

PFOS / PFOA DRINKING WATER MITIGATION SYSTEM

WIDEFIELD WATER AND SANITATION DISTRICT (WWSD)

Prepared for:

USACE Omaha District

1616 Capital Ave., Omaha, NE 68102

Reviewed by
dsdgrimm
03/27/2019 2:09:54 PM



URS Group, Inc.
An AECOM Company

PROJECT

PFOS / PFOA DRINKING WATER MITIGATION SYSTEM

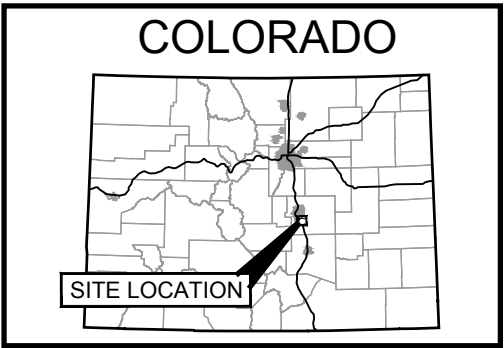
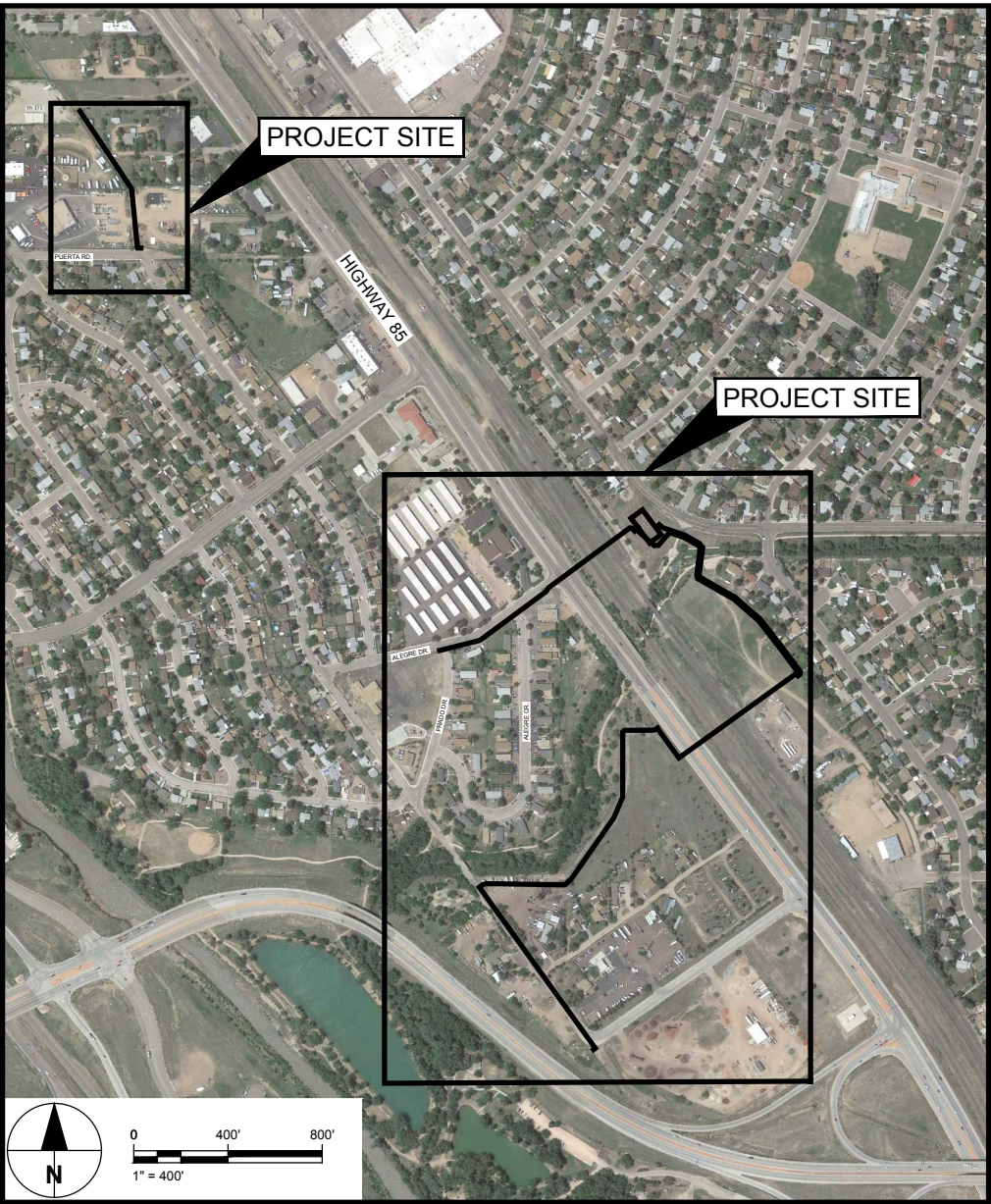
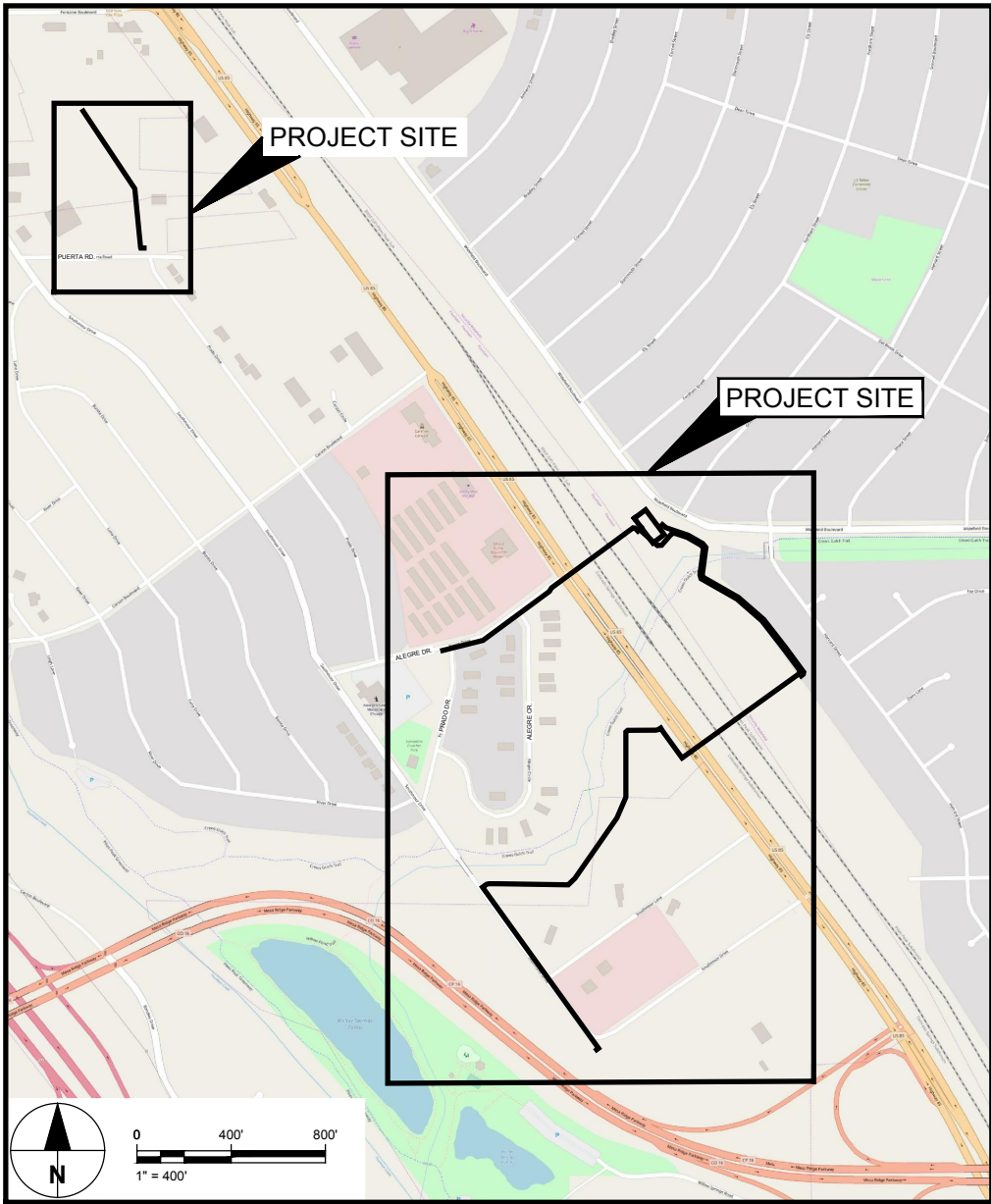
WIDEFIELD WATER AND SANITATION DISTRICT (WWSD)

CLIENT

USACE Omaha District
1616 Capital Ave.
Omaha, NE 68102

CONSULTANT

URS Group, Inc.
12120 Shamrock Plaza
Omaha, NE 68154
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Refer to ECM Chapter 4, Section 4.3.5.E.2 Longitudinal Placement. Provide in the construction drawings all applicable standard drawings in Appendix F for the location of the underground utilities within the public right-of-way.

ISSUE/REVISION

0	02/28/19	60% DESIGN
I/R	DATE	DESCRIPTION

PROJECT NUMBER

Project Number: 60589841

SHEET TITLE

COVER SHEET

SHEET NUMBER

G-400

SHEET LIST

Sheet Number	Description	Revision Number	Revision Date
G-400	COVER SHEET	0	02/28/19
G-401	SHEET LIST AND GENERAL NOTES	0	02/28/19
G-402	GENERAL LEGEND AND SYMBOLS	0	02/28/19
G-403	DRINKING WATER MITIGATION SYSTEM PLAN	0	02/28/19
G-404	PROCESS FLOW DIAGRAM	0	02/28/19
G-405	DWMF SITE PLAN	0	02/28/19
G-409	PROJECT SURVEY CONTROL	0	02/28/19
S-400	STRUCTURAL GENERAL NOTES	0	02/28/19
S-410	WET WELL FOUNDATION PLAN	0	02/28/19
S-411	BUILDING FLOOR PLAN	0	02/28/19
S-412	BUILDING ROOF PLAN	0	02/28/19
S-413	BUILDING FLOOR JOINT PLAN	0	02/28/19
S-420	SECTIONS 1	0	02/28/19
S-421	SECTIONS 2	0	02/28/19
S-430	BUILDING ELEVATIONS	0	02/28/19
S-450	WIDEFIELD STRUCTURAL STANDARD DETAILS 1	0	02/28/19
S-451	WIDEFIELD STRUCTURAL STANDARD DETAILS 2	0	02/28/19
S-452	WIDEFIELD STRUCTURAL STANDARD DETAILS 3	0	02/28/19
PP-401	DWMF PROCESS PLAN	0	02/28/19
PP-402	DWMF PROCESS SECTIONS (SHEET 1 OF 2)	0	02/28/19
PP-403	SMALL DIAMETER PIPING ISOMETRIC	0	02/28/19
PP-410	PROCESS DETAILS (SHEET 1 OF 3)	0	02/28/19
PP-411	PROCESS DETAILS 2 (SHEET 2 OF 3)	0	02/28/19
PP-412	PROCESS DETAILS 3 (SHEET 3 OF 3)	0	02/28/19
PP-413	PROCESS DETAILS 4	0	02/28/19
PP-420	SODIUM HYPOCHLORITE SYSTEM DETAILS	0	02/28/19
PL-400	PIPELINE GENERAL NOTES	B	02/28/19
PL-401	COLLECTION PLAN AND PROFILE KEY MAP	B	02/28/19
PL-411	COLLECTION PLAN AND PROFILE	B	02/28/19
PL-412	TREATED WATER PLAN AND PROFILE	B	02/28/19
E-401	LEGEND AND ABBREVIATIONS	0	02/28/19
E-402	ONE LINE DIAGRAM	0	02/28/19
E-403	ELECTRICAL SCHEDULES	0	02/28/19
E-404	SITE PLAN	0	02/28/19
E-405	LIGHTING PLAN	0	02/28/19
E-406	POWER AND GROUNDING PLAN	0	02/28/19
E-407	BUILDING ROOF LIGHTNING PLAN	0	02/28/19
E-408	SECURITY MOTOR CONTROL SCHEMATICS	0	02/28/19
E-409	DETAILS	0	02/28/19
I-401	LEGEND AND ABBREVIATIONS	0	02/28/19
I-402	PLC COMMUNICATION SCHEMATICS AND LAYOUT	0	02/28/19
I-403	PLC CONNECTION SCHEMATIC	0	02/28/19
I-404	PIPING AND INSTRUMENTATION DIAGRAM I	0	02/28/19
I-405	PIPING AND INSTRUMENTATION DIAGRAM II	0	02/28/19
I-406	PIPING AND INSTRUMENTATION DIAGRAM III	0	02/28/19
I-407	PIPING AND INSTRUMENTATION DIAGRAM IV	0	02/28/19

GENERAL NOTES

1. CONTRACTOR SHALL UNDERSTAND COMPLY WITH ALL LOCAL BUILDING CODES AND STANDARDS
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK ACTIVITIES WITH PUBLIC AND PRIVATE AGENCIES
3. CONTRACTOR SHALL PERFORM HIS WORK IN A MANNER THAT MINIMIZES DISRUPTION OF PUBLIC AND PRIVATE SERVICES
4. THE GROUND CONFIGURATION IS BASED OFF OF FIELD SURVEY INFORMATION OBTAINED DURING DESIGN. THE INFORMATION IS INTENDED TO REFLECT THE GENERAL GROUND CONFIGURATION AND FEATURES AT THE DATE OF SURVEY ONLY. THE CONTRACTOR SHALL REVIEW AND VERIFY THE EXISTING CONFIGURATIONS PRIOR TO CONSTRUCTION
5. CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER CONSISTENT WITH STANDARDS ESTABLISHED BY THE GOVERNING AGENCIES AND PROJECT SPECIFICATIONS.
6. ALL MATERIALS AND WORKMANSHIP SHALL BE IN COMPLIANCE WITH CONTRACT DOCUMENTS AND WORK SHALL BE SUBJECT TO OBSERVATION AND ACCEPTANCE BY THE ENGINEER
7. CONTRACTOR SHALL PROTECT AND MAINTAIN ALL UTILITIES, STRUCTURES, IMPROVEMENTS, MONUMENTS AND BENCHMARKS AFFECTED BY THE WORK NOT DESIGNATED FOR DEMOLITION OR REMOVAL AND REPLACEMENT, AND DAMAGE SHALL BE REPAIRED AND RESTORED TO THE SATISFACTION OF THE AFFECTED OWNER, PUBLIC AGENCIES AND THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.
8. CONTRACTOR SHALL IMPLEMENT PROCEDURES TO MINIMIZE EROSION OF AREAS DISTURBED BY THE WORK. CONTRACTOR SHALL MAINTAIN ALL DISTURBED AREAS UNTIL NATIVE VEGETATION IS RE-ESTABLISHED.
9. THE CONTRACTOR IS RESPONSIBLE FOR AND ASSUMES RESPONSIBILITY FOR WORKING AROUND AND PROTECTING ALL UTILITIES. EXISTING OVERHEAD AND BURIED UTILITIES AND STRUCTURES LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE AND MAY NOT REPRESENT ALL BURIED UTILITIES OR ALL EXISTING STRUCTURES PRESENT.

NOTIFICATIONS

1. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN (MAIN LINES - NO LATERALS OR SERVICES SHOWN) ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN ON THE EXISTING DRAWINGS. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES, LATERALS, AND SERVICES PRIOR TO TRENCHING AND SHALL BE REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE DRAWINGS. CALL UNDERGROUND LOCATION (USA) AT 811 OR 1-800-922-1987 AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION.
2. THE CONTRACTOR IS REQUIRED TO NOTIFY THE EXISTING AGENCIES IN THE AREA BEFORE THE START OF ANY WORK.

UTILITY CONTACTS:

WATER	WIDEFIELD WATER AND SANITATION DISTRICT (719) 390-7111
SEWER	WIDEFIELD WATER AND SANITATION DISTRICT (719) 390-7111
ROADS	COLORADO DEPARTMENT OF TRANSPORTATION (REGION 2) (719) 227-3202
STREETS	EL PASO COUNTY (719) 520-6460
	CITY OF FOUNTAIN (719) 322-2000
ELECTRICITY	CITY OF FOUNTAIN UTILITIES (719) 322-2010
GAS	COLORADO INTERSTATE GAS (800) 238-3764
TELEPHONE	CENTURY LINK (719) 647-5231
CABLE TV	COMCAST / XFINITY (800) 934-6489
FLOOD CONTROL	PIKES PEAK REGIONAL BUILDING DEPT. (719) 327-2880
UNDERGROUND FACILITIES	UTILITY NOTIFICATION CENTER OF COLORADO 811 / (800) 922-1987



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PROJECT NUMBER

Project Number: 60589841

SHEET TITLE

SHEET LIST AND GENERAL
NOTES

SHEET NUMBER

G-401

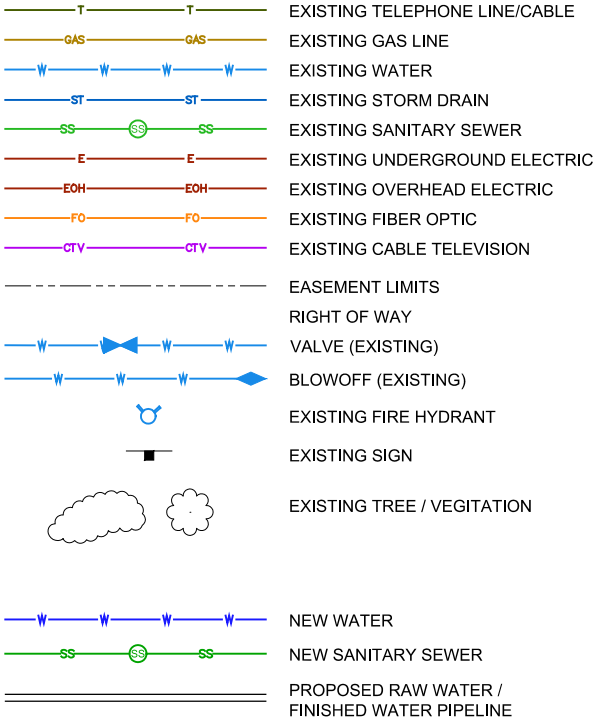
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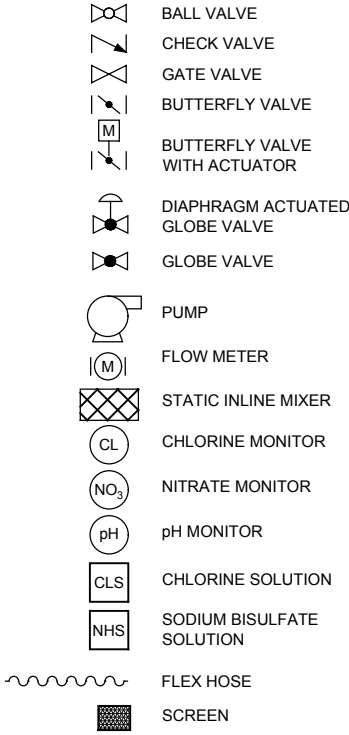


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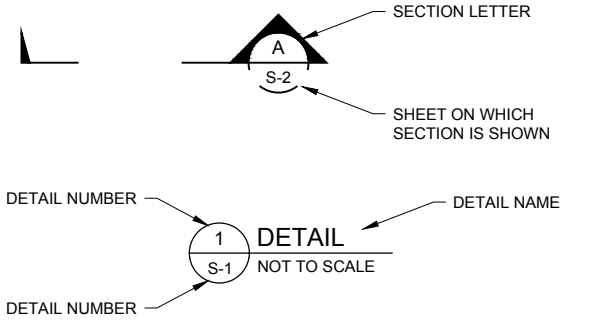
CIVIL LEGEND



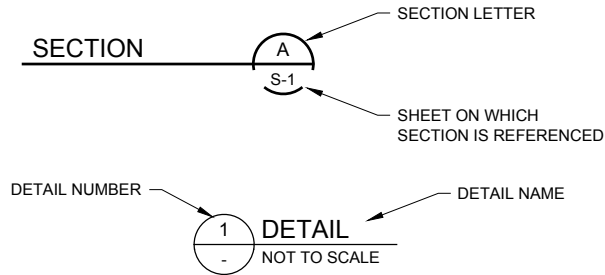
SYMBOLS



SECTION/DETAILS CALLOUTS



SECTION/DETAILS LABELS



ABBREVIATIONS

@	AT	MAX	MAXIMUM
&	AND	M	METER
A	ANODE	MFR	MANUFACTURER
A.C.	ASPHALTIC CONCRETE	MH	MANHOLE
ACT	ACTUAL	MIN	MINIMUM
ADJ.D.	ADJUST	M.J.	MECHANICAL JOINT
AIX	ANION EXCHANGE		
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	NO. OR #	NUMBER
APPROX.E.	APPROXIMATE	NOM	NOMINAL
ARV	AIR AND VACUUM RELEASE VALVE	NPT	NATIONAL PIPE THREAD
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS	N, S, E, W	NORTH, SOUTH, EAST, WEST
AWWA	AMERICAN WATER WORKS ASSOCIATION	NTS	NOT TO SCALE
AWG	AMERICAN WIRE GAUGE		
AVE.F.	AVENUE	OD	OUTSIDE DIAMETER
		OHE	OVERHEAD ELECTRIC
BFV	BUTTERFLY VALVE		
BLVD.	BOULEVARD	PC	POINT OF CURVATURE
BOP	BOTTOM OF PIPE	PDIT	PRESSURE DIFFERENTIAL INDICATE TRANSMIT
BOV	BLOWOFF ASSEMBLY & VALVE	PE	PROFESSIONAL ENGINEER
BPSV	BACK PRESSURE SUSTAINING VALVE	PH	POTHOLE
BWI	BACKWASH INFLUENT	PI	PRESSURE INDICATE
		PL	PROPERTY LINE
CATV	CABLE TELEVISION	PP	POWER POLE
CB	CATCH BASIN	PROP	PROPOSED
CBC	CONCRETE BOX CULVERT	PRV	PRESSURE REDUCING VALVE
c.c.	CENTER TO CENTER	PS	PRESSURE SWITCH
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION	PSF	POUNDS PER SQUARE FOOT
C&G	CURB AND GUTTER	PSI	POUNDS PER SQUARE INCH
CHEM.	CHEMICAL	PT	POINT OF TANGENCY
CIP	CAST IRON PIPE	PVC	POLYVINYL CHLORIDE PIPE
CL	CENTER LINE	PVI	POINT OF VERTICAL INTERSECTION
CLR.	CLEAR	PVT	PRIVATE
CMP	CORRUGATED METAL PIPE		
COMM	COMMUNICATIONS	R	RADIUS
CONC	CONCRETE	RCB	REINFORCED CONCRETE BOX
CPLG (INS), (RED), (STR)	COUPLING (INSULATED), (REDUCING), (STRAIGHT)	RCP	REINFORCE CONCRETE PIPE
CR	CURB RETURN	NO.	REDUCER
CRA	CONCRETE REVERSE ANCHOR	REINF	REINFORCING
CS	COLORADO SPRINGS	REQ'D	REQUIRED
CSFD	COLORADO SPRINGS FIRE DEPARTMENT	ROW	RIGHT OF WAY
CTB	CONCRETE THRUST BLOCK	RSTNT	M.J. RESTRAINT (i.e.. MEGALUG)
CSU	COLORADO SPRINGS UTILITIES	RT	RIGHT
CV	CHECK VALVE	RW	RAW WATER
CY	CUBIC YARDS		
		SAN.	SANITARY
DBA	DOING BUSINESS AS	SH	SHEET
DEFL	DEFLECT	SCH	PIPE SCHEDULE
DIA	DIAMETER	SCHED	SCHEDULE
DIP	DUCTILE IRON PIPE	SDR	STANDARD DIMENSION RATIO
DR	DRAIN	SLD.SLV	SOLID SLEEVE
DWG	DRAWING	SJ	SLIP JOINT
DWMF	DRINKING WATER MITIGATION FACILITY	SPECS	SPECIFICATIONS
		SS OR S.S.	SANITARY SEWER
EA	EACH	SST	STAINLESS STEEL
E.F.	EACH FACE	STA	STATION
ELECT.	ELECTRIC	STL	STEEL
EL OR ELEV.	ELEVATION	STS	STORM SEWER
EXIST.	EXISTING		
		TELE OR TELCO	TELEPHONE COMPANY
FCV	FLOW CONTROL VALVE	TEMP	TEMPORARY/TEMPORARILY
FE	FLOW ELEMENT	tf	THICKNESS OF FOOTING
FI	FLOW INDICATOR	THD'D	THREADED
FIG	FIGURE	TOC	TOP OF CONCRETE
FIMS	FACILITIES INFORMATION MANAGEMENT SYSTEM	TOP	TOP OF PIPE
FLG	FLANGE	TS	TEST STATION
FM	FORCE MAIN	tw	THICKNESS OF WALL
FO	FIBER OPTIC	TYP.	TYPICAL
FT	FEET		
		U.G.E.	UNDERGROUND ELECTRIC
GALV	GALVANIZED	UNNC	UTILITY NOTIFICATION CENTER OF COLORADO
GPM	GALLONS PER MINUTE	UOM	UNIT OF MEASURE
GR.Y.	GRADE BREAK	USGS	UNITED STATES GEOLOGICAL SURVEY
GV	GATE VALVE		
		VCP	VITRIFIED CLAY PIPE
H.	HORIZONTAL	VERT	VERTICAL
HD	HIGH DEFLECTION	VLV	VALVE
HP	HIGH PRESSURE		
HS	HIGH STRENGTH	WL	WATER LINE
HWL	HIGH WATER LINE	W/	WITH
HWY	HIGHWAY	WRD	WATER RESOURCES DEPARTMENT
HYD ASSY	INCLUDES FIRE HYDRANT, LATERAL VALVE, TIE RODS, AND REVERSE ANCHOR	WW	WASTEWATER
I.D.	INSIDE DIAMETER		
IN.	INCH		
INV	INVERT		
LB	POUNDS		
LF	LINEAR FEET		
LT	LEFT		



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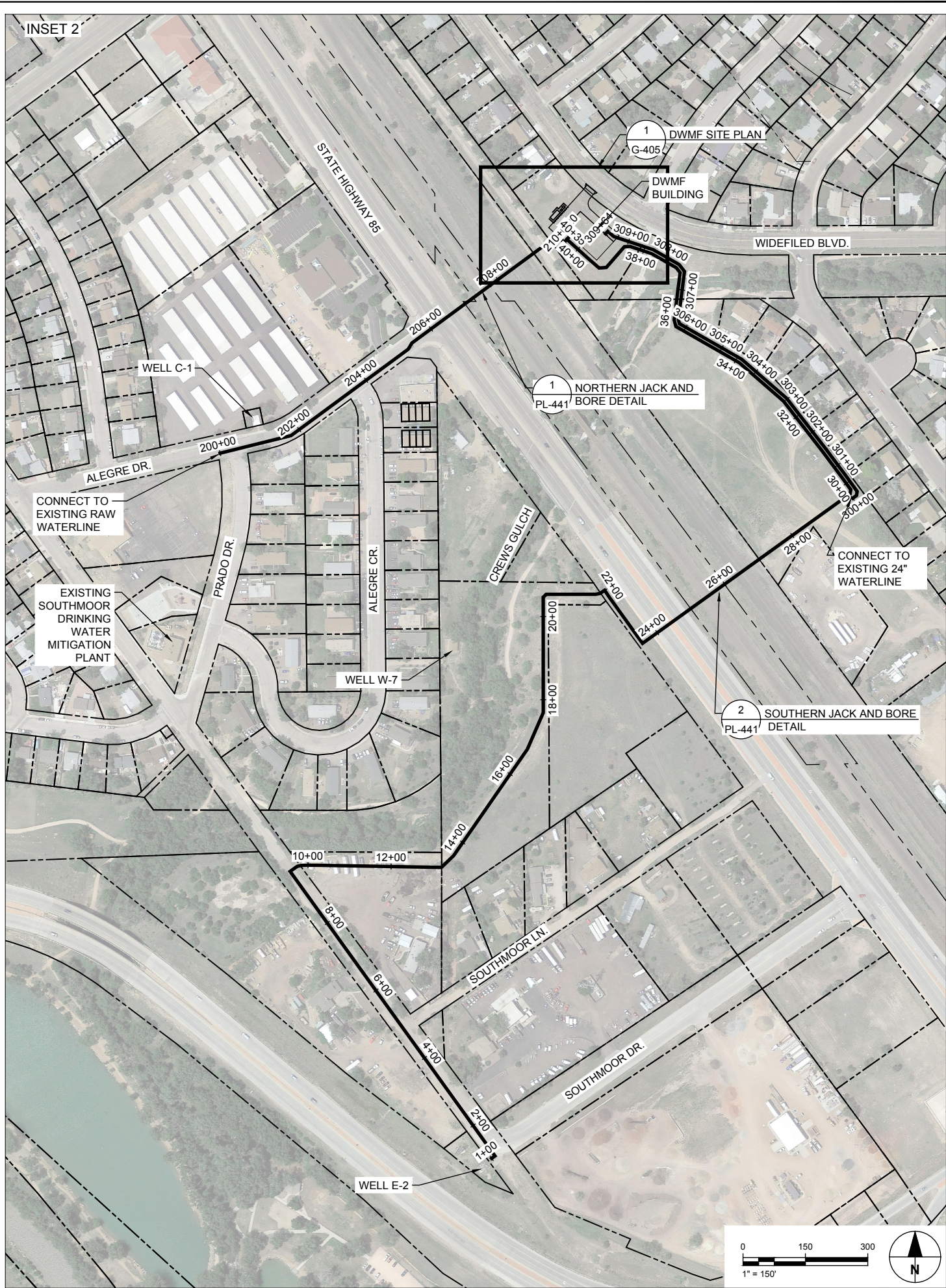
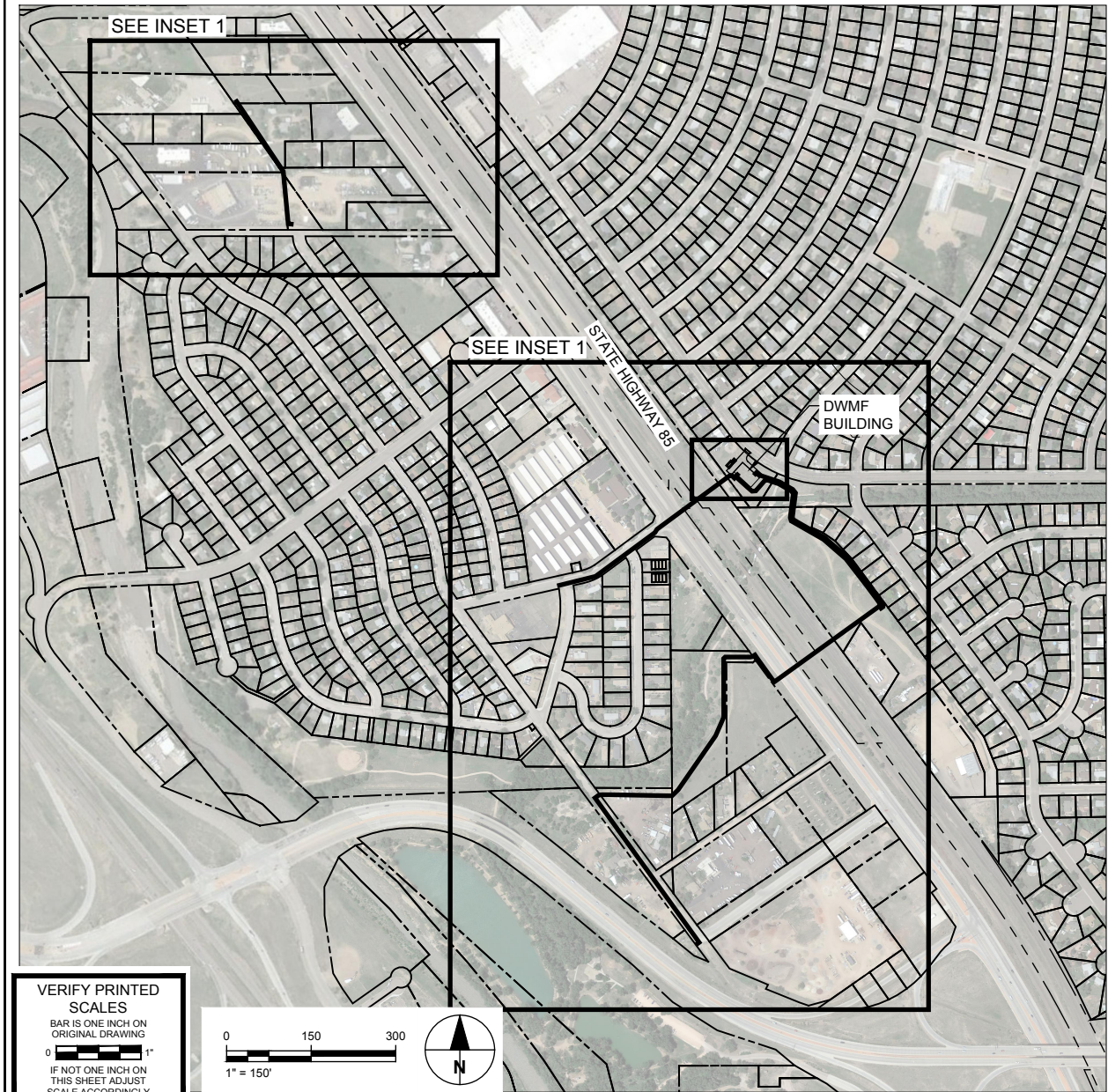
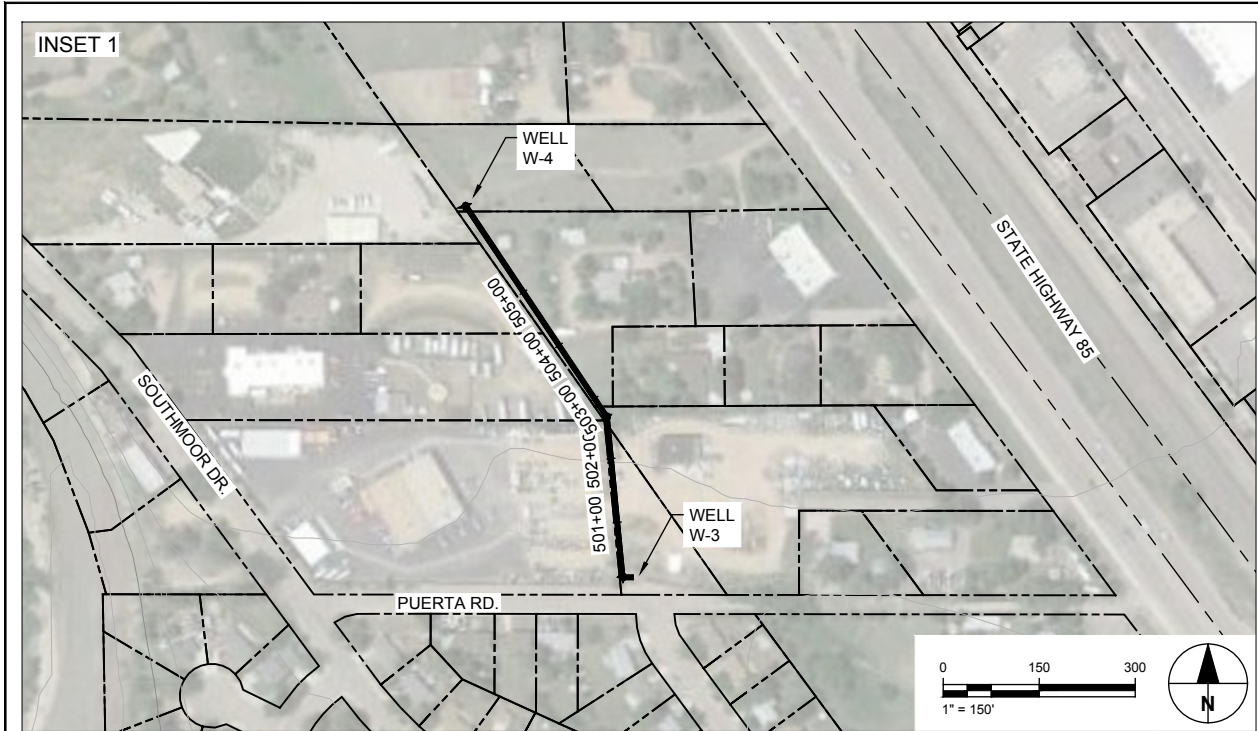
GENERAL LEGEND AND SYMBOLS

SHEET NUMBER

G-402

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URS

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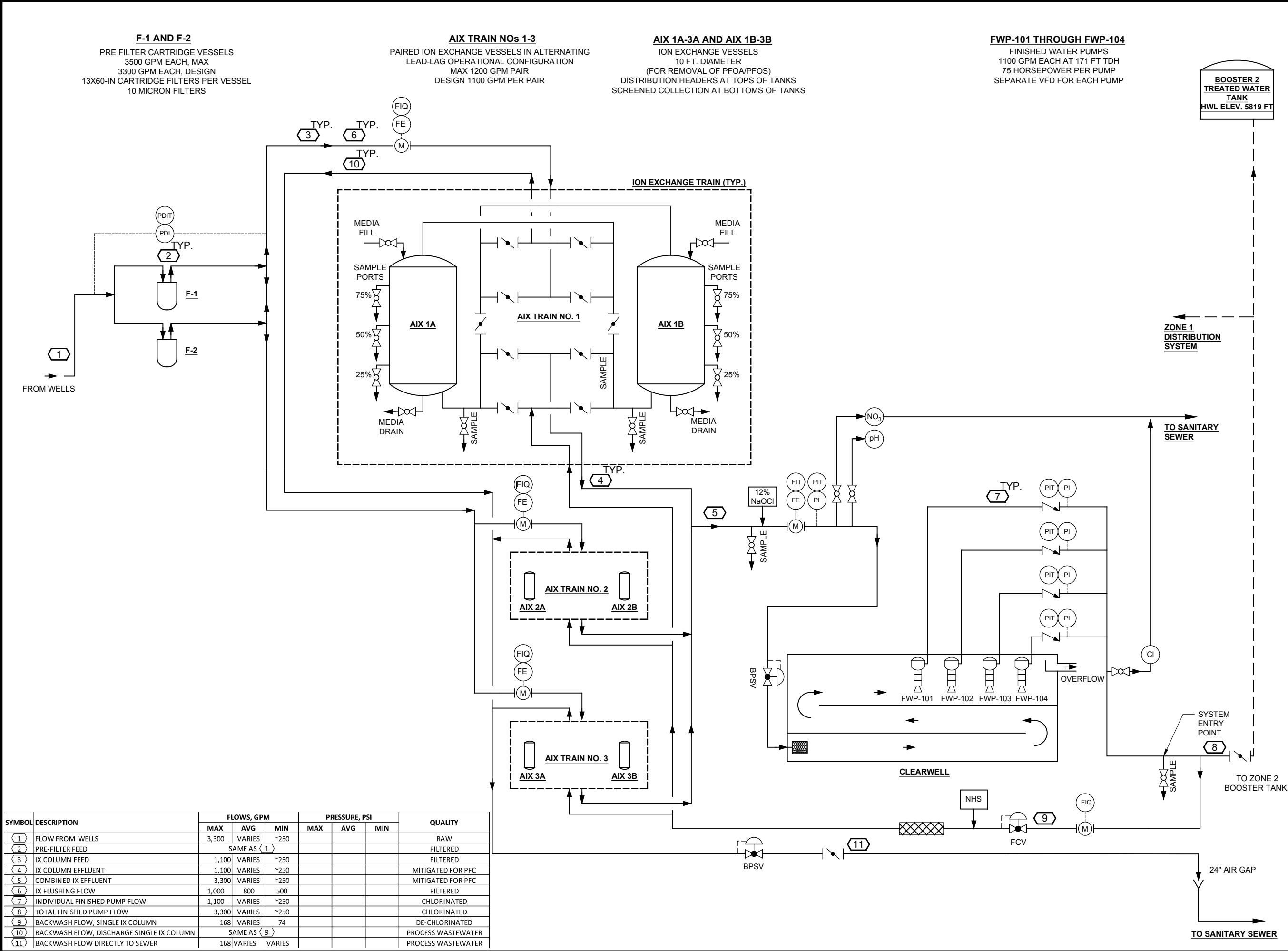
Project Number: 60589841

SHEET TITLE

DRINKING WATER MITIGATION
SYSTEM PLAN

SHEET NUMBER

G-403



URS Group, Inc.
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**PFOS / PFOA DRINKING
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**WIDEFIELD WATER AND
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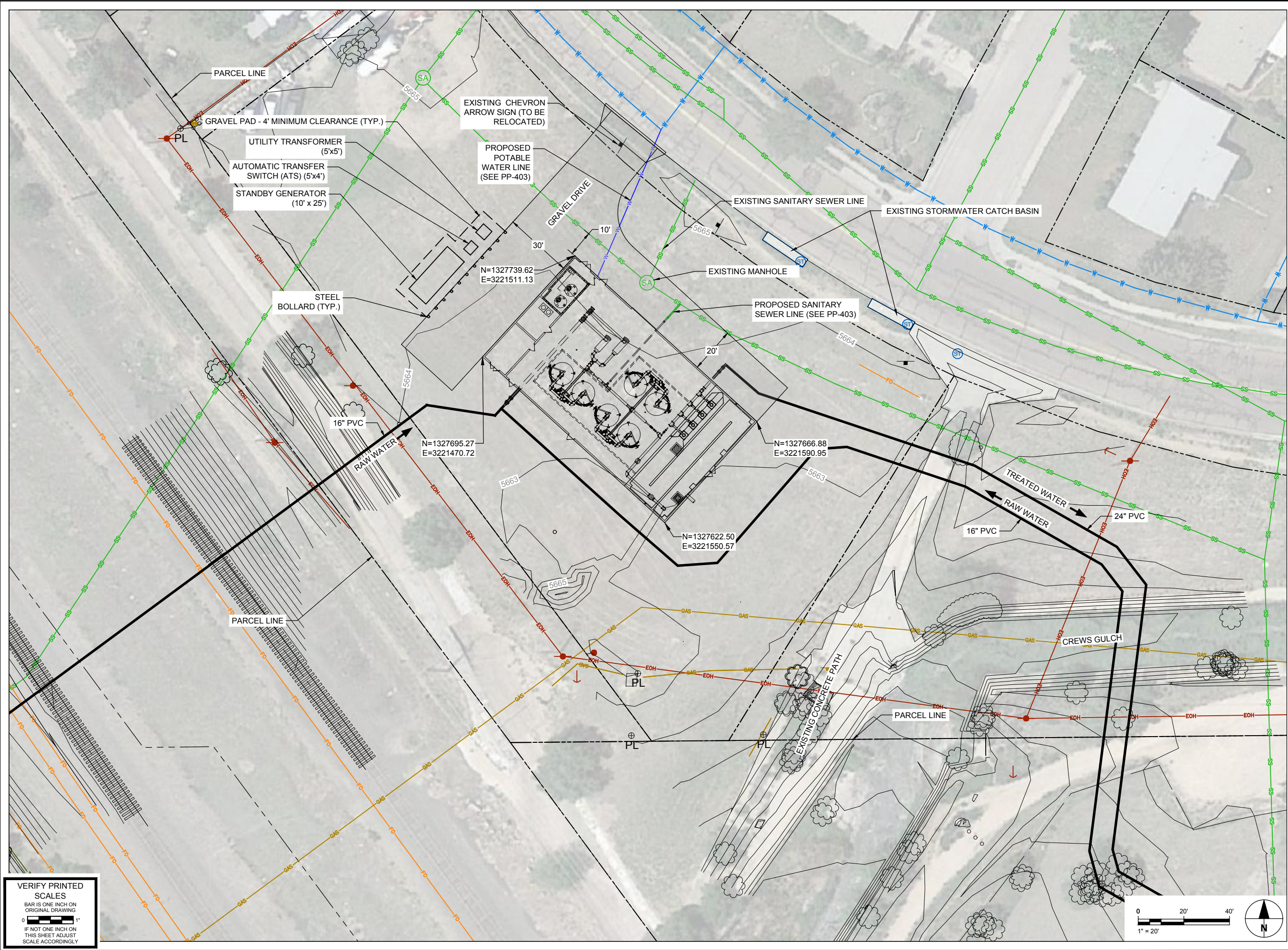
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SHEET TITLE

PROCESS FLOW DIAGRAM

SHEET NUMBER

G-404



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SHEET TITLE
DWMF SITE PLAN

SHEET NUMBER
G-405

NOTES:

1. THIS SURVEY IS NOT A COMPLETE BOUNDARY AND IS PREPARED AS A SURVEY CONTROL DRAWING ONLY.
2. NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.
3. ALL DIMENSIONS SHOWN HEREON ARE IN U.S. SURVEY FEET.
4. SURVEY CONTROL WAS ESTABLISHED BY GPS OBSERVATIONS USING THE FOLLOWING DATUMS:
HORIZONTAL -STATE PLANE COLORADO CENTRAL ZONE, NAD83(2011).
VERTICAL - NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).
5. PROJECT BENCHMARK: NGS CONTROL MONUMENT U 404: A STAINLESS STEEL ROD WITH CAP STAMPED "U 404 1984" LOCATED 7.5 MI SOUTH FROM COLORADO SPRINGS. 7.5 MI SOUTHERLY ALONG THE DENVER AND RIO GRANDE WESTERN RAILROAD FROM THE STATION IN COLORADO SPRINGS, 0.35 MI NORTH OF MAIN STREET IN FOUNTAIN, 128.0 FT NORTHEAST OF THE CENTERLINE OF U.S. HIGHWAY 85, 44.6 FT SOUTHWEST OF THE NEAR RAIL, 43.0 FT SOUTHEAST OF A POWERLINE CROSSING, 20.7 FT NORTH OF THE CENTER OF A SEWAGE MAN HOLE COVER, AND 3.3 FT NORTHWEST OF A UTILITY POLE WITH 4 GUY WIRES. NGS PUBLISHED ELEVATION = 5734.41 FEET (NGVD29).

SURVEYOR'S CERTIFICATE:

I, DEREK S. BROWN, A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF COLORADO, HEREBY CERTIFY THAT THIS SURVEY CONTROL DRAWING WAS PREPARED UNDER MY RESPONSIBLE CHARGE ON 02/28/19, 2019 AND TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF THE INFORMATION SHOWN HEREON IS ACCURATE.

PRELIMINARY

DEREK S. BROWN, P.L.S. 38064
FOR AND ON BEHALF OF AECOM
6200 SOUTH QUEBEC ST.,
GREENWOOD VILLAGE, CO 80111
PHONE 303.843.2330
DEREK.BROWN1@AECOM.COM

GEODETIC COORDINATE TABLE								
Point No.	Geodetic Coordinates NAD-83 (2011) (Central Zone 0502)		Elip Height (NAVD88)(ft)	Ortho Height (NAVD88)(ft)	Meridian Convergence Angle	Combined Scale Factor	NAD-83(2011) Zone (Central Zone 0502)	
	Latitude(N)	Longitude(W)					SP Northing(ft)	SP Easting(ft)
1309	38°42'56.84515"	-104°42'53.49172"	5572.207	5631.098	00°29'43"	0.999691978	1322355.196	3224020.283
1322	38°43'50.34044"	-104°43'28.70998"	5609.472	5668.050	00°29'20"	0.999688499	1327742.825	3221182.873
1324	38°43'58.32482"	-104°43'38.88480"	5617.694	5676.199	00°29'14"	0.999687858	1328543.659	3220369.767
1337	38°44'55.39199"	-104°44'29.14799"	5662.707	5720.796	00°28'42"	0.999683980	1334283.047	3216338.905
1349	38°45'44.40781"	-104°45'17.69961"	5702.123	5759.815	00°28'12"	0.999680673	1339209.697	3212452.049
1353	38°45'55.85058"	-104°45'30.22194"	5711.490	5769.081	00°28'04"	0.999679902	1340359.142	3211450.789
CONTROL 2	38°46'12.96535"	-104°44'40.55072"	5795.545	5853.383	00°28'35"	0.999675405	1342122.900	3215370.344
CONTROL 4	38°46'32.89102"	-104°43'45.38991"	5904.911	5962.987	00°29'10"	0.999669629	1344175.289	3219721.671
CP03	38°46'31.26281"	-104°44'20.96241"	5851.584	5909.479	00°28'47"	0.999672222	1343986.832	3216906.127
CP 131.5	38°43'18.58115"	-104°43'49.93720"	5580.295	5638.835	00°29'07"	0.999690893	1324515.740	3219528.073
CP 131.9	38°43'33.43093"	-104°44'03.52461"	5609.173	5667.600	00°28'58"	0.999689043	1326008.852	3218438.632
F209	38°44'16.61722"	-104°43'09.09020"	5668.896	5727.510	00°29'33"	0.999684849	1330414.309	3222714.666
GPS1	38°45'48.31921"	-104°46'35.50438"	5846.315	5903.489	00°27'23"	0.999673671	1339555.569	3206286.491
MP 290	38°46'12.97945"	-104°45'23.86627"	5730.743	5788.331	00°28'08"	0.999678502	1342096.029	3211939.978
PIN2	38°45'50.81187"	-104°45'24.75824"	5706.148	5763.783	00°28'07"	0.999680299	1339852.958	3211887.683
S347	38°41'51.85525"	-104°42'18.41710"	5545.480	5604.700	00°30'05"	0.999695407	1315804.988	3226857.644
U404	38°45'20.84040"	-104°44'52.71358"	5679.864	5737.760	00°28'27"	0.999682414	1336841.906	3214450.763

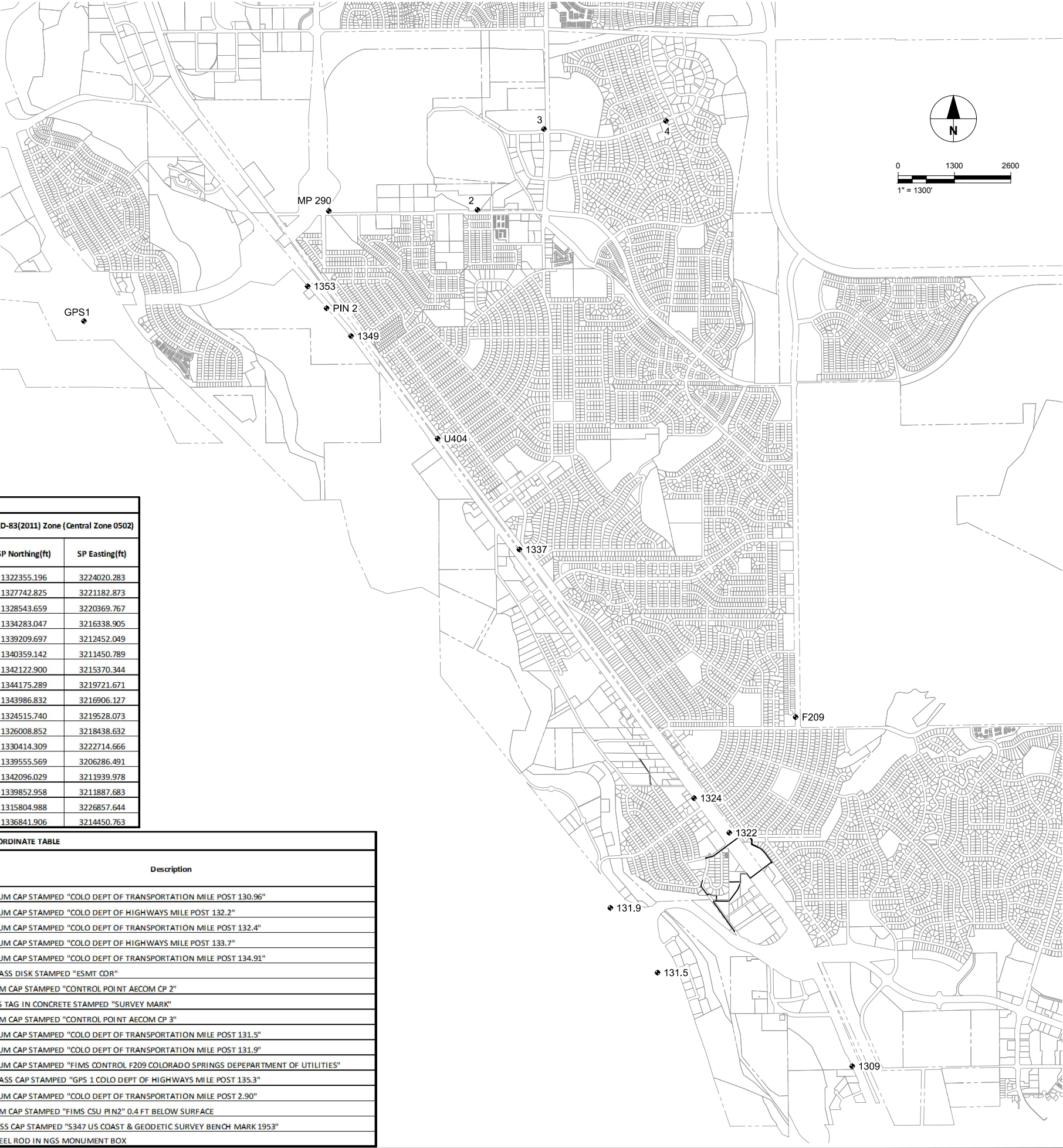
PROJECT COORDINATE TABLE				
Point No.	NAD-83(2011) Zone (Central Zone 0502)		Elev(ft) (NGVD29)	Description
	Northing(ft)	Easting(ft)		
1309	1322355.196	3224020.283	5627.748	3.25" ALUM CAP STAMPED "COLO DEPT OF TRANSPORTATION MILE POST 130.96"
1322	1327742.825	3221182.873	5664.700	3.25" ALUM CAP STAMPED "COLO DEPT OF HIGHWAYS MILE POST 132.2"
1324	1328543.659	3220369.767	5672.849	3.25" ALUM CAP STAMPED "COLO DEPT OF TRANSPORTATION MILE POST 132.4"
1337	1334283.047	3216338.905	5717.446	3.25" ALUM CAP STAMPED "COLO DEPT OF HIGHWAYS MILE POST 133.7"
1349	1339209.697	3212452.049	5756.465	3.25" ALUM CAP STAMPED "COLO DEPT OF TRANSPORTATION MILE POST 134.91"
1353	1340359.142	3211450.789	5765.731	2.25" BRASS DISK STAMPED "ESMT COR"
CONTROL 2	1342122.900	3215370.344	5850.033	1.5" ALUM CAP STAMPED "CONTROL POINT AECOM CP 2"
CONTROL 4	1344175.289	3219721.671	5959.638	1" BRASS TAG IN CONCRETE STAMPED "SURVEY MARK"
CP03	1343986.832	3216906.127	5906.129	1.5" ALUM CAP STAMPED "CONTROL POINT AECOM CP 3"
CP 131.5	1324515.740	3219528.073	5635.485	3.25" ALUM CAP STAMPED "COLO DEPT OF TRANSPORTATION MILE POST 131.5"
CP 131.9	1326008.852	3218438.632	5664.250	3.25" ALUM CAP STAMPED "COLO DEPT OF TRANSPORTATION MILE POST 131.9"
F209	1330414.309	3222714.666	5724.180	3.25" ALUM CAP STAMPED "FIMS CONTROL F209 COLORADO SPRINGS DEPEARTMENT OF UTILITIES"
GPS1	1339555.569	3206286.491	5900.140	3.25" BRASS CAP STAMPED "GPS 1 COLO DEPT OF HIGHWAYS MILE POST 135.3"
MP 290	1342096.029	3211939.978	5784.981	3.25" ALUM CAP STAMPED "COLO DEPT OF TRANSPORTATION MILE POST 2.90"
PIN2	1339852.958	3211887.683	5760.433	2.5" ALUM CAP STAMPED "FIMS CSU PIN2" 0.4 FT BELOW SURFACE
S347	1315804.988	3226857.644	5601.420	3.5" BRASS CAP STAMPED "S347 US COAST & GEODETIC SURVEY BENCH MARK 1953"
U404	1336841.906	3214450.763	5734.410	5/8" STEEL ROD IN NGS MONUMENT BOX

VERIFY PRINTED SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY



URS Group, Inc.
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PROJECT

PFOS / PFOA DRINKING
WATER MITIGATION
SYSTEM

WIDEFIELD WATER AND
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ISSUE/REVISION

0	02/28/19	60% DESIGN
I/R	DATE	DESCRIPTION

PROJECT NUMBER

Project Number: 60589841

SHEET TITLE

PROJECT SURVEY CONTROL

SHEET NUMBER

G-409

GENERAL STRUCTURAL NOTES

1. BUILDING CODES:

- A. THESE GENERAL NOTES APPLY TO ALL STRUCTURAL DRAWINGS. THIS PROJECT IS DESIGNED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (IBC), 2015 EDITION, THE MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES" (ASCE 7-10), AND THE 2017 PIKES PEAK REGIONAL BUILDING CODE (PPRBC).
- B. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH APPLICABLE PROVISIONS OF THE CODES SPECIFIED ABOVE.

2. DESIGN LOADS:

- A. LIVE LOADS:
REDUCTIONS SHALL BE COMPUTED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE. ROOF LIVE LOADS ARE NON-REDUCIBLE.
PEMB ROOF LIVE LOAD:..... 20 PSF
ROOF OF INTERIOR ROOMS:..... 20 PSF
- B. SNOW LOAD:
GROUND SNOW LOAD (PG)..... 20 PSF
FLAT-ROOF SNOW LOAD(PF)..... 20+UNBALANCED OR 30 PSF (MIN)
SNOW LOAD EXPOSURE FACTOR (CE)..... 1.0
SNOW LOAD IMPORTANCE FACTOR (IS)..... 1.1
SNOW LOAD THERMAL FACTOR (CT).....1.1
- C. DEAD LOAD
BUILDING DEAD LOADS..... SEE PEMB DRAWINGS
COLLATERAL LOAD..... 3 PSF OR 1000LB FOR PRIMARY FRAMING AND 100LB FOR SECONDARY FRAMING
- D. WIND LOAD:
ULTIMATE DESIGN WIND SPEED (Vult)..... 150 MPH
WIND EXPOSURE CATEGORY..... C
WIND IMPORTANCE FACTOR (Iw)..... 1.00
RISK CATEGORY..... III
ENCLOSURE CLASSIFICATION CATEGORY..... ENCLOSED
- E. SEISMIC LOAD:
RISK CATEGORY..... III
SOIL SITE CLASS..... D
SPECTRAL RESPONSE COEFFICIENTS:
SHORT PERIOD (SS)..... 0.175g
1 SECOND PERIOD (S1).....0.06g
DESIGN SPECTRAL RESPONSE ACCELERATION:
SHORT PERIOD (SDS).....0.187g
1 SECOND PERIOD (SD1)..... 0.097g
SEISMIC IMPORTANCE FACTOR (IE)..... 1.25
SEISMIC DESIGN CATEGORY..... B

3. COORDINATION:

- A. DO NOT SCALE DRAWINGS. CHANGES AFFECTING THE LAYOUT SHOWN MUST BE SPECIFIC AND CLEARLY CONVEYED TO ENGINEER IN WRITTEN FORM AS A CHANGE FOR INCLUSION INTO THESE PLANS. CONTRACTOR AND/OR CLIENT SHALL VERIFY ALL DIMENSIONS AND LAYOUT PRIOR TO CONSTRUCTION. ALL DIMENSIONS ON STRUCTURAL DRAWINGS SHALL BE CHECKED AGAINST PRE-ENGINEERED METAL BUILDING DRAWINGS AND ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY. REFER TO MECHANICAL, ELECTRICAL AND PROCESS DRAWINGS FOR OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS.
- B. SHOP DRAWINGS SHALL BE PREPARED BY THE FABRICATOR. COPYING OF THESE CONSTRUCTION DOCUMENTS FOR USE AS SHOP DRAWINGS WILL NOT BE PERMITTED.
- C. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS MAY BE NECESSARY.
- D. ALL TEMPORARY SHORING AND REQUIRED DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

4. METAL BUILDING NOTES:

- METAL BUILDING DESIGN DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF COLORADO. FINAL STAMPED METAL BUILDING DRAWINGS SHALL BE SUBMITTED TO AND ACCEPTED BY THE ENGINEER PRIOR TO FOUNDATION PLACEMENT.
- A. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE FINAL DIMENSIONS OF THE METAL BUILDING FOUNDATION AND EXISTING CONDITIONS WITH THE METAL BUILDING MANUFACTURERS.
- B. THE FOUNDATION HAS BEEN DESIGNED WITH PINNED BASES AT ALL COLUMNS.
- C. THE FOUNDATION DESIGN FOR THE PRE-ENGINEERED METAL BUILDING IS BASED ON THE FOLLOWING ASSUMED MAXIMUM REACTIONS (TO BE VERIFIED WITH FINAL ENGINEER ACCEPTED PEMB SHOP DRAWING):
UPLIFT:..... 20.4k (ASD)
DOWNWARD:..... 70k (LRFD)
HORIZONTAL (PERPENDICULAR TO BLDG)..... 45k (LRFD)
- D. IF THE ACTUAL LOADS PROVIDED BY THE PRE-ENGINEERED METAL BUILDING MANUFACTURER VARY FROM THESE LOADS AECOM MUST BE NOTIFIED TO RE-EVALUATE THE FOUNDATION DESIGN FOR THE METAL BUILDING.
- E. METAL BUILDING STRUCTURAL PERFORMANCE CRITERIA:
MAXIMUM ALLOWABLE BUILDING SWAY (DRIFT):..... H/100
MAXIMUM ALLOWABLE DEFLECTION OF PRIMARY MEMBERS:..... L/180
MAXIMUM ALLOWABLE DEFLECTION OF SECONDARY FRAMING:..... L/180
- F. INSULATION REQUIREMENTS (IN ACCORDANCE WITH ASTM C1363 OR ASTM C518):
EXTERIOR WALLS: R13 + R13 CONTINUOUS INSULATION (U-FACTOR 0.052)
ROOF: R19 + R11 LINER SYSTEM WITH THERMAL SPACER BLOCK (U-FACTOR 0.035)

5. CAST-IN-PLACE CONCRETE:

- A. CAST-IN-PLACE CONCRETE WORK SHALL CONFORM TO THE PROJECT MANUAL. CONCRETE HAS BEEN DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENT REINFORCED CONCRETE" AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 318 AND ACI 301) LATEST EDITIONS. WET WELL CONCRETE SHALL BE IN ACCORDANCE WITH ACI 350-06, CODE REQUIREMENTS FOR ENVIRONMENTAL CONCRETE STRUCTURES. ALL CONCRETE SHALL BE OF STONE AGGREGATE, UNLESS NOTED OTHERWISE.
- B. CONCRETE MIXES: SEE SPECIFICATIONS.
- C. REINFORCING IS TO BE NEW BILLET STEEL ASTM A615, GRADE-60. NO SPLICES OF REINFORCEMENT ARE PERMITTED EXCEPT AS DETAILED OR AUTHORIZED BY AECOM. WELDED WIRE FABRIC (W.W.F.) SHALL BE IN ACCORDANCE WITH ASTM A185 DELIVERED IN FLAT SHEETS. LAP (1) FULL MESH MINIMUM AT SPLICES. LAP WELDED WIRE FABRIC 1 SPACE (2 CROSS WIRES) + 2" AT ALL EDGES AND ENDS OF SHEETS. NO WELDING OF REINFORCEMENT PERMITTED UNLESS DETAILED.
- D. WHERE BAR LENGTHS ARE GIVEN ON THE DRAWINGS, THE LENGTH OF ANY HOOK, IF REQUIRED, IS NOT INCLUDED (U.N.O.). USE STANDARD 90° BAR HOOK UNLESS NOTED OTHERWISE.
- E. PLACING OF REINFORCEMENT: PROVIDE CHAIRS, BOLSTERS, ADDITIONAL REINFORCEMENT, AND ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT AT POSITION SHOWN ON DRAWINGS. SUPPORT OF REINFORCEMENT ON FORM TIES, WOOD, BRICK, BRICKBAT OR OTHER UNACCEPTABLE MATERIAL, WILL NOT BE PERMITTED.
- F. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS FOR SIZE AND LOCATION OF ALL EMBEDDED ITEMS, SLEEVES, SLAB DEPRESSIONS, OPENINGS, ETC. REQUIRED BY OTHER TRADES. RECONCILE THEIR EXACT SIZES AND LOCATIONS BEFORE PROCEEDING WITH THE WORK. ALL ITEMS SHALL BE FURNISHED AND INSTALLED PRIOR TO PLACEMENT OF CONCRETE. SECURE THE APPROVAL OF AECOM PRIOR TO PLACING OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
- G. PROVIDE HORIZONTAL CONTROL/CONSTRUCTION JOINTS IN SLABS AS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL SUBMIT ALTERNATE AND ADDITIONAL CONSTRUCTION JOINT LOCATIONS AND DETAILS TO AECOM FOR APPROVAL PRIOR TO CONSTRUCTION. AT LEAST 72 HOURS SHALL ELAPSE BETWEEN CASTING OF ADJOINING UNITS. REINFORCEMENT SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS UNLESS DETAILED OTHERWISE ON THE DRAWINGS. SUBMIT ALL CONSTRUCTION JOINT LOCATIONS WITH THE REINFORCING STEEL SHOP DRAWINGS.
- H. WHERE CONSTRUCTION JOINTS ARE REQUIRED BUT ARE NOT INDICATED ON THE DRAWINGS, THEY SHALL BE LOCATED AT THE MID-SPAN OF SLABS AND WALLS AND SHALL BE SUBJECT TO REVIEW BY AECOM. THE MINIMUM KEY SIZE SHALL BE 1 1/2" DEEP x 1/3 THE DEPTH OR WIDTH OF THE MEMBER.
- I. THE CONTRACTOR SHALL PROVIDE 3/4" CHAMFERS ON ALL EXPOSED CORNERS OF COLUMNS, BEAMS AND WALLS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- J. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING WHEN IT IS SAFE TO REMOVE FORMS AND/OR SHORING. FORMS AND SHORING MUST NOT BE REMOVED UNTIL THE WALLS ARE STRONG ENOUGH TO CARRY THEIR OWN WEIGHT AND ANY ANTICIPATED SUPERIMPOSED LOADS. WHEN FORMS ARE STRIPPED THERE MUST BE NO EXCESSIVE DEFLECTION OR DISTORTION OR DISCOLORATION AND NO EVIDENCE OF DAMAGE TO THE CONCRETE.
- K. PROVIDE 6X6-W2.9XW2.9 WELDED WIRE FABRIC IN ALL SLABS ON GRADE, UNLESS NOTED OTHERWISE. PROVIDE REINFORCING BARS AS SHOWN IN STRUCTURAL DRAWINGS.

6. FOUNDATIONS:

- A. REFERENCE GEOTECHNICAL EVALUATION REPORT BY NINYO & MOORE DATED FEBRUARY 12, 2019 FOR SITE EXCAVATION, FILL, AND BACKFILL RECOMMENDATIONS.
- B. LOCATE ANY EXISTING UTILITY LINES AND/ OR APPURTENANCES AND ADVISE THE ENGINEER OF ANY CONFLICTS WITH NEW STRUCTURES PRIOR TO THEIR CONSTRUCTION. DO NOT DESTROY ANY EXISTING UNDERGROUND STRUCTURES WITHOUT WRITTEN AUTHORIZATION.
- C. AFTER SUBGRADE PREPARATION, ALLOWABLE SOIL BEARING PRESSURE OF FOOTINGS IS 3000 PSF WHICH WILL RESULT IN A TOTAL SETTLEMENT OF LESS THAN 1-INCH AND DIFFERENTIAL SETTLEMENT OF LESS THAN ½-INCH.
- D. AFTER SUBGRADE PERPARATION, ALLOWABLE SOIL BEARING PRESSURE OF MAT FOUNDATIONS IS 3000 PSF WHICH WILL RESULT IN A TOTAL SETTLEMENT OF LESS THAN 1-INCH AND DIFFERENTIAL SETTLEMENT OF LESS THAN ½-INCH.
- E. SUBGRADE PREPARATION:
a. FOUNDATIONS SHALL BE FOUNDED ON ENGINEERED FILL (RECOMPACTED SITE SOILS OR IMPORTED SOILS). GEOTECHNICAL ENGINEER SHALL EVALUATE EXISTING SOILS INTENDED FOR USE AS ENGINEERED FILL.
b. FOOTINGS: PROVIDE 12-INCH MINIMUM ENGINEERED FILL (RECOMPACTED SITE SOILS OR IMPORTED SOIL) MOISTURE CONDITIONED AND COMPACTED IN ACCORDANCE WITH GEOTECHNICAL RECOMMENDATIONS.
c. MAT FOUNDATIONS INCLUDING WET WELL AND THICKENED FLOOR SLABS: PROVIDE 24-INCH MINIMUM ENGINEERED FILL (RECOMPACTED SITE SOILS OR IMPORTED SOIL) MOISTURE CONDITIONED AND COMPACTED IN ACCORDANCE WITH GEOTECHNICAL RECOMMENDATIONS.
d. FLOOR SLABS: PROVIDE 12-INCH MINIMUM ENGINEERED FILL (RECOMPACTED SITE SOILS OR IMPORTED SOIL) MOISTURE CONDITIONED AND COMPACTED IN ACCORDANCE WITH GEOTECHNICAL RECOMMENDATIONS.

ABBREVIATIONS

ABV	ABOVE
ADDL	ADDITIONAL
AB	ANCHOR BOLT
&	AND
B.O.	BOTTOM OF
BOT	BOT
BRG	BEARING
BTWN	BETWEEN
℄	CENTERLINE
CLR	CLEAR
CJ	CONTROL JOINT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATION
CSJ	CONSTRUCTION JOINT
CTRD	CENTERED
Ø	DIAMETER
DIR	DIRECTION
DTL	DETAIL
DWG	DRAWING
(E),EXIST	EXISTING
EA	EACH
EF	EACH FACE
EL, ELEV	ELEVATION
EMBED	EMBEDMENT
EV	EACH WAY
FT	FEET
FTG	FOOTING
HGT, HT	HEIGHT
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
JT	JOINT
LP	LOW POINT
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
OC	ON CENTER
PL	PLATE
PEMB	PRE-ENGINEERED METAL BUILDING
REINF	REINFORCING
REQD	REQUIRED
SHT	SHEET
SIM	SIMILAR
STD	STANDARD
STL	STEEL
SPA	SPACE OR SPACING
TBL	TABLE
T & B	TOP AND BOTTOM
TO	TOP OF
THRU	THROUGH
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT, V	VERTICAL
W/	WITH



URS Group, Inc.
An AECOM Company

PROJECT

PFOS / PFOA DRINKING WATER MITIGATION SYSTEM

WIDFIELD WATER AND SANITATION DISTRICT (WWSD)

CLIENT

USACE Omaha District

1616 Capital Ave.
Omaha, NE 68102

CONSULTANT

URS Group, Inc.
12120 Shamrock Plaza
Omaha, NE 68154
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ISSUE/REVISION

0	02/28/19	60% DESIGN
1/R	DATE	DESCRIPTION

PROJECT NUMBER

Project Number: 60589841

SHEET TITLE

STRUCTURAL GENERAL NOTES

SHEET NUMBER

S-400

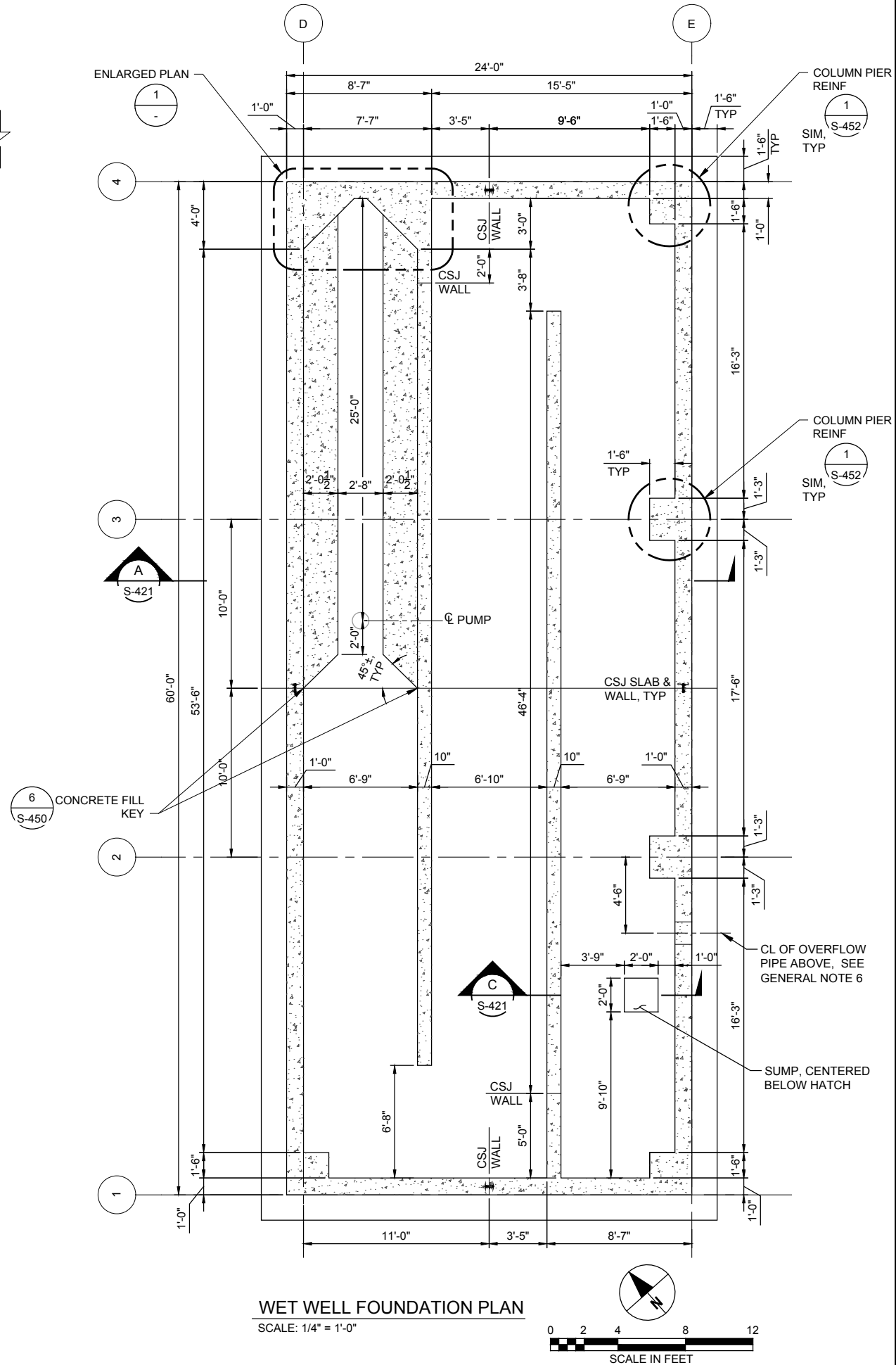
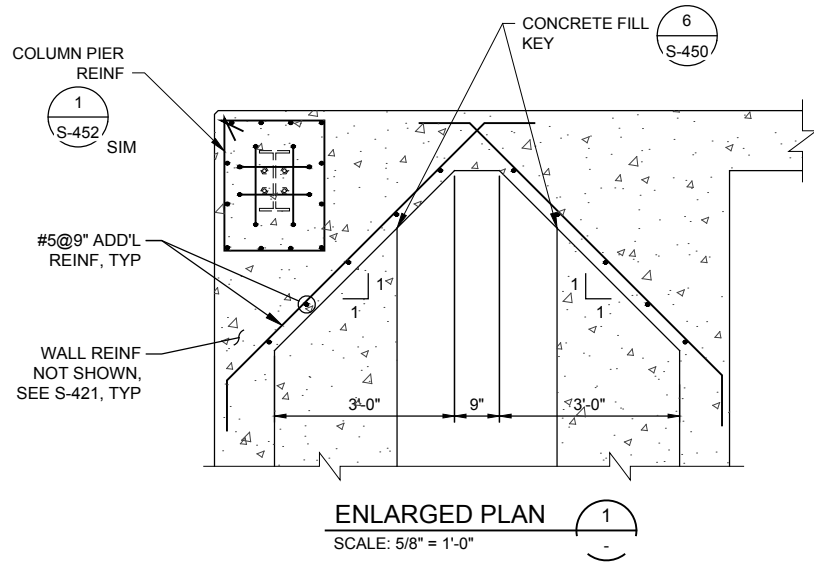
PEMB FOUNDATION NOTE:

BUILDING FOUNDATION SHALL NOT BE CONSTRUCTED UNTIL SIGNED AND SEALED PEMB SHOP DRAWING IS RECEIVED AND ACCEPTED BY THE ENGINEER. COLUMN ANCHOR ROD DESIGN WILL BE PROVIDED TO THE CONTRACTOR ONCE FINAL PEMB SHOP DRAWING IS RECEIVED BY THE ENGINEER.

VERIFY PRINTED
SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON
THIS SHEET ADJUST
SCALE ACCORDINGLY

GENERAL NOTES

- ALL WET WELL CONCRETE SHALL CONFORM TO ACI 350-06, CODE REQUIREMENTS FOR ENVIRONMENTAL CONCRETE STRUCTURES. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR CONCRETE TO BE IN CONTACT WITH POTABLE WATER.
- CONCRETE FOR WET WELL BASE SLAB AND WALLS SHALL HAVE INTEGRAL CRYSTALLINE WATERPROOFING ADMIXTURE. SEE SPECIFICATION SECTION 03 30 00.
- PEMB COLUMN PIER SIZES SHALL BE VERIFIED AND COORDINATED WITH ENGINEER ACCEPTED PEMB SHOP DRAWING.
- WET WELL HAS BEEN DESIGNED FOR LOADING DUE TO LEAK TESTING WITHOUT THE FLOOR SLAB IN PLACE AND PRIOR TO BACKFILLING.
- WET WELL HAS BEEN DESIGNED FOR LOADING DUE TO SOIL BACKFILL PRIOR TO INSTALLATION OF THE FLOOR SLAB. CONTRACTOR SHALL SUBMIT PROPOSED METHODS FOR BACKFILLING INCLUDING PROCEDURE AND INTENDED EQUIPMENT FOR REVIEW.
- CENTERLINE OF 16" DIP OVERFLOW ABOVE. LOCATE CENTERLINE 6'-6" ABOVE BASE SLAB. VERIFY AND COORDINATE WITH PROCESS DRAWINGS.



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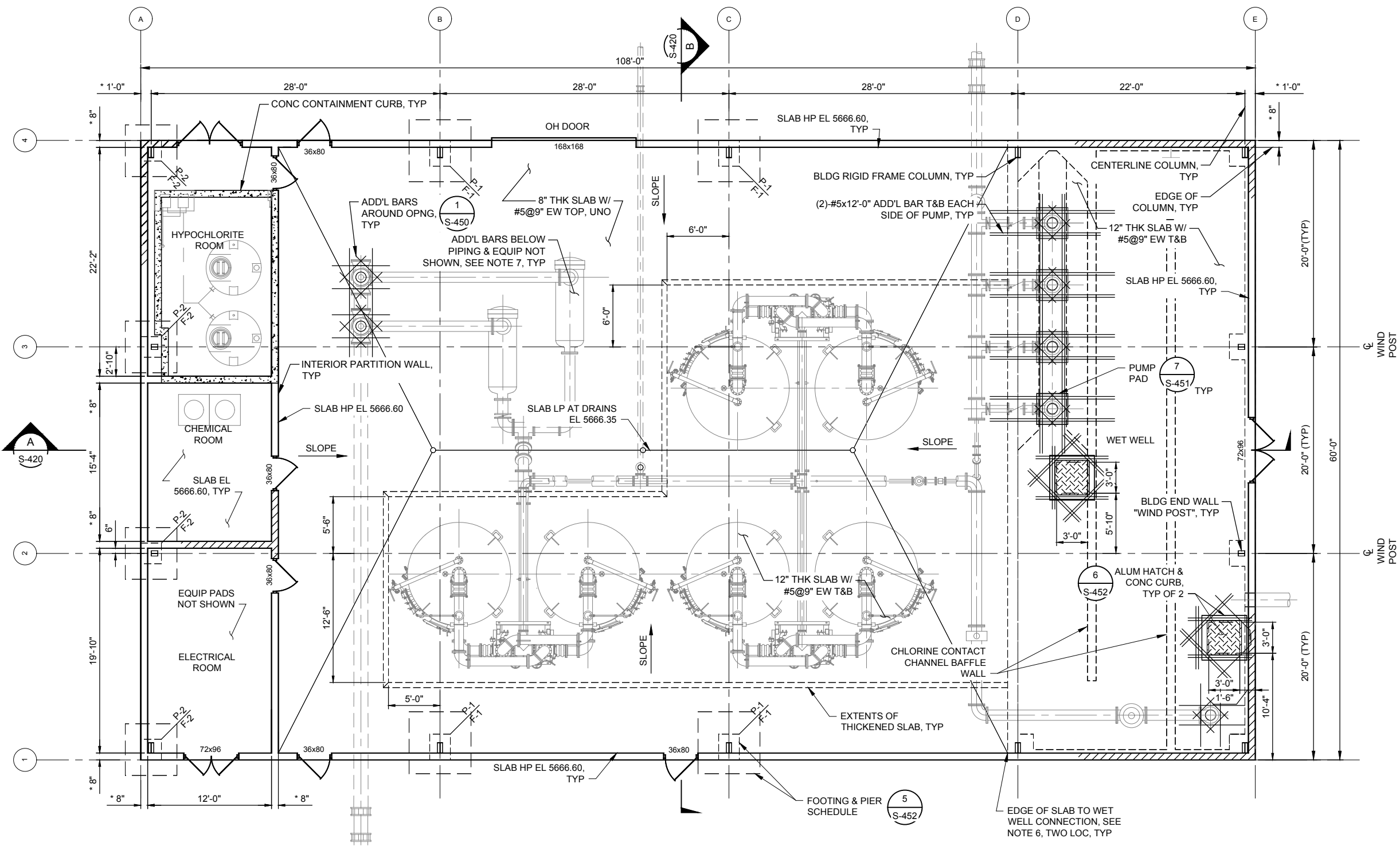
WET WELL
FOUNDATION PLAN

SHEET NUMBER

S-410

ANSI D 22" x 34" SCHWARTZ, EBC, 2/28/2019 4:48 PM

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GENERAL NOTES

- FOR STRUCTURAL GENERAL NOTES, DESIGN CRITERIA AND ABBREVIATIONS REFERENCE S-400.
- ASTERISK (*) DENOTES DIMENSION TO BE VERIFIED W/ PEMB SUPPLIER.
- CONTRACTOR TO VERIFY EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS PRIOR TO BEGINNING WORK.
- CONTRACTOR SHALL LOCATE AND VERIFY WITH OTHER DRAWINGS PRIOR TO PLACING CONCRETE SLOPES, BLOCKOUTS, SLAB DEPRESSIONS, AND EQUIPMENT PADS.
- COORDINATE ANCHORAGE FOR PRE-ENGINEERED METAL BUILDING WITH MANUFACTURER.
- EDGE OF SLAB REINF SHALL BE TIED INTO WET WELL WALL BY THE USE OF CASR-IN DOWELS OR DRILL AND EPOXY DOWELS. EXISTING REINF SHALL NOT BE DAMAGED DUE TO DRILLING ACTIVITIES.
- ADDITIONAL BARS MAY BE REQUIRED BELOW SELECT PIPING AND EQUIPMENT BASED ON FINAL DESIGN REQUIREMENTS.

BUILDING FLOOR PLAN

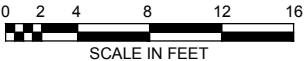
SCALE: 3/16" = 1'-0"

VERIFY PRINTED
SCALES

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ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON
THIS SHEET ADJUST
SCALE ACCORDINGLY



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PROJECT

PFOS / PFOA DRINKING
WATER MITIGATION
SYSTEM

WIDEFIELD WATER AND
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PROJECT NUMBER

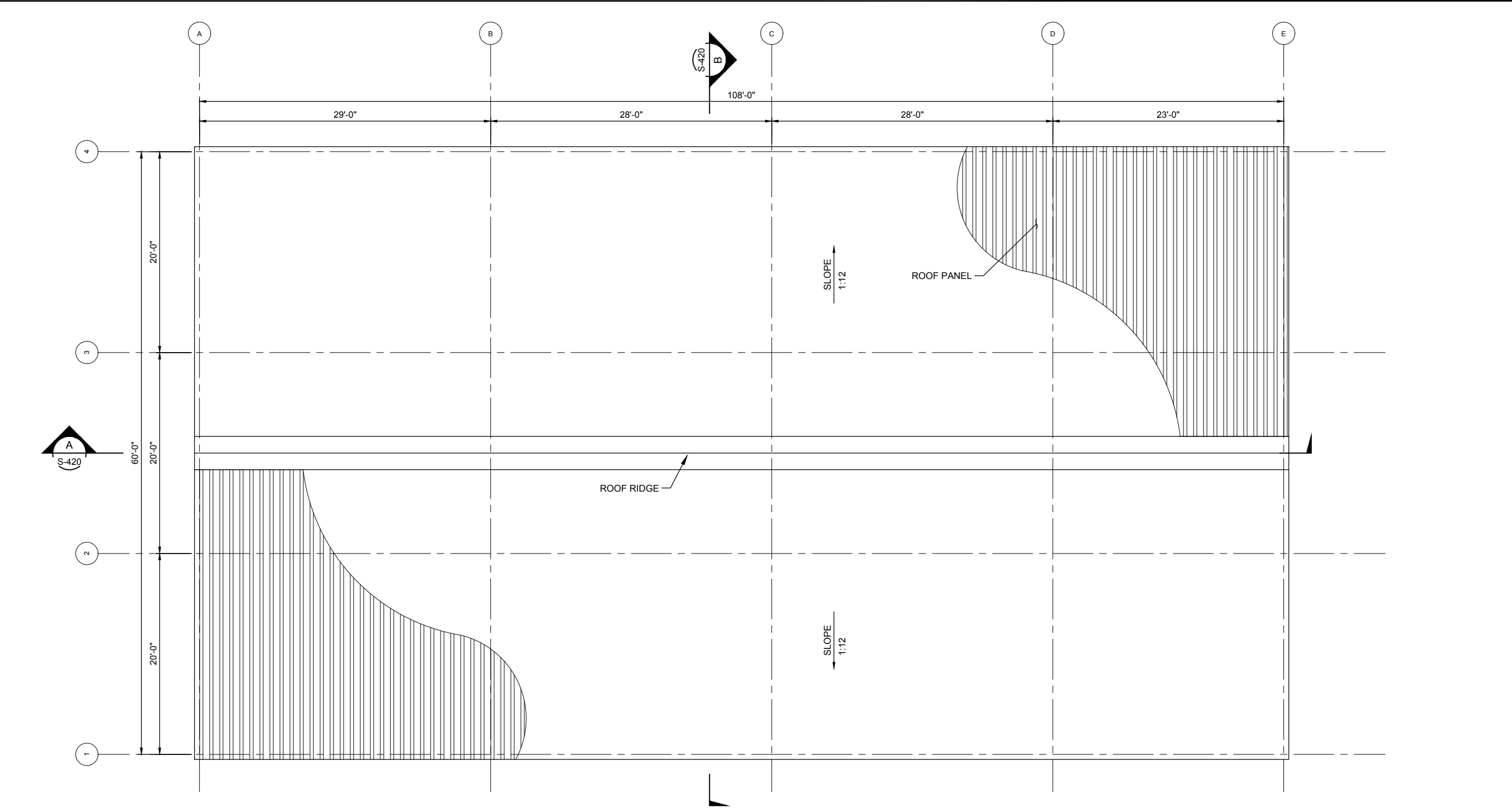
Project Number: 60589841

SHEET TITLE

BUILDING FLOOR PLAN

SHEET NUMBER

S-411



BUILDING ROOF PLAN
SCALE: 3/16" = 1'-0"

VERIFY PRINTED SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY

0 2 4 8 12 16
SCALE IN FEET

URS Group, Inc.
An AECOM Company

PROJECT

PFO5 / PFOA DRINKING WATER MITIGATION SYSTEM

WIDEFIELD WATER AND SANITATION DISTRICT (WWSD)

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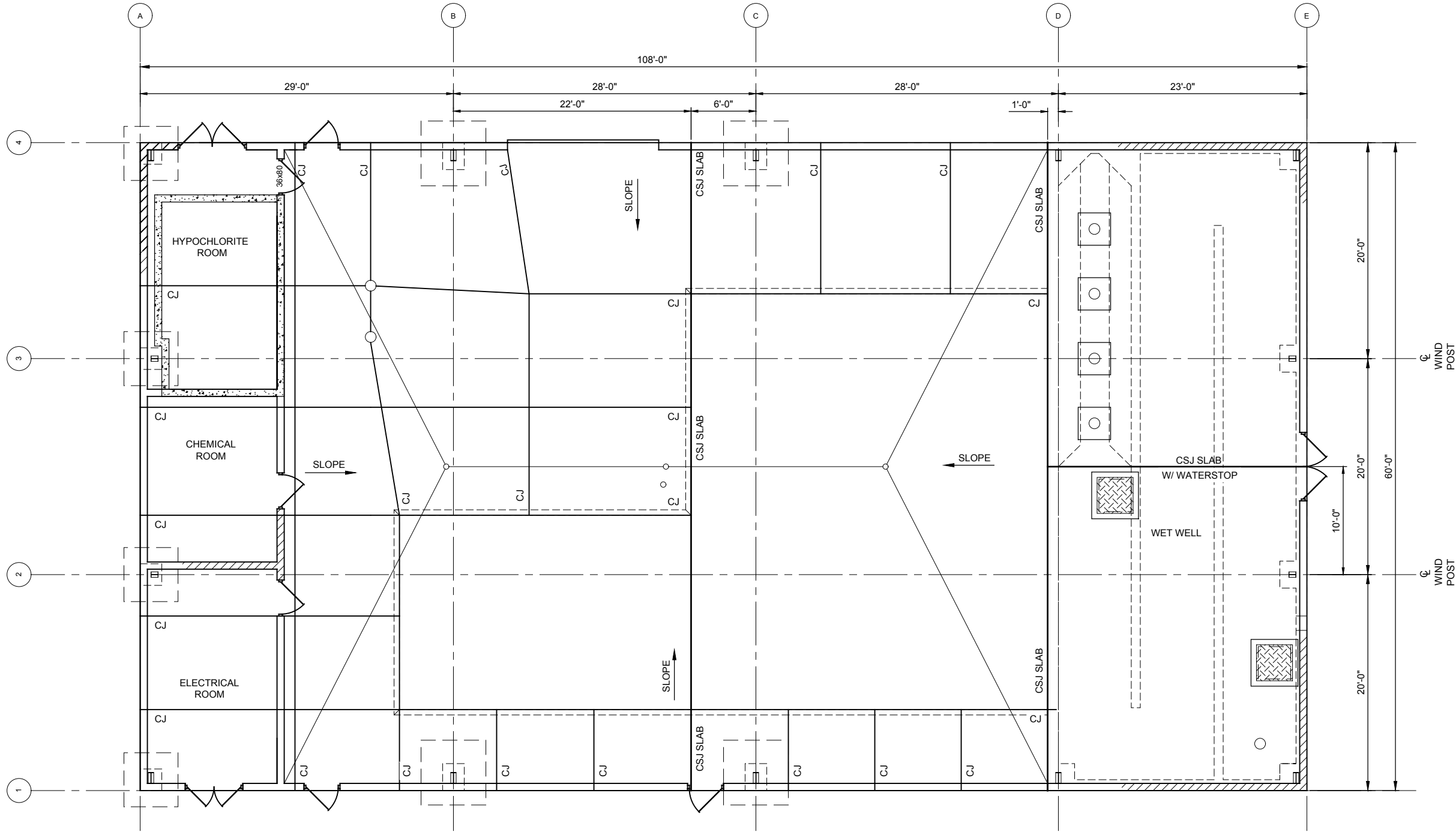
BUILDING ROOF PLAN

SHEET NUMBER

S-412

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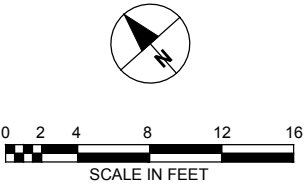
Last saved by: WASHMUTHM(2019-02-28) Last Plotted: 2019-02-28
Filename: M:\DCS\PROJECT\SWTR6058841_PAFB_PFA51900_CAD\20-SHEETS\413 WIDEFIELD BLDG FLOOR JOINT PLAN.DWG



- GENERAL NOTES**
1. PROVIDE CONSTRUCTION (CSJ) AND CONTROL (CJ) JOINTS AS INDICATED. ANY MODIFICATION TO JOINT LAYOUT SHALL BE PROVIDED IN WRITING BY THE ENGINEER.
 2. CONTROL JOINTS MAY BE TOOLED OR SAW CUT. SAWCUT JOINTS SHALL BE MADE WITH AN EARLY ENTRY SAW WITHIN 4-HRS OF INITIAL CONCRETE SET.
 3. CONTROL JOINTS SHALL NOT CUT TOP REINFORCEMENT BARS.
 4. CONSTRUCTION JOINTS IN FLOOR SLAB PERIMETER EDGE NOT SHOWN. PROVIDE CONSTRUCTION JOINTS AS NOTED IN DETAIL 7/S-452.

BUILDING FLOOR JOINT PLAN
SCALE: 3/16" = 1'-0"

VERIFY PRINTED SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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URS
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PROJECT

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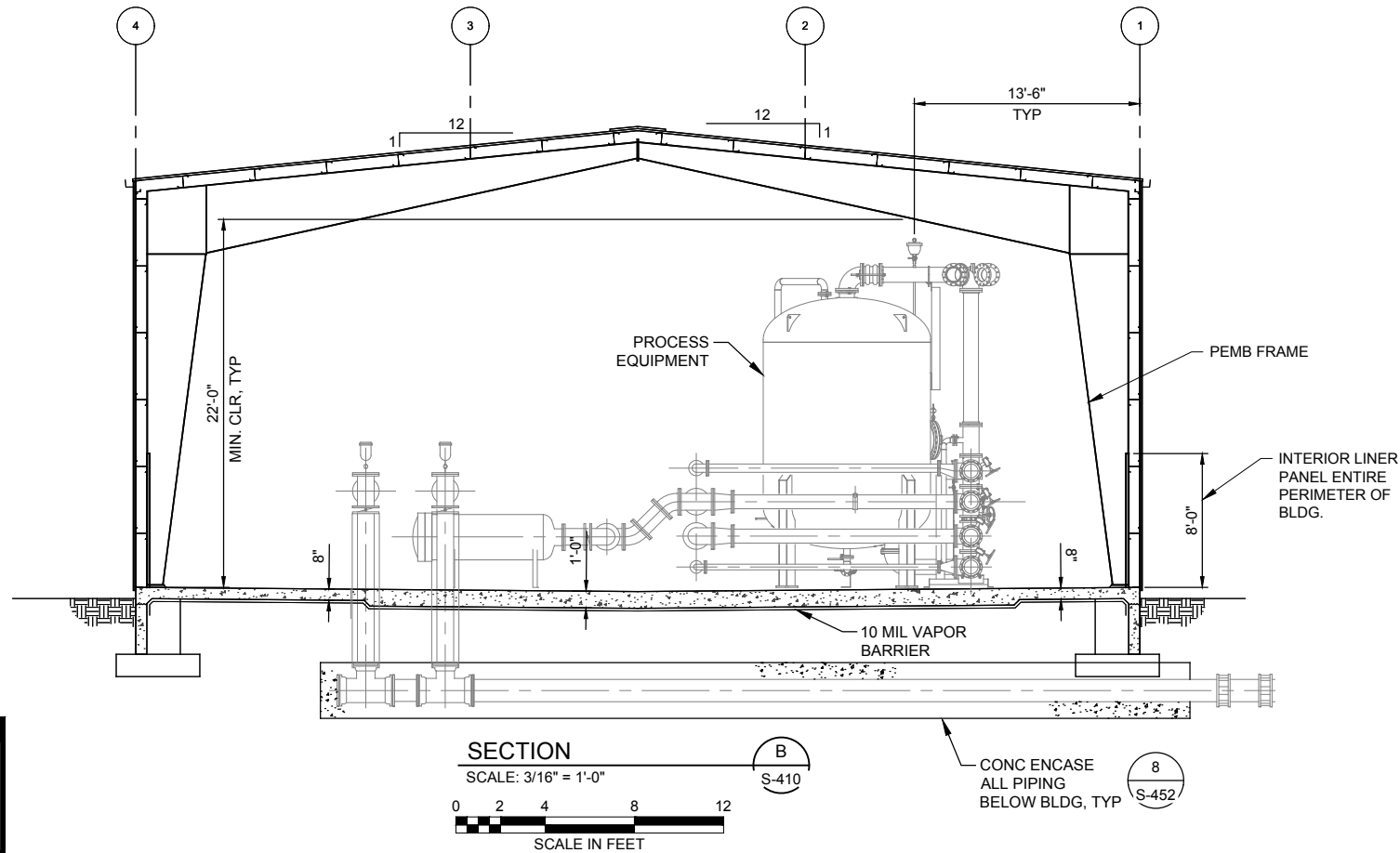
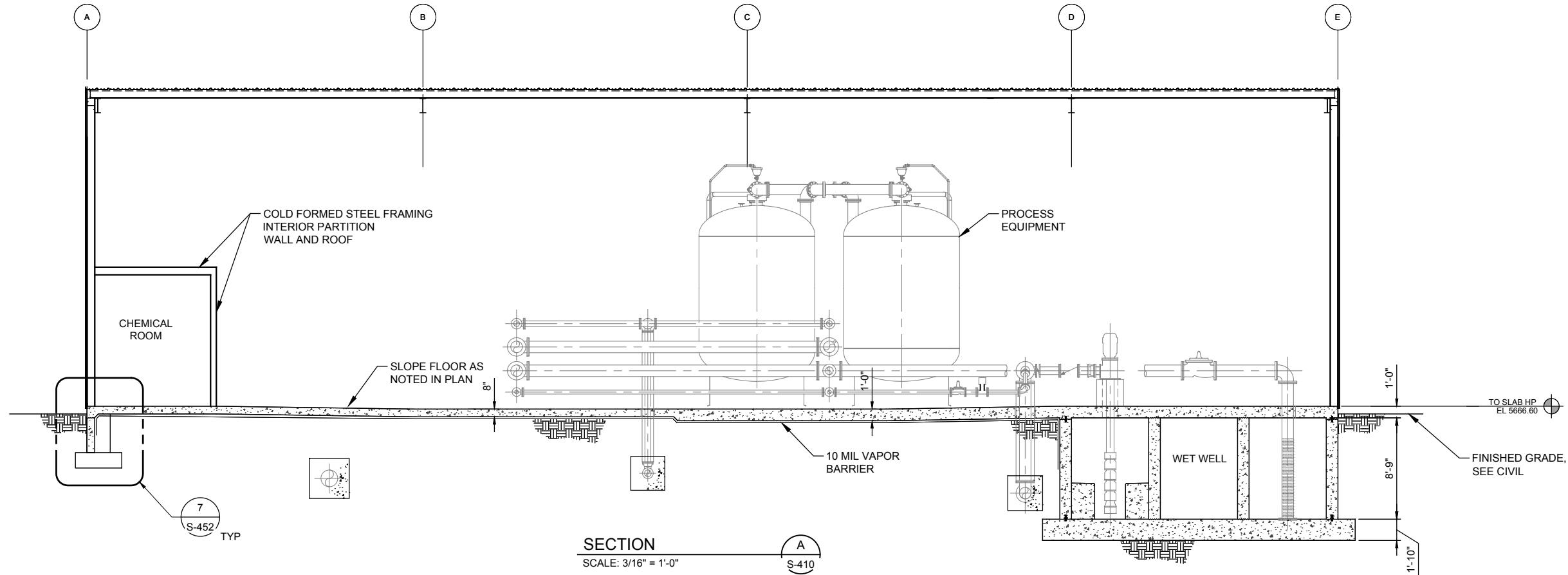
Project Number: 60589841

SHEET TITLE

BUILDING FLOOR JOINT PLAN

SHEET NUMBER

S-413



VERIFY PRINTED
SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON
THIS SHEET ADJUST
SCALE ACCORDINGLY

URS

URS Group, Inc.
An AECOM Company

PROJECT

**PFOS / PFOA DRINKING
WATER MITIGATION
SYSTEM**

**WIDEFIELD WATER AND
SANITATION DISTRICT
(WWSD)**

CLIENT

USACE Omaha District

1616 Capital Ave.
Omaha, NE 68102

CONSULTANT

URS Group, Inc.
12120 Shamrock Plaza
Omaha, NE 68154
T +1 (402) 334 8181. F +1 (402) 334 1984

ISSUE/REVISION

U/R	DATE	DESCRIPTION
0	02/28/19	60% DESIGN
U/R	DATE	DESCRIPTION

PROJECT NUMBER

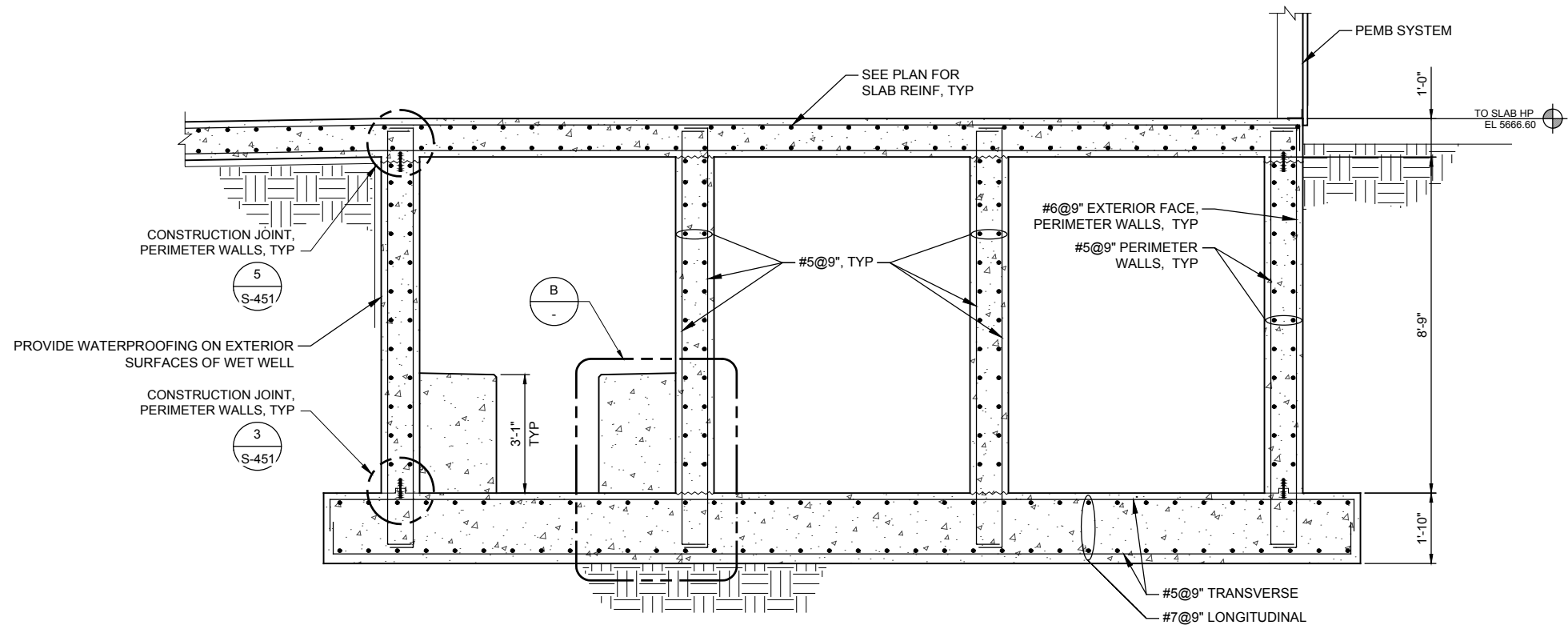
Project Number: 60589841

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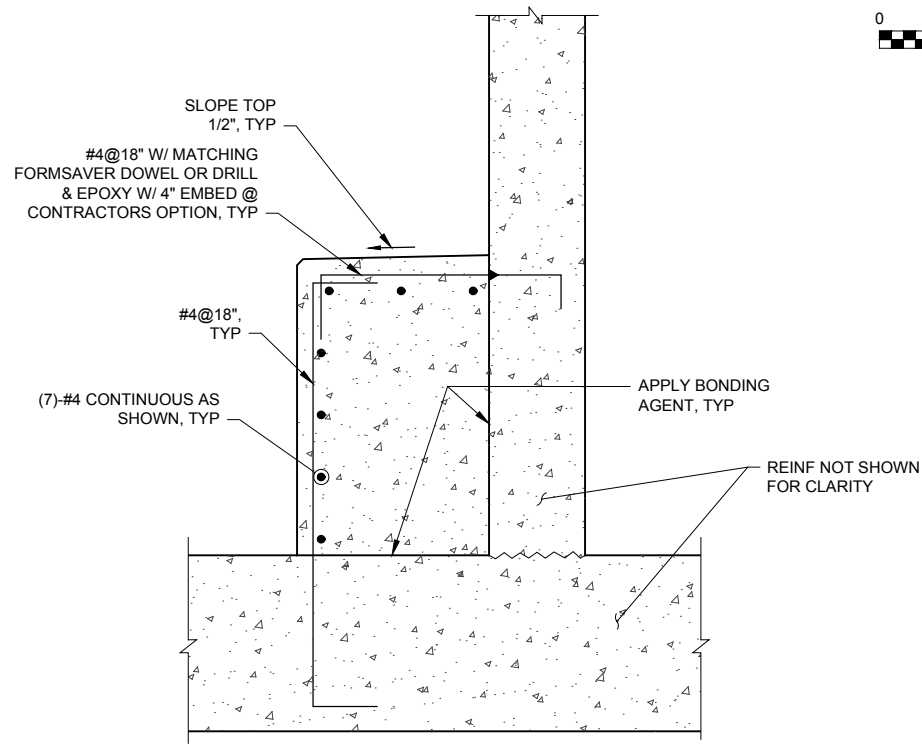
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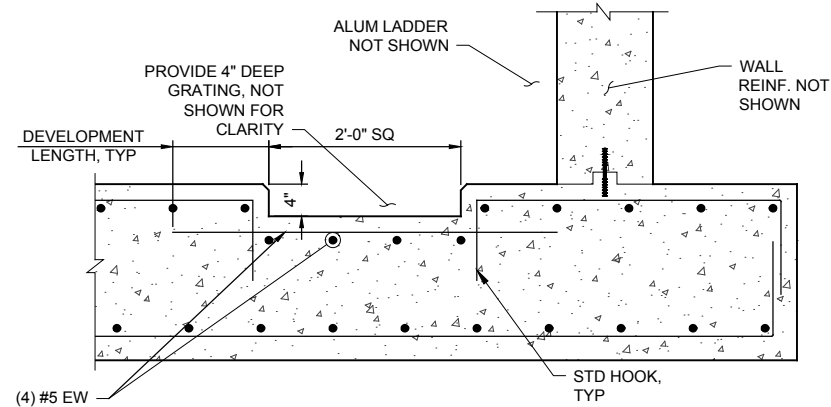
S-420



WET WELL SECTION
SCALE: 1/2" = 1'-0"
A
S-410
0 1 2 4 6
SCALE IN FEET



ENLARGED SECTION
SCALE: 1" = 1'-0"
B
0 1 2 4 6
SCALE IN FEET



NOTE:
CENTER SUMP BELOW ACCESS HATCH.

SUMP SECTION
SCALE: 1" = 1'-0"
C
S-410
0 1 2 4 6
SCALE IN FEET

VERIFY PRINTED
SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1
IF NOT ONE INCH ON
THIS SHEET ADJUST
SCALE ACCORDINGLY

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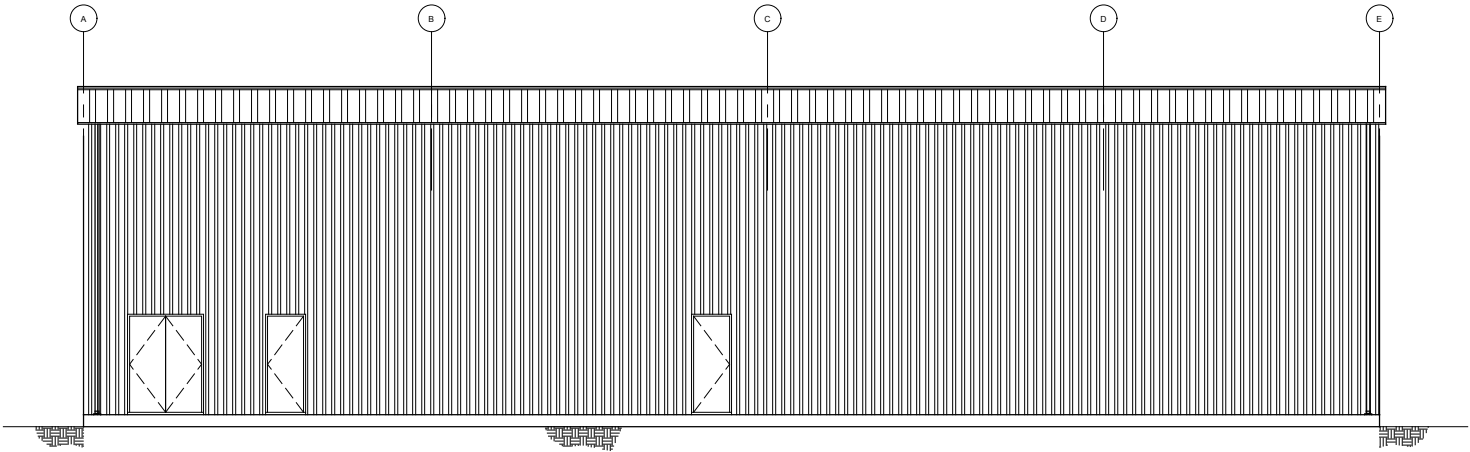
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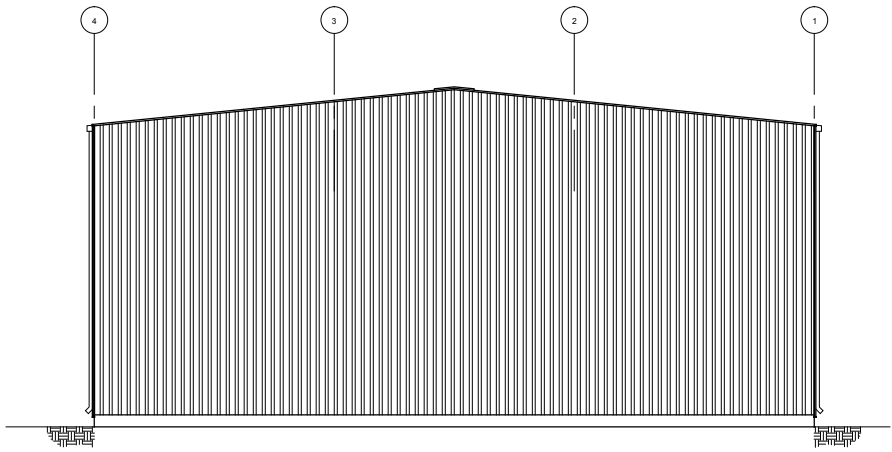
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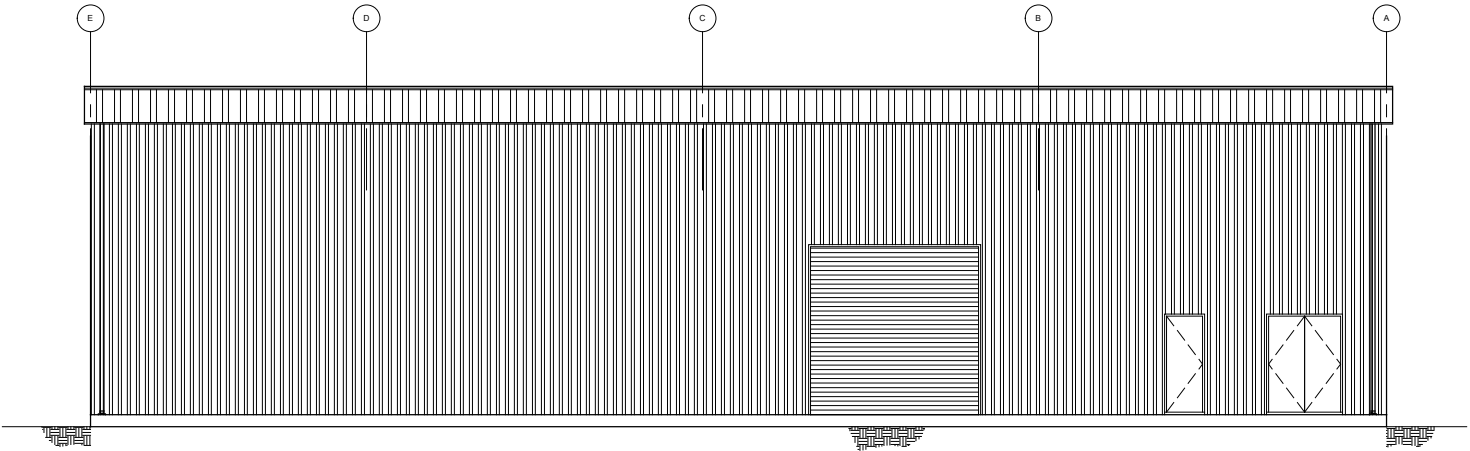
S-421



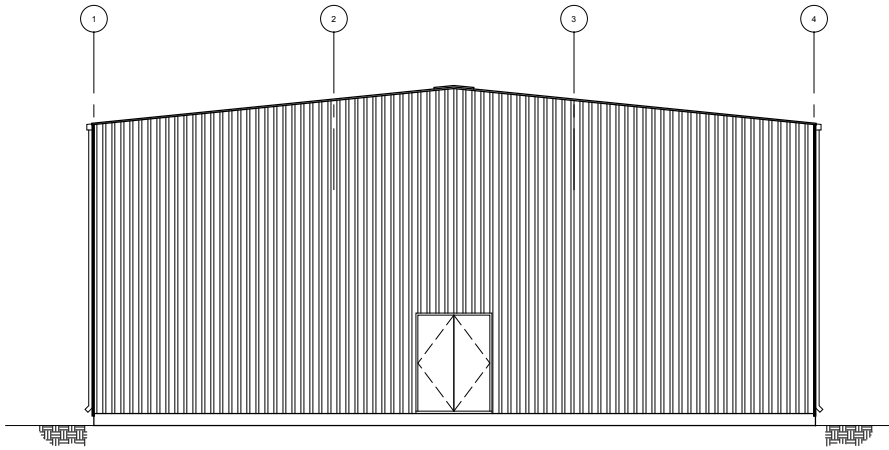
SOUTH ELEVATION
SCALE: 1/8" = 1'-0"
0 4 8 16 24
SCALE IN FEET



WEST ELEVATION
SCALE: 1/8" = 1'-0"
0 4 8 16 24
SCALE IN FEET



NORTH ELEVATION
SCALE: 1/8" = 1'-0"
0 4 8 16 24
SCALE IN FEET



EAST ELEVATION
SCALE: 1/8" = 1'-0"
0 4 8 16 24
SCALE IN FEET

VERIFY PRINTED
SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON
THIS SHEET ADJUST
SCALE ACCORDINGLY

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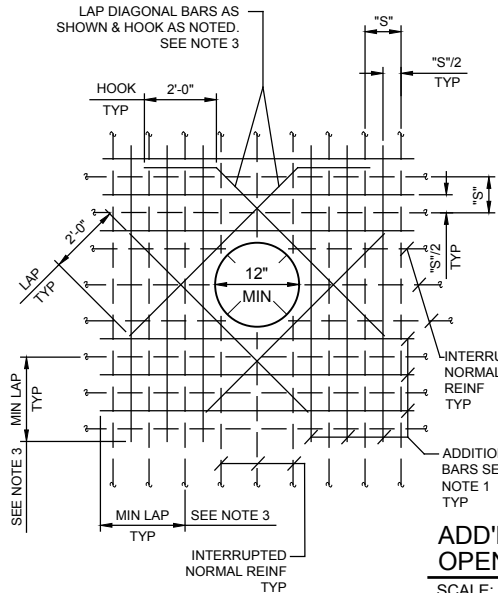
Project Number: 60589841

SHEET TITLE

BUILDING ELEVATIONS

SHEET NUMBER

S-430

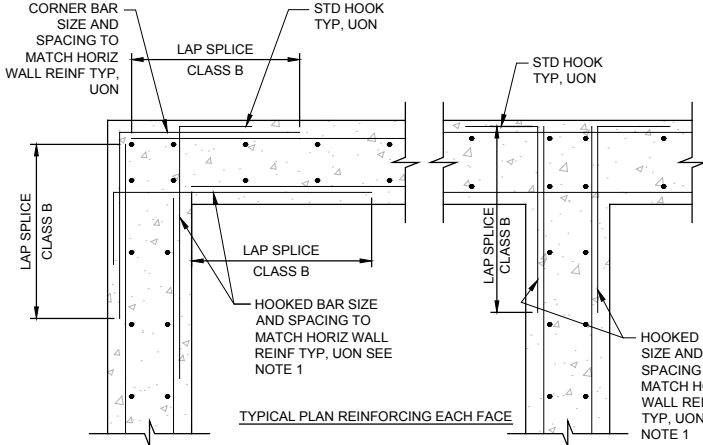
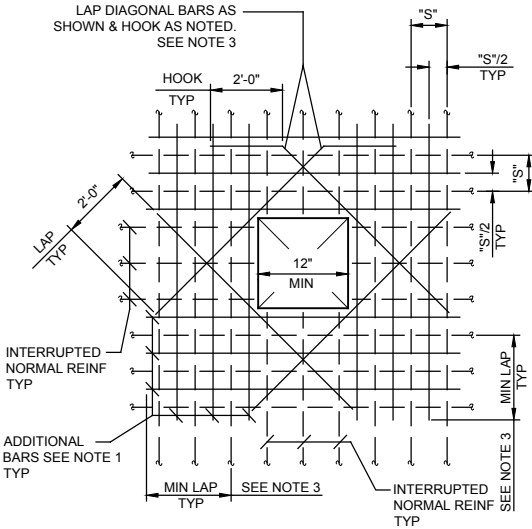


NOTES:

- NUMBER OF ADD'L REINF BARS AT EA SIDE OF OPNG SHALL EQUAL HALF THE NUMBER OF INTERRUPTED BARS IN EACH LAYER OF REINF.
- SIZE OF ADD'L REINF BARS TO EQUAL SIZE OF INTERRUPTED REINF BARS.
- PROVIDE STD HOOKS FOR BARS IF LAP LENGTH EXTENSION CANNOT BE OBTAINED AT JOINTS OR OTHER OBSTRUCTIONS. PLACE ADDITIONAL BARS IN SAME PLANES AS INTERRUPTED REINF.
- SIZE OF DIAGONAL BARS SHALL BE THE SIZE OF THE LARGEST NORMAL REINF BAR CUT, UON. LOCATE DIAGONALS IN EACH LAYER OF REINF.
- PLACE DIAGONAL BARS INSIDE NORMAL REINF.
- ALL REINF TO CLEAR OPNG OR FLANGE COLLARS BY 2".

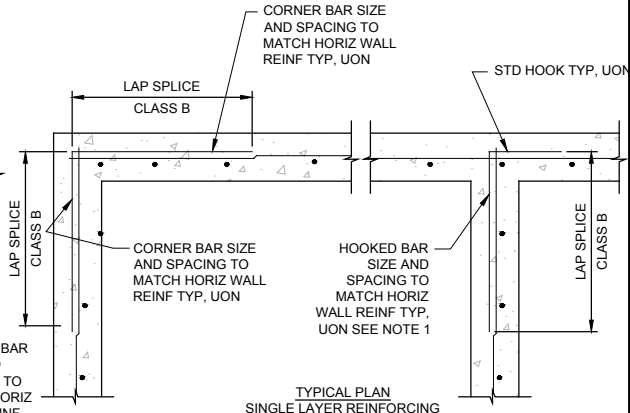
ADD'L REINF BAR DETAILS FOR
OPENING 12" OR GREATER

SCALE: NTS



WALL INTERSECTION /
CORNER REINF

SCALE: NTS

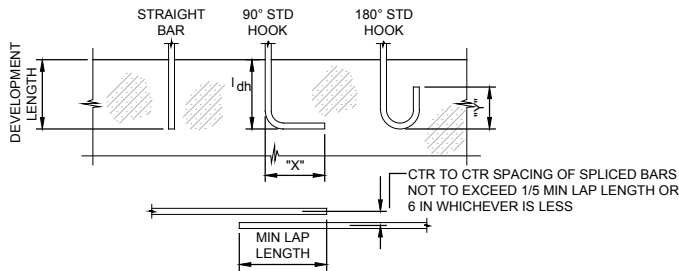


NOTES:

- IN LIEU OF SEPARATE HOOKED BAR, CONTRACTOR OPTION TO USE HORIZ REINF WITH STD HOOK EA END.

BAR SIZE	DIAMETER (d) (INCHES)	DEVELOPMENT LENGTH (l _d) (INCHES)		CLASS B LAP SPLICE (INCHES)		90° STD HOOK (INCHES)		180° STD HOOK (INCHES)	
		"TOP" BARS	OTHER	"TOP" BARS	OTHER	HOOK "X"	l _{dh}	HOOK "Y"	
		REINFORCING BARS IN TENSION							
#3	0.375	18	14	24	18	6	6	6	
#4	0.5	25	19	32	25	8	7	6	
#5	0.625	31	24	40	31	10	9	6	
#6	0.75	37	28	48	37	12	10	6	
#7	0.875	54	42	70	54	14	12	7	
#8	1.0	62	47	80	62	15	14	8	
#9	1.125	70	54	90	70	17	15	9	
#10	1.25	78	60	102	78	20	17	10.2	
#11	1.375	87	67	113	87	22	19	11.3	
#14	1.75	104	80	136	104	26	32	13.5	
REINFORCING BARS IN COMPRESSION									
#3	0.375	8		12		HOOKED BARS SHALL NOT BE USED IN COMPRESSION			
#4	0.5	9		15					
#5	0.625	12		19					
#6	0.75	14		23					
#7	0.875	17		26					
#8	1.0	19		30					
#9	1.125	21		34					
#10	1.25	24		38					
#11	1.375	27		42					
#14	1.75	32		51					

HOOKED BARS SHALL NOT BE USED IN COMPRESSION

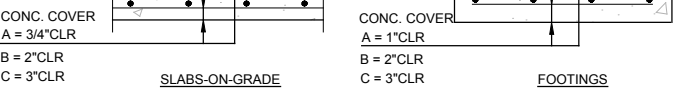
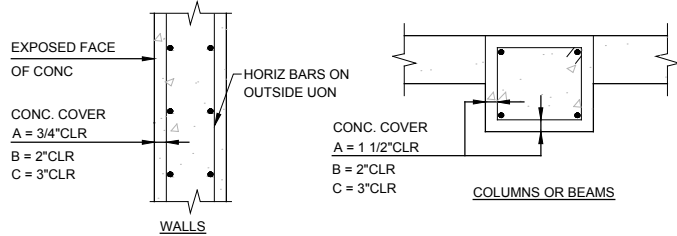


NOTES:

- "TOP" BARS SHALL BE HORIZONTAL REINFORCEMENT PLACED SO THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.
- CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED SHALL A) NOT BE LESS THAN d_b, HAVE CLEAR COVER NOT LESS THAN d_b, AND STIRRUPS OR TIES THROUGHOUT l_d NOT LESS THAN THE CODE MINIMUM OR; B) CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN 2d_b AND CLEAR COVER NOT LESS THAN d_b. WHERE d_b=DIAMETER OF REINFORCING BAR AND l_d=DEVELOPMENT LENGTH.
- FOR SPECIAL SPLICE REQUIREMENTS FOR COLUMNS AND END BEARING SPLICES IN COMPRESSION SEE ACI 318 CHAPTER 12.

STANDARD HOOK AND
REINF LAP SPLICE

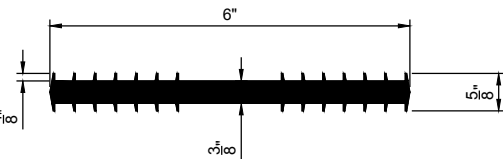
SCALE: NTS



A = NO EXPOSURE TO GROUND, WEATHER OR WATER AFTER FORM REMOVAL.
B = EXPOSURE TO GROUND, WEATHER OR WATER AFTER FORM REMOVAL.
C = CONCRETE PLACED AGAINST GROUND.

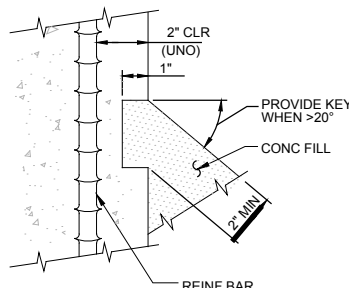
CONC COVER FOR
REINF STEEL

SCALE: NTS



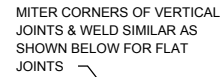
WATERSTOP - FLATSTRIP

SCALE: NTS

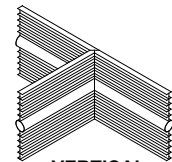


CONCRETE FILL KEY

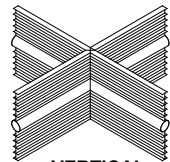
SCALE: NTS



VERTICAL
ELL (NOTE 2)

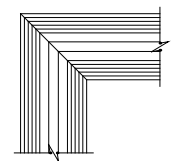


VERTICAL
TEE (NOTE 2)

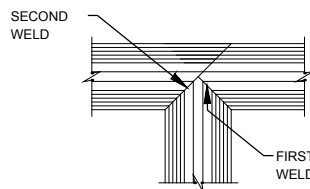


VERTICAL
CROSS (NOTE 2)

WATERSTOP 3-D JOINTS



FLAT ELL



FLAT TEE

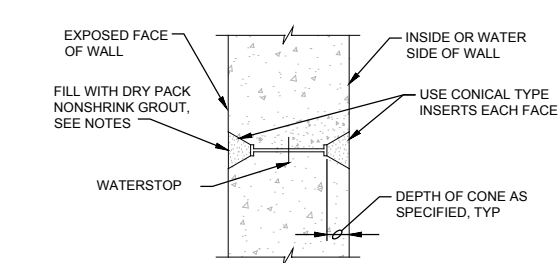
NOTES:

- ALL WELDS SHALL BE PER WATERSTOP MANUFACTURER'S RECOMMENDATIONS.
- THE INDICATED 3-D WATERSTOP JOINTS SHALL BE PRE-FABRICATED BY THE WATERSTOP MANUFACTURER.
- WATERSTOPS ARE TO BE MADE CONTINUOUS BY SPLICING AND CONNECTING TO OTHER WATERSTOPS AS SHOWN ON THE DRAWINGS.
- CENTER BULB WATERSTOP SHOWN BUT DETAILS APPLICABLE TO ALL WATERSTOP TYPES, UON.

FLAT CROSS

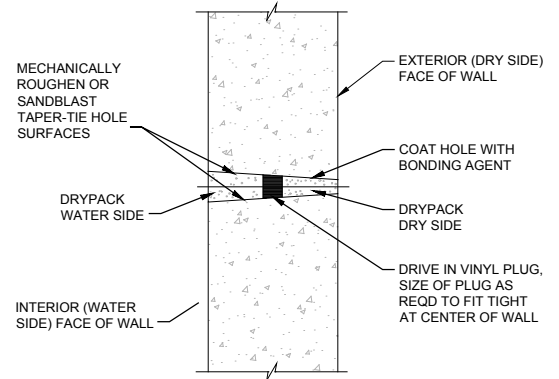
WATERSTOP SPLICING

SCALE: NTS



NOTES:

- THE SPACING OF FORM TIES ON EXPOSED PORTIONS OF WALLS SHALL BE APPROXIMATELY EQUAL HORIZONTALLY AND VERTICALLY AND SHALL BE UNIFORM IN EACH DIRECTION.
- DRY PACK METHOD SHALL BE AS SPECIFIED USING STEEL TOOLS.



NOTE:

MINIMUM HOLE DIAMETER AT EXTERIOR FACE = 1". TAPER HOLE SO THAT MINIMUM HOLE DIAMETER AT INTERIOR FACE = 1 1/4"

CONSTRUCTION STEPS:

- SANDBLAST OR MECHANICALLY ROUGHEN WITH ELECTRIC EQUIPMENT.
- DRIVE IN VINYL PLUG.
- COAT HOLE ON DRY SIDE OF PLUG AND WHILE BONDING AGENT IS TACKY, DRYPACK.
- COAT HOLE ON WATER SIDE OF PLUG AND WHILE BONDING AGENT IS TACKY, DRYPACK.
- USE CATEGORY II, NON-SHRINK GROUT AS SPECIFIED.

FORM TIE-THROUGH
BOLT REPAIR

SCALE: NTS

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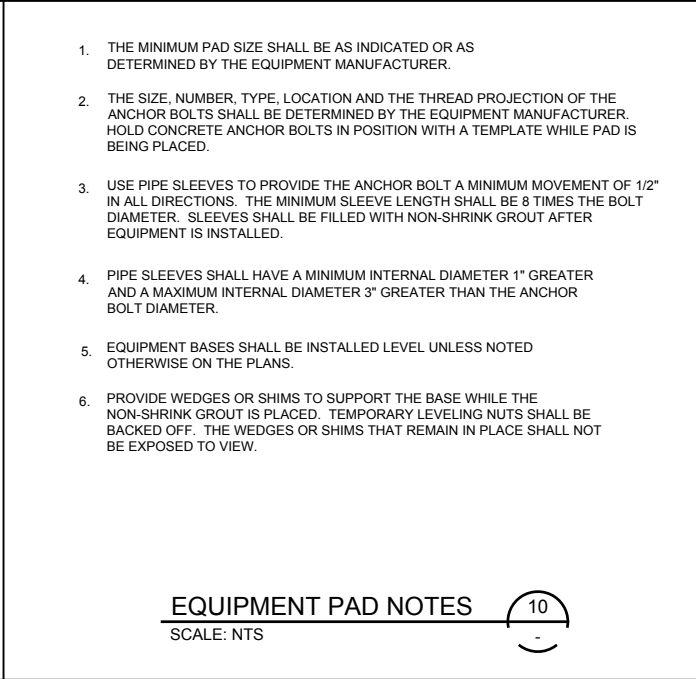
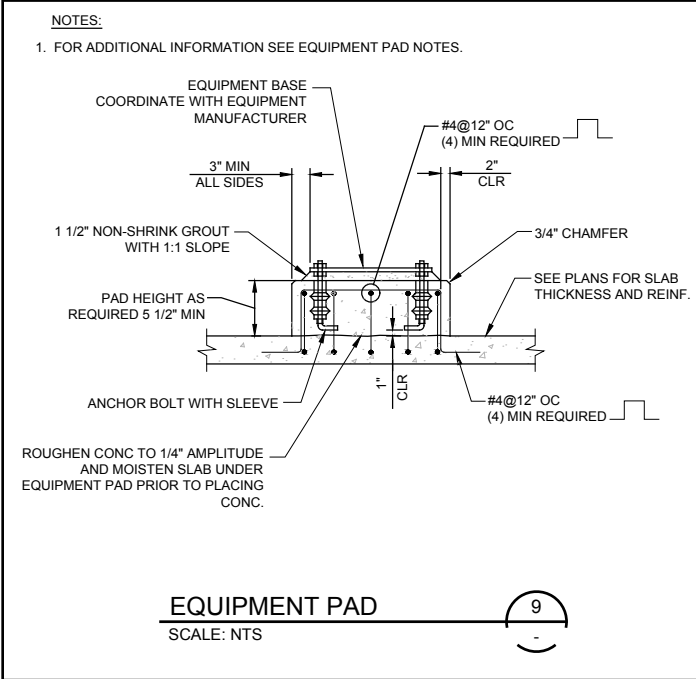
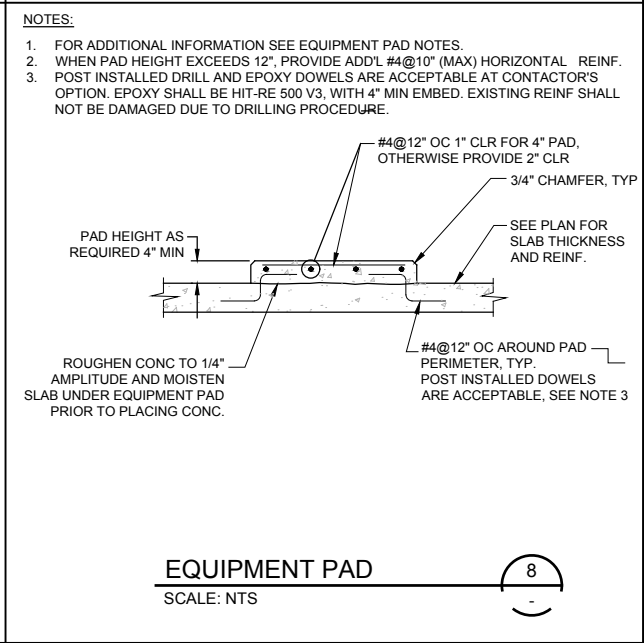
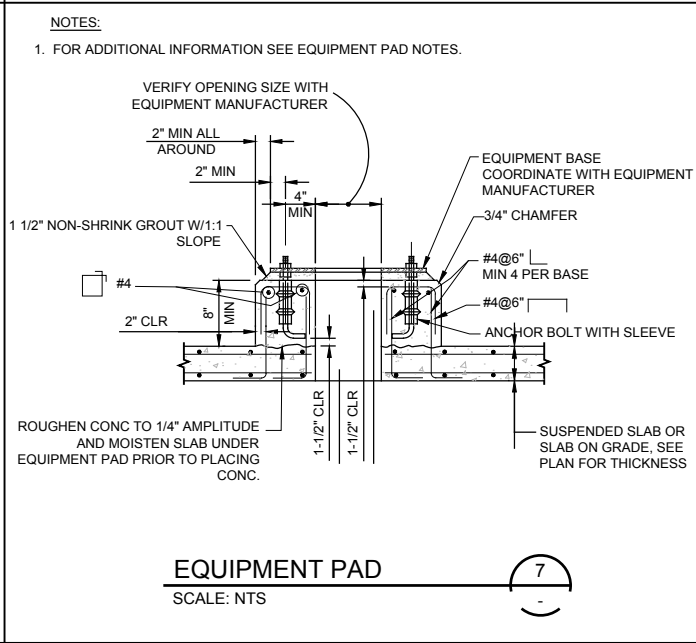
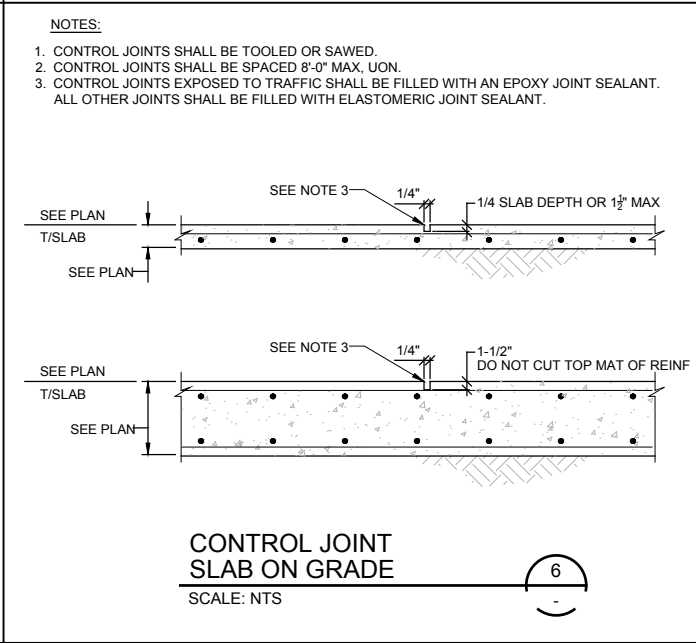
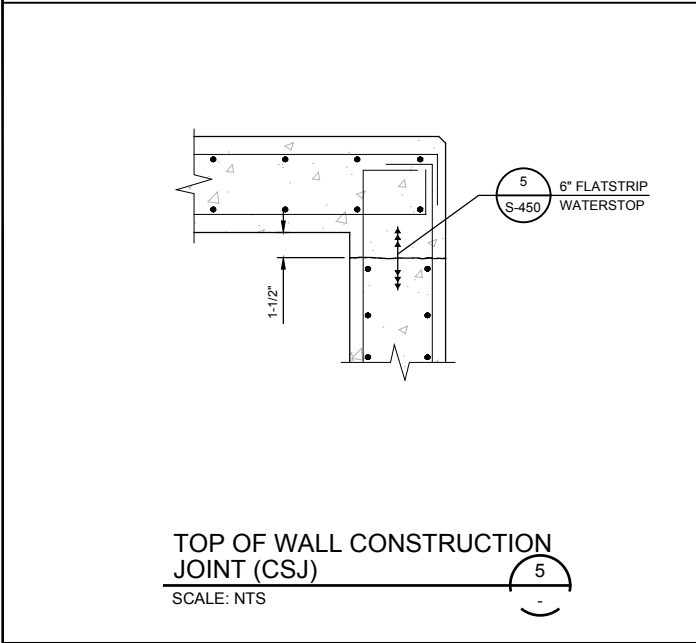
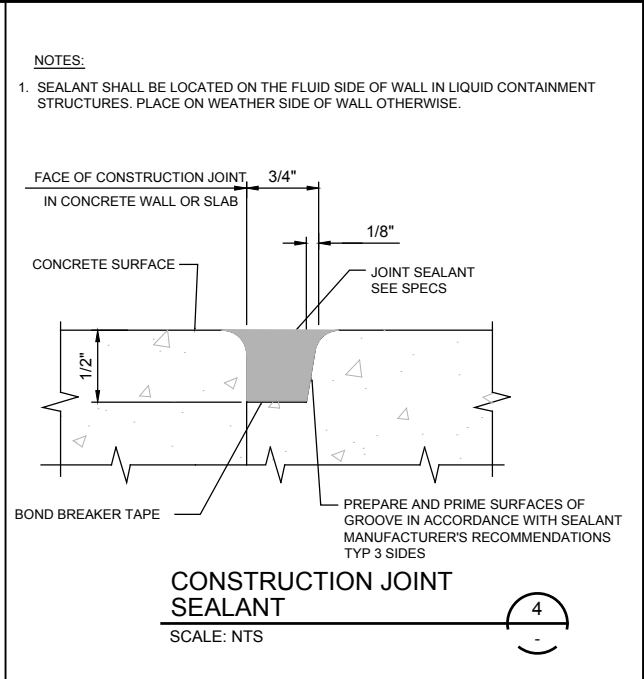
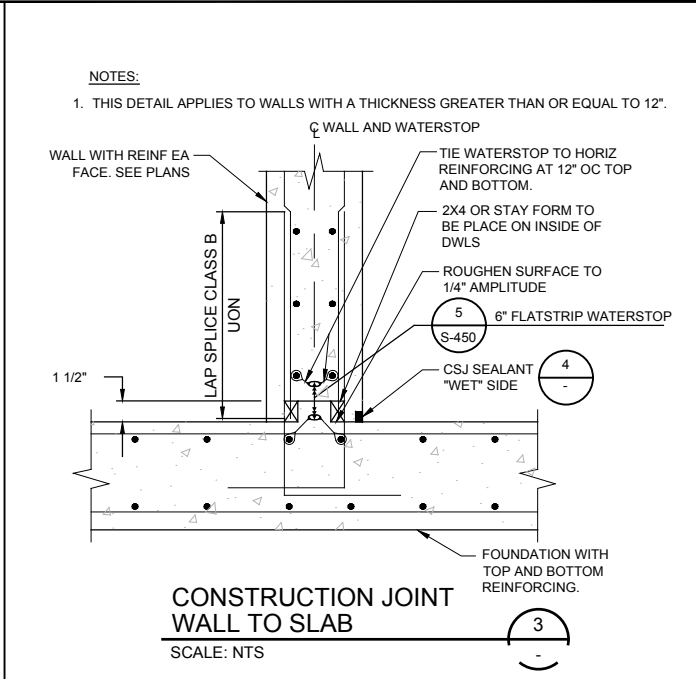
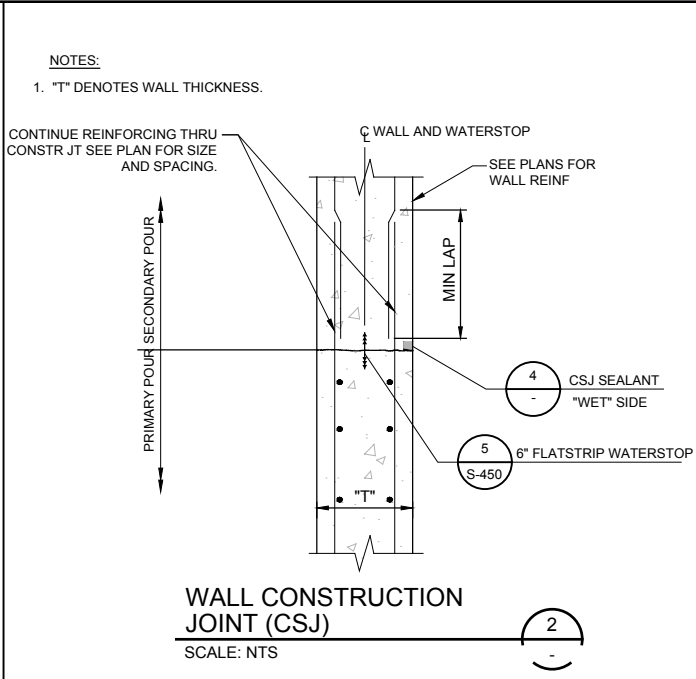
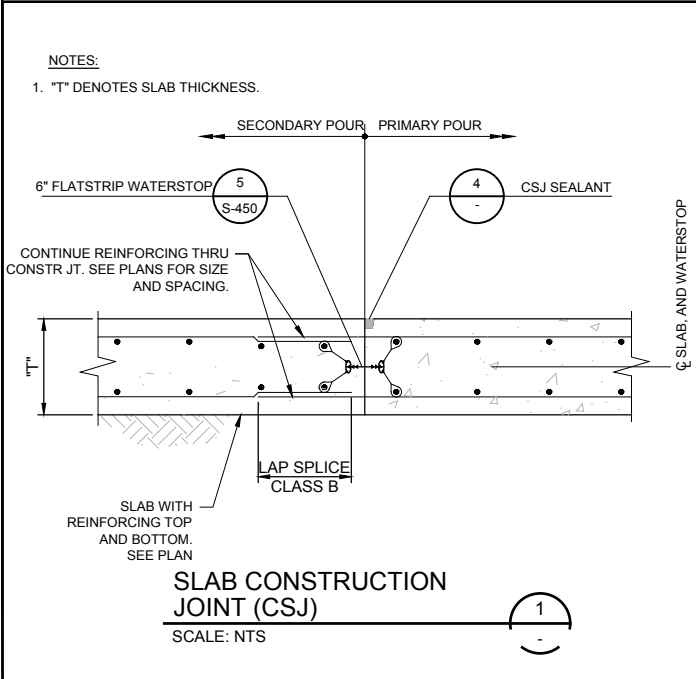
Project Number: 60589841

SHEET TITLE

WIDEFIELD STRUCTURAL
STANDARD DETAILS 1

SHEET NUMBER

S-450



PROJECT

**PFOS / PFOA DRINKING
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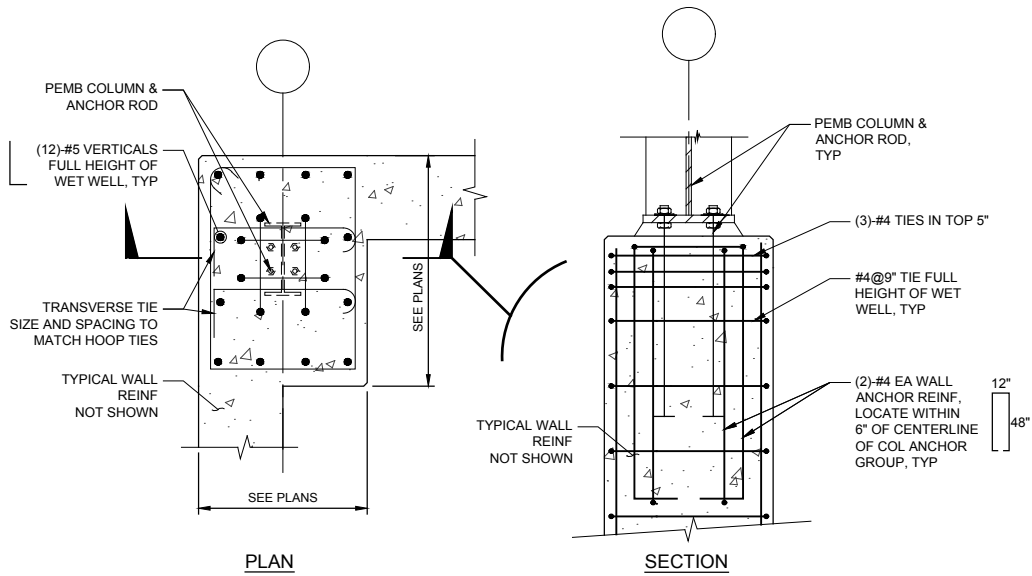
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SHEET TITLE

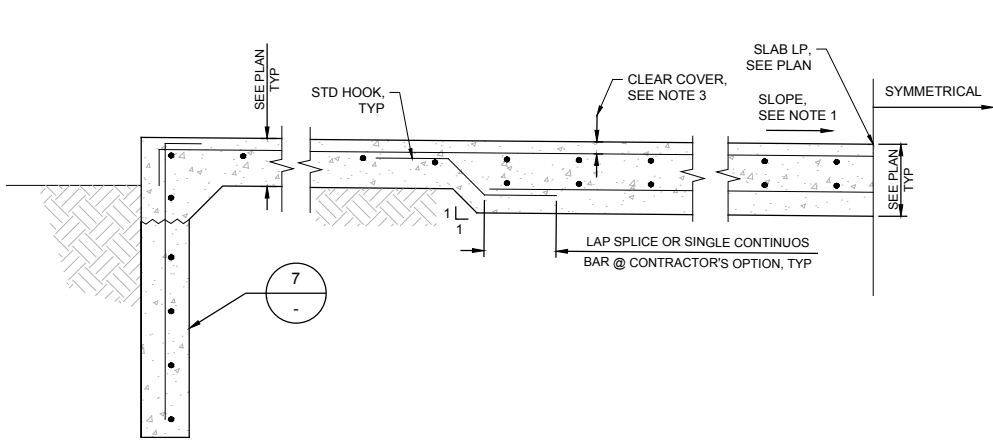
WIDEFIELD STRUCTURAL
STANDARD DETAILS 2

SHEET NUMBER

S-451

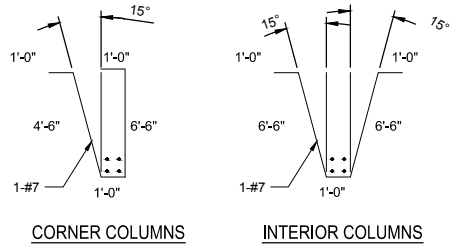


**COLUMN PIER
AT WET WELL**
SCALE: NTS



- NOTES:**
- FLOOR SLAB SHALL SLOPE AS NOTED IN PLAN VIEW. PROVIDE SLOPES AND FINISHED FLOOR ELEVATIONS AS NOTED IN PLAN.
 - SLAB THICKNESSES NOTED ARE MINIMUM REQUIRED THICKNESSES.
 - SLAB REINFORCEMENT SHALL FOLLOW THE CONTOUR OF SLAB SLOPES AND REQUIRED CLEAR COVERS SHALL BE MAINTAINED.

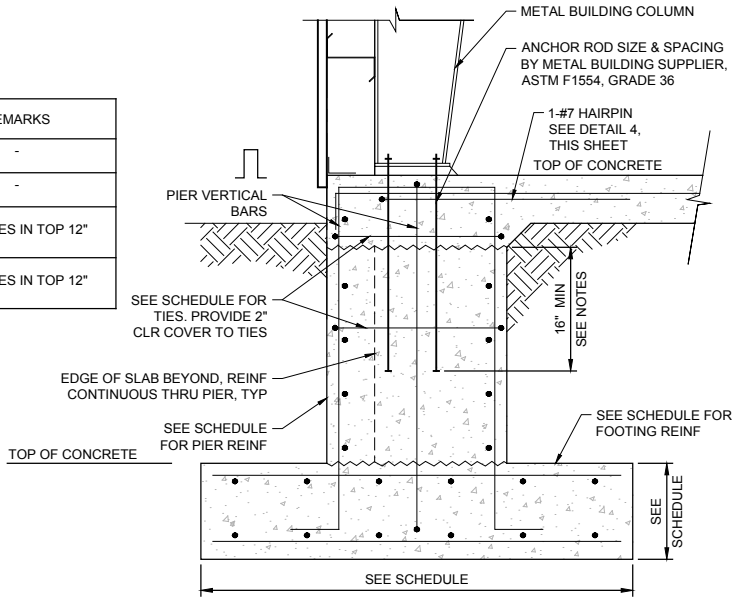
FLOOR SLAB DETAIL
SCALE: NTS



HAIRPIN DETAIL
SCALE: NTS

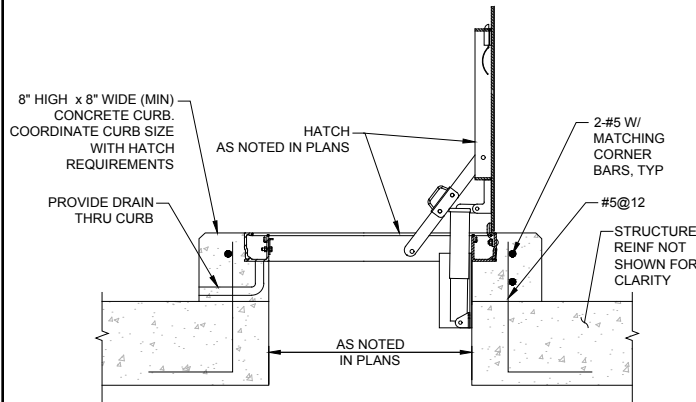
MARK	SIZE	TOP OF CONCRETE	REINFORCEMENT	REMARKS
F-1	6'-0" x6'-0" x2'-0"	5662.60	(7)-#5 EW T&B	-
F-2	4'-0" x4'-0" x1'-6"	5662.60	(5)-#5 EW T&B	-
P-1	2'-0" x2'-6"	5666.60	(6)-#5 VERT #3@8" TIES	(3)-#3 TIES IN TOP 12"
P-2	2'-0" x2'-0"	5666.60	(6)-#5 VERT #3@8" TIES	(3)-#3 TIES IN TOP 12"

- NOTES:**
- COLUMN ANCHOR RODS SHALL BE DESIGNED BY FOUNDATION ENGINEER BASED ON FINAL BLDG LOAD REACTIONS SHOWN IN ENGINEER ACCEPTED PEMB SHOP DRAWING.
 - CENTER FOOTING ON PIER.



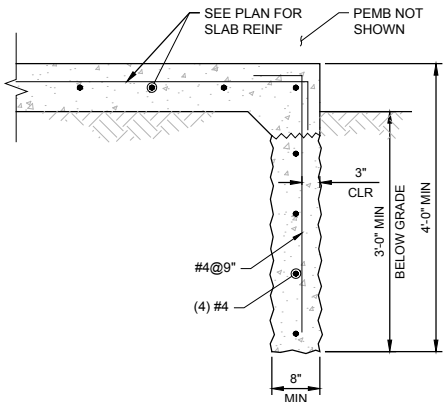
**FOOTING AND PIER
SCHEDULE**
SCALE: NTS

TYPICAL COLUMN FOUNDATION



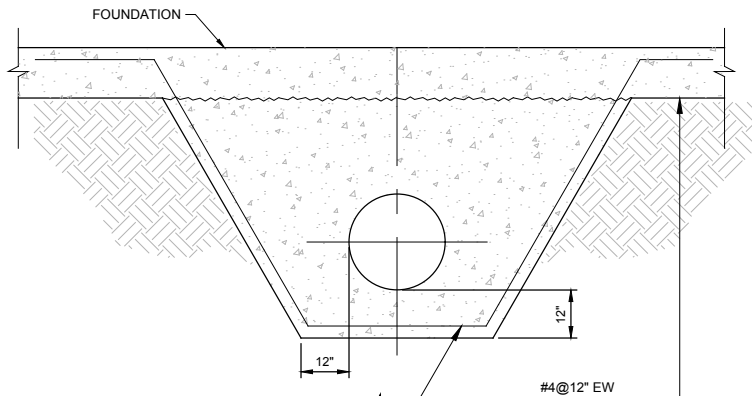
- NOTES:**
- HATCHES SHALL HAVE INTEGRAL FALL PROTECTION GRATING.
 - HATCH SHALL BE BILCO MODEL J-AL OR ENGINEER ACCEPTED ALTERNATIVE.

HATCH AND CURB DETAIL
SCALE: NTS

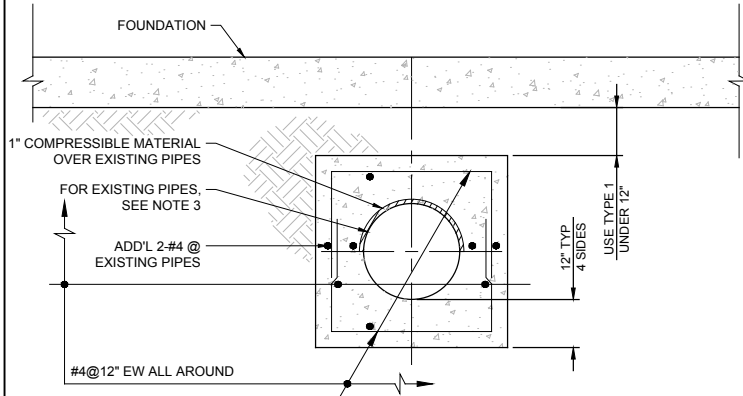


- NOTES:**
- ALL EXPOSED CONCRETE SUFACES SHALL BE FORMED.
 - VERTICAL TRENCH EXCAVATION SHOWN. IF VERTICAL TRENCH EXCAVATION IS NOT POSSIBLE, NOTIFY THE ENGINEER.
 - PROVIDE CONSTRUCTION JOINT IN VERTICAL EDGE POUR AT 30'-0" MAX SPACING.

EDGE OF SLAB DETAIL
SCALE: NTS

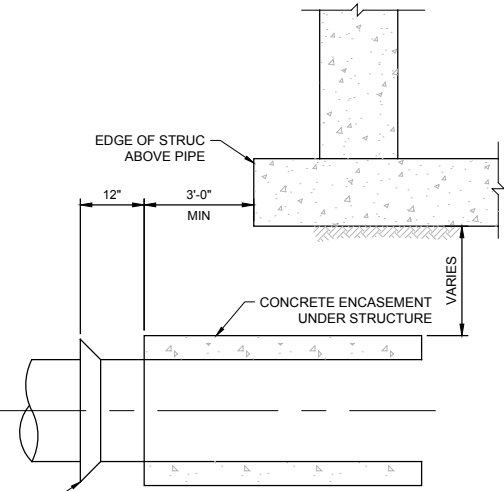


TYPE I



TYPE II

**PIPE ENCASEMENT
BELOW STRUCTURES**
SCALE: NTS



- NOTE:**
- THIS DETAIL APPLICABLE FOR PIPES 48" OR LESS IN DIAMETER.
 - PIPE BELL OR EXPANSION FITTING TO BE POSITIONED A MINIMUM OF 12" OUTSIDE LIMIT OF CONCRETE ENCASEMENT.
 - FOR EXISTING PIPES, EXPOSE PIPE FROM THE CENTERLINE OF THE PIPE UPWARDS. PROVIDE 1" THICK COMPRESSIBLE MATERIAL OVER PIPE AND PROVIDE CONCRETE ENCASEMENT FROM THE CENTERLINE OF THE PIPE UPWARDS, AS SHOWN IN TYPE II DETAIL, SIMILAR.
 - PROVIDE CONTINUOUS HYDROPHILIC WATERSTOP AT ALL PIPE ENCASEMENT CONSTRUCTION JOINTS, TYP.

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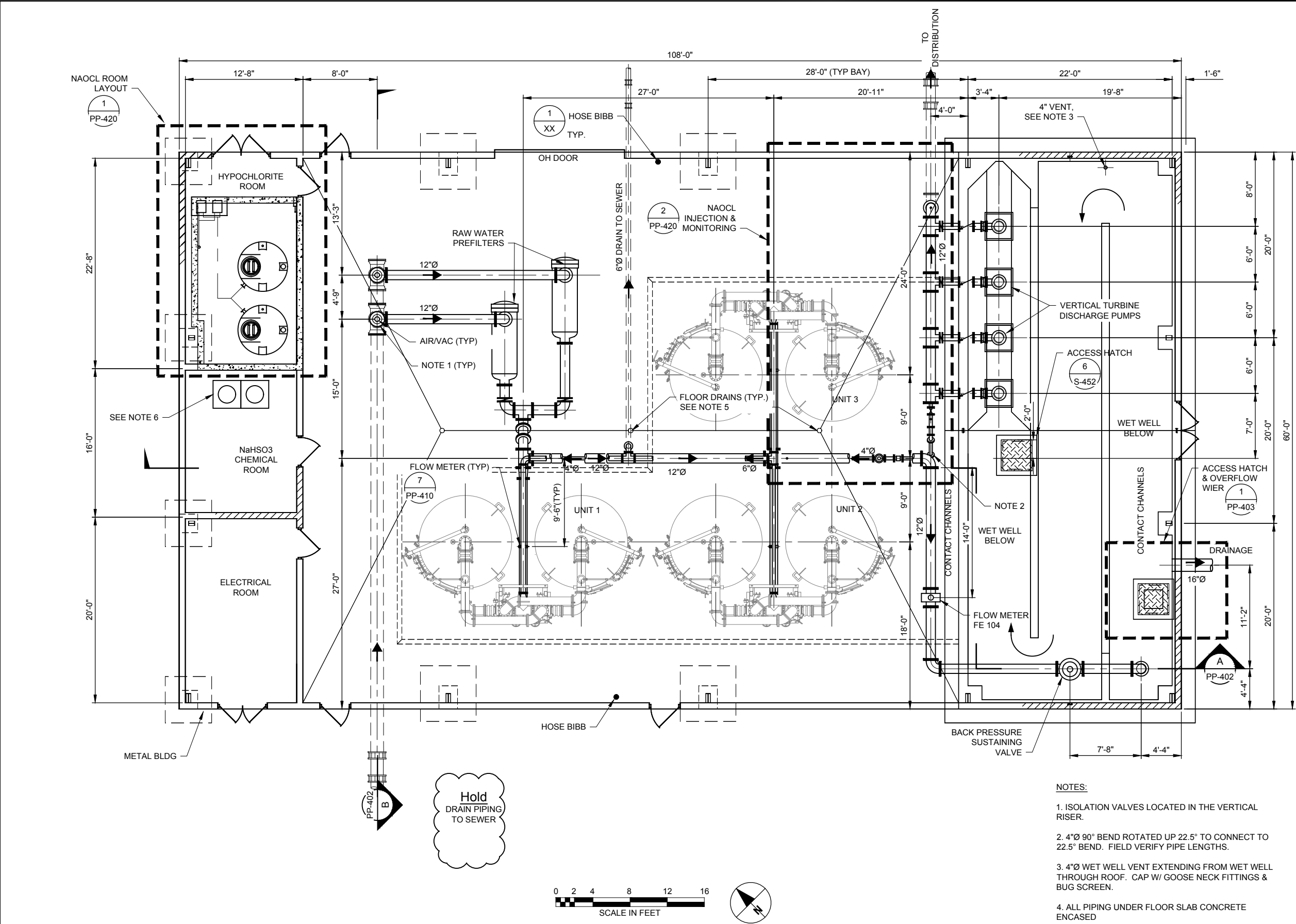
PROJECT NUMBER
Project Number: 60589841

SHEET TITLE
WIDEFIELD STRUCTURAL
STANDARD DETAILS 3

SHEET NUMBER
S-452

ANSI D 22" x 34" SCHWARTZ, ERIC, 2/28/2019 4:48 PM

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- NOTES:
- ISOLATION VALVES LOCATED IN THE VERTICAL RISER.
 - 4"Ø 90° BEND ROTATED UP 22.5° TO CONNECT TO 22.5° BEND. FIELD VERIFY PIPE LENGTHS.
 - 4"Ø WET WELL VENT EXTENDING FROM WET WELL THROUGH ROOF. CAP W/ GOOSE NECK FITTINGS & BUG SCREEN.
 - ALL PIPING UNDER FLOOR SLAB CONCRETE ENCASED
 - FLOOR DRAINS - MAKE CONNECTION TO 6" DRAIN TO SANITARY SEWER
 - POLYETHYLENE SPILL CONTAINMENT PALLET FOR TWO (2) 55 GALLON DRUMS.

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An AECOM Company

PROJECT

PFOS / PFOA DRINKING WATER MITIGATION SYSTEM

WIDEFIELD WATER AND SANITATION DISTRICT (WWSD)

CLIENT

USACE Omaha District
1616 Capital Ave.
Omaha, NE 68102

CONSULTANT

URS Group, Inc.
12120 Shamrock Plaza
Omaha, NE 68154
T +1 (402) 334 8181. F +1 (402) 334 1984

PROJECT NUMBER

Project Number: 60589841

SHEET TITLE

DWMF PROCESS PLAN

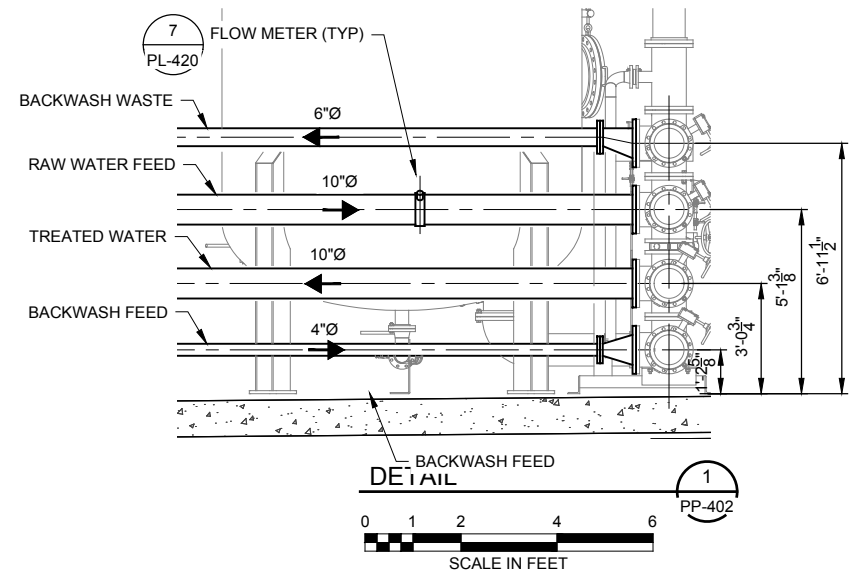
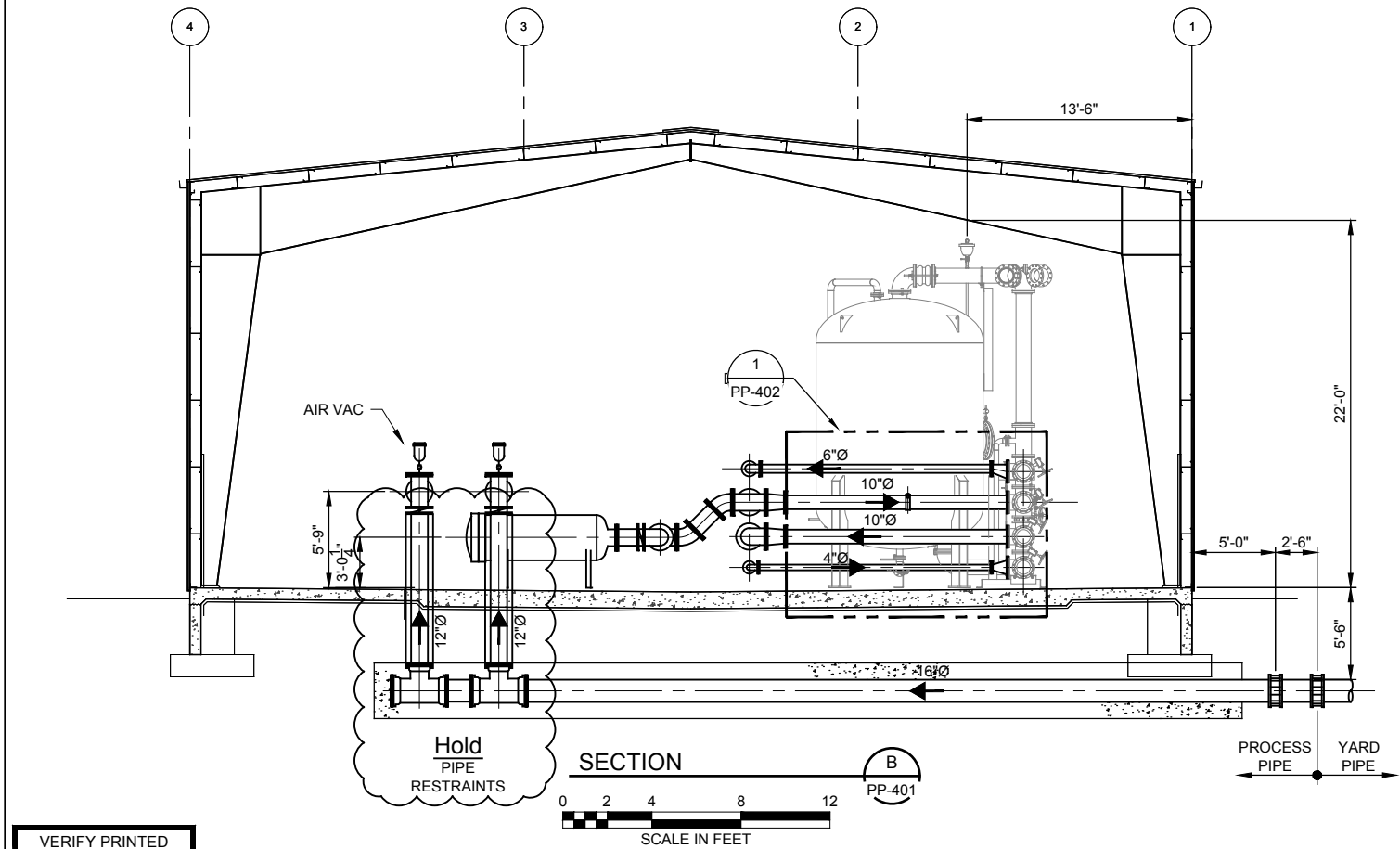
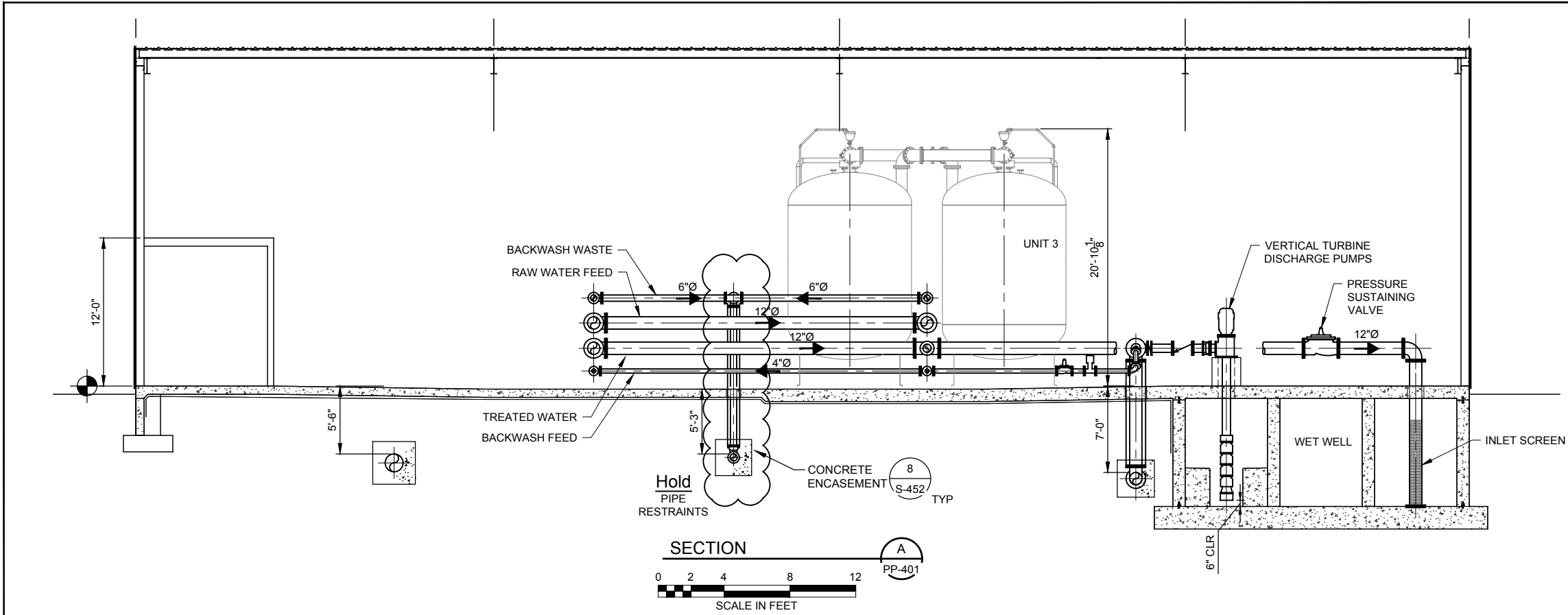
SHEET NUMBER

PP-401

ISSUE/REVISION		
0	02/28/19	60% DESIGN
I/R	DATE	DESCRIPTION

ANSI D 22" x 34"

Last saved by: JIM HEALY (2019-02-28) Last Plotter: 2019-02-28
Filename: M:\DCS\PROJECTS\WTR60589841_PAFEL_PFA5900_CAD_GS910_CAD20-SHEETS\PP-403 SM DIA. PIPING ISO.DWG



VERIFY PRINTED
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ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON
THIS SHEET ADJUST
SCALE ACCORDINGLY

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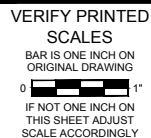
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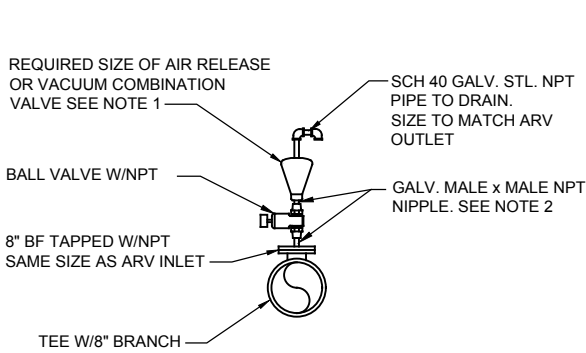
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DWMF PROCESS SECTIONS
(SHEET 1 OF 2)

SHEET NUMBER

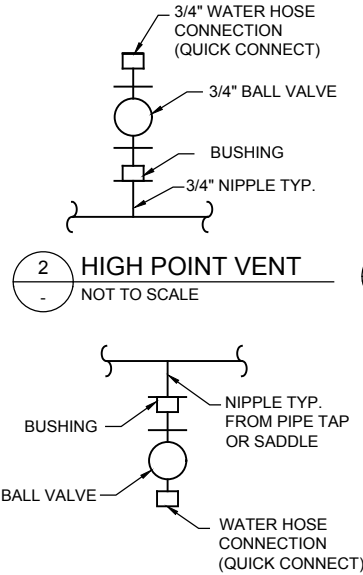
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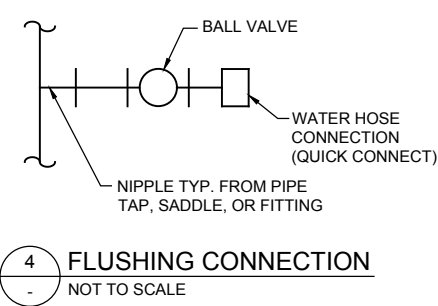


- NOTES:
- FOR ARV SEE SPECS.
 - FOR ARV'S WITH FLANGED CONNECTIONS REPLACE GALV. NPT W/FLG DIP SIZED TO MATCH ARV INLET SIZE.

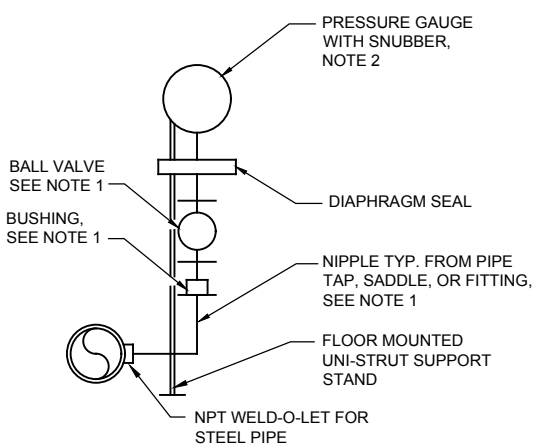
1 AIR RELIEF VALVE INSTALLATION
NOT TO SCALE



2 HIGH POINT VENT
NOT TO SCALE

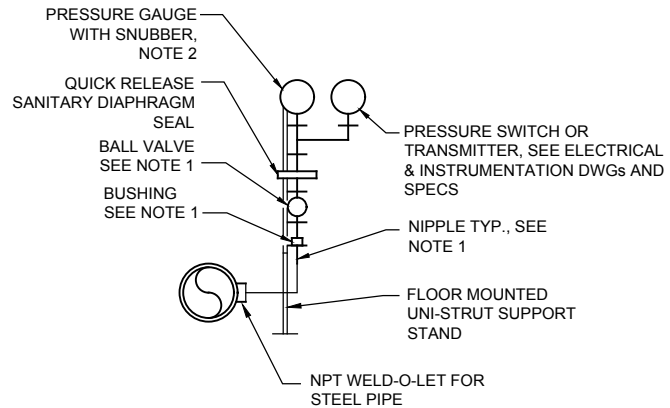


4 FLUSHING CONNECTION
NOT TO SCALE



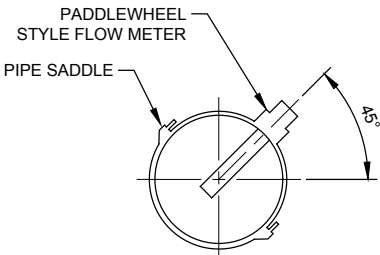
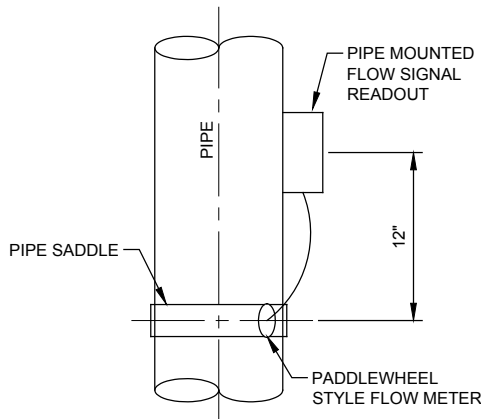
- NOTES:
- PIPE SIZES:
FOR CLEAR WATER SERVICE: N.A.
FOR WASTE OR RAW WATER SERVICE: 2" DIA.
 - SEE SPECS FOR GAUGE RANGE

5 PRESSURE GAUGE
NOT TO SCALE

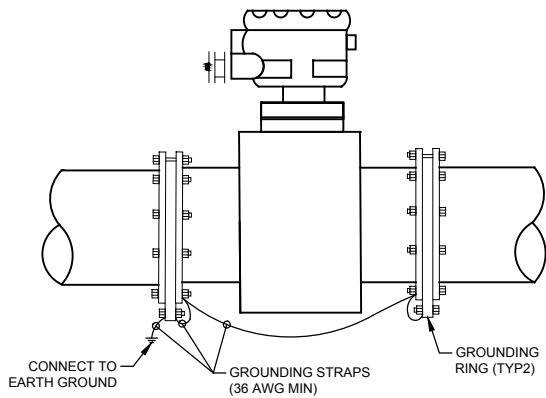


- NOTES:
- PIPE SIZES:
FOR CLEAR WATER SERVICE: N.A. FOR
WASTE OR RAW WATER SERVICE: 2" DIA.
 - SEE SPECS FOR GAUGE RANGE

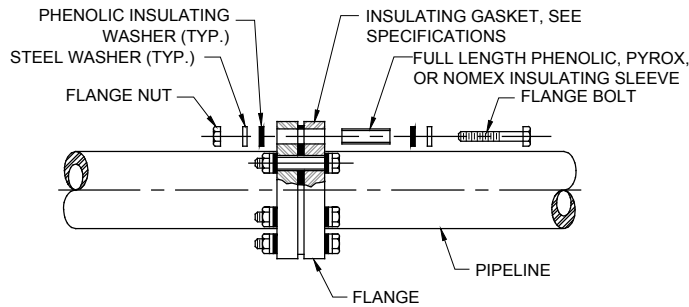
6 PRESSURE GAUGE W/ SWITCH OR TRANS
NOT TO SCALE



7 PADDLE WHEEL FLOW METER
NOT TO SCALE



8 MAGNETIC FLOW METER GROUNDING
NOT TO SCALE



- NOTE:
- HARDWARE QUANTITIES IN INSULATING FLANGE KIT WILL VARY BASED ON GASKET PATTERN AND PIPE SIZE.
 - DO NOT COVER OR SPRAY INSULATING COMPONENTS WITH GREASE.
 - POLYETHYLENE AND MYLAR INSULATING SLEEVES ARE NOT ACCEPTABLE AND WILL BE REJECTED.

8 INSULATING FLANGE ASSEMBLY
NOT TO SCALE

VERIFY PRINTED
SCALES
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ORIGINAL DRAWING
0 1"
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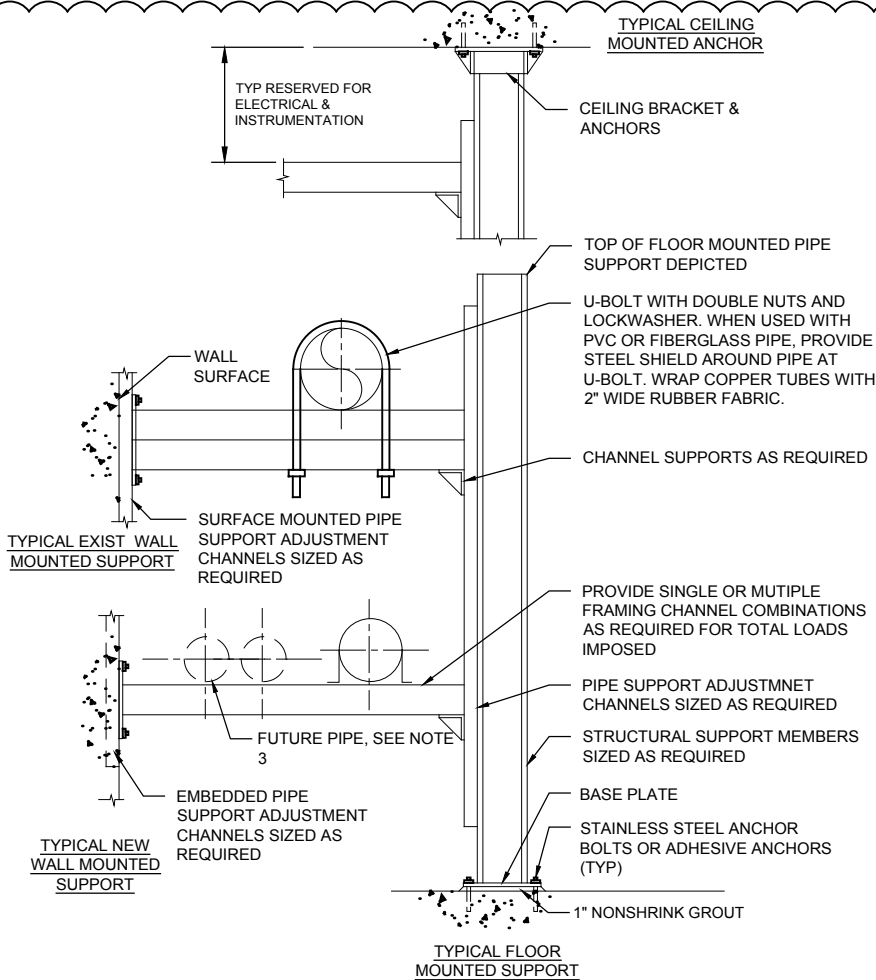
Project Number: 60589841

SHEET TITLE

PROCESS DETAILS 1

SHEET NUMBER

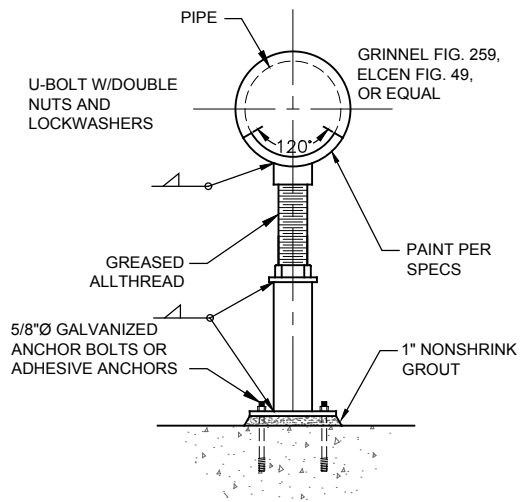
PP-410



TYPICAL PIPE RACK NOTES

1. THE RACK ILLUSTRATED IS A COMPOSITE FOR REFERENCE USE ONLY. THE VERTICAL SPACING, RACK WIDTH, COMPONENTS SELECTED AND PLACEMENT IS BY THE CONTRACTOR.
2. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL. PROPOSED PIPE SUPPORTS TO BE BASED ON SPECIFIC CONDITIONS
3. WHERE FUTURE PIPES ARE INDICATED ADJACENT TO PIPES IN THIS CONTRACT, SUPPORT CHANNELS SHALL BE SIZED FOR FUTURE REQUIREMENTS.

1 TYPICAL PIPE RACK
NOT TO SCALE



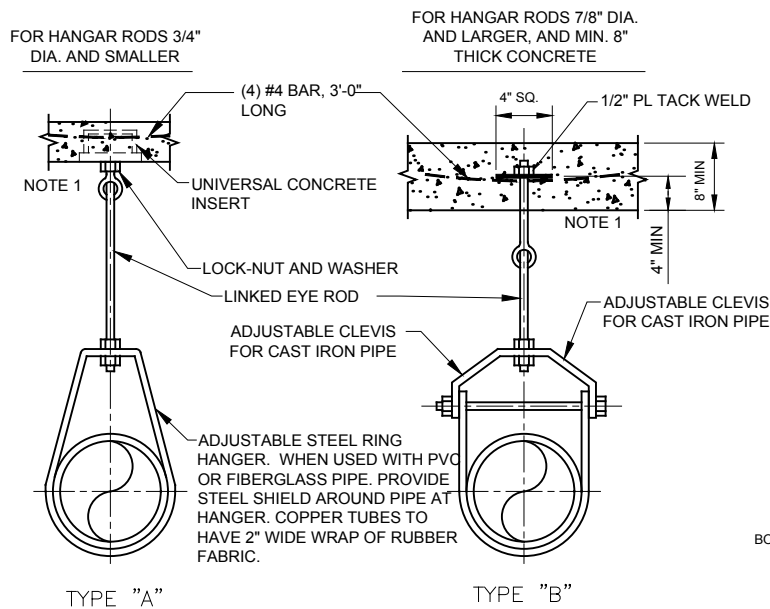
4 PIPE SUPPORT
NOT TO SCALE

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)
BRASS PIPE	10	10
CAST-IRON PIPE	5 ²	15
COPPER OR COPPER-ALLOY PIPE	12	10
COPPER OR COPPER TUBING 1 1/2" DIA. AND SMALLER	6	10
COPPER OR COPPER TUBING 1 1/2" DIA. AND LARGER	10	10
CPVC PIPE OT TUBING 1" OR SMALLER	3	10
CPVC PIPE OT TUBING 1 1/4" OR SMALLER	10	10
STEEL PIPE	12	15
PVC TUBING	8	10
PVC PIPE	4	10

NOTES:

1. REFER TO SECTION 305 LATEST EDITION OF INTERNATIONAL MECHANICAL CODE FOR DETAIL INFORMATION.
2. THE MAXIMUM HORIZONTAL SPACING OF CAST-IRON PIPE HANGERS SHALL BE INCREASED TO 10 FEET WHERE 10-FOOT LENGTHS OF PIPE ARE INSTALLED.
3. ALSO INCLUDES STAINLESS STEEL AIR PIPING SYSTEM.

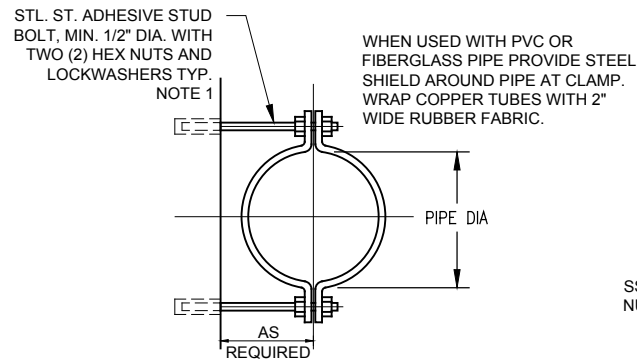
2 PIPE SUPPORT SPACING
NOT TO SCALE



NOTES:

1. DESIGN OF SUPPORTS HUNG FROM STRUCTURAL STEEL ROOF SYSTEMS SHALL BE COORDINATED WITH METAL BLDG. MANUFACTURE.
2. ALL HARDWARE AND RODS SHALL BE TYPE 304L STL. ST.
3. PROVIDE RIGID SUPPORT ON ALL CHANGES OF DIRECTIONS.

5 PIPE HANGER
NOT TO SCALE



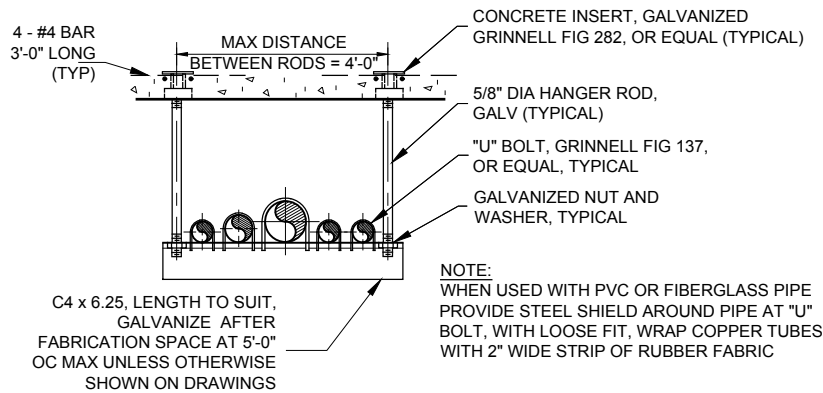
NOTE:

1. GALVANIZE ALL PARTS AFTER FABRICATION. WHERE SUBMERGED, PIPE CLAMP, NUTS, LOCKWASHERS, ANCHORS AND SHIELDS TO BE TYPE 316 STAINLESS STEEL WITH BRONZE NUTS.
2. COORDINATE WALL ANCHORS FOR USE WITH STRUCTURAL STEEL METAL BLDG. WALL FRAME SYSTEMS USING DRILLED HOLES, NUTS AND WASHERS.

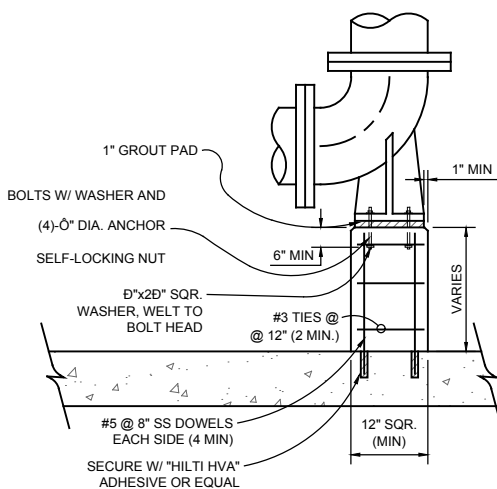
NOTES:

1. WHERE SUBMERGED, PIPE CLAMP, SHIELD AND ANCHOR TO BE TYPE 316 STAINLESS STEEL.
2. WHEN USED WITH PVC OR FIBERGLASS PIPE, PROVIDE STEEL SHIELD AROUND PIPE AT CLAMP. WRAP COPPER TUBES WITH 2\"/>

6 PIPE CLAMP
NOT TO SCALE



7 TRAPEZE PIPE HANGAR
NOT TO SCALE



8 ELBOW SUPPORT
NOT TO SCALE

PIPE DIAMETER	SUPPORT DIAMETER	PLATE THICKNESS	ANCHOR BOLT DIAMETER
4"	2-1/2"	3/8"	3/8"
4" - 12"	3"	3/8"	1/2"
14" - 18"	4"	3/8"	1/2"
18" - 20"	6"	1/2"	5/8"

NOTES:

1. ALL STANDARD STEEL PIPING, AND HARDWARE TO BE PAINTED SAME AS PIPING.
2. ALL VERTICAL SUPPORT PIPING SHALL BE STANDARD WEIGHT, ASTM-A53 TYPE E OR S.
3. APPLIES FOR BASE ELBOWS AND BASE TEES.

Hold
PIPE SUPPORTS
FOR FURTHER
DETAIL

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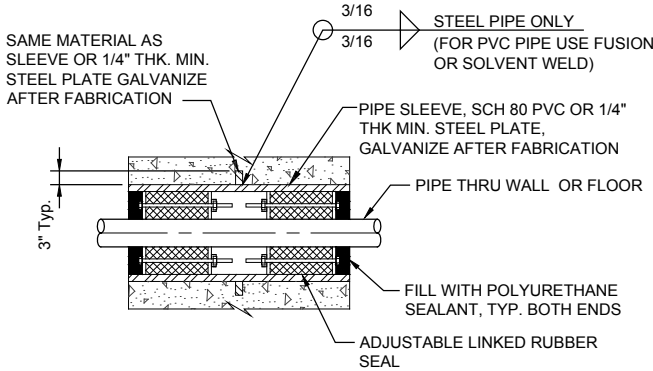
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PROCESS DETAILS 2
(SHEET 2 OF 3)

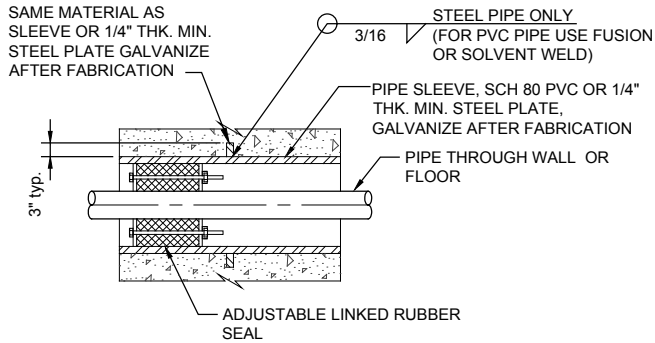
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PP-411

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SCALE ACCORDINGLY

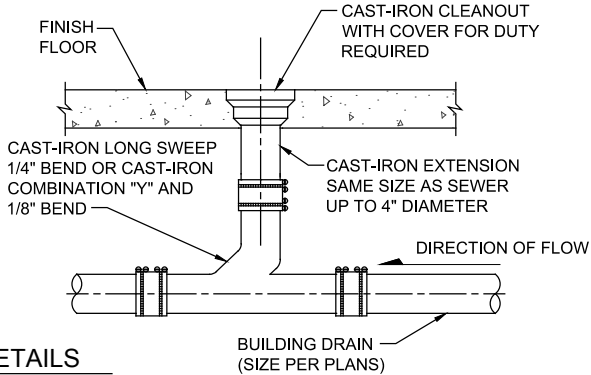
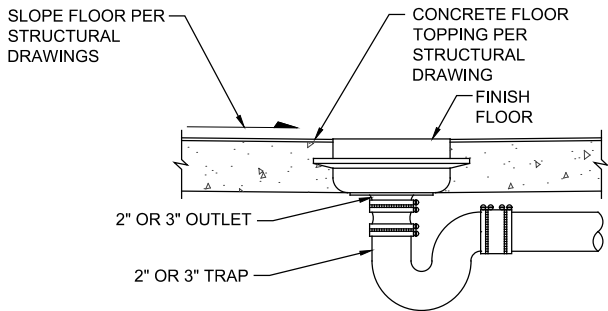


NEW CONSTRUCTION METHOD "A"
(WET PENETRATIONS AND
PENETRATIONS WITH GROUNDWATER)



NEW CONSTRUCTION METHOD "B"
(DRY PENETRATION)

1 PIPE PENETRATIONS
NOT TO SCALE



2 FLOOR DRAIN DETAILS
NOT TO SCALE

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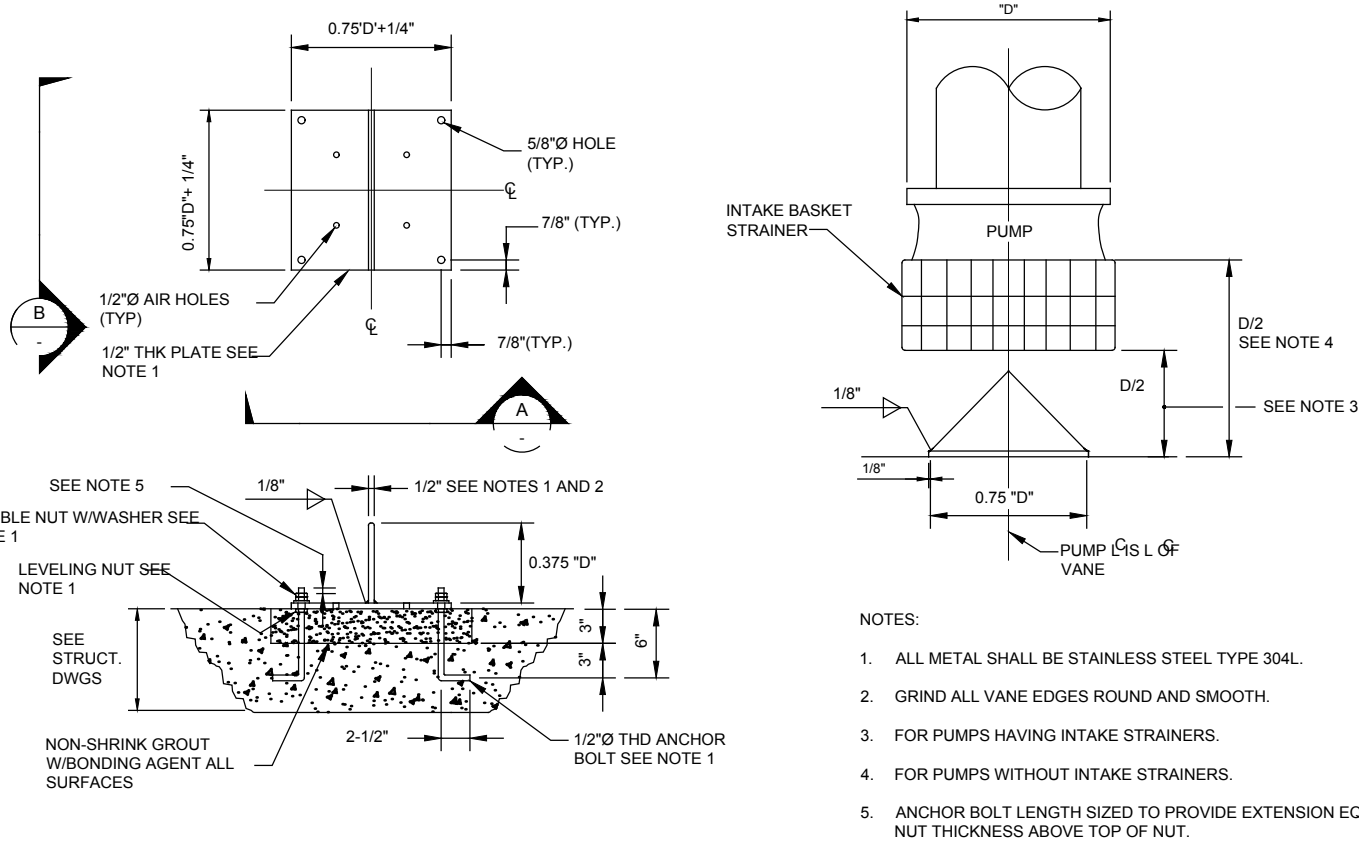
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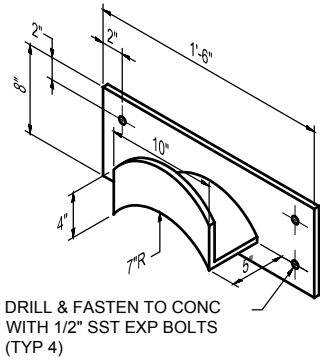
PROCESS DETAILS 3
(SHEET 3 OF 3)

SHEET NUMBER

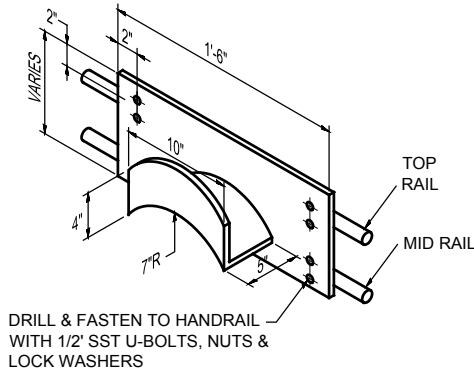
PP-412



1 PUMP INTAKE VANE DETAIL
NOT TO SCALE



WALL MOUNTED

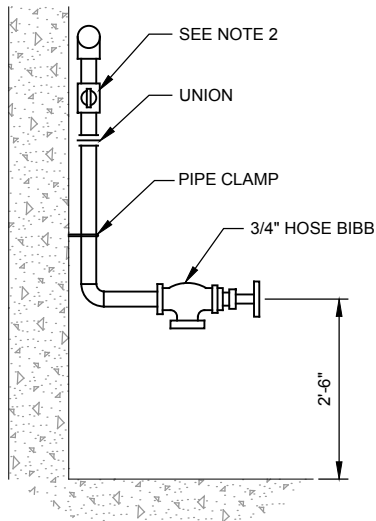


RAIL MOUNTED

NOTE:

WELDED CONSTRUCTION, ALL MATERIALS NO 8 GA SST PL IN CLASSIFIED AREAS, 8 GA GALV STL PL IN NON-CLASSIFIED AREAS, GALV AFTER FABRICATION.

7 HOSE RACK DETAIL
NOT TO SCALE



NOTES:

1. FOR SIZE AND LOATION SEE DRAWING
2. ALL HOSE BIBBS TO BE CONTROLLED BY INDIVIDUAL SHUT-OFF VALVES EXCEPT WHERE INDIVIDUALLY CONTROLLED BRANCH MAIN SERVES HOSE BIBB ONLY.
3. PROVIDE 7" x 10" PLASTIC WARNING SIGN WHEN USED IN NON-POTABLE WATER SYSTEM. (EMED CO. MODEL NO. 40063 OR EQUAL)

7 INTERIOR HOSE BIBB
NOT TO SCALE

VERIFY PRINTED SCALES
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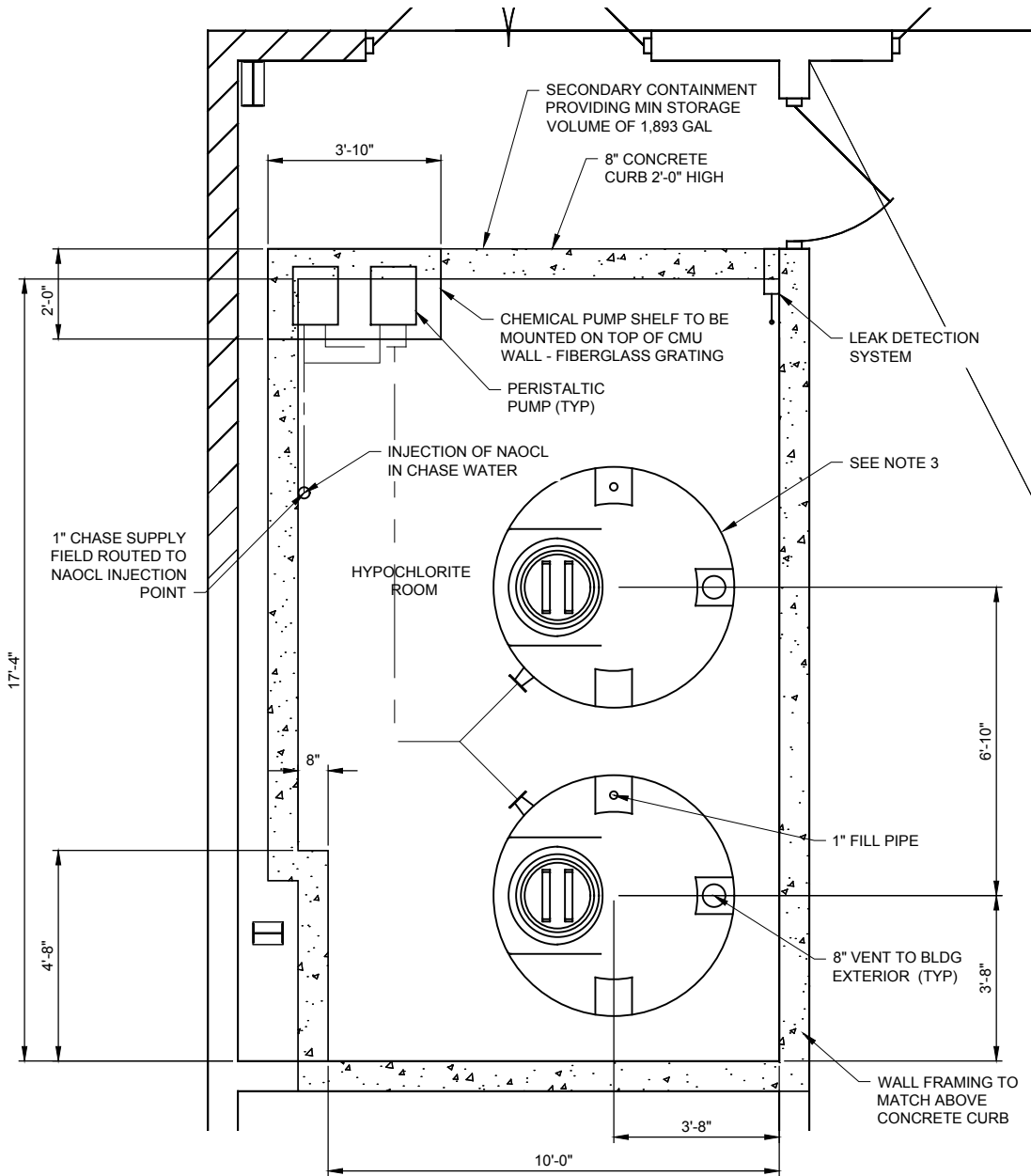
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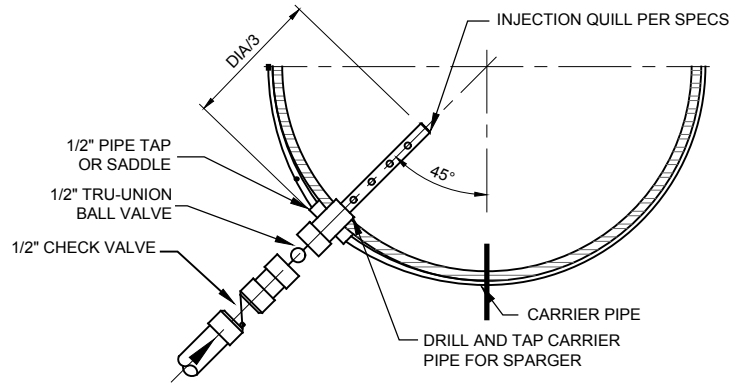
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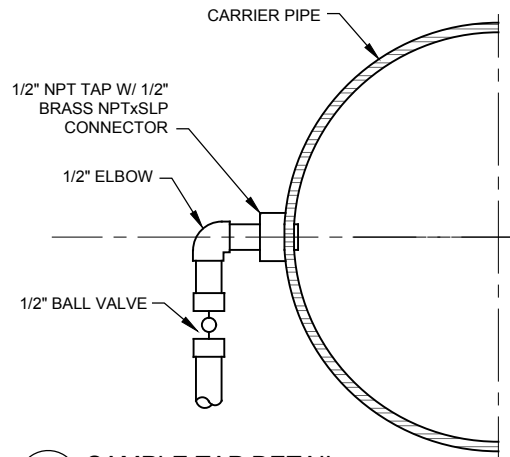
PP-413



1 NAOCL ROOM LAYOUT
PP-401
0 1 2 4 6
SCALE IN FEET



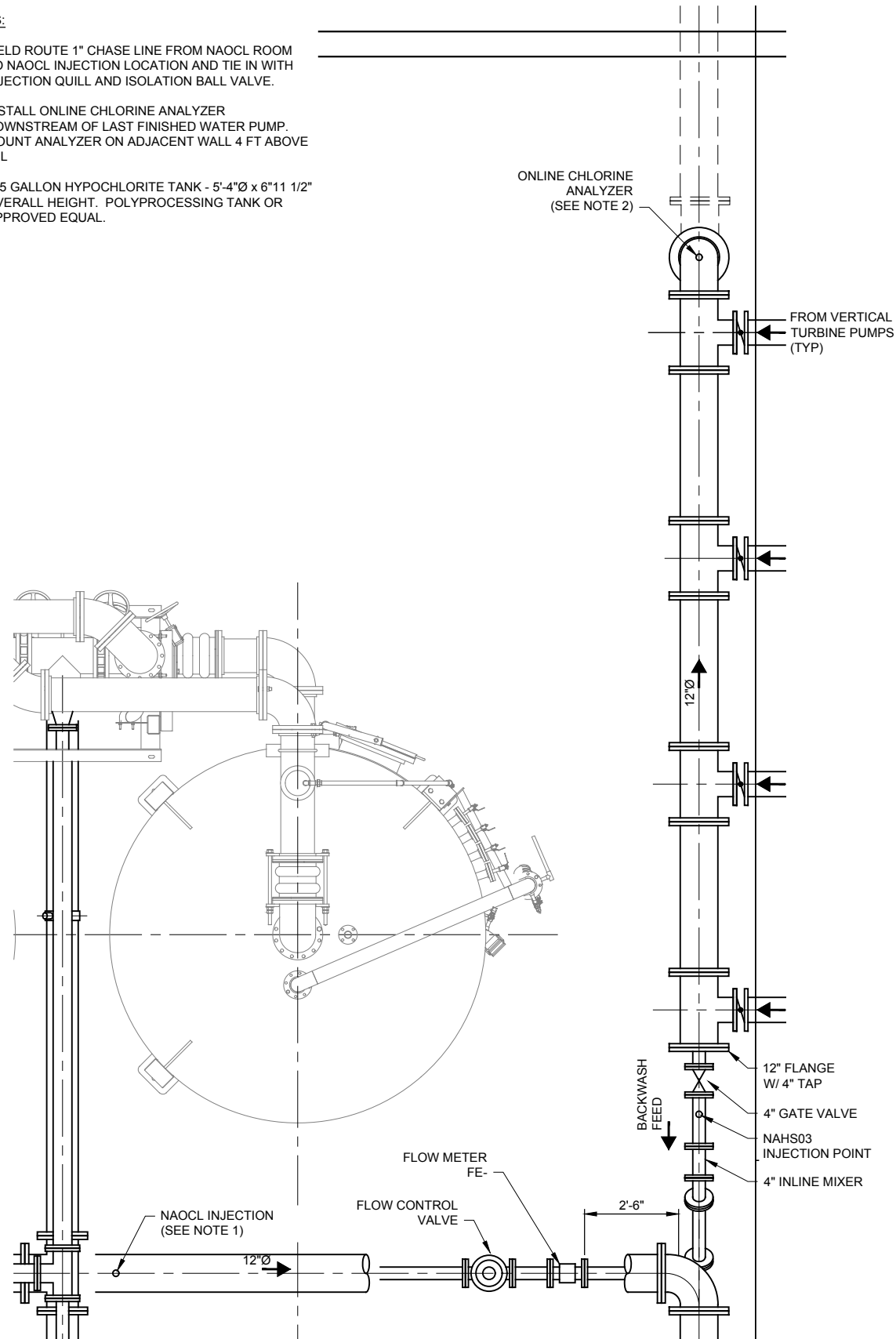
1 INJECTION QUILL DETAIL
PP-401
NOT TO SCALE



2 SAMPLE TAP DETAIL
PP-401
NOT TO SCALE

NOTES:

1. FIELD ROUTE 1" CHASE LINE FROM NAOCL ROOM TO NAOCL INJECTION LOCATION AND TIE IN WITH INJECTION QUILL AND ISOLATION BALL VALVE.
2. INSTALL ONLINE CHLORINE ANALYZER DOWNSTREAM OF LAST FINISHED WATER PUMP. MOUNT ANALYZER ON ADJACENT WALL 4 FT ABOVE FFL
3. 905 GALLON HYPOCHLORITE TANK - 5'-4"Ø x 6"11 1/2" OVERALL HEIGHT. POLYPROCESSING TANK OR APPROVED EQUAL.



2 NAOCL INJECTION AND MONITORING
PP-401
0 1 2 4 6
SCALE IN FEET

VERIFY PRINTED SCALES
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0 1"
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SHEET TITLE

SODIUM HYPOCHLORITE SYSTEM DETAILS

SHEET NUMBER

PP-420

GENERAL NOTES

- A. GENERAL
1. ALL CONSTRUCTION WORK FOR THIS PROJECT SHALL COMPLY WITH THE WIDEFIELD WATER AND SANITATION DISTRICT WATERLINE STANDARDS EXCEPT WHEN CALLED OUT OTHERWISE ON THE PROJECT DRAWINGS OR SPECIFICATIONS. THE CONTRACTOR SHALL KEEP A COPY OF THE ABOVE NAMED SPECIFICATIONS AT THE WORK SITE AT ALL TIMES.

2. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH LOCAL BUILDING CODES AND STANDARDS

3. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER AND WIDEFIELD WATER AND SANITATION DISTRICT.

4. ALL WORK SHALL BE CONDUCTED WITHIN EASEMENT OR ROAD RIGHT-OF-WAYS (ROW).

5. ALL WORK IN THE CITY OF FOUNTAIN PUBLIC ROW SHALL BE IN CONFORMANCE WITH THE CITY OF FOUNTAIN ENGINEERING DIVISION STANDARD SPECIFICATIONS.

6. ALL WORK IN EL PASO COUNTY ROW SHALL BE IN CONFORMANCE WITH EL PASO COUNTY ENGINEERING STANDARD SPECIFICATIONS.

7. ALL WORK IN COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) ROW SHALL BE IN CONFORMANCE WITH CDOT ENGINEERING DIVISION STANDARD SPECIFICATIONS.

8. ALL WORK IN THE UNION PACIFIC ROW SHALL BE IN CONFORMANCE WITH THE UNION PACIFIC PIPELINE INSTALLATION ENGINEERING SPECIFICATIONS.

9. ALL WORK IN THE BNSF ROW SHALL BE IN CONFORMANCE WITH THE BNSF UTILITY ACCOMMODATION POLICY

10. THE CONTRACTOR SHALL MAINTAIN AND PROTECT, AT THEIR COST, ALL UTILITIES, STRUCTURES, IMPROVEMENTS, MONUMENTS AND BENCHMARKS AFFECTED BY THE WORK. ANY DAMAGE SHALL BE REPAIRED AND RESTORED TO THE SATISFACTION OF THE AFFECTED OWNER AND THE WIDEFIELD WATER DISTRICT INSPECTOR.

11. THE CONTRACTOR SHALL NOTIFY THE WIDEFIELD WATER AND SANITATION DISTRICT INSPECTION SUPERVISOR (719-491-6981) 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO OUTLINE METHODS OF CONSTRUCTION, MATERIALS TO BE USED AND CONSTRUCTION STAKING.

12. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SITE SAFETY.

13. THE TRANSMISSION WATERLINE IS A RAW WATERLINE. DIAMETER IS INDICATED ON PLANS.

14. THE FINISHED WATERLINE IS A POTABLE WATERLINE. DIAMETER IS INDICATED ON PLANS.

15. FOR EXISTING POTHOLE LOCATIONS AND DATA, SEE POTHOLE DATA (NOT INCLUDED IN DRAWINGS)
- B. WATER PIPE MATERIAL

1. POLYVINYL CHLORIDE (PVC) PIPE SHALL CONFORM TO WIDEFIELD WATER DISTRICT WATERLINE STANDARDS AND SHALL BE MINIMUM PRESSURE CLASS OF 350.

2. ALL PVC AND FITTINGS SHALL HAVE BONDED JOINTS, ANODES AND TEST STATIONS PER WIDEFIELD WATER DISTRICT SPECIFICATIONS.

3. ALL FITTINGS AND VALVES SHALL BE RATED FOR A MINIMUM OPERATING PRESSURE OF 250 PSIG.

4. ALL METALLIC FITTINGS SHALL BE CHATHODICALLY PROTECTED.
- C. CORROSION PROTECTION

1. ELECTRICAL CONTINUITY. THE RELOCATION PIPE SEGMENT SHALL BE MADE ELECTRICALLY CONTINUOUS ALONG THE ENTIRE RELOCATION PIPELINE LENGTH. JOINTS THAT ARE NOT ELECTRICALLY CONTINUOUS SHALL BE BONDED AS SPECIFIED OR SHOWN.

2. METALLIC FITTINGS SHALL BE POLY WRAPPED INCLUDING ANODES AND TEST STATIONS.
- D. PIPE JOINT RESTRAINT

1. ALL VALVES SHALL BE INSTALLED WITH M.J. RESTRAINT (i.e. MEGALUG) (RSTNT.) ON BOTH PIPE CONNECTIONS.

2. ALL BENDS AND FITTINGS SHALL BE TR FLEX TYPE MECHANICAL JOINT RESTRAINTS INSTALLED PER WIDEFIELD WATER DISTRICT WATERLINE STANDARDS.
- E. PIPELINE OPERATING CONSTRAINTS

1. THE CONTRACTOR SHALL MAINTAIN ALL WATER DISTRIBUTION PIPELINES IN OPERATION EXCEPT DURING THE TIME A CONNECTION OR DISCONNECTION TO AN EXISTING SYSTEM IS IN THE PROCESS OF BEING MADE. CONTRACTOR SHALL MINIMIZE TIME MAKING CONNECTIONS AND DISCONNECTIONS.

2. SHUTDOWN OF ANY OPERATING WATERLINE IS TO BE PERFORMED BY WIDEFIELD WATER DISTRICT PERSONNEL. THE CONTRACTOR SHALL COORDINATE CONNECTION TIME AND PROCEDURE WITH WIDEFIELD WATER DISTRICT.

3. ALL RELOCATED WATER PIPELINES SHALL BE CONSTRUCTED AND PRESSURE TESTED BEFORE THE RELOCATED SEGMENT IS CONNECTED TO AN EXISTING AND OPERATING PIPELINE.

4. ALL PIPE JOINTS AND FITTINGS SHALL BE RESTRAINED IN LOWERINGS.

5. PIPELINE OPERATIONAL REQUIREMENTS. THE EXISTING WATERLINE SHALL BE MAINTAINED IN OPERATION CONTINUALLY EXCEPT FOR AN ALLOWABLE MAXIMUM SHUT DOWN PERIOD AS APPROVED BY WIDEFIELD WATER DISTRICT.

6. SHUTDOWN COORDINATION. ONLY WIDEFIELD WATER DISTRICT EMPLOYEES SHALL SHUTDOWN THE EXISTING WATER TRANSMISSION PIPELINE AND RETURN IT TO SERVICE. TIMING OF ANY SHUTDOWN SHALL BE COORDINATED WITH WIDEFIELD WATER DISTRICT. THE CONTRACTOR SHALL GIVE WIDEFIELD WATER DISTRICT 14 CALENDAR DAYS WRITTEN NOTICE TO SCHEDULE SHUTDOWN OF THE WATER TRANSMISSION PIPE.
- F. SURVEY LINE AND GRADE

1. ALL NEW 30" WATERLINE ELEVATIONS SHOWN ARE TOP OF PIPE UNLESS OTHERWISE NOTED. ALL NEW PIPE AND APPURTENANCES ARE BASED ON PROJECT CONTROL.

2. ALL NEW 30" WATERLINE STATIONING IS RELATIVE TO THE CENTERLINE OF WATERLINE.

3. ONLY EXISTING GROUND PROFILES ARE SHOWN ON THESE DRAWINGS.
- G. INSTALLATION

1. PROPOSED WATER MAINS SHALL BE INSTALLED WITH A MINIMUM COVER OF 5 FEET, EXCEPT WHERE SHOWN OTHERWISE.

2. ALL BENDS SHALL BE FIELD STAKED PRIOR TO CONSTRUCTION.

3. ANY MATERIAL SALVAGED AND NOT REUSED SHALL BE RETURNED, AT THE CONTRACTORS EXPENSE, TO WIDEFIELD WATER DISTRICT.

4. NO TIE-IN POINTS WERE FIELD VERIFIED FOR LOCATION. TIE-IN POINTS UNLESS OTHERWISE REQUESTED SHALL BE EXPOSED AND VERIFIED PRIOR TO CONSTRUCTION.

5. WHERE SITE CONDITIONS DO NOT ALLOW FOR PROPER COMPACTION METHODS TO BE USED (I.E. UTILITY LOWERINGS AND CROSSINGS), FLOWABLE FILL BACKFILL MATERIAL SHALL BE USED.

6. ALL VALVES, VALVE BOXES AND EXTENSION STEMS (WHERE NECESSARY) SHALL BE INSTALLED PER WIDEFIELD WATER DISTRICT CONSTRUCTION DRAWINGS.
- H. SUBMITTALS

1. SHOP DRAWINGS. SCHEDULE AND COMPLETE SHOP DRAWINGS SHALL BE SUBMITTED PRIOR TO FABRICATION TO THE ENGINEER AND WIDEFIELD WATER DISTRICT AS SPECIFIED.

2. POTHOLE DATA. ALL POTHOLE DATA SHALL BE SUBMITTED TO THE ENGINEER AS SPECIFIED.

- I. SUBSURFACE GEOLOGY
1. A GEOTECHNICAL REPORT INCLUDING SOIL DATA AND GROUND WATER ELEVATIONS HAS BEEN PREPARED FOR THIS PROJECT BY NINYO MOORE. SEE APPENDIX A OF THE SPECIFICATIONS.
- J. MISCELLANEOUS

1. THE CONTRACTOR SHALL BE SUBJECT TO WIDEFIELD WATER DISTRICT INSPECTORS FOR INSPECTION OF WORKMANSHIP, MATERIALS, INSTALLATION, TESTING AND ALL ITEMS PER WIDEFIELD WATER DISTRICT STANDARDS AND SUBSEQUENT OVERTIME IF NECESSARY.
- K. ALL CONSTRUCTION DEBRIS, MATERIALS, AND SIMILAR SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AT A FACILITY PERMITTED TO ACCEPT THE WASTE.
- L. EROSION CONTROL

1. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AN EROSION CONTROL SYSTEM IN ACCORDANCE WITH THE PROJECT STORMWATER MANAGEMENT PLAN.
- M. DRAWING CONDITIONS

1. UTILITY INFORMATION DEPICTED ON THESE DRAWINGS WAS COMPILED FROM INFORMATION FURNISHED BY UTILITY OWNERS, POTHOLE, AND FIELD OBSERVATION. WIDEFIELD WATER DISTRICT AND AECOM CANNOT GUARANTEE THE LOCATION OR ACCURACY OF UNDERGROUND FACILITIES SHOWN ON THE DRAWINGS OR BE RESPONSIBLE FOR DAMAGE TO UNDERGROUND FACILITIES NOT SHOWN ON THE DRAWINGS. EXISTING UTILITIES ARE SHOWN ON THE DRAWINGS IN APPROXIMATE LOCATIONS ONLY AND NOT ALL UTILITIES MAY BE SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE LOCATION OF UNDERGROUND FACILITIES MAY BE IDENTIFIED AND MARKED BY CALLING THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987. UTILITIES IN THE AREA INCLUDE WATER, SANITARY SEWER, STORM DRAIN, ELECTRIC, TELEPHONE, CABLE VISION AND OTHERS.

2. IF FIELD CONDITIONS ARE FOUND TO BE DIFFERENT THAN SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE WIDEFIELD WATER DISTRICT AND THE ENGINEER IMMEDIATELY SO THAT APPROPRIATE ACTION CAN BE TAKEN BY THE OWNER.

3. CHANGES IN THE DESIGN DETERMINED NECESSARY TO CONFORM TO FIELD CONDITIONS MAY REQUIRE ADDITIONAL MATERIALS NOT INDICATED ON THE DRAWINGS OR SPECIFICATIONS. ALL CHANGES SHALL BE APPROVED BY THE WIDEFIELD WATER DISTRICT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

4. EXISTING GROUND PROFILES AND CONTOURS AS SHOWN ON THE DRAWING WERE DEVELOPED BY THE SURVEYOR, AERIAL TOPOGRAPHY, AND AVAILABLE MAPPING DATA. ACTUAL GROUND ELEVATIONS SHOULD BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- N. APPURTENANCES

1. CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS APPURTENANT MATERIALS WHETHER OR NOT SHOWN ON THE PLANS, AS REQUIRED FOR PROPER INSTALLATION OF THE PIPE, INCLUDING, BUT NOT LIMITED TO, ALL NUTS, BOLTS, RODS, GASKETS, CONCRETE INSERTS AND ATTACHMENT PLATES. BUILT-UP ENDS AND HARNESS LUGS SHALL BE A PART OF THE FABRICATION AS INDICATED ON THE DRAWINGS.
- O. MISCELLANEOUS

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY PROTECTION, REMOVAL AND REINSTALLATION AT THE SAME LOCATION OF ALL FACILITIES AFFECTED BY HIS WORK.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS ACTIVITIES WITH PUBLIC AND PRIVATE AGENCIES AND OTHER CONTRACTORS WORKING WITHIN THE PROJECT AREA. CONTRACTOR SHALL PERFORM HIS WORK IN A MANNER THAT MINIMIZES DISRUPTION OF PUBLIC AND PRIVATE SERVICES.

POTHOLING NOTES

1. POTHOLE & INVESTIGATION PRIOR TO CONSTRUCTION
- A. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

B. THE ALIGNMENT OF THE EXISTING PIPELINE SHOWN ON THE DRAWINGS IS APPROXIMATE ONLY. IT IS BASED ON POTHOLE AT LOCATIONS OTHER THAN THE POINTS WHERE THE RELOCATED PIPE SEGMENT WILL CONNECT TO THE EXISTING. [POTHOLING TO BE COMPLETED IN FUTURE SUBMITTAL]

C. DURING POTHOLING, THE CONTRACTOR SHALL EXCAVATE SUFFICIENT LENGTH OF EXISTING PIPE TO EXPOSE THE NEAREST PIPE JOINTS ON BOTH SIDES OF THE PROPOSED NEW CONNECTION. THE SLOPE OF THE EXISTING PIPELINE SHALL BE DETERMINED BY ENGINEER FROM THESE TOP-OF-PIPE SURVEY ELEVATIONS.

D. EXISTING PIPE DIMENSIONS: THE CONTRACTOR SHALL DETERMINE THE EXISTING CROSS SECTION AND OUTSIDE DIAMETER OF THE EXISTING PIPE AT EACH OF THE CONNECTION POINTS. EXPOSE SUFFICIENT PIPE TO LOCATE NEAREST PIPE JOINTS ON EACH SIDE OF THE PROPOSED CONNECTIONS AND CONFIRM PIPE IS CIRCULAR AND DETERMINE THE AMOUNT OF ANY DEFLECTION.

E. PROVIDE TRAFFIC CONTROL, DEWATERING AND OBTAIN PERMITS PRIOR TO POTHOLING.

F. SUBMIT ALL FINDINGS IN WRITING TO THE ENGINEER.

CONNECTION AND PHASING NOTES

1. PHASING: SHUTDOWN OF THE WATERLINE SHALL MEET THE TIME AND CALENDAR RESTRICTIONS OF THE PROJECT SPECIAL PROVISIONS.
2. CONTRACTOR SHALL COORDINATE GROUNDWATER DEWATERING SYSTEMS WITH APPLICABLE AGENCIES.

GENERAL STRUCTURAL NOTES

1. THE FOLLOWING NOTES APPLY TO STRUCTURES SHOWN ON PLANS.

2. MANHOLES MAY BE CAST-IN-PLACE OR PRECAST AND CONFORM TO AASHTO M199 (ASTM 478)

3. STEEL REINFORCEMENT SHALL BE NEW GRADE 60 DEFORMED BARS. ALL BARS SHALL HAVE A 2" MINIMUM CONCRETE COVER, 3" IF CAST DIRECTLY AGAINST SOIL.

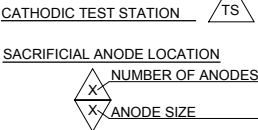
4. STANDARD ABBREVIATIONS:
EL = ELEVATION, EF = EACH FACE, EW = EACH WAY, INV = INVERT, TYP = TYPICAL,
STD = STANDARD, UNO = UNLESS NOTED OTHERWISE, AND CLR = CLEAR.


5. BACKFILL AND SUBGRADE UNDER ALL SPECIAL STRUCTURES SHALL BE COMPACTED PER SPECIFICATIONS.PROVIDE 3/4" CHAMFERS ON ALL CORNERS WHETHER BURIED OR EXPOSED TO VIEW.

6. ALL SURFACES OF CONCRETE SHALL BE GROUT RUBBED AND ALL DEFECTS, VOIDS OR "HONEY COMB" REPAIRED PER ACI 301-10.

7. ALL EXTERIOR WALLS OF BURIED CONCRETE VAULTS AND PRE-CAST MANHOLES SHALL BE COATED WITH 20 MILS COAL TAR EPOXY.

CATHODIC PROTECTION





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THREE (3) BUSINESS DAYS
BEFORE YOU DIG
CALL 811

(or 1-800-922-1987)
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URS Group, Inc.
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PROJECT

PFOS / PFOA DRINKING
WATER MITIGATION
SYSTEM

WIDEFIELD WATER AND
SANITATION DISTRICT
(WWSD)

CLIENT

USACE Omaha District

1616 Capital Ave.
Omaha, NE 68102

CONSULTANT

URS Group, Inc.
12120 Shamrock Plaza
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CONSTRUCTION

ISSUE/REVISION

ISSUE/REVISION		
B	02/28/19	60% DESIGN
A	11/30/18	ISSUED FOR 30% DESIGN
I/R	DATE	DESCRIPTION

PROJECT NUMBER

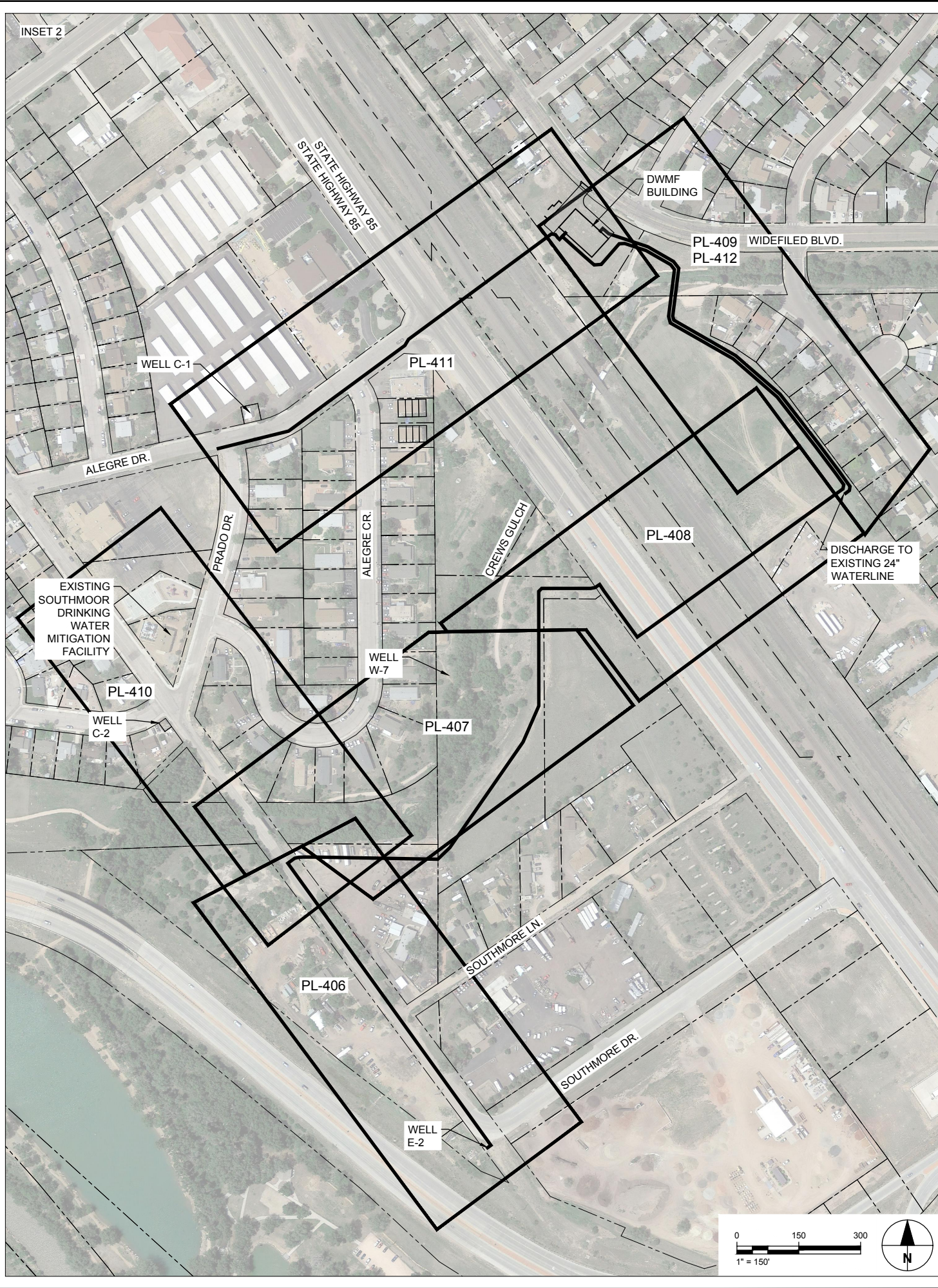
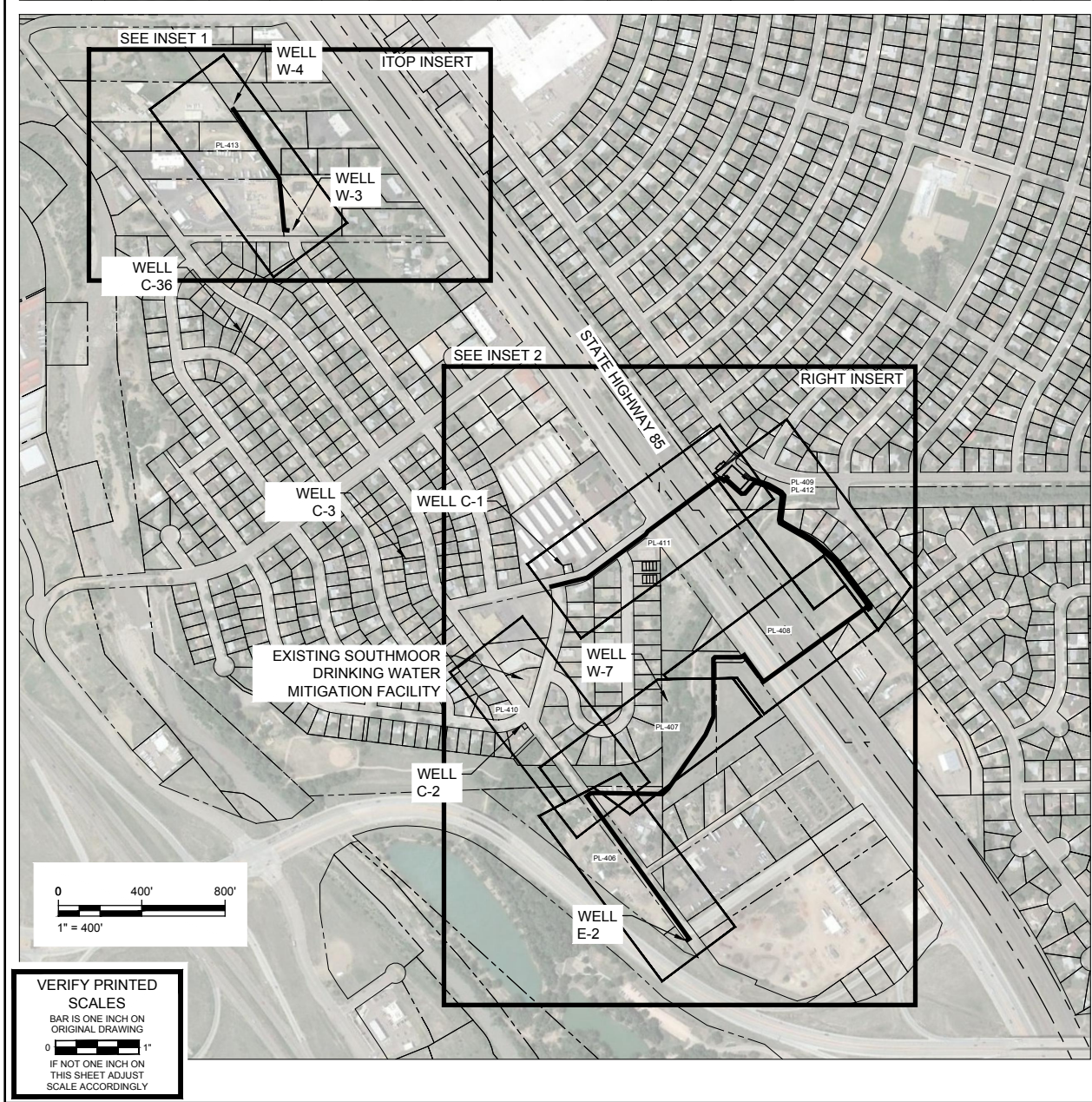
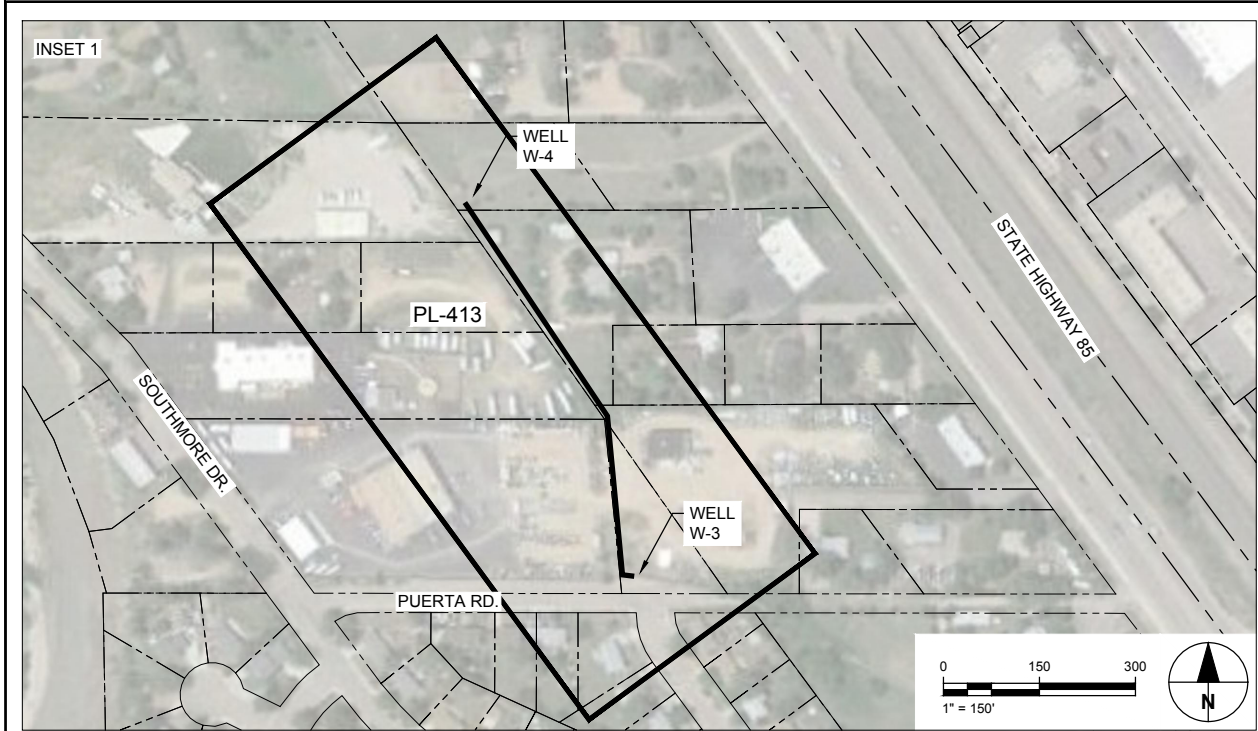
Project Number: 60589841

SHEET TITLE

PIPELINE GENERAL NOTES

SHEET NUMBER

PL-400



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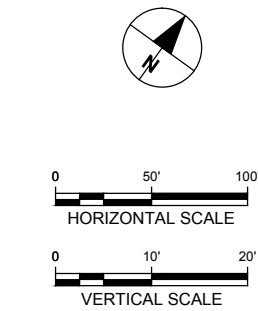
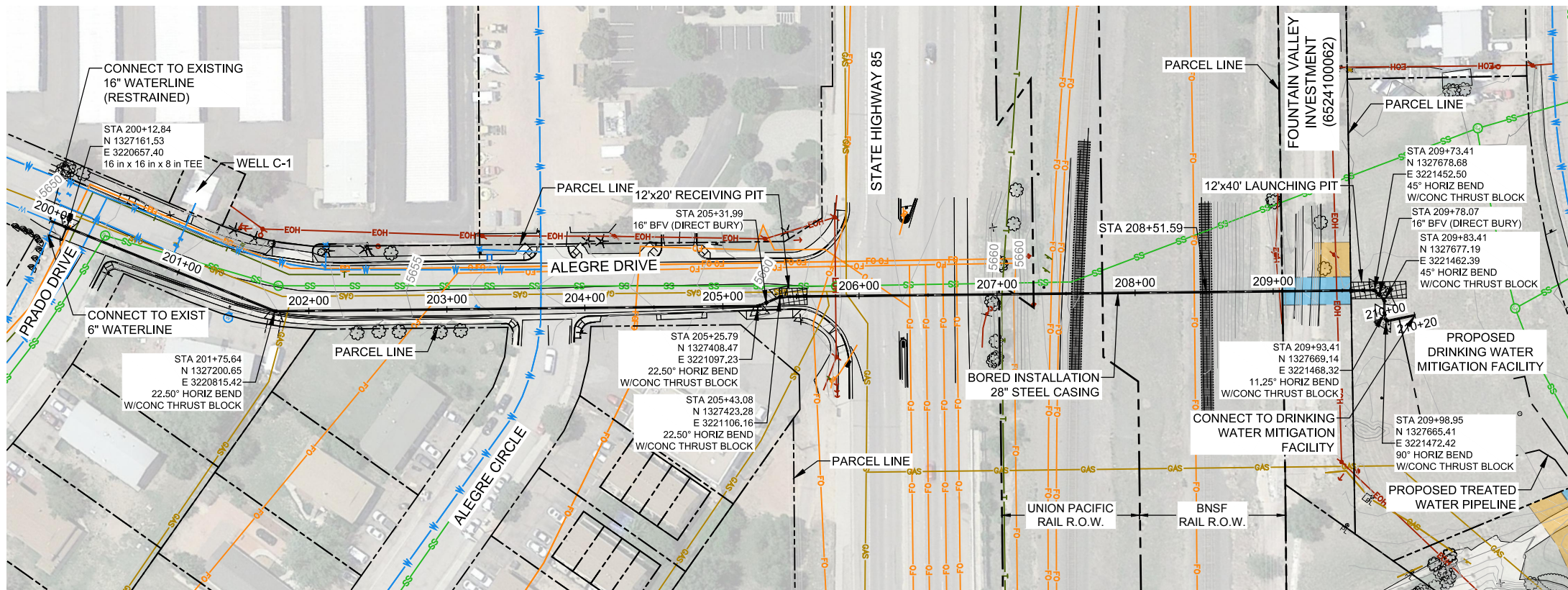
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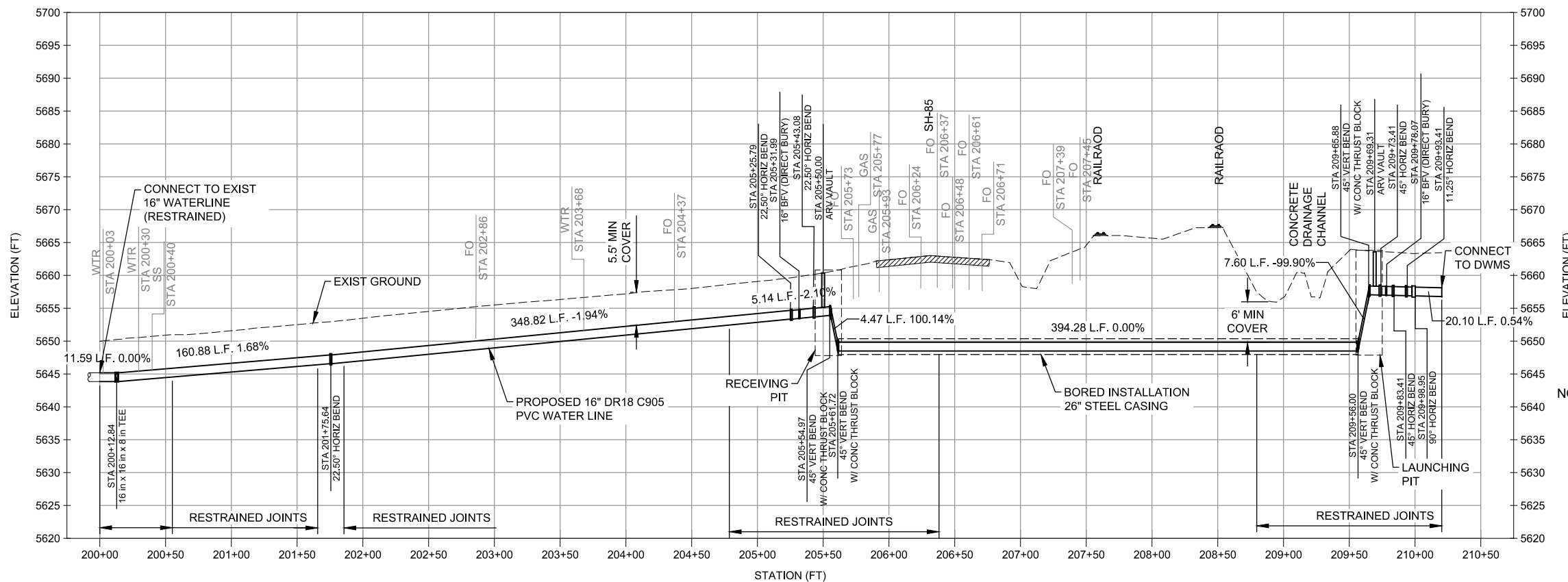
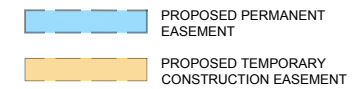
COLLECTION PLAN AND PROFILE
KEY MAP

SHEET NUMBER

PL-401



LEGEND



NOTES:

1. FIELD VERIFY UTILITY LOCATION AND ELEVATIONS.
2. DEFLECT EACH JOINT 1" FOR 8" THROUGH 24" PIPE AS NEEDED.
3. ALL PIPE MUST HAVE ADJUSTED #12 TRACER WIRE (SOLID CORE) WITH TEST STATIONS EVERY 550'.
4. PVC FITTINGS ARE NOT ALLOWED. FITTINGS MUST BE AWWA STANDARD C104, C110, AND C153 FOR SHORT BODY DUCTILE IRON.

VERIFY PRINTED
SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON
THIS SHEET ADJUST
SCALE ACCORDINGLY



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PROJECT

**PFOS / PFOA DRINKING
WATER MITIGATION
SYSTEM****WIDEFIELD WATER AND
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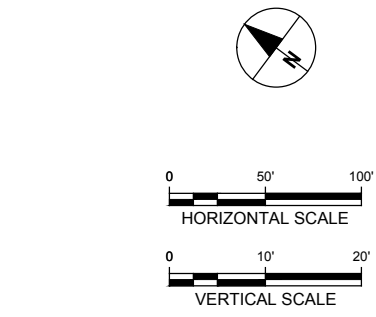
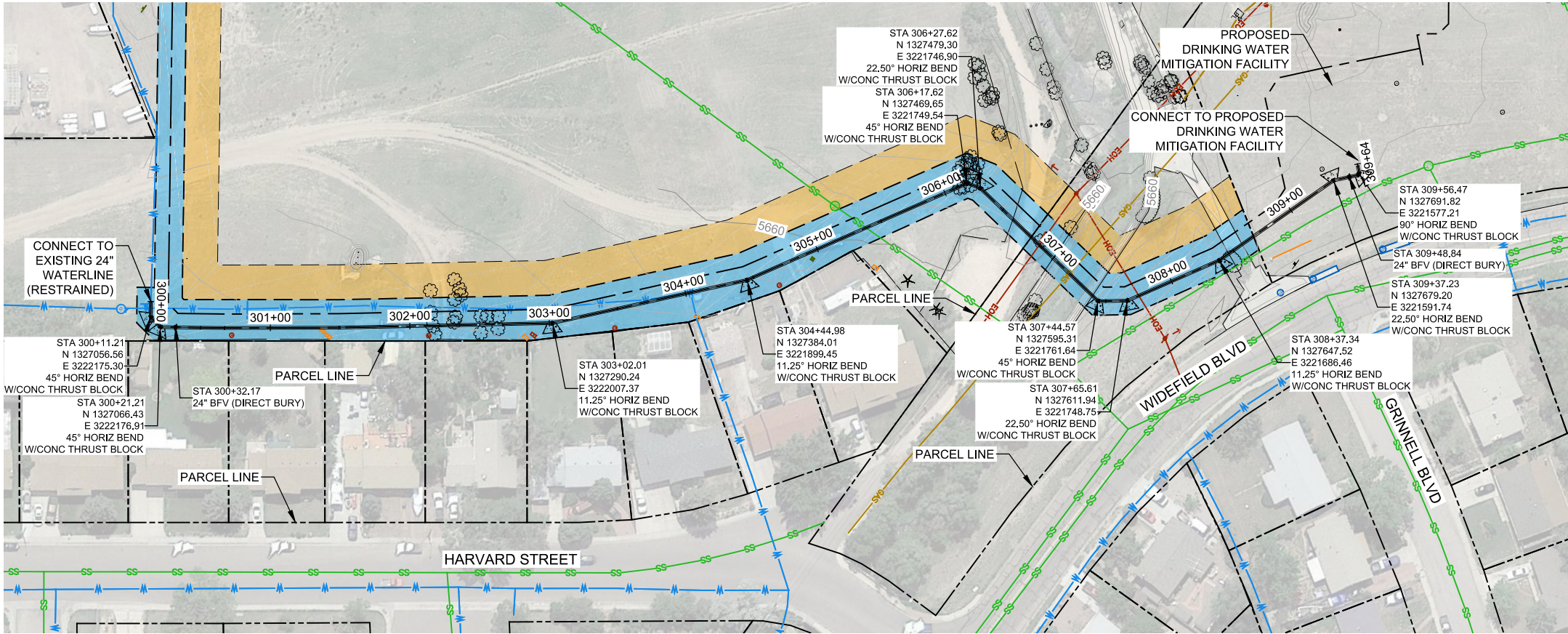
Project Number: 60589841

SHEET TITLE

COLLECTION PLAN AND PROFILE

SHEET NUMBER

PL-411

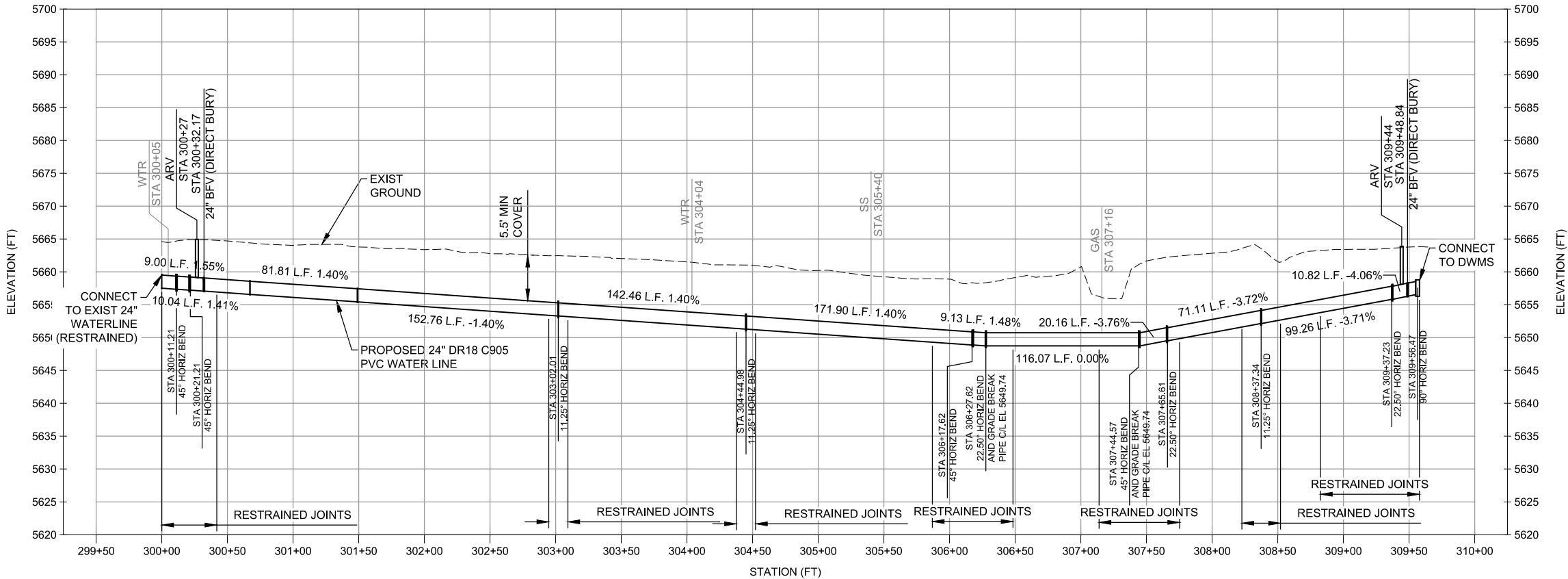


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LEGEND

PROPOSED PERMANENT EASEMENT

PROPOSED TEMPORARY CONSTRUCTION EASEMENT



VERIFY PRINTED SCALES

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0 1"

IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY



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PROJECT

PFO / PFOA DRINKING WATER MITIGATION SYSTEM

WIDEFIELD WATER AND SANITATION DISTRICT (WWSD)

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PROJECT NUMBER

Project Number: 60589841

SHEET TITLE

TREATED WATER PLAN AND PROFILE

SHEET NUMBER

PL-412

SYMBOLS

LIGHTING

	2'X4' FLUORESCENT LIGHT FIXTURE A = FIXTURE TYPE 1 = CIRCUIT NUMBER a = SWITCH CONTROLLING FIXTURE
	1'X4' FLUORESCENT LIGHT FIXTURE A = FIXTURE TYPE 1 = CIRCUIT NUMBER a = SWITCH CONTROLLING FIXTURE
	1'X4' WALL MOUNTED FLUORESCENT LIGHT FIXTURE
	2'X2' FLUORESCENT LIGHT FIXTURE A = FIXTURE TYPE 1 = CIRCUIT NUMBER a = SWITCH CONTROLLING FIXTURE
	2'X4' FLUORESCENT LIGHT FIXTURE WITH EMERGENCY BALLAST OR EMERGENCY BATTERY PACK
	1'X4' FLUORESCENT LIGHT FIXTURE WITH EMERGENCY BALLAST OR EMERGENCY BATTERY PACK
	RECESSED OR CEILING MOUNTED INCANDESCENT LIGHT FIXTURE, LETTER DENOTES FIXTURE TYPE
	WALL MOUNTED INCANDESCENT LIGHT FIXTURE, LETTER DENOTES FIXTURE TYPE
	CEILING OR PENDANT MOUNTED LIGHT FIXTURE, LETTER DENOTES FIXTURE TYPE, SUBSCRIPT INDICATES CONTROL
	CEILING MOUNTED DOUBLE FACE EXIT LIGHT, LETTER DENOTES FIXTURE TYPE, ARROW DENOTES DIRECTIONAL ARROWS
	CEILING MOUNTED SINGLE FACE EXIT LIGHT
	WALL MOUNTED EXIT LIGHT
	EMERGENCY LIGHT FIXTURE, RECHARGEABLE TYPE
	POLE MOUNTED LUMINAIRE
	POLE MOUNTED LIGHT WITH CONCRETE BASE

SWITCHES

	SINGLE POLE SWITCH, 20A, 120/277V, LOWER CASE LETTER DENOTES CONTROL
	THREE-WAY SWITCH, 20A, 120/277V
	FOUR-WAY SWITCH, 20A, 120/277V
	DIMMER SWITCH, 1500 WATT (FLUORESCENT TYPE) UNLESS OTHERWISE NOTED
	MOTOR RATED SWITCH, WITH THERMAL OVERLOAD PROTECTION
	WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE SWITCH (LIGHTING)
	CEILING MOUNTED ULTRASONIC OCCUPANCY SENSOR (LIGHTING)
	MOTION DETECTOR
	MOTION DETECTOR
	NON-FUSIBLE DISCONNECT SWITCH, NUMBER INDICATES SWITCH SIZE
	FUSIBLE DISCONNECT SWITCH
	THERMOSTAT

VERIFY PRINTED SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY

GROUNDING/LIGHTNING PROTECTION

	AIR TERMINAL
	CONNECTION POINT
	EXOTHERMIC WELD
	GROUND CONNECTION
	GROUNDING ROD
	GROUNDING BUS BAR

PANELBOARDS/POWER EQUIPMENT

	PAD MOUNTED TRANSFORMER
	LIGHTING PANELBOARD
	POWER PANELBOARD
	MOTOR, NUMBER INDICATES HORSEPOWER

RECEPTACLES/J-BOXES

	20A, 120V, SIMPLEX RECEPTACLE
	20A, 120V, DUPLEX RECEPTACLE
	20A, 120V, GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE WITH WEATHERPROOF COVER
	20A, 120V, DUPLEX RECEPTACLE, CEILING MOUNTED
	20A, 120V, DUPLEX RECEPTACLE, IN FLOOR BOX
	20A, 120V, DOUBLE DUPLEX RECEPTACLE
	20A, 120V, DOUBLE DUPLEX RECEPTACLE, CEILING MOUNTED
	20A, 120V, DOUBLE DUPLEX RECEPTACLE, IN FLOOR BOX
	SPECIAL PURPOSE RECEPTACLE, GROUNDING TYPE, WALL MOUNTED (NEMA TYPE & AMP RATING AS NOTED)
	SPECIAL PURPOSE RECEPTACLE, GROUNDING TYPE, CEILING MOUNTED (NEMA TYPE & AMP RATING AS NOTED)
	JUNCTION BOX, RECESSED/CEILING MOUNTED
	JUNCTION BOX, WALL MOUNTED
	JUNCTION BOX, FLUSH IN FLOOR

COMMUNICATIONS/SPECIAL SYSTEMS

	COMBINATION TELEPHONE/DATA OUTLET, WALL MOUNTED (1 VOICE; 2 DATA JACKS)
	COMBINATION TELEPHONE/DATA OUTLET, IN FLOOR BOX (1 VOICE; 2 DATA JACKS)
	UNDERGROUND COMMUNICATIONS DUCTS
	TELEPHONE OUTLET, WALL MOUNTED
	CCTV CAMERA, WALL MOUNTED
	EXTERIOR PUBLIC ADDRESS SPEAKER WP = WEATHERPROOF
	WALL MOUNTED SPEAKER
	CEILING SPEAKER, FLUSH MOUNTED
	INTERCOM OUTLET, WALL MOUNTED
	DATA OUTLET, WALL MOUNTED (# REFERS TO QUANTITY IF MORE THAN ONE)

FIRE ALARM SYSTEM

	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR PANEL
	FIRE ALARM MANUAL PULL STATION, WALL MOUNTED
	FIRE ALARM BELL, WALL MOUNTED
	FIRE ALARM HORN-STROBE, ONE ASSEMBLY, WALL MOUNTED
	FIRE ALARM FLASHING STROBE LIGHT, WALL MOUNTED
	DUCT DETECTOR
	FIRE ALARM HEAT DETECTOR, COMBINATION TYPE, CEILING MOUNTED
	SMOKE DETECTOR
	TAMPER SWITCH
	FLOW SWITCH
	PRESSURE SWITCH
	END OF LINE RESISTOR

ONE-LINE DIAGRAM

	TRANSFORMER, DELTA-WYE CONNECTION
	CIRCUIT BREAKER AF = FRAME RATING IN AMPERES AT = TRIP RATING IN AMPERES
	DISCONNECT SWITCH, RATED AS NOTED
	FUSE, RATING AS NOTED
	DRAWOUT BREAKER
	MANUAL OR AUTOMATIC TRANSFER SWITCH
	CONNECTION POINT
	COMBINATION MAGNETIC STARTER 1 = INDICATES NEMA STARTER SIZE 30A = INDICATES DISCONNECT RATING
	MAGNETIC STARTER 1 = INDICATES NEMA STARTER SIZE
	UNDERGROUND ELECTRICAL
	UNDERGROUND ELECTRICAL PRIMARY POWER CIRCUIT IN CONCRETE ENCASED DUCT
	NEW ELECTRICAL CONDUIT
	EXISTING UNDERGROUND ELECTRICAL
	DIGITAL METERING SYSTEM
	SURGE PROTECTION DEVICE
	STANDBY GENERATOR
	POTENTIAL TRANSFORMER

ABBREVIATIONS

A	AMPERE
AD	AIR DRYER
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CAPACITY
APPROX	APPROXIMATELY
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
C	CONDUIT
CA	AIR COMPRESSOR
CCT	CIRCUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CL	CENTER LINE
CO	CONDUIT ONLY
CONC	CONCRETE
CT	CURRENT TRANSFORMER
CU	COPPER
CWP	WATER CONDENSOR
DMS	DIGITAL METERING SYSTEM
DWP	DOMESTIC WATER PUMP
(E)	EXISTING
EF	EXHAUST FAN
EMH	ELECTRICAL MANHOLE
EMCS	ENERGY MONITORING AND CONTROL SYSTEM
EP	HAZARDOUS CLASSIFICATION - EXPLOSION PROOF
EW	ELECTRIC WATER COOLER
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FC	FAN COIL
FLR	FLOOR
FT	FEET
GA	GAUGE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIDGID STEEL
HID	HIGH INTENSITY DISCHARGE
HH	HANDHOLE
HPF	HIGH POWER FACTOR
HP	HEAT PUMP
HPS	HIGH PRESSURE SODIUM
IN	INCHES
INCAND	INCANDESCENT
KCMIL	THOUSAND CIRCULAR MILLS
KVA	KILOVOLT AMPERE
KWH	KILOWATT-HOUR
LAN	LOCAL AREA NETWORK
LT	LONG TIME
LP	LIGHTING PANEL
M	METER
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANELBOARD
MIN	MINIMUM
mm	MILLIMETER
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
OC	ON CENTER
OCEW	ON CENTER EACH WAY
OH	OVERHEAD
O/P	OUTPUT
PA	PUBLIC ADDRESS
PB	PULL BOX
PR	PAIR
PSI	POUNDS PER SQUARE INCH
PT	POTENTIAL TRANSFORMER
PP	POWER PANEL / POWER POLE
PVC	POLYVINYL CHLORIDE
RGS	RIGID GALVANIZED STEEL
RH	RADIANT HEATER
RM	ROOM
RMS	ROOT MEAN SQUARE
RP	RECEPTACLE PANEL
RSC	RIGID STEEL CONDUIT
ST	SHORT TIME
SPD	SURGE PROTECTION DEVICE
SYM	SYMMETRICAL
T	TRANSFORMER
TC	TERMINAL CABINET
TTB	TELEPHONE TERMINAL BOARD
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION & FILTERING
TW/SHLD	TWISTED SHIELDED
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VOLT
VFD	VARIABLE FREQUENCY DRIVE
VMS	VARIABLE MESSAGE SIGN
W	WATT-WIM
W/	WITH
WP	WEATHERPROOF
XP	EXPLOSION PROOF
XFMR	TRANSFORMER



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PROJECT NUMBER

Project Number: 60589841

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

E-401

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UTILITY LOAD INFORMATION				
TAG	LOAD DESCRIPTION	CONNECTED LOAD (kVA)	DEMAND FACTOR (kVA)	DEMAND LOAD (kVA)
RWP-101	RAW WATER PUMP (150HP)	149.65	1.00	149.65
RWP-102	RAW WATER PUMP (150HP)	149.65	1.00	149.65
RWP-103	RAW WATER PUMP (150HP)	149.65	1.00	149.65
RWP-104	RAW WATER PUMP (150HP)	149.65	0.00	0.00
FWP-201	FINISHED WATER PUMP (150HP)	149.65	1.00	149.65
FWP-202	FINISHED WATER PUMP (150HP)	149.65	0.00	0.00
UH-101	UNIT HEATER (20kW)	20.00	1.00	20.00
UH-102	UNIT HEATER (20kW)	20.00	1.00	20.00
UH-103	UNIT HEATER (20kW)	20.00	1.00	20.00
UH-104	UNIT HEATER (20kW)	20.00	1.00	20.00
UH-105	UNIT HEATER (20kW)	20.00	1.00	20.00
LP1	LP1	15.00	1.00	15.00
	LARGEST MOTOR (25%)	37.41	1.00	37.41
TOTAL		1050.31	0.72	751.01
CONNECTED LOAD		1050.31	kVA	
CONNECTED AMPS		1263.33	A	
DEMAND LOAD		751.01	kVA	
DEMAND AMPS		903.32	A	

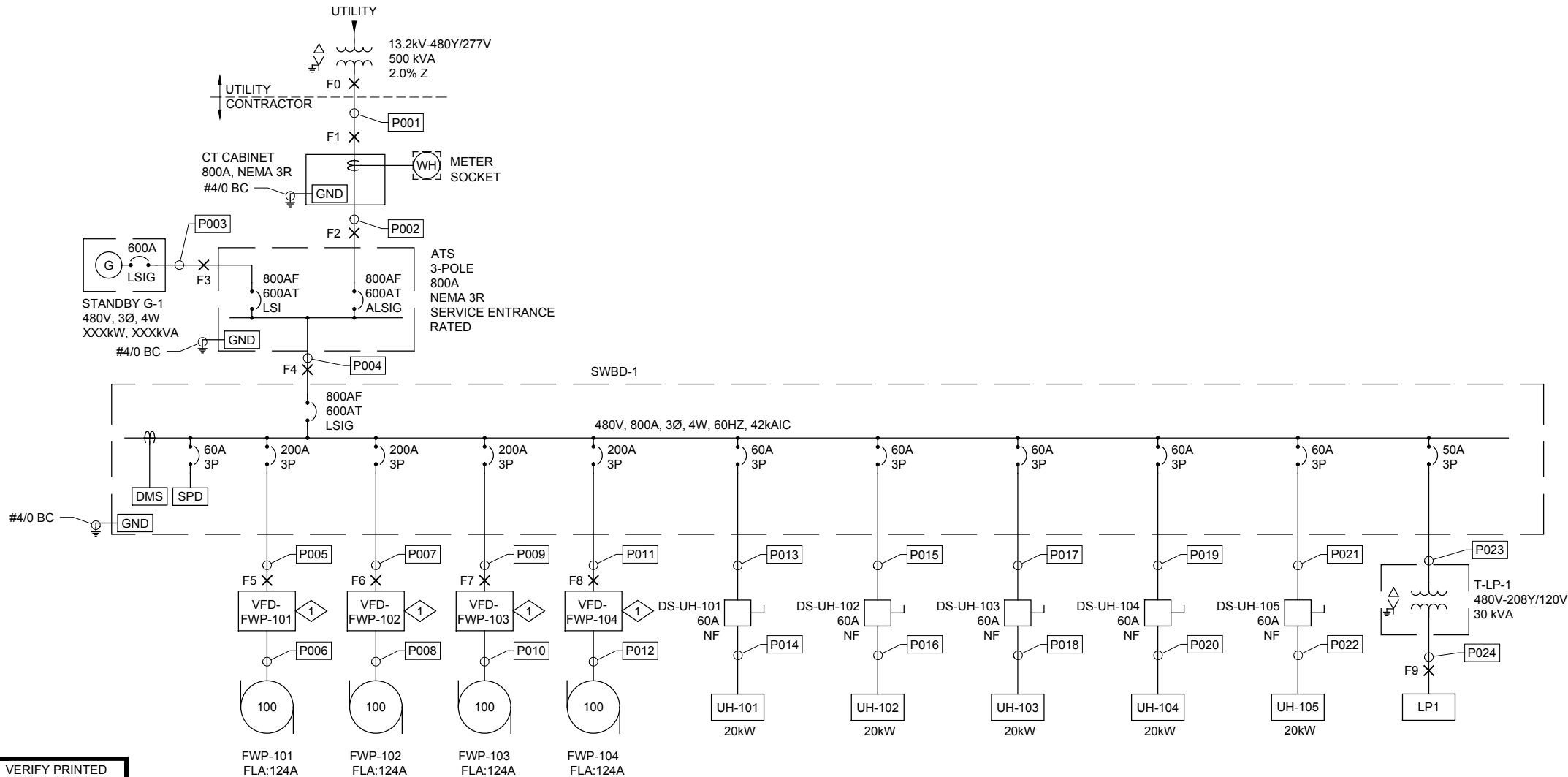
STANDBY GENERATOR LOAD INFORMATION				
TAG	LOAD DESCRIPTION	CONNECTED LOAD (kVA)	DEMAND FACTOR (kVA)	DEMAND LOAD (kVA)
RWP-101	RAW WATER PUMP (150HP)	149.65	1.00	149.65
RWP-102	RAW WATER PUMP (150HP)	149.65	1.00	149.65
RWP-103	RAW WATER PUMP (150HP)	149.65	0.00	0.00
RWP-104	RAW WATER PUMP (150HP)	149.65	0.00	0.00
FWP-201	FINISHED WATER PUMP (150HP)	149.65	1.00	149.65
FWP-202	FINISHED WATER PUMP (150HP)	149.65	0.00	0.00
UH-101	UNIT HEATER (20kW)	20.00	1.00	20.00
UH-102	UNIT HEATER (20kW)	20.00	1.00	20.00
UH-103	UNIT HEATER (20kW)	20.00	1.00	20.00
UH-104	UNIT HEATER (20kW)	20.00	1.00	20.00
UH-105	UNIT HEATER (20kW)	20.00	1.00	20.00
LP1	LP1	15.00	1.00	15.00
	LARGEST MOTOR (25%)	37.41	1.00	37.41
TOTAL		1050.31	0.57	601.36
CONNECTED LOAD		1050.31	kVA	
CONNECTED AMPS		1263.33	A	
DEMAND LOAD		601.36	kVA	
DEMAND AMPS		723.32	A	

FAULT CURRENT TABLE	
NO.	SHORT CIRCUIT AMPS
F0	30,000 A
F1	XX,XXX A
F2	XX,XXX A
F3	XX,XXX A
F4	XX,XXX A
F5	XX,XXX A
F6	XX,XXX A
F7	XX,XXX A
F8	XX,XXX A
F9	XX,XXX A

NOTES:
1. REFER TO E-403 FOR CONDUIT AND CONDUCTOR SCHEDULE.

KEYED NOTES

1 18-PULSE DRIVE OR ACTIVE FRONT END.



WIDEFIELD ONE-LINE DIAGRAM
NOT TO SCALE



URS Group, Inc.
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PROJECT

PFOS / PFOA DRINKING
WATER MITIGATION
SYSTEM

WIDEFIELD WATER AND
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(WWSD)

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SHEET TITLE

ONE LINE DIAGRAM

SHEET NUMBER

E-402

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WIDEFIELD - CONDUIT AND CONDUCTOR SCHEDULE									
CONDUIT			CONDUCTOR / CABLES				SOURCE	DESTINATION	NOTES
NO.	#SET	SIZE	TYPE	#	SIZE	GND			
P001	2	3.5"	XHHW-2	4-1/C	#350	#1	UTILITY TRANSFORMER	CT CABINET	CONDUIT SIZED FOR FUTURE 800A CAPACITY
P002	2	3.5"	XHHW-2	4-1/C	#350	#1	CT CABINET	ATS	CONDUIT SIZED FOR FUTURE 800A CAPACITY
P003	2	3.5"	XHHW-2	4-1/C	#350	#1	G-1	ATS	CONDUIT SIZED FOR FUTURE 800A CAPACITY
P004	2	3.5"	XHHW-2	4-1/C	#350	#1	ATS	SWBD-1	CONDUIT SIZED FOR FUTURE 800A CAPACITY
P005	1	2"	XHHW-2	3-1/C	#3/0	#6	SWBD-1	VFD-FWP-101	
P006	1	2"	XHHW-2	3-1/C	#3/0	#6	VFD-FWP-101	FWP-101	
P007	1	2"	XHHW-2	3-1/C	#3/0	#6	SWBD-1	VFD-FWP-102	
P008	1	2"	XHHW-2	3-1/C	#3/0	#6	VFD-FWP-102	FWP-102	
P009	1	2"	XHHW-2	3-1/C	#3/0	#6	SWBD-1	VFD-FWP-103	
P010	1	2"	XHHW-2	3-1/C	#3/0	#6	VFD-FWP-103	FWP-103	
P011	1	2"	XHHW-2	3-1/C	#3/0	#6	SWBD-1	VFD-FWP-104	
P012	1	2"	XHHW-2	3-1/C	#3/0	#6	VFD-FWP-104	FWP-104	
P013	1	1"	XHHW-2	3-1/C	#6	#10	SWBD-1	DS-UH-101	
P014	1	1"	XHHW-2	3-1/C	#6	#10	DS-UH-101	UH-101	
P015	1	1"	XHHW-2	3-1/C	#6	#10	SWBD-1	DS-UH-102	
P016	1	1"	XHHW-2	3-1/C	#6	#10	DS-UH-102	UH-102	
P017	1	1"	XHHW-2	3-1/C	#6	#10	SWBD-1	DS-UH-103	
P018	1	1"	XHHW-2	3-1/C	#6	#10	DS-UH-103	UH-103	
P019	1	1"	XHHW-2	3-1/C	#6	#10	SWBD-1	DS-UH-104	
P020	1	1"	XHHW-2	3-1/C	#6	#10	DS-UH-104	UH-104	
P021	1	1"	XHHW-2	3-1/C	#6	#10	SWBD-1	DS-UH-105	
P022	1	1"	XHHW-2	3-1/C	#6	#10	DS-UH-105	UH-105	
P023	1	1"	XHHW-2	3-1/C	#8	#10	SWBD-1	T-LP-1	
P024	1	1.5"	THHN	4-1/C	#3	#8	T-LP-1	LP1	

PANELBOARD LP1														
SERVICE VOLTAGE:	208/120V			BUS SIZE: 125A										
FED FROM:	SWBD-1			MAIN BREAKER: 100A										
LOCATION:	ELECTRICAL ROOM			WIRE: 4										
MOUNTING:	SURFACE			SYM. AIC: 10k										
ENCLOSURE: NEMA 1														
LOAD SERVED	VOLT AMPS			NO. POLE	TRIP AMPS	POLE NO.	PHASE	POLE NO.	TRIP AMPS	NO. POLE	VOLT AMPS			LOAD SERVED
HYPO. ROOM LIGHTS	152			1	20	1	A	2	20	1	114			CHEMICAL ROOM LIGHTS
ELECTRIC ROOM LIGHTS		114		1	20	3	B	4	20	1		247		EXTERIOR LIGHTS/EXIT SIGNS
HIGH BAY LIGHTS			1170	1	20	5	C	6	20	1			780	HIGH BAY LIGHTS
HYPO. ROOM RECEPT.	300			1	20	7	A	8	20	1	300			HYPO. PUMP RECEPT.
CHEMICAL ROOM RECEPT.		450		1	20	9	B	10	20	1		600		ELECT. ROOM RECEPT.
FILTER ROOM NORTH RECEPT.			900	1	20	11	C	12	20	1			750	FILTER ROOM SOUTH RECEPT.
FILTER ROOM WEST RECEPT.	600			1	20	13	A	14	20	1	500			CHEMICAL ROOM PUMP RECEPT.
PLC UPS		500		1	20	15	B	16	20	1				SPARE
PLC CABINET			150	1	20	17	C	18	20	1				SPARE
SPARE				1	20	19	A	20	20	1				SPARE
SPARE				1	20	21	B	22	20	1				SPARE
SPARE				1	20	23	C	24	20	1				SPARE
SPARE	-			1	20	25	A	26	20	1	-			SPARE
SPARE		-		1	20	27	B	28	20	1		-		SPARE
SPARE			-	1	20	29	C	30	20	1			-	SPARE
Totals	1052	1064	2220								914	847	1530	
VOLT AMPS: BUS A 1966														
BUS B 1911														
BUS C 3750														
PHASE IMBALANCE (%): A/B -3%														
B/C -49%														
C/A -91%														

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WATER MITIGATION
SYSTEM

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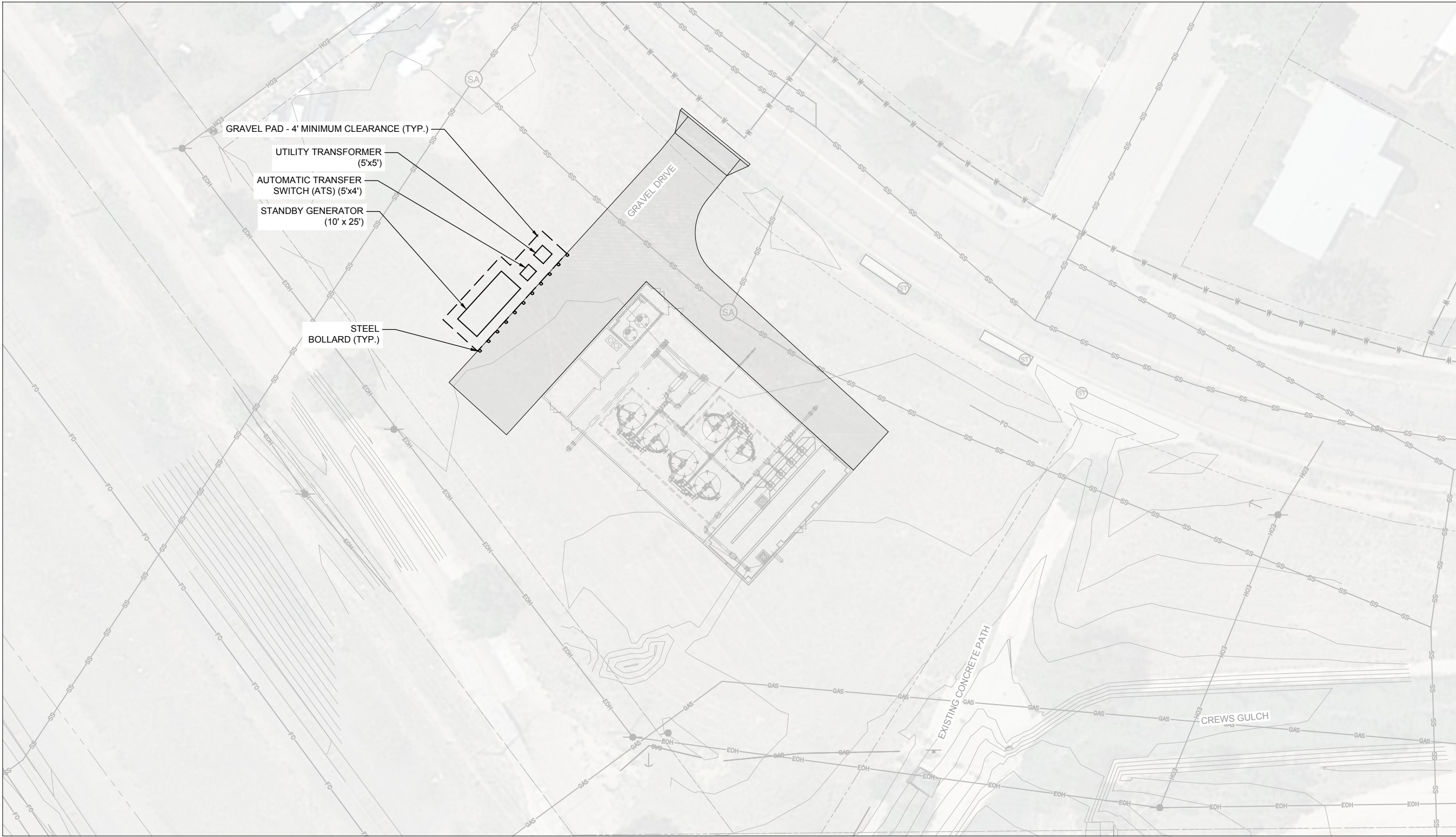
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SHEET TITLE

ELECTRICAL SCHEDULES

SHEET NUMBER

E-403



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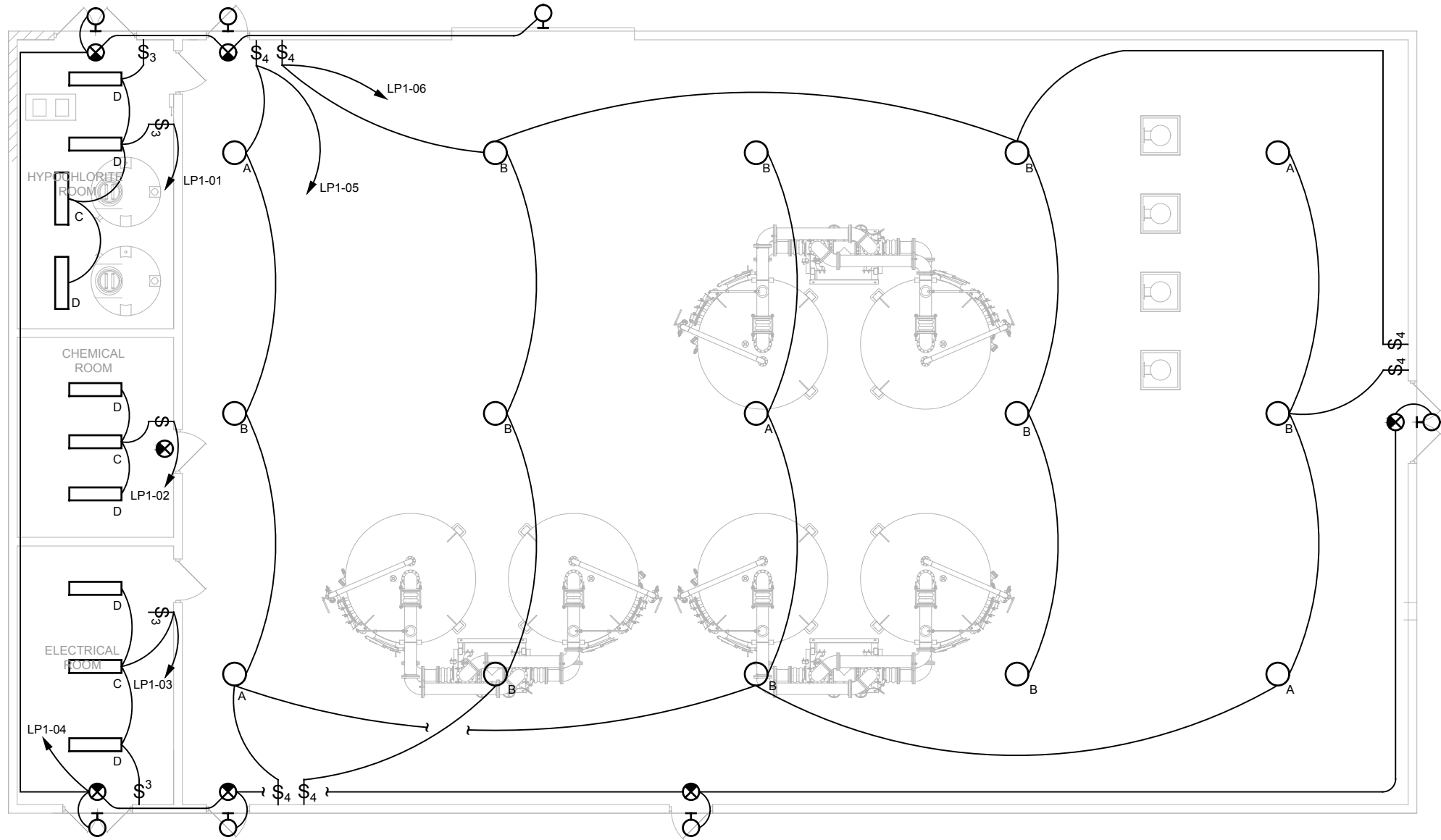
SHEET TITLE

SITE PLAN

SHEET NUMBER

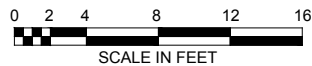
E-404

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LIGHTING PLAN

3/16" = 1'-0"



NOTES:

1. REFER TO E-403 FOR LIGHT FIXTURE SCHEDULE.
2. REFER TO E-403 FOR PANEL SCHEDULE.

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**PFOS / PFOA DRINKING
WATER MITIGATION
SYSTEM**

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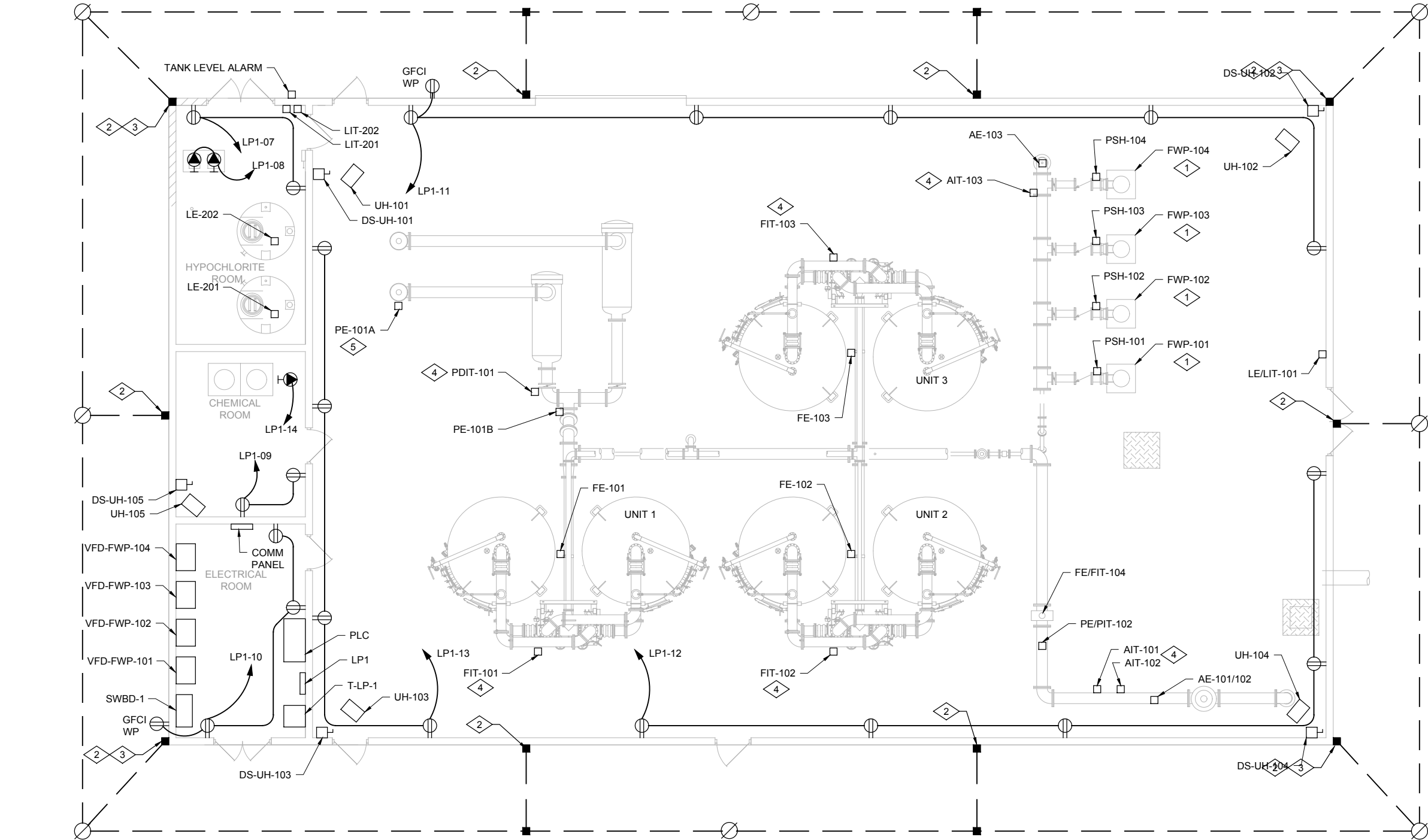
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SHEET TITLE

LIGHTING PLAN

SHEET NUMBER

E-405



- KEYED NOTES
- 1 SEE E-409 FOR CONDUIT ROUTING DETAIL.
 - 2 BOND GROUNDING ELECTRODE CONDUCTOR TO BOTTOM MAT OF REINFORCING STEEL.
 - 3 BOND GROUNDING CONDUCTOR TO BUILDING STRUCTURAL STEEL.
 - 4 SEE E-409 FOR MOUNTING DETAIL.
 - 5 PRESSURE TAP TO BE ON VERTICAL RISER BEFORE ISOLATION VALVE.

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PFOA / PFOA DRINKING WATER MITIGATION SYSTEM

WIDEFIELD WATER AND SANITATION DISTRICT (WWSD)

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SHEET TITLE

POWER AND GROUNDING PLAN

SHEET NUMBER

E-406

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POWER AND GROUNDING PLAN
3/16" = 1'-0"

0 2 4 8 12 16
SCALE IN FEET

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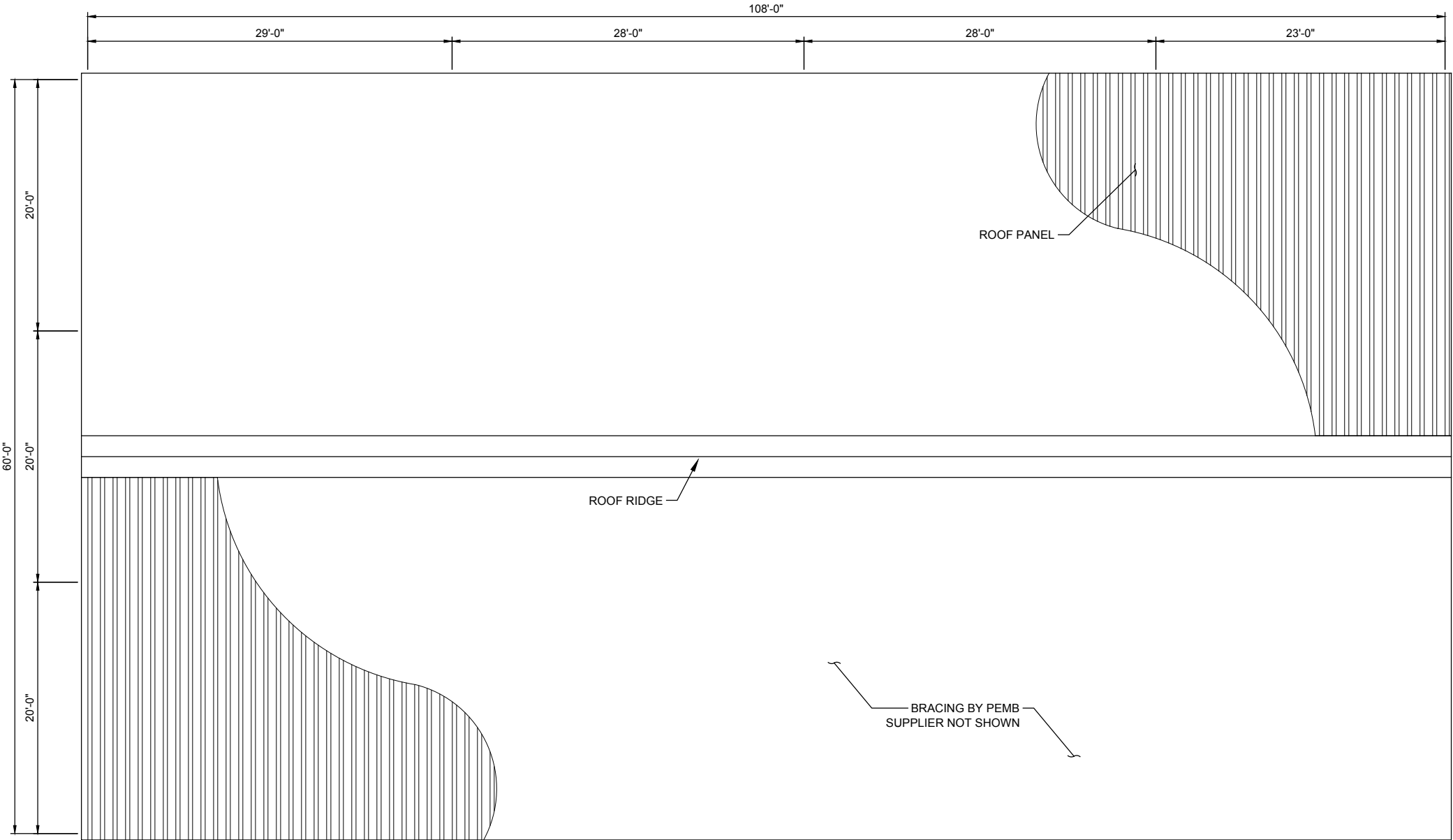
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BUILDING ROOF LIGHTNING PLAN
SCALE: 3/16" = 1'-0"

- NOTES:
1. LIGHTNING PROTECTION TO COMPLY WITH NFPA 780 AND UL 96A.

SCALE IN FEET

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PFO5 / PFOA DRINKING
WATER MITIGATION
SYSTEM

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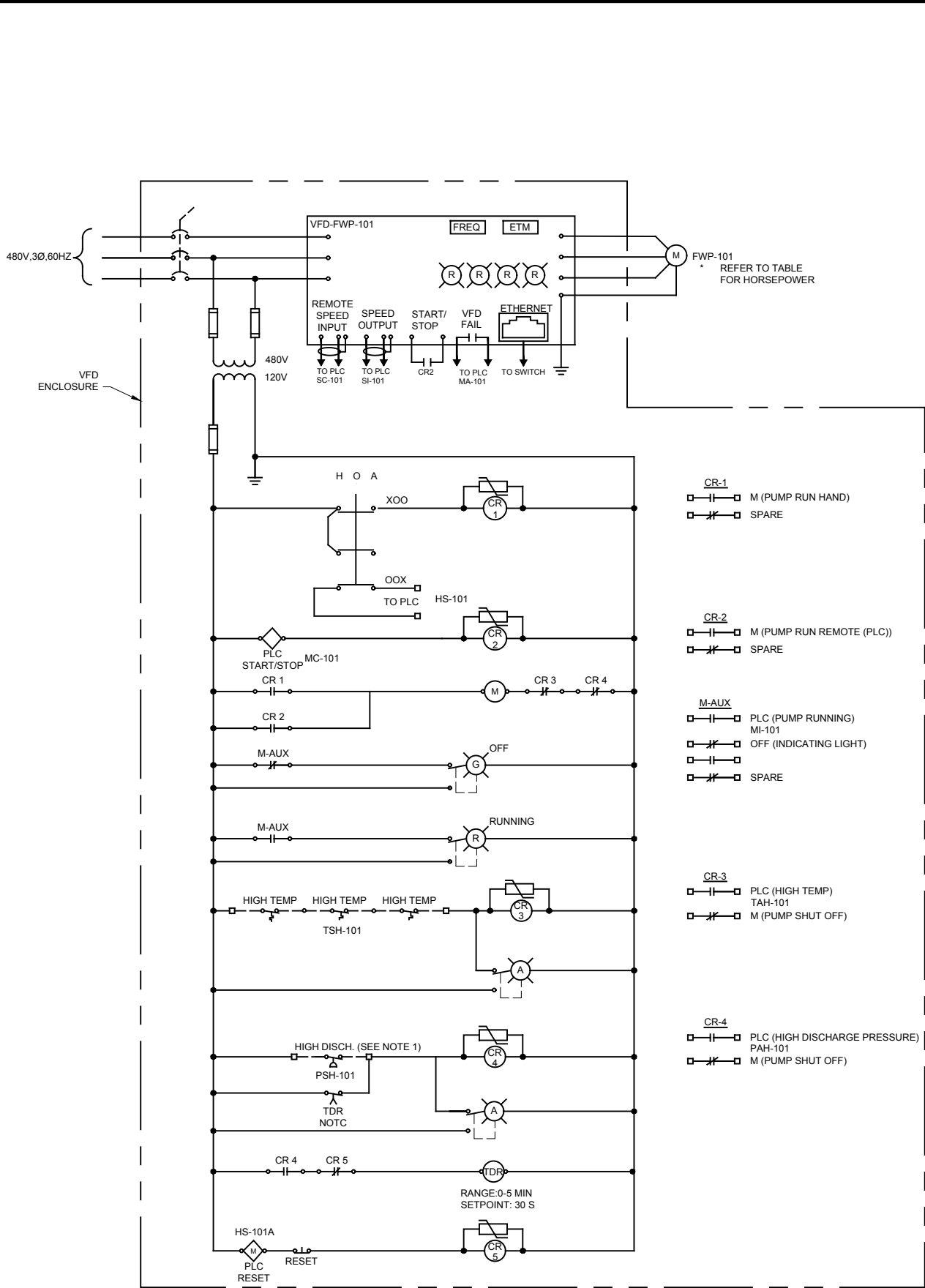
Project Number: 60589841

SHEET TITLE

BUILDING ROOF
LIGHTNING PLAN

SHEET NUMBER

E-407



NOTES:
1. REFER TO SEQUENCE OF OPERATION FOR PUMP CONTROL DESCRIPTION.

TABLE OF CORRESPONDING DEVICES													
TAG NO.	HP	VFD NO.	REMOTE	REMOTE RESET	RUNNING	START/ STOP	SPEED CONTROL	SPEED IND	HIGH DISC PRESS	HIGH DISC ALARM	VFD FAIL	MOTOR TEMP SWITCH	MOTOR HI TEMP
FWP-101	100	VFD-FWP-101	HS-101	HS-101A	MI-101	MC-101	SC-101	SI-101	PSH-101	PAH-101	MA-101	TSH-101	TAH-101
FWP-102	100	VFD-FWP-102	HS-102	HS-102A	MI-102	MC-102	SC-102	SI-102	PSH-102	PAH-102	MA-102	TSH-102	TAH-102
FWP-103	100	VFD-FWP-103	HS-103	HS-103A	MI-103	MC-103	SC-103	SI-103	PSH-103	PAH-103	MA-103	TSH-103	TAH-103
FWP-104	100	VFD-FWP-104	HS-104	HS-104A	MI-104	MC-104	SC-104	SI-104	PSH-104	PAH-104	MA-104	TSH-104	TAH-104

- CR-1

M (PUMP RUN HAND)

SPARE
- CR-2

M (PUMP RUN REMOTE (PLC))

SPARE
- M-AUX

PLC (PUMP RUNNING)

MI-101

OFF (INDICATING LIGHT)

SPARE
- CR-3

PLC (HIGH TEMP)

TAH-101

M (PUMP SHUT OFF)
- CR-4

PLC (HIGH DISCHARGE PRESSURE)

PAH-101

M (PUMP SHUT OFF)
- CR-5

M (PUMP SHUT OFF)

SPARE

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WIDEFIELD MOTOR CONTROL SCHEMATIC
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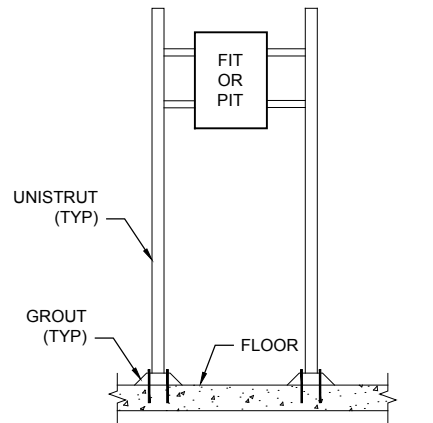
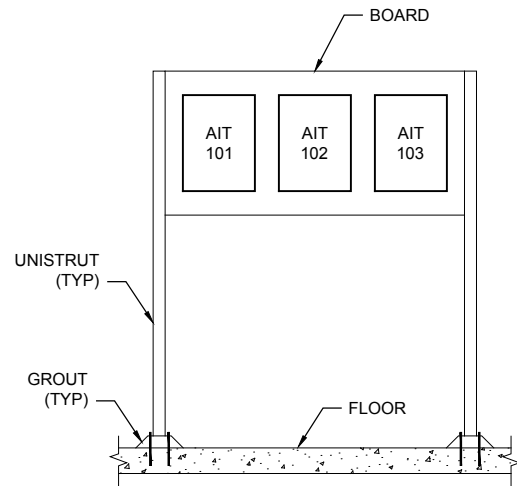
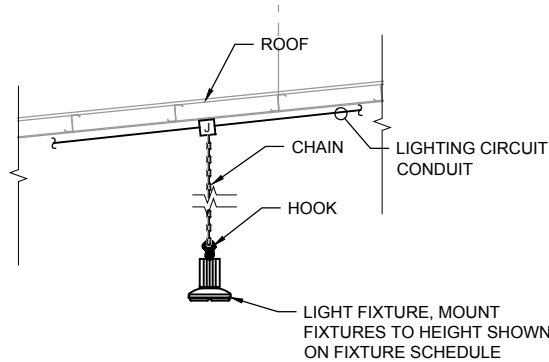
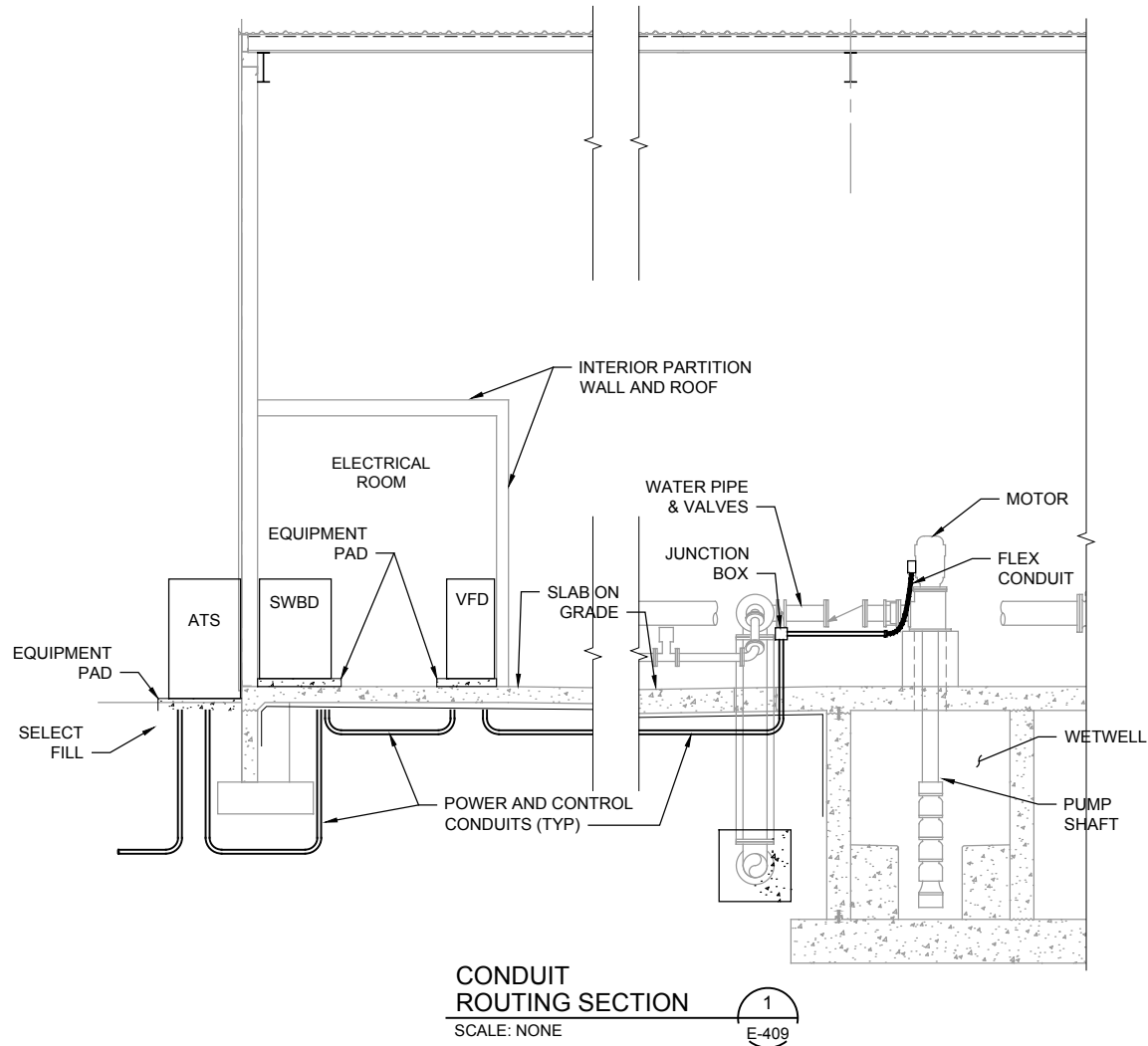
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SHEET TITLE

SECURITY MOTOR CONTROL
SCHEMATICS

SHEET NUMBER

E-408



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WATER MITIGATION
SYSTEM**

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SHEET TITLE
DETAILS

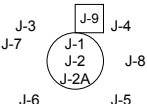
SHEET NUMBER
E-409

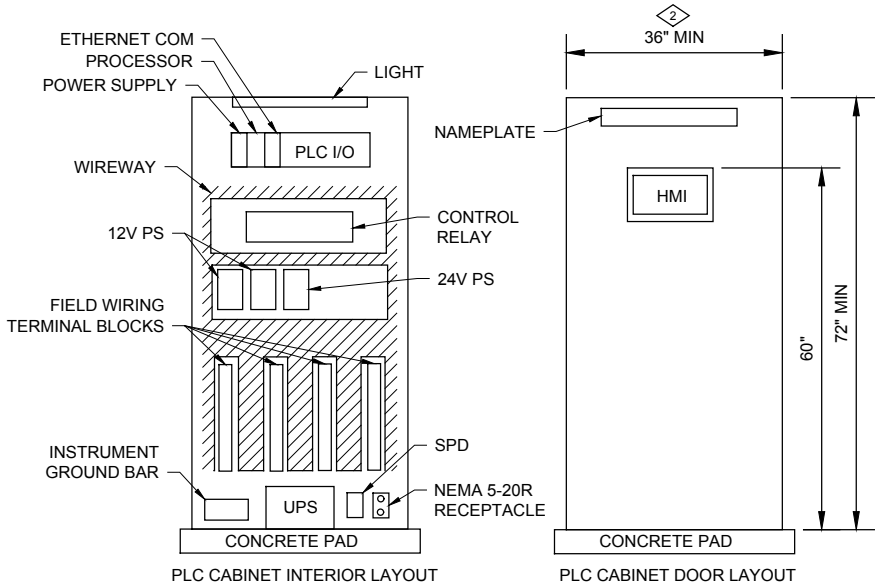
PROCESS FLOW AND PIPING AND INSTRUMENTATION DIAGRAM LEGEND (ALL SYMBOLS SHOWN ARE NOT NECESSARILY USED ON THE DRAWINGS)

LINE TYPES	
SYMBOL	DESCRIPTION
	PROCESS FLOW LINE
	INSTRUMENT SUPPLY OR CONNECTION TO PROCESS
	UNDEFINED SIGNAL
	PNEUMATIC SIGNAL
	ELECTRIC SIGNAL
	HYDRAULIC SIGNAL
	CAPILLARY TUBE
	ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED)
	ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED)
	INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)
	MECHANICAL LINK
OPTIONAL BINARY (ON-OFF) SYMBOLS	
	PNEUMATIC BINARY SIGNAL
	ELECTRIC BINARY SIGNAL
	ELECTRICAL HEAT TRACING
	STEAM HEAT TRACING
	FP – FLOOR PENETRATION RP – ROOF PENETRATION WP – WALL PENETRATION SB – SYSTEM BREAK

ABBREVIATIONS	
AI	– ANALOG INPUT
AO	– ANALOG OUTPUT
DI	– DIGITAL INPUT
DO	– DIGITAL OUTPUT

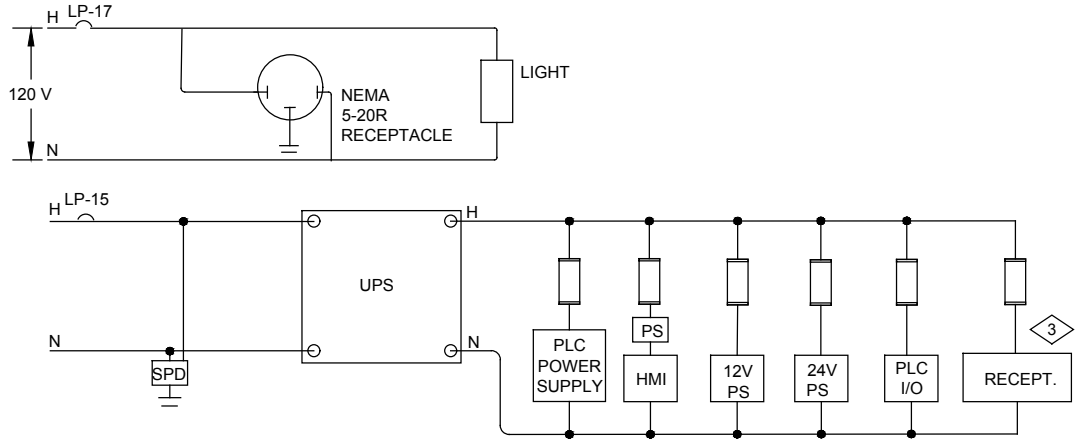
INSTRUMENT/FUNCTION SYMBOLS				
	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS				
SHARED DISPLAY, SHARED CONTROL				
COMPUTER FUNCTION				
PROGRAMMABLE LOGIC CONTROL				
	FLOW INDICATOR			INSTRUMENTS SHARING COMMON HOUSING
	PANEL MOUNTED PATCHBOARD POINT 12			

INSTRUMENTATION IDENTIFICATION TABLE	
	<ul style="list-style-type: none">J-1 COMPONENT FUNCTION NUMBERJ-2 COMPONENT SEQUENCE NUMBERJ-2A COMPONENT SEQUENCE # CONT'DJ-3 VENDOR DESIGNATIONJ-4 PANEL NUMBERJ-5 APPLICABLE NOTESJ-6 SYSTEM ACRONYMJ-7 ASME TEST SYMBOL FOR TEST ONLY OR TEST PLUS NORMAL USEJ-8 SET-POINT(S)J-9 FUNCTION (SEE INSTRUMENT/FUNCTION SYMBOLS)
NOTE: INSTRUMENTATION FUNCTION IDENTIFIERS (J-1) AND FUNCTION SYMBOLS PER ANSI/ISA S5.1.	



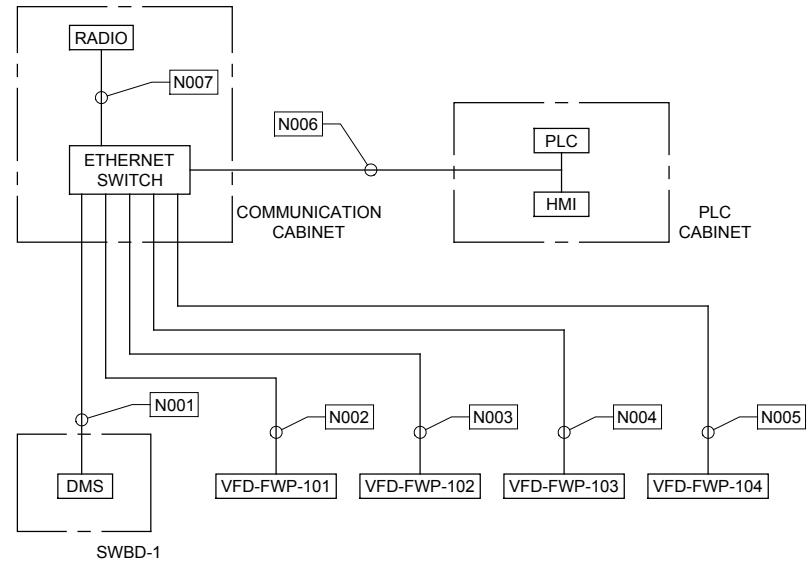
PLC CABINET

1



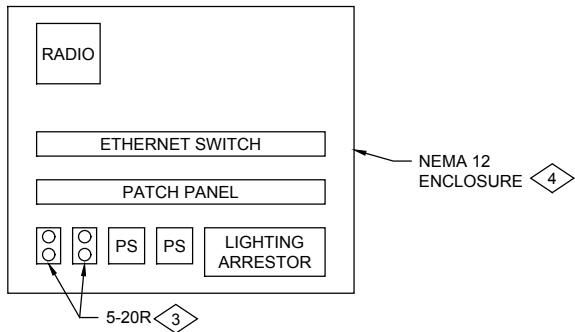
PLC CABINET WIRING DIAGRAM

2



NETWORK CONNECTION SCHEMATIC

3



COMMUNICATION PANEL LAYOUT

4

WIDEFIELD - NETWORK CONDUIT AND CONDUCTOR SCHEDULE									
CONDUIT			CONDUCTOR / CABLES			SOURCE	DESTINATION	NOTES	
NO.	#SET	SIZE	TYPE	#	SIZE	GND			
N001	1	0.75"	CAT 6	1	N/A	N/A	ETHERNET SWITCH	DMS	
N002	1	0.75"	CAT 6	1	N/A	N/A	ETHERNET SWITCH	VFD-FWP-101	
N003	1	0.75"	CAT 6	1	N/A	N/A	ETHERNET SWITCH	VFD-FWP-102	
N004	1	0.75"	CAT 6	1	N/A	N/A	ETHERNET SWITCH	VFD-FWP-103	
N005	1	0.75"	CAT 6	1	N/A	N/A	ETHERNET SWITCH	VFD-FWP-104	
N006	1	0.75"	CAT 6	2	N/A	N/A	ETHERNET SWITCH	PLC CABINET	
N007	1	0.75"	CAT 6	1	N/A	N/A	ETHERNET SWITCH	RADIO TRANSMITTER	

GENERAL NOTES:

- ALL CHANNELS FOR EACH I/O MODULE SHALL BE INDIVIDUALLY FUSED.
- PROVIDE INTRINSICALLY SAFE (IS) BARRIERS FOR ALL I/O LOCATED IN HAZARDS AREAS. REFER TO I/O LIST FOR I/O TAGS REQUIRING IS BARRIERS.
- CIRCUIT BREAKERS AND FUSES TYPE AND SIZE TO MEET APPLICABLE CODE REQUIREMENTS.

KEYED NOTES

- REFER TO I/O LIST IN SPECIFICATIONS. PLC LAYOUT IS INTENDED TO DEPICT A TYPICAL LAYOUT RATHER THAN INDICATE EXACT MODULE TYPE AND COUNT.
- MINIMUM PANEL LAYOUT SHOWN. CONTRACTOR TO VERIFY EQUIPMENT SIZES AND ADJUST PANEL SIZE AS NEEDED.
- UPS RECEPTACLE ARE LOCATED IN THE COMMUNICATIONS CABINET. RECEPTACLES TO POWER ETHERNET SWITCH AND RADIO EQUIPMENT.
- COMMUNICATIONS CABINET LAYOUT SHOWN IS PROPOSED. SYSTEM INTEGRATOR TO COORDINATE ENCLOSURE SIZE AND LAYOUT WITH EQUIPMENT SUBMITTALS.

URS

URS Group, Inc.
An AECOM Company

PROJECT

PFOS / PFOA DRINKING
WATER MITIGATION
SYSTEM

WIDEFIELD WATER AND
SANITATION DISTRICT
(WWSD)

CLIENT

USACE Omaha District

1616 Capital Ave.
Omaha, NE 68102

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ISSUE/REVISION

NO.	DATE	DESCRIPTION
0	02/28/19	60% DESIGN
I/R	DATE	DESCRIPTION

PROJECT NUMBER

Project Number: 60589841

SHEET TITLE

PLC COMMUNICATION
SCHEMATICS AND LAYOUT

SHEET NUMBER

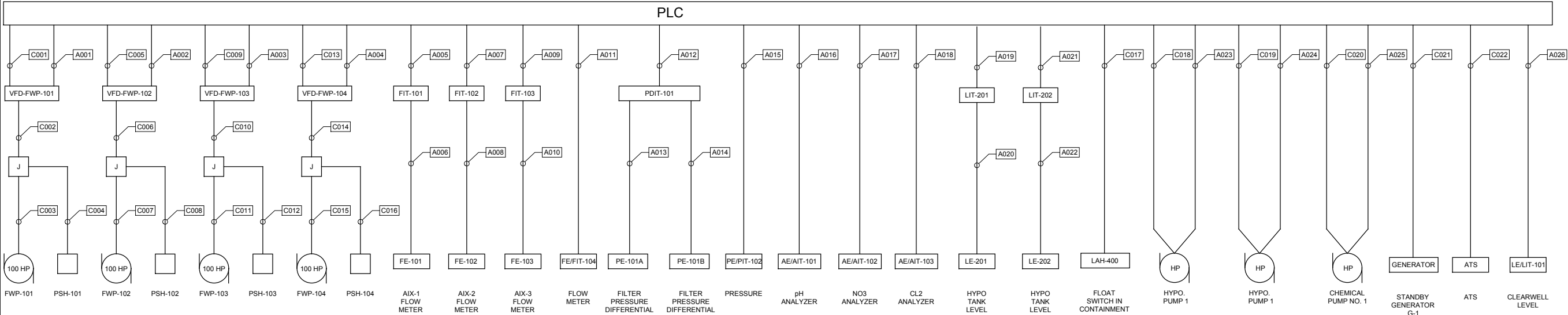
I-402

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PLC CONNECTION SCHEMATIC

1

WIDEFIELD - CONTROL CONDUIT AND CONDUCTOR SCHEDULE									
CONDUIT			CONDUCTOR / CABLES			SOURCE	DESTINATION	NOTES	
NO.	#SET	SIZE	TYPE	#	SIZE	GND			
C001	1	1"	THHN	14	#14	-	PLC CABINET	VFD-FWP-101	
C002	1	0.75"	THHN	4	#14	-	VFD-FWP-101	JUNCTION BOX	
C003	1	0.75"	THHN	2	#14	-	JUNCTION BOX	FWP-101	
C004	1	0.75"	THHN	2	#14	-	JUNCTION BOX	PSH-101	
C005	1	1"	THHN	14	#14	-	PLC CABINET	VFD-FWP-102	
C006	1	0.75"	THHN	4	#14	-	VFD-FWP-102	JUNCTION BOX	
C007	1	0.75"	THHN	2	#14	-	JUNCTION BOX	FWP-102	
C008	1	0.75"	THHN	2	#14	-	JUNCTION BOX	PSH-102	
C009	1	1"	THHN	14	#14	-	PLC CABINET	VFD-FWP-103	
C010	1	0.75"	THHN	4	#14	-	VFD-FWP-103	JUNCTION BOX	
C011	1	0.75"	THHN	2	#14	-	JUNCTION BOX	FWP-103	
C012	1	0.75"	THHN	2	#14	-	JUNCTION BOX	PSH-103	
C013	1	1"	THHN	14	#14	-	PLC CABINET	VFD-FWP-104	
C014	1	0.75"	THHN	4	#14	-	VFD-FWP-104	JUNCTION BOX	
C015	1	0.75"	THHN	2	#14	-	JUNCTION BOX	FWP-104	
C016	1	0.75"	THHN	2	#14	-	JUNCTION BOX	PSH-104	
C017	1	0.75"	THHN	2	#14	-	PLC CABINET	LAH-400	
C018	1	0.75"	THHN	8	#14	-	PLC CABINET	HYPO PUMP 1	
C019	1	0.75"	THHN	8	#14	-	PLC CABINET	HYPO PUMP 2	
C020	1	0.75"	THHN	8	#14	-	PLC CABINET	CHEMICAL PUMP 1	
C021	1	0.75"	THHN	8	#14	-	PLC CABINET	GENERATOR G-1	
C022	1	0.75"	THHN	2	#14	-	PLC CABINET	ATS	

WIDEFIELD - ANALOG CONDUIT AND CONDUCTOR SCHEDULE									
CONDUIT			CONDUCTOR / CABLES			SOURCE	DESTINATION	NOTES	
NO.	#SET	SIZE	TYPE	#	SIZE	GND			
A001	1	1"	TSP	2	#18	-	PLC	VFD-FWP-101	
A002	1	1"	TSP	2	#18	-	PLC	VFD-FWP-102	
A003	1	1"	TSP	2	#18	-	PLC	VFD-FWP-103	
A004	1	1"	TSP	2	#18	-	PLC	VFD-FWP-104	
A005	1	0.75"	TSP	1	#18	-	PLC	FIT-101	
A006	1	0.75"	-	-	-	-	FIT-101	FE-101	MANUFACTURE CABLE
A007	1	0.75"	TSP	1	#18	-	PLC	FIT-102	
A008	1	0.75"	-	-	-	-	FIT-102	FE-102	MANUFACTURE CABLE
A009	1	0.75"	TSP	1	#18	-	PLC	FIT-103	
A010	1	0.75"	-	-	-	-	FIT-103	FE-103	MANUFACTURE CABLE
A011	1	0.75"	TSP	1	#18	-	PLC	FE/FIT-104	
A012	1	0.75"	TSP	1	#18	-	PLC	PDIT-101	
A013	1	0.75"	-	-	-	-	PDIT-101	PE-101A	MANUFACTURE CABLE
A014	1	0.75"	-	-	-	-	PDIT-101	PE-101B	MANUFACTURE CABLE
A015	1	0.75"	TSP	1	#18	-	PLC	PE/PIT-102	
A016	1	0.75"	TSP	1	#18	-	PLC	AE/AIT-101	
A017	1	0.75"	TSP	1	#18	-	PLC	AE/AIT-102	
A018	1	0.75"	TSP	1	#18	-	PLC	AE/AIT-103	
A019	1	0.75"	TSP	1	#18	-	PLC	LIT-201	
A020	1	0.75"	-	-	-	-	LIT-201	LE-201	MANUFACTURE CABLE
A021	1	0.75"	TSP	1	#18	-	PLC	LIT-202	
A022	1	0.75"	-	-	-	-	LIT-202	LE-202	MANUFACTURE CABLE
A023	1	0.75"	TSP	2	#18	-	PLC	HYPO PUMP 1	
A024	1	0.75"	TSP	2	#18	-	PLC	HYPO PUMP 2	
A025	1	0.75"	TSP	2	#18	-	PLC	CHEMICAL PUMP 1	
A026	1	0.75"	TSP	1	#18	-	PLC	LE/LIT-101	CLEARWELL LEVEL

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SHEET TITLE

PLC CONNECTION SCHEMATIC

SHEET NUMBER

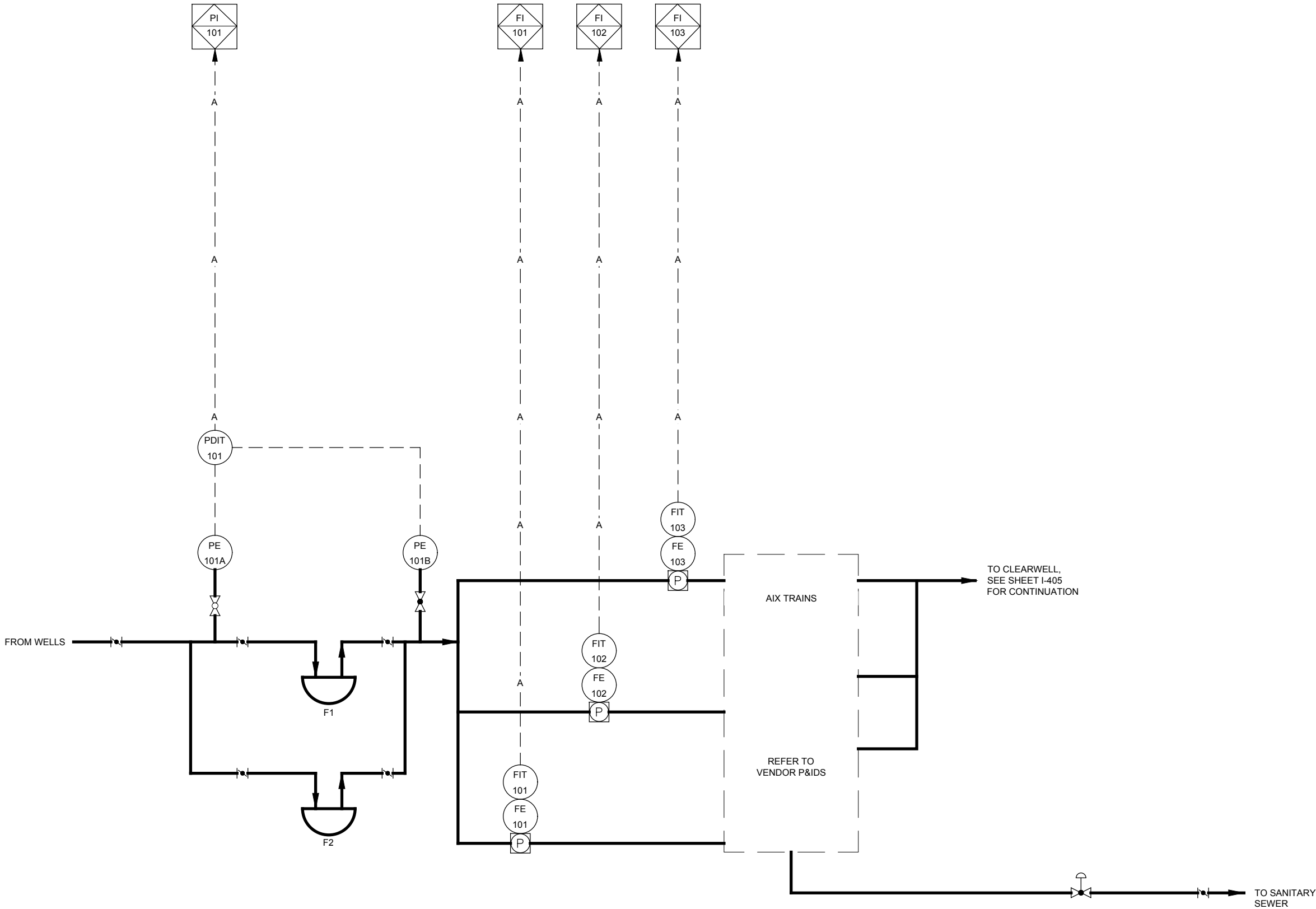
I-403

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WIDEFIELD PRE-FILTER
AND AIX TRAINS P&ID

SCALE: NONE



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WIDEFIELD WATER AND
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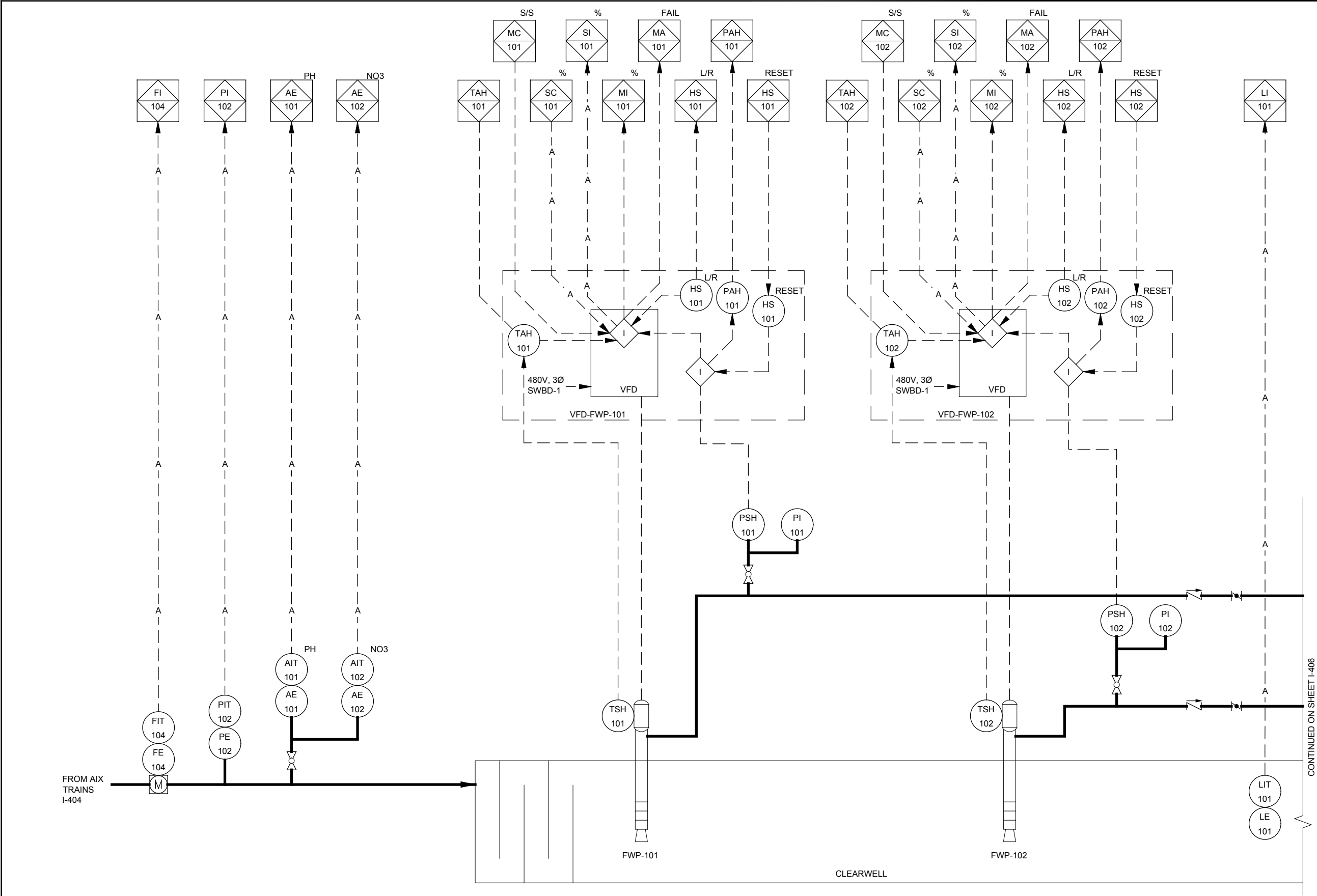
Project Number: 60589841

SHEET TITLE

PIPING AND INSTRUMENTATION
DIAGRAM I

SHEET NUMBER

I-404



WIDEFIELD
FINISHED WATER PUMPING P&ID
SCALE: NONE

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URS Group, Inc.
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PROJECT

**PFOS / PFOA DRINKING
WATER MITIGATION
SYSTEM**

**WIDEFIELD WATER AND
SANITATION DISTRICT
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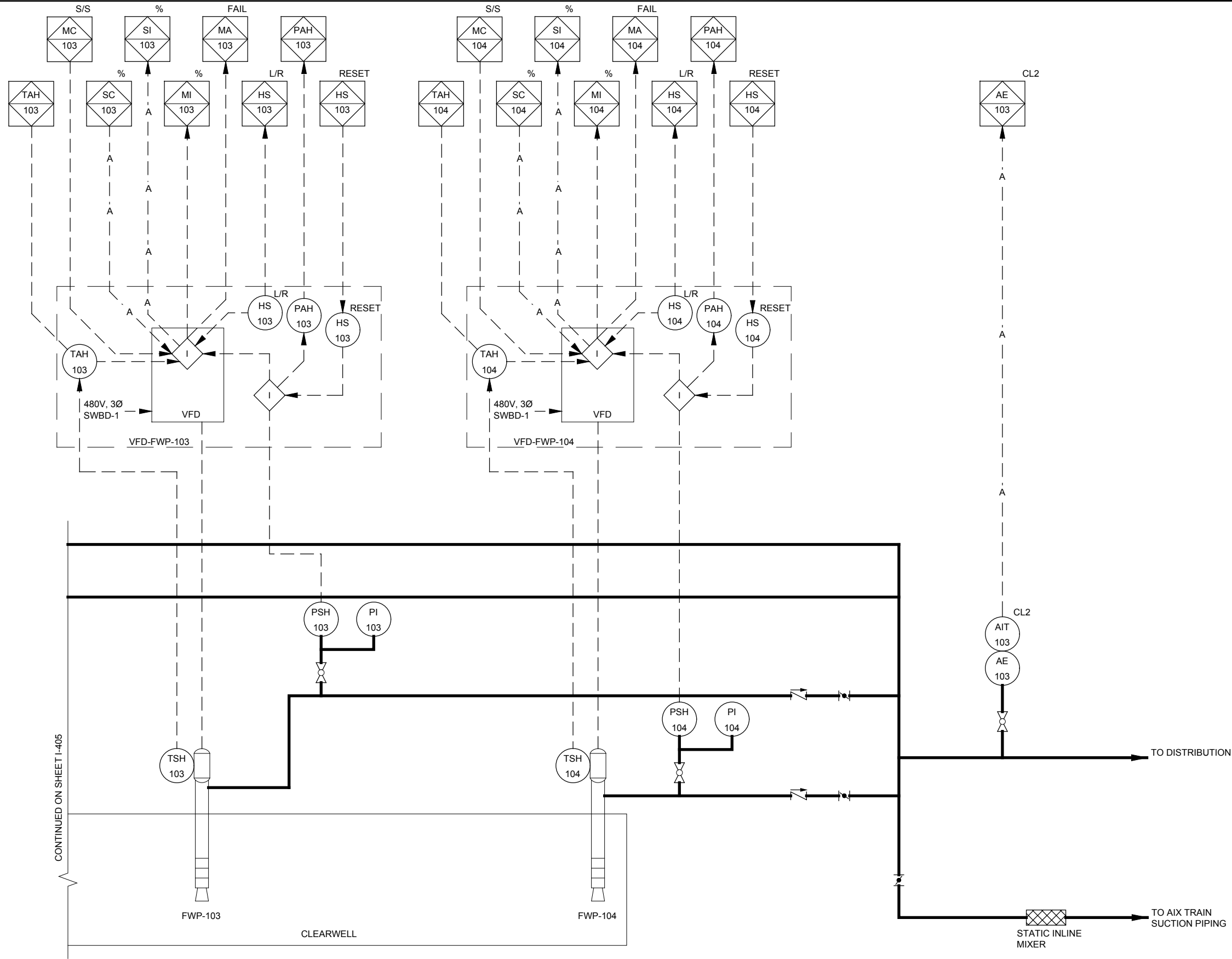
PIPING AND INSTRUMENTATION
DIAGRAM II

SHEET NUMBER

I-405

CONTINUED ON SHEET I-406

ANSI D 22" x 34"



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PROJECT

**PFOS / PFOA DRINKING
WATER MITIGATION
SYSTEM**

**WIDEFIELD WATER AND
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SHEET TITLE

PIPING AND INSTRUMENTATION
DIAGRAM III

SHEET NUMBER

I-406

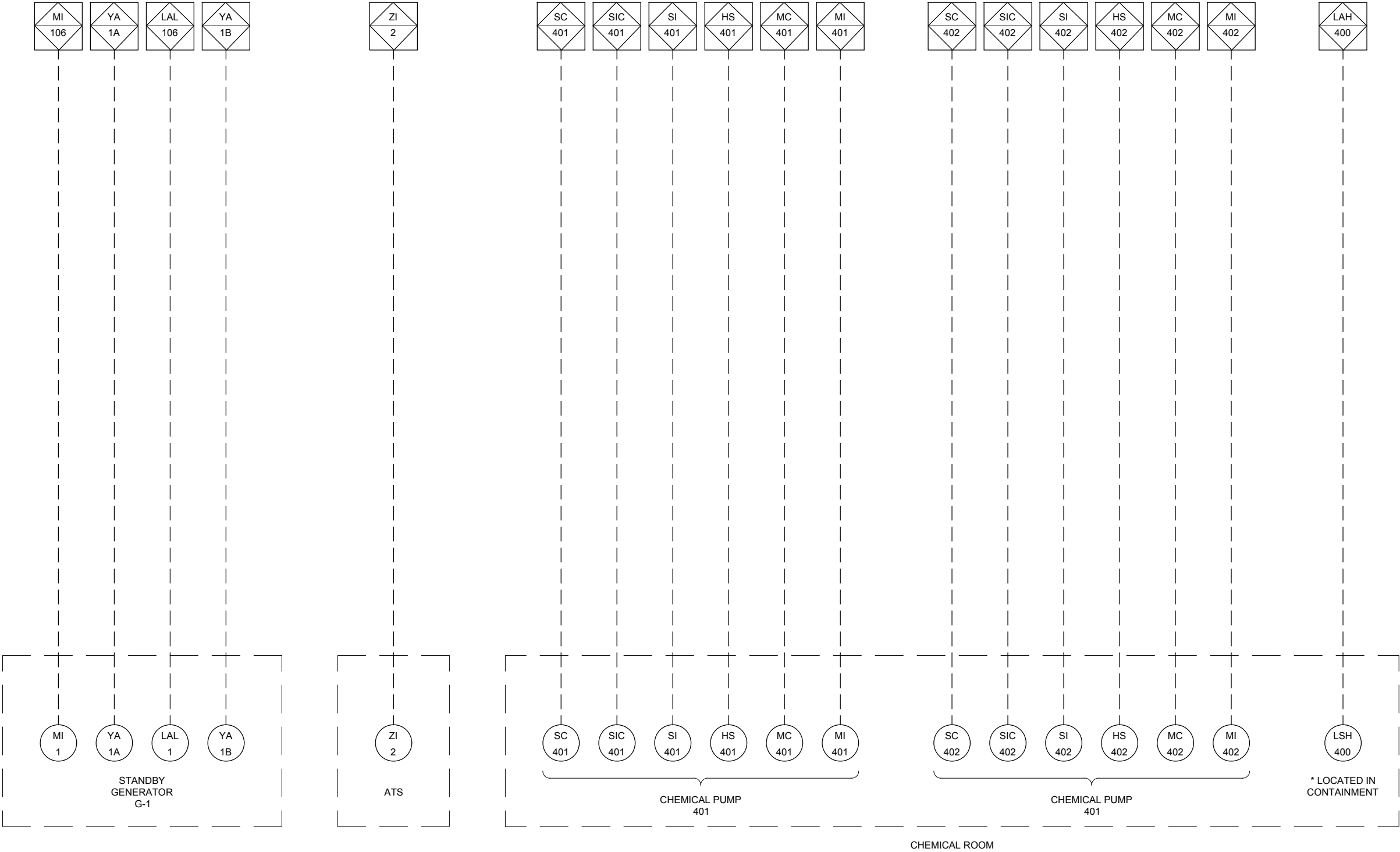
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