MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA

ABBREVIATIONS

AGG.	AGGREGATE
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
B.C.	BEGINNING OF CURVE RADIUS
BLDG.	BUILDING
CBO	CHIEF BUILDING OFFICIAL
CO	CLEANOUT
℄	CENTERLINE
C2B	CLASS 2 BASE
DIA.	DIAMETER
DCO	DOUBLE CLEANOUT
D/W	DRIVEWAY
Δ	DELTA
E.P.	EDGE OF PAVEMENT
E	EAST / ELECTRICAL
EL.	ELEVATION
E.C.	END OF CURVE RADIUS
F.F.	FINISH FLOOR ELEVATION
FP	FIRE PROTECTION
℄	FLOWLINE
F.S.	FINISH SURFACE
IRR	IRRIGATION
L	LENGTH
MAX.	MAXIMUM
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N	NORTH
NS	NATIVE SURFACE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OHE	OVERHEAD ELECTRICAL LINE
P.E.	PAD ELEVATION
%	PERCENT
P.C.C.	PORTLAND CEMENT CONCRETE
POC	POINT OF CONNECTION
P.P.	POWER POLE
P.V.C.	POLY VINYL CHLORIDE
R	RADIUS/ RIGHT
R.C.P.	REINFORCED CONCRETE PIPE
RE	RESIDENT ENGINEER
R/W	RIGHT-OF-WAY
S	SOUTH / SLOPE
SS	SANITARY SEWER / STAINLESS STEEL
SSFM	SANITARY SEWER FORCE MAIN
TBM	TEMPORARY BENCHMARK
T.C.	TOP OF CURB OR TOP OF CONCRETE
T.P.	TOP OF PAVEMENT
W	WEST / WATER

LEGEND

DESCRIPTION	EXISTING	PROPOSED
POWER POLE		
OVERHEAD ELECTRICITY	(OHE)	OHE
UNDERGROUND TELEPHONE LINE	(T)	T
UNDERGROUND ELECTRICAL LINE	(E)	UE
GUY WIRE		
SANITARY SEWER PIPELINE	(SS)	SIZE "SS
SANITARY SEWER FORCEMAIN PIPELINE	(SIZE-INCH SS FM)	SIZE "SS FM
WATER PIPELINE	(W)	SIZE "W
IRRIGATION WATER PIPELINE	(IRR)	IRR
FIRE PROTECTION WATER PIPELINE	(FP)	FP
SANITARY SEWER CLEAN OUT	CO	CO
CLEAN OUT BOX	COB	COB
BACKFLOW PREVENTOR	BF	BF
PIPELINE BLOW-OFF	BO	BO
MANHOLE	SS	SS
A.C. PAVEMENT		
BENCHMARK		
SIGN AND/OR SIGN POST		
DENSE/OVERGROWN VEGETATION		
TREE		
FENCE		
RIGHT OF WAY	ROW	ROW
VALVE		
AIR RELEASE VALVE		
PIEZOMETER		
PROPERTY LINE		
FIRE HYDRANT		
STREET / PARKING LIGHT		
P.C.C. INFRASTRUCTURE		
BUILDING		
AGRICULTURAL FIELD		
DENSE VEGETATION		
BANK SLOPES	TOP OF SLOPE / TOE OF SLOPE	TOP OF SLOPE / TOE OF SLOPE
CONTOUR LINE	(4250.00)	4250.00
SPOT ELEVATION	(4250.00)	4250.00
FLOW DIRECTION		

GENERAL NOTES

GENERAL

1. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT AT 811 AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION.
2. THE CONTRACTOR SHALL COMPLETE ALL WORK IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, TECHNICAL SPECIFICATIONS AND SPECIAL CONDITIONS PREPARED FOR THE PROJECT. IF THERE IS CONFLICT BETWEEN THE PLANS, TECHNICAL SPECIFICATIONS AND THE SPECIAL CONDITIONS, THE MOST STRINGENT REQUIREMENT SHALL PREVAIL.
3. THE SITE SHALL BE WET DOWN AS NECESSARY DURING CONSTRUCTION TO ELIMINATE DUST GENERATION.
4. ANY DIRT, DUST, OR MUD, EITHER TRACKED OFF SITE BY EQUIPMENT OR BLOWN INTO ADJACENT CITY OR COUNTY STREETS WILL BE CLEANED UP DAILY BY THE RESPONSIBLE CONTRACTOR.
5. THE LOCATION OF EXISTING UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
6. ALL GRADING SHALL COMPLY WITH CHAPTER 70 OF THE UNIFORM BUILDING CODE, LATEST EDITION.
7. ALL SITE GRADING SHALL BE FINISHED TO THE ELEVATIONS, LINES AND GRADES SHOWN ON THE PLANS. ALL FINISHED GRADES SHALL BE WITHIN 0.10 FOOT OF PLAN GRADE.
8. DURING GRADING OPERATIONS THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING EQUIPMENT THAT WILL NOT CAUSE "PUMPING" OF THE SOIL DUE TO THE DEPTH OF GROUNDWATER PRIOR TO CONSTRUCTION.
9. THE CONTRACTOR SHALL BE LICENSED BY THE STATE OF CALIFORNIA, HAVE A CITY AND COUNTY BUSINESS LICENSE AND SHALL FILE A CERTIFICATE OF WORKMENS' COMPENSATION WITH THE CITY OF BLYTHE AND COUNTY OF RIVERSIDE PRIOR TO THE START OF CONSTRUCTION.
10. NO OPEN TRENCHES WILL BE PERMITTED OVERNIGHT WITHOUT THE APPROVAL OF THE CITY OF BLYTHE AND COUNTY OF RIVERSIDE.
11. THE CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF PLANS AT THE JOB SITE. THESE PLANS MUST BE KEPT IN GOOD CONDITION, REFLECT ALL CHANGES TO THE PROJECT FROM THE APPROVED PLANS IN RED INK AND BE UPDATED DAILY. AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR SHALL FURNISH THE OWNER WITH ONE COMPLETE SET OF THE "AS-BUILT" PLANS.
12. A PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED WITH THE OWNER AND HIS/HER ASSOCIATES AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

STREET CONSTRUCTION

13. THE CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE CITY OF BLYTHE, COUNTY OF RIVERSIDE AND THE HOLT GROUP HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
14. THE CONTRACTOR SHALL PROVIDE FOR INGRESS AND EGRESS FOR PRIVATE PROPERTY ADJACENT TO THE WORK THROUGHOUT THE PERIOD OF CONSTRUCTION.

THE HOLT GROUP, INC. ENGINEERING NOTES

15. ANY QUESTION RAISED RELATIVE TO THE ACCURACY OF IMPROVEMENT INSTALLATION SHALL NOT BE RAISED SUBSEQUENT TO COMPLETION OF THE WORK UNLESS ALL SURVEY STAKES ARE MAINTAINED INTACT. SHOULD SUCH STAKES NOT BE PRESENT AND VERIFIED AS TO THEIR ORIGIN, NO CLAIM FOR ADDITIONAL COMPENSATION FOR CORRECTION SHALL BE PRESENTED TO ANY PARTY AND SUCH WORK SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE.
16. NEITHER THE OWNER, NOR THE ENGINEER WILL ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL DESIGN, CONSTRUCT, AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING, AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.
17. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED FROM A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO OTHER EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHERS NOT OF RECORD OR NOT SHOWN ON THESE PLANS. ALL DAMAGES THERETO CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE APPROPRIATE SPECIFICATIONS AND AT THE EXPENSE OF THE CONTRACTOR.
18. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UNDERGROUND PIPELINES, TELEPHONE AND ELECTRIC CONDUITS AND STRUCTURES IN ADVANCE OF ANY CONSTRUCTION AND TO OBSERVE ALL POSSIBLE PRECAUTIONS TO AVOID DAMAGE TO SUCH. THE ENGINEER AND/OR OWNER WILL NOT GUARANTEE ANY LOCATIONS AS SHOWN ON THESE PLANS OR THOSE OMITTED FROM THE SAME.
19. CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF THE ACTUAL LOCATIONS OF EXISTING FACILITIES.
20. BEFORE EXCAVATING, THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES WITH THE APPROPRIATE UTILITY COMPANY.
21. LOCATION AND ELEVATION OF IMPROVEMENTS TO BE MET BY WORK TO BE DONE SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK.
22. CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS REQUIRED TO PROTECT ADJACENT PROPERTIES DURING THE GRADING OPERATIONS.
23. ALL FRAMES, COVERS, VALVE BOXES AND MANHOLES SHALL BE ADJUSTED TO FINISH GRADE UPON COMPLETION OF PAVING OR RELATED CONSTRUCTION.
24. THE CONTRACTOR SHALL BE RESPONSIBLE TO INSURE THAT ALL GRADING AND SANITARY SEWER PIPELINES ARE BUILT IN ACCORDANCE WITH THESE PLANS. IF THERE ARE ANY QUESTIONS REGARDING THESE PLANS OR FIELD STAKES, THE CONTRACTOR SHALL REQUEST AN INTERPRETATION BEFORE DOING ANY WORK BY CALLING THE ENGINEER OF WORK AT (760) 922-4658. THE CONTRACTOR SHALL ALSO TAKE THE NECESSARY STEPS TO PROTECT THE PROJECT AND ADJACENT PROPERTY FROM ANY EROSION AND SILTATION THAT MAY RESULT FROM HIS OPERATIONS BY APPROPRIATE MEANS (SAND BAGS, HAY BALES, TEMPORARY DESILTING BASINS, DIKES, SHORING, ETC.) UNTIL SUCH TIME THAT THE PROJECT IS COMPLETED AND ACCEPTED.
25. ALL GRADING AND BACKFILLING SHALL BE ACCOMPLISHED UNDER THE OBSERVATION OF A QUALIFIED GEOTECHNICAL ENGINEER. ALL AREAS TO BE FILLED SHALL BE SUFFICIENTLY PREPARED AND ALL FILL SHALL BE PLACED IN ACCORDANCE WITH THE RECOMMENDED GRADING SPECIFICATIONS AND SPECIAL PROVISIONS ATTACHED TO THE GEOTECHNICAL INVESTIGATION FOR THIS PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE, SPREAD, WATER AND COMPACT FILL IN STRICT ACCORDANCE WITH THESE SPECIFICATIONS.
26. OBSERVATIONS AND COMPACTION TESTS SHALL BE MADE BY THE GEOTECHNICAL ENGINEER DURING THE FILLING AND COMPACTING OPERATIONS SO THAT THE GEOTECHNICAL ENGINEER CAN VERIFY THAT IN HIS/HER OPINION THE BACKFILL WAS CONSTRUCTED IN ACCORDANCE WITH EARTHWORK SPECIFICATIONS, GEOTECHNICAL REPORT AND IMPROVEMENT PLANS.
27. IN THE CASE OF CONFLICTS, THE REQUIREMENTS OF THE EARTHWORK SPECIFICATIONS PREPARED FOR THE PROJECT BY THE GEOTECHNICAL ENGINEER SHALL SUPERCEDE THE REQUIREMENTS OF THESE PLANS AND NOTES.
28. CONTRACTOR IS TO COORDINATE THE GRADING OPERATIONS WITH UTILITY COMPANIES PERTAINING TO POLE REMOVAL ADJUSTING SEWER FACILITIES TO GRADE, OR ANY OTHER UTILITY ADJUSTMENTS.
29. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FULLY COMPLY WITH THE MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT'S RULES AND REGULATION FOR DUST CONTROL.
30. A LIST OF ALL SUBCONTRACTORS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR TO THE CITY BUILDING DEPARTMENT.

PROJECT DESCRIPTION

MAYFLOWER PARK IS LOCATED AT 4980 COLORADO RIVER ROAD IN AN UNINCORPORATED AREA OF RIVERSIDE COUNTY 6 MILES NORTHEAST OF BLYTHE, CALIFORNIA ALONG THE COLORADO RIVER. THERE IS A SMALL NEIGHBORING RESIDENTIAL COMMUNITY ALONG COLORADO RIVER ROAD LOCATED IMMEDIATELY SOUTH OF THE PARK NORTH OF SIXTH AVENUE. MAYFLOWER PARK IS COMPRISED OF APPROXIMATELY 83 ACRES. A TOTAL OF 24 ACRES OF THE PARK HAS BEEN DEVELOPED.

THIS PROJECT WILL BE FUNDED THROUGH THE CALIFORNIA DEPARTMENT OF PARKS AND RECREATION (CA STATE PARKS) PER CAPITA PROGRAM, MADE AVAILABLE THROUGH THE CALIFORNIA DROUGHT, WATER, PARKS, CLIMATE, COASTAL PROTECTION, AND OUTDOOR ACCESS FOR ALL ACT OF 2018 (PROP 68).

THERE ARE CURRENTLY 152 RECREATION VEHICLE (R.V.) SPACES AND 27 TENT CAMPING SPACES AT MAYFLOWER PARK. THERE ARE RESTROOM, SHOWER FACILITIES AND A DUMP STATION AT THE PARK. THE R.V. SPACES CURRENTLY DIRECT WASTEWATER TO THE DUMP STATION. THE WASTEWATER FROM THE DUMP STATION, RESTROOM AND SHOWER FACILITIES IS DIRECTED TO A SEPTIC TANK AND DRAIN FIELD LOCATED WITHIN THE PARK AREA. THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A GRAVITY SANITARY SEWER PIPELINE SYSTEM, SANITARY SEWER PUMP STATION AND SANITARY SEWER FORCE MAIN TO COLLECT THE MAYFLOWER PARK FACILITY WASTEWATER. THE WASTEWATER WILL BE DIRECTED TO AN EXISTING CITY OF BLYTHE 8 INCH DIAMETER SANITARY SEWER FORCE MAIN LOCATED ALONG SIXTH AVENUE. ULTIMATELY, THE WASTEWATER WILL BE CONVEYED TO THE CITY OF BLYTHE WASTEWATER TREATMENT FACILITY. THE EXISTING MAYFLOWER PARK SEPTIC TANKS AND DRAIN FIELD WILL BE ABANDONED AND DECOMMISSIONED IN ACCORDANCE WITH COUNTY OF RIVERSIDE HEALTH DEPARTMENT REQUIREMENTS. THE ABANDONMENT AND DECOMMISSIONING OF THE SEPTIC TANKS AND DRAIN FIELD IS INCLUDED WITHIN THE PROJECT SCOPE OF WORK.

THE PROJECT INCLUDES THE INSTALLATION OF 1,668 LINEAL FEET OF 8 INCH DIAMETER SDR 35 PVC GRAVITY SANITARY SEWER PIPELINE AND 10 MANHOLES. THE MAJORITY OF THE GRAVITY SANITARY SEWER PIPELINE IS BETWEEN 6 TO 10 FEET BELOW FINISH GRADE. SEWER LATERALS EXTENDING FROM THE DUMP STATION AND RESTROOM AND SHOWER FACILITIES WILL BE CONNECTED TO THE 8 INCH DIAMETER SDR 35 PVC GRAVITY SANITARY SEWER PIPELINE.

THE 8 INCH GRAVITY SEWER PIPELINE COLLECTION SYSTEM WILL DIRECT WASTEWATER TO AN 8 FOOT DIAMETER, 20 FOOT DEEP PRE-CAST CONCRETE PUMP STATION WET WELL. A 150 GALLON PER MINUTE, 10 HORSEPOWER DUPLEX SELF-PRIMING ABOVE GRADE PUMP STATION WILL CONVEY THE WASTEWATER THROUGH A FOUR (4) INCH DIAMETER, 3,049 LINEAL FOOT FORCE MAIN TO AN EXISTING CITY OF BLYTHE 8 INCH WASTEWATER FORCE MAIN LOCATED ALONG SIXTH AVENUE. THE DUPLEX PUMP STATION IS INTENDED FOR REDUNDANCY ONLY AND NOT FOR DOUBLE CAPACITY. THE PUMP CONTROLLER SHALL BE CONFIGURED TO LOCK OUT THE 2ND PUMP AND PREVENT BOTH PUMPS FROM RUNNING AT THE SAME TIME. ELECTRICAL POWER WILL BE DIRECTED FROM EXISTING MAYFLOWER PARK ELECTRICAL FACILITIES TO ENERGIZE THE WASTEWATER PUMP STATION. A 2 INCH WATER SERVICE WILL BE EXTENDED FROM THE EXISTING MAYFLOWER PARK IRRIGATION SYSTEM TO THE PUMP STATION TO PROVIDE WASH DOWN WATER. A LOCAL VISUAL/AUDIBLE ALARM WILL BE PROVIDED AT THE PUMP STATION FOR PUMP FAILURE AND HIGH WATER ALARM FUNCTIONS; ***HOWEVER, ACCOMMODATIONS TO TRANSMIT THE ALARM FUNCTIONS TO AN OUTSIDE LOCATION (SUCH AS THE CITY OF BLYTHE PUBLIC WORKS DEPARTMENT OR WASTEWATER TREATMENT PLANT) WILL NOT BE PROVIDED***. AN ACTIVATED CARBON FILTER IS INCLUDED AT THE TERMINATION POINT OF THE VERTICAL VENT PIPELINE EXTENDING FROM THE PUMP STATION WET WELL CEILING TO REDUCE ODORS EMANATING FROM THE WET WELL. A MANUAL ELECTRICAL TRANSFER SWITCH IS INCLUDED AT THE WASTEWATER PUMP STATION PRIOR TO THE PUMP STATION ELECTRICAL PANEL. ALTHOUGH THERE IS NO EMERGENCY POWER SOURCE INCLUDED WITH THIS PROJECT, THE MANUAL TRANSFER SWITCH WOULD ALLOW EMERGENCY POWER TO BE DIRECTED TO THE PUMP STATION ELECTRICAL PANEL AT THE TIME AN EMERGENCY POWER SOURCE IS INSTALLED. A LIGHT POLE AND LUMINAIRE WILL BE PROVIDED AT THE PUMP STATION SITE FOR NIGHTTIME OPERATION AND MAINTENANCE PURPOSES. A CLASS 2 BASE ENTRANCE ROAD AND MAINTENANCE AREA WILL SURROUND THE ABOVE GRADE SELF-PRIMING PUMP STATION. A 12 INCH DIAMETER, SDR 35 PVC GRAVITY PIPELINE WILL BE EXTENDED FOR A DISTANCE OF 40 FEET FROM THE WET WELL TO SERVE THE 59 ACRE UNDEVELOPED PARK AREA IN THE FUTURE.

THE NEW MAYFLOWER PARK FOUR (4) INCH WASTEWATER FORCE MAIN WILL CONNECT TO AN EXISTING EIGHT (8) INCH WASTEWATER FORCE MAIN AT SIXTH AVENUE. THE EXISTING EIGHT (8) INCH WASTEWATER FORCE MAIN CURRENTLY CONVEYS WASTEWATER FROM THE HIDDEN BEACHES PUMP STATION TO THE CITY OF BLYTHE COLLECTION SYSTEMWASTEWATER TREATMENT PLANT. THE PRESSURE WITHIN THE EXISTING EIGHT (8) INCH WASTEWATER FORCE MAIN ALONG SIXTH AVENUE AT THE POINT OF CONNECTION TO THE NEW FOUR (4) INCH FORCE MAIN IS APPROXIMATELY 40 PSI. THE MAYFLOWER PARK PUMP STATION WILL BE MUCH SMALLER THAN THE HIDDEN BEACHES PUMP STATION AND WILL OPERATE AT A LOWER PRESSURE THAN THE HIDDEN BEACHES PUMP STATION. IN ORDER TO AVOID A HYDRAULIC PROBLEM ALONG THE 4 INCH AND 8 INCH FORCE MAINS IN THE EVENT BOTH PUMP STATIONS ARE ACTIVE, THE MAYFLOWER PARK PUMP STATION WILL BE "LOCKED OUT" AND NOT BE ALLOWED TO OPERATE IN THE EVENT THE HIDDEN BEACHES PUMP STATION IS ACTIVE AS DESCRIBED AND REQUIRED BY THE ELECTRICAL PLANS. MODIFICATIONS AND ADDITIONS TO THE HIDDEN BEACHES SANITARY SEWER PUMP STATION ELECTRICAL FACILITIES WILL BE REQUIRED TO "LOCK OUT" THE MAYFLOWER PARK WASTEWATER PUMP STATION. CHECK VALVES AT THE MAYFLOWER PARK PUMP STATION WILL PROHIBIT BACKFLOW FROM THE 8 INCH AND 4 INCH WASTEWATER FORCE MAINS INTO THE PUMP STATION.

THERE WILL BE TWO (2) AIR RELIEF VALVE ASSEMBLIES LOCATED ALONG THE FOUR (4) INCH WASTEWATER FORCE MAIN FOR AIR RELEASE AT "HIGH POINTS". THERE WILL BE SEVERAL "CLEAN-OUTS" LOCATED ALONG THE FOUR (4) INCH FORCE MAIN FOR OPERATION AND MAINTENANCE PURPOSES. THERE WILL BE A FOUR INCH VALVE LOCATED ALONG THE FOUR INCH FORCE MAIN IMMEDIATELY UPSTREAM OF THE EIGHT (8) INCH FORCE MAIN CONNECTION POINT TO ALLOW FOR THE ISOLATION OF THE FOUR (4) INCH FORCE MAIN FOR OPERATION AND MAINTENANCE PURPOSES.

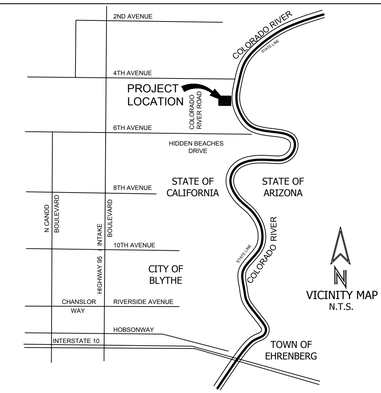
THE FOUR (4) INCH FORCE MAIN IS TO BE LOCATED WITHIN A 10 FOOT WIDE EASEMENT. THE EASEMENT IS TO BE ACQUIRED BY THE COUNTY OF RIVERSIDE PRIOR TO THE CONSTRUCTION OF THE FORCE MAIN.

A PIEZOMETER WAS PLACED NEAR THE LOCATION OF THE WASTEWATER PUMP STATION. THE GROUND WATER SURFACE NEAR THE PUMP STATION LOCATION WAS MEASURED TO BE AT AN ELEVATION OF 262.49 ON 9/23/2019. THE BOTTOM EXCAVATION OF THE PUMP STATION WET WELL HAS BEEN ESTABLISHED AT 262.49. THE CONTRACTOR SHALL PREPARE HIS/HER BID PROPOSAL ON THE ASSUMPTION THAT DEWATERING FOR THE CONSTRUCTION OF THE PUMP STATION WET WELL, 8 INCH GRAVITY SANITARY SEWER COLLECTION PIPELINE AND FOUR (4) INCH SANITARY SEWER FORCE MAIN WILL NOT BE REQUIRED.

CONNECTING THE NEW FOUR (4) INCH FORCE MAIN TO THE EXISTING EIGHT (8) INCH FORCE MAIN ALONG SIXTH AVENUE WILL REQUIRE DE-ENERGIZING THE HIDDEN BEACHES PUMP STATION FOR THE LENGTH OF TIME IT REQUIRES TO COMPLETE THE CONNECTION. IT SHALL BE NECESSARY FOR THE CONTRACTOR TO REMOVE THE WASTEWATER EMANATING FROM THE EIGHT (8) INCH FORCE MAIN AFTER IT IS SEVERED IN ORDER TO ALLOW THE FOUR (4) INCH FORCE MAIN CONNECTION. THE CONTRACTOR SHALL TRANSPORT AND DISPOSE OF THE WASTEWATER AT THE CITY OF BLYTHE WASTEWATER TREATMENT PLANT. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL EFFORTS WITH REGARD TO DE-ENERGIZING THE HIDDEN BEACHES PUMP STATION, REMOVING AND TRANSPORTING THE WASTEWATER AND COORDINATING THE SCHEDULING AND DELIVERY OF THE WASTEWATER WITH THE CITY OF BLYTHE WASTEWATER TREATMENT PLANT STAFF.

NOTE: THE SYSTEM SHOWN ON THESE PLANS IS A PRIVATE SYSTEM. THE CITY OF BLYTHE HAS NO RESPONSIBILITY FOR REPAIR OR MAINTENANCE OF THE SYSTEM EXCEPT FOR THE CONNECTION TO THE EXISTING CITY FORCE MAIN.

VICINITY MAP



SHEET INDEX

UTILITY PURVEYORS

SO CAL GAS TRANSMISSION 30" THE GAS COMPANY 13100 W. 14TH AVE. BLYTHE, CA 92225 CONTACT: DANNY TIPTON PHONE: (760) 623-2665 FAX: N/A	TELEPHONE FRONTIER 14885 SOUTH BROADWAY BLYTHE, CA 92225 CONTACT: TOM CHARNOTA PHONE: (928) 716-3393 FAX: (760) 922-2700	WATER, SEWER, STORMWATER CITY OF BLYTHE DEPARTMENT OF PUBLIC WORKS 440 SOUTH MAIN STREET BLYTHE, CA 92225 CONTACT: ARMANDO BALDIZZONE PHONE: (760) 922-6611 FAX: (760) 922-0278	WASTE MANAGEMENT C R & R DISPOSAL SERVICE 14701 SOUTH BROADWAY BLYTHE, CA 92225 CONTACT: JULIE PADILLA PHONE: (760) 922-9107 FAX: (760) 922-0895
ELECTRIC SOUTHERN CALIFORNIA EDISON COMPANY 505 WEST 14TH AVE. BLYTHE, CA 92225 CONTACT: RAUL VALENZUELA PHONE: (626) 607-7100 FAX: (760) 921-1609	CABLE SUDDENLINK CABLE 621 WEST HOBSONWAY BLYTHE, CA 92225 CONTACT: TOMMY TENIENTE PHONE: (760) 220-4776 FAX: N/A	BLYTHE FIRE DEPARTMENT 201 NORTH COMMERCIAL BLYTHE, CA 92225 CONTACT: BILLY KEM PHONE: (760) 922-6117 FAX: N/A	PALO VERDE IRRIGATION DISTRICT 180 WEST 14TH AVENUE BLYTHE, CA 92225 CONTACT: RICHARD GILMORE PHONE: (760) 922-3144 FAX: (760) 922-8294
FIBER OPTIC ERICSSON SERVICES FOR SPRINT-NEXTEL CORP 1141 N. JOSHUA TREE LANE BLYTHE, CA 92225 CONTACT: REG F. LANG PHONE: (760) 921-3150 FAX: (760) 922-4226	SO CAL GAS DISTRIBUTION RESIDENTIAL THE GAS COMPANY 13100 WEST 14TH AVE. BLYTHE, CA 92225 CONTACT: JOHN PAUL PHONE: (951) 532-0614 FAX: N/A	TELEPHONE A T & T FIBER OPTIC PHONE: (800) 252-1133	

DEVELOPER AND OWNER

RIVERSIDE COUNTY REGIONAL PARK AND OPEN-SPACE DISTRICT
4600 CRESTMORE ROAD
JURUPA VALLEY, CA 92509
CONTACT: ANALICIA GOMEZ, MPA
ANALICIAGOMEZ@RIVCO.ORG
PHONE: (951) 955-6998
FAX: (951) 955-4305

DESIGN ENGINEER

THE HOLT GROUP, INC.
201 E. HOBSONWAY
BLYTHE, CA 92225

CONTACT: ROBERT K. HOLT, P.E.
ROB@THEHOLTGROUP.NET
PHONE: (760) 922-4658
FAX: (760) 922-4660

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIG ALERT
DIAL BEFORE YOU DIG
TOLL FREE 811
TWO WORKING DAYS BEFORE YOU DIG
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

The private engineer signing these plans is responsible for assuring the accuracy and acceptability of the design hereon. In the event of discrepancies arising after county approval or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for approval by the county.

MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — STATE OF CALIFORNIA — CIVIL

The Holt Group, Inc.
ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING

201 E. HOBSONWAY, BLYTHE, CA 92225, PHONE: (760) 922-4658, FAX: (760) 922-4660
1601 N. IMPERIAL AVE., EL CENTRO, CA 92243, PHONE: (760) 337-3883, FAX: (760) 337-5997

PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK:
SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

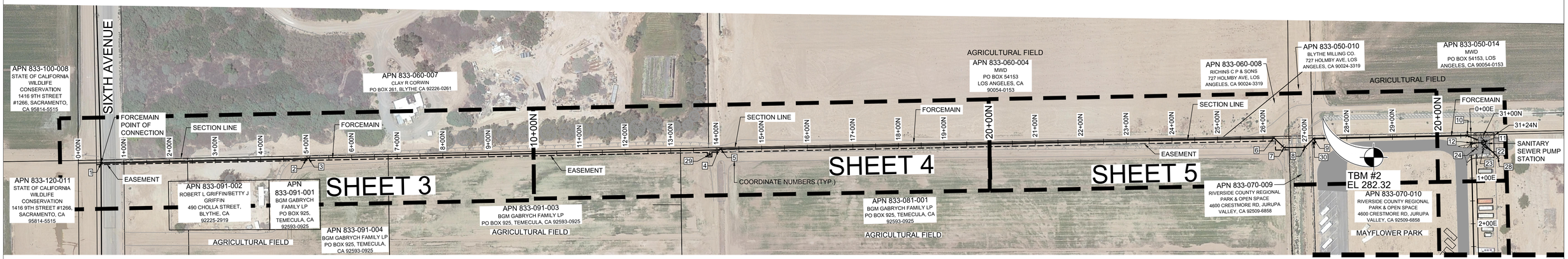
SCALE: H:_____ V:_____

M_____ THG #852.003
MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA
IP _____

TITLE SHEET

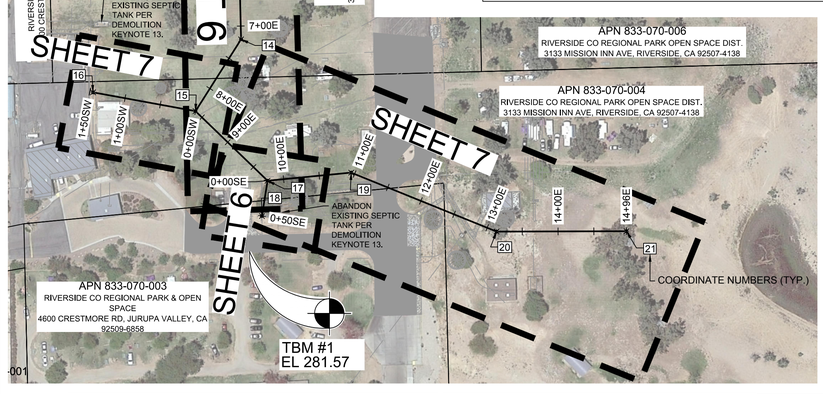
SHEET NO. C-DD- 1
1 OF 21 SHTS

FOR: W.O. COUNTY FILE NO.



SEE BELOW LEFT FOR MATCHLINE

SEE ABOVE RIGHT FOR MATCHLINE



TEMPORARY BENCHMARK TABLE

TBM NO.	DESCRIPTION	ELEVATION
TBM #1	CHISELED SQUARE ON TOP OF EXISTING P.C.C. BARRIER CURB ALONG THE EAST SIDE OF THE PARK ACCESS ROAD.	281.57
TBM #2	CHISELED SQUARE ON TOP OF EXISTING P.C.C. HEADWALL. LOCATED WEST OF THE SOUTHWEST FENCE CORNER OF THE EXISTING MAYFLOWER PARK RV STORAGE, NEAR STATION 27+50N.	282.32

NOTE: PRIOR TO THE COMMENCEMENT OF THE CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL RUN A BENCHMARK LOOP USING TBM #1 TO VERIFY THE ELEVATION OF TBM #2. THE CONTRACTOR SHALL ESTABLISH A NEW TBM ALONG SIXTH AVENUE , ESTABLISHED WITH A COTTON SPINDLE ON A PAVEMENT SURFACE AND NEW TBMS ALONG FORCEMAIN INSTALLATION ALIGNMENT AT 300- FOOT ON CENTER WITH NAILS IN HUBS. IF DISCREPANCIES ARE FOUND BETWEEN THE ELEVATIONS OF TBMS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER.

EXISTING KEYNOTES

1. EXISTING A.C. PAVEMENT TO REMAIN.
2. EXISTING BUILDING TO REMAIN.
3. EXISTING SANITARY SEWER MANHOLE TO REMAIN.
4. EXISTING 2-FOOT HIGH WOODEN POST TO REMAIN.
5. EXISTING ELECTRICAL ENCLOSURE TO REMAIN.
6. EXISTING FENCE TO REMAIN.
7. EXISTING FIRE HYDRANT TO REMAIN.
8. EXISTING SANITARY SEWER PIPELINE TO REMAIN.
9. EXISTING WATER PIPELINE TO REMAIN.
10. EXISTING UNDERGROUND ELECTRICAL CONDUIT TO REMAIN.
11. EXISTING UNDERGROUND ABANDONED ELECTRICAL CONDUIT TO REMAIN.
12. EXISTING UNDERGROUND TELEPHONE LINE TO REMAIN.
13. EXISTING P.C.C. SIDEWALK TO REMAIN.
14. EXISTING P.C.C. PAD TO REMAIN.
15. EXISTING IRRIGATION VALVE TO REMAIN.
16. EXISTING P.C.C. BARRIER CURB TO REMAIN.
17. EXISTING TREE TO REMAIN.
18. EXISTING P.C.C. DRIVEWAY TO REMAIN.
19. EXISTING LANDSCAPING AREA TO REMAIN.
20. EXISTING HOSE BIB TO REMAIN.
21. EXISTING TRAILER ELECTRICAL HOOK-UP TO REMAIN.
22. EXISTING WOODEN BARRIER TO REMAIN.
23. EXISTING WATER TANK TO REMAIN.
24. EXISTING P.C.C. HEADWALL STRUCTURE TO REMAIN.
25. EXISTING DIRT ROAD TO REMAIN.
26. EXISTING DITCH TO REMAIN.
27. EXISTING SEPTIC TANK TO REMAIN.
28. EXISTING LEECH FIELD TO REMAIN.
29. EXISTING WASTEWATER DISPOSAL AREA TO REMAIN.
30. EXISTING AGRICULTURAL FIELD TO REMAIN.
31. EXISTING POWER POLE TO REMAIN.
32. EXISTING TELEPHONE ENCLOSURE TO REMAIN.
33. EXISTING SEWER CLEAN-OUT TO REMAIN.
34. EXISTING GUY WIRE TO REMAIN.
35. EXISTING DENSE VEGETATION TO REMAIN.
36. EXISTING ELECTRICAL TRANSFORMER TO REMAIN.
37. EXISTING EMERGENCY POWER GENERATOR SET TO REMAIN.
38. EXISTING ABANDONED AIR COMPRESSOR TO REMAIN.
39. EXISTING GAS TANK SUPPORTED ON PCC SLAB TO REMAIN.
40. EXISTING UNDERGROUND GAS PIPELINE TO REMAIN.

DEMOLITION KEYNOTES

1. SAWCUT THE EXISTING 8-INCH DIAMETER HDPE SANITARY SEWER FORCEMAIN. REMOVE AND DISPOSE OF THE EXISTING 8-INCH DIA. HDPE PIPELINE FOR THE INSTALLATION OF NEW 4-INCH DIAMETER FORCEMAIN.
2. SAWCUT THE EXISTING A.C. PAVEMENT FOR THE FULL DEPTH OF THE A.C. PAVEMENT. REMOVE AND DISPOSE OF EXISTING A.C. PAVEMENT AND UNDERLYING MATERIAL TO PIPELINE SUBBASE DESIGN GRADE.
3. COLD PLANE EXISTING A.C. PAVEMENT FOR A THICKNESS OF 0.12 FOOT. SEE DETAIL B ON SHEET 13. REMOVE AND DISPOSE OF THE EXISTING GRINDINGS.
4. EXCAVATE EXISTING NATIVE MATERIAL TO SUBBASE DESIGN GRADE. REMOVE AND DISPOSE OF THE EXCESS NATIVE MATERIAL NOT USED FOR THE BACKFILLING OF THE PIPELINE TRENCH.
5. TEMPORARILY REMOVE AND STORE TWO (2) SECTIONS OF EXISTING CHAIN LINK FENCE TO ALLOW FOR THE 4-INCH SANITARY SEWER FORCEMAIN PIPELINE INSTALLATION.
6. CLEAR EXISTING OVERGROWN VEGETATION.
7. RELOCATE EXISTING PRIVATE FACILITIES INCLUDING RV/TRAILER HOMES/BOATS ALONG THE PIPELINE TRENCH, AS NECESSARY AS APPROVED BY THE PARK RANGER AND PRIVATE PROPERTY OWNERS. RELOCATE OR REMOVE AND DISPOSE OF OTHER MISCELLANEOUS DEBRIS AND MATERIALS, AS NEEDED AND AS APPROVED BY THE PARK RANGER FOR THE INSTALLATION OF NEW SANITARY SEWER FACILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE PARK RANGER AND THE PRIVATE OWNERS OF THE RV/TRAILER HOMES/BOATS IN ORDER TO OBTAIN APPROVAL TO RELOCATE THE EXISTING RV/TRAILER HOMES/BOATS. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGES CAUSED BY THE RELOCATION OF THE PRIVATE FACILITIES OR ENCROACHMENT TO THE PRIVATE FACILITIES.
8. REMOVE AND DISPOSE OF EXISTING TREE WITH 18-INCH DIAMETER TRUNK WITH 15-FOOT DIAMETER UMBRELLA.
9. SAWCUT, REMOVE AND DISPOSE OF A SMALL SECTION OF EXISTING SANITARY SEWER PIPELINE IN THE AREA OF THE NEW MANHOLE.CONNECT THE EXISTING UPSTREAM 6-INCH DIAMETER PIPELINE TO THE NEW MANHOLE #7 BASE WITH 6-INCH SDR 35 PVC PIPELINE SEGMENTS AND CALDER COUPLINGS WITH STAINLESS STEEL BANDS. SEE PROFILE SECTION.
10. SAWCUT EXISTING SANITARY SEWER LATERAL. REMOVE AND DISPOSE OF A SECTION OF EXISTING SANITARY SEWER LATERAL, MISCELLANEOUS FITTINGS AND HARDWARE FOR THE CONNECTION AND INSTALLATION OF NEW SANITARY SEWER LATERAL.
11. SAWCUT THE EXISTING P.C.C. CONCRETE BARRIER CURB FOR THE FULL DEPTH OF THE P.C.C. CONCRETE BARRIER CURB. REMOVE AND DISPOSE OF EXISTING P.C.C. CONCRETE BARRIER CURB AND UNDERLYING MATERIAL TO SUBBASE DESIGN GRADE.
12. SAWCUT THE EXISTING P.C.C. SIDEWALK FOR THE FULL DEPTH OF THE P.C.C. CONCRETE. REMOVE AND DISPOSE OF EXISTING P.C.C. SIDEWALK AND UNDERLYING MATERIAL TO SUBBASE DESIGN GRADE.
13. ABANDON EXISTING SEPTIC SYSTEM IN STRICT CONFORMANCE WITH THE COUNTY OF RIVERSIDE DEPARTMENT OF HEALTH REQUIREMENTS.
14. TEMPORARILY REMOVE AND STORE EXISTING ROLLED GATE DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING TO SECURELY CLOSE THE ENTRANCE DURING NON-WORKING HOURS.

CONSTRUCTION KEYNOTES

1. INSTALL NEW 4-INCH DIAMETER AWWA C-900 DR 18 PVC SANITARY SEWER FORCEMAIN IN NATIVE AREA PER TRENCH DETAIL A ON SHEET 13.
2. INSTALL NEW 8-INCH-DIAMETER AWWA C-900 DR 18 PVC SANITARY SEWER FORCEMAIN PER TRENCH DETAIL A ON SHEET 13.
3. INSTALL NEW 4 INCHES OF A.C. PAVEMENT OVER 12 INCHES OF CLASS 2 BASE MATERIAL. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. SEE TRENCH DETAIL A ON SHEET 13.
4. INSTALL 0.12 FOOT DEEP A.C. PAVEMENT OVERLAY AT COLD PLANED AREA. SEE DETAIL DETAIL B ON SHEET 13.
5. PAINT YELLOW DASHED CENTERLINE STRIPING PER CALTRANS STANDARD PLAN A20A DETAIL 5. REPAIR THE EXISTING STRIPING FOR A LENGTH OF 10 FOOT EACH WAY (TOTAL OF 20-FOOT MIN.) FROM THE CENTERLINE OF THE PIPE TRENCH.
6. INSTALL NEW 4-INCH DIAMETER DUCTILE IRON PLUG VALVE WITH VALVE RISER AND COVER PER DETAIL F ON SHEET 13.
7. INSTALL NEW SEWAGE AIR RELEASE/ VACUUM VALVE PER DETAIL H ON SHEET 14.
8. BLANK.
9. INSTALL NEW 4-INCH DIAMETER SANITARY SEWER FORCEMAIN SINGLE CLEANOUT PER DETAIL E ON SHEET 13.
10. INSTALL NEW 4-INCH DIAMETER, 22.5-DEGREE DUCTILE IRON ELBOW WITH RESTRAINED JOINT FITTINGS.
11. INSTALL NEW 4-INCH DIAMETER, 45-DEGREE DUCTILE IRON ELBOW WITH RESTRAINED JOINT FITTINGS.
12. INSTALL NEW 10-INCH-DIAMETER AWWA C-900 DR 14 PVC ENCASEMENT PIPELINE PER ENCASEMENT DETAIL N ON SHEET 15.
13. REINSTALL TEMPORARILY STORED EXISTING CHAIN LINK FENCE AND ROLL GATE.
14. INSTALL A SANITARY SEWER SELF PRIMING PUMP STATION SKID MOUNTED ASSEMBLY PER PLAN SHEETS 8 THROUGH 12.
15. CONNECT NEW 2-INCH SCHEDULE 80 PVC WATER SERVICE PIPELINE FROM EXISTING 4-INCH DIA. WATER PIPELINE WITH NECESSARY FITTINGS AND APPURTENANCES. INSTALL NEW 2-INCH SCHEDULE 80 PVC PIPELINE PER DETAIL I ON SHEET 14. DIRECTIONAL DRILL THE 2-INCH SCHEDULE 80 PVC WATER PIPELINE BENEATH THE A.C. PAVED ROADWAY.
16. INSTALL NEW HOSE BIB PER DETAIL J ON SHEET 14.
17. INSTALL NEW 3 INCHES OF A.C. PAVEMENT OVER 6 INCHES OF CLASS 2 BASE MATERIAL. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. SEE TRENCH DETAIL R ON SHEET 16.
18. INSTALL NEW 8-INCH-DIAMETER SDR 35 PVC SANITARY SEWER GRAVITY PIPELINE IN NATIVE AREA PER TRENCH DETAIL R ON SHEET 16.
19. INSTALL A TEMPORARY BYPASS AROUND THE EXISTING SANITARY SEWER MANHOLE. AFTER THE INSTALLATION OF THE TEMPORARY BYPASS, REMOVE AND DISPOSE OF THE EXISTING P.C.C. SEWER MANHOLE. INSTALL NEW 4-FOOT DIAMETER SANITARY SEWER MANHOLE PER DETAIL M ON SHEET 15. CONNECT EXISTING UPSTREAM SANITARY SEWER PIPELINES TO NEW MANHOLE BASE.
20. INSTALL NEW 12-INCH-DIAMETER SDR 35 PVC SANITARY SEWER GRAVITY PIPELINE STUB-OUT WITH A CAP PER TRENCH DETAIL R ON SHEET 16 AND SEE SHEET 8 FOR WET WELL WALL CONNECTION.
21. INSTALL NEW 4-INCH DIAMETER SDR 35 PVC SANITARY SEWER LATERAL AND CONNECT TO THE EXISTING CLEANOUT WITH CALDER COUPLINGS AND STAINLESS STEEL BANDS PER DETAIL L ON SHEET 15.
22. INSTALL NEW 4-FOOT DIAMETER SANITARY SEWER MANHOLE PER DETAIL M ON SHEET 15.
23. INSTALL NEW 6-INCH P.C.C. BARRIER CURB PER DETAIL D ON SHEET 13.
24. INSTALL NEW 10-FOOT LONG P.C.C. SIDEWALK SECTION PER DETAIL C ON SHEET 13. COMPACT THE NATIVE MATERIAL TO A MINIMUM 90% RELATIVE COMPACTION PER ASTM D-1557 FOR A MINIMUM DEPTH OF ONE FOOT BELOW SUBGRADE (BOTTOM OF THE CONCRETE).
25. INSTALL NEW 4-INCH DIAMETER AWWA C-900 DR18 PVC SANITARY SEWER FORCEMAIN IN A.C. PAVEMENT PER TRENCH DETAIL A ON SHEET 13.
26. INSTALL NEW 8-INCH-DIAMETER SDR 35 PVC SANITARY SEWER GRAVITY PIPELINE IN A.C. PAVEMENT PER TRENCH DETAIL R ON SHEET 16.
27. INSTALL NEW 2-INCH REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTION ASSEMBLY PER DETAIL T ON SHEET 16. INSTALL TWO (2) STEEL BOLLARDS PER DETAIL G ON SHEET 13 AT MINIMUM 5-FOOT AWAY FROM THE EDGE OF PAVEMENT AND MIN. 8-INCH EACH WAY FROM THE NORTHWEST AND NORTHEAST CORNERS OF THE ENCLOSURE OF THE BACKFLOW PREVENTOR.

NOTE:
THE MASTER KEYNOTE LIST SHOWN ABOVE INCLUDES ALL EXISTING KEYNOTES, DEMOLITION KEYNOTES AND CONSTRUCTION KEYNOTES USED WITHIN THE PLAN AND PROFILE SHEETS. ONLY THE KEYNOTES WHICH ARE USED ON A PARTICULAR PLAN SHEET ARE ILLUSTRATED ON THAT PLAN SHEET.

COORDINATE DATA TABLE

Point #	Northing	Easting	Description
1	2188894.40	7082855.37	FORCEMAIN POINT OF CONNECTION
2	2189344.57	7082846.33	22.5 DEG ELBOW
3	2189349.36	7082844.23	22.5 DEG ELBOW
4	2190248.98	7082826.17	22.5 DEG ELBOW
5	2190253.77	7082824.07	22.5 DEG ELBOW
6	2191466.92	7082799.70	45 DEG ELBOW
7	2191489.36	7082821.26	45 DEG ELBOW
8	2191535.52	7082820.33	45 DEG ELBOW
9	2191553.69	7082801.96	45 DEG ELBOW
10	2191891.04	7082795.19	22.5 DEG ELBOW

COORDINATE DATA TABLE

Point #	Northing	Easting	Description
11	2191925.37	7082810.44	LIFT STATION WET WELL
12	2191899.74	7082811.16	MANHOLE #1
13	2191908.06	7083155.43	MANHOLE #2
14	2191916.54	7083506.42	MANHOLE #3
15	2191852.88	7083606.77	MANHOLE #4
16	2191709.70	7083580.50	MANHOLE #5
17	2191953.55	7083704.05	MANHOLE #6
18	2191945.69	7083753.43	MANHOLE #7
19	2192070.46	7083692.72	MANHOLE #8
20	2192273.59	7083775.09	MANHOLE #9

COORDINATE DATA TABLE

Point #	Northing	Easting	Description
21	2192455.03	7083774.61	MANHOLE #10
22	2191926.71	7082817.22	2" WATER HOSE BIB POINT OF CONNECTION
23	2191926.83	7082822.91	2" WATER 90DEG ELBOW
24	2191910.06	7082823.25	2" WATER 90 DEG ELBOW
25	2191919.57	7083219.28	2" WATER 90DEG ELBOW
26	2191860.74	7083221.17	2" WATER 90DEG ELBOW
27	2191862.26	7083266.86	2" WATER POINT OF CONNECTION TO EXISTING WATER LINE
28	2191958.49	7082842.25	12-INCH PIPE STUB-OUT END
29	2190229.33	7082836.56	AV-CNTR
30	2191554.52	7082811.71	AV-CNTR

NOTE:
THE HORIZONTAL COORDINATE DATA NUMBERS ILLUSTRATED ON THE TABLE ABOVE ARE ILLUSTRATED ON THE ABOVE INDEX PLAN. ADDITIONAL COORDINATE DATA FOR THE S.S. PUMP STATION IS ILLUSTRATED ON PLAN SHEET 8.

NOTE:
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

The private engineer signing these plans is responsible for assuring the accuracy and acceptability of the design hereon. In the event of discrepancies arising after county approval or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for approval by the county.

MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER | COUNTY

DIGALERT — DIAL BEFORE YOU DIG — TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

ROBERT K. HOLT
No. 27943
Exp. 3-31-22
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

The Holt Group, Inc.
ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING
201 E. HOBSONWAY, BLYTHE, CA 92225, PHONE : (760) 922-4658, FAX : (760) 922-4660
1601 N. IMPERIAL AVE. EL CENTRO, CA 92243, PHONE : (760) 337-3883, FAX : (760) 337-5997

PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK: SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:_____ V:_____

M_____ MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
THG #852.003 IN COUNTY OF RIVERSIDE, CALIFORNIA
IP _____

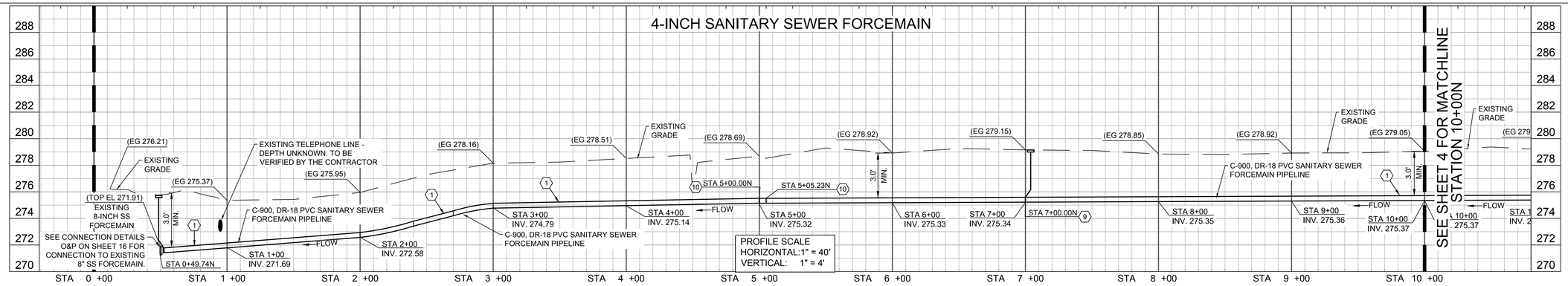
INDEX / HORIZONTAL CONTROL SHEET / BENCHMARK TABLE / MASTER KEYNOTE LIST

SHEET NO. C-DD- 2

2 OF 21 SHTS

FOR: | W.O. | COUNTY FILE NO.

SCALE 1"= 100'



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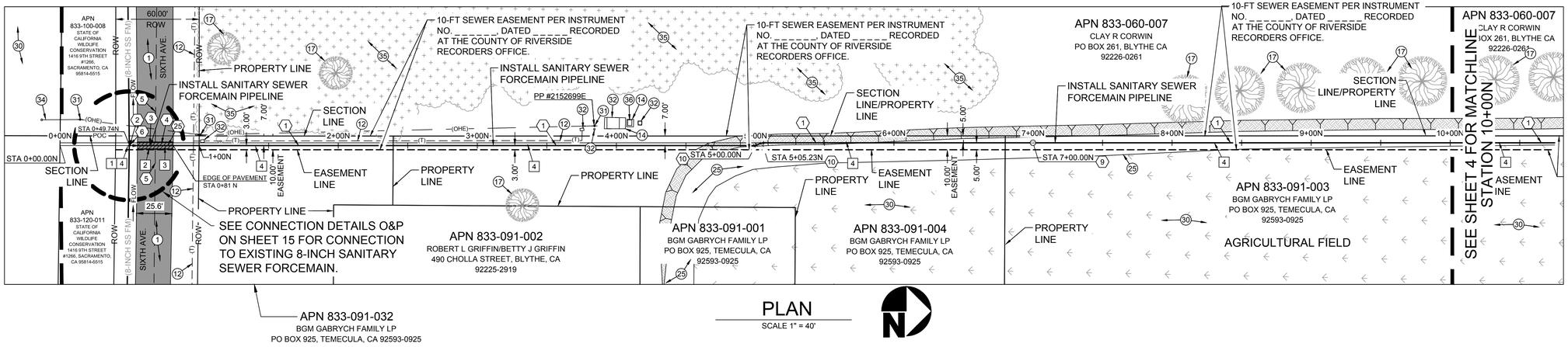

PLAN

SCALE 1" = 40'

NOTE:

THE EXACT HORIZONTAL AND VERTICAL LOCATIONS OF THE EXISTING UNDERGROUND UTILITIES ILLUSTRATED ON THE PLANS ARE UNKNOWN. AN EFFORT WAS MADE TO OBTAIN AS-BUILT PLANS IN ORDER TO ILLUSTRATE THE EXISTING KNOWN UTILITIES DURING THE DESIGN PHASE; HOWEVER, THERE MAY BE ADDITIONAL UNDERGROUND UTILITIES NOT ILLUSTRATED ON THE PLANS, ESPECIALLY WITHIN MAYFLOWER PARK. CONTRACTOR SHALL POT-HOLE THE EXISTING UNDERGROUND UTILITIES ALONG THE LENGTH OF THE PIPELINE WITHIN FIVE (5) DAYS FROM THE ISSUANCE OF THE NOTICE TO PROCEED. THE EXISTING UTILITIES SHALL BE EXPOSED PRIOR TO EXCAVATION OF THE PIPE TRENCH. CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING THE POT-HOLING ACTIVITIES, ESPECIALLY FOR THE EXISTING SANITARY SEWER SYSTEM POINTS OF CONNECTION. THE EXISTING LOCATION OF LEACH FIELDS ILLUSTRATED ON THE PLAN IS APPROXIMATE AND HAS NOT BEEN VERIFIED. THE CONTRACTOR SHALL COORDINATE THE POT-HOLING ACTIVITIES WITH THE UTILITY COMPANIES, OWNER, MAYFLOWER PARK RANGER, AND RESIDENT ENGINEER. RELOCATION OF UTILITIES SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY OR GOVERNING AGENCY. THE RESIDENT ENGINEER SHALL OBSERVE THE EXPOSED UTILITIES PRIOR TO PIPELINE EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL ASSUME THERE ARE NO EXISTING UTILITY CONFLICTS WITH THE INSTALLATION OF THE NEW 4-INCH SANITARY SEWER FORCEMAIN OR 8-INCH GRAVITY PIPELINE DURING THE PREPARATION OF THE BID PROPOSAL. IF UTILITY CONFLICTS OCCUR DURING THE PIPELINE INSTALLATION THAT CANNOT BE MITIGATED BY RE-ALIGNING OR MODIFYING THE GRADE OF THE 4-INCH FORCEMAIN OR 8-INCH GRAVITY SEWER MAIN THEN THE CONTRACTOR SHALL BE COMPENSATED FOR THE COSTS OF THE UTILITY RELOCATION BY MEANS OF A POSITIVE CHANGE ORDER.

EXISTING KEYNOTES

1. EXISTING A.C. PAVEMENT TO REMAIN.
12. EXISTING UNDERGROUND TELEPHONE LINE TO REMAIN.
14. EXISTING P.C.C. PAD TO REMAIN.
17. EXISTING TREE TO REMAIN.
25. EXISTING DIRT ROAD TO REMAIN.
30. EXISTING AGRICULTURAL FIELD TO REMAIN.
31. EXISTING POWER POLE TO REMAIN.
32. EXISTING TELEPHONE ENCLOSURE TO REMAIN.
34. EXISTING GUY WIRE TO REMAIN.
35. EXISTING DENSE VEGETATION TO REMAIN.
36. EXISTING ELECTRICAL TRANSFORMER TO REMAIN.

DEMOLITION KEYNOTES

1. SAWCUT THE EXISTING 8-INCH DIAMETER HDPE SANITARY SEWER FORCEMAIN. REMOVE AND DISPOSE OF THE EXISTING 8-INCH DIA. HDPE PIPELINE FOR THE INSTALLATION OF NEW 4-INCH DIAMETER FORCEMAIN.
2. SAWCUT THE EXISTING A.C. PAVEMENT FOR THE FULL DEPTH OF THE A.C. PAVEMENT. REMOVE AND DISPOSE OF EXISTING A.C. PAVEMENT AND UNDERLYING MATERIAL TO PIPELINE SUBBASE DESIGN GRADE.
3. COLD PLANE EXISTING A.C. PAVEMENT FOR A THICKNESS OF 0.12 FOOT. SEE DETAIL B ON SHEET 13. REMOVE AND DISPOSE OF THE EXISTING GRINDINGS.
4. EXCAVATE EXISTING NATIVE MATERIAL TO SUBBASE DESIGN GRADE. REMOVE AND DISPOSE OF THE EXCESS NATIVE MATERIAL NOT USED FOR THE BACKFILLING OF THE PIPELINE TRENCH.

CONSTRUCTION KEYNOTES

1. INSTALL NEW 4-INCH DIAMETER AWWA C-900 DR 18 PVC SANITARY SEWER FORCEMAIN IN NATIVE AREA PER TRENCH DETAIL A ON SHEET 13.
2. INSTALL NEW 8-INCH-DIAMETER AWWA C-900 DR 18 PVC SANITARY SEWER FORCEMAIN PER TRENCH DETAIL A ON SHEET 13.
3. INSTALL NEW 4 INCHES OF A.C. PAVEMENT OVER 12 INCHES OF CLASS 2 BASE MATERIAL. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. SEE TRENCH DETAIL A ON SHEET 13.
4. INSTALL 0.12 FOOT DEEP A.C. PAVEMENT OVERLAY AT COLD PLANED AREA. SEE DETAIL DETAIL B ON SHEET 13.
5. PAINT YELLOW DASHED CENTERLINE STRIPING PER CALTRANS STANDARD PLAN A20A DETAIL 5. REPAIR THE EXISTING STRIPING FOR A LENGTH OF 10 FOOT EACH WAY (TOTAL OF 20-FOOT MIN.) FROM THE CENTERLINE OF THE PIPE TRENCH.
6. INSTALL NEW 4-INCH DIAMETER DUCTILE IRON PLUG VALVE WITH VALVE RISER AND COVER PER DETAIL F ON SHEET 13.
9. INSTALL NEW 4-INCH DIAMETER SANITARY SEWER FORCEMAIN SINGLE CLEANOUT PER DETAIL E ON SHEET 13.
10. INSTALL NEW 4-INCH DIAMETER, 22.5-DEGREE DUCTILE IRON ELBOW WITH RESTRAINED JOINT FITTINGS.

40 0 40 80 120

SCALE 1"= 40'

APPROVED BY: CITY OF BLYTHE

REGISTERED PROFESSIONAL ENGINEER NOEL OWSLEY No. 39827 Exp. 12-31-21 CIVIL STATE OF CALIFORNIA

NOEL OWSLEY, P.E.
CONSULTING CITY ENGINEER

DATE 12/31/21 REG. EXP. 39827 R.C.E. No.

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT — DIAL BEFORE YOU DIG TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

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MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

REGISTERED PROFESSIONAL ENGINEER ROBERT K. HOLT No. 27943 Exp. 3-31-22 CIVIL STATE OF CALIFORNIA

The Holt Group, Inc.
ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING
201 E. HOBSONWAY, BLYTHE, CA 92225 PHONE : (760) 922-4668 FAX : (760) 922-4880
1601 N. IMPERIAL AVE. EL CENTRO, CA 92243 PHONE : (760) 337-3883 FAX : (760) 337-5997

PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK: SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:_____ V:_____

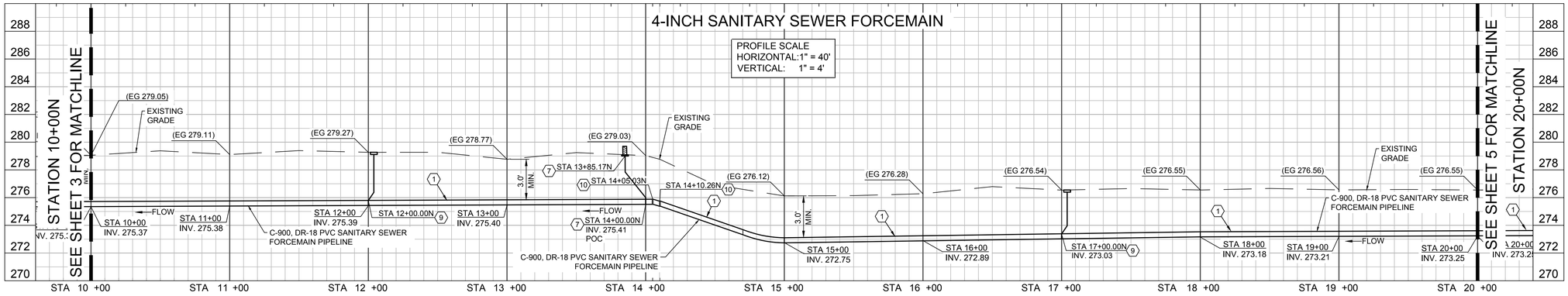
M_____ IP _____
THG #852.003
MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA

FORCEMAIN PLAN AND PROFILE FROM STA 0+00 TO STA 10+00

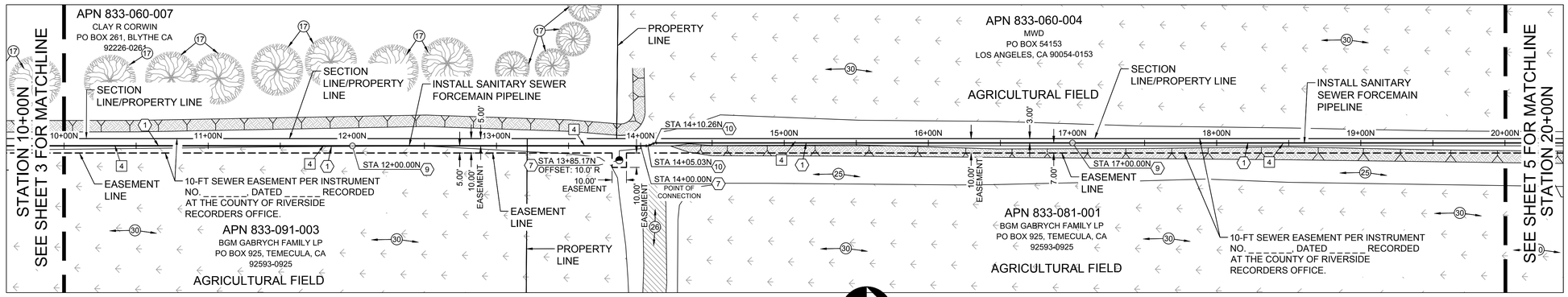
SHEET NO. C-DD- 3

3 OF 21 SHTS

FOR: W.O. COUNTY FILE NO.



PROFILE



PLAN

SCALE 1" = 40'

NOTE:

THE EXACT HORIZONTAL AND VERTICAL LOCATIONS OF THE EXISTING UNDERGROUND UTILITIES ILLUSTRATED ON THE PLANS ARE UNKNOWN. AN EFFORT WAS MADE TO OBTAIN AS-BUILT PLANS IN ORDER TO ILLUSTRATE THE EXISTING KNOWN UTILITIES DURING THE DESIGN PHASE; HOWEVER, THERE MAY BE ADDITIONAL UNDERGROUND UTILITIES NOT ILLUSTRATED ON THE PLANS, ESPECIALLY WITHIN MAYFLOWER PARK. CONTRACTOR SHALL POT-HOLE THE EXISTING UNDERGROUND UTILITIES ALONG THE LENGTH OF THE PIPELINE WITHIN FIVE (5) DAYS FROM THE ISSUANCE OF THE NOTICE TO PROCEED. THE EXISTING UTILITIES SHALL BE EXPOSED PRIOR TO EXCAVATION OF THE PIPE TRENCH. CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING THE POT-HOLING ACTIVITIES, ESPECIALLY FOR THE EXISTING SANITARY SEWER SYSTEM POINTS OF CONNECTION. THE EXISTING LOCATION OF LEACH FIELDS ILLUSTRATED ON THE PLAN IS APPROXIMATE AND HAS NOT BEEN VERIFIED. THE CONTRACTOR SHALL COORDINATE THE POT-HOLING ACTIVITIES WITH THE UTILITY COMPANIES, OWNER, MAYFLOWER PARK RANGER, AND RESIDENT ENGINEER. RELOCATION OF UTILITIES SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY OR GOVERNING AGENCY. THE RESIDENT ENGINEER SHALL OBSERVE THE EXPOSED UTILITIES PRIOR TO PIPELINE EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL ASSUME THERE ARE NO EXISTING UTILITY CONFLICTS WITH THE INSTALLATION OF THE NEW 4-INCH SANITARY SEWER FORCEMAIN OR 8-INCH GRAVITY PIPELINE DURING THE PREPARATION OF THE BID PROPOSAL. IF UTILITY CONFLICTS OCCUR DURING THE PIPELINE INSTALLATION THAT CANNOT BE MITIGATED BY RE-ALIGNING OR MODIFYING THE GRADE OF THE 4-INCH FORCEMAIN OR 8-INCH GRAVITY SEWER MAIN THEN THE CONTRACTOR SHALL BE COMPENSATED FOR THE COSTS OF THE UTILITY RELOCATION BY MEANS OF A POSITIVE CHANGE ORDER.

EXISTING KEYNOTES

(17) EXISTING TREE TO REMAIN.
(25) EXISTING DIRT ROAD TO REMAIN.
(26) EXISTING DITCH TO REMAIN.
(30) EXISTING AGRICULTURAL FIELD TO REMAIN.

DEMOLITION KEYNOTES

[4] EXCAVATE EXISTING NATIVE MATERIAL TO SUBBASE DESIGN GRADE. REMOVE AND DISPOSE OF THE EXCESS NATIVE MATERIAL NOT USED FOR THE BACKFILLING OF THE PIPELINE TRENCH.

CONSTRUCTION KEYNOTES

(1) INSTALL NEW 4-INCH DIAMETER AWWA C-900 DR 18 PVC SANITARY SEWER FORCEMAIN IN NATIVE AREA PER TRENCH DETAIL A ON SHEET 13.
(7) INSTALL NEW SEWAGE AIR RELEASE/ VACUUM VALVE PER DETAIL H ON SHEET 14.
(9) INSTALL NEW 4-INCH DIAMETER SANITARY SEWER FORCEMAIN SINGLE CLEANOUT PER DETAIL E ON SHEET 13.
(10) INSTALL NEW 4-INCH DIAMETER, 22.5-DEGREE DUCTILE IRON ELBOW WITH RESTRAINED JOINT FITTINGS.

40 0 40 80 120
SCALE 1"= 40'

DATE SIGNED
REGISTRATION NUMBER
PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES:

DIGALERT
DIAL BEFORE YOU DIG TOLL FREE 811
TWO WORKING DAYS BEFORE YOU DIG
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:
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MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER | COUNTY

REGISTERED PROFESSIONAL ENGINEER
ROBERT K. HOLT
No. 27943
Exp. 3-31-22
CIVIL
STATE OF CALIFORNIA

The Holt Group, Inc.
ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING
201 E. HOBSONWAY, BLYTHE, CA 92225, PHONE : (760) 922-4658, FAX : (760) 922-4660
1601 N. IMPERIAL AVE., EL CENTRO, CA 92243, PHONE : (760) 337-3883, FAX : (760) 337-5997

PREPARED BY: _____ R.C.E. NO. 27943
DATE 07/24/2020

BENCHMARK:
SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

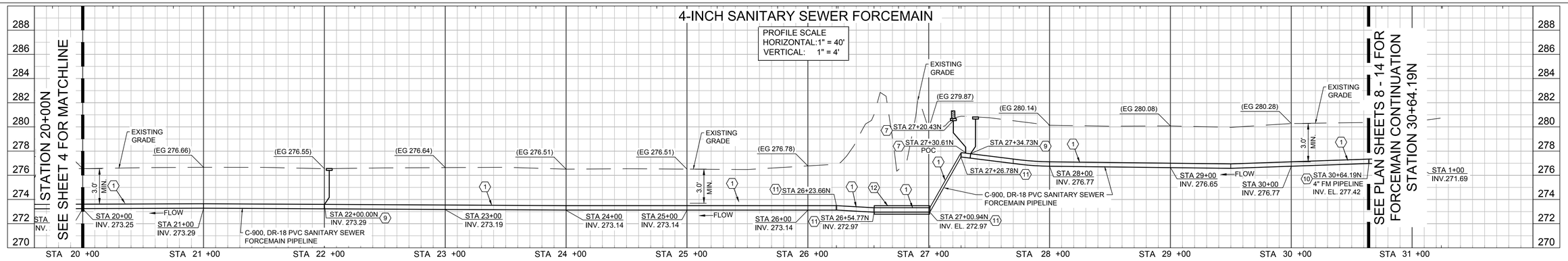
SCALE: H:_____ V:_____

M_____ MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT IP _____
THG #852.003 IN COUNTY OF RIVERSIDE, CALIFORNIA

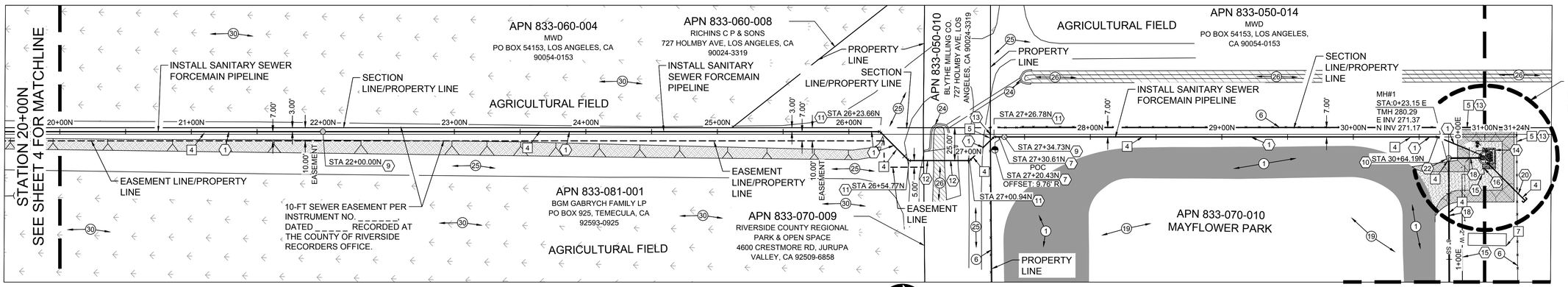
FORCEMAIN PLAN AND PROFILE FROM STA 10+00 N TO STA 20+00 N

SHEET NO. C-DD- 4
4 OF 21 SHTS

FOR: | W.O. | COUNTY FILE NO.



PROFILE



PLAN

SCALE 1" = 40'

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EXISTING KEYNOTES

1. EXISTING A.C. PAVEMENT TO REMAIN.
6. EXISTING FENCE TO REMAIN.
19. EXISTING LANDSCAPING AREA TO REMAIN.
24. EXISTING P.C.C. HEADWALL STRUCTURE TO REMAIN.
25. EXISTING DIRT ROAD TO REMAIN.
26. EXISTING DITCH TO REMAIN.
30. EXISTING AGRICULTURAL FIELD TO REMAIN.

DEMOLITION KEYNOTES

4. EXCAVATE EXISTING NATIVE MATERIAL TO SUBBASE DESIGN GRADE. REMOVE AND DISPOSE OF THE EXCESS NATIVE MATERIAL NOT USED FOR THE BACKFILLING OF THE PIPELINE TRENCH.
5. TEMPORARILY REMOVE AND STORE TWO (2) SECTIONS OF EXISTING CHAIN LINK FENCE TO ALLOW FOR THE 4-INCH SANITARY SEWER FORCEMAIN PIPELINE INSTALLATION.
7. RELOCATE EXISTING PRIVATE FACILITIES INCLUDING RV/TRAILER HOMES/BOATS ALONG THE PIPELINE TRENCH, AS NECESSARY AS APPROVED BY THE PARK RANGER AND PRIVATE PROPERTY OWNERS. RELOCATE OR REMOVE AND DISPOSE OF OTHER MISCELLANEOUS DEBRIS AND MATERIALS, AS NEEDED AND AS APPROVED BY THE PARK RANGER FOR THE INSTALLATION OF NEW SANITARY SEWER FACILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE PARK RANGER AND THE PRIVATE OWNERS OF THE RV/TRAILER HOMES/BOATS IN ORDER TO OBTAIN APPROVAL TO RELOCATE THE EXISTING RV/TRAILER HOMES/BOATS. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGES CAUSED BY THE RELOCATION OF THE PRIVATE FACILITIES OR ENCROACHMENT TO THE PRIVATE FACILITIES.

CONSTRUCTION KEYNOTES

1. INSTALL NEW 4-INCH DIAMETER AWWA C-900 DR 18 PVC SANITARY SEWER FORCEMAIN IN NATIVE AREA PER TRENCH DETAIL A ON SHEET 13.
7. INSTALL NEW SEWAGE AIR RELEASE/ VACUUM VALVE PER DETAIL H ON SHEET 14.
9. INSTALL NEW 4-INCH DIAMETER SANITARY SEWER FORCEMAIN SINGLE CLEANOUT PER DETAIL E ON SHEET 13.
10. INSTALL NEW 4-INCH DIAMETER, 22.5-DEGREE DUCTILE IRON ELBOW WITH RESTRAINED JOINT FITTINGS.
11. INSTALL NEW 4-INCH DIAMETER, 45-DEGREE DUCTILE IRON ELBOW WITH RESTRAINED JOINT FITTINGS.
12. INSTALL NEW 10-INCH-DIAMETER AWWA C-900 DR 14 PVC ENCASEMENT PIPELINE PER ENCASEMENT DETAIL N ON SHEET 15.
13. REINSTALL TEMPORARILY STORED EXISTING CHAIN LINK FENCE AND ROLL GATE.
14. INSTALL A SANITARY SEWER SELF PRIMING PUMP STATION ASSEMBLY PER PLAN SHEETS 8 THROUGH 12.
15. CONNECT NEW 2-INCH SCHEDULE 80 PVC WATER SERVICE PIPELINE FROM EXISTING 4-INCH DIA. WATER PIPELINE WITH NECESSARY FITTINGS AND APPURTENANCES. INSTALL NEW 2-INCH SCHEDULE 80 PVC PIPELINE PER DETAIL I ON SHEET 14. DIRECTIONAL DRILL THE 2-INCH SCHEDULE 80 PVC WATER PIPELINE BENEATH THE A.C. PAVED ROADWAY.
16. INSTALL NEW HOSE BIB PER DETAIL J ON SHEET 14.
18. INSTALL NEW 8-INCH-DIAMETER SDR 35 PVC SANITARY SEWER GRAVITY PIPELINE IN NATIVE AREA PER TRENCH DETAIL R ON SHEET 16.
20. INSTALL NEW 12-INCH-DIAMETER SDR 35 PVC SANITARY SEWER GRAVITY PIPELINE STUB-OUT WITH A CAP PER TRENCH DETAIL R ON SHEET 16 AND SEE SHEET 8 FOR WET WELL WALL CONNECTION.
22. INSTALL NEW 4-FOOT DIAMETER SANITARY SEWER MANHOLE PER DETAIL M ON SHEET 15.

40 0 40 80 120

SCALE 1"= 40'

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT — DIAL BEFORE YOU DIG — TOLL FREE — TWO WORKING DAYS BEFORE YOU DIG — 811 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

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MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — CIVIL — STATE OF CALIFORNIA

The Holt Group, Inc.
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1601 N. IMPERIAL AVE, EL CENTRO, CA 92243, PHONE : (760) 337-3883, FAX : (760) 337-3897

PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK: SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:_____ V:_____

M_____ IP _____

MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT

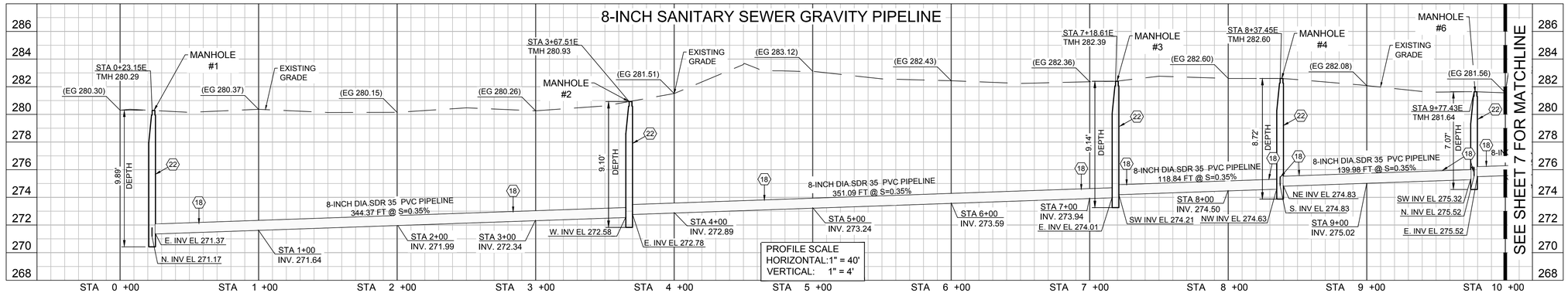
THG #852.003 IN COUNTY OF RIVERSIDE, CALIFORNIA

FORCEMAIN PLAN AND PROFILE FROM STA 20+00N TO STA 30+64.19N

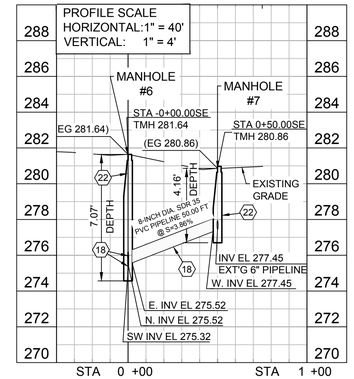
SHEET NO. C-DD- 5

5 OF 21 SHTS

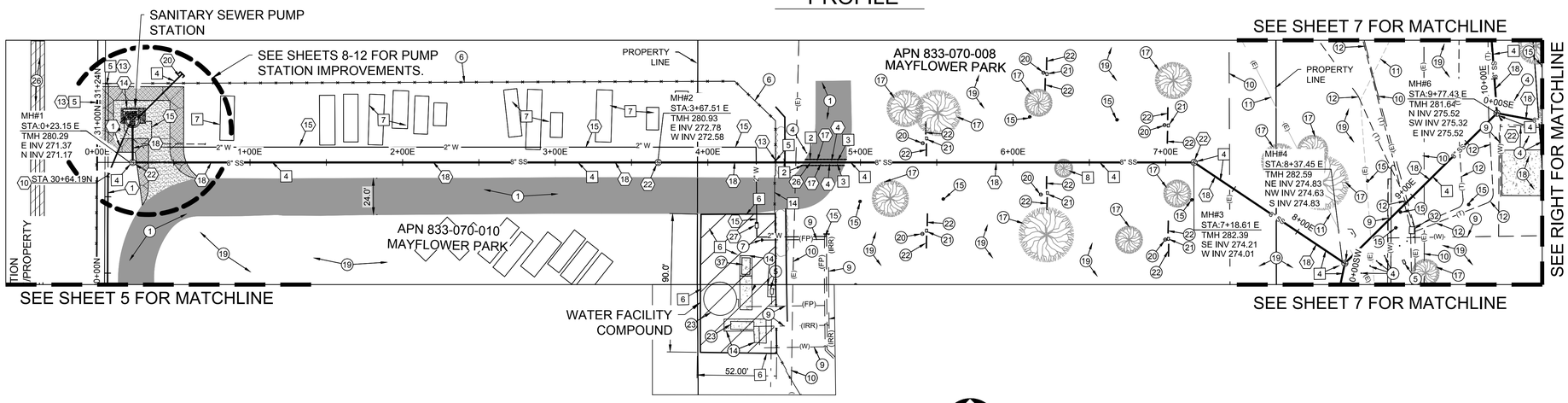
FOR: W.O. COUNTY FILE NO.



PROFILE

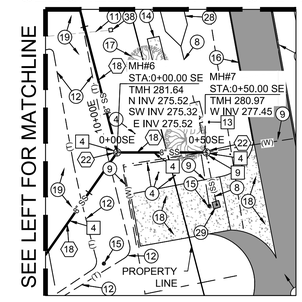


PROFILE



PLAN

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

EXISTING KEYNOTES

1. EXISTING A.C. PAVEMENT TO REMAIN.
4. EXISTING 2-FOOT HIGH WOODEN POST TO REMAIN.
5. EXISTING ELECTRICAL ENCLOSURE TO REMAIN.
6. EXISTING FENCE TO REMAIN.
7. EXISTING FIRE HYDRANT TO REMAIN.
8. EXISTING SANITARY SEWER PIPELINE TO REMAIN.
9. EXISTING WATER PIPELINE TO REMAIN.
10. EXISTING UNDERGROUND ELECTRICAL CONDUIT TO REMAIN.
11. EXISTING UNDERGROUND ABANDONED ELECTRICAL CONDUIT TO REMAIN.
12. EXISTING UNDERGROUND TELEPHONE LINE TO REMAIN.
14. EXISTING P.C.C. PAD TO REMAIN.
15. EXISTING IRRIGATION VALVE TO REMAIN.
16. EXISTING P.C.C. BARRIER CURB TO REMAIN.
17. EXISTING TREE TO REMAIN.
18. EXISTING P.C.C. DRIVEWAY TO REMAIN.
19. EXISTING LANDSCAPING AREA TO REMAIN.
20. EXISTING HOSE BIB TO REMAIN.
21. EXISTING TRAILER ELECTRICAL HOOK-UP TO REMAIN.
22. EXISTING WOODEN BARRIER TO REMAIN.
23. EXISTING WATER TANK TO REMAIN.
26. EXISTING DITCH TO REMAIN.
28. EXISTING LEECH FIELD TO REMAIN.
29. EXISTING WASTEWATER DISPOSAL AREA TO REMAIN.
30. EXISTING AGRICULTURAL FIELD TO REMAIN.
32. EXISTING TELEPHONE ENCLOSURE TO REMAIN.
37. EXISTING EMERGENCY POWER GENERATOR SET TO REMAIN.
38. EXISTING ABANDONED AIR COMPRESSOR TO REMAIN.

DEMOLITION KEYNOTES

2. SAWCUT THE EXISTING A.C. PAVEMENT FOR THE FULL DEPTH OF THE A.C. PAVEMENT. REMOVE AND DISPOSE OF EXISTING A.C. PAVEMENT AND UNDERLYING MATERIAL TO PIPELINE SUBBASE DESIGN GRADE.
3. COLD PLANE EXISTING A.C. PAVEMENT FOR A THICKNESS OF 0.12 FOOT. SEE DETAIL B ON SHEET 13. REMOVE AND DISPOSE OF THE EXISTING GRINDINGS.
4. EXCAVATE EXISTING NATIVE MATERIAL TO SUBBASE DESIGN GRADE. REMOVE AND DISPOSE OF THE EXCESS NATIVE MATERIAL NOT USED FOR THE BACKFILLING OF THE PIPELINE TRENCH.
5. TEMPORARILY REMOVE AND STORE TWO (2) SECTIONS OF EXISTING CHAIN LINK FENCE TO ALLOW FOR THE 4-INCH SANITARY SEWER FORCEMAIN PIPELINE INSTALLATION.
6. CLEAR EXISTING OVERGROWN VEGETATION.
7. RELOCATE EXISTING PRIVATE FACILITIES INCLUDING RV/TRAILER HOMES/BOATS ALONG THE PIPELINE TRENCH, AS NECESSARY AS APPROVED BY THE PARK RANGER AND PRIVATE PROPERTY OWNERS. RELOCATE OR REMOVE AND DISPOSE OF OTHER MISCELLANEOUS DEBRIS AND MATERIALS, AS NEEDED AND AS APPROVED BY THE PARK RANGER FOR THE INSTALLATION OF NEW SANITARY SEWER FACILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE PARK RANGER AND THE PRIVATE OWNERS OF THE RV/TRAILER HOMES/BOATS IN ORDER TO OBTAIN APPROVAL TO RELOCATE THE EXISTING RV/TRAILER HOMES/BOATS. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGES CAUSED BY THE RELOCATION OF THE PRIVATE FACILITIES OR ENCROACHMENT TO THE PRIVATE FACILITIES.
8. REMOVE AND DISPOSE OF EXISTING TREE WITH 18-INCH DIAMETER TRUNK WITH 15-FOOT DIAMETER UMBRELLA.
9. SAWCUT, REMOVE AND DISPOSE OF A SMALL SECTION OF EXISTING SANITARY SEWER PIPELINE IN THE AREA OF THE NEW MANHOLE.CONNECT THE EXISTING UPSTREAM 6-INCH DIAMETER PIPELINE TO THE NEW MANHOLE #7 BASE WITH 6-INCH SDR 35 PVC PIPELINE SEGMENTS AND CALDER COUPLINGS WITH STAINLESS STEEL BANDS. SEE PROFILE SECTION.
13. ABANDON EXISTING SEPTIC SYSTEM IN STRICT CONFORMANCE WITH THE COUNTY OF RIVERSIDE DEPARTMENT OF HEALTH REQUIREMENTS.
14. TEMPORARILY REMOVE AND STORE EXISTING ROLLED GATE DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING TO SECURELY CLOSE THE ENTRANCE DURING NON-WORKING HOURS.

CONSTRUCTION KEYNOTES

1. INSTALL NEW 4-INCH DIAMETER AWWA C-900 DR 18 PVC SANITARY SEWER FORCEMAIN IN NATIVE AREA PER TRENCH DETAIL A ON SHEET 13.
4. INSTALL 0.12 FOOT DEEP A.C. PAVEMENT OVERLAY AT COLD PLANED AREA. SEE DETAIL DETAIL B ON SHEET 13.
10. INSTALL NEW 4-INCH DIAMETER, 22.5-DEGREE DUCTILE IRON ELBOW WITH RESTRAINED JOINT FITTINGS.
13. REINSTALL TEMPORARILY STORED EXISTING CHAIN LINK FENCE AND ROLL GATE.
14. INSTALL A SANITARY SEWER SELF PRIMING PUMP STATION ASSEMBLY PER PLAN SHEETS 8 THROUGH 12.
15. CONNECT NEW 2-INCH SCHEDULE 80 PVC WATER SERVICE PIPELINE FROM EXISTING 4-INCH DIA. WATER PIPELINE WITH NECESSARY FITTINGS AND APPURTENANCES. INSTALL NEW 2-INCH SCHEDULE 80 PVC PIPELINE PER DETAIL I ON SHEET 14. DIRECTIONAL DRILL THE 2-INCH SCHEDULE 80 PVC WATER PIPELINE BENEATH THE A.C. PAVED ROADWAY.
17. INSTALL NEW 3 INCHES OF A.C. PAVEMENT OVER 6 INCHES OF CLASS 2 BASE MATERIAL. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. SEE TRENCH DETAIL R ON SHEET 16.
18. INSTALL NEW 8-INCH-DIAMETER SDR 35 PVC SANITARY SEWER GRAVITY PIPELINE IN NATIVE AREA PER TRENCH DETAIL R ON SHEET 16.
20. INSTALL NEW 12-INCH-DIAMETER SDR 35 PVC SANITARY SEWER GRAVITY PIPELINE STUB-OUT WITH A CAP PER TRENCH DETAIL R ON SHEET 16 AND SEE SHEET 8 FOR WET WELL WALL CONNECTION.
22. INSTALL NEW 4-FOOT DIAMETER SANITARY SEWER MANHOLE PER DETAIL M ON SHEET 15.
26. INSTALL NEW 8-INCH-DIAMETER SDR 35 PVC SANITARY SEWER GRAVITY PIPELINE IN A.C. PAVEMENT PER TRENCH DETAIL R ON SHEET 16.
27. INSTALL NEW 2-INCH REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTION ASSEMBLY PER DETAIL T ON SHEET 16. INSTALL TWO (2) STEEL BOLLARDS PER DETAIL G ON SHEET 13 AT MINIMUM 5-FOOT AWAY FROM THE EDGE OF PAVEMENT AND MIN. 8-INCH EAST WEST FROM THE NORTHWEST AND NORTHEAST CORNERS OF THE ENCLOSURE OF THE BACKFLOW PREVENTOR.

40 0 40 80 120

SCALE 1"= 40'

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DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT

DIAL BEFORE YOU DIG — TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG

A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

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MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — CIVIL — STATE OF CALIFORNIA

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201 E. HOBSONWAY, BLYTHE, CA 92225, PHONE : (760) 922-4658, FAX : (760) 922-4660
1601 N. IMPERIAL AVE., EL CENTRO, CA 92243, PHONE : (760) 337-3883, FAX : (760) 337-5997

PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK: SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:_____ V:_____

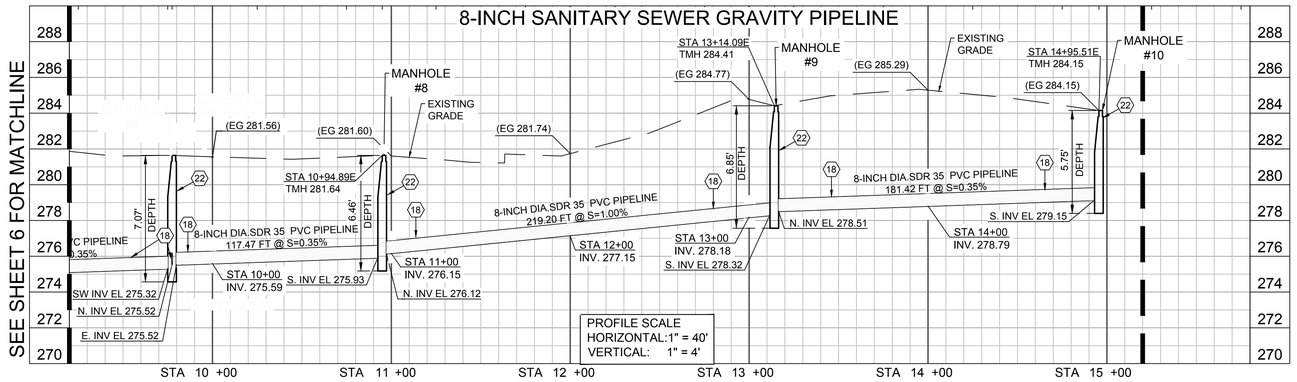
M_____ IP _____
THG #852.003
MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA

GRAVITY SEWER PLAN AND PROFILE FROM STA 0+00E TO STA 10+00E AND FROM STA 0+00SE TO STA 0+50SE

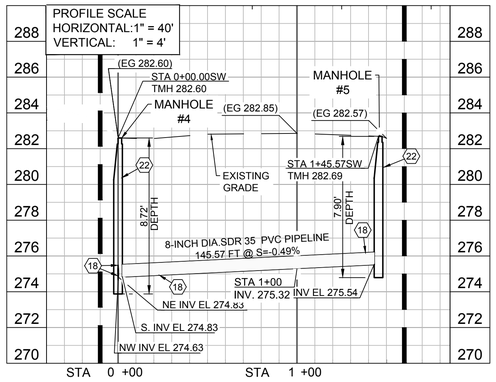
SHEET NO. C-DD- 6

6 OF 21 SHTS

FOR: W.O. COUNTY FILE NO.



PROFILE



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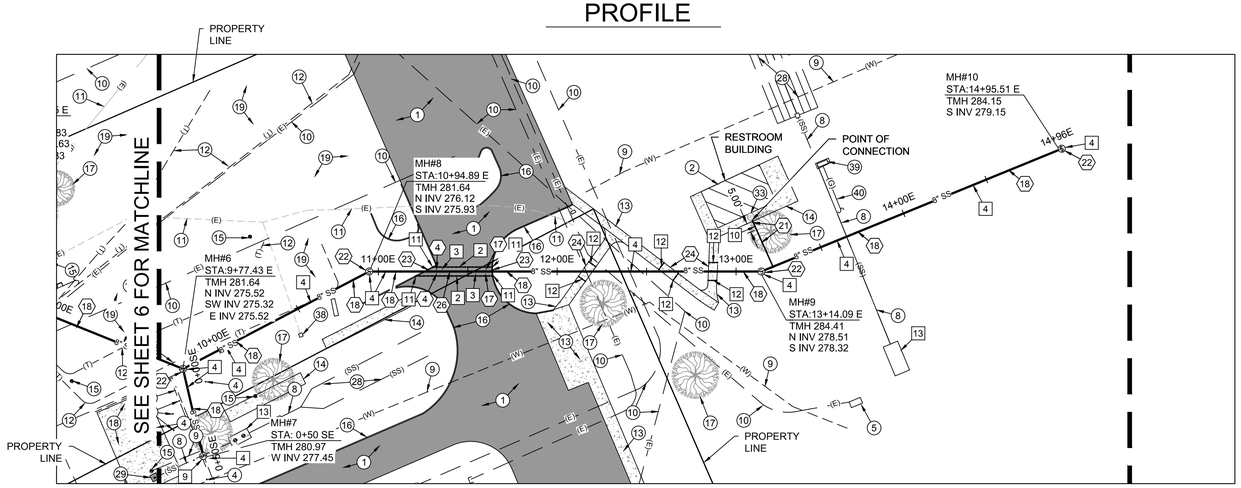
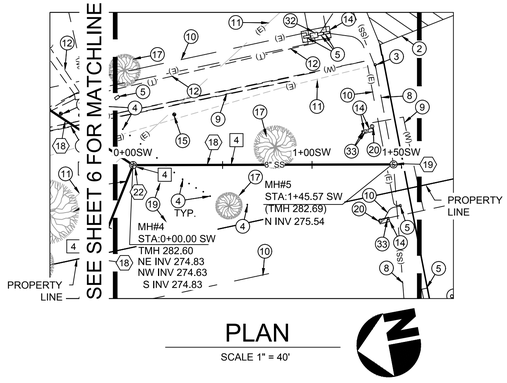


PLAN

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

EXISTING KEYNOTES

1. EXISTING A.C. PAVEMENT TO REMAIN.
2. EXISTING BUILDING TO REMAIN.
3. EXISTING SANITARY SEWER MANHOLE TO REMAIN.
4. EXISTING 2-FOOT HIGH WOODEN POST TO REMAIN.
5. EXISTING ELECTRICAL ENCLOSURE TO REMAIN.
8. EXISTING SANITARY SEWER PIPELINE TO REMAIN.
9. EXISTING WATER PIPELINE TO REMAIN.
10. EXISTING UNDERGROUND ELECTRICAL CONDUIT TO REMAIN.
11. EXISTING UNDERGROUND ABANDONED ELECTRICAL CONDUIT TO REMAIN.
12. EXISTING UNDERGROUND TELEPHONE LINE TO REMAIN.
13. EXISTING P.C.C. SIDEWALK TO REMAIN.
14. EXISTING P.C.C. PAD TO REMAIN.
15. EXISTING IRRIGATION VALVE TO REMAIN.
16. EXISTING P.C.C. BARRIER CURB TO REMAIN.
17. EXISTING TREE TO REMAIN.
18. EXISTING P.C.C. DRIVEWAY TO REMAIN.
19. EXISTING LANDSCAPING AREA TO REMAIN.
20. EXISTING HOSE BIB TO REMAIN.
28. EXISTING LEECH FIELD TO REMAIN.
29. EXISTING WASTEWATER DISPOSAL AREA TO REMAIN.
32. EXISTING TELEPHONE ENCLOSURE TO REMAIN.
33. EXISTING SEWER CLEAN-OUT TO REMAIN.
38. EXISTING ABANDONED AIR COMPRESSOR TO REMAIN.
39. EXISTING GAS TANK SUPPORTED ON PCC SLAB TO REMAIN.
40. EXISTING UNDERGROUND GAS PIPELINE TO REMAIN.

DEMOLITION KEYNOTES

2. SAWCUT THE EXISTING A.C. PAVEMENT FOR THE FULL DEPTH OF THE A.C. PAVEMENT. REMOVE AND DISPOSE OF EXISTING A.C. PAVEMENT AND UNDERLYING MATERIAL TO PIPELINE SUBBASE DESIGN GRADE.
3. COLD PLANE EXISTING A.C. PAVEMENT FOR A THICKNESS OF 0.12 FOOT. SEE DETAIL B ON SHEET 13. REMOVE AND DISPOSE OF THE EXISTING GRINDINGS.
4. EXCAVATE EXISTING NATIVE MATERIAL TO SUBBASE DESIGN GRADE. REMOVE AND DISPOSE OF THE EXCESS NATIVE MATERIAL NOT USED FOR THE BACKFILLING OF THE PIPELINE TRENCH.
9. SAWCUT, REMOVE AND DISPOSE OF A SMALL SECTION OF EXISTING SANITARY SEWER PIPELINE IN THE AREA OF THE NEW MANHOLE.CONNECT THE EXISTING UPSTREAM 6-INCH DIAMETER PIPELINE TO THE NEW MANHOLE #7 BASE WITH 6-INCH SDR 35 PVC PIPELINE SEGMENTS AND CALDER COUPLINGS WITH STAINLESS STEEL BANDS. SEE PROFILE SECTION.
10. SAWCUT EXISTING SANITARY SEWER LATERAL. REMOVE AND DISPOSE OF A SECTION OF EXISTING SANITARY SEWER LATERAL, MISCELLANEOUS FITTINGS AND HARDWARE FOR THE CONNECTION AND INSTALLATION OF NEW SANITARY SEWER LATERAL.
11. SAWCUT THE EXISTING P.C.C. CONCRETE BARRIER CURB FOR THE FULL DEPTH OF THE P.C.C. CONCRETE BARRIER CURB. REMOVE AND DISPOSE OF EXISTING P.C.C. CONCRETE BARRIER CURB AND UNDERLYING MATERIAL TO SUBBASE DESIGN GRADE.
12. SAWCUT THE EXISTING P.C.C. SIDEWALK FOR THE FULL DEPTH OF THE P.C.C. CONCRETE. REMOVE AND DISPOSE OF EXISTING P.C.C. SIDEWALK AND UNDERLYING MATERIAL TO SUBBASE DESIGN GRADE.
13. ABANDON EXISTING SEPTIC SYSTEM IN STRICT CONFORMANCE WITH THE COUNTY OF RIVERSIDE DEPARTMENT OF HEALTH REQUIREMENTS.

CONSTRUCTION KEYNOTES

4. INSTALL 0.12 FOOT DEEP A.C. PAVEMENT OVERLAY AT COLD PLANED AREA. SEE DETAIL DETAIL B ON SHEET 13.
17. INSTALL NEW 3 INCHES OF A.C. PAVEMENT OVER 6 INCHES OF CLASS 2 BASE MATERIAL. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. SEE TRENCH DETAIL R ON SHEET 16.
18. INSTALL NEW 8-INCH-DIAMETER SDR 35 PVC SANITARY SEWER GRAVITY PIPELINE IN NATIVE AREA PER TRENCH DETAIL R ON SHEET 16.
19. INSTALL A TEMPORARY BYPASS AROUND THE EXISTING SANITARY SEWER MANHOLE. AFTER THE INSTALLATION OF THE TEMPORARY BYPASS, REMOVE AND DISPOSE OF THE EXISTING P.C.C. SEWER MANHOLE. INSTALL NEW 4-FOOT DIAMETER SANITARY SEWER MANHOLE PER DETAIL M ON SHEET 15. CONNECT EXISTING UPSTREAM SANITARY SEWER PIPELINES TO NEW MANHOLE BASE.
21. INSTALL NEW 4-INCH DIAMETER SDR 35 PVC SANITARY SEWER LATERAL AND CONNECT TO THE EXISTING CLEANOUT WITH CALDER COUPLINGS AND STAINLESS STEEL BANDS PER DETAIL L ON SHEET 15.
22. INSTALL NEW 4-FOOT DIAMETER SANITARY SEWER MANHOLE PER DETAIL M ON SHEET 15.
23. INSTALL NEW 6-INCH P.C.C. BARRIER CURB PER DETAIL D ON SHEET 13.
24. INSTALL NEW 10-FOOT LONG P.C.C. SIDEWALK SECTION PER DETAIL C ON SHEET 13. COMPACT THE NATIVE MATERIAL TO A MINIMUM 90% RELATIVE COMPACTION PER ASTM D-1557 FOR A MINIMUM DEPTH OF ONE FOOT BELOW SUBGRADE (BOTTOM OF THE CONCRETE).
26. INSTALL NEW 8-INCH-DIAMETER SDR 35 PVC SANITARY SEWER GRAVITY PIPELINE IN A.C. PAVEMENT PER TRENCH DETAIL R ON SHEET 16.

NOTE:

THE EXACT HORIZONTAL AND VERTICAL LOCATIONS OF THE EXISTING UNDERGROUND UTILITIES ILLUSTRATED ON THE PLANS ARE UNKNOWN. AN EFFORT WAS MADE TO OBTAIN AS-BUILT PLANS IN ORDER TO ILLUSTRATE THE EXISTING KNOWN UTILITIES DURING THE DESIGN PHASE; HOWEVER, THERE MAY BE ADDITIONAL UNDERGROUND UTILITIES NOT ILLUSTRATED ON THE PLANS, ESPECIALLY WITHIN MAYFLOWER PARK. CONTRACTOR SHALL POT-HOLE THE EXISTING UNDERGROUND UTILITIES ALONG THE LENGTH OF THE PIPELINE WITHIN FIVE (5) DAYS FROM THE ISSUANCE OF THE NOTICE TO PROCEED. THE EXISTING UTILITIES SHALL BE EXPOSED PRIOR TO EXCAVATION OF THE PIPE TRENCH. CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING THE POT-HOLING ACTIVITIES, ESPECIALLY FOR THE EXISTING SANITARY SEWER SYSTEM POINTS OF CONNECTION. THE EXISTING LOCATION OF LEACH FIELDS ILLUSTRATED ON THE PLAN IS APPROXIMATE AND HAS NOT BEEN VERIFIED. THE CONTRACTOR SHALL COORDINATE THE POT-HOLING ACTIVITIES WITH THE UTILITY COMPANIES, OWNER, MAYFLOWER PARK RANGER, AND RESIDENT ENGINEER. RELOCATION OF UTILITIES SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY OR GOVERNING AGENCY. THE RESIDENT ENGINEER SHALL OBSERVE THE EXPOSED UTILITIES PRIOR TO PIPELINE EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL ASSUME THERE ARE NO EXISTING UTILITY CONFLICTS WITH THE INSTALLATION OF THE NEW 4-INCH SANITARY SEWER FORCEMAIN OR 8-INCH GRAVITY PIPELINE DURING THE PREPARATION OF THE BID PROPOSAL. IF UTILITY CONFLICTS OCCUR DURING THE PIPELINE INSTALLATION THAT CANNOT BE MITIGATED BY RE-ALIGNING OR MODIFYING THE GRADE OF THE 4-INCH FORCEMAIN OR 8-INCH GRAVITY SEWER MAIN THEN THE CONTRACTOR SHALL BE COMPENSATED FOR THE COSTS OF THE UTILITY RELOCATION BY MEANS OF A POSITIVE CHANGE ORDER.

40 0 40 80 120

SCALE 1"= 40'

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT — DIAL BEFORE YOU DIG TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:
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MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — CIVIL — STATE OF CALIFORNIA

The Holt Group, Inc.
ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING
201 E. HOBSONWAY, BLYTHE, CA 92225, PHONE: (760) 922-4658, FAX: (760) 922-4660
1601 N. IMPERIAL AVE. EL CENTRO, CA 92243, PHONE: (760) 337-3883, FAX: (760) 337-5997

PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK: SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:_____ V:_____

M_____ THG #852.003

MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA

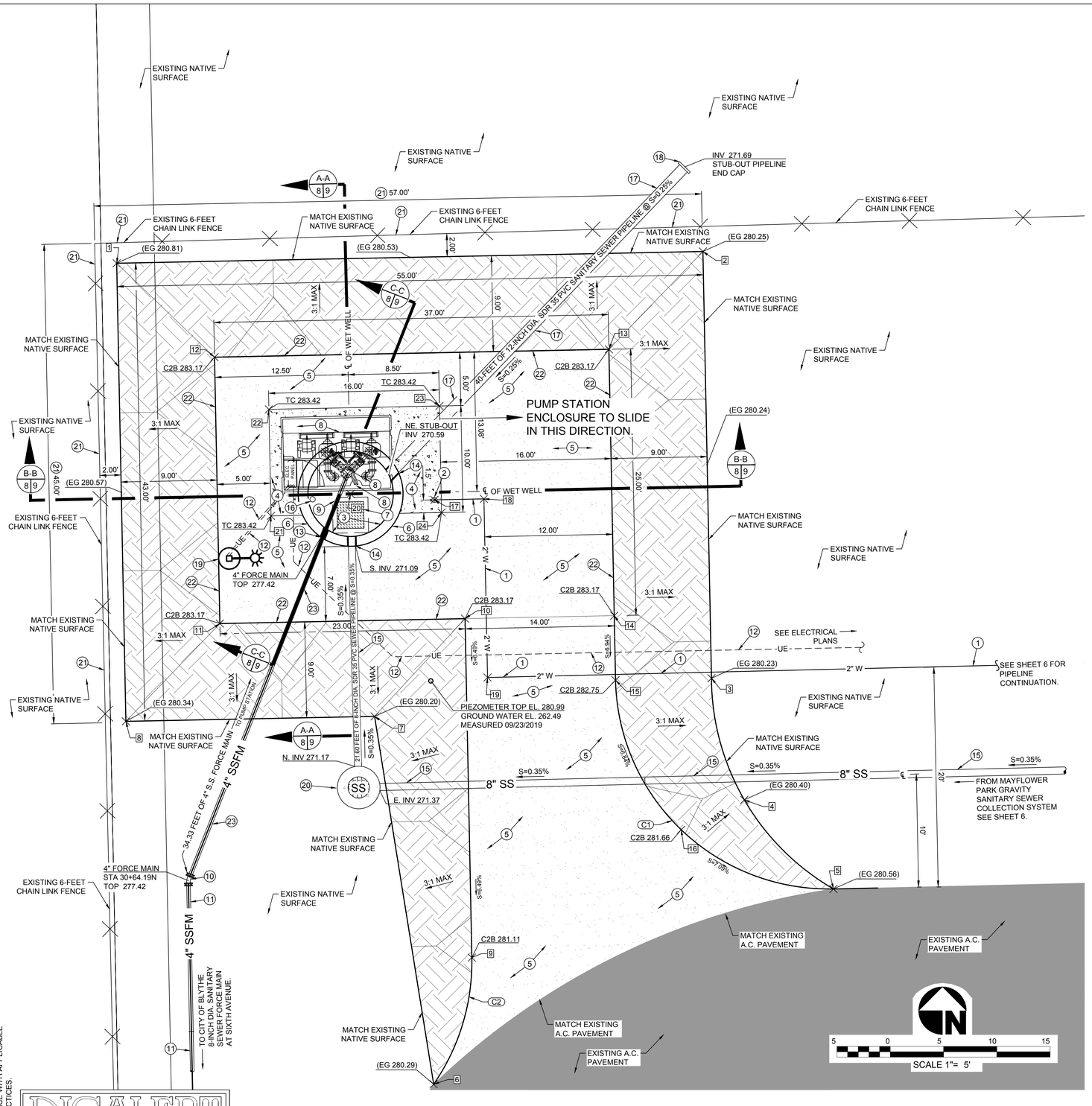
GRAVITY SEWER PLAN AND PROFILE FROM STA 10+00E TO STA 15+00E AND FROM STA 0+00S TO STA 1+50S

IP _____

SHEET NO. C-DD- 7

7 OF 21 SHTS

FOR: _____ W.O. _____ COUNTY FILE NO. _____



CONSTRUCTION KEYNOTES

1. INSTALL 2-INCH DIAMETER SCHEDULE 80 PVC PIPE PER DETAIL I ON SHEET 14.
2. INSTALL 1-INCH DIAMETER HOSE BIB PER DETAIL J ON SHEET 14.
3. INSTALL REINFORCED PRE-CAST P.C.C. WASTEWATER PUMP STATION WET WELL AND PRE-CAST COVER. THE PRE-CAST WET WELL AND PRE-CAST COVER SHALL BE DESIGNED TO STRUCTURAL ENGINEERING CALCULATIONS AS PREPARED BY THE PRE-CAST WET WELL SUPPLIER AND APPROVED DURING THE SUBMITTAL REVIEW PROCESS. THE WALL THICKNESS SHALL BE A MINIMUM OF 11 INCHES. THE CONTRACTOR SHALL COORDINATE WITH THE SELF-PRIMING, PRE-PACKAGE PUMP STATION SUPPLIER AND PRE-CAST WET WELL SUPPLIER REGARDING THE LOCATION OF THE GRAVITY INLET PIPING, FUTURE INLET PIPING, SUCTION PIPING, DISCHARGE PIPING, CONTROL SYSTEM AND ALL OTHER PUMP STATION ITEMS AS RELATED TO THE MOUNTING AND PENETRATIONS THROUGH THE P.C.C. PRE-CAST WET WELL. THE CONTRACTOR SHALL COORDINATE THE ALUMINUM ACCESS HATCH PLACEMENT AND CASTING WITH THE PRE-CAST WET WELL SUPPLIER AFTER THE ACCESS HATCH SUBMITTAL HAS BEEN APPROVED. INSTALL THE PRE-CAST WET WELL STRUCTURE PER SECTION A-A ON SHEET 9. THE PRE-CAST WET WELL BASE, SHAFTS, AND COVER SHOP DRAWINGS SHALL BE FORWARDED FOR REVIEW AS A SUBMITTAL DOCUMENT. THE PRE-CAST WET WELL STRUCTURAL CALCULATIONS SHALL BE STAMPED BY A CALIFORNIA-REGISTERED STRUCTURAL ENGINEER. THE PIPELINE, CONTROL SYSTEM, ACCESS HATCH, AND ALL OTHER PENETRATIONS ENTERING AND EXITING THE WET WELL SHALL BE ILLUSTRATED ON THE SHOP DRAWINGS. THE PENETRATION DIMENSIONS SHALL BE ILLUSTRATED ON THE PLANS AND COORDINATED WITH THE PRE-PACKAGE PUMP STATION SUPPLIER AND CONTRACTOR.
4. INSTALL 12-INCH-THICK P.C.C. SLAB OVER 12 INCHES OF CLASS 2 BASE. COMPACT THE CLASS 2 BASE TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. THE 12-INCH-THICK P.C.C. SLAB AND PRE-CAST P.C.C. WET WELL COVER SHALL BE CONNECTED USING 12-INCH-LONG NO. 5 REINFORCING STEEL BAR DOWELS, PLACED 12" O.C. ALONG THE EXTERIOR CIRCUMFERENCE OF THE P.C.C. PRE-CAST WET WELL SHAFT. THE REINFORCING BAR DOWELS SHALL BE ANCHORED USING A HILTI HIT-RE500 EPOXY OR APPROVED EQUAL.
5. INSTALL 18 INCHES OF CLASS 2 BASE AS ILLUSTRATED BY THE SPECKLE HATCH AREA. COMPACT THE CLASS 2 BASE TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. THE CLASS 2 BASE SHALL SERVE AS THE PUMP STATION SITE FINISHED SURFACE. THE CLASS 2 BASE DRIVEWAY SHALL BE PLACED TO THE TOP OF A.C. PAVEMENT EDGE.
6. THE EXTERIOR SURFACE OF THE WET WELL WALLS SHALL BE COATED WITH A SINGLE-COMPONENT, WATER-BASED, POLYMER-MODIFIED, COLD-APPLIED WATERPROOFING MEMBRANE. THE MEMBRANE SHALL BE APPLIED TO A DRY FILM THICKNESS OF 60 MILS. THE MEMBRANE COATING SHALL BE APPLIED PER THE MANUFACTURER'S RECOMMENDATIONS. THE MEMBRANE SHALL BE A MEL-ROL LM MEMBRANE PRODUCT AS MANUFACTURED BY W.R. MEADOWS OR AN APPROVED EQUAL.
7. INSTALL A 2'-6" X 2'-6" SINGLE COVER ALUMINUM ACCESS HATCH. ALL HARDWARE AND ACCESSORIES SHALL BE COMPOSED OF STAINLESS STEEL. DOORS SHALL CLOSE FLUSH WITH THE FRAME AND REST ON A BUILT IN NEOPRENE GASKET. THE DOOR SHALL BE SUPPLIED WITH A STAINLESS STEEL PADLOCK LOOP. THE ACCESS HATCHES SHALL BE CAPABLE OF BEING PLACED IN A LOCK OPEN POSITION. THE CONTRACTOR SHALL SUPPLY A PADLOCK AND SIX (6) SETS OF KEYS TO THE OWNER. THE ACCESS HATCH SHALL BE A U.S.F. FABRICATION ALUMINUM T-SERIES MODEL TPS SINGLE COVER HATCH OR AN APPROVED EQUAL.
8. INSTALL A 7'-0" X 10'-0" ABOVE-GROUND PRE-PACKAGED SELF-PRIMING PUMP STATION. THE PUMP STATION SHALL BE A PRE-PACKAGED GORMAN-RUPP MODEL T4C60SC-B OR AN APPROVED EQUAL. THE PUMP STATION SHALL CONSIST OF TWO (2) 10-HORSEPOWER, 1,750 RPM, 480 VOLT, 3-PHASE, 60-HERTZ MOTOR, SELF-PRIMING CENTRIFUGAL PUMPS, COVER, AND RESTRAINED JOINT FITTING, ELECTRICAL CONTROL PANEL, DISCHARGE PLUG VALVE, CHECK VALVES, ALARM BEACON, AND ALL OTHER ACCESSORIES. THE PUMP STATION SHALL INCLUDE AIR RELEASE VALVES ON THE DISCHARGE SIDE OF THE PUMPS. EACH PUMP SHALL DELIVER 150 GALLONS PER MINUTE AT 70 FEET OF TOTAL DYNAMIC HEAD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE 4" SUCTION PIPELINES, 4" X 6" DUCTILE IRON INCREASING ELBOWS AND THE SUPPORT BRACKETS FOR THE 4" SUCTION PIPELINES. THE SUPPORT BRACKETS SHALL BE FIBER GLASS WITH 316 STAINLESS STEEL ANCHOR BOLTS AND PLACED EVERY 5' BETWEEN THE BOTTOM AND THE TOP OF THE WET WELL. THE SUPPORT BRACKETS SHALL BE ANCHORED TO THE PUMP STATION INTERIOR WALL. A SUBMERSIBLE TRANSDUCER PUMP CONTROL SYSTEM SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. ALL PUMP ASSEMBLY HARDWARE SHALL BE COMPOSED OF 316 STAINLESS STEEL. THE CONTRACTOR SHALL SECURE THE PUMP SKID TO THE P.C.C. SUPPORT SLAB PER PUMP SUPPLIERS RECOMMENDATIONS. THE CONTRACTOR SHALL SUPPLY HARDWARE, GROUT, AND ALL OTHER ITEMS TO SECURE THE PRE-PACKAGE PUMP STATION TO THE P.C.C. SLAB AND P.C.C. PRE-CAST WET WELL COVER, AS REQUIRED.
9. INSTALL A 4-INCH DIAMETER AWWA C-900, DR18 PVC DISCHARGE PIPELINE FROM THE ABOVE-GRADE PUMP STATION THROUGH THE WET WELL AS ILLUSTRATED BY SECTION C-C ON SHEET 9.
10. INSTALL 22.5-DEGREE DUCTILE IRON EPOXY-COATED MJ ELBOW WITH 316 STAINLESS STEEL HARDWARE AND RESTRAINED JOINT FITTINGS.
11. INSTALL A 4-INCH DIAMETER AWWA C-900, DR-18 PVC FORCEMAIN PIPELINE PER PLAN AND PROFILE SHEET 5.
12. INSTALL ELECTRICAL POWER CONDUIT AND CONDUCTORS PER ELECTRICAL PLAN SHEETS.
13. INSTALL 4-INCH AWWA C-900, DR18 PVC FORCE MAIN THROUGH P.C.C. WET WELL WALL PER PENETRATION DETAIL K ON SHEET 14.
14. INSTALL 8-INCH SDR 35 PVC SANITARY SEWER INFLUENT PIPELINE AND 12-INCH SDR 35 PVC FUTURE STUB-OUT PIPELINE THROUGH THE PCC WET WELL WALL PER PENETRATION DETAIL K ON SHEET 14.
15. INSTALL 8-INCH DIAMETER SDR 35 PVC SANITARY SEWER PIPELINE. INSTALL THE SANITARY SEWER PIPELINE PER TRENCH DETAIL A ON SHEET 13.
16. INSTALL 6-INCH POLY-AIR ACTIVATED CARBON VENT FILTER ON A SCHEDULE 80 PVC PIPELINE WHICH EXTENDS FLUSH WITH THE INTERIOR CEILING SURFACE OF THE WET WELL SLAB. SUPPLY AND INSTALL ALL NECESSARY PVC COUPLINGS, FITTINGS, AND COMPONENTS FOR THE CARBON VENT FILTER INSTALLATION. INSTALL 6-INCH SCHEDULE 80 PVC PIPELINE THROUGH THE WET WELL CEILING PER PENETRATION DETAIL K ON SHEET 14. CONTRACTOR SHALL SUPPLY SIX (6) ADDITIONAL ACTIVATED CARBON NETTED BAGS WITH ACTIVATED CARBON VENT FILTERS.
17. INSTALL 12-INCH DIAMETER, 40-FOOT LONG SDR 35 PVC SANITARY SEWER PIPELINE STUB-OUT PER TRENCH DETAIL R ON SHEET 16.
18. INSTALL 12-INCH DIAMETER PVC END CAP. CONTRACTOR SHALL INSTALL A WOODEN 2-INCH X 4-INCH POST INDICATOR VERTICALLY FROM THE END CAP TERMINATION POINT TO FINISH GRADE.
19. INSTALL A LIGHT POLE, P.C.C. PEDESTAL, AND LIGHT FIXTURE PER LIGHT ASSEMBLY AND PEDESTAL DETAIL Q ON SHEET 16.
20. INSTALL 4-FOOT-DIAMETER SANITARY SEWER MANHOLE PER DETAIL M ON SHEET 15.
21. REMOVE AND STORE EXISTING CHAIN-LINK FENCE TO PROVIDE ACCESS FOR THE PUMP STATION INSTALLATION. INSTALL THE STORED CHAIN-LINK FENCE FABRIC AFTER THE PUMP STATION INSTALLATION IS COMPLETED. THE CONTRACTOR SHALL INSTALL NEW FENCE POSTS, HARDWARE, FASTENERS AND ALL OTHER REQUIRED FENCE COMPONENTS PER DETAIL S ON SHEET 16.
22. INSTALL NEW 2-INCH X 6-INCH TREATED HEADER BOARD ALONG THE CLASS 2 BASE PUMP STATION PAD BOUNDARY. SECURE THE BOARD WITH 2-INCH DEEP X 4-INCH WIDE X 18-INCH LONG WOOD STAKES PLACED 4-FOOT ON CENTER. SECURE THE BOARD WITH THREE (3) 16CC SINKER NAILS.
23. INSTALL 34.33 FEET OF 4-INCH DIAMETER AWWA C-900, DR18 PVC FORCE MAIN FROM THE P.C.C. PUMP STATION WET WELL WALL TO THE 22.5 DEGREE DUCTILE IRON ELBOW AT STATION 30+64.19N.

COORDINATE DATA TABLE			
Point #	Northing	Easting	Description
1	2191948.94	7082788.46	TOE
2	2191950.04	7082843.45	TOE
3	2191909.99	7082844.25	TOE
4	2191898.58	7082847.34	TOE
5	2191890.22	7082855.70	TOE
6	2191871.89	7082818.20	TOE
7	2191906.42	7082812.65	EX-AC PVMT
8	2191905.95	7082789.32	EX-AC PMVT
9	2191883.77	7082821.78	TOP-C2B
10	2191915.59	7082821.14	TOP-C2B
11	2191915.13	7082798.14	TOP-C2B
12	2191940.12	7082797.64	TOP-C2B

COORDINATE DATA TABLE			
Point #	Northing	Easting	Description
13	2191940.86	7082834.63	TOP-C2B
14	2191915.87	7082835.13	TOP-C2B
15	2191909.81	7082835.26	TOP-C2B
16	2191895.78	7082841.41	TOP-C2B
17	2191926.73	7082818.27	HOSE BIB
18	2191926.83	7082822.91	2IN WATER
19	2191910.06	7082823.25	2IN WATER
20	2191927.29	7082810.40	CENTER WET WELL
21	2191925.22	7082802.94	CONC. COR
22	2191935.22	7082802.74	CONC. COR
23	2191935.54	7082818.74	CONC. COR
24	2191925.55	7082818.94	CONC. COR

CURVE DATA TABLE					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C2	12.61	20.21	35.76	N16° 46' 21"E	12.41
C1	31.46	20.00	90.13	S46° 13' 03"E	28.32

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT — DIAL BEFORE YOU DIG — TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

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MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — CIVIL — STATE OF CALIFORNIA

The Holt Group, Inc.
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1601 N. IMPERIAL AVE. EL CENTRO, CA 92243, PHONE: (760) 337-3883, FAX: (760) 337-5997

PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK:
SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

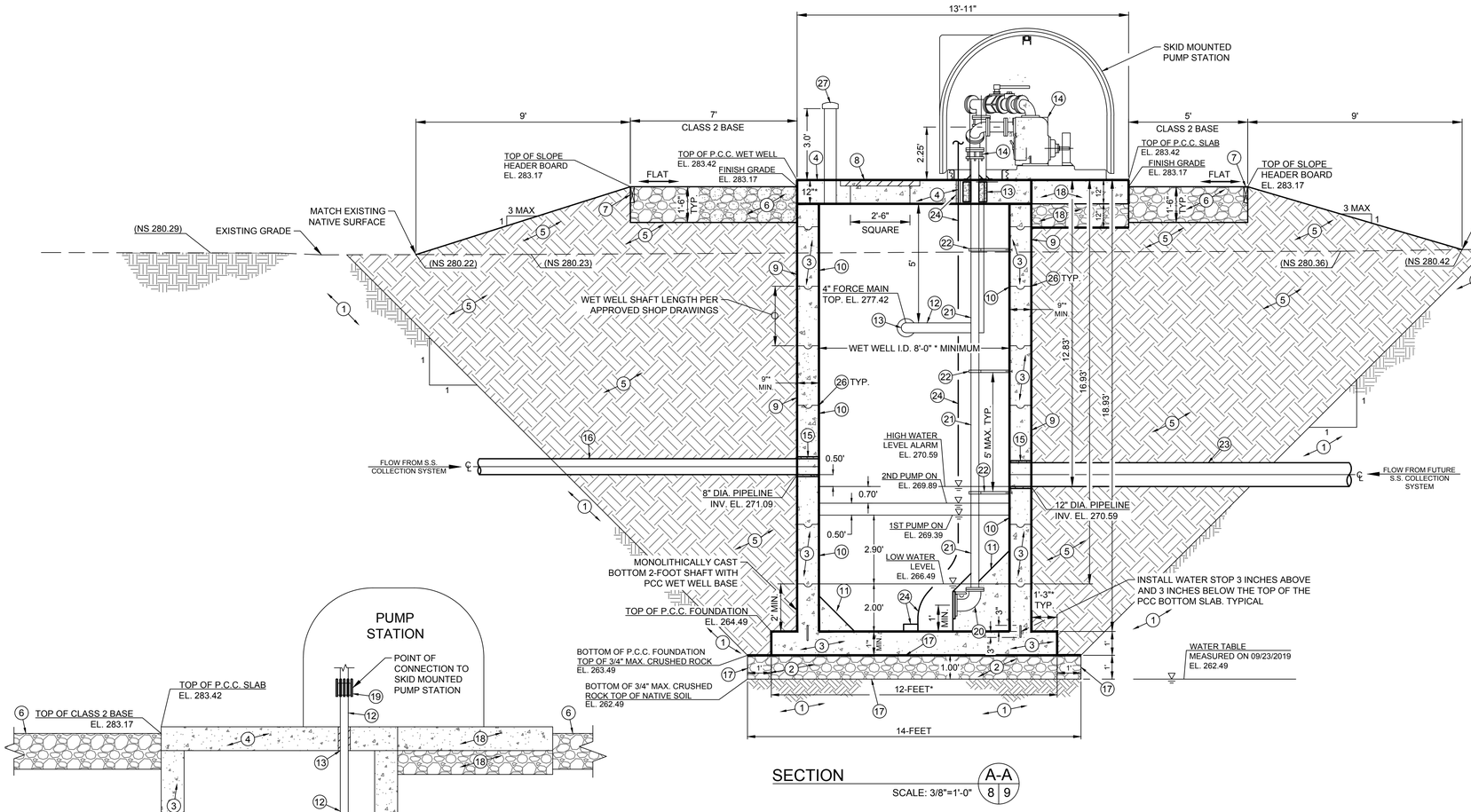
SCALE: H:_____ V:_____

M_____ IP _____
MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
THG #852.003 IN COUNTY OF RIVERSIDE, CALIFORNIA

SANITARY SEWER PUMP STATION PLAN

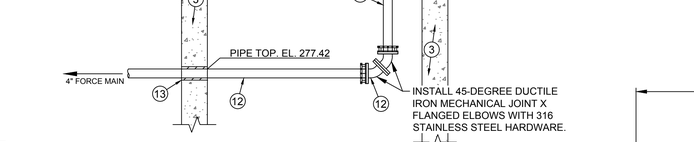
SHEET NO. C-DD-8
8 OF 21 SHTS

FOR: _____ W.O. _____ COUNTY FILE NO. _____



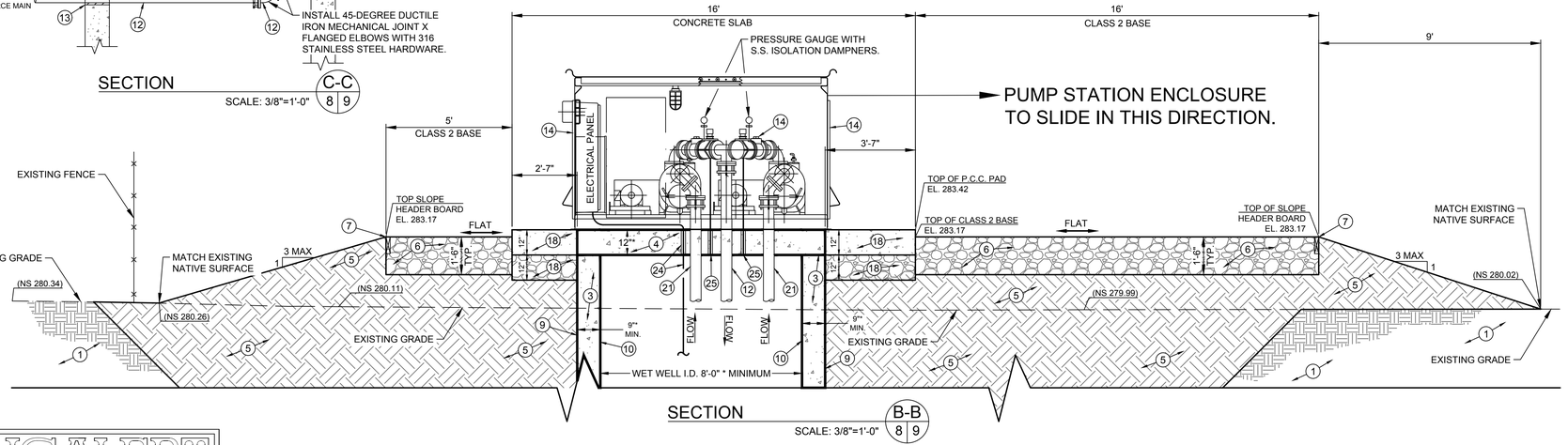
SECTION A-A

SCALE: 3/8"=1'-0" (8 | 9)



SECTION C-C

SCALE: 3/8"=1'-0" (8 | 9)



SECTION B-B

SCALE: 3/8"=1'-0" (8 | 9)

* NOTE:

1. THE P.C.C. WET WELL SHALL BE CONSTRUCTED OF PRE-CAST SECTIONS INCLUDING THE WET WELL BASE AND COVER. DIMENSIONS AS ILLUSTRATED WITH AN ASTERISK ON THIS PLAN SHEET ARE SUBJECT TO MINOR ALTERATION PER THE APPROVED SHOP DRAWINGS AND STRUCTURAL CALCULATIONS PROVIDED BY THE WET WELL SUPPLIER. THE EXACT WET WELL WALL, BASE, AND CEILING DIMENSIONS SHALL BE DETERMINED BY THE SHOP DRAWINGS AND STRUCTURAL CALCULATIONS COMPRISING THE APPROVED SUBMITTAL DOCUMENTS. THE STRUCTURAL CALCULATIONS AND SHOP DRAWINGS SHALL INCLUDE THE CONCRETE MIX DESIGN AND REINFORCEMENT REQUIREMENTS.

CONSTRUCTION KEYNOTES

1. EXISTING NATIVE MATERIAL TO REMAIN.
2. INSTALL 3/4-INCH MAXIMUM CRUSHED ROCK.
3. INSTALL REINFORCED 8-FOOT INSIDE DIAMETER PRE-CAST CONCRETE CIRCULAR WET WELL. THE PRE-CAST WET WELL SHALL BE DESIGNED TO STRUCTURAL ENGINEERING CALCULATIONS AS PREPARED BY THE PRE-CAST WET WELL SUPPLIER AND APPROVED DURING THE SUBMITTAL REVIEW PROCESS. THE STRUCTURAL CALCULATIONS SHALL BE STAMPED BY A CALIFORNIA REGISTERED STRUCTURAL ENGINEER. THE STRUCTURAL CALCULATIONS SHALL BE BASED ON ACI 350, LATEST EDITION. THE BOTTOM 2-FOOT SHAFT WALL SHALL BE MONOLITHICALLY CAST AND POURED WITH THE PCC WET WELL BASE.
4. INSTALL THE REINFORCED PRE-CAST P.C.C. CIRCULAR WET WELL COVER. THE AIR RELEASE PIPING, SUCTION PIPING, DISCHARGE PIPING, ELECTRICAL CONDUITS, AND OTHER PUMP STATION ITEM PENETRATION LOCATIONS TO BE ACCOMPLISHED THROUGH THE PRE-CAST P.C.C. WET WELL COVER SHALL BE COORDINATED BY THE CONTRACTOR, PRE-CAST WET WELL SUPPLIER, AND SELF-PRIMING PRE-PACKAGE PUMP STATION SUPPLIER. THE WET WELL COVER PENETRATION LOCATIONS SHALL BE ILLUSTRATED ON THE WET WELL COVER SHOP DRAWING PLANS SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE LOCATION OF THE ALUMINUM ACCESS HATCH SHALL ALSO BE ILLUSTRATED ON THE WET WELL COVER SHOP DRAWING PLANS. ALL PENETRATIONS SHALL BE SLEEVED WITH THE ANNULAR SPACE BETWEEN THE SLEEVE AND THE PIPELINE FILLED WITH NON-SHRINK GROUT UNLESS OTHERWISE SPECIFIED ON THE PLANS.
5. EXCAVATE AND STORE EXISTING NATIVE MATERIAL TO ALLOW THE CONSTRUCTION OF THE PUMP STATION FOUNDATION AND THE P.C.C. WET WELL. INSTALL ENGINEERED SOIL BACKFILL IN MAXIMUM 8-INCH LIFTS AFTER THE CONSTRUCTION OF THE PUMP STATION FOUNDATION AND P.C.C. WELL. COMPACT THE BACKFILL MATERIAL TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D1557. ADDITIONAL LIFTS SHALL NOT BE PLACED UNTIL PREVIOUS LIFTS HAVE ATTAINED THE SPECIFIED COMPACTION DENSITY. BACKFILL MATERIAL SHALL NOT BE PLACED UNTIL THE CONSTRUCTION OF THE WET WELL FOUNDATION AND WALLS ARE COMPLETE.
6. INSTALL 18 INCHES OF CLASS 2 BASE. COMPACT THE CLASS 2 BASE TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
7. INSTALL NEW 2-INCH X 6-INCH TREATED HEADER BOARD ALONG THE CLASS 2 BASE PUMP STATION PAD BOUNDARY. SECURE THE BOARD WITH 2-INCH DEEP X 4-INCH WIDE X 18-INCH LONG WOOD STAKES PLACED 4-FOOT ON CENTER. SECURE THE BOARD WITH THREE (3) 16CC SINKER NAILS.
8. INSTALL A 2'-6" X 2'-6" SINGLE COVER ALUMINUM ACCESS HATCH. ALL HARDWARE AND ACCESSORIES SHALL BE COMPOSED OF STAINLESS STEEL. DOORS SHALL CLOSE FLUSH WITH THE FRAME AND REST ON A BUILT IN NEOPRENE GASKET. THE DOOR SHALL BE SUPPLIED WITH A STAINLESS STEEL PADLOCK LOOP. THE ACCESS HATCHES SHALL BE CAPABLE OF BEING PLACED IN A LOCK OPEN POSITION. THE CONTRACTOR SHALL SHALL SUPPLY A PADLOCK AND SIX (6) SETS OF KEYS TO THE OWNER. THE ACCESS HATCH SHALL BE A U.S.F. FABRICATION ALUMINUM T-SERIES MODEL TPS SINGLE COVER HATCH OR AN APPROVED EQUAL.
9. THE EXTERIOR SURFACE OF THE WET WELL WALLS SHALL BE COATED WITH A SINGLE-COMPONENT, WATER-BASED, POLYMER-MODIFIED, COLD-APPLIED WATERPROOFING MEMBRANE. THE MEMBRANE SHALL BE APPLIED TO A DRY FILM THICKNESS OF 60 MILS. THE MEMBRANE COATING SHALL BE APPLIED PER THE MANUFACTURER'S RECOMMENDATIONS. THE MEMBRANE SHALL BE A MEL-ROL LM MEMBRANE PRODUCT AS MANUFACTURED BY W.R. MEADOWS OR AN APPROVED EQUAL.
10. COAT ALL INTERIOR CONCRETE SURFACES OF THE WET WELL WITH A RAVEN 405 HIGH BUILD EPOXY COATING SYSTEM. THE COATING SHALL BE APPLIED PER MANUFACTURERS RECOMMENDATIONS.
11. INSTALL A 18-INCH X 18-INCH, 45 DEGREE CEMENT GROUT FILLET ALONG THE INTERIOR BASE PERIMETER WALLS OF THE WET WELL. INCASE THE 4" X 6" INCREASING ELBOWS WITH CEMENT GROUT. THE FILLET SHALL BE 45 DEGREES FROM THE TOP OF THE ELBOW.
12. INSTALL A 4-INCH DIAMETER AWWA C-900, DR18 PVC DISCHARGE PIPELINE FROM THE ABOVE-GRADE PUMP STATION THROUGH THE WET WELL AS ILLUSTRATED BY SECTION C-C ON THIS SHEET. THE DUCTILE IRON ELBOWS SHALL BE COATED WITH THE SAME SYSTEM TO BE APPLIED TO THE INTERIOR PRE-CAST WET WELL P.C.C. SURFACES.
13. INSTALL THE 4-INCH DIAMETER AWWA C-900, DR18 PVC DISCHARGE PIPELINE THROUGH THE P.C.C. WET WELL WALL PER PENETRATION DETAIL K ON SHEET 14.
14. INSTALL A 7'-0" X 10'-0" ABOVE-GROUND PRE-PACKAGED SELF-PRIMING PUMP STATION. THE PUMP STATION SHALL BE A PRE-PACKAGED GORMAN-RUPP MODEL T4C60SC-B OR AN APPROVED EQUAL. THE PUMP STATION SHALL CONSIST OF TWO (2) 10-HORSEPOWER, 1,750 RPM, 480 VOLT, 3-PHASE, 60-HERTZ MOTOR, SELF-PRIMING CENTRIFUGAL PUMPS, COVER, AND RESTRAINED JOINT FITTING, ELECTRICAL CONTROL PANEL, DISCHARGE PLUG VALVE, CHECK VALVES, ALARM BEACON, AND ALL OTHER ACCESSORIES. THE PUMP STATION SHALL INCLUDE AIR RELEASE VALVES ON THE DISCHARGE SIDE OF THE PUMPS. EACH PUMP SHALL DELIVER 150 GALLONS PER MINUTE AT 70 FEET OF TOTAL DYNAMIC HEAD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE 4" SUCTION PIPELINES, 4" X 6" DUCTILE IRON INCREASING ELBOWS AND THE SUPPORT BRACKETS FOR THE 4" SUCTION PIPELINES. THE SUPPORT BRACKETS SHALL BE FIBER GLASS WITH 316 STAINLESS STEEL ANCHOR BOLTS AND PLACED EVERY 5' BETWEEN THE BOTTOM AND THE TOP OF THE WET WELL. THE SUPPORT BRACKETS SHALL BE ANCHORED TO THE PUMP STATION INTERIOR WALL. A SUBMERSIBLE TRANSDUCER PUMP CONTROL SYSTEM SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. ALL PUMP ASSEMBLY HARDWARE SHALL BE COMPOSED OF 316 STAINLESS STEEL. THE CONTRACTOR SHALL SECURE THE PUMP SKID TO THE P.C.C. SUPPORT SLAB PER PUMP SUPPLIERS RECOMMENDATIONS. THE CONTRACTOR SHALL SUPPLY HARDWARE, GROUT, AND ALL OTHER ITEMS TO SECURE THE PRE-PACKAGE PUMP STATION TO THE P.C.C. SLAB AND P.C.C. PRE-CAST WET WELL COVER, AS REQUIRED.
15. INSTALL 8-INCH SDR 35 PVC SANITARY SEWER INFLUENT PIPELINE AND 12-INCH SDR 35 PVC FUTURE STUB-OUT PIPELINE THROUGH THE PCC WET WELL WALL PER PENETRATION DETAIL K ON SHEET 14.
16. INSTALL 8-INCH DIAMETER SDR 35 PVC SANITARY SEWER PIPELINE. INSTALL THE SANITARY SEWER PIPELINE PER TRENCH DETAIL R ON SHEET 16.
17. INSTALL NON-WOVEN GEOTEXTILE FABRIC BENEATH AND ALONG THE TOP, SIDES, AND BOTTOM OF THE CRUSHED ROCK. THE NON-WOVEN GEOTEXTILE FABRIC SHALL BE LAPPED FOR A DISTANCE OF 4 FEET OVER THE TOP OF THE CRUSHED ROCK. NON-WOVEN GEOTEXTILE FABRIC TO BE MIRAFI 600X OR AN APPROVED EQUAL.
18. INSTALL 12-INCH-THICK P.C.C. SLAB OVER 12 INCHES OF CLASS 2 BASE. COMPACT THE CLASS 2 BASE TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
19. INSTALL 4-INCH DIAMETER DUCTILE IRON EPOXY-COATED TRANSITION COUPLING ADAPTER WITH STAINLESS STEEL HARDWARE.
20. INSTALL 4-INCH X 6-INCH DIAMETER INCREASING PVC ELBOW.
21. INSTALL 4-INCH AWWA C-900, DR18 PVC SUCTION PIPELINES.
22. INSTALL FIBERGLASS SUPPORT BRACKETS WITH 316 STAINLESS STEEL ANCHOR BOLTS.
23. INSTALL 12-INCH DIAMETER SDR PVC SANITARY SEWER PIPELINE. SEE PLAN SHEET 8 FOR THE CORRECT ORIENTATION OF THE 12-INCH SANITARY SEWER PIPELINE.
24. INSTALL LIQUID LEVEL SUBMERSIBLE TRANSDUCER. SUBMERSIBLE TRANSDUCER AND CABLE TO EXTEND FROM THE PUMP STATION MCC PANEL TO THE BOTTOM OF THE PUMP STATION WET WELL. PLACE SEALANT IN TRANSDUCER CABLE ANNULAR SLEEVE AREA TO PREVENT GASES FROM ENTERING THE PUMP STATION.
25. INSTALL AIR RELEASE LINES FROM PRE-PACKAGED SELF PRIMING PUMP STATION TO PUMP STATION WET WELL. PLACE SEALANT IN AIR RELEASE LINE SLEEVE EXTENDING THROUGH THE WET WELL FLOOR TO PREVENT GASES FROM ENTERING THE PUMP STATION.
26. INSTALL BUTYL BLACK MAJESTIC ROPE BETWEEN THE PCC PRE-CAST SHAFT COLD JOINT SECTIONS. INSTALL A NON-SHRINK GROUT IN THE INTERSTITIAL VOID COLD JOINTS AT THE INTERIOR AND EXTERIOR WALLS.
27. INSTALL 6-INCH POLY-AIR ACTIVATED CARBON VENT FILTER ON A SCHEDULE 80 PVC PIPELINE WHICH EXTENDS FLUSH WITH THE INTERIOR CEILING SURFACE OF THE WET WELL SLAB. SUPPLY AND INSTALL ALL NECESSARY PVC COUPLINGS, FITTINGS, AND COMPONENTS FOR THE CARBON VENT FILTER INSTALLATION. INSTALL 6-INCH SCHEDULE 80 PVC PIPELINE THROUGH THE WET WELL CEILING PER PENETRATION DETAIL K ON SHEET 14. CONTRACTOR SHALL SUPPLY SIX (6) ADDITIONAL ACTIVATED CARBON NETTED BAGS WITH ACTIVATED CARBON VENT FILTERS.

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT — DIAL BEFORE YOU DIG TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE: WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

The private engineer signing these plans is responsible for assuring the accuracy and acceptability of the design hereon. In the event of discrepancies arising after county approval or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for approval by the county.

MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — CIVIL — STATE OF CALIFORNIA

The Holt Group, Inc.

ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING

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PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK: SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:_____ V:_____

M_____ MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT IP _____

THG #852.003 IN COUNTY OF RIVERSIDE, CALIFORNIA

SANITARY SEWER PUMP STATION SECTIONS

SHEET NO. C-DD-9

9 OF 21 SHTS

FOR: _____ W.O. _____ COUNTY FILE NO. _____

FACTORY-BUILT 7X10 ABOVE GROUND PUMP STATION
WITH DUPLEX SELF-PRIMING PUMPS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. WORK UNDER THIS SECTION INCLUDES, BUT IS NOT LIMITED TO, FURNISHING AND INSTALLING A FACTORY BUILT DUPLEX PUMP STATION AS INDICATED ON THE PROJECT DRAWINGS, HEREIN SPECIFIED, AS NECESSARY FOR PROPER AND COMPLETE PERFORMANCE.

1.02 REFERENCES

A. PUBLICATIONS LISTED BELOW FORM PART OF THIS SPECIFICATION TO EXTENT REFERENCED IN THE TEXT BY BASIC DESIGNATION ONLY. CONSULT LATEST EDITION OF PUBLICATION UNLESS OTHERWISE NOTED.

1. AMERICAN NATIONAL STD. INSTITUTE (ANSI) / AMERICAN WATER WORKS ASSOC. (AWWA)
   - a. ANSI B16.1 — CAST IRON PIPE FLANGES AND FLANGED FITTINGS.
   - b. ANSI/AWWA C115/A21.51 — CAST/DUCTILE IRON PIPE WITH THREADED FLANGES.
   - c. ANSI 253.1 — SAFETY COLOR CODE FOR MARKING PHYSICAL HAZARDS.
   - d. ANSI B40.1 — GAGES, PRESSURE AND VACUUM.
   - e. AWWA C508 — SINGLE SWING CHECK VALVES.

2. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
   - a. ASTM A48 — GRAY IRON CASTINGS.
   - b. ASTM A126 — VALVES, FLANGES, AND PIPE FITTINGS.
   - c. ASTM A307 — CARBON STEEL BOLTS AND STUDS.
   - d. ASTM A36 — STRUCTURAL STEEL.

3. INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
   - a. ANSI/IEEE STD 100 — STANDARD DICTIONARY OF ELECTRICAL TERMS.
   - b. ANSI/IEEE STD 112 — TEST PROCEDURE FOR POLYPHASE INDUCTION
   - c. IEEE STD 242 — PROTECTION OF INDUSTRIAL AND CONTROL POWER SYSTEMS.

4. NATIONAL ELECTRIC CODE (NEC) / NATIONAL ELECTRICAL MANUFACTURERS ASSOC. (NEMA)
   - a. NEC — NATIONAL ELECTRIC CODE.
   - b. NEC 701 — NATIONAL ELECTRIC CODE ARTICLE 701.
   - c. NEMA STD MG1 — MOTORS AND GENERATORS.

5. MISCELLANEOUS REFERENCES
   - a. TEN-STATE STANDARDS — RECOMMENDED STANDARDS FOR SEWAGE WORKS.
   - b. HYDRAULIC INSTITUTE — STD FOR CENTRIFUGAL, ROTARY AND RECIPROCATING PUMPS.
   - c. NMTBA AND JIC STD — NATIONAL MACHINE TOOL BUILDERS ASSOCIATION AND JOINT INDUSTRIAL COUNCIL STANDARDS
   - d. ISO 9001 INTERNATIONAL ORGANIZATION FOR STANDARDIZATION.

1.03 SYSTEM DESCRIPTION

A. CONTRACTOR SHALL FURNISH AND INSTALL ONE FACTORY BUILT ABOVE GROUND, AUTOMATIC PUMP STATION. THE STATION SHALL BE COMPLETE WITH ALL EQUIPMENT SPECIFIED HEREIN, FACTORY ASSEMBLED IN A FIBERGLASS REINFORCED POLYESTER RESIN ENCLOSURE.

B. IN ADDITION TO THE STATION ENCLOSURE, PRINCIPLE ITEMS OF EQUIPMENT SHALL INCLUDE TWO HORIZONTAL, SELF PRIMING, CENTRIFUGAL SEWAGE PUMPS, V-BELT DRIVES, MOTORS, INTERNAL PIPING, VALVES, MOTOR CONTROL PANEL, AUTOMATIC LIQUID LEVEL CONTROL SYSTEM, AND INTERNAL WIRING.

C. FACTORY BUILT PUMP STATION DESIGN, INCLUDING MATERIALS OF CONSTRUCTION, PUMP FEATURES, VALVES AND PIPING, AND MOTOR CONTROLS SHALL BE IN ACCORDANCE WITH REQUIREMENTS LISTED UNDER PART 2 - PRODUCTS OF THIS SECTION.

1.04 PERFORMANCE CRITERIA

A. PUMPS MUST BE DESIGNED TO HANDLE RAW, UNSCREENED, DOMESTIC SANITARY SEWAGE. PUMPS SHALL HAVE 4" SUCTION CONNECTION, AND 4" DISCHARGE CONNECTION. EACH PUMP SHALL BE SELECTED TO PERFORM UNDER FOLLOWING OPERATING CONDITIONS:

1. CAPACITY (GPM)	150
2. TOTAL DYNAMIC HEAD (FT)	70
3. TOTAL DYNAMIC SUCTION LIFT(FT)	2
4. TOTAL DISCHARGE STATIC HEAD(FT)	48

B. SITE POWER FURNISHED TO PUMP STATION SHALL BE AS ILLUSTRATED ON ELECTRICAL PLANS E1 THROUGH E4.

1.05 SUBMITTALS

A. PRODUCT DATA

1. PRIOR TO FABRICATION, PUMP STATION MANUFACTURER SHALL SUBMIT FOUR (4) COPIES OF SUBMITTAL DATA FOR REVIEW AND APPROVAL.

2. SUBMITTAL SHALL INCLUDE SHOP DRAWINGS, ELECTRICAL LADDER LOGIC DRAWINGS, AND SUPPORT DATA AS FOLLOWS: CATALOG CUTS SHEETS REFLECTING CHARACTERISTICS FOR MAJOR ITEMS OF EQUIPMENT, MATERIALS OF CONSTRUCTION, MAJOR DIMENSIONS, MOTOR AND V-BELT DRIVE DATA, PUMP CHARACTERISTIC CURVES SHOWING THE DESIGN DUTY POINT CAPACITY (GPM), HEAD (FT), NET POSITIVE SUCTION HEAD REQUIRED (NPSHR), AND HYDRAULIC BRAKE HORSEPOWER (BHP). ELECTRICAL COMPONENTS USED IN THE MOTOR BRANCH AND LIQUID LEVEL CONTROL SHALL BE FULLY DESCRIBED.

3. SHOP DRAWINGS SHALL PROVIDE LAYOUT OF MECHANICAL EQUIPMENT AND ANCHOR BOLT LOCATIONS FOR STATION. PIPE PENETRATIONS AND STATION ACCESS CLEARANCES SHALL BE DIMENSIONED RELATIVE TO THE STATION CENTERLINE. THE ELECTRICAL LADDER LOGIC DRAWINGS SHALL ILLUSTRATE MOTOR BRANCH AND LIQUID LEVEL CONTROL CIRCUITS TO EXTENT NECESSARY TO VALIDATE FUNCTION AND INTEGRATION OF CIRCUITS TO FORM A COMPLETE WORKING SYSTEM.

B. OPERATIONS AND MAINTENANCE MANUALS

1. OPERATION SHALL BE IN ACCORDANCE WITH WRITTEN INSTRUCTIONS PROVIDED BY THE PUMP STATION MANUFACTURER. COMPREHENSIVE INSTRUCTIONS SUPPLIED AT TIME OF SHIPMENT SHALL ENABLE PERSONNEL TO PROPERLY OPERATE AND MAINTAIN ALL EQUIPMENT SUPPLIED. CONTENT AND INSTRUCTIONS SHALL ASSUME OPERATING PERSONNEL ARE FAMILIAR WITH PUMPS, MOTORS, PIPING AND VALVES, BUT LACK EXPERIENCE ON EXACT EQUIPMENT SUPPLIED.

2. DOCUMENTATION SHALL BE SPECIFIC TO THE PUMP STATION SUPPLIED AND COLLATED IN FUNCTIONAL SECTIONS. EACH SECTION SHALL COMBINE TO FORM A COMPLETE SYSTEM MANUAL COVERING ALL ASPECTS OF EQUIPMENT SUPPLIED BY THE STATION MANUFACTURER. SUPPORT DATA FOR ANY EQUIPMENT SUPPLIED BY OTHERS, EVEN IF MOUNTED OR INCLUDED IN OVERALL STATION DESIGN, SHALL BE PROVIDED BY THOSE SUPPLYING THE EQUIPMENT. INSTRUCTIONS SHALL INCLUDE THE FOLLOWING AS A MINIMUM:

a. FUNCTIONAL DESCRIPTION OF EACH MAJOR COMPONENT, COMPLETE WITH OPERATING INSTRUCTIONS.

b. INSTRUCTIONS FOR OPERATING PUMPS AND PUMP CONTROLS IN ALL MODES OF OPERATION.

c. CALIBRATION AND ADJUSTMENT OF EQUIPMENT FOR INITIAL START-UP, REPLACEMENT OF LEVEL CONTROL COMPONENTS, OR AS REQUIRED FOR ROUTINE MAINTENANCE.

d. SUPPORT DATA FOR COMMERCIALLY AVAILABLE COMPONENTS NOT PRODUCED BY THE STATION MANUFACTURER, BUT SUPPLIED IN ACCORDANCE WITH THE SPECIFICATIONS, SHALL BE SUPPORTED BY LITERATURE FROM THE PRIME MANUFACTURER AND INCORPORATED AS APPENDICES.

e. ELECTRICAL SCHEMATIC DIAGRAM OF THE PUMP STATION CIRCUITS SHALL BE IN ACCORDANCE WITH NFPA 79. SCHEMATICS SHALL ILLUSTRATE, TO THE EXTENT OF AUTHORIZED REPAIR, PUMP MOTOR BRANCH, CONTROL AND ALARM SYSTEM CIRCUITS INCLUDING INTERCONNECTIONS. WIRE NUMBERS AND LEGEND SYMBOLS SHALL BE SHOWN. SCHEMATIC DIAGRAMS FOR INDIVIDUAL COMPONENTS, NOT NORMALLY REPAIRABLE BY THE STATION OPERATOR, NEED NOT BE INCLUDED. DETAILS FOR SUCH PARTS SHALL NOT BE SUBSTITUTED FOR AN OVERALL SYSTEM SCHEMATIC. PARTIAL SCHEMATICS, BLOCK DIAGRAMS, AND SIMPLIFIED SCHEMATICS SHALL NOT BE PROVIDED IN LIEU OF AN OVERALL SYSTEM DIAGRAM.

f. MECHANICAL LAYOUT DRAWING OF THE PUMP STATION AND COMPONENTS, PREPARED IN ACCORDANCE WITH GOOD COMMERCIAL PRACTICE, SHALL PROVIDE INSTALLATION DIMENSIONS AND LOCATION OF ALL PUMPS, MOTORS, VALVES AND PIPING.

3. OPERATION AND MAINTENANCE INSTRUCTIONS WHICH RELY ON VENDOR CUT-SHEETS AND LITERATURE WHICH INCLUDE GENERAL CONFIGURATIONS, OR REQUIRE OPERATING PERSONNEL TO SELECTIVELY READ PORTIONS OF THE MANUAL SHALL NOT BE ACCEPTABLE. OPERATION AND MAINTENANCE INSTRUCTIONS MUST BE SPECIFIC TO EQUIPMENT SUPPLIED IN ACCORDANCE WITH THESE SPECIFICATIONS.

1.06 QUALITY ASSURANCE

A. THE PUMPS AND PUMP STATION MANUFACTURER MUST BE ISO 9001:2008 REVISION CERTIFIED, WITH SCOPE OF REGISTRATION INCLUDING DESIGN CONTROL AND SERVICE AFTER SALES ACTIVITIES.

B. THE PUMPS AND PUMP STATION MANUFACTURER MUST BE REGISTERED TO THE ISO 14001 ENVIRONMENTAL MANAGEMENT SYSTEM STANDARD AND AS SUCH IS COMMITTED TO MINIMIZING THE IMPACT OF ITS ACTIVITIES ON THE ENVIRONMENT AND PROMOTING ENVIRONMENTAL SUSTAINABILITY BY THE USE OF BEST MANAGEMENT PRACTICES, TECHNOLOGICAL ADVANCES, PROMOTING ENVIRONMENTAL AWARENESS AND CONTINUAL IMPROVEMENT.

C. UPON REQUEST FROM THE ENGINEER, THE PUMP STATION MANUFACTURER SHALL PROVE FINANCIAL STABILITY AND ABILITY TO PRODUCE THE STATION WITHIN THE SPECIFIED DELIVERY SCHEDULES. EVIDENCE OF FACILITIES, EQUIPMENT AND EXPERTISE SHALL DEMONSTRATE THE MANUFACTURER'S COMMITMENT TO LONG TERM CUSTOMER SERVICE AND PRODUCT SUPPORT.

D. IN ORDER TO UNIFY RESPONSIBILITY FOR PROPER OPERATION, IT IS THE INTENT OF THESE SPECIFICATIONS THAT ALL SYSTEM COMPONENTS BE FURNISHED BY A SINGLE SUPPLIER (UNITARY SOURCE) AND THAT SOURCE SHALL BE THE PUMP MANUFACTURER. THE PUMPS MUST BE OF STANDARD CATALOG DESIGN, TOTALLY WARRANTED BY THE MANUFACTURER. UNDER NO CIRCUMSTANCES WILL A SYSTEM CONSISTING OF PARTS COMPILED AND ASSEMBLED BY A MANUFACTURER'S REPRESENTATIVE OR DISTRIBUTOR BE ACCEPTED.

E. MANUFACTURER MUST SHOW PROOF OF ORIGINAL PRODUCT DESIGN AND TESTING. PRODUCTS VIOLATING INTELLECTUAL PROPERTY REGULATIONS SHALL NOT BE ALLOWED, AS THEY MAY VIOLATE INTERNATIONAL LAW AND EXPOSE THE USER OR ENGINEER TO UNINTENDED LIABILITIES. "REVERSE-ENGINEERED" PRODUCTS FABRICATED TO SUBSTANTIALLY DUPLICATE THE DESIGN OF ORIGINAL PRODUCT SHALL NOT BE ALLOWED, AS THEY MAY CONTAIN SUBSTANTIAL DIFFERENCES IN TOLERANCES AND MATERIAL APPLICATIONS ADDRESSED IN THE ORIGINAL DESIGN, WHICH MAY CONTRIBUTE TO PRODUCT FAILURE.

F. THE TERM "PUMP MANUFACTURER" OR "PUMP STATION MANUFACTURER" SHALL BE DEFINED AS THE ENTITY WHICH DESIGNS, MACHINES, ASSEMBLES, HYDRAULICALLY TESTS AND WARRANTIES THE FINAL PRODUCT. ANY ENTITY THAT DOES NOT MEET THIS DEFINITION WILL NOT BE CONSIDERED A "PUMP MANUFACTURER" OR "PUMP STATION MANUFACTURER" AND IS NOT AN ACCEPTABLE SUPPLIER. FOR QUALITY CONTROL REASONS AND FUTURE PUMP AND PARTS AVAILABILITY, ALL MAJOR CASTINGS OF THE PUMP SHALL BE SOURCED AND MACHINED IN NORTH AMERICA.

G. PUMP PERFORMANCE CERTIFICATIONS

1. ALL INTERNAL PASSAGES, IMPELLER VANES, AND RECIRCULATION PORTS SHALL PASS A *???*" SPHERICAL SOLID. SMALLER INTERNAL PASSAGES THAT CREATE A MAINTENANCE NUISANCE OR INTERFERE WITH PRIMING AND PUMP PERFORMANCE SHALL NOT BE PERMITTED. UPON REQUEST FROM THE ENGINEER, MANUFACTURER'S CERTIFIED DRAWINGS SHOWING SIZE AND LOCATION OF THE RECIRCULATION PORT(S) SHALL BE SUBMITTED FOR APPROVAL.

2. REPRIME PERFORMANCE

a. CONSIDERATION SHALL BE GIVEN TO THE SANITARY SEWAGE SERVICE ANTICIPATED, IN WHICH DEBRIS IS EXPECTED TO LODGE BETWEEN THE SUCTION CHECK VALVE AND ITS SEAT, RESULTING IN THE LOSS OF THE PUMP SUCTION LEG, AND SIPHONING OF LIQUID FROM THE PUMP CASING TO THE APPROXIMATE CENTER LINE OF THE IMPELLER. SUCH OCCURRENCE SHALL BE CONSIDERED NORMAL, AND THE PUMP MUST BE CAPABLE OF AUTOMATIC, UNATTENDED OPERATION WITH AN AIR RELEASE LINE INSTALLED.

b. DURING UNATTENDED OPERATION, THE PUMP SHALL RETAIN ADEQUATE LIQUID IN THE CASING TO INSURE AUTOMATIC REPRIMING WHILE OPERATING AT ITS RATED SPEED IN A COMPLETELY OPEN SYSTEM. THE NEED FOR A SUCTION CHECK VALVE OR EXTERNAL PRIMING DEVICE SHALL NOT BE REQUIRED.

c. PUMP MUST BE CAPABLE OF REPRIMING 22 VERTICAL FEET AT THE SPECIFIED SPEED AND IMPELLER DIAMETER. REPRIME LIFT IS DEFINED AS THE STATIC HEIGHT OF THE PUMP SUCTION ABOVE THE LIQUID, WHILE OPERATING WITH ONLY ONE-HALF OF THE LIQUID REMAINING IN THE PUMP CASING. THE PUMP MUST REPRIME AND DELIVER FULL CAPACITY WITHIN FIVE MINUTES AFTER THE PUMP IS ENERGIZED IN THE REPRIME CONDITION. REPRIME PERFORMANCE MUST BE CONFIRMED WITH THE FOLLOWING TEST SET-UP:

1) A CHECK VALVE TO BE INSTALLED DOWN STREAM FROM THE PUMP DISCHARGE FLANGE. THE CHECK VALVE SIZE SHALL BE EQUAL (OR GREATER THAN) THE PUMP DISCHARGE DIAMETER.

2) A LENGTH OF AIR RELEASE PIPE SHALL BE INSTALLED BETWEEN PUMP AND THE DISCHARGE CHECK VALVE. THIS LINE SHALL BE OPEN TO ATMOSPHERE AT ALL TIMES DUPLICATING THE AIR DISPLACEMENT RATE ANTICIPATED AT A TYPICAL PUMP STATION FITTED WITH AN AIR RELEASE VALVE.

3)THE PUMP SUCTION CHECK VALVE SHALL BE REMOVED. NO RESTRICTIONS IN THE PUMP OR SUCTION PIPING WILL PREVENT THE SIPHON DROP OF THE SUCTION LEG. SUCTION PIPE CONFIGURATION FOR REPRIME TEST SHALL INCORPORATE A 2 FEET MINIMUM HORIZONTAL RUN, A 90 DEGREE ELBOW AND VERTICAL RUN AT THE SPECIFIED LIFT. PIPE SIZE SHALL BE EQUAL TO THE PUMP SUCTION DIAMETER.

4) IMPELLER CLEARANCES SHALL BE SET AS RECOMMENDED IN THE PUMP SERVICE MANUAL.

5) REPEATABILITY OF PERFORMANCE SHALL BE DEMONSTRATED BY TESTING FIVE CONSECUTIVE REPRIME CYCLES. FULL PUMP CAPACITY (FLOW) SHALL BE ACHIEVED WITHIN FIVE MINUTES DURING EACH CYCLE.

6) LIQUID TO BE USED FOR REPRIME TEST SHALL BE WATER.

3. UPON REQUEST FROM THE ENGINEER, CERTIFIED REPRIME PERFORMANCE TEST RESULTS, PREPARED BY THE MANUFACTURER, AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED FOR APPROVAL PRIOR TO SHIPMENT.

H. CERTIFIED PUMP PERFORMANCE TEST

1. TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH HYDRAULIC INSTITUTE STANDARDS 14.6.3.4 ACCEPTANCE GRADE 2B AT THE SPECIFIED HEAD, CAPACITY, RATED SPEED AND HORSEPOWER. THE PERFORMANCE TESTS WILL VALIDATE THE CORRECT PERFORMANCE OF THE EQUIPMENT AT THE DESIGN HEAD, CAPACITY AND SPEED.

2. FOR PUMPS UTILIZING UP TO (13 HP) MOTORS; BUT LARGER THAN (1.3 HP), TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH HYDRAULIC INSTITUTE STANDARDS 14.6.3.4.1, AS THE SPECIFIED HEAD, CAPACITY, RATED SPEED AND HORSEPOWER.

I. FACTORY SYSTEM TEST

1. ALL INTERNAL COMPONENTS INCLUDING THE PUMPS, MOTORS, VALVES, PIPING AND CONTROLS WILL BE TESTED AS A COMPLETE WORKING SYSTEM AT THE MANUFACTURER'S FACILITY. TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH HYDRAULIC INSTITUTE STANDARDS AT THE SPECIFIED HEAD, CAPACITY, RATED SPEED AND HORSEPOWER. FACTORY OPERATIONAL TEST SHALL SIMULATE ACTUAL PERFORMANCE ANTICIPATED FOR THE COMPLETE STATION.

2. UPON REQUEST FROM THE ENGINEER, THE OPERATIONAL TEST MAY BE WITNESSED BY THE ENGINEER, AND/OR REPRESENTATIVES OF HIS CHOICE, AT THE MANUFACTURER'S FACILITY.

J. THE MANUFACTURER'S TECHNICAL REPRESENTATIVE SHALL INSPECT THE COMPLETED INSTALLATION, CORRECT OR SUPERVISE THE CORRECTION OF ANY DEFECT OR MALFUNCTION, AND INSTRUCT OPERATING PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF THE EQUIPMENT AS DESCRIBED IN PART 3 OF THIS SECTION.

1.07 MANUFACTURER'S WARRANTY

A. THE PUMP STATION MANUFACTURER SHALL WARRANT ALL EQUIPMENT TO BE OF QUALITY CONSTRUCTION, FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP. A WRITTEN WARRANTY SHALL INCLUDE SPECIFIC DETAILS DESCRIBED BELOW.

1. IN ADDITION TO DEFECTS IN MATERIAL AND WORKMANSHIP, FIBERGLASS REINFORCED POLYESTER STATION ENCLOSURES ARE WARRANTED FOR SIXTY (60) MONTHS TO BE RESISTANT TO RUST, CORROSION, CORROSIVE SOILS, EFFECTS OF AIRBORNE CONTAMINATION OR PHYSICAL FAILURES OCCURRING IN NORMAL SERVICE FOR THE PERIOD OF THE PUMP STATION WARRANTY.

2. ALL OTHER EQUIPMENT, APPARATUS, AND PARTS FURNISHED SHALL BE WARRANTED FOR SIXTY (60) MONTHS, EXCEPTING ONLY THOSE ITEMS THAT ARE NORMALLY CONSUMED IN SERVICE, SUCH AS LIGHT BULBS, OILS, GREASE, PACKING, GASKETS, O RINGS, ETC. THE PUMP STATION MANUFACTURER SHALL BE SOLELY RESPONSIBLE FOR WARRANTY OF THE STATION AND ALL COMPONENTS.

B. COMPONENTS FAILING TO PERFORM AS SPECIFIED BY THE ENGINEER, OR AS REPRESENTED BY THE MANUFACTURER, OR AS PROVEN DEFECTIVE IN SERVICE DURING THE WARRANTY PERIOD, SHALL BE REPLACED, REPAIRED, OR SATISFACTORILY MODIFIED BY THE MANUFACTURER.

C. IT IS NOT INTENDED THAT THE STATION MANUFACTURER ASSUME LIABILITY FOR CONSEQUENTIAL DAMAGES OR CONTINGENT LIABILITIES ARISING FROM FAILURE OF ANY VENDOR SUPPLIED PRODUCT OR PART WHICH FAILS TO PROPERLY OPERATE, HOWEVER CAUSED. CONSEQUENTIAL DAMAGES RESULTING FROM DEFECTS IN DESIGN, OR DELAYS IN DELIVERY ARE ALSO BEYOND THE MANUFACTURER'S SCOPE OF LIABILITY.

D. EQUIPMENT SUPPLIED BY OTHERS AND INCORPORATED INTO A PUMP STATION OR ENCLOSURE IS NOT COVERED BY THIS LIMITED WARRANTY. ANY WARRANTY APPLICABLE TO EQUIPMENT SELECTED OR SUPPLIED BY OTHERS WILL BE LIMITED SOLELY TO THE WARRANTY, IF ANY, PROVIDED BY THE MANUFACTURER OF THE EQUIPMENT.

E. THIS LIMITED WARRANTY SHALL BE VALID ONLY WHEN INSTALLATION IS MADE AND USE AND MAINTENANCE IS PERFORMED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. A START-UP REPORT COMPETED BY AN AUTHORIZED MANUFACTURER'S REPRESENTATIVE MUST BE RECEIVED BY MANUFACTURER WITHIN THIRTY (30) DAYS OF THE INITIAL DATE THE UNIT IS PLACED INTO SERVICE. THE WARRANTY SHALL BECOME EFFECTIVE ON THE DATE OF ACCEPTANCE BY THE PURCHASER OR THE PURCHASER'S AUTHORIZED AGENT, OR SIXTY (60) DAYS AFTER INSTALLATION, OR NINETY (90) DAYS AFTER SHIPMENT FROM THE FACTORY, WHICHEVER OCCURS FIRST.

PART 2 - PRODUCT

2.01 UNITARY RESPONSIBILITY

A. IN ORDER TO UNIFY RESPONSIBILITY FOR PROPER OPERATION OF THE COMPLETE PUMPING STATION, IT IS THE INTENT OF THESE SPECIFICATIONS THAT ALL SYSTEM COMPONENTS BE FURNISHED BY A SINGLE SUPPLIER (UNITARY SOURCE). THE PUMPING STATION MUST BE OF STANDARD CATALOG DESIGN, TOTALLY WARRANTED BY THE MANUFACTURER. UNDER NO CIRCUMSTANCES WILL A SYSTEM CONSISTING OF PARTS COMPILED AND ASSEMBLED BY A MANUFACTURER'S REPRESENTATIVE OR DISTRIBUTOR BE ACCEPTED.

2.02 MANUFACTURER

A. THE PUMP STATION SYSTEM INTEGRATOR MUST BE ISO 9001:2000 REVISION CERTIFIED, WITH SCOPE OF REGISTRATION INCLUDING DESIGN CONTROL AND SERVICE AFTER SALES ACTIVITIES.

B. THE SPECIFICATIONS AND PROJECT DRAWINGS DEPICT EQUIPMENT AND MATERIALS MANUFACTURED BY GIVEN MANUFACTURERS WHICH ARE DEEMED MOST SUITABLE FOR THE SERVICE ANTICIPATED. IT IS NOT INTENDED, HOWEVER, TO ELIMINATE OTHER PRODUCTS OF EQUAL QUALITY AND PERFORMANCE. THE CONTRACTOR SHALL PREPARE HIS/HER BID BASED ON THE SPECIFIED EQUIPMENT FOR PURPOSES OF DETERMINING LOW BID. AWARD OF A CONTRACT SHALL CONSTITUTE AN OBLIGATION TO FURNISH THE SPECIFIED EQUIPMENT AND MATERIALS OR FURNISH EQUIPMENT AND MATERIALS EQUAL TO THE SPECIFIED EQUIPMENT AND MATERIALS.

C. PRIOR TO THE OPENING OF PROPOSALS, THE CONTRACTOR MAY OFFER SUBSTITUTIONS TO THE SPECIFIED EQUIPMENT FOR CONSIDERATION. THE SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER A MINIMUM OF 14 DAYS PRIOR TO THE BID OPENING. THE EQUIPMENT PROPOSED FOR SUBSTITUTION MUST BE EQUAL IN CONSTRUCTION AND PERFORMANCE TO THAT SPECIFIED IN THE CONTRACT.

D. IN EVENT THE CONTRACTOR OBTAINS ENGINEER'S APPROVAL FOR EQUIPMENT SUBSTITUTION, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE ALL RESULTING CHANGES TO THE ENCLOSURES, BUILDINGS, PIPING OR ELECTRICAL SYSTEMS AS REQUIRED TO ACCOMMODATE THE PROPOSED EQUIPMENT. REVISED DETAIL DRAWINGS ILLUSTRATING THE SUBSTITUTED EQUIPMENT SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO ACCEPTANCE.

E. IT WILL BE ASSUMED THAT IF THE COST TO THE CONTRACTOR IS LESS FOR THE PROPOSED SUBSTITUTION, THEN THE CONTRACT PRICE SHALL BE REDUCED BY AN AMOUNT EQUAL TO THE SAVINGS.

2.03 STATION ENCLOSURE

A. THE STATION ENCLOSURE SHALL PROVIDE SUFFICIENT INSIDE AREA FOR MAINTENANCE PERSONNEL TO PERFORM NORMAL OPERATION AND MAINTENANCE INSIDE, SHELTERED, AND FREE FROM FOUL WEATHER. THE ENCLOSURE SHALL CONSIST OF A BASE TO SUPPORT THE PUMPS AND A COVER THAT CAN BE MOVED WITHOUT LIFTING. MINIMUM DIMENSIONS OF THE ENCLOSURE SHALL BE SEVEN FEET BY TEN FEET AND SIX FEET IN HEIGHT.

B. THE STATION ENCLOSURE SHALL BE MANUFACTURED OF MOLDED FIBERGLASS REINFORCED ORTHOPHTHALIC POLYESTER RESINS WITH A MINIMUM OF 30% FIBERGLASS, AND A MAXIMUM OF 70% RESIN. GLASS FIBERS SHALL HAVE A MINIMUM AVERAGE LENGTH OF 1¼ INCHES. RESIN FILLERS OR EXTENDERS SHALL NOT BE USED. MAJOR DESIGN CONSIDERATIONS SHALL BE GIVEN TO STRUCTURAL STABILITY, CORROSION RESISTANCE, AND WATER TIGHT PROPERTIES. THE POLYESTER LAMINATES SHALL PROVIDE A BALANCE OF MECHANICAL, CHEMICAL, AND ELECTRICAL PROPERTIES TO INSURE LONG MAINTENANCE FREE LIFE. THEY MUST BE IMPERVIOUS TO MICRO ORGANISMS, MILDEW, MOLD, FUNGUS, CORROSIVE LIQUIDS, AND GASES WHICH CAN REASONABLY BE EXPECTED TO BE PRESENT IN THE ENVIRONMENT SURROUNDING THE WET WELL. WOOD CORE TYPE ENCLOSURES SHALL NOT BE CONSIDERED ACCEPTABLE AND SHALL BE BASIS FOR EQUIPMENT REJECTION. SEE MANUFACTURER'S REQUIREMENTS FOR ENCLOSURE WARRANTY IN THESE SPECIFICATIONS.

C. ALL INTERIOR SURFACES OF THE HOUSING SHALL BE GEL COATED WITH A POLYESTER RESIN. IT SHALL BE OF SUITABLE THICKNESS AND FORMULATED TO PROVIDE:

1. MAINTENANCE FREE SERVICE
2. ABRASION RESISTANCE
3. PROTECTION FROM SEWAGE, GREASES, OILS, GASOLINE, AND OTHER COMMON CHEMICALS.
4. COLOR FASTNESS
5. GLOSS RETENTION

D. INTERIOR SURFACES OF THE ENCLOSURE COVER AND END PANELS SHALL BE WHITE FOR MAXIMUM LIGHT REFLECTIVITY. THE BASE SHALL BE OF A DARKER COLOR TO DE EMPHASIZE THE PRESENCE OF DIRT, GREASE, ETC. COLORS USED FOR BOTH PORTIONS SHALL RESULT IN A PLEASING LOOKING STRUCTURE.

E. THE OUTSIDE OF THE ENCLOSURE SHALL BE COATED WITH A SUITABLE PIGMENTED RESIN COMPOUND TO INSURE LONG, MAINTENANCE FREE LIFE. THE FIBERGLASS ENCLOSURE SHALL BE A REGULAR PRODUCT OF THE PUMP STATION MANUFACTURER.

F. STATION BASE SHALL BE CONSTRUCTED WITH A COMPLETELY ENCAPSULATED STRUCTURAL STEEL FRAME FOR CORROSION PROTECTION. FRAME SHALL PROVIDE ADEQUATE STRUCTURAL SUPPORT FOR PUMPS, MOTORS, AND PIPING. THE ENCAPSULATED FRAME SHALL EXTEND TO LIFT POINTS PROVIDED AND ASSURE ADEQUATE STRENGTH TO RESIST DEFORMATION OF STRUCTURE DURING SHIPPING, LIFTING, OR HANDLING. THE STRUCTURAL STEEL BASE SHALL BE COMPLETELY ENCAPSULATED WITHIN A MOLDED FIBERGLASS REINFORCED POLYESTER BASE SHELL. WALL THICKNESS SHALL BE A MINIMUM OF 3/16 INCH AND BASE HEIGHT A MINIMUM OF 5 INCHES TO PROVIDE NATURAL DRAINAGE OF PUMP STATION FLOOR TO CONCRETE PAD. INTERIOR OF BASE SHALL BE FILLED WITH A FOAMED IN PLACE RIGID POLYURETHANE STRUCTURAL FOAM. FOAM SHALL BE OF CLOSED CELL TYPE WITH A MINIMUM DENSITY OF 2.5 POUNDS/CUBIC FEET TO GIVE ADEQUATE FLOOR SUPPORT FOR MAINTENANCE PERSONNEL AND FOR HANDLING OF EQUIPMENT.

G. HOLES THROUGH THE BASE SHALL BE PROVIDED FOR SUCTION AND DISCHARGE LINES, AIR RELEASE LINES, AND LEVEL CONTROL LINE. HOLES FOR THE SUCTION AND DISCHARGE LINES SHALL BE PROVIDED WITH A GROUT DAM INCORPORATED IN A GROUT RETENTION CAVITY WHICH THE CONTRACTOR SHALL FILL AT INSTALLATION WITH SUITABLE GROUT TO SEAL EACH PIPE TO BASE JOINT AGAINST THE ENTRANCE OF HAZARDOUS GASES FROM THE WET WELL.

H. STATION BASE SHALL INCORPORATE A SUITABLE FLANGE DESIGNED FOR SECURING THE PUMP STATION TO THE CONCRETE PAD IN ACCORDANCE WITH THE MANUFACTURERS APPROVED SHOP DRAWINGS.

I. THE ENCLOSURE COVER SHALL BE MOVABLE WITHOUT LIFTING TO PERMIT OVERHEAD ACCESS TO EITHER HALF OF THE STATION INTERIOR AND SHALL BE COMPLETELY REMOVABLE. A HASP AND STAPLE LOCKING DEVICE SHALL BE PROVIDED TO SECURE THE ENCLOSURE OVER THE STATION BASE. SUITABLE GASKETING SHALL BE PROVIDED BETWEEN THE ENCLOSURE COVER AND END PANELS AND BASE FOR PROTECTION FROM THE ELEMENTS.

J. THE ENCLOSURE COVER SHALL BE PROVIDED WITH A HINGED FIBERGLASS REINFORCED ACCESS DOOR. MINIMUM DIMENSIONS OF THE DOOR SHALL BE 27 INCHES WIDE BY 56 INCHES HIGH FOR ACCESS BY MAINTENANCE PERSONNEL TO STATION INTERIOR. DOOR SHALL BE A MINIMUM 5/8 INCH THICK AND SHALL BE HINGED WITH A FULL LENGTH STAINLESS STEEL PIANO HINGE TO A FULL PERIMETER ALUMINUM DOOR CASING SECURED TO THE ENCLOSURE COVER. SUCH DOOR CASING SHALL INCORPORATE A SUITABLE DRIP SHIELD OVER THE OPENING. DOOR SHALL BE FURNISHED WITH A LOCKING HANDLE CONNECTED TO A THREE POINT LATCHING MECHANISM. LATCH SHALL ENGAGE DOOR CASING AT TOP, SIDE AND BOTTOM FOR MAXIMUM SECURITY AGAINST VANDALISM. ALL MOUNTING HARDWARE FOR DOOR CASING AND DOOR MUST BE CONCEALED OR OF SUCH TYPE AS TO PREVENT VANDALISM WITH ORDINARY TOOLS.

K. A DUPLEX GROUND FAULT INDICATING UTILITY RECEPTACLE PROVIDING 115 VOLTS, SINGLE PHASE, 60 HERTZ SHALL BE MOUNTED INSIDE THE PUMP STATION. RECEPTACLE SHALL BE NEMA 5-15R CONFIGURATION, HEAVY DUTY, SPECIFICATION GRADE AND FITTED WITH A WEATHERPROOF COVER. THE RECEPTACLE SHALL BE PROTECTED BY NORMAL DUTY CIRCUIT BREAKER.

L. A SHUTTERED EXHAUST FAN WITH A MINIMUM CAPACITY OF 500 CFM TO CHANGE THE AIR IN THE ENCLOSURE ONCE EVERY MINUTE, SHALL BE MOUNTED IN ONE END WALL. IN THE WALL APPROXIMATELY OPPOSITE TO THIS END PANEL SHALL BE MOUNTED AN AIR INTAKE. BOTH INTAKE AND EXHAUST OPENING SHALL BE EQUIPPED WITH A SCREEN AND COWL SUITABLY DESIGNED TO PREVENT THE ENTRANCE OF RAIN, SNOW, ROCKS, AND OTHER FOREIGN MATERIAL. THE THERMOSTATICALLY CONTROLLED EXHAUST FAN SHALL ENERGIZE AUTOMATICALLY AT APPROXIMATELY 70 DEGREES F, AND TURN OFF AT 55 DEGREES F. FAN CIRCUIT SHALL BE PROTECTED BY A NORMAL DUTY CIRCUIT BREAKER.

M. AN ENCLOSED AND GASKETED 200 WATT LIGHT FIXTURE SHALL BE PROVIDED. THE FIXTURE SHALL BE VAPOR TIGHT, UNIVERSAL TYPE. THE FIXTURE SHALL BE CENTRALLY LOCATED TO PROVIDE ADEQUATE LIGHT TO ALL PARTS OF THE STATION AND SHALL NOT CONSTITUTE A PHYSICAL HAZARD TO INSPECTION OR SERVICE PERSONNEL. LIGHT CIRCUIT SHALL BE PROTECTED BY A NORMAL DUTY CIRCUIT BREAKER AND SHALL BE PROVIDED WITH A DISCONNECT SWITCH.

2.04 PUMP DESIGN

A. PUMPS SHALL BE HORIZONTAL, SELF-PRIMING CENTRIFUGAL TYPE, DESIGNED SPECIFICALLY FOR HANDLING RAW, UNSCREENED, DOMESTIC SANITARY SEWAGE. PUMP SOLIDS HANDLING CAPABILITY AND PERFORMANCE CRITERIA SHALL BE IN ACCORDANCE WITH REQUIREMENTS LISTED UNDER PART 1 - GENERAL OF THIS SECTION.

B. THE MANUFACTURER OF THE PUMPS MUST BE ISO 9001:2000 REVISION CERTIFIED, WITH SCOPE OF REGISTRATION INCLUDING DESIGN CONTROL AND SERVICE AFTER SALES ACTIVITIES.

C. MATERIALS AND CONSTRUCTION FEATURES

1. PUMP CASING: CASING SHALL BE CAST IRON CLASS 30 WITH INTEGRAL VOLUTE SCROLL. CASING SHALL INCORPORATE FOLLOWING FEATURES:

a. MOUNTING FEET SIZED TO PREVENT TIPPING OR BINDING WHEN PUMP IS COMPLETELY DISASSEMBLED FOR MAINTENANCE.

b. FILL PORT COVERPLATE, 3 1/2" DIAMETER, SHALL BE OPENED AFTER LOOSENING A HAND NUT/CLAMP BAR ASSEMBLY. IN CONSIDERATION FOR SAFETY, HAND NUT THREADS MUST PROVIDE SLOW RELEASE OF PRESSURE, AND THE CLAMP BAR SHALL BE RETAINED BY DETENTE LUGS. A TEFLON GASKET SHALL PREVENT ADHESION OF THE FILL PORT COVER TO THE CASING.

c. CASING DRAIN PLUG SHALL BE AT LEAST 1 1/4" NPT TO INSURE COMPLETE AND RAPID DRAINING.

d. LIQUID VOLUME AND RECIRCULATION PORT DESIGN SHALL BE CONSISTENT WITH PERFORMANCE CRITERIA LISTED UNDER PART 1 - GENERAL OF THIS SECTION.

PLAN CHECK OVERSIGHT ENGINEER | REGISTRATION NUMBER | DATE SIGNED

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT
DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 811
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

The private engineer signing these plans is responsible for assuring the accuracy and acceptability of the design hereon. In the event of discrepancies arising after county approval or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for approval by the county.

MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				COUNTY	

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — CIVIL — STATE OF CALIFORNIA

The Holt Group, Inc.
ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING
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PREPARED BY:
R.C.E. NO. 27943
DATE 07/24/2020

BENCHMARK:
SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:______ V:______

M______ IP ______
THG #852.003
MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT IN COUNTY OF RIVERSIDE, CALIFORNIA

SANITARY SEWER PUMP STATION SPECIFICATIONS

FOR: | W.O. | COUNTY FILE NO.

SHEET NO. C-DD-10

2. COVERPLATE: THE COVERPLATE SHALL BE CAST IRON CLASS 30. DESIGN MUST INCORPORATE FOLLOWING MAINTENANCE FEATURES:

a. RETAINED BY HAND NUTS FOR COMPLETE ACCESS TO PUMP INTERIOR. COVERPLATE REMOVAL MUST PROVIDE AMPLE CLEARANCE FOR REMOVAL OF STOPPAGES, AND ALLOW SERVICE TO THE IMPELLER, SEAL, WEARPLATE OR CHECK VALVE WITHOUT REMOVING SUCTION OR DISCHARGE PIPING.

b. A REPLACEABLE WEARPLATE SECURED TO THE COVERPLATE BY WELD STUDS AND NUTS SHALL BE AISI 1015 HRS.

c. IN CONSIDERATION FOR SAFETY, A PRESSURE RELIEF VALVE SHALL BE SUPPLIED IN THE COVERPLATE. RELIEF VALVE SHALL OPEN AT 75-200 PSI.

d. TWO O-RINGS OF BUNA-N MATERIAL SHALL SEAL COVERPLATE TO PUMP CASING.

e. PUSHER BOLT CAPABILITY TO ASSIST IN REMOVAL OF COVERPLATE. PUSHER BOLT THREADED HOLES SHALL BE SIZED TO ACCEPT SAME RETAINING CAPSCREWS AS USED IN ROTATING ASSEMBLY.

f. EASY-GRIP HANDLE SHALL BE MOUNTED TO FACE OF COVERPLATE.

3. ROTATING ASSEMBLY: A ROTATING ASSEMBLY, WHICH INCLUDES IMPELLER, SHAFT, MECHANICAL SHAFT SEAL, LIP SEALS, BEARINGS, SEALPLATE AND BEARING HOUSING, MUST BE REMOVABLE AS A SINGLE UNIT WITHOUT DISTURBING THE PUMP CASING OR PIPING. DESIGN SHALL INCORPORATE FOLLOWING FEATURES:

a. SEALPLATE AND BEARING HOUSING SHALL BE CAST IRON CLASS 30. SEPARATE OIL FILLED CAVITIES, VENTED TO ATMOSPHERE, SHALL BE PROVIDED FOR SHAFT SEAL AND BEARINGS. CAVITIES MUST BE COOLED BY THE LIQUID PUMPED. THREE LIP SEALS WILL PREVENT LEAKAGE OF OIL.

1) THE BEARING CAVITY SHALL HAVE AN OIL LEVEL SIGHT GAUGE AND FILL PLUG CHECK VALVE. THE CLEAR SIGHT GAUGE SHALL PROVIDE EASY MONITORING OF THE BEARING CAVITY OIL LEVEL AND CONDITION OF OIL WITHOUT REMOVAL OF THE FILL PLUG CHECK VALVE. THE CHECK VALVE SHALL VENT THE CAVITY BUT PREVENT INTRODUCTION OF MOIST AIR TO THE BEARINGS.

2) THE SEAL CAVITY SHALL HAVE AN OIL LEVEL SIGHT GAUGE AND FILL/VENT PLUG. THE CLEAR SIGHT GAUGE SHALL PROVIDE EASY MONITORING OF THE SEAL CAVITY OIL LEVEL AND CONDITION OF OIL WITHOUT REMOVAL OF THE FILL/VENT PLUG.

3) DOUBLE LIP SEAL SHALL PROVIDE AN ATMOSPHERIC PATH PROVIDING POSITIVE PROTECTION OF BEARINGS, WITH CAPABILITY FOR EXTERNAL DRAINAGE MONITORING.

b. IMPELLER SHALL BE DUCTILE IRON, TWO-VANE, SEMI-OPEN, NON-CLOG, WITH INTEGRAL PUMP OUT VANES ON THE BACK SHROUD. IMPELLER SHALL THREAD ONTO THE PUMP SHAFT AND BE SECURED WITH A LOCKSCREW AND CONICAL WASHER.

c. SHAFT SHALL BE AISI 4140 ALLOY STEEL UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, IN WHICH CASE AISI 17-4 PH STAINLESS STEEL SHALL BE SUPPLIED.

d. BEARINGS SHALL BE ANTI-FRICTION BALL TYPE OF PROPER SIZE AND DESIGN TO WITHSTAND ALL RADIAL AND THRUST LOADS EXPECTED DURING NORMAL OPERATION. BEARINGS SHALL BE OIL LUBRICATED FROM A DEDICATED RESERVOIR. PUMP DESIGNS WHICH USE THE SAME OIL TO LUBRICATE THE BEARINGS AND SHAFT SEAL SHALL NOT BE ACCEPTABLE.

e. SHAFT SEAL SHALL BE OIL LUBRICATED MECHANICAL TYPE. THE STATIONARY AND ROTATING SEAL FACES SHALL BE TUNGSTEN TITANIUM CARBIDE ALLOY. EACH MATING SURFACE SHALL BE LAPPED TO WITHIN THREE LIGHT BANDS FLATNESS (35 MILLIONTHS OF AN INCH), AS MEASURED BY AN OPTICAL FLAT UNDER MONOCHROMATIC LIGHT. THE STATIONARY SEAL SEAT SHALL BE DOUBLE FLOATING BY VIRTUE OF A DUAL O-RING DESIGN; AN EXTERNAL O-RING SECURES THE STATIONARY SEAT TO THE SEALPLATE, AND AN INTERNAL O-RING HOLDS THE FACES IN ALIGNMENT DURING PERIODS OF MECHANICAL OR HYDRAULIC SHOCK (LOADS WHICH CAUSE SHAFT DEFLECTION, VIBRATION, AND AXIAL/RADIAL MOVEMENT). ELASTOMERS SHALL BE VITON. CAGE AND SPRING TO BE STAINLESS STEEL. SEAL SHALL BE OIL LUBRICATED FROM A DEDICATED RESERVOIR. THE SAME OIL SHALL NOT LUBRICATE BOTH SHAFT SEAL AND SHAFT BEARINGS. SEAL SHALL BE WARRANTED IN ACCORDANCE WITH REQUIREMENTS LISTED UNDER PART 1 - GENERAL OF THIS SECTION.

f. PUSHER BOLT CAPABILITY TO ASSIST IN REMOVAL OF ROTATING ASSEMBLY. PUSHER BOLT THREADED HOLES SHALL BE SIZED TO ACCEPT SAME CAPSCREWS AS USED FOR RETAINING ROTATING ASSEMBLY.

4. ADJUSTMENT OF THE IMPELLER FACE CLEARANCE (DISTANCE BETWEEN IMPELLER AND WEARPLATE) SHALL BE ACCOMPLISHED BY EXTERNAL MEANS.

a. CLEARANCES SHALL BE MAINTAINED BY A FOUR POINT EXTERNAL SHIMLESS COVERPLATE ADJUSTMENT SYSTEM, UTILIZING A FOUR COLLAR AND FOUR ADJUSTING SCREW DESIGN ALLOWING FOR INCREMENTAL ADJUSTMENT OF CLEARANCES BY HAND AS REQUIRED. EACH OF THE FOUR POINTS SHALL BE LOCKABLE TO PREVENT INADVERTENT CLEARANCE INCREASES OR DECREASES DUE TO EQUIPMENT VIBRATION OR ACCIDENTAL OPERATOR CONTACT. THE FOUR POINT SYSTEM ALSO ALLOWS FOR EQUAL CLEARANCE GAPS AT ALL POINTS BETWEEN THE IMPELLER AND WEAR PLATE. REQUIREMENT OF REALIGNMENT OF BELTS, COUPLINGS, ETC., SHALL NOT BE ACCEPTABLE. COVERPLATE SHALL BE CAPABLE OF BEING REMOVED WITHOUT DISTURBING CLEARANCE SETTINGS. CLEARANCE ADJUSTMENT SYSTEMS THAT UTILIZE LESS THAN FOUR POINTS WILL NOT BE CONSIDERED.

b. THERE SHALL BE PROVISIONS FOR ADDITIONAL CLEARANCE ADJUSTMENT IN THE EVENT THAT ADJUSTMENT TOLERANCES HAVE BEEN DEPLETED FROM THE COVERPLATE SIDE OF THE PUMP. THE REMOVAL OF STAINLESS STEEL SHIMS FROM THE ROTATING ASSEMBLY SIDE OF THE PUMP SHALL ALLOW FOR FURTHER ADJUSTMENT AS DESCRIBED ABOVE

c. CLEARANCE ADJUSTMENT WHICH REQUIRES MOVEMENT OF THE SHAFT ONLY, THEREBY ADVERSELY AFFECTING SEAL WORKING LENGTH OR IMPELLER BACK CLEARANCE, SHALL NOT BE ACCEPTABLE.

5. SUCTION CHECK VALVE SHALL BE MOLDED NEOPRENE WITH INTEGRAL STEEL AND NYLON REINFORCEMENT. A BLOW-OUT CENTER SHALL PROTECT PUMP CASING FROM HYDRAULIC SHOCK OR EXCESSIVE PRESSURE. REMOVAL OR INSTALLATION OF THE CHECK VALVE MUST BE ACCOMPLISHED THROUGH THE COVERPLATE OPENING, WITHOUT DISTURBING THE SUCTION PIPING. SOLE FUNCTION OF CHECK VALVE SHALL BE TO SAVE ENERGY BY ELIMINATING NEED TO REPRIME AFTER EACH PUMPING CYCLE. PUMPS REQUIRING A SUCTION CHECK VALVE TO ASSIST REPRIME WILL NOT BE ACCEPTABLE.

6. SPOOL FLANGES SHALL BE ONE-PIECE CAST IRON, CLASS 30 FITTED TO SUCTION AND/OR DISCHARGE PORTS. EACH SPOOL SHALL HAVE ONE 1-1/4" NPT AND ONE 1/4" NPT TAPPED HOLE WITH PIPE PLUGS FOR MOUNTING GAUGES OR OTHER EQUIPMENT.

D. SERVICEABILITY

NO SPECIAL TOOLS SHALL BE REQUIRED FOR REPLACEMENT OF ANY COMPONENTS WITHIN THE PUMP.

E. DRAIN KIT:

PUMPS TO BE SUPPLIED WITH A DRAIN KIT FOR EASE OF MAINTENANCE. THE KIT TO CONTAIN 10' LENGTH OF REINFORCED PLASTIC HOSE WITH A FEMALE QUICK CONNECT FITTING AT ONE END, AND FACTORY INSTALLED DRAIN FITTINGS IN EACH PUMP. FITTINGS INCLUDE A STAINLESS STEEL PIPE NIPPLE, STAINLESS STEEL BUSHING, STAINLESS STEEL BALL VALVE AND ALUMINUM MALE QUICK CONNECT FITTING.

F. SPARE PARTS KIT:

1. THE FOLLOWING MINIMUM SPARE PARTS SHALL BE FURNISHED WITH THE PUMP STATION:

a. ONE SPARE PUMP MECHANICAL SEAL (COMPLETE WITH SHAFT SLEEVE)
b. ONE COVER PLATE O-RING
c. ONE ROTATING ASSEMBLY O-RING
d. ONE SET OF ROTATING ASSEMBLY SPACERS

2.05 VALVES AND PIPING:

A. EACH PUMP SHALL BE EQUIPPED WITH A FULL FLOW TYPE CHECK VALVE CAPABLE OF PASSING A 3" SPHERICAL SOLID. VALVE SHALL BE CONSTRUCTED WITH FLANGED ENDS AND FITTED WITH AN EXTERNAL LEVER AND TORSIONAL SPRING. VALVE SEAT SHALL BE CONSTRUCTED OF STAINLESS STEEL, SECURED TO THE BODY TO ENSURE CONCENTRICITY, SEALED BY AN O RING, AND SHALL BE REPLACEABLE. THE VALVE BODY SHALL BE CAST IRON INCORPORATING A CLEAN OUT PORT LARGE ENOUGH TO ALLOW REMOVAL AND/OR REPLACEMENT OF THE VALVE CLAPPER WITHOUT REMOVING VALVE OR PIPING FROM THE LINE. VALVE CLAPPER SHALL HAVE A MOLDED NEOPRENE SEATING SURFACE INCORPORATING LOW PRESSURE SEALING RINGS. VALVE HINGE PIN AND INTERNAL HINGE ARM SHALL BE STAINLESS STEEL SUPPORTED ON EACH END IN BRASS BUSHINGS. SHAFT NUT SHALL HAVE DOUBLE O RINGS WHICH SHALL BE SHALL BE EASILY REPLACEABLE WITHOUT REQUIRING ACCESS TO INTERIOR OF VALVE BODY. ALL INTERNAL HARDWARE SHALL BE STAINLESS STEEL. VALVE SHALL BE RATED AT 175 PSI WATER WORKING PRESSURE, 350 PSI HYDROSTATIC TEST PRESSURE. VALVES OTHER THAN FULL FLOW TYPE OR VALVES MOUNTED IN SUCH A MANNER THAT PREVENTS THE PASSAGE OF A 3" SPHERICAL SOLID SHALL NOT BE ACCEPTABLE.

B. PLUG VALVES SHALL BE OF THE NON LUBRICATED, TAPERED TYPE. VALVE BODY SHALL BE SEMI STEEL WITH FLANGED END CONNECTION DRILLED TO ANSI 125 LB. STANDARD. VALVES SHALL HAVE PORTS DESIGNED TO PASS SPHERICAL SOLIDS EQUAL TO THE PUMPS CAPABILITY. VALVES SHALL BE FURNISHED WITH A DRIP TIGHT SHUTOFF PLUG MOUNTED IN STAINLESS STEEL OR TEFLON OVER PHENOLIC BEARINGS, AND SHALL HAVE A RESILIENT FACING BONDED TO THE SEALING SURFACE.

C. AUTOMATIC AIR RELEASE VALVES:

1. AN AUTOMATIC AIR RELEASE VALVE SHALL BE FURNISHED FOR EACH PUMP DESIGNED TO PERMIT THE ESCAPE OF AIR TO THE ATMOSPHERE DURING INITIAL PRIMING OR UNATTENDED REPRIMING CYCLES. UPON COMPLETION OF THE PRIMING CYCLE OR REPRIMING CYCLE, THE VALVE SHALL CLOSE TO PREVENT RECIRCULATION. VALVES SHALL PROVIDE VISUAL INDICATION OF VALVE CLOSURE, AND SHALL OPERATE SOLELY ON DISCHARGE PRESSURE. VALVES WHICH REQUIRE CONNECTION TO THE SUCTION LINE SHALL NOT BE ACCEPTABLE.

2. ALL VALVE PARTS EXPOSED TO SEWAGE SHALL BE CONSTRUCTED OF 316 STAINLESS STEEL, OR SIMILAR CORROSION RESISTANT MATERIALS. DIAPHRAGMS, IF USED, SHALL BE OF FABRIC REINFORCED NEOPRENE OR SIMILAR INERT MATERIAL.

3. A CLEANOUT PORT, THREE INCHES IN DIAMETER, SHALL BE PROVIDED FOR EASE OF INSPECTION, CLEANOUT, AND SERVICE.

4. VALVES SHALL BE FIELD ADJUSTABLE FOR VARYING DISCHARGE HEADS.

5. CONNECTION OF THE AIR RELEASE VALVES TO THE STATION PIPING SHALL INCLUDE 316 STAINLESS STEEL FITTINGS.

D. GAUGE KIT

1. A GAUGE KIT SHALL BE SUPPLIED FOR EACH PUMP. SUCTION PRESSURE MUST BE MONITORED BY A GLYCERIN-FILLED COMPOUND GAUGE, AND DISCHARGE PRESSURE BY A GLYCERIN-FILLED PRESSURE GAUGE. GAUGES TO BE AT LEAST 4 INCHES IN DIAMETER, GRADUATED IN FEET WATER COLUMN. RATED ACCURACY SHALL BE 1% OF FULL SCALE READING. COMPOUND GAUGE SHALL BE GRADUATED -34 TO +34 FEET WATER COLUMN MINIMUM. PRESSURE GAUGE TO BE GRADUATED 0 TO 140 FEET WATER COLUMN MINIMUM.

2. GAUGES TO BE FACTORY MOUNTED ON A RESILIENT PANEL WITH FRAME ASSEMBLY SECURED TO PUMPS OR PIPING. GAUGE INSTALLATIONS SHALL BE COMPLETE WITH ALL HOSES AND STAINLESS STEEL FITTINGS, INCLUDING A SHUTOFF VALVE FOR EACH GAUGE LINE AT THE POINT OF CONNECTION TO SUCTION AND DISCHARGE PIPES.

E. PIPING

1. FLANGED HEADER PIPE SHALL BE CENTRIFUGALLY CAST, DUCTILE IRON, COMPLYING WITH ANSI/AWWA A21.51/C115 AND CLASS 53 THICKNESS.

2. FLANGES SHALL BE CAST IRON CLASS 125 AND COMPLY WITH ANSI B16.1.

3. PIPE AND FLANGES SHALL BE THREADED AND SUITABLE THREAD SEALANT APPLIED BEFORE ASSEMBLING FLANGE TO PIPE.

4. BOLT HOLES SHALL BE IN ANGULAR ALIGNMENT WITHIN 1/2 DEGREE BETWEEN FLANGES. FLANGES SHALL BE FACED WITH A GASKET FINISH.

F. CONTRACTOR MUST INSURE ALL PIPES CONNECTED TO THE PUMP STATION ARE SUPPORTED TO PREVENT PIPING LOADS FROM BEING TRANSMITTED TO PUMPS OR STATION PIPING. PUMP STATION DISCHARGE FORCE MAIN PIPING SHALL BE ANCHORED WITH THRUST BLOCKS WHERE SHOWN ON THE CONTRACT DRAWINGS.

2.06 DRIVE UNIT

A. MOTORS (NOTE; MAXIMUM MOTOR FRAME SIZE IS 326T OPEN DRIP-PROOF.)

1. PUMP MOTORS SHALL BE 10 HP, 3 PHASE, 60 HERTZ, 480 VAC, HORIZONTAL ODP, 1,750 RPM, NEMA DESIGN B WITH CAST IRON FRAME WITH COPPER WINDINGS, INDUCTION TYPE, WITH CLASS F INSULATION AND 1.15 SERVICE FACTOR FOR NORMAL STARTING TORQUE AND LOW STARTING CURRENT CHARACTERISTICS, SUITABLE FOR CONTINUOUS SERVICE. THE MOTORS SHALL NOT OVERLOAD AT THE DESIGN CONDITION OR AT ANY HEAD IN THE OPERATING RANGE AS SPECIFIED.

2. MOTORS SHALL BE TESTED IN ACCORDANCE WITH PROVISIONS OF ANSI/IEEE STD 112.

2.07 DRIVE TRANSMISSION

A. POWER TO PUMPS SHALL BE TRANSMITTED BY V-BELT DRIVE ASSEMBLIES. THE SHEAVE/BELT COMBINATION SHALL PROVIDE THE SPEED RATIO NEEDED TO ACHIEVE THE SPECIFIED PUMP OPERATING CONDITIONS.

B. EACH DRIVE ASSEMBLY SHALL UTILIZE AT LEAST TWO V-BELTS PROVIDING MINIMUM A COMBINED SAFETY FACTOR OF 1.5. SINGLE BELT DRIVES OR SYSTEMS WITH A SAFETY FACTOR OF LESS THAN 1.5 ARE NOT ACCEPTABLE. COMPUTATION OF SAFETY FACTORS SHALL BE BASED ON PERFORMANCE DATA PUBLISHED BY THE DRIVE MANUFACTURER.

C. PRECISE ALIGNMENT TOLERANCES OF THE DRIVE ASSEMBLIES SHALL BE ACHIEVED BY MEANS OF A BELT/SHEAVE LASER ALIGNMENT SYSTEM RESULTING IN THE REDUCTION OF VIBRATION, ACCELERATED WEAR, AND PREMATURE FAILURE.

D. THE PUMP MANUFACTURER SHALL SUBMIT POWER TRANSMISSION CALCULATIONS WHICH DOCUMENT THE FOLLOWING:

1. RATIO OF PUMP/MOTOR SPEED.

2. PITCH DIAMETER OF DRIVER AND DRIVEN SHEAVES.

3. NUMBER OF BELTS REQUIRED PER DRIVE.

4. THEORETICAL HORSEPOWER TRANSMITTED PER BELT, BASED ON VENDOR'S DATA.

5. CENTER DISTANCE BETWEEN PUMP AND MOTOR SHAFTS.

6. ARC-LENGTH CORRECTION FACTOR APPLIED TO THEORETICAL HORSEPOWER TRANSMITTED.

7. SERVICE FACTOR APPLIED TO ESTABLISHED DESIGN HORSEPOWER.

8. SAFETY FACTOR RATIO OF POWER TRANSMITTED/BRAKE HORSEPOWER REQUIRED.

E. PUMP DRIVES TO BE ENCLOSED ON ALL SIDES BY A GUARD CONSTRUCTED OF FABRICATED STEEL OR COMBINATION OF MATERIALS INCLUDING EXPANDED, PERFORATED, OR SOLID SHEET METAL. NO OPENING TO A ROTATING MEMBER SHALL EXCEED 1/2 INCH.

1. GUARDS MUST BE COMPLETELY REMOVAL WITHOUT INTERFERENCE FROM ANY UNIT COMPONENT, AND SHALL BE SECURELY FASTENED AND BRACED TO THE UNIT BASE.

2. METAL TO BE FREE FROM BURRS AND SHARP EDGES. STRUCTURAL JOINTS SHALL BE CONTINUOUSLY WELDED. RIVET SPACING ON PANELS SHALL NOT EXCEED FIVE INCHES. TACK WELDS SHALL NOT EXCEED FOUR INCH SPACING.

3. THE GUARD SHALL BE FINISHED IN ACCORDANCE WITH SECTION 3, COLOR DEFINITIONS OF ANSI 253.1; SAFETY COLOR CODE FOR MARKING PHYSICAL HAZARDS.

2.08 PUMPS, PIPING, AND EXPOSED STEEL FRAMEWORK SHALL BE CLEANED PRIOR TO COATING USING AN APPROVED SOLVENT WIPE OR PHOSPHATIZING CLEANER. THE PART MUST THOROUGHLY DRY BEFORE PAINT APPLICATION. OPEN JOINTS SHALL BE CAULKED WITH AN APPROVED POLYURETHANE SEALANT. EXPOSED SURFACES SHALL BE APPLIED WITH ONE COAT OF TNEMEC SERIES 69 POLYMIDE EPOXY PRIMER AND ONE FINISH COAT OF SERIES 73 ALIPHATIC ACRYLIC POLYURETHANE FOR A TOTAL DRY FILM THICKNESS OF 4-6 MILS. FINISH COAT SHALL BE SEMI-GLOSS WHITE FOR OPTIMUM ILLUMINATION AND ENHANCEMENT. THE COATING SHALL BE CORROSION, MOISTURE, OIL, AND SOLVENT RESISTANT WHEN COMPLETELY DRY. THE FACTORY FINISH SHALL ALLOW FOR OVER-COATING AND TOUCH-UP FOR 6 MONTHS AFTER COATING. THEREAFTER, IT WILL GENERALLY REQUIRE SANDING TO ACCEPT A TOPCOAT OR TOUCH-UP COATING. SEE PRODUCT DATA SHEET FOR ADDITIONAL INFORMATION.

2.09 ELECTRICAL CONTROL COMPONENTS

A. THE PUMP STATION CONTROL PANEL WILL BE TESTED AS AN INTEGRAL UNIT BY THE PUMP STATION MANUFACTURER. THE CONTROL PANEL SHALL ALSO BE TESTED WITH THE PUMP STATION AS A COMPLETE WORKING SYSTEM AT THE PUMP STATION MANUFACTURER'S FACILITY.

B. PANEL ENCLOSURE

1. ELECTRICAL CONTROL EQUIPMENT SHALL BE MOUNTED WITHIN A COMMON NEMA 1 STAINLESS STEEL, DEAD FRONT TYPE CONTROL ENCLOSURES. DOORS SHALL BE HINGED AND SEALED WITH A NEOPRENE GASKET AND EQUIPPED WITH CAPTIVE CLOSING HARDWARE. CONTROL COMPONENTS SHALL BE MOUNTED ON REMOVABLE STEEL BACK PANELS SECURED TO ENCLOSURE WITH COLLAR STUDS.

2. ALL CONTROL DEVICES AND INSTRUMENTS SHALL BE SECURED TO THE SUB-PLATE WITH MACHINE SCREWS AND LOCKWASHERS. MOUNTING HOLES SHALL BE DRILLED AND TAPPED; SELF-TAPPING SCREWS SHALL NOT BE USED TO MOUNT A COMPONENT. ALL CONTROL DEVICES SHALL BE CLEARLY LABELED TO INDICATE FUNCTION.

C. UL LABEL REQUIREMENT

PUMP STATION CONTROLS SHALL CONFORM TO THIRD PARTY SAFETY CERTIFICATION. THE PANEL SHALL BEAR A SERIALIZED UL LABEL LISTED FOR "ENCLOSED INDUSTRIAL CONTROL PANELS". THE ENCLOSURE, AND ALL COMPONENTS MOUNTED ON THE SUBPANEL OR CONTROL COVER SHALL CONFORM TO UL DESCRIPTIONS AND PROCEDURES.

D. UL LABEL REQUIREMENT:

PUMP STATION COMPONENTS AND CONTROLS SHALL CONFORM TO THIRD PARTY SAFETY CERTIFICATION. THE STATION SHALL BEAR A UL LABEL LISTED FOR “PACKAGED PUMPING SYSTEM”. THE PANEL SHALL BEAR A SERIALIZED UL LABEL LISTED FOR "ENCLOSED INDUSTRIAL CONTROL PANELS". THE PUMP STATION COMPONENTS, PANEL ENCLOSURE, AND ALL COMPONENTS MOUNTED ON THE SUB PANEL OR CONTROL COVER SHALL CONFORM TO UL DESCRIPTIONS AND PROCEDURES.

E. BRANCH COMPONENTS

1. ALL MOTOR BRANCH AND POWER CIRCUIT COMPONENTS SHALL BE OF HIGHEST INDUSTRIAL QUALITY. THE SHORT CIRCUIT CURRENT RATING OF ALL POWER CIRCUIT DEVICES SHALL BE A TESTED COMBINATION OR EVALUATED PER THE NATIONAL ELECTRICAL CODE ARTICLE 409. THE LOWEST RATED POWER CIRCUIT COMPONENT SHALL BE THE OVERALL CONTROL PANEL SHORT CIRCUIT RATING AND SHALL NOT BE LESS THAN THE FAULT CURRENT AVAILABLE. THE MINIMUM CONTROL PANEL RATING SHALL NOT BE LESS THAN 10 KA, RMS SYMMETRICAL. CONTROL ASSEMBLIES OPERATING AT 120 VOLTS NOMINAL OR LESS MAY BE PROVIDED WITH TRANSFORMERS WHICH LIMIT THE FAULT CURRENT AND MAY BE RATED LESS THAN THE MINIMUM REQUIRED SHORT CIRCUIT RATING.

2. CIRCUIT BREAKERS AND OPERATING MECHANISMS

a. A PROPERLY SIZED HEAVY DUTY CIRCUIT BREAKER SHALL BE FURNISHED FOR EACH PUMP MOTOR. THE CIRCUIT BREAKERS MUST BE SEALED BY THE MANUFACTURER AFTER CALIBRATION TO PREVENT TAMPERING.

b. AN OPERATING MECHANISM INSTALLED ON EACH MOTOR CIRCUIT BREAKER SHALL PENETRATE THE CONTROL PANEL DOOR. A PADLOCKABLE OPERATOR HANDLE SHALL BE SECURED ON THE EXTERIOR SURFACE. INTERLOCKS MUST PREVENT OPENING THE DOOR UNTIL CIRCUIT BREAKERS ARE IN "OFF" POSITION. AN ADDITIONAL MECHANISM(S) SHALL BE PROVIDED ON THE CIRCUIT BREAKER PERMITTING THE BREAKER TO BE OPERATED AND/OR LOCKED WITH THE CONTROL PANEL DOOR IN THE OPEN POSITION

3. MOTOR STARTERS

a. AN OPEN FRAME, ACROSS THE LINE, NEMA RATED MAGNETIC STARTER WITH UNDER VOLTAGE RELEASE, AND OVERLOAD PROTECTION ON ALL THREE PHASES, SHALL BE FURNISHED FOR EACH PUMP MOTOR. STARTERS OF NEMA SIZE 1 AND ABOVE SHALL ALLOW ADDITION OF AT LEAST TWO AUXILIARY CONTACTS. STARTERS RATED "O", "OO", OR FRACTIONAL SIZE ARE NOT ACCEPTABLE. POWER CONTACTS TO BE DOUBLE BREAK TYPE MADE OF CADMIUM OXIDE SILVER. COILS TO BE EPOXY MOLDED FOR PROTECTION FROM MOISTURE AND CORROSIVE ATMOSPHERES. CONTACTS AND COILS SHALL BE EASILY REPLACEABLE WITHOUT REMOVING THE STARTER FROM ITS MOUNTED POSITION. EACH STARTER SHALL HAVE A METAL MOUNTING PLATE FOR DURABILITY.

b. OVERLOAD RELAYS SHALL BE SOLID STATE BLOCK TYPE, HAVING VISUAL TRIP INDICATION WITH TRIP-FREE OPERATION. ELECTRICALLY RESETTING THE OVERLOAD WILL CAUSE ONE (1) NORMALLY OPEN AND ONE (1) NORMALLY CLOSED ISOLATED ALARM/CONTROL CONTACT TO RESET, THUS RE ESTABLISHING A CONTROL CIRCUIT. TRIP SETTING SHALL BE GOVERNED BY SOLID STATE CIRCUITRY AND ADJUSTABLE CURRENT SETTING. TRIP CLASSES SHALL BE 10, 15 AND 20. ADDITIONAL FEATURES TO INCLUDE PHASE LOSS PROTECTION, SELECTABLE JAM/STALL PROTECTION AND SELECTABLE GROUND FAULT PROTECTION.

c. A RESET PUSHBUTTON, MOUNTED THROUGH THE CONTROL PANEL DOOR, SHALL PERMIT RESETTING THE OVERLOAD RELAYS WITHOUT OPENING THE DOOR.

4. STARTER: A REDUCED VOLTAGE, SOLID STATE MOTOR STARTER SHALL BE FURNISHED FOR EACH PUMP MOTOR. THE STARTER CONSTRUCTION SHALL BE MODULAR WITH SEPARATELY REPLACEABLE POWER AND CONTROL SECTIONS. THE POWER SECTION SHALL CONSIST OF SIX BACK-TO-BACK SCR'S RATED 208 TO 480 VOLTS, 50/60 HERTZ. THE SCR'S SHALL HAVE A MINIMUM REPETITIVE PEAK INVERSE VOLTAGE RATING OF 1400 VOLTS AT 480 VOLTS. THE ENCLOSED OPERATING TEMPERATURE RANGE SHALL BE 0 TO 40 DEGREES C AT ALTITUDES UP TO 2000 METERS WITHOUT DERATING.

a. STARTING MODES: STARTING MODES SHALL BE SELECTABLE SOFT START, CURRENT LIMIT, OR FULL VOLTAGE. SOFT STARTING THE PUMP SHALL INCLUDE AN ADJUSTABLE INITIAL TORQUE VALUE OF 0 TO 90 %. THE ACCELERATION RAMP SHALL BE ADJUSTABLE FROM 0 TO 30 SECONDS. THE STARTER SHALL INCLUDE A SELECTABLE KICK START PROVIDING A CURRENT PULSE AT START. KICK START LEVEL SHALL BE ADJUSTABLE FROM 0 TO 90% OF LOCKED ROTOR TORQUE. KICK START TIME SHALL BE ADJUSTABLE FROM 0 TO 2 SECONDS. CURRENT LIMIT MODE SHALL PROVIDE MEANS FOR LIMITING THE STARTING CURRENT TO A PROGRAMMABLE VALUE BETWEEN 50 AND 600% OF FULL LOAD CURRENT. FULL VOLTAGE START SHALL PROVIDE ACROSS THE LINE STARTING WITH A RAMP TIME OF LESS THAN 0.25 SECONDS.

b. PUMP CONTROL MODE: RAMP TIME WILL BE DEPENDENT ON PUMP TORQUE REQUIREMENTS. THE STARTER SHALL PROVIDE SMOOTH ACCELERATION AND DECELERATION, WHICH APPROXIMATES THE FLOW RATE OF A CENTRIFUGAL PUMP. THE STARTER'S MICROCOMPUTER SHALL ANALYZE MOTOR VARIABLES AND GENERATE CONTROL COMMANDS, WHICH WILL MINIMIZE SURGES IN THE SYSTEM. PUMP STOP TIME SHALL BE ADJUSTABLE FROM 0 TO 120 SECONDS. PUMP CONTROL PROVIDES REDUCED HYDRAULIC SHOCK.

c. BYPASS: WHEN THE START RAMP TIME IS COMPLETE, THE STARTER SHALL ENERGIZE AN INTEGRAL BYPASS CONTACTOR. WHEN IN THE BYPASS MODE, THE BYPASS CONTACTOR SHALL CARRY THE MOTOR LOAD TO MINIMIZE INTERNAL HEATING IN THE ELECTRICAL ENCLOSURE.

d. PROTECTION: THE STARTER SHALL INCLUDE PROTECTIVE FEATURES: COMMUNICATION FAULT, CONTROL TEMPERATURE, EXCESS STARTS/HOUR, STALL, JAM, LINE FAULT, OPEN GATE, OVERLOAD, OVERVOLTAGE, PHASE REVERSAL, POWER LOSS, UNDERLOAD, UNDERVOLTAGE, SHORTED SCR, OPEN BYPASS AND VOLTAGE UNBALANCE.

1) AN INTEGRAL ELECTRONIC OVERLOAD RELAY EQUIPPED WITH THERMAL MEMORY SHALL BE INCLUDED AND SHALL UTILIZE THREE PHASE CURRENT SENSING. ADJUSTMENTS SHALL INCLUDE TRIP CURRENT, SERVICE FACTOR AND 10, 15, 20 OR 30 TRIP CLASS.

2) JAM TRIP SHALL BE ADJUSTABLE 0-1,000% OF THE NOMINAL MOTOR CURRENT WITH A DELAY TIME ADJUSTMENT OF 0-99 SECONDS.

3) STALL PROTECTION SENSES THAT THE MOTOR IS NOT UP-TO-SPEED AT END OF RAMP AND WILL SHUT DOWN AFTER A USER-SELECTED DELAY TIME HAS ELAPSED. STALL DELAY SHALL BE ADJUSTABLE FROM 0-10 SECONDS.

4) FAULT DIAGNOSTICS SHALL BE DISPLAYED ON THE STARTER AND SHALL INCLUDE TEMPERATURE FAULT, LINE FAULT, OPEN GATE AND POWER LOSS.

e. DISPLAY: THE STARTER SHALL INCLUDE A KEYPAD AND DISPLAY ON THE FRONT OF THE CONTROL MODULE. THE DISPLAY IS EQUIPPED WITH A BUILT-IN FOUR LINE, 16 CHARACTER BACKLIT LCD. THE LCD DISPLAYS METERING, FAULTS AND PARAMETER SETTINGS IN ENGLISH. FAULTS WILL DISPLAY IN ENGLISH AND FAULT CODE. A FAULT BUFFER WILL STORE THE LAST FIVE FAULTS. METERING CAPABILITIES SHALL INCLUDE: THREE PHASE CURRENT, THREE PHASE VOLTAGE, POWER FACTOR, MOTOR THERMAL USAGE, WATTMETER, KILOWATT HOURS, AND ELAPSED TIME METER. DIGITAL PARAMETER ADJUSTMENTS SHALL BE MADE USING THE KEYPAD.

f. DOOR MOUNTED DISPLAY: EACH STARTER SHALL BE FURNISHED WITH A DISPLAY AND KEYPAD MOUNTED TO THE DOOR OF THE CONTROL PANEL. THE DOOR MOUNTED DISPLAY WILL DUPLICATE THE FUNCTIONS OF THE STARTER DISPLAY AND ALLOW THE OPERATOR TO MONITOR OR CHANGE PARAMETERS WITHOUT OPENING THE CONTROL PANEL DOOR.

5. PHASE MONITOR

a. THE CONTROL PANEL SHALL BE EQUIPPED TO MONITOR THE INCOMING POWER AND SHUT DOWN THE PUMP MOTORS WHEN REQUIRED TO PROTECT THE MOTOR(S) FROM DAMAGE CAUSED BY PHASE REVERSAL, PHASE LOSS, HIGH VOLTAGE, LOW VOLTAGE, AND VOLTAGE UNBALANCE. AN ADJUSTABLE TIME DELAY SHALL BE PROVIDED TO MINIMIZE NUISANCE TRIPS. THE MOTOR(S) SHALL AUTOMATICALLY RESTART, FOLLOWING AN ADJUSTABLE TIME DELAY, WHEN POWER CONDITIONS RETURN TO NORMAL.

6. TRANSIENT VOLTAGE SURGE SUPPRESSOR

a. THE CONTROL PANEL SHALL BE EQUIPPED WITH A MODULAR SURGE ARRESTOR TO MINIMIZE DAMAGE TO THE PUMP MOTORS AND CONTROL FROM TRANSIENT VOLTAGE SURGES. THE SUPPRESSOR SHALL UTILIZE THERMALLY PROTECTED BY HEAVY DUTY ZINC OXIDE VARISTORS ENCAPSULATED IN A NON CONDUCTIVE HOUSING. MECHANICAL INDICATORS SHALL BE PROVIDED ON EACH PHASE TO INDICATE PROTECTION HAS BEEN LOST. THE SUPPRESSOR SHALL HAVE A SHORT CIRCUIT CURRENT RATING OF 200,000 AMPS AND A MAXIMUM DISCHARGE CURRENT RATING [IMAX] OF 40,000 AMPERES. NOMINAL DISCHARGE CURRENT [IN] IS 20,000 AMPERES. SURGE ARRESTER ACCORDING TO UL 1449 3RD EDITION,TYPE 2 COMPONENT ASSEMBLY.

F. CONTROL CIRCUIT

1. A NORMAL DUTY THERMAL MAGNETIC CIRCUIT BREAKER SHALL PROTECT ALL CONTROL CIRCUITS BY INTERRUPTING CONTROL POWER.

2. PUMP MODE SELECTOR SWITCHES SHALL PERMIT MANUAL START OR STOP OF EACH PUMP INDIVIDUALLY, OR PERMIT AUTOMATIC OPERATION UNDER CONTROL OF THE LIQUID LEVEL CONTROL SYSTEM. MANUAL OPERATION SHALL OVERRIDE ALL SHUTDOWN SYSTEMS, EXCEPT THE MOTOR OVERLOAD RELAYS. SELECTOR SWITCHES TO BE OIL TIGHT DESIGN WITH CONTACTS RATED NEMA A300 MINIMUM.

3. PUMP ALTERNATION SHALL BE INTEGRAL TO THE LIQUID LEVEL CONTROLLER. PROVISIONS FOR AUTOMATIC ALTERNATION OR MANUAL SELECTION SHALL ALSO BE INTEGRAL TO THE LIQUID LEVEL CONTROLLER.

4. SIX DIGIT ELAPSED TIME METER (NON RESET TYPE) SHALL BE CONNECTED TO EACH MOTOR STARTER TO INDICATE TOTAL RUNNING TIME OF EACH PUMP IN "HOURS" AND "TENTHS OF HOURS". AN INTEGRAL PILOT LIGHT SHALL BE WIRED IN PARALLEL TO INDICATE THAT THE MOTOR IS ENERGIZED AND SHOULD BE RUNNING.

5. A HIGH PUMP TEMPERATURE PROTECTION CIRCUIT SHALL OVERRIDE THE LEVEL CONTROL AND SHUT DOWN THE PUMP MOTOR(S) WHEN REQUIRED TO PROTECT THE PUMP FROM EXCESSIVE TEMPERATURE. A THERMOSTAT SHALL BE MOUNTED ON EACH PUMP CASING AND CONNECTED TO A HIGH PUMP TEMPERATURE SHUTDOWN CIRCUIT. IF CASING TEMPERATURE RISES TO A LEVEL SUFFICIENT TO CAUSE DAMAGE, THE THERMOSTAT CAUSES THE PUMP SHUTDOWN CIRCUIT TO INTERRUPT POWER TO THE MOTOR. A VISIBLE INDICATOR LOCATED ON THE CONTROL PANEL DOOR SHALL INDICATE MOTOR STOPPED DUE TO HIGH PUMP TEMPERATURE. THE MOTOR SHALL REMAIN LOCKED OUT UNTIL THE PUMP HAS COOLED AND CIRCUIT HAS BEEN MANUALLY RESET. AUTOMATIC RESET OF THIS CIRCUIT IS NOT ACCEPTABLE.

PLAN CHECK OVERSIGHT ENGINEER | REGISTRATION NUMBER | DATE SIGNED

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT
DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 811
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

The private engineer signing these plans is responsible for assuring the accuracy and acceptability of the design hereon. In the event of discrepancies arising after county approval or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for approval by the county.

MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				COUNTY	

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT No. 27943 Exp. 3-31-22 CIVIL — STATE OF CALIFORNIA

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PREPARED BY:
R.C.E. NO. 27943
DATE 07/24/2020

BENCHMARK:
SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE:
H:_________ V:_________

M_______ MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT IP ______
THG #852.003 IN COUNTY OF RIVERSIDE, CALIFORNIA

SANITARY SEWER PUMP STATION SPECIFICATIONS

SHEET NO. C-DD-11

FOR: | W.O. | COUNTY FILE NO.

6. A DUPLEX GROUND FAULT RECEPTACLE PROVIDING 115 VAC, 60 HZ, SINGLE PHASE CURRENT, WILL BE MOUNTED ON THE SIDE OF THE CONTROL ENCLOSURE. RECEPTACLE CIRCUIT SHALL BE PROTECTED BY A 15 AMPERE THERMAL MAGNETIC CIRCUIT BREAKER.

7. THE LIFT STATION SHALL BE EQUIPPED WITH A 3 KVA STEPDOWN TRANSFORMER TO SUPPLY 115 VOLT, AC, SINGLE PHASE POWER FOR THE CONTROL AND AUXILIARY EQUIPMENT. THE PRIMARY AND SECONDARY SIDE OF THE TRANSFORMER SHALL BE PROTECTED BY A THERMAL MAGNETIC CIRCUIT BREAKERS, SIZED TO MEET THE POWER REQUIREMENTS OF THE TRANSFORMER. AN OPERATING MECHANISM SHALL PENETRATE THE CONTROL PANEL DOOR AND A PADLOCKABLE OPERATOR HANDLE SHALL BE SECURED ON THE EXTERIOR SURFACE. INTERLOCKS MUST PREVENT OPENING THE DOOR UNTIL PRIMARY CIRCUIT BREAKER IS IN "OFF" POSITION. AN ADDITIONAL MECHANISM(S) SHALL BE PROVIDED ON THE CIRCUIT BREAKER PERMITTING THE BREAKER TO BE OPERATED AND/OR LOCKED WITH THE CONTROL PANEL DOOR IN THE OPEN POSITION

8. AUXILIARY POWER TRANSFORMER:

a. THE LIFT STATION SHALL BE EQUIPPED WITH A 5 KVA STEPDOWN TRANSFORMER TO SUPPLY 115 VOLT, AC, SINGLE PHASE POWER FOR THE CONTROL AND AUXILIARY EQUIPMENT. THE PRIMARY AND SECONDARY SIDE OF THE TRANSFORMER SHALL BE PROTECTED BY A THERMAL MAGNETIC CIRCUIT BREAKERS, SIZED TO MEET THE POWER REQUIREMENTS OF THE TRANSFORMER. AN OPERATING MECHANISM SHALL PENETRATE THE CONTROL PANEL DOOR AND A PADLOCKABLE OPERATOR HANDLE SHALL BE SECURED ON THE EXTERIOR SURFACE. INTERLOCKS MUST PREVENT OPENING THE DOOR UNTIL PRIMARY CIRCUIT BREAKER IS IN "OFF" POSITION. AN ADDITIONAL MECHANISM(S) SHALL BE PROVIDED ON THE CIRCUIT BREAKER PERMITTING THE BREAKER TO BE OPERATED AND/OR LOCKED WITH THE CONTROL PANEL DOOR IN THE OPEN POSITION

b. PUMP START DELAY:

THE CONTROL CIRCUIT FOR PUMP #2 SHALL BE EQUIPPED WITH A TIME DELAY TO PREVENT SIMULTANEOUS MOTOR STARTS.

9. WIRING

a. THE PUMP STATION, AS FURNISHED BY THE MANUFACTURER, SHALL BE COMPLETELY WIRED, EXCEPT FOR POWER FEED LINES TO THE MAIN ENTRANCE TERMINAL BLOCKS AND FINAL CONNECTIONS TO REMOTE ALARM DEVICES.

b. ALL WIRING, WORKMANSHIP, AND SCHEMATIC WIRING DIAGRAMS SHALL COMPLY WITH APPLICABLE STANDARDS AND SPECIFICATIONS OF THE NATIONAL ELECTRIC CODE (NEC).

c. ALL USER SERVICEABLE WIRING SHALL BE TYPE MTW OR THW, 600 VOLTS, COLOR CODED AS FOLLOWS:

1) LINE AND LOAD CIRCUITS, AC OR DC POWER..BLACK
2) AC CONTROL CIRCUIT LESS THAN LINE VOLTAGE......................................RED
3) DC CONTROL CIRCUIT..BLUE
4) INTERLOCK CONTROL CIRCUIT, FROM EXTERNAL SOURCE......................YELLOW
5) EQUIPMENT GROUNDING CONDUCTOR...GREEN
6) CURRENT CARRYING GROUND...WHITE
7) HOT WITH CIRCUIT BREAKER OPEN..ORANGE

d. CONTROL CIRCUIT WIRING INSIDE THE PANEL, WITH EXCEPTION OF INTERNAL WIRING OF INDIVIDUAL COMPONENTS, SHALL BE 16 GAUGE MINIMUM, TYPE MTW OR THW, 600 VOLTS. POWER WIRING TO BE 14 GAUGE MINIMUM. MOTOR BRANCH WIRING SHALL BE 10 GAUGE MINIMUM.

e. MOTOR BRANCH AND OTHER POWER CONDUCTORS SHALL NOT BE LOADED ABOVE THE TEMPERATURE OF THE CONNECTED TERMINATION. WIRES MUST BE CLEARLY NUMBERED AT EACH END IN CONFORMANCE WITH APPLICABLE STANDARDS. ALL WIRE CONNECTORS IN THE CONTROL PANEL SHALL BE RING TONGUE TYPE WITH NYLON INSULATED SHANKS. ALL WIRES ON THE SUB-PLATE SHALL BE BUNDLED AND TIED. ALL WIRES EXTENDING FROM COMPONENTS MOUNTED ON DOOR SHALL TERMINATE AT A TERMINAL BLOCK MOUNTED ON THE BACK PANEL. ALL WIRING OUTSIDE THE PANEL SHALL BE ROUTED THROUGH CONDUIT.

f. CONTROL WIRES CONNECTED TO DOOR MOUNTED COMPONENTS MUST BE TIED AND BUNDLED IN ACCORDANCE WITH GOOD COMMERCIAL PRACTICE. BUNDLES SHALL BE MADE FLEXIBLE AT THE HINGED SIDE OF THE ENCLOSURE. ADEQUATE LENGTH AND FLEX SHALL ALLOW THE DOOR TO SWING FULL OPEN WITHOUT UNDUE STRESS OR ABRASION. BUNDLES SHALL BE HELD ON EACH SIDE OF HINGE BY MECHANICAL FASTENING DEVICES.

10. FACTORY INSTALLED CONDUIT SHALL CONFORM TO FOLLOWING REQUIREMENTS:

a. ALL CONDUIT AND FITTINGS TO BE UL LISTED.

b. LIQUID TIGHT FLEXIBLE METAL CONDUIT TO BE CONSTRUCTED OF SMOOTH, FLEXIBLE GALVANIZED STEEL CORE WITH SMOOTH ABRASION RESISTANT, LIQUID TIGHT POLYVINYL CHLORIDE COVER.

c. CONDUIT TO BE SUPPORTED IN ACCORDANCE WITH ARTICLES 346, 347, AND 350 OF THE NATIONAL ELECTRIC CODE.

d. CONDUIT SHALL BE SIZED ACCORDING TO THE NATIONAL ELECTRIC CODE.

11. GROUNDING

a. STATION MANUFACTURER SHALL GROUND ALL ELECTRICAL EQUIPMENT INSIDE THE PUMP STATION TO THE CONTROL PANEL BACK PLATE. ALL PAINT MUST BE REMOVED FROM THE GROUNDING MOUNTING SURFACE BEFORE MAKING FINAL CONNECTION.

b. THE CONTRACTOR SHALL PROVIDE AN EARTH DRIVEN GROUND CONNECTION TO THE PUMP STATION AT THE MAIN GROUNDING LUG IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC).

12. EQUIPMENT MARKING

a. PERMANENT CORROSION RESISTANT NAME PLATE(S) SHALL BE ATTACHED TO THE CONTROL AND INCLUDE FOLLOWING INFORMATION:

1) EQUIPMENT SERIAL NUMBER
2) CONTROL PANEL SHORT CIRCUIT RATING
3) SUPPLY VOLTAGE, PHASE AND FREQUENCY
4) CURRENT RATING OF THE MINIMUM MAIN CONDUCTOR
5) ELECTRICAL WIRING DIAGRAM NUMBER
6) MOTOR HORSEPOWER AND FULL LOAD CURRENT
7) MOTOR OVERLOAD HEATER ELEMENT
8) MOTOR CIRCUIT BREAKER TRIP CURRENT RATING
9) NAME AND LOCATION OF EQUIPMENT MANUFACTURER

b. CONTROL COMPONENTS SHALL BE PERMANENTLY MARKED USING THE SAME IDENTIFICATION KEYS SHOWN ON THE ELECTRICAL DIAGRAM. LABELS SHALL BE MOUNTED ADJACENT TO DEVICE BEING IDENTIFIED.

c. SWITCHES, INDICATORS, AND INSTRUMENTS MOUNTED THROUGH THE CONTROL PANEL DOOR SHALL BE LABELED TO INDICATE FUNCTION, POSITION, ETC. LABELS SHALL BE MOUNTED ADJACENT TO, OR ABOVE THE DEVICE.

2.10 LIQUID LEVEL CONTROL (AIR BUBBLER TYPE)

A. THE MANUFACTURER OF THE LIQUID LEVEL CONTROL SYSTEM MUST BE ISO 9001:2000 REVISION CERTIFIED, WITH SCOPE OF REGISTRATION INCLUDING DESIGN CONTROL AND SERVICE AFTER SALES ACTIVITIES.

B. THE LEVEL CONTROL SYSTEM SHALL START AND STOP THE PUMP MOTORS IN RESPONSE TO CHANGES IN WET WELL LEVEL, AS SET FORTH HEREIN.

C. THE LEVEL CONTROL SYSTEM SHALL BE CAPABLE OF OPERATING AS EITHER AN AIR BUBBLER TYPE LEVEL CONTROL SYSTEM, SUBMERSIBLE TRANSDUCER TYPE SYSTEM, OR ULTRASONIC TRANSMITTER TYPE SYSTEM.

D. THE LEVEL CONTROL SYSTEM SHALL UTILIZE ALTERNATION TO SELECT FIRST ONE PUMP, THEN THE SECOND PUMP, THEN THE THIRD PUMP (IF REQUIRED), TO RUN AS LEAD PUMP FOR A PUMPING CYCLE. ALTERNATION SHALL OCCUR AT THE END OF A PUMPING CYCLE, OR IN THE EVENT OF EXCESSIVE RUN TIME.

E. THE LEVEL CONTROL SYSTEM SHALL UTILIZE AN ELECTRONIC PRESSURE SWITCH WHICH SHALL CONTINUOUSLY MONITOR THE WET WELL LEVEL, PERMITTING THE OPERATOR TO READ WET WELL LEVEL AT ANY TIME. UPON OPERATOR SELECTION OF AUTOMATIC OPERATION, THE ELECTRONIC PRESSURE SWITCH SHALL START THE MOTOR FOR ONE PUMP WHEN THE LIQUID LEVEL IN THE WET WELL RISES TO THE "LEAD PUMP START LEVEL". WHEN THE LIQUID IS LOWERED TO THE "LEAD PUMP STOP LEVEL", THE ELECTRONIC PRESSURE SWITCH SHALL STOP THIS PUMP. THESE ACTIONS SHALL CONSTITUTE ONE PUMPING CYCLE. SHOULD THE WET WELL LEVEL CONTINUE TO RISE, THE ELECTRONIC PRESSURE SWITCH SHALL START THE SECOND AND/OR THIRD PUMP (IF REQUIRED) WHEN THE LIQUID REACHES THE "LAG PUMP START LEVEL", OR "STANDBY PUMP START LEVEL" SO THAT ALL PUMPS ARE OPERATING. THESE LEVELS SHALL BE ADJUSTABLE AS DESCRIBED BELOW.

1. THE ELECTRONIC PRESSURE SWITCH SHALL INCLUDE INTEGRAL COMPONENTS TO PERFORM ALL PRESSURE SENSING, SIGNAL CONDITIONING, EMI AND RFI SUPPRESSION, DC POWER SUPPLY AND 120 VOLT OUTPUTS. COMPARATORS SHALL BE SOLID STATE, AND SHALL BE INTEGRATED WITH OTHER COMPONENTS TO PERFORM AS DESCRIBED BELOW.

2. THE ELECTRONIC PRESSURE SWITCH SHALL BE CAPABLE OF OPERATING ON A SUPPLY VOLTAGE OF 12-24VDC IN AN AMBIENT TEMPERATURE RANGE OF 10 DEGREES C (14 DEGREES F) THROUGH 55 DEGREES C (131 DEGREES F). INGRESS PROTECTION OF IP56 FOR INDOOR USE WITH CLOSED CELL NEOPRENE BLEND GASKET MATERIAL. EVALUATED BY UNDERWRITERS LABORATORIES FOR POLLUTION DEGREE 2 DEVICE FOR U.L. AND CU.L. CONTROL RANGE SHALL BE 0 TO 33.3 FEET OF WATER WITH AN OVERALL REPEAT ACCURACY OF (PLUS/MINUS) 0.1 FEET OF WATER. MEMORY SHALL BE NON VOLATILE. A BATTERY BACKED REAL TIME CLOCK SHALL BE STANDARD.

3. ELEVEN OPTICALLY ISOLATED, USER DEFINED DIGITAL INPUTS FOR PUMP AND ALARM STATUS. RATED AT 10MA AT 24VDC. EIGHT DIGITAL OUTPUT RELAYS (MECHANICAL CONTACTS), CONFIGURABLE FOR PUMP START/STOP OR ALARMS. THREE RELAYS RATED AT 12 AMP @ 28VDC AND 120VAC, FIVE RELAYS RATED AT 3 AMP @ 30VDC AND 120VAC. THE ELECTRONIC PRESSURE SWITCH SHALL CONSIST OF THE FOLLOWING INTEGRAL COMPONENTS: PRESSURE SENSOR, DISPLAY, ELECTRONIC COMPARATORS, DIGITAL INPUTS AND DIGITAL OUTPUT RELAYS.

a. THE INTERNAL PRESSURE SENSOR SHALL BE A STRAIN GAUGE TRANSDUCER AND SHALL RECEIVE AN INPUT PRESSURE FROM THE AIR BUBBLER SYSTEM. THE TRANSDUCER SHALL CONVERT THE INPUT TO A PROPORTIONAL ELECTRICAL SIGNAL FOR DISTRIBUTION TO THE DISPLAY AND ELECTRONIC COMPARATORS. THE TRANSDUCER OUTPUT SHALL BE FILTERED TO PREVENT CONTROL RESPONSE TO LEVEL PULSATIONS OR SURGES. THE TRANSDUCER RANGE SHALL BE 0-14.5 PSI, TEMPERATURE COMPENSATED FROM 40 DEGREES C (40 DEGREES F) THROUGH 85 DEGREES C (185 DEGREES F), WITH A REPEAT ACCURACY OF (PLUS/MINUS) 2.5% FULL SCALE ABOUT A FIXED TEMPERATURE. TRANSDUCER OVERPRESSURE RATING SHALL BE 3 TIMES FULL SCALE.

b. THE ELECTRONIC PRESSURE SWITCH SHALL INCORPORATE A DIGITAL BACK LIGHTED LCD PANEL DISPLAY WHICH, UPON OPERATOR SELECTION, SHALL INDICATE LIQUID LEVEL IN THE WET WELL, AND PUMP STATUS INDICATION FOR UP TO 3 PUMPS. THE DISPLAY SHALL INCLUDE A 128 X 64 BIT RESOLUTION LCD TO READ OUT DIRECTLY IN FEET OF WATER, ACCURATE TO WITHIN ONE TENTH FOOT (0.1 FOOT), WITH A FULL SCALE INDICATION OF NOT LESS THAN 12 FEET. THE DISPLAY SHALL BE EASILY CONVERTIBLE TO INDICATE ENGLISH OR METRIC UNITS.

c. LEVEL ADJUSTMENTS SHALL BE ELECTRONIC COMPARATOR SET POINTS TO CONTROL THE LEVELS AT WHICH THE LEAD, LAG AND STANDBY PUMPS START AND STOP. EACH OF THE LEVEL SETTINGS SHALL BE EASILY ADJUSTABLE WITH THE USE OF MEMBRANE TYPE SWITCHES, AND ACCESSIBLE TO THE OPERATOR WITHOUT OPENING ANY COVER PANEL ON THE ELECTRONIC PRESSURE SWITCH. CONTROLS SHALL BE PROVIDED TO PERMIT THE OPERATOR TO READ THE SELECTED LEVELS ON THE DISPLAY. SUCH ADJUSTMENTS SHALL NOT REQUIRE HARD WIRING, THE USE OF ELECTRONIC TEST EQUIPMENT, ARTIFICIAL LEVEL SIMULATION OR INTRODUCTION OF PRESSURE TO THE ELECTRONIC PRESSURE SWITCH.

d. EACH DIGITAL INPUT CAN BE PROGRAMMED AS PUMP RUN, PUMP HOA, PUMP HIGH TEMP, PUMP MOISTURE/THERMAL, STARTER FAILURE (FVNR, RVSS, VFD), AND PHASE FAILURE. INPUTS ARE USED FOR STATUS AND ALARM INDICATION.

e. EACH OUTPUT RELAY IN THE ELECTRONIC PRESSURE SWITCH SHALL BE HARD CONTACT MECHANICAL STYLE. EACH RELAY INPUT SHALL BE OPTICALLY ISOLATED FROM ITS OUTPUT AND SHALL INCORPORATE ZERO CROSSOVER SWITCHING TO PROVIDE HIGH IMMUNITY TO ELECTRICAL NOISE. EACH OUTPUT RELAY SHALL HAVE AN INDUCTIVE LOAD RATING EQUIVALENT TO ONE NEMA SIZE 3 CONTACTOR. A PILOT RELAY SHALL BE INCORPORATED FOR LOADS GREATER THAN A SIZE 3 CONTACTOR.

4. THE ELECTRONIC PRESSURE SWITCH SHALL BE EQUIPPED WITH ALARM BANNERS WITH TIME AND DATE HISTORY FOR DISPLAYING ALARM INPUT NOTIFICATION. ALARM HISTORY WILL RETAIN A 16 OF THE MOST RECENT ALARM EVENTS.

5. THE ELECTRONIC PRESSURE SWITCH SHALL BE EQUIPPED WITH PUMP START/STOP AND ALARM INPUT DELAY(S) THAT HAVE AN ADJUSTABLE DELAY SET POINTS.

6. AN ANTISEPTIC FUNCTION WITH A BUILT IN TIMER SHALL BE INCORPORATED IN THE ELECTRONIC PRESSURE SWITCH TO PREVENT THE WELL FROM BECOMING SEPTIC.

7. THE ELECTRONIC PRESSURE SWITCH SHALL BE CAPABLE OF JUMPING TO NEXT AVAILABLE PUMP IF CURRENT PUMP IS OUT OF SERVICE DUE TO PUMP FAILURE OR MANUAL SELECTION. CIRCUIT DESIGN IN WHICH APPLICATION OF POWER TO THE LAG PUMP MOTOR STARTER IS CONTINGENT UPON COMPLETION OF THE LEAD PUMP CIRCUIT SHALL NOT BE ACCEPTABLE.

8. THE ELECTRONIC PRESSURE SWITCH SHALL BE EQUIPPED WITH A SIMULATOR SYSTEM CAPABLE OF PERFORMING SYSTEM CYCLE TESTING FUNCTIONS.

9. THE ELECTRONIC PRESSURE SWITCH SHALL BE CAPABLE OF CALCULATING AND DISPLAYING PUMP ELAPSE RUN TIME. THE ELAPSE RUN TIME IS RESETTABLE AND ADJUSTABLE. AN ELAPSED RUNTIME METER SHALL BE SUPPLIED FOR EACH PUMP.

10.THE ELECTRONIC PRESSURE SWITCH SHALL HAVE INTERNAL CAPABILITY OF PROVIDING AUTOMATIC SIMPLEX, DUPLEX, AND TRIPLEX ALTERNATION, MANUAL SELECTION OF PUMP SEQUENCE OPERATION, AND ALTERNATION IN THE EVENT OF 1-24 HOURS OF EXCESSIVE RUN TIME.

11. THE ELECTRONIC PRESSURE SWITCH SHALL BE EQUIPPED WITH A SECURITY ACCESS CODE TO PREVENT ACCIDENTAL SET UP CHANGES AND PROVIDE LIQUID LEVEL SET POINT LOCK OUT. THE SUPERVISOR ACCESS CODE IS ADJUSTABLE.

12. THE ELECTRONIC PRESSURE SWITCH SHALL BE EQUIPPED WITH ONE (1) 0-33 FT. W.C. INPUT, ONE (1) SCALABLE ANALOG INPUT OF EITHER 0-5 VDC, OR 4-20 MA, AND ONE (1) SCALABLE ANALOG OUTPUT OF EITHER 0-5 VDC, 0-10 VDC OR 4-20 MA. OUTPUT IS POWERED BY 10-24 VDC SUPPLY. LOAD RESISTANCE FOR 4-20 MA OUTPUT SHALL BE 100-1000 OHMS.

13. THE ELECTRONIC PRESSURE SWITCH SHALL INCLUDE A DC POWER SUPPLY TO CONVERT 120VAC CONTROL POWER TO 12 OR 24VDC POWER. THE POWER SUPPLY SHALL BE 500 MA (6W) MINIMUM AND BE UL LISTED CLASS II POWER LIMITED POWER SUPPLY.

14. THE ELECTRONIC PRESSURE SWITCH SHALL BE EQUIPPED WITH AN ELECTRONIC COMPARATOR AND MECHANICAL OUTPUT RELAY TO ALERT MAINTENANCE PERSONNEL TO A HIGH LIQUID LEVEL IN THE WET WELL. AN ALARM BANNER, VISIBLE ON THE FRONT OF THE CONTROLLER, SHALL INDICATE THAT A HIGH WET WELL LEVEL EXISTS. THE ALARM SIGNAL SHALL BE MAINTAINED UNTIL THE WET WELL LEVEL HAS BEEN LOWERED AND THE CIRCUIT HAS BEEN MANUALLY RESET. HIGH WATER ALARM SHALL BE FURNISHED WITH A DRY CONTACT WIRED TO TERMINAL BLOCKS.

15. THE ELECTRONIC PRESSURE SWITCH SHALL BE EQUIPPED WITH AN ELECTRONIC COMPARATOR AND MECHANICAL OUTPUT RELAY TO ALERT MAINTENANCE PERSONNEL TO A LOW LIQUID LEVEL IN THE WET WELL. AN ALARM BANNER, VISIBLE ON THE FRONT OF THE CONTROLLER, SHALL INDICATE THAT A LOW WET WELL LEVEL EXISTS. THE ALARM SIGNAL SHALL BE MAINTAINED UNTIL THE CAUSE FOR THE LOW WET WELL LEVEL HAS BEEN CORRECTED AND THE CIRCUIT HAS BEEN MANUALLY RESET. A LOW LIQUID LEVEL CONDITION SHALL DISABLE ALL PUMP MOTORS. WHEN THE WET WELL RISES ABOVE THE LOW LEVEL POINT, ALL PUMP MOTORS SHALL BE AUTOMATICALLY ENABLED. LOW WATER ALARM SHALL BE FURNISHED WITH A DRY CONTACT WIRED TO TERMINAL BLOCKS.

16. INTEGRINEX STANDARD ANALOG OUTPUT CIRCUIT WILL BE FURNISHED WITH TRANSIENT VOLTAGE SURGE SUPPRESSION TO PROTECT RELATED EQUIPMENT FROM INDUCED VOLTAGE SPIKE FROM LIGHTING.

F. AN ALARM SILENCE PUSHBUTTON AND RELAY SHALL BE PROVIDED TO PERMIT MAINTENANCE PERSONNEL TO DE ENERGIZE THE AUDIBLE ALARM DEVICE WHILE CORRECTIVE ACTIONS ARE UNDER WAY. AFTER SILENCING THE ALARM DEVICE, MANUAL RESET OF THE ALARM CONDITION SHALL CLEAR THE ALARM SILENCE RELAY AUTOMATICALLY. THE PUSHBUTTON SHALL BE A MEMBRANE STYLE BUTTON INTEGRAL TO THE INTEGRINEX STANDARD LEVEL CONTROLLER.

G. ULTRASONIC TRANSMITTER SYSTEM

THE LEVEL CONTROL SYSTEM SHALL UTILIZE AN ULTRASONIC LEVEL TRANSMITTER HOUSED IN A NEMA 4X ELECTRICAL ENCLOSURE WITH A SENSOR DESIGNED TO MOUNT AT THE TOP OF THE WET WELL. THE TRANSMITTER SHALL PROVIDE A PROPORTIONAL LEVEL SIGNAL FOR DISTRIBUTION TO THE DISPLAY AND ELECTRONIC COMPARATORS OF THE ELECTRONIC PRESSURE SWITCH, AND REMAINDER OF THE LEVEL CONTROL SYSTEM. TRANSMITTER FULL SCALE OPERATING RANGE SHALL BE 1-31 FT., AND SHALL PROVIDE A 4-20MA OUTPUT SIGNAL. THE SENSOR SHALL HAVE A 12 DEGREE CONICAL BEAM ANGLE, AND A PRESSURE RANGE OF 10 - 50 PSIG MINIMUM. THE TRANSMITTER SHALL BE A MICROPROCESSOR BASED UNIT CAPABLE OF EASY CALIBRATION.

2.11 ALARM LIGHT (EXTERNAL):

A. STATION MANUFACTURER WILL SUPPLY ONE 115 VAC ALARM LIGHT FIXTURE WITH VAPOR-TIGHT RED GLOBE, GUARD, CONDUIT BOX, AND MOUNTING BASE. THE DESIGN MUST PREVENT RAIN WATER FROM COLLECTING IN THE GASKETED AREA OF THE FIXTURE, BETWEEN THE BASE AND GLOBE. THE ALARM LIGHT WILL BE SHIPPED LOOSE FOR INSTALLATION BY THE CONTRACTOR.

B. LOCAL & REMOTE PROGRAMMING CAPABILITIES

1. THE USER MAY OPTIONALLY ELECT TO ALTER THE FOLLOWING PARAMETERS FROM THEIR STANDARD NORMAL DEFAULT VALUES VIA KEYBOARD ENTRY OR REMOTELY FROM ANY TOUCH TONE PHONE.

2. ALARM CALL GROUPING: UPON ALARM ACTIVATION, THE SYSTEM SHALL SELECTIVELY CALL THE CORRECT PHONE NUMBERS ACCORDING TO THE CURRENT ALARM(S).

3. ALARM RESPONSE DELAY: .1 TO 999.9 SECONDS.

4. DELAY BETWEEN ALARM CALL OUTS: .1 TO 99.9 MINUTES.

5. ALARM RESET TIME: .1 TO 99 HOURS OR "NO RESET."

6. INCOMING RING RESPONSE (ANSWER) DELAY: 1 TO 20 RINGS.

7. NUMBER OF MESSAGE REPETITIONS: 1 TO 20 REPETITIONS.

8. INPUT ALARM CRITERIA: EACH CHANNEL SHALL BE INDEPENDENTLY CONFIGURED FOR "ALARM ON OPEN CIRCUIT", "ALARM ON CLOSED CIRCUIT", AND "NO ALARM."

9. AUTOCALL TEST: WHEN ENABLED, THE UNIT SHALL PLACE A SINGLE ROUND OF TEST CALLS, BOTH AT THE TIME THIS FUNCTION IS ENABLED AND ALSO AT REGULAR SUBSEQUENT INTERVALS UNTIL THIS FUNCTION IS DISABLED AT THE KEYBOARD.

10. RUN TIME METER: SELECTED INPUTS SHALL ACCUMULATE AND REPORT THE NUMBER OF HOURS THAT ITS INPUT CONTACTS HAVE BEEN CLOSED.

11. REMOTE SYSTEM MICROPHONE ACTIVATION.

12. REMOTE AND LOCAL ARMING AND DISARMING OF SYSTEM.

13. PULSE TOTALIZER FUNCTION.

C. USER ENTERED PROGRAMMING AND VOICE MESSAGES SHALL BE KEPT INTACT EVEN DURING POWER FAILURES OR WHEN ALL POWER IS REMOVED FOR UP TO TEN YEARS.

D. ACKNOWLEDGEMENT OF AN ALARM PHONE CALL IS TO BE ACCOMPLISHED BY PRESSING A TOUCH TONE "9" AS THE ALARM CALL IS BEING RECEIVED, AND/OR BY RETURNING A PHONE CALL TO THE UNIT AFTER HAVING RECEIVED AN ALARM CALL.

E. THE UNIT SHALL CONTINUOUSLY MONITOR THE PRESENCE OF AC POWER AND THE STATUS OF FOUR CONTACT CLOSURE INPUTS. THE UNIT SHALL OPTIONALLY BE FIELD UPGRADEABLE TO INCORPORATE A TOTAL OF 8, 16, 24, OR 32 DRY CONTACT INPUTS. AC POWER FAILURE, OR VIOLATION OF THE ALARM CRITERIA AT ANY INPUT, SHALL CAUSE THE UNIT TO GO INTO ALARM STATUS AND BEGIN DIAL OUTS. THE UNIT SHALL, UPON A SINGLE PROGRAM ENTRY, AUTOMATICALLY ACCEPT ALL INPUT STATES AS THE NORMAL NON-ALARM STATE; ELIMINATING POSSIBLE CONFUSION ABOUT NORMALLY OPEN VERSUS NORMALLY CLOSED INPUTS. FURTHER, AS A DIAGNOSTIC AID, THE UNIT SHALL HAVE THE CAPABILITY OF DIRECTLY ANNOUNCING THE STATE OF ANY GIVEN INPUT AS CURRENTLY "OPEN CIRCUIT" OR "CLOSED CIRCUIT", WITHOUT DISTURBING ANY MESSAGE PROGRAMMING. EACH INPUT CHANNEL SHALL ALSO BE INDEPENDENTLY PROGRAMMABLE, WITHOUT THE NEED TO MANIPULATE CIRCUIT BOARD SWITCHES OR JUMPERS, AS NORMALLY OPEN OR NORMALLY CLOSED, OR FOR NO ALARM (STATUS ONLY), OR FOR PULSE TOTALIZING, OR FOR RUN TIME METERING.

F. ANY DRY CONTACT INPUT CAN BE PROGRAMMED TO ACCUMULATE AND REPORT THE NUMBER OF HOURS THEIR RESPECTIVE INPUT CIRCUITS HAVE BEEN CLOSED. ANY SUCH CHANNELS WILL NEVER CAUSE AN ALARM, BUT ON INQUIRY WILL RECITE THE CHANNEL'S MESSAGE ACCORDING TO THE STATUS OF THE INPUT AND THEN REPORT THE CLOSED CIRCUIT TIME TO THE TENTH OF AN HOUR. THE INPUT WILL ACCUMULATE AND REPORT IN TENTHS OF HOURS UP TO A TOTAL ACCUMULATED RUNNING TIME OF 99,999.9 HOURS. THE INITIAL VALUE OF THE RUN TIME METER SHALL BE PROGRAMMABLE IN ORDER TO AGREE WITH EXISTING ELECTROMECHANICAL RUN TIME METERS. UP TO A TOTAL OF 8 RUN TIME METERS MAY BE PROGRAMMED.

G. ANY DRY CONTACT INPUT CAN BE PROGRAMMED TO ACCUMULATE THE NUMBER OF PULSES (MOMENTARY CONTACT CLOSURES) OCCURRING AT THE INPUT.

H. UPON INITIATING AN ALARM PHONE CALL, THE SYSTEM IS TO "SPEAK" ONLY THOSE CHANNELS THAT ARE CURRENTLY IN "ALARM STATUS."

I. THE UNIT SHALL PROVIDE A COMPLETE VERBAL REPORT OF ALL PROGRAMMABLE FUNCTIONS AND THEIR PROGRAMMED VALUES ON COMMAND FORM FROM ANY REMOTE TOUCH TONE PHONE.

J. THE UNIT SHALL BE CAPABLE OF DIALING ANY PHONE NUMBER ON COMMAND AND FUNCTION AS A SPEAKERPHONE.

K. INQUIRY PHONE CALLS CAN BE MADE DIRECTLY TO THE UNIT AT ANY TIME FROM ANY TELEPHONE, LOCALLY OR LONG DISTANCE, FOR A COMPLETE STATUS REPORT OF ALL VARIABLES BEING MONITORED; INCLUDING POWER STATUS.

L. NORMAL POWER SHALL BE 105-135 VAC, 15 WATTS NOMINAL. THE PRODUCT IS TO CONTAIN ITS OWN GEL CELL RECHARGEABLE BATTERY WHICH IS AUTOMATICALLY KEPT CHARGED WHEN AC POWER IS PRESENT. THE SYSTEM SHALL OPERATE ON BATTERY POWER FOR A MINIMUM OF 20 CONTINUOUS HOURS IN THE EVENT OF AC POWER FAILURE. A SHORTER BACKUP TIME SHALL NOT BE ACCEPTABLE. THE BUILT-IN CHARGER SHALL BE PRECISION VOLTAGE CONTROLLED, NOT A "TRICKLE CHARGER", IN ORDER TO MINIMIZE RECHARGE TIME AND MAXIMIZE BATTERY LIFE AVAILABLE.

M. THE DIALER IS TO USE A STANDARD ROTARY PULSE OR TOUCH TONE "DIAL-UP" PHONE LINE (DIRECT LEASED LINE NOT TO BE REQUIRED) AND IS TO BE F.C.C. APPROVED. CONNECTION TO THE TELEPHONE IS THROUGH A 4-PIN MODULAR JACK (RJ-11.)

N. ALL POWER, PHONE LINE, DRY CONTACT, AND ANALOG SIGNAL INPUTS SHALL BE PROTECTED AT THE CIRCUIT BOARD TO IEEE STANDARD 587, CATEGORY B (6,000 VOLTS OPEN CIRCUIT/3,000 AMPS CLOSED CIRCUIT.) GAS TUBES FOLLOWED BY SOLID STATE PROTECTORS SHALL BE INTEGRAL TO THE CIRCUIT BOARD FOR EACH SUCH LINE. PROTECTORS MOUNTED EXTERNAL TO THE MAIN CIRCUIT BOARD SHALL NOT BE AN ACCEPTABLE SUBSTITUTE. THE INSTALLER SHALL PROVIDE A GOOD ELECTRICAL GROUND CONNECTION POINT NEAR THE UNIT TO MAXIMIZE THE EFFECTIVENESS OF THE SURGE PROTECTION.

O. THE SYSTEM SHALL INCLUDE EXPANSION CONNECTORS TO ACCOMMODATE FIELD UPGRADES FOR ADDITIONAL DRY CONTACT INPUTS, REMOTE SUPERVISORY CONTROL OUTPUTS, ANALOG INPUTS AND COMMUNICATION WITH REMOTE PRINTERS AND COMPUTERS.

P. ALL KEYBOARD AND FRONT PANEL SWITCHES SHALL BE SEALED TO PREVENT CONTAMINATION. FRONT PANEL LED'S SHALL INDICATE: NORMAL OPERATION, PROGRAM MODE, PHONE CALL IN PROGRESS, STATUS FOR EACH CHANNEL, AC POWER PRESENT, AC POWER FAILURE, AND DISCHARGING OR RECHARGING BATTERY. ON ANY INQUIRY TELEPHONE CALL OR ON SITE STATUS CHECK, THE VOICE SHALL PROVIDE SPECIFIC WARNING IF NO DIAL OUT PHONE NUMBERS ARE ENTERED, OR IF THE UNIT IS IN THE "ALARM DISABLE" MODE, OR IF AC POWER IS OFF OR HAS BEEN OFF SINCE LAST RESET. A BUILT-IN MICROPHONE SHALL ALLOW ANYONE AT A REMOTE PHONE TO LISTEN TO LOCAL SOUNDS AND HAVE A TWO-WAY CONVERSATION WITH PERSONNEL AT THE DIALER.

PART 3 - EXECUTION

3.01 EXAMINATION

A. CONTRACTOR SHALL OFF-LOAD EQUIPMENT AT INSTALLATION SITE USING EQUIPMENT OF SUFFICIENT SIZE AND DESIGN TO PREVENT INJURY OR DAMAGE. STATION MANUFACTURER SHALL PROVIDE WRITTEN INSTRUCTION FOR PROPER HANDLING. IMMEDIATELY AFTER OFF-LOADING, CONTRACTOR SHALL INSPECT COMPLETE PUMP STATION AND APPURTENANCES FOR SHIPPING DAMAGE OR MISSING PARTS. ANY DAMAGE OR DISCREPANCY SHALL BE NOTED IN WRITTEN CLAIM WITH SHIPPER PRIOR TO ACCEPTING DELIVERY. VALIDATE ALL STATION SERIAL NUMBERS AND PARTS LISTS WITH SHIPPING DOCUMENTATION. NOTIFY THE MANUFACTURER'S REPRESENTATIVE OF ANY UNACCEPTABLE CONDITIONS NOTED WITH SHIPPER.

3.02 INSTALLATION

A. INSTALL, LEVEL, ALIGN, AND LUBRICATE PUMP STATION AT THE LOCATION INDICATED ON PROJECT DRAWINGS. INSTALLATION MUST BE IN ACCORDANCE WITH WRITTEN INSTRUCTIONS SUPPLIED BY THE MANUFACTURER AT TIME OF DELIVERY.

B. SUCTION PIPE CONNECTIONS MUST BE VACUUM TIGHT. FASTENERS AT ALL PIPE CONNECTIONS MUST BE TIGHT. INSTALL PIPE WITH SUPPORTS AND THRUST BLOCKS TO PREVENT STRAIN AND VIBRATION ON PUMP STATION PIPING. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED PIPE SUPPORTS AND THRUST BLOCKS AS REQUIRED. INSTALL AND SECURE ALL SERVICE LINES (LEVEL CONTROL, AIR RELEASE VALVE OR PUMP DRAIN LINES) AS REQUIRED IN WET WELL.

C. CHECK MOTOR AND CONTROL DATA PLATES FOR COMPATIBILITY TO SITE VOLTAGE. INSTALL AND TEST THE STATION GROUND PRIOR TO CONNECTING LINE VOLTAGE TO STATION CONTROL PANEL.

D. PRIOR TO APPLYING ELECTRICAL POWER TO ANY MOTORS OR CONTROL EQUIPMENT, CHECK ALL WIRING FOR TIGHT CONNECTION. VERIFY THAT PROTECTIVE DEVICES (FUSES AND CIRCUIT BREAKERS) CONFORM TO PROJECT DESIGN DOCUMENTS. MANUALLY OPERATE CIRCUIT BREAKERS AND SWITCHES TO ENSURE OPERATION WITHOUT BINDING. OPEN ALL CIRCUIT BREAKERS AND DISCONNECTS BEFORE CONNECTING UTILITY POWER. VERIFY LINE VOLTAGE, PHASE SEQUENCE AND GROUND BEFORE ACTUAL START-UP.

E. AFTER THE CONTRACTOR INSTALLS ALL ANCHOR BOLTS, PIPING AND CONTROL CONNECTIONS, THE CONTRACTOR SHALL COMPLETELY FILL THE GROUT DAM IN THE PUMP STATION BASE WITH NON-SHRINK GROUT.

3.03 FIELD QUALITY CONTROL

A. OPERATIONAL TEST

1. PRIOR TO ACCEPTANCE BY OWNER, AN OPERATIONAL TEST OF ALL PUMPS, DRIVES, AND CONTROL SYSTEMS SHALL BE CONDUCTED TO DETERMINE IF THE INSTALLED EQUIPMENT MEETS THE PURPOSE AND INTENT OF THE SPECIFICATIONS. TESTS SHALL DEMONSTRATE THAT ALL EQUIPMENT IS ELECTRICALLY, MECHANICALLY, STRUCTURALLY, AND OTHERWISE ACCEPTABLE; IT IS SAFE AND IN OPTIMUM WORKING CONDITION; AND CONFORMS TO THE SPECIFIED OPERATING CHARACTERISTICS.

2. AFTER CONSTRUCTION DEBRIS AND FOREIGN MATERIAL HAS BEEN REMOVED FROM THE WET WELL, CONTRACTOR SHALL SUPPLY WATER VOLUME ADEQUATE TO OPERATE STATION THROUGH SEVERAL PUMPING CYCLES. OBSERVE AND RECORD OPERATION OF PUMPS, SUCTION AND DISCHARGE GAUGE READINGS, AMPERE DRAW, PUMP CONTROLS, AND LIQUID LEVEL CONTROLS. CHECK CALIBRATION OF ALL INSTRUMENTATION EQUIPMENT, TEST MANUAL CONTROL DEVICES, AND AUTOMATIC CONTROL SYSTEMS.

B. COORDINATE STATION START-UP WITH MANUFACTURER'S TECHNICAL REPRESENTATIVE. THE REPRESENTATIVE OR FACTORY SERVICE TECHNICIAN WILL INSPECT THE COMPLETED INSTALLATION. THE TECHNICIAN WILL CALIBRATE AND ADJUST INSTRUMENTATION, CORRECT OR SUPERVISE CORRECTION OF DEFECTS OR MALFUNCTIONS, AND INSTRUCT OPERATING PERSONNEL IN PROPER OPERATION AND MAINTENANCE PROCEDURES.

C. PRIOR TO ACCEPTANCE, INSPECT INTERIOR AND EXTERIOR OF PUMP STATION FOR DIRT, SPLASHED MATERIAL OR DAMAGED PAINT. CLEAN OR REPAIR ACCORDINGLY. REMOVE FROM THE JOB SITE ALL TOOLS, SURPLUS MATERIALS, SCRAP AND DEBRIS.

D. THE PUMP STATION SHOULD BE PLACED INTO SERVICE IMMEDIATELY. IF OPERATION IS DELAYED, STATION IS TO BE STORED AND MAINTAINED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

END OF SECTION

PLAN CHECK OVERSIGHT ENGINEER | REGISTRATION NUMBER | DATE SIGNED

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT
DIAL BEFORE YOU DIG
TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 811
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

The private engineer signing these plans is responsible for assuring the accuracy and acceptability of the design hereon. In the event of discrepancies arising after county approval or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for approval by the county.

MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				COUNTY	

REGISTERED PROFESSIONAL ENGINEER
ROBERT K. HOLT
No. 27943
Exp. 3-31-22
CIVIL
STATE OF CALIFORNIA

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PREPARED BY:
R.C.E. NO. 27943
DATE 07/24/2020

BENCHMARK:
SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

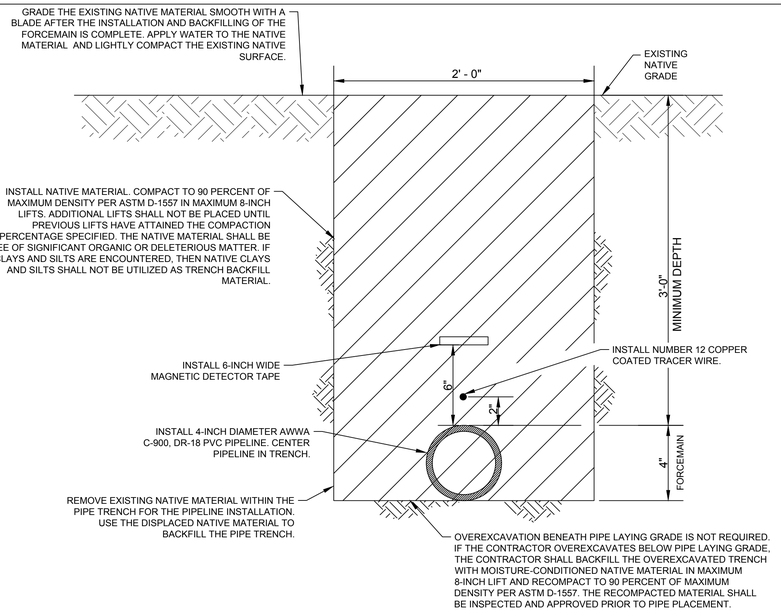
SCALE:
H:________ V:________

M______ IP ______
THG #852.003
MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA

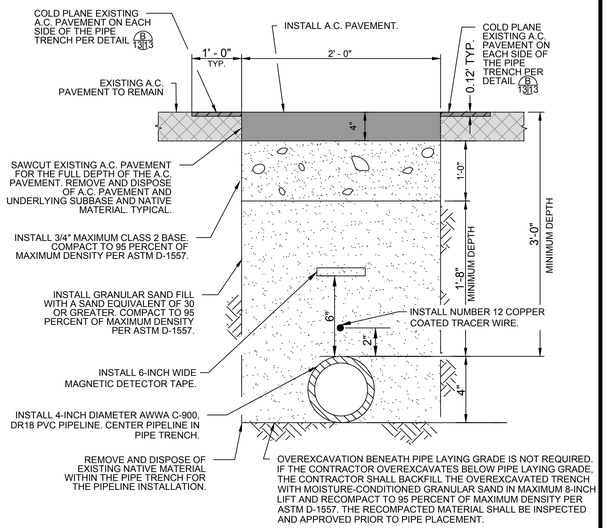
SANITARY SEWER PUMP STATION SPECIFICATIONS

FOR: | W.O. | COUNTY FILE NO.

SHEET NO.
C-DD-12



NATIVE AREA

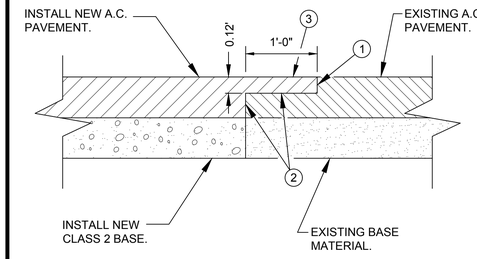


PAVED AREA

FORCEMAIN TRENCH IN NATIVE/PAVED AREAS DETAIL A

SCALE: NTS

3,4,5,6,7,8,15 | 13



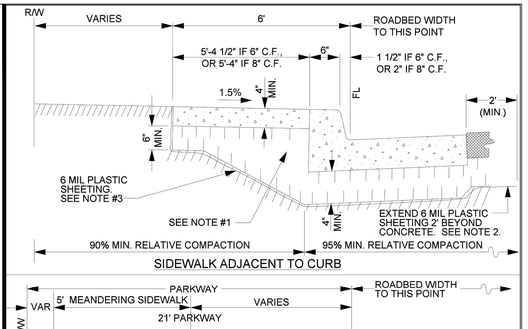
NOTES:

1. COLD PLANE 1 FOOT WIDE X 0.12 FOOT DEEP AREA FOR THE FULL WIDTH OF THE A.C. PAVEMENT.
2. TACK COAT THE SAWCUT A.C. PAVEMENT EDGE AND COLD PLANED AREA WITH A GRADE SS-1H EMULSIFIED ASPHALT AT AN APPROXIMATE RATE OF 0.05 TO 0.10 GALLON PER SQUARE YARD. THE SS-1H EMULSIFIED ASPHALT SHALL BE UNIFORMALY APPLIED PRECEDING THE PLACEMENT OF THE NEW ASPHALT CONCRETE. THE SURFACE SHALL BE FREE OF WATER, FOREIGN MATERIAL OR DUST WHEN THE TACK COAT IS APPLIED.
3. OVERLAY HEADER AREA TO MATCH NEW AND EXISTING A.C. SURFACES.
4. WHERE PAVEMENT IS INSTALLED ON A PROJECT ON MORE THAN ONE DAY, A HEADER (AS HERE IN DESCRIBED) MUST BE PROVIDED AT THE CONSTRUCTION JOINT.

PAVEMENT HEADER CUT EXTENSION DETAIL B

SCALE: NTS

3,6,7,13,15,16 | 13



NOTE:

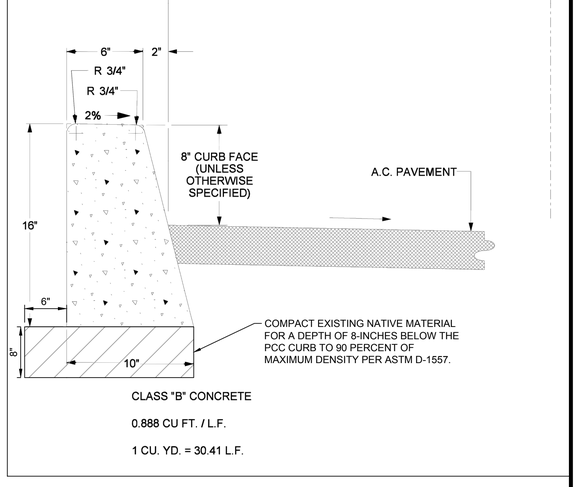
1. AGGREGATE BASE OR APPROVED SELECT MATERIAL WHEN SOILS REPORT INDICATES PRESENCE OF EXPANSIVE SOIL CONDITIONS. COMPACT MATERIAL TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
2. ALL CONSTRUCTION SHALL BE CLASS "B" CONCRETE.
3. WHEN ABUTTING SOIL HAS A HIGH SULFATE CONTENT, SPECIAL CONSIDERATIONS ARE REQUIRED. SEE SPECIFICATIONS (SECTION 18.04).

SIDEWALK DETAIL C

MODIFIED COUNTY OF RIVERSIDE DETAIL 401

SCALE: NTS

7 | 13

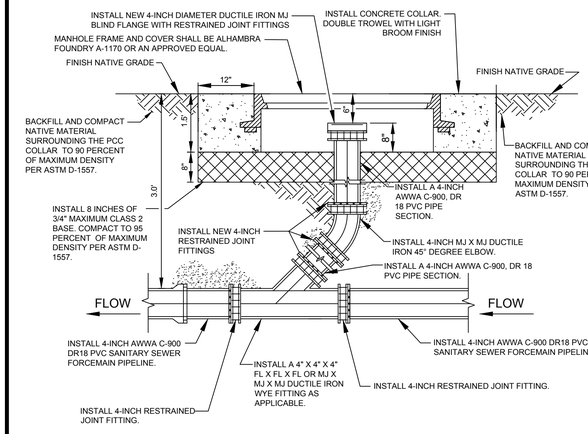


6-INCH BARRIER CURB D

MODIFIED COUNTY OF RIVERSIDE DETAIL 204

SCALE: NTS

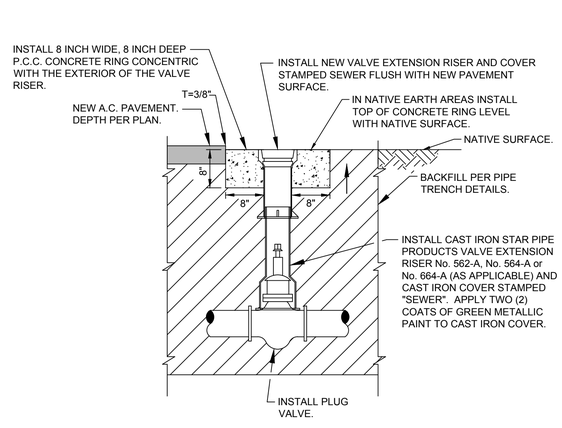
7 | 13



SANITARY SEWER FORCEMAIN SINGLE CLEANOUT DETAIL E

SCALE: NTS

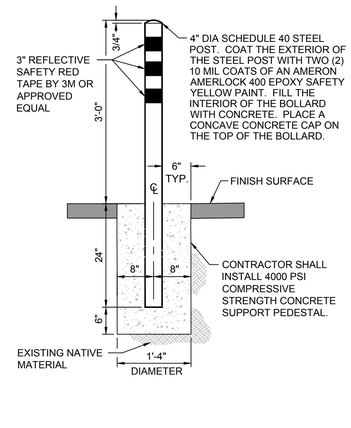
3,4,5,15 | 13



SANITARY SEWER FORCEMAIN VALVE AND RISER F

SCALE: NTS

15 | 13



STEEL BOLLARD DETAIL G

SCALE: NTS

14 | 13

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT

DIAL BEFORE YOU DIG TOLL FREE 811 TWO WORKING DAYS BEFORE YOU DIG

A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

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MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER | COUNTY

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — CIVIL — STATE OF CALIFORNIA

The Holt Group, Inc.

ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING

201 E. HOBSONWAY, BLYTHE, CA 92225, PHONE: (760) 922-4658, FAX: (760) 922-4660

1601 N. IMPERIAL AVE. EL CENTRO, CA 92243, PHONE: (760) 337-3883, FAX: (760) 337-5997

PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK: SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:_____ V:_____

M_____ THG #852.003

MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT IN COUNTY OF RIVERSIDE, CALIFORNIA

DETAIL SHEET

IP _____

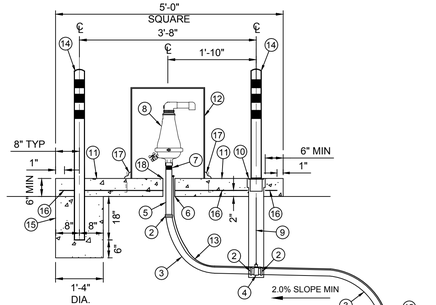
SHEET NO. C-DD-13

13 OF 21 SHTS

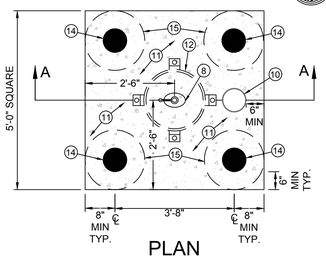
FOR: _____ W.O. _____ COUNTY FILE NO. _____

CONSTRUCTION KEYNOTES

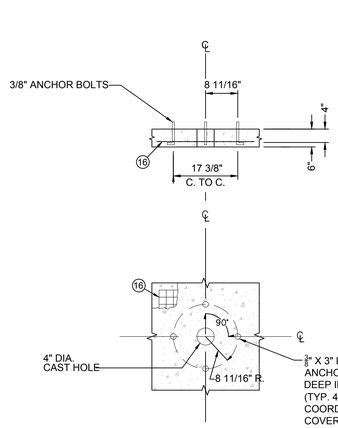
1. INSTALL 4-INCH 316 STAINLESS STEEL SERVICE SADDLE.
2. INSTALL 2-INCH 316 STAINLESS STEEL PEX X 2-INCH NPT MALE ADAPTER AND CLAMP.
3. INSTALL 2-INCH HDPE PEX PIPE.
4. INSTALL 316 STAINLESS STEEL BALL VALVE.
5. INSTALL 2-INCH SS316 PIPE.
6. INSTALL 3-INCH DIAMETER PVC SLEEVE.
7. INSTALL 2-INCH STAINLESS STEEL NIPPLE.
8. INSTALL A.R.I. D-025L OR APPROVED EQUAL COMBINATION AIR VALVE FOR WASTEWATER.
9. INSTALL VALVE STEM EXTENSION.
10. INSTALL G5 CONCRETE UTILITY BOX WITH IRON LID MARKED SEWER.
11. INSTALL 5000 PSI COMPRESSIVE STRENGTH CONCRETE SLAB.
12. INSTALL COVER ASSEMBLY PER DETAIL TO THE RIGHT.
13. INSTALL NUMBER 12 COPPER COATED TRACING WIRE.
14. INSTALL 4-INCH DIA. SCHEDULE 40 STEEL POST. COAT EXTERIOR OF STEEL POST WITH TWO (2) 10 MIL COATS OF AN AMERON AMERLOCK 400 EPOXY SAFETY YELLOW PAINT. FILL THE INTERIOR OF THE BOLLARD WITH CONCRETE. PLACE A CONCAVE CONCRETE CAP ON TOP OF THE BOLLARD. PLACE 3-INCH REFLECTIVE SAFETY TAPE BY 3M OR APPROVED EQUAL AROUND THE CIRCUMFERENCE OF THE BOLLARD. SEE DETAIL G ON SHEET 13.
15. INSTALL P.C.C. FOOTING FOR BOLLARD. THE FOOTING SHALL EXTEND 6-INCHES BELOW THE BOTTOM OF THE BOLLARD AND BE 1-FOOT 4-INCHES IN DIAMETER.
16. INSTALL A SINGLE LAYER OF 6"X6"-10 GAUGE WELDED WIRE FABRIC OVER THE AREA OF SLAB.
17. INSTALL ANCHOR BOLTS AND ANGLE IRONS. SEE RIGHT FOR BASE ASSEMBLY AND COVER ASSEMBLY DETAILS.
18. INSTALL NON-SHRINK GROUT IN THE ANNULAR SPACE BETWEEN THE 316 SS PIPE AND THE 3-INCH DIAMETER SLEEVE.



SECTION A-A

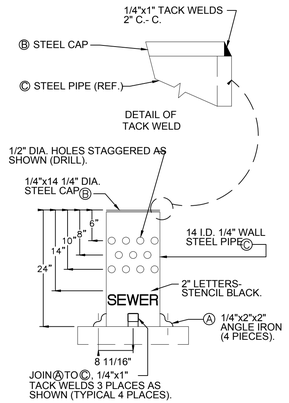


PLAN



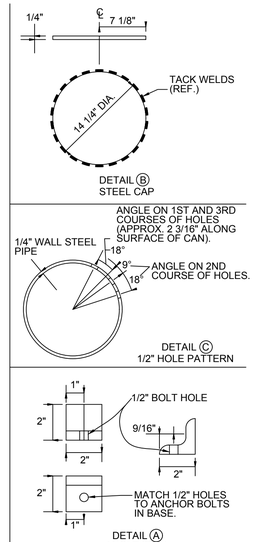
BASE ANCHOR DETAIL

NOTE:
1. TO BE CAST IN PLACE UNLESS OTHERWISE INDICATED BY ENGINEERING DESIGN.
2. ALL METAL FORM STAKES MUST HAVE PROTECTIVE DEVICES SUCH AS "MUSHROOMS" INSTALLED AT ALL TIMES DURING USE, TO ADEQUATELY INSURE SAFETY.



DETAIL COVER ASSEMBLY

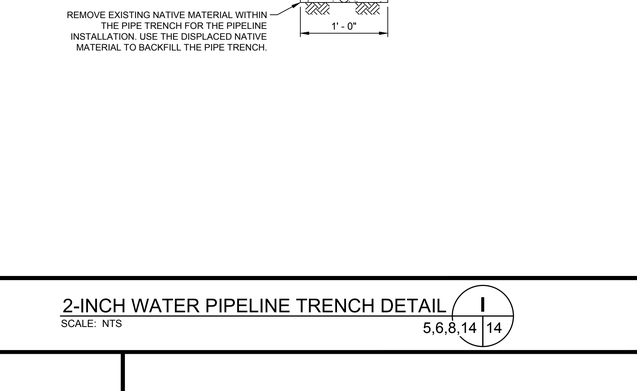
NOTES:
1. FABRICATION BY CEBE CO., PARAMOUNT, CA; PIPELINE PRODUCTS, SAN MARCOS, CA, O.A.E.
2. PIPELINE PRODUCTS, SAN MARCOS, CA PART #: 1" & 2"-VC-316D
   4"-VC-324D
   6"-VC-330D, O.A.E.
3. HOT DIP GALVANIZE.
4. PRIMER (2 COATS) - ZINC CHROMATE OR RED OXIDE METAL PRIMER.
5. PAINT ALUMINUM (BRUSH OR SPRAY).
6. STENCIL "SEWER" IDENTIFICATION (BLACK ENAMEL) MARINE TYPE MOISTURE RESISTANT.



COVER ASSEMBLY DETAIL

SEWAGE AIR RELEASE/ VACUUM VALVE ASSEMBLY DETAIL — H (4,5 | 14)

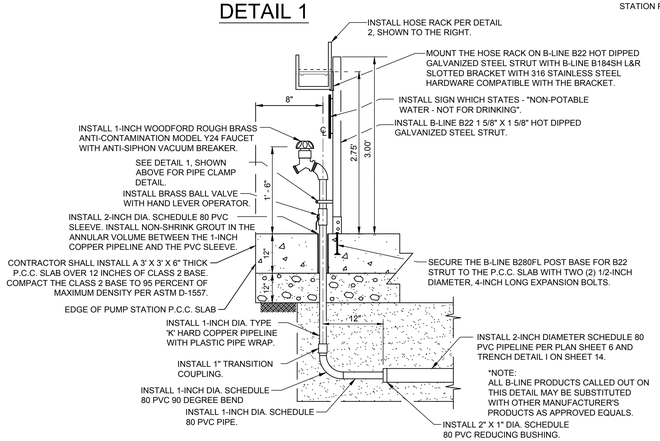
SCALE: NTS

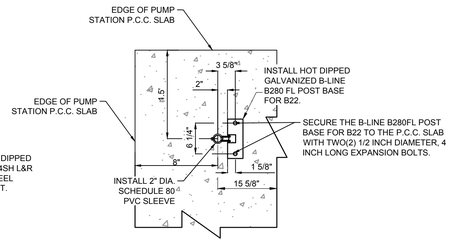


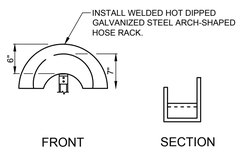
2-INCH WATER PIPELINE TRENCH DETAIL — I (5,6,8,14 | 14)

SCALE: NTS

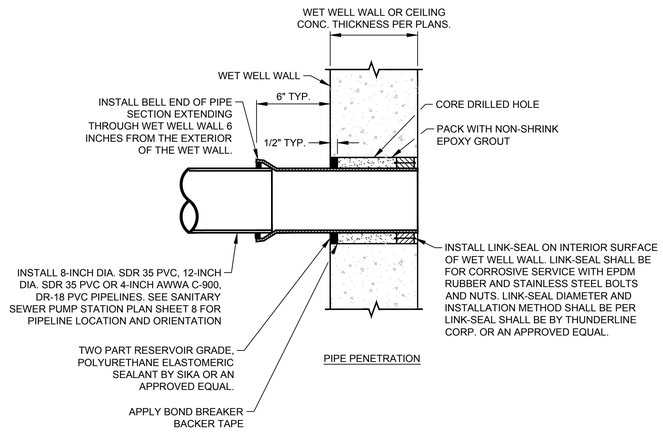
DETAIL 1







DETAIL 2



PIPE PENETRATION

NOTE: THIS PENETRATION DETAIL ALSO APPLIES TO THE 4-INCH AWWA C-900, DR 18 PVC SUCTION AND DISCHARGE PIPELINES EXTENDING THROUGH THE PUMP STATION PCC CEILING.

HOSE BIB DETAIL — J (8 | 14)

SCALE: NTS

WET WELL PIPELINE PENETRATION DETAIL — K (8,9 | 14)

SCALE: NTS

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 811 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

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MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — CIVIL — STATE OF CALIFORNIA

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PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK: SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:_____ V:_____

M_____ THG #852.003

MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA

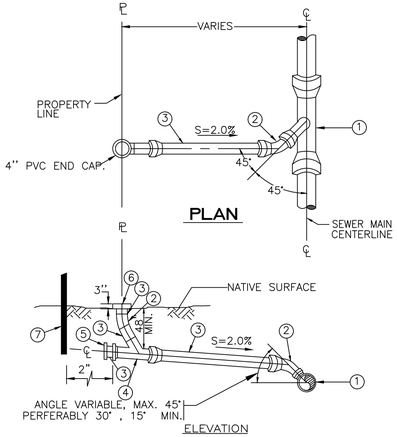
DETAIL SHEET

IP _____

SHEET NO. C-DD-14

14 OF 21 SHTS

FOR: _____ W.O. _____ COUNTY FILE NO. _____



KEYNOTES

1. PIPE MAIN SIZE x 4-INCH SDR 35 PVC WYE FITTING.
2. INSTALL 4 INCH 45 DEGREE SDR 35 PVC FITTING.
3. INSTALL 4" SDR 35 PVC SANITARY SEWER PIPE SECTION.
4. INSTALL 4 INCH SDR 35 PVC WYE FITTING.
5. INSTALL 4 INCH SDR 35 PVC END CAP.
6. PLACE A CLEAN-OUT AT THE PROPERTY LINE. PLACE A 4 INCH SDR 35 PVC END CAP AT THE CLEAN-OUT TERMINATION POINT.
7. INSTALL A 2X4 AT THE END OF EACH LATERAL EXTENDING FROM THE INVERT OF THE LATERAL TERMINATION TO A POINT 2-FEET ABOVE THE EXISTING NATIVE SURFACE.

NOTES:

A. SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 2 PERCENT SLOPE EXCEPT AS OTHERWISE SPECIFICALLY NOTED ON THE PLANS.

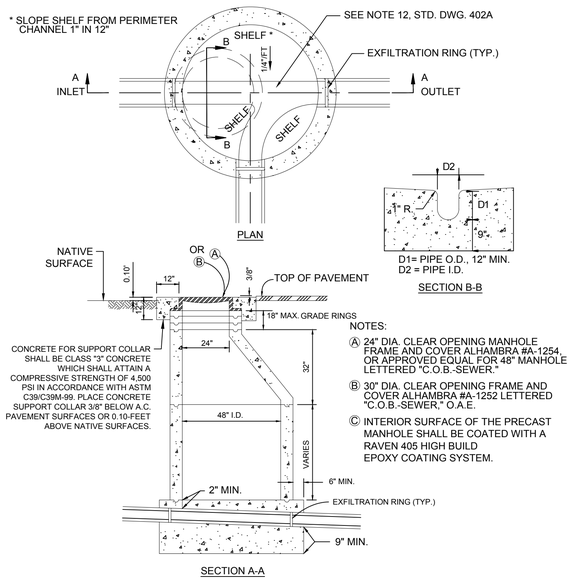
B. END CAPS SHALL BE COMPOSED OF SDR 35 PVC WITH O-RING GASKETS.

C. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF THE PIPE.

SANITARY SEWER LATERAL DETAIL

SCALE: NTS

L | 7 | 15



NOTES:

Ⓐ 24" DIA. CLEAR OPENING MANHOLE FRAME AND COVER ALHAMBRA #A-1254, OR APPROVED EQUAL FOR 48" MANHOLE LETTERED "C.O.B.-SEWER."

Ⓑ 30" DIA. CLEAR OPENING FRAME AND COVER ALHAMBRA #A-1252 LETTERED "C.O.B.-SEWER," O.A.E.

Ⓒ INTERIOR SURFACE OF THE PRECAST MANHOLE SHALL BE COATED WITH A RAVEN 405 HIGH BUILD EPOXY COATING SYSTEM.

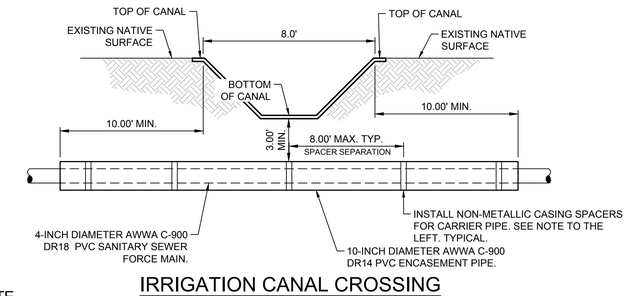
GENERAL NOTES:

1. MANHOLE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE HAVING A MINIMUM THICKNESS OF SIX INCHES AND CONFORMING TO ASTM C-478 REQUIREMENTS FOR MATERIALS AND MANUFACTURE AND ASTM REQUIREMENTS FOR REINFORCEMENT.
2. VERTICAL WALL OF CONE SHALL BE OPPOSITE OUTLET SIDE OF MANHOLE.
3. CONE SHALL BE RAISED WHEN GRADE RINGS EXCEED 18".
4. SUPPORT COLLAR SHALL CONSIST OF CLASS "3" CONCRETE.
5. PLACE CEMENT GROUT IN THE OPENINGS BETWEEN PRECAST MANHOLE UNITS AND GRADE RINGS FLUSH WITH THE INTERIOR AND EXTERIOR SURFACES PRIOR TO APPLYING THE RAVEN 405 HIGH BUILD EPOXY COATING OR COMPLETING BACKFILL WORK AROUND THE EXTERIOR OF THE MANHOLE.
6. CONCRETE SHALL BE CLASS "3" CONCRETE WHICH SHALL ATTAIN A 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI IN ACCORDANCE WITH ASTM C39/C39M-99.
7. SHELF SHALL HAVE A MEDIUM BROOM FINISH. SHELF SHALL BE SLOPED AT 1/4"/FT.
8. THE MAXIMUM DROP BETWEEN THE OUTLET AND INLET OF THIS STRUCTURE IS 0.60' FOR STRAIGHT THROUGH FLOW AND 1.00' FOR SIDE INLET FLOW.
9. THIS MANHOLE IS FOR DEPTHS GREATER THAN 3'-0" AND LESS THAN 20'. MAXIMUM CARRIER PIPE 24" INTERNAL DIAMETER.
10. TROUGH:
    A. SHALL NOT HAVE A FLAT BOTTOM.
    B. SHALL HAVE A STEEL TROWELED FINISH.
    C. DIAMETER OF FEEDLINE SHALL NOT "FLARE OUT" WHERE IT JOINS THE MAINLINE TROUGH.
11. "JIFFY RINGS" SHALL NOT BE ALLOWED.
12. FOR STRAIGHT THROUGH FLOW THE "Y" SHALL NOT BE CONSTRUCTED UNLESS A STUB OR LATERAL IS SHOWN ON THE PLANS AS BEING REQUIRED.
13. MANHOLE RING AND COVER SHALL BE RAISED TO FINISHED GRADE AND SUPPORT COLLAR INSTALLED AFTER PAVING OR FINE GRADING.
14. EXFILTRATION RINGS SHALL BE CONSISTENT WITH PIPE MANUFACTURER'S RECOMMENDATIONS.

SANITARY MANHOLE DETAIL

MODIFIED CITY OF BLYTHE DETAIL SS 402
SCALE: NTS

M | 5,6,7,8 | 15

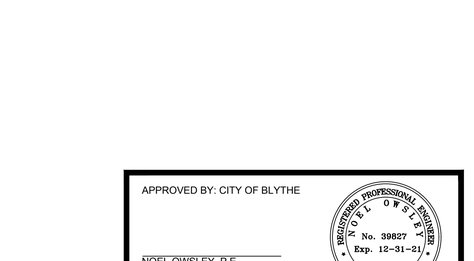


IRRIGATION CANAL CROSSING

NTS

NOTE:

INSTALL NON-METALLIC VIRGIN POLYPROPYLENE SPACERS AFTER THE INSTALLATION OF THE ENCASEMENT PIPELINE HAS BEEN COMPLETED. THE CASING SPACER SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI. SPACERS SHALL BE SPACED A MAXIMUM OF 8 FEET APART ALONG THE LENGTH OF THE CARRIER PIPE WITH ONE CASING SPACER WITHIN 2 FEET OF EACH SIDE OF A PIPE JOINT AND THE REST EVENLY SPACED.



IRRIGATION PIPELINE CROSSING

NTS

4-INCH SANITARY SEWER FORCEMAIN PIPE CASING DETAIL

SCALE: NTS

N | 5 | 15

FORCEMAIN CONNECTION KEYNOTES

EXISTING KEYNOTES

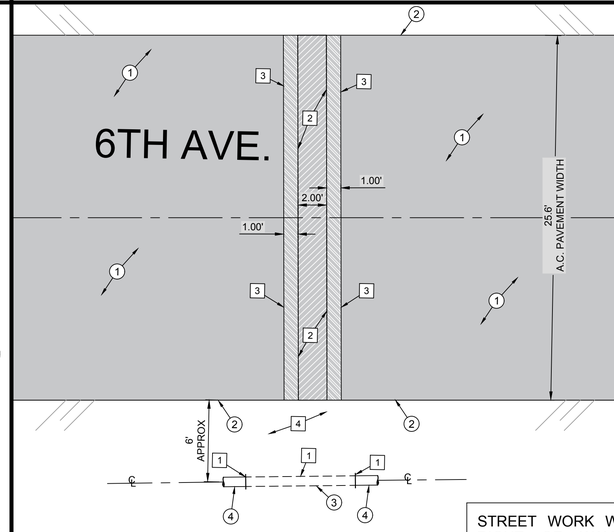
1. EXISTING A.C. PAVEMENT TO REMAIN.
2. EXISTING EDGE OF PAVEMENT.
3. EXISTING 8-INCH DIAMETER HDPE, DR26 PIPELINE.
4. THE CONTRACTOR SHALL COMPLETE EXCAVATION AND POT HOLING ACTIVITIES TO DETERMINE THE EXACT LOCATION OF THE EXISTING 8 INCH SANITARY SEWER FORCEMAIN.

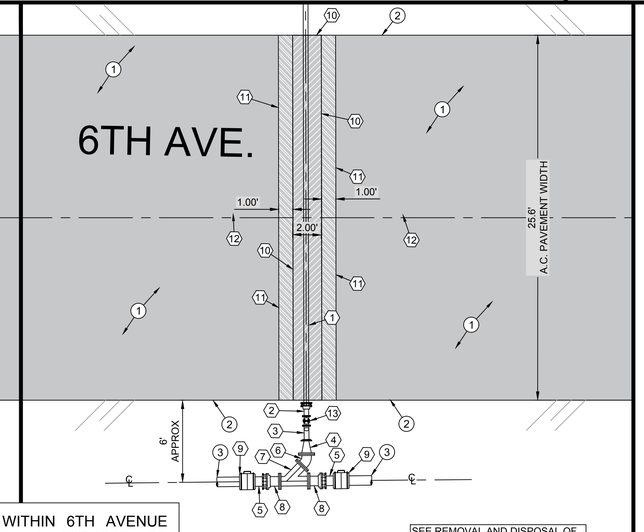
DEMOLITION KEYNOTES

1. SAWCUT THE EXISTING 8-INCH DIAMETER HDPE SANITARY SEWER FORCEMAIN. REMOVE AND DISPOSE OF THE EXISTING 8-INCH DIA. HDPE PIPELINE FOR THE CONNECTION OF THE NEW 4-INCH DIAMETER FORCEMAIN. REMOVE AND DISPOSE OF WASTEWATER RESULTANT FROM SAWCUTTING THE EXISTING 8-INCH SANITARY SEWER FORCEMAIN PER THE FORCEMAIN CONNECTION NOTE ON THIS PLAN SHEET.
2. SAWCUT THE EXISTING A.C. PAVEMENT FOR THE FULL DEPTH OF THE A.C. PAVEMENT. REMOVE AND DISPOSE OF EXISTING A.C. PAVEMENT AND UNDERLYING MATERIAL TO PIPELINE SUBBASE DESIGN GRADE.
3. COLD PLANE EXISTING A.C. PAVEMENT FOR A THICKNESS OF 0.12 FOOT. SEE DETAIL B ON SHEET 13. REMOVE AND DISPOSE OF THE EXISTING GRINDINGS.
4. REMOVE EXISTING NATIVE MATERIAL TO SUBBASE DESIGN GRADE. DISPOSE OF THE EXCESS NATIVE MATERIAL NOT REQUIRED FOR THE BACKFILLING OF THE PIPELINE TRENCH.

CONSTRUCTION KEYNOTES

1. INSTALL NEW 4-INCH-DIAMETER AWWA C-900, DR 18 PVC SANITARY SEWER FORCEMAIN PER TRENCH DETAIL A ON SHEET 13.
2. INSTALL NEW 4-INCH-DIAMETER DUCTILE IRON FL X MJ COUPLING ADAPTER WITH RESTRAINED JOINT FITTINGS.
3. INSTALL NEW 4-INCH-DIAMETER SANITARY SEWER FORCEMAIN SINGLE CLEANOUT PER DETAIL E ON SHEET 13.
4. INSTALL NEW 8-INCH-DIAMETER X 4-INCH-DIAMETER DUCTILE IRON REDUCER.
5. INSTALL NEW 8-INCH-DIAMETER AWWA C-900, DR18 PVC PIPE SECTION.
6. INSTALL NEW 8-INCH-DIAMETER, 45-DEGREE DUCTILE IRON ELBOW.
7. INSTALL NEW 8-INCH X 8-INCH X 8-INCH DUCTILE IRON WYE.
8. INSTALL NEW 8-INCH-DIAMETER MJ X FL DUCTILE IRON COUPLING ADAPTER WITH RESTRAINED JOINT FITTING.
9. INSTALL NEW 8-INCH-DIAMETER DUCTILE IRON EPOXY COATED TRANSITION COUPLING.
10. INSTALL 4 INCHES OF A.C. PAVEMENT OVER 12 INCHES OF CLASS 2 BASE MATERIAL. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. SEE TRENCH DETAIL A ON SHEET 13.
11. INSTALL 0.12 FOOT DEEP A.C. PAVEMENT OVERLAY AT COLD PLANED AREA. SEE DETAIL B ON SHEET 13.
12. PAINT YELLOW DASHED CENTERLINE STRIPING PER CALTRANS STANDARD PLAN A20A. DETAIL 5. REPAIR THE EXISTING STRIPING FOR A LENGTH OF 10 FOOT EACH WAY (TOTAL OF 20-FOOT MIN.) FROM THE CENTERLINE OF THE 4-INCH PIPE TRENCH.
13. INSTALL NEW 4-INCH DIAMETER DUCTILE IRON PLUG VALVE WITH RISER AND COVER PER DETAIL F ON SHEET 13.





STREET WORK WITHIN 6TH AVENUE RIGHT OF WAY IS SUBJECT TO APPROVAL AND INSPECTION BY THE COUNTY OF RIVERSIDE.

SEE REMOVAL AND DISPOSAL OF EXISTING 8-INCH SANITARY SEWER PIPELINE NOTE TO THE RIGHT.

FORCEMAIN CONNECTION - DEMOLITION DETAIL

SCALE: 1" TO 5'

O | 3 | 15

FORCEMAIN CONNECTION - INSTALLATION DETAIL

SCALE: 1"=5'

P | 3 | 15

FORCEMAIN CONNECTION NOTE - REMOVAL AND DISPOSAL OF SANITARY SEWER FLOW

REMOVAL AND DISPOSAL OF SANITARY SEWER AFTER CUTTING EXISTING 8 INCH SANITARY SEWER PIPELINE ALONG SIXTH AVENUE

THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND DISPOSE OF THE SANITARY SEWER FLOW ENTERING THE PIPELINE CONNECTION EXCAVATION AFTER CUTTING THE EXISTING 8 INCH SANITARY SEWER PIPELINE. THE CONTRACTOR SHALL COORDINATE DE-ENERGIZING THE HIDDEN BEACHES PUMP STATION BEFORE AND DURING THE NEW 4 INCH SANITARY SEWER PIPELINE CONNECTION TO THE EXISTING 8 INCH SANITARY SEWER PIPELINE ALONG SIXTH AVENUE. THE CONTRACTOR SHALL POST PERSONNEL AT THE HIDDEN BEACHES PUMP STATION TO INSURE THE PUMP STATION IS NOT ACTIVATED DURING THE NEW 4 INCH PIPELINE CONNECTION PROCESS.

THE CONTRACTOR SHALL PROVIDE ROCK, SUCTION PIPING, PUMPS AND DISCHARGE PIPING, AS REQUIRED, TO REMOVE THE WASTEWATER FROM THE 4 INCH PIPELINE CONNECTION EXCAVATION DURING THE PIPELINE CONNECTION PROCESS. THE CONTRACTOR SHALL PROVIDE ALL SAFETY RELATED ITEMS TO PROTECT THE CONSTRUCTION PERSONNEL TO EXPOSURE TO THE SANITARY SEWER WASTEWATER. THE CONTRACTOR SHALL SUPPLY TANKER TRUCKS OR VACUUM TRUCKS TO REMOVE THE SANITARY SEWER FROM THE EXCAVATION. THE SANITARY SEWER REMOVED FROM THE EXCAVATION SHALL BE DISPOSED OF AT THE CITY OF BLYTHE WASTEWATER TREATMENT PLANT. THE CONTRACTOR SHALL COORDINATE THE DELIVERY OF THE WASTEWATER TO THE BLYTHE WASTEWATER TREATMENT PLANT WITH THE RESIDENT ENGINEER.

APPROVED BY: CITY OF BLYTHE

REGISTERED PROFESSIONAL ENGINEER — NOEL OWSLEY — No. 39827 — Exp. 12-31-21 — CIVIL — STATE OF CALIFORNIA

NOEL OWSLEY, P.E.
CONSULTING CITY ENGINEER

DATE 12/31/21 REG. EXP. 39827 R.C.E. No.

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIG ALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 811 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:
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The private engineer signing these plans is responsible for assuring the accuracy and acceptability of the design hereon. In the event of discrepancies arising after county approval or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for approval by the county.

MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — CIVIL — STATE OF CALIFORNIA

The Holt Group, Inc.
ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING
201 E. HOBSONWAY, BLYTHE, CA 92225, PHONE : (760) 922-4658, FAX : (760) 922-4660
1601 N. IMPERIAL AVE. EL CENTRO, CA 92243, PHONE : (760) 337-3883, FAX : (760) 337-5997

PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK: SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:_____ V:_____

M_____ THG #852.003

MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA

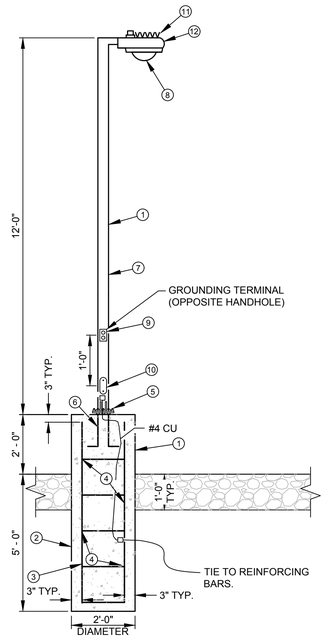
DETAIL SHEET

IP _____

SHEET NO. C-DD-15

15 OF 21 SHTS

FOR: W.O. COUNTY FILE NO.

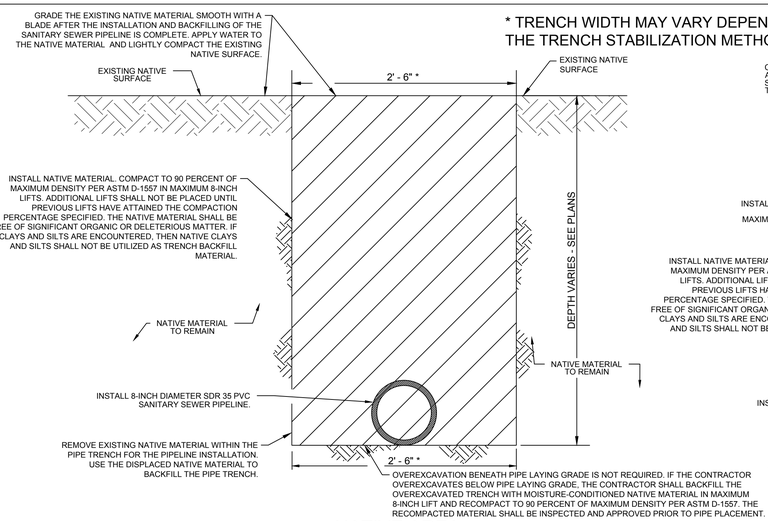


KEYNOTES

1. SEE IMPROVEMENT PLANS FOR THE LOCATION OF THE LIGHT ASSEMBLY.
2. INSTALL 2-FOOT-DIAMETER CONCRETE PEDESTAL FOR THE LIGHT POLE. THE CONCRETE SHALL ATTAIN A COMPRESSIVE STRENGTH OF 5,000 P.S.I. AFTER 28 DAYS CURING. THE CONTRACTOR SHALL UTILIZE A 2-FOOT-DIAMETER SONATUBE TO FORM THE PEDESTAL.
3. INSTALL NUMBER 5 VERTICAL REINFORCEMENT STEEL BARS IN THE 2-FOOT-DIAMETER PEDESTAL SUCH THAT THE VERTICAL BARS ARE PLACED 8 INCHES ON CENTER ALONG A CIRCUMFERENCE BASED ON A DIAMETER OF 1'-6".
4. INSTALL NUMBER 4 REINFORCEMENT STEEL TIE BARS CONSTRUCTED IN A CIRCULAR SHAPE BASED ON A DIAMETER OF 1'-6". THE CIRCULAR TIE BAR ENDING POINT SHALL LAP THE BEGINNING POINT BY A LENGTH OF 1 FOOT. INSTALL THE NUMBER 4 CIRCULAR SHAPED REINFORCING TIE BARS 1 FOOT ON CENTER.
5. PLUMB THE LIGHT POLE BY ADJUSTING THE ANCHOR BASE PLATE LEVELING BOLTS. PLACE A NON-SHRINK GROUT BETWEEN THE BOTTOM OF THE ANCHOR BASE PLATE AND THE TOP OF THE CONCRETE PEDESTAL.
6. CAST HIGH STRENGTH ANCHOR BOLTS INTO THE CONCRETE PEDESTAL UTILIZING A TEMPLATE SUPPLIED BY THE LIGHT POLE MANUFACTURER. MANUFACTURER TO PROVIDE ANCHOR BOLT STRUCTURAL CALCULATIONS.
7. INSTALL A 12-FOOT-HIGH SQUARE BRONZE POLE. THE POLE SHALL BE PROVIDED WITH STEEL BASE CONTINUOUSLY WELDED TO THE SHAFT. THE POLE SHALL BE FURNISHED WITH HIGH STRENGTH ANCHOR BOLTS AS RECOMMENDED BY THE MANUFACTURER. THE BOLT CIRCLE DIAMETER, SHAFT SIZE, BOLT SIZE AND BOLT PROJECTION SHALL BE DESIGNED TO WITHSTAND A MOMENT AT THE BASE CREATED BY THE SHAFT AND FIXTURE OF THE POLE GIVEN A 100 MILE PER HOUR WIND WITH GUSTS OF 130 MILES PER HOUR. THE MANUFACTURER OF THE POLE SHALL DETERMINE THE ABOVE MENTIONED ITEMS BASED ON THE GIVEN CRITERIA.
8. INSTALL XSP SERIES AREA LUMINAIRE - MEDIUM LIGHT FIXTURE LED LIGHT MANUFACTURED BY CREE LIGHTING OR AN APPROVED EQUAL. THE FIXTURE SHALL BE 3ME - TYPE III MEDIUM, 12L - 12,000 LUMENS, 40K7 - 4000K/70 CRI MINIMUM OR ABOVE, UL - UNIVERSAL 120-277 VOLTAGE, SV - SILVER COLOR, N - UTILITY LABEL AND NEMA 7-PIN PHOTOCELL RECEPTACLE AND Q7 INCLUDING FULL RANGE LUMEN ADJUSTABILITY, WATTAGE LABEL FOR SETTING SELECTED AND 7-PIN RECEPTACLE WITH CONTROLLABLE DIMMING OPTION.
9. INSTALL A 120V, GROUND FAULT CIRCUIT INTERRUPTER (GFCI) DUPLEX RECEPTACLE IN POLE WITH METALLIC WEATHERPROOF COVER. RECEPTACLE BOX SHALL BE FLUSH MOUNTED ON THE POLE. FABRICATION AND MOUNTING OF BOX SHALL BE BY POLE MANUFACTURER.
10. THE STEEL POLE SHALL BE EQUIPPED WITH A 4-INCH X 6-INCH HAND HOLE.
11. INSTALL BIRD SPIKE MANUFACTURED BY THE SAME MANUFACTURER OF THE LIGHT FIXTURE. SECURE THE BIRD SPIKE TO THE TOP OF LIGHT AS RECOMMENDED BY THE MANUFACTURER.
12. DIE CAST ALUMINUM HOUSING, COATED WITH EPOXY PRIMER AND SILVER POWDER TOPCOAT.

LIGHT ASSEMBLY AND PEDESTAL DETAIL — Q — 8 | 16

SCALE: NTS



SANITARY SEWER MAIN TRENCH SECTION IN PAVED AND NATIVE AREAS DETAIL — R — 5,6,7,8,9 | 16

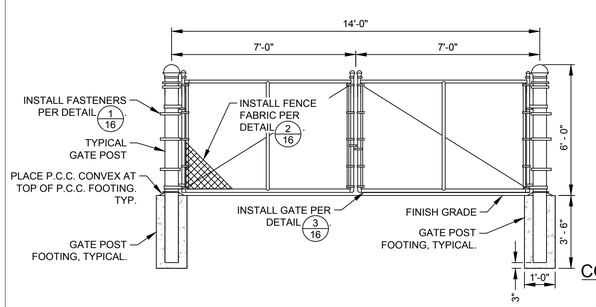
SCALE: NTS

NOTES:

1. WHERE THE TRENCH DEPTH EXCEEDS 3', THE PIPELINE SUBCONTRACTOR CAN UTILIZE ANY OF THE FOLLOWING METHODS FOR EXCAVATION AND TRENCH STABILIZATION. THE METHOD OF EXCAVATION AND TRENCH STABILIZATION SHALL BE APPROVED BY CAL OSHA. DUE TO THE LARGE NUMBER OF UTILITIES, TREES, AND A.C. PAVEMENT IN CLOSE PROXIMITY TO THE NEW SANITARY SEWER PIPELINE, OPEN CUT TRENCHING AT SIDE-SLOPES OF 1:1 OR STEPPING/BENCHING OF THE EXCAVATION TRENCH SHALL NOT BE ALLOWED.

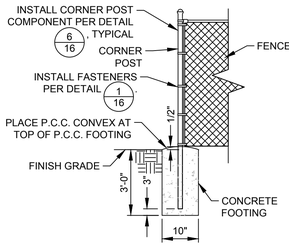
   A) SHORING AS AN APPROVED SUBMITTAL DOCUMENT.
   B) USE OF STEEL SHIELD.
   C) USE OF TRENCH JACKS.

2. WHEN THE PIPE TRENCH IS UNSTABLE DUE TO GROUND WATER INFILTRATION PLACE 1-FOOT OF 3/4-INCH DIAMETER ROUND ROCK BENEATH THE SANITARY SEWER PIPELINE.
3. INSTALLATION OF TEMPORARY COLD MIX PAVEMENT MAY BE ALLOWED FOR A MAXIMUM PERIOD OF TWO WEEKS, IF APPROVED BY THE COUNTY OF RIVERSIDE REPRESENTATIVE FOR THE CONSTRUCTION OF SANITARY SEWER FACILITY. THE CONTRACTOR SHALL INSTALL PERMANENT A.C. PAVEMENT REPLACEMENT IN PIPE TRENCH AREAS WITHIN TWO WEEKS OF TRENCHING ACTIVITY.



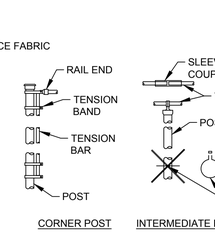
FENCING DETAILS — S — 8 | 16

SCALE: NTS



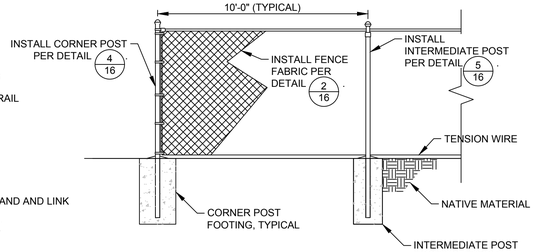
CORNER POST SECTION, TYP. — 4 — 16

NOT TO SCALE



ENLARGED POST DETAILS — 6 — 16

NOT TO SCALE



MATERIALS SCHEDULE FOR FENCING

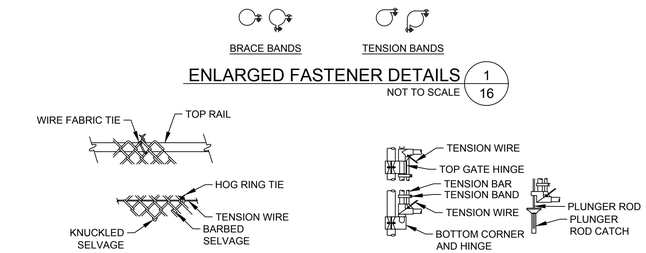
DESCRIPTION	SIZE
I. FABRIC	
A. SWING GATE	PRIVACY LINK, #10.5 GAUGE WITH VINYL PRIVACY SLATS
B. FENCE BAY	2" MESH, #9 GAUGE WITH VINYL PRIVACY SLATS
II. RAILS, POSTS, AND GATES	
A. CORNER AND PULL POSTS	2 7/8" O.D. @ 2.72 LB/FT
B. INTERMEDIATE POSTS	2 3/8" O.D. @ 2.23 LB/FT
C. RAILS	1 5/8" @ 1.65 LB/FT
D. GATE POSTS	4" O.D. @ 7.85 LB/FT
E. GATE FRAMES	1 7/8" TUBULAR MATERIAL
III. TENSION BARS	1/4" X 3/4"
IV. TENSION WIRE	#9 GAUGE
V. FOOTINGS	
A. CORNER AND PULL POSTS	10" O.D. X 36" DEEP
B. INTERMEDIATE POSTS	8" O.D. X 30" DEEP
C. GATE POSTS	12" O.D. X 42" DEEP
D. CONCRETE - FOOTINGS SHALL CONSIST OF (7) SACKS OF CEMENT PER CUBIC YARD OF CONCRETE AND SHALL ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS OF CURING.	

FENCING NOTES

GRADING OF THE GROUND ALONG THE FENCE TO ASSURE A UNIFORM GRADE ALONG THE LENGTH OF THE FENCE SHALL BE ACCOMPLISHED BY THE CONTRACTOR PRIOR TO POST PLACEMENT. THE CHAIN LINK FENCE FABRIC SHALL BE SIX (6) FEET HIGH UNLESS OTHERWISE SPECIFIED ON THE PLANS. IT SHALL BE FASTENED TO THE LINE POSTS BY MEANS OF SUITABLE GALVANIZED CLIPS AT INTERVALS OF NOT MORE THAN TWO (2) FEET AND FASTENED TO THE END, CORNER AND GATE POSTS BY MEANS OF ADJUSTABLE CLAMPS AT INTERVALS NOT TO EXCEED 15 INCHES AND AT TENSION BARS. FABRIC SHALL CONFORM TO ASTM STANDARD A-392, EXCEPT THAT IT SHALL WITHSTAND SIX (6) DIPS OF ONE (1) MINUTE EACH BY THE PREECE TEST (ASTM A-239). PIPE SHALL CONFORM TO ASTM STANDARD A-120. THE CHAIN LINK FABRIC SHALL BE ATTACHED TO THE TENSION WIRE AT INTERVALS OF NOT MORE THAN (2) FEET. TENSION WIRE SHALL CONFORM TO ASTM STANDARD A-112. THE CHAIN LINK GATES TO BE FURNISHED AND INSTALLED SHALL BE JOINED AT THE CORNERS BY ARC WELDING TO FORM A SOLID PANEL, AND SHALL BE SUITABLY BRACED TO PREVENT SAGGING. THE FABRIC SHALL BE THE SAME AS SPECIFIED FOR THE FENCE AND IT SHALL BE FASTENED TO THE FRAME BY MEANS OF ADJUSTABLE CLAMPS AND TENSION RODS. THE GATES SHALL BE EQUIPPED WITH SUITABLE HINGES AND COMBINATION CATCHES AND LOCKING OF APPROVED DESIGN. EXCEPT WHERE OTHERWISE SPECIFIED, ALL PARTS OF THE FENCE, GATES AND PIPE CLAMPS ARE TO BE GALVANIZED THROUGHOUT WITH HOT DIP GALVANIZING IN CONFORMANCE WITH " STANDARD SPECIFICATIONS OF ZINC (HOT GALVANIZED) COATINGS ON STRUCTURAL STEEL SHAPES, PLATES, BARS AND THEIR PRODUCTS" (ASTM A-123), AND WITHSTANDING SIX (6) ONE MINUTE IMMERSIONS BY THE PREECE TEST (ASTM A-239-44). GATES MAY BE GALVANIZED AFTER FABRICATION OR FABRICATED FROM GALVANIZED PARTS, IN WHICH CASE THE WELDS SHALL BE PROTECTED BY AN APPROVED METHOD THAT WILL MEET THE REQUIREMENTS OF THE PREECE TEST REFERENCED ABOVE. POST SHALL BE SET PLUMB AND SHALL BE CENTERED IN THE CONCRETE ENCASEMENT. THE TOP SURFACES OF THE CONCRETE ENCASEMENT SHALL BE SLOPED OUTWARD TO SHED WATER AND SHALL HAVE A NEAT APPEARANCE. ANY GALVANIZED COATING DAMAGED DURING CONSTRUCTION OF THE FENCING SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE. AFTER THE FENCE IS INSTALLED, THE CONTRACTOR SHALL COLLECT ALL DEBRIS RESULTING FROM THE FENCE INSTALLATION AND REMOVE IT FROM THE PROJECT SITE. THE GROUND ON EACH SIDE OF THE FENCE SHALL BE LEVELED EVEN WITH THE EXISTING GRADE.

LOCK MECHANISM FOR GATE

A SUITABLE LOCK MECHANISM FOR THE GATE SHALL BE PROVIDED. THE LOCK MECHANISM SHALL BE PROVIDED WITH A GATE LOCK AND SIX KEYS FOR THE LOCK. LOCK MECHANISM SHALL BE APPROVED DURING SUBMITTAL PROCESS.



ENLARGED FASTENER DETAILS — 1 — 16

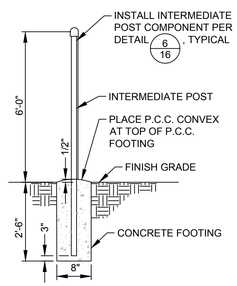
NOT TO SCALE

ENLARGED GATE DETAILS — 2 — 16

NOT TO SCALE

ENLARGED GATE DETAILS — 3 — 16

NOT TO SCALE



INTERMEDIATE POST SECTION, TYPICAL — 5 — 16

NOT TO SCALE

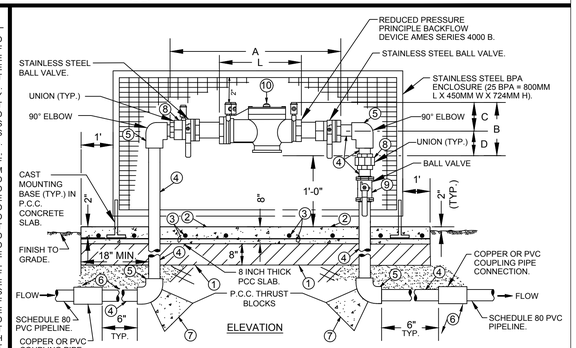


TABLE OF DIMENSIONS FOR BACKFLOW ASSEMBLY

SIZE (DN)	DIMENSIONS (APPROX.)										WEIGHT	
	A		B		C		D		L			
in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	lbs.	kg.
1/2	15	10	250	4-3/8	117	3-3/8	86	1-1/4	32	5-1/2	140	4.50	2.0
3/4	20	10-3/4	273	5	127	3-1/2	89	1-1/2	38	6-3/4	171	5.75	2.6
1	25	16-3/4	425	5-1/2	140	3	76	2-1/2	64	9-1/2	241	12.25	5.6
1-1/4	32	17-3/8	441	6	150	3-1/2	89	2-1/2	64	11-3/8	289	14.62	6.6
1-1/2	40	17-7/8	454	6	150	3-1/2	89	2-1/2	64	11-1/8	283	16.32	7.4
2	***50***	***21-3/8***	***543***	***7-3/4***	***197***	***4-1/2***	***114***	***3-1/4***	***83***	***13-1/2***	***343***	***30.00***	***13.6***

NOTES:

1. INSTALL 8 INCHES OF CLASS 2 BASE. COMPACT THE CLASS 2 BASE TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
2. INSTALL A 4 FOOT WIDE, 8 INCH DEEP P.C.C. CONCRETE SLAB. THE LENGTH OF THE CONCRETE SLAB SHALL BE DETERMINED BY THE DIAMETER SIZE OF THE PIPELINE AND LENGTH OF THE BACKFLOW PREVENTER ASSEMBLY. THE SURFACE OF THE CONCRETE SLAB SHALL RECEIVE A DOUBLE TROWEL FINISH. THE CONCRETE SHALL CONTAIN 6-1/2 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 4,500 PSI AFTER 28 DAYS CURING. THE CEMENT SHALL BE TYPE V.
3. INSTALL NUMBER 4 REINFORCING BARS 12 INCHES ON CENTER EACH WAY.
4. INSTALL TYPE K COPPER PIPELINE PER THE DIAMETER REQUIRED BY THE PLANS.
5. INSTALL COPPER 90 DEGREE ELBOWS.
6. BACKFILL THE BELOW GRADE PIPELINES AND 90 DEGREE ELBOW WITH A 1 FOOT ENVELOPE OF GRANULAR SAND BACKFILL. COMPACT THE GRANULAR SAND BACKFILL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
7. INSTALL P.C.C. THRUST BLOCKS.
8. INSTALL A BRASS UNION FITTING. THE DIAMETER SIZE SHALL BE AS INDICATED ON THE PLANS.
9. INSTALL A BRASS BALL VALVE WITH OPERATOR HANDLE. THE DIAMETER SIZE SHALL BE AS INDICATED ON THE PLANS.
10. INSTALL A BRONZE BODY REDUCED PRESSURE PRINCIPAL BACKFLOW DEVICE ASSEMBLY WITH STAINLESS STEEL BALL VALVE HANDLES. CLEAN AND CHECK STRAINER AND UNION CONNECTIONS. THE BRONZE BODY REDUCED PRESSURE PRINCIPAL BACKFLOW DEVICE SHALL BE AN AMES FIRE & WATERWORKS SERIES 4000B.

REDUCED PRESSURE PRINCIPAL 2 INCH DIAMETER BACKFLOW PREVENTION ASSEMBLY — T — 6 | 16

SCALE: NTS

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

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MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — CIVIL — STATE OF CALIFORNIA

The Holt Group, Inc.

ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING

201 E. HOBSONWAY, BLYTHE, CA 92225, PHONE : (760) 922-4658, FAX : (760) 922-4660

1601 N. IMPERIAL AVE. EL CENTRO, CA 92243, PHONE : (760) 337-3883, FAX : (760) 337-5997

PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK: SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:_____ V:_____

M_____ THG #852.003 — MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT IN COUNTY OF RIVERSIDE, CALIFORNIA — IP _____

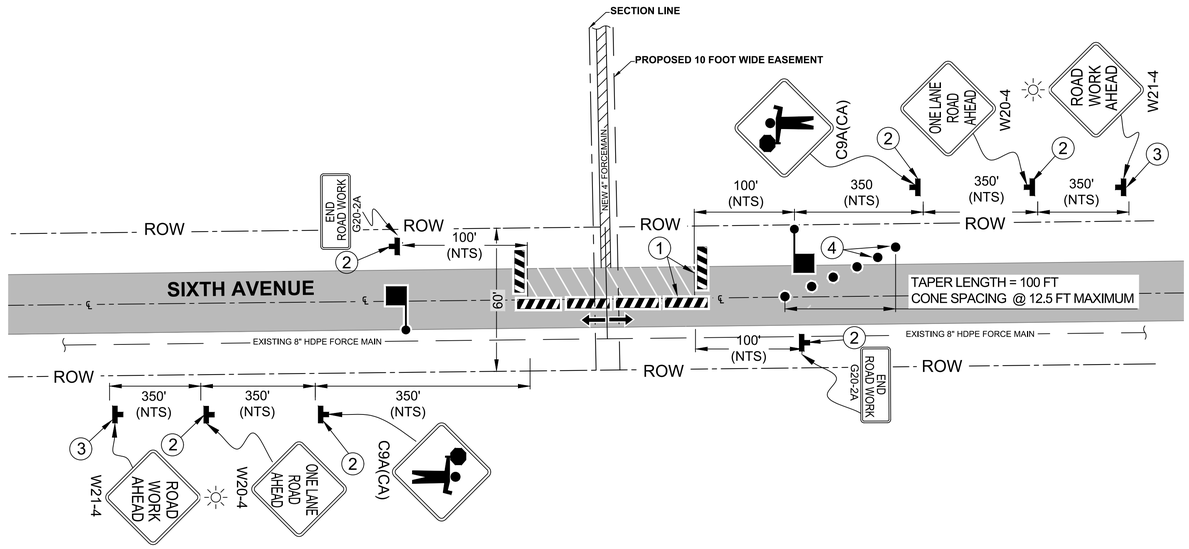
DETAIL SHEET

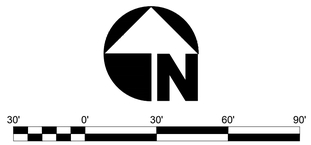
SHEET NO. C-DD-16

16 OF 21 SHTS

FOR: _____ W.O. _____ COUNTY FILE NO. _____

MUTCD TA - 10 (MODIFIED) - LANE CLOSURE ON A TWO LANE ROAD USING FLAGGERS





NOTES:

1. ALL TRAFFIC CONTROL DEVICES FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF MUTCD AND MUTCD CALIFORNIA SUPPLEMENT.
2. TRAFFIC CONTROL SHOWN HEREIN IS THE MINIMUM REQUIRED. ADDITIONAL TRAFFIC CONTROL MAY BE REQUIRED TO FACILITATE PUBLIC SAFETY AND TRAFFIC FLOW IF DEEMED NECESSARY BY THE COUNTY OF RIVERSIDE TRANSPORTATION AND LAND MANAGEMENT AGENCY REPRESENTATIVE, CITY OF BLYTHE PUBLIC WORKS DEPARTMENT REPRESENTATIVE OR THE ENGINEER. THESE CHANGES MAY BE DONE IN THE FIELD.
3. THROUGHOUT EACH WORK PERIOD, CONTRACTOR SHALL INSPECT TRAFFIC CONTROL (SIGNS, BARRICADES AND DELINEATORS) AND MAINTAIN SAME IN ACCORDANCE WITH TRAFFIC CONTROL PLANS.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM 12-FEET TRAFFIC LANE WIDTH AT ALL TIMES. THERE SHALL BE A MINIMUM 2-FEET BETWEEN THE EDGE OF CUT AND THE NEAREST TRAFFIC LANE.
5. ACCESS TO PRIVATE PROPERTY SHALL BE MAINTAINED AT ALL TIMES.
6. NO STREET PARKING SHALL BE ALLOWED ALONG SIXTH AVENUE WITHIN THE CONSTRUCTION ZONE. CONTRACTOR SHALL INSTALL NO PARKING SIGNS (R8-3A) AT ALL REQUIRED AREAS AT LEAST ONE WEEK PRIOR TO BEGINNING OF CONSTRUCTION.
7. CONTRACTOR SHALL DISTRIBUTE A FLIER TO ALL THE PARK USERS AFFECTED BY THE PROPOSED CONSTRUCTION ACTIVITIES. THE FLIER SHALL BE APPROVED BY THE PARK RANGER PRIOR TO DISTRIBUTION. CONTRACTOR SHALL DISTRIBUTE THE FLIERS A MINIMUM OF TWO WEEKS PRIOR TO BEGINNING OF CONSTRUCTION. RE-NOTIFICATION WILL BE REQUIRED IF THE CONTRACTOR'S SCHEDULE IS ALTERED OR OTHER DELAYS OCCUR WHICH AFFECT THE PROJECT SCHEDULE.
8. ALL SIGNS SHALL BE HIGH INTENSITY REFLECTIVE. ALL TRAFFIC CONTROL DEVICES SHALL BE REFLECTIVE. FLASHING LIGHTS SHALL BE INSTALLED PER PLANS. TRAFFIC BEACONS (12") SHALL BE PLACED ON ALL DETOUR AHEAD (W21-4) AND ROAD CLOSED AHEAD (C19) SIGNS.
9. THE RESIDENT ENGINEER/ PROJECT INSPECTOR SHALL DETERMINE IF THIS PLAN STAYS IN PLACE OVERNIGHT OR NOT. IF STEEL PLATES ARE USED, COLD-MIX A.C. PAVEMENT SHALL BE USED TO ACCOMPLISH A SMOOTH TRANSITION BETWEEN STEEL PLATE AND THE ROADWAY GRADES.
10. ACCESS TO PRIVATE PROPERTY AND EMERGENCY VEHICLE ACCESS SHALL BE MAINTAINED AT ALL TIMES.
11. CONTRACTOR SHALL INSTALL CLASS 2 BASE UP TO FINISHED GRADE ELEVATION AFTER SAWCUT AND REMOVAL OF EXISTING A.C PAVEMENT SECTION FOR RESIDENTIAL/ BUSINESS ACCESS.
12. THE CONTRACTOR SHALL MAKE ACCOMMODATIONS TO ALLOW REGULARLY SCHEDULED SOLID WASTE DISPOSAL PICK UP ALONG THE AFFECTED STREET SECTIONS DURING THE PROJECT CONSTRUCTION PERIOD.
13. CONTRACTOR SHALL COVER EXISTING TRAFFIC SIGNS, TRAFFIC SIGNALS, OR PEDESTRIAN SIGNAL INDICATIONS SHOULD SAID CONTROLS CONFLICT WITH TEMPORARY TRAFFIC CONTROL PLAN OR AS DIRECTED BY THE CITY OR COUNTY OF RIVERSIDE REPRESENTATIVE.
14. CONTRACTOR SHALL REPLACE/REPAIR ANY AND ALL STRIPING, PAVEMENT MARKINGS, RAISED PAVEMENT MARKERS, AND CURB PAINT DISRUPTED OR REMOVED DURING THE CONSTRUCTION TO THE SATISFACTION OF THE COUNTY OF RIVERSIDE INSPECTOR.
15. THE CONTRACTOR SHALL COMPLETE EACH PHASE OF PIPELINE INSTALLATION AND PAVING OPERATIONS IN TWO (2) HALF SECTIONS DIVIDED ALONG THE CENTERLINE OF THE ROADWAY. IF THERE IS ANY GRADE DIFFERENCE ALONG THE CENTERLINE OR SHOULDERS OF THE ROADWAY AT ANY TIME, PLACE "UNEVEN LANES" (W8-11) SIGNS AND SHOULDER DROP-OFF SIGNS (W8-17 & 8-17P) AT THREE (3) LOCATIONS ALONG THE LENGTH OF THE ROADWAY IMPROVEMENT. THE EXACT LOCATIONS OF THE SIGN PLACEMENT SHALL BE DETERMINED BY THE ENGINEER.
16. INSTALL COLD-MIX A.C. PAVEMENT ALONG THE TRANSVERSE PAVEMENT JOINTS BETWEEN THE EXISTING AND NEW PAVEMENT SURFACES TO CREATE A SMOOTH TRANSITION.
17. REFER TO THE LATEST REVISION OF MUTCD REGARDING THE NOTES FOR EACH TYPICAL APPLICATION CALLED OUT ON THIS PLAN.

TRAFFIC CONTROL KEYNOTES:

1. INSTALL TYPE III BARRICADE WITH WARNING LIGHTS AS ILLUSTRATED ON PLANS.
2. INSTALL WARNING/REGULATORY SIGN AS ILLUSTRATED ON THE PLAN.
3. INSTALL WARNING/REGULATORY SIGN WITH WARNING LIGHT AS ILLUSTRATED ON THE PLAN.
4. INSTALL REFLECTIVE TRAFFIC CONES/DELINEATERS AT 12.5 FEET ON CENTER ALONG THE TAPER, TYPICAL.

TRAFFIC CONTROL GENERAL NOTE:

TRAFFIC CONTROL DEVICES ILLUSTRATED ON THIS SHEET SHIFTS TRAFFIC TO ALLOW THE CONTRACTOR TO HAVE THE WORK ZONE ON THE NORTH SIDE OF SIXTH AVENUE. THE CONTRACTOR SHALL USE THE SAME MIRRORED TRAFFIC CONTROL TO ALLOW THE WORK ZONE TO BE ON THE SOUTH SIDE OF SIXTH AVENUE. THE TRAFFIC CONTROL SHALL COMPLY WITH CA MUTCD TA 10.

*** LATEST VERSION OF CALIFORNIA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD) IS CA MUTCD 2014 ***
**** A COPY OF CA MUTCD 2014 CAN BE OBTAINED FROM "HTTPS://DOT.CA.GOV/PROGRAMS/TRAFFIC-OPERATIONS/CAMUTCD/CAMUTCD-REV4" ****

TRAFFIC CONTROL LEGEND

ITEM NO.	ITEM DESCRIPTION	ITEM
1.	CHANNELIZING DEVICE	●
2.	DIRECTION OF TRAFFIC	→
3.	TYPE III BARRICADE	
4.	WARNING/REGULATORY SIGN	
5.	WARNING FLASHING LIGHT	
6.	WORK AREA	
7.	FLAGGER	

DATE SIGNED | REGISTRATION NUMBER | PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT — DIAL BEFORE YOU DIG — TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:
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MARK	BY	DATE	REVISIONS	APPR	DATE

ENGINEER | COUNTY

REGISTERED PROFESSIONAL ENGINEER — ROBERT K. HOLT — No. 27943 — Exp. 3-31-22 — CIVIL — STATE OF CALIFORNIA

The Holt Group, Inc.
ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING
201 E. HOBSONWAY, BLYTHE, CA 92225, PHONE : (760) 922-4658, FAX : (760) 922-4660
1601 N. IMPERIAL AVE. EL CENTRO, CA 92243, PHONE : (760) 337-3883, FAX : (760) 337-5997

PREPARED BY: _____ R.C.E. NO. 27943 DATE 07/24/2020

BENCHMARK: SEE SHEET 2 FOR LIST OF TEMPORARY BENCHMARK

SCALE: H:_____ V:_____

M_____ THG #852.003

MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA

TRAFFIC CONTROL PLAN

IP _____

SHEET NO. C-DD-17

17 OF 21 SHTS

FOR: | W.O. | COUNTY FILE NO.

NOTES:

1. ALL ELECTRICAL WORK SHOWN IS NEW UNLESS NOTED OTHERWISE.
2. THE ELECTRICAL CONTRACTOR SHALL COORDINATE, BID, AND PROVIDE ALL INCIDENTAL ELECTRICAL DEMOLITION WORK, TEMPORARY ELECTRICAL REMOVAL & REINSTALLATION WORK, & RESTORATION OF EXISTING ELECTRICAL WORK TO EXISTING CONDITION OR BETTER AT ANY CIVIL OR MECHANICAL DEMOLITION OR RENOVATIONS IDENTIFIED ON THE CIVIL OR MECHANICAL PLANS. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE CIVIL OR MECHANICAL PLANS & COORDINATING WORK RESPONSIBILITY WITH THE GENERAL CONTRACTOR & INCLUDING ALL SUCH WORK IN THE CONTRACT BID.

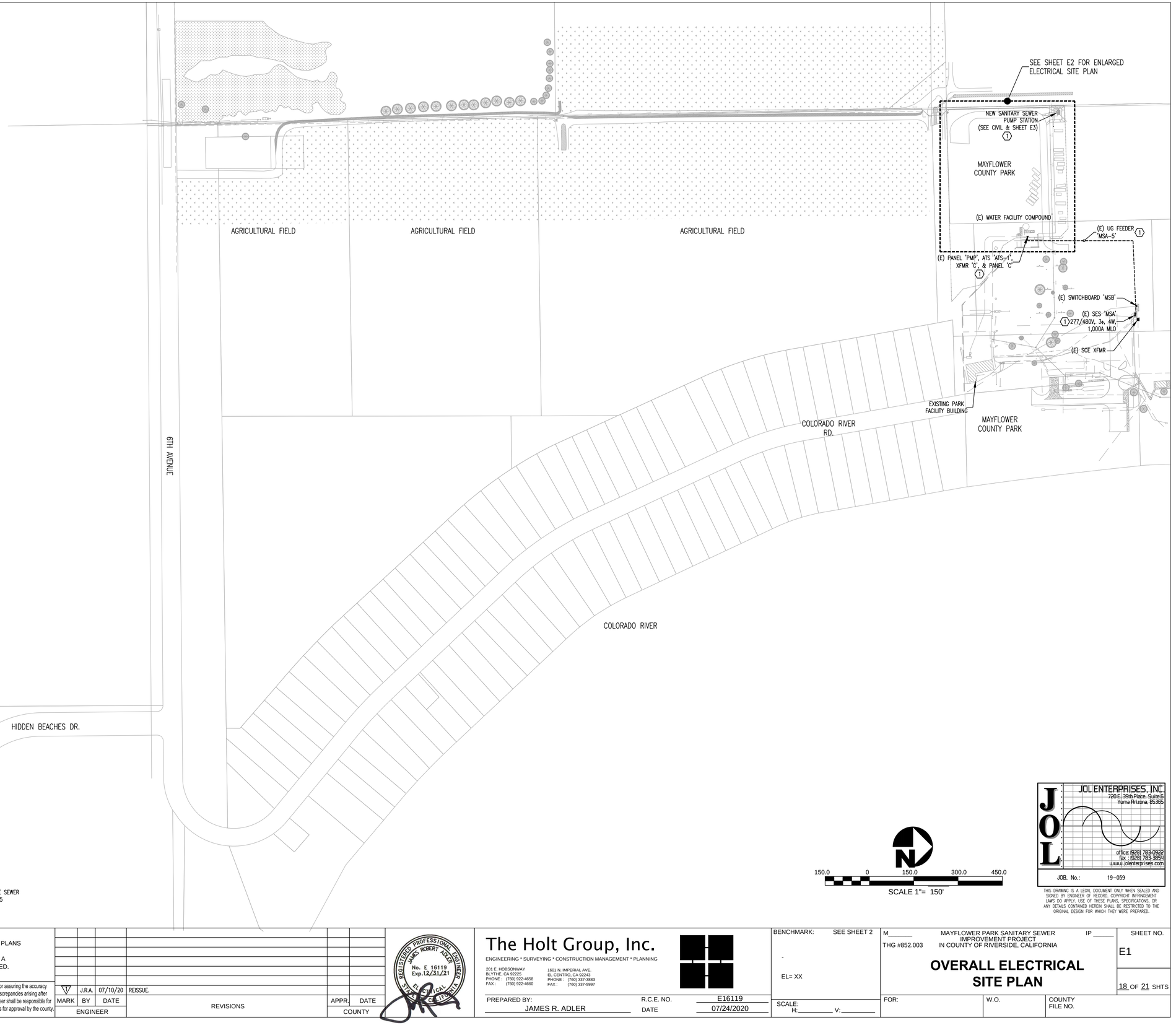
KEY NOTES:

(1) SEE ELECTRICAL ONE-LINE DIAGRAM.

(2) MODIFY THE EXISTING BLYTHE #15 TESCO CONTROLS INC. PUMP CONTROL PANEL AS REQUIRED FOR THE NEW INTERFACE WITH THE MAYFLOWER PARK LIFT STATION CONTROL PANEL. PROVIDE & INSTALL NEW MASTER RTU & RADIO TRANSCEIVER AT BLYTHE #15 AS REQUIRED TO INTERFACE WITH AND COMMUNICATE BETWEEN THE NEW & EXISTING CONTROL PANELS. NEW MASTER RTU & RADIO TRANSEIVER SHALL HAVE MINIMUM 4 DIGITAL INPUTS, 2 DIGITAL OUTPUTS, & 2 ANALOG INPUTS; 120V POWER SUPPLY; CONFIGURATION SOFTWARE; MAXIMUM 1W 902-928 MHZ TRANSCEIVER; MINIMUM 15 MILES RANGE; AND OMNI-DIRECTIONAL ANTENNA (NBT TSR900 OR EQUAL). INSTALL NEW MASTER RTU & RADIO TRANSCEIVER INSIDE THE EXISTING PUMP CONTROL CABINET. PLUG INTO THE EXISTING 120V RECEPTACLE OR POWER SUPPLY AT THE CONTROL PANEL. THE BLYTHE #15 LIFT STATION MASTER RTU SHALL BE CONFIGURED WITH "LEAD PUMP RUN", "LAG PUMP RUN", & "HIGH LEVEL" DIGITAL INPUTS FROM THE EXISTING CONTROL PANEL. THE MAYFLOWER PUMP STATION SLAVE RTU SHALL BE CONFIGURED WITH "1ST PUMP ON", "2ND PUMP ON", & "HIGH WATER LEVEL ALARM" DIGITAL INPUTS FROM THE NEW CONTROL PANEL AND "2ND PUMP ON" & "HIGH WATER LEVELALARM" DIGITAL OUTPUTS TO SIGNAL THE MASTER RTU. BLYTHE #15 PUMP RUNNING INPUT TO THE MASTER RTU SHALL RESULT IN AN OUTPUT SIGNAL TRANSMITTED TO THE MAYFLOWER SLAVE RTU TO PROHIBIT PUMP OPERATION AT THE SAME TIME. THE MASTER RTU SHALL TRANSMIT AN OVERRIDE OUTPUT SIGNAL TO THE BLYTHE #15 CONTROL PANEL TO INITIATE SHUTDOWN OF THE BLYTHE #15 PUMPS TO PERMIT START OF THE MAYFLOWER PUMPS IN THE FOLLOWING CONDITIONS:
   1. MAYFLOWER "2ND PUMP ON" ON AND BLYTHE #15 "LAG PUMP RUN" OFF.
   2. MAYFLOWER "HIGH WATER LEVEL ALARM" ON AND BLYTHE #15 "HIGH LEVEL" OFF.

   UTILIZE THE NC CONTACT OF THE BLYTHE #15 LOW LEVEL SHUTOFF TO INCORPORATE THE NEW MAYFLOWER OVERRIDE SHUTOFF. COORDINATE ALL NEW EQUIPMENT & INSTALLATION WITH CITY OF BLYTHE REQUIREMENTS & PERSONNEL.

(3) PROVIDE & INSTALL NEW 10dB 900-960MHZ OMNI-DIRECTIONAL ANTENNA COMPATIBLE WITH THE NEW RTU TRANSCEIVER AT THE EXISTING AREA LIGHT POLE. INSTALL NEW 3/4" PVC CONDUIT BETWEEN THE EXISTING PUMP CONTROL PANEL AND THE EXISTING POLE FOUNDATION. STUB UP CONDUIT AT CONCRETE FOUNDATION. INSTALL RIGID METAL CONDUIT AT OUTSIDE EDGE OF POLE. PROVIDE & INSTALL ANTENNA SUPPORT HARDWARE COMPATIBLE WITH NEW ANTENNA & THE EXISTING POLE. PROVIDE & INSTALL 900MHZ LIGHTNING PROTECTOR & WEATHERPROOF GROUNDING KIT. PROVIDE & INSTALL FLEXIBLE HELIAX ANTENA CABLING AS REQUIRED BY MANUFACTURER.



DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

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MARK	BY	DATE	REVISIONS	APPR.	DATE
1	J.R.A.	07/10/20	REISSUE.		

ENGINEER | COUNTY

REGISTERED PROFESSIONAL ENGINEER JAMES ROBERT ADLER No. E 16119 Exp.12/31/21 ELECTRICAL CALIFORNIA

The Holt Group, Inc.
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1601 N. IMPERIAL AVE. EL CENTRO, CA 92243, PHONE : (760) 337-3883, FAX : (760) 337-5997

PREPARED BY: JAMES R. ADLER
R.C.E. NO. E16119
DATE 07/24/2020

BENCHMARK: SEE SHEET 2
-
EL= XX

SCALE: H:_____ V:_____

M_____ THG #852.003
MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA
IP _____

OVERALL ELECTRICAL SITE PLAN

SHEET NO. E1
18 OF 21 SHTS

FOR: | W.O. | COUNTY FILE NO.

JOL ENTERPRISES, INC
720 E. 29th Place, Suite 6
Yuma Arizona, 85365
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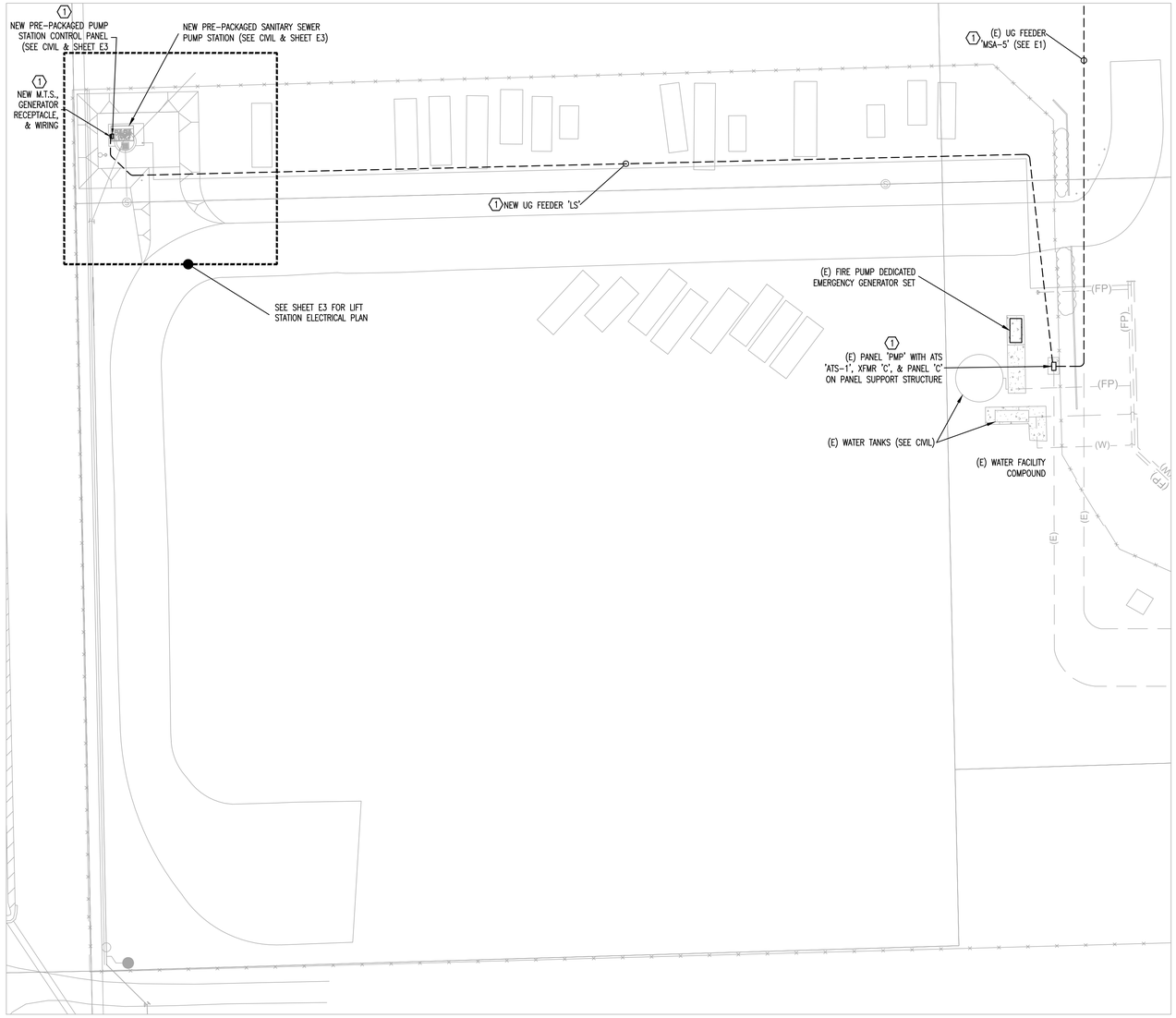
fax : (928) 783-3859
www.jolenterprises.com

JOB. No.: 19-059



NOTES:

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2. THE ELECTRICAL CONTRACTOR SHALL COORDINATE, BID, AND PROVIDE ALL INCIDENTAL ELECTRICAL DEMOLITION WORK, TEMPORARY ELECTRICAL REMOVAL & REINSTALLATION WORK, & RESTORATION OF EXISTING ELECTRICAL WORK TO EXISTING CONDITION OR BETTER AT ANY CIVIL OR MECHANICAL DEMOLITION OR RENOVATIONS IDENTIFIED ON THE CIVIL OR MECHANICAL PLANS. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE CIVIL OR MECHANICAL PLANS & COORDINATING WORK RESPONSIBILITY WITH THE GENERAL CONTRACTOR & INCLUDING ALL SUCH WORK IN THE CONTRACT BID.

KEY NOTES:

1 SEE ELECTRICAL ONE-LINE DIAGRAM.

N

30.0 0 30.0 60.0 90.0

SCALE 1"= 30'

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www.jolenterprises.com

JOB. No.: 19-059

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

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MARK	BY	DATE	REVISIONS	APPR.	DATE
1	J.R.A.	07/10/20	ADDED M.T.S.		
ENGINEER				COUNTY	

REGISTERED PROFESSIONAL ENGINEER
JAMES ROBERT ADLER
No. E 16119
Exp.12/31/21
ELECTRICAL
STATE OF CALIFORNIA

The Holt Group, Inc.
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PREPARED BY: JAMES R. ADLER
R.C.E. NO. E16119
DATE 7/24/2020

BENCHMARK: SEE SHEET 2
-
EL= XX

SCALE:
H:_____ V:_____

M_____ IP _____
THG #852.003
MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA

ENLARGED ELECTRICAL SITE PLAN

SHEET NO. E2

19 OF 21 SHTS

FOR:

W.O.

COUNTY FILE NO.

KEY NOTES:

1. PROVIDE & INSTALL NEW 10dB 900-960MHZ YAGI ANTENNA COMPATIBLE WITH THE NEW RTU TRANSCEIVER AT THE NEW AREA LIGHT POLE. INSTALL FIRM & FIXED & ADJUST "LINE OF SIGHT" WITH THE CITY OF BLYTHE LIFT STATION ANTENNA. INSTALL NEW 1" PVC CONDUIT BETWEEN THE PRE-PACKAGED PUMP STATION CONTROL PANEL AND THE POLE FOUNDATION. STUB UP CONDUIT WITHIN CONCRETE FOUNDATION TO J-BOX AT TOP OF FOUNDATION. INSTALL RIGID METAL CONDUIT AT OUTSIDE EDGE OF POLE. PROVIDE & INSTALL ANTENNA SUPPORT HARDWARE COMPATIBLE WITH NEW ANTENNA & THE POLE. PROVIDE & INSTALL 900MHZ LIGHTNING PROTECTOR & WEATHERPROOF GROUNDING KIT. PROVIDE & INSTALL FLEXIBLE HELIAX ANTENA CABLING AS REQUIRED BY MANUFACTURER.
2. PROVIDE & INSTALL INTERFACE WITH THE CITY OF BLYTHE SEWER LIFT STATION #15 CONTROL PANEL (SEE E1). PROVIDE & INSTALL NEW SLAVE RTU & RADIO TRANSCEIVER AT THE NEW CONTROL PANEL AS REQUIRED TO INTERFACE WITH AND COMMUNICATE BETWEEN THE NEW & EXISTING CONTROL PANELS. NEW SLAVE RTU & RADIO TRANSEIVER SHALL HAVE MINIMUM 4 DIGITAL INPUTS, 2 DIGITAL OUTPUTS, & 2 ANALOG INPUTS; 120V POWER SUPPLY; CONFIGURATION SOFTWARE; MAXIMUM 1W 902-928 MHZ TRANSCEIVER; MINIMUM 15 MILES RANGE; AND YAGI ANTENNA (NBT TSR900 OR EQUAL). INSTALL NEW SLAVE RTU & RADIO TRANSCEIVER INSIDE THE PUMP CONTROL CABINET. PLUG INTO FURNISHED 120V RECEPTACLE OR POWER SUPPLY AT THE CONTROL PANEL. SEE E1 FOR CONTROL SEQUENCE & REQUIREMENTS.
3. SEE ELECTRICAL ONE-LINE DIAGRAM.
4. WP-IU GFI RECEPTACLE. MOUNT IN POLE PER CIVIL DETAIL Q ON SHEET 16.
5. (2) #10 CU THWN, (1) #10 CU GRD, 3/4" CONDUIT, TO 20A CB AT PRE-PACKAGE PUMP STATION CONTROL PANEL.
6. PROVIDE & INSTALL 150W HPS LIGHT FIXTURE AS INDICATED IN THE CIVIL DRAWINGS OR LED ALTERNATE. LED ALTERNATE SHALL BE 15,000 LUMENS, 3,000K, TYPE 3 CUTOFF DISTRIBUTION (LITHONIA KAD-LED-60C-700-30K-R3 OR EQUAL)).

ELECTRICAL GENERAL NOTES:

1. ALL MATERIALS AND WORKMANSHIP TO BE NEW AND OF FIRST RATE QUALITY. MATERIALS TO BE UL LISTED AND APPROVED. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT ADOPTED EDITION OF THE CALIFORNIA ELECTRICAL CODE AND ANY OTHER STATE AND LOCAL APPLICABLE CODES.

2. ALL CEILING, FLOOR, AND WALL PENETRATIONS SHALL BE CAULKED/SEALED TO PRESERVE FIRE RATINGS AND WATER PROOF INTEGRITY. FIRESTOPPING OF PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS & WALLS SHALL BE IN ACCORDANCE WITH IBC & UL AND AS REQUIRED BY THE FIRESTOPPING MANUFACTURER FOR THE CONSTRUCTION TYPE & FIRE RATING SPECIFIED. THE FIRESTOPPING SYSTEM SHALL BE LISTED AND TESTED TO UL-1479 & ASTM E-814. INSTALL IN STRICT COMPLIANCE WITH THE MANUFACTURER INSTRUCTIONS.

3. ALL ELECTRICAL CONDUCTORS SHALL BE COPPER, 90 DEGREE C TEMPERATURE RATING, MINIMUM SIZE IS NO. 12 AWG. ALL WIRING SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED ON THE DRAWINGS. UNDERGROUND CONDUCTORS MUST BE RATED FOR 90 DEGREE C AS DEFINED FOR "WET LOCATION" BY THE NEC UNLESS NOTED OTHERWISE.

4.a. ALL CONDUIT SHALL BE METALLIC ELECTRICAL CONDUIT UNLESS NOTED OTHERWISE ON THE DRAWINGS. MINIMUM SIZE CONDUIT IS 1/2".

b. UNDERGROUND CONDUIT SHALL BE MINIMUM OF SCHEDULE 40 PVC, 90 DEGREE C. RATED WITH MINIMUM OF TRENCH COVER PER NEC TABLE 300-5. ALL UNDERGROUND JUNCTION/PULL BOXES SHALL BE RATED THE SAME AS THE ASSOCIATED CONDUIT, MINIMUM SIZE UNDERGROUND CONDUIT IS 3/4".

5. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF CONDUIT, WIRING, ELECTRICAL EQUIPMENT AND ASSOCIATED HARDWARE WITH THE INSTALLATION OF THE MECHANICAL EQUIPMENT AND OTHER TRADES. SEE THE CIVIL PLANS FOR EXACT LOCATIONS.

6. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND INSTALLATION OF SERVING ELECTRICAL TELEPHONE/TV COMPANY CONDUIT SYSTEMS AND SERVICE EQUIPMENT. UNDERGROUND TRENCH LOCATIONS SHOWN ARE APPROXIMATE AND MUST BE VERIFIED BY THE SERVING UTILITY. CONTACT WITH THE SERVING UTILITIES IS REQUIRED PRIOR TO INSTALLATION. THE CONTRACTOR IS RESPONSIBLE FOR EXISTING FIELD CONDITIONS AND PROVIDING A FULL FUNCTIONING ELECTRICAL SYSTEM.

7. ALL LIGHT FIXTURES, RECEPTACLE AND JUNCTION BOXES, PANEL BOARDS AND ALL OTHER METALLIC ELECTRICAL APPLIANCES AND DEVICES MUST BE GROUNDED AS REQUIRED BY SECTION 250 OF THE NATIONAL ELECTRICAL CODE.

8. LIGHT FIXTURE SUBSTITUTIONS MUST BE OF EQUAL APPLICATION, SIZE, WEIGHT, AND APPEARANCE.

9. MATERIALS & INSTALLATION SHALL COMPLY WITH REQUIREMENTS FOR INSTALLATION IN SEISMIC ZONE 4/DESIGN CATEGORY D.

ELECTRICAL SYMBOLS & ABBREVIATIONS:

- DUPLEX RECEPTACLE, 120V/20A, MOUNT 15" A.F.F. UNLESS NOTED OTHERWISE.
- NUMBER OF WIRES IN CONDUIT, LONG SLASH DENOTES GROUND WIRE, SHORT SLASH DENOTES NUMBER OF CURRENT CARRYING CONDUCTORS, HALF SLASH DENOTES SWITCHED LEG.
- $ LIGHT CIRCUIT SWITCH, 120V/20A, MOUNT 48" A.F.F. UNLESS NOTED OTHERWISE.
- UNDERGROUND CONDUIT.
- ABOVE GROUND CONCEALED CONDUIT.
- (P.C) PHOTO CELL, 120V/20A, MOUNT AS SHOWN, NEMA 3R.
- (J) JUNCTION BOX, MOUNT AS SHOWN.
- ATS AUTOMATIC TRANSFER SWITCH.
- CWP COLD WATER PIPE.
- GENSET GENERATOR SET.
- GFI GROUND FAULT CIRCUIT INTERRUPTER.
- MTS MANUAL TRANSFER SWITCH
- SES SERVICE ENTRANCE SECTION, SIZED AS SHOWN.
- SCE SOUTHERN CALIFORNIA EDISON.
- WP OUTDOOR WEATHERPROOF ENCLOSURE.
- WP-IU OUTDOOR WEATHERPROOF IN-USE ENCLOSURE.
- UG UNDERGROUND.
- XFMR TRANSFORMER.

NOTES:

1. ALL ELECTRICAL WORK SHOWN IS NEW UNLESS NOTED OTHERWISE.
2. THE SEWER PUMP STATION WET WELL SHALL BE CLASSIFIED AS A CLASS 1 DIVISION 1 AREA PER NFPA 820. EQUIPMENT, WIRING, & EQUIPMENT CONNECTIONS INSIDE THE WET WELL SHALL BE INSTALLED PER NEC SECTION 501. SEAL ALL CONDUITS BETWEEN THE WET WELL AND THE JUNCTION BOX PER NEC SECTION 501 TO PREVENT MIGRATION OF GAS.
3. THE ELECTRICAL CONTRACTOR SHALL COORDINATE, BID, AND PROVIDE ALL INCIDENTAL ELECTRICAL DEMOLITION WORK, TEMPORARY ELECTRICAL REMOVAL & REINSTALLATION WORK, & RESTORATION OF EXISTING ELECTRICAL WORK TO EXISTING CONDITION OR BETTER AT ANY CIVIL OR MECHANICAL DEMOLITION OR RENOVATIONS IDENTIFIED ON THE CIVIL OR MECHANICAL PLANS. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE CIVIL OR MECHANICAL PLANS & COORDINATING WORK RESPONSIBILITY WITH THE GENERAL CONTRACTOR & INCLUDING ALL SUCH WORK IN THE CONTRACT BID.

5.0 0 5.0 10.0 15.0

SCALE 1"= 5'

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JOB. No.: 19-059

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

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MARK	BY	DATE		APPR.	DATE
ENGINEER				COUNTY	
1	J.R.A.	07/10/20	ADDED M.T.S.		

REGISTERED PROFESSIONAL ENGINEER — JAMES ROBERT ADLER — No. E 16119 — Exp.12/31/21 — ELECTRICAL — CALIFORNIA

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PREPARED BY: JAMES R. ADLER — R.C.E. NO. E16119 — DATE 07/24/2020

BENCHMARK: SEE SHEET 2 — - — EL= XX

SCALE: H:_____ V:_____

M_____ THG #852.003

MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA

IP _____

LIFT STATION ELECTRICAL PLAN

SHEET NO. E3

20 OF 21 SHTS

FOR: — W.O. — COUNTY FILE NO.

ELECTRICAL SPECIFICATIONS:

FURNISH AND INSTALL, INCLUDING LABOR, SUPERVISION, MATERIALS, TOOLS, SERVICES, TRANSPORTATION, OVERHEAD COSTS, FEES, PLAN CHECK FEES, INSPECTION CHARGES, ROYALTIES, PROFITS, ETC., A COMPLETE ELECTRICAL INSTALLATION AS SPECIFIED HEREIN AND INDICATED ON THE ELECTRICAL DRAWINGS. PERFORM WORK IN AN APPROVED, NEAT, FIRST CLASS, SAFE, WORKMANSHIP LIKE MANNER THAT COMPLIES WITH ALL APPLICABLE LOCAL, STATE, FEDERAL, AND SERVICING ELECTRICAL AND TELEPHONE UTILITIES, ETC., CODES, ORDINANCES, RULES, REGULATIONS, STANDARDS, ETC. THE ENTIRE ELECTRICAL INSTALLATION SHALL COMPLY WITH OR SURPASS THE MOST RECENT EDITION OF THE NATIONAL ELECTRICAL CODE AND OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).

ALL MATERIALS AND EQUIPMENT FURNISHED BY THE ELECTRICAL CONTRACTOR SHALL BE NEW OF FIRST-CLASS QUALITY UNLESS NOTED OTHERWISE, FREE FROM DEFECTS, AND CONFORM WITH UNDERWRITER LABORATORIES INC. STANDARDS AND BE SO LABELED. MATERIALS, EQUIPMENT ETC. NOT INDICATED ON DRAWINGS OR SPECIFIED HEREIN BUT REQUIRED FOR A SUCCESSFUL AND EFFICIENT COMPLETION OF THE ELECTRICAL INSTALLATION SHALL BE HELD TO BE IMPLIED AND SHALL BE FURNISHED AND INSTALLED AT NO ADDITIONAL COST. ENCLOSURES FOR ALL EQUIPMENT SHALL BE SUITABLE FOR USE INTENDED e.g., WEATHER-PROOF FOR EXTERIOR AND WET LOCATIONS. ALL EQUIPMENT SHALL BE RATED FOR USE INTENDED, e.g., VOLTAGE, HORSE POWER, RATING OF DISCONNECT SWITCHES, ETC.

IMMEDIATELY UPON AWARD OF CONTRACT, COORDINATE BETWEEN UTILITIES AND OWNER TO QUANTIFY AND FINALIZE TOTAL UTILITY COMPANY CHARGES AND OWNER PAYMENT OF SERVICE CHARGES FOR SERVING ELECTRICAL AND TELEPHONE UTILITIES. INCLUDE IN BID AND PROVIDE ALL ADDITIONAL WORK, MATERIALS, ETC., REQUIRED BY THE UTILITIES SUCH AS TRENCHING, BACKFILL, CONDUIT, TRANSFORMER PADS, GROUNDING, ETC. REQUIRED TO PROVIDE COMPLETE ELECTRICAL AND TELEPHONE SERVICE TO THIS PROJECT.

MATERIALS, EQUIPMENT, ETC., INCLUDING THOSE FURNISH BY OTHERS, THAT ARE TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE RECEIVED AND PROPERLY PROTECTED BY THE CONTRACTOR UNTIL ENTIRE INSTALLATION IS COMPLETE.

MAKE NO INSTALLATION OF WORK WHICH WOULD LEAVE INADEQUATE OPERATION OR SERVICING SPACE FOR ANY ITEM FOR THE ENTIRE PROJECT. DRAWINGS ARE NOT INTENDED TO SHOW IN DETAIL ALL FEATURES OF WORK. CHECK LOCATION AT ELECTRICAL WORK TO DETERMINE IN ADVANCE THAT IT CLEARS ALL OPENINGS, STRUCTURAL MEMBERS, ETC. THE CONTRACTOR SHALL INSTALL ALL THE MINIMUM CODE REQUIRED MATERIALS AND EQUIPMENT AT NO ADDITIONAL COST.

ALL SWITCHES AND RECEPTACLES FOR THIS PROJECT SHALL BE COMMERCIAL GRADE 20 AMP. ALL DEVICE PLATES SHALL BE SMOOTH PLASTIC; IVORY COLORED ON LIGHT WALLS AND BROWN COLORED ON DARK WALLS. (U.N.O.)

PROVIDE WEATHER-PROOF DIE CAST ALUMINUM BOXES & COVERS AT OUTDOOR LOCATIONS. INSTALL "IN-USE" TYPE WP COVERS AT RECEPTACLES AT OUTDOOR WET LOCATIONS.

ALL WIRING SHALL BE INSTALLED IN APPROVED RACEWAYS IF REQUIRED BY CODES. RACEWAYS SHALL BE APPROVED FOR USE INTENDED. ALL ELECTRICAL CONDUCTORS SHOWN ARE 600V COPPER, MINIMUM SIZE CONDUCTOR IS NO. 12 AWG, AND AS RECOMMENDED BY SUPPLIER OF EQUIPMENT AS APPLICABLE.

ALL CONDUIT SHALL BE INSTALLED SURFACE MOUNTED OR UNDERGROUND AS INDICATED UNLESS NOTED OTHERWISE. ALL CEILING, FLOOR, AND WALL PENETRATIONS SHALL BE CAULKED/SEALED TO PRESERVE FIRE RATINGS AND WATER PROOF INTEGRITY. FIRESTOPPING OF PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS & WALLS SHALL BE IN ACCORDANCE WITH IBC & UL AND AS REQUIRED BY THE FIRESTOPPING MANUFACTURER FOR THE CONSTRUCTION TYPE & FIRE RATING SPECIFIED. THE FIRESTOPPING SYSTEM SHALL BE LISTED AND TESTED TO UL-1479 & ASTM E-814. INSTALL IN STRICT COMPLIANCE WITH THE MANUFACTURER INSTRUCTIONS.

FURNISH AND INSTALL FIXTURES COMPLETE WITH LAMPS AND ACCESSORIES. INSTALL SYMMETRICAL AND PLUMB. CLEAN LENSES AND/OR REFLECTORS AT COMPLETION.

PROVIDE PANELBOARDS WITH FULL SIZED BREAKERS AND COPPER BUSSING. LABEL EQUIPMENT AND WIRING PER NEC. PROVIDE TYPED PANEL DIRECTORIES AND IDENTIFY ALL CIRCUITS AND SPACES.

LABEL EQUIPMENT WITH MYCARTA TAGS, 1/4" ENGRAVED LETTERS. PROVIDE WIRE COLOR CODING PER NEC AND ACCEPTED STANDARDS. PROVIDE UNDERGROUND WARNING TAPE AT ALL UNDERGROUND CONDUIT SYSTEMS.

THIS CONTRACT IS TO INCLUDE ALL CONTINGENCIES WHICH MAY ARISE AND WHICH MAY BE REQUIRED TO MAKE A COMPLETE ELECTRICAL SYSTEM.

THE ELECTRICAL CONTRACTOR SHALL VISIT SITE AND DETERMINE EXTENT OF THE WORK. AT COMPLETION OF ELECTRICAL INSTALLATION, PROVIDE OWNER WITH ACCURATE AS-BUILT DRAWINGS INDICATING ALL VARIATIONS FROM CONTRACT DRAWINGS, AND A LETTER TO THE OWNER'S REPRESENTATIVE STATING PROJECT FULLY COMPLIES WITH ALL CONTRACT DOCUMENTS AND IF NOT, HOW INSTALLATION WAS ACCOMPLISHED. ALL CHANGES SHALL BE SUBJECT TO OWNER'S REPRESENTATIVE'S APPROVAL.

PROVIDE NECESSARY LABOR, TOOLS, EQUIPMENT, e.g., VOLTMETER, AMMETER, MEGGER, ETC., AND CHECK ENTIRE ELECTRICAL SYSTEM IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. ALL TESTING SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION OF EQUIPMENT, MATERIALS, ETC., BEING TESTED.

NOTES (ONE-LINE DIAGRAM):

1. PROVIDE RATED EQUIPMENT & DEVICES BY MANUFACTURER CAPABLE OF SAFELY INTERRUPTING THE AVAILABLE FAULT CURRENT.
2. PROVIDE WARNING LABELS & MARKING BY MANUFACTURER AT ALL SWITCHBOARDS, PANELBOARDS, & INDUSTRIAL CONTROL PANELS/MCC'S LIKELY TO CREATE ARC FLASH CONDITIONS AS REQUIRED BY NEC ART. 110.16.
3. LABEL & MARK MAIN SERVICE DISCONNECT(S) PER NEC. MAXIMUM OF 6 DISCONNECTS PERMITTED PER NEC.
4. TIE UFER GROUND TO BUILDING FOUNDATION PER NEC.
5. PUMP CONTROL PANEL SHALL BE DESIGNED & MANUFACTURED FOR OPERATION IN AN OUTDOOR ENVIRONMENT WITH A MAXIMUM AMBIENT OF 50°C (122°F). PROVIDE ADDITIONAL VENTILATION AND AMBIENT COMPENSATED CB'S, OVERLOAD RELAYS, WIRING, CT'S, & ACCESSORIES AS REQUIRED BY MANUFACTURER.
6. SEE SHEETS E1 AND E3 FOR CITY OF BLYTHE MASTER & SLAVE RTU TRANSCEIVER REQUIREMENTS. INSTALL ALL COMPONENTS AS REQUIRED. PROVIDE SERVICES OF MANUFACTURER'S TECHNICAL REPRESENTATIVE AS REQUIRED TO SET UP, CONNECT, TEST, DEMONSTRATE, & TRAIN FOR PROPER INSTALLATION & OPERATION OF RTU TRANSCEIVERS.
7. PACKAGED LIFT STATION WITH DUPLEX PUMP CONTROLLER SHALL BE AS SPECIFIED IN THE CIVIL DRAWINGS.
8. THE DUPLEX PUMP STATION IS INTENDED FOR REDUNDANCY ONLY AND NOT FOR DOUBLE CAPACITY. THE PUMP CONTROLLER SHALL BE CONFIGURED TO LOCK OUT THE 2ND PUMP AND PREVENT BOTH PUMPS FROM RUNNING AT THE SAME TIME.

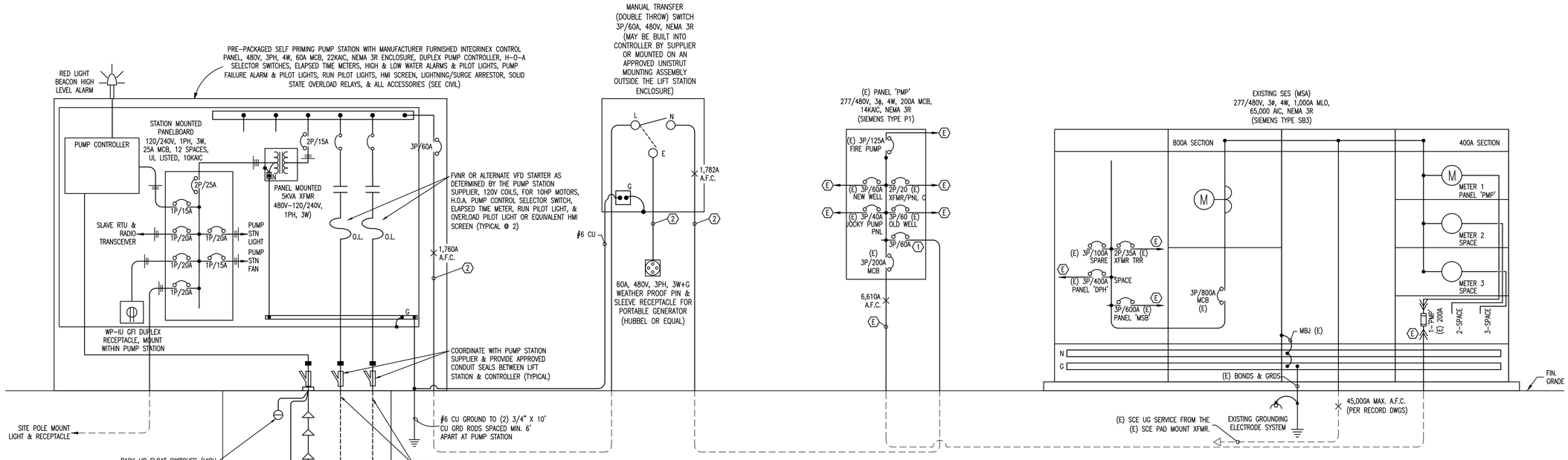
LOAD SUMMARY, EXISTING 1,000A SES 'MSA' (AMPS @ 277/480V 3PH)

EXISTING 800A SECTION:			
EXISTING DESIGN LOAD (NOTE 1)	573,655 VA*		690.0 AMPS
EXISTING 200A SECTION & PANEL 'PMP'			
EXISTING FIRE PUMP (50HP 57FLA) (NOTE 3)	47,389	VA	
EXISTING FIRE JOCKEY PUMP PANEL (EST. 10HP)	11,639	VA	
EXISTING DESIGN WELL PUMPS & MISC. LOAD (NOTE 1)	64,008	VA	
EXISTING DESIGN 25% LARGEST MOTOR (NOTE 3)	11,847	VA	
NEW LOAD			
SUBMERSIBLE PUMPS (2 x 10HP) (NOTE 2)	11,639	VA	
POLE LIGHT	232	VA	
PUMP STATION LIGHT	250	VA	
RECEPTACLES (2 x 180VA)	360	VA	
PUMP STATION FAN	180	VA	
RTU, PUMP CONTROLS	1,000	VA	
TOTAL:	148,544	VA	178.7 AMPS
TOTAL LOAD:	722,199	VA	868.7 AMPS

NOTES:
1. EXISTING LOAD PER RECORD DRAWINGS, "MAYFLOWER PARK" DATED 4/29/2010.
2. PUMPS ARE REDUNDANT & WILL NOT RUN AT SAME TIME. PUMP CONTROLLER SHALL BE CONFIGURED TO LOCK OUT 2ND PUMP TO PREVENT BOTH PUMPS FROM RUNNING AT THE SAME TIME.
3. EXISTING LOAD AS VERIFIED IN THE FIELD.

KEY NOTES:

1. INSTALL NEW FEEDER BREAKER COMPATIBLE WITH EXISTING PANEL & EQUIPMENT RATINGS AT EXISTING AVAILABLE SPACE. CONNECT NEW FEEDER & LABEL PER SPECIFICATIONS.
2. (3) #4 CU THWN-2, (1) #8 CU GRD, 2" PVC CONDUIT.
E. EXISTING FEEDER WIRE & CONDUIT.



1 / E4 **ELECTRICAL ONE-LINE DIAGRAM**
(NO SCALE)

JOL ENTERPRISES, INC.
720 E. 39th Place, Suite 5
Yuma Arizona, 85365
office: (928) 783-0922
fax : (928) 783-3854
www.jolenterprises.com

JOB. No.: 19-059

DATE SIGNED

REGISTRATION NUMBER

PLAN CHECK OVERSIGHT ENGINEER

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

DIGALERT
DIAL BEFORE YOU DIG
TOLL FREE 1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

The private engineer signing these plans is responsible for assuring the accuracy and acceptability of the design hereon. In the event of discrepancies arising after county approval or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for approval by the county.

MARK	BY	DATE	REVISIONS	APPR.	DATE
1	J.R.A.	07/10/20	ADDED M.T.S.		
ENGINEER				COUNTY	

REGISTERED PROFESSIONAL ENGINEER
JAMES ROBERT ADLER
No. E 16119
Exp.12/31/21
ELECTRICAL
CALIFORNIA

The Holt Group, Inc.
ENGINEERING * SURVEYING * CONSTRUCTION MANAGEMENT * PLANNING
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EL CENTRO, CA 92243
PHONE : (760) 337-3883
FAX : (760) 337-5997

PREPARED BY: JAMES R. ADLER
R.C.E. NO. E16119
DATE 7/24/2020

BENCHMARK: SEE SHEET 2
-
EL= XX
SCALE: H:_____ V:_____

M_____ THG #852.003
MAYFLOWER PARK SANITARY SEWER IMPROVEMENT PROJECT
IN COUNTY OF RIVERSIDE, CALIFORNIA
IP _____

ELECTRICAL ONE-LINE DIAGRAM

SHEET NO. E4
21 OF 21 SHTS

FOR: | W.O. | COUNTY FILE NO.