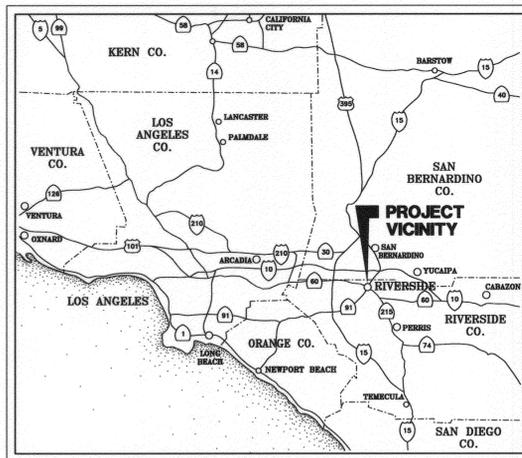


CITY OF RIVERSIDE, CALIFORNIA PUBLIC WORKS DEPARTMENT

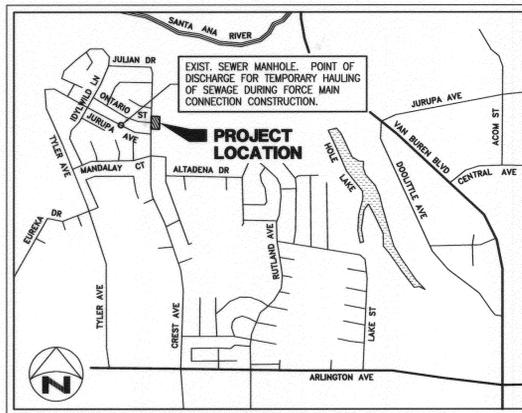
CREST LIFT STATION REPLACEMENT

DRAWING INDEX

DWG. NO.	SHEET NO.	DESCRIPTION
G-1	1	TITLE SHEET, VICINITY MAP, LOCATION MAP, AND DRAWING INDEX
G-2	2	CONSTRUCTION NOTES
G-3	3	CONSTRUCTION NOTES
G-4	4	LEGENDS, SYMBOLS, AND ABBREVIATIONS
G-5	5	SCHEDULES AND PIPE DUTY DESIGNATION
C-1	6	SITE PLAN
C-2	7	FENCE AND GATE DETAILS
C-3	8	CONNECTION DETAILS
C-4	9	STREET IMPROVEMENT PLAN AND PROFILE
ME-1	10	LIFT STATION AND WET WELL ROOF HATCH PLANS
ME-2	11	LIFT STATION SECTION
ME-3	12	MISCELLANEOUS DETAILS AND SECTIONS
ME-4	13	MISCELLANEOUS DETAILS
S-1	14	WET WELL STRUCTURAL PLAN, SECTIONS, AND DETAILS
S-2	15	ELECTRICAL PANEL SUNSHADE STRUCTURE, FOUNDATION PLAN, ELEVATION, AND SECTION
E-1	16	ELECTRICAL SYMBOLS, ABBREVIATIONS, AND LIGHTING FIXTURE SCHEDULE
E-2	17	SINGLE LINE DIAGRAM, MCC PLAN AND ELEVATIONS, AND SCHEDULE OF CONDUIT AND CONDUCTORS
E-3	18	CONTROL DIAGRAMS
E-4	19	MCC AND SUNSHADE GROUNDING PLAN
E-5	20	INTERCONNECT DIAGRAMS
D-1	21	DEMOLITION PLAN AND SECTIONS



VICINITY MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

PROJECT SPECIFIC REQUIREMENTS AND DATA

LIFT STATION DESIGN CAPACITY [GPM]	FORCE MAIN PIPE DIA. [IN]	FORCE MAIN LENGTH [FT]	MINIMUM STATIC LIFT [FT]	MAXIMUM STATIC LIFT [FT]
265 (1)	6"	775	19	34.50

PUMPING UNIT PERFORMANCE			
CONDITION	DISCHARGE CAPACITY [GPM]	TOTAL DYNAMIC HEAD [FT]	MINIMUM HYDRAULIC EFFICIENCY [%]
1	150	53±8	25
2 (1)	265	42	35
3	350	31±8	30
MINIMUM SHUT-OFF HEAD		56	FT.
MINIMUM MOTOR SIZE		10	HP.

NOTES:

- DESIGN CONDITION WITH ONE PUMP OPERATING THROUGH 6" FORCE MAIN.

SITE BENCHMARK: T-59-81 ELEVATION 742.763 NGVD 1929

CITY OF RIVERSIDE BM ID: G3-03
FD. PK NAIL & CITY ENGINEER TAG IN CONCRETE STREET LIGHT BASE ON THE SOUTHWEST CORNER OF CREST AVENUE AND JURUPA AVENUE.

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA STATE PLANE COORDINATE SYSTEM CCS 83, ZONE 6 BASED UPON GPS OBSERVATIONS AS DERIVED FROM AN OPUS-RS SOLUTION WITH A REFERENCE FRAME OF NAD_83 (CORS96) (EPOCH:2002.000) ITRF00 (EPOCH:2010.71135) AT CONTROL PT. 100 AND PT. 103. ALL BEARINGS SHOWN ON THIS MAP ARE GRID AND ALL DISTANCES SHOWN ARE GROUND DISTANCES UNLESS STATED OTHERWISE. GRID DISTANCES MAY BE OBTAINED BY MULTIPLYING GROUND DISTANCES BY A COMBINATION FACTOR OF 0.99998289. CALCULATIONS ARE MADE AT CONTROL PT. 103 WITH THE COORDINATES OF NORTH 2,294,373.564 SFT., EAST 6,190,315.916 SFT. USING THE OPUS-RS COMPUTED NAVD88 ELEVATION OF 745.113. RESULTING GRID COORDINATE AT CONTROL PT. 103 IS HELD FIXED AS THE GROUND COORDINATE AND THE ORIGIN OF SCALING GRID TO GROUND. THE GRID BEARING OF NORTH 01°03'42" EAST WAS HELD FIXED BETWEEN CONTROL PT. 103 AND PT.100.

AS-BUILT
07/31/2014



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

KRIEGER & STEWART INCORPORATED
3602 University Ave. · Riverside, CA. 92501 · 951-684-6900
APPROVED BY *Josh P. MacLachlan*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



MARK	REVISIONS	APPR.	DATE

DESIGNED BY *JPM* DRAWN BY *MIRN* CHECKED BY *JCR*

**CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT**

APPROVED BY	BY	DATE	APPROVED BY
ENGINEERING MANAGER	<i>JPM</i>	7/10/12	<i>MacLachlan</i>
PRINCIPAL ENGINEER	<i>JPM</i>	7/10/12	<i>MacLachlan</i>
CONTRACT ADMINISTRATOR	<i>JPM</i>	7/10/12	<i>MacLachlan</i>
SURVEYOR	<i>JPM</i>	7/10/12	<i>MacLachlan</i>
TRAFFIC DIVISION	<i>JPM</i>	7/10/12	<i>MacLachlan</i>

DATE 7/29/12

CREST LIFT STATION REPLACEMENT

**TITLE SHEET, VICINITY MAP,
LOCATION MAP, AND DRAWING INDEX**

SCALE: NONE

ACCT. NO. 9835423203
CONST. W.O. 1218173

S-2106

SHEET 1 OF 21

DWG. NO. **G-1**

DWG. NO.: 476-16-30-1 FILE NO.: 476-16-3 UPDATE BY: MRN PROJ. ENG.: JPM PLOT DATE: 06/26/12 PLOT TIME: 2:37PM PLOT SCALE: 1"=1

CONSTRUCTION NOTES

GENERAL

- CONTRACTOR SHALL PERFORM CONSTRUCTION WORK IN A MANNER TO MAINTAIN CONTINUOUS OPERATION OF THE EXISTING CREST SEWAGE LIFT STATION. CONTRACTOR SHALL COOPERATE WITH THE CITY WHO WILL BE OPERATING THE EXISTING AND PROPOSED FACILITIES AND SHALL NOT INTERFERE NOR INTERRUPT THE FACILITY OPERATION, EXCEPT AS SPECIFICALLY APPROVED BY THE CITY. CONTRACTOR SHALL NOT OPERATE ANY EXISTING VALVE OR EQUIPMENT. ANY SUCH WORK NECESSARY SHALL BE PERFORMED BY THE CITY. CONTRACTOR SHALL FOLLOW THE SEQUENCE OF WORK SPECIFIED IN SPECIAL CONDITIONS. UNLESS SPECIFIED OTHERWISE, A MINIMUM OF 10 WORKING DAYS WRITTEN NOTICE TO THE CITY IS REQUIRED PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES WHICH MAY AFFECT EXISTING FACILITIES.
- EQUIPMENT AND MATERIALS, INCLUDING PIPING, VALVES, FITTINGS, DRAINS, PIPE SUPPORTS, ETC., ARE SHOWN ON THE DRAWINGS BY SYMBOLS. PIPE SIZE IS SHOWN AS STANDARD CALL OUT WITH SIZE AND PIPE DUTY. MATERIAL DESCRIPTION LISTS, WHERE PROVIDED, ARE FOR CLARITY AND SPECIAL ITEMS ON SOME DRAWINGS. NOT ALL EQUIPMENT, PIPING, VALVES, AND FITTINGS ARE INCLUDED IN MATERIAL DESCRIPTION LISTS. CONTRACTOR SHALL FURNISH AND INSTALL EQUIPMENT AND MATERIALS AS SHOWN ON THE DRAWINGS BY SYMBOL AND PER MATERIAL DESCRIPTION LISTS, INCLUDING MINOR PIPE FITTINGS, ADAPTERS, AND APPURTENANCES NECESSARY TO PROVIDE COMPLETE, OPERABLE SYSTEMS.
- ASTERISK (*) DENOTES A DIMENSION DEPENDENT UPON ACTUAL EQUIPMENT FURNISHED OR EXISTING EQUIPMENT AS INSTALLED. DIMENSION TO BE VERIFIED PRIOR TO CONSTRUCTION AND PRIOR TO ORDERING EQUIPMENT DEPENDENT UPON DIMENSION. CONTRACTOR SHALL VERIFY DIMENSIONS WITH ACTUAL FABRICATED EQUIPMENT DELIVERED TO PROJECT OR AS-BUILT CONDITIONS. CONTRACTOR SHALL ALLOW FOR ADJUSTMENTS TO CONNECTIONS TO EQUIPMENT DUE TO FABRICATION TOLERANCES AND INSTALLATION TOLERANCES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE AND CROSS CHECK DETAILS AND DIMENSIONS SHOWN ON THE DRAWINGS. FLOOR AND WALL OPENINGS, SLEEVES, PENETRATIONS AND OTHER CIVIL, STRUCTURAL, MECHANICAL, OR ELECTRICAL REQUIREMENTS MUST BE COORDINATED BEFORE CONTRACTOR PROCEEDS WITH CONSTRUCTION.
- IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON DRAWINGS.
- THE PRECISE DIMENSIONS AND LOCATIONS OF ALL OPENINGS AND PENETRATIONS SHALL BE DETERMINED FOR THE ACTUAL EQUIPMENT BEING FURNISHED. SHOP DRAWINGS WITH ADEQUATE ACCURATE DIMENSIONS MUST BE SUBMITTED AND REVIEWED PRIOR TO CONTRACTOR CONSTRUCTING FACILITIES THAT ARE AFFECTED BY SAID EQUIPMENT.
- CONTRACTOR IS ADVISED THAT THE WORK ON THIS PROJECT MAY INVOLVE WORKING IN A CONFINED SPACE. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING WORK AREA CLASSIFICATIONS AND IMPLEMENTATION OF ALL PRACTICES AND PROCEDURES REQUIRED FOR "CONFINED SPACES" UNDER THE CALIFORNIA ADMINISTRATIVE CODE, TITLE 8.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PROJECT SITE SECURITY. PROJECT SITE SHALL REMAIN SECURED AT ALL TIMES BY EXISTING CITY FENCE OR TEMPORARY 6' HIGH CHAIN LINK FENCE.
- CONTRACTOR SHALL PROVIDE HIS OWN SANITARY AND OFFICE FACILITIES INCLUDING TELEPHONE AND TEMPORARY POWER.

UNDERGROUND FACILITIES AND EXISTING IMPROVEMENTS

- THE LOCATIONS OF EXISTING UNDERGROUND FACILITIES (PIPING, VALVES, CONDUCTORS, ELECTRICAL CONDUIT, ETC.) ARE SHOWN IN AN APPROXIMATELY ONLY AND ARE BASED ON OWNER'S EXISTING FIELD VERIFICATION. CONTRACTOR SHALL EXERCISE CARE DURING EXCAVATIONS TO AVOID DAMAGE TO SAID FACILITIES. CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UNDERGROUND FACILITIES BEFORE COMMENCING WORK. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY DAMAGES WHICH RESULT FROM HIS FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL FACILITIES.

AT LEAST 48 HOURS BEFORE COMMENCING ANY EXCAVATION, CONTRACTOR SHALL REQUEST UNDERGROUND SERVICE ALERT (1-800-227-2600) AND NON-MEMBER COMPANIES OR UTILITIES TO MARK OR OTHERWISE INDICATE THE LOCATION(S) OF THEIR SUBSURFACE FACILITIES INCLUDING, BUT NOT LIMITED TO, STRUCTURES, VAULTS, PIPING, VALVES, CONDUCTORS, CONDUIT, CABLES, AND SERVICE CONNECTIONS.

- AS FIRST ITEM OF WORK (WITHIN 30 DAYS OF EXECUTION OF CONTRACT) CONTRACTOR SHALL EXCAVATE AND EXPOSE ("POTHOLE") EXISTING FACILITIES IN LOCATIONS WHERE NEW FACILITIES ARE PROPOSED TO ESTABLISH THE EXACT HORIZONTAL LOCATION, SIZE, AND ELEVATION, AND DETERMINE IF THERE WILL BE AN INTERFERENCE WITH PROPOSED FACILITIES. CHANGES OR DELAYS CAUSED BY CONTRACTOR'S FAILURE TO PERFORM "POTHOLING" AND INTERFERENCE LOCATION WORK SHALL NOT BE ELIGIBLE FOR EXTRA WORK COMPENSATION OR TIME EXTENSION.

CONTRACTOR SHALL SUBMIT "POTHOLE" DATA (EXACT ELEVATION, SIZE, AND HORIZONTAL LOCATION) TO CITY FOR EVERY UTILITY EXPOSED. BASED ON SAID "POTHOLE DATA", CITY MAY MODIFY BELOW GRADE PIPING ALIGNMENT AND GRADE TO AVOID EXISTING PIPING AND WILL SUBMIT MODIFICATIONS, IF ANY, TO CONTRACTOR WITHIN TWO WEEKS OF RECEIPT OF ALL "POTHOLE" DATA.

- CONTRACTOR SHALL REPLACE IN KIND ALL EXISTING IMPROVEMENTS DAMAGED OR REMOVED BY CONSTRUCTION ACTIVITIES. LIMITS OF REMOVAL AND REPLACEMENT SHALL BE APPROVED BY THE CITY PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

SITE WORK AND GRADING

- SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF THE CALIFORNIA BUILDING CODE (LATEST EDITION), SOILS REPORT, AND CONTRACT DOCUMENTS. IN THE EVENT OF CONFLICT BETWEEN THESE DOCUMENTS, THE MOST STRINGENT REQUIREMENTS SHALL PREVAIL.
- RELATIVE COMPACTION OF 95% SHALL MEAN SOIL COMPACTED TO A DRY DENSITY EXCEEDING 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 1557, LATEST EDITION.
- ALL DEBRIS, BRUSH, AND RUBBISH SHALL BE REMOVED AND DISPOSED OF TO LEAVE THE AREA WHICH HAS BEEN DISTURBED WITH A NEAT AND FINISHED APPEARANCE FREE FROM ALL DEBRIS. WHERE REMOVAL OF SUBSURFACE OBSTRUCTIONS IS NECESSARY, CAVITIES CREATED BY THE REMOVAL SHALL BE CLEARED OF ALL LOOSE DEBRIS AND SOIL AND SHAPED TO PROVIDE ACCESS FOR BACKFILLING AND COMPACTION EQUIPMENT. SAID MATERIALS SHALL BE LEGALLY DISPOSED OF IN AN APPROVED OFFSITE LOCATION (CITY OR COUNTY LANDFILL).
- ALL AREAS TO BE GRADED SHALL BE STRIPPED OF VEGETATION AND DELETERIOUS MATERIAL. VEGETATION AND DELETERIOUS MATERIALS SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF.
- CONTRACTOR IS ADVISED THAT ROCK OR UNACCEPTABLE FILL MATERIAL SHALL BE ENCOUNTERED DURING EXCAVATION OPERATIONS. WHERE SUCH MATERIAL IS ENCOUNTERED, CONTRACTOR SHALL (AT NO ADDITIONAL COST TO THE CITY) EXCAVATE SAID ROCK OR UNACCEPTABLE MATERIAL, HAUL IT OFF SITE TO LEGAL DISPOSAL SITE, AND INSTALL SELECT FILL MATERIAL.

- CONTRACTOR IS ADVISED THAT GROUNDWATER WAS ENCOUNTERED DURING PERFORMANCE OF THE PRELIMINARY GEOTECHNICAL INVESTIGATION FOR THE PROPOSED FACILITIES. CONTRACTOR SHALL INCLUDE ALL COSTS FOR PROVIDING MATERIALS, EQUIPMENT, POWER, LABOR, AND RELATED EXPENSES ASSOCIATED WITH DEWATERING GROUNDWATER WITHIN THE EXCAVATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING PUMPING LOCATIONS IN OR ADJACENT TO THE EXCAVATIONS TO ADEQUATELY REMOVE WATER FROM WITHIN THE EXCAVATIONS DURING CONSTRUCTION.

ALL DEWATERING SHALL BE PERFORMED IN CONFORMANCE WITH ALL SAFETY REGULATIONS AND REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) REQUIREMENTS. CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY TO OBTAIN ALL PERMITS AND CLEARANCES FROM ANY AND ALL REGULATORY AGENCIES. WHERE REQUIRED BY RWQCB, MONITORING SHALL BE PERFORMED BY CONTRACTOR.

- EXCAVATED NATIVE SOILS MAY BE UTILIZED FOR SELECT FILL MATERIAL PROVIDED THESE MATERIAL ARE FREE OF VEGETATIVE MATTER AND OTHER DELETERIOUS SUBSTANCES, AND SHALL NOT CONTAIN ROCKS OR IRREDUCIBLE MATERIALS GREATER THAN 8" IN MAXIMUM DIMENSION.

- IF REQUIRED, CONTRACTOR SHALL IMPORT SUFFICIENT QUANTITIES OF SELECT FILL MATERIAL TO ACHIEVE THE SPECIFIED FINISHED GRADES AND MINIMUM RELATIVE COMPACTION. IMPORT SELECT FILL MATERIAL SHALL BE INORGANIC, GRANULAR, NON-EXPANSIVE SOIL, FREE OF ROCKS OR LUMPS GREATER THAN 8" IN MAXIMUM DIMENSION. IMPORT SELECT FILL MATERIAL SHALL MEET THE USCS CLASSIFICATIONS OF SM, SP-SM, OR SW-SM WITH 5% TO 35% PASSING THE No.200 SIEVE.

- THE SOILS UNDER THE ENTIRE SITE SHALL BE REMOVED A MINIMUM OF 3' BELOW EXISTING GRADE. THE EXPOSED SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF 12", BROUGHT TO NEAR OPTIMUM MOISTURE CONTENT, AND COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 90%. SELECT FILL MATERIAL SHALL BE PLACED ON THE COMPACTED SUBGRADE AND BROUGHT TO NEAR OPTIMUM MOISTURE CONTENT, AND COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 90%.

- THE SOIL UNDER THE EMERGENCY STORAGE TANK, WET WELL, AND VALVE VAULT FOUNDATIONS SHALL BE REMOVED A MINIMUM OF 12" BELOW THE BOTTOM OF THE FOUNDATION. THE EXPOSED SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF 12", BROUGHT TO NEAR OPTIMUM MOISTURE CONTENT, AND COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 95%. CRUSHED MISCELLANEOUS BASE SHALL BE PLACED 12" THICK ON THE COMPACTED SUBGRADE AND COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 95%.

- SELECT FILL MATERIAL SHALL BE PLACED IN LIFTS NO GREATER THAN 8" IN LOOSE THICKNESS AND COMPACTED TO THE SPECIFIED MINIMUM RELATIVE COMPACTION.

- SELECT BACKFILL MATERIAL AROUND EMERGENCY STORAGE TANK, WET WELL, AND VALVE VAULT SHALL BE PAVED IN LAYERS WHICH, WHEN COMPACTED, SHALL NOT EXCEED 8" IN THICKNESS. EACH LAYER SHALL SPREAD, MOISTENED, AND COMPACTED UNIFORMLY TO INSURE ALL BACKFILL IS PROPERLY COMPACTED. AFTER EACH LAYER OF BACKFILL HAS BEEN PLACED, MIXED AND SPREAD EVENLY. IT SHALL BE THOROUGHLY COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 90%.

- CITY SHALL APPROVE PREPARATION OF ALL NATURAL GROUND SURFACE PRIOR TO PLACEMENT OF FILL ON THAT SURFACE.

- CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING EROSION AND DUST CONTROL MEASURES, AND AS NECESSARY TO COMPLY WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.

- CRUSHED MISCELLANEOUS BASE (CMB) SHALL BE PER SSPWC SECTION 200-2.4, FINE GRADATION.

- ALL SUBGRADES TO RECEIVE CONCRETE PAVEMENT, ASPHALT CONCRETE PAVEMENT, CRUSHED BASE PAVING, OR 3/4" CRUSHED ROCK SHALL RECEIVE SOIL TREATMENT PER SPECIFICATION SECTION 02280.

LIFT STATION SITE ASPHALT CONCRETE PAVEMENT

PERMANENT ASPHALT CONCRETE PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SSPWC, EXCEPT AS MODIFIED HEREAFTER.

A. PREPARATION

UPPER 12" OF SUBGRADE BENEATH CRUSHED BASE SHALL BE SCARIFIED AND COMPACTED TO 95% RELATIVE COMPACTION MINIMUM.

B. THICKNESS

UNLESS NOTED OTHERWISE, PERMANENT ASPHALT CONCRETE PAVEMENT SHALL BE HOT PLACED TO 6" TOTAL THICKNESS MINIMUM PLACED OVER 8" OF CRUSHED MISCELLANEOUS BASE. ASPHALT CONCRETE PAVEMENT AND CRUSHED MISCELLANEOUS BASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION MINIMUM.

C. LIFT STATION SITE ASPHALT CONCRETE PAVEMENT SPECIFICATIONS

PERMANENT PAVEMENT SHALL BE PLACED IN TWO LIFTS. THE FIRST LIFT SHALL BE 4.8" AND MAY BE PLACED WITH A BLADE AND ROLLER. THE SECOND LIFT SHALL BE 1.2" AND SHALL BE PLACED WITH A SELF-PROPELLED MECHANICAL SPREADING AND PAVING MACHINE.

THE SECOND LIFT SHALL OVERLAP TRENCH EDGES 1' MINIMUM, AND EDGES SHALL BE FEATHERED TO MEET EXISTING PAVEMENT. AFTER PLACEMENT, PAVEMENT SHALL NOT VARY MORE THAN 0.01" FROM A STRAIGHT EDGE PLACED ACROSS ANY TRENCH.

PAVEMENT MATERIALS SHALL COMPLY WITH SSPWC SECTION 203-6. UNLESS NOTED OTHERWISE, THE FIRST LIFT SHALL BE B-PG64-10 AND THE SECOND LIFT SHALL BE C2-PG64-10.

D. INSTALLATION

FINISHED GRADE SHALL MATCH EXISTING GRADES WHERE NEW PAVING ABUTS EXISTING PAVING. UNLESS NOTED OTHERWISE, ALL EXPOSED PAVING EDGES SHALL BE PLACED AGAINST 2"x4" REDWOOD HEADERS.

TRAFFIC CONTROL, STREET RESTORATION REQUIREMENTS, AND STREET ASPHALT CONCRETE PAVEMENT

1. TRAFFIC CONTROL

CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL FOR PROJECT AS REQUIRED FOR SAFETY IN ACCORDANCE WITH THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) 2003 EDITION, THE MUTCD 2003 CALIFORNIA SUPPLEMENT, LATEST EDITION, AND THE CITY OF RIVERSIDE ENCROACHMENT PERMIT. CONTRACTOR SHALL MAINTAIN ONE LANE OPEN FOR TRAFFIC AT ALL TIMES. TRAFFIC CONTROL REQUIREMENTS MAY BE MODIFIED BY CITY OR AS CONDITIONS WARRANT. CONTRACTOR SHALL MODIFY TRAFFIC CONTROL AS REQUIRED BY THE CITY AT NO ADDITIONAL COST TO CITY.

THROUGHOUT EACH WORK PERIOD, CONTRACTOR SHALL INSPECT TRAFFIC CONTROL (SIGNS, BARRICADES, ARROWBOARDS, AND DELINEATORS) AND SHALL MAINTAIN SAME IN ACCORDANCE WITH SAID MANUAL. ALL TEMPORARY SIGNS SHALL BE PLACED ON A TYPE 1 BARRICADE WITH A FLASHER. STREET CLOSURES ARE NOT ALLOWED.

2. RESTORATION REQUIREMENTS

CONTRACTOR SHALL PROTECT IN PLACE OR REMOVE AND REPLACE ALL EXISTING UTILITIES AND PUBLIC AND PRIVATE IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, ALL BERMS, ASPHALT CONCRETE PAVEMENT, DRIVEWAYS, STORM DRAINS, LANDSCAPING, LANDSCAPING MATERIALS, LANDSCAPING IRRIGATION SYSTEMS, GRAIT SHOULDERS, DRAINAGE SWALES, SLOPES, WALLS, FENCES, POWER POLES, AND SIGNS. CONTRACTOR SHALL CORRECT OR REPLACE ANY DAMAGED UTILITIES OR IMPROVEMENTS AS PART OF THE CONTRACT WORK AND AT NO ADDITIONAL COST TO CITY. CERTAIN EXISTING IMPROVEMENTS ARE SPECIFIED ON THE CONSTRUCTION DRAWINGS TO BE PROTECTED IN PLACE OR REMOVED AND REPLACED. CONTRACTOR SHALL PROTECT IN PLACE OR REMOVE AND REPLACE ALL EXISTING PUBLIC AND PRIVATE IMPROVEMENTS WHETHER THEY ARE SPECIFICALLY NOTED ON THE CONSTRUCTION DRAWINGS OR NOT.

CONTRACTOR SHALL, AS A MINIMUM, HAVE ACCOMPLISHED BY THE END OF EACH WORK PERIOD, THE FOLLOWING:

- REMOVAL OF ALL DEBRIS AND CONSTRUCTION MATERIALS FROM PUBLIC STREETS, CONSTRUCTION RIGHT-OF-WAY, AND PRIVATE PROPERTY.
- REMOVAL OF ALL TRAFFIC CONTROL EXCEPT TRAFFIC CONTROL REQUIRED FOR SAFETY.
- FILLING ALL TRENCH EXCAVATIONS WITH COMPACTED BACKFILL AND PLACEMENT OF 2" MINIMUM TEMPORARY ASPHALT CONCRETE PAVEMENT (WHERE EXISTING ASPHALT CONCRETE PAVEMENT WAS REMOVED), COMPACTED AND ROLLED SMOOTH AND FLUSH WITH ADJACENT PAVEMENT SUFFICIENT TO SUPPORT TRAFFIC. SAID PAVEMENT MAY BE PLACED COLD, PROVIDED IT IS PLACED SMOOTH AND FLUSH, AND PROPERLY MAINTAINED WITH ADJACENT PAVEMENT. ROLLER WITH A STEEL-WHEELED PAVEMENT ROLLER. COMPACTION OF PAVEMENT BY OTHER EQUIPMENT, GREAT INCLUDING, BUT NOT LIMITED TO, BACKHOES, LOADERS, OR TRUCKS WILL NOT BE ALLOWED.
- CLEANING (INCLUDING SWEEPING AND WASHING) STREETS WITHIN WORKSITE. CONTRACTOR MAY BE REQUIRED TO WASH AND/OR SWEEP SAID AREA MORE THAN ONCE A DAY AS DETERMINED AND AS DIRECTED BY CITY.
- ALL EXCAVATIONS SHALL BE COMPLETELY BACKFILLED AND COMPACTED AND STREETS SHALL BE OPEN FOR PUBLIC USE WHEN NO WORK IS IN PROGRESS. THE WORK AREA SHALL BE COMPLETELY OPEN FOR PUBLIC USE DURING WEEKENDS AND HOLIDAYS, AND WHENEVER CONTRACTOR IS NOT ACTIVELY WORKING AT PROJECT SITE.

IN ADDITION, CONTRACTOR SHALL INSPECT ENTIRE JOB SITE AT LEAST ONCE DURING THE DAY ON WEEK DAYS, SATURDAYS, SUNDAYS, AND HOLIDAYS, AND CORRECT ANY SAFETY OR BACKFILL DEFICIENCIES. CONTRACTOR SHALL MAINTAIN STREETS INCLUDING BACKFILLED TRENCHES IN GOOD REPAIR.

CONTRACTOR SHALL RESPOND IMMEDIATELY TO ALL REQUESTS BY CITY FOR REMEDIAL WORK. CONTRACTOR SHALL HAVE A CREW AVAILABLE TO RESPOND TO SAID REQUESTS.

3. GENERAL PERMANENT ASPHALT CONCRETE PAVEMENT

WITHIN FIVE (5) DAYS OF PLACING TEMPORARY PAVEMENT, OR AS DIRECTED BY CITY, CONTRACTOR SHALL REMOVE ALL TEMPORARY ASPHALT CONCRETE PAVEMENT, DISPOSE OF IT AT AN AUTHORIZED DISPOSAL SITE, BACKFILL TRENCH AS REQUIRED, COMPACT SUBGRADE AS SPECIFIED, AND THEN PLACE PERMANENT PAVEMENT PER CITY SPECIFICATIONS. IF CONTRACTOR FAILS TO PLACE PERMANENT PAVEMENT WITHIN SPECIFIED PERIOD, OR AS DIRECTED BY CITY, CITY WILL PROHIBIT ANY OTHER CONSTRUCTION WORK UNTIL PERMANENT PAVEMENT WORK HAS BEEN COMPLETED.

PERMANENT ASPHALT CONCRETE PAVEMENT RESTORATION SHALL CONSIST OF BASE PAVEMENT AND A PAVEMENT OVERLAY IN ACCORDANCE WITH CITY OF RIVERSIDE ENCROACHMENT PERMIT. IN ADDITION, ASPHALT CONCRETE BERMS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED PER CITY OF RIVERSIDE SPECIFICATIONS, STANDARD DRAWING No.250, AND PERMIT.

PAVEMENT AND ITS PLACEMENT SHALL COMPLY WITH CITY OF RIVERSIDE SPECIFICATIONS, STANDARDS, AND ENCROACHMENT PERMIT.

4. SPECIFIC STREET PERMANENT ASPHALT CONCRETE PAVEMENT

PERMANENT ASPHALT CONCRETE PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SSPWC, EXCEPT AS MODIFIED HEREAFTER.

A. PREPARATION

UPPER 12" OF SUBGRADE BENEATH CRUSHED BASE SHALL BE SCARIFIED AND COMPACTED TO 95% RELATIVE COMPACTION MINIMUM.

B. THICKNESS

UNLESS NOTED OTHERWISE, PERMANENT ASPHALT CONCRETE PAVEMENT SHALL BE HOT PLACED TO 4" TOTAL THICKNESS MINIMUM PLACED OVER 12" OF CRUSHED MISCELLANEOUS BASE. ASPHALT CONCRETE PAVEMENT AND CRUSHED MISCELLANEOUS BASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION MINIMUM.

C. ASPHALT CONCRETE PAVEMENT SPECIFICATIONS

PERMANENT PAVEMENT SHALL BE PLACED IN TWO LIFTS. THE FIRST LIFT SHALL BE 2.8" AND MAY BE PLACED WITH A BLADE AND ROLLER. THE SECOND LIFT SHALL BE 1.2" AND SHALL BE PLACED WITH A SELF-PROPELLED MECHANICAL SPREADING AND PAVING MACHINE.

THE SECOND LIFT SHALL OVERLAP TRENCH EDGES 1' MINIMUM, AND EDGES SHALL BE FEATHERED TO MEET EXISTING PAVEMENT. AFTER PLACEMENT, PAVEMENT SHALL NOT VARY MORE THAN 0.01" FROM A STRAIGHT EDGE PLACED ACROSS ANY TRENCH.

PAVEMENT MATERIALS SHALL COMPLY WITH SSPWC SECTION 203-6. UNLESS NOTED OTHERWISE, THE FIRST LIFT SHALL BE B-PG64-10 AND THE SECOND LIFT SHALL BE C2-PG64-10.

WHERE SHOWN ON THE DRAWINGS, THE EXISTING PAVEMENT SHALL BE GROUND DOWN 0.10" AND SHALL BE CAPPED WITH A C2-PG64-10 AC MIX. THE CAP SHALL BE INSTALLED WITH THE SECOND LIFT OF STREET PAVING.

IN PAVEMENT OVERLAY AREAS, ANY DISTRESSED EXISTING PAVEMENT SHALL BE REMOVED AND REPLACED BY THE INSPECTOR PRIOR TO OVERLAYING WITH A.C. PAVING.

D. REMOVAL OF EXISTING AC PAVEMENT

ALL PAVING REMOVED FOR STREET WORK AND/OR PIPELINE TRENCHING SHALL BE HAULED FROM SITE AND DISPOSED OF AT A LEGAL DISPOSAL SITE.

WHERE EXISTING ASPHALT CONCRETE PAVEMENT IS TO BE REMOVED FOR INSTALLATION OF BELOW GRADE PIPING AND ELECTRICAL CONDUIT, CONTRACTOR SHALL SAW CUT EXISTING ASPHALT PAVEMENT EDGES (1' ADDITIONAL EACH SIDE OF TRENCH) TO STRAIGHT, NEAT, VERTICAL EDGES, EITHER PERPENDICULAR TO OR PARALLEL WITH THE TRENCH. CONTRACTOR SHALL EXCAVATE UNDERLYING SUBGRADE TO PROPER GRADE AND COMPACT IT TO 95% RELATIVE COMPACTION MINIMUM.

E. INSTALLATION

FINISHED GRADE SHALL MATCH EXISTING GRADES WHERE NEW PAVING ABUTS EXISTING PAVING. UNLESS NOTED OTHERWISE, ALL EXPOSED PAVING EDGES SHALL BE PLACED AGAINST 2"x4" REDWOOD HEADERS.

F. PAVEMENT STRIPING

ALL PAVEMENT STRIPING OR MARKINGS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED FOLLOWING PLACEMENT OF PERMANENT ASPHALT CONCRETE PAVEMENT OR PLACEMENT OF SLURRY SEAL OVER EXISTING ASPHALT CONCRETE PAVEMENT.

PIPING/VALVES

- PIPE MATERIALS AND TEST PRESSURES SHALL BE AS SHOWN ON THE PIPE MATERIAL SCHEDULE AND AS SPECIFIED HEREIN. PIPING HAS BEEN DESIGNED BASED ON SAID TABLE. ALL PIPING SHALL BE CONSTRUCTED WITH RESTRAINED JOINTS. RESTRAINED JOINTS SHALL BE FLANGED, VICTAULIC (GROOVED TYPE), WELDED, THREADED, OR EQUAL. FLANGED AND VICTAULIC JOINTS SHALL BE PROVIDED WHERE SHOWN.
- PIPELINE ELEVATIONS SHOWN ARE FOR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED. PIPELINES SHALL BE STRAIGHT GRADE BETWEEN ELEVATIONS SHOWN. CONTRACTOR SHALL PROVIDE ALL SHORTS, SPOOLS, AND FITTINGS NECESSARY TO MEET ELEVATIONS SPECIFIED.
- VALVES SHALL COMPLY WITH REQUIREMENTS OF THE SPECIFICATIONS, AS LISTED IN EQUIPMENT AND MATERIALS DESCRIPTIONS, AS SHOWN BY SYMBOL ON THE DRAWINGS, AND AS SPECIFIED HEREON. UNLESS NOTED OTHERWISE, VALVES 4" AND LARGER SHALL BE FLANGED AND HAND WHEELED OPERATORS. ALL VALVES ABOVE GRADE SHALL BE FURNISHED WITH VALVE BOXES AND STEEL EXTENSIONS PER CITY STANDARD DRAWINGS. ALL BURIED VALVES SHALL BE INSTALLED IN ACCORDANCE WITH CITY STANDARD DRAWINGS. VALVE CAN LIDS SHALL BE MARKED ACCORDING TO THEIR RESPECTIVE SERVICE.
- ALL PIPE ZONE BEDDING AND TRENCH BACKFILL SHALL BE PER CITY STANDARD DRAWINGS 452 AND 453. SEWER PIPE BEDDING SHALL BE CASE III. FORCE MAIN PIPE BEDDING SHALL BE CASE I.
- PIPE SHALL BE INSTALLED IN TRENCH CONDITION AND AS SPECIFIED IN SPECIFICATION SECTION. BACKFILL SHALL BE COMPLETED INCLUDING COMPACTION TESTS PRIOR TO PRESSURE TESTING. BACKFILL IN PIPE ZONE SHALL BE COMPACTED BY HAND TAMPING TO MINIMUM 90% COMPACTION, WHERE PIPE IS LOCATED UNDER CONCRETE SLABS, ALL TRENCH BACKFILL SHALL BE MINIMUM 95% COMPACTION.
- PIPING WHERE STUBBED THROUGH SLABS/FOUNDATIONS SHALL BE DOUBLE WRAPPED WITH 33 MIL PVC TAPE.
- CONTRACTOR SHALL BACKFILL WITH TWO SACK CEMENT/SAND SLURRY ALL PIPELINE CROSSINGS WITH EXISTING MAINLINE UTILITIES AND AT LOCATIONS SHOWN ON THE CONSTRUCTION DRAWINGS. THE TWO SACK CEMENT/SAND SLURRY SHALL EXTEND FIVE FEET ON EACH SIDE OF THE EXISTING FACILITY AND EXTEND FROM THE BOTTOM OF THE PROPOSED PIPELINE TO THE SPRINGLINE OF THE EXISTING FACILITY TO BE SUPPORTED.
- UNLESS OTHERWISE SHOWN, MINIMUM COVER ON BELOW GRADE PIPE SHALL BE 30".
- UNLESS NOTED OTHERWISE, TRENCH BACKFILL SHALL BE COMPACTED TO 90% RELATIVE COMPACTION (MINIMUM).
- ALL BELOW GRADE PIPE UNDER CONCRETE SLABS AND LESS THAN 30" BELOW THE TOP OF SLAB SHALL BE BACKFILLED WITH 2 SACK CEMENT/SAND SLURRY.
- ALL BELOW GRADE PIPE UNDER CONCRETE FOUNDATIONS SHALL BE BACKFILLED WITH 2 SACK CEMENT/SAND SLURRY TO THE BOTTOM OF THE FOUNDATION AND 2' BEYOND THE FOUNDATION LIMITS.
- ALL PIPE SHALL BE RESTRAINED. WHERE MECHANICAL JOINTS ENDS ARE CALLED OUT (M.J.), THE JOINT SHALL INCLUDE A MEGA-LUG FOR RESTRAINT.
- PIPE JOINTS FOR VITRIFIED CLAY PIPE SHALL BE TYPE "G" AS SPECIFIED IN SECTION 708-2.3 OF THE SSPWC. IF PLASTIC PIPE IS ALLOWED AS AN ALTERNATIVE, ALL PIPE JOINTS SHALL BE GASKETED. CEMENT JOINTS SHALL NOT BE ALLOWED.
- CONTRACTOR SHALL PERFORM A VIDEO INSPECTION OF ALL NEW SEWERS PRIOR TO FINAL ACCEPTANCE OF THE WORK. THE VIDEO INSPECTION SHALL BE PERFORMED IN THE PRESENCE OF THE PUBLIC WORKS INSPECTOR. A RECORDING OF THE VIDEO INSPECTION SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND ACCEPTANCE.

DWG. NO.: 476-16-35-2 FILE NO.: 476-16-3 UPDATE BY: EMD PROJ. ENG.: JPM PLOT DATE: 07/09/12 PLOT TIME: 1:15PM PLOT SCALE: 1"=1'

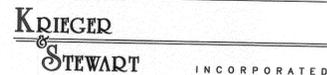


VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING



IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY



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APPROVED BY *Joh P. Macleak*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



DESIGNED BY JPM DRAWN BY MRN CHECKED BY JCR

CITY OF RIVERSIDE, CALIFORNIA PUBLIC WORKS DEPARTMENT

APPROVED BY *[Signature]* BY DATE *7/12/12*
ENGINEERING MANAGER
PRINCIPAL ENGINEER
CONTRACT ADMINISTRATOR
SURVEYOR
TRAFFIC DIVISION
DATE *8/22/2012*

CREST LIFT STATION REPLACEMENT

ACCT. NO. 9835423203
CONST. I.G. 1218173

CONSTRUCTION NOTES

S-2106

SHEET 2 OF 21

SCALE: NONE

DWG. NO. G-2

CONSTRUCTION NOTES (CONT'D)

CONCRETE CONSTRUCTION

- ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH SSPWC AND NOTES HEREON. UNLESS NOTED OTHERWISE, ALL CONCRETE FOUNDATIONS (INCLUDING, BUT NOT LIMITED TO, WET WELL FOUNDATIONS, BELOW GRADE MANHOLE AND VAULT BASES, AND SLABS ON GRADE) SHALL BE PLACED ON SOIL SCARIFIED TO A MINIMUM DEPTH OF 12" AND THEN COMPACTED TO 95% RELATIVE COMPACTION. ALL CONCRETE SHALL BE CONCRETE CLASS 6500-CW-4000 UNLESS INDICATED OTHERWISE ON DRAWINGS. FOR ALL CONCRETE, USE TYPE V PORTLAND CEMENT.
- FORMWORK, CURING, AND BACKFILL
 - FOUNDATIONS

CURE PER SPECIFICATIONS. WET WELL FOUNDATION SHALL CURE A MINIMUM OF 7 DAYS AND ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI PRIOR TO SETTING WET WELL RCP. TEST CYLINDERS SHALL BE CURED IN FIELD.
 - SUSPENDED SLABS

CURE PER SPECIFICATIONS. FORMS SHALL REMAIN IN PLACE UNTIL A MINIMUM OF 14 DAYS AND 90% OF DESIGN STRENGTH ARE REACHED. TEST CYLINDERS SHALL BE CURED IN FIELD.
- CONCRETE FINISHING
 - GRADE SLABS AND FLOOR SLABS SHALL RECEIVE A MONOLITHIC TROWEL FINISH FOLLOWED BY A LIGHT BROOM FINISH AS APPROVED BY CITY.
 - ALL EXPOSED EXTERIOR FORMED CONCRETE SHALL RECEIVE A "SACKED" FINISH PER CAST-IN-PLACE CONCRETE SPECIFICATIONS.
- THE LOCATION OF ALL CONSTRUCTION JOINTS NOT SPECIFICALLY NOTED OR SHOWN SHALL BE APPROVED BY THE CITY.
- ALL NON-SHRINK GROUT SHALL BE NON-METALLIC.

STRUCTURAL AND MISCELLANEOUS STEEL

- ALL STRUCTURAL AND MISCELLANEOUS STEEL CONSTRUCTION SHALL BE IN ACCORDANCE WITH SSPWC.
- STRUCTURAL STEEL SHOP DRAWINGS SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND ERECTION.
- ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, LATEST EDITION. ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING SPECIFICATION (UNLESS NOTED OTHERWISE):

WIDE FLANGE (W AND WT) SECTIONS:	ASTM A992 Fy=36 KSI
CHANNELS AND MISC. SHAPES (C,MC,S,M,HP):	ASTM A36 Fy=36 KSI
ANGLES AND PLATES:	ASTM A36 Fy=36 KSI
PIPE COLUMNS (STANDARD,X-STRG, XX-STRG):	ASTM A53 TYPE E, OR B Fy=36 KSI
TUBES:	ASTM A500, OR B Fy=46 KSI
- ALL WELDING SHALL COMPLY WITH AMERICAN WELDING SOCIETY (AWS) SPECIFICATIONS AND SHALL BE EXECUTED BY ELECTRIC ARC PROCESS WITH E70XX ELECTRODES. COMPLETE AND PARTIAL PENETRATION GROOVE WELDS SHALL BE PERFORMED USING "INNERSHIELD" AND "ML-2" SEMI-AUTOMATIC EQUIPMENT. ALL WELDERS SHALL BE AWS CERTIFIED FOR THE TYPE OF WELDING PERFORMED.
- WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM SIZE WELDS AS SPECIFIED IN THE AISC MANUAL OF STEEL CONSTRUCTION, 9th EDITION, SPECIFICATION J2.2.B.
- NUTS ON BOLTS OF SLOTTED CONNECTIONS SHALL BE INSTALLED FINGER-TIGHT ONLY, WITH THREADS SPOILED, UNLESS NOTED OTHERWISE.
- STRUCTURAL STEEL EMBEDDED IN CONCRETE OR MASONRY SHALL BE UNPAINTED.
- UNLESS NOTED OTHERWISE, ALL MACHINE BOLTS, ANCHOR BOLTS, DEFERRED BOLTING DEVICES, AND FASTENERS SHALL BE 316 STAINLESS STEEL. UNLESS NOTED OTHERWISE, ALL ANCHOR BOLTS FOR ROTATING OR VIBRATING EQUIPMENT SHALL BE CAST-IN-PLACE OR DRILLED AND EPOXIED. EPOXY ANCHORS SHALL BE HILTI HIT C-100 SYSTEM, RED HEAD EPCON SYSTEM, OR EQUAL. PRIOR TO INJECTING EPOXY, EACH DRILLED HOLE SHALL BE CLEANED OUT WITH A NYLON BRUSH. CONTRACTOR SHALL INSTALL DOWELS AND ANCHOR BOLTS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

ELECTRICAL

- CONTRACTOR SHALL CONSTRUCT POWER SERVICE FACILITIES IN ACCORDANCE WITH CITY REQUIREMENTS AND SHALL PERFORM ALL COORDINATION WITH CITY. CONTRACTOR SHALL FURNISH AND INSTALL TRANSFORMER SLAB BOX, SERVICE SECTION, CONDUITS, GROUNDING FACILITIES, AND GUARD POSTS. SHALL COORDINATE ALL WORK INCLUDING ABANDONMENT OF EXISTING ELECTRICAL SERVICE WITH CITY, AND VERIFY ALL FACILITIES LOCATIONS WITH CITY PRIOR TO INSTALLATION. ALL SERVICE EQUIPMENT AND PANELS SHALL BE IN STRICT ACCORDANCE WITH CITY REQUIREMENTS. SHOP DRAWINGS FOR ALL CITY FACILITIES SHALL BE SUBMITTED AND APPROVED BY OWNER AND CITY.
- CONTRACTOR SHALL INSTALL CONDUIT AND ELECTRICAL EQUIPMENT IN LOCATIONS THAT WILL CAUSE MINIMAL INTERFERENCE WITH THE MAINTENANCE AND REMOVAL OF MECHANICAL EQUIPMENT. CONDUITS AND FLEX CONNECTIONS ARE SHOWN SCHEMATICALLY. CONTRACTOR SHALL RUN CONDUIT IN A NEAT MANNER AND ROUTE TOGETHER WHERE THERE ARE PARALLEL RUNS, SUPPORTING EXPOSED CONDUITS WITH UNISTRUT TYPE SUPPORT SYSTEM.
- GROUNDING SHALL BE AS SHOWN ON DRAWING E-4 AND IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, LATEST EDITION.

- UNLESS NOTED OTHERWISE, UNDERGROUND CONDUIT SHALL BE MINIMUM 1" DIA. SCHED. 40 PVC, EXCEPT THAT VERTICAL RISERS AND ELBOWS SHALL BE PVC COATED GALVANIZED RIGID STEEL. MINIMUM COVER SHALL BE 30" UNLESS SHOWN OTHERWISE ON DRAWINGS.

CONDUIT CAST IN CONCRETE, UNDER CONCRETE SLABS OR FOOTINGS, OR IN MASONRY WALLS SHALL BE MINIMUM 1" DIA. PVC COATED GALVANIZED RIGID STEEL. UNLESS NOTED OTHERWISE, CONDUITS SHALL BE INSTALLED BENEATH CONCRETE SLABS, FOOTINGS, OR TRENCHES, AND SHALL BE PROVIDED WITH A MINIMUM OF 6" CLEARANCE BETWEEN CONDUIT AND BOTTOM OF CONCRETE. CONDUIT BACKFILL WHERE INSTALLED BENEATH CONCRETE SHALL BE TWO (2) SACK CEMENT/SAND SLURRY. CONDUITS SHALL BE CAST IN CONCRETE ONLY WHERE SPECIFICALLY SHOWN ON DRAWINGS.

WHERE CONDUIT IS STUBBED UP THROUGH CONCRETE SLABS OR FOOTINGS INTO MCC/ELECTRICAL PANELS, CONTRACTOR SHALL PROVIDE A MINIMUM OF 1 1/2" CLEARANCE BETWEEN REBAR AND CONDUIT AND A MINIMUM OF 1" CLEARANCE BETWEEN CONDUITS. CONTRACTOR SHALL ADJUST REBAR SPACING AS NECESSARY TO A MAXIMUM OF ONE-HALF THE NOMINAL SPACING SUCH THAT MAXIMUM REBAR SPACING DOES NOT EXCEED 1 1/2" TIMES THAT SPECIFIED. THE TOTAL AMOUNT OF REINFORCING STEEL SHALL NOT BE REDUCED.

EXPOSED CONDUITS INDOOR OR OUTDOORS SHALL BE MINIMUM 1" GALVANIZED RIGID STEEL (SCHED. 40), UNLESS NOTED OTHERWISE. CONDUITS SHALL NOT BE RUN CONCEALED IN WALLS OR ROOFS. CONDUITS SHALL BE SURFACE MOUNTED ON WALLS, ROOFS, OR COLUMNS. EXPOSED CONDUITS SHALL BE PLUMB, PARALLEL, AND PERPENDICULAR TO BUILDING WALLS, EQUIPMENT, AND PIPING.

ALL CONDUITS SHALL, UNLESS SPECIFIED AS FLUSH, EXTEND 2 INCHES ABOVE SLAB, GRADE, OR WALL. SPARE CONDUITS SHALL BE PROVIDED WITH THREADED CAPS OR PLUGS AND PULL CHORDS.

CONDUIT BETWEEN PUMPS AND PUMP JUNCTION BOXES FOR PUMP CABLES SHALL BE A MINIMUM OF 2" DIAMETER.

CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT/CONFIGURATION OF DUCT BANKS AND COORDINATION OF PULL BOX SIZES. PROPOSED DUCT BANK LAYOUTS AND CROSS SECTIONS SHALL BE SUBMITTED TO THE OWNER FOR REVIEW PRIOR TO COMMENCING INSTALLATION. CONTRACTOR'S AS-BUILT DRAWINGS SHALL INCLUDE CROSS SECTIONS (DRAWN BY CONTRACTOR) OF ALL ELECTRICAL DUCT BANKS. SAID DUCT BANK CROSS SECTIONS AND AS-BUILT DRAWINGS SHALL BE PREPARED AS THE PROJECT PROCEEDS AND SHALL BE REVIEWED BY THE CONTRACTOR WITH THE OWNER AT LEAST MONTHLY.

COMPLETE AS-BUILT ELECTRICAL DRAWINGS SHALL BE SUBMITTED TO THE OWNER UPON COMPLETION OF CONSTRUCTION.
- UNLESS NOTED OTHERWISE, EXPOSED CONDUITS SHALL BE MOUNTED WITH UNISTRUT SUPPORTS OR CONDUIT CLAMPS AT 8'-0" MAXIMUM SPACING. CONTRACTOR SHALL PROVIDE 3/8" STAINLESS STEEL WEDGE ANCHORS FOR SUPPORTS OR CLAMPS ATTACHED TO CONCRETE OR MASONRY. UNLESS NOTED OTHERWISE, ALL UNISTRUT SUPPORTS SHALL BE 12 GAUGE 316 STAINLESS STEEL.
- ALL CONDUIT CAST DEVICE BOXES, JUNCTION BOXES, AND CONDULETS SHALL BE ADEQUATELY SIZED FOR REQUIRED CIRCUITRY. ALL CAST DEVICE BOXES SHALL BE CONSTRUCTED OF MALLEABLE IRON (HDG) AND SHALL BE "DEEP" STYLE. EXCEPT AS NOTED HEREINAFTER, ALL BOXES SHALL BE SUPPORTED WITH UNISTRUT SUPPORTS.

- CONDUIT CAST MALLEABLE IRON BOXES AND CONDULETS SHALL BE MANUFACTURED BY CROUSE-HINDS, APPLETON, OR EQUAL. PVC COATED HDG CAST MALLEABLE IRON BOXES AND CONDULETS SHALL BE MANUFACTURED BY ROBROY, OR EQUAL. HOWEVER, ALL BOXES AND CONDULETS OF THE SAME TYPE SHALL BE FURNISHED BY A SINGLE MANUFACTURER. SURFACE MOUNTING TO WALLS SHALL BE PROVIDED BY EXPANSION ANCHORS.
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, JUNCTION BOXES SHALL BE NEMA 12 WHERE LOCATED INDOORS AND NEMA 4X 316 STAINLESS STEEL OUT OF DOORS. MINIMUM JUNCTION BOX SIZE SHALL BE 4" X 4" X 3". BOXES SHALL BE SUPPORTED BY CONDUITS THROUGH FLOOR SLAB, ON STANCHIONS AS SPECIFIED, PROVIDED WITH FEET FOR WALL MOUNTING, OR MOUNTED WITH UNISTRUT SUPPORTS. ALL BOXES SHALL BE ADEQUATELY SIZED FOR REQUIRED CIRCUITRY. MOUNTING TO WALLS SHALL BE PROVIDED BY STAINLESS STEEL WEDGE ANCHORS.
- CONNECTION FROM JUNCTION BOX OR CONDUIT TO MOTOR OR EQUIPMENT TERMINAL BOX SHALL BE WITH FLEXIBLE CONDUIT. ALL FLEXIBLE CONDUIT SHALL BE LIQUID-TIGHT AND SHALL HAVE AN INTERLOCKED FLEXIBLE GALVANIZED STEEL CORE WITH PERMANENTLY BONDED CONTINUOUS EXTERIOR GRAY POLYVINYL CHLORIDE JACKET. EXTERIOR FLEXIBLE CONDUIT SHALL BE UV PROTECTED.
- UNLESS NOTED OTHERWISE, CONTRACTOR SHALL USE 316 STAINLESS STEEL EXPANSION ANCHORS (WEDGE OR SLEEVE TYPE) FOR MOUNTING ELECTRICAL CONDUIT, BOXES, AND EQUIPMENT. NO TYPE OF EXPLOSIVE ANCHOR WILL BE PERMITTED.
- NAMEPLATES SHALL BE PROVIDED IN ACCORDANCE WITH THE ELECTRICAL SPECIFICATIONS AND SHALL BE LAMINATED PLASTIC WITH WHITE LETTERING ON BLACK BACKGROUND. FASTENED WITH STAINLESS STEEL DRIVE SCREWS OR ESCUTCHEON PINS. NAMEPLATES SHALL BE PROVIDED FOR ALL LOCAL CONTROL STATIONS, FIELD INSTRUMENTS, PANELS, MCC SECTIONS, AND ELECTRICAL EQUIPMENT.
- CONTRACTOR SHALL FIELD NUMBER AND LABEL ALL CONDUCTORS AND CONDUITS AND PROVIDE COMPLETE AS-BUILT DRAWINGS TO THE OWNER. ALL CONDUITS WITHIN MANHOLES/PULL BOXES SHALL BE PERMANENTLY LABELED THEREIN AND LABELED WHERE THEY STUB UP INTO AN MCC OR PANEL. STATUS, ALARM, AND CONTROL SIGNAL (I/O) CONDUCTORS TO AND FROM THE RTU TERMINAL STRIPS SHALL BE IDENTIFIED USING THE LABELING DESIGNATION.
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, CONDUCTORS 250 MCM OR SMALLER SHALL BE STRANDED COPPER WITH 75° C THWN INSULATION AND MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG. UNLESS NOTED OTHERWISE ON THE DRAWINGS, CONDUCTORS LARGER THAN 250 MCM SHALL BE STRANDED COPPER WITH 75° C XHHW INSULATION.
- UNLESS NOTED OTHERWISE, PROVIDE 3C (MINIMUM) #16 SHIELDED BELDEN CABLE FOR ALL 4 TO 20 MA SIGNALS.

- CONTROL (LADDER) DIAGRAMS ARE PROVIDED TO DESCRIBE DESIRED OPERATION AND CONTROL. SINGLE RELAYS ARE SHOWN REGARDLESS OF NUMBER OF CONTACTS REQUIRED AND MULTIPLE EQUIPMENT UNITS ARE SHOWN AS TYPICAL. CONTRACTOR SHALL FURNISH THE NUMBER OF RELAYS, AUXILIARY CONTACTS, AND CONTROL EQUIPMENT NECESSARY TO PROVIDE THE OPERATION AS SPECIFIED.
- ALL FIELD WIRING TO CONTROL PANEL(S) AND TO SECTIONS OF THE MCC SHALL TERMINATE AT TERMINAL STRIPS IN THE RESPECTIVE PANELS AND BUCKETS.
- CONTRACTOR SHALL SUBMIT ELECTRICAL SHOP DRAWINGS INCLUDING COMPLETE CONTROL LADDER DIAGRAMS AND COMPLETE INTERCONNECT DIAGRAMS WITH APPROPRIATE WIRE AND TERMINAL NUMBERING. LADDER DIAGRAMS SHALL BE PROVIDED WITH NUMBERS FOR EACH LINE INCLUDING REFERENCES TO THE LINE NUMBER WHERE CONTACTS FOR EACH RELAY ARE SHOWN. LADDER DIAGRAMS SHALL SHOW WIRE NUMBERS, TERMINAL BLOCKS, AND TERMINAL BLOCK NUMBERS.

INTERCONNECT DIAGRAMS SHALL SHOW ALL INTERCONNECTIONS BETWEEN EQUIPMENT, CONTROL PANELS, RTU, MCC, AND INSTRUMENTATION. DIAGRAMS SHALL BE PROVIDED WITH WIRE NUMBERS AND TERMINAL BLOCK NUMBERS. STATUS, ALARM, AND CONTROL SIGNAL (I/O) CONDUCTORS TO AND FROM THE RTU TERMINAL STRIPS SHALL BE IDENTIFIED USING THE LABELING DESIGNATION.
- ELECTRICAL MCC/PANEL ELEVATIONS HEREIN SHOW APPROXIMATE SPACE REQUIREMENTS FOR EQUIPMENT. LAYOUTS SHALL BE MODIFIED AS REQUIRED FOR THE MANUFACTURER'S SPECIFIC EQUIPMENT BUT SHALL COMPLY WITH SPACE LIMITS SHOWN. MANUFACTURER'S WHICH CANNOT COMPLY WITH SPACE LIMITS SHOWN ARE NOT ACCEPTABLE. ADDITIONAL PANEL SECTIONS OR WIDER SECTIONS SHALL BE PROVIDED AS NECESSARY PROVIDED LAYOUT COMPLIES WITH SPACE LIMITS SHOWN. CONTRACTOR SHALL SUBMIT COMPLETE SHOP DRAWINGS WHICH SHALL INCLUDE ELEVATIONS VIEWS OF ALL ELECTRICAL PANELS FOR OWNER APPROVAL. EXTERIOR COLOR OF ALL ELECTRICAL PANELS SHALL BE LIGHT GRAY.
- CONDUITS SHALL TERMINATE WITHIN THE RESPECTIVE MCC/PANEL SECTION, OR IN ADJACENT SECTION IF ADDITIONAL SPACE IS REQUIRED. CONTRACTOR SHALL ADJUST LOCATION OF CONDUIT TERMINATIONS BASED ON THE APPROVED MCC/PANEL LAYOUT.
- AFTER INSTALLATION IS COMPLETE, THE CONTRACTOR SHALL CHECK ALL CONTROLS BY SIMULATING ALL OPERATING CONDITIONS WITH THE OWNER PRESENT. SUBSEQUENT START-UP OF FACILITIES SHALL BE PERFORMED BY THE CONTRACTOR AND SHALL INCLUDE OPERATION OF ALL EQUIPMENT IN ALL MODES OF CONTROL INCLUDING START, STOP, SHUTDOWN AND ALARM CONDITIONS.
- CONTROL RELAYS SHALL BE RATED 120 VOLTS A.C. WITH MINIMUM 10 AMP CONTACTS UNLESS OTHERWISE SHOWN.
- UPON COMPLETION OF START-UP AND TESTING, CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED PARTS OF ELECTRICAL INSTALLATION, INCLUDING PANEL INTERIORS. CONTRACTOR SHALL REMOVE ALL TRACES OF DIRT, OIL, GREASE, ETC.
- CONTRACTOR SHALL PERFORM SHORT CIRCUIT STUDY, ARC FLASH STUDY, SET ALL PROTECTIVE DEVICES, AND PROVIDE LABELING ACCORDING TO STUDIES. PRIOR TO ENERGIZING ANY FACILITIES, CONTRACTOR SHALL PROVIDE SERVICES OF AN INDEPENDENT TESTING CONSULTANT TO PERFORM TESTING TO VERIFY SETTINGS, GROUNDING, AND COMPLIANCE WITH CONTRACT DOCUMENTS. REFER TO TECHNICAL SPECIFICATIONS SECTION 16040.
- UNDERGROUND PULL BOXES (MANHOLE) SHALL BE SIZED AND LOCATED AS SHOWN ON THE DRAWINGS AND INDICATED ON THE ELECTRICAL PULL BOX SCHEDULE. ADDITIONAL PULL BOXES SHALL BE PROVIDED AS NECESSARY FOR CONDUCTOR PULLING. PULL BOX SIZES SHOWN ARE MINIMUM SIZES. DEPENDING UPON THE CONTRACTOR'S DUCT BANK CONFIGURATION AND PULL BOX KNOCKOUT AREA, LARGER SIZE PULL BOXES MAY BE NECESSARY. COST OF ADDITIONAL OR LARGER PULL BOXES SHALL BE BORNE BY THE CONTRACTOR. PULL BOXES SHALL BE PRECAST CONCRETE WITH REQUIRED KNOCKOUTS AND CONCRETE SUMP (BROKEN OUT). PULL BOXES SHALL BE SET ON MINIMUM OF 12" THICK 3/4" CRUSHED ROCK. UNLESS NOTED OTHERWISE, PULL BOXES SHALL BE PROVIDED WITH ONE PIECE, HDG STEEL BOLT DOWN TYPE TRAFFIC COVERS WITH LIFTING HOLES. PULL BOXES AND COVERS SHALL BE AS MANUFACTURED BY JENSEN, OR EQUAL.
- CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT AND CONDUCTORS AS SHOWN ON THE DRAWINGS, AS SHOWN ON THE CONTROL DIAGRAMS, AND AS LISTED ON THE "SCHEDULE OF CONDUIT AND CONDUCTORS" DRAWING. CONTRACTOR IS ADVISED THAT NOT ALL CONDUIT AND CONDUCTORS ARE LISTED IN THE SCHEDULE (PARTICULARLY 120V LIGHTING AND RECEPTACLES) AND THAT NOT ALL CONDUIT AND CONDUCTORS LISTED IN THE SCHEDULE ARE SPECIFICALLY SHOWN, LABELED, OR CALLED OUT INDIVIDUALLY ON OTHER DRAWINGS.
- CONTRACTOR IS ADVISED THAT INTERCONNECTING WIRING WITHIN AND BETWEEN LINEUPS (ASSEMBLED PANELS WITH COMMON INTERCONNECTING HORIZONTAL WIREWAYS) OF MCCs, DISTRIBUTION PANELS, MCPs, AND CONTROL PANELS IS NOT SPECIFICALLY LISTED OR SHOWN ON THE DRAWINGS. CONTRACTOR IS DIRECTED TO CONTROL DIAGRAMS AND RTU CONNECTION DIAGRAMS ON THE DRAWINGS FOR THESE CONNECTIONS, WHICH ARE SUBJECT TO CHANGE ACCORDING TO APPROVED SHOP DRAWINGS. CONTRACTOR SHALL INSTALL WIRING FOR SAID CONNECTIONS WITHIN THE BOTTOM WIREWAY OF MCCs AND PANELS.

DWG. NO. 476-16.3-3 FILE NO. 476-16.3 UPDATE BY: FMD, PROJ. ENG.: JPM, PLOT DATE: 07/09/12, PLOT TIME: 1:17PM, PLOT SCALE: 1"=1'



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

KRIEGER & STEWART INCORPORATED
3602 University Ave. • Riverside, CA. 92501 • 951-684-6900
APPROVED BY *John R. MacLean*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



MARK	REVISIONS	APPR.	DATE

DESIGNED BY *JPM* DRAWN BY *MRN* CHECKED BY *JCR*

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE	APPROVED BY
ENGINEERING MANAGER	<i>JPM</i>	7/10/12	<i>John R. MacLean</i>
PRINCIPAL ENGINEER	<i>MRN</i>	7/10/12	CITY ENGINEER
CONTRACT ADMINISTRATOR	<i>JCR</i>	7/10/12	
SUPERVISOR	<i>MRN</i>	7/10/12	
TRAFFIC DIVISION			

DATE 8/29/12

CREST LIFT STATION REPLACEMENT

CONSTRUCTION NOTES

SCALE: NONE

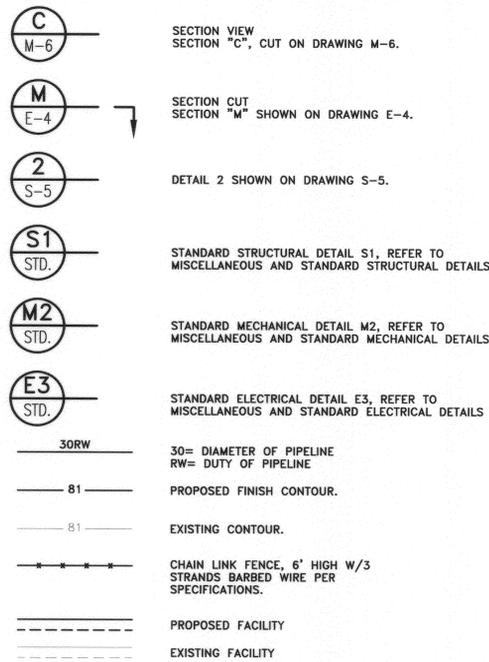
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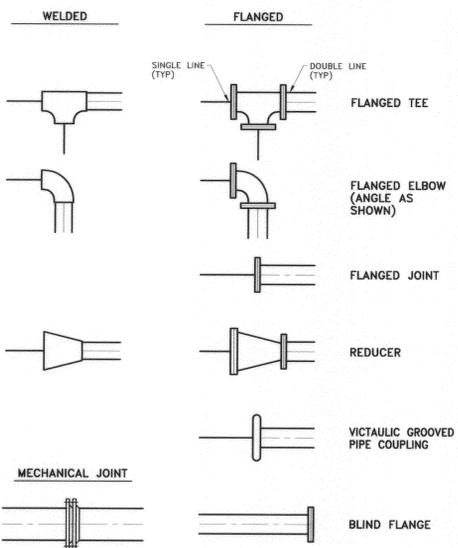
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DWG. NO. G-3

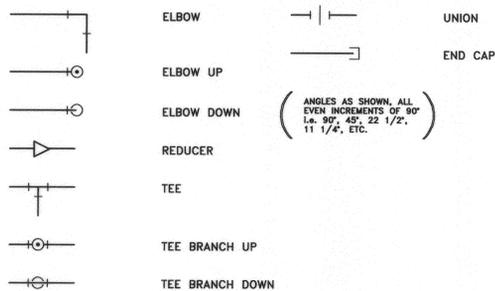
SYMBOLS AND LEGEND



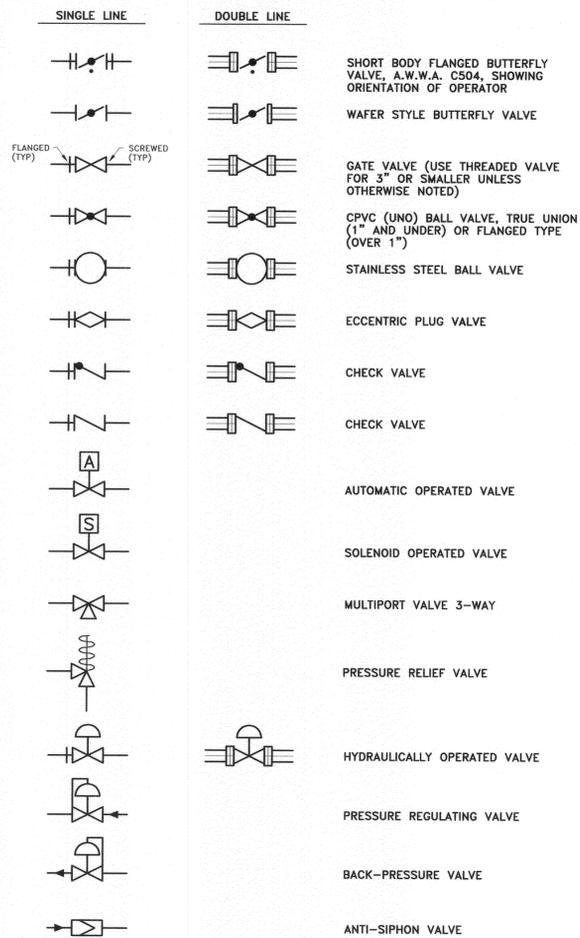
FITTING SYMBOLS



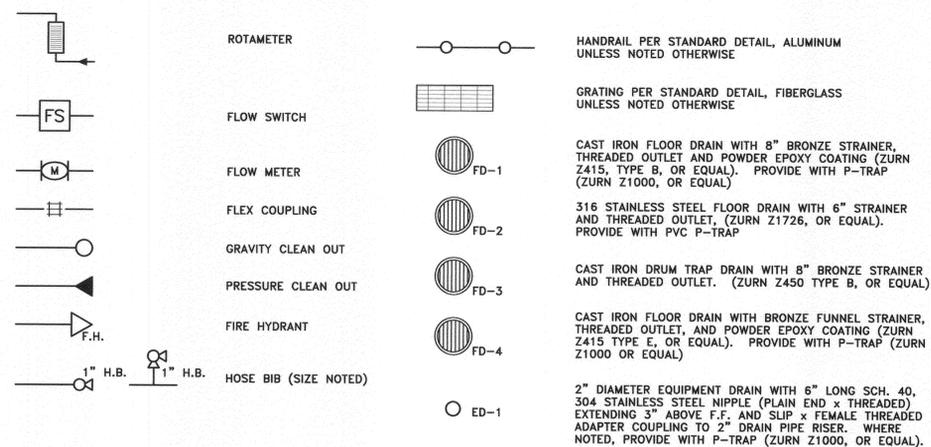
THREADED AND SOLVENT-WELDED FITTING SYMBOLS



VALVES, UNO



MISCELLANEOUS SYMBOLS



ABBREVIATIONS AND NOTATIONS

ABBR.	ABBREVIATION	G	GAS	PS1	PIPE SUPPORT TYPE 1, 2, ETC., REFER TO MISCELLANEOUS DETAILS AND STANDARD DRAWINGS
A/C	AIR CONDITIONER	GA.	GAUGE	PSI	POUNDS PER SQUARE INCH
A.C..AC	ASPHALT CONCRETE	GB	GRADE BREAK	PT	PRESSURE TRANSMITTER
A.S.	AS SHOWN	GSM	GALVANIZED SHEET METAL	R	RADIUS
AV	AIR VALVE	HB	HOSE BIBB	RC, R.C.	RELATIVE COMPACTION
BFV	BUTTERFLY VALVE	HDG	HOT DIPPED GALVANIZED	REQ.	REQUIRED, REQUIREMENTS
BOT	BOTTOM	HDPE	HIGH DENSITY POLYETHYLENE	RPBFD	REDUCED PRESSURE BACKFLOW DEVICE
BC	BEGINNING CURVE	HHWL	HIGH HIGH WATER LEVEL	R/W	RIGHT OF WAY
CG	CENTER GRADE	HP	HIGH POINT	S	SEWER
CJ	CONSTRUCTION JOINT	HPI	HORIZONTAL POINT OF INFLECTION	SCH, SCHED	SCHEDULE
CL., CL	CENTERLINE	HWL	HIGH WATER LEVEL	SPEC	BOUND SPECIFICATIONS
CL EL	CENTERLINE ELEVATION	ID, I.D.	INSIDE DIAMETER	SQ.	SQUARE
CLR.	CLEAR, CLEARANCE	INV.	INVERT ELEVATION	SSPWC	STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (2009 EDITION)
CMB	CRUSHED MISCELLANEOUS BASE	LF	LINEAR FEET	STA.	STATION
CMU	CONCRETE MASONRY UNIT	LLH	LONG LEG HORIZONTAL	ST. STL, S.S.	STAINLESS STEEL
CONC.	CONCRETE	LLV	LONG LEG VERTICAL	STD DWG	STANDARD DRAWING-- REFER TO BOUND SPECIFICATION
CONT.	CONTINUOUS	LLWL	LOW LOW WATER LEVEL	T&B	TOP AND BOTTOM
C.O.T.G.	CLEAN-OUT TO GRADE	LWL	LOW WATER LEVEL	TB	TOP OF BERM ELEVATION
CTF	CUT-TO-FIT	MANUF.	MANUFACTURER	TC, TOC	TOP OF CONCRETE ELEVATION, TOP OF CURB ELEVATION
CTRL JT	CONTROL JOINT	MAX.	MAXIMUM	TD	TOP OF DRAIN ELEVATION
DIA.	DIAMETER	MGD	MILLION GALLONS PER DAY	TEL.	TELEPHONE
DWG.	DRAWING	MH	MANHOLE	TELM.	TELEMETRY
E.#	EAST COORDINATE	MIN.	MINIMUM	TF	TOP OF FOOTING ELEVATION
EC	END CURVE	MIP	MALE IRON PIPE	TG	TOP OF GRATE ELEVATION, TOP OF GRATING
EG	EXISTING GRADE ELEVATION	MISC.	MISCELLANEOUS	THK.	THICK, THICKNESS
EL	ELEVATION	MJ	MECHANICAL JOINT CONNECTION	TP	TOP OF PAVING
EMH	ELECTRICAL MANHOLE	N.#	NORTH COORDINATE	TS	TOP OF SLAB, TOP OF STEEL
EP	EDGE OF PAVING	N/A	NOT APPLICABLE, NOT AVAILABLE	TW, TOW	TOP OF WALL ELEVATION
EQ.	EQUAL, EQUALLY	N.I.C.	NOT IN CONTRACT	TYP, TYP.	TYPICAL
E.W.	EACH WAY	No.	NUMBER	UNO, U.N.O.	UNLESS NOTED OTHERWISE
EXIST, E	EXISTING	NPT	AMERICAN NATION STANDARD TAPERED PIPE THREADS	VPI	VERTICAL POINT OF INFLECTION
EXP.	EXPANSION	N.T.S.	NOT TO SCALE	VTR	VENT TO ROOF
FD1	FLOOR DRAIN, TYPE 1, 2, ETC., REFER TO MISCELLANEOUS SYMBOLS	O.C.	ON CENTER	W	WATER
FF, FIN, FLR	FINISH FLOOR ELEVATION	OD, O.D.	OUTSIDE DIAMETER	W/	WITH
F.F.C.O.	FLUSH FLOOR CLEAN-OUT	OFCl, O.F.C.I.	OWNER FURNISHED EQUIPMENT, CONTRACTOR TO INSTALL	WS	WATER SURFACE
FG	FINISH GRADE ELEVATION	OFOI, O.F.O.I.	OWNER FURNISHED OWNER INSTALLED EQUIPMENT	WT.	WEIGHT
FIP	FEMALE IRON PIPE	OH	OPPOSITE HAND	*	DENOTES A DIMENSION DEPENDENT UPON THE EQUIPMENT FURNISHED. CONTRACTOR TO VERIFY DIMENSION WITH ACTUAL EQUIPMENT DELIVERED TO SITE. SEE GENERAL CONSTRUCTION NOTES. DIMENSION TO BE VERIFIED PRIOR TO CONSTRUCTION AND PRIOR TO ORDERING EQUIPMENT DEPENDENT UPON DIMENSION.
FL., FL	FLOW LINE ELEVATION	OHE	OVERHEAD ELECTRICAL		
FLG	FLANGE, FLANGED	PE	PLAIN END		
FRP	FIBERGLASS REINFORCED PLASTIC	PG	PRESSURE GAUGE		
FS	FINISH SURFACE ELEVATION	PORC	POINT OF REVERSE CURVE		
FTG	FOOTING	PL, PL	PROPERTY LINE		
FUT.	FUTURE CONSTRUCTION				

ABBREVIATIONS FOR PIPE MATERIALS

ABS	ACRYLONITRILE BUTADIENE STYRENE	ECTFE	ETHYLENE-CHLOROTRIFLUOROETHYLENE
AGS	ADVANCED GROOVE SYSTEM	FRP	FIBERGLASS REINFORCED PLASTIC
BSP	BLACK STEEL PIPE	GIP	GALVANIZED IRON PIPE (STD.WT.)
CCP	CONCRETE CYLINDER PIPE	HDG	HOT DIPPED GALVANIZED (SCH.40 STEEL UNO)
CIP	CAST IRON PIPE	HDPE	HIGH DENSITY POLYETHYLENE
CISP	CAST IRON SOIL PIPE	PTFE	POLYTETRAFLUOROETHYLENE
CMC	CEMENT MORTAR COATED	PVC	POLYVINYL CHLORIDE
CML	CEMENT MORTAR LINED	PVDF	POLYVINYLIDENE FLOURIDE
CMLC, CML&C	WELDED STEEL PIPE CEMENT MORTAR LINED AND COATED	RCP	REINFORCED CONCRETE PIPE
CML&TC	WELDED STEEL PIPE CEMENT MORTAR LINED, TAPE WRAPPED, AND CEMENT MORTAR COATED	SCS	SEAMLESS CARBON STEEL
CMP	CORRUGATED METAL PIPE	SS, ST. STL	STAINLESS STEEL (SCH.40 UNO)
CPVC	CHLORINATED POLYVINYL CHLORIDE	STD.WT.	STANDARD WEIGHT
CT	CYLINDER THICKNESS	STL	STEEL
DI	DUCTILE IRON	VCP	VITRIFIED CLAY PIPE (EXTRA-STRENGTH)
DIP	DUCTILE IRON PIPE	WSP	WELDED STEEL PIPE
		1/4"CT	WSP WITH 1/4" STEEL CYLINDER THICKNESS

DRAWING NUMBER ABBREVIATIONS

G	GENERAL	S	STRUCTURAL
C	CIVIL	E	ELECTRICAL
ME	MECHANICAL/ELECTRICAL	D	DEMOLITION

PROJECT SPECIFIC ABBREVIATIONS/DEFINITIONS

CITY	CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT
OWNER	CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT

FOR PURPOSES OF ORGANIZATION, DRAWINGS ARE ARRANGED PER ABOVE DISCIPLINES. HOWEVER, TO REDUCE THE NUMBER OF DRAWINGS, MULTIPLE TYPES OF WORK MAY BE SHOWN ON ANY DRAWING.

DWG. NO. 475-16.30-4 FILE NO. 475-16.3 UPDATE BY: MRN PROJ. ENG. NEW PLOT DATE: 06/26/12 PLOT TIME: 2:40PM PLOT SCALE: 1"=1'

48 hours BEFORE excavation
1-800-227-2600
 CALL Underground Service Alert

VERIFY SCALES
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APPROVED BY *John P. Mueck*
 REGISTERED ENGINEER No. 62220 DATE 7/10/12



MARK	REVISIONS	APPL.	DATE

DESIGNED BY *JPM* DRAWN BY *MRN* CHECKED BY *JCR*

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY: *John P. Mueck* (REGISTERED ENGINEER)
 APPROVED BY: *John P. Mueck* (CITY ENGINEER)
 CONTRACT ADMINISTRATOR: *John P. Mueck*
 SURVEYOR: *John P. Mueck*
 TRAFFIC DIVISION: *John P. Mueck*
 DATE: *7/10/12*

CREST LIFT STATION REPLACEMENT

LEGENDS, SYMBOLS, AND ABBREVIATIONS

ACCT. NO. 9835423203
 CONST. NO. 1218173

S-2106

SHEET 4 OF 21

DWG. NO. G-4

SCALE: NONE

PIPE DUTY DESIGNATION

AVD	AIR VALVE DRAIN	RSD	RAW SEWAGE DISCHARGE
D	DRAIN	S	SEWER
FM	FORCE MAIN	SD	SUMP DRAIN
PW	POTABLE WATER	V	VENT
RSB	RAW SEWAGE BACKFLUSH		

FINISH AND PROTECTIVE COATING SCHEDULE (UNLESS NOTED OTHERWISE)

ITEM (1)	COATING (2)
EXTERIOR CONCRETE SURFACES	NO COATING REQUIRED.
WET WELL AND EMERGENCY STORAGE TANK INTERIOR SURFACES	COAT PER SERVICE CONDITION D.
EXPOSED FERROUS METAL PIPING, VALVES, FITTINGS, AND APPURTENANCES	COAT PER SERVICE CONDITION A. (3)
BELOW GRADE FERROUS METAL	COAT PER SERVICE CONDITION C.
EQUIPMENT AND MOTORS	FACTORY COATING. TOUCH UP WHERE DAMAGED PER MANUF. REQ.
MISCELLANEOUS FERROUS METAL (EXTERIOR)	COAT PER SERVICE CONDITION A. (3)
HOT DIPPED GALVANIZED STEEL (INTERIOR OR EXTERIOR)	NO COATING REQUIRED.
STAINLESS STEEL	NO COATING REQUIRED.
ALUMINUM	NO COATING, EXCEPT WHERE AGAINST CONCRETE COAT AREA PER SPECIFICATION. ANODIZE WHERE SPECIFIED.
ELECTRICAL PANELS	FACTORY COATING, BAKED ENAMEL TOUCH UP WHERE DAMAGED.
ELECTRICAL DEVICE BOXES	FACTORY COATING, ZINC ELECTROPLATE AND ALUMINUM LACQUER OR HDG.
PIPE OR CONDUIT SUPPORTS	HOT DIPPED GALVANIZED.
EXPOSED ELECTRICAL CONDUIT	NO ADDITIONAL COATING REQUIRED.
ORNAMENTAL STEEL GATES AND FENCE	POWDER COAT PER SPECIFICATIONS.

PIPE MATERIAL SCHEDULE (UNLESS NOTED OTHERWISE)

DUTY	BURIED/BELOW GRADE (1)	ABOVE GRADE OR EXPOSED (1)	HYDROSTATIC AND LEAKAGE TEST PRESSURE (PSI) (2)	NOTES
AVD	S.S.	S.S.	25	(3)
FM	PVC, C900	N/A	150	(4)
PW	TYPE "K" COPPER	SCHED. 40 RED BRASS	150	(5) (7)
RSB	S.S.	S.S.	150	
RSD	CLASS 53 DIP	CLASS 53 DIP/S.S.	150	(6)
S	VCP	N/A	AIR TEST	(10)
SD	SCH. 40 PVC	TYPE K COPPER	50	(7)
V	STD. WT. STL.	STD. WT. STL.	N/A	(8)(9)

NOTES:

- UNLESS NOTED OTHERWISE, PIPE MATERIAL AND FITTINGS SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFICATION SECTION 11210.
- LEAKAGE AND HYDROSTATIC TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SSPWC. CONTRACTOR SHALL FURNISH ALL TESTING EQUIPMENT, INCLUDING CALIBRATED TEST GAUGES WITH PROVISIONS FOR OWNER'S TEST GAUGES. NO LEAKAGE IS PERMITTED ON ABOVE GRADE OR EXPOSED PIPING. TESTING AGAINST VALVES IS NOT PERMITTED.
- TEST WITH AIR FOR 4 HOURS, NO LEAKAGE PERMITTED.
- PVC PIPE SHALL BE AWWA C900 PRESSURE CLASS 165 (DR25) WITH DIP FITTINGS. ALL PIPE AND FITTING JOINTS SHALL PROVIDED WITH MECHANICAL TYPE EXTERNAL JOINT RESTRAINTS PER CITY'S APPROVED MATERIAL LIST.
- DISINFECT PRIOR TO CONNECTION TO POTABLE WATER SYSTEM. CONNECTION PIPING SHALL BE SWABBED WITH CHLORINE.
- EXPOSED PIPING INSIDE VALVE VAULT SHALL BE DIP. EXPOSED PIPING INSIDE WET WELL SHALL BE 316 S.S.
- PVC PIPE SHALL BE SOLVENT WELDED. BELOW GRADE COPPER PIPE SHALL BE TAPE WRAPPED.
- STD. WT. STL. PIPE SHALL CONFORM TO ASTM A53, TYPE E (ELECTRO RESISTANCE WELDED). PIPE FITTINGS SHALL BE STD. WT. STL. FITTINGS CONFORMING TO ANSI B16.9 AND ASTM A234. FLANGES FOR STD. WT. STL. PIPE SHALL BE ANSI B16.5, CLASS 150.
- VENT PIPING SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
- VCP SHALL BE PROVIDED IN ACCORDANCE WITH SSPWC.

NOTES (FINISH AND PROTECTIVE COATING SCHEDULE)

- WHERE ITEM NOT SPECIFICALLY INCLUDED IN TABLE, REFER TO SPECIFICATION SECTION 11210.
- UNLESS NOTED OTHERWISE, SURFACE PREPARATION AND COATING SHALL BE PER SPECIFICATION SECTION 11210. ALL COLORS SELECTED BY OWNER.
- SHOP BLAST AND PRIME OR FIELD BLAST AND PRIME PRIOR.

DWG. NO.: 476-16-35-5 FILE NO.: 476-16.3 UPDATE BY: MRN PROJ. ENG.: JPM PLOT DATE: 08/26/12 PLOT TIME: 2:42PM PLOT SCALE: 1"=1'



VERIFY SCALES
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 3602 University Ave. • Riverside, CA 92501 • 951-684-6900
 APPROVED BY: *John P. Maulick*
 REGISTERED ENGINEER No. 62220 DATE 7/10/12



CITY OF RIVERSIDE, CALIFORNIA
 PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE	APPROVED BY
ENGINEERING MANAGER	<i>JPM</i>	7/10/12	<i>John P. Maulick</i>
PRINCIPAL ENGINEER	<i>MRN</i>	7/10/12	<i>John P. Maulick</i>
CONTRACT ADMINISTRATOR	<i>JCR</i>	7/10/12	<i>John P. Maulick</i>
SURVEYOR			
TRAFFIC DIVISION			

DESIGNED BY: JPM DRAWN BY: MRN CHECKED BY: JCR

CREST LIFT STATION REPLACEMENT

SCHEDULES AND PIPE DUTY DESIGNATION

SCALE: NONE

ACCT. NO. 9835423203
 CONST. W.O. 1218173

S-2106

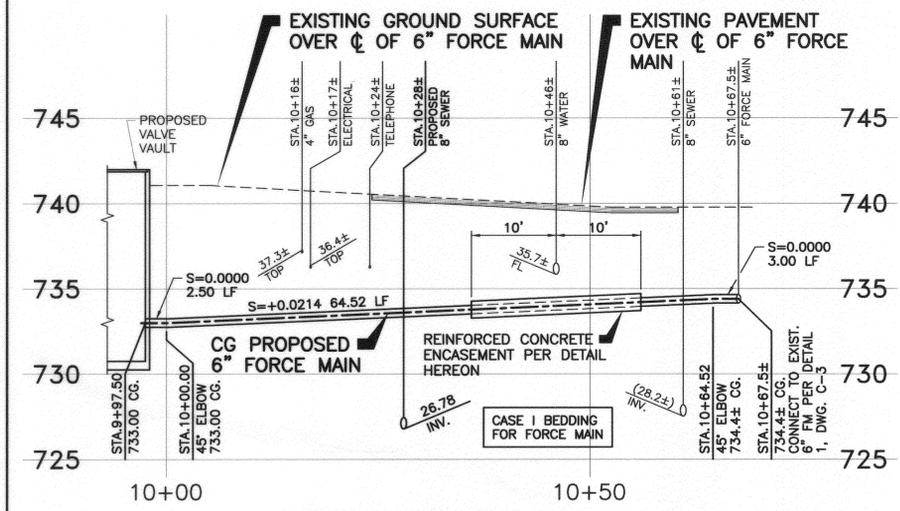
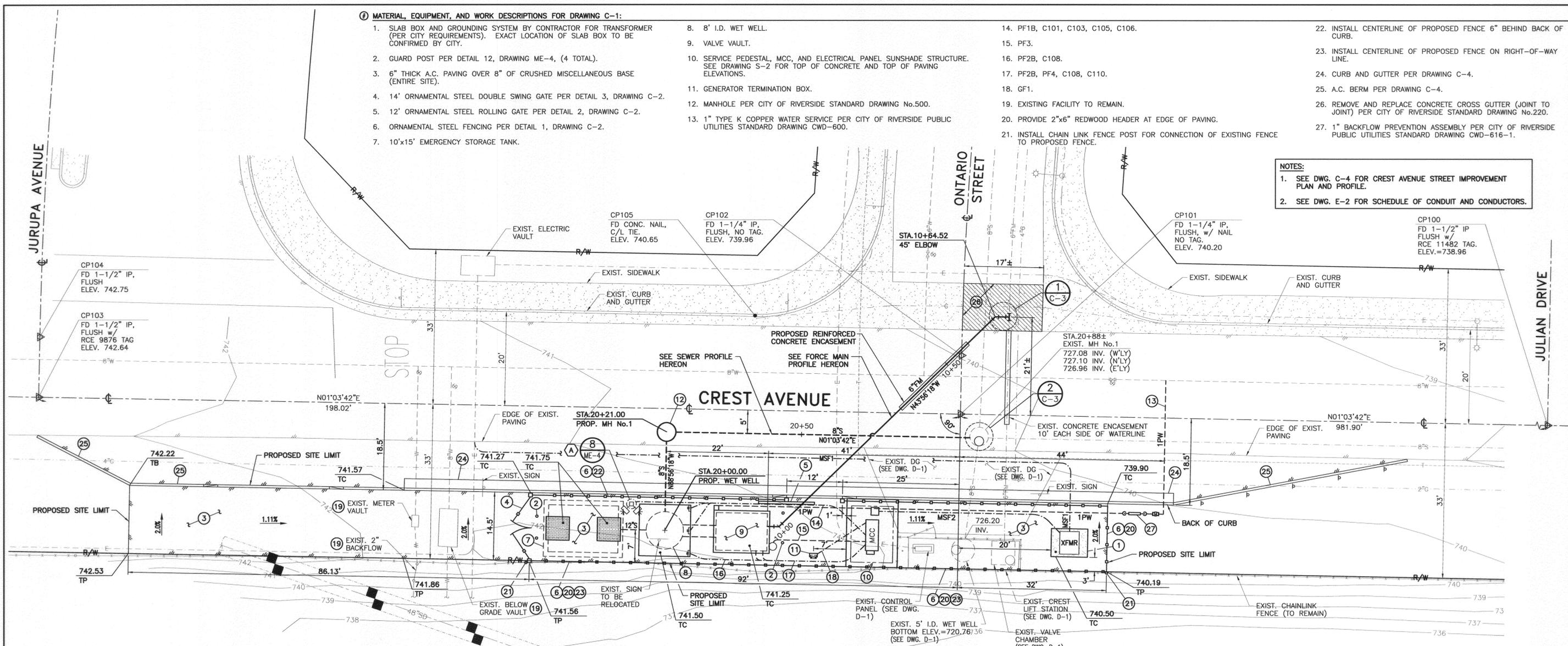
SHEET 5 OF 21

DWG. NO. G-5

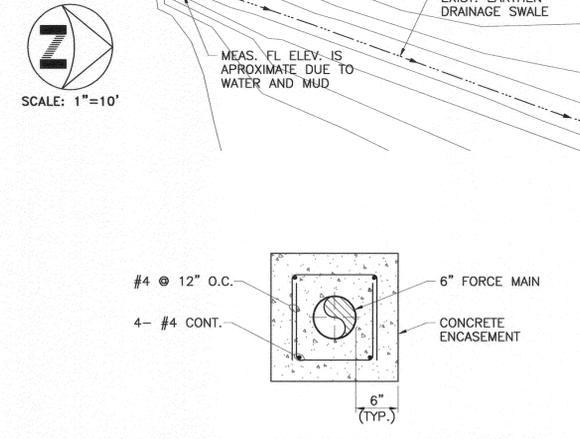
⑥ MATERIAL, EQUIPMENT, AND WORK DESCRIPTIONS FOR DRAWING C-1:

1. SLAB BOX AND GROUNDING SYSTEM BY CONTRACTOR FOR TRANSFORMER (PER CITY REQUIREMENTS). EXACT LOCATION OF SLAB BOX TO BE CONFIRMED BY CITY.
2. GUARD POST PER DETAIL 12, DRAWING ME-4, (4 TOTAL).
3. 6" THICK A.C. PAVING OVER 8" OF CRUSHED MISCELLANEOUS BASE (ENTIRE SITE).
4. 14' ORNAMENTAL STEEL DOUBLE SWING GATE PER DETAIL 3, DRAWING C-2.
5. 12' ORNAMENTAL STEEL ROLLING GATE PER DETAIL 2, DRAWING C-2.
6. ORNAMENTAL STEEL FENCING PER DETAIL 1, DRAWING C-2.
7. 10'x15' EMERGENCY STORAGE TANK.
8. 8' I.D. WET WELL.
9. VALVE VAULT.
10. SERVICE PEDESTAL, MCC, AND ELECTRICAL PANEL SUNSHADE STRUCTURE. SEE DRAWING S-2 FOR TOP OF CONCRETE AND TOP OF PAVING ELEVATIONS.
11. GENERATOR TERMINATION BOX.
12. MANHOLE PER CITY OF RIVERSIDE STANDARD DRAWING No.500.
13. 1" TYPE K COPPER WATER SERVICE PER CITY OF RIVERSIDE PUBLIC UTILITIES STANDARD DRAWING CWD-600.
14. PF1B, C101, C103, C105, C106.
15. PF3.
16. PF2B, C108.
17. PF2B, PF4, C108, C110.
18. GF1.
19. EXISTING FACILITY TO REMAIN.
20. PROVIDE 2"x6" REDWOOD HEADER AT EDGE OF PAVING.
21. INSTALL CHAIN LINK FENCE POST FOR CONNECTION OF EXISTING FENCE TO PROPOSED FENCE.
22. INSTALL CENTERLINE OF PROPOSED FENCE 6" BEHIND BACK OF CURB.
23. INSTALL CENTERLINE OF PROPOSED FENCE ON RIGHT-OF-WAY LINE.
24. CURB AND GUTTER PER DRAWING C-4.
25. A.C. BERM PER DRAWING C-4.
26. REMOVE AND REPLACE CONCRETE CROSS GUTTER (JOINT TO JOINT) PER CITY OF RIVERSIDE STANDARD DRAWING No.220.
27. 1" BACKFLOW PREVENTION ASSEMBLY PER CITY OF RIVERSIDE PUBLIC UTILITIES STANDARD DRAWING CWD-616-1.

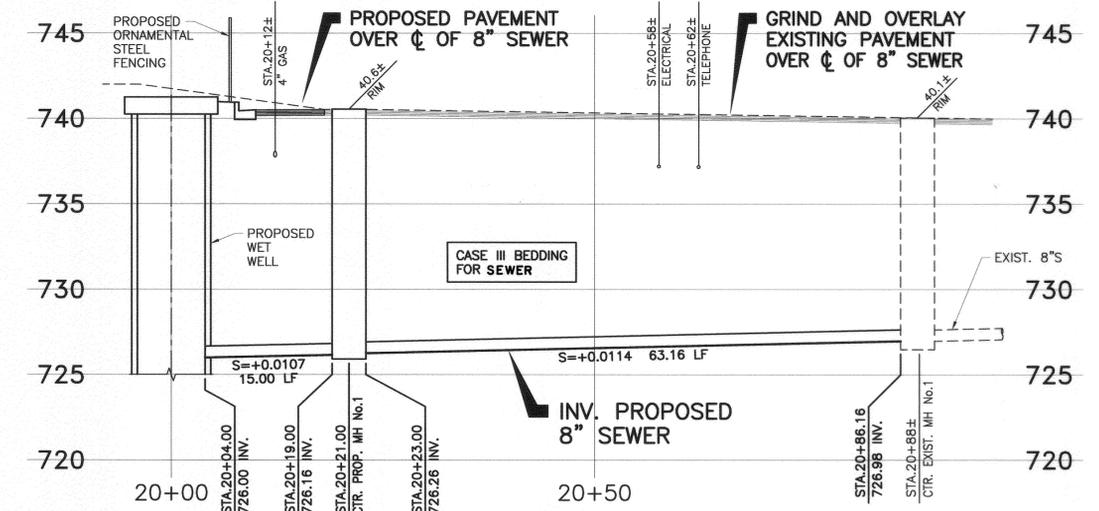
NOTES:
 1. SEE DWG. C-4 FOR CREST AVENUE STREET IMPROVEMENT PLAN AND PROFILE.
 2. SEE DWG. E-2 FOR SCHEDULE OF CONDUIT AND CONDUCTORS.



FORCE MAIN PROFILE
 SCALE: 1"=10'(H) 1"=5'(V)



REINFORCED CONCRETE ENCASEMENT
 N.T.S.



SEWER PROFILE
 SCALE: 1"=10'(H) 1"=5'(V)

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 CALL Underground Service Alert

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 APPROVED BY *John P. Moulade*
 REGISTERED ENGINEER No. 62220 DATE 7/10/12



MARK	REVISIONS	APPR.	DATE

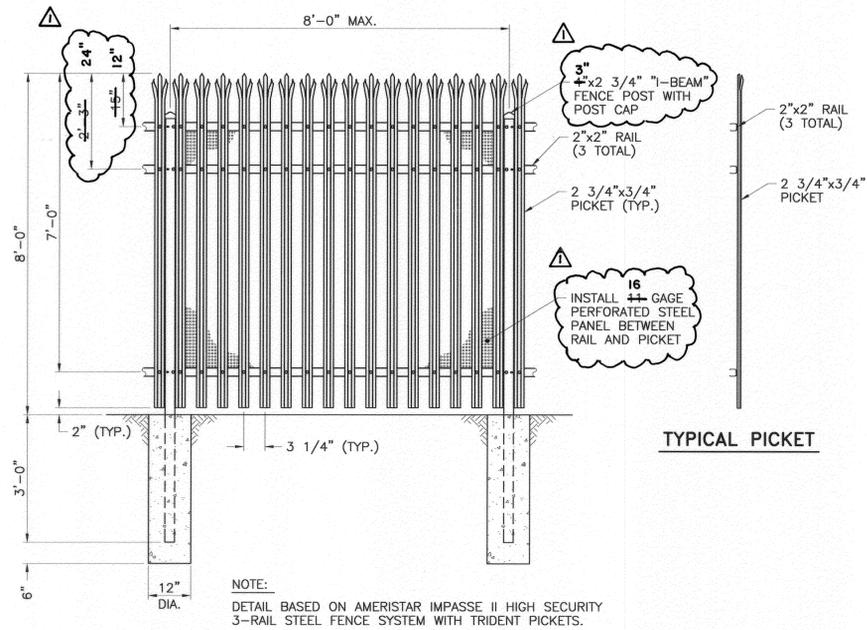
DESIGNED BY JPM DRAWN BY MRN CHECKED BY JCR

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT
 APPROVED BY *[Signature]* DATE *8/24/12*
 ENGINEERING MANAGER
 PRINCIPAL ENGINEER
 CONTRACT ADMINISTRATOR
 SURVEYOR
 TRAFFIC DIVISION

CREST LIFT STATION REPLACEMENT
SITE PLAN
 SCALE: NONE

ACCT. NO. 9835423203
 CONST. W.O. 1218173
S-2106
 SHEET 6 OF 21
 DWG. NO. C-1

DWG. NO.: 476-16-3c-1 FILE NO.: 476-16-3 UPDATE BY: RMD PROJ. ENG.: JEM PLOT DATE: 07/08/12 PLOT TIME: 2:38PM PLOT SCALE: 1"=1"

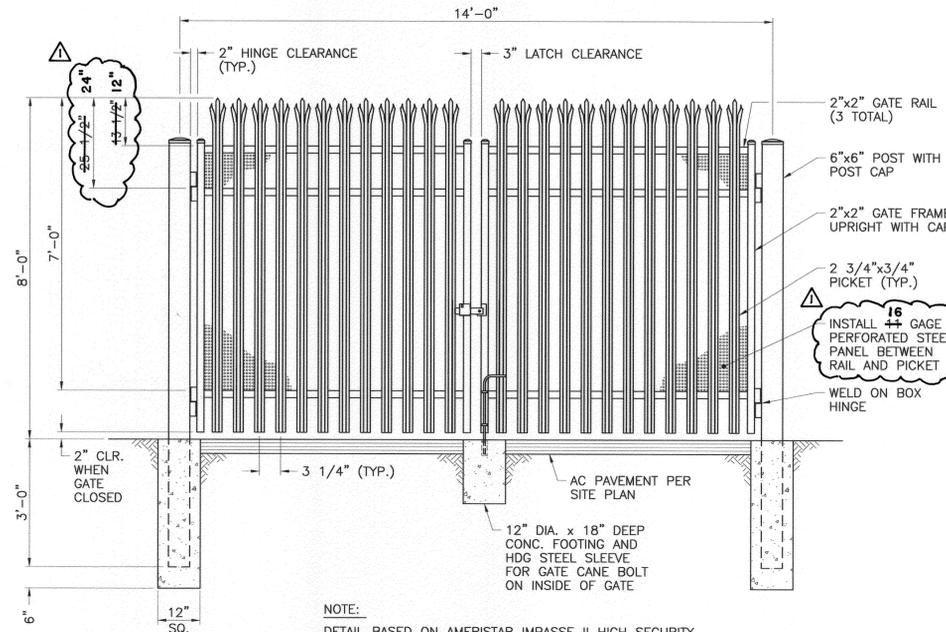


NOTE:
DETAIL BASED ON AMERISTAR IMPASSE II HIGH SECURITY 3-RAIL STEEL FENCE SYSTEM WITH TRIDENT PICKETS.

STEEL FENCE DETAIL

N.T.S.

1
C-1

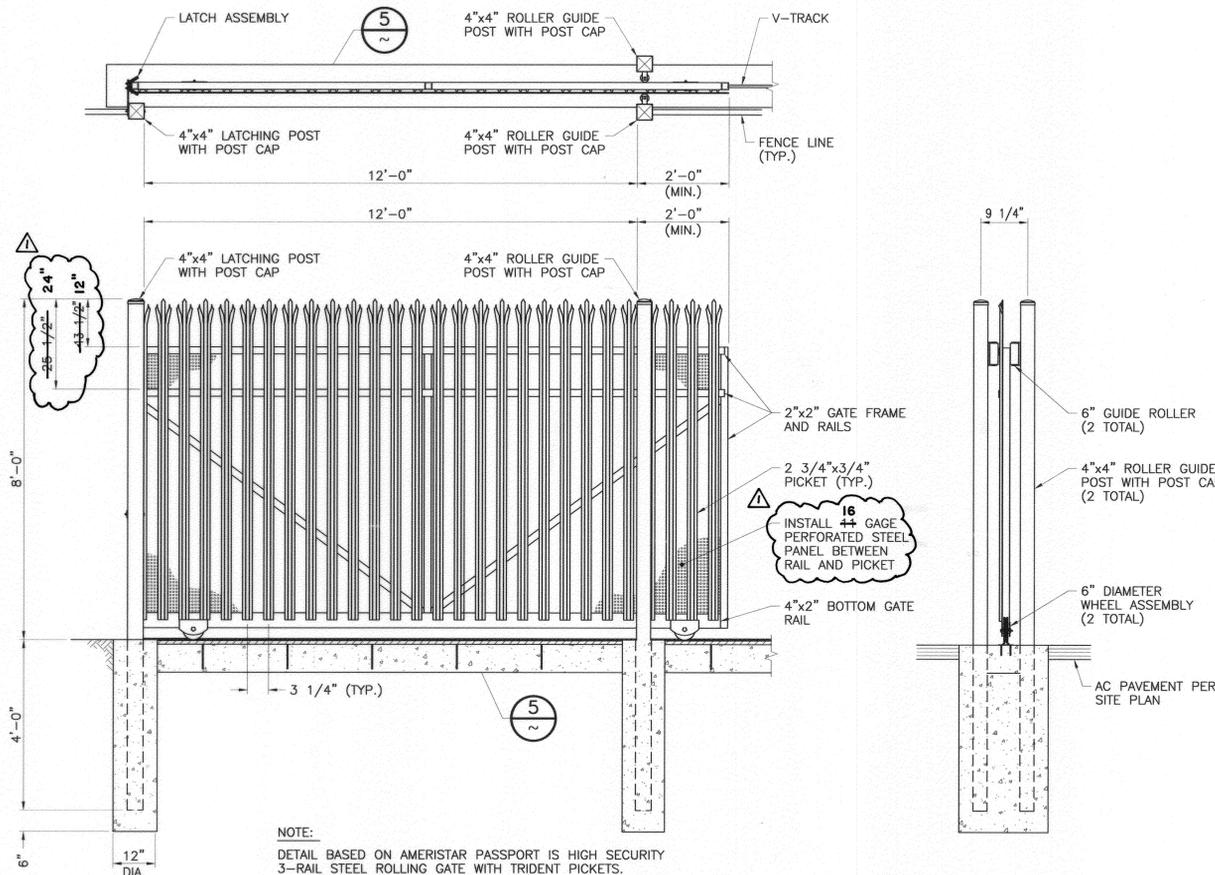


NOTE:
DETAIL BASED ON AMERISTAR IMPASSE II HIGH SECURITY 3-RAIL STEEL DOUBLE SWING GATE WITH TRIDENT PICKETS.

DOUBLE SWING GATE DETAIL

N.T.S.

3
C-1

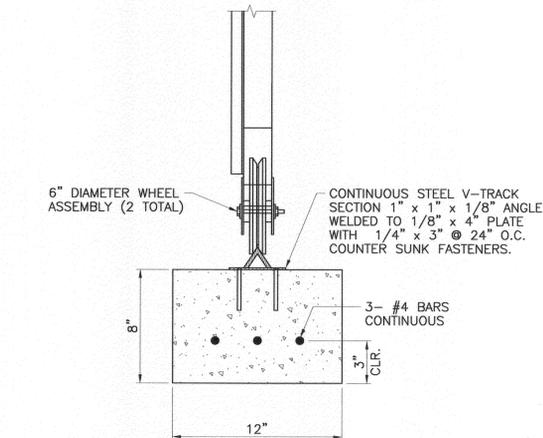


NOTE:
DETAIL BASED ON AMERISTAR PASSPORT IS HIGH SECURITY 3-RAIL STEEL ROLLING GATE WITH TRIDENT PICKETS.

ROLLING GATE DETAIL

N.T.S.

2
C-1



V-GROOVE WHEEL DETAIL

N.T.S.

5
2



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APPROVED BY *John P. Maulsbach*
REGISTERED ENGINEER No. 62220 DATE 7/10/12

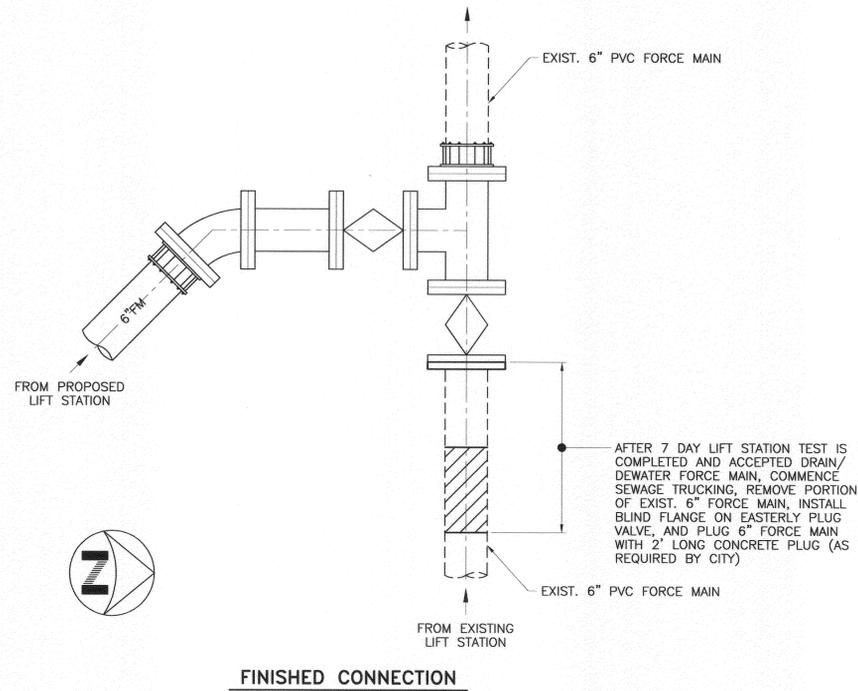
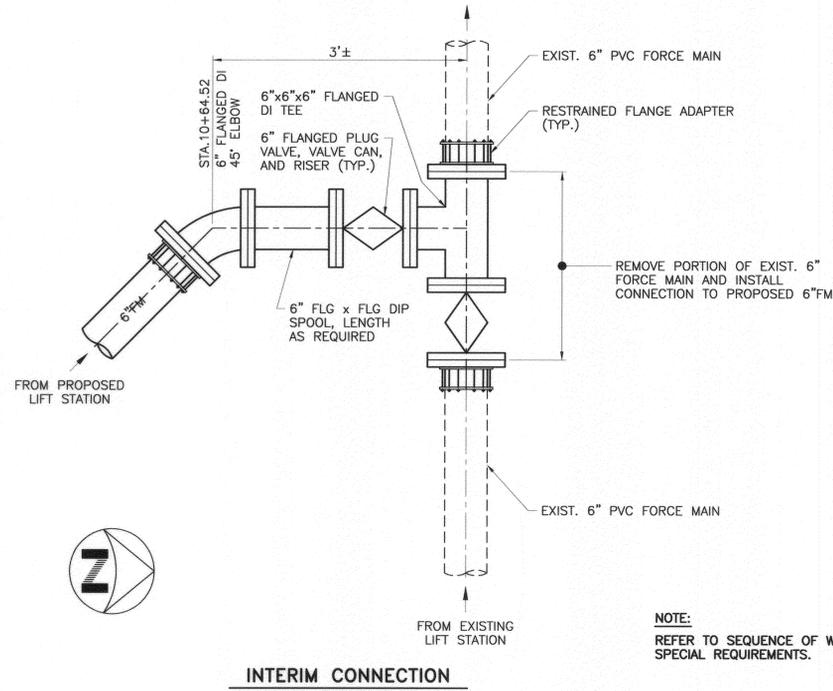


CITY OF RIVERSIDE, CALIFORNIA PUBLIC WORKS DEPARTMENT			
APPROVED BY	BY	DATE	APPROVED BY
ENGINEERING MANAGER	JPM	8/29/12	<i>John P. Maulsbach</i>
PRINCIPAL ENGINEER			
CONTRACT ADMINISTRATOR			
SURVEYOR			
TRAFFIC DIVISION			
DESIGNED BY JPM	DRAWN BY MRN	CHECKED BY JCR	DATE 8/29/12

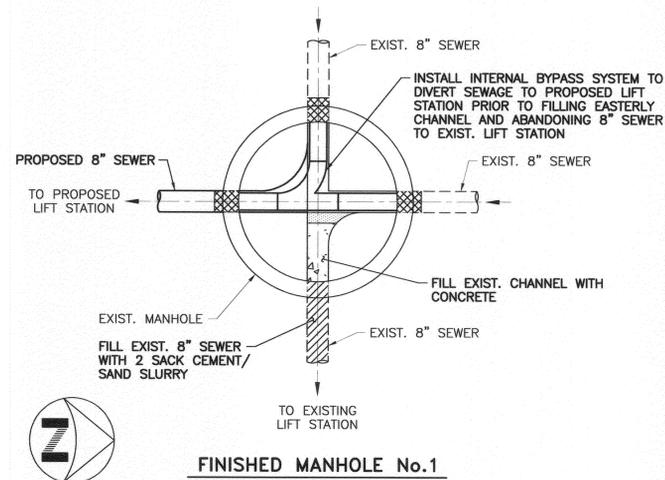
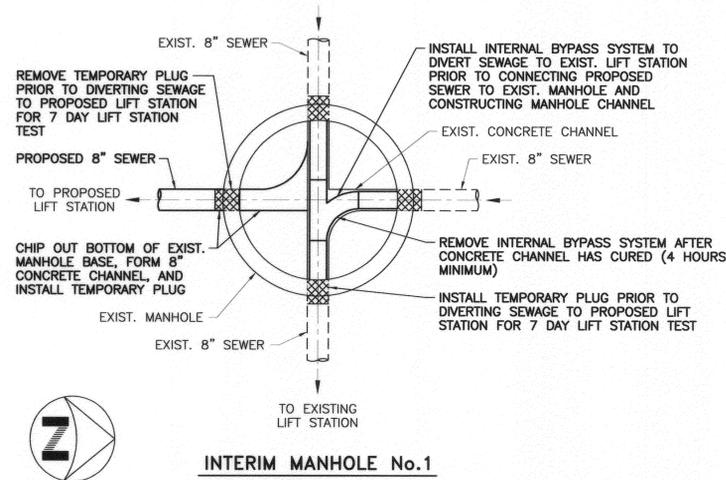
CREST LIFT STATION REPLACEMENT		ACCT. NO. 9835423203 CONST. W.O. 1218173
FENCE AND GATE DETAILS		S-2106
SCALE: NONE		SHEET 7 OF 21
		DWG. NO. C-2

DWG. NO.: 476-18-35-2 FILE NO.: 476-18.3 UPDATE BY: MRN PROJ. ENG.: JPM PLOT DATE: 08/22/12 PLOT TIME: 11:53AM PLOT SCALE: 1"=1

DWG. NO. 476-16-36-3 FILE NO. 476-16.3 UPDATE BY: MRN PROJ. ENG. JPM PLOT DATE: 08/26/12 PLOT TIME: 10:56AM PLOT SCALE: 1"=1'



6" FORCE MAIN CONNECTION DETAIL (1)
SCALE: 1"=1'-0"



- NOTES:**
- REFER TO SEQUENCE OF WORK IN SPECIAL REQUIREMENTS.
 - AFTER PROPOSED SEWER IS INSTALLED, TESTED, AND ACCEPTED BY CITY AND AFTER 7 DAY LIFT STATION TEST IS COMPLETED AND ACCEPTED, CONTRACTOR SHALL CONSTRUCT FINISHED MANHOLE No.1.

EXISTING MANHOLE No.1 CONNECTION DETAIL (2)
SCALE: 3/8"=1'-0"



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APPROVED BY *John P. Macleod*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



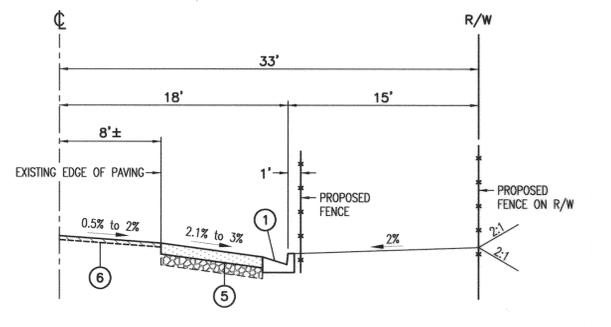
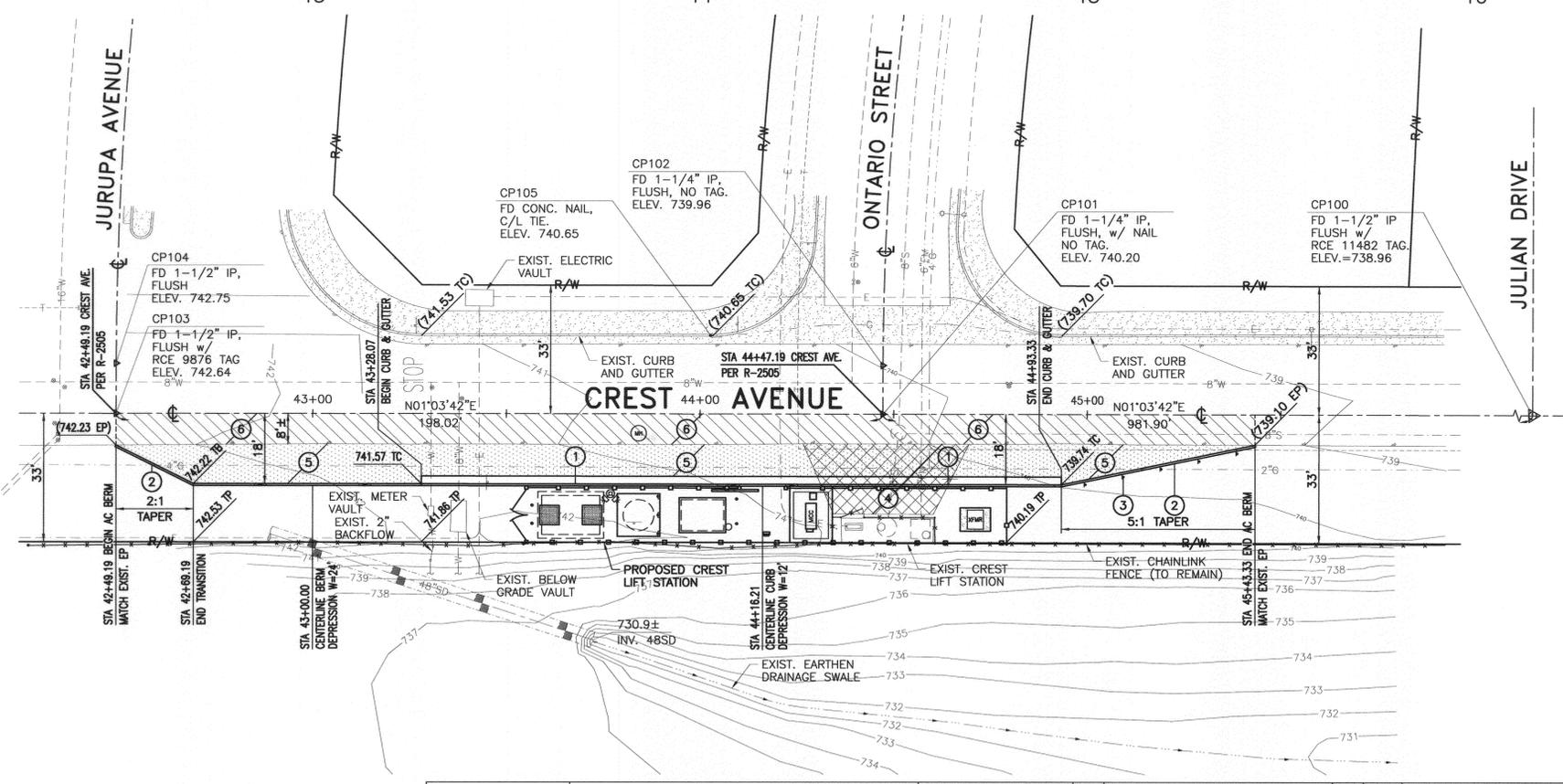
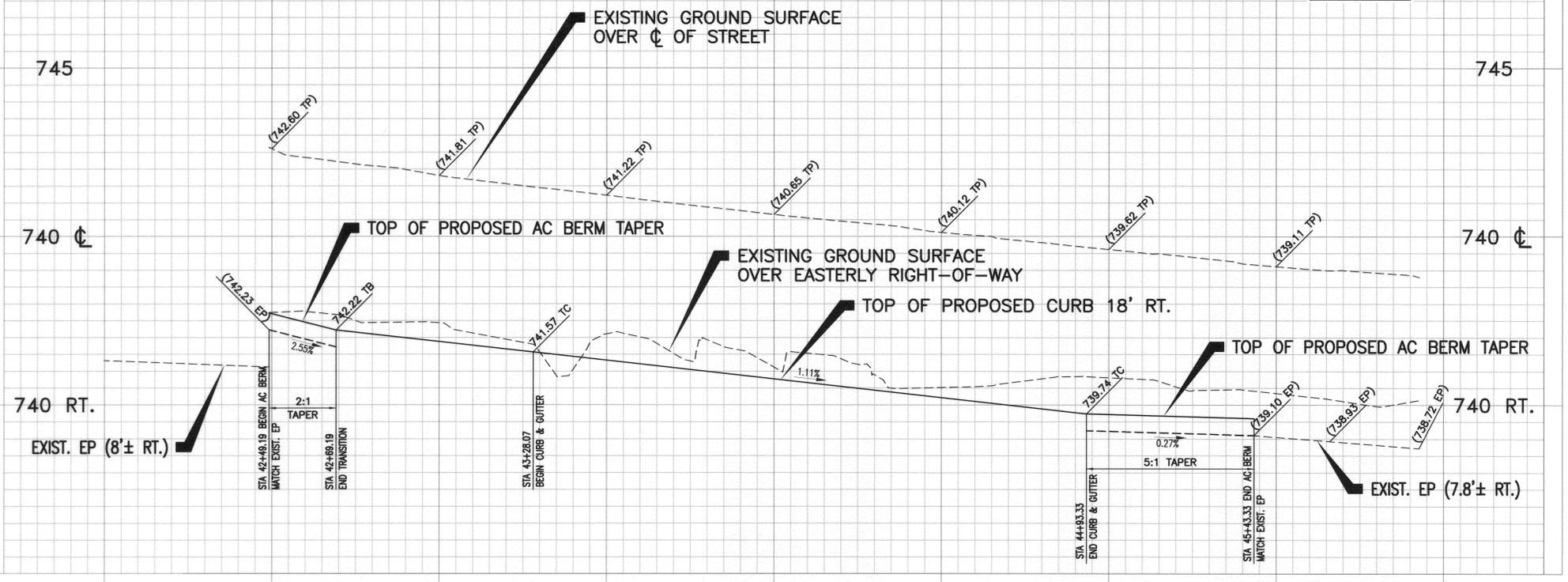
CITY OF RIVERSIDE, CALIFORNIA PUBLIC WORKS DEPARTMENT			
APPROVED BY	BY	DATE	APPROVED BY
ENGINEERING MANAGER	JPM	7/11/12	<i>John P. Macleod</i>
PRINCIPAL ENGINEER	JCR	7/11/12	
CONTRACT ADMINISTRATOR	JCR	7/11/12	
SURVEYOR	JCR	7/11/12	
TRAFFIC DIVISION			
DESIGNED BY	JPM	DRAWN BY	MRN
		CHECKED BY	JCR

CREST LIFT STATION REPLACEMENT		ACCT. NO. 9835423203 CONST. W.O. 1218173
CONNECTION DETAILS		S-2106
SCALE: NONE		SHEET 8 OF 21
		DWG. NO. C-3

DWG. NO.: 476-16.35-4 FILE NO.: 476-16.3 UPDATE BY: MRN PROJ. ENG.: JPM PLOT DATE: 08/26/12 PLOT TIME: 3:03PM PLOT SCALE: 1"=1'

HORIZ: 1"=20'
VERT: 1"=2'

- CONSTRUCTION NOTES**
- CONSTRUCT TYPE 1 CONCRETE CURB AND GUTTER (6" CURB FACE) PER CITY OF RIVERSIDE STANDARD DRAWING No.200.
 - CONSTRUCT TYPE 1 ASPHALT CONCRETE BERM PER CITY OF RIVERSIDE STANDARD DRAWING No.250.
 - INSTALL TYPE "OM2-1V" MARKERS (@10' O.C.) PER CITY OF RIVERSIDE STANDARD DRAWING No.665.
 - REMOVE EXISTING D.G. DRIVE APPROACH.
 - CONSTRUCT 4" OF A.C. PAVEMENT OVER 12" OF CRUSHED MISCELLANEOUS BASE.
 - COLD MILL (0.10') OF EXISTING A.C. PAVEMENT AND CONSTRUCT 0.10' OF A.C. PAVEMENT



48 hours BEFORE excavation
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CALL Underground Service Alert

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

KRIEGER & STEWART INCORPORATED
3602 University Ave. • Riverside, CA 92501 • 951-684-6900
APPROVED BY *John P. Wheeler*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



MARK	REVISIONS	APPR.	DATE

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY: *[Signature]* DATE: 8/29/12
ENGINEERING MANAGER
PRINCIPAL ENGINEER
CONTRACT ADMINISTRATOR
SURVEYOR
TRAFFIC DIVISION

CREST LIFT STATION REPLACEMENT
STREET IMPROVEMENT PLAN AND PROFILE
CREST AVENUE
STA. 42+49.19 TO STA. 45+43.33

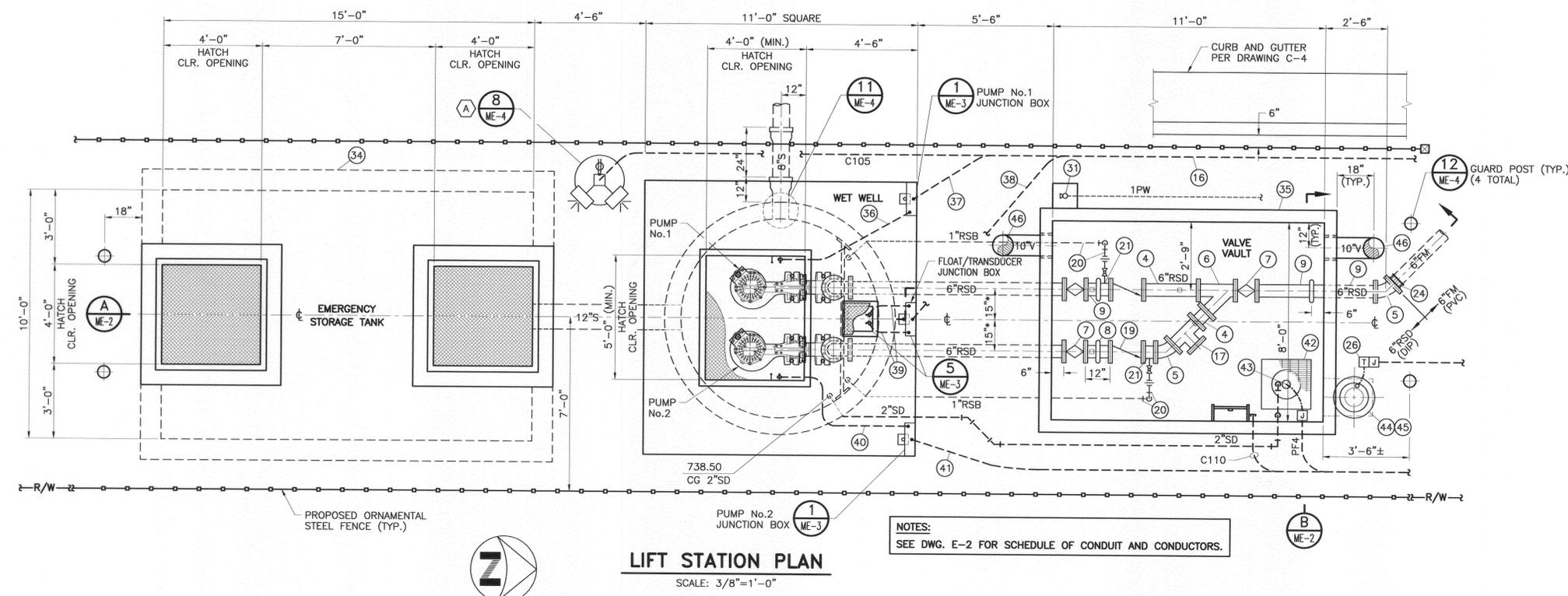
SCALE: 1"=20' HORIZONTAL 1"=2' VERTICAL

ACCT. NO. 9835423203
CONST. W.O. 1218173
S-2106
SHEET 9 OF 21
DWG. NO. C-4

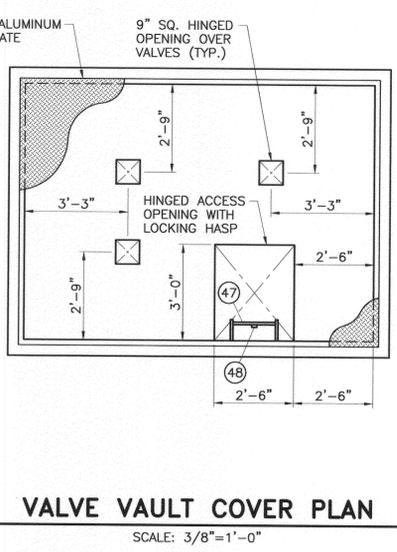
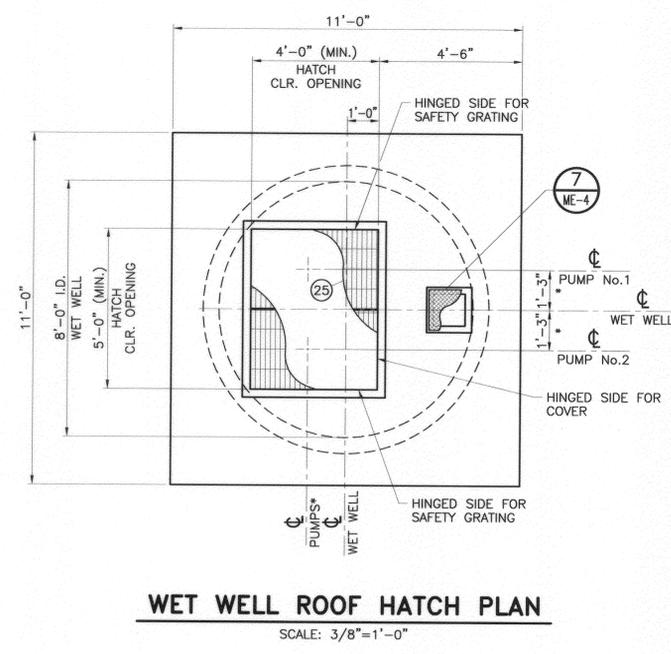
DWG. NO. 478-16.3-FILE NO. 478-16.3-UPDATE BY: MRN PROJ. ENG.: JPM PLOT DATE: 08/26/12 PLOT TIME: 3:05PM PLOT SCALE: 1"=1'

⑦ MATERIAL, EQUIPMENT, AND WORK DESCRIPTIONS FOR DRAWINGS ME-1 AND ME-2:

1. SUBMERSIBLE CHOPPER PUMP WITH CENTER DISCHARGE. CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ALL REQUIRED MODIFICATIONS TO DISCHARGE PIPING AND HATCH LOCATION/SIZE IF PUMPING UNIT FURNISHED HAS SIDE (TANGENTIAL) DISCHARGE.
2. POWER AND CONTROL CABLES TO PUMPING UNIT. SUPPORT CABLES WITH ALL STAINLESS STEEL KELLEMS GRIPS HUNG FROM SUPPORT. LOOP EXCESS PUMP CABLE (3' MIN. TO 6' MAX. LENGTH) OVER SUPPORT. THE POWER AND CONTROL CABLES TOGETHER PER MANUFACTURER'S RECOMMENDATIONS.
3. 5/16" DIAMETER (MINIMUM) 316 STAINLESS STEEL LIFTING CABLE LOOPED THROUGH 316 STAINLESS STEEL PUMP LIFTING ASSEMBLY AND SECURED WITH 316 STAINLESS STEEL LOCKING CLEVIS. PROVIDE CONNECTOR AT END OF CABLE TO CREATE END LOOP AND HANG FROM CABLE SUPPORT. CABLE SHALL HAVE A MINIMUM RATED CAPACITY OF 2000 LB. OR 4 TIMES PUMPING UNIT WEIGHT WHICHEVER IS GREATER.
4. DUCTILE IRON PIPE (DIP) FLANGED END SPOOL, LENGTH AS REQUIRED, OR AS SHOWN.
5. 45° DI FLANGED ELBOW.
6. DI FLANGED WYE.
7. WORM GEAR OPERATED NON-LUBRICATED PLUG VALVE WITH NUT OPERATOR.
8. VICTAULIC GROOVED COUPLING (STYLE 31).
9. DIP SPOOL, FLANGED END X GROOVED END, LENGTH AS REQUIRED.
10. 6" X 4" STD. WT. 316 STAINLESS STEEL 90° FLANGED REDUCING ELBOW.
11. SCHEDULE 40 316 STAINLESS STEEL PIPE GUIDE RAILS FOR SUBMERSIBLE PUMP.
12. INTERMEDIATE GUIDE RAIL SUPPORT (MINIMUM OF TWO REQUIRED) - 316 STAINLESS STEEL. ATTACH TO PIPE PER MANUFACTURER'S RECOMMENDATIONS.
13. UPPER GUIDE RAIL SUPPORT - ALL 316 STAINLESS STEEL. ATTACH TO CONCRETE WITH 316 STAINLESS STEEL EPOXY ANCHORS. ANCHOR BOLT SIZE, EMBEDMENT, AND NUMBER PER PUMP MANUFACTURER.
14. PUMP DISCHARGE ELBOW FURNISHED BY PUMP MANUFACTURER. ANCHOR ELBOW WITH STAINLESS STEEL ANCHOR BOLTS (CAST-IN-PLACE OR DRILL AND EPOXY). ANCHOR BOLT SIZE, NUMBER, AND EMBEDMENT PER PUMP MANUFACTURER.
15. SHORT RADIUS 90° ELBOW, PLAN END X PLAIN END.
16. PF1B, C101, C103, C105, C106.
17. EMERGENCY BYPASS CONNECTION. DI TEE WITH BLIND FLANGE.
18. ACCESS HATCH, ALL 316 STAINLESS STEEL CONSTRUCTION WITH SAFETY GRATING. HATCH SIZE SHOWN IS MINIMUM, PROVIDE LARGER SIZE IF NECESSARY FOR PUMPING UNITS FURNISHED.
19. SURGEBUSTER CHECK VALVE AS MANUFACTURED BY VAL-MATIC, OR EQUAL.
20. 1" STAINLESS STEEL BALL VALVE, UNION, AND FITTINGS FOR RAW SEWAGE BACKFLUSH (RSB) TO WET WELL FOR MANUAL BREAK DOWN OF SCUM BLANKET. PIPING SHALL BE 1" SCHEDULE 40, 316 STAINLESS STEEL.
21. 1" SERVICE SADDLE WITH DUCTILE IRON BODY AND STAINLESS STEEL STRAPS (RATED FOR 150 PSI MINIMUM WORKING PRESSURE).
22. 1/4" DIAMETER, 316 STAINLESS STEEL WIRE ROPE (7 X 19 STRAND CORE) ATTACHED TO 10 POUND STAINLESS STEEL WEIGHT. LOCATE WEIGHT APPROXIMATELY 24" FROM BOTTOM OF WET WELL. ATTACH FLOAT SWITCH CABLES TO WIRE ROPE AT LEVELS SPECIFIED WITH NYLON TIES (4" O.C. MAX.). PROVIDE CLOSED LOOP AT TOP OF WIRE ROPE FOR SUPPORT HOOK.
23. REINFORCED CONCRETE PIPE (RCP) PER ASTM C76, CLASS III (D-2000). PIPE SECTIONS SHALL BE MINIMUM 8' LONG, TOP AND BOTTOM SECTION LENGTHS SHALL BE ADJUSTED TO ACHIEVE REQUIRED WET WELL HEIGHT AND TO PROVIDE 12" MINIMUM CLEARANCE BETWEEN RCP JOINTS AND PIPE PENETRATIONS.
24. TRANSITION FROM RAW SEWAGE DISCHARGE TO RAW SEWAGE FORCE MAIN. PROVIDE RESTRAINED FLANGE ADAPTER FOR TRANSITION FROM DIP TO PVC.
25. TWO PIECE SAFETY GRATING BENEATH HATCH DOOR LEAFS, RATED FOR 300 LB./SF LIVE LOAD, SEE NOTE 18 HEREON.
26. INSTALL TIMER IN JUNCTION BOX AND INSTALL LIQUID-TIGHT FLEXIBLE METAL CONDUIT FROM JUNCTION BOX TO EXHAUST VENTILATOR.
27. 4" X 3" STD. WT. 316 STAINLESS STEEL FLANGED ECCENTRIC REDUCER (ONLY REQUIRED FOR PUMPS WITH 3" DISCHARGE).
28. WET WELL HIGH HIGH WATER LEVEL (HHWL) FLOAT SWITCH.
29. 4" SCHEDULE 40, 316 STAINLESS STEEL FLANGED END SPOOL, LENGTH AS REQUIRED.
30. 6" SCHEDULE 40, 316 STAINLESS STEEL FLANGED END SPOOL, LENGTH AS REQUIRED. SHIP ONE FLANGE LOOSE FOR FIELD WELDING AFTER INSTALLATION IN WET WELL.
31. 1" HOSE BIB. VERTICAL RISER FOR HOSE BIB SHALL BE 1" SCHEDULE 40 RED BRASS. TRANSITION TO TYPE "K" COPPER SHALL BE AT BELOW GRADE ELBOW.
32. 1" RSB, SCHEDULE 40, 316 STAINLESS STEEL. ATTACH TO DISCHARGE PIPE SUPPORTS WITH 316 STAINLESS STEEL UNISTRUT.
33. ULTRASONIC LEVEL TRANSDUCER. MANUFACTURER TO VERIFY OPERATION. INITIALLY SET TRANSDUCER TWO FEET ABOVE GRAVITY SEWER INVERT. IF THERE IS INTERFERENCE FROM ADJACENT EQUIPMENT, LOWER TRANSDUCER.
34. PRE-CAST CONCRETE EMERGENCY STORAGE TANK.
35. 8'-0" ID X 11'-0" ID PRECAST CONCRETE VALVE VAULT DESIGNED FOR PEDESTRIAN LOADING WITH SOLID CONCRETE BOTTOM, 24" ID SQUARE X 24" DEEP SOLID BOTTOM SUMP WITH GALVANIZED FRAME AND GRATE, AND REMOVABLE ALUMINUM CHECKER PLATE COVER PER VALVE VAULT COVER PLAN HEREON.



NOTES:
SEE DWG. E-2 FOR SCHEDULE OF CONDUIT AND CONDUCTORS.



36. PF1A, C107.
37. PF1B, C106.
38. C101, C103.
39. C102, C104.
40. PF2A, C109.
41. PF2B, C108.
42. 24" ID SQUARE X 24" DEEP SOLID BOTTOM SUMP WITH GALVANIZED PARKWAY FRAME AND GRATE.
43. ZOELLER SUMP PUMP, GRAINGER STOCK No.2P553 OR EQUAL, 33 GPM AT 20 FEET, 1/2 HP, 115 VOLT WITH AUTOMATIC ON/OFF FLOAT, 2" DISCHARGE WITH 2" CHECK VALVE AND ST. STL. BALL VALVE AND ALL REQUIRED FITTINGS. MOUNT PIPING TO WALL WITH PS3 UNISTRUT SUPPORTS. NOTCH GRATING AS REQUIRED FOR DISCHARGE PIPE AND CONDUIT INSTALLATION.
44. UP BLAST CENTRIFUGAL EXHAUST VENTILATOR EF1, DIRECT DRIVE, LOREN COOK MODEL ACRU-D, OR EQUAL.
45. 1/8" MINIMUM STEEL EXHAUST DUCT, HDG. AFTER FABRICATION, SIZE TO MATCH EXHAUST FAN MOUNTING COLLAR.
46. VENT, STD. WT. STL., 15 ROWS OF 20 EQUALLY SPACED 1" DIAMETER DRILLED HOLES (300 TOTAL), WITH WELDED CAP (FLAT PLATE) ON TOP, GALVANIZE AFTER FABRICATION.
47. FULLY WELDED 304 ST. STL. STEEL LADDER, 16" WIDE, 2"x5/8" STRINGERS, 3/4" DIAMETER RUNGS AT 12" O.C., BOTTOM RUNG 12" FROM FLOOR OF VAULT. ATTACH LADDER TO WALL WITH 2- 1/2"x1/4" BENT PLATE, LENGTH AS REQUIRED. WELD ONE LEG TO STRINGER AND BOLT OTHER LEG TO WALL WITH 2- 1/2" DIAMETER ST. STL. EXPANSION ANCHORS EACH SIDE AT TOP, MIDDLE, AND 18" FROM BOTTOM.
48. BILCO LADDERUP SAFETY POST, TYPE 304 ST. STL. OR EQUAL.

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0 1"
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APPROVED BY *John P. Macleak*
REGISTERED ENGINEER No. 62220 DATE 7/10/12

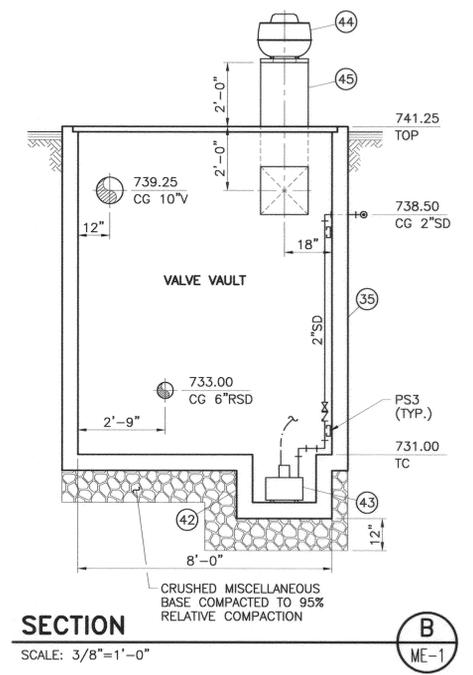
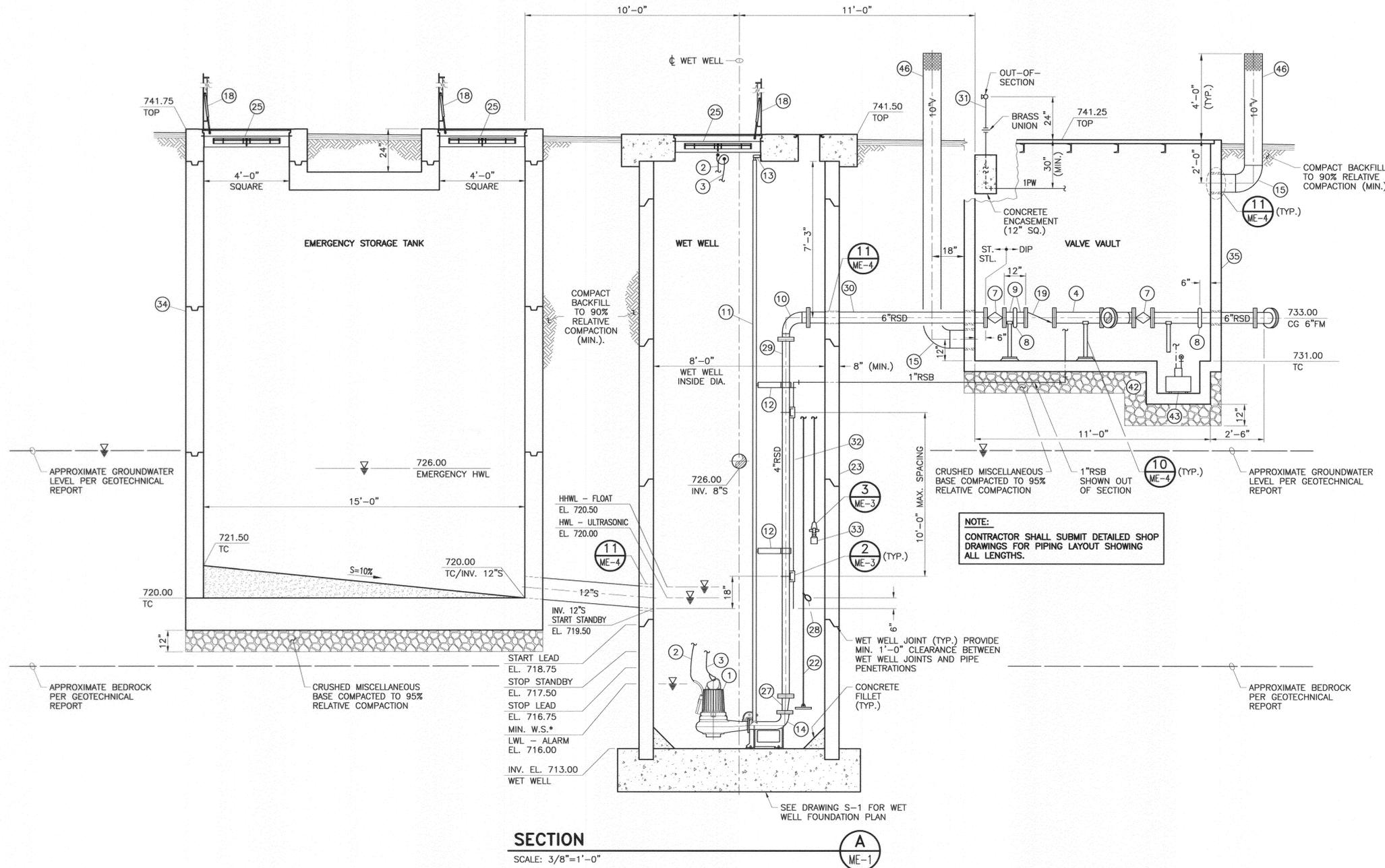


MARK	REVISIONS	APPR. DATE

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT
APPROVED BY: *[Signature]* DATE: 8/28/12
PRINCIPAL ENGINEER
CONTRACT ADMINISTRATOR
SUPERVISOR
TRAFFIC DIVISION

CREST LIFT STATION REPLACEMENT
LIFT STATION AND WET WELL ROOF HATCH PLANS
ACCT. NO. 9835423203
CONST. NO. 1218173
S-2106
SHEET 10 OF 21
SCALE: NONE
DWG. NO. ME-1

DWG. NO. 476-16.3.mxd-27 FILE NO. 476-16.3 UPDATE BY: EMD PROJ. ENG.: JPM PLOT DATE: 07/09/12 PLOT TIME: 3:20PM PLOT SCALE: 1=1



NOTE:
 CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS FOR PIPING LAYOUT SHOWING ALL LENGTHS.

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 APPROVED BY *John P. Macleod*
 REGISTERED ENGINEER No. 62220 DATE 7/10/12

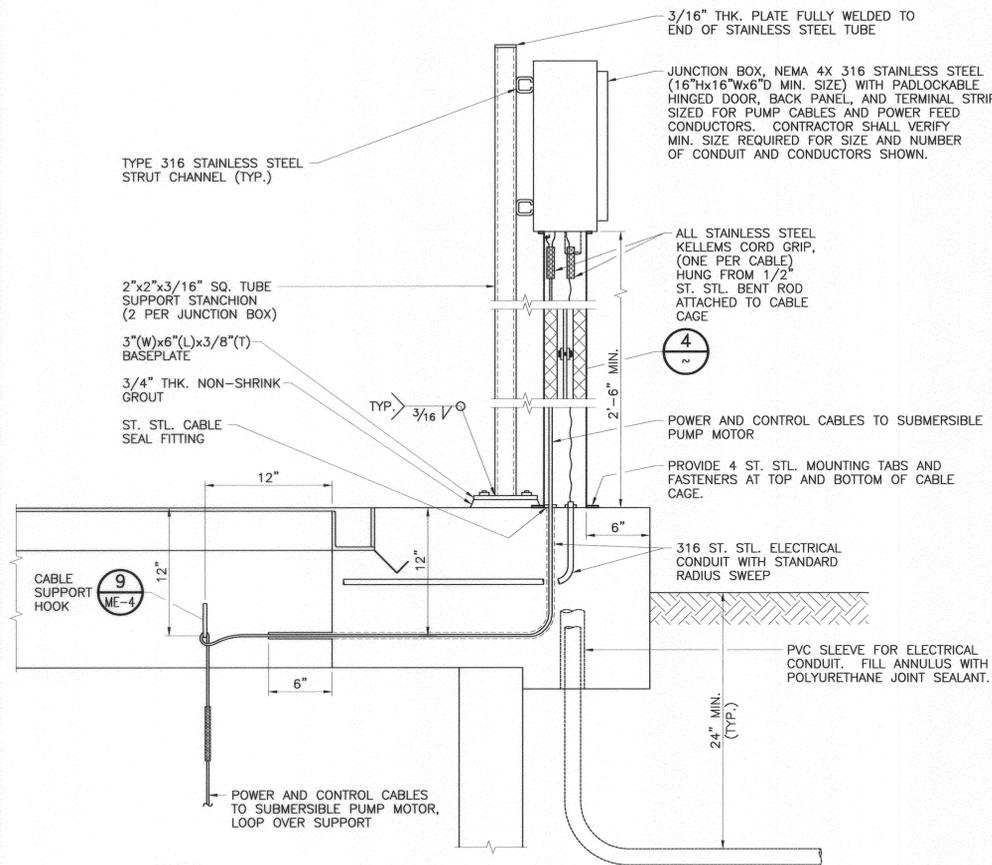


MARK	REVISIONS	APPR.	DATE

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT
 APPROVED BY: *[Signature]* DATE: 8/29/12
 ENGINEERING MANAGER
 PRINCIPAL ENGINEER
 CONTRACT ADMINISTRATOR
 SURVEYOR
 TRAFFIC DIVISION

CREST LIFT STATION REPLACEMENT
LIFT STATION SECTION
 SCALE: NONE
 ACCT. NO. 9835423203
 CONST. W.O. 1218173
S-2106
 SHEET 11 OF 21
 DWG. NO. ME-2

DWG. NO. 476-16-3me-3FILE NO.: 476-16-3 UPDATE BY: MRN PROJ. ENG.: JPM PLOT DATE: 06/22/12 PLOT TIME: 12:14PM PLOT SCALE: 1=1

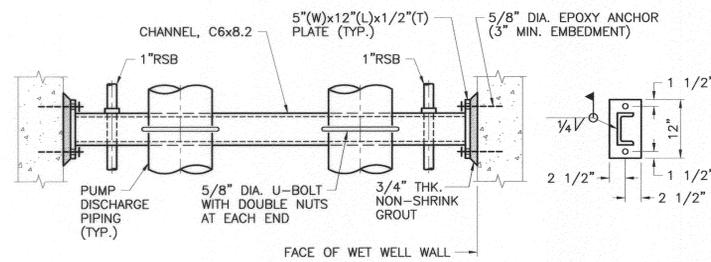


- NOTES:
- JUNCTION BOX SUPPORT STANCHIONS SHALL BE CONSTRUCTED OF 316 STAINLESS STEEL.
 - CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR PUMP CABLE CAGE TO CITY FOR APPROVAL PRIOR TO FABRICATION.

PUMP CABLE ENTRY DETAIL

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

1
ME-1

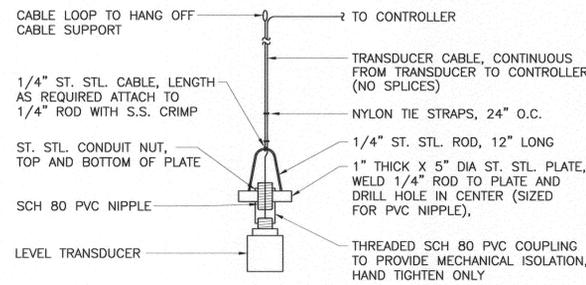


- NOTES:
- ALL SUPPORT MATERIALS SHALL BE 316 STAINLESS STEEL, INCLUDING ANCHOR BOLTS.
 - TRIM ENDS OF SUPPORT CHANNEL AT ANGLE REQUIRED FOR MOUNTING SUPPORT END PLATES TO INSIDE FACE OF CIRCULAR WET WELL. FIELD WELD SUPPORT END PLATES TO CHANNEL TO OBTAIN PROPER ANGLE.

DISCHARGE PIPE SUPPORT DETAIL

N.T.S.

2
ME-2

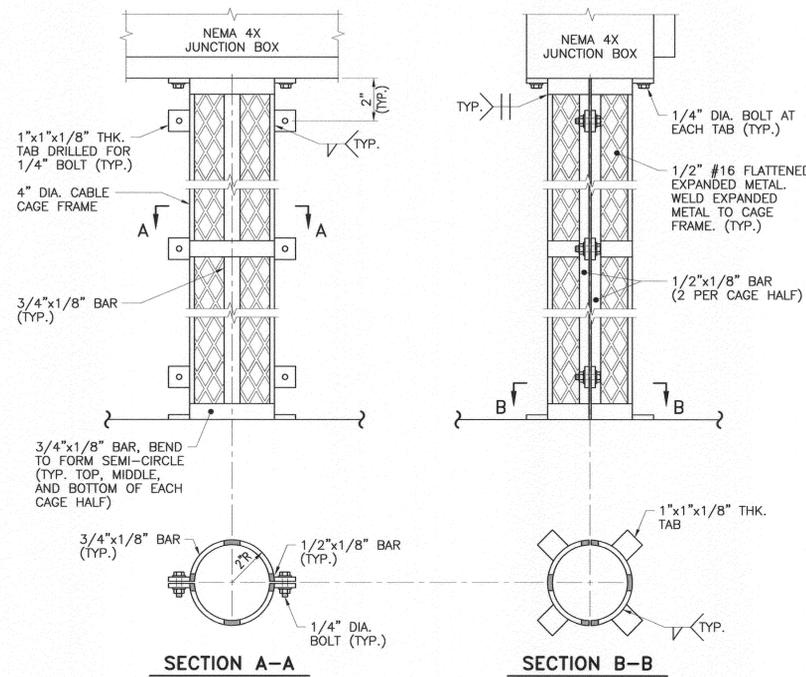


NOTE:
ALL ST. STL. SHALL BE TYPE 316.

LEVEL TRANSDUCER DETAIL

N.T.S.

3
ME-2

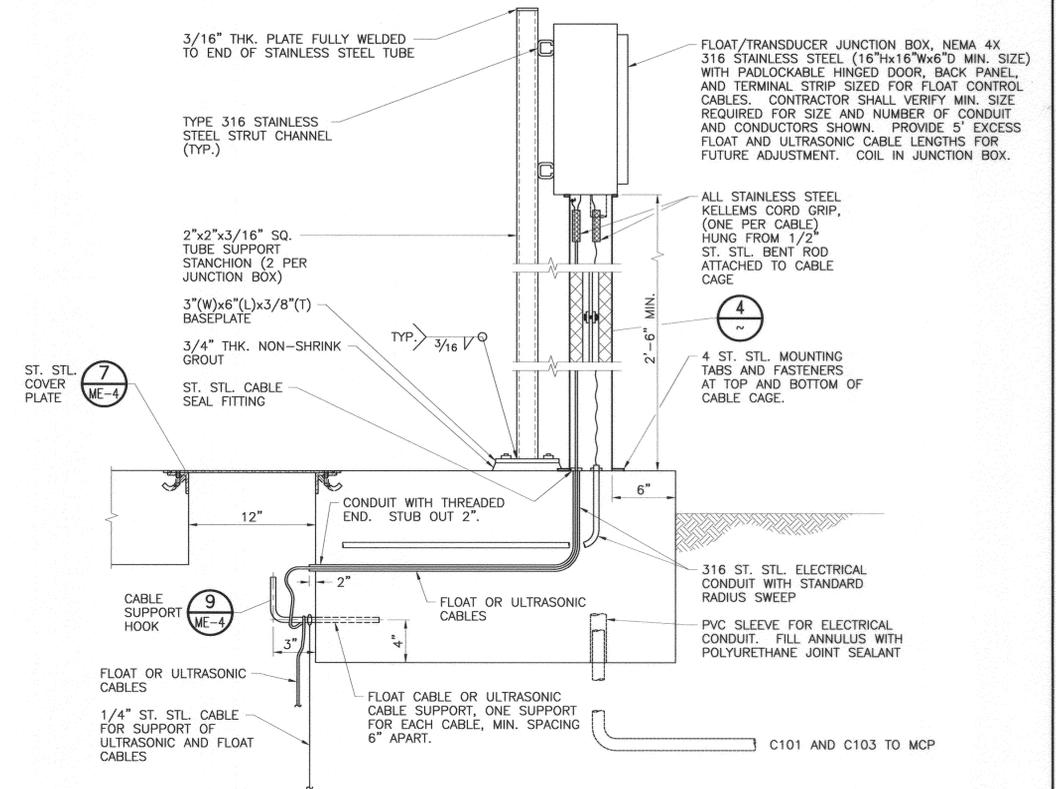


NOTE:
ALL MATERIALS SHALL BE 316 STAINLESS STEEL.

CABLE CAGE DETAIL

SCALE: 3"=1'-0"

4
ME-2



- NOTES:
- JUNCTION BOX SUPPORT STANCHIONS SHALL BE CONSTRUCTED OF 316 STAINLESS STEEL.
 - CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR CABLE CAGE TO CITY FOR APPROVAL PRIOR TO FABRICATION.
 - WET WELL SHAFT NOT SHOWN FOR CLARITY.
 - LEVEL TRANSDUCER CABLE CONTINUOUS TO LEVEL CONTROLLER IN MCP.
 - ALL SUPPORT CABLES SHALL BE 316 STAINLESS STEEL.

FLOAT/TRANSDUCER DETAIL

N.T.S.

5
ME-1



VERIFY SCALES
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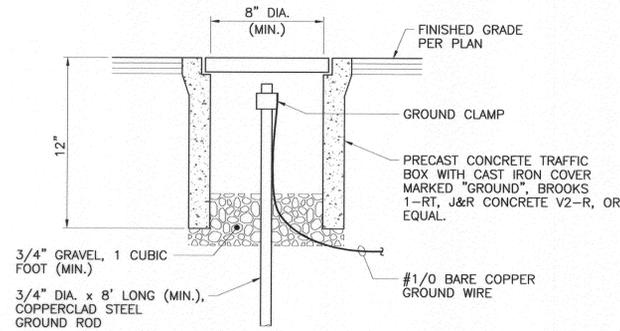
KRIEGER & STEWART INCORPORATED
3602 University Ave. · Riverside, CA 92501 · 951-684-6900
APPROVED BY *John P. Maslach*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



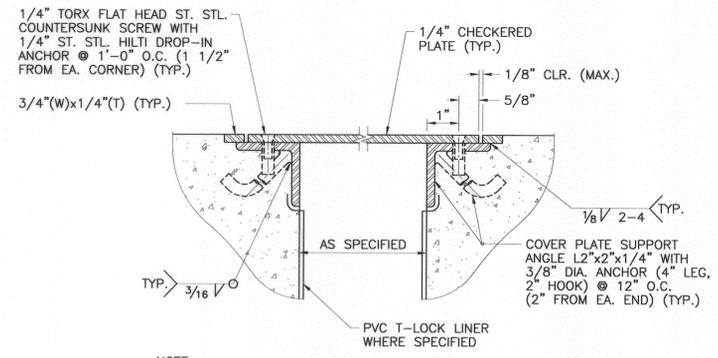
DESIGNED BY	JPM	DRAWN BY	MRN	CHECKED BY	JCR
MARK		REVISIONS		APPR.	DATE

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT
APPROVED BY: *[Signature]* DATE: 8/29/2012
ENGINEERING MANAGER
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SURVEYOR
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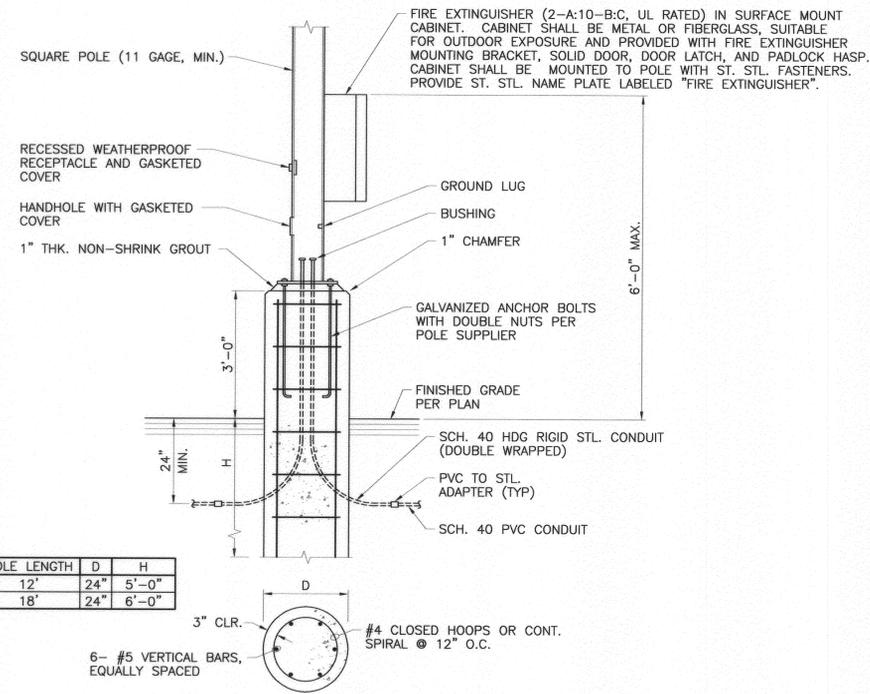
CREST LIFT STATION REPLACEMENT
MISCELLANEOUS DETAILS AND SECTIONS
SCALE: NONE
ACCT. NO. 9835423203
CONST. W.O. 1218173
S-2106
SHEET 12 OF 21
DWG. NO. ME-3



GROUND WELL DETAIL
N.T.S. 6 6
E-2 E-4

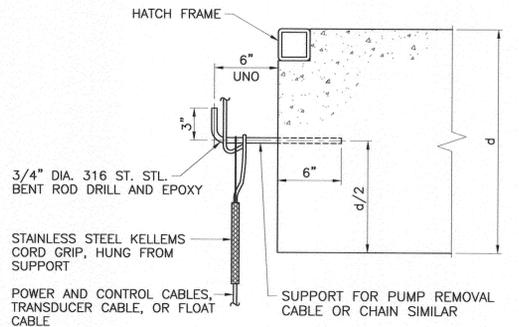


STAINLESS STEEL COVER PLATE DETAIL
N.T.S. 7 7
ME-1 ME-3

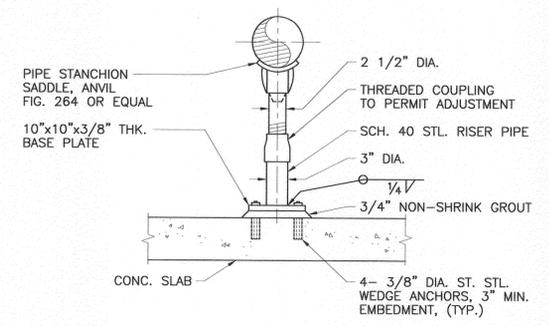


LIGHTING POLE FOUNDATION DETAIL
N.T.S. 8 8
C-1 ME-1

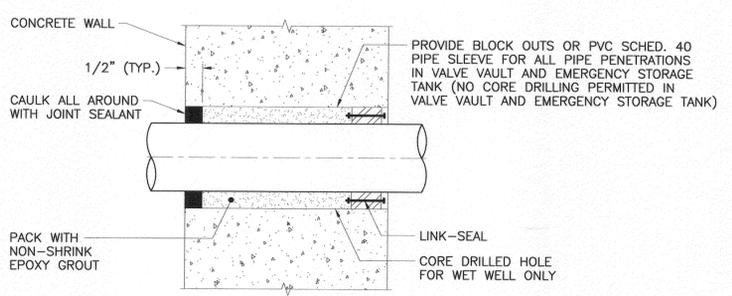
POLE LENGTH	D	H
12'	24"	5'-0"
18'	24"	6'-0"



CABLE AND LIFTING CHAIN SUPPORT HOOK DETAIL
N.T.S. 9
ME-3

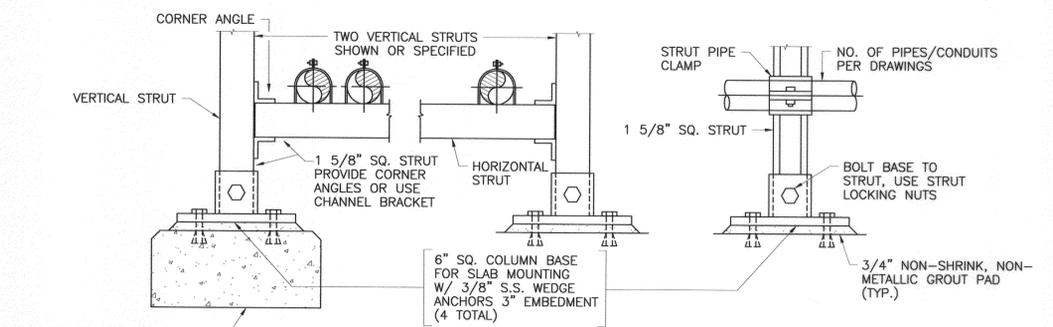


PIPE SUPPORT DETAIL
N.T.S. 10
ME-2

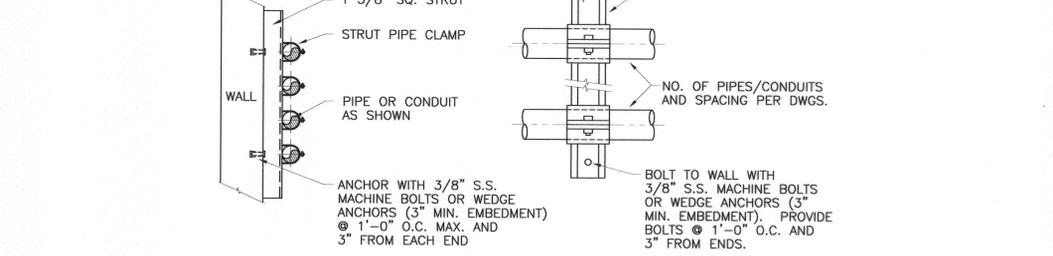


- NOTES:
- JOINT SEALANT SHALL BE TWO COMPONENT, POLYURETHANE ELASTOMERIC SEALANT, SIKAFLEX-2C NS, AS MANUFACTURED BY SIKA, OR EQUAL. PROVIDE BACKER ROD OR TAPE AT BACK OF JOINT SEALANT.
 - LINK-SEAL SHALL BE LOCATED ON SIDE OF WALL/SLAB THAT WILL BE PERMANENTLY ACCESSIBLE. LINK-SEAL SHALL BE FOR CORROSIVE SERVICE WITH EPDM RUBBER AND STAINLESS STEEL BOLTS AND NUTS, AS MANUFACTURED BY THUNDERLINE CORP., OR EQUAL. SLEEVE DIAMETER SHALL BE PER MANUFACTURERS RECOMMENDATION.

TYPICAL PIPE PENETRATION DETAIL
N.T.S. 11 11
ME-1 ME-2

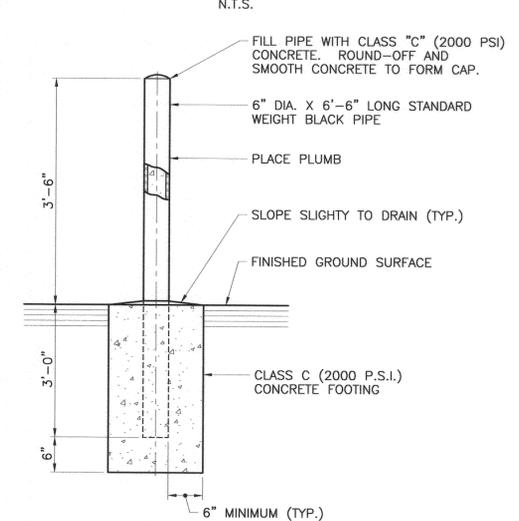


FOR STRUTS NOT LOCATED ON CONC. SLABS AT LEAST 6" THK., PROVIDE 12" SQ. x 9" THK. CONC. PAD WITH 2-#4 BARS TOP AND BOTTOM, EA. WAY



- NOTES:
- UNLESS NOTED OTHERWISE, FOR INDOOR AND OUTDOOR LOCATIONS ALL MATERIAL SHALL BE STAINLESS STEEL. STRUT CHANNEL SHALL BE 12 GAUGE 1 5/8"x1 5/8" TYPE 316 ST. STL. PROVIDE NECESSARY STRUT ACCESSORIES TO ACCOMMODATE SUPPORT CONFIGURATION, INCLUDING CONNECTION FITTINGS AND POST BASES. UNLESS OTHERWISE NOTED, ALL NUTS, BOLTS, THREADED RODS, AND PIPE/CONDUIT STRAPS SHALL BE 316 ST. STL. ALL ANCHOR BOLTS SHALL BE TYPE 316 ST. STL.
 - STRUT SYSTEM, INCLUDING ALL COMPONENTS, SHALL BE AS MANUFACTURED BY UNISTRUT, B-LINE, OR EQUAL.
 - PROVIDE DOUBLE STRUT WHERE REQUIRED FOR LOAD OR CONFIGURATION, OR WHERE NOTED AS PS3-D ON DRAWINGS.
 - ALL CUT ENDS OF STRUT SHALL BE GROUND SMOOTH.
 - WHERE NOTED AS PS3-CORROSION RESISTANT OR PS3-CR ON DRAWING. STRUT CHANNEL SHALL BE HEAVY DUTY 1 5/8"x1 5/8"x1/4" NON-METALLIC (VINYLESTER) AS MANUFACTURED BY AICKINSTRUT, B-LINE, OR EQUAL. PROVIDE NECESSARY STRUT ACCESSORIES TO ACCOMMODATE SUPPORT CONFIGURATION, INCLUDING CONNECTION FITTINGS AND POST BASES. UNLESS OTHERWISE NOTED, ALL NUTS, BOLTS, THREADED RODS, AND PIPE/CONDUIT STRAPS SHALL BE POLYURETHANE. ALL CONCRETE ANCHOR BOLTS SHALL BE 316 ST. STL. EPOXY ANCHORS.

PS3 - PIPING/CONDUIT STAINLESS STEEL AND NON-METALLIC STRUT SUPPORTS
N.T.S.



- NOTES:
- ALL GUARD POSTS SHALL BE SET AS SPECIFIED.
 - GUARD POSTS SHALL BE COATED PER SERVICE CONDITION C, SPECIFICATION 09900. FINISH COLOR SHALL BE SAFETY YELLOW.

GUARD POST DETAIL
N.T.S. 12 12
C-1 ME-1

48 hours BEFORE excavation
1-800-227-2600
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0 1"
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KRIEGER & STEWART INCORPORATED
3602 University Ave., Riverside, CA 92501-9511-684-8900
APPROVED BY *John T. MacEachron*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



DESIGNED BY JPM DRAWN BY MRN CHECKED BY JCR

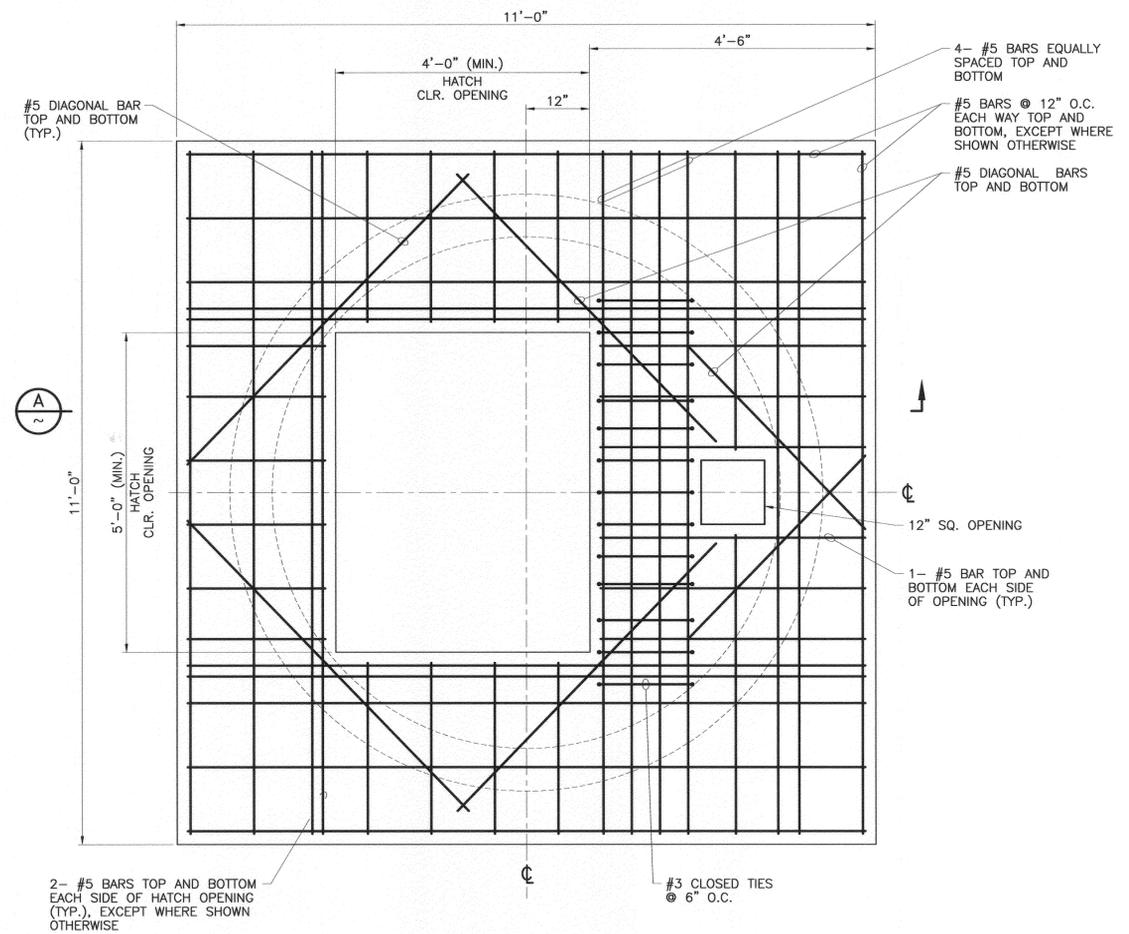
CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT
APPROVED BY *[Signature]* DATE *8/2/12*
ENGINEERING MANAGER
PRINCIPAL ENGINEER
CONTRACT ADMINISTRATOR
SURVEYOR
TRAFFIC DIVISION

CREST LIFT STATION REPLACEMENT
MISCELLANEOUS DETAILS
SCALE: NONE

ACCT. NO. 9835423203
CONST. NO. 1218173
S-2106
SHEET 13 OF 21
DWG. NO. ME-4

DWG. NO. 476-16-30ME-FILE NO. 476-16-3 UPDATE BY: MRN PROJ. ENG.: JPM PLOT DATE: 08/22/12 PLOT TIME: 12:15PM PLOT SCALE: 1"=1'

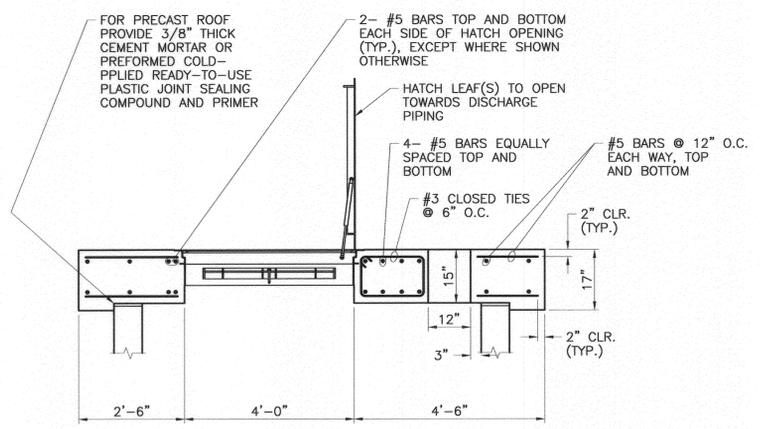
DWG. NO.: 476-16-38-1 FILE NO.: 476-16.3 UPDATE BY: MRN PROJ. ENG.: JEM PLOT DATE: 06/25/12 PLOT TIME: 2:07PM PLOT SCALE: 1"=1'



- NOTES:**
- HATCH FRAME NOT SHOWN FOR CLARITY.
 - WET WELL ROOF MAY BE CAST-IN-PLACE ON TOP OF WET WELL OR IT MAY BE PRECAST AND LIFTED INTO PLACE. FOR PRECAST ROOF, CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF ALL NECESSARY LIFTING DEVICES/SYSTEMS.

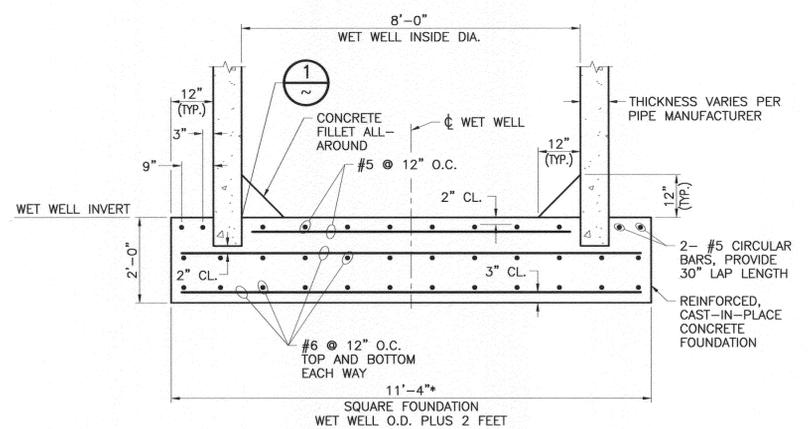
WET WELL ROOF REINFORCING PLAN

SCALE: 3/4"=1'-0"



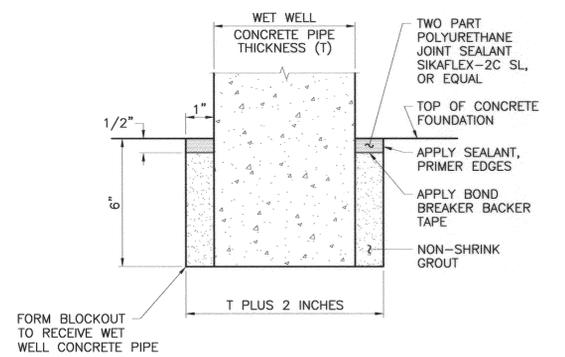
WET WELL ROOF SECTION

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



WET WELL FOUNDATION DETAIL

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



FOUNDATION BLOCKOUT DETAIL

N.T.S.



VERIFY SCALES
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0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

KRIEGER & STEWART INCORPORATED
3602 University Ave. • Riverside, CA 92501 • 951-684-8900

APPROVED BY: *John P. MacLeck*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



MARK	REVISIONS	APPR.	DATE

DESIGNED BY: JPM DRAWN BY: MRN CHECKED BY: JCR

**CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT**

APPROVED BY: *[Signature]* DATE: 6/27/12
ENGINEERING MANAGER
PRINCIPAL ENGINEER

APPROVED BY: *[Signature]* DATE: 6/27/12
CITY ENGINEER

CONTRACT ADMINISTRATOR: *[Signature]*
SURVEYOR: *[Signature]*
TRAFFIC DIVISION: *[Signature]*

CREST LIFT STATION REPLACEMENT

**WET WELL STRUCTURAL PLAN,
SECTIONS, AND DETAILS**

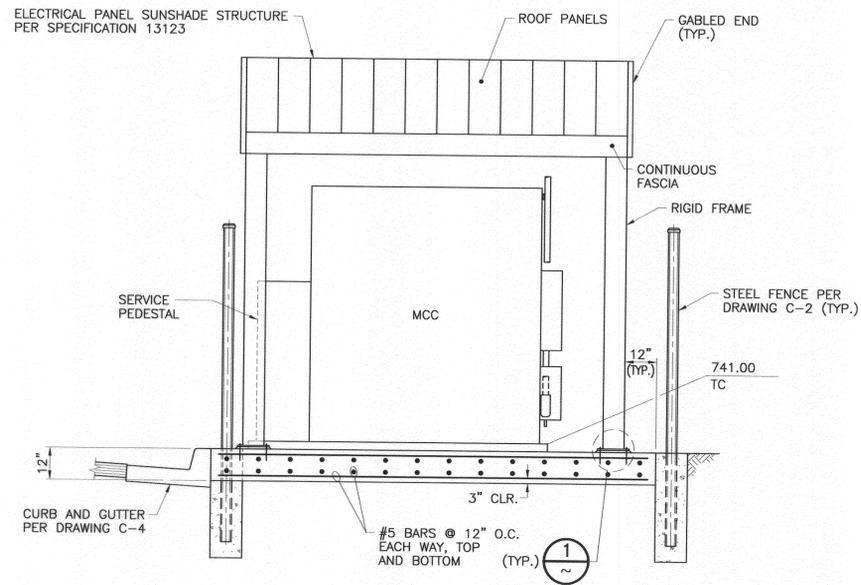
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ACCT. NO. 9835423203
CONST. W.O. 1218173

S-2106

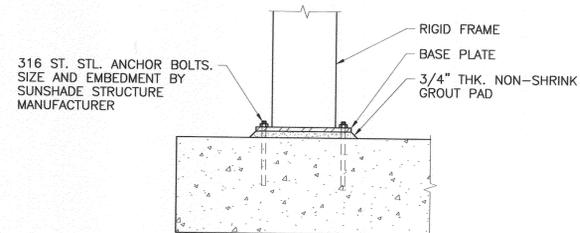
SHEET 14 OF 21

DWG. NO. S-1

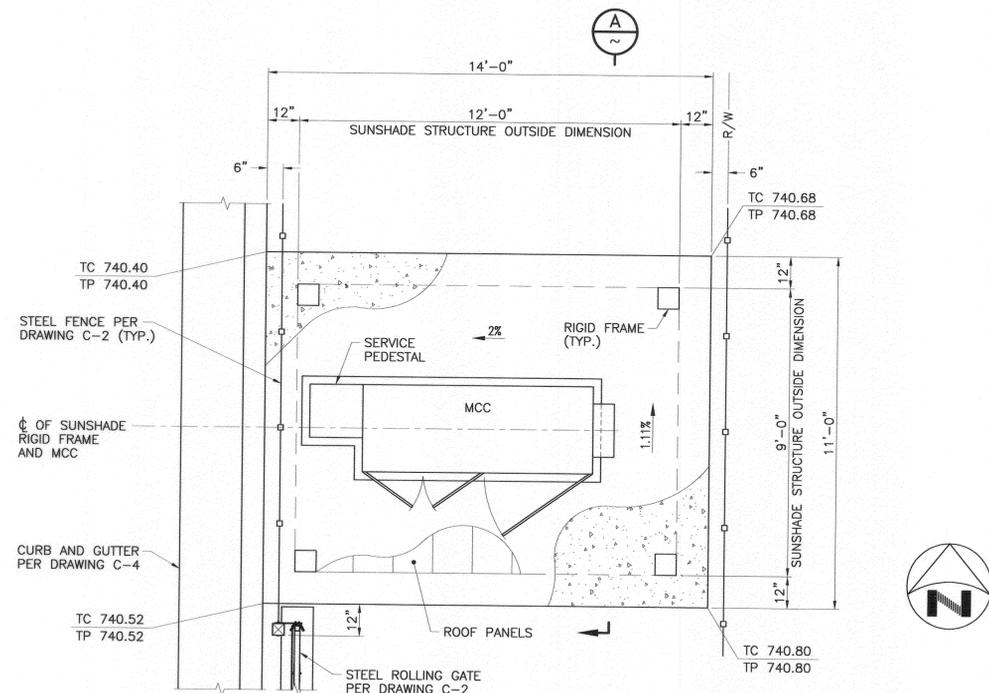


ELEVATION
SCALE: 3/8"=1'-0"

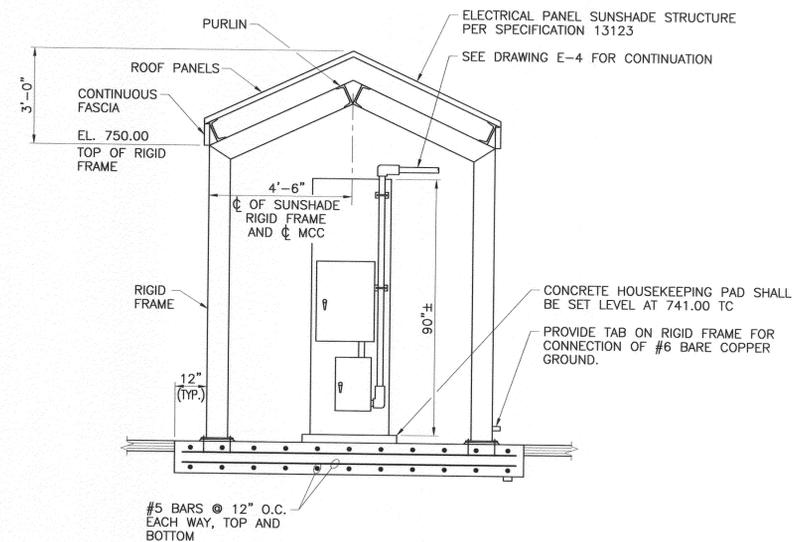
NOTE:
FOUNDATION DIMENSIONS AND REINFORCEMENT SHOWN HEREON ARE PRELIMINARY AND REPRESENT MINIMUM CONSTRUCTION REQUIREMENTS. PER SPECIFICATION REQUIREMENTS, ELECTRICAL PANEL SUNSHADE STRUCTURE MANUFACTURER SHALL DESIGN SUNSHADE STRUCTURE AND FOUNDATION, INCLUDING CONNECTIONS AND ANCHORAGES.



DETAIL
N.T.S.



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



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

DWG. NO.: 476-16.3-2 FILE NO.: 476-16.3 UPDATE BY: MRN PROJ. ENG.: JEM PLOT DATE: 08/22/12 PLOT TIME: 12:20PM PLOT SCALE: 1=1

 48 hours BEFORE excavation
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KRIEGER & STEWART INCORPORATED
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APPROVED BY *John R. Maule*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



MARK	REVISIONS	APPR.	DATE

DESIGNED BY: JPM DRAWN BY: MRN CHECKED BY: JCR

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE	APPROVED BY
ENGINEERING MANAGER	<i>[Signature]</i>	7/10/12	CITY ENGINEER
CONTRACT ADMINISTRATOR	<i>[Signature]</i>	7/10/12	CITY ENGINEER
SURVEYOR	<i>[Signature]</i>	7/10/12	CITY ENGINEER
TRAFFIC DIVISION	<i>[Signature]</i>	7/10/12	CITY ENGINEER

DATE: 8/29/12

CREST LIFT STATION REPLACEMENT
ELECTRICAL PANEL SUNSHADE STRUCTURE, FOUNDATION PLAN, ELEVATION, AND SECTION
SCALE: NONE

ACCT. NO. 9835423203
CONST. W.O. 1218173
S-2106
SHEET 15 OF 21
DWG. NO. S-2

ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	NORMALLY OPEN PUSHBUTTON - MOMENTARY TYPE		AIR INTAKE LOUVER IN 3R WRAP DOOR OF MCC OR DISTRIBUTION PANEL AT BOTTOM WITH GASKETS, FILTER, AND LOUVER PLATE.
	NORMALLY OPEN INTERLOCK		TIMER, LINE VOLTAGE TYPE, 0-60 MINUTE MANUAL START SWITCH
	NORMALLY CLOSED INTERLOCK		NORMALLY OPEN CONTACT TIMED TO CLOSE ON ENERGIZATION
	HAND-OFF-AUTO SWITCH		NORMALLY OPEN CONTACT INSTANTANEOUS CLOSE ON ENERGIZATION TIMED TO OPEN
	CONDUCTORS - CONNECTED		NORMALLY CLOSED CONTACT TIMED TO OPEN ON ENERGIZATION
	CONDUCTORS - NOT CONNECTED		TEMPERATURE SWITCH
	TEMPERATURE SWITCH NORMALLY CLOSED		THERMAL OVERLOAD RELAY
	INLINE FUSE (CLF INDICATES CURRENT LIMITING FUSE)		ELAPSED TIME METER
	TRANSFORMER		MOTOR STARTER CONTACTOR, NUMBER IDENTIFIES CONTACTOR
	THERMAL MAGNETIC BREAKER, 255 INDICATES FRAME SIZE, 100 INDICATES TRIP SIZE, 3P INDICATES NO. OF POLES.		RELAY, TYPE PER ABBREVIATIONS, NUMBER IDENTIFIES RELAY
	MOTOR (NUMBER INDICATES HORSEPOWER)		PRESSURE TRANSMITTER
	LIGHTING FIXTURE (TYPE AND MOUNTING AS NOTED)		PRESSURE SWITCH
	CAST METAL DEVICE BOX WITH SWITCH (1 POLE, 20A, U.N.O.). U.N.O., DEVICE BOX SHALL BE RECESSED INTO WALL (STUD, MASONRY, OR CONCRETE). WEATHERPROOF WHERE OUT-OF-DOORS. 3W DENOTES 3 WAY SWITCH. 2P DENOTES 2 POLE SWITCH, ETC.		UNLESS NOTED OTHERWISE, DENOTES A DRY CONTACT OFF RELAY TF1 TO TERMINAL BLOCK IN MCP FOR INPUT TO TELEMETRY
	JUNCTION BOX, CROUSE-HINDS CAST CONDULET DEVICE BOX. WEATHER-PROOF WHERE OUT-OF-DOORS. MIN. TWO GANG SIZE WITH SOLID COVER. PROVIDE LARGER SIZE IF NECESSARY FOR SPLICING.		DENOTES A CONNECTION FROM MCP TERMINAL BLOCKS TO MCC BUCKET, ATS, FIELD DEVICE OR OTHER REMOTE TERMINAL
	CONDUIT FITTING, CROUSE-HINDS CONDULET CONDUIT OUTLET BODY.		PUSH TO TEST INDICATOR LIGHT, ALLEN BRADLEY MODEL No. 800T-Q10, OR EQUAL
	JUNCTION BOX, MINIMUM 4"x4"x3". PROVIDE LARGER SIZE WHERE SPECIFIED OR REQUIRED FOR CONDUCTOR SIZE. WEATHERPROOF WHERE OUT-OF-DOORS.		CAST METAL DEVICE BOX WITH DUPLEX WEATHER-RESISTENT CONVENIENCE RECEPTACLE, 1 POLE (U.N.O.), 120 VOLTS AC MTG HT 18" ABOVE FLOOR (U.N.O.). (F- INDICATES FLOOR MOUNTED, H- HAZARDOUS AREA EXPLOSION PROOF, WF- OUTDOOR WEATHER PROOF, GFI- GROUND FAULT INTERRUPTER). RECESS INTO STUD WALLS, MASONRY WALLS, OR CONCRETE WALLS, AND PROVIDE WEATHERPROOF EXTRA-DUTY IN-USE COVER AND BOX IF OUT-OF-DOORS.
	ELECTRICAL DUCT BANK		CONDUIT FITTING, CROUSE-HINDS CONDULET CONDUIT OUTLET BODY.
	CONDUIT (1" MINIMUM), RUN EXPOSED		JUNCTION BOX, MINIMUM 4"x4"x3". PROVIDE LARGER SIZE WHERE SPECIFIED OR REQUIRED FOR CONDUCTOR SIZE. WEATHERPROOF WHERE OUT-OF-DOORS.
	CONDUIT (1" MINIMUM), RUN BELOW GRADE OR CONCEALED		SEE LIGHTING SCHEDULE HEREON
	FLEXIBLE CONDUIT CONNECTION		MCC (OR DISTRIBUTION PANEL) AIR SUPPLY OR EXHAUST WITH GRILL AND FILTER.
	CONDUIT (3/4" MINIMUM) WITH #12 CONDUCTORS, NUMBER INDICATED EXCLUDING REQUIRED GROUND, TO LP CKT. NUMBER SHOWN.		MCC STRIP HEATER MOUNTED IN BOTTOM PORTION OF ELECTRICAL PANEL, 150 WATT, 120 VOLT, CHROMALOX, DAYTON, OR EQUAL.
	PUSHBUTTON STATION, SUBSCRIPT INDICATES FUNCTION "S/S"=START-STOP, "S/LOS"=START/LOCK-OUT STOP, "J"=JOG, "T/LOS"=TEST/LOCK-OUT STOP		MCC EXHAUST FAN No.1, ETC. AT TOP OF 3R WRAP WITH GASKETS, FILTER, AND LOUVERED PLATE. 4" DIAMETER, 120 VOLT, 100 CFM (MIN.), DAYTON, HOFFMAN, OR EQUAL.
	FULL VOLTAGE NON-REVERSING COMBINATION MOTOR STARTER, WITH MOTOR CIRCUIT PROTECTOR AND AIR CONTACTORS. SIZE 0 MINIMUM WITH THERMAL OVERLOADS AND AUXILIARY CONTACTS AS REQUIRED FOR CONTROL, AND ONE SARE N.O. AND ONE SPARE N.O. SUBSCRIPT INDICATES NEMA SIZE.		LINE VOLTAGE THERMOSTAT MOUNTED IN MCC OR DISTRIBUTION PANEL. COOLING TYPE FOR EXHAUST OR SUPPLY FAN WITH 15" F. DIFFERENTIAL DAYTON, CHROMALOX, OR EQUAL. HEATING TYPE FOR STRIP HEATER WITH 3" TO 10" F. DIFFERENTIAL DAYTON, CHROMALOX, OR EQUAL.
	DOOR MOUNTED MAGNETIC CONTACT SWITCH. SWITCH SHALL BE CORROSION-RESISTANT, HERMETICALLY SEALED, AND SUITABLE FOR SERVICE IN MOIST OR DUSTY ENVIRONMENTS. SWITCHES SHALL BE SCREW-FASTENED, SURFACE MOUNT TYPE, AND RATED 5A AT 120 VAC. SWITCH ASSEMBLY SHALL INCLUDE COVER, SPACER, AND STAINLESS STEEL MOUNTING SCREWS.		SUPPLY FAN No.1, ETC. AT BOTTOM OF MCC OR DISTRIBUTION PANEL, WITH FILTER AND GRILL. 4" DIAMETER, 120 VOLT, 100 CFM (MIN.), DAYTON, HOFFMAN, OR EQUAL.

ABBREVIATIONS

A	AMPERES, AMMETER	H/A	HAND/AUTO	OC	ON CENTER
AC	ALTERNATING CURRENT	HDG	HOT DIPPED GALVANIZED SCH.40 STEEL CONDUIT	O.L.	OVERLOAD
AF	AMPERE FRAME	HOA	HAND/OFF/AUTO	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
AFF	ABOVE FINISHED FLOOR	HP	HORSE POWER	P	POLE, PHASE
AFRC	AIR FUEL RATIO CONTROLLER	HPS	HIGH PRESSURE SODIUM	PB	PULL BOX, PUSH BUTTON
AIC	AMPERES INTERRUPTING CAPACITY	HT	HEIGHT	PF	POWER FEEDER PER SINGLE LINE DIAGRAM
AR	ALARM RELAY	HTR	HEATER	PROVIDE	FURNISH, INSTALL & CONNECT
AT	AMPERE TRIP	HV	HIGH VOLTAGE (GENERALLY ABOVE 600V)	PT	POTENTIAL TRANSFORMER, PRESSURE TRANSDUCER
ATS	AUTOMATIC TRANSFER SWITCH	HZ	HERTZ (CYCLES PER SECOND)	PVC	POLYVINYL CHLORIDE
AUTO	AUTOMATIC				
AWG	AMERICAN WIRE GAUGE				
		JB	JUNCTION BOX		
BC	BARE COPPER CONDUCTOR	KVA	KILOVOLT-AMPERES	REQD	REQUIRED
BKR	BREAKER	KVAR	KILOVOLT-AMPERES, REACTIVE	RGS	RIGID GALVANIZED STEEL CONDUIT
		KW	KILOWATTS	RMS	ROOT MEAN SQUARE
C.	CONDUIT	KWH	KILOWATT HOUR		
C101	CONDUIT No.101 WITH CONTROL POWER CONDUCTORS	L	LOAD	SCE	SOUTHERN CALIFORNIA EDISON
CB	CIRCUIT BREAKER	LO	LUGS ONLY	SCH.	SCHEDULE
CKT	CIRCUIT	LOS	LOCK-OUT STOP	SEC	SECONDARY, SECONDS
CO, C.O.	CONDUIT ONLY	LP	LIGHTING PANEL	SEL	SELECTOR
COMPT	COMPARTMENT	LTG	LIGHTING	SF	SUPPLY FAN
CONC	CONCRETE	LV	LOW VOLTAGE (GENERALLY BELOW 600V)	SH	SHIELDED
CPT	CONTROL POWER TRANSFORMER			SPEC	SPECIFICATIONS
CR	CONTROL RELAY			SSMS	SOLID STATE MOTOR STARTER
CT	CURRENT TRANSFORMER			SW	SWITCH
CU	COPPER	M	MOTOR	SYM.	SYMMETRICAL
		MAX	MAXIMUM		
DC	DIRECT CURRENT	MCC	MOTOR CONTROL CENTER	T1	TRANSFORMER NO.1
DET	DETAIL	MCM	THOUSAND CIRCULAR MILLS	T.C.	TIME CLOSE
DIAG	DIAGRAM	MCP	MAIN CONTROL PANEL OR MOTOR CIRCUIT PROTECTOR	TDR	TIME DELAY RELAY
DS	DISCONNECT SWITCH	MIN	MINIMUM	TEL	TELEPHONE, TELEMETRY
		MP	MOISTURE PROTECTION CONTROL MODULE	T.O.	TIME OPEN
E	EMERGENCY	MR	MOTOR CONTACTOR RELAY	TRANSF.	TRANSFORMER
EF	EXHAUST FAN	MSF	MAIN SERVICE FEEDER	TS	TEMPERATURE SWITCH
EL	ELEVATION	MTD	MOUNTED	TYP.	TYPICAL
ENCL	ENCLOSURE/ENCLOSED	MTG. HT.	MOUNTING HEIGHT		
EQUIP	EQUIPMENT	MTS	MANUAL TRANSFER SWITCH	UG	UNDERGROUND
ETM	ELAPSE TIME METER			UON	UNLESS OTHERWISE NOTED
		N	NORMAL		
FDR	FEEDER	N/A	NOT APPLICABLE	VA	VOLT-AMPS
FLA	FULL LOAD AMPERAGE	NC	NORMALLY CLOSED		
FLEX	FLEXIBLE	NCTO	NORMALLY CLOSED, TIMED TO OPEN ON ENERGIZING	W/	WITH
FUT	FUTURE	NEC	NATIONAL ELECTRICAL CODE (LATEST EDITION)	WM	WATTMETER
		NIC	NOT IN CONTRACT	W/O	WITHOUT
G	GREEN GROUND CONDUCTOR, GENERATOR	NO	NORMALLY OPEN	WP	WEATHERPROOF
GALV	GALVANIZED	NOTC	NORMALLY OPEN, TIMED TO CLOSE ON ENERGIZING		
GF	GENERATOR FEEDER	NOTO	NORMALLY OPEN, INSTANTANEOUS CLOSE ON ENERGIZING, TIMED TO OPEN	ZS	POSITION SWITCH
GFI	GROUND FAULT INTERRUPTER	NTS	NOT TO SCALE		
GND, GRD	GROUND			3C5#12	3" CONDUIT WITH 5 #12 AND NUMBER OF GROUND (GRD.) CONDUCTORS AS INDICATED OR 1 #12 GRD. MIN. WHERE NOT SPECIFIED

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	DESCRIPTION	REMARKS
A	POLE MOUNTED EXTERIOR WORK LIGHT AND AREA LIGHT (15'± HIGH) AS MANUFACTURED BY SPAULDING LIGHTING. ONE 150W HIGH PRESSURE SODIUM WORK LIGHT, RAVEN SERIES AND ONE 55W LOW PRESSURE SODIUM AREA LIGHT, OAKLAND SERIES (WITH PHOTO CELL). LIGHTS SHALL BE PROVIDED WITH GASKETED SQUARE ALUMINUM HOUSING AND SHALL BE MOUNTED HORIZONTAL ON 10" ARMS WITH IMPACT RESISTANT LENS AND OPERATE ON 120VAC. WORK LIGHT AND AREA LIGHT SHALL BE MOUNTED 180 DEGREES APART ON TOP OF A 4" SQUARE STRAIGHT ALUMINUM POLE, 12' LONG WITH RECESSED RECEPTACLE. FIXTURES AND POLE SHALL BE DARK BRONZE POWDER COAT FINISH AND SHALL BE FURNISHED WITH ALL NECESSARY MOUNTING BRACKETS AND HARDWARE.	SEE DETAIL 8 ON DWG. ME-4 FOR LIGHT POLE FOUNDATION REQUIREMENTS.

DWG. NO. 478-1B-38-1 FILE NO. 478-1B-3 UPDATE BY: MRN PROJ. ENG. DATE: 06/22/12 PLOT DATE: 11:58AM PLOT SCALE: 1=1



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APPROVED BY *John T. Marbach*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY: *John T. Marbach* (REGISTERED ENGINEER)
BY: *John T. Marbach* (PRINCIPAL ENGINEER)
DATE: 7/10/12

APPROVED BY: *John T. Marbach* (CITY ENGINEER)
DATE: 9/29/12

DESIGNED BY: JPM DRAWN BY: MRN CHECKED BY: JCR

CREST LIFT STATION REPLACEMENT

ELECTRICAL SYMBOLS, ABBREVIATIONS, AND LIGHTING FIXTURE SCHEDULE

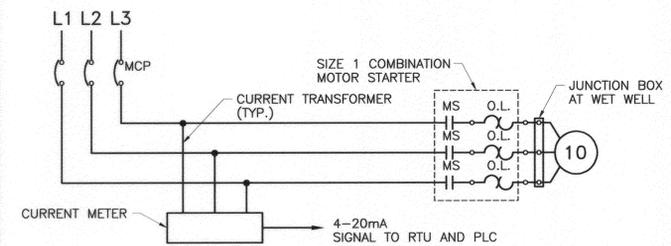
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ACCT. NO. 9835423203
CONST. W.G. 1218173

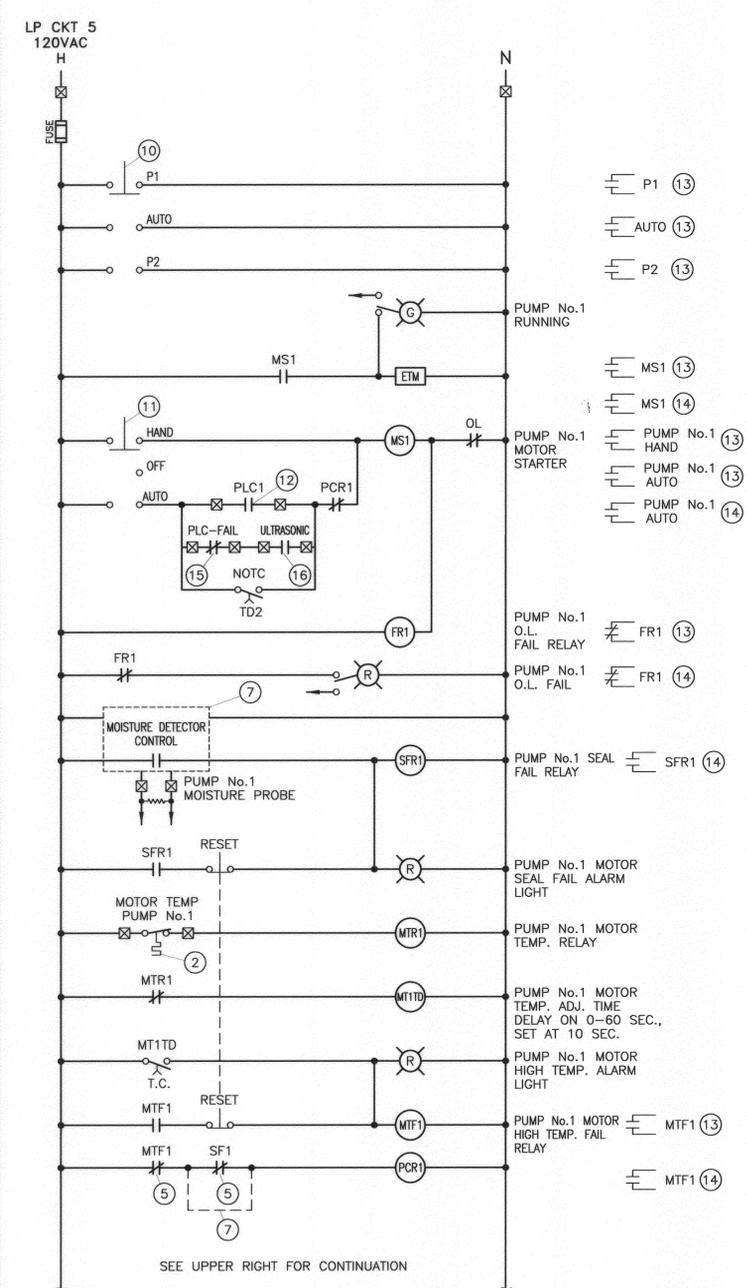
S-2106

SHEET 16 OF 21

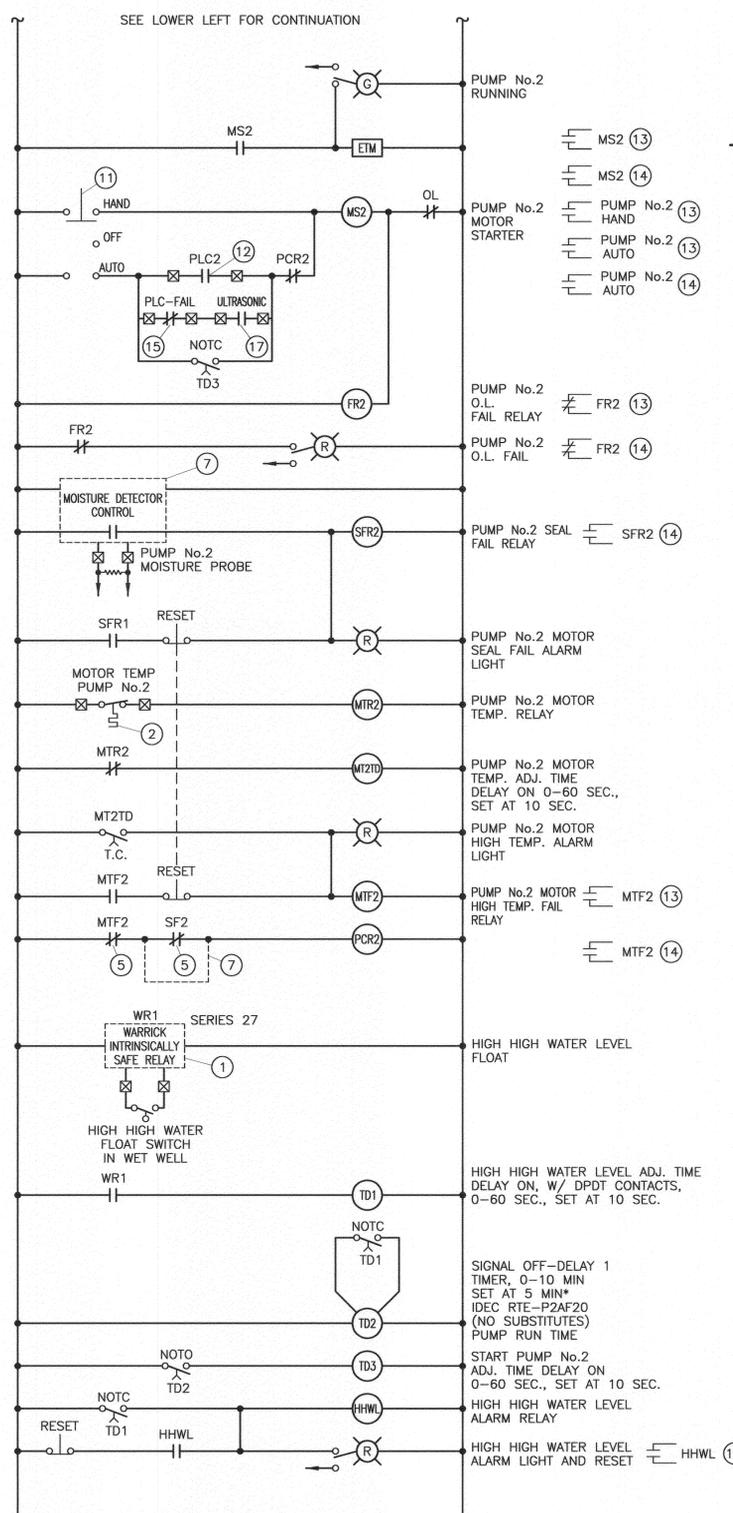
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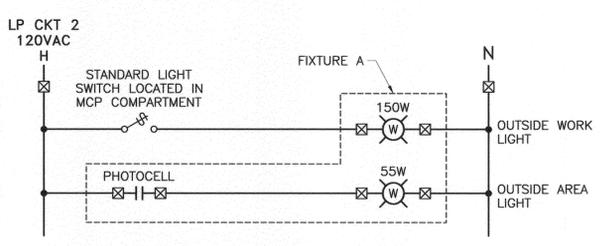
PUMP CONTROL DIAGRAM
(TYPICAL FOR PUMPS No. 1 AND No. 2)
LOCATED IN THE MCC BUCKET



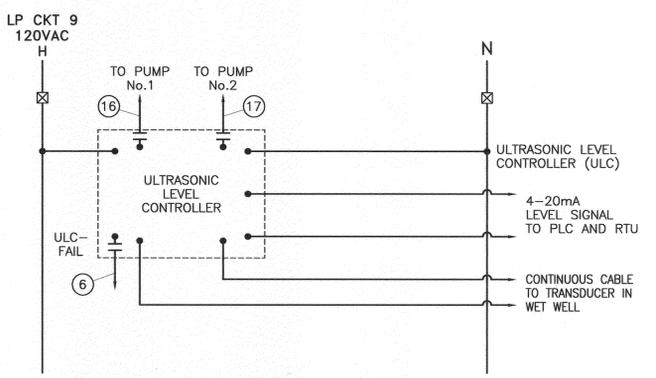
MCP CONTROL DIAGRAM
LOCATED IN THE MCP PANEL (4)(8)(9)



MCP CONTROL DIAGRAM (CONT.)
LOCATED IN THE MCP PANEL (4)(8)(9)



AREA/WORK LIGHT CONTROL DIAGRAM
LOCATED IN THE MCP PANEL



ULTRASONIC LEVEL CONTROL DIAGRAM
LOCATED IN THE MCP

- MATERIAL, EQUIPMENT, AND WORK DESCRIPTIONS FOR DRAWING E-3:**
1. WARRICK INTRINSICALLY SAFE RELAY (NO SUBSTITUTES).
 2. NORMALLY CLOSED, OPENS ON HIGH TEMPERATURE.
 3. LIGHTS, STARTERS, ETM'S, OVERLOAD RELAYS, AND HOA SWITCHES SHALL BE LOCATED AS SHOWN HEREON.
 4. RELAYS, LIGHTS, SELECTOR SWITCHES, AND ETM SHALL BE LOCATED IN THE MAIN CONTROL PANEL AS SHOWN HEREON.
 5. MOTOR THERMAL FAIL AND SEAL FAIL, SHUT-DOWN ON MOTOR THERMAL. SHUT-DOWN ON SEAL FAIL IF REQUIRED FOR PUMP WARRANTY (JUMPER SF CONTACT IF NOT REQUIRED).
 6. ULTRASONIC LEVEL CONTROLLER FAILURE CONTACT TO PLC AND RTU.
 7. MOISTURE DETECTION MODULE FURNISHED BY PUMP MANUFACTURER. SHUT-DOWN PUMP IF REQUIRED BY MANUFACTURER'S WARRANTY (JUMPER SF CONTACT IF NOT REQUIRED).
 8. ALL SELECTOR SWITCHES, PUSH BUTTONS, AND LIGHTS SHALL BE HEAVY DUTY NEMA 4/13. LIGHTS SHALL BE PUSH-TO-TEST TYPE.
 9. CONTRACTOR SHALL SUBMIT A CONTROL PANEL LAYOUT DRAWING SHOWING ALL ALARM LIGHTS, SWITCHES, AND NAME PLATES FOR CITY'S REVIEW AND APPROVAL.
 10. MULTIPLE CONTACT P1-AUTO-P2 SELECTOR SWITCH FOR "P1", "AUTO", AND "P2" POSITION SIGNALS TO PLC. AUTO WHEN BOTH PUMPS IN OPERATION, P1 OR P2 WHEN ONE PUMP IS OUT OF SERVICE.
 11. MULTIPLE CONTACT HOA SWITCH FOR "AUTO" AND "HAND" POSITION SIGNALS TO PLC.
 12. CONTACT FROM PLC IN MCP.
 13. CONTACT TO PLC IN MCP.
 14. CONTACT TO RTU.
 15. CONTACT FROM PLC, CLOSE WHEN PLC FAILS. PUMPS START ON FLOAT OR ULTRASONIC.
 16. DIFFERENTIAL RELAY CONTACT FOR PUMP No.1 FROM ULTRASONIC LEVEL CONTROLLER. START/STOP PUMP No.1 WHEN PLC FAILURE OCCURS.
 17. DIFFERENTIAL RELAY CONTACT FOR PUMP No.2 FROM ULTRASONIC LEVEL CONTROLLER. START/STOP PUMP No.2 WHEN PLC FAILURE OCCURS.

DWC NO.: 476-16-3-3 FILE NO.: 476-16.3 UPDATE BY: MRN PROJ. ENG.: JPM PLOT DATE: 08/26/12 PLOT TIME: 3:19PM PLOT SCALE: 1=1

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APPROVED BY: *John R. Mader*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY: *[Signature]* DATE: 8/2/12
ENGINEERING MANAGER
PRINCIPAL ENGINEER
CONTRACT ADMINISTRATOR
SURVEYOR
TRAFFIC DIVISION

DESIGNED BY: JPM DRAWN BY: MRN CHECKED BY: JCR

CREST LIFT STATION REPLACEMENT

CONTROL DIAGRAMS

ACCT. NO. 9835423203
CONST. W.G. 1218173

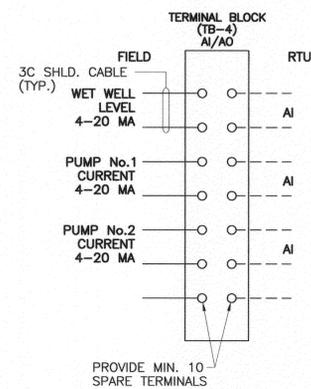
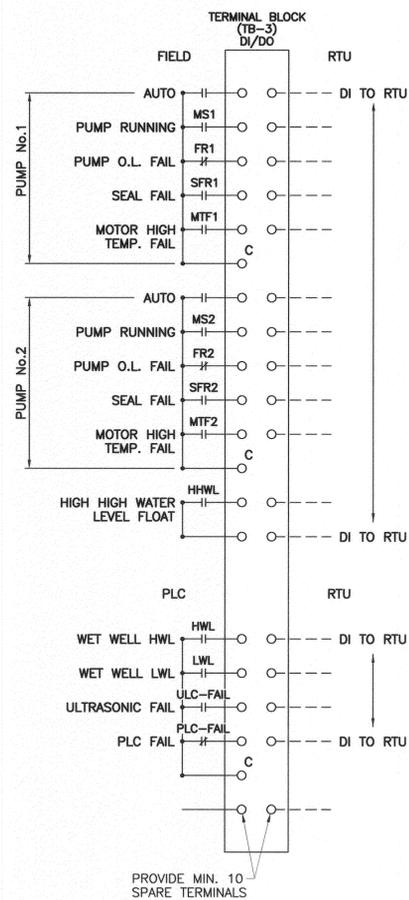
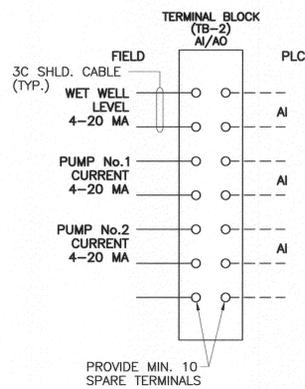
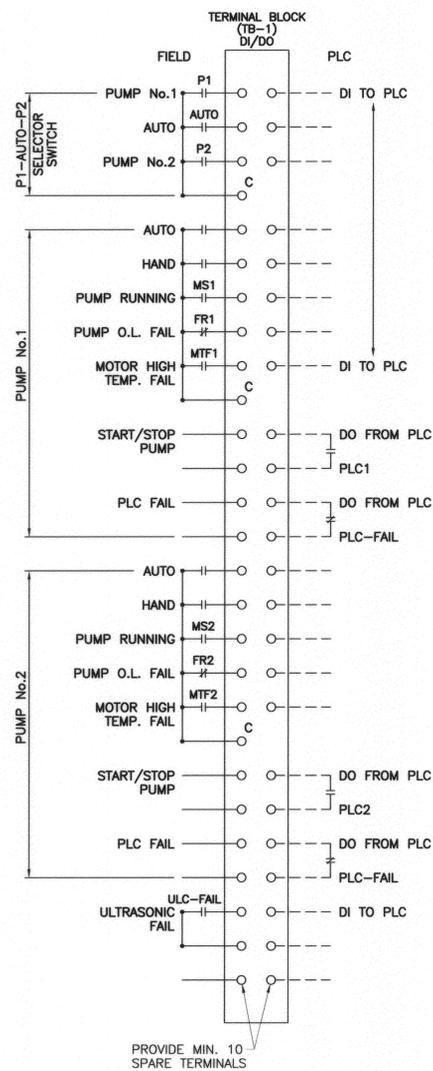
S-2106

SHEET 18 OF 21

DWG. NO. E-3

SCALE: NONE

DWG. NO.: 476-16.3a-5 FILE NO.: 476-16.3 UPDATE BY: JPM PROJ. ENG.: JPM PLOT DATE: 07/09/12 PLOT TIME: 4:03PM PLOT SCALE: 1=1



INTERCONNECT DIAGRAMS

LOCATED IN THE MCP PANEL

NOTE:
 CONTRACTOR TO PROVIDE TERMINAL BLOCKS TB-1, TB-2, TB-3, AND TB-4 IN MCP WIRED TO STATUS/ALARM SIGNALS AS SHOWN. CONTRACTOR SHALL CONNECT FROM MCP TERMINAL BLOCKS TO RTU TERMINAL BLOCK. CONTRACTOR SHALL TERMINATE CONDUCTORS ON RTU TERMINAL BLOCK AND LABEL CONDUCTORS.



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 APPROVED BY *John P. Munkel*
 REGISTERED ENGINEER No. 62220 DATE 7/10/12



MARK	REVISIONS	APPR.	DATE

DESIGNED BY *JPM* DRAWN BY *MRN* CHECKED BY *JCR*

**CITY OF RIVERSIDE, CALIFORNIA
 PUBLIC WORKS DEPARTMENT**

APPROVED BY	BY	DATE	APPROVED BY
ENGINEERING MANAGER	<i>[Signature]</i>	7/10/12	<i>[Signature]</i>
PRINCIPAL ENGINEER	<i>[Signature]</i>	7/10/12	<i>[Signature]</i>
CONTRACT ADMINISTRATOR	<i>[Signature]</i>	7/10/12	<i>[Signature]</i>
SURVEYOR	<i>[Signature]</i>	7/10/12	<i>[Signature]</i>
TRAFFIC DIVISION	<i>[Signature]</i>	7/10/12	<i>[Signature]</i>

DATE 8/29/12

CREST LIFT STATION REPLACEMENT

INTERCONNECT DIAGRAMS

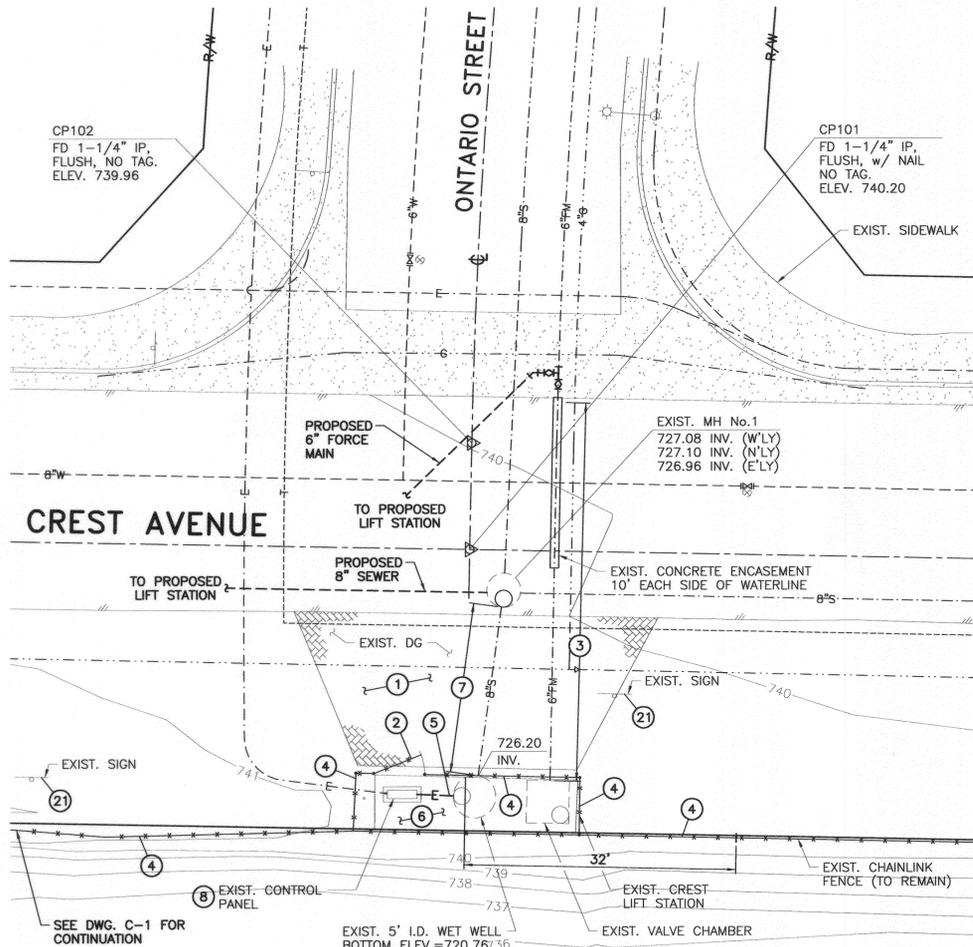
ACCT. NO. 9835423203
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S-2106

SHEET 20 OF 21

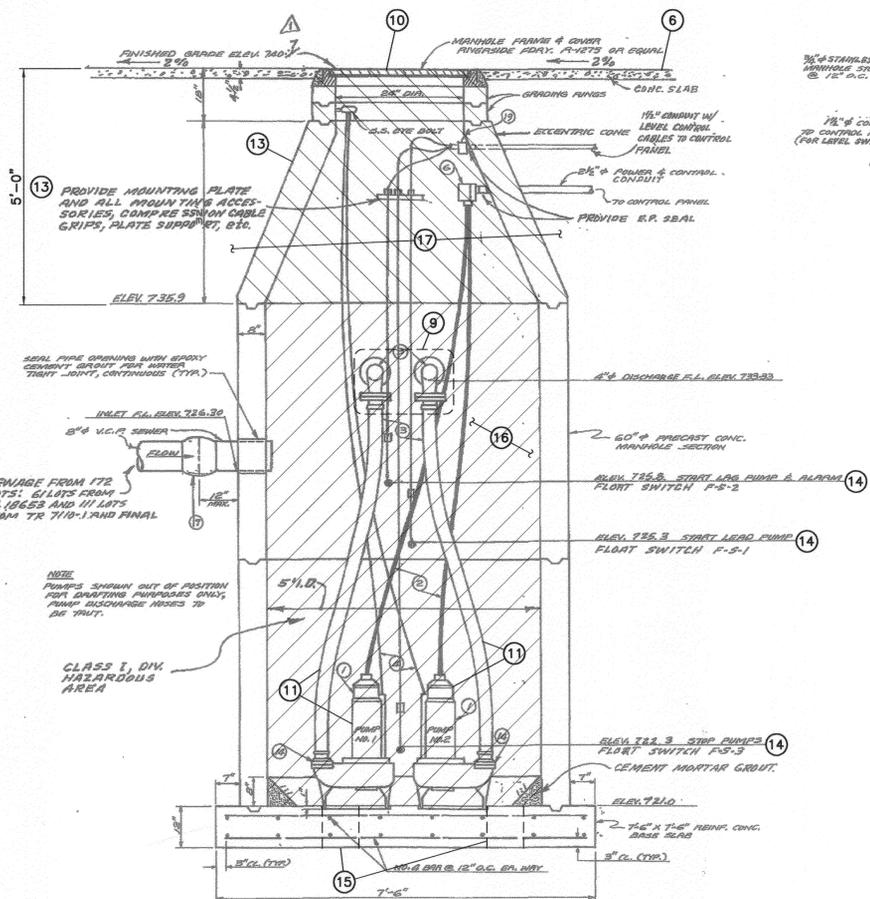
SCALE: NONE

DWG. NO. **E-5**



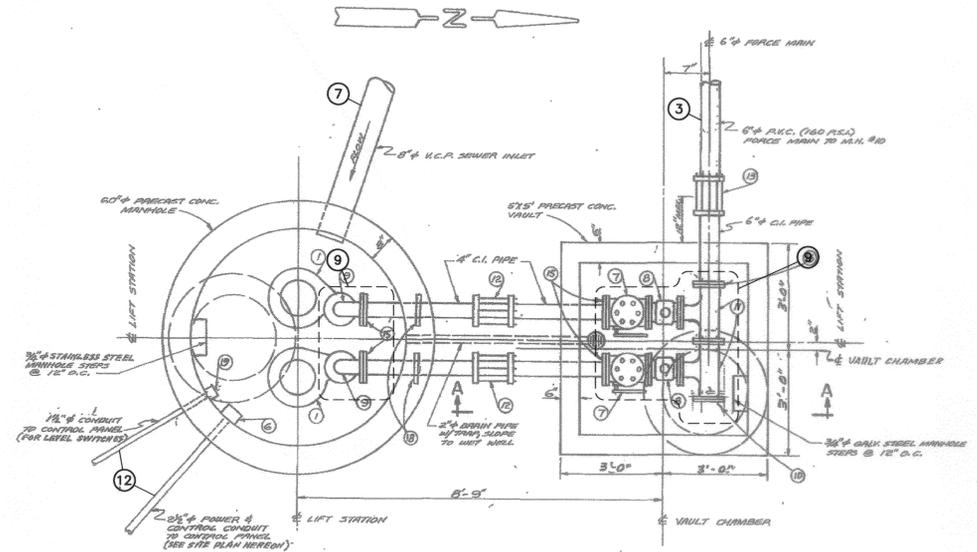
EXISTING LIFT STATION DEMOLITION SITE PLAN

SCALE: 1"=10'



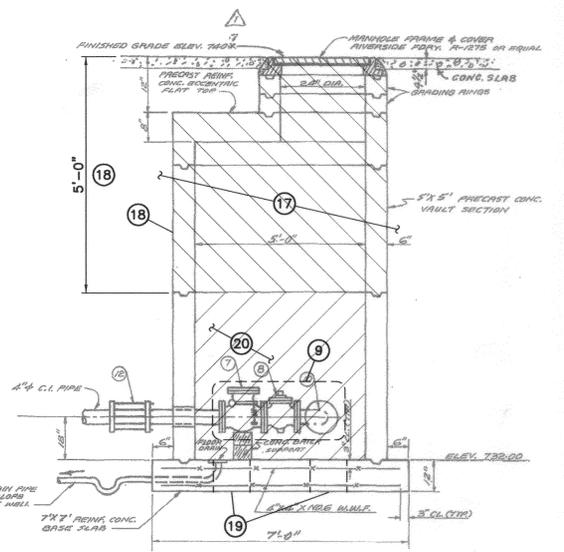
SECTION LIFT STATION WET WELL

NOT TO SCALE



PLAN VIEW

NOT TO SCALE



SECTION A-A VALVE CHAMBER

NOT TO SCALE

- GENERAL NOTES:**
- DEMOLITION SHALL NOT PROCEED UNTIL NEW LIFT STATION HAS BEEN TESTED AND IS IN OPERATION. ELECTRICAL SERVICE HAS BEEN TERMINATED BY THE CITY, INLET MANHOLE TO THE LIFT STATION SITE HAS BEEN RECONFIGURED FOR GRAVITY FLOW, AND EXISTING LIFT STATION IS NO LONGER IN OPERATION.
 - REMOVE AND DISPOSE OF ALL CONCRETE SLABS, UNLESS NOTED OTHERWISE.
 - UNLESS NOTED OTHERWISE, BELOW GRADE HORIZONTAL PIPING RUNS DEEPER THAN 48" SHALL BE ABANDONED IN PLACE. PROVIDE APPROPRIATE BLIND FLANGES, CAPS, THREADED PLUGS, ETC. AT ENDS OF ALL ABANDONED PIPING. BELOW GRADE HORIZONTAL PIPING RUNS SHALLOWER THAN 48" SHALL BE REMOVED.
 - CONTRACTOR SHALL COORDINATE WITH CITY THE REMOVAL OF ALL CITY OWNED EQUIPMENT AND MATERIAL, INCLUDING SERVICE METER, TRANSFORMER, AND SERVICE CONDUCTORS.
 - ALL ELECTRICAL CONDUCTORS SHALL BE DISCONNECTED FROM THE ASSOCIATED EQUIPMENT AND REMOVED FROM THE CONDUIT. ALL ABOVE GRADE CONDUIT SHALL BE REMOVED. VERTICAL CONDUIT RISERS AND SWEEPS SHALL BE REMOVED TO BELOW GRADE TRANSITION WITH HORIZONTAL CONDUIT. BELOW GRADE HORIZONTAL CONDUIT RUNS DEEPER THAN 36" SHALL BE ABANDONED IN PLACE. PROVIDE CONDUIT CAPS AT ENDS OF ALL ABANDONED CONDUIT. BELOW GRADE HORIZONTAL CONDUIT RUNS SHALLOWER THAN 36" SHALL BE REMOVED.
 - BELOW GRADE AREAS AND VOIDS CREATED BY REMOVAL OF BELOW GRADE FACILITIES OR DEMOLITION OF STRUCTURES SHALL BE BACKFILLED WITH SELECT FILL MATERIAL PER CONSTRUCTION NOTES ON DRAWING G-2 COMPACTED TO 95% MINIMUM RELATIVE COMPACTION.
 - SEE SPECIFICATION SECTION 02051 "SEWAGE LIFT STATION DEMOLITION" FOR ADDITIONAL DEMOLITION REQUIREMENTS.
 - SEE DRAWING C-3 FOR CONNECTIONS TO EXISTING FORCE MAIN AND SEWER MANHOLE.

- DESCRIPTION OF DEMOLITION WORK FOR DRAWING D-1:**
- REMOVE AND DISPOSE OF DG DRIVEWAY WITHIN LIMITS OF PROPOSED SITE.
 - REMOVE AND DISPOSE OF SITE GATE.
 - FILL EXISTING ABANDONED FORCE MAIN WITH 2 SACK CEMENT/SAND SLURRY.
 - REMOVE AND DISPOSE OF CHAINLINK FENCE.
 - EXISTING BURIED CONDUIT, REMOVE AND DISPOSE OF CONDUIT AND CONDUCTORS.
 - REMOVE AND DISPOSE OF 4 1/2" THICK CONCRETE SLAB.
 - FILL EXISTING ABANDONED SEWER WITH 2 SACK CEMENT/SAND SLURRY.
 - REMOVE AND SALVAGE EXISTING CONTROL PANEL, ELECTRICAL SERVICE, AND RTU. COORDINATE WITH CITY.
 - REMOVE AND DISPOSE OF DISCHARGE PIPING, VALVES, AND FITTINGS.
 - REMOVE AND DISPOSE OF WET WELL MANHOLE FRAME AND COVER.
 - REMOVE AND SALVAGE SUBMERSIBLE PUMPING UNIT, INCLUDING PUMP, BASE ELBOW, DISCHARGE HOSE, PUMP POWER AND CONTROL CABLES, AND LIFTING CHAIN/CABLE. CLEAN WITH HIGH PRESSURE WATER SPRAY.
 - REMOVE CONDUCTORS FROM CONDUIT. ABANDON IN PLACE ALL BELOW GRADE CONDUIT DEEPER THAN 36". REMOVE AND DISPOSE OF ALL BELOW GRADE CONDUIT AND CONDUCTORS SHALLOWER THAN 36". REMOVE VERTICAL CONDUIT RISER AND PROVIDE CONDUIT CAPS AT THE ENDS OF ALL ABANDONED CONDUIT.
 - REMOVE AND DISPOSE OF UPPER 5' (MINIMUM) OF WET WELL SHAFT.
 - REMOVE AND DISPOSE OF WET WELL FLOATS.
 - CORE DRILL WET WELL FOUNDATION IN 4 PLACES, EQUALLY SPACED. EACH CORE DRILL SHALL BE 12" IN DIAMETER.
 - FILL REMAINING WET WELL SHAFT WITH SAND COMPACTED TO 90% RELATIVE COMPACTION.
 - BACKFILL EXCAVATION WITH SELECT FILL MATERIAL AND COMPACT TO 95% MINIMUM RELATIVE COMPACTION.
 - REMOVE AND DISPOSE OF UPPER 5' (MINIMUM) OF VALVE CHAMBER (VAULT).
 - CORE DRILL VALVE CHAMBER FOUNDATION IN 4 PLACES, EQUALLY SPACED. EACH CORE DRILL SHALL BE 12" IN DIAMETER.
 - FILL REMAINING VALVE CHAMBER WITH SAND COMPACTED TO 90% RELATIVE COMPACTION.
 - REMOVE AND RELOCATE EXISTING SIGN. COORDINATE LOCATION WITH CITY.



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

KRIEGER & STEWART INCORPORATED
3602 University Ave. • Riverside, CA. 92501 • 951-684-6900
APPROVED BY *John P. MacLeck*
REGISTERED ENGINEER No. 62220 DATE 7/10/12



MARK	REVISIONS	APPR.	DATE

DESIGNED BY *JPM* DRAWN BY *MRN* CHECKED BY *JCR*

CITY OF RIVERSIDE, CALIFORNIA PUBLIC WORKS DEPARTMENT

APPROVED BY *[Signature]* BY DATE *8/19/12* APPROVED BY *[Signature]*
ENGINEERING MANAGER PRINCIPAL ENGINEER
CONTRACT ADMINISTRATOR SURVEYOR
TRAFFIC DIVISION

CREST LIFT STATION REPLACEMENT

DEMOLITION PLAN AND SECTIONS

ACCT. NO. 9835423203 CONST. W.O. 1218173

S-2106

SHEET 21 OF 21

SCALE: NONE DWG. NO. D-1

DWG. NO.: 476-18-34-1 FILE NO.: 476-18.3 UPDATE BY: MRN PROJ. ENG.: JPM PLOT DATE: 06/25/12 PLOT TIME: 3:00PM PLOT SCALE: 1"=10'