

GENERAL INFORMATION:

1 THE DEPARTMENT OF WATER AND POWER (DWP) WILL NOT EQUIP THE TRANSFORMER PAD UNTIL THE REQUIREMENTS OF THESE DRAWINGS HAVE BEEN COMPLETED AND APPROVED BY A DWP DESIGN ENGINEER AND INSPECTOR.

IT IS EXPECTED THAT IT WILL TAKE DWP APPROXIMATELY ONE MONTH FROM THE TIME THE PAD HAS BEEN APPROVED BY A DWP DESIGN ENGINEER TO BUILD BOTH THE ON-SITE AND OFF-SITE FACILITIES NECESSARY TO PROVIDE THE PERMANENT ELECTRIC SERVICE TO THIS PROJECT.

IT IS THE RESPONSIBILITY OF THE OWNER OR OWNERS' REPRESENTATIVE TO INFORM DWP, IN WRITING, OF THE MOST ACCURATE PERMANENT SERVICE DATE AT LEAST THREE MONTHS PRIOR TO THE SERVICE DATE.

CHANGES IN SERVICE DATE MUST BE SUBMITTED IN WRITING TO THE DESIGN ENGINEER. FAILURE TO DO SO COULD DELAY ENERGIZING THE SWITCHBOARD.

2 PROVIDE A TRANSFORMER PAD COMPLETE AS SHOWN ON THESE DRAWINGS. PIPES OR DUCTS FOREIGN TO THIS INSTALLATION SHALL NOT RUN IN OR UNDER THE PAD. THE ENCLOSURE SHALL BE LOCATED SO DWP WILL HAVE ACCESS FOR CONSTRUCTION OR FOR MAINTENANCE TRUCKS AND EQUIPMENT, AND HAVE IMMEDIATE ACCESS FOR MAINTENANCE, REPAIRS, AND SWITCHING 24 HOURS A DAY. PROVIDE KEYS FOR ALL INTERMEDIATE DOORS OR GATES. THE CUSTOMER WILL PROVIDE A BUILT-IN BOX WITH A YALE AND TOWNE LOCK CYLINDER WITH SIX-PIN TUMBLER, 'O' BITTING, AND AN 'SA' KEYWAY.

INSTALLATION AND INSPECTION SHALL BE IN ACCORDANCE WITH THE DWP UNDERGROUND CONDUIT REQUIREMENTS DRAWING PREPARED FOR THIS PROJECT. CONTRACTOR TO CONTACT THE DWP DESIGN ENGINEER TO OBTAIN A COPY OF THE CONDUIT REQUIREMENTS DRAWING.

TRANSFORMER PAD SHALL MEET THE ADDITIONAL INSTALLATION REQUIREMENTS OF DWP UNDERGROUND CONDUIT AND SUBSTRUCTURE SPECIFICATION NO. 104 AND DWP POWER DISTRIBUTION DIVISION CONSTRUCTION STANDARDS NO. C721-01 (ALL SHEETS) AS LAST REVISED WITH THE EXCEPTIONS NOTED HEREON.

REQUIREMENTS FOR FABRICATION:

3 TRANSFORMER PAD SHALL BE REINFORCED CONCRETE AND SHALL MEET THE REQUIREMENTS OF DW&P SPECIFICATION NO. P-178 AS LAST REVISED EXCEPT ARTICLE 4 FOR PAD HANDHOLE AND ARTICLE 3 (C)(1) AND ARTICLE 4 FOR PAD SLAB. MINIMUM REQUIRED DESIGN LOADING FOR PAD SLAB SHALL BE:
 LIVE LOAD = 300 LBS/SQ FT
 DEAD LOAD = 4000 LBS/LF @ LOAD POINTS
 IMPACT = NONE

ALL PULL IRONS PER UGCS 1-825 SHALL BE SO PLACED AS TO WITHSTAND A WORKING LOAD OF 20,000 LBS./PULL IRON.

STRUT AND BOLT INSTALLATION SHALL WITHSTAND A MINIMUM SHEAR LOAD OF 300 LBS/LF AND A PULL-OUT LOAD OF 150 LBS/BOLT. MAXIMUM SPACING REQUIRED IS 16" O.C. AND 3" FROM EACH END OF STRUT, UNLESS OTHERWISE NOTED.

MANUFACTURER TO DELIVER PREFABRICATED TRANSFORMER PAD TO JOB SITE AND SUPPLY SPREADER BAR FOR UNLOADING. DWP OR INSTALLING CONTRACTOR TO PROVIDE MEANS FOR UNLOADING AND SETTING PRECAST UNITS.

COVERS SHALL BE PROVIDED WITH NON-CORROSIVE FASTENING DEVICE ON THE CENTER LINE OF EACH SIDE (4 SIDES) SUCH THAT A TOOL SHALL BE REQUIRED FOR ITS REMOVAL. COVERS SHALL BE HOT DIP GALVANIZED. COVERS AND BOLTS SHALL BE FLUSH WITH CONCRETE SURFACE. THE FRONT COVER SHALL BE GALVANIZED AFTER LADWP LOGO IS BEADWELDED IN PLACE. IF APPLICABLE, PROVIDE 1/2" OPEN END STAR P35T INSERTS WITH THROUGH HOLE OR CLEAN OUT FOR EACH BOLT.

4 SELECT A LOCATION FREE OF SUBSTRUCTURES, CLEAR OF OVERHEAD OBSTRUCTIONS THAT WOULD INTERFERE WITH THE BOOM OF A LARGE CRANE AND HAVE AMPLE WORKING ROOM FOR A CRANE TO UNLOAD THE SECTION FROM A TRUCK INTO THE EXCAVATION.

STRUCTURE SHALL BE SET ON A COMPACTED LEVEL BED OF CRUSHED AGGREGATE BASE.

ALL MAIN LINE CONDUIT ENTERING HANDHOLE SHALL TERMINATE FLUSH WITH INSIDE SURFACE. TERMINATION SHALL BE WITH CAST-IN TERMINATIONS. EDGES SHALL BE ROUNDED AND SMOOTH. NO SHARP OR ROUGH EDGES WILL BE ACCEPTED.

WEIGHT AND ALL OUTSIDE DIMENSIONS VARY WITH MANUFACTURER. VALUES GIVEN ARE LARGEST SHOWN ON MANUFACTURE'S DRAWINGS. PRIOR TO EXCAVATION, STRUCTURE INSTALLER SHALL OBTAIN THE MINIMUM REQUIRED EXCAVATION SIZE FROM THE MANUFACTURER SUPPLYING THE STRUCTURE.

BACKFILL WITH NATURAL MATERIAL AND PERFORM 90% COMPACTION. AS AN ALTERNATIVE BACKFILL WITH SLURRY-CEMENT CONCRETE CLASS 100-E-100. BACKFILL UNDER OVERHANG SHALL ONLY BE SLURRY-CEMENT.

V.B.

REQUIREMENTS FOR INSTALLATION:

5 THE WALL OF ANY BUILDING ADJACENT TO THE ENCLOSURE SHALL BE OF REINFORCED CONCRETE, BRICK, OR CONCRETE BLOCK WITH A MINIMUM FIRE RESISTANCE OF THREE HOURS AND SHALL HAVE NO OPENINGS ABOVE THE ENCLOSURE OR WITHIN TEN FEET OF THE ENCLOSURE.

6 THE ENCLOSURE SHALL BE PROTECTED BY CONCRETE FILLED, 4 FOOT HIGH, 5" HOT DIP GALVANIZED STEEL PIPE BARRIERS INSERTED A MINIMUM OF 3' IN THE GROUND (IF APPLICABLE). LOCATE THE BARRIER PIPES AS SHOWN ON THE DRAWING, OR AS DIRECTED BY DEPARTMENT REPRESENTATIVE.

7 FOR THE ACCESS PATH TO THE TRANSFORMER PAD AND THE CRANE STAGING AREA REQUIREMENTS SEE C721-01.4 AND C721-01.5 AS LAST REVISED EXCEPT, IN TABLE 1 ON C721-01.5. ANY SUBSTRUCTURE UNDER THE ACCESS PATH AND STAGING AREA SHALL BE DESIGNED FOR A MINIMUM CRANE PLUS TRANSFORMER WEIGHT OF 45 TONS WITH THE LOAD BEING CONCENTRATED ON 1 TO 4 OUTRIGGERS.

8 GROUP 1 AND 2 STRUCTURES REQUIRE TWO GROUND PLATES, WHILE GROUP 3 STRUCTURES REQUIRE A TOTAL OF FOUR. GROUND PLATES (CADWELD NO. B-164-30) ARE CAST-IN CONCRETE WITH THE FLAT-TAPPED SURFACES SET FLUSH WITH THE INSIDE WALL FACE AND A WELDED 500 KCMIL INSULATED COPPER CABLE (3 FT LONG TAIL), ELECTRICALLY ISOLATE CABLE FROM CONCRETE REINFORCING BARS.

4/0 BARE STRANDED COPPER WIRE (PT. 22) SHALL BE USED THROUGHOUT THE GROUND GRID EXCEPT 500 KCMIL INSULATED STRANDED COPPER CABLE (PT. 23) SHALL BE USED TO CONNECT THE GROUND PLATES (PT. 28) TO THE 4/0 GROUND GRID (PT. 22) AND THE COLD WATER CONNECTION (PT. 23).

LADWP SHALL BOND THE STAINLESS STEEL FIRE BARRIER MOUNTING PLATE FROM THE TRANSITION BOX TO THE METALLIC STRUT BRACKET HARDWARE IN THE CABLE TRENCH, THEN FROM THE CABLE TRENCH TO THE METALLIC HARDWARE OF THE PRECAST TRANSFORMER PAD. BONDING WIRE SHALL CONSIST OF EITHER 1-4/0 BARE STRANDED COPPER WIRE (M.C. 34-08-154) OR 2-2/0 BARE STRANDED COPPER WIRES (M.C. 34-08-152).

INSTALL ALL GROUND WIRES IN THE EARTH 1'-6" BELOW THE FINISH GRADE. CONNECT TO THE GROUND PLATE (PT. 28) AND GROUND RODS (PT. 21). ALL CONNECTIONS SHALL BE WELDED USING EXOTHERMIC WELDING (PT. 25). ANY ADJOINING FENCE MUST BE ISOLATED FROM THE PADMOUNT GROUNDING SYSTEM BY AN 18" GAP.

THE GROUNDING GRID AND CONNECTION TO COLD WATER WILL BE GIVEN PRELIMINARY APPROVAL PENDING FINAL APPROVAL BASED ON ACCEPTABLE RESISTANCE MEASUREMENTS OF 5 OHMS OR LESS TAKEN BY DWP TEST LAB.

CONNECT 500 KCMIL INSULATED STRANDED COPPER CABLE (PT. 23) TO A CONTINUOUS METALLIC UNDERGROUND COLD WATER PIPING SYSTEM MAIN, 2" MINIMUM, OR GROUND SUBSTITUTE SPECIFIED BY A DWP DESIGN ENGINEER. IN THE ABSENCE OF COLD WATER PIPING SYSTEM CONNECT A SEPARATELY DERIVED GROUNDING SYSTEM TO THE LOWER GROUNDING PLATE ACCORDING TO THE DRAWING UB721-17. ELECTRICALLY ISOLATE CABLE FROM OTHER GROUNDS, METALS, AND CONCRETE REINFORCING NETWORKS. DO NOT USE THIS CABLE TO GROUND ANY EQUIPMENT OUTSIDE OF THE ENCLOSURE.

FURNISH A 3-HOUR FIRE-RATED CABLE SEALING DEVICE FOR THE APPROPRIATE SERVICE SIZE. SELECT FROM ONE OF THE FOLLOWING APPROVED MANUFACTURERS AND RELATED DRAWINGS:

A. CROUSE HINDS, UB721-21(4000A & 5000A) & UB721-27 (3000A).
 B. NELSON, UB721-22 (4000A & 5000A) & UB721-28 (3000A).

THE CUSTOMER SHALL PURCHASE, OWN, AND MAINTAIN THE CABLE SEALING DEVICE(S).

9 THE CABLE SEALING DEVICE OR DEVICES SHALL BE FOR OUTDOOR INSTALLATION AND SHALL INCLUDE ALL NECESSARY FITTINGS AND WALL FLANGES THAT ARE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION FOR CLASS 'A' OPENINGS, SUPPORTING STRUCTURES, AND MISCELLANEOUS PARTS REQUIRED TO MAKE A COMPLETE INSTALLATION. THE CONDUCTORS FOR THIS SYSTEM WILL BE FURNISHED AND INSTALLED BY THE DWP AND WILL CONSIST OF A MAXIMUM OF TWENTY-ONE COPPER EPR/CPE CONDUCTORS CONSISTING OF 929KCMIL (DLO) CABLE, EIGHTEEN CONDUCTORS FOR SIX SETS OF THREE PHASE APPLICATION AND THREE CONDUCTORS FOR NEUTRAL APPLICATION, WITH A MAXIMUM CONDUCTOR JACKET O.D. DIAMETER OF 1.67".

10 FOR CORRESPONDING PRECAST CABLE TRENCH, REFER TO UB721-20 AND FOR PRECAST CABLE TRANSITION BOX REFER TO UB721-24.

REV. NO.	REV. DATE	INT'L.	REVISION DESCRIPTION	APPV.	PE NO.
	03/06/13	EHP	REVISED NOTE 11.	J.M.A.	
	08/18/11	EHP	SEE SHT'S 1 & 2 FOR REVISION	J.M.A.	
	06/27/11	JHG	SEE SHT'S 1 & 2 FOR REVISION	J.M.A.	
	05/19/11	JD/EHP	ADDED INSTRUCTIONS TO NOTE 8	J.M.A.	
	04/20/11	JD	REVISED NOTE #8	J.M.A.	
	03/04/11	EHP	REVISED NOTES & ADDED NOTE #12	J.A.	
	07/19/10	EHP	REVISED NOTE 9 & ADDED NOTE #11	J.A.	

DISTRICT	CONTRACT NO.	DWP NO.
CITY OF LOS ANGELES		
DEPARTMENT OF WATER AND POWER		
DISTRIBUTION ENGINEERING & SERVICES SECTION		
DESIGN SA'10 P00571	DRAWING E.PERDOMO	
DATE 6-23-10	CHECKER W.YCEDO	
DATE 04/15/09	DATE	
APPROVED JAMES MAGUIA		

REV. NO.	REV. DATE	INT'L.	REVISION DESCRIPTION	APPV.	PE NO.

DESIGN	SA'10 P00571	DRAWING	E.PERDOMO
DATE	6-23-10	CHECKER	W.YCEDO
DATE	04/15/09	DATE	
APPROVED	JAMES MAGUIA		

City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
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Brown and Caldwell
WALSH
 CONSULTANT

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

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

ELECTRICAL DRAWING REFERENCE - 3

DESIGNED BY: FRF
 DRAWN BY: FRF
 CHECKED BY: HWP
 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
R-01-5003
 SH-243-OF 303 SHS

FOR REFERENCE ONLY

PLANT CODE - "C" FOR CHARNOCK AND "A" FOR ARCADIA
 SYSTEM CODE - DENOTES ASSOCIATED SYSTEM STREAM
 FUNCTION CODE - DENOTES ASSOCIATED EQUIPMENT ABBREVIATION
 SEQUENCE CODE - UNIQUE ALPHA-NUMERIC IDENTIFIER

NOTE:
 TAG NUMBERS FOR ALL EQUIPMENT ARE PRECEDED WITH A PLANT CODE "C"
 FOR ALL CHARNOCK EQUIPMENT AND A PLANT CODE "A" FOR ALL ARCADIA
 EQUIPMENT UNLESS OTHERWISE NOTED.

EQUIPMENT IDENTIFICATION DESCRIPTION

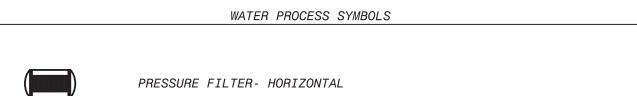
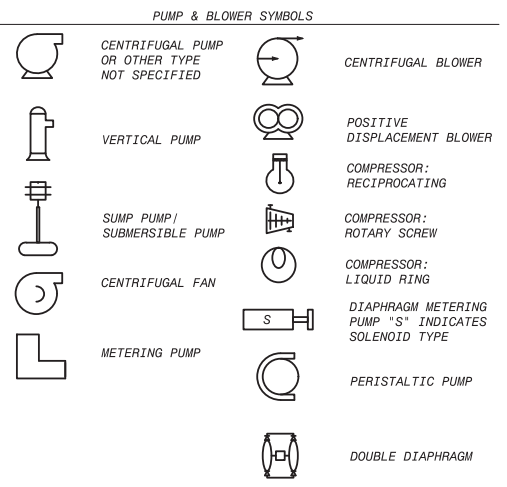
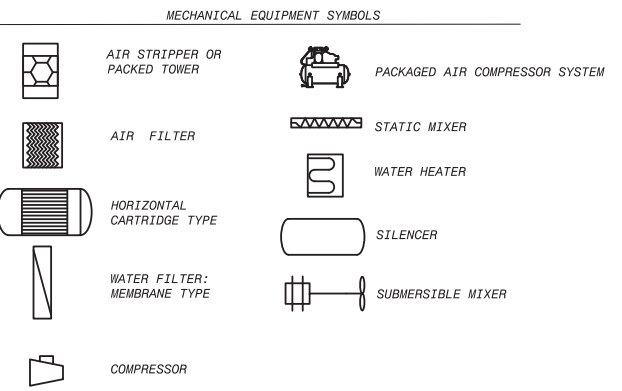
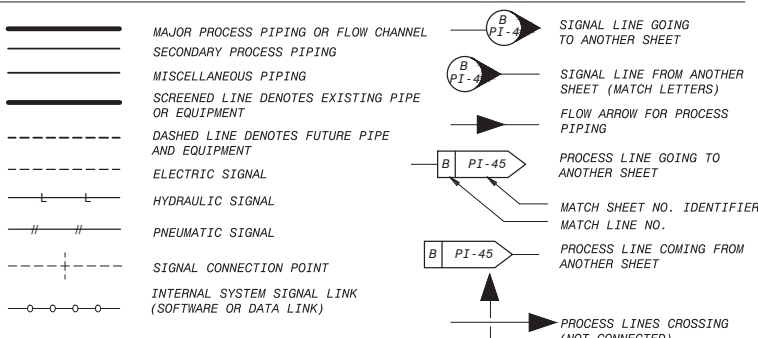
P - SSS - FFF - 9999

PIPE SIZE - INCHES UNLESS OTHERWISE NOTED
 SYSTEM CODE - DENOTES ASSOCIATED PROCESS STREAM
 MATERIAL CODE - DENOTES ASSOCIATED MATERIAL ABBREVIATION

SSS - PPP - 999

PIPELINE IDENTIFICATION DESCRIPTION

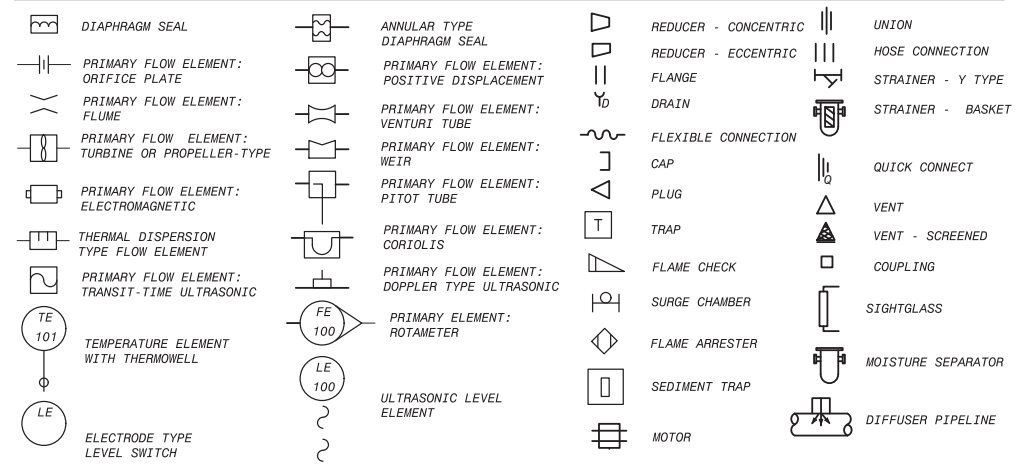
LINE SYMBOLS



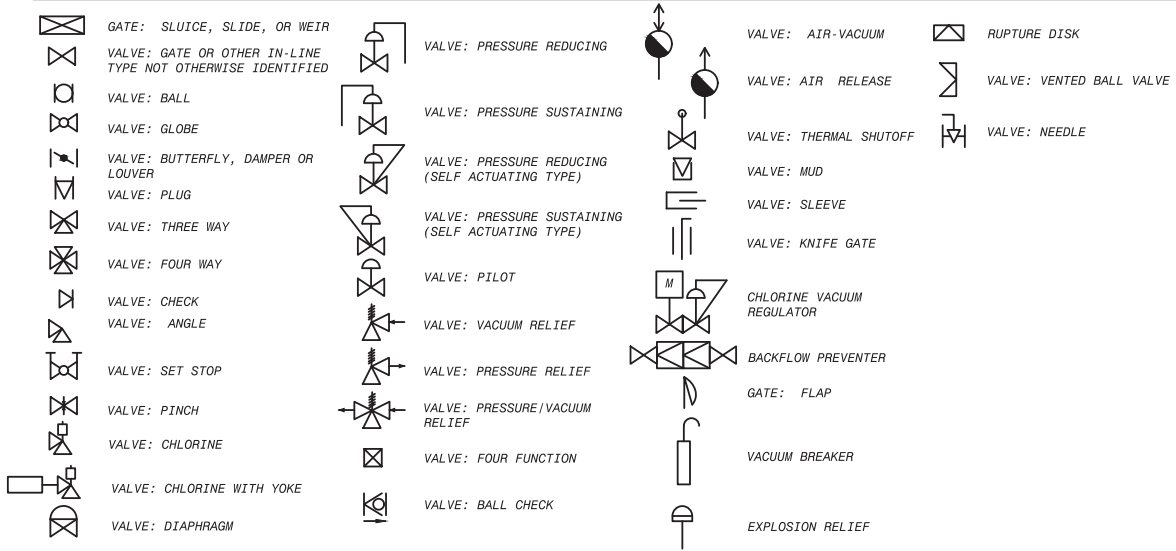
AWTP EXPANSION NOTES

1. PORTIONS OF THIS DRAWING SET ARE BASED ON EXISTING PLANT DRAWINGS, WITH AWTP MODIFICATIONS SHOWN. WHEN EXISTING SHEETS ARE USED THE ORIGINAL SEAL INFORMATION IS NOTED. NEW SEALS APPLIED BY THIS PROJECT, APPLY ONLY TO THE NEW OR MODIFIED ELEMENTS ON THE SHEETS.

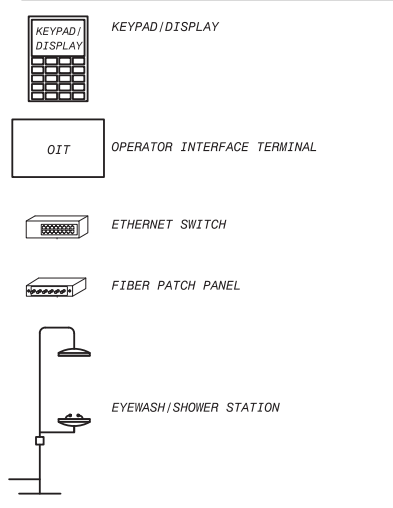
PRIMARY ELEMENT & FITTING SYMBOLS



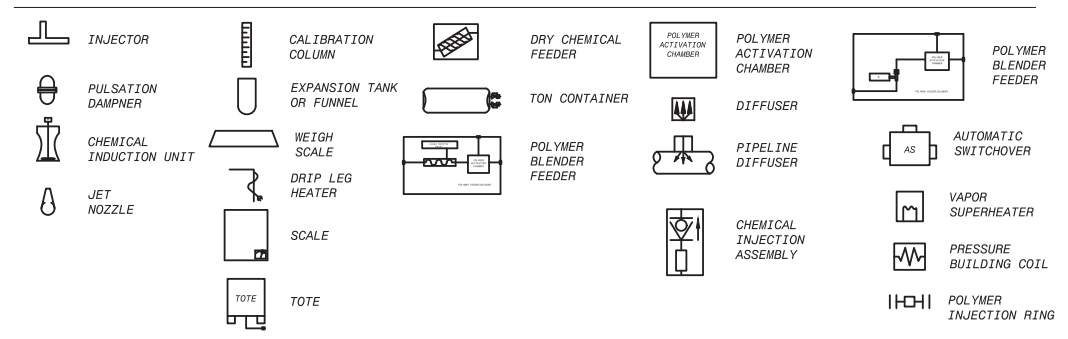
VALVE & GATE SYMBOLS



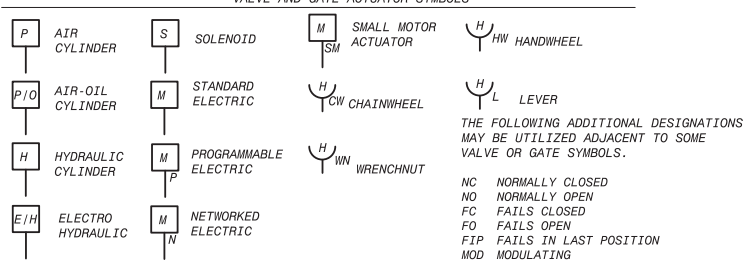
MISCELLANEOUS SYMBOLS



CHEMICAL FEED EQUIPMENT SYMBOLS



VALVE AND GATE ACTUATOR SYMBOLS



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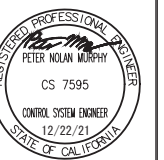
NO.	DATE	BY	DESCRIPTION	APPROVED

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

INSTRUMENTATION LEGEND - 1

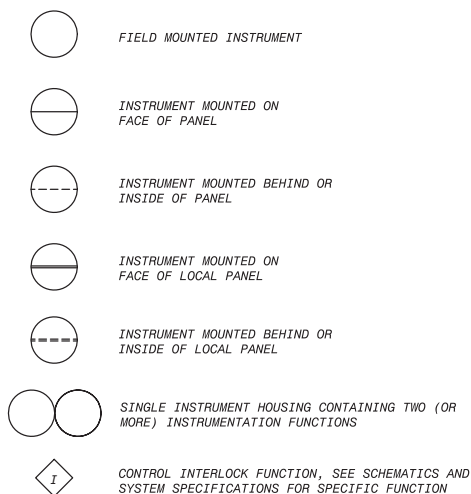
DESIGNED BY : WT
 DRAWN BY : CR
 CHECKED BY : AZ
 CONSULTANT JOB SHEET NO.
 DRAWING NO. 7078
 1-01-0001
 SHEET 244 OF 303 SHEETS



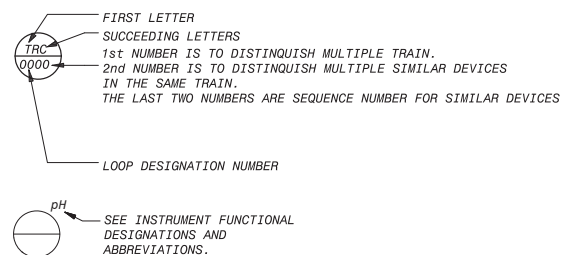
INSTRUMENT TAG NUMBERS
MEANINGS OF IDENTIFICATION LETTERS

LETTER	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	CLOSED
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME-SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY	MOMENTARY			MIDDLE OR INTER-MEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE OR TOTALIZE	INTEGRATE OR TOTALIZE		
R	RADIATION		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER, OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, OR PRESENCE			RELAY OR COMPUTE	
Z	POSITION, DIMENSION			DRIVE, ACTUATOR OR UNCLASSIFIED FINAL CONTROL ELEMENT	

GENERAL INSTRUMENT SYMBOLS

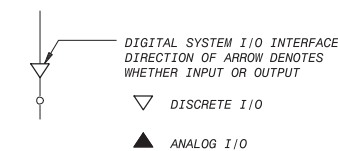


TAG NUMBERS AND ADDITIONAL DESIGNATIONS



DIGITAL SYSTEMS INTERFACE SYMBOLS

NOTE: REFER TO DETAILED SYSTEM SPECIFICATIONS FOR FUNCTIONAL DESCRIPTION. ALSO SEE I/O SCHEDULES FOR COMPLETE INPUT AND OUTPUT LISTINGS.



FUNCTION DESIGNATIONS AND ABBREVIATIONS

INSTRUMENT DESIGNATIONS

K	GAIN OR ATTENUATE (INPUT:OUTPUT)
-K	GAIN AND REVERSE
Σ	ADD OR SUM (ADD AND SUBTRACT)
Δ	SUBTRACT (DIFFERENCE)
√	EXTRACT SQUARE ROOT
÷	DIVIDE
F(X)	CHARACTERIZE SIGNAL
>	HIGH-SELECT
<	LOW-SELECT
X	MULTIPLY
∫	INTEGRATE (TIME INTEGRAL)
CH ₄	METHANE
CL ₂	CHLORINE RESIDUAL
CO ₂	CARBON DIOXIDE
COND	CONDUCTIVITY
DO	DISSOLVED OXYGEN
F	FLUORIDE
LEL	LOWER EXPLOSIVE LIMIT
MCC	MOTOR CONTROL CENTER
MLSS	MIXED LIQUOR SUSPENDED SOLIDS
O ₂	OXYGEN (PURITY)
ORP	OXIDATION REDUCTION POTENTIAL
pH	pH CELL
TEMP	TEMPERATURE
TURB	TURBIDITY

FUNCTION DESIGNATIONS AND ABBREVIATIONS

GENERAL NOTES

- IN GENERAL, THE P&ID SYMBOLS AND DEVICE IDENTIFICATIONS ARE BASED ON INSTRUMENT SOCIETY OF AMERICA, STANDARD PRACTICE ISA-S5.1 (1988). SOME MODIFICATIONS, ADDITIONS, AND ALTERATIONS HAVE BEEN MADE AS NEEDED TO ACCOMMODATE THE PROJECT REQUIREMENTS.
- SOME CONTROL AND INTERLOCK REQUIREMENTS WHICH CAN BE MORE CLEARLY ILLUSTRATED ON SCHEMATIC DRAWINGS HAVE BEEN OMITTED FROM P&ID DRAWINGS.
- THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
- PIPING AND EQUIPMENT LEGEND APPLIES TO P&ID SHEETS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.

HAND SWITCH DESIGNATIONS

HOA	HAND-OFF-AUTO
LR	LOCAL REMOTE
OC	OPEN-CLOSE
OO	ON-OFF
LOR	LOCAL-OFF-REMOTE
OOA	ON-OFF-AUTO
OCR	OPEN-CLOSE-REMOTE
OOR	ON-OFF-REMOTE
FR	FORWARD-REVERSE

POWER SUPPLY ABBREVIATIONS

AS	AIR SUPPLY
ES	ELECTRIC SUPPLY
GS	GAS SUPPLY
HS	HYDRAULIC SUPPLY
NS	NITROGEN SUPPLY
SS	STEAM SUPPLY
WS	WATER SUPPLY

AS > POWER SUPPLY SOURCE LABEL. USED ONLY WHERE NECESSARY TO HELP CLARIFY AN INSTRUMENT OR SYSTEM FUNCTION.

TRANSDUCER & CONVERTER DESIGNATION

E	VOLTAGE
FSK	FREQUENCY SHIFT KEYING
H	HYDRAULIC
I	CURRENT
P	PNEUMATIC PULSE
PD	PULSE DURATION
PF	PULSE FREQUENCY
R	RESISTANCE (ELECTRICAL)

EXAMPLE: I/P = CURRENT TO PNEUMATIC TRANSDUCER

AWTP EXPANSION NOTES

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



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

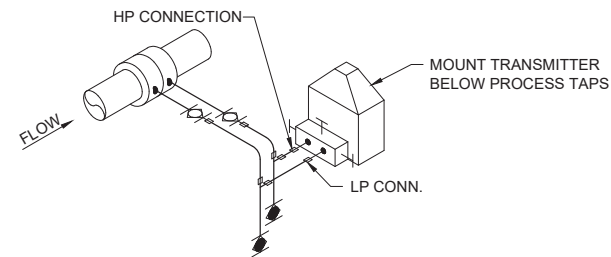
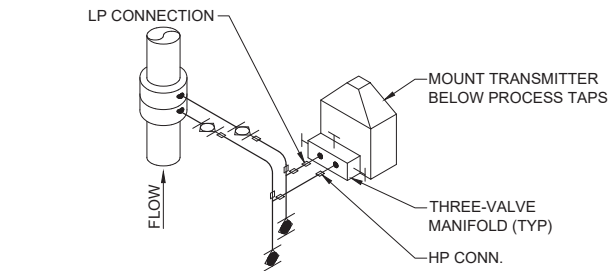
REFERENCE : _____	DATE : _____, 20__	COMPUTER FILE NAME : _____
SUBMITTED BY : _____	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO. : SP2602
APPROVED BY : _____	DATE : _____, 20__	ALEX NAZARCHUK, P.E. - CITY ENGINEER

OLYMPIC WELL FIELD RESTORATION
AND ARCADIA WTP EXPANSION

INSTRUMENTATION LEGEND - 2

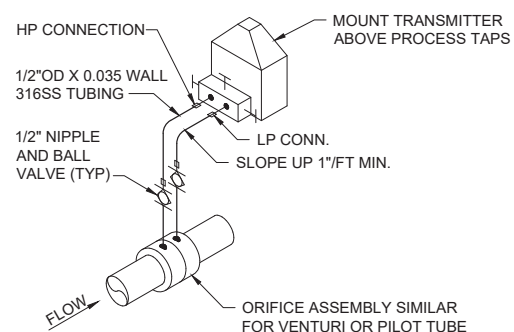
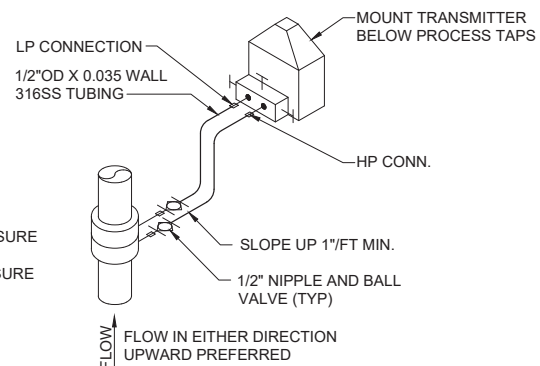


DESIGNED BY : WT
DRAWN BY : CR
CHECKED BY : AZ
CONSULTANT JOB/SHEET NO. _____
DRAWING NO. 7078
1-01-0002
SHT 245 OF 303 SHS



FLOW TRANSMITTER AND DIFFERENTIAL PRESSURE ELEMENT FOR VERTICAL LINE FOR LIQUIDS OR STEAM

FLOW TRANSMITTER AND DIFFERENTIAL PRESSURE ELEMENT IN HORIZONTAL LINE FOR LIQUIDS OR STEAM



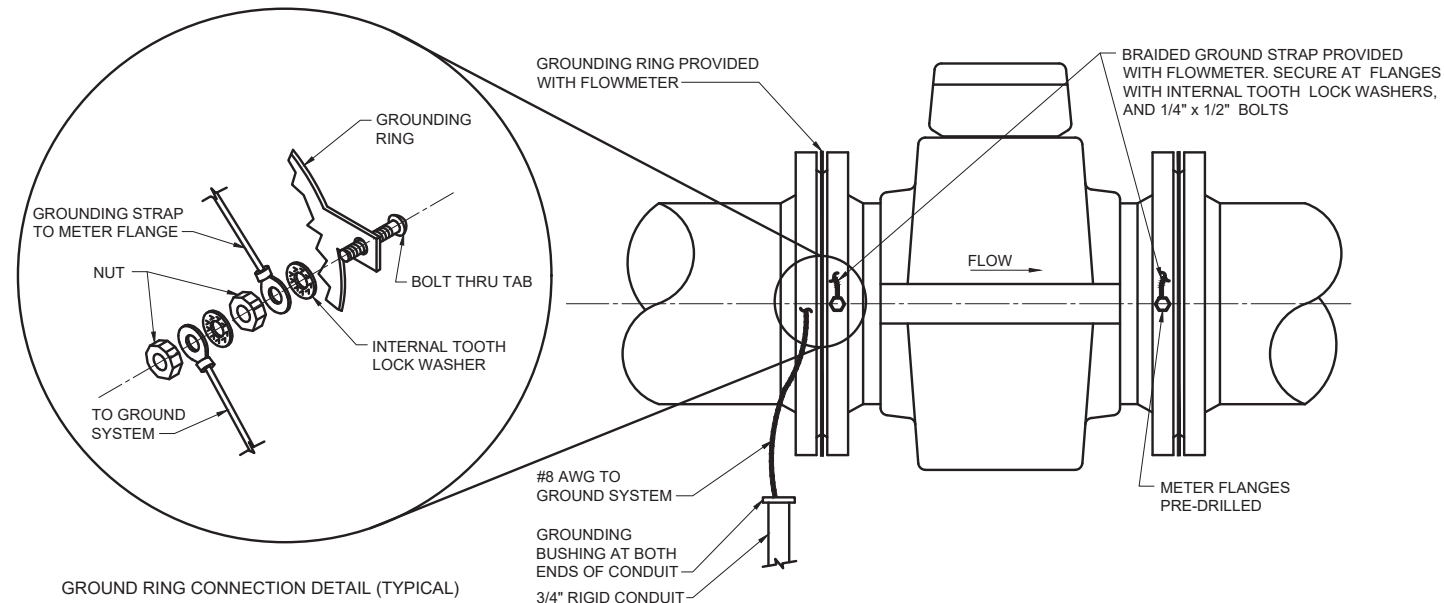
FLOW TRANSMITTER AND DIFFERENTIAL PRESSURE ELEMENT FOR VERTICAL LINE FOR AIR OR GAS

FLOW TRANSMITTER AND DIFFERENTIAL PRESSURE ELEMENT FOR HORIZONTAL LINE FOR AIR OR GAS

NOTES:

- DIFFERENTIAL PRESSURE TYPE OF FLOW MEASUREMENT
- MANIFOLD PER SPECIFICATION DIVISION 17

PROCESS LINE TAP DIFFERENTIAL PRESSURE LINES
DETAIL I2111
SCALE: NONE



GROUND RING CONNECTION DETAIL (TYPICAL)

FLOW TRANSMITTER MAGNETIC - GROUNDING
DETAIL I4001
SCALE: NONE

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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

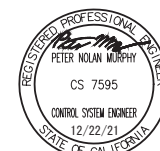
NO.	DATE	BY	DESCRIPTION	APPROVED



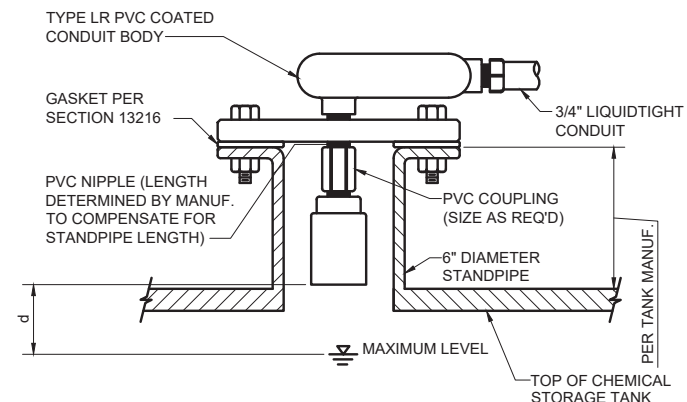
REVIEWED BY: _____ DATE: _____ 20__
 REVIEWED BY: _____ DATE: _____ 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____ 20__
 OMEED POUR, P.E. - PROJECT MANAGER

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

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
 INSTRUMENTATION DETAILS - 1

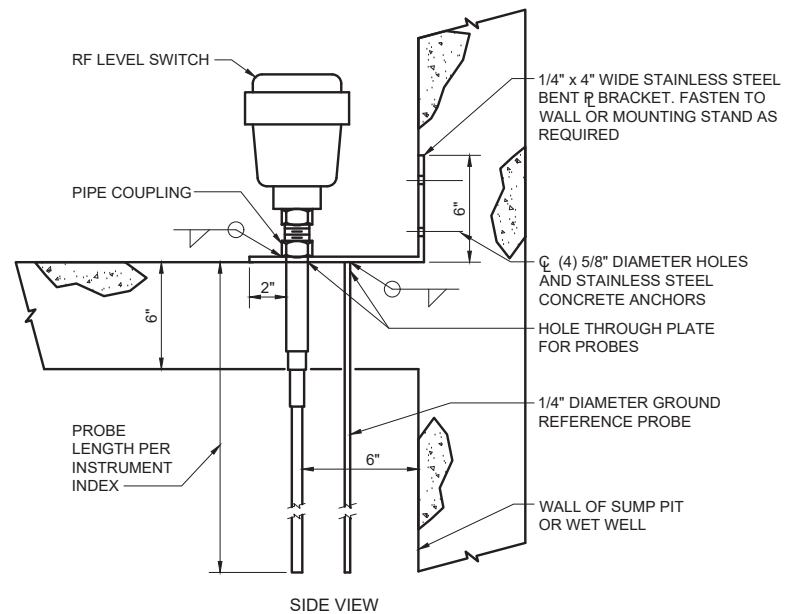


DESIGNED BY: WT
 DRAWN BY: CR
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
I-01-5001
 SH 247 OF 303 SHS

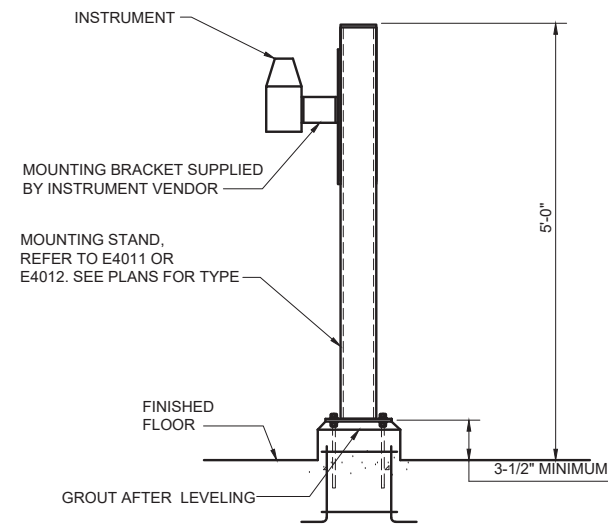


- NOTES:
1. DISTANCE FROM TRANSDUCER SENSOR HEAD TO MAXIMUM LIQUID LEVEL: (d) AS REQUIRED BY TRANSDUCER MANUFACTURER FOR PROPER LEVEL MEASUREMENT, MINIMUM 10 INCHES.
 2. PROVIDE AN UNOBSTRUCTED SOUND PATH PERPENDICULAR TO THE LIQUID SURFACE, PER TRANSDUCER MANUFACTURER INSTRUCTIONS.
 3. COORDINATE FLANGE UNIT AND STAND PIPE WITH TANK SUPPLIER

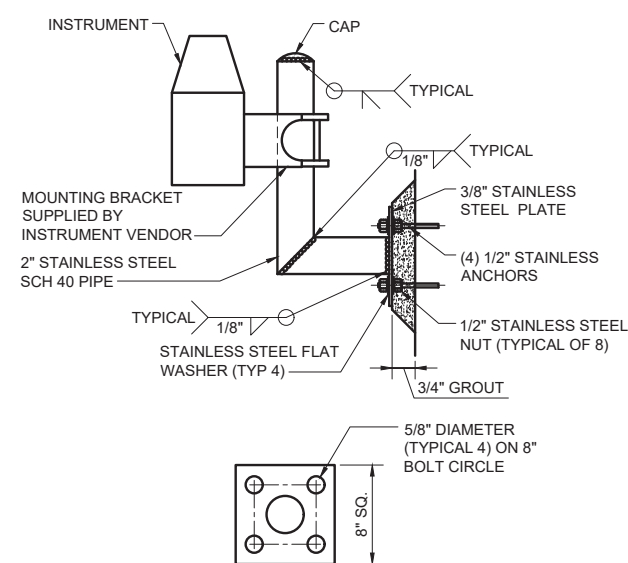
LEVEL TRANSMITTER
ULTRASONIC - FLANGED - ON TANK
DETAIL 14103
SCALE: NONE



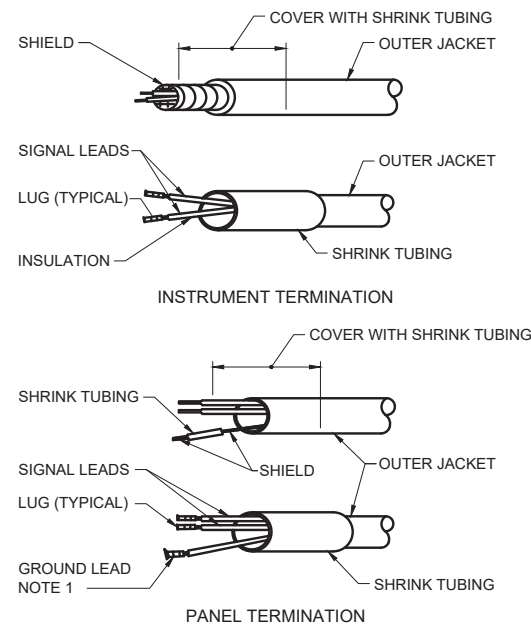
LEVEL SWITCH
CAPACITANCE - SUSPENDED
DETAIL 16111
SCALE: NONE



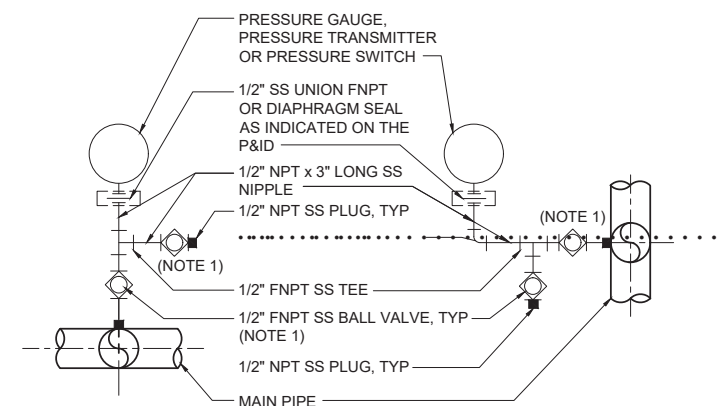
REMOTE INSTRUMENT MOUNT
FLOOR
DETAIL 17001
SCALE: NONE



WALL PLATE DETAIL
NOTES:
1. PROVIDE 316 STAINLESS STEEL
REMOTE INSTRUMENT MOUNT
WALL
DETAIL 17002
SCALE: NONE



SHIELDED CABLE TERMINATION
DETAIL 10501
SCALE: NONE



NOTES:
1. BALL VALVE TYPE UNLESS OTHERWISE NOTED.
PRESSURE, INSTRUMENT, GAUGE
OR PRESSURE SWITCH
DETAIL A
SCALE: NONE

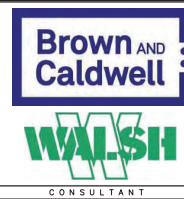


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NO.	DATE	BY	DESCRIPTION	APPROVED



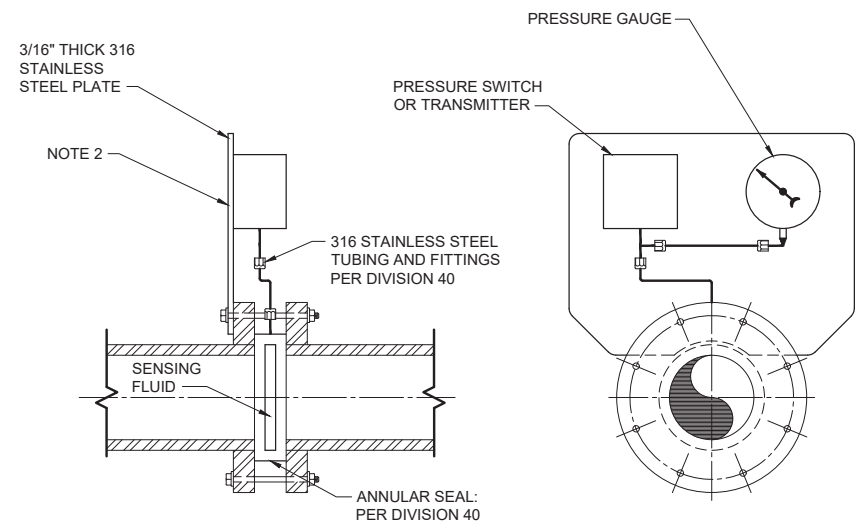
REVIEWED BY: _____ DATE: _____, 20__
 REVIEWED BY: _____ DATE: _____, 20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY: _____ DATE: _____, 20__
 OMEED POUR, P.E. - PROJECT MANAGER

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

OLYMPIC WELL FIELD RESTORATION
AND ARCADIA WTP EXPANSION

INSTRUMENTATION DETAILS - 2

DESIGNED BY: WT
 DRAWN BY: CR
 CHECKED BY: AZ
 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
 1-01-5002
 SHEET 248 OF 303 SHEETS



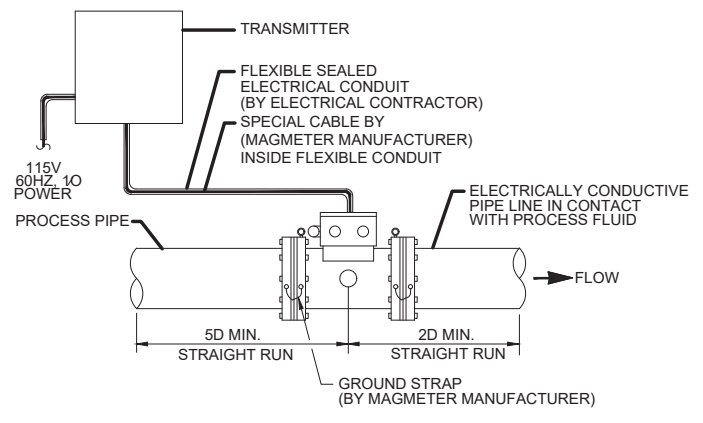
NOTES:

- 1. MOUNT EQUIPMENT WITH STAINLESS STEEL HARDWARE
- 2. SIZE PLATE AS REQUIRED FOR DEVICES

CHEMICAL SEALS
ANNULAR
DETAIL 12001
SCALE: NONE

	CLEAN LIQUIDS OR STEAM	AIR OR GAS
PRESSURE	TOP PREFERRED SIDE IF NECESSARY	TOP ONLY
TEMP.	TOP PREFERRED SIDE IF NECESSARY	SIDE PREFERRED TOP OR BOTTOM IF NECESSARY

PROCESS LINE TAP
INSTRUMENT TAP ORIENTATION
DETAIL 12102
SCALE: NONE



MAGNETIC FLOW METER WITH TRANSMITTER

DETAIL B
SCALE: NONE



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NO.	DATE	BY	DESCRIPTION	APPROVED



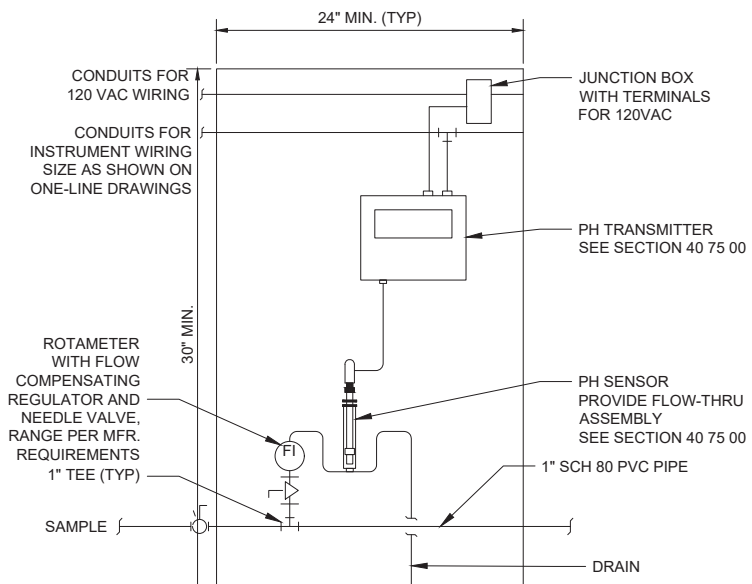
REVIEWED BY : _____ DATE : _____ 20__
SUNNY WANG, P.E. - WATER RESOURCES MANAGER
REVIEWED BY : _____ DATE : _____ 20__
OMIED POUR, P.E. - PROJECT MANAGER

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

OLYMPIC WELL FIELD RESTORATION
AND ARCADIA WTP EXPANSION

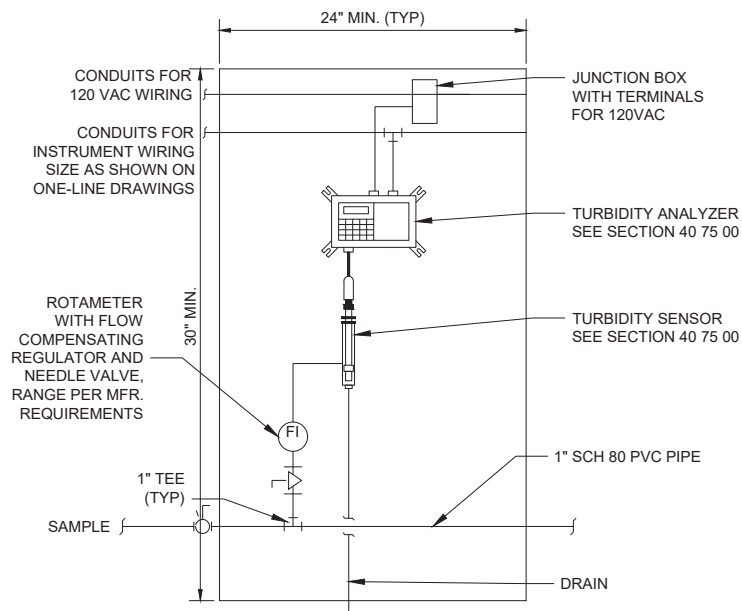
INSTRUMENTATION DETAILS - 3

DESIGNED BY : WT
DRAWN BY : CR
CHECKED BY : AZ
CONSULTANT JOB/SHEET NO.
DRAWING NO. 7078
1-01-5003
SHT 249 OF 303 SHS



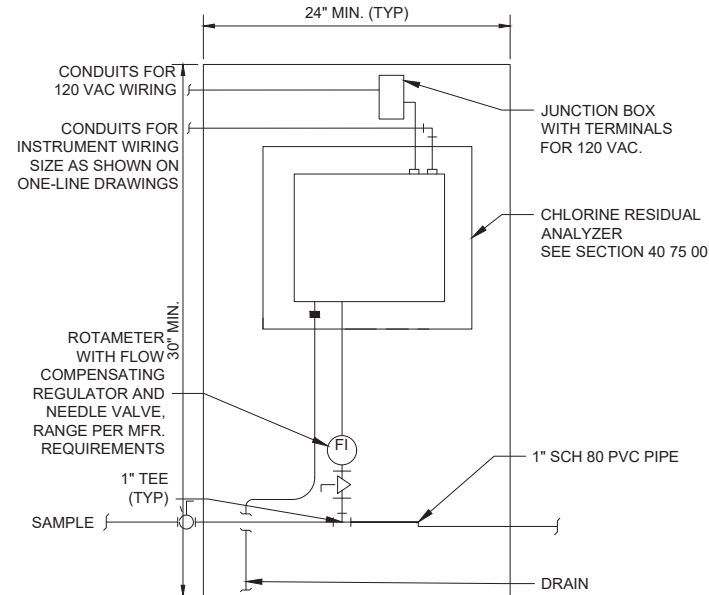
ANALYZER INSTRUMENT SUBPANEL
TYPICAL FOR PH/TEMP.
ORP AND CONDUCTIVITY

DETAIL **C**
SCALE: NONE



ANALYZER INSTRUMENT SUBPANEL
TYPICAL FOR TURBIDITY

DETAIL **D**
SCALE: NONE



ANALYZER INSTRUMENT SUBPANEL
TYPICAL FOR CHLORINE RESIDUAL

DETAIL **E**
SCALE: NONE

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NO.	DATE	BY	DESCRIPTION	APPROVED

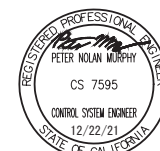


REVIEWED BY : _____ DATE : ____/____/20__
 REVIEWED BY : _____ DATE : ____/____/20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY : _____ DATE : ____/____/20__
 OMIED POUR, P.E. - PROJECT MANAGER

REFERENCE : _____ DATE : ____/____/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

INSTRUMENTATION DETAILS - 4

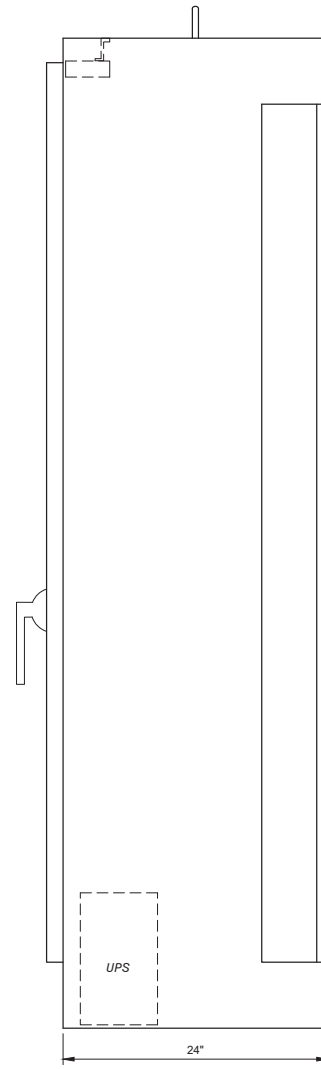
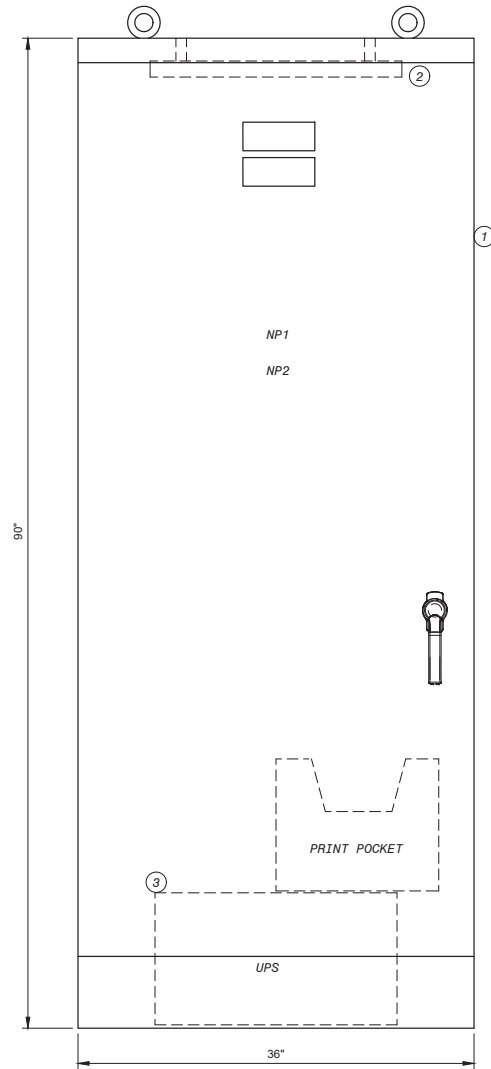


DESIGNED BY : WT
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 CHECKED BY : AZ
 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
1-01-5004
 SH1 250 OF 303 SH15

MATERIAL LIST					
NO	TAG	QTY	MANUFACTURER	DESCRIPTION	MODEL NO.
1		1	HOFFMAN CO.	90" H X 36" W X 24" D NEMA 1P ENCL OSURE	A-903624SSFSDN4
2		1	HOFFMAN CO.	FLUORESCENT LIGHT FIXTURE	ALF16D24R
3		1	EATON-POWERWARE	1500 WATT UPS	5125-1500

NAMEPLATE SCHEDULE		
NP1	NP2 LINE1	NP2 LINE2
PLC-1/RIO-4	120VAC POWER FROM	

NOTES:
1. REFER TO SPECIFICATION SECTION 40 67 00 FOR PANEL AND COMPONENTS.



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SHEET

DWG. NO. :

TITLE OF PROJECT :



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

NO.	DATE	BY	DESCRIPTION	APPROVED



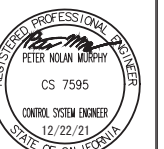
CONSULTANT

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

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

PLC/RIO PANEL LAYOUT

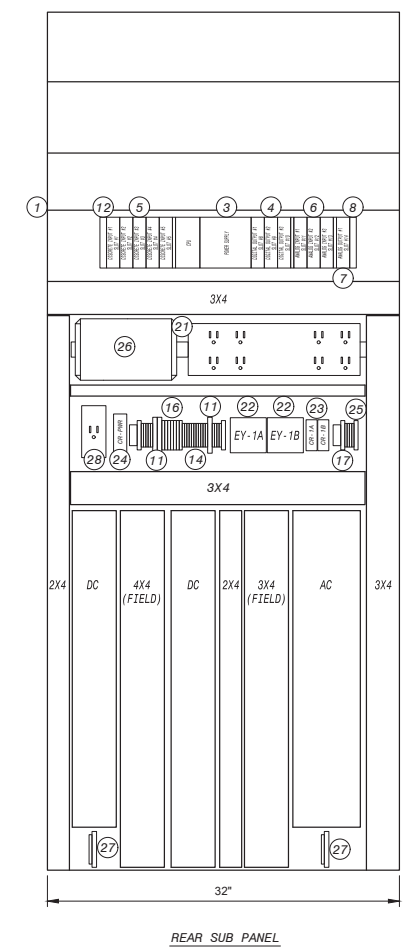
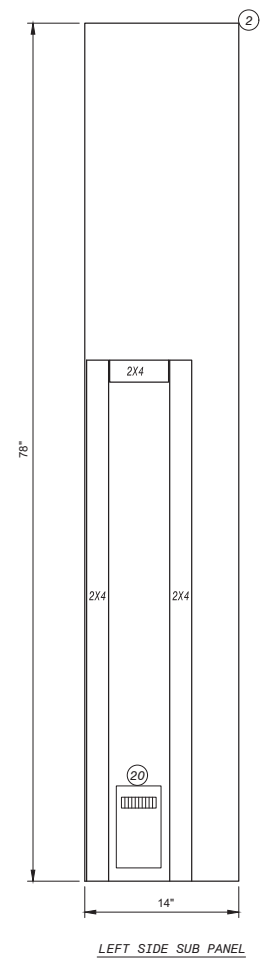


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CONSULTANT JOB/SHEET NO.	
DRAWING NO. 7078	
1-01-5005	
SHT 251 OF 303 SHS	

PROJECT AND SHEET TITLE

MATERIAL LIST					
NO	TAG	QTY	MANUFACTURER	DESCRIPTION	MODEL NO.
1		1	HOFFMAN CO.	78" X 32"W SUBPAN	A-90P36F1
2		1	HOFFMAN CO.	78" X 14"W SUBPAN	A-90SMP14
3		1	ALLEN-BRADLEY	RACK MOUNT POWER SUPPLY	1769-PA4
4		3	ALLEN-BRADLEY	16 PT DISCRETE OUTPUT MODULE	1769-OA16
5		5	ALLEN-BRADLEY	16 PT DISCRETE INPUT MODULE	1769-IA16
6		3	ALLEN-BRADLEY	4 PT ANALOG INPUT MODULE	1769-IF41
7		1	ALLEN-BRADLEY	4 PT ANALOG OUTPUT MODULE	1769-OF4CI
8		1	ALLEN-BRADLEY	RIGHT END CAP	1769-ECR
9		1	ALLEN-BRADLEY	CPU WITH ETHERNET	5069-L340ER
10					
11	A/R		ALLEN-BRADLEY	10A CIRCUIT BREAKER	1489-A1C-100
12		1	ALLEN-BRADLEY	LEFT END CAP	1769-ECL
13	A/R		ALLEN-BRADLEY	RAISED DIN RAIL	1492-DR6
14	A/R		ALLEN-BRADLEY	TERMINAL BLOCK	1492-J4
15	A/R		ALLEN-BRADLEY	GROUND TERMINAL BLOCK	1492-JG4
16	A/R		WEIDMULLER	120VAC FUSED TERMINAL BLOCK	1012300000
17	A/R		WEIDMULLER	24VDC FUSED TERMINAL BLOCK	1011300000
18	A/R		CUTLER HAMMER	1 POLE 120VAC RELAY	XRU1D120U
19	A/R		PHOENIX CONTACT	SURGE SUPPRESSOR	PT 2X2-24DC-ST
20		1	HOFFMAN CO.	SPACE HEATER	DAH8001B
21		1	LIEBERT	UPS BYPASS SWITCH	MP2-115A
22		2	SOLA	24VDC 3.8A POWER SUPPLY	SDP4-24100LT
23		2	IDEC	24VDC RELAY AND SOCKET	RH2B-UL-24VDC/SH2B-05
24		1	IDEC	120VAC RELAY AND SOCKET	RH2B-UL-120VAC/SH2B-05
25		2	INT. RECTIFIER	1N5806 DIODE	5125-1500
26		1	CONTROL CONCEPTS	SURGE SUPPRESSOR	1N5806
27		1	ELECTRICCENTER	GROUND BUS	ECLX071M
28		1	LEVITON	SIMPLEX RECEPTACLE	5261-I

NOTES:
 1. REFER TO SPECIFICATION SECTION 40 67 00, 40 63 43, AND 40 66 13 FOR PANEL AND COMPONENTS.
 2. REFER TO SPECIFICATION SECTION 40 61 93 FOR I/O LIST.



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NO.	DATE	BY	DESCRIPTION	APPROVED



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

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

PLC-7 PANEL INTERIOR LAYOUT

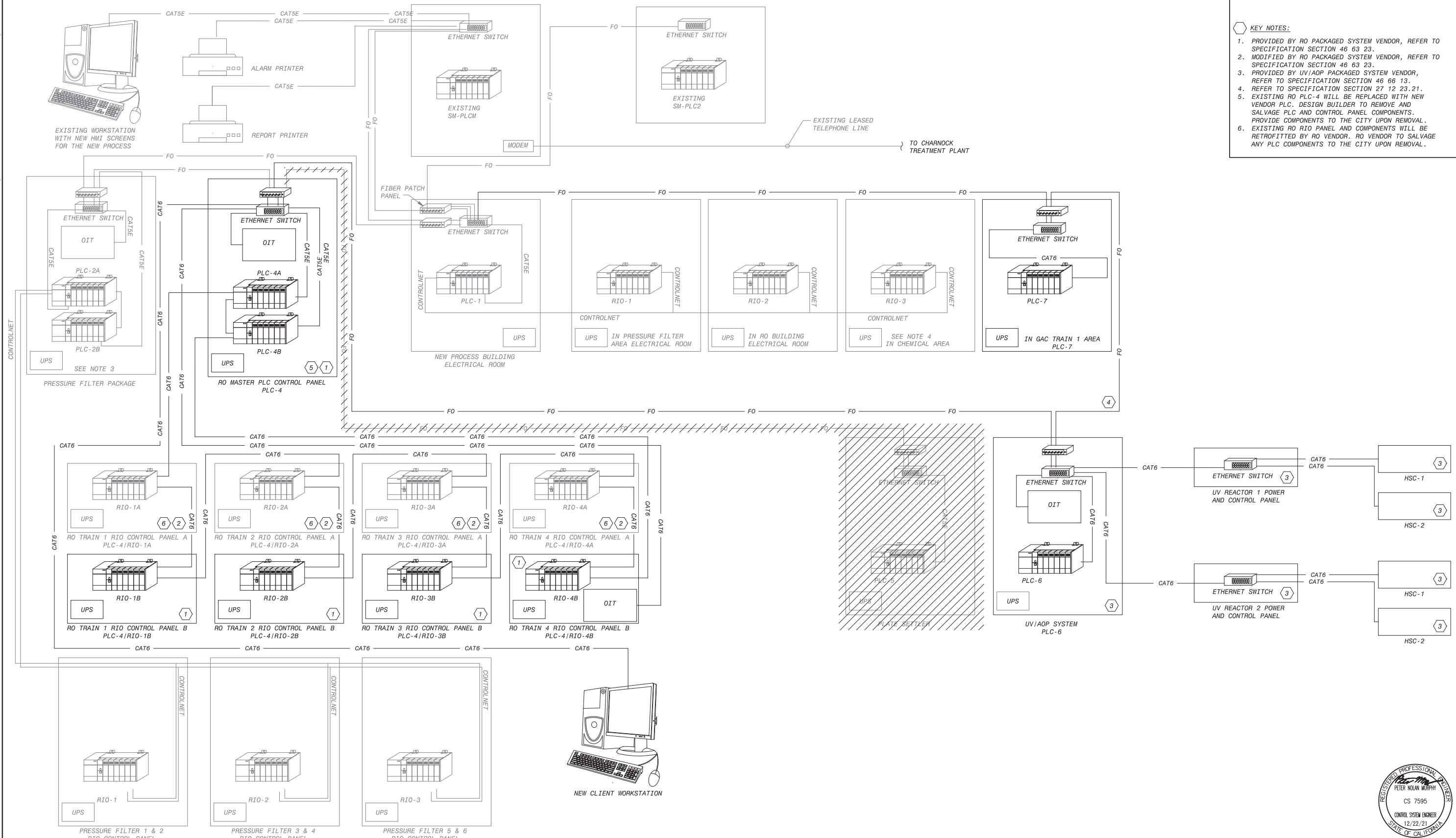
PROJECT AND SHEET TITLE



DESIGNED BY : WT
DRAWN BY : CR
CHECKED BY : AZ
CONSULTANT JOB/SHEET NO.
DRAWING NO. 7078
1-01-5006
SHT 252 OF 303 SHS

ARCADIA TREATMENT PLANT

- NOTES:
1. ALL ETHERNET PROTOCOLS FOR NEW CONSTRUCTION SHALL BE ETHERNET/IP UNLESS NOTED OTHERWISE.
- KEY NOTES:
1. PROVIDED BY RO PACKAGED SYSTEM VENDOR, REFER TO SPECIFICATION SECTION 46 63 23.
 2. MODIFIED BY RO PACKAGED SYSTEM VENDOR, REFER TO SPECIFICATION SECTION 46 63 23.
 3. PROVIDED BY UV/AOP PACKAGED SYSTEM VENDOR, REFER TO SPECIFICATION SECTION 46 66 13.
 4. REFER TO SPECIFICATION SECTION 27 12 23.21.
 5. EXISTING RO PLC-4 WILL BE REPLACED WITH NEW VENDOR PLC. DESIGN BUILDER TO REMOVE AND SALVAGE PLC AND CONTROL PANEL COMPONENTS. PROVIDE COMPONENTS TO THE CITY UPON REMOVAL.
 6. EXISTING RO RIO PANEL AND COMPONENTS WILL BE RETROFITTED BY RO VENDOR. RO VENDOR TO SALVAGE ANY PLC COMPONENTS TO THE CITY UPON REMOVAL.



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NO.	DATE	BY	DESCRIPTION	APPROVED

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

**CONTROL SYSTEM BLOCK
 DIAGRAM**

DESIGNED BY : WT
 DRAWN BY : CR
 CHECKED BY : AZ
 CONSULTANT JOB SHEET NO.
 DRAWING NO. 7078
1-01-6001
 SHEET 253 OF 303 SHEETS



SHEET

DWG. NO. :

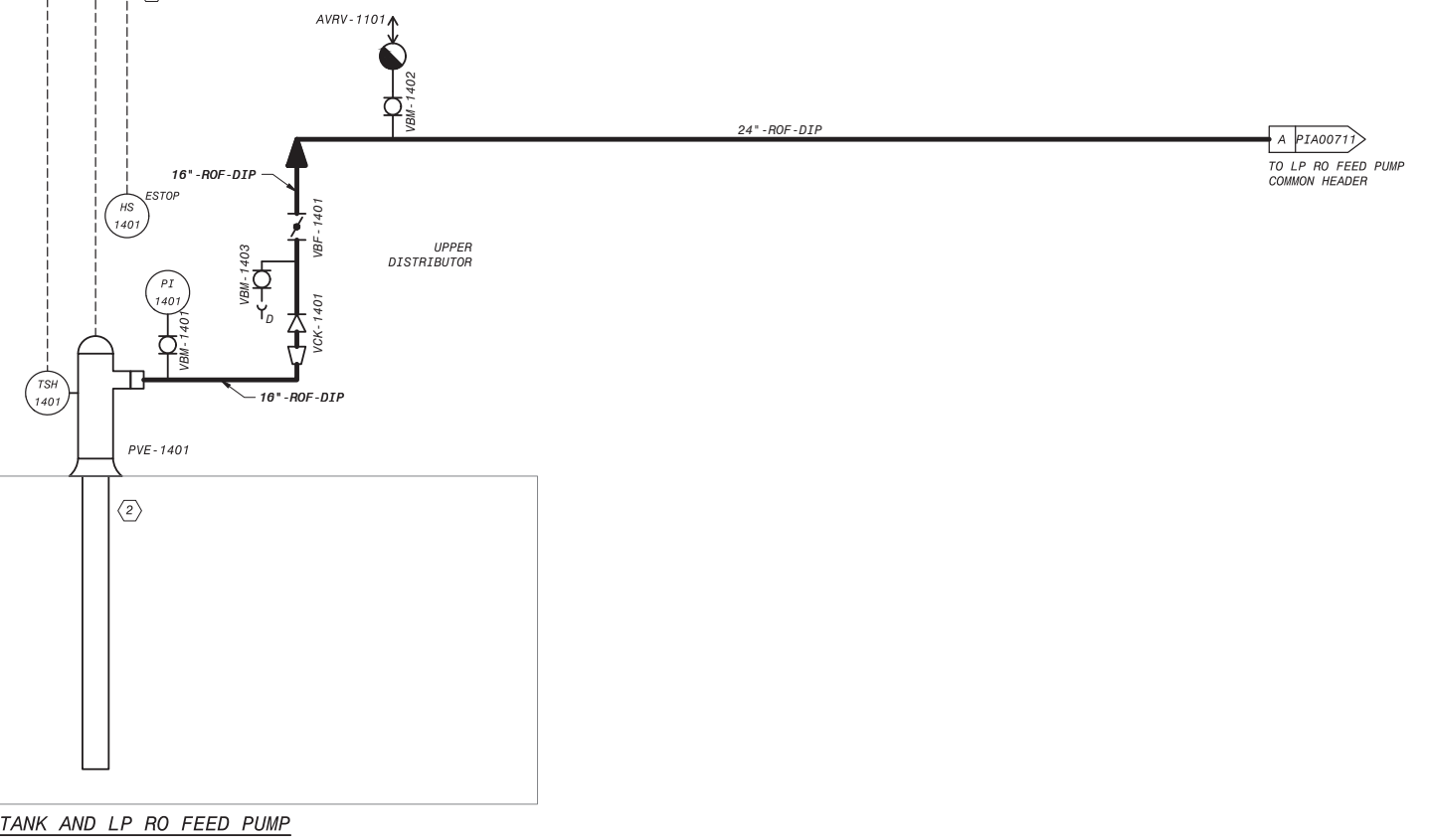
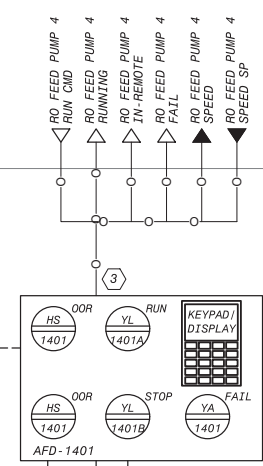
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PLC-1/RIO-1

NOTES:
 1. TAG NUMBERS TO BE PRECEDED WITH SYSTEM CODE ROF UNLESS OTHERWISE NOTED.

KEY NOTES:
 1. LOW LEVEL CUTOFF SIGNAL FROM LOW LEVEL CUTOFF PANEL.
 2. NEW LP RO FEED PUMP INSTALLED IN EXISTING RO FEED TANK. NEW PUMP SHOWN SEPARATELY ON THIS SHEET FOR CLARITY. SEE EXISTING SHEET PIA00711 FOR EXISTING RO FEED TANK DETAILS AND CONNECTION OF NEW PUMP INTO EXISTING DISCHARGE HEADER.
 3. AFD CONTROL AND STATUS MONITORING PROVIDED BY DATA LINK.LINK IS PROVIDED VIA ETHERNET/IP NETWORK OVER CAT-6 MEDIA. SEE SPECIFICATION SECTION 40 61 96 FOR DETAILS AND ADDITIONAL SIGNALS.

1
 C PIA00711
 FROM LOW LEVEL CUTOFF PANEL



CONTINUED FROM PIA00711

SEE DRAWING PIA00711 FOR EXISTING RO FEED TANK DETAILS

RO FEED TANK AND LP RO FEED PUMP



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
 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

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

P&ID LP RO FEED PUMPS PVE-1401

DESIGNED BY : WT
 DRAWN BY : TRJ
 CHECKED BY : AZ
 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
1-02-6001
 SH 254 OF 303 SHS

SHEET NO. :
 DWG. NO. :
 TITLE OF PROJECT :
 C:\BCP\W\0408747\I-03-6001.DWG 12/21/2021 4:26 PM

PLC-6
2

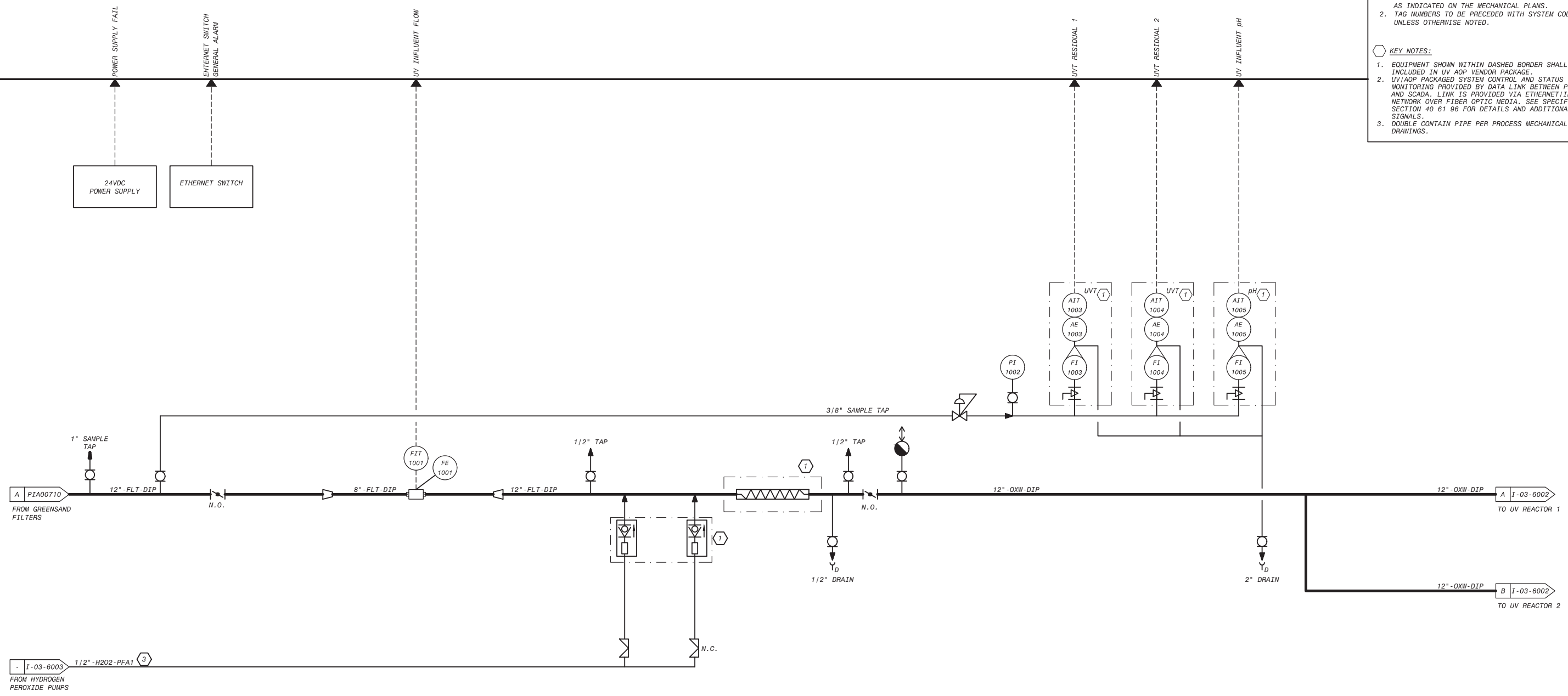
FIELD

NOTES:

- CHEMICAL PIPING SHALL BE SECONDARILY CONTAINED AS INDICATED ON THE MECHANICAL PLANS.
- TAG NUMBERS TO BE PRECEDED WITH SYSTEM CODE OXW UNLESS OTHERWISE NOTED.

KEY NOTES:

- EQUIPMENT SHOWN WITHIN DASHED BORDER SHALL BE INCLUDED IN UV AOP VENDOR PACKAGE.
- UV/AOP PACKAGED SYSTEM CONTROL AND STATUS MONITORING PROVIDED BY DATA LINK BETWEEN PLC-6 AND SCADA. LINK IS PROVIDED VIA ETHERNET/IP NETWORK OVER FIBER OPTIC MEDIA. SEE SPECIFICATION SECTION 40 61 96 FOR DETAILS AND ADDITIONAL SIGNALS.
- DOUBLE CONTAIN PIPE PER PROCESS MECHANICAL DRAWINGS.



I-03-6003 1/2" - H202 - PFA1 3
FROM HYDROGEN PEROXIDE PUMPS

City of Santa Monica
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Brown and Caldwell
WALSH
 CONSULTANT

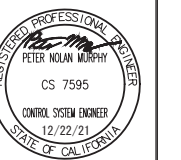
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 REVIEWED BY : _____ DATE : ____/____/20__
 SUNNY WANG, P.E. - WATER RESOURCES MANAGER
 REVIEWED BY : _____ DATE : ____/____/20__
 OMIED POUR, P.E. - PROJECT MANAGER

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

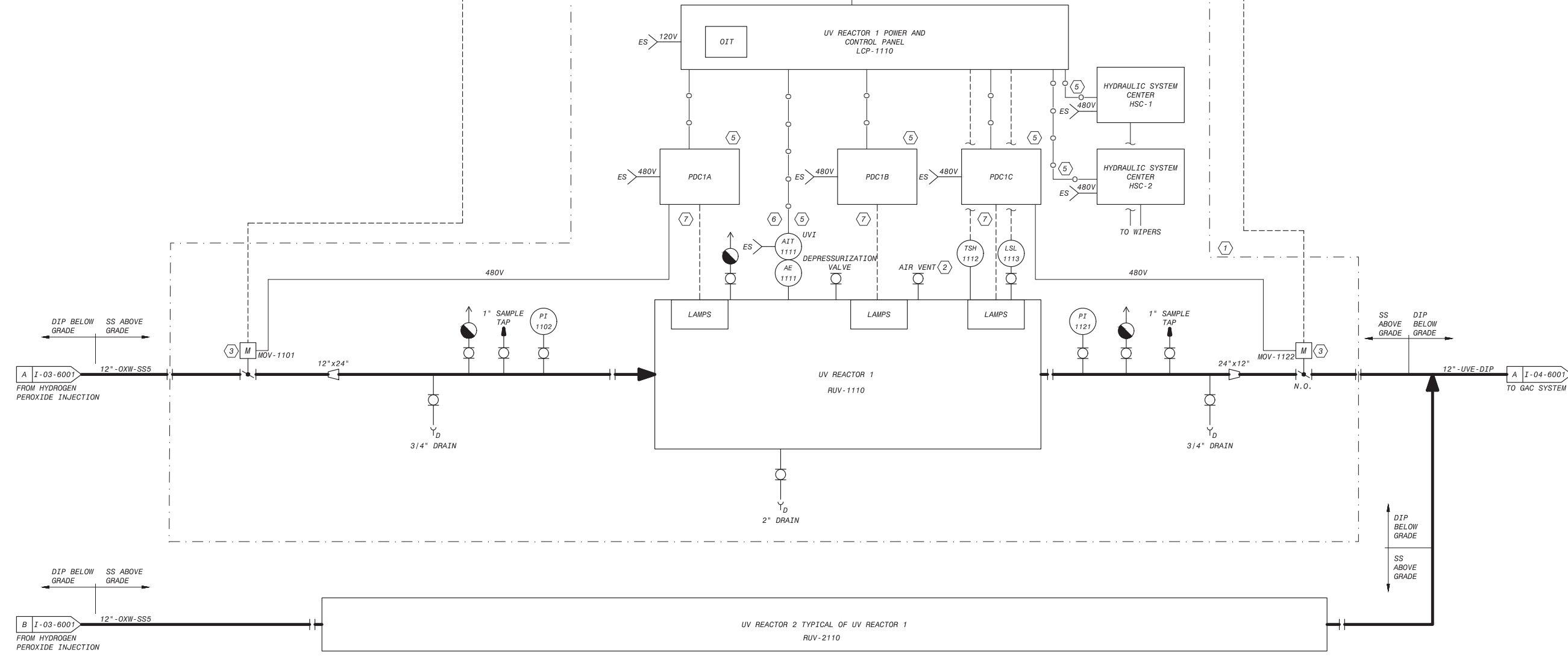
 P&ID UV/AOP - HYDROGEN
 PEROXIDE INJECTION SYSTEM

 PROJECT AND SHEET TITLE



DESIGNED BY : WT
 DRAWN BY : CR
 CHECKED BY : AZ
 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
I-03-6001
 SH 255 OF 303 SHS

- NOTES:**
1. TAG NUMBERS TO BE PRECEDED WITH SYSTEM CODE OXW UNLESS OTHERWISE NOTED.
- KEY NOTES:**
1. EQUIPMENT SHOWN WITHIN DASHED BORDER SHALL BE INCLUDED IN UV ADP VENDOR PACKAGE.
 2. ONE AIR VENT TYPICAL PER BANK. 6 BANKS PER REACTOR.
 3. LOCAL VALVE CONTROLS PROVIDED PER 40 05 57.23, NOT SHOWN ON P&ID FOR CLARITY.
 4. UV/ADP PACKAGED SYSTEM CONTROL AND STATUS MONITORING PROVIDED BY DATA LINK BETWEEN PLC-6 AND SCADA. LINK IS PROVIDED VIA ETHERNET/IP NETWORK OVER FIBER OPTIC MEDIA. SEE SPECIFICATION SECTION 40 61 96 FOR DETAILS AND ADDITIONAL SIGNALS.
 5. PROVIDE CAT-6 ETHERNET DATA LINK BETWEEN VENDOR PROVIDED PANELS AND INSTRUMENTS.
 6. ONE SENSOR PER SECTION (2 SECTIONS PER BANK).
 7. LAMP STATUS SIGNAL ON 4 WIRES FROM PDC TO EACH LAMP (TYP.).



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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

Brown and Caldwell
WALSH

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

OLYMPIC WELL FIELD RESTORATION
AND ARCADIA WTP EXPANSION

P&ID UV REACTOR

DESIGNED BY : WT
DRAWN BY : TRJ
CHECKED BY : AZ
CONSULTANT JOB SHEET NO.
DRAWING NO. 7078
1-03-6002
SHT 256 OF 303 SHS



HYDROGEN PEROXIDE STORAGE TANK
LEVEL INDICATION

FIELD

HYDROGEN PEROXIDE PUMPS
LEAK DETECTED

HYDROGEN PEROXIDE PUMPS
ESTOP

HYDROGEN PEROXIDE PUMP 1
FAIL

HYDROGEN PEROXIDE PUMP 1
RUNNING

HYDROGEN PEROXIDE PUMP 1
CMD

HYDROGEN PEROXIDE PUMP 1
SPEED SETPOINT

HYDROGEN PEROXIDE PUMP 2
FAIL

HYDROGEN PEROXIDE PUMP 2
RUNNING

HYDROGEN PEROXIDE PUMP 2
CMD

HYDROGEN PEROXIDE PUMP 2
SPEED SETPOINT

HYDROGEN PEROXIDE PUMPS
OUTLET PRESSURE

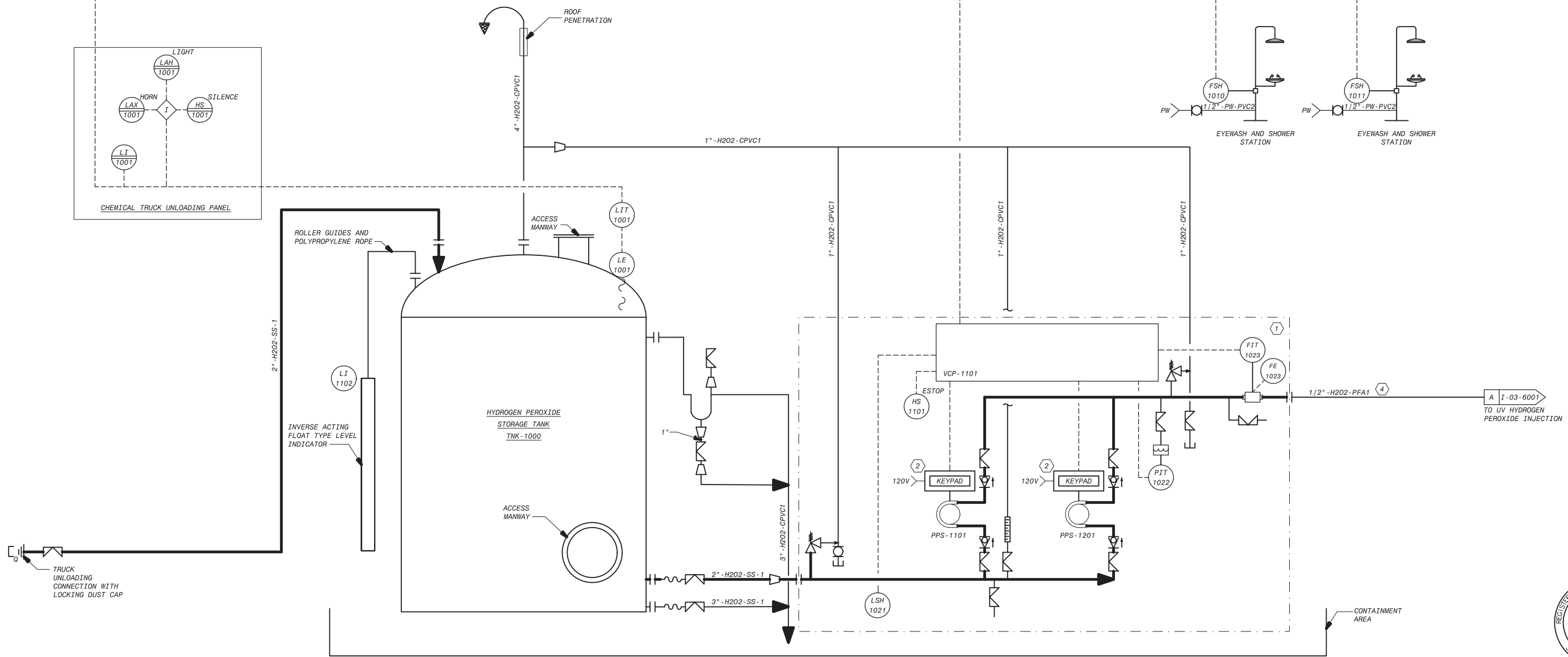
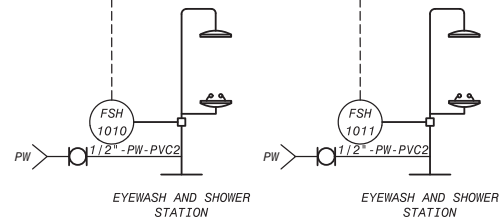
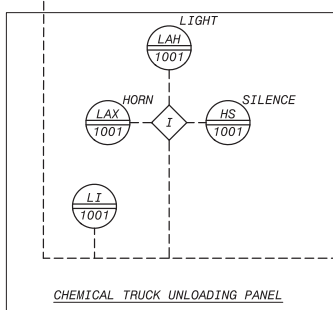
HYDROGEN PEROXIDE PUMPS
OUTLET FLOW

HYDROGEN PEROXIDE STORAGE TANK
EYEWASH IN-USE

HYDROGEN PEROXIDE FILL STATION
EYEWASH IN-USE

NOTES:

1. TAG NUMBERS TO BE PRECEDED BY SYSTEM CODE H2O2 UNLESS OTHERWISE NOTED.
 2. CHEMICAL PIPING SHALL BE SECONDARILY CONTAINED AT DISCHARGE FROM VENDOR PROVIDED PACKAGE AS INDICATED ON THE MECHANICAL PLANS.
- KEY NOTES:
1. EQUIPMENT SHOWN WITHIN DASHED BORDER SHALL BE INCLUDED IN UV ADP VENDOR PACKAGE.
 2. LOCAL METERING PUMP CONTROLLER, INTEGRAL TO PUMP.
 3. UV/ADP PACKAGED SYSTEM CONTROL AND STATUS MONITORING PROVIDED BY DATA LINK BETWEEN PLC-6 AND SCADA. LINK IS PROVIDED VIA ETHERNET/IP NETWORK OVER FIBER OPTIC MEDIA. SEE SPECIFICATION SECTION 40 61 96 FOR DETAILS AND ADDITIONAL SIGNALS.
 4. DOUBLE CONTAIN PIPE PER PROCESS MECHANICAL DRAWINGS.



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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__

OMED POUR, P.E. - PROJECT MANAGER

REFERENCE :

DATE : _____, 20XX

COMPUTER FILE NAME :

SP-FILE NO. : SP2602

APPROVED BY : _____ DATE : _____, 20XX

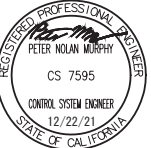
ALEX NAZARCHUK, P.E. - CITY ENGINEER

ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION
AND ARCADIA WTP EXPANSION

P&ID HYDROGEN PEROXIDE TANKS AND
METERING PUMPS

PROJECT AND SHEET TITLE



DESIGNED BY : WT

DRAWN BY : TRJ

CHECKED BY : AZ

CONSULTANT JOB/SHEET NO.

DRAWING NO. 7078

1-03-6003

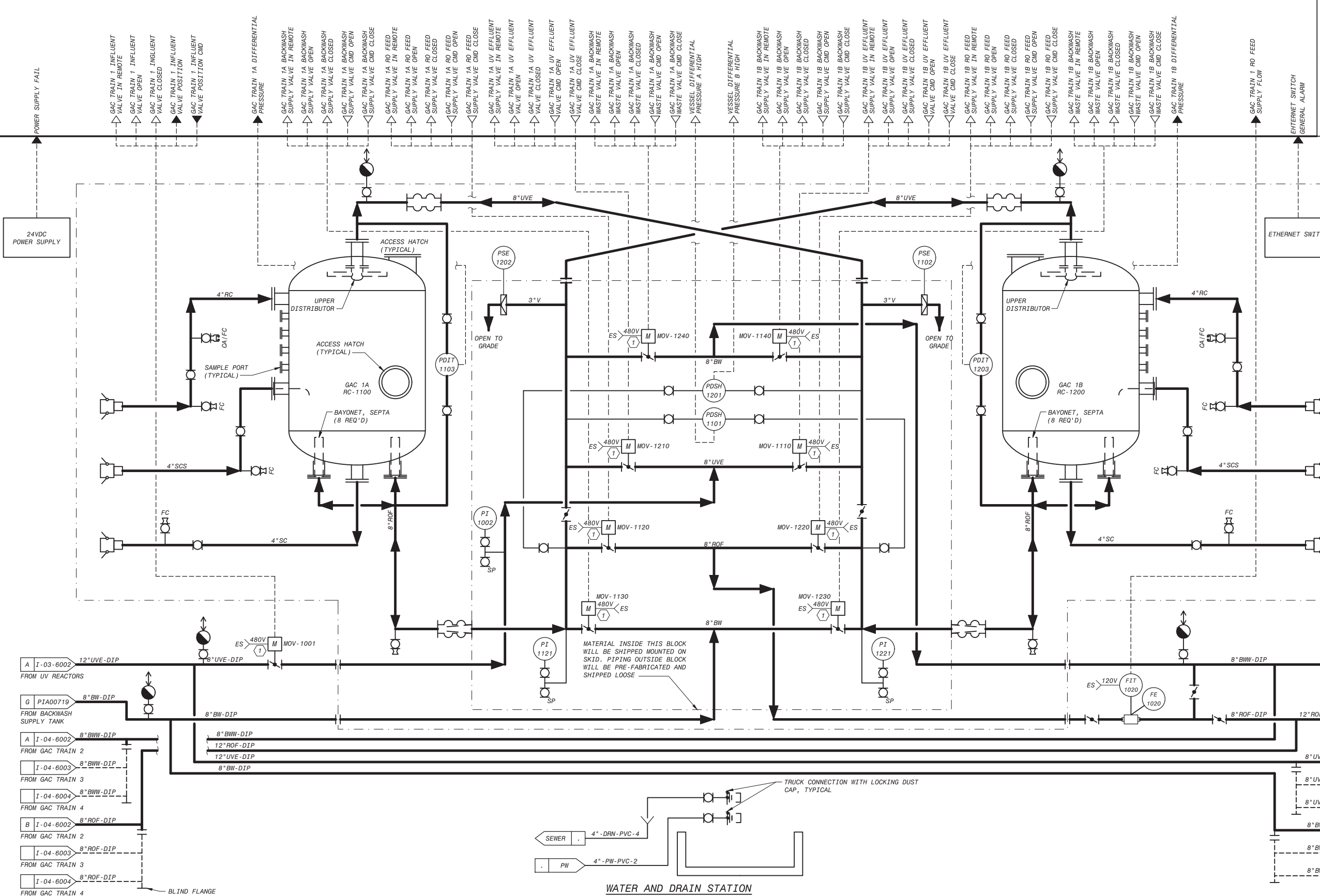
SHT 257 OF 303 SHS

NOTES:

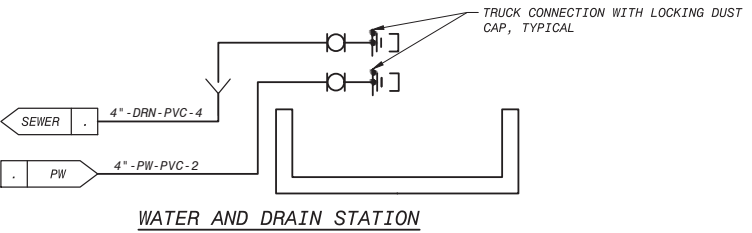
- TAG NUMBERS TO BE PRECEDED BY SYSTEM CODE GAC UNLESS OTHERWISE NOTED.

KEY NOTES:

- LOCAL VALVE CONTROLS PROVIDED PER 40 05 57.13, NOT SHOWN ON P&ID FOR CLARITY.



FURNISHED BY GAC SYSTEM MANUFACTURERS.



WATER AND DRAIN STATION

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

Brown and Caldwell
WALSH
 CONSULTANT

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

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION

P&ID GAC TRAIN 1

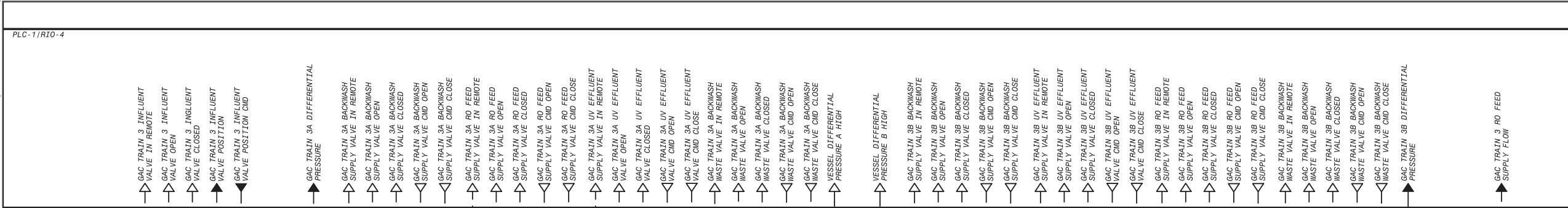
REGISTERED PROFESSIONAL ENGINEER
 PETER NOLAN MURPHY
 CS 7595
 CONTROL SYSTEM ENGINEER
 12/22/21
 STATE OF CALIFORNIA

DESIGNED BY :	WT
DRAWN BY :	CR
CHECKED BY :	AZ
CONSULTANT JOB SHEET NO.	
DRAWING NO. 7078	
1-04-6001	
SHT 258 OF 303 SHS	

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NO.	DATE	BY	DESCRIPTION	APPROVED

SHEET NO. 1
PLC-11/RIO-4
DWG. NO. 1
TITLE OF PROJECT: C:\BCP\W\0408747\04-6003.DWG 12/21/2021 4:27 PM

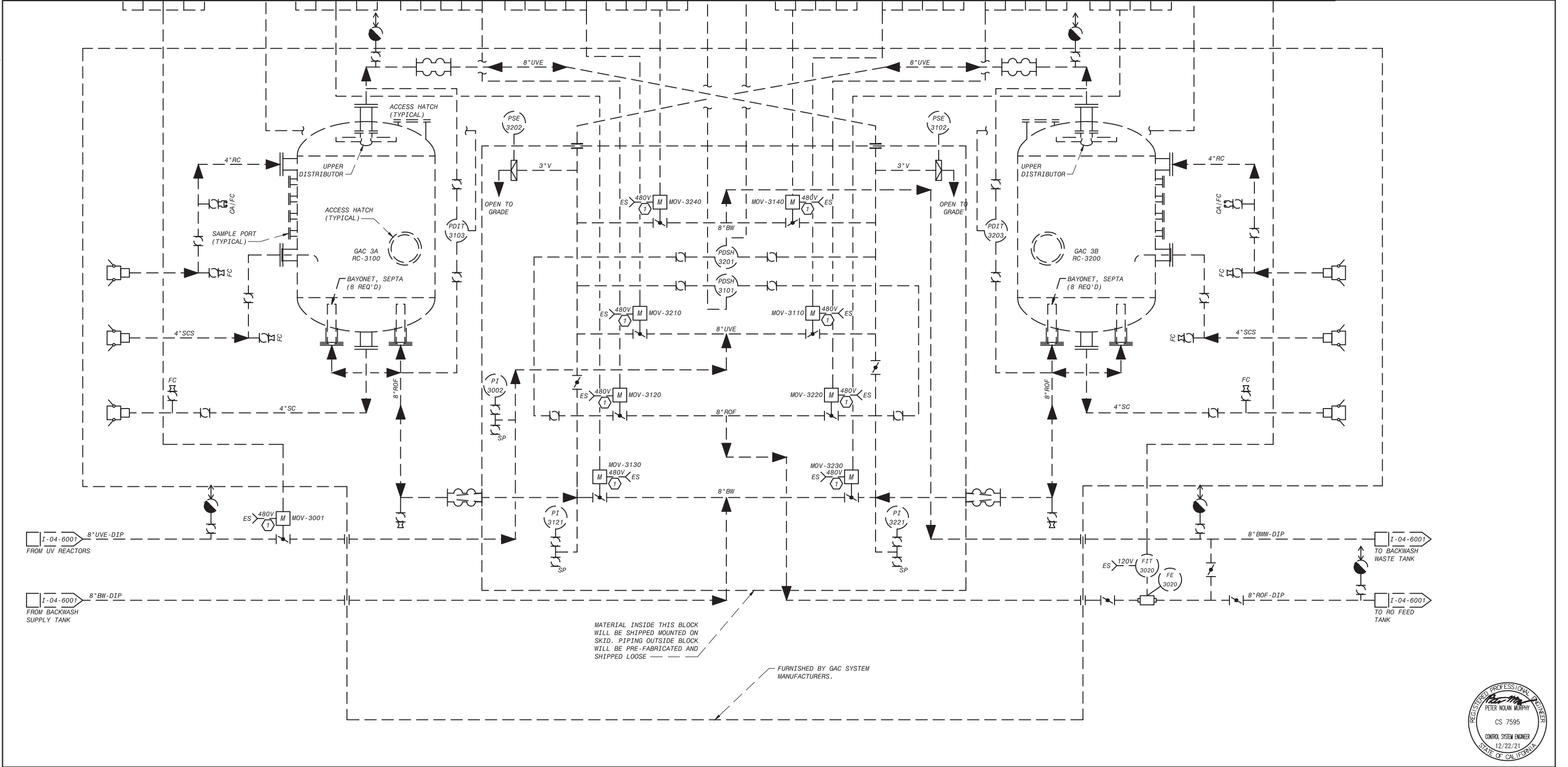


NOTES:

1. TAG NUMBERS TO BE PRECEDED BY SYSTEM CODE GAC UNLESS OTHERWISE NOTED.
2. ALL WORK SHOWN ON THIS SHEET IS FUTURE AND NOT PART OF THE OLYMPIC WELL FIELD AND ARCADIA RESTORATION PROJECT.

KEY NOTES:

1. LOCAL VALVE CONTROLS PROVIDED PER 40 05 57.13, NOT SHOWN ON P&ID FOR CLARITY.



MATERIAL INSIDE THIS BLOCK WILL BE SHIPPED MOUNTED ON SKID. PIPING OUTSIDE BLOCK WILL BE PRE-FABRICATED AND SHIPPED LOOSE

FURNISHED BY GAC SYSTEM MANUFACTURERS.

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

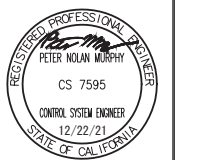
Brown and Caldwell
WALSH

REVIEWED BY: _____	DATE: _____, 20__	REFERENCE: _____	COMPUTER FILE NAME: _____
REVIEWED BY: _____	DATE: _____, 20__	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

P&ID GAC TRAIN 3 (FUTURE)

DESIGNED BY: WT
DRAWN BY: CR
CHECKED BY: AZ
CONSULTANT JOB SHEET NO. _____
DRAWING NO. 7078
I-04-6003
SHT 260 OF 303 SHS

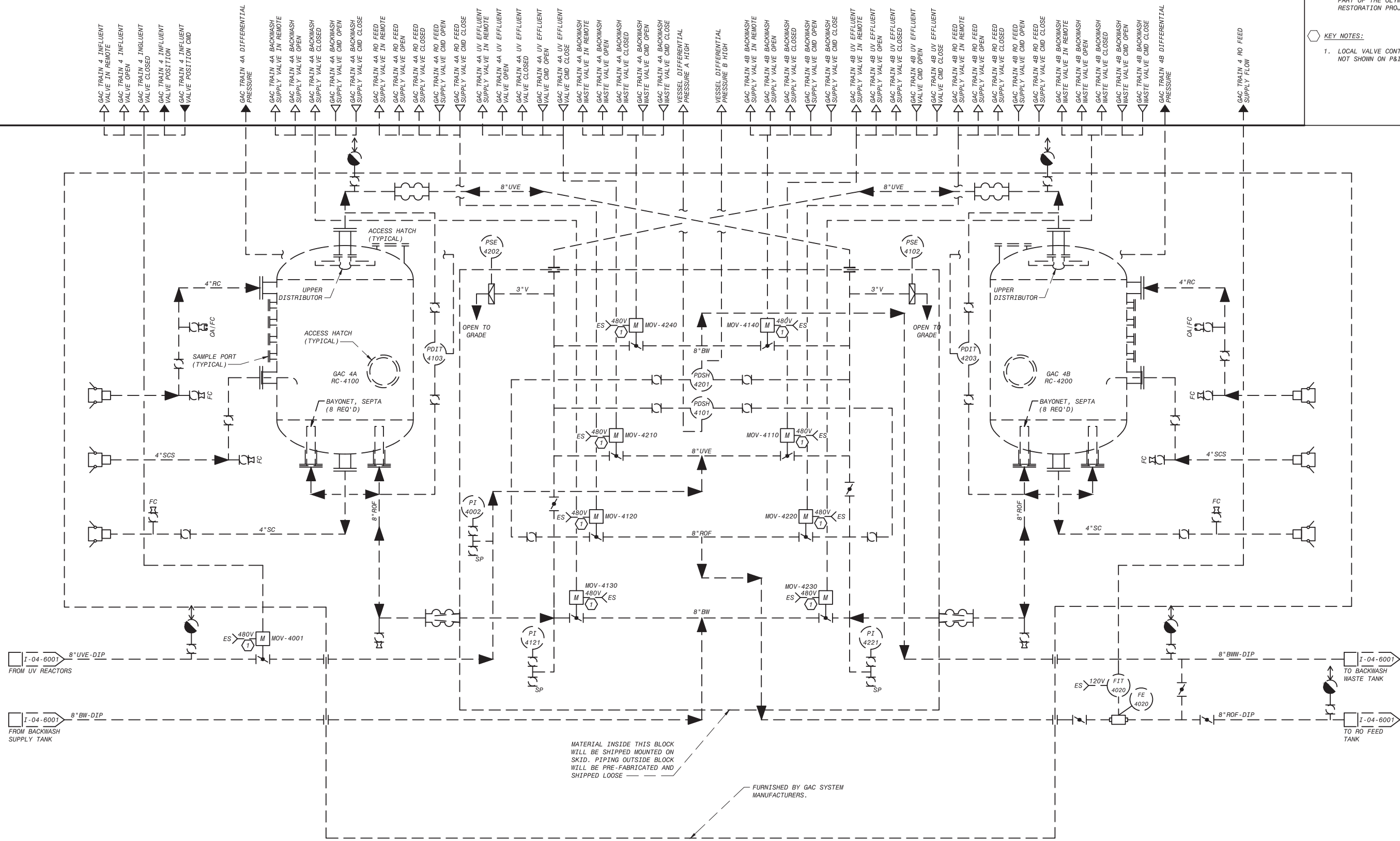


NOTES:

1. TAG NUMBERS TO BE PRECEDED BY SYSTEM CODE GAC UNLESS OTHERWISE NOTED.
2. ALL WORK SHOWN ON THIS SHEET IS FUTURE AND NOT PART OF THE OLYMPIC WELL FIELD AND ARCADIA RESTORATION PROJECT.

KEY NOTES:

1. LOCAL VALVE CONTROLS PROVIDED PER 40 05 57.13, NOT SHOWN ON P&ID FOR CLARITY.



MATERIAL INSIDE THIS BLOCK WILL BE SHIPPED MOUNTED ON SKID. PIPING OUTSIDE BLOCK WILL BE PRE-FABRICATED AND SHIPPED LOOSE

FURNISHED BY GAC SYSTEM MANUFACTURERS.

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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__
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

P&ID GAC TRAIN 4 (FUTURE)

DESIGNED BY : WT
DRAWN BY : CR
CHECKED BY : AZ
CONSULTANT JOB SHEET NO.
DRAWING NO. 7078
I-04-6004
SHT 261 OF 303 SHS



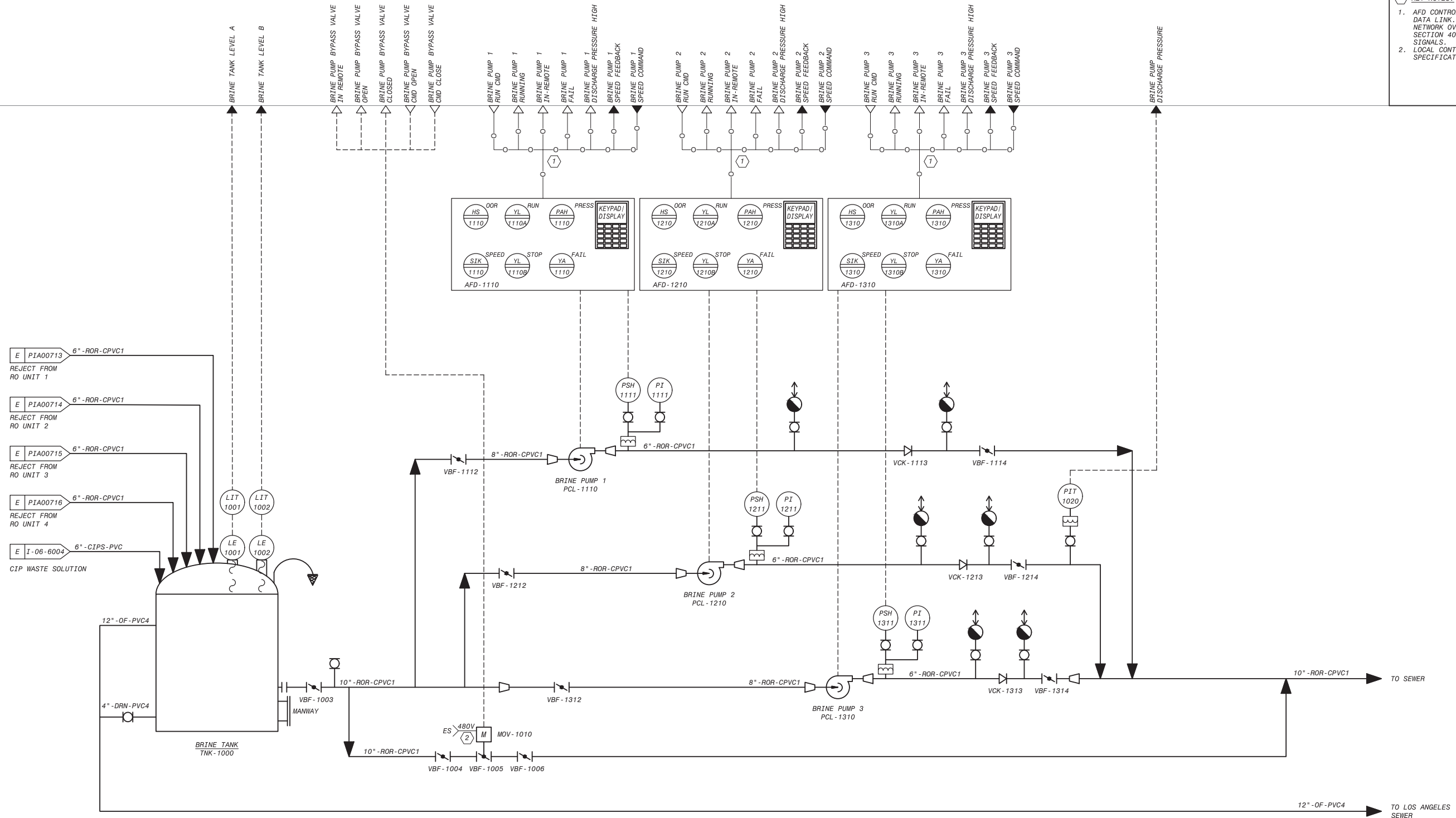
NOTES:

- TAG NUMBERS TO BE PRECEDED WITH SYSTEM CODE ROR UNLESS OTHERWISE NOTED.

KEY NOTES:

- AFD CONTROL AND STATUS MONITORING PROVIDED BY DATA LINK. LINK IS PROVIDED VIA ETHERNET/10 NETWORK OVER CAT-6 MEDIA. SEE SPECIFICATION SECTION 40 61 96 FOR DETAILS AND ADDITIONAL SIGNALS.
- LOCAL CONTROL AND INDICATION NOT SHOWN. REFER TO SPECIFICATION SECTION 40 05 57.23 FOR DETAIL.

PLC-1/R10-2



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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
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

DESIGNED BY : WT
 DRAWN BY : TRJ
 CHECKED BY : AZ
 CONSULTANT JOB/SHEET NO.
 DRAWING NO. 7078
1-06-6002
 SHEET 262 OF 303 SHS

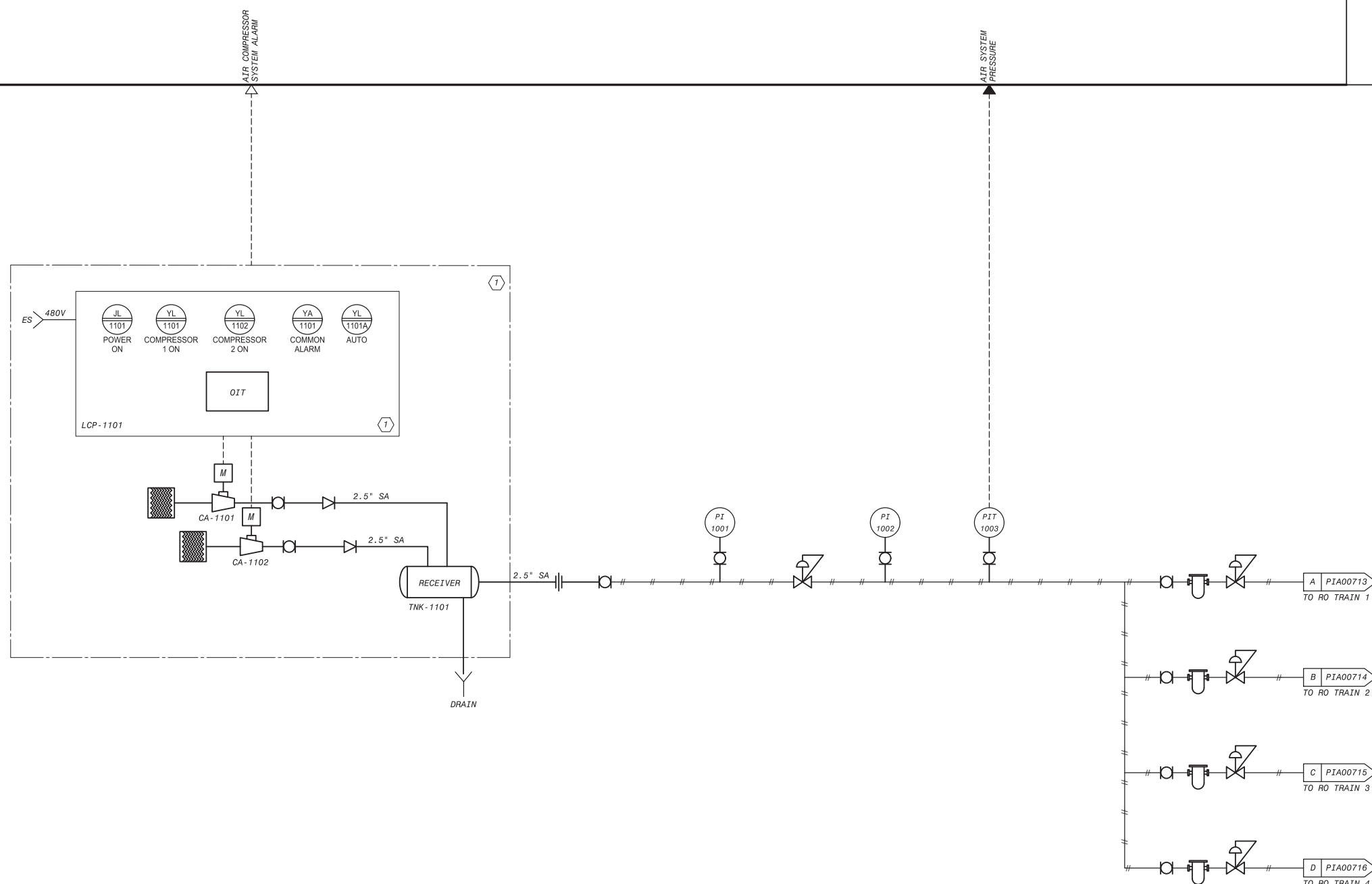
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
P&ID BRINE PUMP STATION
 PROJECT AND SHEET TITLE



PLC-1/RIO-2

NOTES:
1. SYSTEM CODE IS SA UNLESS OTHERWISE NOTED.

KEY NOTES:
1. VENDOR SUPPLIED COMPRESSOR PACKAGE DOES NOT SHOW ALL COMPONENTS. SEE SPECIFICATION 43 12 51 FOR DETAILS.



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NO.	DATE	BY	DESCRIPTION	APPROVED



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.

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

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

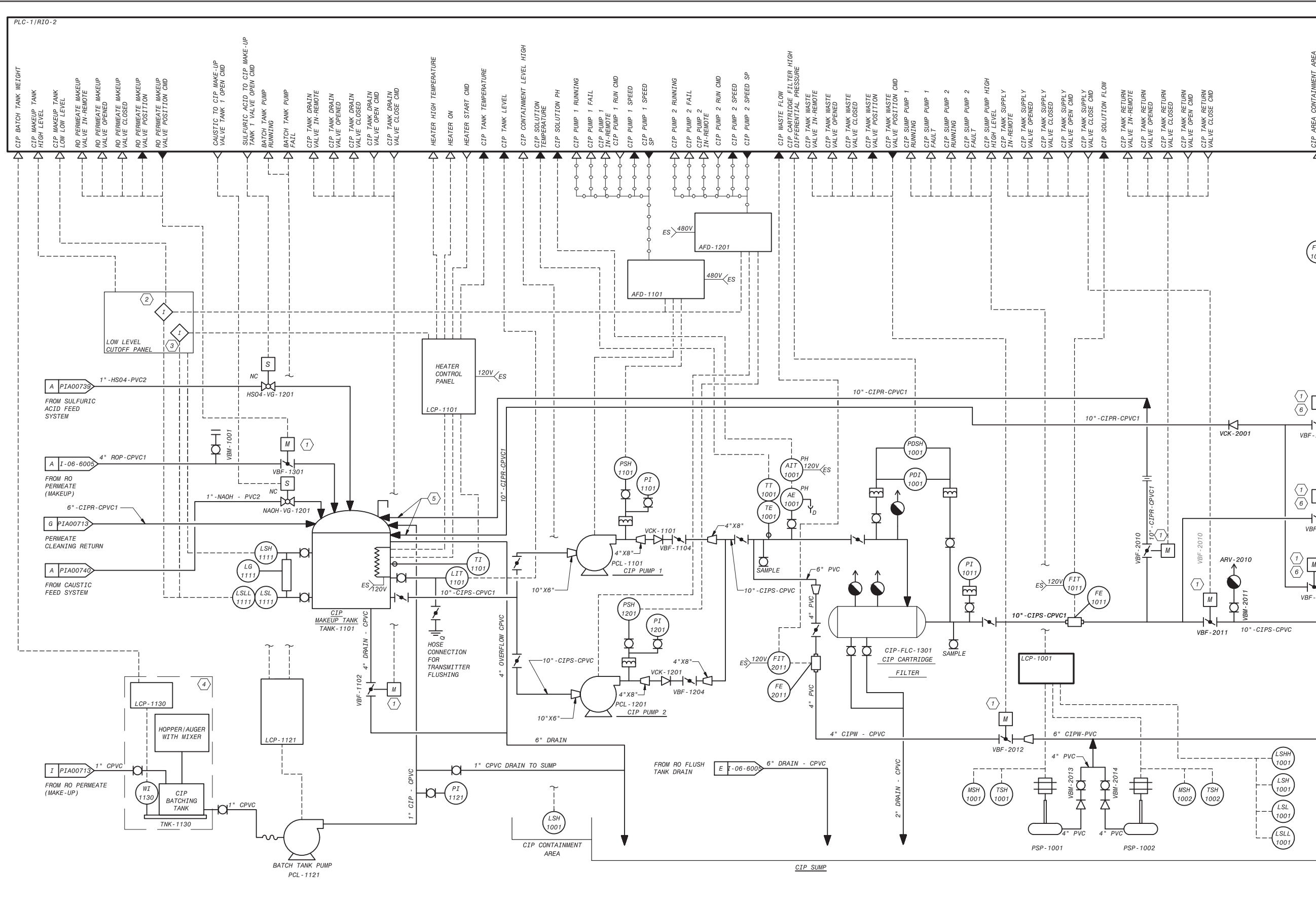
P&ID AIR COMPRESSOR SYSTEM

PROJECT AND SHEET TITLE



DESIGNED BY : WT
 DRAWN BY : QS
 CHECKED BY : AZ
 CONSULTANT JOB SHEET NO.
 DRAWING NO. 7078
 1-06-6003
 SH 263 OF 303 SHS

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 SHEET NO. 1
 TITLE OF PROJECT:



- NOTES:**
1. SYSTEM CODE IS CIP UNLESS OTHERWISE NOTED.
- KEY NOTES:**
1. LOCAL VALVE CONTROLS PROVIDED PER 40 05 57.23, NOT SHOWN ON P&ID FOR CLARITY. PROVIDE RELAYS TO REPLICATE LOW LEVEL CUTOFF TO AFDS AS SHOWN.
 2. PROVIDE RELAYS TO REPLICATE LOW LEVEL CUTOFF FOR HEATER AS SHOWN.
 3. TO BE PROVIDED PER SPECIFICATION 46 63 23.
 4. TO BE PROVIDED WITH A DOWNCOMER BELOW LIQUID LEVEL OPENING.
 5. I/O FOR VALVE NOT SHOWN FOR CLARITY. VALVE I/O SHALL BE TYPICAL OF OPEN/CLOSE VALVES.

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Brown and Caldwell
WALSH
 CONSULTANT

REVIEWED BY:	DATE: _____ 20__
REVIEWED BY:	DATE: _____ 20__
REVIEWED BY:	DATE: _____ 20__
OMED 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:	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: _____, 20XX

DESIGNED BY: WT
 DRAWN BY: QS
 CHECKED BY: AZ
 CONSULTANT JOB SHEET NO.
 DRAWING NO. 7078
1-06-6004
 SHEET 264 OF 303 SHEETS

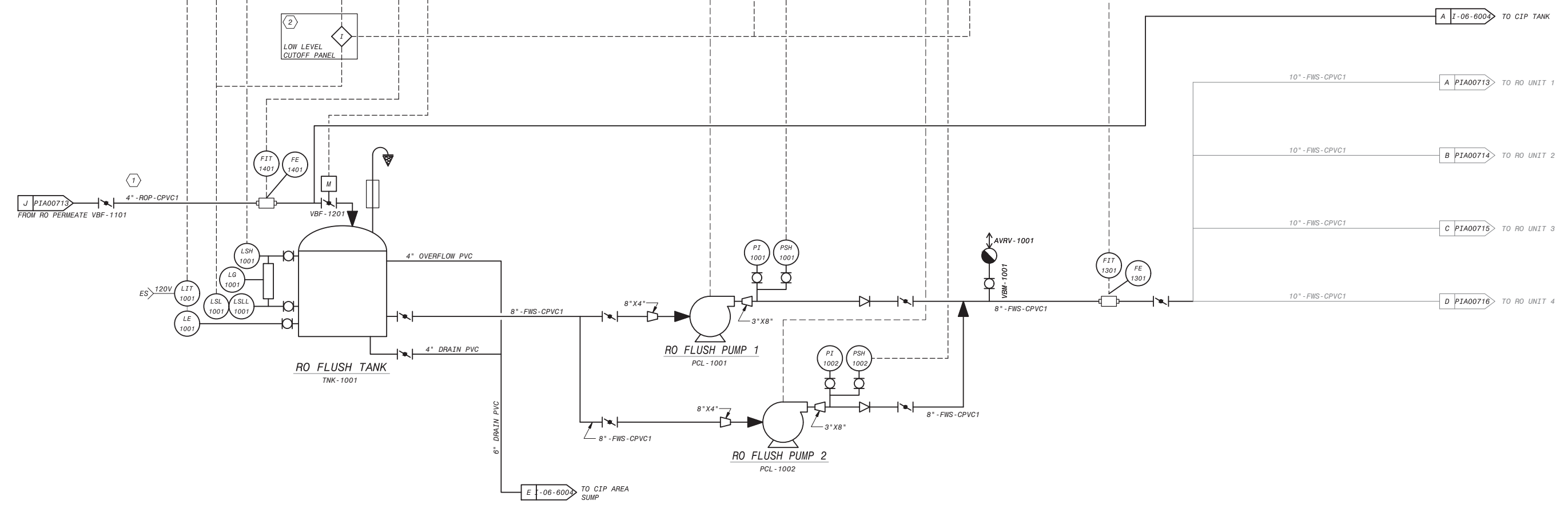
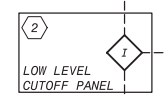
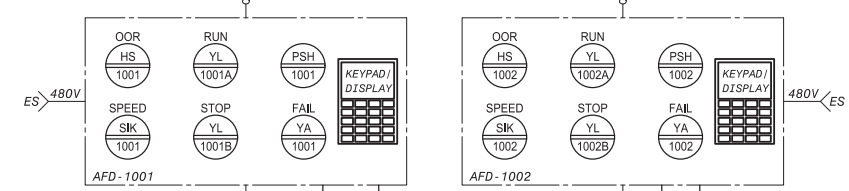
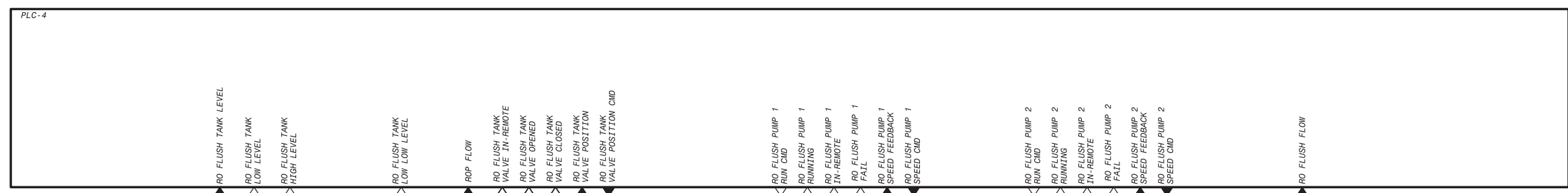
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
P&ID CLEAN IN PLACE SYSTEM
 PROJECT AND SHEET TITLE



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NOTES:
 1. SYSTEM CODE IS FWS UNLESS OTHERWISE NOTED.

KEY NOTES:
 1. LOCAL VALVE CONTROLS PROVIDED PER 40 05 57.23, NOT SHOWN ON P&ID FOR CLARITY.
 2. PROVIDE RELAYS TO REPLICATE LOW LEVEL CUTOFF TO AFDS AS SHOWN.



City of Santa Monica
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 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 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: _____, 20XX
OMED POUR, P.E. - PROJECT MANAGER	ALEX NAZARCHUK, P.E. - CITY ENGINEER	ENGINEERING AND STREET SERVICES

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

P&ID RO FLUSH SYSTEM

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

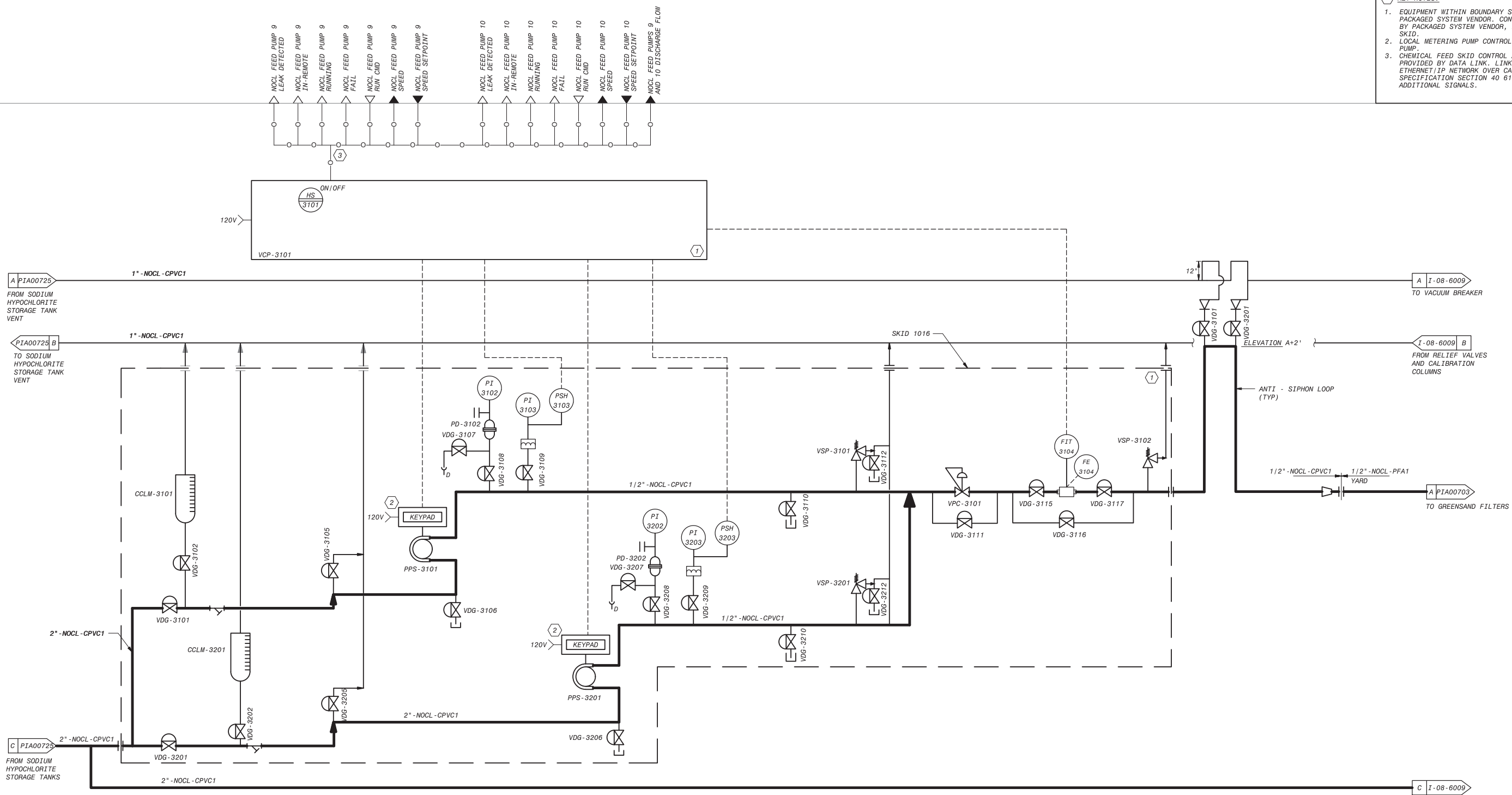
DRAWING NO. 7078
I-06-6005
 SH 265 OF 303 SHS

PROJECT AND SHEET TITLE



NOTES:
 1. SYSTEM CODE IS NOCL UNLESS OTHERWISE NOTED.

KEY NOTES:
 1. EQUIPMENT WITHIN BOUNDARY SHALL BE PROVIDED BY PACKAGED SYSTEM VENDOR. CONTROL PANEL PROVIDED BY PACKAGED SYSTEM VENDOR, MOUNTED INTEGRAL TO SKID.
 2. LOCAL METERING PUMP CONTROLLER, INTEGRAL TO PUMP.
 3. CHEMICAL FEED SKID CONTROL AND STATUS MONITORING PROVIDED BY DATA LINK. LINK IS PROVIDED VIA ETHERNET/IP NETWORK OVER CAT-6 MEDIA. SEE SPECIFICATION SECTION 40 61 96 FOR DETAILS AND ADDITIONAL SIGNALS.



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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

Brown and Caldwell
WALSH
 CONSULTANT

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

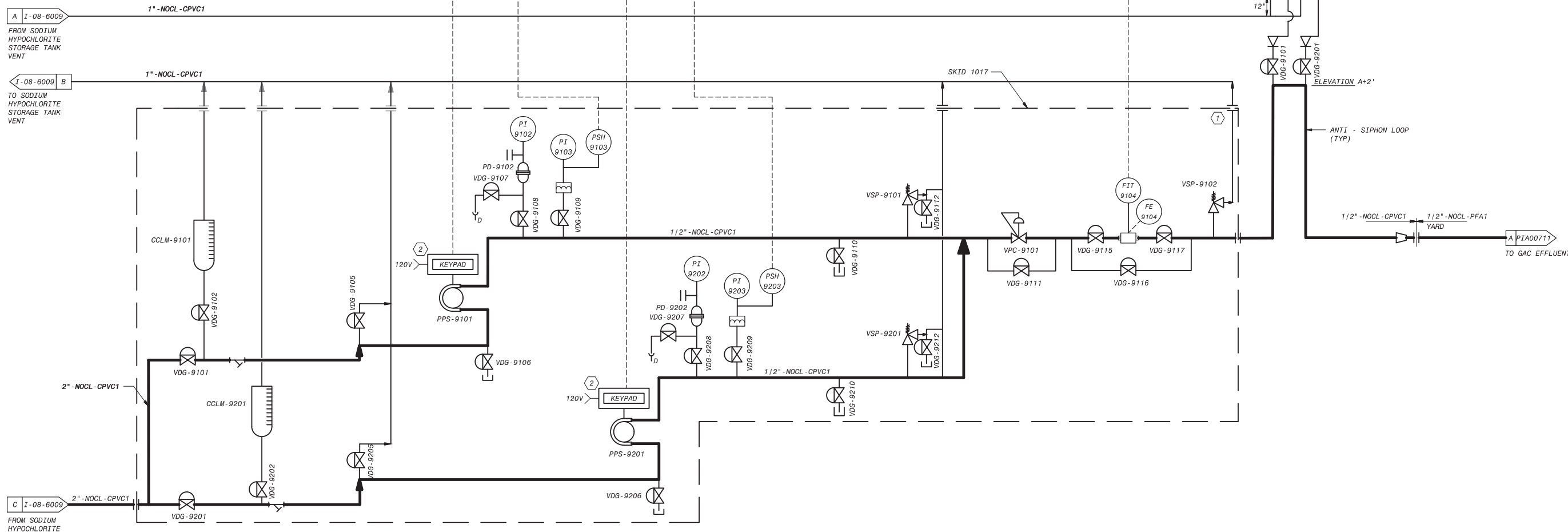
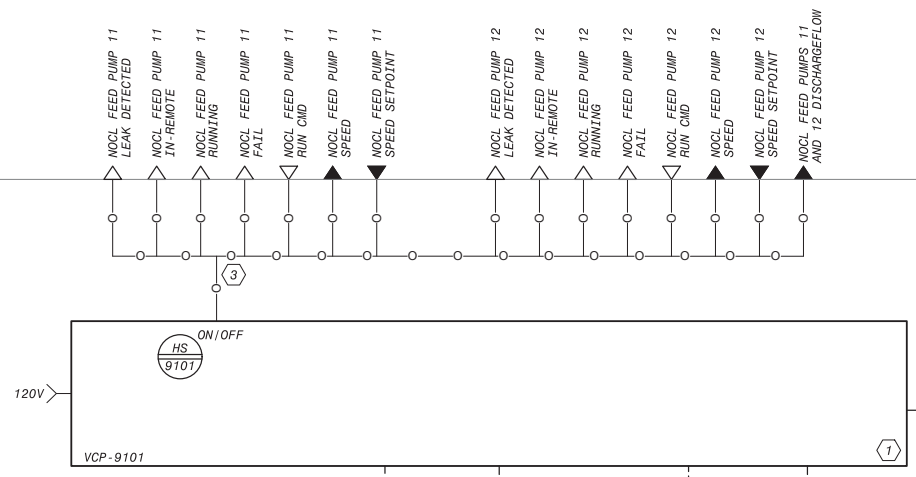
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 OLYMPIC GREENSAND FILTER
 SODIUM HYPOCHLORITE FEED PUMPS
 3 OF 4



DESIGNED BY : WT
DRAWN BY : CR
CHECKED BY : AZ
CONSULTANT JOB SHEET NO.
DRAWING NO. 7078
I-08-6008
SHT 266 OF 303 SHS

NOTES:
1. SYSTEM CODE IS NOCL UNLESS OTHERWISE NOTED.

KEY NOTES:
1. EQUIPMENT WITHIN BOUNDARY SHALL BE PROVIDED BY PACKAGED SYSTEM VENDOR. CONTROL PANEL PROVIDED BY PACKAGED SYSTEM VENDOR, MOUNTED INTEGRAL TO SKID.
2. LOCAL METERING PUMP CONTROLLER, INTEGRAL TO PUMP.
3. CHEMICAL FEED SKID CONTROL AND STATUS MONITORING PROVIDED BY DATA LINK. LINK IS PROVIDED VIA ETHERNET/IP NETWORK OVER CAT-6 MEDIA. SEE SPECIFICATION SECTION 40 61 96 FOR DETAILS AND ADDITIONAL SIGNALS.



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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

Brown and Caldwell
WALSH
 CONSULTANT

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

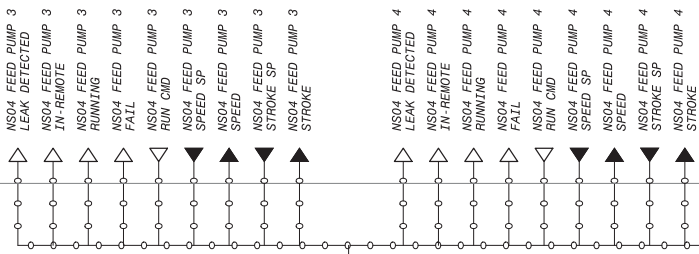
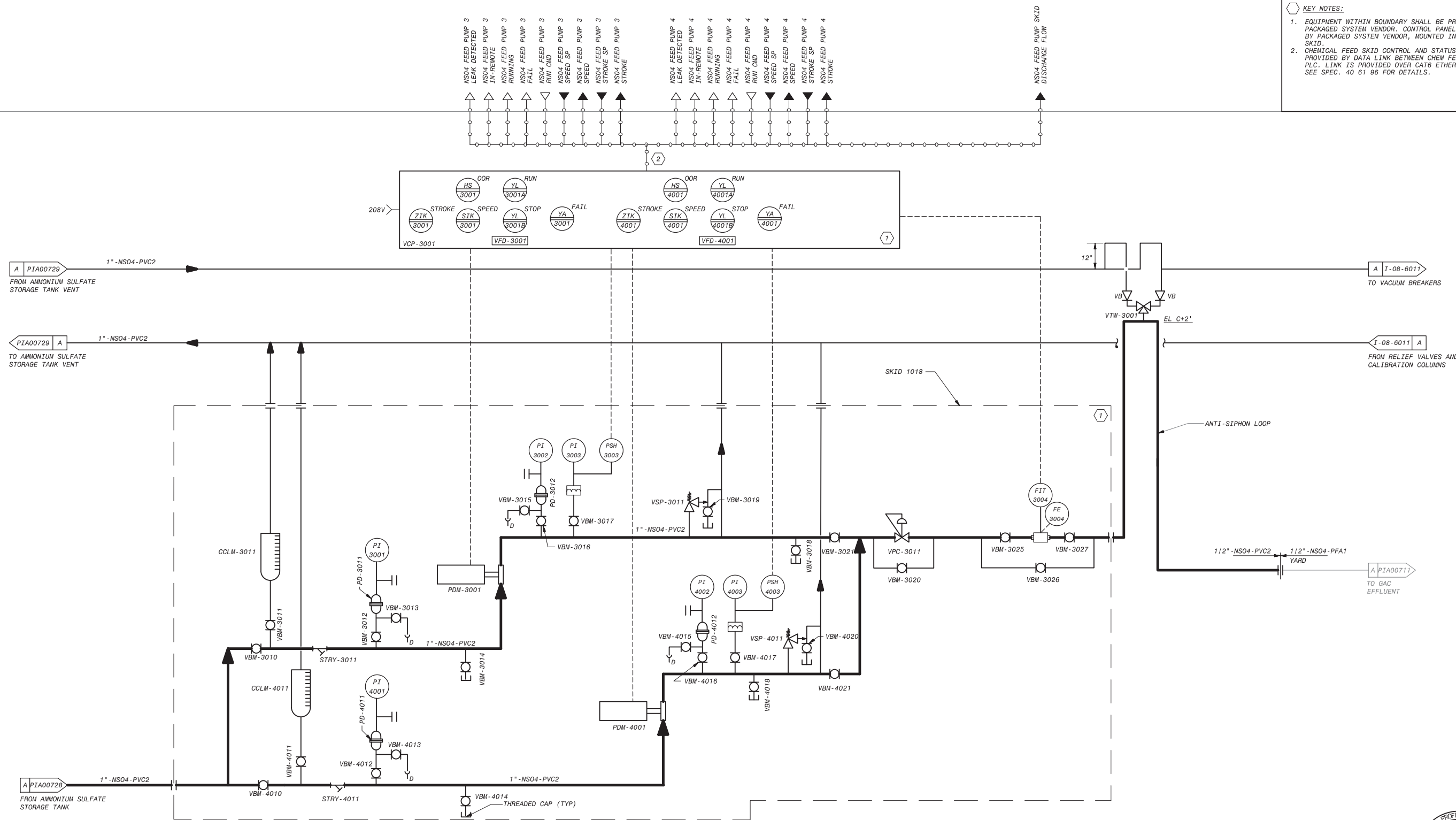
OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
 OLYMPIC GREENSAND FILTER
 SODIUM HYPOCHLORITE FEED PUMS
 4 OF 4



DESIGNED BY : WT
DRAWN BY : CR
CHECKED BY : AZ
CONSULTANT JOB SHEET NO.
DRAWING NO. 7078
1-08-6009
SHT 267 OF 303 SHS

NOTES:
1. SYSTEM CODE IS NS04 UNLESS OTHERWISE NOTED.

KEY NOTES:
1. EQUIPMENT WITHIN BOUNDARY SHALL BE PROVIDED BY PACKAGED SYSTEM VENDOR. CONTROL PANEL PROVIDED BY PACKAGED SYSTEM VENDOR, MOUNTED INTEGRAL TO SKID.
2. CHEMICAL FEED SKID CONTROL AND STATUS MONITORING PROVIDED BY DATA LINK BETWEEN CHEM FEED SKID AND PLC. LINK IS PROVIDED OVER CAT6 ETHERNET CABLE. SEE SPEC. 40 61 96 FOR DETAILS.



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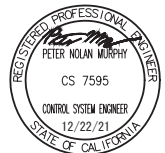
NO.	DATE	BY	DESCRIPTION	APPROVED



DESIGNED BY:	WT	DATE:	_____, 20XX
DRAWN BY:	CR	COMPUTER FILE NAME:	
CHECKED BY:	AZ	SUBMITTED BY:	
CONSULTANT JOB SHEET NO.		SP-FILE NO.:	SP2602
DRAWING NO. 7078		APPROVED BY:	
1-08-6010		ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE: _____, 20XX
SHT 268 OF 303 SHS		OMED POUR, P.E. - PROJECT MANAGER	

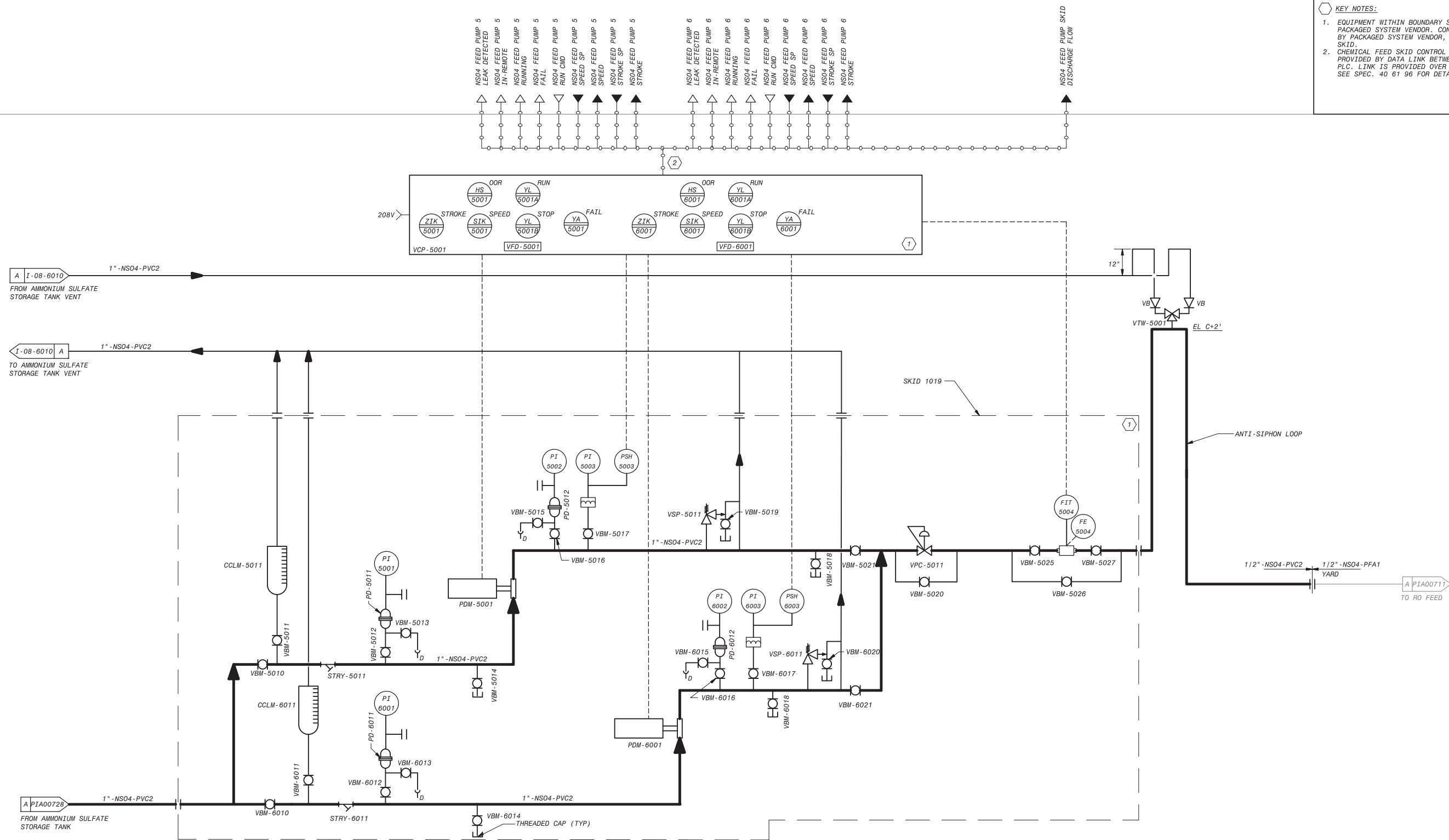
OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
GAC EFFLUENT LIQUID AMMONIUM SULFATE FEED PUMPS 2 OF 3

PROJECT AND SHEET TITLE



NOTES:
1. SYSTEM CODE IS NS04 UNLESS OTHERWISE NOTED.

KEY NOTES:
1. EQUIPMENT WITHIN BOUNDARY SHALL BE PROVIDED BY PACKAGED SYSTEM VENDOR. CONTROL PANEL PROVIDED BY PACKAGED SYSTEM VENDOR, MOUNTED INTEGRAL TO SKID.
2. CHEMICAL FEED SKID CONTROL AND STATUS MONITORING PROVIDED BY DATA LINK BETWEEN CHEM FEED SKID AND PLC. LINK IS PROVIDED OVER CAT6 ETHERNET CABLE. SEE SPEC. 40 61 96 FOR DETAILS.



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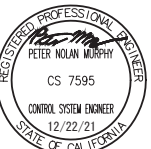
City of Santa Monica
PUBLIC WORKS DEPARTMENT
 1685 MAIN STREET, MAIL STOP 15, SANTA MONICA, CA 90401
 TEL. (310) 458-8721 FAX. (310) 393-4425

NO.	DATE	BY	DESCRIPTION	APPROVED

Brown and Caldwell
WALSH
 CONSULTANT

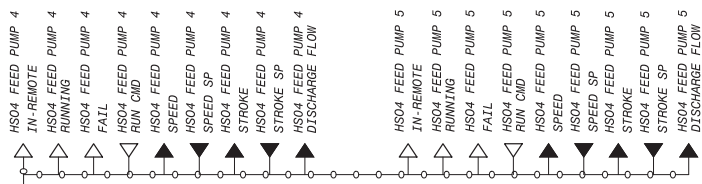
REVIEWED BY : SUNNY WANG, P.E. - WATER RESOURCES MANAGER	DATE : _____ 20__	REFERENCE :	DATE : _____, 20XX	COMPUTER FILE NAME :
REVIEWED BY : OMED POUR, P.E. - PROJECT MANAGER	DATE : _____ 20__	SUBMITTED BY :	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO. : SP2602
APPROVED BY :	DATE : _____ 20XX	APPROVED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

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION
GAC EFFLUENT LIQUID AMMONIUM SULFATE FEED PUMPS 3 OF 3
 PROJECT AND SHEET TITLE



DESIGNED BY : WT
DRAWN BY : CR
CHECKED BY : AZ
CONSULTANT JOB SHEET NO.
DRAWING NO. 7078
1-08-6011
SHT 269 OF 303 SHS

PLC-1/RTIO-3

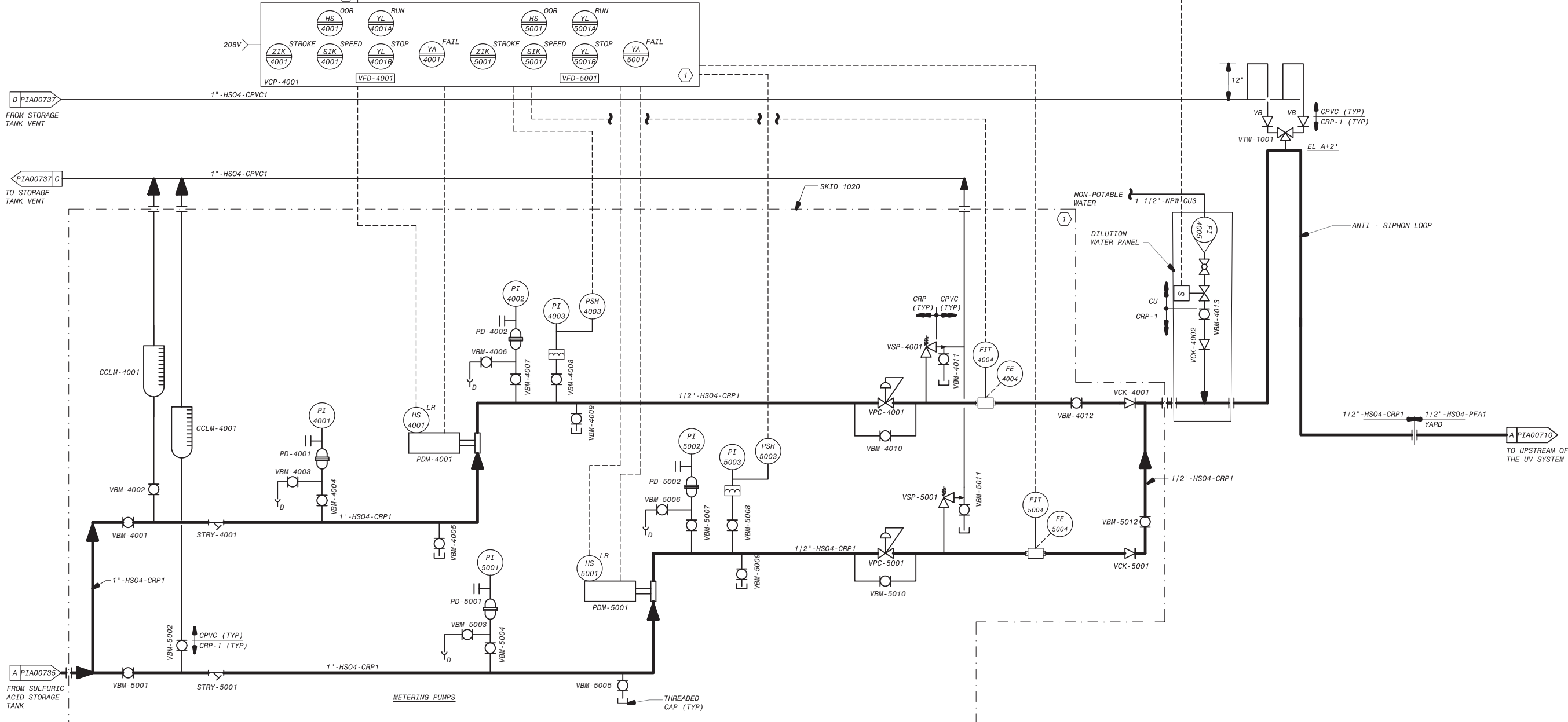


NOTES:

1. SYSTEM CODE IS HSD4 UNLESS OTHERWISE NOTED.
2. FOR DRAWING CLARITY, VALVE TAG NUMBERS ONLY SHOW THE SEQUENCE NUMBER UNLESS OTHERWISE NOTED.

KEY NOTES:

1. EQUIPMENT WITHIN BOUNDARY SHALL BE PROVIDED BY PACKAGED SYSTEM VENDOR. CONTROL PANEL PROVIDED BY PACKAGED SYSTEM VENDOR, MOUNTED INTEGRAL TO SKID.
2. CHEMICAL FEED SKID CONTROL AND STATUS MONITORING PROVIDED BY DATA LINK. LINK IS PROVIDED VIA ETHERNET/IP NETWORK OVER CAT-6 MEDIA. SEE SPECIFICATION SECTION 40 61 96 FOR DETAILS AND ADDITIONAL SIGNALS.



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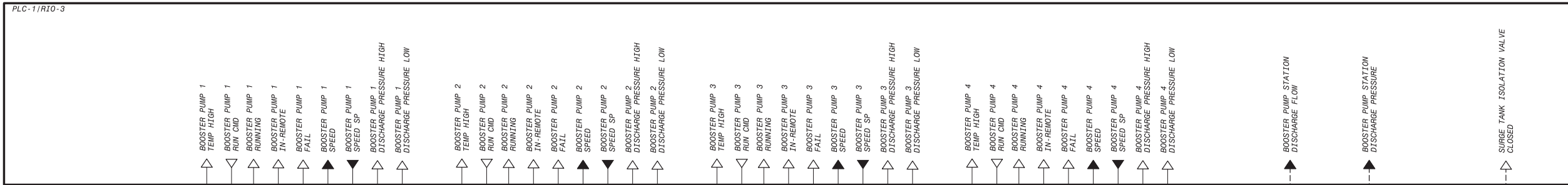


REVIEWED BY :	DATE : _____ 20__	REFERENCE :	DATE : _____, 20XX	COMPUTER FILE NAME :
REVIEWED BY :	DATE : _____ 20__	SUBMITTED BY :	CURTIS CASTLE, P.E. - PRINCIPAL C.E.	SP-FILE NO. : SP2602
REVIEWED BY :	DATE : _____ 20__	APPROVED BY :	ALEX NAZARCHUK, P.E. - CITY ENGINEER	DATE : _____, 20XX
OMED POUR,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

OLYMPIC WELL FIELD RESTORATION
 AND ARCADIA WTP EXPANSION
P&ID SULFURIC ACID FEED SYSTEM
 3 OF 3

DESIGNED BY :	WT
DRAWN BY :	CR
CHECKED BY :	AZ
CONSULTANT JOB SHEET NO.	
DRAWING NO. 7078	
1-08-6012	
SHT 270 OF 303 SHTS	

NO.	DATE	BY	DESCRIPTION	APPROVED

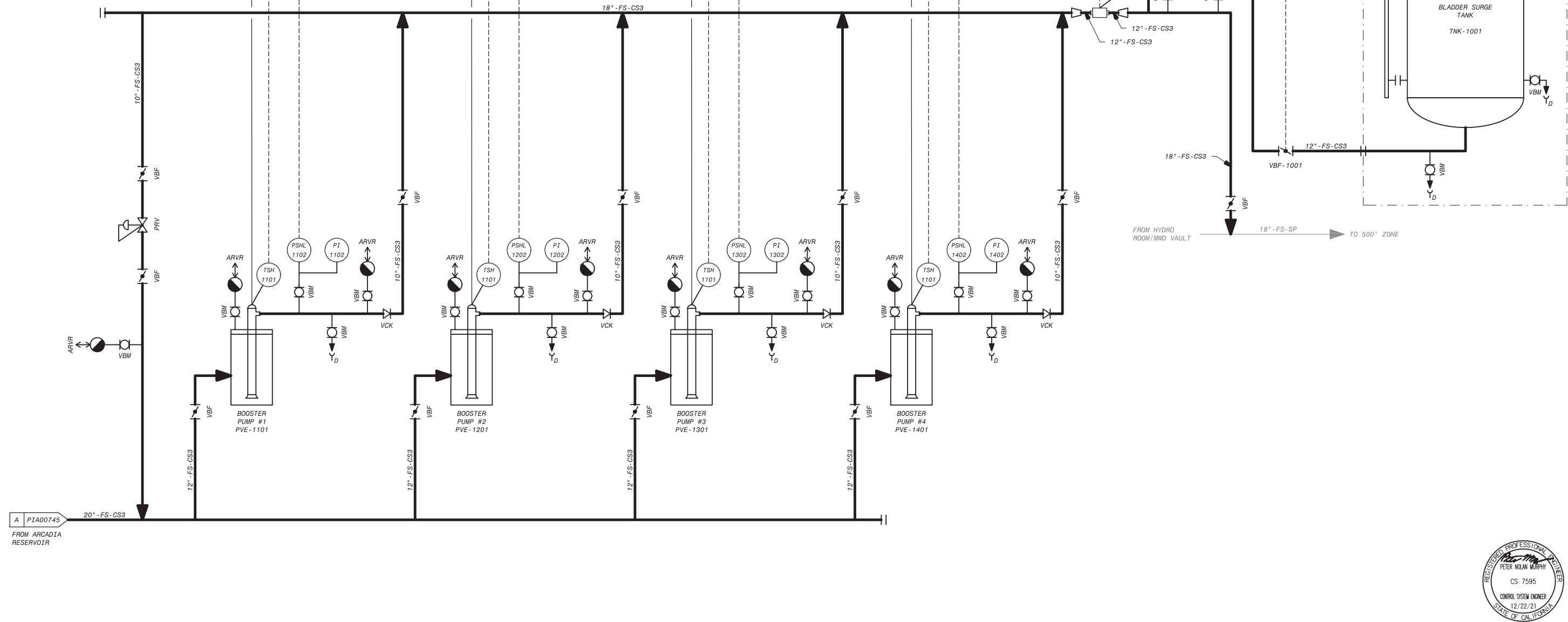
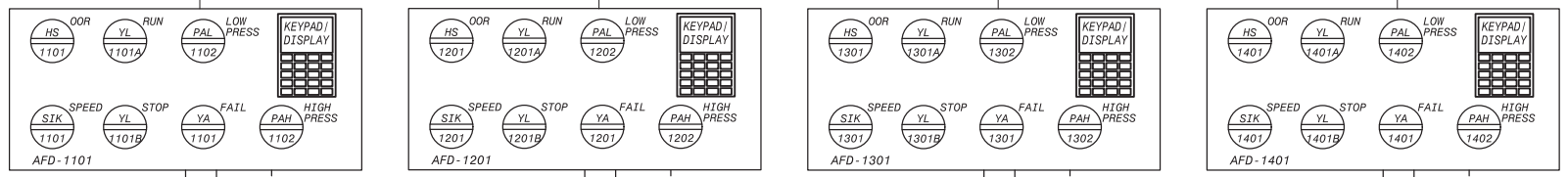


NOTES:

- TAG NUMBERS TO BE PRECEDED BY SYSTEM CODE FS UNLESS OTHERWISE NOTED.

KEY NOTES:

- AFD CONTROL AND STATUS MONITORING PROVIDED BY PACKAGED SYSTEM VENDOR. DATALINK IS PROVIDED VIA ETHERNET/IP NETWORK OVER CAT-6 MEDIA. SEE SPECIFICATION SECTION 40 61 96 FOR DETAILS AND ADDITIONAL SIGNALS.
- EQUIPMENT WITHIN BOUNDARY SHALL BE PROVIDED BY PACKAGED SYSTEM VENDOR. CONTROL PANEL PROVIDED BY PACKAGED SYSTEM VENDOR, MOUNTED INTEGRAL TO SKID.



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
 CONSULTANT

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

P&ID BOOSTER PUMP STATION

DESIGNED BY: WT
 DRAWN BY: CR
 CHECKED BY: AZ
 CONSULTANT JOB SHEET NO.
 DRAWING NO. 7078
1-10-6001
 SHEET 271 OF 303 SHEETS

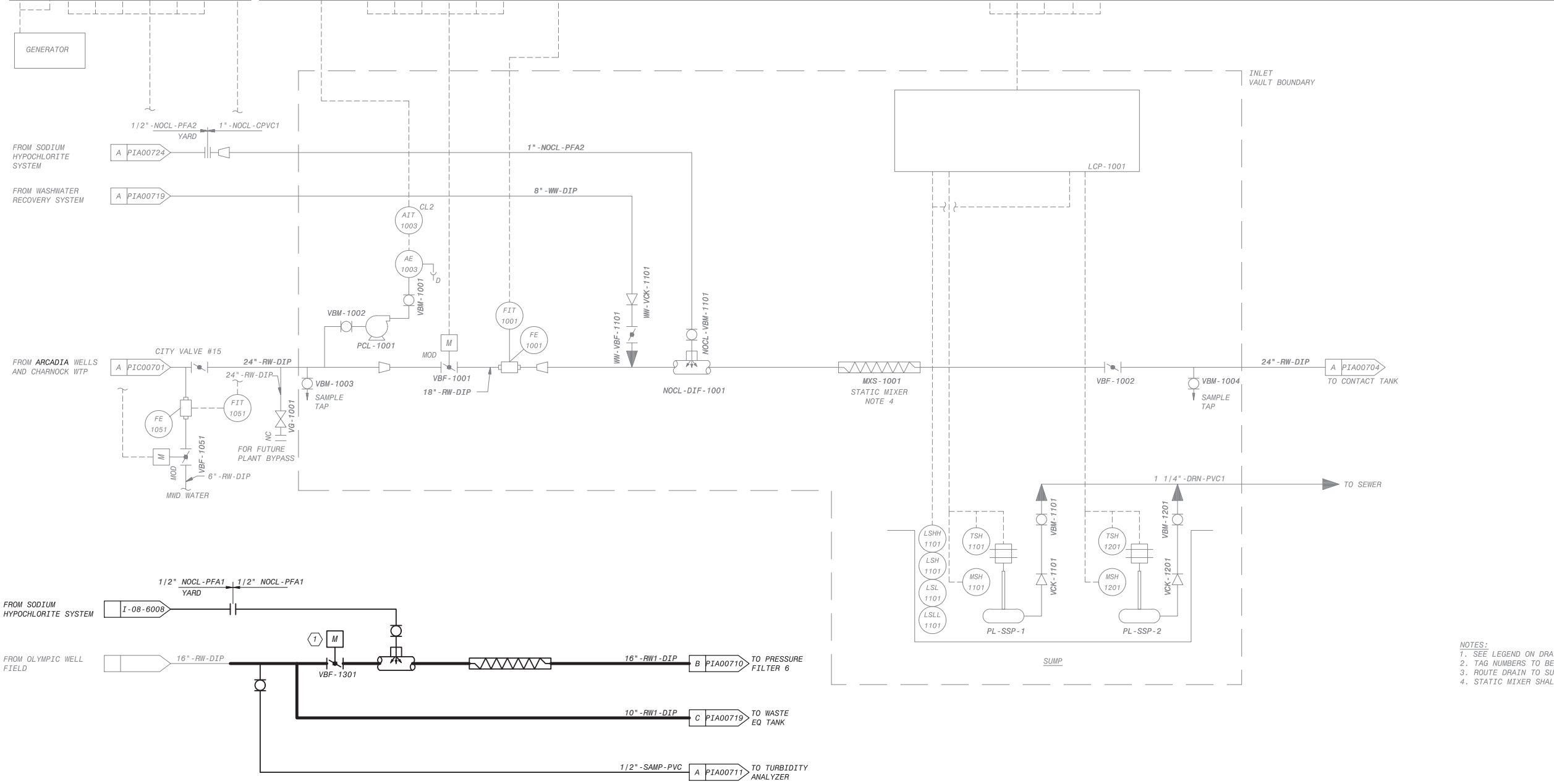
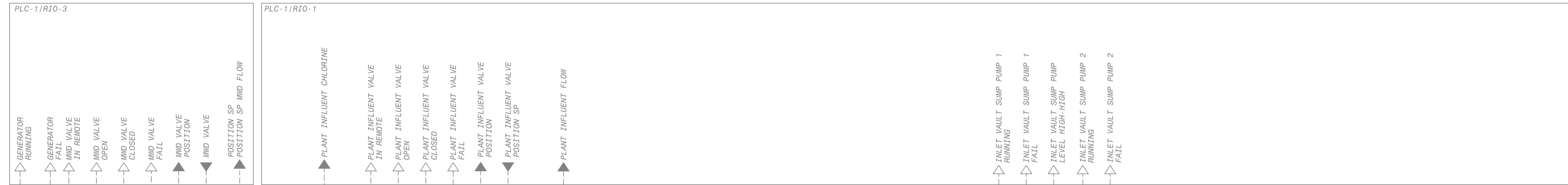


AWTP EXPANSION NOTES:

- THIS IS AN EXISTING P&ID DRAWING ORIGINALLY SEALED ON 06/12/09. PE STAMP HERE APPLIES ONLY TO NEW OR MODIFIED ELEMENTS ON THIS SHEET.
- NEW WORK INSTALLED OR MODIFIED BY AWTP EXPANSION PROJECT SHOWN IN BOLD LINES AND BOLD TEXT.

KEY NOTES:

- LOCAL VALVE CONTROLS PROVIDED PER 40 05 57.23, NOT SHOWN ON P&ID FOR CLARITY.



NOTES:

- SEE LEGEND ON DRAWINGS P1000001, P1000002, P1000003.
- TAG NUMBERS TO BE PRECEDED WITH SYSTEM CODE RW UNLESS OTHERWISE NOTED.
- ROUTE DRAIN TO SUMP IN RAW WATER VAULT INLET.
- STATIC MIXER SHALL BE FURNISHED BY 65.1211.

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION BY JON S. LEE ON 06/12/09 AND SEALED BY CHRISTOPHER J. KINDLE, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF CALIFORNIA, E17946



NO.	DATE	BY	DESCRIPTION	APPROVED



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

OLYMPIC WELL FIELD RESTORATION AND ARCADIA WTP EXPANSION

P&ID RAW WATER MIXING

PROJECT AND SHEET TITLE

DESIGNED BY : WT
DRAWN BY : CR
CHECKED BY : XX
CONSULTANT JOB/SHEET NO.
DRAWING NO. 7078
PIA00703
SHT 272 OF 303 SHS