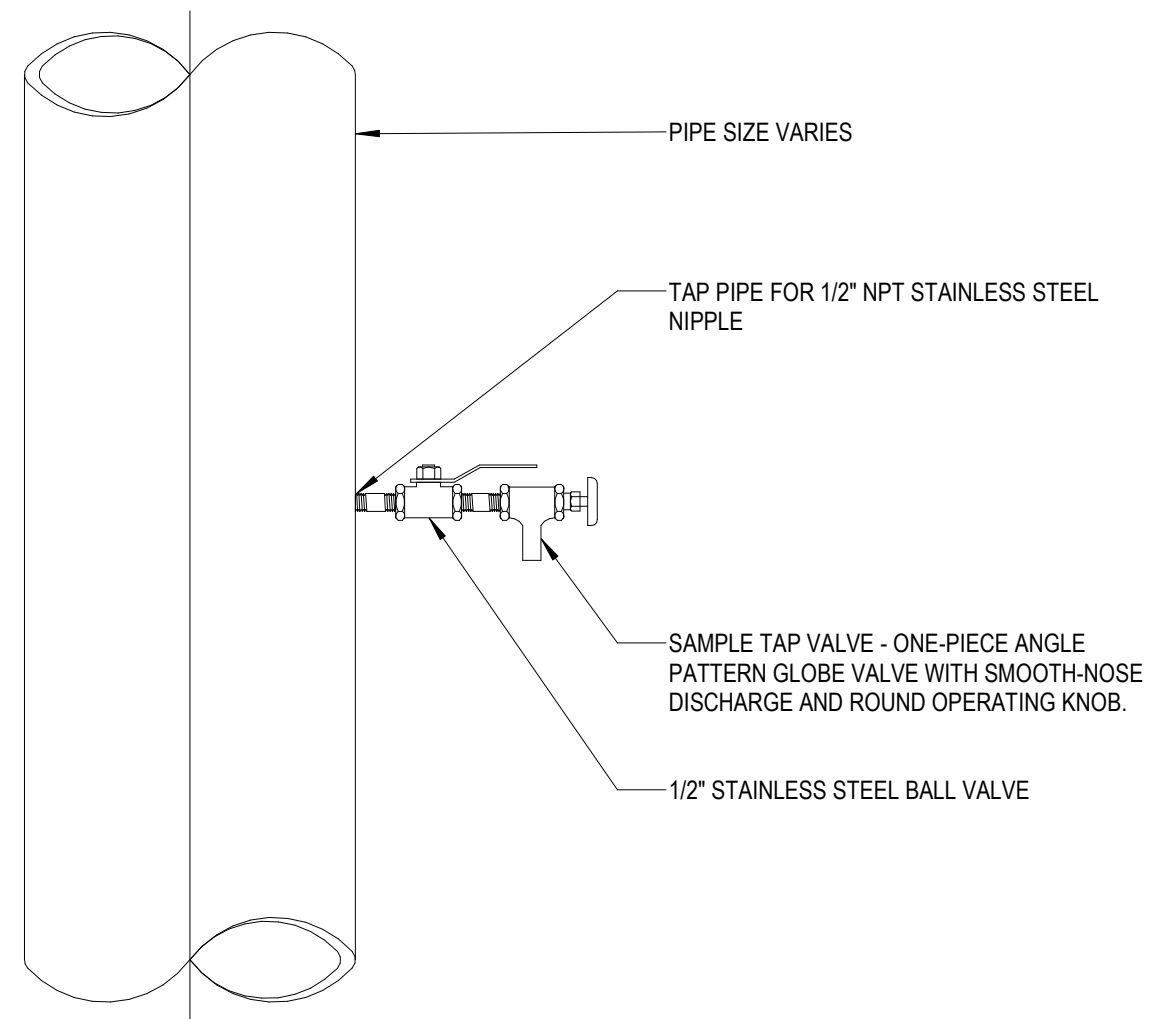
1. PLACE BETWEEN FITTING AND UNDISTURBED TRENCH WALL
2. MINIMUM THICKNESS: 12 INCHES
3. MINIMUM AREA IN SQUARE FEET SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

THRUST BLOCKING				
PIPE SIZE	TEE OR PLUG	1/4 BEND	1/32 AND 1/8 BEND	1/16 BEND
6"	2.9	3.1	1.6	0.8
8"	3.7	5.3	2.9	1.4
10"	5.7	8.1	4.4	2.2
12"	8.1	13.4	6.6	3.2
16"	15.1	21.4	11.6	5.9
20"	23.2	30.2	18.1	9.3
24"	33.6	48.5	26.1	13.3

4. SIZE BLOCKING BASED ON LARGER PIPE
5. VERIFY THAT BOLTS ARE ACCESSIBLE AFTER CONCRETE IS POURED

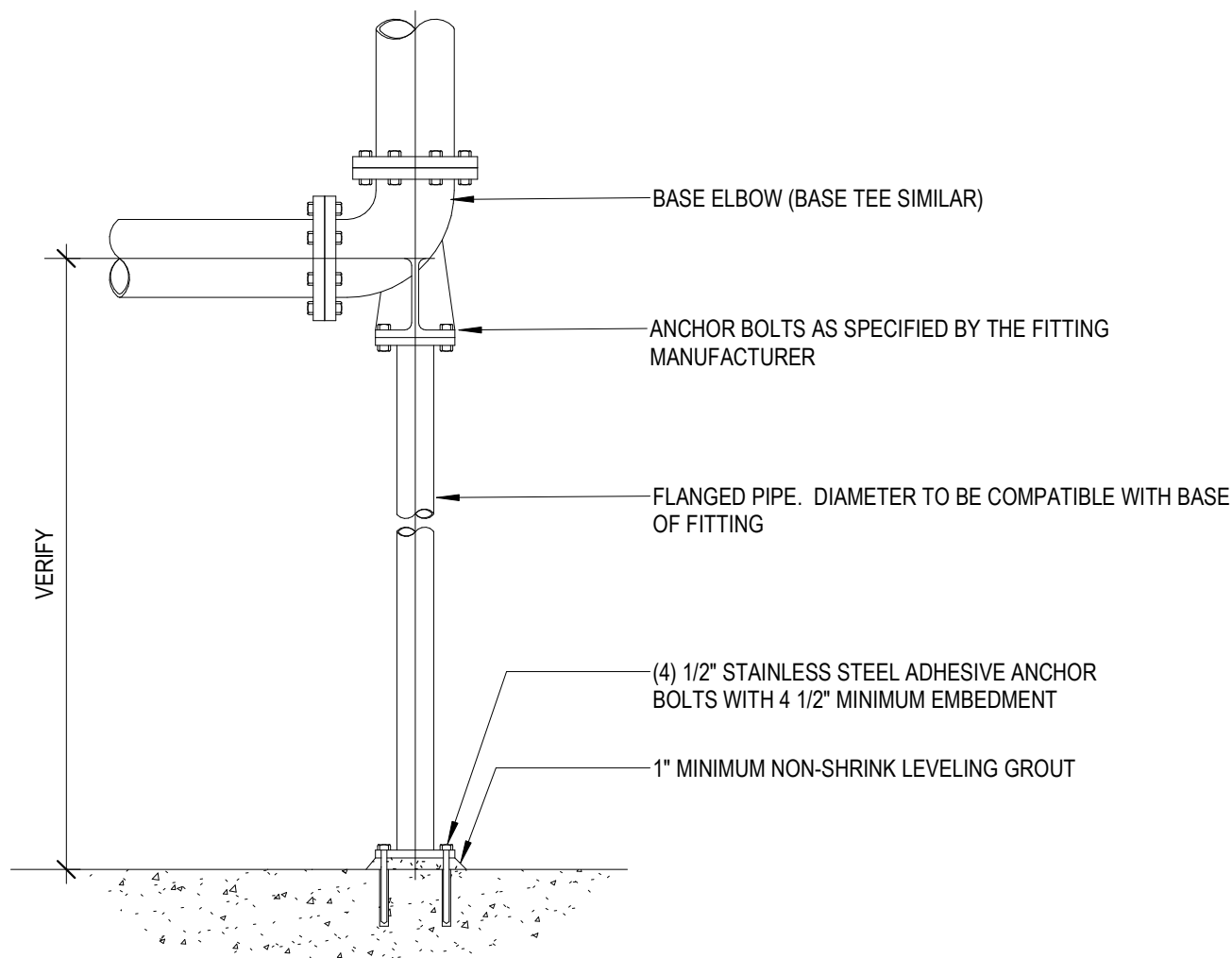
E CONCRETE THRUST BLOCKING DETAIL

DP502



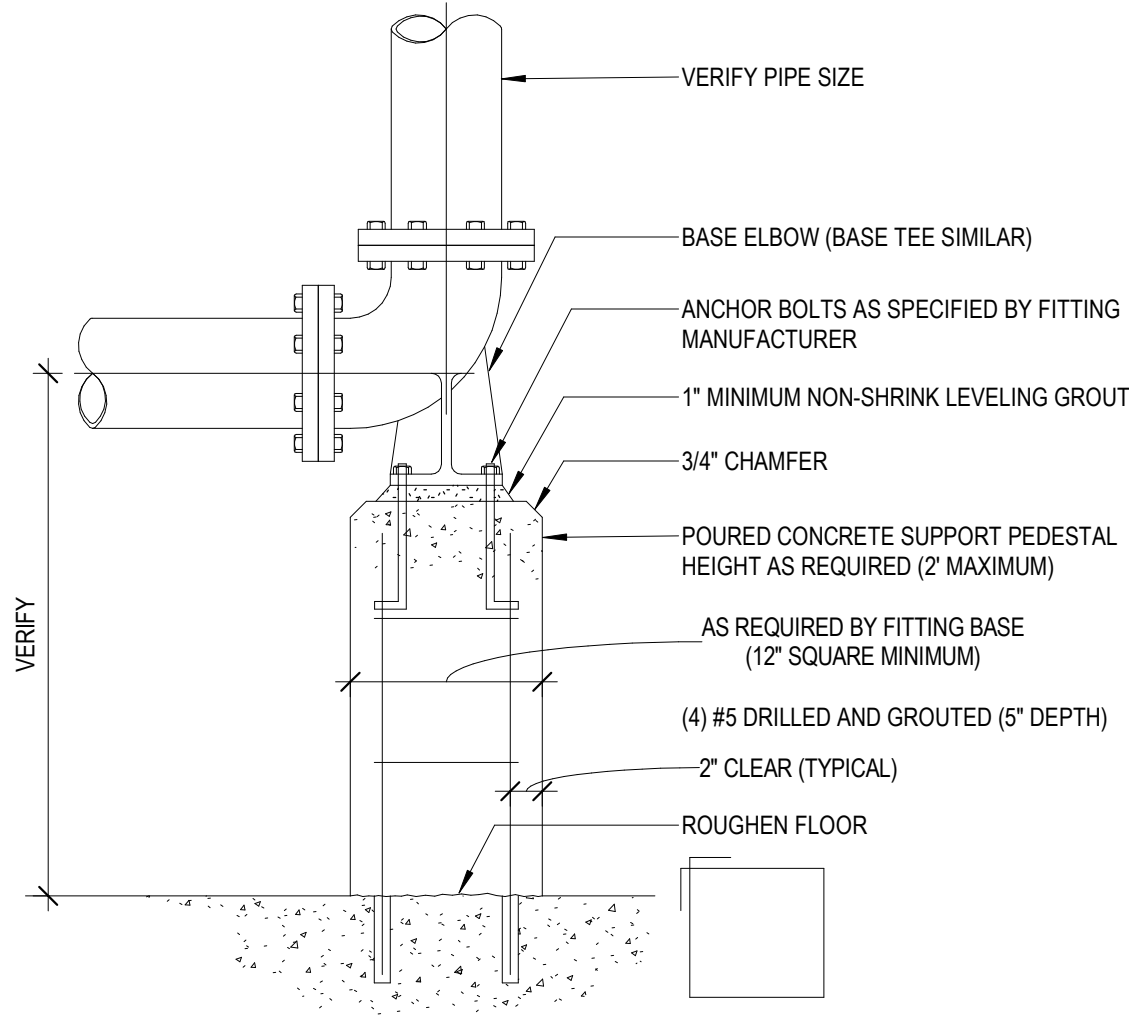
F SAMPLE TAP-1

DP502



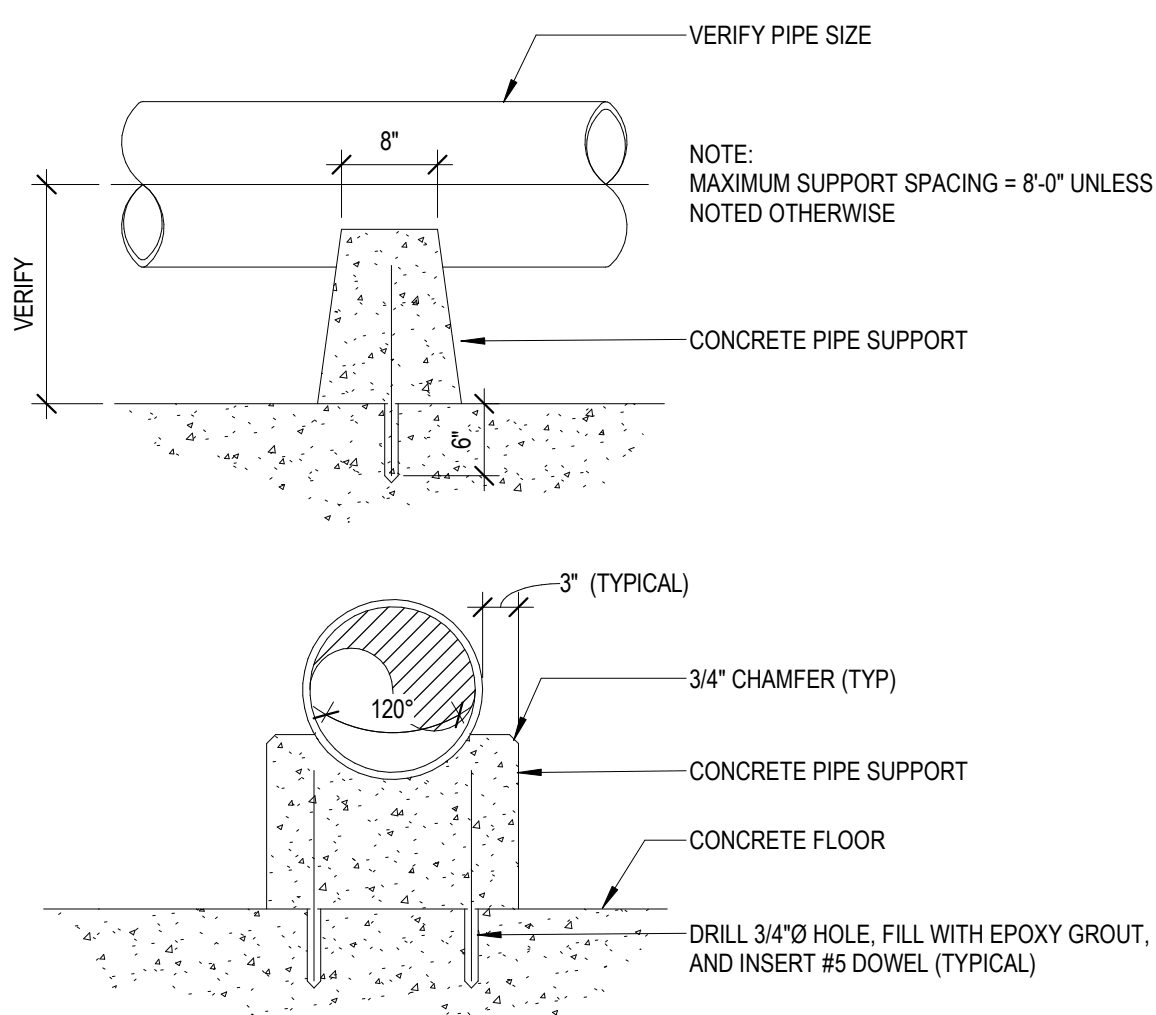
A BASE BEND SUPPORT - TYPE 1 DETAIL

DP503



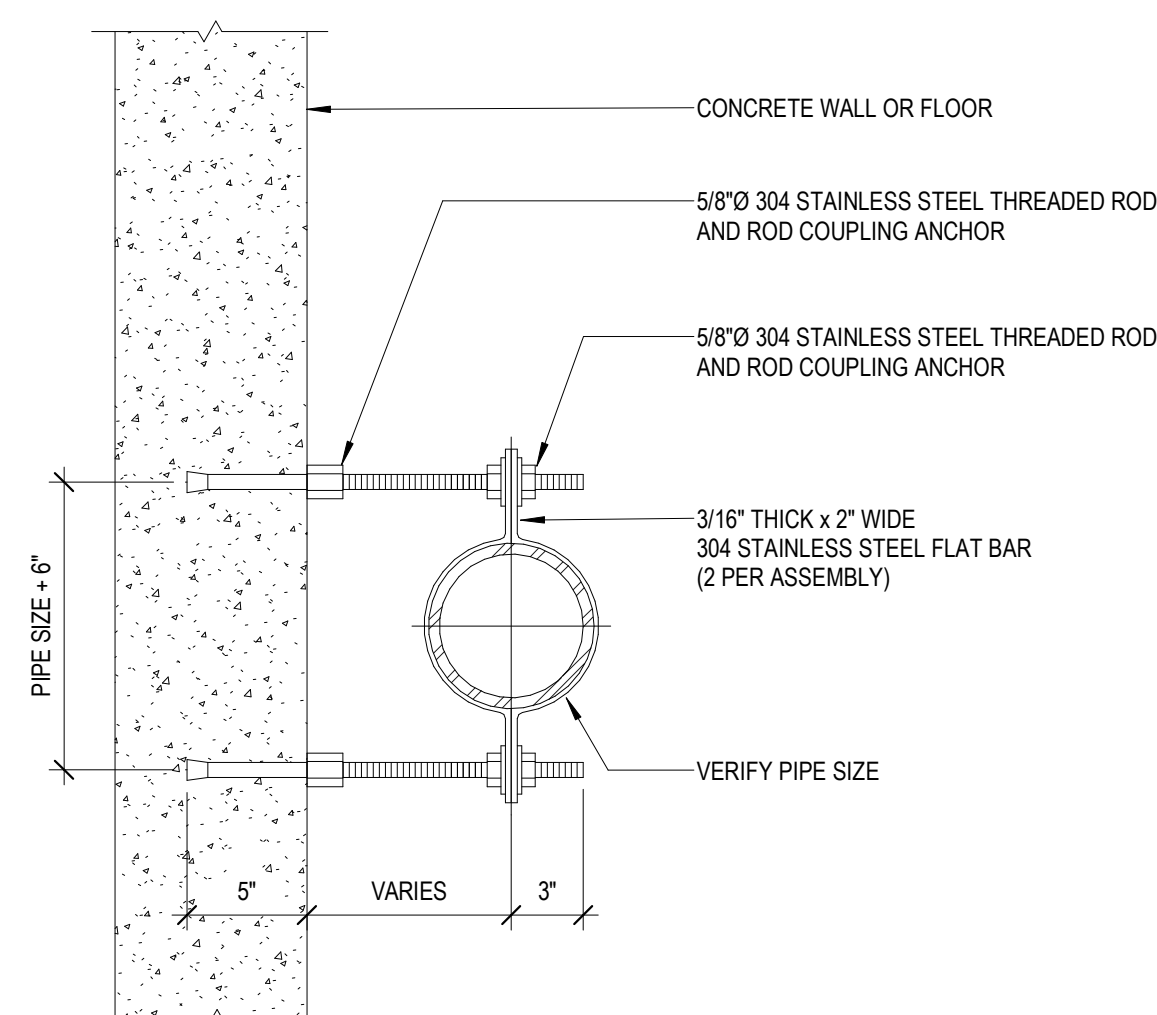
B BASE BEND SUPPORT - TYPE 2 DETAIL

DP503



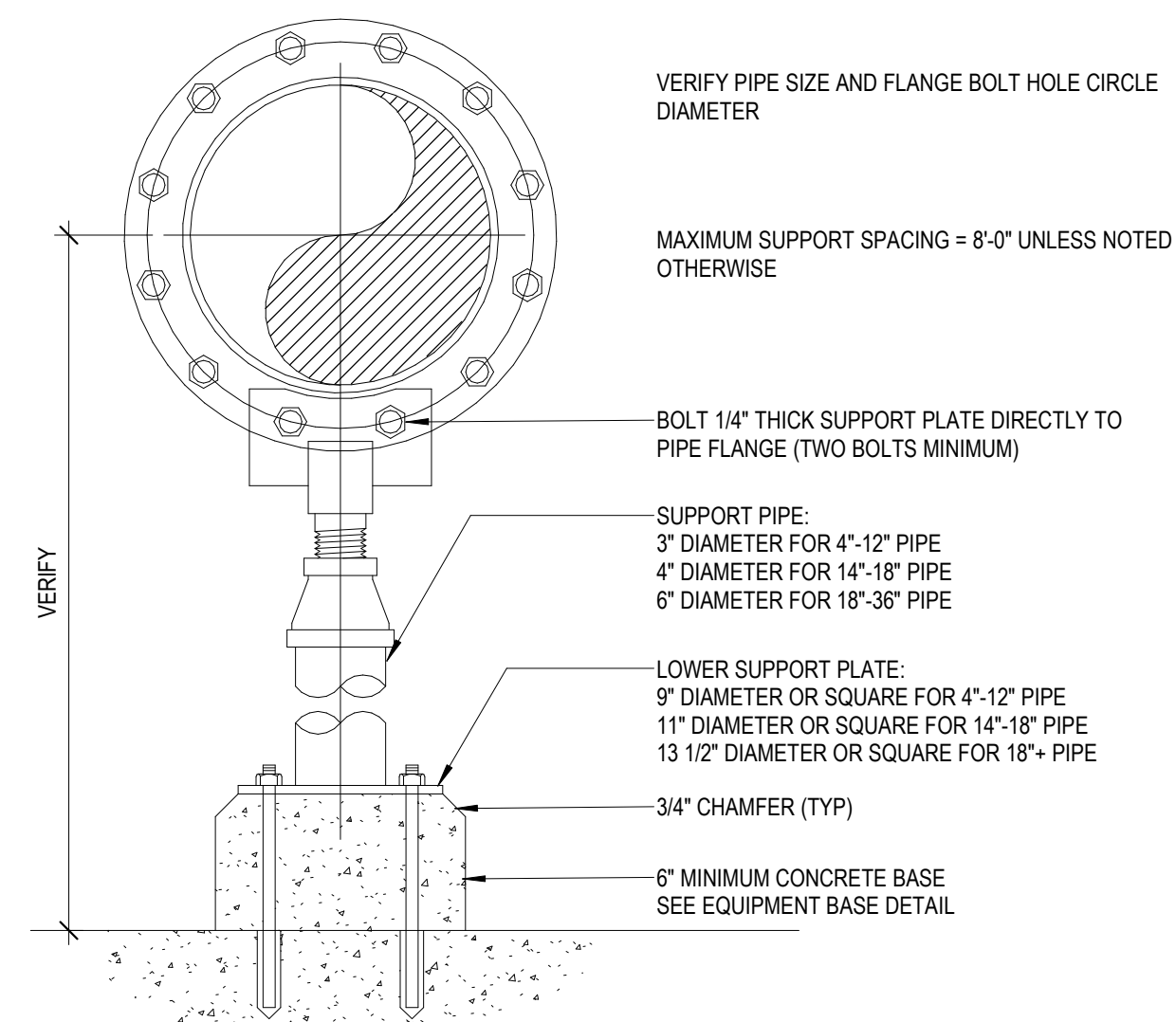
C CONCRETE PIPE SUPPORT DETAIL

DP503



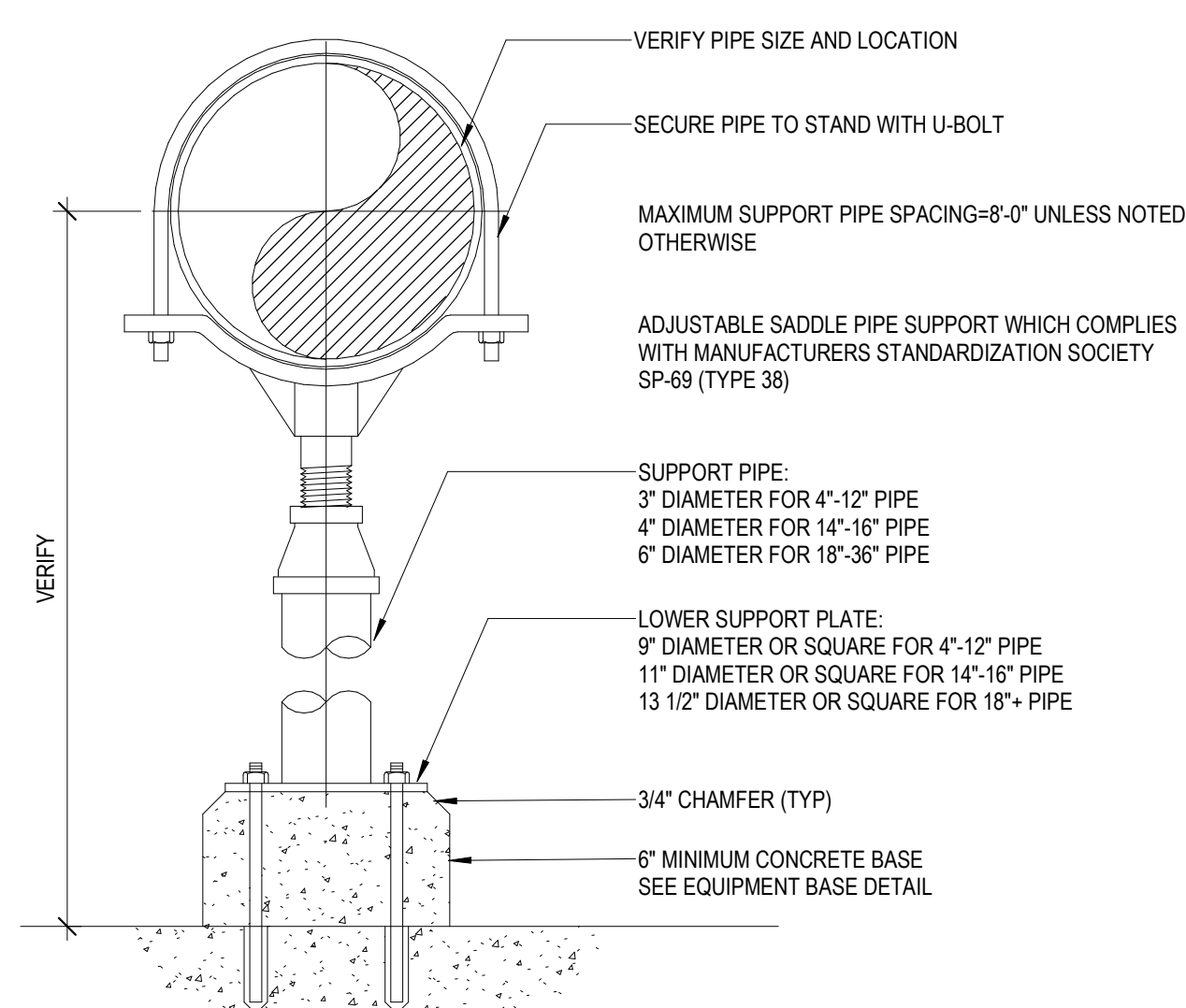
D PIPE SUPPORT FROM WALL DETAIL

DP503



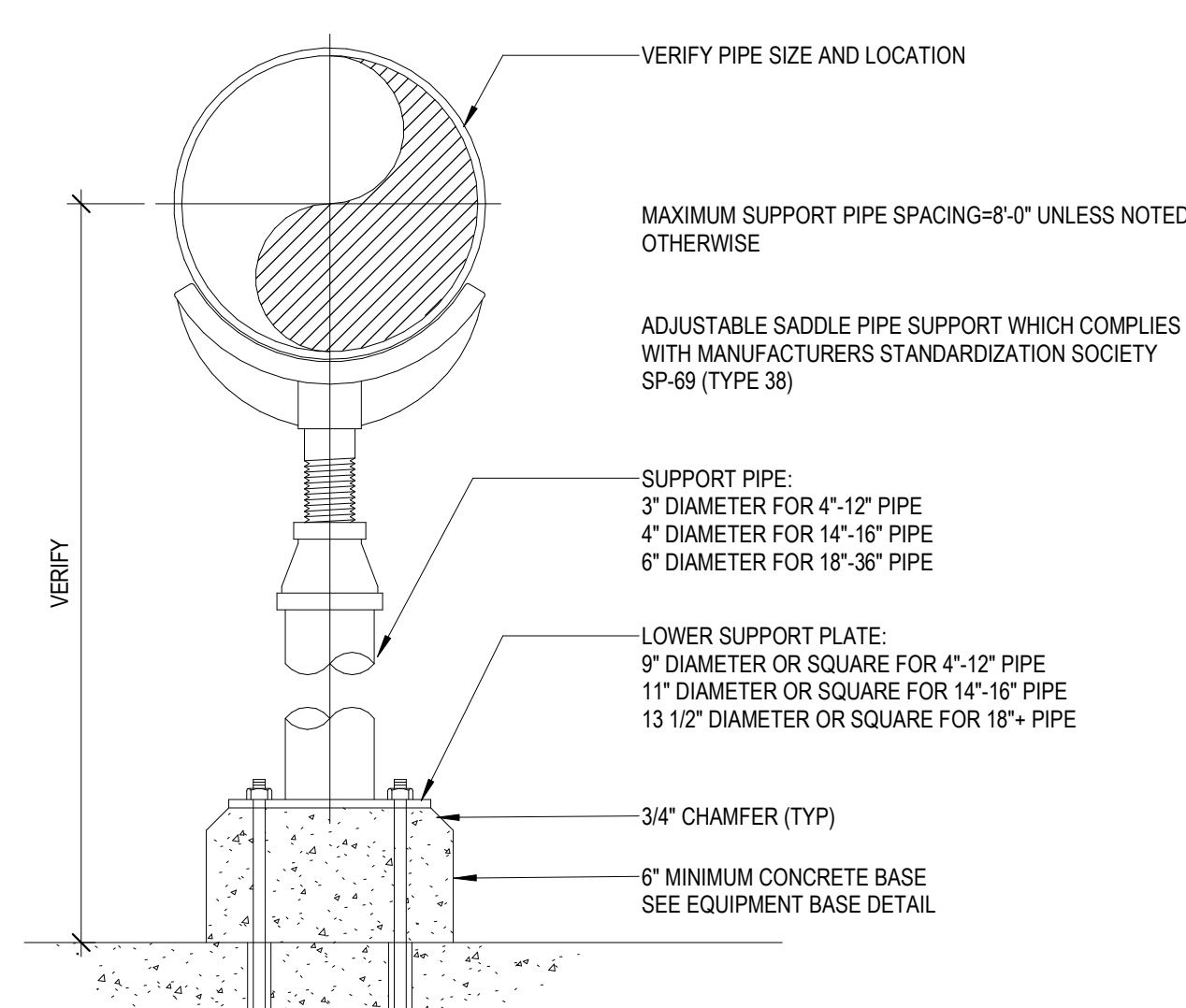
E PIPE SUPPORT FROM FLOOR - TYPE 1 DETAIL

DP503



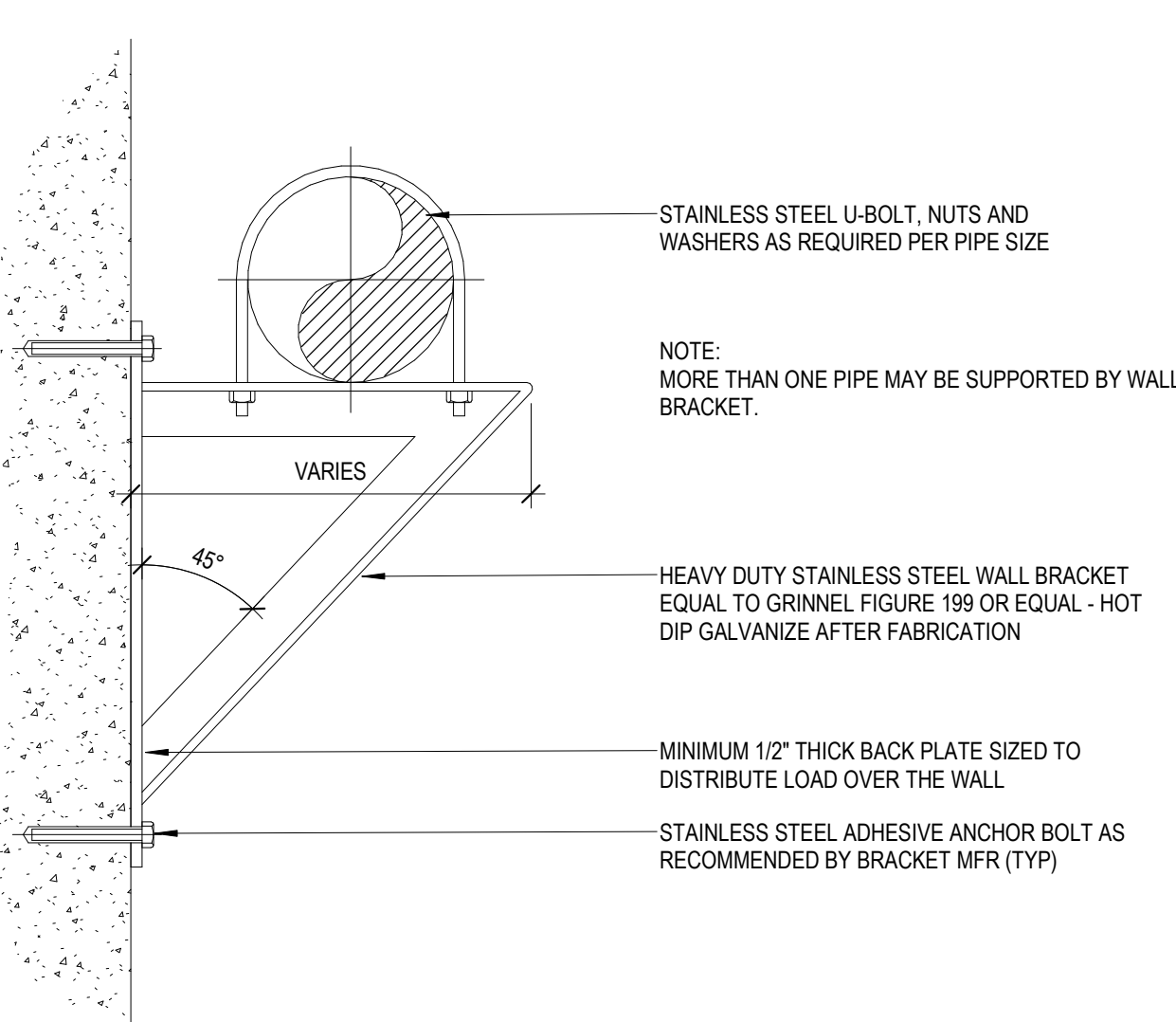
F PIPE SUPPORT FROM FLOOR - TYPE 2 DETAIL

DP503



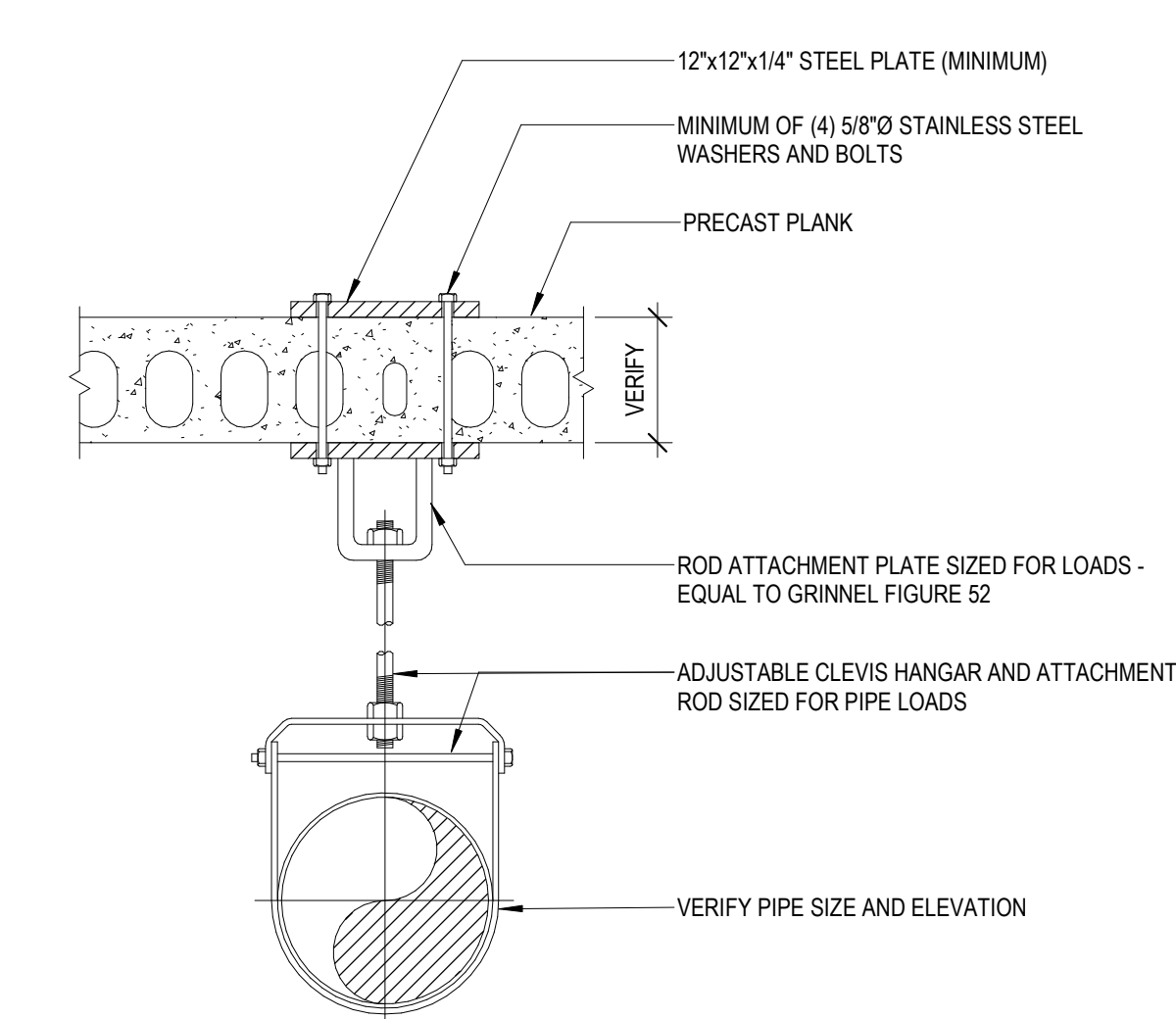
G PIPE SUPPORT FROM FLOOR - TYPE 3 DETAIL

DP503



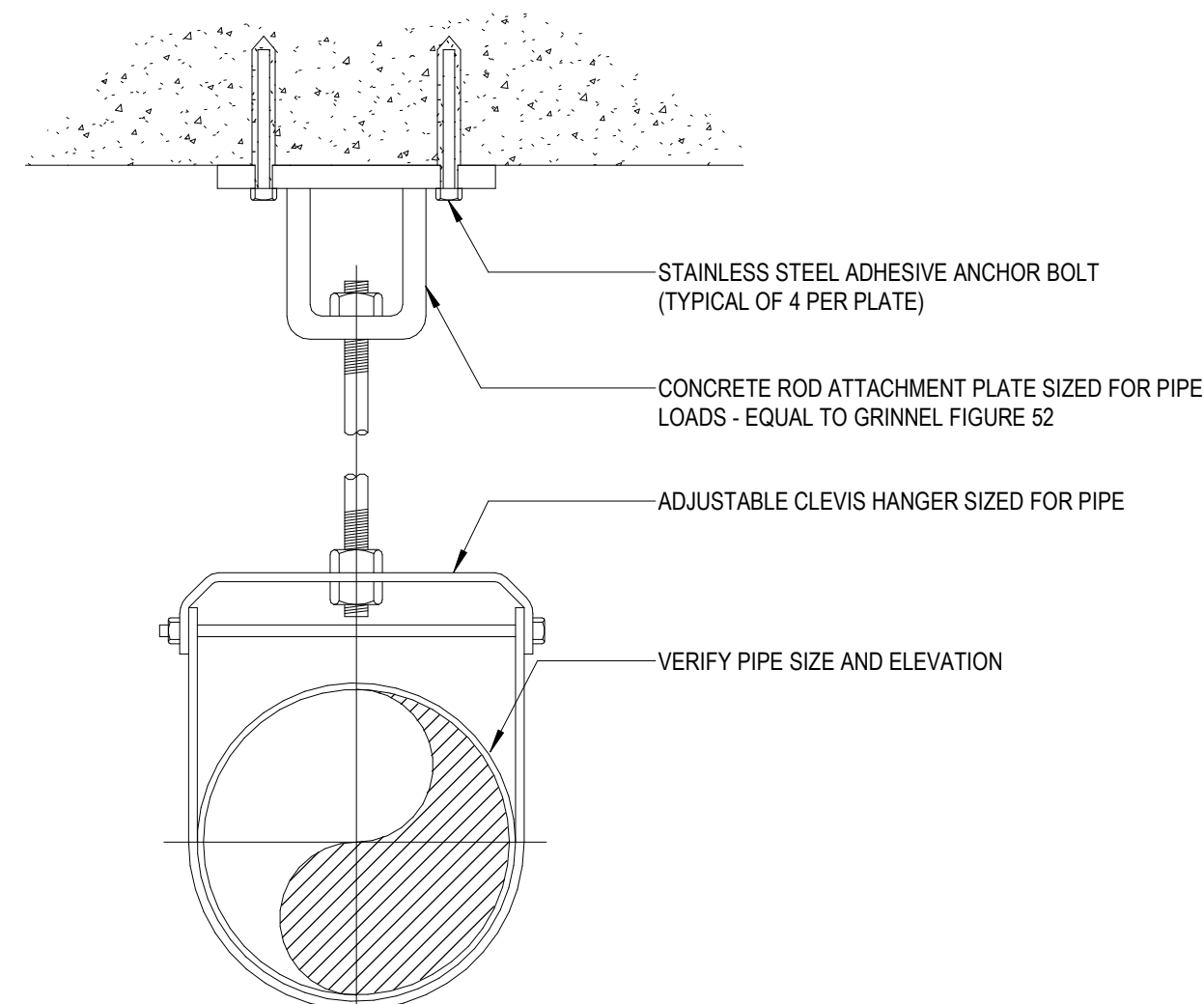
H WALL BRACKET PIPE SUPPORT DETAIL

DP503



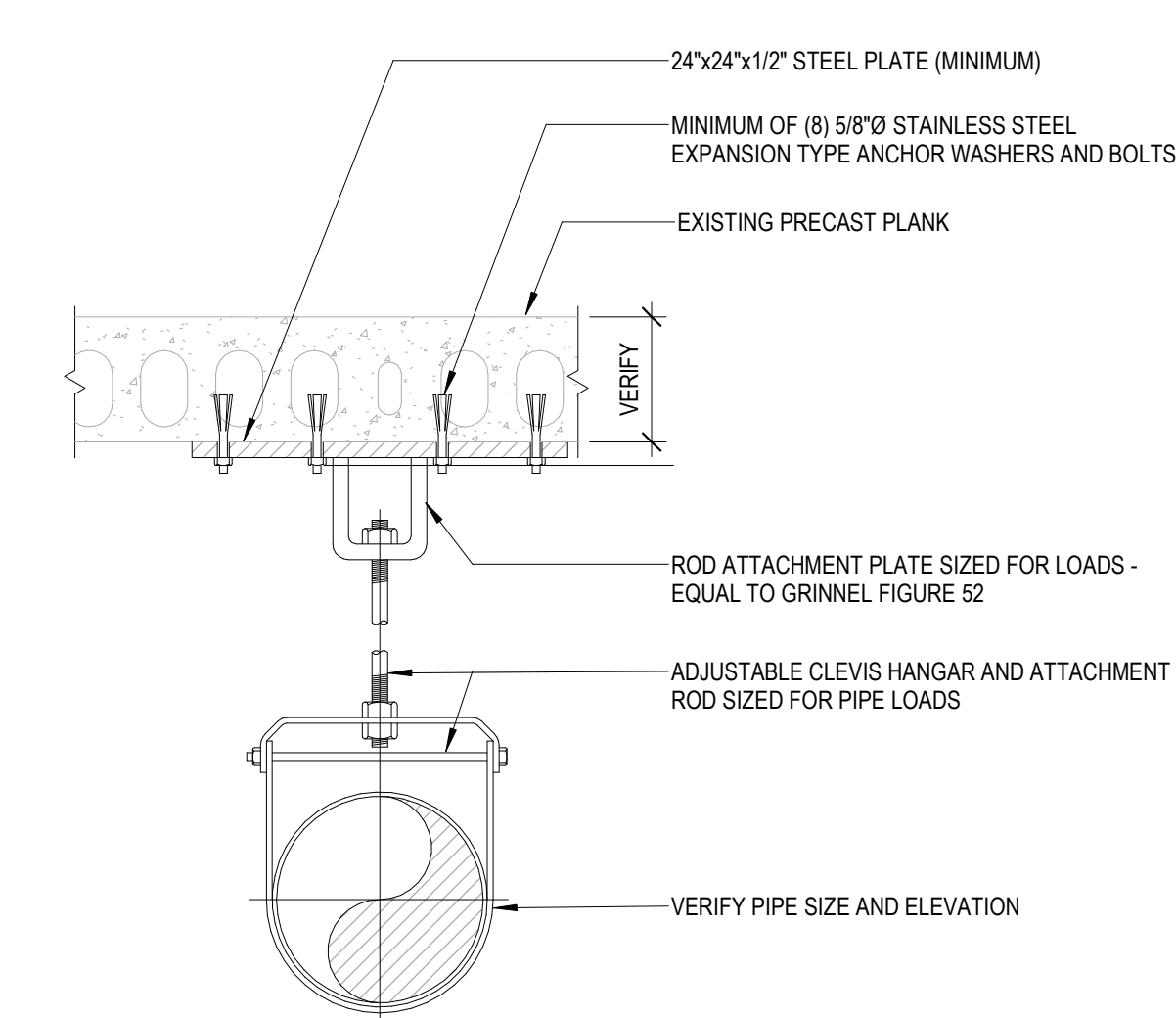
I PIPE SUPPORT FROM CEILING - TYPE 1 DETAIL

DP503



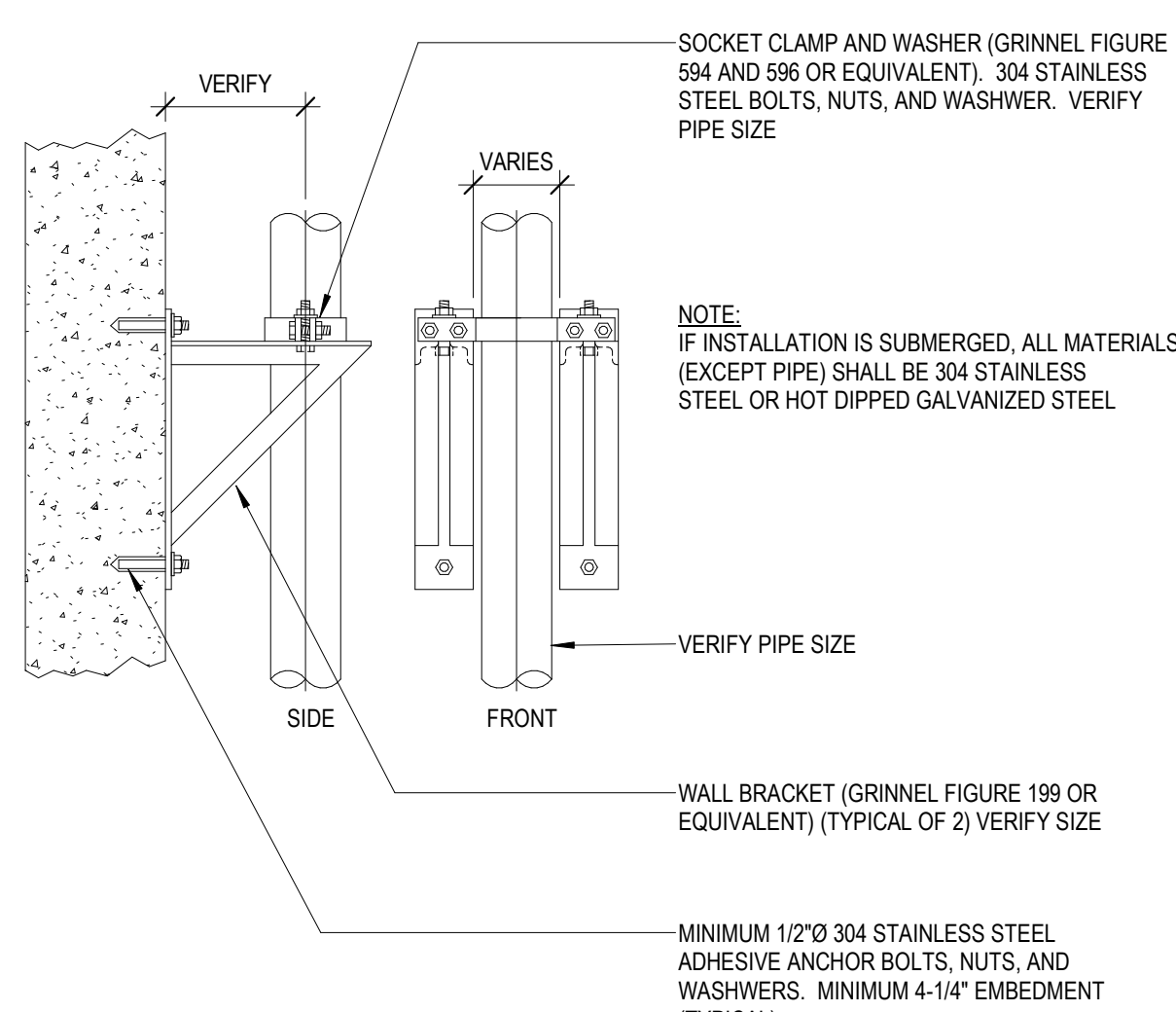
J PIPE SUPPORT FROM CEILING - TYPE 2 DETAIL

DP503



K PIPE SUPPORT FROM CEILING - TYPE 3 DETAIL

DP503

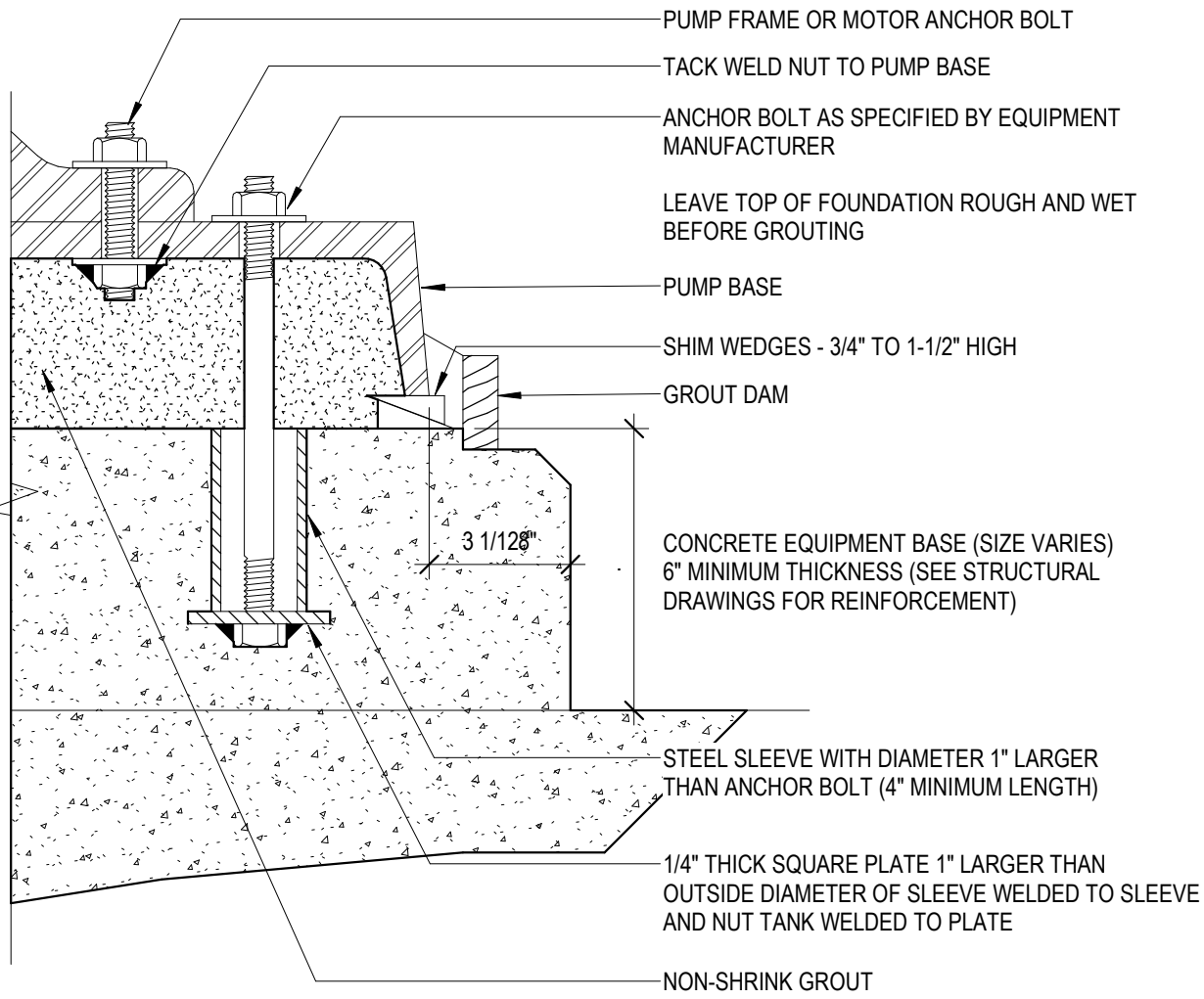


L VERTICAL PIPE SUPPORT DETAIL

DP503

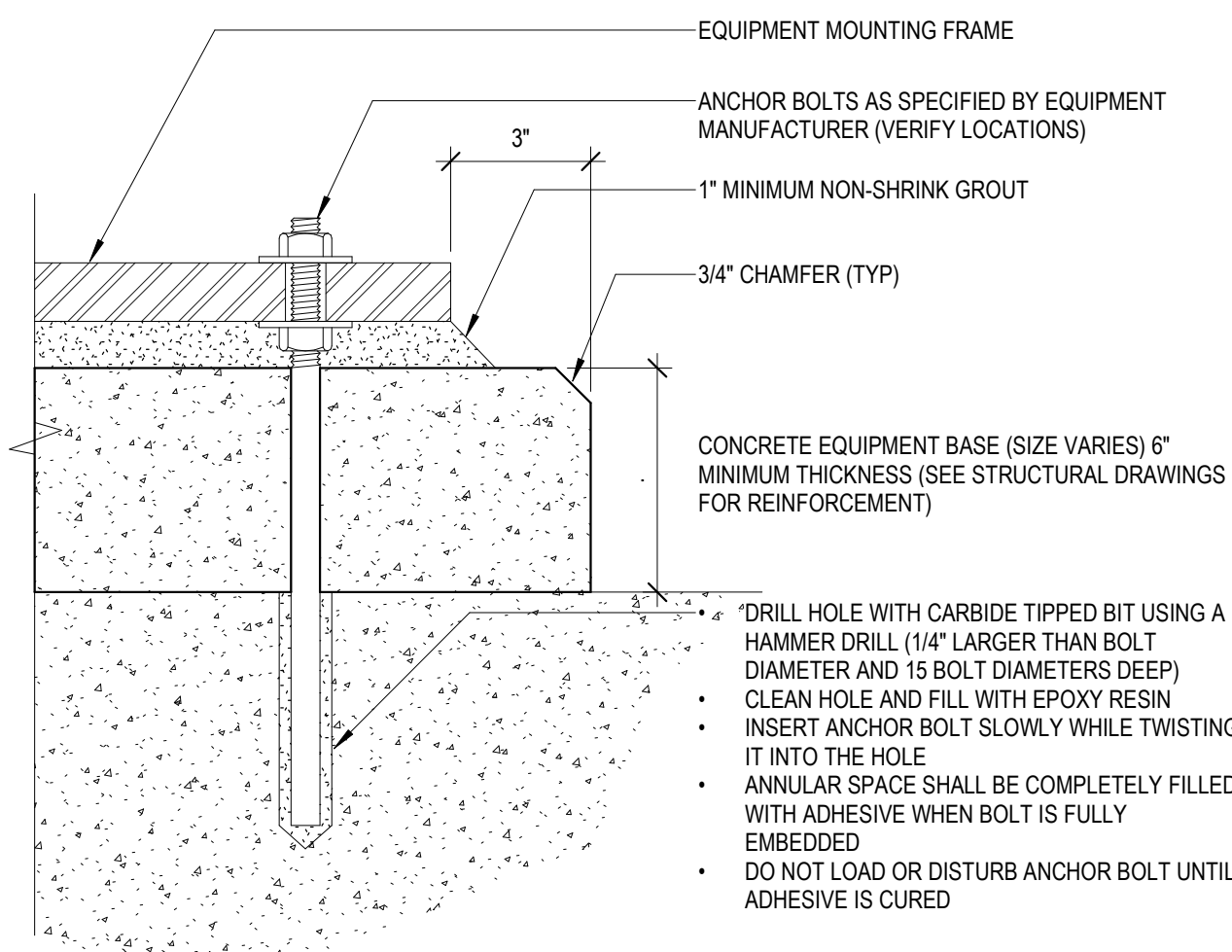
10/10/2023 10:22:01 AM

10/10/2023 10:22:02 AM



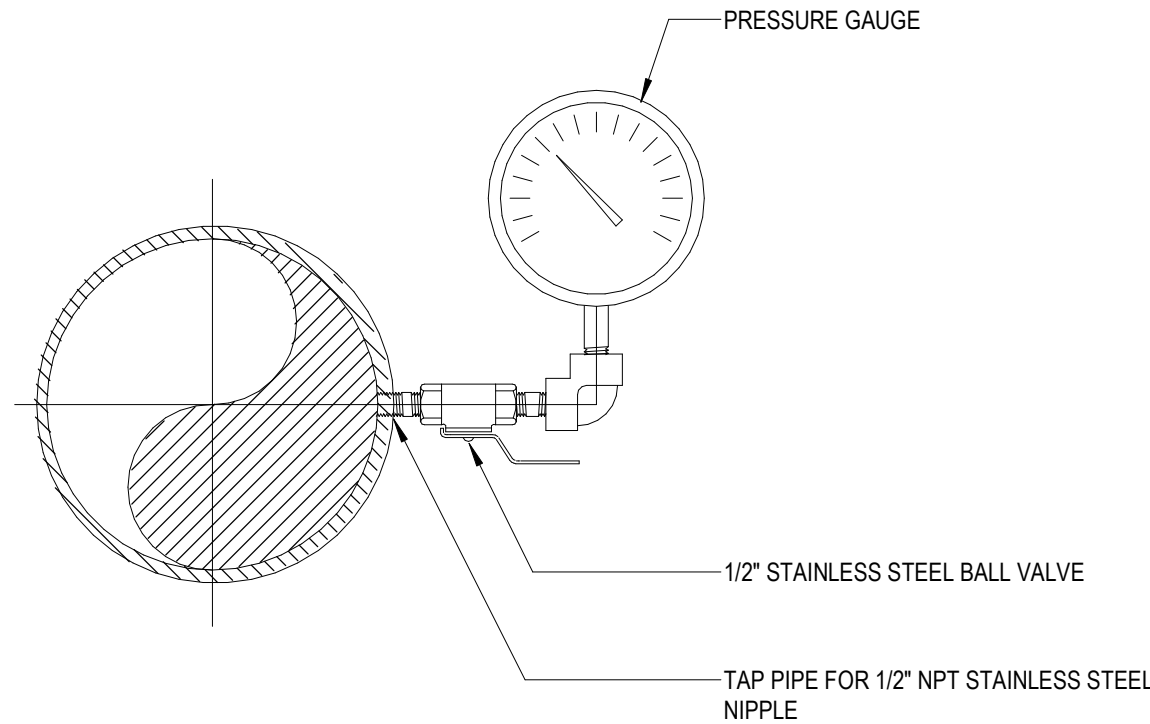
A PUMP BASE DETAIL

DP504



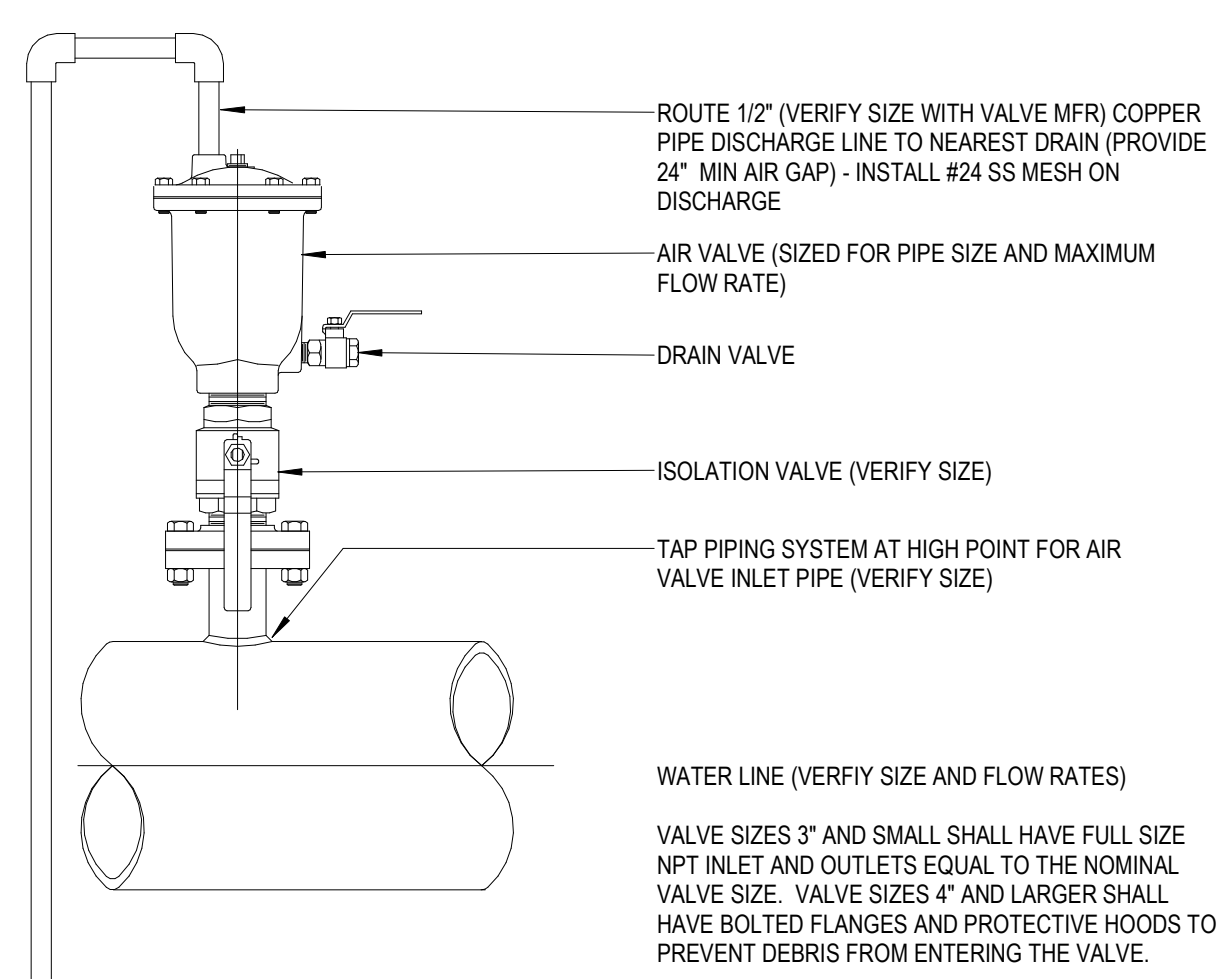
B EQUIPMENT BASE DETAIL

DP504



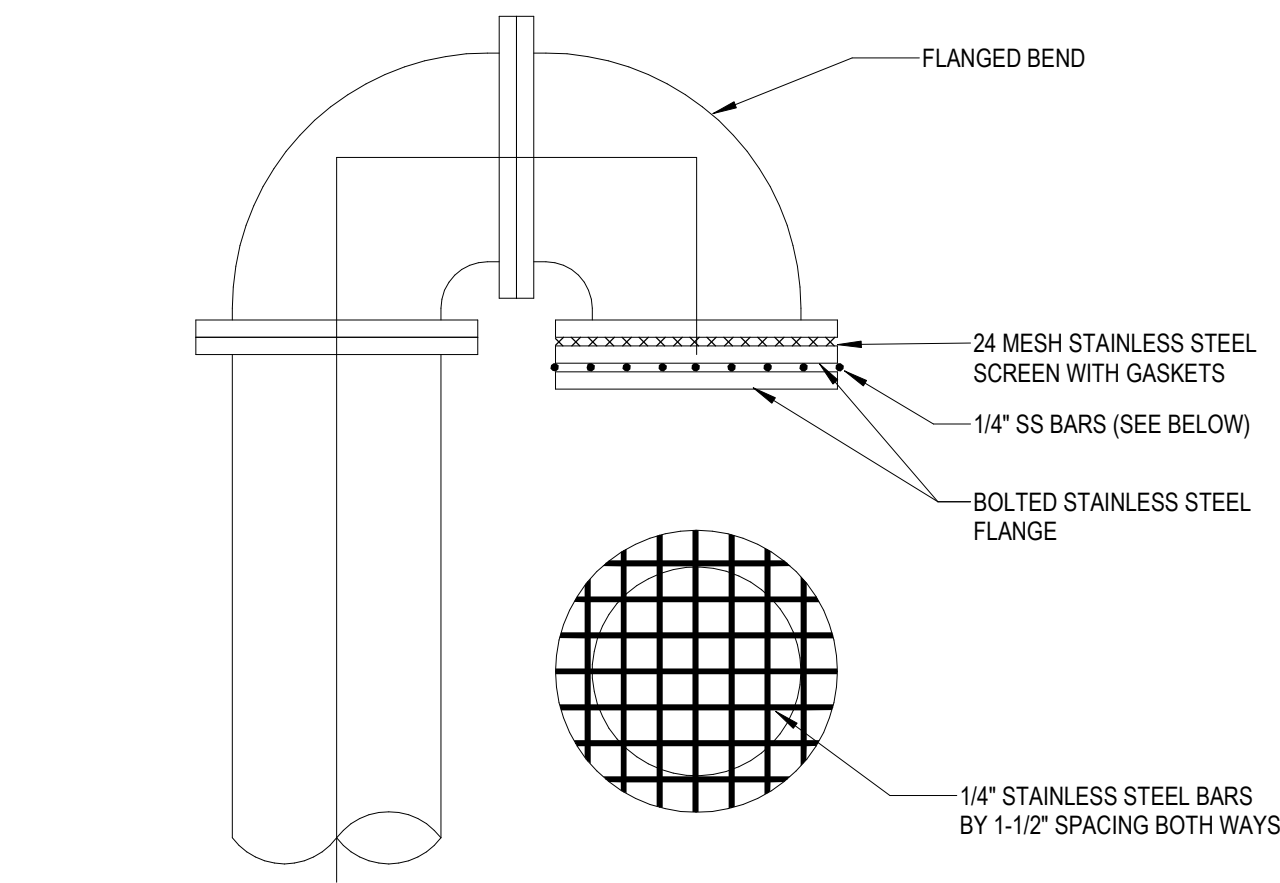
C AIR PIPE PRESSURE GAUGE DETAIL

DP504



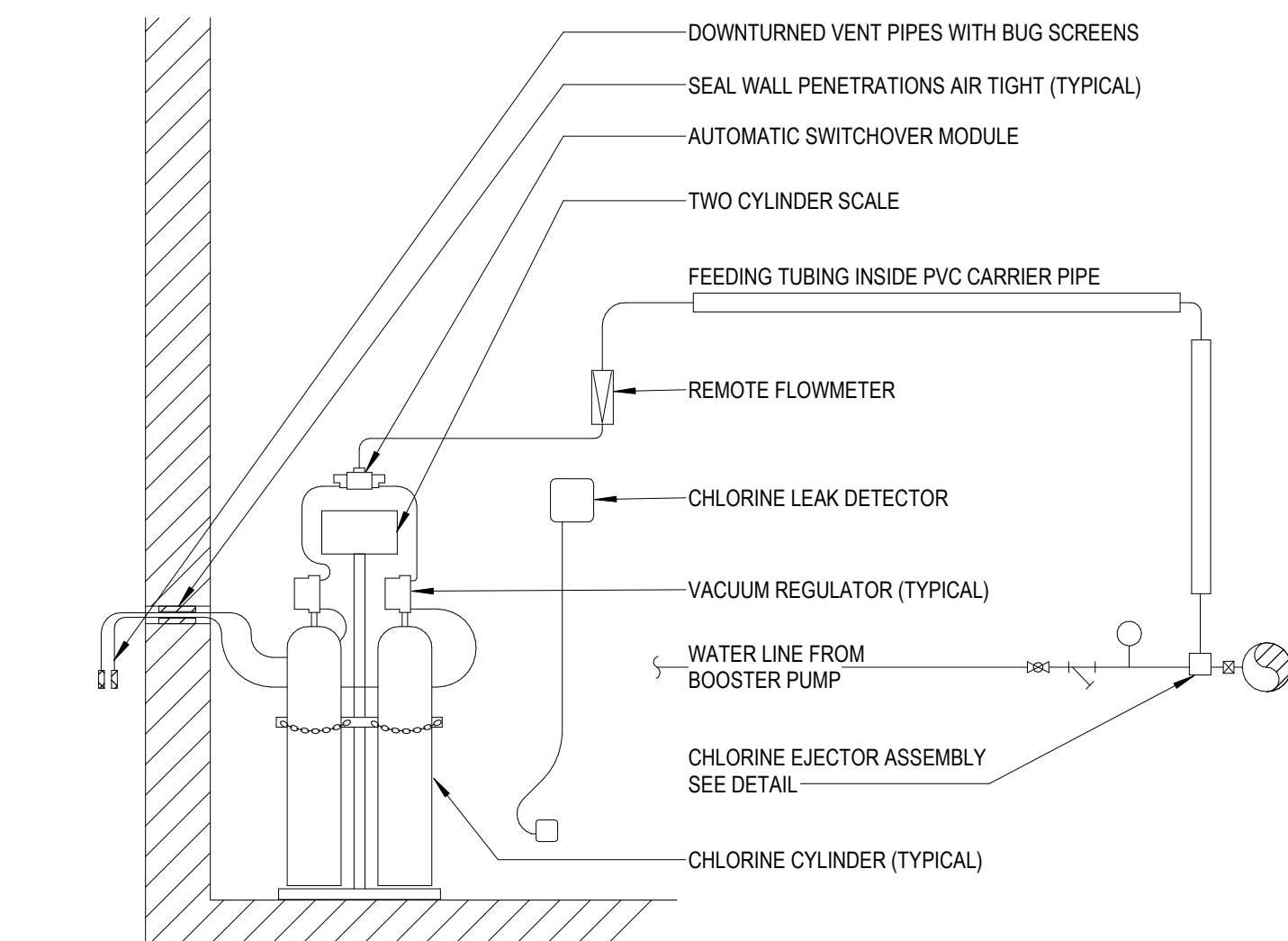
D AIR RELEASE VALVE DETAIL

DP504



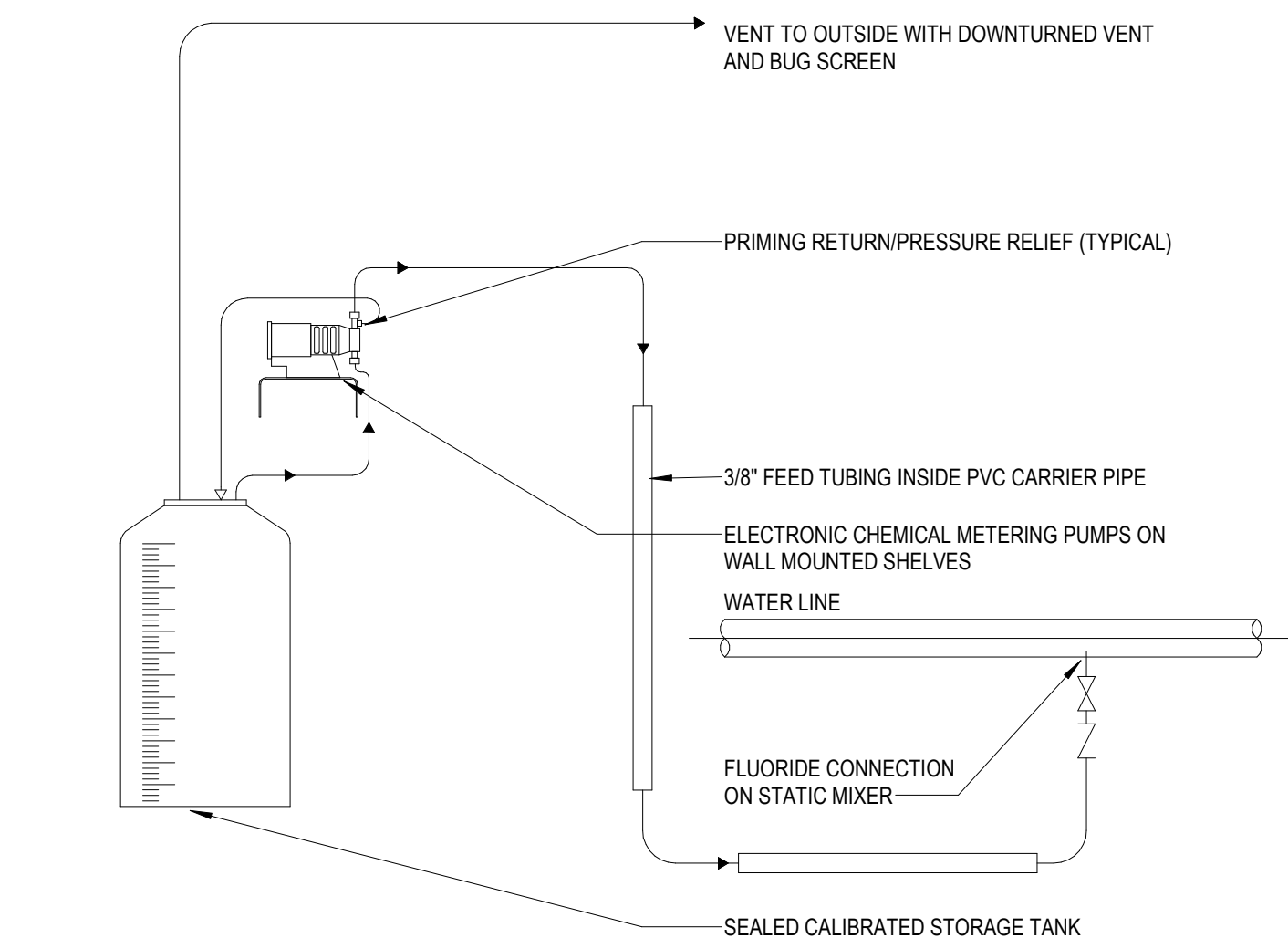
E VENT SCREEN DETAIL

DP504



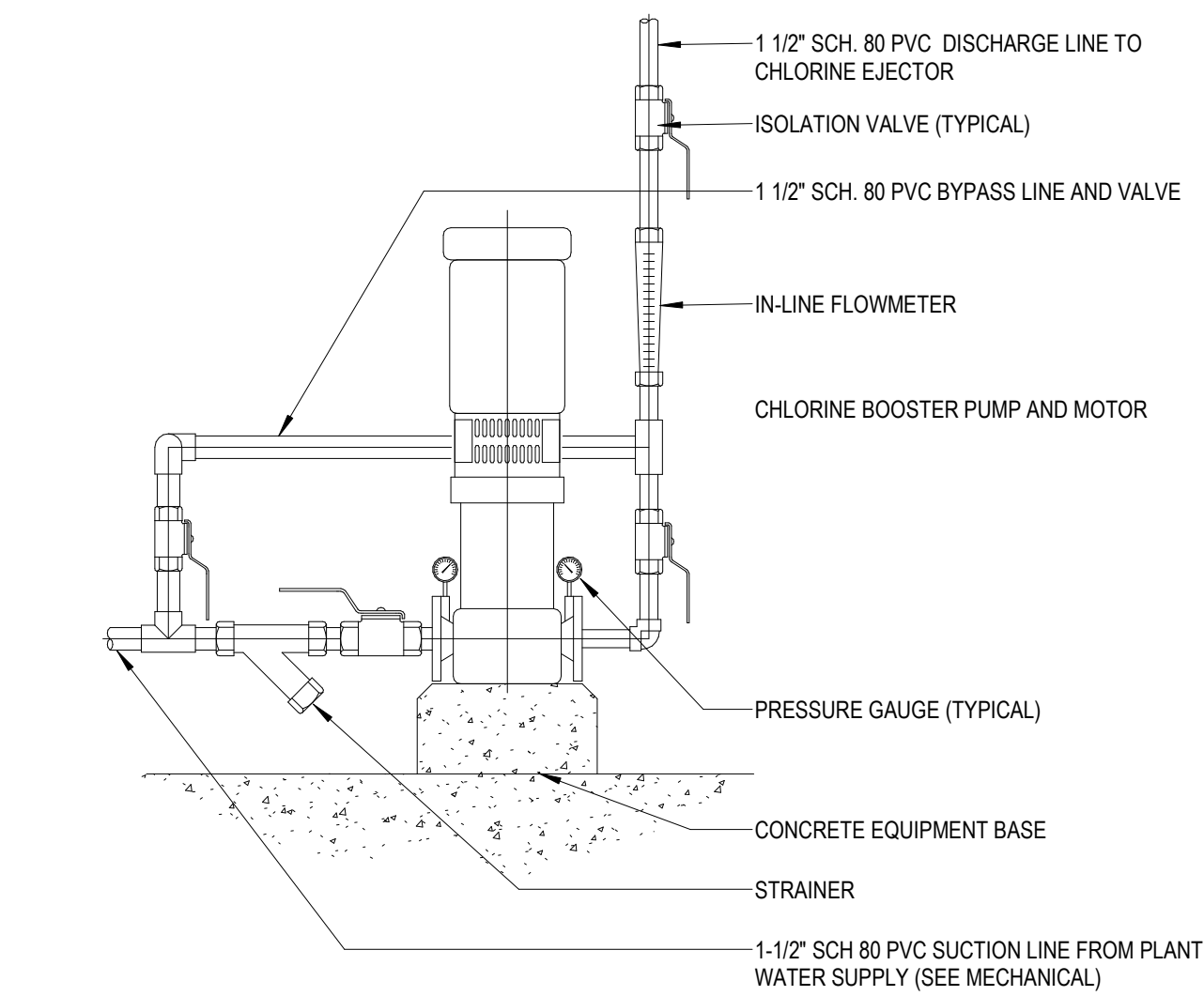
F CHLORINE GAS FEED SYSTEM-2

DP504



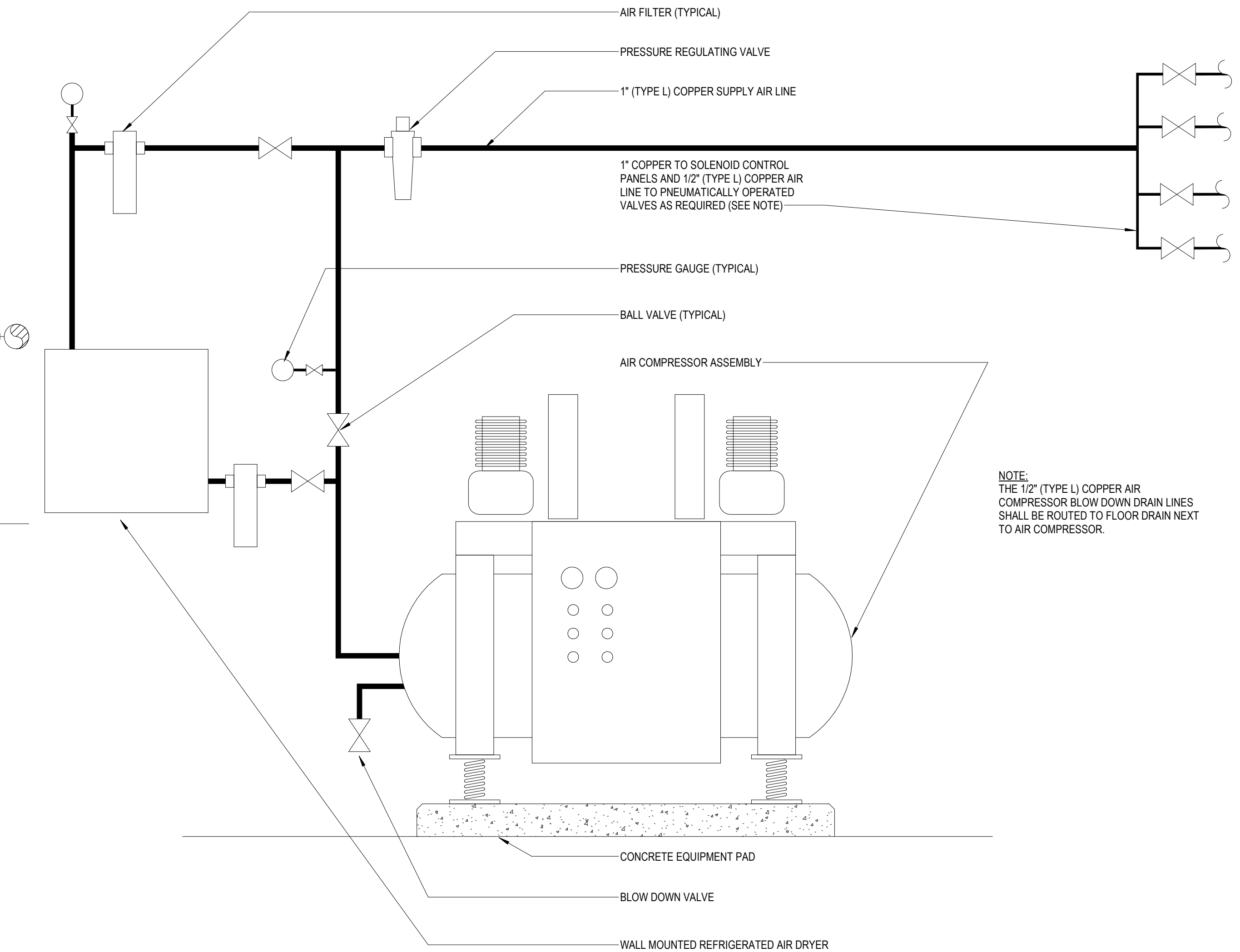
G FLUORIDE FEED SYSTEM

DP504



H CHLORINE BOOSTER PUMP

DP504



I AIR COMPRESSOR/DRYER ASSEMBLY

DP504



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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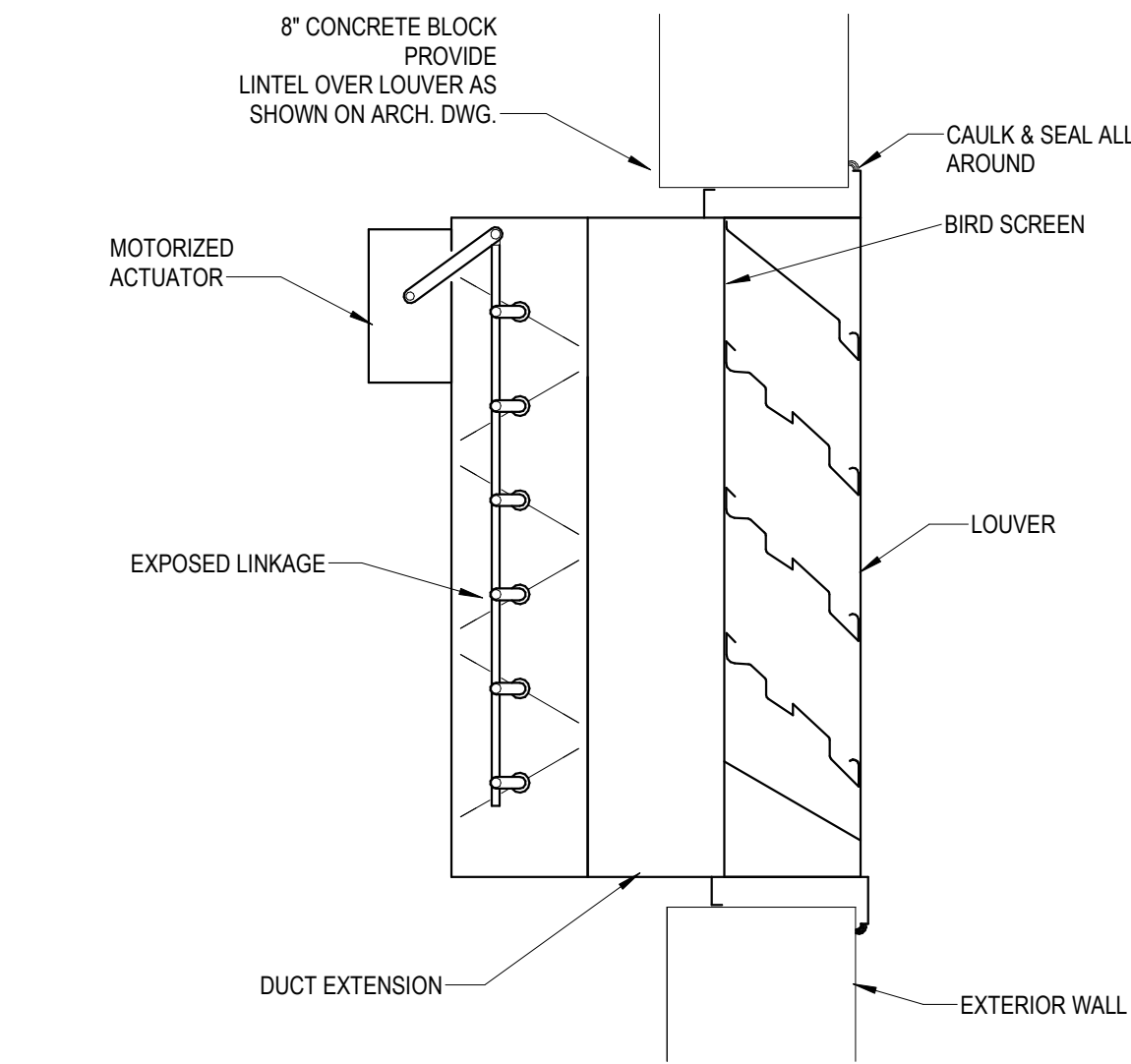
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Checked By MS
Drawn By LAP

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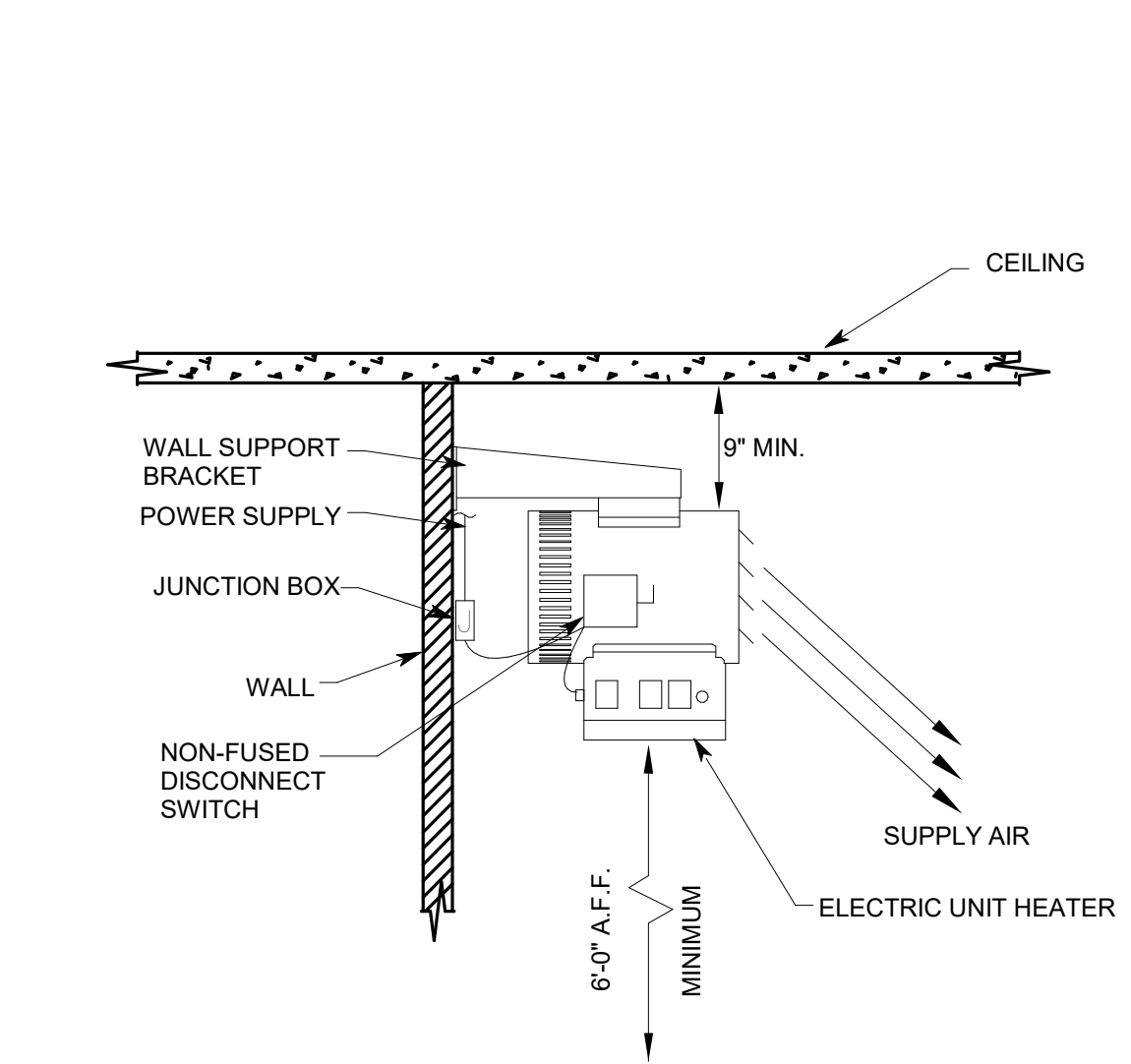
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REV. # DESCRIPTION DATE

MISCELLANEOUS
PROCESS DETAILS

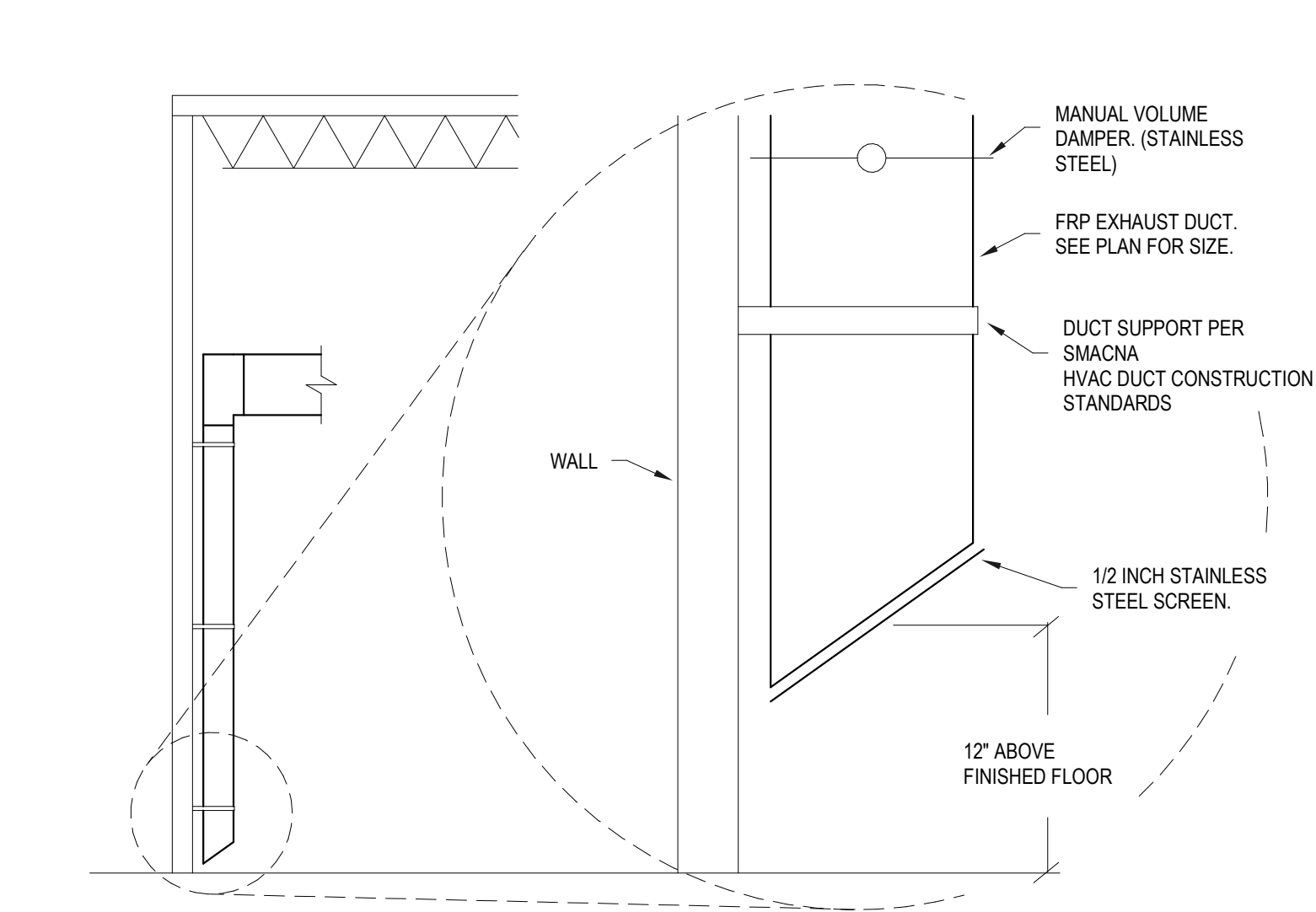
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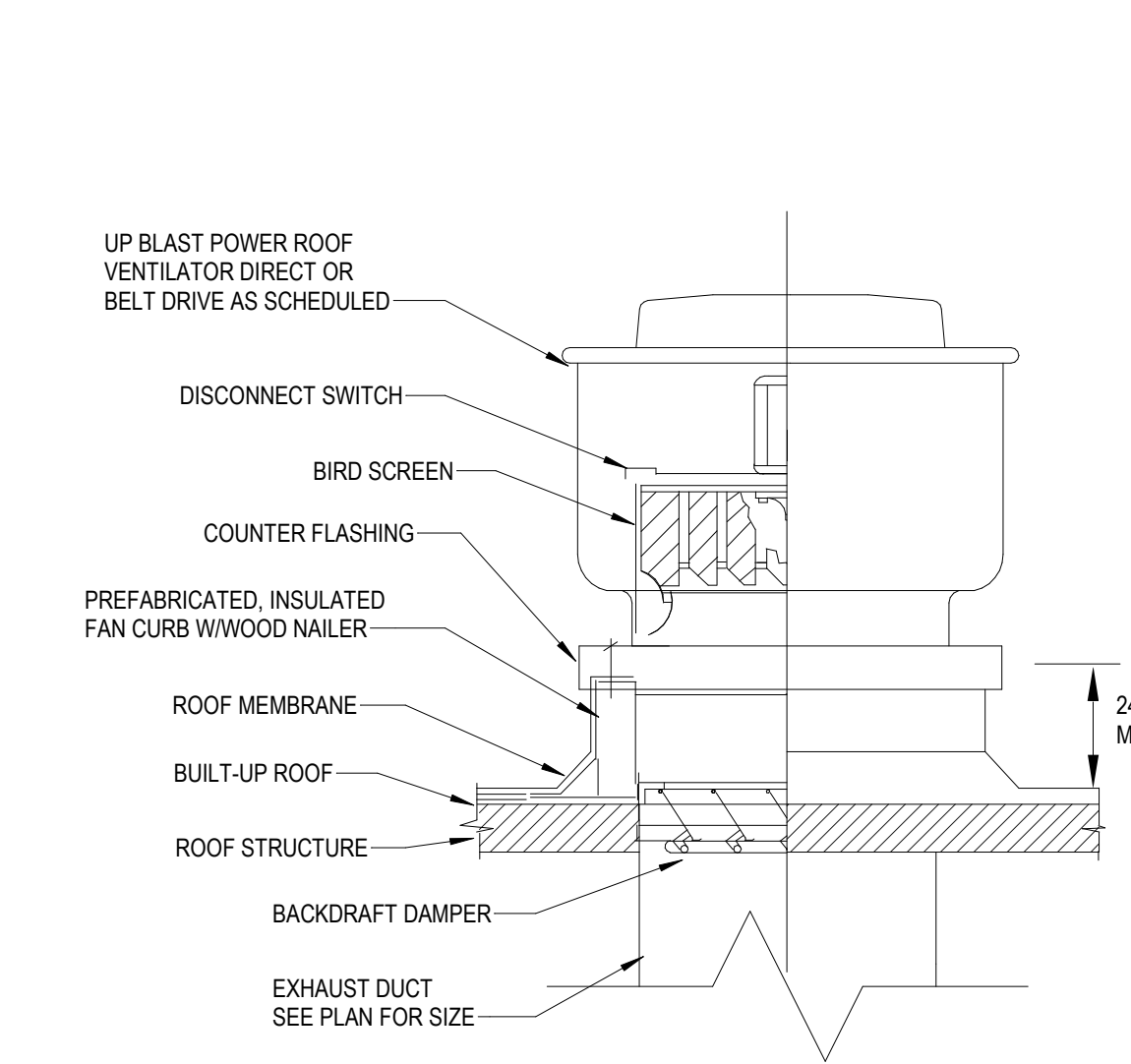
1 LOUVER WITH MOTORIZED DAMPER
DM1 NOT TO SCALE



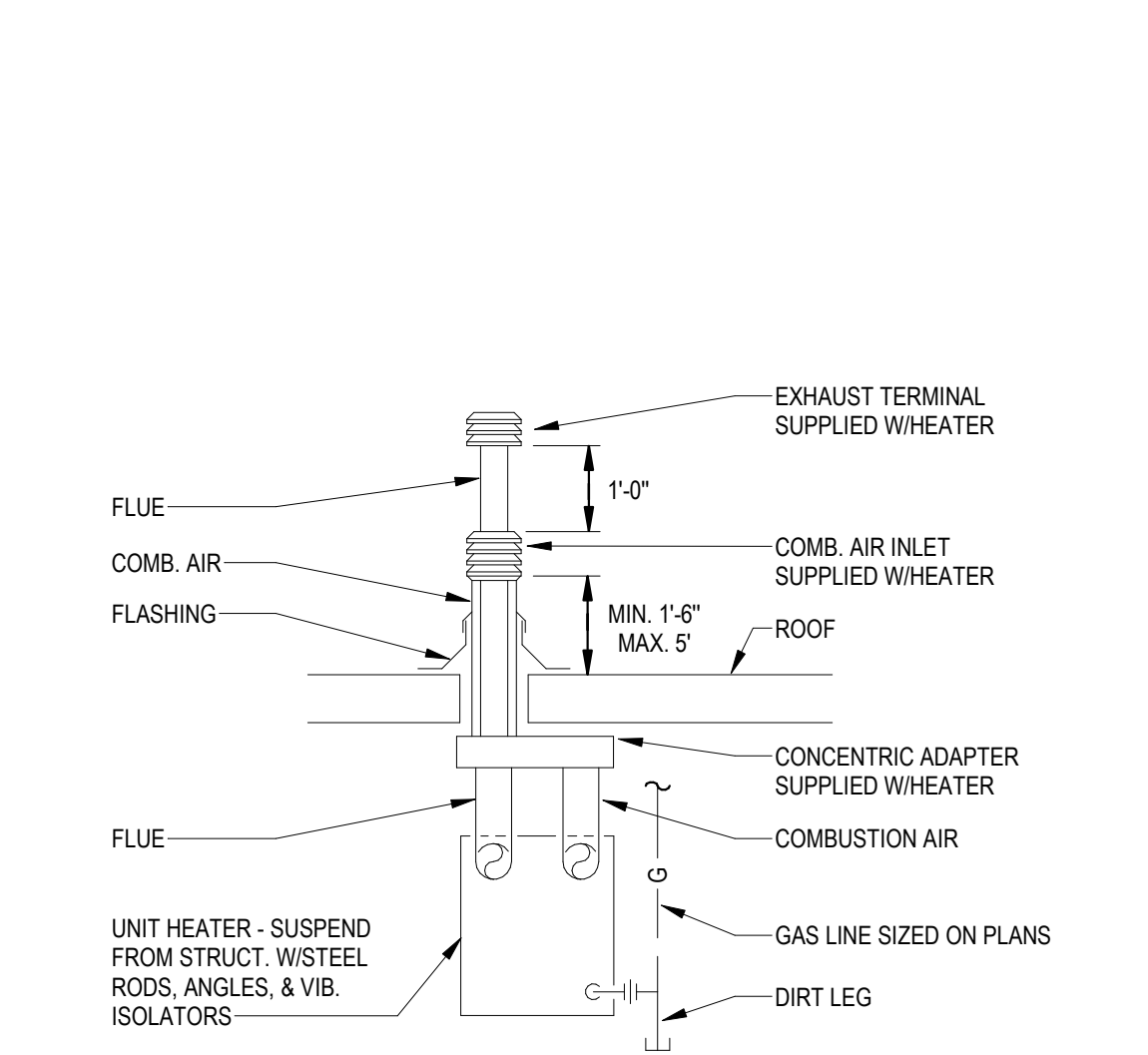
2 WASHDOWN ELECTRIC UNIT HEATER
DM1 NOT TO SCALE



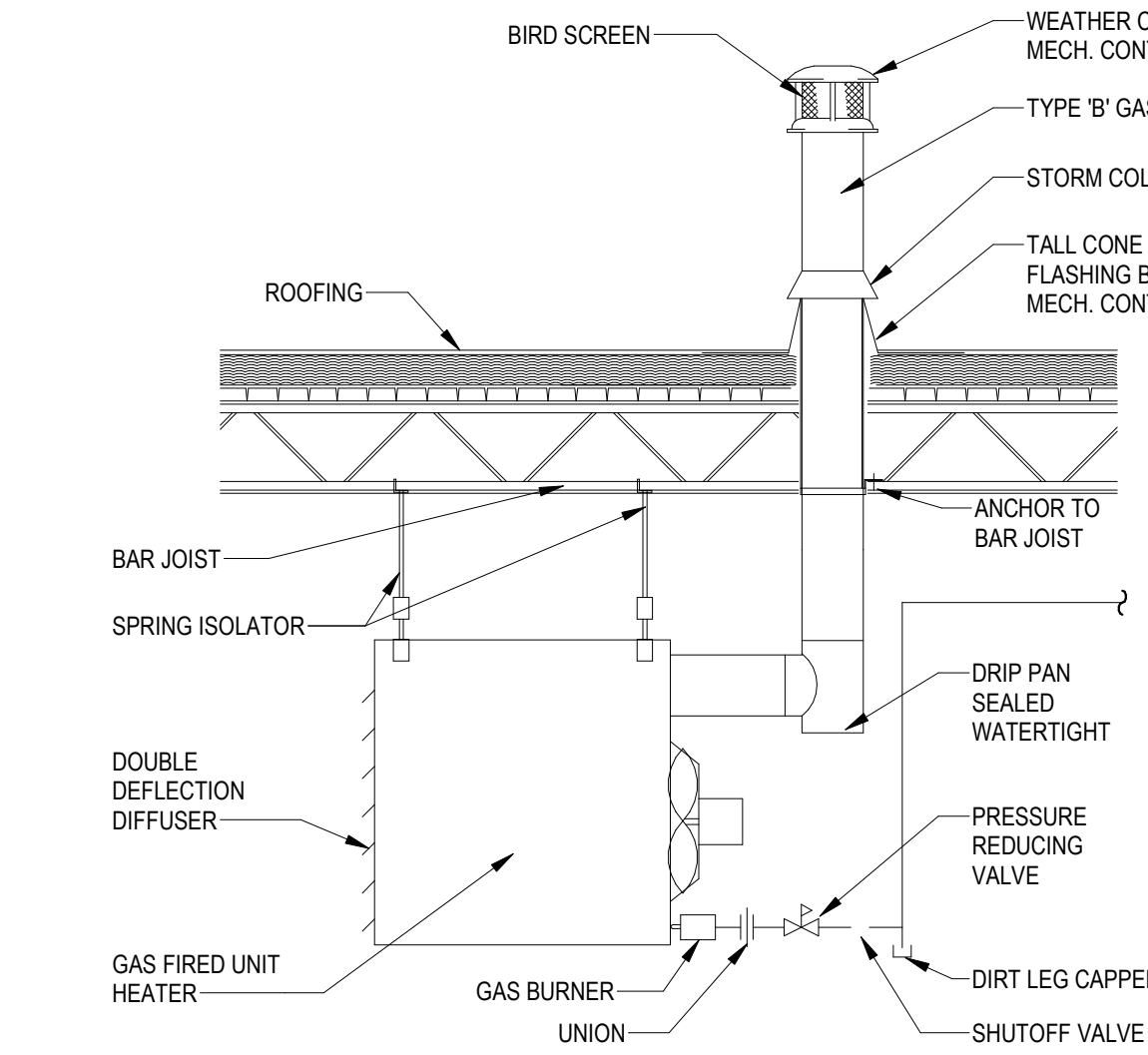
3 FRP EXHAUST DUCT DETAIL
DM1 NOT TO SCALE



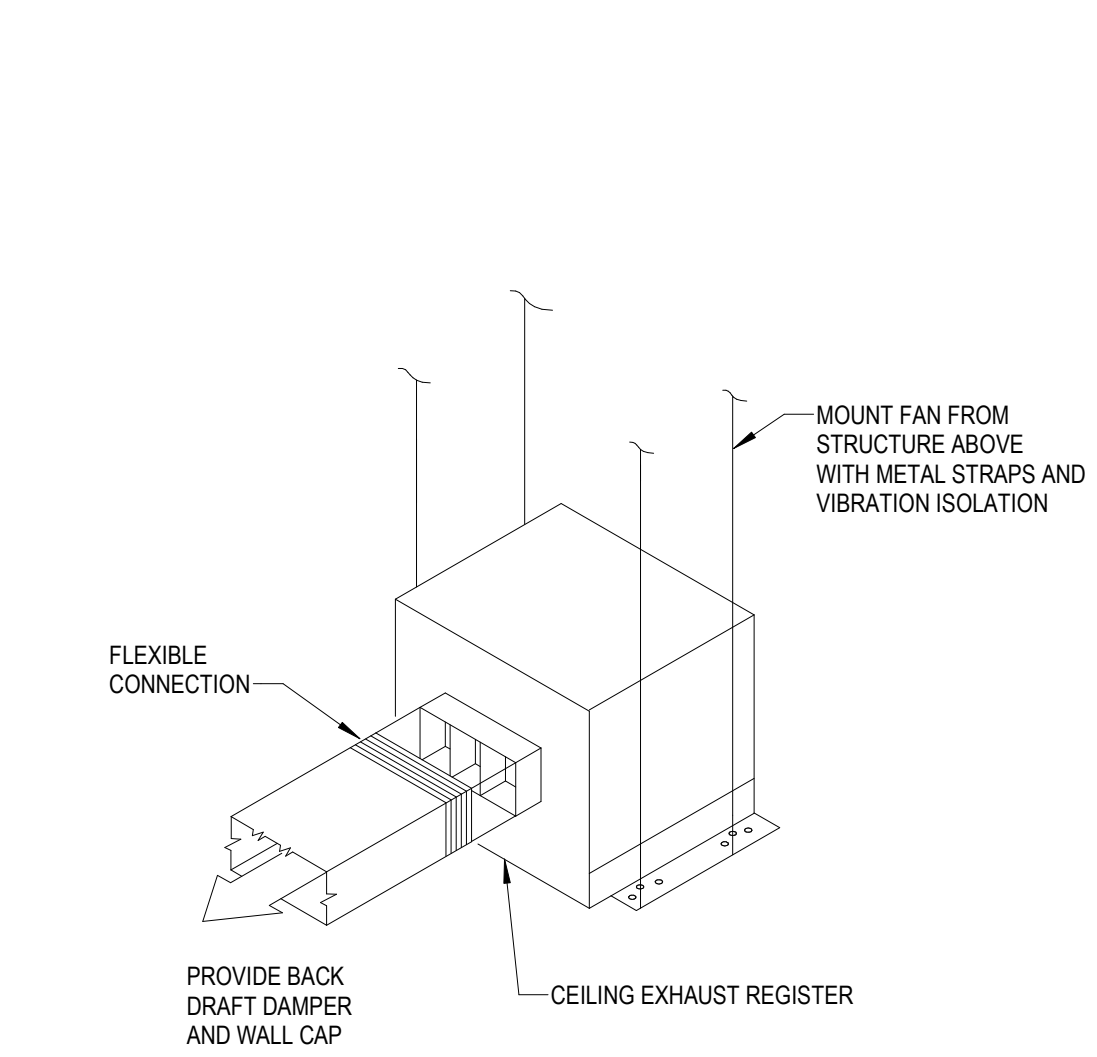
4 ROOF MOUNTED EXHAUST FAN
DM1 NOT TO SCALE



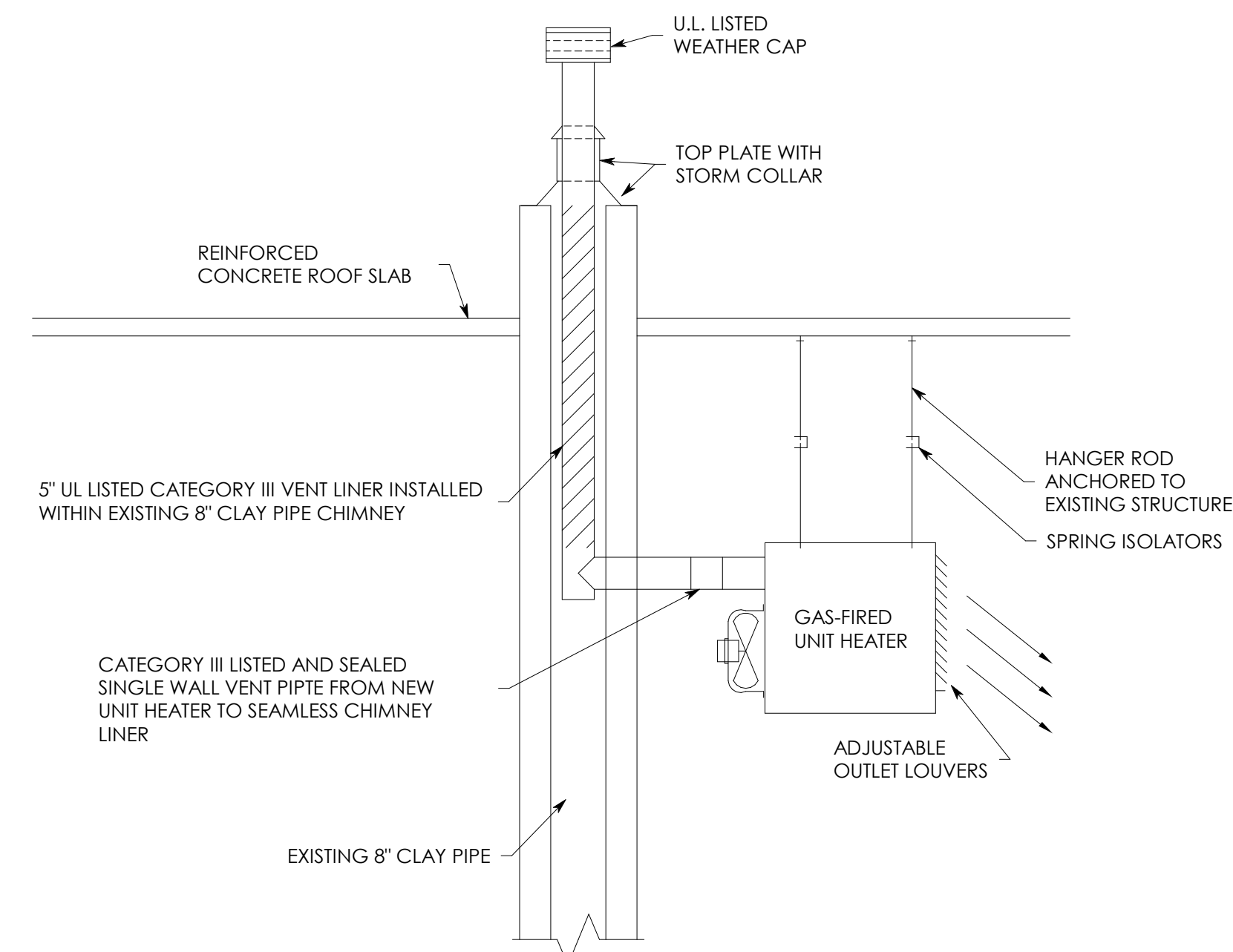
5 GAS FIRED UNIT HEATER DETAIL
DM1 NOT TO SCALE



6 GAS FIRED UNIT HEATER DETAIL
DM1 NOT TO SCALE



7 CEILING EXHAUST FAN
DM1 NOT TO SCALE



8 UNIT HEATER AND CHIMNEY DETAIL
DM1 NOT TO SCALE



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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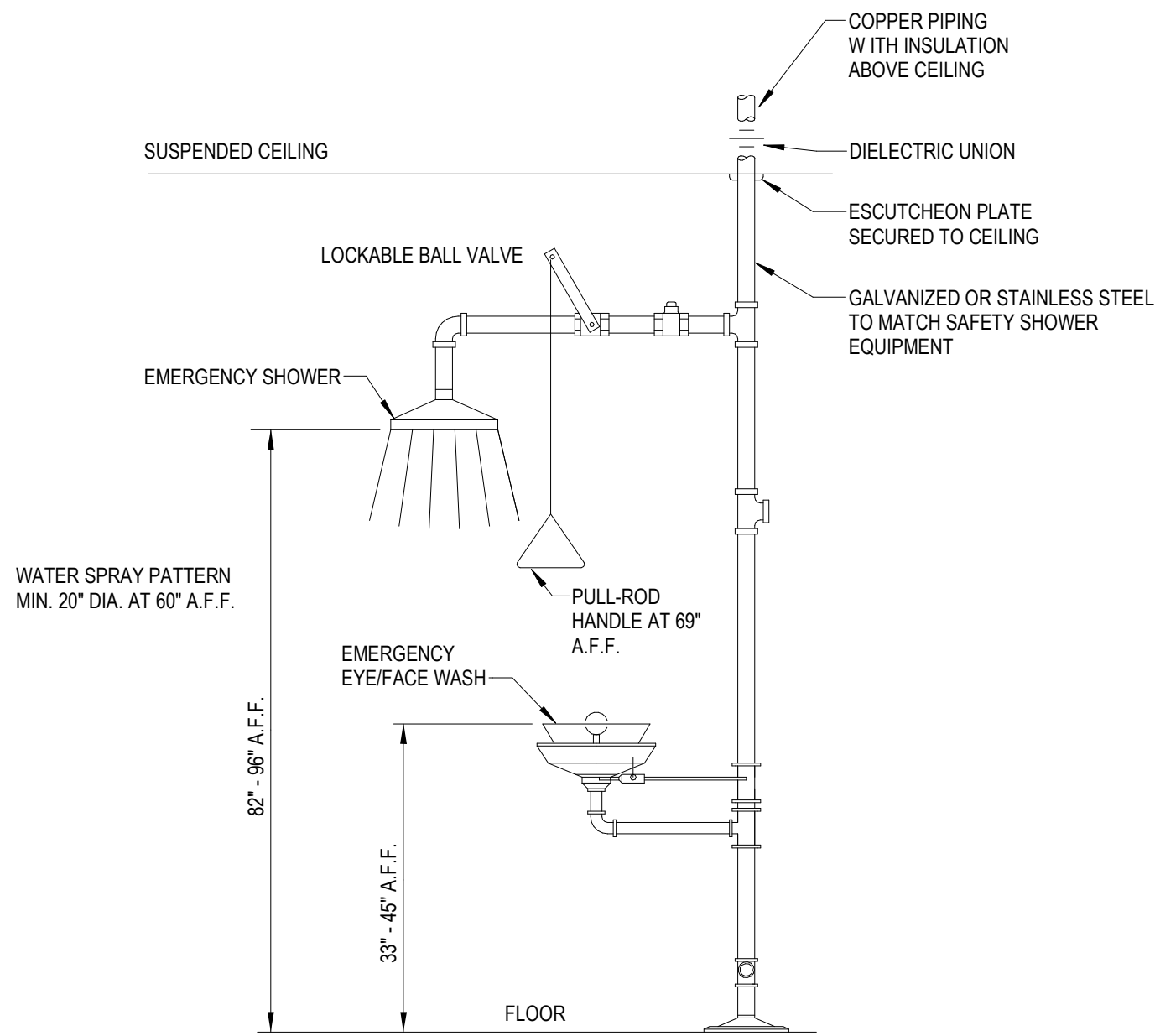
SEH Project MADWU 167818
Checked By NJB
Drawn By OBJ

Project Status BIDDING DOCUMENTS
Issue Date OCTOBER, 2023

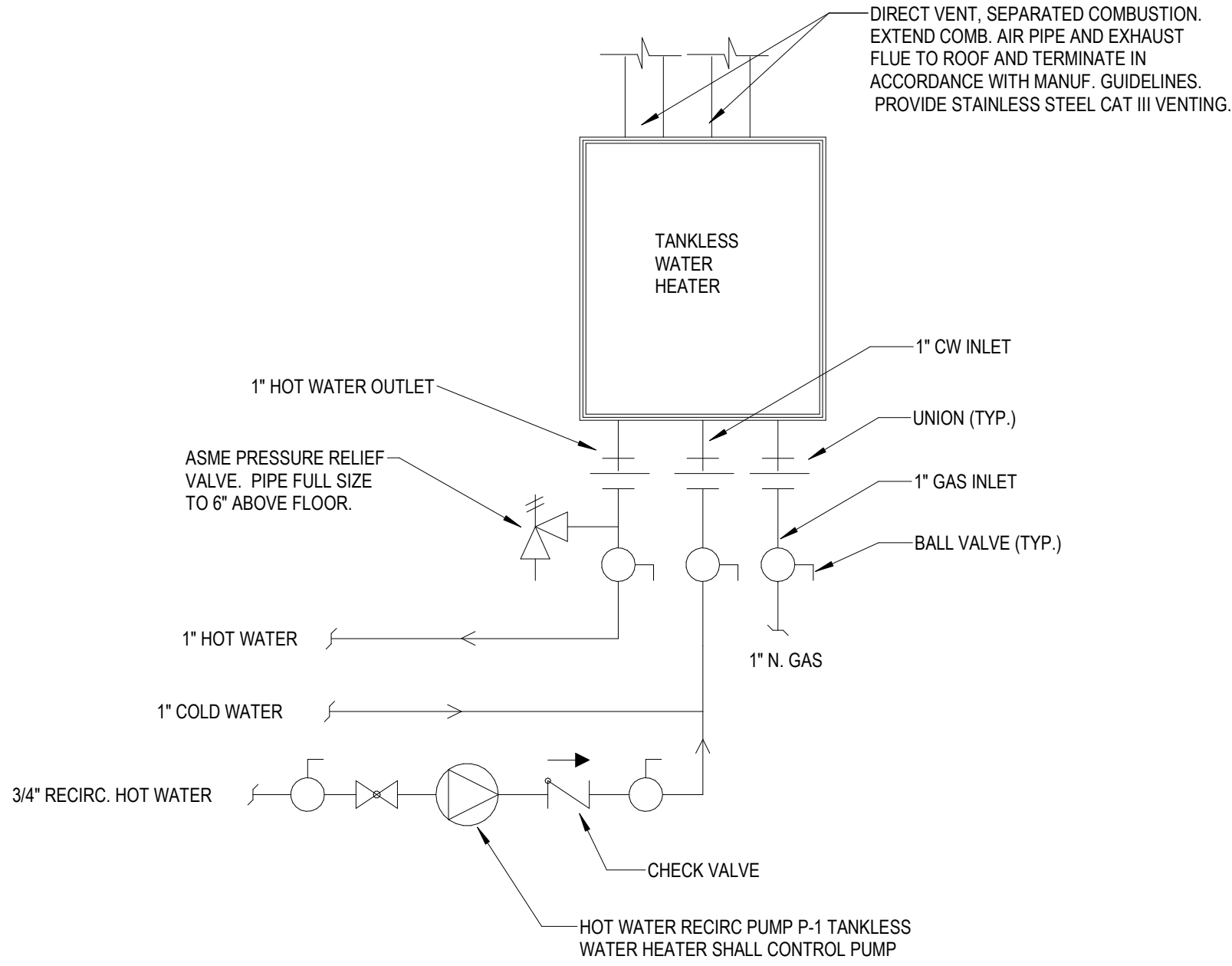
REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

MECHANICAL DETAILS

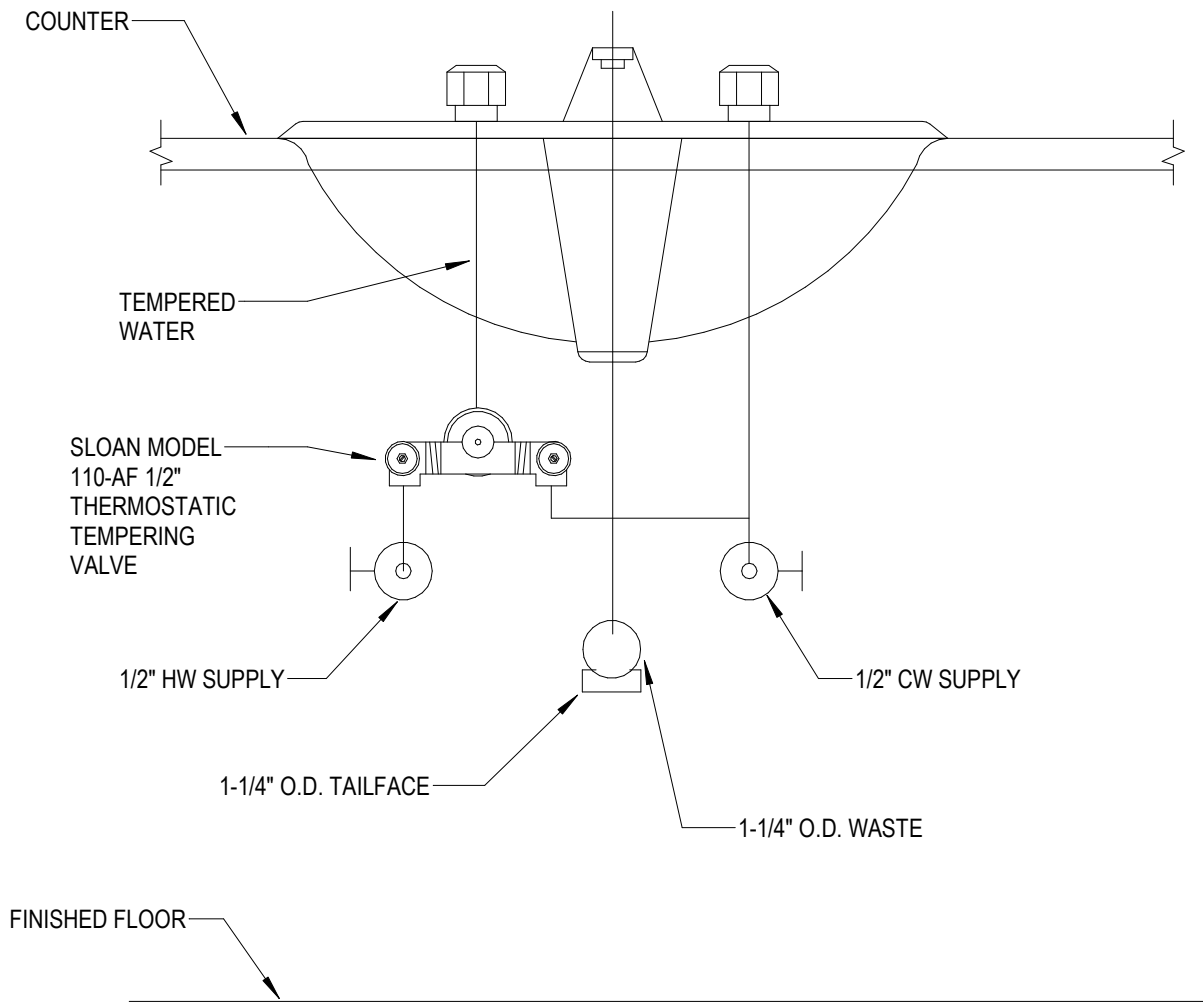
DM1



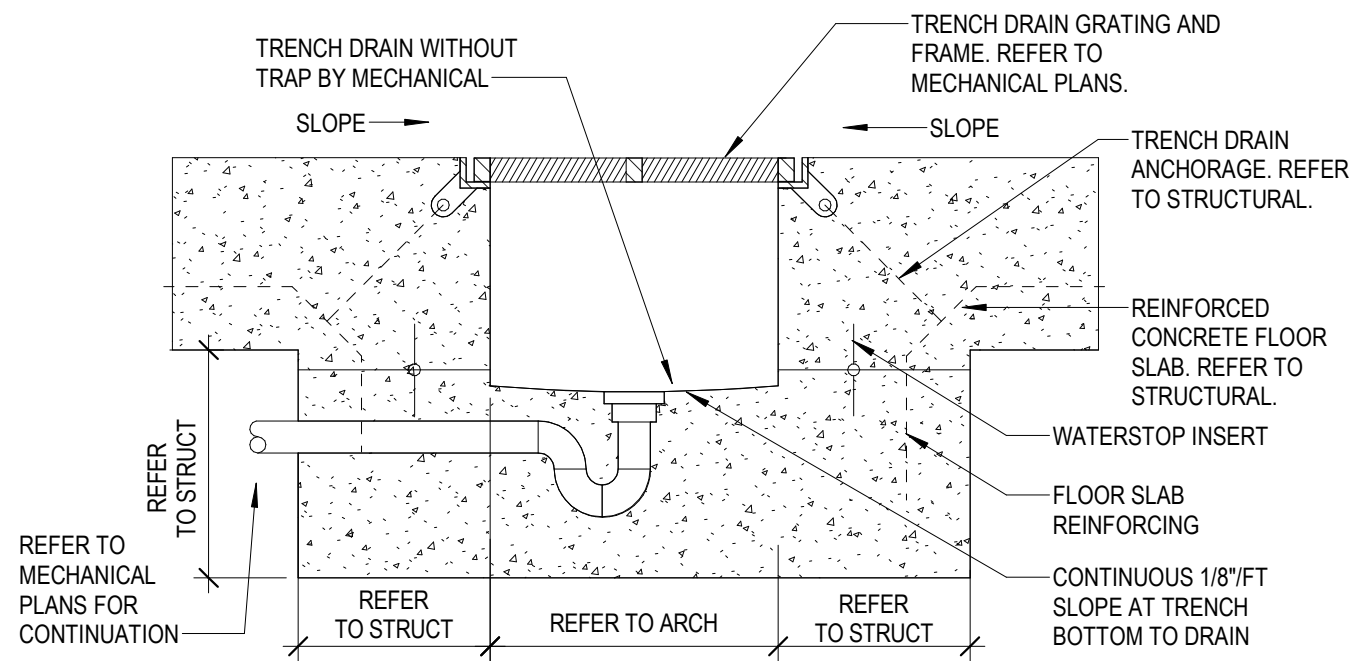
1 SAFETY SHOWER AND EYE WASH
DM2 NOT TO SCALE



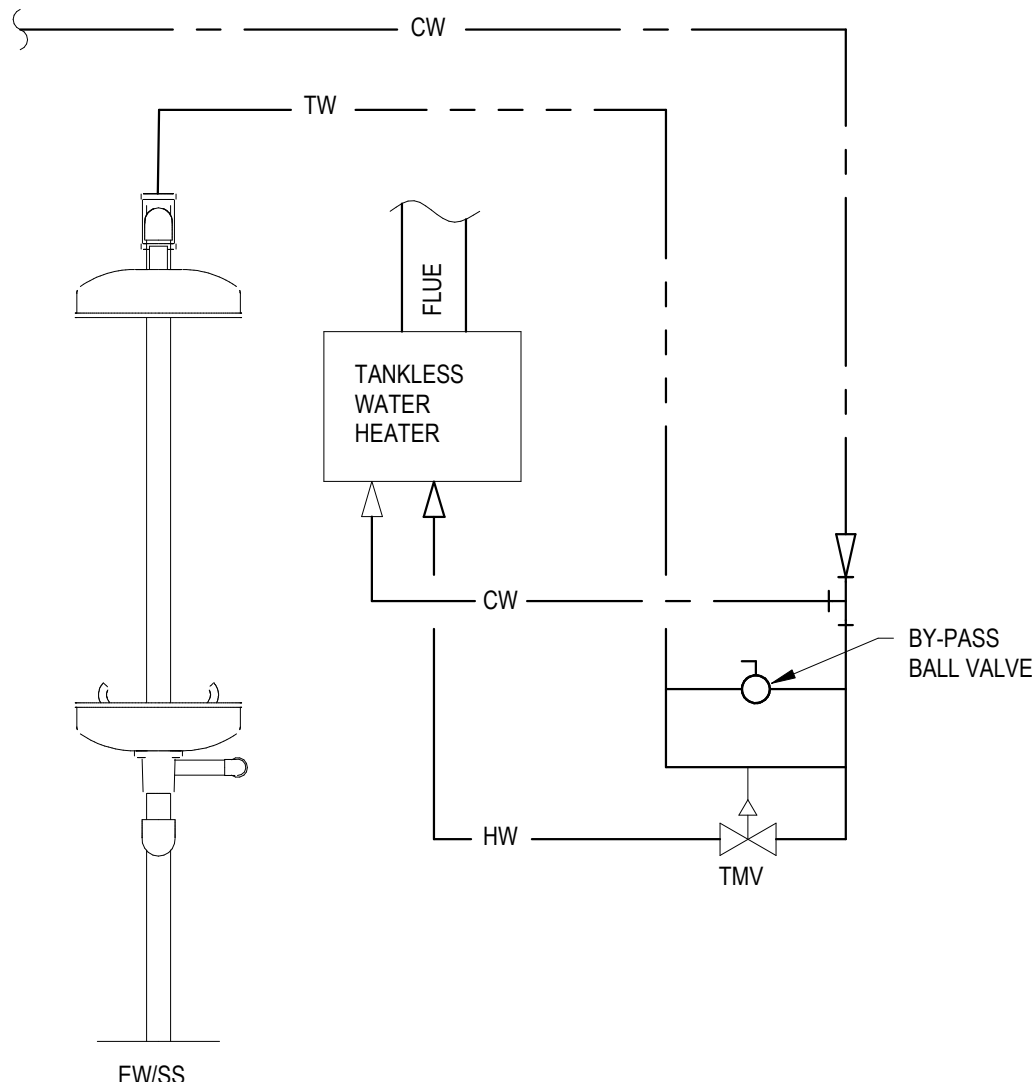
2 TANKLESS WATER HEATER
DM2 NOT TO SCALE



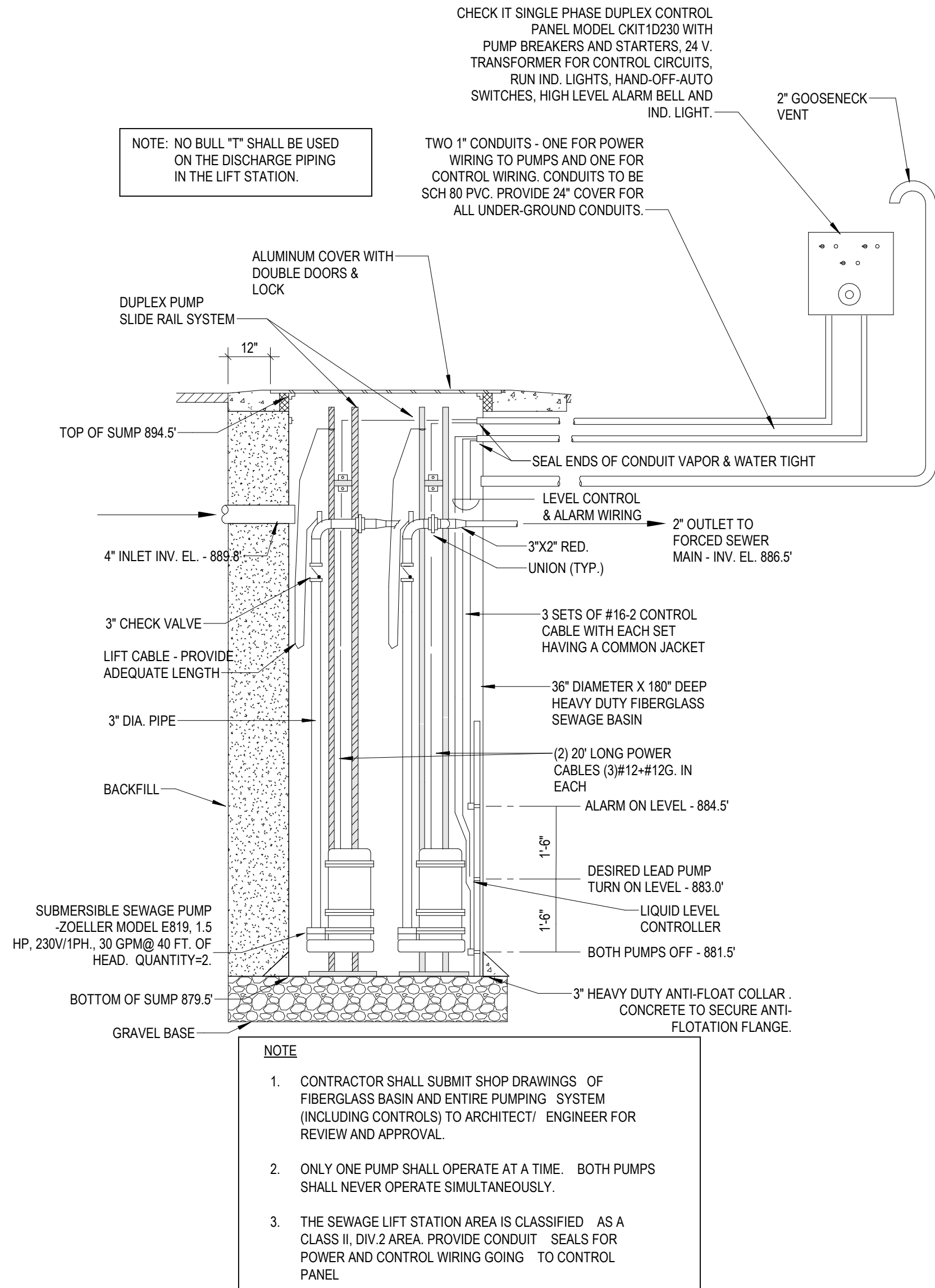
3 LOCAL MIXING VALVE
DM2 NOT TO SCALE



4 TRENCH DRAIN
DM2 NOT TO SCALE



5 TEMPERED WATER MIXING VALVE
DM2 NOT TO SCALE



6 GRINDER LIFT STATION
DM2 NOT TO SCALE



Project Owner
MADISON WATER UTILITY

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

2526 LAKE MENDOTA DRIVE
MADISON, WISCONSIN

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SEH Project MADWU 167818
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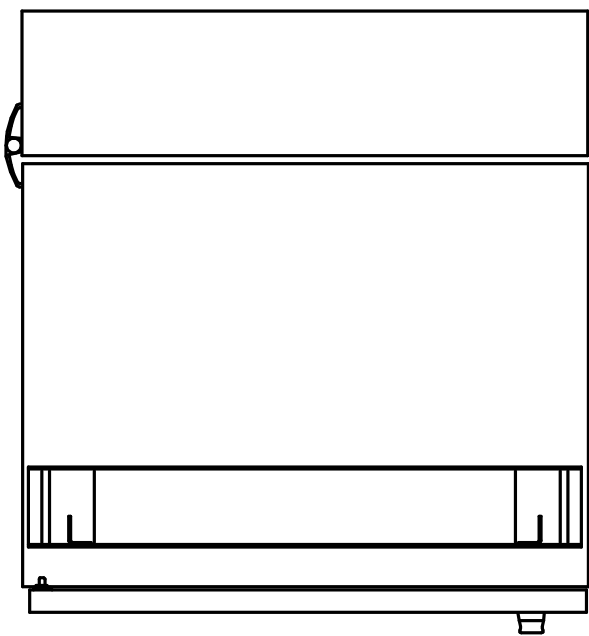
Project Status Issue Date
BIDDING DOCUMENTS OCTOBER, 2023

REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

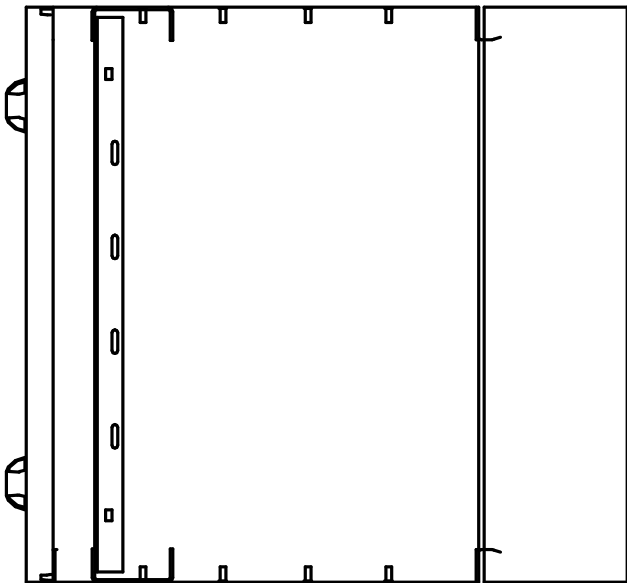
MECHANICAL DETAILS

DM2

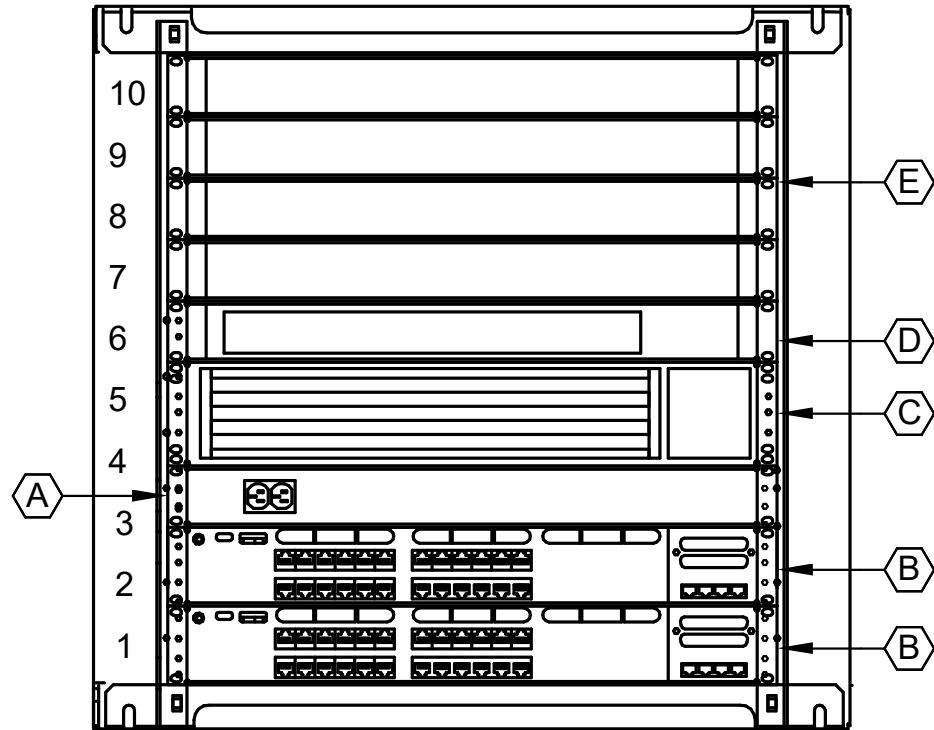
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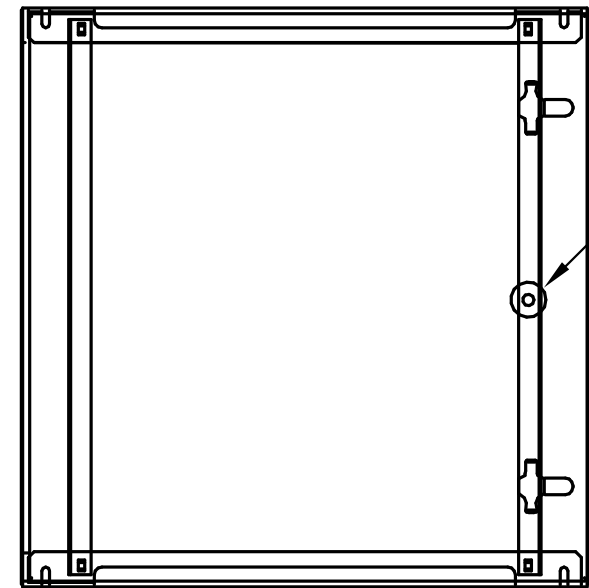
TOP
VIEW



SIDE
VIEW



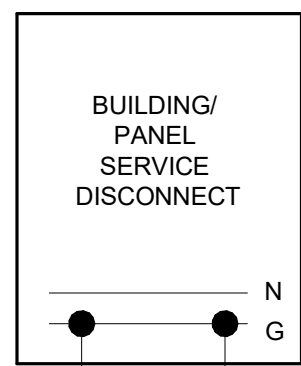
INTERIOR
LAYOUT



FRONT VIEW

PROVIDE LOCK

1 WALL MOUNT - DOUBLE HINGE FIELD HUB ENCLOSURE - NEMA 4X
DE01 SCALE: NONE



#2/0 AWG BONDING CONDUCTOR TO EXTERIOR ELECTRICAL PANELS, EXTERIOR ANTENNAS, EXTERIOR EXPOSED PIPE, BUILDING STEEL AND CONCRETE STEEL REINFORCING PER NEC FOR CONNECTION OF ALL OTHER AREAS REQUIRED TO BE BONDED TO GROUNDING.

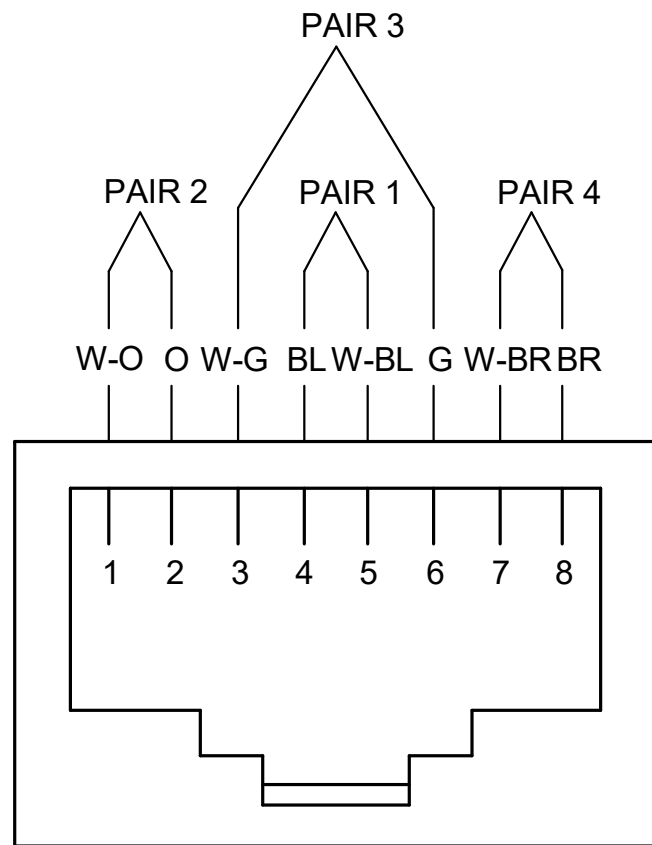
SIZE MAIN GROUNDING CONDUCTOR PER NEC OR 12.5% OF TOTAL CROSS SECTIONAL AREA OF MAIN SERVICE CONDUCTORS PER PHASE.

3/4"x10' COPPER CLAD STEEL GROUND ROD. GROUND RODS SHALL BE SPACED A MINIMUM OF 6 FEET APART. EXOTHERMIC WELD ALL CONNECTIONS OF CONDUCTORS TO GROUND RODS.

CONDUCTOR CONNECTING THE GROUND RODS SHALL BE A MINIMUM OF #2/0 AWG BARE CU.

2 SUPPLEMENTAL GROUND
DE01 NOT TO SCALE

EIA 568B WIRE LEGEND	
PIN NO.	WIRE COLOR
1	WHITE/ORANGE
2	ORANGE
3	WHITE/GREEN
4	BLUE
5	WHITE/BLUE
6	GREEN
7	WHITE/BROWN
8	BROWN



3 8 PIN MODULAR CONNECTION EIA/TIA/568B
DE01 SCALE: NONE

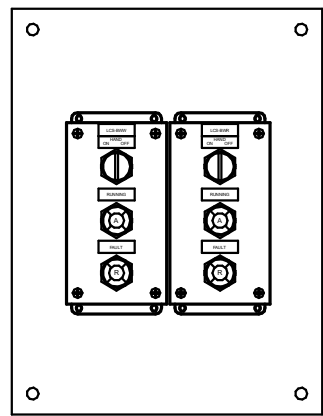
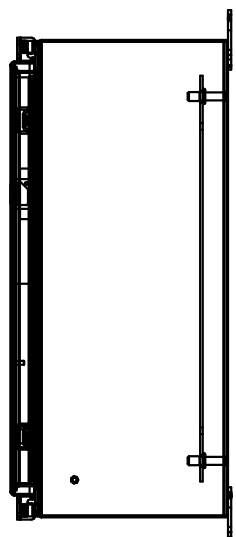
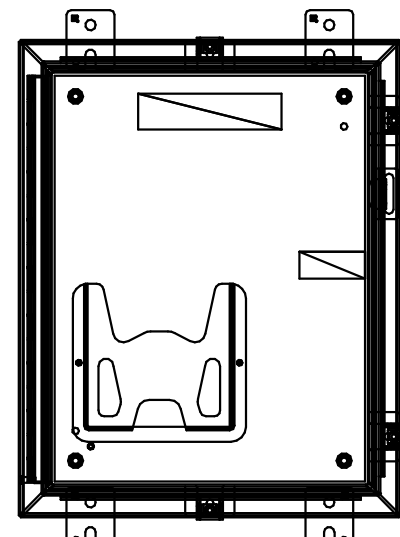
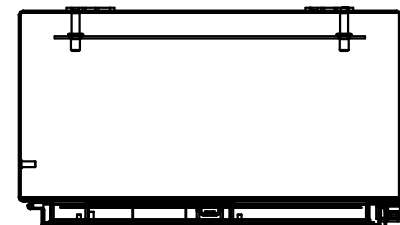
RACK ELEVATION DEVICE SCHEDULE				
SYMBOL	TYPE	RACK UNITS	DESCRIPTION	MISC
A	RECEPTACLE	N/A	PROVIDE SINGLE-GANG OUTLET BOX WITH DUPLEX 120V GFCI RECEPTACLE. ORANGE COLOR	MOUNT TO BACK OF RACK. FEED FROM LP-1.
B	SWITCH	1RU	NETWORK SWITCH: QTY 1 - 48 PORT CISCO SWITCH	NETWORK SWITCH TO BE PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR.
C	UPS	2RU	RACK MOUNTED 500VA UPS.	1000VA, 120VAC, LCD STATUS DISPLAY
D	LIGHT	N/A	ENCLOSURE MOUNTED LED STRIP LIGHT. ONE LOCATED AT FRONT AND ONE LOCATED AT BACK OF ENCLOSURE.	18" STRIP LIGHT. EACH LIGHT IS ACTIVATED BY A SEPARATE DOOR SWITCH AT FRONT AND BACK OF ENCLOSURE.
E	FUTURE	4RU	PROVIDE 4 RACK UNITS FOR FUTURE NETWORK EQUIPMENT	

GENERAL NOTES:

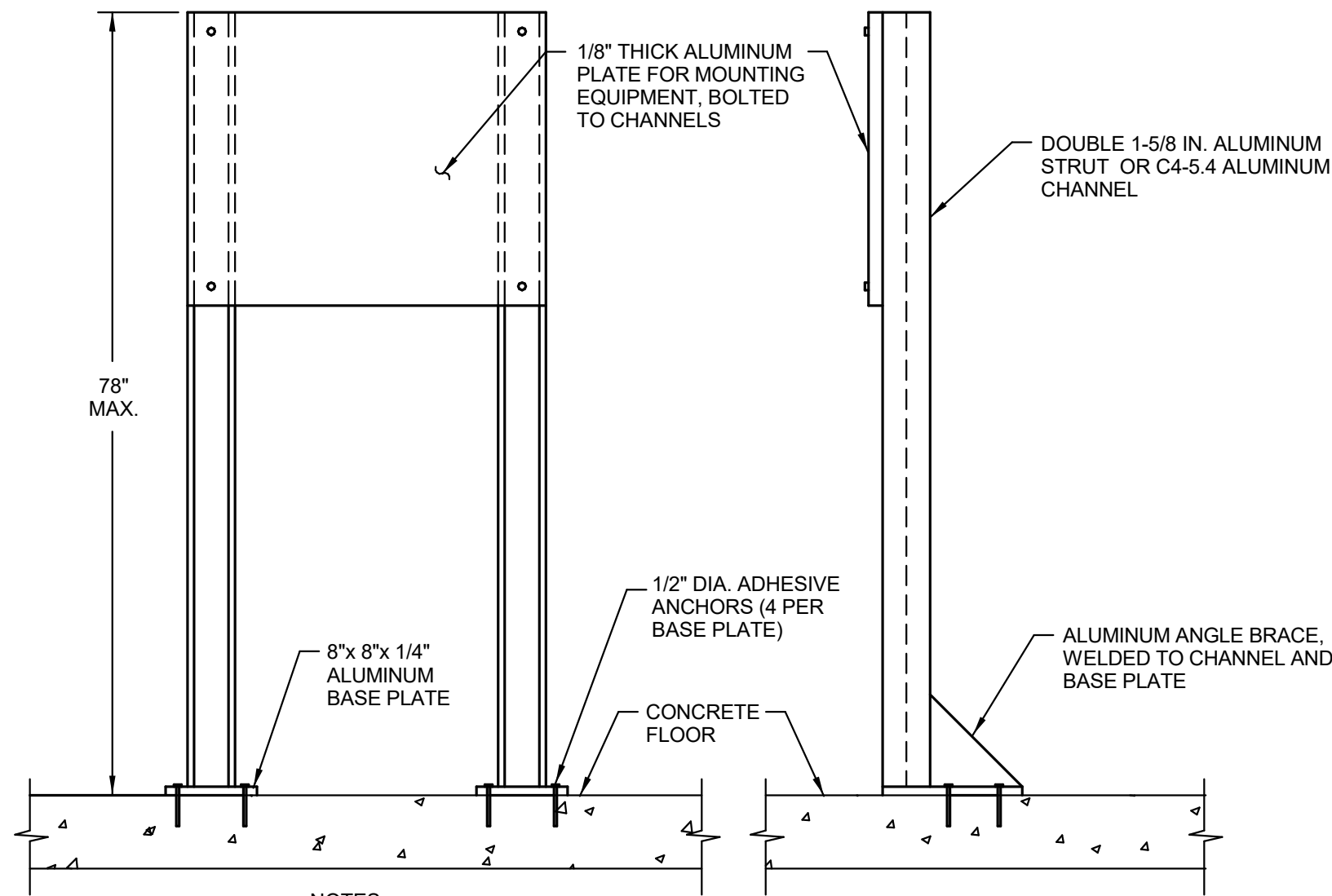
- A. ALL FIELD WIRING TO BE IN 3/4" RMC CONDUIT MINIMUM.
- B. PROVIDE 3/4"-2#12,#12G FOR POWER WIRING UNLESS NOTED OTHERWISE.
- C. PROVIDE THE FOLLOWING CONTROL WIRING UNLESS NOTED OTHERWISE:
(1) 1 1/2"-(2)2/C#16SH FOR ANALOG SIGNALS
(1) 1 1/2"-34#14,#14G FOR DIGITAL SIGNALS.

KEYNOTES:

1. PROVIDE WITHOUT UPS WHEN INDICATED ON FIELD HUB ENCLOSURE SCHEDULE.



4 NEMA ENCLOSURE AT BACKWASH TANK
DE01 NOT TO SCALE



NOTES:

1. USE STAINLESS STEEL FASTENERS AND HARDWARE.

5 PEDESTAL
DE01 NOT TO SCALE

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

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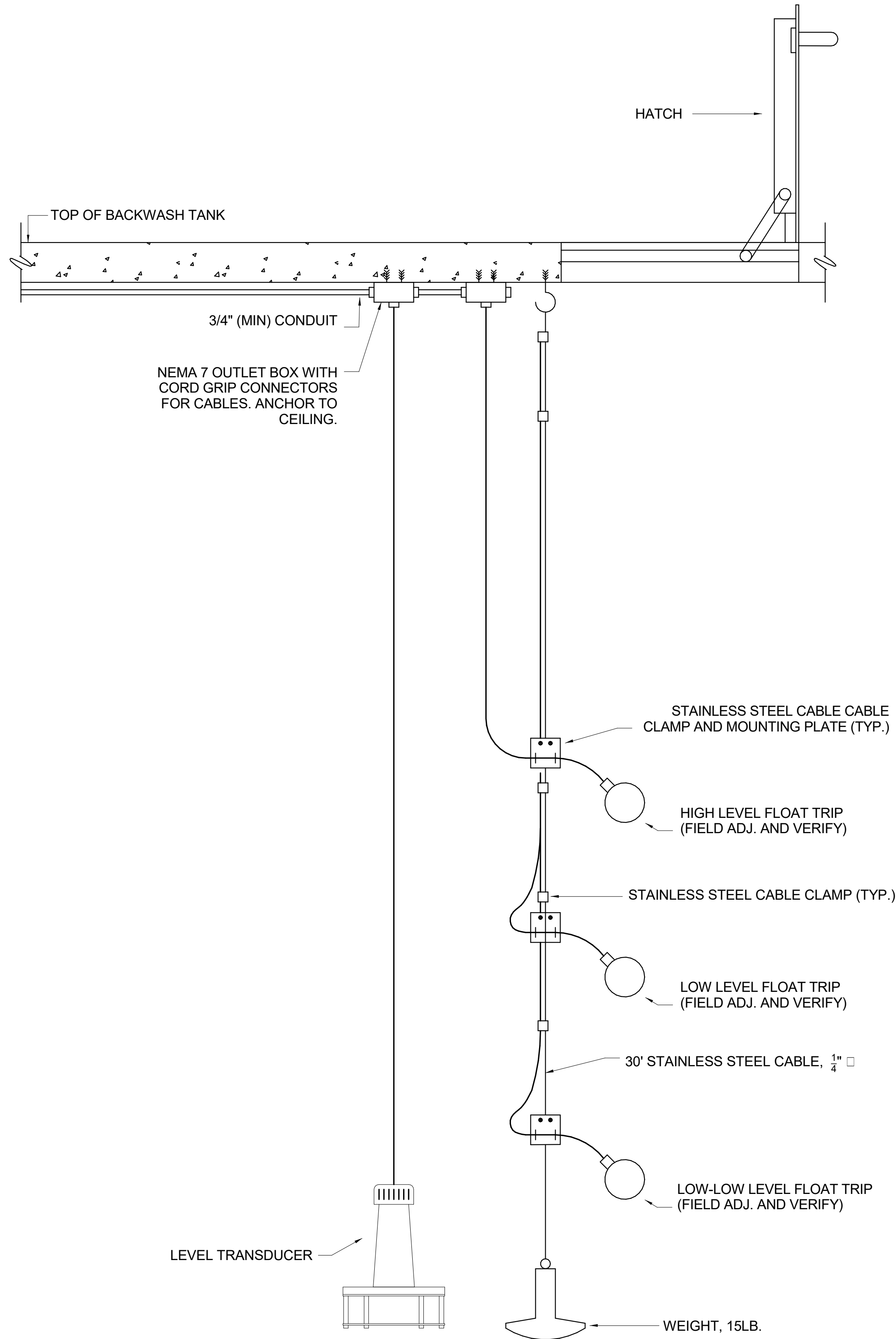
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REVISION SCHEDULE
REV. # DESCRIPTION DATE

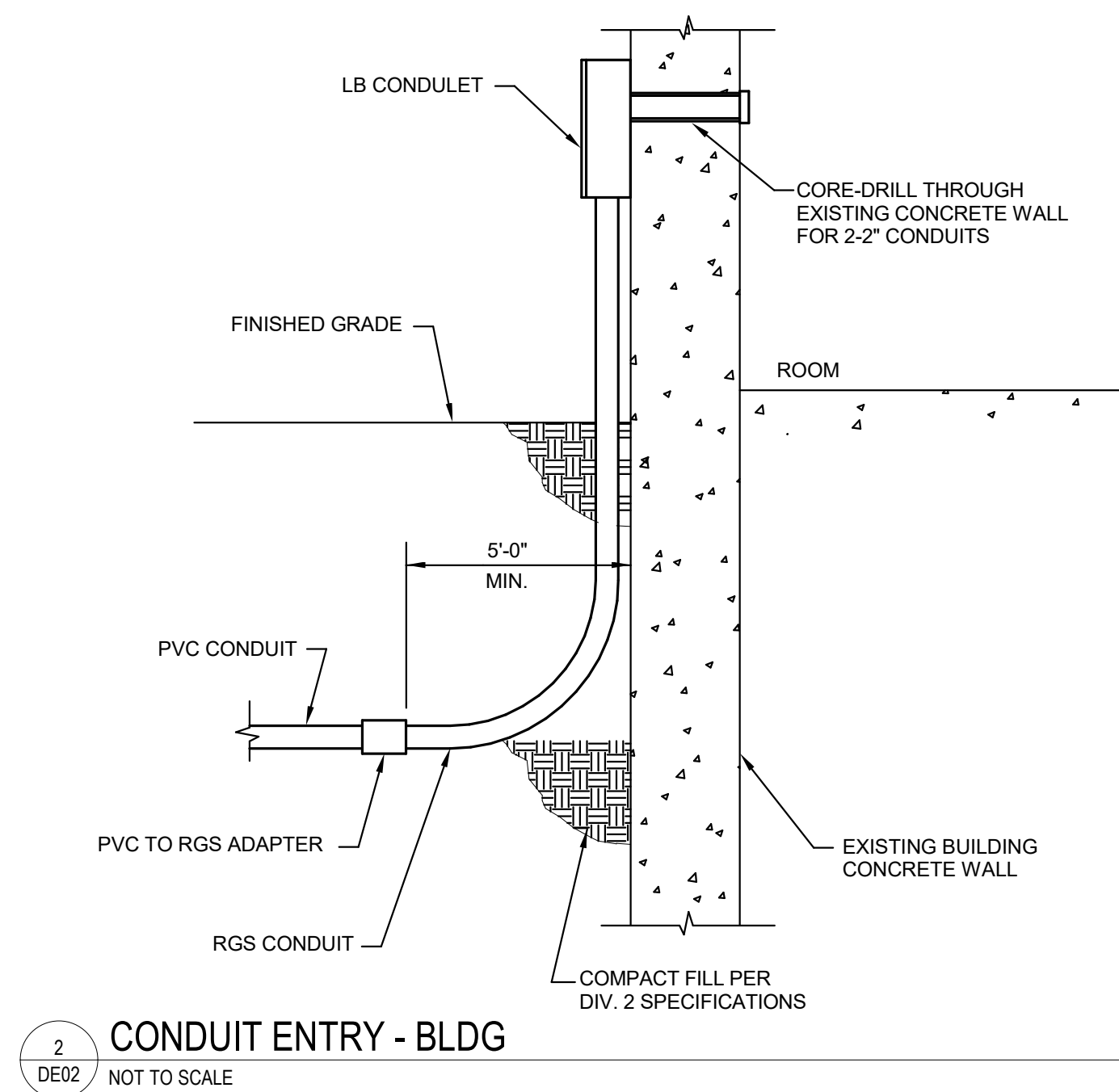
DETAILS

DE01

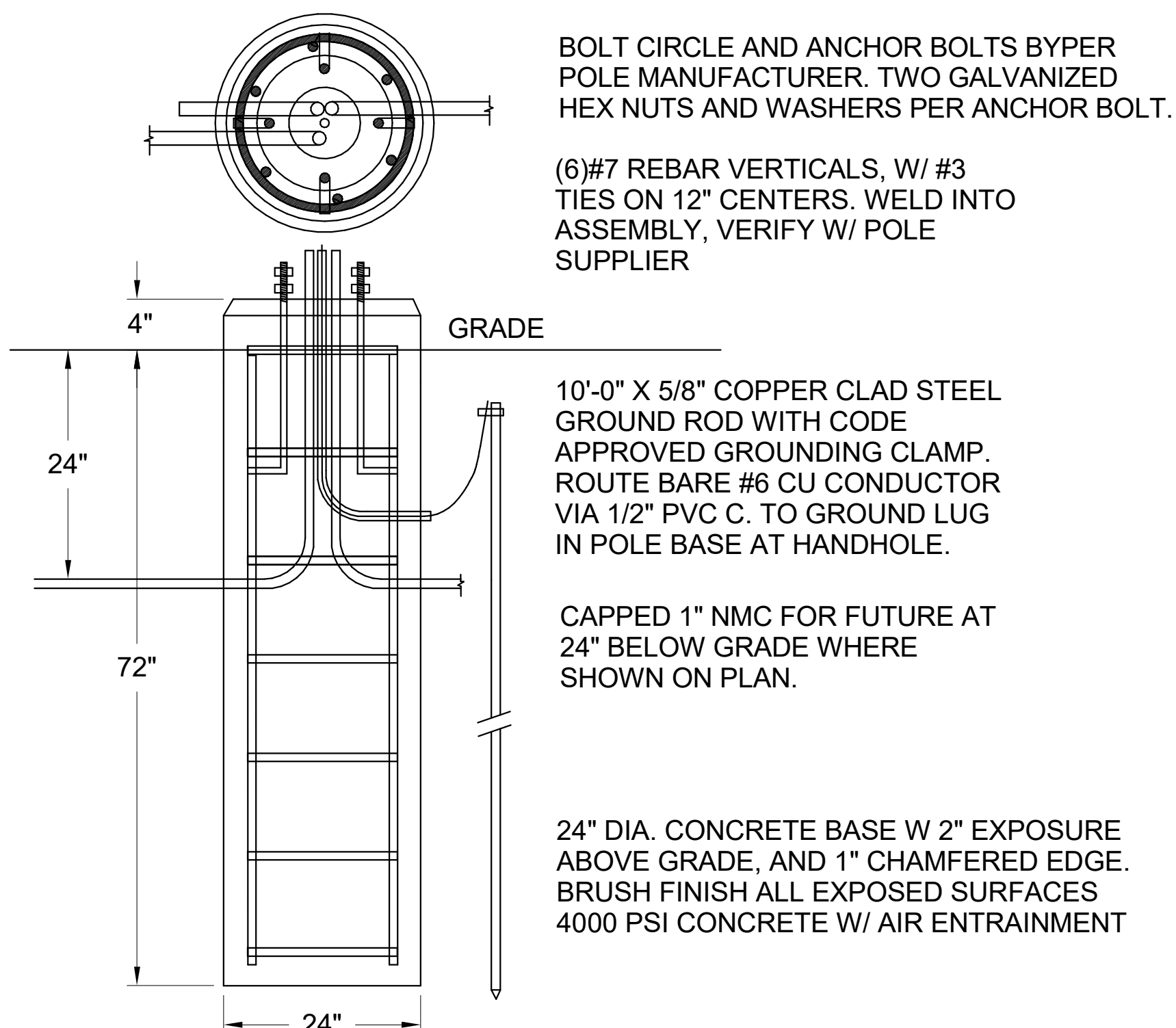
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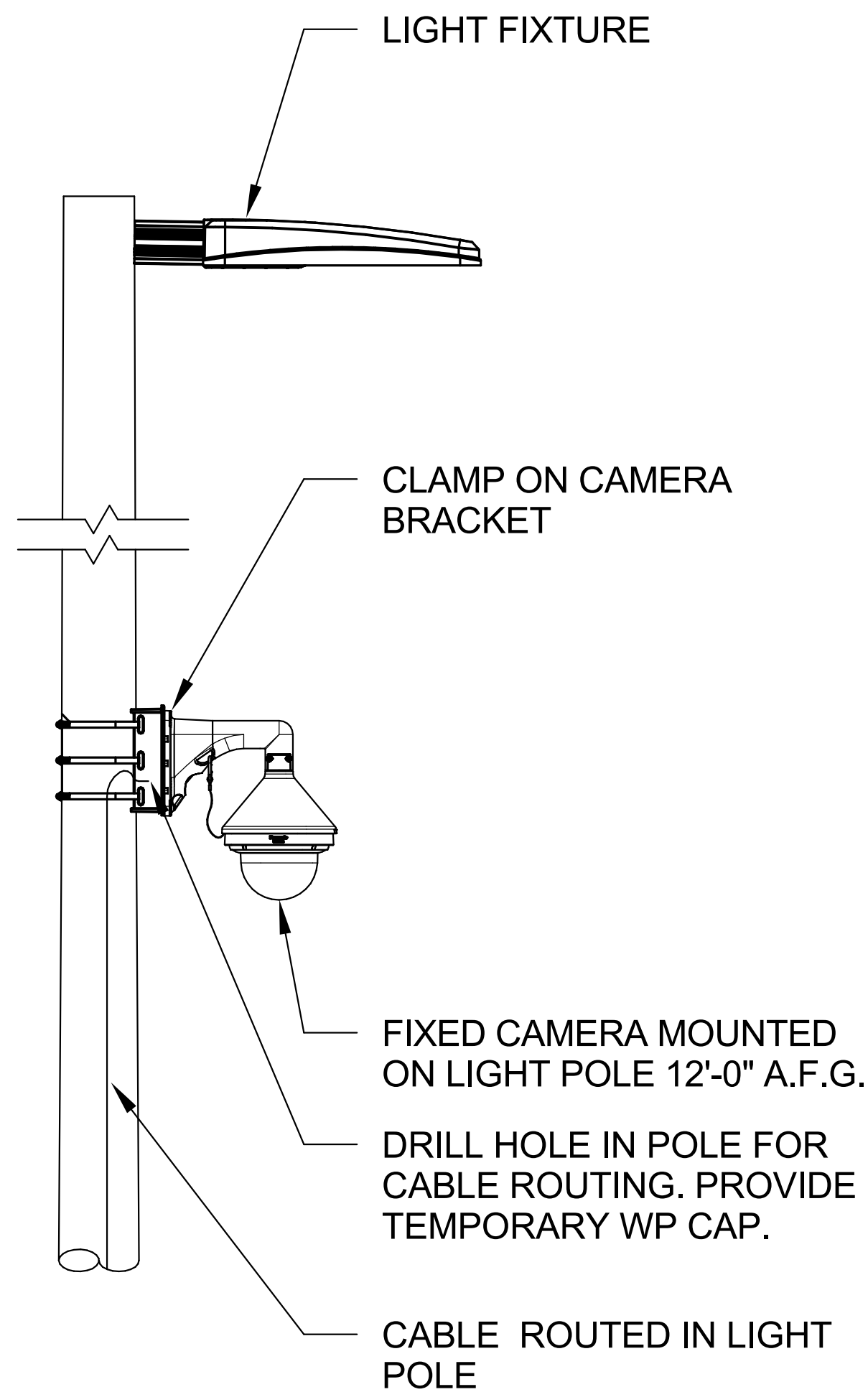
1 BACKWASH TANK LAYOUT
DE02 NOT TO SCALE



2 CONDUIT ENTRY - BLDG
DE02 NOT TO SCALE



3 LIGHTING UNIT FOUNDATION DETAIL
DE02 NOT TO SCALE



4 POLE MOUNTED MULTI-SENSOR CAMERA
DE02 NOT TO SCALE



Project Owner

CITY OF MADISON WATER UTILITY
UNIT WELL 19 TREATMENT SYSTEM ADDITION

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DETAILS

DE02

