

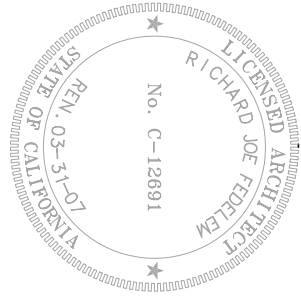


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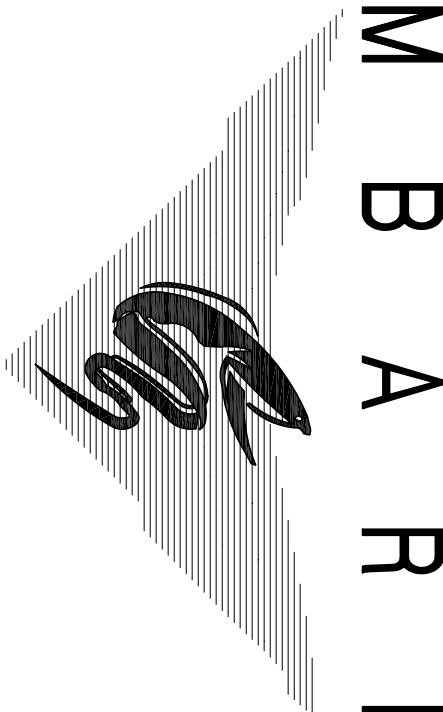
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Agency Approvals:

Revisions	No.	Description	Date



MOSS LANDING FACILITIES
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MOSS LANDING CA. 95039

MARS SHORE STATION

Drawn by: SK	Checked: MB	Approved:	Project No. 06.044	Drawing No.	Date: 8/04/06
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LANDSCAPE IRRIGATION - SECTION 02810

PART I - GENERAL

1.01 RELATED DOCUMENTS

- DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION-1 SPECIFICATION SECTIONS, APPLY TO THE WORK OF THIS SECTION.

1.02 DESCRIPTION OF WORK

- EXTENT: IN THIS SECTION INCLUDES THE INSTALLATION OF A COMPLETE AUTOMATIC IRRIGATION SYSTEM AND MODIFICATION OF AN EXISTING SYSTEM, INCLUDING TRENCHING, PIPING, EQUIPMENT, BOOSTER PUMP, ELECTRICAL, MAINTENANCE OF THE SYSTEM, AND INCIDENTALS RELATED THERETO.

B. RELATED WORK

- EARTHWORK AND GRADING
- LANDSCAPE PLANTING
- LANDSCAPE MAINTENANCE
- ELECTRICAL

1.03 STANDARDS

- UNLESS OTHERWISE SHOWN OR SPECIFIED, ALL MATERIALS AND METHODS SHALL CONFORM TO THE APPROPRIATE CURRENT SECTIONS OF:

- THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD SPECIFICATIONS (DSS), EXCEPT FOR MEASUREMENT AND PAYMENT REQUIREMENTS.
- APPLICABLE ASTM SPECIFICATIONS AS THEY REASONABLY APPLY TO THIS WORK.
- UNIFORM PLUMBING CODE (UPC)
- NEC (NATIONAL ELECTRICAL CODE)

1.04 REVIEWS

- CONTRACTOR SHALL SPECIFICALLY REQUEST THE FOLLOWING REVIEWS AT LEAST 48 HOURS PRIOR TO PROGRESSING WITH WORK:

- LAYOUT OF THE SYSTEM.
- ALL TRENCHING.
- PRESSURE TESTING OF ALL MAINLINES FOR LEAKS.
- COVERAGE ADJUSTMENT OF ALL HEADS, VALVE BOX INSPECTION, AND OPERATION OF THE SYSTEM, AND
- LOCATION OF CONTROLLER.

1.05 QUALITY ASSURANCE

- ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY AVAILABLE UNLESS OTHERWISE SPECIFIED. MANUFACTURER SHALL BE CLEARLY MARKED ON ALL MATERIAL, CONTAINERS, OR CERTIFICATES OF CONTENTS FOR INSPECTION.

- ANY DESIRED SUBSTITUTIONS FOR IRRIGATION EQUIPMENT REQUIRE SUBMITTALS FOR SPECIFIC WRITTEN APPROVAL.

1.06 UTILITIES

- CONTRACTOR SHALL VERIFY LOCATION OF ALL ON SITE UTILITIES PRIOR TO TRENCHING. NOTIFY ENGINEER BY TELEPHONE AND IN WRITING OF ANY CONFLICTS PRIOR TO INSTALLATION. RESTORATION OF DAMAGED UTILITIES SHALL BE MADE AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER.

1.07 CODES

- IRRIGATION SYSTEM AND ELECTRICAL POWER TO CONTROLLER SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH LOCAL CODES AND MANUFACTURERS SPECIFICATIONS.

1.08 TESTING

- THE BACKFLOW PREVENTER SHALL BE TESTED AND APPROVED BY A LICENSED TESTING AGENCY PRIOR TO SUBSTANTIAL COMPLETION. SUBMIT TEST RESULT CERTIFICATE TO OWNER AS PART OF SUBSTANTIAL COMPLETION REVIEW FOR LANDSCAPE MAINTENANCE PERIOD AUTHORIZATION.

PART II - PRODUCTS

2.01 POINT OF CONNECTION

- POINTS OF CONNECTION SHALL BE BELOW GRADE. CONNECT TO WATER METER AND PLUMB BACKFLOW DEVICE AND REMAINING SYSTEM.

2.02 PLASTIC PIPE AND FITTINGS

- UNLESS OTHERWISE NOTED:
 - LATERAL PIPE SHALL BE SCHEDULE E 40 PVC, CLASS 200 PVC
 - MAINLINE FOR PIPE SIZES UP TO 2" SHALL BE SCHEDULE 40 PVC
 - MAIN LINE FOR PIPE SIZES 2-1/2" AND LARGER SHALL BE SCHEDULE 40 PVC, CLASS 315 PVC, CLASS 200 PVC RUBBER RING JOINT
 - ALL PVC SOLVENT WELD FITTINGS FOR LATERAL PIPING SHALL BE SCHEDULE 40 PVC.
 - MAIN LINE FITTINGS SHALL MATCH THE PIPE TYPE.
 - ALL THREADED FITTINGS FOR LATERAL PIPE SHALL BE SCHEDULE 40 PVC HEAVY WALL.
 - ALL MAIN LINE THREADED FITTINGS SHALL MATCH THE PIPE TYPE.
 - ALL RISERS AND NIPPLES SHALL BE SCHEDULE 80 PVC.
 - PLASTIC THREADED FITTINGS SHALL HAVE PERMATEX #2 THREAD SEALANT WITH TEFELON OR EQUAL.
 - PVC CEMENT SHALL BE IPS (INDUSTRIAL POLY CHEMICALS) FOR SOLVENT WELD, WITH ASSOCIATED PRIMER TO FIT PIPE TYPE AND SIZE.

2.03 GALVANIZED PIPE AND FITTINGS

- GALVANIZED STEEL PIPE ASTM A120. FITTINGS SHALL BE STANDARD THREADED GALVANIZED MALLEABLE IRON. ALL GALVANIZED MAIN BELOW GRADE SHALL BE WRAPPED WITH 2" WIDE PLASTIC ADHESIVE TAPE (#50 "SCOTCH WRAP" OR EQUAL).

2.03 RED BRASS PIPE AND ASSOCIATED FITTINGS

- PIPE: ASTM B 43, REGULAR

- FITTINGS: ANSI/ ASME B16.15, CLASS 250, CAST BRONZE THREADED

2.03 COPPER TUBING AND ASSOCIATED FITTINGS

- TUBING: ASTM B 08, TYPE K IN GROUND, TYPE L ABOVE GROUND.

- FITTINGS: ASME/ ANSI B16.22 AND ANSI B16.18, SOLDER JOINT. SOLDER, ASTM B 32 ALLOY GRADE SN 95 OR SN 94, FLUX, CID A-4 51145, TYPE I.

2.03 CAST IRON PIPING

- CLASS 150. FITTINGS SHALL BE STANDARD FLANGED, BOLTED CONNECTIONS. ALL COST IRON PIPING BELOW GRADE SHALL BE WRAPPED WITH 2" WIDE PLASTIC ADHESIVE TAPE (#50 "SCOTCH WRAP" OR EQUAL).

2.04 LEEMCO FITTINGS AND JOINT RESTRAINTS (SPORTS FIELDS ONLY)

- SHALL BE AS AVAILABLE FROM HORIZON SALES (925) 634-0788 AND SHALL BE AS FOLLOWS:

- FITTINGS FOR LEEMCO FITTINGS AND JOINT RESTRAINTS SHALL BE DUCTILE IRON. SLANT-BELL DESIGN, DEEP BELL TYPE. FITTINGS SHALL BE MANUFACTURED OF DUCTILE IRON, GRADE 68-45-12 IN ACCORDANCE WITH ASTM A-536. FITTING GASKETS SHALL BE IN ACCORDANCE WITH ASTM F-477. ALL DUCTILE IRON FITTINGS SHALL BE EQUIPPED WITH FOUR 90-DEGREE APART, OUTWARDLY EXTENDING RADIAL LUGS TO ACCOMMODATE FOR APPROPRIATE METHOD OF MECHANICAL RESTRAINTS.
- FITTINGS MADE FROM MORE THAN ONE PIECE SHALL UTILIZE SECURELY FASTENED BOLT-ON STYLE SPIGOT-BELL COMPONENTS. LOOSELY ATTACHED, SLIP-ON LINKS AS THE METHOD OF ATTACHMENT IS NOT PERMISSIBLE.
- ALL TEE FITTINGS USED TO CONNECT REMOTE CONTROL VALVE AND QUICK COUPLING ASSEMBLIES TO THE MAIN LINE SHALL BE DUCTILE IRON, DEEP BELL SERVICE TEES. SADDLES ARE NOT PERMISSIBLE.

- ALL DUCTILE IRON BENDS, REDUCERS, TEES AND GATE VALVES SHALL BE MECHANICALLY RESTRAINED. ALL BELL AND GASKET JOINTS WITHIN FIFTY (50) FEET OF A DIRECTIONAL OR DIAMETER CHANGE IN THE MAIN LINE SHALL BE EQUIPPED WITH JOINT RESTRAINTS.
- THE MECHANICAL JOINT RESTRAINT SHALL BE CAPABLE OF SECURING THE PVC PIPE DIRECTLY TO THE DUCTILE IRON FITTING WITHOUT THE USE OF BOLTS, LINKS, AND ADAPTERS. THE JOINT RESTRAINT SHALL BE CAPABLE OF SECURING PVC GASKET PIPE JOINTS AND GATE VALVES WITHOUT THE USE OF THREADED RODS. THE WIDTH OF THE CLAMP AT ITS AREX SHALL BE NO LESS THAN 3 INCHES WIDE. JOINT RESTRAINTS MADE FOR IRON OR STEEL PIPE ARE NOT PERMISSIBLE.

- THE JOINT RESTRAINT SHALL BE MANUFACTURED FROM DUCTILE IRON, GRADE 68-45-12 IN ACCORDANCE WITH ASTM A-536. BOLTS AND NUTS USED ON JOINT RESTRAINTS SHALL BE MANUFACTURED BY LEEMCO, INC.
- ALL JOINT RESTRAINTS SHALL BE INSTALLED USING METHODS RECOMMENDED BY THE MANUFACTURER. ALL BOLTS AND NUTS SHALL BE TIGHTENED AS PER MANUFACTURER'S RECOMMENDED TORQUE RATINGS.
- THE FOLLOWING LEEMCO MODELS SHALL BE UTILIZED WHERE APPLICABLE:
 - LH-SERIES RESTRAINTS SHALL BE USED FOR ALL CONNECTIONS BETWEEN PVC PIPE AND PUSH-ON DEEP BELL, DUCTILE IRON FITTINGS.
 - LB-SERIES RESTRAINTS SHALL BE USED FOR PVC BELL SPIGOT CONNECTIONS THAT REQUIRE RESTRAINTS.
 - LG-SERIES RESTRAINTS SHALL BE USED FOR ALL PUSH ON GATE VALVES.
 - LIG-SERIES RESTRAINTS SHALL BE USED FOR ALL PUSH ON GATE VALVES INSTALLED ADJACENT TO A DUCTILE IRON FITTING.
 - LNU-SERIES RESTRAINTS SHALL BE USED FOR ALL MJ GATE VALVES, AND FLANGED VALVES.

2.05 SLEEVING

- ALL MAIN AND LATERAL LINES LOCATED BENEATH PAVING SHALL BE SLEEVED WITH SCHEDULE 40 PVC PIPE UNLESS OTHERWISE NOTED.

2.06 CONTROL WIRE

- TYPE UF, 600V, INSULATION, MINIMUM SIZE #14, COPPER, COMMON GROUND WHITE, U.L. APPROVED FOR IRRIGATION CONTROL USE. SPLICES SHALL BE SEALED WITH APPROVED WITH WIRE NUTS ENCLOSED IN RESIN-FILLED ENVELOPES.

2.07 VALVE BOXES

- PRECAST LOCKABLE PLASTIC OF TYPE AND SIZE AS INDICATED ON THE PLANS AND FREE OF ALL CRACKS, CHIPS OR STRUCTURAL DEFECTS.
 - BOXES SUBJECT TO VEHICULAR TRAFFIC SHALL BE CONCRETE AND HAVE TRAFFIC LID COVERS.
 - ALL VALVE BOXES SHALL BE LABELED WITH A PLASTIC LABEL, INDICATING THE VALVE STATION # AS CONNECTED TO THE CONTROLLER AS INDICATED ON THE PLANS.