

LINE TYPE LEGEND

	PROPOSED UNDERGROUND PIPE
	PROPOSED ABOVE GROUND PIPE
	DAYLIGHT LINE
	PROPOSED CURB
	DIRECTION OF DRAINAGE FLOW
	SHEET BOUNDARY LINE
	EXISTING RIGHT-OF-WAY
	PROPOSED WATER LINE
	EXISTING WATER LINE
	EXISTING GAS LINE
	EXISTING SEWER LINE
	EXISTING UNDERGROUND TELEPHONE LINE
	EXISTING UNDERGROUND ELECTRIC LINES
	EXISTING OVERHEAD LINES
	PROPOSED CHAINLINK FENCING
	EXISTING CHAINLINK FENCING
	SANITARY SEWER

LABELING LEGEND

	CROSS REFERENCE TO CONSTRUCTION NOTES
	DETAIL CALLOUT
	DENOTES DETAIL NO. DENOTES SHEET NO. WHERE SHOWN
	CROSS SECTION CALLOUT
	DENOTES CROSS SECTION LETTER DENOTES SHEET NO. WHERE SHOWN

HATCHING LEGEND

	PROPOSED CUT OR FILL SLOPE
	EXISTING CUT OR FILL SLOPE
	PROPOSED A.C. PAVEMENT OR WATER
	EARTH OR GRADE
	PROPOSED CONCRETE
	CLASS II BASE
	SAND
	RIP-RAP
	WALLS AND SECTIONS

LEGEND

	EXISTING GATE VALVE		PROPOSED YARD LIGHT
	PLUG VALVE, ECCENTRIC		EXISTING YARD LIGHT
	FLOW METER		WARF HEAD
	CHECK VALVE		EXISTING MANHOLE
	PRESSURE RELIEF VALVE		CLEANOUT
	BUTTERFLY VALVE		AIR VALVE
	REDUCER		EXISTING SPOT ELEVATIONS

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.
- ALL PROPOSED CUT AND FILL SLOPES ARE 2:1 UNLESS SHOWN OTHERWISE
- DURING GRADING OPERATIONS, TEMPORARY DRAINAGE CONTROL SHALL BE PROVIDED BY CONTRACTOR TO PREVENT PONDING WATER AND DAMAGE TO ADJACENT PROPERTIES AND EXISTING FACILITIES.
- 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.
- SURPLUS EXCAVATED MATERIAL SHALL BE DISPOSED OF ONSITE PER THE OWNERS INSTRUCTIONS UNLESS SPECIFICALLY STATED OTHERWISE IN THE CONTRACT DOCUMENTS, AND SHALL NOT CREATE A NUISANCE. THE MOVING OR DISPOSAL OF EXCESS MATERIAL ONSITE SHALL BE DONE AT NO ADDITIONAL COST TO THE CITY.
- PROPOSED CONTOURS AND ELEVATIONS SHOWN ON PLANS INDICATE FINISHED EARTH SURFACE OR FINISHED TOP OF ASPHALT AS INDICATED IN THE PLANS.
- 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.
- THE CONTRACTOR SHALL PROVIDE AT HIS OWN COST ALL TEMPORARY ELECTRICAL POWER NECESSARY FOR CONSTRUCTION, TESTING, GENERAL AND SECURITY LIGHTING AND ALL OTHER PURPOSES.
- 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.
- ALL EXPOSED PIPING AND METAL SURFACES, SHALL BE FIELD PAINTED IN ACCORDANCE WITH THE SPECIFICATIONS.
- ALL CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI, TYPE II CEMENT. SEE SOILS REPORT. ALL THICKNESSES ARE MINIMUMS
- REINFORCING STEEL FOR CONCRETE SHALL CONFORM TO ASTM A615, GRADE 60 DEFORMED BARS, EXCEPT STIRRUPS AND TIES WHICH SHALL BE GRADE 40. SPIRAL REINFORCING SHALL BE GRADE 60. FURNISH AND ERECT IN ACCORDANCE WITH ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, ACI 315.

GENERAL PIPELINE NOTES

- PIPELINE AND APPURTENANT CONSTRUCTION SHALL BE IN ACCORDANCE W/ MANUFACTURER'S AND CITY'S RECOMMENDATIONS.
- ALL NEW PIPES SHALL BE INSTALLED W/ LOCATOR WIRE. LOCATOR WIRE IS TO BE 14 GAUGE SOLID COPPER WIRE UF, THWN, OR THHN. WIRE TO BE CONTINUOUS STRAND, SPLICES TO BE DONE W/ A CRIMPABLE BUTT CONNECTOR. FOR PIPE DEPTHS GREATER THAN 8 FT, LOCATOR WIRE SHALL BE PLACED AT MAX 8 FT DEPTH. MARKER TAPE SHALL BE PLACED 1 FT ABOVE THE LOCATOR WIRE. A LOCATILITY TEST IS TO BE PERFORMED ON ALL LOCATOR WIRES, BY THE CONTRACTOR PRIOR TO FACILITY ACCEPTANCE.
- THRUST BLOCKS SHALL BE POURED AT ALL CHANGES IN VERTICAL AND HORIZONTAL ALIGNMENT IN ORDER TO PREVENT PIPELINE MOVEMENT
- DUCTILE IRON PIPE AND FITTINGS SHALL BE CEMENT MORTAR LINED CL 53 UNLESS OTHERWISE SPECIFIED. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE WRAPPED PER AWWA C105 CONTRACTOR TO PROVIDE WRAP. ALL ABOVE GRADE STEEL PIPE SHALL BE FUSION BONDED EPOXY LINED AND OUTSIDE PAINTED UNLESS OTHERWISE SPECIFIED. ALL BELOW GRADE STEEL PIPE SHALL BE CEMENT MORTAL LINED AND COATED.
- PIPE AND FITTINGS SHOULD 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, WHICH 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.

PVC AND DI PIPE NOTES:

- ALL PVC PIPE THROUGH 12-INCH DIAMETER SHALL BE TYPE C-900, CLASS 150. PIPE SHALL CONFORM TO AWWA SPECIFICATIONS.
- FITTINGS FOR C-900 OR C-905 PVC PIPE SHALL BE DUCTILE OR GRAY IRON AS SHOWN ON THE CONSTRUCTION PLANS PER THE CITY'S REQUIREMENTS.
- ALL DUCTILE OR GRAY IRON FITTINGS SHALL BE POLYETHYLENE ENCASED AT THE TIME OF INSTALLATION PER AWWA C105. CONTRACTOR TO PROVIDE WRAP

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.

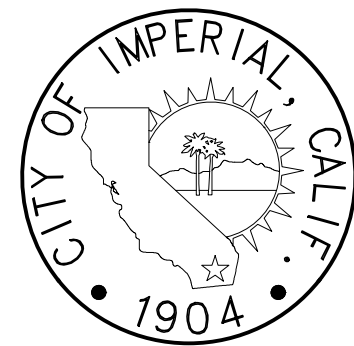
ABBREVIATIONS

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
BOT	BOTTOM	OSHA	OCCUPATIONAL SAFETY & HEALTH ADMIN.
C&G	CURB & GUTTER	PCC	PORTLAND CEMENT CONCRETE
CB	CATCH BASIN	PDC	POWER DISTRIBUTION CENTER
CF	CURB FACE	PE	PAD ELEVATION OR POLYETHYLENE
CG	CENTER GRADE	PI	POINT OF INTERSECTION
CL	CENTERLINE OR CLASS	PP	EXISTING POWER POLE
CLR	CLEARANCE	PRC	POINT OF REVERSE CURVE
CMC	CEMENT MORTAR COATING	PROP	PROPOSED
CML	CEMENT MORTAR LINING	PVC	POLY VINYL CHLORIDE
CML&C	CEMENT MORTAR LINED AND COATED	RAD	RADIUS
CML&P	CEMENT MORTAR LINED AND OUTSIDE PAINTED	RAS	RETURN ACTIVATED SLUDGE
CMP	CORRUGATED METAL PIPE	RC	RELATIVE COMPACTION
CMU	CONCRETE MASONRY UNITS	REQD	REQUIRED
CD	CLEANOUT	REV	REVISION, REVISED
CONC	CONCRETE	RSGV	RESILIENT SEAT GATE VALVE
CONT	CONTINUOUS	RT	RIGHT
CPLG	COUPLING	R/W	RIGHT-OF-WAY
CTF	CUT TO FIT	SCC	SYSTEM CONTROL CENTER
DBL	DOUBLE	SDR	STANDARD DIMENSION
DD	DRAIN DITCH	SG	RATIO
DI	DUCTILE IRON	SHD	SUBGRADE
DIA	DIAMETER	SCHED	SCHEDULE
DIP	DUCTILE IRON PIPE	SD	STORM DRAIN
DIV	DIVISION	SP	SPACE
DWG	DRAWING	SPEC	SPECIFICATION
EC	END OF CURVE	SS	STAINLESS STEEL
EL, ELEV	ELEVATION	STA	STATION
EP	EDGE OF PAVEMENT	STD	STANDARD
EQ	EQUAL	STL	STEEL
EVC	END OF VERTICAL CURVE	SWR	SEWER
EX, EXIST	EXISTING	TOB	TOP OF BERM
FAB	FABRICATED	TC	TOP OF CURB
FBEL	FUSION BONDED EPOXY LINED	TD	TOP OF DIKE
FF	FINISHED FLOOR	TG	TOP OF GRATE
FG	FINISHED GRADE	THK	THICK
FH	FIRE HYDRANT	TOP	TOP OF PIPE
FL	FLOWLINE	TS	TOP OF SLAB
FLG	FLANGE	TOW	TOP OF WALL
FLG'D	FLANGED	TYP	TYPICAL
FS	FINISHED SURFACE	UBC	UNIFORM BUILDING CODE
FT	FOOT, FEET	VC	VERTICAL CURVE
FUT	FUTURE	VERT	VERTICAL
GA	GAUGE	VFD	VARIABLE FREQUENCY DRIVE
GALV	GALVANIZED	VPI	VERTICAL POINT OF INTERSECTION
GB	GRADE BREAK	WAS	WASTE ACTIVATED SLUDGE
HORIZ	HORIZONTAL	WSP	WELDED STEEL PIPE
HP	HIGH POINT	WS	WATER SURFACE
HPI	HORIZONTAL POINT OF INTERSECTION	WT	WEIGHT
HSC	HYDRAULIC SYSTEM CENTER	WTR	WATER
ID	INSIDE DIAMETER	WWM	WELDED WIRE MESH
IN	INCHES	WWTTP	WASTEWATER TREATMENT PLANT
INV	INVERT	W/	WITH
LF	LINEAL FOOT (FEET)	W/LY	WESTERLY
LG	LONG		



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

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36951 COOK STREET #103
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PLANS PREPARED UNDER THE SUPERVISION OF:

SHANE L. BLOOMFIELD
REGISTERED CIVIL ENGINEER NO. C77435

DATE

	DATE
DESIGNED: -	5/16/12
DRAWN: BTE	5/16/12
TRACED: -	N/A
CHECKED: SLB	5/16/12
SUBMITTED: -	--/--/--
SCALE:	
HORIZ. SCALE: N/A	
VERT. SCALE: N/A	

CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA

LA BRUCHERIE LIFT STATION IMPROVEMENTS
GENERAL NOTES & ABBREVIATIONS

DWG. NO.

BID NO.
2015-07

SHEET
2
OF 25

G-2

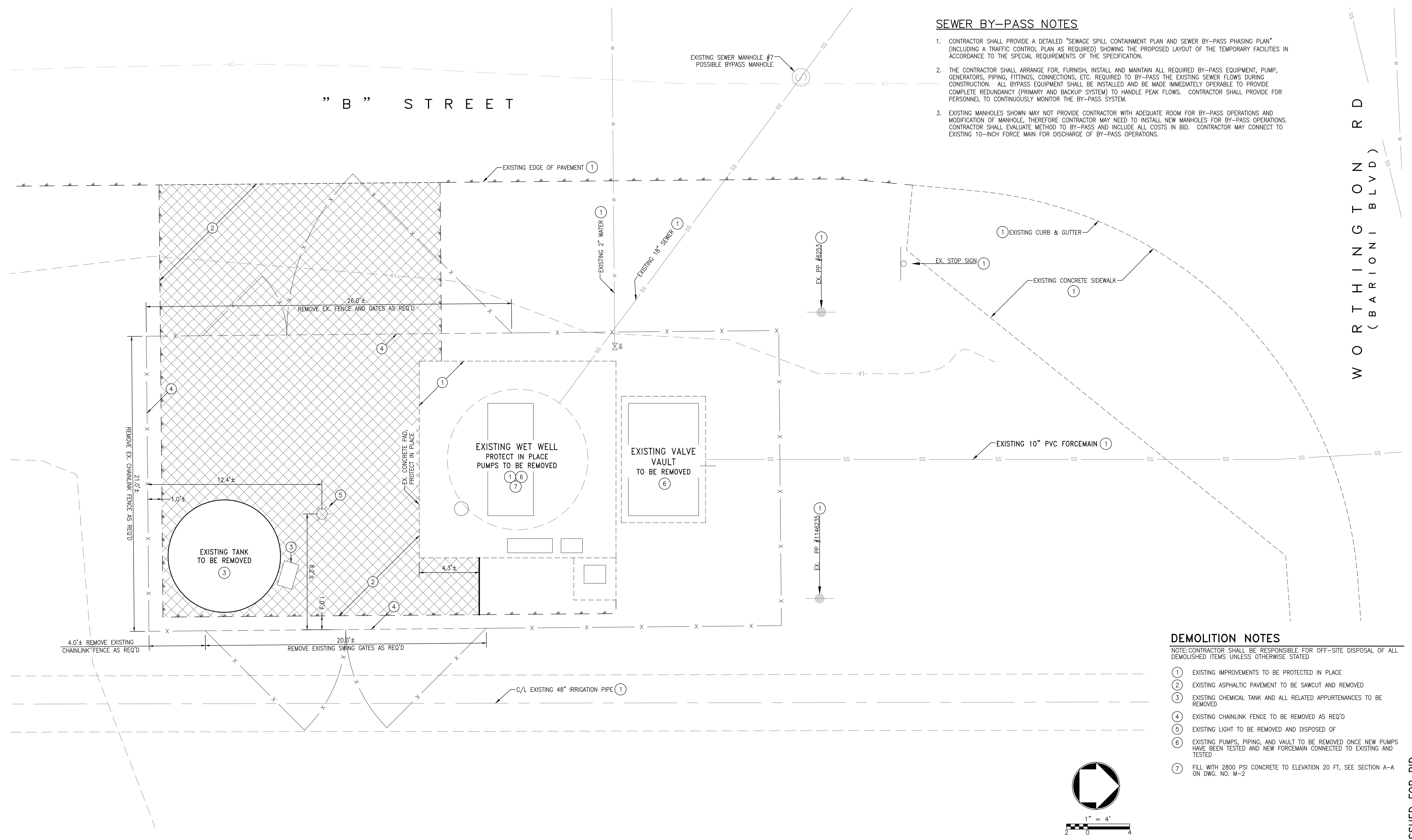
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WORTHINGTON RD
(BARRIONI BLVD)

SEWER BY-PASS NOTES

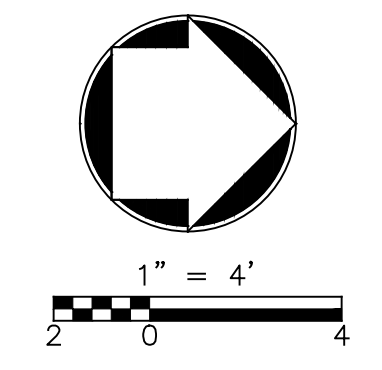
1. CONTRACTOR SHALL PROVIDE A DETAILED "SEWAGE SPILL CONTAINMENT PLAN AND SEWER BY-PASS PHASING PLAN" (INCLUDING A TRAFFIC CONTROL PLAN AS REQUIRED) SHOWING THE PROPOSED LAYOUT OF THE TEMPORARY FACILITIES IN ACCORDANCE TO THE SPECIAL REQUIREMENTS OF THE SPECIFICATION.
2. THE CONTRACTOR SHALL ARRANGE FOR, FURNISH, INSTALL AND MAINTAIN ALL REQUIRED BY-PASS EQUIPMENT, PUMP, GENERATORS, PIPING, FITTINGS, CONNECTIONS, ETC. REQUIRED TO BY-PASS THE EXISTING SEWER FLOWS DURING CONSTRUCTION. ALL BYPASS EQUIPMENT SHALL BE INSTALLED AND BE MADE IMMEDIATELY OPERABLE TO PROVIDE COMPLETE REDUNDANCY (PRIMARY AND BACKUP SYSTEM) TO HANDLE PEAK FLOWS. CONTRACTOR SHALL PROVIDE FOR PERSONNEL TO CONTINUOUSLY MONITOR THE BY-PASS SYSTEM.
3. EXISTING MANHOLES SHOWN MAY NOT PROVIDE CONTRACTOR WITH ADEQUATE ROOM FOR BY-PASS OPERATIONS AND MODIFICATION OF MANHOLE, THEREFORE CONTRACTOR MAY NEED TO INSTALL NEW MANHOLES FOR BY-PASS OPERATIONS. CONTRACTOR SHALL EVALUATE METHOD TO BY-PASS AND INCLUDE ALL COSTS IN BID. CONTRACTOR MAY CONNECT TO EXISTING 10-INCH FORCE MAIN FOR DISCHARGE OF BY-PASS OPERATIONS.



DEMOLITION NOTES

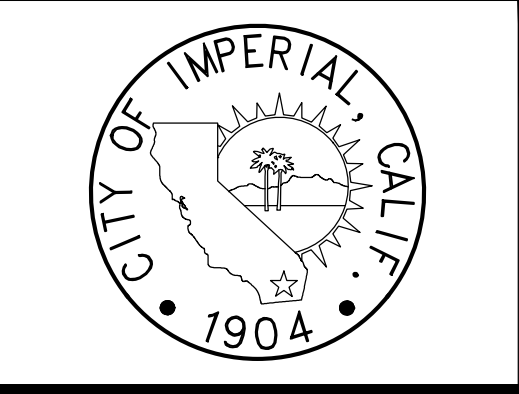
NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL DEMOLISHED ITEMS UNLESS OTHERWISE STATED

- 1 EXISTING IMPROVEMENTS TO BE PROTECTED IN PLACE
- 2 EXISTING ASPHALTIC PAVEMENT TO BE SAWCUT AND REMOVED
- 3 EXISTING CHEMICAL TANK AND ALL RELATED APPURTENANCES TO BE REMOVED
- 4 EXISTING CHAINLINK FENCE TO BE REMOVED AS REQ'D
- 5 EXISTING LIGHT TO BE REMOVED AND DISPOSED OF
- 6 EXISTING PUMPS, PIPING, AND VAULT TO BE REMOVED ONCE NEW PUMPS HAVE BEEN TESTED AND NEW FORCEMAIN CONNECTED TO EXISTING AND TESTED
- 7 FILL WITH 2800 PSI CONCRETE TO ELEVATION 20 FT, SEE SECTION A-A ON DWG. NO. M-2



REVISIONS				
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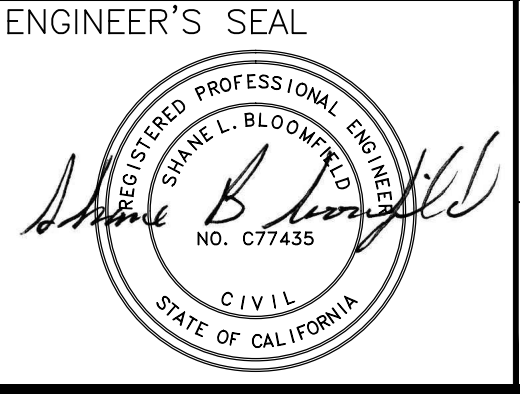
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CITY OF IMPERIAL

CITY ENGINEER _____ DATE _____

REFERENCES



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PLANS PREPARED UNDER THE SUPERVISION OF:

SHAWN L. BLOOMFIELD
REGISTERED CIVIL ENGINEER NO. C77435

	DATE
DESIGNED: -	4/23/13
DRAWN: BTE	4/23/13
TRACED: -	N/A
CHECKED: SLB	4/23/13
SUBMITTED: -	---/--

SCALE:
HORIZ. SCALE: 1" = 2'
VERT. SCALE: N/A

CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA

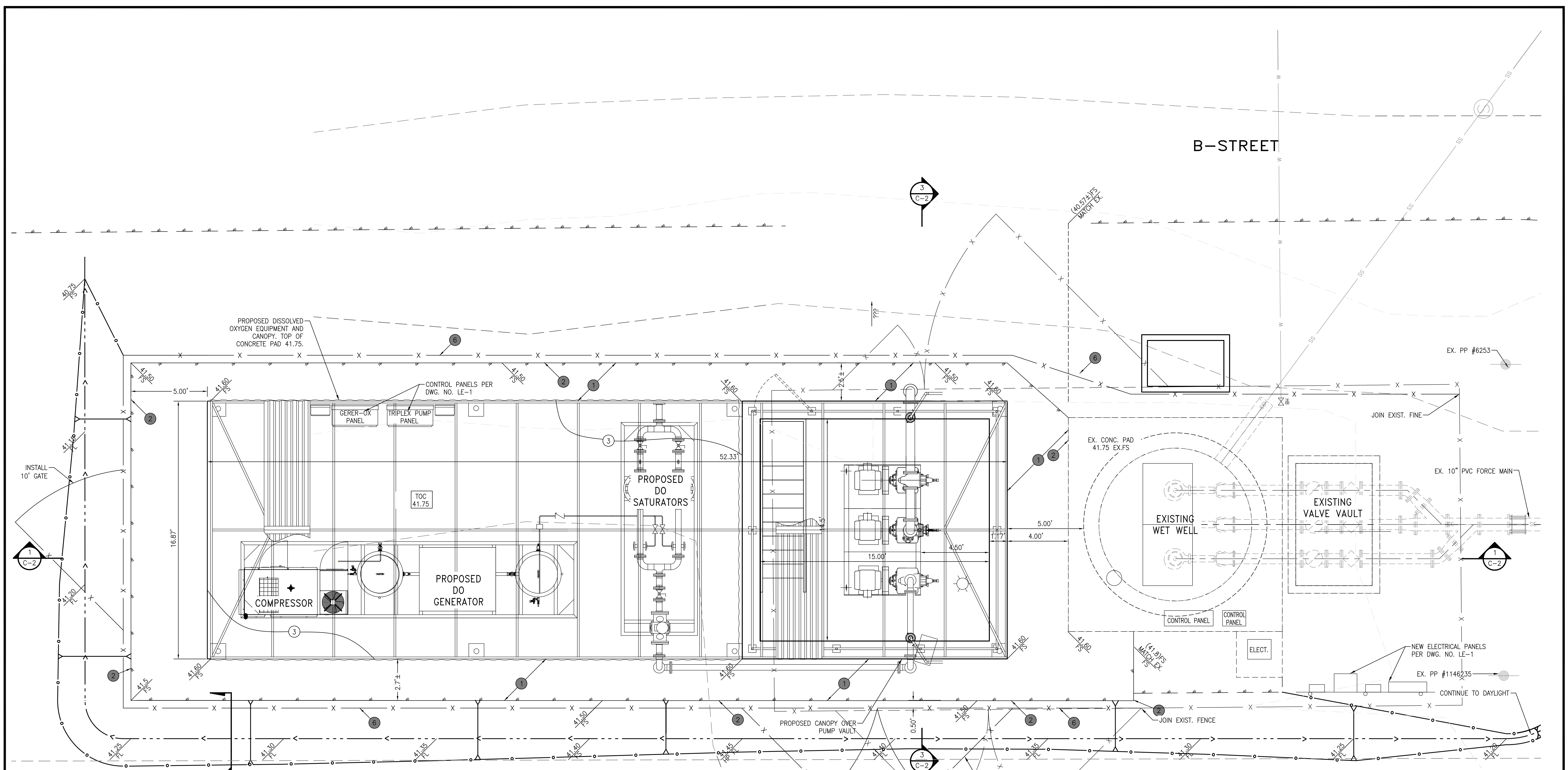
**LA BRUCHERIE LIFT STATION IMPROVEMENTS
DEMOLITION PLAN**

BID NO.
2015-07

SHEET
3
OF 25

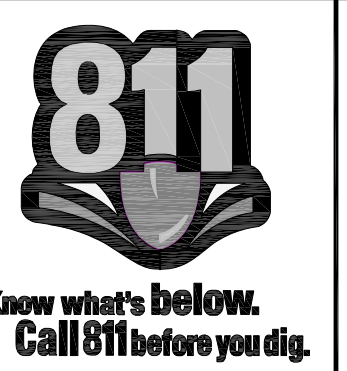
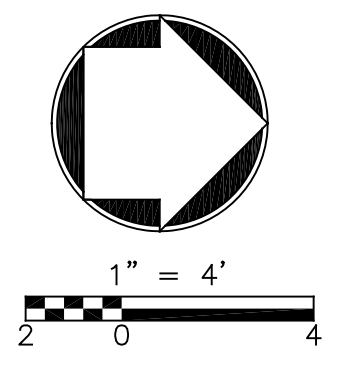
DWG. NO.
D-1

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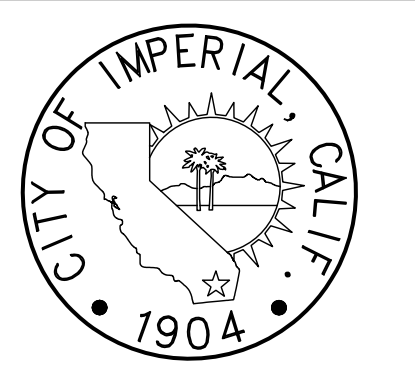
SITE AND GRADING NOTES

- ① CONSTRUCT 3" AC PAVEMENT OVER 3" AB
- ② CONSTRUCT REDWOOD HEADER PER DETAIL "A" ON DWG. NO. C-2
- ③ CONSTRUCT 8" THICK PCC SLAB W/ CONTROL JOINTS AT 10'
- ④ SAWCUT & OVERLAY EX. AC PAVEMENT PER DETAIL "B" ON DWG. NO. C-2
- ⑤ INSTALL 8' CHAINLINK FENCE WITH BARBED WIRE TO MATCH EXISTING



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

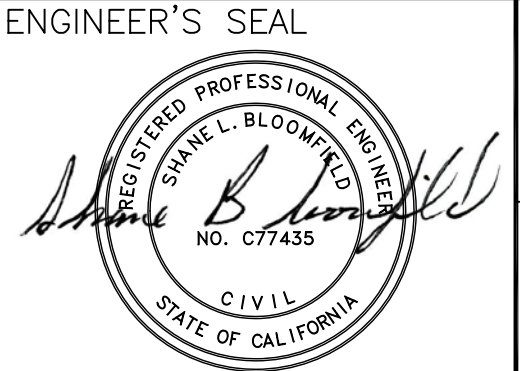
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CITY OF IMPERIAL

CITY ENGINEER _____ DATE _____

REFERENCES



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TRACED: -	N/A
CHECKED: SLB	4/23/13
SUBMITTED: -	---

SCALE:
 HORIZ. SCALE: 1" = 2'
 VERT. SCALE: N/A

CITY OF IMPERIAL
 IMPERIAL COUNTY, CALIFORNIA

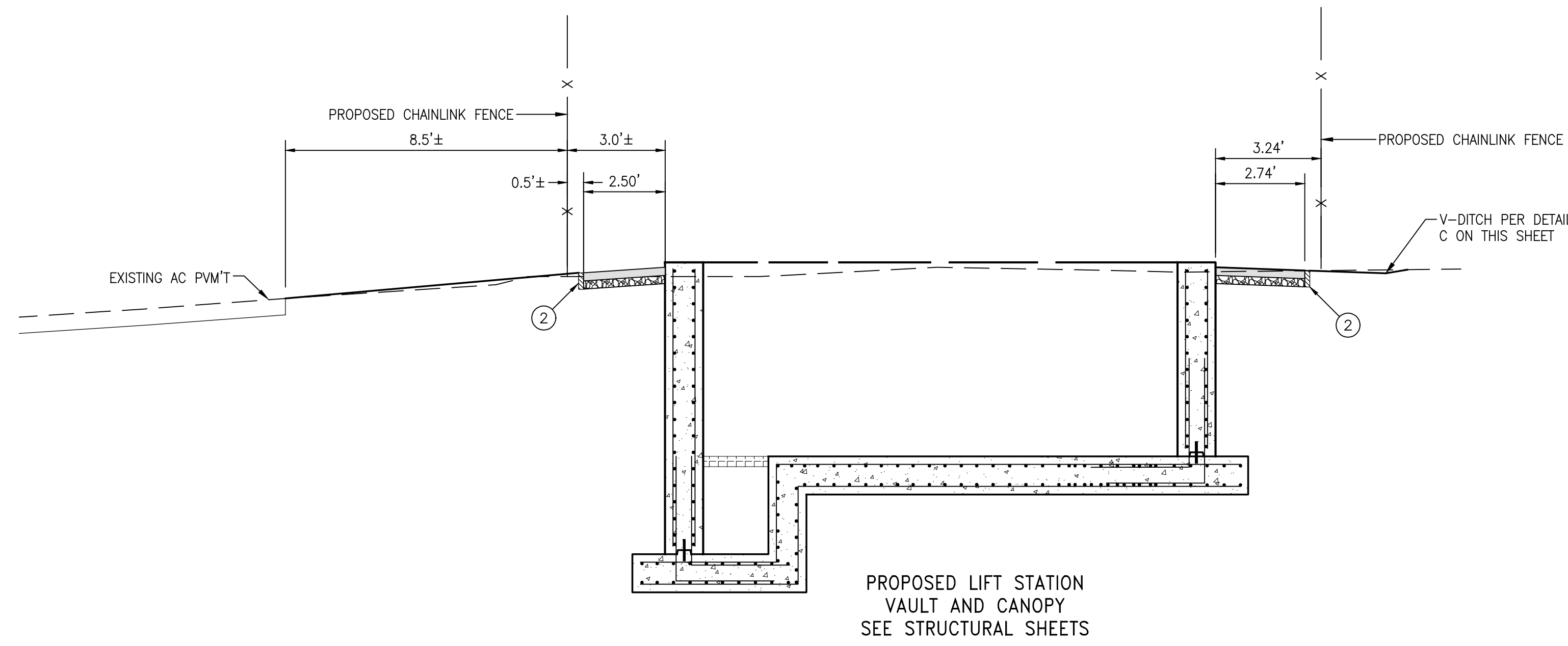
**LA BRUCHERIE LIFT STATION IMPROVEMENTS
 GRADING & SITE PLAN**

BID NO.
2015-07

SHEET
4
 OF 25

DWG. NO.
 C-1

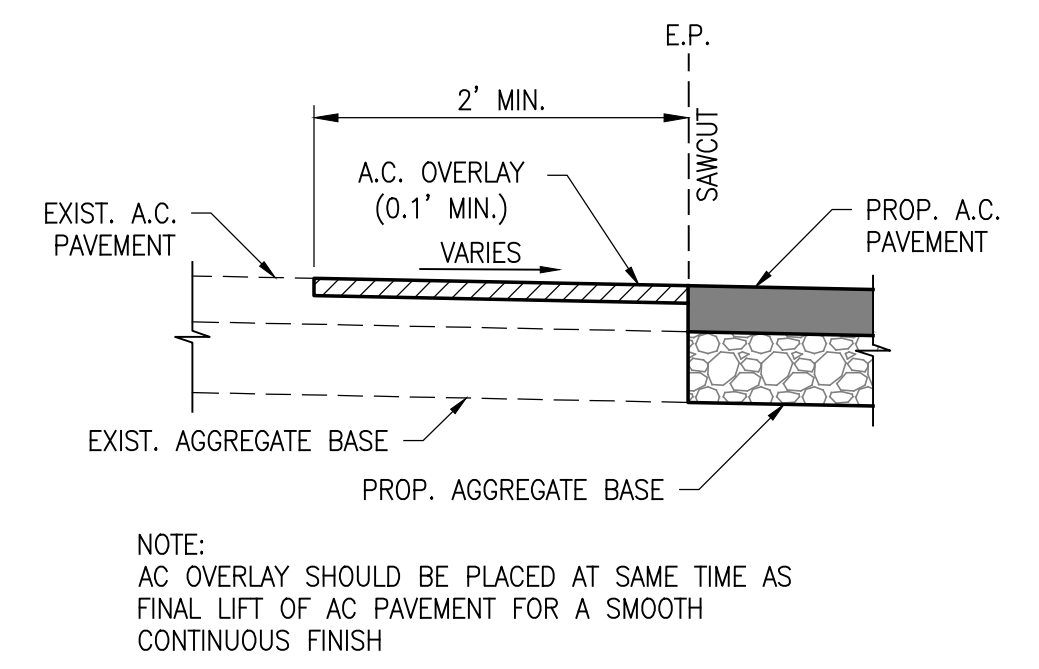
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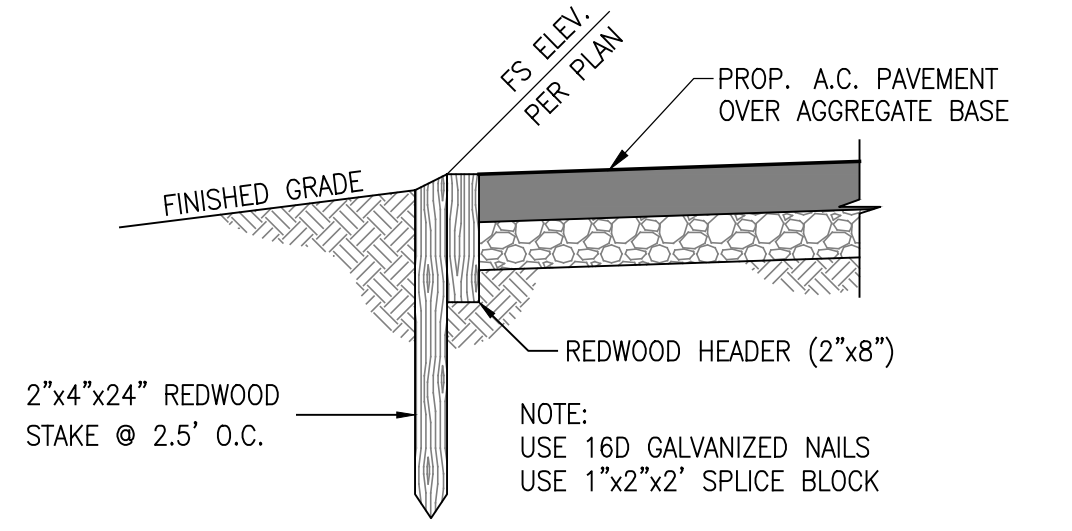
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SCALE: 1" = 3' **C-1**

SECTION GRADING NOTES

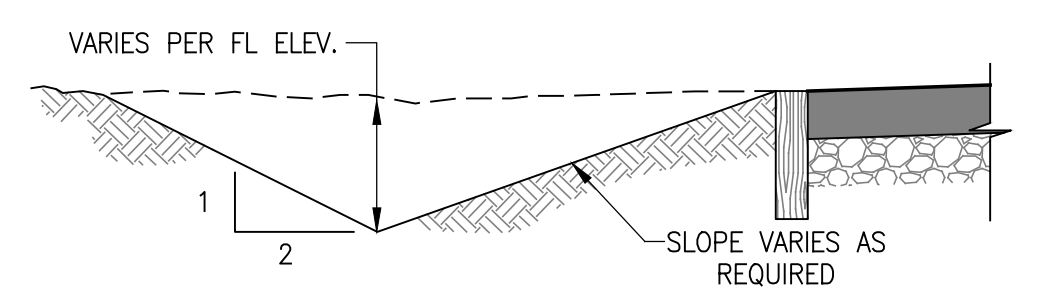
- ① CONSTRUCT 3" AC PAVEMENT OVER 3" AB
- ② CONSTRUCT REDWOOD HEADER PER DETAIL "A" ON DWG. NO. C-2
- ③ CONSTRUCT 8" THICK PCC SLAB W/ CONTROL JOINTS AT 10'



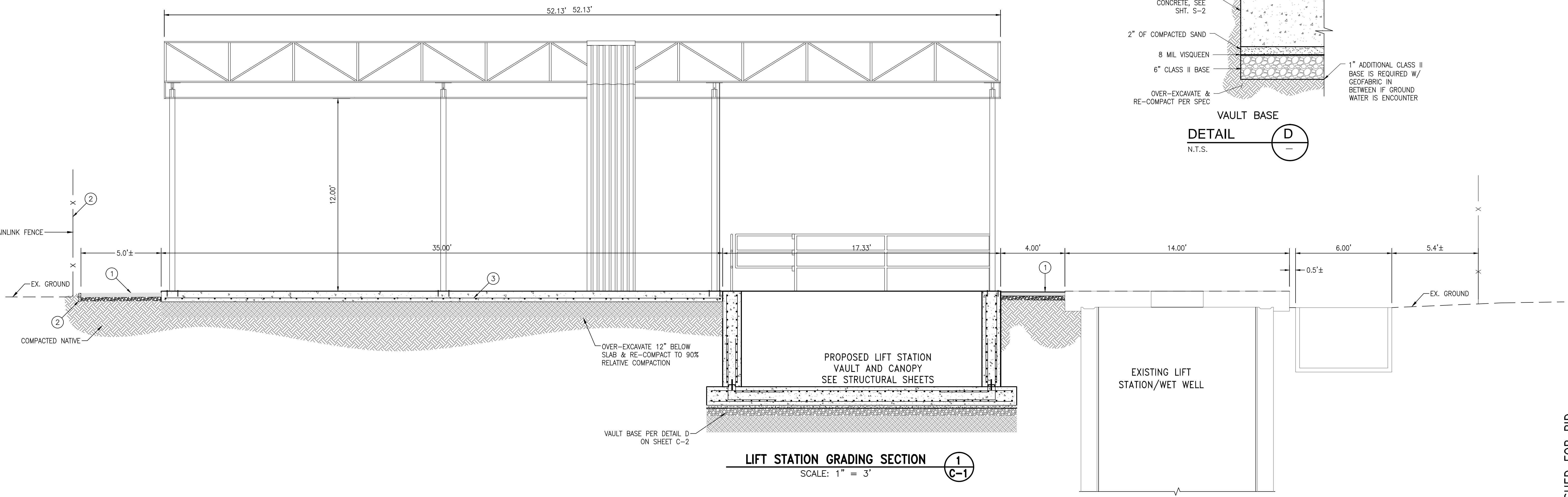
SAWCUT AND JOIN DETAIL **B**
N.T.S.



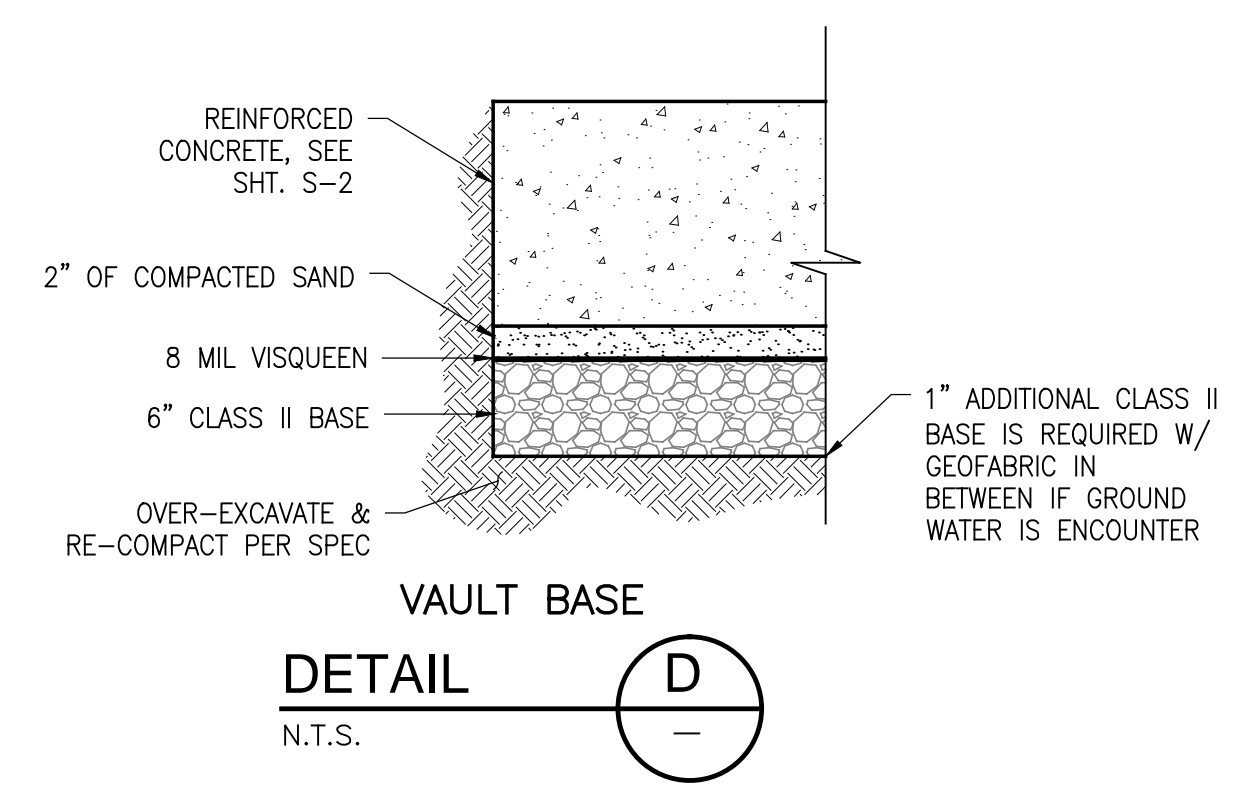
REDWOOD HEADER DETAIL **A**
N.T.S.



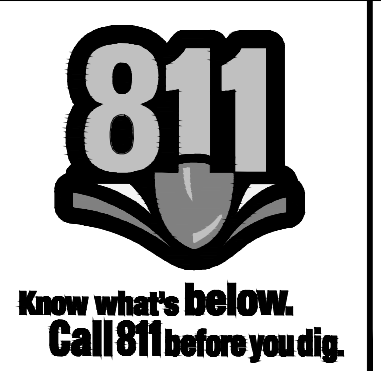
TYPICAL DIRT "V"-DITCH **C**
N.T.S. **C-1**



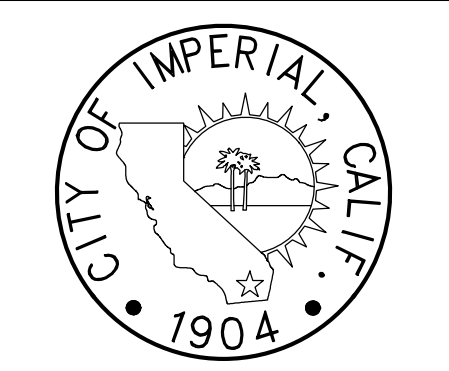
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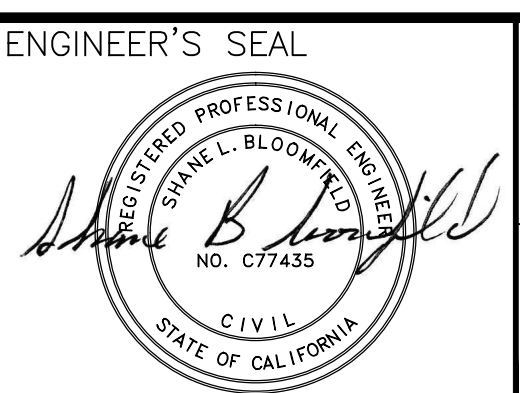
VAULT BASE **D**
N.T.S.



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE



CITY OF IMPERIAL
CITY ENGINEER _____ DATE _____
REFERENCES _____



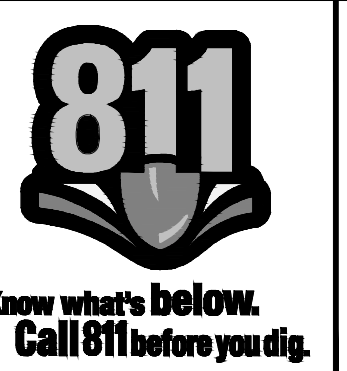
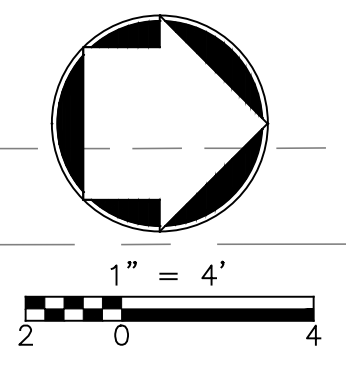
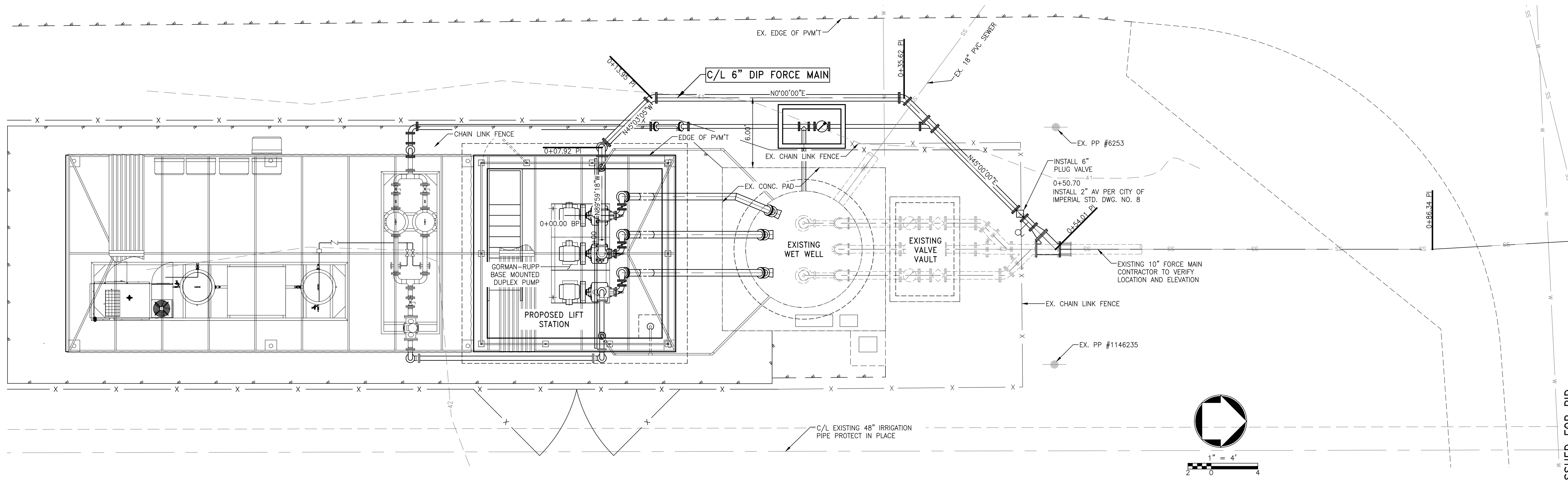
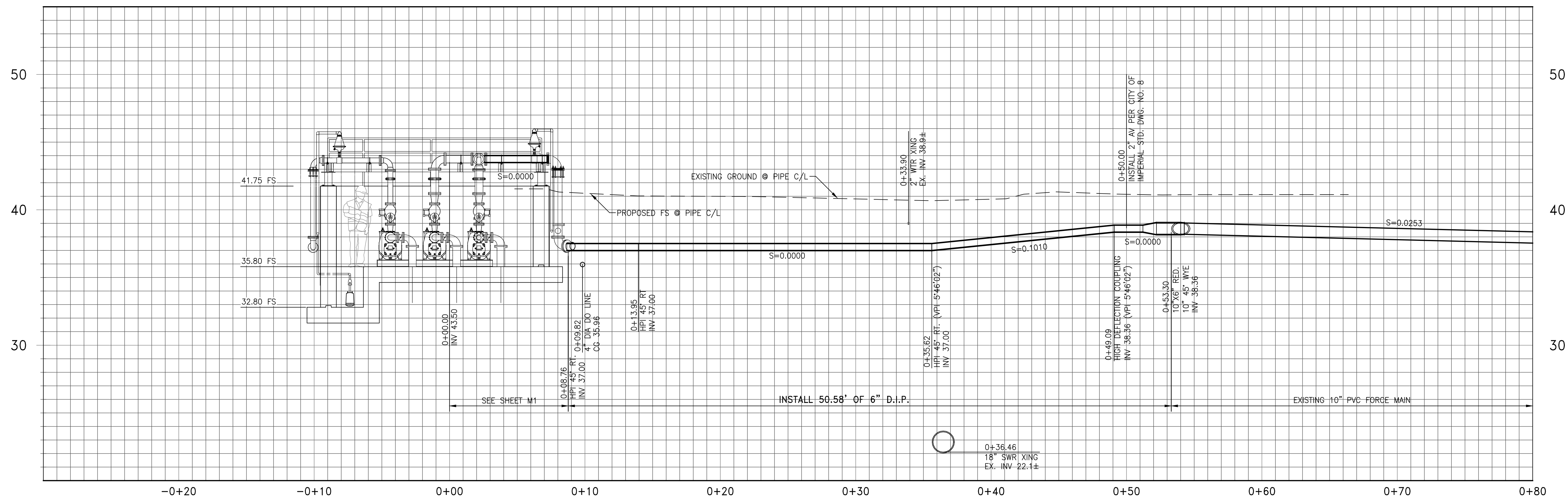
ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
36951 COOK STREET #103
PALM DESERT, CA 92211
PH. (760) 568-5005
FAX (760) 568-3443
PLANS PREPARED UNDER THE SUPERVISION OF:
SHAWN L. BLOOMFIELD
REGISTERED CIVIL ENGINEER NO. C77435

	DATE
DESIGNED: -	4/23/13
DRAWN: BTE	4/23/13
TRACED: -	N/A
CHECKED: SLB	4/23/13
SUBMITTED: -	4/23/13
SCALE:	
HORIZ. SCALE: 1" = 2'	
VERT. SCALE: N/A	

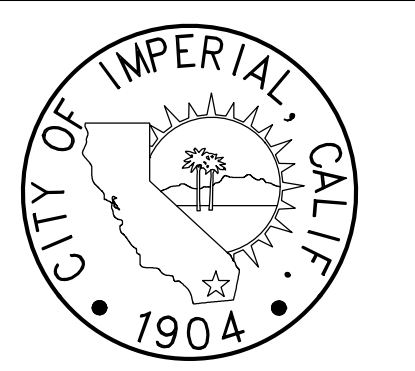
CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA
LA BRUCHERIE LIFT STATION IMPROVEMENTS
DETAILS & SECTIONS
DWG. NO. _____

BID NO. 2015-07
SHEET 5 OF 25
C-2

ISSUED FOR BID
G:\2012\12-0081\URAWINGS\B STREET LS\12-0081-C-LS-1-C2.DWG 4/23/2015 10:00 AM



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



CITY OF IMPERIAL

CITY ENGINEER _____ DATE _____

REFERENCES



ALBERT A. WEBB ASSOCIATES

ENGINEERING CONSULTANTS
36951 COOK STREET #103
PALM DESERT, CA 92211
PH. (760) 568-5005
FAX (760) 568-3443

PLANS PREPARED UNDER THE SUPERVISION OF:

SHAWN L. BLOOMFIELD
REGISTERED CIVIL ENGINEER NO. C77455

	DATE
DESIGNED: -	4/23/13
DRAWN: BTE	4/23/13
TRACED: -	N/A
CHECKED: SLB	4/23/13
SUBMITTED: -	---/---/---
SCALE:	
HORIZ. SCALE: N/A	
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CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA

**LA BRUCHERIE LIFT STATION IMPROVEMENTS
FORCE MAIN PLAN & PROFILE**

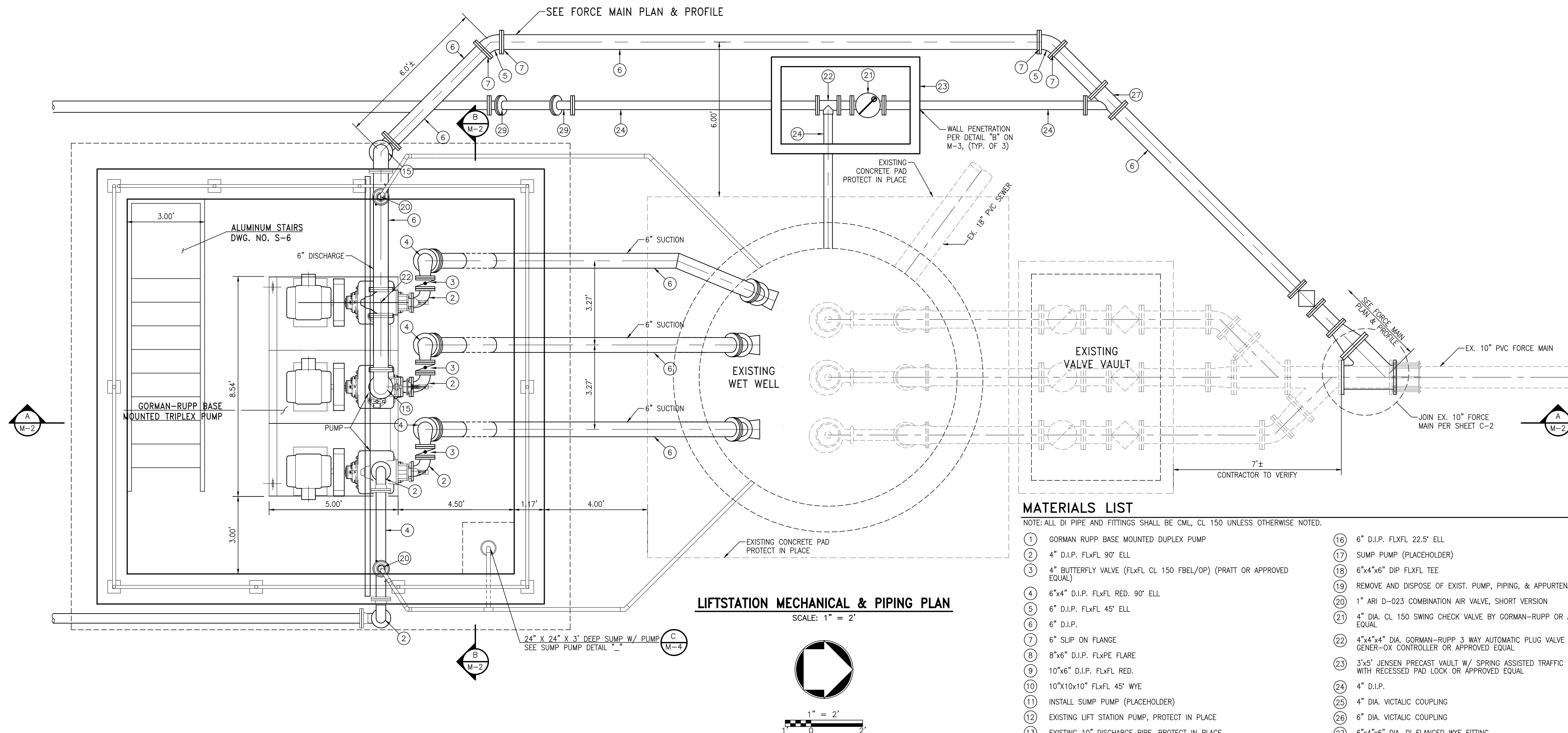
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BID NO.
2015-07

SHEET
6
OF 25

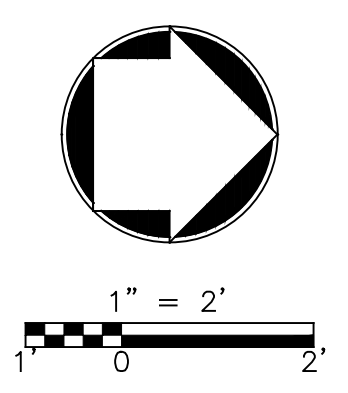
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ISSUED FOR BID
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LIFTSTATION MECHANICAL & PIPING PLAN

SCALE: 1" = 2'



MATERIALS LIST

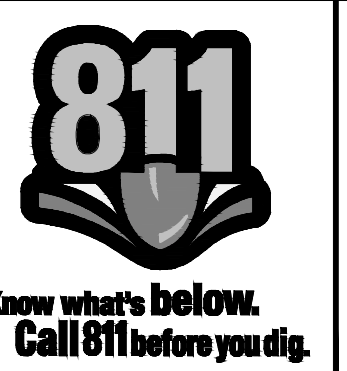
NOTE: ALL DI PIPE AND FITTINGS SHALL BE CML, CL 150 UNLESS OTHERWISE NOTED.

- | | |
|---|---|
| 1 GORMAN RUPP BASE MOUNTED DUPLEX PUMP | 16 6" D.I.P. FLXFL 22.5' ELL |
| 2 4" D.I.P. FLXFL 90° ELL | 17 SUMP PUMP (PLACEHOLDER) |
| 3 4" BUTTERFLY VALVE (FLXFL CL 150 FBEL/OP) (PRAIT OR APPROVED EQUAL) | 18 6"x4"x6" DIP FLXFL TEE |
| 4 6"x4" D.I.P. FLXFL RED. 90° ELL | 19 REMOVE AND DISPOSE OF EXIST. PUMP, PIPING, & APPURTENANCES |
| 5 6" D.I.P. FLXFL 45° ELL | 20 1" ARI D-023 COMBINATION AIR VALVE, SHORT VERSION |
| 6 6" D.I.P. | 21 4" DIA. CL 150 SWING CHECK VALVE BY GORMAN-RUPP OR APPROVED EQUAL |
| 7 6" SLIP ON FLANGE | 22 4"x4"x4" DIA. GORMAN-RUPP 3 WAY AUTOMATIC PLUG VALVE W/ GENER-OX CONTROLLER OR APPROVED EQUAL |
| 8 8"x6" D.I.P. FLXPE FLARE | 23 3'x5' JENSEN PRECAST VAULT W/ SPRING ASSISTED TRAFFIC RATED LID WITH RECESSED PAD LOCK OR APPROVED EQUAL |
| 9 10"x6" D.I.P. FLXFL RED. | 24 4" D.I.P. |
| 10 10"x10"x10" FLXFL 45° WYE | 25 4" DIA. VICTALIC COUPLING |
| 11 INSTALL SUMP PUMP (PLACEHOLDER) | 26 6" DIA. VICTALIC COUPLING |
| 12 EXISTING LIFT STATION PUMP, PROTECT IN PLACE | 27 6"x4"x6" DIA. DI FLANGED WYE FITTING |
| 13 EXISTING 10" DISCHARGE PIPE, PROTECT IN PLACE | 28 4" DIA. DI 90° ELBOW |
| 14 FLEXIBLE COUPLING PER DETAIL "B" ON DWG. NO. "M-4". | 29 4" DIA. DI 45° ELBOW |
| 15 6" D.I.P. FLXFL 90° ELL | |

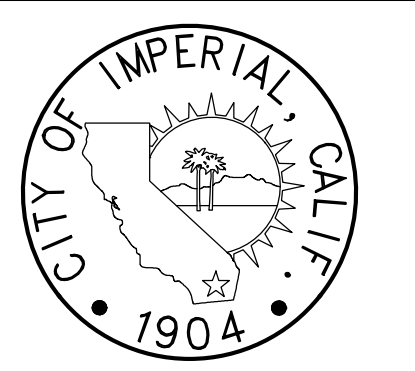
MECHANICAL AND PIPING GENERAL NOTES

- PROCESS EQUIPMENT DIMENSIONS, LOCATIONS AND PIPING SYSTEM LAYOUTS ARE BASED ON EQUIPMENT SELECTED AND SPECIFIED AND BY THE DESIGN ENGINEER. IF THE CONTRACTOR PROPOSES TO FURNISH EQUIPMENT THAT REQUIRES AN ARRANGEMENT OR SPACE DIFFERING FROM THAT INDICATED ON THE DRAWINGS OR SPECIFIED, THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER FOR APPROVAL DETAILED ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, INSTRUMENTATION, HVAC AND ELECTRICAL DRAWINGS AND EQUIPMENT LISTS SHOWING ALL NECESSARY CHANGES AND EMBODYING ALL FEATURES OF THE EQUIPMENT AND/OR PROCESS SYSTEM PROPOSED. THIS INFORMATION SHALL INCLUDE BUT NOT BE LIMITED TO PLANS, SECTIONS, DETAILS AND SCHEMATICS OF ALL APPURTENANCES REQUIRED.
- SIZES OF EQUIPMENT FOUNDATIONS AND EQUIPMENT PADS INDICATED ON THE DRAWINGS ARE APPROXIMATE. EXACT DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FOR THE EQUIPMENT FURNISHED. ALL FLOOR MOUNTED EQUIPMENT SHALL BE SET ON CONCRETE PADS CONFORMING TO DETAILS SHOWN ON THE STRUCTURAL AND/OR MECHANICAL DRAWINGS.
- STRUCTURAL BACKGROUND AND DIMENSIONAL DATA ON MECHANICAL PIPING DRAWINGS ARE FOR REFERENCE ONLY. SEE APPLICABLE STRUCTURAL DRAWINGS FOR ACTUAL DESIGN INFORMATION.
- ALL PROCESS PIPING TO AND FROM "YARD", SHOWN AND LOCATED ON YARD PIPING DRAWINGS SHALL AGREE WITH MECHANICAL PIPING LOCATING DIMENSIONS. UNLESS SPECIFICALLY NOTED OTHERWISE, OR NOT SHOWN, MECHANICAL LOCATION SHALL TAKE PRECEDENCE.
- PROTECTED WATER SUPPLY CONNECTIONS TO PROCESS EQUIPMENT AND PROCESS PIPES ARE SHOWN ON THE MECHANICAL DRAWINGS. DETAILS OF CONTROL VALVE STATIONS, MAKE-UP WATER CONNECTIONS, FLUSHING CONNECTIONS, ETC. ARE SHOWN ON THE MECHANICAL DRAWINGS. IF APPLICABLE, LIMITS OF WORK ARE SHOWN ON THE MECHANICAL AND THE PLUMBING DRAWINGS.
- WASH HOSE STATIONS ARE SHOWN ON THE PLUMBING DRAWINGS.
- DIELECTRIC COUPLINGS, FLANGES OR UNIONS SHALL BE INSTALLED AT ALL CONNECTIONS BETWEEN DISSIMILAR METAL PIPING.
- MECHANICAL PLANS AND SECTIONS DO NOT SHOW ALL VALVES, GAUGES, SWITCHES, OPERATORS, DRAINS, VENTS, ETC. REQUIRED FOR THE COMPLETE SYSTEM. CERTAIN SMALL DIAMETER PROCESS PIPING RUNS MAY NOT BE SHOWN IN THEIR ENTIRETY. GENERALLY SMALL PIPING IS SHOWN DIAGRAMMATICALLY IN THE PROCESS SCHEMATICS. FIELD ROUTE TO AVOID INTERFERENCES, SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE CONTRACTOR SHALL FURNISH, INSTALL AND TEST ALL PIPING SYSTEMS AS INDICATED ON THE PROCESS FLOW SCHEMATICS AND/OR AS DEFINED IN PROCESS PIPING SCHEDULES TO PROVIDE THE COMPLETE SYSTEM.
- UNLESS OTHERWISE SHOWN ON THE MECHANICAL DRAWINGS ALL FLOOR SLAB, WALL AND TANK PENETRATIONS SHALL BE AS SHOWN ON THE PENETRATION DETAILS INCLUDED IN THE MECHANICAL CONSTRUCTION DETAILS. ABOVE GROUND EXTERIOR WALL AND ROOF PENETRATIONS SHALL BE AS SHOWN ON THE ARCHITECTURAL DRAWINGS. IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY SUBSTITUTE ALTERNATE METHODS PROVIDING THEY MEET INTENDED DESIGN REQUIREMENTS.
- PIPE SUPPORTS SHOWN ON THE DRAWINGS ARE USED TO SHOW THE CONTRACTOR THE DESIGN INTENT. CONTRACTOR SHALL DESIGN AND PROVIDE ALL PIPE SUPPORTS THAT ARE REQUIRED FOR A COMPLETE SYSTEM, WHETHER SHOWN ON THE DRAWINGS ARE NOT. SUPPORTS SHALL BE BRACED AS REQUIRED FOR SEISMIC RESTRAINT.
- ANCHOR BOLTS OR EXPANSION TYPE ANCHORS SHOWN ON PIPE SUPPORT DRAWINGS ARE FOR REFERENCE ONLY. FOR APPROVED TYPE AND INSTALLATION REQUIREMENTS, SEE SPECIFICATIONS.
- CONTRACTOR SHALL COORDINATE PIPE SUPPORT CONFIGURATION AND INSTALLATION WITH WORK OF ALL OTHER TRADES, INCLUDING ARCHITECTURAL, PRIOR TO ANY FABRICATION OR INSTALLATION.
- ALL EQUIPMENT BASES AND PIPING HAVING DRAIN OUTLETS SHALL BE PIPED TO THE NEAREST OPEN END DRAIN (OED) OR TRENCH DRAIN USING GALVANIZED STEEL PIPE OF APPROPRIATE DIAMETER AS INDICATED ON THE DRAWINGS OR AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
- UNLESS OTHERWISE SHOWN ALL PIPES UNDER CONCRETE SLABS SHALL BE ENCASED IN CONCRETE AS SHOWN ON THE STRUCTURAL DRAWINGS.
- NOT ALL VALVES AND GATE OPERATORS ARE SHOWN (I.E. HAND WHEELS, CRANKS, CHAIN WHEELS, MOTORS OR LEVERS). OPERATORS SHALL BE LOCATED TO ALLOW CONVENIENT OPENING AND CLOSING OF VALVES OR GATES. ORIENTATION OF OPERATORS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. NO VALVE SHALL BE INSTALLED WITH THE OPERATING STEM IN THE VERTICAL DOWNWARD POSITION.
- PIPING SHALL BE INSTALLED SO THAT ANY PIPE, LAYER OF PIPING OR EQUIPMENT CAN BE REMOVED WITHOUT DISTURBING REMAINING PIPES AND SUPPORTS.
- THE NUMBER OF UNIONS AND OTHER TYPES OF DISMANTLING COUPLINGS SHOWN IS APPROXIMATE. THE CONTRACTOR SHALL PROVIDE UNIONS OR DISMANTLING COUPLINGS WHETHER THEY ARE SHOWN ON THE DRAWINGS OR NOT ON ALL PIPELINES WITH WELDED, THREADED OR SOLVENT CEMENTED JOINTS: AT ALL EQUIPMENT CONNECTIONS, AT A MINIMUM EVERY 50 FEET AND IN BRANCH LINES TO ALLOW CONVENIENT REMOVAL OF PIPING, EQUIPMENT AND APPURTENANCES.



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE



CITY OF IMPERIAL

CITY ENGINEER _____ DATE _____

REFERENCES _____

ENGINEER'S SEAL

REGISTERED PROFESSIONAL ENGINEER

SHANE L. BLOOMFIELD

NO. C77435

CIVIL

STATE OF CALIFORNIA

ALBERT A. WEBB ASSOCIATES

ENGINEERING CONSULTANTS

36951 COOK STREET #103

PALM DESERT, CA 92211

PH. (760) 568-5005

FAX (760) 568-3443

PLANS PREPARED UNDER THE SUPERVISION OF:

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SCALE:	
HORIZ. SCALE: 1" = 2'	
VERT. SCALE: N/A	

CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA

LA BRUCHERIE LIFT STATION IMPROVEMENTS
MECHANICAL SECTIONS & DETAILS

DWG. NO. _____

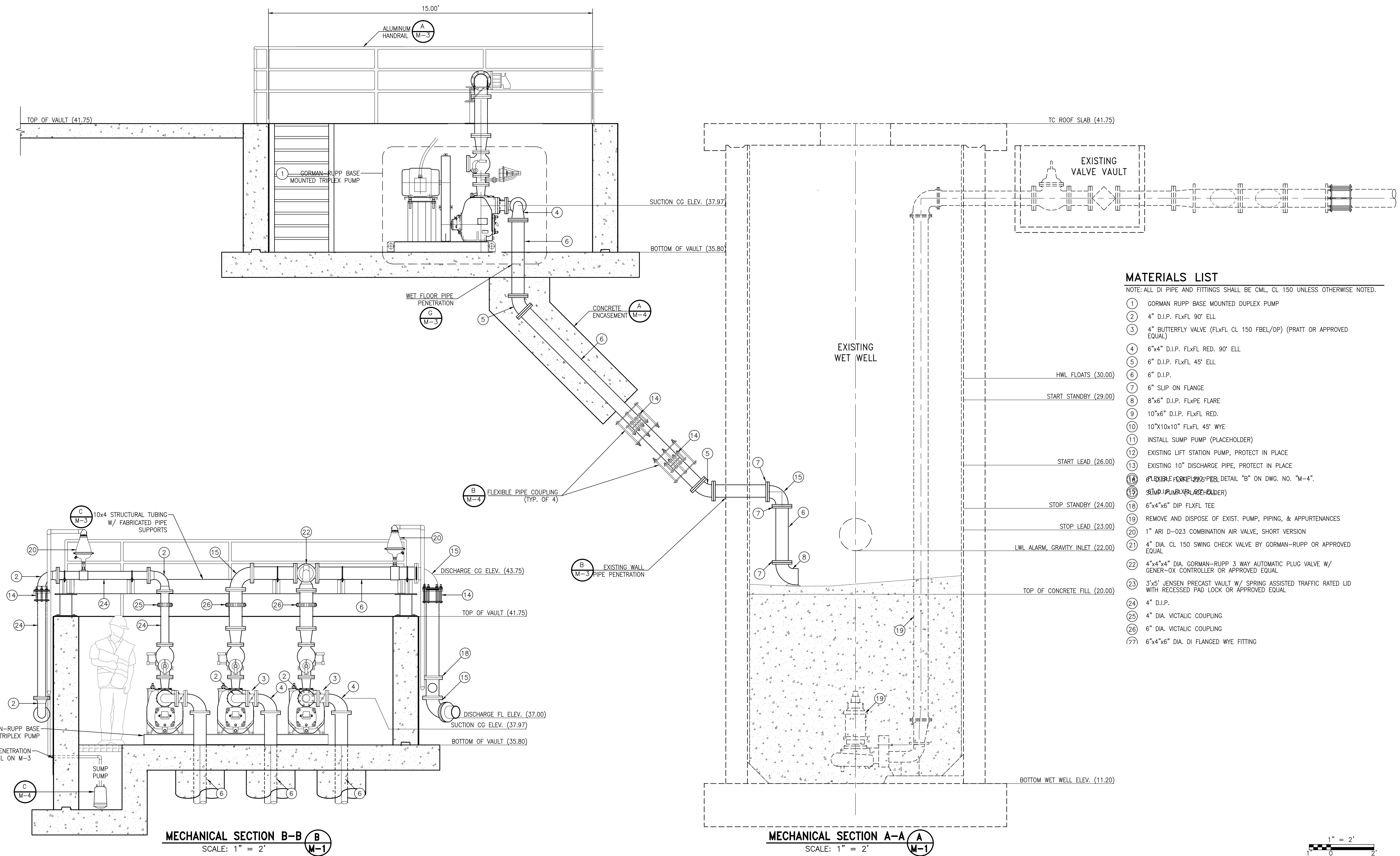
BID NO. 2015-07

SHEET 7 OF 25

M-1

ISSUED FOR BID

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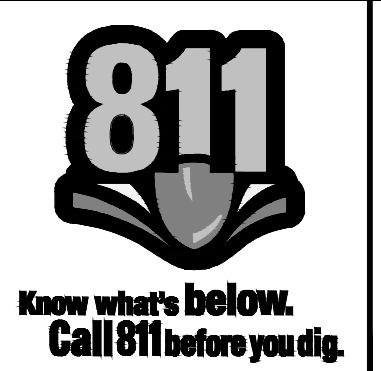
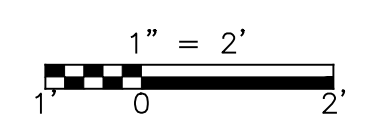
MATERIALS LIST

NOTE: ALL DI PIPE AND FITTINGS SHALL BE CML, CL 150 UNLESS OTHERWISE NOTED.

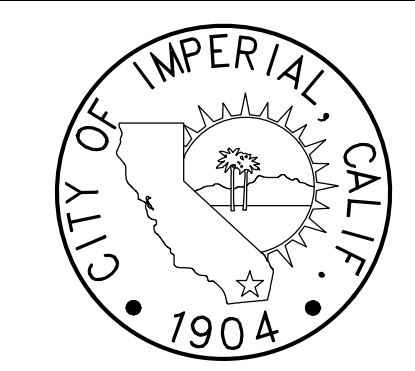
- 1 GORMAN RUPP BASE MOUNTED DUPLEX PUMP
- 2 4" D.I.P. FLXFL 90° ELL
- 3 4" BUTTERFLY VALVE (FLXFL CL 150 FBEL/OP) (PRAIT OR APPROVED EQUAL)
- 4 6"x4" D.I.P. FLXFL RED. 90° ELL
- 5 6" D.I.P. FLXFL 45° ELL
- 6 6" D.I.P.
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- 14 6" FLEXIBLE PIPE COUPLING PER DETAIL "B" ON DWG. NO. "M-4".
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- 16 6"x4"x6" DIP FLXFL TEE
- 17 REMOVE AND DISPOSE OF EXIST. PUMP, PIPING, & APPURTENANCES
- 18 1" ARI D-023 COMBINATION AIR VALVE, SHORT VERSION
- 19 4" DIA. CL 150 SWING CHECK VALVE BY GORMAN-RUPP OR APPROVED EQUAL
- 20 4"x4"x4" DIA. GORMAN-RUPP 3 WAY AUTOMATIC PLUG VALVE W/ GENER-OX CONTROLLER OR APPROVED EQUAL
- 21 3'x5' JENSEN PRECAST VAULT W/ SPRING ASSISTED TRAFFIC RATED LID WITH RECESSED PAD LOCK OR APPROVED EQUAL
- 22 4" D.I.P.
- 23 4" DIA. VICTALIC COUPLING
- 24 6" DIA. VICTALIC COUPLING
- 25 6"x4"x6" DIA. DI FLANGED WYE FITTING

MECHANICAL SECTION B-B
SCALE: 1" = 2'

MECHANICAL SECTION A-A
SCALE: 1" = 2'



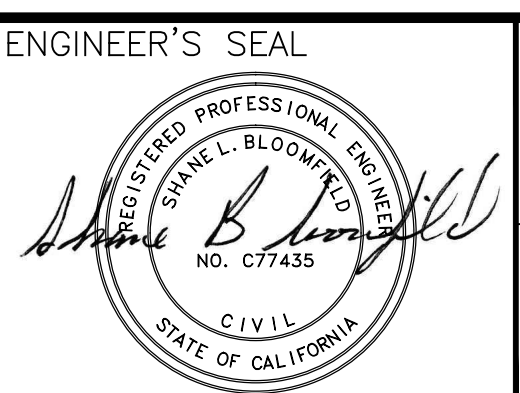
REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE



CITY OF IMPERIAL

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REFERENCES _____



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36951 COOK STREET #103
PALM DESERT, CA 92211
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PLANS PREPARED UNDER THE SUPERVISION OF:

SHANE L. BLOOMFIELD
REGISTERED CIVIL ENGINEER NO. C77435

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DESIGNED: -	4/23/13
DRAWN: BTE	4/23/13
TRACED: -	N/A
CHECKED: SLB	4/23/13
SUBMITTED: -	---/---/---

SCALE:
HORIZ. SCALE: 1" = 2'
VERT. SCALE: N/A

CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA

LA BRUCHERIE LIFT STATION IMPROVEMENTS
MECHANICAL SECTIONS & DETAILS

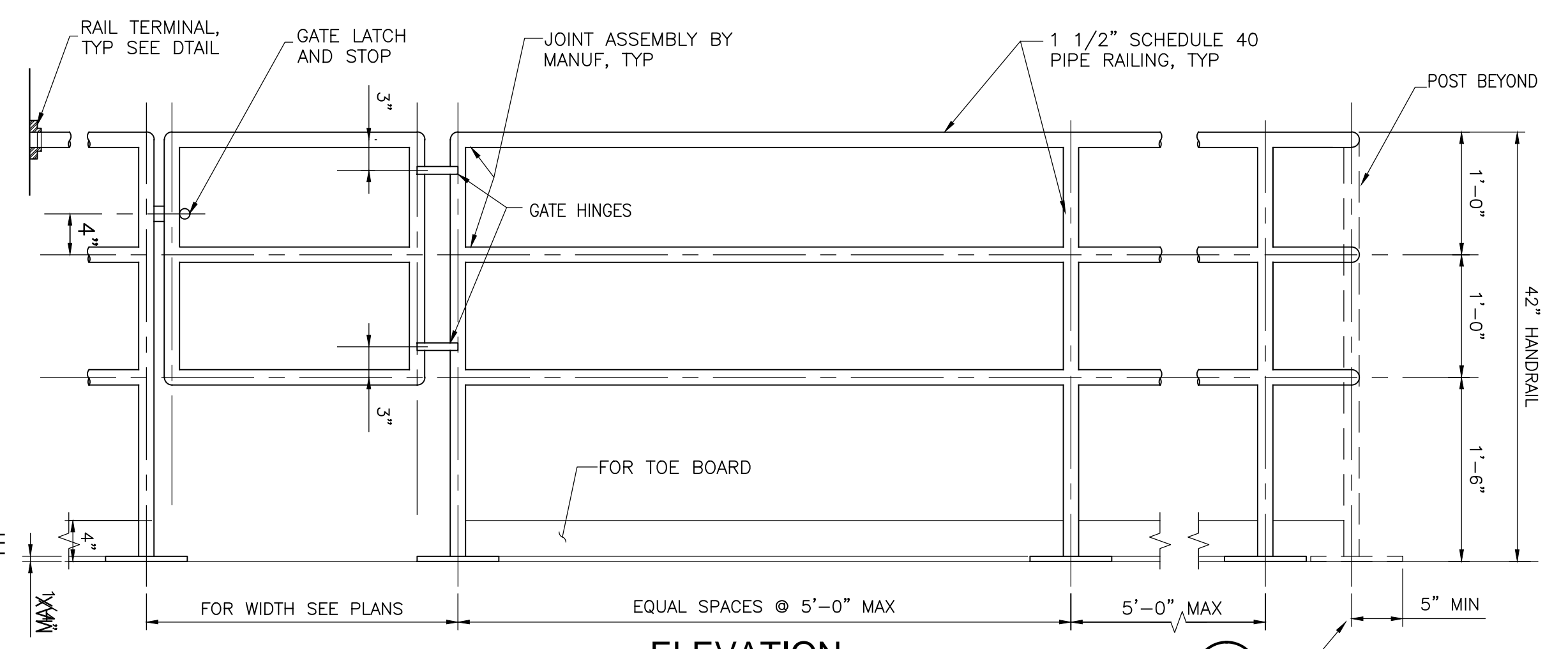
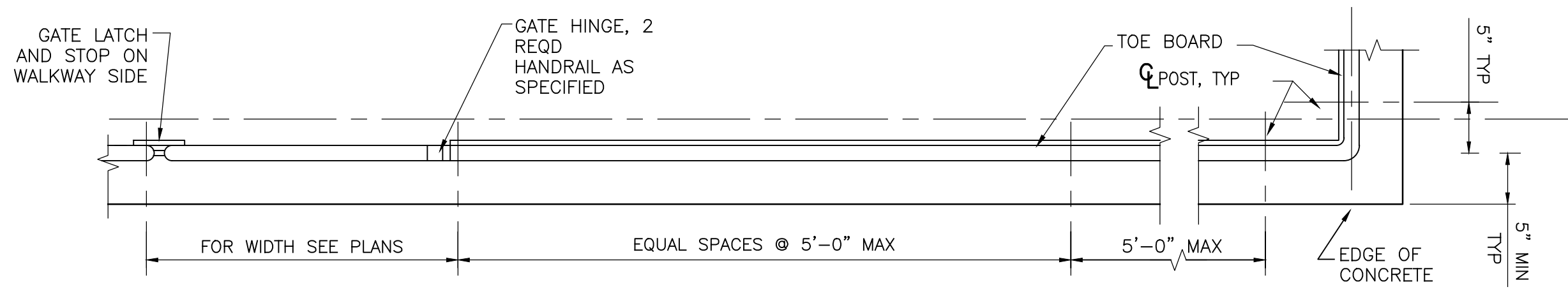
DWG. NO. _____

BID NO. 2015-07

SHEET 8 OF 25

M-2

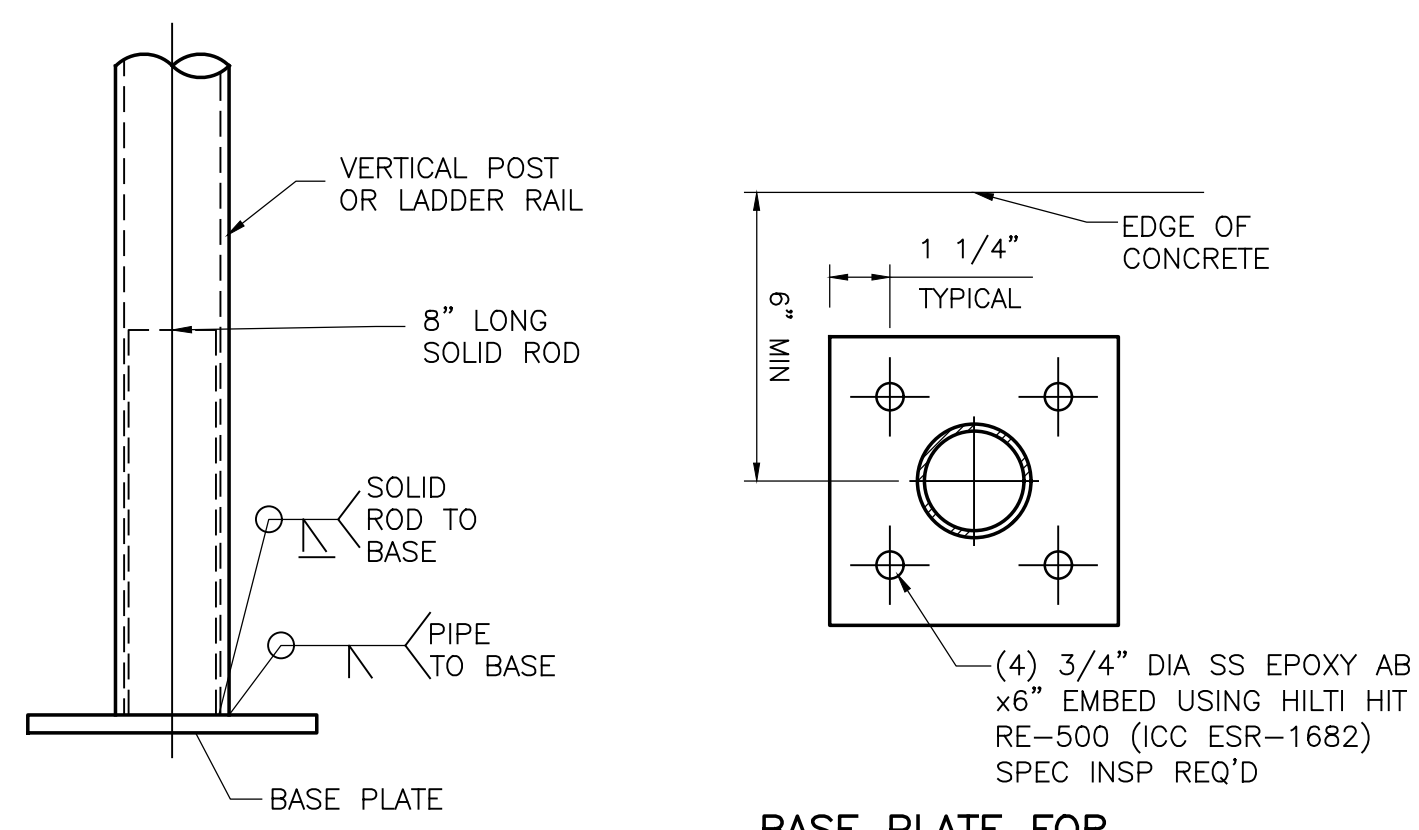
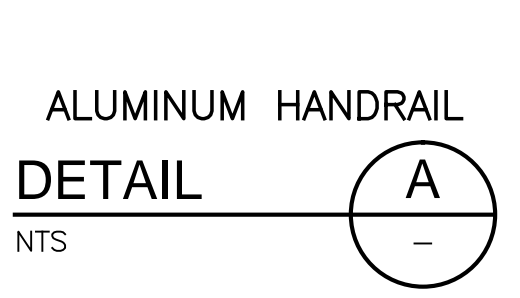
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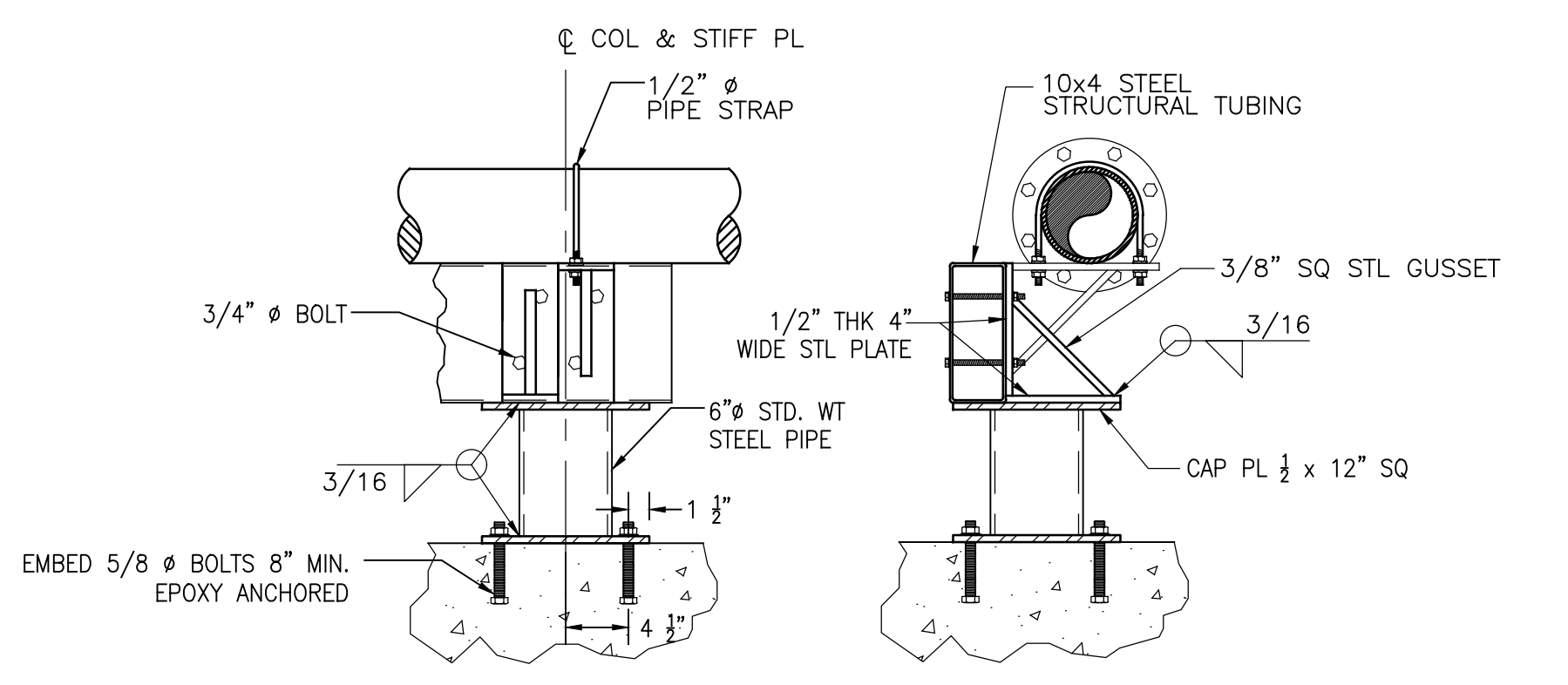
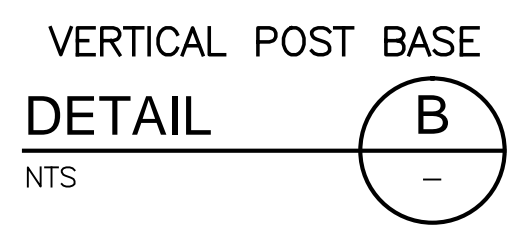
RAIL TERMINAL

- NOTES:
- FASTEN RAIL TO WALL BRACKET PER MANUFACTURERS RECOMMENDATIONS.
 - PROVIDE ISOLATION WASHER BETWEEN S.S. BOLT AND ALUMINUM MEMBER FOR PROTECTION OF DISSIMILAR METALS

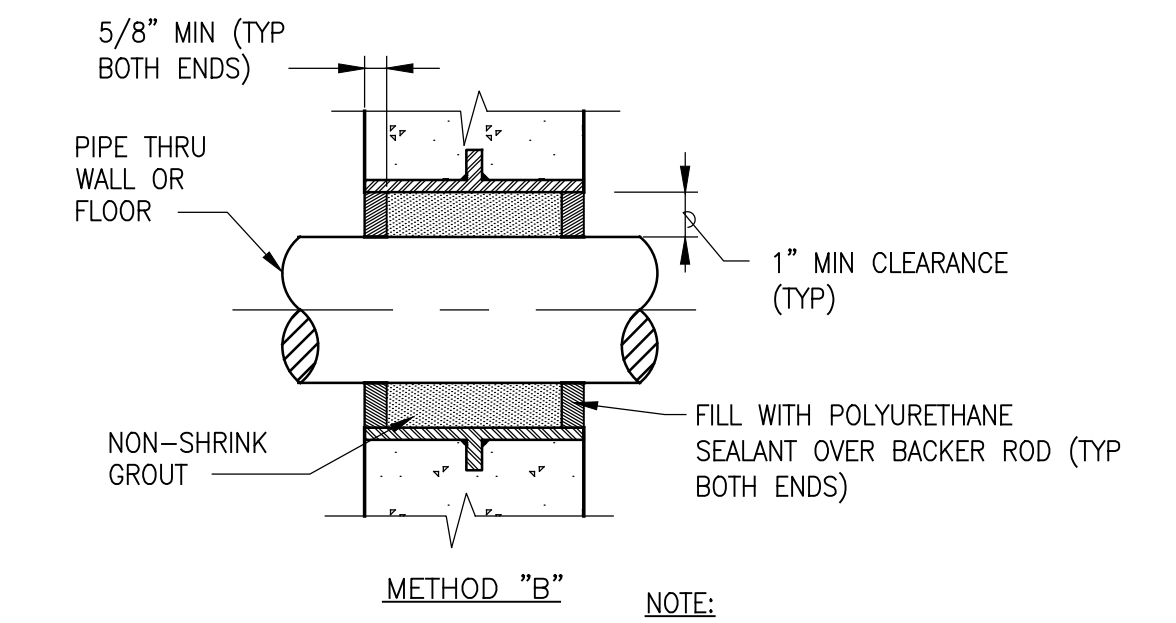
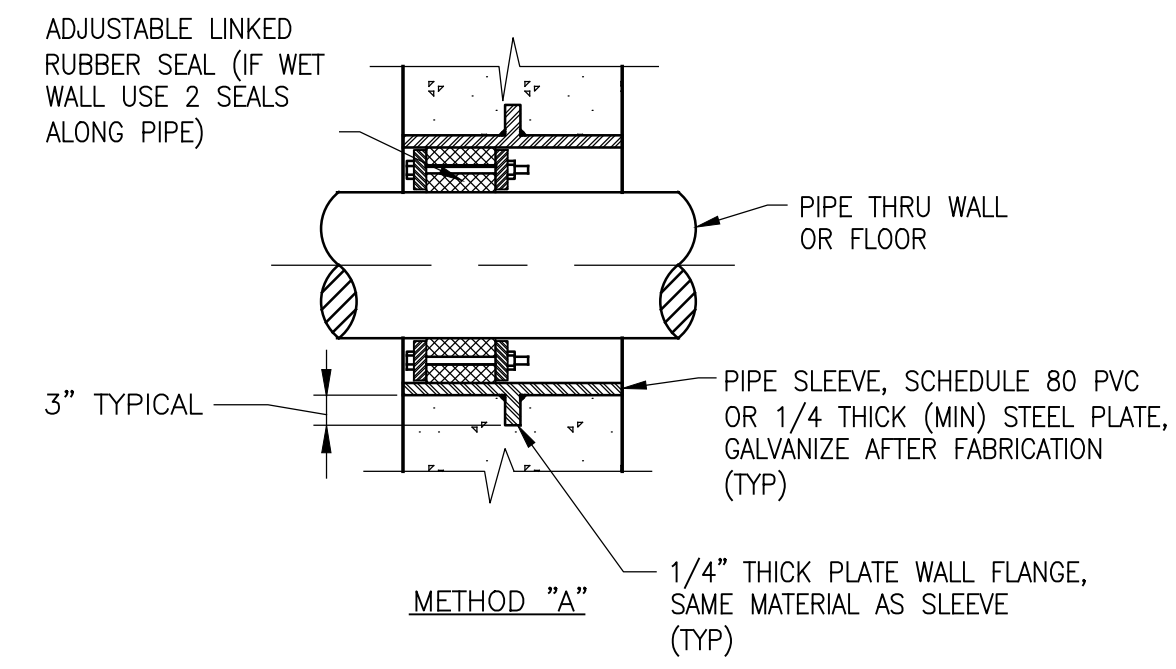
ALUMINUM HANDRAIL



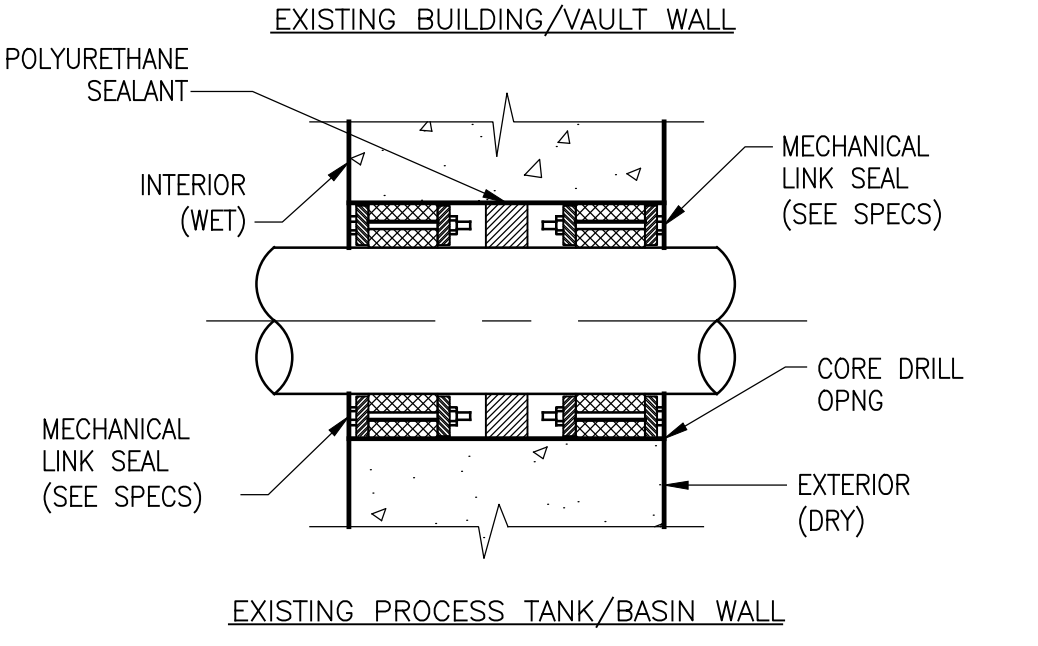
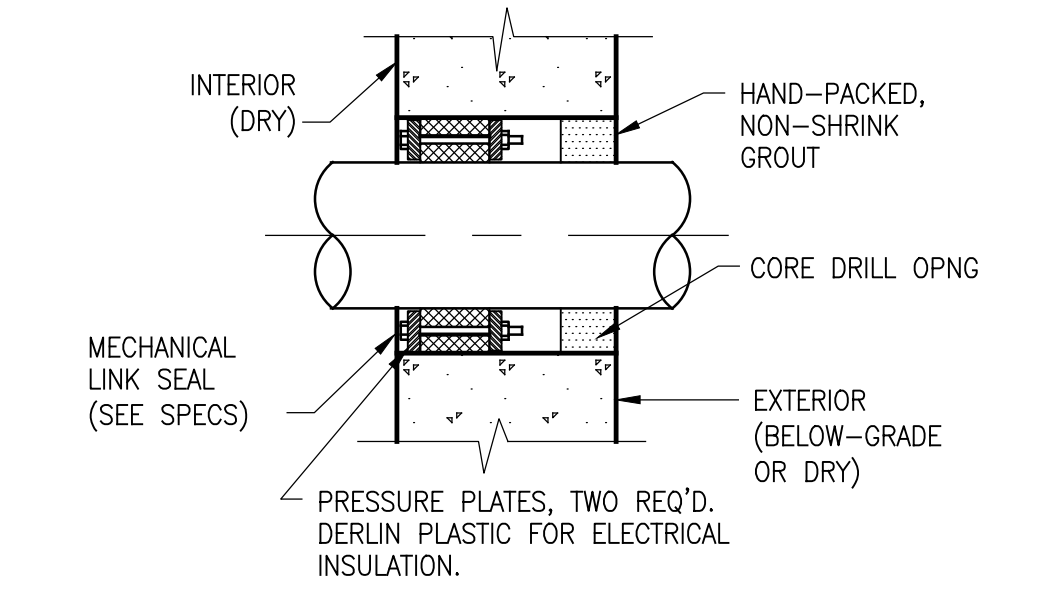
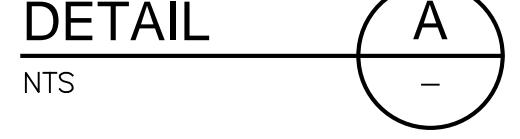
BASE PLATE FOR MOUNTING TO CONCRETE



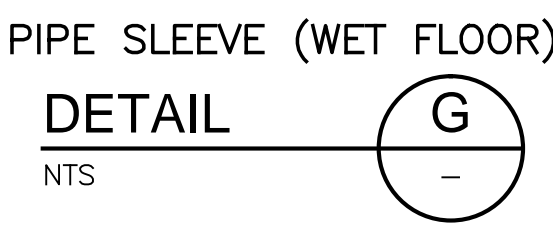
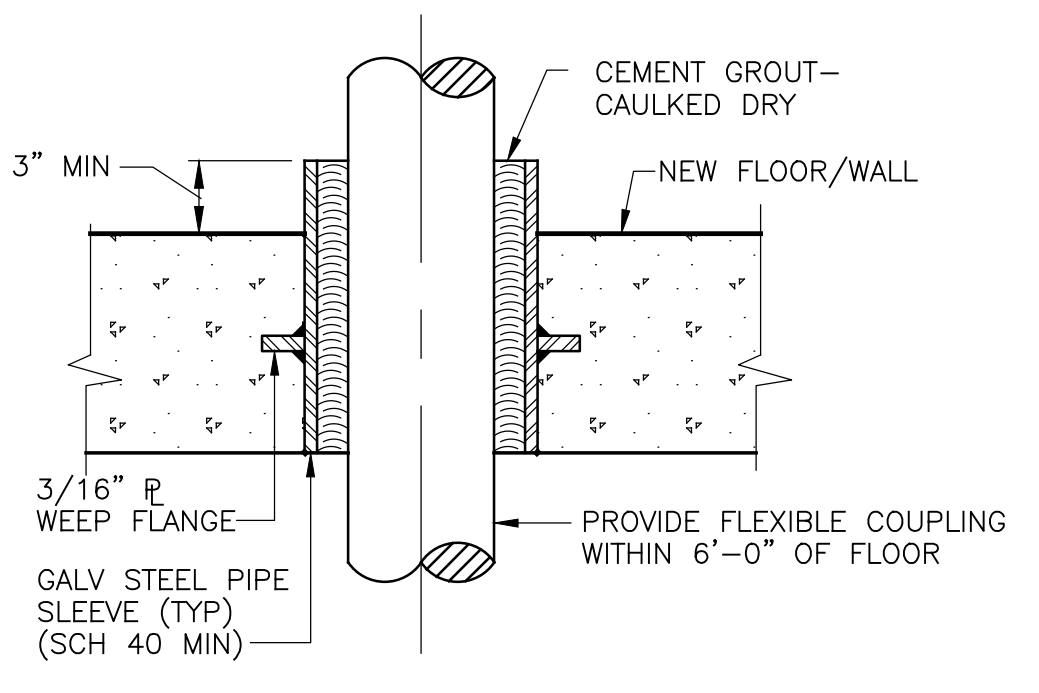
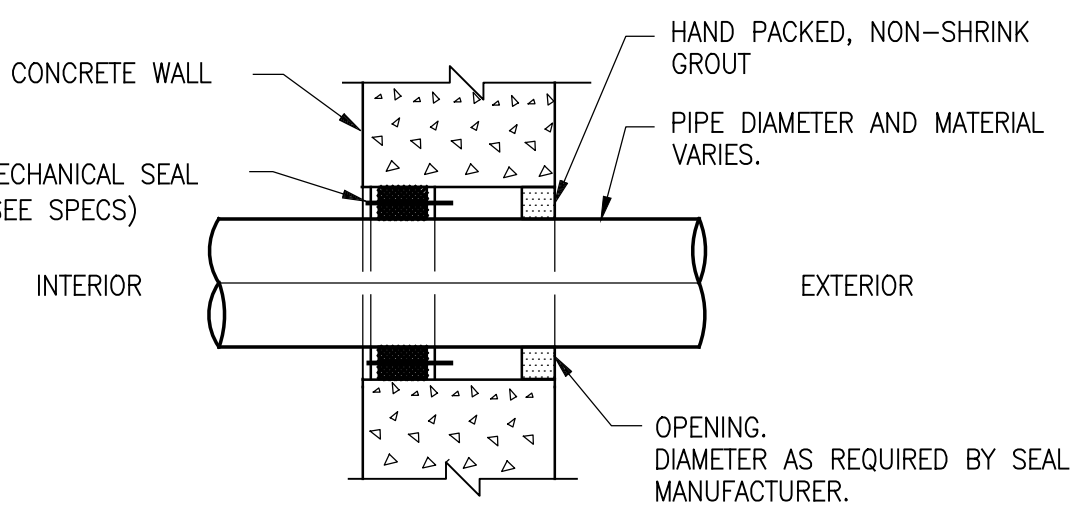
PIPE SUPPORT STRUCTURE



PIPE PENETRATION IN NEW WALL



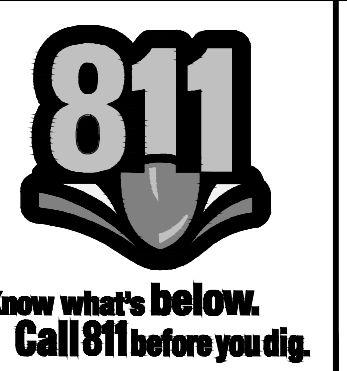
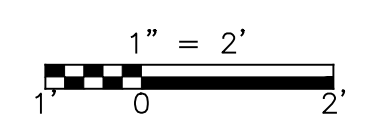
PIPE PENETRATION IN EXISTING WALL



NOTE:
INSULATED PIPING: INTERRUPT INSULATION AT BOTH SIDES OF WALL. INSTALL INSULATION FLUSH WITH WALL AFTER WATER TIGHT INSTALLATION OF MECHANICAL SEAL.

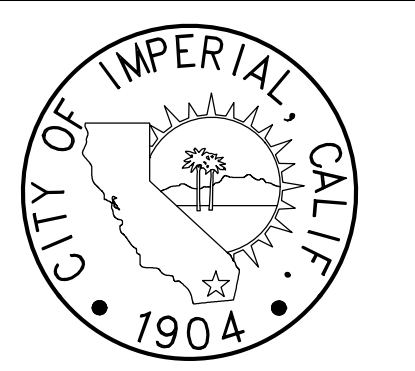
NOTE:
THESE SLEEVED PIPE DETAILS ARE TO BE USED IN DRY WALLS ONLY, EXCEPT AS NOTED

NOTES:
1. INSIDE DIA OF EACH WALL OPENING SHALL BE OF THE SIZE RECOMMENDED BY MANUFACTURER TO FIT THE PIPE OR CONDUIT AND THE WALL SEAL ASSEMBLY TO ENSURE A WATER-TIGHT JOINT.
2. PROVIDE ALUMINUM ESCUTCHEONS IN FINISHED SPACES.



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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LA BRUCHERIE LIFT STATION IMPROVEMENTS

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SHEET 9 OF 25

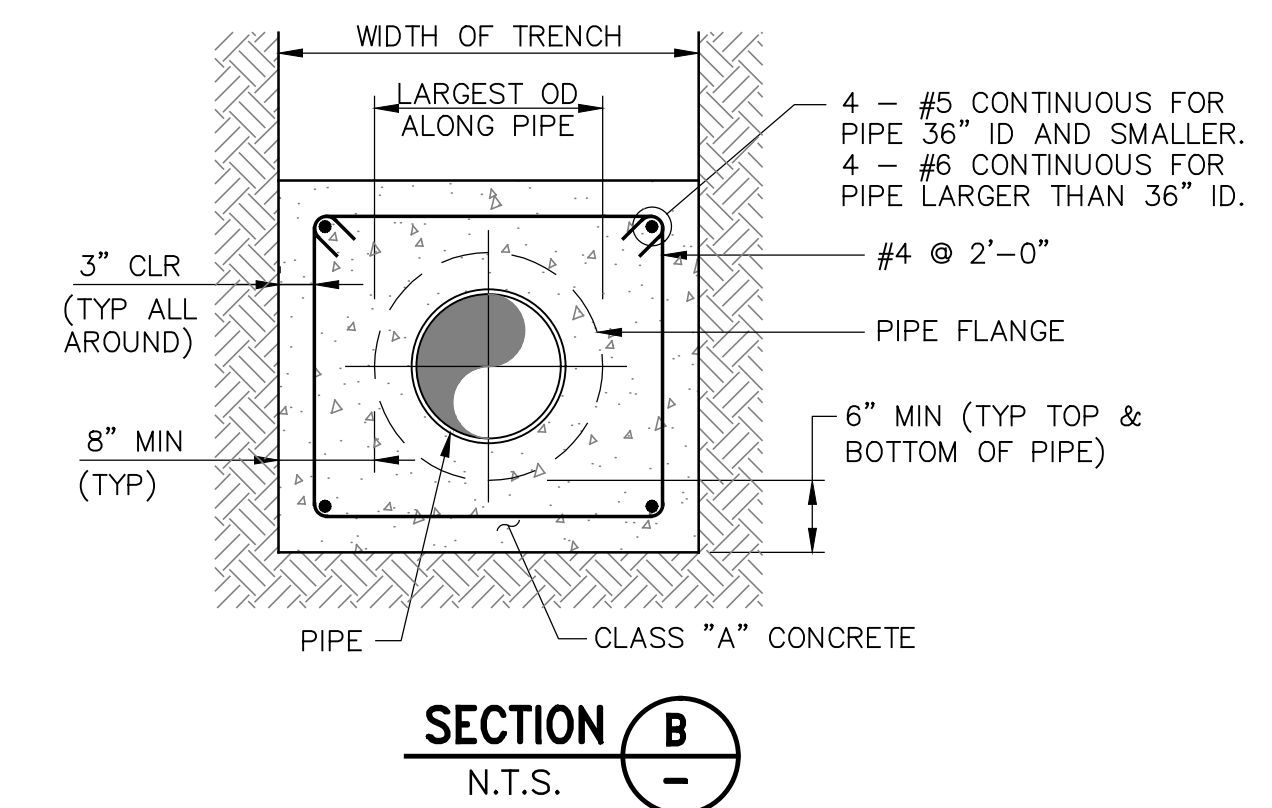
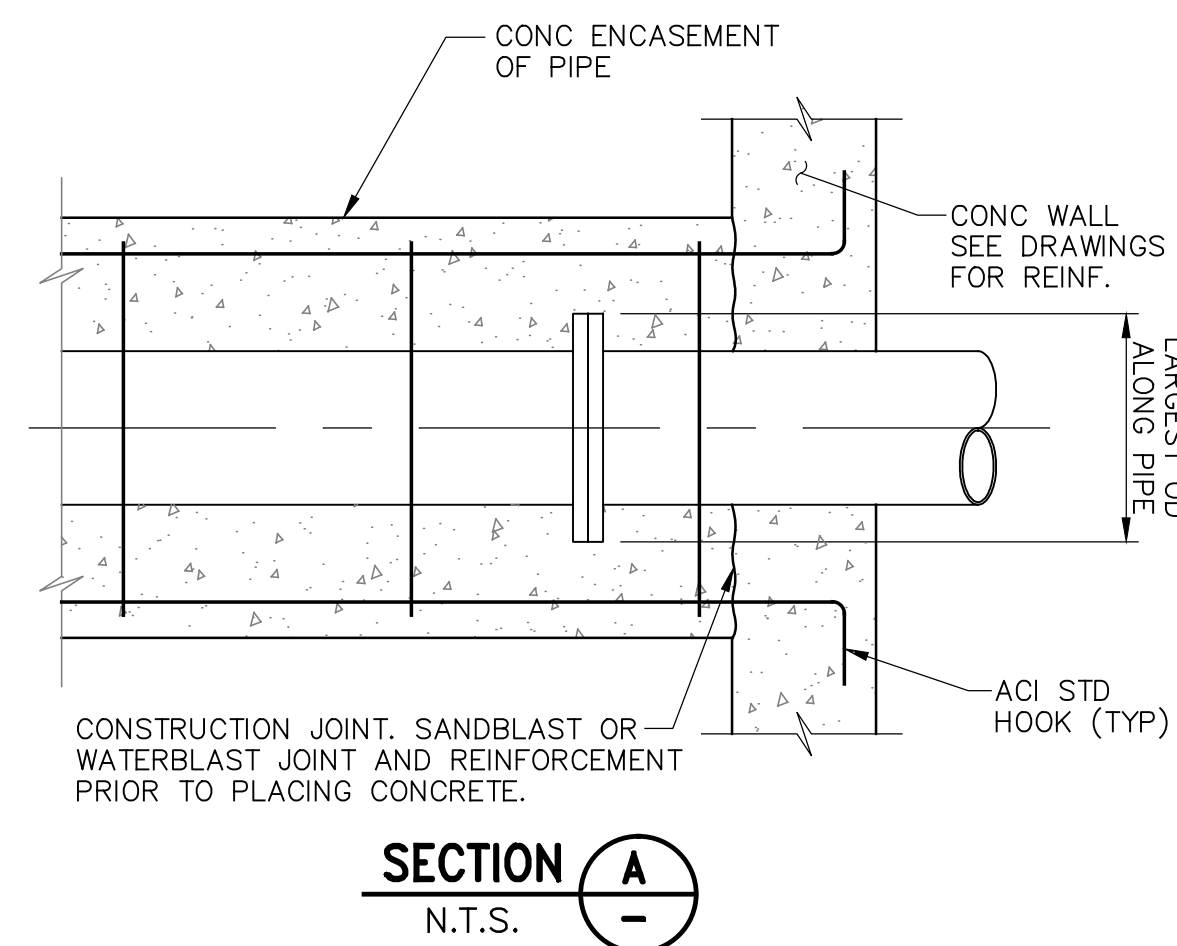
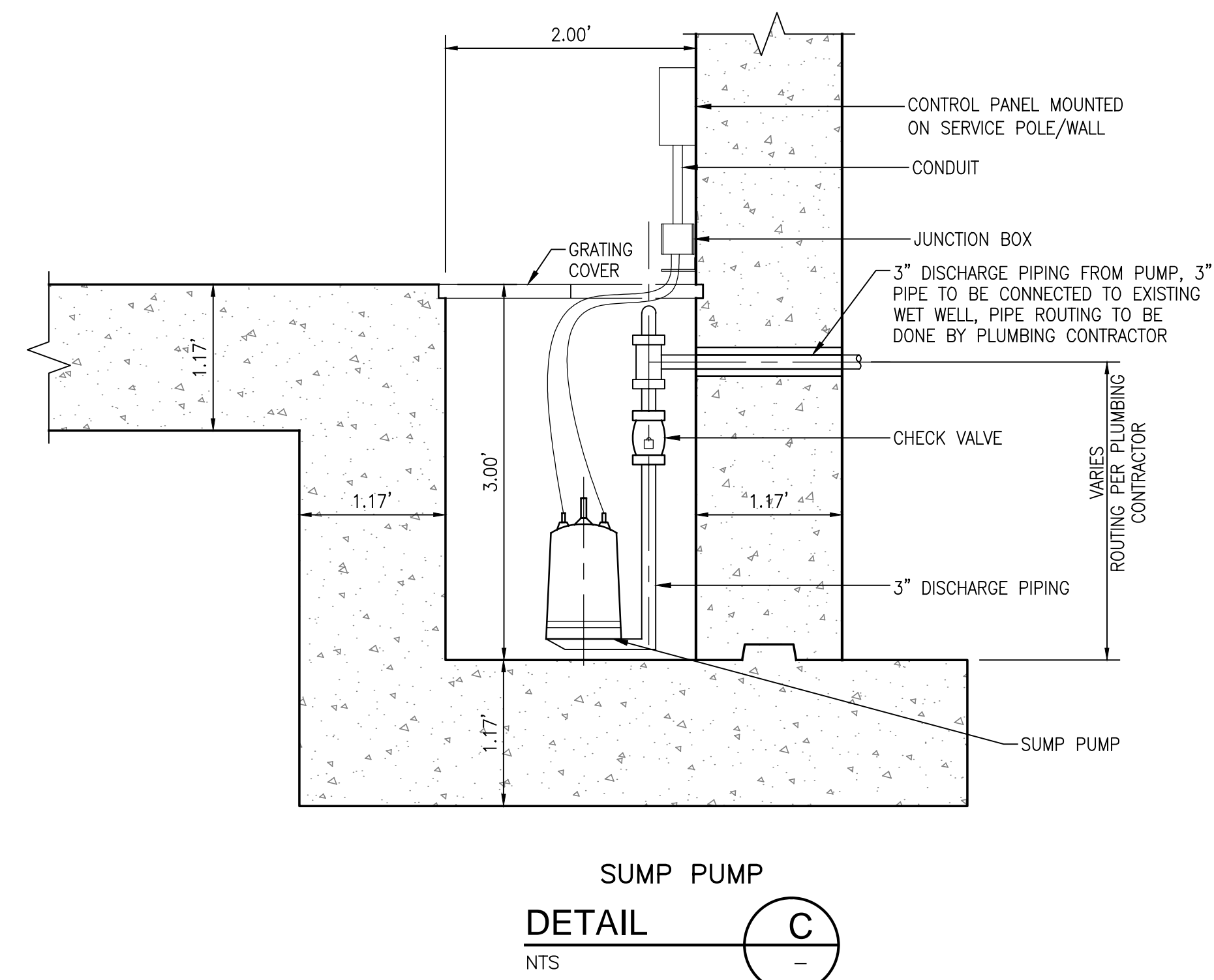
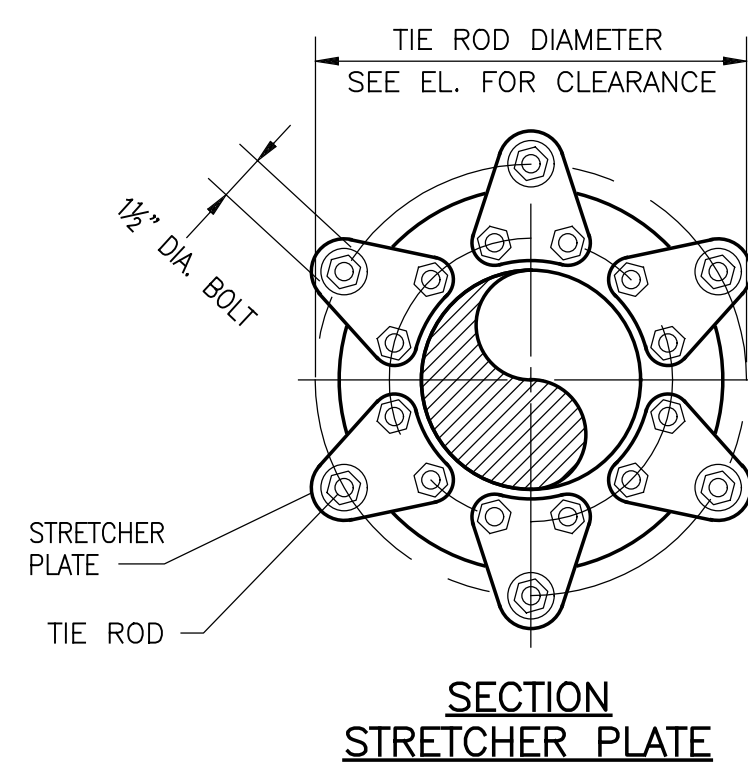
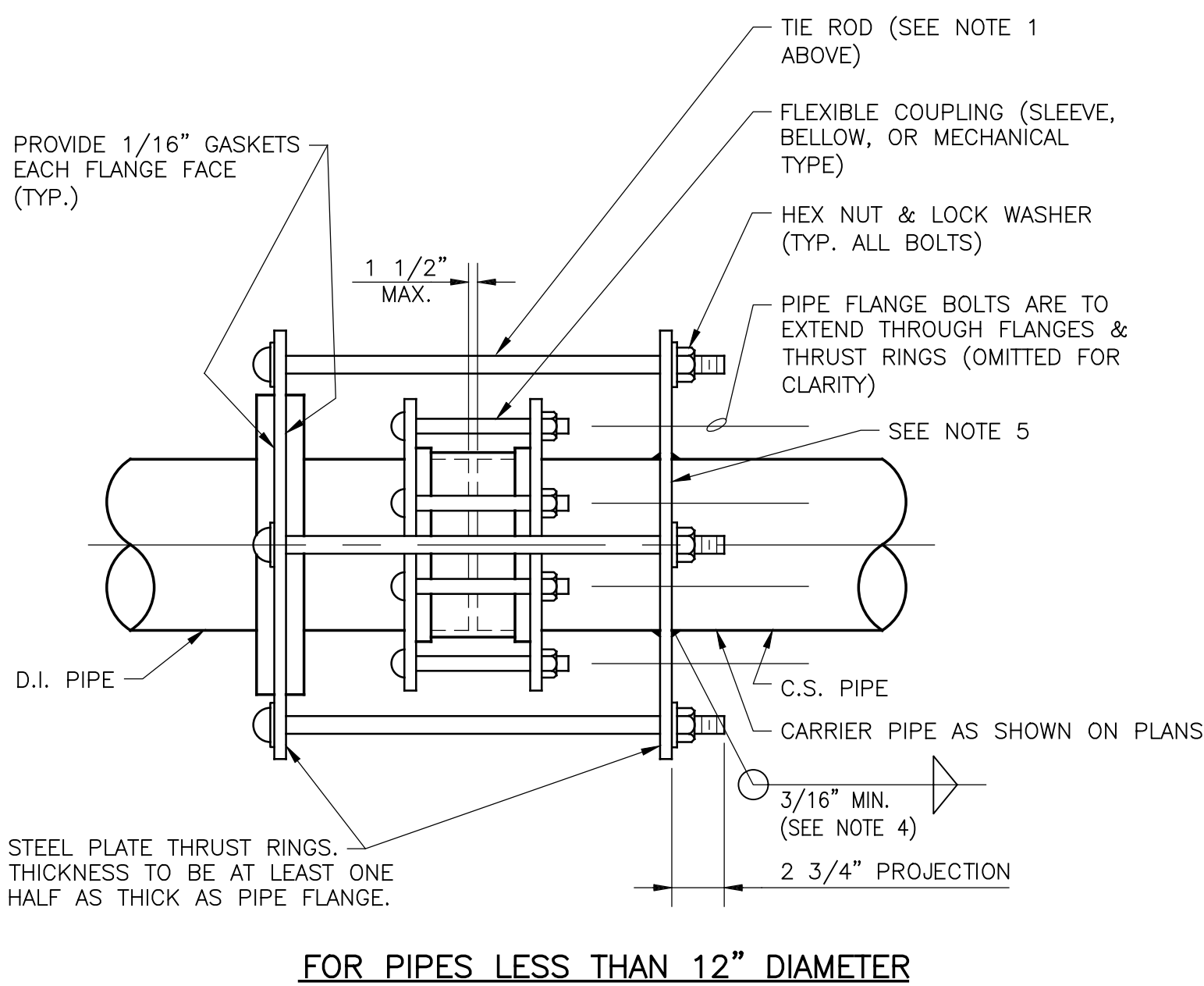
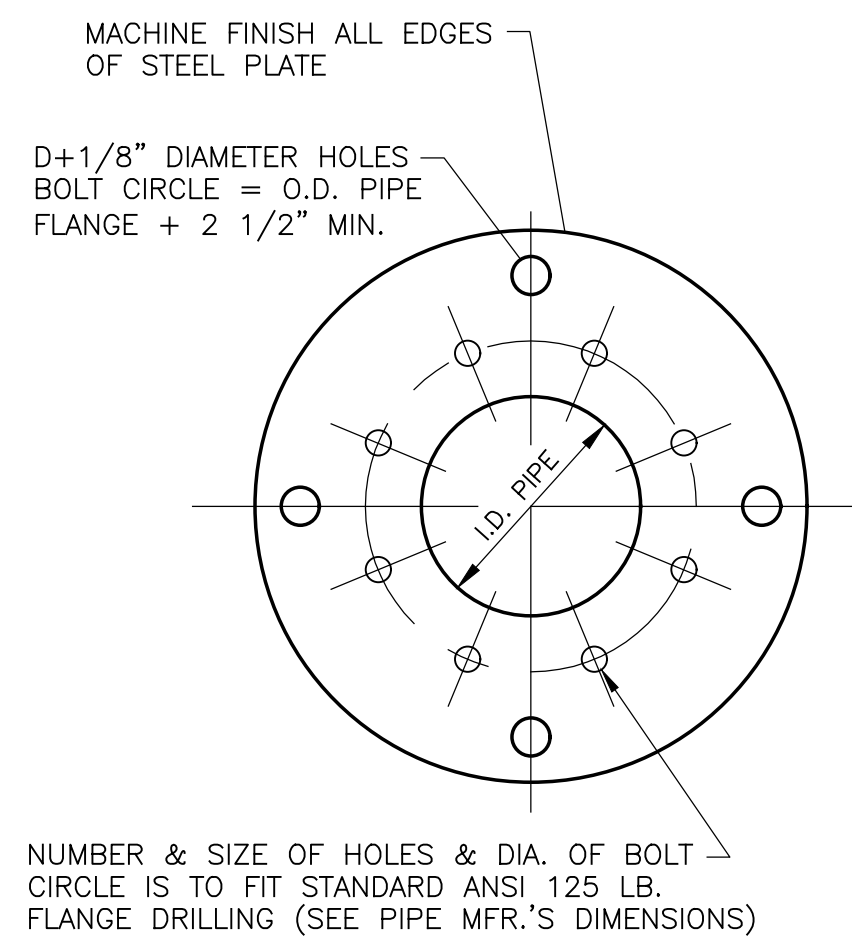
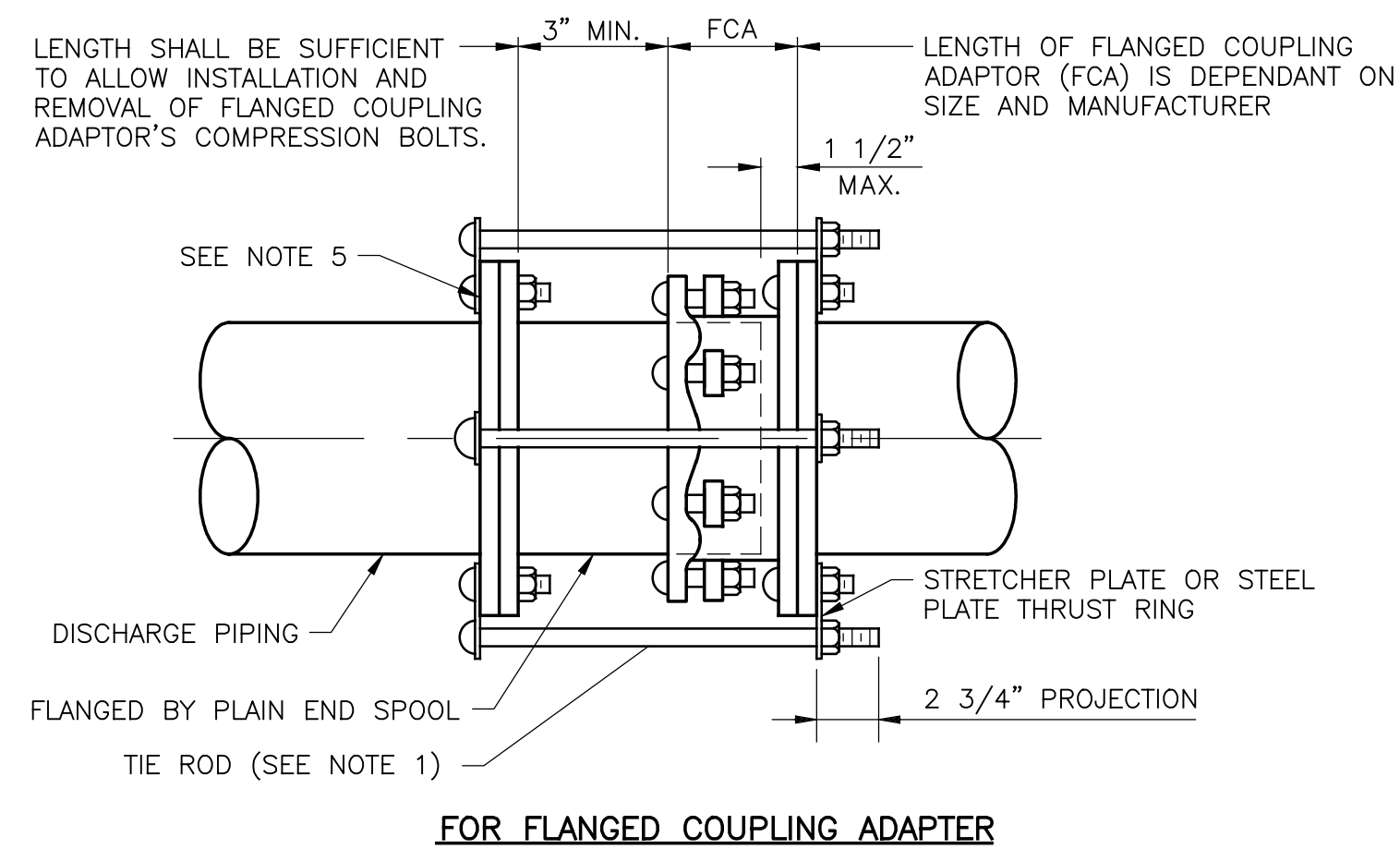
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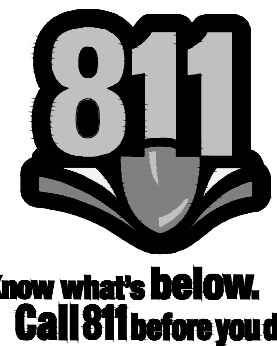
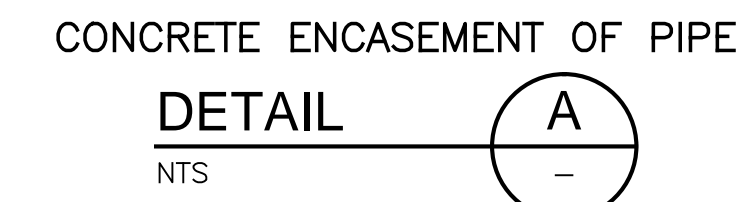
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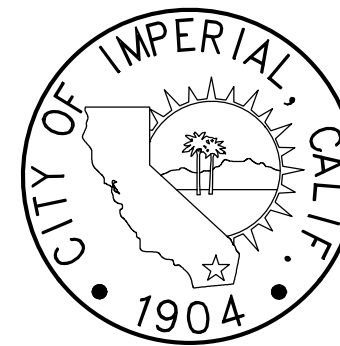
1. PROVIDE NUMBER OF TIE RODS PER AWWA MANUAL 11. EVENLY SPACE INSTALLATION OF THE TIE RODS. LENGTH OF THE RODS TO BE DETERMINED BY CONTRACTOR BASED ON SIZE AND FLANGED COUPLING ADAPTOR AND FINAL LENGTH OF SPOOL PIECE.
2. PROVIDE STRETCHER PLATE FOR ATTACHMENT OF TIE RODS. FOR SIZE SEE TABLE.
3. MATERIALS - BOLTS: ASTM A-307 HOT DIP GALVANIZED.
STRETCHER PLATE: ASTM A36 STEEL
HOT DIP GALVANIZED.
FLEXIBLE COUPLING: PER SPECIFICATIONS
4. WELD TO DEVELOP MIN. THE STRENGTH OF PIPE. REPAIR COATINGS AS REQUIRED.
5. WHERE CALLED OUT AND/OR SHOWN, PROVIDE HARNESS LUG DETAILS TO AWWA MANUAL 11.
6. WRAP ALL COUPLING BURIED BELOW GRADE IN PROTECTIVE TAPE.



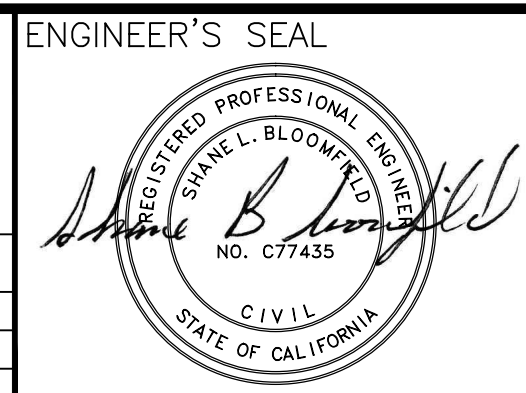
NOTE:
1. TYPE OF PIPE AND TYPE OF PIPE JOINT OR COUPLER AS INDICATED ON THE DRAWINGS.



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



CITY OF IMPERIAL	
CITY ENGINEER	DATE
REFERENCES	



ALBERT A. WEBB ASSOCIATES	
ENGINEERING CONSULTANTS 36951 COOK STREET #103 PALM DESERT, CA 92211 PH. (760) 568-5005 FAX (760) 568-3443	
PLANS PREPARED UNDER THE SUPERVISION OF:	
SHANE L. BLOOMFIELD REGISTERED CIVIL ENGINEER NO. C77435	

	DATE
DESIGNED: -	4/23/13
DRAWN: BTE	4/23/13
TRACED: -	N/A
CHECKED: SLB	4/23/13
SUBMITTED: -	4/23/13
SCALE:	
HORIZ. SCALE: 1" = 2'	
VERT. SCALE: N/A	

CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA	
LA BRUCHERIE LIFT STATION IMPROVEMENTS MECHANICAL SECTIONS & DETAILS	
DWG. NO.	

BID NO. 2015-07
SHEET 10 OF 25
M-4

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STEEL:

- FABRICATION AND ERECTION TO CONFORM TO A.I.S.C. LATEST EDITION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS" AND "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" EXCEPT AS OTHERWISE SHOWN OR SPECIFIED.
- A.W.S. CERTIFIED WELDERS SHALL BE USED FOR ALL WELDING. WELDING TO BE PERFORMED IN AISC CERTIFIED FABRICATOR SHOP OR EQUAL. ALL WELDING TO CONFORM TO THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE A.W.S. D1.1.
- MATERIALS:

ROLLED SHAPES	ASTM A992 GRADE 50
WIDE FLANGES	ASTM A36
CHANNELS, ANGLES & OTHER PLATES	
BEAM COVER/SIDE PLATES	ASTM A572 GRADE 50
COLUMN CONTINUITY PLATES	ASTM A572 GRADE 50
COLUMN BASE PLATES	ASTM A572 GRADE 50
OTHER UON	ASTM A36
STEEL PIPES	ASTM A53 GRADE B
STEEL TUBING	ASTM A500, GRADE B (Fy=46 KSI)
HIGH STRENGTH BOLTS	ASTM A325
MACHINE BOLTS	ASTM A307
ANCHOR BOLTS	ASTM F1554, GRADE 36 UON
THREADED AND HANGER ROD	ASTM A307
WELDED SHEAR CONNECTORS	ASTM A108 GRADE 1015 THRU 1020
GALVANIZING	ASTM A123
RUST-INHIBITING PRIMER	TT-P-645 ASTM
- HOT-DIPPED GALVANIZE PER ASTM A123, A153, A385 AFTER FABRICATION OF ALL STRUCTURAL STEEL AND CONNECTORS EXPOSED TO WEATHER. REPAIR PER ASTM A780.
- CONNECTED MEMBERS SHALL BEAR ONLY UPON UNTHREADED PORTIONS OF BOLTS.
- BURNING OF HOLES IS NOT ALLOWED.
- INSPECTION OF WELDING SHALL CONFORM TO C.B.C. REQUIREMENTS (CHAPTER 17).
- THE STRUCTURAL STEEL FABRICATOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.
- BOLT HOLES SHALL BE 1/16" LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED, UNLESS NOTED OTHERWISE.
- ALL STRUCTURAL STEEL SURFACES TO RECEIVE SPRAY-APPLIED FIREPROOFING OR TO BE ENCASED IN CONCRETE OR MASONRY SHALL BE LEFT UNPAINTED.
- STRUCTURAL STEEL SHALL BE DELIVERED TO THE JOB SITE FREE OF EXCESSIVE RUST, MILL SCALE, GREASE, ETC.
- OPENING SHALL NOT BE PLACED IN STEEL MEMBERS UNLESS SPECIFICALLY DETAILED.

CONCRETE:

- ALL CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF A.C.I. 318-LATEST EDITION "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", EXCEPT AS MODIFIED BY THE SUPPLEMENTAL REQUIREMENTS CONTAINED HEREIN OR SHOWN ON THE DRAWINGS.
- ALL CONCRETE SHALL BE 150 P.C.F. HARDROCK, MIXED PER A.S.T.M. C-94 FOR READY MIX CONCRETE, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 P.S.I. AT 28 DAYS.
- THE MAXIMUM SIZE AGGREGATE IN FOUNDATION AND MASS CONCRETE WORK SHALL BE 1 INCH. THE MAXIMUM SIZE AGGREGATE IN SLABS ON GRADE, WALLS, AND ALL OTHER CONCRETE SHALL BE 3/4 INCH.
- CEMENT SHALL CONFORM TO A.S.T.M. C-150, TYPE II, LOW ALKALI. AGGREGATES FOR NORMAL WEIGHT SHALL CONFORM TO A.S.T.M. C-33.
- ADMIXTURES AND COLORS (EXCEPT AS NOTED HEREIN) SHALL NOT BE USED UNLESS SUBSTANTIATING DATA IS SUBMITTED TO AND REVIEWED BY THE ENGINEER AND ARCHITECT OF RECORD.
- CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY. THE MIX DESIGNS SHALL CONFORM TO C.B.C. SEC. 1905 UNLESS OTHERWISE NOTED.
- NON-STRUCTURAL STEEL EMBEDDED IN CONCRETE SHALL BE GALVANIZED OR PAINTED. ALL DAMAGED GALVANIZED AREAS SHALL BE REPAIRED PRIOR TO EMBEDMENT.
- PROVIDE 2- #5 DIAGONAL BARS AT CORNERS OF WALL, FLOOR, AND ROOF OPENINGS AND INSIDE CORNERS OF FLOORS.
- PROVIDE WATERSTOPS IN ALL BELOW GRADE FOUNDATION WALL CONSTRUCTION JOINTS.
- READY MIXED CONCRETE SHALL CONFORM TO A.S.T.M. C-94.
- PLACEMENT OF CONCRETE SHALL CONFORM TO A.C.I. 304. CLEAN AND ROUGHEN TO 1/4" AMPLITUDE FOR ALL CONCRETE SURFACES AGAINST WHICH CONCRETE IS TO BE PLACED.
- ALL EXPOSED CONCRETE SHALL HAVE A SMOOTH FORM FINISH USING B-B PLYFORM, CLASS I, EXT-A.P.A. PLYWOOD.
- ALL SLABS SHALL HAVE A TROWELED FINISH EXCEPT AS NOTED ON THE DRAWINGS.
- ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS AND INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
- IF THE CONTRACTOR DESIRES TO MAKE ANY CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON THESE DRAWINGS, HE SHALL SUBMIT DETAILS OF CHANGES TO THE ENGINEER OF RECORD FOR REVIEW BEFORE STARTING WORK.
- NO BRICK OR POROUS MATERIAL SHALL BE USED TO SUPPORT FOUNDATION STEEL OFF THE GROUND.
- PROVIDE 3/4 INCH CHAMFER ON ALL EXPOSED CONCRETE CORNERS, U.O.N.
- SLEEVE PLUMBING OPENINGS IN SLABS WITH NON-CORROSIVE SLEEVE BEFORE PLACING CONCRETE AND BEND REINFORCING AROUND SLEEVES.
- ALL REINFORCING BARS SHALL BE PROVIDED WITH THE FOLLOWING CONCRETE MINIMUM COVER:

FOOTINGS CAST AGAINST EARTH	3"
FORMED CONCRETE EXPOSED TO EARTH, WEATHER OR LIQUID	2"
BEAMS AND GIRDERS	1 1/2"
WALLS	2"
COLUMN TIES	1 1/2"
SLABS (#11 AND SMALLER)	3/4"
- CONCRETE CURING: TYPICALLY REQUIRED A MINIMUM OF 10 DAYS.

WELDING:

- ALL WELDING SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE AMERICAN WELDING SOCIETY CODE D1.1. (LATEST EDITION).
- ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS.
- ALL WELDS SHALL HAVE A WELD CONTROLLED SEQUENCE AND TECHNIQUE IN ORDER TO MINIMIZE SHRINKAGE, STRESSES AND DISTORTION.
- ALL ELECTRODES FILLER MATERIAL SHALL BE A MINIMUM OF E70XX.
- WELDING OF REINFORCING BARS TO BE IN ACCORDANCE WITH A.W.S. D1.4. REINFORCING STEEL TO BE WELDED SHALL HAVE A CARBON EQUIVALENT (CE) OF 0.75. SPECIAL INSPECTION IS REQUIRED.
- WELDING OF SHEET METAL SHALL BE IN ACCORDANCE WITH A.W.S. D1.3.
- SPECIAL INSPECTION IS REQUIRED FOR ALL FIELD WELDING.
- ALL SHOP AND FIELD WELDING OF MOMENT CONNECTIONS OR MOMENT RESISTING FRAMES, AND ALL COLUMN SPLICE WELDS, SHALL BE TESTED AS PER C.B.C.

STRUCTURAL OBSERVATION:

- PER C.B.C. CHAPTER 17 SECTION 1709, THE OWNER SHALL EMPLOY A LICENSED ENGINEER RESPONSIBLE FOR THE STRUCTURAL DESIGN, OR HIS DESIGNATED ENGINEER OR ARCHITECT TO MAKE SITE VISITS TO OBSERVE GENERAL COMPLIANCE WITH THE APPROVED STRUCTURAL PLANS, SPECIFICATIONS AND CHANGE ORDERS. THE ENGINEER SHALL SUBMIT A STATEMENT IN WRITING TO THE BUILDING OFFICIAL STATING THAT THE SITE VISIT HAS BEEN MADE AND THAT ANY DEFICIENCIES NOTED HAVE BEEN CORRECTED. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE INSPECTIONS REQUIRED BY SECTIONS 109, 1704 OR OTHER SECTIONS OF THE CODE.

FOUNDATION:

- SOIL REMOVAL AND RECOMPACTION SHALL BE DONE PER PROJECT SPECIFICATIONS UNDER GEOTECHNICAL ENGINEER'S SUPERVISION AND INSPECTION.
 - TYPE OF FOOTING:
 - A. SHALLOW FOOTING SYSTEM-MINIMUM EMBEDMENT 24" BELOW LOWEST ADJACENT GRADE.
- DESIGN SOIL PRESSURE:
FOR SITE CLASS C
- | | |
|--------------------|-------------------------|
| FOOTING TYPE | STATIC BEARING PRESSURE |
| SPREAD FOOTING | 4,000 P.S.F. |
| CONTINUOUS FOOTING | 4,000 P.S.F. |
| MAT FOOTING | 4,500 P.S.F. |
- FOR SITE CLASS D
- | | |
|--------------------|-------------------------|
| FOOTING TYPE | STATIC BEARING PRESSURE |
| SPREAD FOOTING | 3,000 P.S.F. |
| CONTINUOUS FOOTING | 3,000 P.S.F. |
| MAT FOOTING | 3,000 P.S.F. |
- SLAB BASE AND COMPACTION TO BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
 - NO PIPES OR DUCTS SHALL BE PLACED IN SLABS OR WALLS UNLESS SPECIFICALLY DETAILED OR APPROVED BY THE ENGINEER.
 - FOR ALL DIMENSIONS, CURBS, SLAB DEPRESSIONS, STEPS, FLOOR DRAINS, FLOOR SINKS, TRENCHES, UNDER FLOOR DUCTS AND CONDUITS, SEE CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS, TRENCH BACK FILL AS PER PROJECT SPECIFICATIONS.
 - ALL WALLS RETAINING EARTH SHALL DRAIN TO DAYLIGHT OR OTHER DRAINAGE.
 - ALL ABANDONED FOOTINGS, UTILITIES, ETC., THAT INTERFERE WITH NEW CONSTRUCTION SHALL BE REMOVED.
 - THE CONTRACTOR SHALL DETERMINE THE LOCATION OF UTILITY SERVICES IN AREAS TO BE EXCAVATED BEFORE BEGINNING EXCAVATION. EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING. DAMAGE CAUSED AS A RESULT OF FAILING TO EXACTLY LOCATE AND PRESERVE ALL EXISTING UNDERGROUND UTILITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
 - THE CONTRACTOR SHALL PROVIDE FOR THE DESIGN, APPROVALS, PERMITS, INSTALLATION AND MONITORING OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED TO SAFELY RETAIN TEMPORARY EXCAVATIONS.
 - ALL PLANTERS IN CLOSE PROXIMITY TO THE STRUCTURE SHALL HAVE ADEQUATE DRAINAGE OF SURFACE WATER TO PREVENT SATURATION OF SOIL UNDER FOUNDATION.

REINFORCING:

- ALL REINFORCING STEEL SHALL BE PLACED IN CONFORMANCE WITH THE C.B.C., AND THE "MANUAL OF STANDARD PRACTICE" BY THE C.R.S.I. OR AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
- REINFORCING BARS SHALL CONFORM TO A.S.T.M. A-615, DEFORMED GRADE 60, EXCEPT #3 BARS MAY BE GRADE 40. REINFORCING BARS THAT ARE TO BE WELDED SHALL CONFORM TO A.S.T.M. A-706, DEFORMED GRADE 60.
- WELDING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH A.S.T.M. A-706 WITH LOW HYDROGEN ELECTRODES AND STRUCTURAL WELDING CODE. REINFORCING STEEL SHALL CONFORM TO A.N.S.I. / A.W.S. D1.4. MINIMUM TENSILE STRENGTH OF WELD METAL SHALL BE 90 K.S.I. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS.
- ALL REINFORCING BAR BENDS SHALL BE MADE COLD, UNLESS OTHERWISE PERMITTED BY THE BUILDING OFFICIAL.
- WELDED WIRE FABRIC SHALL CONFORM TO A.S.T.M. A-185, AND SHALL BE LAPPED 1 SPACE AND 12" MINIMUM.
- DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE LAPPED WITH THE SAME GRADE, SIZE, SPACING AND NUMBER AS THE VERTICAL REINFORCEMENT.
- REINFORCING SPLICES SHALL BE MADE AS INDICATED ON THE DRAWINGS.
- ALL VERTICAL REINFORCING SHALL BE CONTINUOUS BETWEEN TWO LEVELS, UNLESS OTHERWISE NOTED.
- SLAB ON GRADE REINFORCING SHALL BE POSITIONED AT MID-DEPTH, UNLESS OTHERWISE NOTED.
- PROVIDE #3 SPACER TIES AT 2'-6" ON CENTER IN ALL BEAMS AND FOOTINGS TO SECURE REINFORCING BARS IN PLACE, UNLESS OTHERWISE NOTED.
- PIPING AND CONDUIT SHALL BE SO FABRICATED AND INSTALLED THAT CUTTING, BENDING, OR DISPLACEMENT OF REINFORCEMENT FROM ITS PROPER LOCATION WILL NOT BE REQUIRED. A.C.I. SECTION 6.3.12

GENERAL NOTES:

- THE PROJECT SPECIFICATIONS SHALL BE PART OF THE CONTRACT DOCUMENTS.
- THE STRUCTURAL DRAWINGS ARE TO BE USED IN CONJUNCTION WITH CIVIL, ARCHITECTURAL, MECHANICAL HVAC, AND ELECTRICAL DRAWINGS.
- THE CONTRACTOR SHALL REVIEW EXISTING CONDITIONS ON THE SITE DURING THE BIDDING. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES PRIOR TO PROCEEDING.
- UNLESS NOTED OR SHOWN OTHERWISE, ALL PHASES OF WORK ARE TO CONFORM TO THE MINIMUM STANDARDS OF THE CALIFORNIA BUILDING CODE (2010 EDITION), AND ANY A.S.T.M. SPECIFICATIONS ON WHICH THESE STANDARDS ARE BASED. WHERE CONFLICT BETWEEN BUILDING CODES AND SPECIFICATIONS OCCUR, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.
- ALL A.S.T.M. DESIGNATIONS REFERRED TO ON THESE DRAWINGS SHALL BE THE LATEST ADOPTED OR REVISED SPECIFICATION, AS OF THE DATE OF THESE DRAWINGS.
- ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND DETAILS. DRAWINGS SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES.
- NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
- THE STRUCTURAL DRAWINGS SHOW ONLY THE BASIC STRUCTURAL REQUIREMENTS. REFER TO CIVIL, ARCHITECTURAL, MECHANICAL HVAC, AND ELECTRICAL DRAWINGS FOR NON-STRUCTURAL ITEMS, SUCH AS:
 - A. SIZE AND LOCATION OF ALL OPENINGS.
 - B. SIZE AND LOCATION OF ALL CONCRETE CURBS, WALKS, AND FLOOR DRAINS, SLOPES, DEPRESSED SLAB AREAS, ETC.
 - C. FLOOR, AND WALL FINISHES.
 - D. DIMENSIONS WHICH ARE NOT SHOWN ON STRUCTURAL DRAWINGS.
- THE STRUCTURAL CONTRACT DOCUMENTS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS NOTED OTHERWISE, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION.
- NEITHER THE OWNER NOR THE ARCHITECT/STRUCTURAL ENGINEER WILL ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING AND BRACING AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS. SITE OBSERVATION VISITS BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE SAFETY ITEMS.
- SATISFACTORY EXECUTION OF CONSTRUCTION IS DEPENDENT UPON CONFORMANCE WITH THE INTENT OF THESE DRAWINGS. THE OWNER OR CONTRACTOR SHALL RETAIN A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER DURING CONSTRUCTION TO OBSERVE THE CONSTRUCTION AND STATE THAT THE STRUCTURE HAS BEEN BUILT IN GENERAL CONFORMANCE WITH THE INTENT OF THESE DRAWINGS.
- CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOAD SHALL NOT EXCEED DESIGN LIVE LOAD FOR EACH PARTICULAR LEVEL. WHEN WEIGHT OF MATERIALS OR EQUIPMENT MAY EXCEED DESIGN LOAD, STRUCTURAL SYSTEMS SHALL BE SHORED.
- WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF THE WORK. THE DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

DESIGN BASIS:

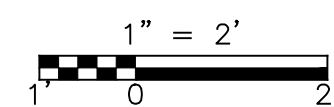
CODE: 2010 C.B.C. (CALIFORNIA BUILDING CODE) CCR, TITLE 24, PART 2.

GRAVITY LOADS:

- FLAT ROOF LIVE LOAD : 20 P.S.F.
- FLOOR LIVE LOAD : 100 P.S.F

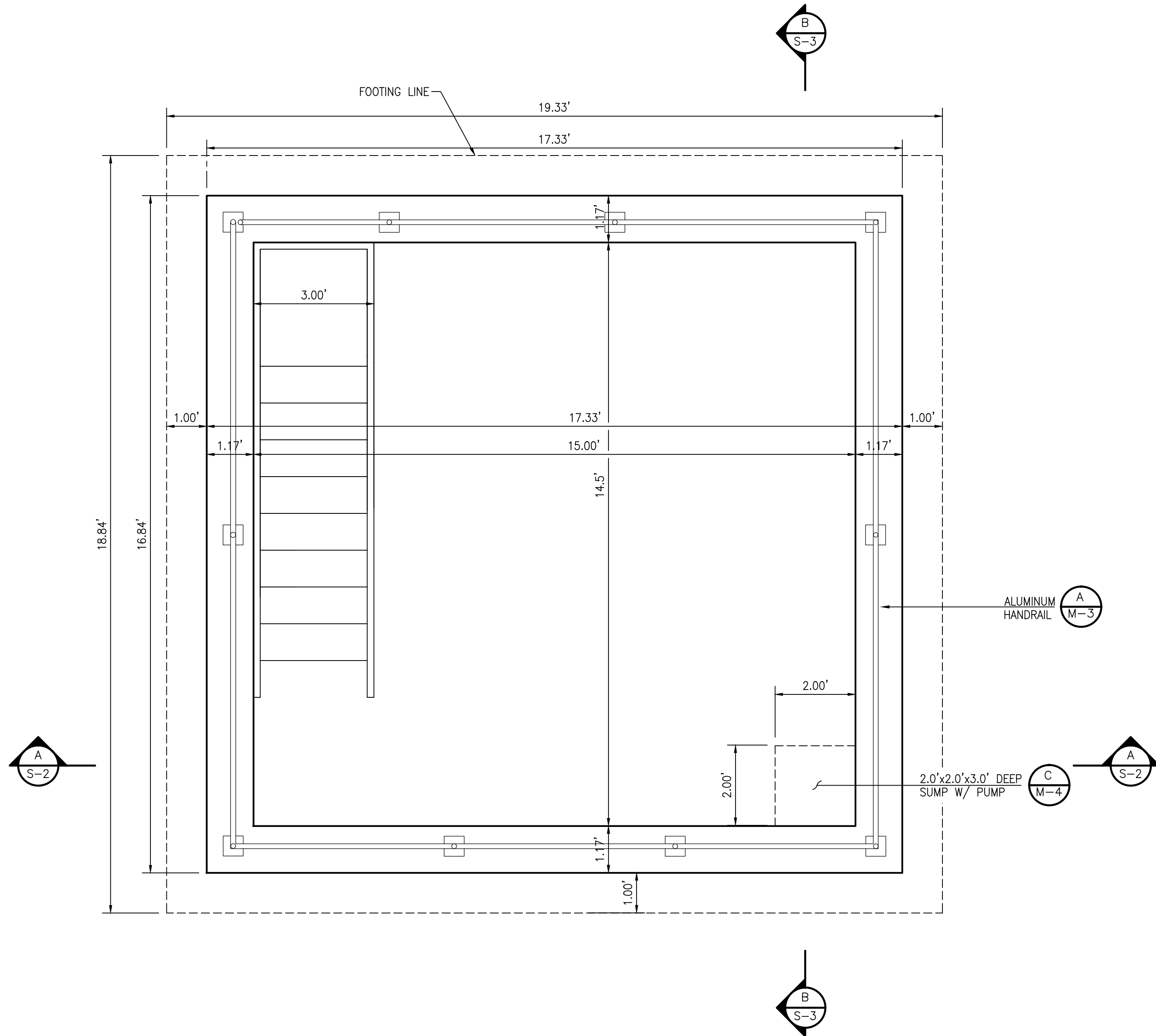
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 - BUILDING OCCUPANCY = III
 - SITE CLASS = D
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 - S1 = 0.65
 - Fa = 1.0
 - Fv = 1.5
 - Sms = 1.7
 - SM1 = 0.97
 - Sds = 1.14
 - Sd1 = 0.65
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- WIND LOAD:
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 - EXPOSURE C
 - w = 1.15
- GROUNDWATER ELEVATION = 925.00

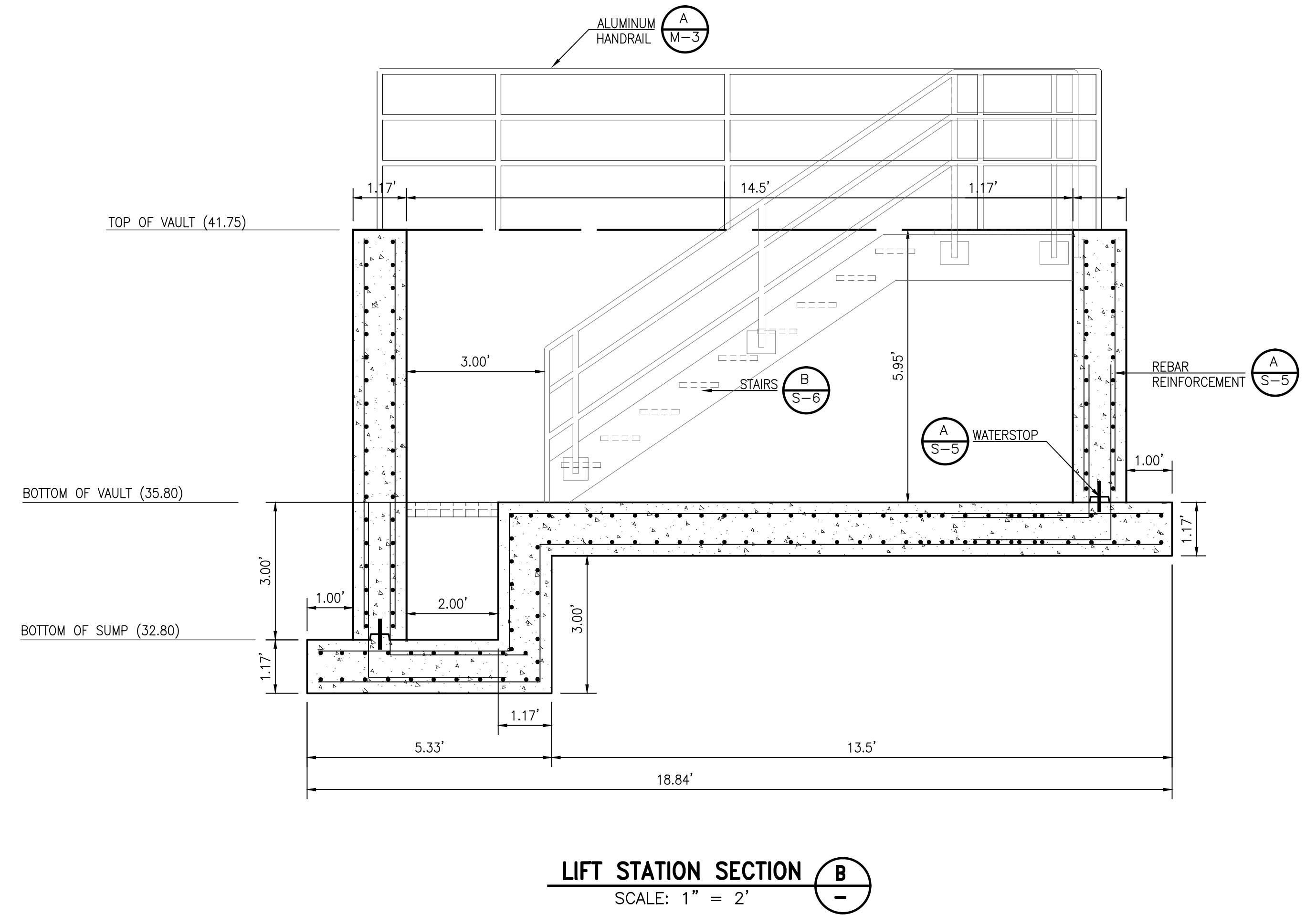


	REVISIONS				CITY OF IMPERIAL		ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 36951 COOK STREET #103 PALM DESERT, CA 92211 PH. (760) 568-5005 FAX (760) 568-3443	DATE DESIGNED: - 4/23/13 DRAWN: BTE 4/23/13 TRACED: - N/A CHECKED: SLB 4/23/13 SUBMITTED: --/--/-- SCALE:	CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA	BID NO. 2015-07
	NO.	DATE	INITIAL		DESCRIPTION		APPROVED/DATE	CITY ENGINEER	DATE	PLANS PREPARED UNDER THE SUPERVISION OF:	
DESIGNED BY:			DRAWN BY:			CHECKED BY:			HORIZ. SCALE: 1" = 2' VERT. SCALE: N/A	DWG. NO.	S-1

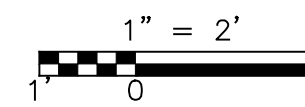
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LIFT STATION PLAN
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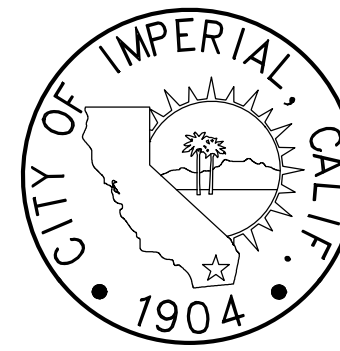


LIFT STATION SECTION B
SCALE: 1" = 2'



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
36951 COOK STREET #103
PALM DESERT, CA 92211
PH. (760) 568-5005
FAX (760) 568-3443

PLANS PREPARED UNDER THE SUPERVISION OF:

SHAWN L. BLOOMFIELD
REGISTERED CIVIL ENGINEER NO. C77435

	DATE
DESIGNED: -	4/23/13
DRAWN: BTE	4/23/13
TRACED: -	N/A
CHECKED: SLB	4/23/13
SUBMITTED: -	--/--/--

SCALE:
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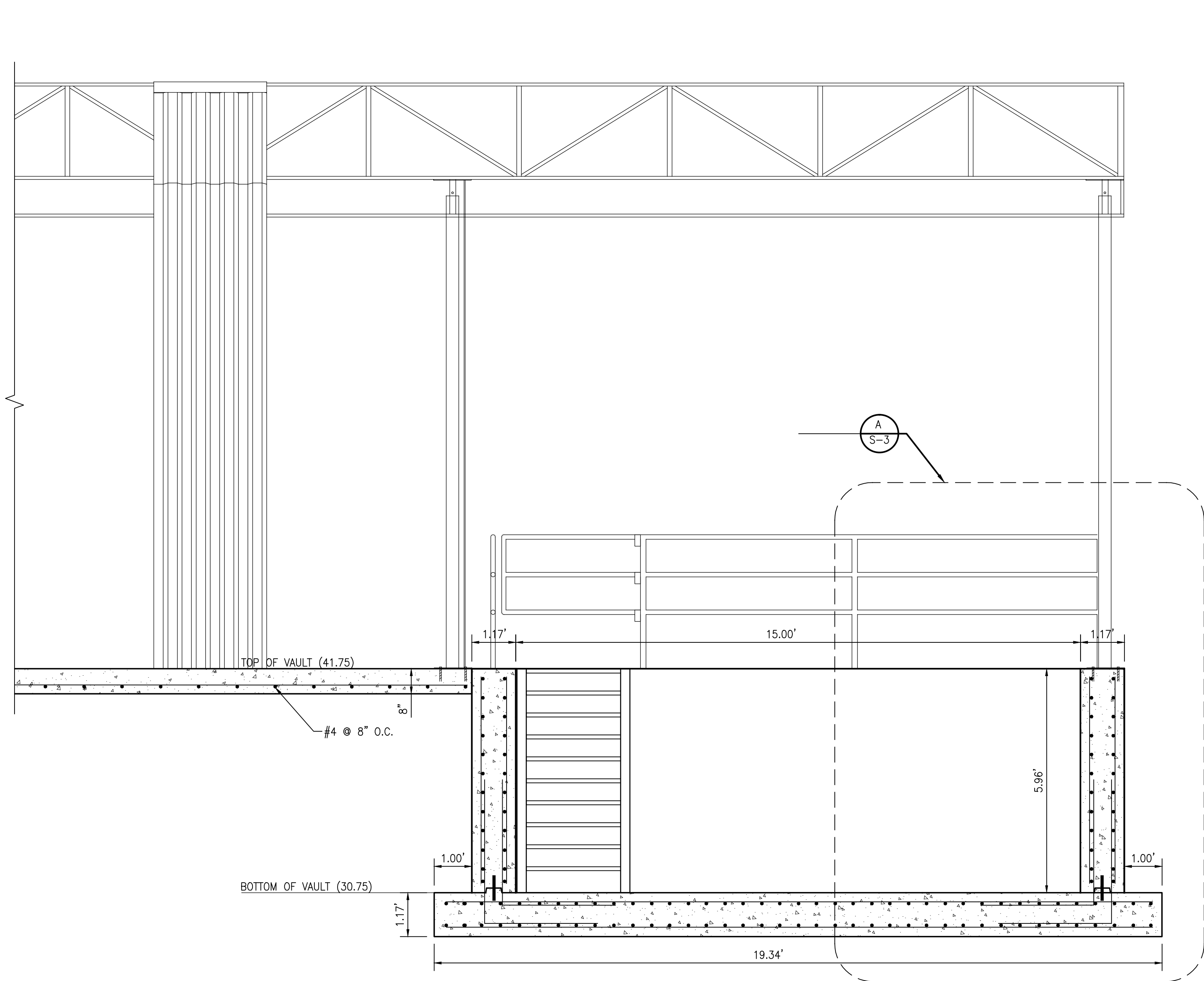
CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA

**LA BRUCHERIE LIFT STATION IMPROVEMENTS
STRUCTURAL PLAN AND SECTIONS**

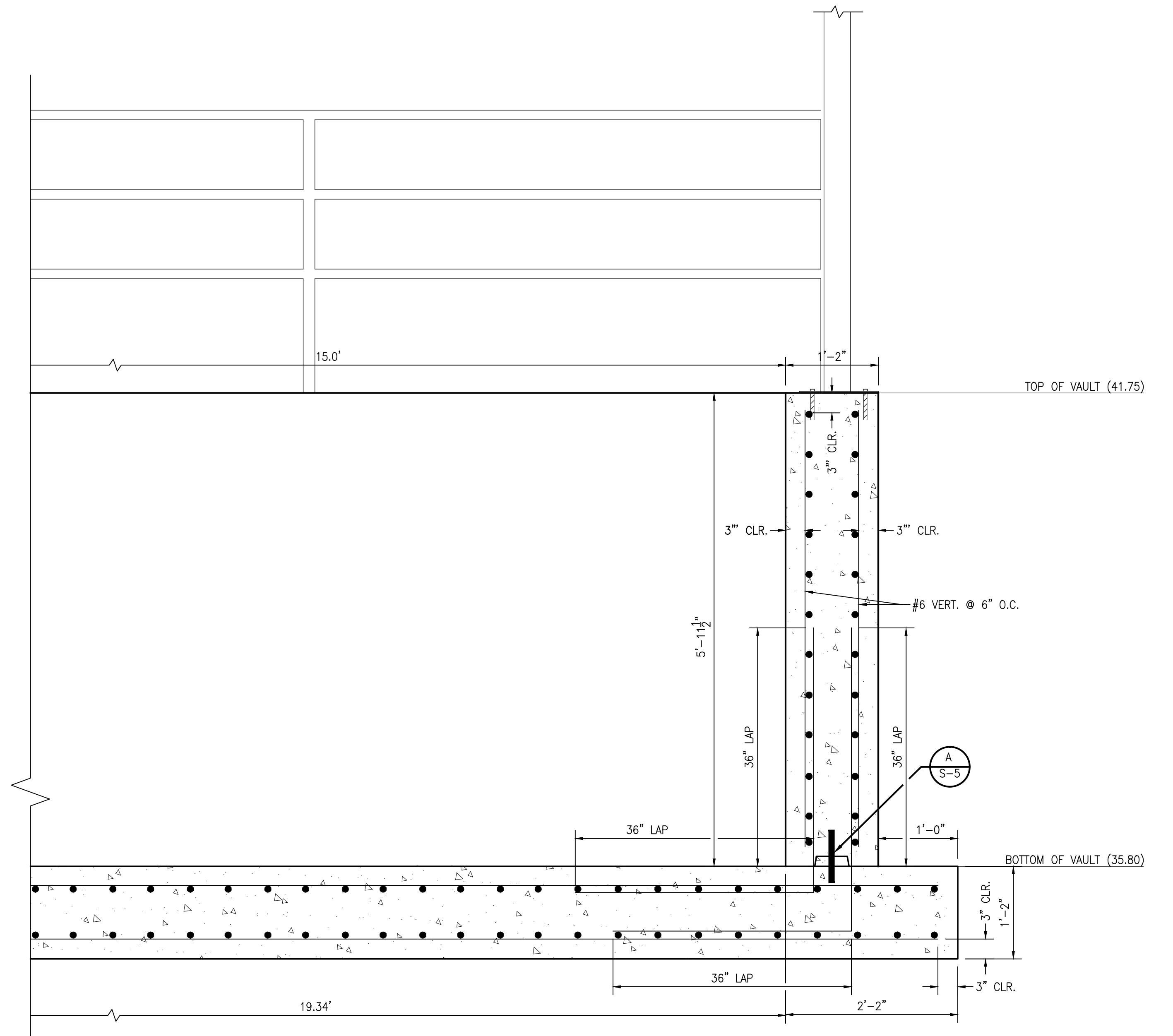
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BID NO. 2015-07
SHEET 12 OF 25
S-2

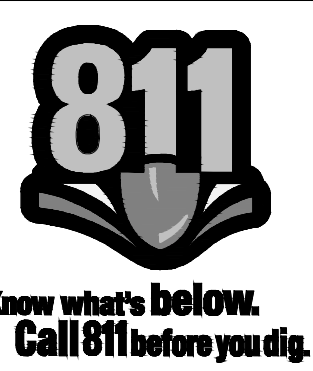
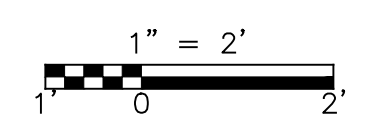
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LIFT STATION SECTION A
SCALE: 1" = 2' **S-2**

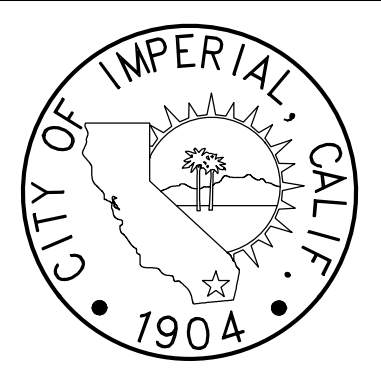


STRUCTURAL DETAIL A
SCALE: 1" = 1' **S-5**



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

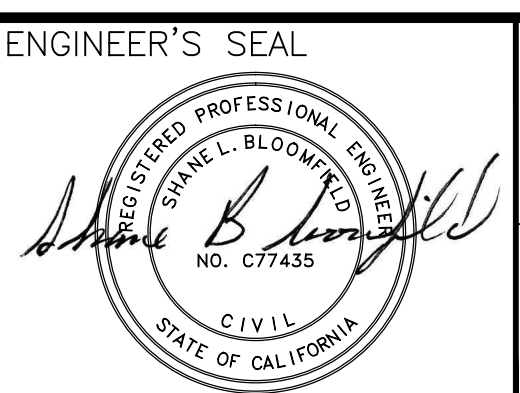
DESIGNED BY: _____ DRAWN BY: _____ CHECKED BY: _____



CITY OF IMPERIAL

CITY ENGINEER _____ DATE _____

REFERENCES _____



ALBERT A. WEBB ASSOCIATES ENGINEERING CONSULTANTS
36951 COOK STREET #103
PALM DESERT, CA 92211
PH. (760) 568-5005
FAX (760) 568-3443

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

	DATE
DESIGNED: -	4/23/13
DRAWN: BTE	4/23/13
TRACED: -	N/A
CHECKED: SLB	4/23/13
SUBMITTED: -	--/--/--

SCALE:
HORIZ. SCALE: 1" = 2'
VERT. SCALE: N/A

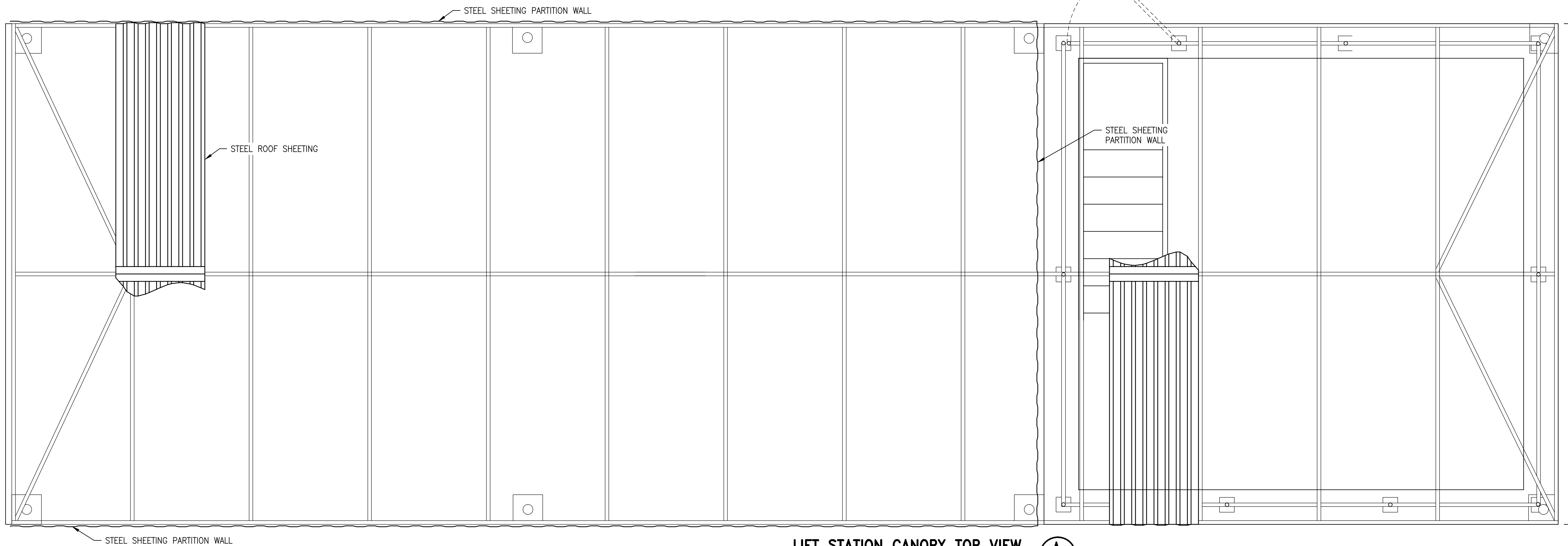
CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA

LA BRUCHERIE LIFT STATION IMPROVEMENTS
STRUCTURAL PLAN AND SECTIONS

DWG. NO. _____

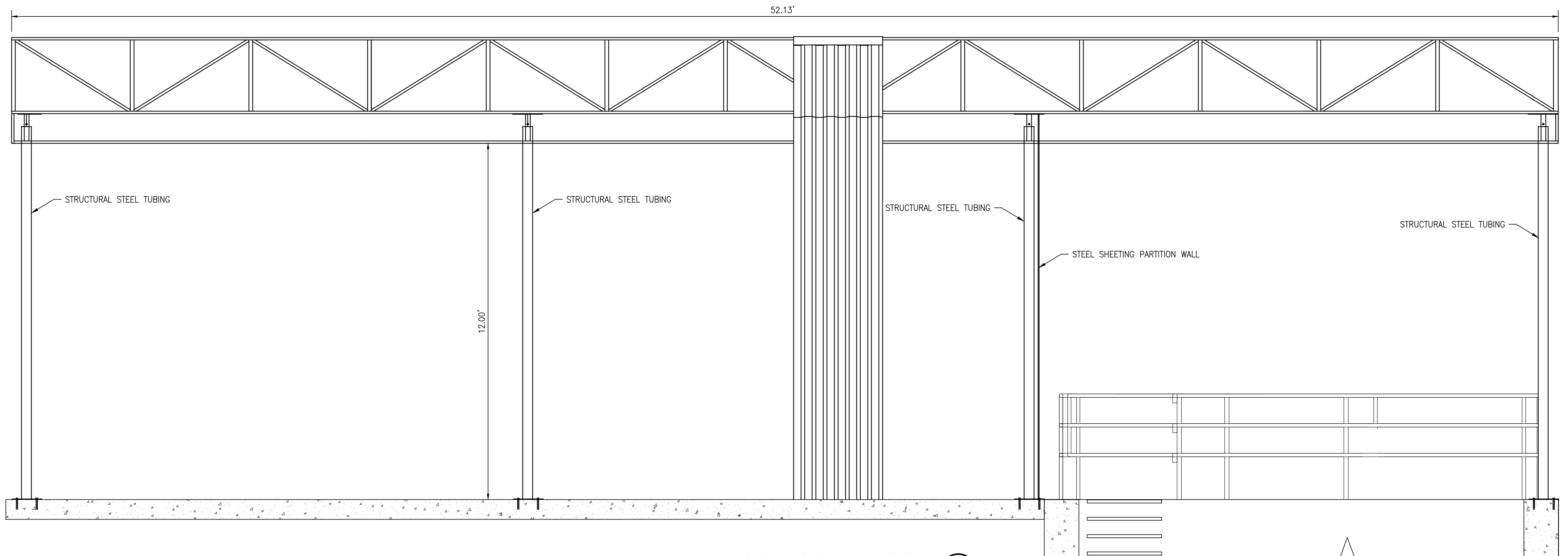
BID NO. 2015-07
SHEET 13 OF 25
S-3

ISSUED FOR BID
G:\2012\12-0081-S-LS-3-S3.DWG 4/23/2015 10:04 AM



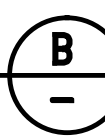
LIFT STATION CANOPY TOP VIEW

SCALE: 1" = 2'



LIFT STATION CANOPY ELEVATION

SCALE: 1" = 2'

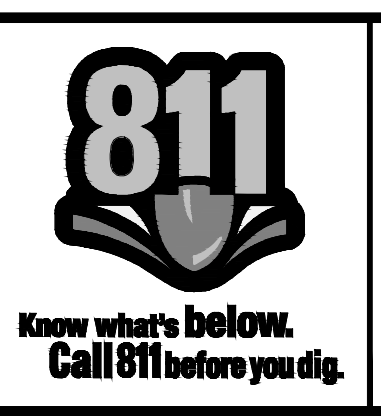


CANOPY SPECIFICATIONS

1. THE CONTRACTOR SHALL TEST THE CANOPY FOR LEAKAGE BY 10 MINUTES OF SOAKING BY HOSE WITH NO LEAKS. ANY FAILURES SHALL BE REPAIRED AND RETESTED AT THE CONTRACTORS EXPENSE.
2. THE CONTRACTOR SHALL SUBMIT SIGNED AND STAMPED SHOP DRAWINGS AND STRUCTURAL CALCULATIONS AS WELL AS CATALOG DATA ON THE CANOPY FOR APPROVAL.
3. STEEL TUBING SHALL COMPLY WITH ASTM A-513, TYPE 1 "COLD-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING". SHEET STEEL SHALL COMPLY WITH ASTM A611 "STEEL, SHEET, CARBON, COLD-ROLLED, STRUCTURAL QUALITY"
4. THE LIFTSTATION CANOPY SHALL BE DESIGNED IN ACCORDANCE WITH THE FOLLOWING PARAMETERS: EXPOSURE C, FREE STANDING CANOPY (PEAKED TOP), 16'-10" WIDE X 25'-2" LONG, DESIGN WIND SPEED AT 130 mph PER ICBO, SUPPORTS OF ASTM A-513, TYPE 1 COLD-ROLLED CARBON STEEL WITH YIELD STRENGTH OF 50 ksi, MODULUS OF ELASTICITY OF 29,000 ksi; AND AN ALUMINUM W-PAN FABRIC.
5. ALL STEEL STRUCTURAL MEMBER SIZES SHOWN HEREON ARE MINIMUM REQUIREMENTS AND SHALL BE INCREASED IF REQUIRED BY STRUCTURAL CALCULATIONS AT NO ADDITIONAL COST TO OWNER.
6. CANOPY ROOF STRUCTURE TO BE RATED FOR 20 PSF LIVE LOAD.
7. STRUCTURAL FRAME TO BE SHOP PRIMERED AND FIELD PAINTED IN ACCORDANCE WITH COATING SPECIFICATIONS.
8. CANOPY SHALL BE DESIGNED TO WITHSTAND MINIMUM WIND LOADS OF 130 MPH AND SEISMIC FORCES ZONE 4

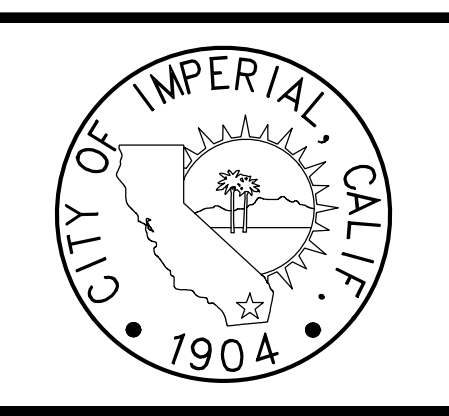
TOP POST DETAIL

1. ALL CONSTRUCTION SHALL COMPLY WITH THE UNIFORM BUILDING CODE.
2. ALL WELDS SHALL BE DONE BY A CERTIFIED WELDER.
3. WELDS SHALL BE GROUND SMOOTH WHERE THEY TOUCH FABRIC OR OPEN TO PUBLIC CONTACT.
4. ALL WELDS TO BE 3/8" FILLET E70xx FOR 1 1/2" X 2" STL. ALL WELDS TO BE 3/8" FILLET E70xx FOR 1" X 1" STL.
5. THE EDGE DISTANCE OF ALL FASTENERS SHALL BE NOT LESS THAN 1.5 TIMES THE RIVET OR BOLT DIAMETER.



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

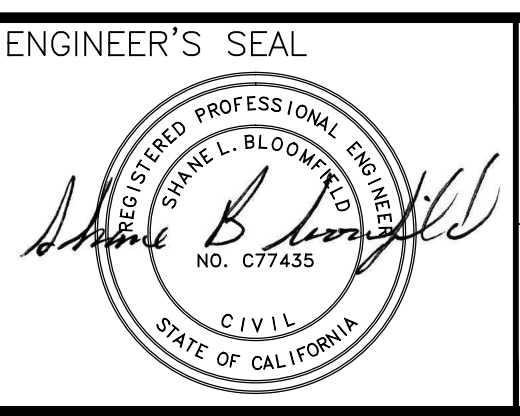
DESIGNED BY: _____ DRAWN BY: _____ CHECKED BY: _____



CITY OF IMPERIAL

CITY ENGINEER _____ DATE _____

REFERENCES _____



ALBERT A. WEBB ASSOCIATES ENGINEERING CONSULTANTS
 36951 COOK STREET #103
 PALM DESERT, CA 92211
 PH. (760) 568-5005
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PLANS PREPARED UNDER THE SUPERVISION OF:
 SHANE L. BLOOMFIELD
 REGISTERED CIVIL ENGINEER NO. C77435

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TRACED: -	N/A
CHECKED: SLB	4/23/13
SUBMITTED: -	--/--/--

SCALE:
 HORIZ. SCALE: 1" = 2'
 VERT. SCALE: N/A

CITY OF IMPERIAL
 IMPERIAL COUNTY, CALIFORNIA

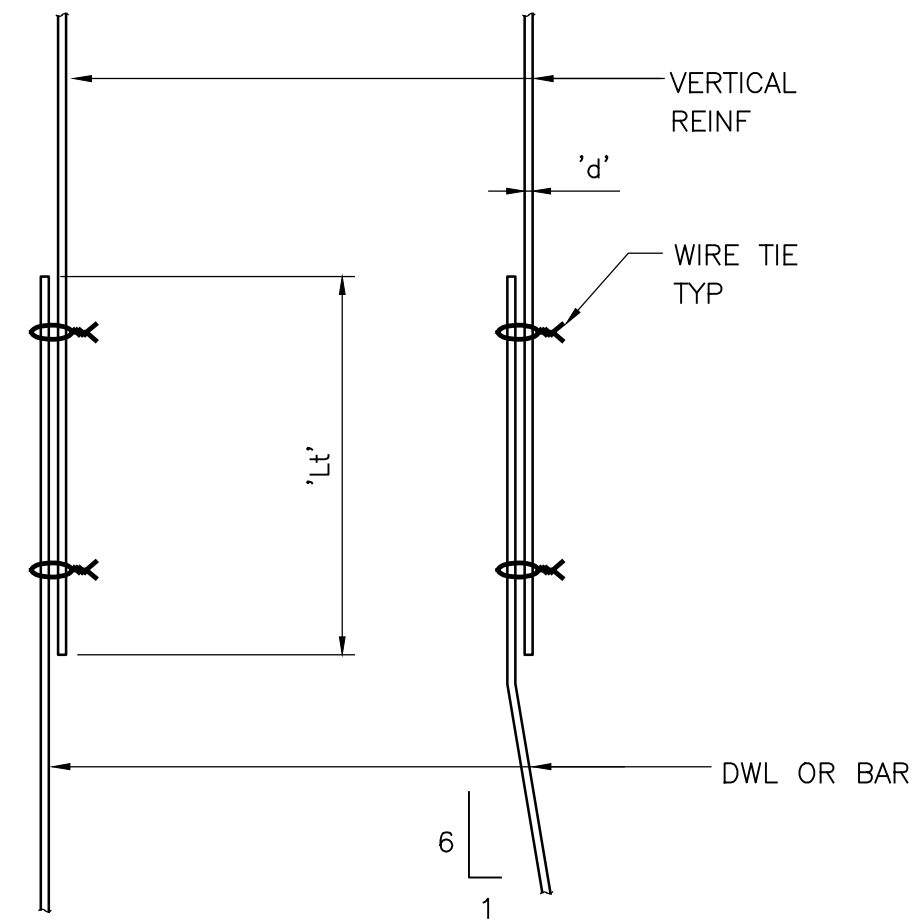
LA BRUCHERIE LIFT STATION IMPROVEMENTS
 LIFT STATION CANOPY
 PLAN AND DETAILS

BID NO.
 2015-07

SHEET
14
 OF 25

DWG. NO. S-4

ISSUED FOR BID
 G:\2012\12-0081\URAWINGS\B STREET LS\12-0081-S-LS-34.DWG 4/23/2015 10:04 AM



BAR SIZE	TENSION LAP "Lt" (IN.)			HOOK EMBED (IN.)
	F'c=3,000 PSI	F'c=4,000 PSI	F'c=5,000 PSI	
#3	22	19	17	8
#4	29	25	23	11
#5	36	31	28	14
#6	43	37	34	16
#7	63	54	49	19
#8	72	62	56	22
#9	81	70	63	25
#10	91	79	70	28
#11	101	87	78	31

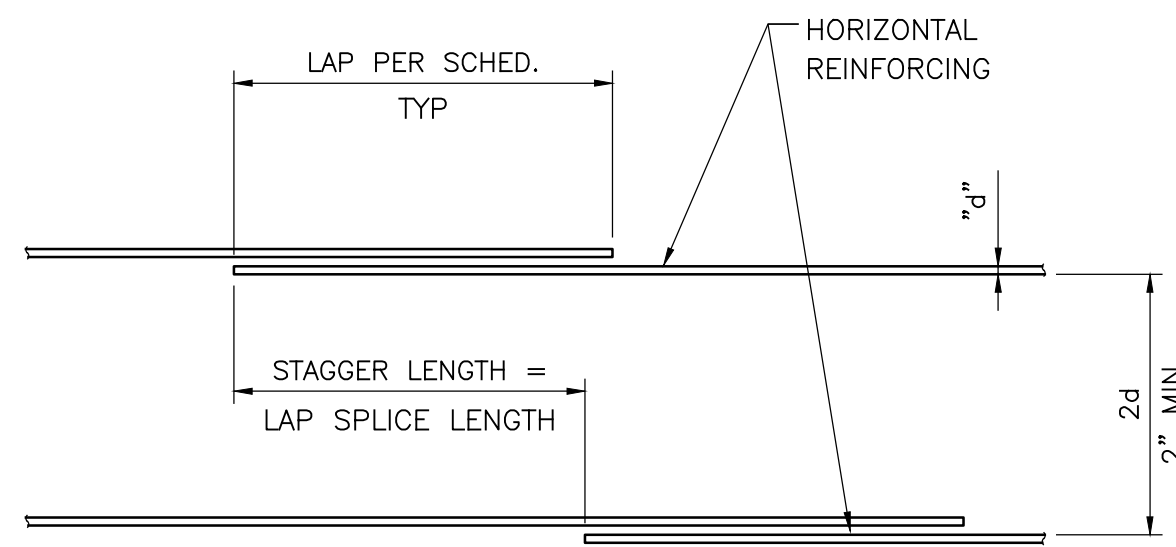
F'y = 60 KSI

NOTES:

- ALL VERTICAL REINFORCING FOR COLUMN, PIERS AND WALLS SHALL BE DOWELED AS SHOWN UON.
- MINIMUM CLEAR SPACING 2d, MINIMUM COVER 1.5".
- DOWELS SHALL BE THE SAME GRADE, SIZE, QUANTITY AND/OR SPACING AS VERTICAL REINFORCING.

TYP VERTICAL REINF LAP SPlice

DETAIL A
NO SCALE



NOTES:

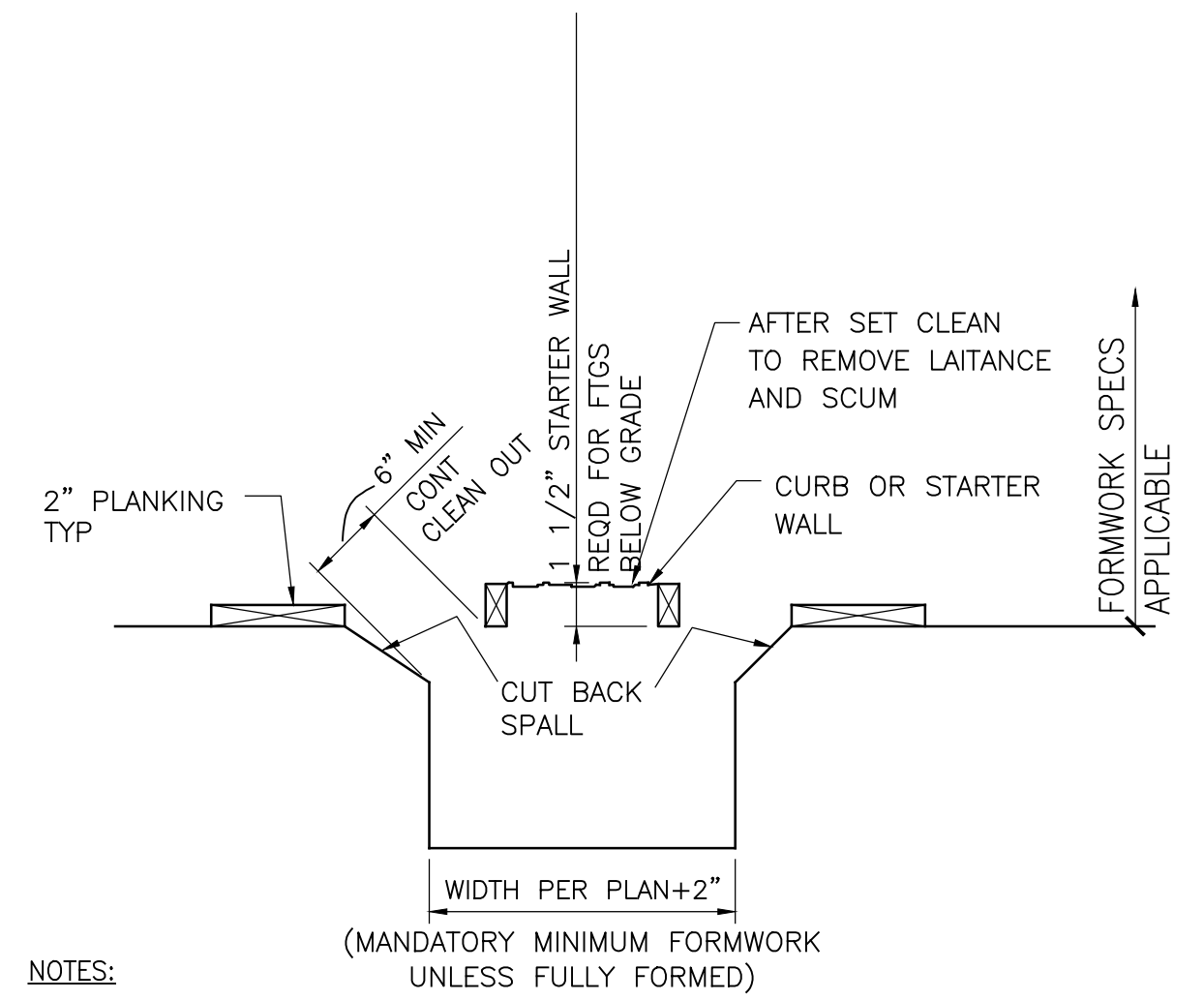
- SPlice LENGTH SHALL BE DETERMINED FROM THE SIZE OF THE SMALLER BAR SPliced.
- MINIMUM COVER 1.5", MINIMUM BAR CLEAR SPACING 2 BAR DIAMETERS.
- TOP BARS ARE DEFINED AS BARS WITH 12" OR MORE OF FRESH CONCRETE PLACED BELOW THEM.
- CONCRETE MASONRY UNITS LAP 48d MIN HORIZ & VERT REINF.
- Lt VALUES IN SCHEDULE SHALL BE MULTIPLIED BY 1.3 FOR LIGHT WEIGHT CONCRETE.
- SEE A FOR HOOK EMBEDMENT.

TYP HORIZONTAL REINF LAP SPlice

DETAIL B
NO SCALE

BAR SIZE	TENSION LAP "Lt" (IN.)					
	F'c=3,000 P.S.I.		F'c=4,000 P.S.I.		F'c=5,000 P.S.I.	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	29	23	25	20	22	17
#4	38	30	33	26	29	23
#5	47	37	41	32	36	28
#6	56	44	49	38	44	34
#7	82	64	71	55	63	49
#8	94	73	81	63	72	56
#9	106	82	91	70	81	63
#10	119	92	103	80	91	70
#11	131	101	113	87	101	78

HARDROCK CONCRETE
F'y = 60,000 P.S.I. (CLASS "B")

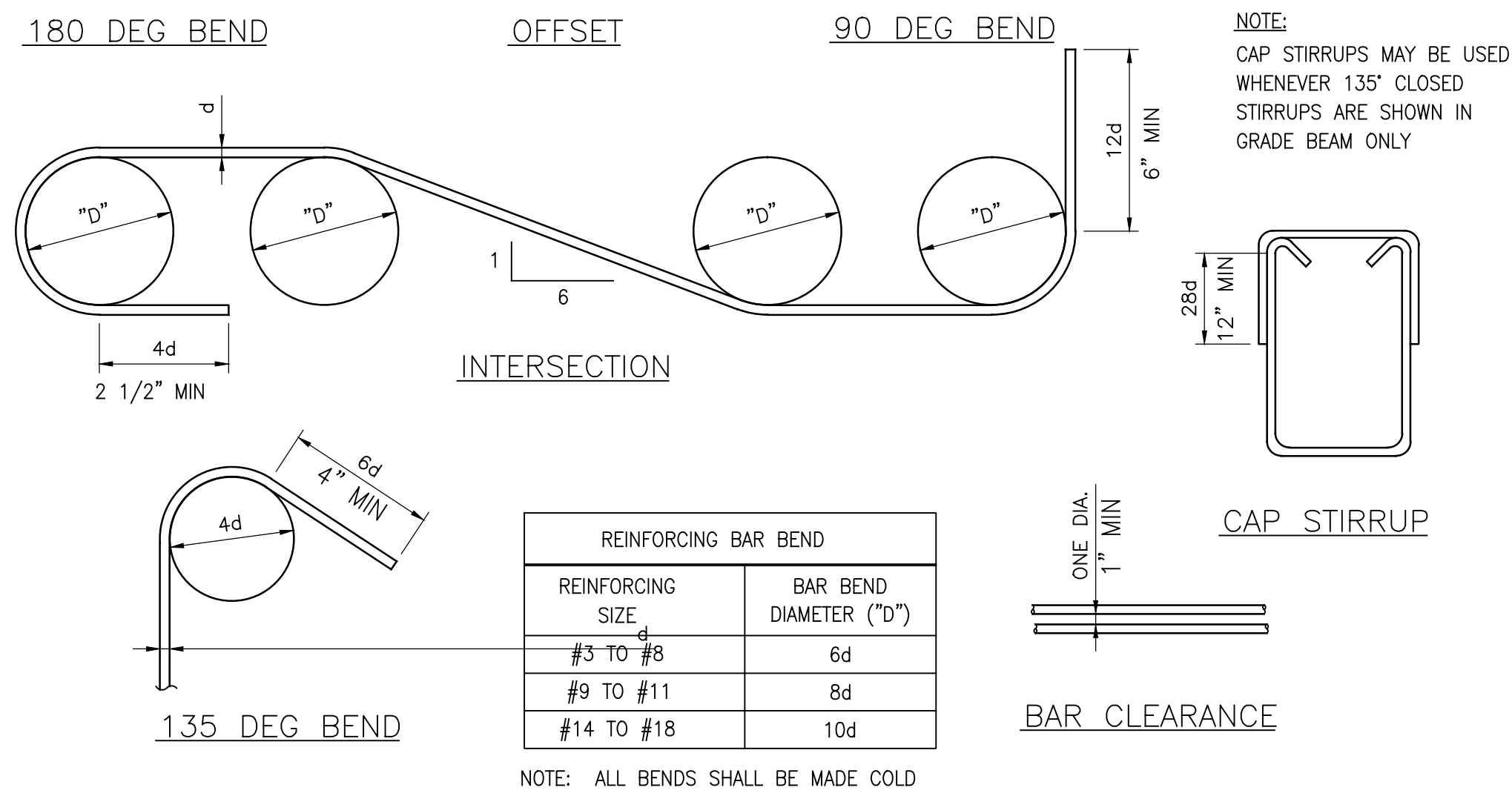


NOTES:

- FOUNDATION CONCRETE MAY BE PLACED DIRECTLY INTO NEAT EXCAVATIONS PROVIDED THE FOUNDATION TRENCH WALLS ARE STABLE AS DETERMINED BY THE ENGINEER (STRUCTURAL ENGINEER). IN SUCH CASE THE MINIMUM FORMWORK SHOWN ON THE DRAWINGS IS MANDATORY TO ENSURE CLEAN EXCAVATIONS IMMEDIATELY PRIOR TO THE PLACING OF CONCRETE.
- FORMWORK IS NOT PERMITTED WITHIN FOOTING SECTION, UNLESS FULLY FORMED.
- STAKES ARE NOT PERMITTED WITHIN FOOTING SECTION.

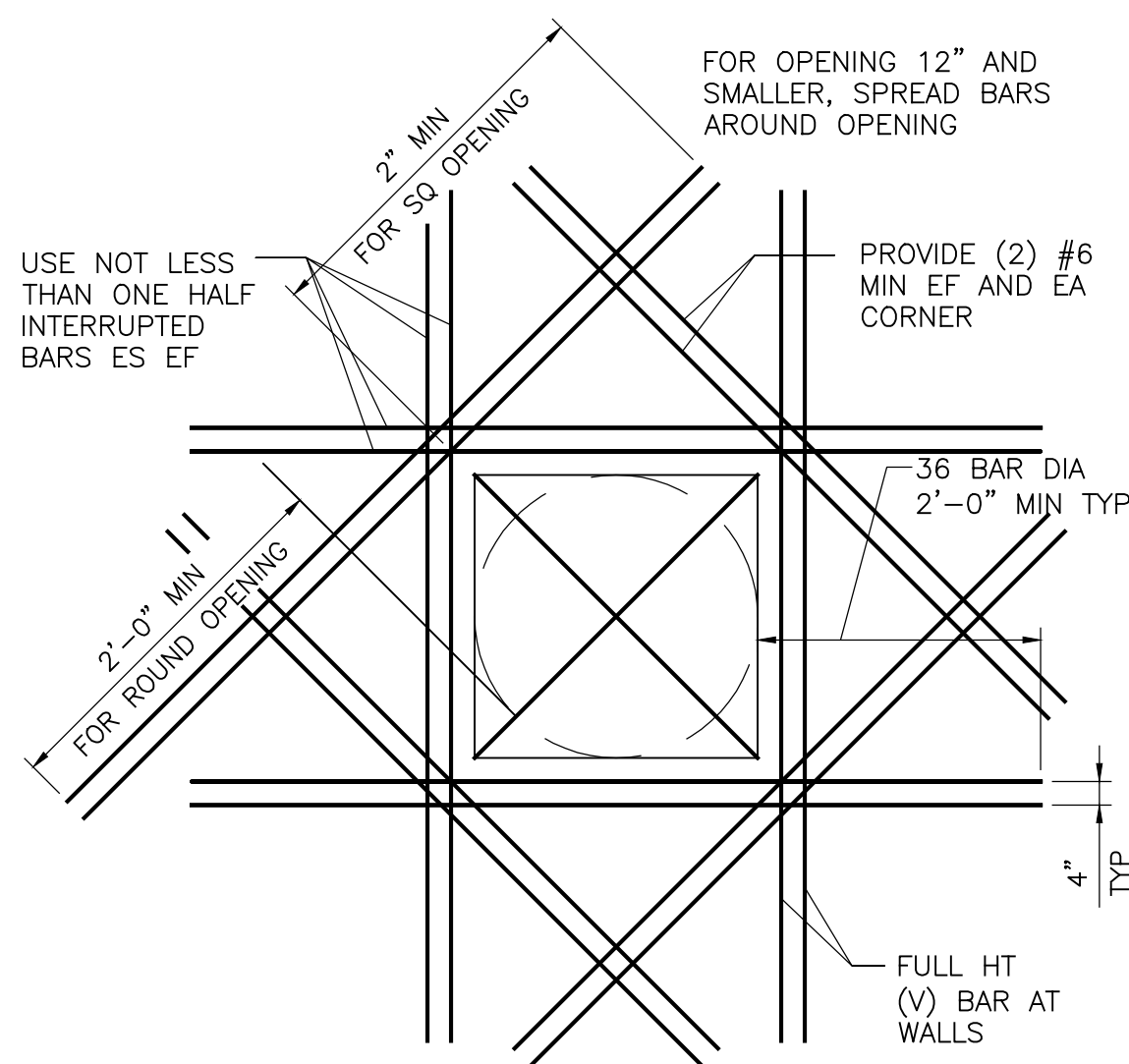
TYP MIN FORMWORK

DETAIL C
NO SCALE



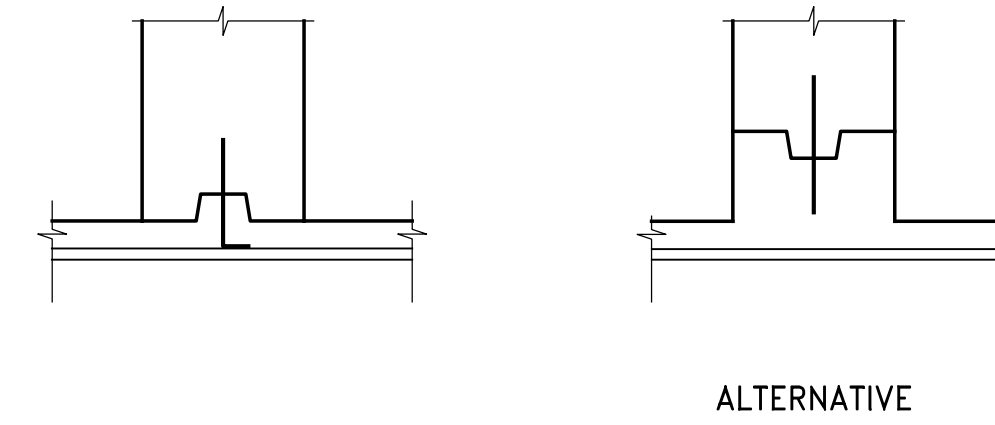
TYP REINF BAR BENDS

DETAIL D
NO SCALE

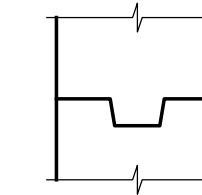


TYP REINF AT LARGE WALL OPENING

DETAIL E
NO SCALE



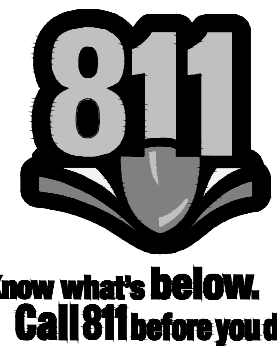
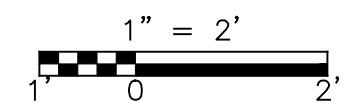
JOINTS WITH WATERSTOPS



JOINTS WITHOUT WATERSTOPS

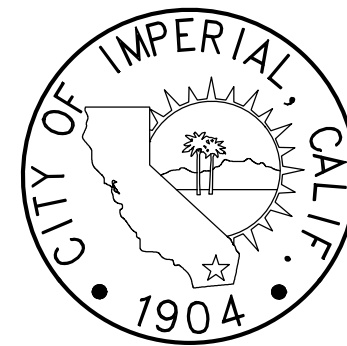
TYPICAL SLAB & WALL JOINTS

DETAIL A
NOT TO SCALE



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

DESIGNED BY: _____ DRAWN BY: _____ CHECKED BY: _____

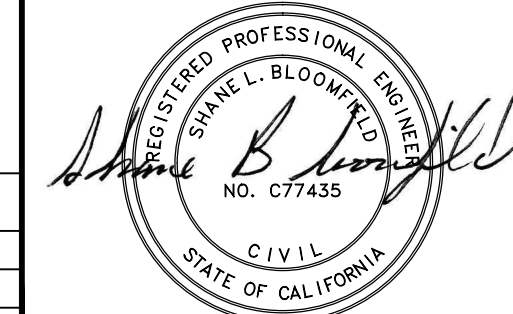


CITY OF IMPERIAL

CITY ENGINEER _____ DATE _____

REFERENCES

ENGINEER'S SEAL



ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
36951 COOK STREET #103
PALM DESERT, CA 92211
PH. (760) 568-5005
FAX (760) 568-3443

PLANS PREPARED UNDER THE SUPERVISION OF:

SHAWN L. BLOOMFIELD
REGISTERED CIVIL ENGINEER NO. C77435

	DATE
DESIGNED: -	4/23/13
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TRACED: -	N/A
CHECKED: SLB	4/23/13
SUBMITTED: -	--/--/--

SCALE:
HORIZ. SCALE: 1" = 2'
VERT. SCALE: N/A

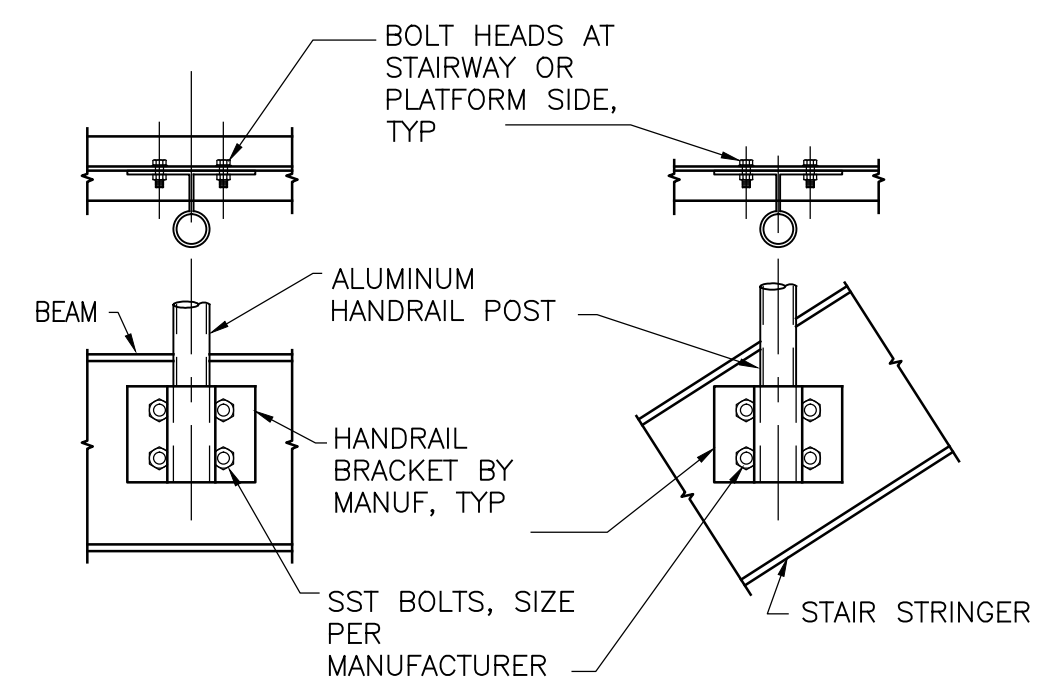
CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA
LA BRUCHERIE LIFT STATION IMPROVEMENTS
STRUCTURAL SECTIONS & DETAILS

BID NO. 2015-07

SHEET 15 OF 25

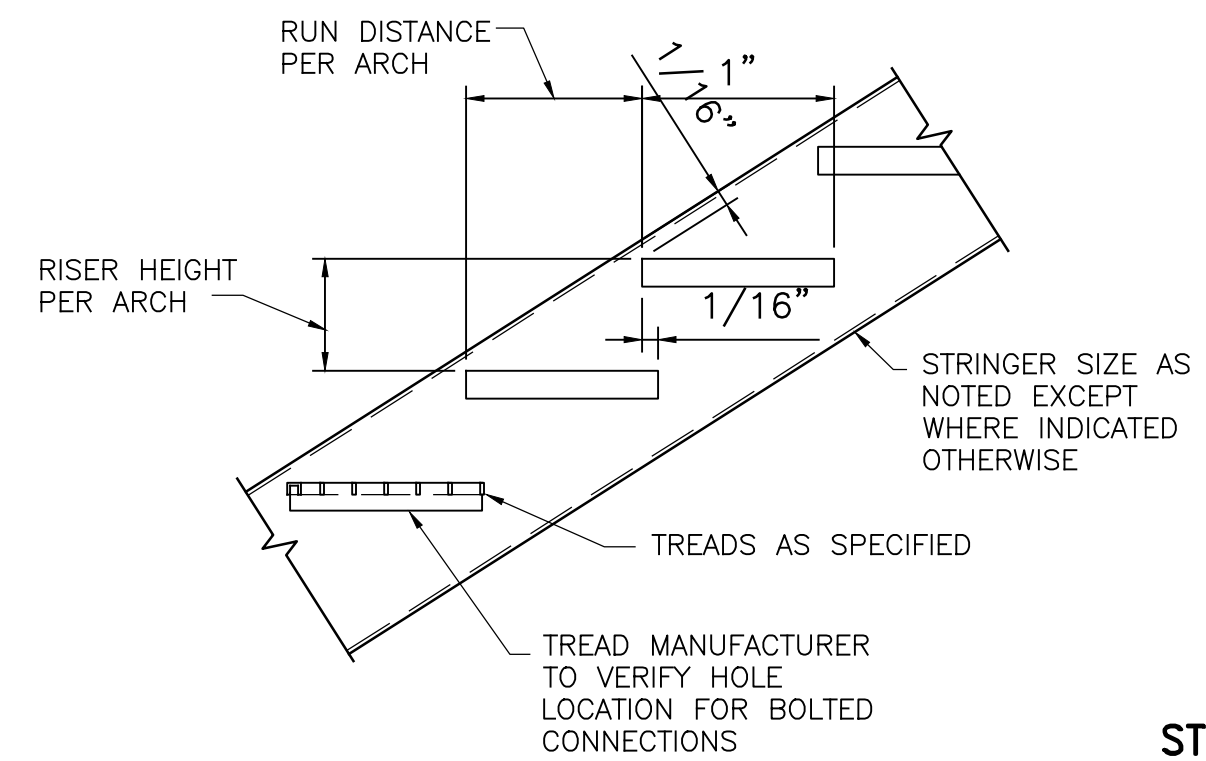
DWG. NO. S-5

ISSUED FOR BID
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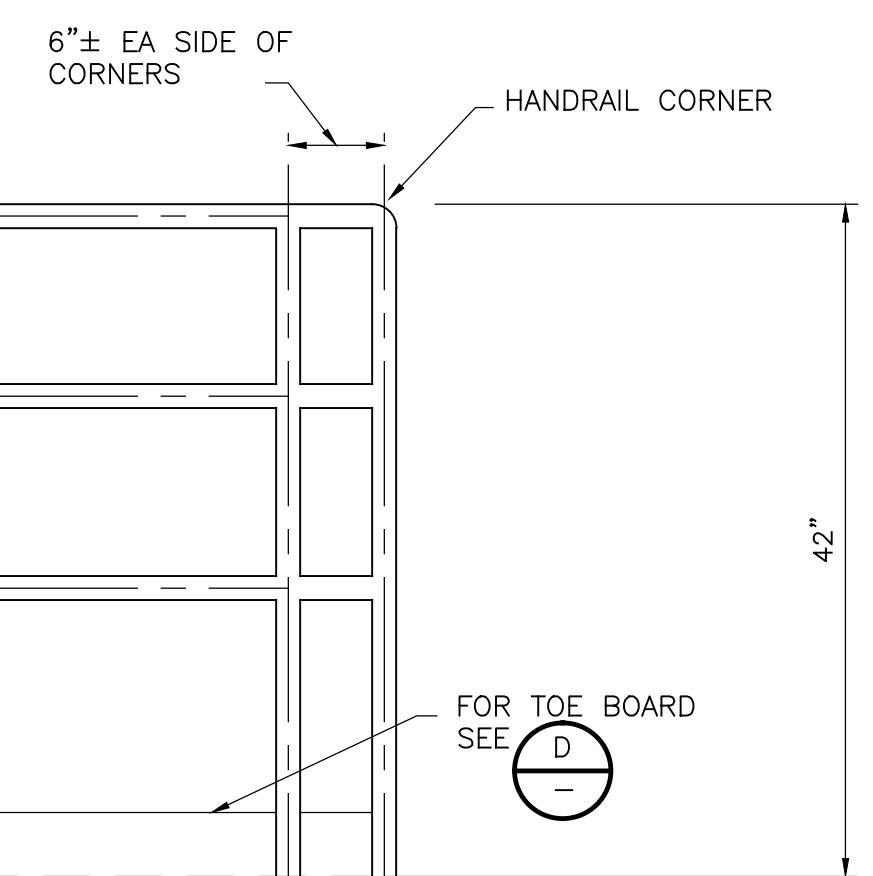
NOTE: PROVIDE PROTECTION FOR DISSIMILAR METALS AND CONCRETE PER SPECIFICATIONS.

HANDRAIL POST ANCHORAGE
DETAIL A
NTS

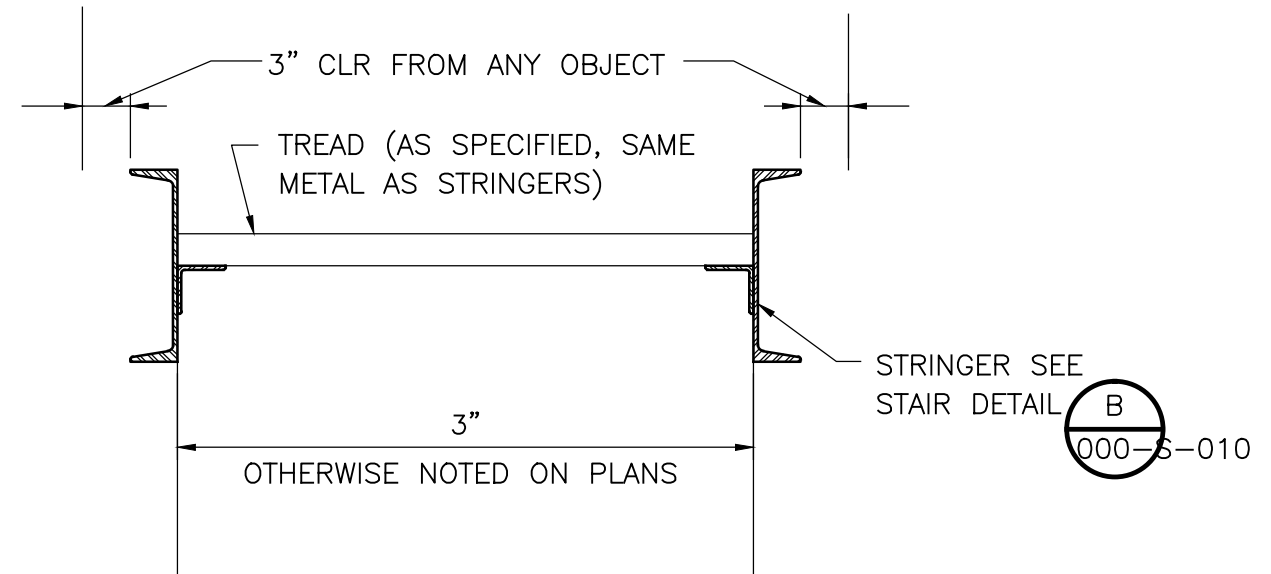


NOTES:
1. USE ALUMINUM C12x7.41 MIN OR PER MANUF UON ON THE DRAWINGS.
2. STAIR HANDRAIL NOT SHOWN.

STAIR DETAIL
DETAIL B
NTS

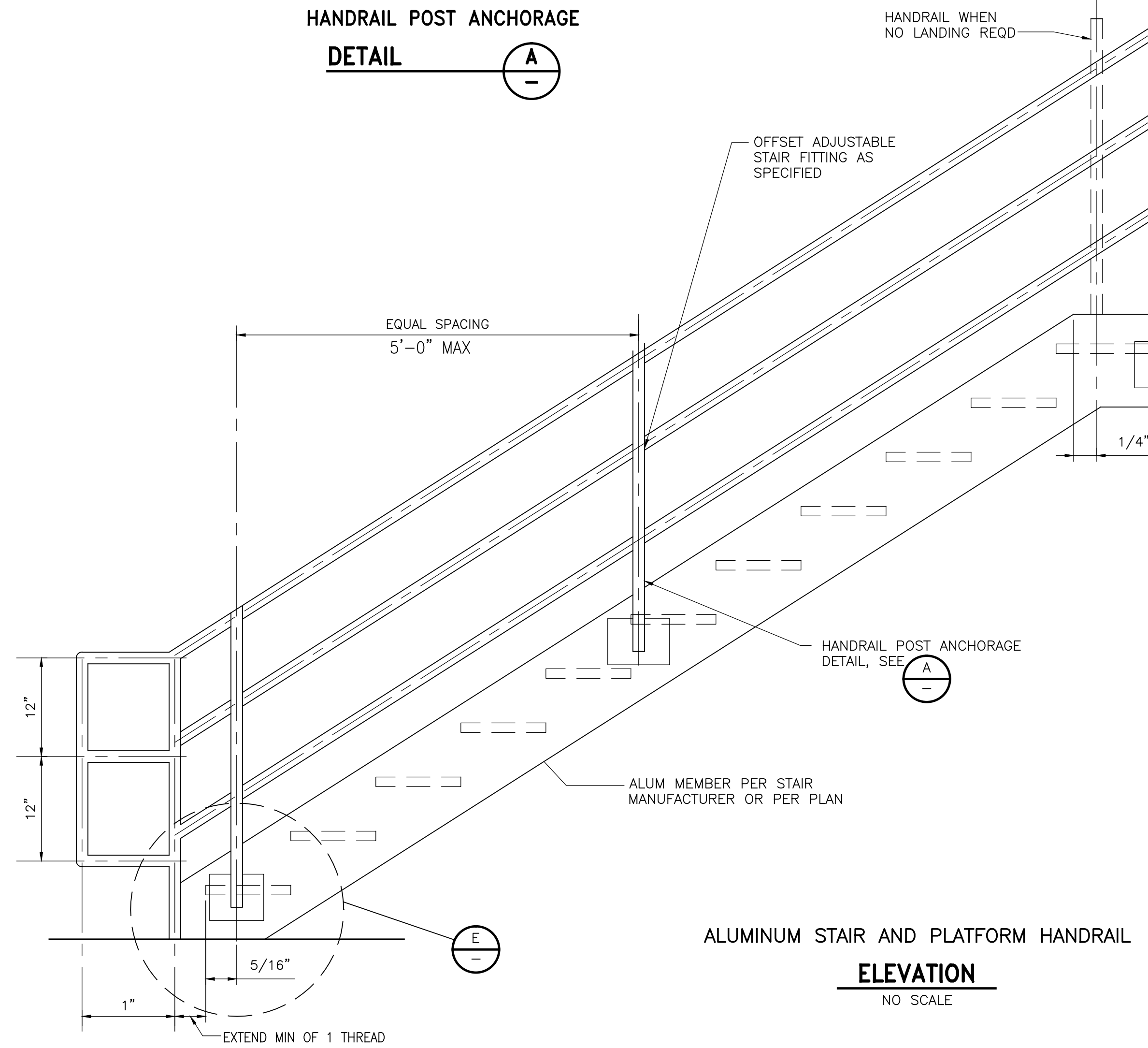


STAIRWAY WIDTH	BEARING BARS
	ALUMINUM TREAD
2'-3" OR LESS	1"x3/16"
2'-9" OR LESS	1 1/4"x3/16"
3'-3" OR LESS	1 1/2"x3/16"
4'-7" OR LESS	1 3/4"x3/16"

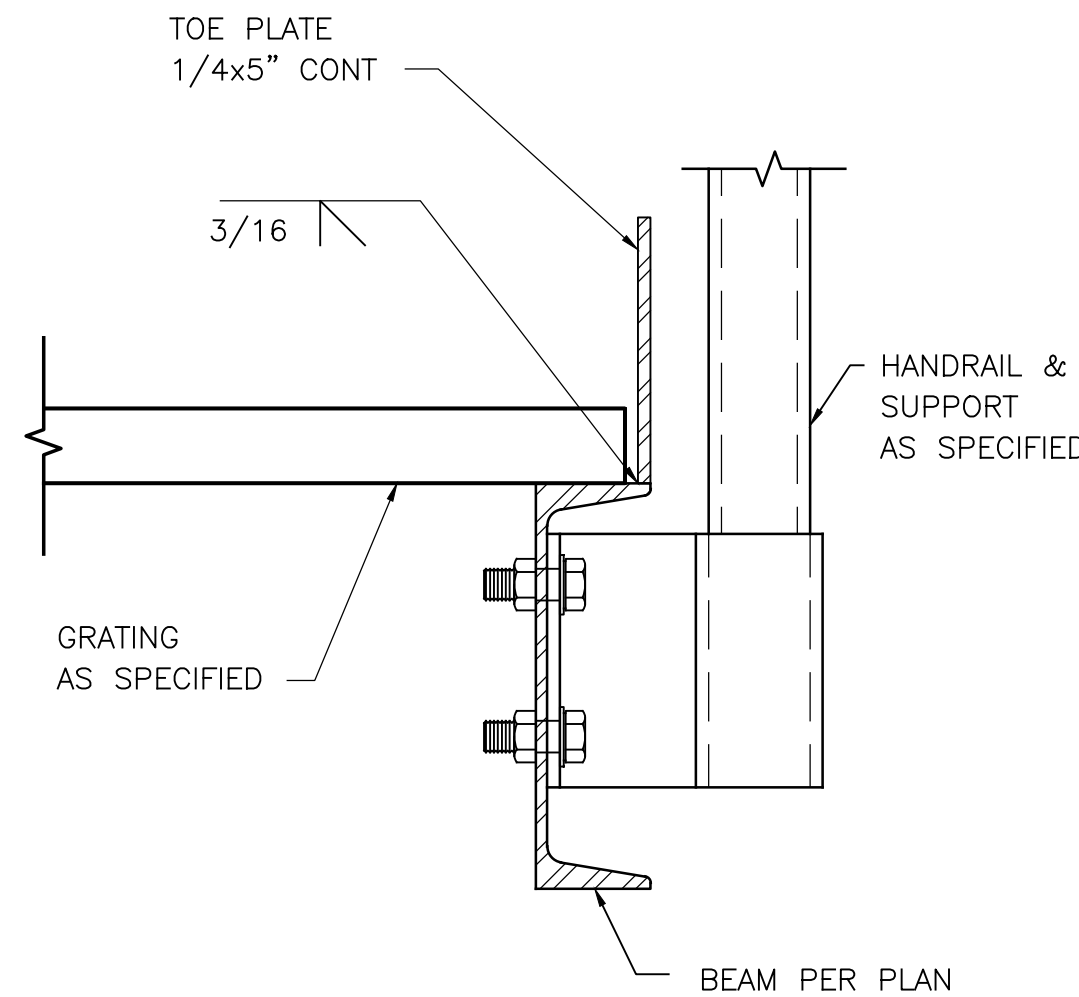


STAIR DETAIL
DETAIL C
NTS

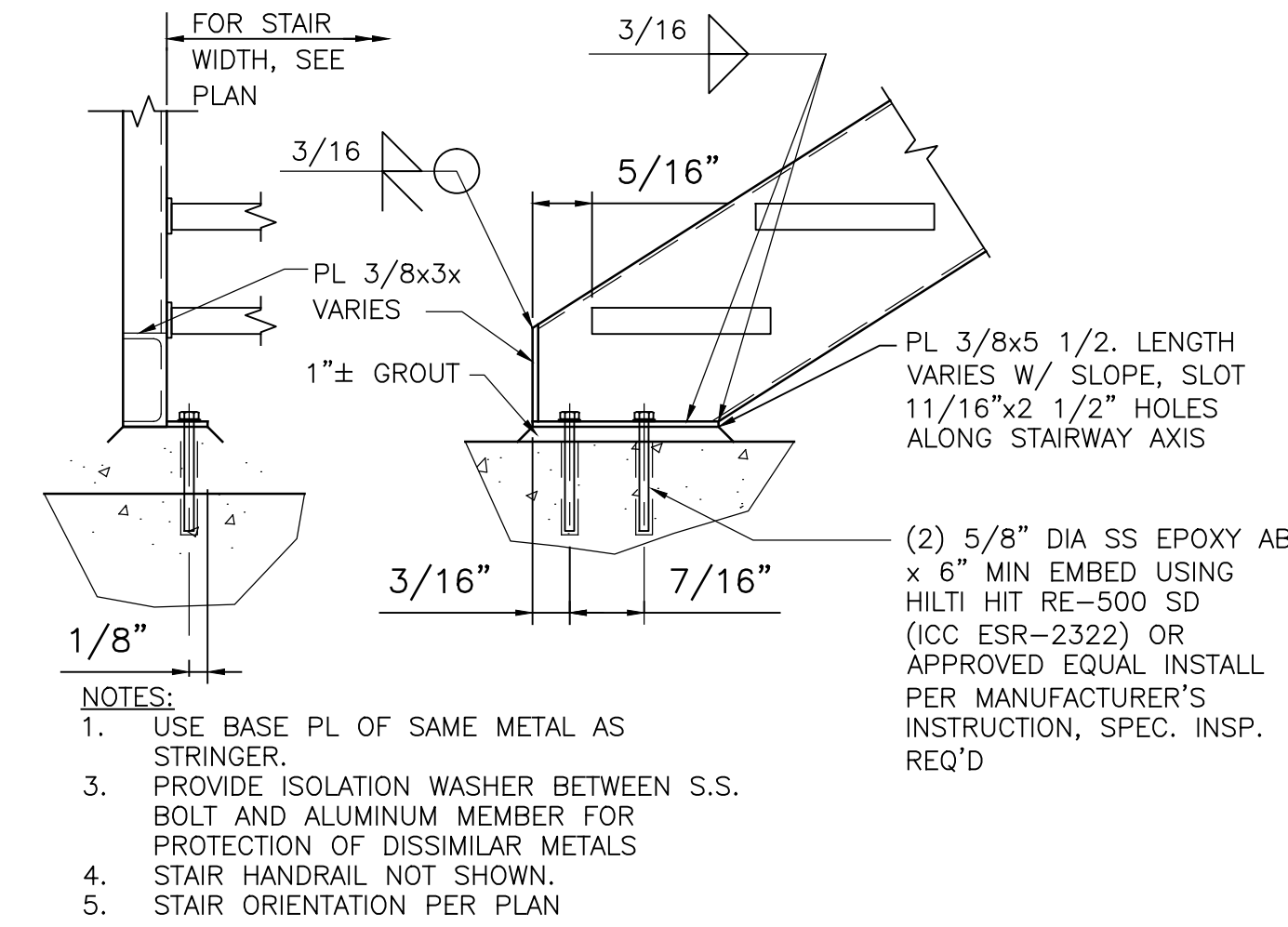
NOTES
1. STAIR DETAILS ARE PROVIDED FOR REFERENCE ONLY AND REPRESENT A TYPICAL STAIR INSTALLATION. ALUMINUM STAIRS, HANDRAILS, AND ALL CONNECTIONS ARE TO BE DESIGNED BY THE STAIRWAY MANUFACTURER.
2. FOR STEEL STRINGER WITH ALUMINUM RAILING PROVIDE DISSIMILAR METAL ISOLATION FOR ALL CONNECTIONS.



ALUMINUM STAIR AND PLATFORM HANDRAIL
ELEVATION
NO SCALE

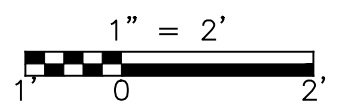


TOE BOARD
DETAIL D
NTS

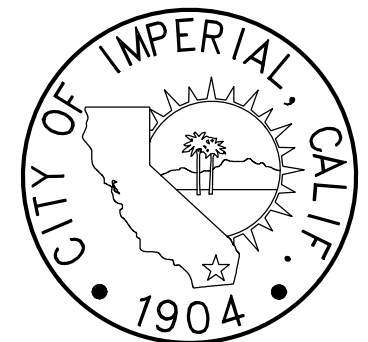


NOTES:
1. USE BASE PL OF SAME METAL AS STRINGER.
2. PROVIDE ISOLATION WASHER BETWEEN S.S. BOLT AND ALUMINUM MEMBER FOR PROTECTION OF DISSIMILAR METALS.
3. STAIR HANDRAIL NOT SHOWN.
4. STAIR ORIENTATION PER PLAN.

STAIR BOTTOM CONN
DETAIL E
NTS



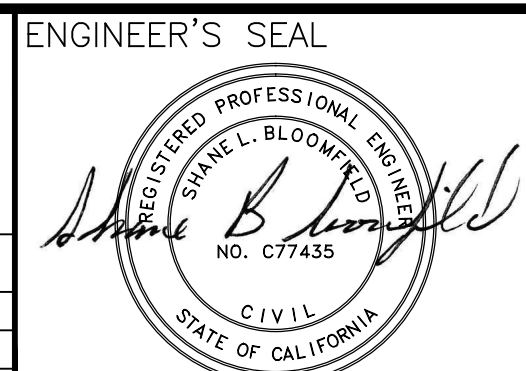
REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE



CITY OF IMPERIAL

CITY ENGINEER _____ DATE _____

REFERENCES



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VERT. SCALE: N/A

CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA
LA BRUCHERIE LIFT STATION IMPROVEMENTS
STRUCTURAL SECTIONS & DETAILS

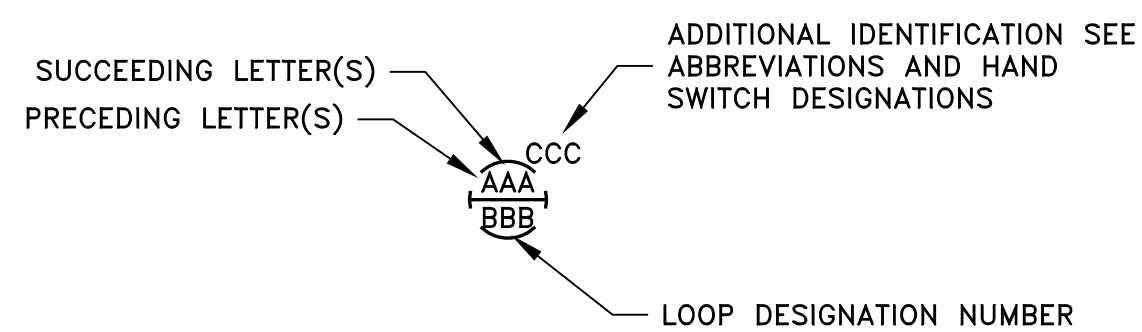
BID NO. 2015-07
SHEET 16 OF 25
DWG. NO. S-6

ISSUED FOR BID
G:\2012\12-0081\5-LS-56.DWG 4/23/2015 10:05 AM

ISA INSTRUMENT IDENTIFICATION TABLE

PRECEDING 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	USER'S CHOICE
C	CONDUCTIVITY		CONTROL	
D	DENSITY OR SPECIFIC GRAVITY			
E	VOLTAGE	PRIMARY ELEMENT		
F	FLOW RATE			
G	GAUGE			
H	HAND	GLASS, VIEWING DEVICE		
I	CURRENT (ELECTRICAL)			HIGH
J	POWER	SCAN		
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION
L	LEVEL			LOW
M	MOTOR	MOMENTARY		MIDDLE
N	VIDEO			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

TAG NUMBERS AND ADDITIONAL DESIGNATIONS



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 SUPERSCRIPED CCC.
- AAA CCC: PILOT LIGHT (X=LENS COLOR, R=RED, G=GREEN, A=AMBER, B=BLUE)
 - AAA CCC: DEVICE MOUNTED IN SUBPANEL
 - AAA CCC: FIELD DEVICE
 - AAA CCC: PANEL DEVICE
 - AAA CCC: PLC I/O TERMINAL
 - AAA CCC: SCADA FUNCTION

INPUT/OUTPUT SYMBOLS

- ▲ ANALOG INPUT
- ▼ ANALOG OUTPUT
- △ DISCRETE INPUT
- ▽ DISCRETE OUTPUT
- ▲ PULSE INPUT
- ▼ PULSE OUTPUT

P&ID LINETYPES

- Channel
- Electrical Signal
- Equipment
- Existing/Future Piping and Equipment
- Hydraulic Signal
- Internal System Signal Link (Software or Data Link)
- Loop Divider
- Pneumatic Signal
- Process Piping
- Subprocess Piping
- Vendor Supplied

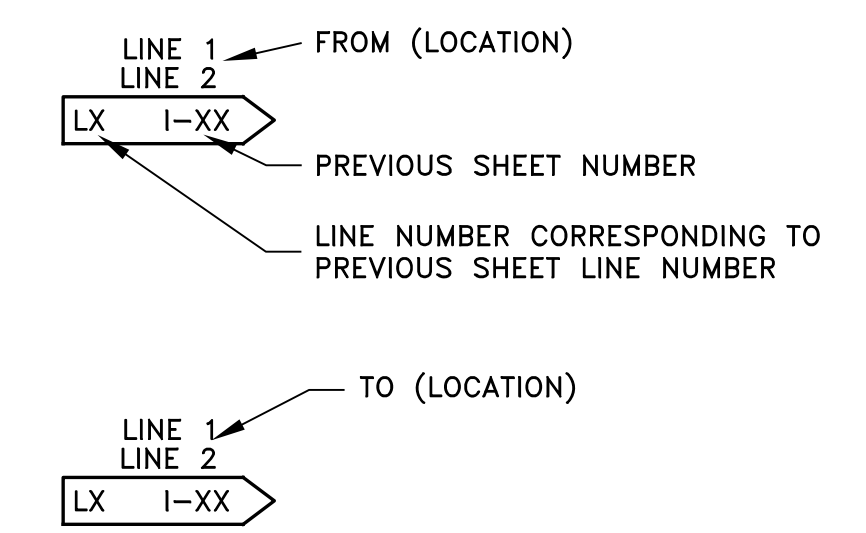
P&ID ABBREVIATIONS/PROCESS IDENTIFIERS

- AI: ANALOG INPUT
- AO: ANALOG OUTPUT
- ARV: AIR RELIEF VALVE
- AS: AIR SUPPLY
- AS: AIR SUPPLY
- BD: BOTTOM DRAIN
- BS: BENDED SLUDGE
- CLZ: 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
- LAI: LOCAL AREA NETWORK
- LOH: LOW, OFF, HIGH
- LCP: LOCAL CONTROL PANEL
- M: MOTOR
- MA: MILLIAMPS
- 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
- N/S: NORTH/SOUTH
- 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
- RH: RELATIVE HUMIDITY
- 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
- 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
- CLY: CHLORINE GAS UNDER VACUUM
- CSL: CHLORINATOR VENT AND DETECTION LINE
- CV: DECANT
- DN: DIGESTED SLUDGE
- DSL: DEMINERALIZED WATER
- DW: ENGINE EXHAUST
- EE: EVAPORATIVE COOLING
- EY: ENGINE COOLING WATER RETURN
- EWR: ENGINE COOLING WATER SUPPLY
- EWS: AIR EXHAUST
- EX: FOUL AIR
- FA: 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

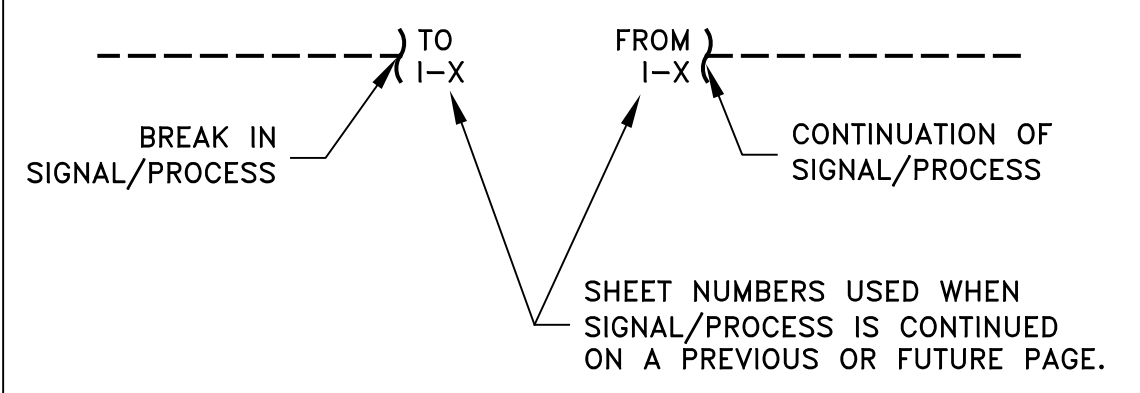
GENERAL NOTES

- 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.

PROCESS/SIGNAL LINE TO/FROM A PRECEDING SHEET

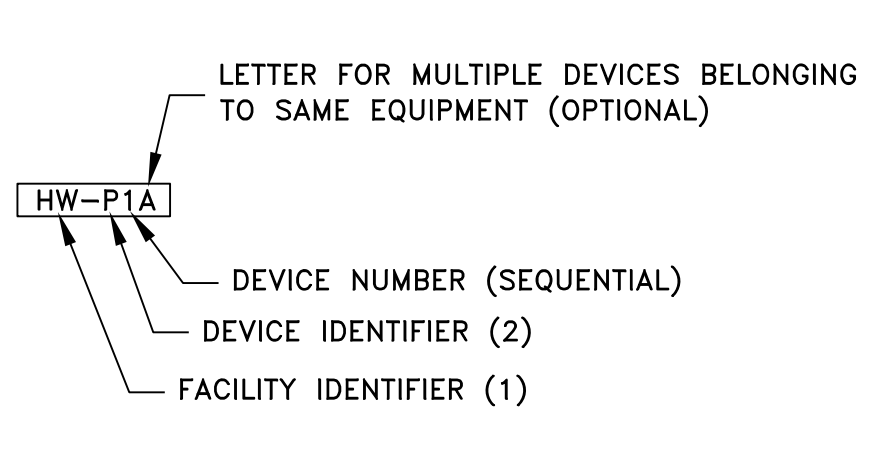


CONTINUATION



EQUIPMENT TAG

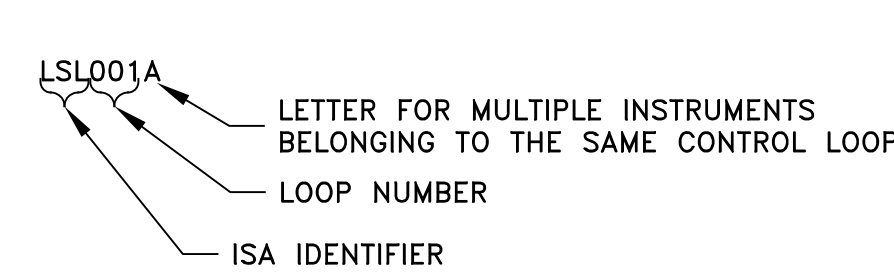
(1) FACILITY IDENTIFIERS



- BL: BLOWER
- DF: DISC FILTER
- FS: FINE SCREEN
- GR: GRIT REMOVAL
- HW: HEADWORKS
- UV: ULTRAVIOLET DISINFECTION

INSTRUMENT/SCADA TAG

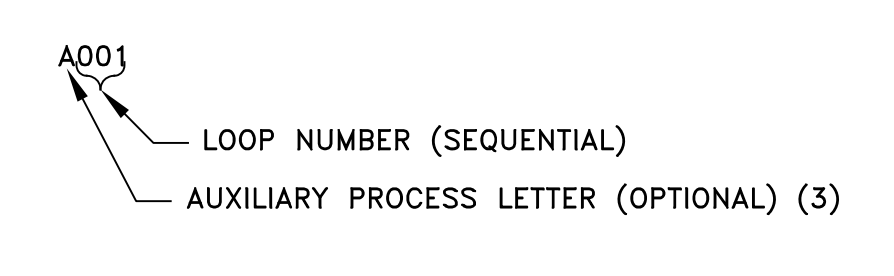
(2) DEVICE IDENTIFIERS



- G: GATE
- HVAC: HVAC
- M: MECHANICAL
- P: PUMP
- V: VALVE

LOOP NUMBER CRITERIA

(3) AUXILIARY PROCESS LETTERS

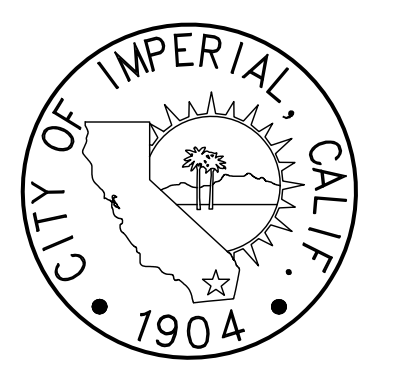


- A: ACCESS CONTROL SYSTEMS
- C: COLLECTIONS SYSTEM
- F: FIRE SYSTEMS
- H: HVAC SYSTEMS
- P: POWER SYSTEMS



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE

DESIGNED BY: _____ DRAWN BY: _____ CHECKED BY: _____



CITY OF IMPERIAL

CITY ENGINEER _____ DATE _____

REFERENCES _____



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

DESIGNED:	DATE
MPJ	6/11/13
TR	6/11/13
N/A	-
MPJ	6/11/13
SCALE:	NONE

CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA

LA BRUCHERIE LIFT STATION IMPROVEMENTS
INSTRUMENTATION - P&ID
INSTRUMENTATION LEGEND

DWG. NO. _____

BID NO. 2015-07
SHEET 17 of 25

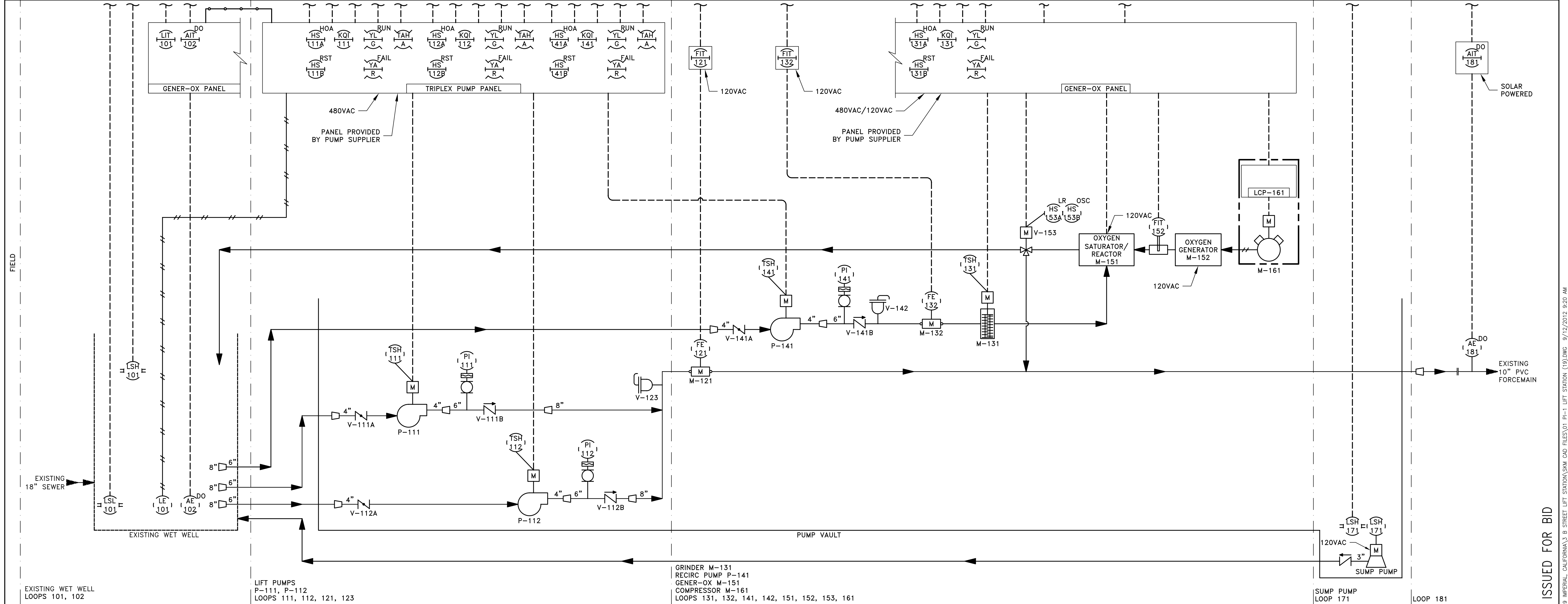
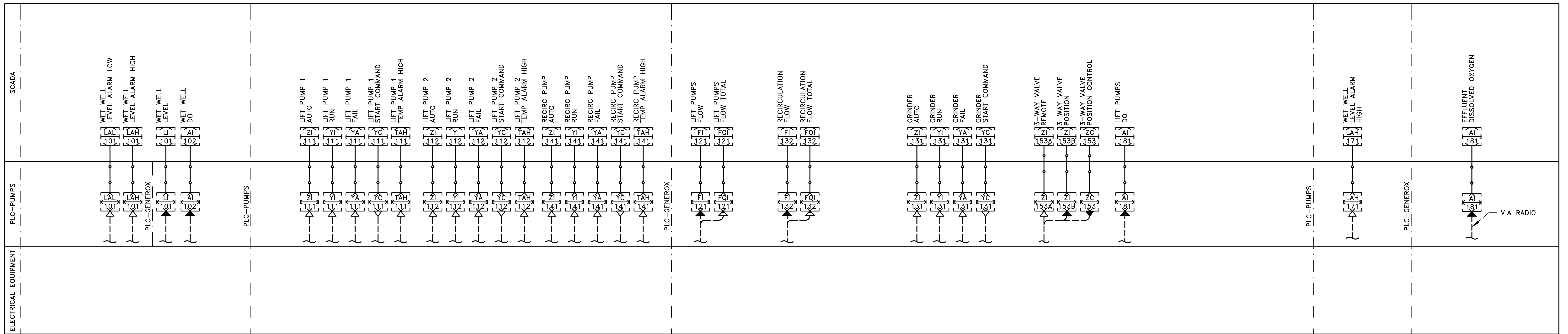
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VALVES		PUMPS		PIPING		FLOW ELEMENTS		MISCELLANEOUS		PRIMARY ELEMENT SYMBOLS	
	3 WAY VALVE		CENTRIFUGAL PUMP		BLIND FLANGE		MAGNETIC FLOW ELEMENT				ANALYZER ELEMENT
	4 WAY VALVE		MECHANICAL DIAPHRAGM PUMP		CAPPED OR PLUGGED END		MASS FLOW ELEMENT ANNUBAR (INSERTION)				DO ANALYZER
	ANGLE VALVE		METERING PUMP		DRAIN		MASS FLOW ELEMENT ANNUBAR (SPOOL)				DO SENSOR
	BACK PRESSURE RELIEF VALVE		PERISTALTIC PUMP		QUICK CONNECT/DISCONNECT		PROPELLER FLOW ELEMENT (INSERTION)				ORP ANALYZER
	BALANCING VALVE		PROGRESSIVE CAVITY PUMP		REDUCER		PROPELLER FLOW ELEMENT (SPOOL)				ORP SENSOR
	BALL VALVE		ROTARY LOBE PUMP		Y-STRAINER		ROTAMETER				pH ANALYZER
	BUTTERFLY VALVE		SUBMERSIBLE PUMP	HVAC			THERMAL MASS FLOW ELEMENT (INSERTION)				pH SENSOR
	CHECK VALVE		VERTICAL TURBINE PUMP		AIR COMPRESSOR		THERMAL MASS FLOW ELEMENT (SPOOL)				ULTRASONIC OR RADAR LEVEL TRANSDUCER
	DIAPHRAGM VALVE				AIR FILTER		ULTRASONIC FLOW ELEMENT (INSERTION)				
	ECCENTRIC PLUG VALVE				DAMPER		ULTRASONIC FLOW ELEMENT (SPOOL)				
	GATE VALVE				EXHAUST FAN						
	GLOBE VALVE				FILTER						
	KNIFE VALVE				GUIDE VANES						
	LUBRICATED PLUG VALVE				HEAT EXCHANGER						
	MIX VALVE				LOUVER WITH HOOD						
	MUD VALVE				SILENCER						
	NEEDLE VALVE				UNIT HEATER						
	PINCH VALVE										
	PRESSURE REDUCING VALVE										
	PRESSURE RELIEF VALVE										
	SLEEVE VALVE										
GATES											
	SLIDE GATE										
	SLUICE GATE										
	STOP GATE										
ACTUATORS											
	ACTUATOR: H=HYDRAULIC, M=MOTOR, P=PNEUMATIC, S=SOLENOID										
	MANUAL										
	PNEUMATIC DIAPHRAGM										
	PNEUMATIC DIAPHRAGM WITH POSITIONER										

ISSUED FOR BID

<p>Know what's below. Call 811 before you dig.</p>	REVISIONS <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> </tbody> </table>		NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE																											CITY OF IMPERIAL CITY ENGINEER _____ DATE _____ REFERENCES _____		533 W 2600 S, Suite 25 Bountiful, Utah 84010 Phone: (801) 677-0011 www.skm-inc.com	DESIGNED: MPJ DATE: 6/11/13 DRAWN: TR DATE: 6/11/13 TRACED: N/A CHECKED: MPJ DATE: 6/11/13 SUBMITTED: DATE: --/--/-- SCALE: NONE	CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA LA BRUCHERIE LIFT STATION IMPROVEMENTS INSTRUMENTATION - P&ID INSTRUMENTATION SYMBOLS	BID NO. 2015-07 SHEET 18 OF 25
	NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE																																		
DESIGNED BY: _____ DRAWN BY: _____ CHECKED BY: _____	DWG. NO. GI-2																																						

S:\PROJECTS\ENGINEERING\000\0689 IMPERIAL, CALIFORNIA\3 B STREET LIFT STATION\SMI CAD FILES\00 04-2 SYMBOLS (18).DWG 9/12/2012 9:20 AM



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

CITY OF IMPERIAL

CITY ENGINEER _____ DATE _____

REFERENCES

ENGINEER'S SEAL

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

DESIGNED:	DATE
MPJ	6/11/13
DRAWN:	TR
TRACED:	N/A
CHECKED:	MPJ
SUBMITTED:	6/11/13
SCALE:	---

NONE

CITY OF IMPERIAL
IMPERIAL COUNTY, CALIFORNIA

LA BRUCHERIE LIFT STATION IMPROVEMENTS
INSTRUMENTATION - P&ID
DUPLEX PUMPS

BID NO. 2015-07
SHEET **19** of 25
DWG. NO. PI-1

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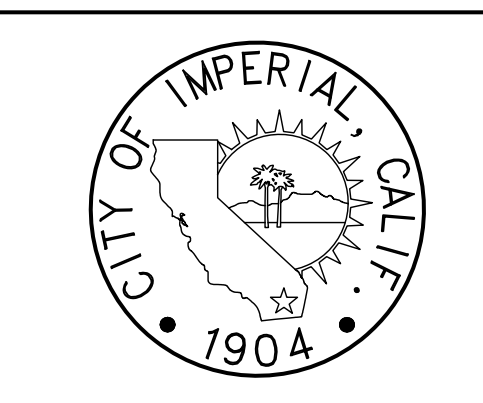
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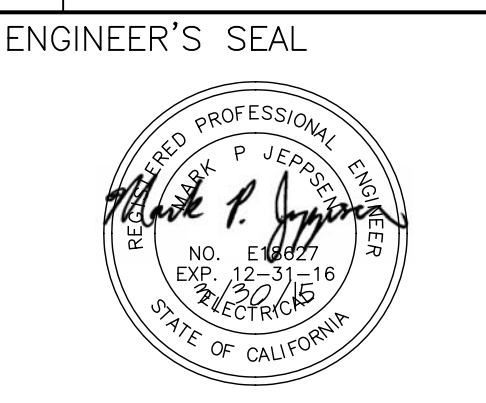
ELECTRICAL PLAN LINETYPES	SCHEMATIC LINETYPES	ABBREVIATIONS	NOTES
<p>EXPOSED CONDUIT</p> <p>EXISTING OR FUTURE EXPOSED CONDUIT</p> <p>UNDERGROUND CONDUIT</p> <p>EXISTING OR FUTURE UNDERGROUND CONDUIT</p> <p>BARE COPPER GROUND CONDUCTOR</p> <p>ELECTRICAL EQUIPMENT</p> <p>EXISTING OR FUTURE ELECTRICAL EQUIPMENT</p> <p>DEMOLITION</p> <p>CAPPED UNDERGROUND CONDUIT</p>	<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>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>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>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, MILLIAMPS</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>NTU NOT TO SCALE</p> <p>NTU TURBIDITY</p> <p>OIT OPERATOR INTERFACE TERMINAL</p> <p>OL OVERLOAD</p> <p>OD 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</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>
ELEC. PLAN SYMBOLS	PLC SYMBOLS	SCHEMATIC SYMBOLS	
<p>SITE PLAN DEVICES</p> <p>X ← X= (SEE BELOW)</p> <p>AE - ANALYZER ELEMENT</p> <p>AIT - ALALYZING 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 DUPLEX RECEPTACLE</p> <p>WP DENOTES RECEPTACLE TYPE (BLANK) = STANDARD INDOORS</p> <p>GFCI = GND FLT CURRENT INT.</p> <p>WP = WEATHER PROOF & GFCI</p> <p>QUADRAPLEX RECEPTACLE</p> <p>WP DUPLEX RECEPTACLE MOUNTED AT 44" AFF</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 (SECONDARY)</p> <p>TERMINAL LABEL (SIZE PERMITTING)</p> <p>PLC PANEL TERMINAL BLOCK</p> <p>TERMINAL LABEL</p> <p>MCC TERMINAL BLOCK</p> <p>TERMINAL LABEL</p> <p>PLC DISCRETE INPUT</p> <p>DISCRETE INPUT LABEL</p> <p>PLC DISCRETE OUTPUT (NORMALLY OPEN)</p> <p>DISCRETE OUTPUT LABEL</p> <p>PLC DISCRETE OUTPUT (NORMALLY CLOSED)</p> <p>DISCRETE OUTPUT LABEL</p> <p>PLC ANALOG INPUT</p> <p>ANALOG INPUT LABEL</p> <p>PLC ANALOG OUTPUT</p> <p>ANALOG OUTPUT LABEL</p> <p>PLC RTD</p> <p>RTD LABEL</p>	<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 CT'S</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>HARMONIC FILTER</p> <p>LOAD REACTOR</p> <p>VARIABLE FREQUENCY DRIVE</p> <p>REDUCED VOLTAGE SOFT STARTER</p> <p>GROUND CONNECTION</p> <p>MOTOR, NUMBER DESIGNATES NEMA HORSEPOWER SIZE</p> <p>MOTOR STARTER, CONTACTOR, RELAY OR TIMER COIL</p> <p>NORMALLY OPEN CONTACT</p> <p>NORMALLY CLOSED CONTACT</p> <p>SOLENOID VALVE</p> <p>TERMINAL BLOCK</p> <p>EQUIPMENT PROGRAMMING CONSOLE</p> <p>2 POSITION SELECTOR SWITCH POSITION</p> <p>LEGEND: X=CLOSED O=OPEN</p> <p>3 POSITION SELECTOR SWITCH HAND - OFF - AUTO POSITION</p> <p>LEGEND: X=CLOSED O=OPEN</p> <p>3 POSITION SELECTOR SWITCH OPEN - CLOSE - AUTO POSITION</p> <p>LEGEND: X=CLOSED O=OPEN</p> <p>3 POSITION SELECTOR SWITCH FORWARD - OFF - REVERSE POSITION</p> <p>LEGEND: X=CLOSED O=OPEN</p> <p>NORMALLY CLOSED PUSH BUTTON</p> <p>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</p> <p>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>GROUND FAULT TRIP DEVICE</p>	
CONDUIT CALLOUT	EQUIPMENT CALLOUT		
<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>EQUIP. TAG EQUIPMENT CALLOUT</p> <p>DESCRIPTOR #1</p> <p>DESCRIPTOR #2</p> <p>DESCRIPTOR #3</p> <p>100 TYP DETAIL CALLOUT</p> <p>FE FIELD INSTRUMENT CALLOUT</p>		



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



CITY OF IMPERIAL	
CITY ENGINEER	DATE
REFERENCES	



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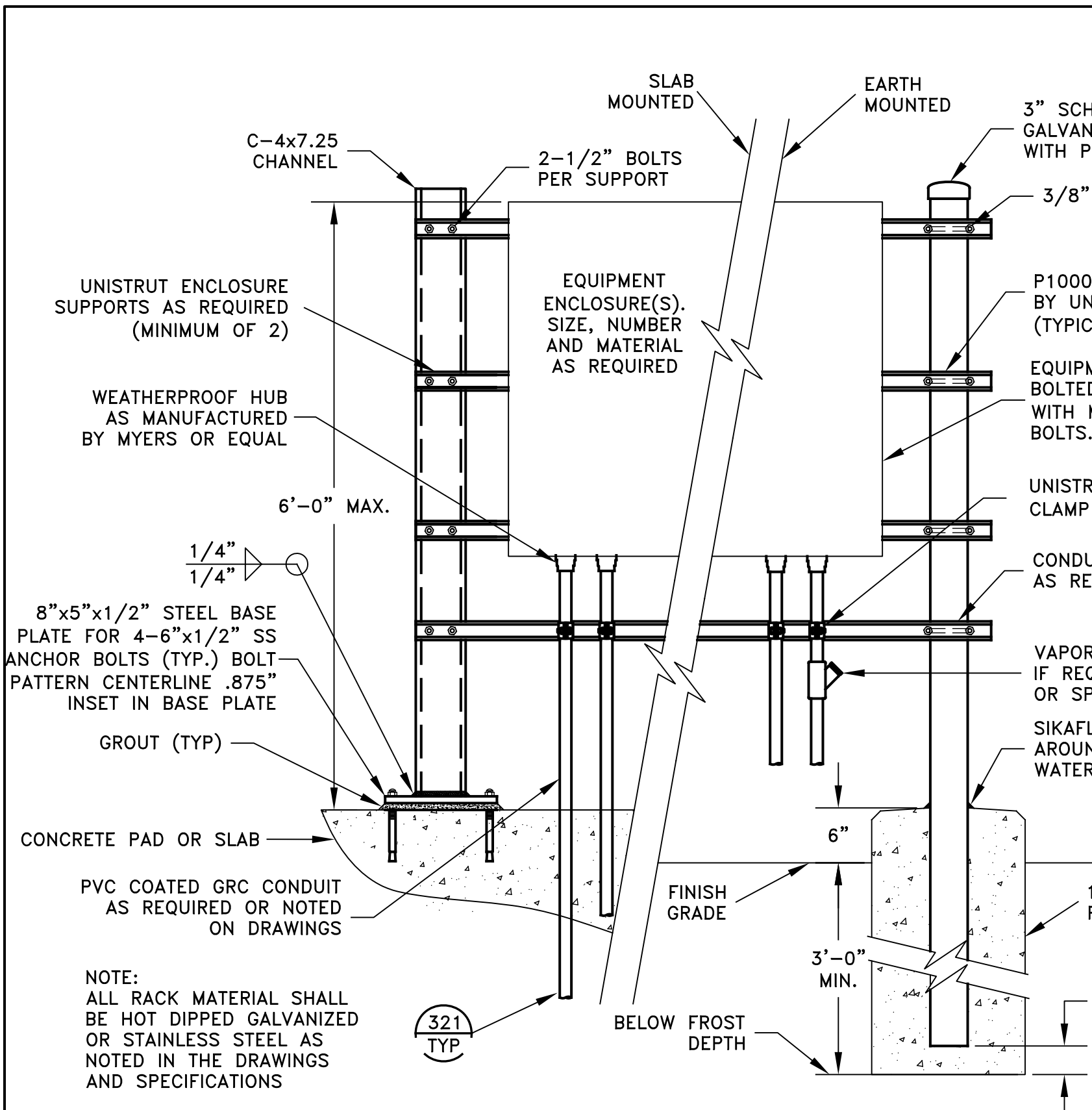
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TR	6/11/13
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MPJ	6/11/13
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SCALE: NONE	

CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA	
LA BRUCHERIE LIFT STATION IMPROVEMENTS	ELECTRICAL LEGEND
DWG. NO.	GE-1

BID NO.	SHEET
2015-07	20
	OF 25

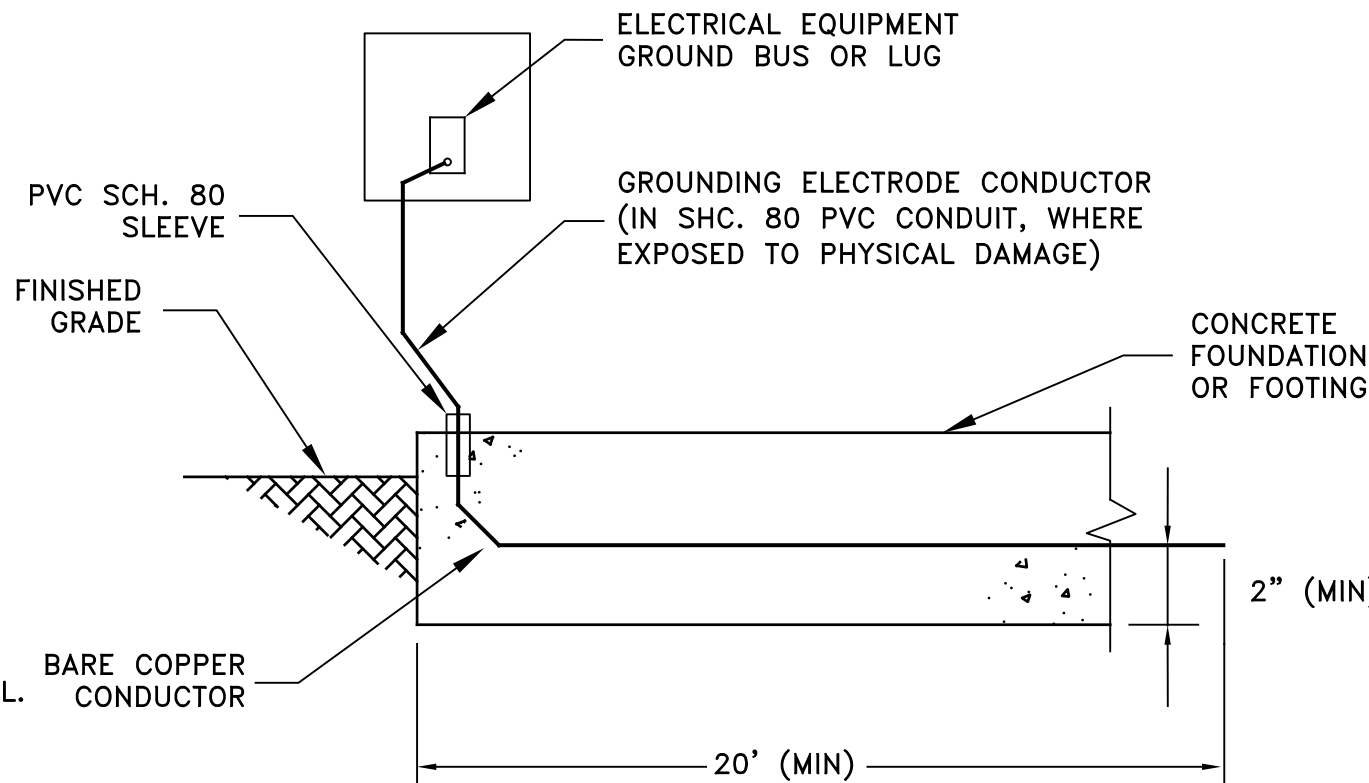
ISSUED FOR BID

S:\PROJECTS\ENGINEERING\000\0689 IMPERIAL, CALIFORNIA\3 B STREET LIFT STATION\3RM CAD FILES\10 GE-1 ELECTRICAL LEGEND (20)DWG 9/12/2012 8:20 AM



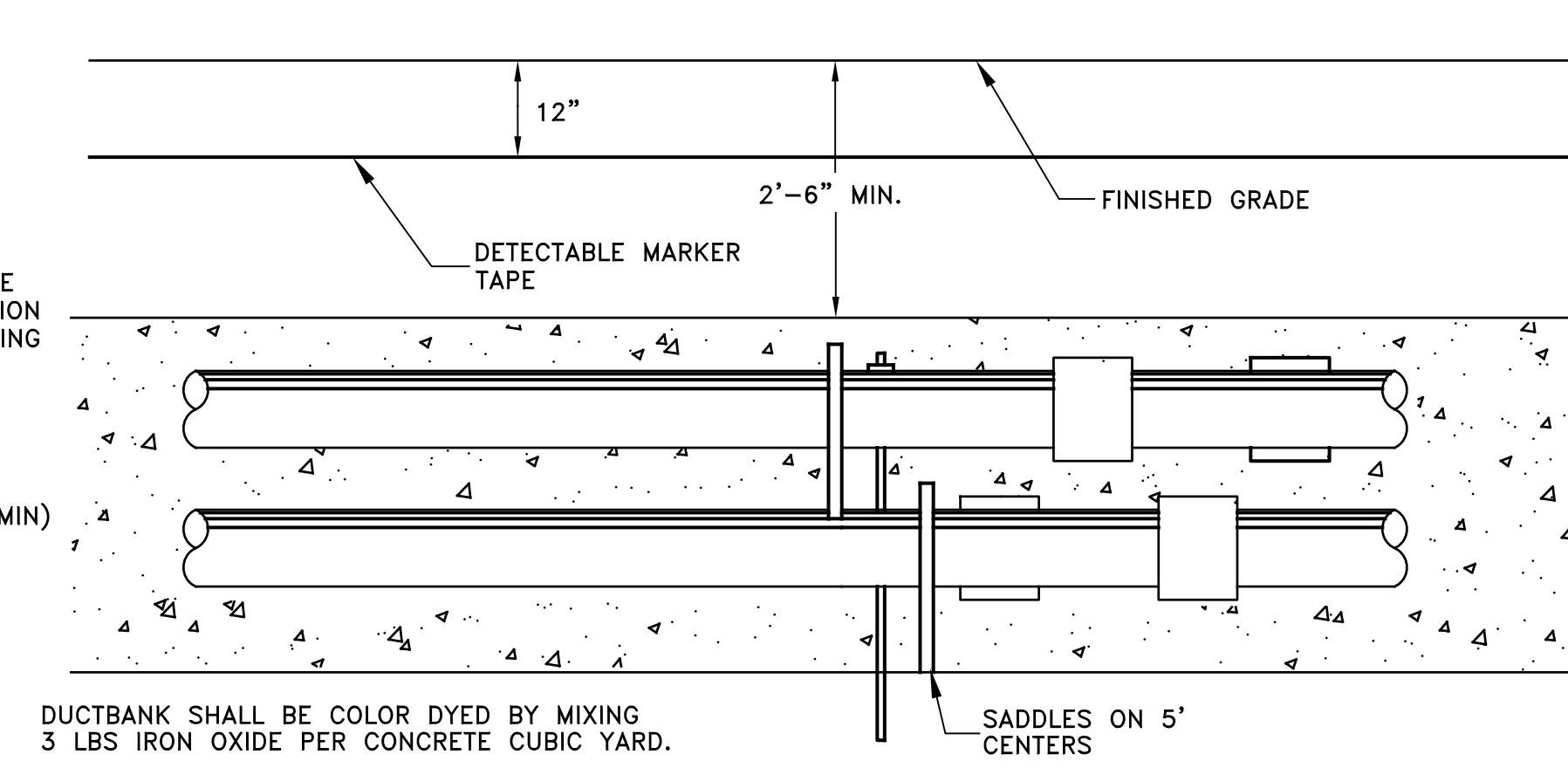
EQUIPMENT RACK DETAIL

015
TYP NO SCALE



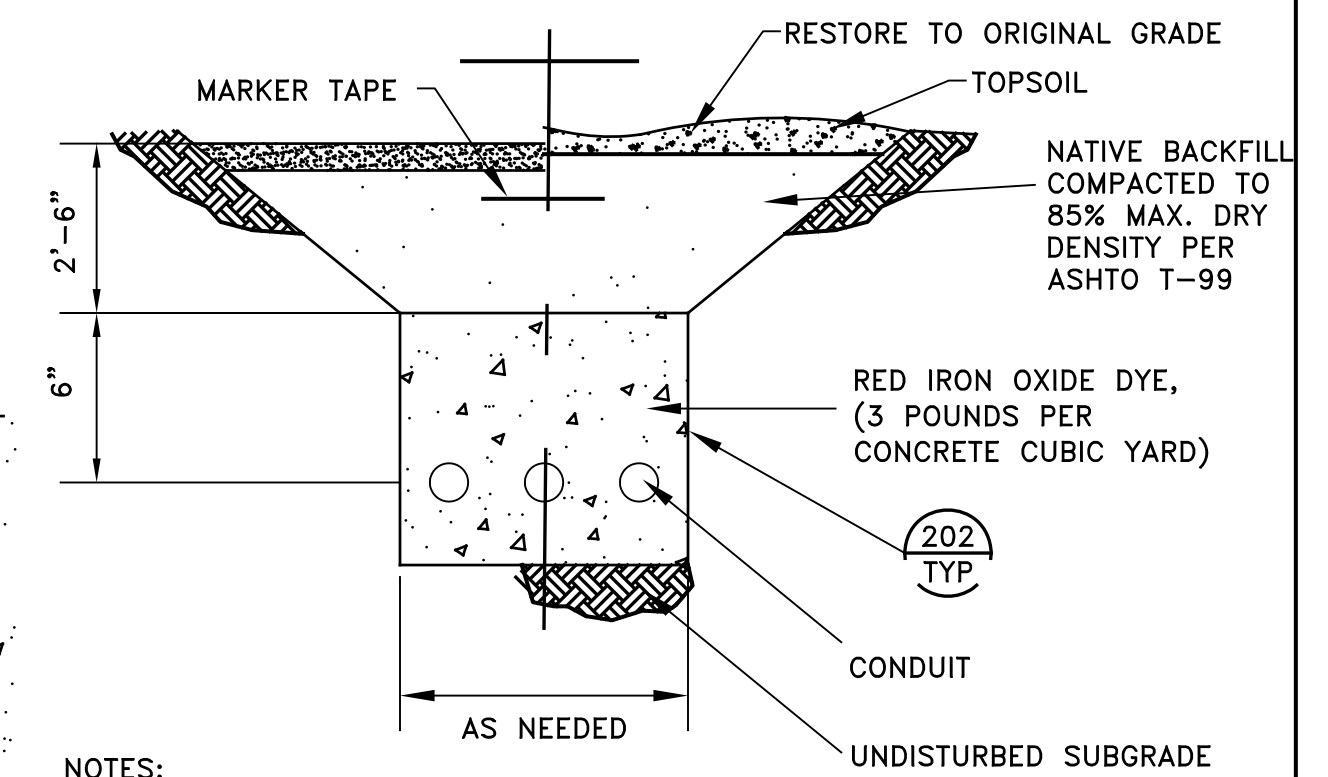
GROUNDING DETAIL ("UFER")

140
TYP SCALE: NONE



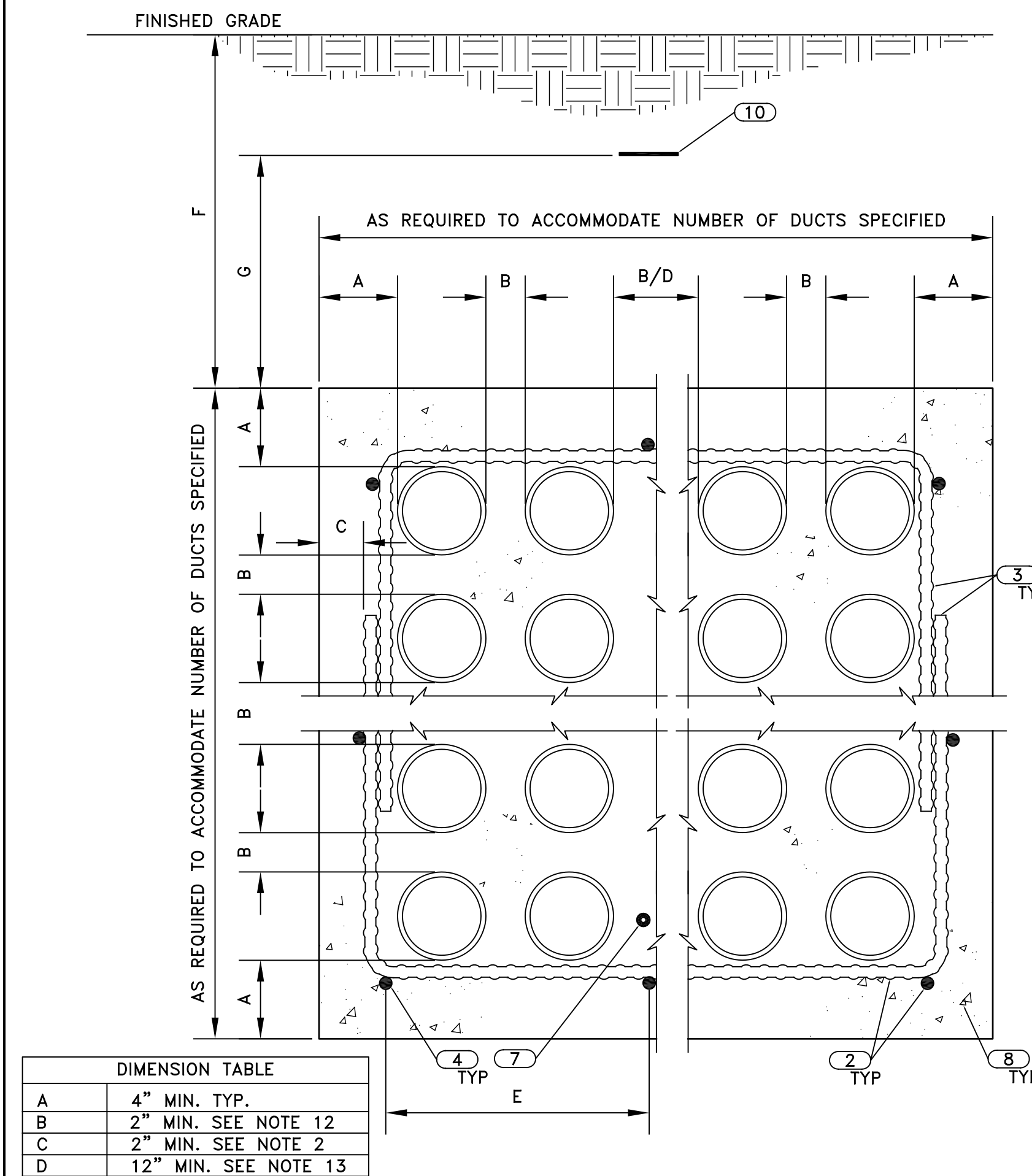
DUCTBANK DETAIL

203
TYP SCALE: NONE



TYPICAL TRENCH DETAIL FOR BELOW 600 VOLTS

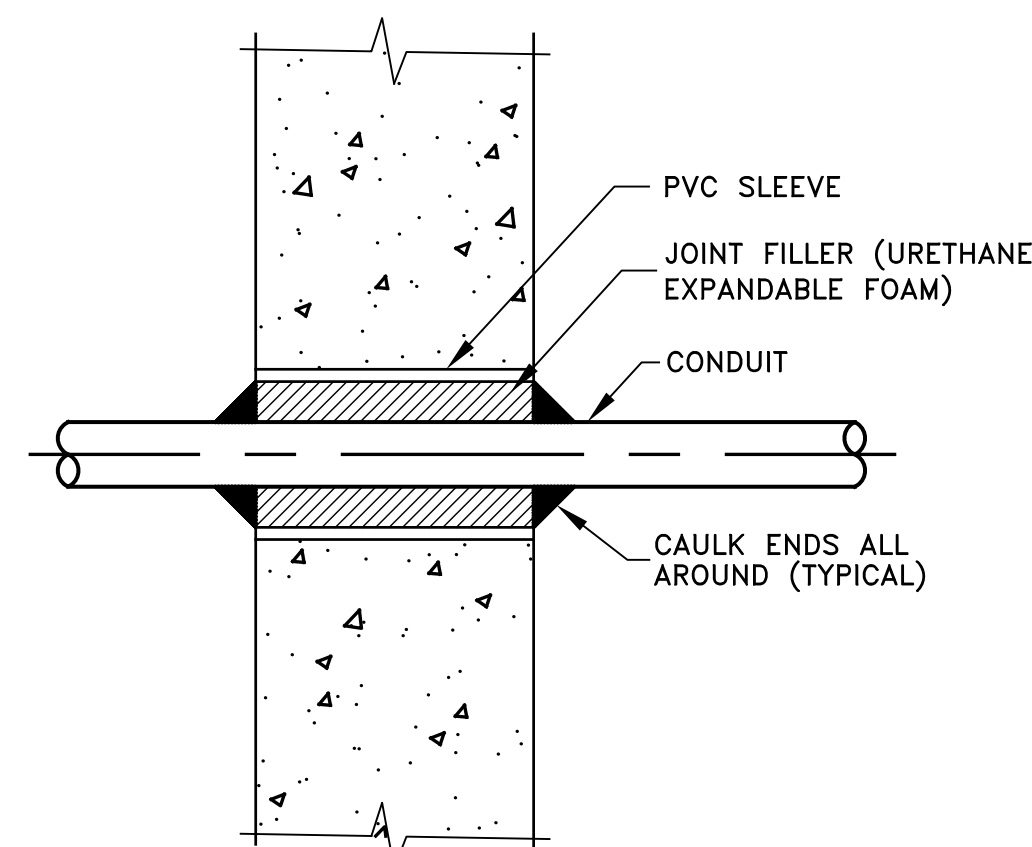
204
TYP SCALE: NONE



MULTIPLE DUCT DUCTBANK DETAIL

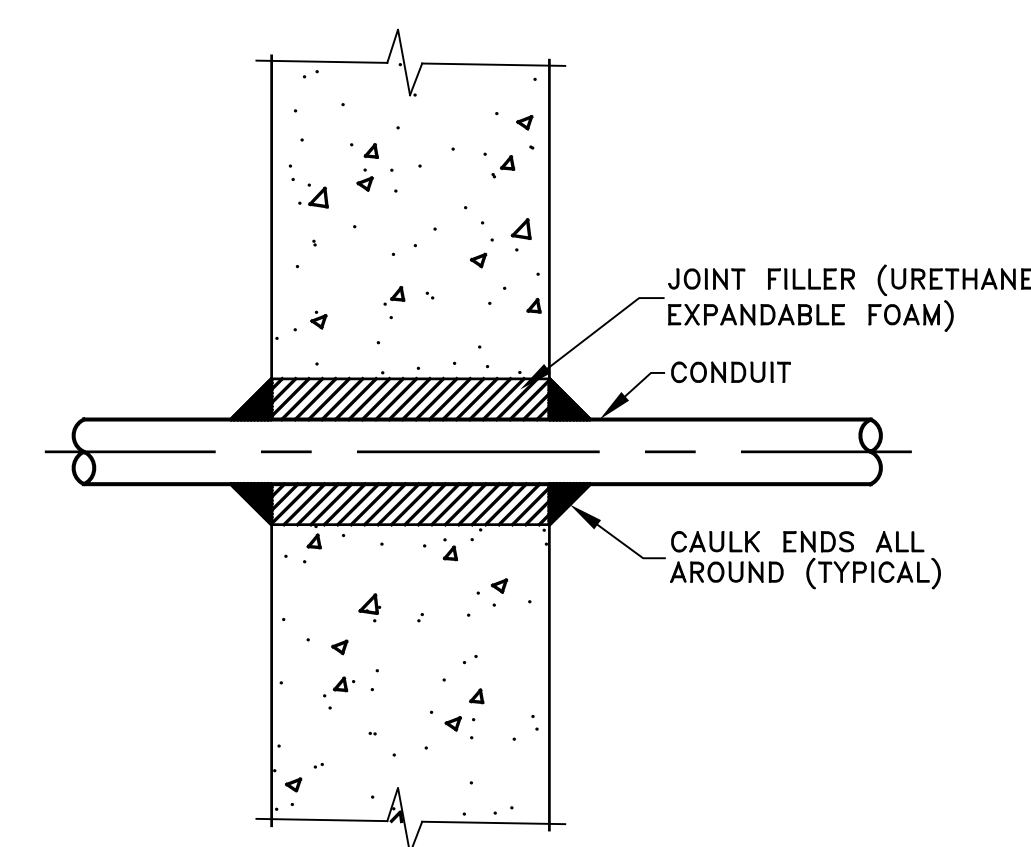
202
TYP SCALE: N.T.S.

- NOTES:
1. ALL DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
 2. ALL REBAR SHALL BE #4 BAR AND HAVE A MINIMUM CONCRETE EMBEDMENT OF 2" (EDGE OF REBAR TO OUTSIDE SURFACE OF CONCRETE).
 3. REBAR HOOPS SHALL OVERLAP 9" MINIMUM AND SHALL BE PROVIDED EVERY 4 FEET HORIZONTALLY. HOOPS SHALL NOT BE REQUIRED ON SINGLE ROW DUCTBANKS.
 4. 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.
 5. 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).
 6. DUCTS SHALL BE SECURED TO PREVENT FLOATING DURING THE CONCRETE ENCASEMENT.
 7. PROVIDE A 4/0 BARE CONTINUOUS COPPER GROUND. SEE GROUNDING SPECIFICATION SECTION 16170.
 8. DUCTBANK CONCRETE SHALL BE COLOR DYED RED BY MIXING 3 LBS. IRON OXIDE PER CUBIC YARD OF CONCRETE.
 9. ALL DUCTBANKS SHALL BE SLOPED @ 1/4" PER 10 FEET TO ALLOW DRAINAGE.
 10. 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.
 11. REFER TO CONDUIT SCHEDULE FOR WIRE FILL OF ALL DUCTS.
 12. ALL DUCTS OF THE SAME DUTY (480V POWER, 120V POWER, 120V CONTROLS, AND SIGNAL) SHALL BE SEPARATED BY A MINIMUM OF 2".
 13. SIGNAL DUCTS SHALL BE SEPARATED FROM 480V POWER BY A MIN. OF 12". SIGNAL DUCTS SHALL BE SEPARATED FROM 120V POWER DUCTS BY 6" MIN. AND FROM 120V CONTROL BY MIN. OF 4" UNLESS NOTED OTHERWISE ON THE DRAWINGS.



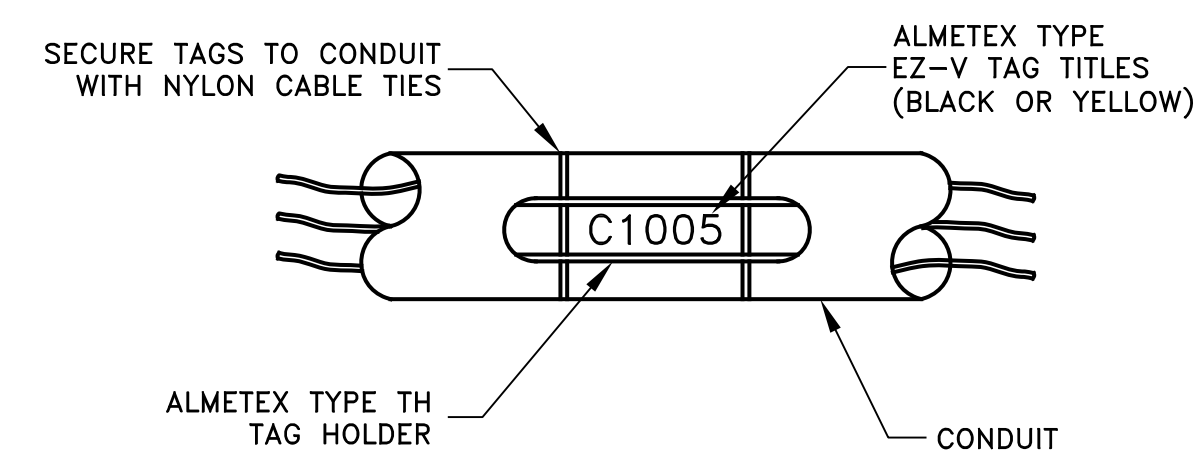
CONDUIT PENETRATION AT NEW WALL OR SLAB

300
TYP SCALE: NONE



CONDUIT PENETRATION AT EXISTING WALL OR SLAB

301
TYP SCALE: NONE



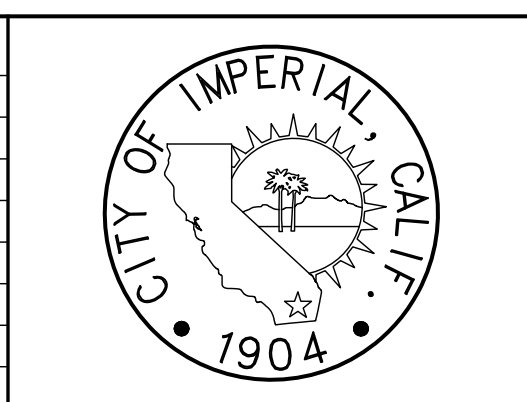
CONDUIT MARKING SYSTEM

360
TYP SCALE: NONE



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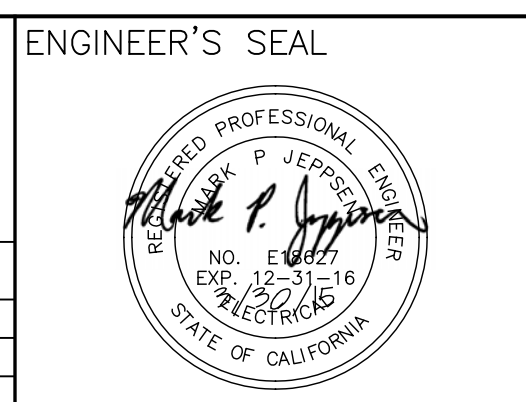
DESIGNED BY: DRAWN BY: CHECKED BY:



CITY OF IMPERIAL

CITY ENGINEER: _____ DATE: _____

REFERENCES

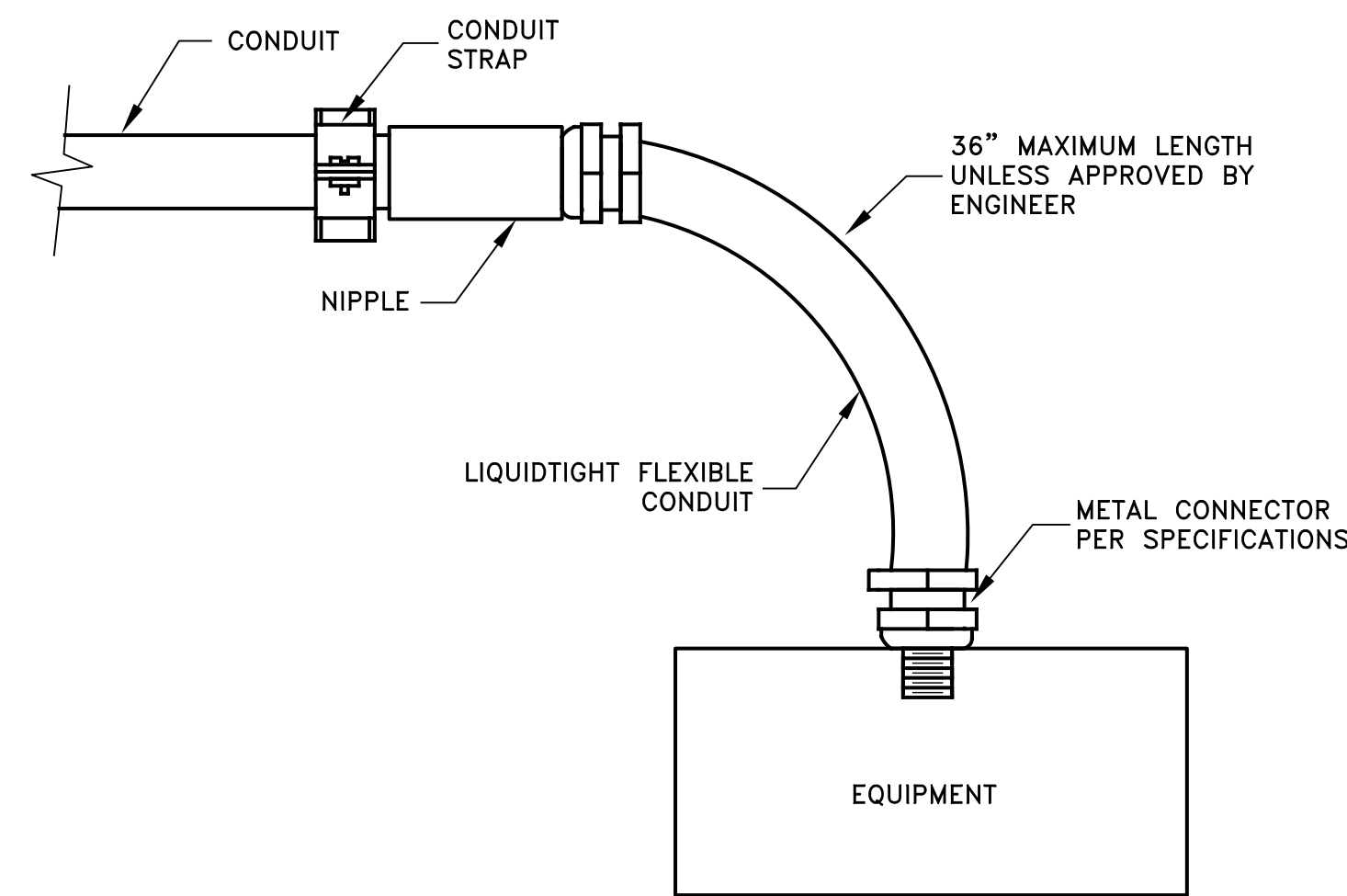


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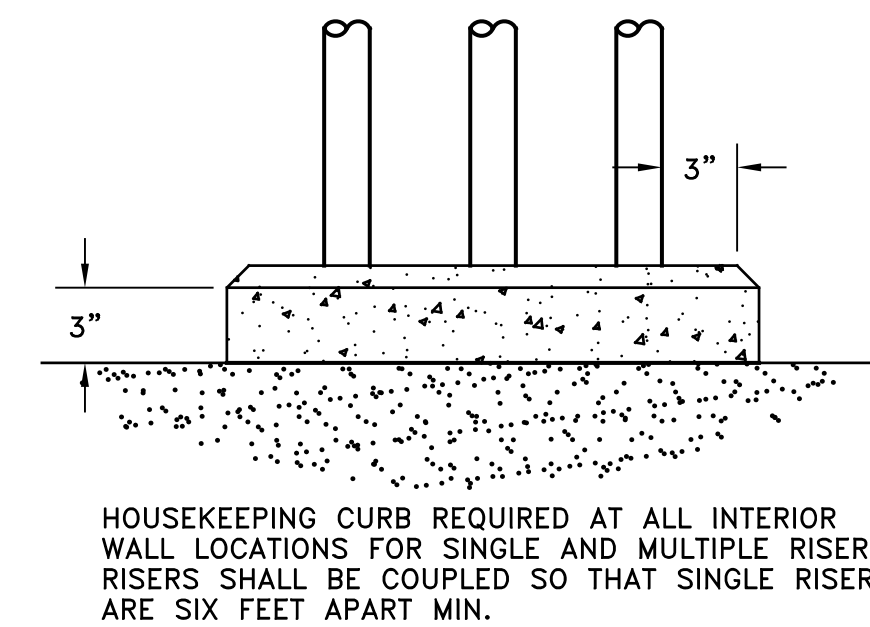
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CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA		BID NO. 2015-07
LA BRUCHERIE LIFT STATION IMPROVEMENTS		SHEET 21 OF 25
ELECTRICAL DETAILS		DWG. NO. GE-2

ISSUED FOR BID

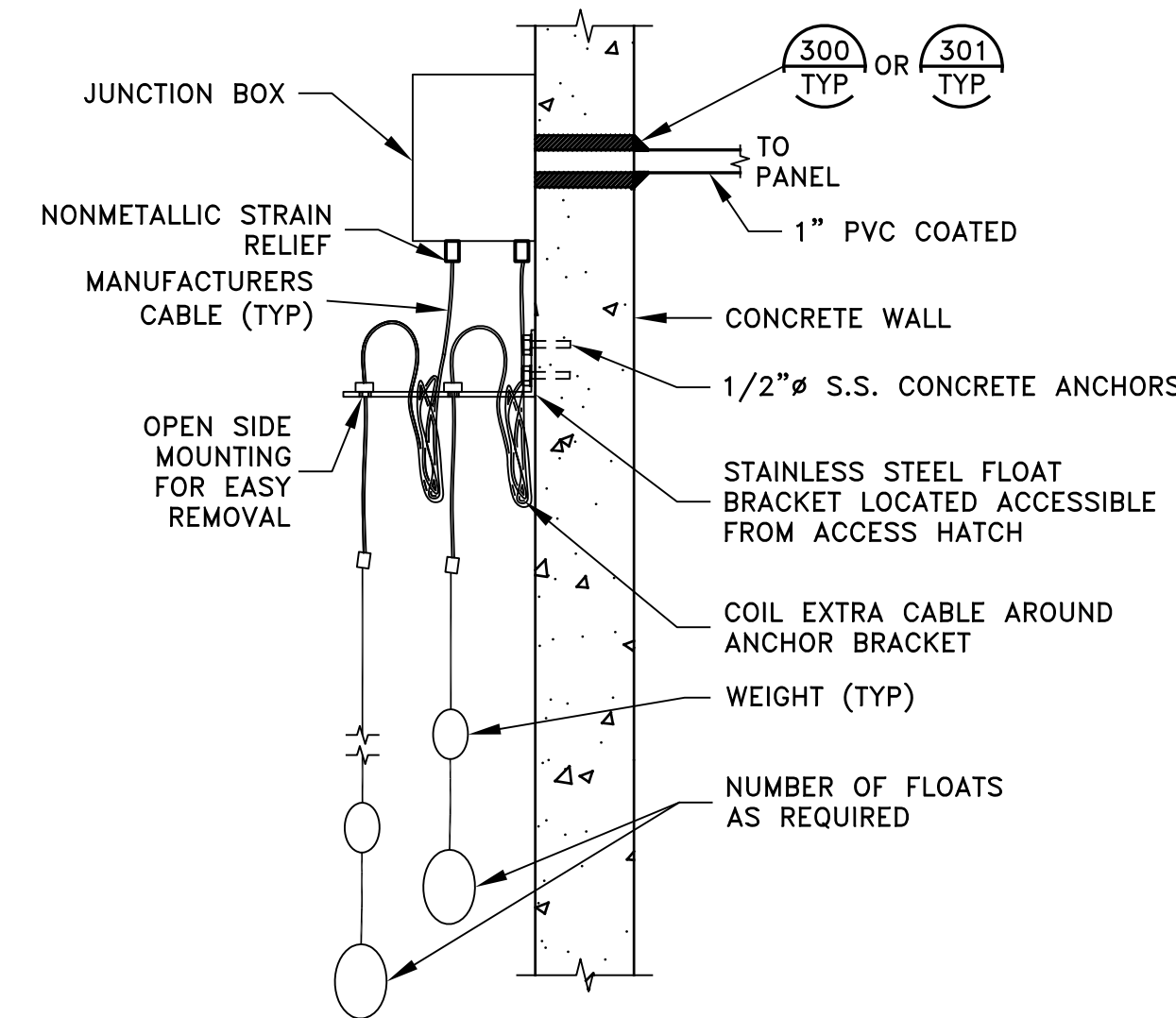


365 TYP **FLEXIBLE CONDUIT DETAIL**
SCALE: NONE

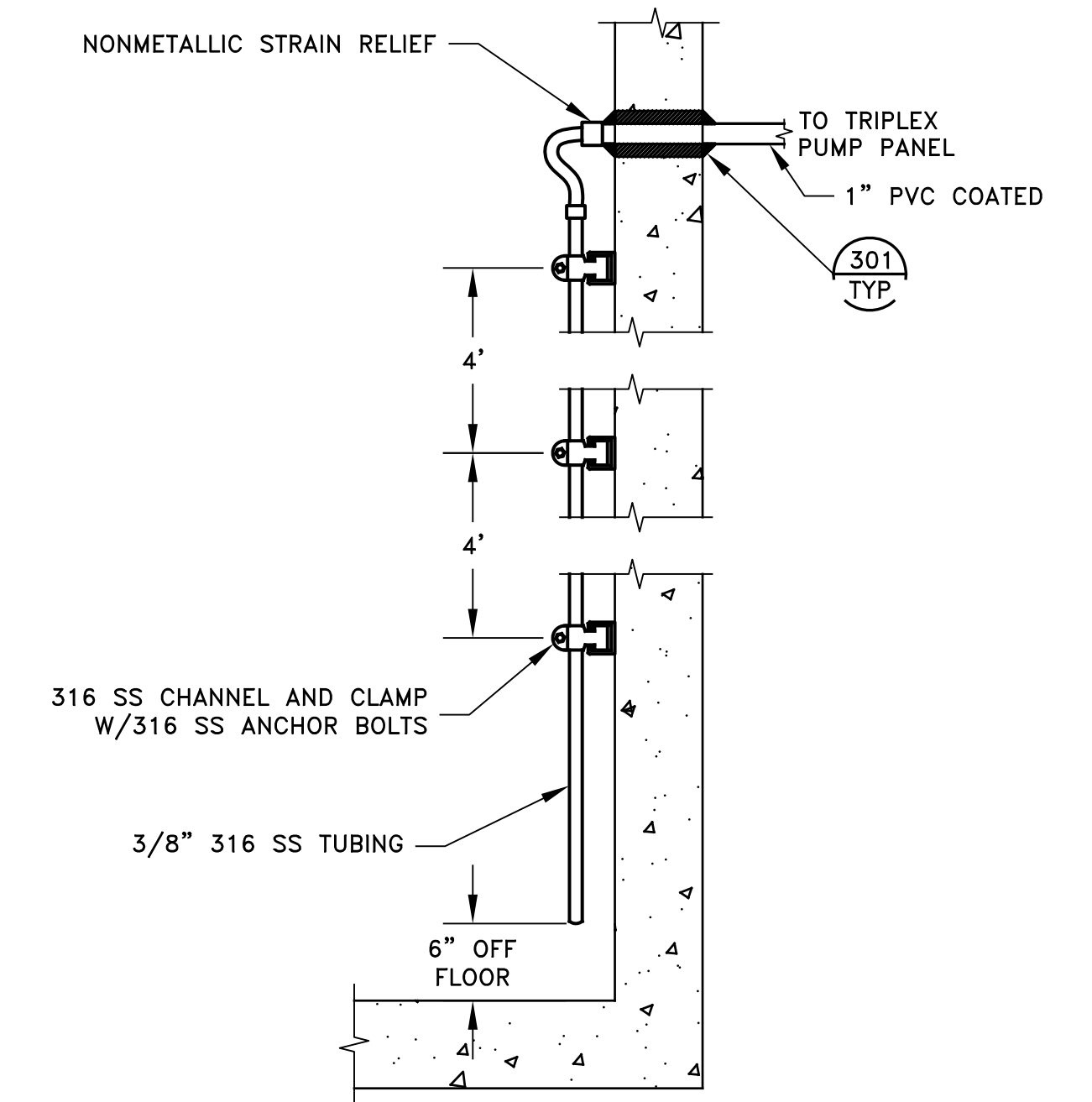


HOUSEKEEPING CURB REQUIRED AT ALL INTERIOR WALL LOCATIONS FOR SINGLE AND MULTIPLE RISERS. RISERS SHALL BE COUPLED SO THAT SINGLE RISERS ARE SIX FEET APART MIN.

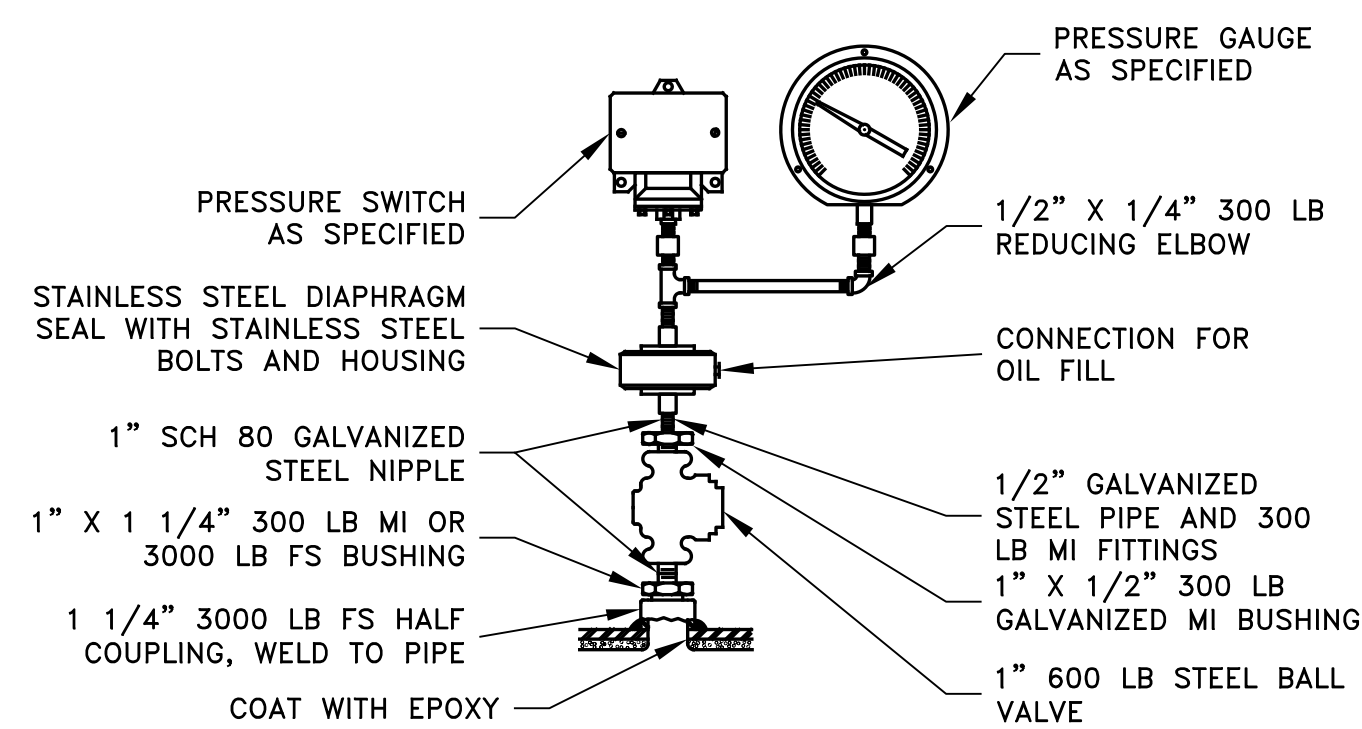
420 TYP **CONCRETE HOUSEKEEPING CURB DETAIL**
SCALE: NONE



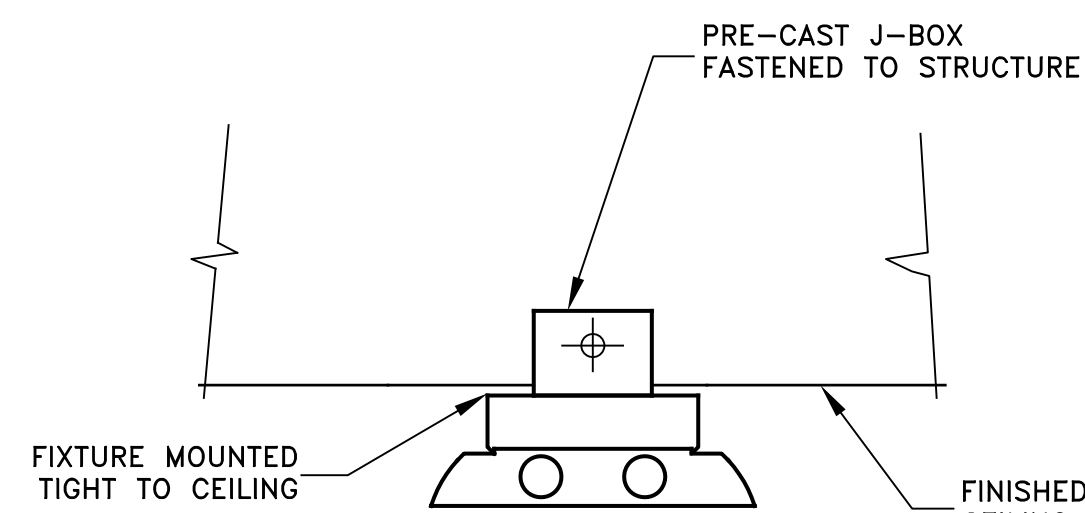
509 TYP **SUSPENDED FLOAT DETAIL**
SCALE: NONE



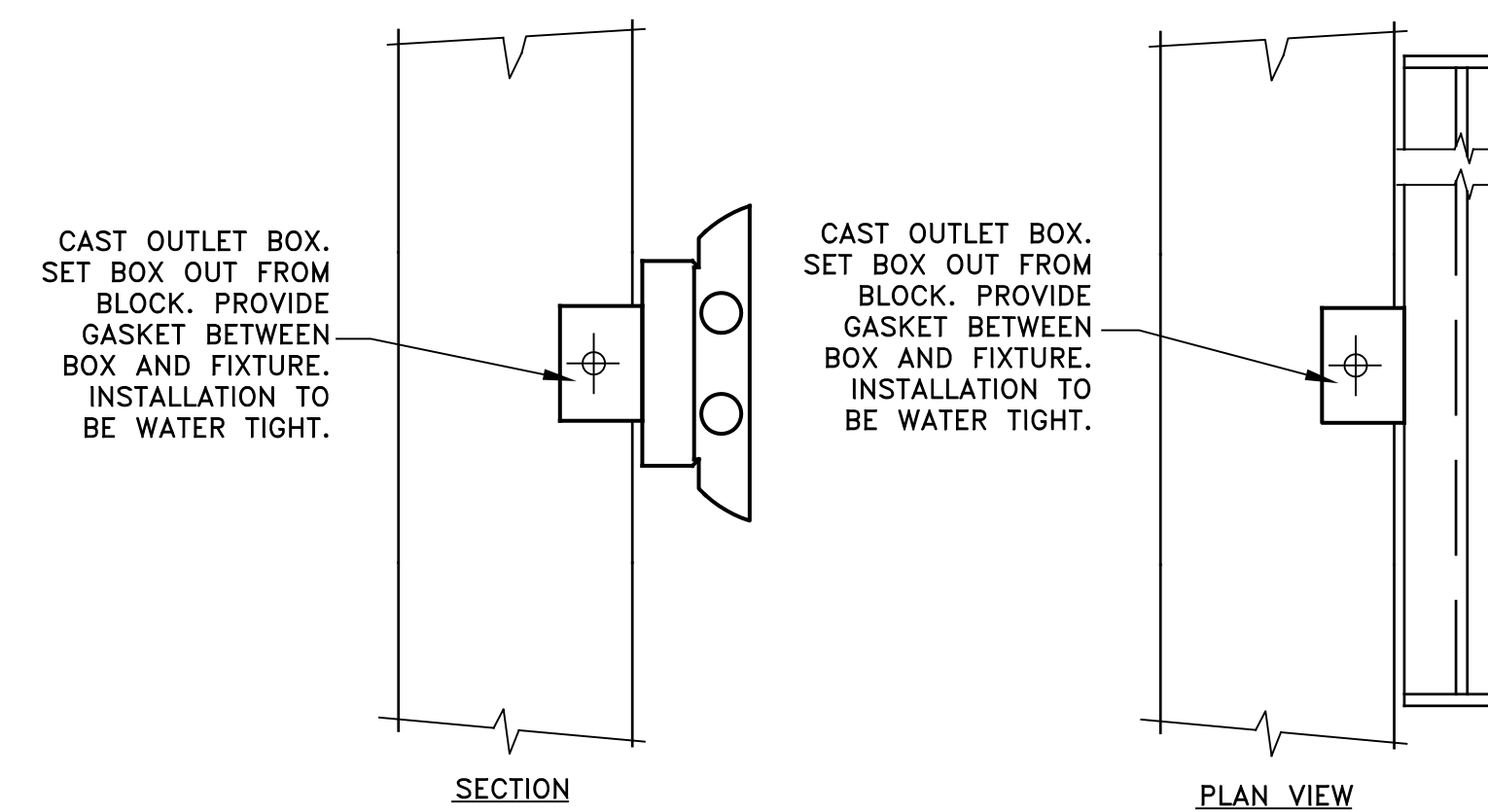
510 TYP **BUBBLE LINE DETAIL**
SCALE: NONE



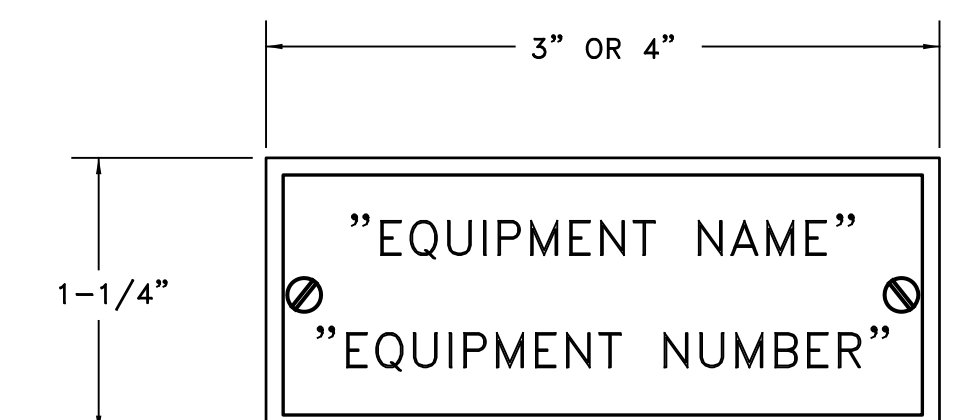
592 TYP **PRESSURE SWITCH AND GAUGE**
SCALE: NONE



800 TYP **CEILING HUNG FIXTURE DETAIL**
SCALE: NONE



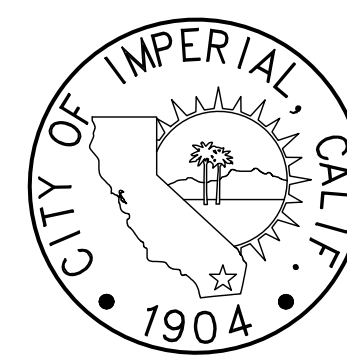
801 TYP **WALL HUNG FIXTURE DETAIL**
SCALE: NONE



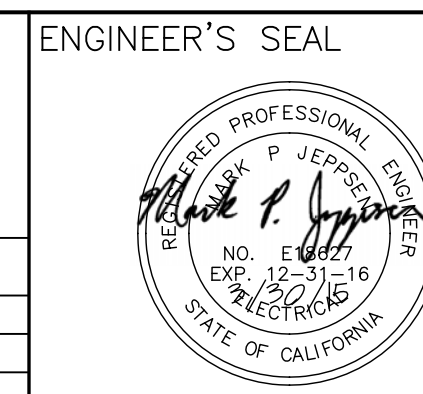
- 900 TYP** **NAMEPLATE DETAIL**
SCALE: NONE
- NOTES:
- ALL LETTERS TO BE 1/4" UNLESS NOTED OTHERWISE.
 - ALL NAMEPLATES TO BE MOUNTED ON THE VERTICAL CENTERLINE OF THE CUBICAL OR DEVICE.
 - ATTACH ALL NAMEPLATES WITH STAINLESS STEEL SCREWS.
 - PROVIDE BLANK NAMEPLATES FOR ALL SPARE AND FUTURE DEVICES.



REVISIONS				
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CITY OF IMPERIAL	
CITY ENGINEER	DATE
REFERENCES	

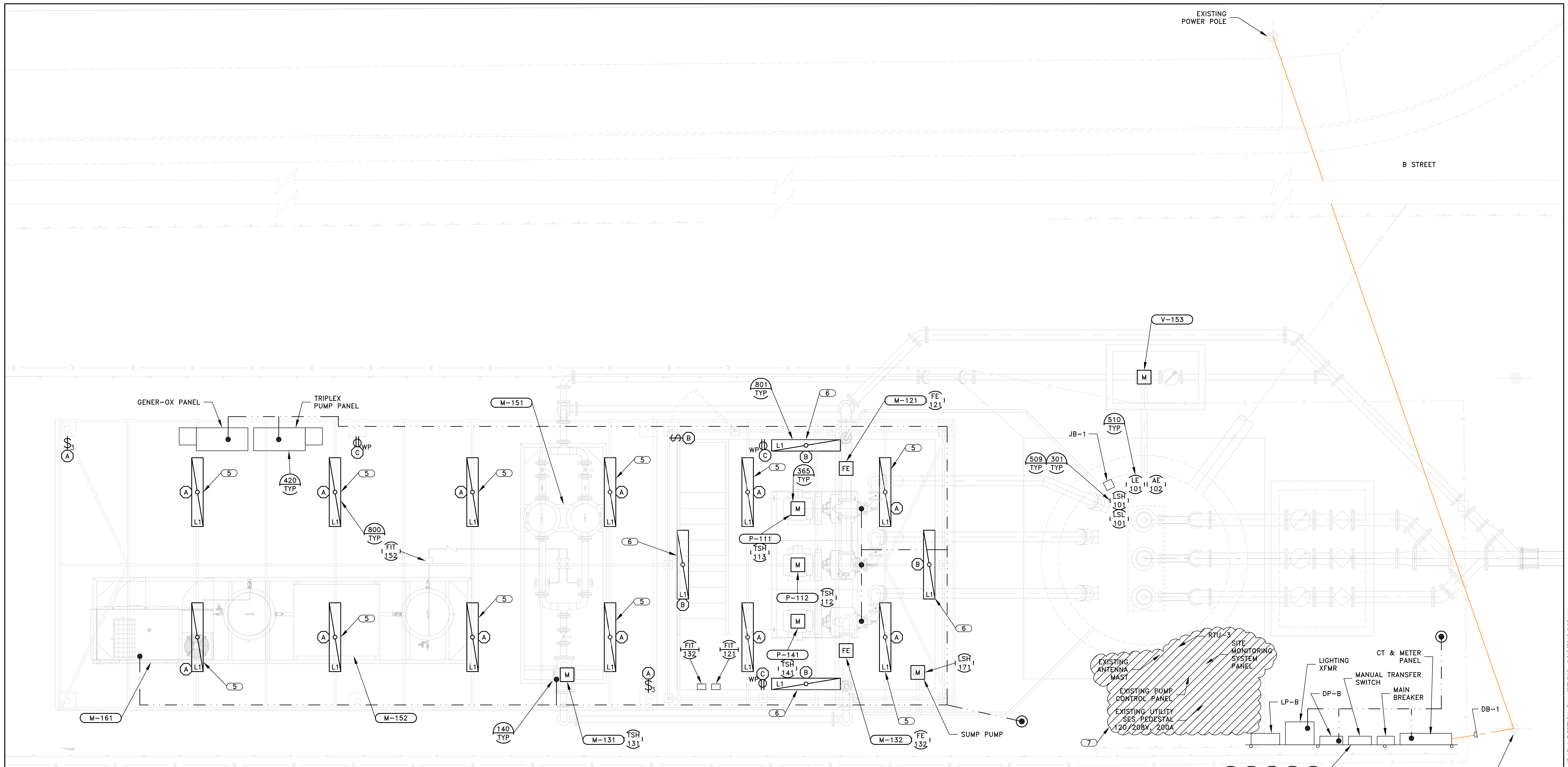


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Bountiful, Utah 84010
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	DATE
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TRACED: N/A	
CHECKED: MPJ	6/11/13
SUBMITTED: ---/--/--	
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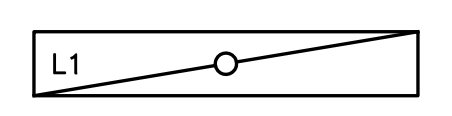
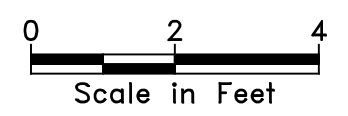
CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA	BID NO. 2015-07
LA BRUCHERIE LIFT STATION IMPROVEMENTS ELECTRICAL DETAILS	SHEET 22 OF 25
DWG. NO.	GE-3

ISSUED FOR BID



- NOTES:**
- 1 CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. ALL EXPOSED CONDUIT SHALL BE PVC COATED.
 - 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 ALL EQUIPMENT AND INSTRUMENTATION TO BE INSTALLED BY CONTRACTOR.
 - 5 INSTALL LIGHTS ON CANOPY BEAMS.
 - 6 INSTALL LIGHTS ON PUMP VAULT WALL.
 - 7 EXISTING PANELS, ANTENNA AND UTILITY PEDESTAL TO BE REMOVED AND SALVAGED TO OWNER. REMOVE EXISTING WIRE FROM PANELS TO DESTINATION.
 - 8 CONTRACTOR SHALL PROVIDE 2 CONCRETE ENCASED ELECTRODES IN FOOTINGS PER SPECIFICATIONS 60" PER CONDUCTOR.
 - 9 CONTRACTOR SHALL INSTALL (2) 10"x3/4"Ø COPPER GROUND RODS 10' MINIMUM SPACING.
 - 10 BOND ALL BUILDING STEEL TO GROUND PER NEC.

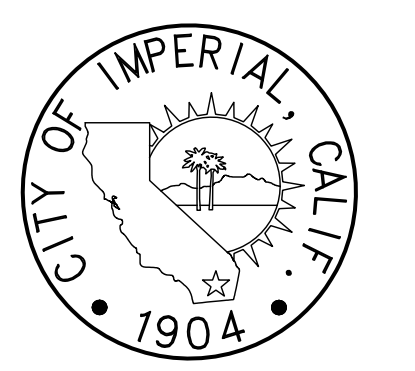
LIFT STATION PLAN



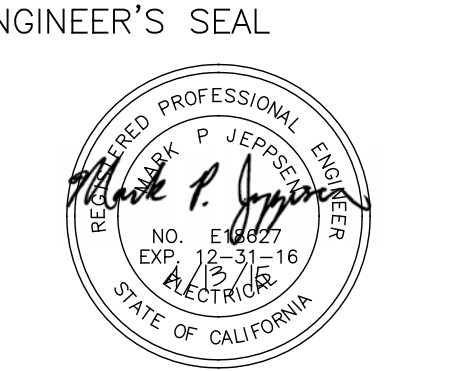
- ELECTRICAL LEGEND**
- DAY-BRITE WET LOCATION VAPORLUME FLUORESCENT FIXTURE. MODEL DW2AE254HO-120-1/2. (48" DUAL ELEMENT SURFACE MOUNT WET LOCATION FLUORESCENT FIXTURE WITH 2-LAMP BALLAST).
 - WEATHER-PROOF OUTLET GFCI PROTECTED
 - DEVICES WITH SAME LETTER CODE (I.E. A,B,C) REPRESENT DEVICES ON SAME CIRCUIT.



REVISIONS				
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DESIGNED BY:	DRAWN BY:	CHECKED BY:		



CITY OF IMPERIAL	
CITY ENGINEER	DATE
REFERENCES	



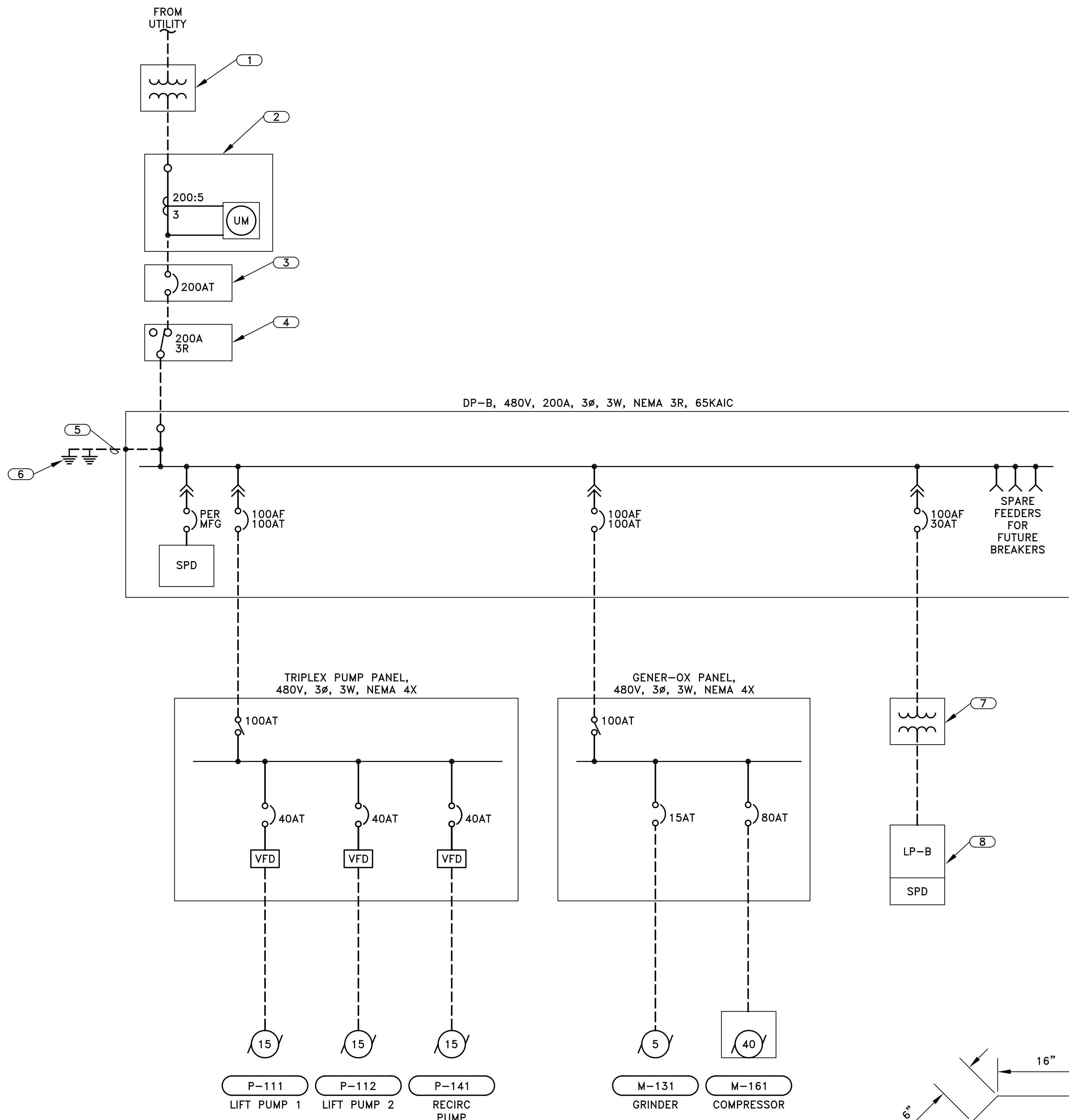
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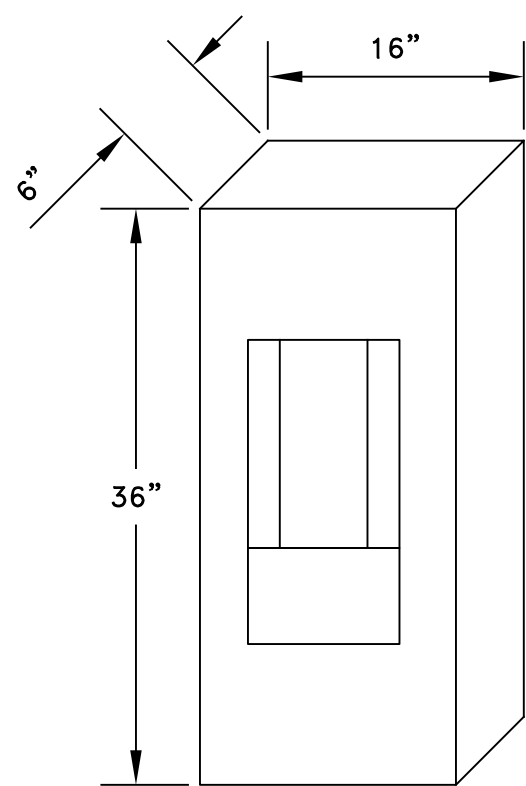
CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA	
LA BRUCHERIE LIFT STATION IMPROVEMENTS ELECTRICAL ELECTRICAL PLAN	
DWG. NO.	LE-1

BID NO.	SHEET
2015-07	23
OF 25	

ISSUED FOR BID
S:\PROJECTS\ENGINEERING\000\0899 IMPERIAL, CALIFORNIA\3 B STREET LIFT STATION\SM CAD FILES\13 LE-1 ELECTRICAL PLAN (23).DWG 9/12/2012 9:20 AM



LIFT STATION ONELINE DIAGRAM



DP-B SECTION

SCALE: 1" = 1'

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
NON-MOTOR LOADS			
LIGHTING TRANSFORMER	15.0		11.7
TRIPLEX PANEL			58.2
GENER-OX PANEL			59.6
SUBTOTAL			129.5
+ 25% OF LARGEST MOTOR			14.6
TOTAL AMPS @ 480V/3PHASE			144.0
SERVICE SIZE (AMPS)			200.0

DP-B CALCULATIONS

CIRCUIT DESCRIPTION	BKR	CIRCUIT	MAIN CB: 40 AMP		CIRCUIT	BKR	CIRCUIT DESCRIPTION
			LINE 1	LINE 2			
CANOPY LIGHTS (A, 12)	20/1	1	1284				
			428		2	20/1	PUMP VAULT LIGHTS (B, 4)
SUMP PUMP	20/1	3		667	4	20/1	SPARE
RECEPTACLES (C, 3)	20/1	5	540		6	20/1	SPARE
GENER-OX PANEL	20/1	7			8	20/1	FIT-121
SPARE	20/1	9		100	10	20/1	SPARE
FIT-132	20/1	11		100	12	20/1	SPARE
SPARE	20/1	13			14	20/1	SPARE
SPARE	20/1	15			16	20/1	SPARE
SPARE	20/1	17			18	20/1	SPARE
CONNECTED VA PER PHASE			2252.0	867.0	NOTES:		
CONNECTED AMPS PER PHASE			18.8	7.2			
25% OF CONTINUOUS & LIGHTING LOAD (VA)			428.0	50.0			
LARGEST MOTOR (25%)			0.0	166.8			
CODE VA PER PHASE			2680.0	1083.8			
CODE AMPS PER PHASE			22.3	9.0			

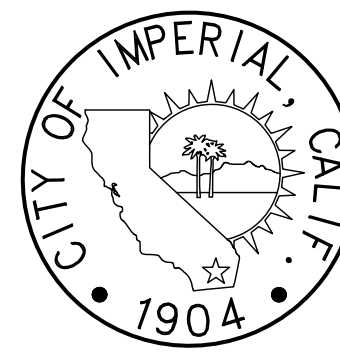
LP-B CALCULATIONS

NOTES:

- 1 POLE MOUNTED UTILITY TRANSFORMER
- 2 CT AND METER COMBINATION CABINET PER EUSERC 313 AND IID REQUIREMENTS
- 3 MAIN BREAKER
- 4 MANUAL TRANSFER SWITCH WITH GENERATOR PLUG
- 5 MAIN BONDING JUMPER PER UTILITY REQUIREMENTS
- 6 GROUND GRID
- 7 LIGHTING XFMR 15KVA, 480V PRIMARY 120V/240V SECONDARY 1 ϕ , NEMA 3R
- 8 LIGHTING PANEL LP-B, 120/240V, 1 ϕ , 3W NEMA 4 60A, 10KAIC



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

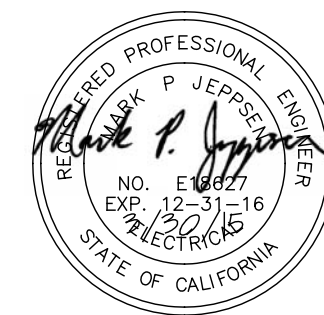


CITY OF IMPERIAL

CITY ENGINEER _____ DATE _____

REFERENCES

ENGINEER'S SEAL

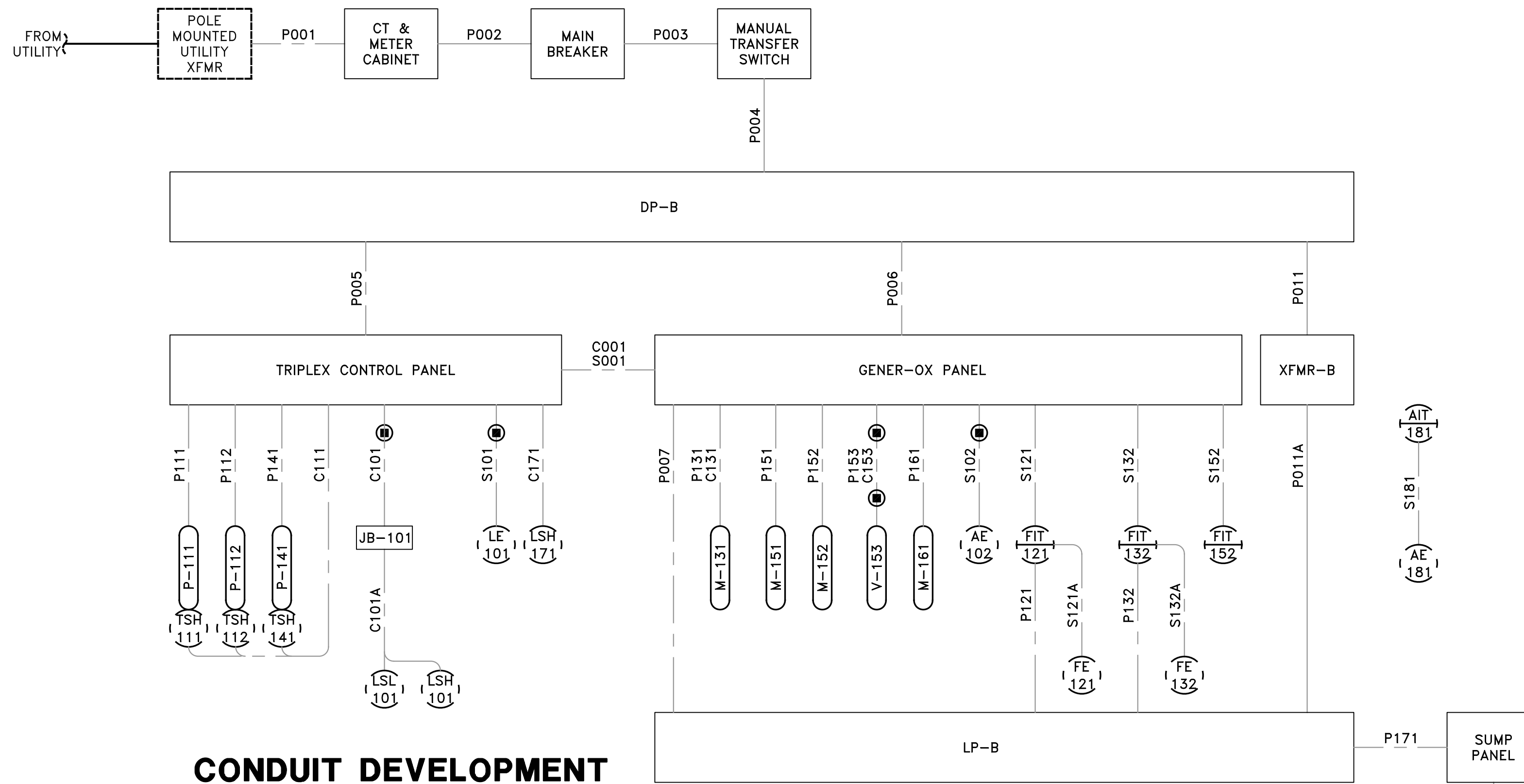


533 W 2600 S, Suite 25
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Phone: (801) 677-0011
www.skm-inc.com

DESIGNED:	DATE
MPJ	6/11/13
TR	6/11/13
N/A	-
MPJ	6/11/13
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NONE	

CITY OF IMPERIAL IMPERIAL COUNTY, CALIFORNIA		BID NO. 2015-07
LA BRUCHERIE LIFT STATION IMPROVEMENTS ELECTRICAL ONELINE & CALCULATIONS		SHEET 24 of 25
DWG. NO.		E-1

ISSUED FOR BID



CONDUIT DEVELOPMENT

LINETYPE LEGEND

- ABOVE GROUND CONDUIT
- BELOW GROUND CONDUIT
- EXISTING ABOVE GROUND CONDUIT
- EXISTING BELOW GROUND CONDUIT
- EXPOSED WIRE

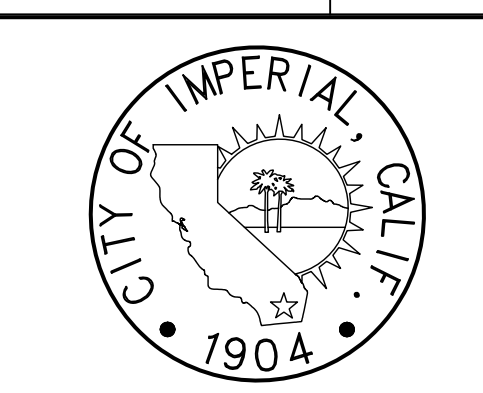
CONDUIT	SIZE	CONDUCTORS	SERVICE	VOLTAGE	ABOVE GROUND MATERIAL	UNDERGROUND MATERIAL	FROM	TO	DUCTBANKS	COMMENTS
C001	1"	5 #14	CONTROL	120VAC	PVC COATED GRS	PVC SCH 40	TRIPLEX PUMP PANEL	GENER-OX PANEL		
C101	1"	5 #14	CONTROL	120VAC	PVC COATED GRS	PVC SCH 40	TRIPLEX CONTROL PANEL	JB-101		
C101A	1"	2 - MFG CABLE	CONTROL	120VAC	PVC COATED GRS	PVC SCH 40	JB-101	LSL-101; LSH-101		
C111	1"	6 #14	CONTROL	120VAC	PVC COATED GRS	PVC SCH 40	TRIPLEX CONTROL PANEL	P-111; P-112; P-141 (LIFT & RECIRC PUMP TSH'S)		
C131	1"	2 #14	CONTROL	120VAC	PVC COATED GRS	PVC SCH 40	GENER-OX PANEL	M-131 (GRINDER)		
C153	1"	5 #14	CONTROL	120VAC	PVC COATED GRS	PVC SCH 40	GENER-OX PANEL	V-153 (ACTUATED VALVE)		
C171	1"	1 - MFG CABLE	CONTROL	120VAC	PVC COATED GRS	PVC SCH 40	TRIPLEX CONTROL PANEL	LSH-171		
P001	3"	WIRE BY UTILITY	POWER	480VAC	PER UTILITY REQ.	PVC SCH 40	UTILITY TRANSFORMER	CT & METER CABINET	DB-1	
P002	3"	3 3/0 W/ #3 GND	POWER	480VAC	PVC COATED GRS		CT & METER CABINET	MAIN BREAKER		
P003	3"	3 3/0 W/ #3 GND	POWER	480VAC	PVC COATED GRS		MAIN BREAKER	MANUAL TRANSFER SWITCH		
P004	3"	3 3/0 W/ #3 GND	POWER	480VAC	PVC COATED GRS		MANUAL TRANSFER SWITCH	DISTRIBUTION PANEL (DP-B)		
P005	1.5"	3 #3 W/ #6 GND	POWER	480VAC	PVC COATED GRS	PVC SCH 40	DISTRIBUTION PANEL (DP-B)	TRIPLEX CONTROL PANEL	DB-2	
P006	1.5"	3 #3 W/ #6 GND	POWER	480VAC	PVC COATED GRS	PVC SCH 40	DISTRIBUTION PANEL (DP-B)	GENER-OX PANEL	DB-2	
P007	1"	2 #12 W/ #12 GND	POWER	120VAC	PVC COATED GRS	PVC SCH 40	LP-B	GENER-OX PANEL	DB-2	
P011	1"	3 #8 W/ #10 GND	POWER	480VAC	PVC COATED GRS		DISTRIBUTION PANEL (DP-B)	LIGHTING TRANSFORMER (XFMR-B)		
P011A	1.5"	3 #3 W/ #8 GND	POWER	120/240VAC	PVC COATED GRS		LIGHTING TRANSFORMER (XFMR-B)	LIGHTING PANEL (LP-B)		
P111	1"	3 #10 W/ #10 GND	POWER	480VAC	PVC COATED GRS	PVC SCH 40	TRIPLEX CONTROL PANEL	P-111 (LIFT PUMP 1)		
P112	1"	3 #10 W/ #10 GND	POWER	480VAC	PVC COATED GRS	PVC SCH 40	TRIPLEX CONTROL PANEL	P-112 (LIFT PUMP 2)		
P121	1"	2 #12 W/ #12 GND	POWER	120VAC	PVC COATED GRS	PVC SCH 40	LIGHTING PANEL (LP-B)	FIT-121		
P131	1"	3 #12 W/ #12 GND	POWER	480VAC	PVC COATED GRS	PVC SCH 40	GENER-OX PANEL	M-131 (GRINDER)		
P132	1"	2 #12 W/ #12 GND	POWER	120VAC	PVC COATED GRS	PVC SCH 40	LIGHTING PANEL (LP-B)	FIT-132		
P141	1"	3 #10 W/ #10 GND	POWER	480VAC	PVC COATED GRS	PVC SCH 40	TRIPLEX CONTROL PANEL	P-141 (RECIRCULATION PUMP)		
P151	1"	2 #12 W/ #12 GND	POWER	120VAC	PVC COATED GRS	PVC SCH 40	GENER-OX PANEL	M-151 (OXYGEN BOOSTER SYSTEM)		
P152	1"	2 #12 W/ #12 GND	POWER	120VAC	PVC COATED GRS	PVC SCH 40	GENER-OX PANEL	M-152 (OXYGEN GENERATOR UNIT)		
P153	1"	2 #12 W/ #12 GND	POWER	120VAC	PVC COATED GRS	PVC SCH 40	GENER-OX PANEL	V-153 (ACTUATED VALVE)		
P161	1"	3 #6 W/ #10 GND	POWER	480VAC	PVC COATED GRS	PVC SCH 40	GENER-OX PANEL	M-161 (COMPRESSOR)		
P171	1"	2 #12 W/ #12 GND	POWER	120VAC	PVC COATED GRS	PVC SCH 40	LIGHTING PANEL (LP-B)	SUMP PANEL		
P171A	1"	1 - MFG CABLE	POWER	120VAC	PVC COATED GRS		SUMP PANEL	SUMP PUMP		
S001	1"	CAT6	COMM		PVC COATED GRS	PVC SCH 40	TRIPLEX PUMP PANEL	GENER-OX PANEL		
S101	1"	BUBBLER TUBE	SIGNAL		PVC COATED GRS	PVC SCH 40	TRIPLEX CONTROL PANEL	LE-101		
S102	1"	1 - MFG CABLE	SIGNAL	24VDC	PVC COATED GRS	PVC SCH 40	GENER-OX PANEL	AE-102		
S121	1"	1 - TSP	SIGNAL	24VDC	PVC COATED GRS	PVC SCH 40	TRIPLEX CONTROL PANEL	FIT-121		
S121A	1"	1 - MFG CABLE	SIGNAL	24VDC	PVC COATED GRS	PVC SCH 40	FIT -121	FE-121 (M-121)		
S132	1"	1 - TSP	SIGNAL	24VDC	PVC COATED GRS	PVC SCH 40	GENER-OX PANEL	FIT-132		
S132A	1"	1 - MFG CABLE	SIGNAL	24VDC	PVC COATED GRS	PVC SCH 40	FIT -132	FE-132 (M-132)		
S152	1"	2 - TSP	POWER/SIGNAL	24VDC	PVC COATED GRS	PVC SCH 40	GENER-OX PANEL	FIT-152		
S181	1"	1 - MFG CABLE	SIGNAL	24VDC	PVC COATED GRS	PVC SCH 40	AIT-181	AE-181		

CONDUIT SCHEDULE

NOTES:
 (1) 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.



REVISIONS			
NO.	DATE	INITIAL	DESCRIPTION



CITY OF IMPERIAL
 CITY ENGINEER _____ DATE _____
 REFERENCES _____



skm inc.
 533 W 2600 S, Suite 25
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 www.skm-inc.com

DESIGNED:	DATE
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TR	6/11/13
N/A	-
MPJ	6/11/13
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CITY OF IMPERIAL
 IMPERIAL COUNTY, CALIFORNIA
 LA BRUCHERIE LIFT STATION IMPROVEMENTS
 ELECTRICAL
 CONDUIT DEVELOPMENT & SCHEDULE
 DWG. NO. _____

BID NO. 2015-07
 SHEET 25 of 25
 E-2

ISSUED FOR BID