

# CITY OF IMPERIAL, CA

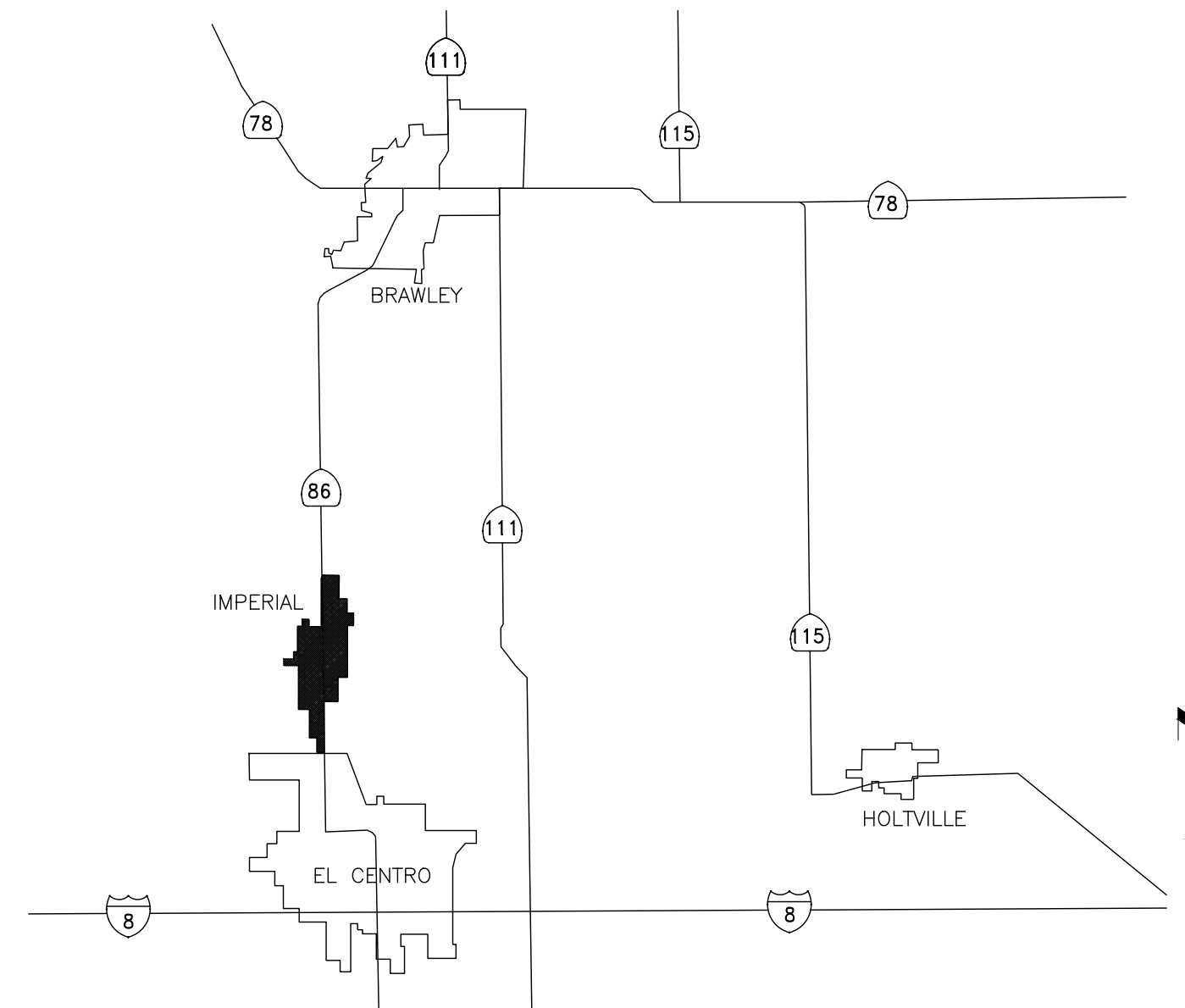
## CLEARWELL PUMP STATION REPLACEMENT AND GAC TREATMENT SYSTEM EXPANSION AND FILTER PIPING REPLACEMENT AT THE WATER TREATMENT PLANT

### BID NO. 2022-05

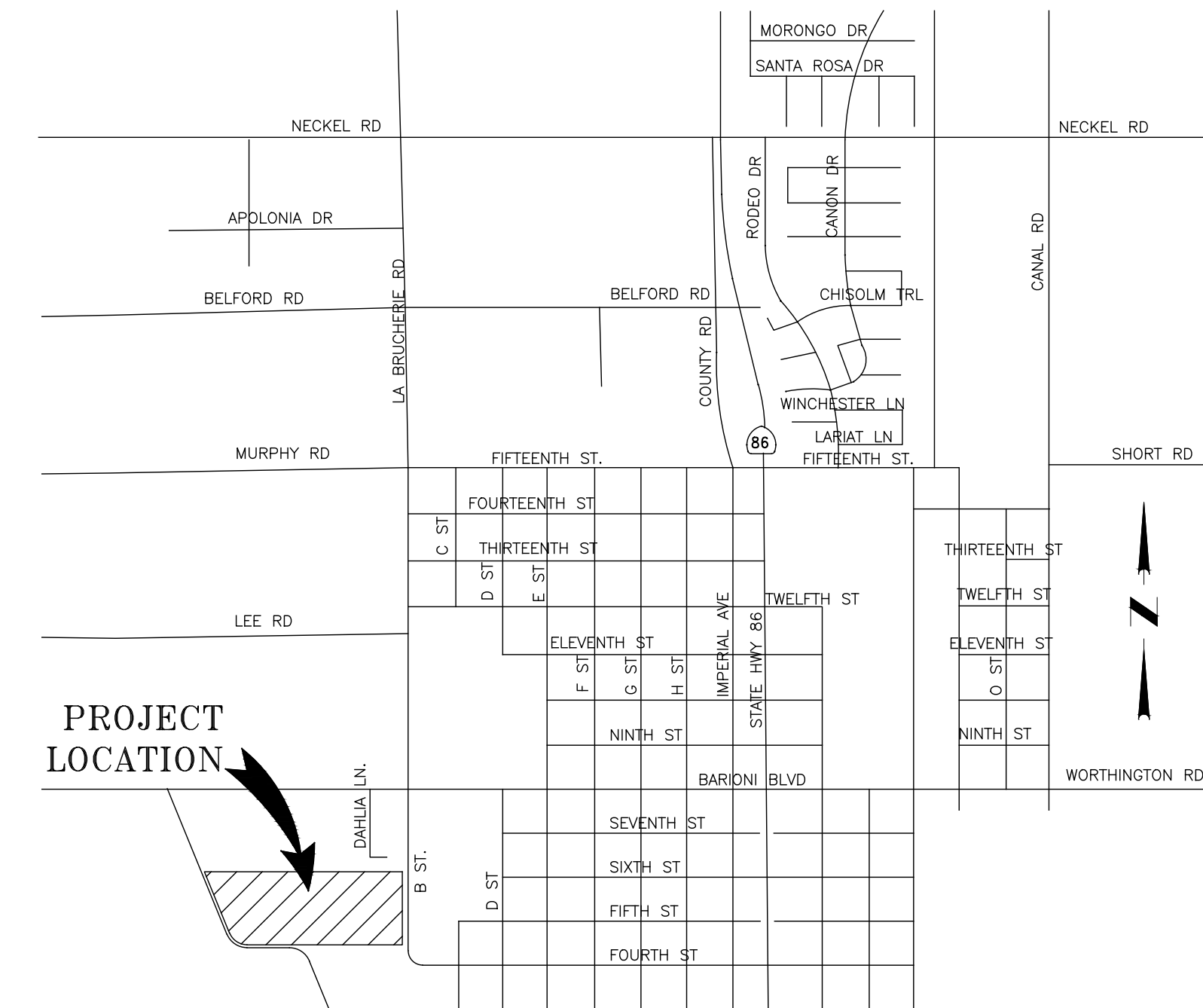
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**VICINITY MAP**  
BASED ON IMPERIAL COUNTY GIS DATA  
NOT TO SCALE



**LOCATION MAP**  
BASED ON IMPERIAL COUNTY GIS DATA  
NOT TO SCALE

#### NOTICE TO CONTRACTOR

- THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE DRAWINGS WERE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. NO CERTIFICATION IS MADE AS TO THE ACCURACY OR THOROUGHNESS OF THIS PLAN BY CITY OF IMPERIAL. APPROVAL OF THIS PLAN BY THE CITY OF IMPERIAL DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OF LOCATION OR THE EXISTENCE OR NON-EXISTENCE OF ANY UNDERGROUND UTILITY, PIPE, OR STRUCTURE. THE CONTRACTOR SHALL TAKE ALL DUE PRECAUTIONARY MEANS TO PROTECT ALL LINES AND STRUCTURES REGARDLESS IF SHOWN OR NOT ON THE DRAWINGS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES OR STRUCTURES CROSSING THE PROPOSED IMPROVEMENTS.
- IF ANY CONFLICT EXISTS BETWEEN THE CONTRACT DRAWINGS AND THE CONTRACT SPECIFICATIONS, THE MOST STRINGENT REQUIREMENT SHALL GOVERN.

- CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING THE SITE AS REQUIRED FOR CONSTRUCTION OF THE FACILITIES, INCLUDING PROVIDING ALL LABOR, EQUIPMENT, METHODS, CRUSHED ROCK, SHORING, APPROVED WATER DISPOSAL, AND ETC. NECESSARY TO COMPLETE THIS PROJECT AT NO ADDITIONAL COST TO THE OWNER. THE COMPLETE GEOTECHNICAL INVESTIGATION FOR THIS SITE IS INCLUDED IN THE PROJECT SPECIFICATIONS.
- THE CONTRACTOR/SUB-CONTRACTOR SHALL EXAMINE CAREFULLY THE SITE OF THE WORK CONTEMPLATED, AS WELL AS THE PLANS AND SPECIFICATIONS. THE SUBMISSION OF A BID SHALL BE CONCLUSIVE EVIDENCE THAT THE CONTRACTOR/SUB-CONTRACTOR HAS INVESTIGATED THE PROJECT SITE AND REVIEWED THE PLANS AND SPECIFICATIONS AND IS SATISFIED AS TO THE CONDITIONS TO BE ENCOUNTERED, AS TO THE CHARACTER, QUALITY AND SCOPE OF THE WORK TO BE PERFORMED, THE QUANTITIES OF MATERIALS TO BE FURNISHED, AND AS TO THE REQUIREMENTS OF THE BID PROPOSAL, PLANS AND SPECIFICATIONS.

#### NSF 61 REQUIREMENT

- ALL PIPING, PUMPS, LININGS/COATING, AND APPURTENANCES IN CONTACT WITH WATER FOR THIS PROJECT SHALL BE NSF 61 CERTIFIED.

#### ENGINEER'S NOTICE

- CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
- THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THESE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
- QUANTITIES SHOWN HEREON ARE PROVIDED FOR BIDDING PURPOSES ONLY. CONTRACTORS SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES PRIOR TO BIDDING FOR CONSTRUCTION.
- ALL PERMITS REQUIRED BY LAW SHALL BE OBTAINED BY THE CONTRACTOR UNLESS SPECIFICALLY STATED TO BE OBTAINED BY THE OWNER.

#### DECLARATION OF RESPONSIBLE CHARGE

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS. I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY OF IMPERIAL IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITIES FOR THE PROJECT DESIGN.

BY: *Shane L. Bloomfield* DATE: 6/25/2022  
SHANE L. BLOOMFIELD  
P.E. NO. C77435

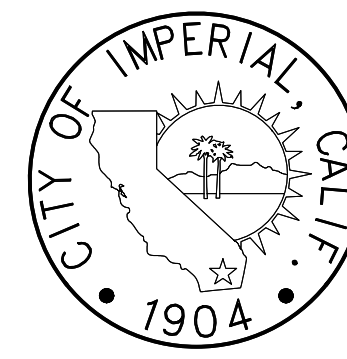
#### CONTACT INFORMATION

CITY OF IMPERIAL JACKIE LOPER (760) 355-4371  
ALBERT A. WEBB ASSOCIATES SHANE BLOOMFIELD, P.E. (951) 686-1070

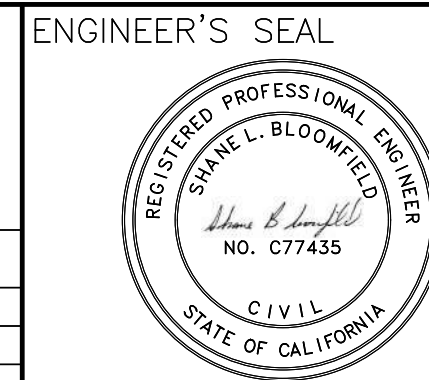


REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

DESIGNED BY:      DRAWN BY:      CHECKED BY:



CITY OF IMPERIAL	
CITY ENGINEER	DATE
REFERENCES	



ENGINEER'S SEAL	
<b>ALBERT A. WEBB ASSOCIATES</b>	
ENGINEERING CONSULTANTS 3788 MCGRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	
PLANS PREPARED UNDER THE SUPERVISION OF:	
<i>Shane L. Bloomfield</i>	6/25/22
SHANE L. BLOOMFIELD REGISTERED CIVIL ENGINEER NO. C77435	DATE

DESIGN/DATE	
DESIGNED: SLB	DATE
DRAWN: JW	
TRACED:	
CHECKED: BPK	
SUBMITTED:	
SCALE:	

CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA	
CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP	
<b>TITLE SHEET</b>	
DWG. NO.	

BID NO.	
2022-05	
SHEET	
1	
OF 60	
G-1	



**LEGEND**

	PROPOSED SEWER FORCE MAIN OR WATERLINE
	EXISTING UNDERGROUND WATER MAIN (SIZE NOTED)
	EXISTING UNDERGROUND SEWER MAIN (SIZE NOTED)
	EXISTING UNDERGROUND STROM DRAINAGE
	EXISTING UNDERGROUND IRRIGATION LINE
	EXISTING UNDERGROUND GAS LINE (SIZE NOTED)
	EXISTING UNDERGROUND COMMUNICATION LINE
	RIGHT OF WAY
	STATE HIGHWAY PAVEMENT EDGE
	LOCAL STREET PAVEMENT EDGE
	EXISTING FENCE (PROTECT IN PLACE)
	EXISTING WATER VALVE (PROTECT IN PLACE)
	PRPOSED WATER REDUCER
	EXISTING FIRE HYDRANT (PROTECT IN PLACE)
	EXISTING GUY WIRE (PROTECT IN PLACE)
	EXISTING UTILITY POLE (PROTECT IN PLACE)
	EXISTING SEWER MANHOLE
	EXISTING MAIL BOX (PROTECT IN PLACE)
	EXISTING TRAFFIC SIGN (PROTECT IN PLACE)

**GENERAL PIPELINE NOTES**

- PIPELINE AND APPURTENANT CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S AND CITY'S RECOMMENDATIONS.
- THRUST BLOCKS SHALL BE POURED PER CITY OF IMPERIAL STD. DRAWINGS NO. 1 AND 2 AT ALL CHANGES IN VERTICAL AND HORIZONTAL ALIGNMENT IN ORDER TO PREVENT PIPELINE MOVEMENT. CONCRETE SHALL BE PER GEOTECHNICAL REPORT RECOMMENDATIONS PROVIDED AS AN ATTACHMENT TO THE SPECIFICATIONS.
- PIPE AND FITTINGS SHALL BE HANDLED SO AS TO PROTECT PIPE JOINTS, LINING AND COATING, AND CAREFULLY BEDDED TO PROVIDE CONTINUOUS BEARING AND PREVENT SETTLEMENT. PIPE SHALL BE PROTECTED AGAINST FLOATATION AT ALL TIMES. OPEN ENDS SHALL BE SEALED AT ALL TIMES WHEN CONSTRUCTION IS IN PROGRESS.
- TEST PRESSURE SHALL BE 1.5 TIMES THE PRESSURE CLASS AND SHALL BE UNDER CONTINUOUS INSPECTION AND SHALL BE IN ACCORDANCE WITH AWWA STANDARD PROCEDURES. CITY INSPECTOR TO INSPECT TEST USING APPROVED PRESSURE GAUGE. INSPECTOR'S TIME SPENT INSPECTING ANY REQUIRED RETESTS (INCLUDING RATE AND OVERHEAD) SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
- CONNECTIONS TO EXISTING PIPELINES SHALL ONLY BE MADE WITH THE CITY INSPECTOR PRESENT. TEST PLUGS SHALL ONLY BE REMOVED UPON DIRECTION OF THE CITY.
- ALL PIPELINES LESS THAN 12" DIA. SHALL BE INSTALLED WITH A MINIMUM 36 INCH COVER AT THE FINISH GRADE OVER THE PIPE, AND ALL PIPELINES 12" DIA. OR GREATER SHALL HAVE 48 INCH MINIMUM COVER, UNLESS OTHERWISE NOTED.
- ALL VAULT AND MANHOLE KNOCKOUTS SHALL BE SEALED WITH NON-SHRINK GROUT AFTER PIPES AND CONDUITS HAVE BEEN INSTALLED. ALL VAULTS AND MANHOLES ARE TO BE WATERTIGHT
- ALL BURIED VALVES SHALL BE INSTALLED WITH AN ADJUSTABLE VALVE BOX AND RISER STEM PER CITY OF IMPERIAL STD. DWG. NO. 6. THE STEM SHALL BRING THE VALVE NUT TO WITHIN 3 FT OF THE FINAL GROUND SURFACE.
- MEGALUGS ARE REQUIRED WHERE JOINT MOVEMENT IS NOT PREVENTED BY THRUST BLOCKS.
- REPLACEMENT PAVING IN ALL PAVED ROADS, TRAFFIC CONTROL, RESTRIPIPING, SPECIAL TRENCH BACKFILL, SPECIAL CLASS 2 BASE REQUIREMENTS, ETC. SHALL BE IN ACCORDANCE WITH THE CITY OF IMPERIAL'S PUBLIC WORKS DEPARTMENT PERMIT REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY OF IMPERIAL'S PUBLIC WORKS DEPARTMENT PERMIT SECTION AT (760) 482-4462 AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION. IF THE PROPOSED PIPELINE CROSSES A PAVED STREET AT OTHER THAN 90 DEGREES, THE LIMITS OF PAVEMENT OVERLAY SHALL BE AT RIGHT ANGLES TO THE STREET CENTERLINE AND SHALL ENCOMPASS THE ENTIRE TRENCH PAVING.
- ALL CONSTRUCTION AND MATERIALS SHALL COMPLY WITH THE CITY OF IMPERIAL'S (CITY) STANDARDS AND THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS (GREEN BOOK). ANY CONSTRUCTION AND/OR MATERIALS NOT COVERED IN THE CITY'S STANDARDS SHALL BE APPROVED BY THE CITY.
- FAILURE TO MEET ANY REQUIREMENTS OF N.W.C. AND/OR A.W.W.A. SPECIFICATIONS IS CAUSE FOR REJECTION.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL AND MAINTAIN ALL CONSTRUCTION, REGULATORY, GUIDE AND WARNING SIGNS WITHIN THE PROJECT LIMITS AND ITS SURROUNDINGS AND TO PROVIDE SAFE PASSAGE FOR THE TRAVELING PUBLIC AND WORKERS UNTIL THE FINAL COMPLETION AND ACCEPTANCE OF THE PROJECT BY THE CITY.
- CONTRACTOR SHALL SHORE ALL TRENCHES AND CONDUCT ALL CONSTRUCTION AND OPERATIONS IN ACCORDANCE WITH CAL-OSHA REQUIREMENTS.
- PIPE JOINTS SHALL NOT BE PULLED AT ANY ANGLE GREATER THAN THE MAXIMUM ANGLE RECOMMENDED BY THE PIPE MANUFACTURER.
- THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR THE UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND FACILITIES PRIOR TO TRENCHING AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/OR ANY OTHER UNDERGROUND UTILITY LINES NOT OF RECORD OR NOT SHOWN ON THE PLANS. CALL UNDERGROUND SERVICE ALERT (USA) 1-800-422-4133 AT LEAST 48 HOURS PRIOR TO EXCAVATION.
- ALL HIGH POINTS IN THE PIPELINE SHALL HAVE AN AIR-VAC INSTALLED PER CITY OF IMPERIAL STD. DWG. NO. 8.
- ALL WATERLINE INSTALLATIONS SHALL COMPLY WITH WATER AND SEWERAGE FACILITIES SEPARATION REQUIREMENTS OF THE GOVERNING AGENCY
- APPROVAL BY THE CITY IMPLIES NO PERMISSION OTHER THAN THAT WITHIN THE CITY'S JURISDICTION. ALL PERMITS REQUIRED BY LAW SHALL BE ACQUIRED BY THE CONTRACTOR UNLESS OTHERWISE NOTED. REQUIREMENTS OF THE CITY SHALL TAKE PRECEDENCE OVER REQUIREMENTS OF OTHER AGENCIES ONLY WHERE THE CITY'S REQUIREMENTS ARE GREATER.
- CONTRACTOR SHALL COORDINATE WITH THE CITY IN THE FIELD FOR LOCATION OF ALL APPURTENANCES.

**GRADING & GENERAL CONSTRUCTION NOTES**

- ALL GRADING SHALL CONFORM TO DIVISION 2 OF THE SPECIFICATIONS, AND THE CURRENT UNIFORM BUILDING CODE.
- THE CONTRACTOR SHALL NOTIFY THE CITY OF IMPERIAL, ATTN: JACKIE LOPER A MINIMUM OF 48 HOURS IN ADVANCE OF STARTING CONSTRUCTION.
- NO FILL SHALL BE PLACED ON EXISTING GROUND UNTIL THE GROUND HAS BEEN CLEARED OF WEEDS, DEBRIS AND OTHER DELETERIOUS MATERIAL.
- ALL NATIVE FILL SHALL BE COMPACTED TO A MINIMUM OF 90 PERCENT OF RELATIVE COMPACTION IN ACCORDANCE WITH THE ASTM D1557-78 TEST METHOD.
- MAIN LINE VALVES ARE TO BE OPERATED ONLY BY A CITY OF IMPERIAL EMPLOYEE
- DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS.
- HOURS OF OPERATION SHALL BE FROM 7 A.M. TO 4 P.M. MONDAY THROUGH FRIDAY.
- ALL TRENCH AND SLAB BACKFILLS SHALL BE TESTED AND CERTIFIED BY THE SOILS ENGINEER TO A MINIMUM OF 95% RELATIVE COMPACTION UNDER SLABS AND 5' OUTSIDE SLABS IN ALL DIRECTIONS. A MIN. OF 90% RELATIVE COMPACTION SHALL BE MAINTAINED ELSEWHERE, UNLESS OTHERWISE NOTED.
- ALL CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE AT THE CLOSE OF EACH WEEK.
- ANY CONTRACTOR/SUB CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM HIS OPERATIONS. SAID EXISTING IMPROVEMENTS SHALL INCLUDE BUT ARE NOT LIMITED TO BERMS, DITCHES, DRIVEWAYS, FENCES, PLANTS, PIPES, CONDUITS AND STRUCTURES. ANY REMOVAL OR DAMAGE TO EXISTING IMPROVEMENTS SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT HIS EXPENSE AND SHALL BE APPROVED BY THE OWNER.
- THE CONTRACTOR/SUB-CONTRACTOR SHALL EXAMINE CAREFULLY THE SITE OF THE WORK CONTEMPLATED, AS WELL AS THE PLANS AND SPECIFICATIONS. THE SUBMISSION OF A BID SHALL BE CONCLUSIVE EVIDENCE THAT THE CONTRACTOR/SUB-CONTRACTOR HAS INVESTIGATED THE PROJECT SITE AND REVIEWED THE PLANS AND SPECIFICATIONS AND IS SATISFIED AS TO THE CONDITIONS TO BE ENCOUNTERED, AS TO THE CHARACTER, QUALITY AND SCOPE OF THE WORK TO BE PERFORMED, THE QUANTITIES OF MATERIALS TO BE FURNISHED, AND AS TO THE REQUIREMENTS OF THE BID PROPOSAL, PLANS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL FURNISH POTABLE WATER FOR HIS EMPLOYEES, WHICH SHALL MEET ALL THE REQUIREMENTS OF THE COUNTY AND STATE HEALTH DEPARTMENTS.
- PRIOR TO CONSTRUCTION OF THE PIPE LINES, THE CONTRACTOR SHALL EXPOSE THE EXISTING PIPE LINES WHERE CONNECTIONS WILL OCCUR AND VERIFY THEIR ELEVATION, LOCATION, AND SIZE. APPROVAL OF A PROPOSED CONNECTION TO A CITY OF IMPERIAL FACILITY DOES NOT IMPLY APPROVAL OR CORRECTNESS OF THE ELEVATION AND/OR LOCATION SHOWN ON THESE PLANS.
- CONTRACTOR SHALL NOT BACKFILL TRENCHES UNTIL THE INSPECTOR HAS OBTAINED AS-BUILT STATIONING ON ALL STRUCTURES. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE ACCURATE "RECORD DRAWINGS" TO THE OWNER IMMEDIATELY AFTER CONSTRUCTION.
- ALL CONSTRUCTION SHALL CONFORM TO CURRENT CAL-OSHA SAFETY REQUIREMENTS. IF CONSTRUCTION ACTIVITIES ARE INTERRUPTED OR HALTED DUE TO OSHA VIOLATIONS THE CONTRACTOR WILL NOT BE ELIGIBLE FOR A TIME EXTENSION FOR THE DAY OR DAYS LOST DUE TO THAT VIOLATION.
- CONTRACTOR SHALL DESIGNATE A QUALIFIED SUPERINTENDENT WITH FULL AUTHORITY TO ACT ON BEHALF OF THE CONTRACTOR. SAID SUPERINTENDENT SHALL BE ON THE JOB SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED.

**BENCHMARK DATA**

NAVDB88 BASED ON NGS CONTROL. ADDED 500.00' TO AVOID NEGATIVE ELEV.

DB1612  
ELEV. = -61.540

RECOVERY NOTE BY IMPERIAL COUNTY CALIFORNIA 1991 1.70 MI (2.74 KM) EAST ALONG WORTHINGTON ROAD FROM WHERE IT INTERSECTS THE SOUTHERN PACIFIC RAILROAD TRACKS IN THE CITY OF IMPERIAL, 40 FT (12.2 M) NORTH OF THE CENTERLINE OF WORTHINGTON ROAD, 52 FT (15.8 M) EAST OF THE CENTERLINE OF DOGWOOD ROAD GOING NORTH, 42 FT (12.8 M) WEST OF THE DOGWOOD CANAL CHECK GATE, 22 FT (6.7 M) SOUTH OF THE CENTERLINE OF DELIVERY 91 ON THE NORTHEAST CORNER OF THE INTERSECTION, SET ON TOP AND AT THE SOUTHWEST CORNER OF THE NORTH HEADWALL OF THE SIPHON FOR DOGWOOD CANAL UNDER WORTHINGTON ROAD.

**UTILITIES COORDINATION**

- NO LESS THAN 3 WORKING DAYS PRIOR TO ANY EXCAVATION OR TRENCHING, EACH CONTRACTOR DOING SUCH WORK SHALL CONTACT OR TELEPHONE THE FOLLOWING AGENCIES SO THAT EXISTING UNDERGROUND UTILITIES MAYBE LOCATED AND, IF REQUIRED BY THE AGENCY AN INSPECTOR MAY BE PRESENT
- THE PROPOSED WATERLINE CROSSES AN EXISTING KINDER MORGAN 6-INCH HIGH PRESSURE REFINED PETROLEUM PIPELINE. THE CONTRACTOR IS REQUIRED TO COORDINATE WITH KINDER MORGAN AND FOLLOW THEIR REQUIREMENTS PROVIDED IN THE SPECIFICATIONS.

**ABBREVIATIONS**

ABAND	ABANDONED	LP	LOW POINT
AC	ASPHALTIC CONCRETE	LT	LEFT
ACP	ASBESTOS CEMENT PIPE	MAX	MAXIMUM
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	MIN	MINIMUM
APPROX	APPROXIMATE	MOC	MIDDLE OF CURVE
AR	AIR RELEASE	MTG	MOUNTING
AV	AIR VALVE	MVC	MIDDLE OF VERTICAL CURVE
ASTM	AMERICAN NATIONAL STANDARDS INSTITUTE	NTS	NOT TO SCALE
BC	BEGINNING OF CURVE	OD	OUTSIDE DIAMETER
BVC	BEGINNING OF VERTICAL CURVE	O&M	OPERATIONS AND MAINTENANCE
BO	BLOW OFF	OC	ON CENTER
BOP	BOTTOM OF PIPE	OSHA	OCCUPATIONAL SAFETY & HEALTH
BOT	BOTTOM	PCC	POINT OF COMPOUND CURVE
C&G	CURB & GUTTER	PDC	POWER DISTRIBUTION CENTER
CB	CATCH BASIN	PE	PAD ELEVATION OR POLYETHYLENE
CF	CURB FACE	PI	POINT OF INTERSECTION
CG	CENTER GRADE	PP	EXISTING POWER POLE
CL	CENTERLINE OR CLASS	PRC	POINT OF REVERSE CURVE
CLR	CLEARANCE	PROP	PROPOSED
CML	CEMENT MORTAR COATING	PVC	POLY VINYL CHLORIDE
CML	CEMENT MORTAR LINING	RAD	RADIUS
CML&C	CEMENT MORTAR LINED AND COATED	RC	RELATIVE COMPACTION
CML&P	CEMENT MORTAR LINED AND OUTSIDE PAINTED	REQD	REQUIRED
CMP	CORRUGATED METAL PIPE	REV	REVISION, REVISED
CMU	CONCRETE MASONRY UNITS	RSGV	RESILIENT SEAT GATE VALVE
CO	CLEANOUT	RT	RIGHT
CONC	CONCRETE	R/W	RIGHT-OF-WAY
CONT	CONTINUOUS	S	SLOPE
CPLG	COUPLING	SCC	SYSTEM CONTROL CENTER
CTF	CUT TO FIT	SD	STORM DRAIN
DBL	DOUBLE	SDR	STANDARD DIMENSION RATIO
DD	DRAIN DITCH	SG	SUBGRADE
DI	DUCTILE IRON	SHD	SCHEDULE
DIA	DIAMETER	SCHED	SCHEDULE
DIP	DUCTILE IRON PIP	SD	STORM DRAIN
DIV	DIVISION	SP	SPACE
DN	DN	SPEC	SPECIFICATION
DWG	DRAWING	SS	STAINLESS STEEL
EC	END OF CURVE	STA	STATION
EL	ELEVATION	STD	STANDARD
ELEV	ELEVATION	STL	STEEL
EP	EDGE OF PAVEMENT	SWR	SEWER
EQ	EQUAL	TOB	TOP OF BERM
EVC	END OF VERTICAL CURVE	TC	TOP OF CURB
EX, EXIST	EXISTING	TD	TOP OF DIKE
FAB	FABRICATED	TG	TOP OF GRATE
FBEL	FUSION BONDED EPOXY LINED	THK	THICK
FBEL/CMC	FUSION BONDED CEMENT MOTOR COATED	TOP	TOP OF PIPE
FF	FINISHED FLOOR	TS	TOP OF SLAB
FG	FINISHED GRADE	TOW	TOP OF WALL
FH	FIRE HYDRANT	TYP.	TYPICAL
FL, F.L.	FLOWLINE	UBC	UNIFORM BUILDING CODE
FLG	FLANGE	VC	VERTICAL CURVE
FLG'D	FLANGED	VERT	VERTICAL
FS	FINISHED SURFACE	VPI	VERTICAL POINT OF INTERSECTION
FT	FOOT, FEET	WSP	WELDED STEEL PIPE
FUT	FUTURE	WS	WATER SURFACE
GA	GALVANE	WT	WEIGHT
GALV	GALVANIZED	WTR	WATER
GB	GRADE BREAK	W/	WITH
HORIZ	HORIZONTAL	XING	CROSSING
HP	HIGH POINT		
HPI	HORIZONTAL POINT OF INTERSECTION		
HSC	HYDRAULIC SYSTEM CENTER		
ID	INSIDE DIAMETER		
IID	IMPERIAL IRRIGATION DISTRICT		
IN	INCHES		
INV	INVERT		
LF	LINEAL FOOT (FEET)		
LG	LONG		
LN	LINE		

**BASIS OF COORDINATES**

CCS NAD83, ZONE VI BASED ON NGS STATIONS "P494" EPOCH 2010.00.

P494  
N: 1856571.780  
E: 6720900.821

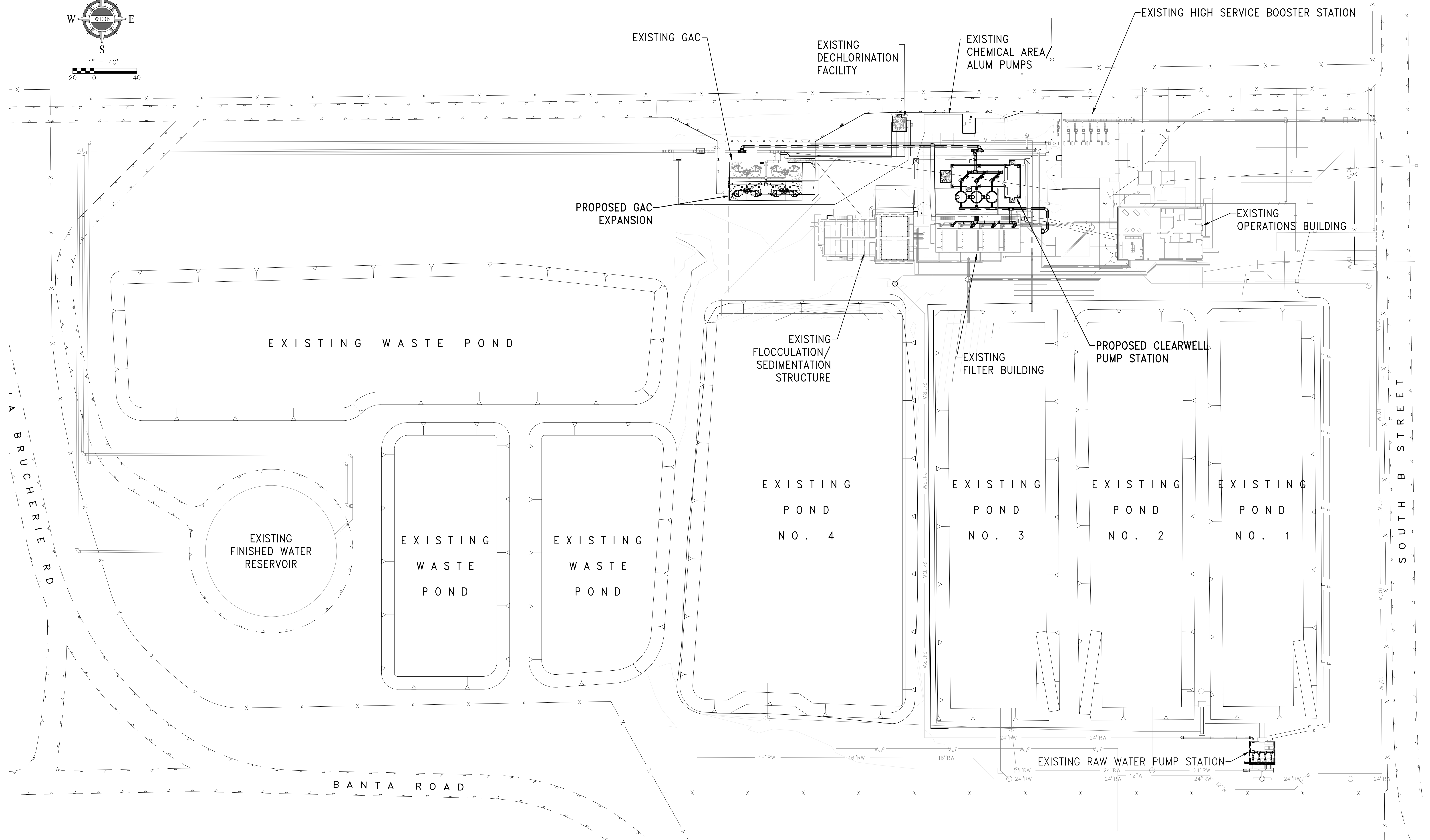
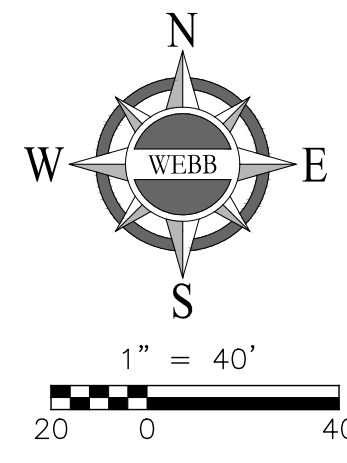
CONVERGENCE ANGLE 0'22"06.9" @ PT. 1

**BASIS OF BEARINGS**

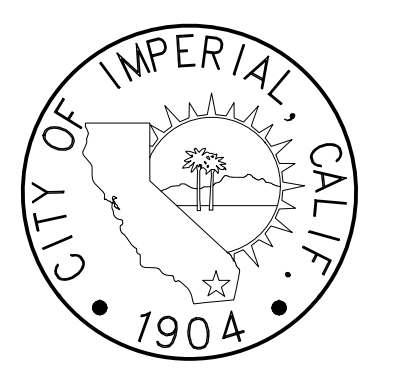
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA STATE PLANE COORDINATE SYSTEM, CCS83, ZONE 6, BASED LOCALLY ON CONTROL STATIONS "P494" NAD 83(NSRS2007) AS SHOWN HEREON. ALL BEARINGS SHOWN ON THIS MAP ARE GRID. QUOTED BEARINGS AND DISTANCES FROM REFERENCE MAPS OR DEEDS ARE AS SHOWN PER THAT RECORD REFERENCE. ALL DISTANCES SHOWN ARE GROUND DISTANCES UNLESS SPECIFIED OTHERWISE. GRID DISTANCES, MAY BE OBTAINED BY MULTIPLYING THE GROUND DISTANCE BY A COMBINATION FACTOR OF 0.999996393 CALCULATIONS ARE MADE AT POINT NO. 1 WITH COORDINATES OF: N: 1893907.692, E: 6770081.112, USING AN ELEVATION OF -64.06.

<p>Know what's below. Call 811 before you dig.</p>	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>INITIAL</th> <th>DESCRIPTION</th> <th>APPROVED/DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE																																														<p>CITY OF IMPERIAL 1904</p>	<p><b>CITY OF IMPERIAL</b></p> <p>CITY ENGINEER _____ DATE _____</p> <p>REFERENCES _____</p>	<p>ENGINEER'S SEAL</p> <p>ALBERT A. WEBB ASSOCIATES REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA NO. C77455 CIVIL</p>	<p>ENGINEERING CONSULTANTS 3788 McCRAV STREET RIVERSIDE CA 92506 PH. (951) 686-1070 FAX (951) 788-1256</p> <p>PLANS PREPARED UNDER THE SUPERVISION OF: <i>Shane L. Bloomfield</i> 6/25/22 DATE</p> <p>SHANE L. BLOOMFIELD REGISTERED CIVIL ENGINEER NO. C77435</p>	<table border="1"> <tr><td>DESIGNED:</td><td>SLB</td></tr> <tr><td>DRAWN:</td><td>JW</td></tr> <tr><td>TRACED:</td><td></td></tr> <tr><td>CHECKED:</td><td>BPK</td></tr> <tr><td>SUBMITTED:</td><td></td></tr> <tr><td>SCALE:</td><td></td></tr> </table>	DESIGNED:	SLB	DRAWN:	JW	TRACED:		CHECKED:	BPK	SUBMITTED:		SCALE:		<p>CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA</p> <p>CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP</p> <p>LEGEND, BENCHMARK, GENERAL NOTES, AND ABBREVIATIONS</p> <p>DWG. NO.</p>	<p>BID NO. 2022-05</p> <p>SHEET 2 OF 60</p> <p>G-2</p>
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**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES



**ALBERT A. WEBB ASSOCIATES**  
 ENGINEERING CONSULTANTS  
 3788 MCGRAY STREET  
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 PH. (951) 686-1070  
 FAX (951) 788-1256

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Shane L. Bloomfield*  
 SHANE L. BLOOMFIELD  
 REGISTERED CIVIL ENGINEER NO. C77455

6/25/22  
 DATE

DESIGNED:	SLB	DATE	
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SCALE:			

CITY OF IMPERIAL  
 IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT  
 SYSTEM EXPAN., AND FILTER PIPING REPLACE.  
 AT THE WTP

**OVERALL SITE PLAN**

DWG. NO. \_\_\_\_\_

BID NO.  
2022-05

SHEET  
**3**  
OF 60

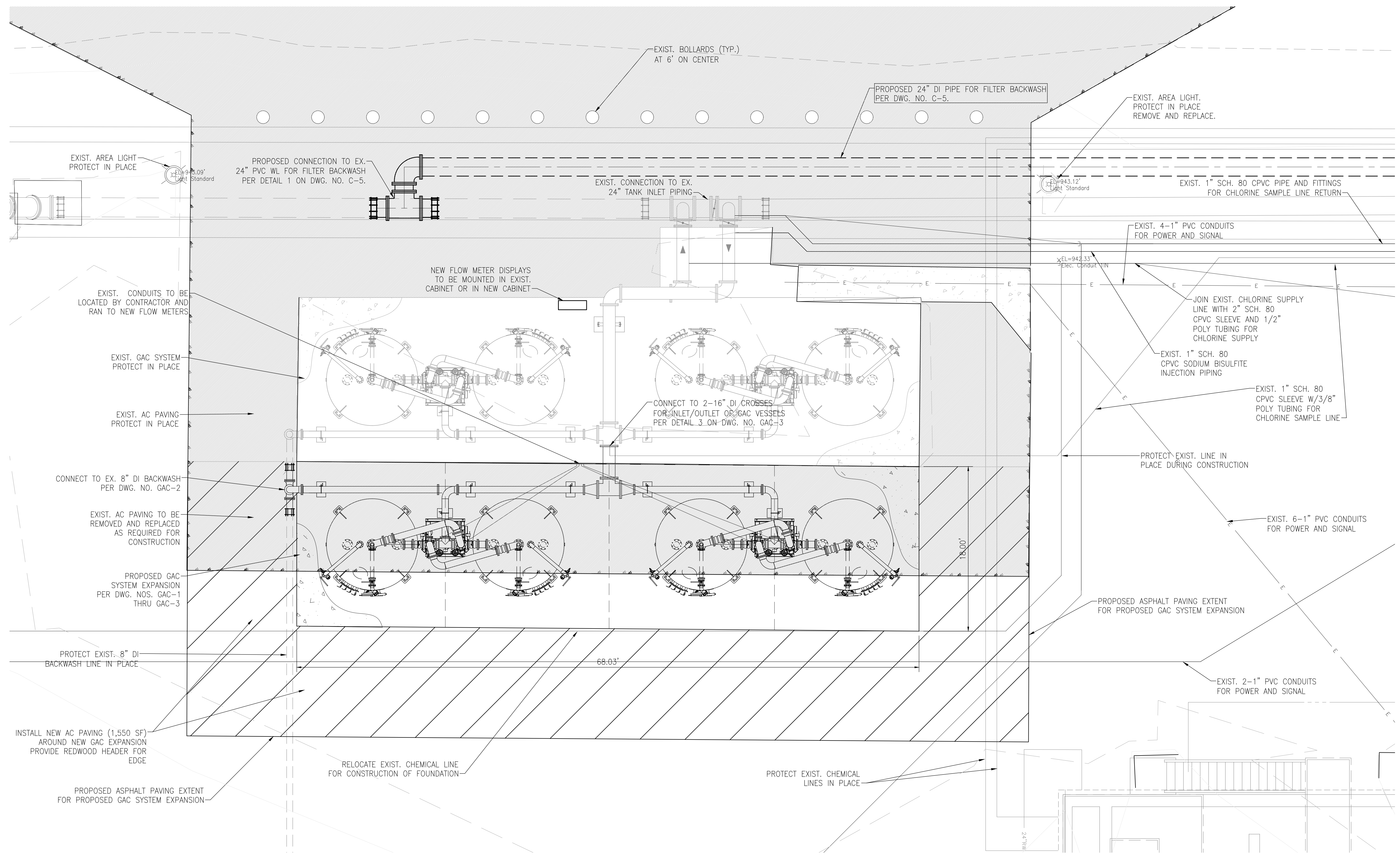
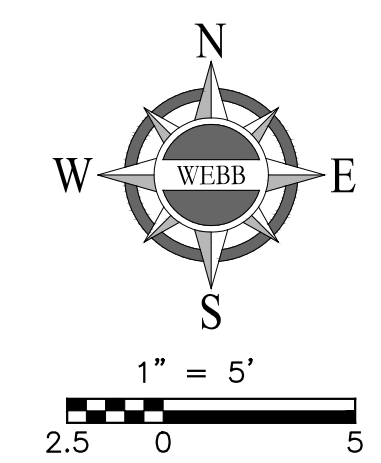
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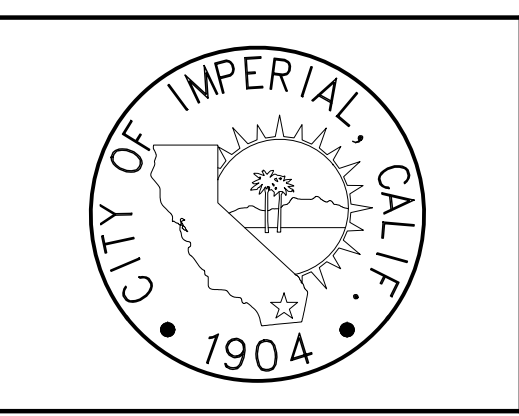






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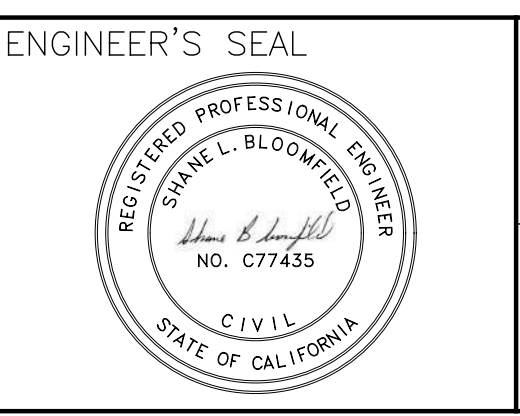
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**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

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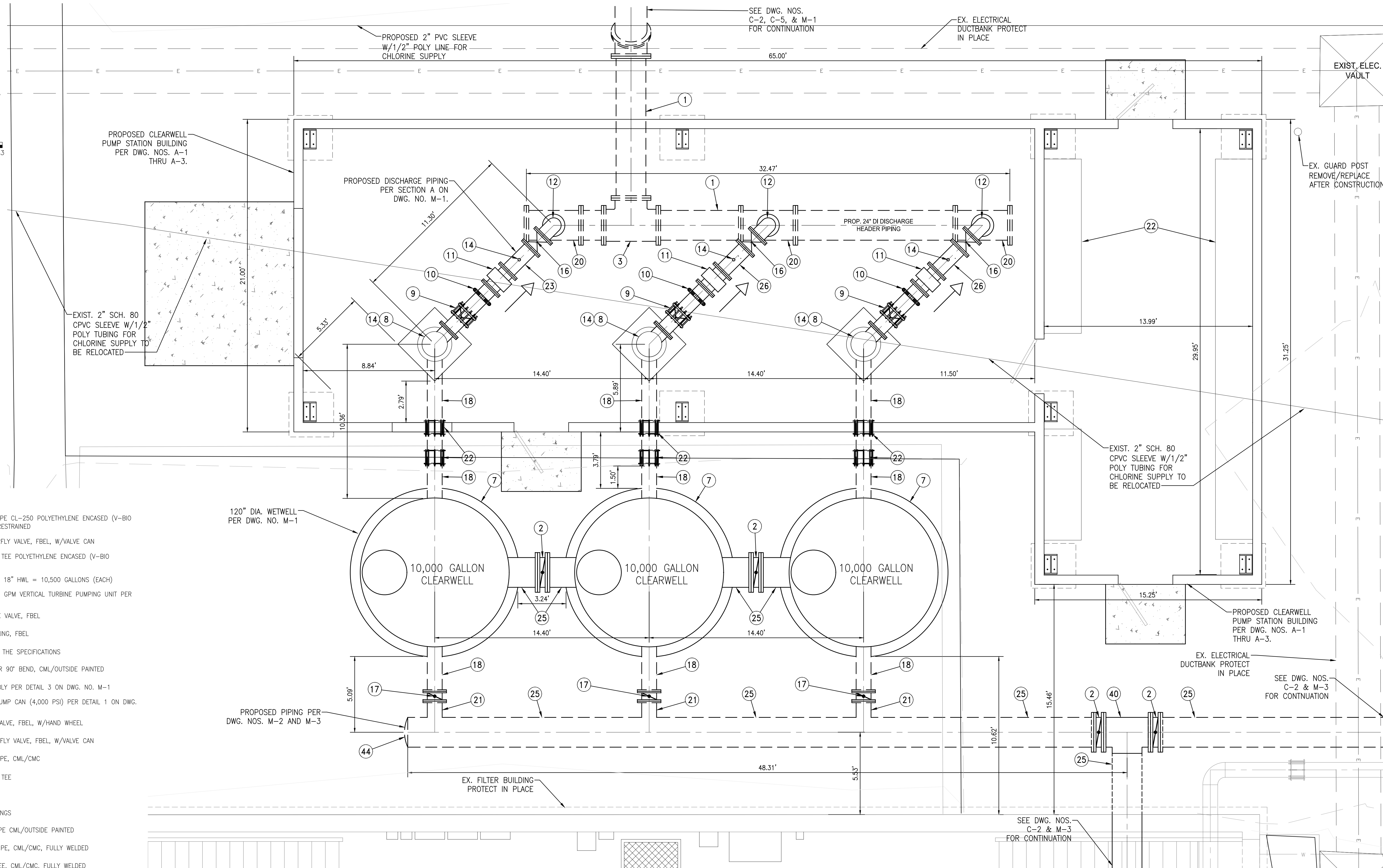
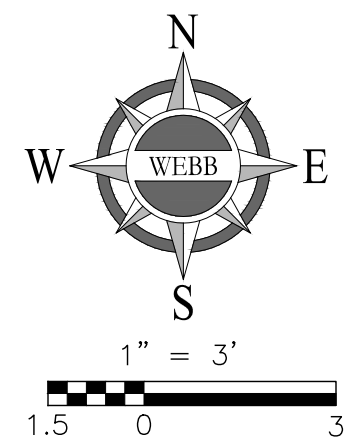
**GAC TREATMENT SYSTEM SITE PLAN**

DWG. NO. \_\_\_\_\_

BID NO. 2022-05  
 SHEET 5 OF 60  
 C-3

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**CONSTRUCTION NOTES**

- ① 24" DIA. DUCTILE IRON PIPE CL-250 POLYETHYLENE ENCASED (V-BIO ENHANCED), ALL JOINTS RESTRAINED
- ② 24" DIA. FLANGED BUTTERFLY VALVE, FBEL, W/VALVE CAN
- ③ 24" X 24" DUCTILE IRON TEE POLYETHYLENE ENCASED (V-BIO ENHANCED)
- ⑦ 120" DIA. WETWELL (TYP.) 18" HWL = 10,500 GALLONS (EACH)
- ⑧ 40 HP MOTOR AND 2,500 GPM VERTICAL TURBINE PUMPING UNIT PER THE SPECIFICATIONS
- ⑨ 12" DOUBLE DOOR CHECK VALVE, FBEL
- ⑩ 12" DIA. VICTAULIC COUPLING, FBEL
- ⑪ 12" DIA. MAG METER PER THE SPECIFICATIONS
- ⑫ 12" DIA. STD. WT. STL. SR 90° BEND, CML/OUTSIDE PAINTED
- ⑭ PRESSURE GAUGE ASSEMBLY PER DETAIL 3 ON DWG. NO. M-1
- ⑮ REINFORCED CONCRETE PUMP CAN (4,000 PSI) PER DETAIL 1 ON DWG. NO. M-1
- ⑯ 12" DIA. FLANGED GATE VALVE, FBEL, W/HAND WHEEL
- ⑰ 12" DIA. FLANGED BUTTERFLY VALVE, FBEL, W/VALVE CAN
- ⑱ 12" DIA. STD. WT. STL. PIPE, CML/CMC
- ⑳ 24" X 12" DUCTILE IRON TEE
- ㉑ 12" DIA. OUTLET
- ㉒ 12" DIA. FLEXIBLE COUPLINGS
- ㉓ 12" DIA. STD. WT. STL PIPE CML/OUTSIDE PAINTED
- ㉔ 24" DIA. STD. WT. STL. PIPE, CML/CMC, FULLY WELDED
- ④① 24" DIA. STD. WT. STL. TEE, CML/CMC, FULLY WELDED
- ④② 24" DIA. STD. WT. STL. DISH HEAD

120" DIA. WETWELL PER DWG. NO. M-1

PROPOSED PIPING PER DWG. NOS. M-2 AND M-3

EX. FILTER BUILDING PROTECT IN PLACE

PROPOSED CLEARWELL PUMP STATION BUILDING PER DWG. NOS. A-1 THRU A-3.

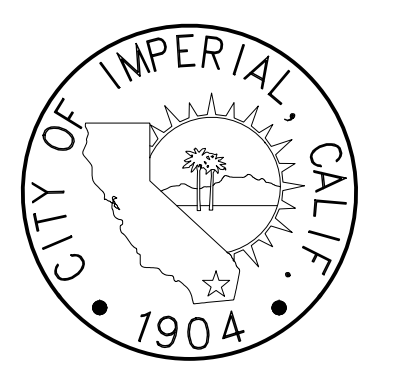
EX. ELECTRICAL DUCTBANK PROTECT IN PLACE

SEE DWG. NOS. C-2 & M-3 FOR CONTINUATION

SEE DWG. NOS. C-2 & M-3 FOR CONTINUATION



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 ENGINEERING CONSULTANTS  
 3788 MCGRAY STREET  
 RIVERSIDE, CA, 92506  
 PH. (951) 686-1070  
 FAX (951) 788-1256

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Shawn L. Bloomfield*  
 SHAWN L. BLOOMFIELD  
 REGISTERED CIVIL ENGINEER NO. C77435

DATE: 6/25/22

DESIGNED: SLB	DATE:
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CHECKED: BPK	
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SCALE:	

CITY OF IMPERIAL  
 IMPERIAL COUNTY, CALIFORNIA

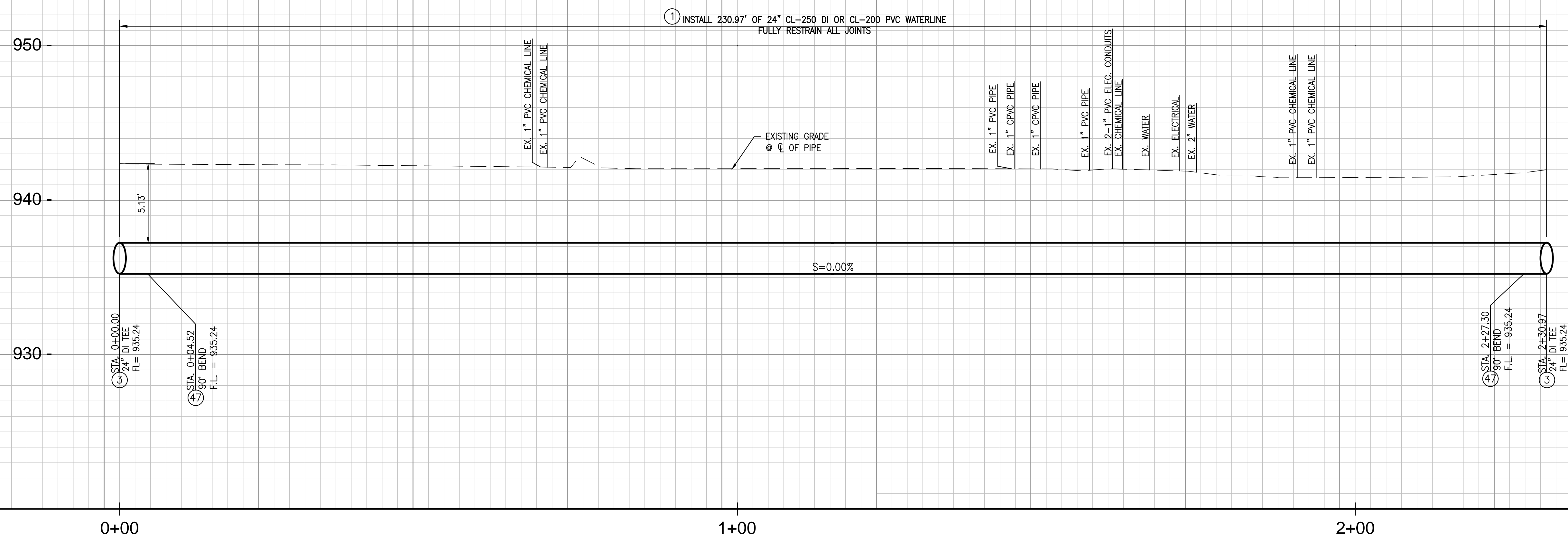
CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPLAN., AND FILTER PIPING REPLACE. AT THE WTP  
**CLEARWELL PUMP STATION SITE LAYOUT**

DWG. NO. \_\_\_\_\_

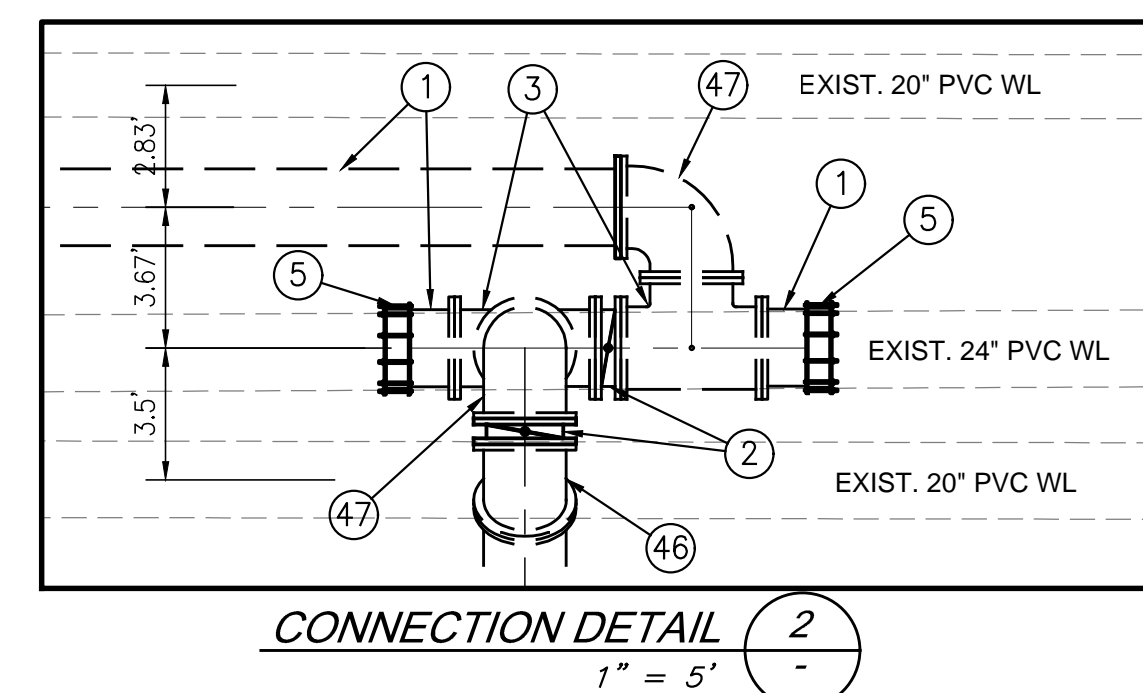
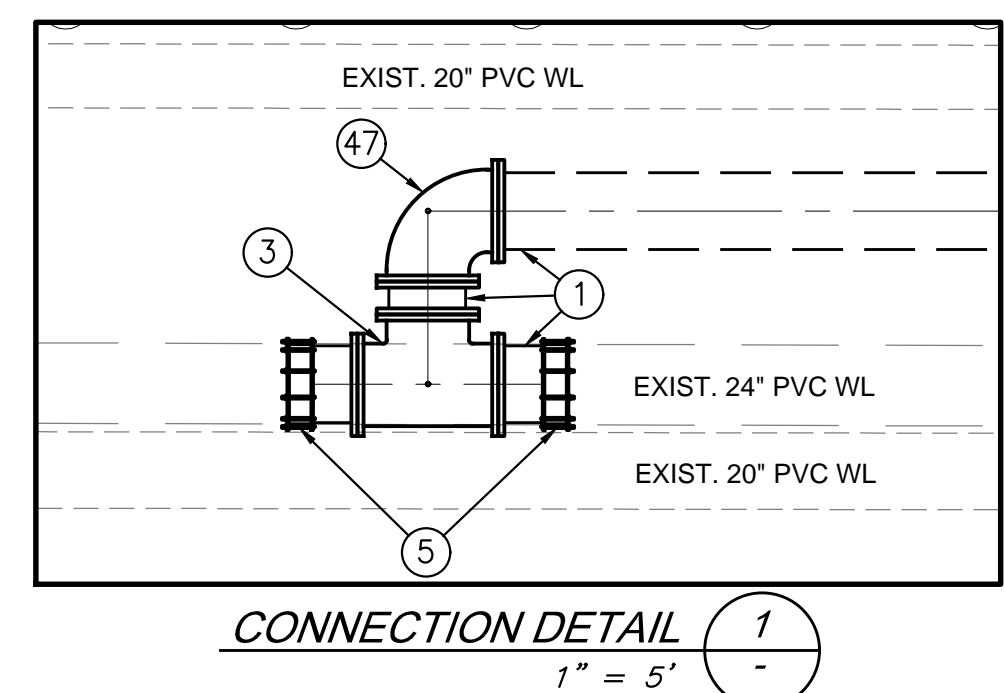
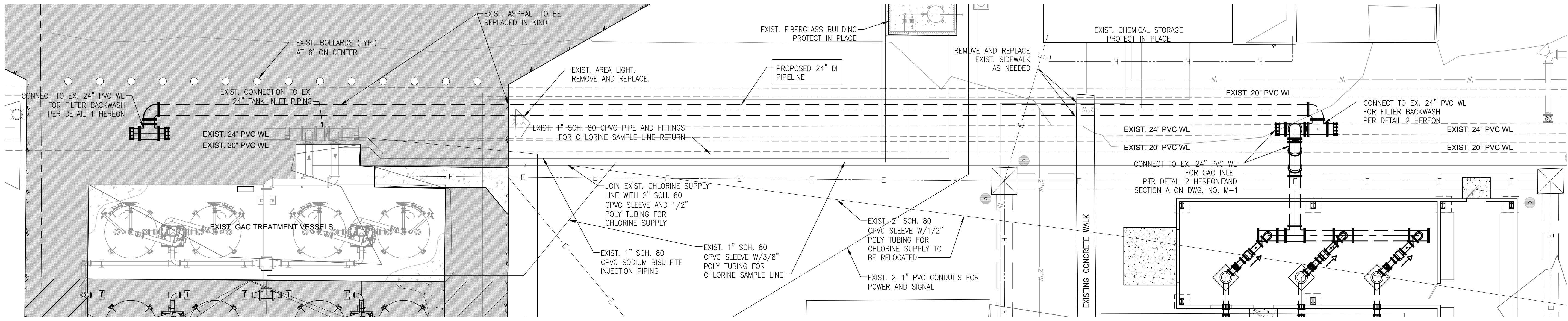
BID NO. 2022-05  
 SHEET 6 OF 60  
 C-4

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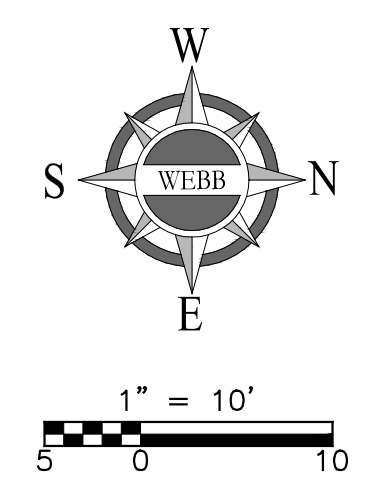




PROFILE SCALES  
 HORIZ. 1"=40'  
 VERT. 1"=4'

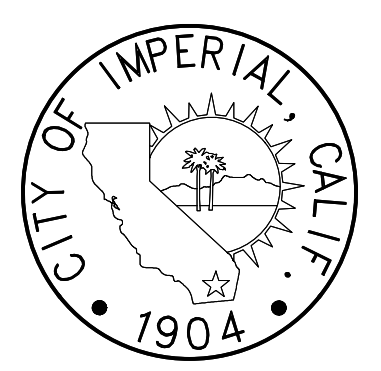


- CONSTRUCTION NOTES**
- ① 24" DIA. DUCTILE IRON PIPE CL-250 POLYETHYLENE ENCASED (V-BIO ENHANCED), ALL JOINTS RESTRAINED
  - ② 24" DIA. FLANGED BUTTERFLY VALVE, FBEL, W/VALVE CAN
  - ③ 24" X 24" DUCTILE IRON TEE POLYETHYLENE ENCASED (V-BIO ENHANCED)
  - ⑤ 24" FLEXIBLE COUPLING
  - ④ 24" DUCTILE IRON 45° BEND, POLYETHYLENE ENCASED (V-BIO ENHANCED)
  - ④ 24" DUCTILE IRON 90° BEND, POLYETHYLENE ENCASED (V-BIO ENHANCED)



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DESIGNED BY: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_



**CITY OF IMPERIAL**

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PLANS PREPARED UNDER THE SUPERVISION OF:  
 \_\_\_\_\_  
 SHAWN L. BLOOMFIELD  
 REGISTERED CIVIL ENGINEER NO. C77435

DATE: 6/25/22

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SCALE:	

CITY OF IMPERIAL  
 IMPERIAL COUNTY, CALIFORNIA

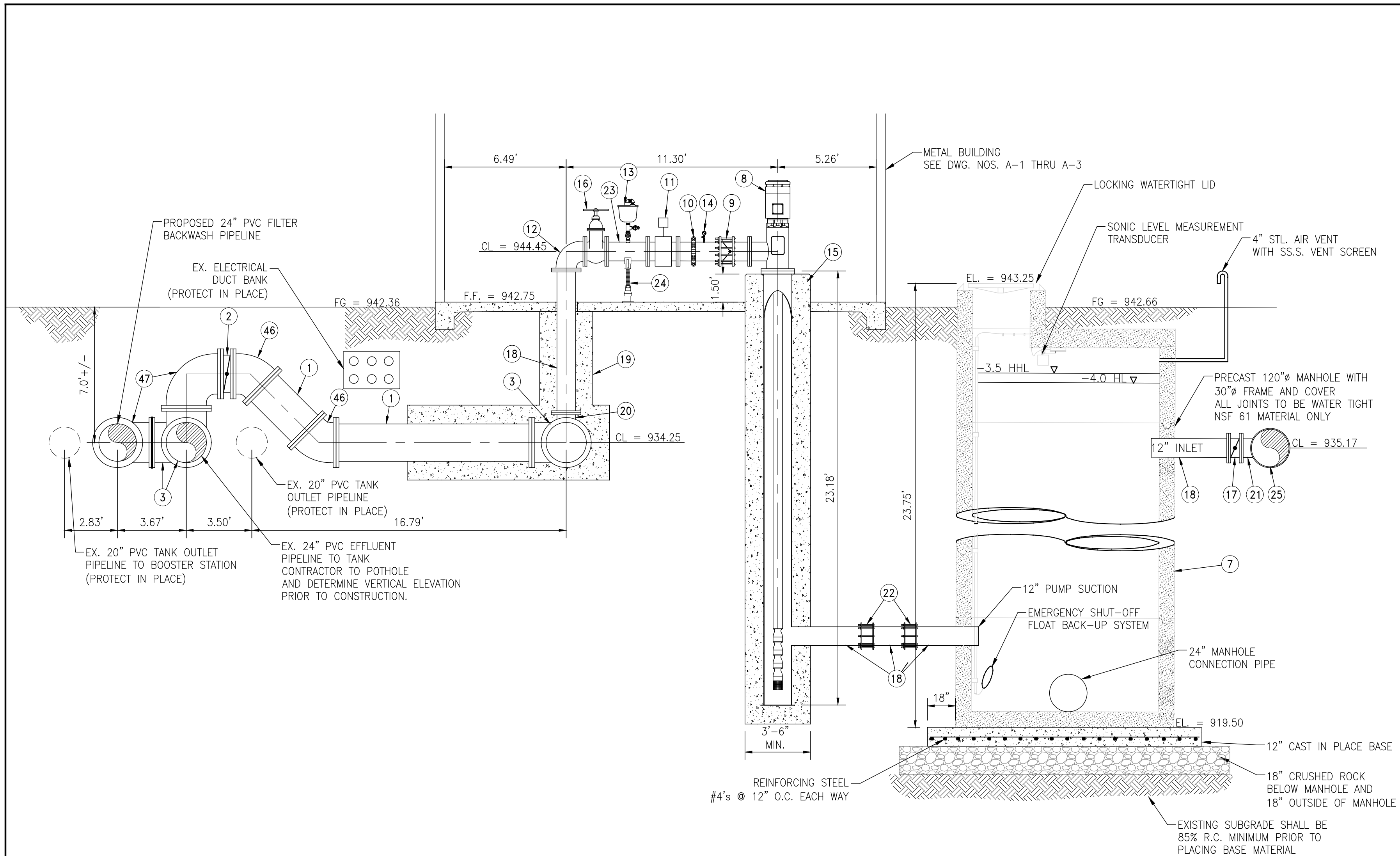
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**FILTER BACKWASH PIPELINE PLAN AND PROFILE**

DWG. NO. \_\_\_\_\_

BID NO. 2022-05  
 SHEET 7 OF 60  
 C-5

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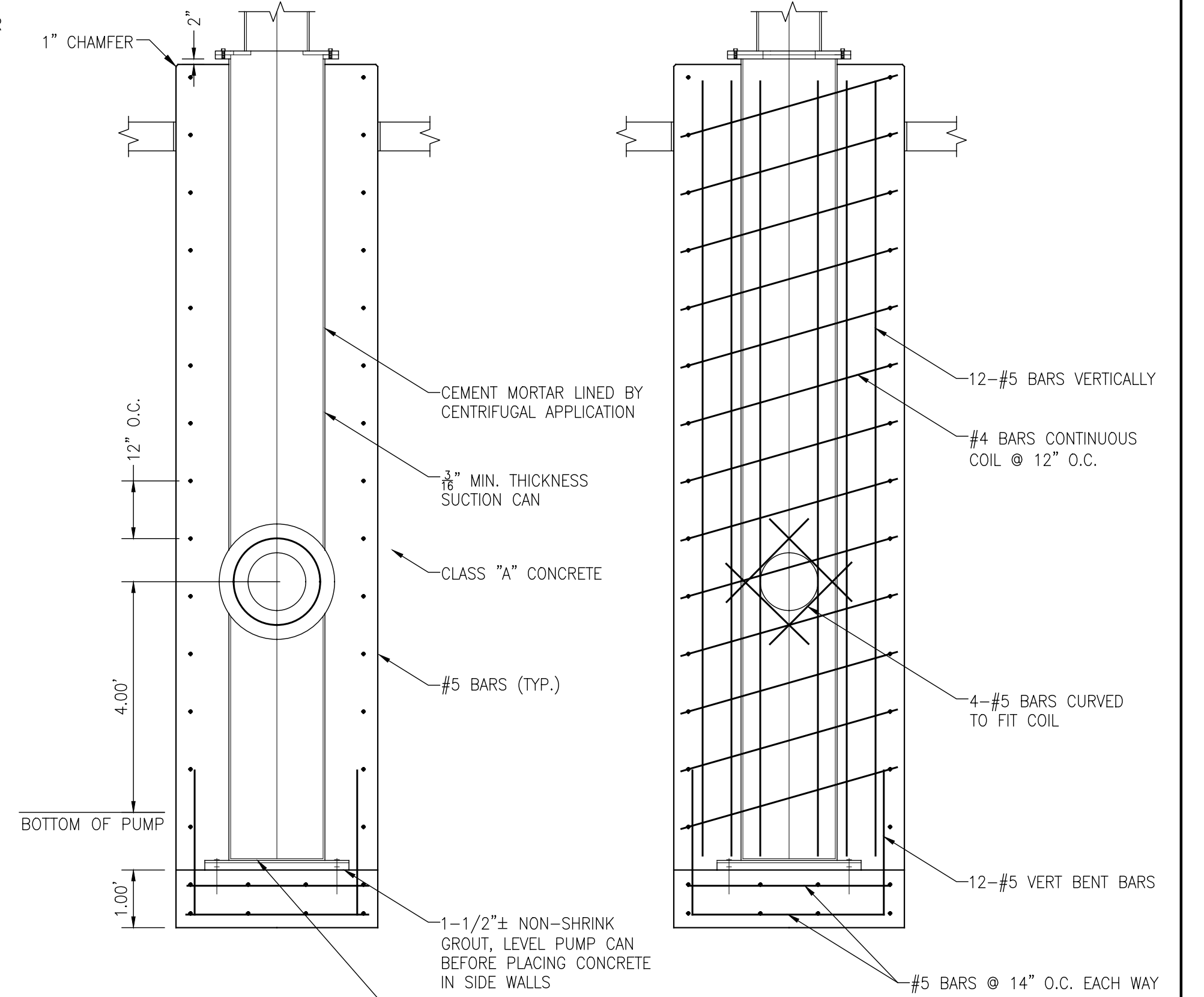
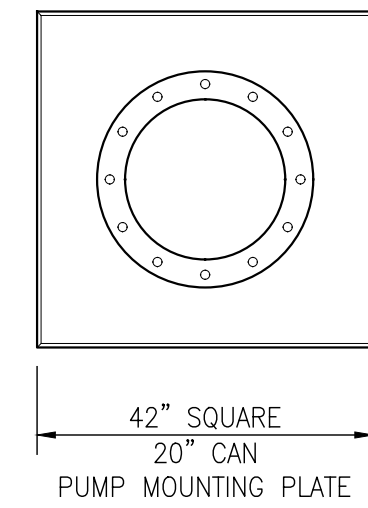




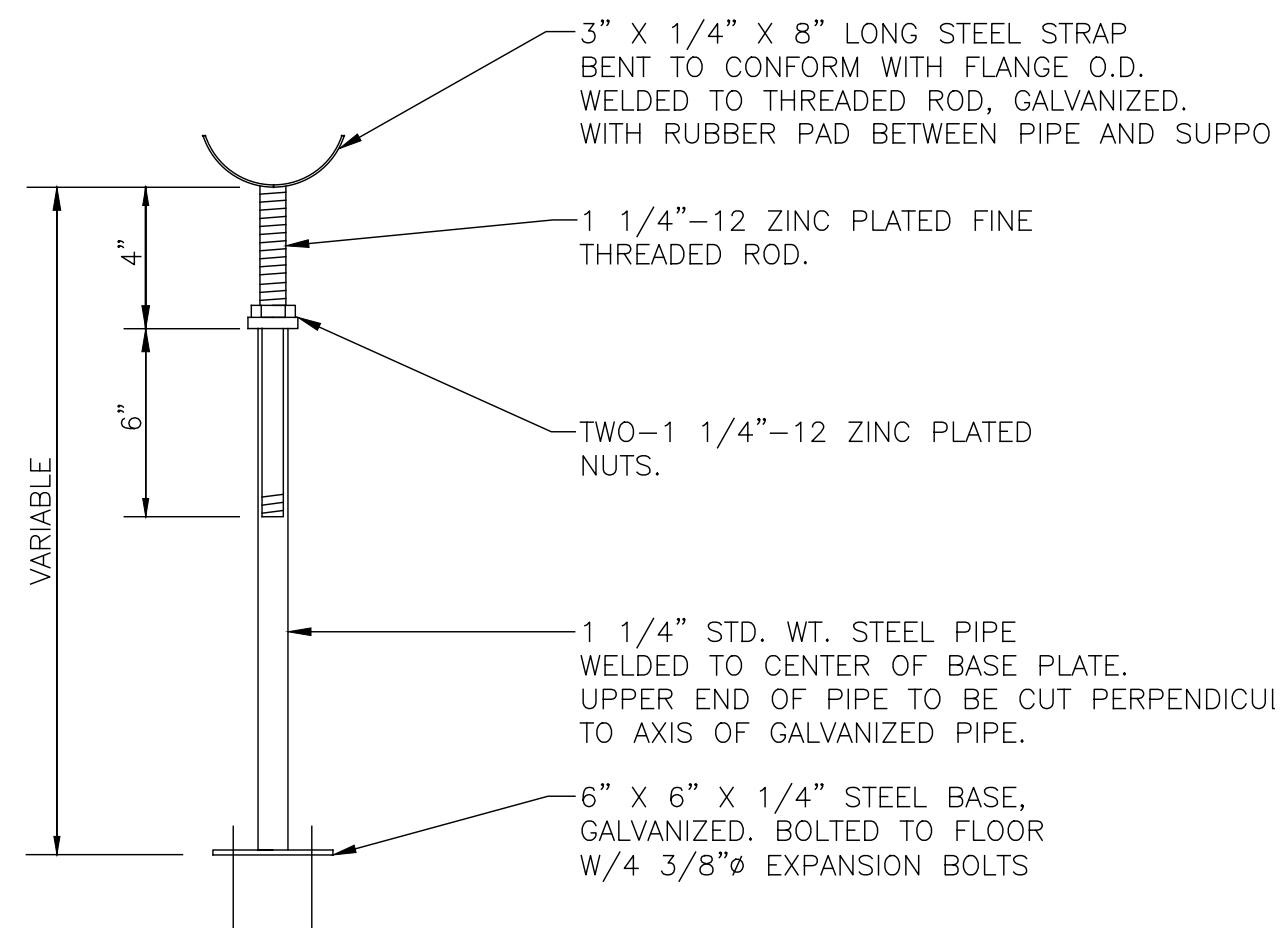
**VERTICAL PUMP TO WET WELL CONNECTION DETAIL AND SECTION** (A)  
1" = 4" (C-2)

**CONSTRUCTION NOTES**

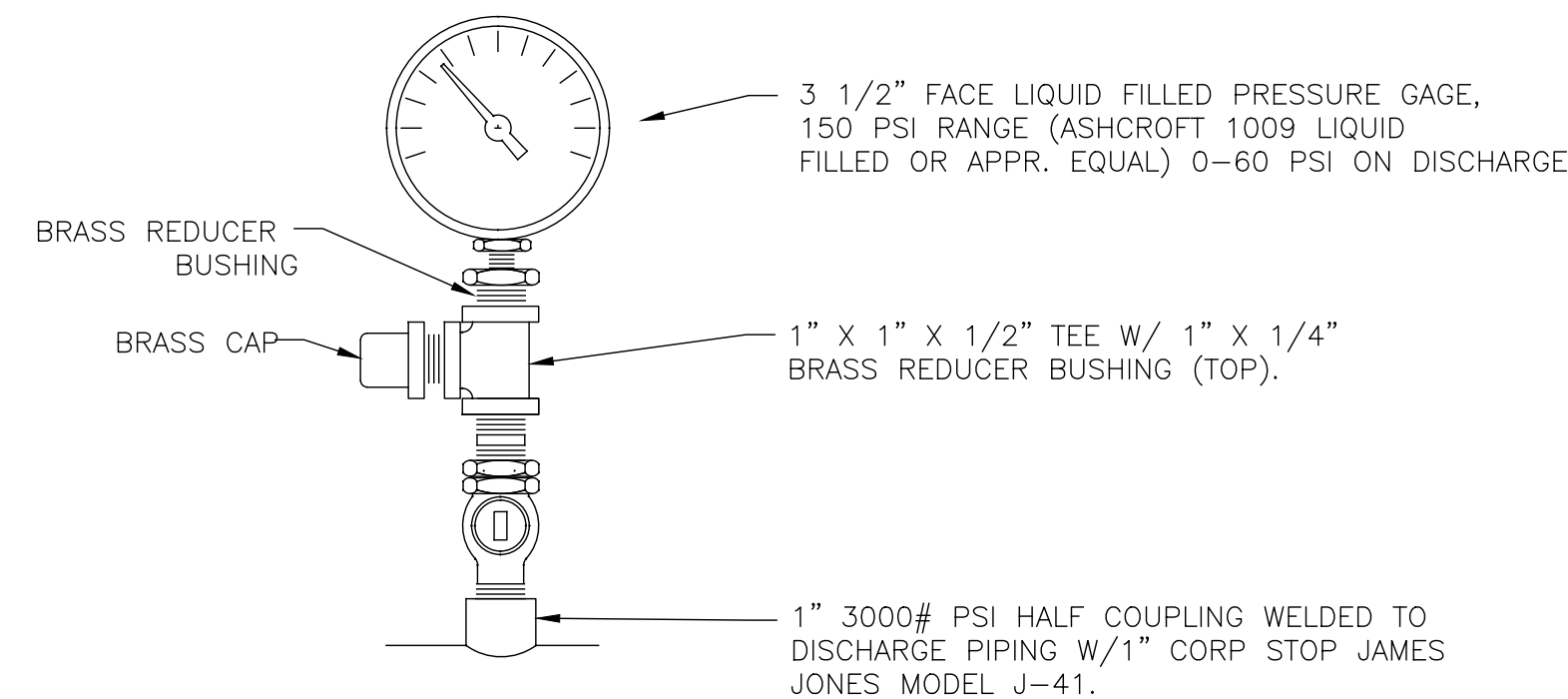
- ① 24" DIA. DUCTILE IRON PIPE CL-250 POLYETHYLENE ENCASED (V-BIO ENHANCED), ALL JOINTS RESTRAINED
- ② 24" DIA. FLANGED BUTTERFLY VALVE, FBEL, W/VALVE CAN
- ③ 24" X 24" DUCTILE IRON TEE POLYETHYLENE ENCASED (V-BIO ENHANCED)
- ④ CONNECT TO EXIST. 24" PVC PIPE TO GAC/2.0 MG RESERVOIR
- ⑦ 120" DIA. WETWELL (TYP.) 18" HWL = 10,500 GALLONS (EACH)
- ⑧ 40 HP MOTOR AND 2,500 GPM VERTICAL TURBINE PUMPING UNIT PER THE SPECIFICATIONS
- ⑨ 12" DOUBLE DOOR CHECK VALVE, FBEL
- ⑩ 12" DIA. VICTAULIC COUPLING, FBEL
- ⑪ 12" DIA. MAG METER PER THE SPECIFICATIONS
- ⑫ 12" DIA. STD. WT. STL. SR 90° BEND, CML/OUTSIDE PAINTED
- ⑬ 2" AIR RELEASE PER DETAIL 4 ON DWG. NO. M-1
- ⑭ PRESSURE GAUGE ASSEMBLY PER DETAIL 3 ON DWG. NO. M-1
- ⑮ REINFORCED CONCRETE PUMP CAN (4,000 PSI) PER DETAIL 1 ON DWG. NO. M-1
- ⑯ 12" DIA. FLANGED GATE VALVE, FBEL, W/HAND WHEEL
- ⑰ 12" DIA. FLANGED BUTTERFLY VALVE, FBEL, W/VALVE CAN
- ⑱ 12" DIA. STD. WT. STL. PIPE, CML/CMC
- ⑲ CONCRETE ENCASUREMENT MIN. 1' THICK, EXTENDING MIN. 18" OUTSIDE OF BUILDING PAD
- ⑳ 24" X 12" DUCTILE IRON TEE
- ㉑ 12" DIA. OUTLET
- ㉒ 12" DIA. FLEXIBLE COUPLINGS
- ㉓ 12" DIA. STD. WT. STL. PIPE CML/OUTSIDE PAINTED
- ㉔ PIPE SUPPORT PER DETAIL 2 ON DWG. NO. M-1
- ㉕ 24" DIA. STD. WT. STL. PIPE, CML/CMC, FULLY WELDED
- ④⑥ 24" DUCTILE IRON 45° BEND, POLYETHYLENE ENCASED (V-BIO ENHANCED)
- ④⑦ 24" DUCTILE IRON 90° BEND, POLYETHYLENE ENCASED (V-BIO ENHANCED)



**PUMP CAN DETAIL** (1)  
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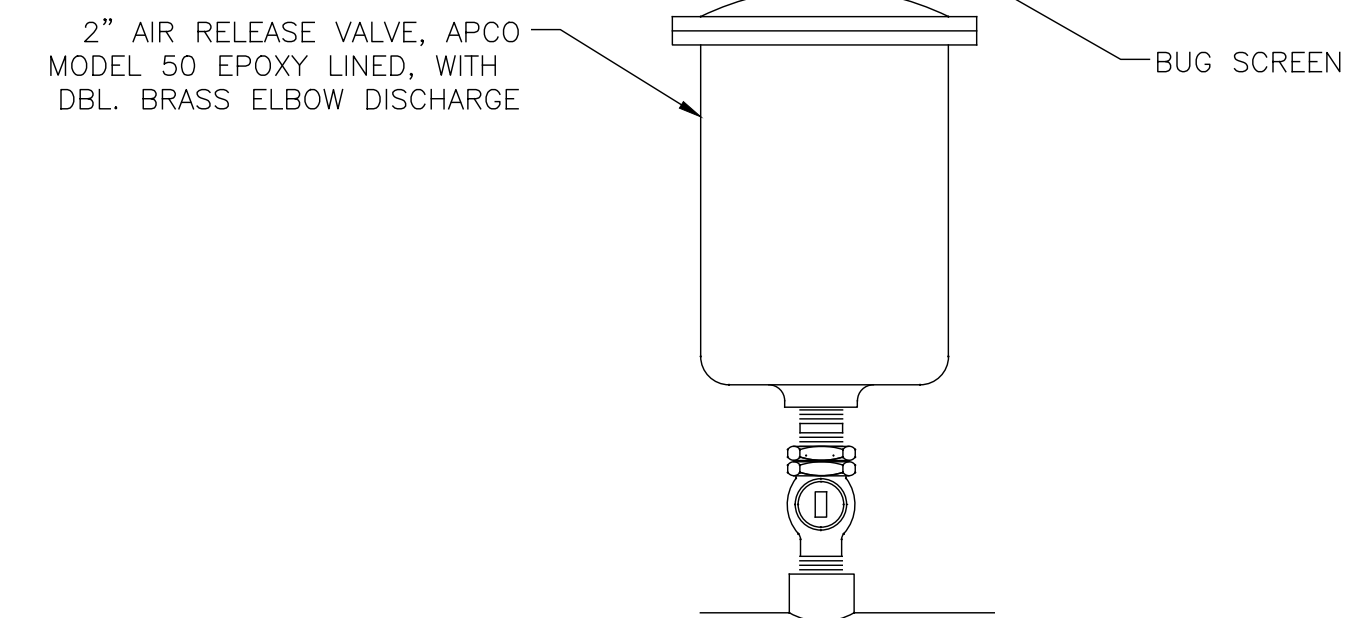


**PIPE SUPPORT DETAIL** (2)  
NTS



NOTE: ALL BRASS PIPE AND FITTINGS TO BE SCH. 40

**PRESSURE GAGE ASSEMBLY DETAIL** (3)  
NTS

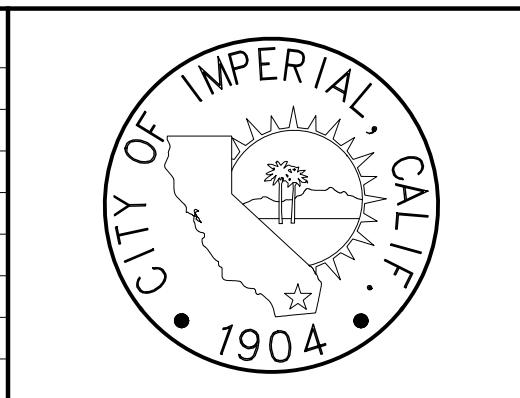


**AIR VALVE DETAIL** (4)  
NTS



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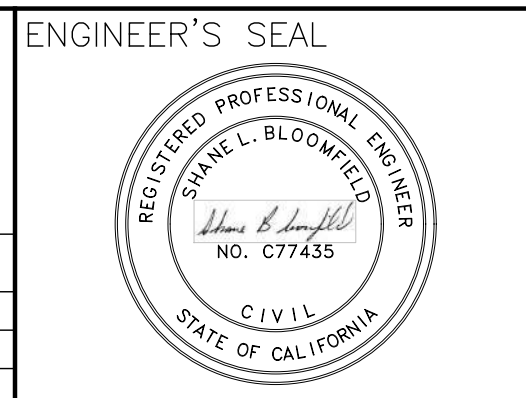
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**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES



**ALBERT A. WEBB ASSOCIATES**

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PLANS PREPARED UNDER THE SUPERVISION OF:  
*Shane L. Bloomfield*  
SHANE L. BLOOMFIELD  
REGISTERED CIVIL ENGINEER NO. C77435

DATE: 6/25/22

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SCALE:	

CITY OF IMPERIAL  
IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP

**PUMP STATION SITE AND PIPING DETAILS**

DWG. NO. \_\_\_\_\_

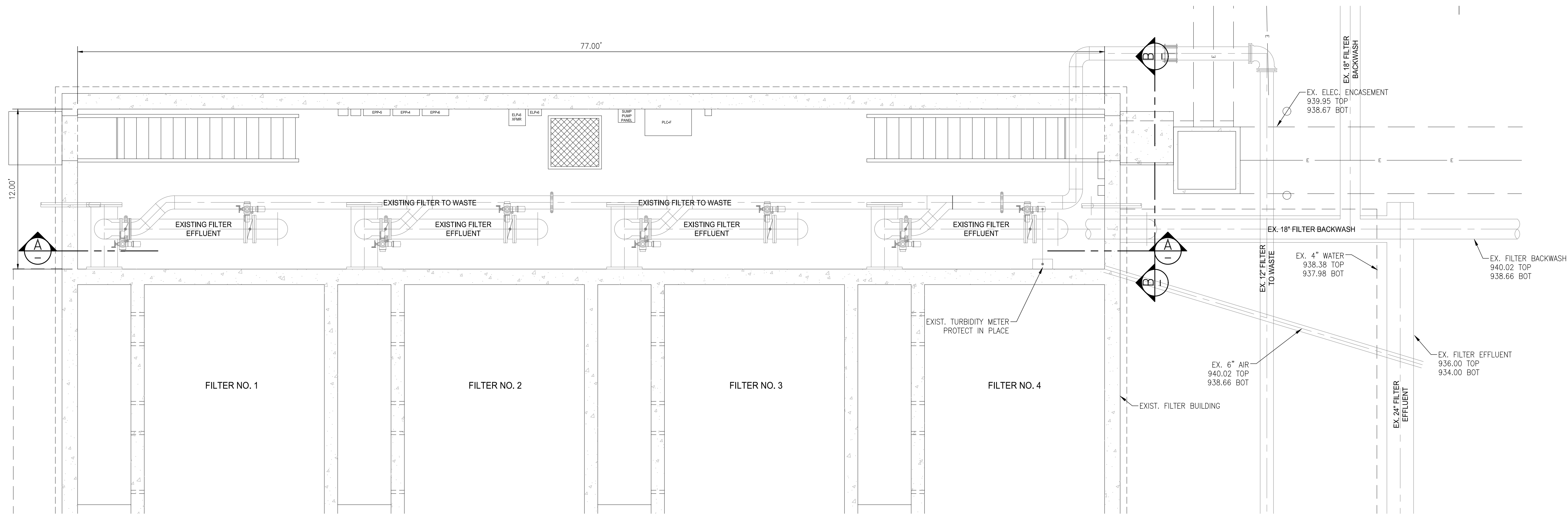
BID NO. 2022-05

SHEET 8 OF 60

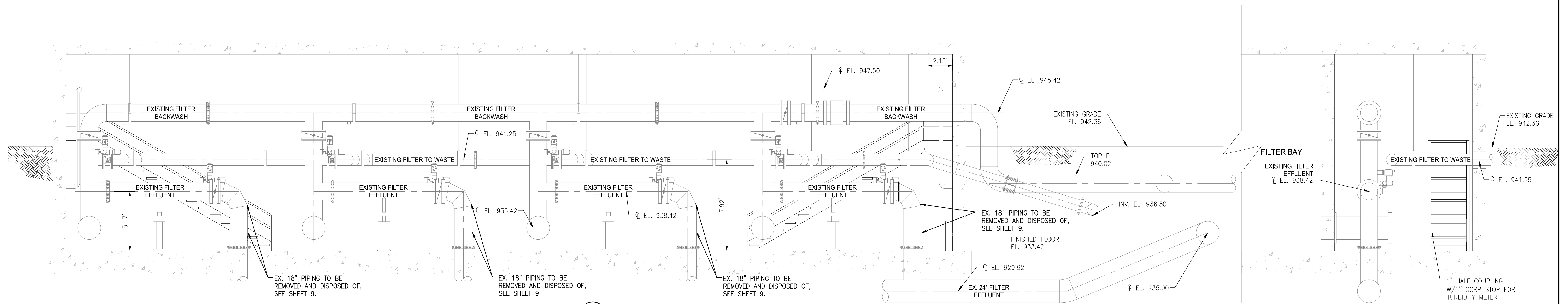
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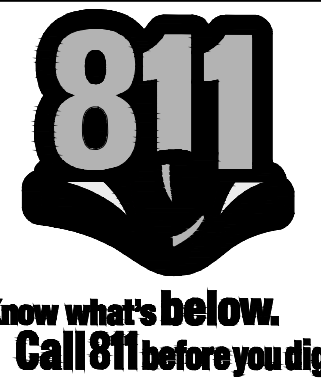


PLAN VIEW (1) 1:4

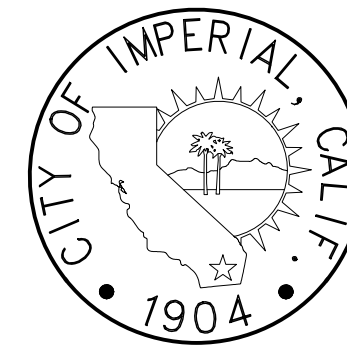


SECTION VIEW (A) 1:4

SECTION VIEW (B) 1:4



REVISIONS				
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CITY OF IMPERIAL

CITY ENGINEER DATE

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ENGINEER'S SEAL



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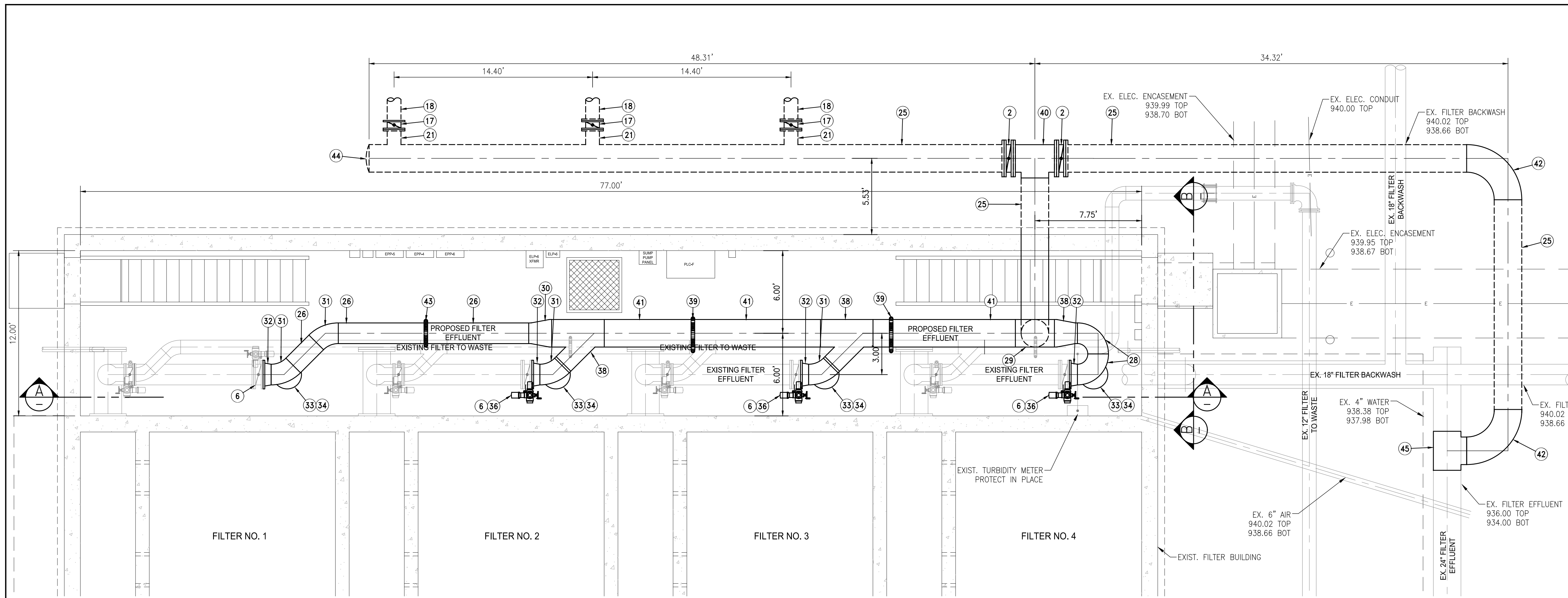
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CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA	
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EXISTING FILTER PIPING	
DWG. NO.	

BID NO.	2022-05
SHEET	9
OF 60	
M-2	

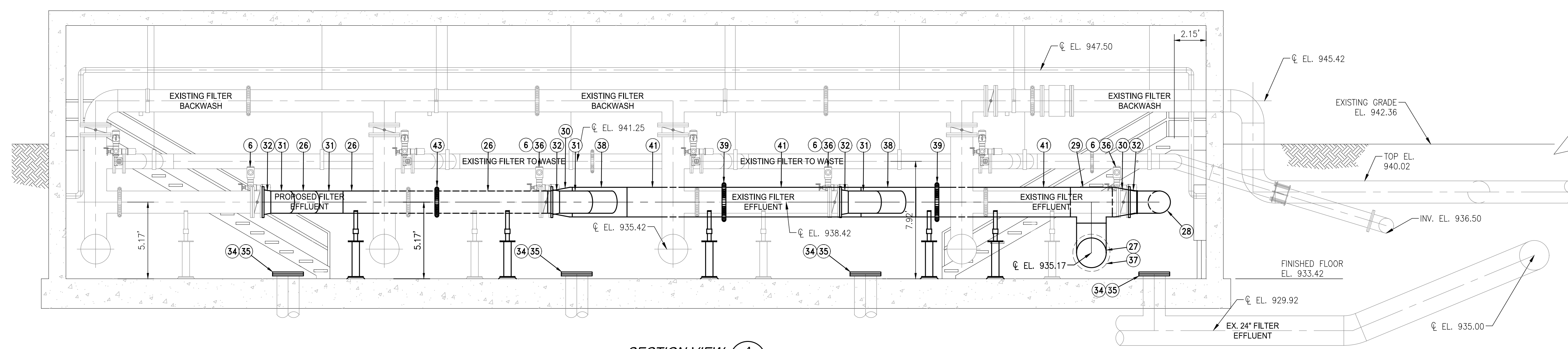
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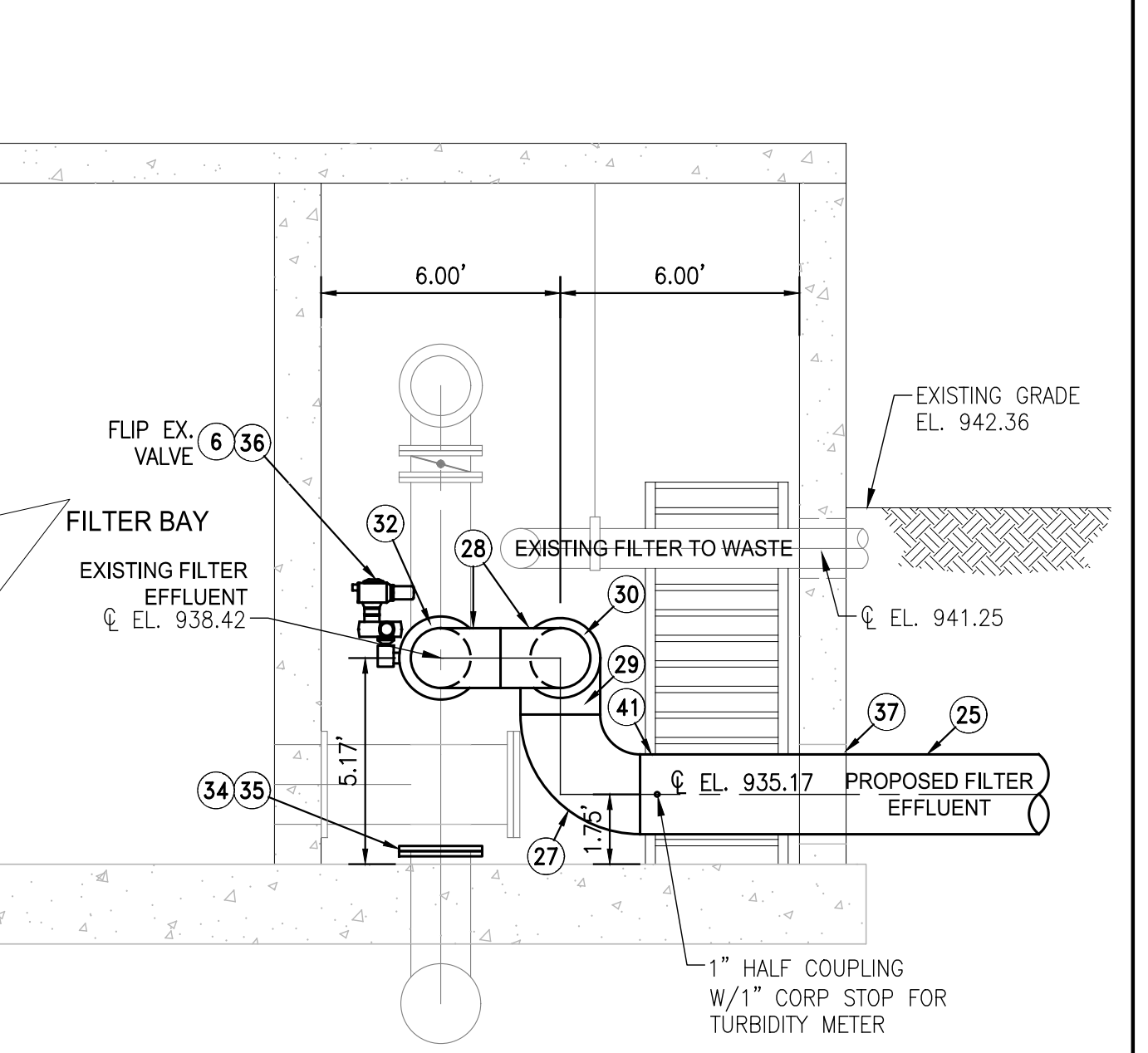


PLAN VIEW 1  
1:4

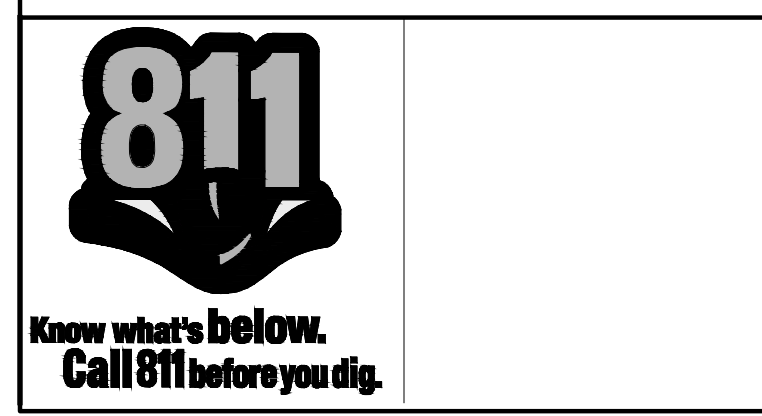
- CONSTRUCTION NOTES**
- ② 24" DIA. FLANGED BUTTERFLY VALVE, FBEL, W/VALVE CAN
  - ⑥ REPLACE EXIST. ACTUATOR PER DWG. NO. E102.
  - ⑪ 12" DIA. FLANGED BUTTERFLY VALVE, FBEL, W/VALVE CAN
  - ⑱ 12" DIA. STD. WT. STL. PIPE, CML/CMC
  - ⑳ 12" DIA. OUTLET
  - ㉓ 24" DIA. STD. WT. STL. PIPE, CML/CMC, FULLY WELDED
  - ㉔ 16" DIA. STD. WT. STL. PIPE, CML/OUTSI
  - ㉕ 24" DIA. STD. WT. STL. SR 90° BEND, CML/OUTSIDE PAINTED, FULLY WELDED
  - ㉖ 16" DIA. STD. WT. STL. SR 90° BEND, CML/OUTSIDE PAINTED, FULLY WELDED
  - ㉗ 24" DIA. STD. WT. STL. TEE, CML/OUTSIDE PAINTED, FULLY WELDED
  - ㉘ 24" X 16" STD. WT. ST. REDUCER, CML/OUTSIDE PAINTED, FULLY WELDED
  - ㉙ 16" DIA. STD. WT. STL. 45° BEND, CML/OUTSIDE PAINTED, FULLY WELDED
  - ㉚ 16" DIA. WELD NECK FLANGE, CML/OUTSIDE PAINTED, FULLY WELDED
  - ㉛ 18" DIA. VICTUAL G FLANGE ADAPTER STYLE 841 OR APPROVED EQUAL
  - ㉜ 18" BLIND FLANGE
  - ㉝ NEW PIPE SUPPORT TO MATCH EXISTING
  - ㉞ FLIP EX. 16" BFV AND OPERATOR AND MODIFY ELECTRICAL AS NECESSARY
  - ㉟ CORE 30" DIA. HOLE IN EX. 12" THICK CONCRETE WALL AND SEAL PIPE PER DETAIL 6 ON DWG. NO. A-3
  - ㊱ 24" X 16" STD. WT. STL. WYE, CML/OUTSIDE PAINTED, FULLY WELDED
  - ㊲ 24" VICTUAL COUPLING, FBEL
  - ㊳ 24" DIA. STD. WT. STL. TEE, CML/CMC, FULLY WELDED
  - ㊴ 24" DIA. STD. WT. STL. PIPE, CML/OUTSIDE PAINTED, FULLY WELDED
  - ㊵ 24" DIA. STD. WT. STL. LR 90° BEND, CML/CMC, FULLY WELDED
  - ㊶ 16" VICTUAL COUPLING, FBEL
  - ㊷ 24" DIA. STD. WT. STL. DISH HEAD
  - ㊸ CONNECT TO EX. 24" STEEL FILTER EFFLUENT LINE W/24" X 24" TEE AND BUTT STRAPS



SECTION VIEW A  
1:4

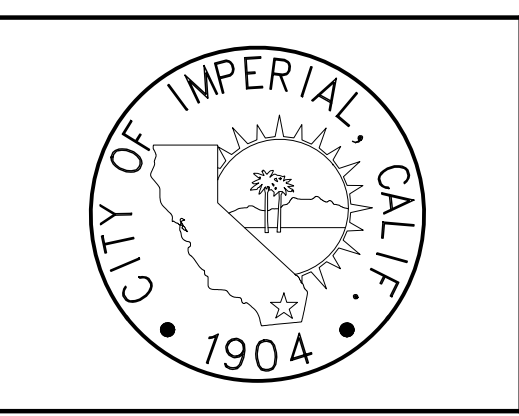


SECTION VIEW B  
1:4



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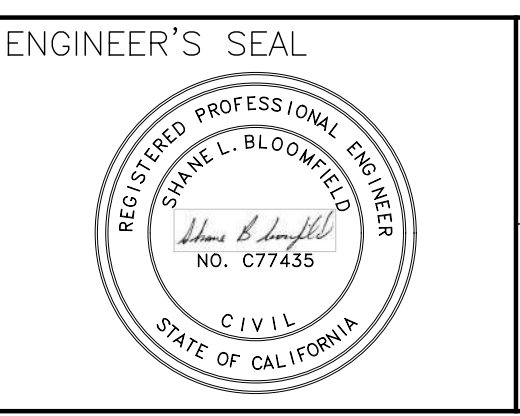
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**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES



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PH. (951) 686-1070  
FAX (951) 788-1256

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Shawn L. Bloomfield*  
SHAWN L. BLOOMFIELD  
REGISTERED CIVIL ENGINEER NO. C77435

DATE: 6/25/22

DESIGNED: SLB	DATE
DRAWN: JW	
TRACED: _____	
CHECKED: BPK	
SUBMITTED: _____	
SCALE: _____	

CITY OF IMPERIAL  
IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP

**PROPOSED FILTER PIPING MODIFICATIONS**

DWG. NO. \_\_\_\_\_

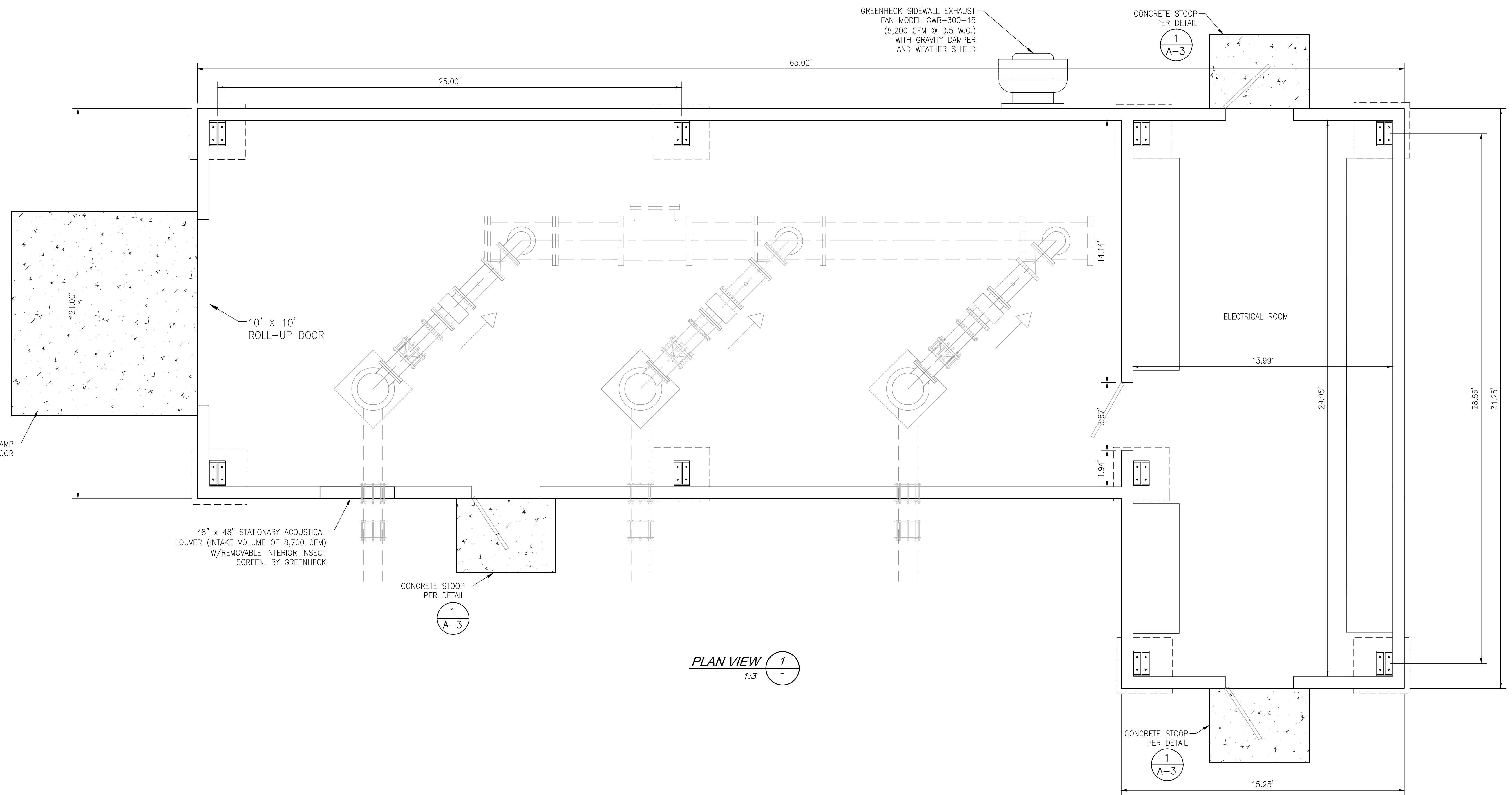
BID NO. 2022-05

SHEET 10 OF 60

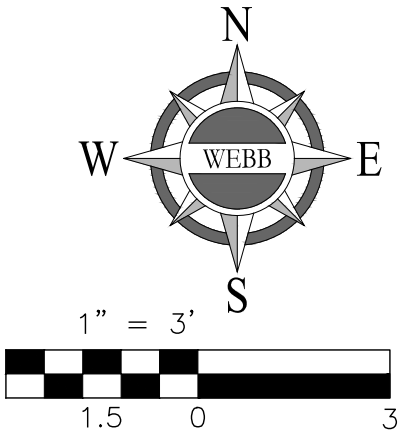
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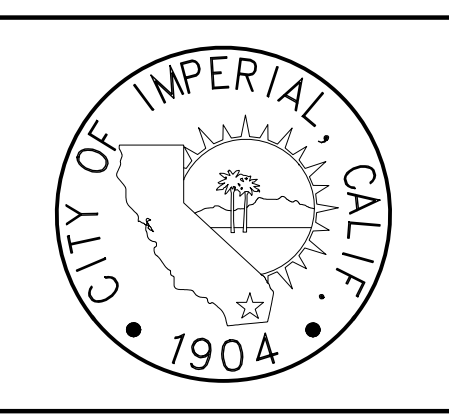




PLAN VIEW 1  
1:3



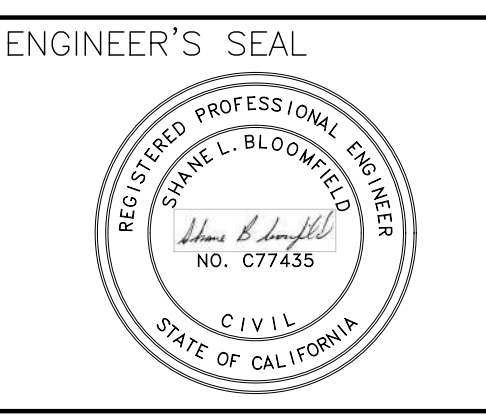
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SCALE:			

CITY OF IMPERIAL  
IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT  
SYSTEM EXPAN., AND FILTER PIPING REPLACE.  
AT THE WTP

**PUMP STATION BUILDING LAYOUT**

DWG. NO. \_\_\_\_\_

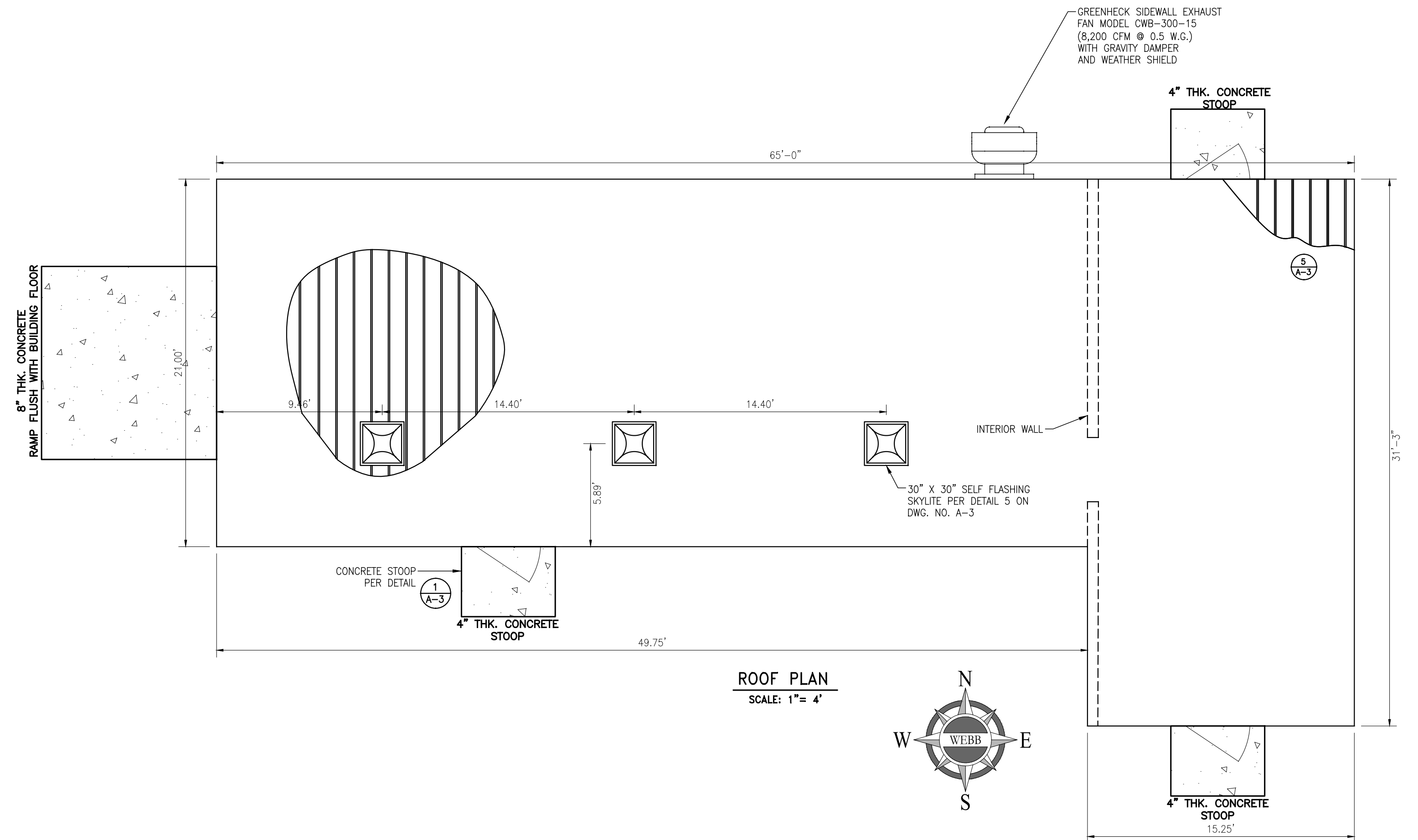
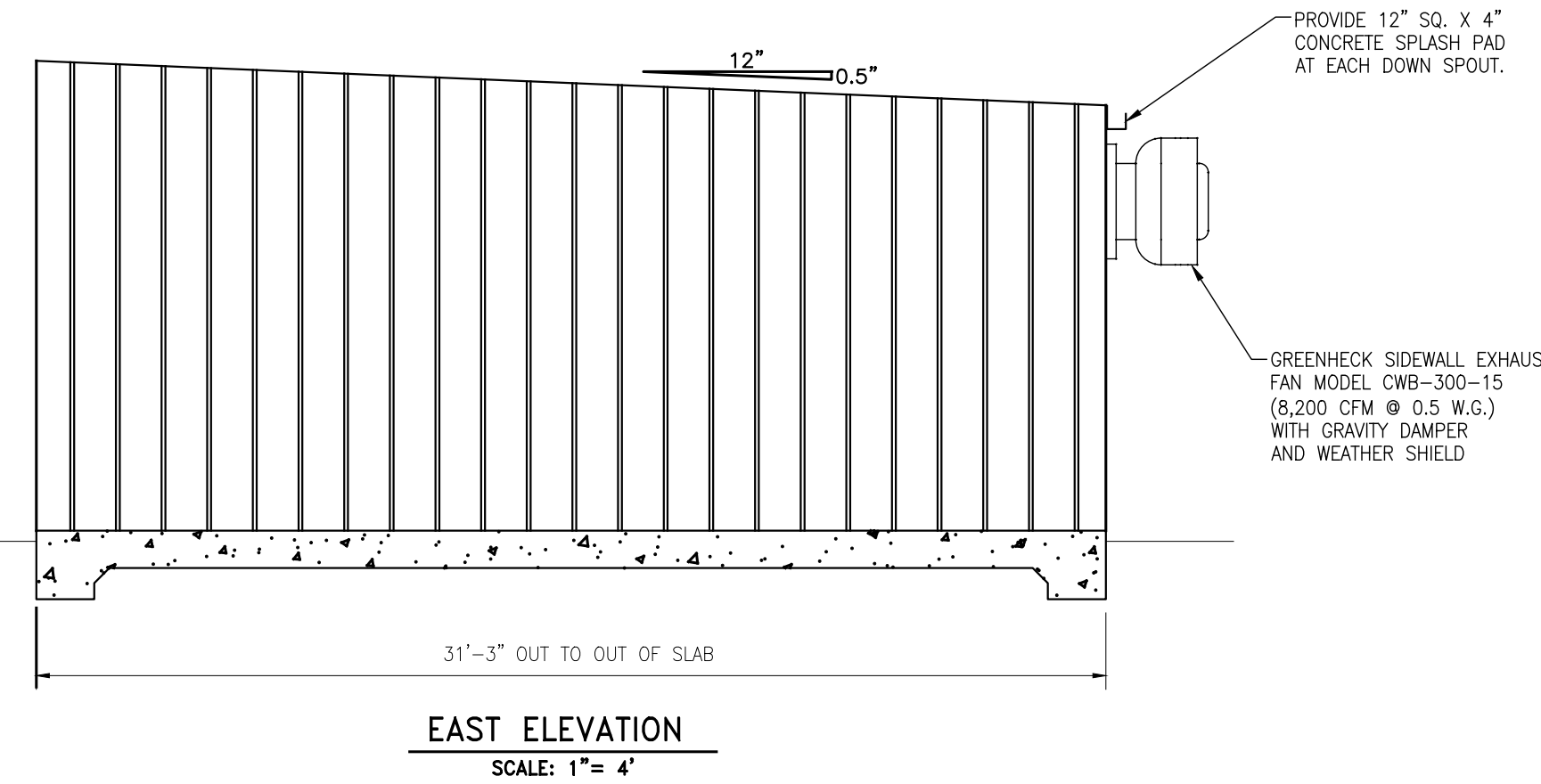
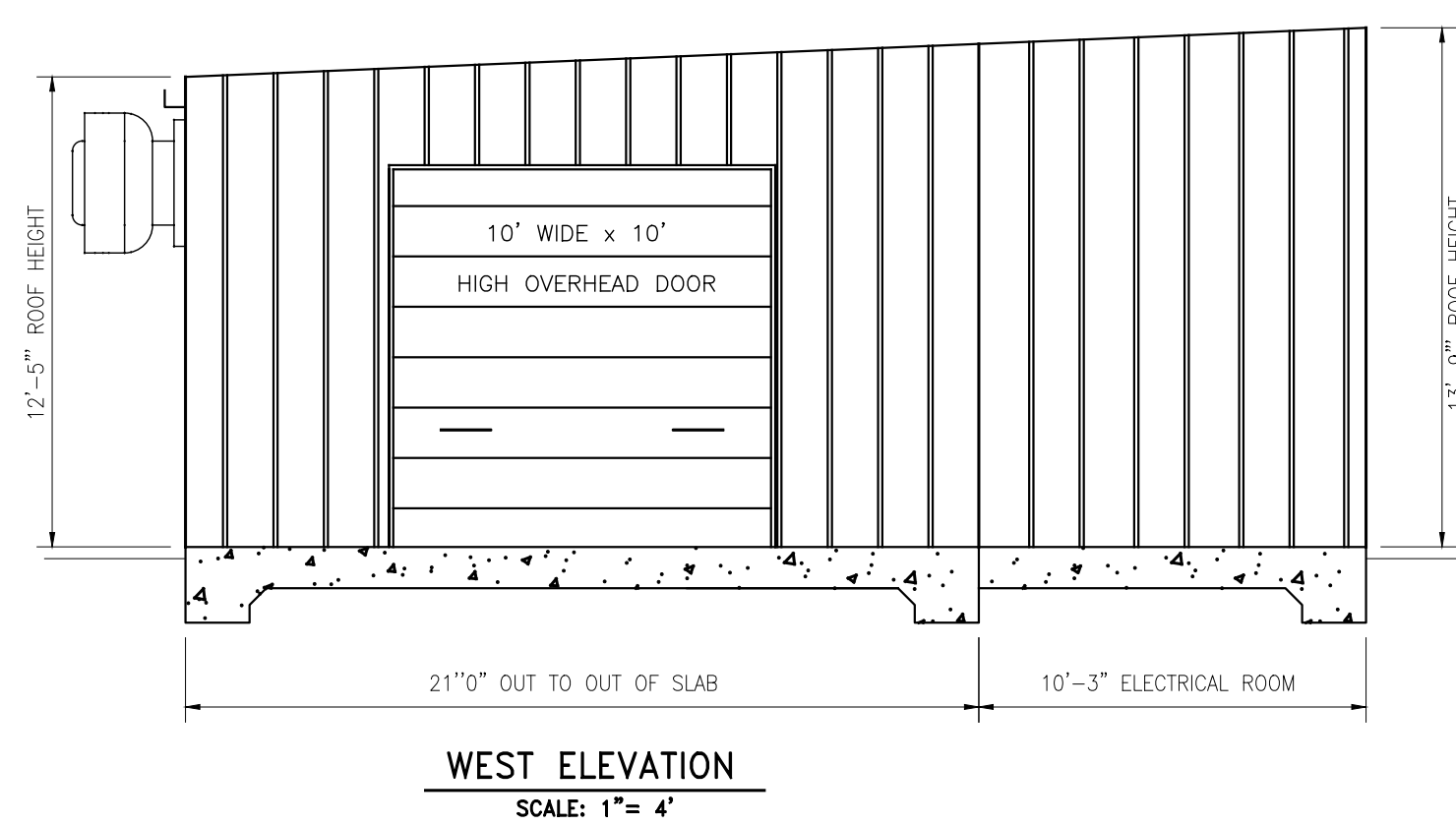
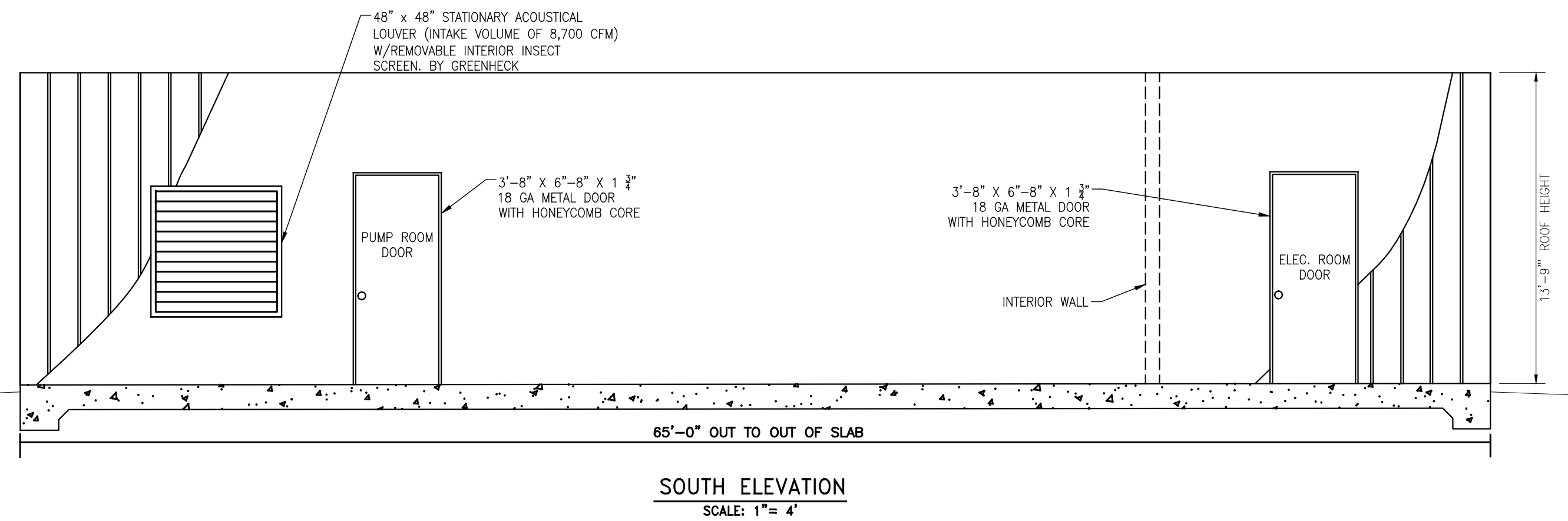
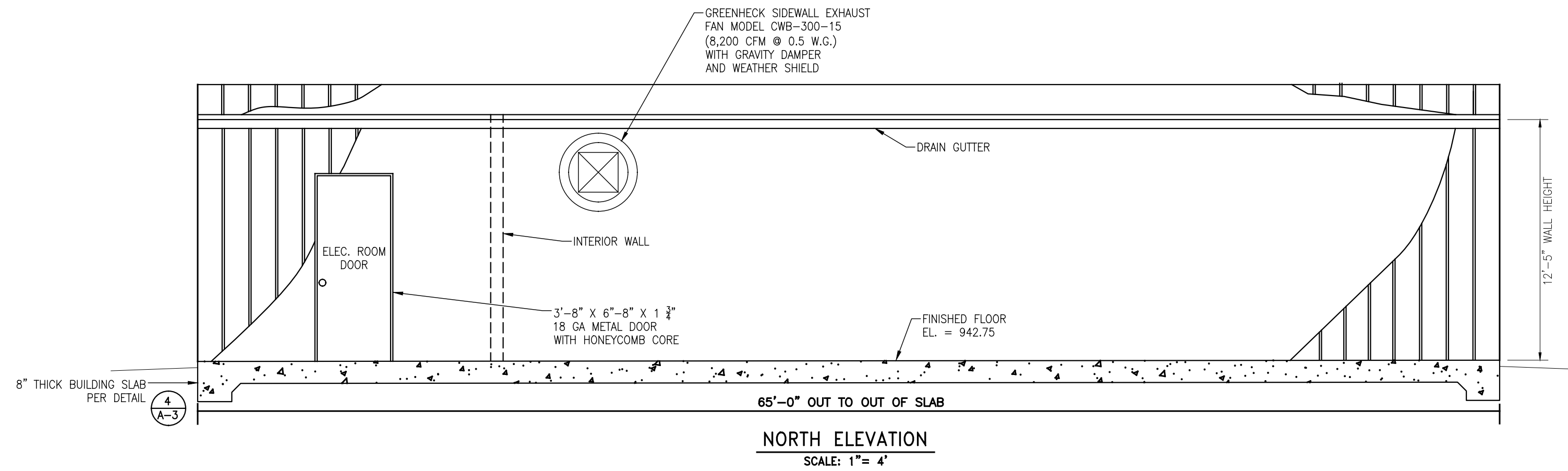
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2022-05

SHEET  
**11**  
OF 60

A-1

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**GENERAL NOTES**

**GENERAL**

THE METAL BUILDING MATERIALS, EQUIPMENT INSTALLATION AND DESIGN REQUIREMENTS SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATION SECTION 13120.

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE AND TO CROSS CHECK ALL DETAILS AND DIMENSIONS SHOWN ON THE STRUCTURAL DRAWING WITH RELATED REQUIREMENTS ON THE CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS. FLOOR AND WALL OPENINGS, ETC. AND ALL OTHER CIVIL, MECHANICAL AND ELECTRICAL REQUIREMENTS SHALL BE COORDINATED PRIOR TO COMMENCEMENT OF CONSTRUCTION. IF ANY CONFLICT OCCURS BETWEEN NOTES ON THE DRAWINGS AND ITEMS COVERED BY THE SPECIFICATION, OR BETWEEN GENERAL NOTES AND SPECIFICATION DETAILS, THEN THE ENGINEER SHALL BE NOTIFIED AND WILL INTERPRET THE INTENT OF THE CONTRACT DOCUMENTS. WHERE NO SPECIFIC DETAIL IS SHOWN FOR A "CONSTRUCTION NOTE" CONTRACTOR'S WORK SHALL PARALLEL SIMILAR CASES OF CONSTRUCTION ON THIS PROJECT. IF NO REFERENCE IS AVAILABLE, WORK SHALL CONFORM TO "GOOD COMMON PRACTICE". WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF U.B.C. (LATEST EDITION).

SIGNAGE INDICATING HEARING PROTECTION REQUIRED UPON ENTRY TO BLOWER BUILDING SHALL BE PROVIDED.

**CONCRETE**

ALL STEEL REINFORCED CONCRETE SHALL BE 5000 PSI, (CLASS "D"), UNLESS OTHERWISE NOTED. SHALL NOT BE LESS THAN 7.0 SACK PER CUBIC YARD. THE CONTRACTOR SHALL SUBMIT A CONCRETE DESIGN TO THE ENGINEER FOR APPROVAL MINIMUM OF SEVEN DAYS PRIOR TO POURING CONCRETE. PROVIDE 3/4" CHAMFER FOR ALL EXPOSED CONCRETE EDGES UNLESS OTHERWISE NOTED.

**REINFORCING STEEL**

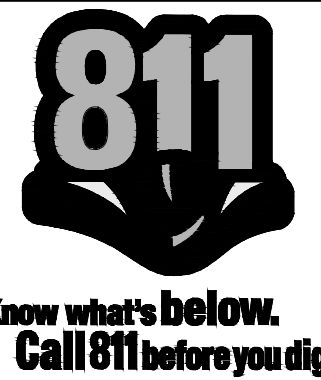
REINFORCING STEEL SHALL BE GRADE 60 (MIN-YIELD STRENGTH + 60 KSI), DEFORMED BARS CONFORMING TO A.S.T.M. SPEC A-615. ALL REINFORCING STEEL SHALL BE FABRICATED PER A.C.I. CODE. REINFORCING STEEL FABRICATION SCHEDULE SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL. REINFORCING STEEL LAPING LENGTH SHALL BE 40 DIAMETERS OF THE REINFORCING STEEL, WITH A MINIMUM LAP OF 24", UNLESS OTHERWISE NOTED. USE "LOW HYDROGEN" ELECTRODES FOR ALL WELDING ON REINFORCING STEEL. PLAN WIRE FOR SPIRAL REINFORCEMENT SHALL CONFORM TO A.S.T.M. A-82 WITH A MINIMUM YIELD STRENGTH OF 60 KSI. WELDED PLAIN WIRE FABRIC FOR CONCRETE REINFORCEMENT SHALL CONFORM TO A.S.T.M. A-185 WITH A MIN. YIELD STRENGTH OF 60 KSI.

**STRUCTURAL STEEL**

- STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR "STEEL FOR BRIDGES AND BUILDINGS" A.S.T.M. DESIGNATION A-36.
- FABRICATION SHALL BE IN ACCORDANCE WITH THE A.I.S.C. "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STEEL BUILDINGS" AS AMENDED TO DATE.
- SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL PRIOR TO FABRICATION, PER SPECIFICATIONS.
- ALL EXPOSED METAL WORK SHALL BE GALVANIZED AS PER SPECIFICATION AFTER FABRICATION, UNLESS OTHERWISE NOTED.
- DRILL 1/8" DIAMETER LARGER THEN BOLT SIZE SPECIFIED FOR ALL BOLT CONNECTIONS UNLESS NOTED OTHERWISE.

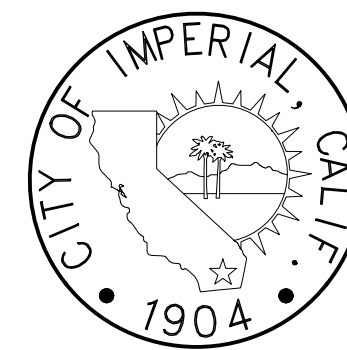
**WALLS/ROOF**

EXTERIOR AND INTERIOR WALL PANELS SHALL BE 26 GAUGE STEEL SHEETS, EXTERIOR WALL COLOR TO BE DESERT TAN, INTERIOR COLOR AND EXTERIOR ROOF PANELS TO BE ARTIC WHITE. FULL HEIGHT ON INTERIOR AND EXTERIOR SIDE WALLS. ALL WALLS SHALL HAVE MINIMUM 4" THK. BLANKET INSULATION AND ROOF SHALL BE SOLID CORE PANELS. PROVIDE A MINIMUM RESISTANCE OF R-11 FOR WALLS AND R-22 FOR ROOF.



REVISIONS				
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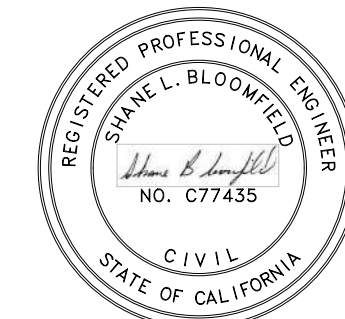


**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES

**ENGINEER'S SEAL**



**ALBERT A. WEBB ASSOCIATES**

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3788 MCGRAY STREET  
RIVERSIDE, CA, 92506  
PH. (951) 686-1070  
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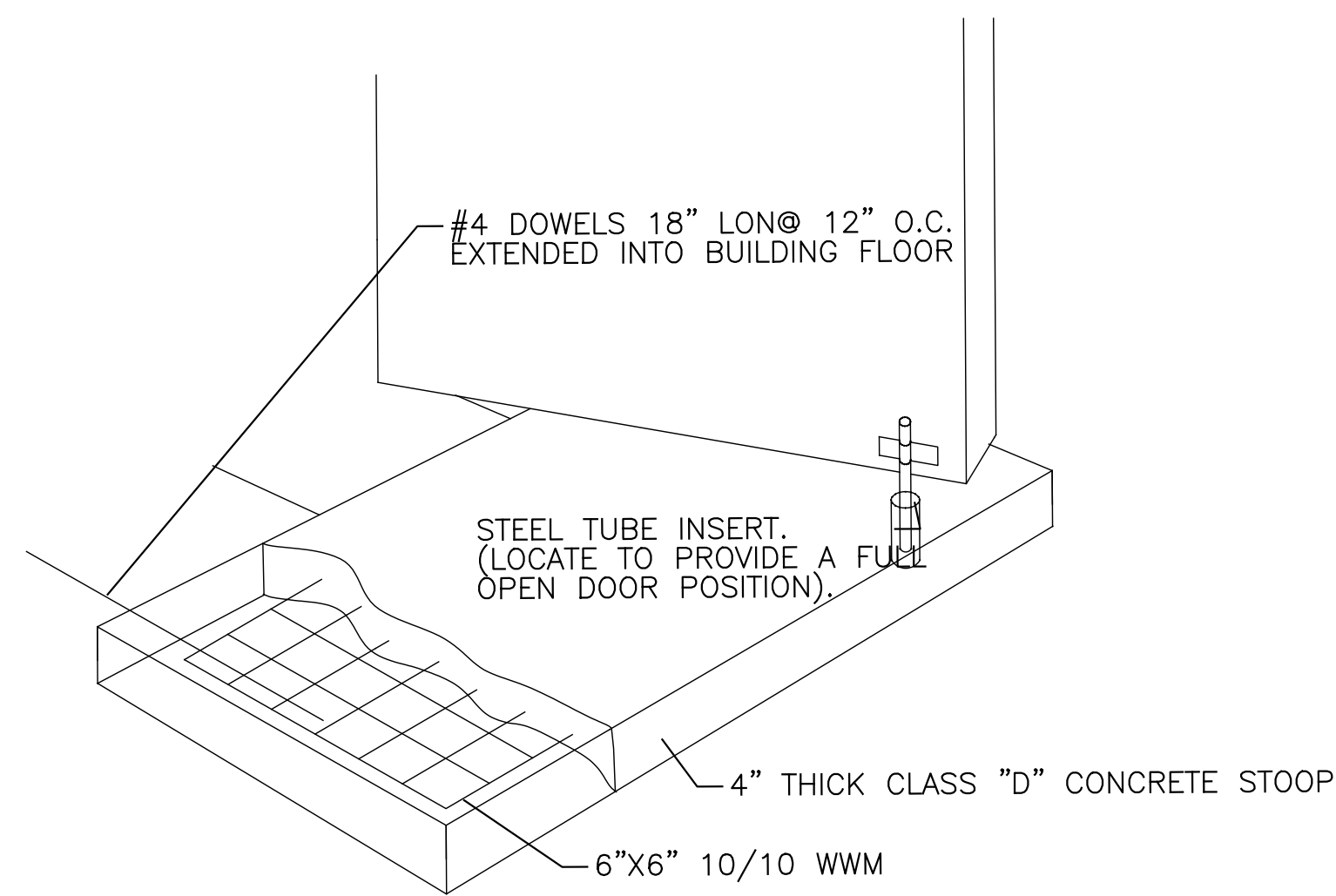
PLANS PREPARED UNDER THE SUPERVISION OF:  
*Shane L. Bloomfield* 6/25/22  
DATE

SHANE L. BLOOMFIELD  
REGISTERED CIVIL ENGINEER NO. C77435

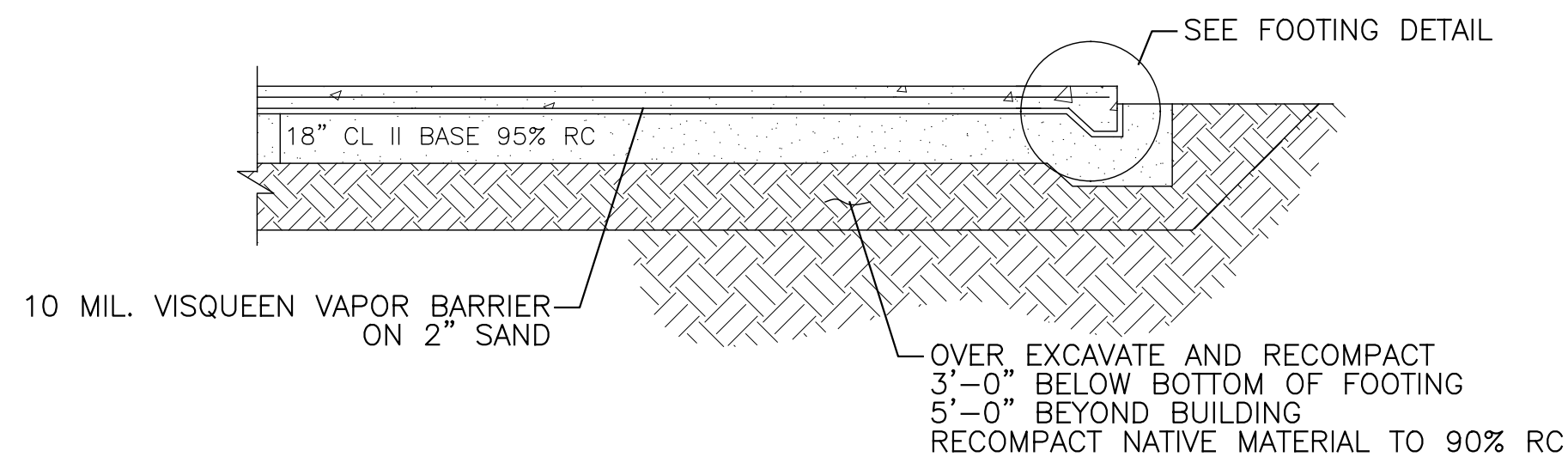
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SUBMITTED: _____	
SCALE: _____	

CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA		BID NO. 2022-05
CLEARWELL PS REPLACEMENT, GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACEMENT AT THE WTP		SHEET <b>12</b> OF 60
<b>PUMP STATION BUILDING DETAILS</b>		DWG. NO. A-2

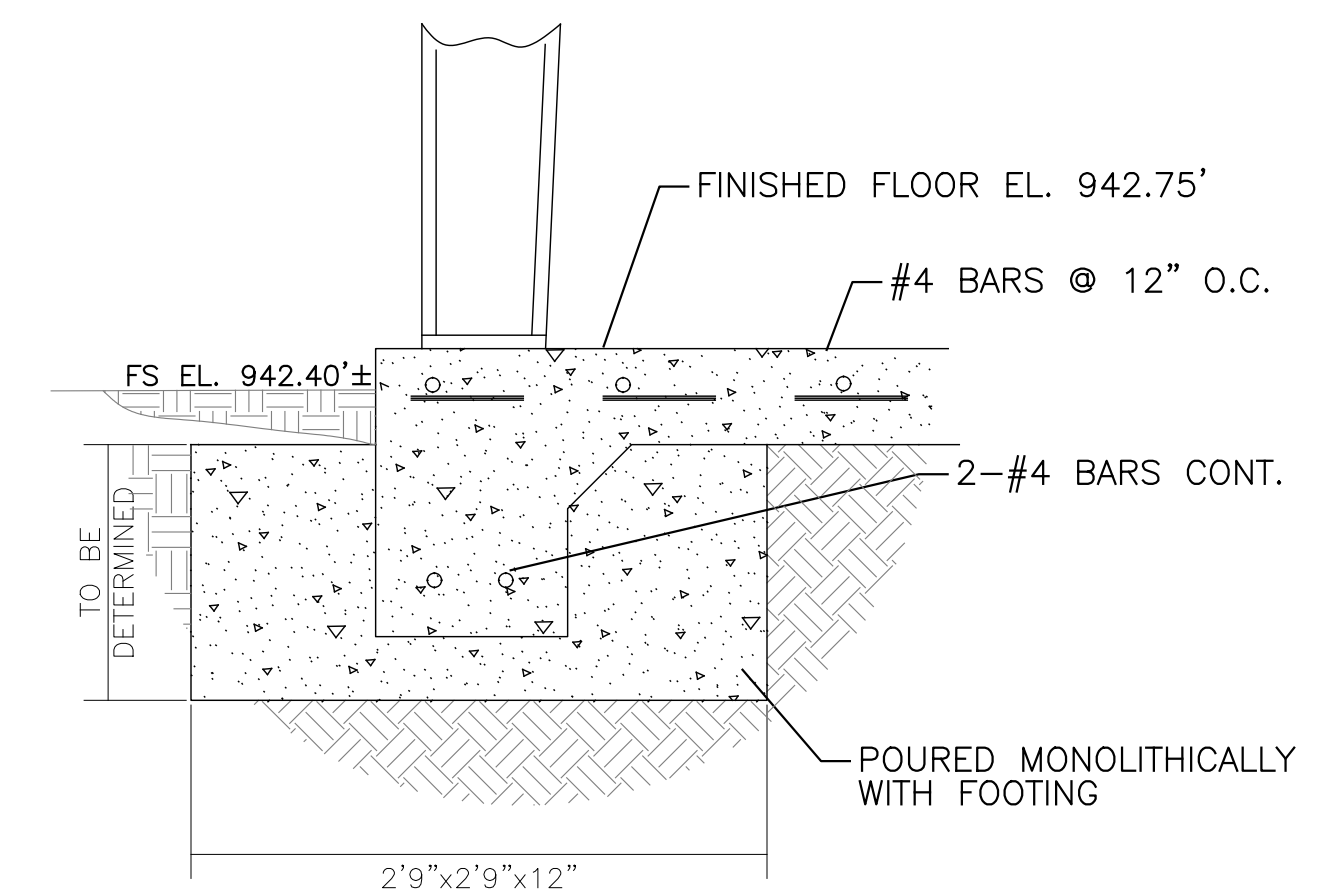




**STOOP DETAIL** 1  
NTS

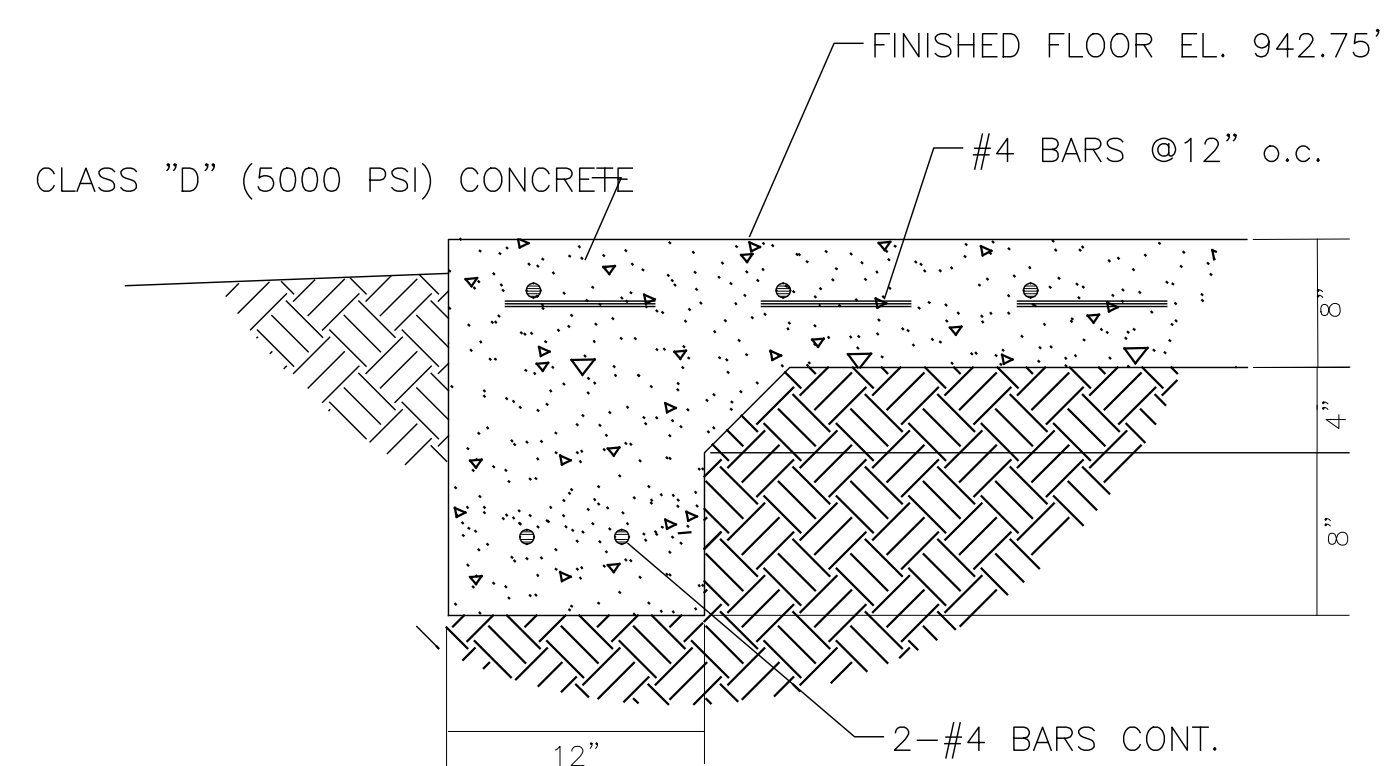


**SUBGRADE DETAIL** 2  
NTS

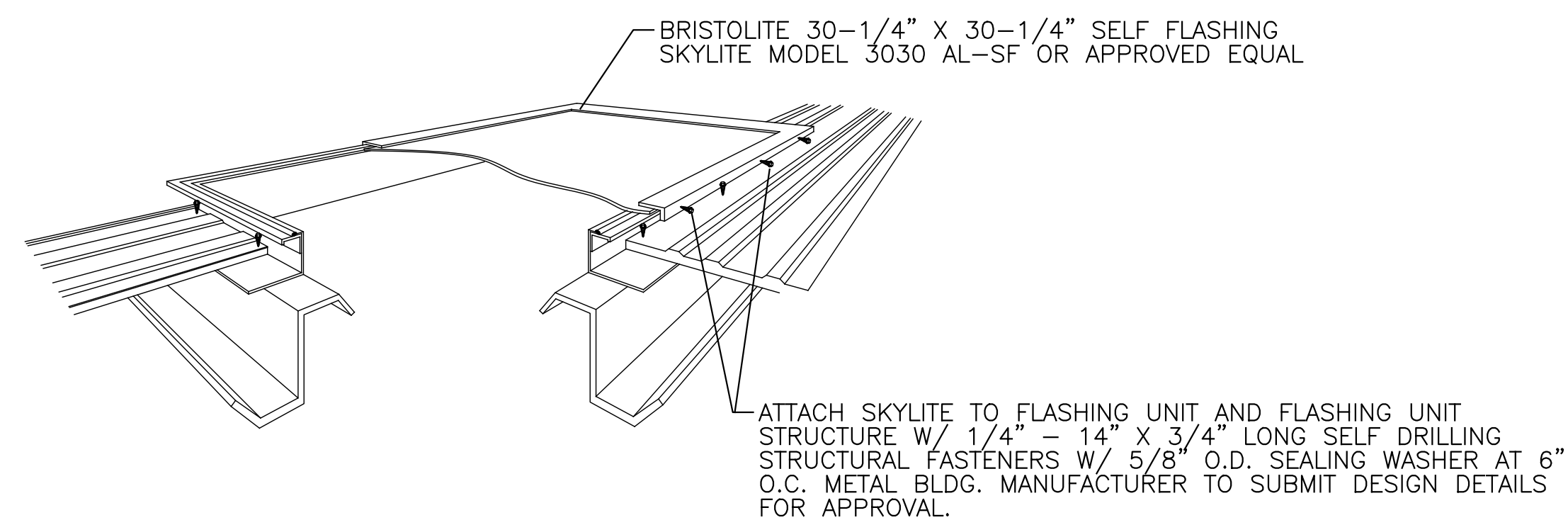


NOTE: THIS DETAIL INDICATES THE GENERAL FOOTING REQUIREMENTS. BUILDING SUPPLIER SHALL BE REQUIRED TO SUBMIT A FOUNDATION AND FOOTING PLAN, INCLUDING CALCULATIONS, SIGNED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA.

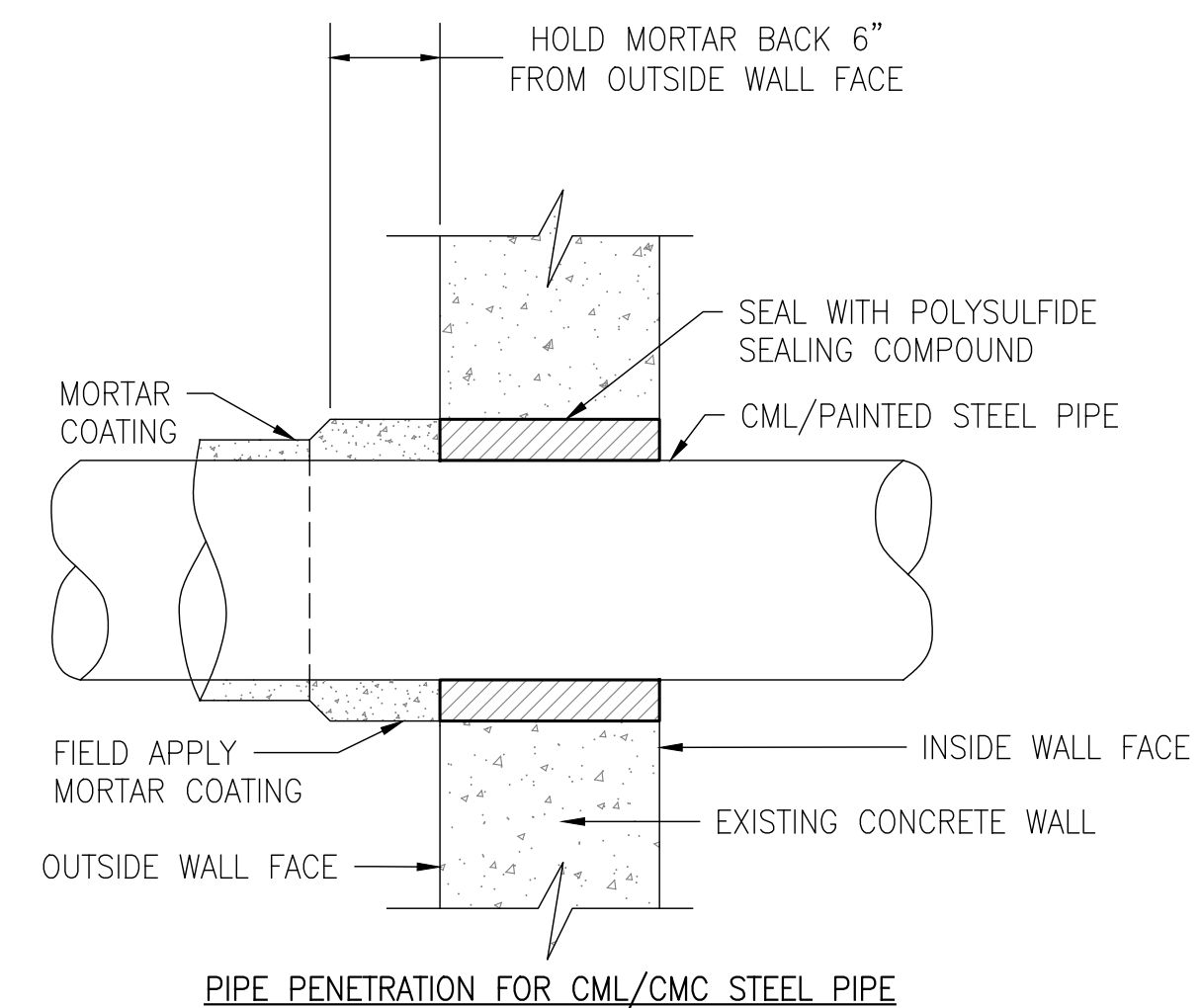
**FOUNDATION AT VERTICAL SUPPORTS DETAIL** 3  
NTS



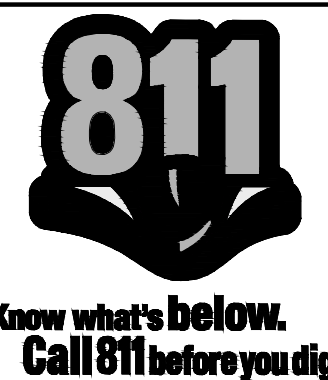
**FOOTING ALL AROUND SLAB DETAIL** 4  
NTS



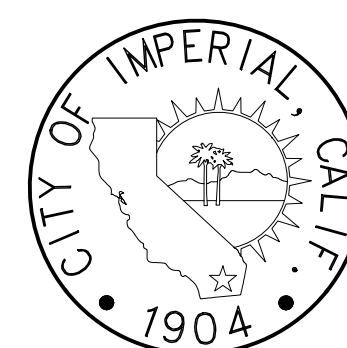
**SKYLITE DETAIL** 5  
NTS



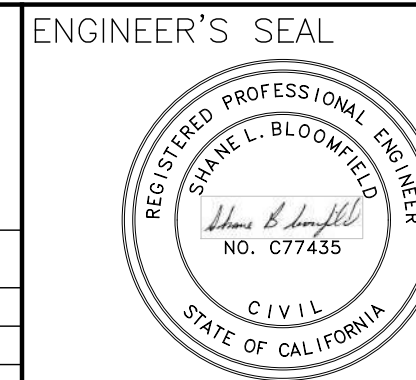
**WALL PENETRATION DETAIL** 6  
NTS



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CITY OF IMPERIAL	
CITY ENGINEER	DATE
REFERENCES	



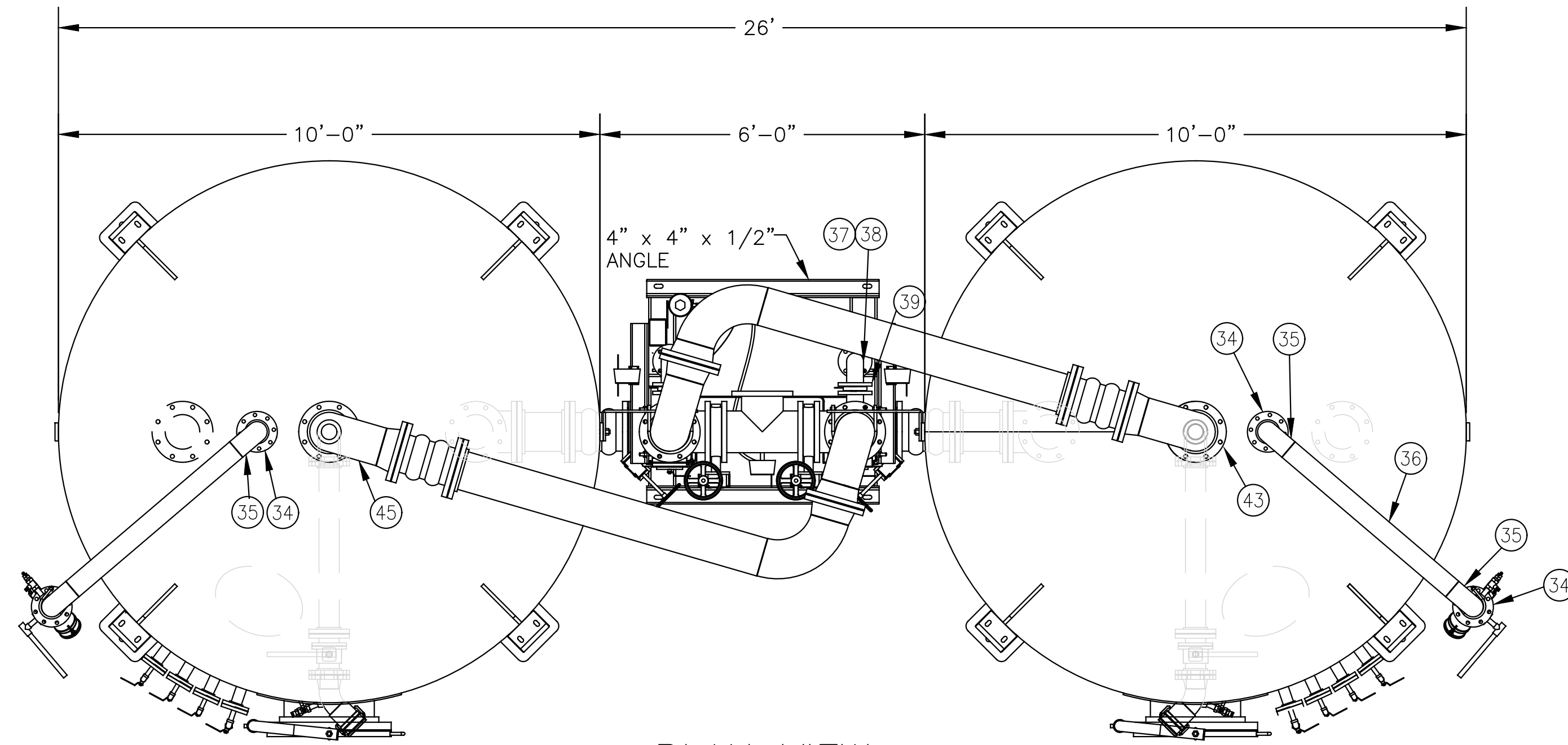
<b>ALBERT A. WEBB ASSOCIATES</b>	ENGINEERING CONSULTANTS 3788 MCGRAY STREET RIVERSIDE, CA, 92506 PH. (951) 686-1070 FAX (951) 788-1256
PLANS PREPARED UNDER THE SUPERVISION OF:	
<i>Shane L. Bloomfield</i>	6/25/22
SHANE L. BLOOMFIELD REGISTERED CIVIL ENGINEER NO. C77435	DATE

DESIGNED: SLB	DATE
DRAWN: JW	
TRACED:	
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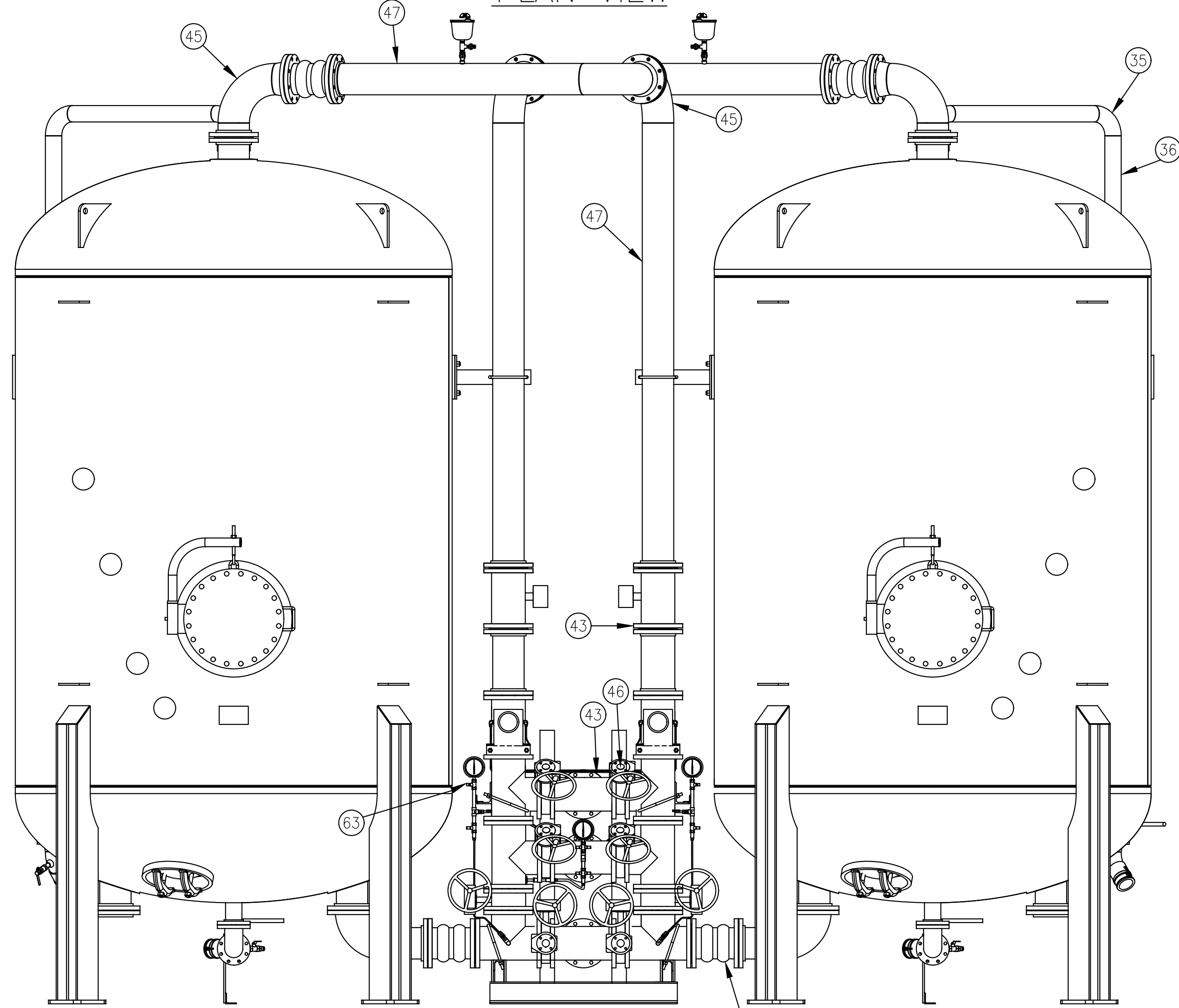
CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA	BID NO. 2022-05
CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP	SHEET <b>13</b> OF 60
<b>PUMP STATION BUILDING DETAILS</b>	DWG. NO. A-3

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PLAN VIEW



ELEVATION

**NOTES:**

1. THIS DRAWING IS TO SHOW PIPING AND EQUIPMENT DETAILS FOR CUSTOMER APPROVAL.
2. ALL BUTTERFLY VALVES ARE CAST IRON WITH STAINLESS STEEL TRIM, AL/BRNZ DISK.
3. PROVIDE STAINLESS STEEL SCREENS AT SEPTA UNDER DRAIN.
4. VESSELS SHALL BE 125 PSI, ASME CODE.
5. FINISH INTERIOR WITH PLASITE 4110. PREPARE AND APPLY STRICTLY IN ACCORDANCE WITH MFG. RECOMMENDATIONS.
6. CARBON STEEL PIPE IS ASTM A-53 GRADE B (erw), FITTINGS SHALL MEET A-234 GRADE B, A-105/ A-182 SS, AND A-865 THREADED. PIPING TO BE LINED WITH CARBOLINE 891.
7. FINISH EXTERIOR WITH CARBOLINE 133 HIGH BUILD URETHANE OVER CARBOLINE 893 RUST PREVENTATIVE EPOXY PRIMER APPLIED PER MFG RECOMMENDATIONS.
8. GROUTING BY OTHERS IF REQUIRED.

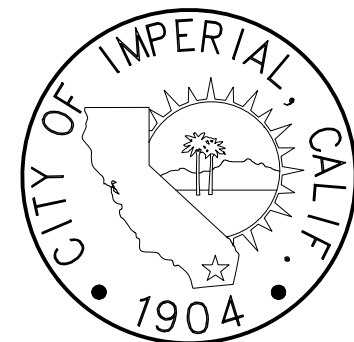
**SCHEDULED MATERIALS**

TAG	QTY	SIZE	DESCRIPTION
1	6	1/4" x 3 1/2" Dia	PRESSURE GAUGE (0-50) SILICONE FILLED
2	6	1/2" x 1/4"	1/2" x 1/4" GALV REDUCER
3	4	1/2"	NPT/COMP 1/2" x 4" TUBING
4	14	1/2"	SS BALL VALVE
5	14	1/2"	SS CLOSE NIPPLE
6	4	1/2"	SS HALF COUPLING (3,000 LB.)
7	4	1/2"	SS TEE (THD)
8	6	2" x 1/2"	CS 150# REDUCING FLANGE
9	A/R	1/2"	SS TUBING .035 WALL
10	6	1/2"	SS BALL VALVE
11	2	1" x 1/2"	SS THD REDUCING TEE
12	A/R	1"	SS SCHED/40 PIPE
13	4	1"	SS 90° ELBOW (THD)
14	14	1"	SS CLOSE NIPPLE
15	12	1"	SS BALL VALVE
16	2	1"	SCHED/80 SS CLOSE NIPPLE
17	10	1"	CHICAGO PNEUMATIC COUPLE
18	8	1"	SS HALF COUPLING
19	4	1"	ZINC PLATED U-BOLT
20	2	1"	PRESSURE AIR/VAC VENT APPO 143-C
21	2	2" x 1"	CS THD. REDUCING FLANGE
22	2	2"	SCHED/80 SS CLOSE NIPPLE
23	4	2"	SS CLOSE NIPPLE
24	2	2"	ZINC PLATED U-BOLT
25	4	2"	SS TEE
26	4	2"	SS 90° ELBOW (THD)
27	2	2"	CAM & GRV ADAPT 200F-AL,200DC-AL
28	4	2"	SS BALL VALVE
29	2	2"	PVC 2" SPRAY NOZZLE
30	A/R	2"	GAL SCHED/40 PIPE
31	2	2" x 1"	SS REDUCING TEE
32	2	3" x 2"	150# REDUCING FLANGE (THD)
33	4	4"	FULL PORT SS BALL VALVE
34	16	4"	150# S/O FLANGE 304SS
35	6	4"	90° L/R ELBOW 304SS
36	A/R	4"	304SS SCH 10 PIPE
37	A/R	4"	CARBON STEEL SCH/40 PIPE
38	2	4"	90° L/R ELBOW CARBON STEEL
39	4	4"	150# W/N FLANGE CARBON STEEL
40	4	4"	CAM & GRV ADAPT 400F-AL,400DC-AL
41	6	4"	ZINC PLATED U-BOLT
42	2	4"	ZOOK MONO GRAPHITE 125# BURST DISK
43	35	8"	150# W/N FLANGE
44	9	8"	WELD TEE
45	14	8"	90° LR ELBOW
46	9	8"	GEAR OP. WAFER/BUTTERFLY VALVE
47	A/R	8"	CARBON STEEL SCH/40 PIPE
48	4	8"	ZINC PLATED U-BOLT
49	16	8" x 6"	CS STD RED. TEE
50	16	6"	150# CS W/N FLANGE
51	16	8"	SS SEPTA NOZZLE .020 SLOT
52	6	1/2"	SS 90° COMP x MPT FITTING
53	12	1/2"	SS STRAIGHT COMP x MPT FITTING
54	A/R	6", 8", 4", 3", 2"	RED RUBBER RING GASKETS (LOT)
55	A/R	3/4" x 1 3/4"	ZINC PLATED BOLTS
56	A/R	5/8" x 1 3/4"	ZINC PLATED BOLTS
57	A/R	5/8" x 3"	ZINC PLATED BOLTS W/HEAVY HEX NUTS
58	A/R	3/4" x 6"	ZINC PLATED BOLTS W/HEAVY HEX NUTS
59	A/R	3/4" x 3"	ZINC PLATED BOLTS W/HEAVY HEX NUTS
60			
61	2	8"	150# CS S/O FLANGE
62	2	8"	FLOWMETER
63	2	5" DIA FACE	DIFFERENTIAL PRESSURE GAUGE



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

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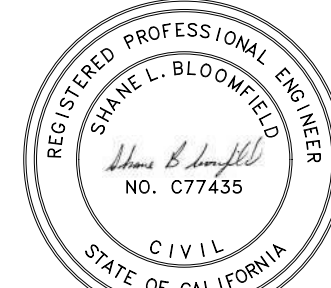


**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES

ENGINEER'S SEAL



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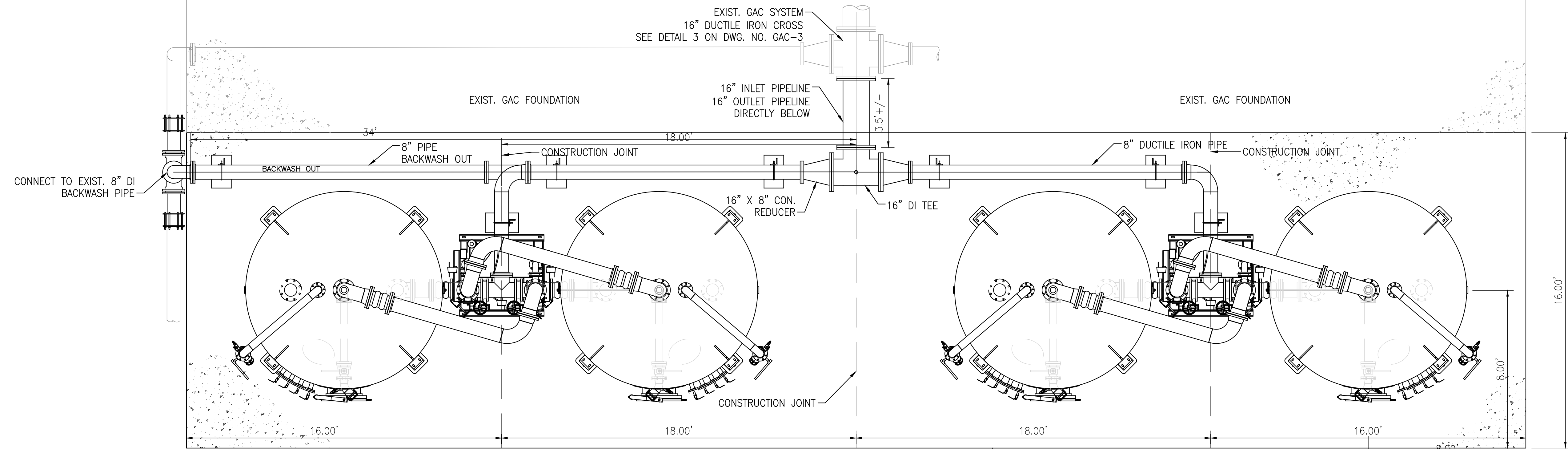
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SUBMITTED:		
SCALE:		

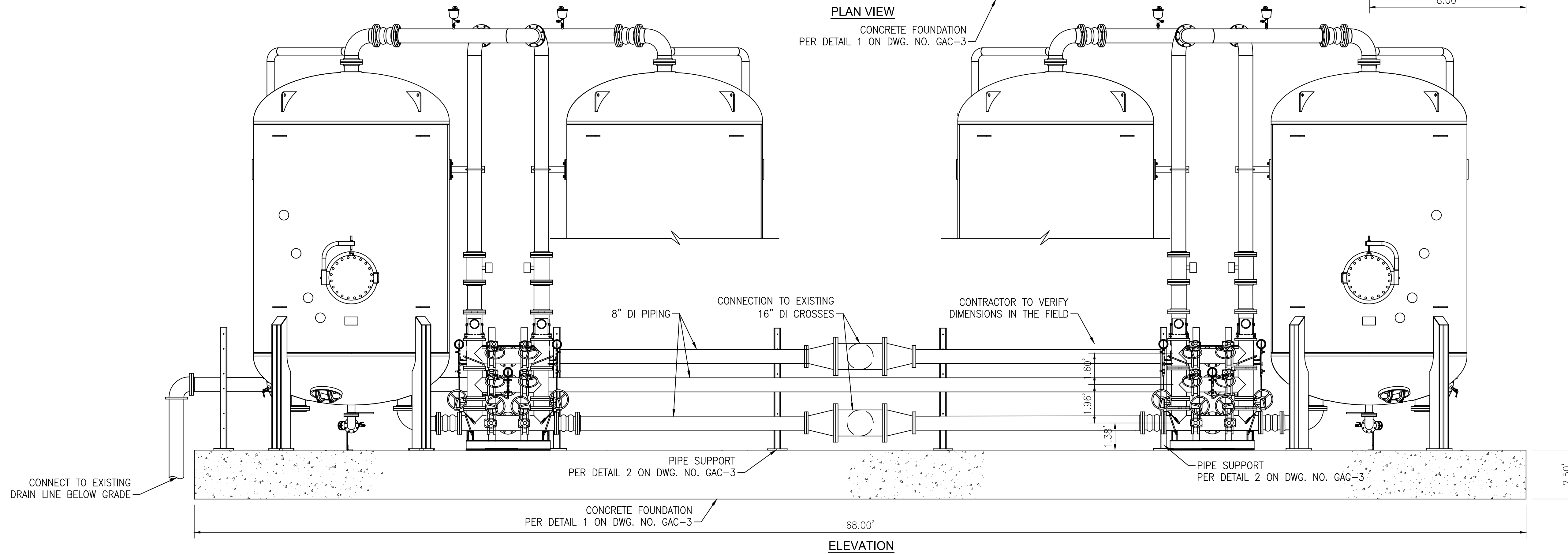
CITY OF IMPERIAL  
IMPERIAL COUNTY, CALIFORNIA  
CLEARWELL PS REPLACE., GAC TREATMENT  
SYSTEM EXPAN., AND FILTER PIPING REPLACE.  
AT THE WTP  
**GAC TREATMENT SYSTEM PIPING  
DETAILS**  
DWG. NO. \_\_\_\_\_

BID NO.  
2022-05  
SHEET  
**14**  
OF 60  
GAC-1

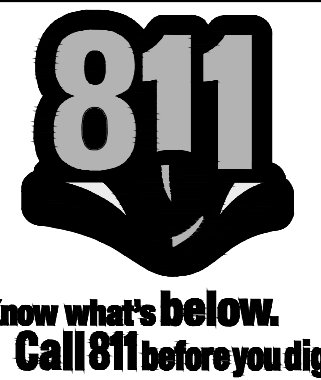
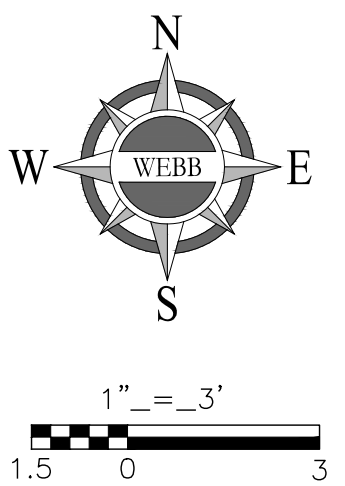




PLAN VIEW

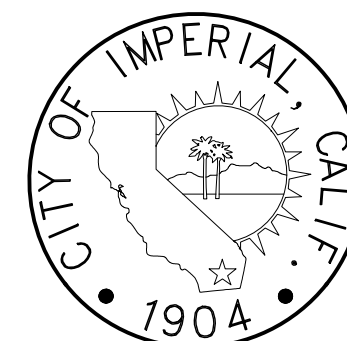


ELEVATION



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

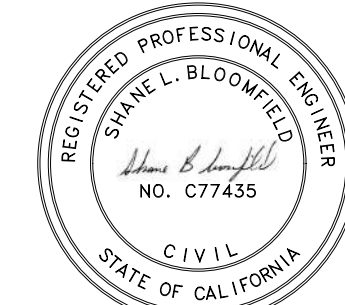
DESIGNED BY: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_



CITY OF IMPERIAL

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_  
REFERENCES

ENGINEER'S SEAL



**ALBERT A. WEBB ASSOCIATES**

ENGINEERING CONSULTANTS  
3788 MCGRAY STREET  
RIVERSIDE, CA, 92506  
PH. (951) 686-1070  
FAX (951) 788-1256

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Shawn L. Bloomfield*  
SHAWN L. BLOOMFIELD  
REGISTERED CIVIL ENGINEER NO. C77435  
DATE 6/25/22

DESIGNED:	DATE
SLB	
DRAWN:	JW
TRACED:	
CHECKED:	BPK
SUBMITTED:	
SCALE:	

CITY OF IMPERIAL  
IMPERIAL COUNTY, CALIFORNIA  
CLEARWELL PS REPLACE., GAC TREATMENT  
SYSTEM EXPAN., AND FILTER PIPING REPLACE.  
AT THE WTP  
**GAC TREATMENT SYSTEM PIPING  
PLAN**  
DWG. NO. \_\_\_\_\_

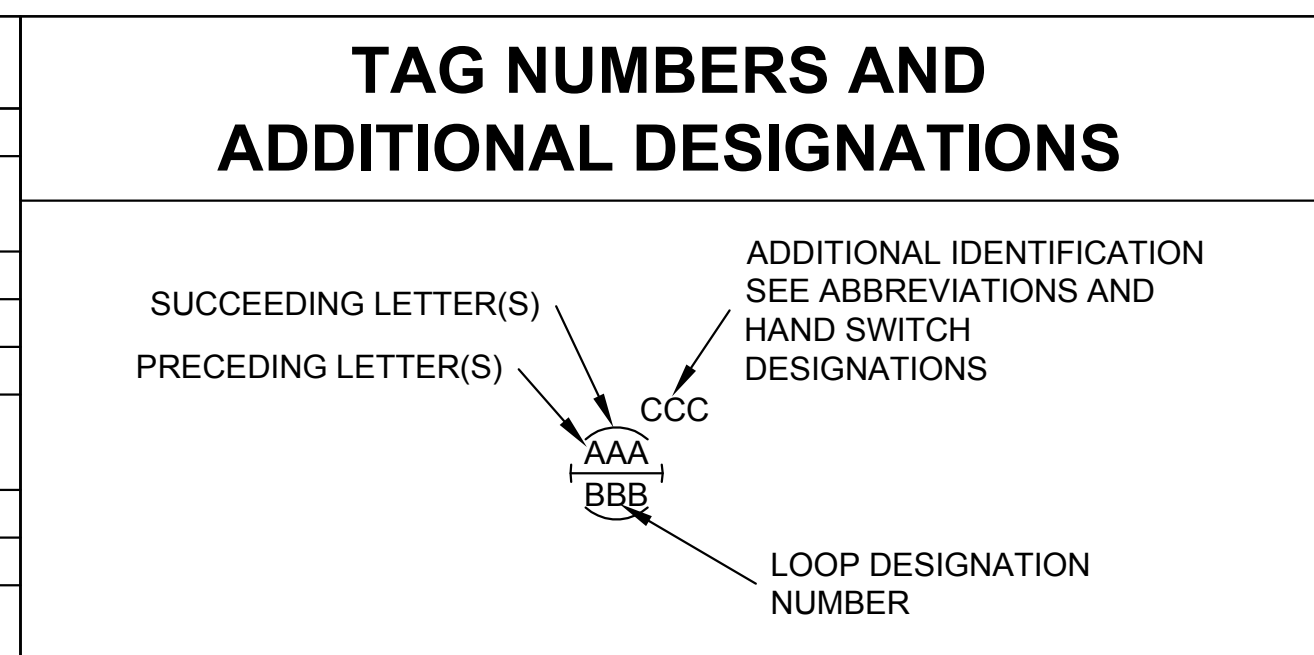
BID NO.  
2022-05  
SHEET  
**15**  
OF 60  
GAC-2







ISA INSTRUMENT IDENTIFICATION TABLE				
PRECEEDING LETTERS		SUCCEEDING LETTERS		
MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM	
B	BURNER, COMBUSTION		EMERGENCY	USER'S CHOICE
C	CONDUCTIVITY			CONTROL
D	DENSITY OR SPECIFIC GRAVITY	DIFFERENTIAL		
E	VOLTAGE		PRIMARY ELEMENT	
F	FLOW RATE	RATIO		
G	GAUGE		GLASS, VIEWING DEVICE	
H	HAND			HIGH
I	CURRENT (ELECTRICAL)		INDICATE	
J	POWER	SCAN		
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION
L	LEVEL		LIGHT	LOW
M	MOTOR	MOMENTARY	MOISTURE	MIDDLE
N	VIDEO		USER'S CHOICE	NORMAL
O	USER'S CHOICE		ORIFICE, RESTRICTION	OPEN
P	PRESSURE, VACUUM		POINT CONNECTION	STOP
Q	QUANTITY	INTEGRATE, TOTALIZE		
R	RADIATION		RECORD, OR PRINT	
S	SPEED, FREQUENCY	SAFETY		SWITCH
T	TEMPERATURE			TRANSMIT
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, LOUVER
W	WEIGHT, FORCE		WELL	
X	UNCLASSIFIED	X-AXIS	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, OR PRESENCE	Y-AXIS		RELAY, COMPUTE, CONVERT
Z	POSITION, DIMENSION	Z-AXIS		DRIVER, ACTUATOR, FINAL CONTROL ELEMENT



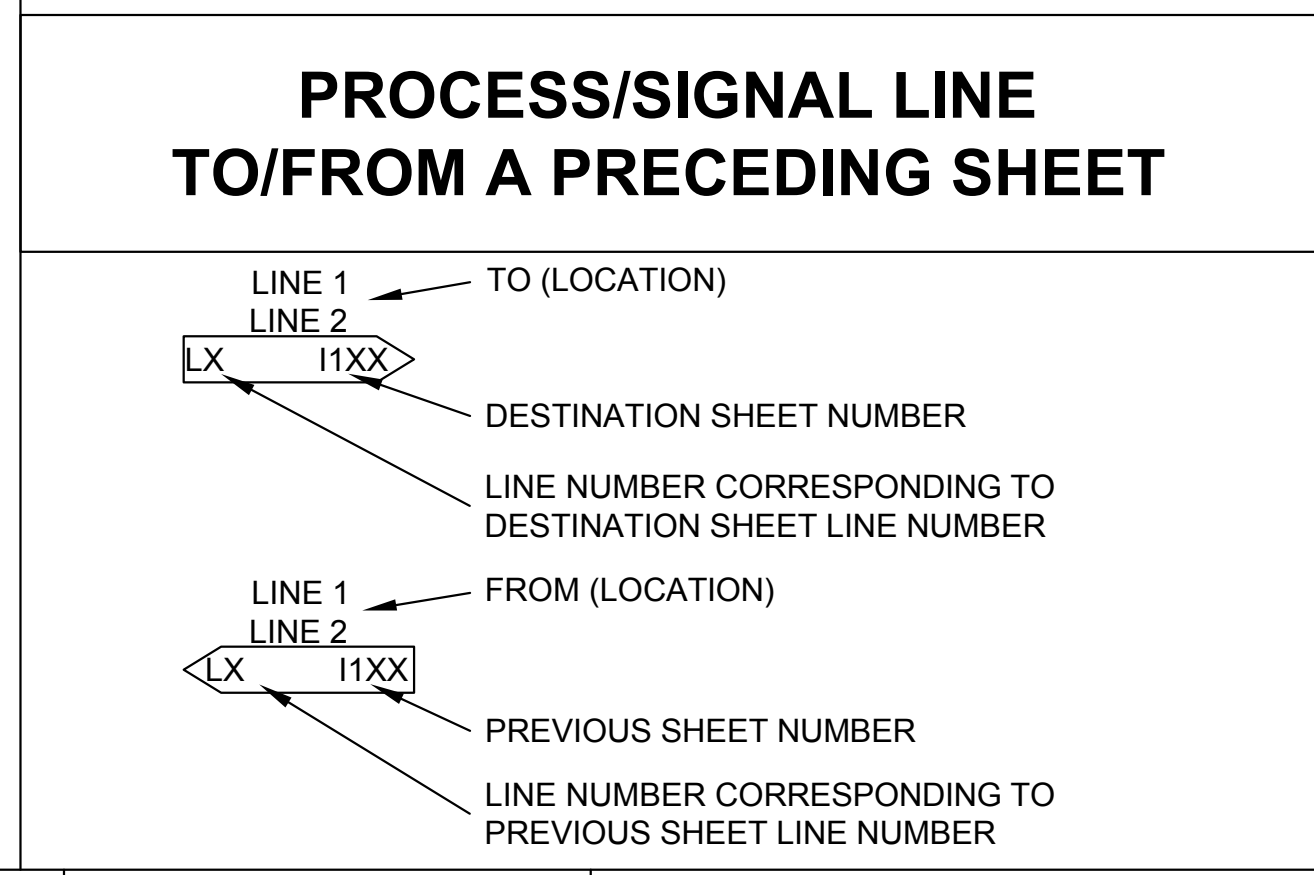
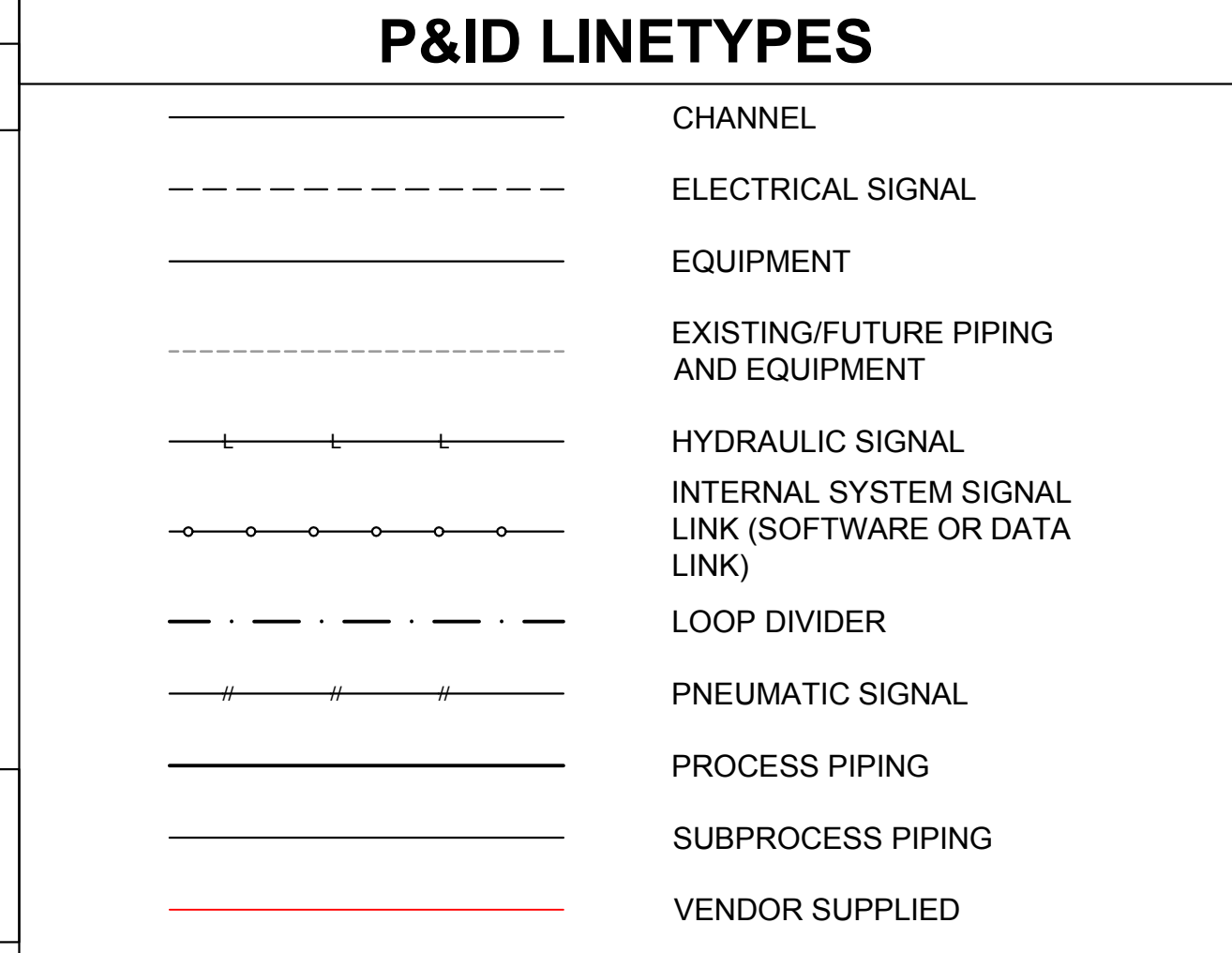
### P&ID INTERFACE SYMBOLS

NOTE:  
REFER TO ISA INSTRUMENT IDENTIFICATION TABLE FOR DEFINITION OF LETTERS AAA INSIDE THE BUBBLES. BBB REPRESENTS LOOP ID (IF USED). SEE ABBREVIATIONS LIST FOR SUPERSCRIPIT CCC.

	PILOT LIGHT		DEVICE MOUNTED IN SUBPANEL
	X= LENS COLOR, R=RED, G=GREEN, A=AMBER B=BLUE		PLC I/O TERMINAL
	FIELD DEVICE		SCADA FUNCTION

### INPUT/OUTPUT SYMBOLS

	ANALOG INPUT		ANALOG OUTPUT
	DISCRETE INPUT		DISCRETE OUTPUT
	PULSE INPUT		PULSE OUTPUT



### P&ID ABBREVIATIONS

AI	ANALOG INPUT	AO	ANALOG OUTPUT	ARV	AIR RELIEF VALVE	AS	AIR SUPPLY	BWL	BOTTOM WATER LEVEL	CL2	CHLORINE	CV	CONTROL VALVE/CONTROL VARIABLE	DCS	DISTRIBUTED CONTROL SYSTEM	DI	DISCRETE INPUT	DO	DISSOLVED OXYGEN	DP	DIFFERENTIAL PRESSURE	DWG	DRAWING	ETM	ELAPSED TIME METER	ETMF	ELAPSED TIME METER (FAST SPEED)	ETMs	ELAPSED TIME METER (SLOW SPEED)	ES	EMERGENCY STOP	FA	FOUL AIR	FC	FAIL CLOSED	FE	FLOW ELEMENT	FVNR	FULL VOLTAGE NON-REVERSING	FVR	FULL VOLTAGE REVERSING	GA	GALLONS	GCP	GENERATOR CONTROL PANEL	GND	GROUND	GPD	GALLONS PER DAY	GPH	GALLONS PER HOUR	GPM	GALLONS PER MINUTE	H2S	HYDROGEN SULFIDE	HMI	HUMAN MACHINE INTERFACE	IO	INPUT/OUTPUT	ISB	INTRINSICALLY SAFE BARRIER	LAN	LOCAL AREA NETWORK	LCP	LOCAL CONTROL PANEL	M	MOTOR	MA	MILLIAMPER	MCC	MOTOR CONTROL CENTER	MFR(S)	MANUFACTURER(S)	MGD	MILLION GALLONS PER DAY	MGL	MILLIGRAMS PER LITER	MLR	MIXED LIQUOR RETURN	MO	MOISTURE	MOD	MODULATING	MTU	MASTER TELEMETRY UNIT	NTU	TURBIDITY	OIT	OPERATOR INTERFACE TERMINAL	OL	OVERLOAD	PER	PERMISSIVE	PLC	PROGRAMMABLE LOGIC CONTROLLER	PNL	PANEL	POS	POSITION	POT	POTENTIOMETER	PPM	PARTS PER MILLION	PR	PAIR	PSI	POUNDS PER SQUARE INCH	PV	PROCESS VARIABLE	RF	RADIO FREQUENCY	RIO	REMOTE INPUT OUTPUT	RST	RESET	RTU	REMOTE TELEMETRY UNIT	RVSS	REVERSE VOLTAGE SOFT START	SB	SLUDGE BLANKET	SD	SMOKE DETECTOR	SLC	SINGLE LOOP CONTROLLER	SO2	SULFUR DIOXIDE	SP	SET POINT/SPARE	SPD	SPEED	SV	SOLENOID OPERATED VALVE	T/M	TEMPERATURE AND/OR MOISTURE	TSS	TOTAL SUSPENDED SOLIDS	TWL	TOP WATER LEVEL	UG	UNDERGROUND	VFD	VARIABLE FREQUENCY DRIVE	VTP	VERTICAL TURBINE PUMP
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### PROCESS IDENTIFIERS

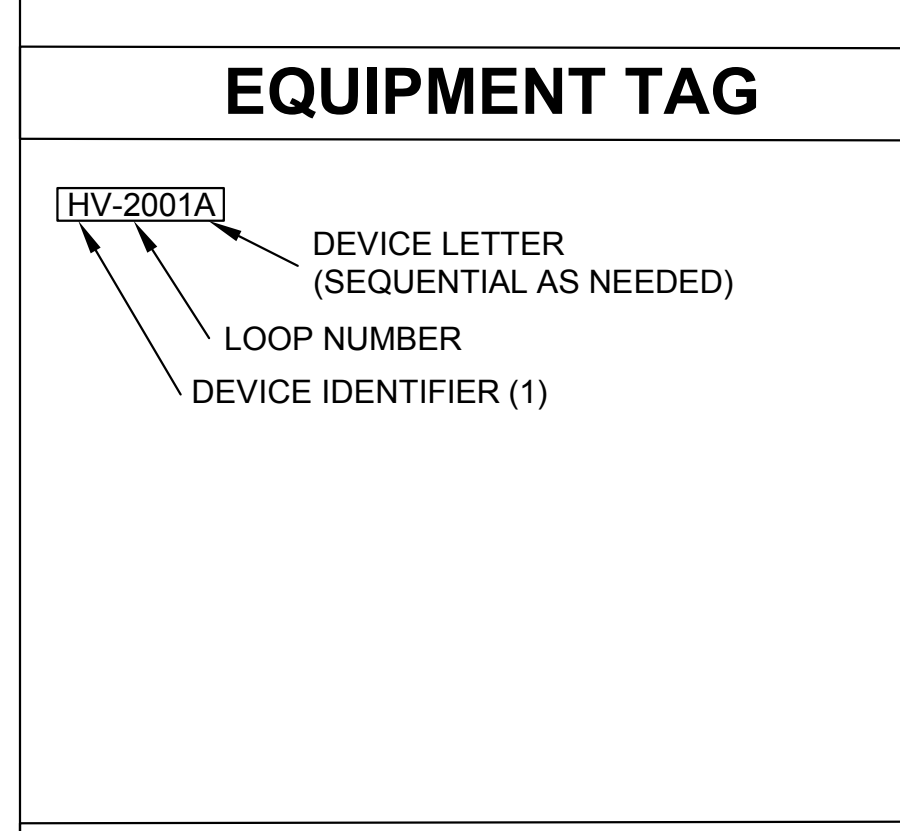
A	AERATION	AIR	COMPRESSED AIR	AS	AIR SUPPLY	BD	BOTTOM DRAIN	BS	BENDED SLUDGE	C	CONDENSATE	CD	CHEMICAL DRAIN AND VENT	CL	CHLORINE (GAS OR LIQUID STATE)	CLS	CHLORINE SOLUTION	CLV	CHLORINE GAS UNDER VACUUM	CSL	CIRCULATED PRESSURE	CV	CHLORINATOR VENT AND DETECTION LINE	DN	DECANT	DSL	DIGESTED SLUDGE	DW	DEMINERALIZED WATER	EE	ENGINE EXHAUST	EV	EVAPORATIVE COOLING	EWR	ENGINE COOLING WATER RETURN	EWS	ENGINE COOLING WATER SUPPLY	EX	AIR EXHAUST	FA	FOUL AIR	FE	FINAL EFFLUENT	FM	FORCE MAIN	FOR	FUEL RETURN	FOS	FUEL SUPPLY	FS	FROTH SPRAY	FSP	FIRE PROTECTION SPRINKLER SYSTEM	FW	FINISHED WATER	G	GRIT	H	HYPOCHLORITE	HR	HEATING WATER RETURN	HS	HEATING WATER SUPPLY	HW	HOT WATER	HWR	HOT WATER RETURN	HWS	HOT WATER SUPPLY	HY	HYDRAULIC	IA	INSTRUMENT AIR	LO	LUBE OIL	LSP	LANDSCAPING SPRINKLER SYSTEM	ML	MIXED LIQUOR	NG	NOT USED NATURAL GAS	NPW	NON-POTABLE WATER	OF	OVERFLOW	PA	PLANT AIR	PD	PLANT DRAIN	PEA	POLYMER-ANIONIC	PEC	POLYMER-CATIONIC	PEF	PRIMARY EFFLUENT	PEN	POLYMER-NONIONIC	PI	PLANT INFLUENT	PW	POTABLE WATER	RAS	RETURN ACTIVATED SLUDGE	RSL	RAW SLUDGE	RW	RAW WATER	RWL	RAINWATER LEADER	S	SCUM	SA	SAMPLE LINE (SEE LIST AT RIGHT)	SB	SODIUM BISULFITE	SD	SANITARY DRAIN AND VENT	SDR	STORM DRAIN	SE	SECONDARY EFFLUENT	SF	SLUDGE FILTRATE	SG	SLUDGE GAS	SN	SUBNATANT	SPD	SUMP PUMP DISCHARGE	SS	SANITARY SEWER	ST	STEAM	SU	STRUCTURE UNDERDRAIN	SUC	STRUCTURE UNDERDRAIN COLLECTOR	TSL	THICKENED SLUDGE	UW	UTILITY WATER	WAS	WASTE ACTIVATED SLUDGE	WLO	WASTE LUBE OIL	WW	WASTEWATER
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### GENERAL NOTES

- ADDITIONAL INSTRUMENTATION AND CONTROL SYMBOLS MAY BE USED AS REQUIRED. SYMBOLS AND NOMENCLATURE ARE BASED ON ISA STANDARD S-5.1.
- SEE ASSOCIATED ELECTRICAL SYMBOL SHEETS FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS.

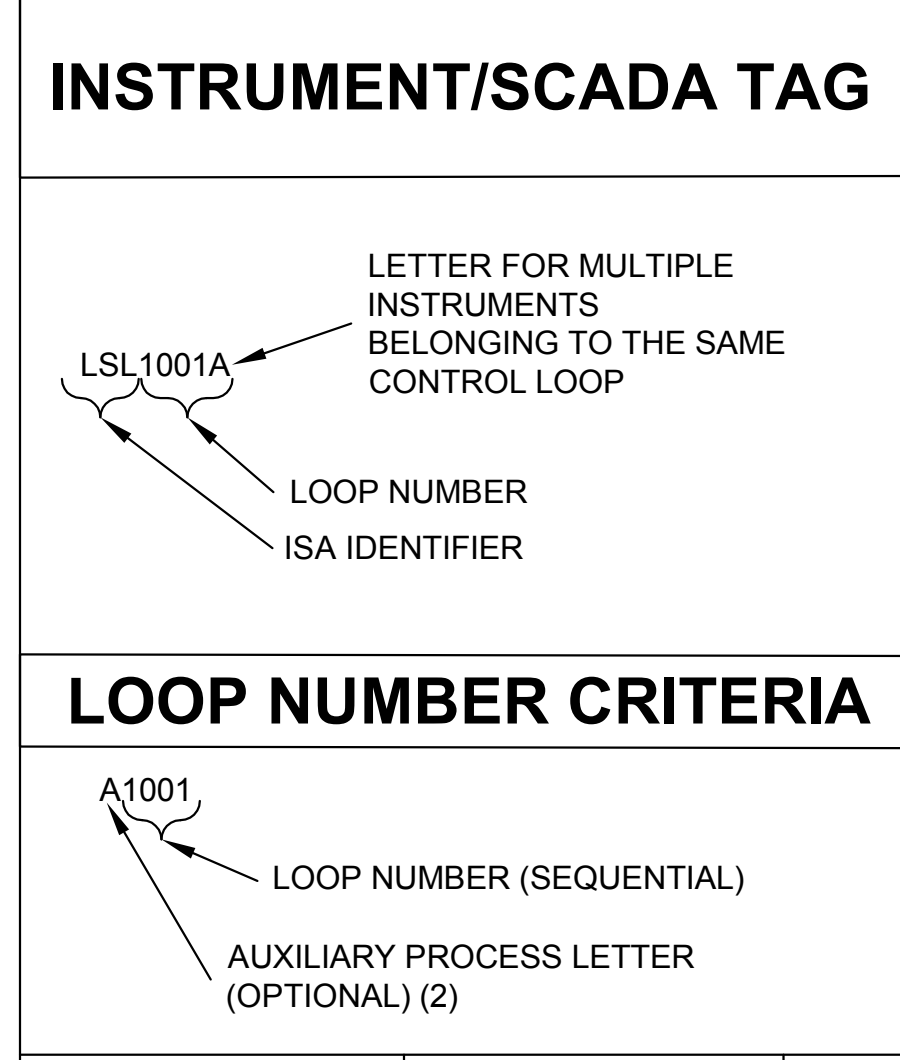
### P&ID CONTINUATION ARROW LINE NUMBER SEQUENCE

LINE#	PROCESS
1-10	INFLUENT TO EFFLUENT LINE
11-20	PRIMARY TREATMENT (SLUDGE, SCUM, SCREENINGS)
21-30	SECONDARY TREATMENT (RAS/WAS)
31-40	SOLIDS HANDLING (DIGESTERS, DEWATERING, THICKENING, CONVEYORS/TRUCKS)
41-50	TERTIARY/MISC. PROCESS (DRAINS, CLOTH FILTERS, REUSE PUMP STATIONS)
SUBPROCESS	
51-60	POTABLE/NON-POTABLE
61-80	AIR/PNEUMATIC/HYDRAULIC
81-90	CHEMICAL
91-100	MISC. SUBPROCESS



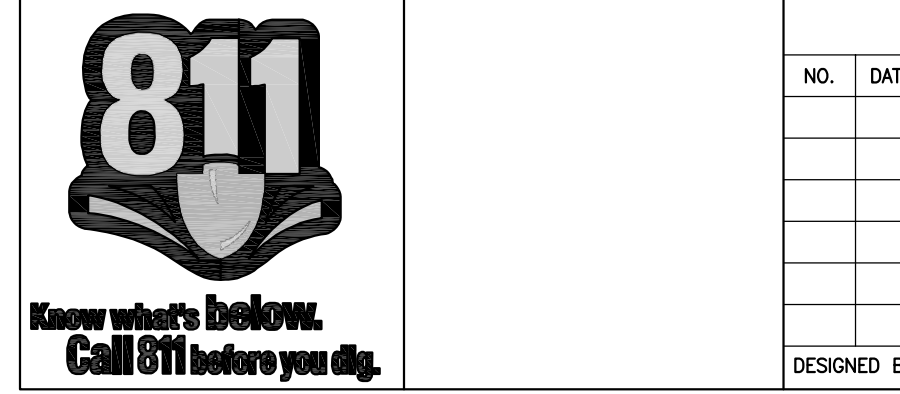
### (1) DEVICE IDENTIFIERS

CNV	CONVEYANCE EQUIPMENT
CV	CHECK VALVE
FV	AUTOMATIC VALVE (ACTUATED VALVE)
G	GATE
H	HVAC/ODOR
HV	HAND VALVE
M	METERING
ME	CHEMICAL/MECHANICAL EQUIPMENT
MFV	MULTIFUNCTION VALVE
P	PUMP
SPV	SAMPLE VALVE
SV	SOLENOID VALVE



### (2) AUXILIARY PROCESS LETTERS

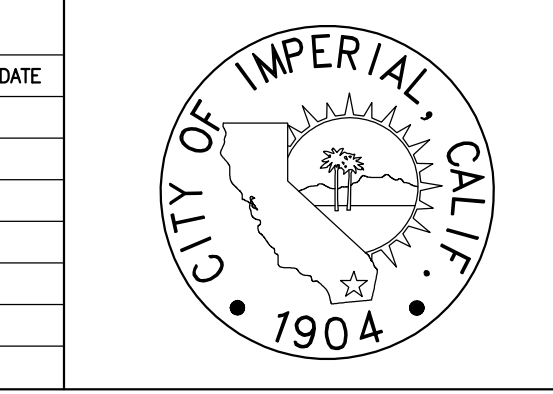
A	ACCESS CONTROL SYSTEMS
C	COLLECTIONS SYSTEM
F	FIRE SYSTEMS
H	HVAC SYSTEMS
P	POWER SYSTEMS



### REVISIONS

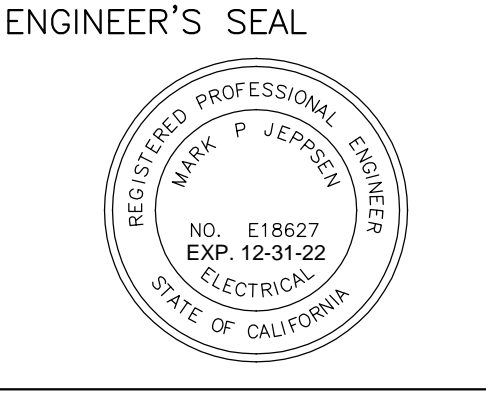
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DESIGNED BY: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_



### CITY OF IMPERIAL

CITY ENGINEER	DATE
REFERENCES	



ENGINEER'S SEAL

**skm**

533 W 2600 S, Suite 25  
Bountiful, Utah 84010  
Phone: (801) 677-0011  
www.skmeng.com

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
6/24/2022 DATE

MARK P. JEPPESEN  
REGISTERED ELECTRICAL ENGINEER NO. E18627

DESIGNED:	DATE
MPJ	06/22
DRAWN:	06/22
TRACED:	N/A
CHECKED:	06/22
SUBMITTED:	
SCALE:	

HORIZ. SCALE: N/A  
VERT. SCALE: N/A

### CITY OF IMPERIAL

IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP

INSTRUMENTATION - GENERAL LEGEND

DWG. NO. 1001

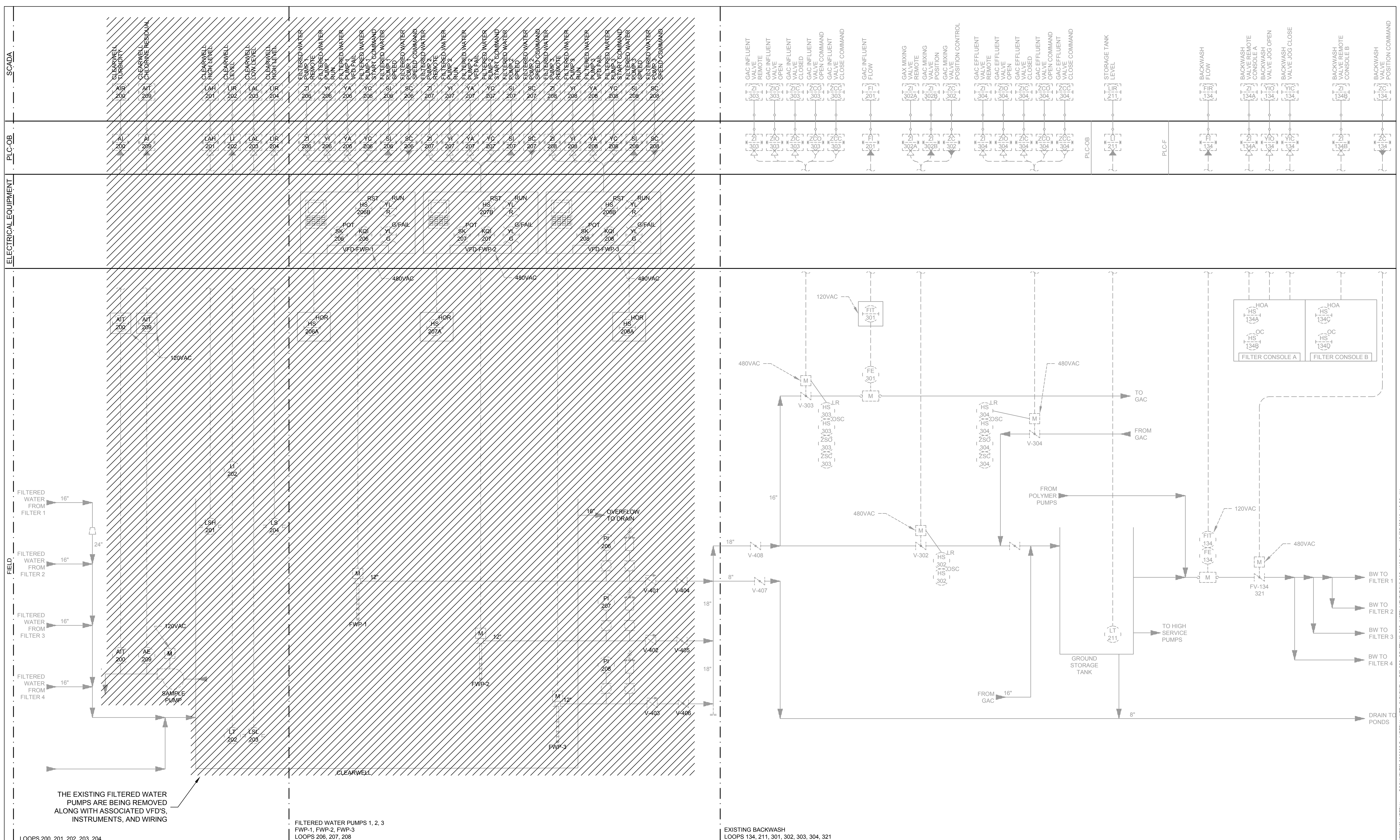
BID NO. 2022-05

SHEET 17 OF 60









LOOPS 200, 201, 202, 203, 204

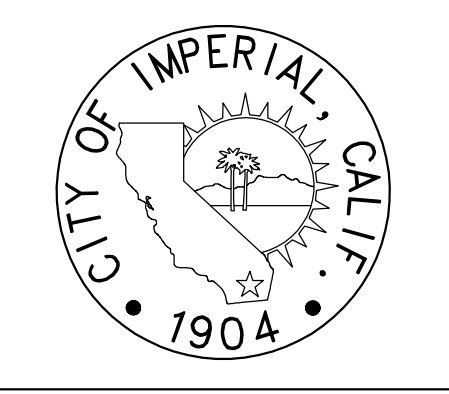
FILTERED WATER PUMPS 1, 2, 3  
FWP-1, FWP-2, FWP-3  
LOOPS 206, 207, 208

EXISTING BACKWASH  
LOOPS 134, 211, 301, 302, 303, 304, 321



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

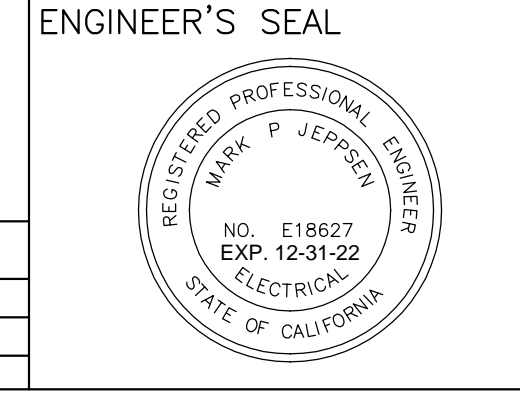
DESIGNED BY: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_



**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES



**skm**

633 W 2600 S, Suite 25  
Bountiful, Utah 84010  
Phone: (801) 677-0011  
www.skmeng.com

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
MARK P. JEPPISEN  
REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22
-	-

SCALE: \_\_\_\_\_  
HORIZ. SCALE: N/A  
VERT. SCALE: N/A

**CITY OF IMPERIAL**  
IMPERIAL COUNTY, CALIFORNIA

**BID NO. 2022-05**

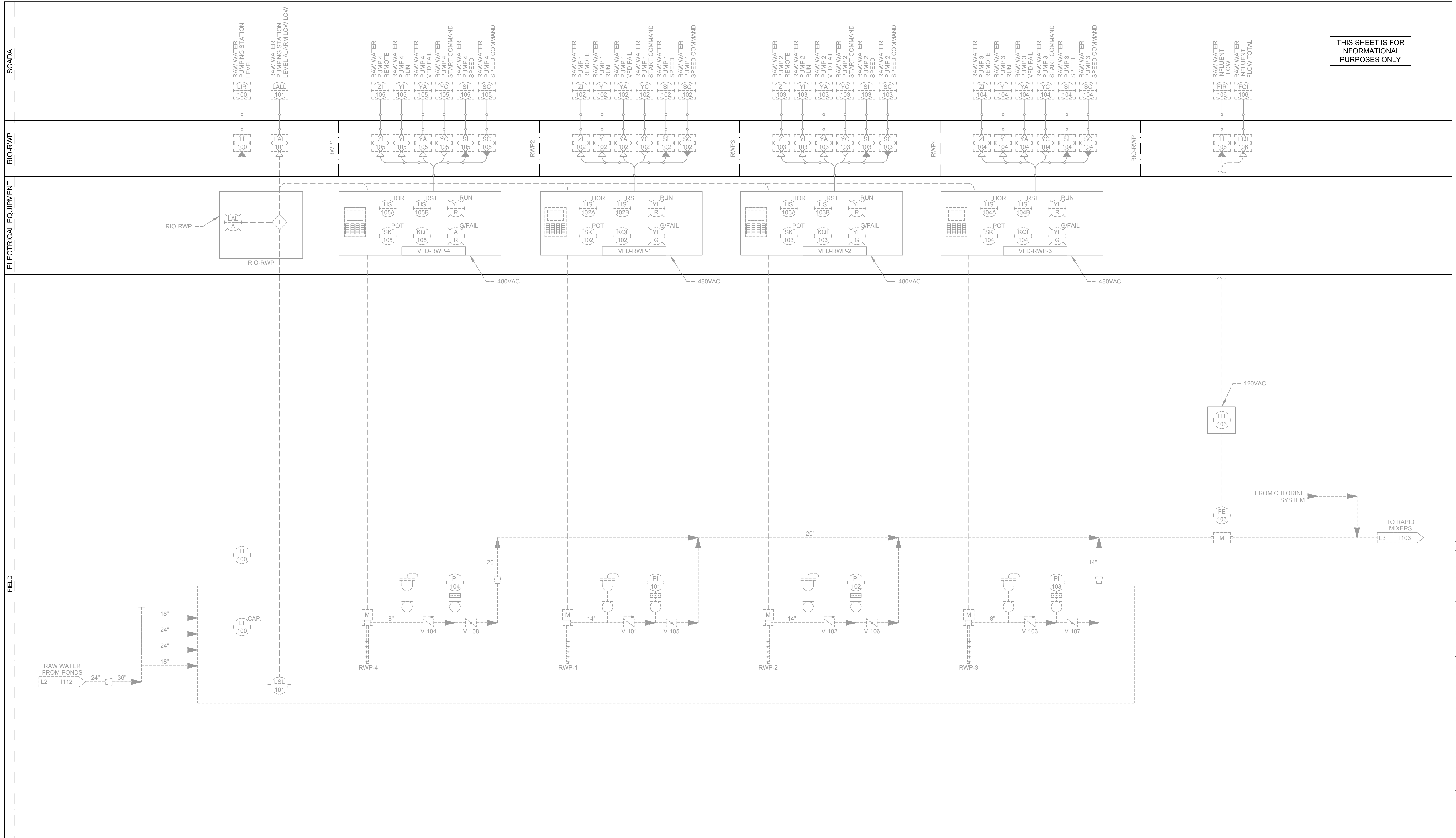
**CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP**

**INSTRUMENTATION - P&ID CLEARWELL DEMOLITION P&ID**

**SHEET 19 OF 60**

DWG. NO. 1101



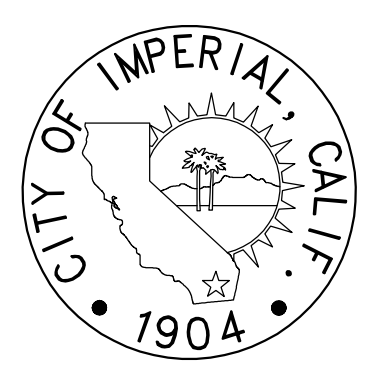


THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY

RAW WATER PUMP STATION  
 RAW WATER PUMPS 1, 2, 3, 4 RWP-1, RWP-2, RWP-3, RWP-4  
 LOOPS 100, 101, 102, 103, 104, 105, 106

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

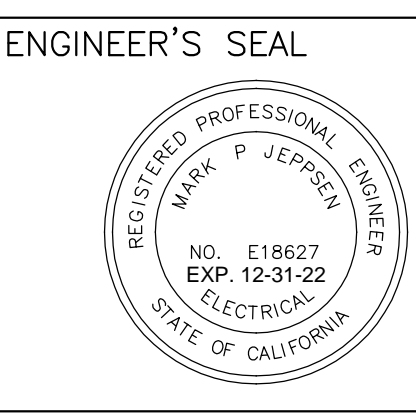
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**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES



**skm**

533 W 2600 S, Suite 25  
 Bountiful, Utah 84010  
 Phone: (801) 677-0011  
 www.skmg.com

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
 MARK P. JEPPESEN  
 REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22
-	-

HORIZ SCALE: N/A  
 VERT. SCALE: N/A

**CITY OF IMPERIAL**  
 IMPERIAL COUNTY, CALIFORNIA

**BID NO. 2022-05**

**SHEET 20 OF 60**

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP INSTRUMENTATION - P&ID RAW WATER PUMP STATION

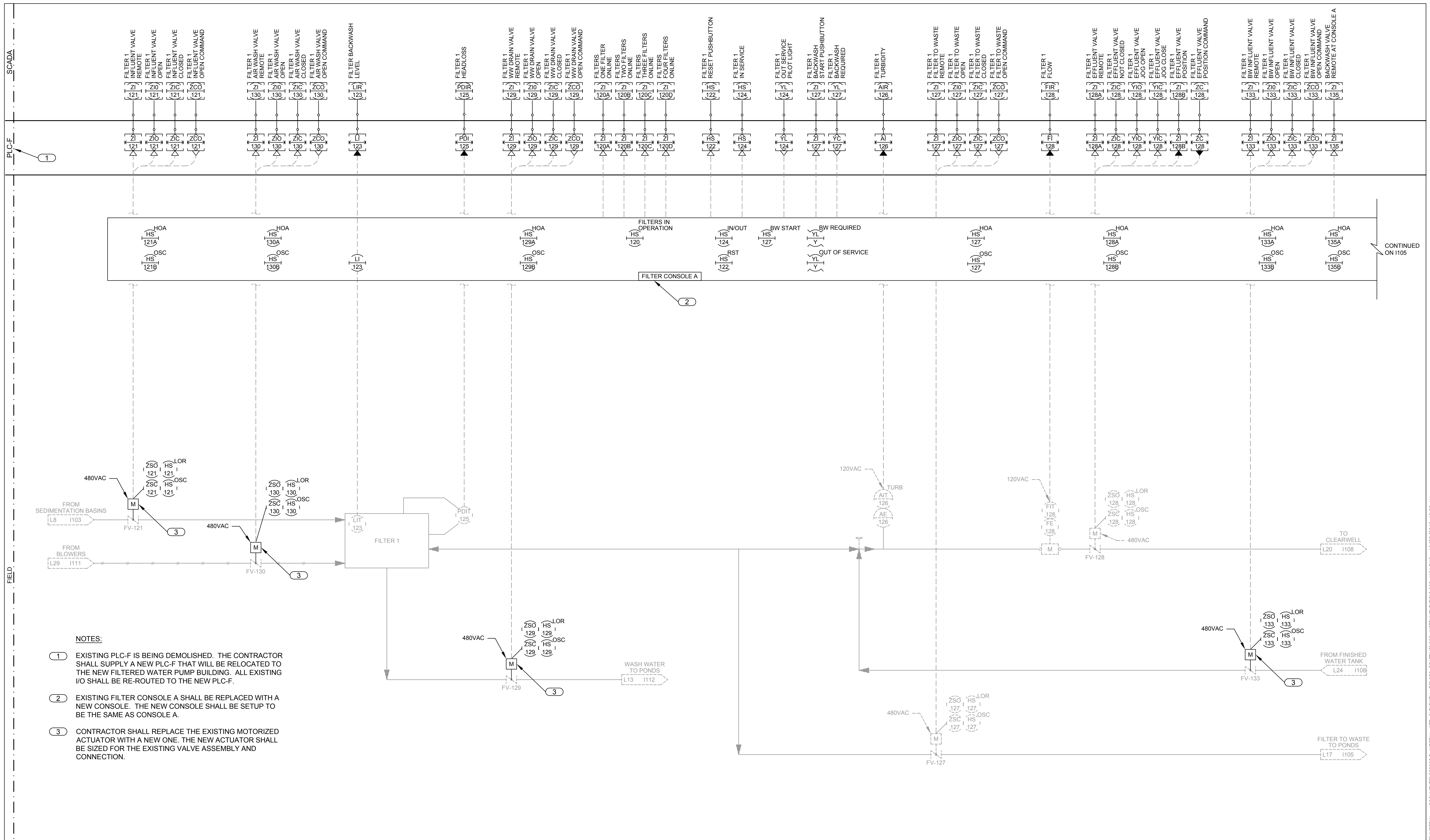
DWG. NO. 1102











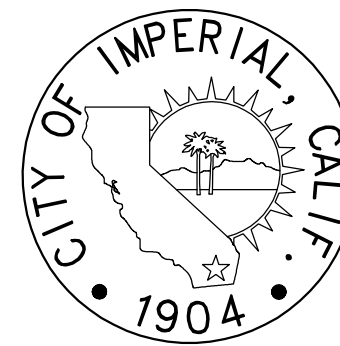
**NOTES:**

- 1 EXISTING PLC-F IS BEING DEMOLISHED. THE CONTRACTOR SHALL SUPPLY A NEW PLC-F THAT WILL BE RELOCATED TO THE NEW FILTERED WATER PUMP BUILDING. ALL EXISTING I/O SHALL BE RE-ROUTED TO THE NEW PLC-F.
- 2 EXISTING FILTER CONSOLE A SHALL BE REPLACED WITH A NEW CONSOLE. THE NEW CONSOLE SHALL BE SETUP TO BE THE SAME AS CONSOLE A.
- 3 CONTRACTOR SHALL REPLACE THE EXISTING MOTORIZED ACTUATOR WITH A NEW ONE. THE NEW ACTUATOR SHALL BE SIZED FOR THE EXISTING VALVE ASSEMBLY AND CONNECTION.

FILTER 1  
LOOPS 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 133

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

DESIGNED BY: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_

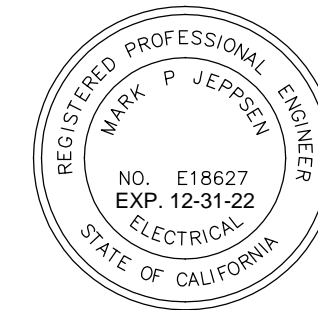


**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES

ENGINEER'S SEAL



**skm**  
 533 W 2600 S, Suite 25  
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PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
 MARK P. JEPPISEN  
 REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22

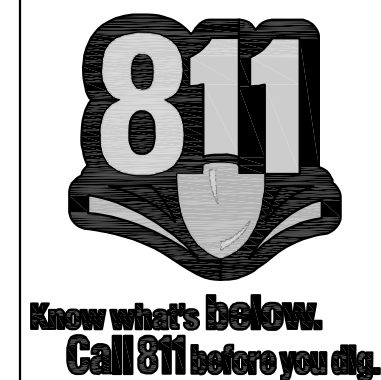
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 VERT. SCALE: N/A

**CITY OF IMPERIAL**  
 IMPERIAL COUNTY, CALIFORNIA

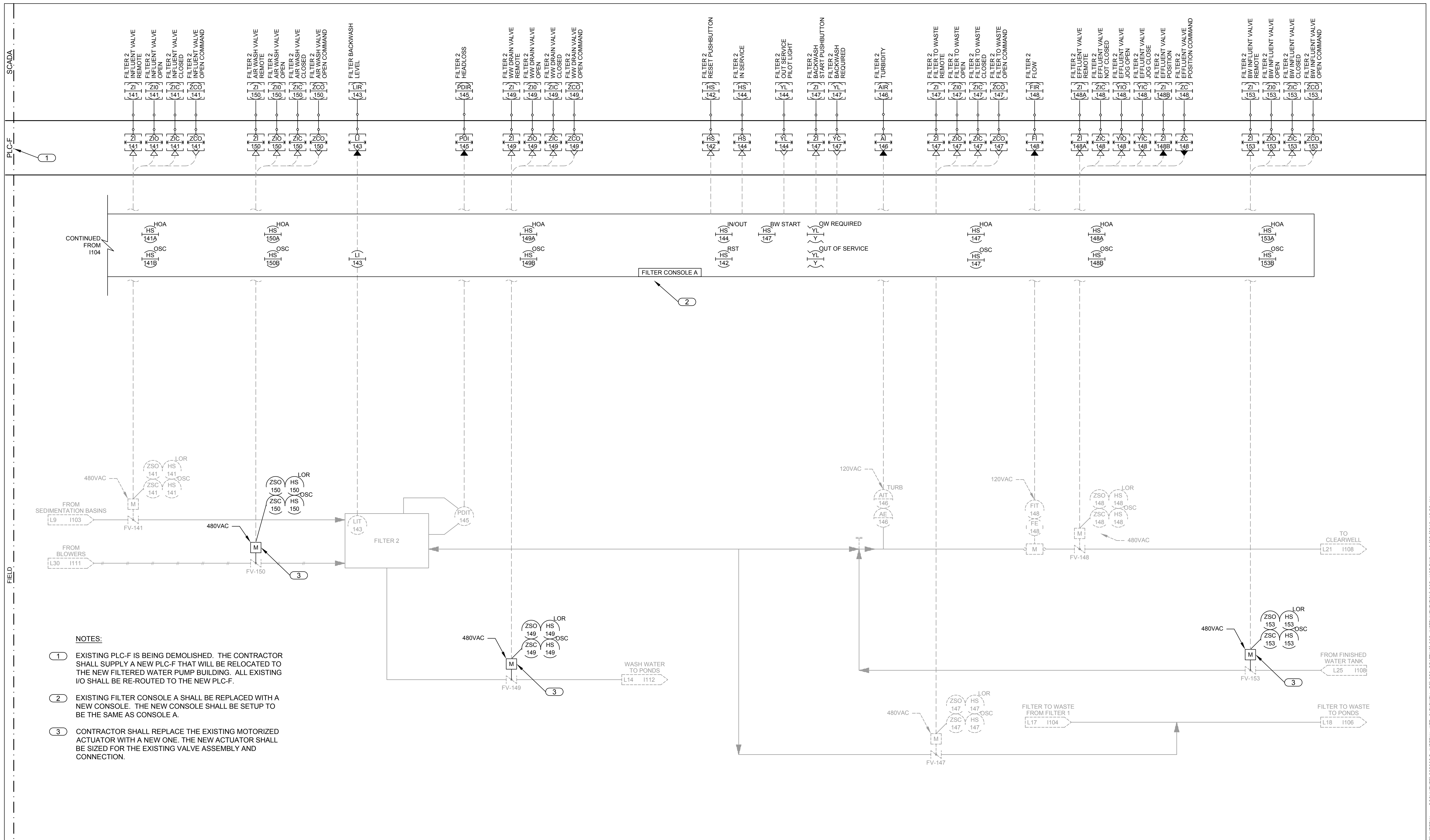
CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP  
 INSTRUMENTATION - P&ID  
 FILTER 1

DWG. NO. 1104

BID NO. 2022-05  
 SHEET 22 OF 60







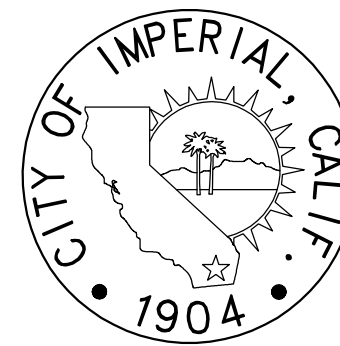
**NOTES:**

- 1 EXISTING PLC-F IS BEING DEMOLISHED. THE CONTRACTOR SHALL SUPPLY A NEW PLC-F THAT WILL BE RELOCATED TO THE NEW FILTERED WATER PUMP BUILDING. ALL EXISTING I/O SHALL BE RE-ROUTED TO THE NEW PLC-F.
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FILTER 2  
LOOPS 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 153

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

DESIGNED BY: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_

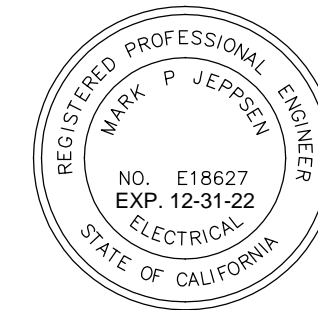


**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES

ENGINEER'S SEAL

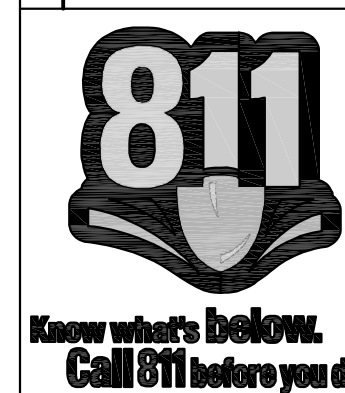


**skm**  
 533 W 2600 S, Suite 25  
 Bountiful, Utah 84010  
 Phone: (801) 677-0011  
 www.skmg.com  
 PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
 MARK P. JEPPISEN  
 REGISTERED ELECTRICAL ENGINEER NO. E18627  
 DATE: 6/24/2022

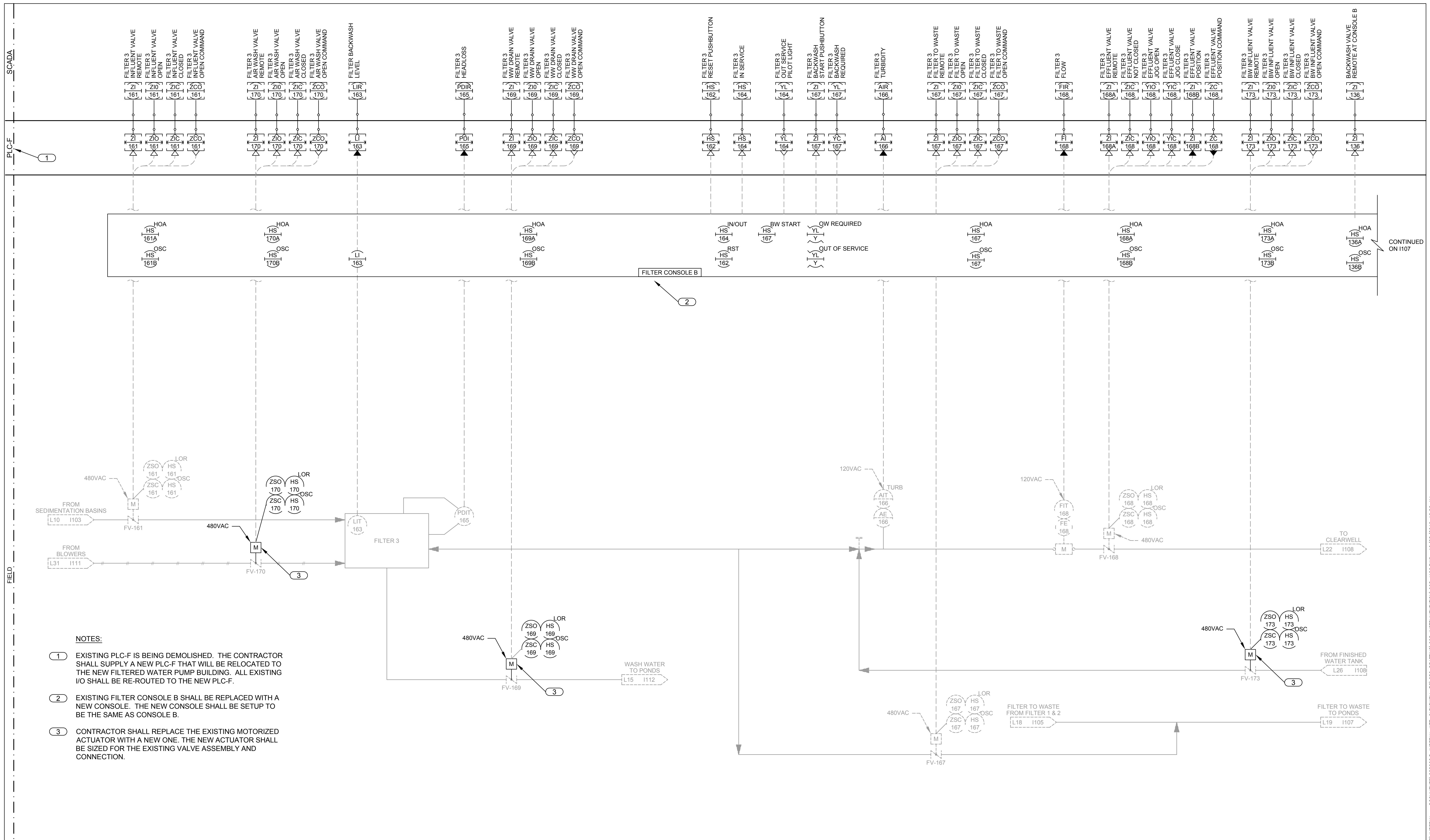
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DCL	06/22
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MPJ	06/22

SCALE: \_\_\_\_\_  
 HORIZ. SCALE: N/A  
 VERT. SCALE: N/A

**CITY OF IMPERIAL**  
 IMPERIAL COUNTY, CALIFORNIA  
**CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP INSTRUMENTATION - P&ID FILTER 2**  
 DWG. NO. 1105  
 BID NO. 2022-05  
 SHEET 23 OF 60







CONTINUED ON I107

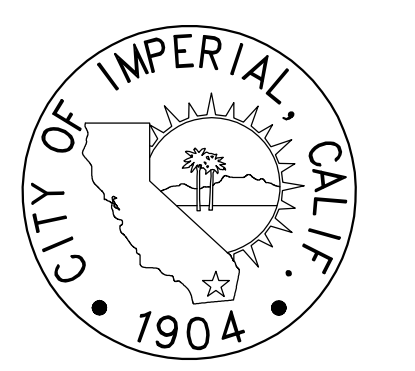
**NOTES:**

- 1 EXISTING PLC-F IS BEING DEMOLISHED. THE CONTRACTOR SHALL SUPPLY A NEW PLC-F THAT WILL BE RELOCATED TO THE NEW FILTERED WATER PUMP BUILDING. ALL EXISTING I/O SHALL BE RE-ROUTED TO THE NEW PLC-F.
- 2 EXISTING FILTER CONSOLE B SHALL BE REPLACED WITH A NEW CONSOLE. THE NEW CONSOLE SHALL BE SETUP TO BE THE SAME AS CONSOLE B.
- 3 CONTRACTOR SHALL REPLACE THE EXISTING MOTORIZED ACTUATOR WITH A NEW ONE. THE NEW ACTUATOR SHALL BE SIZED FOR THE EXISTING VALVE ASSEMBLY AND CONNECTION.

FILTER 3  
LOOPS 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 173

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

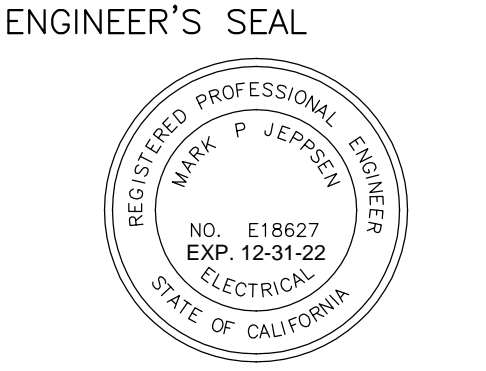
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**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES



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PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen* 6/24/2022 DATE

MARK P. JEPPISEN  
REGISTERED ELECTRICAL ENGINEER NO. E18627

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22

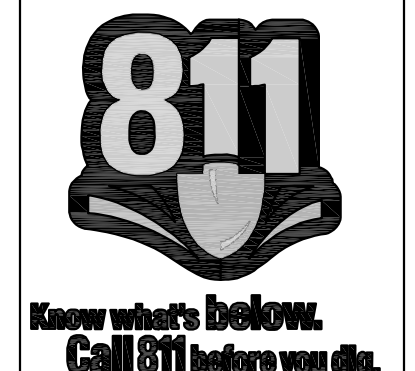
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VERT. SCALE: N/A

**CITY OF IMPERIAL**  
IMPERIAL COUNTY, CALIFORNIA

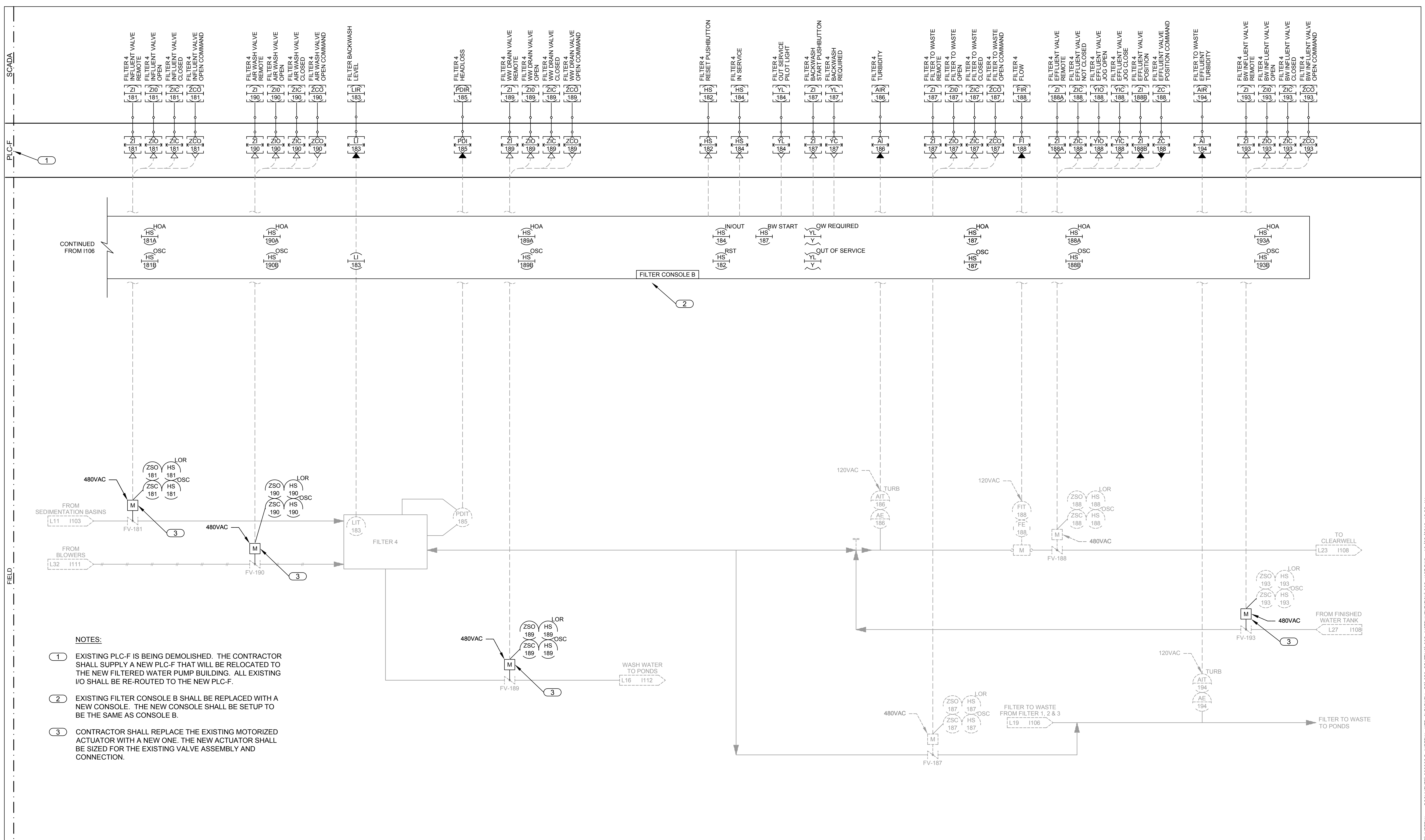
**CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP INSTRUMENTATION - P&ID FILTER 3**

DWG. NO. 1106

BID NO. 2022-05  
SHEET 24 OF 60





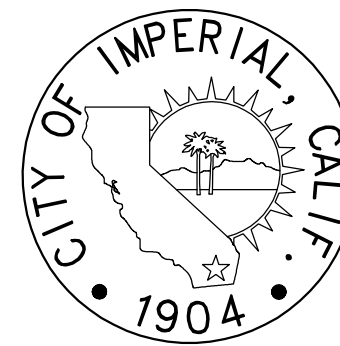


**NOTES:**

- 1 EXISTING PLC-F IS BEING DEMOLISHED. THE CONTRACTOR SHALL SUPPLY A NEW PLC-F THAT WILL BE RELOCATED TO THE NEW FILTERED WATER PUMP BUILDING. ALL EXISTING I/O SHALL BE RE-ROUTED TO THE NEW PLC-F.
- 2 EXISTING FILTER CONSOLE B SHALL BE REPLACED WITH A NEW CONSOLE. THE NEW CONSOLE SHALL BE SETUP TO BE THE SAME AS CONSOLE B.
- 3 CONTRACTOR SHALL REPLACE THE EXISTING MOTORIZED ACTUATOR WITH A NEW ONE. THE NEW ACTUATOR SHALL BE SIZED FOR THE EXISTING VALVE ASSEMBLY AND CONNECTION.

FILTER 4  
LOOPS 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 193

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE
DESIGNED BY:	DRAWN BY:	CHECKED BY:		

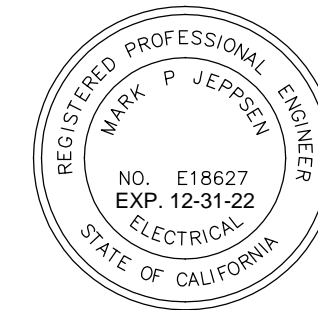


**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

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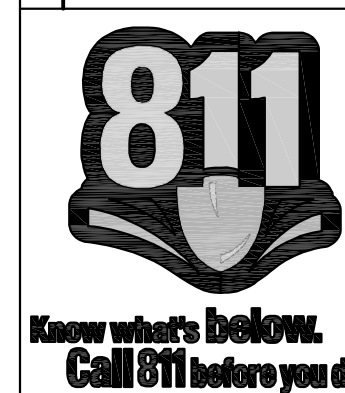
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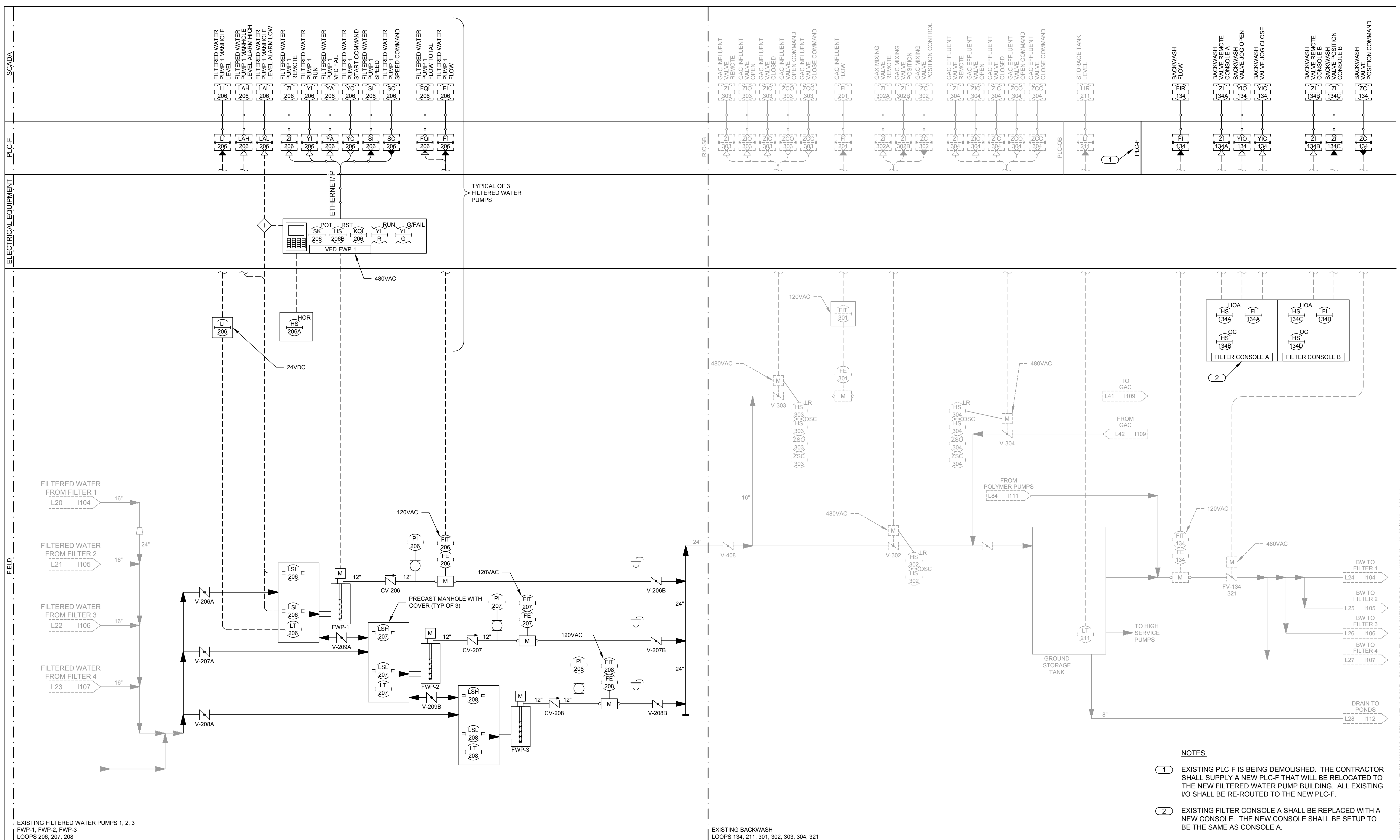
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 PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
 MARK P. JEPPISEN  
 REGISTERED ELECTRICAL ENGINEER NO. E18627  
 6/24/2022 DATE

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22
SCALE:	
HORIZ. SCALE: N/A	
VERT. SCALE: N/A	

**CITY OF IMPERIAL**  
 IMPERIAL COUNTY, CALIFORNIA  
**CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP INSTRUMENTATION - P&ID FILTER 4**  
 DWG. NO. 1107  
 BID NO. 2022-05  
 SHEET 25 OF 60







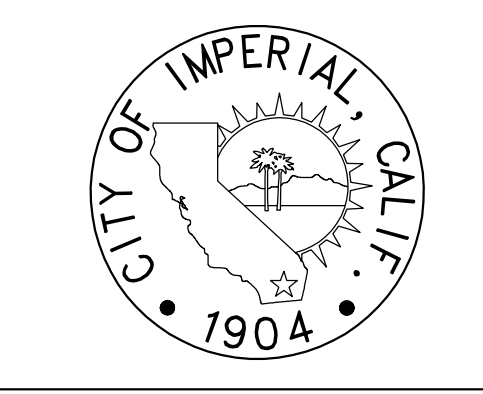
EXISTING FILTERED WATER PUMPS 1, 2, 3  
FWP-1, FWP-2, FWP-3  
LOOPS 206, 207, 208

EXISTING BACKWASH  
LOOPS 134, 211, 301, 302, 303, 304, 321

- NOTES:**
- EXISTING PLC-F IS BEING DEMOLISHED. THE CONTRACTOR SHALL SUPPLY A NEW PLC-F THAT WILL BE RELOCATED TO THE NEW FILTERED WATER PUMP BUILDING. ALL EXISTING I/O SHALL BE RE-ROUTED TO THE NEW PLC-F.
  - EXISTING FILTER CONSOLE A SHALL BE REPLACED WITH A NEW CONSOLE. THE NEW CONSOLE SHALL BE SETUP TO BE THE SAME AS CONSOLE A.



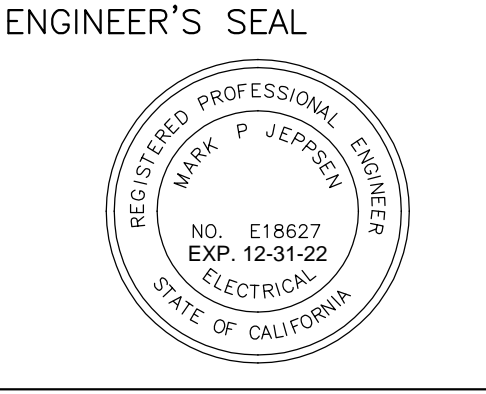
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DESIGNED BY:	DRAWN BY:	CHECKED BY:		



**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

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DATE: 6/24/2022

DESIGNED:	DATE
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DCL	06/22
N/A	-
MPJ	06/22
HORIZ. SCALE: N/A	
VERT. SCALE: N/A	

**CITY OF IMPERIAL**  
IMPERIAL COUNTY, CALIFORNIA

**CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP INSTRUMENTATION - P&ID CLEARWELL P&ID**

DWG. NO. 1108

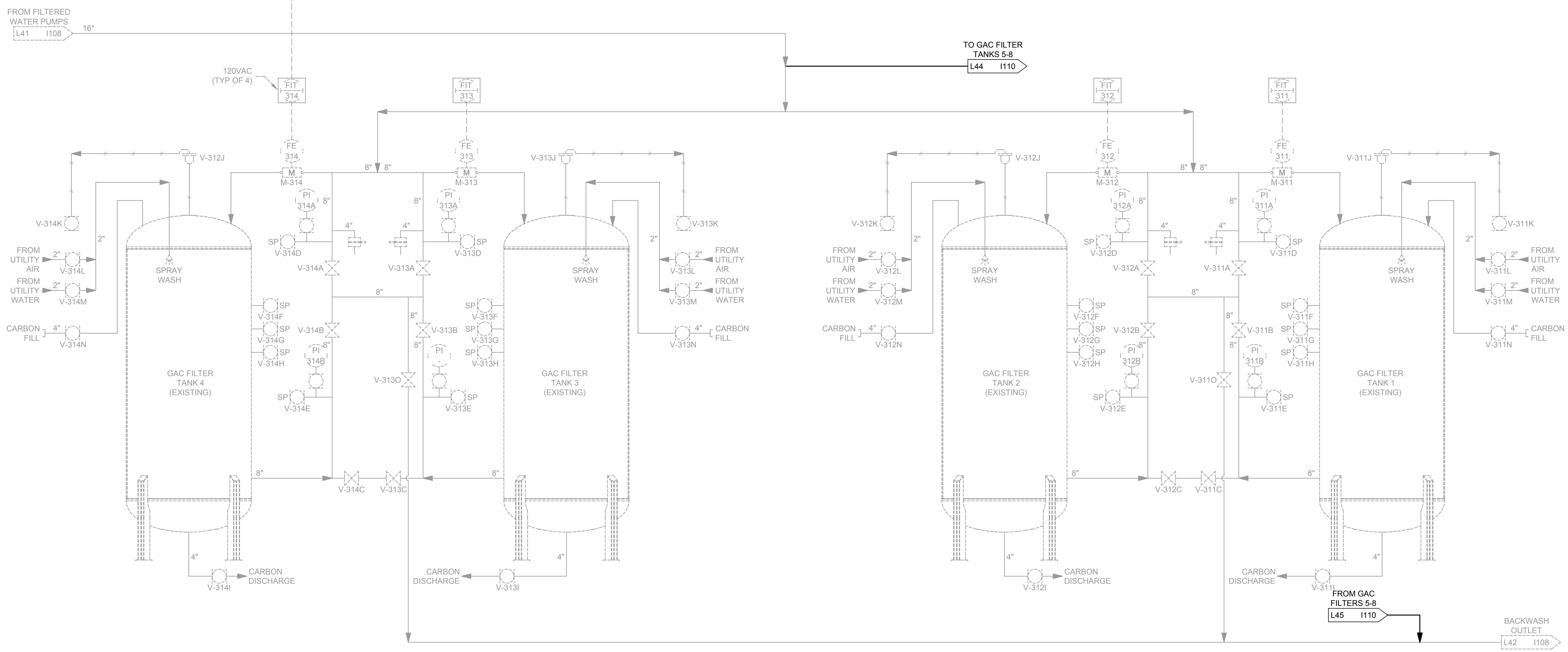
BID NO. 2022-05  
SHEET 26 OF 60



SCADA

RIO-SE

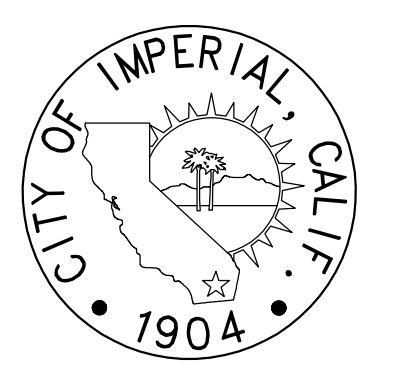
FIELD



EXISTING GAC FILTER TANK 1-4  
 LOOPS: 311, 312, 313, 314



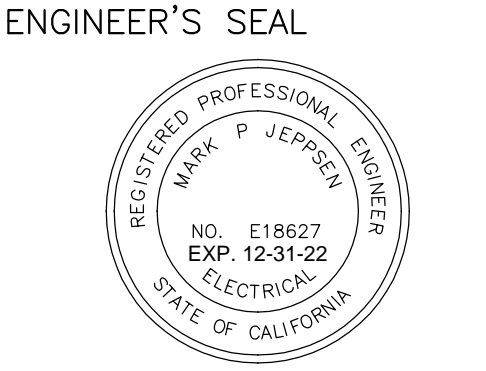
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DESIGNED BY:	DRAWN BY:	CHECKED BY:		



**CITY OF IMPERIAL**

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*Mark P. Jeppsen*  
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 REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

	DATE
DESIGNED: MPJ	06/22
DRAWN: DCL	06/22
TRACED: N/A	-
CHECKED: MPJ	06/22
SUBMITTED: -	-
SCALE:	
HORIZ. SCALE: N/A	
VERT. SCALE: N/A	

**CITY OF IMPERIAL**  
 IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP INSTRUMENTATION - P&ID GAC P&ID 1

DWG. NO. \_\_\_\_\_

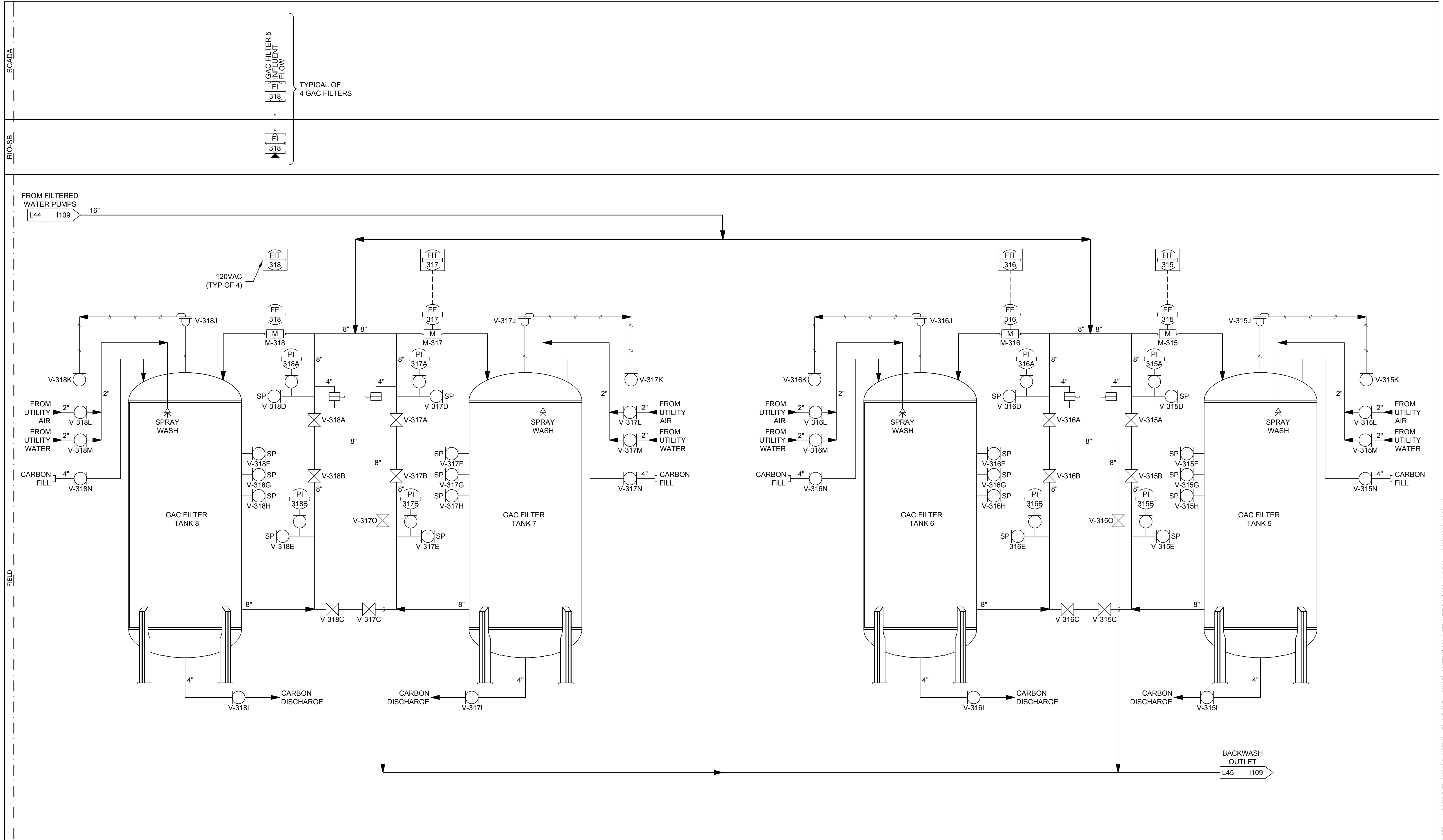
BID NO. 2022-05

SHEET 27 OF 60

DWG. NO. 1109

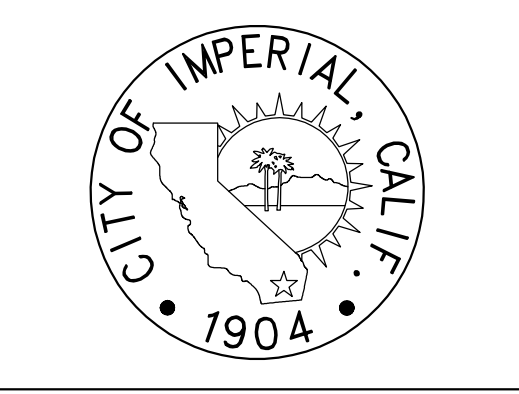
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GAC FILTER TANK 5-8  
 LOOPS: 315, 316, 317, 318

REVISIONS				
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DESIGNED BY:	DRAWN BY:	CHECKED BY:		



**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

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ENGINEER'S SEAL

**skm**

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DATE: 6/24/2022

	DATE
DESIGNED: MPJ	06/22
DRAWN: DCL	06/22
TRACED: N/A	-
CHECKED: MPJ	06/22
SUBMITTED: -	-
SCALE:	
HORIZ. SCALE: N/A	
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CITY OF IMPERIAL  
 IMPERIAL COUNTY, CALIFORNIA

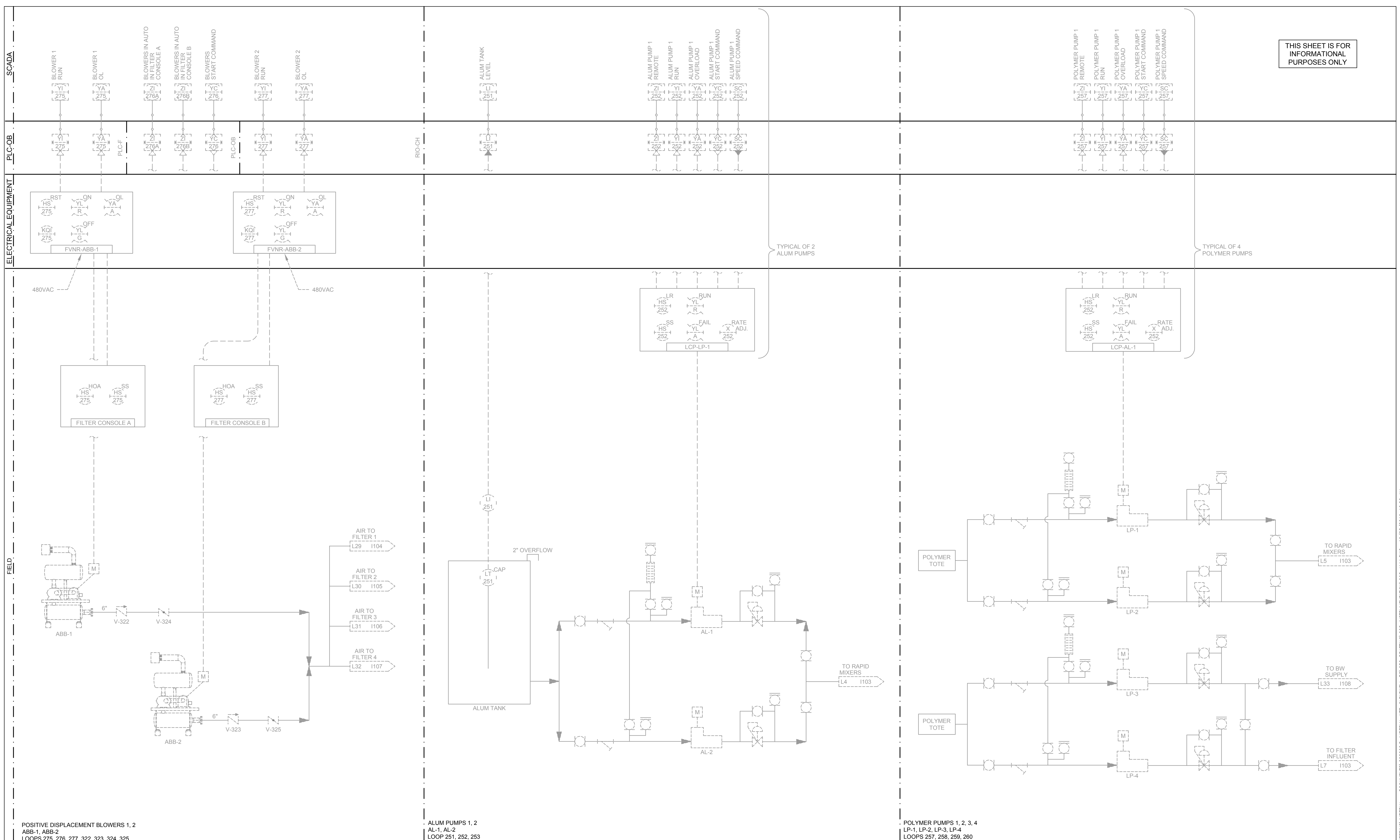
CLEARWELL PS REPLACE., GAC TREATMENT  
 SYSTEM EXPAN., AND FILTER PIPING REPLACE.  
 AT THE WTP  
 INSTRUMENTATION - P&ID  
 GAC P&ID 2

DWG. NO. 1110

BID NO. 2022-05  
 SHEET 28 OF 60

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POSITIVE DISPLACEMENT BLOWERS 1, 2  
 ABB-1, ABB-2  
 LOOPS 275, 276, 277, 322, 323, 324, 325

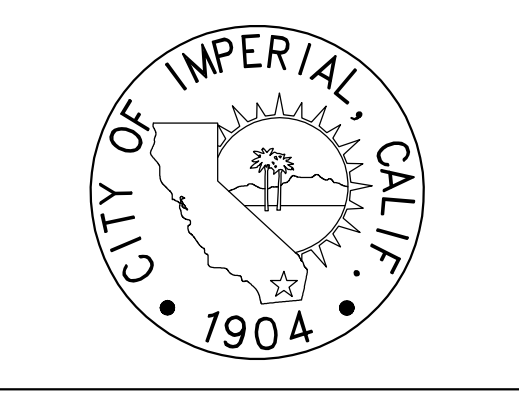
ALUM PUMPS 1, 2  
 AL-1, AL-2  
 LOOP 251, 252, 253

POLYMER PUMPS 1, 2, 3, 4  
 LP-1, LP-2, LP-3, LP-4  
 LOOPS 257, 258, 259, 260



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

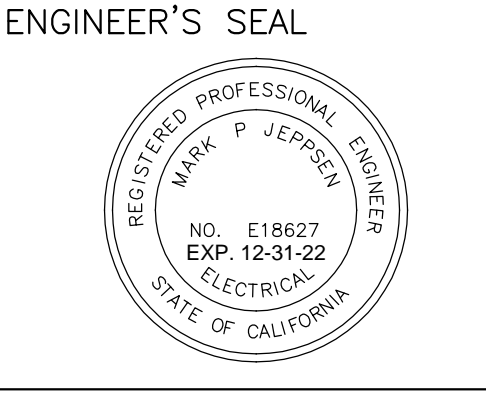
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**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

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 MARK P. JEPPESEN  
 REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

DESIGNED:	DATE
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N/A	-
MPJ	06/22
-	-

SCALE:  
 HORIZ. SCALE: N/A  
 VERT. SCALE: N/A

**CITY OF IMPERIAL**  
 IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP INSTRUMENTATION - P&ID BLOWERS, POLYMER & ALUM PUMPS

DWG. NO. 1111

BID NO. 2022-05  
 SHEET 29 OF 60

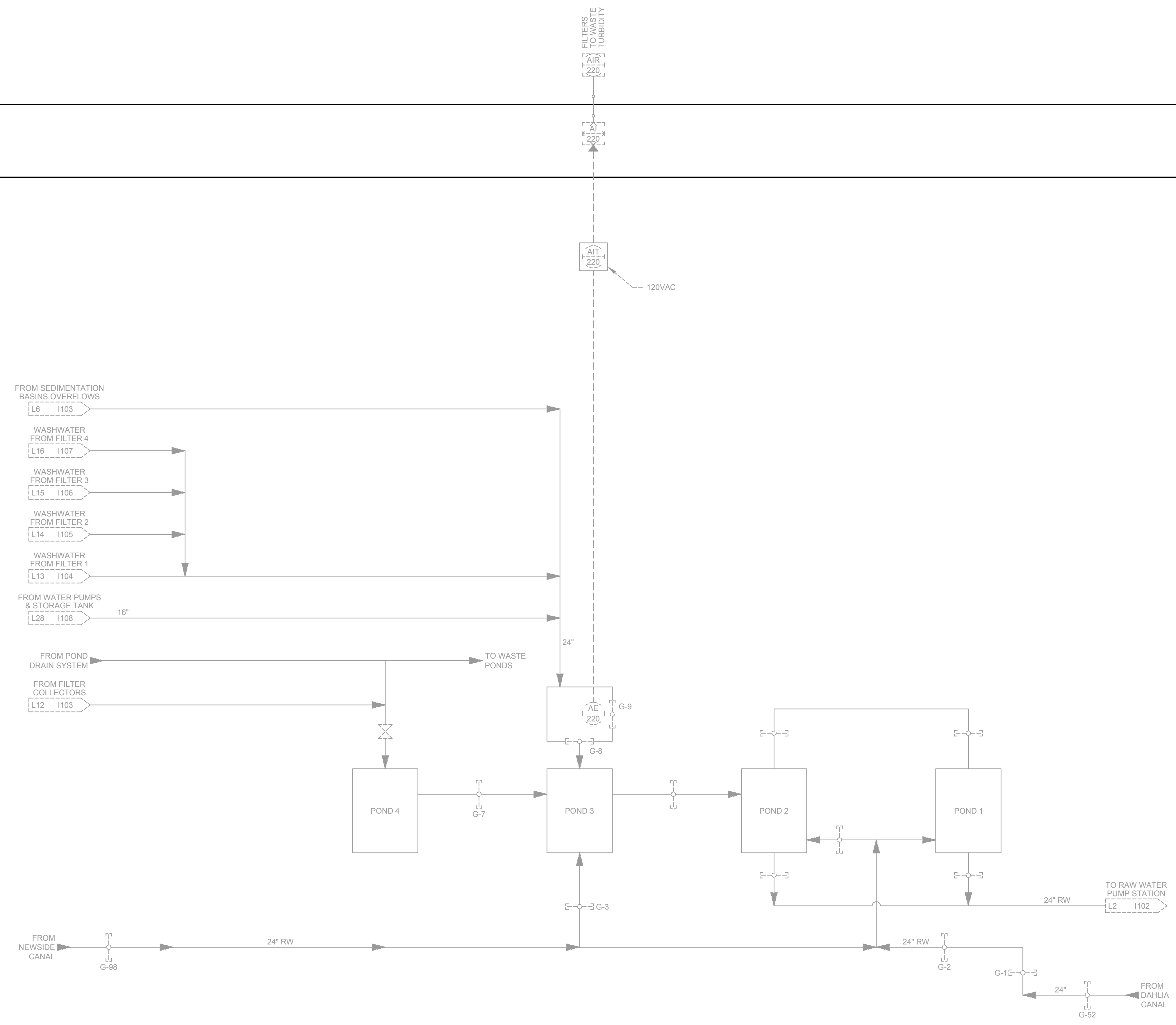


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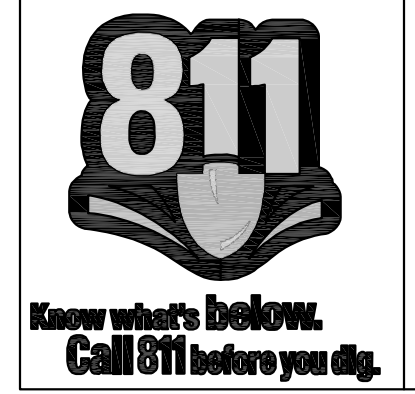
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PLC-B

FIELD

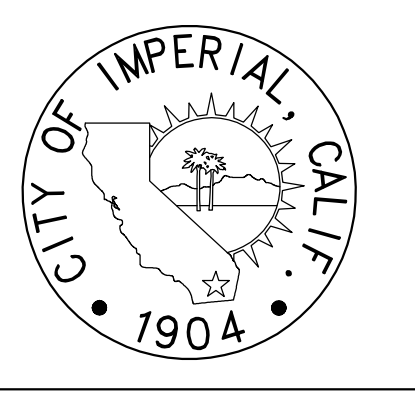


POND 1, 2, 3, 4  
LOOP 220



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

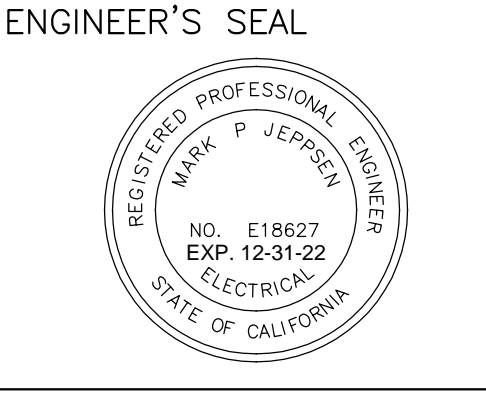
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TRACED:	N/A
CHECKED:	MPJ
SUBMITTED:	06/22
SCALE:	
HORIZ. SCALE: N/A VERT. SCALE: N/A	


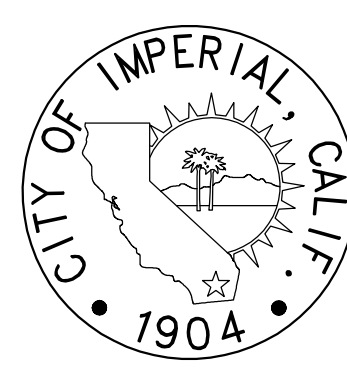
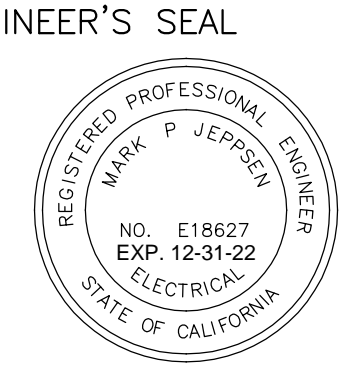
**CITY OF IMPERIAL**  
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CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP INSTRUMENTATION - P&ID PONDS

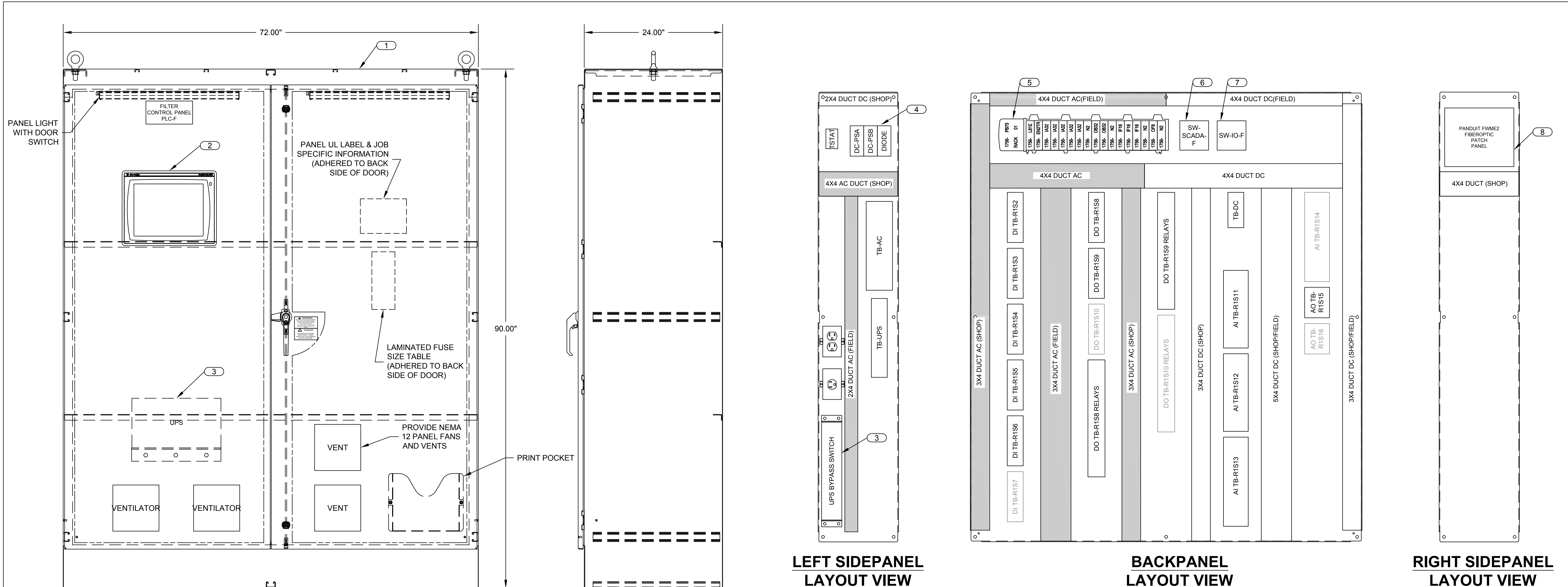
DWG. NO. 1112

BID NO. 2022-05  
SHEET 30 OF 60

SCHEMATIC LINETYPES		ABBREVIATIONS		NOTES	
<p>MANUFACTURER/SHOP WIRE TYPICALLY INSTALLED OFF-SITE</p> <p>EXISTING OR FUTURE MANUFACTURER/SHOP WIRE</p> <p>EXISTING OR FUTURE FIELD/CONTRACTOR INSTALLED WIRE</p> <p>FIELD/CONTRACTOR INSTALLED WIRE</p>		<p>A AMPERE</p> <p>AFF ABOVE FINISHED FLOOR</p> <p>AI ANALOG INPUT</p> <p>AIC AMPS INTERRUPTING CAPACITY</p> <p>AO ANALOG OUTPUT</p> <p>AS AIR SUPPLY</p> <p>ATS AUTOMATIC TRANSFER SWITCH</p> <p>C CONDUIT</p> <p>CB CIRCUIT BREAKER</p> <p>CL2 CHLORINE</p> <p>CPT CONTROL POWER TRANSFORMER</p> <p>CTC COMMUNICATIONS TERMINATION CABINET</p> <p>CU COPPER, BARE</p> <p>CV CONTROL VALVE</p> <p>DCS DISTRIBUTED CONTROL SYSTEM</p> <p>DI DISCRETE INPUT</p> <p>DO DISCRETE OUTPUT</p> <p>DP DISTRIBUTION PANEL</p> <p>DS DISCONNECT SWITCH</p> <p>DV/DT DIFFERENTIAL VOLTAGE/TIME</p> <p>DWG DRAWING</p> <p>ETM ELAPSED TIME METER</p> <p>EOL ELECTRONIC OVERLOAD</p> <p>FE FLOW ELEMENT</p> <p>FLA FULL LOAD AMPS</p> <p>FOC FIBER OPTIC CABLE</p> <p>FOR FORWARD-OFF-REVERSE</p> <p>FS FLOW SWITCH</p> <p>FVNR FULL VOLTAGE NON-REVERSING</p> <p>GFCI GROUND FAULT CIRCUIT INTERRUPTER</p> <p>GFP GROUND FAULT PROTECTION</p> <p>GND GROUND</p> <p>GPM GALLONS PER MINUTE</p> <p>GRS GALVANIZED RIGID STEEL</p> <p>H2S HYDROGEN SULFIDE</p> <p>HMI HUMAN MACHINE INTERFACE</p> <p>HOA HAND-OFF-AUTO</p> <p>HOR HAND-OFF-REMOTE</p> <p>I CURRENT</p> <p>IC INSTRUMENTATION CABLE</p> <p>IO INPUT/OUTPUT</p> <p>ISC SHORT CIRCUIT CURRENT</p> <p>J JUNCTION BOX</p> <p>LAN LOCAL AREA NETWORK</p> <p>LCP LOCAL CONTROL PANEL</p> <p>LOS LOCK-OUT-STOP</p> <p>LP LIGHTING PANEL</p> <p>LR LOCAL/REMOTE</p> <p>LS LEVEL SWITCH</p> <p>LTC LIQUIDTIGHT FLEXIBLE METAL CONDUIT</p> <p>M MOTOR</p> <p>MA MANUAL/AUTO, MILLIAMP</p> <p>MC MANUFACTURER'S CABLE</p> <p>MCB MAIN CIRCUIT BREAKER</p> <p>MCC MOTOR CONTROL CENTER</p> <p>MCP MOTOR CIRCUIT PROTECTOR</p> <p>MFR(S) MANUFACTURER(S)</p> <p>MGD MILLION GALLONS PER DAY</p> <p>MH MANHOLE</p> <p>MOV MOTOR OPERATED VALVE</p> <p>MTU MASTER TELEMETRY UNIT</p> <p>NEC NATIONAL ELECTRICAL CODE</p> <p>NOTC NORMALLY OPEN TIMED CLOSED</p> <p>NPW NON-POTABLE WATER</p> <p>NTS NOT TO SCALE</p> <p>NTU TURBIDITY</p> <p>OIT OPERATOR INTERFACE TERMINAL</p> <p>OL OVERLOAD</p> <p>OO ON/OFF (MAINTAINED)</p> <p>OR OFF-REMOTE</p> <p>PB PULL BOX</p> <p>PC PERSONAL COMPUTER</p> <p>PFR PHASE/POWER FAILURE RELAY</p> <p>PLC PROGRAMMABLE LOGIC CONTROLLER</p> <p>PANEL PANEL</p> <p>PPM PARTS PER MILLION</p> <p>PR PAIR</p> <p>P PRESSURE</p> <p>PS PRESSURE SWITCH</p> <p>PSI POUNDS PER SQUARE INCH</p> <p>PV PROCESS VARIABLE</p> <p>RCP REMOTE CONTROL PANEL</p> <p>RF RADIO FREQUENCY</p> <p>RIO REMOTE INPUT OUTPUT</p> <p>RST RESET</p> <p>RTD RESISTANCE TEMPERATURE DETECTOR</p> <p>RTU REMOTE TELEMETRY UNIT</p> <p>RVSS REDUCED VOLTAGE SOFT STARTER</p> <p>SEQ SERVICE ENTRANCE EQUIPMENT</p> <p>SES SERVICE ENTRANCE SECTION</p> <p>SLOS START-LOCK-OFF-STOP</p> <p>SMC SUBMERSIBLE MANUFACTURER CABLE</p> <p>SO2 SULFUR DIOXIDE</p> <p>SP SET POINT/SPARE</p> <p>SPD SURGE PROTECTION DEVICE</p> <p>SS START/STOP</p> <p>ST SHUNT TRIP</p> <p>TC TELEPHONE CABLE</p> <p>TS TEMPERATURE SWITCH</p> <p>TYP TYPICAL</p> <p>UG UNDERGROUND</p> <p>V VOLT</p> <p>VA VOLTAMP</p> <p>VFD VARIABLE FREQUENCY DRIVE</p> <p>W WATT, WIRE</p> <p>WP WEATHERPROOF</p> <p>XFMR TRANSFORMER</p> <p>ZS POSITION SWITCH</p>		<p>1. THE COMPLETED INSTALLATION SHALL COMPLY WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES, AND REGULATIONS. ALL WORK SHALL BE COMPLETED IN A NEAT, WORKMANLIKE MANNER IN ACCORDANCE WITH THE LATEST NEC STANDARDS OF INSTALLATION UNDER COMPETENT SUPERVISION. INSTALL GROUNDING PER NEC.</p> <p>2. ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, UL, OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURERS' NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS, AND BID PRICE.</p> <p>3. PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS, OR ANY OTHER PREVENTABLE CAUSES. EQUIPMENT DAMAGED DURING SHIPPING OR CONSTRUCTION, PRIOR TO ACCEPTANCE BY THE ENGINEER OR THE OWNER, WILL BE REJECTED AS DEFECTIVE.</p> <p>4. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK. DAMAGED PAINT AND FINISHES SHALL BE TOUCHED UP OR REPAINTED WITH MATCHING COLOR PAINT AND FINISH.</p> <p>5. CIRCUIT CONDUCTORS #6 AWG OR SMALLER SHALL BE THWN STRANDED COPPER. #4 AWG THROUGH #2 AWG SHALL BE XHHW STRANDED COPPER. #1 AWG OR LARGER SHALL BE XHHW-2 STRANDED COPPER. MINIMUM POWER CONDUCTOR SIZE SHALL BE #12 AWG WITH #12 AWG GROUND. ALL WIRE TO BE SIZED PER NEC TABLE 316-10, 75° C BASED ON A 30° C AMBIENT.</p> <p>6. SAFETY SWITCHES, ELECTRICAL DISTRIBUTION EQUIPMENT, CONTROL PANELS, AND OTHER ELECTRICAL DEVICES SHALL BE UL LISTED, AND RATED FOR HEAVY DUTY SERVICE.</p> <p>7. WIRING DEVICES SHALL BE SPECIFICATION GRADE.</p> <p>8. TYPICAL DETAILS SHALL APPLY IN ALL CASES, WHETHER SPECIFICALLY REFERRED TO OR NOT.</p>	
SCHEMATIC SYMBOLS	TB'S & PLC SYMBOLS				
<p>○ DEVICE CONNECTION LUG OR TERMINAL</p> <p>● SCHEMATIC POINT OF CONNECTION</p> <p><b>CIRCUIT BREAKER</b></p> <p>○ 100AF ← FRAME SIZE</p> <p>○ 50AT ← TRIP RATING</p> <p>○ MCP ← BREAKER TYPE</p> <p><b>FUSE</b></p> <p>□ 30A ← AMPERE RATING</p> <p>R ← FUSE TYPE</p> <p>⊥ GROUND CONNECTION</p> <p>(M) MOTOR STARTER, CONTACTOR, RELAY OR TIMER COIL</p> <p>⌋ Normally OPEN CONTACT</p> <p>⌋ Normally CLOSED CONTACT</p> <p>⌋ SOLENOID VALVE</p> <p>⌋ EQUIPMENT PROGRAMMING CONSOLE</p> <p>OFF ON ○ ○ ○ ○ X O</p> <p>3 POSITION SELECTOR SWITCH POSITION LEGEND: X=CLOSED O=OPEN</p> <p>H O A ○ ○ ○ ○ X O O</p> <p>3 POSITION SELECTOR SWITCH HAND - OFF - AUTO POSITION LEGEND: X=CLOSED O=OPEN</p> <p>O C A ○ ○ ○ ○ X O O</p> <p>3 POSITION SELECTOR SWITCH OPEN - CLOSE - AUTO POSITION LEGEND: X=CLOSED O=OPEN</p> <p>F O R ○ ○ ○ ○ X O O</p> <p>3 POSITION SELECTOR SWITCH FORWARD - OFF - REVERSE POSITION LEGEND: X=CLOSED O=OPEN</p> <p>STOP ○ ○ ○ ○</p> <p>NORMALLY CLOSED PUSH BUTTON</p> <p>START ○ ○ ○ ○</p> <p>NORMALLY OPEN PUSH BUTTON</p> <p><b>TYPICAL SWITCH CONFIGURATION</b></p> <p>○ ○ ○ ○ ○ ○ ○ ○</p> <p>FLOAT SWITCH - MAKE ON FALL</p> <p>○ ○ ○ ○ ○ ○ ○ ○</p> <p>FLOAT SWITCH - MAKE ON RISE</p> <p>○ ○ ○ ○ ○ ○ ○ ○</p> <p>FLOAT SWITCH - BREAK ON FALL</p> <p>○ ○ ○ ○ ○ ○ ○ ○</p> <p>FLOAT SWITCH - BREAK ON RISE</p> <p>○ SWITCH TYPE SYMBOL (SEE BELOW)</p> <p>○ LEVEL SWITCH</p> <p>△ PRESSURE SWITCH</p> <p>⌋ FLOW OR TORQUE SWITCH</p> <p>⌋ TEMPERATURE SWITCH</p> <p>✓ LIMIT SWITCH</p> <p>NOTC ○ ○ ○ ○</p> <p>TIMER RELAY CONTACT NORMALLY OPEN TIME DELAY CLOSE</p>	<p><b>LOCAL PANEL OR DEVICE TERMINAL BLOCK</b></p> <p>○ TERMINAL LABEL</p> <p>○ X</p> <p><b>PLC PANEL TERMINAL BLOCK</b></p> <p>○ TERMINAL LABEL</p> <p>○ X</p> <p><b>MCC TERMINAL BLOCK</b></p> <p>○ TERMINAL LABEL</p> <p>○ X</p> <p><b>DEVICE TERMINAL BLOCK</b></p> <p>○ TERMINAL LABEL</p> <p>○ X</p>				

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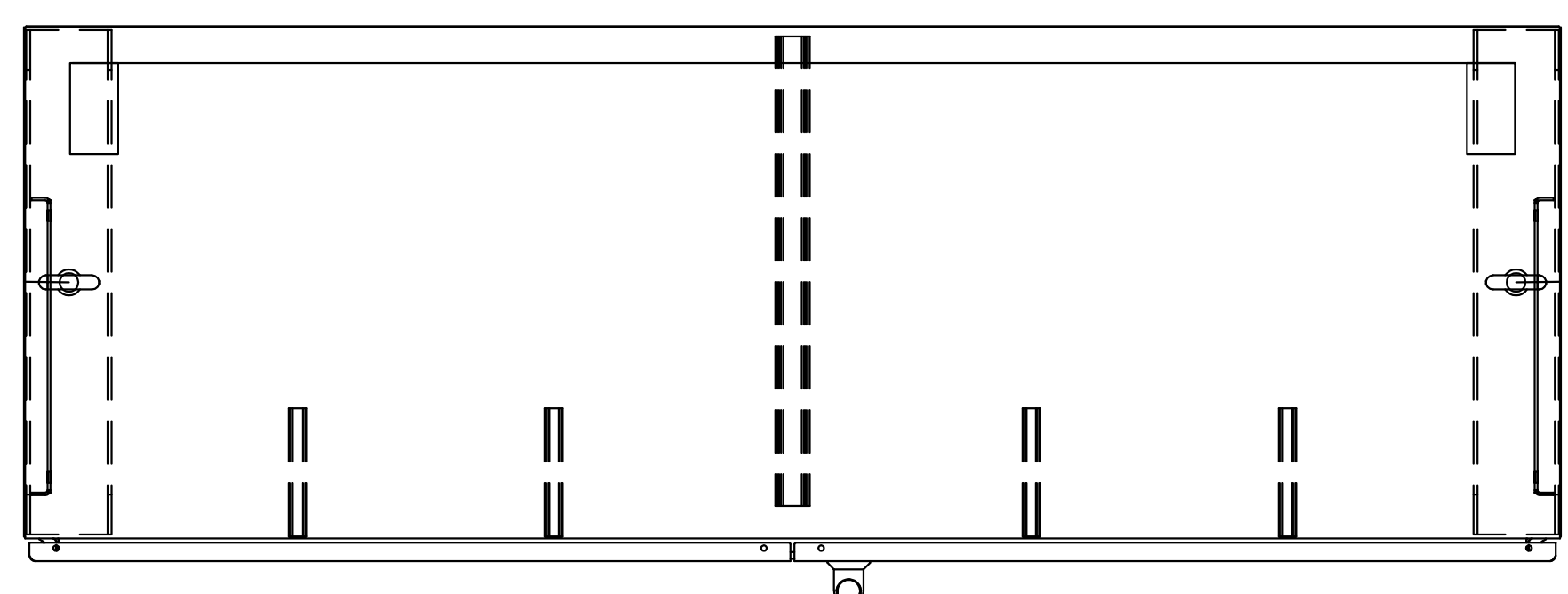
**FRONT VIEW**

**SIDE VIEW**

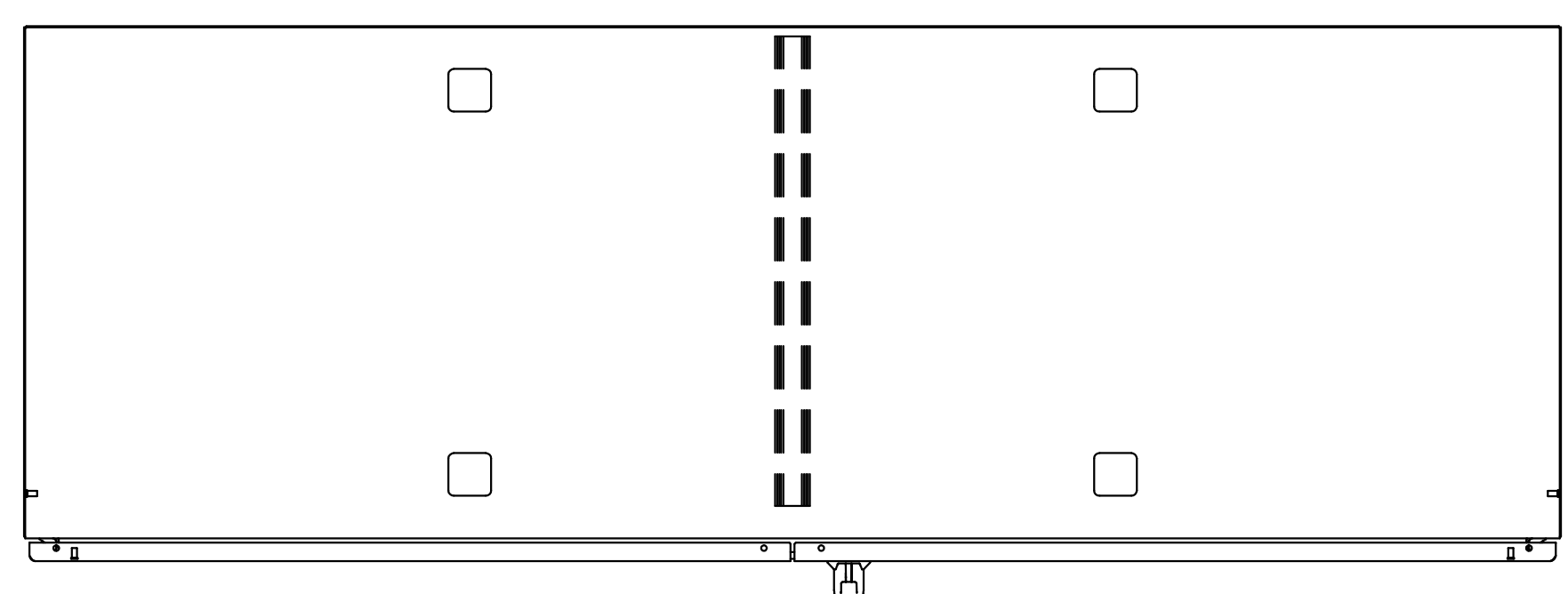
**LEFT SIDEPANEL LAYOUT VIEW**

**BACKPANEL LAYOUT VIEW**

**RIGHT SIDEPANEL LAYOUT VIEW**



**TOP VIEW**



**BOTTOM VIEW**

**FILTER CONTROL PANEL PLC-F**

**⚠ DANGER**  
ELECTRICAL SHOCK AND BURN HAZARD. CABINET ENTRY ONLY BY AUTHORIZED SERVICE PERSONNEL.

**⚠ WARNING**  
MULTIPLE VOLTAGE SOURCES. THIS PANEL CONTAINS ELECTRICAL POWER FROM SEVERAL EXTERNAL AND INTERNAL SOURCES. ONLY AUTHORIZED AND QUALIFIED PERSONNEL SHOULD ENTER THIS PANEL.

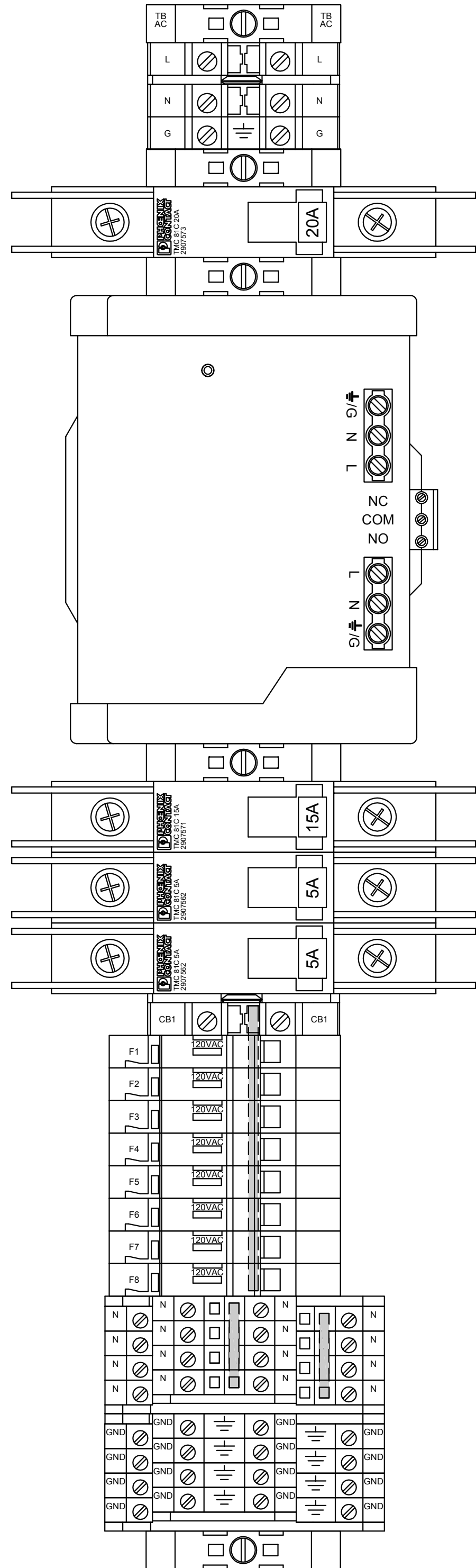
- KEYED NOTES:**
- 1 PROVIDE A NEW NEMA 12 PANEL ASSEMBLY FOR PLC-F. THE PANEL SHALL BE 90"H X 72"W X 24"D AND UL LABELED BY A UL508A PANEL SHOP. PANEL SUPPLIER SHALL CONDUCT A WITNESSED FACTORY ACCEPTANCE TEST OF THE PANEL WITH THE OWNER AND THE OWNER'S SYSTEM INTEGRATOR PRIOR TO DELIVERY TO SITE.
  - 2 PROVIDE A 10" ALLEN-BRADLEY PANELVIEW 5510 TOUCH SCREEN (PART NUMBER 2715P-T10WD). CENTERLINE OF PANELVIEW SHALL BE AT 62" ABOVE FINISHED FLOOR (COORDINATE HOUSEKEEPING PAD HEIGHT WITH CONTRACTOR).
  - 3 PROVIDE A 1500VA ONLINE UPS (LIEBERT GTX5 SERIES OR EQUAL) AND BYPASS SWITCH FOR BACKING UP THE PLC DURING POWER OUTAGE.
  - 4 PROVIDE REDUNDANT 24VDC 10A POWER SUPPLIES AND DIODE (PHOENIX CONTACT QUINT OR EQUAL)
  - 5 PROVIDE AN ALLEN-BRADLEY CONTROLLOGIX PLC ASSEMBLY WITH 1756-PB75 POWER SUPPLY, 1756-A17 17-SLOT RACK, 1756-L81E PROCESSOR (ETHERNET PORT CONNECTED TO SCADA SWITCH SW-SCADA-F), 1756-EN2TR ETHERNET/IP MODULE (FOR COMMUNICATION TO IO SWITCH SW-IO-F), FIVE 1756-IA32 DISCRETE INPUT MODULES, TWO 1756-OB32 DISCRETE OUTPUT MODULES, THREE 1756-IF16 ANALOG INPUT MODULES, AND ONE 1756-OF8 ANALOG OUTPUT MODULE.
  - 6 PROVIDE AN N-TRON 708FX2-SC ETHERNET SWITCH FOR THE SCADA NETWORK. CONNECT THE PLC PROCESSOR AND TOUCH SCREEN TO THIS SWITCH. CONNECT THE FIBER PORTS TO THE PATCH PANEL.
  - 7 PROVIDE AN ALLEN-BRADLEY STRATIX 1783-BMS10CGP SWITCH FOR THE IO NETWORK. CONNECT THE TWO PORTS ON THE 1756-ENT2R TO THE SWITCH AND CONNECT THE VFD'S IN MCC-CW.
  - 8 PROVIDE A FIBER PATCH PANEL WITH ADAPTER PLATES FOR A 12-STRAND MULTIMODE FIBER CABLE TO TERMINATE TO SC TYPE CONNECTORS.

<p>Know what's below. Call 811 before you dig.</p>	<b>REVISIONS</b> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>INITIAL</th> <th>DESCRIPTION</th> <th>APPROVED/DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE							<b>CITY OF IMPERIAL</b> CITY ENGINEER _____ DATE _____ REFERENCES _____	<b>ENGINEER'S SEAL</b> 	533 W 2600 S, Suite 25 Bountiful, Utah 84010 Phone: (801) 677-0011 www.skmeng.com PLANS PREPARED UNDER THE SUPERVISION OF: 6/24/2022 DATE	<table border="1"> <thead> <tr> <th>DESIGNED:</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>MPJ</td> <td>06/22</td> </tr> <tr> <td>DCL</td> <td>06/22</td> </tr> <tr> <td>N/A</td> <td>-</td> </tr> <tr> <td>MPJ</td> <td>06/22</td> </tr> </tbody> </table>	DESIGNED:	DATE	MPJ	06/22	DCL	06/22	N/A	-	MPJ	06/22	<b>CITY OF IMPERIAL</b> IMPERIAL COUNTY, CALIFORNIA CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP INSTRUMENTATION - PLC DRAWINGS PLC-F PANEL LAYOUT DWG. NO. 1402	BID NO. 2022-05 SHEET 32 OF 60
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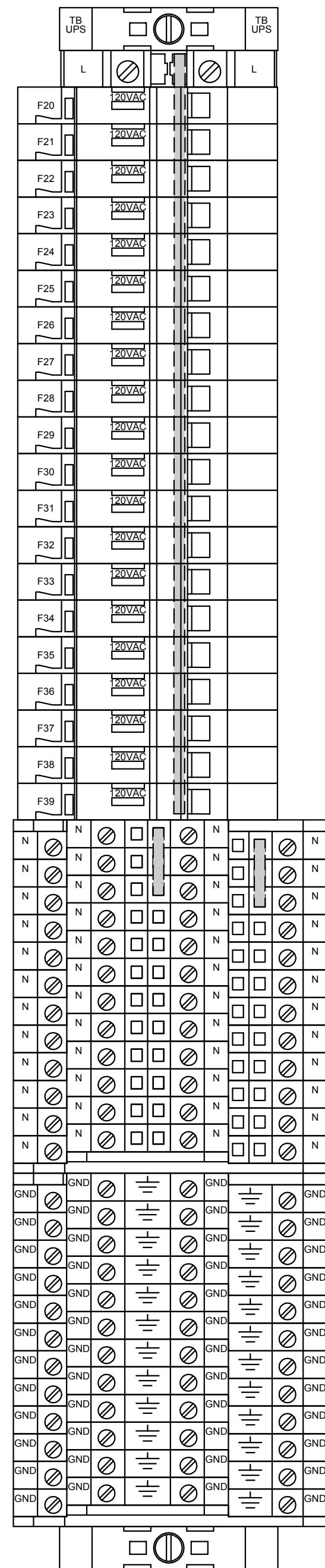


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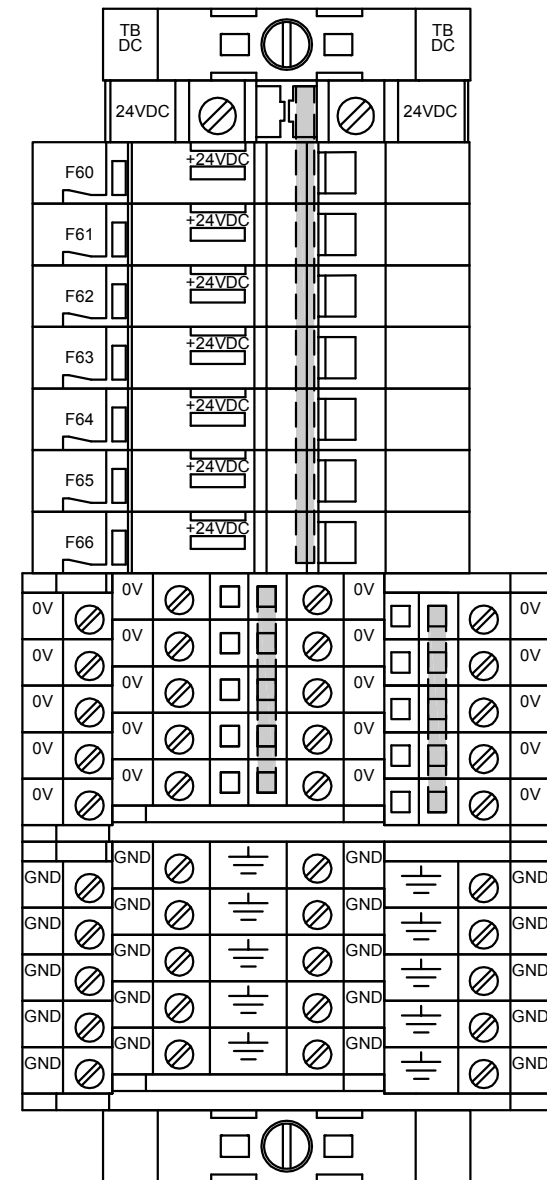
1. TERMINAL BLOCK LAYOUT DETAILS ARE INTENDED TO BE USED AS A GENERAL GUIDELINE WHEN LAYING OUT TERMINAL BLOCK GROUPS. ACTUAL COUNT OF TERMINALS, BREAKERS, AND OTHER PARTS MAY VARY. VERIFY ACTUAL COUNTS WITH I/O SCHEDULE AND SCHEMATICS. PROVIDE MINIMUM TWENTY PERCENT SPARE BREAKERS AND FUSES.



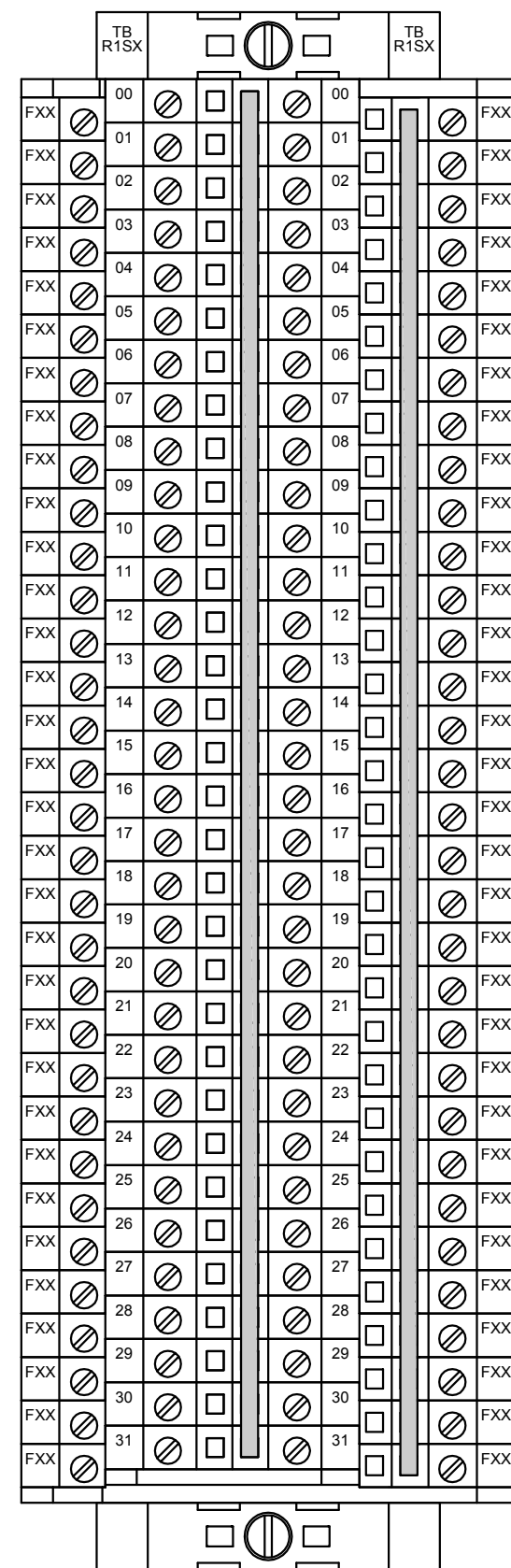
101 TYP TB-AC LAYOUT



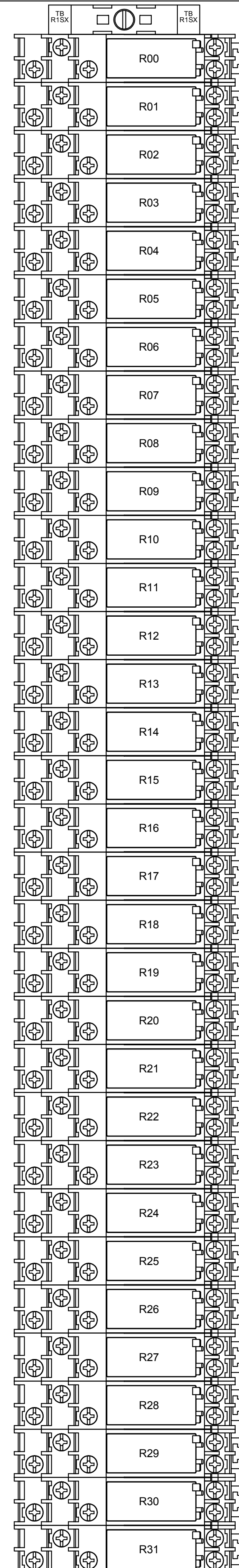
102 TYP TB-UPS LAYOUT



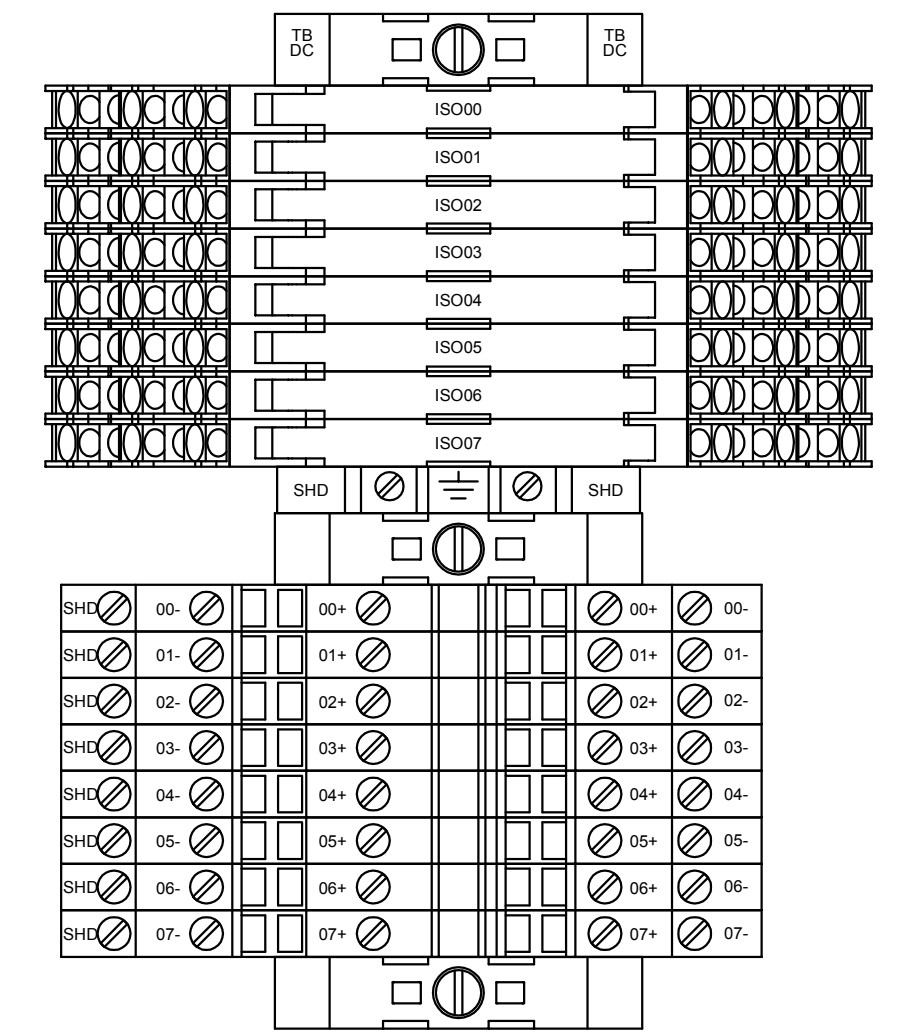
103 TYP TB-DC LAYOUT



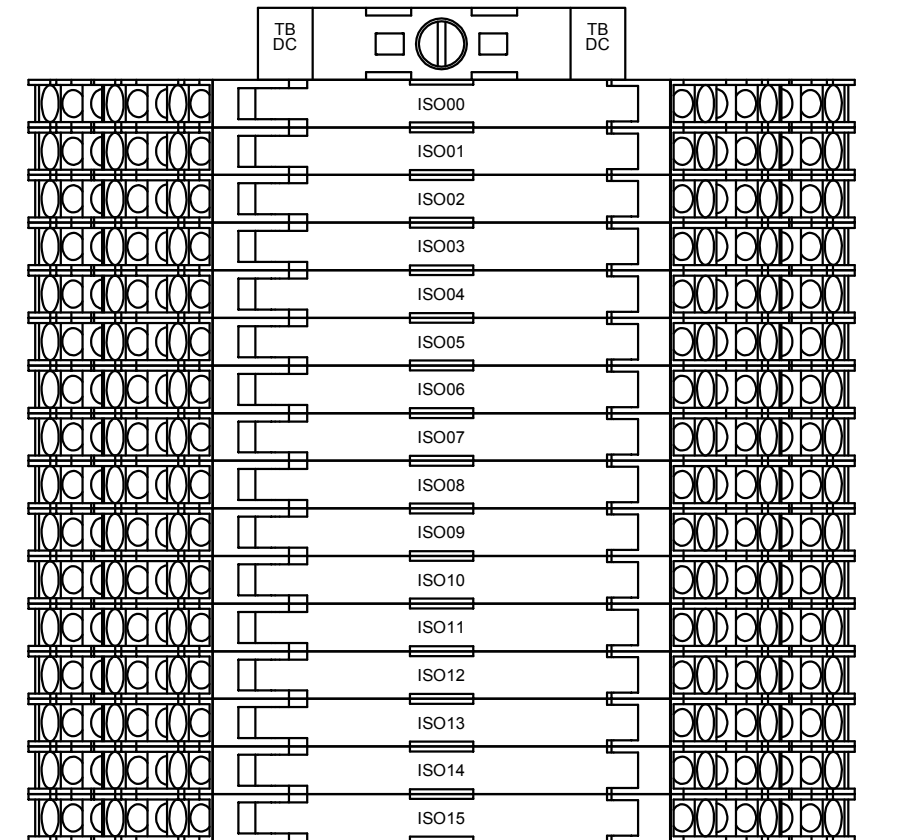
104 TYP 32 POINT DI MODULE



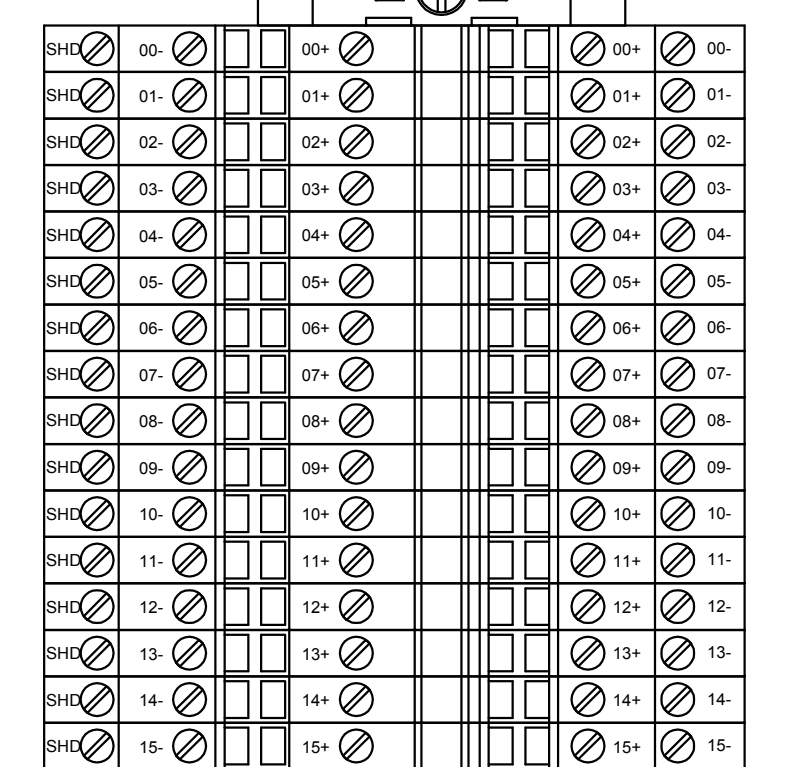
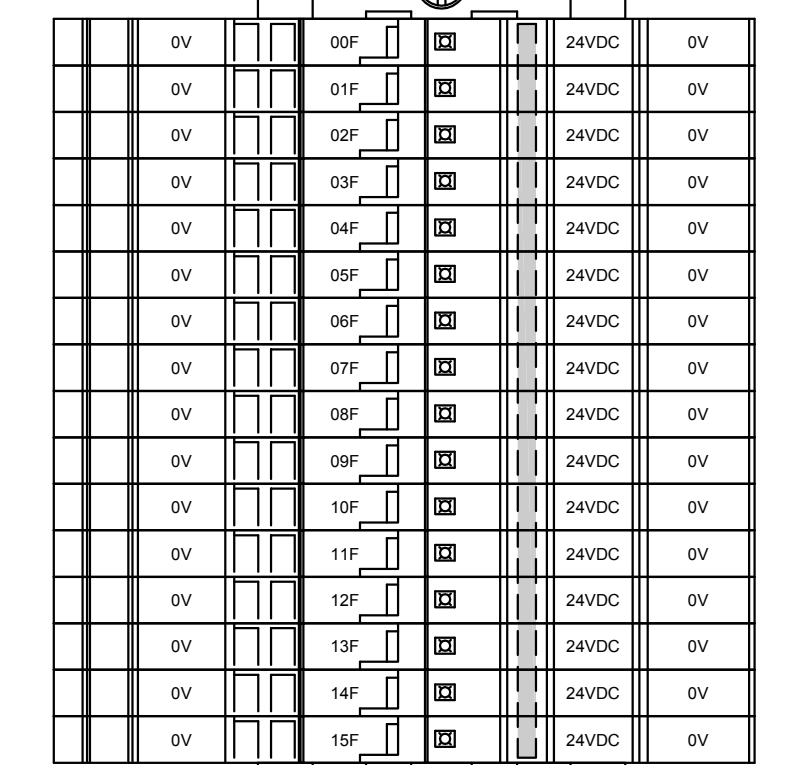
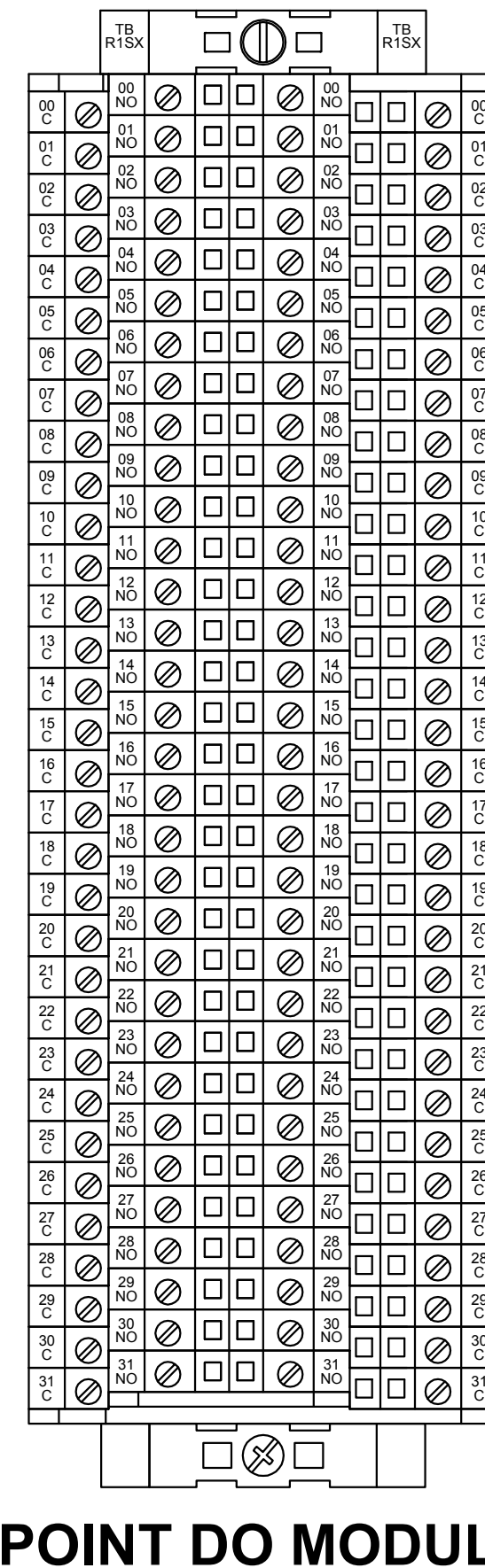
105 TYP 32 POINT DO MODULE & INTERPOSING RELAYS



107 TYP 8 POINT AO MODULE



106 TYP 16 POINT AI MODULE



106 TYP 16 POINT AI MODULE

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CITY OF IMPERIAL

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES

ENGINEER'S SEAL

533 W 2600 S, Suite 25  
 Bountiful, Utah 84010  
 Phone: (801) 677-0011  
 www.skmg.com

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SUBMITTED:	DATE
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SCALE:	
HORIZ. SCALE: N/A	
VERT. SCALE: N/A	

CITY OF IMPERIAL  
IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT  
 SYSTEM EXPAN., AND FILTER PIPING REPLACE.  
 AT THE WTP  
 INSTRUMENTATION - PLC DRAWINGS  
 PLC-F TERMINAL BLOCK LAYOUTS

DWG. NO. 1403  
 BID NO. 2022-05  
 SHEET 33 OF 60





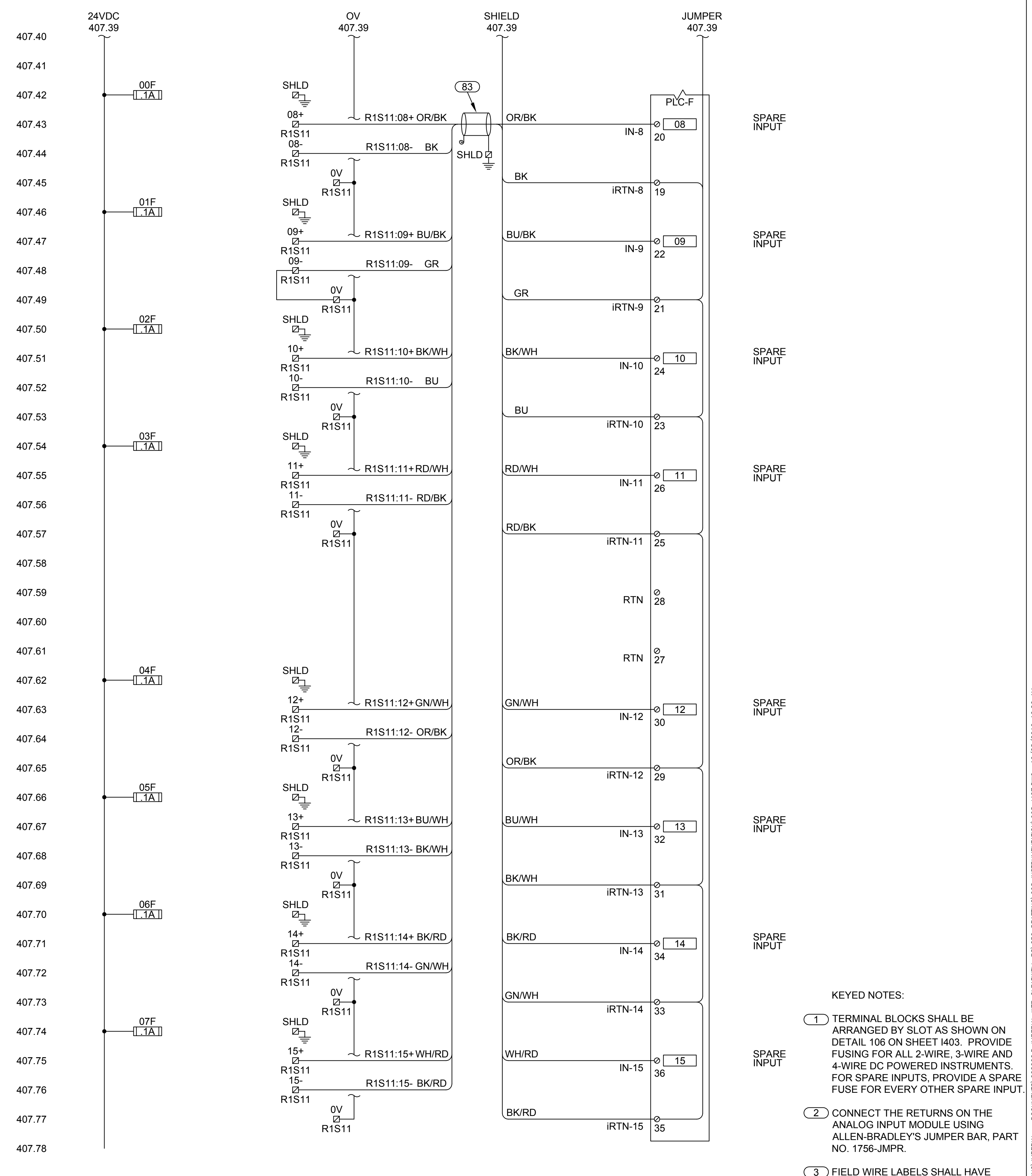
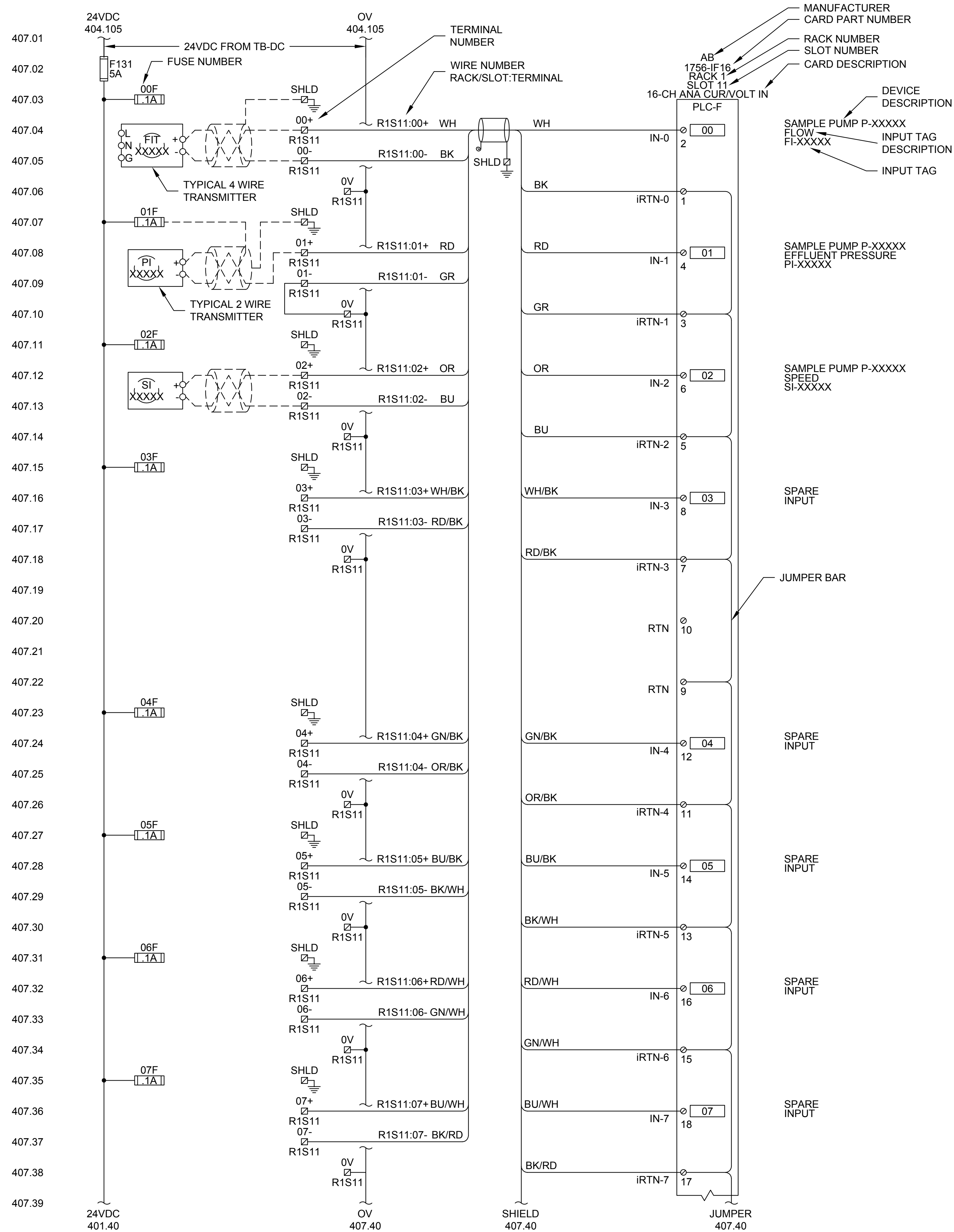




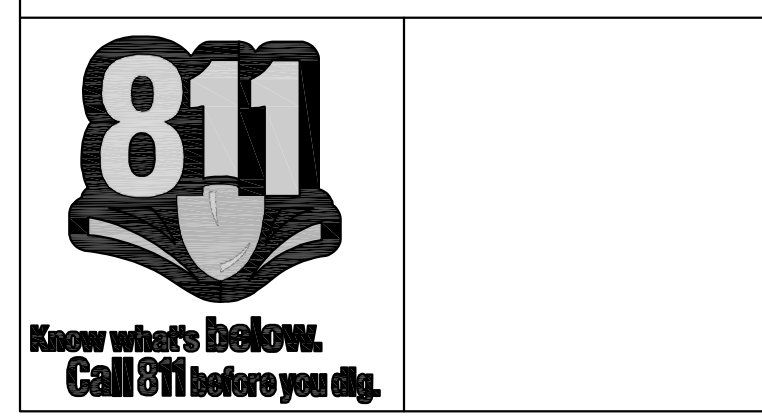




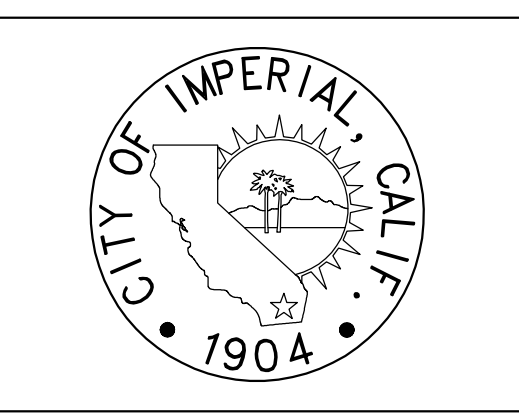




- KEYED NOTES:
- 1 TERMINAL BLOCKS SHALL BE ARRANGED BY SLOT AS SHOWN ON DETAIL 106 ON SHEET 1403. PROVIDE FUSING FOR ALL 2-WIRE, 3-WIRE AND 4-WIRE DC POWERED INSTRUMENTS. FOR SPARE INPUTS, PROVIDE A SPARE FUSE FOR EVERY OTHER SPARE INPUT.
  - 2 CONNECT THE RETURNS ON THE ANALOG INPUT MODULE USING ALLEN-BRADLEY'S JUMPER BAR, PART NO. 1756-JMPR.
  - 3 FIELD WIRE LABELS SHALL HAVE TO/FROM LABELING.



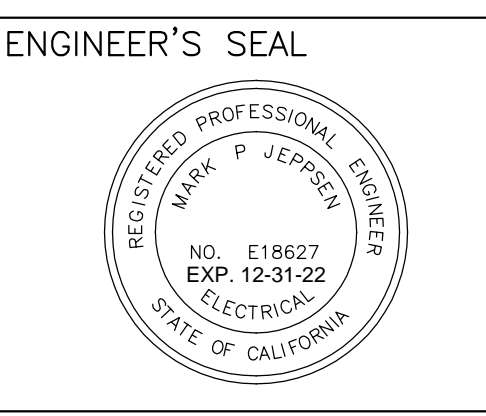
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**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES



**skm**

533 W 2600 S, Suite 25  
Bountiful, Utah 84010  
Phone: (801) 677-0011  
www.skmeng.com

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppesen* 6/24/2022 DATE

MARK P. JEPPESEN  
REGISTERED ELECTRICAL ENGINEER NO. E18627

	DATE
DESIGNED: MPJ	06/22
DRAWN: DCL	06/22
TRACED: N/A	-
CHECKED: MPJ	06/22
SUBMITTED: -	-
SCALE:	
HORIZ. SCALE: N/A	
VERT. SCALE: N/A	

**CITY OF IMPERIAL**  
IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP

INSTRUMENTATION - PLC DRAWINGS  
TYPICAL ANALOG INPUTS WIRING DIAGRAM

BID NO. 2022-05  
SHEET 37 OF 60  
DWG. NO. 1407


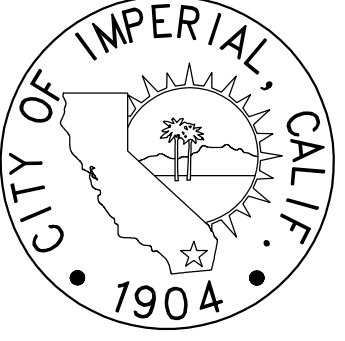
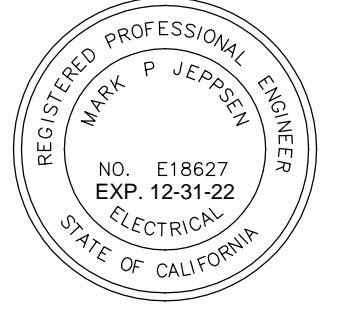






TYPE	SIGNAL	LOOP POWERED	RACK:SLOT:POINT	TAGNAME	DESCRIPTION	P&ID SHEET	STATUS
DI	120VAC		1:2:00	ZI-120A	CALL FOR ONE FILTER		EXISTING
DI	120VAC		1:2:01	ZI-120B	CALL FOR TWO FILTERS		EXISTING
DI	120VAC		1:2:02	ZI-120C	CALL FOR THREE FILTERS		EXISTING
DI	120VAC		1:2:03	ZI-120D	CALL FOR FOUR FILTERS		EXISTING
DI	120VAC		1:2:04	ZI-134A	FILTERS BACKWASH VALVE REMOTE (CONSOLE A)		EXISTING
DI	120VAC		1:2:05	ZI-134B	FILTERS BACKWASH VALVE REMOTE (CONSOLE B)		EXISTING
DI	120VAC		1:2:06	YIO-134	FILTERS BACKWASH VALVE JOG OPEN		EXISTING
DI	120VAC		1:2:07	YIC-134	FILTERS BACKWASH VALVE JOG CLOSE		EXISTING
DI	120VAC		1:2:08	LSH-195	FILTER GALLERY SUMP HIGH LEVEL		EXISTING
DI	120VAC		1:2:09	ZI-276A	BLOWERS IN AUTO (CONSOLE A)		EXISTING
DI	120VAC		1:2:10	ZI-276B	BLOWERS IN AUTO (CONSOLE B)		EXISTING
DI	120VAC		1:2:11	LSH-206	FILTERED WATER PUMP 1 WET WELL HIGH		NEW
DI	120VAC		1:2:12	LSL-206	FILTERED WATER PUMP 1 WET WELL LOW		NEW
DI	120VAC		1:2:13	LSH-207	FILTERED WATER PUMP 2 WET WELL HIGH		NEW
DI	120VAC		1:2:14	LSL-207	FILTERED WATER PUMP 2 WET WELL LOW		NEW
DI	120VAC		1:2:15	LSH-208	FILTERED WATER PUMP 3 WET WELL HIGH		NEW
DI	120VAC		1:2:16	LSL-208	FILTERED WATER PUMP 3 WET WELL LOW		NEW
DI	120VAC		1:2:17		INSTALLED SPARE		
DI	120VAC		1:2:18		INSTALLED SPARE		
DI	120VAC		1:2:19		INSTALLED SPARE		
DI	120VAC		1:2:20		INSTALLED SPARE		
DI	120VAC		1:2:21		INSTALLED SPARE		
DI	120VAC		1:2:22		INSTALLED SPARE		
DI	120VAC		1:2:23		INSTALLED SPARE		
DI	120VAC		1:2:24		INSTALLED SPARE		
DI	120VAC		1:2:25		INSTALLED SPARE		
DI	120VAC		1:2:26		INSTALLED SPARE		
DI	120VAC		1:2:27		SPD FAIL		NEW
DI	120VAC		1:2:28		24VDC PSA POWER		NEW
DI	120VAC		1:2:29		24VDC PSB POWER		NEW
DI	120VAC		1:2:30		UPS ALARM		NEW
DI	120VAC		1:2:31		UPS ON BATTERY		NEW
DI	120VAC		1:3:00	ZI-121	FILTER 1 INFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:3:01	ZIO-121	FILTER 1 INFLUENT VALVE OPENED		EXISTING
DI	120VAC		1:3:02	ZIC-121	FILTER 1 INFLUENT VALVE CLOSED		EXISTING
DI	120VAC		1:3:03	ZI-122	FILTER 1 ALARM RESET		EXISTING
DI	120VAC		1:3:04	ZI-124	FILTER 1 IN SERVICE		EXISTING
DI	120VAC		1:3:05	ZI-127	FILTER 1 BACKWASH START		EXISTING
DI	120VAC		1:3:06	ZI-127A	FILTER 1 FTW VALVE REMOTE		EXISTING
DI	120VAC		1:3:07	ZIO-127	FILTER 1 FTW VALVE OPENED		EXISTING
DI	120VAC		1:3:08	ZIC-127	FILTER 1 FTW VALVE CLOSED		EXISTING
DI	120VAC		1:3:09	ZI-128A	FILTER 1 EFFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:3:10	ZIC-128	FILTER 1 EFFLUENT VALVE NOT CLOSED		EXISTING
DI	120VAC		1:3:11	YIO-128	FILTER 1 EFFLUENT VALVE JOG OPEN		EXISTING
DI	120VAC		1:3:12	YIC-128	FILTER 1 EFFLUENT VALVE JOG CLOSED		EXISTING
DI	120VAC		1:3:13	ZI-129	FILTER 1 DRAIN VALVE REMOTE		EXISTING
DI	120VAC		1:3:14	ZIO-129	FILTER 1 DRAIN VALVE OPENED		EXISTING
DI	120VAC		1:3:15	ZIC-129	FILTER 1 DRAIN VALVE CLOSED		EXISTING
DI	120VAC		1:3:16	ZI-130	FILTER 1 AIR SCOUR VALVE REMOTE		EXISTING
DI	120VAC		1:3:17	ZIO-130	FILTER 1 AIR SCOUR VALVE OPENED		EXISTING
DI	120VAC		1:3:18	ZIC-130	FILTER 1 AIR SCOUR VALVE CLOSED		EXISTING
DI	120VAC		1:3:19	ZI-133	FILTER 1 BW INFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:3:20	ZIO-133	FILTER 1 BW INFLUENT VALVE OPENED		EXISTING
DI	120VAC		1:3:21	ZIC-133	FILTER 1 BW INFLUENT VALVE CLOSED		EXISTING
DI	120VAC		1:3:22		INSTALLED SPARE		
DI	120VAC		1:3:23		INSTALLED SPARE		
DI	120VAC		1:3:24		INSTALLED SPARE		
DI	120VAC		1:3:25		INSTALLED SPARE		
DI	120VAC		1:3:26		INSTALLED SPARE		
DI	120VAC		1:3:27		INSTALLED SPARE		
DI	120VAC		1:3:28		INSTALLED SPARE		
DI	120VAC		1:3:29		INSTALLED SPARE		
DI	120VAC		1:3:30		INSTALLED SPARE		
DI	120VAC		1:3:31		INSTALLED SPARE		
DI	120VAC		1:4:00	ZI-141	FILTER 2 INFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:4:01	ZIO-141	FILTER 2 INFLUENT VALVE OPENED		EXISTING
DI	120VAC		1:4:02	ZIC-141	FILTER 2 INFLUENT VALVE CLOSED		EXISTING
DI	120VAC		1:4:03	ZI-142	FILTER 2 ALARM RESET		EXISTING
DI	120VAC		1:4:04	ZI-144	FILTER 2 IN SERVICE		EXISTING
DI	120VAC		1:4:05	ZI-147	FILTER 2 BACKWASH START		EXISTING
DI	120VAC		1:4:06	ZI-147A	FILTER 2 FTW VALVE REMOTE		EXISTING
DI	120VAC		1:4:07	ZIO-147	FILTER 2 FTW VALVE OPENED		EXISTING
DI	120VAC		1:4:08	ZIC-147	FILTER 2 FTW VALVE CLOSED		EXISTING
DI	120VAC		1:4:09	ZI-148A	FILTER 2 EFFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:4:10	ZIC-148	FILTER 2 EFFLUENT VALVE NOT CLOSED		EXISTING
DI	120VAC		1:4:11	YIO-148	FILTER 2 EFFLUENT VALVE JOG OPEN		EXISTING
DI	120VAC		1:4:12	YIC-148	FILTER 2 EFFLUENT VALVE JOG CLOSED		EXISTING
DI	120VAC		1:4:13	ZI-149	FILTER 2 DRAIN VALVE REMOTE		EXISTING
DI	120VAC		1:4:14	ZIO-149	FILTER 2 DRAIN VALVE OPENED		EXISTING
DI	120VAC		1:4:15	ZIC-149	FILTER 2 DRAIN VALVE CLOSED		EXISTING
DI	120VAC		1:4:16	ZI-150	FILTER 2 AIR SCOUR VALVE REMOTE		EXISTING
DI	120VAC		1:4:17	ZIO-150	FILTER 2 AIR SCOUR VALVE OPENED		EXISTING
DI	120VAC		1:4:18	ZIC-150	FILTER 2 AIR SCOUR VALVE CLOSED		EXISTING
DI	120VAC		1:4:19	ZI-153	FILTER 2 BW INFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:4:20	ZIO-153	FILTER 2 BW INFLUENT VALVE OPENED		EXISTING
DI	120VAC		1:4:21	ZIC-153	FILTER 2 BW INFLUENT VALVE CLOSED		EXISTING

TYPE	SIGNAL	LOOP POWERED	RACK:SLOT:POINT	TAGNAME	DESCRIPTION	P&ID SHEET	STATUS
DI	120VAC		1:4:22		INSTALLED SPARE		
DI	120VAC		1:4:23		INSTALLED SPARE		
DI	120VAC		1:4:24		INSTALLED SPARE		
DI	120VAC		1:4:25		INSTALLED SPARE		
DI	120VAC		1:4:26		INSTALLED SPARE		
DI	120VAC		1:4:27		INSTALLED SPARE		
DI	120VAC		1:4:28		INSTALLED SPARE		
DI	120VAC		1:4:29		INSTALLED SPARE		
DI	120VAC		1:4:30		INSTALLED SPARE		
DI	120VAC		1:4:31		INSTALLED SPARE		
DI	120VAC		1:5:00	ZI-161	FILTER 3 INFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:5:01	ZIO-161	FILTER 3 INFLUENT VALVE OPENED		EXISTING
DI	120VAC		1:5:02	ZIC-161	FILTER 3 INFLUENT VALVE CLOSED		EXISTING
DI	120VAC		1:5:03	ZI-162	FILTER 3 ALARM RESET		EXISTING
DI	120VAC		1:5:04	ZI-164	FILTER 3 IN SERVICE		EXISTING
DI	120VAC		1:5:05	ZI-167	FILTER 3 BACKWASH START		EXISTING
DI	120VAC		1:5:06	ZI-167A	FILTER 3 FTW VALVE REMOTE		EXISTING
DI	120VAC		1:5:07	ZIO-167	FILTER 3 FTW VALVE OPENED		EXISTING
DI	120VAC		1:5:08	ZIC-167	FILTER 3 FTW VALVE CLOSED		EXISTING
DI	120VAC		1:5:09	ZI-168A	FILTER 3 EFFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:5:10	ZIC-168	FILTER 3 EFFLUENT VALVE NOT CLOSED		EXISTING
DI	120VAC		1:5:11	YIO-168	FILTER 3 EFFLUENT VALVE JOG OPEN		EXISTING
DI	120VAC		1:5:12	YIC-168	FILTER 3 EFFLUENT VALVE JOG CLOSED		EXISTING
DI	120VAC		1:5:13	ZI-169	FILTER 3 DRAIN VALVE REMOTE		EXISTING
DI	120VAC		1:5:14	ZIO-169	FILTER 3 DRAIN VALVE OPENED		EXISTING
DI	120VAC		1:5:15	ZIC-169	FILTER 3 DRAIN VALVE CLOSED		EXISTING
DI	120VAC		1:5:16	ZI-170	FILTER 3 AIR SCOUR VALVE REMOTE		EXISTING
DI	120VAC		1:5:17	ZIO-170	FILTER 3 AIR SCOUR VALVE OPENED		EXISTING
DI	120VAC		1:5:18	ZIC-170	FILTER 3 AIR SCOUR VALVE CLOSED		EXISTING
DI	120VAC		1:5:19	ZI-173	FILTER 3 BW INFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:5:20	ZIO-173	FILTER 3 BW INFLUENT VALVE OPENED		EXISTING
DI	120VAC		1:5:21	ZIC-173	FILTER 3 BW INFLUENT VALVE CLOSED		EXISTING
DI	120VAC		1:5:22		INSTALLED SPARE		
DI	120VAC		1:5:23		INSTALLED SPARE		
DI	120VAC		1:5:24		INSTALLED SPARE		
DI	120VAC		1:5:25		INSTALLED SPARE		
DI	120VAC		1:5:26		INSTALLED SPARE		
DI	120VAC		1:5:27		INSTALLED SPARE		
DI	120VAC		1:5:28		INSTALLED SPARE		
DI	120VAC		1:5:29		INSTALLED SPARE		
DI	120VAC		1:5:30		INSTALLED SPARE		
DI	120VAC		1:5:31		INSTALLED SPARE		
DI	120VAC		1:6:00	ZI-181	FILTER 4 INFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:6:01	ZIO-181	FILTER 4 INFLUENT VALVE OPENED		EXISTING
DI	120VAC		1:6:02	ZIC-181	FILTER 4 INFLUENT VALVE CLOSED		EXISTING
DI	120VAC		1:6:03	ZI-182	FILTER 4 ALARM RESET		EXISTING
DI	120VAC		1:6:04	ZI-184	FILTER 4 IN SERVICE		EXISTING
DI	120VAC		1:6:05	ZI-187	FILTER 4 BACKWASH START		EXISTING
DI	120VAC		1:6:06	ZI-187A	FILTER 4 FTW VALVE REMOTE		EXISTING
DI	120VAC		1:6:07	ZIO-187	FILTER 4 FTW VALVE OPENED		EXISTING
DI	120VAC		1:6:08	ZIC-187	FILTER 4 FTW VALVE CLOSED		EXISTING
DI	120VAC		1:6:09	ZI-188A	FILTER 4 EFFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:6:10	ZIC-188	FILTER 4 EFFLUENT VALVE NOT CLOSED		EXISTING
DI	120VAC		1:6:11	YIO-188	FILTER 4 EFFLUENT VALVE JOG OPEN		EXISTING
DI	120VAC		1:6:12	YIC-188	FILTER 4 EFFLUENT VALVE JOG CLOSED		EXISTING
DI	120VAC		1:6:13	ZI-189	FILTER 4 DRAIN VALVE REMOTE		EXISTING
DI	120VAC		1:6:14	ZIO-189	FILTER 4 DRAIN VALVE OPENED		EXISTING
DI	120VAC		1:6:15	ZIC-189	FILTER 4 DRAIN VALVE CLOSED		EXISTING
DI	120VAC		1:6:16	ZI-190	FILTER 4 AIR SCOUR VALVE REMOTE		EXISTING
DI	120VAC		1:6:17	ZIO-190	FILTER 4 AIR SCOUR VALVE OPENED		EXISTING
DI	120VAC		1:6:18	ZIC-190	FILTER 4 AIR SCOUR VALVE CLOSED		EXISTING
DI	120VAC		1:6:19	ZI-193	FILTER 4 BW INFLUENT VALVE REMOTE		EXISTING
DI	120VAC		1:6:20	ZIO-193	FILTER 4 BW INFLUENT VALVE OPENED		EXISTING
DI	120VAC		1:6:21	ZIC-193	FILTER 4 BW INFLUENT VALVE CLOSED		EXISTING
DI	120VAC		1:6:22		INSTALLED SPARE		
DI	120VAC		1:6:23		INSTALLED SPARE		
DI	120VAC		1:6:24		INSTALLED SPARE		
DI	120VAC		1:6:25		INSTALLED SPARE		
DI	120VAC		1:6:26		INSTALLED SPARE		
DI	120VAC		1:6:27		INSTALLED SPARE		
DI	120VAC		1:6:28		INSTALLED SPARE		
DI	120VAC		1:6:29		INSTALLED SPARE		
DI	120VAC		1:6:30		INSTALLED SPARE		
DI	120VAC		1:6:31		INSTALLED SPARE		
DO	RELAY		1:8:00	ZCO-121	FILTER 1 INFLUENT VALVE OPEN CMD		EXISTING
DO	RELAY		1:8:01	YL-124	FILTER 1 OUT OF SERVICE PILOT LIGHT		EXISTING
DO	RELAY		1:8:02	ZCO-127	FILTER 1 FTW VALVE OPEN CMD		EXISTING
DO	RELAY		1:8:03	ZCO-129	FILTER 1 DRAIN VALVE OPEN CMD		EXISTING
DO	RELAY		1:8:04	ZCO-130	FILTER 1 AIR SCOUR VALVE OPEN CMD		EXISTING
DO	RELAY		1:8:05	ZCO-133	FILTER 1 BW INFLUENT VALVE OPEN CMD		EXISTING
DO	RELAY		1:8:06		INSTALLED SPARE		
DO	RELAY		1:8:07	ZCO-141	FILTER 2 INFLUENT VALVE OPEN CMD		EXISTING
DO	RELAY		1:8:08	YL-144	FILTER 2 OUT OF SERVICE PILOT LIGHT		EXISTING
DO	RELAY		1:8:09	ZCO-147	FILTER 2 FTW VALVE OPEN CMD		EXISTING
DO	RELAY		1:8:10	ZCO-149	FILTER 2 DRAIN VALVE OPEN CMD		EXISTING

 <p>Know what's below. Call 811 before you dig.</p>	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>INITIAL</th> <th>DESCRIPTION</th> <th>APPROVED/DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE																 <p>CITY OF IMPERIAL 1904</p>	<p>CITY OF IMPERIAL</p> <p>CITY ENGINEER _____ DATE _____</p>		 <p>ENGINEER'S SEAL Mark P. Jeppsen REGISTERED PROFESSIONAL ENGINEER NO. E18627 EXP. 12-31-22 ELECTRICAL STATE OF CALIFORNIA</p>	<p>533 W 2600 S, Suite 25 Bountiful, Utah 84010 Phone: (801) 677-0011 www.skmeng.com</p> <p>PLANS PREPARED UNDER THE SUPERVISION OF: <i>Mark P. Jeppsen</i> 6/24/2022 DATE</p>	<table border="1"> <thead> <tr> <th></th> <th>DATE</th> </tr> </thead> <tbody> <tr><td>DESIGNED: MPJ</td><td>06/22</td></tr> <tr><td>DRAWN: DCL</td><td>06/22</td></tr> <tr><td>TRACED: N/A</td><td>-</td></tr> <tr><td>CHECKED:</td></tr></tbody></table>		DATE	DESIGNED: MPJ	06/22	DRAWN: DCL	06/22	TRACED: N/A	-	CHECKED:
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**FILTER 1/FILTER 2 CONSOLE**

①



**FILTER 3/FILTER 4 CONSOLE**

②



**STORAGE RESERVOIR LEVEL DISPLAY**

④

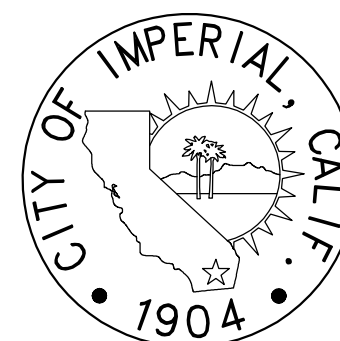
**NOTES:**

- ① THE EXISTING FILTER CONSOLE A THAT HAS SWITCHES, BUTTONS AND INDICATORS FOR FILTERS 1 & 2 SHALL BE REPLACED WITH A NEW CONSOLE. THE NEW CONSOLE WILL BE FUNCTIONALLY THE SAME AS THE EXISTING CONSOLE. SEE DRAWINGS I412 & I413 FOR PANEL AND WIRING INFORMATION. THE NEW CONSOLE SHALL BE NEMA 4X RATED AND CONSTRUCTED OUT OF STAINLESS STEEL.
- ② THE EXISTING FILTER CONSOLE B THAT HAS SWITCHES, BUTTONS AND INDICATORS FOR FILTERS 3 & 4 SHALL BE REPLACED WITH A NEW CONSOLE. THE NEW CONSOLE WILL BE FUNCTIONALLY THE SAME AS THE EXISTING CONSOLE. SEE DRAWINGS I412 & I413 FOR PANEL AND WIRING INFORMATION. THE NEW CONSOLE SHALL BE NEMA 4X RATED AND CONSTRUCTED OUT OF STAINLESS STEEL.
- ③ THE EXISTING STORAGE RESERVOIR LEVEL INDICATOR AND IT'S ENCLOSURE SHALL BE REPLACED WITH A NEMA 4X STAINLESS STEEL ENCLOSURE AND NEMA 4X INDICATOR.



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

DESIGNED BY: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_

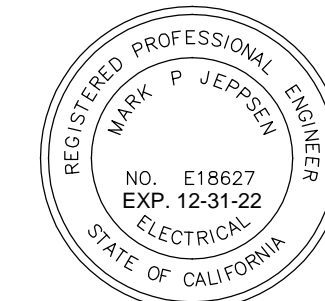


**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

**REFERENCES**

**ENGINEER'S SEAL**



**skm**  
 533 W 2600 S, Suite 25  
 Bountiful, Utah 84010  
 Phone: (801) 677-0011  
 www.skmeng.com

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
 MARK P. JEPPESEN  
 REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

	DATE
DESIGNED: MPJ	06/22
DRAWN: DCL	06/22
TRACED: N/A	-
CHECKED: MPJ	06/22
SUBMITTED: _____	-

SCALE:  
 HORIZ. SCALE: N/A  
 VERT. SCALE: N/A

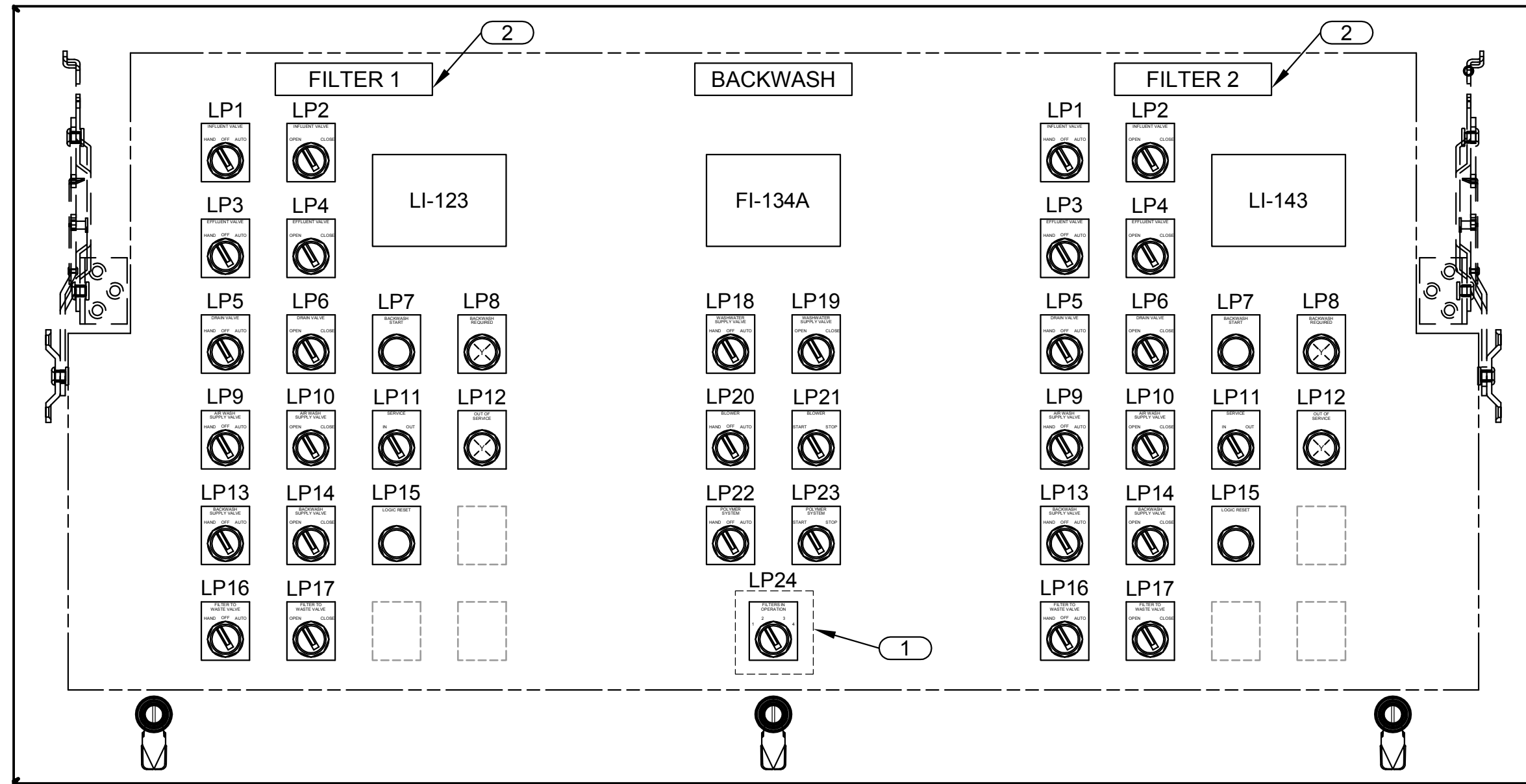
**CITY OF IMPERIAL**  
 IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP  
 INSTRUMENTATION - PLC DRAWINGS  
 CONSOLE PANEL IMAGES

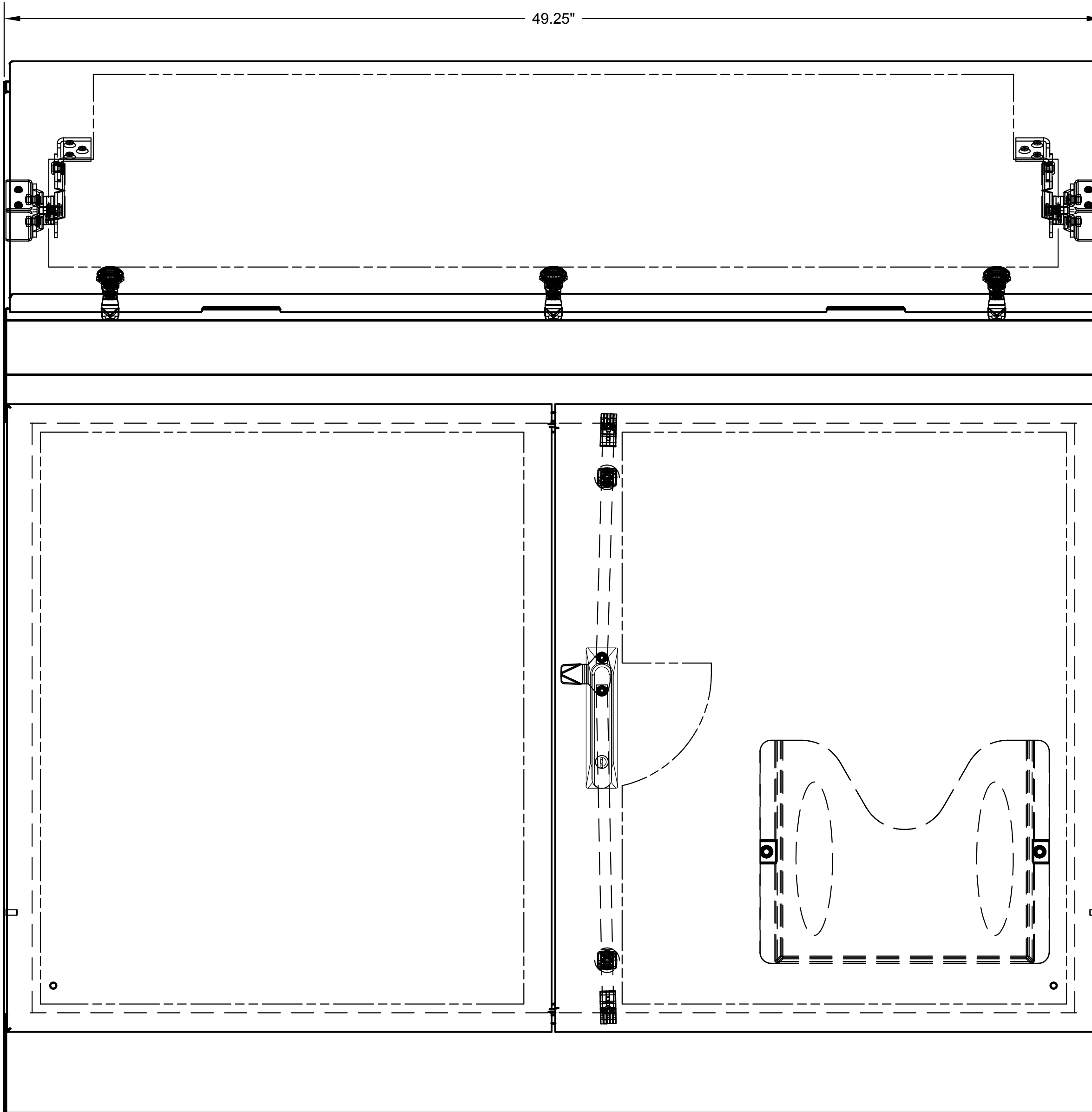
DWG. NO. \_\_\_\_\_

BID NO. 2022-05  
 SHEET 41 OF 60

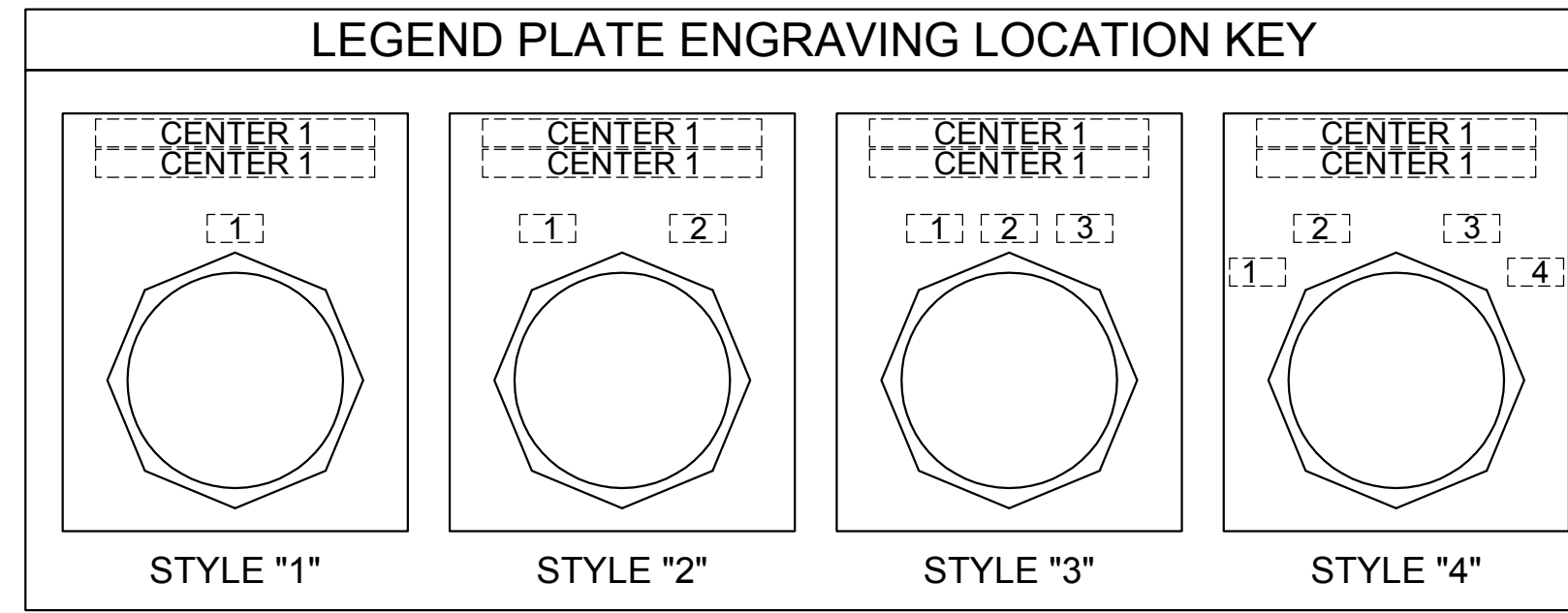




TOP VIEW



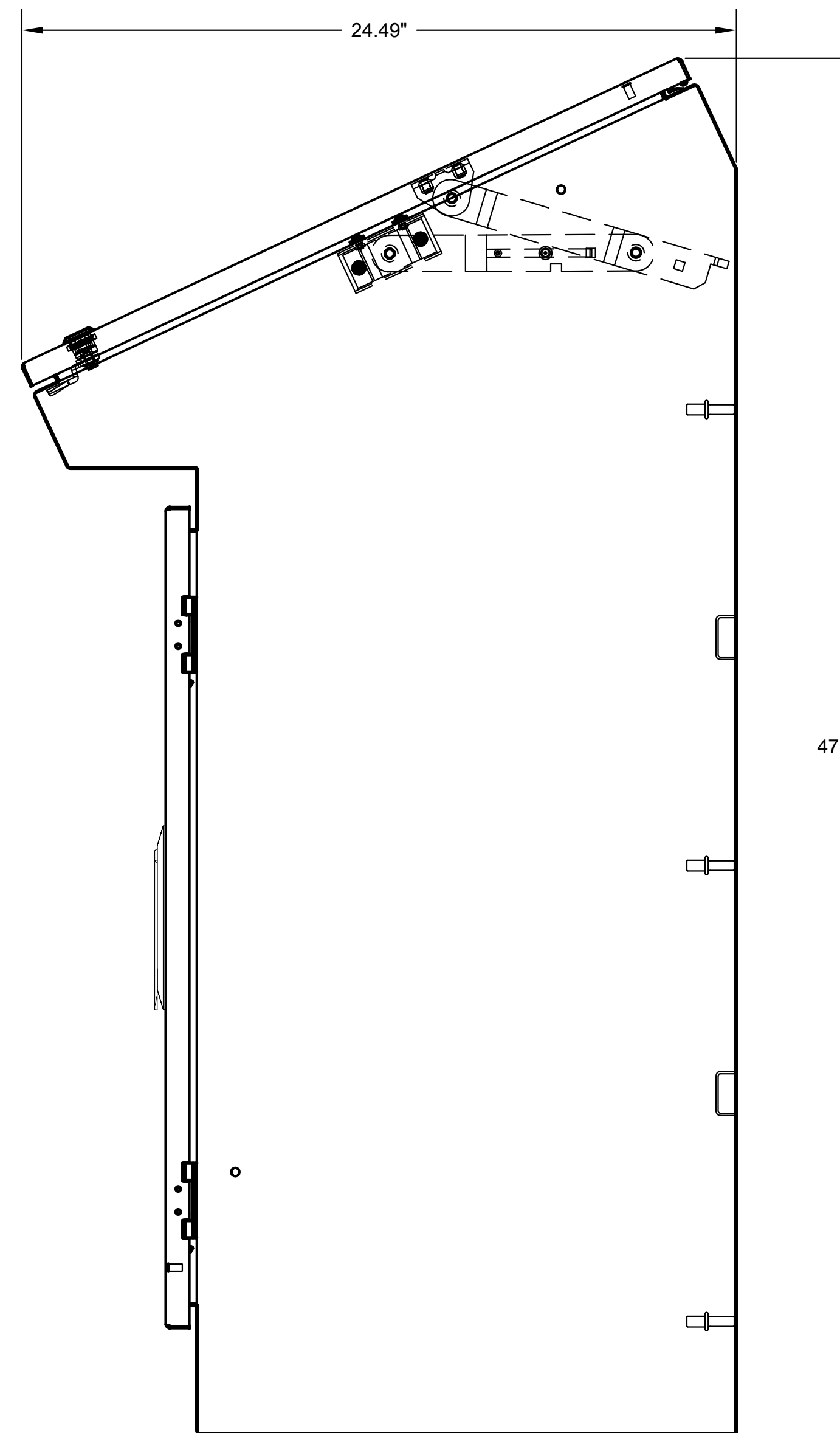
FRONT VIEW



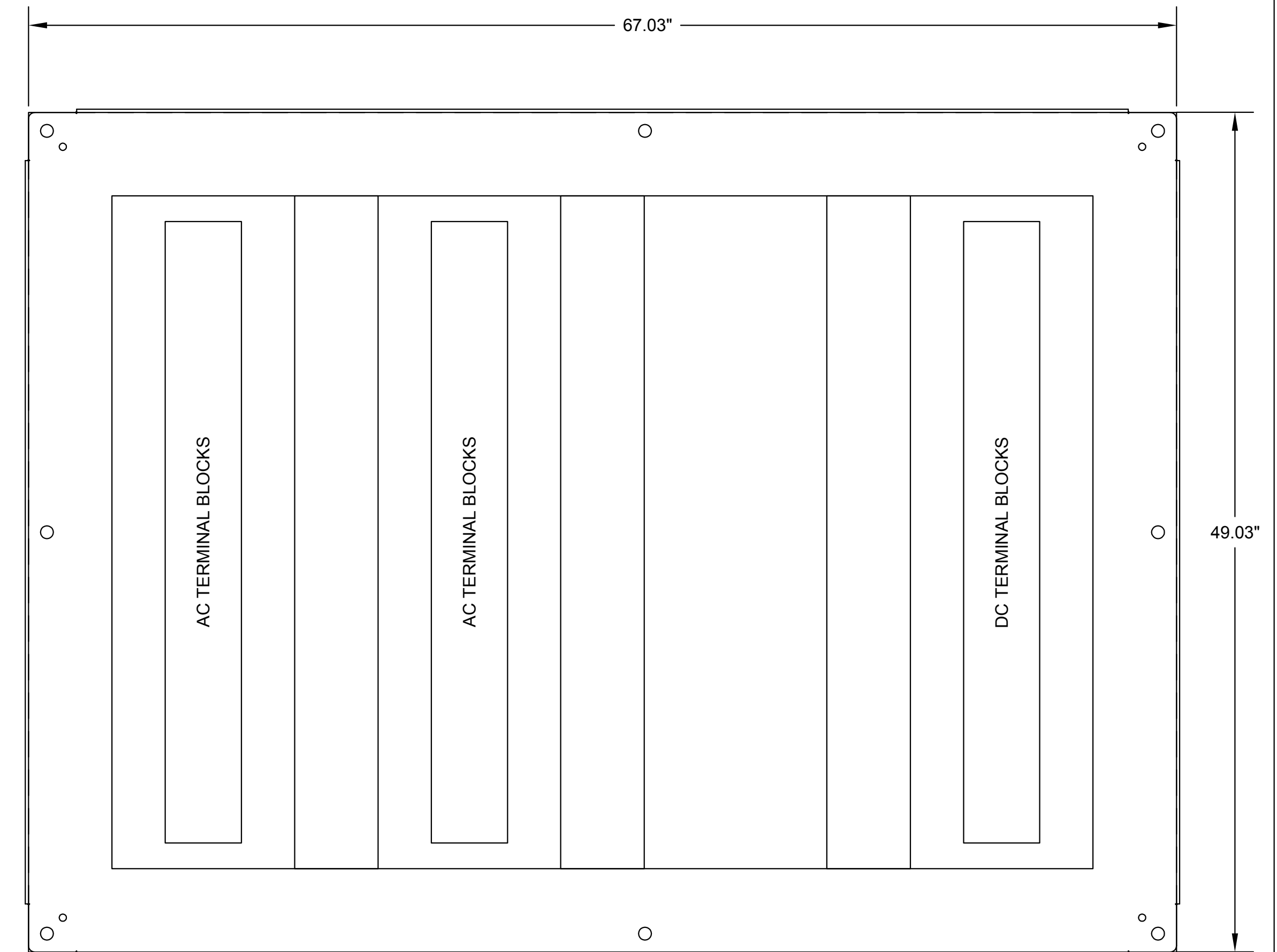
NOTE:

- ① LAYOUTS AND SCHEDULE ARE TYPICAL OF CONSOLE A AND CONSOLE B EXCEPT FOR THE FILTERS IN OPERATION SELECTOR SWITCH WHICH IS FOR CONSOLE "A" ONLY.
- ② CONSOLE B SHALL BE LABELED FOR FILTER 3 AND FILTER 4 INSTEAD OF FILTER 1 AND FILTER 2.

LEGEND PLATE SCHEDULE												
LP	LP. SIZE	LTR. SIZE	MAT.	STYLE	QTY	CENTER 1	CENTER 2	POS. 1	POS. 2	POS. 3	POS. 4	
1	2 X 2.438	0.125	B/W	3	4	INFLUENT VALVE		HAND	OFF	AUTO		
2	2 X 2.438	0.125	B/W	2	4	INFLUENT VALVE		OPEN	CLOSE			
3	2 X 2.438	0.125	B/W	3	4	EFFLUENT VALVE		HAND	OFF	AUTO		
4	2 X 2.438	0.125	B/W	2	4	EFFLUENT VALVE		OPEN	CLOSE			
5	2 X 2.438	0.125	B/W	3	4	DRAIN VALVE		HAND	OFF	AUTO		
6	2 X 2.438	0.125	B/W	2	4	DRAIN VALVE		OPEN	CLOSE			
7	2 X 2.438	0.125	B/W	1	4	BACKWASH	START					
8	2 X 2.438	0.125	B/W	1	4	BACKWASH	REQUIRED					
9	2 X 2.438	0.125	B/W	3	4	AIR WASH	SUPPLY VALVE	HAND	OFF	AUTO		
10	2 X 2.438	0.125	B/W	2	4	AIR WASH	SUPPLY VALVE	OPEN	CLOSE			
11	2 X 2.438	0.125	B/W	2	4	SERVICE		IN	OUT			
12	2 X 2.438	0.125	B/W	1	8	OUT OF	SERVICE					
13	2 X 2.438	0.125	B/W	3	4	BACKWASH	SUPPLY VALVE	HAND	OFF	AUTO		
14	2 X 2.438	0.125	B/W	2	4	BACKWASH	SUPPLY VALVE	OPEN	CLOSE			
15	2 X 2.438	0.125	B/W	1	4	LOGIC RESET						
16	2 X 2.438	0.125	B/W	3	4	FILTER TO	WASTE VALVE	HAND	OFF	AUTO		
17	2 X 2.438	0.125	B/W	2	4	FILTER TO	WASTE VALVE	OPEN	CLOSE			
18	2 X 2.438	0.125	B/W	3	2	WASHWATER	SUPPLY VALVE	HAND	OFF	AUTO		
19	2 X 2.438	0.125	B/W	2	2	WASHWATER	SUPPLY VALVE	OPEN	CLOSE			
20	2 X 2.438	0.125	B/W	3	2	BLOWER		HAND	OFF	AUTO		
21	2 X 2.438	0.125	B/W	2	2	BLOWER		START	STOP			
22	2 X 2.438	0.125	B/W	3	2	POLYMER	SYSTEM	HAND	OFF	AUTO		
23	2 X 2.438	0.125	B/W	2	2	POLYMER	SYSTEM	START	STOP			
24	2 X 2.438	0.125	B/W	4	1	FILTERS	IN OPERATION	1	2	3	4	



RIGHT SIDE VIEW



BACKPANEL VIEW

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES

ENGINEER'S SEAL

**skm**

533 W 2600 S, Suite 25  
Bountiful, Utah 84010  
Phone: (801) 677-0011  
www.skmg.com

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
MARK P. JEPPESEN  
REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22
-	-

SCALE: HORIZ. SCALE: N/A  
VERT. SCALE: N/A

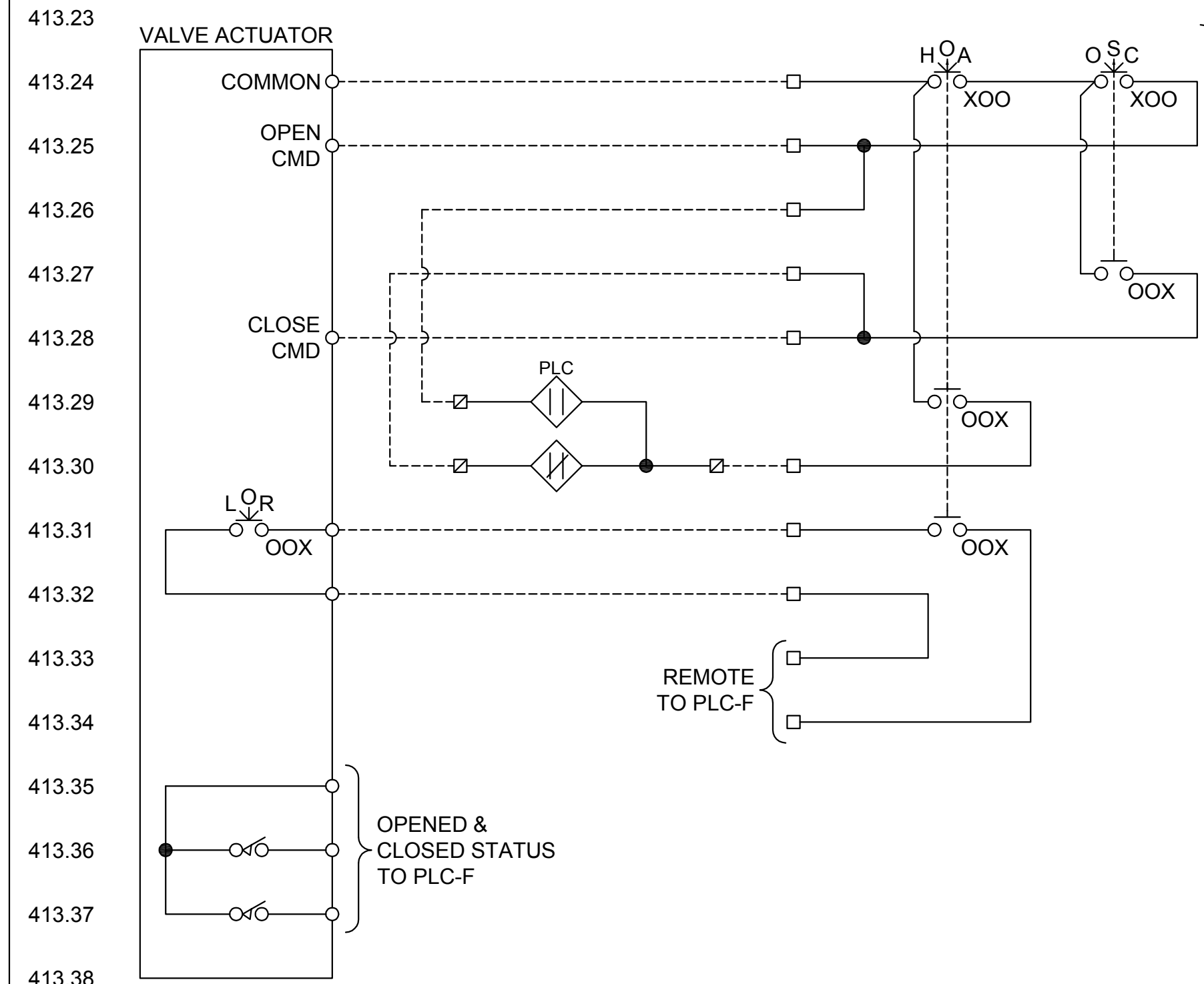
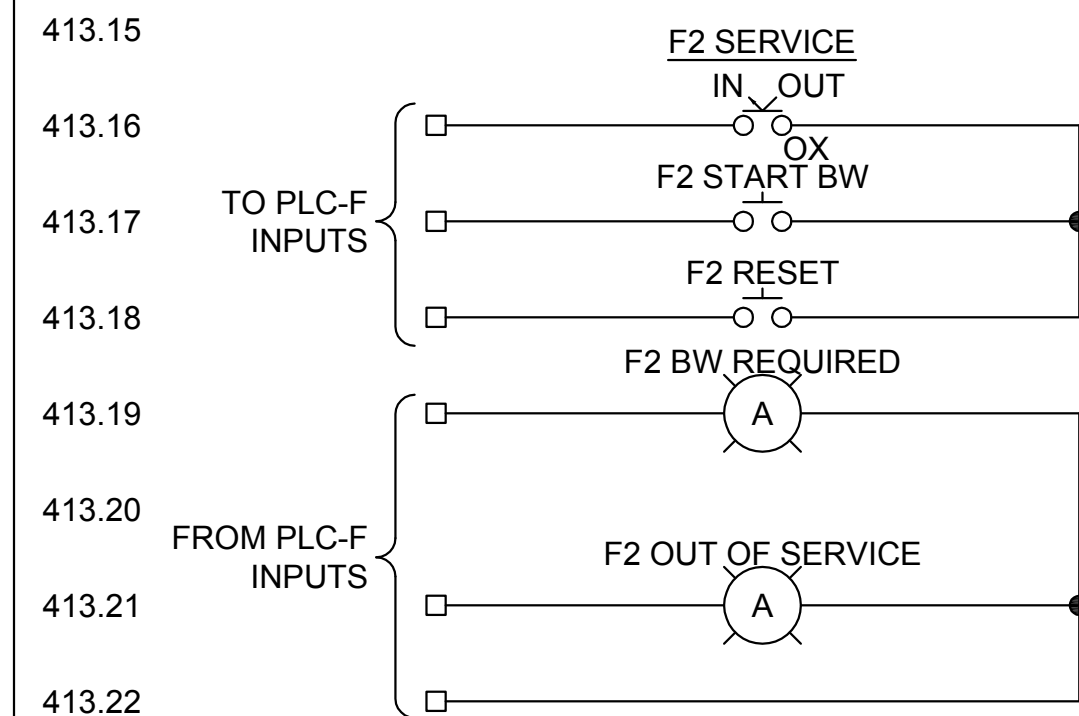
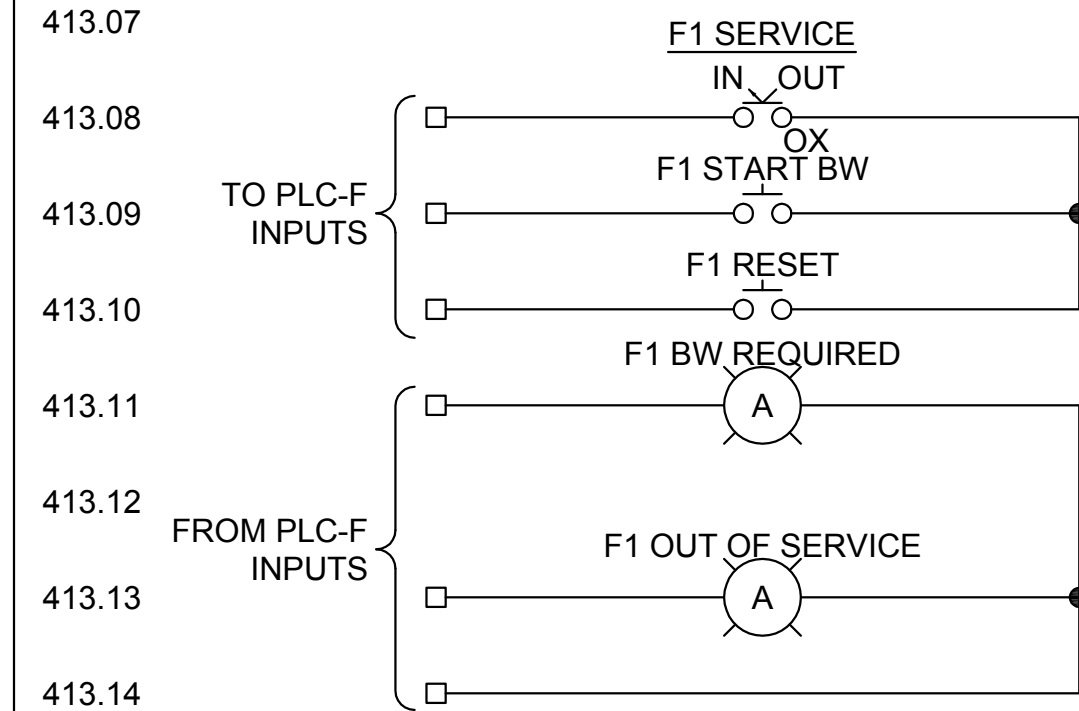
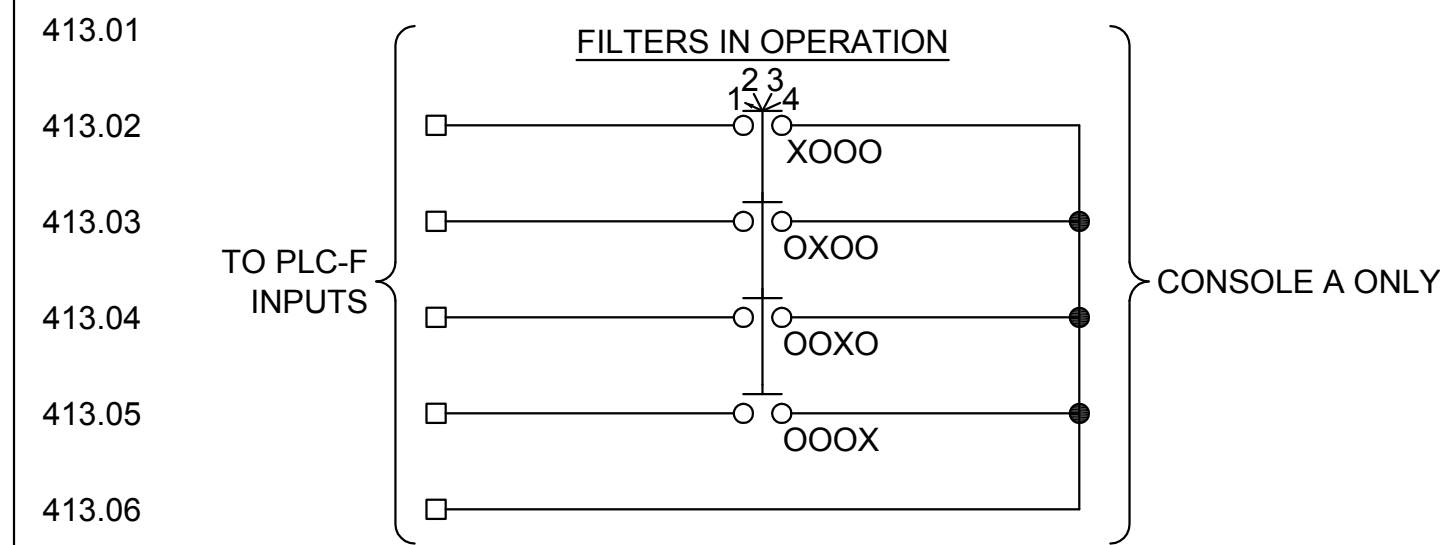
CITY OF IMPERIAL  
IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT  
SYSTEM EXPAN., AND FILTER PIPING REPLACE.  
AT THE WTP  
INSTRUMENTATION - PLC DRAWINGS  
FILTER CONSOLE PANEL LAYOUT

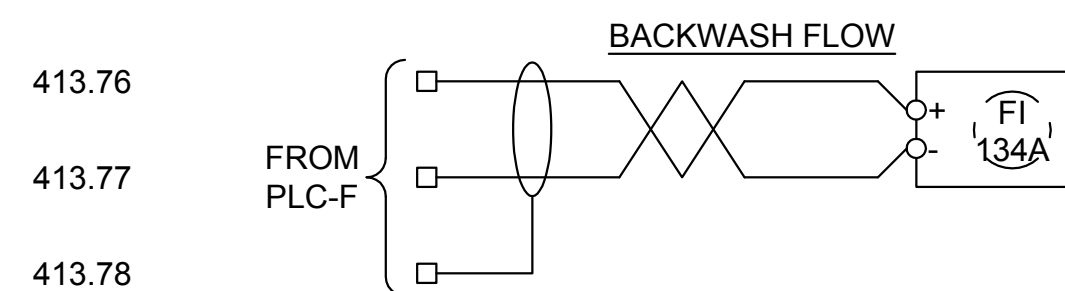
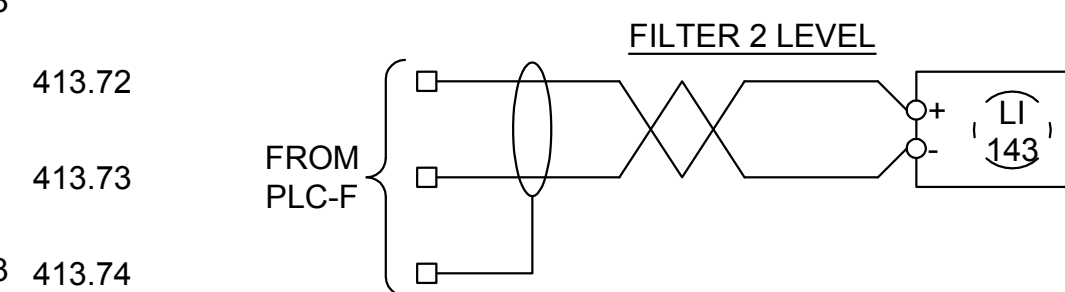
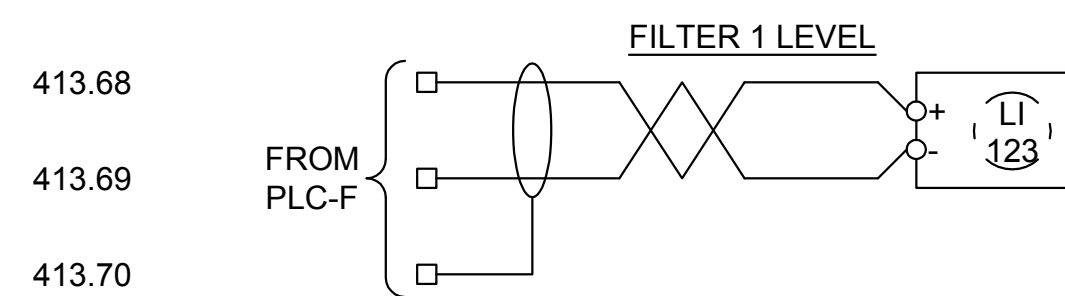
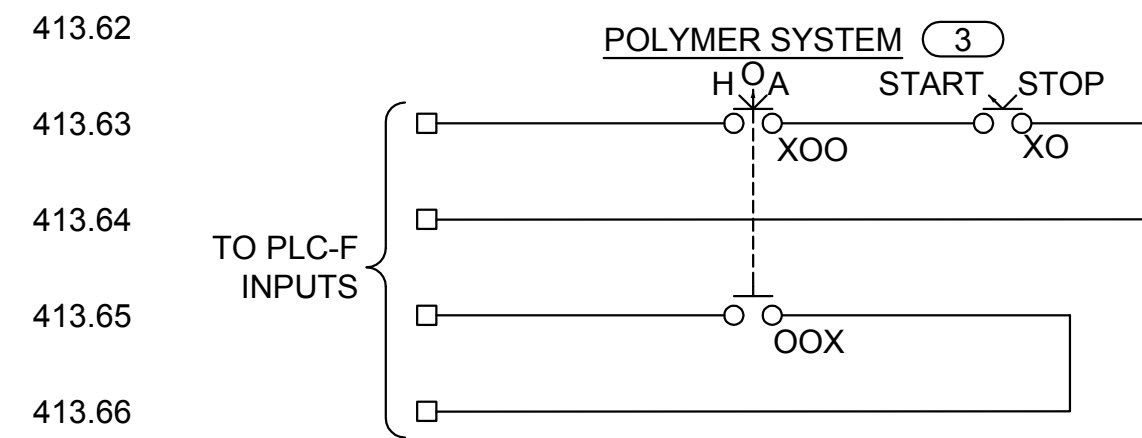
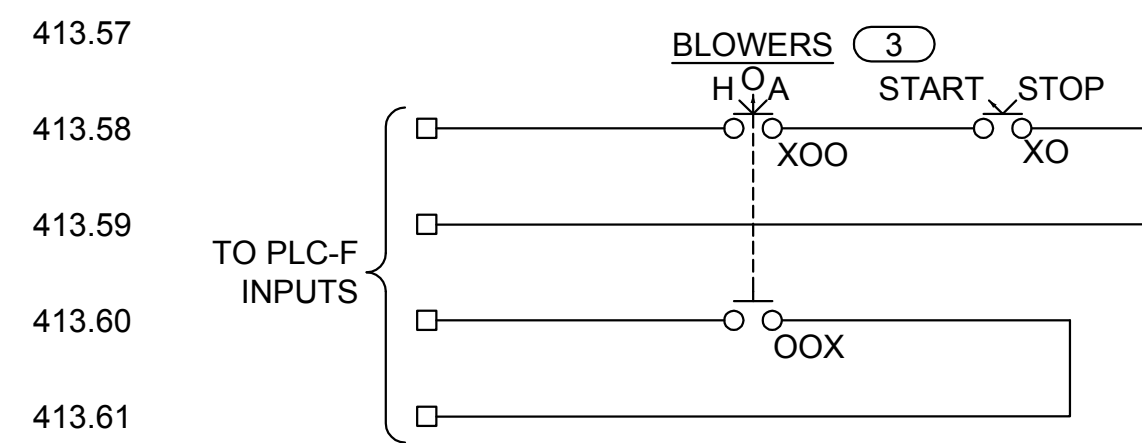
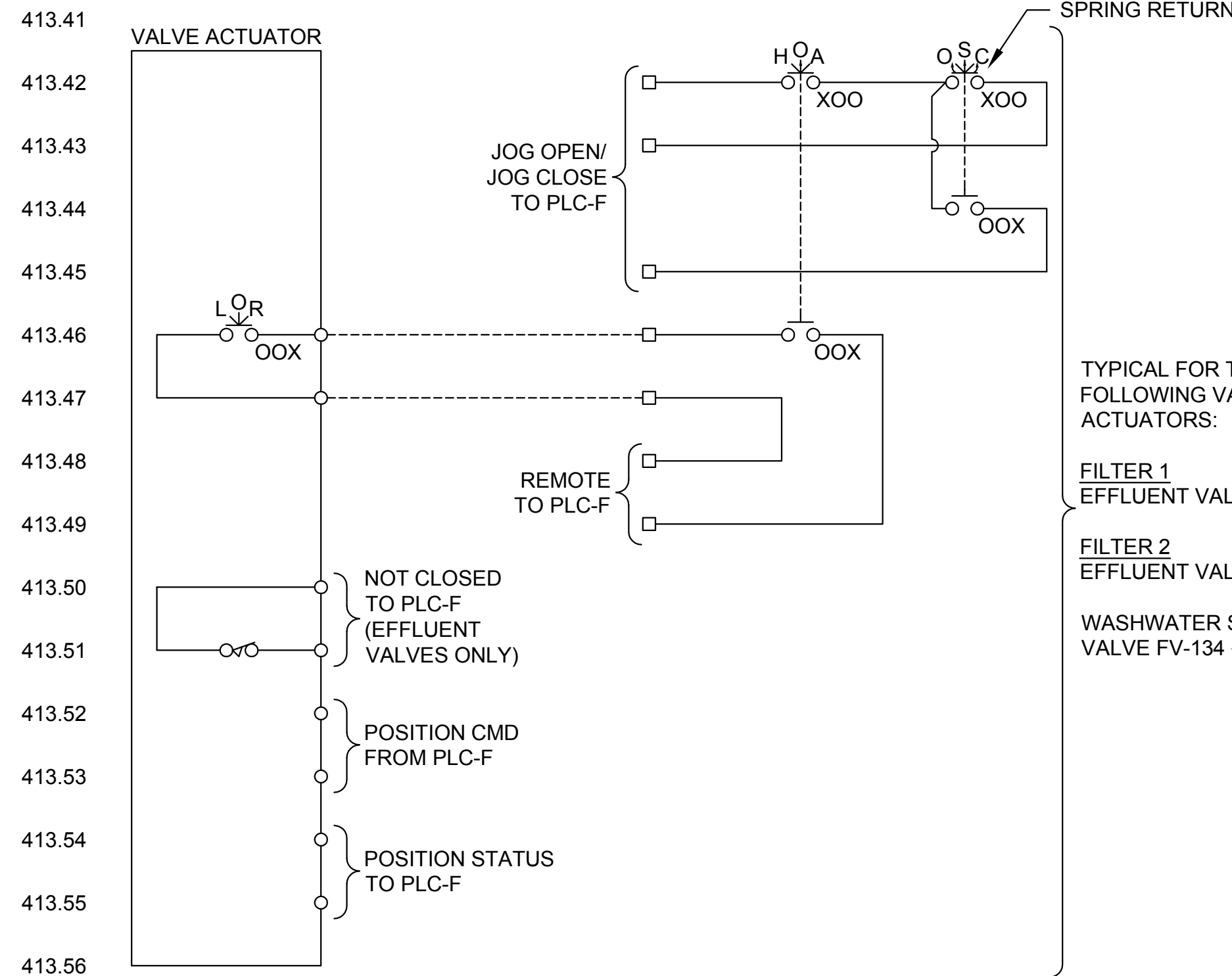
DWG. NO. 1412

BID NO. 2022-05  
SHEET 42 OF 60





TYPICAL FOR THE FOLLOWING VALVE ACTUATORS:  
 FILTER 1  
 INFLUENT VALVE FV-121  
 FTW VALVE FV-127  
 DRAIN VALVE FV-129  
 AIR SCOUR VALVE FV-130  
 BW INFLUENT VALVE FV-133  
 FILTER 2  
 INFLUENT VALVE FV-141  
 FTW VALVE FV-147  
 DRAIN VALVE FV-149  
 AIR SCOUR VALVE FV-150  
 BW INFLUENT VALVE FV-153



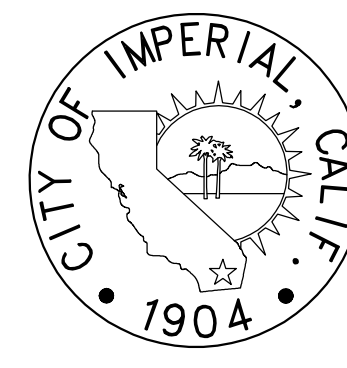
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NOTES:

- 1 THE WIRING DIAGRAM SHOWN IS FOR FILTER CONSOLE A. FILTER CONSOLE B IS IDENTICAL EXCEPT IT IS FOR FILTERS 3 & 4. SUBSTITUTE VALVES FV-121, 127, 128, 129, 130, 133, 141, 147, 148, 149, 150, & 153 FOR FV-161, 167, 168, 169, 170, 173, 181, 187, 188, 189, 190, & 193 RESPECTIVELY. SUBSTITUTE LI-121, I-141, & FI-134A WITH LI-161, LI-181, & FI-134B RESPECTIVELY. IN ADDITION, CONSOLE B DOES NOT HAVE THE FILTERS IN OPERATION SELECTOR SWITCH.
- 2 THE WASHWATER SUPPLY VALVE FV-134 IS SHARED BY ALL FOUR FILTERS. AS A RESULT, THE REMOTE INDICATION FROM EACH CONSOLE SHALL BE WIRED BACK TO THE PLC AND THE JOG OPEN/ JOG CLOSE INPUTS SHALL BE WIRED IN PARALLEL.
- 3 THE BLOWER AND POLYMER SYSTEMS ARE SHARED BY ALL FOUR FILTERS. AS A RESULT, THE REMOTE AND START INDICATIONS TO THE PLC SHALL BE WIRED IN PARALLEL FROM CONSOLE A AND CONSOLE B.



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE
DESIGNED BY:		DRAWN BY:		CHECKED BY:

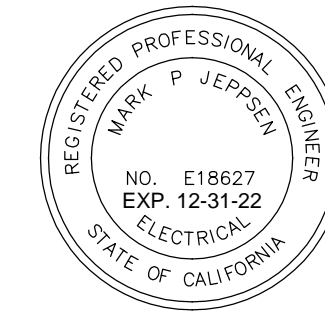


CITY OF IMPERIAL

CITY ENGINEER DATE

REFERENCES

ENGINEER'S SEAL



skm  
 533 W 2600 S, Suite 25  
 Bountiful, Utah 84010  
 Phone: (801) 677-0011  
 www.skmeng.com  
 PLANS PREPARED UNDER THE SUPERVISION OF:  
 Mark P. Jeppsen  
 REGISTERED ELECTRICAL ENGINEER NO. E18627  
 DATE 6/24/2022

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22
HORIZ. SCALE: N/A	
VERT. SCALE: N/A	

CITY OF IMPERIAL  
 IMPERIAL COUNTY, CALIFORNIA  
 CLEARWELL PS REPLACE., GAC TREATMENT  
 SYSTEM EXPAN., AND FILTER PIPING REPLACE.  
 AT THE WTP  
 INSTRUMENTATION - PLC DRAWINGS  
 FILTER CONSOLE WIRING DIAGRAM  
 DWG. NO. 1413

BID NO. 2022-05  
 SHEET 43 OF 60



SCHEMATIC LINETYPES		ELECTRICAL PLAN LINETYPES		EQUIPMENT CALLOUT		ABBREVIATIONS		NOTES	
<p>— ELECTRICAL BUS</p> <p>— EXISTING OR FUTURE ELECTRICAL BUS</p> <p>— MANUFACTURER/SHOP WIRE TYPICALLY INSTALLED OFF-SITE</p> <p>— EXISTING OR FUTURE MANUFACTURER/SHOP WIRE</p> <p>--- FIELD/CONTRACTOR INSTALLED WIRE</p> <p>--- EXISTING OR FUTURE FIELD/CONTRACTOR INSTALLED WIRE</p>	<p>— BARE COPPER GROUND CONDUCTOR</p> <p>— ELECTRICAL EQUIPMENT</p> <p>--- EXISTING OR FUTURE ELECTRICAL EQUIPMENT</p> <p>////// DEMOLITION</p> <p>— E — E — CONDUIT DUCTBANK</p> <p>— E — E — EXISTING OR FUTURE CONDUIT DUCTBANK</p>	<p>— EQUIP. TAG</p> <p>DESCRIPTOR #1</p> <p>DESCRIPTOR #2</p> <p>DESCRIPTOR #3</p> <p>100 TYP 101</p> <p>FE 101</p> <p>FIELD INSTRUMENT CALLOUT</p>	<p>A AMPERE</p> <p>AFF ABOVE FINISHED FLOOR</p> <p>AI ANALOG INPUT</p> <p>AIC AMPS INTERRUPTING CAPACITY</p> <p>AO ANALOG OUTPUT</p> <p>AS AIR SUPPLY</p> <p>ATS AUTOMATIC TRANSFER SWITCH</p> <p>C CIRCUIT BREAKER</p> <p>CB CHLORINE</p> <p>CL2 CONTROL POWER TRANSFORMER</p> <p>CPT COMMUNICATIONS TERMINATION CABINET</p> <p>CU COPPER, BARE</p> <p>CV CONTROL VALVE</p> <p>DB DUCT BANK</p> <p>DCS DISTRIBUTED CONTROL SYSTEM</p> <p>DI DISCRETE INPUT</p> <p>DO DISCRETE OUTPUT</p> <p>DP DISTRIBUTION PANEL</p> <p>DS DISCONNECT SWITCH</p> <p>DV/DT DIFFERENTIAL VOLTAGE/TIME DRAWING</p> <p>ETM ELAPSED TIME METER</p> <p>EOL ELECTRONIC OVERLOAD</p> <p>FE FLOW ELEMENT</p> <p>FLA FULL LOAD AMPS</p> <p>FOC FIBER OPTIC CABLE</p> <p>FOR FORWARD-OFF-REVERSE</p> <p>FS FLOW SWITCH</p> <p>FVNR FULL VOLTAGE NON-REVERSING</p> <p>GFCI GROUND FAULT CIRCUIT INTERRUPTER</p> <p>GFP GROUND FAULT PROTECTION</p> <p>GND GROUND</p> <p>GPM GALLONS PER MINUTE</p> <p>GRS GALVANIZED RIGID STEEL</p> <p>H2S HYDROGEN SULFIDE</p> <p>HH HANDHOLE</p> <p>HMI HUMAN MACHINE INTERFACE</p> <p>HOR HAND-OFF-AUTO</p> <p>HOR HAND-OFF-REMOTE</p> <p>I CURRENT</p> <p>IC INSTRUMENTATION CABLE</p> <p>IO INPUT/OUTPUT</p> <p>ISC SHORT CIRCUIT CURRENT</p> <p>J JUNCTION BOX</p> <p>LAN LOCAL AREA NETWORK</p> <p>LCP LOCAL CONTROL PANEL</p> <p>LOS LOCK-OUT-STOP</p> <p>LP LIGHTING PANEL</p> <p>LR LOCAL/REMOTE</p> <p>LS LEVEL SWITCH</p> <p>LTC LIQUIDTIGHT FLEXIBLE METAL CONDUIT</p> <p>M MOTOR</p> <p>MA MANUAL/AUTO, MILLIAMP</p> <p>MC MANUFACTURER'S CABLE</p> <p>MCB MAIN CIRCUIT BREAKER</p> <p>MCC MOTOR CONTROL CENTER</p> <p>MCP MOTOR CIRCUIT PROTECTOR</p> <p>MFR(S) MANUFACTURER(S)</p> <p>MGD MILLION GALLONS PER DAY</p> <p>MH MANHOLE</p> <p>MOV MOTOR OPERATED VALVE</p> <p>MTU MASTER TELEMETRY UNIT</p> <p>NEC NATIONAL ELECTRICAL CODE</p> <p>NOTC NORMALLY OPEN TIMED CLOSED</p> <p>NPW NON-POTABLE WATER</p> <p>NTS NOT TO SCALE</p> <p>NTU TURBIDITY</p> <p>OIT OPERATOR INTERFACE TERMINAL</p> <p>OL OVERLOAD</p> <p>OO ON/OFF (MAINTAINED)</p> <p>OR OFF-REMOTE</p> <p>PB PULL BOX</p> <p>PC PERSONAL COMPUTER</p> <p>PFR PHASE/POWER FAILURE RELAY</p> <p>PLC PROGRAMMABLE LOGIC CONTROLLER</p> <p>PNL PANEL</p> <p>PPM PARTS PER MILLION</p> <p>PR PAIR</p> <p>P PRESSURE</p> <p>PS PRESSURE SWITCH</p> <p>PSI POUNDS PER SQUARE INCH</p> <p>PV PROCESS VARIABLE</p> <p>RCP REMOTE CONTROL PANEL</p> <p>RF RADIO FREQUENCY</p> <p>RIO REMOTE INPUT OUTPUT</p> <p>RST RESET</p> <p>RTD RESISTANCE TEMPERATURE DETECTOR</p> <p>RTU REMOTE TELEMETRY UNIT</p> <p>RVSS REDUCED VOLTAGE SOFT STARTER</p> <p>SEQ SERVICE ENTRANCE EQUIPMENT</p> <p>SES SERVICE ENTRANCE SECTION</p> <p>SLOS START-LOCK-OFF-STOP</p> <p>SMC SUBMERSIBLE MANUFACTURER CABLE</p> <p>SO2 SULFUR DIOXIDE</p> <p>SP SET POINT/SPARE</p> <p>SPD SURGE PROTECTION DEVICE</p> <p>SS START/STOP</p> <p>ST SHUNT TRIP</p> <p>TC TELEPHONE CABLE</p> <p>TS TEMPERATURE SWITCH</p> <p>TYP TYPICAL</p> <p>UG UNDERGROUND</p> <p>V VOLT</p> <p>VA VOLTAMP</p> <p>VFD VARIABLE FREQUENCY DRIVE</p> <p>W WATT, WIRE</p> <p>WP WEATHERPROOF</p> <p>XFMR TRANSFORMER</p> <p>ZS POSITION SWITCH</p>	<p>1. THE COMPLETED INSTALLATION SHALL COMPLY WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES, AND REGULATIONS. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. ALL WORK SHALL BE COMPLETED IN A NEAT, WORKMANLIKE MANNER IN ACCORDANCE WITH THE LATEST NEC STANDARDS OF INSTALLATION UNDER COMPETENT SUPERVISION. INSTALL GROUNDING PER NEC.</p> <p>2. VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND OTHER FACTORS, WHICH MAY AFFECT THE EXECUTION OF THE WORK. INCLUDE ALL RELATED COSTS IN THE INITIAL BID PROPOSAL.</p> <p>3. THE CONTRACTOR SHALL COORDINATE WORK WITH THE UTILITIES PROVIDING SERVICES ON THIS PROJECT, AND SHALL COMPLY WITH ALL THEIR INSTALLATION REQUIREMENTS.</p> <p>4. ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, UL, OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURERS' NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS, AND BID PRICE.</p> <p>5. PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS, OR ANY OTHER PREVENTABLE CAUSES. EQUIPMENT DAMAGED DURING SHIPPING OR CONSTRUCTION, PRIOR TO ACCEPTANCE BY THE ENGINEER OR THE OWNER, WILL BE REJECTED AS DEFECTIVE.</p> <p>6. LEAVE THE SITE CLEAN. REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK. DAMAGED PAINT AND FINISHES SHALL BE TOUCHED UP OR REPAINTED WITH MATCHING COLOR PAINT AND FINISH.</p> <p>7. CIRCUIT CONDUCTORS #6 AWG OR SMALLER SHALL BE THWN STRANDED COPPER. #4 AWG THROUGH #2 AWG SHALL BE XHHW STRANDED COPPER. #1 AWG OR LARGER SHALL BE XHHW-2 STRANDED COPPER. MINIMUM POWER CONDUCTOR SIZE SHALL BE #12 AWG WITH #12 AWG GROUND. ALL WIRE TO BE SIZED PER NEC TABLE 316-10, 75° C BASED ON A 30° C AMBIENT.</p> <p>8. UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC. MINIMUM CONDUIT DEPTH SHALL BE 24 INCHES. MINIMUM UNDERGROUND CONDUIT SIZE SHALL BE 1 INCH. MINIMUM CONDUIT DEPTH UNDER SLAB SHALL BE 1 INCH.</p> <p>9. CONDUITS SHALL BE MARKED AT EACH END WITH MATCHING NUMBERED BRASS OR NYLON TAGS. SPARE CONDUITS SHALL HAVE A PULL STRING INSTALLED AND SECURED.</p> <p>10. EXPOSED CONDUITS SHALL BE GALVANIZED RIGID STEEL (GRS), MINIMUM SIZE 3/4 INCH, UNLESS OTHERWISE NOTED ON THE PLANS.</p> <p>11. SAFETY SWITCHES, ELECTRICAL DISTRIBUTION EQUIPMENT, CONTROL PANELS, AND OTHER ELECTRICAL DEVICES SHALL BE UL LISTED, AND RATED FOR HEAVY DUTY SERVICE.</p> <p>12. WIRING DEVICES SHALL BE SPECIFICATION GRADE.</p> <p>13. THE CONTRACTOR IS RESPONSIBLE FOR MANAGING, SCHEDULING, DOCUMENTING, AND PERFORMING THE WORK SO THAT A COMPLETE ELECTRICAL, INSTRUMENTATION AND CONTROL SYSTEM FOR THE FACILITY IS PROVIDED. ACCURATE SHOP AND RECORD DRAWINGS, AND OEM MANUALS SHALL BE SUBMITTED PRIOR TO FINAL ACCEPTANCE OF THE WORK.</p> <p>14. TYPICAL DETAILS SHALL APPLY IN ALL CASES, WHETHER SPECIFICALLY REFERRED TO OR NOT.</p> <p>15. REFER TO SPECIFICATION 260533 "TRACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS" FOR CONDUIT SPACING AND ROUTING REQUIREMENTS.</p>					
SCHEMATIC SYMBOLS		ELECTRICAL PLAN HAZARDOUS LOCATION CLASSIFICATION LINETYPES		CONDUIT CALLOUT					
<p>○ DEVICE CONNECTION LUG OR TERMINAL</p> <p>● SCHEMATIC POINT OF CONNECTION</p> <p>≡ POWER STABS BUS CONNECTION</p> <p>≡ POWER STABS LOAD CONNECTION</p> <p>CIRCUIT BREAKER</p> <p>○ 100AF ← FRAME SIZE</p> <p>○ 50AT ← TRIP RATING</p> <p>○ MCP ← BREAKER TYPE</p> <p>DISCONNECT</p> <p>○ 30A ← AMPERE RATING</p> <p>○ 4X ← NEMA RATING</p> <p>FUSE</p> <p>30A ← AMPERE RATING</p> <p>R ← FUSE TYPE</p> <p>FUSED DISCONNECT</p> <p>○ 30A ← AMPERE RATING</p> <p>○ 4X ← NEMA RATING</p> <p>30A ← AMPERE RATING</p> <p>R ← FUSE TYPE</p> <p>TRANSFORMER</p> <p>CURRENT TRANSFORMER</p> <p>100:5 ← CT TURNS RATIO</p> <p>3 ← NUMBER OF CTS</p> <p>POTENTIAL TRANSFORMER</p> <p>480:120 ← PT VOLTAGE RATIO</p> <p>3 ← NUMBER OF PT'S</p> <p>METERING EQUIPMENT</p> <p>UM ← METER TYPE DESIGNATION</p> <p>AM = AMMETER</p> <p>SSM = SOLID STATE METER</p> <p>UM = UTILITY METER</p> <p>VM = VOLTMETER</p> <p>WHM = WATT HOUR METER</p> <p>WM = WATT METER</p> <p>GENERATOR</p> <p>MANUAL OR AUTOMATIC TRANSFER SWITCH</p> <p>600A ← AMPERE RATING</p> <p>3R ← NEMA RATING</p> <p>TRANSIENT VOLTAGE SURGE SUPPRESSOR</p> <p>TVSS CLASS C ← TVSS CLASSIFICATION</p> <p>MOTOR OVERLOAD RELAY</p> <p>FULL VOLTAGE NON-REVERSING STARTER (FVNR)</p> <p>NEMA SIZE ← STARTER TYPE AND SIZE</p> <p>FULL VOLTAGE REVERSING STARTER (FVR)</p> <p>NEMA SIZE ← STARTER TYPE AND SIZE</p> <p>TWO-SPEED STARTER</p> <p>NEMA SIZE ← STARTER TYPE AND SIZE</p>	<p>HF HARMONIC FILTER</p> <p>LR LOAD REACTOR</p> <p>VFD VARIABLE FREQUENCY DRIVE</p> <p>RVSS REDUCED VOLTAGE SOFT STARTER</p> <p>GROUND CONNECTION</p> <p>5 MOTOR, NUMBER DESIGNATES NEMA HORSEPOWER SIZE</p> <p>M MOTOR STARTER, CONTACTOR, RELAY OR TIMER COIL</p> <p>NO NORMALLY OPEN CONTACT</p> <p>NC NORMALLY CLOSED CONTACT</p> <p>SOLENOID VALVE</p> <p>EQUIPMENT PROGRAMMING CONSOLE</p> <p>2 POSITION SELECTOR SWITCH</p> <p>POSITION LEGEND: X=CLOSED O=OPEN</p> <p>3 POSITION SELECTOR SWITCH</p> <p>SWITCH HAND - OFF - AUTO</p> <p>POSITION LEGEND: X=CLOSED O=OPEN</p> <p>3 POSITION SELECTOR SWITCH</p> <p>OPEN - CLOSE - AUTO POSITION</p> <p>LEGEND: X=CLOSED O=OPEN</p> <p>3 POSITION SELECTOR SWITCH</p> <p>FORWARD - OFF - REVERSE</p> <p>POSITION LEGEND: X=CLOSED O=OPEN</p> <p>STOP NORMALLY CLOSED PUSH BUTTON</p> <p>START NORMALLY OPEN PUSH BUTTON</p> <p>TYPICAL SWITCH CONFIGURATION</p> <p>○ FLOAT SWITCH - MAKE ON FALL</p> <p>○ FLOAT SWITCH - MAKE ON RISE</p> <p>○ FLOAT SWITCH - BREAK ON FALL</p> <p>○ FLOAT SWITCH - BREAK ON RISE</p> <p>SWITCH TYPE SYMBOL (SEE BELOW)</p> <p>○ LEVEL SWITCH</p> <p>△ PRESSURE SWITCH</p> <p>↳ FLOW OR TORQUE SWITCH</p> <p>↳ TEMPERATURE SWITCH</p> <p>↳ LIMIT SWITCH</p> <p>○ TIMER RELAY CONTACT</p> <p>○ NORMALLY OPEN TIME DELAY CLOSE</p> <p>○ ELAPSED TIME METER</p> <p>○ CONTROL RELAY</p> <p>○ TIME DELAY RELAY</p> <p>○ ALARM RELAY</p> <p>○ PILOT LIGHT</p> <p>○ LETTER INDICATES COLOR R=RED, A=AMBER, B=BLUE, G=GREEN</p> <p>○ INSTANTANEOUS SHORT-CIRCUIT TRIP DEVICE</p> <p>○ TIME OVERCURRENT TRIP DEVICE</p> <p>○ 50</p> <p>○ 51</p> <p>○ 51G GROUND FAULT TRIP DEVICE</p>	<p>— C1D1 CLASS I DIV 1</p> <p>— C2D1 CLASS II DIV 1</p> <p>— C1D2 CLASS I DIV 2</p> <p>— C2D2 CLASS II DIV 2</p>	<p>GROUPED CONDUIT AND CIRCUIT IDENTIFICATION TAGS. REFER TO THE POWER ONE-LINE AND CONTROL ONE-LINE DIAGRAMS OR CONDUIT SCHEDULES FOR CONDUIT SIZES AND CONTENTS.</p> <p>C-CONTROL/INSTRUMENTATION</p> <p>P-POWER</p> <p>F-FIBER OPTIC/NETWORK</p> <p>SP-SPARE CONDUITS</p>	<p>CXXX</p> <p>PXXX</p> <p>FXXX</p> <p>SPXXX</p>	<p>SITE PLAN DEVICES</p> <p>X ← X= (SEE BELOW)</p> <p>AE - ANALYZER ELEMENT</p> <p>AIT - ANALYZING INDICATING TRANSMITTER</p> <p>FE - FLOW ELEMENT</p> <p>FIT - FLOW INDICATING TRANSMITTER</p> <p>FS - FLOW SWITCH</p> <p>J - JUNCTION BOX</p> <p>JS - TORQUE SWITCH</p> <p>LE - LEVEL ELEMENT</p> <p>LIT - LEVEL INDICATING TRANSMITTER</p> <p>LS - LEVEL SWITCH</p> <p>M - MOTOR</p> <p>MH - MANHOLE</p> <p>MV - MOTOR OPERATED VALVE</p> <p>PB - PULLBOX</p> <p>PIT - PRESSURE INDICATING TRANSMITTER</p> <p>PS - PRESSURE SWITCH</p> <p>PT - PRESSURE TRANSMITTER</p> <p>SV - SOLENOID VALVE</p> <p>TS - TEMPERATURE SWITCH</p> <p>WE - WEIGHT ELEMENT</p> <p>WIT - WEIGHT INDICATING TRANSMITTER</p> <p>ZS - LIMIT SWITCH</p> <p>GROUND ROD</p> <p>WP ← DENOTES RECEPTACLE TYPE (BLANK) = STANDARD INDOORS</p> <p>GFCI = GND FLT CURRENT INT.</p> <p>WP = WEATHER PROOF &amp; GFCI</p> <p>QUADRAPLEX RECEPTACLE</p> <p>DATA JACK</p> <p>SINGLE POLE SWITCH</p> <p>3-WAY SWITCH</p> <p>4-WAY SWITCH</p> <p>CONDUIT SEALOFF</p> <p>LTC CONNECTION</p> <p>MC CONNECTION</p> <p>DISCONNECT SWITCH</p> <p>THERMOSTAT</p> <p>CONDUIT HOME RUN NUMBER INDICATES QUANTITY OF CONDUCTORS INCLUDING GROUND</p>	<p>LOCAL PANEL OR DEVICE TERMINAL BLOCK</p> <p>TERMINAL LABEL</p> <p>PLC PANEL TERMINAL BLOCK</p> <p>TERMINAL LABEL</p> <p>MCC TERMINAL BLOCK</p> <p>TERMINAL LABEL</p> <p>DEVICE TERMINAL BLOCK</p> <p>TERMINAL LABEL</p> <p>PLC DISCRETE INPUT</p> <p>DISCRETE INPUT LABEL</p> <p>DIXX</p> <p>PLC DISCRETE OUTPUT (NORMALLY OPEN)</p> <p>DISCRETE OUTPUT LABEL</p> <p>DOXX</p> <p>PLC DISCRETE OUTPUT (NORMALLY CLOSED)</p> <p>DISCRETE OUTPUT LABEL</p> <p>DOXX</p> <p>PLC ANALOG INPUT</p> <p>ANALOG INPUT LABEL</p> <p>AIXX</p> <p>PLC ANALOG OUTPUT</p> <p>ANALOG OUTPUT LABEL</p> <p>AOXX</p> <p>PLC RTD</p> <p>RTD LABEL</p> <p>RTDXX</p>			

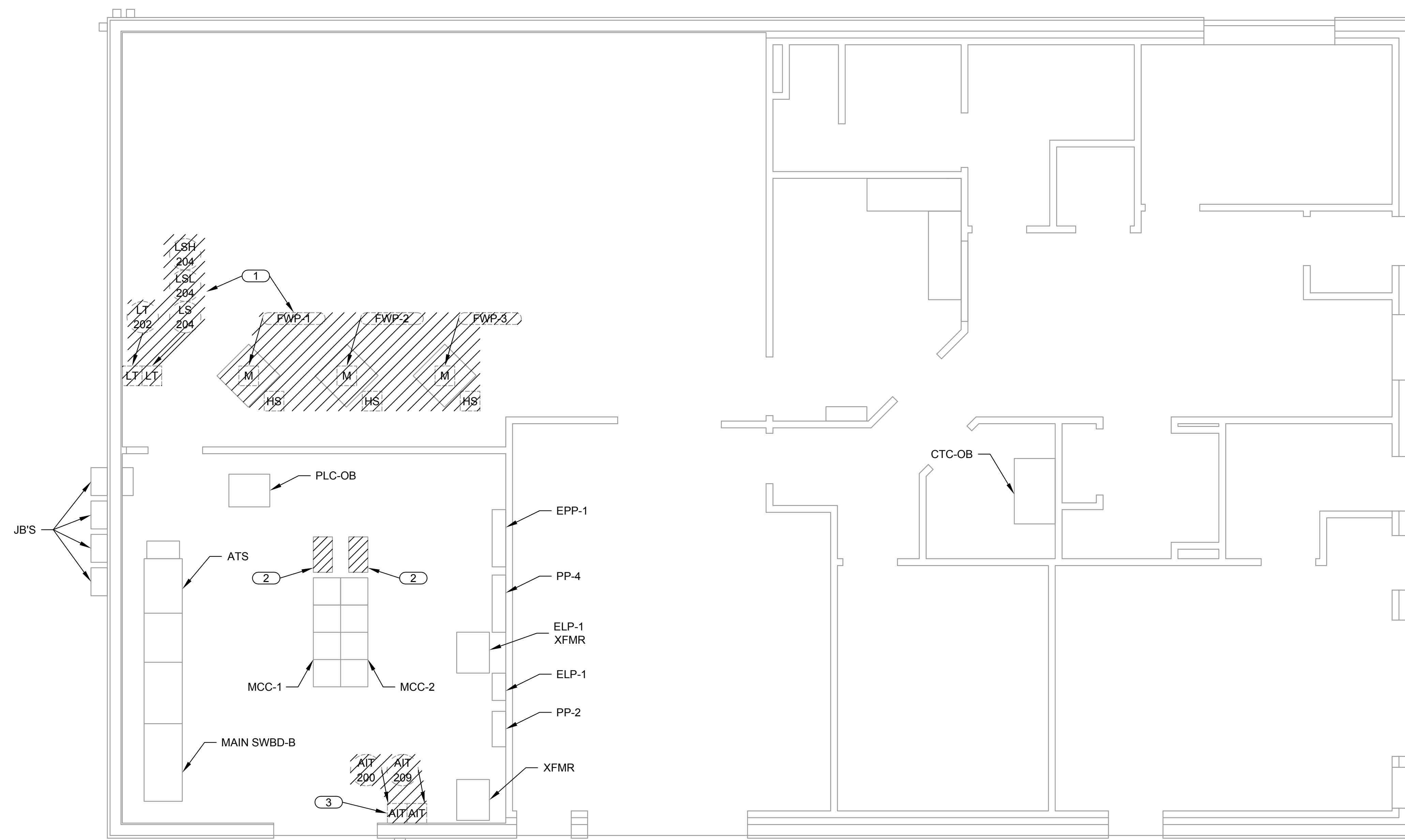
	<b>REVISIONS</b>			<b>CITY OF IMPERIAL</b>	<b>ENGINEER'S SEAL</b>		533 W 2600 S, Suite 25 Bountiful, Utah 84010 Phone: (801) 677-0011 www.skmeng.com		DESIGNED: MPJ 06/22 DRAWN: DCL 06/22 TRACED: N/A CHECKED: MPJ 06/22 SUBMITTED:	<b>CITY OF IMPERIAL</b> IMPERIAL COUNTY, CALIFORNIA	<b>BID NO.</b> 2022-05
	NO. DATE INITIAL DESCRIPTION APPROVED/DATE	DATE					DATE	DATE			
DESIGNED BY:	DRAWN BY:	CHECKED BY:	CITY ENGINEER	DATE	REFERENCES	PLANS PREPARED UNDER THE SUPERVISION OF: 	6/24/2022	DATE	SCALE:	HORIZ. SCALE: N/A VERT. SCALE: N/A	SHEET <b>44</b> OF 60
CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP										ELECTRICAL - GENERAL	DWG. NO. E001

C:\USERS\DANIELLEVAITIA\AQUA\_ENGINEERING\IMPERIAL - DOCUMENTS\020202.D\IMPERIAL\_WTP\_CLEARWELL\_PS\050\_DRAFTING\999\_ELECTRICAL\999-E001.DWG 10/28/2010 10:26 AM

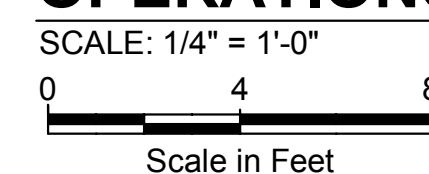


**NOTES**

- 1 REMOVE EXISTING FILTERED WATER PUMPS, LEVEL TRANSMITTER AND LEVEL SWITCHES AND SALVAGE TO OWNER. REMOVE ALL EXISTING CONDUIT AND WIRE CONNECTED TO THIS EQUIPMENT TO THEIR ORIGINATING POINTS.
- 2 CONTRACTOR SHALL REMOVE AND SALVAGE TO THE OWNER THE EXISTING VFD PANELS FOR THE EXISTING FILTERED WATER PUMPS. REMOVE ALL EXISTING CONDUIT AND WIRE CONNECTED TO THIS EQUIPMENT TO THEIR ORIGINATING POINTS.
- 3 REMOVE EXISTING TURBIDITY AND CHLORINE DISPLAYS AND SALVAGE TO OWNER. REMOVE ALL EXISTING CONDUIT AND WIRE TO THEIR ORIGINATING POINTS.

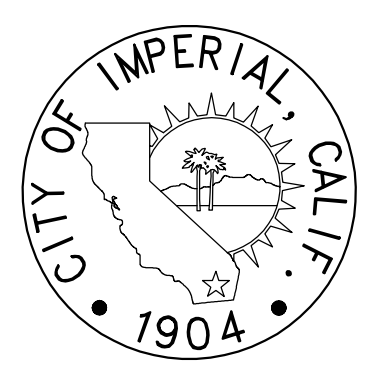


**OPERATIONS BUILDING DEMOLITION PLAN**



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

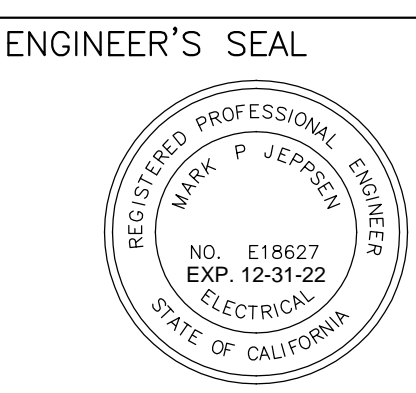
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**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES



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www.skmeng.com

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen* 6/24/2022 DATE

MARK P. JEPPISEN  
REGISTERED ELECTRICAL ENGINEER NO. E18627

DESIGNED:	DATE
MPJ	06/22
DRAWN:	06/22
TRACED:	N/A
CHECKED:	06/22
SUBMITTED:	-

SCALE:  
HORIZ. SCALE: 1" = 5'-0"  
VERT. SCALE: N/A

**CITY OF IMPERIAL**  
IMPERIAL COUNTY, CALIFORNIA

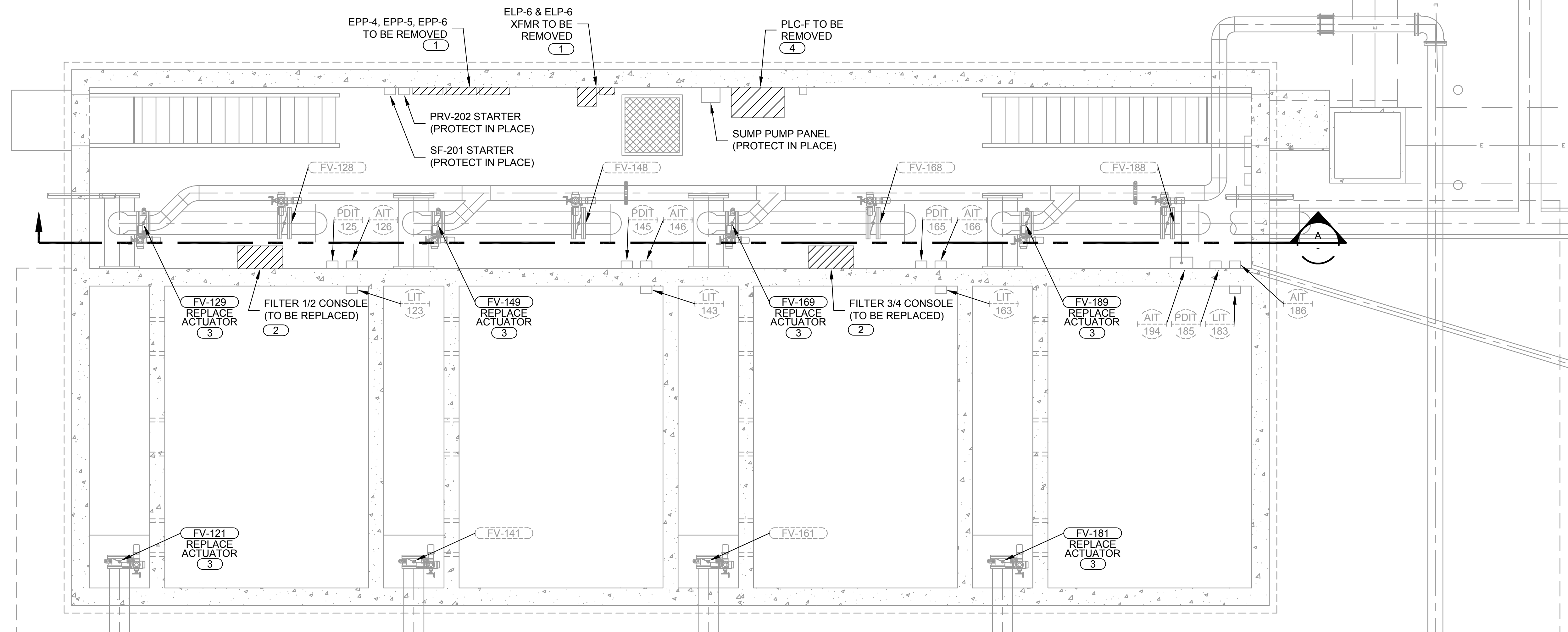
CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP  
ELECTRICAL - DEMOLITION PLAN

BID NO. 2022-05  
SHEET 45 OF 60  
DWG. NO. E101



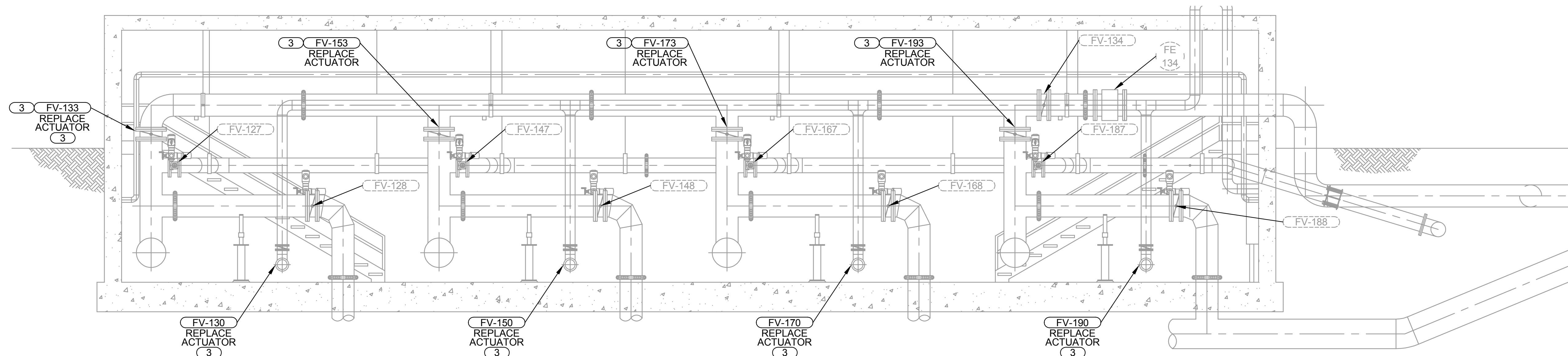
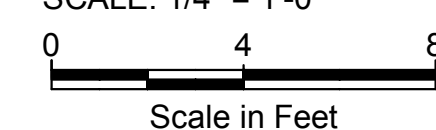
**NOTES**

- 1 EXISTING FILTER BUILDING POWER PANELS ARE TO BE REMOVED. EXISTING LOADS WILL BE RE-FED FROM THE NEW CLEARWELL BUILDING ELECTRICAL ROOM. EXISTING CONDUITS SHALL BE MODIFIED TO BE ROUTED TO THE NEW ELECTRICAL ROOM. ALL EXISTING POWER DISTRIBUTION WIRING IS TO BE REMOVED. NEW WIRE WILL BE INSTALLED FROM THE NEW ELECTRICAL ROOM TO THE EXISTING LOADS.
- 2 REMOVE AND REPLACE THE EXISTING FILTER CONSOLES. THE CONSOLES ARE MOUNTED ON THE ROOF OF THE FILTER BUILDING. EXISTING CONDUITS BETWEEN THE CONSOLES AND ACTUATORS SHALL BE RE-UTILIZED. EXISTING WIRING SHALL BE REPLACED WITH NEW.
- 3 REMOVE AND REPLACE THE EXISTING VALVE ACTUATORS. EXISTING CONDUITS BETWEEN THE ACTUATORS AND CONSOLES SHALL BE RE-UTILIZED. CONDUITS BETWEEN THE ACTUATORS AND THE POWER PANELS AND PLC-F SHALL BE RE-ROUTED TO THE NEW ELECTRICAL ROOM. NEW WIRE SHALL BE INSTALLED TO EACH ACTUATOR.
- 4 REMOVE AND REPLACE THE EXISTING PLC-F. THE NEW PLC-F IS TO BE LOCATED IN THE NEW CLEARWELL ELECTRICAL ROOM, SEE DWG. E202. REMOVE ALL EXISTING WIRING. EXISTING EXPOSED CONDUITS SHALL BE REMOVED AND RE-ROUTED TO THE NEW ELECTRICAL ROOM.



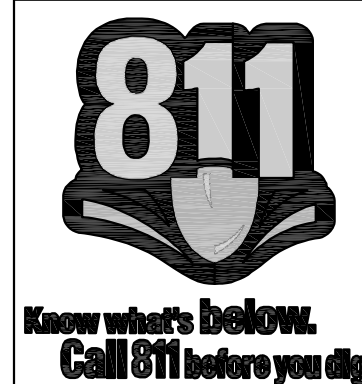
**FILTER AREA DEMOLITION PLAN**

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

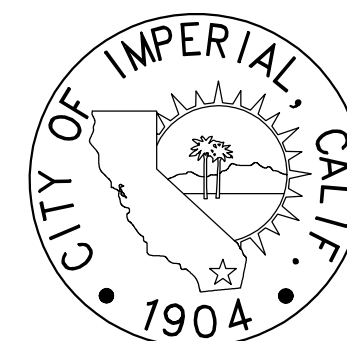


**SECTION**

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



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE
DESIGNED BY:	DRAWN BY:	CHECKED BY:		

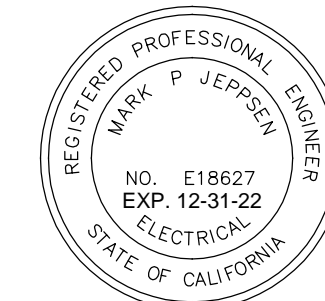


**CITY OF IMPERIAL**

CITY ENGINEER DATE

REFERENCES

ENGINEER'S SEAL



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PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
MARK P. JEPPESEN  
REGISTERED ELECTRICAL ENGINEER NO. E18627

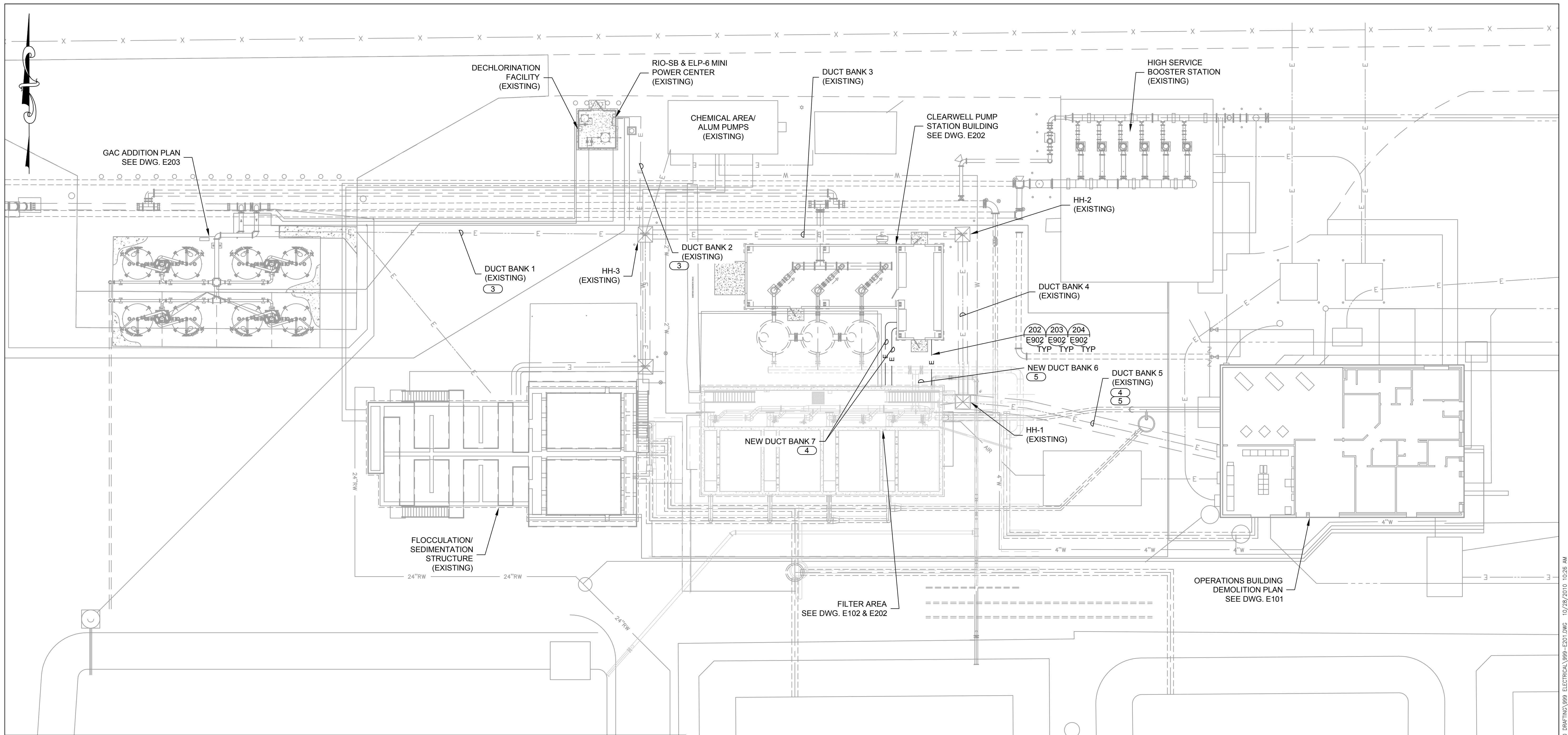
6/24/2022 DATE

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	
MPJ	06/22
SCALE:	
HORIZ. SCALE: 1" = 5'-0"	
VERT. SCALE: NA	

CITY OF IMPERIAL  
IMPERIAL COUNTY, CALIFORNIA  
CLEARWELL PS REPLACE., GAC TREATMENT  
SYSTEM EXPAN., AND FILTER PIPING REPLACE.  
AT THE WTP  
ELECTRICAL - DEMOLITION  
FILTER AREA DEMOLITION PLAN

BID NO.  
2022-05  
SHEET  
**46**  
OF 60  
DWG. NO. E102

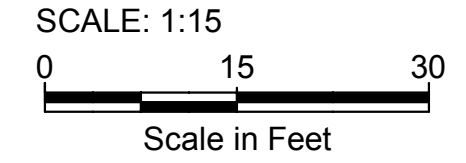




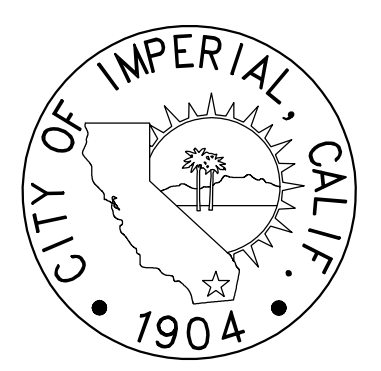
**NOTES**

- 1 CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. LIMIT EXPOSED CONDUITS, 90 DEG. BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL, CONTROL, AND POWER-CARRYING CONDUITS.
- 2 CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN TO THE ELECTRICAL ENGINEER FOR APPROVAL.
- 3 UTILIZE EXISTING DUCT BANKS 1 & 2 TO ROUTE NEW FLOW METER SIGNALS FROM THE NEW GAC FLOW METER TRANSMITTERS TO THE RIO-SB PANEL IN THE DECHLORINATION FACILITY.
- 4 INSTALL A NEW CONTROLS AND SIGNAL DUCT BANK (DUCT BANK 7) BETWEEN NEW PLC-F AND THE FILTER BUILDING. COORDINATE CONDUIT PENETRATIONS INTO THE BELOW GRADE FILTER GALLERY WITH THE OWNER AND ENGINEER. THESE CONDUITS WILL ROUTE ALONG THE WALLS AND CEILINGS AND MAY CONNECT TO EXISTING CONDUITS THAT WERE PREVIOUSLY ROUTED TO THE DEMOLISHED PLC-F. A NEW FIBER OPTIC CABLE WILL BE INSTALLED BETWEEN THE NEW PLC-F AND THE EXISTING PLC-OB IN THE OPERATIONS BUILDING. UTILIZE THE EXISTING DUCT BANK 5 FOR THIS CABLE. THE EXISTING FIBER PATCH PANEL IN PLC-OB SHALL BE REPURPOSED FOR THIS CABLE ONCE THE EXISTING CABLE IS REMOVED. THE CONTRACTOR SHALL MAKE PROVISIONS TO TEMPORARILY HAVE BOTH CABLES CONNECTED IN PLC-OB DURING THE CUTOVER.
- 5 INSTALL A NEW POWER DUCT BANK (DUCT BANK 6) BETWEEN THE CLEARWELL ELECTRICAL ROOM AND THE FILTER BUILDING. COORDINATE CONDUIT PENETRATIONS INTO THE BELOW GRADE FILTER GALLERY WITH THE OWNER AND ENGINEER. THESE CONDUITS WILL ROUTE ALONG THE WALLS AND CEILINGS AND MAY CONNECT TO EXISTING CONDUITS THAT WERE PREVIOUSLY ROUTED TO THE DEMOLISHED PANELBOARDS. THIS INCLUDES EXISTING PLC PANEL PLC-F, FILTER CONSOLES, ACTUATORS, LIGHTING, AND RECEPTACLES. UTILIZE DUCT BANK 5 AND EXISTING CONDUITS BETWEEN THE FILTER BUILDING AND THE OPERATIONS BUILDING TO INSTALL THE POWER FEEDER TO MCC-CW IN THE CLEARWELL ELECTRICAL ROOM.

**SITE PLAN**



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE
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**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES

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PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
MARK P. JEPPISEN  
REGISTERED ELECTRICAL ENGINEER NO. E18627

6/24/2022 DATE

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22
SCALE:	
HORIZ. SCALE: 1" = 40'-0"	
VERT. SCALE: N/A	

**CITY OF IMPERIAL**  
IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP  
ELECTRICAL - SITE  
SITE PLAN

DWG. NO. E201

BID NO. 2022-05  
SHEET 47 OF 60



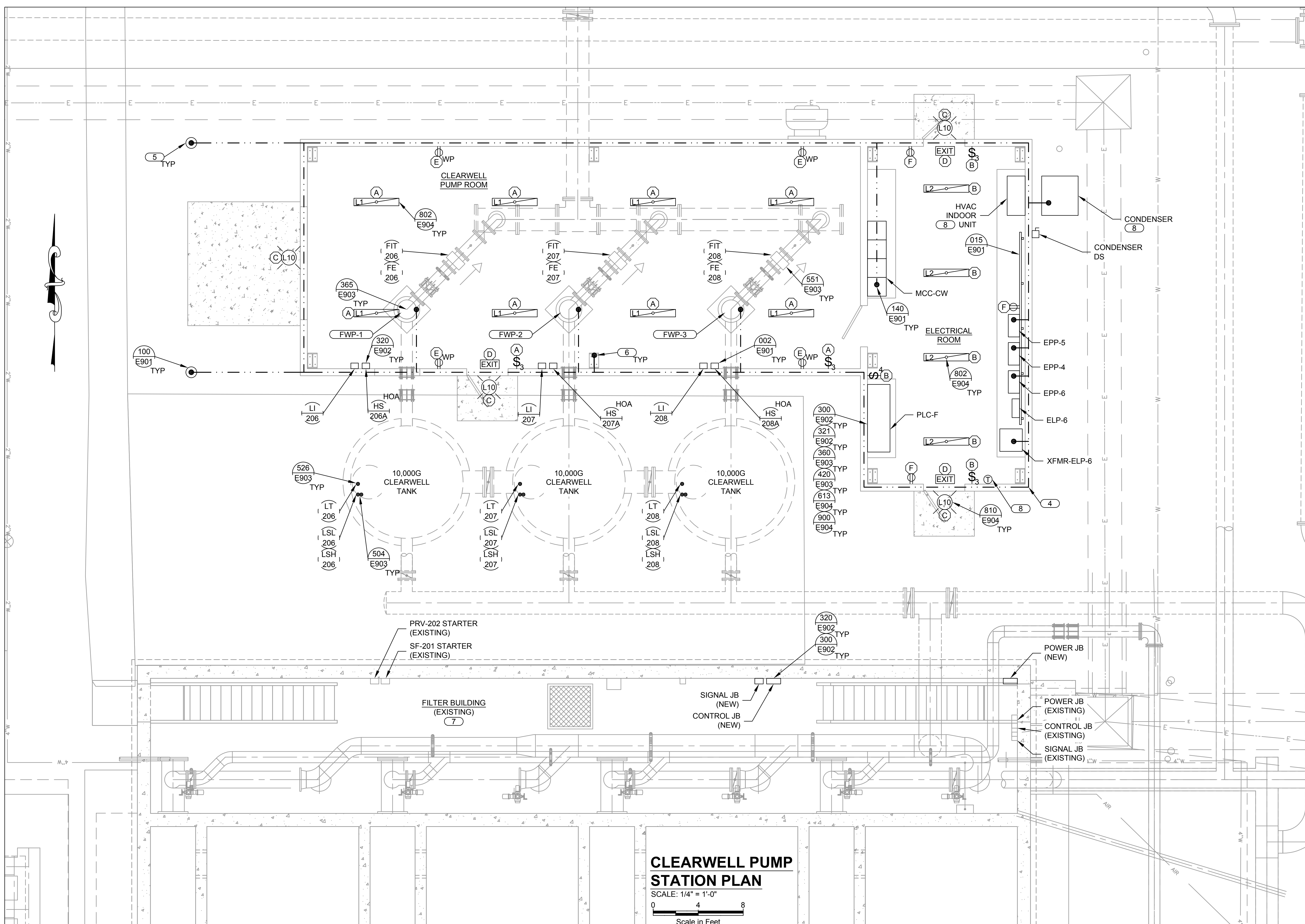


**NOTES**

- 1 CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. CONDUITS SHALL BE ROUTED UNDERGROUND OR IN THE WALLS WHEREVER POSSIBLE. ALL EXPOSED CONDUIT SHALL BE GR. PANELS IN THE ELECTRICAL ROOM MAY BE NEMA 1. EQUIPMENT IN THE PUMP ROOM SHALL BE NEMA 4. ALL CONDUIT BOXES, CHANNEL, STRAPS, ETC. SHALL BE HOT DIPPED GALVANIZED.
- 2 CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN TO THE ELECTRICAL ENGINEER FOR APPROVAL.
- 3 LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
- 4 CONTRACTOR SHALL PROVIDE 2 CONCRETE ENCASED ELECTRODES IN FOOTINGS PER SPECIFICATIONS 60' PER CONDUCTOR. CONTRACTOR SHALL CONNECT THE NEW BUILDING GROUND GRID TO THE EXISTING FACILITIES GROUND GRID. THIS SHALL BE ACHIEVED WITH A 1/0 GROUND WIRE FROM THE NEW BUILDING TO THE EXISTING OPERATIONS BUILDING.
- 5 CONTRACTOR SHALL INSTALL (2) 10'X3/4"Ø COPPER GROUND RODS 10' MINIMUM SPACING AND 10' MINIMUM FROM BUILDING.
- 6 BOND ALL BUILDING STEEL TO GROUND PER NEC.
- 7 SEE DWG. E102 FOR EXISTING EQUIPMENT AND INSTRUMENT LOCATIONS.
- 8 INSTALL A DUCTLESS SPLIT AIR CONDITIONING SYSTEM RATED AT 3 TONS AND POWERED BY SINGLE PHASE 208VAC. OUTDOOR CONDENSER SHALL BE MOUNTED ON A PAD. ROUTE REFRIGERANT AND CONTROL WIRING TO THE INDOOR UNIT IN THE ELECTRICAL ROOM. INSTALL A THERMOSTAT AND ROUTE WIRING TO THE INDOOR UNIT. THE SYSTEM SHALL BE THE MITSUBISHI MR. SLIM SERIES OR APPROVED EQUAL.

**ELECTRICAL LEGEND**

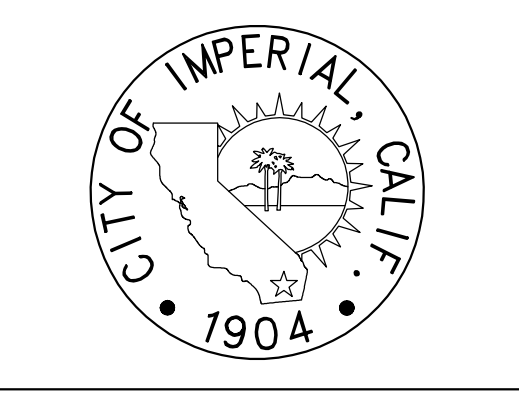
- L1 DAY-BRITE 66W 1'X4' WET LOCATION LED FIXTURE WITH EMERGENCY DRIVER. MOUNT AT 11'-0" AFF. MODEL DWAE70L840-4-UNV-EMLED OR APPROVED EQUAL
- L2 H.E. WILLIAMS 49W 1'X4' LED FIXTURE WITH EMERGENCY & DIMMING DRIVERS. MOUNT AT 9'-0" AFF. MODEL ATS1-14-L50/840-D-EM/10WLP-DIM-UNV OR APPROVED EQUAL
- L10 GE CURRENT EVOLVE LED 36W WALL LIGHT (WALL PACK) WITH PHOTO CELL CONTROL, BATTERY BACKUP AND DARK SKY COMPLIANCE. MODEL EWAS-01-1-B3-AW-7-40-D-3-FM-DKBZ-EMBR OR APPROVED EQUAL.
- EXIT CHLORIDE VE SERIES EXIT SIGN. MODEL VEGW OR APPROVED EQUAL.
- DUPLEX OUTLET
- G: GFCI PROTECTED OUTLET
- WP: WEATHER-PROOF OUTLET GFCI PROTECTED.
- T THERMOSTAT
- 3 LIGHT SWITCH
- 3: 3-WAY SWITCH
- 4: 4-WAY SWITCH
- (A) DEVICES WITH SAME LETTER CODE (I.E. A,B,C) REPRESENT DEVICES ON SAME CIRCUIT.



**CLEARWELL PUMP STATION PLAN**  
SCALE: 1/4" = 1'-0"  
0 4 8  
Scale in Feet



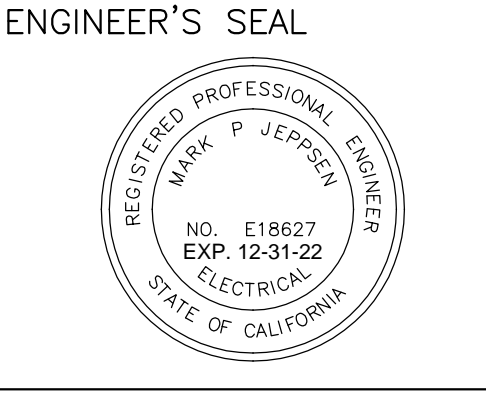
REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE
DESIGNED BY:	DRAWN BY:	CHECKED BY:		



**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES \_\_\_\_\_



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PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
MARK P. JEPPISEN  
REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22
SCALE:	-
HORIZ. SCALE: 1" = 5'-0"	
VERT. SCALE: NA	

**CITY OF IMPERIAL**  
IMPERIAL COUNTY, CALIFORNIA

**CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP**

**ELECTRICAL - SITE CLEARWELL PUMP STATION PLAN**

DWG. NO. E202

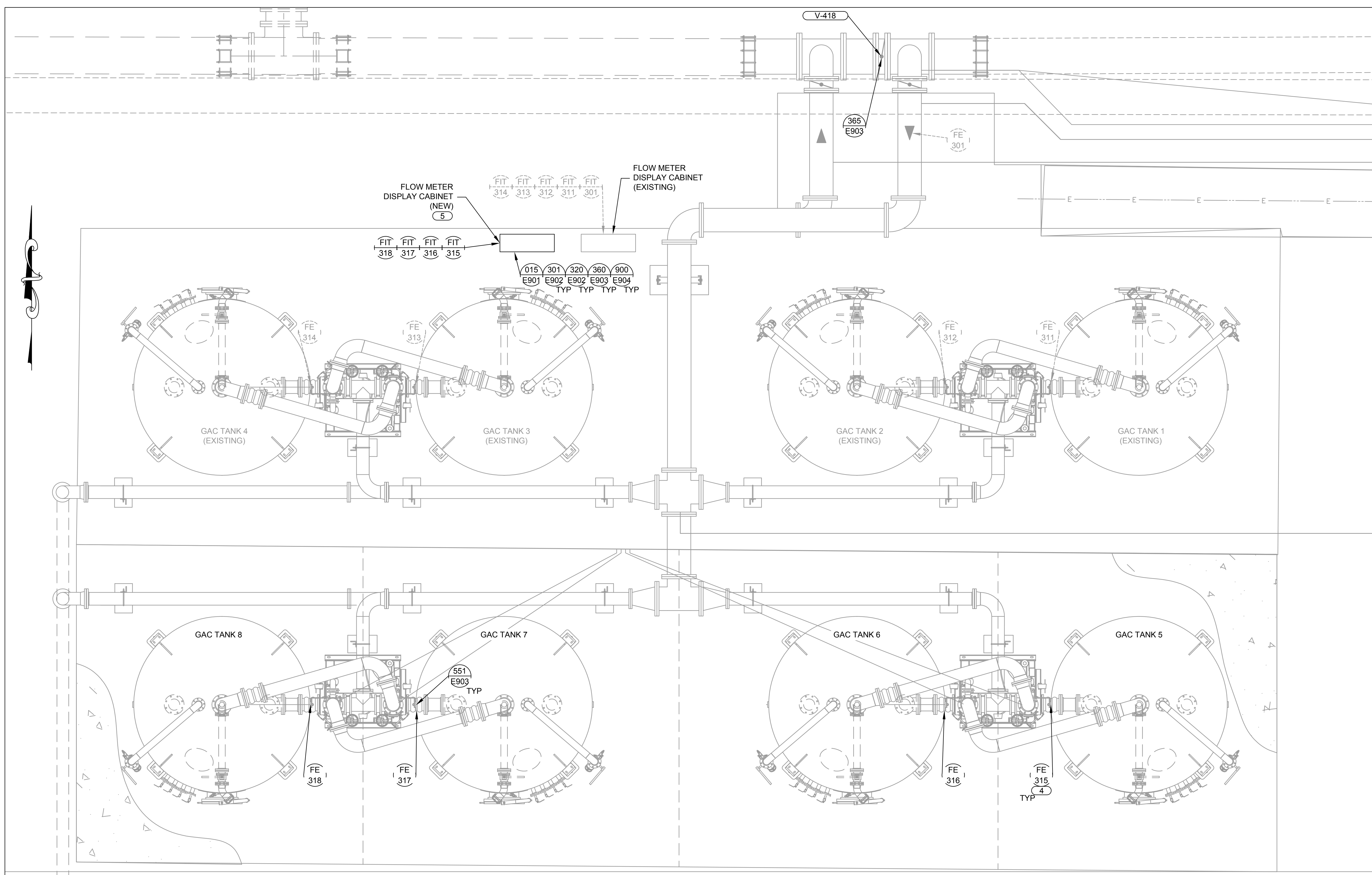
BID NO. 2022-05

SHEET 48 OF 60



**NOTES**

- 1 CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. ALL EXPOSED CONDUIT SHALL BE GRS. PANELS SHALL BE STAINLESS STEEL NEMA 4X.
- 2 CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN TO THE ELECTRICAL ENGINEER FOR APPROVAL.
- 3 LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
- 4 GROUND FLOWMETER PER MANUFACTURER'S RECOMMENDATIONS.
- 5 PROVIDE A NORTH FACING, NEMA 4X, WINDOWED ENCLOSURE FOR HOUSING THE FLOW TRANSMITTERS. THE FLOW TRANSMITTERS SHALL BE MOUNTED INSIDE THE ENCLOSURE SUCH THAT THEIR DISPLAYS ARE VIEWABLE THRU THE INNER DOOR. ROUTE A POWER AND A SIGNAL CONDUIT FROM THE EXISTING FLOW METER DISPLAY CABINET TO THE NEW CABINET. UTILIZE THE POWER FROM THE EXISTING CABINET TO POWER THE NEW METERS. UTILIZE THE EXISTING SIGNAL CONDUIT FROM THE EXISTING FLOW METER DISPLAY CABINET TO RIO-SB TO CONNECT THE ANALOG SIGNALS FROM THE NEW FLOW METERS TO RIO-SB. UTILIZE THE FOUR SPARE ANALOG INPUTS ON RIO-SB FOR THESE CONNECTIONS.



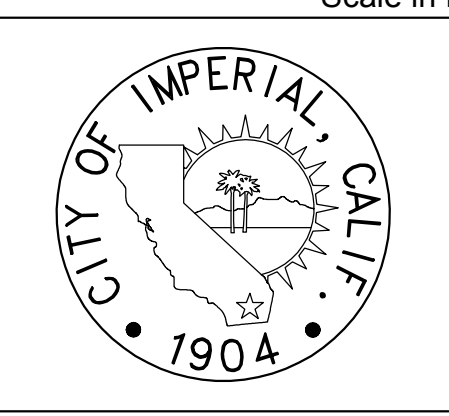
**GAC TREATMENT SYSTEM SITE PLAN**

SCALE: 3/8" = 1'-0"  
 0 2 4  
 Scale in Feet



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

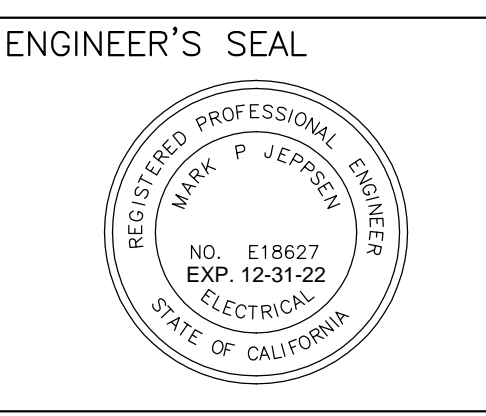
DESIGNED BY: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_



**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES



**skm**

533 W 2600 S, Suite 25  
 Bountiful, Utah 84010  
 Phone: (801) 677-0011  
 www.skmeng.com

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppson*  
 MARK P. JEPPESON  
 REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22

SCALE:  
 HORIZ. SCALE: 1" = 5'-0"  
 VERT. SCALE: N/A

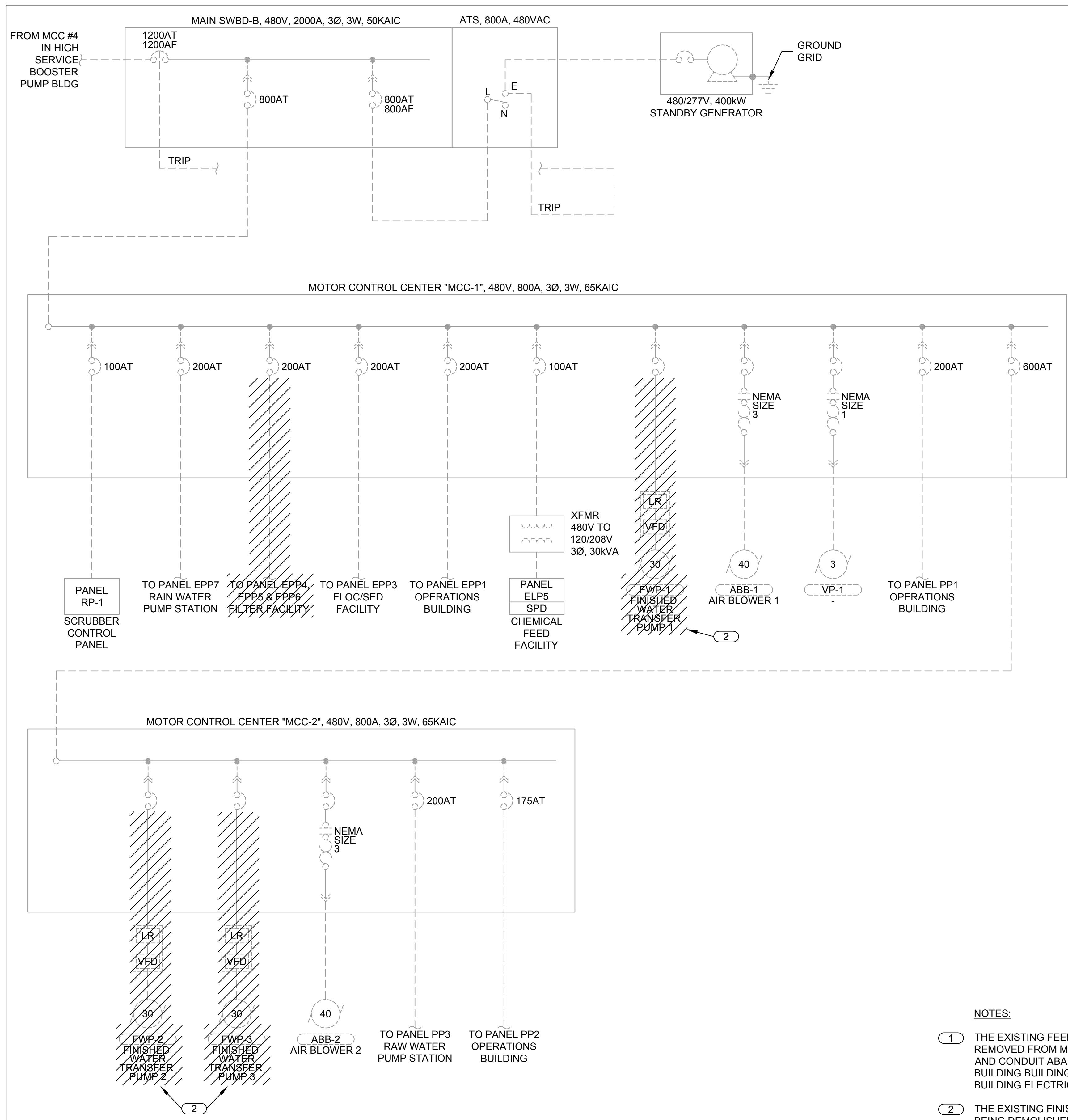
**CITY OF IMPERIAL**  
 IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP  
 ELECTRICAL - SITE  
 GAC ADDITION PLAN

DWG. NO. E203

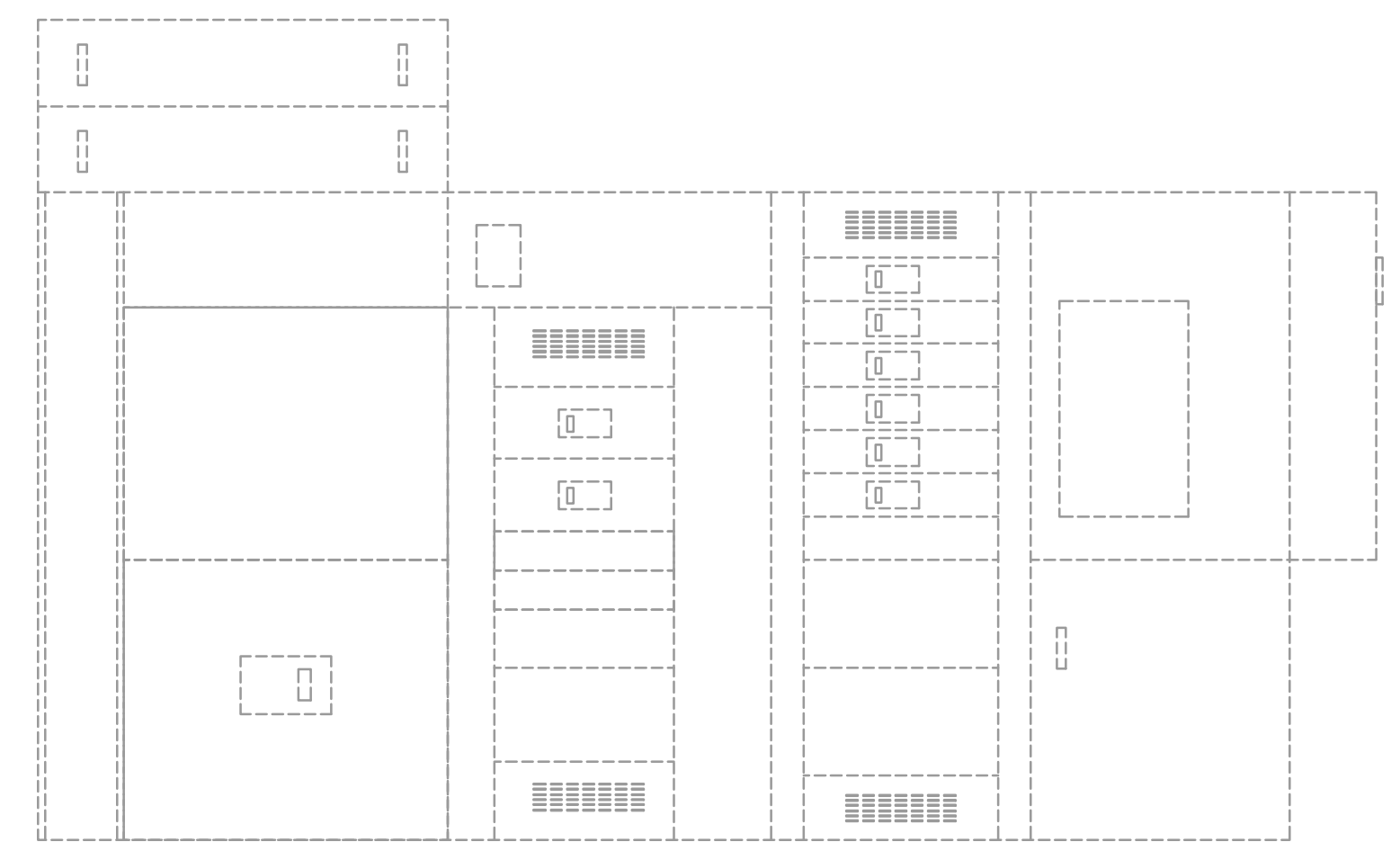
BID NO. 2022-05  
 SHEET 49 OF 60





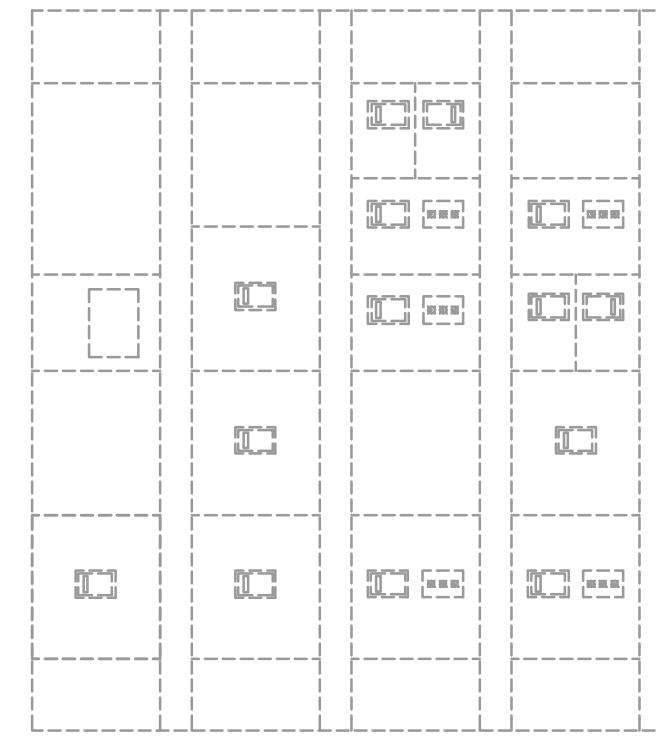
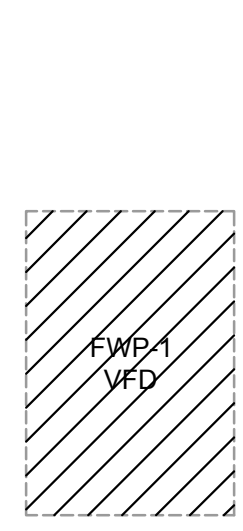
**DEMOLITION ONELINE DIAGRAM**

- NOTES:
- 1 THE EXISTING FEEDER TO THE FILTER BUILDING SHALL BE REMOVED FROM MCC-1. EXISTING WIRE SHALL BE REMOVED AND CONDUIT ABANDONED IN PLACE. POWER FOR THE BUILDING BUILDING WILL BE FED FROM THE NEW CLEARWELL BUILDING ELECTRICAL ROOM.
  - 2 THE EXISTING FINISHED WATER PUMP VFD'S AND PUMPS ARE BEING DEMOLISHED. REMOVE THE EXISTING VFD PANELS AND SALVAGE TO THE OWNER. REMOVE THE FEEDER CABLE AND CONDUITS BETWEEN THE MCC'S AND THE VFD CABINETS. REMOVE ASSOCIATED CONDUITS AND WIRE TO THE MOTORS AND TO PLC-OB.



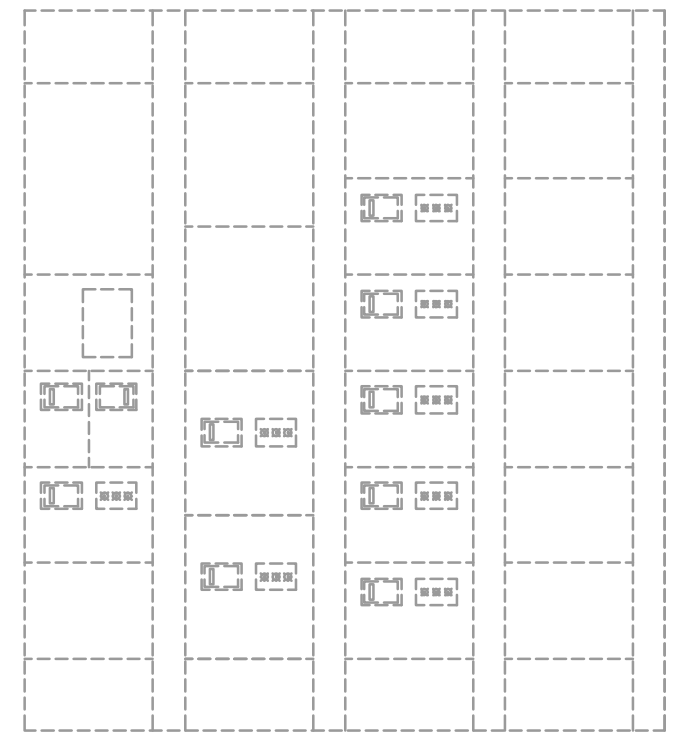
**MAIN SWBD-B ELEVATION**

SCALE: 1/2" = 1'-0



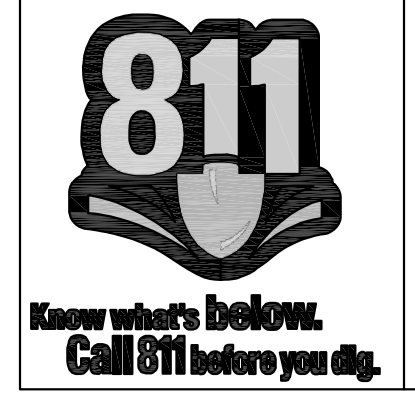
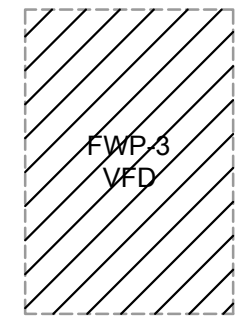
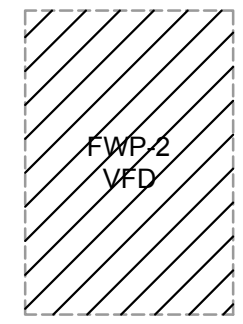
**MCC-1 ELEVATION**

SCALE: 1/2" = 1'-0



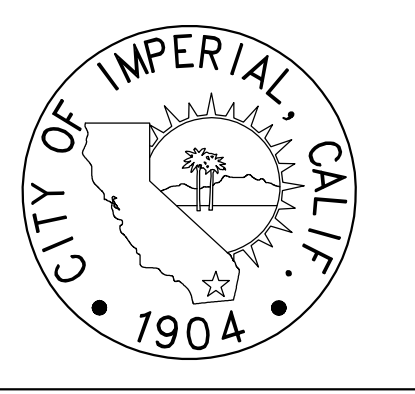
**MCC-2 ELEVATION**

SCALE: 1/2" = 1'-0



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

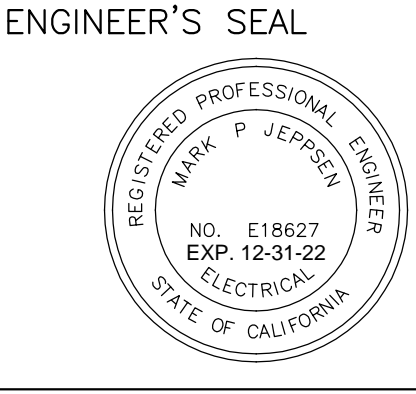
DESIGNED BY: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_



**CITY OF IMPERIAL**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

REFERENCES



**skm**

533 W 2600 S, Suite 25  
Bountiful, Utah 84010  
Phone: (801) 677-0011  
www.skmeng.com

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
MARK P. JEPPISEN  
REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22
-	-

HORIZ SCALE: N/A  
VERT. SCALE: N/A

**CITY OF IMPERIAL**  
IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPLAN., AND FILTER PIPING REPLACE. AT THE WTP

**ELECTRICAL - POWER DISTRIBUTION**

DEMOLITION ONELINE DIAGRAM

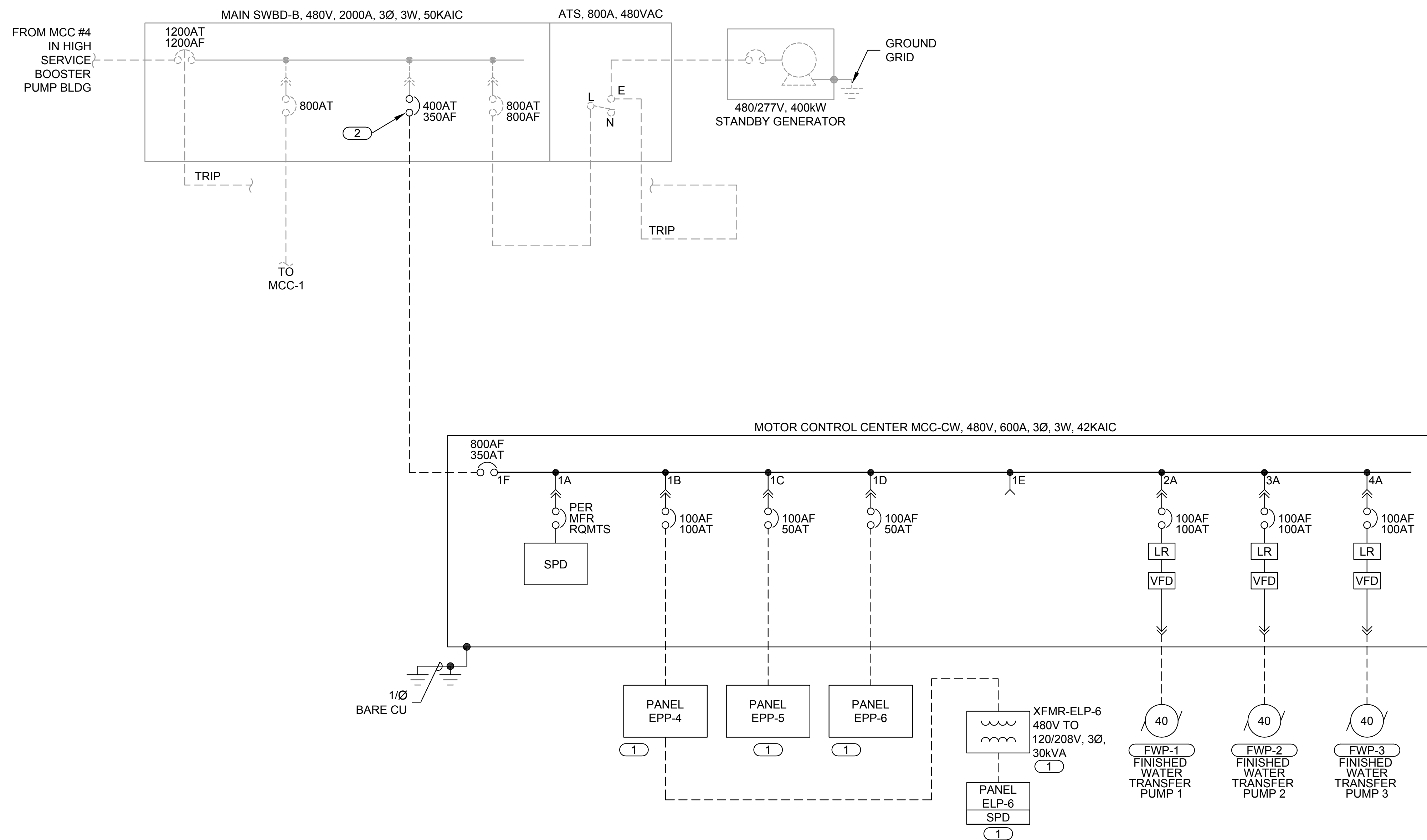
DWG. NO. \_\_\_\_\_

BID NO. 2022-05

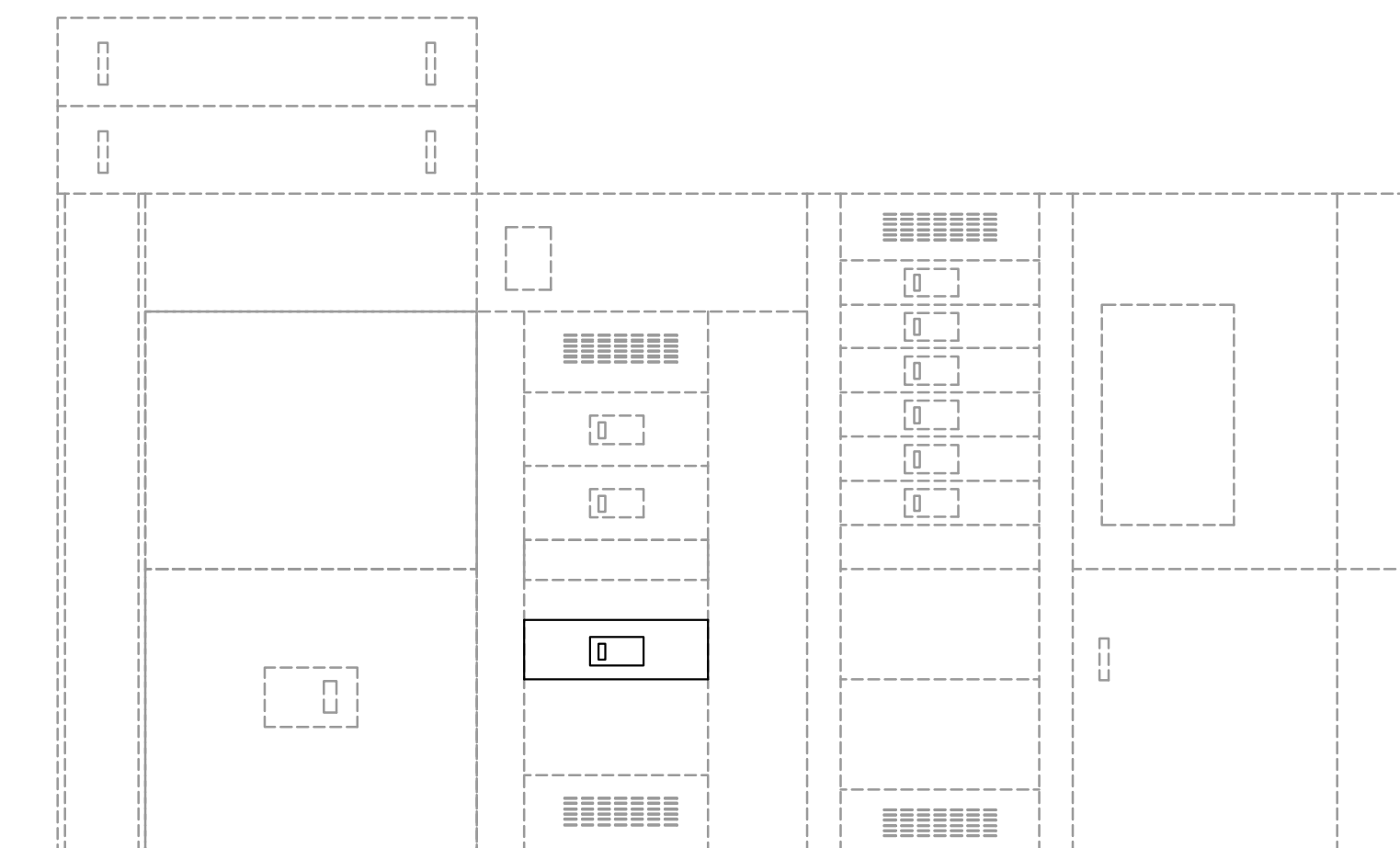
SHEET 50 OF 60

E501



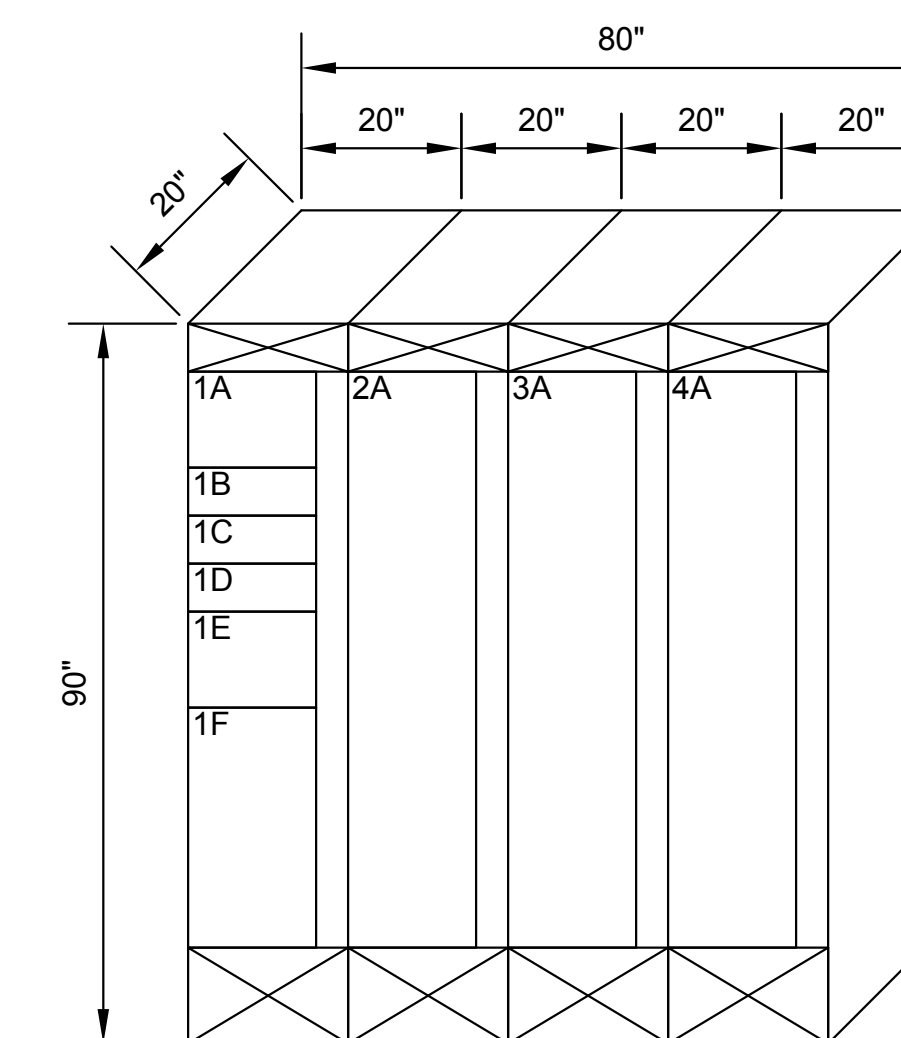


**ONLINE DIAGRAM**



**MAIN SWBD-B ELEVATION**

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

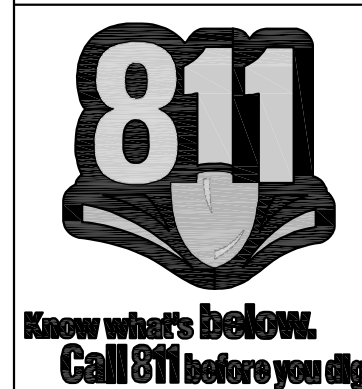


**MCC-CW ELEVATION**

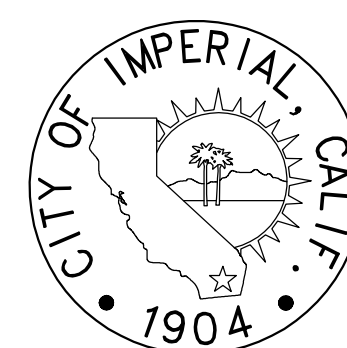
SCALE: 1/2" = 1'-0"

**NOTES:**

- ① PROVIDE NEW 480V AND 120/208V PANELBOARDS TO REPLACE THE FILTER BUILDING PANELBOARDS. THESE PANELBOARDS WILL SERVICE THE FILTER BUILDING AND THE NEW CLEARWELL BUILDING.
- ② INSTALL A NEW 400AF/400AT FEEDER BREAKER IN THE EXISTING SWBD-B. SWBD-B IS A WESTINGHOUSE POW-R-LINE-C SWITCHBOARD. THE BREAKER SHALL HAVE A 65KAIC WITHSTAND RATING.



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE
DESIGNED BY:	DRAWN BY:	CHECKED BY:		

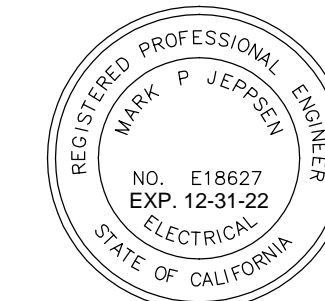


**CITY OF IMPERIAL**

CITY ENGINEER DATE

**REFERENCES**

**ENGINEER'S SEAL**



**skm**  
 533 W 2600 S, Suite 25  
 Bountiful, Utah 84010  
 Phone: (801) 677-0011  
 www.skmeng.com

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
 MARK P. JEPPISEN  
 REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	
MPJ	06/22
SCALE:	
HORIZ SCALE: N/A	
VERT. SCALE: N/A	

**CITY OF IMPERIAL**  
 IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP  
 ELECTRICAL - POWER DISTRIBUTION  
 ONLINE DIAGRAM

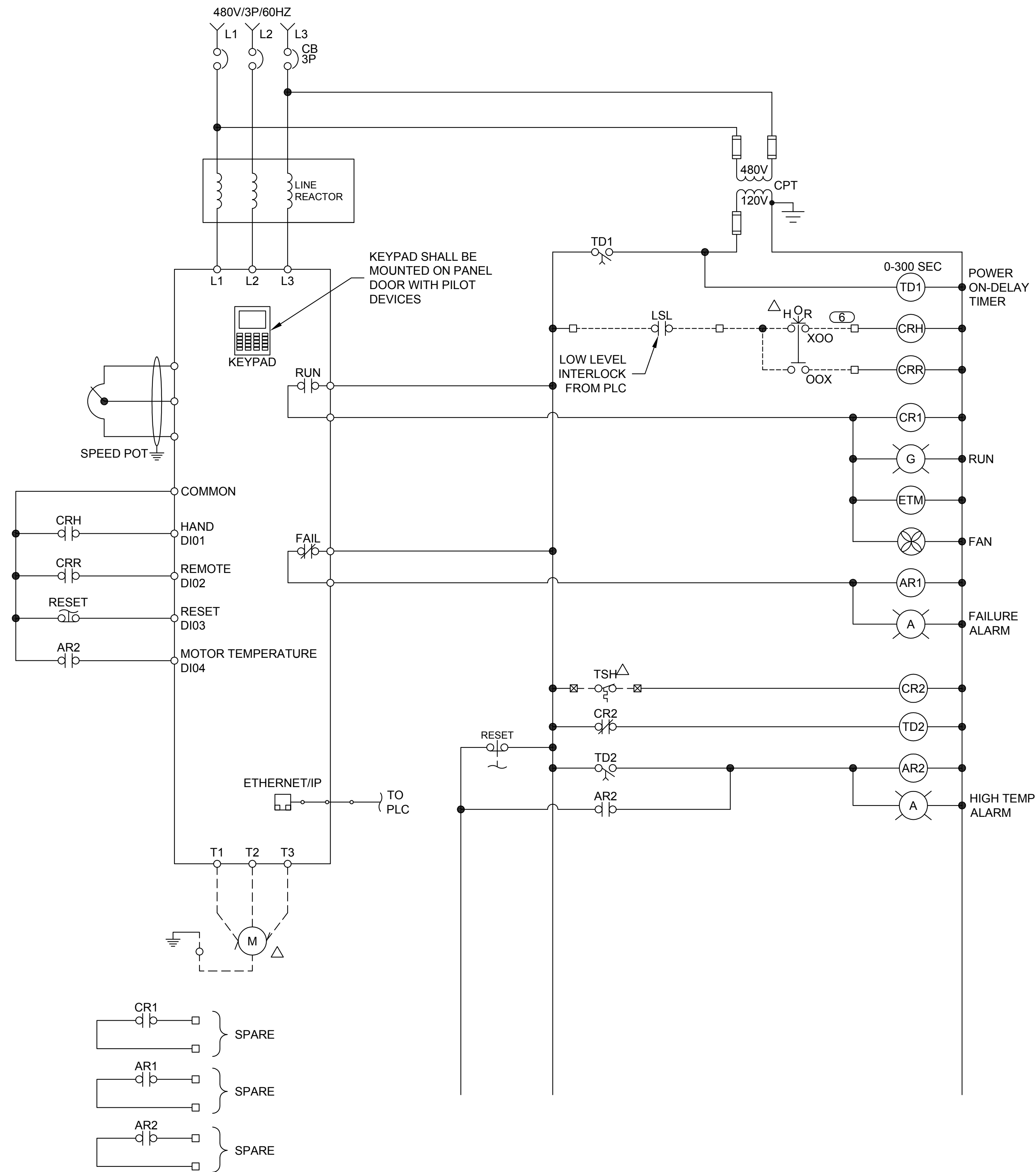
DWG. NO. E502

BID NO. 2022-05  
 SHEET 51 OF 60









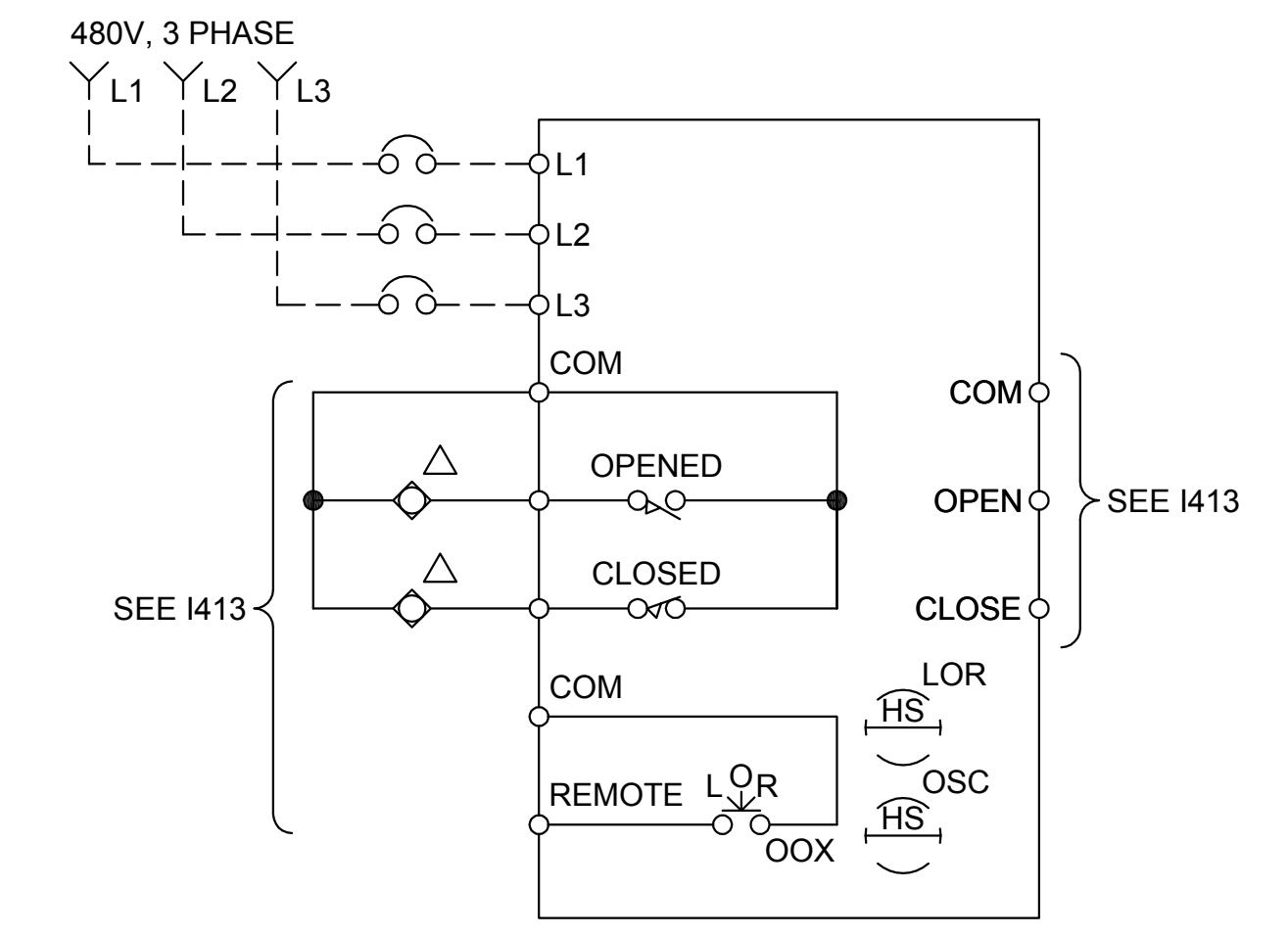
### VFD CONTROL DESCRIPTION

WHEN THE HOR SWITCH IS IN THE HAND POSITION, THE MOTOR SHOULD RUN. WHEN THE HOR SWITCH IS IN THE OFF POSITION, THE MOTOR SHOULD STOP AND WHEN THE HOR SWITCH IS IN THE REMOTE POSITION, THE MOTOR IS CONTROLLED BY THE PLC THROUGH THE ETHERNET NETWORK. THE PLC WILL BE ABLE TO MONITOR WHETHER THE HOR IS IN THE HAND OR REMOTE POSITION.

WHEN THE HOR SWITCH IS IN THE HAND POSITION, THE SPEED COMMAND COMES FROM THE POTENTIOMETER. WHEN IN THE REMOTE POSITION, THE SPEED COMMAND COMES FROM THE PLC THROUGH THE ETHERNET NETWORK.

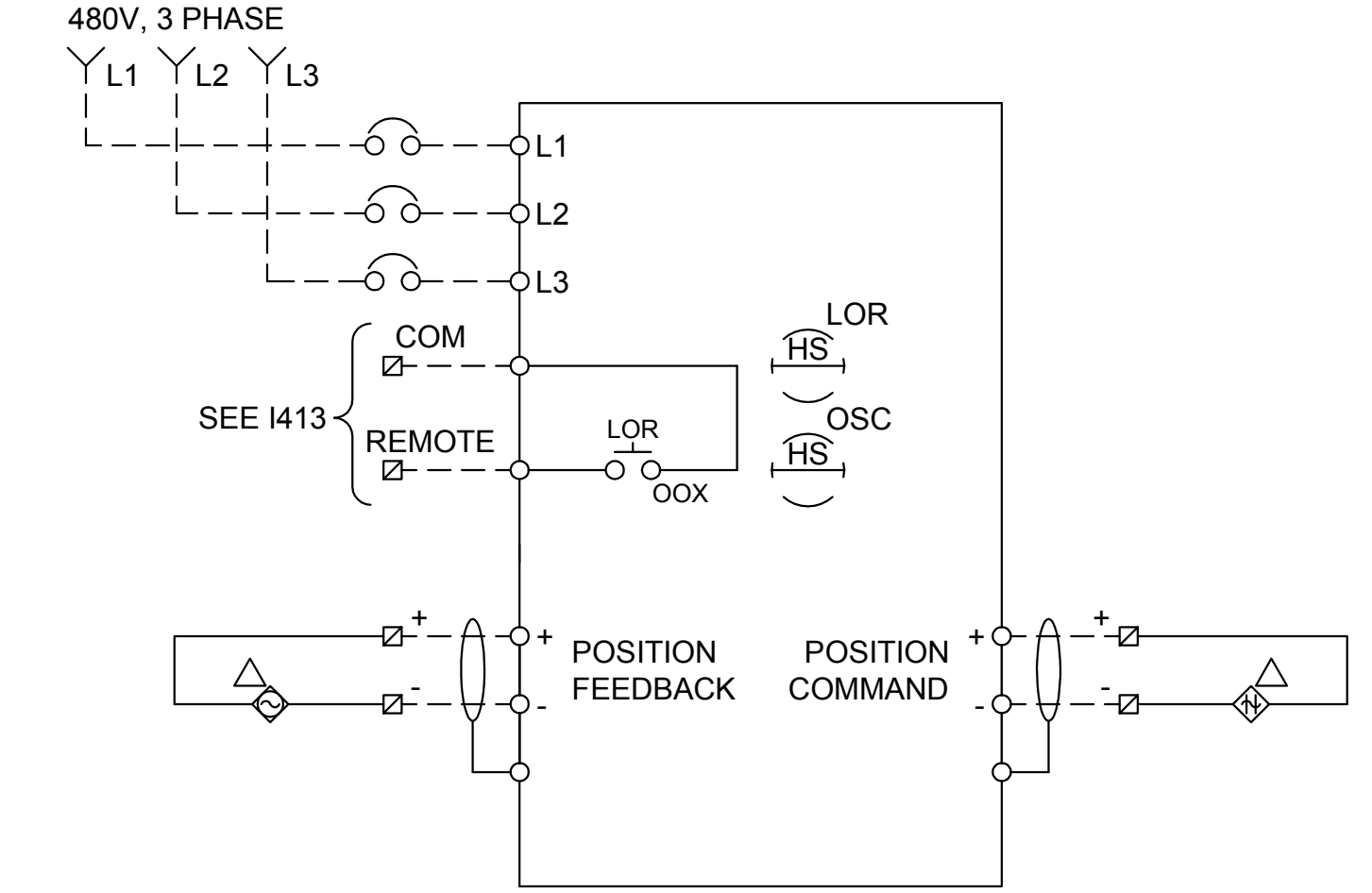
### VFD CONTROL SCHEMATIC

TYPICAL FOR: FILTER WATER PUMPS



### 480VAC VALVE SCHEMATIC

TYPICAL FOR: FILTER INFLUENT VALVES: FV-121, FV-141, FV-161, FV-181  
 FILTER AIR SCOUR VALVES: FV-130, FV-150, FV-170, FV-190  
 FILTER DRAIN VALVES: FV-129, FV-149, FV-169, FV-189  
 FILTER TO WASTE VALVES: FV-127, FV-147, FV-167, FV-187  
 FILTER BACKWASH INFLUENT VALVES: FV-133, FV-153, FV-173, FV-193



### 480VAC MODULATING VALVE SCHEMATIC

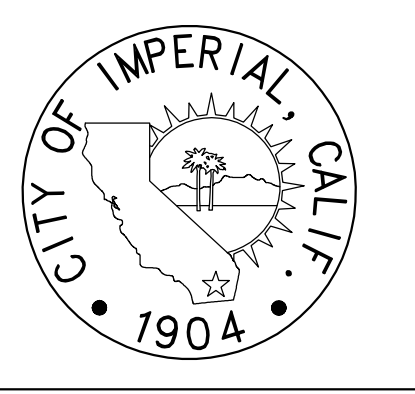
TYPICAL FOR: FILTER EFFLUENT VALVES: FV-128, FV-148, FV-168, FV-188

### NOTES:

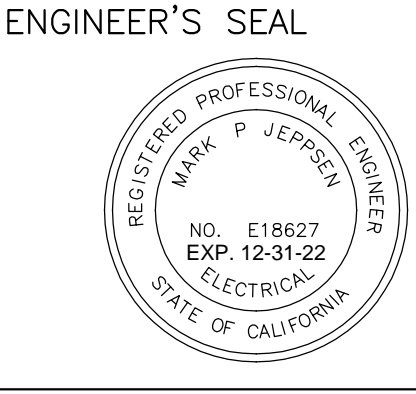
- 1) TYPICAL SCHEMATIC DIAGRAMS ARE INTENDED TO REFLECT THE GENERAL CONTROL STRATEGY. ACTUAL CIRCUITRY MAY VARY FOR SPECIFIC EQUIPMENT SUPPLIED. THE NUMBER AND TYPE OF DEVICES SHALL BE FURNISHED AS REQUIRED FOR PROPER OPERATION OF THE EQUIPMENT.
- 2) CONTROL POWER TRANSFORMERS (CPT) SHALL BE ADEQUATELY SIZED AND SHALL BE PROVIDED WITH PROPERLY SIZED FUSES FOR BOTH THE PRIMARY AND SECONDARY WINDINGS.
- 3) FUSES SHALL BE ADEQUATELY SIZED PER THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- 4) ADJUST TIME DELAY RELAYS PRIOR TO STARTUP. STAGGER TIMER SETTINGS FOR POWER ON-DELAY RELAYS.
- 5) CONTROL SWITCHES SHALL BE DOOR MOUNTED ON THEIR RESPECTIVE PANELS. DEVICES SHALL BE RATED FOR LINE VOLTAGE AND 125% OF LOAD CURRENT.
- 6) LOCAL CONTROLS SHALL BE INSTALLED ACCORDING TO P&ID'S AND NOT NECESSARILY AS SHOWN ON SCHEMATICS. SEE LCP SCHEMATICS AND CONDUIT SCHEDULE FOR EXACT WIRING.



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE
DESIGNED BY:	DRAWN BY:	CHECKED BY:		



<b>CITY OF IMPERIAL</b>	
CITY ENGINEER	DATE
REFERENCES	



533 W 2600 S, Suite 25  
 Bountiful, Utah 84010  
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 www.skmeng.com

PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
 MARK P. JEPPISEN  
 REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

	DATE
DESIGNED: MPJ	06/22
DRAWN: DCL	06/22
TRACED: N/A	-
CHECKED: MPJ	06/22
SUBMITTED: -	-

SCALE:  
 HORIZ. SCALE: N/A  
 VERT. SCALE: N/A

**CITY OF IMPERIAL**  
 IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT  
 SYSTEM EXPAN., AND FILTER PIPING REPLACE.  
 AT THE WTP  
 ELECTRICAL - POWER DISTRIBUTION  
 SCHEMATICS

DWG. NO. E601

BID NO. 2022-05
SHEET <b>53</b> OF 60



SHEET	TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	RANGE	COMMENTS
I108	LSH-206	FILTERED WATER PUMP 1 HIGH LEVEL FLOAT	FLYGT	ENM-10	24VDC	NC CONTACT	OR APPROVED EQUAL
I108	LSL-206	FILTERED WATER PUMP 1 LOW LEVEL FLOAT	FLYGT	ENM-10	24VDC	NO CONTACT	OR APPROVED EQUAL
I108	LT-206	FILTERED WATER PUMP 1 LEVEL TRANSMITTER	DWYER	PBLT2-10-40	24VDC	0-23.1 FEET	OR APPROVED EQUAL
I108	LI-206	FILTERED WATER PUMP 1 LEVEL INDICATOR	PRECISION DIGITAL	PD765-7R3-00	24VDC	N/A	PROVIDE WITH SMALL NEMA 4X ENCLOSURE, PDA2301, OR APPROVED EQUAL
I108	FE/FIT-206	FILTERED WATER PUMP 1 FLOW METER	ROSEMOUNT	8750W	120VAC	0-2000 GPM	12" FLOW TUBE WITH INTEGRAL TRANSMITTER, OR APPROVED EQUAL
I108	LSH-207	FILTERED WATER PUMP 2 HIGH LEVEL FLOAT	FLYGT	ENM-10	24VDC	NC CONTACT	OR APPROVED EQUAL
I108	LSL-207	FILTERED WATER PUMP 2 LOW LEVEL FLOAT	FLYGT	ENM-10	24VDC	NO CONTACT	OR APPROVED EQUAL
I108	LT-207	FILTERED WATER PUMP 2 LEVEL TRANSMITTER	DWYER	PBLT2-10-40	24VDC	0-23.1 FEET	OR APPROVED EQUAL
I108	LI-207	FILTERED WATER PUMP 2 LEVEL INDICATOR	PRECISION DIGITAL	PD765-7R3-00	24VDC	N/A	PROVIDE WITH SMALL NEMA 4X ENCLOSURE, PDA2301, OR APPROVED EQUAL
I108	FE/FIT-207	FILTERED WATER PUMP 2 FLOW METER	ROSEMOUNT	8750W	120VAC	0-2000 GPM	12" FLOW TUBE WITH INTEGRAL TRANSMITTER, OR APPROVED EQUAL
I108	LSH-208	FILTERED WATER PUMP 3 HIGH LEVEL FLOAT	FLYGT	ENM-10	24VDC	NC CONTACT	OR APPROVED EQUAL
I108	LSL-208	FILTERED WATER PUMP 3 LOW LEVEL FLOAT	FLYGT	ENM-10	24VDC	NO CONTACT	OR APPROVED EQUAL
I108	LT-208	FILTERED WATER PUMP 3 LEVEL TRANSMITTER	DWYER	PBLT2-10-40	24VDC	0-23.1 FEET	OR APPROVED EQUAL
I108	LI-208	FILTERED WATER PUMP 3 LEVEL INDICATOR	PRECISION DIGITAL	PD765-7R3-00	24VDC	N/A	PROVIDE WITH SMALL NEMA 4X ENCLOSURE, PDA2301, OR APPROVED EQUAL
I108	FE/FIT-208	FILTERED WATER PUMP 3 FLOW METER	ROSEMOUNT	8750W	120VAC	0-2000 GPM	12" FLOW TUBE WITH INTEGRAL TRANSMITTER, OR APPROVED EQUAL
I110	FE/FIT-315	GAC FILTER TANK 5 FLOW METER	ROSEMOUNT	8750W	120VAC	0-1000 GPM	8" FLOW TUBE WITH REMOTE TRANSMITTER, OR APPROVED EQUAL
I110	FE/FIT-316	GAC FILTER TANK 6 FLOW METER	ROSEMOUNT	8750W	120VAC	0-1000 GPM	8" FLOW TUBE WITH REMOTE TRANSMITTER, OR APPROVED EQUAL
I110	FE/FIT-317	GAC FILTER TANK 7 FLOW METER	ROSEMOUNT	8750W	120VAC	0-1000 GPM	8" FLOW TUBE WITH REMOTE TRANSMITTER, OR APPROVED EQUAL
I110	FE/FIT-318	GAC FILTER TANK 8 FLOW METER	ROSEMOUNT	8750W	120VAC	0-1000 GPM	8" FLOW TUBE WITH REMOTE TRANSMITTER, OR APPROVED EQUAL

### INSTRUMENT SCHEDULE

POWER CONDUIT								
CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED IN	DUCTBANKS	NOTES
P001	3"	3-400 MCM W/ 1/0 GND	480VAC	MCC-1	MCC-CW		DB-5, 6	THROUGH HH-1
P002	1.25"	3#2 W/#8 GND	480VAC	MCC-CW	EPP-4			
P003	1"	3#6 W/#8 GND	480VAC	MCC-CW	EPP-5			
P004	1"	3#6 W/#8 GND	480VAC	MCC-CW	EPP-6			
P005	1.25"	3#4 W/#8 GND	480VAC	MCC-CW	XFMR-ELP-6			
P005A	1.5"	3#1 W/#4 GND	480VAC	XFMR-ELP-6	ELP-6			
P006	1"	2#12 W/#12 GND	120VAC	ELP-6	PLC-F			
P007	1"	2#8 W/#10 GND	208VAC	ELP-6	CONDENSER			ROUTE THROUGH DISCONNECT SWITCH
P008	1"	2#12 W/#12 GND	208VAC	CONDENSER	AC UNIT			
P009	1"	2#12 W/#12 GND	120VAC	ELP-6	TSTAT			
P009A	1"	2#12 W/#12 GND	120VAC	TSTAT	FAN			
P121	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-121	P121+	DB-6	
P127	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-127	P121+	DB-6	
P128	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-128	P121+	DB-6	
P129	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-129	P121+	DB-6	
P130	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-130	P121+	DB-6	
P133	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-133	P121+	DB-6	
P134	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-134	P121+	DB-6	
P141	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-141	P141+	DB-6	
P147	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-147	P141+	DB-6	
P148	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-148	P141+	DB-6	
P149	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-149	P141+	DB-6	
P150	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-150	P141+	DB-6	
P153	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-153	P141+	DB-6	
P161	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-161	P161+	DB-6	
P167	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-167	P161+	DB-6	
P168	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-168	P161+	DB-6	
P169	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-169	P161+	DB-6	
P170	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-170	P161+	DB-6	
P173	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-173	P161+	DB-6	
P181	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-181	P181+	DB-6	
P187	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-187	P181+	DB-6	
P188	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-188	P181+	DB-6	
P189	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-189	P181+	DB-6	
P190	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-190	P181+	DB-6	
P193	3/4"	3#10 W/#12 GND	480VAC	EPP-5	FV-193	P181+	DB-6	
P201	3/4"	3#10 W/#12 GND	480VAC	EPP-4	FVNR-201	P201+	DB-6	
P202	3/4"	3#10 W/#12 GND	480VAC	EPP-4	FVNR-202	P201+	DB-6	
P206	1.25"	3#4 W/#8 GND, 2#14	480VAC	MCC-CW	FWP-1			
P206A	1"	2#12 W/#12 GND	120VAC	ELP-6	FIT-206			
P207	1.25"	3#4 W/#8 GND, 2#14	480VAC	MCC-CW	FWP-2			
P207A	1"	2#12 W/#12 GND	120VAC	ELP-6	FIT-207			
P208	1.25"	3#4 W/#8 GND, 2#14	480VAC	MCC-CW	FWP-3			
P208A	1"	2#12 W/#12 GND	120VAC	ELP-6	FIT-208			
P315	3/4"	2#12 W/#12 GND	120VAC	EX. FLOW METER CABINET	NEW FLOW METER CABINET (FIT-315, 316, 317, & 318)			

CONTROL CONDUIT								
CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED IN	DUCTBANKS	NOTES
C001	1"	8#14	120VAC	PLC-F	MCC-CW			
C002	1"	TSTAT CABLE	24VAC	AC UNIT	TSTAT			
C121	3/4"	8#12	120VAC	PLC-F	FV-121	C121+, C121A+	DB-7	
C121A	3/4"	6#12	120VAC	FILTER CONSOLE A	FV-121	C121+, C121B+		
C121B	1"	16#12	120VAC	FILTER CONSOLE A	PLC-F	C121A+, C121B+		
C127	3/4"	8#12	120VAC	PLC-F	FV-127	C127+, C121A+	DB-7	
C127A	3/4"	6#12	120VAC	FILTER CONSOLE A	FV-127	C127+, C121B+		
C128	3/4"	4#12	120VAC	PLC-F	FV-128	C128+, C121A+	DB-7	
C128A	3/4"	2#12	120VAC	FILTER CONSOLE A	FV-128	C128+, C121B+		
C129	3/4"	8#12	120VAC	PLC-F	FV-129	C129+, C121A+	DB-7	
C129A	3/4"	6#12	120VAC	FILTER CONSOLE A	FV-129	C129+, C121B+		
C130	3/4"	8#12	120VAC	PLC-F	FV-130	C130+, C121A+	DB-7	
C130A	3/4"	6#12	120VAC	FILTER CONSOLE A	FV-130	C130+, C121B+		
C133	3/4"	8#12	120VAC	PLC-F	FV-133	C133+, C121A+	DB-7	
C133A	3/4"	6#12	120VAC	FILTER CONSOLE A	FV-133	C133+, C121B+		
C134	3/4"	4#12	120VAC	PLC-F	FV-134	C128+, C121A+	DB-7	
C134A	3/4"	2#12	120VAC	FILTER CONSOLE B	FV-134	C128+, C121B+		
C141	3/4"	8#12	120VAC	PLC-F	FV-141	C141+, C141A+	DB-7	
C141A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-141	C141+, C141B+		
C141B	1"	16#12	120VAC	FILTER CONSOLE B	PLC-F	C141A+, C141B+		
C147	3/4"	8#12	120VAC	PLC-F	FV-147	C147+, C141A+	DB-7	
C147A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-147	C147+, C141B+		
C148	3/4"	4#12	120VAC	PLC-F	FV-148	C148+, C141A+	DB-7	
C148A	3/4"	2#12	120VAC	FILTER CONSOLE B	FV-148	C148+, C141B+		
C149	3/4"	8#12	120VAC	PLC-F	FV-149	C149+, C141A+	DB-7	
C149A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-149	C149+, C141B+		
C150	3/4"	8#12	120VAC	PLC-F	FV-150	C150+, C141A+	DB-7	
C150A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-150	C150+, C141B+		
C153	3/4"	8#12	120VAC	PLC-F	FV-153	C153+, C141A+	DB-7	
C153A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-153	C153+, C141B+		
C161	3/4"	8#12	120VAC	PLC-F	FV-161	C161+, C161A+	DB-7	
C161A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-161	C161+, C161B+		
C161B	1"	16#12	120VAC	FILTER CONSOLE B	PLC-F	C161A+, C161B+		
C167	3/4"	8#12	120VAC	PLC-F	FV-167	C167+, C161A+	DB-7	
C167A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-167	C167+, C161B+		
C168	3/4"	4#12	120VAC	PLC-F	FV-168	C168+, C161A+	DB-7	
C168A	3/4"	2#12	120VAC	FILTER CONSOLE B	FV-168	C168+, C161B+		
C169	3/4"	8#12	120VAC	PLC-F	FV-169	C169+, C161A+	DB-7	
C169A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-169	C169+, C161B+		
C170	3/4"	8#12	120VAC	PLC-F	FV-170	C170+, C161A+	DB-7	
C170A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-170	C170+, C161B+		
C173	3/4"	8#12	120VAC	PLC-F	FV-173	C173+, C161A+	DB-7	
C173A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-173	C173+, C161B+		
C181	3/4"	8#12	120VAC	PLC-F	FV-181	C181+, C181A+	DB-7	
C181A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-181	C181+, C181B+		
C181B	1"	16#12	120VAC	FILTER CONSOLE B	PLC-F	C181A+, C181B+		
C187	3/4"	8#12	120VAC	PLC-F	FV-187	C187+, C181A+	DB-7	
C187A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-187	C187+, C181B+		
C188	3/4"	4#12	120VAC	PLC-F	FV-188	C188+, C181A+	DB-7	
C188A	3/4"	2#12	120VAC	FILTER CONSOLE B	FV-188	C188+, C181B+		
C189	3/4"	8#12	120VAC	PLC-F	FV-189	C189+, C181A+	DB-7	
C189A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-189	C189+, C181B+		
C190	3/4"	8#12	120VAC	PLC-F	FV-190	C190+, C181A+	DB-7	
C190A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-190	C190+, C181B+		
C193	3/4"	8#12	120VAC	PLC-F	FV-193	C193+, C181A+	DB-7	
C193A	3/4"	6#12	120VAC	FILTER CONSOLE B	FV-193	C193+, C181B+		
C206	1"	4#12 W/#12 GND	24VDC	PLC-F	LSH-206, LSL-206			
C206A	1"	4#14 W/#14 GND	120VAC	MCC-CW	LCP-206			
C207	1"	4#12 W/#12 GND	24VDC	PLC-F	LSH-207, LSL-207			
C207A	1"	4#14 W/#14 GND	120VAC	MCC-CW	LCP-207			
C208	1"	4#12 W/#12 GND	24VDC	PLC-F	LSH-208, LSL-208			
C208A	1"	4#14 W/#14 GND	120VAC	MCC-CW	LCP-208			



SIGNAL CONDUIT								
CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED IN	DUCTBANKS	NOTES
S123	3/4"	#18 TSP	SIGNAL	LIT-123	PLC-F	S123+	DB-7	
S125	3/4"	#18 TSP	SIGNAL	PDIT-125	PLC-F	S123+	DB-7	
S126	3/4"	#18 TSP	SIGNAL	AIT-126	PLC-F	S123+	DB-7	
S128	3/4"	2 #18 TSP	SIGNAL	FV-128	PLC-F	S123+	DB-7	
S128A	1"	#18 TSP	SIGNAL	PLC-F	FILTER CONSOLE A	S123+	DB-7	
S128B	3/4"	#18 TSP	SIGNAL	FIT-128	PLC-F	S123+	DB-7	
S143	3/4"	#18 TSP	SIGNAL	LIT-143	PLC-F	S143+	DB-7	
S145	3/4"	#18 TSP	SIGNAL	PDIT-145	PLC-F	S143+	DB-7	
S146	3/4"	#18 TSP	SIGNAL	AIT-146	PLC-F	S143+	DB-7	
S148	3/4"	2 #18 TSP	SIGNAL	FV-148	PLC-F	S143+	DB-7	
S148A	1"	#18 TSP	SIGNAL	PLC-F	FILTER CONSOLE A	S143+	DB-7	
S148B	3/4"	#18 TSP	SIGNAL	FIT-148	PLC-F	S143+	DB-7	
S163	3/4"	#18 TSP	SIGNAL	LIT-163	PLC-F	S163+	DB-7	
S165	3/4"	#18 TSP	SIGNAL	PDIT-165	PLC-F	S163+	DB-7	
S166	3/4"	#18 TSP	SIGNAL	AIT-166	PLC-F	S163+	DB-7	
S168	3/4"	2 #18 TSP	SIGNAL	FV-168	PLC-F	S163+	DB-7	
S168A	1"	#18 TSP	SIGNAL	PLC-F	FILTER CONSOLE B	S163+	DB-7	
S168B	3/4"	#18 TSP	SIGNAL	FIT-168	PLC-F	S163+	DB-7	
S183	3/4"	#18 TSP	SIGNAL	LIT-183	PLC-F	S183+	DB-7	
S185	3/4"	#18 TSP	SIGNAL	PDIT-185	PLC-F	S183+	DB-7	
S186	3/4"	#18 TSP	SIGNAL	AIT-186	PLC-F	S183+	DB-7	
S188	3/4"	2 #18 TSP	SIGNAL	FV-188	PLC-F	S183+	DB-7	
S188A	1"	#18 TSP	SIGNAL	PLC-F	FILTER CONSOLE B	S183+	DB-7	
S188B	3/4"	#18 TSP	SIGNAL	FIT-188	PLC-F	S183+	DB-7	
S194	3/4"	#18 TSP	SIGNAL	AIT-194	PLC-F	S183+	DB-7	
S206	1"	#18 TSP	SIGNAL	LI-206	LI-206			
S206A	1"	#18 TSP	SIGNAL	LI-206	PLC-F			
S206B	1"	2 #18 TSP	SIGNAL	FIT-208	PLC-F			
S207	1"	#18 TSP	SIGNAL	LI-207	LI-207			
S207A	1"	#18 TSP	SIGNAL	LI-207	PLC-F			
S207B	1"	2 #18 TSP	SIGNAL	FIT-208	PLC-F			
S208	1"	#18 TSP	SIGNAL	LI-208	LI-208			
S208A	1"	#18 TSP	SIGNAL	LI-208	PLC-F			
S208B	1"	2 #18 TSP	SIGNAL	FIT-208	PLC-F			
S301	1"	4-PR #18 TSP	SIGNAL	LCP-315	RIO-SB		DB-1, 2	THRU HH-3, EXISTING CONDUIT
S315	1"	MFR CABLE	SIGNAL	FE-315	LCP-315 / FIT-315			
S316	1"	MFR CABLE	SIGNAL	FE-316	LCP-315 / FIT-316			
S317	1"	MFR CABLE	SIGNAL	FE-317	LCP-315 / FIT-317			
S318	1"	MFR CABLE	SIGNAL	FE-318	LCP-315 / FIT-318			


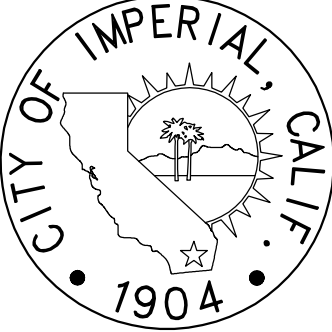

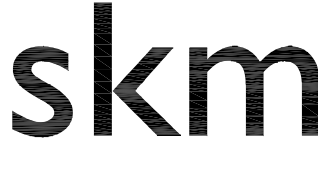
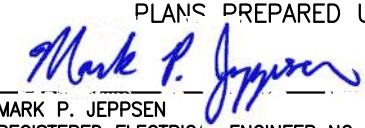
COMMUNICATION CONDUIT								
CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED IN	DUCTBANKS	NOTES
F001	2"	12-STRAND OM4 MM FIBER	COMMS	PLC-OB	PLC-F			
F002	2"	3 CAT6 SHIELDED	COMMS	PLC-F	MCC-CW			

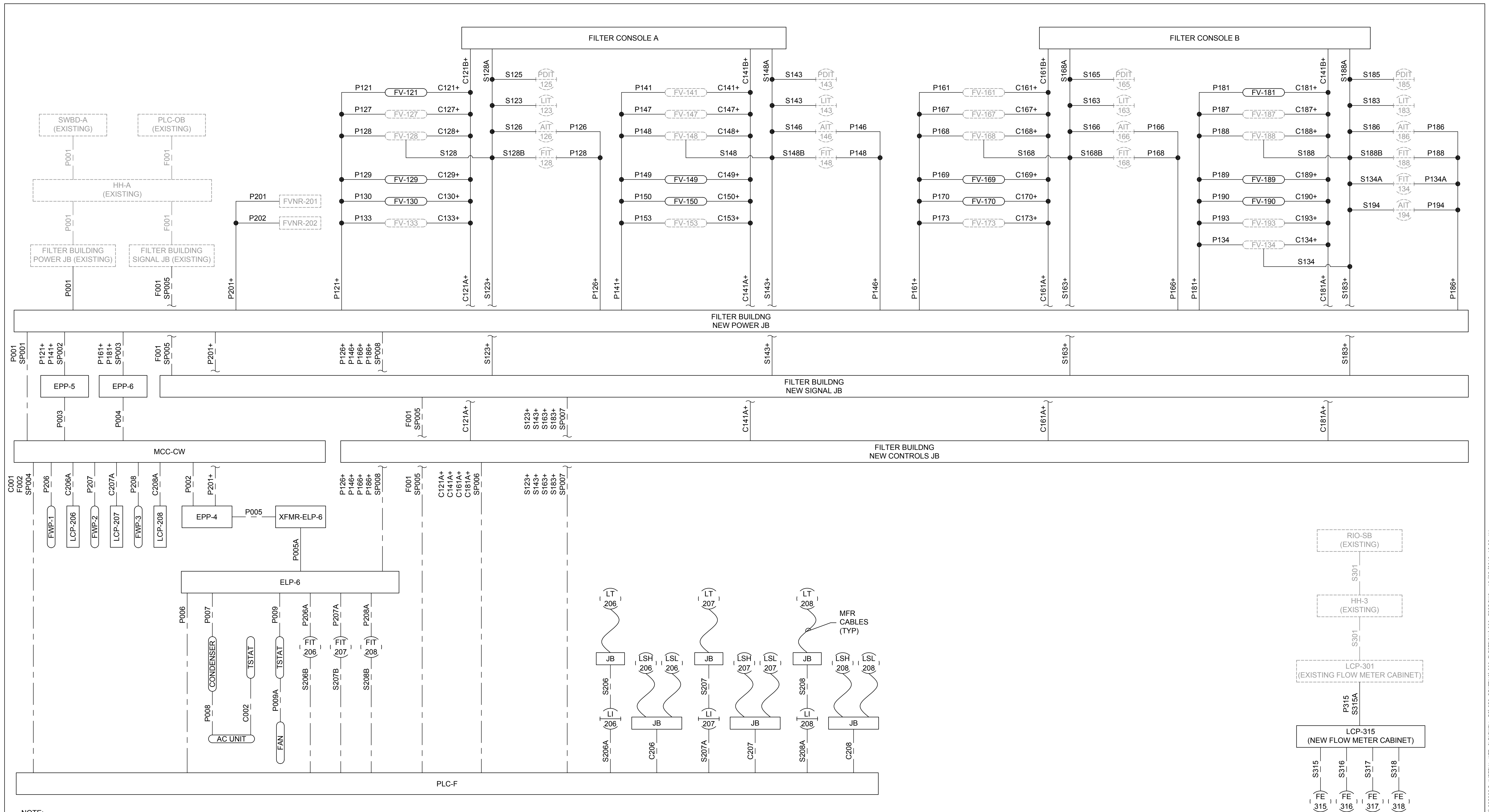
SPARE CONDUIT								
CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED IN	DUCTBANKS	NOTES
SP001	3"	PULL STRING	480VAC	MCC-CW	FILTER BLDG POWER JB		DB-6	
SP002	1.5"	PULL STRING	480VAC	EPP-5	FILTER BLDG POWER JB		DB-6	
SP003	1.5"	PULL STRING	480VAC	EPP-6	FILTER BLDG POWER JB		DB-6	
SP004	1"	PULL STRING	CONTROLS	MCC-CW	PLC-F			
SP005	2"	PULL STRING	COMMS	PLC-F	EXISTING FILTER BLDG COMMS JB			
SP006	2"	PULL STRING	CONTROLS	PLC-F	FILTER BLDG CONTROLS JB			
SP007	2"	PULL STRING	SIGNAL	PLC-F	FILTER BLDG SIGNAL JB			

COMBINED CONDUIT								
CONDUIT	SIZE	CONDUITS	SERVICE	FROM	TO	DUCTBANKS	NOTES	
P121+	1.5"	P121, P127, P128, P129, P130, P133, P134	480VAC	EPP-5	LAST FILTER 1 VALVE	DB-6		
P141+	1.5"	P141, P147, P148, P149, P150, P153, P154	480VAC	EPP-5	LAST FILTER 2 VALVE	DB-6		
P161+	1.5"	P161, P167, P168, P169, P170, P173, P174	480VAC	EPP-6	LAST FILTER 3 VALVE	DB-6		
P181+	1.5"	P181, P187, P188, P189, P190, P193, P194	480VAC	EPP-6	LAST FILTER 4 VALVE	DB-6		
P201+	1"	P201, P202	480VAC	EPP-4	LAST FVNR	DB-6		
C121+	1"	C121, C121A	120VAC	C121A+, C121B+	FV-121			
C121A+	3"	C121, C121B, C127, C128, C129, C130, C133	120VAC	PLC-F	FILTER CONSOLE A	DB-7		
C121B+	3"	C121A, C127A, C128A, C129A, C130A, C133A, C121B	120VAC	FILTER CONSOLE A	LAST FILTER 1 VALVE			
C127+	1"	C127, C127A	120VAC	C121A+, C121B+	FV-127			
C128+	1"	C128, C128A	120VAC	C121A+, C121B+	FV-128			
C129+	1"	C129, C129A	120VAC	C121A+, C121B+	FV-129			
C130+	1"	C130, C130A	120VAC	C121A+, C121B+	FV-130			
C133+	1"	C133, C133A	120VAC	C121A+, C121B+	FV-133			
C134+	1"	C134, C134A	120VAC	C181A+, C181B+	FV-134			
C141+	1"	C141, C141A	120VAC	C141A+, C141B+	FV-141			
C141A+	3"	C141, C141B, C147, C148, C149, C150, C153	120VAC	PLC-F	FILTER CONSOLE A	DB-7		
C141B+	3"	C141A, C147A, C148A, C149A, C150A, C153A, C141B	120VAC	FILTER CONSOLE A	LAST FILTER 1 VALVE			
C147+	1"	C147, C147A	120VAC	C141A+, C141B+	FV-147			
C148+	1"	C148, C148A	120VAC	C141A+, C141B+	FV-148			
C149+	1"	C149, C149A	120VAC	C141A+, C141B+	FV-149			
C150+	1"	C150, C150A	120VAC	C141A+, C141B+	FV-150			
C153+	1"	C153, C153A	120VAC	C141A+, C141B+	FV-153			
C161+	1"	C161, C161A	120VAC	C161A+, C161B+	FV-161			
C161A+	3"	C161, C161B, C167, C168, C169, C170, C173	120VAC	PLC-F	FILTER CONSOLE B	DB-7		
C161B+	3"	C161A, C167A, C168A, C169A, C170A, C173A, C161B	120VAC	FILTER CONSOLE B	LAST FILTER 1 VALVE			
C167+	1"	C167, C167A	120VAC	C161A+, C161B+	FV-167			
C168+	1"	C168, C168A	120VAC	C161A+, C161B+	FV-168			
C169+	1"	C169, C169A	120VAC	C161A+, C161B+	FV-169			
C170+	1"	C170, C170A	120VAC	C161A+, C161B+	FV-170			
C173+	1"	C173, C173A	120VAC	C161A+, C161B+	FV-173			
C181+	1"	C181, C181A	120VAC	C181A+, C181B+	FV-181			
C181A+	3"	C181, C181B, C187, C188, C189, C190, C193	120VAC	PLC-F	FILTER CONSOLE B	DB-7		
C181B+	3"	C181A, C187A, C188A, C189A, C190A, C193A, C181B	120VAC	FILTER CONSOLE B	LAST FILTER 1 VALVE			
C187+	1"	C187, C187A	120VAC	C181A+, C181B+	FV-187			
C188+	1"	C188, C188A	120VAC	C181A+, C181B+	FV-188			
C189+	1"	C189, C189A	120VAC	C181A+, C181B+	FV-189			
C190+	1"	C190, C190A	120VAC	C181A+, C181B+	FV-190			
C193+	1"	C193, C193A	120VAC	C181A+, C181B+	FV-193			
S123+	2"	S123, S126, S128, S128A, S128B	SIGNAL	PLC-F	FILTER CONSOLE A	DB-7		
S143+	2"	S143, S146, S148, S148A, S148B	SIGNAL	PLC-F	FILTER CONSOLE A	DB-7		
S163+	2"	S163, S166, S168, S168A, S168B	SIGNAL	PLC-F	FILTER CONSOLE B	DB-7		
S183+	2"	S183, S186, S188, S188A, S188B	SIGNAL	PLC-F	FILTER CONSOLE B	DB-7		

**CONDUIT SCHEDULE (CONTINUED)**

 <p>Know what's below. Call 811 before you dig.</p>	<p align="center">REVISIONS</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>INITIAL</th> <th>DESCRIPTION</th> <th>APPROVED/DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE																	<p><b>CITY OF IMPERIAL</b></p> <p>CITY ENGINEER _____ DATE _____</p>	<p align="center">ENGINEER'S SEAL</p> 	<p align="center">           533 W 2600 S, Suite 25          Bountiful, Utah 84010          Phone: (801) 677-0011          www.skmeng.com          PLANS PREPARED UNDER THE SUPERVISION OF:            6/24/2022          DATE       </p>	<table border="1"> <thead> <tr> <th>DESIGNED:</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td>MPJ</td><td>06/22</td></tr> <tr><td>DRAWN:</td><td>06/22</td></tr> <tr><td>TRACED:</td><td>N/A</td></tr> <tr><td>CHECKED:</td><td>MPJ 06/22</td></tr> <tr><td>SUBMITTED:</td><td>-</td></tr> </tbody> </table>	DESIGNED:	DATE	MPJ	06/22	DRAWN:	06/22	TRACED:	N/A	CHECKED:	MPJ 06/22	SUBMITTED:	-	<p align="center"> <b>CITY OF IMPERIAL</b>          IMPERIAL COUNTY, CALIFORNIA          CLEARWELL PS REPLACE., GAC TREATMENT          SYSTEM EXPAN., AND FILTER PIPING REPLACE.          AT THE WTP          ELECTRICAL - POWER DISTRIBUTION          SCHEDULES 2          DWG. NO. E802       </p>	<p align="center">         BID NO.          2022-05          SHEET  <b>55</b>          OF 60       </p>
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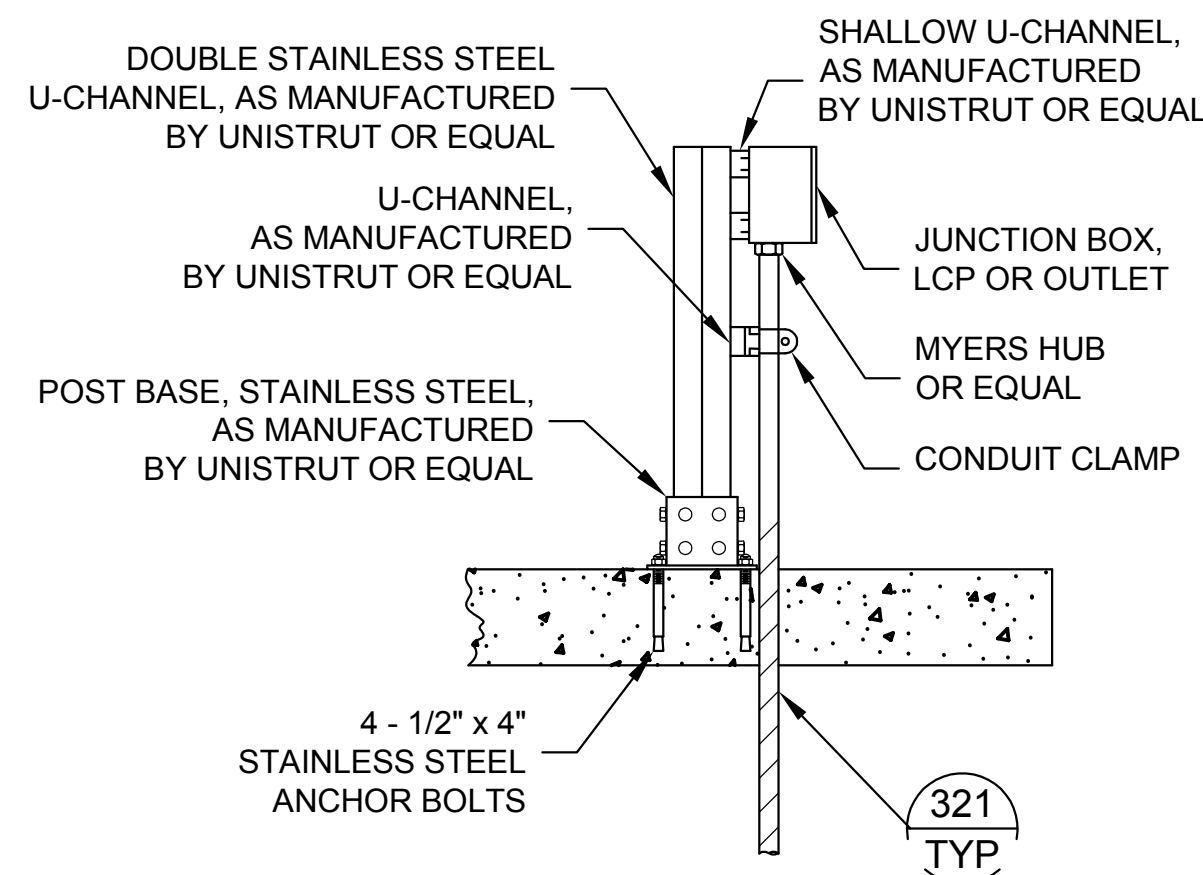
**NOTE:**  
 CONDUIT DEVELOPMENT IS NOT ALL INCLUSIVE.  
 CONTRACTOR SHALL PROVIDE CONDUIT AND WIRE  
 TO PROVIDE A FULLY FUNCTIONAL FACILITY.  
 INTERCONNECTION OF LOW VOLTAGE DEVICES  
 MAY NOT BE SHOWN. CONDUIT AND  
 CONDUCTORS TO LIGHTS AND RECEPTACLES ARE  
 NOT INCLUDED IN THE CONDUIT DEVELOPMENT.

### CONDUIT DEVELOPMENT

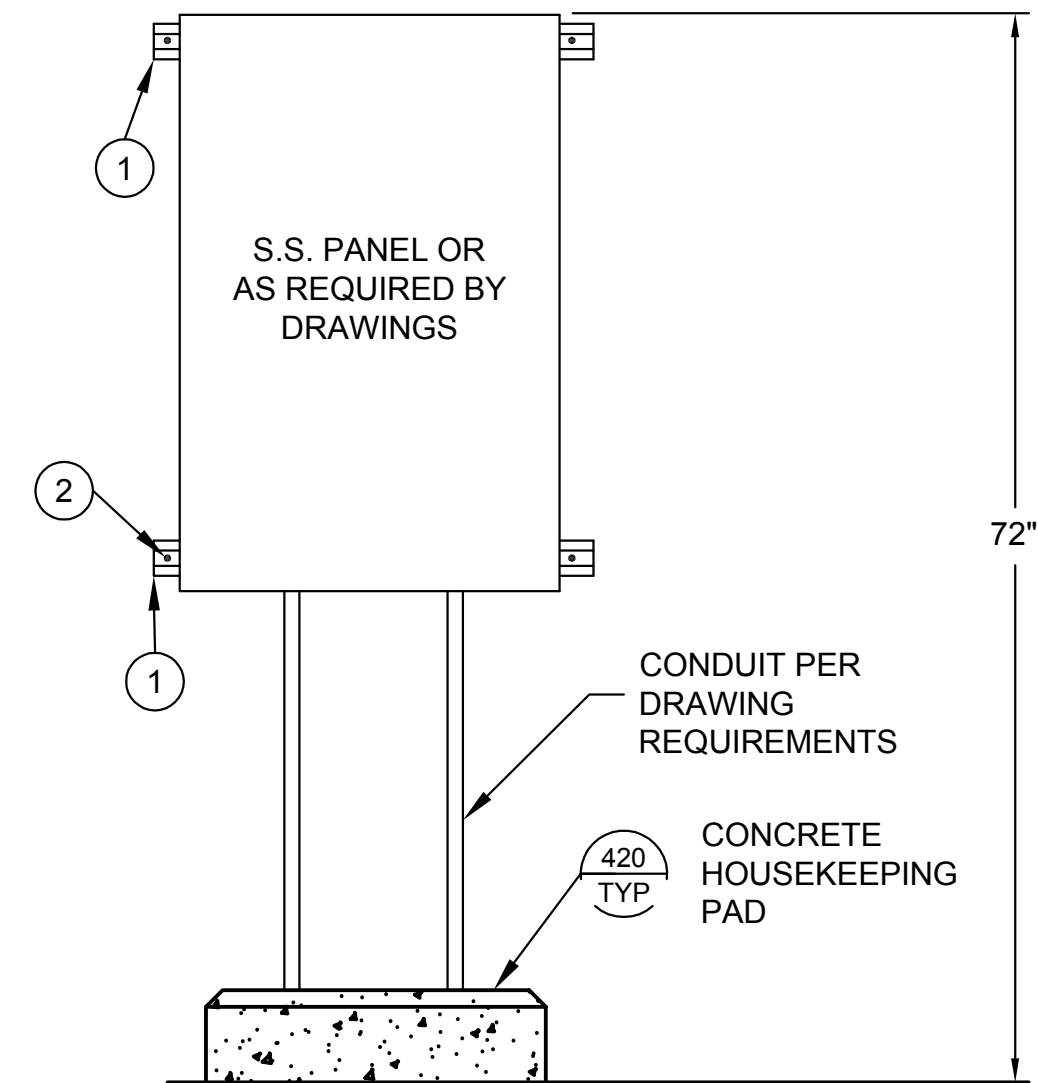
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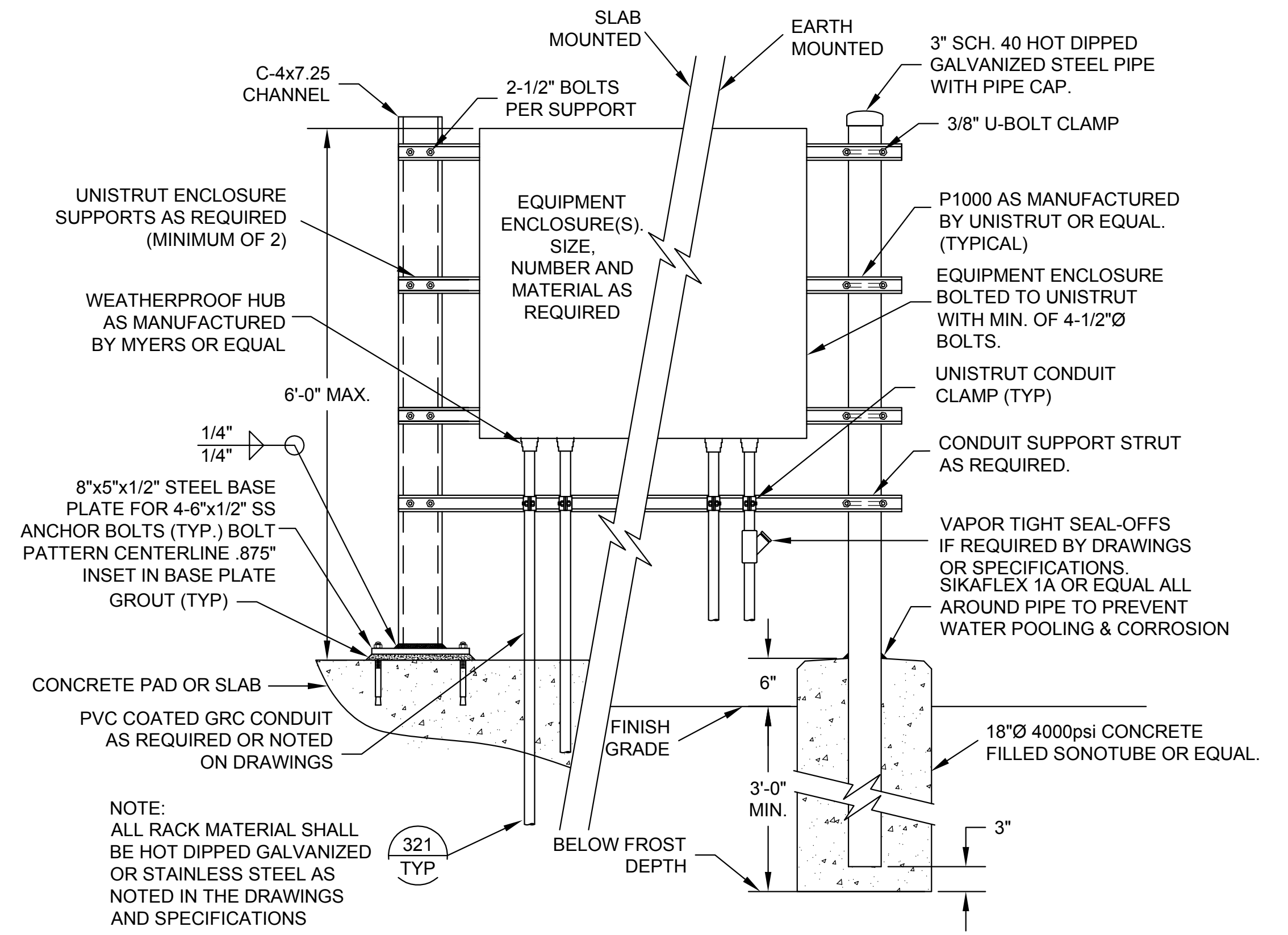


001 TYP ELECTRICAL PANEL MOUNTING DETAIL  
SCALE: NONE

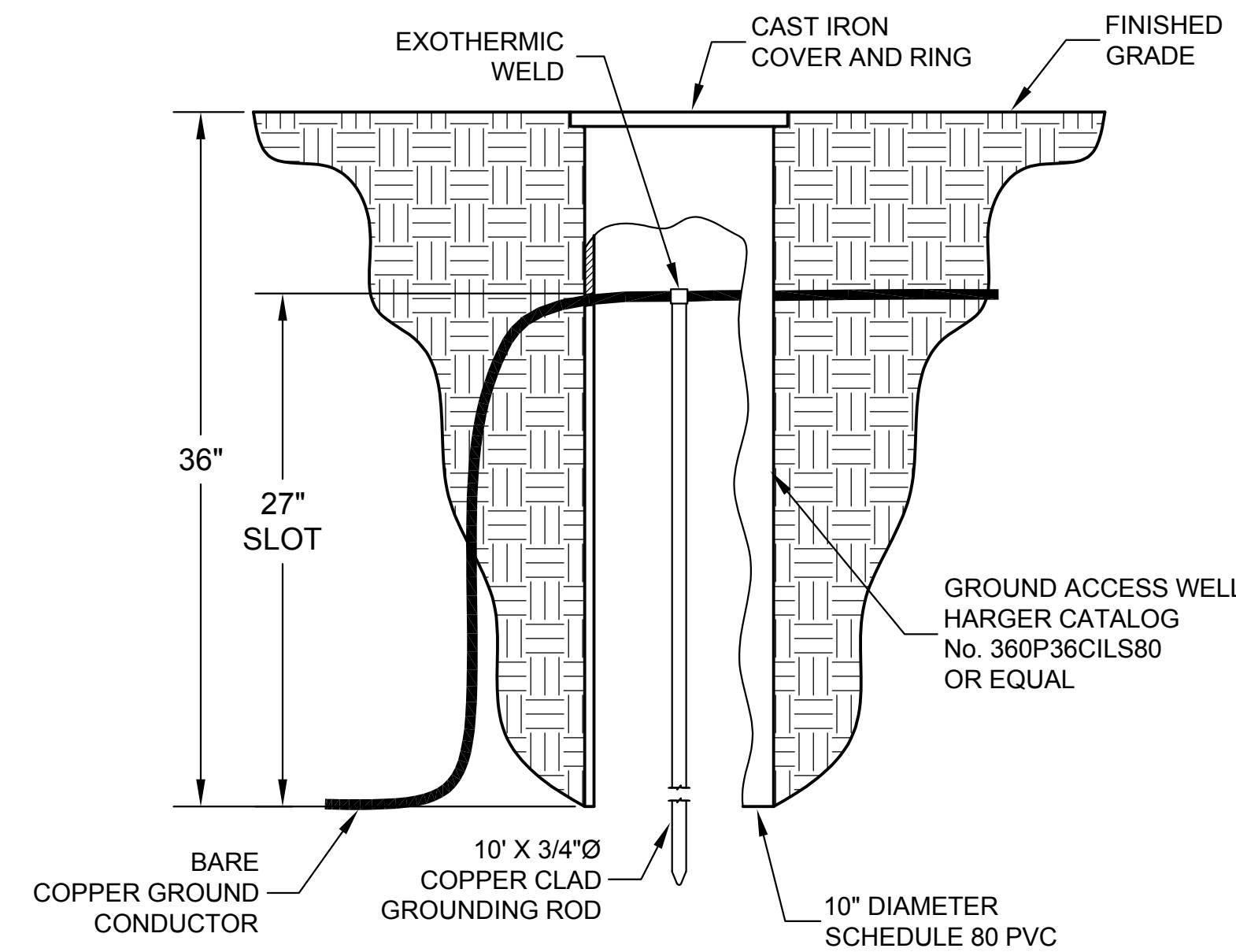


- 1 STAINLESS STEEL 1-5/8" X 1-5/8" UNISTRUT CHANNEL.
- 2 1/2" X 3" S.S. ANCHOR BOLT OR LAG BOLT WITH WASHER, ANCHORED TO WALL (EVERY 18", 2 MIN.)
- 3 MAXIMUM PANEL HEIGHT NOT TO EXCEED 72".
- 4 CENTER OF INSTRUMENT DISPLAYS SHALL BE 62".
- 5 CENTER OF LOCAL CONTROL STATIONS SHALL BE 48".

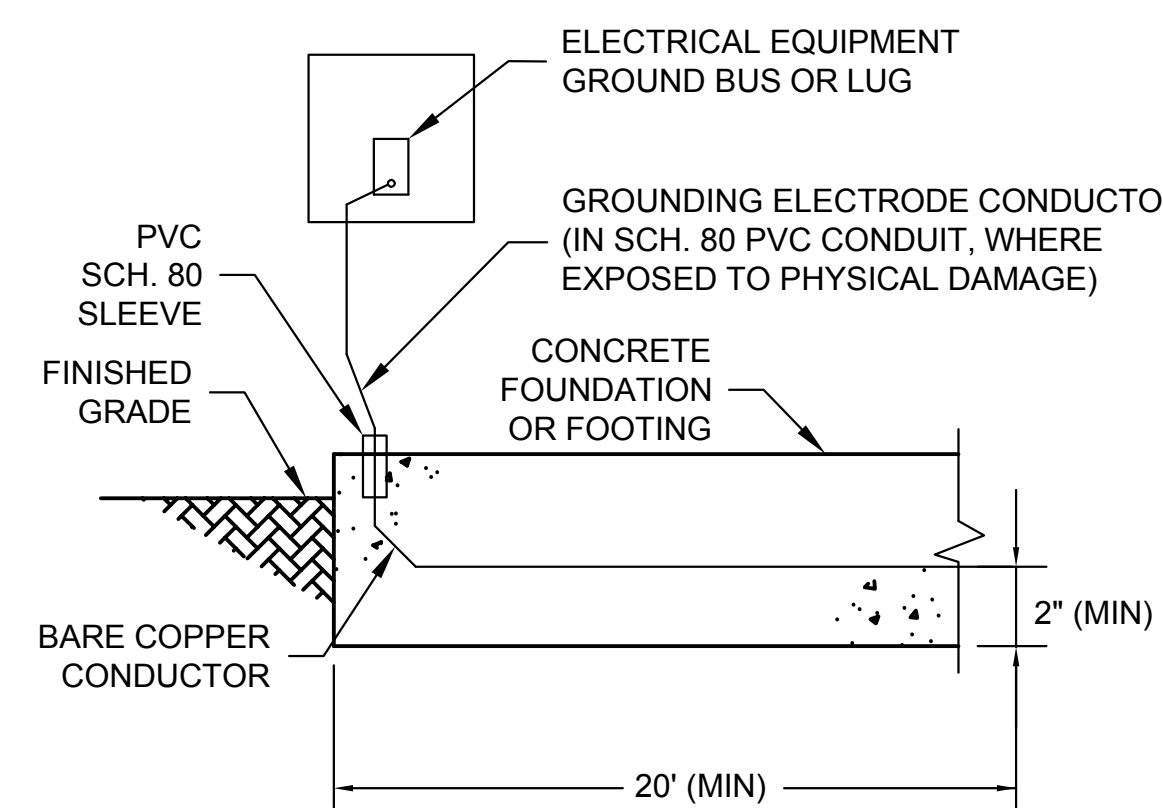
002 TYP WALL MOUNTED PANEL  
SCALE: NONE



015 TYP EQUIPMENT RACK DETAIL  
NO SCALE

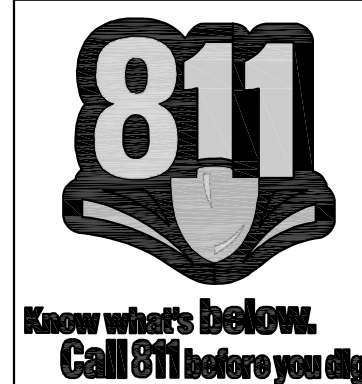


100 TYP GROUND ROD WITH ACCESS WELL  
SCALE: NONE

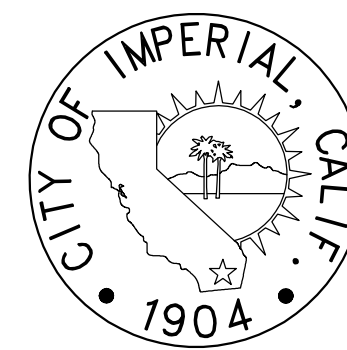


NOTE:  
ALL WORK SHALL BE PER NATIONAL ELECTRICAL CODE AND LOCAL GOVERNING AUTHORITY.

140 TYP UFER GROUNDING DETAIL  
SCALE: NONE



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE
DESIGNED BY:	DRAWN BY:	CHECKED BY:		

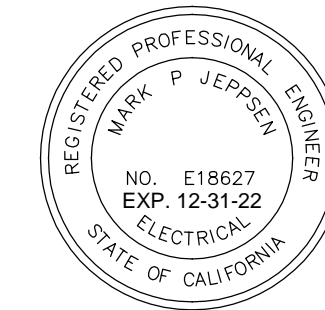


CITY OF IMPERIAL

CITY ENGINEER DATE

REFERENCES

ENGINEER'S SEAL



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PLANS PREPARED UNDER THE SUPERVISION OF:

*Mark P. Jeppsen* 6/24/2022 DATE

MARK P. JEPPESEN  
REGISTERED ELECTRICAL ENGINEER NO. E18627

DESIGNED:	DATE
MPJ	06/22
DRAWN:	06/22
TRACED:	N/A
CHECKED:	06/22
SUBMITTED:	-
SCALE:	-
HORIZ. SCALE:	N/A
VERT. SCALE:	N/A

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IMPERIAL COUNTY, CALIFORNIA

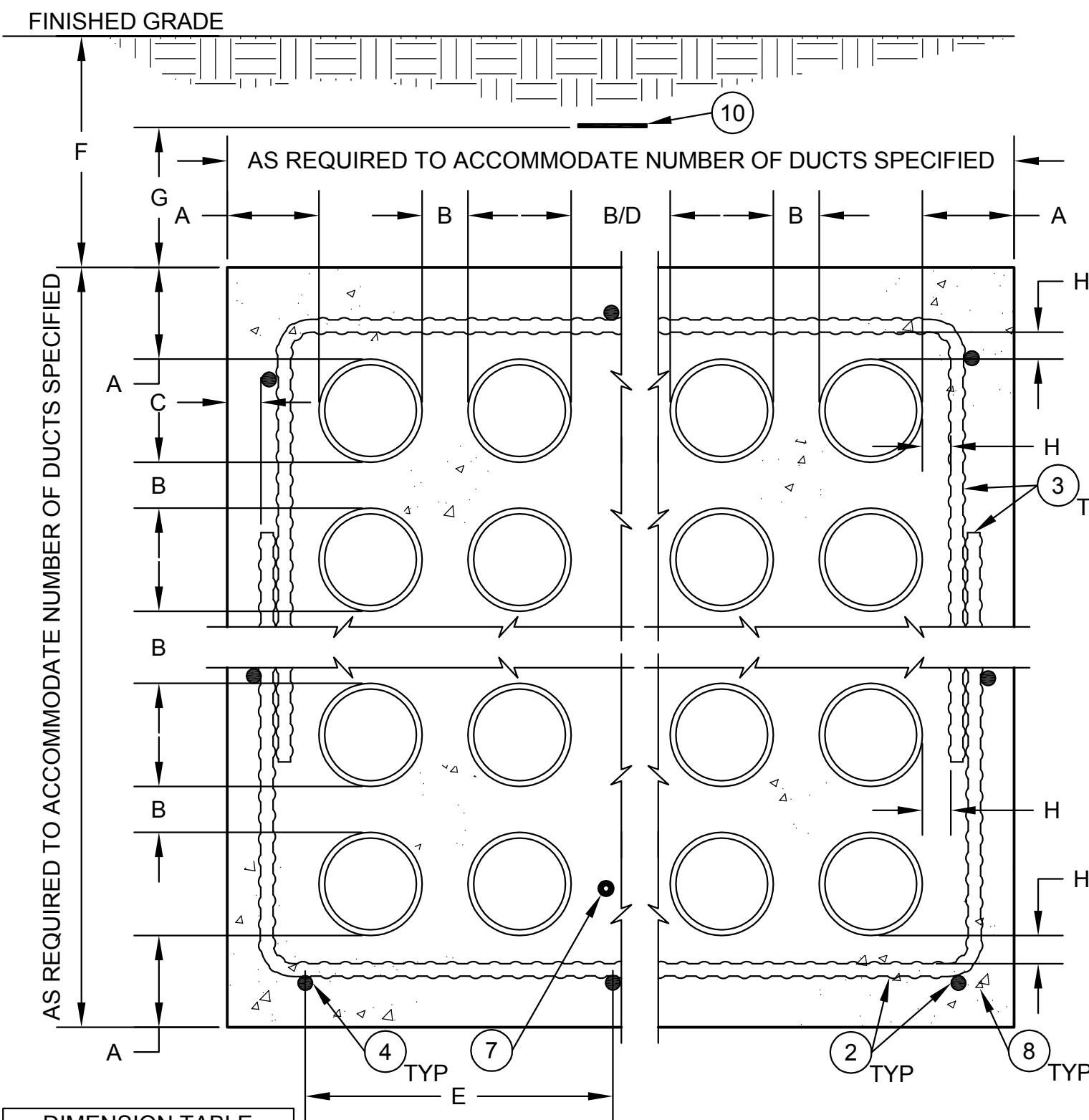
CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP

ELECTRICAL - DETAILS  
DETAILS 1

DWG. NO. E901

BID NO. 2022-05  
SHEET 57 OF 60



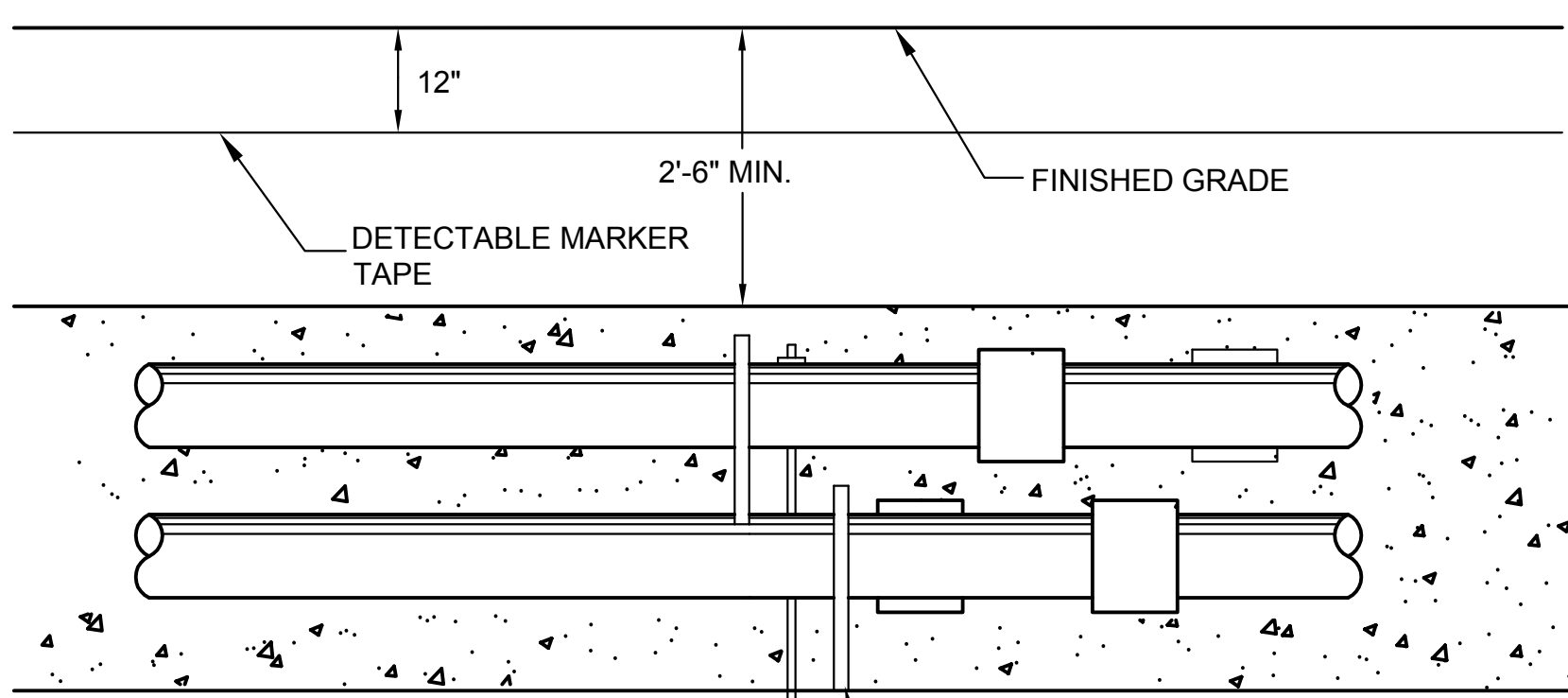


DIMENSION TABLE	
A	4" MIN. TYP.
B	2" MIN. SEE NOTE 12
C	2" MIN. SEE NOTE 2
D	12" MIN. SEE NOTE 13
E	18" MAX. SEE NOTE 4
F	18" MIN. 30" MAX.
G	12"
H	2" MIN. TYP.

**MULTIPLE DUCT DUCTBANK DETAIL**

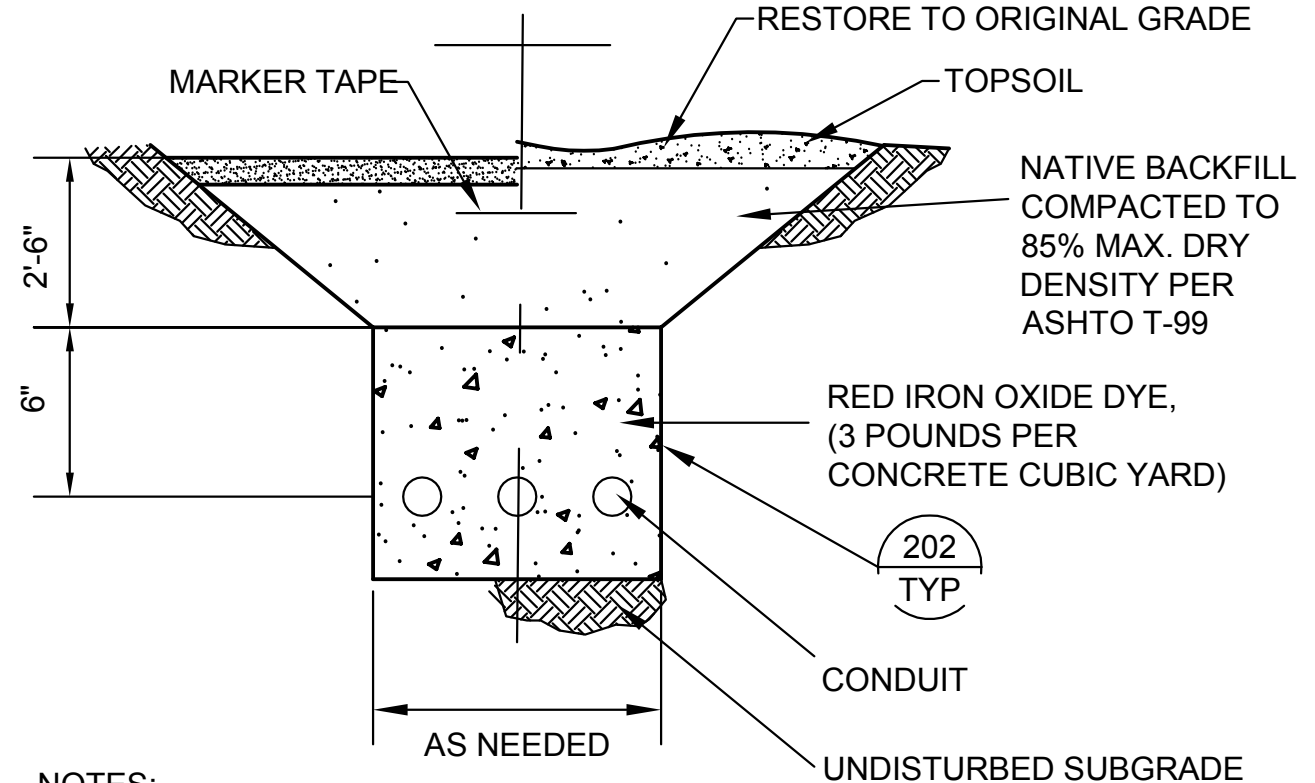
202 TYP SCALE: N.T.S.

- NOTES:**
- ALL DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS. UNLESS NOTED OTHERWISE ON THE DRAWINGS.
  - ALL REBAR SHALL BE #4 BAR AND HAVE A MINIMUM CONCRETE EMBEDMENT OF 2" (EDGE OF REBAR TO OUTSIDE SURFACE OF CONCRETE).
  - REBAR HOOPS SHALL OVERLAP 9" MINIMUM AND SHALL BE PROVIDED EVERY 4 FEET HORIZONTALLY. HOOPS SHALL NOT BE REQUIRED ON SINGLE ROW DUCTBANKS.
  - HORIZONTAL REBAR SHALL BE PLACED @ A MAXIMUM OF 18" ON CENTER ALL AROUND THE DUCTBANK ENVELOPE AND SHALL BE SUPPORTED EVERY 4 FEET LONGITUDINALLY. SINGLE ROW DUCTBANKS LESS THAN 24" WIDE SHALL HAVE A MIN. OF 2 HORIZONTAL BARS.
  - DUCT SPACERS (SADDLES) SHALL BE PROVIDED FOR PROPER SUPPORT OF CONDUIT DUCTS. SPACERS SHALL BE PROVIDED HORIZONTALLY AS RECOMMENDED BY THE MANUFACTURER AND TO PREVENT ANY SAGGING OF THE DUCTS (LOW SPOTS WILL NOT BE ALLOWED).
  - DUCTS SHALL BE SECURED TO PREVENT FLOATING DURING THE CONCRETE ENCASEMENT.
  - PROVIDE A 4/0 BARE CONTINUOUS COPPER GROUND. SEE GROUNDING SPECIFICATION SECTION 16170.
  - DUCTBANK CONCRETE SHALL BE COLOR DYED RED BY MIXING 3 LBS. IRON OXIDE PER CUBIC YARD OF CONCRETE.
  - ALL DUCTBANKS SHALL BE SLOPED @ 1/4" PER 10 FEET TO ALLOW DRAINAGE.
  - A 3" WIDE DETECTABLE PLASTIC MARKER TAPE WITH INSCRIPTION "CAUTION ELECTRICAL LINES BURIED BELOW" (BLACK LETTERS ON RED BACKGROUND) SHALL BE INSTALLED 12" ABOVE THE TOP OF ALL CONCRETE ENCASED DUCTBANKS.
  - REFER TO CONDUIT SCHEDULE FOR WIRE FILL OF ALL DUCTS.
  - ALL DUCTS OF THE SAME DUTY (480V POWER, 120V POWER, 120V CONTROLS, AND SIGNAL) SHALL BE SEPARATED BY A MINIMUM OF 2".
  - SIGNAL AND FIBER DUCTS SHALL BE SEPARATED FROM 480V POWER BY A MIN. OF 12". FROM 120V POWER BY A MIN. OF 6" AND FROM 120V CONTROL BY MIN. OF 4" UNLESS NOTED OTHERWISE ON THE DRAWINGS. 120V POWER AND 120V CONTROL DUCTS SHALL BE SEPARATED FROM 480V POWER BY A MIN. OF 4" UNLESS NOTED OTHERWISE ON THE DRAWINGS.



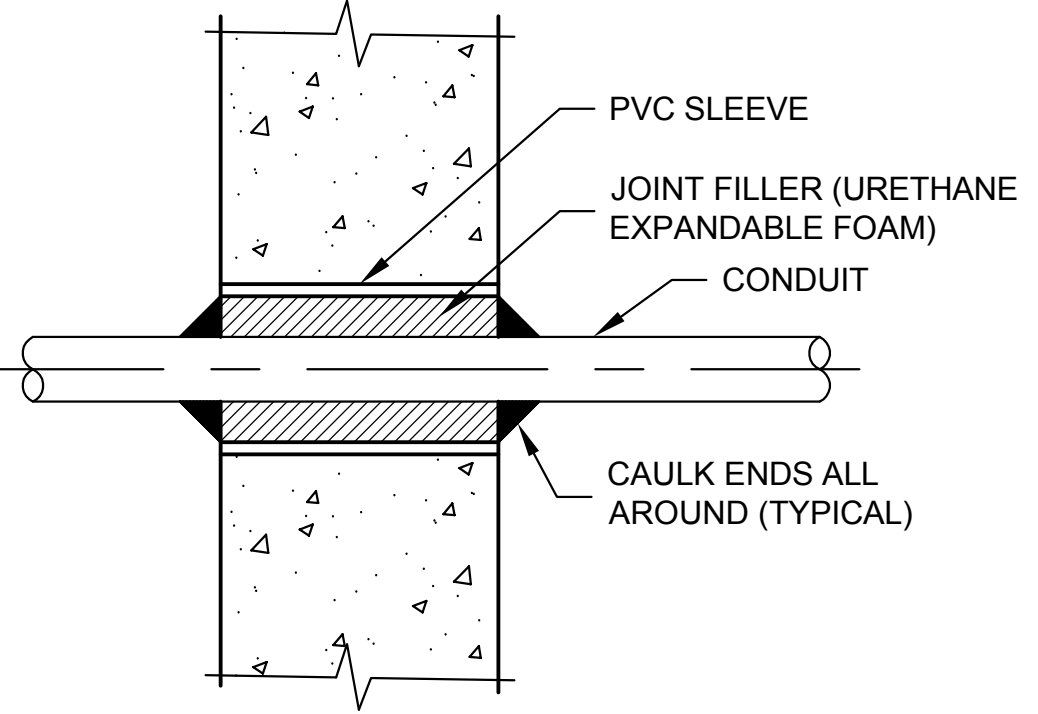
**DUCTBANK DETAIL**

203 TYP SCALE: NONE



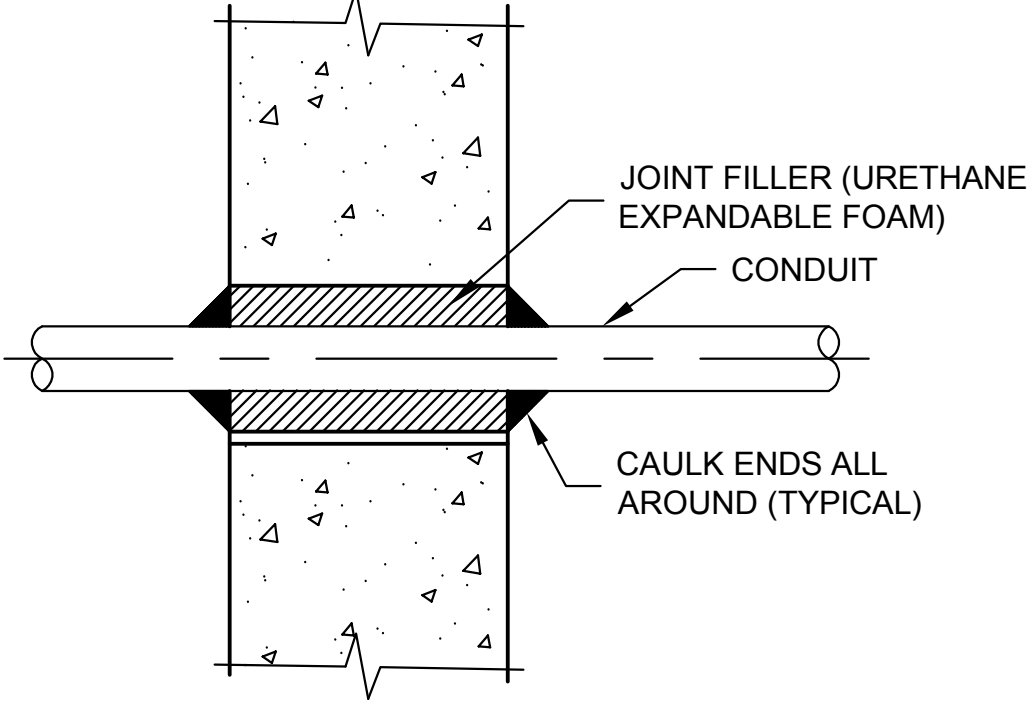
**TYPICAL TRENCH DETAIL FOR BELOW 600 VOLTS**

204 TYP SCALE: NONE



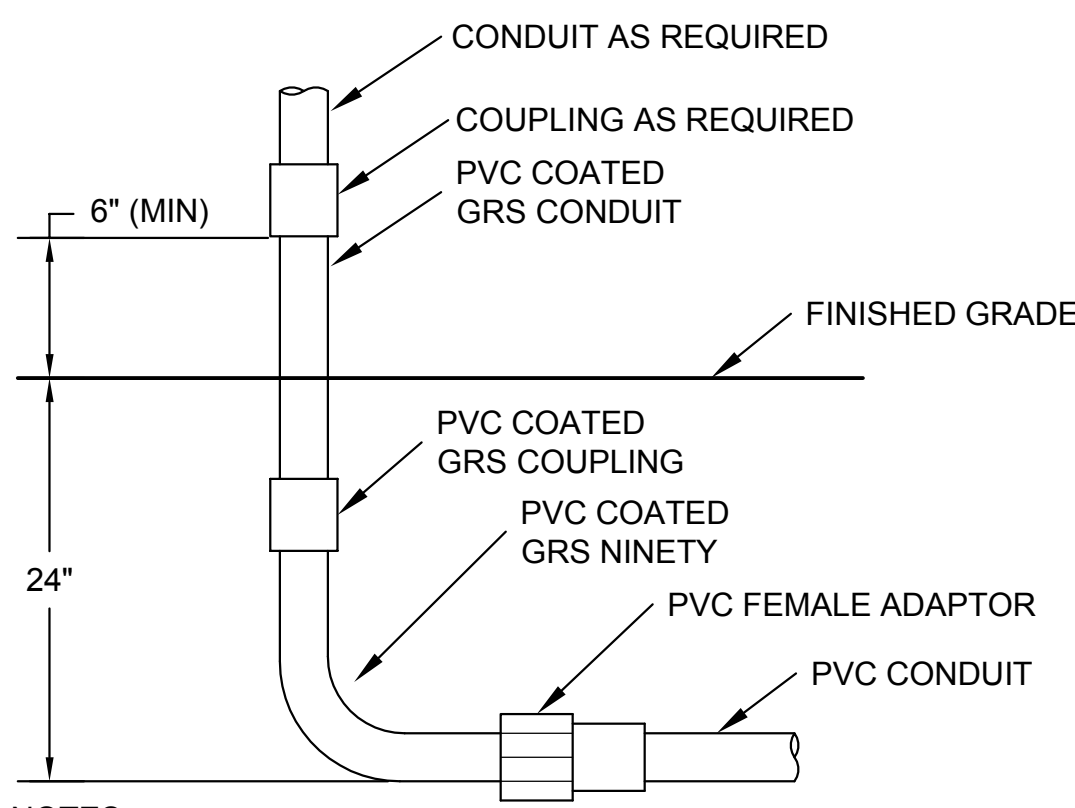
**CONDUIT PENETRATION AT NEW WALL OR SLAB**

300 TYP SCALE: NONE



**CONDUIT PENETRATION AT EXISTING WALL OR SLAB**

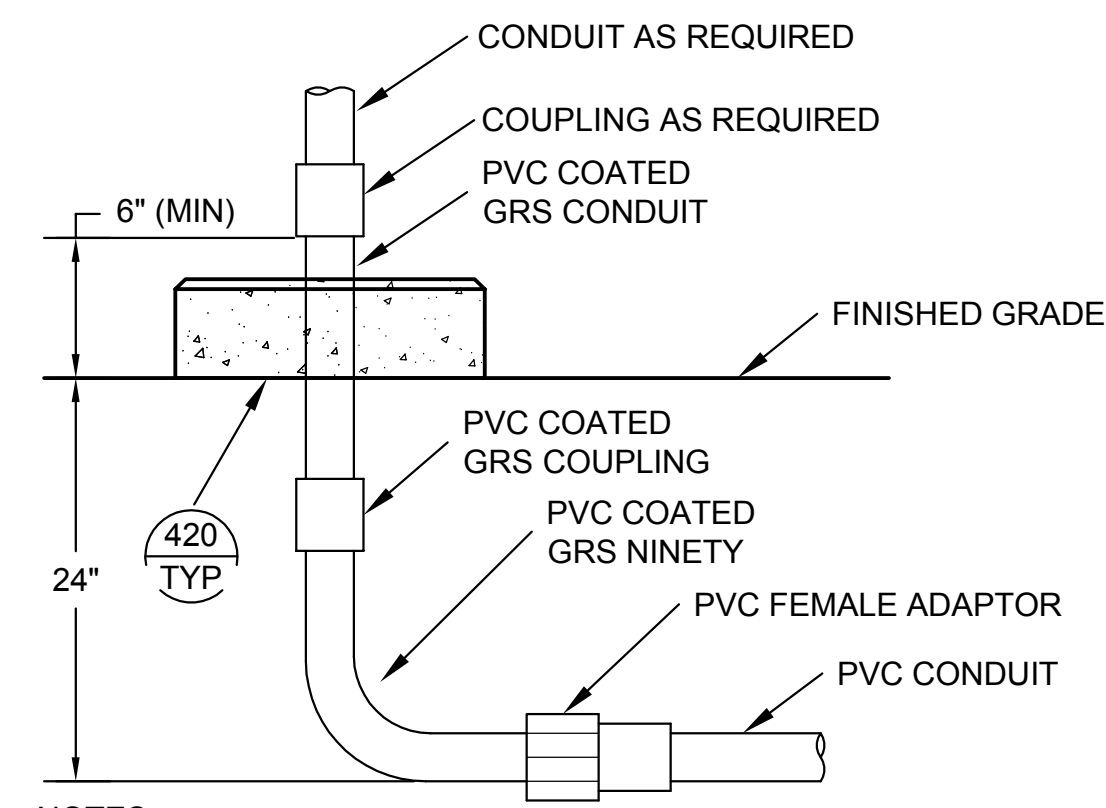
301 TYP SCALE: NONE



- NOTES:**
- WHERE CONDUITS ARE INSTALLED IN OR UNDER A CONCRETE SLAB, THE 24" DIMENSION DOES NOT APPLY. CONDUITS SHALL BE INSTALLED BETWEEN REBAR MATS OR UNDER A SINGLE REBAR MAT.
  - IN CORROSIVE AREAS, PVC COATED GRS SHALL BE USED.

**GRS STUB UP DETAIL**

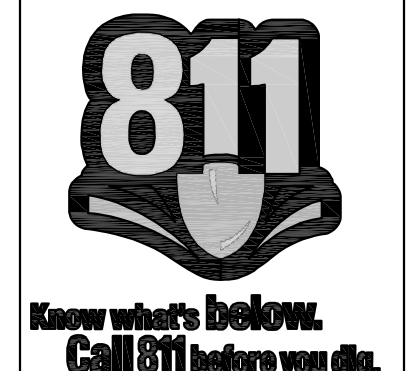
320 TYP SCALE: NONE



- NOTES:**
- WHERE CONDUITS ARE INSTALLED IN OR UNDER A CONCRETE SLAB, THE 24" DIMENSION DOES NOT APPLY. CONDUITS SHALL BE INSTALLED BETWEEN REBAR MATS OR UNDER A SINGLE REBAR MAT.
  - IN CORROSIVE AREAS, PVC COATED GRS SHALL BE USED.

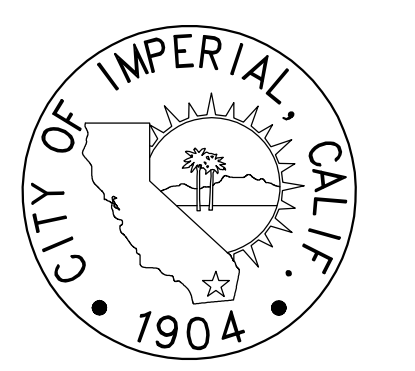
**STUB UP DETAIL**

321 TYP SCALE: NONE

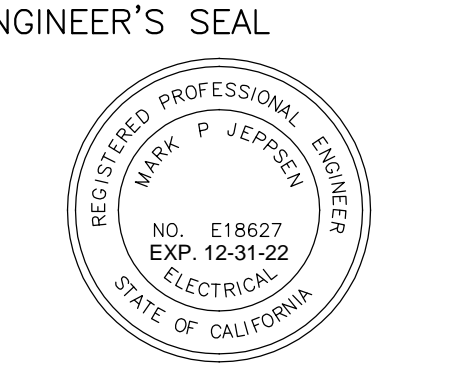


REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

DESIGNED BY: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_



CITY OF IMPERIAL	
CITY ENGINEER	DATE
REFERENCES	



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PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
 MARK P. JEPPESEN  
 REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

DESIGNED:	DATE
MPJ	06/22
DRAWN:	06/22
TRACED:	N/A
CHECKED:	06/22
SUBMITTED:	

SCALE:  
 HORIZ. SCALE: N/A  
 VERT. SCALE: N/A

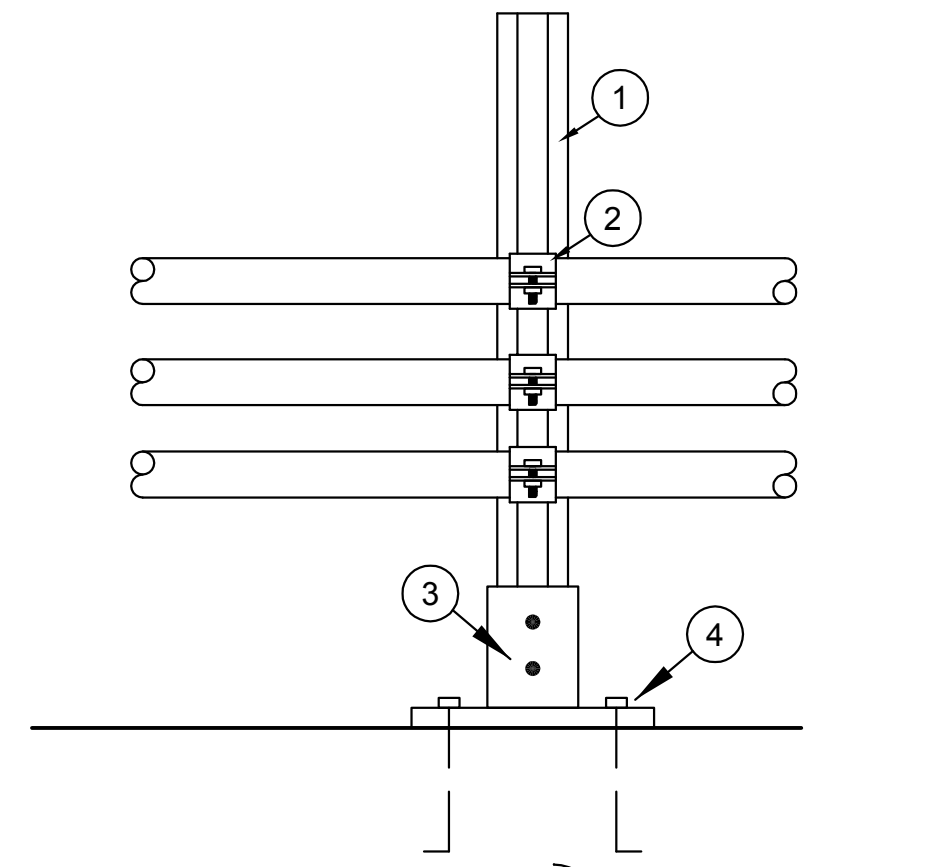
CITY OF IMPERIAL  
 IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP  
 ELECTRICAL - DETAILS  
 DETAILS 2

DWG. NO. E902

BID NO. 2022-05  
 SHEET 58 OF 60

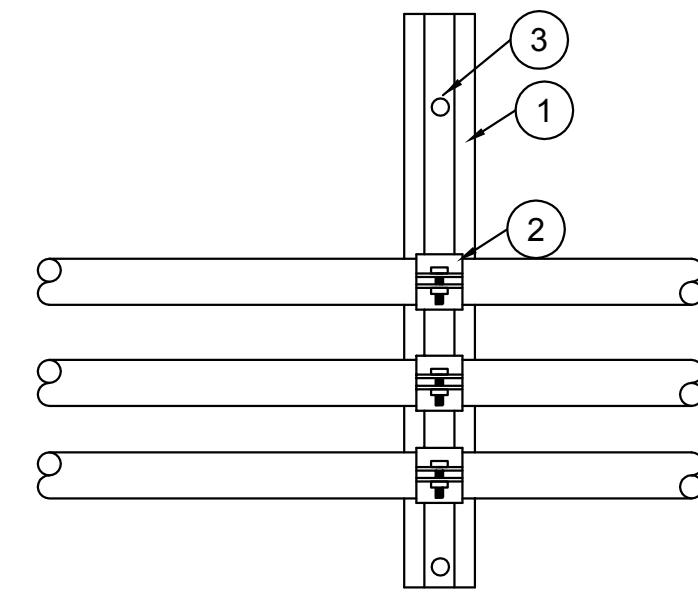




- ① UNISTRUT CHANNEL
- ② UNISTRUT CONDUIT STRAP
- ③ UNISTRUT POST BASE
- ④ 3/8"x3-1/2" ANCHOR BOLT GROUDED INTO CONCRETE (4 PER POST BASE)

**EXPOSED SURFACE CONDUIT SUPPORT**

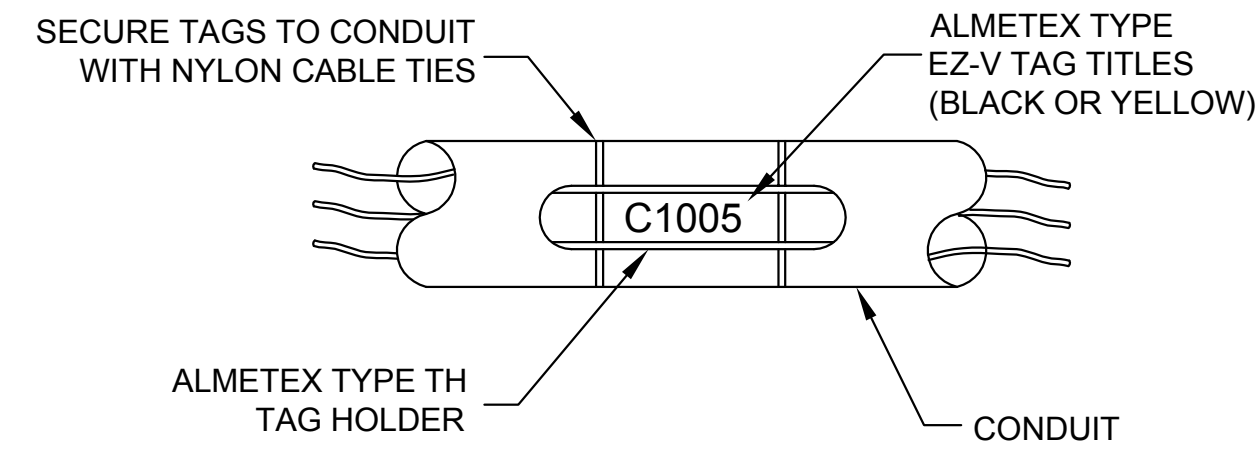
350 TYP SCALE: NONE



- ① STAINLESS UNISTRUT P1000 CHANNEL
- ② STAINLESS UNISTRUT CONDUIT STRAP
- ③ STAINLESS 3/8"x3-1/2" ANCHOR BOLT GROUDED INTO CONCRETE (1 PER FOOT, 2 MINIMUM)

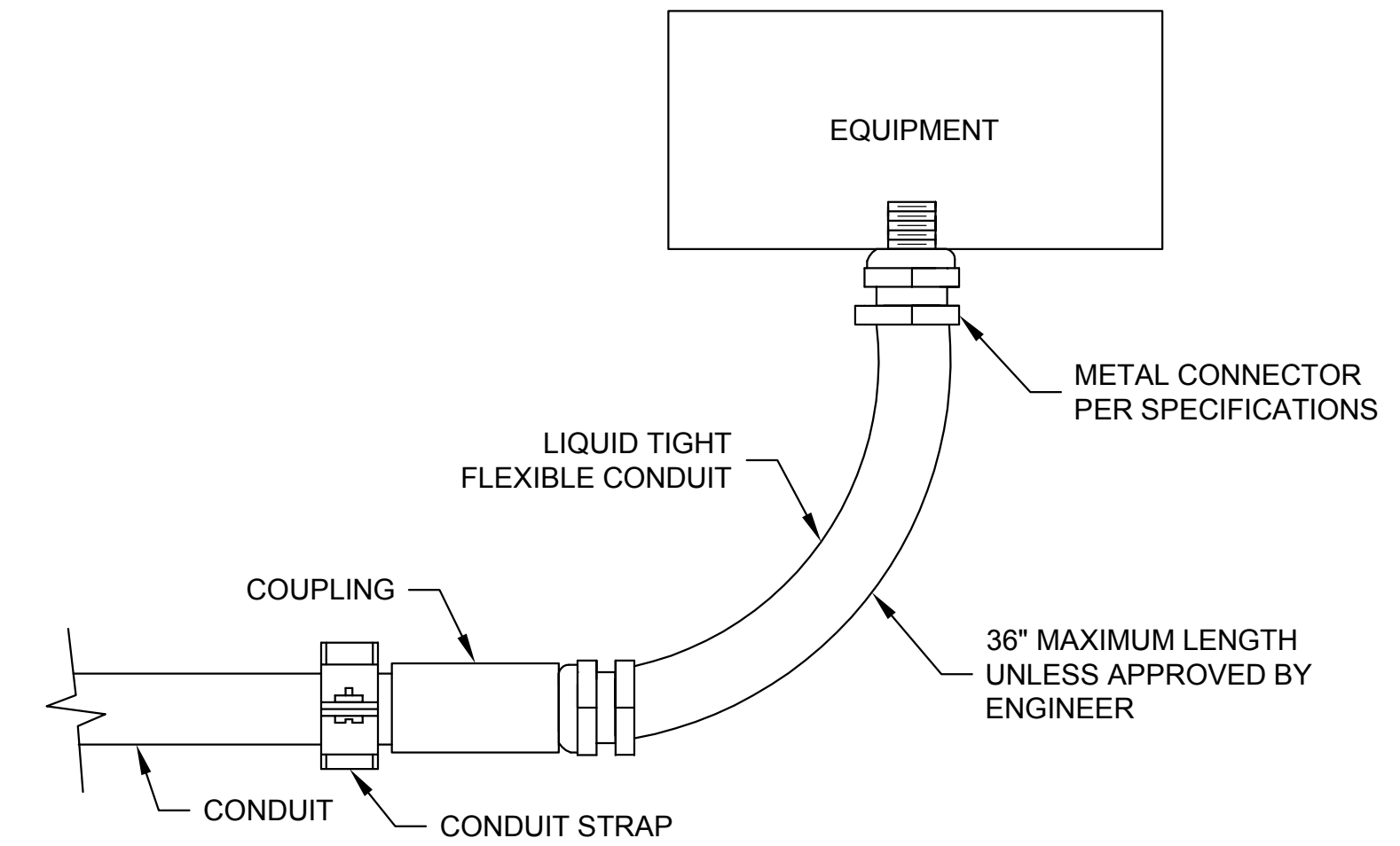
**EXPOSED SURFACE CONDUIT**

351 TYP SCALE: NONE



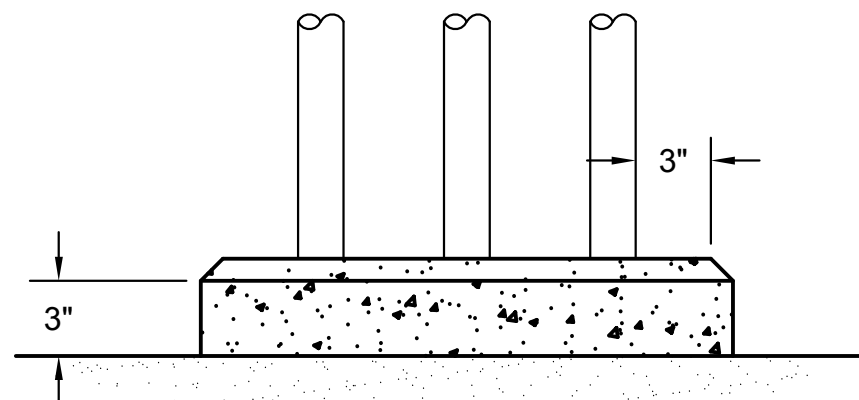
**CONDUIT MARKING SYSTEM**

360 TYP SCALE: NONE



**FLEXIBLE CONDUIT DETAIL**

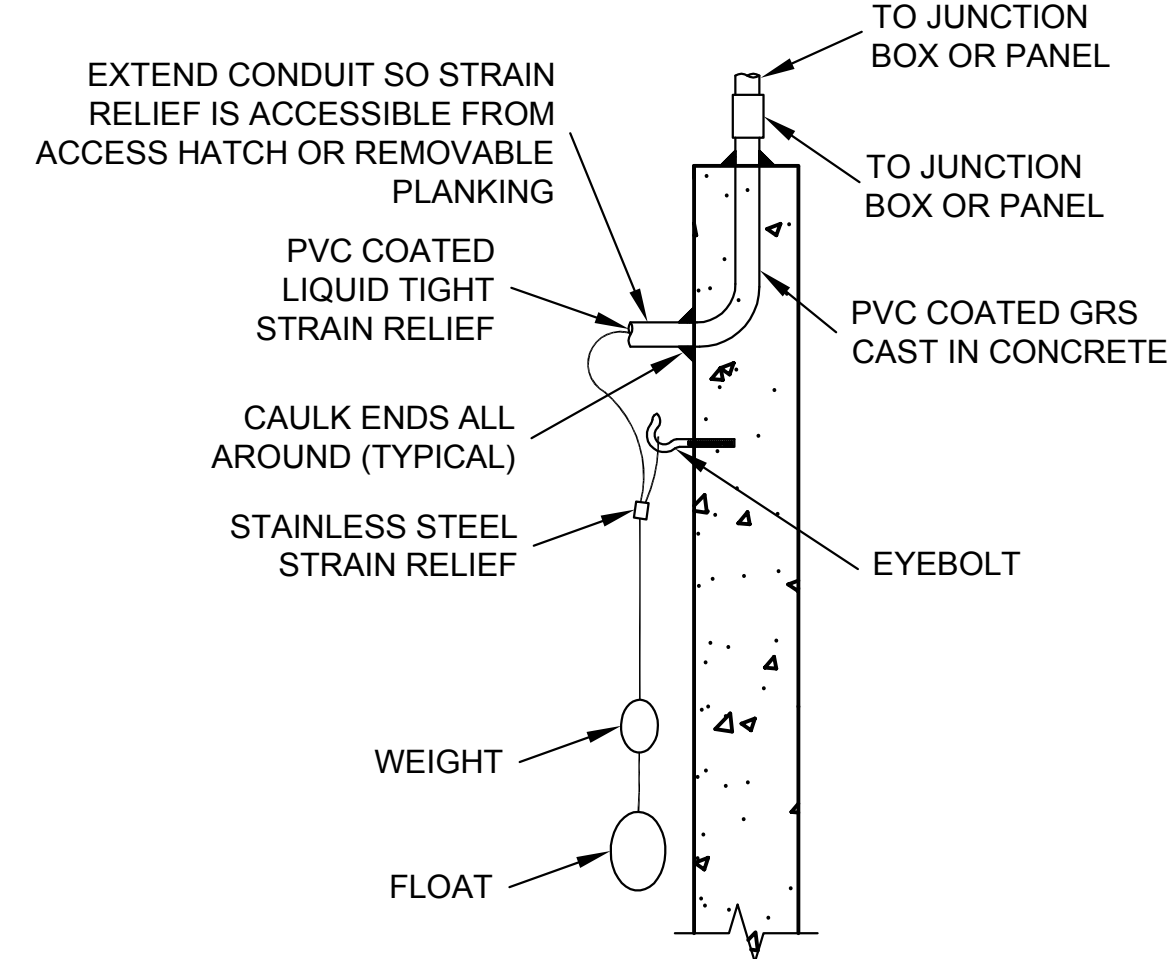
365 TYP SCALE: NONE



HOUSEKEEPING CURB REQUIRED AT ALL INTERIOR WALL LOCATIONS FOR SINGLE AND MULTIPLE RISERS. RISERS SHALL BE COUPLED SO THAT SINGLE RISERS ARE SIX FEET APART MIN.

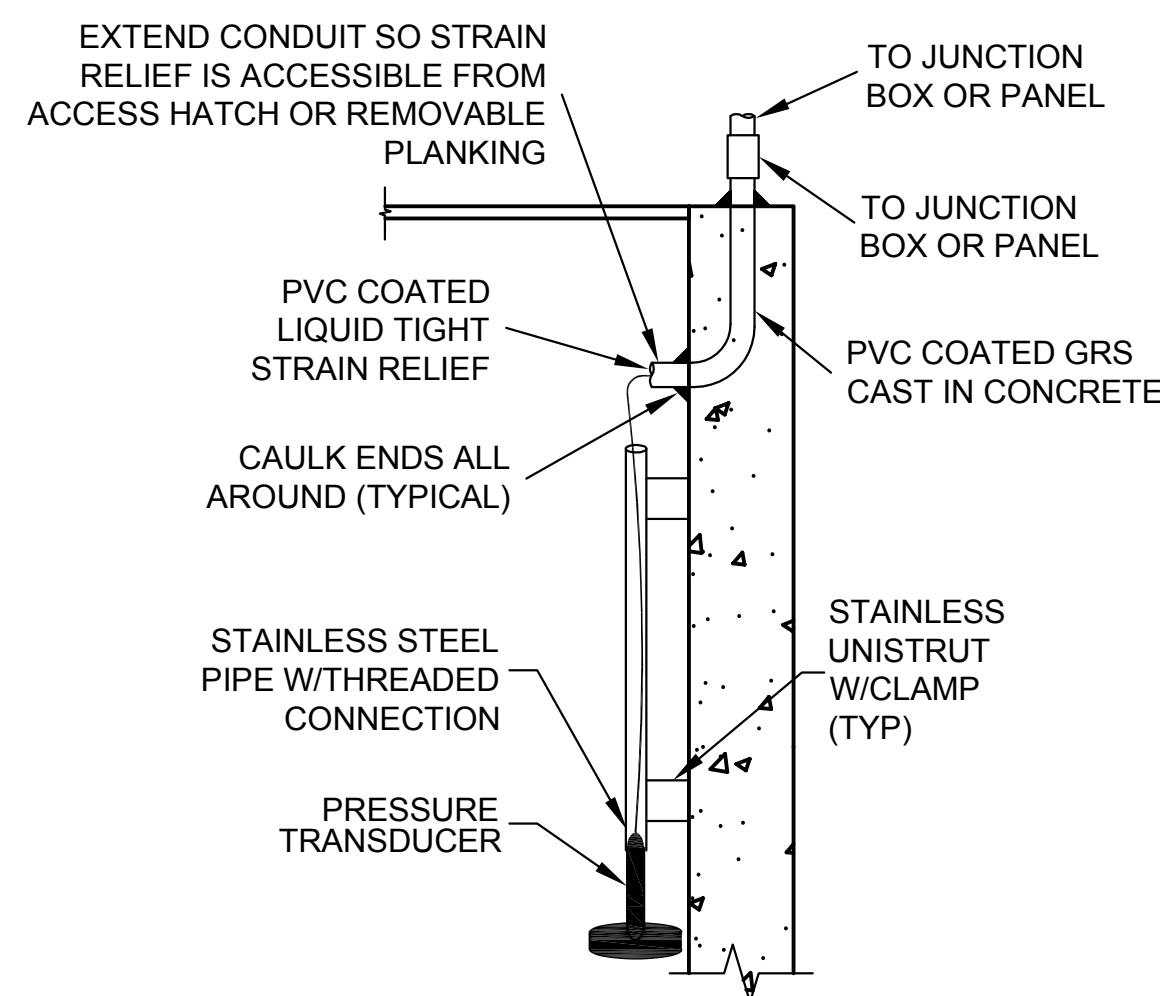
**CONCRETE HOUSEKEEPING CURB DETAIL**

420 TYP SCALE: NONE



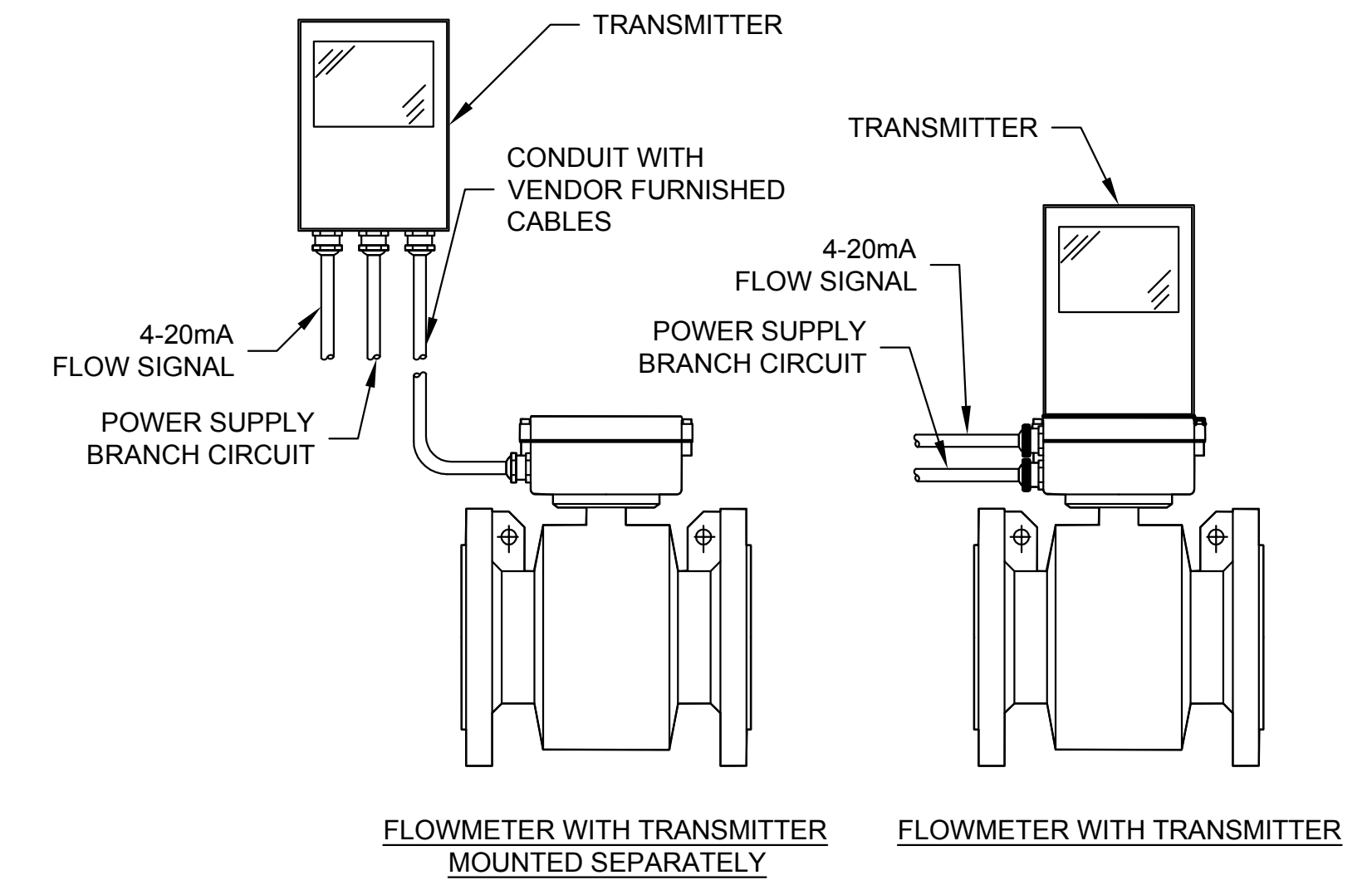
**SUSPENDED FLOAT DETAIL**

504 TYP SCALE: NONE



**PRESSURE TRANSDUCER (LARGE HEAD) DETAIL**

526 TYP SCALE: NONE

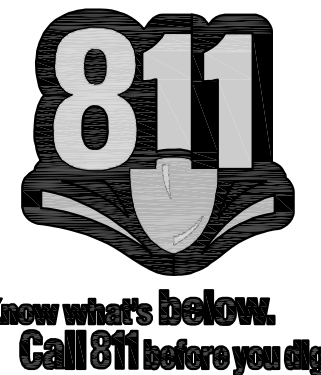


**NOTES:**

1. ALL VENDOR FURNISHED CABLES SHALL BE CUT TO LENGTH AND TERMINATED PER MANUFACTURER'S RECOMMENDATIONS.
2. GROUND PER MANUFACTURER'S RECOMMENDATIONS.

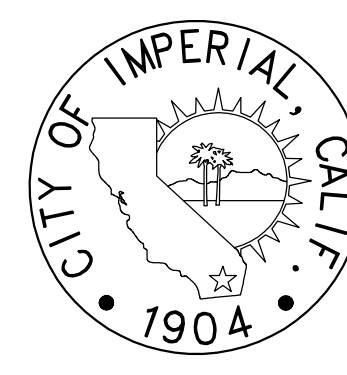
**MAGNETIC FLOWMETER DETAIL**

551 TYP SCALE: NONE



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

DESIGNED BY: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_

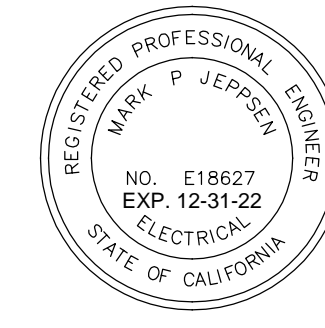


**CITY OF IMPERIAL**

CITY ENGINEER DATE

**REFERENCES**

**ENGINEER'S SEAL**



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PLANS PREPARED UNDER THE SUPERVISION OF:  
*Mark P. Jeppsen*  
 MARK P. JEPPISEN  
 REGISTERED ELECTRICAL ENGINEER NO. E18627

DATE: 6/24/2022

DESIGNED:	DATE
MPJ	06/22
DCL	06/22
N/A	-
MPJ	06/22
-	-

HORIZ. SCALE: N/A  
 VERT. SCALE: N/A

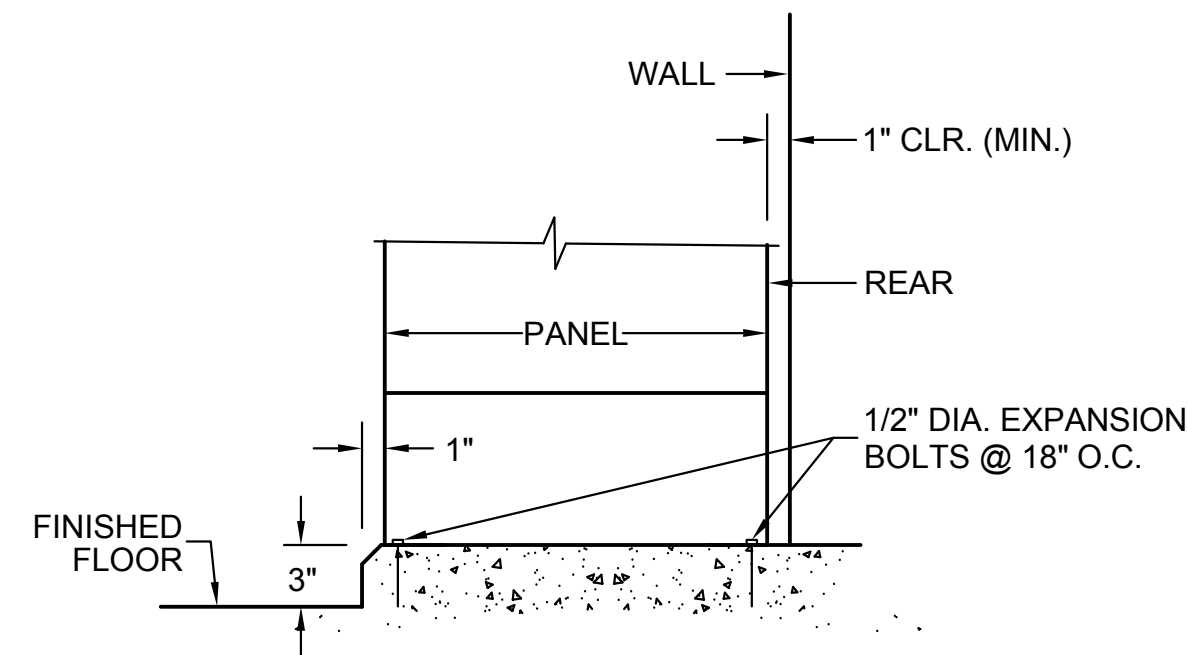
**CITY OF IMPERIAL**  
 IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT SYSTEM EXPAN., AND FILTER PIPING REPLACE. AT THE WTP  
 ELECTRICAL - DETAILS  
 DETAILS 3

DWG. NO. E903

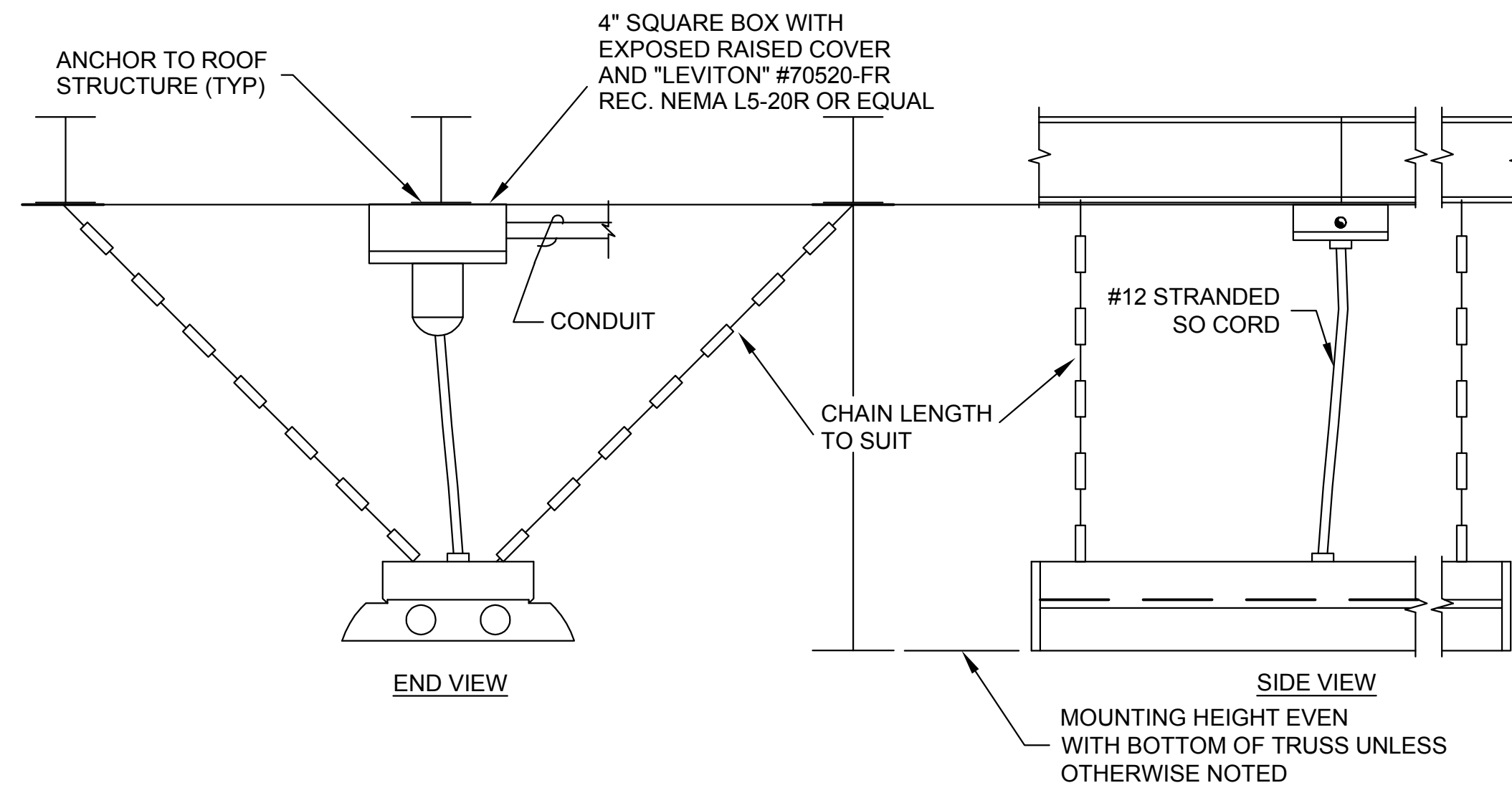
BID NO. 2022-05  
 SHEET 59 OF 60





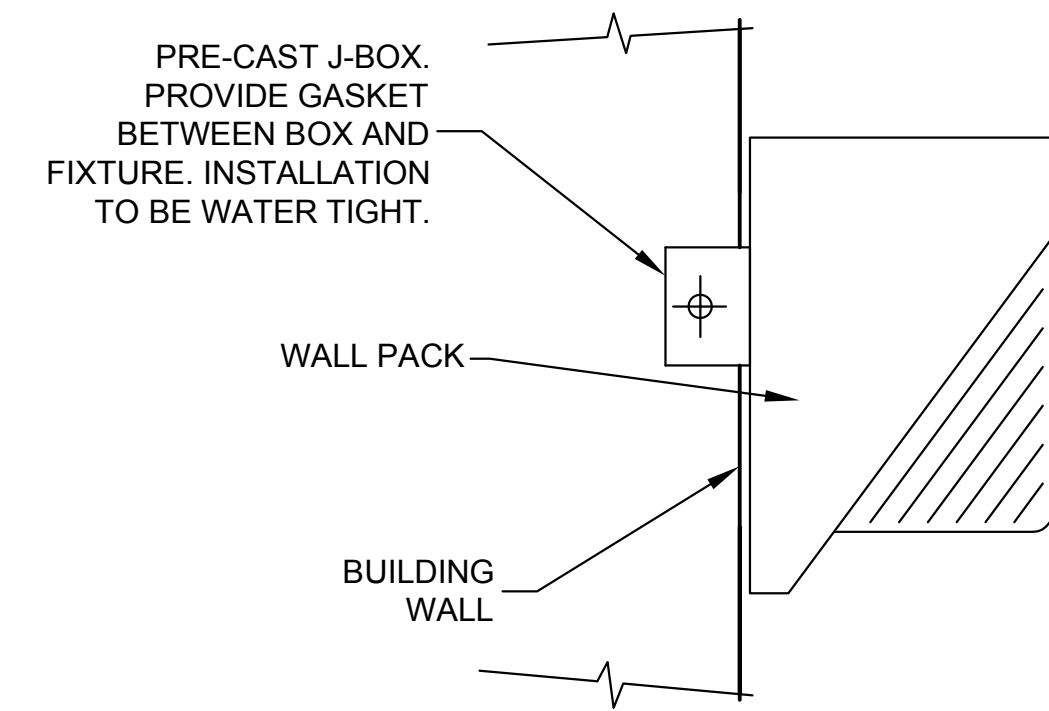
**FLOOR MOUNTED  
PANEL DETAIL**

613  
TYP SCALE: NONE



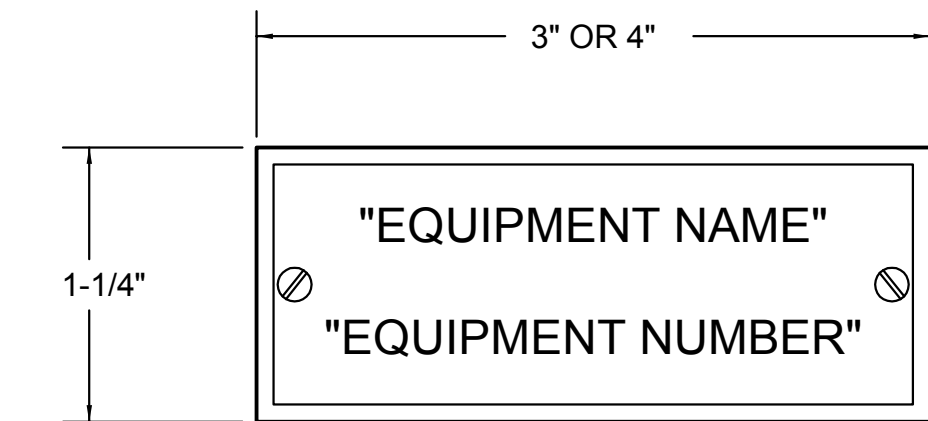
**SUSPENDED LIGHT FIXTURE INSTALLATION DETAIL**

802  
TYP SCALE: NONE



**WALL MOUNTED LIGHT  
FIXTURE DETAIL**

810  
TYP SCALE: NONE



NOTES:

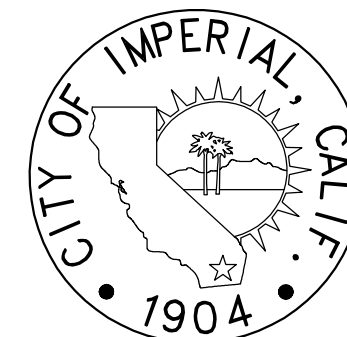
1. ALL LETTERS TO BE 1/4" UNLESS NOTED OTHERWISE.
2. ALL NAMEPLATES TO BE MOUNTED ON THE VERTICAL CENTERLINE OF THE CUBICAL OR DEVICE.
3. ATTACH ALL NAMEPLATES WITH STAINLESS STEEL SCREWS.
4. PROVIDE BLANK NAMEPLATES FOR ALL SPARE AND FUTURE DEVICES.

**NAMEPLATE DETAIL**

900  
TYP SCALE: NONE



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE
DESIGNED BY:	DRAWN BY:	CHECKED BY:		

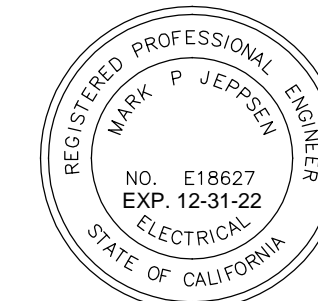


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DATE

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REGISTERED ELECTRICAL ENGINEER NO. E18627

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TRACED: N/A	
CHECKED: MPJ	06/22
SUBMITTED:	
SCALE:	
HORIZ. SCALE: N/A	
VERT. SCALE: N/A	

CITY OF IMPERIAL  
IMPERIAL COUNTY, CALIFORNIA

CLEARWELL PS REPLACE., GAC TREATMENT  
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AT THE WTP  
ELECTRICAL - DETAILS  
DETAILS 4

DWG. NO. E904

BID NO.  
2022-05

SHEET  
**60**  
OF 60