

MERCED STORM DRAIN PUMP STATION DESIGN

1. DISCHARGE RATE SHALL COMPLY WITH THE MERCED COUNTY CRITICAL AREA FLOODING AND DRAINAGE PLAN.
2. EACH PUMP STATION SHALL HAVE EITHER TWO PUMPS, EACH CAPABLE OF HANDLING DESIGN FLOW INDIVIDUALLY OR THREE PUMPS EQUALING 150 PERCENT OF DESIGN FLOW. PUMPS SHALL BE VERTICAL TURBINE, OIL LUBRICATED AND SUITABLE FOR OUTDOOR INSTALLATION [INSULATION CLASS H (180°) OR (155°)]. SUBMERSIBLE PUMPS MAY BE CONSIDERED SUBJECT TO (1) DOUBLE SEAL; (2) MOISTURE LEAKAGE DETECTION AND SHUTOFF; (3) TERMINAL BOARD AND CABLE ENTRY SEALED AGAINST MOISTURE; (4) THERMAL SHUTOFF; (5) CAPABLE OF OPERATION IN AIR.
3. TWO PUMPS SHALL ALTERNATE WITH EACH OTHER AND EACH PUMP TO HAVE A SEPARATE DISCHARGE LINE OR CHECK VALVE.
4. CIRCUITS AND CONTROLS SHALL INCLUDE TIME DELAY BEFORE RESTART (ADJUSTABLE UP TO FIVE MINUTES).
5. ALARMS SHALL INCLUDE LOW WATER, PUMPS OFF, PUMP ONE ON, PUMP TWO ON, HIGH WATER AND POWER FAILURE (WITH BATTERY BACKUP). ALL ALARMS SHALL BE TELEMETERED TO THE CITY POLICE STATION.
6. CONTROLS SHALL BE SOLID STATE PROGRAMMABLE CONTROLLER WITH LED DIGITAL READOUT (TESCO LIQUIDTRONIC III MODEL 36-663 OR EQUAL). LIQUID LEVELS DETECTION SHALL BE TESCO CB612 OR EQUAL, OR "SONAR" DETECT, OR EQUAL, IN WATERPROOF CASING.
7. TRASH RACK SHALL EXTEND FULL WIDTH AND HEIGHT OF WET WELL. SPACING BETWEEN VERTICAL BARS OF TRASH RACK TO BE LESS THAN ONE-INCH. STRUCTURAL SUPPORT FOR TRASH RACK WILL REQUIRE STRUCTURAL CALCULATIONS BUT SUPPORTS ARE NOT TO INHIBIT THE FUNCTION OF THE TRASH RACK. IN ADDITION, A TRASH BASKET IS REQUIRED ON ALL PUMPS. BOTTOM OF TRASH BASKET TO BE MINIMUM OF 18 INCHES ABOVE BOTTOM OF PUMP WELL.
8. ABOVE GROUND PIPING, MOTORS, ELECTRICAL PANEL TO BE PAINTED. BELOW GROUND PIPING TO HAVE TWO COATS OF BITUMASTIC PAINT OR EQUAL. WET WELL GRATING, LADDER, TRASH RACK, ETC., TO BE GALVANIZED AFTER FABRICATION. WET WELL LIGHTING SHALL BE EXPLOSION-PROOF. SITE LIGHTING SHALL BE WEATHER-PROOF.
9. DECK GRATING TO BE "BORDEN W/B" TYPE 6 WITH A MAXIMUM SPAN OF 5 FEET 6 INCHES (OR APPROVED EQUAL).
10. ALL UTILITY SERVICES TO THE STATION SHALL BE UNDERGROUND.
11. TWO COPIES OF OPERATIONS/MAINTENANCE MANUALS ARE REQUIRED.
12. COMPLETE INSTALLATION SHALL CARRY A MINIMUM OF ONE YEAR GUARANTEE FROM THE DATE OF FILING OF NOTICE OF COMPLETION.
13. DISCHARGE TO MID FACILITIES WILL REQUIRE APPLICANT TO SUBMIT FULL CONFIRMATION OF MID APPROVAL.
14. WHERE COMBINED HORSEPOWER OF ALL PUMPS IS GREATER THAN 50 HP, AN AUTOMATED TRASH RACK IS REQUIRED.
15. ALL DISCHARGE LINES SHALL BE SUBJECT TO HYDROSTATIC AND LEAK TESTING AS DEFINED FOR WATER LINES (SHEET W-19).
16. FOR PUMPS DISCHARGING TO CREEKS OR M.I.D. FACILITIES: a) PROVIDE HIGH WATER CUT-OFF PER CITY STANDARD SD-34, b) BASIN AND/OR PIPING SYSTEM SHALL BE SIZED FOR INTERRUPTIBLE FLOW, AND c) PUMP FACILITIES TO BE DESIGNED AND CONSTRUCTED WITH SEDIMENT, SOLIDS AND FLOATABLE SEPRATOR/REMOVAL SYSTEM PRIOR TO FLOW INTO CREEK OR M.I.D. FACILITIES AND ACCESSIBLE TO MAINTENANCE EQUIPMENT/PERSONNEL. APPROVED HYDRODYNAMIC SEPARATORS: BAYSAVER, FLO-GARD OR VORTECHS.
17. PROVIDE PORTABLE GENERATOR CONNECTIONS PER CITY STANDARD S-18.
18. FOR MULTI PURPOSE BASINS USED FOR RECREATION, THE FENCE SHOWN ON SD-30 IS NOT REQUIRED FOR THE BASIN; HOWEVER, IT IS STILL REQUIRED AROUND THE PUMP STATION.

ENGINEERING DEPARTMENT

CITY OF MERCED, CA.

STORM DRAIN DESIGN

DRAWN: KGE
DATE: 1/06
REVISED: 3/17/08

APPROVED BY: 
CITY ENGINEER

DATE: 3/17/08

SD-32

SHEET OF