

TABLE 2 REQUIRED SPECIAL INSPECTIONS - NONSTRUCTURAL SYSTEMS				
SYSTEM OR MATERIAL	REQUIRED INSPECTION	FREQUENCY OF INSPECTION		REMARKS
		CONTINUOUS	PERIODIC	
ARCHITECTURAL	INSPECT WELDING OF GUARD AND HANDRAIL SYSTEMS		X	
	EXTERIOR WALL PANELS AND THEIR ANCHORAGE		X	
MECHANICAL	INSPECT ANCHORAGE OF FIRE SPRINKLER SYSTEM		X	
	INSPECT ANCHORAGE OF ALL MECHANICAL SYSTEMS (INCLUDING EQUIPMENT PIPING, DUCT WORK, ETC.) REQUIRING STANDBY POWER		X	
	CERTIFICATE OF COMPLIANCE FOR ALL MECHANICAL EQUIPMENT REQUIRING STANDBY POWER			EQUIPMENT MANUFACTURER SHALL PROVIDE CERTIFICATE OF COMPLIANCE
ELECTRICAL	INSPECT ANCHORAGE OF ELECTRICAL EQUIPMENT FOR STANDBY POWER		X	
	INSPECT ANCHORAGE OF ALL OTHER ELECTRICAL EQUIPMENT REQUIRING STANDBY POWER		X	
	CERTIFICATE OF COMPLIANCE FOR ALL ELECTRICAL EQUIPMENT FOR STANDBY POWER AND ALL ELECTRICAL EQUIPMENT REQUIRING STANDBY POWER			EQUIPMENT MANUFACTURER SHALL PROVIDE CERTIFICATE OF COMPLIANCE
	EMERGENCY LIGHTING		X	

TABLE 3 REQUIRED TESTING FOR SPECIAL INSPECTIONS			
SYSTEM OR MATERIAL	TESTING		REMARKS
	CODE OR STANDARD REFERENCE	FREQUENCY	
GEOTECHNICAL			
PREPARED SUBGRADE DENSITY	ASTM D6938	EACH 300 SF OF PREPARED SUBGRADE	PER GEOTECHNICAL REPORT
FILL IN-PLACE DENSITY	ASTM D6938	EACH 300 SF OF EACH LIFT PLACED EACH DAY	PER GEOTECHNICAL REPORT
CONCRETE			
CONCRETE COMPRESSIVE STRENGTH	ASTM C31, ASTM C39, ASTM C172	SEE SPECIFICATION 03 30 00	
CONCRETE SLUMP	ASTM C143	WHENEVER CYLINDERS ARE CAST	
CONCRETE AIR CONTENT	ASTM C231	WHENEVER CYLINDERS ARE CAST	
CONCRETE TEMPERATURE	ASTM C1064	WHENEVER CYLINDERS ARE CAST	
CEMENTITIOUS AND EPOXY GROUT COMPRESSIVE STRENGTH	ASTM C942 (CEMENTITIOUS) ASTM C579 (EPOXY)		TEST 2" CUBES FOR EACH GROUT SHIPMENT TO THE FIELD
STEEL			
MAGNETIC PARTICLE (MT) AND ULTRASONIC (UT) TESTING OF WELDS	MT - AWS D1.1 6.14.4 UT - AWS D1.1 6.13 & 6.14.3	AT ALL PARTIAL AND FULL PENETRATION FIELD WELDS	
PRE-CONSTRUCTION TESTING OF WELDING STUDS	AWS D1.1 7.7.1	EACH SIZE AND TYPE OF STUD EACH SHIFT	
PRE-INSTALLATION VERIFICATION OF PRETENSIONED HIGH STRENGTH BOLTS	RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS SECTION 7	EACH COMBINATION OF DIAMETER, LENGTH, GRADE, AND LOT TO BE USED IN THE WORK	



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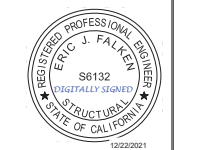
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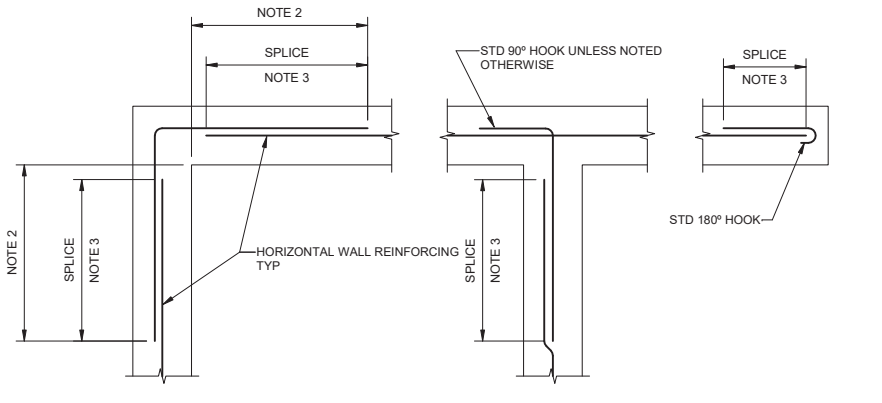
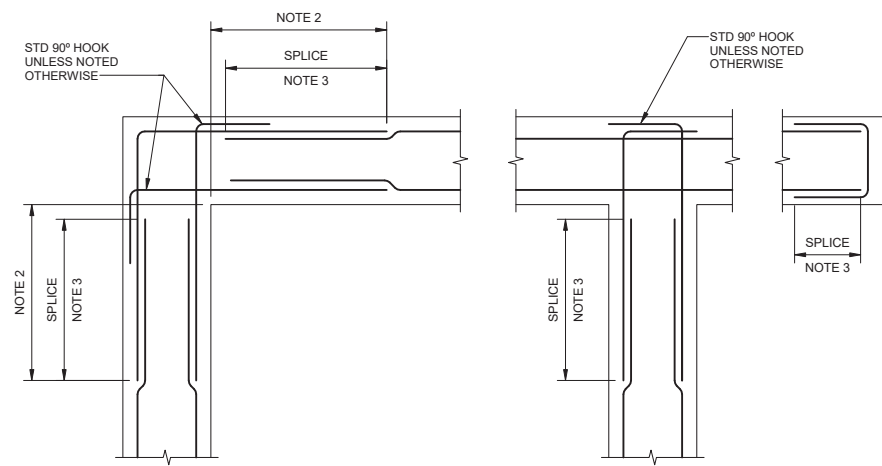
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WALSH
 CONSULTANT

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SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME :
REVIEWED BY : _____	DATE : _____ 20__	SP-FILE NO. : SP2602
OMVED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE : _____, 20XX
CITY CLIENTS	ENGINEERING AND STREET SERVICES	

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
GENERAL NOTES - 4
 PROJECT AND SHEET TITLE

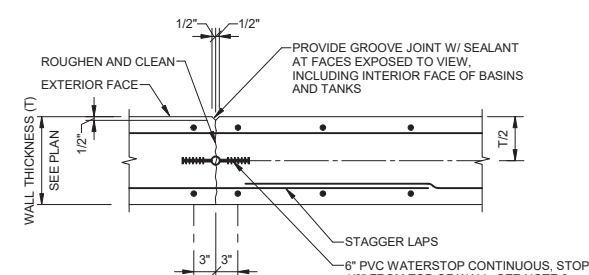


DESIGNED BY : EJP
 DRAWN BY : REK
 CHECKED BY : AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
S-01-0004
 SH 73 of 303 SH15



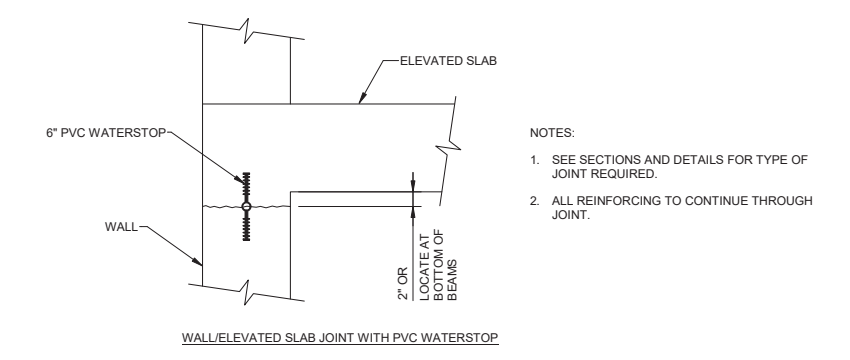
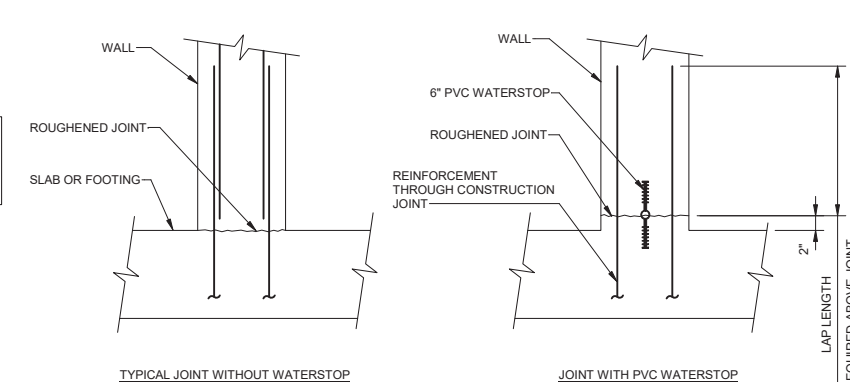
- NOTES:
- UNLESS NOTED OTHERWISE, SIZE AND SPACING OF CORNER OR INTERSECTION REINFORCING SHALL MATCH HORIZONTAL REINFORCING SHOWN IN SPECIFIC SECTIONS OR DETAILS. VERTICAL REINFORCING NOT SHOWN FOR CLARITY.
 - UNLESS NOTED OTHERWISE, BAR SPLICE SHALL BE LOCATED OUTSIDE OF CORNER OR INTERSECTION AREA TO AVOID CONGESTION. CONTRACTORS OPTION TO PROVIDE SINGLE BENT BAR IN LIEU OF SPLICE CONFIGURATION AT ONE END ONLY.
 - SEE GENERAL STRUCTURAL NOTES FOR SPLICE LENGTH. HORIZONTAL WALL BARS SHALL BE CONSIDERED TOP BARS FOR DEVELOPMENT AND SPLICE LENGTHS.

S1001
DPS2020
TYPICAL HORIZONTAL WALL REINFORCING
NO SCALE

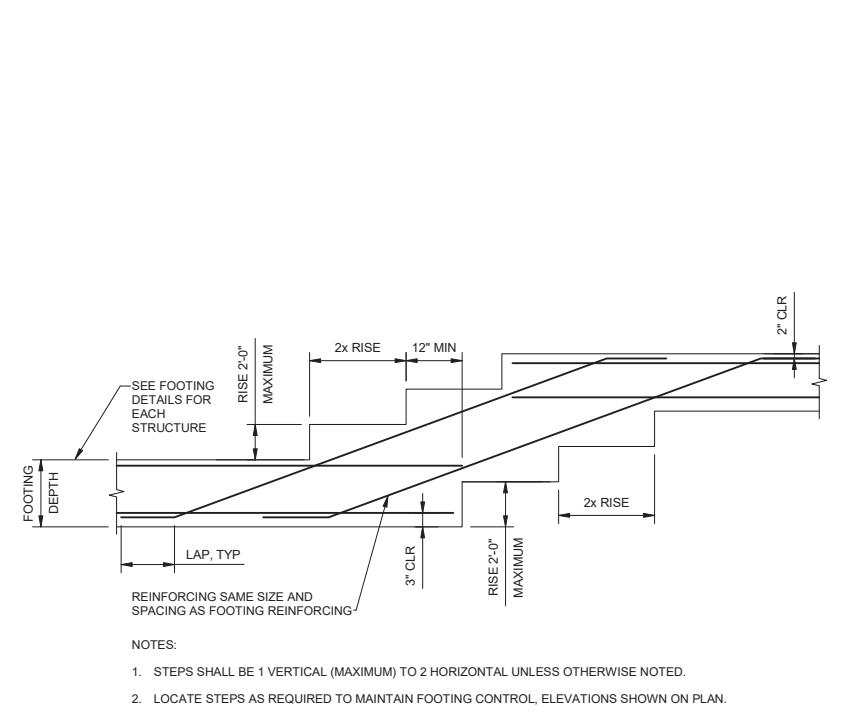


- NOTES:
- ALL REINFORCING SHALL BE CONTINUOUS THROUGH JOINT.
 - WATERSTOP REQUIRED AT LIQUID HOLDING BASINS AND TANKS, AND BELOW GRADE WALLS.

S1004
DPS2020
TYPICAL VERTICAL WALL CONSTRUCTION JOINT
NO SCALE

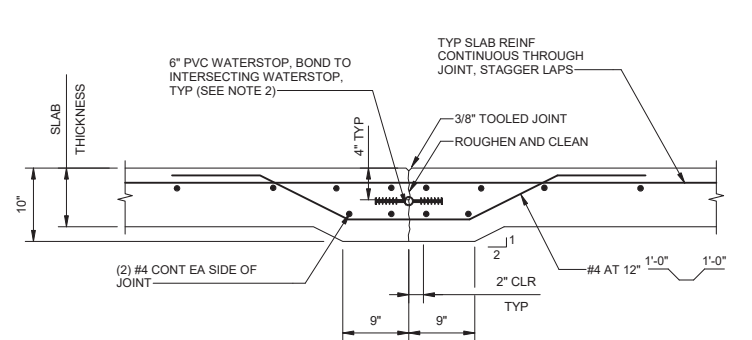


S1002
DPS2020
TYPICAL HORIZONTAL CONSTRUCTION JOINT
NO SCALE

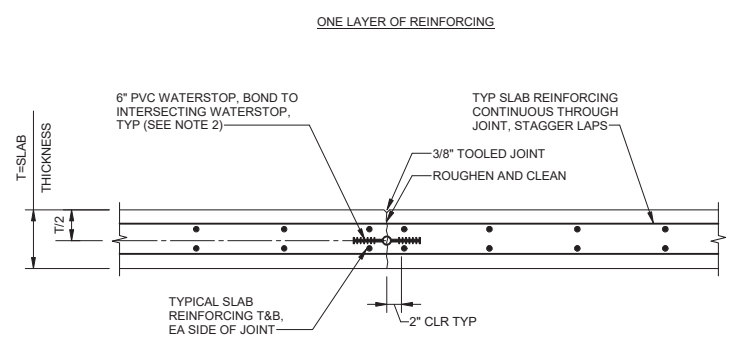


S1005
DPS2020
TYPICAL STEP IN WALL FOOTING
NO SCALE

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CONSULTANT				
CITY CLIENTS				



- NOTES:
- 10" THICKENED SLAB AND ADDITIONAL #4 REQUIRED ONLY AT JOINTS WITH WATERSTOPS.
 - FOR SLABS 10" THICK OR GREATER, NO THICKENING REQUIRED.



- NOTES:
- ALL REINFORCING SHALL BE CONTINUOUS THROUGH JOINT.
 - WATERSTOP REQUIRED AT LIQUID HOLDING BASINS AND TANKS, AND BELOW GRADE SLABS.

S1003
DPS2020
TYPICAL SLAB CONSTRUCTION JOINT
NO SCALE

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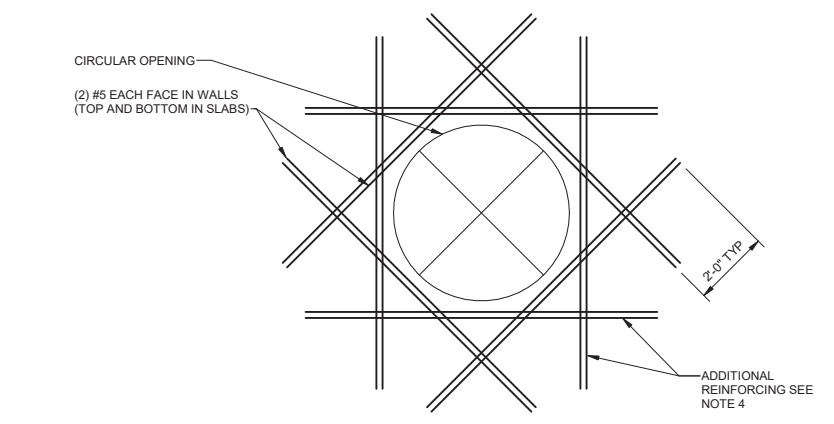
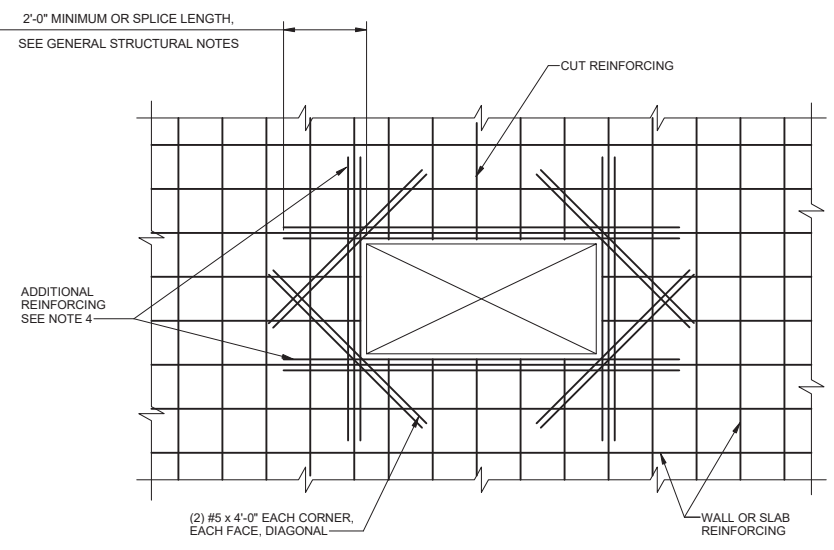
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SUNNY WANG, P.E. - WATER RESOURCES MANAGER	SUBMITTED BY: _____ SP-FILE NO.: SP2802
REVIEWED BY: _____ DATE: _____, 20__	APPROVED BY: _____ DATE: _____, 20XX
OMVED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER
CITY CLIENTS	ENGINEERING AND STREET SERVICES

DESIGNED BY: EJP
 DRAWN BY: REK
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
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S-01-5001
 SHEET 74 of 303 SHEETS

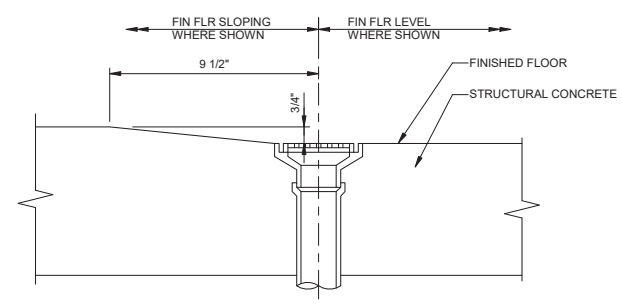
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 DETAILS - 1
 PROJECT AND SHEET TITLE



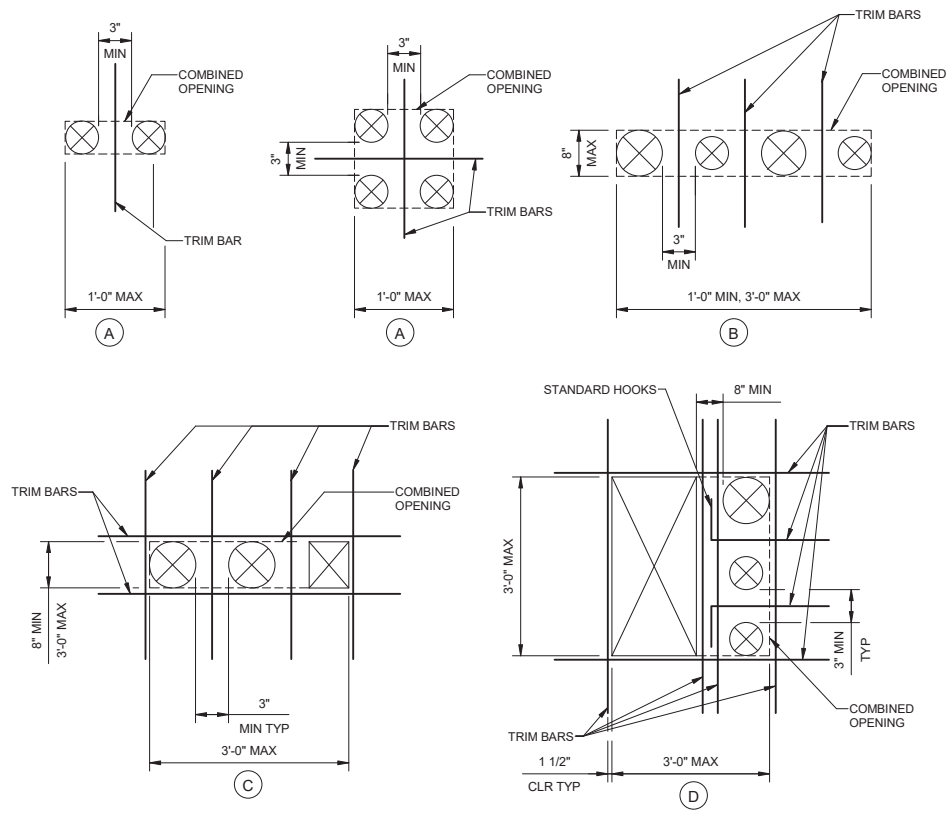


- ADDITIONAL REINFORCING NOTES:**
- AT OPENINGS 12" OR LESS, NO ADDITIONAL REINFORCING IS REQUIRED. OFFSET REINFORCING, STILL MAINTAINING REQUIRED SPACING TO ALLOW FOR OPENING WHERE PRACTICAL, OR CUT AT THE OPENING AND ADDITIONAL REINFORCING ADDED PER NOTE 4.
 - OPENINGS ARE NOT ALL SHOWN ON STRUCTURAL DRAWINGS. PROVIDE OPENINGS IN ACCORDANCE WITH ARCHITECTURAL, MECHANICAL, AND OTHER CONTRACT DRAWINGS.
 - ADDITIONAL REINFORCEMENT MAY BE OMITTED WHERE OPENING IS FRAMED BY BEAMS OR WALLS.
 - ADDITIONAL REINFORCING (4) SIDES OF OPENING, EACH FACE, EQUAL TO NUMBER AND SIZE OF CUT REINFORCING. WHERE AN ODD NUMBER OF REBAR ARE CUT, PROVIDE (ODD NO. +1)/2 EACH SIDE OF OPENING (MIN 2 ADDITIONAL BARS EACH SIDE).

S2001 ADDITIONAL REINFORCING AT OPENINGS
NO SCALE



S2003 SLAB AT FLOOR DRAIN
NO SCALE



S2002 COMBINED OPENING TRIM BARS
NO SCALE

- TRIM BAR NOTES:**
- OPENINGS IN CONCRETE WHICH ARE CLOSER TO ONE ANOTHER THAN THE DIAMETER OR SHORTER SIDE OF THE LARGER OF THE TWO ARE CONSIDERED TO FORM A COMBINED OPENING.
 - THESE DIAGRAMS ARE FOR COMBINED OPENINGS WHOSE LARGER DIMENSION DOES NOT EXCEED 3'-0". SEE DRAWINGS FOR "ADDITIONAL REINFORCING AT OPENINGS" DETAIL FOR LARGER COMBINED OPENINGS.
 - TRIM BAR SIZE IS SELECTED TO MATCH TYPICAL WALL OR SLAB REINFORCING IN EACH DIRECTION. PLACE TRIM BARS AT EACH FACE OR LAYER OF TYPICAL REINFORCING.
 - TRIM BAR EXTENSION PAST EDGES OF COMBINED OPENINGS SHALL BE 1'-0" FOR #4 BARS, 1'-6" FOR #5 BARS, AND ONE DEVELOPMENT LENGTH FOR LARGER BARS.
 - DISPLACE PRINCIPAL REINFORCEMENT TO EACH SIDE OF COMBINED OPENING OR PLACE BETWEEN INDIVIDUAL OPENINGS. DO NOT CUT PRINCIPAL REINFORCEMENT.
 - SEE "ADDITIONAL REINFORCING AT OPENINGS" DETAIL FOR TRIM BARS FOR INDIVIDUAL OPENINGS.
 - SUBMIT SPECIAL SITUATIONS TO ENGINEER FOR REVIEW.

- TRIM BAR REQUIREMENTS:**
- (A)** IF THE COMBINED OPENING IS SMALLER THAN 1'-0", PROVIDE (1) #5 EACH FACE BETWEEN OPENINGS.
 - (B)** IF THE LARGER DIMENSION OF A COMBINED OPENING EXCEEDS 1'-0" BUT THE SMALLER DIMENSION IS LESS THAN OR EQUAL TO 8", AND PROVIDED THE COMBINED OPENING IS ALIGNED WITH THE PRINCIPAL REINFORCEMENT, PROVIDE (1) #5 EACH FACE BETWEEN OPENINGS.
 - (C)** IN OTHER CASES WHERE OPENINGS ARE ARRANGED IN A SINGLE LINE, PROVIDE (1) #5 EACH FACE BETWEEN OPENINGS AND (1) #5 EACH FACE AROUND PERIMETER OF COMBINED OPENING.
 - (D)** WHERE INDIVIDUAL OPENINGS OF A COMBINED OPENING FORM TWO OR MORE ROWS, SEPARATE THE ROWS BY AT LEAST 8" OF CONCRETE. PROVIDE (2) #5 EACH FACE BETWEEN ROWS OF OPENINGS, (1) #5 EACH FACE BETWEEN OPENINGS IN THE PERPENDICULAR DIRECTION, AND (1) #5 EACH FACE AROUND THE PERIMETER OF COMBINED OPENINGS. PROVIDE STANDARD HOOKS WHERE BARS TERMINATE WITHIN THE COMBINED OPENING.

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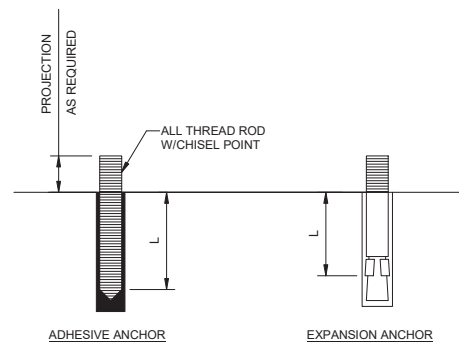
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OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
DETAILS - 2

DESIGNED BY: E.J.F.
 DRAWN BY: REK
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
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 SH1 75 of 303 SH15

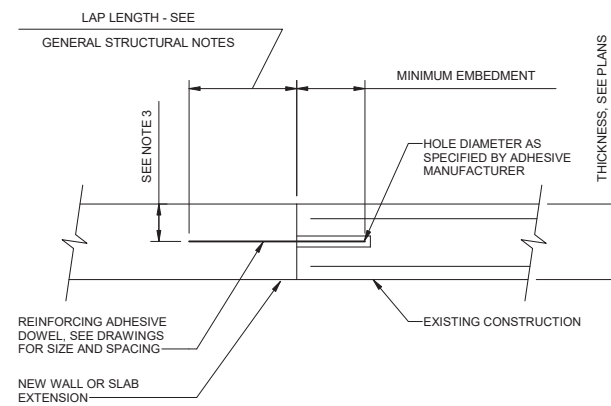




MINIMUM EMBEDMENT LENGTH, L		
DIAMETER	ADHESIVE ANCHOR	EXPANSION ANCHOR
3/8"	3 1/2"	2 1/2"
1/2"	4 1/4"	3 1/2"
5/8"	5"	4 1/2"
3/4"	6 3/4"	5"
7/8"	7 1/2"	-
1"	8 1/4"	-

- NOTES:
- CONFORM TO ICC EVALUATION SERVICE REPORT (ES REPORT) REQUIREMENTS AND MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.
 - PROVIDE TYPE 316 STAINLESS STEEL ALL-THREAD ROD MATERIAL.
 - PROVIDE HOLE DIAMETER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
 - EXPANSION ANCHOR EMBEDMENT LENGTHS ARE BASED ON HILTI KWIK BOLT T22 STAINLESS STEEL ANCHORS IN 4000 PSI NORMAL WEIGHT CONCRETE. SUBMIT ICC EVALUATION SERVICE REPORT (ES REPORT) FOR ALTERNATE PRODUCTS.
 - ADHESIVE ANCHOR EMBEDMENT LENGTHS ARE BASED ON HILTI HIT-RE 500-V3 AND SIMPSON STRONG-TIE SET-3G ADHESIVE IN 4000 PSI CONCRETE. SUBMIT ICC ES REPORT FOR ALTERNATE PRODUCTS.

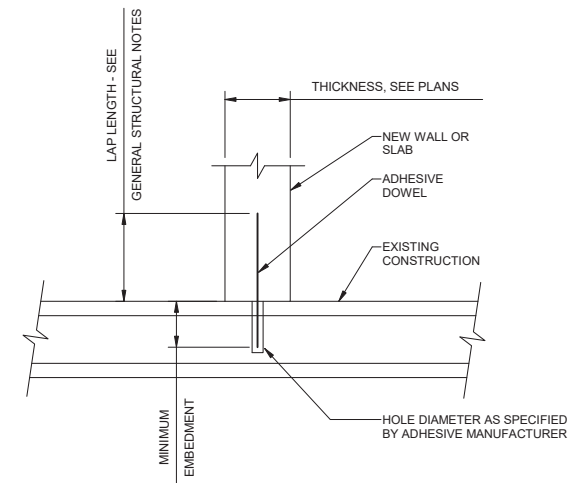
S3001 CONCRETE ANCHORS
NO SCALE
DPS2020



DOWEL SIZE	MINIMUM EMBEDMENT
#3	5"
#4	7"
#5	8"
#6	10"
#7	12"
#8	14"
#9	16"

- NOTES:
- EMBEDMENT LENGTH IS BASED ON DOWELS SET WITH HILTI HIT-RE 500-V3 ADHESIVE ANCHOR SYSTEM. SUBMIT ICC EVALUATION SERVICE REPORT (ES REPORT) IF ALTERNATE PRODUCT IS PROPOSED.
 - INSTALL DOWELS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ICC ES REPORT.
 - LOCATE DOWELS CENTERED IN WALL OR SLAB UNLESS NOTED OTHERWISE ON DRAWINGS. WHERE 2 ROWS OF DOWELS ARE INDICATED, STAGGER SPACING AND LOCATE ALTERNATING DOWELS AT MINIMUM EDGE DISTANCE FROM OPPOSITE FACES.
 - SPECIAL INSPECTION IS REQUIRED FOR ADHESIVE DOWEL INSTALLATION.

S3002 REBAR DOWELS SET WITH ADHESIVE
NO SCALE
DPS2020



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 OMVED POUR, P.E. - PROJECT MANAGER

REFERENCE: _____ DATE: _____, 20XX
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 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

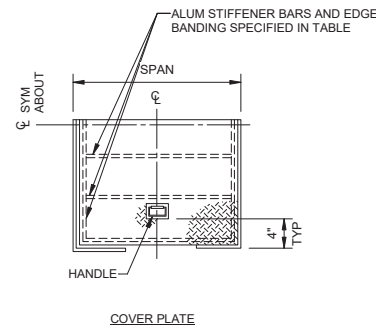
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 DETAILS - 3



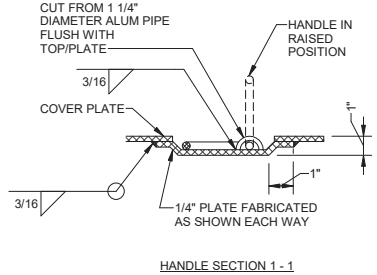
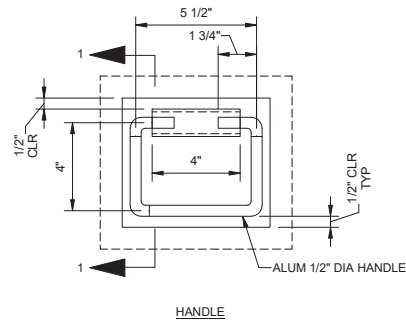
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MAX SPAN	PLATE THICKNESS, INCH	STIFFENER BAR SIZE, INCH	SPACING, INCH
2'-0"	1/4"	-	-
5'-0"	1/4"	3/8 x 2	12
7'-0"	1/4"	3/8 x 2	12

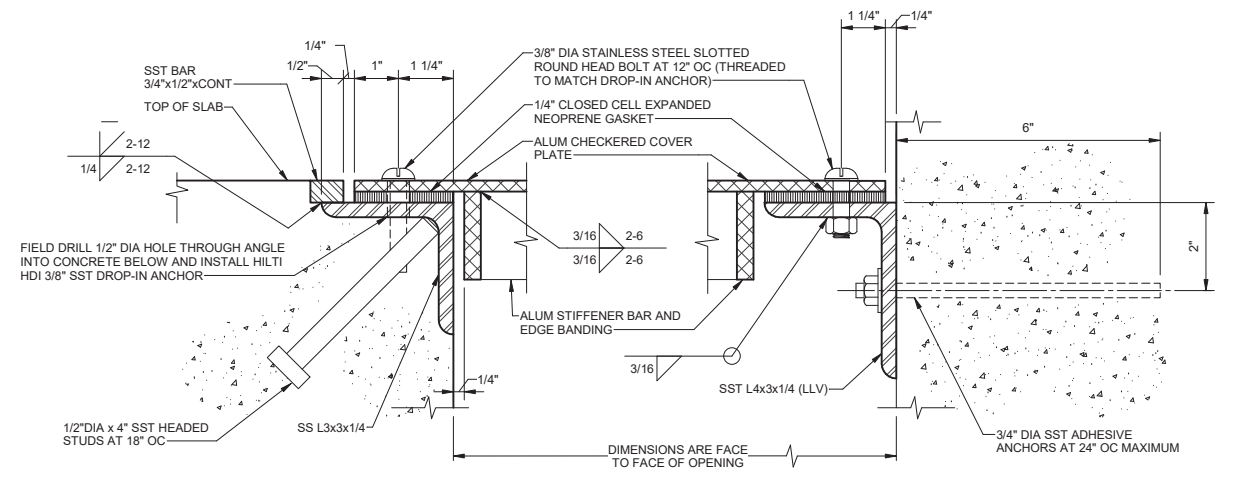
- NOTES:
- EDGE BAND SAME AS STIFFENER BARS.
 - COVERS FOR FOOT TRAFFIC ONLY. VEHICLE TRAFFIC NOT PERMITTED.
 - ALUMINUM COVER PLATES SHALL BE ROLLED TREAD PLATE.



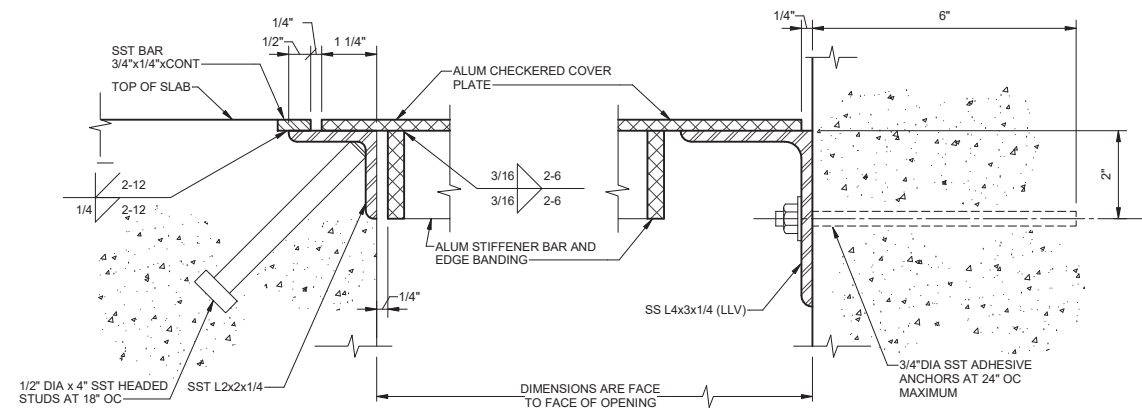
S4001 ALUMINUM COVER PLATE
NO SCALE



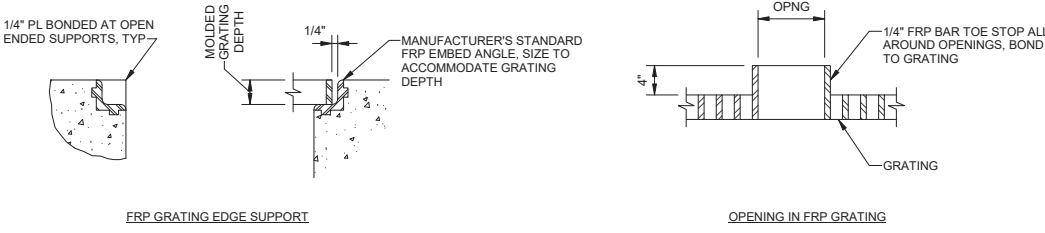
S4001 ALUMINUM COVER PLATE
NO SCALE



S4003 ALUMINUM COVER PLATE WITH GASKET
NO SCALE



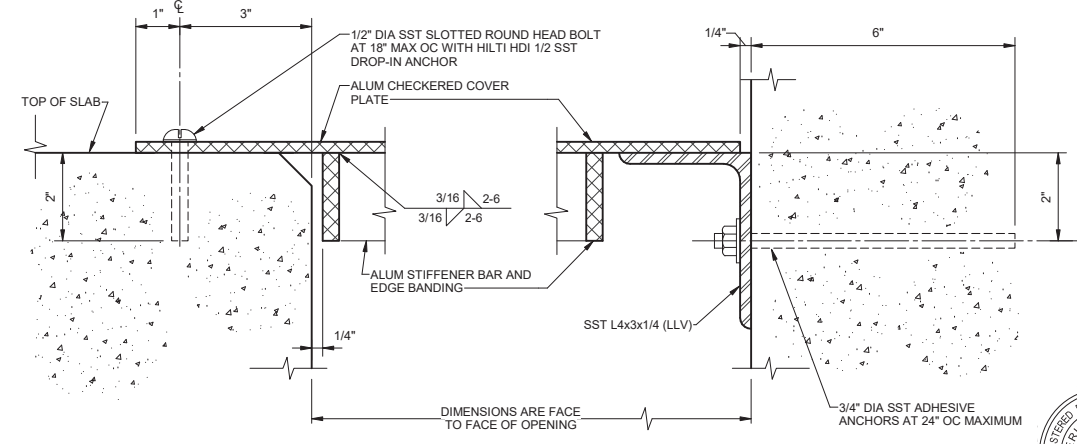
S4004 ALUMINUM COVER PLATE AT NEW CONCRETE
NO SCALE



- FRP GRATING NOTES:
- MAXIMUM WIDTH OF GRATING SECTION: 4'-0"
 - SUBMIT SHOP DRAWINGS BASED ON FIELD DIMENSIONS PRIOR TO FABRICATION.
 - PROVIDE REMOVABLE GRATING WITH 4 STAINLESS STEEL HOLD DOWN CLIPS WITH SELF-TAPPING SCREWS APPROXIMATELY 4" FROM THE CORNERS OF EACH PIECE.
 - CLEAR SPAN IS PLAN DIMENSION, FACE TO FACE OF OPENING.
 - GRATING SCHEDULE AND DETAILS ARE DESIGNED FOR PEDESTRIAN LOAD ONLY (100 PSF MAXIMUM). NO VEHICLE LOADS ARE ALLOWED.

CLEAR SPAN MAXIMUM	MOLDED DEPTH
3'-0"	1 1/2"
4'-0"	2"

S4002 TYPICAL FIBERGLASS GRATING
NO SCALE



S4005 ALUMINUM COVER PLATE AT EXISTING CONCRETE
NO SCALE



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WALSH

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REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

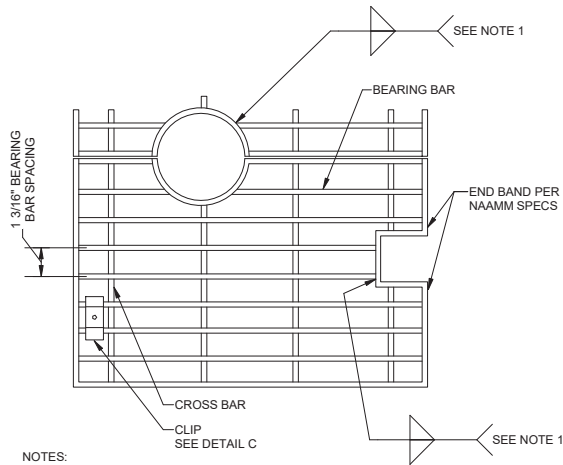
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ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

DETAILS - 4

PROJECT AND SHEET TITLE

DESIGNED BY:	EJF
DRAWN BY:	REK
CHECKED BY:	AZ
CONSULTANT JOB SHEET NO.	154390
DRAWING NO.	7078
S-01-5004	
SHT	77 OF 303 SH15



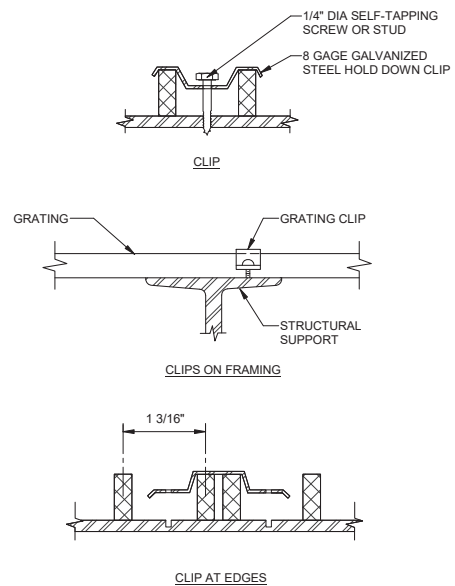
- NOTES:
1. WELD BEARING AND CROSS BARS TO END BANDS.
 2. FOR ADDITIONAL INFORMATION, SEE DETAIL B.

S5001 ALUMINUM GRATING PLAN
NO SCALE
DPS2020

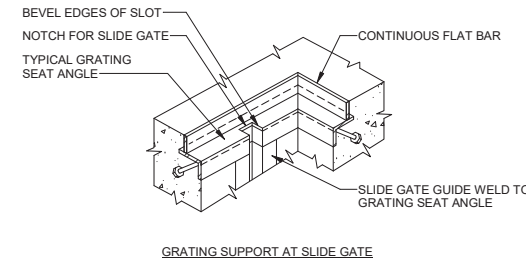
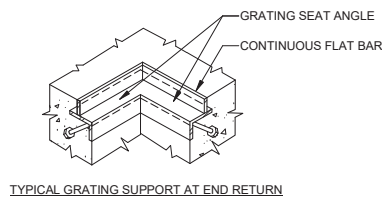
SERRATED GRATING SCHEDULE		
CLEAR SPAN MAXIMUM	BEARING BAR SIZE	MINIMUM END BEARING
4'-0"	1 1/2 x 3/16	1"
4'-6"	1 3/4 x 3/16	1"
5'-0"	2 x 3/16	1 1/2"
6'-0"	2 1/4 x 3/16	1 1/2"
6'-6"	2 1/2 x 3/16	2"

- GRATING NOTES:
1. CONFORM TO THE METAL BAR GRATING MANUAL OF NAAMM. USE GALVANIZED OR STAINLESS STEEL GRATING SUPPORT ANGLES AND EMBEDMENTS.
 2. PROVIDE REMOVABLE GRATING WITH (4) HOLD DOWN CLIPS WITH SELF-TAPPING SCREWS APPROXIMATELY 4" FROM THE CORNERS OF EACH PIECE.
 3. CLEAR SPAN IS PLAN DIMENSION, FACE TO FACE OF OPENING.
 4. GRATING SCHEDULE AND DETAILS ARE DESIGNED FOR PEDESTRIAN LOAD ONLY (100 PSF MAXIMUM). NO VEHICLE LOADS ARE ALLOWED.

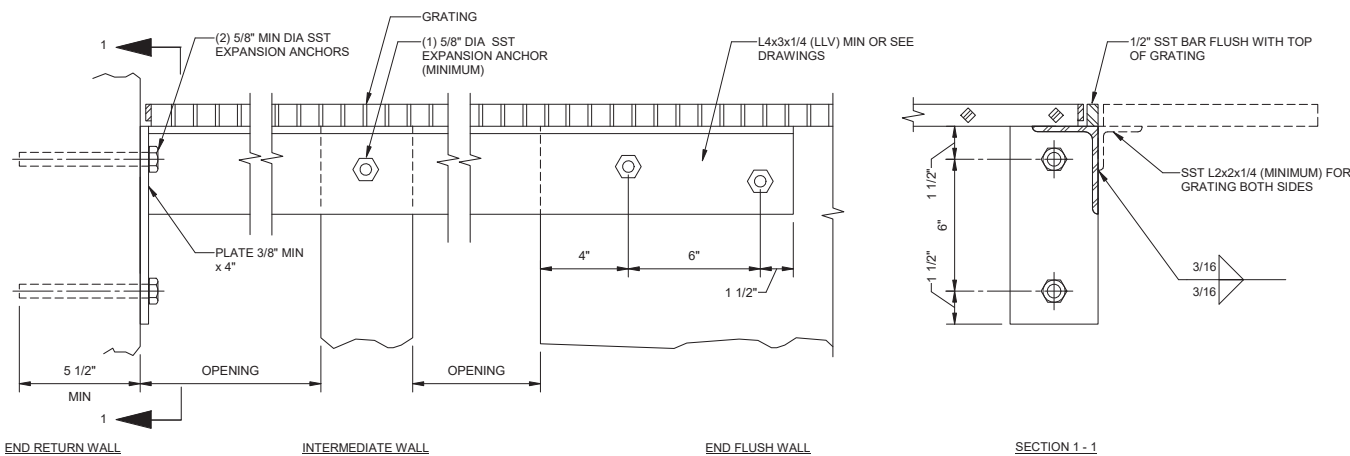
S5002 ALUMINUM GRATING SCHEDULE AND NOTES
NO SCALE
DPS2020



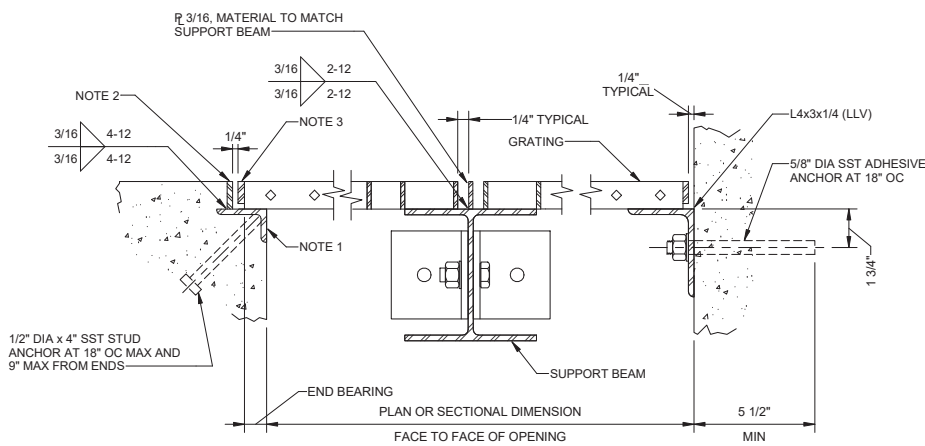
S5003 GRATING CLIPS
NO SCALE
DPS2020



S5004 EMBEDDED GRATING SUPPORT AT CONCRETE (ISOMETRIC)
NO SCALE
DPS2020

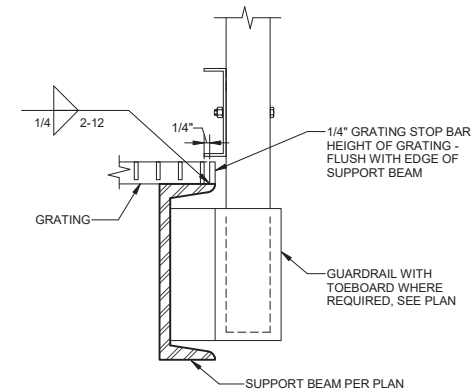


S5005 GRATING SUPPORT AT OPENINGS
NO SCALE
DPS2020



- NOTES:
1. L3x2x1/4 (LLH) MITER AND WELD CORNERS.
 2. CONTINUOUS SST FLAT BAR, 1/4" x DEPTH OF GRATING. WELD CORNERS.
 3. END EDGE BAND, 1/4" LESS THAN DEPTH OF GRATING, TYPICAL AT BEARING SEATS.

S5006 GRATING SUPPORT AT CONCRETE
NO SCALE
DPS2020



- NOTES:
1. GRATING STOP SHALL BE INSTALLED ON ALL GRATING PLATFORMS AND LANDINGS AND SHALL BE CONTINUOUS ON ALL SIDES OF PLATFORMS NOT OTHERWISE COVERED BY A REBATE, SEAT, OR OTHER SIMILAR DETAIL. GRATING STOPS SHALL BE DISCONTINUOUS AT STAIRS BUT SHALL SERVE TO HOLD LANDING PANEL AT STAIRWAYS IN PLACE.
 2. GRATING STOP MATERIAL SHALL MATCH THE SUPPORT BEAM.

S5007 GRATING SUPPORT AT STEEL
NO SCALE
DPS2020



NO.	DATE	BY	DESCRIPTION	APPROVED

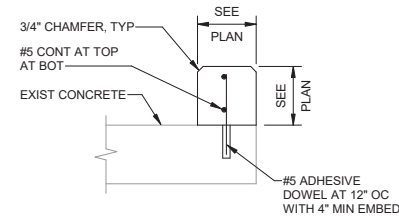


REVIEWED BY:	DATE:	20	REFERENCE:
REVIEWED BY:	DATE:	20	DATE:
REVIEWED BY:	DATE:	20	COMPUTER FILE NAME:
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO.:	SP2602
OMVED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE:	20XX

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

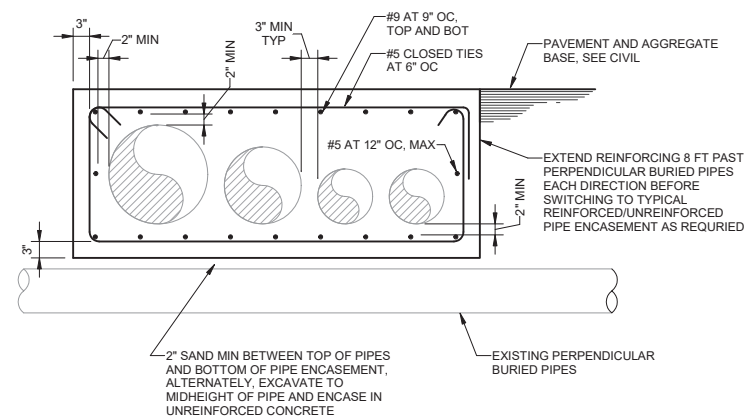
DETAILS - 5

DESIGNED BY:	EJF
DRAWN BY:	REK
CHECKED BY:	AZ
CONSULTANT JOB SHEET NO.	154390
DRAWING NO.	7078
S-01-5005	
SHT	78 of 303 SH15

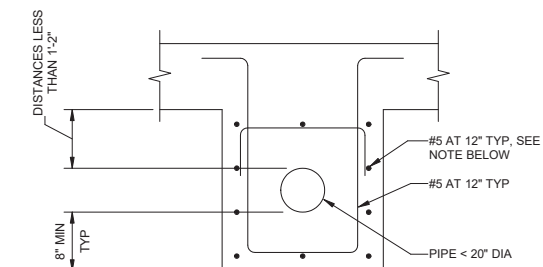
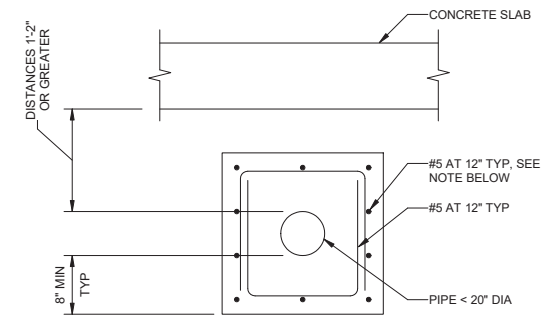


NOTE:
 PROVIDE 1/2" PREFORMED JOINT FILLER WHERE
 ADJACENT TO NEW AND EXISTING STRUCTURES.

S6001 CURB
DPS2020 NO SCALE



S6002 GROUPED PIPE ENCASEMENT
DPS2020 NO SCALE



NOTE:
 WHERE PIPE ENCASEMENT BEGINS OR TERMINATES AT STRUCTURE, EXTEND
 REINFORCING A MINIMUM OF 1'-0" INTO STRUCTURE.

S6003 SMALL DIAMETER PIPE ENCASEMENT
DPS2020 NO SCALE



NO.	DATE	BY	DESCRIPTION	APPROVED



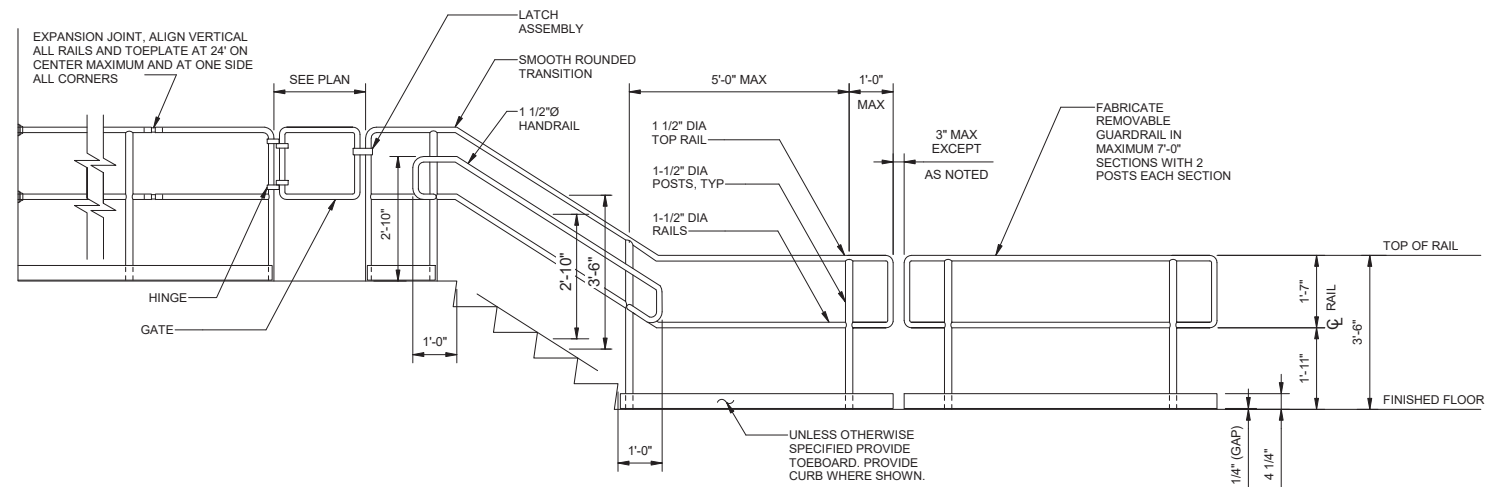
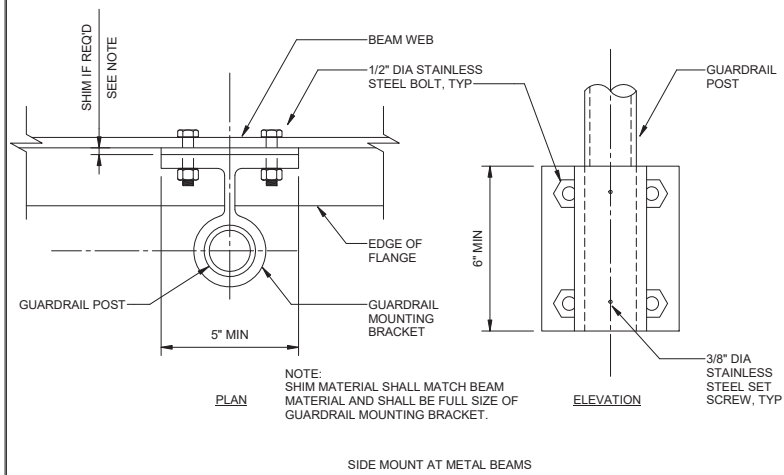
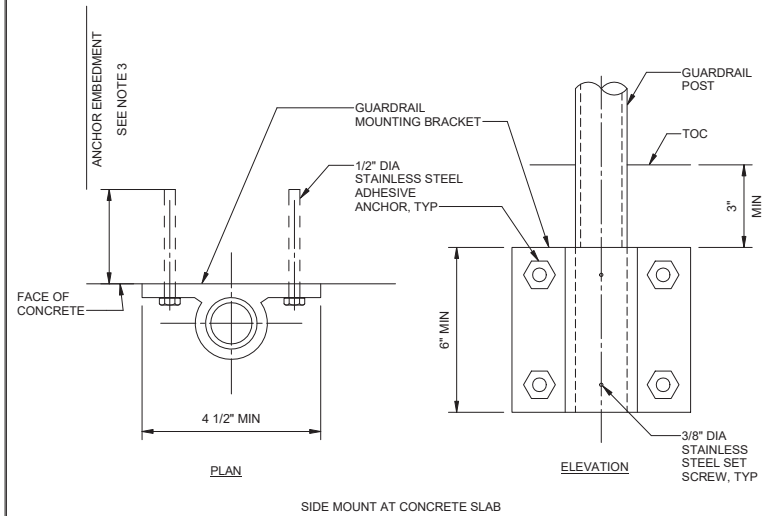
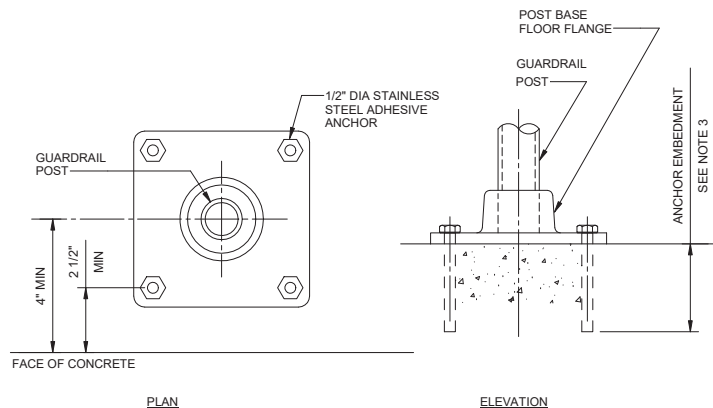
REVIEWED BY: _____ DATE: _____, 20__
 REVIEWED BY: _____ DATE: _____, 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20__
 OMVED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20__ COMPUTER FILE NAME:
 SUBMITTED BY: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20__
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 DETAILS - 6
 PROJECT AND SHEET TITLE



DESIGNED BY: E.J.F.
 DRAWN BY: REK
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
S-01-5006
 SH1 79 OF 303 SH15



- GENERAL NOTES:**
- UNLESS OTHERWISE NOTED, HANDRAIL, GUARDRAIL, AND MOUNTING APPURTENANCES SHALL BE ANODIZED ALUMINUM.
 - ALL FASTENERS SHALL BE STAINLESS STEEL, TYPE 316 FOR HANDRAIL/GUARDRAIL. ALL FASTENERS SHALL BE GALVANIZED AND CONFORM TO ASTM F3125 GRADE A325N (TYPE 1) FOR LADDER.
 - NUMBER OF ANCHORS AND SIZE OF ANCHORS ARE MINIMUM. PROVIDE LARGER ANCHOR SIZE IF NECESSARY TO MEET LOAD REQUIREMENTS. CONTRACTOR'S SUPPLIER AND ENGINEER ARE RESPONSIBLE FOR DESIGNING BASE BRACKET AND STAINLESS STEEL ANCHOR BOLT SIZE AND EMBEDMENT DEPTH INTO CONCRETE TO RESIST LOADS TAKING INTO ACCOUNT ANCHOR EDGE DISTANCES AND CONCRETE STRENGTHS AT THE POINT OF ATTACHMENT.
 - UNLESS SPECIFICALLY INDICATED OTHERWISE, GUARDRAIL MOUNTING MAY BE BY ANY SHOWN METHOD AS APPLICABLE.
 - RAILING POST LOCATION SHALL BE FIELD MEASURED AND RAILING FABRICATED TO FIT.
 - TOP AND MIDDLE RAILS SHALL BE CONTINUOUS EXCEPT AT GUARDRAIL SECTIONS SPECIFICALLY CALLED OUT ON DRAWINGS AS REMOVABLE GUARDRAIL.
 - THE SPACING OF EXPANSION JOINTS IN GUARDRAILS AND TOEBOARDS SHALL NOT EXCEED 24 FEET.
 - ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE, GROUT, OR DISSIMILAR METALS SHALL HAVE CONTACT SURFACE PROTECTED IN ACCORDANCE WITH SPECIFICATIONS.
 - LADDER DETAILS APPLY TO LADDERS 30'-0" OR LESS IN FLOOR TO FLOOR HEIGHT.
 - LADDER MATERIAL FOR BARS, PLATES, AND RUNGS SHALL BE ASTM A36 STEEL AND HOT-DIP GALVANIZED AFTER FABRICATION.
 - LADDERS SHALL BE PAINTED SAFETY YELLOW.

City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED



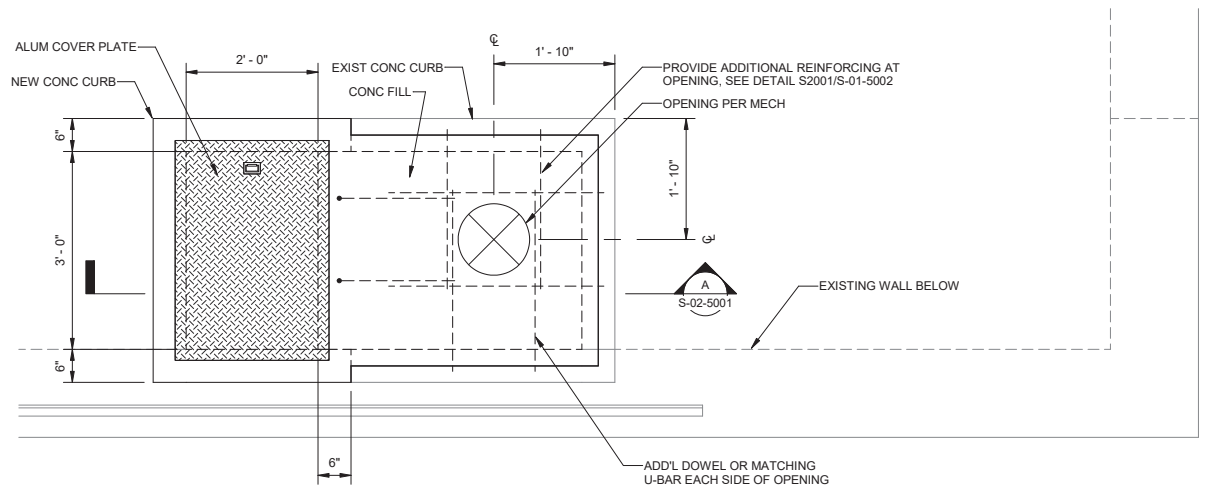
REVIEWED BY: _____ DATE: _____ 20__
 REVIEWED BY: _____ DATE: _____ 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____ 20__
 OMVED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20XX
 SUBMITTED BY: _____
 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

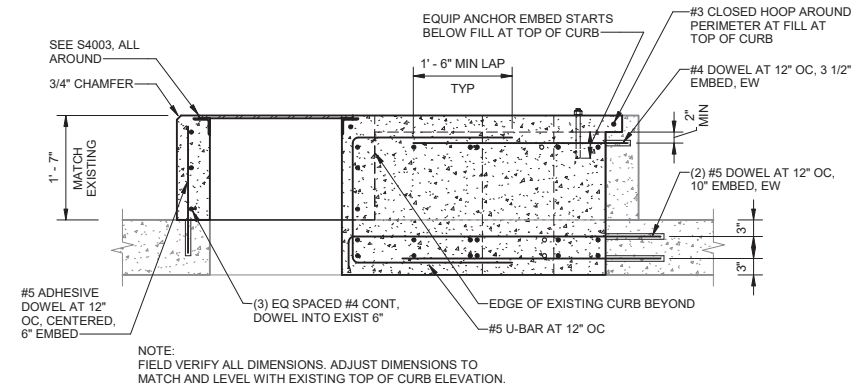
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 DETAILS - 7
 PROJECT AND SHEET TITLE



DESIGNED BY: EJP
 DRAWN BY: REK
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
S-01-5007
 SHEET 80 OF 303 SHEETS



1 ROOF HATCH MODIFICATION
 SCALE: 3/4" = 1'-0"



A SECTION
 S-02-5001 SCALE: 3/4" = 1'-0"



NO.	DATE	BY	DESCRIPTION	APPROVED

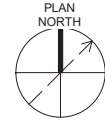
REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

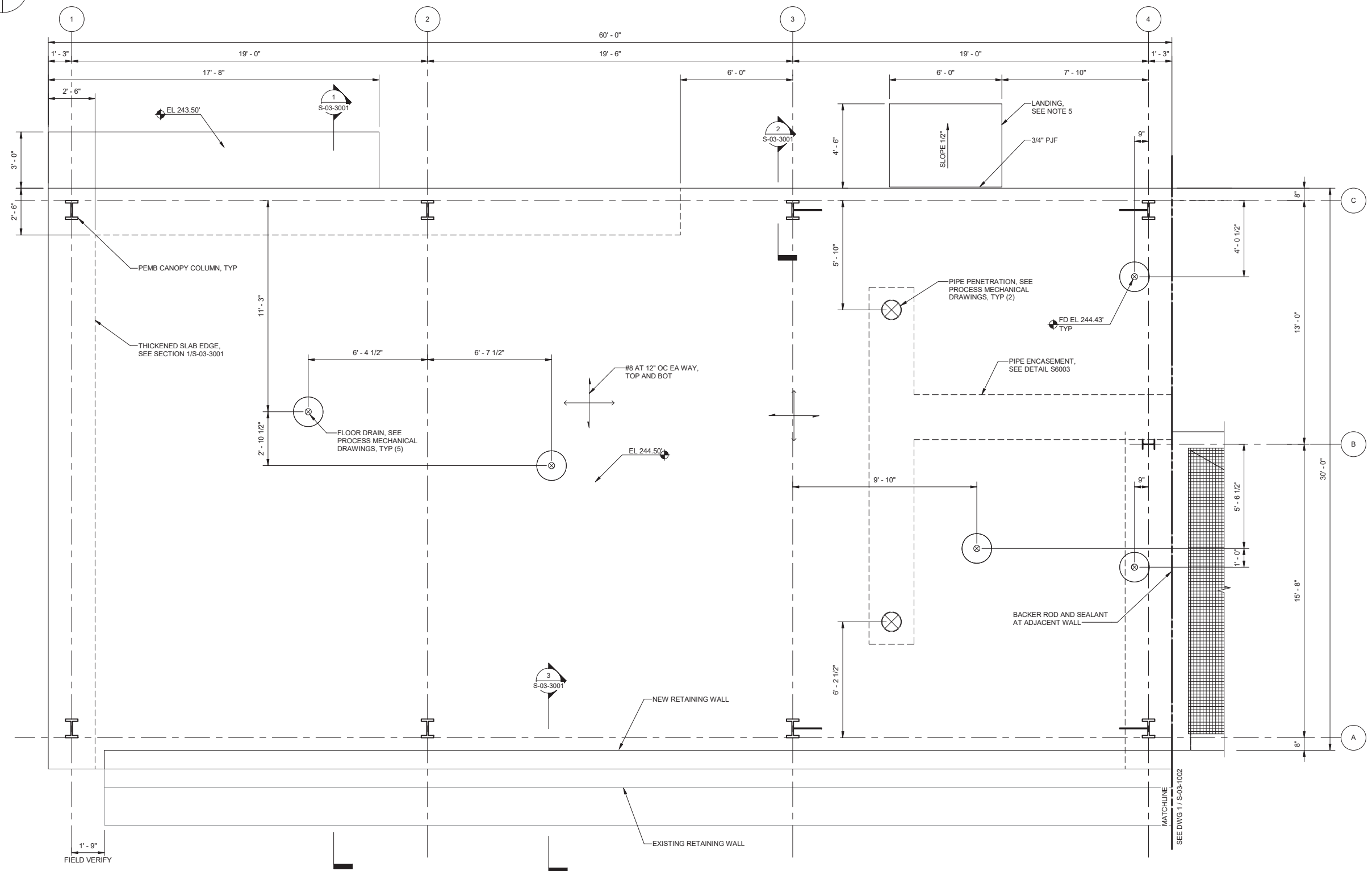
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
PRESSURE FILTERS AND LP RO FEED PUMPS DETAILS

PROJECT AND SHEET TITLE

DESIGNED BY:	EJF
DRAWN BY:	REK
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
S-02-5001	
SHT	81 of 303 SHS



- GENERAL NOTES:**
- REFER TO DRAWINGS S-01-0001 THROUGH S-01-5007 FOR ADDITIONAL NOTES AND DETAILS.
 - SLOPE FLOOR 1/8" PER FOOT MIN TO FLOOR DRAINS AND SUMPS.
 - SEE PROCESS/MECHANICAL FOR TANK AND PUMP SKID EQUIPMENT PADS.
 - FOUNDATION HAS BEEN DESIGNED FOR A RECOMMENDED NET ALLOWABLE STATIC UNIFORM BEARING PRESSURE OF 500 PSF AND SHORT TERM NON-UNIFORM BEARING PRESSURE OF 2,200 PSF.
 - 8" CONCRETE LANDING AT ENTRY. TOP OF CONCRETE 1/4" BELOW DOOR THRESHOLD, AND SLOPES AWAY FROM BUILDING. REINFORCE WITH #4 AT 12" OC, CENTERED.
 - PEMB CANOPY IS A DEFERRED SUBMITTAL. SEE S-01-0002.



1 FOUNDATION PLAN
 SCALE: 3/8" = 1'-0"



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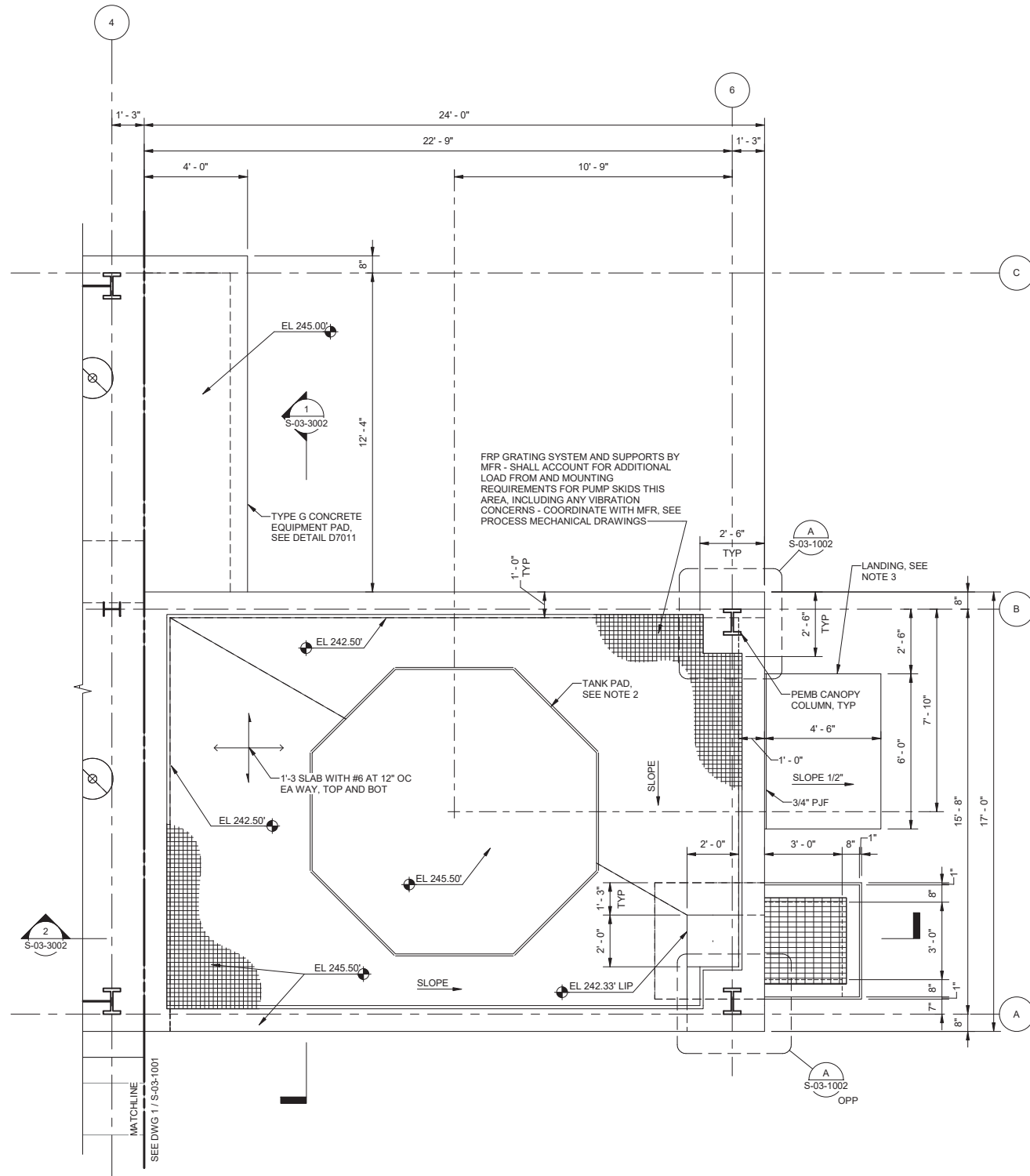
NO.	DATE	BY	DESCRIPTION	APPROVED

REVIEWED BY: _____	DATE: _____, 20__	REFERENCE:
REVIEWED BY: _____	DATE: _____, 20__	DATE: _____, 20__
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME: _____
REVIEWED BY: _____	DATE: _____, 20__	SP-FILE NO.: SP2602
OMNEED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: _____, 20__

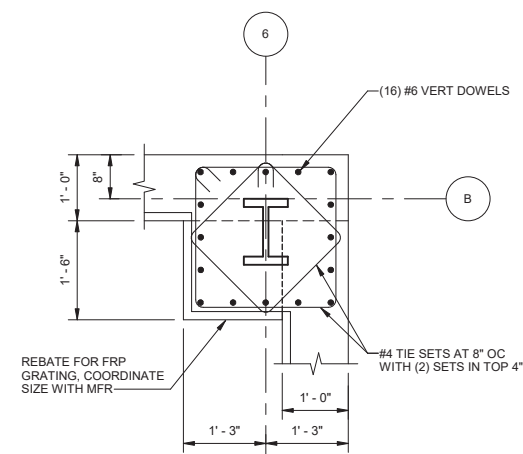
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
UV/AOP FOUNDATION PLAN - 1

PROJECT AND SHEET TITLE

DESIGNED BY: EJP
DRAWN BY: REK
CHECKED BY: AZ
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
S-03-1001
SHT 82 OF 303 SH15



1 FOUNDATION PLAN
SCALE: 3/8" = 1'-0"



A PEMB PEDESTAL REINFORCING
SCALE: 3/4" = 1'-0"

- GENERAL NOTES:**
1. PEMB PEDESTAL FOUNDATION SIZE AND REINFORCING SHOWN TO BE VERIFIED WITH SUBMITTED AND APPROVED COLUMN REACTION AND ANCHOR REQUIREMENTS. REINFORCING SUBMITTAL SHALL NOT BE APPROVED PRIOR TO THIS VERIFICATION.
 2. COORDINATE WITH PROCESS MECHANICAL DRAWINGS FOR TANK PAD DIMENSIONS. FINAL DIMENSIONS SHALL BE VERIFIED WITH SUBMITTED AND APPROVED TANK ANCHOR REQUIREMENTS. REINFORCING SUBMITTAL SHALL NOT BE APPROVED PRIOR TO THIS VERIFICATION.
 3. 8" CONCRETE LANDING AT ENTRY, TOP OF CONCRETE 1/4" BELOW DOOR THRESHOLD, AND SLOPES AWAY FROM BUILDING. REINFORCE WITH #4 AT 12" OC, CENTERED.
 4. FOUNDATION HAS BEEN DESIGNED FOR A RECOMMENDED NET ALLOWABLE STATIC UNIFORM BEARING PRESSURE OF 500 PSF AND SHORT TERM NON-UNIFORM BEARING PRESSURE OF 2,200 PSF.
 5. PEMB CANOPY IS A DEFERRED SUBMITTAL, SEE S-01-0002.

City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED



REVIEWED BY: _____ DATE: _____, 20__
 REVIEWED BY: _____ DATE: _____, 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20__
 OMEED POUR, P.E. - PROJECT MANAGER

REFERENCE: _____ DATE: _____, 20__
 SUBMITTED BY: _____
 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 APPROVED BY: _____ DATE: _____, 20__
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
UV/AOP FOUNDATION PLAN - 2

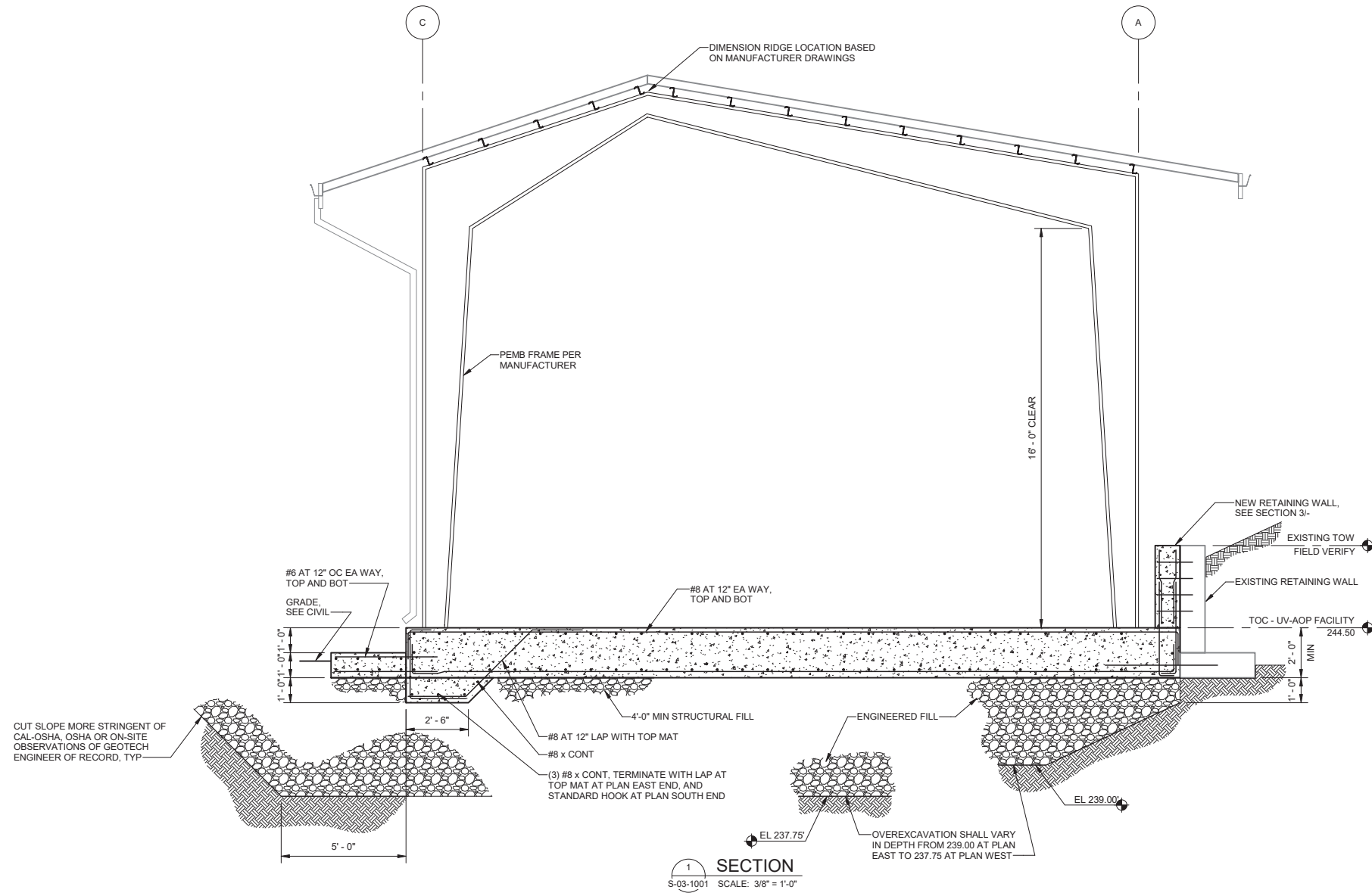
PROJECT AND SHEET TITLE



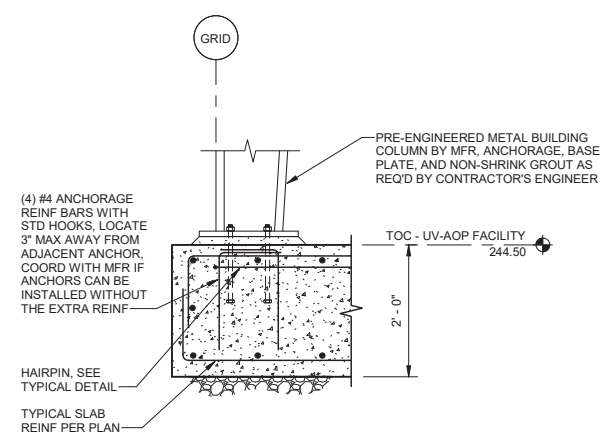
DESIGNED BY: EJP
 DRAWN BY: REK
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
S-03-1002
 SHEET 83 OF 303 SHEETS

GENERAL NOTES:

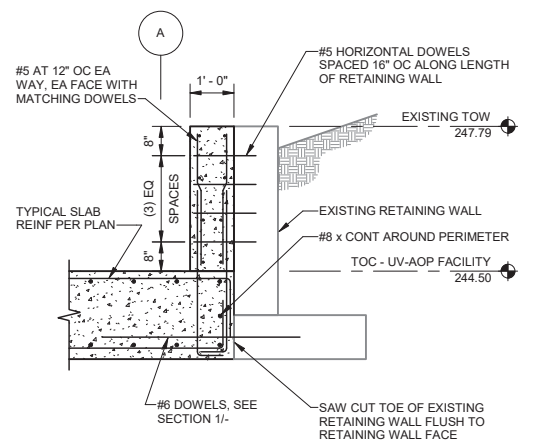
1. PEMB PEDESTAL FOUNDATION SIZE AND REINFORCING SHOWN TO BE VERIFIED WITH SUBMITTED AND APPROVED COLUMN REACTION AND ANCHOR REQUIREMENTS. REINFORCING SUBMITTAL SHALL NOT BE APPROVED PRIOR TO THIS VERIFICATION.
2. FOR OVER-EXCAVATION, ENGINEERED FILL AND BACKFILL INFORMATION NOT INCLUDED HEREIN, SEE ADDITIONAL FOUNDATION REQUIREMENT NOTES ON S-01-1001.



SECTION 1
 S-03-1001 SCALE: 3/8" = 1'-0"



SECTION 2
 S-03-1001 SCALE: 3/4" = 1'-0"



SECTION 3
 S-03-1001 SCALE: 1/2" = 1'-0"

City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
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NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH

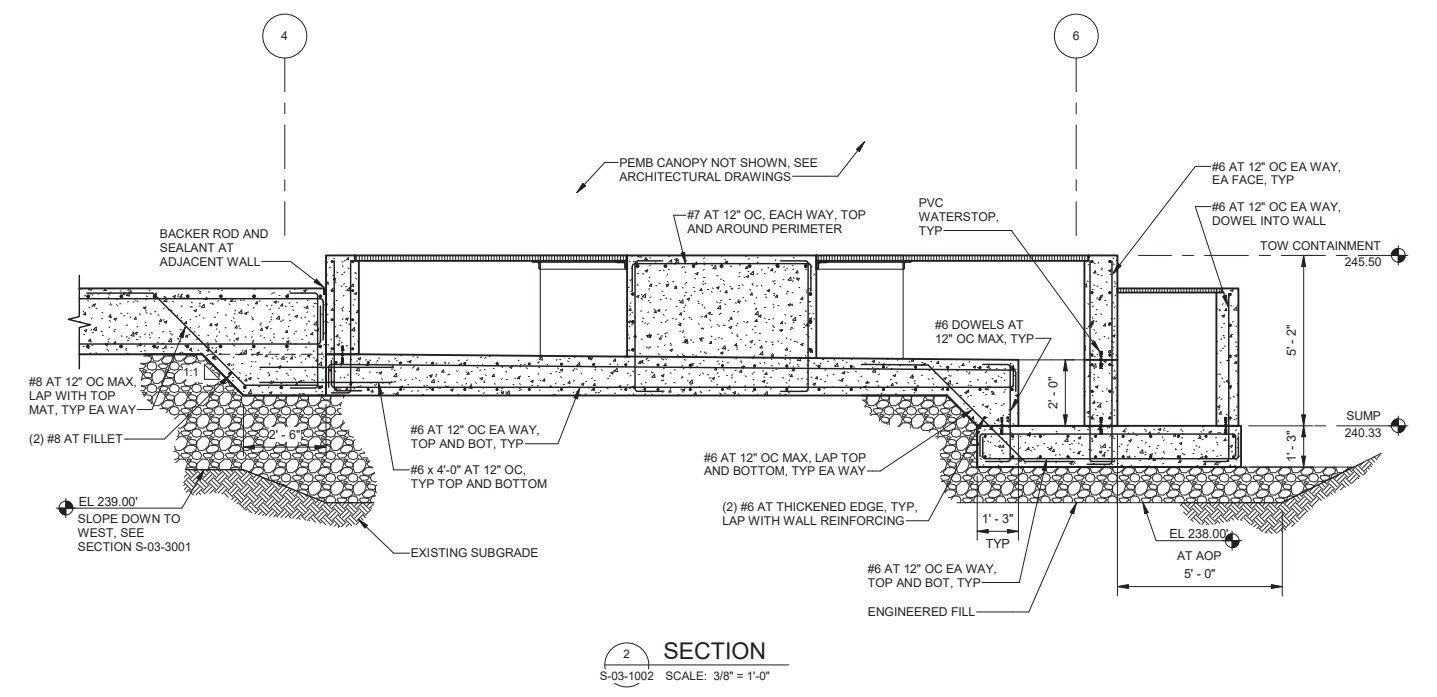
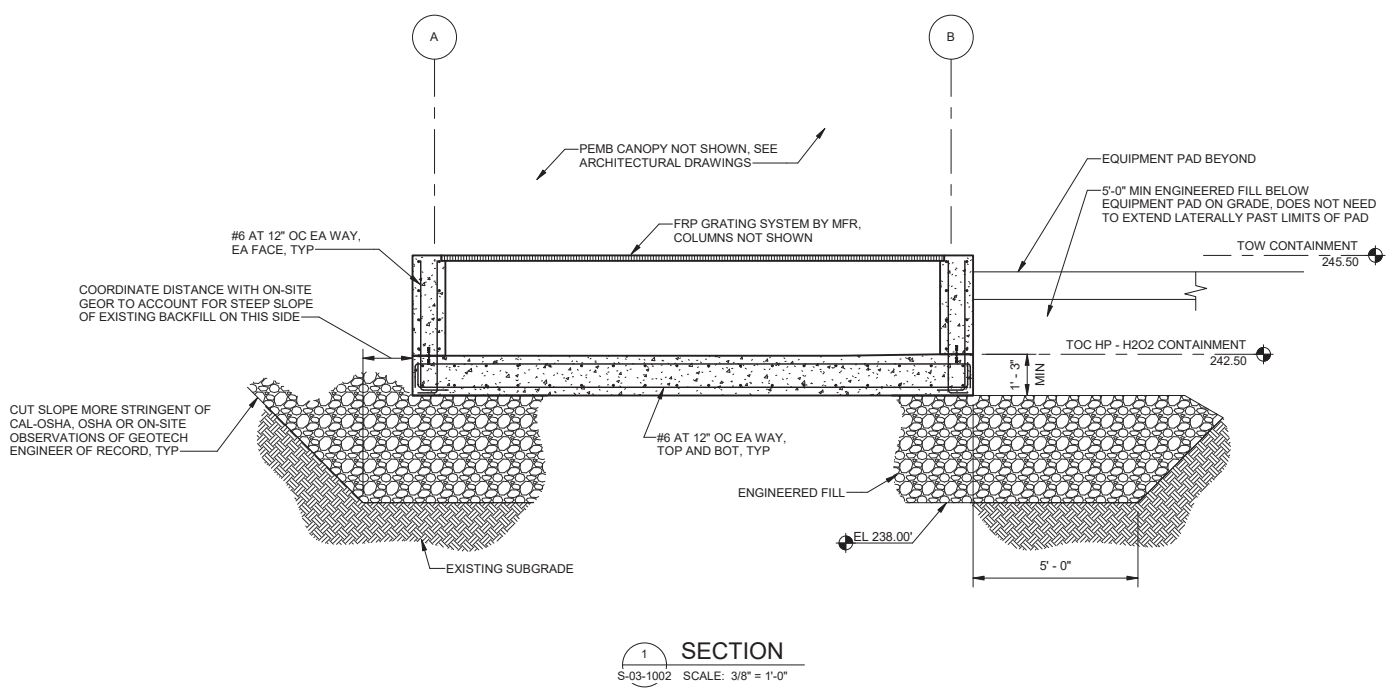
REVIEWED BY: _____ DATE: _____, 20__ REVIEWED BY: _____ DATE: _____, 20__ SUNNY WANG, P.E. - WATER RESOURCES MANAGER REVIEWED BY: _____ DATE: _____, 20__ OMIED POUR, P.E. - PROJECT MANAGER	REFERENCE: DATE: _____, 20__ SUBMITTED BY: _____ CURTIS CASTLE, P.E. - PRINCIPAL C.E. APPROVED BY: _____ DATE: _____, 20__ ALEX NAZARCHUK, P.E. - CITY ENGINEER	COMPUTER FILE NAME: _____ SP-FILE NO.: SP2602
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OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 UV/AOP SECTIONS - 1



DESIGNED BY: EJP
DRAWN BY: REK
CHECKED BY: AZ
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
S-03-3001
SHT 84 of 303 SHS

GENERAL NOTES:
 1. FOR OVER-EXCAVATION, ENGINEERED FILL AND BACKFILL INFORMATION NOT INCLUDED HEREIN, SEE ADDITIONAL FOUNDATION REQUIREMENT NOTES ON S-01-1001.



City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED

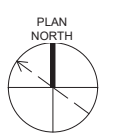
Brown and Caldwell
WALSH

REVIEWED BY: _____	DATE: _____, 20XX	REFERENCE:
REVIEWED BY: _____	DATE: _____, 20XX	DATE: _____, 20XX
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME: _____
REVIEWED BY: _____	DATE: _____, 20XX	SP-FILE NO.: SP2602
OMNEED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: _____, 20XX

DESIGNED BY: EJP
 DRAWN BY: REK
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
S-03-3002
 SH1 85 of 303 SH15

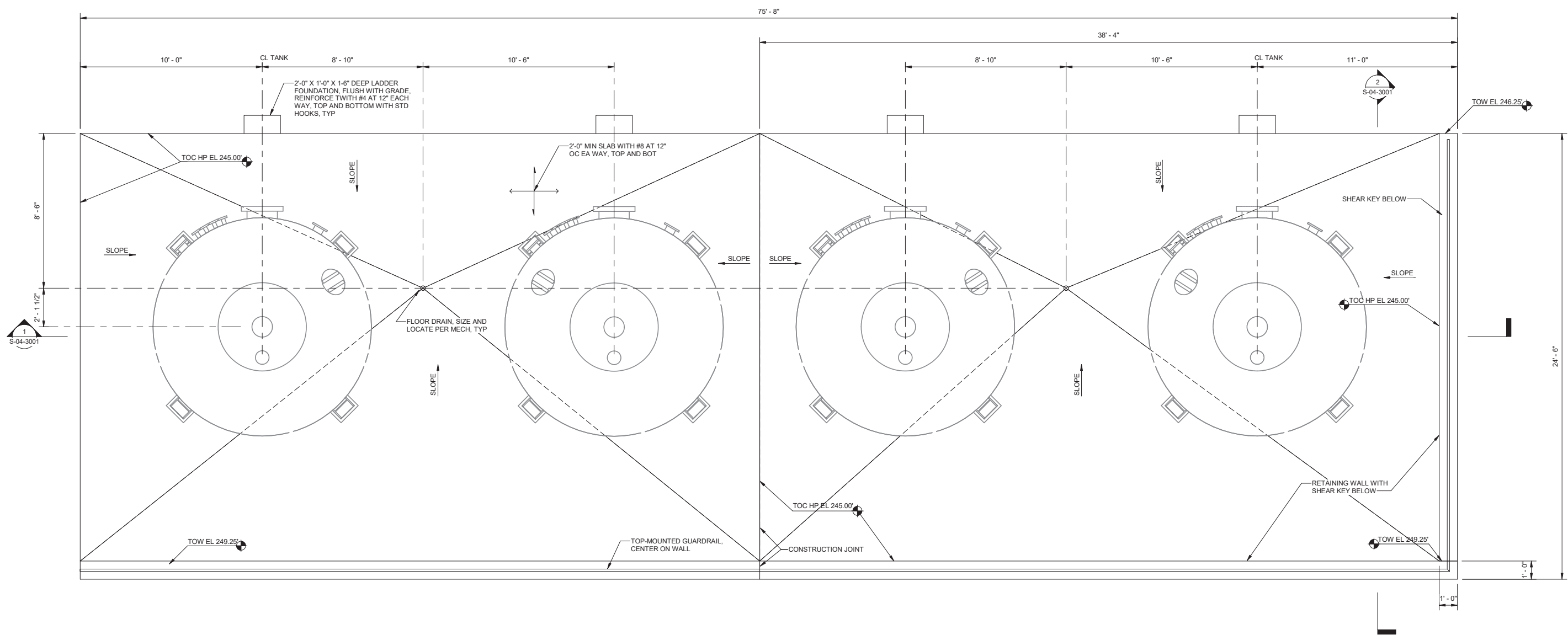


12/20/2021 2:58:07 PM
 S-04-1001
 86 of 303
 BIM 360://154390 - Arcadia Water Treatment Plant Expansion/154390-S-04V19.rvt
 TITLE OF PROJECT: OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION



GENERAL NOTES:

- COORDINATE WITH PROCESS MECHANICAL DRAWINGS FOR TANK AND PLATFORM INFORMATION. SUBMIT TANK ANCHOR CALCULATIONS FOR REVIEW.
- FOUNDATION HAS BEEN DESIGNED FOR A RECOMMENDED NET ALLOWABLE STATIC UNIFORM BEARING PRESSURE OF 900 PSF AND SHORT TERM NON-UNIFORM BEARING PRESSURE OF 2,300 PSF.



1 PLAN
SCALE: 3/8" = 1'-0"



City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED

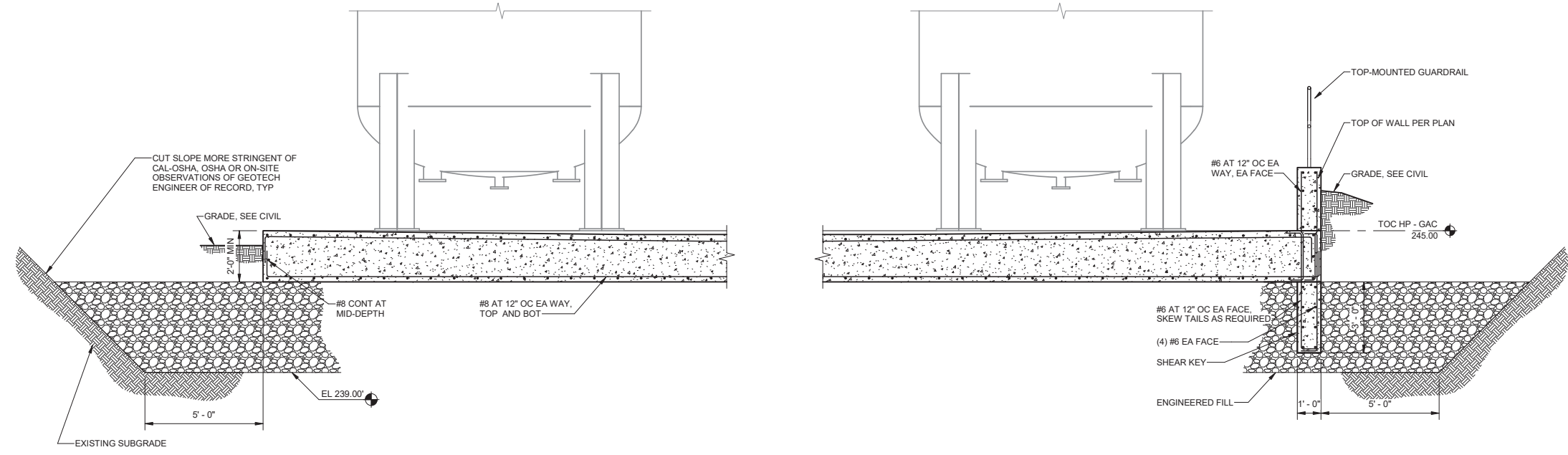
Brown and Caldwell
WALSH

REVIEWED BY: _____	DATE: _____, 20__	REFERENCE: _____	DATE: _____, 20__	COMPUTER FILE NAME: _____
REVIEWED BY: _____	DATE: _____, 20__	SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO.: SP2602
REVIEWED BY: _____	DATE: _____, 20__	OMNEED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: _____, 20__

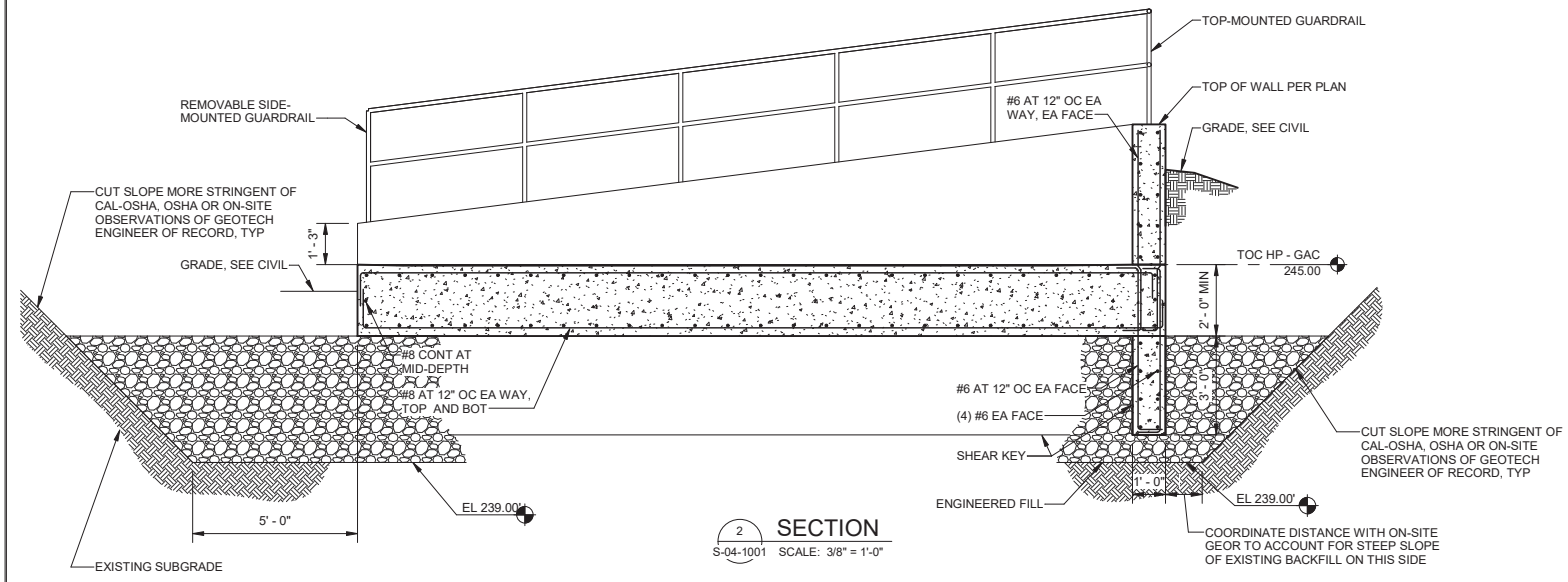
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
GAC FOUNDATION PLAN
 PROJECT AND SHEET TITLE

DESIGNED BY: EJP
DRAWN BY: REK
CHECKED BY: AZ
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
S-04-1001
SHT 86 of 303 SH15

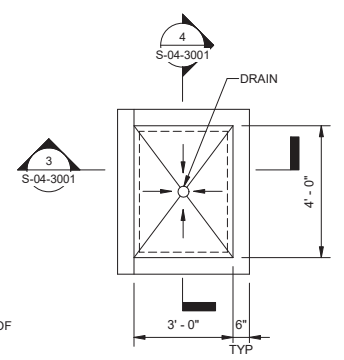
GENERAL NOTES:
 1. FOR OVER-EXCAVATION, ENGINEERED FILL AND BACKFILL INFORMATION NOT INCLUDED HEREIN, SEE ADDITIONAL FOUNDATION REQUIREMENT NOTES ON S-01-1001.



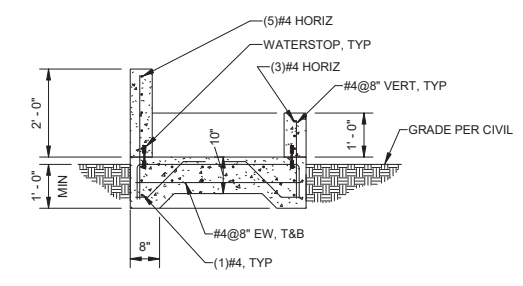
SECTION 1
 S-04-1001 SCALE: 3/8" = 1'-0"



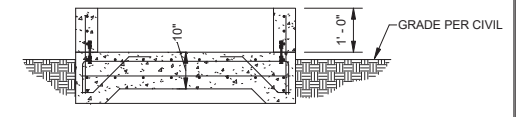
SECTION 2
 S-04-1001 SCALE: 3/8" = 1'-0"



DETAIL A
 C-01-1002 SCALE: 3/8" = 1'-0"



SECTION 3
 S-04-3001 SCALE: 1/2" = 1'-0"



SECTION 4
 S-04-3001 SCALE: 1/2" = 1'-0"



City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED

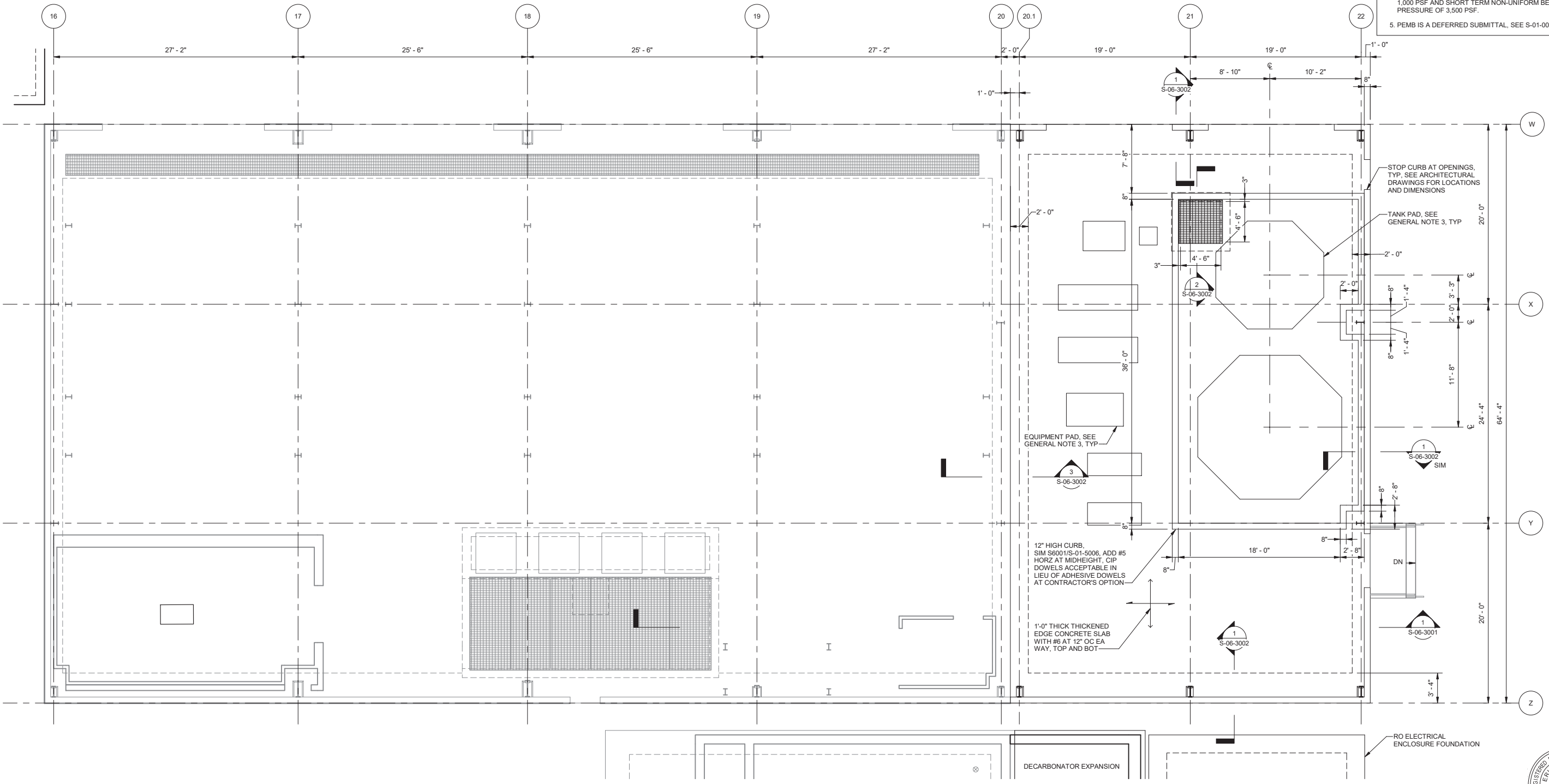
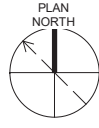
CONSULTANT

REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMVED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
GAC SECTIONS
 PROJECT AND SHEET TITLE

DESIGNED BY:	EJF
DRAWN BY:	REK
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
S-04-3001	
SHT	87 of 303 SH15



- GENERAL NOTES:**
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION. DIMENSIONS SHALL BE ADJUSTED AS REQUIRED TO ACCOMMODATE EQUIPMENT PURCHASED AND EXISTING CONDITIONS AT THE SITE.
 2. PEMB PEDESTAL FOUNDATION AND ANCHORAGE REINFORCING TO BE VERIFIED WITH SUBMITTED AND APPROVED COLUMN REACTION AND ANCHOR REQUIREMENTS. REINFORCING SUBMITTAL SHALL NOT BE APPROVED PRIOR TO THIS VERIFICATION.
 3. COORDINATE TANK AND EQUIPMENT PAD ELEVATIONS, SIZES, AND LOCATIONS WITH APPROVED TANK AND EQUIPMENT ANCHORAGE SUBMITTALS.
 4. FOUNDATION HAS BEEN DESIGNED FOR A RECOMMENDED NET ALLOWABLE STATIC UNIFORM BEARING PRESSURE OF 1,000 PSF AND SHORT TERM NON-UNIFORM BEARING PRESSURE OF 3,500 PSF.
 5. PEMB IS A DEFERRED SUBMITTAL, SEE S-01-0002.

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



City of Santa Monica
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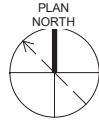
NO.	DATE	BY	DESCRIPTION	APPROVED

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REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMVED POUR, P.E. - PROJECT MANAGER		

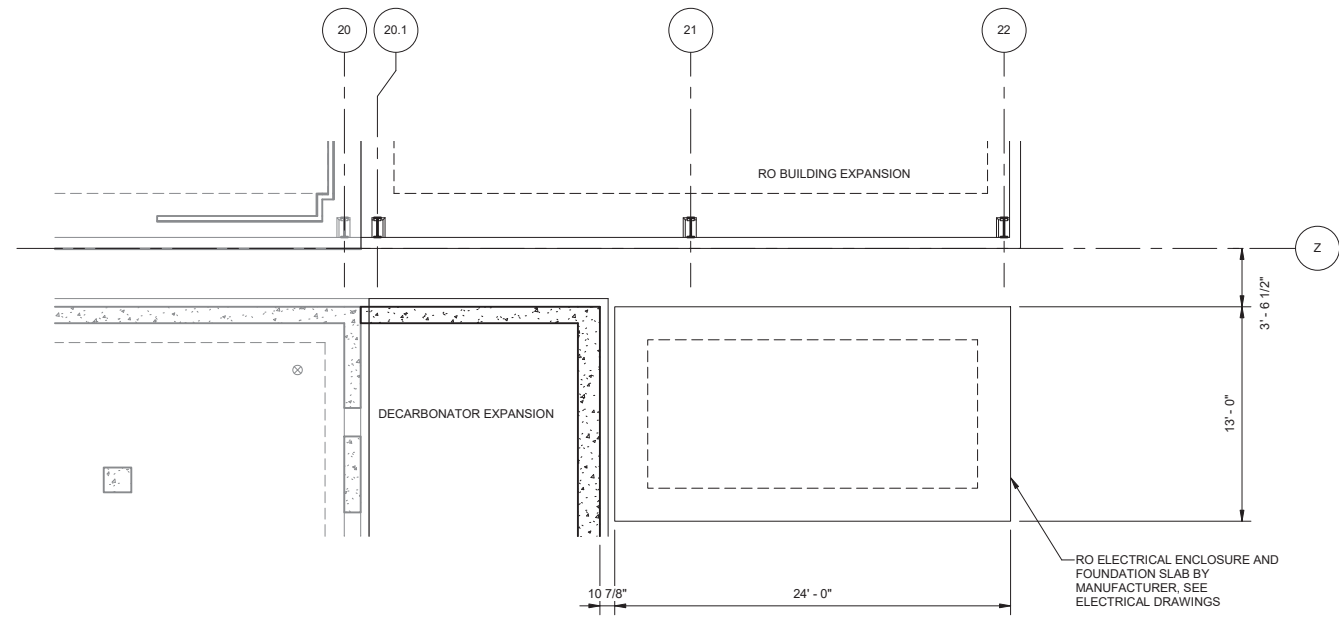
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SUBMITTED BY:			SP-FILE NO.:
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			SP2602
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
RO BUILDING FOUNDATION PLAN
 PROJECT AND SHEET TITLE

DESIGNED BY:	EJF
DRAWN BY:	REK
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
S-06-1001	
SHT	88 of 303 SHTS



GENERAL NOTES:
 1. FOUNDATION DESIGN IS THE RESPONSIBILITY OF THE ELECTRICAL ENCLOSURE STRUCTURE MANUFACTURER'S STRUCTURAL ENGINEER OF RECORD.



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



City of Santa Monica
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 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED

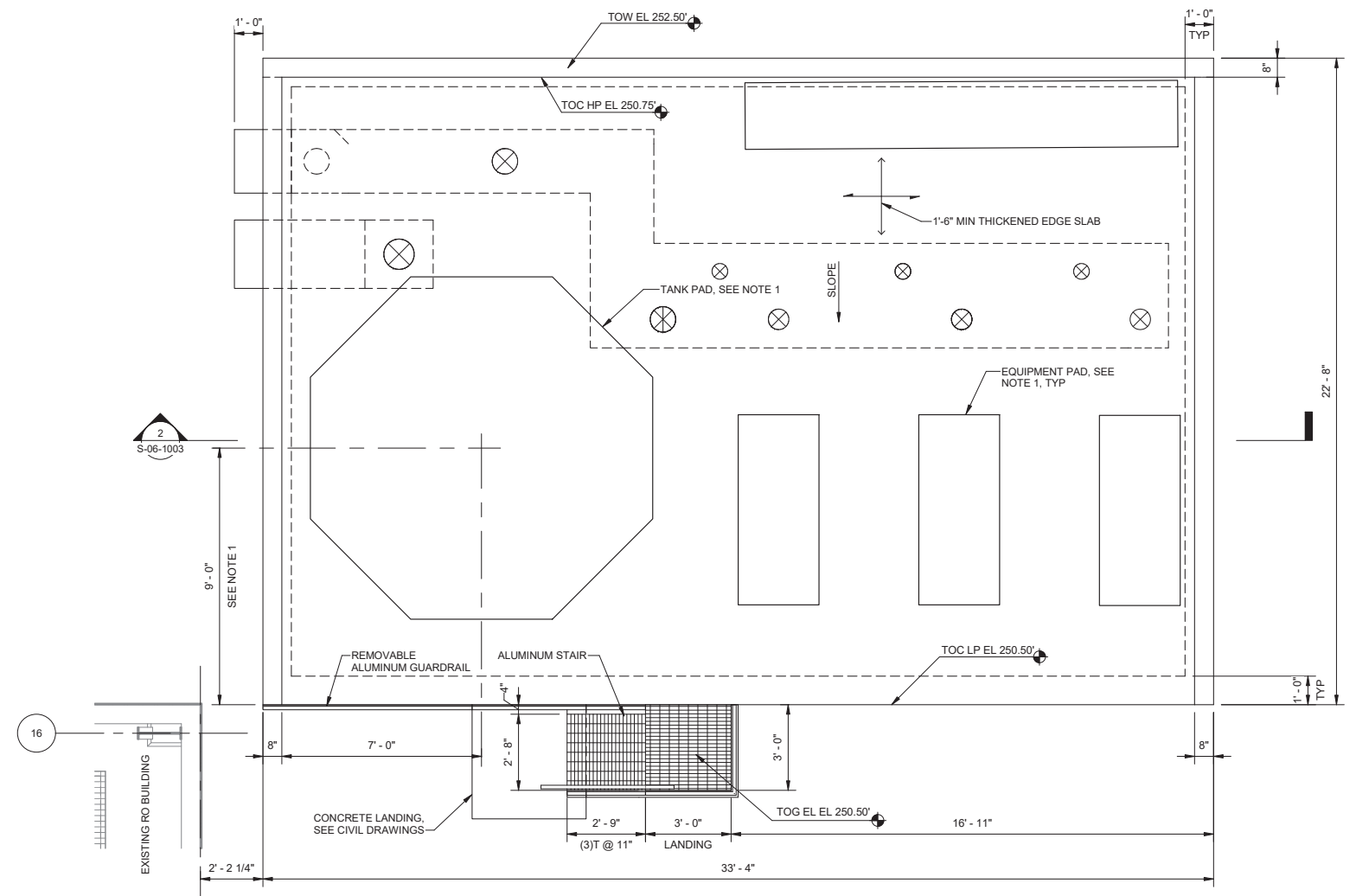
Brown and Caldwell
WALSH

REVIEWED BY: _____ DATE: _____, 20__
 REVIEWED BY: _____ DATE: _____, 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20__
 OMIED POUR, P.E. - PROJECT MANAGER

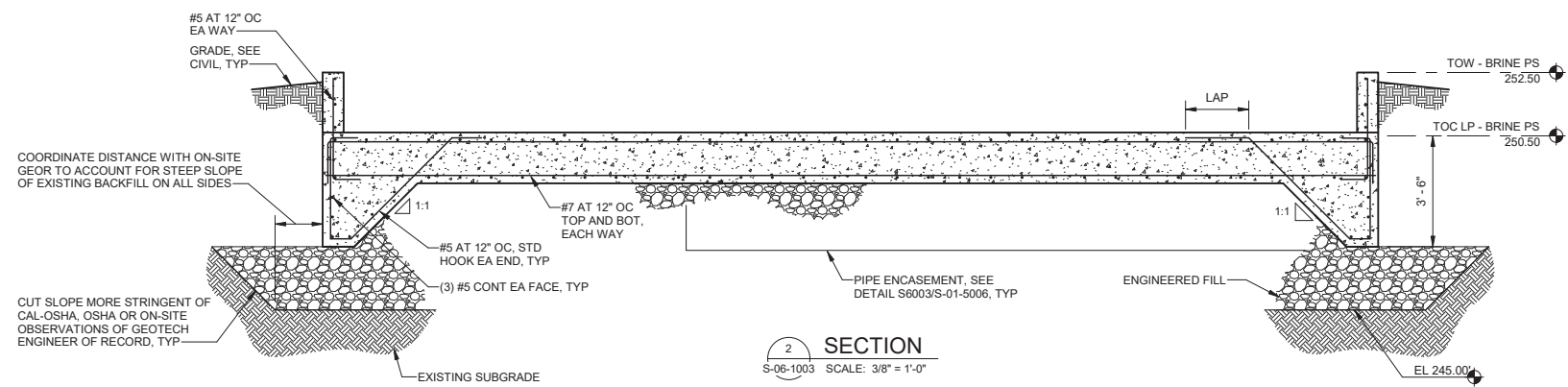
REFERENCE:
 DATE: _____, 20__
 SUBMITTED BY: _____
 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 APPROVED BY: _____ DATE: _____, 20__
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 RO BUILDING ELECTRICAL ROOM SLAB PLAN

DESIGNED BY: EJP
 DRAWN BY: REK
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
S-06-1002
 SHEET 89 OF 303 SH15



1 PLAN
SCALE: 3/8" = 1'-0"



2 SECTION
S-06-1003 SCALE: 3/8" = 1'-0"

- GENERAL NOTES:**
- COORDINATE LOCATION, SIZE AND ELEVATION OF EQUIPMENT PADS WITH APPROVED MECHANICAL AND ELECTRICAL EQUIPMENT ANCHORAGE SUBMITTALS, INCLUDING SOUND ENCLOSURES AT PUMPS.
 - COORDINATE PIPE PENETRATIONS WITH PROCESS MECHANICAL DRAWINGS.
 - FOUNDATION HAS BEEN DESIGNED FOR A RECOMMENDED NET ALLOWABLE STATIC UNIFORM BEARING PRESSURE OF 1,000 PSF AND SHORT TERM NON-UNIFORM BEARING PRESSURE OF 2,000 PSF.
 - FOR OVER-EXCAVATION, ENGINEERED FILL AND BACKFILL INFORMATION NOT INCLUDED HEREIN, SEE ADDITIONAL FOUNDATION REQUIREMENT NOTES ON S-01-1001.

City of Santa Monica
PUBLIC WORKS DEPARTMENT
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 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED



REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMVED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
BRINE TANK PAD PLAN AND SECTION

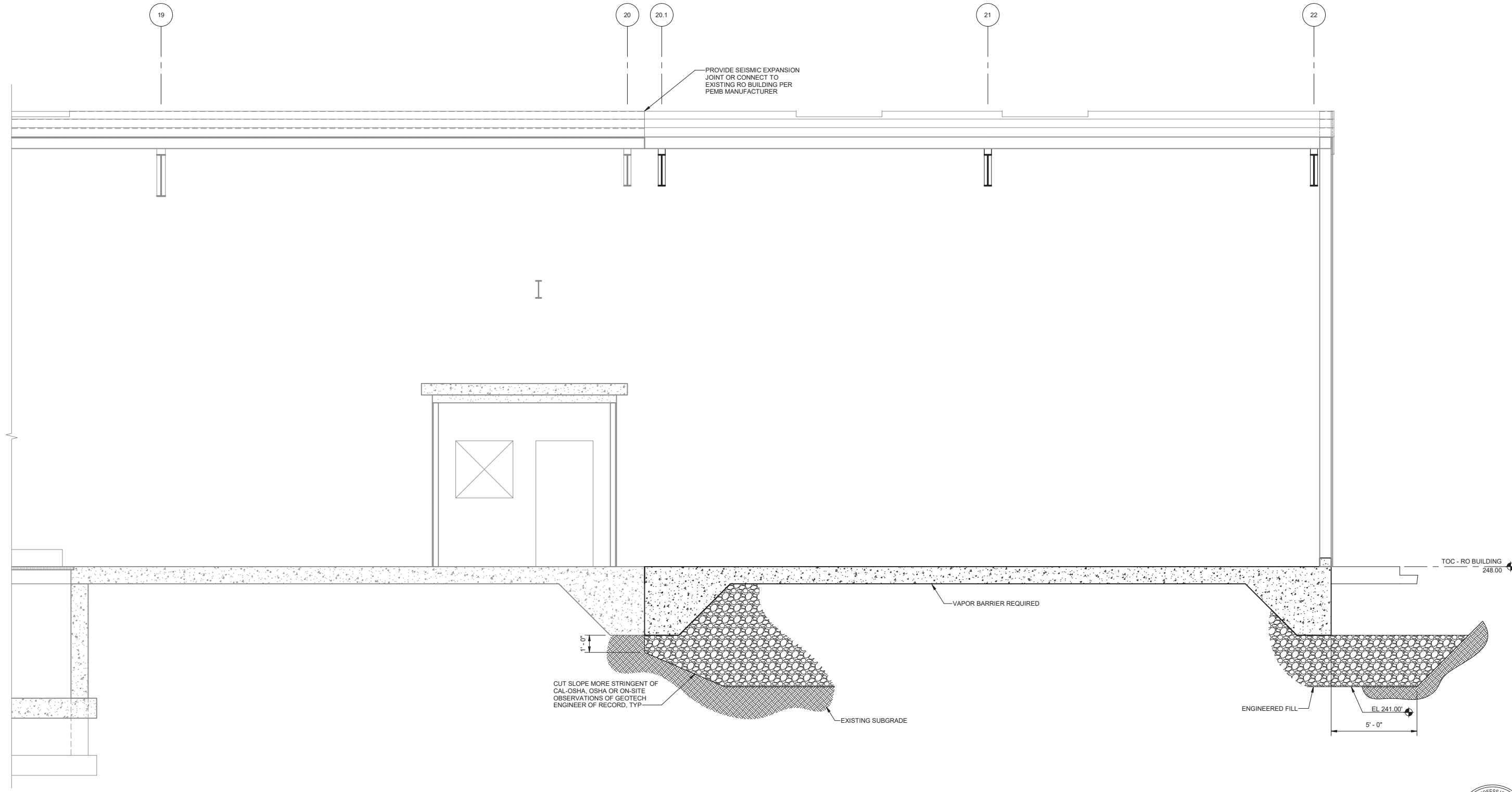


DESIGNED BY:	EJF
DRAWN BY:	REK
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
S-06-1003	
SHT	90 OF 303 SH15

12/20/2021 2:59:38 PM
 BIM 360://154390 - Arcadia Water Treatment Plant Expansion/154390-S-06V19.rvt
 TITLE OF PROJECT: OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

S-06-3001
 SHEET 91 of 303

GENERAL NOTES:
 1. FOR OVER-EXCAVATION, ENGINEERED FILL AND BACKFILL INFORMATION NOT INCLUDED HEREIN, SEE ADDITIONAL FOUNDATION REQUIREMENT NOTES ON S-01-1001.



SECTION
 S-06-1001 SCALE: 3/8" = 1'-0"



City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED



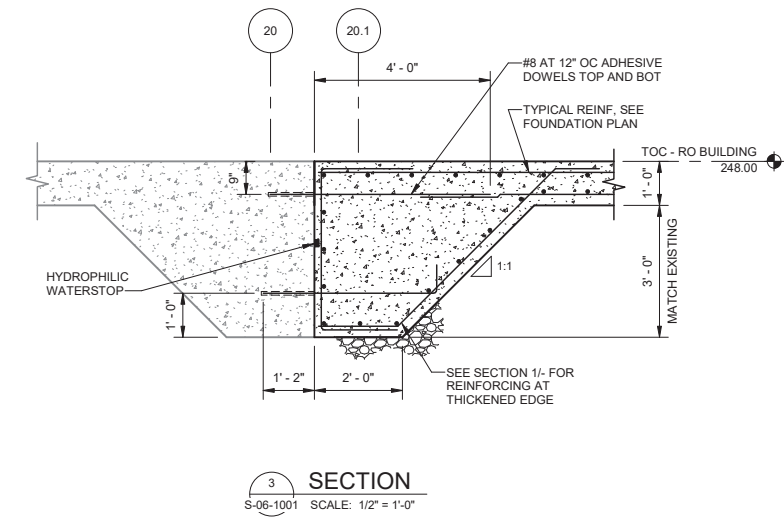
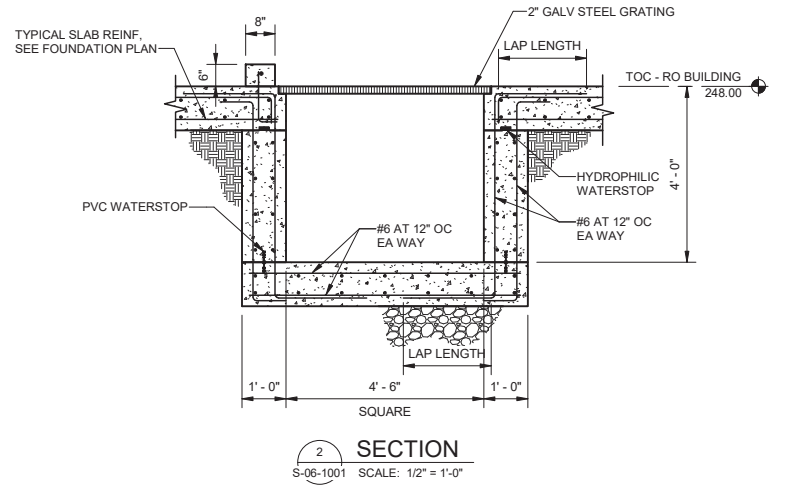
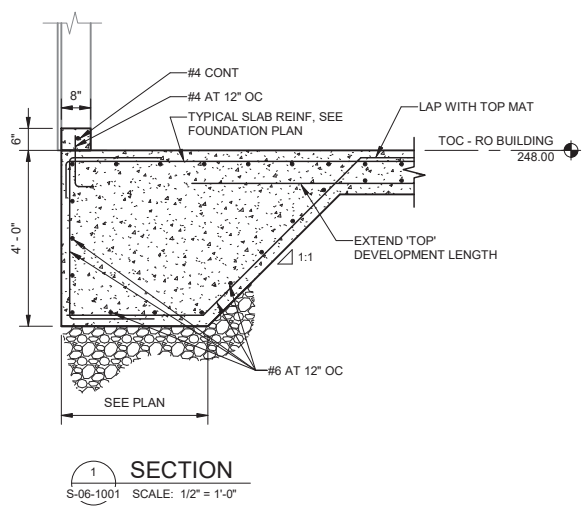
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 REVIEWED BY: _____ DATE: _____, 20XX
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20XX
 OMIED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20XX
 SUBMITTED BY: _____
 COMPUTER FILE NAME: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

**OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION**
RO BUILDING SECTIONS

DESIGNED BY: EJP
 DRAWN BY: REK
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
S-06-3001
 SHEET 91 OF 303 SHEETS

PROJECT AND SHEET TITLE



City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH

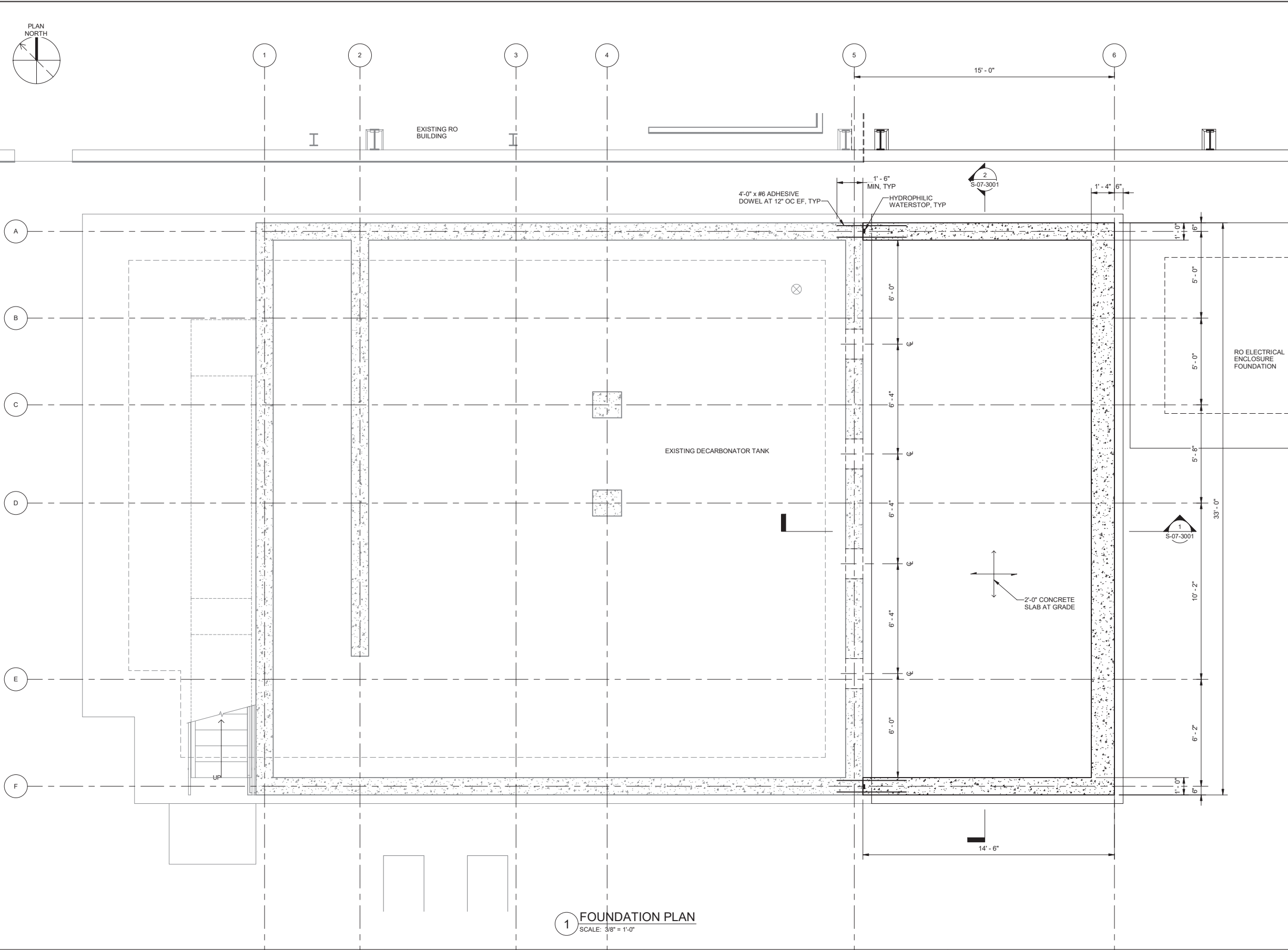
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REVIEWED BY : _____	DATE : _____ 20__	SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO. : SP2602
REVIEWED BY : _____	DATE : _____ 20__	OMVED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE : _____, 20XX

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 RO BUILDING SECTIONS
 PROJECT AND SHEET TITLE



DESIGNED BY : EJP
DRAWN BY : REK
CHECKED BY : AZ
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
S-06-3002
SHT 92 of 303 SHS

12/20/2021 2:59:39 PM
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 93 of 303
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 BIM 360://154390 - Arcadia Water Treatment Plant Expansion/154390-S-06V19.rvt
 TITLE OF PROJECT: OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION



- GENERAL NOTES:**
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATIONS. DIMENSIONS SHALL BE ADJUSTED AS REQUIRED TO ACCOMMODATE EQUIPMENT PURCHASED AND EXISTING CONDITIONS AT THE SITE.
 - COORDINATE EQUIPMENT PAD SIZES AND LOCATIONS WITH APPROVED EQUIPMENT ANCHORAGE SUBMITTALS.
 - FOUNDATION HAS BEEN DESIGNED FOR A RECOMMENDED NET ALLOWABLE STATIC UNIFORM BEARING PRESSURE OF 2,000 PSF AND SHORT TERM NON-UNIFORM BEARING PRESSURE OF 5,100 PSF.

City of Santa Monica
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NO.	DATE	BY	DESCRIPTION	APPROVED

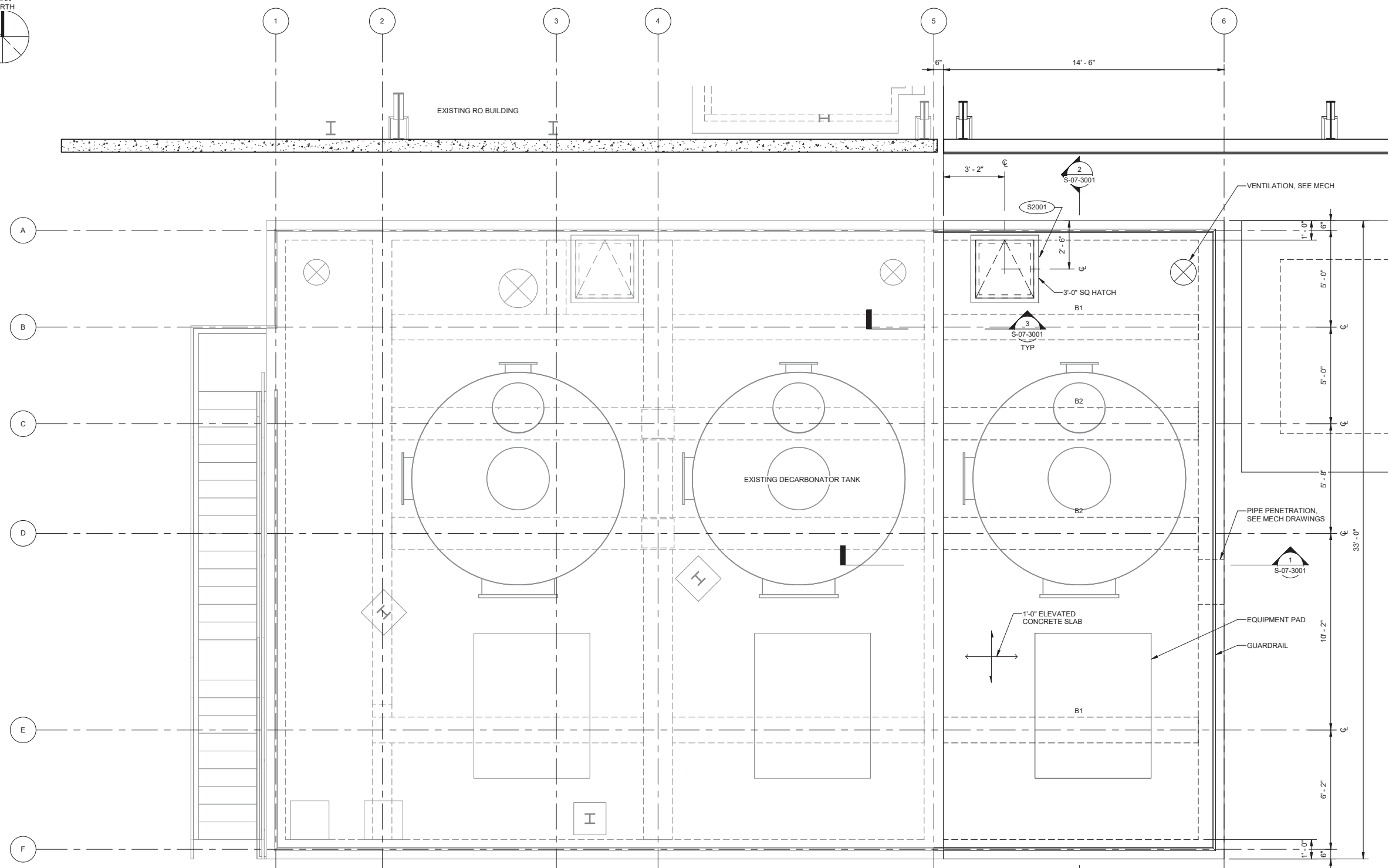
Brown and Caldwell
WALSH

REVIEWED BY: _____	DATE: _____ 20__	REFERENCE: _____	DATE: _____, 20XX	COMPUTER FILE NAME: _____
REVIEWED BY: _____	DATE: _____ 20__	SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO.: SP2602
REVIEWED BY: _____	DATE: _____ 20__	OMNEED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: _____, 20XX

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
DECARBONATORS FOUNDATION PLAN



DESIGNED BY: EJP
DRAWN BY: REK
CHECKED BY: AZ
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
S-07-1001
SHT 93 of 303 SH15



1 FLOOR PLAN
SCALE: 3/8" = 1'-0"



City of Santa Monica
PUBLIC WORKS DEPARTMENT
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NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH
 CONSULTANT

REVIEWED BY:	DATE:	20__
REVIEWED BY:	DATE:	20__
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20__
OMIED POUR, P.E. - PROJECT MANAGER		

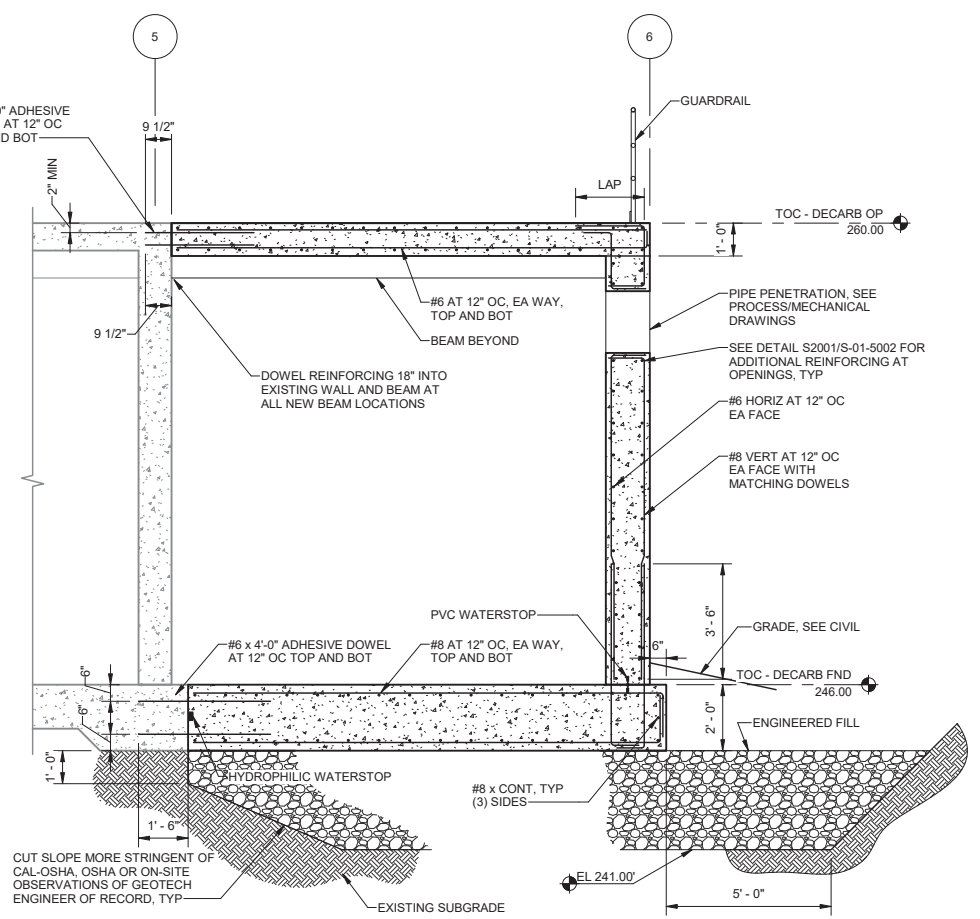
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SUBMITTED BY:			
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			SP-FILE NO.: SP2602
APPROVED BY:	DATE:	20__	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
DECARBONATORS OPERATING FLOOR PLAN
 PROJECT AND SHEET TITLE

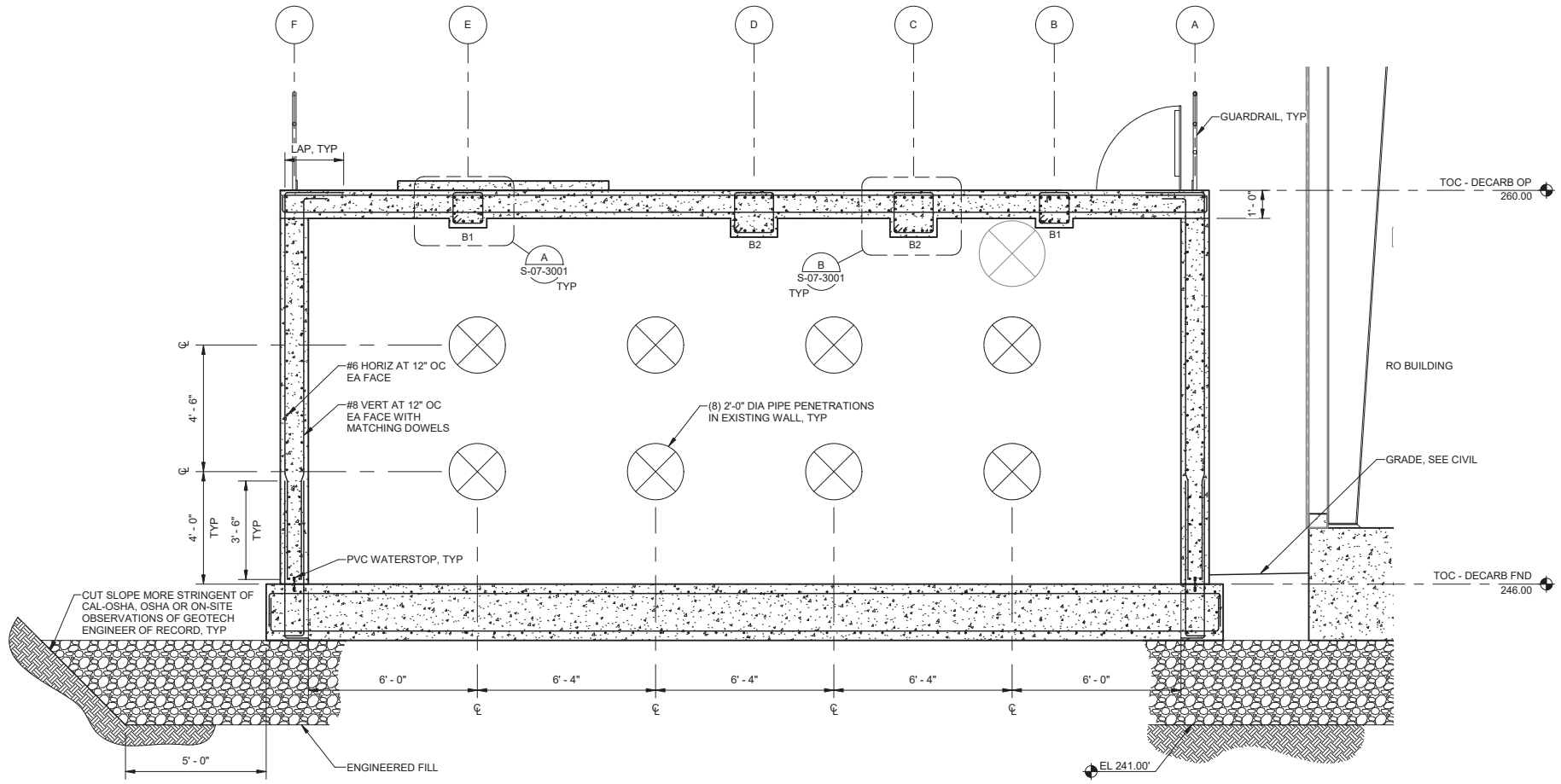
DESIGNED BY:	EJF
DRAWN BY:	REK
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
S-07-1002	
SHT	94 of 303 SH15

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 S-07-3001
 95 of 303
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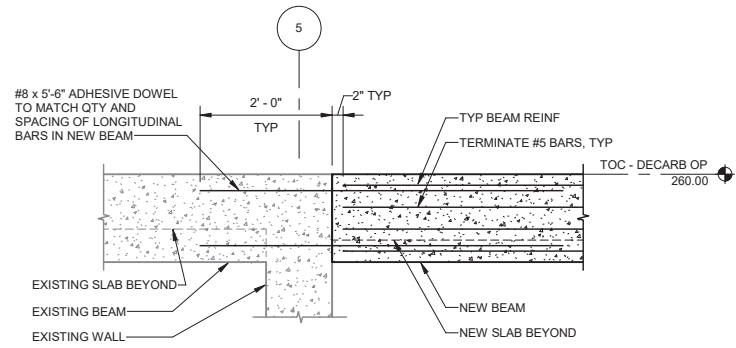
GENERAL NOTES:
 1. FOR OVER-EXCAVATION, ENGINEERED FILL AND BACKFILL INFORMATION NOT INCLUDED HEREIN, SEE ADDITIONAL FOUNDATION REQUIREMENT NOTES ON S-01-1001.



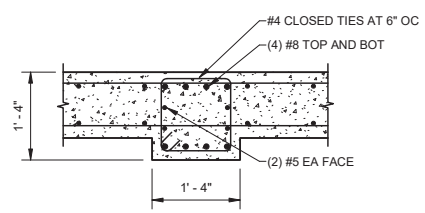
SECTION 1
 S-07-1001 SCALE: 3/8" = 1'-0"



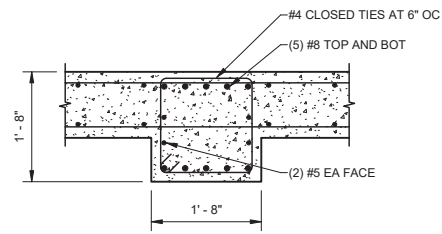
SECTION 2
 S-07-1001 SCALE: 3/8" = 1'-0"



SECTION 3
 S-07-1002 SCALE: 3/4" = 1'-0"



BEAM B1
 S-07-3001 SCALE: 3/4" = 1'-0"



BEAM B2
 S-07-3001 SCALE: 3/4" = 1'-0"



NO.	DATE	BY	DESCRIPTION	APPROVED



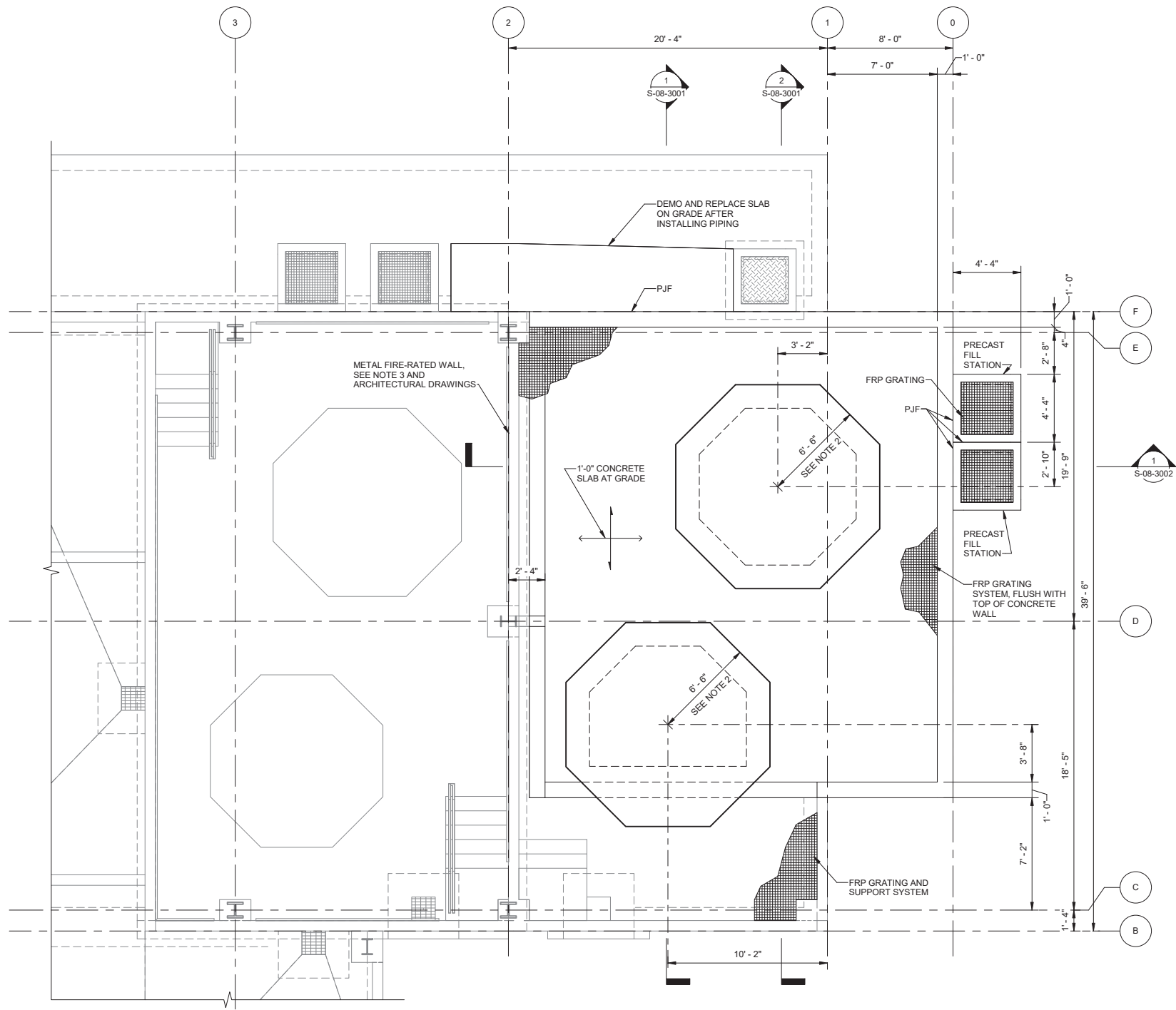
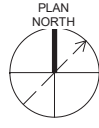
REVIEWED BY: _____ DATE: _____, 20__
 REVIEWED BY: _____ DATE: _____, 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20__
 OMIED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20__ COMPUTER FILE NAME:
 SUBMITTED BY: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20__
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 DECARBONATORS SECTIONS

DESIGNED BY: E.J.F.
 DRAWN BY: REK
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
S-07-3001
 SH1 95 of 303 SH15

PROJECT AND SHEET TITLE



- GENERAL NOTES:**
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION. DIMENSIONS SHALL BE ADJUSTED AS REQUIRED TO ACCOMMODATE EQUIPMENT PURCHASED AND EXISTING CONDITIONS AT THE SITE.
 2. COORDINATE EQUIPMENT PAD SIZES AND LOCATIONS WITH APPROVED EQUIPMENT ANCHORAGE SUBMITTALS.
 3. COORDINATE WITH PEMB MANUFACTURER TO DESIGN AND PROVIDE GIRTS TO SUPPORT METAL FIRE-RATED WALL. METAL WALL CONNECTIONS TO EXISTING PEMB AND FOUNDATION SHALL BE DESIGNED BY MANUFACTURER. SEE SECTION 01 73 24 FOR DESIGN LOADING CRITERIA.
 4. FOUNDATION HAS BEEN DESIGNED FOR A RECOMMENDED NET ALLOWABLE STATIC UNIFORM BEARING PRESSURE OF 1,600 PSF AND SHORT TERM NON-UNIFORM BEARING PRESSURE OF 6,100 PSF.

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



City of **Santa Monica**
PUBLIC WORKS DEPARTMENT
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 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH

REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMNEED POUR, P.E. - PROJECT MANAGER		

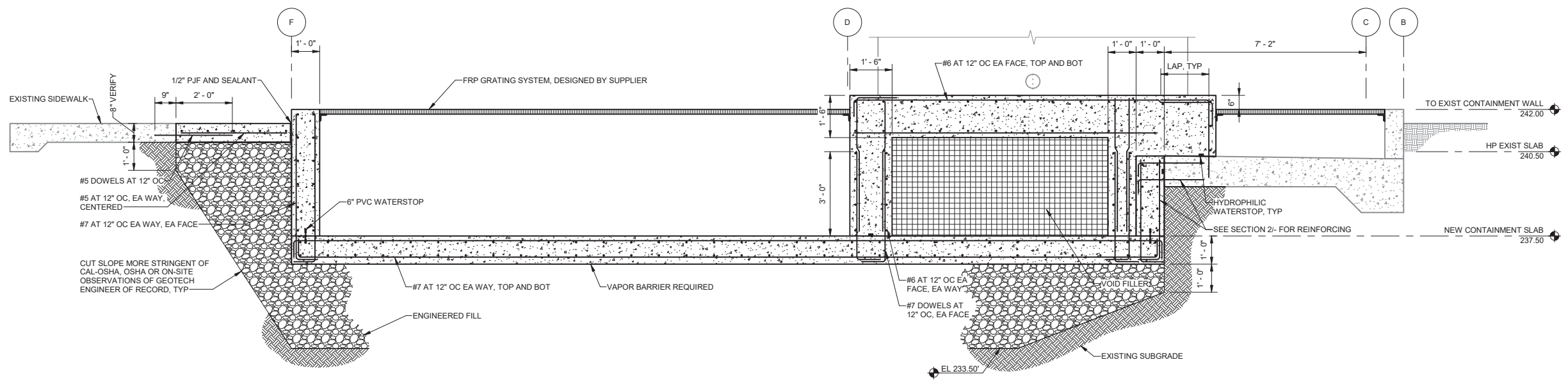
REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
CHEMICAL STORAGE AREA FOUNDATION PLAN
 PROJECT AND SHEET TITLE

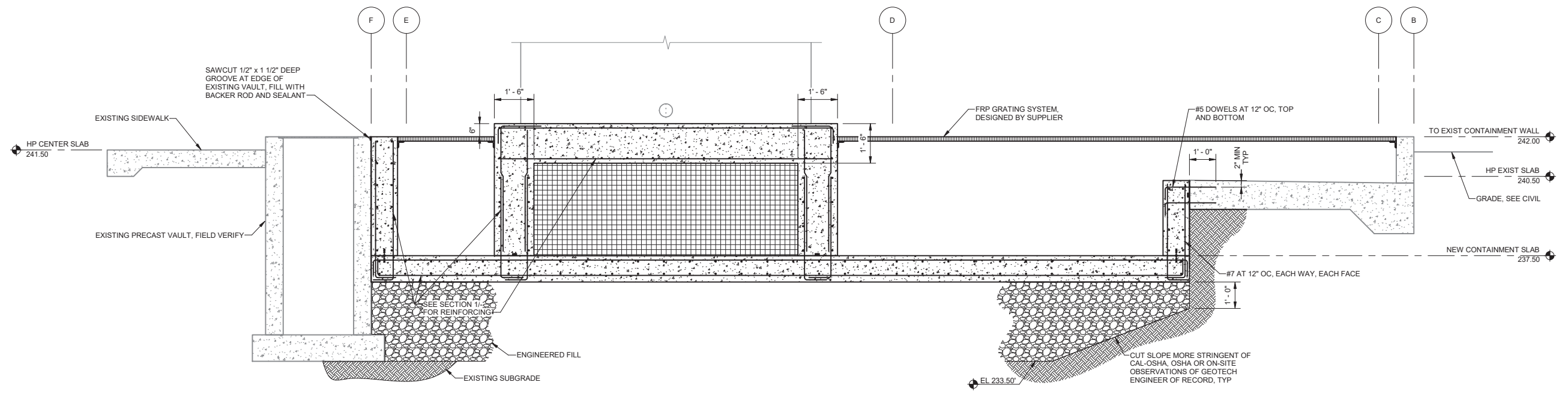
DESIGNED BY:	EJF
DRAWN BY:	REK
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
S-08-1001	
SHT	96 OF 303 SH15

12/20/2021 3:01:12 PM
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 97 of 303
 12/20/2021 3:01:12 PM
 BIM 360://154390 - Arcadia Water Treatment Plant Expansion/154390-S-08V19.rvt
 OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

GENERAL NOTES:
 1. FOR OVER-EXCAVATION, ENGINEERED FILL AND BACKFILL INFORMATION NOT INCLUDED HEREIN, SEE ADDITIONAL FOUNDATION REQUIREMENT NOTES ON S-01-1001.



1 SECTION
 S-08-1001 SCALE: 1/2" = 1'-0"



2 SECTION
 S-08-1001 SCALE: 1/2" = 1'-0"




City of Santa Monica
PUBLIC WORKS DEPARTMENT
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 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED



 CONSULTANT

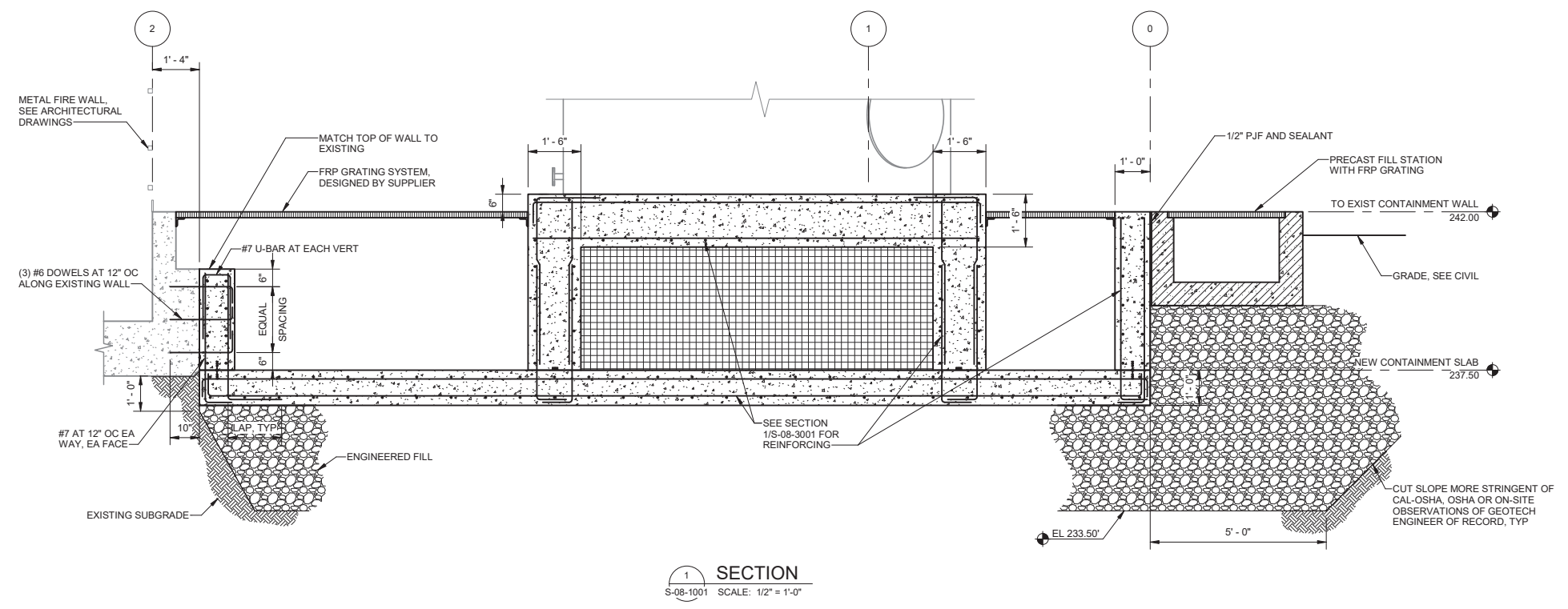
REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.:
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			SP2602
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
CHEMICAL STORAGE AREA SECTIONS - 1
 PROJECT AND SHEET TITLE

DESIGNED BY:	EJF
DRAWN BY:	REK
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
S-08-3001	
SHT	97 of 303 SHS

GENERAL NOTES:
 1. FOR OVER-EXCAVATION, ENGINEERED FILL AND BACKFILL INFORMATION NOT INCLUDED HEREIN, SEE ADDITIONAL FOUNDATION REQUIREMENT NOTES ON S-01-1001.



SECTION 1
 S-08-1001 SCALE: 1/2" = 1'-0"

City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH

REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

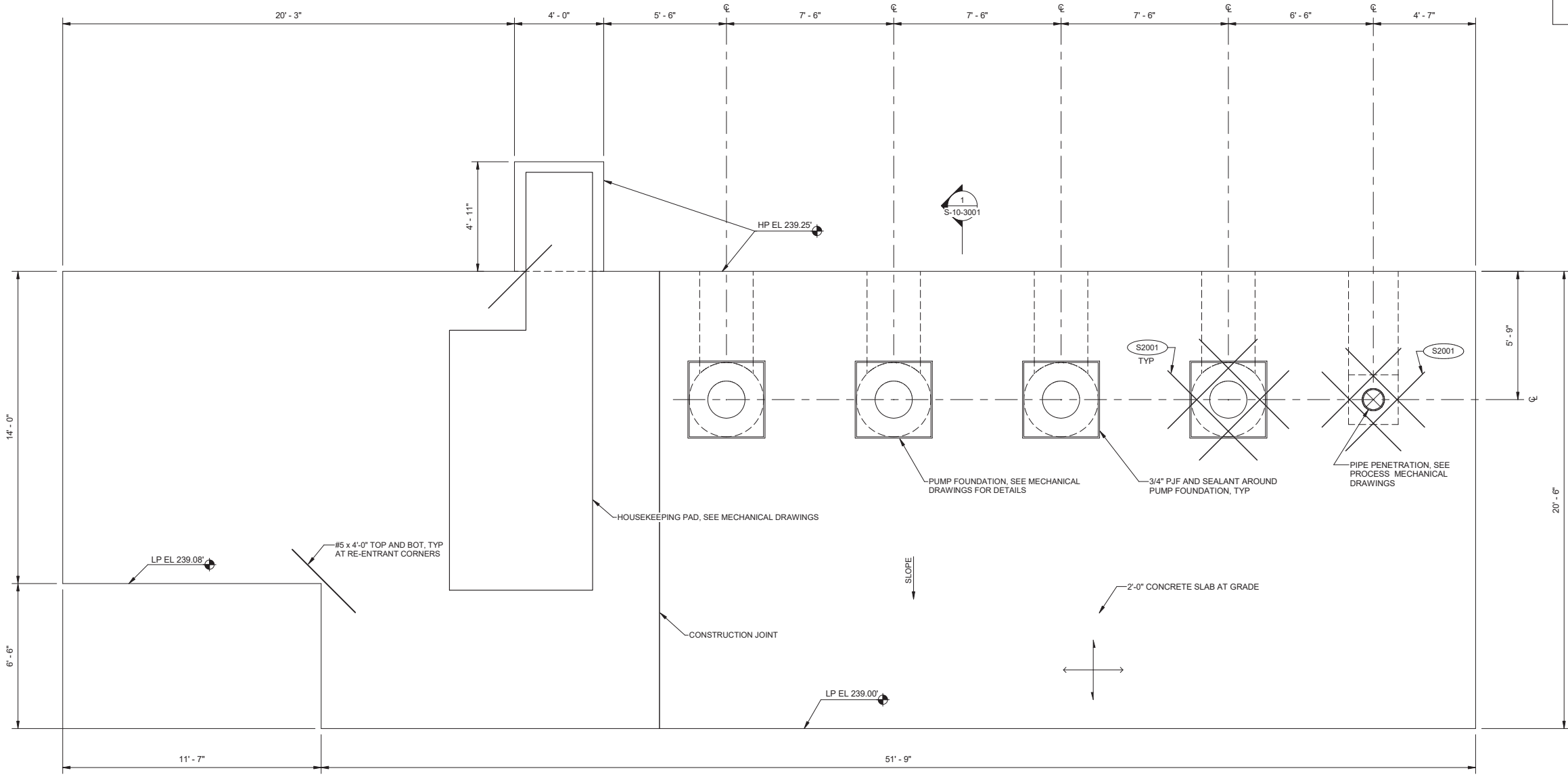
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SUBMITTED BY:	COMPUTER FILE NAME:	
CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO.:	SP2602
APPROVED BY:	DATE:	20XX
ALEX NAZARCHUK, P.E. - CITY ENGINEER		

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
CHEMICAL STORAGE AREA SECTIONS - 2
 PROJECT AND SHEET TITLE



DESIGNED BY:	EJF
DRAWN BY:	REK
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
S-08-3002	
SHT	98 OF 303 SHS

- GENERAL NOTES:**
- COORDINATE EQUIPMENT PAD SIZES AND LOCATIONS WITH APPROVED EQUIPMENT ANCHORAGE SUBMITTALS.
 - BOTTOM OF PUMP CAN FOUNDATION HAS BEEN DESIGNED FOR A RECOMMENDED NET ALLOWABLE STATIC UNIFORM BEARING PRESSURE OF 750 PSF AND SHORT TERM NON-UNIFORM BEARING PRESSURE OF 2,750 PSF.
 - SLAB ON GRADE HAS BEEN DESIGNED FOR A RECOMMENDED NET ALLOWABLE STATIC UNIFORM BEARING PRESSURE OF 500 PSF AND SHORT TERM NON-UNIFORM BEARING PRESSURE OF 2,000 PSF.



1 PLAN
SCALE: 3/8" = 1'-0"



City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH

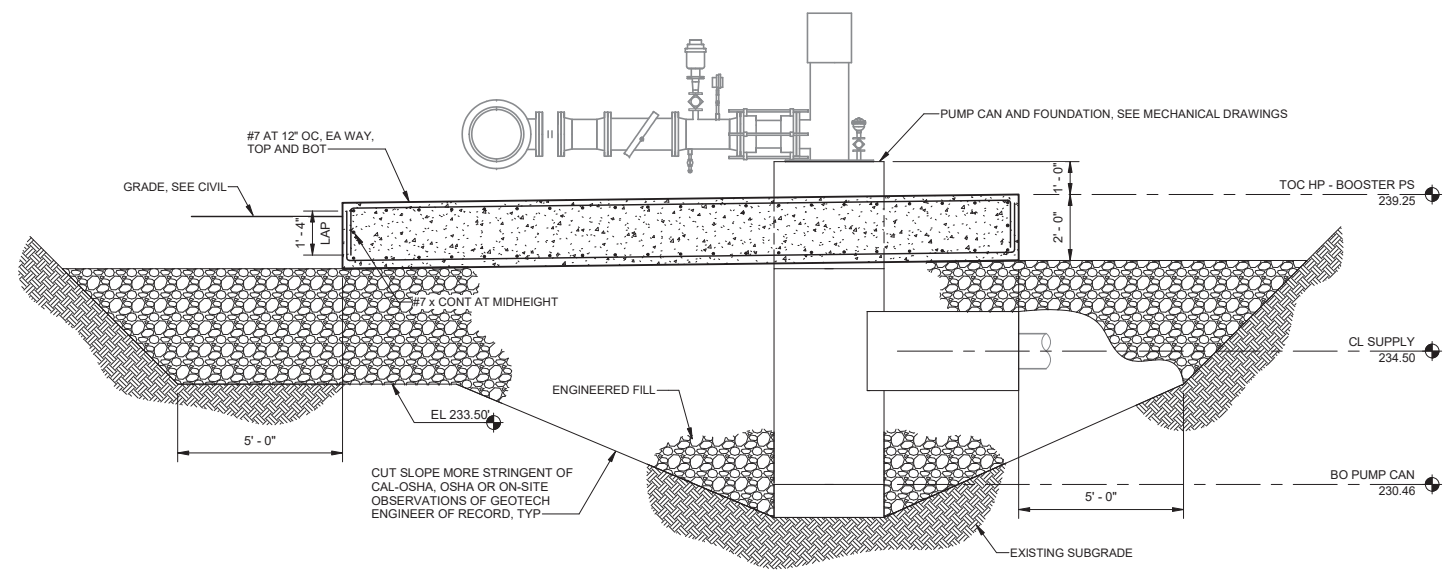
REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMNEED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
BOOSTER PUMP STATION STRUCTURAL PLAN

DESIGNED BY:	EJF
DRAWN BY:	REK
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
S-10-1001	
SHT	99 of 303 SH15

GENERAL NOTES:
 1. FOR OVER-EXCAVATION, ENGINEERED FILL AND BACKFILL INFORMATION NOT INCLUDED HEREIN, SEE ADDITIONAL FOUNDATION REQUIREMENT NOTES ON S-01-1001.



SECTION
 S-10-1001 SCALE: 3/8" = 1'-0"



City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED



REVIEWED BY: _____ DATE: _____, 20__
 REVIEWED BY: _____ DATE: _____, 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20__
 OMIED POUR, P.E. - PROJECT MANAGER

REFERENCE: _____
 DATE: _____, 20__
 SUBMITTED BY: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20__
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
BOOSTER PUMP STATION STRUCTURAL SECTIONS
 PROJECT AND SHEET TITLE

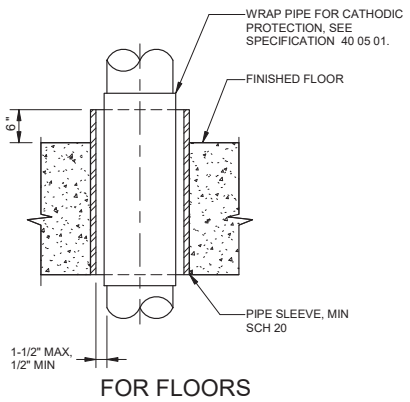
DESIGNED BY: EJP
 DRAWN BY: REK
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
S-10-3001
 SH1 100 of 303 SH15

PIPE PENETRATION TYPES					
CONDITION		TYPE			
FROM	TO	STEEL PIPE	CAST IRON	PLASTIC PIPE	
1	TANK	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
2	TANK	TANK ABOVE W.S.	D OR E	D OR E	D OR E
3	PASSAGE	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
4	PASSAGE	TANK ABOVE W.S.	A, C, D OR E	A, C, D OR E	A, C, D OR E
5	PASSAGE	PASSAGE	B OR C SEE NOTE 6	B OR C SEE NOTE 6	B OR C SEE NOTE 6
6	PASSAGE	OUTSIDE WALL	D OR E	D OR E	D OR E
7	PASSAGE	ROOF	AS SHOWN		
8	TANK	OUTSIDE WALL	E OR F	E, F OR G	E

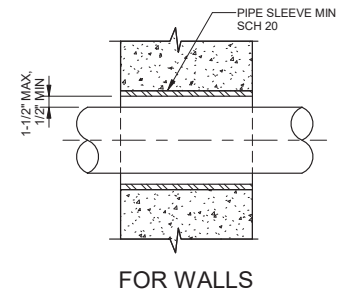
PIPE PENETRATION NOTES:

- WHERE PIPES PASS THROUGH WALLS, FLOORS, OR CEILINGS, PENETRATIONS SHALL CONFORM TO TABLE, EXCEPT AS OTHERWISE SPECIFIED.
- IN TABLE, "TANK" SHALL MEAN ANY PART OF A STRUCTURE CONTAINING LIQUID, OR IN CONTACT WITH THE EARTH.
- IN TABLE, "PASSAGE" SHALL MEAN ANY ROOM, GALLERY, TUNNEL, OR SIMILAR ENCLOSURE.
- IN TABLE, WATER SURFACE "WS" SHALL MEAN AN ELEVATION 9-INCHES ABOVE MAXIMUM WATER SURFACE SHOWN.
- ALL STEEL SLEEVES SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
- IN CONDITION 5, PENETRATION TYPE E, H, J, OR K SHALL BE USED WHERE ONE SIDE IS DESIGNATED AS HAZARDOUS (CLASSIFIED), WHERE FLOODING IS POSSIBLE, OR WHERE SPECIFIED.
- SEAL FLANGES SHALL BE FACED AND DRILLED TO 150 POUND STANDARD. EACH JOINT SHALL BE FULL FACE GASKETED.
- WHERE SPECIFIED, CAST IRON FLANGES MAY BE INSTALLED FLUSH WITH WALL AND TAPPED FOR STUDS.
- PROVIDE CURB WHERE PENETRATING FLOOR, EXCEPT FOR PENETRATION TYPES A AND C. CURB SHALL BE 4" HIGH BY 3" WIDE.
- PROVIDE A MINIMUM OF 3" CLEARANCE BETWEEN REINFORCING STEEL AND FERROUS METAL PENETRATIONS.
- FLEXIBLE JOINTS SHALL BE PROVIDED FOR UNDERGROUND PIPING AS SPECIFIED.
- RESTRAINED FLEXIBLE COUPLINGS FOR STEEL PIPE SHALL BE DESIGNED FOR 100 PSI LINE PRESSURE IN ACCORDANCE WITH AWWA MANUAL M11, FIGURES 19.15 AND 19.16. AWWA MANUAL M11, TABLE 19.7 SHALL BE UTILIZED.
- UNLESS OTHERWISE SPECIFIED, INSULATION SHALL NOT EXTEND THROUGH SLEEVES. CHILLED WATER MUST PENETRATE WITH INSULATION.
- WHERE CAST IRON PIPE IS EMBEDDED IN CONCRETE AT AN EXPANSION JOINT, USE TYPE L PENETRATION.
- WEEP RINGS SHALL HAVE A MINIMUM DIAMETER 3-INCHES GREATER THAN THE OUTSIDE PIPE DIAMETER.
- "TANK SIDE OF WALL" SHALL MEAN SIDE OF WALL NORMALLY EXPOSED TO LIQUID, EARTH, OR OUTSIDE ATMOSPHERE.
- SEAL WITH MASTIC SEALANT WHERE WALL IS EXPOSED TO LIQUID, EARTH, OR A HAZARDOUS (CLASSIFIED) AREA

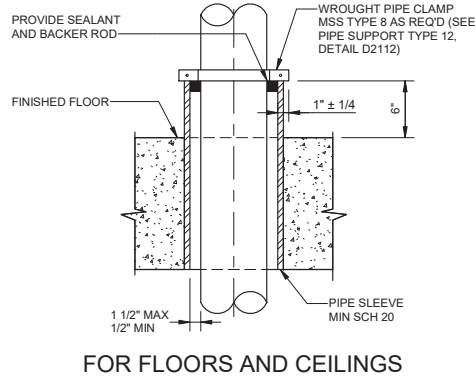
D1100 PENETRATION TYPES AND STANDARD NOTES
NO SCALE



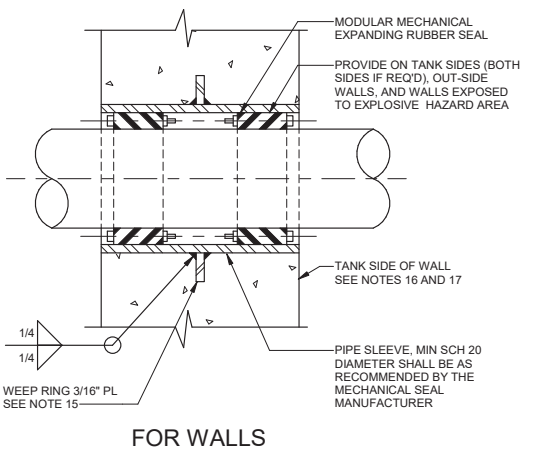
D1101 TYPE A PIPE PENETRATION
NO SCALE



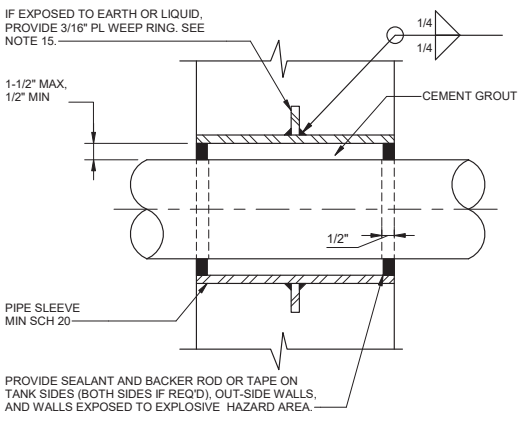
D1102 TYPE B PIPE PENETRATION
NO SCALE



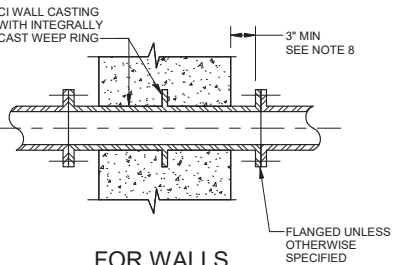
D1103 TYPE C PIPE PENETRATION
NO SCALE



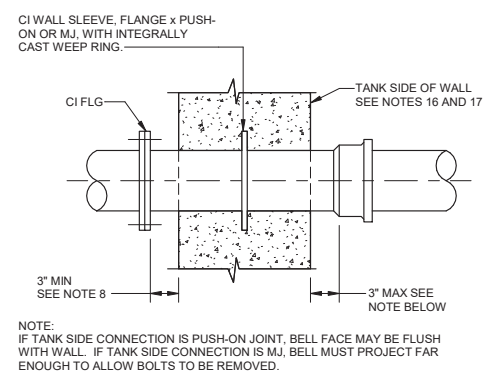
D1104 TYPE D PIPE PENETRATION
NO SCALE



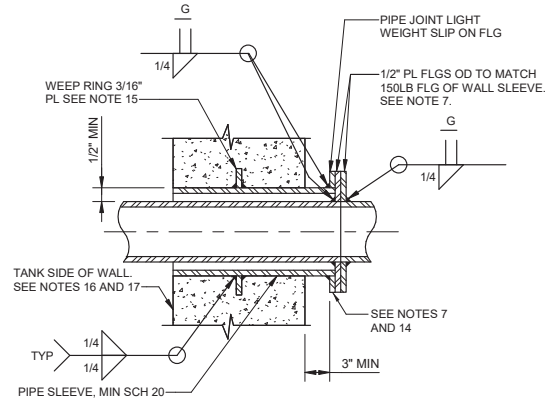
D1105 TYPE E PIPE PENETRATION
NO SCALE



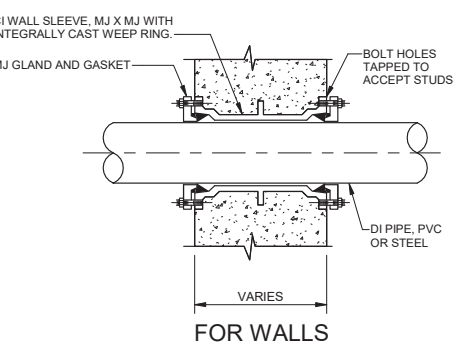
D1106 TYPE F PIPE PENETRATION
NO SCALE



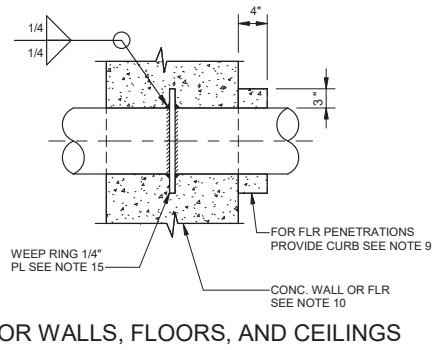
D1107 TYPE G PIPE PENETRATION - NOT USED
NO SCALE



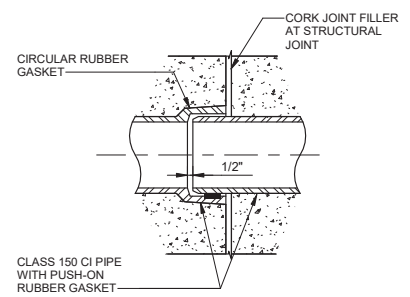
D1108 TYPE H PIPE PENETRATION - NOT USED
NO SCALE



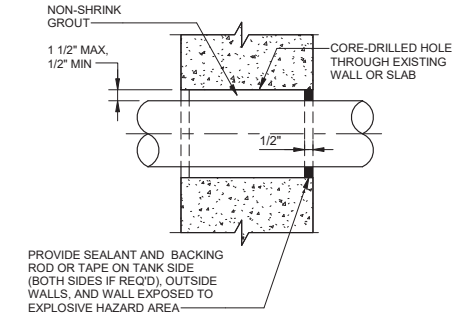
D1109 TYPE J PIPE PENETRATION
NO SCALE



D1110 TYPE K PIPE PENETRATION
NO SCALE



D1111 TYPE L PIPE PENETRATION
NO SCALE



D1113 TYPE X1 PIPE PENETRATION
NO SCALE

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PUBLIC WORKS DEPARTMENT
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Brown and Caldwell
WALSH
 CONSULTANT

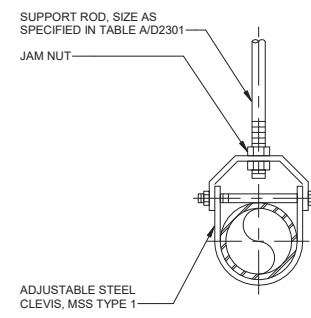
REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
STANDARD TYPICAL DETAILS - 1
 PROJECT AND SHEET TITLE

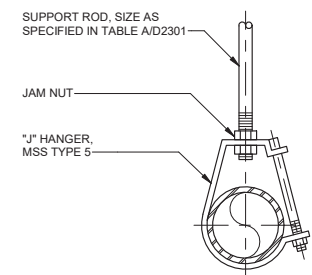
DESIGNED BY:	KBK
DRAWN BY:	LEG
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-01-0001	
SHT	101 of 303 SHTS





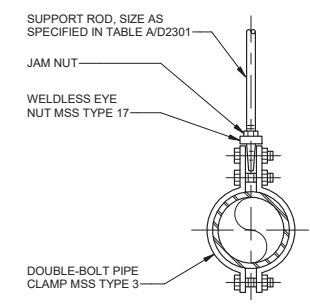
1/2" THROUGH 12" PIPE

D2101 TYPE 1, CLEVIS PIPE HANGER
NO SCALE



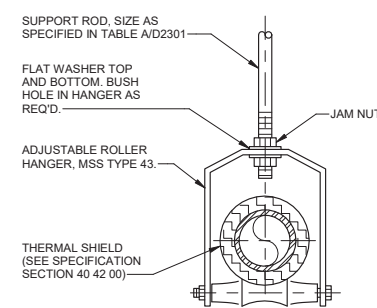
1/2" THROUGH 8" PIPE

D2102 TYPE 2 'J' PIPE HANGER
NO SCALE



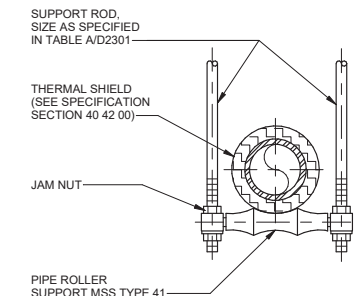
3/4" THROUGH 12" PIPE

D2103 TYPE 3 DOUBLE BOLT PIPE CLAMP
NO SCALE



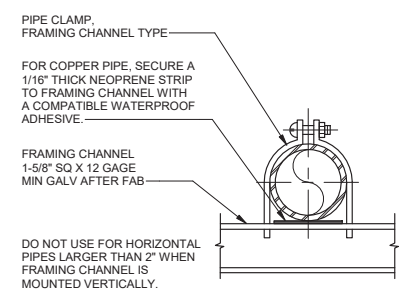
3/8" THROUGH 12" PIPE

D2104 TYPE 4 ADJUSTABLE ROLLER
NO SCALE



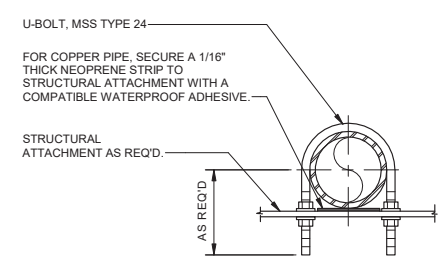
6" THROUGH 12" PIPE

D2105 TYPE 5 SINGLE PIPE ROLL
NO SCALE



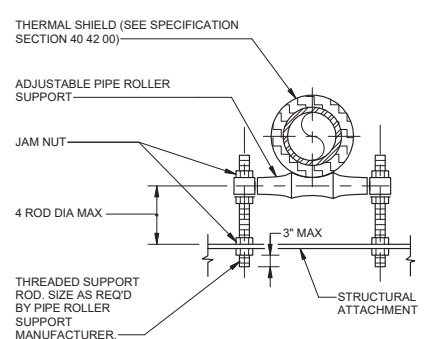
3/8" THROUGH 8" PIPE

D2106 TYPE 6 FRAMING CHANNEL PIPE CLAMP
NO SCALE



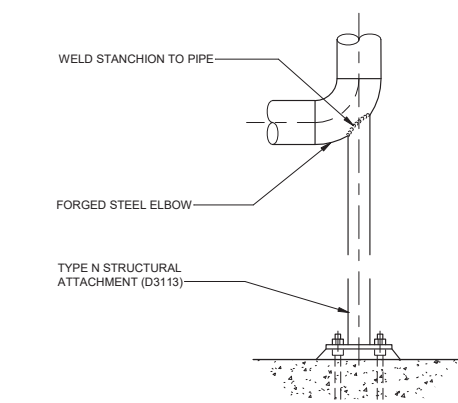
1/2" THROUGH 12" PIPE

D2107 TYPE 7 U-BOLT CLAMP
NO SCALE



1" THROUGH 12" PIPE

D2108 TYPE 8 ADJUSTABLE PIPE ROLL SUPPORT
NO SCALE



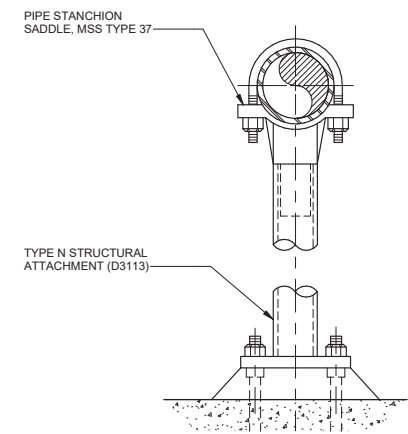
APPROXIMATE SIZES FOR STANCHION

NPS OF PIPING (INCHES)	2-1/2	3	4	6	8	10	12	14
NPS OF PIPE FORMING LEG (INCHES)	1-1/2	2	3	4	6	8	8	10

NOTE: ABOVE SIZES ARE NOMINAL PIPE DIA IN INCHES

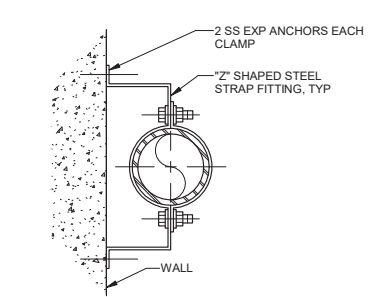
2 1/2" THROUGH 14" PIPE

D2109 TYPE 9 WELDED PIPE STANCHION
NO SCALE



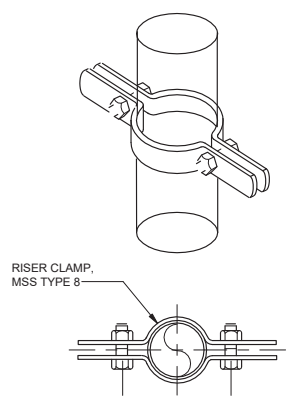
3" THROUGH 20" PIPE

D2110 TYPE 10 ADJUSTABLE PIPE STANCHION SADDLE
NO SCALE



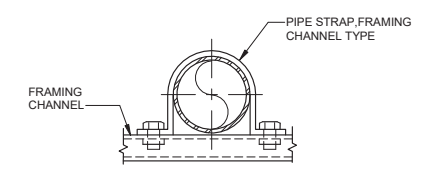
FOR VERTICAL PIPE ONLY 3/4" THROUGH 8" PIPE

D2111 TYPE 11 OFFSET PIPE CLAMP
NO SCALE



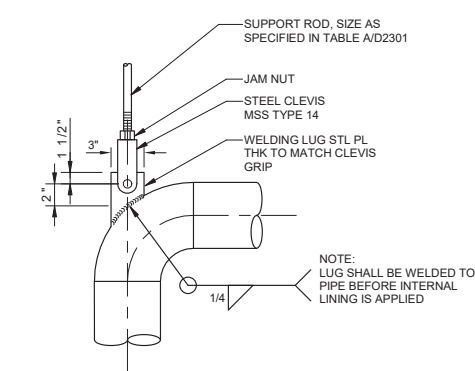
FOR VERTICAL PIPE ONLY 1/2" THROUGH 8" PIPE

D2112 TYPE 12 RISER CLAMP
NO SCALE



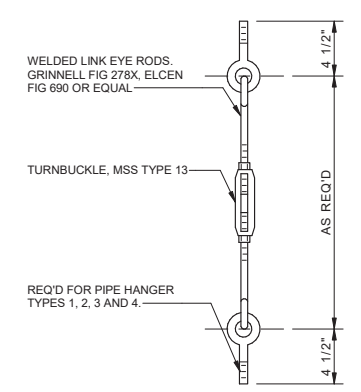
1/2" THROUGH 6" PIPE

D2113 TYPE 13 FRAMING CHANNEL PIPE STRAP
NO SCALE



2" THROUGH 12" PIPE

D2114 TYPE 14 WELDED LUG CLEVIS ATTACHMENT
NO SCALE



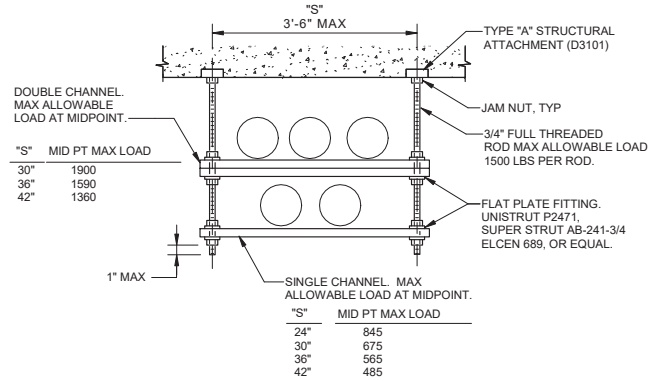
D2115 TYP SUPPORT ROD FOR PIPE HORIZONTAL MOVEMENT
NO SCALE

NO.	DATE	BY	DESCRIPTION	APPROVED

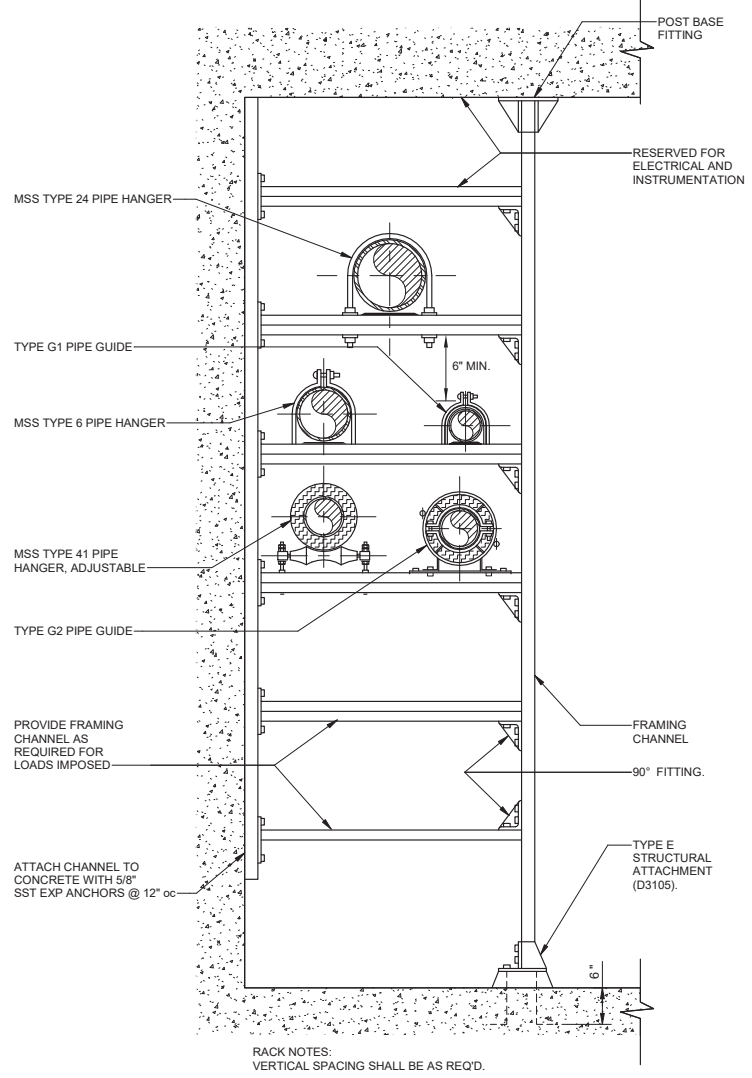
REVIEWED BY: _____ DATE: _____ 20__
 REVIEWED BY: _____ DATE: _____ 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____ 20__
 OMEED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20XX
 SUBMITTED BY: _____ COMPUTER FILE NAME: _____
 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER
 ENGINEERING AND STREET SERVICES

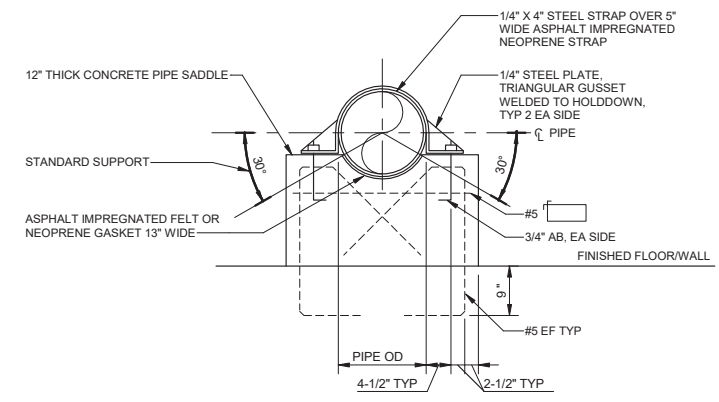
DESIGNED BY: KBK
 DRAWN BY: LEG
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-01-0002
 SHEET 102 OF 303 SHEETS
 OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 STANDARD TYPICAL DETAILS - 2
 PROJECT AND SHEET TITLE



D2120 TYPE 20 TYPICAL TRAPEZE PIPE SUPPORT
NO SCALE



D2121 TYPE 21 TYPICAL PIPE RACK SUPPORT
NO SCALE



D2124 TYPE 24 CONCRETE SADDLE PIPE SUPPORT
NO SCALE

City of **Santa Monica**
PUBLIC WORKS DEPARTMENT
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NO.	DATE	BY	DESCRIPTION	APPROVED

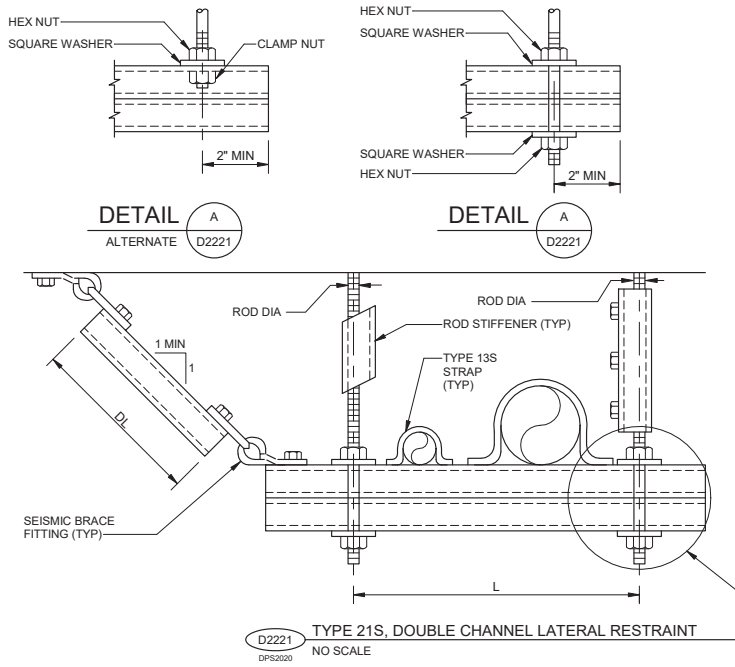
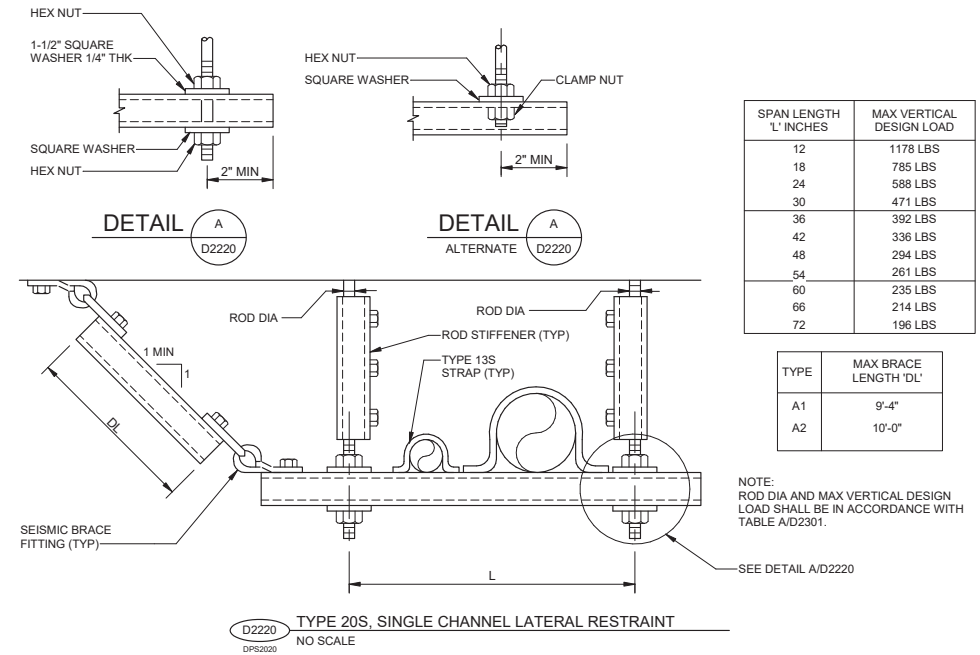
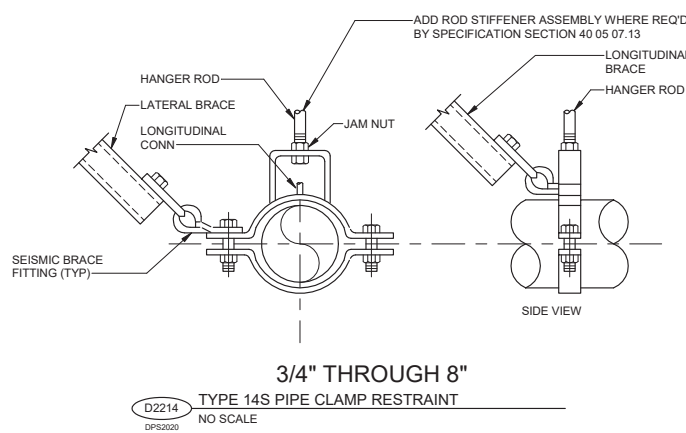
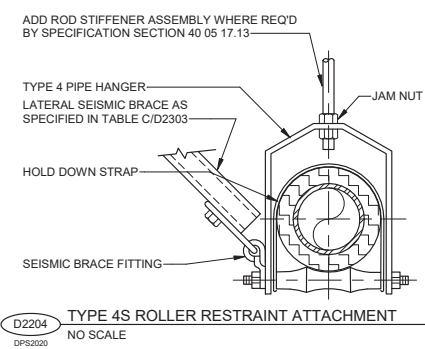
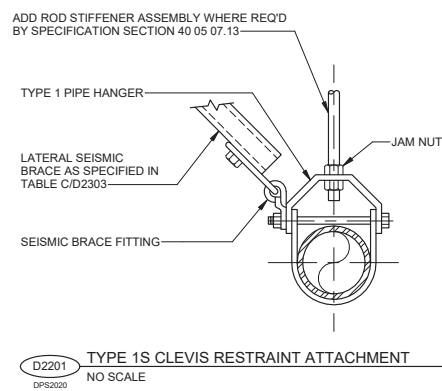
Brown and Caldwell
WALSH
 CONSULTANT

REVIEWED BY: _____ DATE: _____, 20XX	REFERENCE: _____
REVIEWED BY: _____ DATE: _____, 20XX	DATE: _____, 20XX COMPUTER FILE NAME: _____
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	SUBMITTED BY: _____ SP-FILE NO.: SP2602
REVIEWED BY: _____ DATE: _____, 20XX	APPROVED BY: _____ DATE: _____, 20XX
OMIED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER
CITY CLIENTS	ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
STANDARD TYPICAL DETAILS - 3

DESIGNED BY: KBK
 DRAWN BY: LEG
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-01-0003
 SH1 103 of 303 SH15

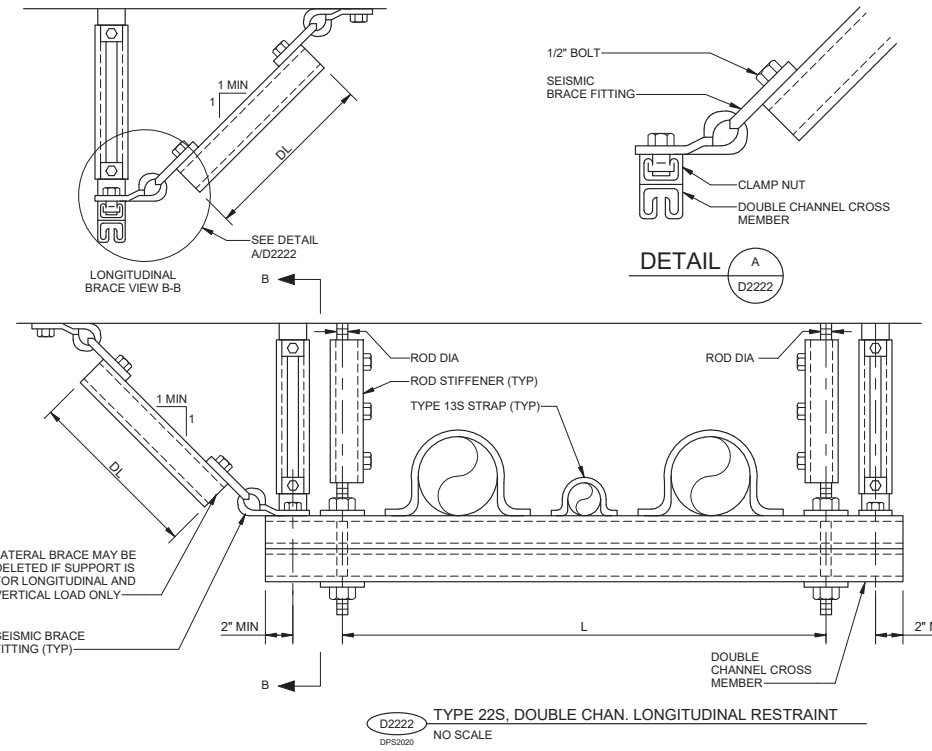




SPAN LENGTH 'L' INCHES	MAX VERTICAL DESIGN LOAD
24	1600 LBS
30	1293 LBS
36	1079 LBS
42	920 LBS
48	806 LBS
54	713 LBS
60	646 LBS
66	588 LBS
72	540 LBS
84	446 LBS
96	404 LBS
108	360 LBS

TYPE	MAX BRACE LENGTH 'DL'
A1	9'-4"
A2	10'-0"

NOTE: ROD DIA AND MAX VERTICAL DESIGN LOAD SHALL BE IN ACCORDANCE WITH TABLE A/D2301.



SPAN LENGTH 'L' INCHES	MAX VERTICAL DESIGN LOAD
12	2150 LBS
18	2150 LBS
24	2150 LBS
30	1944 LBS
36	1620 LBS
42	1388 LBS
48	1214 LBS
54	1080 LBS
60	972 LBS
66	882 LBS
72	810 LBS
84	694 LBS
96	606 LBS
108	540 LBS

TYPE	MAX BRACE LENGTH 'DL'
A1	9'-4"
A2	10'-0"

NOTE: ROD DIA AND MAX VERTICAL DESIGN LOAD SHALL BE IN ACCORDANCE WITH TABLE A/D2301.



NO.	DATE	BY	DESCRIPTION	APPROVED

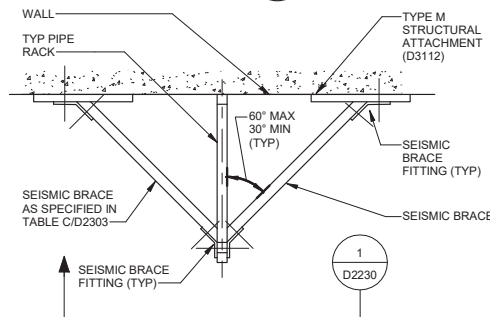
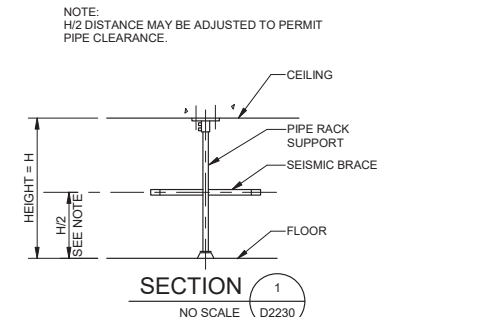


REVIEWED BY: _____	DATE: _____, 20XX	REFERENCE: _____
REVIEWED BY: _____	DATE: _____, 20XX	DATE: _____, 20XX
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME: _____
REVIEWED BY: _____	DATE: _____, 20XX	SP-FILE NO.: SP2602
OMIED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: _____, 20XX

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
STANDARD TYPICAL DETAILS - 4

DESIGNED BY: KBK
 DRAWN BY: LEG
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-01-0004
 SHEET 104 OF 303 SHEETS





D2230 NO SCALE
LONGITUDINAL PIPE RACK BRACING

TABLE C
SEISMIC RESTRAINT SPACING

NOM PIPE SIZE	MAX SPAN BETWEEN BRACES		BRACE TYPE	MAX BRACE LENGTH
	LATERAL BRACE (FEET)	LONGITUDINAL BRACE (FEET)		
2	40	80	A1	9'-4"
2-1/2	40	80	A1	9'-4"
3	40	80	A1	9'-4"
4	40	80	A1	9'-4"
6	40	80	A1	9'-4"
8	40	40	A1	9'-4"
10	40	40	A1	9'-4"
12	40	40	A2	10'-0"
14	30	30	A2	10'-0"
16	25	25	A2	10'-0"
18	20	20	A2	10'-0"
20	16	16	A2	10'-0"
24	10	10	A2	10'-0"

(S) - STANDARD WALL

D2303 NO SCALE
SEISMIC RESTRAINT SPACING TABLE C

NOMINAL PIPE SIZE (INCHES)	SUPPORT ROD SIZE AND MAX LOAD PER ROD - SEE NOTES 1 AND 2		MAX SUPPORT SPACING (FEET)			
	ROD SIZE (INCHES)	MAX LOAD (POUNDS)	STEEL	COPPER	PLASTIC SEE NOTE 4	CAST IRON SEE NOTE 5
3/8 TO 3/4	3/8	610	5	5	CONTINUOUS	...
1	3/8	610	5	5	5	...
1-1/4	3/8	610	5	5	5	...
1-1/2	3/8	610	5	5	5	...
2	3/8	610	10	5	5	...
2-1/2	3/8	610	10	10	5	...
3	3/8	610	10	20	5	...
4	1/2	1130	10	20	5	...
6	5/8	1810	15	20	5	...
8	3/4	2710	15	20	5	...
10	3/4	2710	20	---	5	...
12	1	4960	20	---	10	...
14	1	4960	20	---	---	...
16	1	4960	20	---	---	...
18	1	4960	20	---	---	...
20	1-1/4	8000	20	---	---	...
24	1-1/4	8000	20	---	---	...
30	1-1/2	11630	20	---	---	...

- TABLE A NOTES:
- DESIGN WEIGHT SHALL BE TWICE THE WEIGHT OF THE PIPE FULL OF WATER PLUS THE WEIGHTS OF VALVES, FITTINGS, INSULATING MATERIALS AND SUSPENDED HANGER COMPONENTS ON THE RUN OF PIPE BEING SUPPORTED.
 - ROD SIZES SHOWN ARE FOR THE SUPPORT OF A SINGLE PIPE. WHEN SUPPORTING MORE THAN ONE PIPE, ROD SHALL BE SIZED USING DESIGN WEIGHTS (SEE NOTE 1) TO DETERMINE THE TOTAL DESIGN LOAD. THE TOTAL DESIGN LOAD SHALL NOT EXCEED THE MAX LOADS IN THE TABLE ABOVE.
 - PIPE SHALL NOT HAVE POCKETS FORMED IN THE SPAN DUE TO SAGGING OF THE PIPE BETWEEN SUPPORTS CAUSED BY THE WEIGHT OF THE PIPE, MEDIUM IN THE PIPE, INSULATION, VALVES AND FITTINGS.
 - SPAN SHOWN IS FOR SCHEDULE 80 PVC PIPE AT 100°F. SPANS FOR OTHER PLASTICS, OTHER PVC PIPE SCHEDULES AND PIPES AT HIGHER TEMPERATURES SHALL BE SHORTER ENDED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS. "CONTINUOUS" MEANS PIPE SHALL BE IN UNISTRUT OR SIMILAR CHANNEL.
 - PROVIDE A MIN OF ONE HANGER PER PIPE LENGTH, WITHIN 4-INCHES OF THE BELL.
 - PIPE HANGER AND SUPPORT SELECTION SHALL BE IN ACCORDANCE WITH TABLE B (D2302) AND SPECIFICATION SECTION 40 07.

D2301 NO SCALE
SUPPORT SPACING AND ROD LOADS TABLE A

SYSTEM	INSULATION	NOTE 1	PIPE ATTACHMENTS							BUILDING STRUCTURAL ATTACHMENTS					
			HORIZONTAL							VERTICAL	STEEL AND/OR MALL IRON				
			STEEL STRAPS	STEEL BANDS	STEEL CLAMPS	CAST IRON HANGING ROLLS	CAST IRON SUPPORTING ROLLS	STEEL TRAPEZES AND RACKS	THERMAL HANGER SHIELDS	STEEL OR CAST IRON STANCHIONS	STEEL RISER CLAMPS	INSERTS	BEAM CLAMPS	WELDED AND BOLTED ATTACHMENTS	BRACKETS
HOT	COVERED		13	1, 2	3	4, 5	8	20, 21	SEE SPEC	10	11, 12	A	C, D	F, J, M	B, G, H, K, L
	BARE	6, 7, 13	1, 2	3	4, 5	8	20, 21	NONE	10						
A-1 120 TO 450	COVERED		13	1	3	4, 5	8	20, 21	SEE SPEC	10	11, 12	A	C, D	F, J, M	B, G, H, K, L
	BARE	NONE	NONE	3	NONE	NONE	20, 21	NONE	NONE						
A-2 451 TO 750	COVERED		13	1	3 (ALLOY)	4, 5	8	20, 21	SEE SPEC	10	11, 12	NONE	C, D	F, J, M	B, G, H, K, L
	BARE	13	NONE	3 (ALLOY)	NONE	NONE	20, 21	NONE	NONE						
A-3 OVER 750	COVERED		13	1	3 (ALLOY)	4, 5	8	20, 21	SEE SPEC	10	11, 12	NONE	C, D	F, J, M	B, G, H, K, L
	BARE	13	NONE	3 (ALLOY)	NONE	NONE	20, 21	NONE	NONE						
AMBIENT	COVERED		13	1, 2	3	4, 5	8	20, 21	SEE SPEC	9, 10	11, 12	A	C, D	F, J, M	B, G, H, K, L
	BARE	6, 7, 13	1, 2	3	4, 5	8	20, 21	NONE	9, 10						
B 60 TO 119	COVERED		13	1, 2, 3	3	4, 5	8	20, 21	SEE SPEC	10	11, 12	A	C, D	F, J, M	B, G, H, K, L
	BARE	6, 7, 13	1, 2, 3	3	4, 5	8	20, 21	NONE	10						
C-1 33 TO 59	COVERED		13	1, 2, 3	3	4, 5	8	20, 21	SEE SPEC	10	11, 12	A	C, D	F, J, M	B, G, H, K, L
	BARE	6, 7, 13	1, 2, 3	3	4, 5	8	20, 21	NONE	10						
C-2 2 TO 32	COVERED		13	1, 2, 3	3	4, 5	8	20, 21	SEE SPEC	10	11, 12	A	C, D	F, J, M	B, G, H, K, L
	BARE	NONE	1, 2, 3	3	4, 5	8	20, 21	NONE	10						

- TABLE B NOTES:
- HANGERS ON INSULATED SYSTEMS SHALL INCORPORATE THERMAL HANGER SHIELDS.
 - HANGER AND SUPPORT SPACING SHALL BE IN ACCORDANCE WITH TABLE A (D2301).

D2302 NO SCALE
HANGER AND SUPPORT SELECTION TABLE B

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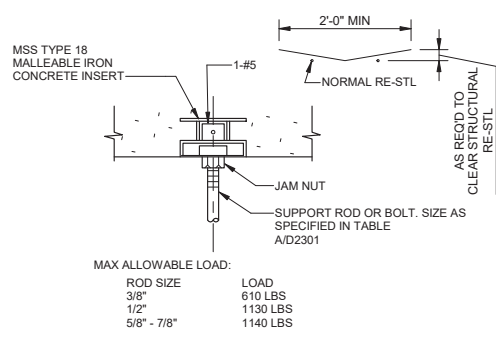
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REVIEWED BY: _____ DATE: _____, 20XX	DATE: _____, 20XX COMPUTER FILE NAME: _____
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.
REVIEWED BY: _____ DATE: _____, 20XX	SP-FILE NO.: SP2602
OMIED POUR, P.E. - PROJECT MANAGER	APPROVED BY: _____ DATE: _____, 20XX
CITY CLIENTS	ALEX NAZARCHUK, P.E. - CITY ENGINEER
ENGINEERING AND STREET SERVICES	

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
STANDARD TYPICAL DETAILS - 5

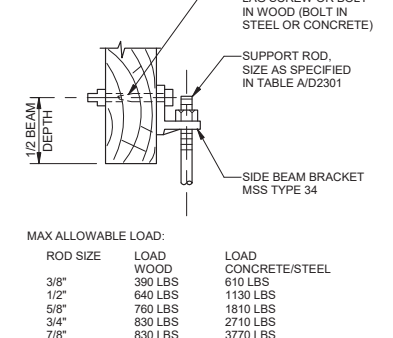
PROJECT AND SHEET TITLE

DESIGNED BY: KBK
DRAWN BY: LEG
CHECKED BY: AZ
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
D-01-0005
SHT 105 of 303 SHS

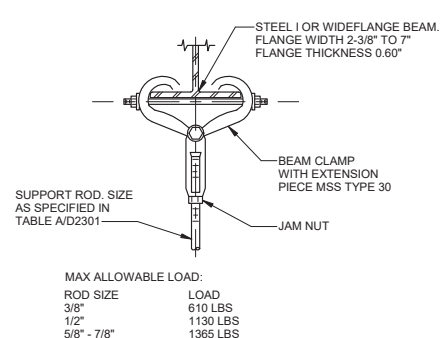




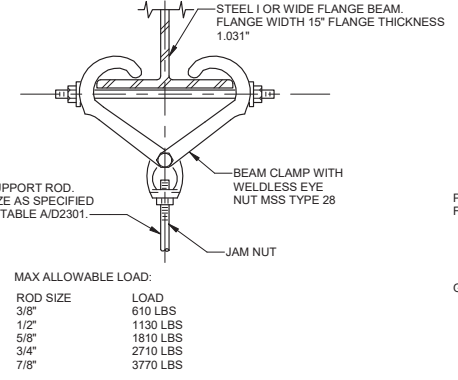
D3101 TYPE A MALLEABLE IRON CONCRETE INSERT
NO SCALE
DPS2020



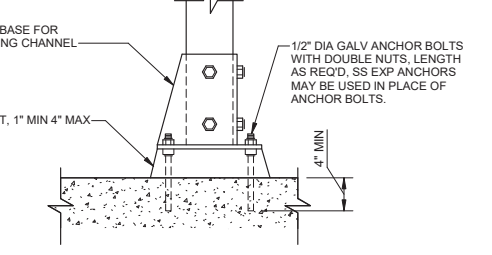
D3102 TYPE B SIDE BEAM BRACKET ATTACHMENT
NO SCALE
DPS2020



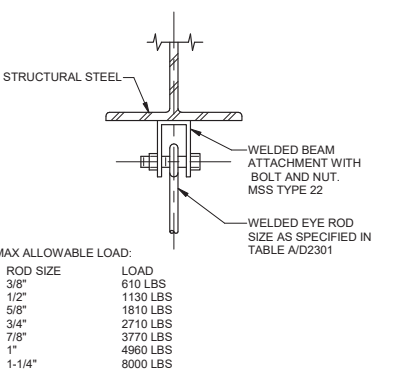
D3103 TYPE C BEAM CLAMP ATTACHMENT
NO SCALE
DPS2020



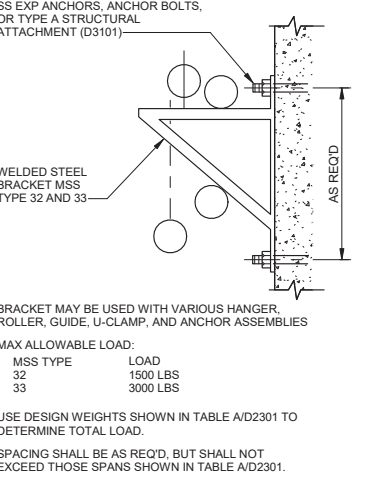
D3104 TYPE D BEAM CLAMP ATTACHMENT
NO SCALE
DPS2020



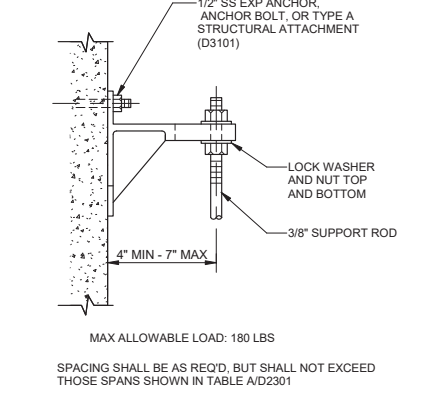
D3105 TYPE E FRAMING CHANNEL POST BASE
NO SCALE
DPS2020



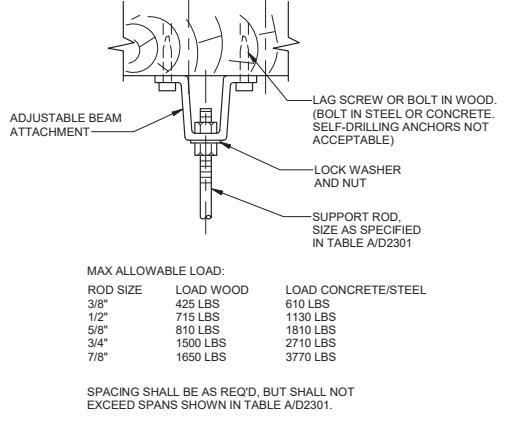
D3106 TYPE F WELDED BEAM ATTACHMENT
NO SCALE
DPS2020



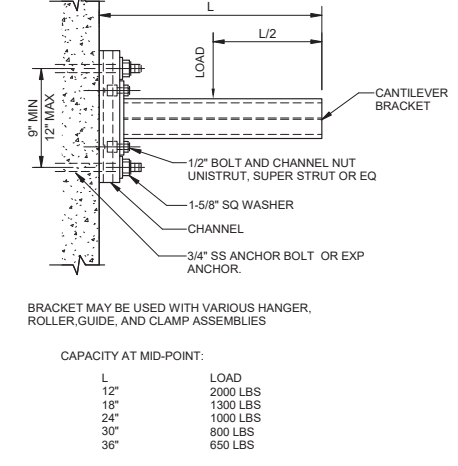
D3107 TYPE G WELDED STEEL BRACKET ATTACHMENT
NO SCALE
DPS2020



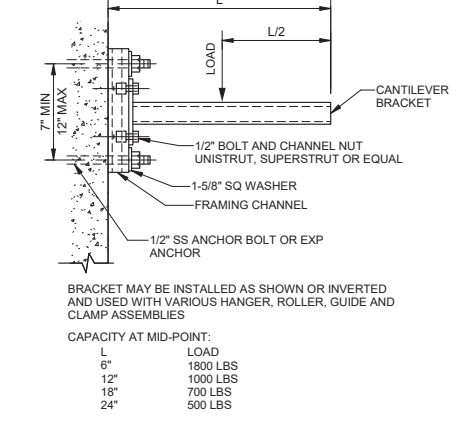
D3108 TYPE H CAST IRON BRACKET ATTACHMENT
NO SCALE
DPS2020



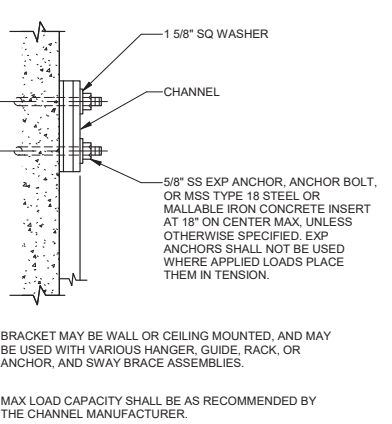
D3109 TYPE J ADJUSTABLE BEAM ATTACHMENT
NO SCALE
DPS2020



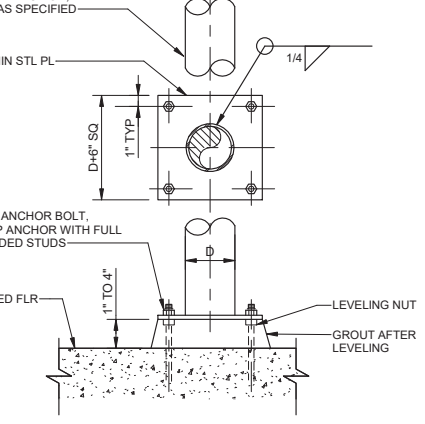
D3110 TYPE K DOUBLE CHANNEL BRACKET ATTACHMENT
NO SCALE
DPS2020



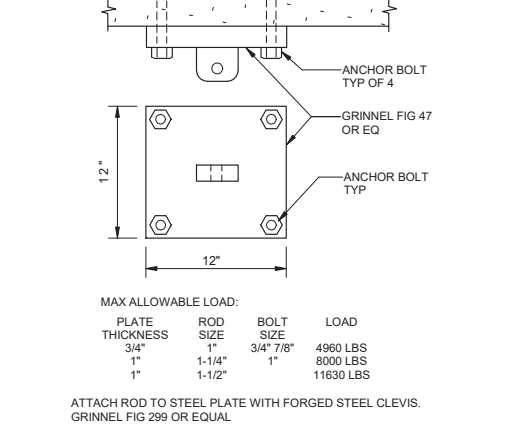
D3111 TYPE L SINGLE CHANNEL BRACKET ATTACHMENT
NO SCALE
DPS2020



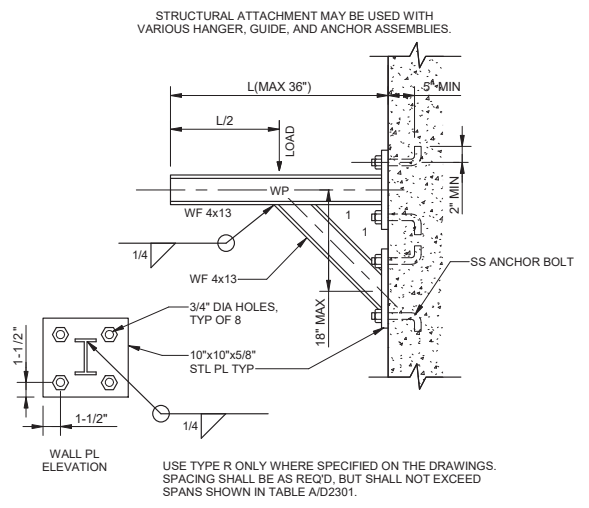
D3112 TYPE M WALL MOUNTED CHANNEL ATTACHMENT
NO SCALE
DPS2020



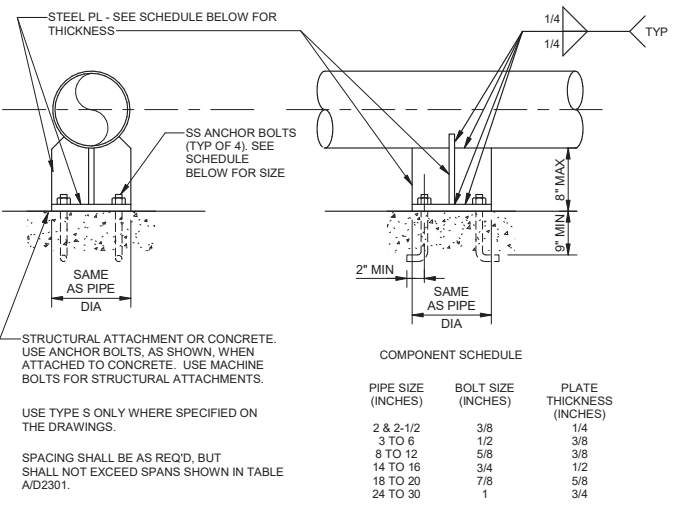
D3113 TYPE N PIPE STANCHION FLOOR ATTACHMENT
NO SCALE
DPS2020



D3114 TYPE P STRUCTURAL ATTACHMENT
NO SCALE
DPS2020



D3115 TYPE R STRUCTURAL ATTACHMENT
NO SCALE
DPS2020



D3116 TYPE S STRUCTURAL ATTACHMENT
NO SCALE
DPS2020

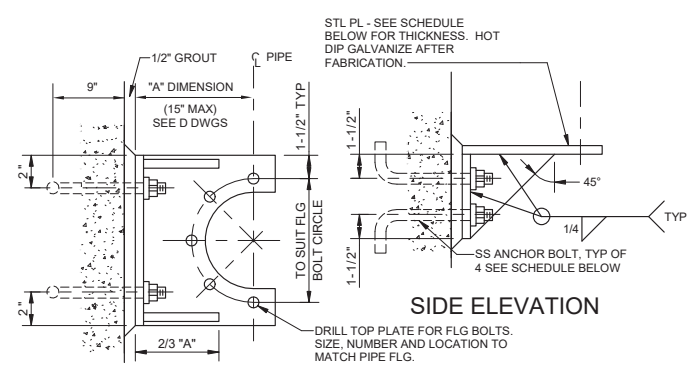
City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED
REVISIONS				

REVIEWED BY: _____	DATE: _____ 20__	REFERENCE:
REVIEWED BY: _____	DATE: _____ 20__	DATE: _____, 20XX
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME:
REVIEWED BY: _____	DATE: _____ 20__	SP-FILE NO.: SP2602
OMED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: _____, 20XX
CITY CLIENTS	ENGINEERING AND STREET SERVICES	

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
STANDARD TYPICAL DETAILS - 6

DESIGNED BY: KBK	CONTRACTANT JOB SHEET NO. 154390
DRAWN BY: LEG	DRAWING NO. 7078
CHECKED BY: AZ	D-01-0006
	SHT 106 of 303 SHTS



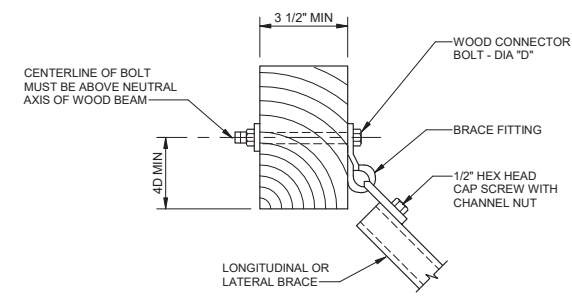
PLAN VIEW

USE TYPE T ONLY WHERE SPECIFIED ON THE DRAWINGS.
SPACING SHALL BE AS REQ'D, BUT SHALL NOT EXCEED SPANS SHOWN IN TABLE A/D2301.

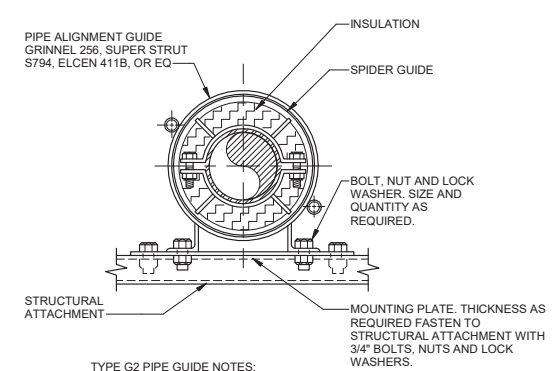
PIPE SIZE (INCHES)	BOLT SIZE (INCHES)	PL THICKNESS (INCHES)
2 & 2-1/2	3/8	1/4
3 TO 6	1/2	3/8
8 TO 12	5/8	3/8
14 TO 16	3/4	1/2
18 TO 20	7/8	5/8
24 TO 30	1	3/4

D3117 TYPE T STRUCTURAL ATTACHMENT
NO SCALE

MAX ALLOWABLE LOADS			
RIGHT ANGLE TO GRAIN		PARALLEL TO GRAIN	
LOAD (LBS)	D	LOAD (LBS)	D
476	1/2"	476	1/2"
-	-	1400	3/4"



D3204 TYPE SA-4 ATTACHMENT
NO SCALE



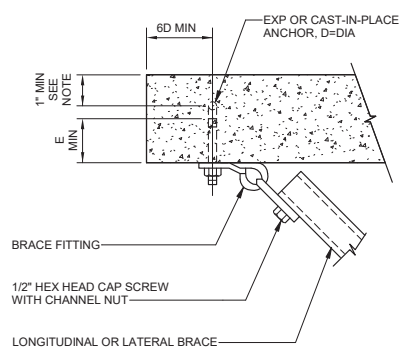
- TYPE G2 PIPE GUIDE NOTES:**
- THIS GUIDE SHALL NOT BE USED FOR CHILLED WATER SUPPLY (CWS) OR CHILLED WATER RETURN (CWR) PIPING.
 - SEE "PIPE GUIDE NOTES" D3300.

3/4" THROUGH 12" PIPE

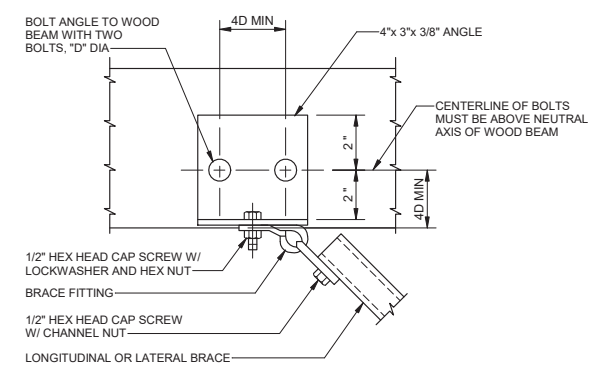
D3302 TYPE G2 PIPE GUIDE
NO SCALE

ANCHOR NOTE:
IF END OF ANCHOR TO SLAB FACE IS LESS THAN 1", USE THRU BOLT, WASHER AND NUT.

LOAD (LBS)	MAX ALLOWABLE LOADS:			
	EXP ANCHOR		CAST-IN-PLACE ANCHOR	
	D	E	D	E
336	3/8"	3 1/2"	3/8"	3"
476	1/2"	4 1/2"	3/8"	3"
970	5/8"	5 1/2"	1/2"	4"
1400	3/4"	5"	5/8"	4"



D3201 TYPE SA-1 ATTACHMENT
NO SCALE

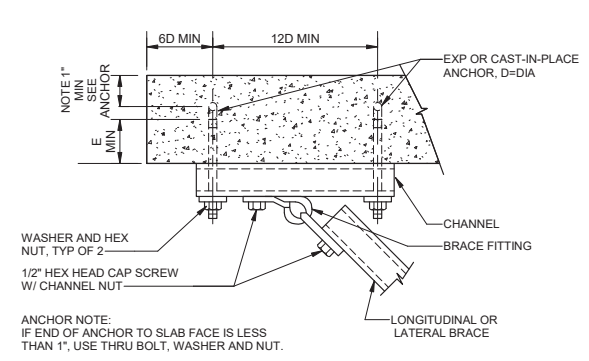


D3205 TYPE SA-5 ATTACHMENT
NO SCALE

MAX ALLOWABLE LOADS			
RIGHT ANGLE TO GRAIN		PARALLEL TO GRAIN	
LOAD (LBS)	D	LOAD (LBS)	D
970	1/2"	476	1/2"
1400	1"	1400	5/8"

FOR USE WHERE BRACE RUNS PARALLEL TO WOOD SUPPORT OR WHERE DOUBLE BOLTING REQUIRED

LOAD (LBS)	MAX ALLOWABLE LOADS:			
	EXP ANCHOR		CAST-IN-PLACE ANCHOR	
	D	E	D	E
336	3/8"	3 1/2"	3/8"	3"
476	3/8"	3 1/2"	3/8"	3"
970	1/2"	4 1/2"	3/8"	3"
1400	1/2"	4 1/2"	1/2"	4"

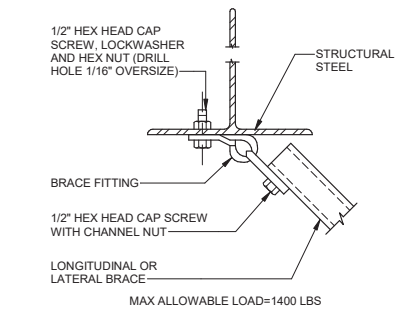


D3202 TYPE SA-2 ATTACHMENT
NO SCALE

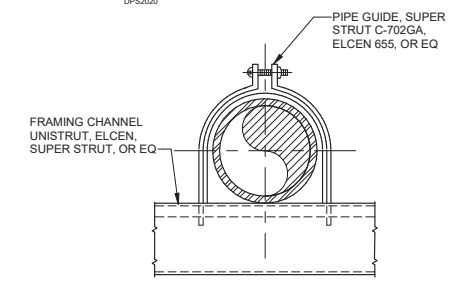
PIPE GUIDE NOTES:

- SECTIONS OF HOT AND CHILLED PIPING BETWEEN ANCHORS SHALL BE PROVIDED WITH PIPE GUIDES.
- THE FIRST AND SECOND PIPE GUIDES FROM EXPANSION JOINTS SHALL BE LOCATED AT A MAXIMUM OF FOUR AND EIGHTEEN PIPE DIAMETERS RESPECTIVELY FROM THE FREE END OF THE EXPANSION JOINT. INTERMEDIATE PIPE GUIDES SHALL BE LOCATED AS RECOMMENDED BY THE EXPANSION JOINT MANUFACTURER.
- FOR "L", "Z" AND "U" CONFIGURATIONS OF PIPING BETWEEN ANCHORS, PIPE GUIDES SHALL BE PROVIDED.

D3300 PIPE GUIDE NOTES
NO SCALE



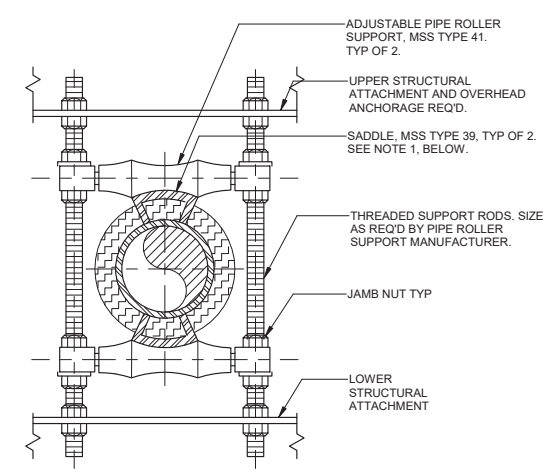
D3203 TYPE SA-3 ATTACHMENT
NO SCALE



- TYPE G1 PIPE GUIDE NOTES:**
- THIS GUIDE SHALL NOT BE USED FOR INSULATED PIPE.
 - SEE NOTES 2 AND 3 UNDER "PIPE GUIDE NOTES".

1/2" THROUGH 6" PIPE

D3301 TYPE G1 PIPE GUIDE
NO SCALE



- TYPE G3 PIPE GUIDE NOTES:**
- REPLACE SADDLES WITH CALCIUM OR WOOD BLOCK AND SHIELD, MSS TYPE 40 WHEN USED WITH COPPER PIPE OR CHILLED WATER SUPPLY (CWS) OR CHILLED WATER RETURN (CWR) PIPING.
 - SEE "PIPE GUIDE NOTES", D3300.

3/8" THROUGH 12" PIPE

D3303 TYPE G3 PIPE GUIDE
NO SCALE

NO.	DATE	BY	DESCRIPTION	APPROVED
REVISIONS				

REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

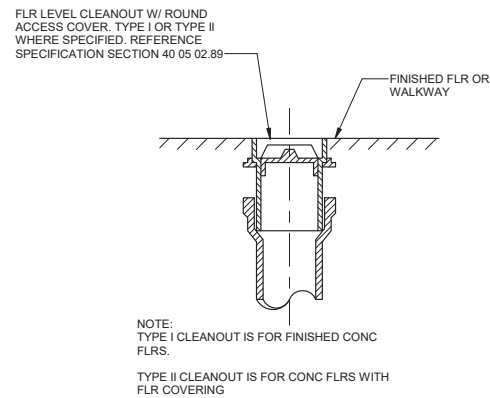
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SUBMITTED BY:			SP-FILE NO.: SP2602
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
STANDARD TYPICAL DETAILS - 7

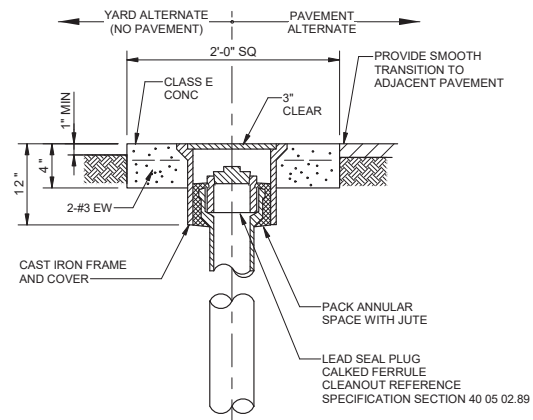
DESIGNED BY: KBK
DRAWN BY: LEG
CHECKED BY: AZ
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
D-01-0007
SHT 107 of 303 SHTS



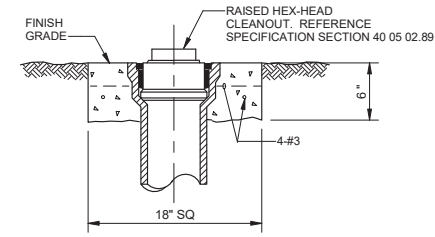
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 TITLE OF PROJECT: OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION



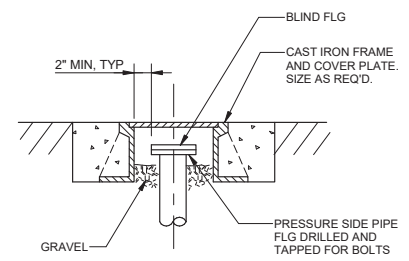
D4101 TYPE I AND II CLEANOUT
NO SCALE



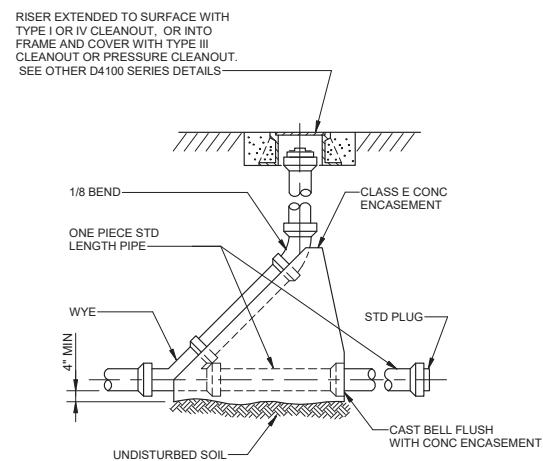
D4102 TYPE III CLEANOUT
NO SCALE



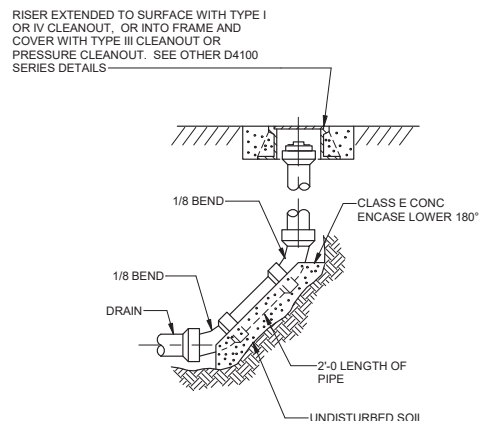
D4103 TYPE IV CLEANOUT
NO SCALE



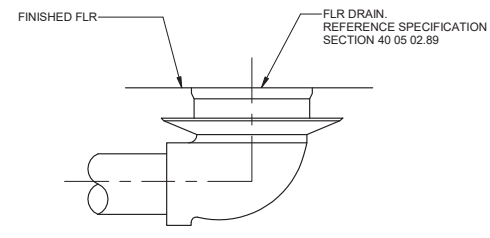
D4105 PRESSURE PIPE CLEANOUT
NO SCALE



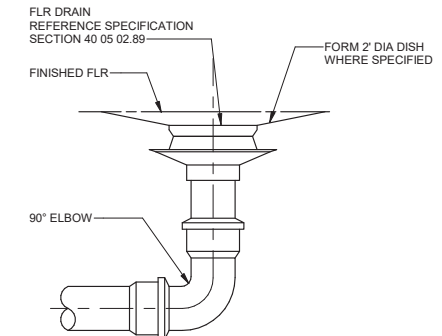
D4106 EXTENDABLE CLEANOUT
NO SCALE



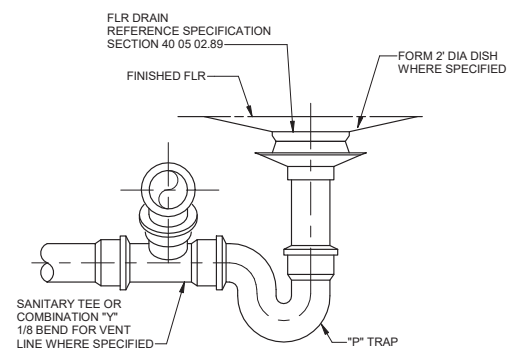
D4107 LINE END CLEANOUT
NO SCALE



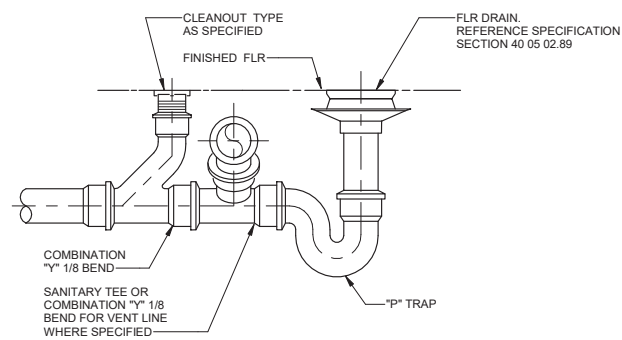
D4201 TYPE I FLOOR DRAIN
NO SCALE



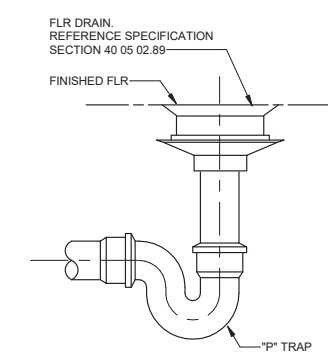
D4202 TYPE II FLOOR DRAIN
NO SCALE



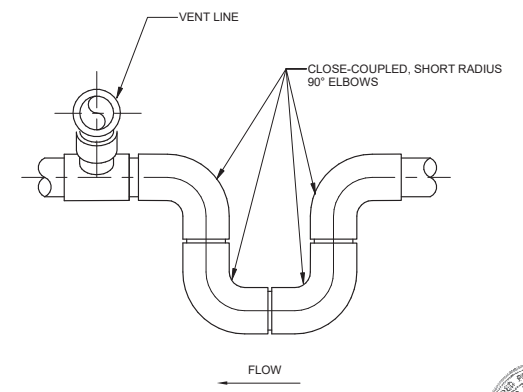
D4203 TYPE III FLOOR DRAIN
NO SCALE



D4204 TYPE IV FLOOR DRAIN
NO SCALE



D4205 TYPE V FLOOR DRAIN
NO SCALE



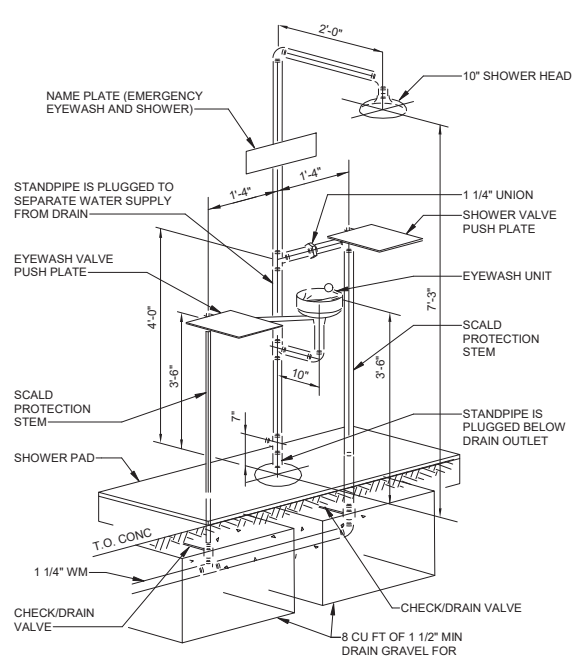
D4301 FABRICATED U-BEND
NO SCALE

NO.	DATE	BY	DESCRIPTION	APPROVED

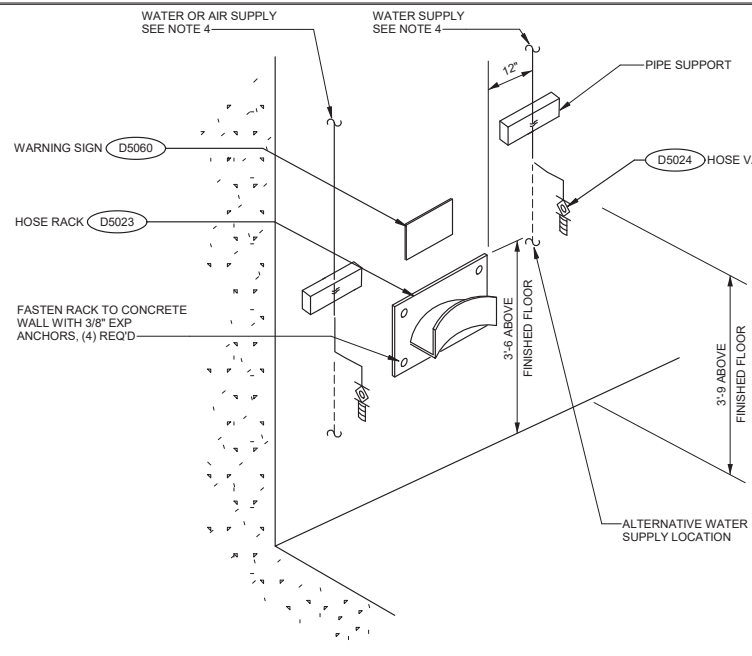
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REVIEWED BY:	DATE:	20	DATE:
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME:	SP-FILE NO.:
OMIED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE:	20XX

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
STANDARD TYPICAL DETAILS - 8

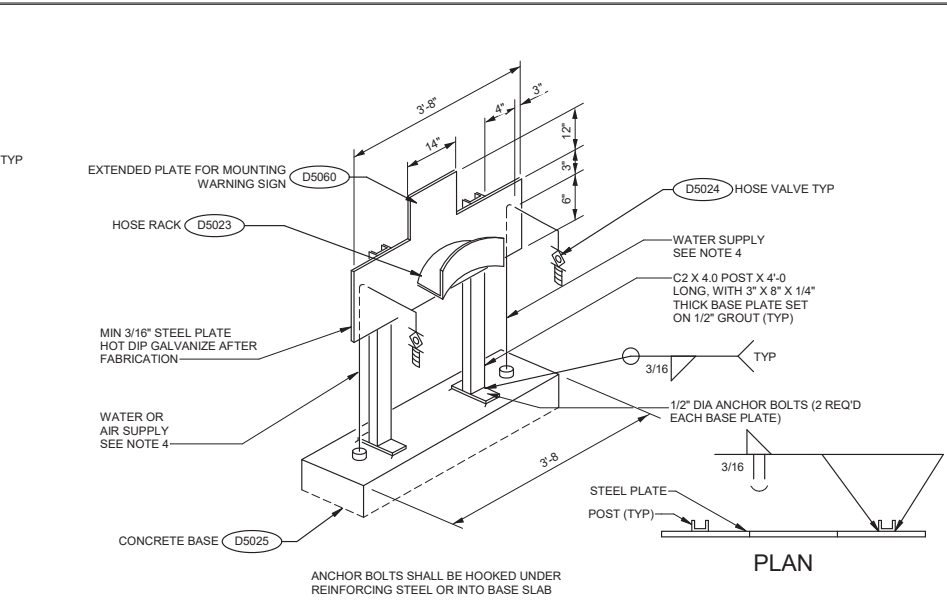
DESIGNED BY: KBK
 DRAWN BY: LEG
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-01-0008
 SHEET 108 OF 303 SHEETS



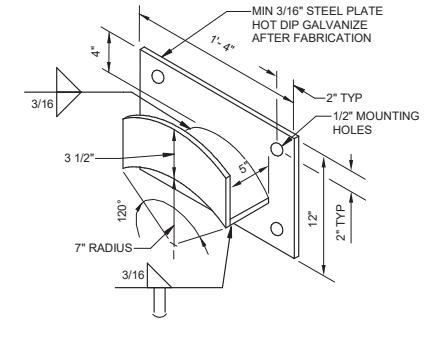
EMERGENCY EYEWASH AND SHOWER STATION
 D4402
 NO SCALE



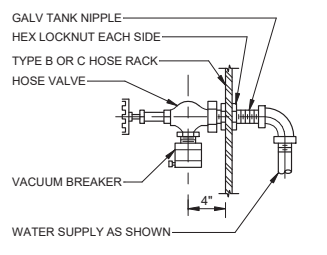
UTILITY STATION TYPE A, WALL MOUNTED
 D5020
 NO SCALE



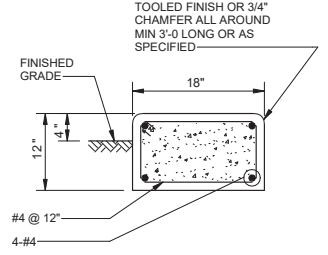
UTILITY STATION TYPE C, POST MOUNTED
 D5022
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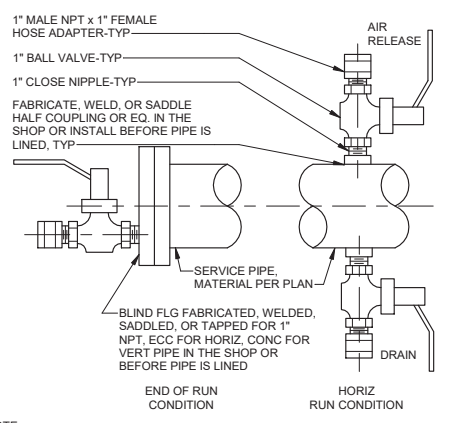
HOSE RACK
 D5023
 NO SCALE



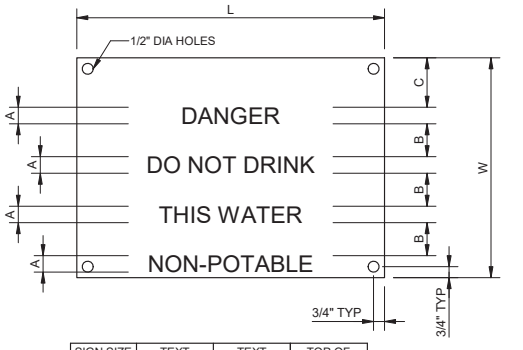
HOSE VALVE
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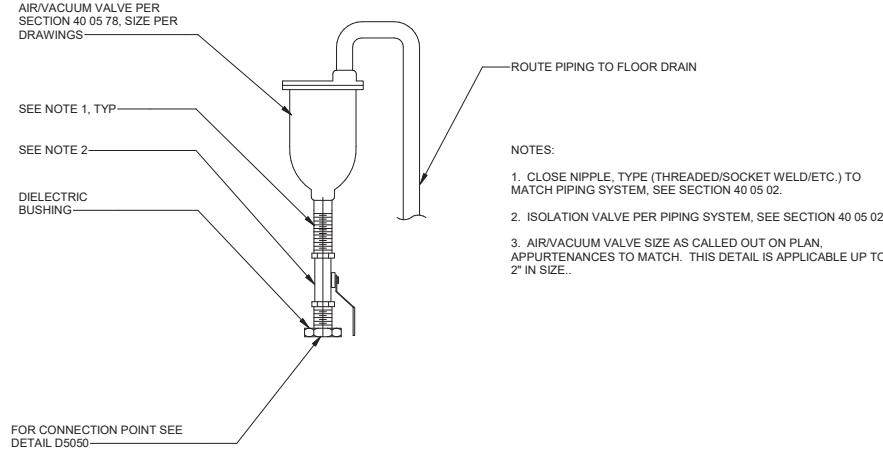
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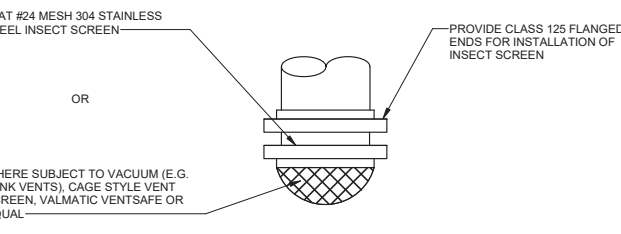
FLUSHING COCK
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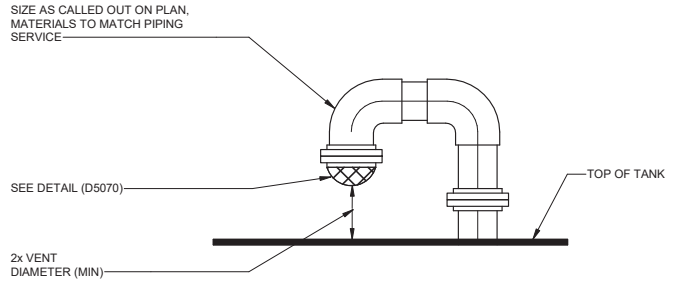
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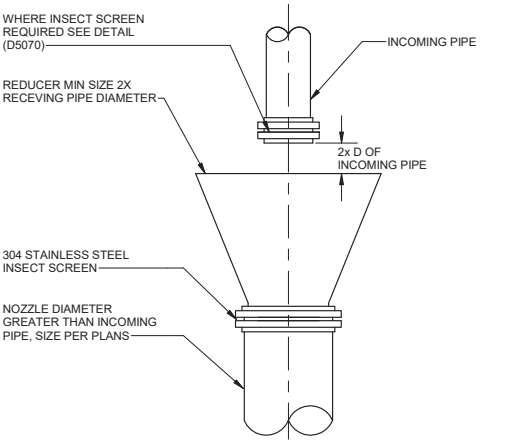
AIR/VACUUM VALVE
 D5061
 NO SCALE



INSECT SCREEN
 D5070
 NO SCALE



TANK VENT
 D5075
 NO SCALE



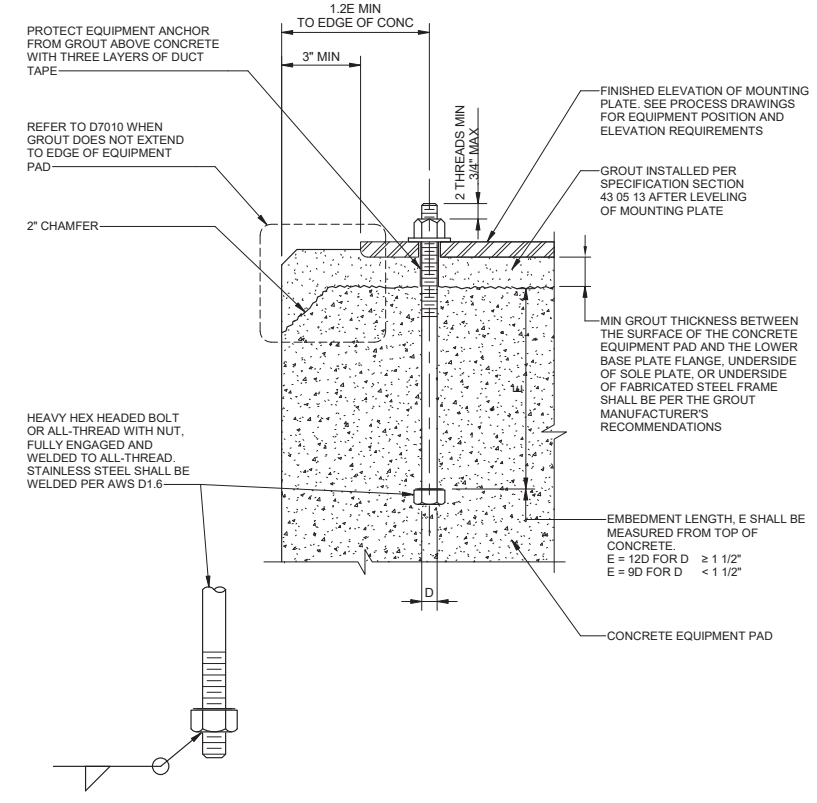
AIR GAP
 D5076
 NO SCALE



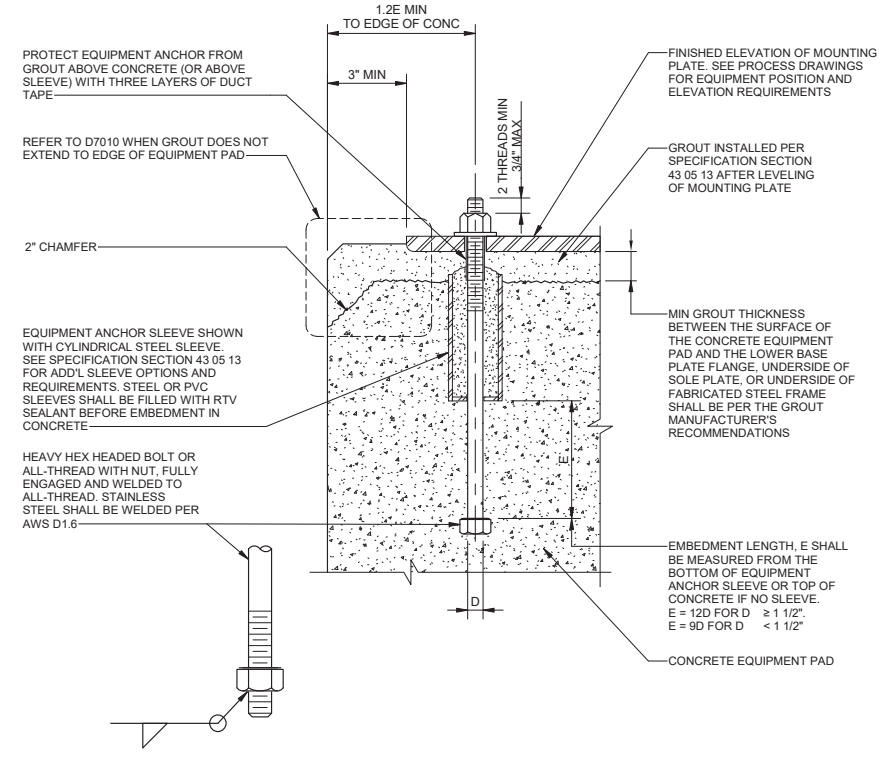
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DRAWN BY: LEG	DATE: _____, 20XX	COMPUTER FILE NAME:
CHECKED BY: AZ	DATE: _____, 20XX	SP-FILE NO.: SP2602
CONTRACTANT JOB/SHEET NO. 154390	DATE: _____, 20XX	APPROVED BY: ALEX NAZARCHUK, P.E. - CITY ENGINEER
DRAWING NO.: 7078	DATE: _____, 20XX	DATE: _____, 20XX
D-01-0009		
SHT 109 of 303 SHTS		

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 STANDARD TYPICAL DETAILS - 9

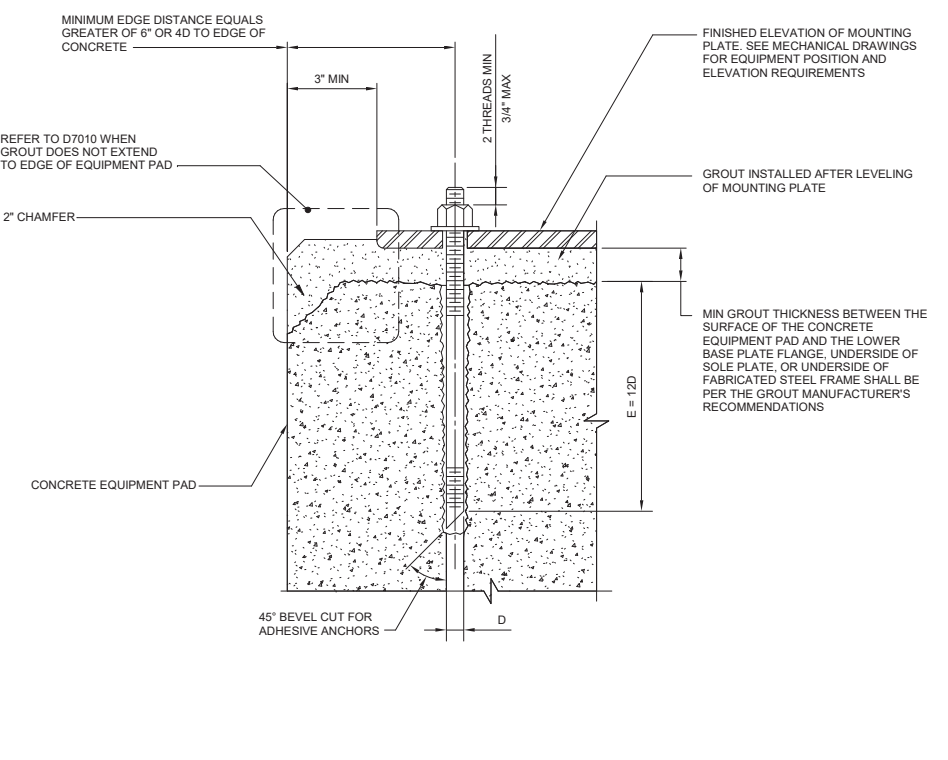




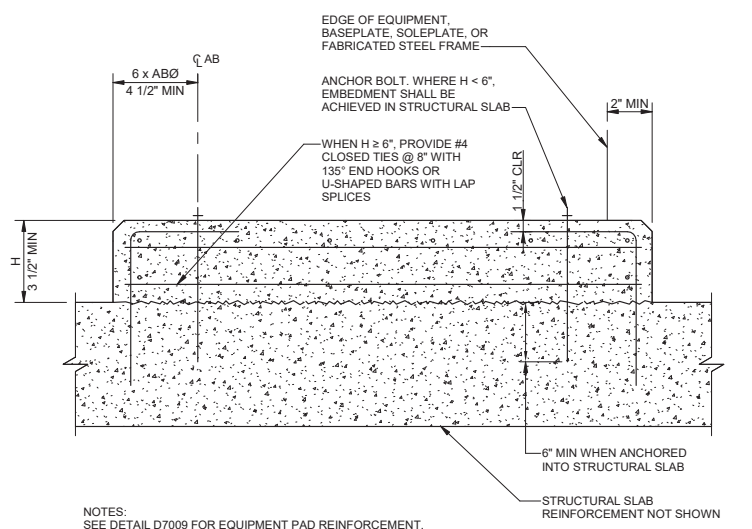
D7001
 CAST-IN-PLACE ANCHOR BOLTS FOR EQUIPMENT ANCHORAGE
 NO SCALE



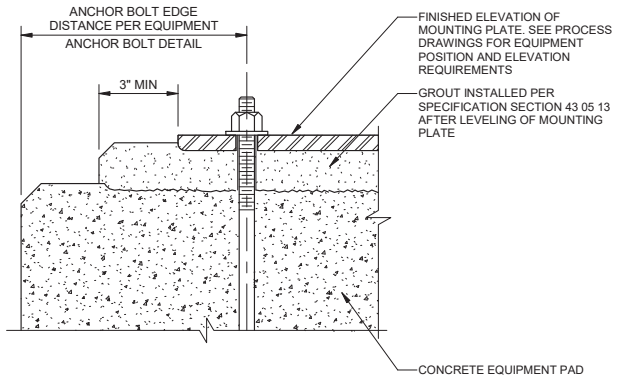
D7002
 CAST-IN-PLACE EQUIPMENT ANCHOR BOLTS FOR RIGID EQUIPMENT MOUNTS
 NO SCALE



D7004
 ADHESIVE ANCHORS FOR RIGID EQUIPMENT MOUNTS
 NO SCALE



D7006
 STATIC / NON CRITICAL EQUIPMENT PAD
 NO SCALE



D7010
 EQUIPMENT PAD GROUT EDGE
 NO SCALE

City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED

CONSULTANT

REVIEWED BY:	DATE:	20XX
REVIEWED BY:	DATE:	20XX
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20XX
OMIED POUR, P.E. - PROJECT MANAGER		

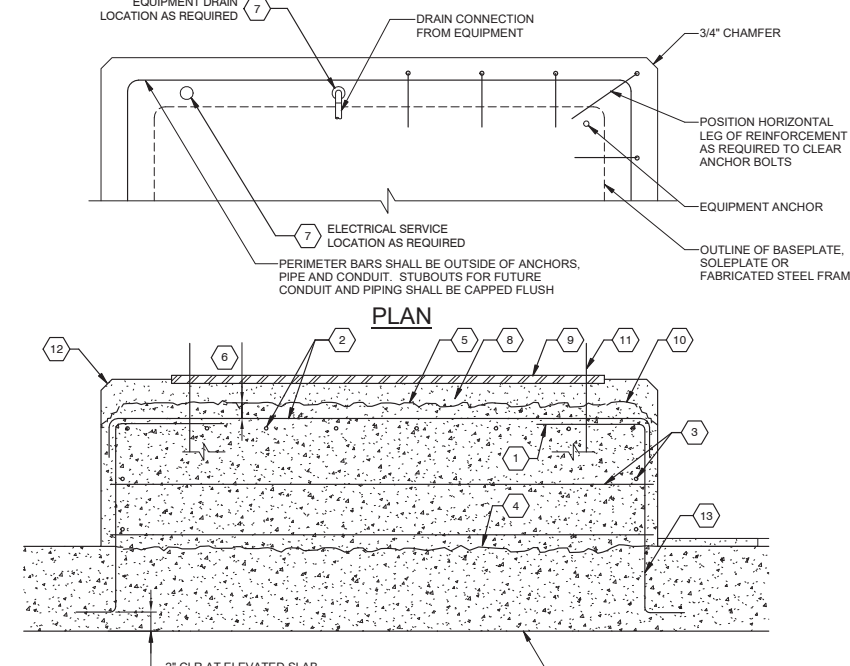
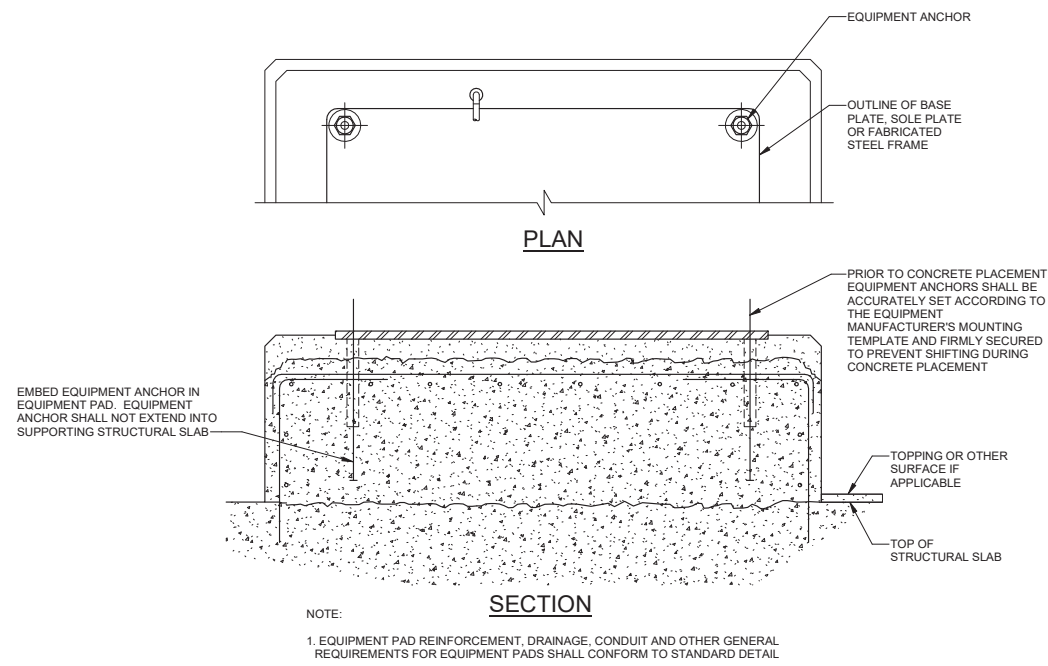
REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
STANDARD TYPICAL DETAILS - 10

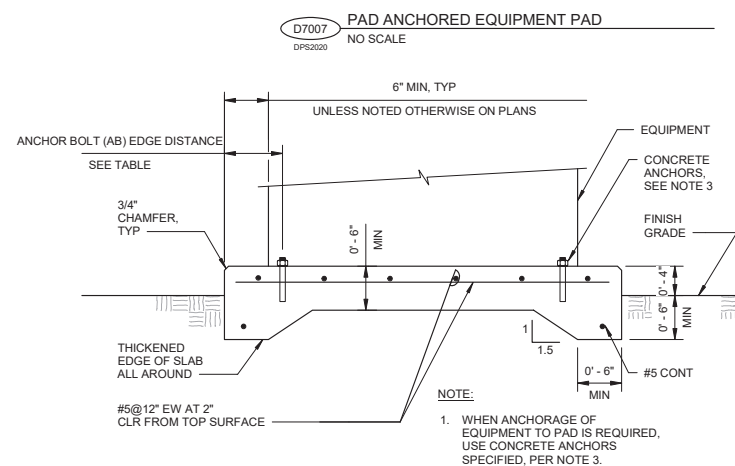
PROJECT AND SHEET TITLE

DESIGNED BY:	KBK
DRAWN BY:	LEG
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-01-0010	
SHT	110 of 303 SHTS

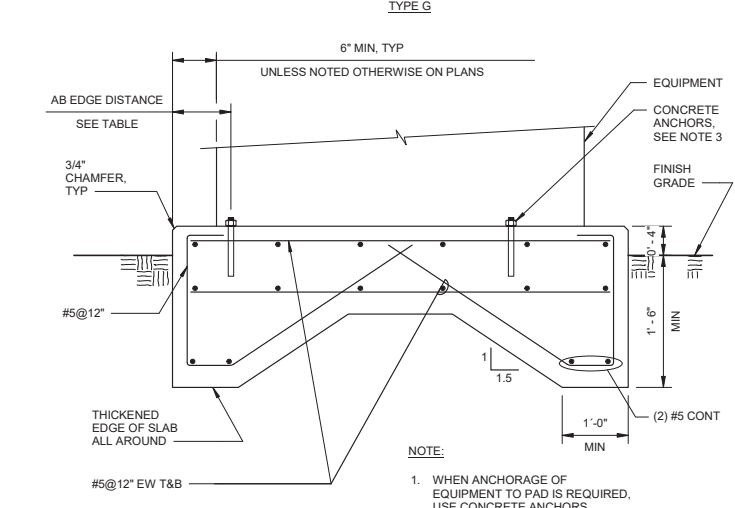




- KEY NOTES:**
- #4 @ 12" DOWELS FOR PADS ≤ 12" HIGH (#5 @ 12" FOR PADS > 12" HIGH) WITH 90 DEGREE STANDARD HOOK. PROVIDE 10" EMBEDMENT INTO STRUCTURAL SLAB OR HOOK BARS AT BOTTOM OF SLAB IF SLAB IS LESS THAN 12" THICK.
 - #4 @ 12" EACH WAY. TERMINATE WITH STANDARD HOOKS OR CLASS BLAP SPLICE WITH DOWEL HOOKS.
 - #4 CLOSED TIES @ 8" WITH 135° END HOOKS OR U-SHAPED BARS WITH LAP SPLICES.
 - ROUGHEN SLAB SURFACE TO 1/4" AMPLITUDE. REMOVE ALL LINTANCE AND LOOSE MATERIAL. APPLY BONDING AGENT 30 MINUTES OR LESS BEFORE PLACING CONCRETE. EXTENT OF ROUGHENED AREA SHALL BE 2 INCHES INSIDE THE PERIMETER OF THE EQUIPMENT PAD.
 - AFTER THE CONCRETE IS FULLY CURED, THE TOP OF THE EQUIPMENT PAD SHALL BE ROUGHENED PER SPECIFICATION SECTION 11002.
 - MINIMUM 1" CLEAR AFTER ROUGHENING TOP OF EQUIPMENT PAD.
 - COORDINATE LOCATION OF ELECTRICAL CONDUIT AND DRAINAGE PIPING PENETRATIONS WITHIN THE EQUIPMENT PAD. ALL PENETRATIONS SHALL STUB-UP ON THE SAME SIDE OF THE EQUIPMENT AS REQUIRED. FOR CONNECTION TO EQUIPMENT. EQUIPMENT PAD DRAINS SHALL BE LOCATED AT DRAINAGE CONNECTIONS FROM EQUIPMENT. EQUIPMENT PAD SHALL BE CONFIGURED ACCORDINGLY.
 - EQUIPMENT PAD GROUT. MINIMUM THICKNESS PER GROUT MANUFACTURER'S INSTRUCTIONS.
 - BASEPLATE, SOLEPLATE OR FABRICATED STEEL FRAME.
 - 2-INCH ROUGHENED CHAMFER IN CONCRETE EQUIPMENT PAD ALL AROUND WHERE GROUT EXTENDS TO EDGE OF PAD.
 - PRIOR TO CONCRETE PLACEMENT, EQUIPMENT ANCHORS SHALL BE ACCURATELY SET ACCORDING TO THE EQUIPMENT MANUFACTURER'S MOUNTING TEMPLATE AND FIRMLY SECURED TO PREVENT SHIFTING DURING CONCRETE PLACEMENT.
 - 3/4-INCH CHAMFER IN EQUIPMENT PAD GROUT ALL AROUND.
 - FOR CONDITION WHERE STRUCTURAL SLAB IS EXISTING, DRILL HOLE AND ADHESIVE GROUT DOWELS A MINIMUM OF 6" INTO THE SLAB FOR #4 DOWELS AND 7 1/2" FOR #5 DOWELS.



- NOTES:**
- PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS INDICATED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.
 - COORDINATE LOCATION OF ELECTRICAL CONDUIT AND DRAINAGE PIPING PENETRATIONS WITHIN THE EQUIPMENT PAD. STUB UP PENETRATIONS ON THE SAME SIDE OF THE EQUIPMENT AS REQUIRED FOR CONNECTION TO EQUIPMENT. EQUIPMENT DRAINS SHALL BE LOCATED AS REQUIRED FOR DRAINAGE FROM EQUIPMENT. EQUIPMENT PAD SHALL BE CONFIGURED ACCORDINGLY.
 - THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER AND AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE OR OTHER ACCEPTABLE MEANS, MATCHING THE BASE PLATE, WHILE PAD IS BEING PLACED.
 - ANCHOR BOLT SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 1" GREATER THAN BOLT DIAMETER AND A MAXIMUM INTERNAL DIAMETER 3" GREATER THAN ANCHOR BOLT DIAMETER UNLESS MECHANICAL SPECIFICATIONS CALL OUT OTHERWISE. THE MINIMUM SLEEVE LENGTH SHALL BE 8 TIMES THE BOLT DIAMETER UNLESS MECHANICAL SPECIFICATIONS CALL OUT OTHERWISE. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT AFTER BOLTS ARE ALIGNED. SEE ANCHOR BOLT DETAILS DRAWING.
 - EQUIPMENT BASES SHALL BE INSTALLED LEVEL. SEE SPECIFICATION SECTION 43 05 13 FOR LEVELING REQUIREMENT.
 - WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE GROUT IS PLACED. ANCHOR BOLTS MAY BE USED FOR LEVELING WITH DOUBLE NUTS. HOWEVER, PRIOR TO TIGHTENING, THE BASE PLATE MUST BE HARD-SHIMMED AND THE LEVELING NUTS BACKED OFF. EACH ANCHOR BOLT MUST HAVE ITS OWN SHIM PACK AND THE NUT FULLY TIGHTENED PRIOR TO GROUTING. WEDGES OR SHIMS THAT ARE LEFT IN PLACE SHALL NOT BE EXPOSED TO VIEW.
 - FOR GROUT APPLICATION, SEE SPECIFICATION SECTION 43 05 13.
 - AT DESIGN BUILDER'S OPTION, ADHESIVE ANCHORS MAY BE USED IN LIEU OF CAST-IN-PLACE ANCHOR BOLTS FOR EQUIPMENT ANCHOR BOLTS LESS THAN 5/8" DIAMETER WHEN APPROVED BY THE EQUIPMENT MANUFACTURER AND APPROVED BY THE ENGINEER. ANCHORS SHALL BE INSTALLED WITH 4 1/2" MINIMUM EDGE DISTANCE IN EACH DIRECTION.
 - ANCHOR BOLTS AND EQUIPMENT PADS FOR RIGID EQUIPMENT MOUNTS SHALL COMPLY WITH SPECIFICATION SECTION 43 05 13. REQUIREMENTS IN SECTION 43 05 13 SHALL CONTROL OVER THE STANDARD DETAILS SHOWN ON THIS DRAWING.



EQUIPMENT PAD DIMENSIONS

AB DIA (IN.)	1/2	5/8	3/4	7/8	1	1 1/4	1 3/8	1 1/2	1 3/4	2
MIN PAD HT (IN.)	7 1/2	9 1/2	11	12 1/2	14	17 1/2	19	20 1/2	24	27
MIN AB EDGE DISTANCE	4 1/2	4 1/2	4 1/2	5 1/4	6	7 1/2	8 1/4	9	10 1/2	12

D7011 CONCRETE EQUIPMENT PAD DETAILS
 NO SCALE



REVIEWED BY: _____ DATE: _____ 20____
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 OMEED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20XX
 SUBMITTED BY: _____
 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 STANDARD TYPICAL DETAILS - 11




DESIGNED BY: KBK
 DRAWN BY: LEG
 CHECKED BY: AZ
 CONSULTANT JOB SHEET NO. 154390
 DRAWING NO. 7078
 D-01-0011
 SHEET 111 OF 303 SHEETS

NO.	DATE	BY	DESCRIPTION	APPROVED

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PIPE MATERIAL SCHEDULE													
SERVICE	PIPE SERVICE ABBREVIATION	LOCATION	DIAMETER (INCH)	MATERIAL	CLASS/SCHED.	JOINTS	TYPE FITTINGS	LINING	EXTERNAL COATING SYSTEM (REFERENCE 09 90 00)	TEST PRESSURE PSIG	TEST DURATION MIN	TEST MEDIUM	SPECIFICATION
WATER													
RAW WATER (OLYMPIC WELLFIELD)	RW1	EXPOSED	ALL	DIP	CL53	FLG	DIP	CML	E-1, EU-1 (EXPOSED TO SUNLIGHT)	200	120	WATER	40 05 19
		BURIED	16" AND LARGER	DIP	PC250	MJ	DIP	CML	MANUFACTURER'S ASPHALTIC COATING	200	120	WATER	40 05 19
PRESSURE FILTER EFFLUENT	FLT	EXPOSED	ALL	SS-1	10S	W OR FLG	SS-1	NONE	NONE	150	120	WATER	40 05 23
		BURIED	12" AND SMALLER	DIP	PC350	MJ	DIP	CML	MANUFACTURER'S ASPHALTIC COATING	200	120	WATER	40 05 19
ULTRAVIOLET FEED (D/S PEROXIDE INJECTION)	OXW	EXPOSED	ALL	SS-1	10S	W OR FLG	SS-1	NONE	NONE	150	120	WATER	40 05 23
		BURIED	12" AND SMALLER	DIP	PC350	MJ	DIP	CML	MANUFACTURER'S ASPHALTIC COATING	200	120	WATER	40 05 19
ULTRAVIOLET EFFLUENT	LVE	EXPOSED (INSIDE UV BUILDING)	ALL	SS-1	10S	W OR FLG	SS-1	NONE	NONE	150	120	WATER	40 05 23
		EXPOSED (OUTSIDE OF UV BUILDING)	ALL	DIP	CL53	FLG	DIP	CML	E-1, EU-1 (EXPOSED TO SUNLIGHT)	200	120	WATER	40 05 19
		EXPOSED (SUPPLIER/SUBCONTRACTOR)	ALL	CS-3	SEE SECTION 40 05 24	W	CS-3	EPOXY	MANUFACTURER'S EPOXY COATING	200	120	WATER	40 05 24
		BURIED	12" AND SMALLER	DIP	PC350	MJ	DIP	CML	MANUFACTURER'S ASPHALTIC COATING	200	120	WATER	40 05 19
GAC CONTACTOR BACKWASH SUPPLY	BW	EXPOSED (DESIGN BUILDER)	ALL	DIP	CL53	FLG	DIP	CML	E-1, EU-1 (EXPOSED TO SUNLIGHT)	200	120	WATER	40 05 19
		EXPOSED (SUPPLIER/SUBCONTRACTOR)	ALL	CS-3	SEE SECTION 40 05 24	W	CS-3	EPOXY	MANUFACTURER'S EPOXY COATING	200	120	WATER	40 05 24
		BURIED	12" AND SMALLER	DIP	PC350	MJ	DIP	CML	MANUFACTURER'S ASPHALTIC COATING	200	120	WATER	40 05 19
GAC CONTACTOR BACKWASH WASTE	BWW	EXPOSED (DESIGN BUILDER)	ALL	DIP	CL53	FLG	DIP	CML	E-1, EU-1 (EXPOSED TO SUNLIGHT)	200	120	WATER	40 05 19
		EXPOSED (SUPPLIER/SUBCONTRACTOR)	ALL	CS-3	SEE SECTION 40 05 24	W	CS-3	EPOXY	MANUFACTURER'S EPOXY COATING	200	120	WATER	40 05 24
		BURIED	12" AND SMALLER	DIP	PC350	MJ	DIP	CML	MANUFACTURER'S ASPHALTIC COATING	200	120	WATER	40 05 19
GAC CONTACTOR SPENT CARBON SLURRY	SC	EXPOSED	ALL	SS-5	40S	W	SS-5	NONE	NONE	150	120	WATER	40 05 23
		BURIED							N/A				
GAC CONTACTOR REACT (VIRGIN) CARBON	RC	EXPOSED	ALL	SS-5	40S	W	SS-5	NONE	NONE	150	120	WATER	40 05 23
		BURIED							N/A				
GAC CONTACTOR EFFLUENT	ROF	EXPOSED (DESIGN BUILDER)	ALL	DIP	CL53	FLG	DIP	CML	E-1, EU-1 (EXPOSED TO SUNLIGHT)	200	120	WATER	40 05 19
		EXPOSED (SUPPLIER/SUBCONTRACTOR)	ALL	CS-3	SEE SECTION 40 05 24	W	CS-3	EPOXY	MANUFACTURER'S EPOXY COATING	200	120	WATER	40 05 24
		BURIED	12" AND SMALLER	DIP	PC350	MJ	DIP	CML	MANUFACTURER'S ASPHALTIC COATING	200	120	WATER	40 05 19
RO FEED (D/S TRANSFER PUMPS)	ROF	EXPOSED	ALL	DIP	CL53	FLG	DIP	CML	E-1, EU-1 (EXPOSED TO SUNLIGHT)	200	120	WATER	40 05 19
		BURIED							N/A				
RO FEED (D/S SULFURIC ACID INJECTION)	ROF	EXPOSED	ALL	FRP	SEE SECTION 40 05 36.23	FLG OR BUTT-WRAPPED	FRP	NONE	EU-1-FRP	100	120	WATER	40 05 36.23
		BURIED							N/A				
RO FEED (D/S CARTRIDGE FILTERS)	ROF	EXPOSED	ALL	SS-1	10S	W OR FLG	SS-1	NONE	NONE	150	120	WATER	40 05 23
		BURIED	ALL	SS-5	40S	W	SS-5	NONE	NONE	150	120	WATER	40 05 23
RO FEED (D/S HIGH PRESSURE RO PUMPS)	ROF	EXPOSED	ALL	SS-1	10S	W OR FLG	SS-1	NONE	NONE	150	120	WATER	40 05 23
		BURIED							N/A				
RO REJECT	ROR	EXPOSED	ALL	CPVC-1	80	SLV	CPVC-1	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	150	120	WATER	40 05 31
		BURIED	ALL	HDPE	SDR 9	W	HDPE	NONE	NONE	200	120	WATER	40 05 33.13
RO PERMEATE	ROP	EXPOSED	ALL	SS-1	10S	W OR FLG	SS-1	NONE	NONE	150	120	WATER	40 05 23
		BURIED	ALL	SS-5	40S	W	SS-5	NONE	NONE	150	120	WATER	40 05 23

- NOTES:
- SEE G-01-0003 FOR PIPE MATERIAL, SYSTEM CODE, AND JOINT TYPE ABBREVIATIONS.
 - PROVIDE TRACER WIRE WITH BURIED PLASTIC PIPING PER SPECIFICATION 40 05 45.
 - MATCH PROCESS PIPING.
 - PROVIDE 3" SCH 80 CPVC CONTAINMENT PIPE AROUND CARRIER TUBING. WHERE BURIED, USE SPARE EXISTING UNDERGROUND CONDUITS AS DOUBLE CONTAINMENT TO THE GREATEST EXTENT POSSIBLE, AND DOUBLE CONTAIN IN 3" SCH 80 CPVC OTHERWISE.
 - SEE SPECIFICATION 40 05 31.19 FOR SECONDARY PIPE TESTING REQUIREMENTS.
 - ONLY WHERE INDICATED IN DRAWINGS. DRAIN PIPE MATERIAL TO MATCH EXISTING.



City of **Santa Monica**
PUBLIC WORKS DEPARTMENT
1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED



REVIEWED BY : _____	DATE : _____ 20__	REFERENCE :
REVIEWED BY : _____	DATE : _____ 20__	DATE : _____, 20XX
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME :
REVIEWED BY : _____	DATE : _____ 20__	SP-FILE NO. : SP2602
OMED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE : _____, 20XX

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

PIPE MATERIAL SCHEDULE - 1

DESIGNED BY : WL
DRAWN BY : RP
CHECKED BY : AZ
CONSULTANT JOB SHEET NO.
DRAWING NO. 7078
D-01-6001
SHT 112 OF 303 SHS



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PIPE MATERIAL SCHEDULE													
SERVICE	PIPE SERVICE ABBREVIATION	LOCATION	DIAMETER (INCH)	MATERIAL	CLASS/SCHED.	JOINTS	TYPE FITTINGS	LINING	EXTERNAL COATING SYSTEM (REFERENCE 09 90 00)	TEST PRESSURE PSIG	TEST DURATION MIN	TEST MEDIUM	SPECIFICATION
RO CLEANING FEED	CIPS	EXPOSED	ALL	CPVC-1	80	SLV	CPVC-1	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	150	120	WATER	40 05 31
		BURIED	N/A										
RO CLEANING RETURN	CIPR	EXPOSED	ALL	CPVC-1	80	SLV	CPVC-1	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	150	120	WATER	40 05 31
		BURIED	N/A										
RO PERMEATE CLEANING RETURN	CIPR	EXPOSED	ALL	CPVC-1	80	SLV	CPVC-1	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	150	120	WATER	40 05 31
		BURIED	N/A										
RO CLEANING WASTE	CIPW	EXPOSED	ALL	CPVC-1	80	SLV	CPVC-1	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	150	120	WATER	40 05 31
		BURIED	N/A										
RO FLUSH	FWS	EXPOSED	ALL	CPVC-1	80	SLV	CPVC-1	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	150	120	WATER	40 05 31
		BURIED	N/A										
DECARBONATOR EFFLUENT	DC	EXPOSED	ALL	SS-1	10S	W OR FLG	SS-1	NONE	NONE	150	120	WATER	40 05 23
		BURIED	16" AND LARGER	DIP	PC250	MJ	DIP	CML	MANUFACTURER'S ASPHALTIC COATING	200	120	WATER	40 05 19
FINISHED SUPPLY	FS	EXPOSED	ALL	CS-3	SEE SECTION 40 05 24	W	CS-3	CML	MANUFACTURER'S EPOXY COATING	200	120	WATER	40 05 24
		BURIED	ALL	CS-3	SEE SECTION 40 05 24	W	CS-3	CML	CEMENT MORTAR COATING	200	120	WATER	40 05 24
BYPASS/OFF-SPEC	ROB	EXPOSED	ALL	DIP	CL53	FLG	DIP	CML	E-1, EU-1 (EXPOSED TO SUNLIGHT)	200	120	WATER	40 05 19
		BURIED	12" AND SMALLER	DIP	PC350	MJ	DIP	CML	MANUFACTURER'S ASPHALTIC COATING	200	120	WATER	40 05 19
SAMPLE	SAMP	EXPOSED	ALL	SS-6	SEE SECTION 40 05 23	CPRSN	SS-6	NONE	NONE	150	120	WATER	40 05 23
		BURIED	N/A										
POTABLE WATER	PW	EXPOSED	N/A										
		BURIED	ALL	PVC-2	80	SLV	PVC-2	NONE	NONE	200	120	WATER	40 05 31

NOTES:

- SEE G-01-0003 FOR PIPE MATERIAL, SYSTEM CODE, AND JOINT TYPE ABBREVIATIONS.
- PROVIDE TRACER WIRE WITH BURIED PLASTIC PIPING PER SPECIFICATION 40 05 45.
- MATCH PROCESS PIPING.
- PROVIDE 3" SCH 80 CPVC CONTAINMENT PIPE AROUND CARRIER TUBING. WHERE BURIED, USE SPARE EXISTING UNDERGROUND CONDUITS AS DOUBLE CONTAINMENT TO THE GREATEST EXTENT POSSIBLE, AND DOUBLE CONTAIN IN 3" SCH 80 CPVC OTHERWISE.
- SEE SPECIFICATION 40 05 31.19 FOR SECONDARY PIPE TESTING REQUIREMENTS.
- ONLY WHERE INDICATED IN DRAWINGS. DRAIN PIPE MATERIAL TO MATCH EXISTING.



City of **Santa Monica**
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED



Brown and Caldwell
WALSH

REVIEWED BY : _____ DATE : ____/____/20__

 REVIEWED BY : _____ DATE : ____/____/20__

 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY : _____ DATE : ____/____/20__

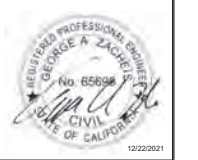
 OMED POUR, P.E. - PROJECT MANAGER

REFERENCE : _____
 DATE : ____/____/20__
 SUBMITTED BY : _____

 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 APPROVED BY : _____ DATE : ____/____/20__

 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
PIPE MATERIAL SCHEDULE - 2



DESIGNED BY : WL
 DRAWN BY : AC
 CHECKED BY : AZ
 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
D-01-6002
 SH 113 OF 303 SHS

C:\BCP\W0408737\DWG 12/20/2021 8:54 PM
 SHEET
 DWG. No. 1
 TITLE OF PROJECT:

PIPE MATERIAL SCHEDULE													
SERVICE	PIPE SERVICE ABBREVIATION	LOCATION	DIAMETER (INCH)	MATERIAL	CLASS/ SCHED.	JOINTS	TYPE FITTINGS	LINING	EXTERNAL COATING SYSTEM (REFERENCE 09 90 00)	TEST PRESSURE PSIG	TEST DURATION MIN	TEST MEDIUM	SPECIFICATION
CHEMICAL (SEE NOTE 4)													
AMMONIUM SULFATE	NSO4	EXPOSED (WITHIN CHEMICAL STORAGE AREA)	ALL	PVC-2	80	SLV	PVC-2	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	100	120	WATER	40 05 31
		EXPOSED (WITHIN DOUBLE CONTAINMENT)	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100 (SEE NOTE 5)	120	WATER (SEE NOTE 5)	40 05 31, 40 05 31.19
		BURIED	ALL	PFA-1	PER SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100	120	WATER	40 05 31
ANTISCALANT	AS	EXPOSED (WITHIN CHEMICAL STORAGE AREA)	ALL	PVC-2	80	SLV	PVC-2	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	100	120	WATER	40 05 31
		EXPOSED (WITHIN DOUBLE CONTAINMENT)	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100 (SEE NOTE 5)	120	WATER (SEE NOTE 5)	40 05 31, 40 05 31.19
		BURIED	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100	120	WATER	40 05 31
SODIUM HYDROXIDE	NAOH	EXPOSED (WITHIN CHEMICAL STORAGE AREA)	ALL	CS-2	40	SW	CS-2	NONE	EA-1	200	120	WATER	40 05 24
		EXPOSED (WITHIN DOUBLE CONTAINMENT)	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100 (SEE NOTE 5)	120	WATER (SEE NOTE 5)	40 05 31, 40 05 31.19
		BURIED	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100	120	WATER	40 05 31
SULFURIC ACID	HSO4	EXPOSED (WITHIN CHEMICAL STORAGE AREA)	ALL	CRP-1	SEE SECTION 40 05 24	SW	CRP-1	NONE	NONE	100	120	WATER	40 05 23
		EXPOSED (WITHIN DOUBLE CONTAINMENT)	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100 (SEE NOTE 5)	120	WATER (SEE NOTE 5)	40 05 31, 40 05 31.19
		BURIED	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100	120	WATER	40 05 31
SODIUM HYPOCHLORITE	NOCL	EXPOSED (WITHIN CHEMICAL STORAGE AREA)	ALL	CPVC-1	80	SLV	CPVC-1	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	150	120	WATER	40 05 31
		EXPOSED (WITHIN DOUBLE CONTAINMENT)	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100 (SEE NOTE 5)	120	WATER (SEE NOTE 5)	40 05 31, 40 05 31.19
		BURIED	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100	120	WATER	40 05 31
HYDROGEN PEROXIDE	H2O2	EXPOSED (WITHIN CHEMICAL STORAGE AREA)	ALL	SS-1	10S	W OR FLG	SS-1	NONE	NONE	150	120	WATER	40 05 23
		EXPOSED (WITHIN DOUBLE CONTAINMENT)	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100 (SEE NOTE 5)	120	WATER (SEE NOTE 5)	40 05 31, 40 05 31.19
		BURIED	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100	120	WATER	40 05 31
HYDROFLUOROSILICIC ACID	HF	EXPOSED (WITHIN CHEMICAL STORAGE AREA)	ALL	PVC-2	80	SLV	PVC-2	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	100	120	WATER	40 05 31
		EXPOSED (WITHIN DOUBLE CONTAINMENT)	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100 (SEE NOTE 5)	120	WATER (SEE NOTE 5)	40 05 31, 40 05 31.19
		BURIED	ALL	PFA-1	SEE SECTION 40 05 31	FLRD	PVDF FLARE-TYPE	NONE	NONE	100	120	WATER	40 05 31

- NOTES:
- SEE G-01-0003 FOR PIPE MATERIAL, SYSTEM CODE, AND JOINT TYPE ABBREVIATIONS.
 - PROVIDE TRACER WIRE WITH BURIED PLASTIC PIPING PER SPECIFICATION 40 05 45.
 - MATCH PROCESS PIPING.
 - PROVIDE 3" SCH 80 CPVC CONTAINMENT PIPE AROUND CARRIER TUBING. WHERE BURIED, USE SPARE EXISTING UNDERGROUND CONDUITS AS DOUBLE CONTAINMENT TO THE GREATEST EXTENT POSSIBLE, AND DOUBLE CONTAIN IN 3" SCH 80 CPVC OTHERWISE.
 - SEE SPECIFICATION 40 05 31.19 FOR SECONDARY PIPE TESTING REQUIREMENTS.
 - ONLY WHERE INDICATED IN DRAWINGS. DRAIN PIPE MATERIAL TO MATCH EXISTING.



City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH

REVIEWED BY : _____ DATE : ____/____/20__ SUNNY WANG, P.E. - WATER RESOURCES MANAGER	REFERENCE : _____ DATE : ____/____/20__ CURTIS CASTLE, P.E. - PRINCIPAL C.E.
REVIEWED BY : _____ DATE : ____/____/20__ OMED POUR, P.E. - PROJECT MANAGER	COMPUTER FILE NAME : _____ SP-FILE NO. : SP2602 APPROVED BY : _____ DATE : ____/____/20__ ALEX NAZARCHUK, P.E. - CITY ENGINEER

DESIGNED BY : WL
 DRAWN BY : AC
 CHECKED BY : AZ
 CONSULTANT JOB/SHEET NO. _____
 DRAWING NO. 7078
D-01-6003
 SH1 114 of 303 SH15

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
PIPE MATERIAL SCHEDULE - 3
 PROJECT AND SHEET TITLE

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PIPE MATERIAL SCHEDULE													
SERVICE	PIPE SERVICE ABBREVIATION	LOCATION	DIAMETER (INCH)	MATERIAL	CLASS/SCHED.	JOINTS	TYPE FITTINGS	LINING	EXTERNAL COATING SYSTEM (REFERENCE 09 90 00)	TEST PRESSURE PSIG	TEST DURATION MIN	TEST MEDIUM	SPECIFICATION
AIR													
GAC AIR SCRUBBERS	FA	EXPOSED	ALL	FRP	SEE SECTION 40 05 31	FLG OR BUTT-WRAPPED	FRP	NONE	EU-1-FRP	5	120	AIR	40 05 36.23
		BURIED							N/A				
INSTRUMENT AIR	IA	EXPOSED	ALL	SS-7	40S	SW	SS-7	NONE	NONE	200	120	AIR	40 05 23
		BURIED							N/A				
VENT	V	EXPOSED	ALL	VARIES, REFER TO P&IDs FOR PIPE MATERIAL DESIGNATIONS					VARIES	5	120	AIR	VARIES
		BURIED							N/A				
DRAIN													
OVERFLOW	OF	EXPOSED	ALL	PVC-4	80	SLV	PVC-4	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	5	120	WATER	40 05 31.17
		BURIED	ALL	PVC-4	80	SLV	PVC-4	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	5	120	WATER	40 05 31.17
DRAIN	DRN	EXPOSED	ALL	PVC-4	80	SLV	PVC-4	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	5	120	WATER	40 05 31.17
		BURIED	ALL	PVC-4	80	SLV	PVC-4	NONE	NONE (NOT EXPOSED TO SUNLIGHT), L-2 (EXPOSED TO SUNLIGHT)	5	120	WATER	40 05 31.17
CARTRIDGE FILTER DRAIN, EQUALIZATION TANK DRAIN (SEE NOTE 6)	DRN	EXPOSED	ALL	SEE NOTE 6						50	120	WATER	40 05 19
		BURIED	ALL	SEE NOTE 6						50	120	WATER	40 05 19
STORM WATER	SW	EXPOSED		N/A									
		BURIED	10" OR SMALLER	PVC-4	80	SLV	PVC-4	NONE	NONE	5	120	WATER	40 05 31.17
		BURIED	12" OR GREATER	RCP	SEE SECTION 40 05 39.23	MORTAR TONGUE AND GROOVE OR RUBBER GASKET	NONE	PVC	NONE	5	120	WATER	40 05 39.23

NOTES:

- SEE G-01-0003 FOR PIPE MATERIAL, SYSTEM CODE, AND JOINT TYPE ABBREVIATIONS.
- PROVIDE TRACER WIRE WITH BURIED PLASTIC PIPING PER SPECIFICATION 40 05 45.
- MATCH PROCESS PIPING.
- PROVIDE 3" SCH 80 CPVC CONTAINMENT PIPE AROUND CARRIER TUBING. WHERE BURIED, USE SPARE EXISTING UNDERGROUND CONDUITS AS DOUBLE CONTAINMENT TO THE GREATEST EXTENT POSSIBLE, AND DOUBLE CONTAIN IN 3" SCH 80 CPVC OTHERWISE.
- SEE SPECIFICATION 40 05 31.19 FOR SECONDARY PIPE TESTING REQUIREMENTS.
- ONLY WHERE INDICATED IN DRAWINGS. DRAIN PIPE MATERIAL TO MATCH EXISTING.



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REVIEWED BY: _____ DATE: ____/____/20__

 REVIEWED BY: _____ DATE: ____/____/20__

 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: ____/____/20__

 OMED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: ____/____/20__
 SUBMITTED BY: _____

 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 APPROVED BY: _____ DATE: ____/____/20__

 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
PIPE MATERIAL SCHEDULE - 4



DESIGNED BY: WL
 DRAWN BY: AC
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
D-01-6004
 SH1 115 OF 303 SH15

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SHEET DWG. No. 1

OVERALL VALVE SCHEDULE										
ITEM NO.	SIZE (INCH)	VALVE TYPE	TYPE	OPERATOR TYPE	REMOTE HAND CONTROL	QTY	DWG NO.		REMARKS	
							MECH.	P&ID		
1	10	PRESSURE REGULATING VALVE	MODULATING	MANUAL	N/A	1	D-02-1002	PIA00703	RW1 - PRV	
2	10	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	2	D-02-1002	PIA00703	RW1 - PRV ISOLATION	
3	16	BUTTERFLY VALVE	OPEN/CLOSE	ACTUATED	480 V	1	D-02-1002	PIA00703	RW1 - GREENSAND FILTER INFLUENT	
4	12	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	2	D-03-1001, D-03-3001	I-03-6001	FLT - H2O2 FLOWMETER AND STATIC MIXER ISOLATION	
5	8	BUTTERFLY VALVE	OPEN/CLOSE	ACTUATED	480 V	2	D-04-3002	I-04-6001, I-04-6002	LUVE - GAC TRAIN 1 AND 2 ISOLATION	
6	8	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	4	D-04-3002	I-04-6001, I-04-6002	ROF - GAC TRAIN 1 AND 2 FLOWMETER ISOLATION	
7	8	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	2	D-04-3002	I-04-6001, I-04-6002	ROF - GAC TRAIN 1 AND 2 DRAIN / OFF-SPEC	
8	16	CHECK VALVE	OPEN/CLOSE	MANUAL	N/A	1	D-02-3002	I-02-6001	ROF - LP RO FEED PUMP	
9	16	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	1	D-02-3002	I-02-6001	ROF - LP RO FEED PUMP	
10	10	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	2	D-02-1004, D-02-3003	PIA00712	ROF - CARTRIDGE FILTER 5 ISOLATION	
11	8	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	1	D-02-1004, D-02-3003	PIA00712	DRN - CARTRIDGE FILTERS DRAIN / OFF-SPEC	
12	10	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	3	D-06-1002, D-06-3004	I-06-6002	ROR - BRINE TANK EFFLUENT AND BYPASS	
13	10	BUTTERFLY VALVE	OPEN/CLOSE	ACTUATED	480 V	1	D-06-1002, D-06-3004	I-06-6002	ROR - BRINE TANK BYPASS	
14	8	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	3	D-06-1002, D-06-3004	I-06-6002	ROR - BRINE PUMP SUCTION	
15	6	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	3	D-06-1002, D-06-3004	I-06-6002	ROR - BRINE PUMP DISCHARGE	
16	6	CHECK VALVE	OPEN/CLOSE	MANUAL	N/A	3	D-06-1002, D-06-3004	I-06-6002	ROR - BRINE PUMP DISCHARGE	
17	4	BALL VALVE	OPEN/CLOSE	MANUAL	N/A	1	D-06-3004	I-06-6002	DRN - BRINE TANK DRAIN TO OVERFLOW	
18	16	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	1	D-07-3001	PIA00721	ROP - DECARBONATOR INFLUENT	
19	18	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	1	D-07-3002	PIA00721	ROP - DECARBONATOR INFLUENT	
20	24	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	1	D-07-3002	PIA00721	ROP - DECARBONATOR INFLUENT	
21	6	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	1	D-07-1001, D-07-3001	PIA00721	DRN - DECARBONATOR EFFLUENT TANK DRAIN	
22	4	BALL VALVE	OPEN/CLOSE	MANUAL	N/A	4	D-07-1001, D-07-3001	PIA00721	DC - FLASH MIX PUMP SUCTION AND DISCHARGE	
23	4	CHECK VALVE	OPEN/CLOSE	MANUAL	N/A	2	D-07-1001, D-07-3001	PIA00721	DC - FLASH MIX PUMP DISCHARGE	
24	24	BUTTERFLY VALVE	MODULATING	ACTUATED	480 V	1	C-01-1007, C-01-5001	PIA00745	DC - DECARBONATOR EFFLUENT TO RESERVOIR	
25	6	GATE VALVE	OPEN/CLOSE	MANUAL	N/A	1	C-01-5002	PIA00745	BW - BACKWASH HOLDING TANK SUPPLY ISOLATION	
26	6	BUTTERFLY VALVE	MODULATING	ACTUATED	480 V	1	C-01-5002	PIA00745	BW - BACKWASH HOLDING TANK SUPPLY	
27	8	BUTTERFLY VALVE	MODULATING	ACTUATED	480 V	1	D-02-1001, D-02-1003	PIA00720	BW - BACKWASH SUPPLY PUMP RECIRCULATION	
28	8	BUTTERFLY VALVE	MODULATING	ACTUATED	480 V	1	D-09-1001	PIA00719	DRN - EQUALIZATION TANK DISCHARGE	
29	20	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	1	C-01-1007	PIA00745	FS - BOOSTER PUMP STATION SUCTION	
30	12	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	5	D-10-1001	I-10-6001	FS - BOOSTER PUMP STATION SUCTION AND SURGE TANK	
31	10	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	6	D-10-1001	I-10-6001	FS - BOOSTER PUMP STATION DISCHARGE	
32	18	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	1	D-10-1001	I-10-6001	FS - BOOSTER PUMP STATION DISCHARGE	
33	4	BUTTERFLY VALVE	MODULATING	ACTUATED	480 V	2	D-06-1001, D-06-3002, D-06-4001	I-06-6004	ROP - RO PERMEATE (MAKEUP) TO CIP MAKEUP TANK CIPS - DISCHARGE TO BRINE TANK	
34	4	BUTTERFLY VALVE	OPEN/CLOSE	ACTUATED	480 V	1	D-06-1001, D-06-3002, D-06-4001	I-06-6004	DRN - CIP MAKEUP TANK DRAIN	
35	4	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	1	D-06-1001, D-06-3002, D-06-4001	I-06-6004	CIPS - DISCHARGE TO BRINE TANK	
36	8	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	2	D-06-1001, D-06-3002, D-06-4001	I-06-6004	CIPS - CIP PUMP DISCHARGE	
37	10	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	6	D-06-1001, D-06-3002, D-06-4001	I-06-6004	CIPS - CIP MAKEUP TANK EFFLUENT, CIP PUMP SUCTION CIPS - CIP CARTRIDGE FILTER INFLUENT AND EFFLUENT	
38	10	BUTTERFLY VALVE	OPEN/CLOSE	ACTUATED	480 V	2	D-06-1001, D-06-3002, D-06-4001	I-06-6004	CIPS - CIP CARTRIDGE FILTER EFFLUENT CIPR	
39	4	CHECK VALVE	OPEN/CLOSE	MANUAL	N/A	2	D-06-1001, D-06-3002, D-06-4001	I-06-6004	SUMP PUMPS DISCHARGE	
40	8	CHECK VALVE	OPEN/CLOSE	MANUAL	N/A	2	D-06-1001, D-06-3002, D-06-4001	I-06-6004	CIPS - CIP PUMP DISCHARGE	
41	10	CHECK VALVE	OPEN/CLOSE	MANUAL	N/A	1	D-06-1001, D-06-3002, D-06-4001	I-06-6004	CIPR	
42	4	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	2	D-06-1001, D-06-3002, D-06-4001	I-06-6005	ROP - FLUSH TANK SUPPLY DRN - RO FLUSH TANK DRAIN	
43	4	BUTTERFLY VALVE	MODULATING	ACTUATED	480 V	1	D-06-1001, D-06-3002, D-06-4001	I-06-6005	ROP - FLUSH TANK SUPPLY	
44	8	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	6	D-06-1001, D-06-3002, D-06-4001	I-06-6005	FWS - FLUSH PUMP SUCTION AND DISCHARGE	
45	8	CHECK VALVE	OPEN/CLOSE	MANUAL	N/A	2	D-06-1001, D-06-3002, D-06-4001	I-06-6005	FWS - FLUSH PUMP DISCHARGE	

RO RETROFIT VALVE SCHEDULE										
ITEM NO.	SIZE (INCH)	VALVE TYPE	TYPE	OPERATOR TYPE	REMOTE HAND CONTROL	QTY	DWG NO.		REMARKS	
							MECH.	P&ID		
1	4	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	4	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROF - TRAINS 1-4, RO INTERSTAGE (STAGE 2 OUT) PUMP DISCHARGE	
2	8	BUTTERFLY VALVE	OPEN/CLOSE	ACTUATED	480 V	8	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROP - TRAINS 1-4, STAGE 2 INLET	
3	6	BUTTERFLY VALVE	OPEN/CLOSE	ACTUATED	480 V	8	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROP - TRAINS 1-4, STAGE 2 OUTLET	
4	6	BUTTERFLY VALVE	OPEN/CLOSE	ACTUATED	480 V	4	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROP - TRAINS 1-4, STAGE 2-3 BYPASS	
5	6	BUTTERFLY VALVE	OPEN/CLOSE	ACTUATED	480 V	4	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	FWS - TRAINS 1-4, STAGE 2 FLUSH OUTLET	
6	4	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	N/A	4	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROP - TRAINS 1-4, PERMEATE 1ST STATIC PVS	
7	3	BALL VALVE, V PORT	MODULATING	ACTUATED	480 V	8	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROR - TRAINS 1-4, FLOW CONTROL	
8	2.5	BALL VALVE	OPEN/CLOSE	ACTUATED	480 V	56	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROF - TRAINS 1-4, STAGE 1 INLET FOR BLOCKS A THROUGH N	
9	2	BALL VALVE	OPEN/CLOSE	ACTUATED	480 V	56	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROF - TRAINS 1-4, STAGE 1 OUTLET FOR BLOCKS A THROUGH N	
10	2	BALL VALVE	OPEN/CLOSE	ACTUATED	480 V	56	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROF - TRAINS 1-4, STAGE 3 INLET FOR BLOCKS A THROUGH N	
11	2	BALL VALVE	OPEN/CLOSE	ACTUATED	480 V	56	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROF - TRAINS 1-4, STAGE 3 OUTLET FOR BLOCKS A THROUGH N	
12	8	CHECK VALVE	OPEN/CLOSE	MANUAL	N/A	4	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROF - TRAINS 1-4, RO INTERSTAGE (STAGE 2 IN) PUMP DISCHARGE	
13	4	CHECK VALVE	OPEN/CLOSE	MANUAL	N/A	4	D-06-4003	PIA00713, PIA00714, PIA00715, PIA00716	ROF - TRAINS 1-4, RO INTERSTAGE (STAGE 3 IN) PUMP DISCHARGE	

NOTE: ONLY NEW VALVES REQUIRED FOR RO UNIT RETROFIT SHOWN. EXISTING VALVES TO BE REUSED AND PROTECTED IN PLACE OR RELOCATED ARE NOT SHOWN IN THIS TABLE. SEE PROCESS MECHANICAL AND INSTRUMENTATION FOR ALL VALVE TYPES, LOCATIONS, AND SIZES.



City of **Santa Monica**
PUBLIC WORKS DEPARTMENT
1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
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NO.	DATE	BY	DESCRIPTION	APPROVED



Brown and Caldwell
WALSH
CONSULTANT

REVIEWED BY : _____	DATE : _____, 20__
REVIEWED BY : _____	DATE : _____, 20__
REVIEWED BY : _____	DATE : _____, 20__

SUNNY WANG, P.E. - WATER RESOURCES MANAGER
OMED POUR, P.E. - PROJECT MANAGER

REFERENCE : _____	DATE : _____, 20__	COMPUTER FILE NAME : _____
SUBMITTED BY : _____	DATE : _____, 20__	SP-FILE NO. : SP2602
APPROVED BY : _____	DATE : _____, 20__	

CURTIS CASTLE, P.E. - PRINCIPAL C.E.
ALEX NAZARCHUK, P.E. - CITY ENGINEER

DESIGNED BY : WL
DRAWN BY : RP
CHECKED BY : AZ
CONSULTANT JOB/SHEET NO. _____

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

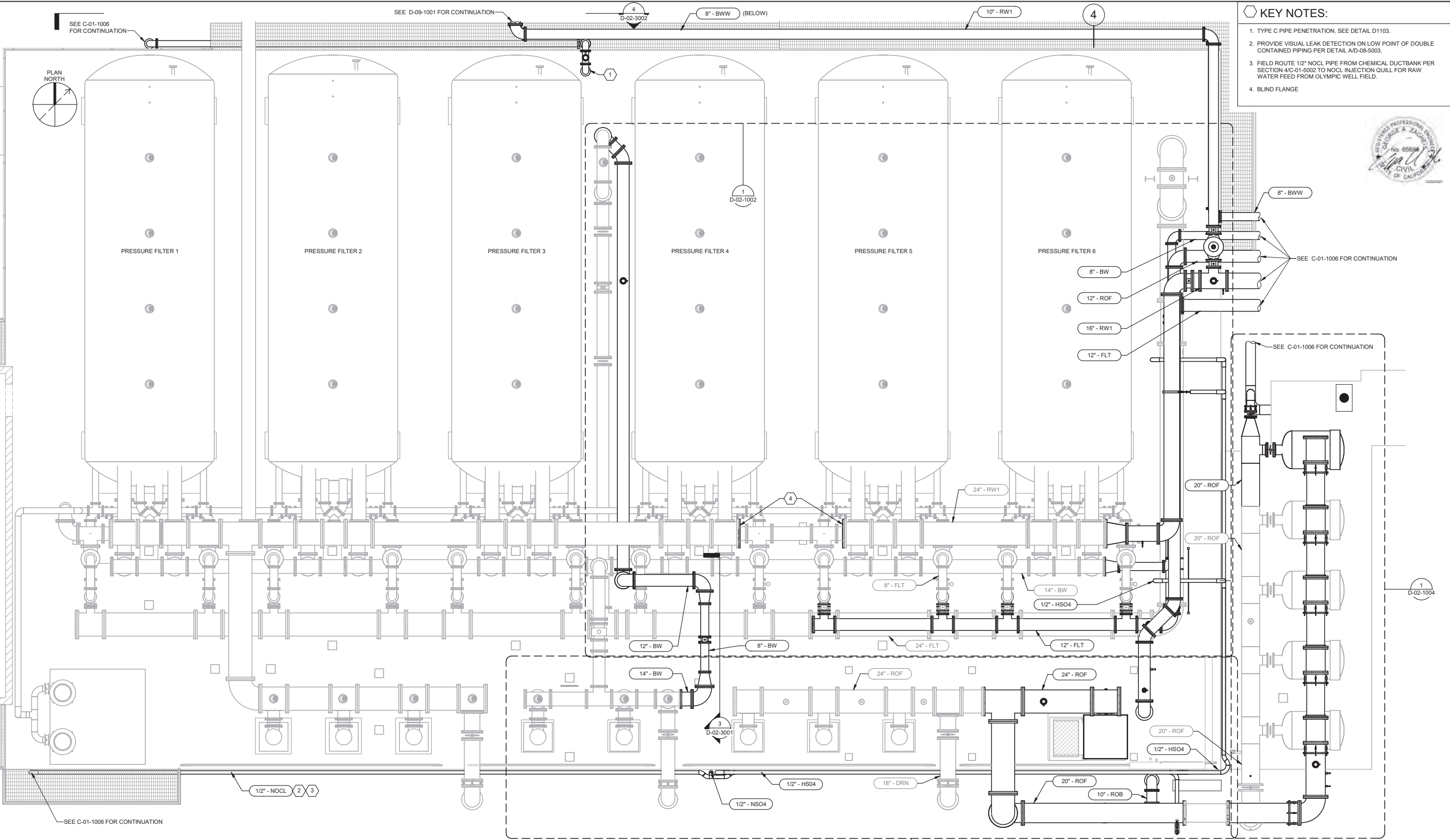
VALVE SCHEDULE

DRAWING NO. 7078
D-01-6005
SHT 116 OF 303 SHS

NOTES:

- VALVES PROVIDED BY VENDOR FACTORY SKID MOUNT, AS SHOWN IN THE P&ID'S, ARE NOT LISTED IN THE VALVE SCHEDULES.
- VALVE SCHEDULES ONLY INCLUDES VALVES 4" AND GREATER.






- KEY NOTES:**
1. TYPE C PIPE PENETRATION, SEE DETAIL D1103.
 2. PROVIDE VISUAL LEAK DETECTION ON LOW POINT OF DOUBLE CONTAINED PIPING PER DETAIL A/D-08-5003.
 3. FIELD ROUTE 1/2\" NOCL PIPE FROM CHEMICAL DUCTBANK PER SECTION 4/C-01-5002 TO NOCL INJECTION QUILL FOR RAW WATER FEED FROM OLYMPIC WELL FIELD.
 4. BLIND FLANGE



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



City of Santa Monica
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NO.	DATE	BY	DESCRIPTION	APPROVED



REVIEWED BY:	DATE:	20__	REFERENCE:
REVIEWED BY:	DATE:	20__	DATE:
SUNNY WANG, P.E. - WATER RESOURCES MANAGER			CURTIS CASTLE, P.E. - PRINCIPAL C.E.
REVIEWED BY:	DATE:	20__	DATE:
OMEDD POUR, P.E. - PROJECT MANAGER			ALEX NAZARCHUK, P.E. - CITY ENGINEER

DESIGNED BY: WL

DRAWN BY: AC

CHECKED BY: AZ

CONSULTANT JOB/SHEET NO. 154390

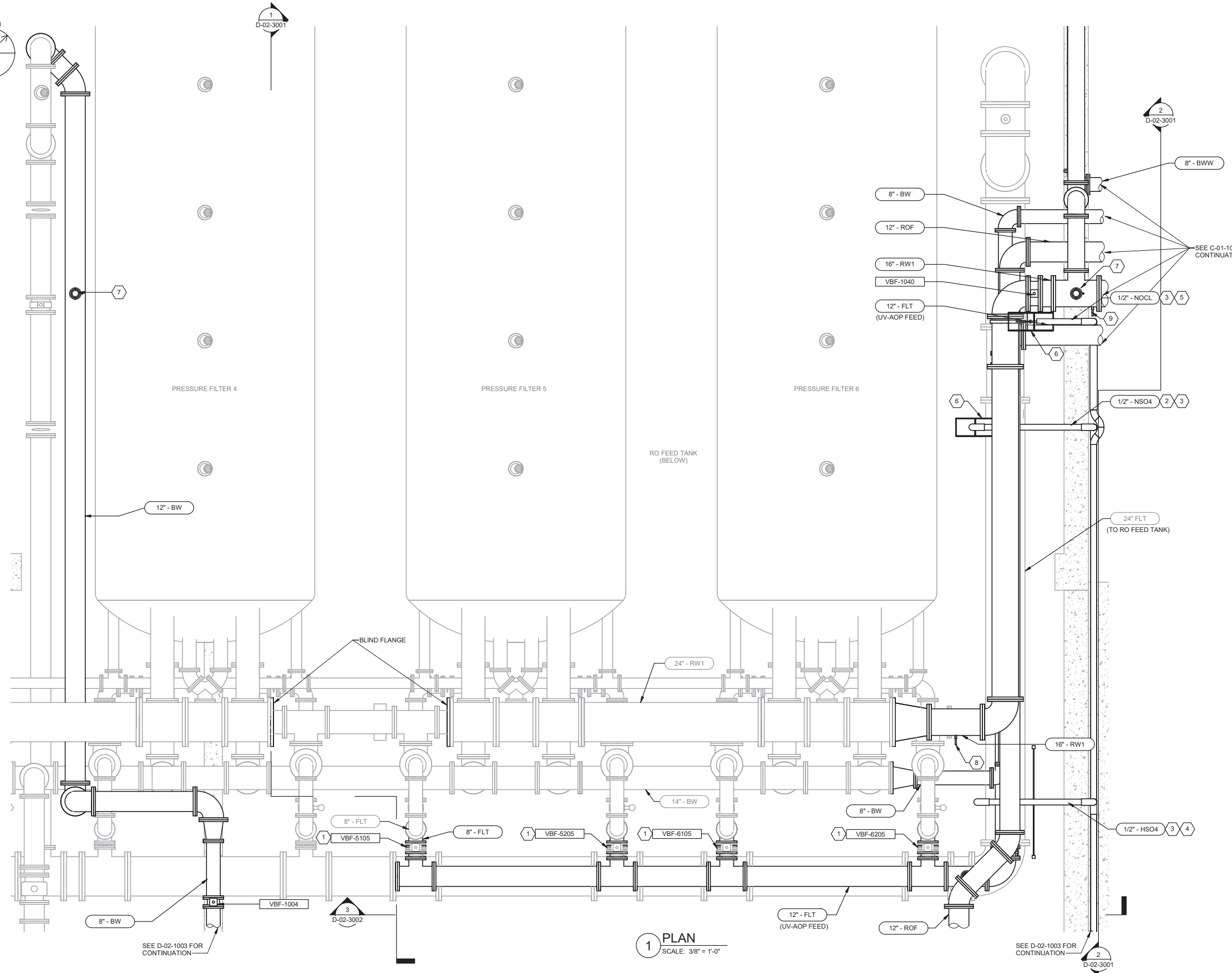
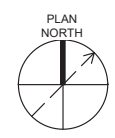
DRAWING NO. 7078

D-02-1001

SHT 117 of 298 SHTS

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

OVERALL PRESSURE FILTERS, LP RO FEED PUMPS, AND CARTRIDGE FILTERS PLAN



1 PLAN
SCALE: 3/8" = 1'-0"

GENERAL NOTES:

1. EXISTING EQUIPMENT TAGS SHOWN ON CITY OF SANTA MONICA WELL FIELD RESTORATION PROJECT, ARCADIA, DRAWING MA03301.

KEY NOTES:

1. RELOCATE EXISTING 8" VBF. SUPPLIER/SUBCONTRACTOR TO EXTEND EXISTING ELECTRICAL CONDUITS AS NECESSARY TO ACCOMMODATE THE RELOCATION OF THE MOV ACTUATORS. FOR CONDUIT AND CONDUCTOR SIZES SEE DETAILS Q AND R ON DRAWING E-01-6015.
2. FIELD ROUTE 1/2" NSO4 FROM CHEMICAL DUCTBANK PER SECTION 1/C-01-5002 TO EXISTING NSO4 INJECTION QUILL ON 24" FLT TO RO FEED TANK.
3. PROVIDE VISUAL LEAK DETECTION ON LOW POINT OF DOUBLE CONTAINED PIPING PER DETAIL A/D-08-5003. EXTEND CLEAR PVC PIPING SO THAT IT IS LOCATED AT LEAST 5-FT ABOVE GRADE FOR OPERATOR VIEWING.
4. FIELD ROUTE 1/2" HSO4 FROM CHEMICAL DUCTBANK PER SECTION 1/C-01-5002 TO HSO4 INJECTION QUILL FOR GREENSAND FILTER EFFLUENT TO UV.
5. FIELD ROUTE 1/2" NOCL PIPE FROM CHEMICAL DUCTBANK PER SECTION 4/C-01-5002 TO NOCL INJECTION QUILL FOR RAW WATER FEED FROM OLYMPIC WELL FIELD.
6. CHEMICAL INJECTOR SAFETY ENCLOSURE PER DETAIL G/ D-08-5004.
7. 2" COMBINATION AIR VALVE PER DETAIL D5061.
8. 3/8" INSTRUMENT TAP. FIELD ROUTE SST TO FREE CHLORINE ANALYZER ON ANALYZER PANEL 1 PER DETAIL A/D-02-5001.
9. 3/8" INSTRUMENT TAP. FIELD ROUTE SST TO TURBIDIMETER ON ANALYZER PANEL 1 PER DETAIL A/D-02-5001.



City of Santa Monica
PUBLIC WORKS DEPARTMENT
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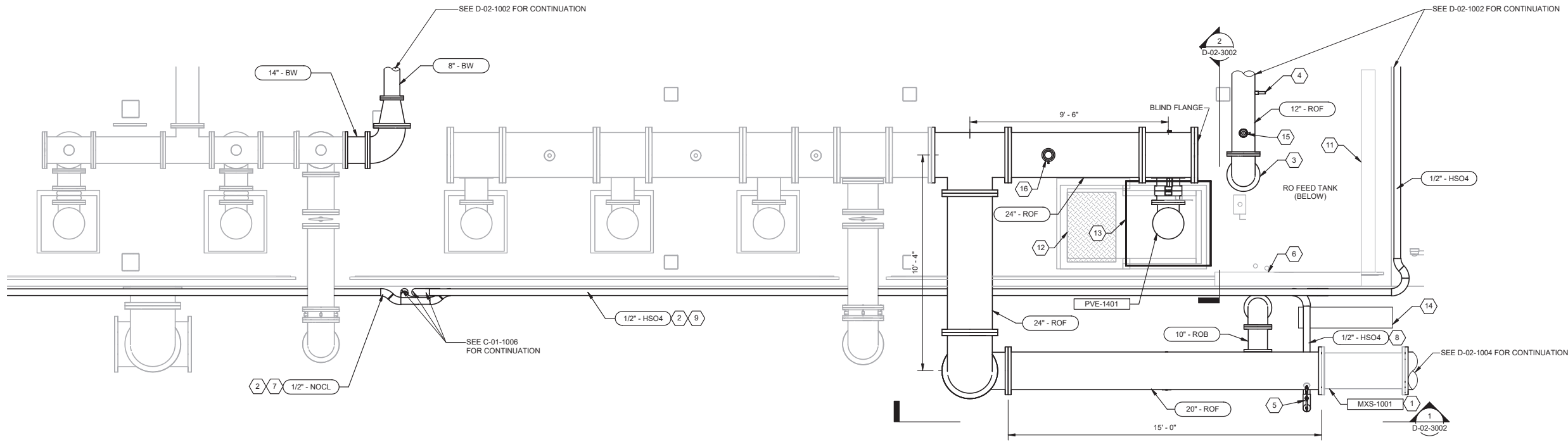
REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX
SUBMITTED BY:	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	
COMPUTER FILE NAME:	SP-FILE NO.:	SP2602
APPROVED BY:	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE:
		20XX

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
**PRESSURE FILTER PIPING MODIFICATION
 PLAN**

PROJECT AND SHEET TITLE

DESIGNED BY:	WL
DRAWN BY:	AC
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-02-1002	
SHT	118 OF 303 SH15



1 PLAN
SCALE: 3/8" = 1'-0"

- GENERAL NOTES:**
- EXISTING EQUIPMENT TAGS SHOWN ON CITY OF SANTA MONICA WELL FIELD RESTORATION PROJECT, ARCADIA, DRAWING MA03104.
 - ROUTE CHEMICAL PIPE ALONG ROF TANK WALL. ATTACH WITH SS UNISTRUTS AND CLIPS.
 - TRANSITION TO HARD PIPING FROM DOUBLE CONTAINED FLEXIBLE TUBING FOR CHEMICAL PIPELINES EXITING CHEMICAL DUCTBANK AS INDICATED IN DETAIL B/D-08-5003.
 - COORDINATE DESIGN OF PIPING SUPPORTS, EXPANSION JOINTS, AND EXPANSION CONTROL AND SEISMIC RESTRAINTS PER SPECIFICATION 40 05 01.
- KEY NOTES:**
- RELOCATE EXISTING MXS-1001.
 - PROVIDE VISUAL LEAK DETECTION ON LOW POINT OF DOUBLE CONTAINED PIPING PER DETAIL A/D-08-5003.
 - PENETRATE FLOOR PER DETAIL D1113.
 - 3/8" INSTRUMENT TAP. FIELD ROUTE SST TO FREE/TOTAL CHLORINE ANALYZER ON ANALYZER PANEL 1.
 - CHEMICAL INJECTION QUILL PER DETAIL E/D-08-5004, TYPICAL.
 - ANALYZER PANEL 1 WITH CANOPY PER PIA00711 AND DETAIL A/D-02-5001.
 - FIELD ROUTE 1/2" NOCL FROM CHEMICAL DUCTBANK PER SECTION 4/C-01-5002 TO NOCL INJECTION QUILL FOR RAW WATER FEED FROM OLYMPIC WELL FIELD.
 - FIELD ROUTE 1/2" HSO4 FROM CHEMICAL DUCTBANK PER SECTION 1/C-01-5002 TO HSO4 INJECTION QUILL UPSTREAM OF RO UNITS AND CARTRIDGE FILTERS. 1/2" HSO4 CHEMICAL PIPING SHALL BE DOUBLE CONTAINED IN 2" SCH 40 PVC CARRIER PIPE FROM THE CHEMICAL DUCTBANK TO THE INJECTION QUILL.
 - FIELD ROUTE 1/2" HSO4 FROM CHEMICAL DUCTBANK PER SECTION 1/C-01-5002 TO HSO4 INJECTION QUILL FOR GREENSAND FILTER EFFLUENT TO UV.
 - NOT USED.
 - INSTALL NEW PH PROBE ON EXISTING INSTRUMENT PANEL PER PIA00712.
 - PROVIDE NEW 36" X 30" ALUMINUM COVER PLATE AND REPAIR SLAB OPENING PER DETAIL 1/S-02-5001.
 - NEW MOTOR NOISE ENCLOSURE. LEGS TO BE OFFSET TO MAINTAIN 5" ANCHOR BOLT EDGE DISTANCE.
 - ANALYZER PANEL 2 WITH CANOPY PER PIA00711 AND DETAIL B/D-02-5001.
 - 1" COMBINATION AIR VALVE PER DETAIL D5061.
 - 2 1/2" COMBINATION AIR VALVE PER DETAIL D5061.

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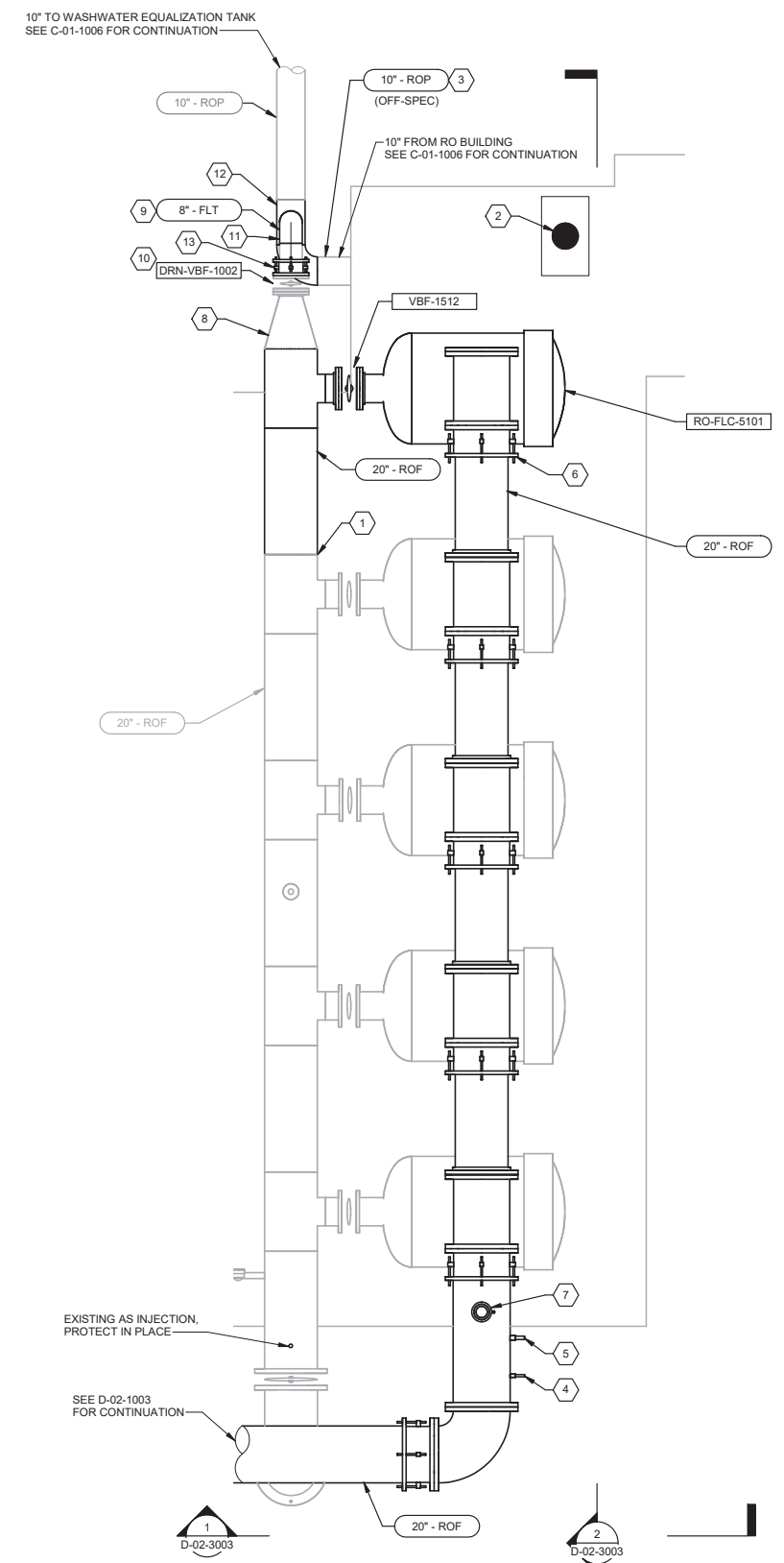
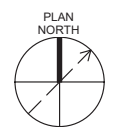


REVIEWED BY: _____	DATE: _____, 20__	REFERENCE:
REVIEWED BY: _____	DATE: _____, 20__	DATE: _____, 20__
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME:
REVIEWED BY: _____	DATE: _____, 20__	SP-FILE NO.: SP2602
OMNEED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: _____, 20__

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 LP RO FEED PUMP AND PIPING
 MODIFICATION PLAN



DESIGNED BY: LRB
DRAWN BY: AC
CHECKED BY: AZ
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
D-02-1003
SHT 119 of 303 SH15



1 PLAN
SCALE: 3/8" = 1'-0"

GENERAL NOTES:

1. ALL EXISTING SAMPLE TAPS, SAMPLE VALVES, AND INSTRUMENTS TO BE REPLACED IN KIND.
2. CONTRACTOR TO COORDINATE DESIGN OF PIPING SUPPORTS, EXPANSION JOINTS, AND EXPANSION CONTROL AND SEISMIC RESTRAINTS PER SPECIFICATION 40 05 01.

KEY NOTES:

1. FIELD WELD NEW STAINLESS STEEL PIPE TO EXISTING STAINLESS STEEL PIPE PER SPECIFICATION 40 05 23.
2. RELOCATE EXISTING UTILITY STATION. MAINTAIN EXISTING BELOW-GRADE CONNECTION TO 1 1/2" NPW PIPELINE. FIELD ROUTE ABOVE-GRADE TO NEW UTILITY STATION LOCATION.
3. SEE DETAIL D / C-01-5001 FOR CONNECTION OF 8" FLT DRAIN TO 10" ROP OFF-SPEC.
4. 3/8" INSTRUMENT TAP. FIELD ROUTE SST TO ANALYZER PANEL PER PIA00711 AND DETAIL B/D-02-5001.
5. 1" INSTRUMENT TAP. FIELD ROUTE PIPING TO PRESSURE INSTRUMENTS PER PIA00712. LOCATE INSTRUMENTS AT FLOOR LEVEL IN SAME LOCATION AS EXISTING.
6. 20" SLEEVE-TYPE FLANGED COUPLING ADAPTER, TYPICAL.
7. 4" COMBINATION AIR VALVE PER DETAIL D5061.
8. RELOCATE 20"x8" REDUCER.
9. RELOCATE 8" DIP SPOOLS.
10. RELOCATE 8" BFV.
11. RELOCATE 8" DIP ELBOW.
12. 8" FLT CONNECTION PER DETAIL D/C-01-5001.
13. RESTRAINED FLEXIBLE COUPLING

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NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH
 CONSULTANT

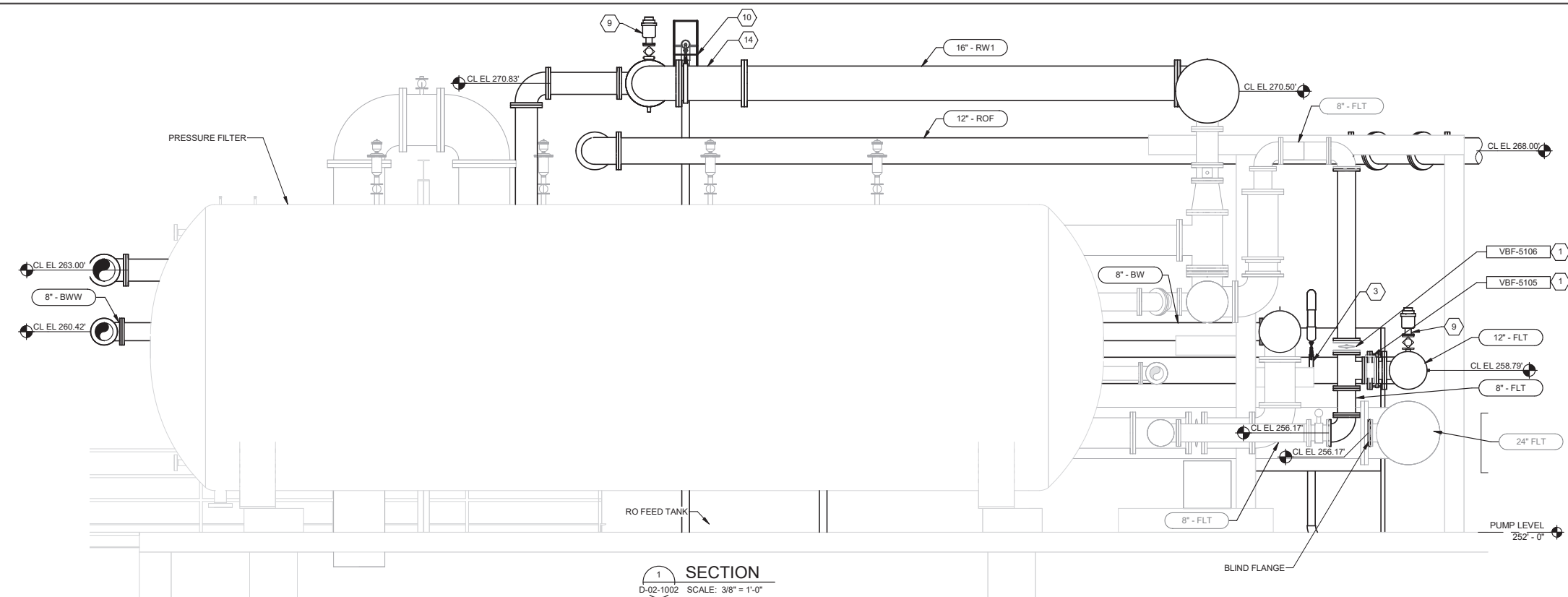
REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

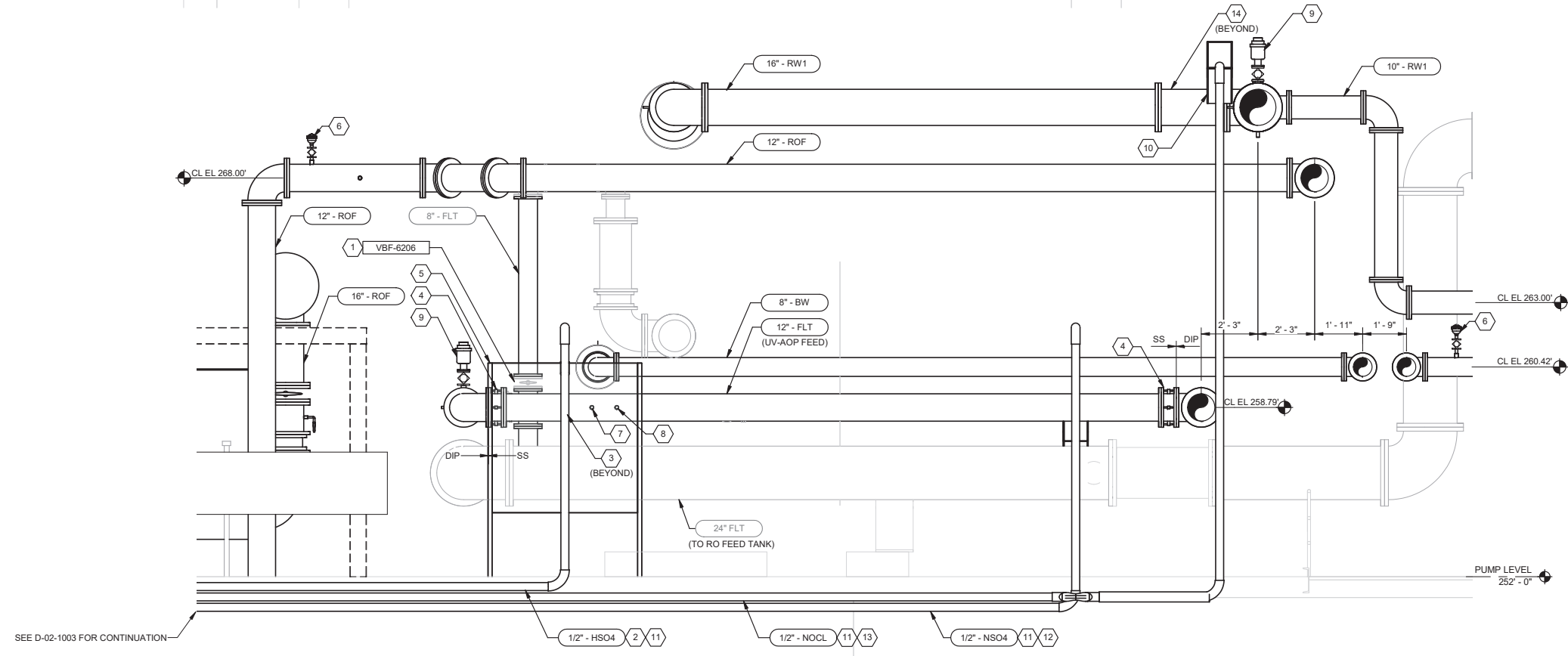
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 CARTRIDGE FILTER PLAN
 PROJECT AND SHEET TITLE



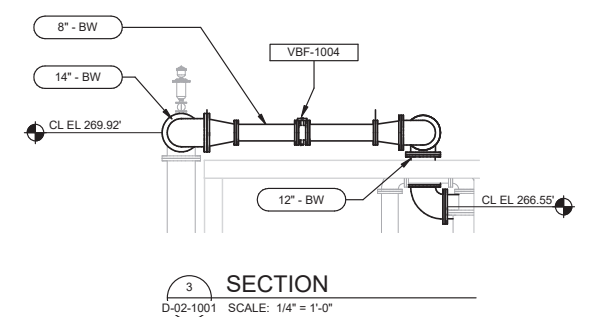
DESIGNED BY:	LRB
DRAWN BY:	AC
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-02-1004	
SHT	120 of 303 SH15



SECTION 1
D-02-1002 SCALE: 3/8" = 1'-0"



SECTION 2
D-02-1002 SCALE: 3/8" = 1'-0"



SECTION 3
D-02-1001 SCALE: 1/4" = 1'-0"

- GENERAL NOTES:**
- EXISTING EQUIPMENT TAGS SHOWN ON CITY OF SANTA MONICA WELL FIELD RESTORATION PROJECT, ARCADIA, DRAWING MA03301.
 - ROUTE AIR RELEASE VALVE VENT PIPING TO NEAREST FLOOR DRAIN. UTILIZE ADJACENT PIPE SUPPORTS TO ROUTE VENT PIPE TO MINIMIZE OBSTRUCTION OF WALKING PATHS AND EQUIPMENT ACCESS.
- KEY NOTES:**
- RELOCATE EXISTING 8" VBF. EXTEND EXISTING ELECTRICAL CONDUIT FOR MOV ACTUATORS AS NEEDED TO ACCOMMODATE RELOCATION. SEE ELECTRICAL DRAWINGS
 - FIELD ROUTE 1/2" HSO4 FROM CHEMICAL DUCTBANK PER SECTION 11C-01-5002 TO HSO4 INJECTION QUILL FOR GREENSAND FILTER EFFLUENT TO UV.
 - 12" WAFER-STYLE STATIC MIXER WITH INTEGRAL CHEMICAL INJECTOR ASSEMBLY PER SPECIFICATION 46 41 17.
 - TRANSITION 12" FLT FROM DIP TO SS AT ELBOW WITH RESTRAINED FLANGE COUPLING ADAPTER.
 - SAFETY SHIELD PER DETAIL C/D-08-5003.
 - 1" COMBINATION AIR VALVE. SEE DETAIL 5061.
 - 1/2" SPIKING TAP AND INJECTION QUILL (TEMPORARY) TO SPIKE UV1-MODIFYING CHEMICAL TO MODIFY UV1 FOR AOP CHALLENGE TEST.
 - 1/2" SPIKING TAP AND INJECTION QUILL (TEMPORARY) TO SPIKE CHALLENGE TEST CHEMICALS DURING AOP CHALLENGE TEST.
 - 2" COMBINATION AIR VALVE. SEE DETAIL 5061.
 - CHEMICAL INJECTOR SAFETY ENCLOSURE PER DETAIL G/ D-08-5004.
 - PROVIDE VISUAL LEAK DETECTION ON LOW POINT OF DOUBLE CONTAINED PIPING PER DETAIL A/D-08-5003.
 - FIELD ROUTE 1/2" NSO4 PIPE FROM CHEMICAL DUCTBANK PER SECTION 44C-01-5002 TO NOCL INJECTION QUILL ON 24" FLT TO RO FEED TANK.
 - FIELD ROUTE 1/2" NOCL PIPE FROM CHEMICAL DUCTBANK PER SECTION 44C-01-5002 TO NOCL INJECTION QUILL FOR RAW WATER FEED FROM OLYMPIC WELL FIELD.
 - INJECTION QUILL INTEGRATED WITH STATIC MIXER ASSEMBLY PER SPECIFICATION 46 41 17.

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Brown and Caldwell
WALSH

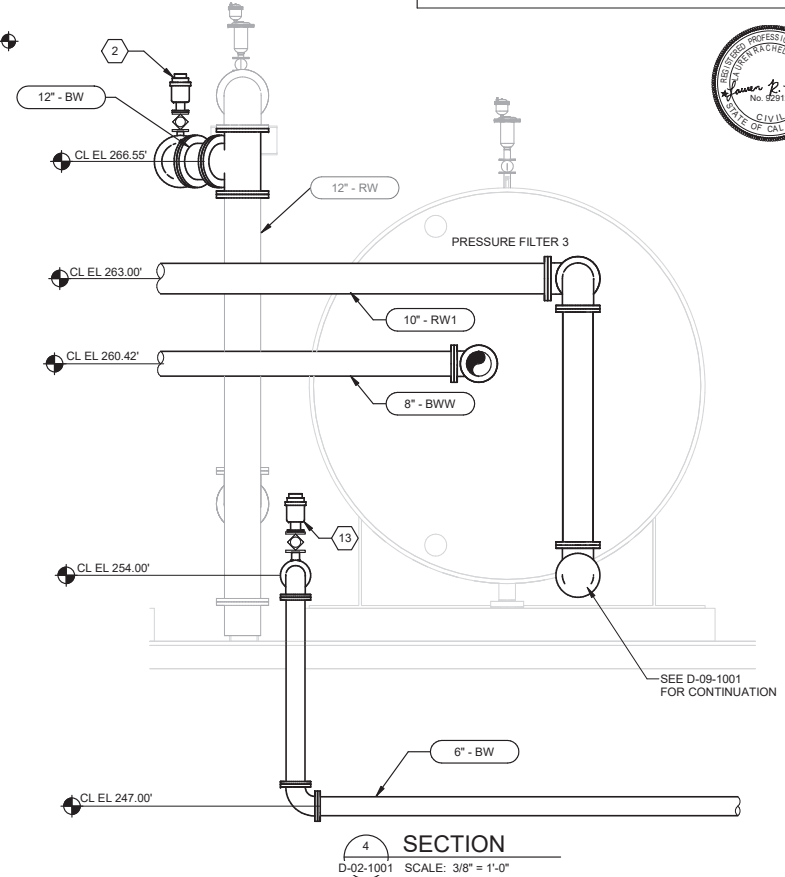
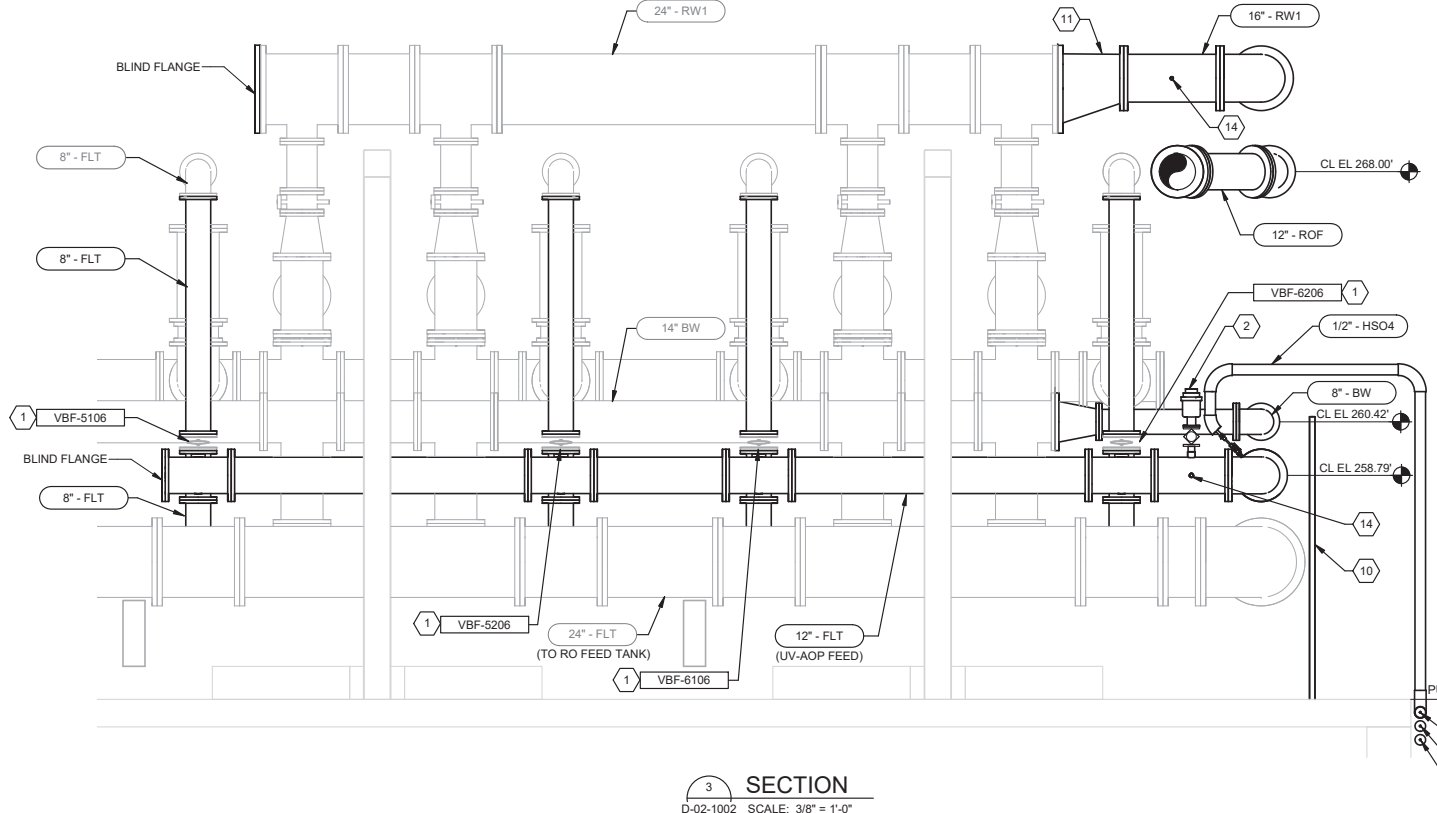
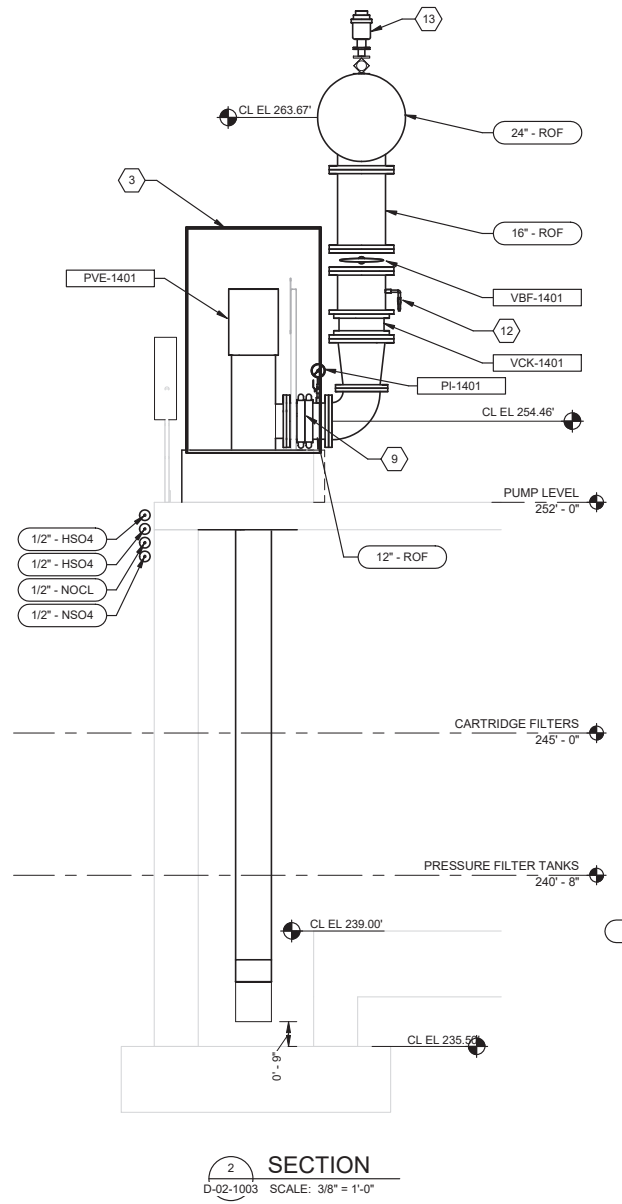
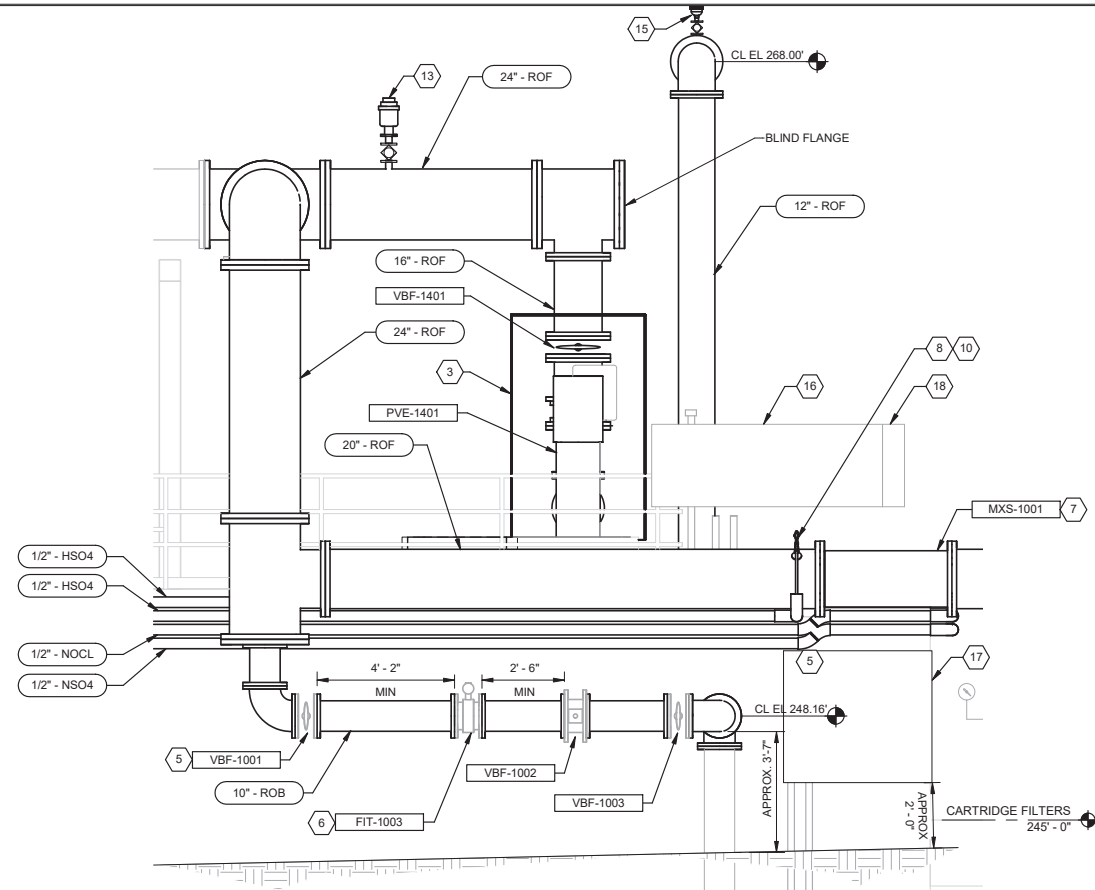
REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
PRESSURE FILTER PIPING MODIFICATION
SECTIONS

DESIGNED BY: WL
 DRAWN BY: AC
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-02-3001
 SHEET 121 OF 303 SHEETS





- GENERAL NOTES:**
- EXISTING EQUIPMENT TAGS SHOWN ON CITY OF SANTA MONICA WELL FIELD RESTORATION PROJECT, ARCADIA, DRAWING MA03301.
 - ROUTE AIR RELEASE VALVE VENT PIPING TO NEAREST FLOOR DRAIN. UTILIZE ADJACENT PIPE SUPPORTS TO ROUTE VENT PIPE TO MINIMIZE OBSTRUCTION OF WALKING PATHS AND EQUIPMENT ACCESS.
 - COORDINATE DESIGN OF PIPING SUPPORTS, EXPANSION JOINTS, AND EXPANSION CONTROL AND SEISMIC RESTRAINTS PER SPECIFICATION 40 05 01.
- KEY NOTES:**
- RELOCATE EXISTING 8" VBF. EXTEND EXISTING ELECTRICAL CONDUIT FOR MOV ACTUATORS AS NEEDED TO ACCOMMODATE RELOCATION. SEE ELECTRICAL DRAWINGS.
 - 2" COMBINATION AIR VALVE PER DETAIL D5061.
 - NEW MOTOR NOISE ENCLOSURE. LEGS TO BE OFFSET TO MAINTAIN 5" ANCHOR BOLT EDGE DISTANCE.
 - RELOCATE EXISTING VBF-1002. EXTEND EXISTING ELECTRICAL CONDUIT FOR MOV ACTUATOR AS NEEDED TO ACCOMMODATE RELOCATION. SEE ELECTRICAL DRAWINGS.
 - RELOCATE EXISTING 10" VBF.
 - RELOCATE EXISTING FIT-1003. EXTEND EXISTING ELECTRICAL CONDUIT FOR MOV ACTUATOR AS NEEDED TO ACCOMMODATE RELOCATION. SEE ELECTRICAL DRAWINGS.
 - RELOCATE EXISTING MXS-1001.
 - CHEMICAL INJECTION QUILL PER DETAIL E/D-08-5004.
 - VICTAULIC COUPLINGS IN SERIES PER SPECIFICATION 43 23 62.
 - PROVIDE SAFETY SHIELD PER DETAIL C/D-08-5003.
 - ECCENTRIC REDUCER. FLAT SIDE ON TOP.
 - ROUTE DRAIN PIPE TO NEAREST FLOOR DRAIN. UTILIZE ADJACENT PIPE SUPPORTS TO ROUTE DRAIN PIPE TO MINIMIZE OBSTRUCTION OF WALKING PATHS AND EQUIPMENT ACCESS.
 - 2-1/2" COMBINATION AIR VALVE PER DETAIL D5061.
 - 3/8" INSTRUMENT TAP. FIELD ROUTE SST TO FREE CHLORINE ANALYZER ON ANALYZER PANEL 1 PER DETAIL A/D-02-5001.
 - 1" COMBINATION AIR VALVE PER SEE DETAIL D5061.
 - ANALYZER PANEL 1 WITH CANOPY PER PIA00711 AND DETAIL A/D-02-5001.
 - ANALYZER PANEL 2 WITH CANOPY PER PIA00711 AND DETAIL B/D-02-5001.
 - EXISTING INSTRUMENT PANEL PER PIA00712.



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NO.	DATE	BY	DESCRIPTION	APPROVED



REVIEWED BY :	DATE :	20
REVIEWED BY :	DATE :	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY :	DATE :	20
OMIED POUR, P.E. - PROJECT MANAGER		

REFERENCE :	DATE :	20XX	COMPUTER FILE NAME :
SUBMITTED BY :			SP-FILE NO. : SP2602
APPROVED BY :	DATE :	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
LP RO FEED PUMP AND PIPING MODIFICATION SECTIONS

PROJECT AND SHEET TITLE

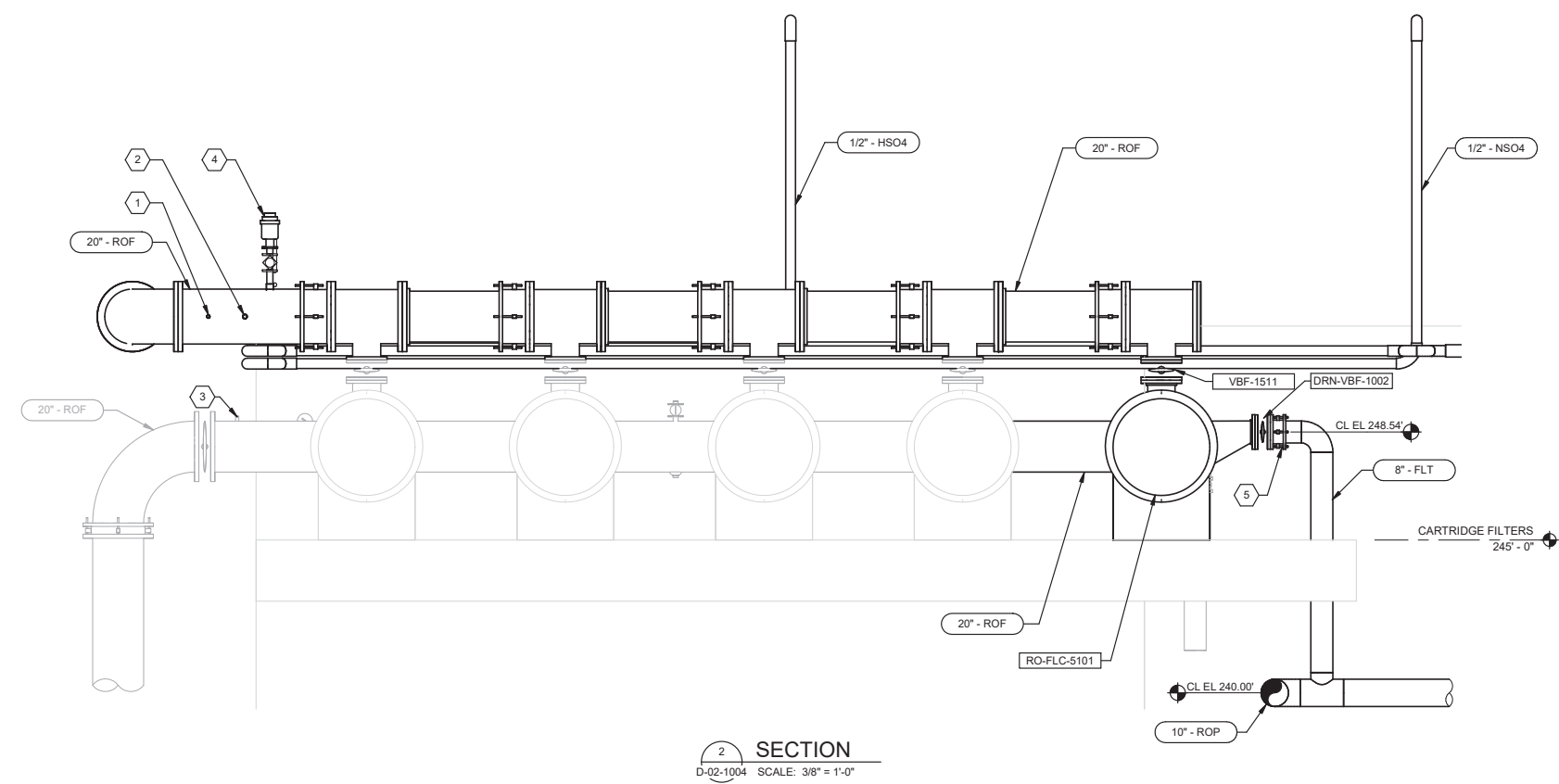
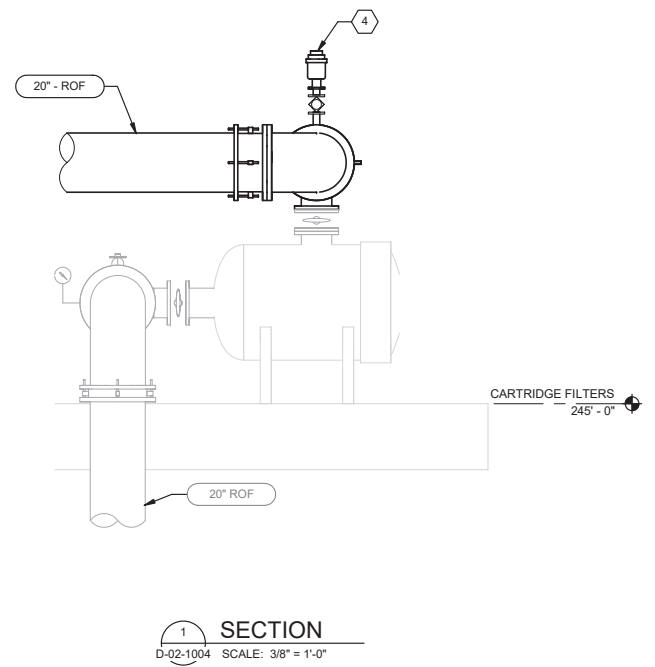
DESIGNED BY :	LRB
DRAWN BY :	AC
CHECKED BY :	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	D-02-3002
SHT	122 of 303 SH15

GENERAL NOTES:

1. ALL EXISTING SAMPLE TAPS, SAMPLE VALVES, AND INSTRUMENTS TO BE REPLACED IN KIND.
2. CONTRACTOR TO COORDINATE DESIGN OF PIPING SUPPORTS, EXPANSION JOINTS, AND EXPANSION CONTROL AND SEISMIC RESTRAINTS PER SPECIFICATION 40 05 01.

KEY NOTES:

1. 3/8" INSTRUMENT TAP. FIELD ROUTE SST TO ANALYZER PANEL 2 PER PIA00712 AND DETAIL B/D-02-5001.
2. 1" INSTRUMENT TAP. FIELD ROUTE PIPING TO PRESSURE INSTRUMENTS PER PIA00712. LOCATE INSTRUMENTS AT FLOOR LEVEL IN SAME LOCATION AS EXISTING.
3. EXISTING AS CHEMICAL INJECTION. PROTECT-IN-PLACE.
4. 4" COMBINATION AIR VALVE PER DETAIL D5061.
5. RESTRAINED FLEXIBLE COUPLING.



NO.	DATE	BY	DESCRIPTION	APPROVED

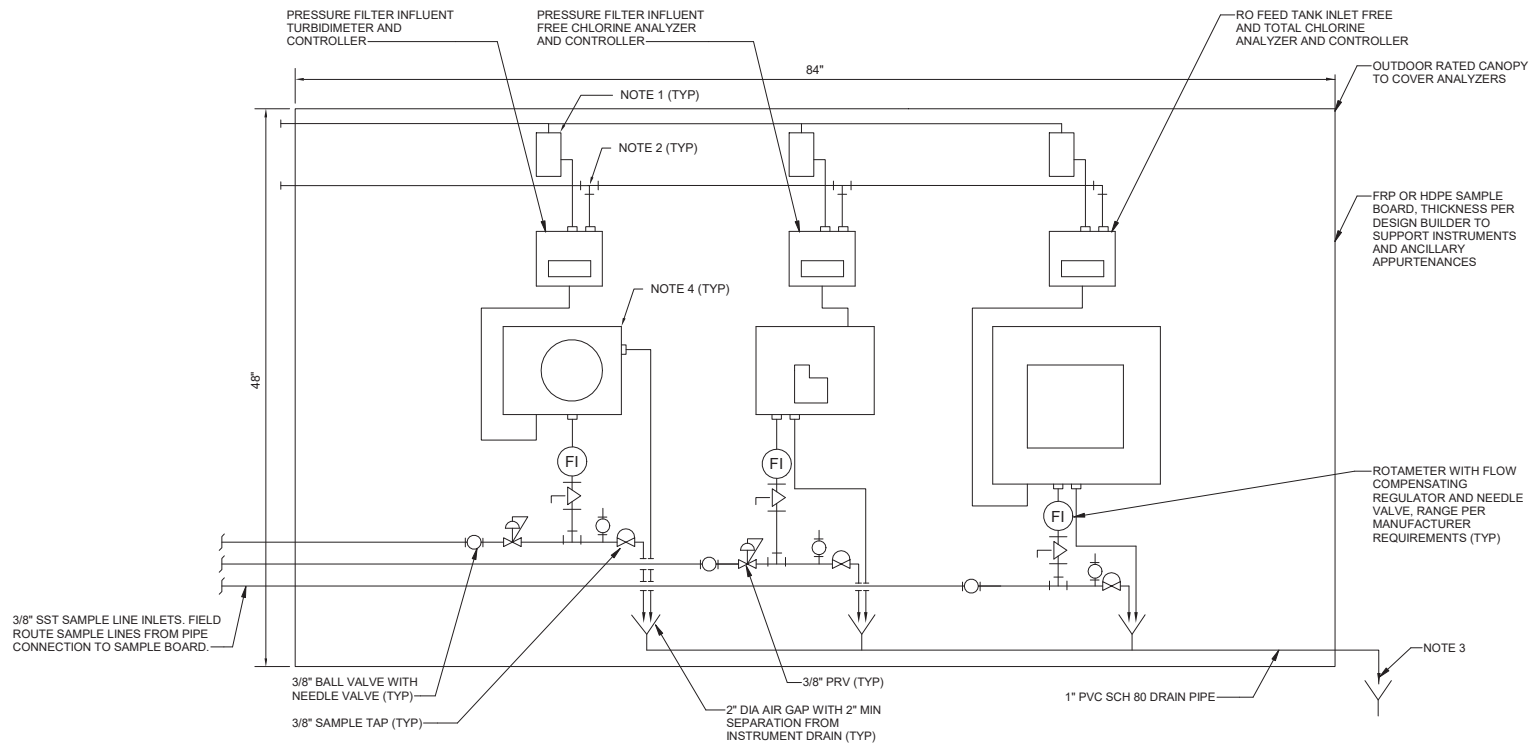


REVIEWED BY: _____ DATE: _____, 20XX
 REVIEWED BY: _____ DATE: _____, 20XX
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20XX
 OMIED POUR, P.E. - PROJECT MANAGER

REFERENCE: _____ DATE: _____, 20XX
 SUBMITTED BY: _____
 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

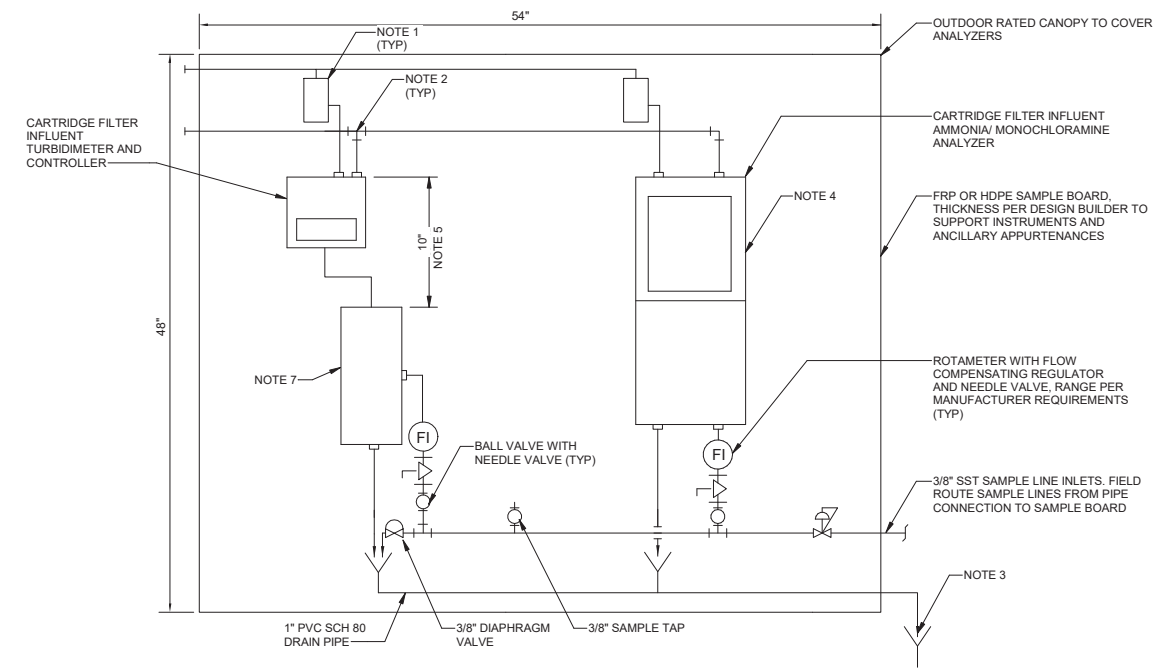
DESIGNED BY: LRB
 DRAWN BY: AC
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-02-3003
 SHEET 123 OF 303 SHEETS





- NOTES:
1. JUNCTION BOX WITH TERMINALS FOR 120 VAC. ROUTE ALL CONDUITS FOR 120 VAC WIRING ALONG TOP OF SAMPLE BOARD.
 2. CONDUITS FOR INSTRUMENT WIRINGS SIZES SHALL BE AS SHOWN ON ONE-LINE DRAWINGS. ROUTE ALL CONDUITS FOR INSTRUMENT WIRING ALONG TOP OF SAMPLE BOARD.
 3. FIELD ROUTE SAMPLE BOARD DRAIN LINE TO NEW TEE ON EXISTING ANALYZER PANEL DRAIN LINE.
 4. ANALYZER MODELS PER SPEC 40 75 00.
 5. STAINLESS STEEL TUBING (SST) PER SPEC 40 05 23

ANALYZER PANEL 1 DETAIL
 D-02-1003 SCALE: NTS



- NOTES:
1. JUNCTION BOX WITH TERMINALS FOR 120 VAC. ROUTE ALL CONDUITS FOR 120 VAC WIRING ALONG TOP OF SAMPLE BOARD.
 2. CONDUITS FOR INSTRUMENT WIRINGS SIZES SHALL BE AS SHOWN ON ONE-LINE DRAWINGS. DESIGN BUILDER SHALL ROUTE ALL CONDUITS FOR INSTRUMENT WIRING ALONG TOP OF SAMPLE BOARD.
 3. FIELD ROUTE SAMPLE BOARD DRAIN LINE TO NEW TEE ON EXISTING ANALYZER PANEL DRAIN LINE.
 4. ANALYZER MODELS PER SPEC 40 75 00.
 5. MAINTAIN MINIMUM 10" OF CLEARANCE ABOVE INSTRUMENT FOR REMOVAL OF HEAD ASSEMBLY.
 6. STAINLESS STEEL TUBING (SST) PER SPEC 40 05 23.
 7. INSTALL PYXIS TURBIDITY METER TO BE PROVIDED BY THE CITY.

ANALYZER PANEL 2 DETAIL
 D-02-1003 NTS
 SCALE: 12" = 1'-0"



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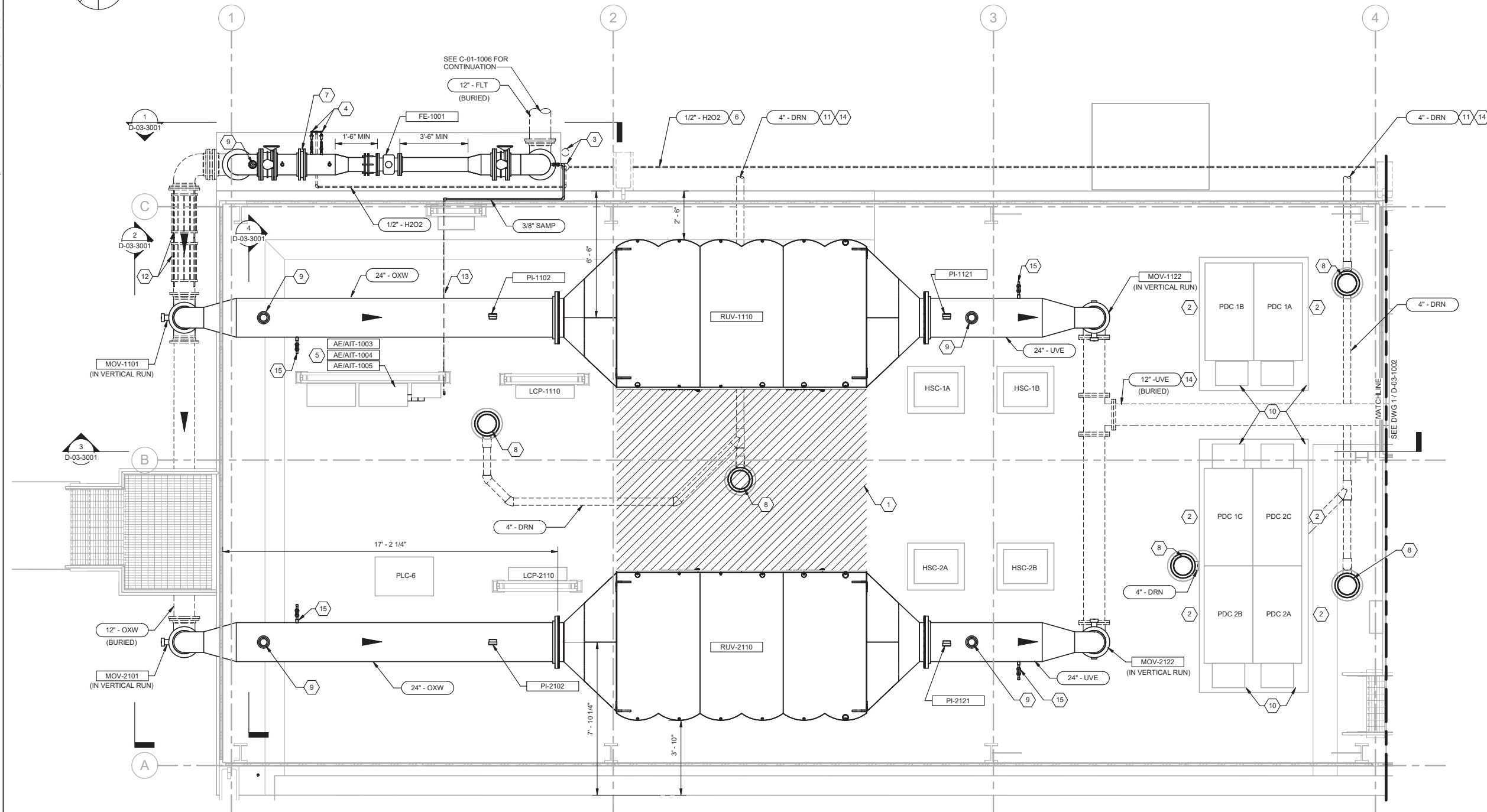
REVIEWED BY : _____	DATE : _____ 20__	REFERENCE :
REVIEWED BY : _____	DATE : _____ 20__	DATE : _____, 20XX
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME :
REVIEWED BY : _____	DATE : _____ 20__	SP-FILE NO. : SP2602
OMVED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE : _____, 20XX

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
ANALYZER PANEL DETAILS
 PROJECT AND SHEET TITLE

DESIGNED BY : JL
DRAWN BY : AZ
CHECKED BY : AZ
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
D-02-5001
SHT 124 of 303 SHS



- KEY NOTES:**
1. AREA TO BE KEPT CLEAR FOR UV REACTOR MAINTENANCE AND LAMP CHANGE OUT
 2. MINIMUM 3' IN FRONT OF PDC TO BE KEPT CLEAR FOR MAINTENANCE
 3. CHEMICAL RISER PER DETAIL C / C-01-5003. BF SPARE CHEMICAL RISER PIPE
 4. H2O2 CHEMICALS INJECTOR CONNECTION PER DETAIL A / D-03-5001
 5. ANALYZER PANEL PER DETAIL B / D-03-5001
 6. 1/2" H2O2 WITHIN 3" CONTAINMENT PIPE WITHIN CHEMICAL DUCTBANK. HYDROGEN PEROXIDE FEED DUCTBANK PER SECTION 7 / C-01-5002
 7. 12" WAFER-STYLE STATIC MIXER PER SPECIFICATION 46 41 17
 8. TYPE V FLOOR DRAIN PER DETAIL D4205. PROVIDE TRAP PRIMER TO SERVICE FLOOR DRAINS WITH P-TRAPS.
 9. 2" AUTOMATIC AIR RELEASE PER DETAIL D5061
 10. FIELD LOCATE FLOOR DRAINS FOR PDC AC UNIT CONDENSATE DRAIN LINES. ASSUME MINIMUM 1 FLOOR DRAIN PER PAIR OF PDC UNITS. COORDINATE WITH UV VENDOR LOCATION FOR FLOOR DRAINS AND DRAIN SIZE. FIELD ROUTE FLOOR DRAINS TO 4" DRN LINE
 11. 4" DRAIN TO SANITARY SEWER TO BE FIELD ROUTED. SEE KEY NOTE NO. 12 ON C-01-1005 FOR LOCATION OF NEAREST SANITARY SEWER.
 12. DUAL RESTRAINED MECHANICAL JOINTS IN SERIES
 13. ROUTE 1/2" SAMPLE LINE TO UV/PH ANALYZER PANEL WITHIN UV FACILITY. PROVIDE 4" CPVC PIPE SLEEVE WHEN ROUTING BELOW GRADE INSIDE UV FACILITY.
 14. PROVIDE CONCRETE ENCASUREMENT PER DETAIL S6003.
 15. 1" SAMPLE TAP LOCATION WITH SS WELD-O-LET.



1 PLAN
SCALE: 3/8" = 1'-0"

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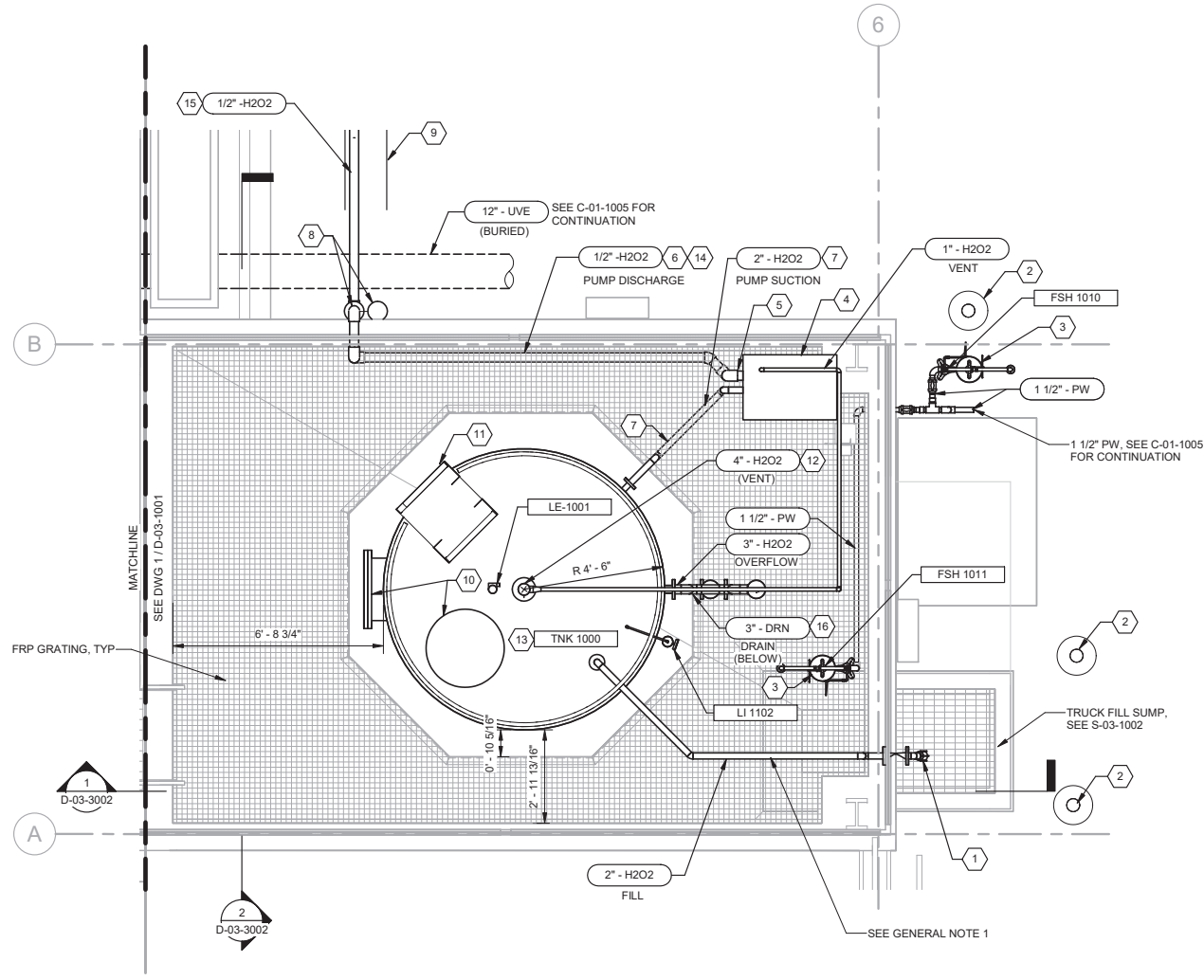
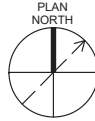


REVIEWED BY: _____ DATE: _____, 20__
 REVIEWED BY: _____ DATE: _____, 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20__
 OMVED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20__
 SUBMITTED BY: _____
 COMPUTER FILE NAME: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20__
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 UV/AOP PLAN
 PROJECT AND SHEET TITLE

DESIGNED BY: AZ
 DRAWN BY: AC
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-03-1001
 SHEET 125 OF 303 SHEETS



1 PLAN
SCALE: 3/8" = 1'-0"

GENERAL NOTES:

1. PROVIDE 1/4" HDPE SPLASH SHIELDS ON ALL TANK FILL LINES RUNNING OVERHEAD WITHIN HYDROGEN PEROXIDE STORAGE AREA.
2. GRATING SHALL BE REMOVABLE TO PROVIDE ACCESS TO FLOOR AND SUMP BELOW.

KEY NOTES:

1. TRUCK FILL PER DETAIL F / D-08-5004
2. BOLLARD PER DETAIL C / C-01-5002
3. EMERGENCY EYEWASH STATION PER DETAIL D4402. FIELD ROUTE TO NEAREST EMERGENCY EYEWASH STATION HOT WATER LOOP. PROVIDE TEMPERATURE RELIEF VALVE
4. VENDOR PROVIDED CHEMICAL METERING PUMP ENCLOSURE AND PUMP SKID
5. TRANSITION TO 1/2" PFA CARRIER PIPE WITHIN 3" CPVC CONTAINMENT AT DISCHARGE FROM PUMP ENCLOSURE PER DETAIL B / D-08-5003
6. INSTALL CHEMICAL DISCHARGE PIPE ALONG CHEMICAL CONTAINMENT WALL UNDER GRATING. MOUNT CPVC PIPE TO WALL WITH SS UNISTRUTS AND CLIPS. INSTALL VISUAL LEAK DETECTION AT PIPE LOWPOINTS PER DETAIL A / D-08-5003
7. INSTALL CHEMICAL PIPE UNDER CHEMICAL GRATING. SECURE PIPE TO FLOOR AND WALLS WITH SS UNISTRUTS AND CLIPS PER DETAIL D3301 INSTALLED IN THE VERTICAL
8. CHEMICAL RISER PER DETAIL C / C-01-5003. INSTALL BF ON SPARE CHEMICAL RISER
9. H2O2 CHEMICAL DUCTBANK PER SECTION 7 / C-01-5002
10. 30" MANWAY
11. TANK ACCESS LADDER
12. 4" TANK VENT PER DETAIL D5075. PENETRATE TANK VENT THROUGH CONTAINMENT AREA ROOF.
13. HDPE H2O2 CHEMICAL STORAGE TANK 9' DIAMETER BY 11' HEIGHT PER SPECIFICATION 43.41.43.13
14. 1/2" H2O2 WITHIN 3" CPVC CONTAINMENT PIPE.
15. 1/2" H2O2 WITHIN 3" CONTAINMENT PIPE WITHING CHEMICAL DUCTBANK. HYDROGEN PEROXIDE FEED DUCTBANK PER SECTION 7/C-01-5002.
16. PROVIDE NOTCH IN TANK PAD FOR DRAIN LINE TO BE FLUSH WITH TANK BOTTOM.



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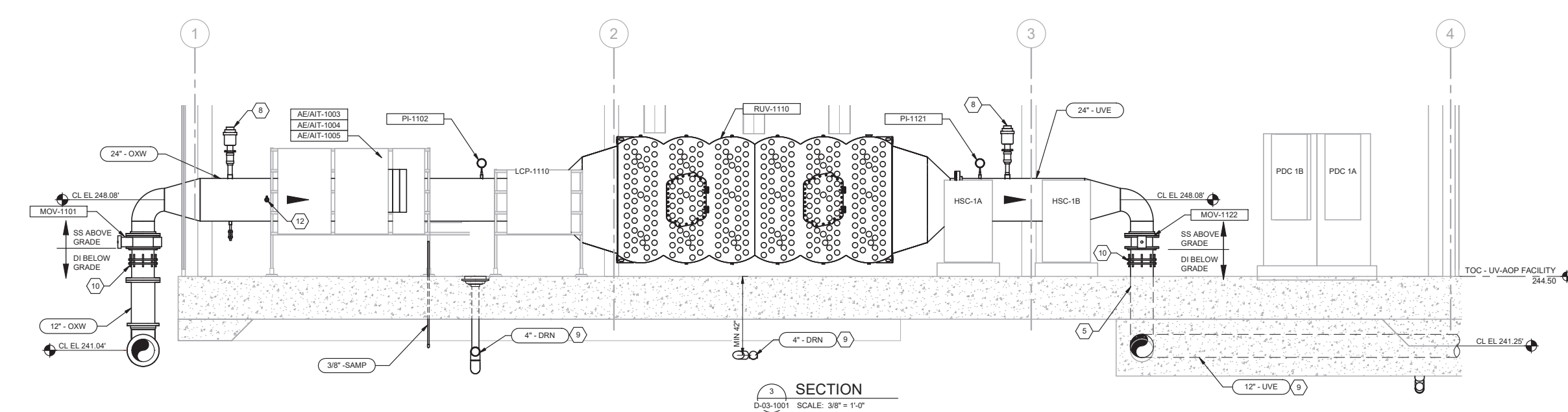
REVIEWED BY: _____ DATE: _____, 20XX
 REVIEWED BY: _____ DATE: _____, 20XX
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20XX
 OMNEED POUR, P.E. - PROJECT MANAGER

REFERENCE: _____
 DATE: _____, 20XX
 SUBMITTED BY: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 HYDROGEN PEROXIDE STORAGE AND FEED
 PLAN
 PROJECT AND SHEET TITLE

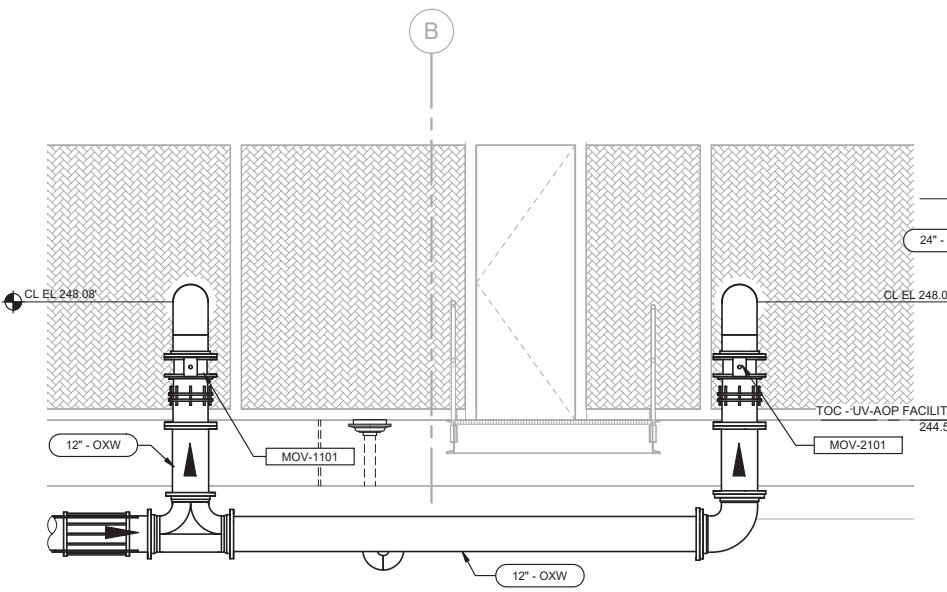


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 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-03-1002
 SH1 126 of 303 SH15

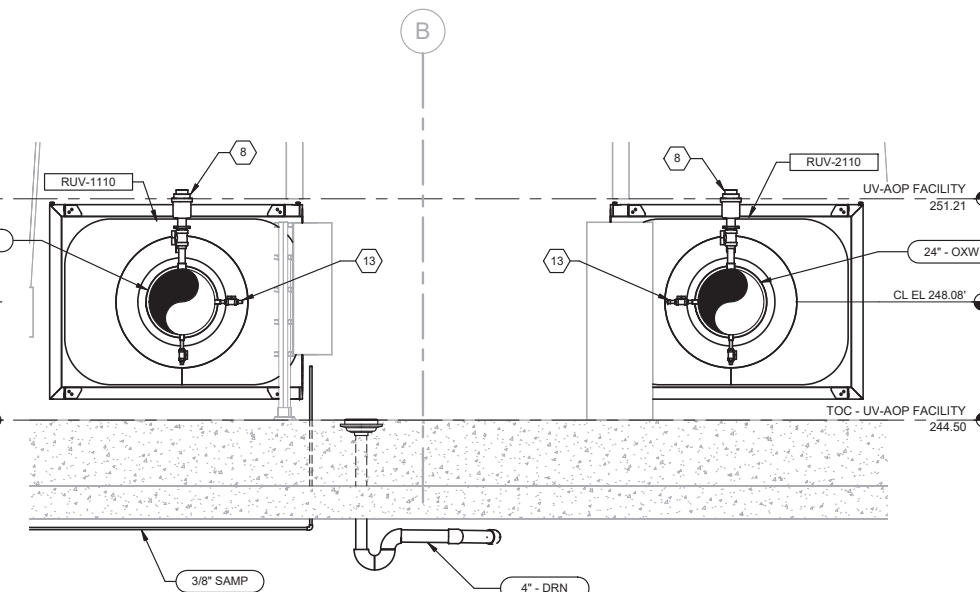


SECTION 3
D-03-1001 SCALE: 3/8" = 1'-0"

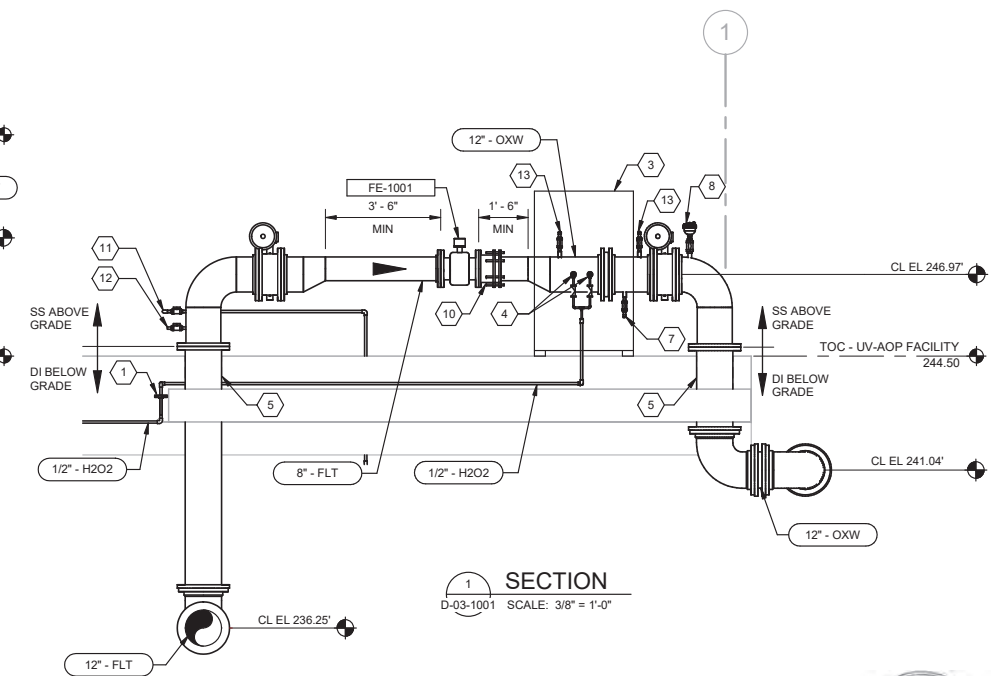
- KEY NOTES:**
- CHEMICAL RISER PER DETAIL C / C-01-5003
 - UVT ANALYZER PANEL PER DETAIL B / DWG D-03-5001
 - SAFETY SHIELD PER DETAIL C / D-08-5003
 - H2O2 CHEMICAL INJECTORS CONNECTION PER DETAIL A / D-03-5001
 - TYPE K PIPE PENETRATION PER DETAIL D1110
 - 3/4" DRAIN PER DETAIL D5050
 - 1/2" DRAIN PER DETAIL D5050
 - 2" AUTOMATIC AIR RELEASE PER DETAIL D5061
 - ENCASE BURIED 12" UVE AND 4" DRAIN PIPES BELOW UV FACILITY SLAB PER DETAIL S6003. PROVIDE ENCASEMENT AT LEAST 5" OUTSIDE OF FACILITY SLAB
 - FLANGED COUPLING ADAPTER
 - 3/8" SAMPLE TAP LOCATION WITH SS WELD-O-LET. ROUTE 3/8" STAINLESS STEEL TUBING TO UVT ANALYZER PANEL LOCATED IN UV FACILITY.
 - 1" SAMPLE TAP LOCATION WITH SS WELD-O-LET
 - 1/2" PRESSURE GAUGE TAP



SECTION 2
D-03-1001 SCALE: 3/8" = 1'-0"



SECTION 4
D-03-1001 SCALE: 3/8" = 1'-0"



SECTION 1
D-03-1001 SCALE: 3/8" = 1'-0"

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 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20XX
 OMVED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20XX COMPUTER FILE NAME:
 SUBMITTED BY: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER
 ENGINEERING AND STREET SERVICES

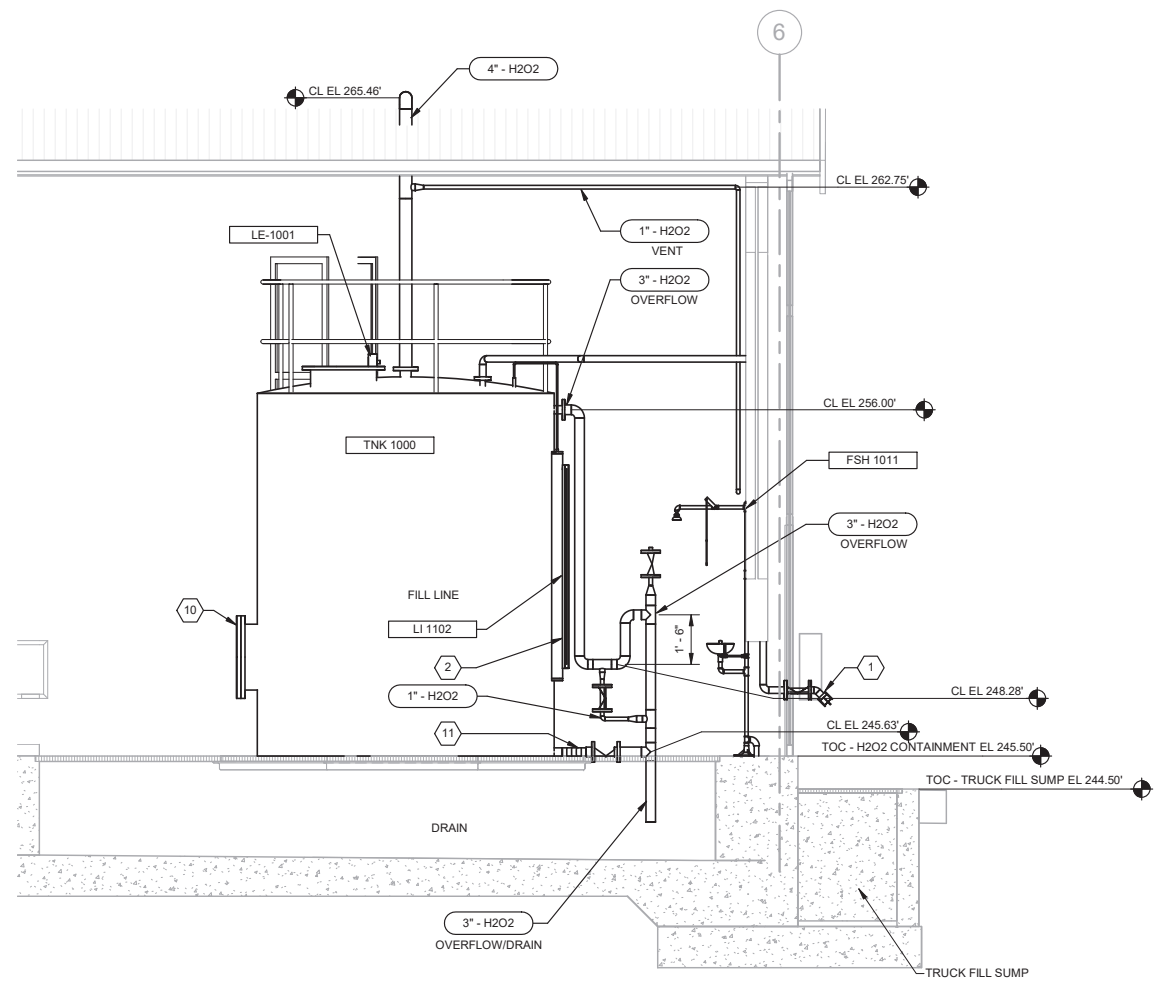
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 UV/AOP SECTIONS

DESIGNED BY: AZ
 DRAWN BY: AC
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-03-3001
 SHEET 127 OF 303 SHEETS

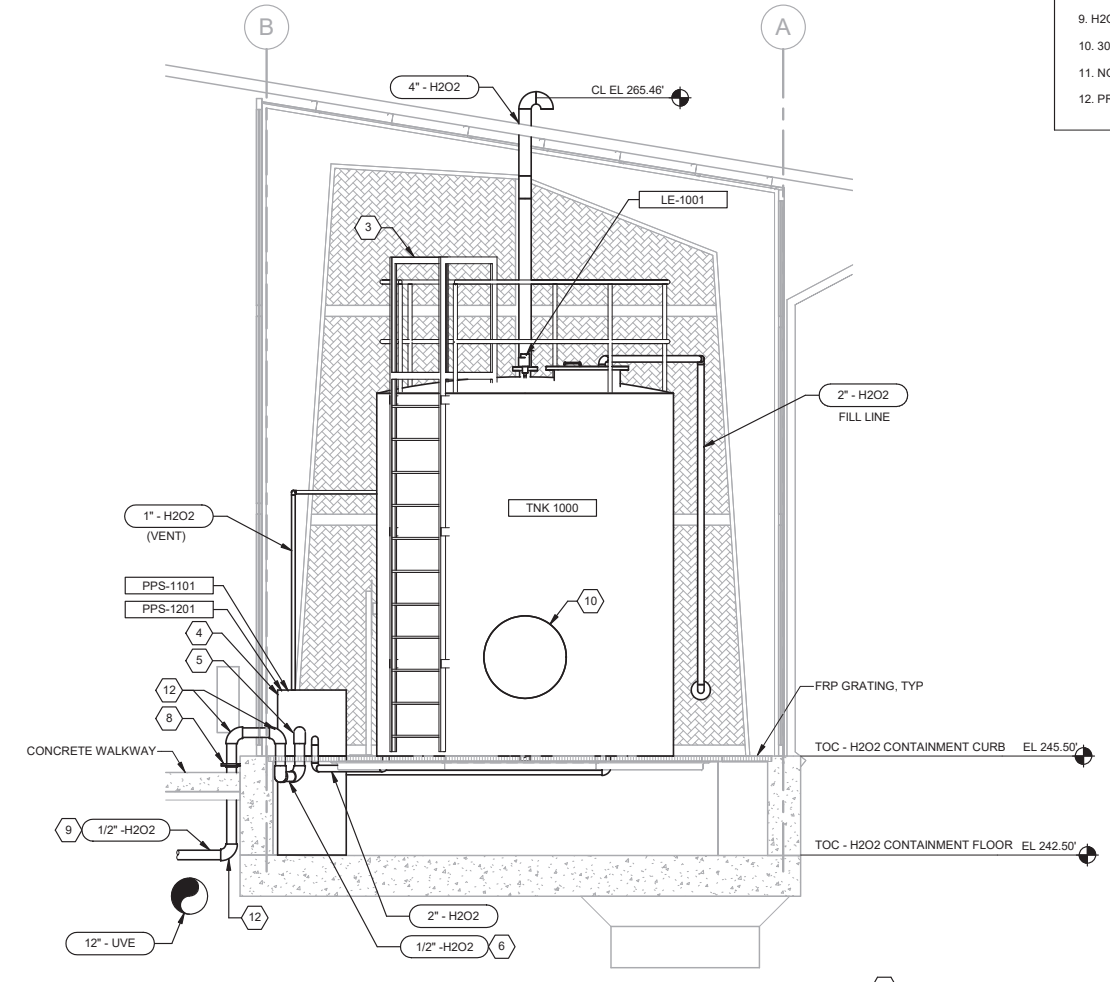


KEY NOTES:

1. TRUCK FILL PER DETAIL F / D-03-5004 WITHOUT A BASKET STRAINER
2. FLOAT STYLE LEVEL INDICATOR PER SECTION 43 41 43.13
3. TANK ACCESS LADDER
4. VENDOR PROVIDED CHEMICAL METERING PUMP ENCLOSURE AND PUMP SKID
5. TRANSITION TO 1/2" PFA CARRIER PIPE WITHIN 3" CPVC CONTAINMENT AT DISCHARGE FROM PUMP ENCLOSURE PER DETAIL B / D-08-5003
6. INSTALL CHEMICAL DISCHARGE PIPE ALONG CHEMICAL CONTAINMENT WALL UNDER GRATING. MOUNT CPVC PIPE TO WALL WITH SS UNISTRUTS AND CLIPS PER DETAIL D3112
7. INSTALL CHEMICAL PIPE UNDER CHEMICAL GRATING. SECURE PIPE TO FLOOR AND WALLS WITH SS UNISTRUTS AND CLIPS PER DETAIL D3301 INSTALLED IN THE VERTICAL
8. CHEMICAL RISER PER DETAIL C / C-01-5003
9. H2O2 CHEMICAL DUCTBANK PER SECTION 7 / D-03-5001
10. 30" MANWAY
11. NON METALLIC FLEXIBLE CONNECTOR PER SECTION 43 41 43.13
12. PROVIDE LONG SWEEPING RADIUS BEND PER SECTION 40 05 31.19



1 SECTION
D-03-1002 SCALE: 3/8" = 1'-0"



2 SECTION
D-03-1002 SCALE: 3/8" = 1'-0"



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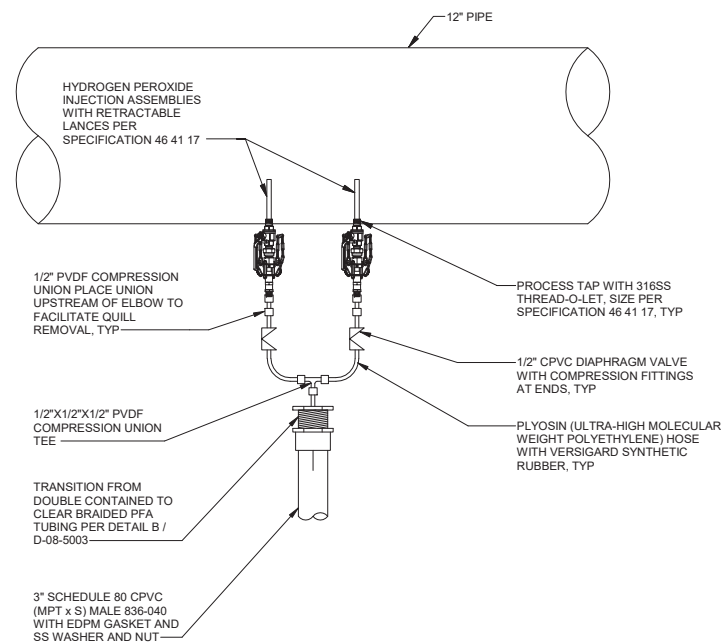
REVIEWED BY: _____ DATE: _____, 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20__
 OMVED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20XX
 SUBMITTED BY: _____
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

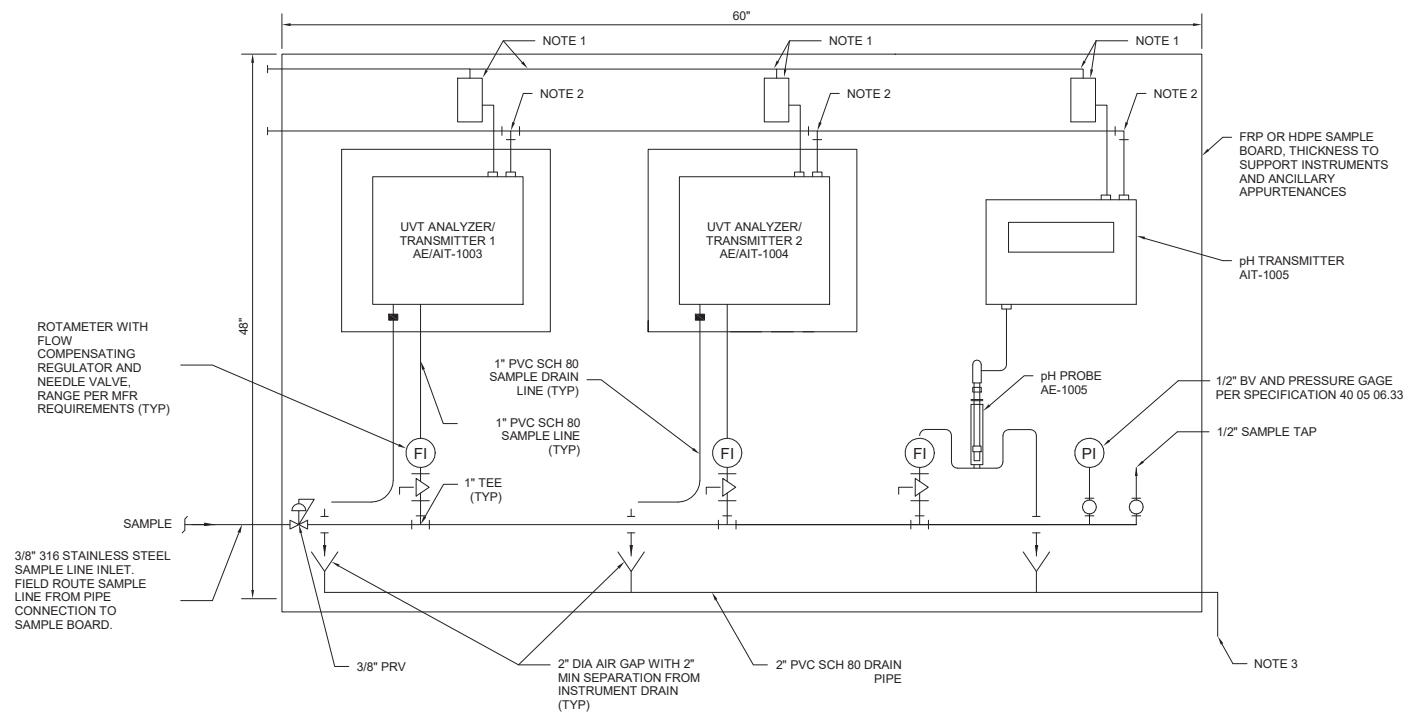
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 HYDROGEN PEROXIDE STORAGE AND FEED SECTIONS
 PROJECT AND SHEET TITLE



DESIGNED BY: AZ
 DRAWN BY: AC
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-03-3002
 SH1 128 of 303 SH15



A
HYDROGEN PEROXIDE INJECTION ASSEMBLY DETAIL
 D-03-1001 SCALE: NTS



- NOTES:**
- JUNCTION BOX WITH TERMINALS FOR 120VAC. ROUTE ALL CONDUITS FOR 120 VAC WIRING ALONG TOP OF SAMPLE BOARD.
 - CONDUITS FOR INSTRUMENT WIRING SIZES SHALL BE AS SHOWN ON ONE-LINE DRAWINGS. ROUTE ALL CONDUITS FOR INSTRUMENT WIRING ALONG TOP OF SAMPLE BOARD.
 - FIELD ROUTE SAMPLE BOARD DRAIN LINE TO NEAREST EQUIPMENT FLOOR DRAIN.

B
UV FEED ANALYZER/TRANSMITTER SAMPLE BOARD DETAIL
 D-03-1001 SCALE: NTS



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 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY : _____ DATE : _____, 20__
 OMIED POUR, P.E. - PROJECT MANAGER

REFERENCE : _____
 DATE : _____, 20__
 SUBMITTED BY : _____
 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 SP-FILE NO. : SP2602
 APPROVED BY : _____ DATE : _____, 20__
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 UV/AOP AND HYDROGEN PEROXIDE DETAILS
 PROJECT AND SHEET TITLE



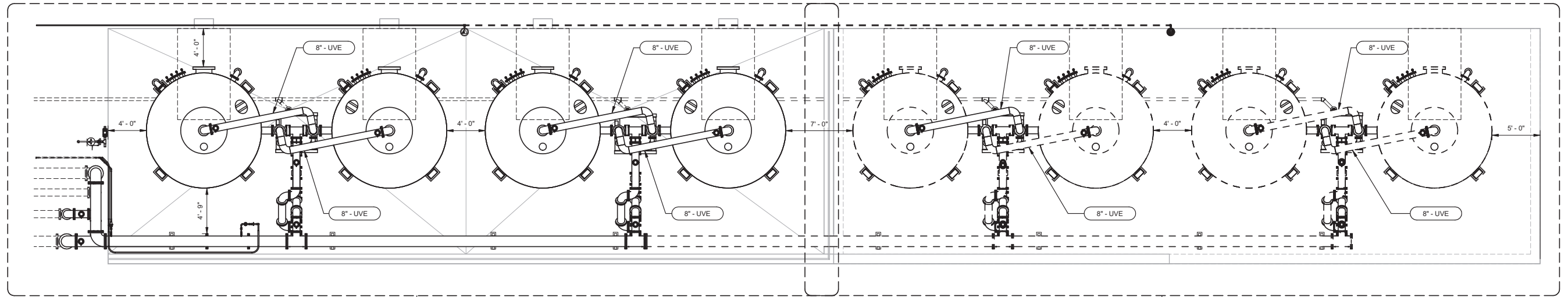
DESIGNED BY : AZ
 DRAWN BY : LEG
 CHECKED BY : AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-03-5001
 SH1 129 of 303 SH15

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D-04-1001

ENC. NO. 1

SHEET 130 OF 303



1
D-04-1002

1 GAC OVERALL PLAN
SCALE: 3/16" = 1'-0"

2
D-04-1003

BIM 360/154390 - Arcadia Water Treatment Plant Expansion/154390-D-04V19.rvt
TITLE OF PROJECT: OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION



City of **Santa Monica**
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NO.	DATE	BY	DESCRIPTION	APPROVED



REVIEWED BY: _____ DATE: _____, 20XX
 REVIEWED BY: _____ DATE: _____, 20XX
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20XX
 OMEED POUR, P.E. - PROJECT MANAGER

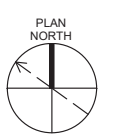
REFERENCE:
 DATE: _____, 20XX
 SUBMITTED BY: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER
 ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
OVERALL GAC PLAN



DESIGNED BY: LRB
 DRAWN BY: RP
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-04-1001
 SH1 130 OF 303 SH15

PROJECT AND SHEET TITLE

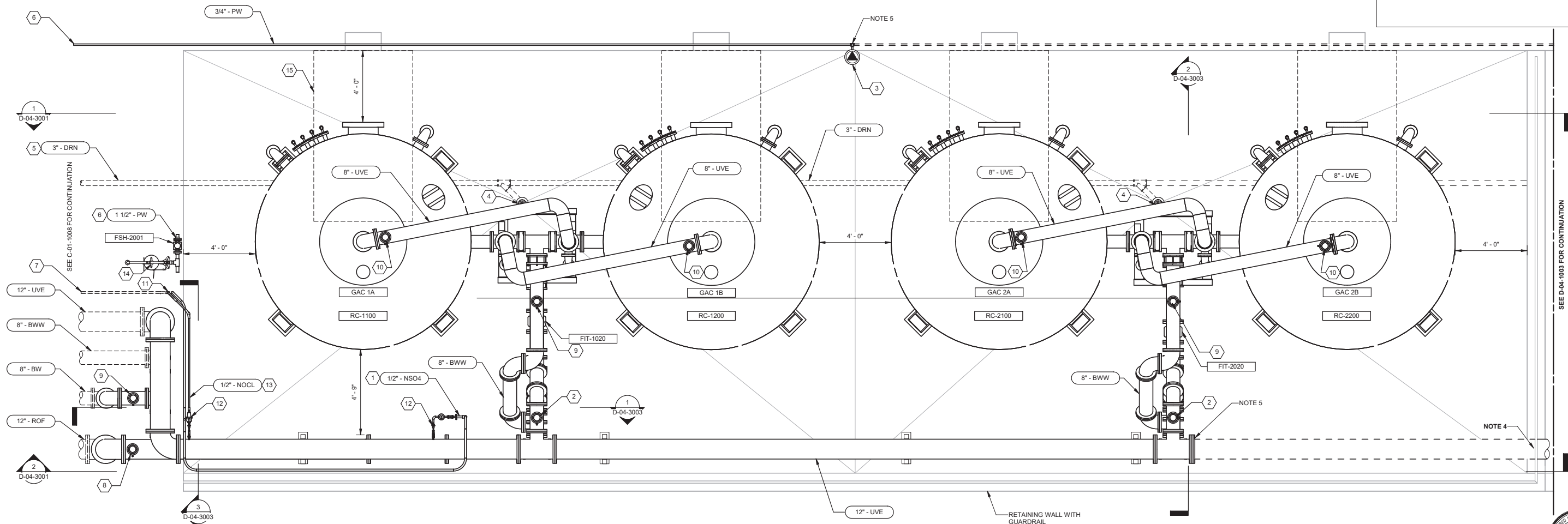


GENERAL NOTES:

- PIPE SUPPORTS SHOWN ON PLANS ARE FOR VISUAL AND SPATIAL REFERENCE ONLY. COORDINATE DESIGN OF PIPING SUPPORTS, EXPANSION JOINTS, AND EXPANSION CONTROL AND SEISMIC RESTRAINTS PER SPECIFICATION 40 05 01.
- REFER TO I-04-6001 AND I-04-6002 FOR INSTRUMENTATION AND FLEXIBLE FITTINGS, FURNISHED BY GAC SYSTEM MANUFACTURERS. FIELD ROUTE ELECTRICAL AND INSTRUMENTATION CABLING.
- ROUTE COMBINATION AIR VALVE VENT PIPING TO NEAREST FLOOR DRAIN. UTILIZE ADJACENT PIPE SUPPORTS TO ROUTE VENT PIPE TO MINIMIZE OBSTRUCTION OF WALKING PATHS AND EQUIPMENT ACCESS.
- RETAINING WALL TO BE DEMOLISHED FOR FUTURE PHASE BUILD OUT.
- BLIND FLANGE PROVIDED FOR INITIAL PHASE BUILD OUT. BLIND FLANGE TO BE REMOVED FOR FUTURE PHASE BUILD OUT.

KEY NOTES:

- 1/2" NS04 CHEMICAL PIPING SHALL BE DOUBLE CONTAINED IN 2" SCH 40 PVC CARRIER PIPE FROM THE CHEMICAL DUCTBANK TO THE INJECTION QUILL.
- 1-1/2" COMBINATION AIR VALVE PER DETAIL D5061.
- UTILITY STATION PER DETAIL D5022. PROVIDE 100 FT HOSE TO ALLOW ACCESS TO VESSELS GAC 1A THROUGH GAC 2B.
- FLOOR DRAIN PER DETAIL D4202. TYPICAL. FIELD ROUTE TO NEAREST STORM DRAIN, EXTEND PIPING TO EDGE OF PAD FOR FUTURE CONNECTION, AND PROVIDE CLEANOUT AS NEEDED.
- DRAIN CONNECTION TO BE FIELD ROUTED TO STORM DRAIN.
- POTABLE WATER CONNECTION TO BE FIELD ROUTED.
- CHEMICAL CONNECTION TO BE FIELD ROUTED.
- 2" COMBINATION AIR VALVE PER DETAIL D5061.
- 1/2" NOOL CHEMICAL PIPING PER DETAIL D5061.
- COMBINATION AIR VALVE PER DETAIL D5061 PROVIDED BY GAC SYSTEM MANUFACTURER.
- CHEMICAL RISER PER DETAIL C/C-01-5003.
- CHEMICAL INJECTION QUILL PER DETAIL E/D-08-5004. TYPICAL.
- 1/2" NOOL CHEMICAL PIPING SHALL BE DOUBLE CONTAINED IN 2" SCH 40 PVC CARRIER PIPE FROM THE CHEMICAL DUCTBANK TO THE INJECTION QUILL.
- EMERGENCY EYEWASH STATION PER DETAIL D4402. FIELD ROUTE TO NEAREST EMERGENCY EYEWASH STATION HOT WATER LOOP.
- GAC SYSTEM MANUFACTURER TO PROVIDE AND COORDINATE DESIGN OF THE PLATFORM AND LADDER PER SPECIFICATION 43 31 13.13. TYPICAL.



1 GAC PARTIAL PLAN - 1
 SCALE: 3/8" = 1'-0"

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REVISIONS				

Brown and Caldwell
WALSH

REVIEWED BY: _____ DATE: _____, 20XX	REFERENCE:
REVIEWED BY: _____ DATE: _____, 20XX	DATE: _____, 20XX COMPUTER FILE NAME: _____
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	SUBMITTED BY: _____ SP-FILE NO.: SP2602
REVIEWED BY: _____ DATE: _____, 20XX	APPROVED BY: _____ DATE: _____, 20XX
OMED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER
CITY CLIENTS	ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

GAC PARTIAL PLAN - 1

DESIGNED BY: LRB
 DRAWN BY: RP
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-04-1002
 SHEET 131 OF 303 SHEETS



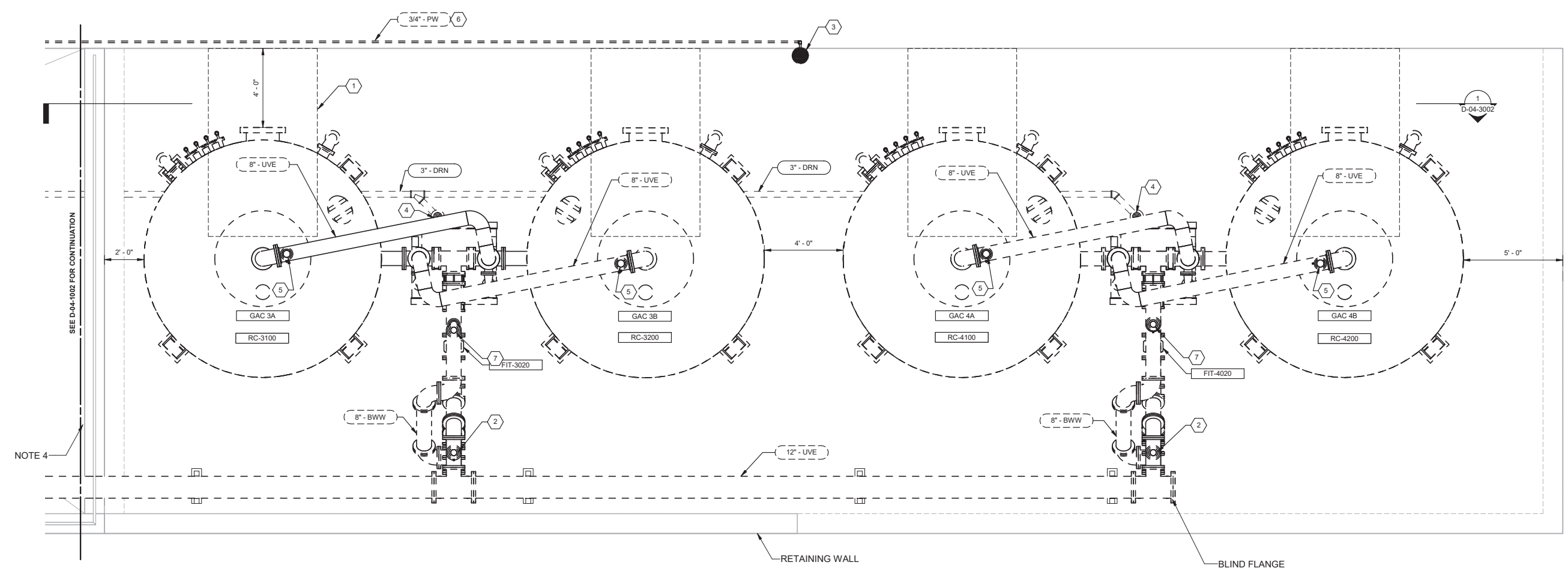


GENERAL NOTES:

1. PIPE SUPPORTS SHOWN ON PLANS ARE FOR VISUAL AND SPATIAL REFERENCE ONLY. COORDINATE DESIGN OF PIPING SUPPORTS, EXPANSION JOINTS, AND EXPANSION CONTROL AND SEISMIC RESTRAINTS PER SPECIFICATION 40 05 01.
2. REFER TO I-04-6003 AND I-04-6004 FOR INSTRUMENTATION AND FLEXIBLE FITTINGS FURNISHED BY GAC SYSTEM MANUFACTURERS. FIELD ROUTE ELECTRICAL AND INSTRUMENTATION CABLING.
3. ROUTE COMBINATION AIR VALVE VENT PIPING TO NEAREST FLOOR DRAIN. UTILIZE ADJACENT PIPE SUPPORTS TO ROUTE VENT PIPE TO MINIMIZE OBSTRUCTION OF WALKING PATHS AND EQUIPMENT ACCESS.
4. RETAINING WALL TO BE DEMOLISHED FOR FUTURE PHASE BUILDING OUT.

KEY NOTES:

1. GAC SYSTEM MANUFACTURER TO PROVIDE AND COORDINATE DESIGN OF THE PLATFORM AND LADDER PER SPECIFICATION 43 31 13.13, TYPICAL.
2. 1-1/2" COMBINATION AIR VALVE PER DETAIL D5061.
3. UTILITY STATION PER DETAIL D5022. PROVIDE 100 FT HOSE TO ALLOW ACCESS TO VESSELS GAC 3A THOUGH GAC 4B.
4. FLOOR DRAIN PER DETAIL D4202, TYPICAL. CONNECT TO EXTENDED 3" DRN LINE FROM INITIAL BUILD OUT AND PROVIDE CLEANOUT AS NEEDED.
5. COMBINATION AIR VALVE PER DETAIL D5061 PROVIDED BY GAC SYSTEM MANUFACTURER.
6. POTABLE WATER CONNECTION TO BE FIELD ROUTED.
7. 1/2" COMBINATION AIR VALVE PER DETAIL D5061.



2 GAC PARTIAL PLAN - 2
SCALE: 3/8" = 1'-0"



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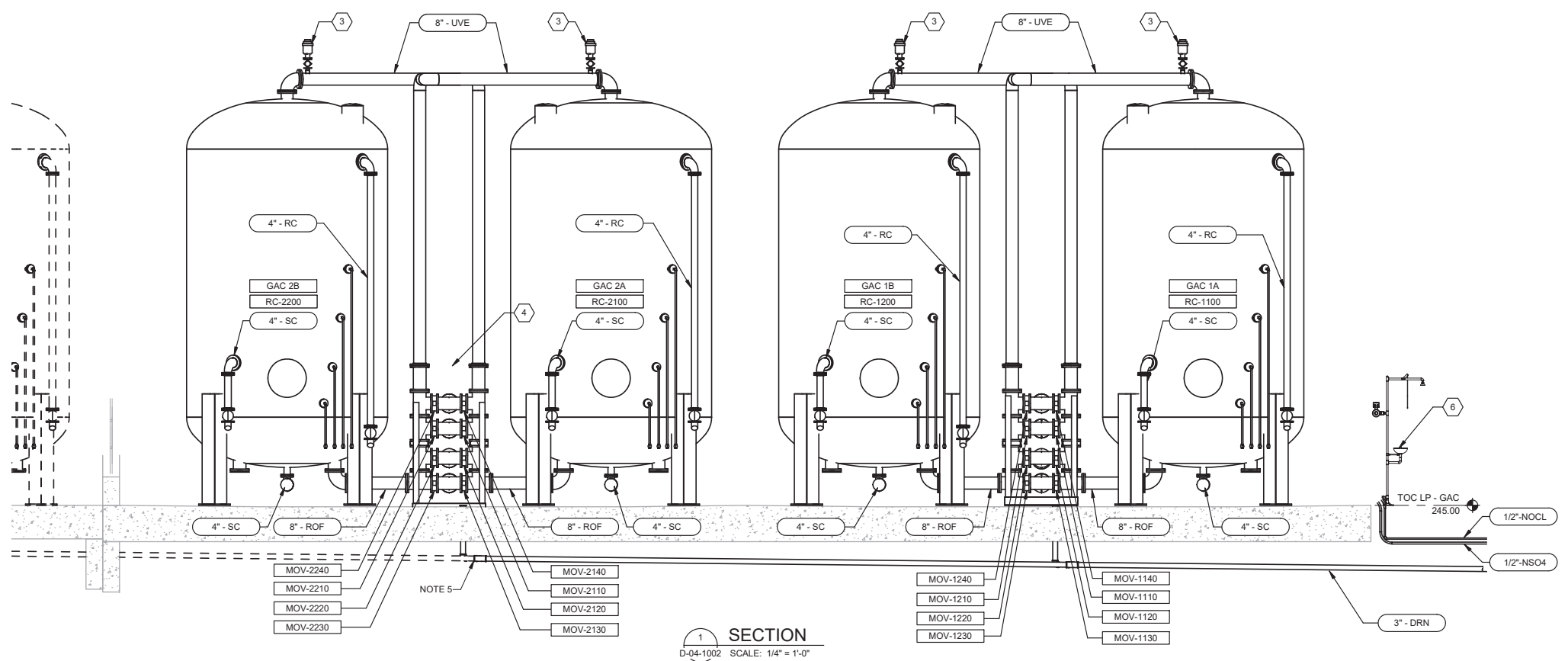
NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH

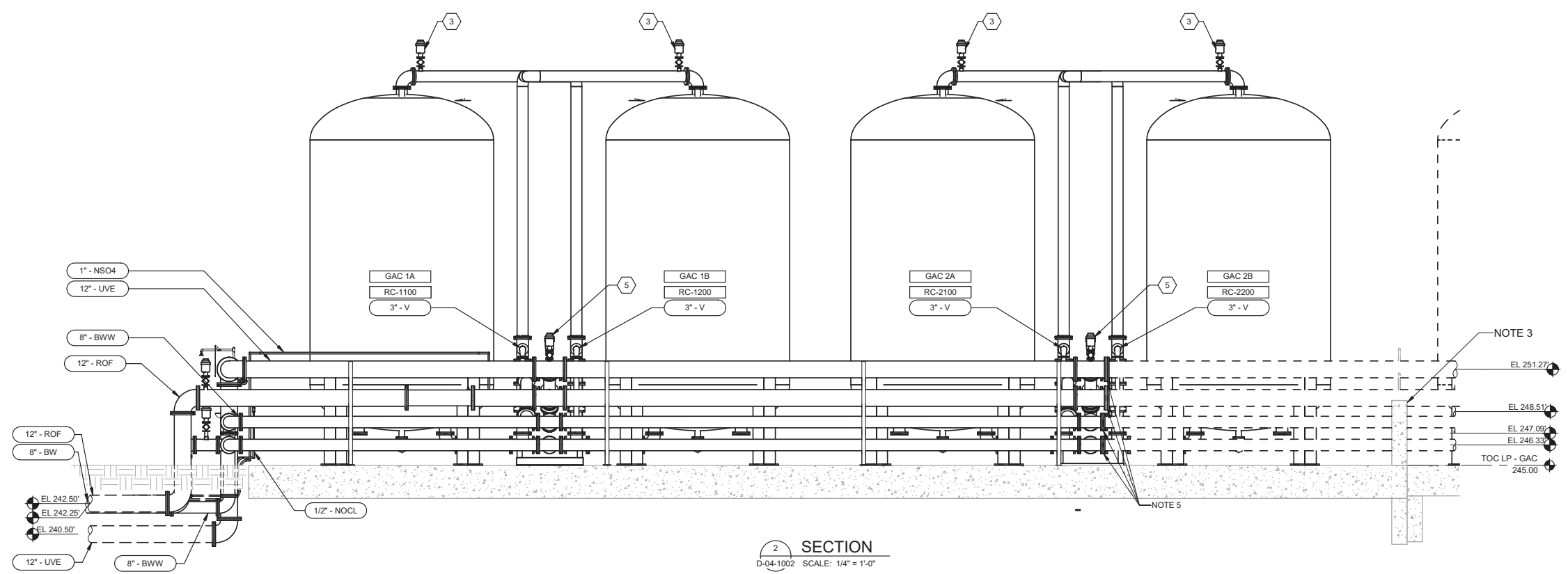
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER	DATE:	20

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
CURTIS CASTLE, P.E. - PRINCIPAL C.E.	DATE:	20XX	SP-FILE NO.: SP2602
ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE:	20XX	

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
GAC PARTIAL PLAN - 2
 DESIGNED BY: LRB
 DRAWN BY: RP
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-04-1003
 SHEET 132 OF 303 SHEETS



1 SECTION
D-04-1002 SCALE: 1/4" = 1'-0"



2 SECTION
D-04-1002 SCALE: 1/4" = 1'-0"

- GENERAL NOTES:**
- REFER TO I-04-6001 AND I-04-6002 FOR INSTRUMENTATION AND FLEXIBLE FITTINGS FURNISHED BY GAC SYSTEM MANUFACTURERS. FIELD ROUTE ELECTRICAL AND INSTRUMENTATION CABLING.
 - ROUTE COMBINATION AIR VALVE VENT PIPING TO NEAREST FLOOR DRAIN. UTILIZE ADJACENT PIPE SUPPORTS TO ROUTE VENT PIPE TO MINIMIZE OBSTRUCTION OF WALKING PATHS AND EQUIPMENT ACCESS.
 - RETAINING WALL TO BE DEMOLISHED FOR FUTURE PHASE BUILD OUT.
 - PIPE SUPPORTS SHOWN ON PLANS ARE FOR VISUAL AND SPATIAL REFERENCE ONLY. COORDINATE DESIGN OF PIPING SUPPORTS, EXPANSION JOINTS, AND EXPANSION CONTROL AND SEISMIC RESTRAINTS PER SPECIFICATIONS 40 05 01.
 - BLIND FLANGE PROVIDED FOR INITIAL PHASE BUILD OUT. BLIND FLANGE TO BE REMOVED FOR FUTURE PHASE BUILD OUT.
- KEY NOTES:**
- NOT USED.
 - PROCESS WATER SAMPLE ASSEMBLY PER SPECIFICATION 43 31 13.13.
 - COMBINATION AIR VALVE PER DETAIL D5061 PROVIDED BY GAC SYSTEM MANUFACTURER.
 - 1/2" COMBINATION AIR VALVE PER DETAIL D5061.
 - 1-1/2" COMBINATION AIR VALVE PER DETAIL D5061.
 - EMERGENCY EYEWASH STATION PER DETAIL D4402. FIELD ROUTE TO NEAREST EMERGENCY EYEWASH STATION HOT WATER LOOP.

City of Santa Monica
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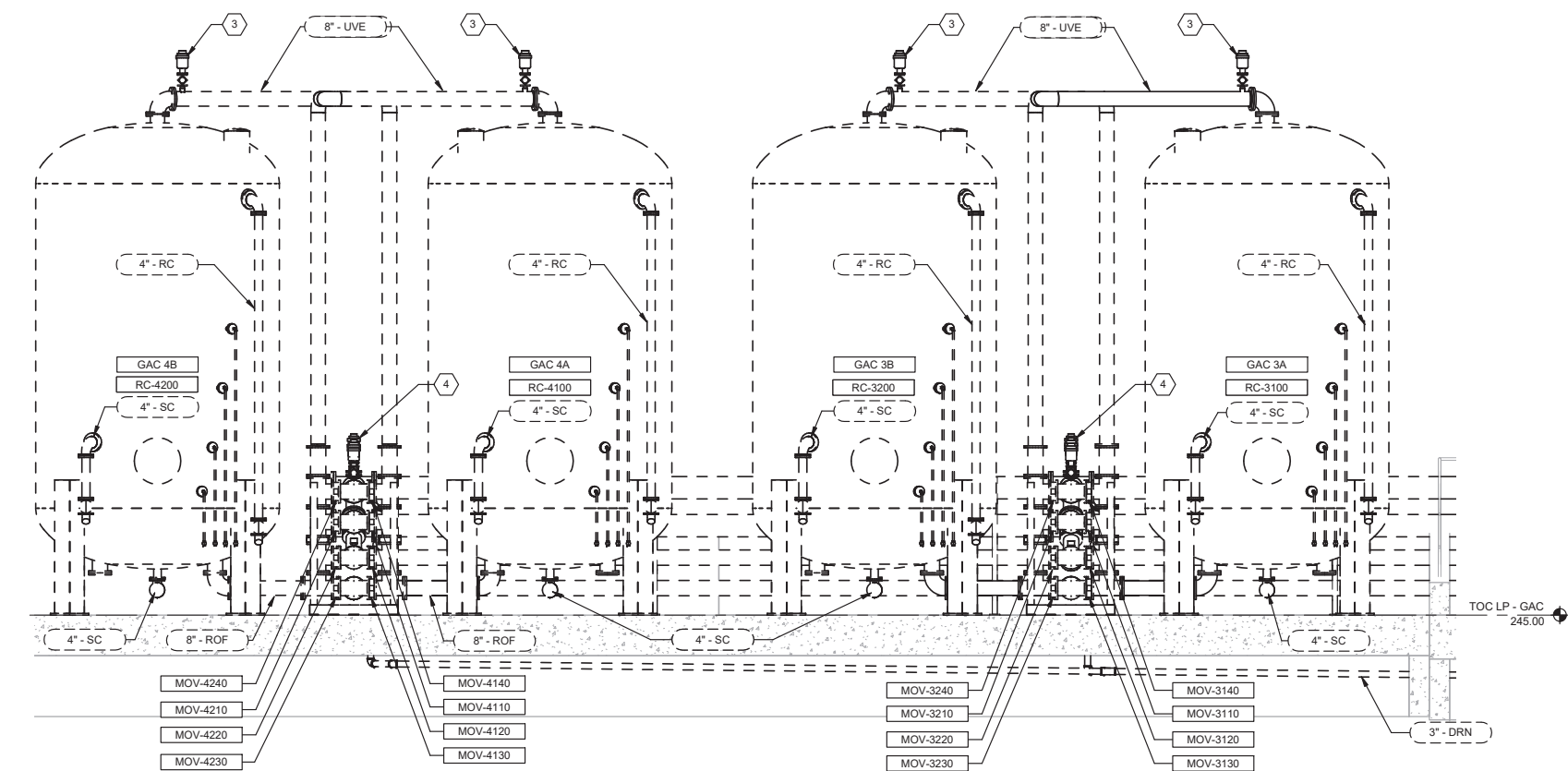
Brown and Caldwell
WALSH

REVIEWED BY: _____ DATE: _____, 20__	REFERENCE: _____
REVIEWED BY: _____ DATE: _____, 20__	DATE: _____, 20XX COMPUTER FILE NAME: _____
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	SUBMITTED BY: _____ SP-FILE NO.: SP2602
REVIEWED BY: _____ DATE: _____, 20__	APPROVED BY: _____ DATE: _____, 20XX
OMED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER

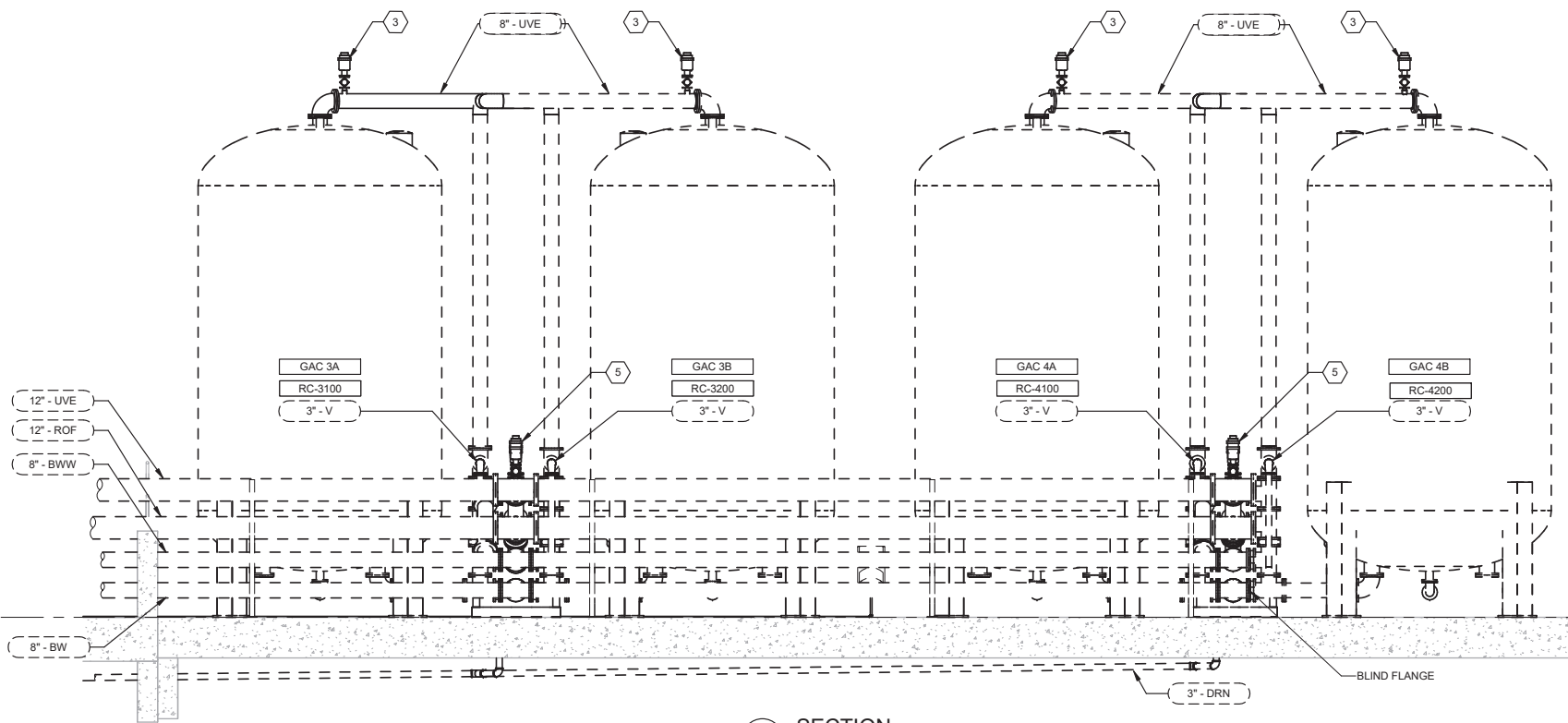
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
GAC SECTIONS - 1

DESIGNED BY: LRB	CONSULTANT JOB/SHEET NO. 154390
DRAWN BY: RP	DRAWING NO. 7078
CHECKED BY: AZ	D-04-3001
PROJECT AND SHEET TITLE	

12/22/2021
 SHEET 133 OF 303 SHS



SECTION 1
 D-04-1003 SCALE: 1/4" = 1'-0"



SECTION 2
 SCALE: 1/4" = 1'-0"

- GENERAL NOTES:**
- REFER TO I-04-6001 AND I-04-6002 FOR INSTRUMENTATION AND FLEXIBLE FITTINGS FURNISHED BY GAC SYSTEM MANUFACTURERS. FIELD ROUTE ELECTRICAL AND INSTRUMENTATION CABLING.
 - ROUTE COMBINATION AIR VALVE VENT PIPING TO NEAREST FLOOR DRAIN. UTILIZE ADJACENT PIPE SUPPORTS TO ROUTE VENT PIPE TO MINIMIZE OBSTRUCTION OF WALKING PATHS AND EQUIPMENT ACCESS.
 - PIPE SUPPORTS SHOWN ON PLANS ARE FOR VISUAL AND SPATIAL REFERENCE ONLY. COORDINATE DESIGN OF PIPING SUPPORTS, EXPANSION JOINTS, AND EXPANSION CONTROL AND SEISMIC RESTRAINTS PER SPECIFICATIONS 40 05 01.
- KEY NOTES:**
- NOT USED.
 - PROCESS WATER SAMPLE ASSEMBLY PER SPECIFICATION 43 31 13.13.
 - COMBINATION AIR VALVE PER DETAIL D5061 PROVIDED BY GAC SYSTEM MANUFACTURER.
 - 1/2" COMBINATION AIR VALVE PER DETAIL D5061.
 - 1-1/2" COMBINATION AIR VALVE PER DETAIL D5061.

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REVISIONS				

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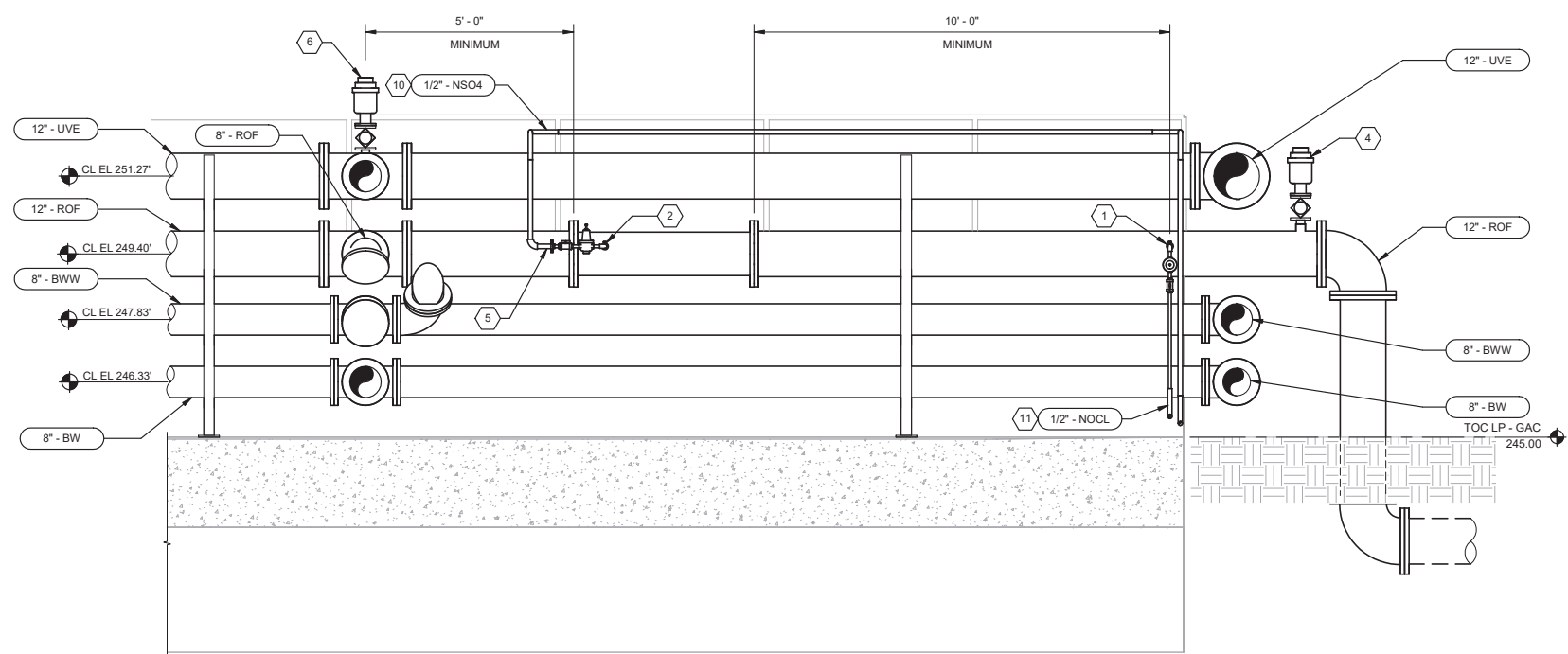
REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			SP-FILE NO.: SP2602
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

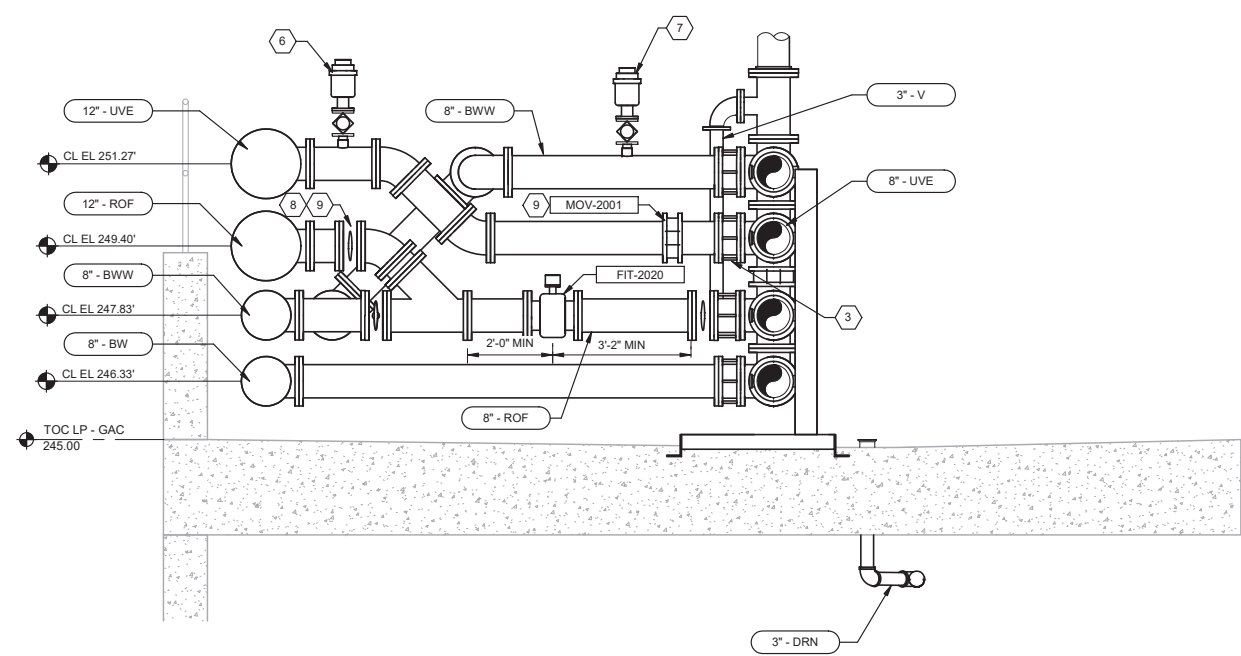
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 GAC SECTIONS - 2
 PROJECT AND SHEET TITLE



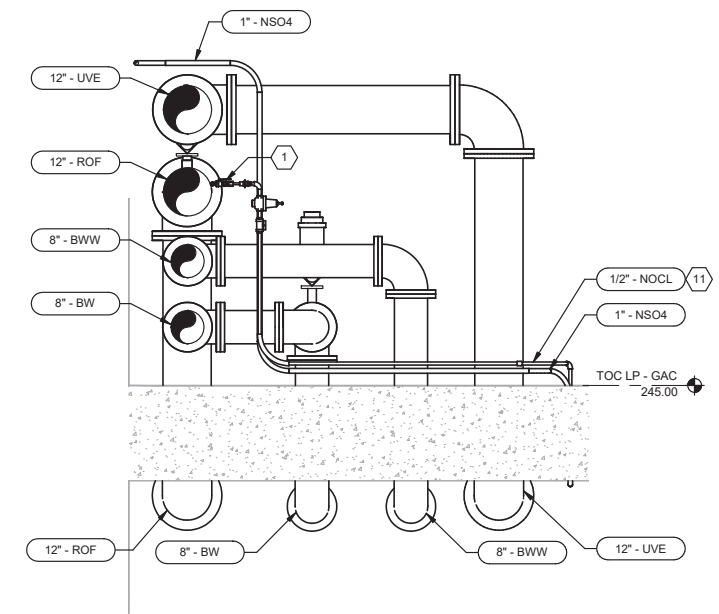
DESIGNED BY:	LRB
DRAWN BY:	RP
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-04-3002	
SHT	134 of 303 SHS



SECTION 1
D-04-1002 SCALE: 1/2" = 1'-0"



SECTION 2
D-04-1002 SCALE: 1/2" = 1'-0"



SECTION 3
D-04-1002 SCALE: 1/2" = 1'-0"

GENERAL NOTES:

- ROUTE COMBINATION AIR VALVE VENT PIPING TO NEAREST FLOOR DRAIN. UTILIZE ADJACENT PIPE SUPPORTS TO ROUTE VENT PIPE TO MINIMIZE OBSTRUCTION OF WALKING PATHS AND EQUIPMENT ACCESS.
- PIPE SUPPORTS SHOWN ON PLANS ARE FOR VISUAL AND SPATIAL REFERENCE ONLY. COORDINATE DESIGN OF PIPING SUPPORTS, EXPANSION JOINTS AND EXPANSION CONTROL AND SEISMIC RESTRAINT PER SPECIFICATION 40 05 01.

KEY NOTES:

- CHEMICAL INJECTION QUILL PER DETAIL E/D-08-5004, TYPICAL.
- INJECTION QUILL INTEGRATED WITH STATIC MIXER ASSEMBLY PER SPECIFICATION 46 41 17.
- TRANSITION COUPLING PER SPECIFICATION 43 31 13.13, TYPICAL.
- 2" COMBINATION AIR VALVE PER DETAIL M5061.
- TRANSITION FROM DOUBLE CONTAINED FLEXIBLE TUBING TO HARD PIPING AS INDICATED IN DETAIL B/D-08-5003, TYPICAL.
- 1-1/2" COMBINATION AIR VALVE PER DETAIL D5061.
- 1/2" COMBINATION AIR VALVE PER DETAIL D5061.
- COORDINATE WITH GAC SUPPLIER TO MATCH VALVE MANUFACTURER, TYPICAL.
- 8" BUTTERFLY, TYPICAL.
- 1/2" NSO4 CHEMICAL PIPING SHALL BE DOUBLE CONTAINED IN 2" SCH 40 PVC CARRIER PIPE FROM THE CHEMICAL DUCTBANK TO THE INJECTION QUILL.
- 1/2" NOCL CHEMICAL PIPING SHALL BE DOUBLE CONTAINED IN 2" SCH 40 PVC CARRIER PIPE FROM THE CHEMICAL DUCTBANK TO THE INJECTION QUILL.

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WALSH
 CONSULTANT

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REVIEWED BY:	DATE:	20__
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20__
OMIED POUR, P.E. - PROJECT MANAGER		

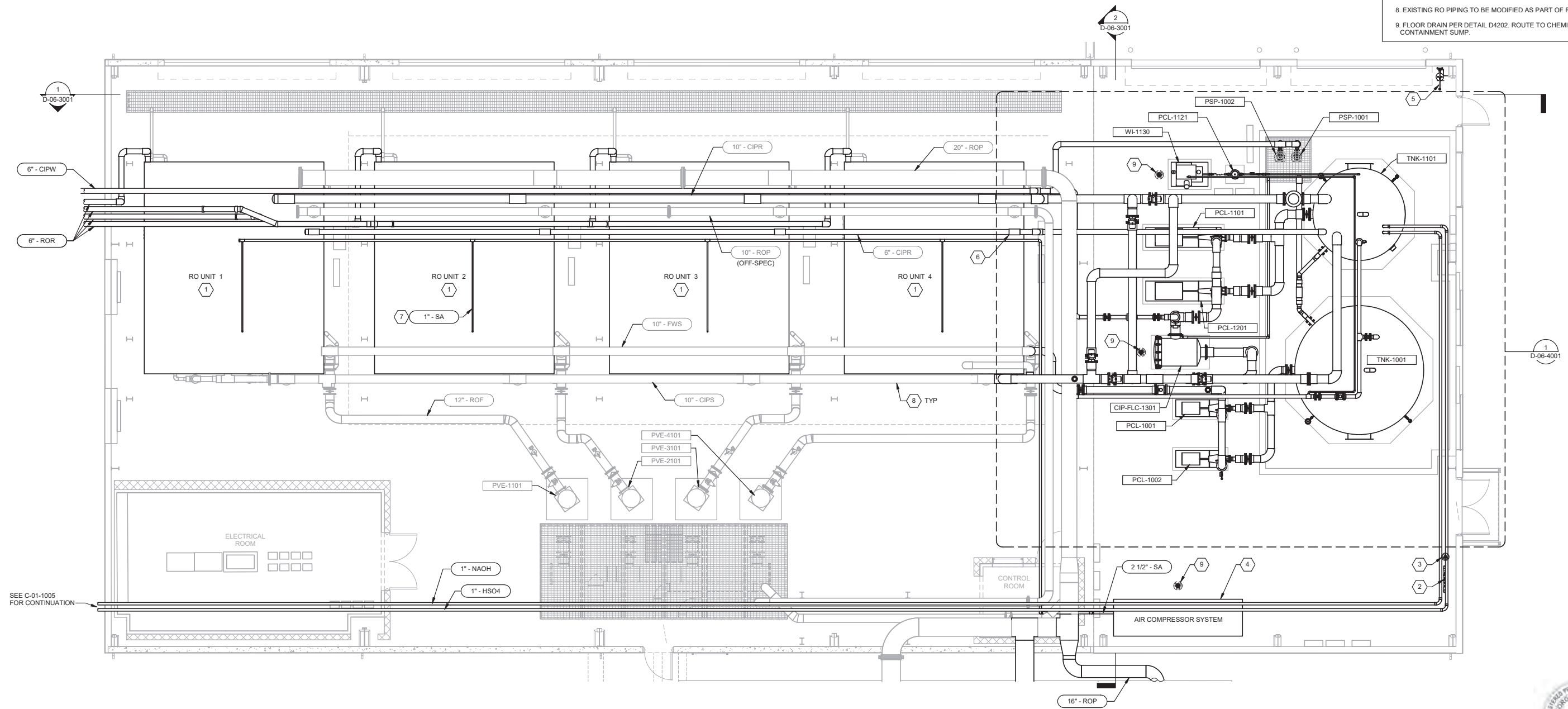
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SUBMITTED BY:			SP-FILE NO.: SP2602
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

DESIGNED BY: LRB
 DRAWN BY: RP
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-04-3003
 SHEET 135 OF 303 SHEETS
 OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 GAC SECTIONS - 3
 PROJECT AND SHEET TITLE





- KEY NOTES:**
1. RETROFITTED RO SKID BY CONTRACTOR PER SPECIFICATION 46 63 23. SEE DRAWINGS PROVIDED BY RO VENDOR FOR RETROFITTED SKID ENLARGED PLAN
 2. RELOCATE EXISTING 2" PW BACKFLOW PREVENTER ASSEMBLY PER Z-06-5001. CONTRACTOR SHALL FIELD ROUTE EXISTING 2" PW PIPELINE FROM YARD TO NEW CONNECTION LOCATION IN BUILDING EXPANSION
 3. RELOCATE EXISTING UTILITY STATION PER Z-06-5001. CONTRACTOR SHALL RECONNECT UTILITY STATION TO BACKFLOW PREVENTER DISCHARGE AND CONNECT NEW PW LINE TO EXISTING RO BUILDING PW LINE
 4. SKID MOUNTED AIR COMPRESSOR SYSTEM BY CONTRACTOR PER SPECIFICATION 43 12 51. CONTRACTOR SHALL COORDINATE WITH RO VENDOR FOR RO UNIT INTERFACE LOCATION AND FIELD ROUTE AIR SUPPLY PIPING PER SPECIFICATION 40 79 00 TO INDIVIDUAL RO UNITS
 5. EMERGENCY EYEWASH
 6. CIPR RISER PIPES TO BE DEMOLISHED AND RECONSTRUCTED ON OPPOSITE END OF THE RO TRAIN. CIPR HEADER TO BE REPLACED STARTING AT UNIT 4 AND EXTENDED WITH EACH SUBSEQUENT RETROFIT.
 7. COMPRESSED AIR REGULATOR FOR RO UNIT BRANCH LINES. SETPOINT = 70 psig.
 8. EXISTING RO PIPING TO BE MODIFIED AS PART OF RETROFIT.
 9. FLOOR DRAIN PER DETAIL D4202. ROUTE TO CHEMICAL CONTAINMENT SUMP.



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



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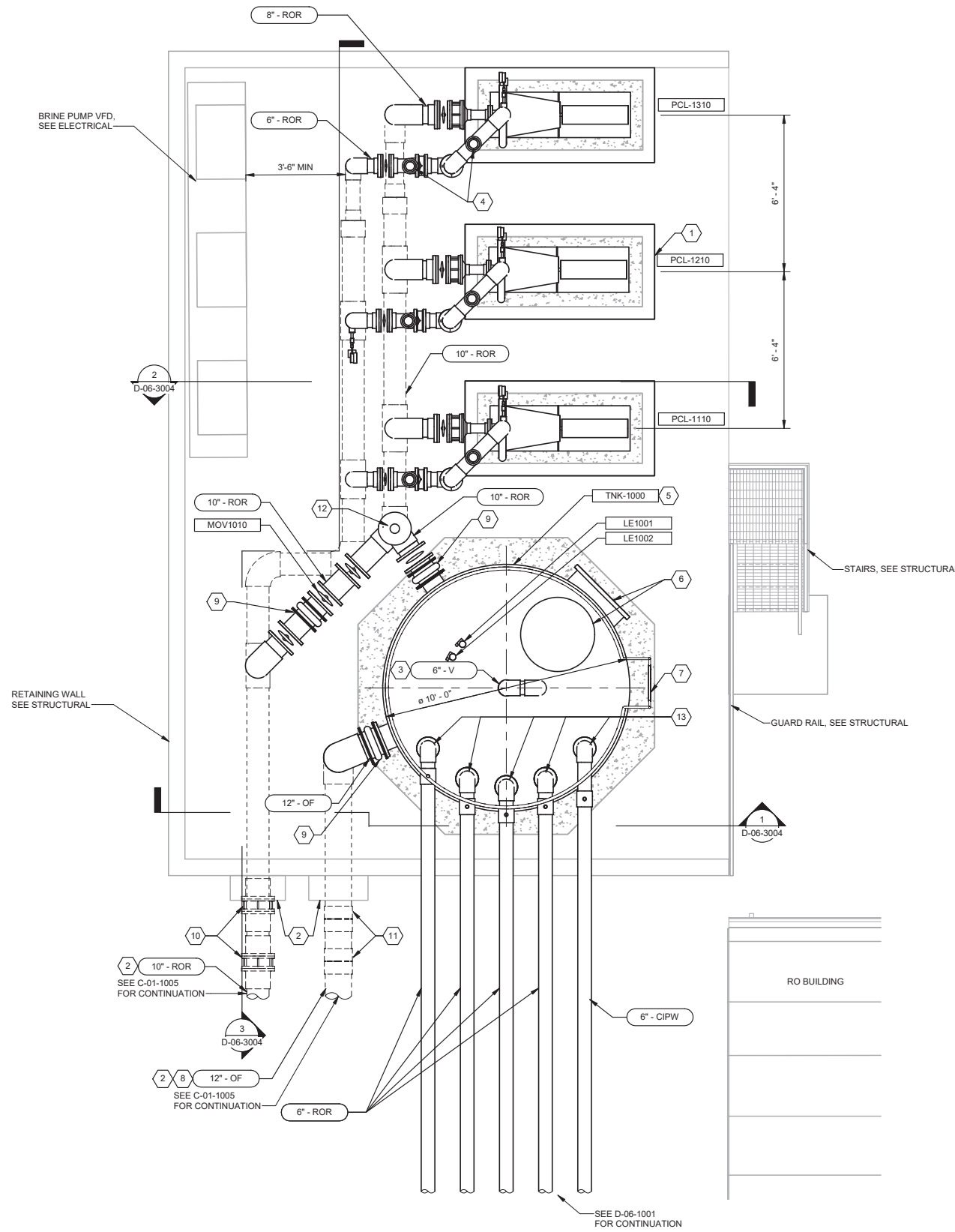
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REVIEWED BY: _____ DATE: _____ 20__	DATE: _____, 20XX COMPUTER FILE NAME: _____
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	SUBMITTED BY: _____ SP-FILE NO.: SP2602
REVIEWED BY: _____ DATE: _____ 20__	APPROVED BY: _____ DATE: _____, 20XX
OMED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER
CITY CLIENTS	ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 RO BUILDING OVERALL PLAN

DESIGNED BY: _____
 DRAWN BY: AC
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-06-1001
 SHEET 136 OF 303 SHEETS



- KEY NOTES:**
1. PUMP NOISE ENCLOSURE, TYPICAL
 2. CONCRETE ENGASEMENT, SEE DETAIL S6003 AND STRUCTURAL DRAWINGS
 3. 6" VENT, SEE DETAIL D5075
 4. 1" COMBINATION AIR VALVE, SEE DETAIL D5061. ROUTE TO WITHIN 1 FT OF PAVEMENT, TYPICAL.
 5. FRP TANK PER SPECIFICATION 43 41 46
 6. 36" MANWAY
 7. ACCESS LADDER WITH FALL ARRESTER SYSTEM
 8. PROVIDE 0.5% SLOPE
 9. FLEXIBLE EXPANSION JOINT
 10. DUAL PLAN END RESTRAINT WITH GRIPPING TEETH IN SERIES
 11. DUAL FERNCO FLEXIBLE COUPLINGS IN SERIES
 12. 10" BLIND FLANGE WITH 1/2" TAP AND BALL VALVE
 13. 1" VENT ROR, 3" HIGH, 6" MIN FROM 90 DOWN TO TANK VESSEL

1 PLAN
 SCALE: 3/8" = 1'-0"



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 REVIEWED BY: _____ DATE: _____, 20XX
 OMIED POUR, P.E. - PROJECT MANAGER

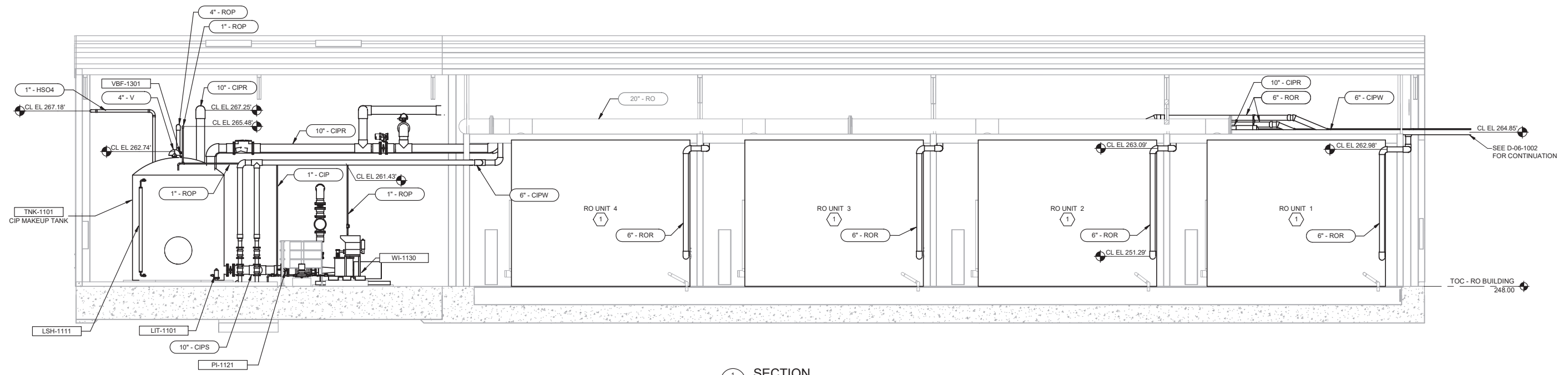
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 DATE: _____, 20XX
 SUBMITTED BY: _____
 COMPUTER FILE NAME: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 BRINE PUMP STATION PLAN

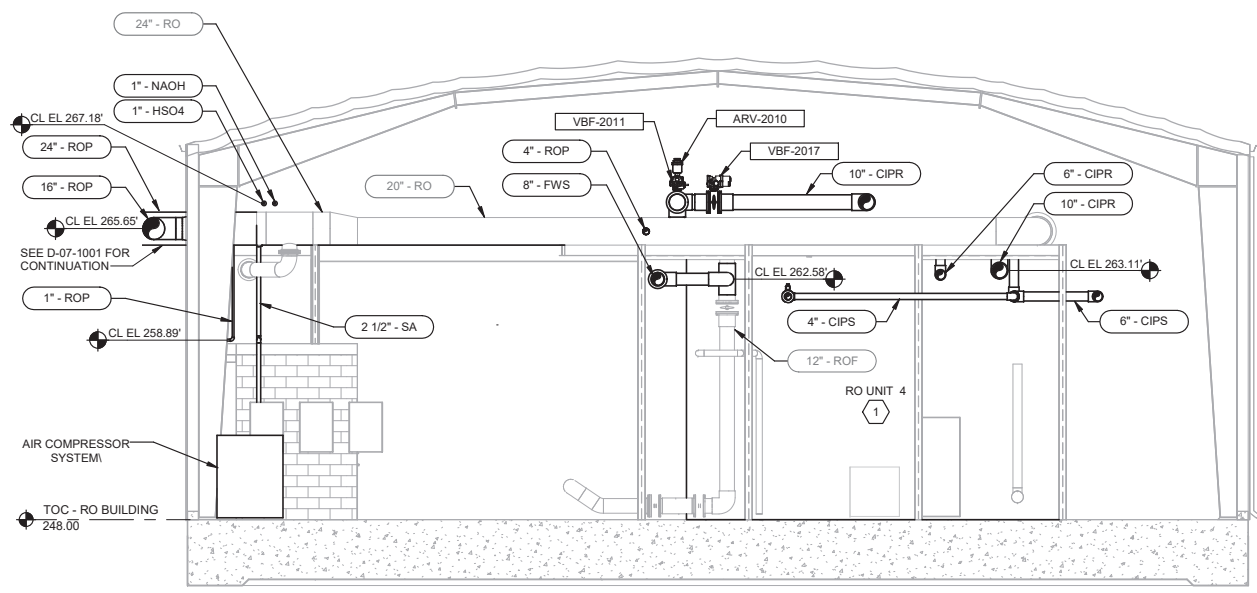
DESIGNED BY: NB
 DRAWN BY: LEG
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-06-1002
 SHEET 137 OF 303 SHEETS

KEY NOTES:

1. RETROFITTED RO SKID BY CONTRACTOR PER SPECIFICATION 46 63 23. SEE DRAWINGS PROVIDED BY RO VENDOR FOR RETROFITTED SKID ENLARGED PLAN.



SECTION 1
 D-06-1001 SCALE: 3/16" = 1'-0"



SECTION 2
 D-06-1001 SCALE: 3/16" = 1'-0"



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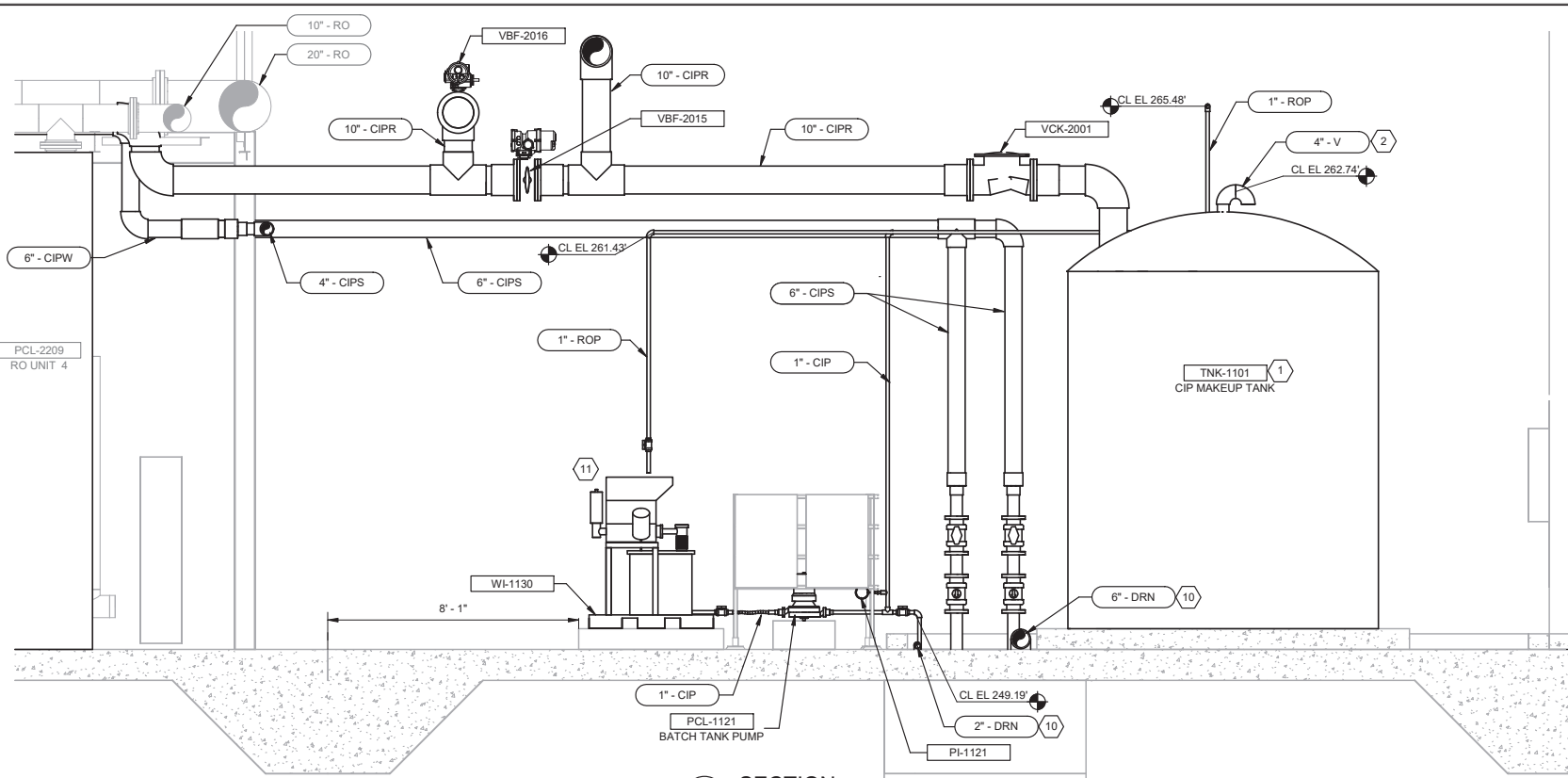
CONSULTANT

REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

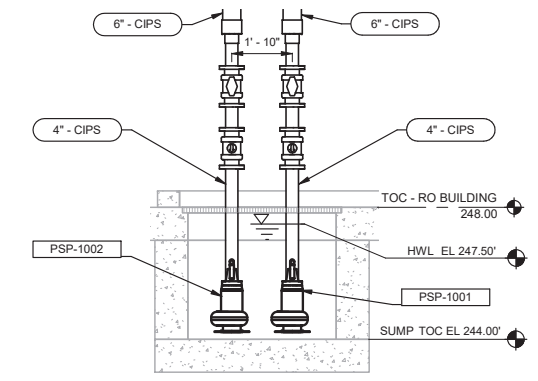
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SUBMITTED BY:			SP-FILE NO.: SP2602
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
RO BUILDING SECTIONS - 1
 PROJECT AND SHEET TITLE

DESIGNED BY:	
DRAWN BY:	AC
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-06-3001	
SHT	138 of 303 SH15

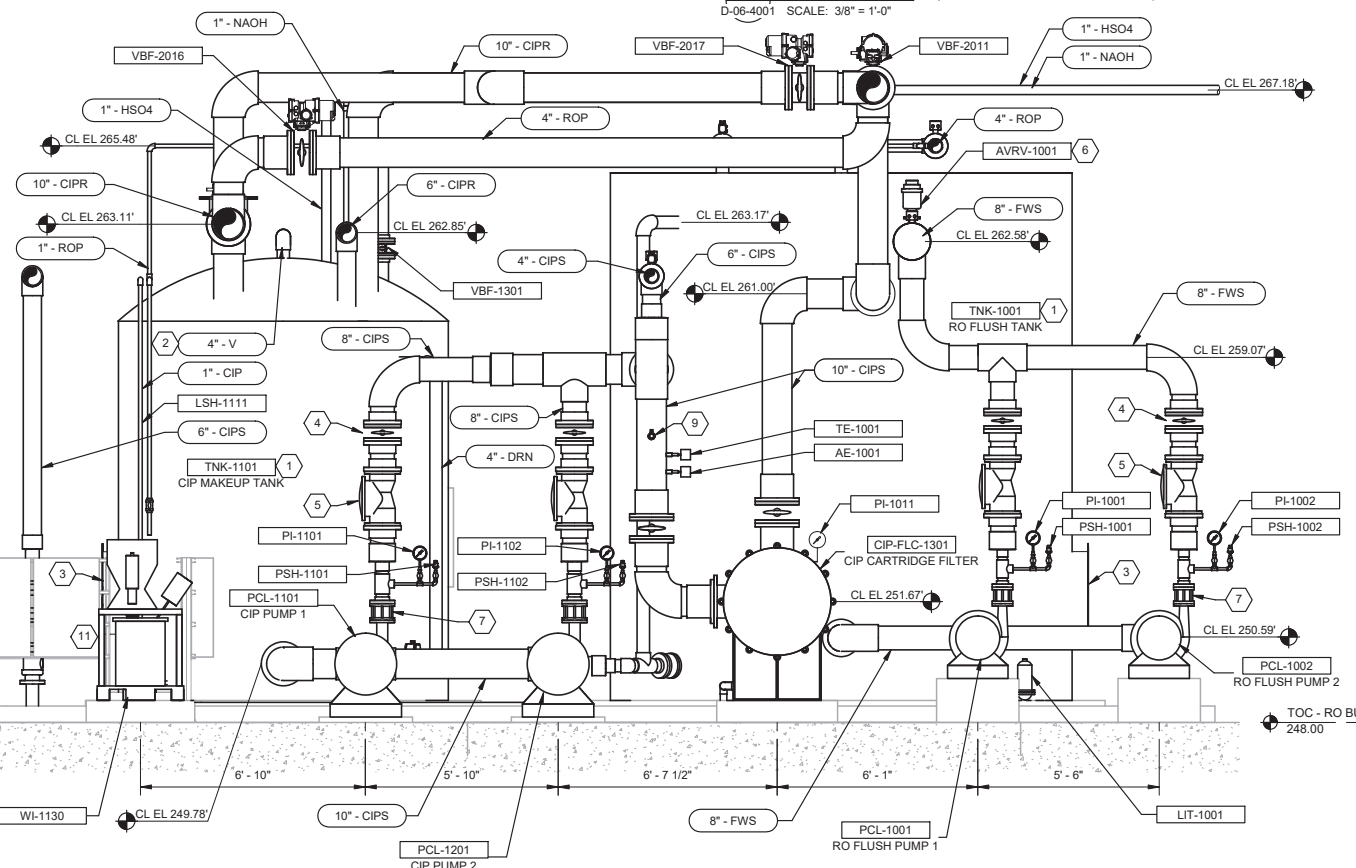


SECTION 1
D-06-4001 SCALE: 3/8" = 1'-0"

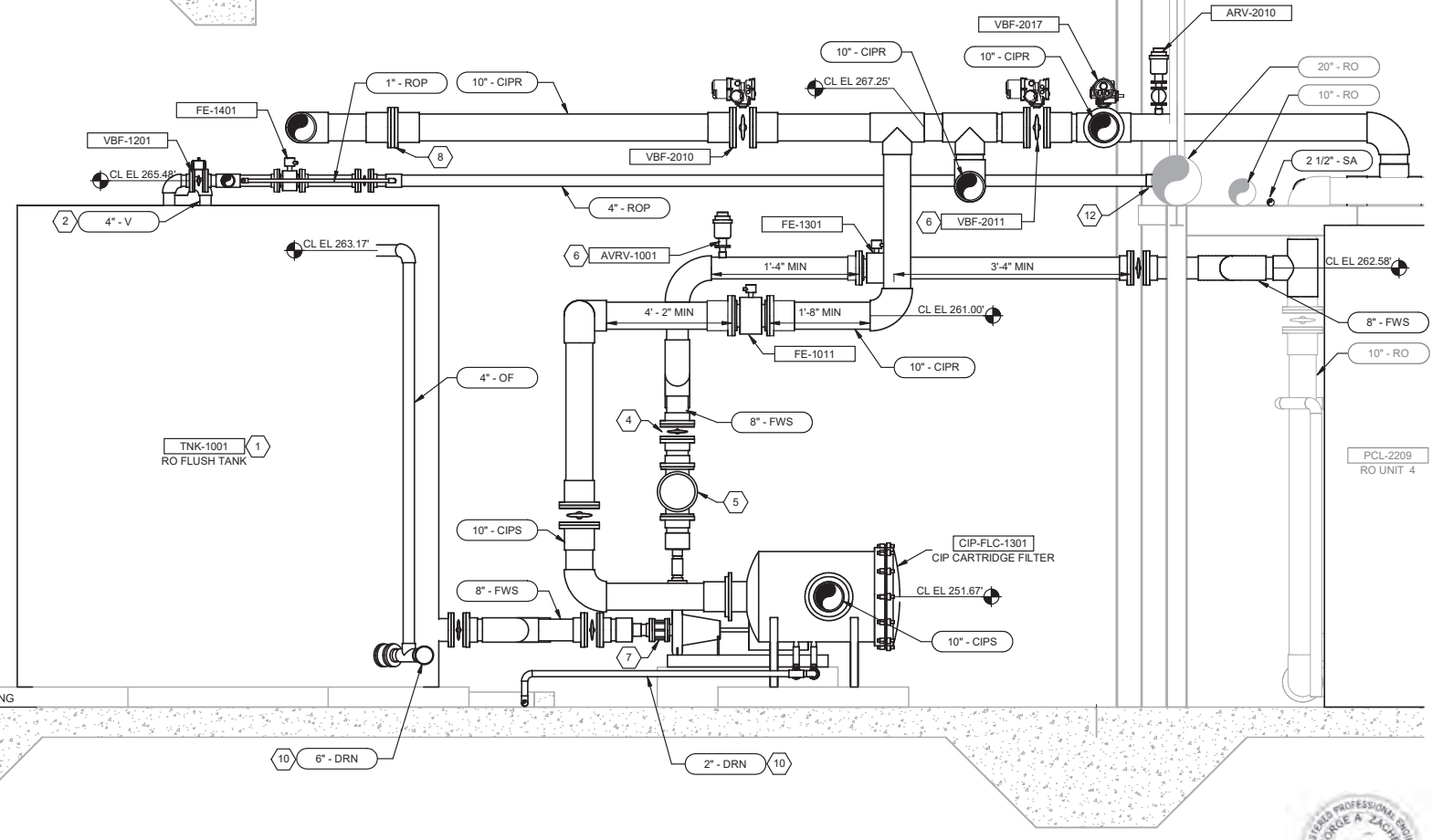


SECTION 4
D-06-4001 SCALE: 3/8" = 1'-0"

- KEY NOTES:**
- FRP TANK PER SPECIFICATION 43 41 46
 - 4" VENT, SEE DETAIL D5075
 - 30" MANWAY
 - BUTTERFLY VALVE, TYP.
 - SWING CHECK VALVE, TYP.
 - 2" AIR VALVE, SEE DETAIL D5061. ROUTE TO WITHIN 1 FT OF PAVEMENT, TYP.
 - RESTRAINED FLEXIBLE COUPLING, TYP.
 - ORIFICE PLATE
 - SAMPLE TAP
 - PROVIDE 0.5% SLOPE
 - CHEMICAL BATCHING SYSTEM PER SPECIFICATION 46 63 23.
 - TIE IN NEW ROP FILL LINE USING A STAINLESS STEEL TAPPING SADDLE ON EXISTING 20" ROP HEADER.



SECTION 2
D-06-4001 SCALE: 3/8" = 1'-0"



SECTION 3
D-06-4001 SCALE: 3/8" = 1'-0"

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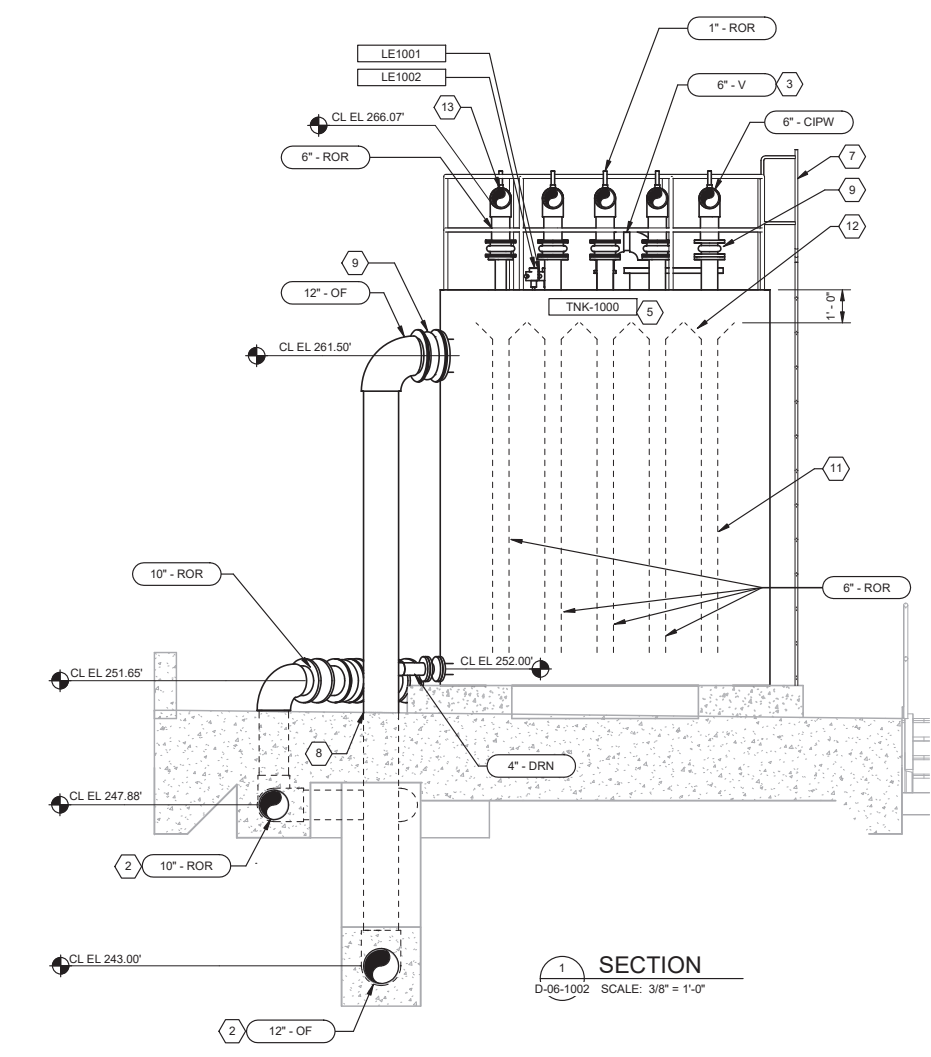


REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

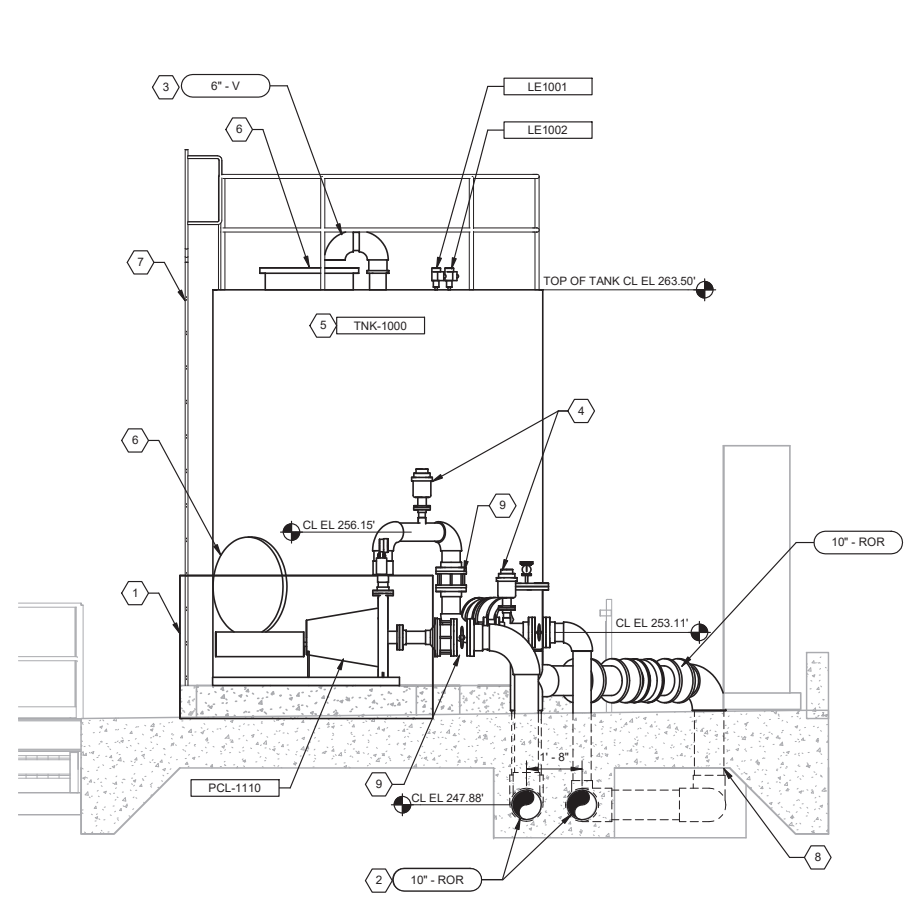
REFERENCE:	DATE:	20XX
SUBMITTED BY:	COMPUTER FILE NAME:	
CURTIS CASTLE, P.E. - PRINCIPAL C.E.		
APPROVED BY:	DATE:	20XX
ALEX NAZARCHUK, P.E. - CITY ENGINEER		

DESIGNED BY: ERA
 DRAWN BY: AC
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
D-06-3002
 SHEET 139 OF 303 SHEETS
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
RO BUILDING SECTIONS - 2

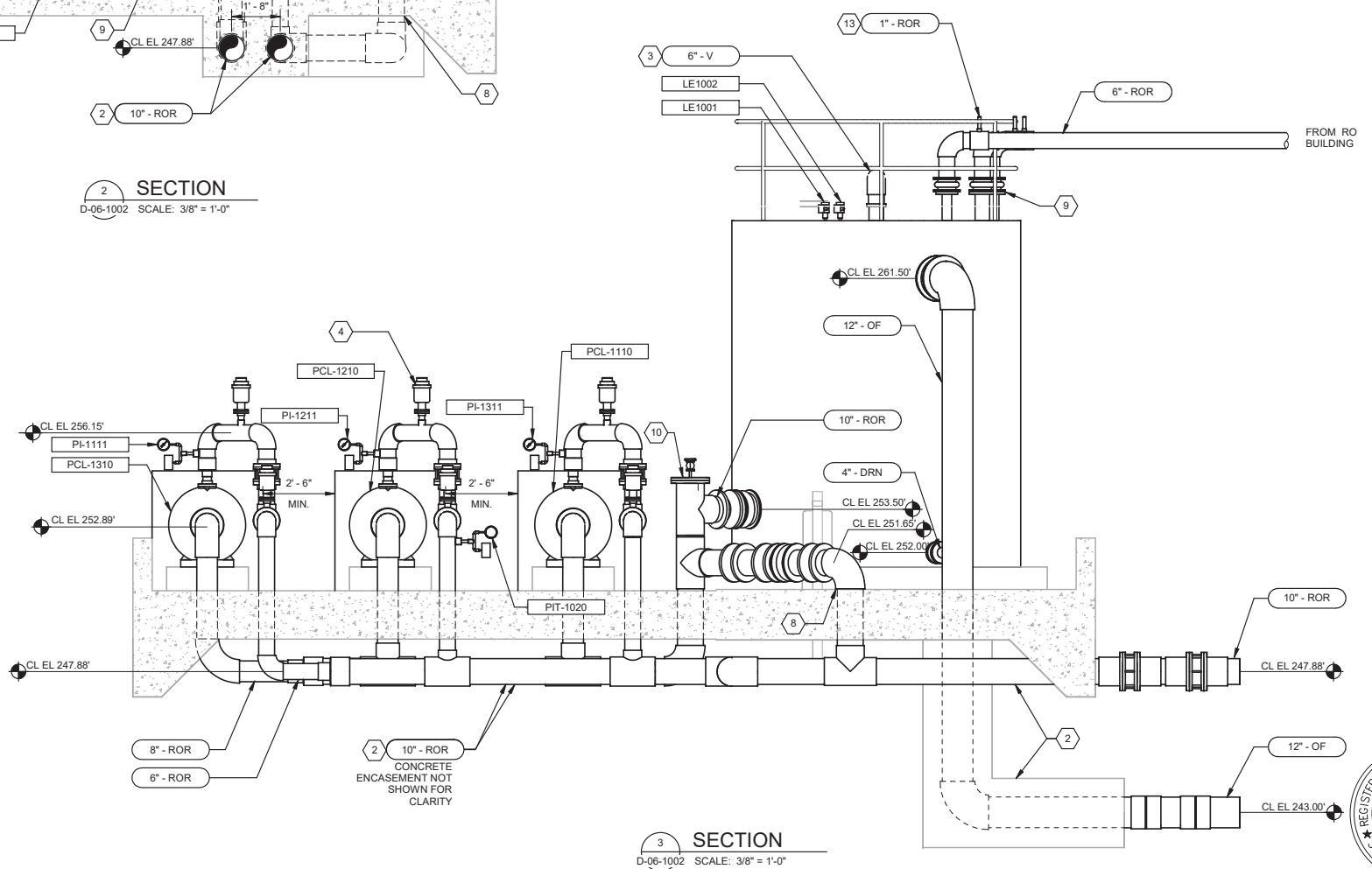




SECTION 1
D-06-1002 SCALE: 3/8" = 1'-0"



SECTION 2
D-06-1002 SCALE: 3/8" = 1'-0"



SECTION 3
D-06-1002 SCALE: 3/8" = 1'-0"

- KEY NOTES:**
1. PUMP NOISE ENCLOSURE
 2. CONCRETE ENCASUREMENT, SEE DETAIL S6003 AND STRUCTURAL DRAWINGS
 3. 6" VENT, SEE DETAIL D5075
 4. 1" COMBINATION AIR VALVE, SEE DETAIL D5061. ROUTE TO WITHIN 1 FT OF PAVEMENT, TYPICAL.
 5. FRP TANK PER SPECIFICATION 43 41 46
 6. 36" MANWAY
 7. ACCESS LADDER
 8. TYPE C PIPE PENETRATION, SEE DETAIL D1103, TYPICAL
 9. RESTRAINED FLEXIBLE COUPLING, TYPICAL
 10. 10" BLIND FLANGE WITH 1/2" TAP AND BALL VALVE
 11. TERMINATE DOWNCOMERS 12-INCHES ABOVE TANK FLOOR. SUPPORT THE PIPES FROM INSIDE OF THE TANK WALL. COORDINATE SUPPORTS WITH TANK MANUFACTURER.
 12. 6" X 10" SCH80 PVC FUNNEL, TYPICAL
 13. 1" VENT ROR, 3" HIGH, 6" MIN FROM 90 DOWN TO TANK VESSEL

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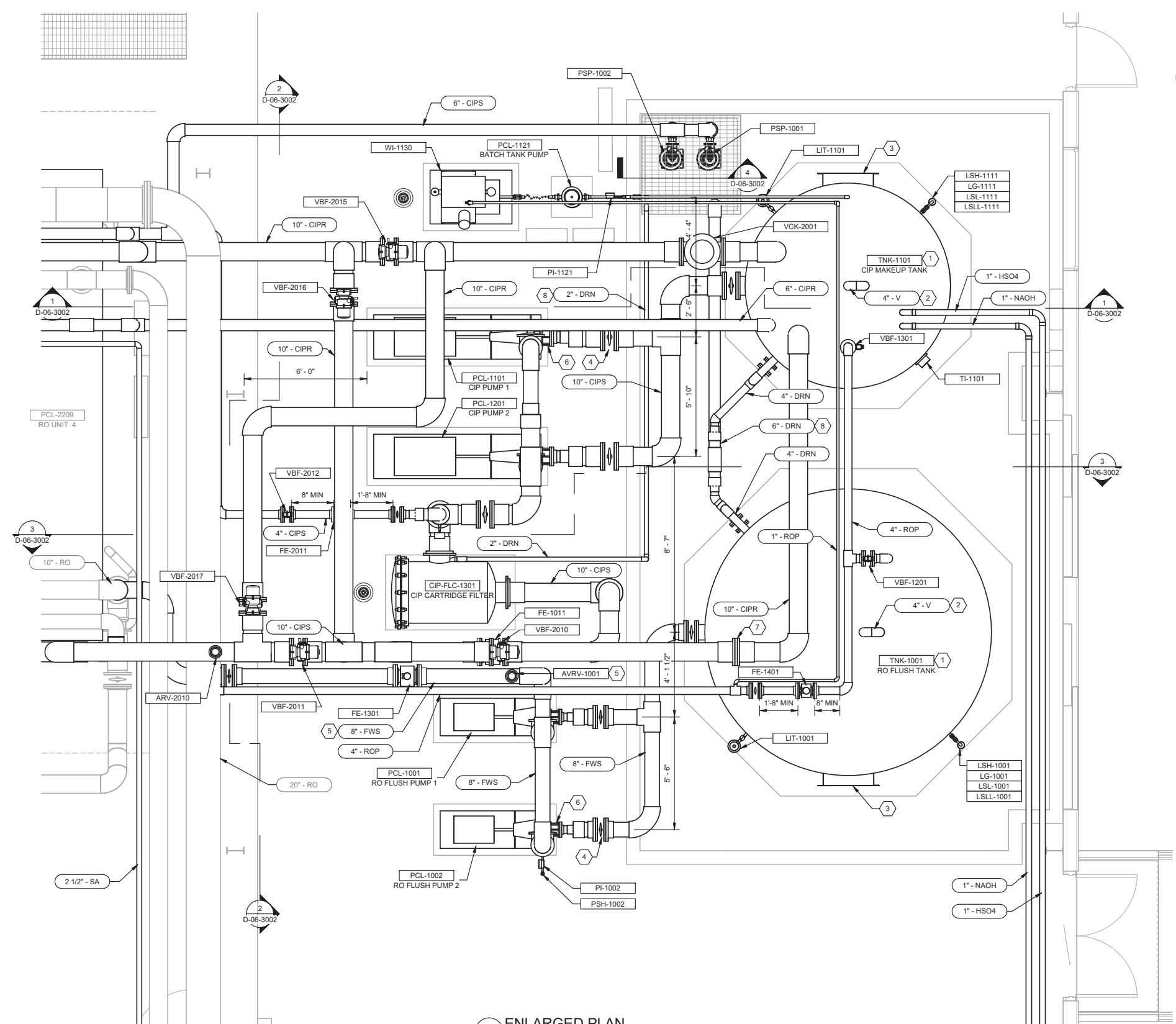


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REVIEWED BY:	DATE:	20	DATE:
REVIEWED BY:	DATE:	20	COMPUTER FILE NAME:
SUNNY WANG, P.E. - WATER RESOURCES MANAGER			SP-FILE NO.:
OMVED POUR, P.E. - PROJECT MANAGER			SP2602
			APPROVED BY:
			ALEX NAZARCHUK, P.E. - CITY ENGINEER
			DATE:
			20XX

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 BRINE PUMP STATION SECTIONS
 PROJECT AND SHEET TITLE



DESIGNED BY:	NB
DRAWN BY:	LEG
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-06-3004	
SHT	140 of 303 SH15



- KEY NOTES:**
1. FRP TANK PER SPECIFICATION 43 41 46
 2. 4\"/>

1 ENLARGED PLAN
 SCALE: 3/8\"/>



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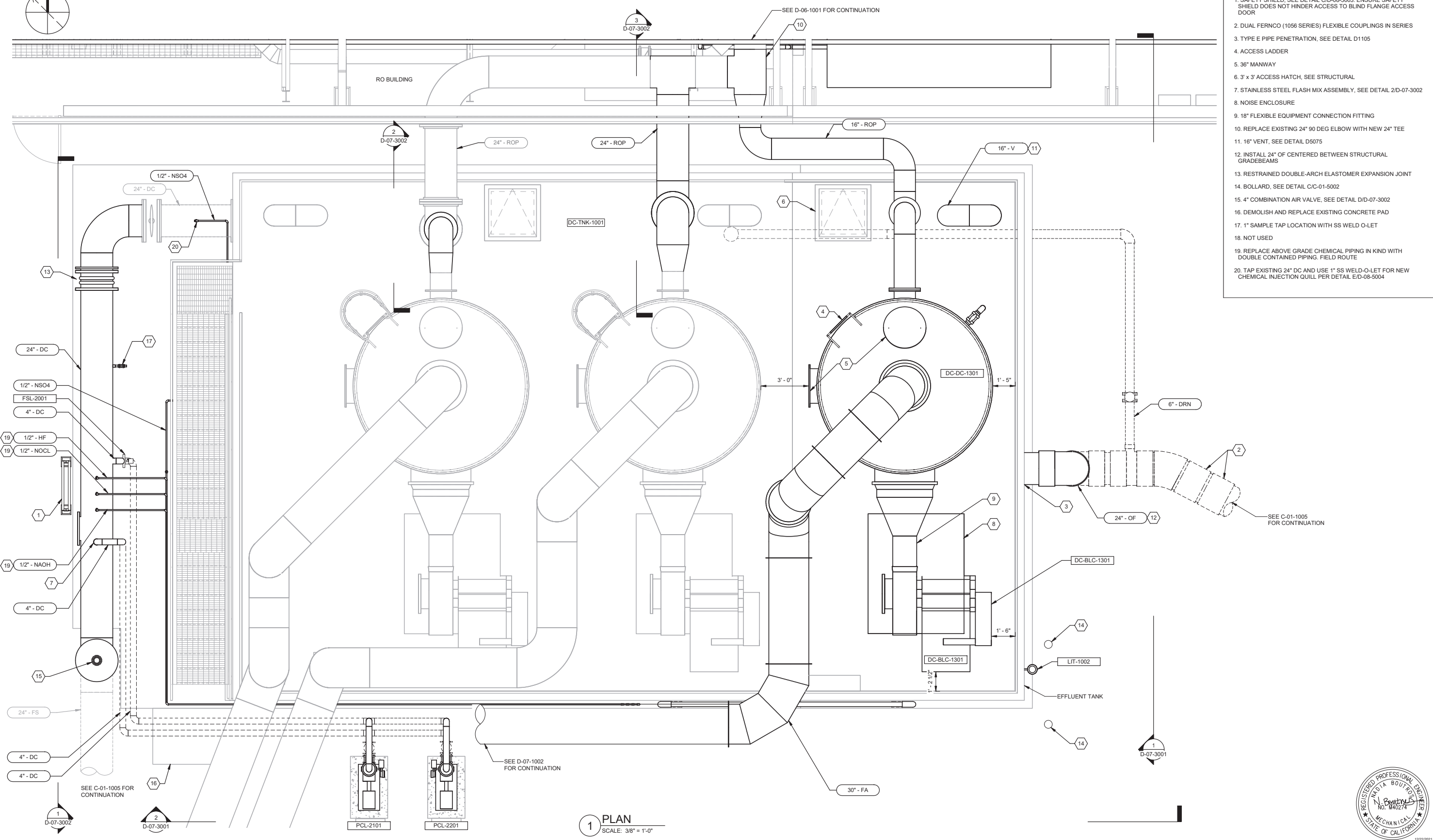
REVIEWED BY: _____ DATE: _____, 20__
 REVIEWED BY: _____ DATE: _____, 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20__
 OMIED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20__
 SUBMITTED BY: _____
 COMPUTER FILE NAME: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20__
 ALEX NAZARCHUK, P.E. - CITY ENGINEER
 ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
RO CIP AND FLUSH SYSTEM ENLARGED PLAN
 PROJECT AND SHEET TITLE

DESIGNED BY: ERA
 DRAWN BY: AC
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-06-4001
 SHEET 141 OF 303 SHEETS

12/21/2021 6:47:38 PM
 D-07-1001
 142 of 303
 12/21/2021 6:47:38 PM
 BIM 360://154390 - Arcadia Water Treatment Plant Expansion/154390-D-06V19.mxd
 TITLE OF PROJECT: OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION



- KEY NOTES:**
1. SAFETY SHIELD, SEE DETAIL C/D-08-5003. ENSURE SAFETY SHIELD DOES NOT HINDER ACCESS TO BLIND FLANGE ACCESS DOOR
 2. DUAL FERNCO (1056 SERIES) FLEXIBLE COUPLINGS IN SERIES
 3. TYPE E PIPE PENETRATION, SEE DETAIL D1105
 4. ACCESS LADDER
 5. 36" MANWAY
 6. 3' x 3' ACCESS HATCH, SEE STRUCTURAL
 7. STAINLESS STEEL FLASH MIX ASSEMBLY, SEE DETAIL 2/D-07-3002
 8. NOISE ENCLOSURE
 9. 18" FLEXIBLE EQUIPMENT CONNECTION FITTING
 10. REPLACE EXISTING 24" DEG ELBOW WITH NEW 24" TEE
 11. 16" VENT, SEE DETAIL D5075
 12. INSTALL 24" OF CENTERED BETWEEN STRUCTURAL GRADEBEAMS
 13. RESTRAINED DOUBLE-ARCH ELASTOMER EXPANSION JOINT
 14. BOLLARD, SEE DETAIL C/C-01-5002
 15. 4" COMBINATION AIR VALVE, SEE DETAIL D/D-07-3002
 16. DEMOLISH AND REPLACE EXISTING CONCRETE PAD
 17. 1" SAMPLE TAP LOCATION WITH SS WELD O-LET
 18. NOT USED
 19. REPLACE ABOVE GRADE CHEMICAL PIPING IN KIND WITH DOUBLE CONTAINED PIPING, FIELD ROUTE
 20. TAP EXISTING 24" DC AND USE 1" SS WELD-O-LET FOR NEW CHEMICAL INJECTION QUILL PER DETAIL E/D-08-5004

1 PLAN
 SCALE: 3/8" = 1'-0"



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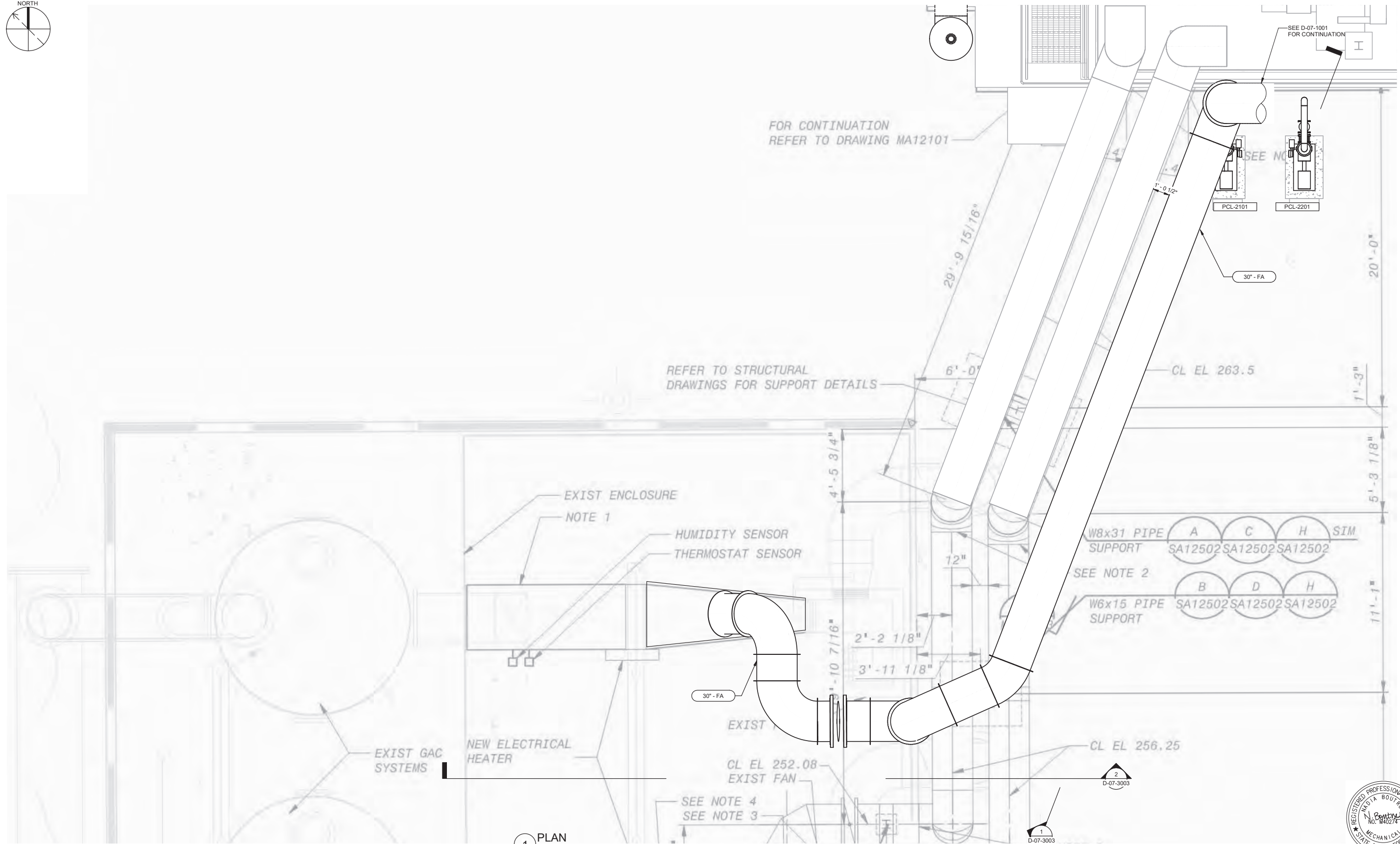
REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMVED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

DESIGNED BY: NB
 DRAWN BY: LEG
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-07-1001
 SHEET 142 OF 303 SHEETS

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
DECARBONATORS PLAN

PROJECT AND SHEET TITLE



1 PLAN
 SCALE: 3/8" = 1'-0"



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Brown and Caldwell
WALSH

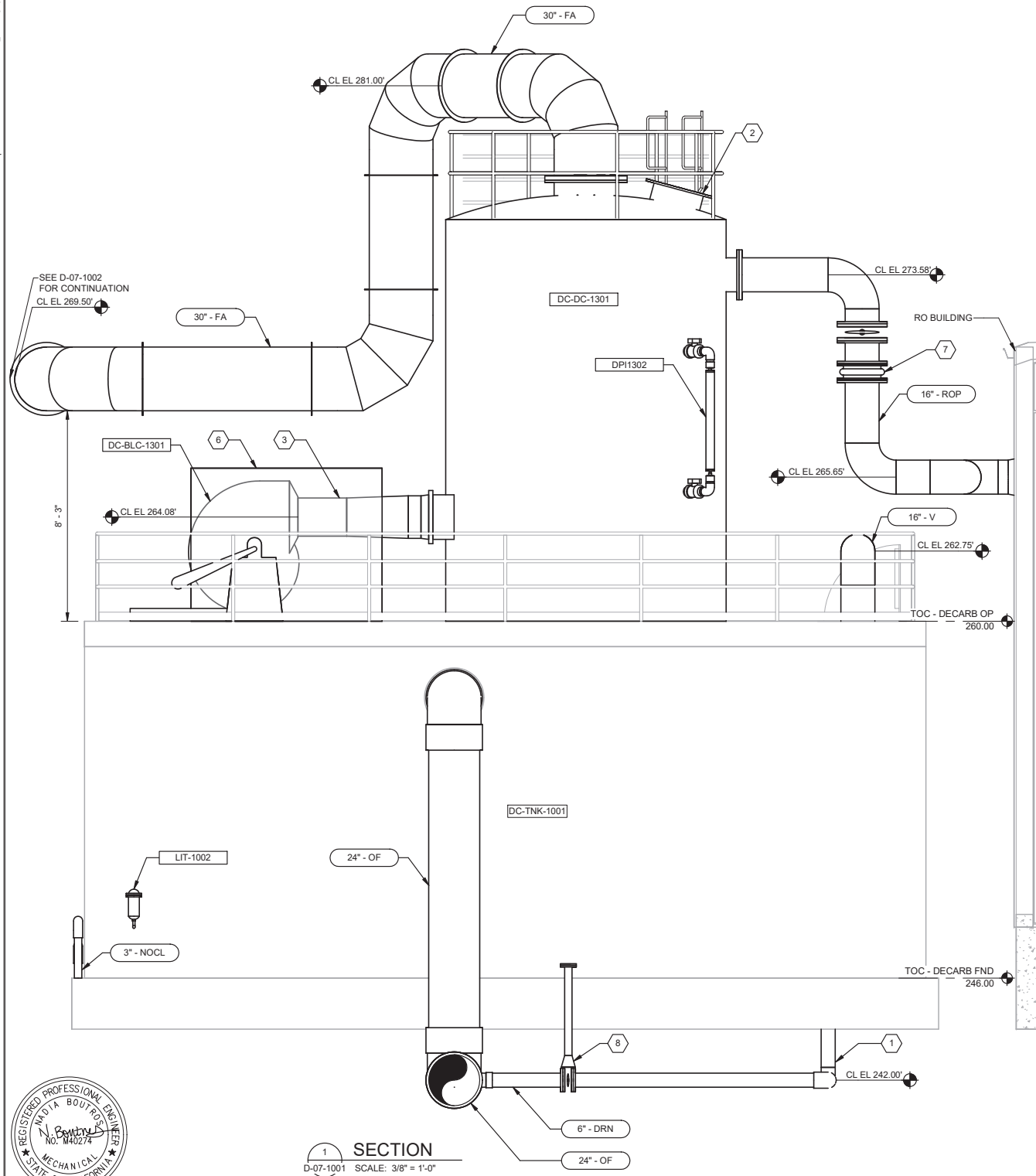
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SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

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SUBMITTED BY:			SP-FILE NO.: SP2602
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

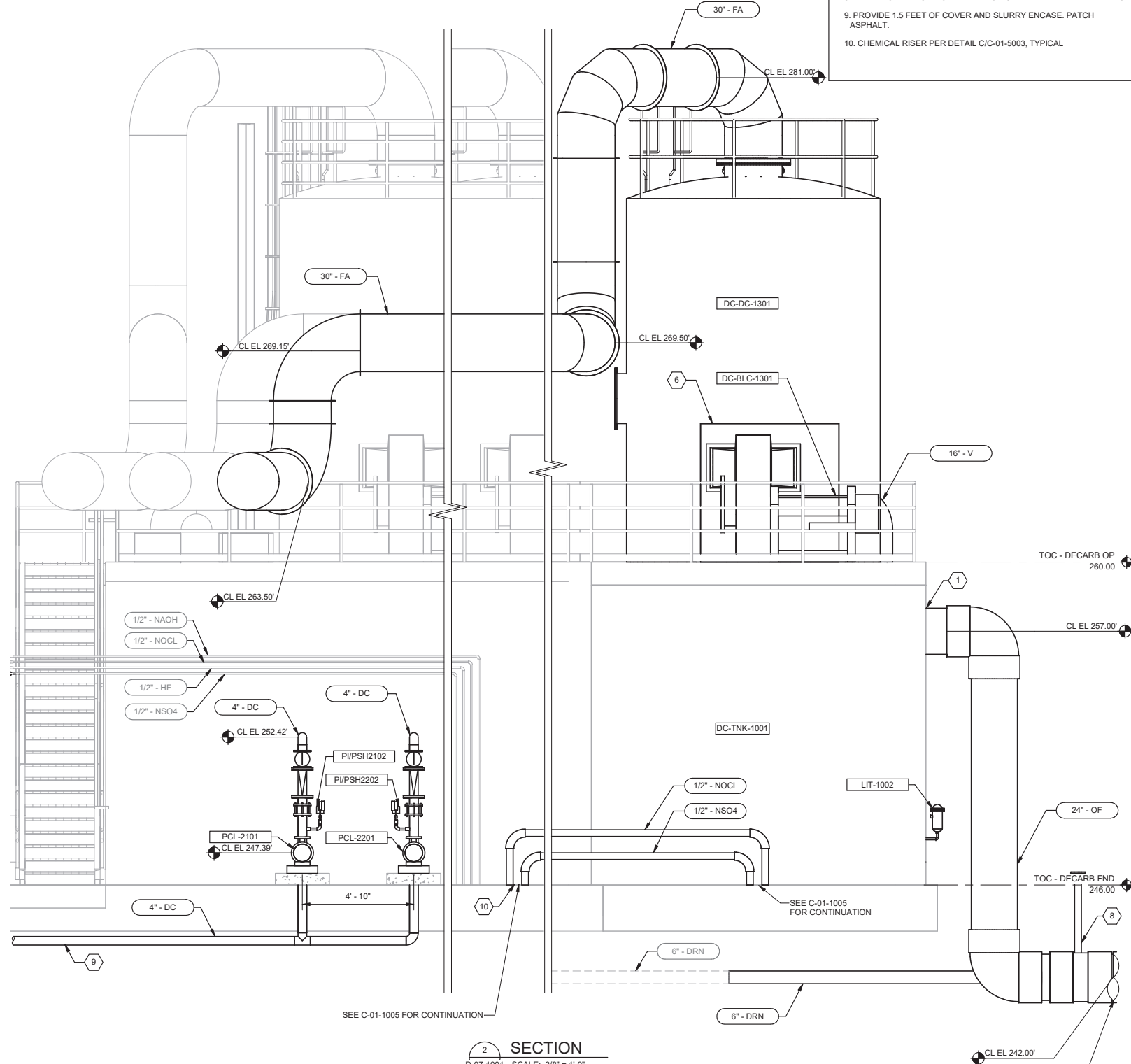
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 VGAC PLAN
 PROJECT AND SHEET TITLE

DESIGNED BY:	NB
DRAWN BY:	LEG
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-07-1002	
SHT	143 of 303 SH15

- KEY NOTES:**
1. TYPE E PIPE PENETRATION, SEE DETAIL D1105
 2. 36" MANWAY
 3. 18" FLEXIBLE EQUIPMENT CONNECTION FITTING
 4. NOT USED
 5. NOT USED
 6. NOISE ENCLOSURE
 7. RESTRAINED FLEXIBLE COUPLING
 8. VALVE BOX PER CITY OF SANTA MONICA STANDARD DETAIL SMW-8
 9. PROVIDE 1.5 FEET OF COVER AND SLURRY ENCASE. PATCH ASPHALT.
 10. CHEMICAL RISER PER DETAIL C/C-01-5003, TYPICAL



1 SECTION
 D-07-1001 SCALE: 3/8" = 1'-0"



2 SECTION
 D-07-1001 SCALE: 3/8" = 1'-0"



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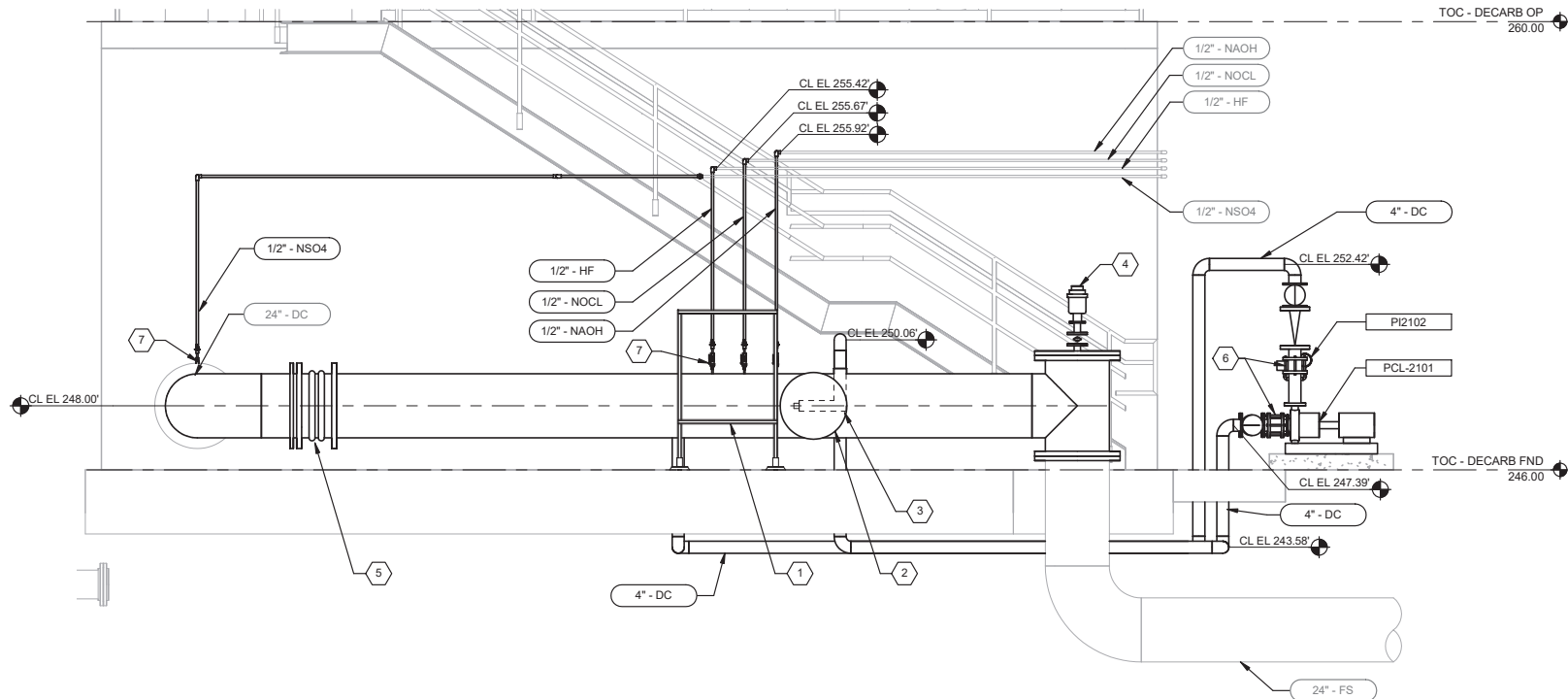


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REVIEWED BY:	DATE:	20
OMIED POUR, P.E. - PROJECT MANAGER		

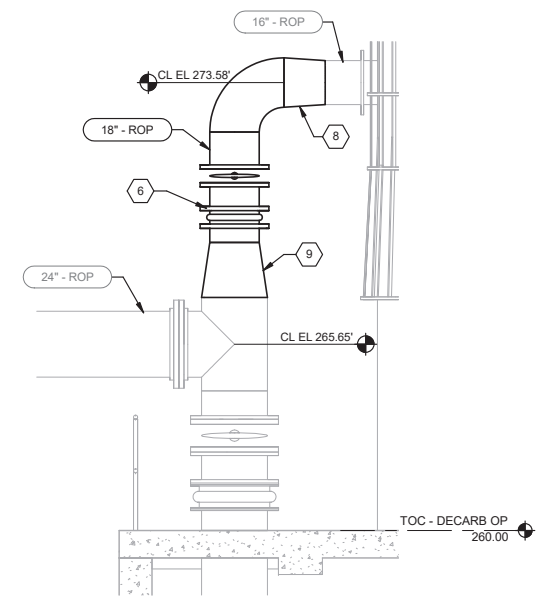
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CURTIS CASTLE, P.E. - PRINCIPAL C.E.			SP2602
APPROVED BY:	DATE:	20XX	
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OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
DECARBONATORS SECTIONS AND DETAILS -
1
 PROJECT AND SHEET TITLE

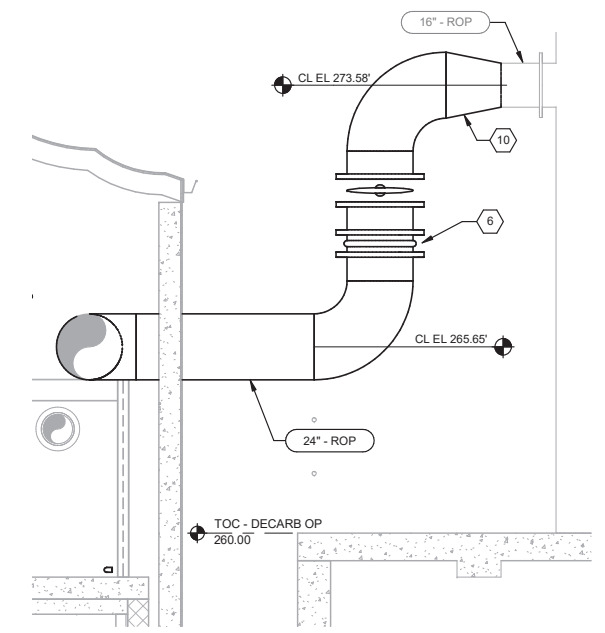
DESIGNED BY:	NB
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CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-07-3001	
SHT	144 of 303 SH15



1 SECTION
D-07-1001 SCALE: 3/8" = 1'-0"

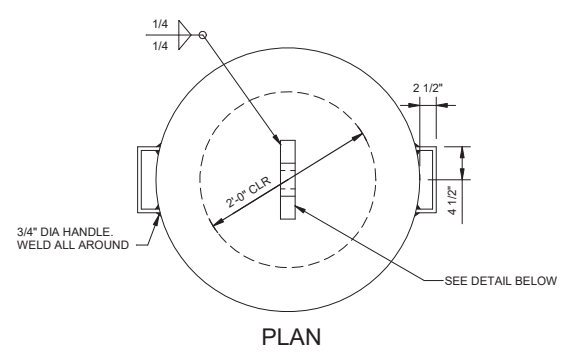


2 SECTION
D-07-1001 SCALE: 3/8" = 1'-0"

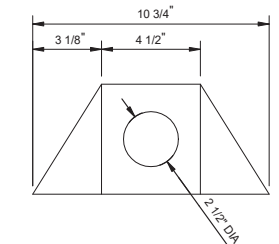


3 SECTION
D-07-1001 SCALE: 3/8" = 1'-0"

- KEY NOTES:**
1. SAFETY SHIELD. SEE DETAIL CD-08-5003. ENSURE SAFETY SHIELD DOES NOT HINDER ACCESS TO BLIND FLANGE ACCESS DOOR
 2. BLIND FLANGE ACCESS DOOR. SEE DETAIL A/D-07-3002
 3. STAINLESS STEEL FLASH MIX ASSEMBLY. SEE DETAIL B/D-07-3002
 4. 4" COMBINATION AIR VALVE. SEE DETAIL D/D-07-3002
 5. RESTRAINED DOUBLE-ARCH ELASTOMER EXPANSION JOINT
 6. RESTRAINED FLEXIBLE COUPLING
 7. CHEMICAL INJECTION QUILL PER DETAIL E/D-08-5004, TYPICAL
 8. 18" x 16" REDUCER
 9. 24" x 18" REDUCER
 10. 24" x 16" REDUCER

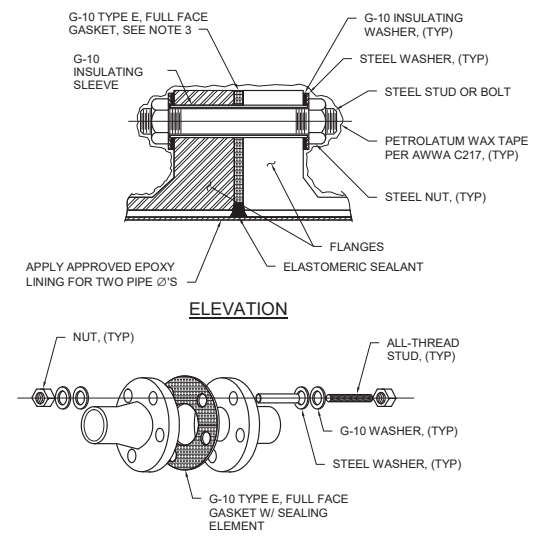
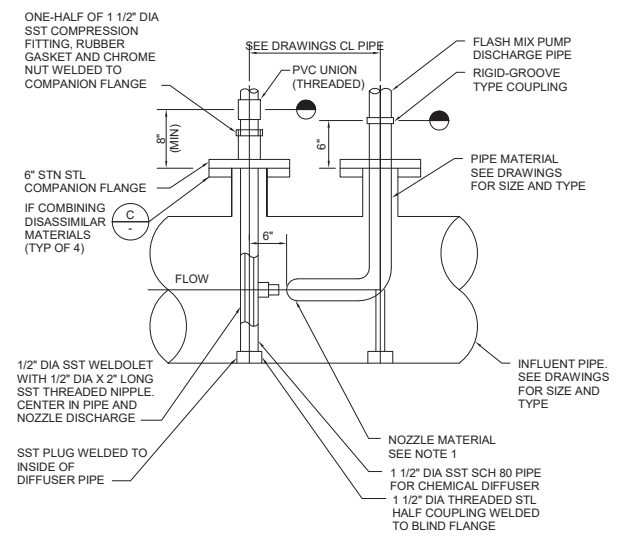


PLAN



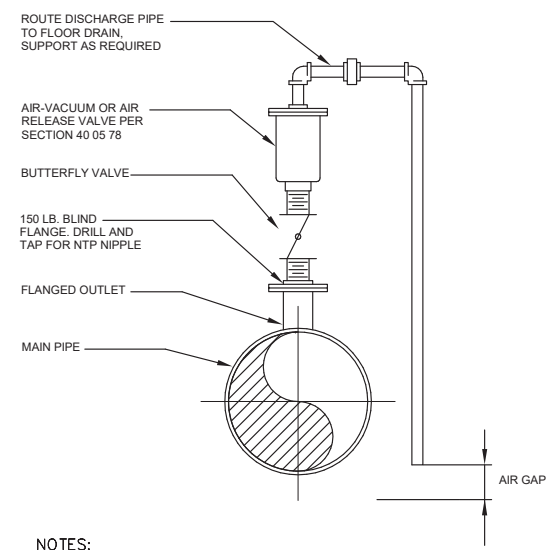
DETAIL

NOTE:
1. PROTECTIVE COATING SAME AS BLIND FLANGE.



ELEVATION

- NOTES:**
1. TEST INSULATING FLANGE BEFORE APPLYING WAX TAPE AND BURIAL.
 2. EXTEND WAX TAPE 12-IN BEYOND FLANGE FACE OR 12-IN ONTO PIPE COATING, WHICHEVER IS GREATER.
 3. EXTEND FULL FACE GASKET 1/8-IN BEYOND STEEL CAN ID. FILL REMAINING ANNULUS BETWEEN LINING W/ NSF APPROVED ELASTOMERIC SEALANT COMPATIBLE W/ LINING MATERIAL.



- NOTES:**
1. VALVE SIZE SHALL BE AS INDICATED ON PLANS
 2. SERVICE TAP AND BUTTERFLY VALVE SHALL MATCH VALVE INLET SIZE.

A BLIND FLANGE ACCESS DOOR

B STAINLESS STEEL FLASH MIX ASSEMBLY

C INSULATING FLANGE

D AIR/VACUUM VALVE

PUMP TAG	CONNECTION SIZE INCH	NOZZLE FLOW GPM	PRESSURE DROP PSI	ORIFICE SIZE INCH	CAT NO
PCL-2101	4	212	10	1.859	4-HF-SS-212
PCL-2201	4	212	10	1.859	4-HF-SS-212

- NOTES:**
1. PROVIDE FLANGED NOZZLE WITH FULL CONE SPRAY PATTERN PER SECTION 40 05 33. MANUFACTURER SHALL BE SPRAYING SYSTEMS, MODEL AS INDICATED IN ABOVE TABLE, OR EQUAL.
 2. FOR DIFFUSER, PIPING ORIENTATION, AND CONTINUATION OF PIPING, SEE MECHANICAL DWGS.

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WALSH

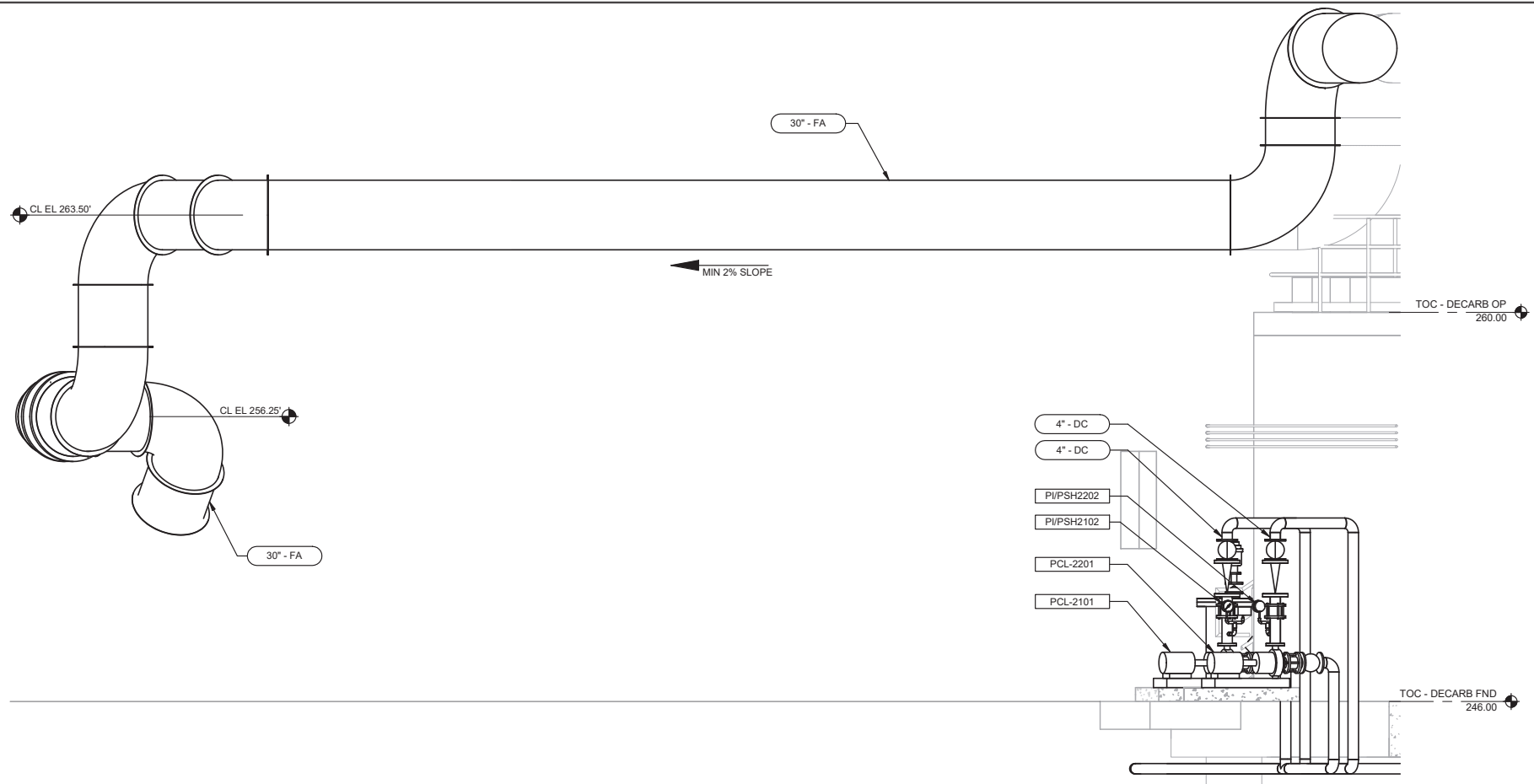
REVIEWED BY: _____ DATE: _____, 20____ REVIEWED BY: _____ DATE: _____, 20____ SUNNY WANG, P.E. - WATER RESOURCES MANAGER REVIEWED BY: _____ DATE: _____, 20____ OMIED POUR, P.E. - PROJECT MANAGER	REFERENCE: DATE: _____, 20____ SUBMITTED BY: _____ CURTIS CASTLE, P.E. - PRINCIPAL C.E. APPROVED BY: _____ DATE: _____, 20____ ALEX NAZARCHUK, P.E. - CITY ENGINEER	COMPUTER FILE NAME: _____ SP-FILE NO.: SP2602
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DESIGNED BY: NB
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 CHECKED BY: AZ
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 DRAWING NO. 7078
D-07-3002
 SHEET 145 OF 303 SHEETS

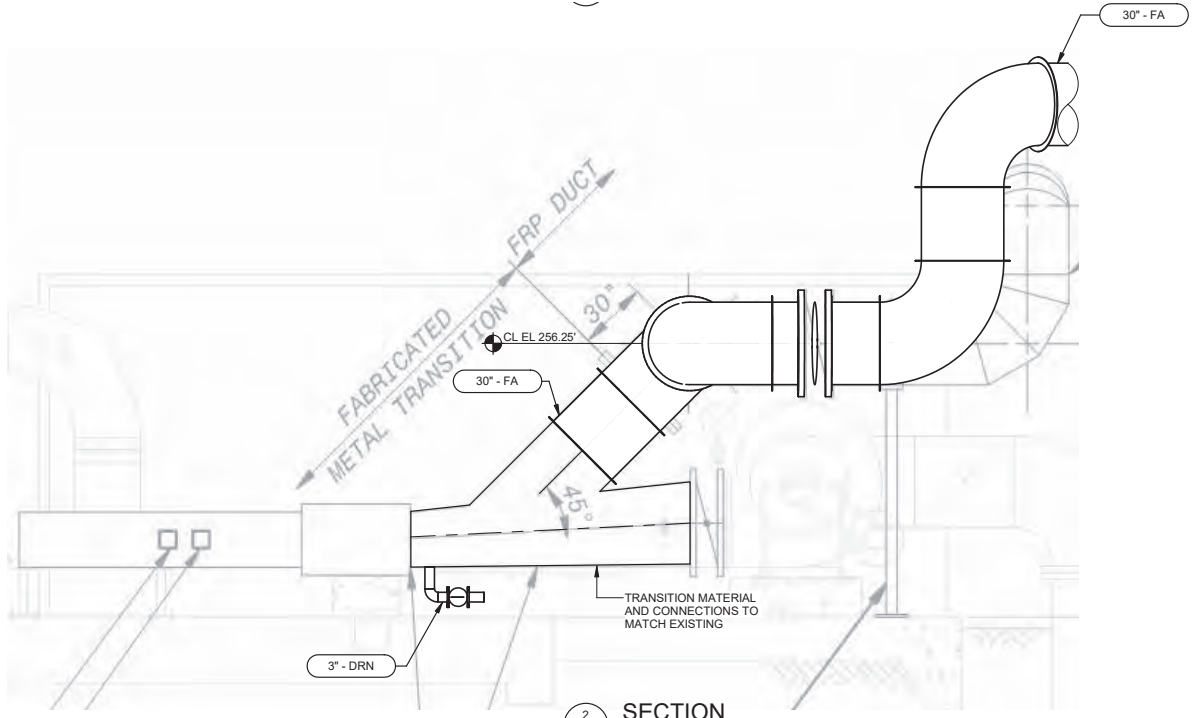
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 DECARBONATORS SECTIONS AND DETAILS -
 2

PROJECT AND SHEET TITLE





1 SECTION
D-07-1002 SCALE: 3/8" = 1'-0"



2 SECTION
D-07-1002 SCALE: 3/8" = 1'-0"



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WALSH
 CONSULTANT

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 REVIEWED BY: _____ DATE: _____, 20__
 OMVED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20__ COMPUTER FILE NAME:
 SUBMITTED BY: _____ SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20__
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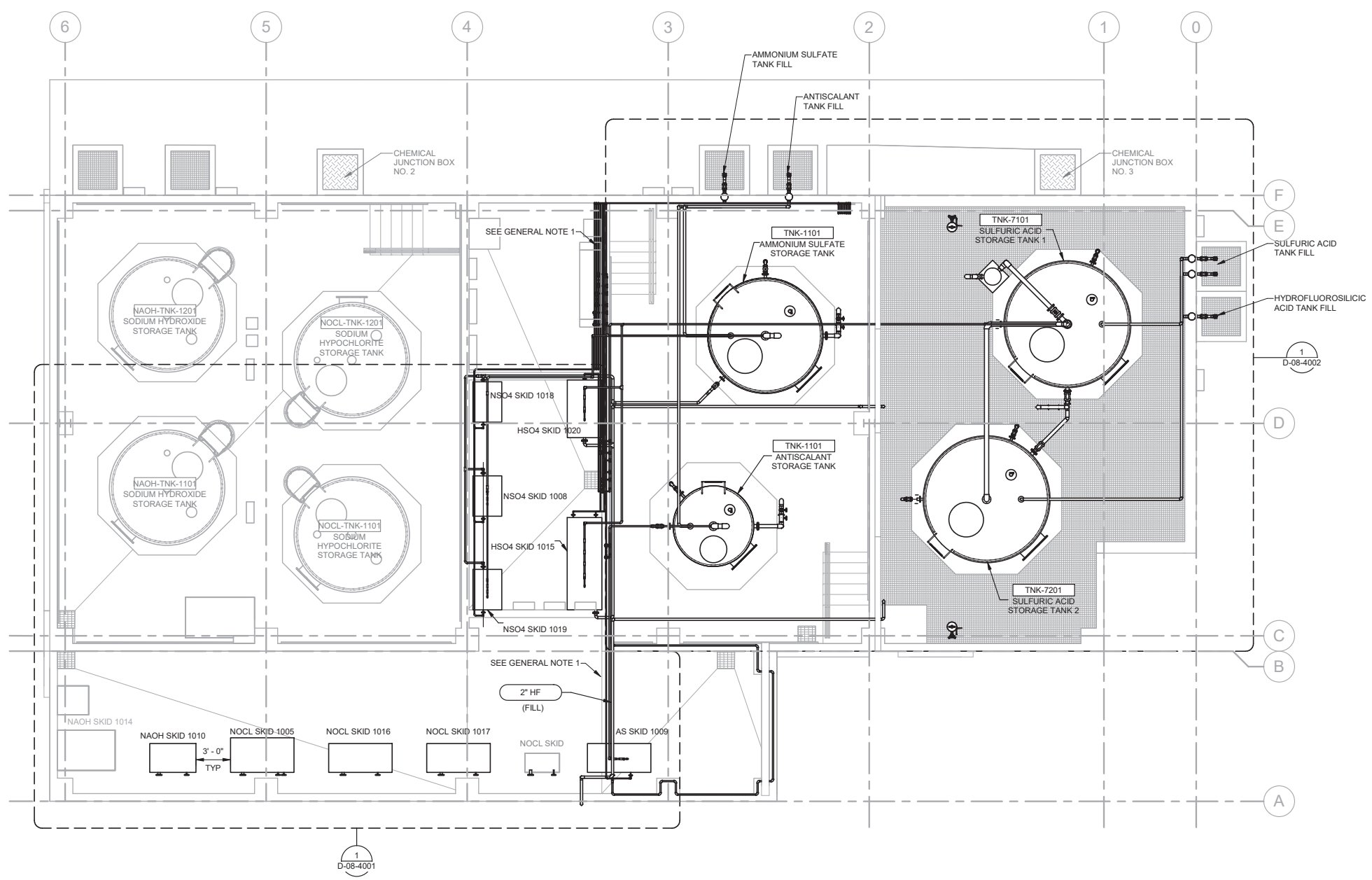
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 VGAC SECTIONS AND DETAILS
 PROJECT AND SHEET TITLE

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 DRAWING NO. 7078
D-07-3003
 SHEET 146 of 303 SH15



GENERAL NOTES:

1. PROVIDE 1/4" HDPE SPLASH SHIELDS ON ALL CHEMICAL METERING PUMP DISCHARGE LINES RUNNING OVERHEAD WITHIN CHEMICAL FACILITY AREA.



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



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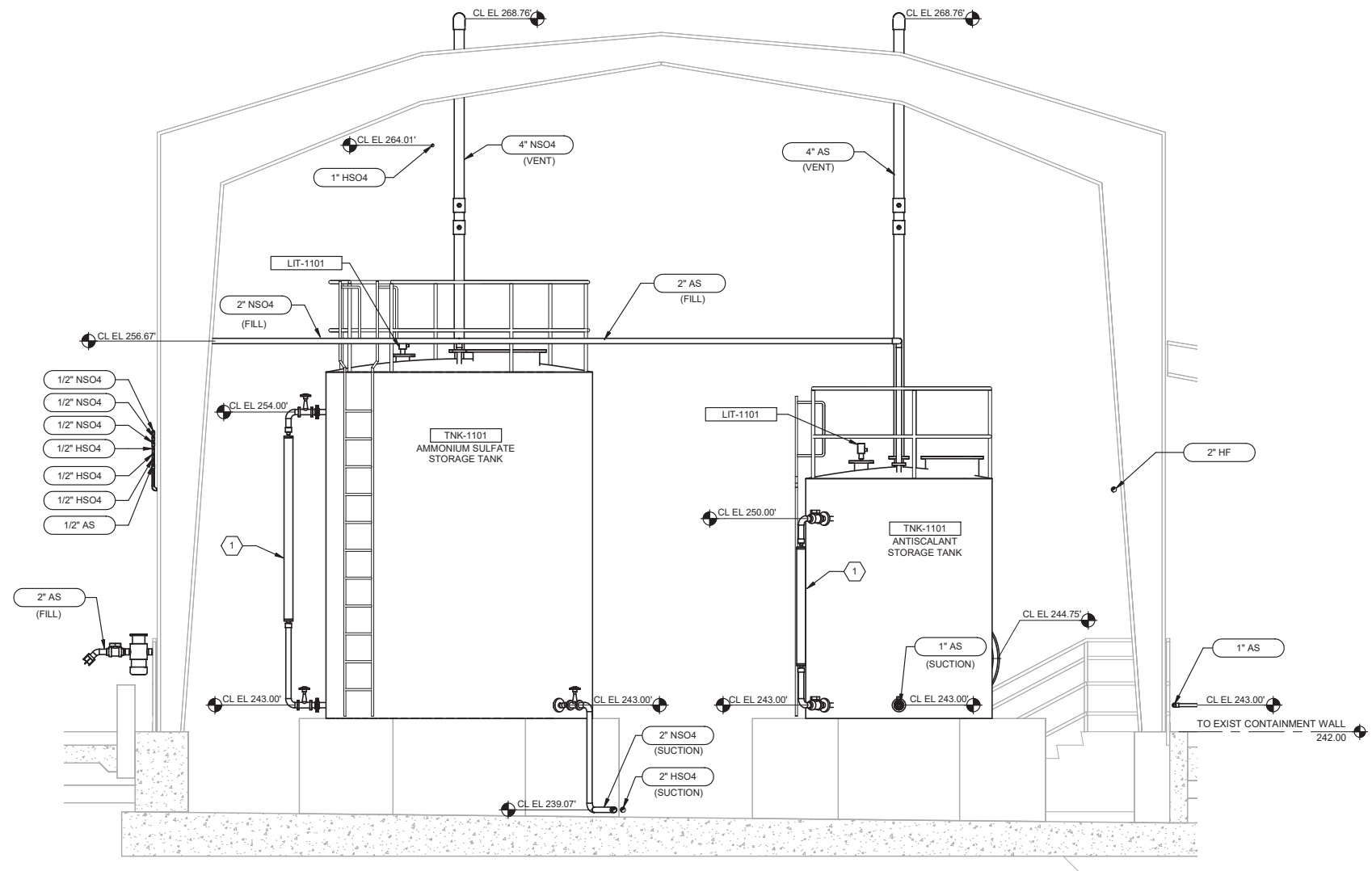
REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
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OMIED POUR, P.E. - PROJECT MANAGER		

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SUBMITTED BY:			SP-FILE NO.: SP2602
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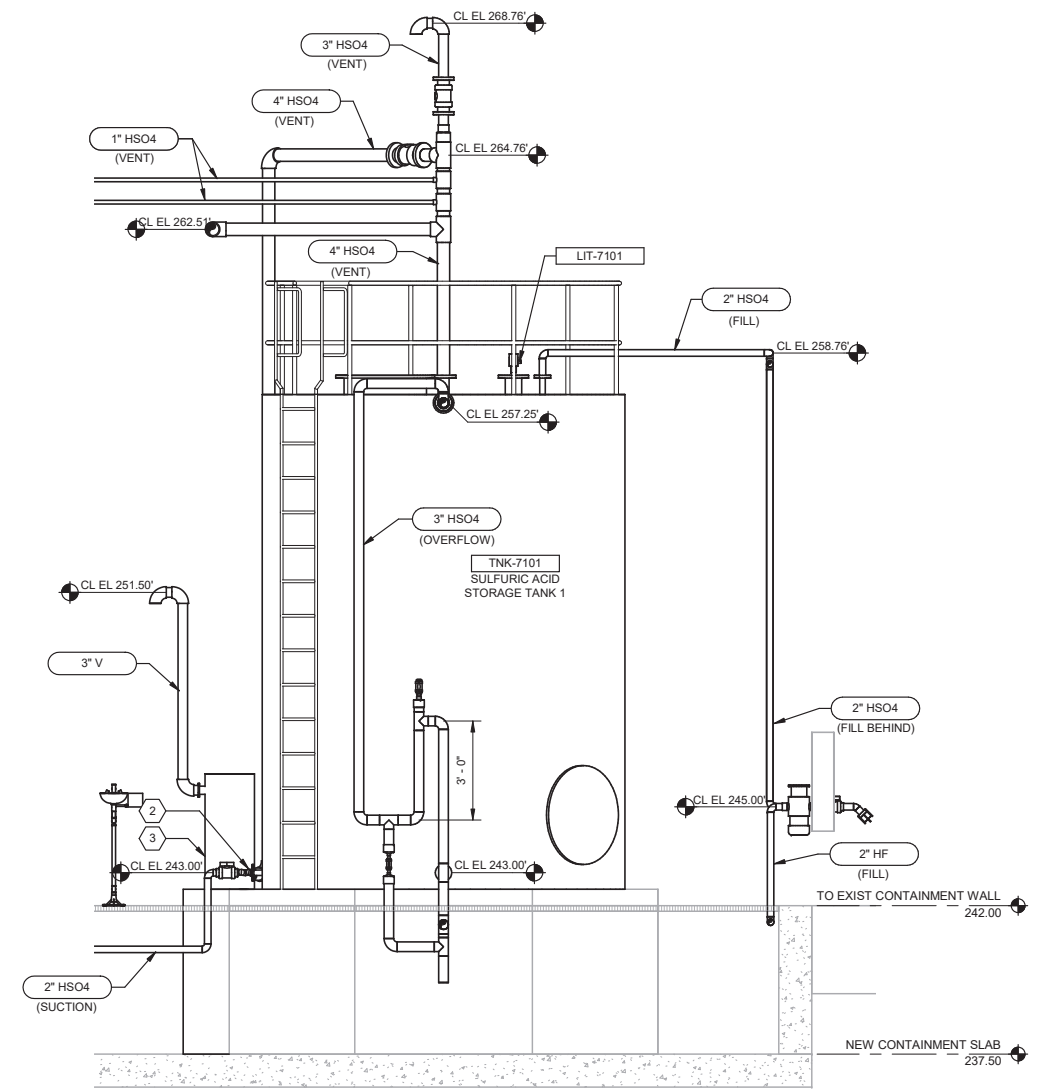
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
CHEMICAL STORAGE AREA OVERALL PLAN
 PROJECT AND SHEET TITLE

DESIGNED BY:	PT
DRAWN BY:	LEG
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-08-1001	
SHT	147 of 303 SHS

- KEY NOTES:**
1. SIGHT LEVEL GAUGE.
 2. NONMETALLIC FLEXIBLE CONNECTION PER SECTION 40 05 06.23.
 3. DESSICANT DRYER.



SECTION 1
 D-08-4002 SCALE: 3/8" = 1'-0"



SECTION 2
 D-08-4002 SCALE: 3/8" = 1'-0"




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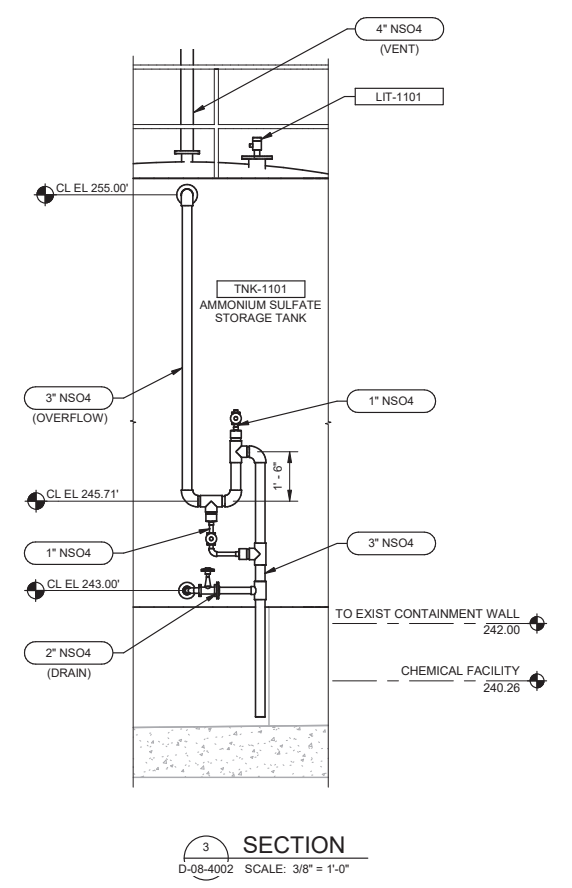
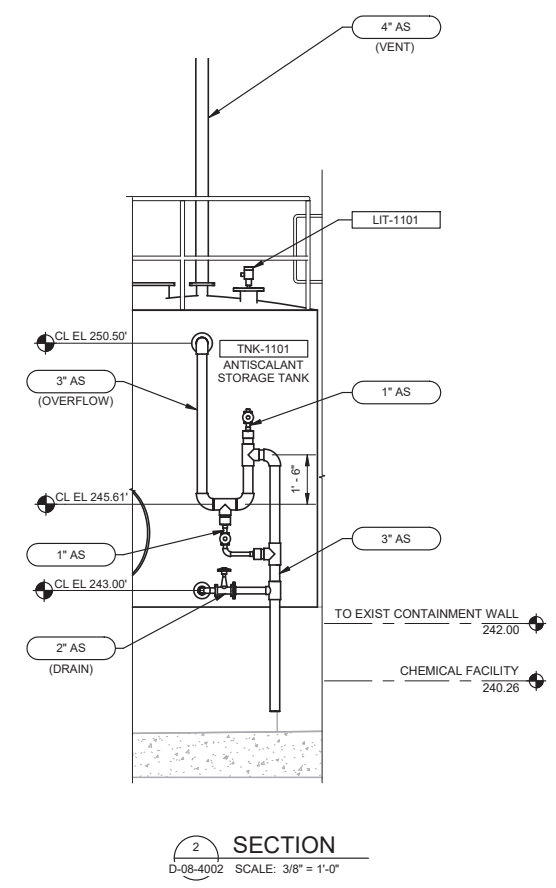
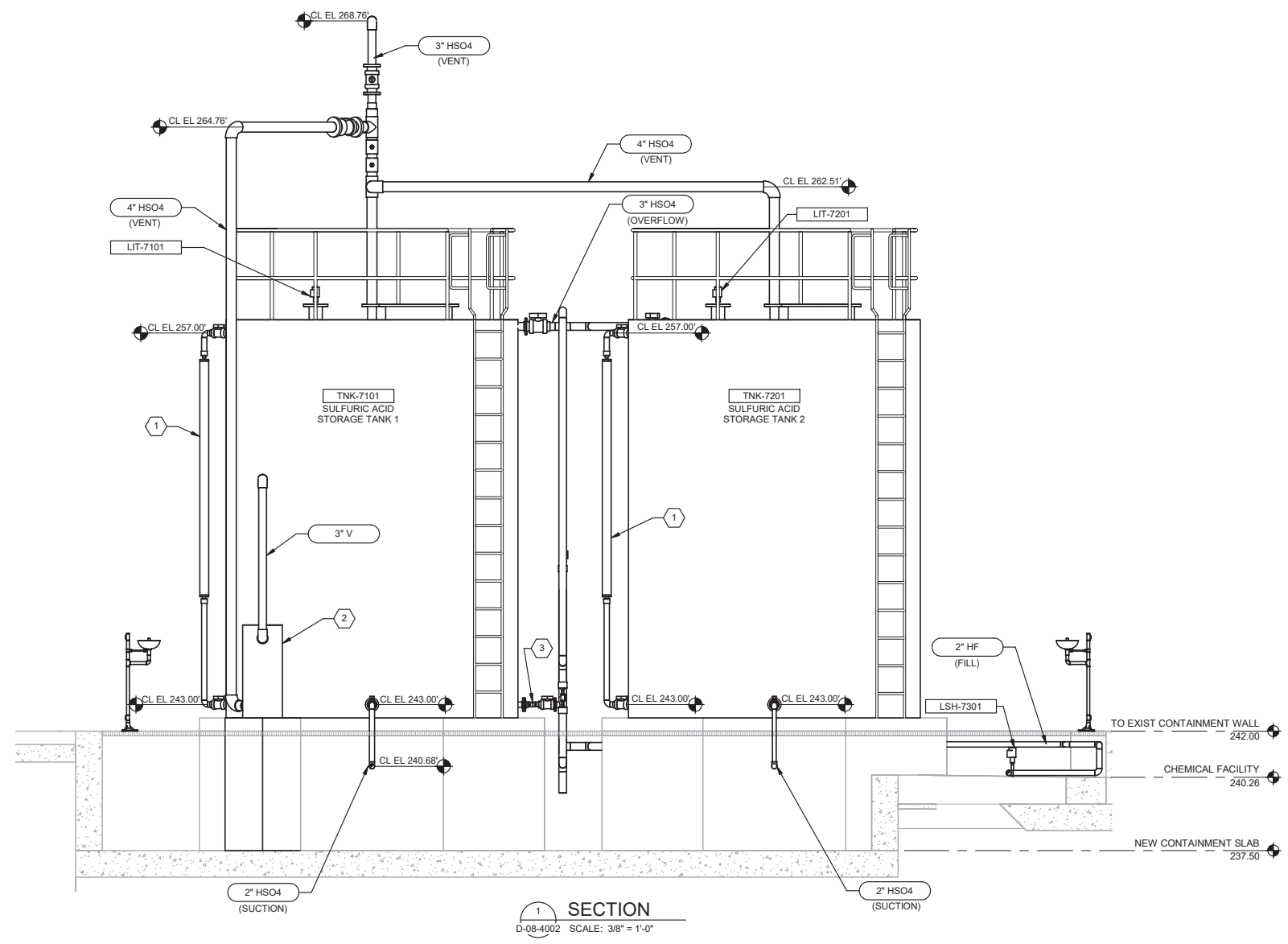
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REVIEWED BY:	DATE:	20	DATE:
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REVIEWED BY:	DATE:	20	SP-FILE NO.:
OMIED POUR, P.E. - PROJECT MANAGER			SP2602
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			ALEX NAZARCHUK, P.E. - CITY ENGINEER
			DATE:
			20XX

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
CHEMICAL AREA SECTIONS - 1

PROJECT AND SHEET TITLE

DESIGNED BY:	PT
DRAWN BY:	LEG
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-08-3001	
SHT	148 of 303 SHTS

- KEY NOTES:**
1. SIGHT LEVEL GAUGE.
 2. DESSICANT DRYER.
 3. NONMETALLIC FLEXIBLE CONNECTION PER SECTION 40 05 06.23.



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REVIEWED BY:	DATE:	20	DATE:
SUNNY WANG, P.E. - WATER RESOURCES MANAGER			COMPUTER FILE NAME:
REVIEWED BY:	DATE:	20	SP-FILE NO.:
OMIED POUR, P.E. - PROJECT MANAGER			SP2602
			APPROVED BY:
			ALEX NAZARCHUK, P.E. - CITY ENGINEER
			DATE:
			20XX

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
CHEMICAL AREA SECTIONS - 2

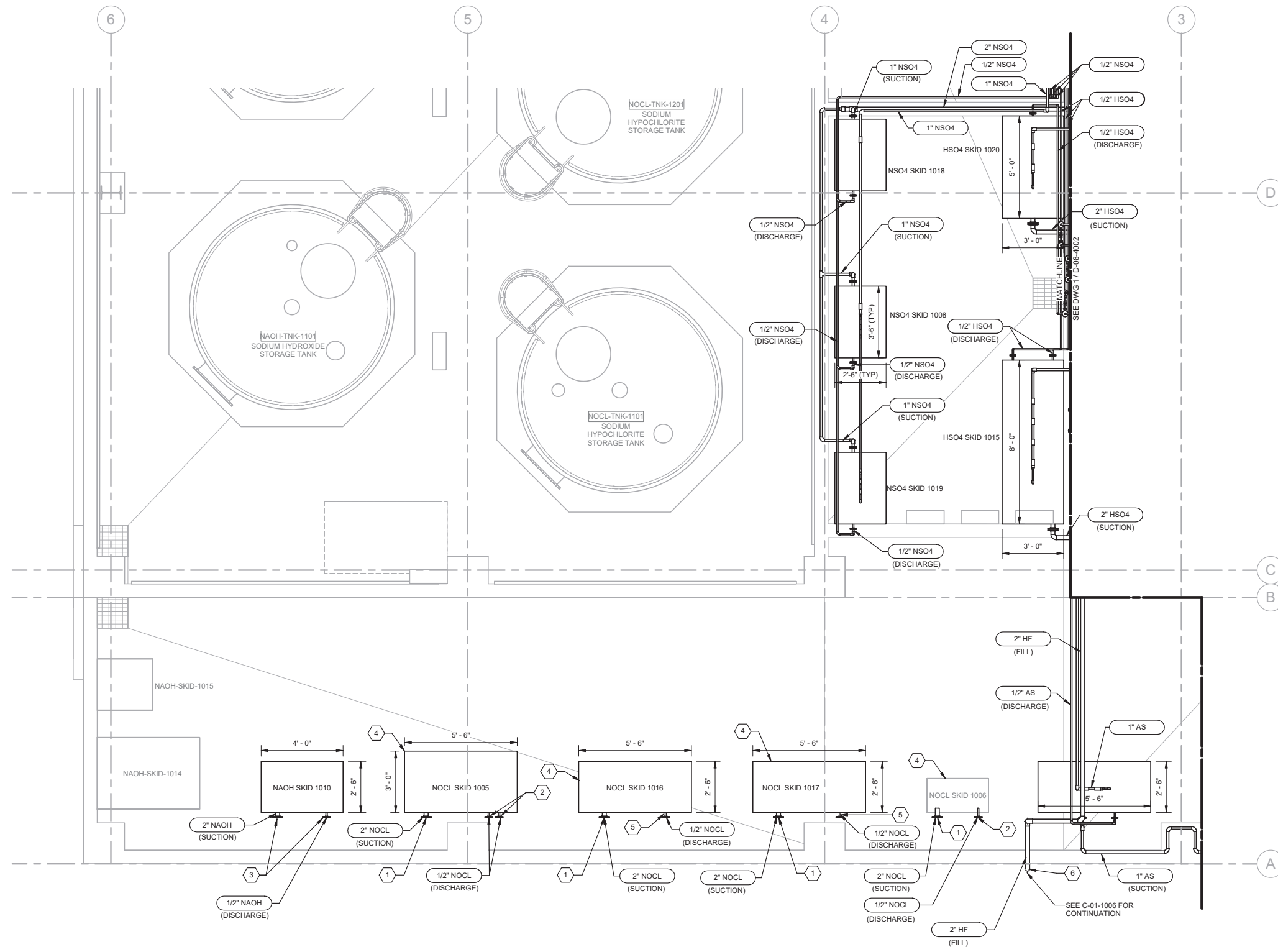
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DRAWN BY:	LEG
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-08-3002	
SHT	149 of 303 SHS

12/20/2021 5:25:55 PM

D-08-4001

150 of 303

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION



- KEY NOTES:**
1. FIELD ROUTE PIPING FROM EXISTING COMMON SUCTION NOCL HEADER.
 2. FIELD ROUTE PIPING TO CONNECTION POINTS AS SHOWN IN PHOTO 4 Z-08-3001.
 3. FIELD ROUTE PIPING TO CONNECTION POINT AS SHOWN IN PHOTO 5 Z-08-3001.
 4. FIELD ROUTE COMBINED VENT PIPING FROM EACH NOCL SKID TO CONNECTION POINT AS SHOWN IN PHOTO 4 Z-08-3001.
 5. FIELD ROUTE 1/2" NOCL DISCHARGE PIPING FROM SKID 1017 THROUGH NEW ANTISIPHON LOOPS TO CHEMICAL JUNCTION BOX NO. 3 ROUTE 1/2" NOCL DISCHARGE PIPING FROM SKID 1016 THROUGH NEW ANTISIPHON LOOP TO CHEMICAL JUNCTION BOX NO. 2. ANTISIPHON LOOPS TO BE INSTALLED AT AN ELEVATION ABOVE NOCL STORAGE TANK OVERFLOW.
 6. TWO CHEMICAL RISERS PER DETAIL C/C-01-5003. INSTALL BF ON SPARE CHEMICAL RISER.

1 ENLARGED PLAN
SCALE: 3/8" = 1'-0"



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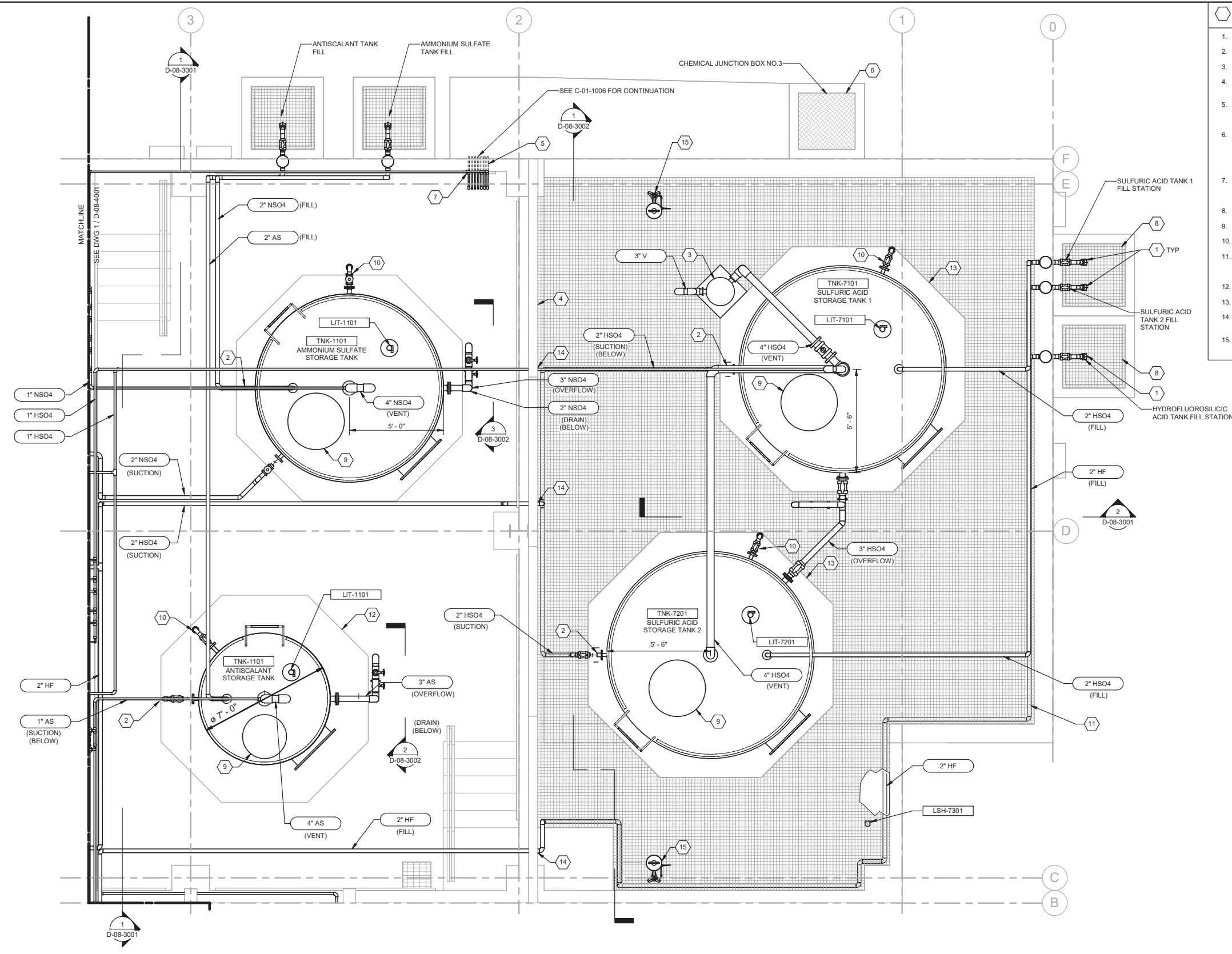
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WALSH
CONSULTANT

REVIEWED BY: _____ DATE: _____ 20__
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 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____ 20__
 OMEED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20XX
 SUBMITTED BY: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER
 ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
CHEMICAL STORAGE AREA ENLARGED PLAN
 - 1
 PROJECT AND SHEET TITLE

DESIGNED BY: PT
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 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-08-4001
 SHEET 150 OF 303 SHEETS



- KEY NOTES:**
- TRUCK FILL CONNECTION PER DETAIL D/D-08-5003.
 - NONMETALLIC FLEXIBLE CONNECTION PER SECTION 40 05 06.23.
 - DESSICANT DRYER.
 - COAT CONTAINMENT AREA FLOOR AND WALL PER SECTION 09 90 00.
 - CHEMICAL DUCTBANK PER DETAIL 6/C-01-5002. FIELD ROUTE CHEMICAL PIPING TO EXISTING CHEMICAL JUNCTION MH NO.3.
 - RECONNECT TO ALL PIPING WITHIN EXISTING CHEMICAL DUCTBANK EXCEPT PRE-DECARBONATOR NAOH, SODIUM BISULFITE AND RO PERMEATE. SEE CA05501 (CITY OF SANTA MONICA WELL FIELD RESTORATION PROJECT ARCADIA) FOR ORIENTATION WITHIN DUCTBANK.
 - TIE INTO EXISTING 1/2" NAOH (X2), 1/2" NOCL (X2), NAF PER PHOTO 7 Z-08-3001 AND ROUTE NEW PIPING TO CHEMICAL JUNCTION MH NO.3.
 - TRUCK FILL STATION PER DETAIL F/D-08-5004.
 - ACCESS HATCH.
 - SIGHT LEVEL GAUGE.
 - INSTALL HFA TANK FILL PIPING ALONG CONTAINMENT WALL UNDER GRATING. MOUNT CPVC PIPE TO WALL WITH SS UNISTRUTS AND CLIPS.
 - SEE STRUCTURAL FOR MODIFICATIONS TO EXISTING TANK PAD.
 - SEE STRUCTURAL FOR SULFURIC ACID TANK PAD DETAIL.
 - PIPE PENETRATION PER D1102. PROVIDE 2 HOUR FIRE RATED CAULKING AT PENETRATION.
 - RELOCATE EYEWASH STATIONS THAT WERE REMOVED PER Z-08-1001 AND TIE INTO EXISTING TEPID WATER SUPPLY.

1 ENLARGED PLAN
 SCALE: 3/8" = 1'-0"



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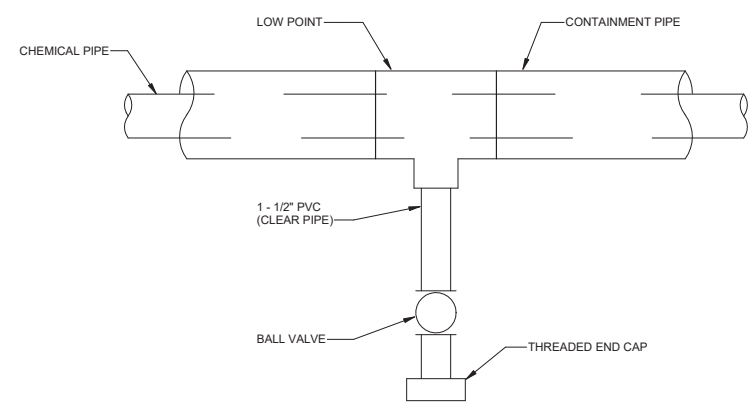
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Brown and Caldwell
WALSH

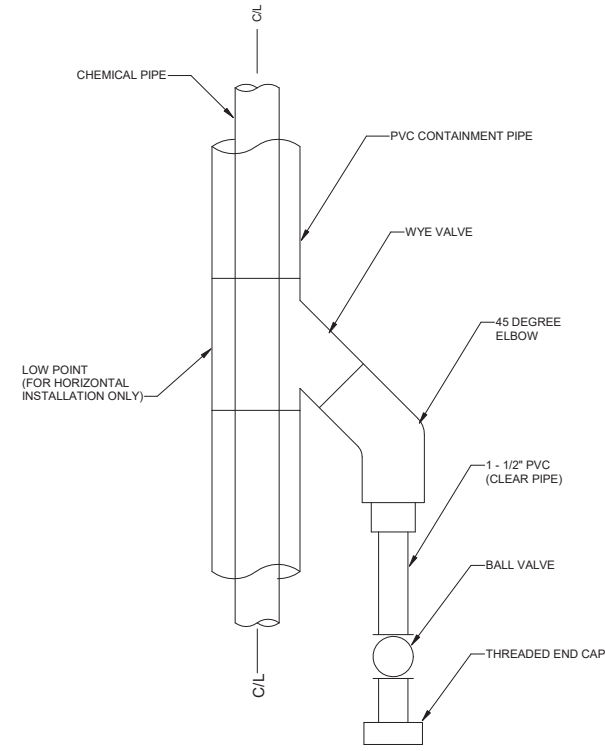
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SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME: _____
REVIEWED BY: _____	DATE: _____, 20__	SP-FILE NO.: SP2602
OMIED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: _____, 20XX

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
CHEMICAL STORAGE AREA ENLARGED PLAN
 - 2
 PROJECT AND SHEET TITLE

DESIGNED BY: PT
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 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-08-4002
 SHEET 151 OF 303 SHEETS



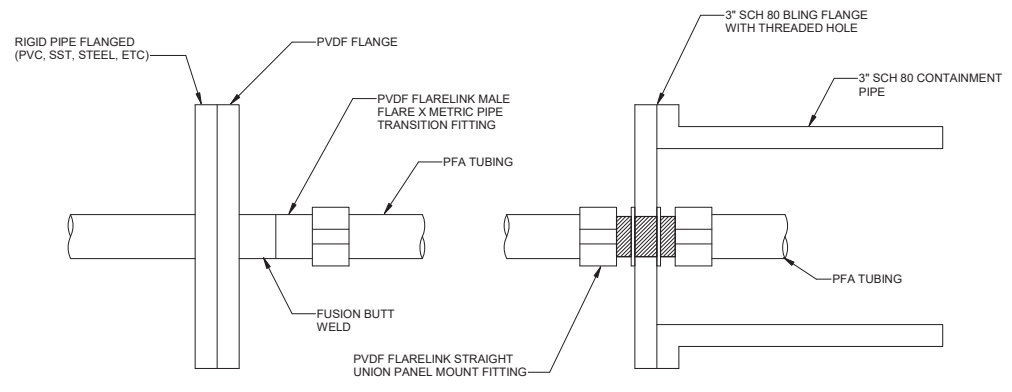
A HORIZONTAL PIPE CONFIGURATION



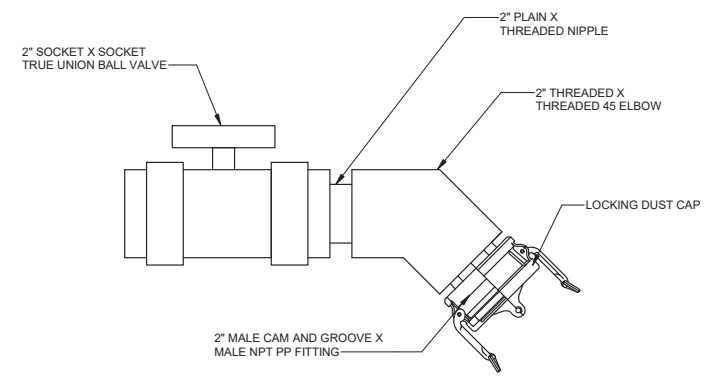
B VERTICAL PIPE CONFIGURATION

NOTES:
 1. LEAK DETECTION SHALL MEET THE REQUIREMENTS OF SECTION 40 05 31.19.

A VISIBLE LEAK DETECTION ON DOUBLE CONTAINED PIPING

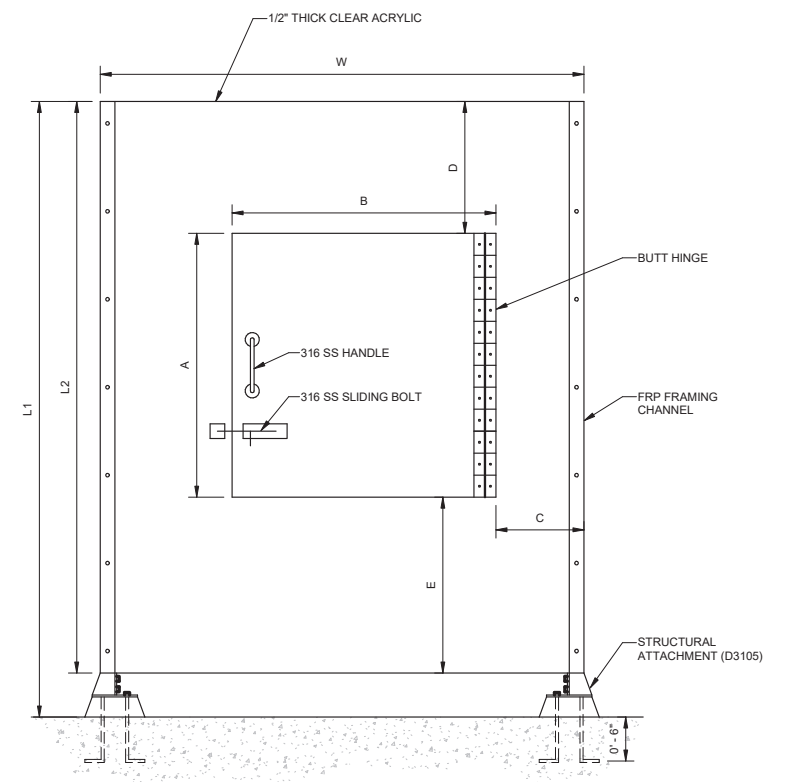


B METERING PUMP DISCHARGE PFA TUBING TRANSITION



NOTES:
 1. ALL WETTED MATERIALS TO BE COMPATIBLE WITH CHEMICAL SERVICE.
 2. INSTALL FILL CONNECTION POINTS SUCH THAT THEY DRAIN INTO THE SUMPS AS SHOWN ON PLAN AND BOTH ISOLATION VALVE AND CONNECTION POINT CAN BE REACHED FROM OUTSIDE OF THE CONTAINMENT.
 3. TRUE UNION BALL VALVE SHALL HAVE PROVISIONS FOR LOCK-OUT TAG-OUT.
 4. FILL LINES SHALL BE SUPPORTED AT TRUCK FILL CONNECTION. SUPPORTS SHALL SPAN ACROSS DRAINAGE SUMP TO ALLOW FOR EASY REMOVAL OF GRATING.

D TRUCK FILL CONNECTION



C SAFETY SHIELD

LOCATION	DIMENSIONS (L1/L2/W)	DOOR DIMENSIONS (A/B/C/D/E)
DECARBONATOR	5'-0\"/>	
SULFURIC ACID INJECTION - UV FEED	9'-0\"/>	
HYDROGEN PEROXIDE INJECTION - UV FEED	5'-0\"/>	

NOTE:
 1. CENTER DOOR OVER CHEMICAL INJECTORS.



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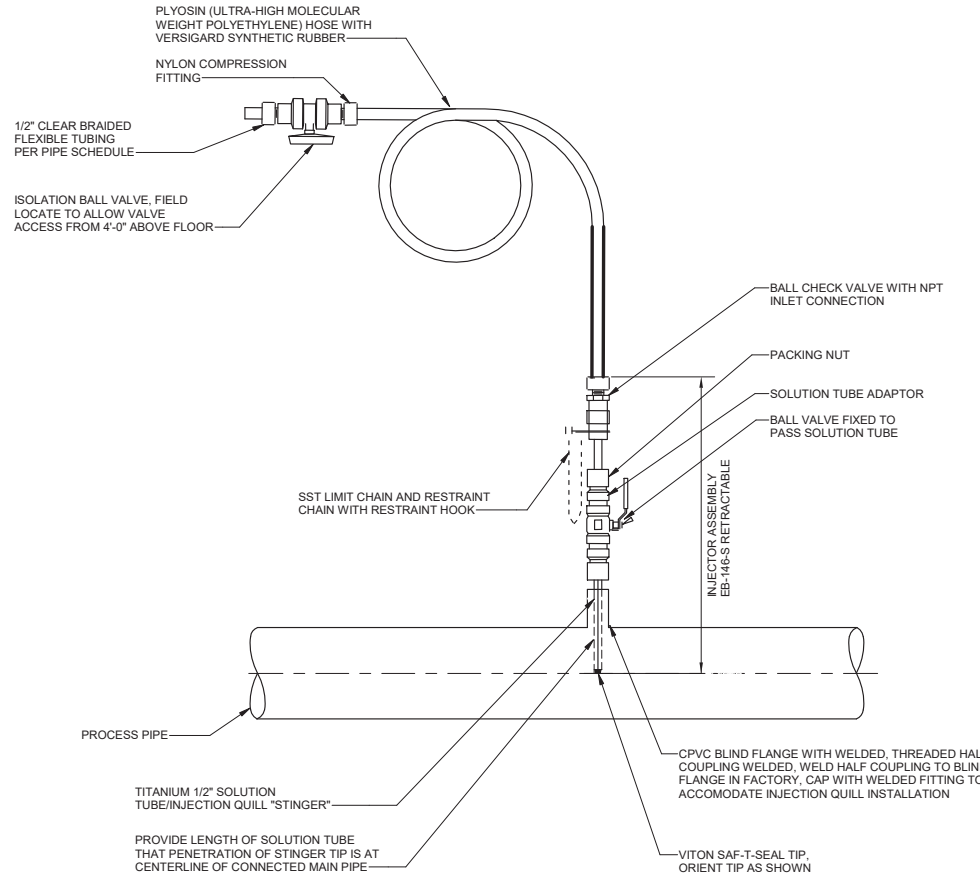
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REFERENCE:
 DATE: _____, 20XX
 SUBMITTED BY: _____
 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 CHEMICAL AREA DETAILS - 1
 PROJECT AND SHEET TITLE

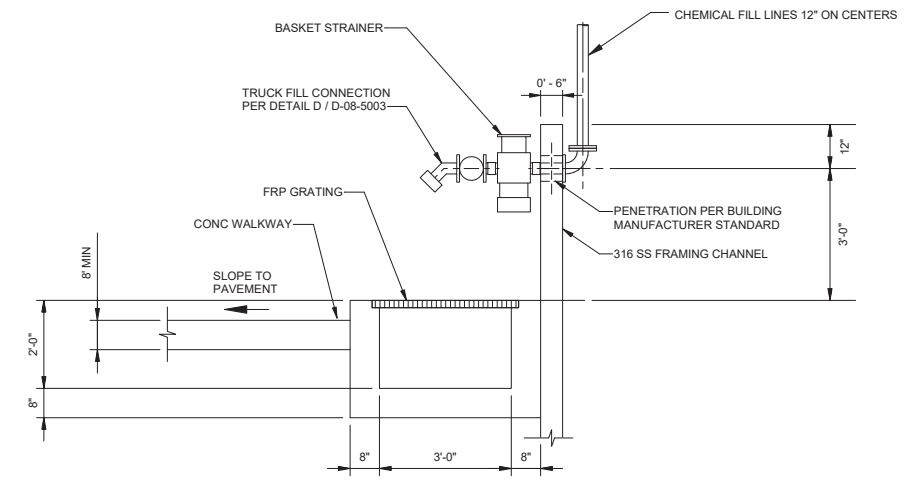


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 DRAWING NO. 7078
D-08-5003
 SHEET 152 OF 303 SHEETS

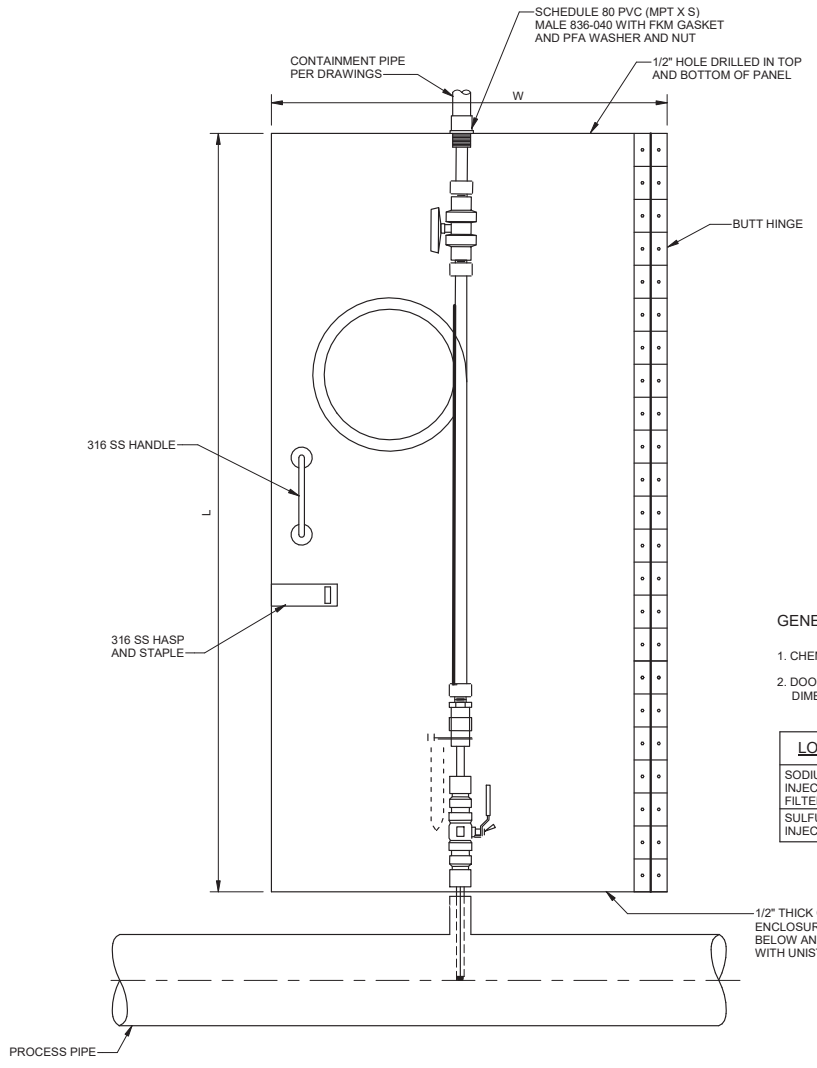


- GENERAL NOTES:**
1. DETAIL SUITABLE FOR FEED PUMP MAX. PRESSURE.
 2. SEE SECTION 46 41 17 FOR INJECTION MATERIAL SCHEDULE.
 3. COORDINATE QUILL SIZING AND DESIGN WITH STATIC MIXER MANUFACTURER.

E CHEMICAL INJECTION ASSEMBLY



F TANK FILL STATION
SCALE: 1/2" = 1'-0"



- GENERAL NOTES:**
1. CHEMICAL INJECTION ASSEMBLY PER DETAIL E/D-08-5004.
 2. DOOR DIMENSION TO MATCH L/W DIMENSIONS. COORDINATE FINAL DIMENSIONS WITH QUILL MANUFACTURER AND PIPE FABRICATOR.

LOCATION	DIMENSIONS (L/W/D)
SODIUM HYPOCHLORITE INJECTION - GREENSAND FILTER FEED	2'-0"1'-0"1'-6"
SULFURIC ACID INJECTION - RO FEED	2'-0"1'-0"1'-6"

G CHEMICAL INJECTOR SAFETY ENCLOSURE



NO.	DATE	BY	DESCRIPTION	APPROVED



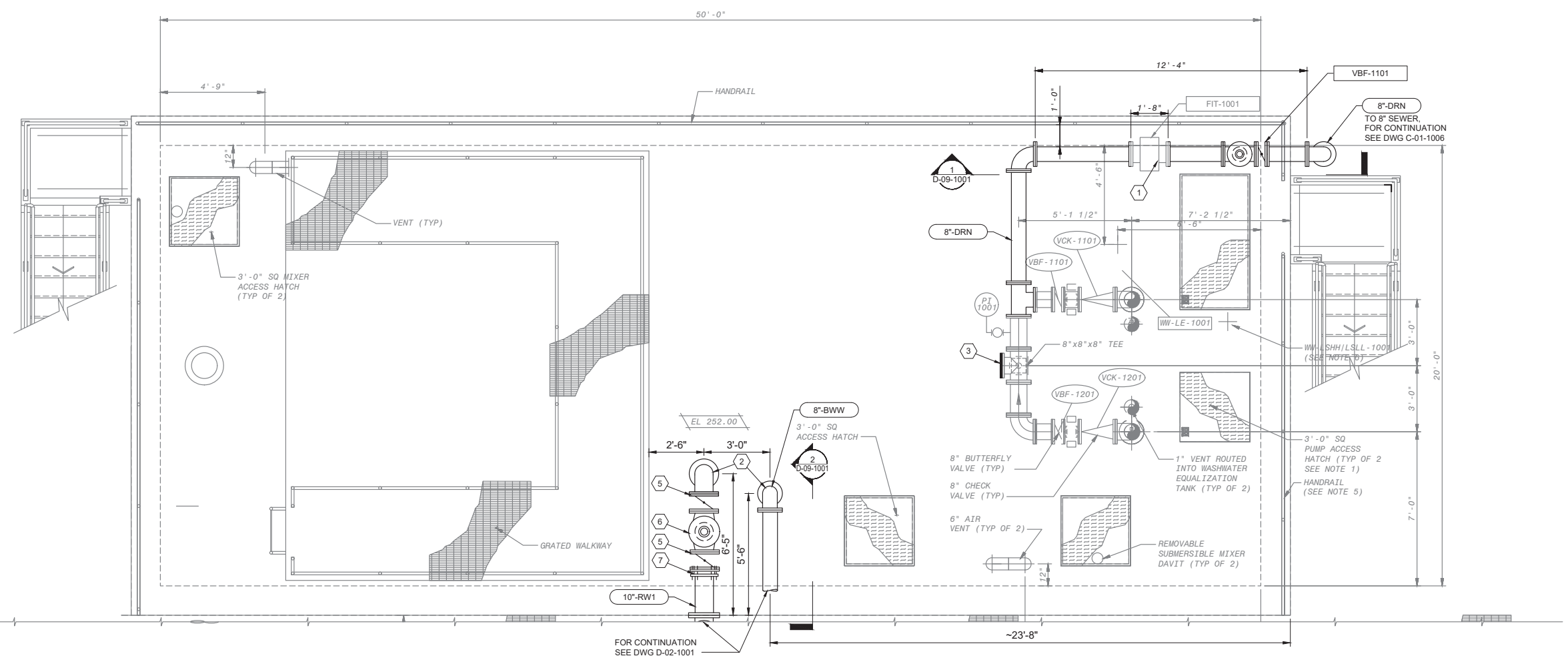
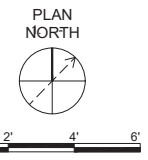
REVIEWED BY: _____ DATE: _____, 20__
 REVIEWED BY: _____ DATE: _____, 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20__
 OMEED POUR, P.E. - PROJECT MANAGER

REFERENCE: _____
 DATE: _____, 20__X
 SUBMITTED BY: _____ COMPUTER FILE NAME: _____
 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20__X
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

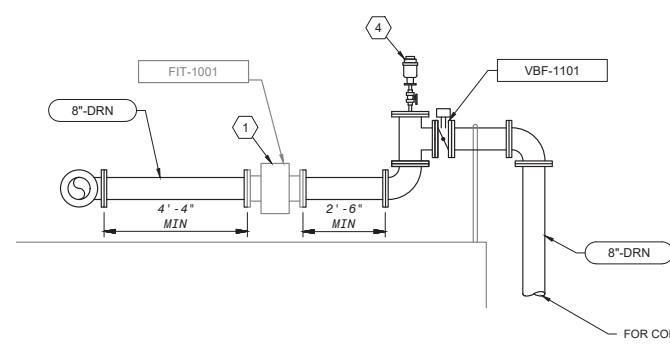
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 CHEMICAL AREA DETAILS - 2
 PROJECT AND SHEET TITLE

DESIGNED BY: PT
 DRAWN BY: LEG
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-08-5004
 SHEET 153 OF 303 SHEETS

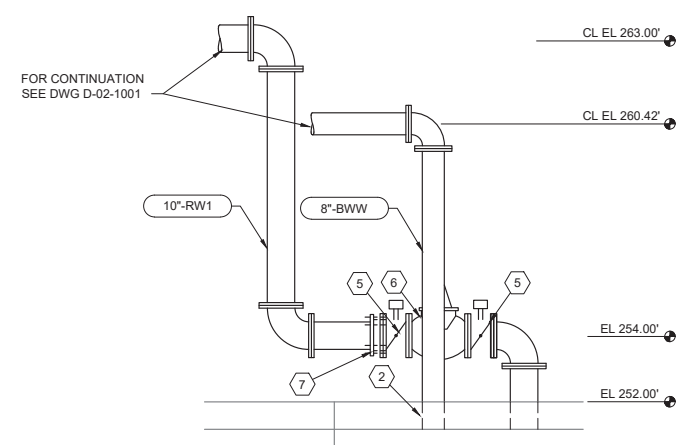
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OPERATING LEVEL PLAN - EL 252.00
SCALE: 3/8" = 1'-0"



SECTION 1
D-09-1001 SCALE: 3/8" = 1'-0"



SECTION 2
D-09-1001 SCALE: 3/8" = 1'-0"

GENERAL NOTES:

- KEY NOTES:**
1. REPURPOSED 8" FLOW METER, SEE DWG Z-09-1001 FOR CURRENT LOCATION OF THE METER
 2. TYPE X1 PIPE PENETRATION, SEE DETAIL D1113
 3. PROVIDE 8" BLIND FLANGE, MATCH EXISTING PIPE MATERIAL AND SCHEDULE.
 4. 1" AUTOMATIC AIR RELEASE, SEE DETAIL 5061.
 5. 10" BUTTERFLY VALVE.
 6. 10" PRESSURE SUSTAINING VALVE.
 7. RESTRAINED FLANGED COUPLING ADAPTER.



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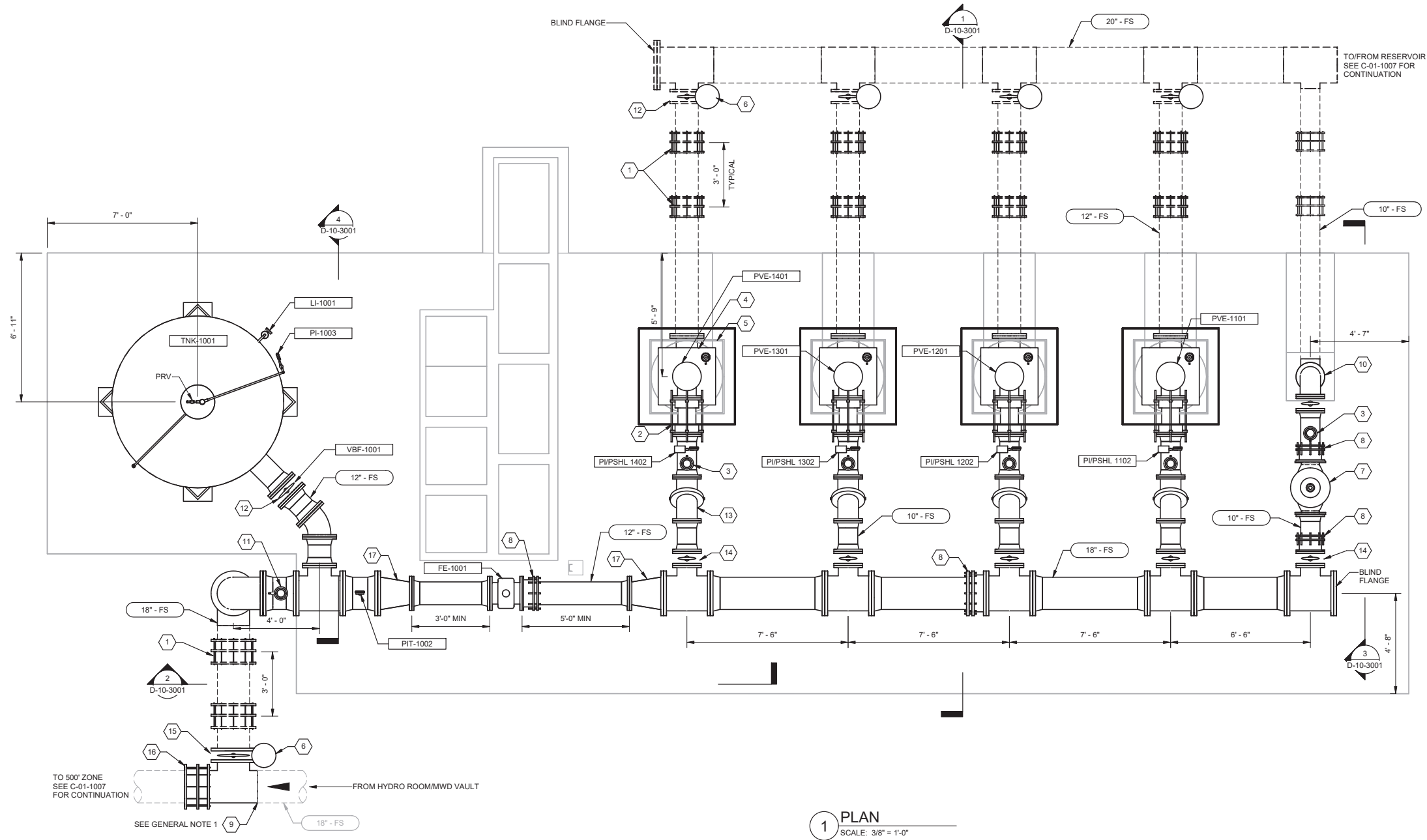
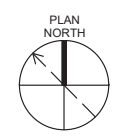
NO.	DATE	BY	DESCRIPTION	APPROVED



REVIEWED BY: _____ DATE: _____, 20__	REFERENCE: _____
REVIEWED BY: _____ DATE: _____, 20__	DATE: _____, 20__ COMPUTER FILE NAME: _____
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	SUBMITTED BY: _____ SP-FILE NO.: SP2602
REVIEWED BY: _____ DATE: _____, 20__	CURTIS CASTLE, P.E. - PRINCIPAL C.E.
OMED POUR, P.E. - PROJECT MANAGER	APPROVED BY: _____ DATE: _____, 20__
CITY CLIENTS	ALEX NAZARCHUK, P.E. - CITY ENGINEER
ENGINEERING AND STREET SERVICES	

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
EQUALIZATION TANK PLAN AND SECTION

DESIGNED BY: CL
DRAWN BY: AC
CHECKED BY: AZ
CONSULTANT JOB/SHEET NO. _____
DRAWING NO. 7078
D-09-1001
SHT 154 OF 303 SHS



1 PLAN
SCALE: 3/8" = 1'-0"

GENERAL NOTES:

1. FIELD VERIFY LOCATION OF EXISTING 18" FS PRIOR TO ANY WORK. EXISTING 18" FS IS CARBON STEEL PIPE WITH CEMENT MORTAR LINING AND COATING.

KEY NOTES:

1. DUAL RESTRAINED SLEEVE-TYPE COUPLINGS IN SERIES. TYPICAL. TIE-RODS SHALL BE FINGER TIGHT
2. EQUIPMENT CONNECTION FITTING, TYPICAL
3. 1.5" COMBINATION AIR VALVE PER DETAIL D5061, TYPICAL
4. MOTOR NOISE ENCLOSURE, TYPICAL
5. CONCRETE PUMP PEDESTAL PER DETAIL A/D-10-3002, TYPICAL
6. VALVE BOX PER CITY OF SANTA MONICA STANDARD DETAIL SMW-8, TYPICAL
7. 10" PRESSURE REDUCING VALVE
8. RESTRAINED FLANGED COUPLING ADAPTER
9. 18"x18" TEE. COATING AND LINING TO MATCH EXISTING 18" FS.
10. TYPE A PIPE PENETRATION PER DETAIL D1101
11. 2.5" COMBINATION AIR RELEASE VALVE PER DETAIL D5061
12. 12" BUTTERFLY VALVE, TYPICAL
13. 10" TILTING DISC CHECK VALVE, TYPICAL
14. 10" BUTTERFLY VALVE, TYPICAL
15. 18" BUTTERFLY VALVE
16. 18" RESTRAINED SLEEVE-TYPE COUPLING
17. 18" x 12" ECCENTRIC REDUCER

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REVIEWED BY:	DATE:	20
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REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
BOOSTER PUMP STATION PLAN
 PROJECT AND SHEET TITLE



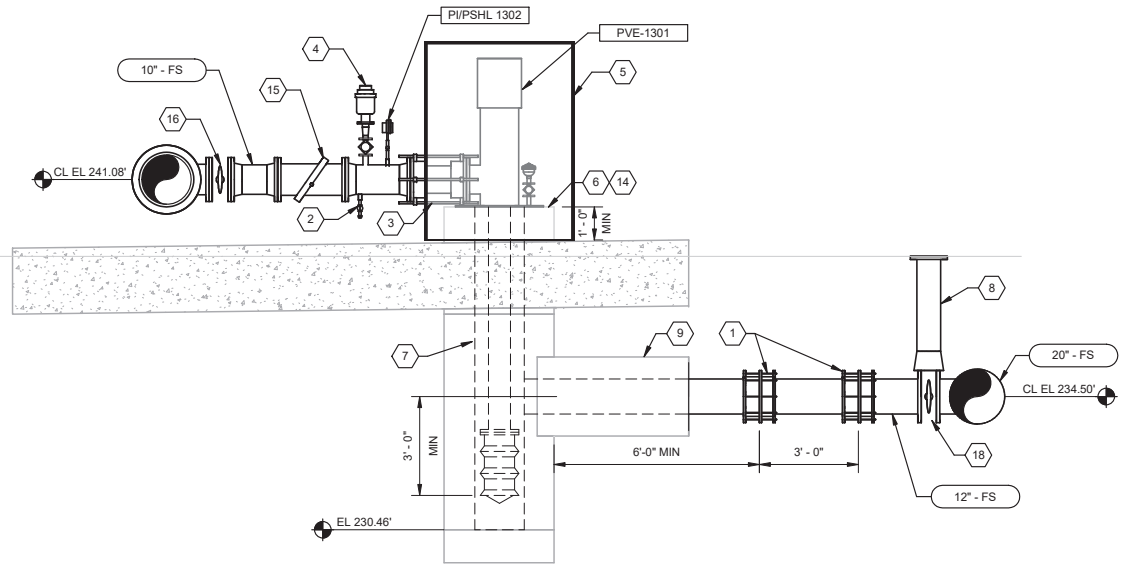
DESIGNED BY:	KBK
DRAWN BY:	AC
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-10-1001	
SHT	155 of 303 SHS

GENERAL NOTES:

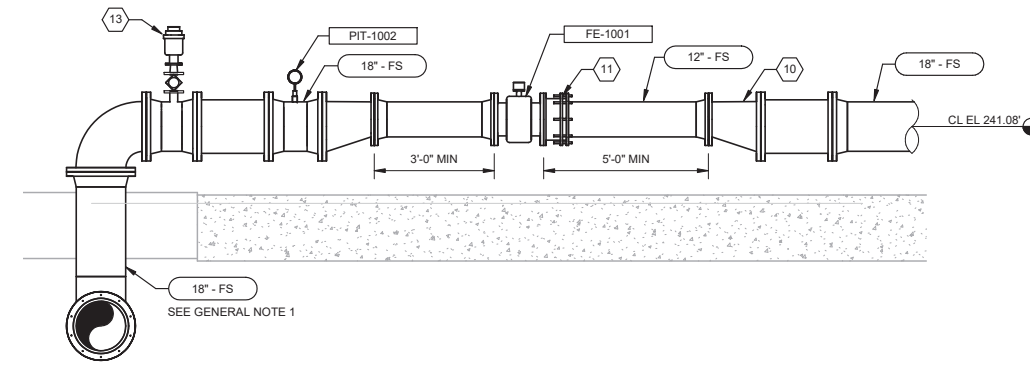
1. FIELD VERIFY LOCATION OF EXISTING 18" FS PRIOR TO ANY WORK. EXISTING 18" FS IS CARBON STEEL PIPE WITH CEMENT MORTAR LINING AND COATING.

KEY NOTES:

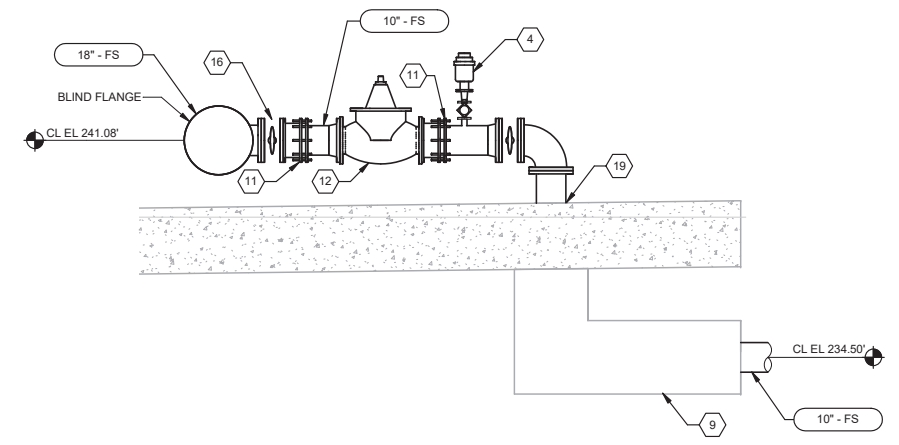
1. 12" DUAL RESTRAINED COUPLINGS IN SERIES. TIE-RODS SHALL BE FINGER TIGHT
2. 1/2" DRAIN PER DETAIL D5050
3. EQUIPMENT CONNECTION FITTING
4. 1.5" COMBINATION AIR VALVE PER DETAIL D5061
5. MOTOR NOISE ENCLOSURE
6. CONCRETE PUMP PEDESTAL PER DETAIL A/D-10-3002
7. INTAKE CAN INSIDE CONCRETE ENCASEMENT. PIPE ENCASEMENT PER DETAIL A/D-10-3002
8. VALVE BOX PER CITY OF SANTA MONICA STANDARD DETAIL SMW-8
9. CONCRETE ENCASEMENT PER DETAIL S6003
10. 18" X 12" ECCENTRIC REDUCER
11. RESTRAINED FLANGED COUPLING ADAPTER
12. 10" PRESSURE REDUCING VALVE
13. 2.5" COMBINATION AIR VALVE PER DETAIL D5061
14. PIPE MOUNTING PER DETAIL B/D-10-3002
15. 10" TILTING DISC CHECK VALVE
16. 10" BUTTERFLY VALVE, TYPICAL
17. 18" X 14" CONCENTRIC REDUCER, TYPICAL
18. 12" BUTTERFLY VALVE
19. TYPE A PIPE PENETRATION PER DETAIL D1101
20. 12" NOZZLE
21. 1" DRAIN LINE WITH BALL VALVE
22. 12" 90 DEGREE SHORT RADIUS BEND
23. 1/2" AIR/GAS PRECHARGE CONNECTION



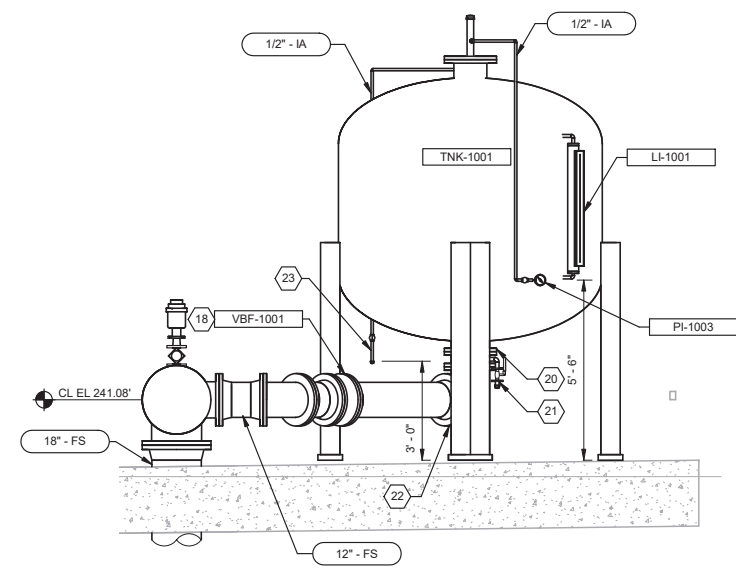
1 SECTION
D-10-1001 SCALE: 3/8" = 1'-0"



2 SECTION
D-10-1001 SCALE: 3/8" = 1'-0"



3 SECTION
D-10-1001 SCALE: 3/8" = 1'-0"



4 SECTION
D-10-1001 SCALE: 3/8" = 1'-0"

NO.	DATE	BY	DESCRIPTION	APPROVED

REVIEWED BY:	DATE:	20
REVIEWED BY:	DATE:	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20
OMEED POUR, P.E. - PROJECT MANAGER		

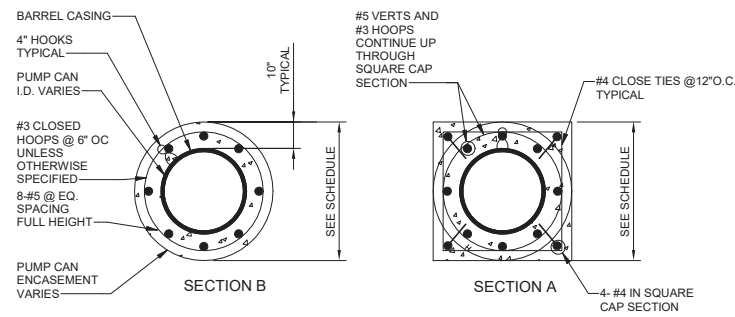
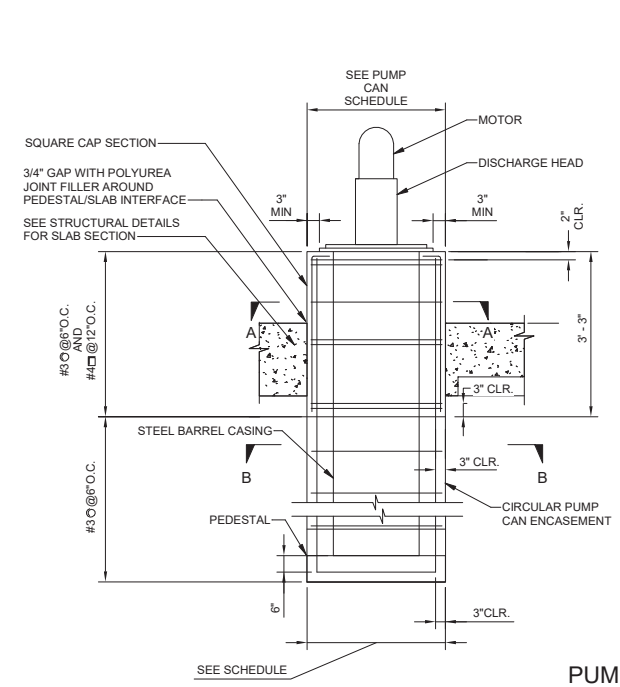
REFERENCE:	DATE:	20XX
SUBMITTED BY:	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	
SP-FILE NO.:	SP2602	
APPROVED BY:	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: 20XX

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
BOOSTER PUMP STATION SECTIONS

PROJECT AND SHEET TITLE

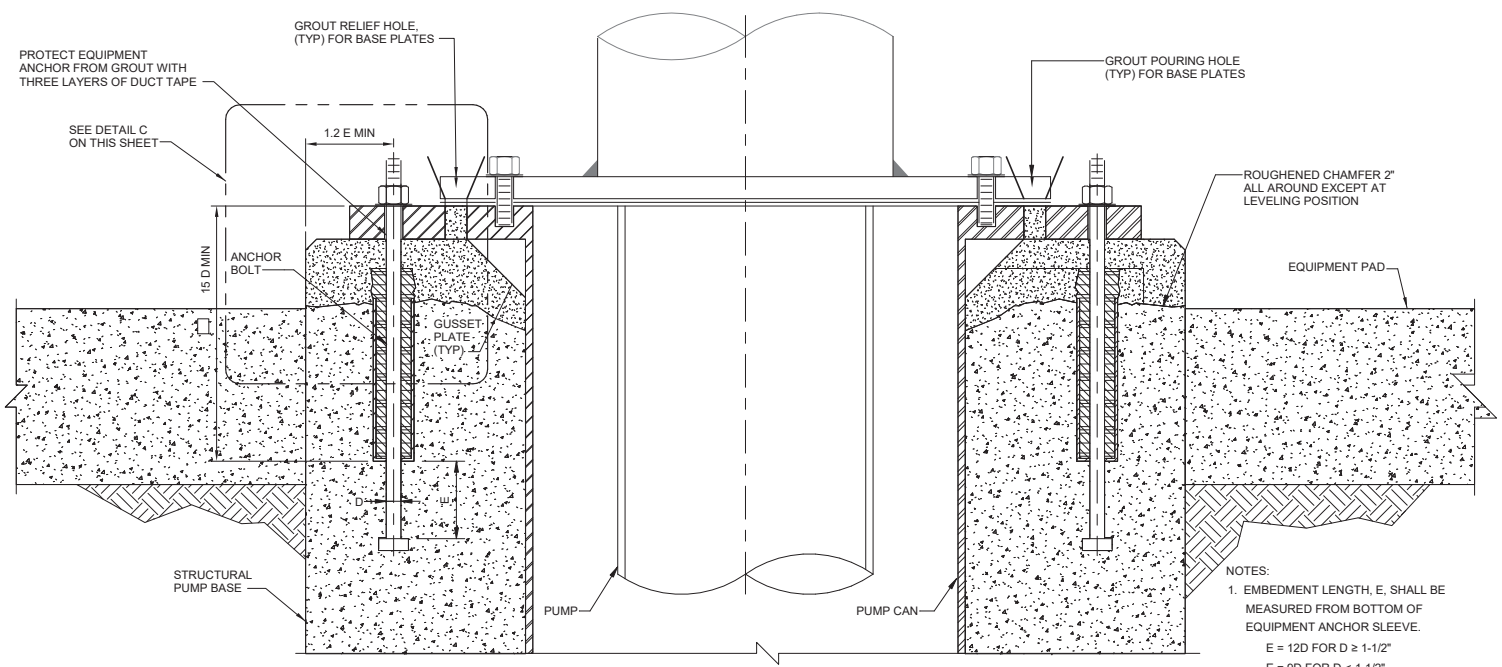


DESIGNED BY:	KBK
DRAWN BY:	AC
CHECKED BY:	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
D-10-3001	
SHT	156 of 303 SHS

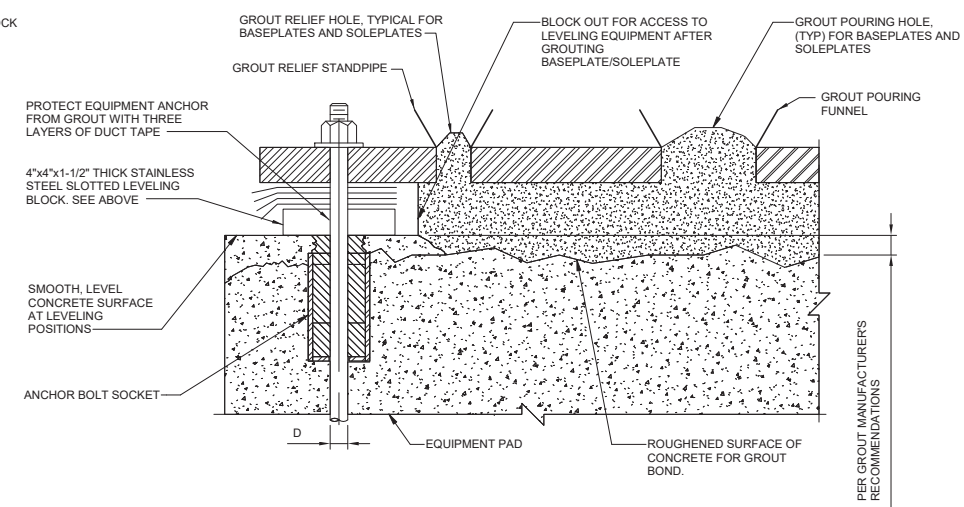
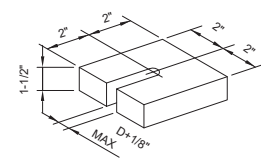


PUMP CAN SCHEDULE					
PUMPS	SQUARE CAP SECTION	PUMP CAN ID [INCH]	PUMP CAN ENCASEMENT DIA. [INCH]	PEDESTAL SIZE [INCH]	PUMP CAN INVERT TO DISCHARGE CL [FT]
PVE-1101 TO PVE-1401	40" X 40"	18"	40"	40" X 40" X 12" (MIN)	10.62'

PUMP CAN
 DETAIL A
 D-10-3001 NTS



PUMP MOUNTING
 DETAIL B
 D-10-3002 NTS



EQUIPMENT LEVELING WITH SHIMS AND LEVELING BLOCK
 DETAIL C
 D-10-3002 NTS

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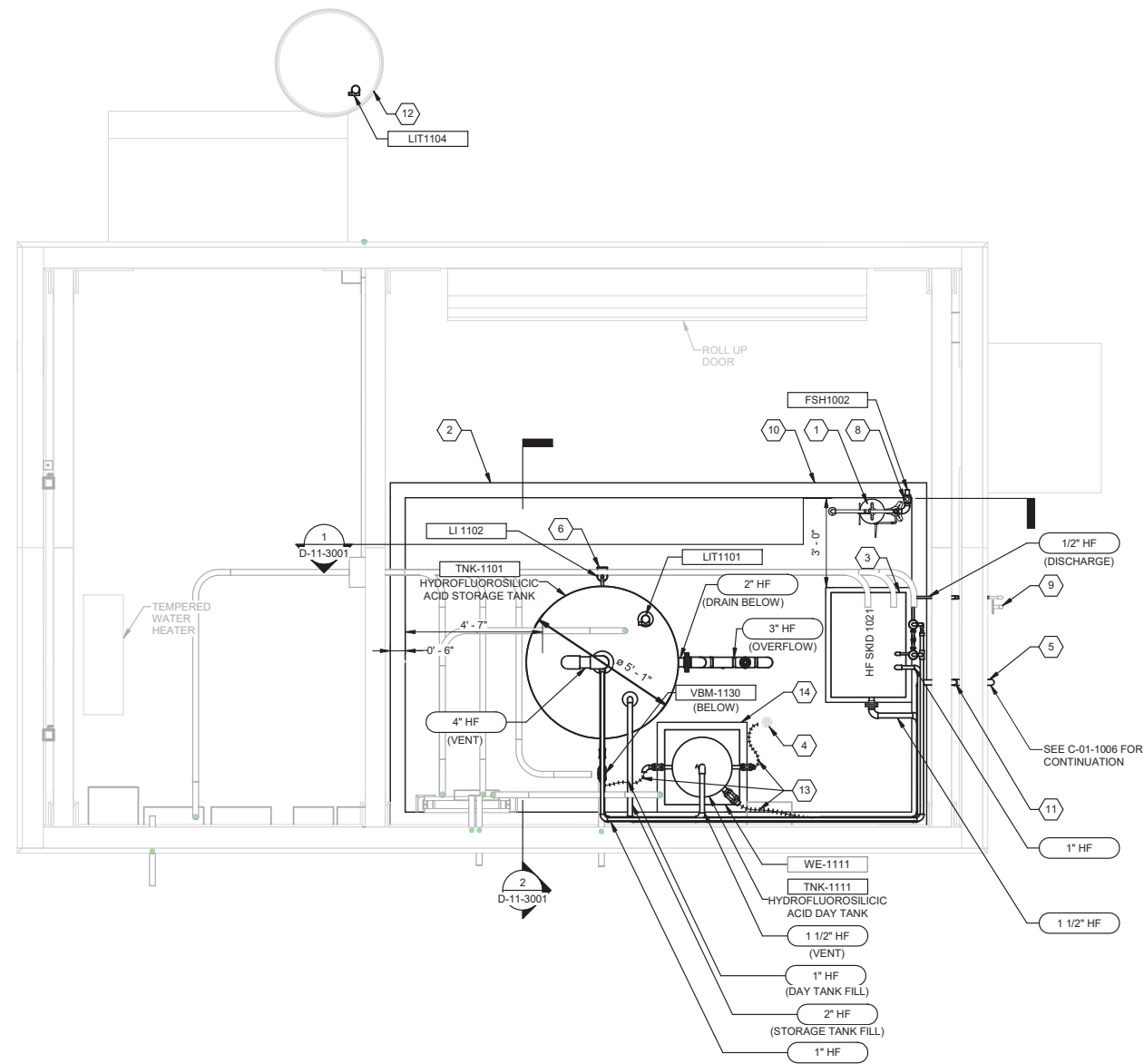
Brown and Caldwell
WALSH

REVIEWED BY:	DATE:	20XX
REVIEWED BY:	DATE:	20XX
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY:	DATE:	20XX
OMIED POUR, P.E. - PROJECT MANAGER		

REFERENCE:	DATE:	20XX	COMPUTER FILE NAME:
SUBMITTED BY:			SP-FILE NO.: SP2602
CURTIS CASTLE, P.E. - PRINCIPAL C.E.			
APPROVED BY:	DATE:	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
BOOSTER PUMP STATION DETAILS
 PROJECT AND SHEET TITLE

DESIGNED BY: KBK
 DRAWN BY: AC
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
D-10-3002
 SHEET 157 OF 303 SHEETS



1 FLUORIDE BUILDING PLAN
SCALE: 3/8" = 1'-0"

- KEY NOTES:**
1. EMERGENCY EYEWASH AND SHOWER STATION PER DETAIL D4402.
 2. CONTAINMENT CURB PER DETAIL S6001.
 3. VENDOR PROVIDED CHEMICAL METERING PUMP ENCLOSURE AND PUMP SKID PER SECTION 46 33 44.
 4. FIELD VERIFY EXISTING DRAIN LOCATION.
 5. INSTALL TWO CHEMICAL RISERS PER DETAIL C/C-01-5003. INSTALL BLIND FLANGE ON SPARE CHEMICAL RISER.
 6. FLOAT STYLE LEVEL INDICATOR PER SECTION 43 41 43.13.
 7. NOT USED.
 8. FIELD ROUTE APPROXIMATELY 40 LF 1" POTABLE WATER LINE FROM EMERGENCY EYEWASH & SHOWER STATION TO LOCATION INDICATED ON PHOTO 1/2-11-5001.
 9. INSTALL BLIND FLANGE ON RO PERMEATE.
 10. CONTAINMENT CURB. COAT CONTAINMENT AREA FLOOR AND WALL PER SECTION 09 90 00.
 11. WALL PENETRATION PER BUILDING MANUFACTURER STANDARD.
 12. FIELD VERIFY EXISTING OUTDOOR SUMP AND INSTALL NEW LIT.
 13. PROVIDE MINIMUM OF 18" LENGTH FLEXIBLE TEFLON TUBING PER SECTION 43 41 43.13.
 14. PROVIDE 3' x 3' FRP PLATFORM FOR LOAD SCALE AND DAY TANK. MINIMUM HEIGHT OF 6".

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NO.	DATE	BY	DESCRIPTION	APPROVED



REVIEWED BY: _____ DATE: _____, 20XX REVIEWED BY: _____ DATE: _____, 20XX SUNNY WANG, P.E. - WATER RESOURCES MANAGER REVIEWED BY: _____ DATE: _____, 20XX OMEED POUR, P.E. - PROJECT MANAGER	REFERENCE: DATE: _____, 20XX SUBMITTED BY: _____ CURTIS CASTLE, P.E. - PRINCIPAL C.E. APPROVED BY: _____ DATE: _____, 20XX ALEX NAZARCHUK, P.E. - CITY ENGINEER	COMPUTER FILE NAME: SP-FILE NO.: SP2802
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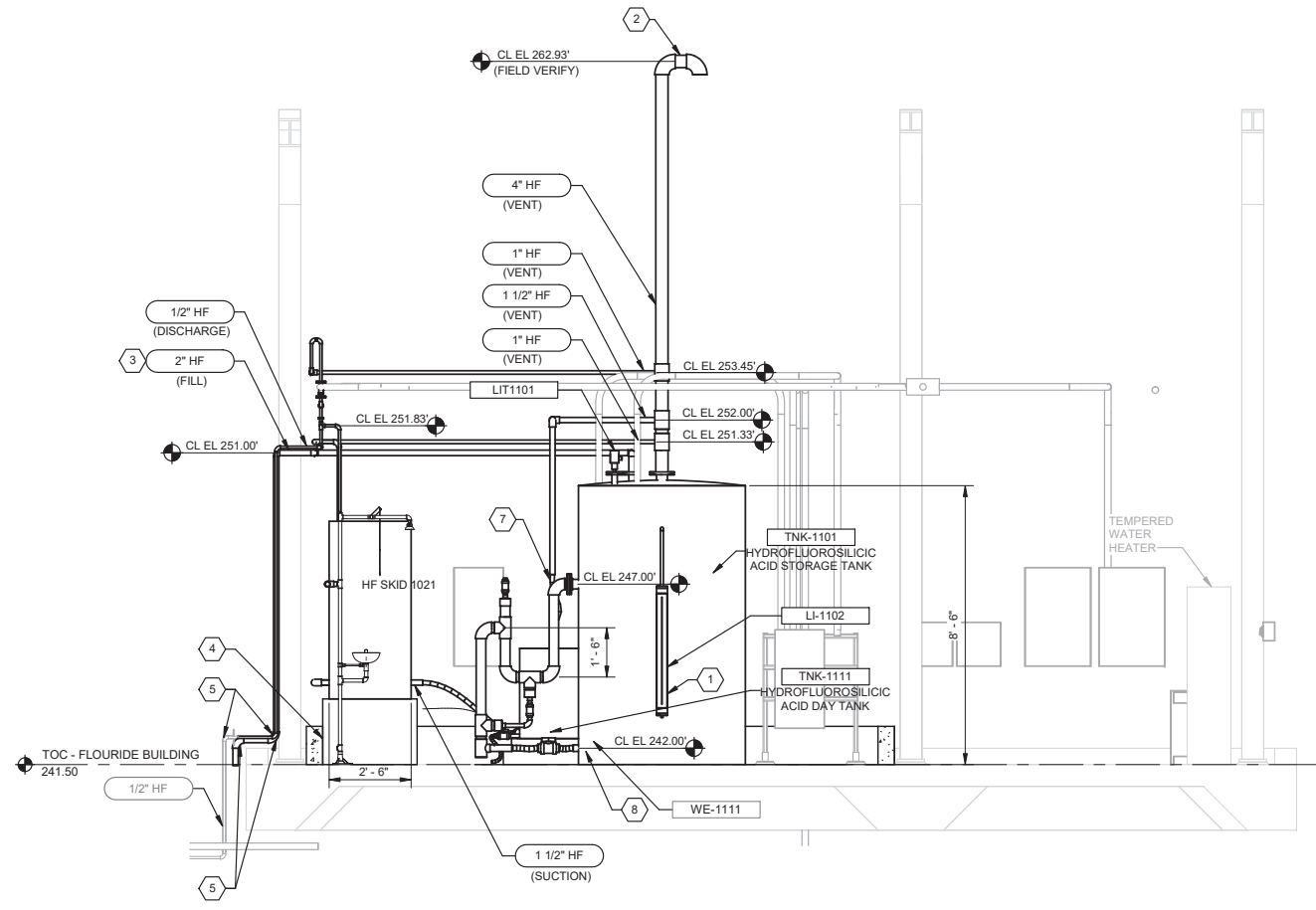
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
FLUORIDE BUILDING PLAN



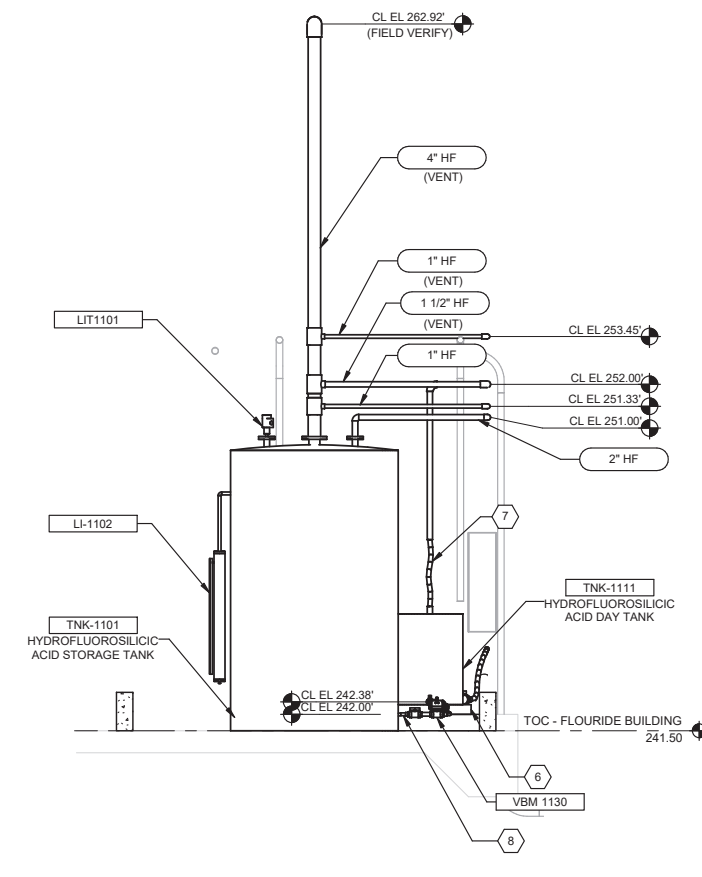
DESIGNED BY: PT
DRAWN BY: LEG
CHECKED BY: AZ
CONSULTANT JOB SHEET NO. 154390
DRAWING NO. 7078
D-11-1001
SHT 158 of 303 SH15

KEY NOTES:

1. FLOAT STYLE LEVEL INDICATOR PER SECTION 43 41 43.13.
2. 4" TANK VENT PER DETAIL D5075. ROOF PENETRATION DETAIL PER BUILDING MANUFACTURER STANDARD.
3. SUPPORT ALL ELEVATED PIPING ON SS UNISTRUT RACKS SUPPORTED FROM ROOF BEAMS
4. EQUIPMENT BASE PER SECTION 46 33 44. PROVIDE MINIMUM HEIGHT OF 1'-3".
5. PROVIDE LONG SWEEPING RADIUS BEND PER SECTION 40 05 31.19.
6. PROVIDE 30"x30" LOAD SCALE.
7. PROVIDE MINIMUM OF 18" LENGTH FLEXIBLE TEFLON TUBING PER SECTION 43 41 43.13.
8. NON METALLIC FLEXIBLE CONNECTOR PER SECTION 43 41 43.13.



SECTION 1
D-11-1001 SCALE: 3/8" = 1'-0"



SECTION 2
D-11-1001 SCALE: 3/8" = 1'-0"



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REVISIONS				



REVIEWED BY: _____ DATE: _____, 20XX
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER

REVIEWED BY: _____ DATE: _____, 20XX
 OMIED POUR, P.E. - PROJECT MANAGER

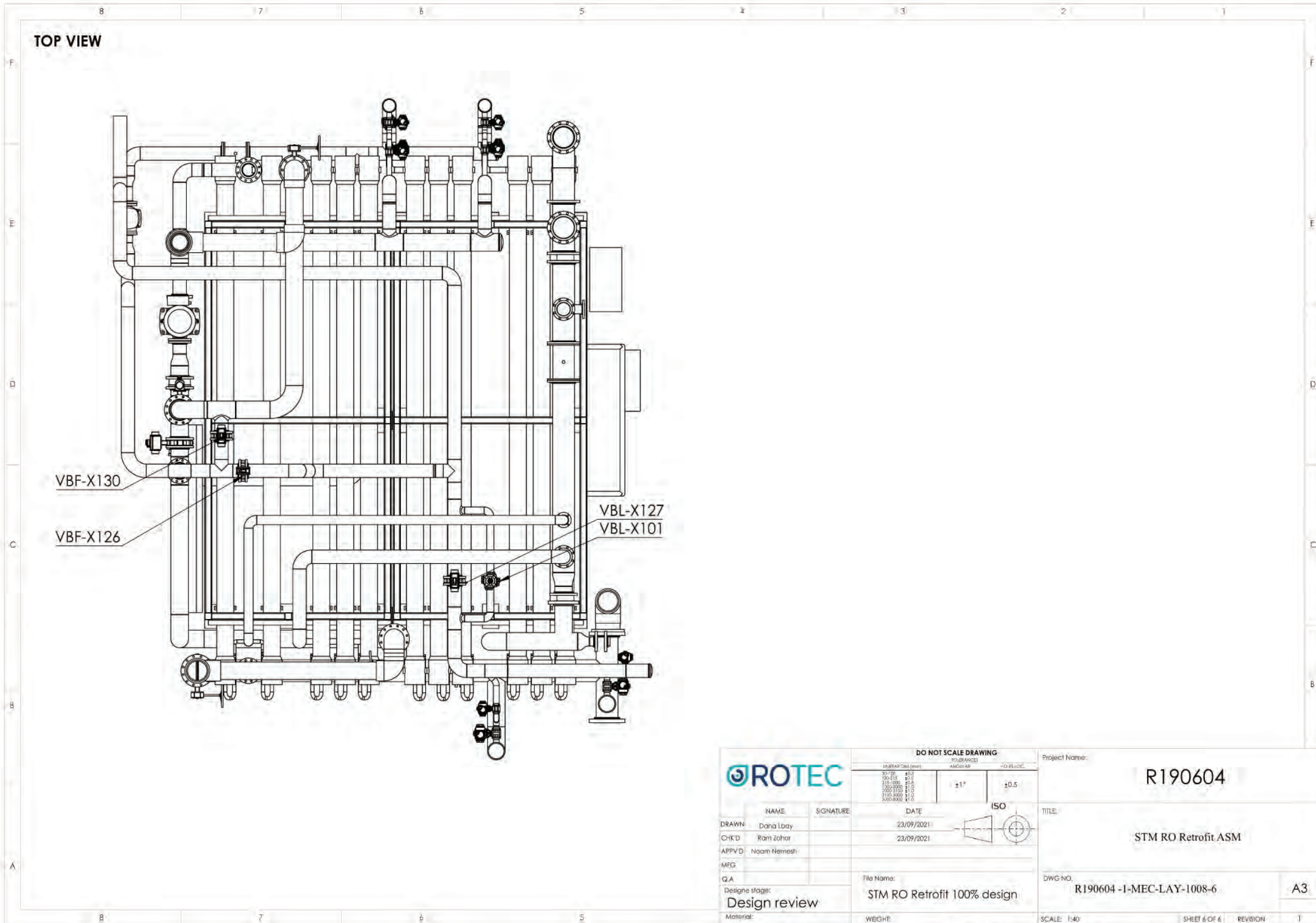
REFERENCE: _____ DATE: _____, 20XX
 CURTIS CASTLE, P.E. - PRINCIPAL C.E.

APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 FLUORIDE BUILDING SECTIONS

DESIGNED BY: PT
 DRAWN BY: LEG
 CHECKED BY: AZ
 CONSULTANT JOB SHEET NO. 154390
 DRAWING NO. 7078
D-11-3001
 SHEET 159 OF 303 SHEETS

PROJECT AND SHEET TITLE



DO NOT SCALE DRAWING

ENERGY (mm)	ANGULAR	ISO
35-70 0/3	±1°	±0.5
70-100 0/3		
100-150 0/3		
150-200 0/3		
200-250 0/3		
250-300 0/3		
300-350 0/3		
350-400 0/3		

Project Name: **R190604**

TITLE: **STM RO Retrofit ASM**

DWG NO: **R190604 -I-MEC-LAY-1008-6** A3

SCALE: 1:40 SHEET 6 OF 6 REVISION 1

FINISH Date: 10:48:49 2021 13:00:23 23/09/2021 File location: C:\P\My Documents\CAD PROJECTS\ROTEC\STM\2. Drawing\1. SolidWorks Drawings\Layout\

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REVIEWED BY: _____ DATE: _____ 20__

SUNNY WANG, P.E. - WATER RESOURCES MANAGER

REVIEWED BY: _____ DATE: _____ 20__

OMIED POUR, P.E. - PROJECT MANAGER

CITY CLIENTS

REFERENCE:

DATE: _____, 20XX

COMPUTER FILE NAME: _____

SP-FILE NO.: SP2602

APPROVED BY: _____ DATE: _____, 20XX

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ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

MODIFICATIONS TO EXISTING RO TRAINS

TOP VIEW

PROJECT AND SHEET TITLE

DESIGNED BY: ROTECH

DRAWN BY: ROTECH

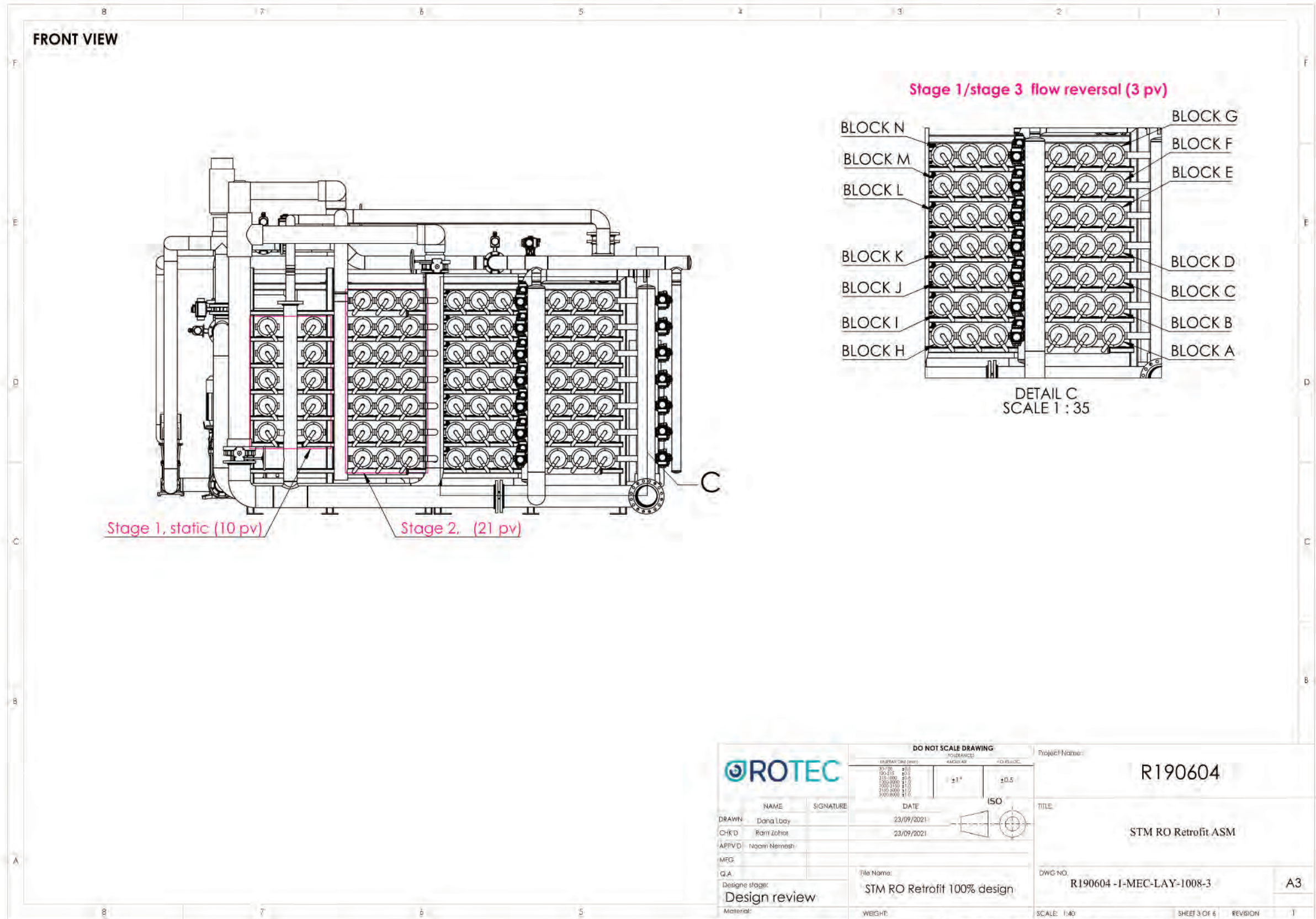
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CONSULTANT JOB/SHEET NO. 154390

DRAWING NO. 7078

R-06-1001

SHT 160 OF 300 SH15



DO NOT SCALE DRAWING

ROTEC

NAME	SIGNATURE	DATE
DRAWN: Dana Luby		23/09/2021
CHK'D: Ram Zohar		23/09/2021
APP'V'D: Naam Nemesh		
MFG:		
Q.A.		
Design stage:	File Name: STM RO Retrofit 100% design	
Design review		
Material:	WEIGHT:	SCALE: 1:40

Project Name: **R190604**

TITLE: **STM RO Retrofit ASM**

DWG NO: **R190604 -I-MEC-LAY-1008-3**

FINISH Date: 10:48:49 2021 10/23/2021

File location: C:\P\W\Documents\CAD PROJECTS\ROTEC\STM\2. Drawing\1. SolidWorks Drawings\Layout\

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REVIEWED BY: _____ DATE: _____ 20__

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OMED POUR, P.E. - PROJECT MANAGER

CITY CLIENTS

REFERENCE:

DATE: _____, 20XX

COMPUTER FILE NAME:

SP-FILE NO.: SP2602

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OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

MODIFICATIONS TO EXISTING RO TRAINS

FRONT VIEW

PROJECT AND SHEET TITLE

DESIGNED BY: ROTECH

DRAWN BY: ROTECH

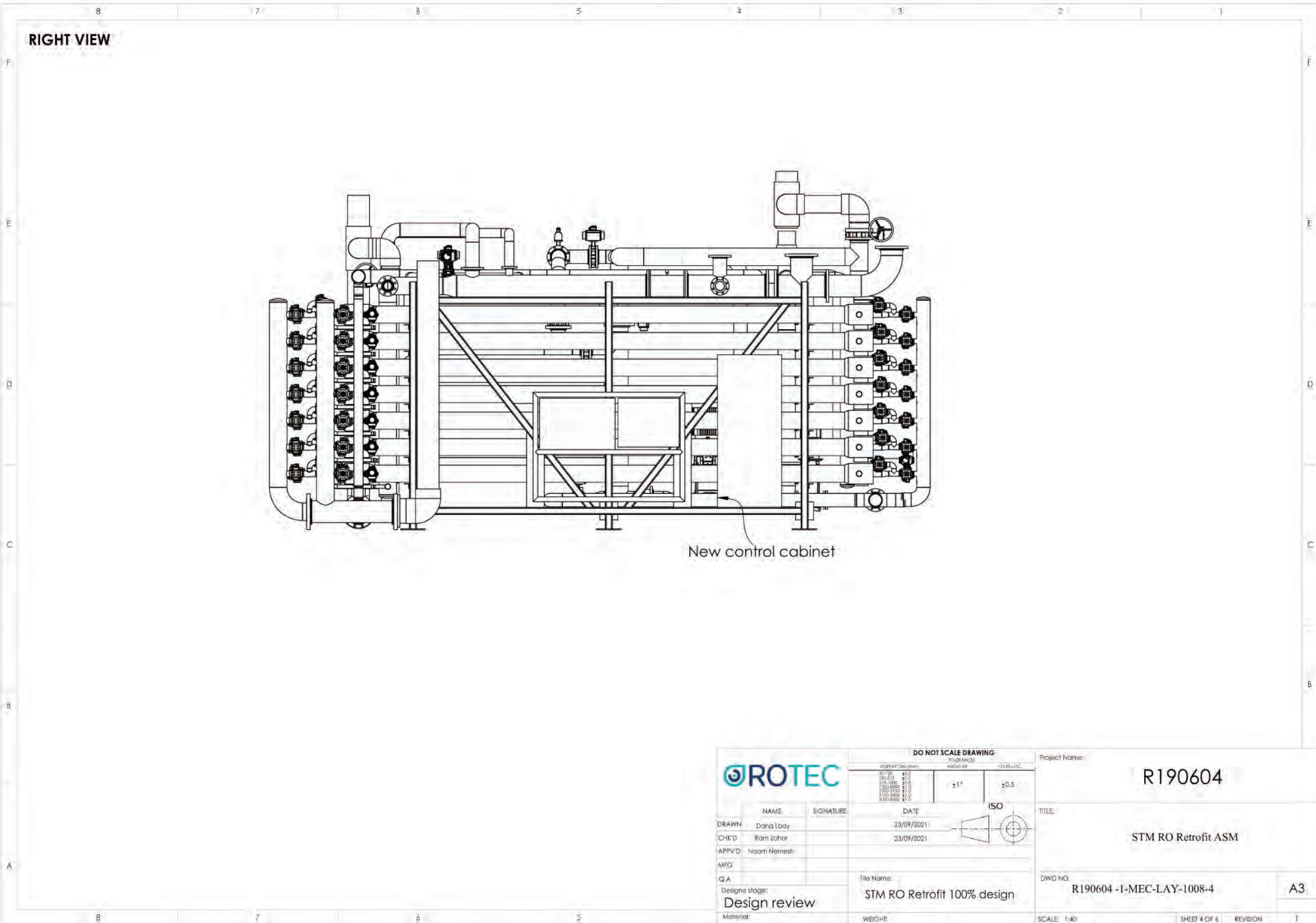
CHECKED BY: ROTECH

CONSULTANT JOB/SHEET NO. 154390

DRAWING NO. 7078

R-06-3001

SHT 161 of 300 SHS



DO NOT SCALE DRAWING

UNITS	TOLERANCES	ANGLES	DECIMALS
3/16"	±0.3		1
1/8"	±0.5		1
1/16"	±0.8		1
1/32"	±1.0		1
1/64"	±1.5		1
1/128"	±2.0		1

Project Name: **R190604**

Drawn: Dana Lbay, 23/09/2021

Checked: Ram Zohar, 23/09/2021

Approved: Naam Nemesh

MFG: _____

QA: _____

Design stage: **Design review**

Material: _____

File Name: **STM RO Retrofit 100% design**

Weight: _____

ISO

Scale: 1:40

Sheet 4 of 6

Revision: 1

Finish Date: 10:48:49 2021

File location: C:\RVM Documents\CAD PROJECTS\ROTEC\STM\2. Drawing\1. SolidWorks Drawings\Layout\

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CITY CLIENTS

REFERENCE:

DATE: _____, 20XX

COMPUTER FILE NAME: _____

SP-FILE NO.: SP2602

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ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

MODIFICATIONS TO EXISTING RO TRAINS RIGHT VIEW

PROJECT AND SHEET TITLE

DESIGNED BY: ROTECH

DRAWN BY: ROTECH

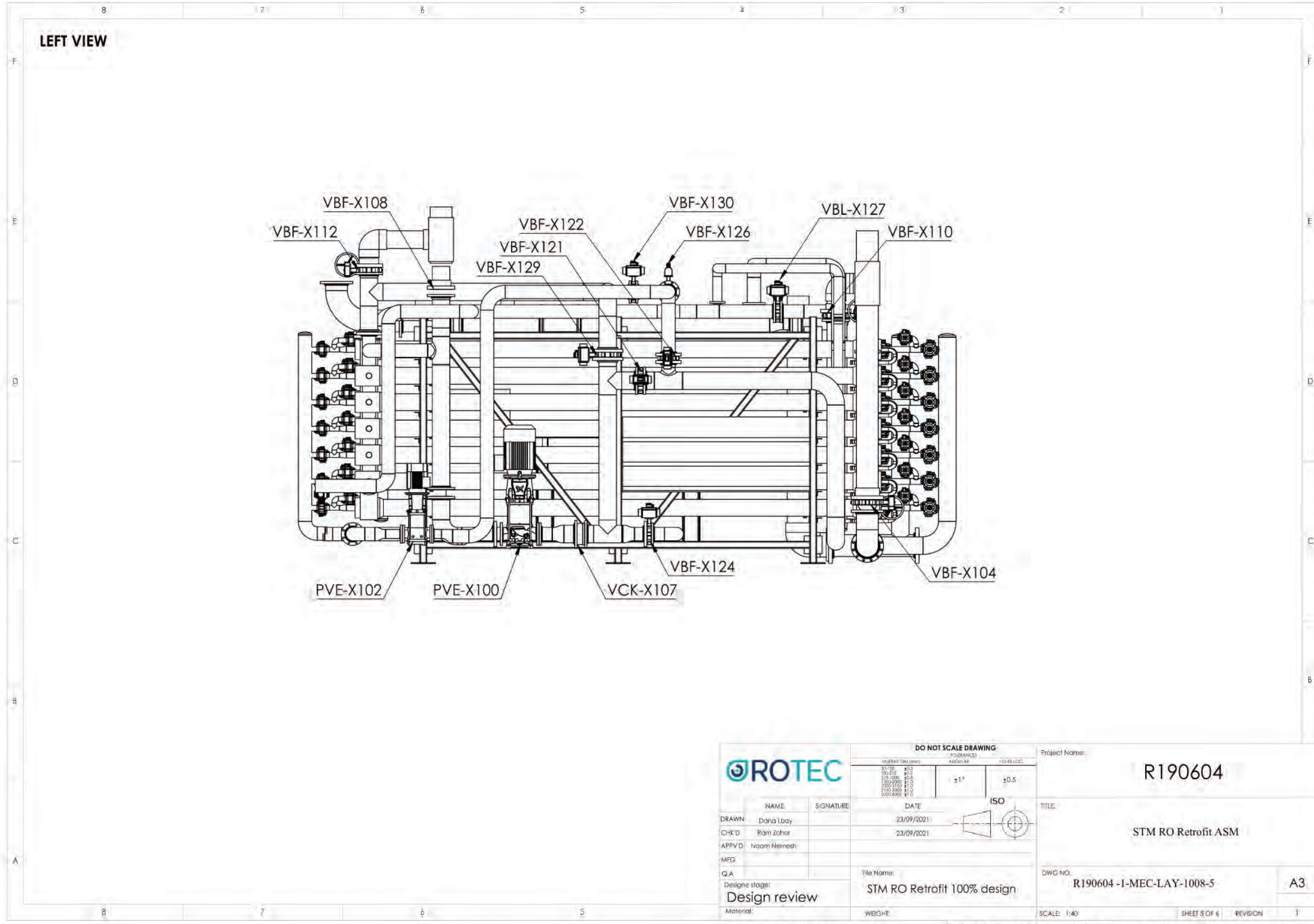
CHECKED BY: ROTECH

CONSULTANT JOB/SHEET NO. 154390

DRAWING NO. 7078

R-06-3002

SHT 162 of 300 SHS



		DO NOT SCALE DRAWING <small>UNITS: DIM (mm) TOLERANCES: AS SHOWN</small> <table border="1"> <tr> <td>0-10</td> <td>±0.1</td> <td rowspan="5"> </td> </tr> <tr> <td>10-30</td> <td>±0.2</td> </tr> <tr> <td>30-100</td> <td>±0.3</td> </tr> <tr> <td>100-300</td> <td>±0.4</td> </tr> <tr> <td>300-1000</td> <td>±0.5</td> </tr> </table>		0-10	±0.1		10-30	±0.2	30-100	±0.3	100-300	±0.4	300-1000	±0.5	Project Name: R190604							
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100-300	±0.4																					
300-1000	±0.5																					
<table border="1"> <tr> <th>NAME</th> <th>SIGNATURE</th> <th>DATE</th> </tr> <tr> <td>DRAWN: Dana Loya</td> <td></td> <td>23/09/2021</td> </tr> <tr> <td>CHK'D: Ram Zahar</td> <td></td> <td>23/09/2021</td> </tr> <tr> <td>APP'D: Naam Nemesh</td> <td></td> <td></td> </tr> <tr> <td>MFG:</td> <td></td> <td></td> </tr> <tr> <td>Q.A:</td> <td></td> <td></td> </tr> </table>		NAME	SIGNATURE	DATE	DRAWN: Dana Loya		23/09/2021	CHK'D: Ram Zahar		23/09/2021	APP'D: Naam Nemesh			MFG:			Q.A:			TITLE: STM RO Retrofit ASM		A3
NAME	SIGNATURE	DATE																				
DRAWN: Dana Loya		23/09/2021																				
CHK'D: Ram Zahar		23/09/2021																				
APP'D: Naam Nemesh																						
MFG:																						
Q.A:																						
Design stage: Design review		DWG NO: R190604 -I-MEC-LAY-1008-5																				
Material:		File Name: STM RO Retrofit 100% design		SCALE: 1:40																		
FINISH Date: 10/45:49 2021		File location: C:\R\My Documents\CAD PROJECTS\ROTEC\STM\2. Drawing\1. SolidWorks Drawings\Layout\																				

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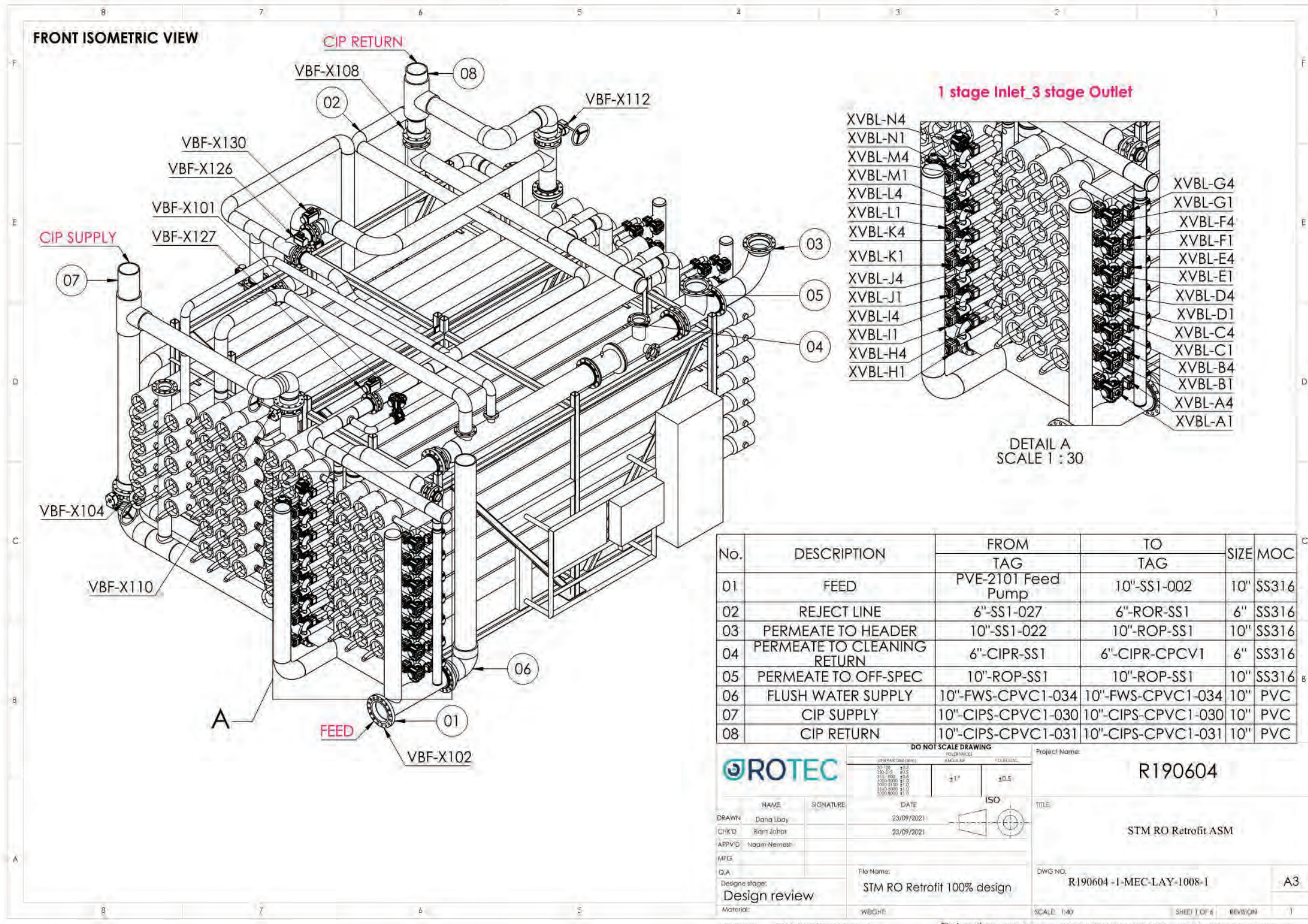
NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH
 CONSULTANT

REVIEWED BY: _____ DATE: _____ 20__	REFERENCE: _____
REVIEWED BY: _____ DATE: _____ 20__	DATE: _____, 20XX SUBMITTED BY: _____ COMPUTER FILE NAME: _____ SP-FILE NO.: SP2602
REVIEWED BY: _____ DATE: _____ 20__	APPROVED BY: _____ DATE: _____, 20XX ALEX NAZARCHUK, P.E. - CITY ENGINEER
OMVED POUR, P.E. - PROJECT MANAGER	ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
MODIFICATIONS TO EXISTING RO TRAINS
LEFT VIEW
 PROJECT AND SHEET TITLE

DESIGNED BY: ROTEK
DRAWN BY: ROTEK
CHECKED BY: ROTEK
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
R-06-3003
SHT 163 of 300 SH15



No.	DESCRIPTION	FROM TAG	TO TAG	SIZE	MOC
01	FEED	PVE-2101 Feed Pump	10"-SS1-002	10"	SS316
02	REJECT LINE	6"-SS1-027	6"-ROR-SS1	6"	SS316
03	PERMEATE TO HEADER	10"-SS1-022	10"-ROP-SS1	10"	SS316
04	PERMEATE TO CLEANING RETURN	6"-CIPR-SS1	6"-CIPR-CPCV1	6"	SS316
05	PERMEATE TO OFF-SPEC	10"-ROP-SS1	10"-ROP-SS1	10"	SS316
06	FLUSH WATER SUPPLY	10"-FWS-CPVC1-034	10"-FWS-CPVC1-034	10"	PVC
07	CIP SUPPLY	10"-CIPS-CPVC1-030	10"-CIPS-CPVC1-030	10"	PVC
08	CIP RETURN	10"-CIPS-CPVC1-031	10"-CIPS-CPVC1-031	10"	PVC

ROTEC

Project Name: **R190604**

TITLE: **STM RO Retrofit ASM**

DWG NO: **R190604-I-MEC-LAY-1008-1**

Scale: 1:40

Sheet 1 of 6

Revision: 1

ISO

DO NOT SCALE DRAWING

FINISH Date: 10:45:47 2021 1:00:00 23-Nov-21

File location: C:\R\My Documents\CAD PROJECTS\ROTEC\STM\2: Drawing\1: SolidWorks Drawings\Layout\

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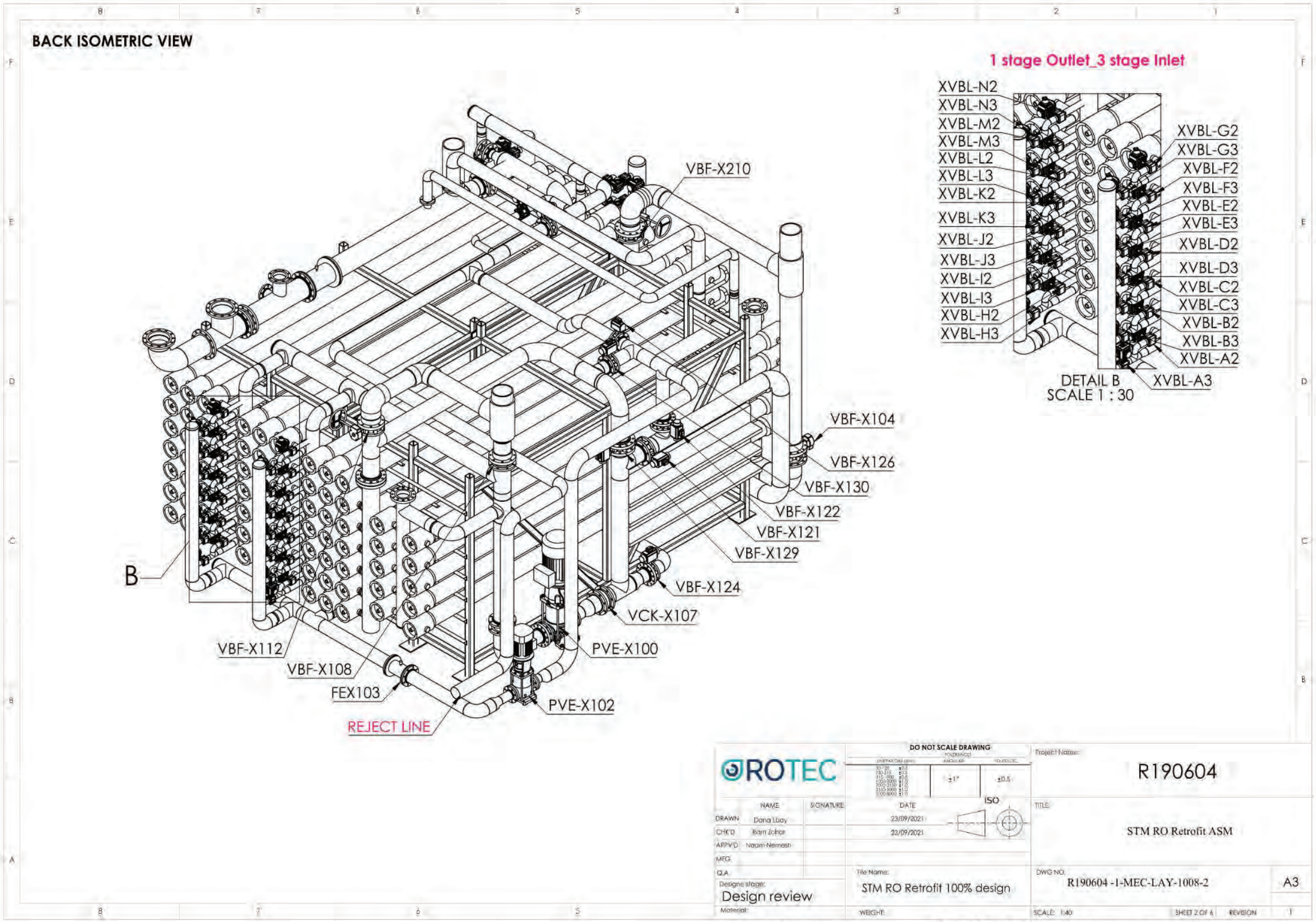
Brown and Caldwell
WALSH

REVIEWED BY: _____	DATE: _____, 20__	REFERENCE:
REVIEWED BY: _____	DATE: _____, 20__	DATE: _____, 20__
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME: _____
REVIEWED BY: _____	DATE: _____, 20__	SP-FILE NO.: SP2602
OMED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: _____, 20__

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
MODIFICATIONS TO EXISTING RO TRAINS
FRONT ISOMETRIC VIEW

PROJECT AND SHEET TITLE

DESIGNED BY: ROTECH
DRAWN BY: ROTECH
CHECKED BY: ROTECH
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
R-06-7001
SHT 164 of 300 SH15



		DO NOT SCALE DRAWING SHEET NO. 154390-001 DATE 23/09/2021 PROJECT NO. R190604	
DRAWN: Dana Loay CHK'D: Rami Zohar APP'VD: Naam Nemest MFG: Q.I.A. Design stage: Design review	NAME: Dana Loay SIGNATURE: [Signature] DATE: 23/09/2021 NAME: Rami Zohar SIGNATURE: [Signature] DATE: 23/09/2021 NAME: Naam Nemest SIGNATURE: [Signature]	TITLE: STM RO Retrofit ASM DWG NO.: R190604-I-MEC-LAY-1008-2 SCALE: 1:40 SHEET 2 OF 6 REVISION: 1	PROJECT NO.: R190604 TITLE: STM RO Retrofit ASM DWG NO.: R190604-I-MEC-LAY-1008-2 SCALE: 1:40 SHEET 2 OF 6 REVISION: 1

**FOR
REFERENCE
ONLY**

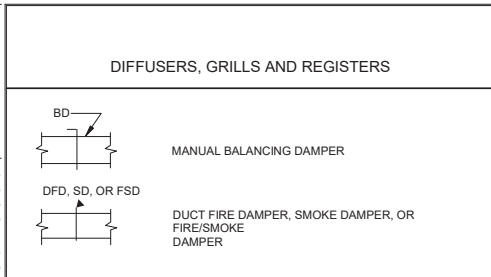
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NO.	DATE	BY	DESCRIPTION	APPROVED

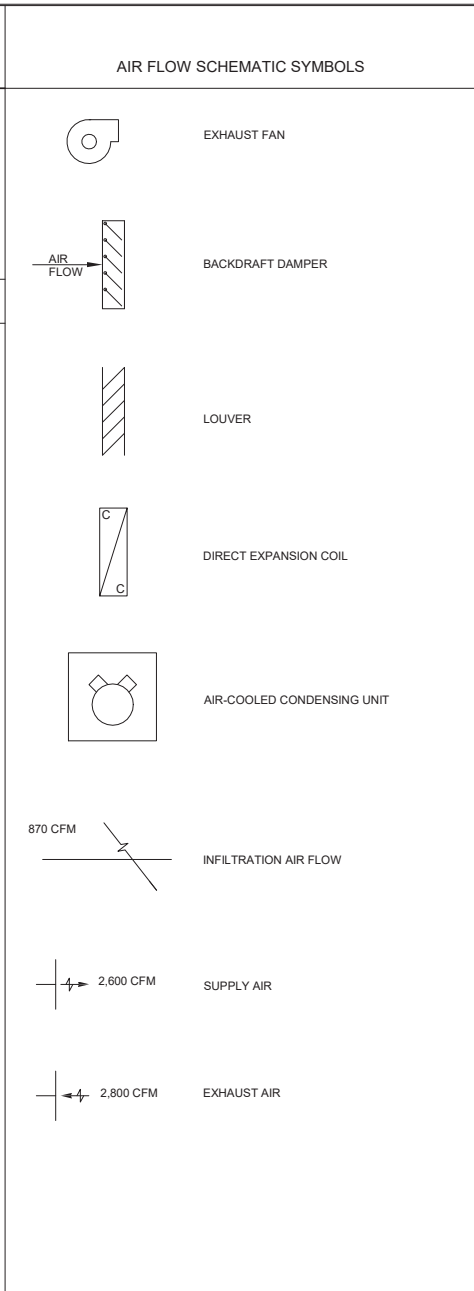
REVIEWED BY: _____ DATE: ____/____/20__ REVIEWED BY: _____ DATE: ____/____/20__ SUNNY WANG, P.E. - WATER RESOURCES MANAGER REVIEWED BY: _____ DATE: ____/____/20__ OMEED POUR, P.E. - PROJECT MANAGER	REFERENCE: DATE: ____/____/20__ COMPUTER FILE NAME: SUBMITTED BY: _____ SP-FILE NO.: SP2602 APPROVED BY: _____ DATE: ____/____/20__ ALEX NAZARCHUK, P.E. - CITY ENGINEER
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OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 MODIFICATIONS TO EXISTING RO TRAINS
 BACK ISOMETRIC VIEW

DESIGNED BY: ROTEK
DRAWN BY: ROTEK
CHECKED BY: ROTEK
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
R-06-7002
SHT 165 OF 300 SH15



- CONTROLS**
- (T) THERMOSTAT
 - (TS) TEMPERATURE SWITCH
 - (TE) TEMPERATURE SENSOR
 - (PS) PRESSURE SWITCH
 - (PE) PRESSURE SENSOR
 - (SD) SMOKE DETECTOR
 - (CO) CARBON DIOXIDE SENSOR
 - (FS) FLOW SWITCH
 - (HS) HAND SWITCH
 - (M) MOTORIZED



- HVAC STANDARD ABBREVIATIONS**
- A/C AIR CONDITIONING
 - AFF ABOVE FINISHED FLOOR
 - BD BALANCING DAMPER
 - BDD BACKDRAFT DAMPER
 - BTU BRITISH THERMAL UNIT
 - BTUH BRITISH THERMAL UNITS PER HOUR
 - CAP CAPACITY
 - CC COOLING COIL
 - CF CUBIC FEET
 - CFM CUBIC FEET PER MINUTE
 - D DEGREE
 - DIA DIAMETER
 - DN DOWN
 - EA EXHAUST AIR
 - EAT ENTERING AIR TEMPERATURE
 - EL ELEVATION
 - ESP EXTERNAL STATIC PRESSURE
 - EWT ENTERING WATER TEMPERATURE
 - EXH EXHAUST
 - F FAHRENHEIT
 - FD FIRE DAMPER
 - FF FINISHED FLOOR
 - FPM FEET PER MINUTE
 - FPS FEET PER SECOND
 - FSD COMBINATION FIRE/SMOKE DAMPER
 - FT FEET
 - GA GAUGE
 - GAL GALLONS
 - GALV GALVANIZED
 - GPM GALLONS PER MINUTE
 - HCA HAND-OFF-AUTO
 - HP HORSEPOWER
 - HR HOUR
 - HVAC HEATING, VENTILATING AND AIR CONDITIONING
 - ID INSIDE DIAMETER
 - IN INCHES
 - INFIL INFILTRATION
 - INSUL INSULATE, INSULATION
 - I/O INPUT/OUTPUT
 - KW KILOWATT
 - LAT LEAVING AIR TEMPERATURE
 - LBS POUNDS
 - LWT LEAVING WATER TEMPERATURE
 - MAX MAXIMUM
 - MBH THOUSANDS BTU PER HOUR
 - MIN MINIMUM, MINUTE
 - OA OUTSIDE AIR
 - OD OUTSIDE DIAMETER
 - ODP OPEN DRIP PROOF
 - PH PHASE
 - PI PRESSURE INDICATOR
 - PRES PRESSURE
 - PS PRESSURE SWITCH
 - PSIA POUNDS PER SQUARE INCH ABSOLUTE
 - PSIG POUNDS PER SQUARE INCH GAGE
 - QTY QUANTITY
 - RA RETURN AIR
 - RG RETURN GRILLE
 - RH RELATIVE HUMIDITY
 - RPM REVOLUTIONS PER MINUTE
 - SA SUPPLY AIR
 - SCFM STANDARD CUBIC FEET PER MINUTE
 - SD SMOKE DETECTOR, SMOKE DAMPER
 - SF SQUARE FEET, SUPPLY FILTER
 - SP SET POINT, STATIC PRESSURE
 - SST STAINLESS STEEL
 - T THERMOSTAT, THERMOMETER
 - TD TEMPERATURE DIFFERENCE
 - TDH TOTAL DYNAMIC HEAD
 - TEAO TOTALLY ENCLOSED AIR OVER
 - TEFC TOTALLY ENCLOSED FAN COOLED
 - TEMP TEMPERATURE
 - TS TEMPERATURE SWITCH
 - TW THERMOWELL
 - VAV VARIABLE AIR VOLUME
 - VEL VELOCITY
 - VTR VENT THROUGH ROOF
 - W WITH
 - W/O WITHOUT
 - WB WET BULB
 - WC WATER COLUMN
 - XP EXPLOSION PROOF

- GENERAL NOTES**
1. GENERAL HVAC NOTES APPLY TO ALL HVAC DRAWINGS, EQUIPMENT AND APPURTENANCES.
 2. IN CASE OF CONFLICT BETWEEN THE DRAWINGS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN UNLESS SPECIFICALLY APPROVED OTHERWISE.
 3. FURNISH AND INSTALL HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT, DUCTWORK AND APPURTENANCES TO AVOID INTERFERENCES WITH STRUCTURE, PIPING, EQUIPMENT, CONDUIT, LIGHTING, ETC. DUCTWORK AND ASSOCIATED ACCESSORIES MAY REQUIRE REROUTING TO FACILITATE INSTALLATION. SUBMIT THE PLAN AND DETAIL FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
 4. DRAWINGS SHALL BE CONSIDERED DIAGRAMMATIC ONLY.
 - A. FIELD VERIFY EXACT LOCATIONS, SIZES AND ELEVATIONS OF ALL ITEMS SHOWN AS EXISTING PRIOR TO DEMOLITION OR THE INSTALLATION OF ANY NEW WORK.
 - B. COORDINATE WITH ALL INVOLVED DISCIPLINES THE FINAL LOCATION OF EQUIPMENT AND PIPING.
 - C. WHEN PLACING NEW HVAC EQUIPMENT, VERIFY LOCATIONS OF EXHAUSTS AND VENTS. ALL EXHAUSTS AND VENTS SHALL BE A MINIMUM 10 FEET AWAY FROM HVAC UNITS OUTDOOR AIR INTAKES. FIELD VERIFY PRIOR TO BID WHERE THE INTERFERENCES ARE AND MAKE ALLOWANCES IN BID.
 - D. REVIEW THE CONTRACT DRAWINGS, THE MANUFACTURER'S LAYOUT DRAWINGS, INSTALLATION REQUIREMENTS, MANUFACTURER'S OPERATING AND MAINTENANCE REQUIREMENTS, AND CODE REQUIRED CLEARANCES.
 5. NOT ALL THE ITEMS ARE SHOWN IN PLANS, SECTIONS, DETAILS, AND SCHEMATICS DRAWINGS. THE PROVIDE ALL ITEMS EVEN IF THEY ARE SHOWN AT ONLY ONE LOCATION ON THE DRAWINGS. IN ADDITION, PROVIDE ALL ITEMS REQUIRED PER SPECIFICATION WHETHER THEY ARE SHOWN ON THE DRAWINGS OR NOT.
 6. THE DRAWINGS ARE NOT INTENDED TO SHOW EVERY OFFSET OR FITTING OR EVERY STRUCTURAL DIFFICULTY THAT MAY BE ENCOUNTERED DURING INSTALLATION OF THE WORK. LOCATION OF ALL ITEMS NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. EXACT LOCATIONS NECESSARY TO SECURE BEST CONDITIONS AND RESULTS MUST BE DETERMINED AT THE JOB SITE AND SHALL HAVE THE APPROVAL OF THE ARCHITECT OR ENGINEER OF RECORD BEFORE BEING INSTALLED.
 7. ALL VALVES SHOWN SHALL BE FULL LINE AND PORT SIZE UNLESS OTHERWISE NOTED.
 8. PENETRATION OF PIPES, CONDUITS, ETC., IN WALLS AND/OR FLOORS REQUIRING PROTECTED OPENINGS SHALL BE FIRE STOPPED. MATERIAL SHALL BE A TESTED ASSEMBLY APPROVED BY THE STATE FIRE MARSHAL. PENETRATIONS THROUGH OTHER SYSTEM COMPONENTS, E.G. DUCTWORK, IS STRICTLY PROHIBITED.
 9. INSTALL ALL WORK TO CLEAR ARCHITECTURAL, STRUCTURAL MEMBERS AND MECHANICAL SYSTEMS. ADJUST PIPING AS NECESSARY. NO ITEM SUCH AS PIPE, ETC., SHALL BE IN CONTACT WITH ANY EQUIPMENT. INSTALL ALL PIPING AS HIGH AS POSSIBLE OR AS SPECIFIED ON DRAWINGS TO MAINTAIN MAXIMUM ACCESSIBILITY.
 10. CLOSELY COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO TRENCHING, DEMOLITION OR INSTALLATION OF NEW. IDENTIFY SIZE AND LOCATIONS OF ALL PENETRATIONS THROUGH FOUNDATIONS, WALLS OR ROOFS PRIOR TO FABRICATION OF ANY SYSTEM OR ORDERING MATERIALS AFFECTED BY POSSIBLE COORDINATION CONFLICTS.
 11. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR CUTTING THRU STRUCTURAL SYSTEM. RECEIVE WRITTEN APPROVAL FROM THE ARCHITECT, STRUCTURAL ENGINEER, OR ENGINEER OF RECORD BEFORE MAKING PENETRATIONS THAT ARE NOT DETAILED ON THE CONSTRUCTION DOCUMENTS.
 12. USE CAUTION WHEN SAW-CUTTING THROUGH EXISTING CONCRETE FLOOR OR WALL. CONSTRUCTION FOR THE INSTALLATION OF MECHANICAL/PLUMBING SYSTEMS TO AVOID CUTTING EXISTING REBAR AT EDGE OF OPENING. LEAVE SUFFICIENT REBAR EXPOSED TO TIE NEW REINFORCING FOR REPLACEMENT CONCRETE AND OR OTHER STRUCTURAL ATTACHMENTS FOR NEW CONSTRUCTION.
 13. DESIGN BUILDER SHALL BE RESPONSIBLE FOR ANY REVISIONS, OFFSETS, ETC. TO AVOID EQUIPMENT, PIPING EQUIPMENT, OR STRUCTURE AND TO MAKE A COMPLETE AND FUNCTIONING SYSTEM.
 14. PIPE AND DUCT SUPPORTS AND EXPANSION CONTROL ARE THE RESPONSIBILITY OF THE DESIGN BUILDER.
 15. ADD DRAINS WITH 1/4" BALL VALVES AT THE LOW POINTS OF ALL HYDRONIC PIPING.
 16. DUCT SIZES INDICATED ARE CLEAR DIMENSIONS INSIDE THE DUCT OR THE DUCT LINING.
 17. DUCT AND PIPE CONNECTIONS TO EQUIPMENT, AND EQUIPMENT SUPPORTS SHALL BE VERIFIED AND ADJUSTED TO MATCH ACTUAL EQUIPMENT FURNISHED AT NO ADDITIONAL COST TO THE DISTRICT.
 18. DUCT AND PIPE CONNECTIONS TO EQUIPMENT SHALL INCLUDE A FLEXIBLE CONNECTOR AS APPROVED BY THE ENGINEER.
 19. DUCT SHALL BE INSTALLED AS SEAL CLASS "A" AND LEAKAGE CLASS BETTER THAN "4".
 20. AIRTIGHT ACCESS DOORS OF NOT LESS THAN 12" X 12" SIZE SHALL BE PROVIDED TO ALLOW INSPECTION OF ALL DAMPERS AND FILTERS.
 21. THE LOCATION OF REFRIGERANT PIPING TO THE AIR HANDLING UNITS SHALL NOT INTERFERE WITH FILTER REMOVAL OR SERVICING THE EQUIPMENT.
 22. ROOF FANS, VENTS, AND HOODS SHALL BE PROVIDED WITH 1/2" MESH STAINLESS STEEL BIRD SCREENS OVER ALL OPENINGS.
 23. ALL STAINLESS STEEL SHALL BE TYPE 316 OR 316L UNLESS SPECIFICALLY NOTED.
 24. APPLY HERESITE P-413 PHENOLIC COATING OR EQUAL ON ALL LOUVERS, CASINGS, COILS, AND FANS.
 25. HVAC DUCTING SHALL BE ALUMINUM UNLESS OTHERWISE NOTED

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NO.	DATE	BY	DESCRIPTION	APPROVED

NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH

REVIEWED BY : SUNNY WANG, P.E. - WATER RESOURCES MANAGER	DATE : _____ 20__	REFERENCE :	DATE : _____, 20XX	COMPUTER FILE NAME :
REVIEWED BY : OMED POUR, P.E. - PROJECT MANAGER	DATE : _____ 20__	SUBMITTED BY :	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO. : SP2602
REVIEWED BY :	DATE : _____ 20__	APPROVED BY :	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE : _____, 20XX

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

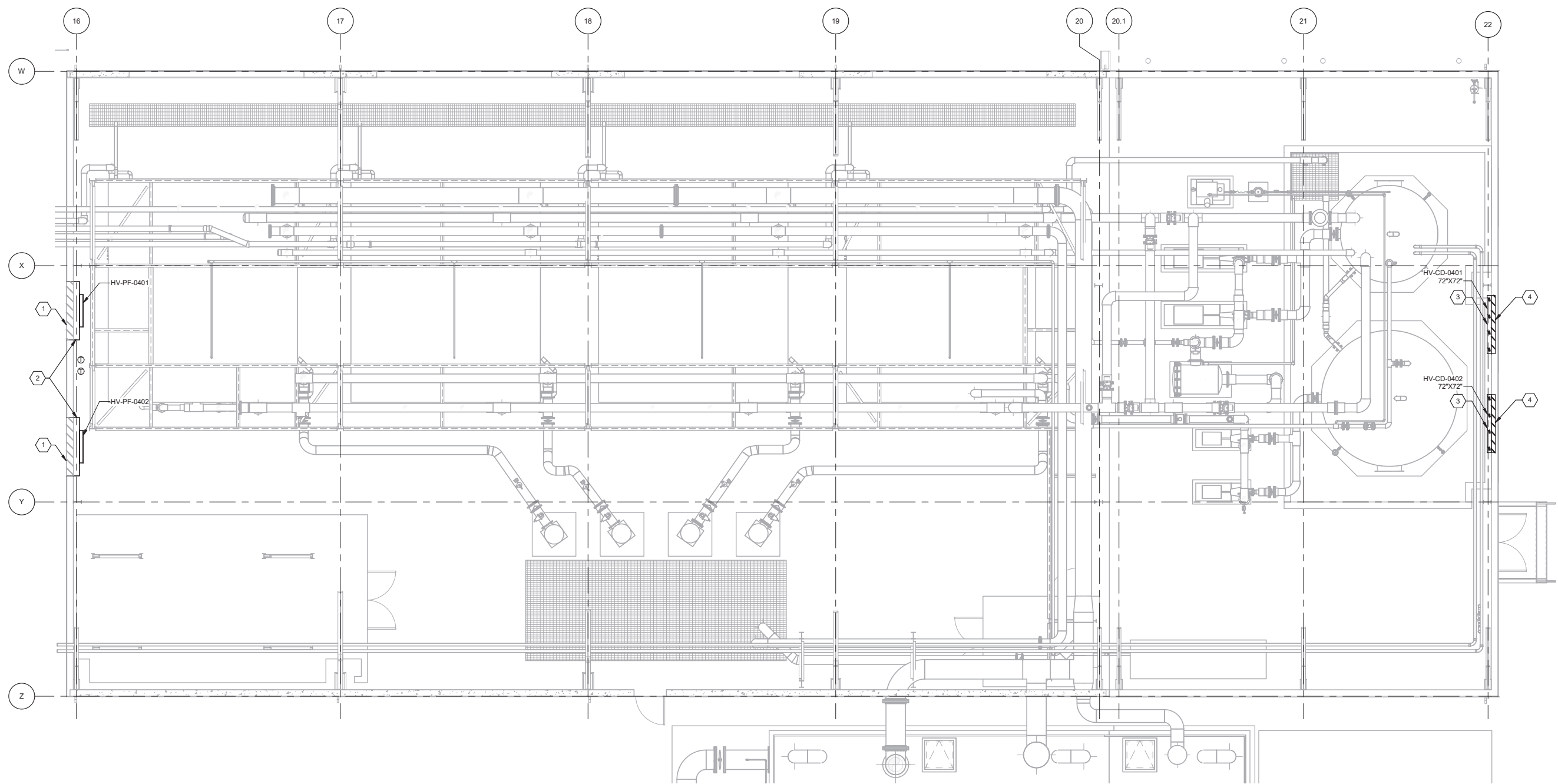
RO BUILDING HVAC GENERAL NOTES, ABBREVIATIONS, LEGENDS, & SYMBOLS

DESIGNED BY : HA
DRAWN BY : LEG
CHECKED BY : AZ
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
M-06-0001
SHT 166 of 303 SHTS

PROJECT AND SHEET TITLE



- KEY NOTES:**
- EXISTING LOUVER TO REMAIN. DEMO EXISTING DUCTWORK AND FAN. INSTALL NEW DAMPER AND FAN PER MANUFACTURER'S RECOMMENDATION FOR METAL BUILDINGS. DETAIL B/M-06-5001 AS REFERENCE.
 - PROVIDE SHEET METAL PLENUM
 - INSTALL CONTROL DAMPER AND LOUVER PER DETAIL A/M-06-5001. INTERLOCK CONTROL DAMPERS WITH EXHAUST FANS
 - COORDINATE LOUVER LOCATION WITH ARCHITECTURAL SHEET A-06-2001.



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



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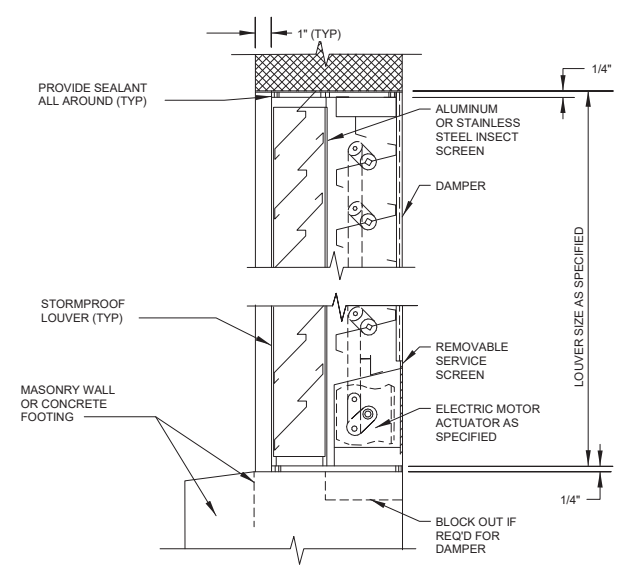
Brown and Caldwell
WALSH

REVIEWED BY :	DATE :	20
REVIEWED BY :	DATE :	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY :	DATE :	20
OMIED POUR, P.E. - PROJECT MANAGER		

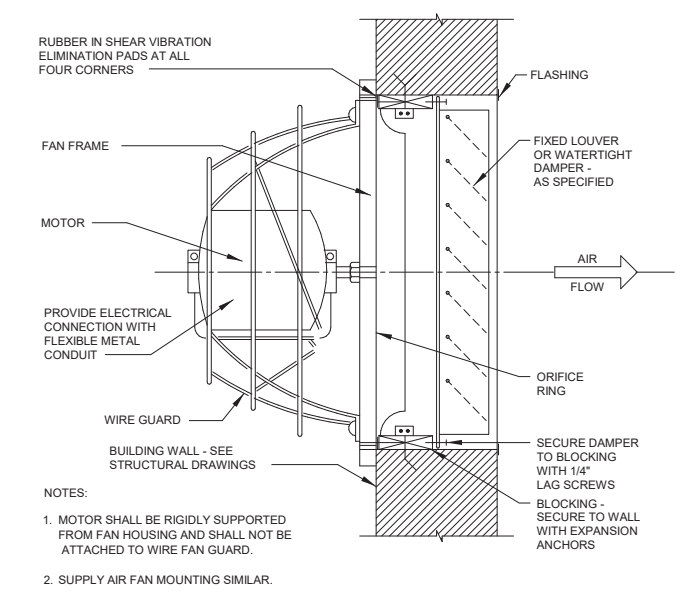
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SUBMITTED BY :			SP-FILE NO. : SP2602
APPROVED BY :	DATE :	20XX	
ALEX NAZARCHUK, P.E. - CITY ENGINEER			

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
RO BUILDING HVAC PLAN
 PROJECT AND SHEET TITLE

DESIGNED BY :	HA
DRAWN BY :	LEG
CHECKED BY :	AZ
CONSULTANT JOB/SHEET NO.	154390
DRAWING NO.	7078
M-06-1001	
SHT	167 of 303 SH15



A LOUVER AND DAMPER MOUNTING DETAIL



- NOTES:
1. MOTOR SHALL BE RIGIDLY SUPPORTED FROM FAN HOUSING AND SHALL NOT BE ATTACHED TO WIRE FAN GUARD.
 2. SUPPLY AIR FAN MOUNTING SIMILAR.

B WALL EXHAUST FAN MOUNTING

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REVIEWED BY : _____ DATE : ____ 20__ REVIEWED BY : _____ DATE : ____ 20__ SUNNY WANG, P.E. - WATER RESOURCES MANAGER REVIEWED BY : _____ DATE : ____ 20__ OMVED POUR, P.E. - PROJECT MANAGER	REFERENCE : _____ DATE : ____ 20XX SUBMITTED BY : _____ CURTIS CASTLE, P.E. - PRINCIPAL C.E. APPROVED BY : _____ DATE : ____ 20XX ALEX NAZARCHUK, P.E. - CITY ENGINEER	COMPUTER FILE NAME : _____ SP-FILE NO. : SP2602
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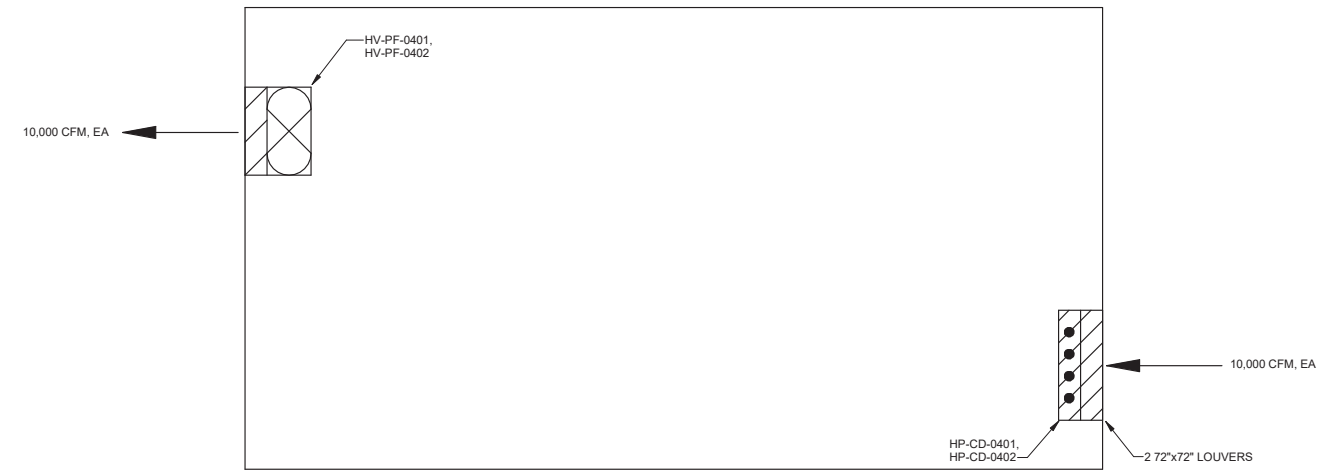
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 RO BUILDING HVAC DETAILS
 PROJECT AND SHEET TITLE



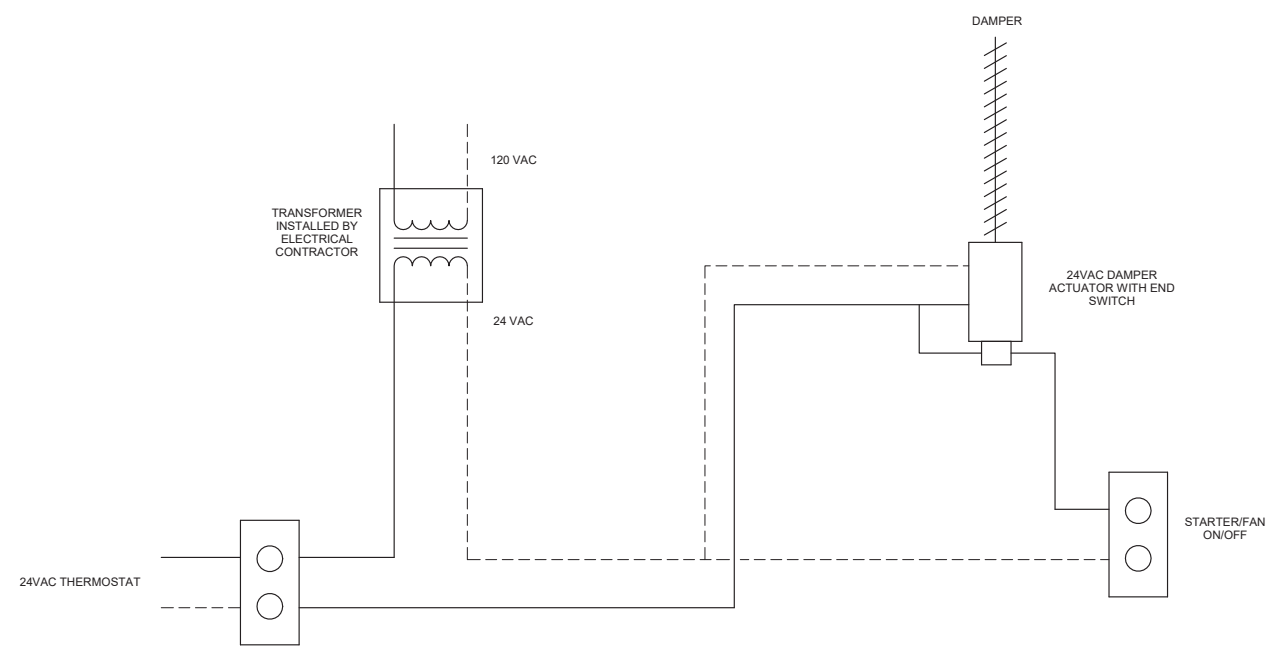
DESIGNED BY : HA
DRAWN BY : LEG
CHECKED BY : AZ
CONSULTANT JOB/SHEET NO. 154390
DRAWING NO. 7078
M-06-5001
SHT 168 of 303 SH15

EQUIPMENT NO.	NAME	LOCATION	TYPE	AIRFLOW REQUIREMENTS			ELECTRICAL REQUIREMENTS					WEIGHT (LBS)	NOTES
				AIRFLOW (CFM)	ESP (IN WC)	FRPM	MOTOR SIZE (BHP)	MOTOR SIZE (HP)	VOLTS/ PHASE	MOTOR ENCLOSURE	DRIVE TYPE		
HV-PF-0401	EXHAUST FAN	RO BUILDING	PROPELLER, EXHAUST	10,000	0.40	838	1.00	2 1/2	460/3	TEFC	BELT	162	1,2,3,4,5,6
HV-PF-0402	EXHAUST FAN	RO BUILDING	PROPELLER, EXHAUST	10,000	0.40	838	1.00	2 1/2	460/3	TEFC	BELT	162	1,2,3,4,5,6

NOTES:
 1. PROVIDE WITH BELT GUARD.
 2. PROVIDE WITH MOTOR AND DRIVER COVER.
 3. PROVIDE WITH TOGGLE STYLE DISCONNECT SWITCH.
 4. PROVIDE WITH GRAVITY BACKDRAFT DAMPER.
 5. PROVIDE WITH BEARING LUBRICATION LINES.
 6. INTERLOCK EXHAUST FANS WITH INTAKE CONTROL DAMPERS.



3 RO ROOM AIR FLOW SCHEMATIC



1 EXHAUST FAN CONTROL SCHEMATIC

EXHAUST FAN SEQUENCE OF OPERATIONS

ENABLED:
 THE EXHAUST FAN SHALL BE ENABLED IF THE FOLLOWING CONDITIONS ARE MET AND CONTROL DAMPER PROVES OPEN:
 1. THE THERMOSTAT READS A TEMPERATURE ABOVE 90F (ADJ)

DISABLED:
 THE EXHAUST FAN SHALL BE DISABLED IF THE FOLLOWING CONDITIONS ARE MET:
 1. THE THERMOSTAT READS A TEMPERATURE ABOVE 90F

DAMPER SEQUENCE OF OPERATIONS

OPEN:
 THE CONTROL DAMPER SHALL BE OPEN WHEN THE EXHAUST FAN IS ENABLED

CLOSED:
 THE CONTROL DAMPER SHALL BE CLOSED WHEN EXHAUST FAN IS DISABLED

FAILURE MODE:
 THE CONTROL DAMPER SHALL FAIL IN THE OPEN POSITION IF COMMUNICATION IS LOST



NO.	DATE	BY	DESCRIPTION	APPROVED

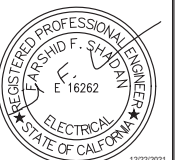
REVIEWED BY :	DATE :	20__
REVIEWED BY :	DATE :	20__
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY :	DATE :	20__
OMIED POUR, P.E. - PROJECT MANAGER		

REFERENCE :	DATE :	20XX
SUBMITTED BY :	COMPUTER FILE NAME :	
CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO. :	SP2602
APPROVED BY :	DATE :	20XX
ALEX NAZARCHUK, P.E. - CITY ENGINEER		

DESIGNED BY : HA
 DRAWN BY : LEG
 CHECKED BY : AZ
 CONSULTANT JOB/SHEET NO. 154390
 DRAWING NO. 7078
M-06-6001
 SHEET 169 OF 303 SH15
 OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 RO BUILDING HVAC SCHEDULES AND AIR FLOW SCHEMATIC
 PROJECT AND SHEET TITLE

C:\BCP\W\0408745E-01-0001 LEGENDS AND SYMBOLS - 1.DWG 12/20/2021 4:34 PM

<h3>RACEWAYS</h3> <p>HH1000 MANHOLE (MH), HANDHOLE (HH), PULLBOX (PB)</p> <p>JB1000 JUNCTION BOX. OPTIONAL IDENTIFIER</p> <p>TB1000 TERMINAL BOX. OPTIONAL IDENTIFIER</p> <p>PBD1000:1,3,5 HOME RUN EXPOSED - SEE PANELBOARD, SWITCHBOARD, OR MCC SCHEDULE FOR CIRCUIT INFORMATION</p> <p>EXAMPLE: HOME TO PANELBOARD PBD-1900, CIRCUITS 1, 3, AND 5</p> <p>PBD1000:1,3,5 HOME RUN CONCEALED - SEE PANELBOARD, SWITCHBOARD, OR MCC SCHEDULE FOR CIRCUIT INFORMATION.</p> <p>EXAMPLE: HOME TO PANELBOARD PBD-1900, CIRCUITS 1, 3, AND 5</p> <p>CABLE TRAY MODIFIERS: CTS - 24VDC OR LESS CTC - 120V CONTROL CONDUCTORS CTP - 600V POWER CONDUCTORS</p> <p>CABLE #4/0 AND LARGER SHALL NOT BE STACKED VERTICALLY</p> <p>WHEN TWO TRAY MODIFIERS IDENTIFY A SINGLE TRAY, THE CONTRACTOR MAY USE DIVIDER OR INSTALL SEPARATE TRAYS (CTC/CTS)</p> <p>CABLE TRAY WITH COVER MODIFIER, AS ABOVE</p> <p>----- RACEWAY CONCEALED</p> <p>----- RACEWAY TURNED TOWARD THE VIEWER</p> <p>----- RACEWAY TURNED DOWN</p> <p>----- CONDUIT CAPPED</p> <p>--- OH --- OVERHEAD POWER LINE</p> <p>--- DB --- UNDERGROUND DUCT BANK</p> <p>----- RACEWAY EXPOSED</p> <p>===== UNDERGROUND DUCT BANK (PLAN VIEW/REVIT)</p>	<h3>DISTRIBUTION EQUIPMENT</h3> <p>APPROXIMATE SHAPE AND SCALE REPRESENTED WHERE POSSIBLE. HOWEVER, EXACT SIZE AND NUMBER OF SECTIONS IS ESTIMATED</p> <p>MCC1000 EQUIPMENT DESIGNATION (EXAMPLE)</p> <p>PBD1000 EQUIPMENT DESIGNATION (EXAMPLE)</p> <h3>LIGHTING</h3> <p>FIXTURE IDENTIFIER:</p> <p>NUMBER OF FIXTURES (SHOWN ONLY WHEN REQUIRED FOR CLARITY)</p> <p>FIXTURE TYPE. TYPE APPLIES TO ALL FIXTURES OF THE SAME SHAPE WITHIN A ROOM OR AREA.</p> <p>MOUNTING: L = POLE G = GROUND P = PENDANT R = RECESSED S = SURFACE W = WALL</p> <p>MOUNTING HEIGHT, FLOOR TO BOTTOM OF FIXTURE LION. AHAP= AS HIGH AS POSSIBLE. AD= ABOVE DOOR.</p> <p>NUMBER OF LAMPS/LAMP WATTAGE</p> <p>CONTROL: PHOTOCELL, SWITCH, CONTACTOR</p> <p>LIGHTING FIXTURE SHAPES AND SCALE ARE REPRESENTED WHERE POSSIBLE. THE EXAMPLES SHOWN BELOW ARE TYPICAL APPLICATIONS</p> <p>RECESSED FLUORESCENT FIXTURE</p> <p>SUSPENDED PENDANT MOUNTED FIXTURE</p> <p>SURFACE MOUNTED FIXTURE</p> <p>NS EMERGENCY LIGHTING FIXTURES, FIXTURES WITH EMERGENCY BALLASTS, AND FIXTURES IDENTIFIED WITH AN 'NS' SHALL BE PROVIDED WITH NON-SWITCHED POWER SOURCE</p> <p>FLUORESCENT FIXTURE WITH EMERGENCY BATTERY PACK</p> <p>LIGHT FIXTURE</p> <p>WALL MOUNTED FIXTURE</p> <p>DIRECTIONAL LIGHT</p> <p>POLE MOUNTED AREA LIGHT</p> <p>EMERGENCY LIGHTING UNIT SELF CONTAINED</p>	<h3>LIGHTING CONTINUED</h3> <h4>EXIT LIGHTS:</h4> <p>● SURFACE ON CEILING</p> <p>⊗ WALL MOUNTED</p> <p>⊗ WITH DIRECTIONAL ARROWS</p> <p>3a CIRCUIT IDENTIFIER: WHEN SHOWN ADJACENT TO FIXTURE IDENTIFIES CIRCUIT NUMBER AND SWITCH. EXAMPLE: CIRCUIT 3, CONTROLLED BY SWITCH a</p> <p>⊙ PC PHOTO CELL</p> <p>⊙ OS OCCUPANCY SENSOR</p> <h4>WIRING DEVICES</h4> <h4>SWITCHES:</h4> <p>UNLESS OTHERWISE NOTED, ALL SWITCHES ARE WALL MOUNTED</p> <p>\$ TOGGLE SWITCH, SINGLE POLE</p> <p>\$\$ GANGED SWITCHES IN COMMON BOX WITH COMMON WALL PLATE</p> <p>\$^a SUPERSCRIPIT INDICATES CIRCUIT CONTROLLED: a, b, c, ETC. MAY BE COMBINED WITH CIRCUIT NUMBER. EXAMPLE: 1a, 4b, ETC</p> <p>\$₃ SUBSCRIPT MODIFIER INDICATES: 2 = DOUBLE POLE 3 = THREE WAY 4 = FOUR WAY k = KEY OPERATED MC = MOMENTARY CONTACT, THREE POSITION MS = MANUAL (MOTOR) STARTER OR SWITCH WITH OVERLOADS R = RHEOSTAT (DIMMER, SPEED CONTROL) O = OCCUPANCY SWITCH</p> <p>⊞ DIMMER</p> <h4>RECEPTACLES:</h4> <p>⊖ WP DUPLEX RECEPTACLE</p> <p>RECEPTACLE MODIFIERS: WP = WEATHER PROOF GFI = GROUND FAULT CIRCUIT INTERRUPTER</p> <p>⊖ HAZARDOUS AREA; EXPLOSION PROOF</p> <p>⊖ EXPLOSION PROOF, CLASS 1, DEAD FRONT, 45° ANGLE, TWO GANG</p> <p>⊖ RECESSED FLOOR RECEPTACLE - ANY RECEPTACLE INSIDE A SQUARE</p> <p>⊖ SURFACE FLOOR RECEPTACLE - ANY RECEPTACLE INSIDE A TRIANGLE</p> <p>⊖ GANGED RECEPTACLES--IN COMMON BOX, WITH COMMON WALL PLATE</p> <p>⊖ RECEPTACLE, CLOCK HANGER</p> <p>⊖ RECEPTACLE, DUPLEX ON EMERGENCY</p> <p>⊖ 480V RECEPTACLE</p>	<h3>GROUNDING</h3> <p>⊖ GROUND ROD</p> <p>⊖ GROUND ROD WITH GROUND WELL</p> <p>--- G --- GROUND CONNECTION, COMPRESSION TYPE, EXOTHERMIC. SEE SPECIFICATIONS.</p> <p>--- G --- GROUNDING CONDUCTOR</p> <p>⊖ GROUND CONNECTION</p> <p>⊖ GROUND CONNECTION TO STRUCTURAL REINFORCEMENT</p> <p>⊖ LIGHTNING ROD/AIR TERMINAL</p> <h3>MOTORS AND EQUIPMENT</h3> <p>⊖ MOTOR STARTER, INDIVIDUAL. NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY</p> <p>⊖ COMBINATION MOTOR STARTER. NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY</p> <p>⊖ DISCONNECT SWITCH, NON-FUSED EXAMPLE: 60 AMP</p> <p>⊖ DISCONNECT SWITCH, FUSED EXAMPLE: 100 AMP, 2P, 80 AMP FUSES</p> <p>⊖ MOTOR</p> <p>⊖ SOLENOID VALVE</p> <p>⊖ HEATER</p> <p>⊖ THERMOSTAT</p> <p>⊖ WATER HEATER</p> <p>⊖ FIELD INSTRUMENT</p> <p>⊖ LOCAL CONTROL STATION</p> <p>LCP-0001 EQUIPMENT DESIGNATION</p> <p>CONTROL PANEL, VFD, RVSS, APPROXIMATE SHAPE AND SCALE.</p> <h3>AREA IDENTIFICATION</h3> <p>C1-D1 HAZARDOUS AREA CLASSIFICATION</p> <p>C1-D2 HAZARDOUS AREA CLASSIFICATION</p>	<h3>TELEPHONE & COMMUNICATION SYSTEMS</h3> <p>UNLESS OTHERWISE NOTED, TELEPHONE OUTLETS SHALL BE MOUNTED AT SAME HEIGHT AS THE RECEPTACLES.</p> <p>⊖ A EXTERNAL LINE OR PLANT PHONE SYSTEM OUTLET</p> <p>OPTIONAL MODIFIERS: A = ATTENDANT'S CONSOLE F = FUTURE INSTRUMENT J = JACK, PLUG-IN TYPE W = WALL INSTRUMENT</p> <p>⊖ BELL</p> <p>⊖ D OUTLET, DATA COMMUNICATION</p> <p>⊖ SECURITY CAMERA</p> <p>⊖ SPEAKER</p> <p>⊖ AUDIBLE HORN</p> <p>⊖ B STROBE LIGHT (BLUE SHOWN)</p> <p>⊖ CS ELECTRONIC CARD SWIPE</p> <p>⊖ SD SMOKE DETECTOR</p> <p>⊖ R RATE-OF-RISE DETECTOR</p> <h3>CABLE/RACEWAY IDENTIFICATION</h3> <p>EQUIPMENT NUMBER SEE PID OR SINGLE LINES</p> <p>A- AAA###-A</p> <p>UNIT SUFFIX FOR MULTIPLES</p> <p>EQUIPMENT TYPE (ABBREVIATION)</p> <p>MODIFIER INCLUDES: H - POWER (ABOVE 600V) P - POWER PC - POWER AND CONTROL C - CONTROL S - SIGNAL F - FIBER OPTIC X - SPARE PLC - PROGRAMMABLE LOGIC CONTROLLER N - ETHERNET</p> <h3>GENERAL NOTES:</h3> <ol style="list-style-type: none"> SYMBOLS AND ABBREVIATION DRAWINGS ARE GENERAL IN NATURE. SOME SYMBOLS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS SYMBOLS ARE ARRANGED ON SPECIFIC DRAWINGS AND IN CATEGORIES FOR CONVENIENCE ONLY; SYMBOLS MAY BE USED ON ANY OF THE CONTRACT DRAWINGS IDENTIFICATIONS (ID), SIZES, RATINGS, LOCATIONS AND SIMILAR INFORMATION SHOWN ASSOCIATED WITH SYMBOLS ARE OPTIONAL; EXAMPLES OF SUCH INFORMATION ARE SHOWN WITH SOME SYMBOLS FOR CLARITY
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City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED



REVIEWED BY : SUNNY WANG, P.E. - WATER RESOURCES MANAGER	DATE : _____, 20__
REVIEWED BY : OMED POUR, P.E. - PROJECT MANAGER	DATE : _____, 20__

REFERENCE : DATE : _____, 20__	COMPUTER FILE NAME :
SUBMITTED BY : CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO. : SP2602
APPROVED BY : ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE : _____, 20__

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

LEGEND AND SYMBOLS - 1

DESIGNED BY : FRF
 DRAWN BY : FRF
 CHECKED BY : AZ
 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
E-01-0001
 SH1 170 OF 303 SH15

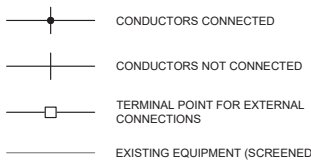
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SHEET Dwg. No. 1

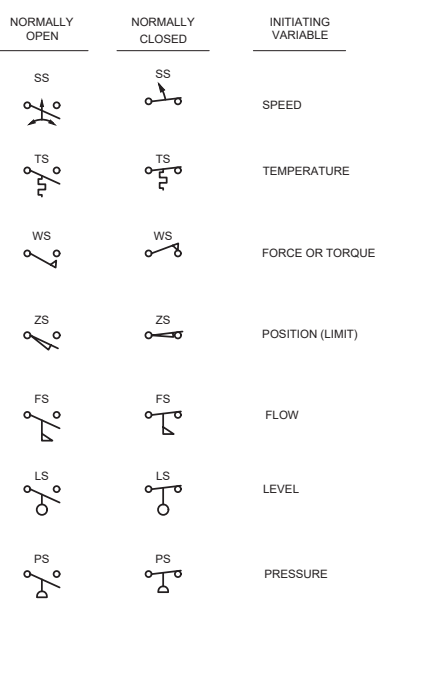
CONTROL DIAGRAM SYMBOLS

ONE LINE DIAGRAM SYMBOLS

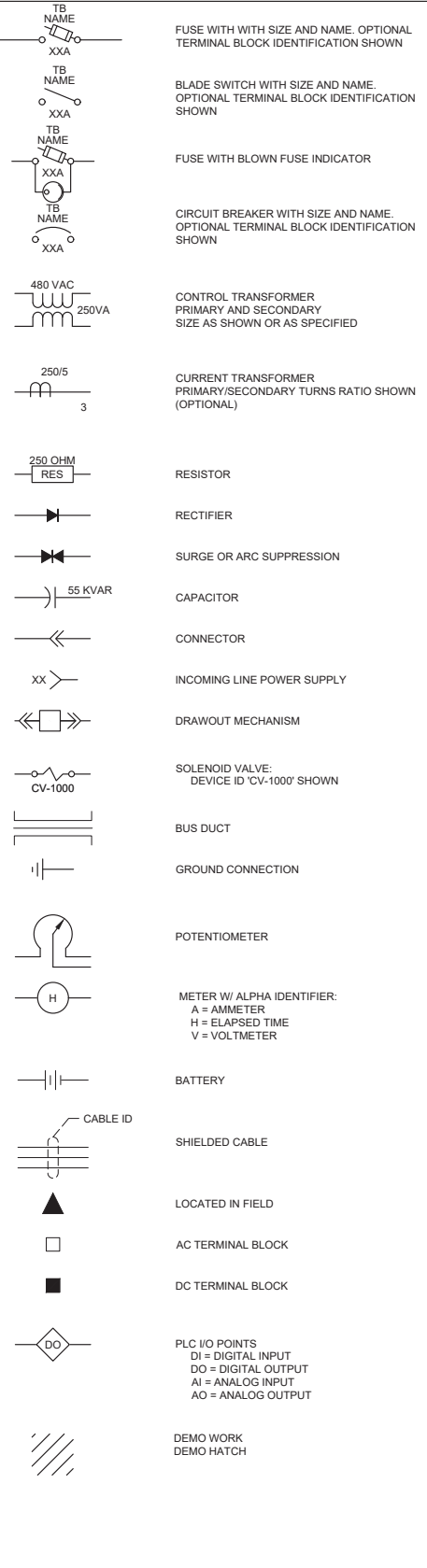
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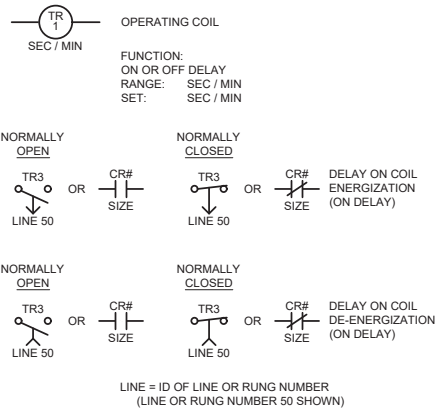
INPUT SWITCHES



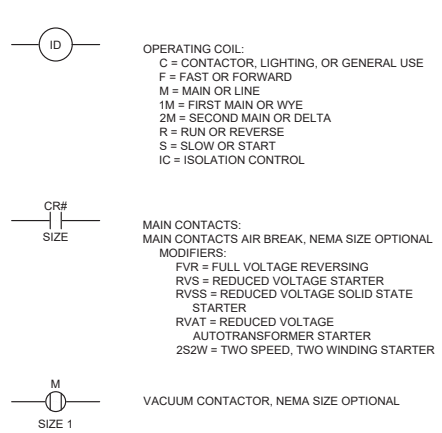
MISCELLANEOUS



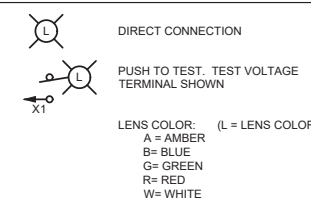
TIMING RELAYS



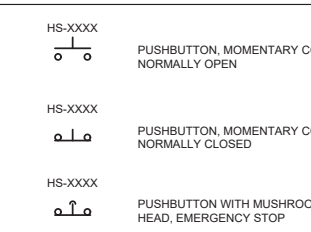
CONTACTORS



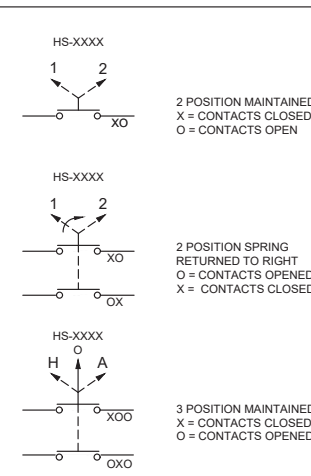
INDICATING LIGHTS



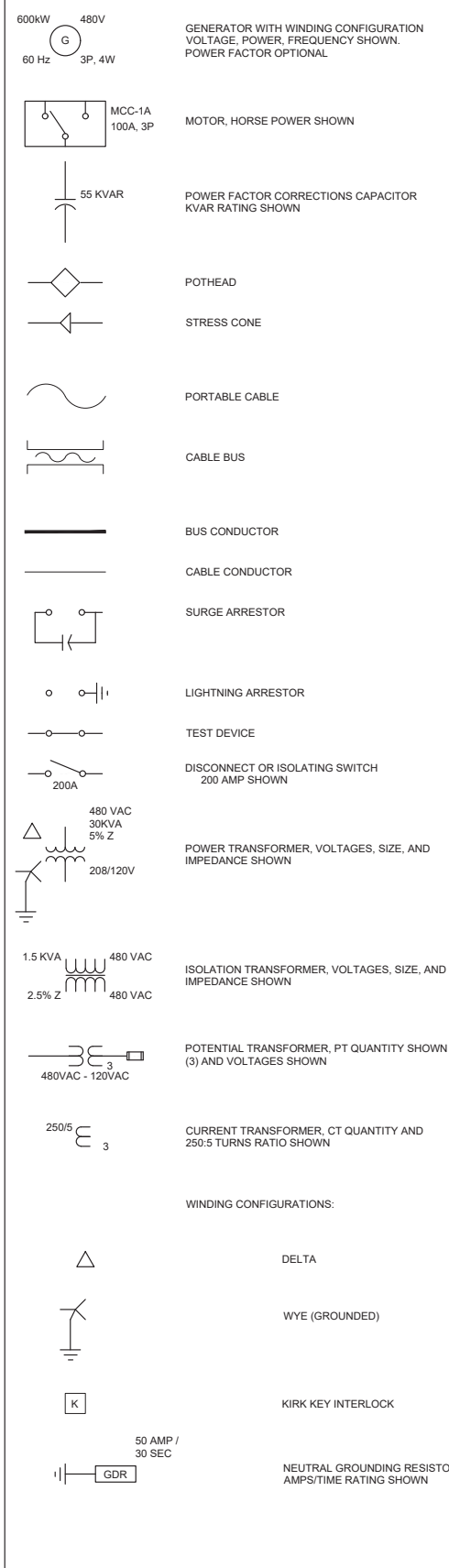
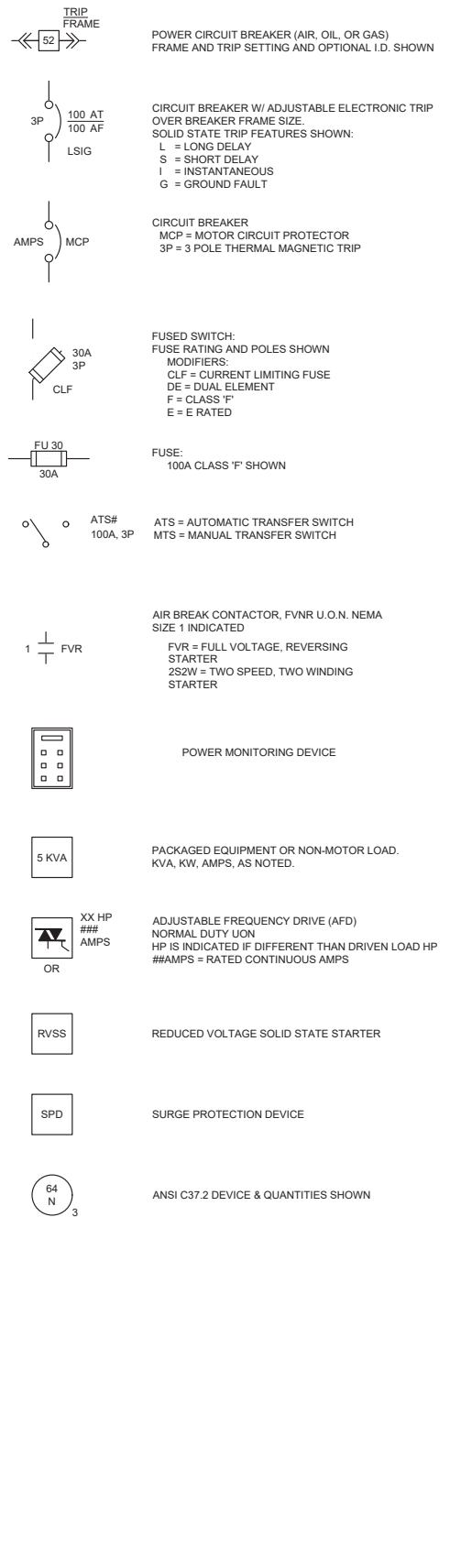
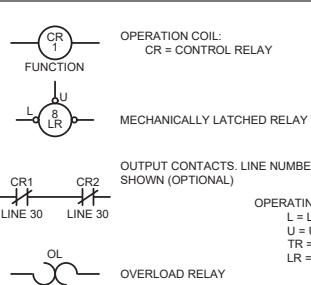
PUSHBUTTONS



SELECTOR SWITCHES



CONTROL RELAYS



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NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH

REVIEWED BY: _____	DATE: _____, 20__	REFERENCE:
REVIEWED BY: _____	DATE: _____, 20__	DATE: _____, 20__X COMPUTER FILE NAME: _____
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO.: SP2602
REVIEWED BY: _____	DATE: _____, 20__	APPROVED BY: _____ DATE: _____, 20__X
OMED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	ENGINEERING AND STREET SERVICES

DESIGNED BY: FRF
DRAWN BY: FRF
CHECKED BY: AZ
CONSULTANT JOB SHEET NO. 154390
DRAWING NO. 7078
LEGEND AND SYMBOLS - 2
PROJECT AND SHEET TITLE

REGISTERED PROFESSIONAL ENGINEER
LARSCHIO F. SHADYAN
E 16262
ELECTRICAL
STATE OF CALIFORNIA

12/22/2021

E-01-0002
SHT 171 OF 303 SHS

ELECTRICAL ABBREVIATIONS

GENERAL CONSTRUCTION NOTES:

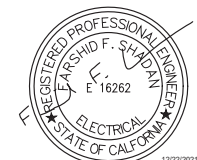
- NOTES:
 1. ABBREVIATIONS SHOWN ON ELECTRICAL DRAWINGS ARE IN ACCORDANCE WITH ASME STANDARD Y14.38A
 2. ABBREVIATIONS ON THIS SHEET ARE IN ADDITION TO THE ABBREVIATIONS DEFINED ON OTHER DRAWINGS.
 3. ABBREVIATIONS HEREIN SHALL TAKE PRECEDENCE IN CASE OF CONFLICT.
 4. ABBREVIATIONS ARE NOT EQUIPMENT NUMBERING PREFIXES LISTED ON OTHER DRAWINGS.

A, AMP	AMP(S), AMPERE(S)				
AC	ALTERNATING CURRENT	HZ	HERTZ (CYCLES PER SECOND)	RCPT	RECEPTACLE
AFD	ADJUSTABLE FREQUENCY DRIVE			REF	REFERENCE
AFF	ABOVE FINISHED FLOOR	IAW	IN ACCORDANCE WITH	REQD	REQUIRED
AHAP	AS HIGH AS POSSIBLE	ICOM	INTERCOM	RE STL	REINFORCING STEEL
AIC	AMPS INTERRUPTING CAPACITY, SYMM.	ID	INSIDE DIAMETER	RMS	ROOT MEAN SQUARE
AL	ALUMINUM	IMC	INTERMEDIATE METAL CONDUIT	RTD	RESISTANCE TEMPERATURE DETECTOR
ARCH	ARCHITECT(U)RAL	INCAND	INCANDESCENT	RTU	REMOTE TERMINAL UNIT
ASYM	ASYMMETRICAL	INTLK	INTERLOCK	RVSS	REDUCED VOLTAGE SOLID STATE STARTER
ATS	AUTOMATIC TRANSFER SWITCH	INST	INSTANTANEOUS	SA	SURGE ARRESTOR
AUTO	AUTOMATIC	I/O	INPUT-OUTPUT	SCE	SOUTHERN CALIFORNIA EDISON
AUX	AUXILIARY	IPB	INSTRUMENT PULLBOX	SCR	SILICON CONTROLLED RECTIFIER
AWG	AMERICAN WIRE GAUGE	JB	JUNCTION BOX	SD	SMOKE DETECTOR
B	BLOWER	KCMIL	1000 CIRCULAR MIL	SEC	SECONDARY
BAT	BATTERY	KV	KILOVOLT	SEL	SELECTOR
BC	BARE COPPER	KVA	KILOVOLT-AMPERE	SHH	SIGNAL HANDHOLE
BLDG	BUILDING	KVAR	KILOVOLT-AMPERE REACTIVE	SLD	SINGLE LINE DIAGRAM
BOT	BOTTOM	KW	KILOWATT	SMH	SIGNAL MANHOLE
C	CONDUCTOR, CONDUIT	KWH	KILOWATT-HOUR	SPEC	SPECIFICATION
CB	CIRCUIT BREAKER	L	LONG	SPDR	SURGE PROTECTION DEVICE
CHGR	BATTERY CHARGER	LC	LIGHTING CONTACTOR	SPKR	SPEAKER
CKT	CIRCUIT	LCP	LOCAL CONTROL PANEL	ST	SHORT TIME
CLG	CEILING	LCS	LOCAL CONTROL STATION	STP	SHIELDED TWISTED PAIR
CM	CENTIMETERS	LED	LIGHT EMITTING DIODE	SUB	SUBSTATION
CND	CONDUIT	LHH	LOW VOLTAGE HANDHOLE	SW	SWITCH
CNTL	CONTROL	LMH	LOW VOLTAGE MANHOLE	SWBD	SWITCHBOARD
C.O.	CONDUIT ONLY, SPARE	LRP	LIGHTING RELAY PANEL	SWGR	SWITCHGEAR
CONC	CONCRETE	LT	LONG TIME	SYMM	SYMMETRICAL
CPT	CONTROL POWER TRANSFORMER	LTG	LIGHTING	SYS	SYSTEM
CT	CURRENT TRANSFORMER	LV	LOW VOLTAGE	TB	TERMINAL BOX
C.T.	CONSTANT TORQUE	M	METER	TEL	TELEPHONE
CU	COPPER	MA	MILLIAMPERE	TEMP	TEMPERATURE
DB	DUCT BANK, DIRECT BURIAL	MBS	MANUAL BYPASS SWITCH	TFR	TRANSFORMER
DC	DIRECT CURRENT, DATA CABLE	MCC	MOTOR CONTROL CENTER	TRI	TRIAD
DCU	DISTRIBUTED CONTROL UNIT	MCP	MOTOR CIRCUIT PROTECTOR	TV	TELEVISION
DET	DETAIL	MPC	MINI POWER CENTER	TYP	TYPICAL
DIAG	DIAGRAM	MECH	MECHANICAL	U/G	UNDERGROUND
DSC	DISCONNECT	MFR	MANUFACTURE(R)	UON	UNLESS OTHERWISE NOTED
DWG	DRAWING	MH	MANHOLE, METAL HALIDE	UPS	UNINTERRUPTABLE POWER SUPPLY
EA	EACH	MIC	MICROPHONE	V	VOLT
EC	EMPTY CONDUIT	MIS	MANAGEMENT INFORMATION SYSTEM	VA	VOLT-AMPERE
ECP	EQUIPMENT CONTROL PANEL	MISC	MISCELLANEOUS	VAR	VOLT-AMPERE REACTIVE
EDB	ELECTRICAL DUCTBANK	MM	MILLIMETER	VC	VACUUM CONTACTOR
EG	ENGINE GENERATOR SET	MMH	MEDIUM VOLTAGE MANHOLE	VCP	VENDOR CONTROL PANEL
EL	ELEVATION	MOV	MOTOR OPERATED VALVES	VND	VENDOR
ELEC	ELECTRICAL	MTS	MANUAL TRANSFER SWITCH	V.T.	VARIABLE TORQUE
EMH	ELECTRICAL MANHOLE	MV	MILLIVOLT, MEDIUM VOLTAGE	W	WATT, WIRE, WIDE
EMER	EMERGENCY	MVMC	MEDIUM VOLTAGE MOTOR CONTROL	W/	WITH
ENCL	ENCLOSURE/ENCLOSED	N/A	NOT APPLICABLE	W/O	WITHOUT
EPB	ELECTRICAL PULLBOX	N.C.	NORMALLY CLOSED	WW	WIREFRAY
ETM	ELAPSED TIME METER	N.D.	NORMAL DUTY (VFD)	WG	WITH GROUND
EP	EXPLOSION PROOF	NEUT, N	NEUTRAL NEUT, N	WP	WEATHERPROOF
EQUIP	EQUIPMENT	NF	NON-FUSED	XMTR	TRANSMITTER
EX	EXISTING	NIC	NOT IN CONTRACT	XP	EXPLOSION PROOF
F	FAN, FUSE	NO.	NUMBER	Z	IMPEDANCE
FDR	FEEDER	NOM	NOMINAL		
FL	FLUORESCENT	NP	NAMEPLATE		
FLA	FULL LOAD AMPS	NTS	NOT TO SCALE		
FLEX	FLEXIBLE CONDUIT				
F.O.	FAIL OPEN				
FO	FIBER OPTIC	OC	ON CENTER		
FUT	FUTURE	OCC	OPERATION CONTROL CENTER		
FVNR	FULL VOLTAGE NON-REVERSING	OD	OUTSIDE DIAMETER		
FVR	FULL VOLTAGE REVERSING	OH	OVERHEAD		
GDR	GROUNDING RESISTOR	OIS	OPERATOR INTERFACE STATION		
GEC	GROUND ELECTRODE CONDUCTOR	OT	OIL TIGHT		
GF	GROUND FAULT	OVS	OPERATOR WORKSTATION		
GFI	GROUND FAULT INTERRUPTER	P	POLE, PHASE, PUMP, POWER		
GRD, G	GROUND	PBD	PANEL BOARD		
GRS	GALVANIZED RIGID STEEL	PB	PUSHBUTTON, PULLBOX		
H	HIGH	PF	POWER FACTOR		
H.D.	HEAVY DUTY (VFD)	PH	PHASE		
HGT	HEIGHT	PLC	PROGRAMMABLE LOGIC CONTROLLER		
HH	HANDHOLE	PMM	POWER METERING MODULE		
HID	HIGH INTENSITY DISCHARGE	PNL	PANEL		
HMI	HUMAN MACHINE INTERFACE	PP	POWER PANEL		
HP	HORSEPOWER	PR	PAIR		
HPS	HIGH PRESSURE SODIUM	PRI	PRIMARY		
HTR	HEATER	PT	POTENTIAL TRANSFORMER		
HV	HIGH VOLTAGE	PVC	POLYVINYL CHLORIDE		
HVAC	HEATING, VENTILATION,	QSB	QUARTZ STANDBY		

- THE ELECTRICAL DRAWINGS USE THE SINGLE LINE DIAGRAMS AND PANEL SCHEDULES IN CONJUNCTION WITH SHOWING THE LOCATION OF THE ELECTRICAL INSTRUMENTATION SOURCES AND LOADS/DEVICES SHOWN ON THE PLAN DRAWINGS TO DEPICT THE WORK. THE DESIGN-BUILDER SHALL USE THESE DOCUMENTS TO DETERMINE AND PROVIDE THE NECESSARY RACEWAY AND WIRING SYSTEM FOR EACH CIRCUIT AND PROVIDE CONNECTIONS AS SHOWN ON THE P&ID. THE TYPE OF RACEWAY AND WIRE USED SHALL BE AS SPECIFIED.
- DESIGN-BUILDER MAY COMBINE CIRCUITS OF THE SAME VOLTAGE AND CABLE TYPE WITHIN THE SAME AREA, EXCEPT 480V CIRCUITS. THE DESIGN-BUILDER IS RESPONSIBLE FOR ENSURING COMBINED CIRCUITS MEET NEC DERATING AND FILL REQUIREMENTS. PROVIDE PROPERLY SIZED CONDULET/JUNCTION BOX AS REQUIRED.
- ONLY MAJOR DUCTBANKS AND LARGE CONDUITS ARE ROUTED ON PLAN DRAWINGS. DESIGN-BUILDER SHALL FIELD ROUTE ALL CIRCUITS AND HOMERUNS.
- FOR CLARITY, 120V EQUIPMENT/INSTRUMENT DISCONNECTS ARE NOT CIRCUITED OR SHOWN. PROVIDE 120V, 15A, TOGGLE TYPE DISCONNECT WITH APPROPRIATE BOX/COVER AT EACH EQUIPMENT/INSTRUMENT REQUIRING EXTERNAL POWER SOURCE AS INDICATED ON THE P&ID, TYPICAL.
- IF EQUIPMENT SUPPLIED BY MANUFACTURER HAS A LARGER LOAD THAN INDICATED ON THE SINGLE LINE DIAGRAM, THE CONSTRUCTION MANAGER SHALL BE NOTIFIED. THE CABLE, CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE SIZED AS REQUIRED, TO ACCOMMODATE THE HIGHER VALUE.
- IN AREAS WHERE THERE ARE OVERHEAD BRIDGE CRANES, HOISTS, ETC., OR WHERE EQUIPMENT IS LIFTED AND MOVED FOR MAINTENANCE OR REPLACEMENT, NO CONDUITS SHALL BE RUN OVERHEAD THAT WILL INTERFERE WITH THE OPERATION OF THE EQUIPMENT OR ACCESS TO EQUIPMENT.
- THE LOCATION OF THE CONTROL STATIONS/INSTRUMENTS SHOWN ON THE PLAN DRAWINGS ARE DIAGRAMMATIC ONLY. THE ACTUAL LOCATION SHALL BE COORDINATED IN THE FIELD WITH THE CONSTRUCTION MANAGER AND ADJACENT EQUIPMENT SUCH AS PIPING, PROCESS EQUIPMENT, ETC.
- THE DESIGN-BUILDER SHALL COORDINATE WITH THE STRUCTURAL, MECHANICAL, AND CIVIL DRAWINGS FOR CONDUIT ROUTING, STUB UP AND TERMINATION LOCATIONS.
- PROVIDE TERMINALS FOR SPARE CONDUCTORS AT TERMINAL BOXES, TYPICAL.
- ALL DUCT BANK IN TRAFFIC RATED AREA SHALL BE REINFORCED CONCRETE ENCASED.
- DESIGN-BUILDER TO PROVIDE AND INSTALL MANHOLES/HANDHOLES/PULLBOXES AS REQUIRED TO MEET THE MAXIMUM BENDING RADIUS REQUIREMENTS PER THE SPECIFICATIONS.

C:\BCP\W\0408745\E-01-0003 ABBYS AND GEN NOTES.DWG 12/20/2021 4:34 PM

SHEET
DWG. NO. 1



NO.	DATE	BY	DESCRIPTION	APPROVED



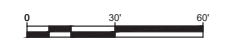
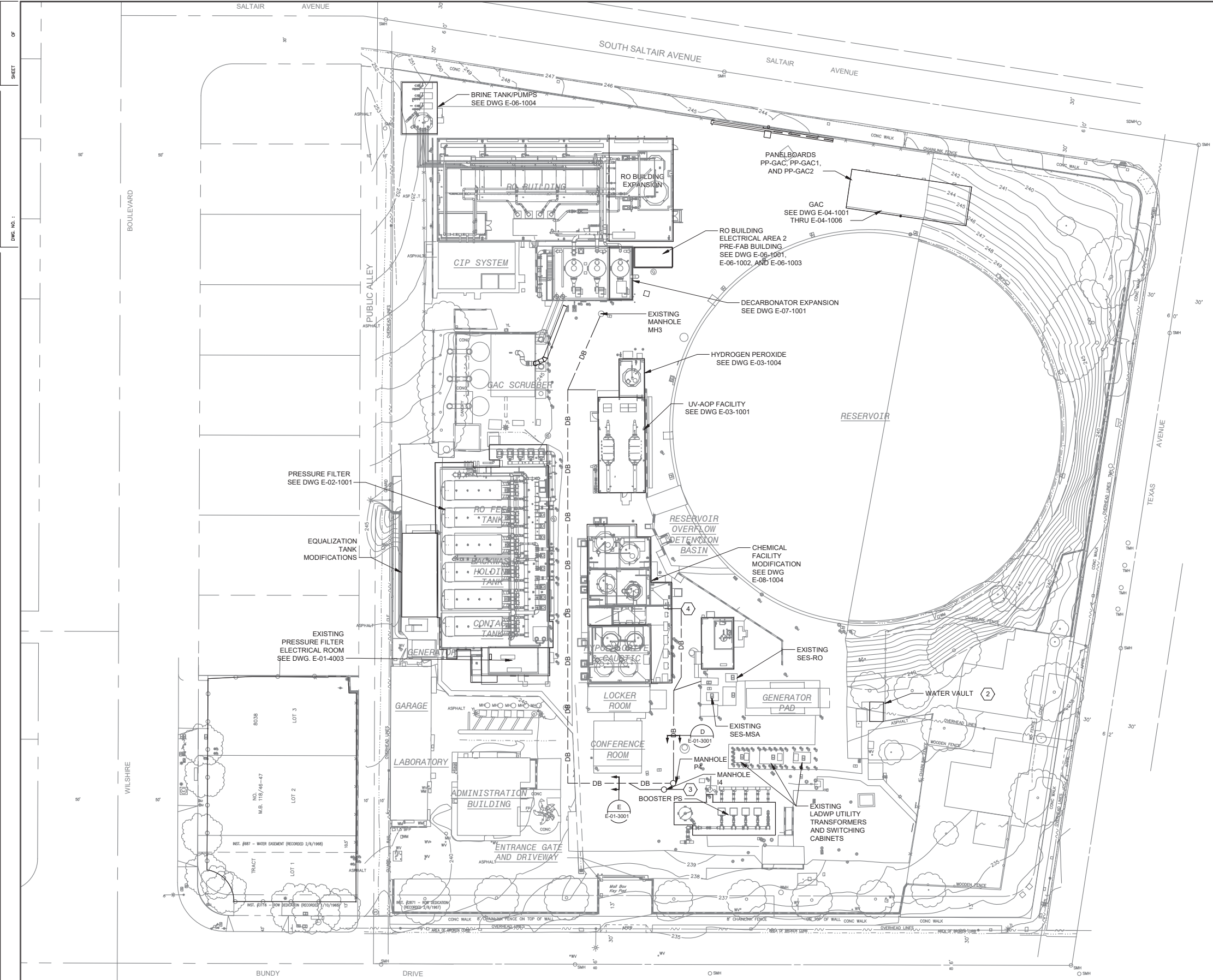
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REVIEWED BY : _____	DATE : ____/____/20__	DATE : ____/____/20XX
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	COMPUTER FILE NAME :
REVIEWED BY : _____	DATE : ____/____/20__	SP-FILE NO. : SP2602
OMED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE : ____/____/20XX

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

ABBREVIATIONS AND GENERAL NOTES

PROJECT AND SHEET TITLE

DESIGNED BY : FRF
DRAWN BY : FRF
CHECKED BY : AZ
CONSULTANT JOB/SHEET NO.
DRAWING NO. 7078
E-01-0003
SHT 172 OF 303 SHS



- GENERAL NOTES:**
- DESIGN-BUILDER TO PROTECT EXISTING SYSTEMS IN PLACE DURING CONSTRUCTION.
 - COORDINATE ALL SHUTDOWN ACTIVITIES WITH PLANT OPERATIONS PRIOR TO SHUTDOWN.
 - SITE ADDRESS: 1228 S. BUN DY DR. LOS ANGELES, CA. 90025
 - COORDINATE EXACT DUCTBANK LOCATIONS WITH CIVIL DRAWINGS C-01-1005 THROUGH C-01-1008.
- KEY NOTES:**
- NOT USED.
 - WATER VAULT FLOW METER TO REMAIN IN PLACE. PROTECT POWER AND CONTROL WIRING IN PLACE. 24 INCH MOTORIZED VALVE SHALL BE INSTALLED IN THE WATER VAULT. PROVIDE AND FIELD ROUTE 480V POWER AND CONTROL 3-1" CONDUITS TO MANHOLES P4 AND I4. FOR CIRCUITS SEE E-01-6011 AND E-01-6018.
 - TO BOOSTER PUMP STATION
 - TO PANEL PP-CH 1" CONDUIT

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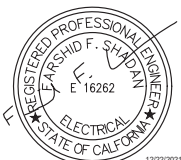
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 REVIEWED BY: _____ DATE: _____, 20XX
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20XX
 OMEED POUR, P.E. - PROJECT MANAGER

REFERENCE:
 DATE: _____, 20XX
 SUBMITTED BY: _____
 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 APPROVED BY: _____ DATE: _____, 20XX
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

**OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION**
ELECTRICAL OVERALL SITE PLAN



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 CHECKED BY: AZ
 CONSULTANT JOB SHEET NO.
 DRAWING NO. 7078
E-01-1001
 SH 173 OF 303 SHS

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EXISTING SERVICE ENTRANCE SECTION- MS-A ①



EXISTING SERVICE ENTRANCE SECTION- MS-RO

- KEY NOTES:
- EXISTING SERVICE ENTRANCE SECTION MS-A AND ATS-A TO BE REPLACED. SEE DRAWING E-01-4003 AND E-01-6001.
 - EXISTING LADWP TRANSFORMERS TO BE REPLACED BY LADWP, PROVIDE CONDUIT AND PAD. SEE DRAWINGS E-01-4003 AND E-01-6001.



EXISTING TRANSFER SWITCH ATS-A ①



EXISTING LADWP TRANSFORMERS ②



EXISTING TRANSFER SWITCH ATS-RO



City of **Santa Monica**
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 REVIEWED BY : _____ DATE : _____, 20XX

 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY : _____ DATE : _____, 20XX

 OMEED POUR, P.E. - PROJECT MANAGER

REFERENCE :
 DATE : _____, 20XX
 SUBMITTED BY : _____

 SP-FILE NO. : SP2602
 APPROVED BY : _____ DATE : _____, 20XX

 ALEX NAZARCHUK, P.E. - CITY ENGINEER
 ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION

EQUIPMENT ELEVATION - 1

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 DRAWING NO. 7078
E-01-2001
 SH1 174 OF 303 SH15

PROJECT AND SHEET TITLE



EXISTING SWITCHBOARD MSB-A (1)



EXISTING SWITCHBOARD MSB-RO (2)



EXISTING MOTOR CONTROL CENTER MCC-D (3)



EXISTING SWITCHBOARD SWBD-PF (4)



EXISTING ENERGY RECOVERY VFDS (7)

- KEY NOTES:
- EXISTING SWITCHBOARD MSB-A TO BE REPLACED. SEE DRAWINGS E-01-4003 AND E-01-6001.
 - EXISTING SWITCHBOARD MSB-RO LOCATED INSIDE THE EXISTING RO BUILDING ELECTRICAL ROOM. SEE DRAWINGS E-01-4003 AND E-01-6005.
 - EXISTING MCC-D TO BE RELOCATED. SEE DRAWINGS E-01-4001, E-01-4002, AND E-01-6003.
 - EXISTING SWITCHBOARD SWBD-PF LOCATED INSIDE THE PRESSURE FILTER ELECTRICAL ROOM. SEE DRAWINGS E-01-4003 AND E-01-6005.
 - UTILIZE EXISTING SPACE TO INSTALL NEW 1200AF BREAKER FOR POWER FEED TO MSB-RO2. SEE DRAWING E-01-6001.
 - REPLACE (4) EXISTING 20 AMPERE BREAKERS WITH 100 AMPERE BREAKERS. INSTALL (4) NEW 40HP AFDS FOR NEW INTERSTAGE 1-2 BOOSTER PUMPS AT EXISTING RO TRAINS 1 THROUGH 4. FIELD ROUTE 1-1/4" CONDUIT TO NEW AFDS WITH 3-#2, 1-8G CONDUCTORS.
 - EXISTING ENERGY RECOVERY DEVICE AFDS TO BE DEMOLISHED. UTILIZE UNDERGROUND CONDUITS AND WIREWAY TO INTERSTAGE 2-3 PUMPS AT EACH RO TRAIN. PROVIDE AND FIELD ROUTE NEW 1" CONDUIT FROM WIREWAY TO INTERSTAGE 2-3 AFDS.
 - UTILIZE EXISTING ENERGY RECOVERY DEVICE BREAKERS FOR INTERSTAGE 2-3 BOOSTER PUMPS AFDS. PROVIDE 3-#4, 1-#10G CONDUCTORS FROM SWBD-RO TO 20HP AFDS. PROVIDE NEW NAMEPLATES.
 - DEMOLISH CIP TANK 1 & 2 HEATERS AND RO FLUSH PUMPS 1 & 2 DURING EXISTING CIP AND RO FLUSH PUMP DEMO. SEE DEMOLITION DRAWING Z-06-1002.

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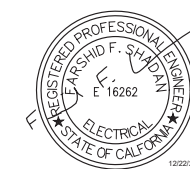
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 CURTIS CASTLE, P.E. - PRINCIPAL C.E.
 REVIEWED BY: _____ DATE: _____, 20XX

 OMEED POUR, P.E. - PROJECT MANAGER

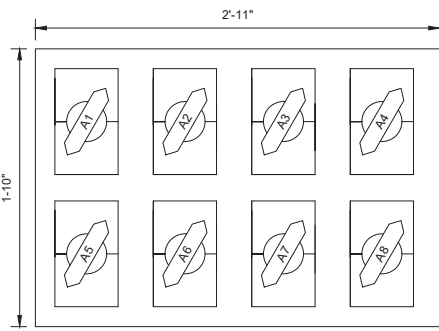
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 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 EQUIPMENT ELEVATION - 2



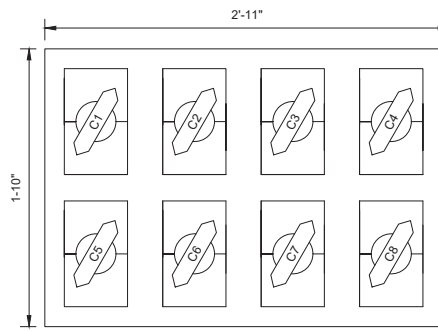
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 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
E-01-2002
 SH1 175 OF 303 SH15



A DUCT BANK SECTION

E-01-6001

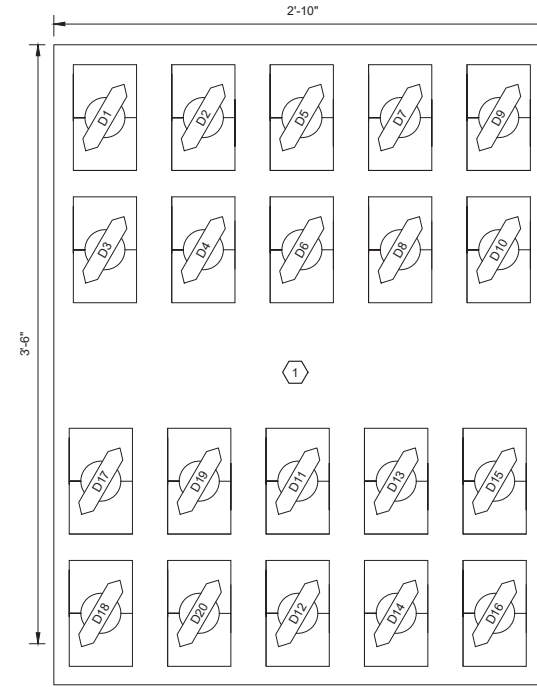
NUMBER	SIZE	CIRCUIT NUMBERS	CONDUCTORS	EQUIPMENT SERVED
A1	4"	P-ATS-A-0001	4-#500, 1#500G	SES-MS-A TO ATS-A
A2	4"	P-ATS-A-0001	4-#500, 1#500G	SES-MS-A TO ATS-A
A3	4"	P-ATS-A-0001	4-#500, 1#500G	SES-MS-A TO ATS-A
A4	4"	P-ATS-A-0001	4-#500, 1#500G	SES-MS-A TO ATS-A
A5	4"	P-ATS-A-0001	4-#500, 1#500G	SES-MS-A TO ATS-A
A6	4"	P-ATS-A-0001	4-#500, 1#500G	SES-MS-A TO ATS-A
A7	4"	P-ATS-A-0001	4-#500, 1#500G	SES-MS-A TO ATS-A
A8	4"	P-ATS-A-0001	4-#500, 1#500G	SES-MS-A TO ATS-A



C DUCT BANK SECTION

E-01-6001

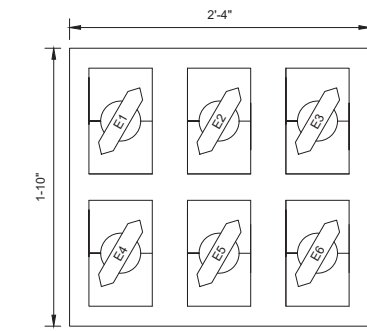
NUMBER	SIZE	CIRCUIT NUMBERS	CONDUCTORS	EQUIPMENT SERVED
C1	4"	P-MSB-A-0001	4-#500, 1#500G	ATS-A TO MSB-A
C2	4"	P-MSB-A-0001	4-#500, 1#500G	ATS-A TO MSB-A
C3	4"	P-MSB-A-0001	4-#500, 1#500G	ATS-A TO MSB-A
C4	4"	P-MSB-A-0001	4-#500, 1#500G	ATS-A TO MSB-A
C5	4"	P-MSB-A-0001	4-#500, 1#500G	ATS-A TO MSB-A
C6	4"	P-MSB-A-0001	4-#500, 1#500G	ATS-A TO MSB-A
C7	4"	P-MSB-A-0001	4-#500, 1#500G	ATS-A TO MSB-A
C8	4"	P-MSB-A-0001	4-#500, 1#500G	ATS-A TO MSB-A



D DUCT BANK SECTION

E-01-6001, E-01-6002, E-01-6004, E-10-6001

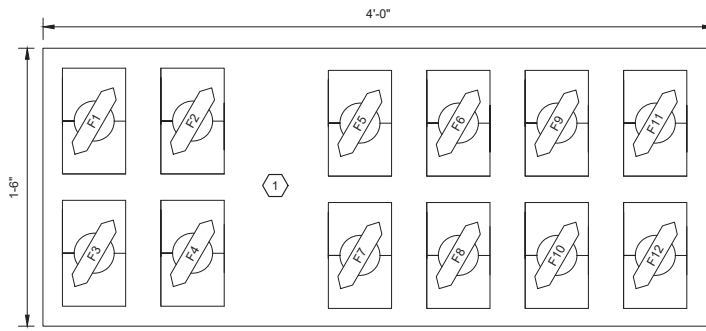
NUMBER	SIZE	CIRCUIT NUMBERS	CONDUCTORS	EQUIPMENT SERVED
D1	3"	P-MSB-UV-0001	4-#250, 1-#1/0G	MSB-A TO MSB-UV VIA MANHOLE P4
D2	3"	P-MSB-UV-0001	4-#250, 1-#1/0G	MSB-A TO MSB-UV VIA MANHOLE P4
D3	3"	P-MSB-UV-0001	4-#250, 1-#1/0G	MSB-A TO MSB-UV VIA MANHOLE P4
D4	3"	SPARE	PULL ROPE	MSB-A TO MANHOLE 3 VIA MANHOLE P4
D5	3"	SPARE	PULL ROPE	MSB-A TO MANHOLE 3 VIA MANHOLE P4
D6	3"	SPARE	PULL ROPE	MSB-A TO MANHOLE 3 VIA MANHOLE P4
D7	3"	SPARE	PULL ROPE	MSB-A TO MANHOLE 3 VIA MANHOLE P4
D8	3"	P-MSB-BPS	3-#350, 1-#1/0G	MSB-A TO MANHOLE P4
D9	3"	P-MSB-BPS	3-#350, 1-#1/0G	MSB-A TO MANHOLE P4
D10	3"	P-MSB-BPS	3-#350, 1-#1/0G	MSB-A TO MANHOLE P4
D11	1"	BPS-AFD-1101-N1	CAT 6E CABLE	BPS-AFD-1101 TO PLC-1/RIO-3 VIA MANHOLE 14
D12	1"	BPS-AFD-1201-N1	CAT 6E CABLE	BPS-AFD-1201 TO PLC-1/RIO-3 VIA MANHOLE 14
D13	1"	BPS-AFD-1301-N1	CAT 6E CABLE	BPS-AFD-1301 TO PLC-1/RIO-3 VIA MANHOLE 14
D14	1"	BPS-AFD-1401-N1	CAT 6E CABLE	BPS-AFD-1401 TO PLC-1/RIO-3
D15	1"	BPS-FIT-1001-S1	1-PR#16S	BPS-FIT-1001 TO PLC-1/RIO-3 VIA MANHOLE 14
D16	1"	BPS-PIT-1002-S1	1-PR#16S	BPS-PIT-1002 TO PLC-1/RIO-3 VIA MANHOLE 14
D17	1"	SPARE	PULL ROPE	SWBD-BPS TO PLC-1/RIO-3 VIA MANHOLE 14
D18	1"	SPARE	PULL ROPE	SWBD-BPS TO PLC-1/RIO-3 VIA MANHOLE 15
D19	1"	SPARE	PULL ROPE	SWBD-BPS TO PLC-1/RIO-3 VIA MANHOLE 16
D20	1"	SPARE	PULL ROPE	PLC-1/RIO-3 TO SWBD-BPS VIA MANHOLE 14



E DUCT BANK SECTION

E-01-6001, E-01-6002, E-01-6004

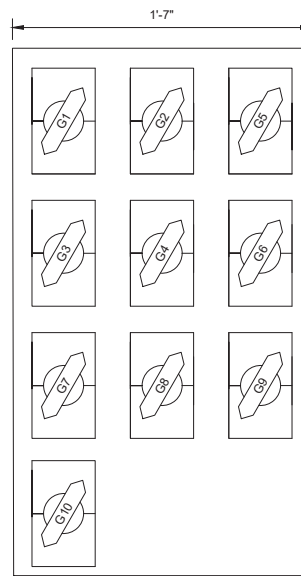
NUMBER	SIZE	CIRCUIT NUMBERS	CONDUCTORS	EQUIPMENT SERVED
E1	3"	P-MSB-UV-0001	4-#250, 1-#1/0G	MSB-A TO MSB-UV
E2	3"	P-MSB-UV-0001	4-#250, 1-#1/0G	MSB-A TO MSB-UV
E3	3"	P-MSB-UV-0001	4-#250, 1-#1/0G	MSB-A TO MSB-UV
E4	4"	-	PULL ROPE	MSB-A TO MANHOLE 3
E5	4"	-	PULL ROPE	MSB-A TO MANHOLE 3
E6	4"	-	PULL ROPE	MSB-A TO MANHOLE 3



F DUCT BANK SECTION

E-10-6001

NUMBER	SIZE	CIRCUIT NUMBERS	CONDUCTORS	EQUIPMENT SERVED
F1	3"	P-MSB-BPS	3-#350, 1-#1/0G	MANHOLE P4 TO SWBD-BPS
F2	3"	P-MSB-BPS	3-#350, 1-#1/0G	MANHOLE P4 TO SWBD-BPS
F3	3"	P-MSB-BPS	3-#350, 1-#1/0G	MANHOLE P4 TO SWBD-BPS
F4	3"	SPARE	PULL ROPE	MANHOLE P4 TO SWBD-BPS
F5	1"	BPS-AFD-1101-N1	CAT 6E CABLE	BPS-AFD-1101 TO MANHOLE 14
F6	1"	BPS-AFD-1201-N1	CAT 6E CABLE	BPS-AFD-1201 TO MANHOLE 14
F7	1"	BPS-AFD-1301-N1	CAT 6E CABLE	BPS-AFD-1301 TO MANHOLE 14
F8	1"	BPS-AFD-1401-N1	CAT 6E CABLE	BPS-AFD-1401 TO MANHOLE 14
F9	1"	BPS-FIT-1001-S1	1-PR#16S	BPS-FIT-1001 TO MANHOLE 14
F10	1"	BPS-PIT-1002-S1	1-PR#16S	BPS-PIT-1002 TO MANHOLE 14
F11	1"	SPARE	PULL ROPE	BPS PAD TO MANHOLE 14
F12	1"	SPARE	PULL ROPE	BPS PAD TO MANHOLE 14



G DUCT BANK SECTION

E-01-6001, E-01-6012, E-01-6013

NUMBER	SIZE	CIRCUIT NUMBERS	CONDUCTORS	EQUIPMENT SERVED
G1	2"	P-PDP-GAC	3-#4/0, 1#6G	MSB-RO2 TO PP-GAC
G2	2"	P-ROR-AFD-1110-A	3-#2/0, 1#6G	MSB-RO2 TO BRINE PUMP-1
G3	2"	P-ROR-AFD-1210-A	3-#2/0, 1#6G	MSB-RO2 TO BRINE PUMP-2
G4	2"	P-ROR-AFD-1310-A	3-#2/0, 1#6G	MSB-RO2 TO BRINE PUMP-3
G5	3/4"	P-ROR-MOVE-1010	3-#10, 1#12G	MSB-RO2 TO MOV-1010
G6	3/4"	LP-RO2-CKT 8	2-#12, 1#12G	LP-RO2 TO FIT-1020
G7	3/4"	LP-RO2-CKT 10	2-#12, 1#12G	LP-RO2 TO FIT-2020
G8	3/4"	LP-RO2-CKT 18	2-#12, 1#12G	LP-RO2 TO FIT-3020
G9	3/4"	LP-RO2-CKT 20	2-#12, 1#12G	LP-RO2 TO FIT-4020
G10	3/4"	LP-RO2-CKT 17	2-#12, 1#12G	PLC-1/RIO-4 POWER

GENERAL NOTES:

- CONCRETE REINFORCED DUCTBANKS SHOWN ON THIS DRAWING. ALL OTHER UNDERGROUND FEEDER CONDUITS CONDUCTOR SIZES ARE SHOWN ON THE POWER AND CONTROL SINGLE LINE DRAWINGS.
- FOR DUCTBANK CONSTRUCTION DETAILS SEE DETAIL E2002 ON DRAWING E-01-5005.

KEY NOTES:

- PER SPECIFICATION 26 05 33 PROVIDE 12 INCHES OR GREATER SEPERATION BETWEEN POWER AND CONTROL/SIGNAL CONDUITS IN THE SAME DUCTBANK.



City of Santa Monica
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REVIEWED BY: _____ DATE: _____, 20__
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 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20__
 OMEED POUR, P.E. - PROJECT MANAGER

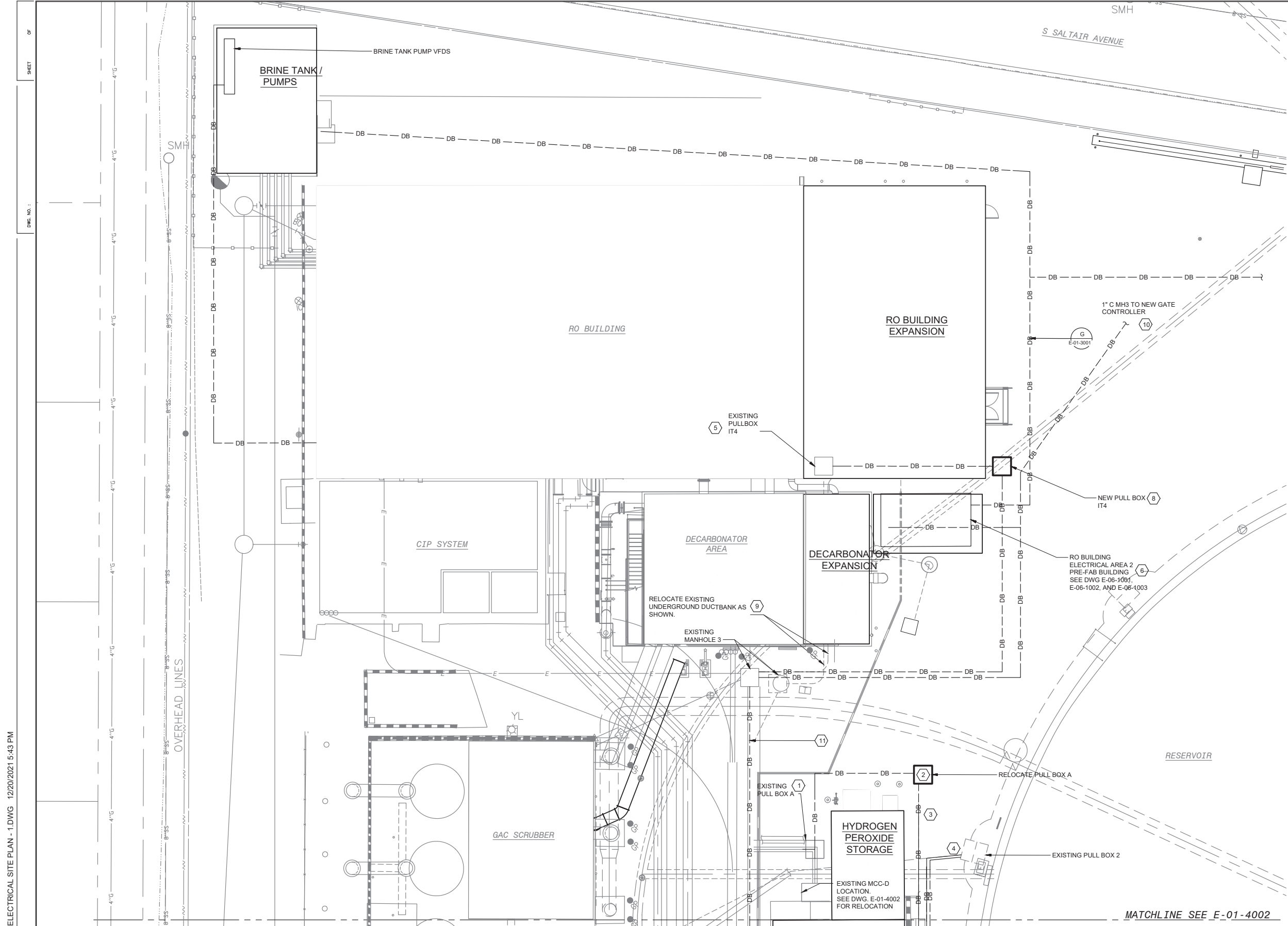
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 SP-FILE NO.: SP2602
 APPROVED BY: _____ DATE: _____, 20__
 ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION

DUCTBANK SECTIONS

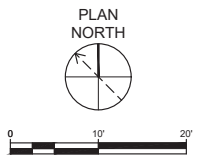


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 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
E-01-3001
 SH 176 OF 303 SHS



- GENERAL NOTES:**
- DESIGN-BUILDER TO PROTECT EXISTING SYSTEMS IN PLACE DURING CONSTRUCTION.
 - COORDINATE ALL SHUTDOWN ACTIVITIES WITH PLANT OPERATIONS PRIOR TO SHUTDOWN.
 - COORDINATE EXACT DUCTBANK LOCATIONS WITH CIVIL DRAWINGS C-01-1005 THROUGH C-01-1008.

- KEY NOTES:**
- DESIGN-BUILDER TO INTERCEPT EXISTING CONDUITS IN EXISTING DUCTBANK AND EXTEND TO NEW PULL BOX A LOCATION.
 - DESIGN-BUILDER TO INSTALL A NEW PULL BOX A. NEW PULLBOX SIZE TO MATCH EXISTING. FIELD LOCATE PULL BOX A TO AREA OUTSIDE THE HYDROGEN PEROXIDE FOOTER AND CLEAR OF ANY MECHANICAL PIPING.
 - ROUTE NEW CONDUITS TO MCC-D FROM PULL BOX A. PROVIDE NEW CONDUCTORS FROM MSB-A TO MCC-D AS SHOWN ON DWG. E-01-6001. FOR LOCATION OF MSB-A, SEE DWG. E-01-4003.
 - ROUTE NEW CONDUITS FROM MCC-D TO PULL BOX 2 FOR EXISTING AERATION POWER AND CONTROL CIRCUITS. PROVIDE NEW CONDUCTORS SPLICING NOT ACCEPTABLE.
 - EXISTING PULL BOX TO BE REMOVED. SEE KEYNOTES 8 AND 9.
 - RO BUILDING ELECTRICAL AREA 2 AND RO BUILDING EXPANSION CONSTRUCTION DEPENDENT ON WIFIA FUNDING CONFIRMATION FROM THE OWNER.
 - RO BUILDING ELECTRICAL AREA 2 PRE-FABRICATED ELECTRICAL BUILDING PER SPECIFICATION 13 24 33. DESIGN-BUILDER TO PROVIDE UNDERGROUND DUCTBANK AS SHOWN ON DRAWINGS E-06-1001, E-06-1002, AND E-06-1003.
 - PROVIDE NEW 24" X 24" PRECAST PULL BOX FOR PULL BOX IT4. INSTALL COVER AT GRADE LEVEL.
 - INTERCEPT EXISTING CONDUITS FROM MH3 TO EXISTING PULL BOX IT4. EXISTING CONDUITS ARE 2-2" PVC CONDUITS TO RO BUILDING CONTROL ROOM. DESIGN-BUILDER TO LOCATE EXACT LOCATION OF EQUIPMENT PRIOR TO ANY WORK ON THE RELOCATION OF THE EXISTING CONDUITS.
 - INTERCEPT EXISTING CONDUIT TO GATE CONTROLLER AND RELOCATE OUTSIDE OF THE RO BUILDING EXPANSION FOOTING. PROVIDE NEW CONDUIT AND CONDUCTORS TO NEW GATE CONTROLLER. EXISTING GATE CONTROLLER TO BE DEMOLISHED.
 - DUCTBANK E CONTINUED TO E-01-4002.



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Brown and Caldwell

REVIEWED BY :	DATE :	20
SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
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APPROVED BY :	DATE :	20XX
ALEX NAZARCHUK, P.E. - CITY ENGINEER		

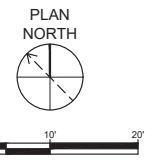
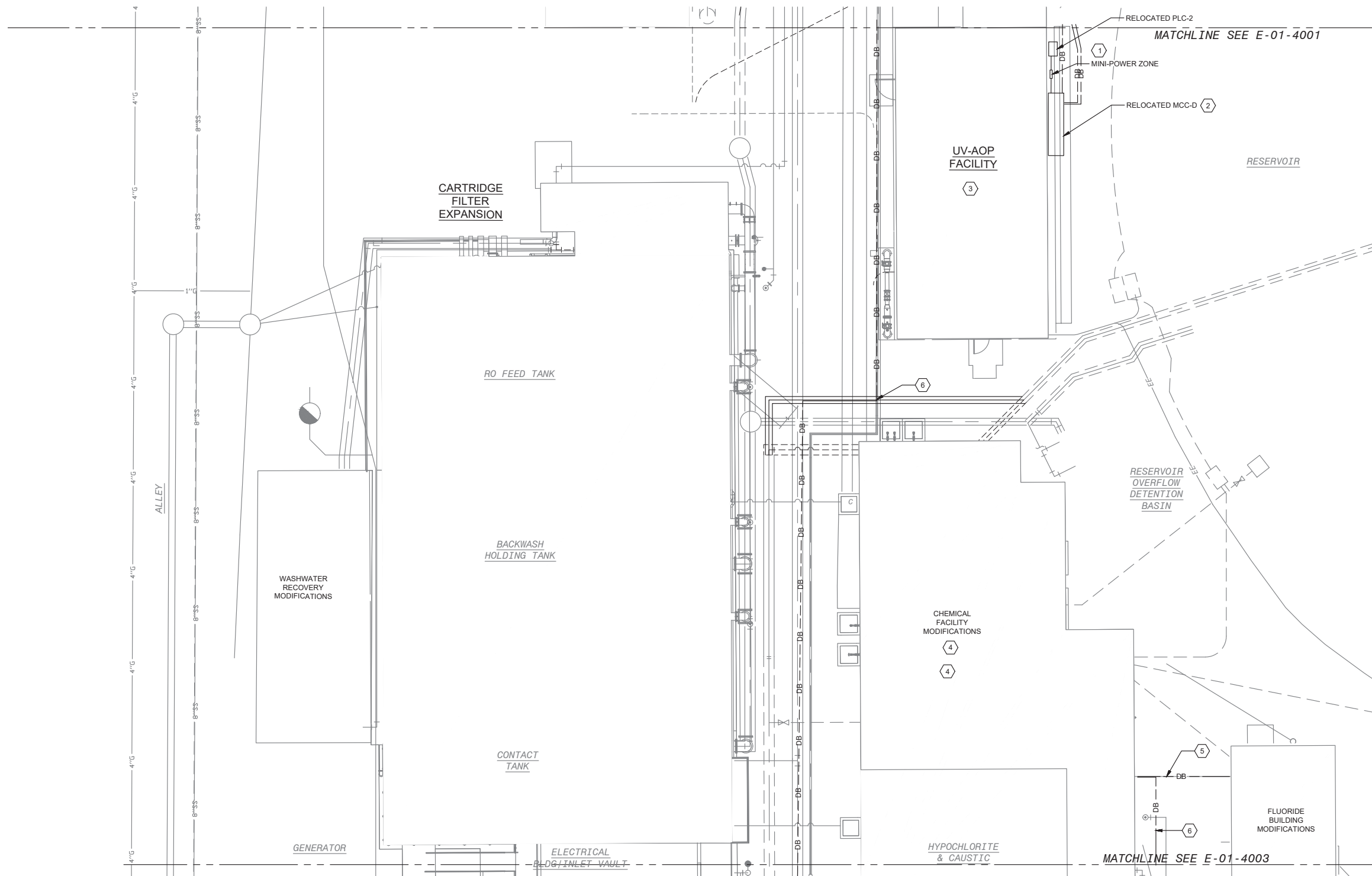
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

ELECTRICAL SITE PLAN - 1

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 DRAWN BY : FRF
 CHECKED BY : AZ
 CONSULTANT JOB SHEET NO.
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E-01-4001
 SH1 177 OF 303 SH15

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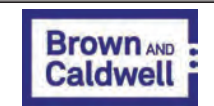
SHEET NO. 1 OF 1



- GENERAL NOTES:**
- DESIGN-BUILDER TO PROTECT EXISTING SYSTEMS IN PLACE DURING CONSTRUCTION.
 - COORDINATE ALL SHUTDOWN ACTIVITIES WITH PLANT OPERATIONS PRIOR TO SHUTDOWN.
 - COORDINATE EXACT DUCTBANK LOCATIONS WITH CIVIL DRAWINGS C-01-1005 THROUGH C-01-1008.
- KEY NOTES:**
- SEE DRAWING E-01-4001 FOR CONDUIT CONTINUATION.
 - PROVIDE NEW CONCRETE EQUIPMENT PAD FOR RELOCATED MCC-D. SEE DETAILS FOR EQUIPMENT PAD ON DRAWINGS D-01-0010 AND D-01-0011.
 - SEE DRAWING E-03-1001 FOR UV SYSTEM POWER PLAN.
 - SEE DRAWING E-08-1004 FOR CHEMICAL AREA POWER PLAN.
 - PROVIDE DUCTBANK FROM FLUORIDE BUILDING TO CHEMICAL BUILDING'S PLC-1/RIO-3. UTILIZE EXISTING CONDUIT RUNS IF POSSIBLE, NO SPLICES IN CONTROL OR SIGNAL CABLES ALLOWED. SEE DRAWING E-01-6011 FOR CIRCUITS FROM FLUORIDE BUILDING TO PLC-1/RIO-3.
 - CONTROL AND SIGNAL DUCTBANK FROM BOOSTER PUMP STATION. SEE DUCTBANK SECTION D AND F ON DRAWING E-01-3001.
 - DUCTBANK E CONTINUED FROM E-01-4001.

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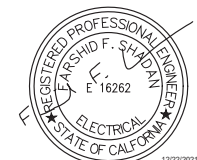
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REVIEWED BY : _____ DATE : _____ 20__	DATE : _____, 20XX COMPUTER FILE NAME : _____
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	SUBMITTED BY : _____ SP-FILE NO. : SP2602
REVIEWED BY : _____ DATE : _____ 20__	APPROVED BY : _____ DATE : _____, 20XX
OMED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

ELECTRICAL SITE PLAN - 2

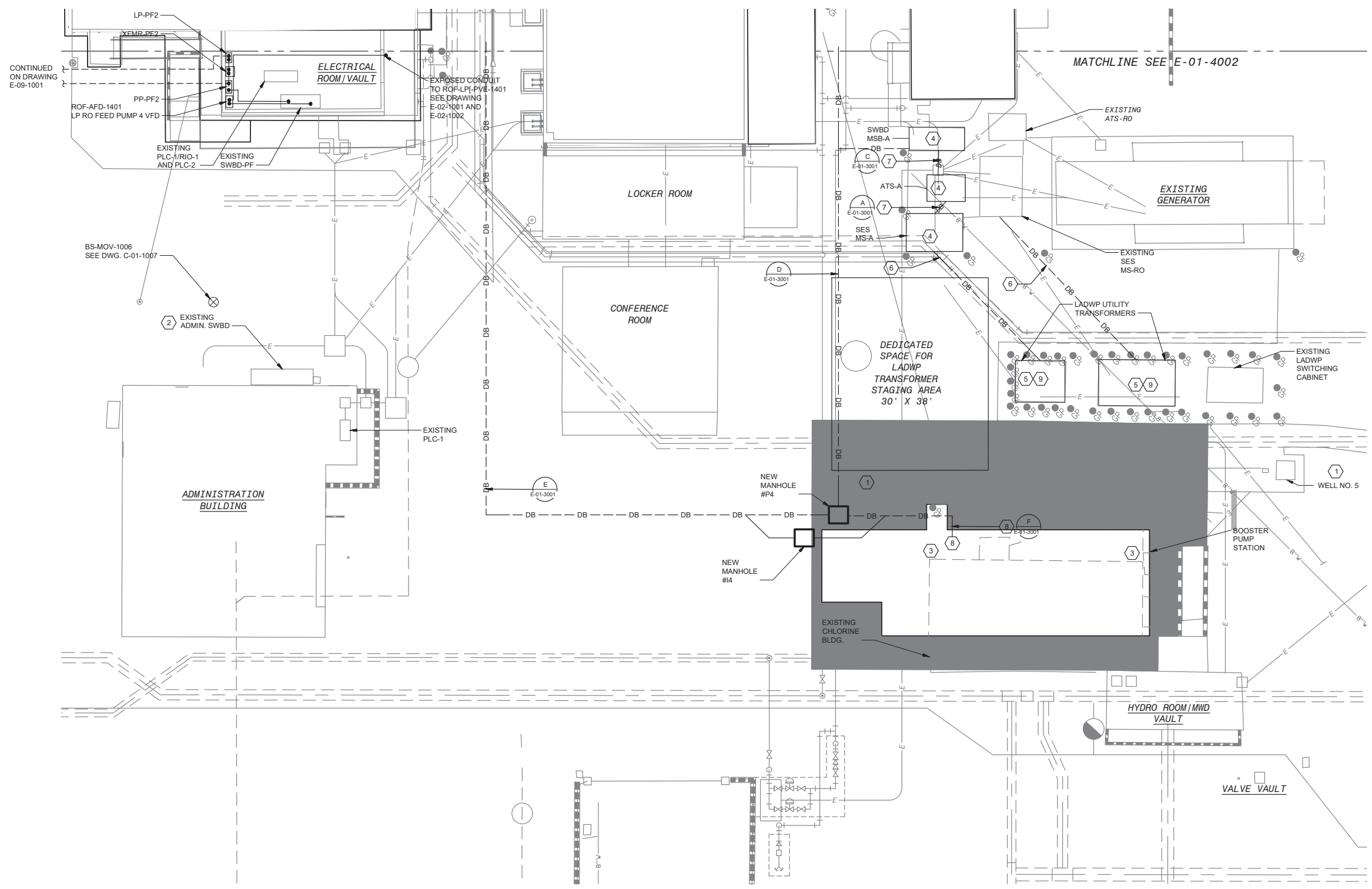
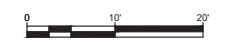
DESIGNED BY : FRF
 DRAWN BY : FRF
 CHECKED BY : AZ
 CONSULTANT JOB SHEET NO. _____

DRAWING NO. 7078
E-01-4002
 SH1 178 OF 303 SH1S



C:\BCP\W\0408745\E-01-4003 ELECTRICAL SITE PLAN - 3.DWG 12/20/2021 4:36 PM

SHEET OF DWG. No. 1



- GENERAL NOTES:**
- DESIGN-BUILDER TO PROTECT EXISTING SYSTEMS IN PLACE DURING CONSTRUCTION.
 - COORDINATE ALL SHUTDOWN ACTIVITIES WITH PLANT OPERATIONS PRIOR TO SHUTDOWN.
 - COORDINATE EXACT DUCTBANK LOCATIONS WITH CIVIL DRAWINGS C-01-1005 THROUGH C-01-1008.

- KEY NOTES:**
- FOR FUTURE BOOSTER PUMP STATION: RELOCATE WELL 4 AND WELL 5 POWER AND CONTROL CABINETS AT EXISTING CHLORINE BLDG. FIELD LOCATE EXISTING DISCONNECTS AT WELL LOCATION. PROVIDE ADDITIONAL BOLLARDS AS NEEDED TO PROTECT WELL DISCONNECTS. INTERCEPT EXISTING CONDUIT FROM THE ADMIN SWBD TO WELL 4 AND WELL 5 PANELS LOCATIONS AT EXISTING WELL HEAD. PROVIDE NEW FEEDER CONDUCTORS FROM SWBD ADMIN.
 - WELL 4 AND WELL 5 ARE SUPPLIED POWER FROM THE EXISTING ADMINISTRATION BLDG. SWITCHBOARD, ADMIN-SWBD.
 - RELOCATE WELL 4 AND WELL 5 PANELS. RELOCATE PER KEYNOTE 1.
 - PROVIDE NEW EQUIPMENT TO REPLACE THE EXISTING EQUIPMENT IN THIS LOCATION. SEE DRAWING E-01-6001 FOR CONDUIT AND CABLE REPLACEMENT.
 - LADWP TO REPLACE EXISTING 1000KVA AND 1500KVA TRANSFORMERS WITH 2000KVA AND 2500KVA TRANSFORMERS. LADWP TRANSFORMER REPLACEMENT DESIGN TO BE PROVIDED AT A LATER DATE BY LADWP.
 - PROVIDE NEW DUCTBANK AS REQUIRED BY LADWP DESIGN FROM LADWP TRANSFORMERS TO SES-MS-A AND SES-MS-RO. EXISTING CONDUITS PER OWNER PROVIDED RECORD DRAWINGS: LADWP XFMR TO MS-A (5-5°C), LADWP XFMR TO MS-RO (8-5°C).
 - PROVIDE NEW DUCTBANK FROM SES-MS-A TO ATS-A. FROM MSA-A PROVIDE NEW CONDUIT TO EXISTING GENERATOR TERMINAL BOX AND NEW MSB-A.
 - PROVIDE NEW DUCTBANK FOR BOOSTER PUMP STATION FROM MSB-A TO SWBD-BPS. SEE DRAWING E-10-6001.
 - FOR SES-MS-A LADWP NEW TRANSFORMER PAD REQUIREMENTS SEE REFERENCE DRAWINGS R-01-5001, R-01-5002, AND R-01-5003. MS-RO EXISTING LADWP TRANSFORMER PAD TO REMAIN. PROTECT IN PLACE DURING TRANSFORMER UPGRADES.

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SUNNY WANG, P.E. - WATER RESOURCES MANAGER		
REVIEWED BY :	DATE :	20
OMED POUR, P.E. - PROJECT MANAGER		

REFERENCE :	DATE :	20XX
SUBMITTED BY :	COMPUTER FILE NAME :	
CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO. :	SP2602
APPROVED BY :	DATE :	20XX
ALEX NAZARCHUK, P.E. - CITY ENGINEER		

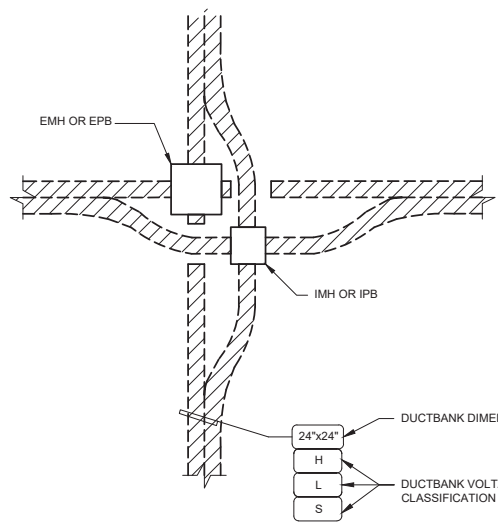
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

ELECTRICAL SITE PLAN - 3

DESIGNED BY : FRF
 DRAWN BY : FRF
 CHECKED BY : AZ
 CONSULTANT JOB SHEET NO. :
 DRAWING NO. 7078
E-01-4003
 SH1 179 OF 303 SH18



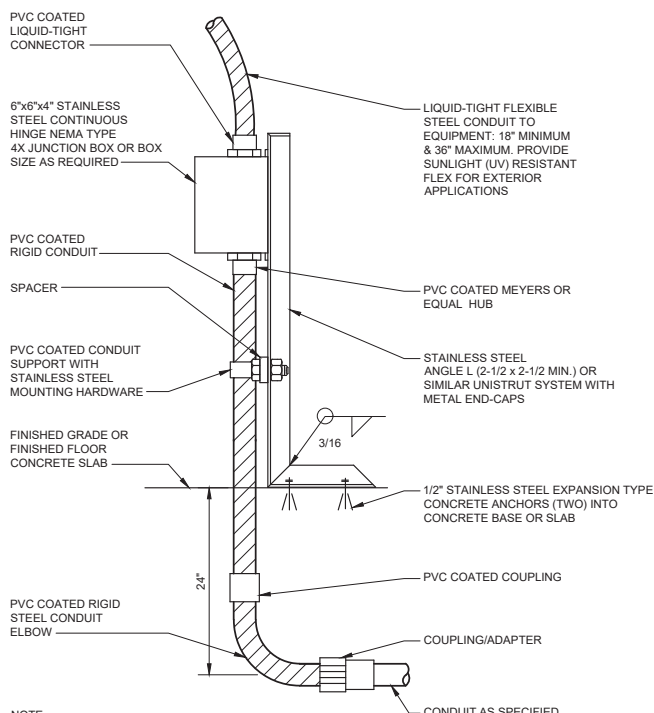
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ABBREVIATIONS AND SYMBOLS:
 H = HIGH VOLTAGE: 5KV, 15KV, 25KV OR 35KV
 L = LOW VOLTAGE: 600V (POWER & CONTROL)
 S = SIGNAL: INSTRUMENTATION, DATA COMMUNICATION, TELEPHONE
 EMH = ELECTRICAL MANHOLE
 EPB = ELECTRICAL PULLBOX
 IMH = INSTRUMENT MANHOLE
 IPB = INSTRUMENT PULLBOX

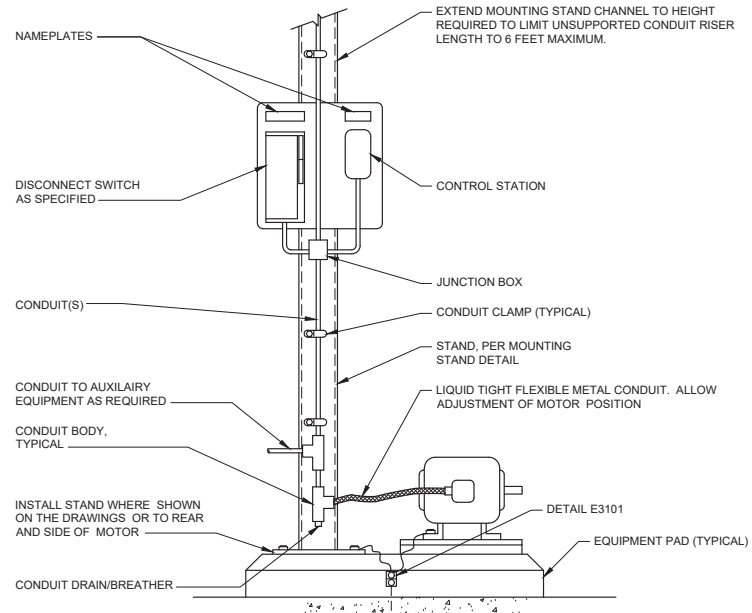
NOTES:
 1. SECTION CUTS OR SEGMENT NOTATION IDENTIFY CIRCUITS AND RACEWAY SIZES

**UNDERGROUND DUCTBANKS
 TYPICAL DUCTBANK PLAN
 DETAIL (E2001)
 NO SCALE**



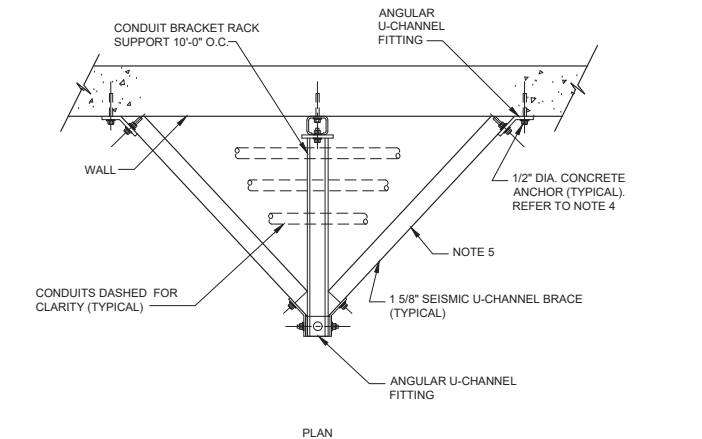
NOTE:
 THE 24" DIMENSION DOES NOT APPLY WHERE CONDUITS ARE INSTALLED IN SLAB.

**UNDERGROUND RACEWAYS
 STUB-UP AND J-BOX
 DETAIL (E2112)
 NO SCALE**



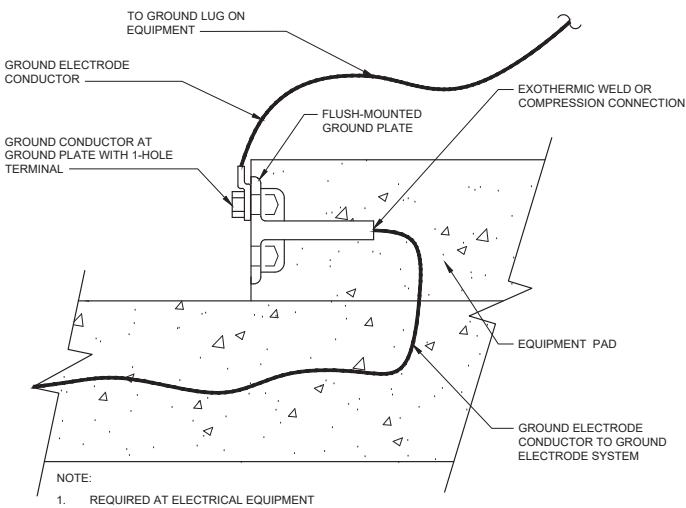
NOTES:
 1. MOUNTING STAND REQUIREMENTS VARY WITH EQUIPMENT SIZE.
 2. CONDUIT NUMBER, SIZE AND CONFIGURATION VARIES. REFER TO APPLICABLE ONE LINE DIAGRAMS OR SCHEDULES.
 3. PROVIDE POWER DISCONNECT NAMEPLATE INDICATING POWER SOURCE.
 4. PROVIDE CONTROL STATION NAMEPLATE INDICATING EQUIPMENT TAG NUMBER AND DESCRIPTION.
 5. SEE DRAWINGS OR SCHEDULES FOR SEPARATE POWER, CONTROL AND INSTRUMENTATION RACEWAYS.

**MOTOR RACEWAYS
 OVERHEAD FEED
 DETAIL (E2303)
 NO SCALE**

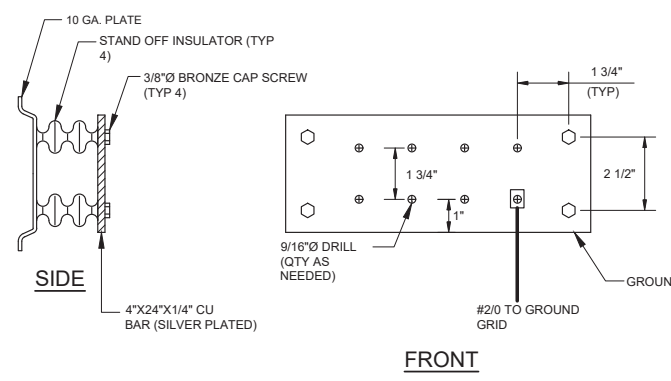


NOTES:
 1. MATERIALS AND HARDWARE PER SPECIFICATION DIVISION 26 REQUIREMENTS.
 2. MAX. UNIFORMLY DISTRIBUTED LOAD (CONDUIT AND FILL) PER UNIT TO BE 1000 LBS.
 3. HOLE SIZES ON FITTINGS SHALL BE 9/16" DIA. WITH 1/2" HEX HEAD CAP SCREW 15/16" LONG AND 1/2" CLAMP NUT WITH SPRING.
 4. SEE TYPICAL CONCRETE ANCHOR OR THREADED ROD DETAIL FOR ANCHOR REQUIREMENTS
 5. SEE SPECIFICATION 01 73 24 FOR SEISMIC ANCHORAGE AND BRACING REQUIREMENTS. SEISMIC CHANNEL BRACING REQUIRED AT INTERVALS OF 60'-0" MAX. FOR ZONE 3 AND 40'-0" MAX. FOR ZONE 4.

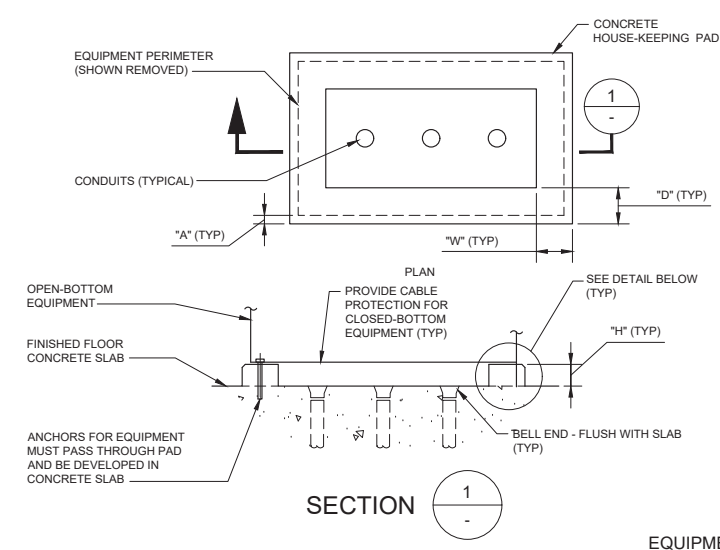
**RACEWAY SUPPORTS
 WALL MOUNT
 DETAIL (E2803)
 NO SCALE**



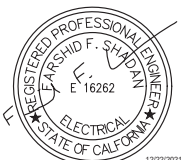
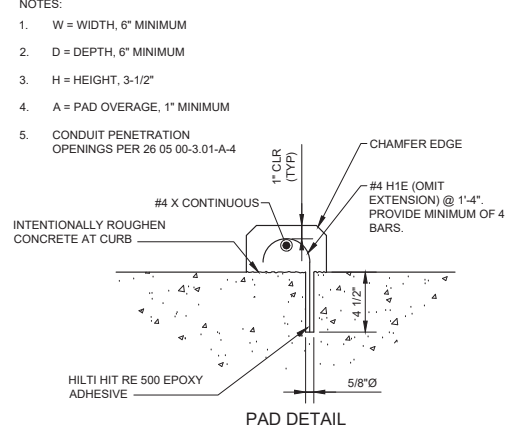
**EQUIPMENT GROUNDING
 GROUND PLATE IN SLAB
 DETAIL (E3101)
 NO SCALE**



**EQUIPMENT GROUNDING PLATE
 DETAIL (E3200)
 NO SCALE**



**EQUIPMENT SUPPORTS
 HOUSE-KEEPING PAD
 DETAIL (E4021)
 NO SCALE**



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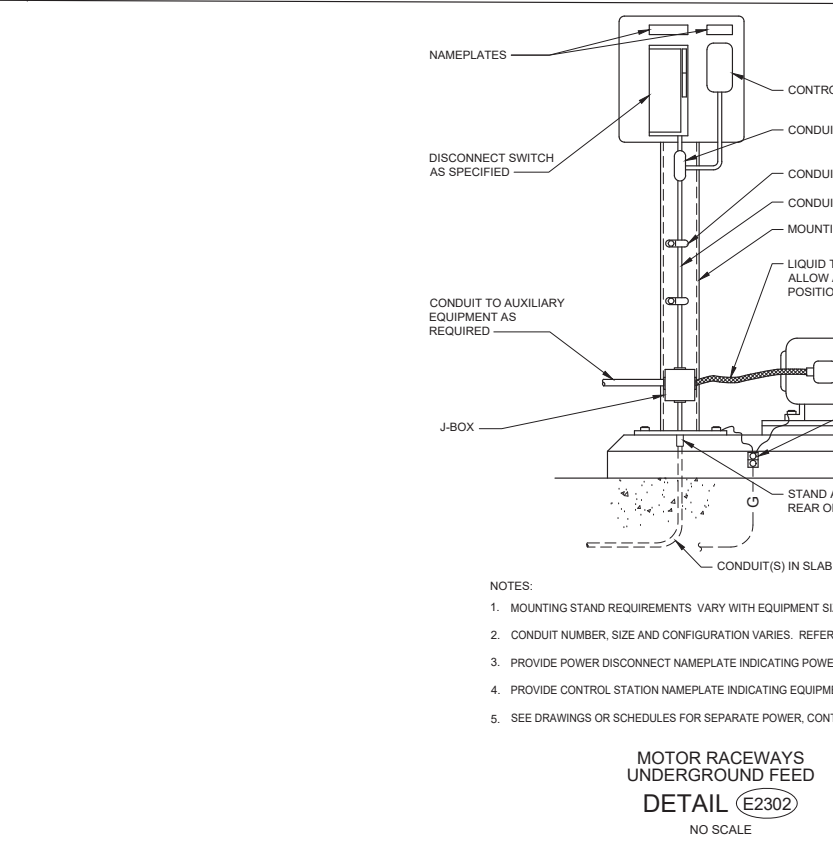
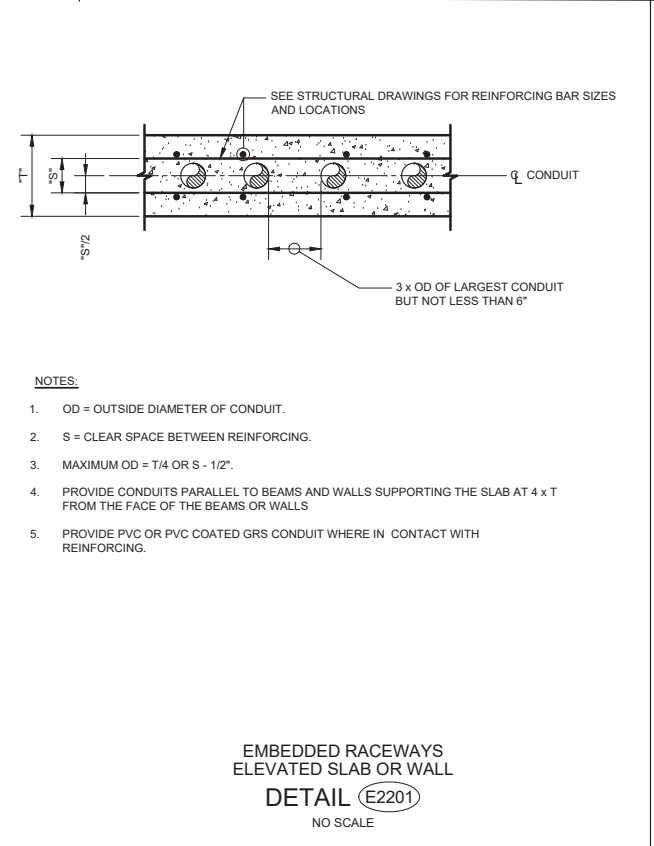
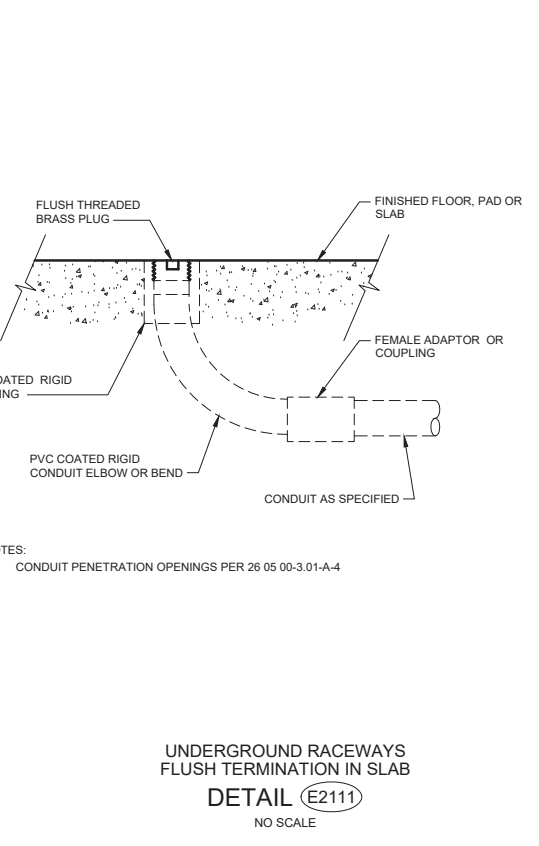
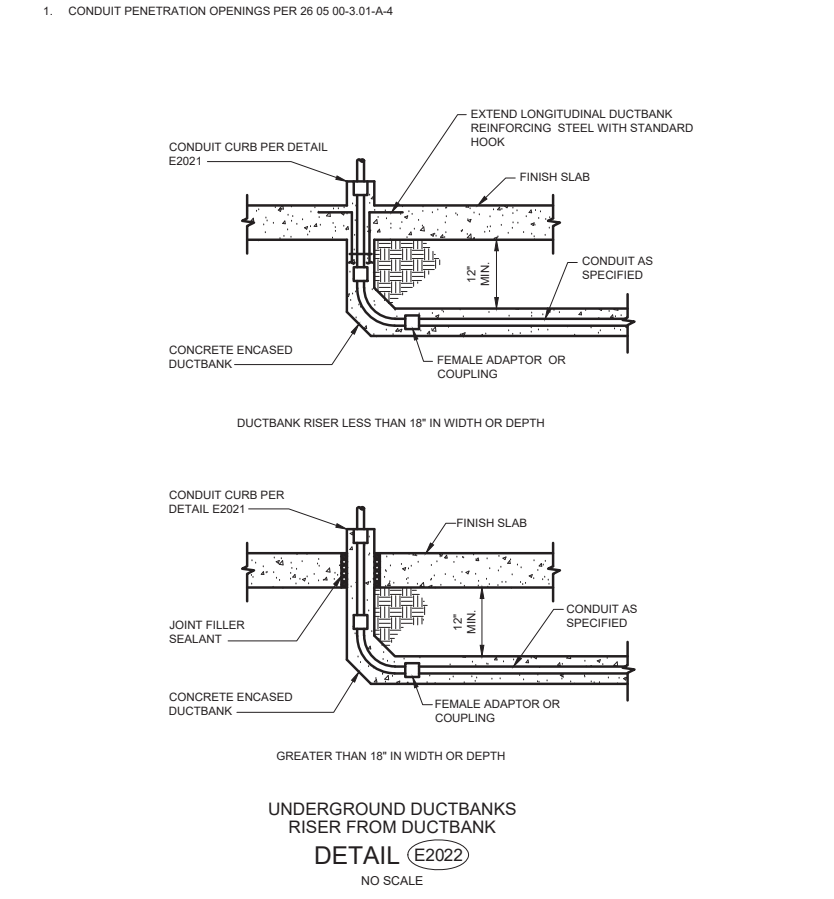
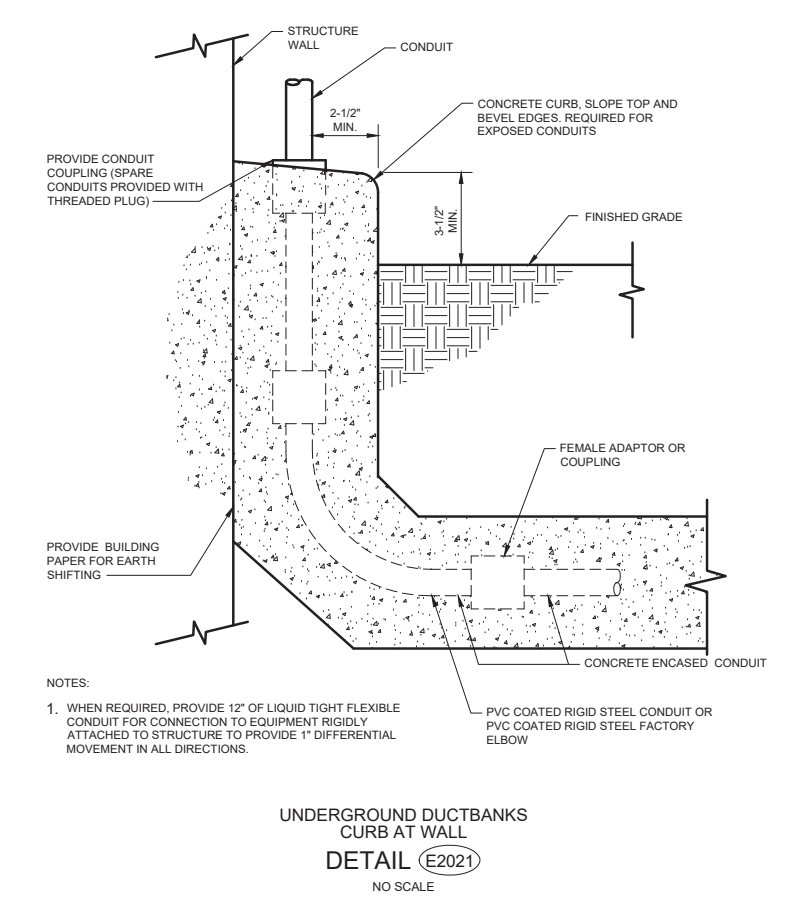
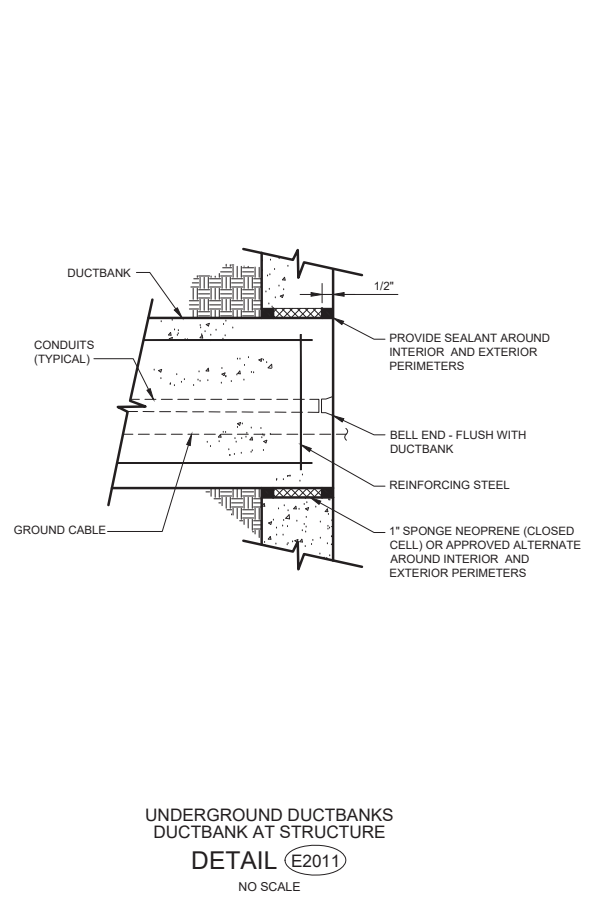
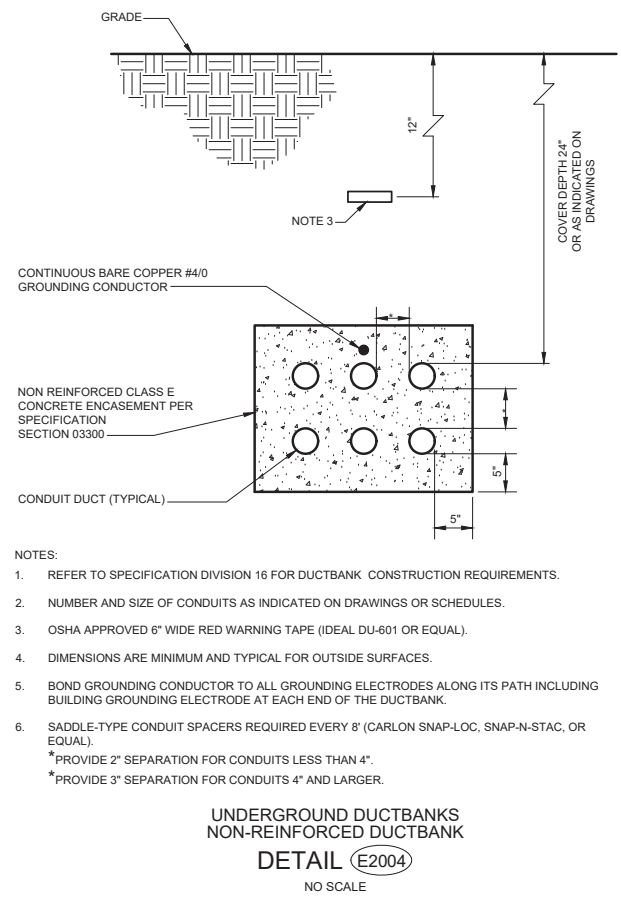
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REVIEWED BY : _____ DATE : _____, 20__	DATE : _____, 20__X COMPUTER FILE NAME :
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	SUBMITTED BY : _____ SP-FILE NO. : SP2602
REVIEWED BY : _____ DATE : _____, 20__	CURTIS CASTLE, P.E. - PRINCIPAL C.E.
OMED POUR, P.E. - PROJECT MANAGER	APPROVED BY : _____ DATE : _____, 20__X
	ALEX NAZARCHUK, P.E. - CITY ENGINEER

**OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION**

STANDARD DETAILS - 1

DESIGNED BY : FRF
 DRAWN BY : FRF
 CHECKED BY : AZ
 CONSULTANT JOB/SHEET NO. _____
 DRAWING NO. 7078
E-01-5001
 SH 180 OF 303 SHS

C:\BCP\W\0408745\01-5002 STANDARD DETAILS - 2.DWG 12/20/2021 4:36 PM



REGISTERED PROFESSIONAL ENGINEER
LARSCHID F. SHADYAN
E 16262
ELECTRICAL
STATE OF CALIFORNIA

DESIGNED BY : FRF
DRAWN BY : FRF
CHECKED BY : AZ
CONSULTANT JOB SHEET NO.
DRAWING NO. 7078
E-01-5002
SHEET 181 OF 303 SHEETS

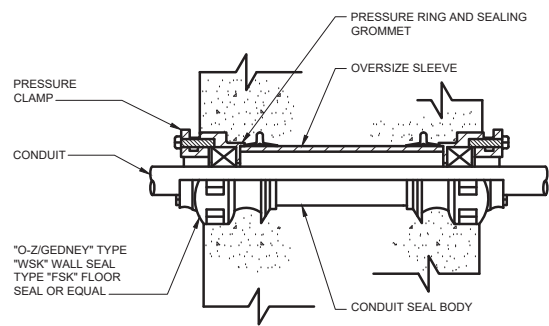
NO.	DATE	BY	DESCRIPTION	APPROVED

REVIEWED BY : _____ DATE : _____, 20__	REFERENCE : _____
REVIEWED BY : _____ DATE : _____, 20__	DATE : _____, 20__ COMPUTER FILE NAME : _____
SUNNY WANG, P.E. - WATER RESOURCES MANAGER	SUBMITTED BY : _____ SP-FILE NO. : SP2602
REVIEWED BY : _____ DATE : _____, 20__	APPROVED BY : _____ DATE : _____, 20__
OMED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

STANDARD DETAILS - 2

PROJECT AND SHEET TITLE

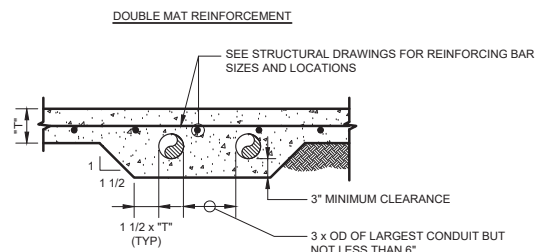
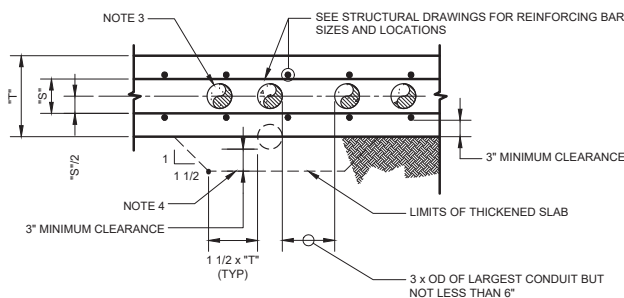


SINGLE-ENDED SEALS FOR INSTALLATIONS THROUGH WALLS AS FOLLOWS.

WALL THICKNESS	CONDUIT SIZE
LESS THAN 7-1/2"	ALL SIZES
7-1/2" TO 8-3/8"	1-1/2" OR LARGER
8-3/8" TO 8-3/4"	2-1/2" OR LARGER
8-3/4" TO 9-1/4"	3-1/2" OR LARGER
9-1/2" TO 10"	4-1/2" OR LARGER

DOUBLE-ENDED SEALS FOR PENETRATIONS THROUGH WALLS GREATER THAN 10" THICK OR PROVIDE OVERSIZED SLEEVE AND GROUT CONDUIT

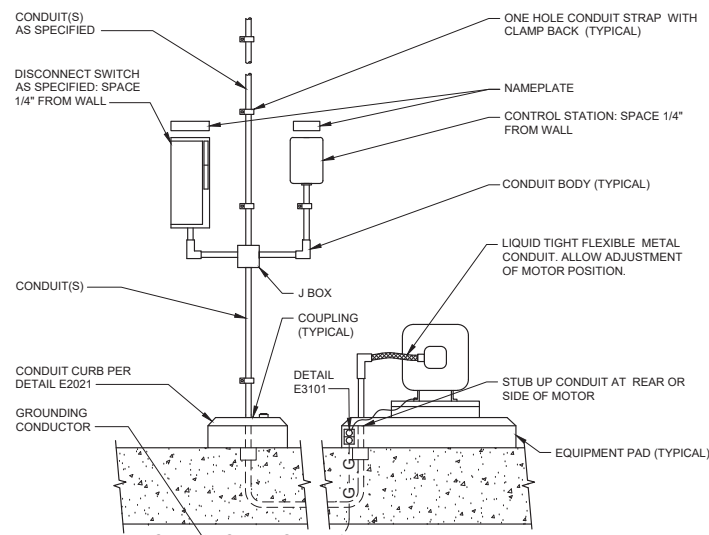
UNDERGROUND RACEWAYS THROUGH FLOOR AND WALL
DETAIL (E2114)
NO SCALE



NOTES

- OD = OUTSIDE DIAMETER OF CONDUIT.
- "S" = CLEAR SPACE BETWEEN REINFORCING.
- MAXIMUM OD = T/4 OR S - 1/2".
- PLACE CONDUIT UNDER SLAB AND ENCASE IN CONCRETE WHERE OD GREATER THAN T/4 OR S - 1/2".
- PROVIDE PVC OR PVC COATED CONDUITS WHERE IN CONTACT WITH REINFORCING.
- CONDUIT PENETRATION OPENINGS PER 26 05 00-3.01-A-4.

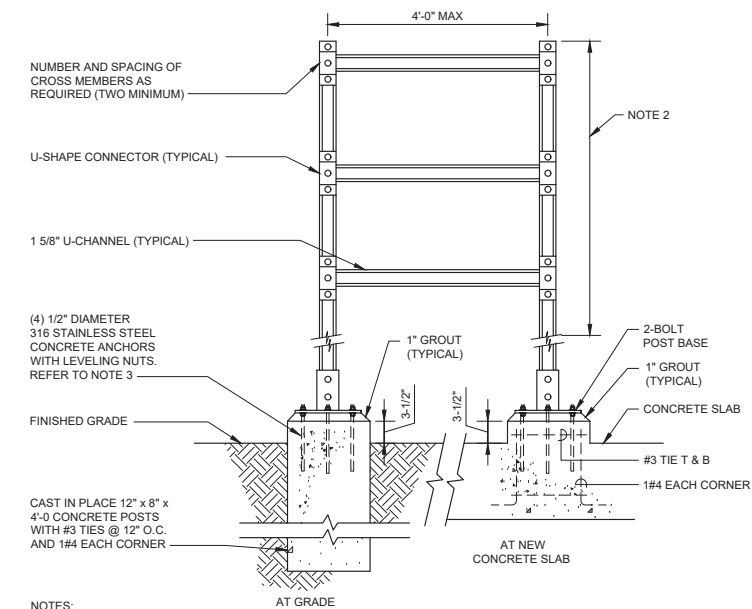
EMBEDDED RACEWAYS SLAB ON GRADE
DETAIL (E2202)
NO SCALE



NOTES:

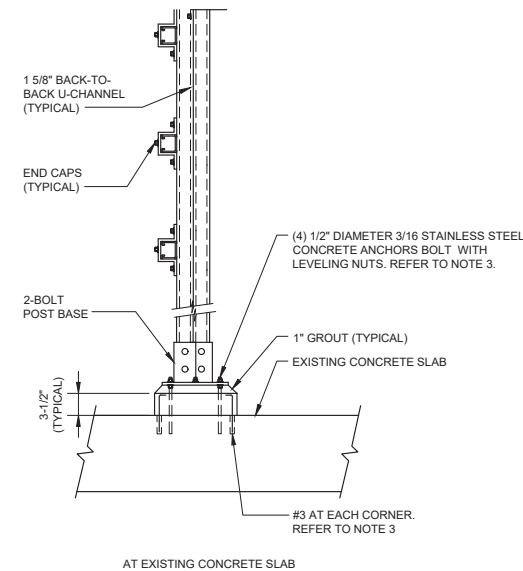
- CONDUIT NUMBER, SIZE, AND CONFIGURATION VARIES. REFER TO APPLICABLE ONE LINE DIAGRAMS OR SCHEDULES.
- PROVIDE POWER DISCONNECT NAMEPLATE INDICATING POWER SOURCE.
- PROVIDE CONTROL STATION NAMEPLATE INDICATING EQUIPMENT TAG NUMBER AND DESCRIPTION.
- SEE DRAWINGS OR SCHEDULES FOR SEPARATE POWER, CONTROL AND INSTRUMENTATION RACEWAYS.

MOTOR RACEWAYS ADJACENT WALL STARTER
DETAIL (E2301)
SCALE: NONE



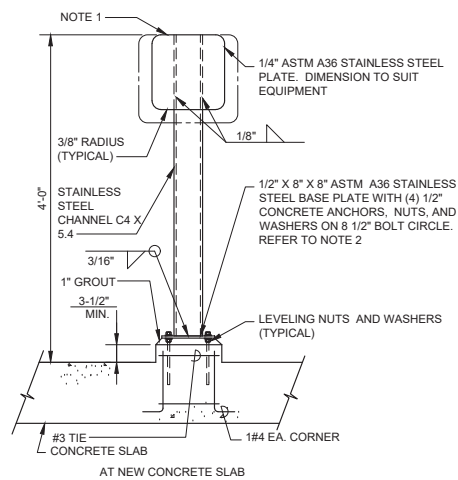
NOTES:

- EQUIPMENT RACK SIZING:
 - A. ONE ITEM GREATER THAN 150 SQUARE INCHES.
 - B. TWO EQUIPMENT ITEMS GREATER THAN 130 SQUARE INCHES.
 - C. THREE OR MORE EQUIPMENT ITEMS.
 - D. PROVIDE 316 STAINLESS STEEL CHANNEL END-CAPS, AND FITTINGS
 - E. PROVIDE 1/4" MINIMUM ALUMINUM PLATE FOR SMALL ITEMS
- MOUNT INDICATORS OR EQUIPMENT OPERATING HANDLES FOUR FEET ABOVE FLOOR OR PLATFORM.



- REFER TO STRUCTURAL DRAWINGS AND SPECIFICATION FOR ANCHORAGE MATERIAL AND METHOD REQUIREMENTS.
- MATERIAL AND HARDWARE PER SPECIFICATION DIVISION 26.

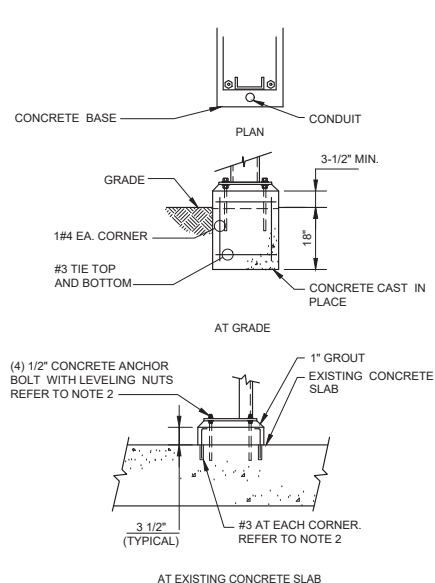
EQUIPMENT SUPPORTS STRUT RACK
DETAIL (E4001)
NO SCALE



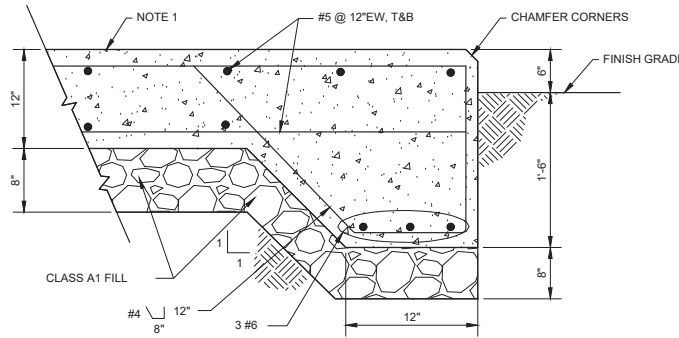
NOTES:

- MOUNTING STAND PLATE: 2X2" MAXIMUM
 - A. DRILL PLATE FOR NUMBER OF HOLES REQUIRED.
 - B. REMOVE ALL SHARP EDGES.
 - C. CLEAN AND HOT DIP GALVANIZE AFTER FABRICATION.
- SEE TYPICAL CONCRETE ANCHOR OR THREADED ROD DETAIL FOR CONCRETE ANCHOR REQUIREMENTS.
- PROVIDE 316 STAINLESS STEEL ANCHOR BOLTS AND HARDWARE

EQUIPMENT SUPPORTS INSTRUMENT/CONTROL STAND - SS
DETAIL (E4012)
NO SCALE



EQUIPMENT SUPPORTS CONCRETE PAD
DETAIL (E4031)
NO SCALE



NOTES:

- PROVIDE PAD DIMENSION PER ACCEPTED EQUIPMENT SUBMITTAL

NO.	DATE	BY	DESCRIPTION	APPROVED