COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
IMPERIAL COUNTY PROJECT NO. 6582NSD

PROJECT DESCRIPTION

THE NILAND WASTEWATER TREATMENT PLANT (WWTP) HAS A LONG HISTORY OF EFFLUENT DISCHARGE VIOLATIONS DATING BACK TO 2003. THE MAJORITY OF THE VIOLATIONS WERE THE RESULT OF NPDES DISCHARGE PERMIT VIOLATIONS FOR COPPER AND THALLIUM. A 2016 PRELIMINARY ENGINEERING REPORT (PER) PREPARED BY THE HOLT GROUP, INC. REVIEWED THE NILAND WWTP EFFLUENT VIOLATIONS AND ALTERNATIVE IMPROVEMENTS TO ADDRESS THE VIOLATIONS. THE ALTERNATIVE SELECTED TO ADDRESS THE DISCHARGE VIOLATIONS WAS TO CONSTRUCT EVAPORATION PONDS FOR THE ULTIMATE DISPOSAL OF THE TREATED EFFLUENT WASTEWATER. THE EVAPORATION PONDS WILL ALLOW FOR THE ELIMINATION OF THE POINT DISCHARGE TO THE IMPERIAL IRRIGATION DISTRICT "R" DRAIN AND THE NPDES DISCHARGE PERMIT WASTEWATER EFFLUENT REQUIREMENTS. A WASTE DISCHARGE REQUIREMENT (WDR) PERMIT WILL BE REQUIRED FOR THE NILAND WWTP AND EVAPORATION POND SYSTEM IN LIEU OF THE NPDES DISCHARGE PERMIT. IN ADDITION TO THE CONSTRUCTION OF EVAPORATION PONDS, IMPROVEMENTS TO THE GRAVITY SANITARY SEWER PIPELINE COLLECTION SYSTEM UPSTREAM OF THE WWTP ARE TO BE ACCOMPLISHED. THE IMPROVEMENTS TO THE GRAVITY SANITARY SEWER PIPELINE COLLECTION SYSTEM WILL LIMIT INFILTRATION (INCLUDING COPPER AND THALLIUM) INTO THE COLLECTION SYSTEM AND WWTP. THE EXISTING WWTP WILL REMAIN OPERATIONAL TO TREAT THE INFLUENT RAW WASTEWATER TO A SECONDARY EFFLUENT CONDITION PRIOR TO DIRECTING THE SECONDARY EFFLUENT TO THE EVAPORATION PONDS. CAPITAL IMPROVEMENTS TO THE EXISTING WWTP COMPONENTS (RESULTANT FROM AGED TREATMENT PLANT INFRASTRUCTURE) WILL ALSO BE ACCOMPLISHED TO INSURE THE EXISTING WASTEWATER TREATMENT PLANT COMPONENTS ARE SATISFACTORILY FUNCTIONING.

THE THREE (3) PRIMARY NILAND WWTP AND COLLECTION SYSTEM PROJECT COMPONENTS AND MAJOR ITEMS ASSOCIATED WITH EACH COMPONENT CONSIST OF THE FOLLOWING ITEMS:

1. EXISTING WWTP IMPROVEMENTS INCLUDING:

1.1. REPLACEMENT OF FIBERGLASS GRATING AT THE TOP OF THE RAW INFLUENT PUMP STATION WET WELL WITH AN ALUMINUM ACCESS HATCH.

1.2 REPAIR OF AERATION POND HDPE LINER MATERIAL AT AERATION PONDS NUMBERS 1 AND 2.

1.3 THE SLUDGE IN AERATION POND NUMBER 1 IS TO BE REMOVED AND PLACED IN A NEW SLUDGE CONTAINMENT BASIN. THE HDPE LINER IN AERATION POND NUMBER 1 IS IN POOR CONDITION AND IS TO BE REPLACED WITH A NEW HDPE LINER.

1.4 REHABILITATION IMPROVEMENTS TO THE CHLORINATION/DE-CHLORINATION STRUCTURE ARE TO BE COMPLETED. REPLACEMENT OF FAILED CONCRETE WALL AND FLOOR AREAS ARE TO BE COMPLETED. A NEW FLASH MIXER IS TO BE INSTALLED. THE CONCRETE FLASHMIXER CONCRETE CEILING IS TO BE REPLACED.

1.5 THE EXISTING CHEMICAL CONTAINMENT BASIN STRUCTURE HAS FAILED AND CANNOT BE REHABILITATED. THE EXISTING CHEMICAL CONTAINMENT STRUCTURE IS TO BE ABANDONED. NEW SODIUM HYPOCHLORITE AND SODIUM METABISULFITE CHEMICAL SYSTEM FACILITIES ARE TO BE CONSTRUCTED. THE CHEMICAL SYSTEMS SHALL INCLUDE THE CHEMICAL TANKS, PUMPS, PIPING, EYE WASH STATIONS, SHADE STRUCTURES, P.C.C. SUPPORT SLABS, ELECTRICAL CIRCUITRY AND OTHER MISCELLANEOUS ITEMS.

1.6 IMPROVEMENTS AT THE FLOWMETER/SAMPLING VAULT INCLUDE THE INSTALLATION OF AN ALUMINUM GRATE AT THE TOP OF THE VAULT.

1.7 IMPROVEMENTS AT THE GROUND WATER PUMP STATION INCLUDE THE REPLACEMENT OF THE PLYWOOD COVER LOCATED AT THE TOP OF THE WET WELL WITH AN ALUMINUM ACCESS HATCH.

1.8 THE EXISTING RESILIENT WEDGE GATE VALVES ALONG THE PIPING WITHIN THE AERATION PONDS AND REMAINING PLANT FACILITY ARE CURRENTLY NON-FUNCTIONAL. THIS INCLUDES REPLACING THE VALVES UPSTREAM OF THE HEADWORKS STRUCTURE. THE RESILIENT WEDGE GATE VALVES ARE TO BE REPLACED WITH ECCENTRIC PLUG VALVES.

1.9 THE WWTP ENTRANCE ROAD BRIDGE CROSSING THE IMPERIAL IRRIGATION DISTRICT "R" CANAL IS TO BE REPLACED. THE BRIDGE WILL BE REPLACED BY THE IMPERIAL IRRIGATION DISTRICT.

1.10 A NEW POTABLE WATER TREATMENT FACILITY WITH SHADE STRUCTURE IS TO BE CONSTRUCTED FOR THE WWTP WASH DOWN WATER AND TO PROVIDE POTABLE WATER FOR THE LABORATORY BUILDING.

1.11 THE EXISTING SIX (6) AERATORS IN AERATION PONDS 1 THROUGH 6 ARE TO BE REPLACED WITH NEW AERATORS.

1.12 THE P.C.C. INFLUENT FLOWMETER PRECAST VAULT IS TO BE RAISED TO A HIGHER ELEVATION TO PREVENT FLOODING OF THE FLOWMETER.

1.13 A NEW AUTOMATIC ENTRANCE GATE IS TO BE INSTALLED.

1.14 OTHER MINOR EXISTING WWTP CAPITAL IMPROVEMENTS.

2. CONSTRUCTION OF EVAPORATION PONDS AND EFFLUENT CONVEYANCE SYSTEM INCLUDING:

2.1 INSTALLATION OF AN EFFLUENT PUMP STATION DOWNSTREAM OF THE EXISTING WWTP FLOWMETER/SAMPLING VAULT. THE EFFLUENT PUMP STATION WILL TRANSMIT THE EXISTING WWTP TREATED EFFLUENT TO THE EVAPORATION PONDS.

2.2 INSTALLATION OF 8 INCH DIAMETER GRAVITY AND 6 INCH DIAMETER FORCE MAIN CONVEYANCE PIPING FROM THE EFFLUENT PUMP STATION TO THE EVAPORATION PONDS INCLUDING VALVES, FITTINGS AND APPURTENANCES.

2.3 INSTALLATION OF A STANDPIPE ALONG THE GRAVITY AND FORCE MAIN EFFLUENT CONVEYANCE PIPING. INSTALLATION OF PCC HEADWALLS AT THE PIPING OUTLET POINT TO THE EVAPORATION PONDS.

2.4 CONSTRUCTION OF THREE (3) EVAPORATION PONDS USING THE NATIVE EARTH AT THE PROJECT SITE. EACH EVAPORATION POND BOTTOM SHALL CONSIST OF 10 ACRES. THE TOTAL EVAPORATION POND SITE IS COMPRISED OF 56 ACRES.

2.5 INSTALLATION OF A 6 FOOT HIGH CHAIN LINK FENCE AROUND THE PERIMETER OF THE EVAPORATION POND SITE.

2.6 CONSTRUCTION OF AN ALL WEATHER ACCESS ROAD EXTENDING FROM THE INTERIOR OF THE EXISTING WWTP TO THE EVAPORATION POND SITE.

2.7 INSTALLATION OF MONITORING WELLS AROUND THE PERIMETER OF THE EVAPORATION PONDS.

3. COLLECTION SYSTEM IMPROVEMENTS

3.1 REHABILITATE THE EXISTING WASTEWATER COLLECTION SYSTEM 10 INCH GRAVITY PIPELINE ALONG ALCOTT ROAD FROM THE EXISTING WWTP TO HIGHWAY 111 WITH A CURED IN PLACE PIPING (CIPP) METHOD.

3.2 REHABILITATION OF TEN (10) EXISTING SANITARY SEWER MANHOLES ALONG THE GRAVITY SANITARY SEWER OUTFALL PIPELINE.

3.3 REPLACEMENT OF FOUR (4) EXISTING SANITARY SEWER MANHOLES ALONG THE GRAVITY SANITARY SEWER OUTFALL PIPELINE.

3.4 REHABILITATE THE EXISTING 10 INCH SANITARY SEWER PIPELINE BENEATH THE IID "S" LATERAL AND DRAIN AT THE INTERSECTION OF NOFFSINGER ROAD AND HIGHWAY 111 WITH A CURED IN PLACE PIPING (CIPP) METHOD.

3.5 REHABILITATE THE EXISTING 8 INCH SANITARY SEWER PVC PIPELINE SIPHON EXTENDING BENEATH THE IID "R" DRAIN WITH A CURED IN PLACED PIPING (CIPP) METHOD. REPLACE THE 10 INCH VCP PIPELINE SECTIONS IMMEDIATELY UPSTREAM AND DOWNSTREAM OF THE 8 INCH PIPELINE SIPHON WITH NEW 10 INCH SDR 26 PVC SANITARY SEWER PIPELINES.

3.6 OTHER MINOR COLLECTION SYSTEM IMPROVEMENTS.

GENERAL NOTES

STREET IMPROVEMENT GENERAL NOTES

1. COUNTY ENCROACHMENT PERMIT CONDITIONS AND PROVISIONS SHALL TAKE PRECEDENCE OVER THE APPROVED PLANS AND SPECIFICATIONS FOR ANY CONFLICTS.
2. THE STRUCTURAL SECTIONS SHALL BE IN ACCORDANCE WITH IMPERIAL COUNTY STANDARDS (OR CALTRANS IF IN STATE ROW) AND AS APPROVED BY THE PUBLIC WORKS DIRECTOR (OR CALTRANS).
3. APPROVAL OF THESE IMPROVEMENT PLANS, AS SHOWN, DOES NOT CONSTITUTE APPROVAL OF ANY CONSTRUCTION OUTSIDE THE PROJECT BOUNDARY.
4. ALL UNDERGROUND UTILITIES WITHIN THE STREET RIGHT-OF-WAY SHALL BE CONSTRUCTED, CONNECTED AND TESTED PRIOR TO CONSTRUCTION OF BERM, CURB, CROSS-GUTTER AND PAVING.
5. THE EXISTENCE AND LOCATION OF EXISTING UNDERGROUND FACILITIES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO OTHER EXISTING FACILITIES EXCEPT AS SHOWN ON THESE PLANS. HOWEVER, THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT ANY EXISTING FACILITY SHOWN HEREON AND ANY OTHER WHICH IS NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
6. LOCATION AND ELEVATIONS OF IMPROVEMENTS TO BE MET BY WORK TO BE DONE SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK. CONTRACTOR WILL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF ACTUAL LOCATION OF EXISTING FACILITIES.
7. UTILITIES COORDINATION

   NO LESS THAN 3 WORKING DAYS PRIOR TO ANY EXCAVATION OR TRENCHING, EACH CONTRACTOR DOING SUCH WORK SHALL CONTACT THE FOLLOWING AGENCIES SO THAT EXISTING UNDERGROUND UTILITIES MAY BE LOCATED. THE AGENCY MAY REQUIRE AN INSPECTOR TO BE PRESENT.

   A. COUNTY OF IMPERIAL
DEPARTMENT OF PUBLIC WORKS
155 S. ELEVENTH STREET
EL CENTRO, CA 92243
PHONE: (442) 265-1818
CONTACT: JOHN GAY, P.E.

   B. GOLDEN STATE WATER CO.
631 S SORENSON AVE
CALIPATRIA, CA 92233
PHONE: (760) 348-5331, EXT. 103
CONTACT: DAVID GODSEY

   C. SPECTRUM
313 N. EIGHTH STREET
EL CENTRO, CA 92243
PHONE: (760) 679-5294
CONTACT: CHRIS CORTEZ

   D. SOUTHERN CALIFORNIA GAS COMPANY-PLANNING DEPARTMENT
P.O. BOX 3003
1981 W. LUGONIA AVENUE
REDLANDS, CA 92373
PHONE: (909) 335-7561
CONTACT: ANTONIO MORALES

   E. SOUTHERN CALIFORNIA GAS COMPANY
602 EAST ROSS AVENUE
EL CENTRO, CA 92243
PHONE: (760) 370-5812
CONTACT: ENRIQUE CUEVAS

   F. IMPERIAL IRRIGATION DISTRICT - POWER DIVISION
333 WATERMAN AVENUE
EL CENTRO, CA 92243
PHONE: (760) 482-3426
CONTACT: IGNACIO ROMO

   G. IMPERIAL IRRIGATION DISTRICT - WATER DIVISION
333 E. BARIONI BLVD.T
IMPERIAL CA. 92251
PHONE: (760) 339-9507
CONTACT: ISMAEL GOMEZ, P.E.

   H. AT&T
1029 S. SECOND STREET
EL CENTRO, CA 92243
PHONE: (760) 337-3358
CONTACT: DANIEL GARCIA

   I. UNDERGROUND SERVICE ALERT
PHONE: 811

8. EXISTING UNDERGROUND UTILITIES

   BEFORE EXCAVATING FOR THIS CONTRACT, VERIFY LOCATION OF UNDERGROUND UTILITIES. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS HAS BEEN OBTAINED FROM AVAILABLE RECORDS ONLY AND MAY NOT REFLECT ALL EXISTING UTILITIES. LOCATION OF ALL EXISTING UTILITIES SHALL BE CONFIRMED BY FIELD MEASUREMENTS BY CONTRACTOR PRIOR TO CONSTRUCTION OF WORK.

   CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HERON AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

   ACCURATE VERIFICATIONS AS TO SIZE, LOCATION AND DEPTH OF EXISTING UNDERGROUND SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY. THE CONTRACTOR SHALL NOTIFY THE SOUTHERN CALIFORNIA GAS COMPANY, AT&T, IMPERIAL IRRIGATION DISTRICT, GOLDEN STATE WATER COMPANY, AND ANY OTHER AFFECTED UTILITY AGENCIES PRIOR TO STARTING WORK NEAR SUCH UTILITY FACILITIES AND SHALL COORDINATE WORK WITH UTILITY REPRESENTATIVES. FOR LOCATION OF UNDERGROUND UTILITIES AND APPURTENANCES, CONTACT "UNDERGROUND SERVICE ALERT" AT 811.
9. IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO CONTACT THE UTILITY AGENCIES, ADVISE THEM OF THE PROPOSED IMPROVEMENTS AND BEAR THE COST OF RELOCATIONS, IF NEEDED.
10. NO PAVING SHALL BE COMPLETED UNTIL EXISTING POWER POLES ARE RELOCATED OUTSIDE THE AREAS TO BE PAVED.
11. PRIVATE ROAD IMPROVEMENTS SHOWN HEREON ARE FOR INFORMATION ONLY. COUNTY OFFICIALS SIGNATURE HEREON DOES NOT CONSTITUTE APPROVAL OR RESPONSIBILITY OF ANY KIND FOR THE DESIGN OR CONSTRUCTION OF THESE PRIVATE IMPROVEMENTS.
12. ALL SIGNS TO BE ALUMINUM WITH 3M HIGH INTENSITY TYPE REFLECTIVE FACE OR EQUIVALENT.
13. CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY STRIPING, PAVEMENT MARKERS, OR LEGENDS OBLITERATED BY THE CONSTRUCTION OF THIS PROJECT.
14. THE CONTRACTOR SHALL COMPLETE ALL NEW STRIPING AND SANDBLASTING OF REDUNDANT OR EXISTING STRIPING.
15. THE CONTRACTOR SHALL BE RESPONSIBLE TO SECURE AN ENCROACHMENT PERMIT FROM THE COUNTY OF IMPERIAL DEPARTMENT OF PUBLIC WORKS FOR ANY EXCAVATION OR CONSTRUCTION WITHIN COUNTY ROAD RIGHT-OF-WAY. FOR INSPECTIONS, 48 HOUR MINIMUM NOTICE IS REQUIRED, (760) 482-4462. ADDITIONALLY, UNDERGROUND SERVICE ALERT (USA) MUST BE CALLED TWO WORKING DAYS BEFORE THE CONTRACTOR MAY EXCAVATE. THE USA CONTACT NUMBER IS 811. ALL WORK AND MATERIALS ARE SUBJECT TO THE INSPECTION AND APPROVAL FROM THE COUNTY DEPARTMENT OF PUBLIC WORKS OR THEIR REPRESENTATIVE.
16. NO REVISIONS OF ANY KIND SHALL BE MADE TO THESE PLANS WITHOUT THE PRIOR WRITTEN APPROVAL OF BOTH THE COUNTY ENGINEER (OR HIS REPRESENTATIVE) AND THE ENGINEER OF RECORD. A REPRODUCIBLE AS-BUILT PLAN SET WILL BE PROVIDED TO THE PUBLIC WORKS DEPARTMENT AS A CONDITION OF SUBSTANTIAL CONSTRUCTION COMPLETION AND PRIOR TO PROJECT ACCEPTANCE.
17. ALL WORK AND MATERIALS SHALL CONFORM TO THESE PLANS AND SPECIFICATIONS, THE IMPERIAL COUNTY DEPARTMENT OF PUBLIC WORKS STANDARDS AND ENCROACHMENT PERMIT CONDITIONS, ANY REFERENCED STANDARDS AND SPECIFICATIONS AND THE SPECIFICATIONS & THE REQUIREMENTS OF THE AGENCIES REFERRED TO HEREIN. ALL WORK SHOWN OR INDICATED BY THESE PLANS SHALL BE COMPLETED IN ACCORDANCE WITH THE STANDARDS, POLICIES AND REGULATIONS OF IMPERIAL COUNTY; WHERE, OR IF, CONFLICTS OCCUR, THE IMPERIAL COUNTY REQUIREMENTS SHALL GOVERN.
18. UNLESS SPECIFICALLY INDICATED OTHERWISE, METHODS EMPLOYED AND MATERIAL USED IN THE CONSTRUCTION OF ALL OFFSITE IMPROVEMENTS SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE "STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED MAY 2010". ALL WORK IS SUBJECT TO INSPECTION AND APPROVAL AS REQUIRED.
19. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AN EXCAVATION PERMIT FROM THE STATE OF CALIFORNIA DIVISION OF SAFETY AND TO ADHERE TO ALL PROVISIONS OF THE STATE CONSTRUCTION SAFETY ORDERS AND STANDARDS.
20. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A GENERAL CONSTRUCTION ACTIVITY STORM WATER PERMIT FROM THE STATE WATER RESOURCES CONTROL BOARD DIVISION OF WATER QUALITY. CONTACT "STATE WATER RESOURCES CONTROL BOARD, DIVISION OF WATER QUALITY, ATTENTION: STORM WATER PERMIT UNIT, P.O. BOX 1977, SACRAMENTO, CALIFORNIA, 95812".
21. CONSTRUCTION PROJECTS DISTURBING MORE THAN ONE ACRE MUST OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT. OWNER/OWNERS ARE REQUIRED TO FILE A NOTICE OF INTENT (NOI) WITH THE STATE WATER RESOURCES CONTROL BOARD, PREPARE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND MONITORING PLAN FOR THE SITE.
22. EXISTING STORM DRAIN PIPES/CULVERTS, WHETHER TO BE CONNECTED TO, EXTENDED, ADJUSTED, DRAINED TO, OR JUST IN PROJECT VICINITY SHALL BE REPAIRED AND/OR CLEANED TO MAKE THEM FUNCTIONAL AND ACCEPTABLE AS DIRECTED BY THE PUBLIC WORKS DIRECTOR.
23. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) OR AS DIRECTED BY THE IMPERIAL COUNTY TRAFFIC ENGINEER.
24. ANY EXISTING SURVEY MONUMENTS OR COUNTY RECOGNIZED BENCHMARKS SHALL BE PROTECTED BY THE CONTRACTOR. SHOULD ANY SUCH MONUMENTS OR BENCHMARKS BE REMOVED, DAMAGED, OBLITERATED OR ALTERED BY THE CONTRACTORS OPERATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER RESETTING OF THE SAME AS PER THE SUBDIVISION MAP ACT, THE PROFESSIONAL LAND SURVEYORS ACT AND THE SATISFACTION OF THE COUNTY SURVEYOR/DIRECTOR OF PUBLIC WORKS. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR A REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OR RECORD OF SURVEY AS APPROPRIATE SHALL BE FILED BY THE LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER.
25. DUST SHALL BE CONTROLLED BY THE CONTRACTOR IN ACCORDANCE WITH ALL IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT (APCD) FUGITIVE DUST CONTROL RULES AND REGULATIONS AND SHALL COMPLY WITH THEIR PERMITTING REQUIREMENTS, IF APPLICABLE.
26. THE NOTES LISTED ABOVE ARE A MINIMUM LIST. THIS DOES NOT RELIEVE THE ENGINEER FROM COMPILING ADDITIONAL NOTES THAT MAY BE REQUIRED FOR THE PROJECT.

GRADING PLAN GENERAL NOTES

1. APPROVAL OF THIS GRADING PLAN DOES NOT CONSTITUTE APPROVAL OF VERTICAL OR HORIZONTAL ALIGNMENT OF ANY PRIVATE ROAD SHOWN HEREON FOR COUNTY ROAD PURPOSES.
2. FINAL APPROVAL OF THESE GRADING PLANS SUBJECT TO FINAL APPROVAL OF THE ASSOCIATED IMPROVEMENT PLANS WHERE APPLICABLE. FINAL CURB GRADE ELEVATIONS MAY REQUIRE CHANGES IN THESE PLANS.
3. IMPORT MATERIAL SHALL BE OBTAINED FROM A LEGAL SITE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO SECURE AN ENCROACHMENT PERMIT FROM THE COUNTY OF IMPERIAL DEPARTMENT OF PUBLIC WORKS FOR ANY EXCAVATION OR CONSTRUCTION WITHIN COUNTY ROAD RIGHT-OF-WAY. FOR INSPECTIONS, 48 HOUR MINIMUM NOTICE IS REQUIRED, (760) 482-4462. ADDITIONALLY, UNDERGROUND SERVICE ALERT (USA) MUST BE CALLED TWO WORKING DAYS BEFORE THE CONTRACTOR MAY EXCAVATE. THE USA CONTACT NUMBER IS 811. ALL WORK AND MATERIALS ARE SUBJECT TO THE INSPECTION AND APPROVAL OF THE COUNTY DEPARTMENT OF PUBLIC WORKS.
5. THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK. NOTICE OF PROPOSED WORK SHALL BE GIVEN TO THE AGENCIES LISTED ON SECTION 7 OF THE STREET IMPROVEMENT GENERAL NOTES.
6. A SOILS REPORT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT AND/OR GRADING PLAN APPROVAL.
7. APPROVAL OF THESE PLANS BY THE DIRECTOR OF PUBLIC WORKS DOES NOT AUTHORIZE ANY WORK OR GRADING TO BE PERFORMED UNTIL THE PROPERTY OWNER'S PERMISSION HAS BEEN OBTAINED AND VALID GRADING PERMIT HAS BEEN ISSUED BY THE COUNTY PLANNING DEPARTMENT.
8. THE DIRECTOR OF PUBLIC WORKS' APPROVAL OF THESE PLANS DOES NOT CONSTITUTE COUNTY BUILDING OFFICIAL APPROVAL OF ANY FOUNDATION FOR STRUCTURES TO BE PLACED ON THE ITEMS COVERED BY THESE PLANS, INCLUDING ANY ONSITE OR PERIMETER SCREEN OR RETAINING WALLS.
9. ALL MAJOR SLOPES SHALL BE ROUNDED INTO EXISTING TERRAIN TO PRODUCE A CONTOURED TRANSITION FROM CUT OR FILL FACES TO NATURAL GROUND AND ABUTTING CUT OR FILL SURFACES.
10. NOTWITHSTANDING THE MINIMUM STANDARDS SET FORTH IN THE GRADING ORDINANCE AND NOTWITHSTANDING THE APPROVAL OF THESE GRADING PLANS, THE PERMITTEE IS RESPONSIBLE FOR THE PREVENTION OF DAMAGE TO ADJACENT PROPERTY. NO PERSON SHALL EXCAVATE ON LAND SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY SUCH PROPERTY FROM SETTLING, CRACKING, EROSION, SILTING, SCOUR OR OTHER DAMAGE, WHICH MIGHT RESULT FROM THE GRADING DESCRIBED ON THE PLAN. THE COUNTY WILL HOLD THE PERMITTEE RESPONSIBLE FOR CORRECTION OF NON-DEDICATED IMPROVEMENTS WHICH DAMAGE ADJACENT PROPERTY.
11. SPECIAL CONDITION: IF ANY ARCHEOLOGICAL RESOURCES ARE DISCOVERED ON THE SITE OF THIS GRADING OPERATION, SUCH OPERATION WILL CEASE IMMEDIATELY AND THE PERMITTEE WILL NOTIFY THE DIRECTOR OF THE PLANNING DEPARTMENT AND THE DISCOVERY. GRADING OPERATION, WILL NOT RECOMMENCE UNTIL THE PERMITTEE HAS RECEIVED WRITTEN AUTHORITY FROM THE DIRECTOR OF PLANNING TO DO SO.
12. THE CONSTRUCTION OF ONE PCC STANDARD DRIVEWAY PER LOT, LOCATION TO BE DETERMINED IN THE FIELD BY ENGINEER OF WORK AND APPROVED BY COUNTY PUBLIC WORKS INSPECTOR. PCC SURFACING OF DRIVEWAY TO EXTEND FROM CURB TO PROPERTY LINE.
13. ALL GRADING SHALL CONFORM TO THE UNIFORM BUILDING CODE APPENDIX CHAP. 33, AS AMENDED BY TITLE 9 LAND USE ORDINANCE.
14. ALL PROPERTY CORNERS SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AND/OR GRADING.
15. DURING ROUGH GRADING OPERATIONS AND PRIOR TO THE CONSTRUCTION OF ANY PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE CONTROL SHALL BE PROVIDED TO PREVENT PONDING WATER AND DAMAGE TO CONTIGUOUS PROPERTIES.
16. DUST SHALL BE CONTROLLED IN ACCORDANCE WITH THE APPROVED PM10 PLAN. APPROVAL SHALL BE BY IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT.
17. NO FILL SHALL BE PLACED ON EXISTING GROUND UNTIL THE EXISTING GROUND HAS BEEN CLEARED OF WEEDS, DEBRIS, TOPSOIL AND OTHER DELETERIOUS MATERIAL.
18. THE MAXIMUM ALLOWABLE CUT AND FILL SLOPES ARE 3:1, AS NOTED ON THE PROJECT GEOTECHNICAL REPORT.
19. A 5' WIDE BY 1' HIGH BERM, OR EQUIVALENT, SHALL BE CONSTRUCTED ALONG THE TOP OF ALL FILL SLOPES OVER 5' IN VERTICAL HEIGHT. ALL SLOPES LESS THAN OR EQUAL TO 5' SHALL HAVE A BERM TO PREVENT DRAINAGE FROM ERODING SAME.
20. A BROW DITCH DESIGNED TO HANDLE THE FLOWS (Q) FROM A 100-YR. STORM EVENT SHALL BE CONSTRUCTED ALONG THE TOP OF ALL CUT SLOPES.
21. NO OBSTRUCTION OF FLOOD PLAINS OR NATURAL WATER COURSES WILL BE PERMITTED.
22. ALL EXISTING DRAINAGE COURSES ON THE PROJECT SITE MUST CONTINUE TO FUNCTION DURING STORM CONDITIONS. PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT CONTIGUOUS PROPERTIES DURING GRADING OPERATIONS.
23. THE FINISHED GRADE SHALL BE SLOPED AWAY FROM ALL EXTERIOR BUILDING WALLS AT NOT LESS THAN 4% (1/2" PER FOOT) FOR A MINIMUM OF 3 FEET, UNLESS A SOIL REPORT PROVIDES ALTERNATE RECOMMENDATIONS.
24. A SUITABLY QUALIFIED AND REGISTERED PROFESSIONAL SHALL SUBMIT A WRITTEN CERTIFICATION TO THE PUBLIC WORKS DEPARTMENT THAT THE FINAL GRADING HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS FOR ALL GRADING DESIGNATED AS "ENGINEERED GRADING". AS-BUILT PLANS SHALL BE PROVIDED PRIOR TO FINAL ACCEPTANCE.
25. THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS DEPARTMENT AT LEAST 48 HOURS IN ADVANCE OF REQUESTING A FINISH LOT GRADE AND DRAINAGE INSPECTION. THIS INSPECTION MUST BE APPROVED PRIOR TO THE BUILDING PERMIT FINAL INSPECTION BY PUBLIC WORKS FOR EACH LOT.
26. THE CONTRACTOR SHALL NOTIFY "UNDERGROUND SERVICE ALERT" AT 811 A MINIMUM OF TWO DAYS PRIOR TO THE COMMENCEMENT OF ANY DIGGING OR EXCAVATION.
27. THE CONTRACTOR SHALL POSSESS A CALIFORNIA CONTRACTOR'S LICENSE, CLASS A, AT THE TIME THIS CONTRACTOR IS AWARDED.

GEOTECHNICAL ENGINEER'S STATEMENT

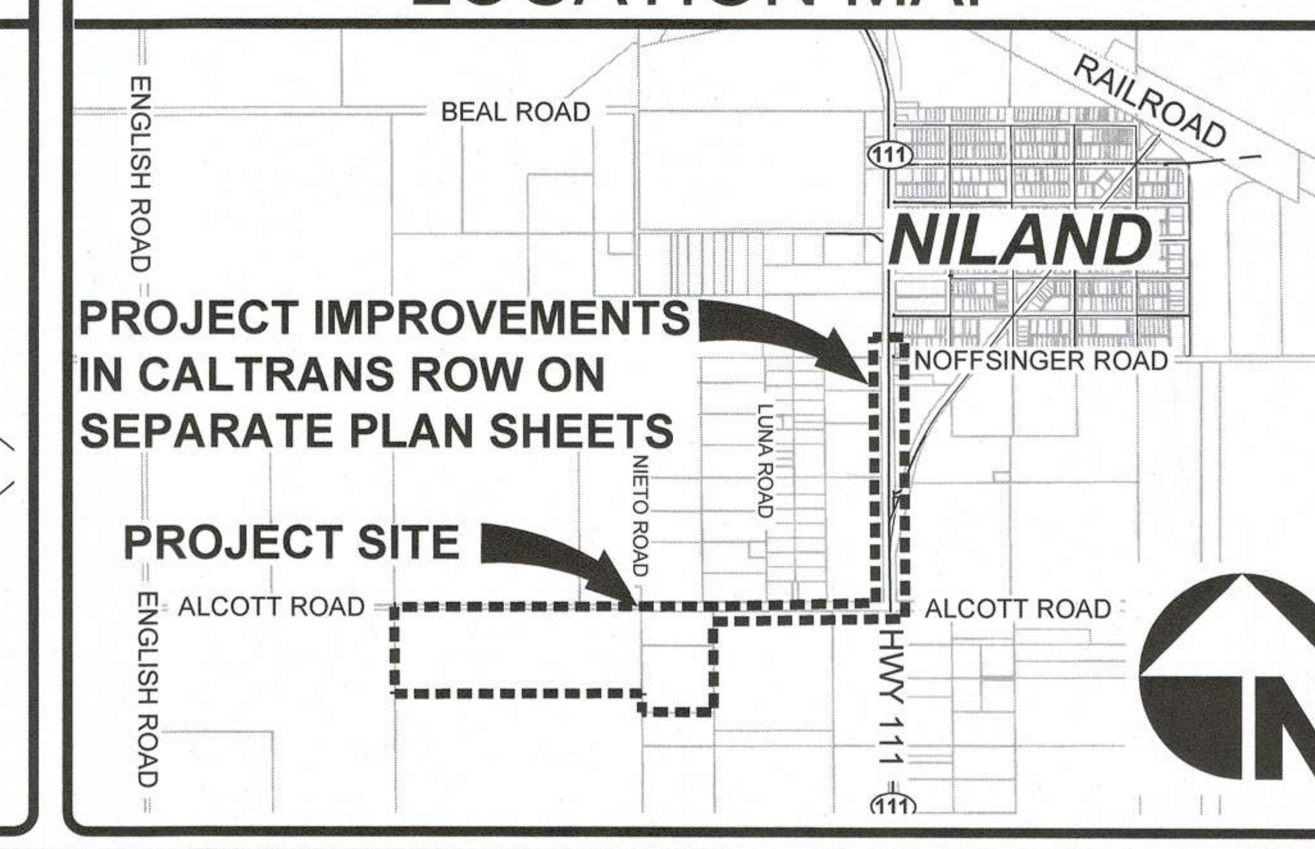
I STATE THAT I HAVE REVIEWED THESE PLANS AND FIND THAT THEY SUBSTANTIALLY CONFORM TO THE RECOMMENDATIONS SET FORTH IN REPORT NO. LE18206 DATED NOVEMBER 29, 2018 PREPARED IN OUR OFFICE.

PETER E. LABRUCHERIE, P.E.
LANDMARK CONSULTANTS, INC.
780 N. 4TH STREET
EL CENTRO, CALIFORNIA 92243
PHONE: (760) 337-1100

PETER E. LABRUCHERIE, P.E.
RCE 84,812 — DATE 10/06/2023

VICINITY MAP

LOCATION MAP



SHEET INDEX

DECLARATION OF RESPONSIBLE CHARGE

I HEREBY DECLARE THAT I AM THE ENGINEER OF THE WORK OF THIS PROJECT, THAT I HAVE EXERCISED REPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION OF 6703 OF THE BUSINESS AND PROFESSIONS CODE AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

I UNDERSTAND THAT THE CHECK OF THE PROJECT DRAWINGS AND SPECIFICATIONS BY THE COUNTY OF IMPERIAL IS CONFINED TO REVIEW ONLY AND DOES NOT RELIEVE ME AS ENGINEER OF WORK, OF MY REPONSIBILITY FOR PROJECT DESIGN.

JAMES G. HOLT
THE HOLT GROUP, INC.
1601 N. IMPERIAL AVENUE
(760) 337-3883

JAMES G. HOLT, P.E.
R.C.E. NO. 31773 — 09/25/2023 DATE

JAMES G. HOLT · No. 31773 · Exp. 12-31-24 · CIVIL · STATE OF CALIFORNIA · REGISTERED PROFESSIONAL ENGINEER

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

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER · JAMES G. HOLT · No. 31773 · Exp. 12-31-24 · CIVIL · STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER · JOHN A. GAY · No. 62028 · Exp. 9-30-25 · CIVIL · STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.
10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE	09/25/2023
DRAWN	RS
DESIGNED	RS
SCALE	N/A
CHECKED	JGH

PROJECT TITLE
**COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS**

TITLE SHEET

REFERENCE

THG #542.089

ABBREVIATIONS

AGG.	AGGREGATE
APN	ASSESSORS PARCEL NUMBER
APP.	APPROXIMATE
A.C.P.	ASBESTOS CEMENT PIPE
A.C.	ASPHALT CONCRETE
B.C.	BEGINNING OF CURVE RADIUS
BM	BENCHMARK
B.O.C.	BACK OF CURB
BOT	BOTTOM OF TRENCH
BLDG.	BUILDING
B.V.	BUTTERFLY VALVE
C2B	CLASS 2 BASE
C.H.	CHORD
C.I.	CAST IRON
CLR.	CLEAR
C.B.	CATCH BASIN
C.M.C.	CEMENT MORTAR COATED
C.M.L.	CEMENT MORTAR LINED
CONC.	CONCRETE
CR	CRUSH ROCK
℄	CENTERLINE
C & G	CURB AND GUTTER
DEG.	DEGREE
DIA.	DIAMETER
DN	DOWN
D/W	DRIVEWAY
▲	DELTA
E.P.	EDGE OF PAVEMENT
E	EAST
EFFL.	EFFLUENT
EL.	ELEVATION
E.C.	END OF CURVE RADIUS
EG	EXISTING GRADE
EXT'G	EXISTING
FG	FINISH GRADE
F.O.C.	FACE OF CURB
F.F.	FINISH FLOOR ELEVATION
F / FL	FLOWLINE
FM	FORCEMAIN
F.S.	FINISH SURFACE
G.B.	GRADE BREAK
G.V.	GATE VALVE
H.B.	HOSE BIB
HDPE	HIGH DENSITY POLYETHYLENE
I.I.D.	IMPERIAL IRRIGATION DISTRICT
I.D.	INSIDE DIAMETER
INV.	INVERT
L.	LENGTH
LIP.	LIP OF CURB IN DRIVEWAYS
M.C.	MIDDLE OF CURVE
M.H.	MANHOLE
MAX.	MAXIMUM
MIN.	MINIMUM
N	NORTH
NO.	NUMBER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OHE	OVERHEAD ELECTRICAL LINE
P.E.	PAD ELEVATION
%	PERCENT
P.I.	POINT OF INFLECTION
P.I.G.	POINT OF INTERSECTING GRADES
P.I.T.	POINT OF INTERSECTING TANGENTS
℄	PROPERTY LINE
P.O.C.	POINT OF CONNECTION
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FEET
P.V.C.	POLY VINYL CHLORIDE
P.C.C.	PORTLAND CONCRETE CEMENT
P.P.	POWER POLE
R.	RADIUS
R.C.P.	REINFORCED CONCRETE PIPE
RW	RAW WATER
R/W	RIGHT-OF-WAY
S/W	SIDEWALK
S.	SLOPE / SOUTH
SS	SANITARY SEWER
T.	TANGENT
TBM	TEMPORARY BENCHMARK
TCC	TOP OF CONCRETE CURB
T.O.C.	TOP OF CONCRETE
T.C.	TOP OF CURB
TMH	TOP OF MANHOLE
T.P.	TOP OF PAVEMENT
TW	TOP OF WALL
TYP	TYPICAL
UE	UNDERGROUND ELECTRICAL
UV	ULTRAVIOLET
VCP	VITRIFIED CLAY PIPE
W	WATER / WEST
WWTP	WASTE WATER TREATMENT PLANT

NOFFSINGER ROAD

NIETO ROAD

LUNA ROAD

NILAND AVENUE

HIGHWAY 111

ALCOTT ROAD

IID "R" CANAL

IID "R" DRAIN

APN 021-200-006

APN 021-200-007

APN 021-040-033

APN 021-132-014

APN 021-210-005

APN 021-210-006

APN 021-210-007

APN 021-220-002

APN 021-220-030

APN 021-220-007

APN 021-220-011

APN 021-220-003

APN 021-220-014

APN 021-220-004

APN 021-220-013

APN 021-220-009

APN 021-230-003

APN 021-230-007

APN 021-250-023

APN 021-240-001

APN 021-240-006

APN 021-240-002

APN 021-240-003

APN 021-200-005

SHEET 4
CALTRANS PLANS

SHEETS 2 AND 6
CALTRANS PLANS

SHEETS 2 AND 6
CALTRANS PLANS

SHEET 3
CALTRANS PLANS

SHEETS 39 AND 41

SEE SEPARATE CALTRANS PLAN SHEETS FOR SANITARY SEWER PIPELINE COLLECTION SYSTEM IMPROVEMENTS

EVAPORATION / INFILTRATION POND PUMP STATION. SEE SHEETS 24 AND 25.

TBM #3 - STAMPED DISK ON PCC HEADWALL
EL 825.01

TBM #4 - CHISELED "X" ON TOP OF IID P.C.C. HEADWALL
EL. 814.49

EFFLUENT PIPELINE AND PUMP STATION OVERFLOW PIPELINE PLAN AND PROFILE. SEE PLAN SHEET 21.

EVAPORATION / INFILTRATION POND GRADING AND IMPROVEMENTS. SEE PLAN SHEETS 13 THROUGH 23; PLAN SHEETS 26 AND 27.

EVAPORATION / INFILTRATION POND FENCING PLAN. SEE PLAN SHEETS 28 THROUGH 29.

EXISTING NILAND WASTE WATER TREATMENT PLANT IMPROVEMENTS -- SEE PLAN SHEETS 4 THROUGH 12

BM - CHISELED "X" ON WEST TANK FOUNDATION SLAB
EL 824.41

38+00 359+00 360+00 361+00 362+00 363+00
37+00 347+00 348+00 349+00 350+00 351+00 352+00 372+00 373+00 374+00 375+00 376+00

200 0 200 400 600
SCALE 1"= 200'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

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PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
PROJECT SITE MAP AND SHEET INDEX

REFERENCE
THG #542.089
SHEET 2 OF 50

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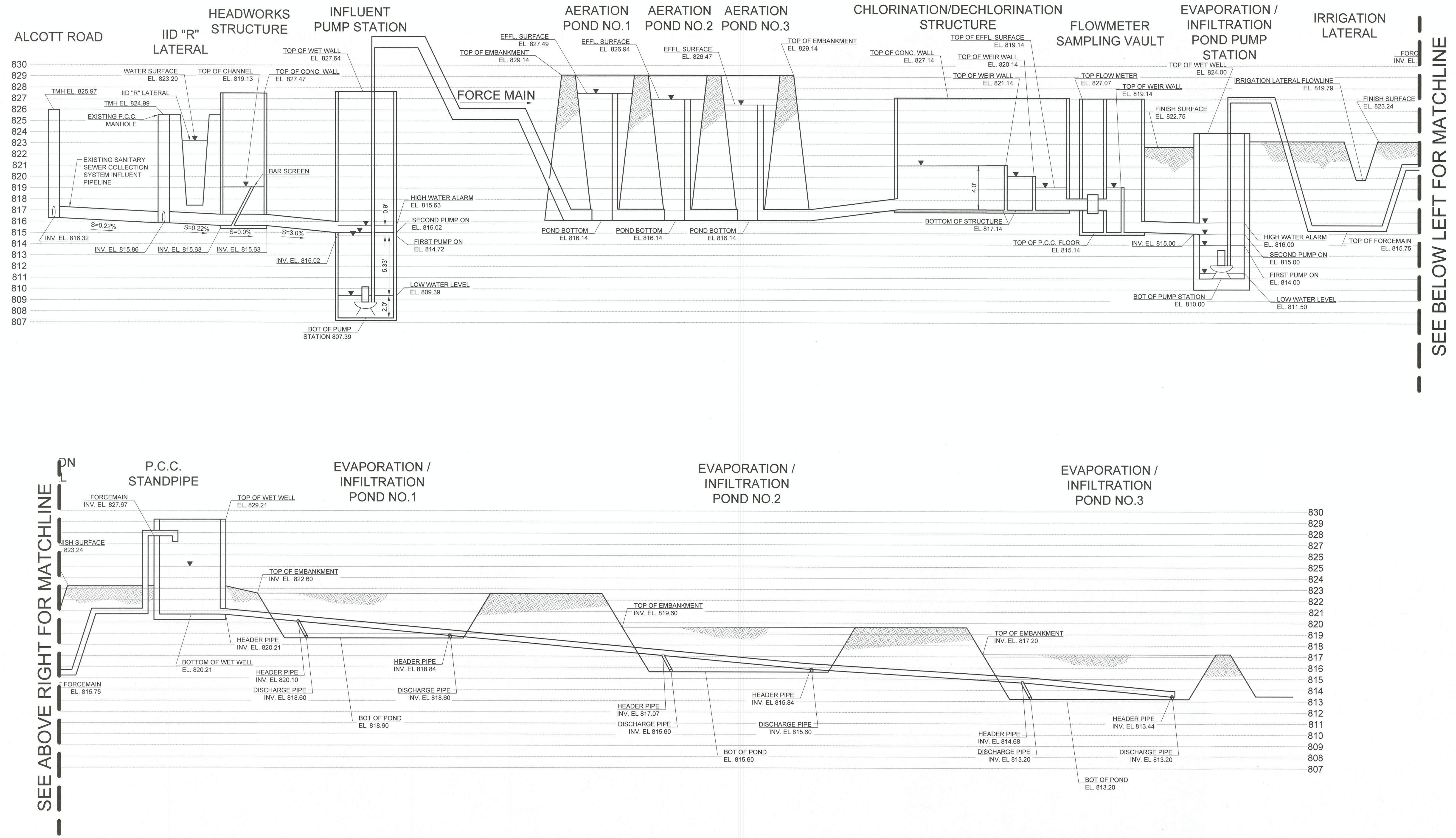

NILAND WASTE WATER TREATMENT PLANT HYDRAULIC PROFILE

NOT TO SCALE

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES G. HOLT — No. 31773 — Exp. 12-31-24 — CIVIL — STATE OF CALIFORNIA

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COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
HYDRAULIC PROFILE

REFERENCE — THG #542.089
SHEET 3 OF 50

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CONSTRUCT NEW EVAPORATION / PERCOLATION PONDS (1,125.15' PER OM 6-31)

SEE PLAN SHEET 15 FOR CONTINUATION OF THE ALL WEATHER ACCESS ROAD CONSTRUCTION.

CL ACCESS ROAD N 2026221.056 E 6782521.184 FG 821.49

850.01

50' WIDE EASEMENT FOR ROADS AND CANALS PER OM 6-31.

50.00' EASEMENT

LOT 25 OF ALEXANDER TRACT ACCORDING TO MAP NO. 360 ON FILE IN BOOK 6, PAGE 31 OF OFFICIAL MAPS AT THE IMPERIAL COUNTY RECORDERS OFFICE

CL-BC ACCESS ROAD N 2026221.420 E 6782608.360 FG 820.66

CL-EC ACCESS ROAD N 2026224.262 E 6782624.770 FG 820.84

CL-BC ACCESS ROAD N 2026249.473 E 6782696.308 FG 821.38

CL-EC ACCESS ROAD N 2026252.315 E 6782712.718 FG 821.43

CL-BC ACCESS ROAD N 2026253.249 E 6782936.776 FG 822.42

CL ACCESS ROAD N 2026470.265 E 6782971.168 FG 823.17

CL ACCESS ROAD N 2026652.154 E 6782970.706 FG 823.50

CL ACCESS ROAD N 2026742.192 E 6782970.474 FG 826.40

CL-BC ACCESS ROAD N 2026874.980 E 6782970.131 FG 825.90

CL-EC ACCESS ROAD N 2026910.373 E 6782984.684 FG 825.65

CL-BC ACCESS ROAD N 2026933.083 E 6783007.277 FG 826.11

CL-EC ACCESS ROAD N 2026968.476 E 6783021.831 FG 826.13

CL ACCESS ROAD N 2027061.452 E 6783021.591 FG 826.33

TOE OF SLOPE EXISTING GRADE EL. 820.15

EXISTING GRADE EL. 820.09

TOE OF SLOPE EXISTING GRADE EL. 819.79

TOE OF SLOPE EXISTING GRADE EL. 820.85

TOE OF SLOPE EXISTING GRADE EL. 820.39

TOP OF SLOPE EL. 824.00

ACCESS ROAD

N 2026039.120 E 6782782.060 BOTTOM SLOPE EL. 819.00

N 2026189.116 E 6782780.894 BOTTOM SLOPE EL. 819.00

N 2026040.286 E 6782932.055 BOTTOM SLOPE EL. 819.00

N 2026190.281 E 6782930.890 BOTTOM SLOPE EL. 819.00

SLUDGE CONTAINMENT BASIN - BOTTOM OF BASIN EL. 819.00

CONSTRUCT SLUDGE CONTAINMENT BASIN PER SHEET 4 AND 34

ALL WEATHER ACCESS ROAD TO EVAPORATION PONDS

ALL WEATHER ACCESS ROAD TO EVAPORATION PONDS

AERATION POND NO.3

AERATION POND NO.2

AERATION POND NO.1

EXISTING CHEMICAL CONTAINMENT STRUCTURE TO BE ABANDONED.

NEW SODIUM METABISULFATE FACILITY. SEE PLAN SHEET 6,9,10 AND 11.

EFLUENT FLOW METER / SAMPLING VAULT

NEW EVAPORATION POND PUMP STATION SEE PLAN SHEET 24 AND 25.

NEW SODIUM HYPOCHLORITE FACILITY. SEE PLAN SHEETS 6,9,10,11.

REHABILITATE CHLORINATION / DECHLORINATION STRUCTURE. SEE PLAN SHEET 7 AN 8.

EXISTING HEADWORK STRUCTURE.

INFLUENT FLOWMETER.

EXISTING GROUND WATER PUMP STATION.

EXISTING EMERGENCY POWER GENERATOR CONTROL SET

NEW POTABLE WATER FACILITY. SEE DETAIL H ON PLAN SHEET 5.

ABORATORY CONTROL BUILDING.

NILAND WWTP ENTRANCE

ABANDONED BLDG.

ABANDONED IMHOFF TANK

EXISTING GARAGE.

REHABILITATE EXISTING AERATION POND AND HDPE LINER SEE PLAN SHEETS 31,32,33.

EMERGENCY POND - BOTTOM OF BASIN EL. 819.00 CONSTRUCT EMERGENCY POND PER SHEET 46

EXISTING EMERGENCY WASTE WATER POND.

STORM WATER POND

STORM WATER POND

TEMPORARY BENCHMARK - CHISELED "X" ON P.C.C. SLAB EL. 824.41

SLAB FOUNDATION FOR PREVIOUS WW TANK

RAW WATER POND

ACCESS ROAD

ALCOTT ROAD

IID "R" CANAL

IID "R" DRAIN (760' PER OM 6-31) (761.31' PER ROS 10-7)

55' EASEMENT FOR CANALS, ROADS, POWER AND TELEPHONE UTILITIES PER OFFICIAL RECORD 6-31 AND DEED IN BK124, PG. 351 DATED 6/9/1917 AT THE IMPERIAL RECORDERS OFFICE.

IID BRIDGE

POINT OF DISCHARGE.

50' WIDE ROAD AND CANAL EASEMENT NILAND SANITARY DISTRICT PER OFFICIAL RECORD IN BOOK 708, PAGE 202 FILED AT THE IMPERIAL RECORDERS OFFICE ON 5/25/1948. SEE RECORD OF SURVEY MAP 10-7 FOR EXACT EASEMENT LOCATION.

(1,126.15' PER OM 6-31) (1,126.12' PER ROS 10-7)

412.05

SCALE 1"= 40'

EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL.
2. EXISTING NATIVE MATERIAL BORROW AREA AND EMERGENCY WASTE WATER STORAGE POND.
3. EXISTING BUILDING.
4. EXISTING P.C.C. RIBBON GUTTER.
5. EXISTING P.C.C. SIDEWALK.
6. EXISTING ABANDONED EMERGENCY WASTE WATER STORAGE POND.
7. EXISTING RAW WATER STORAGE POND.
8. EXISTING CHAIN LINK FENCE.
9. EXISTING CHAIN LINK FENCE SWING GATE.
10. EXISTING CHAIN LINK FENCE ROLL GATE.
11. EXISTING IID IRRIGATION CANAL TO REMAIN
12. EXISTING IID EARTHEN DRAIN.
13. EXISTING HDPE LINED AERATION POND.
14. EXISTING DIRT ACCESS ROAD.
15. EXISTING DIRT PILE.
16. EXISTING TREE.
17. EXISTING PALM TREE.
18. EXISTING BRUSH VEGETATION.
19. EXISTING GRAVITY SANITARY SEWER PIPELINE.
20. EXISTING SANITARY SEWER FORCE MAIN.
21. EXISTING SANITARY SEWER MANHOLE.
22. EXISTING SANITARY SEWER FORCE MAIN FLOW METER VAULT.
23. EXISTING SANITARY SEWER FORCE MAIN VALVE.
24. EXISTING GRAVITY SANITARY SEWER VALVE.
25. EXISTING EMERGENCY WASTE WATER DISCHARGE PIPELINE.
26. EXISTING GROUND WATER PUMP DISCHARGE PIPELINE.
27. EXISTING RAW WATER PIPELINE.
28. EXISTING HOSE BIB.
29. EXISTING P.C.C. HEADWORKS STRUCTURE.
30. EXISTING WASTE WATER INFLUENT PUMP STATION.
31. EXISTING GROUND WATER PUMP STATION.
32. EXISTING CHLORINATION/DECHLORINATION STRUCTURE.
33. EXISTING EFFLUENT FLOW METER / SAMPLING VAULT.
34. EXISTING CHEMICAL STORAGE TANK.
35. EXISTING OUT OF SERVICE CHEMICAL STORAGE TANK.
36. EXISTING AERATION POND CATWALK STRUCTURE.
37. EXISTING WWTP MAIN ACCESS WOODEN BRIDGE.
38. SURVEY MONUMENTS NOTED AS "1 1/2 INCH IRON PIPE TAGGED LS5397" PER RECORD OF SURVEY ON FILE IN BOOK 10, PAGE 7 AT THE IMPERIAL COUNTY RECORDERS OFFICE. CONTRACTOR SHALL TAKE EXTREME CAUTION NOT TO DISTURB OR DESTROY THE EXISTING MONUMENTS DURING THE PROJECT CONSTRUCTION PERIOD. SEE THE MONUMENT PRESERVATION NOTE ON THIS PLAN SHEET.
39. SURVEY MONUMENT NOTED AS "1 1/2 INCH IRON PIPE TAGGED LS5397" NOTED TO BE THE WEST 1/4 CORNER OF SECTION 9, TOWNSHIP 11 SOUTH , RANGE 14 EAST, SAN BERNARDINO MERIDIAN PER RECORD OF SURVEY ON FILE IN BOOK 10, PAGE 7 AT THE IMPERIAL COUNTY RECORDERS OFFICE.
40. EXISTING SANITARY SEWER GRAVITY VALVES.
41. EXISTING GRAVITY SANITARY SEWER PIPELINE.
42. EXISTING GENERATOR SET.
43. EVAPORATION POND NORTH PROJECT BOUNDARY LINE.
44. EVAPORATION POND SOUTH PROJECT BOUNDARY LINE.
45. THE PREVIOUS NILAND WWTP ENTRANCE WOODEN BRIDGE OVER THE IID R LATERAL WAS IN POOR CONDITION AND UNSAFE. THE WOODEN BRIDGE WAS REMOVED. IID IS TO CONSTRUCT A NEW NILAND WWTP ENTRANCE BRIDGE. THE CONSTRUCTION OF THE NEW BRIDGE WILL BE CONDUCTED BY THE IID INDEPENDENTLY AND IS NOT INCLUDED WITH THE IMPROVEMENTS TO BE COMPLETED BY THE CONTRACTOR.

CONSTRUCTION KEYNOTES

1. CONSTRUCT NEW VALVES AND PIPELINE FITTINGS UPSTREAM OF THE P.C.C. HEADWORK STRUCTURE PER DETAIL A ON PLAN SHEET 12.
2. INSTALL TWO LEAF DOORS FOR GROUNDWATER PUMP STATION PER DETAIL B ON PLAN SHEET 12.
3. INSTALL PRECAST CONCRETE EXTENSION SECTIONS AT EXISTING P.C.C. FLOW METER VAULT PER DETAILS C AND D ON PLAN SHEET 12.
4. INSTALL POTABLE WATER SYSTEM AND SHADE STRUCTURE PER PLAN SHEET 5.
5. INSTALL EVAPORATION POND PUMP STATION PER PLAN SHEETS 24 AND 25.
6. INSTALL SODIUM HYPOCHLORITE TANK AND SHADE STRUCTURE PER PLAN SHEETS 6, 9, 10 AND 11.
7. INSTALL SODIUM METABISULFITE TANK AND SHADE STRUCTURE PER PLAN SHEETS 6, 9, 10 AND 11.
8. RAISE VALVE RISER AND COVER TO THE FINISH SURFACE GRADE ELEVATION PER DETAIL E ON PLAN SHEET 35.
9. INSTALL TWO LEAF DOORS FOR INFLUENT PUMP STATION PER DETAIL F ON PLAN SHEET 12.
10. REHABILITATE LEAF CHLORINATION / DECHLORINATION STRUCTURE PER PLAN SHEETS 7 AND 8.
11. INSTALL SAMPLING VAULT ALUMINUM GRATES PER DETAIL G ON PLAN SHEET 12.
12. CONSTRUCT SLUDGE CONTAINMENT BASIN. SEE SECTION A-A 4 34.
13. INSTALL CLASS 2 BASE ALL WEATHER ACCESS ROAD PER SECTION B-B ON PLAN SHEET 45.
14. CONSTRUCT NATIVE EARTH SLUDGE CONTAINMENT ACCESS RAMP.
15. REGRADE THE EXISTING EMERGENCY WASTEWATER POND PER SECTIONS C-C AND SECTION D-D ON PLAN SHEET 46.
16. REPLACE EXISTING NON-FUNCTIONAL RESILIENT WEDGE VALVE WITH ECCENTRIC PLUG VALVE PER THE SPECIAL CONDITIONS.
17. CONSTRUCT NATIVE EARTH EMERGENCY POND ACCESS RAMP.
18. REMOVE 40- FEET OF EXISTING FENCE AND SCARIFY NATIVE AREA TO PROVIDE ACCESS TO THE EMERGENCY POND ACCESS RAMP.
19. REMOVE EXISTING SIX (6) AERATORS IN THE AERATION PONDS AND DELIVER TO THE NILAND COUNTY SANITATION DISTRICT AT A LOCATION WITHIN THE WWTP SITE DESIGNATED BY THE ENGINEER. THERE (ARE) TWO (2) AERATORS IN EACH AERATION POND. INSTALL SIX (6) NEW 7.5 HP, 480 VOLTS, 3 PHASE AERATORS IN THE AERATION PONDS. SEE THE TECHNICAL SPECIFICATIONS AND ELECTRICAL SITE PLAN.
20. INSTALL NEW 20-FOOT WIDE AUTOMATICALLY OPERATED CHAIN LINK FENCE GATE. SEE DETAIL PP ON PLAN SHEET 35.

DEMOLITION KEYNOTES

1. REMOVE AND DISPOSE EXISTING VALVES AND PIPE FITTINGS ALONG GRAVITY SANITARY SEWER PIPELINE AND BYPASS PIPELINE UPSTREAM OF THE P.C.C. HEADWORKS STRUCTURE.
2. REMOVE AND DISPOSE OF EXISTING P.C.C. RIBBON GUTTER.
3. REMOVE AND DISPOSE OF EXISTING NATIVE MATERIAL TO SUB-BASE DESIGN GRADE.SCARIFY THE BOTTOM 12 INCHES OF NATIVE MATERIAL AND RECOMPACT TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. SEE SECTION B-B ON PLAN SHEET 45

MONUMENT PRESERVATION NOTE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SURVEY MONUMENTS, CORNER ACCESSORIES AND/OR BENCHMARKS WITHIN THE LIMITS OF WORK. IN ACCORDANCE WITH THE PROFESSIONAL LAND SURVEYORS ACT (CHAPTER 15 OF THE CALIFORNIA BUSINESS AND PROFESSIONAL CODE), SUCH OBJECTS WITHIN THE LIMITS OF WORK THAT MAY BE DISTURBED OR DESTROYED BY CONSTRUCTION SHALL BE REFERENCED BY A PERSON AUTHORIZED TO PRACTICE LAND SURVEYING AND A CORNER RECORD (OR RECORD OF SURVEY) SHOWING SAID REFERENCES SHALL BE FILED WITH THE COUNTY SURVEYOR PRIOR TO CONSTRUCTION. ANY MONUMENT, CORNER ACCESSORY, OR BENCHMARK THAT IS DISTURBED OR DESTROYED BY CONSTRUCTION SHALL BE REPLACED WITH APPROPRIATE MONUMENTATION BY A PERSON AUTHORIZED TO PRACTICE LAND SURVEYING AND A CORNER RECORD (OR RECORD OF SURVEY) SHALL BE FILED PRIOR TO PROJECT COMPLETION. FORM MPR-01 AND FORM MPR-02 ARE REQUIRED FOR ALL IMPERIAL COUNTY PROJECTS.

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

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JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

WASTEWATER TREATMENT PLANT IMPROVEMENT SITE PLAN

REFERENCE

THG #542.089

SHEET 4 OF 50

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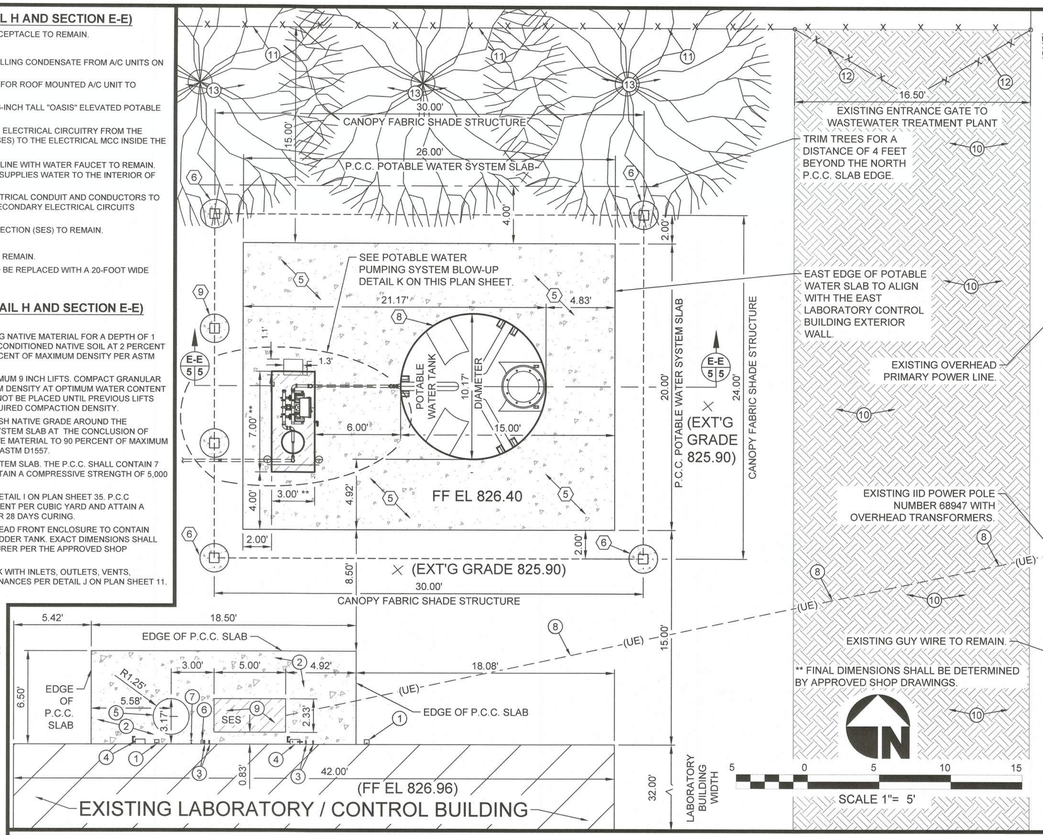
EXISTING KEYNOTES FOR (DETAIL H AND SECTION E-E)

1. EXISTING DUPLEX WEATHERPROOF GFCI RECEPTACLE TO REMAIN.
2. EXISTING P.C.C. SLAB TO REMAIN.
3. EXISTING ¾-INCH PVC STUB OUT PIPES EXPELLING CONDENSATE FROM A/C UNITS ON THE ROOF TO REMAIN.
4. EXISTING ELECTRICAL DISCONNECT SWITCH FOR ROOF MOUNTED A/C UNIT TO REMAIN.
5. EXISTING 100-GALLON, 30-INCH DIAMETER, 36-INCH TALL "OASIS" ELEVATED POTABLE WATER TANK TO REMAIN.
6. EXISTING ELECTRICAL CONDUIT FITTING FOR ELECTRICAL CIRCUITRY FROM THE ELECTRICAL SERVICE ENTRANCE SECTION (SES) TO THE ELECTRICAL MCC INSIDE THE LABORATORY BUILDING TO REMAIN.
7. EXISTING ¾-INCH NON-POTABLE WATER PIPELINE WITH WATER FAUCET TO REMAIN. THE ¾-INCH NON-POTABLE WATER PIPELINE SUPPLIES WATER TO THE INTERIOR OF THE LABORATORY BUILDINGS.
8. EXISTING UNDERGROUND SECONDARY ELECTRICAL CONDUIT AND CONDUCTORS TO REMAIN. EXACT LOCATION AND DEPTH OF SECONDARY ELECTRICAL CIRCUITS UNKNOWN.
9. EXISTING ELECTRICAL SERVICE ENTRANCE SECTION (SES) TO REMAIN.
10. EXISTING NATIVE EARTH ACCESS ROAD.
11. EXISTING 6-FOOT TALL CHAIN LINK FENCE TO REMAIN.
12. EXISTING CHAIN LINK FENCE SWING GATE TO BE REPLACED WITH A 20-FOOT WIDE ENTRANCE GATE.
13. EXISTING TREES TO REMAIN.

CONSTRUCTION KEYNOTES (DETAIL H AND SECTION E-E)

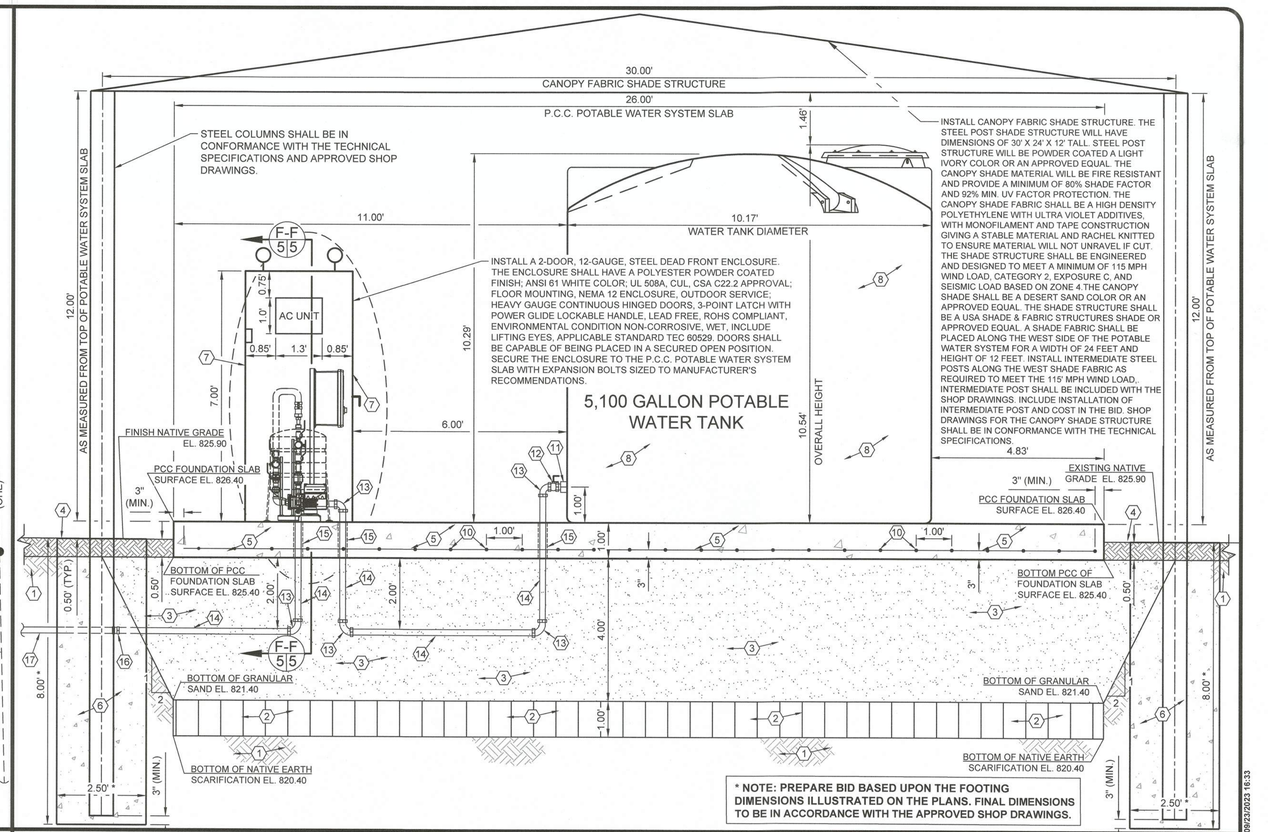
1. EXISTING NATIVE SOIL TO REMAIN.
2. SCARIFY AND MOISTURE CONDITION EXISTING NATIVE MATERIAL FOR A DEPTH OF 1 FOOT. COMPACT SCARIFIED AND MOISTURE CONDITIONED NATIVE SOIL AT 2 PERCENT OVER OPTIMUM WATER CONTENT TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D1557.
3. INSTALL GRANULAR SAND MATERIAL IN MAXIMUM 9 INCH LIFTS. COMPACT GRANULAR SAND MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY AT OPTIMUM WATER CONTENT PER ASTM D1557. SUCCESSIVE LIFTS SHALL NOT BE PLACED UNTIL PREVIOUS LIFTS HAVE BEEN TESTED AND ATTAINED THE REQUIRED COMPACTION DENSITY.
4. INSTALL 6-INCH OF NATIVE MATERIAL TO FINISH NATIVE GRADE AROUND THE EXTERIOR OF THE P.C.C. POTABLE WATER SYSTEM SLAB AT THE CONCLUSION OF CONSTRUCTION ACTIVITIES. COMPACT NATIVE MATERIAL TO 90 PERCENT OF MAXIMUM DENSITY AT OPTIMUM WATER CONTENT PER ASTM D1557.
5. INSTALL 12-INCH P.C.C. POTABLE WATER SYSTEM SLAB. THE P.C.C. SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS OF CURING.
6. INSTALL SHADE STRUCTURE FOOTING PER DETAIL I ON PLAN SHEET 35. P.C.C CONCRETE SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS CURING.
7. INSTALL 3-FOOT X 7-FOOT X 7-FOOT METAL DEAD FRONT ENCLOSURE TO CONTAIN POTABLE WATER PUMPING SYSTEM AND BLADDER TANK. EXACT DIMENSIONS SHALL DEPEND UPON THE ENCLOSURE MANUFACTURER PER THE APPROVED SHOP DRAWINGS.
8. INSTALL 5,100 GALLON POTABLE WATER TANK WITH INLETS, OUTLETS, VENTS, MANWAYS, SEISMIC BRACING, AND APPURTENANCES PER DETAIL J ON PLAN SHEET 11.
9. INSTALL INTERMEDIATE STEEL POST AND P.C.C. FOOTING PER APPROVED SHADE STRUCTURE SHOP DRAWINGS.
10. INSTALL # 5 REINFORCING BARS 1'-0" O.C. EACH WAY.
11. INSTALL 2-INCH 316 STAINLESS STEEL NIPPLE CONNECTED TO WATER TANK OUTLET.
12. INSTALL 2-INCH STAINLESS STEEL BALL VALVE WITH TEE HANDLE.
13. INSTALL 2-INCH 316 STAINLESS STEEL PIPELINE ELBOWS AS REQUIRED.
14. INSTALL 2-INCH 316 STAINLESS STEEL PIPELINE. DETERMINE EXACT PIPELINE LENGTH AT THE TIME OF INSTALLATION.
15. INSTALL 2-INCH 316 STAINLESS STEEL PIPING THROUGH A 3-INCH SCHEDULE 40 PVC SLEEVE EXTENDING THROUGH THE P.C.C SLAB. FILL THE ANNULAR AREA WITH GRANULAR SAND.
16. INSTALL 2-INCH ADAPTER FITTING FROM 316 STAINLESS STEEL TO SCHEDULE 80 PVC.
17. INSTALL 2-INCH SCHEDULE 80 PVC POTABLE WATER PIPELINE. INSTALL NEW 2-INCH SCHEDULE 80 PVC PIPELINE TO THE EXISTING WATER PIPELINE POINT OF CONNECTION AS ILLUSTRATED ON PLAN SHEET 4.



POTABLE WATER SYSTEM PLAN VIEW DETAIL

SCALE 1" = 5'

H 4|5



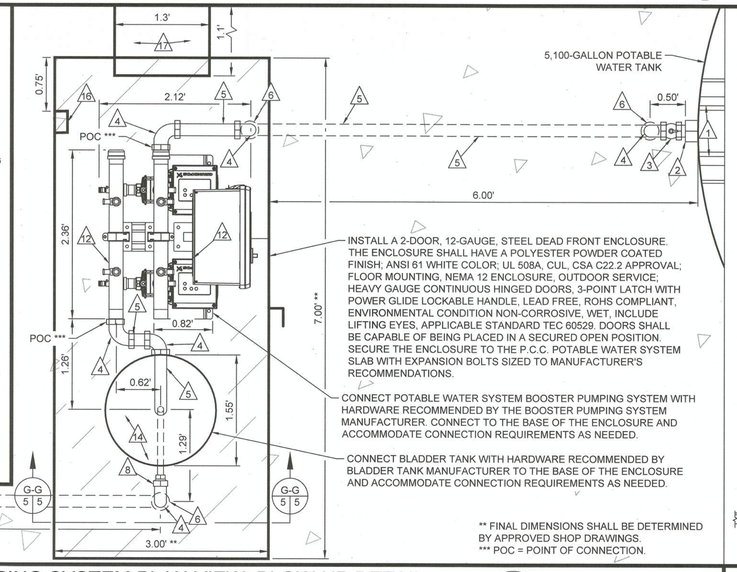
POTABLE WATER SYSTEM ELEVATION VIEW SECTION

SCALE 1" = 2'

E-E 5|5

POTABLE WATER PIPING CONSTRUCTION KEYNOTES (DETAIL K AND SECTIONS F-F AND G-G)

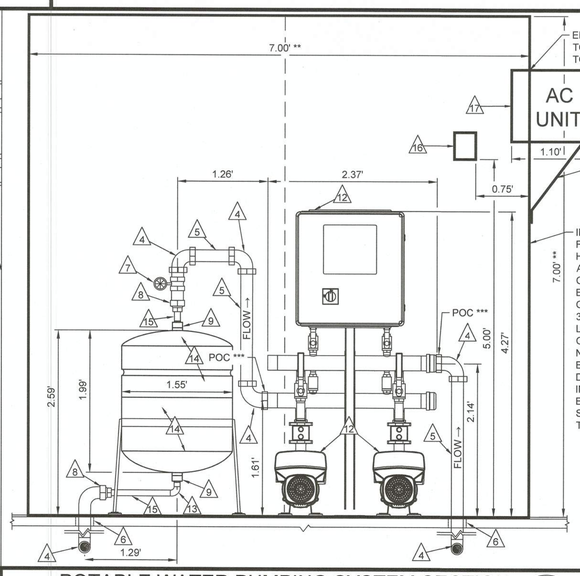
1. INSTALL 5,100-GALLON POTABLE WATER TANK PER SECTION E-E ON THIS PLAN SHEET.
2. INSTALL 2-INCH 316 STAINLESS STEEL NIPPLE CONNECTED TO WATER TANK.
3. INSTALL 2-INCH STAINLESS STEEL BALL VALVE WITH TEE HANDLE.
4. INSTALL 2-INCH 316 STAINLESS STEEL PIPELINE ELBOWS AS REQUIRED.
5. INSTALL 2-INCH 316 STAINLESS STEEL PIPELINE. DETERMINE EXACT PIPELINE LENGTH AT THE TIME OF INSTALLATION.
6. INSTALL 2-INCH 316 STAINLESS STEEL PIPING THROUGH A 3 INCH SCHEDULE 40 PVC SLEEVE EXTENDING THROUGH THE PCC SLAB. FILL THE ANNULAR AREA WITH GRANULAR SAND.
7. INSTALL PRESSURE GAUGE WITH 0 TO 100 PSI RANGE.
8. INSTALL 1-INCH X 2-INCH 316 STAINLESS STEEL REDUCER FITTING.
9. INSTALL 1-INCH 316 STAINLESS STEEL PIPE NIPPLE TO BE CONNECTED TO DIAPHRAGM (BLADDER) TANK.
10. INSTALL 2-INCH ADAPTER FITTING FROM 316 STAINLESS STEEL TO SCHEDULE 80 PVC.
11. INSTALL 2-INCH SCHEDULE 80 PVC PIPELINE.
12. INSTALL BOOSTER POTABLE WATER SYSTEM. THE 15 GPM @ 162 FEET TDH DUPLEX PUMPING SYSTEM SHALL BE EQUIPPED WITH VARIABLE FREQUENCY DRIVE UNITS. THE PUMP MOTORS SHALL BE 2 HP, 480 VOLTS, 3 PHASE. THE BOOSTER PUMPING SYSTEM SHALL BE PREFABRICATED ON A SKID WITH PUMPS, SUCTION AND DISCHARGE PIPING, AND ELECTRICAL CONTROL PANEL. THE SKID MOUNTED PUMPING SYSTEM SHALL BE A GRUNDFOS MODEL HYDRO MPC E2CME5-4 OR APPROVED EQUAL. SEE TECHNICAL SPECIFICATIONS.
13. INSTALL 1-INCH 316 STAINLESS STEEL PIPELINE ELBOW.
14. INSTALL A 14-GALLON BLADDER TANK. THE BLADDER TANK SHALL BE AN AMTROL THERM-X-TROL MODEL NO. ST-30V WITH SUPPORT OR APPROVED EQUAL. SEE TECHNICAL SPECIFICATIONS.
15. INSTALL 1-INCH 316 STAINLESS STEEL PIPELINE. DETERMINE EXACT PIPELINE LENGTH AT THE TIME OF INSTALLATION.
16. INSTALL DUPLEX 110 VOLT, 1 PHASE WEATHER PROOF ELECTRICAL RECEPTACLE FOR A/C UNIT
17. INSTALL A TOSHIBA 6,000-BTW, 115-VOLT, 1-PHASE, WINDOW AIR CONDITIONER UNIT OR AN APPROVED EQUAL WITH REMOTE CONTROLLER. THE DIMENSIONS OF THE A/C UNIT ARE 12.05 INCHES TALL, 15.99 INCHES WIDE, AND 13.19 INCHES DEEP.



POTABLE WATER PUMPING SYSTEM PLAN VIEW BLOW-UP DETAIL

SCALE 1" = 1'

K 5|5



POTABLE WATER PUMPING SYSTEM SECTION

SCALE 1" = 1'

F-F 5|5

POTABLE WATER PUMPING SYSTEM BLOW-UP SECTION

SCALE 1" = 1'

G-G 5|5

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS
10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
WASTEWATER TREATMENT PLANT POTABLE WATER SYSTEM DETAILS AND SECTIONS

REFERENCE
THG #542.089
SHEET 5 OF 50

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EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL.
2. EXISTING CHEMICAL CONTAINMENT STRUCTURE TO BE ABANDONED.
3. EXISTING 6-FOOT" CHAIN LINK FENCE.
4. EXISTING CHLORINATION/ DECHLORINATION BASIN P.C.C. EXTERIOR WALLS
5. EXISTING DIRT ACCESS ROAD..
6. EXISTING PALM TREE.
7. EXISTING 12" AWWA C 900, CLASS 150 PVC GRAVITY SANITARY SEWER PIPELINE.
8. EXISTING 2-INCH SCHEDULE 80 PVC WATER PIPELINE.

CONSTRUCTION KEYNOTES

1. INSTALL EVAPORATION / INFILTRATION POND PUMP STATION PER PLAN SHEET 24.
2. INSTALL SODIUM HYPOCHLORITE TANK AND SHADE STRUCTURE PER DETAIL L ON PLAN SHEET 11.
3. INSTALL SODIUM METABISULFITE TANK AND SHADE STRUCTURE PER DETAIL M ON PLAN SHEET 11.
4. INSTALL SAMPLING VAULT ALUMINUM GRATES PER DETAIL G ON PLAN SHEET 12.
5. INSTALL 2-INCH SCHEDULE 80 PVC PIPELINE ELBOW.
6. INSTALL 2-INCH SCHEDULE 80 PVC NEW WATER PIPELINE.
7. INSTALL 2-INCH SCHEDULE 80 PVC CONNECTION FITTING TO THE EXISTING WATER PIPELINE.
8. INSTALL 2-INCH SCHEDULE 80 PVC CHEMICAL CARRIER PIPELINE.
9. INSTALL AN EYE WASH STATION PER DETAIL N ON PLAN SHEET 35.
10. INSTALL A LIGHT ASSEMBLY PER DETAIL O ON PLAN SHEET 35.
11. INSTALL 9-INCHES OF CLASS 2 BASE. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557 PER CROSS SECTIONS H-H, I-I AND J-J ON PLAN SHEET 44.
12. INSTALL 1 FOOT OF ¾-INCH GRAY CRUSHED ROCK ON COMPACTED NATIVE MATERIAL PER CROSS SECTION K-K ON PLAN SHEET 10.
13. INSTALL 6" P.C.C. SIDESLOPE PER CROSS SECTION L-L ON PLAN SHEET 10, AND SECTIONS M-M AND N-N ON PLAN SHEET 44.
14. INSTALL P.C.C. CONCRETE SLAB. P.C.C. CONCRETE SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS CURING PER CROSS SECTIONS K-K AND L-L ON PLAN SHEET 10.
15. INSTALL 4" P.C.C. SLAB PER CROSS SECTION K-K ON PLAN SHEET 10.
16. COMPLETE GRADING AND SIDESLOPE CONSTRUCTION IN THE CHLORINATION / DECHLORINATION BASIN AREA PER SECTIONS H-H, I-I AND J-J ON PLAN SHEET 44.

ABANDONED CHEMICAL CONTAINMENT STRUCTURE

EXISTING CHEMICAL FACILITIES TO BE ABANDONED IN PLACE.

TOP OF EXISTING AND NEW SLOPE

REHABILITATE CHLORINATION / DECHLORINATION STRUCTURE PER PLAN SHEETS 7 AND 8.

CHLORINATION/ DECHLORINATION BASIN

SODIUM METABISULFITE FACILITY

SEE SODIUM METABISULFITE FACILITY BLOW-UP PLAN ON SHEET 9.

INSTALL AN EYE WASH STATION PER DETAIL N ON PLAN SHEET 35.

INSTALL SODIUM METABISULFITE TANK AND SHADE STRUCTURE PER SECTION L-L ON PLAN SHEET 10.

FLOW METER/ SAMPLING VAULT

REHABILITATE ACCESS HATCH LEAF CHLORINATION / DECHLORINATION STRUCTURE PER DETAIL G ON PLAN SHEET 12.

SODIUM HYPOCHLORITE FACILITY

SEE SODIUM HYPOCHLORITE FACILITY BLOW-UP PLAN ON SHEET 9.

INSTALL SODIUM HYPOCHLORITE TANK AND SHADE STRUCTURE PER SECTION K-K ON PLAN SHEET 10.

EVAPORATION / INFILTRATION POND PUMP STATION

INSTALL EVAPORATION / PERCOLATION POND PUMP STATION PER PLAN SHEETS 24 AND 25.

SCALE 1"= 5'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

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PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

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DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
CHLORINATION/DECHLORINATION STRUCTURE AND GRADING PLAN
CHEMICAL CONTAINMENT STRUCTURE PLAN

REFERENCE
THG #542.089
SHEET 6 OF 50

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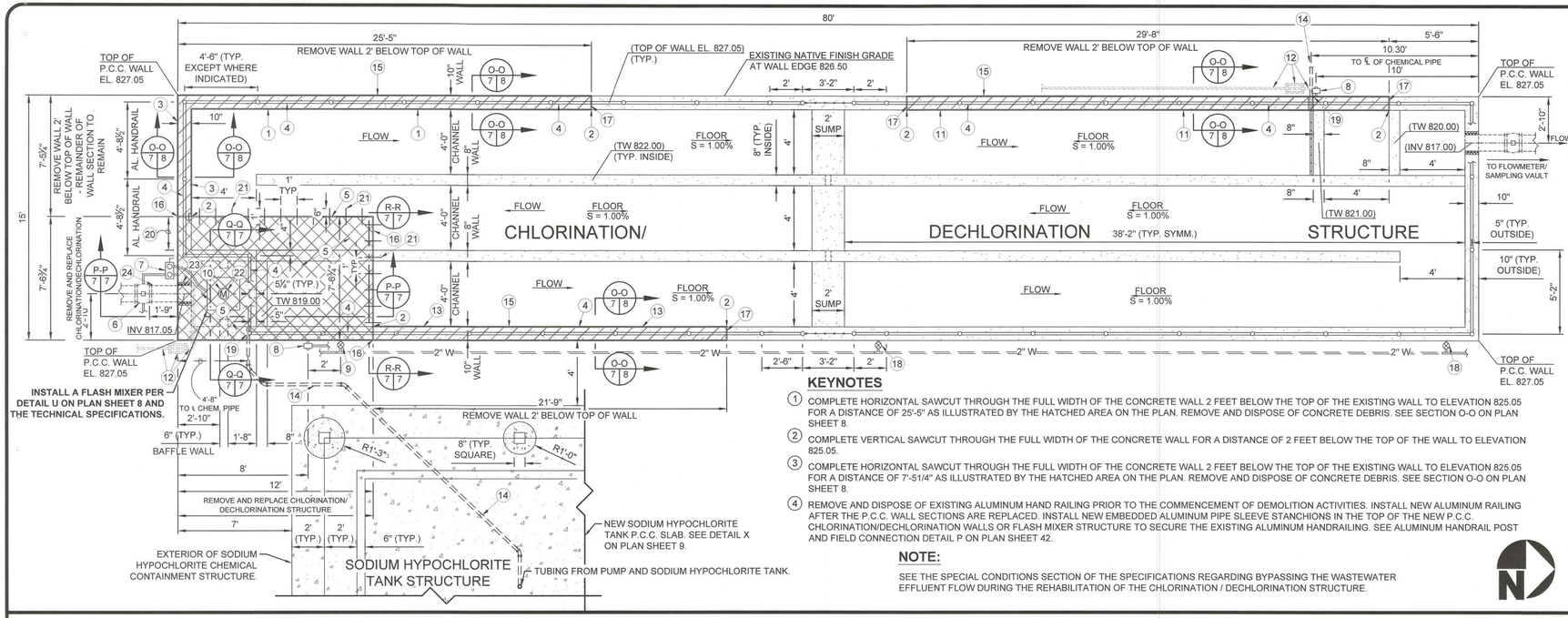


KEYNOTES

1. COMPLETE HORIZONTAL SAWCUT THROUGH THE FULL WIDTH OF THE CONCRETE WALL 2 FEET BELOW THE TOP OF THE EXISTING WALL TO ELEVATION 825.05 FOR A DISTANCE OF 25'-5" AS ILLUSTRATED BY THE HATCHED AREA ON THE PLAN. REMOVE AND DISPOSE OF CONCRETE DEBRIS. SEE SECTION O-O ON PLAN SHEET 8.
2. COMPLETE VERTICAL SAWCUT THROUGH THE FULL WIDTH OF THE CONCRETE WALL FOR A DISTANCE OF 2 FEET BELOW THE TOP OF THE WALL TO ELEVATION 825.05.
3. COMPLETE HORIZONTAL SAWCUT THROUGH THE FULL WIDTH OF THE CONCRETE WALL 2 FEET BELOW THE TOP OF THE EXISTING WALL TO ELEVATION 825.05 FOR A DISTANCE OF 7'-51/4" AS ILLUSTRATED BY THE HATCHED AREA ON THE PLAN. REMOVE AND DISPOSE OF CONCRETE DEBRIS. SEE SECTION O-O ON PLAN SHEET 8.
4. REMOVE AND DISPOSE OF EXISTING ALUMINUM HAND RAILING PRIOR TO THE COMMENCEMENT OF DEMOLITION ACTIVITIES. INSTALL NEW ALUMINUM RAILING AFTER THE P.C.C. WALL SECTIONS ARE REPLACED. INSTALL NEW EMBEDDED ALUMINUM PIPE SLEEVE STANCHIONS IN THE TOP OF THE NEW P.C.C. CHLORINATION/DECHLORINATION WALLS OR FLASH MIXER STRUCTURE TO SECURE THE EXISTING ALUMINUM HANDRAILING. SEE ALUMINUM HANDRAIL POST AND FIELD CONNECTION DETAIL P ON PLAN SHEET 42.

NOTE:

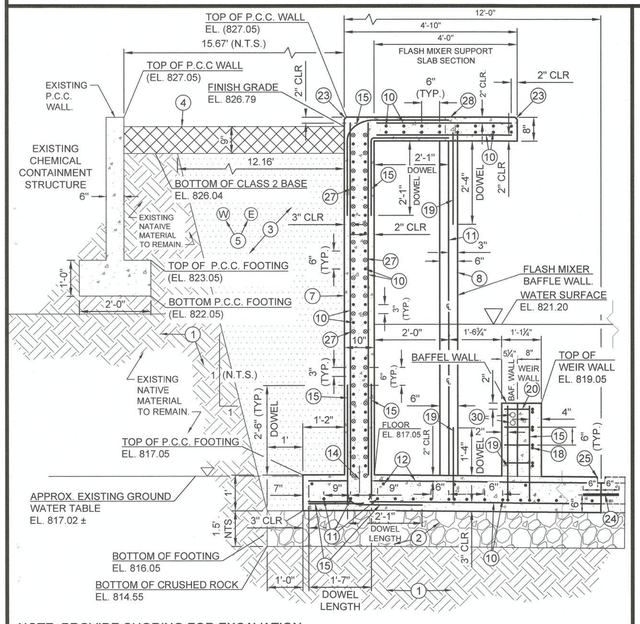
SEE THE SPECIAL CONDITIONS SECTION OF THE SPECIFICATIONS REGARDING BYPASSING THE WASTEWATER EFFLUENT FLOW DURING THE REHABILITATION OF THE CHLORINATION / DECHLORINATION STRUCTURE.

KEYNOTES (CONTINUED)

5. COMPLETE HORIZONTAL AND VERTICAL SAWCUTTING OF EXISTING P.C.C. WALLS, FOOTINGS, FLOORS, SEPARATION WALLS, AND ALL OTHER CONCRETE FACILITIES THROUGH THE FULL WIDTH OF THE CONCRETE FACILITIES. NOTE THAT THE EXISTING P.C.C. WALL FOOTINGS EXTEND BEYOND THE EXTERIOR SIDE OF THE WALLS 1'-0" ALONG THE EAST WALL AND 1'-2" ON THE SOUTH WALL. REMOVE AND DISPOSE OF THE CONCRETE WALLS, FOOTINGS, FLOORS, SEPARATION WALLS, FLASH MIXER SUPPORT CEILING SLAB AND ALL OTHER CONCRETE FACILITIES ILLUSTRATED BY THE CROSS-HATCHED AREA. RECONSTRUCT P.C.C. WALLS, FOOTINGS, FLOORS, SEPARATION WALLS, AND ALL OTHER CONCRETE FACILITIES PER SECTIONS P-P, Q-Q, AND R-R ON THIS PLAN SHEET.
6. EXISTING 12-INCH RESILIENT WEDGE (RW) GATE VALVE TO REMAIN. EXISTING RW GATE VALVE TO REMAIN IN A CLOSED POSITION DURING THE REHABILITATION OF THE CHLORINATION / DECHLORINATION STRUCTURE.
7. EXISTING NEMA 3R DISCONNECT SWITCH, STOP / START STATION, AND GUTTER MOUNTED ON A STAINLESS STEEL BACKBOARD SUPPORTED BY A PUNCH GALVANIZED STEEL POST TO BE REMOVED PRIOR TO REMOVING THE CONCRETE WALL. DISCONNECT AND RE-ROUTE ¾-INCH CONDUIT, JUNCTION BOX, AND ELECTRICAL CIRCUITRY PRIOR TO REMOVING AND STORING THE ELECTRICAL FACILITIES. DISCONNECT THE ELECTRICAL FLEX CONDUIT AND CIRCUITRY FROM THE DISCONNECT SWITCH TO THE EXISTING FLASH MIXER UNIT. AFTER THE CONSTRUCTION OF THE CHLORINATION / DECHLORINATION WALLS AND CONCRETE FACILITIES, INSTALL THE ELECTRICAL FACILITIES ALONG THE CHLORINATION / DECHLORINATION CHAMBER WALLS PER THE ELECTRICAL PLANS.
8. REMOVE EXISTING DUPLEX RECEPTACLE AND CIRCUITRY SUPPORTED BY UNISTRUT PRIOR TO THE DEMOLITION OF THE EXISTING P.C.C. WALL. DISCONNECT ELECTRICAL CIRCUITRY PRIOR TO REMOVING THE DUPLEX RECEPTACLE. AFTER CONSTRUCTING THE NEW P.C.C. CHLORINATION/DECHLORINATION WALL, INSTALL NEW ¾-INCH DIAMETER CONDUIT, 1¾" X 1⅝" STAINLESS STEEL UNISTRUT WITH STRAPS, NEW DUPLEX EXTERIOR RECEPTACLE WITH ALUMINUM COVER AND RECONNECT THE EXISTING ELECTRICAL CIRCUITRY. SEE ELECTRICAL PLANS.
9. REMOVE EXISTING ¾-INCH WATER FAUCET, UNISTRUT SUPPORT MEMBERS AND ¾-INCH DIAMETER PVC WATER PIPING PRIOR TO COMPLETING DEMOLITION OF THE P.C.C. CHLORINATION / DECHLORINATION WALL. CAP AND TEMPORARILY ISOLATE THE END OF THE WATER PIPELINE AFTER THE CONSTRUCTION OF THE NEW CHLORINATION/DECHLORINATION P.C.C. WALLS, INSTALL A NEW ¾-INCH BRASS WATER FAUCET, EXTEND THE ¾-INCH SCHEDULE 80 PVC PIPE FROM THE TEMPORARILY CAPPED WATER PIPELINE TO THE WATER FAUCET. SUPPORT THE ¾-INCH WATER PIPELINE TO A 1½-INCH 316 STAINLESS STEEL UNISTRUT MEMBER WITH PIPE STRAPS. CONNECT THE 316 1¾-INCH STAINLESS STEEL UNISTRUT MEMBER TO THE NEW CHLORINATION / DECHLORINATION STRUCTURE WALL WITH FOUR (4) ⅜-INCH DIAMETER, 4-INCH LONG STAINLESS STEEL EXPANSION BOLTS.
10. REMOVE AND DISPOSE OF EXISTING FLASH MIXER UNIT, FLEX CONDUIT AND CIRCUITRY EXTENDING FROM THE ELECTRICAL DISCONNECT SWITCH TO THE FLASH MIXER. AFTER THE CONSTRUCTION OF THE CHLORINATION / DECHLORINATION STRUCTURE WALLS, FLASH MIXER CHAMBER CEILING, AND OTHER P.C.C. ITEMS, INSTALL A NEW FLASH MIXER AND ELECTRICAL FLEX CONDUIT AND CIRCUITRY FROM THE NEW DISCONNECT SWITCH. SEE TECHNICAL SPECIFICATIONS. SEE THE ELECTRICAL PLANS.
11. COMPLETE HORIZONTAL SAWCUT THROUGH THE FULL WIDTH OF THE CONCRETE WALL 2 FEET BELOW THE TOP OF THE EXISTING WALL AT ELEVATION 825.05 FOR A DISTANCE OF 29'-8" AS ILLUSTRATED BY THE HATCHED AREA ON THE PLAN. REMOVE AND DISPOSE OF CONCRETE DEBRIS SEE SECTION O-O ON PLAN SHEET 8.
12. NILAND PLANT OPERATORS SHALL REMOVE EXISTING CHEMICAL TOTES AND ABOVE GRADE PIPING PRIOR TO THE COMMENCEMENT OF DEMOLITION ACTIVITIES.
13. COMPLETE HORIZONTAL SAWCUT THROUGH THE FULL WIDTH OF THE CONCRETE WALL 2 FEET BELOW THE TOP OF THE EXISTING WALL AT ELEVATION 825.05 FOR A DISTANCE OF 21'-9" AS ILLUSTRATED BY THE HATCHED AREA ON THE PLAN. REMOVE AND DISPOSE OF CONCRETE DEBRIS SEE SECTION O-O ON PLAN SHEET 8.
14. INSTALL 2-INCH SCHEDULE 80 PVC PIPELINE AND TWO (2) - ½-INCH SOFT CLEAR PLASTIC CHEMICAL TUBES PER PLAN SHEETS 9, 10 AND 43.
15. INSTALL ¾-INCH CHAMFER ON NEW P.C.C. WALL REPLACEMENT SECTION.
16. INSTALL NUMBER 5 REINFORCING BAR DOWELS TO CONNECT NEW AND EXISTING P.C.C. WALLS. SEE SECTIONS P-P AND R-R. THE DOWELS ARE ILLUSTRATED AS "⊗" ON SECTIONS P-P AND R-R. DRILL ¾" HOLES FOR A DISTANCE OF 6-INCHES INTO THE EXISTING WALLS AT THE LOCATIONS ILLUSTRATED ON SECTIONS P-P AND R-R. INSTALL A 1 FOOT LONG NUMBER 5 REINFORCING DOWEL SECURED WITH EPOXY INTO THE DRILLED HOLE. THE REMAINING 6-INCHES OF THE DOWEL IS TO EXTEND INTO THE NEW P.C.C. WALL SECTION.
17. DISCONNECT / SEVERE EXISTING ALUMINUM HANDRAIL TO BE REMOVED FROM THE ALUMINUM HANDRAIL TO REMAIN. RECONNECT NEW AND EXISTING ALUMINUM HANDRAIL AFTER P.C.C. WALL AND STRUCTURE REPLACEMENT WORK IS COMPLETED. SEE ALUMINUM HANDRAIL POST AND FIELD CONNECTION DETAIL P ON PLAN SHEET 42.
18. REMOVE AND DISPOSE OF EXISTING WATER FAUCETS. INSTALL NEW WATER FAUCETS PER THE REQUIREMENTS OF KEYNOTE 9.
19. SEE DETAIL Q ON PLAN SHEET 43 FOR CONTINUATION OF CHEMICAL PIPING. ALSO SEE PLAN SHEETS 9 AND 10.
20. WALL, FOOTING AND FLOOR SECTION BETWEEN FLASH MIXER CHAMBER AND EXISTING WESTERLY WALL SECTION WHICH IS TO REMAIN; SHALL BE CONSTRUCTED PER SECTION P-P EXCEPT WITHOUT THE FLASH MIXER SUPPORT SLAB SECTION AND WITHOUT THE REINFORCING DOWELS EXTENDING FROM THE WALL TO THE FLASH MIXER SUPPORT SLAB SECTION.
21. INSTALL NUMBER 5 REINFORCING BARS 1'-0" ON CENTER TO CONNECT NEW AND EXISTING SLABS. SEE SECTIONS P-P, Q-Q AND R-R ON THIS PLAN SHEET. DRILL ¾- INCH HOLES FOR A DISTANCE OF 6-INCHES INTO THE EXISTING P.C.C. SLAB AS ILLUSTRATED ON PLAN VIEW AND SECTION P-P, Q-Q AND R-R. INSTALL 1 FOOT LONG NUMBER 5 REINFORCING DOWEL SECURED WITH EPOXY INTO THE DRILLED HOLE. THE REMAINING 6-INCHES OF THE DOWEL IS TO EXTEND INTO THE NEW SLAB.
22. PROVIDE A CHASE OPENING OF APPROXIMATELY 4-INCHES IN DIAMETER THROUGH THE FLASH MIXER SUPPORT SLAB FOR THE FLASH MIXER SHAFT. CONFIRM CHASE OPENING DIAMETER SIZE DURING FLASH MIXER SUBMITTAL REVIEW.
23. PLACE A 12-INCH AWWA C-900, CLASS 150 PVC COUPLING FLUSH WITH THE INTERIOR FACE OF THE CONCRETE WALL. INSTALL A LINK SEAL AROUND THE EXTERIOR OF THE PVC COUPLING.
24. INSTALL A NEW 12-INCH AWWA C-900, CLASS 150 PVC PIPE SECTION FROM THE EXISTING 12-INCH RESILIENT WEDGE GATE VALVE TO THE NEW FLASH MIXER EXTERIOR WALL. PROVIDE NEW 316 S.S. HARDWARE TO CONNECT TO EXISTING 12-INCH RESILIENT WEDGE GATE VALVE AS REQUIRED.

CHLORINATION / DECHLORINATION STRUCTURE DEMOLITION AND RECONSTRUCTION PLAN

SCALE ¼" = 1'

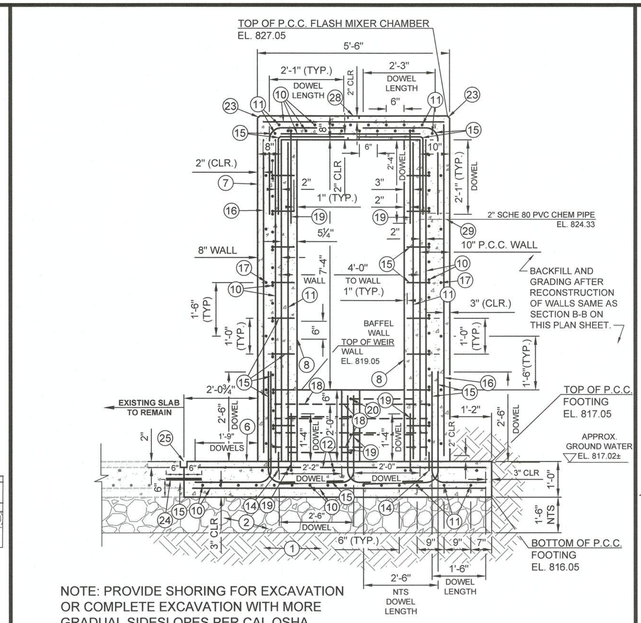


NOTE: PROVIDE SHORING FOR EXCAVATION PER CAL OSHA REQUIREMENTS.

CHLORINATION / DECHLORINATION STRUCTURE WEST FACING SECTION

P-P | 7 | 7

SCALE ½" = 1'

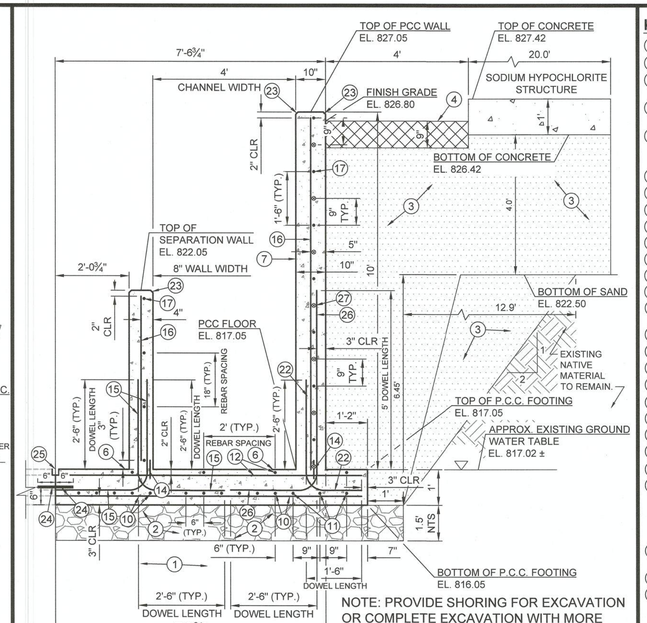


NOTE: PROVIDE SHORING FOR EXCAVATION OR COMPLETE EXCAVATION WITH MORE GRADUAL SIDESLOPES PER CAL OSHA REQUIREMENTS.

CHLORINATION / DECHLORINATION STRUCTURE FLASH MIXER CHAMBER SECTION

Q-Q | 7 | 7

SCALE ½" = 1"



NOTE: PROVIDE SHORING FOR EXCAVATION OR COMPLETE EXCAVATION WITH MORE GRADUAL SIDESLOPES PER CAL OSHA REQUIREMENTS.

CHLORINATION / DECHLORINATION STRUCTURE SECTION

R-R | 7 | 7

SCALE ½" = 1'

KEYNOTES (SECTIONS P-P, Q-Q, AND R-R)

1. NATIVE MATERIAL.
2. INSTALL ¾-INCH CRUSHED ROCK BENEATH THE NEW P.C.C. FLOOR AND FOOTINGS.
3. AFTER THE CHLORINATION / DECHLORINATION CHAMBER RECONSTRUCTION, BACKFILL GRANULAR SAND IN MAXIMUM 9-INCH LIFTS. COMPACT THE GRANULAR SAND TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
4. INSTALL 9 INCHES OF CLASS 2 BASE. COMPACT TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. SEE PLAN SHEET 6 FOR SITE GRADING IN THE VICINITY OF THE CHLORINATION \ DECHLORINATION BASIN.
5. CONTRACTOR TO POTHOLE AND EXPOSE EXISTING WATER PIPELINES AND ELECTRICAL CONDUITS AND CONDUCTORS PRIOR TO COMMENCING EXCAVATION WORK. EXACT LOCATION OF UNDERGROUND UTILITIES IS UNKNOWN.
6. CONSTRUCT A 1-FOOT DEEP P.C.C. SLAB. THE TOP OF THE P.C.C. SLAB SHALL RECEIVE A DOUBLE TROWEL FINISH.
7. CONSTRUCT P.C.C. WALLS TO THE DIMENSIONS INDICATED.
8. CONSTRUCT P.C.C. BAFFLE WALLS IN THE FLASH MIXER CHAMBER.
9. CONSTRUCT P.C.C. SUMP TO THE DIMENSIONS INDICATED.
10. INSTALL NUMBER 5 REINFORCING BARS AT 6 INCHES ON CENTER EACH WAY.
11. PLACE NUMBER 5 REINFORCING BARS AS ILLUSTRATED.
12. INSTALL NUMBER 5 REINFORCING BARS AT 24 INCHES ON CENTER EACH WAY.
13. INSTALL NUMBER 5 DOWELS AT 1 FOOT ON CENTER.
14. PLACE A 6-INCH WATERSTOP BETWEEN COLD JOINTS OF THE CONCRETE FOOTING, WALL, OR SLAB SURFACES. PLACE WATERSTOP 3" ABOVE FLOOR LEVEL AND 3" BELOW FLOOR LEVEL.
15. INSTALL NUMBER 6 DOWELS AT 1 FOOT ON CENTER. SEE DETAIL R ON PLAN SHEET 8.
16. INSTALL NUMBER 6 REINFORCING BARS AT 12 INCHES ON CENTER.
17. INSTALL NUMBER 5 REINFORCING BARS AT 18 INCHES ON CENTER.
18. INSTALL NUMBER 5 HORIZONTAL WALL REINFORCING DOWELS 6 INCHES ON CENTER PER DETAIL T ON PLAN SHEET 8.
19. INSTALL ONE (1) NUMBER 5 REINFORCING DOWEL(S). SEE DETAIL R ON PLAN SHEET 8.
20. INSTALL NUMBER 5 REINFORCING DOWEL AT 6 INCHES ON CENTER. SEE DETAIL T ON PLAN SHEET 8.
21. INSTALL NUMBER 6 REINFORCING BARS AT 6 INCHES ON CENTER.
22. INSTALL NUMBER 6 REINFORCING DOWEL AT 12 INCHES ON CENTER.
23. INSTALL ¾-INCH CHAMFER TYPICAL.
24. INSTALL NUMBER 5 REINFORCING BARS 1'-0" ON CENTER TO CONNECT NEW AND EXISTING SLABS. SEE SECTIONS P-P, Q-Q AND R-R ON THIS PLAN SHEET. DRILL ¾- INCH HOLES FOR A DISTANCE OF 6-INCHES INTO THE EXISTING P.C.C. SLAB AS ILLUSTRATED ON PLAN VIEW AND SECTION P-P, Q-Q AND R-R. INSTALL 1 FOOT LONG NUMBER 5 REINFORCING DOWEL SECURED WITH EPOXY INTO THE DRILLED HOLE. THE REMAINING 6-INCHES OF THE DOWEL IS TO EXTEND INTO THE NEW SLAB.
25. INSTALL SIKA PRODUCT IN SLOTTED AREA TO PREVENT LEAKAGE THROUGH COLD JOINT BETWEEN EXISTING AND NEW CONCRETE SLAB. SEE DETAIL S ON PLAN SHEET 8.
26. INSTALL NUMBER 6 DOWELS AT 6 INCHES ON CENTER.
27. INSTALL NUMBER 5 REINFORCING BAR DOWELS TO CONNECT NEW AND EXISTING P.C.C. WALLS. SEE SECTIONS P-P AND R-R. THE REINFORCING BAR DOWELS ARE ILLUSTRATED AS "⊗" ON SECTIONS P-P AND R-R. DRILL ¾" HOLES FOR A DISTANCE OF 6-INCHES INTO THE EXISTING WALLS AT THE LOCATIONS ILLUSTRATED ON SECTIONS P-P AND R-R. INSTALL A 1 FOOT LONG NUMBER 5 REINFORCING DOWEL SECURED WITH EPOXY INTO THE DRILLED HOLE. THE REMAINING 6 INCHES OF THE DOWEL IS TO EXTEND INTO THE NEW P.C.C. SLAB SECTION.
28. PROVIDE A CHASE OPENING OF APPROXIMATELY 4-INCHES IN DIAMETER THROUGH THE FLASH MIXER SUPPORT SLAB FOR THE FLASH MIXER SHAFT. CONFIRM CHASE OPENING DIAMETER SIZE DURING FLASH MIXER SUBMITTAL REVIEW.
29. PLACE 2-INCH SCHEDULE 80 PVC CARRIER PIPE FOR TWO (2) - ½-INCH SOFT TUBE CLEAR PLASTIC CHEMICAL TUBES THROUGH THE FULL WIDTH OF THE 10-INCH P.C.C. WALL. SEE PLAN SHEET 9, 10 AND 43.
30. PLACE TWO (2) - 1-INCH SCHEDULE 80 PVC PIPE SLEEVES THROUGH THE 6-INCH WIDE BAFFLE WALL TO ACCOMMODATE THE 1/2-INCH PVC CHEMICAL PIPELINES. PLACE NON-SHIRNK GROUT IN THE ANNULAR SPACE BETWEEN THE ½-INCH AND 1-INCH PVC PIPELINES. SEE CHEMICAL DELIVERY PIPELINE DETAIL Q ON PLAN SHEET 43.

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES G. HOLT — No. 31773 — Exp. 12-31-24 — CIVIL — STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No. — 09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER — JOHN A. GAY — No. 62028 — Exp. 9-30-25 — CIVIL — STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. — 62028 R.C.E. No. — DIRECTOR OF PUBLIC WORKS — 09/30/25 REG. EXP. — 10/9/23 DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023 | DRAWN RS | DESIGNED RS | SCALE N/A | CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
CHLORINATION / DECHLORINATION STRUCTURE REHABILITATION DETAILS AND SECTIONS

REFERENCE | THG #542.089

SHEET 7 OF 50

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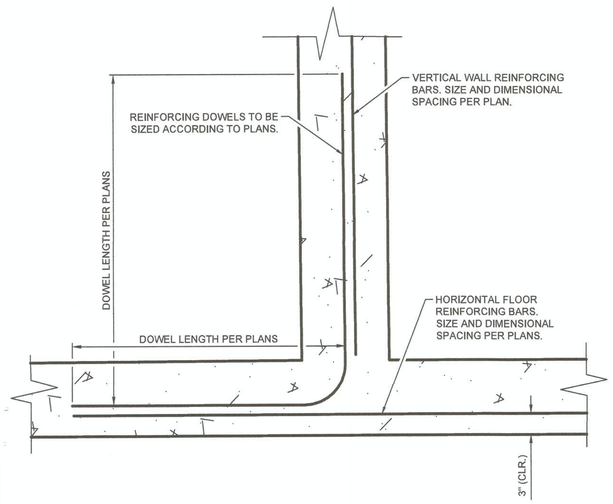


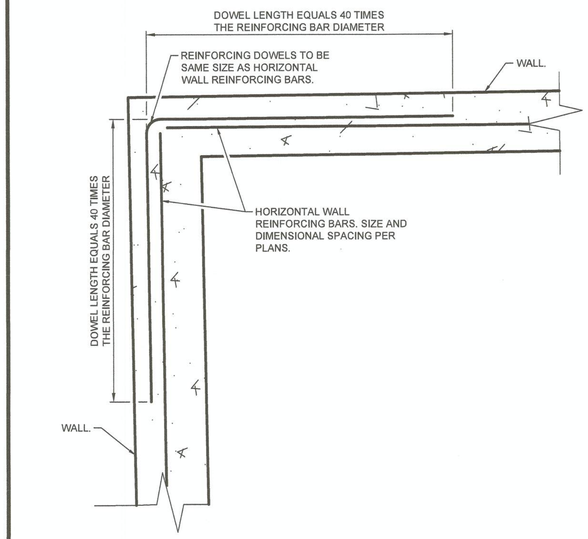
NOTE

ALL WALL AND FLOOR REINFORCING BARS SHALL BE TIED WITH REINFORCING DOWELS.

WALL / FLOOR OR FOOTING REINFORCING BAR LAP DETAIL

R | 7 | 8

NOT TO SCALE



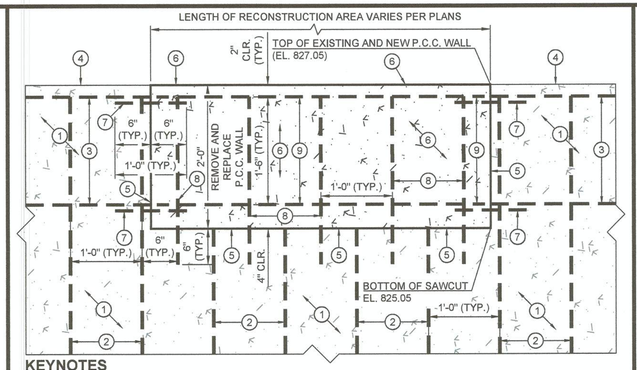
NOTE

ALL WALL AND FLOOR REINFORCING BARS SHALL BE TIED WITH REINFORCING DOWELS.

HORIZONTAL WALL REINFORCING BAR LAP DETAIL

T | 7 | 8

NOT TO SCALE



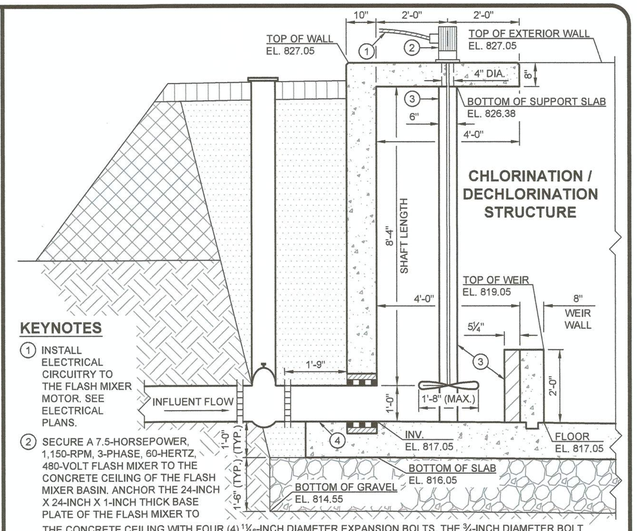
KEYNOTES

1. EXISTING P.C.C. WALL SECTION TO REMAIN.
2. EXISTING NO. 6 REINFORCING BARS AT 1 FOOT ON CENTER.
3. EXISTING NO. 5 REINFORCING BARS AT 1.5 FEET ON CENTER.
4. TOP OF EXISTING CHLORINATION / DECHLORINATION P.C.C. WALL.
5. SAWCUT EXISTING P.C.C. WALL HORIZONTALLY AND VERTICALLY FOR THE FULL WALL WIDTH.
6. REMOVE AND DISPOSE OF EXISTING P.C.C. WALL SECTION FOR THE HORIZONTAL DISTANCES ILLUSTRATED ON PLAN SHEET 7. REMOVE AND DISPOSE OF THE EXISTING WALL SECTION FOR A VERTICAL DISTANCE OF 2 FEET BELOW THE TOP OF THE WALL.
7. DRILL ¾-INCH DIAMETER HOLES IN THE CENTER OF THE EXISTING 10-INCH WIDE P.C.C. WALL FOR A DISTANCE OF 6 INCHES. INSTALL NEW NO. 5, 1-FOOT LONG DOWEL REINFORCING BARS IN THE ¾-INCH DIAMETER HOLES AND SECURE THE NO. 5 DOWEL REINFORCING BARS WITH EPOXY. TIE THE NO. 5 DOWEL REINFORCING BAR TO THE NEW NO. 5 HORIZONTAL REINFORCING BARS IN THE RECONSTRUCTION AREA..
8. INSTALL NEW NO. 6 REINFORCING BARS AT 1 FOOT ON CENTER. DRILL ⅞-INCH DIAMETER HOLES IN THE CENTER OF THE EXISTING 10-INCH WIDE P.C.C. WALL 6 INCHES DEEP. INSTALL NEW NO. 6 REINFORCING BARS IN THE ⅞-INCH DIAMETER HOLES AND SECURE THE BARS IN THE ⅞-INCH DIAMETER HOLES WITH EPOXY. OFFSET THE NEW NO. 6 REINFORCING BARS 6 INCHES FROM THE EXISTING REINFORCING BARS.
9. INSTALL NEW NO. 5 REINFORCING BARS AT 1.5 FEET ON CENTER. TIE THE NEW NO. 5 REINFORCING BARS TO THE NO. 5 REINFORCING BAR DOWELS PER KEYNOTE 7.

DEMOLITION AND REPLACEMENT OF P.C.C. CHLORINATION / DECHLORINATION WALL SECTIONS

O-O | 7 | 8

SCALE 1" = 1'



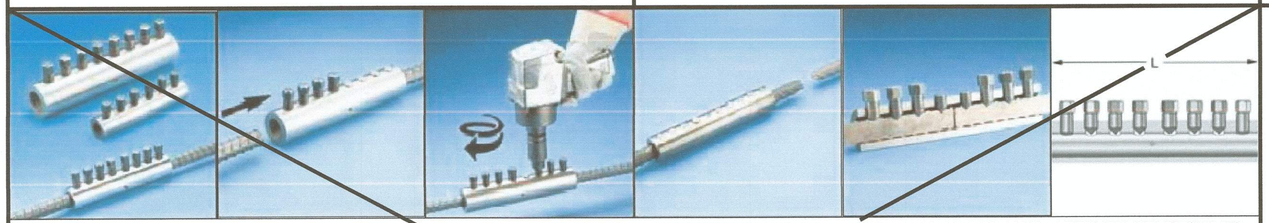
KEYNOTES

1. INSTALL ELECTRICAL CIRCUITRY TO THE FLASH MIXER MOTOR. SEE ELECTRICAL PLANS.
2. SECURE A 7.5-HORSEPOWER, 1,150-RPM, 3-PHASE, 60-HERTZ, 480-VOLT FLASH MIXER TO THE CONCRETE CEILING OF THE FLASH MIXER BASIN. ANCHOR THE 24-INCH X 24-INCH X 1-INCH THICK BASE PLATE OF THE FLASH MIXER TO THE CONCRETE CEILING WITH FOUR (4) 1⅛-INCH DIAMETER EXPANSION BOLTS. THE ¾-INCH DIAMETER BOLT OPENINGS SHALL BE POSITIONED 2 INCHES FROM THE EDGES OF THE BASE PLATE. PLACE A MINIMUM 4-INCH DIAMETER OPENING IN THE CONCRETE CEILING TO ACCOMMODATE A ⅞-INCH DIAMETER FLASH MIXER SHAFT. DIMENSIONS, BASE PLATE SIZES, BOLT SECUREMENT SIZES, FLASH MIXER SHAFT SIZES, ETC. ARE SUBJECT TO MODIFICATION AND WILL BE DETERMINED DURING SHOP DRAWING PROCESS. COAT THE METALLIC COMPONENTS OF THE FLASH MIXER WITH A HIGH SOLIDS EPOXY COATING SYSTEM. EPOXY COATING COLOR SHALL BE DETERMINED BY THE NILAND COUNTY SANITATION DISTRICT. SEE THE FLASH MIXER TECHNICAL SPECIFICATIONS.
3. INTERIOR 5½-INCH X 6-INCH WIDE P.C.C. BAFFLE WALLS TO BE CONSTRUCTED FOR THE FULL LENGTH OF THE CHLORINE FLASH MIXER BASIN WALLS AND WEIR WALL. SEE PLAN SHEET 7 SECTIONS.
4. 12-INCH INFLUENT PIPELINE.

FLASH MIXER DETAIL

U | 7 | 8

SCALE ½" = 1'



LENTON LOCK MECHANICAL REBAR SPLICING SYSTEM BY ERICO.

1. INSERT THE LENTON LOCK COUPLER OVER REINFORCING BAR.

2. TIGHTEN BOLTS FROM THE CENTER TO THE END TO SECURE ONTO THE FIRST REINFORCING BAR. (AIR IMPACT WRENCH SHOWN *)

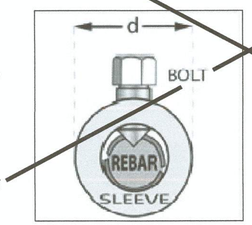
3. REPEAT STEPS 1 AND 2 WITH THE SECOND REINFORCING BAR ON THE OTHER SIDE OF THE COUPLER.

THIS CUTAWAY SHOW LENTON LOCK'S GRIPPING ON THE INSIDE OF THE COUPLER AND ROUND BOLTS ON THE OUTER EDGES OF THE COUPLER.

LENTON LOCK, WITH ITS ROUND END BOLTS, DESIGNED TO BREAK THE REINFORCING BAR REMOTE FROM THE REBAR CONNECTOR IN ACCORDANCE WITH ULTIMATE SPLICE REQUIREMENTS.

PROCESS OF INSTALLATION

1. EXPOSE EXISTING REBAR IN THE EXISTING CONCRETE.
2. CUT OFF END OF EXISTING REBARS SQUARE.
3. CHIP OUT CONCRETE AROUND THE ENDS OF THE REBAR TO ALLOW PLACEMENT OF ERICO LENTON LOCK WITH 1-INCH CLEARANCE ALL AROUND.
4. BUTT SPLICED #7 OR #8 BAR (VERIFY EXACT SIZE OF EXISTING REBARS).
5. INSTALL ERICO LENTON BAR SPLICER PER MANUFACTURER'S INSTRUCTIONS.
6. ROTATE THE DEVICE SO THAT THE TIGHTENING BOLTS ARE ALMOST HORIZONTAL, AWAY FROM THE SURFACE OF CONCRETE TO BE INSTALLED.
7. COVER ALL WORK WITH SIKATOP 123 (OR OTHER CEMENTITIOUS REPAIR MORTAR) WITH MINIMUM 1½-INCH COVER ALL AROUND.
8. USE UNCOATED ASTM 615 STEEL FOR THE SPLICE MATERIAL.

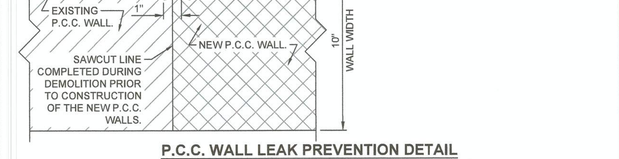


SIDE VIEW OF COUPLER.

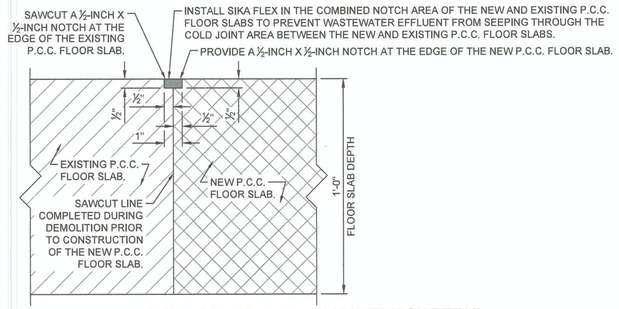
PRODUCT SPECIFICATIONS

REBAR DESIGNATION	COUPLER PART NUMBER	LENGTH (L) [INCHES]	OUTSIDE DIAMETER (D) [INCHES]	INSIDE DIAMETER [INCHES]	WEIGHT [POUNDS]	SOCKET SIZE [INCHES]	AVERAGE TORQUE ALL BOLTS [POUND-FEET]	NUMBER OF BOLTS
#3	LL 12B1	5.0	1.25	0.6	1.5	1/2	150	6
#4	LL 12B1	5.0	1.25	0.6	1.5	1/2	150	6
#5	LL 16B1	6.3	1.38	0.7	2.0	1/2	150	6
#6	LL 20B1	7.5	1.75	0.9	3.8	1/2	150	8
#7	LL 22B1	8.7	1.88	1.1	4.0	5/8	250	8
#8	LL 25B1	10.0	2.13	1.2	7.4	5/8	350	8
#9	LL 28B1	11.3	2.4	1.3	10.2	5/8	350	10
#10	LL 32B1	12.7	2.6	1.5	13.1	13/16	500	8
#11	LL 36B1	14.1	2.8	1.7	17.3	13/16	550	10

NOT APPLICABLE TO THIS PROJECT



P.C.C. WALL LEAK PREVENTION DETAIL BETWEEN NEW AND EXISTING P.C.C. WALLS



P.C.C. FLOOR SLAB LEAK PREVENTION DETAIL BETWEEN NEW AND EXISTING P.C.C. FLOOR SLABS

~~LOCK SPLICING OF NEW AND EXISTING REBAR DETAIL~~

X | X | 8

NOT TO SCALE

FLOOR SLAB AND WALL LEAK PREVENTION DETAIL

S | 7 | 8

SCALE 3" = 1'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
CHLORINATION / DECHLORINATION STRUCTURE REHABILITATION DETAILS AND SECTIONS

REFERENCE
THG #542.089

SHEET 8 OF 50

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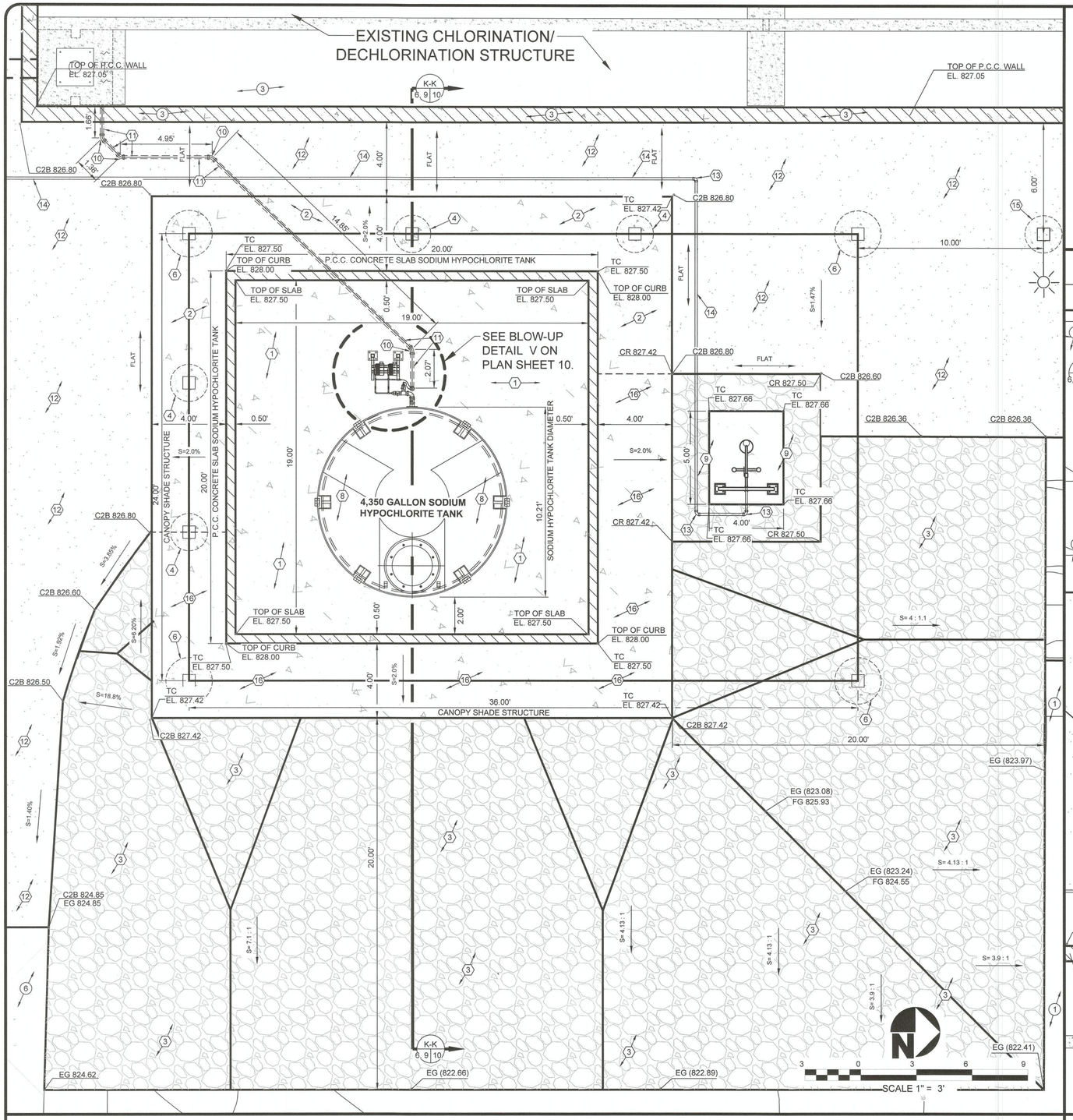
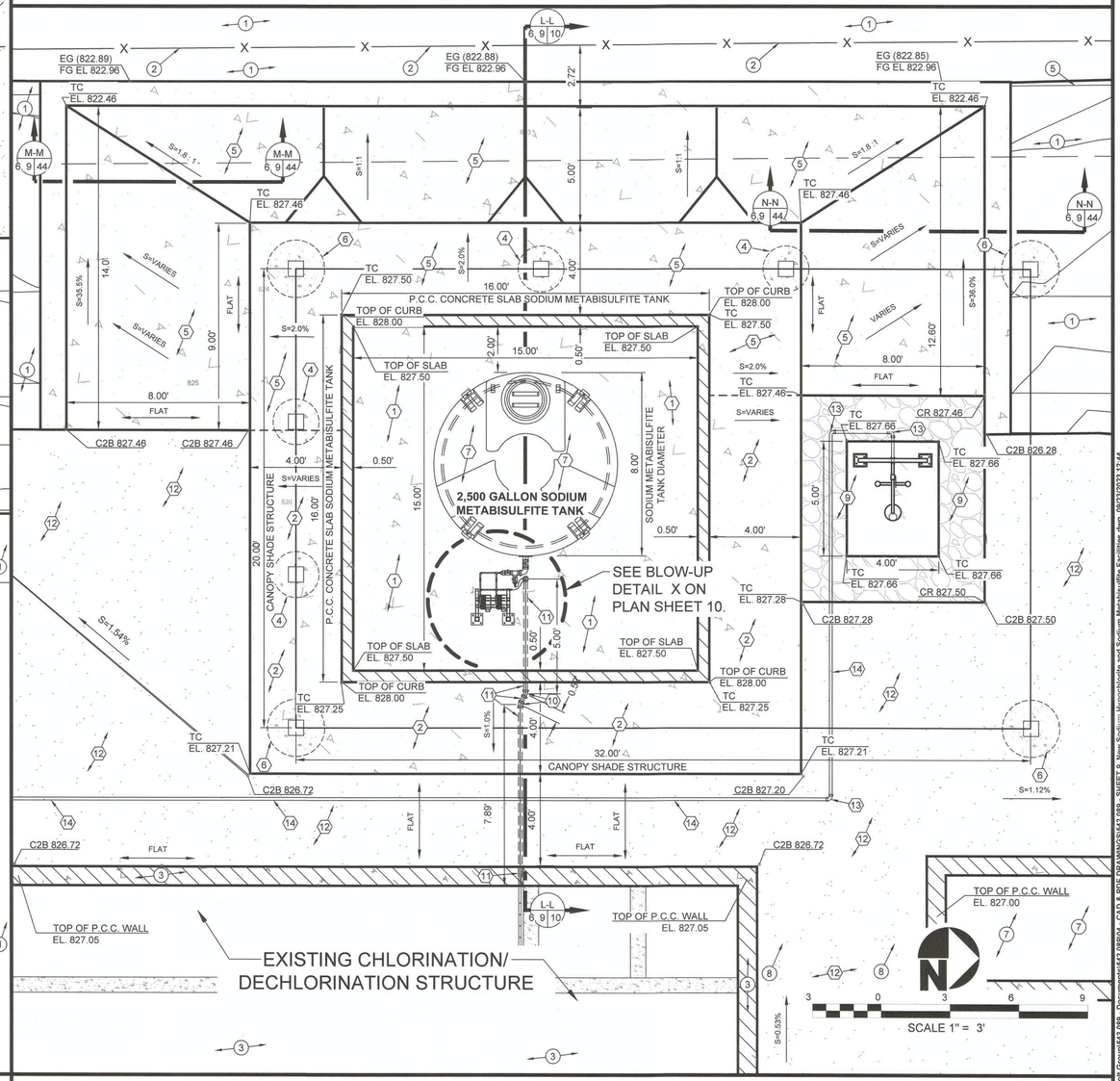


EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL TO REMAIN.
2. EXISTING 6-FOOT CHAIN LINK FENCE TO REMAIN.
3. EXISTING P.C.C. CHLORINATION / DECHLORINATION STRUCTURE TO REMAIN.
4. EXISTING 12-INCH PVC SANITARY SEWER EFFLUENT PIPELINE.
5. EXISTING 6-INCH PERFORATED PIPELINE TO REMAIN.
6. EXISTING DIRT ACCESS ROAD.
7. EXISTING EFFLUENT FLOWMETER / SAMPLING VAULT.
8. EXISTING 12-INCH PVC SANITARY SEWER EFFLUENT PIPELINE.

CONSTRUCTION KEYNOTES

1. INSTALL 12-INCH P.C.C. SYSTEM SLABS. THE P.C.C. SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS OF CURING. THE 6-INCH P.C.C. CURB SHALL BE POURED MONOLITHICALLY WITH P.C.C. DISINFECTION FACILITY SLAB.
2. INSTALL P.C.C. CONCRETE SLAB. P.C.C. CONCRETE SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS CURING.
3. INSTALL 1 FOOT OF ¾-INCH GRAY CRUSHED ROCK ON COMPACTED NATIVE MATERIAL.
4. INSTALL INTERMEDIATE STEEL POST AND P.C.C. FOOTING PER APPROVED SHADE STRUCTURE SHOP DRAWINGS.
5. INSTALL 6" P.C.C. SIDE SLOPE NEXT TO METABISULFITE TANK STRUCTURE SLAB.
6. INSTALL SHADE STRUCTURE FOOTING PER DETAIL I ON PLAN SHEET 35. P.C.C. CONCRETE SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS OF CURING.
7. INSTALL 2,500-GALLON SODIUM METABISULFITE TANK WITH INLETS, OUTLETS, VENTS, MANWAYS, SEISMIC BRACING, AND APPURTENANCES PER DETAIL M ON PLAN SHEET 11.
8. INSTALL 4,350-GALLON SODIUM HYPOCHLORITE TANK WITH INLETS, OUTLETS, VENTS, MANWAYS, SEISMIC BRACING, AND APPURTENANCES PER DETAIL L ON PLAN SHEET 11.
9. INSTALL EMERGENCY SHOWER AND EYEWASH STATION PER DETAIL N ON PLAN SHEET 35.
10. INSTALL 2-INCH SCHEDULE 80 PVC PIPELINE 45-DEGREE FITTING.
11. INSTALL 2-INCH SCHEDULE 80 PVC CHEMICAL CARRIER PIPELINE.
12. INSTALL 9-INCHES OF CLASS 2 BASE. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
13. INSTALL 2-INCH SCHEDULE 80 PVC PIPELINE ELBOW.
14. INSTALL 2-INCH SCHEDULE 80 PVC PIPELINE.
15. INSTALL A LIGHT ASSEMBLY PER DETAIL O ON PLAN SHEET 35.
16. INSTALL 4" P.C.C. SLAB.



NEW 4,350-GALLON SODIUM HYPOCHLORITE TANK BLOW-UP PLAN

SCALE 1" = 3'

NEW 2,500-GALLON SODIUM METABISULFITE TANK BLOW-UP PLAN

SCALE 1" = 3'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES G. HOLT — No. 31773 — Exp. 12-31-24 — CIVIL — STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER — JOHN A. GAY — No. 62028 — Exp. 9-30-25 — CIVIL — STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE	09/25/2023
DRAWN	RS
DESIGNED	RS
SCALE	N/A
CHECKED	JGH

PROJECT TITLE

COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

SODIUM HYPOCHLORITE AND SODIUM METABISULFITE FACILITIES

REFERENCE

THG #542.089

SHEET 9 OF 50

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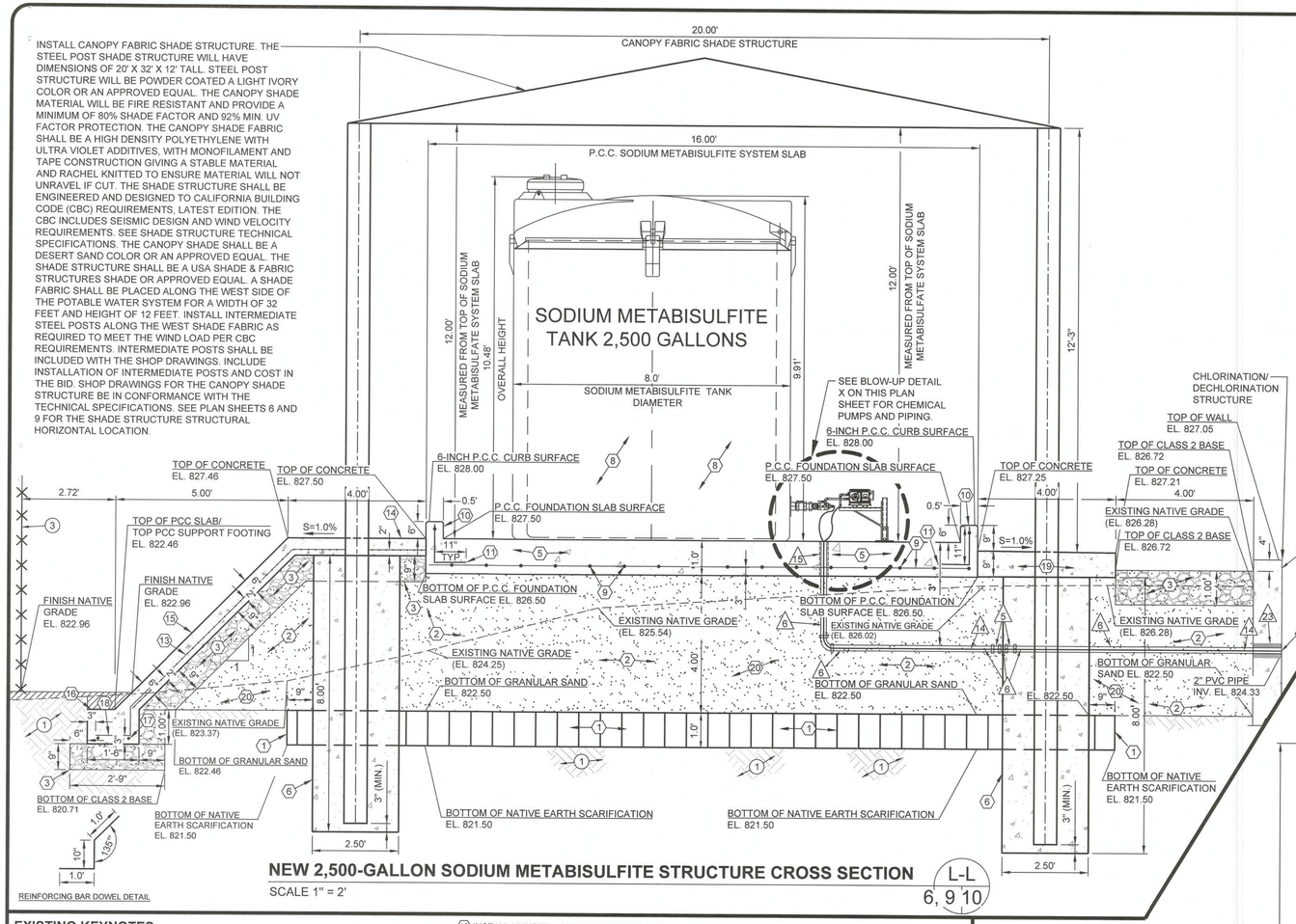
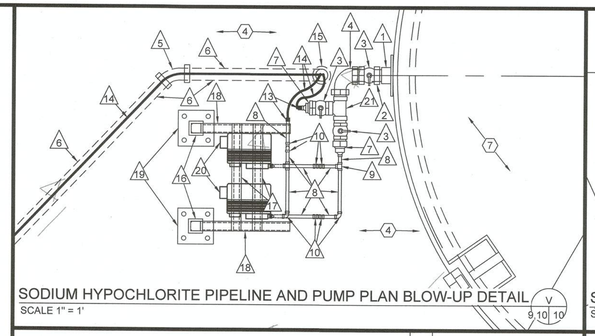
INSTALL CANOPY FABRIC SHADE STRUCTURE. THE STEEL POST SHADE STRUCTURE WILL HAVE DIMENSIONS OF 20' X 32' X 12' TALL. STEEL POST STRUCTURE WILL BE POWDER COATED A LIGHT IVORY COLOR OR AN APPROVED EQUAL. THE CANOPY SHADE MATERIAL WILL BE FIRE RESISTANT AND PROVIDE A MINIMUM OF 80% SHADE FACTOR AND 92% MIN. UV FACTOR PROTECTION. THE CANOPY SHADE FABRIC SHALL BE A HIGH DENSITY POLYETHYLENE WITH ULTRA VIOLET ADDITIVES, WITH MONOFILAMENT AND TAPE CONSTRUCTION GIVING A STABLE MATERIAL AND RACHEL KNITTED TO ENSURE MATERIAL WILL NOT UNRAVEL IF CUT. THE SHADE STRUCTURE SHALL BE ENGINEERED AND DESIGNED TO CALIFORNIA BUILDING CODE (CBC) REQUIREMENTS, LATEST EDITION. THE CBC INCLUDES SEISMIC DESIGN AND WIND VELOCITY REQUIREMENTS. SEE SHADE STRUCTURE TECHNICAL SPECIFICATIONS. THE CANOPY SHADE SHALL BE A DESERT SAND COLOR OR AN APPROVED EQUAL. THE SHADE STRUCTURE SHALL BE A USA SHADE & FABRIC STRUCTURES SHADE OR APPROVED EQUAL. A SHADE FABRIC SHALL BE PLACED ALONG THE WEST SIDE OF THE POTABLE WATER SYSTEM FOR A WIDTH OF 32 FEET AND HEIGHT OF 12 FEET. INSTALL INTERMEDIATE STEEL POSTS ALONG THE WEST SHADE FABRIC AS REQUIRED TO MEET THE WIND LOAD PER CBC REQUIREMENTS. INTERMEDIATE POSTS SHALL BE INCLUDED WITH THE SHOP DRAWINGS. INCLUDE INSTALLATION OF INTERMEDIATE POSTS AND COST IN THE BID. SHOP DRAWINGS FOR THE CANOPY SHADE STRUCTURE BE IN CONFORMANCE WITH THE TECHNICAL SPECIFICATIONS. SEE PLAN SHEETS 6 AND 9 FOR THE SHADE STRUCTURE STRUCTURAL HORIZONTAL LOCATION.

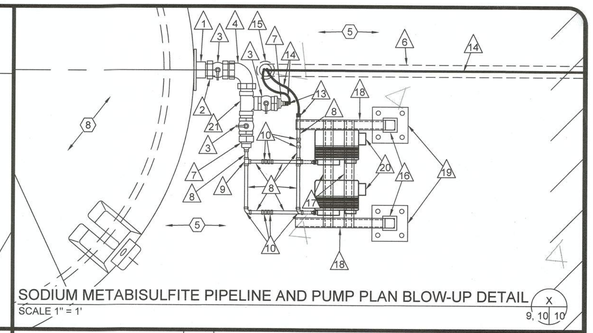


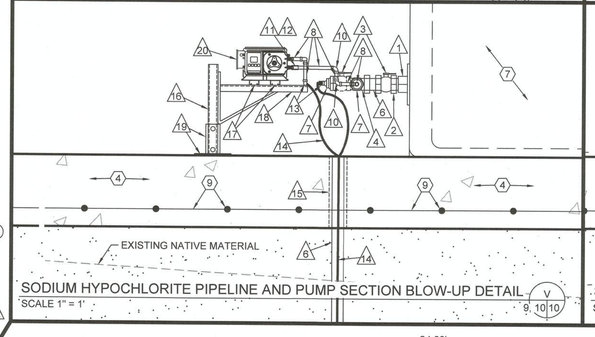
NEW 2,500-GALLON SODIUM METABISULFITE STRUCTURE CROSS SECTION

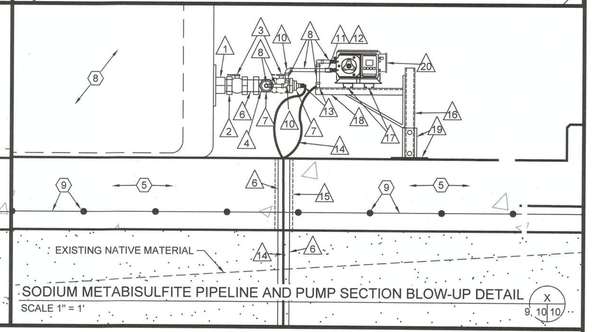
SCALE 1" = 2'

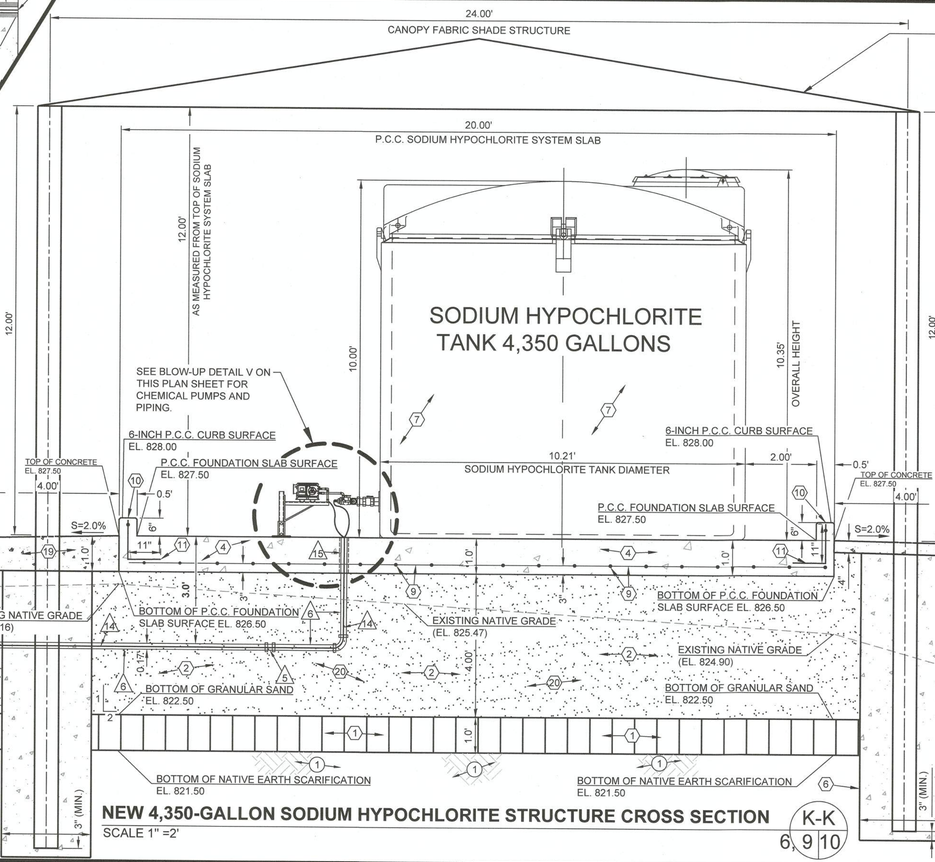
L-L 6, 9 10











NEW 4,350-GALLON SODIUM HYPOCHLORITE STRUCTURE CROSS SECTION

SCALE 1" =2'

K-K 6, 9 10

INSTALL CANOPY FABRIC SHADE STRUCTURE. THE STEEL POST SHADE STRUCTURE WILL HAVE DIMENSIONS OF 24' X 36' X 12' TALL. STEEL POST STRUCTURE WILL BE POWDER COATED A LIGHT IVORY COLOR OR AN APPROVED EQUAL. THE CANOPY SHADE MATERIAL WILL BE FIRE RESISTANT AND PROVIDE A MINIMUM OF 80% SHADE FACTOR AND 92% MIN. UV FACTOR PROTECTION. THE CANOPY SHADE FABRIC SHALL BE A HIGH DENSITY POLYETHYLENE WITH ULTRA VIOLET ADDITIVES, WITH MONOFILAMENT AND TAPE CONSTRUCTION GIVING A STABLE MATERIAL AND RACHEL KNITTED TO ENSURE MATERIAL WILL NOT UNRAVEL IF CUT. THE SHADE STRUCTURE SHALL BE ENGINEERED AND DESIGNED TO CALIFORNIA BUILDING CODE (CBC) REQUIREMENTS, LATEST EDITION. THE CBC INCLUDES SEISMIC DESIGN REQUIREMENTS AND WIND VELOCITY REQUIREMENTS. SEE SHADE STRUCTURE TECHNICAL SPECIFICATIONS. THE CANOPY SHADE SHALL BE A DESERT SAND COLOR OR AN APPROVED EQUAL. THE SHADE STRUCTURE SHALL BE A USA SHADE & FABRIC STRUCTURES SHADE OR APPROVED EQUAL. A SHADE FABRIC SHALL BE PLACED ALONG THE WEST SIDE OF THE POTABLE WATER SYSTEM FOR A WIDTH OF 36 FEET AND HEIGHT OF 12 FEET. INSTALL INTERMEDIATE STEEL POSTS ALONG THE WEST SHADE FABRIC AS REQUIRED TO MEET THE WIND LOAD PER CBC REQUIREMENTS. INTERMEDIATE POSTS SHALL BE INCLUDED WITH THE SHOP DRAWINGS. INCLUDE INSTALLATION OF INTERMEDIATE POSTS AND COST IN THE BID. SHOP DRAWINGS FOR THE CANOPY SHADE STRUCTURE BE IN CONFORMANCE WITH THE TECHNICAL SPECIFICATIONS. SEE PLAN SHEETS 6 AND 9 FOR THE SHADE STRUCTURE HORIZONTAL LOCATION.

EXISTING KEYNOTES

1. EXISTING NATIVE SOIL TO REMAIN.
2. EXISTING P.C.C. CHLORINATION / DECHLORINATION STRUCTURE TO REMAIN.
3. EXISTING 6-FOOT CHAIN LINK FENCE TO REMAIN.

CONSTRUCTION KEYNOTES

1. SCARIFY AND MOISTURE CONDITION EXISTING NATIVE MATERIAL FOR A DEPTH OF 1 FOOT. COMPACT SCARIFIED AND MOISTURE CONDITIONED NATIVE SOIL AT 2 PERCENT OVER OPTIMUM WATER CONTENT TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
2. INSTALL GRANULAR SAND MATERIAL IN MAXIMUM 9-INCH LIFTS. COMPACT GRANULAR SAND MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY AT OPTIMUM WATER CONTENT PER ASTM D-1557. SUCCESSIVE LIFTS SHALL NOT BE PLACED UNTIL PREVIOUS LIFTS HAVE BEEN TESTED AND ATTAINED THE REQUIRED COMPACTION DENSITY.
3. INSTALL CLASS 2 BASE. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
4. INSTALL 12-INCH P.C.C. SODIUM HYPOCHLORITE SYSTEM SLAB. THE P.C.C. SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS OF CURING. THE 6-INCH P.C.C. CURB SHALL BE POURED MONOLITHICALLY WITH P.C.C. DISINFECTION FACILITY SLAB.
5. INSTALL 12-INCH P.C.C. SODIUM METABISULFITE SYSTEM SLAB. THE P.C.C. SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS OF CURING. THE 6-INCH P.C.C. CURB SHALL BE POURED MONOLITHICALLY WITH P.C.C. DISINFECTION FACILITY SLAB.
6. INSTALL SHADE STRUCTURE FOOTING PER DETAIL I ON PLAN SHEET 35. P.C.C. CONCRETE SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS CURING.
7. INSTALL 4,350-GALLON SODIUM HYPOCHLORITE TANK WITH INLETS, OUTLETS, VENTS, MANWAYS, SEISMIC BRACING, AND APPURTENANCES PER DETAIL L ON PLAN SHEET 11.
8. INSTALL 2,500-GALLON SODIUM METABISULFITE TANK WITH INLETS, OUTLETS, VENTS, MANWAYS, SEISMIC BRACING, AND APPURTENANCES PER DETAIL M ON PLAN SHEET 11.
9. INSTALL #5 REINFORCING BARS 1'-0" ON CENTER EACH WAY.
10. PCC CURB TO BE INSTALLED AROUND THE PERIMETER OF THE SODIUM METABISULFITE AND SODIUM HYPOCHLORITE PCC FOUNDATION SLAB.
11. INSTALL #3 11-INCH X 11-INCH REINFORCING DOWELS 1.5 FEET ON CENTER AROUND THE PERIMETER OF THE FOUNDATION SLAB.
12. INSTALL 1 FOOT OF ¾-INCH GRAY CRUSHED ROCK ON COMPACTED NATIVE MATERIAL.
13. INSTALL 6" X 6" - 6 GAUGE WELDED WIRE FABRIC.
14. INSTALL 6" P.C.C. SLAB.
15. INSTALL 6" P.C.C. SIDESLOPE.
16. INSTALL P.C.C. SIDESLOPE SUPPORT FOOTING.
17. INSTALL TWO (2) CONTINUOUS NUMBER 5 HORIZONTAL REINFORCING BARS.
18. INSTALL NUMBER 4 REINFORCING BAR DOWEL 1.5 FEET ON CENTER, NO.5 HORIZONTAL REINFORCING BARS AND 6" X 6" - 6 GAUGE WELDED WIRE FABRIC TO BE TIED TO THE NUMBER 4 REINFORCING DOWEL.
19. INSTALL P.C.C. CONCRETE SLAB. P.C.C. CONCRETE SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS CURING.
20. REMOVE AND DISPOSE OF EXISTING NATIVE MATERIAL TO THE BOTTOM OF THE GRANULAR SAND MATERIAL OR P.C.C. FOOTING PRIOR TO CONSTRUCTING CHEMICAL STRUCTURES.
21. INSTALL 4" P.C.C. SLAB.

PIPELINE AND PUMP KEYNOTES

1. INSTALL 2-INCH PRIMARY TANK OUTLET.
2. INSTALL 2-INCH SCHEDULE 80 PVC NIPPLE CONNECTED TO THE WATER TANK.
3. INSTALL 2-INCH SCHEDULE 80 PVC BALL VALVE WITH TEE HANDLE.
4. INSTALL 2-INCH SCHEDULE 80 PVC PIPELINE 90 DEGREE ELBOW.
5. INSTALL 2-INCH SCHEDULE 80 PVC PIPELINE 45 DEGREE FITTING.
6. INSTALL 2-INCH SCHEDULE 80 PVC PIPELINE.
7. INSTALL ½-INCH X 2-INCH SCHEDULE 80 PVC REDUCER FITTING.
8. INSTALL ½-INCH SCHEDULE 80 PVC PIPELINE.
9. INSTALL ½-INCH SCHEDULE 80 PVC TEE FITTING.
10. INSTALL ½-INCH SCHEDULE 80 PVC 90 DEGREE ELBOW.
11. INSTALL ½-INCH SCHEDULE 80 PVC ELBOW CHECK VALVE FITTING.
12. INSTALL ½-INCH SCHEDULE 80 PVC FEMALE PIPE THREAD FITTING.
13. INSTALL RYAN-HERCO SOFT TUBE TRANSITION FITTING OR AN APPROVED EQUAL TO CONNECT THE CLEAR PVC TUBING WITH THE SCHEDULE 80 PVC PIPE.
14. INSTALL TWO (2) - ½-INCH SOFT TUBE CLEAR PLASTIC TUBES IN A 2-INCH SCHEDULE 80 PVC PIPELINE.
15. INSTALL 2-INCH SCHEDULE 80 PVC PIPING THROUGH A 3-INCH SCHEDULE 40 PVC SLEEVE EXTENDING THROUGH THE P.C.C. SLAB. FILL THE ANNULAR AREA WITH GRANULAR SAND.
16. INSTALL UNISTRUT 304 STAINLESS STEEL 1⅝-INCH STRUT CHANNEL PART NUMBER P1100HS OR AN APPROVED EQUAL.
17. INSTALL UNISTRUT 304 STAINLESS STEEL 1⅝-INCH X 1⅝-INCH PART NUMBER P4100SL OR AN APPROVED EQUAL.
18. INSTALL UNISTRUT 304 STAINLESS STEEL 8⅝-INCH X15-INCH TRAY BRACKET PART NUMBER P2547 OR AN APPROVED EQUAL.
19. INSTALL UNISTRUT 304 STAINLESS STEEL POST BASE PART NUMBER P2547SQ OR AN APPROVED EQUAL.
20. INSTALL A FEXFLOW MODEL A-100NV VARIABLE SPEED PERISTALTIC INJECTOR PUMP OR AN APPROVED EQUAL.
21. INSTALL 2-INCH SCHEDULE 80 PVC TEE FITTING.
22. FOR CONTINUATION OF 2 INCH SCHEDULE 80 PVC PIPELINE AND TWO (2) - 1/2 INCH SOFT TUBE CLEAR PLASTIC TUBES SEE SODIUM HYPOCHLORITE AND SODIUM METABISULFITE DELIVERY PIPELINE SYSTEM DETAIL Q ON PLAN SHEET 43.
23. DRILL NEW 2 ½ INCH DIAMETER HOLE IN THE EXISTING PCC WALL. GROUT THE ANGULAR SPACE BETWEEN THE EXTERIOR OF THE 2 INCH SCHEDULE 80 PVC PIPE AND THE 2 ½ INCH DRILLED HOLE WITH NON-SHRINK GROUT.

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE	09/25/2023
DRAWN	RS
DESIGNED	RS
SCALE	N/A
CHECKED	JGH

PROJECT TITLE

COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

NEW SODIUM HYPOCHLORITE AND SODIUM METABISULFITE DETAILS AND SECTIONS

REFERENCE — THG #542.089

SHEET 10 OF 50

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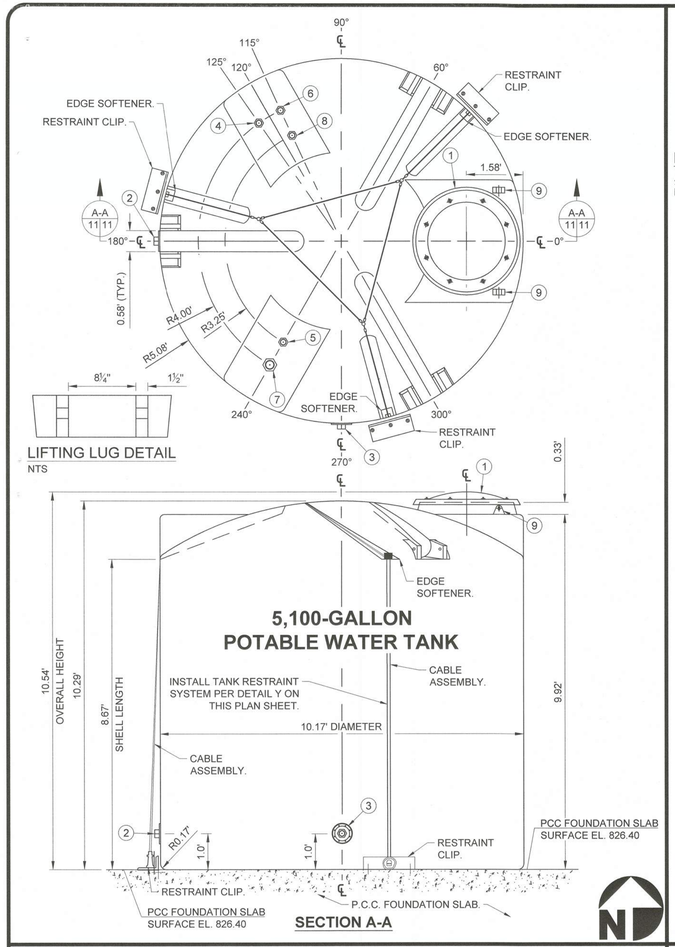
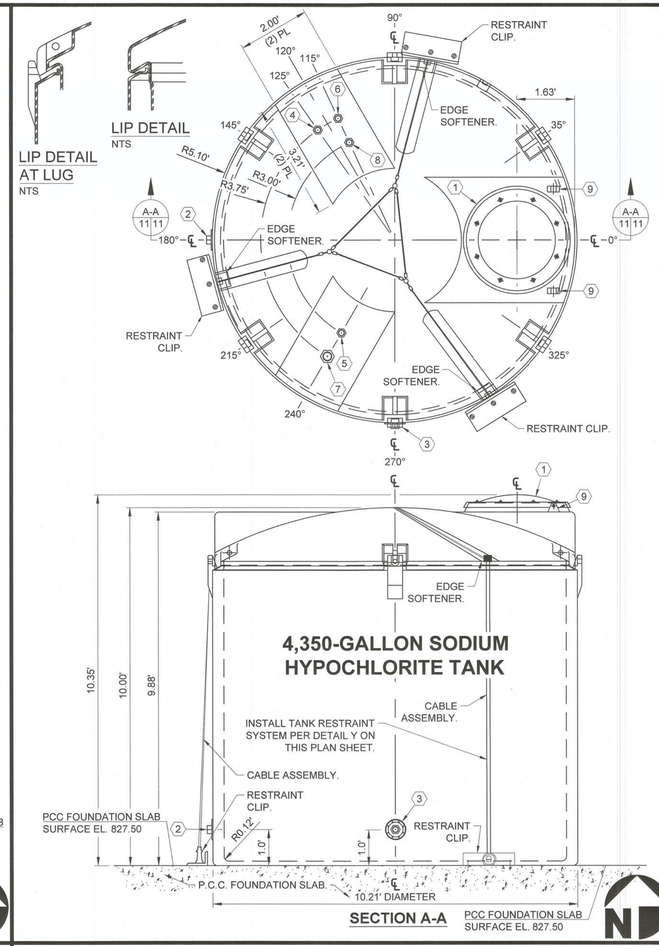
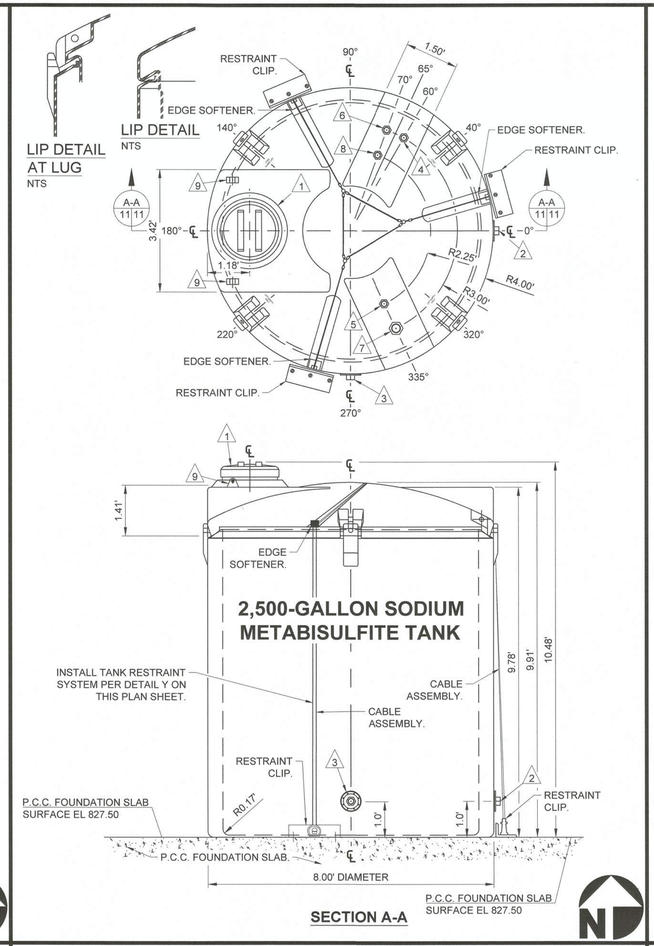


LIFTING LUG DETAIL
NTS

SECTION A-A



SECTION A-A



SECTION A-A

5,100-GALLON POTABLE WATER SYSTEM

NOZZLE SCHEDULE & ACCESSORIES

SERVICE	MK.	STOCK NO.	SIZE	FITTING	DEG.	ELEV.
CAP	1	3218 *	24"	24-INCH MANWAY WITH 8-INCH VENT	0°	836.94
OUTLET	2	9743 *	2"	2-INCH PRIMARY TANK OUTLET	180°	827.40
DRAIN	3	9743 *	2"	2-INCH CONTAINMENT DRAIN	270°	827.40
INLET	4	7117 *	2"	2-INCH INLET WITH FILL LINE ASSEMBLY	125°	836.32
INLET	5	7117 *	2"	2-INCH REVERSE LEVEL FLOAT GAUGE	240°	836.32
INLET	6	7117 *	2"	2-INCH LEVEL CONTROL	115°	836.32
INLET	7	7122 *	3"	3-INCH SPARE	240°	836.32
INLET	8	7117 *	2"	2-INCH VENT	115°	836.32
LADDER	9	N/A	N/A	FRP LADDER WITH HANDRAIL AND PLATFORM PER DETAIL Z ON PLAN SHEET 47	180°	836.32

4,350-GALLON SODIUM HYPOCHLORITE TANK

NOZZLE SCHEDULE & ACCESSORIES

SERVICE	MK.	STOCK NO.	SIZE	FITTING	DEG.	ELEV.
CAP	1	3218 *	24"	24-INCH MANWAY WITH 8-INCH VENT	0°	837.85
OUTLET	2	9743 *	2"	2-INCH PRIMARY TANK OUTLET	180°	828.50
DRAIN	3	9743 *	2"	2-INCH CONTAINMENT DRAIN	270°	828.50
INLET	4	7117 *	2"	2-INCH INLET WITH FILL LINE ASSEMBLY	125°	837.38
INLET	5	7117 *	2"	2-INCH REVERSE LEVEL FLOAT GAUGE	240°	837.38
INLET	6	7117 *	2"	2-INCH LEVEL CONTROL	115°	837.38
INLET	7	7122 *	3"	3-INCH SPARE	240°	837.38
INLET	8	7117 *	2"	2-INCH VENT	115°	837.38
LADDER	9	N/A	N/A	FRP LADDER WITH HANDRAIL AND PLATFORM PER DETAIL Z ON PLAN SHEET 47	180°	837.50

2,500-GALLON SODIUM METABISULFITE TANK

NOZZLE SCHEDULE & ACCESSORIES

SERVICE	MK.	STOCK NO.	SIZE	FITTING	DEG.	ELEV.
CAP	1	4558 *	17"	17-INCH MANWAY	180°	837.98
OUTLET	2	9743 *	2"	2-INCH PRIMARY TANK OUTLET	0°	828.50
DRAIN	3	9743 *	2"	2-INCH CONTAINMENT DRAIN	270°	828.50
INLET	4	7117 *	2"	2-INCH INLET WITH FILL LINE ASSEMBLY	60°	837.28
INLET	5	7117 *	2"	2-INCH REVERSE LEVEL FLOAT GAUGE	335°	837.28
INLET	6	7117 *	2"	2-INCH LEVEL CONTROL	70°	837.28
INLET	7	7122 *	3"	3-INCH SPARE	335°	837.28
INLET	8	7117 *	2"	2-INCH VENT	70°	837.28
LADDER	9	N/A	N/A	FRP LADDER WITH HANDRAIL AND PLATFORM PER DETAIL Z ON PLAN SHEET 47	180°	837.28

* PER POLY PROCESSING

NOTE

TANK RESTRAINT SYSTEM SUBMITTAL DOCUMENTS TO BE APPROVED PRIOR TO CONSTRUCTION OF P.C.C. DISINFECTION SYSTEM SLAB.

5,100-GALLON POTABLE WATER SYSTEM 3-WAY CABLE / 3 RESTRAINT CLIP DETAIL

J | 5 | 11

SCALE ½" = 1'

4,350-GALLON SODIUM HYPOCHLORITE TANK 3-WAY CABLE / 3 RESTRAINT CLIP DETAIL

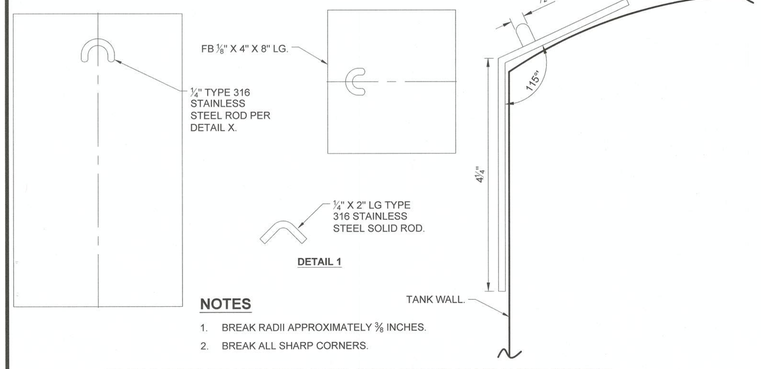
L | 6,9,10 | 11

SCALE ½" = 1'

2,500-GALLON SODIUM METABISULFITE TANK 3-WAY CABLE / 3 RESTRAINT CLIP DETAIL

M | 6,9,10 | 11

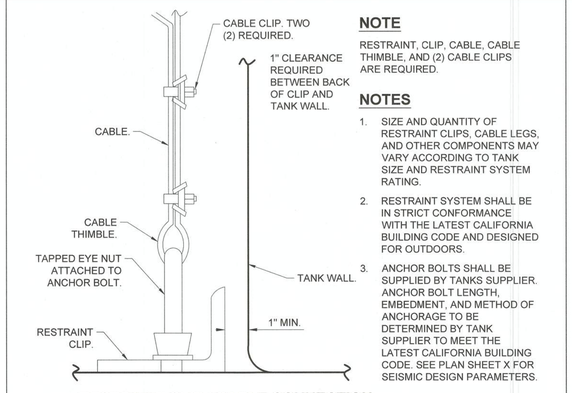
SCALE ½" = 1'



NOTES

1. BREAK RADII APPROXIMATELY ⅜ INCHES.
2. BREAK ALL SHARP CORNERS.

EDGE SOFTENER FOR NON-INSULATED TANKS (CABLE NOT SHOWN)



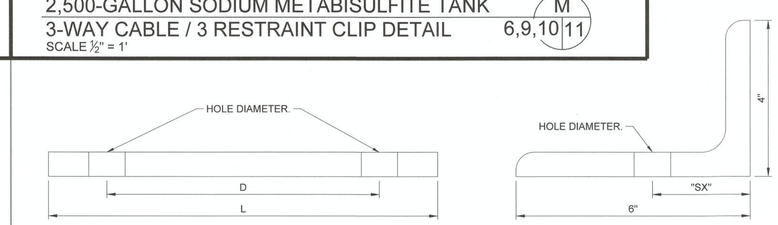
NOTE

RESTRAINT, CLIP, CABLE, CABLE THIMBLE, AND (2) CABLE CLIPS ARE REQUIRED.

NOTES

1. SIZE AND QUANTITY OF RESTRAINT CLIPS, CABLE LEGS, AND OTHER COMPONENTS MAY VARY ACCORDING TO TANK SIZE AND RESTRAINT SYSTEM RATING.
2. RESTRAINT SYSTEM SHALL BE IN STRICT CONFORMANCE WITH THE LATEST CALIFORNIA BUILDING CODE AND DESIGNED FOR OUTDOORS.
3. ANCHOR BOLTS SHALL BE SUPPLIED BY TANKS SUPPLIER. ANCHOR BOLT LENGTH, EMBEDMENT, AND METHOD OF ANCHORAGE TO BE DETERMINED BY TANK SUPPLIER TO MEET THE LATEST CALIFORNIA BUILDING CODE. SEE PLAN SHEET X FOR SEISMIC DESIGN PARAMETERS.

RESTRAINT CLIP / CABLE CONNECTION



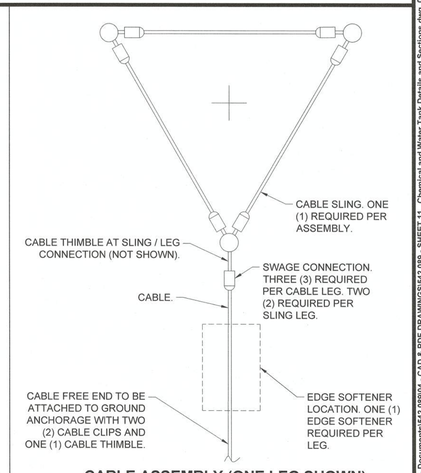
HOT ROLLED STRUCTURAL ANGLE SIZE	"L" CLIP LENGTH	"D" DISTANCE BETWEEN HOLES	HOLE DIAMETER	NUMBER OF HOLES REQUIRED	RESTRAINT CLIP DESIGNATION	DIM "SX" *
L 6 X 4 X ⅝	4"	N/A	1⅛"	1	RC 6 X 4 X ⅝ X 4	2"
L 6 X 4 X ⅝	10"	7½"	13/16"	2	RC 6 X 4 X ⅝ X 10	2½"
L 6 X 4 X ⅝	16"	13"	15/16"	2	RC 6 X 4 X ⅝ X 16	2½"
L 6 X 4 X ⅝	24"	10½"	15/16"	3	RC 6 X 4 X ⅝ X 24	2½"

* TOLERANCE ON DIMENSION "SX" = ± ⅛ - 0 INCHES

NOTES

1. RESTRAINT CLIPS SHALL BE HOT DIP GALVANIZED A36 STRUCTURAL ANGLE.
2. CONTACT MANUFACTURER FOR NUMBER AND SIZE OF CLIPS FOR WIND AND SEISMIC REQUIREMENTS PER THE LATEST CALIFORNIA BUILDING CODE.

HOT DIP GALVANIZED RESTRAINT CLIPS



CABLE ASSEMBLY (ONE LEG SHOWN)

TANK RESTRAINT SYSTEM DETAIL

Y | 11 | 11

NOT TO SCALE

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
CHEMICAL AND WATER TANK DETAILS AND SECTIONS

REFERENCE

THG #542.089

SHEET 11 OF 50

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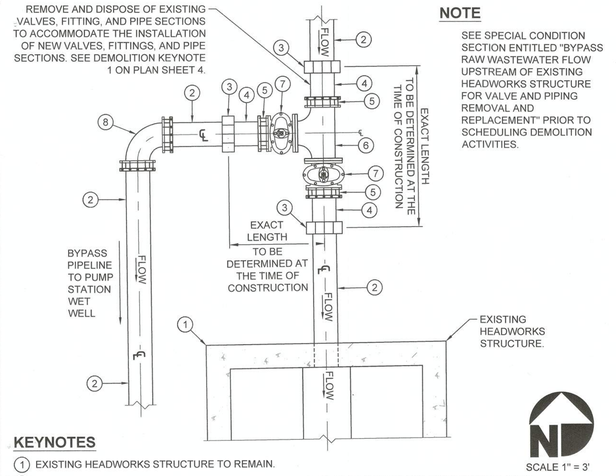
NEW VALVE AND PIPELINE FITTING REPLACEMENT UPSTREAM OF P.C.C. HEADWORKS STRUCTURE DETAIL

A 4 12

SCALE 1" = 3'



NOTE

SEE SPECIAL CONDITION SECTION ENTITLED "BYPASS RAW WASTEWATER FLOW UPSTREAM OF EXISTING HEADWORKS STRUCTURE FOR VALVE AND PIPING REMOVAL AND REPLACEMENT" PRIOR TO SCHEDULING DEMOLITION ACTIVITIES.

KEYNOTES

1. EXISTING HEADWORKS STRUCTURE TO REMAIN.
2. EXISTING 12-INCH AWWA C-900 CLASS 200 PVC SANITARY SEWER COLLECTION PIPELINE TO REMAIN.
3. INSTALL A 12-INCH DUCTILE IRON FUSION EPOXY-COATED TRANSITION COUPLING WITH 316 STAINLESS STEEL HARDWARE TO CONNECT THE EXISTING AWWA C-900, CLASS 200 PVC PIPELINE TO THE NEW AWWA C-900, CLASS 200 PVC PIPELINE SECTION.
4. INSTALL NEW 12-INCH DIAMETER AWWA C-900, CLASS 200 PVC PIPELINE SECTION.
5. INSTALL 12-INCH DUCTILE IRON RESTRAINED JOINT FITTING WITH 316 STAINLESS STEEL HARDWARE.
6. INSTALL 12-INCH X 12-INCH X 12-INCH DUCTILE IRON-FLANGED TEE WITH 316 STAINLESS STEEL HARDWARE.
7. INSTALL 12-INCH DIAMETER FLANGED ECCENTRIC PLUG VALVES WITH VALVE RISER AND COVER PER DETAIL F ON SHEET 26.
8. EXISTING 12-INCH, 90-DEGREE DUCTILE IRON ELBOW TO REMAIN.

SCALE 1" = 3'

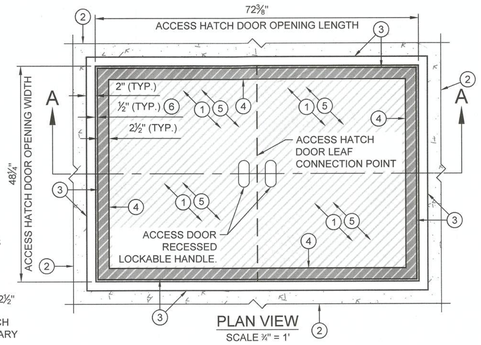
SANITARY SEWER INFLUENT PUMP STATION ACCESS HATCH DETAIL

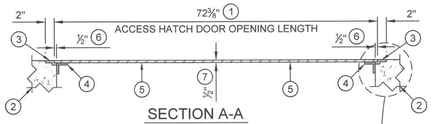
F 4 12

PLAN AND SECTION SCALE ¾" = 1', BLOW-UP SCALE 1½" = 1'

KEYNOTES

1. EXISTING P.C.C. SANITARY SEWER INFLUENT PUMP STATION ACCESS HATCH OPENING. PRIOR ACCESS HATCH DOORS WERE DAMAGED AND REMOVED.
2. P.C.C. SANITARY SEWER INFLUENT PUMP STATION CONCRETE CEILING. EXACT THICKNESS UNKNOWN.
3. ALUMINUM ACCESS FRAME CAST INTO P.C.C. PUMP STATION CEILING.
4. TEMPORARY 2½" X 2½" STAINLESS STEEL ANGLE IRONS WHICH SUPPORT TEMPORARY ACCESS HATCH FIBERGLASS COVERS. REMOVE AND DISPOSE OF TEMPORARY ANGLE IRONS PRIOR TO INSTALLATION OF NEW ACCESS DOORS.
5. INSTALL NEW ALUMINUM ACCESS DOORS WITHIN THE EXISTING ALUMINUM ACCESS FRAME WHICH IS CAST INTO THE P.C.C. PUMP STATION CEILING. THE ALUMINUM ACCESS DOORS SHALL BE CAPABLE OF SUPPORTING A WEIGHT OF 850 POUNDS.
6. DOOR SEATING WIDTH.
7. DOOR SEATING DEPTH ≈ DOOR THICKNESS.





NOTES

1. CONTRACTOR TO COMPLETE FIELD MEASUREMENTS AND FORWARD ALUMINUM HATCH DOOR SUBMITTAL DRAWINGS FOR REVIEW AND APPROVAL.
2. ACCESS DOORS SHALL BE CAPABLE OF BEING LOCKED OPEN.

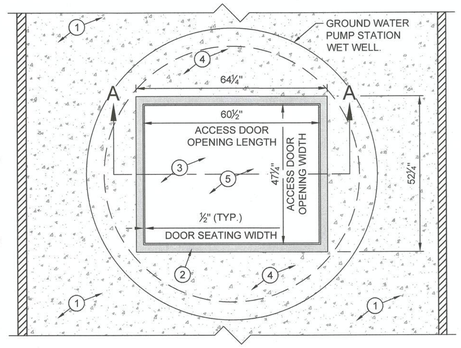
GROUND WATER PUMP STATION ACCESS HATCH DETAIL

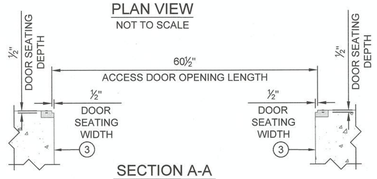
B 4 12

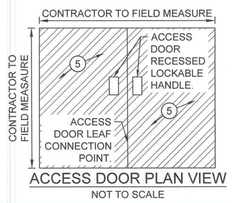
NOT TO SCALE

KEYNOTES

1. EXISTING GROUND WATER PUMP STATION P.C.C. SLAB.
2. EXISTING ACCESS HATCH DOOR FRAME CAST INTO PUMP STATION CONCRETE CEILING.
3. EXISTING P.C.C. GROUND WATER PUMP STATION HATCH OPENING. ACCESS DOORS WERE DAMAGED AND REMOVED.
4. P.C.C. GROUND WATER PUMP STATION CONCRETE CEILING.
5. INSTALL NEW ALUMINUM ACCESS DOORS WITHIN THE EXISTING ACCESS FRAME WHICH IS CAST INTO THE GROUND WATER PUMP STATION CEILING. THE ALUMINUM ACCESS DOORS SHALL BE CAPABLE OF SUPPORTING A WEIGHT OF 850 POUNDS.







NOTES

1. CONTRACTOR TO COMPLETE FIELD MEASUREMENTS AND FORWARD ALUMINUM HATCH DOOR SUBMITTAL DRAWINGS FOR REVIEW AND APPROVAL.
2. ACCESS DOORS SHALL BE CAPABLE OF BEING LOCKED OPEN.

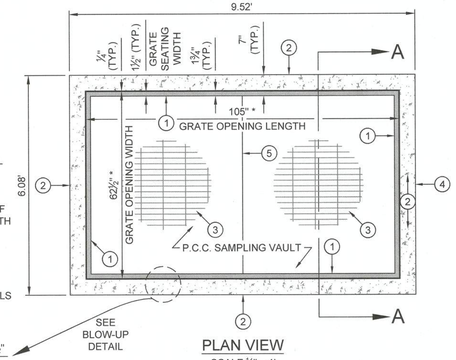
EXISTING P.C.C. SAMPLING VAULT OUTLET STRUCTURE NEW ALUMINUM GRATE DETAIL

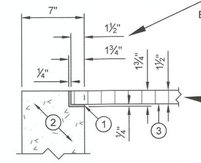
G 4, 6 12

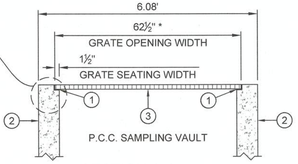
PLAN AND SECTION SCALE ½" = 1', BLOW-UP SCALE 1½" = 1'

KEYNOTES

1. 1¾-INCH X 1¾-INCH, ¼-INCH THICK GALVANIZED STEEL ANGLE IRON.
2. P.C.C. SAMPLING VAULT WALL.
3. INSTALL ALUMINUM GRATING CAPABLE OF SUPPORTING A WEIGHT OF 850 POUNDS. INSTALL TWO (2) SEPARATE PANELS OF ALUMINUM SWAGE LOCKED SKID-PROOF GRATING OF EQUAL WIDTH FLUSH WITH THE TOP OF THE P.C.C. WALL.
4. COMMON WALL WITH FLOWMETER VAULT.
5. ALUMINUM GRATE PANELS CONNECTION POINT.







NOTES

1. CONTRACTOR TO COMPLETE FIELD MEASUREMENTS AND FORWARD ALUMINUM GRATING SHOP DRAWING PLANS WITH ILLUSTRATED DIMENSIONS FOR SUBMITTAL REVIEW.
2. P.C.C. SAMPLING VAULT WALLS MAY NOT BE SQUARE. GRATING DIMENSIONS MAY REQUIRE ADJUSTMENT ALONG THE WIDTH OF THE GRATING TO ACCOMMODATE THE SAMPLING VAULT INCONSISTENT INTERIOR WALL DIMENSION WIDTHS AND LENGTHS.

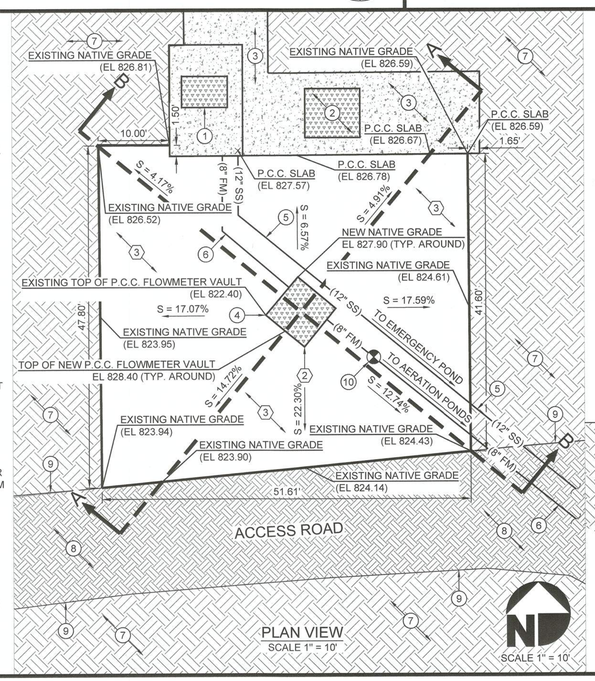
* DIMENSIONS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY.

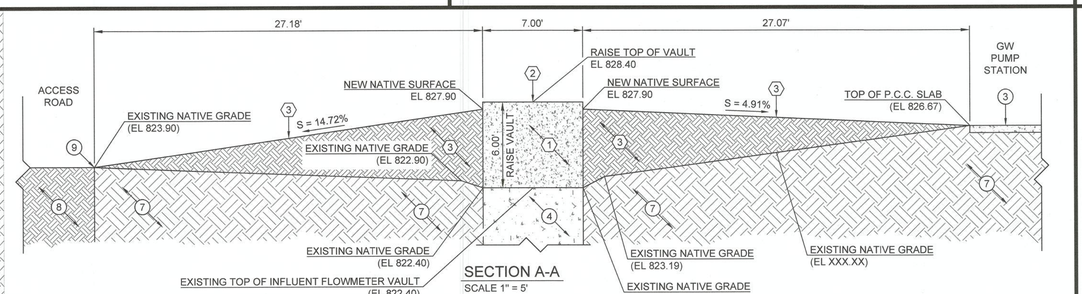
EXISTING KEYNOTES

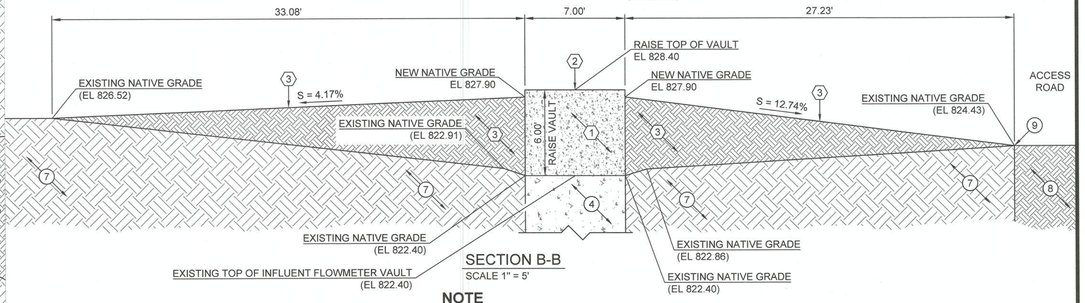
1. EXISTING RAW WASTEWATER INFLUENT PUMP STATION.
2. EXISTING GROUNDWATER PUMP STATION.
3. EXISTING GROUNDWATER PUMP STATION P.C.C. SLAB.
4. EXISTING P.C.C. FLOWMETER VAULT.
5. EXISTING 12-INCH GRAVITY SANITARY SEWER PIPELINE TO EMERGENCY PONDS.
6. EXISTING 8-INCH SANITARY SEWER FORCE MAIN.
7. EXISTING NATIVE MATERIAL TO REMAIN.
8. EXISTING DIRT ACCESS ROAD.
9. EDGE OF EXISTING DIRT ACCESS ROAD.
10. EXISTING 8-INCH VALVE.

CONSTRUCTION KEYNOTES

1. INSTALL NEW P.C.C. PRECAST VAULT SECTIONS TO RAISE THE TOP OF VAULT TO EL 828.40.
2. RAISE THE TOP OF THE EXISTING P.C.C FLOWMETER VAULT FROM EL 822.40 TO EL 828.40.
3. BACKFILL AROUND THE FLOWMETER VAULT WITH NATIVE MATERIAL FROM THE EVAPORATION POND EXCAVATION. APPLY WATER TO EXISTING NATIVE SURFACE AND COMPACT PRIOR TO INSTALLING NATIVE EARTH BACKFILL. INSTALL NATIVE EARTH BACKFILL IN MAXIMUM 9-INCH LIFTS AND COMPACT TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. DO NOT PLACE SUCCESSIVE LIFTS OF NATIVE MATERIAL UNTIL PREVIOUS LIFTS HAVE ACHIEVED THE REQUIRED COMPACTION DENSITY.







NOTE

THE CALCULATED VOLUME OF NATIVE BACKFILL MATERIAL TO BE PLACED AND COMPACTED INCLUDING A 20 PERCENT SHRINKAGE FACTOR IS 232 CUBIC YARDS.

PRECAST CONCRETE INFLUENT FLOW METER VAULT EXTENSION DETAIL

C 4 12

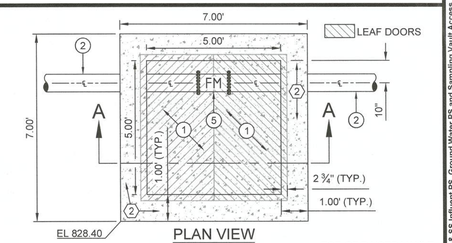
PLAN SCALE 1" = 10', SECTIONS SCALE 1" = 5'

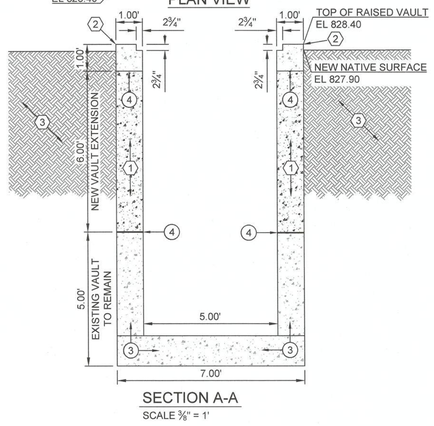
EXISTING KEYNOTES

1. TWO EXISTING LEAF ENTRANCE DOORS TO REMAIN.
2. EXISTING 8-INCH PVC WASTEWATER FORCE MAIN.
3. EXISTING PRECAST CONCRETE VAULT SECTION TO REMAIN.
4. PRECAST VAULT SECTION COLD JOINT.
5. EXISTING INFLUENT FLOWMETER TO REMAIN.

CONSTRUCTION KEYNOTES

1. INSTALL NEW P.C.C. VAULT SECTION EXTENSIONS SIX (6) VERTICAL FEET. NEW VAULT EXTENSION SECTIONS TO MATCH EXISTING VAULT EXTENSION SECTIONS DIMENSIONALLY. EXISTING VAULT SECTIONS WERE MANUFACTURED BY "OLD CASTLE."
2. EXISTING 1-FOOT VERTICAL VAULT TOP SECTION TO BE RELOCATED FROM THE SURFACE OF THE EXISTING VAULT SECTION TO THE TOP OF THE NEW VAULT SECTIONS. THE TOP ENTRANCE HATCH IS TO REMAIN.
3. BACKFILL AROUND THE FLOWMETER VAULT WITH NATIVE MATERIAL AND COMPACT TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. SEE SECTIONS X-X AND Y-Y ON DETAIL X ON THIS PLAN SHEET.





PRECAST CONCRETE INFLUENT FLOWMETER VAULT EXTENSION DETAIL

D 4 12

SCALE ⅜" = 1'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE	09/25/2023
DRAWN	RS
DESIGNED	RS
SCALE	N/A
CHECKED	JGH

PROJECT TITLE

COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
HEADWORKS STRUCTURE VALVE REPLACEMENT & SANITARY SEWER INFLUENT PUMP STATION, GROUND WATER PUMP STATION AND SAMPLING VAULT ACCESS HATCH/COVER REPLACEMENT DETAILS & INFLUENT FLOWMETER VAULT IMPROVEMENTS

REFERENCE

THG #542.089

SHEET 12 OF 50

C:\Users\ChristophersonGarcia\The Holt Group\542.089 - Documents\542.089#04 - CAD & PDF DRAWINGS\542.089 - SHEET 12_Headworks St Valve Rep & SS Influent PS, Ground Water PS and Sampling Vault Access HatchCover.dwg 09/23/2023 13:38

APN 021-200-006

APN 021-220-003

APN 021-200-007

APN 021-200-005

APN 021-240-002

SEE PLAN AND PROFILE SHEET 21 FOR PUMP STATION EFFLUENT PIPELINE AND EMERGENCY OVERFLOW PIPELINE PROFILES

SEE SHEETS 24 AND 25 FOR PUMP STATION SITE GRADING, DETAILS AND SECTIONS.

TBM #4 - CHISELED "X" ON TOP OF IID P.C.C. HEADWALL EL. 814.49

TBM #3 - STAMPED DISK ON PCC HEADWALL EL 825.01

IID "R" DRAIN

IID "R" CANAL

ALCOTT ROAD

N89° 45' 40.18"E 2634.16

2584.16'

S89° 45' 40.18"W 2634.23'

75.00' EASEMENT

LIMITS OF CONSTRUCTION

50.00' EASEMENT

N00° 26' 26.68"W 925.01'

PIEZOMETER #1
TOP EL. 814.35
WATER TABLE EL. 808.75

PIEZOMETER #2
TOP EL. 817.54
WATER TABLE EL. 811.84

PIEZOMETER #3
TOP EL. 819.38
WATER TABLE EL. 814.08

PIEZOMETER #4
TOP EL. 822.58
WATER TABLE EL. 817.02

PIEZOMETER #5
TOP EL. 819.36
WATER TABLE EL. 813.56

PIEZOMETER #6
TOP EL. 815.77
WATER TABLE EL. 808.77

PIEZOMETER #7
TOP EL. 813.20
WATER TABLE EL.805.60

PIEZOMETER #8
TOP EL. 812.00
WATER TABLE EL.805.40

NEW EVAPORATION POND 12' WIDE ACCESS ROAD

NEW 8-INCH EFFLUENT HEADER PIPELINE. SEE PLAN SHEETS 15-17 AND SECTION E-E ON SHEET 20.

SHEET 17
PRECISE GRADING PLAN

SHEET 16
PRECISE GRADING PLAN

SHEET 15
PRECISE GRADING PLAN

BOTTOM OF POND NO.3 EL 813.20

BOTTOM OF POND NO. 2 EL 815.60

BOTTOM OF POND NO.1 EL 818.60

PROPERTY AREA
55.94 ACRES

EXISTING NILAND WASTE WATER TREATMENT PLANT

EXISTING WWTP FENCE

W-W 13 20

S-S 13 18

V-V 13 20

U-U 13 19

T-T 13 19

N00° 26' 42.73"W 1124.61'

N00° 26' 42.73"W 925.11'

N00° 26' 42.73"W 199.60'

509'

614.00'

751.80'

750.00'

759.00'

544'

1291'

1362'

508'

446.75'

650.01'

SCALE 1"= 100'

Point Table

Point #	Northing	Easting	Description
1	2026881.74	6780100.43	EC
2	2026881.64	6780088.43	EC
3	2026922.05	6780140.26	BC
4	2026934.05	6780140.21	BC
5	2026923.89	6780583.27	GB
6	2026935.89	6780583.22	GB
7	2026924.98	6780843.26	BC
8	2026884.96	6780883.43	EC
9	2026925.36	6780935.26	BC
10	2026885.05	6780895.43	EC
11	2026327.06	6780899.77	BC
12	2026287.38	6780939.93	EC
13	2026327.30	6780887.76	BC
14	2026286.99	6780847.93	EC
15	2026275.16	6780887.98	GB
16	2026286.74	6780787.93	GB
17	2026274.74	6780787.98	GB
18	2026286.48	6780724.99	BC
19	2026311.29	6780699.88	EC
20	2026341.37	6780699.65	BOT

Point Table

Point #	Northing	Easting	Description
21	2026341.32	6780687.65	BOT
22	2026311.42	6780687.88	BC
23	2026286.22	6780662.99	EC
24	2026284.06	6780144.93	EC
25	2026272.06	6780144.98	EC
26	2026323.75	6780104.77	BC
27	2026323.66	6780092.77	BC
28	2026937.14	6780883.21	GB
29	2026927.21	6781378.26	GB
30	2026939.21	6781378.21	GB
31	2026940.46	6781678.21	GB
32	2026928.29	6781638.26	BC
33	2026888.60	6781678.43	EC
34	2026888.70	6781690.43	EC
35	2026928.68	6781730.26	BC
36	2026278.47	6781682.98	GB
37	2026332.12	6781682.75	BC
38	2026332.21	6781694.75	BC
39	2026290.69	6781734.93	EC
40	2026290.31	6781642.93	EC

Point Table

Point #	Northing	Easting	Description
41	2026290.06	6781582.93	GB
42	2026278.06	6781582.98	GB
43	2026289.79	6781519.98	BC
44	2026289.54	6781457.98	BC
45	2026314.60	6781494.88	EC
46	2026314.73	6781482.88	EC
47	2026344.69	6781494.65	BOT
48	2026344.60	6781482.65	BOT
49	2026942.52	6782173.02	GB
50	2026930.52	6782173.07	GB
51	2026943.61	6782433.21	EC
52	2026931.61	6782433.26	EC
53	2026891.92	6782473.42	BC
54	2026892.01	6782485.42	BC
55	2026856.92	6782473.70	GB
56	2026857.01	6782485.70	GB
57	2026333.93	6782477.76	EC
58	2026334.02	6782489.76	EC
59	2026293.62	6782437.93	BC
60	2026281.62	6782437.98	BC

Point Table

Point #	Northing	Easting	Description
61	2026226.20	6782315.50	BC
62	2026214.20	6782315.55	EC
63	2026251.00	6782290.40	EC
64	2026250.91	6782278.40	EC
65	2026255.91	6782290.36	BC
66	2026256.04	6782278.36	BC
67	2026281.11	6782315.26	EC
68	2026292.85	6782252.98	EC
69	2026293.11	6782314.98	BC
70	2026280.85	6782253.26	BC
71	2026317.91	6782289.88	EC
72	2026318.04	6782277.88	BC
73	2026348.00	6782289.65	BOT
74	2026347.91	6782277.65	BOT
75	2026937.82	6782479.02	STAND PIPE
76	2026935.56	6782271.49	TEE
77	2026933.97	6781892.00	TEE
78	2026932.19	6781464.49	TEE
79	2026930.64	6781093.00	TEE
80	2026928.91	6780676.10	TEE

Point Table

Point #	Northing	Easting	Description
81	2026928.03	6780300.20	ELBOW
82	2026913.71	6780300.26	DISCHARGE
83	2026913.08	6780676.16	DISCHARGE
84	2026917.02	6781093.06	DISCHARGE
85	2026915.79	6781464.56	DISCHARGE
86	2026920.35	6781892.05	DISCHARGE
87	2026920.99	6782271.55	DISCHARGE
88	2027027.25	6779948.15	LIMITS OF CONST.
89	2027038.02	6782532.46	LIMITS OF CONST.
90	2026188.12	6782538.91	LIMITS OF CONST.
91	2026177.27	6779954.69	LIMITS OF CONST.
92	2026943.82	6782485.02	TOP OF BERM COR.
93	2026227.13	6782538.75	ROAD/PL
94	2026215.13	6782538.68	ROAD/PL
95	2027007.25	6779948.23	LIMITS OF CONST.
96	2027023.25	6779948.18	TOP SLOPE
97	2027033.95	6782514.85	TOP SLOPE
98	2027017.95	6782514.99	TOE SLOPE
99	2026927.25	6779900.00	STA 0+00
100	2026937.89	6782499.98	STA 26+00

Point Table

Point #	Northing	Easting	Description
101	2026284.19	6779960.87	TOP BASIN
102	2026284.80	6780040.86	TOP BASIN
103	2026264.96	6780061.02	TOP BASIN
104	2026184.61	6780061.64	TOP BASIN
105	2026184.19	6779961.64	TOP BASIN
106	2026191.47	6782521.40	CL TOP BERM
107	2026180.68	6779958.16	CL TOP BERM
108	2026994.28	6779951.90	CL TOP BERM

Curve Table

Curve #	Length	Radius	Delta	Tangent
C24	39.18	25.00	89.79	24.91
C26	57.99	37.00	89.79	36.87
C12	39.36	25.00	90.21	25.09
C25	39.18	25.00	89.79	24.91
C2	81.87	52.00	90.21	52.19
C9	81.87	52.00	90.21	52.19
C22	81.49	52.00	89.79	51.81
C23	81.49	52.00	89.79	51.81
C4	62.98	40.00	90.21	40.14
C5	62.69	40.00	89.79	39.86
C13	62.98	40.00	90.21	40.14
C15	39.18	25.00	89.79	24.91
C16	39.36	25.00	90.21	25.09
C17	62.69	40.00	89.79	39.86
C6	62.98	40.00	90.21	40.14
C7	62.69	40.00	89.79	39.86
C8	62.98	40.00	90.21	40.14
C10	39.18	25.00	89.79	24.91
C11	39.36	25.00	90.21	25.09
C14	62.69	40.00	89.79	39.86

Curve Table

Curve #	Length	Radius	Delta	Tangent
C1	62.98	40.00	90.21	40.14
C3	62.69	40.00	89.79	39.86
C18	62.98	40.00	90.21	40.14
C19	39.18	25.00	89.79	24.91
C20	39.36	25.00	90.21	25.09
C21	62.69	40.00	89.79	39.86

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE

COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

EVAPORATION/INFILTRATION POND INDEX MAP AND HORIZONTAL CONTROL DATA

REFERENCE

THG #542.089

SHEET 13 OF 50

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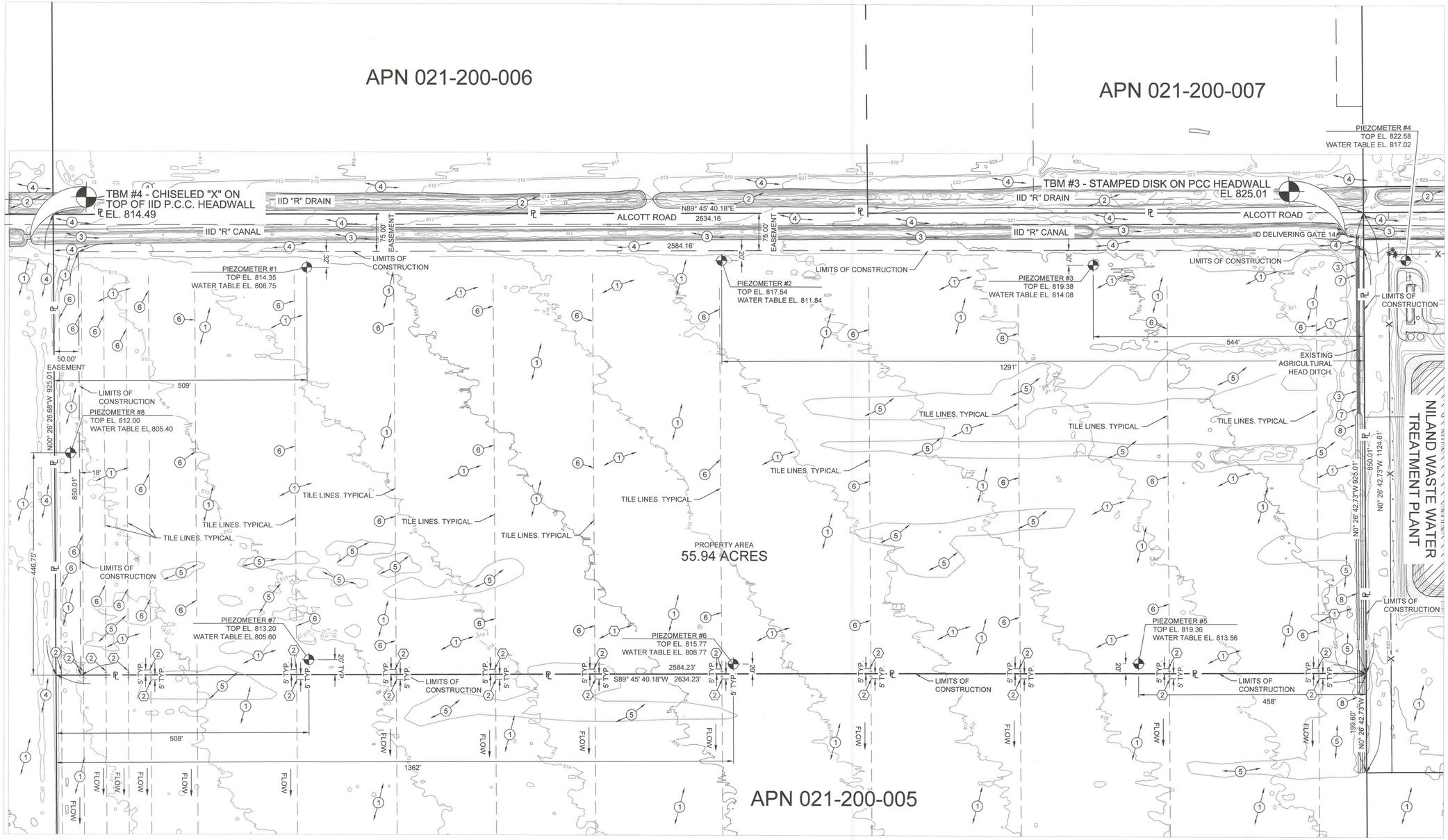

EVAPORATION / INFILTRATION PONDS EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL.
2. EXISTING IID IRRIGATION CANAL TO REMAIN
3. EXISTING IID EARTHEN DRAIN.
4. EXISTING DIRT ROAD.
5. EXISTING DENSE BRUSH VEGETATION.
6. EXISTING DRAINAGE TILE LINE TO BE ABANDONED.
7. EXISTING DETERIORATED CONCRETE-LINED IRRIGATION LATERAL.
8. EXISTING EARTH-LINED IRRIGATION LATERAL.

EVAPORATION / INFILTRATION PONDS DEMOLITION KEYNOTES

1. CLEAR AND GRUB EXISTING THE NATIVE SURFACE WITHIN THE EVAPORATION PONDS LIMITS OF CONSTRUCTION. REMOVE AND DISPOSE OF ALL EXISTING VEGETATION OR DEBRIS INCLUDING GRASS, TREES, ROOT BALLS AND WEEDS.
2. SAWCUT THE EXISTING TILE LINE AT LOCATION 5-FOOT NORTH AND A LOCATION 5-FOOT SOUTH OF PROPERTY LINE. REMOVE AND DISPOSE OF 10-FOOT SECTION OF EXISTING TILE LINE. THE REMAINING TILE LINES ARE TO BE PLUGGED WITH P.C.C. CONCRETE AT THE TERMINATION POINTS OF THE PIPELINES.
3. REMOVE AND DISPOSE EXISTING DETERIORATED P.C.C. CANAL LINING.

NOTE:

THE EXACT HORIZONTAL AND VERTICAL LOCATION OF THE EXISTING UNDERGROUND DRAINAGE TILE LINES ILLUSTRATED ON THIS PLAN ARE UNKNOWN. THE CONTRACTOR SHALL POT-HOLE THE EXISTING DRAINAGE TILE LINES PRIOR TO THE COMMENCEMENT OF SITE GRADING ACTIVITIES TO DETERMINE THE EXACT LOCATION.

100 0 100 200 300
SCALE 1"= 100'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS
10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/INFILTRATION POND EXISTING SITE PLAN

REFERENCE
THG #542.089
SHEET 14 OF 50

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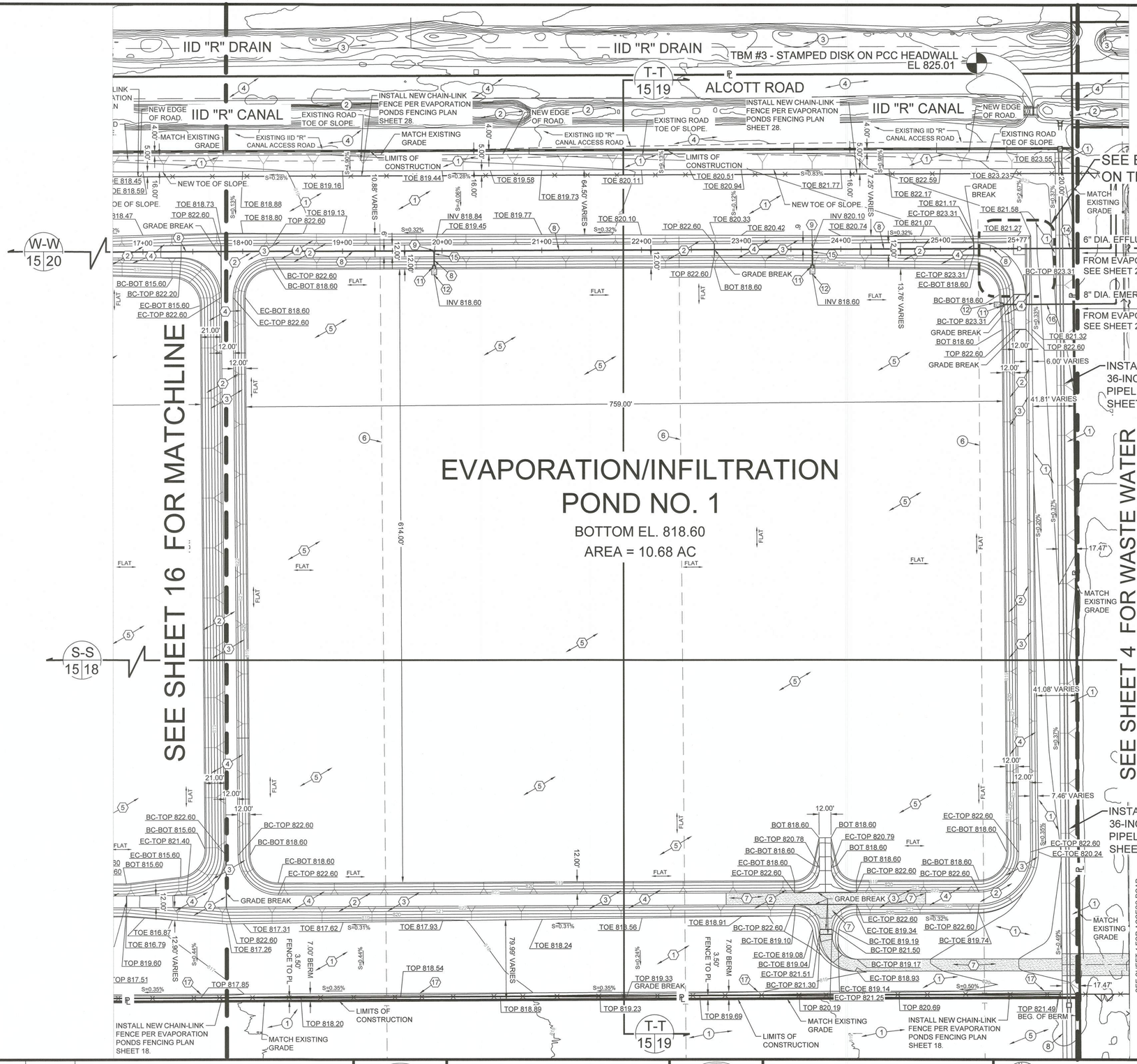
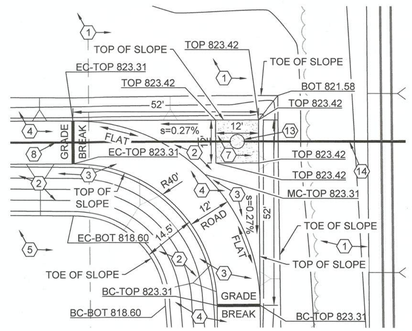


EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL.
2. EXISTING IID IRRIGATION CANAL TO REMAIN
3. EXISTING IID EARTHEN DRAIN.
4. EXISTING DIRT ROAD.
5. EXISTING DENSE BRUSH VEGETATION.
6. EXISTING DRAINAGE TILE LINE TO BE ABANDONED.
7. EXISTING DETERIORATED CONCRETE-LINED IRRIGATION LATERAL.
8. EXISTING EARTH-LINED IRRIGATION LATERAL.

EVAPORATION/INFILTRATION PONDS CONSTRUCTION KEYNOTES

1. AFTER CLEARING AND GRUBBING IS COMPLETED, BLADE THE EXISTING NATIVE MATERIAL TO LEVEL THE SURFACE AND GRADE TO DESIGN ELEVATION.
2. PREWET THE TOP 3.5 FEET OF EXISTING NATIVE SOIL BENEATH THE NEW NATIVE EARTH EVAPORATION POND EMBANKMENTS TO A MINIMUM 20 PERCENT OF MOISTURE CONTENT.
3. PRIOR TO THE INSTALLATION OF THE NATIVE FILL EMBANKMENT, THE CONTRACTOR SHALL REMOVE AND STORE THE TOP 12 INCHES OF NATIVE SOIL. THE CONTRACTOR SHALL THEN MOISTURE CONDITION AND DISC THE TOP 8 INCHES OF THE EXPOSED SURFACE TO A MINIMUM OF OPTIMUM PLUS 5 PERCENT AND RE-COMPACT TO A MINIMUM OF 87 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
4. GRADE NATIVE MATERIAL EMBANKMENT TO SUB GRADE DESIGN ELEVATION. THE ENGINEERED FILL SHALL BE UNIFORMLY DISCED AND MOISTURE CONDITIONED TO OPTIMUM PLUS 5 TO 10 PERCENT AND COMPACTED IN 6-INCH MAXIMUM LIFTS TO A MINIMUM OF 87 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
5. GRADE NATIVE MATERIAL TO DESIGN GRADE ELEVATION WITHIN THE EVAPORATION PONDS BOTTOM AREA. WHERE NATIVE MATERIAL FILL IS REQUIRED, THE ENGINEERED FILL SHALL BE UNIFORMLY DISCED AND MOISTURE CONDITIONED TO OPTIMUM PLUS 5 TO 10 PERCENT. AFTER NATIVE MATERIAL GRADING HAS BEEN SATISFACTORILY COMPLETED, THE BOTTOM OF POND SURFACE SHALL BE SCARIFIED TO A DEPTH OF 18 INCHES.
6. REMOVE AND DISPOSE EXISTING NATIVE MATERIAL TO SUB BASE DESIGN GRADE. SCARIFY THE EXPOSED NATIVE MATERIAL FOR A DEPTH OF 12 INCHES AND COMPACT TO A MINIMUM OF 90 PERCENT AT A MINIMUM OF 2 PERCENT ABOVE OPTIMUM MOISTURE.
7. INSTALL 12 INCHES OF CLASS 2 BASE MATERIAL TO FINISH GRADE ELEVATION. COMPACT THE CLASS 2 BASE TO A MINIMUM OF 90 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
8. INSTALL 8-INCH DIAMETER AWWA C-900, DR14 PVC EFFLUENT HEADER PIPELINE PER CROSS SECTION W-W ON SHEET 19 AND TRENCH DETAIL CC ON SHEET 26.
9. INSTALL 8-INCH DIAMETER MJ X FL DUCTILE IRON TEE WITH RESTRAINED JOINTS AND STAINLESS STEEL HARDWARE.
10. INSTALL 8-INCH DIAMETER MJ X MJ DUCTILE IRON 90-DEGREE ELBOW WITH RESTRAINED JOINT FITTINGS AND STAINLESS STEEL HARDWARE.
11. INSTALL P.C.C. HEADWALL PER DETAIL BB ON SHEET 26.
12. INSTALL A 6-FOOT WIDE X 5-FOOT LONG X 1-FOOT DEEP, 3/4-INCH CRUSHED ROCK RIP-RAP PROTECTION. INSTALL A NON-WOVEN GEOTEXTILE FABRIC ALONG THE SIDES AND BOTTOM OF THE CRUSHED ROCK. THE NON-WOVEN GEOTEXTILE FABRIC SHALL BE MIRAFI 600X OR AN APPROVED EQUAL.
13. INSTALL STAND PIPE AND P.C.C. WET WELL PER DETAIL AA ON SHEET 26.
14. INSTALL 6-INCH DIAMETER AWWA C-900, DR18 PVC EFFLUENT FORCE MAIN PER TRENCH DETAIL CC ON SHEET 26.
15. INSTALL 8-INCH DIAMETER FL X MJ ECCENTRIC PLUG VALVE WITH VALVE RISER AND COVER PER DETAIL FF ON SHEET 26.
16. INSTALL 8" DIAMETER AWWA C-900 DR 21 EMERGENCY OVERFLOW PIPELINE PER PLAN AND PROFILE SHEET 21 AND TRENCH DETAIL CC ON SHEET 26.
17. CONSTRUCT NEW EARTHEN BERM FOR STORM WATER RUNOFF PROTECTION PER DETAIL II ON SHEET 27.
18. INSTALL NATIVE MATERIAL IN THE AREA BETWEEN THE EXISTING EDGE OF ROAD AND THE NEW TOP OF SLOPE. THE ENGINEERED FILL SHALL BE UNIFORMLY DISCED AND MOISTURE CONDITIONED TO OPTIMUM PLUS 5 TO 10 PERCENT.



BLOWUP DETAIL A
SCALE 1" = 20'

SCALE 1"= 50'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
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09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
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JOHN GAY, P.E. — 62028 R.C.E. No.
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10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/INFILTRATION POND NO. 1 GRADING AND IMPROVEMENT PLAN

REFERENCE
THG #542.089
SHEET 15 OF 50

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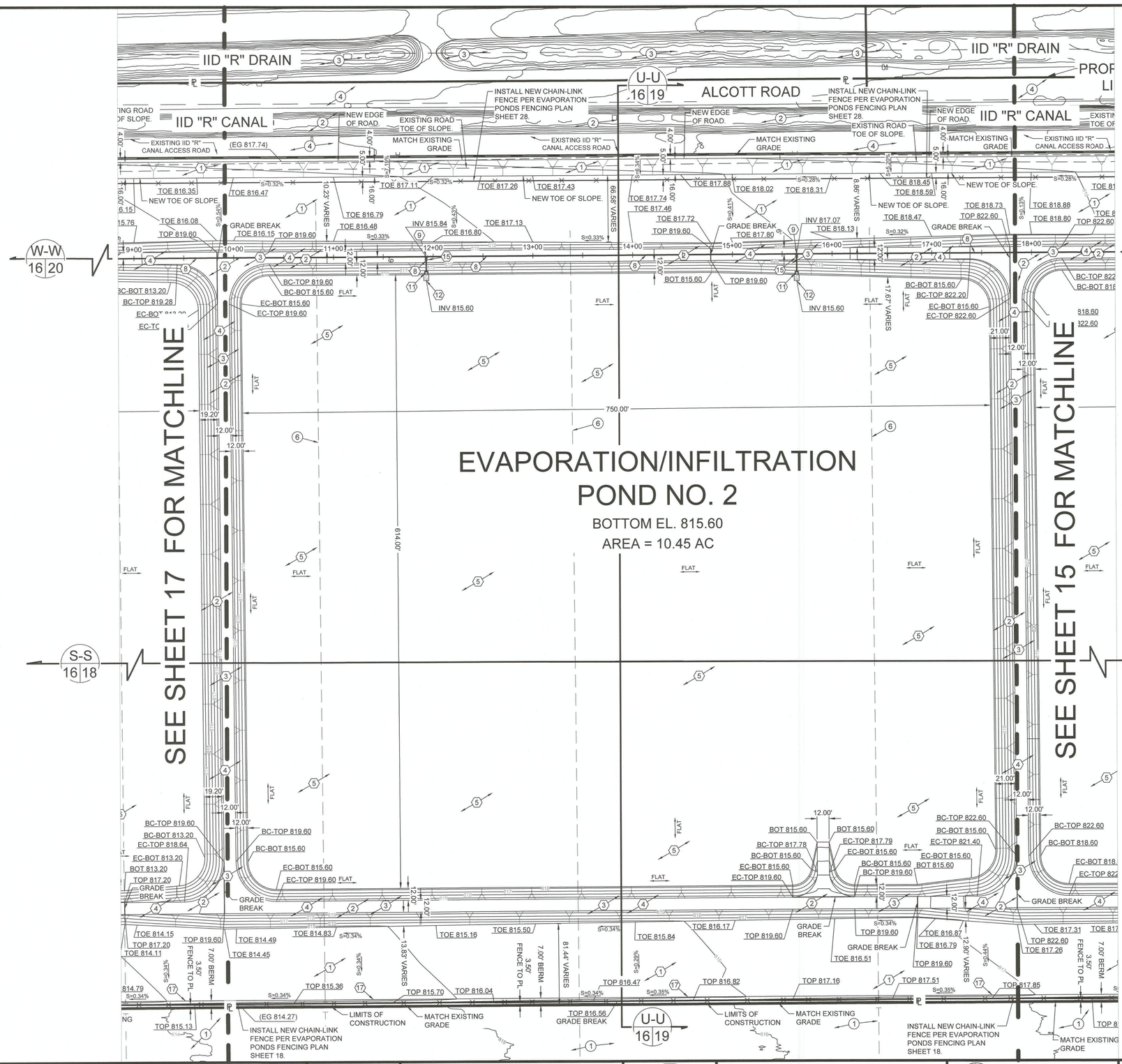

EVAPORATION / INFILTRATION PONDS EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL.
2. EXISTING IID IRRIGATION CANAL TO REMAIN
3. EXISTING IID EARTHEN DRAIN.
4. EXISTING DIRT ROAD.
5. EXISTING DENSE BRUSH VEGETATION.
6. EXISTING DRAINAGE TILE LINE TO BE ABANDONED.
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EVAPORATION/INFILTRATION PONDS CONSTRUCTION KEYNOTES

1. AFTER CLEARING AND GRUBBING IS COMPLETED, BLADE THE EXISTING NATIVE MATERIAL TO LEVEL THE SURFACE AND GRADE TO DESIGN ELEVATION.
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3. PRIOR TO THE INSTALLATION OF THE NATIVE FILL EMBANKMENT, THE CONTRACTOR SHALL REMOVE AND STORE THE TOP 12 INCHES OF NATIVE SOIL. THE CONTRACTOR SHALL THEN MOISTURE CONDITION AND DISC THE TOP 8 INCHES OF THE EXPOSED SURFACE TO A MINIMUM OF OPTIMUM PLUS 5 PERCENT AND RE-COMPACT TO A MINIMUM OF 87 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
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8. INSTALL 8-INCH DIAMETER AWWA C-900, DR14 PVC EFFLUENT HEADER PIPELINE PER CROSS SECTION W-W ON SHEET 19 AND TRENCH DETAIL CC ON SHEET 26.
9. INSTALL 8-INCH DIAMETER MJ X FL DUCTILE IRON TEE WITH RESTRAINED JOINTS AND STAINLESS STEEL HARDWARE.
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REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/INFILTRATION POND NO. 2 GRADING AND IMPROVEMENT PLAN

REFERENCE

THG #542.089

SHEET 16 OF 50

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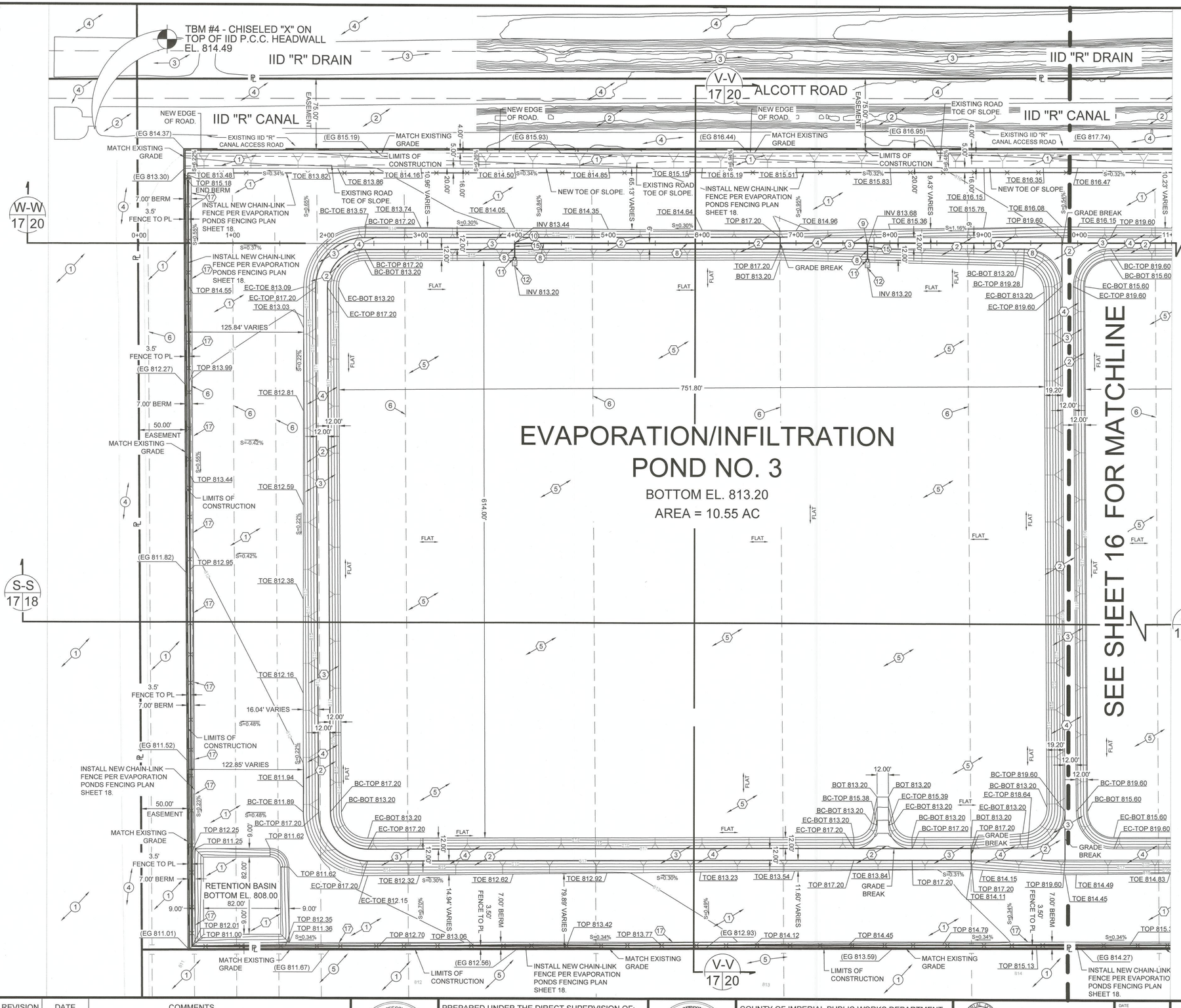

EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL.
2. EXISTING IID IRRIGATION CANAL TO REMAIN
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15. INSTALL 8-INCH DIAMETER FL X MJ ECCENTRIC PLUG VALVE WITH VALVE RISER AND COVER PER DETAIL F ON SHEET 26.
16. INSTALL 8" DIAMETER AWWA C-900 DR 21 EMERGENCY OVERFLOW PIPELINE PER PLAN AND PROFILE SHEET 21 AND TRENCH DETAIL C ON SHEET 26.
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SCALE 1"= 50'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/INFILTRATION POND NO. 3 GRADING AND IMPROVEMENT PLAN

REFERENCE
THG #542.089

SHEET 17 OF 50

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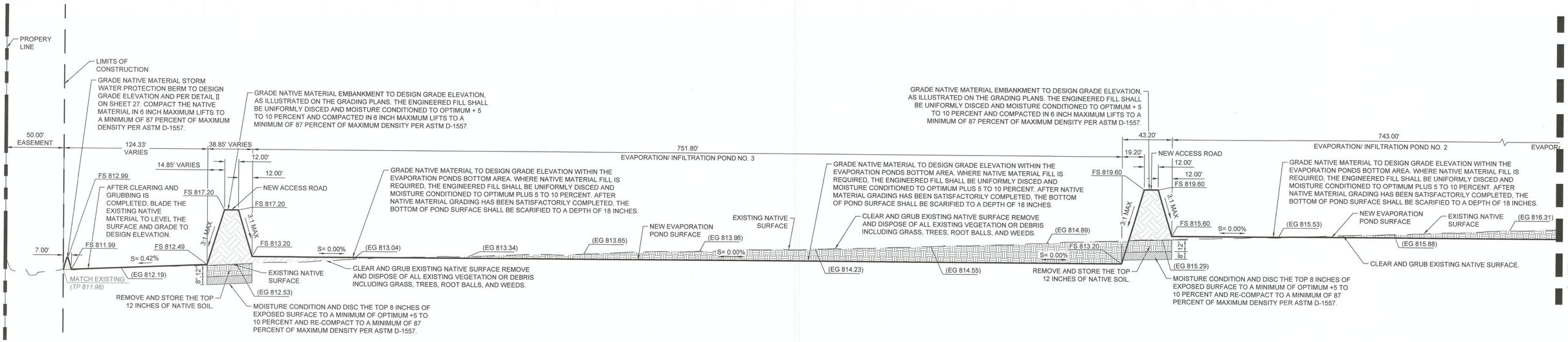

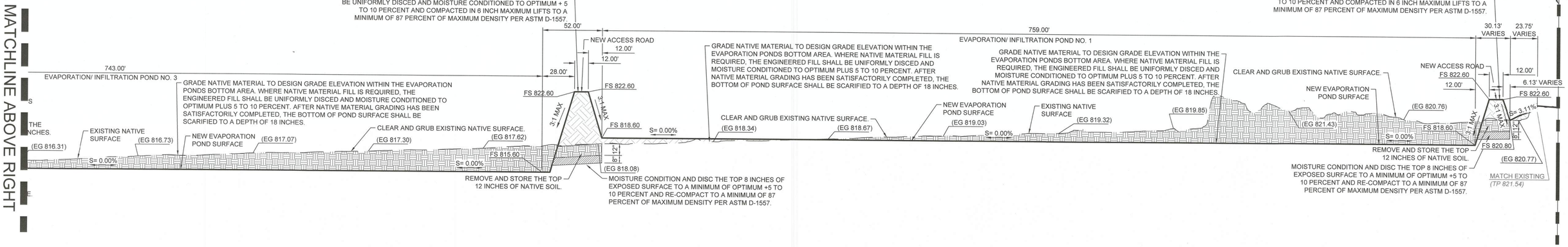

EVAPORATION/ INFILTRATION POND CROSS SECTION

S-S

13-17 18

HORIZONTAL SCALE: 1" = 40'-0"
VERTICAL SCALE: 1" = 4'-0"

REVISION	DATE	COMMENTS

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10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE	09/25/2023
DRAWN	RS
DESIGNED	RS
SCALE	N/A
CHECKED	JGH

PROJECT TITLE

COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

EVAPORATION/ INFILTRATION POND CROSS SECTIONS

REFERENCE

THG #542.089

SHEET 18 OF 50

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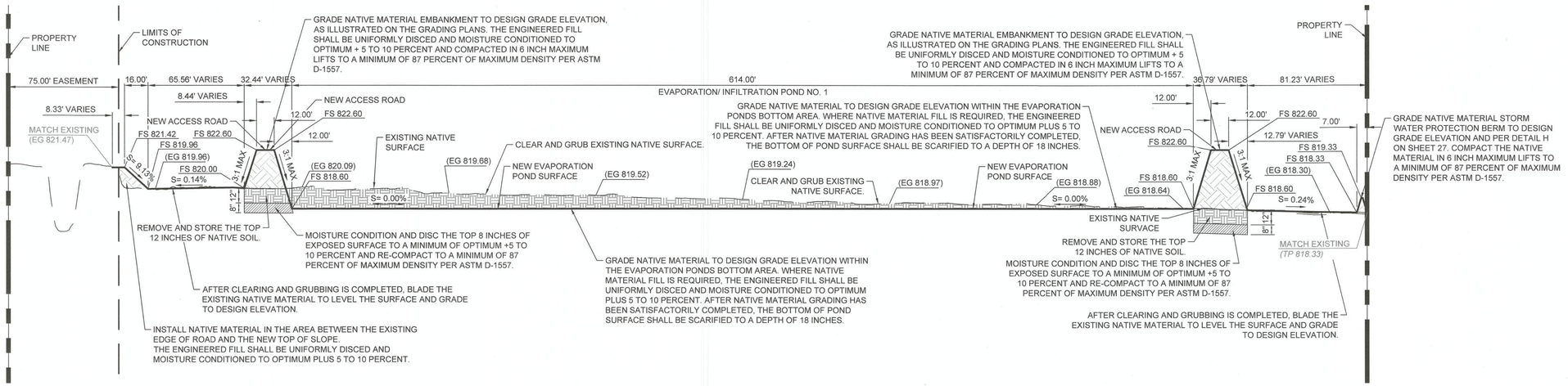
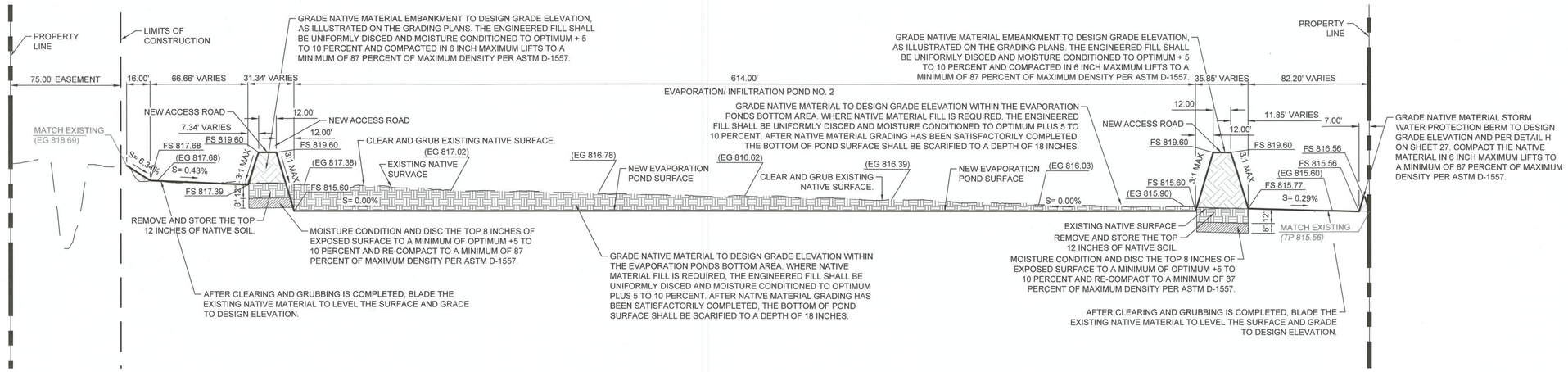


EVAPORATION/ INFILTRATION POND CROSS SECTION

T-T

13,15|19

HORIZONTAL SCALE: 1" = 40'-0"
VERTICAL SCALE: 1" = 4'-0"



EVAPORATION/ INFILTRATION POND CROSS SECTION

U-U

13,16|19

HORIZONTAL SCALE: 1" = 40'-0"
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REVISION	DATE	COMMENTS

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EVAPORATION/ INFILTRATION POND CROSS SECTIONS

REFERENCE
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SHEET 19 OF 50

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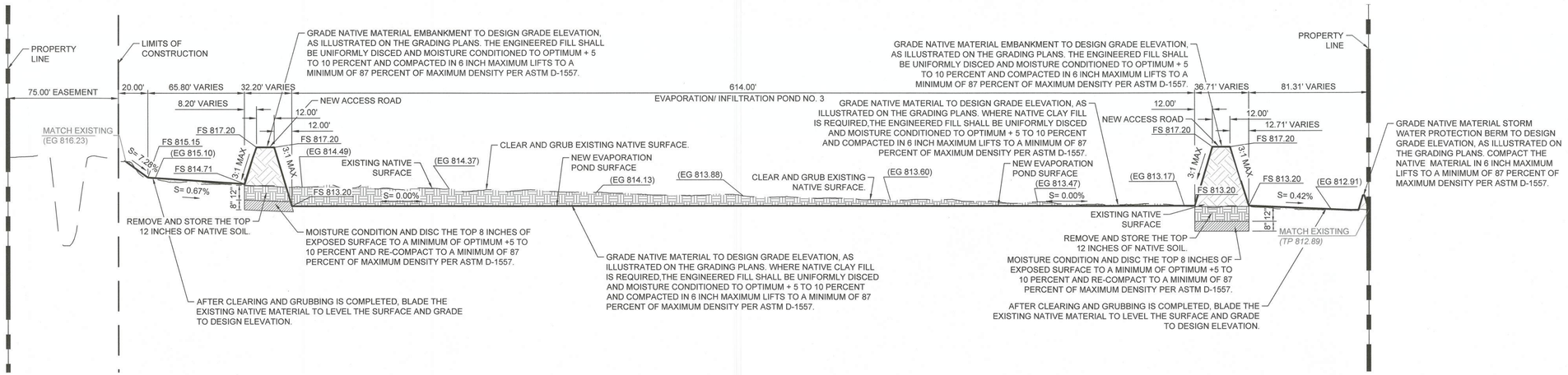


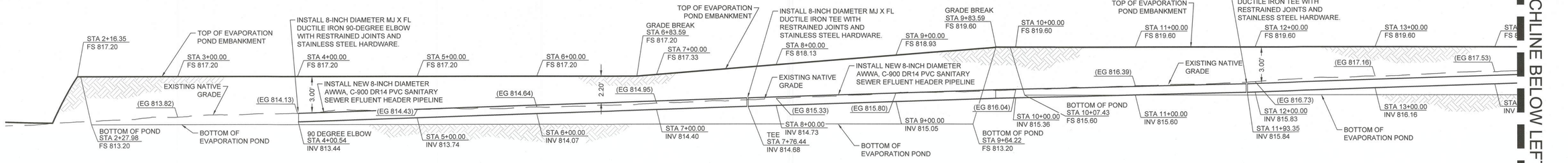
EVAPORATION/ INFILTRATION POND CROSS SECTION

V-V

13,17|20

HORIZONTAL SCALE: 1" = 40'-0"
VERTICAL SCALE: 1" = 4'-0"

SEE MATCHLINE BELOW LEFT



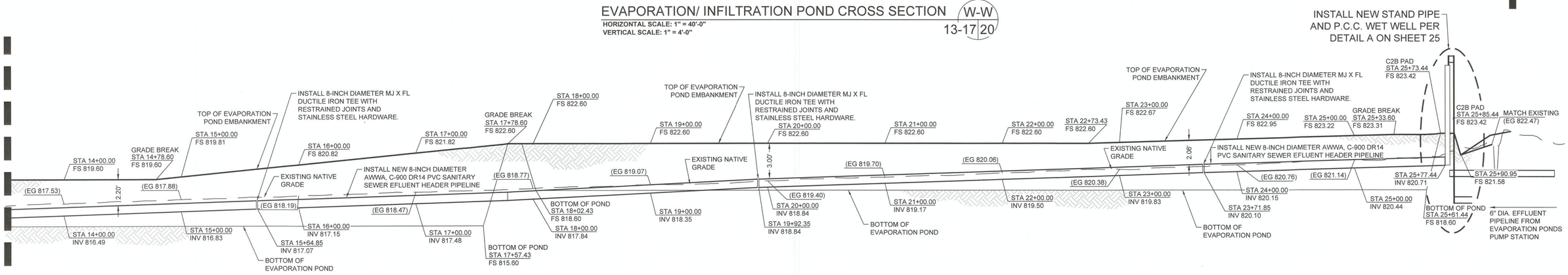
EVAPORATION/ INFILTRATION POND CROSS SECTION

W-W

13-17|20

HORIZONTAL SCALE: 1" = 40'-0"
VERTICAL SCALE: 1" = 4'-0"

SEE MATCHLINE ABOVE RIGHT



EVAPORATION/ INFILTRATION POND CROSS SECTION

W-W

13-17|20

HORIZONTAL SCALE: 1" = 40'-0"
VERTICAL SCALE: 1" = 4'-0"

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

EVAPORATION/ INFILTRATION POND CROSS SECTIONS

REFERENCE

THG #542.089

SHEET 20 OF 50

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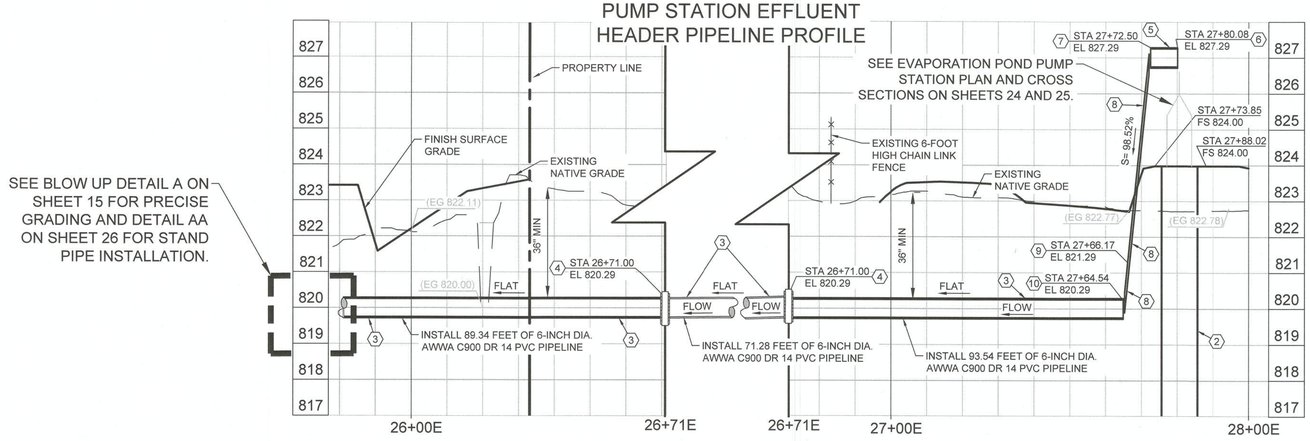
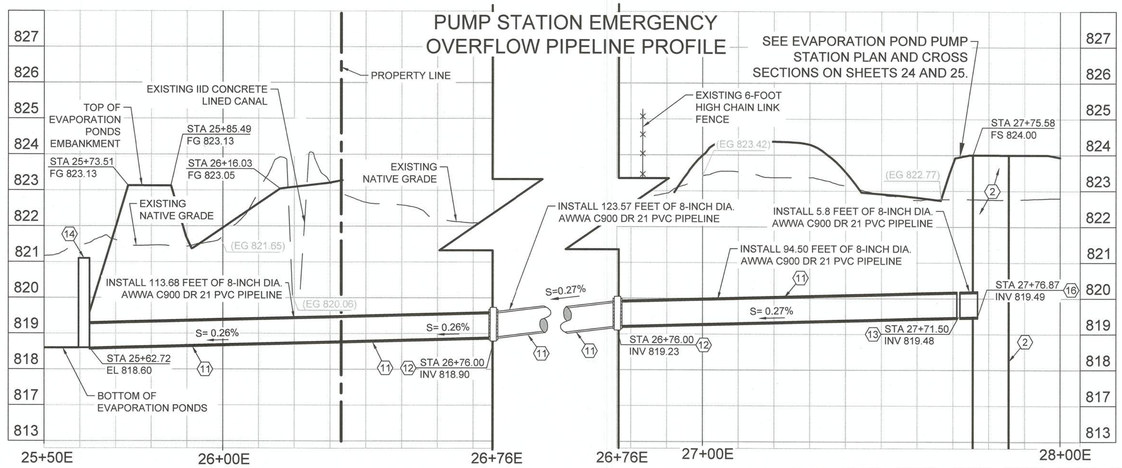
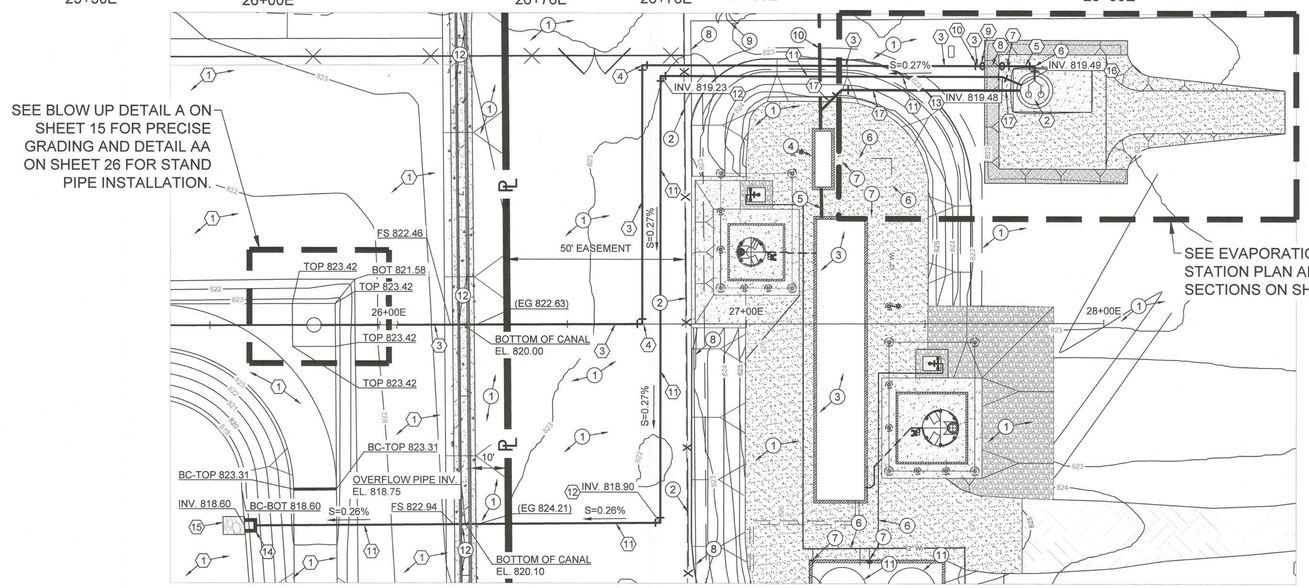
PUMP STATION EFFLUENT HEADER PIPELINE PROFILE



PUMP STATION EMERGENCY OVERFLOW PIPELINE PROFILE





EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL TO REMAIN.
2. EXISTING 8-FOOT CHAINLINK FENCE TO REMAIN.
3. EXISTING P.C.C. CHLORINATION/ DECHLORINATION STRUCTURE TO REMAIN.
4. EXISTING P.C.C. FLOW METER/ SAMPLING VAULT TO REMAIN.
5. EXISTING 12-INCH PVC SANITARY SEWER EFFLUENT PIPELINE.
6. EXISTING 2-INCH PVC WATER PIPELINE TO REMAIN.
7. EXISTING WATER HOSE BIB TO REMAIN.
8. EXISTING 6-INCH PERFORATED PIPELINE TO REMAIN.
9. EXISTING PALM TREES TO REMAIN.
10. EXISTING 12-INCH PVC SANITARY SEWER EFFLUENT PIPELINE TO BE ABANDONED IN PLACE.
11. EXISTING CHEMICAL STORAGE TANK TO REMAIN.
12. EXISTING IID CONCRETE LINED IRRIGATION CANAL.

CONSTRUCTION KEYNOTES

1. GRADE EVAPORATION PONDS SITE PER GRADING PLAN SHEETS 15-17.
2. INSTALL EVAPORATION PONDS PUMP STATION PER BLOW UP DETAIL A ON SHEET 24 AND CROSS SECTION A-A AND B-B ON SHEET 25.
3. INSTALL A 6-INCH DIAMETER AWWA C-900, DR 14 PVC EFFLUENT HEADER PIPELINE PER TRENCH DETAIL CC ON SHEET 26.
4. INSTALL A 6-INCH MECHANICAL JOINT X MECHANICAL JOINT 90-DEGREE DUCTILE IRON FUSION EPOXY LINED ELBOW WITH 316 STAINLESS STEEL HARDWARE AND THRUST BLOCK PER DETAIL EE ON SHEET 26.
5. INSTALL A 6-INCH DIAMETER, FLANGED CLASS 53 DUCTILE IRON PIPE SPOOL.
6. INSTALL A 6-INCH FLANGE X FLANGE CLASS 53 DUCTILE IRON 90 DEGREE ELBOW.
7. INSTALL A 6-INCH MECHANICAL JOINT X MECHANICAL JOINT 45 DEGREE DUCTILE IRON FUSION EPOXY LINED ELBOW WITH 316 STAINLESS STEEL HARDWARE AND THRUST BLOCK PER DETAIL EE ON SHEET 26.
8. INSTALL A 6-INCH DIAMETER, FLANGE X PLAIN END CLASS 53 DUCTILE IRON PIPE.
9. INSTALL A 6-INCH DUCTILE IRON EPOXY COATED TRANSITION COUPLING WITH 316 STAINLESS STEEL HARDWARE. THE TRANSITION COUPLING SHALL BE A SMITH-BLAIR MODEL NO. 461-06540765-031 OR AN APPROVED EQUAL.
10. INSTALL A 6-INCH FLANGE X FLANGE CLASS 53 DUCTILE IRON 45 DEGREE ELBOW.
11. INSTALL AN 8-INCH DIAMETER AWWA DR 21 PVC PUMP STATION OVERFLOW PIPELINE PER TRENCH DETAIL CC ON SHEET 26.
12. INSTALL AN 8-INCH DIAMETER MJ X MJ 90-DEGREE DUCTILE IRON ELBOW WITH RESTRAINED JOINT FITTINGS AND STAINLESS STEEL HARDWARE.
13. INSTALL AN 8-INCH DIAMETER MJ X MJ 22.5-DEGREE DUCTILE IRON ELBOW WITH RESTRAINED JOINT FITTINGS AND STAINLESS STEEL HARDWARE.
14. INSTALL P.C.C. HEADWALL PER DETAIL BB ON SHEET 26.
15. INSTALL A 6-FOOT WIDE X 5-FOOT LONG X 1-FOOT DEEP, 3/4-INCH CRUSHED ROCK RIP-RAP PROTECTION. INSTALL A NON-WOVEN GEOTEXTILE FABRIC ALONG THE SIDES AND BOTTOM OF THE CRUSHED ROCK. THE NON-WOVEN GEOTEXTILE FABRIC SHALL BE MIRAFI 600X OR AN APPROVED EQUAL.
16. INSTALL THE PIPELINE THROUGH THE NEW P.C.C. WET WELL WALL PER PENETRATION DETAIL DD ON SHEET 26.
17. INSTALL 12-INCH DIAMETER SANITARY SEWER EFFLUENT PIPELINE PER EVAPORATION POND PUMP STATION PLAN SHEET 24.

20 0 20 40 60
SCALE 1"= 20'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

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COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
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JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS
10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EFFLUENT PIPELINE AND PUMP STATION OVERFLOW PIPELINE PLAN AND PROFILE

REFERENCE
THG #542.089
SHEET 21 OF 50

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TBM #4 - CHISELED "X" ON TOP OF IID P.C.C. HEADWALL EL. 814.49

IID "R" DRAIN

IID "R" CANAL

IID "R" CANAL ACCESS ROAD

ALCOTT ROAD

TOP OF ROAD

LIMITS OF CONSTRUCTION

50.00' EASEMENT

75.00' EASEMENT

NEW EVAPORATION/INFILTRATION POND 12' WIDE ACCESS ROAD

TOP OF SLOPE

TOE OF SLOPE

BOTTOM OF POND NO. 3 EL. 813.20

BOTTOM OF POND NO. 2 EL. 815.60

NOTE:
1. NO SHRINKAGE OF EXISTING SURFACE HAS BEEN CONSIDERED ON THE ILLUSTRATED CUT AND FILL GRID. AN OVERALL 6-INCH SHRINKAGE OF THE EXISTING SURFACE SHALL BE CONSIDERED.
2. SEE SHEETS 15-17 FOR EVAPORATION/INFILTRATION PONDS PRECISE GRADING.

SEE SHEET 23 FOR MATCHLINE

SCALE 1"= 50'

REVISION	DATE	COMMENTS

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COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
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10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/INFILTRATION POND SITE EARTHWORK

REFERENCE
THG #542.089
SHEET 22 OF 50

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IID "R" DRAIN

IID "R" CANAL

TBM #3 - STAMPED DISK ON PCC HEADWALL
EL 825.01

ALCOTT ROAD

IID "R" CANAL ACCESS ROAD

TOP OF ROAD

LIMITS OF CONSTRUCTION

75.00' EASEMENT

NEW EVAPORATION/INFILTRATION POND 12' WIDE ACCESS ROAD

TOE OF SLOPE

TOP OF SLOPE

NILAND WASTE WATER TREATMENT PLANT

BOTTOM OF POND NO. 1 EL. 818.60

BOTTOM OF POND NO. 2 EL. 815.60

SEE SHEET 22 FOR MATCHLINE

NOTE:
1. NO SHRINKAGE OF EXISTING SURFACE HAS BEEN CONSIDERED ON THE ILLUSTRATED CUT AND FILL GRID. AN OVERALL 6-INCH SHRINKAGE OF THE EXISTING SURFACE SHALL BE CONSIDERED.
2. SEE SHEET 15-17 FOR EVAPORATION/INFILTRATION PONDS PRECISE GRADING.

SCALE 1"= 50'

REVISION	DATE	COMMENTS

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PUBLIC WORKS DEPARTMENT
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DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/INFILTRATION POND SITE EARTHWORK

REFERENCE
THG #542.089
SHEET 23 OF 50

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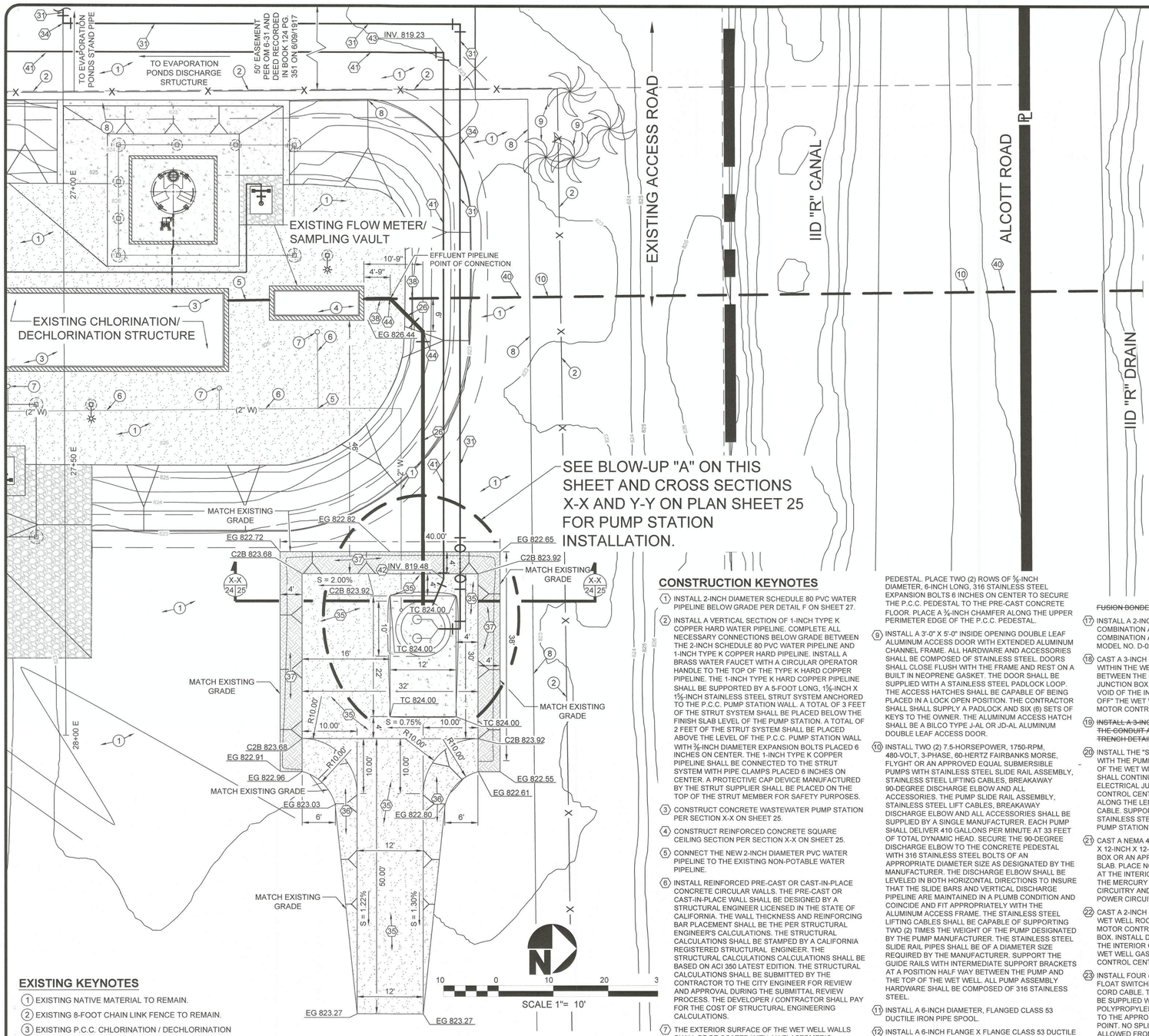

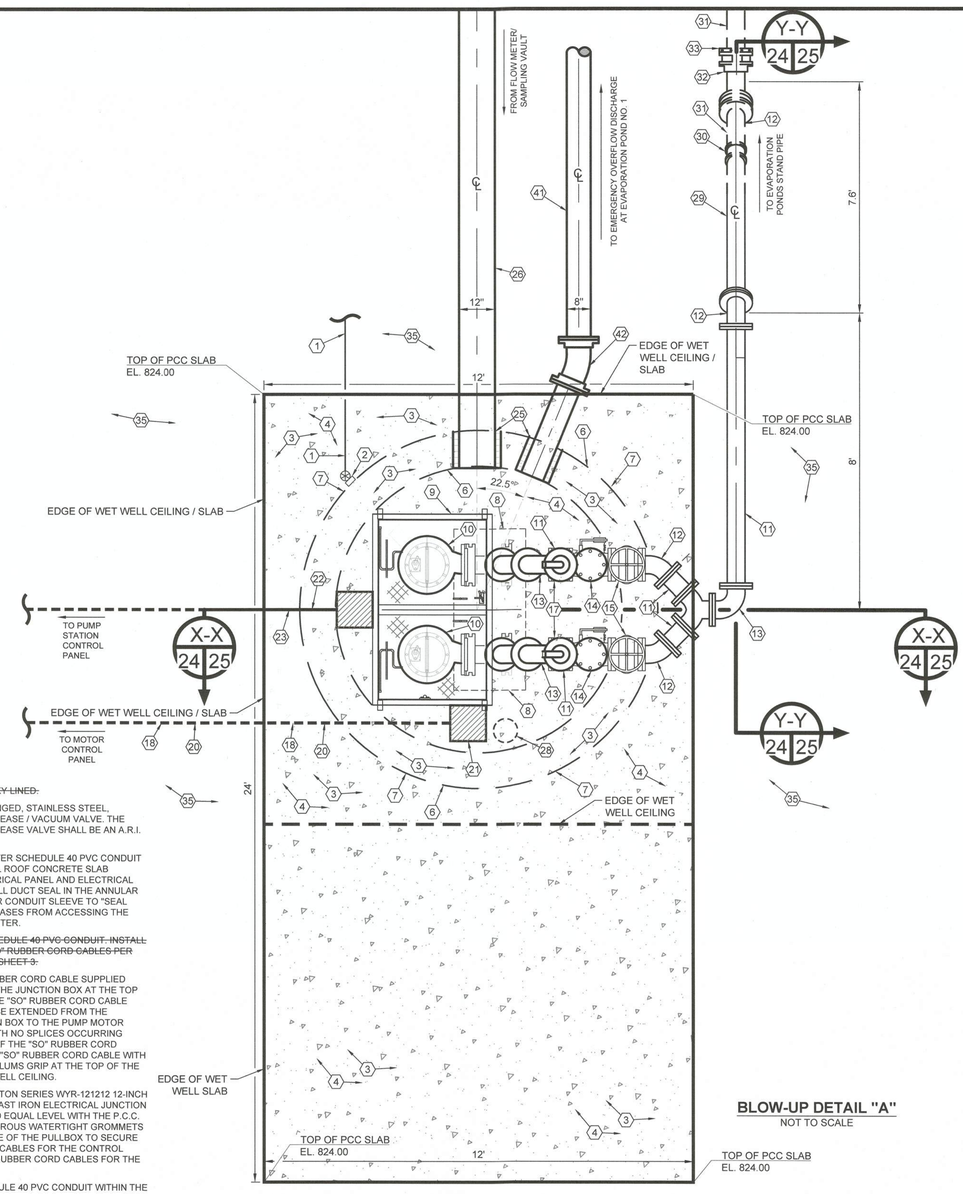

BLOW-UP DETAIL "A"
NOT TO SCALE

EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL TO REMAIN.
2. EXISTING 8-FOOT CHAIN LINK FENCE TO REMAIN.
3. EXISTING P.C.C. CHLORINATION / DECHLORINATION STRUCTURE TO REMAIN.
4. EXISTING P.C.C. FLOWMETER / SAMPLING VAULT TO REMAIN.
5. EXISTING 12-INCH PVC SANITARY SEWER EFFLUENT PIPELINE.
6. EXISTING 2-INCH PVC WATER PIPELINE TO REMAIN.
7. EXISTING WATER HOSE BIB TO REMAIN.
8. EXISTING 6-INCH PERFORATED PIPELINE TO REMAIN.
9. EXISTING PALM TREES TO REMAIN.
10. EXISTING 12-INCH PVC SANITARY SEWER EFFLUENT PIPELINE TO BE ABANDONED IN PLACE.

CONSTRUCTION KEYNOTES

1. INSTALL 2-INCH DIAMETER SCHEDULE 80 PVC WATER PIPELINE BELOW GRADE PER DETAIL F ON SHEET 27.
2. INSTALL A VERTICAL SECTION OF 1-INCH TYPE K COPPER HARD WATER PIPELINE. COMPLETE ALL NECESSARY CONNECTIONS BELOW GRADE BETWEEN THE 2-INCH SCHEDULE 80 PVC WATER PIPELINE AND 1-INCH TYPE K COPPER HARD PIPELINE. INSTALL A BRASS WATER FAUCET WITH A CIRCULAR OPERATOR HANDLE TO THE TOP OF THE TYPE K HARD COPPER PIPELINE. THE 1-INCH TYPE K HARD COPPER PIPELINE SHALL BE SUPPORTED BY A 5-FOOT LONG, 1⅛-INCH X 1⅛-INCH STAINLESS STEEL STRUT SYSTEM ANCHORED TO THE P.C.C. PUMP STATION WALL. A TOTAL OF 3 FEET OF THE STRUT SYSTEM SHALL BE PLACED BELOW THE FINISH SLAB LEVEL OF THE PUMP STATION. A TOTAL OF 2 FEET OF THE STRUT SYSTEM SHALL BE PLACED ABOVE THE LEVEL OF THE P.C.C. PUMP STATION WALL WITH ⅜-INCH DIAMETER EXPANSION BOLTS PLACED 6 INCHES ON CENTER. THE 1-INCH TYPE K COPPER PIPELINE SHALL BE CONNECTED TO THE STRUT SYSTEM WITH PIPE CLAMPS PLACED 6 INCHES ON CENTER. A PROTECTIVE CAP DEVICE MANUFACTURED BY THE STRUT SUPPLIER SHALL BE PLACED ON THE TOP OF THE STRUT MEMBER FOR SAFETY PURPOSES.
3. CONSTRUCT CONCRETE WASTEWATER PUMP STATION PER SECTION X-X ON SHEET 25.
4. CONSTRUCT REINFORCED CONCRETE SQUARE CEILING SECTION PER SECTION X-X ON SHEET 25.
5. CONNECT THE NEW 2-INCH DIAMETER PVC WATER PIPELINE TO THE EXISTING NON-POTABLE WATER PIPELINE.
6. INSTALL REINFORCED PRE-CAST OR CAST-IN-PLACE CONCRETE CIRCULAR WALLS. THE PRE-CAST OR CAST-IN-PLACE WALL SHALL BE DESIGNED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CALIFORNIA. THE WALL THICKNESS AND REINFORCING BAR PLACEMENT SHALL BE THE PER STRUCTURAL ENGINEER'S CALCULATIONS. THE STRUCTURAL CALCULATIONS SHALL BE STAMPED BY A CALIFORNIA REGISTERED STRUCTURAL ENGINEER. THE STRUCTURAL CALCULATIONS CALCULATIONS SHALL BE BASED ON ACI 350 LATEST EDITION. THE STRUCTURAL CALCULATIONS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE CITY ENGINEER FOR REVIEW AND APPROVAL DURING THE SUBMITTAL REVIEW PROCESS. THE DEVELOPER / CONTRACTOR SHALL PAY FOR THE COST OF STRUCTURAL ENGINEERING CALCULATIONS.
7. THE EXTERIOR SURFACE OF THE WET WELL WALLS SHALL BE BE COATED WITH AN ELASTOMERIC COAL-TAR FREE FLUID 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 TREMPROOF 201/202 MEMBRANE PRODUCT AS MANUFACTURED BY MAMECO INTERNATIONAL, INC. OR AN APPROVED EQUIVALENT OR EQUAL SUBSTANCE AND FUNCTION. A ⅜-INCH POLYURETHANE GREEN FOAM BACKER BOARD SHALL BE PLACED OVER THE EXTERIOR SURFACE OF THE WET WELL AFTER THE COATING SYSTEM IS APPLIED TO PROTECT THE COATING FROM BACKFILL OPERATIONS.
8. CONSTRUCT A 2'-0" WIDE X 4'-6" LONG X 10" HIGH P.C.C. PEDESTAL. PLACE TWO (2) ROWS OF ⅝-INCH DIAMETER, 6-INCH LONG, 316 STAINLESS STEEL EXPANSION BOLTS 6 INCHES ON CENTER TO SECURE THE P.C.C. PEDESTAL TO THE PRE-CAST CONCRETE FLOOR. PLACE A ¾-INCH CHAMFER ALONG THE UPPER PERIMETER EDGE OF THE P.C.C. PEDESTAL.
9. INSTALL A 3'-0" X 5'-0" INSIDE OPENING DOUBLE LEAF ALUMINUM ACCESS DOOR WITH EXTENDED ALUMINUM CHANNEL FRAME. 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 ALUMINUM ACCESS HATCH SHALL BE A BILCO TYPE J-AL OR JD-AL ALUMINUM DOUBLE LEAF ACCESS DOOR.
10. INSTALL TWO (2) 7.5-HORSEPOWER, 1750-RPM, 480-VOLT, 3-PHASE, 60-HERTZ FAIRBANKS MORSE, FLYGHT OR AN APPROVED EQUAL SUBMERSIBLE PUMPS WITH STAINLESS STEEL SLIDE RAIL ASSEMBLY, STAINLESS STEEL LIFTING CABLES, BREAKAWAY 90-DEGREE DISCHARGE ELBOW AND ALL ACCESSORIES. THE PUMP SLIDE RAIL ASSEMBLY, STAINLESS STEEL LIFT CABLES, BREAKAWAY DISCHARGE ELBOW AND ALL ACCESSORIES SHALL BE SUPPLIED BY A SINGLE MANUFACTURER. EACH PUMP SHALL DELIVER 410 GALLONS PER MINUTE AT 33 FEET OF TOTAL DYNAMIC HEAD. SECURE THE 90-DEGREE DISCHARGE ELBOW TO THE CONCRETE PEDESTAL WITH 316 STAINLESS STEEL BOLTS OF AN APPROPRIATE DIAMETER SIZE AS DESIGNATED BY THE MANUFACTURER. THE DISCHARGE ELBOW SHALL BE LEVELED IN BOTH HORIZONTAL DIRECTIONS TO INSURE THAT THE SLIDE BARS AND VERTICAL DISCHARGE PIPELINE ARE MAINTAINED IN A PLUMB CONDITION AND COINCIDE AND FIT APPROPRIATELY WITH THE ALUMINUM ACCESS FRAME. THE STAINLESS STEEL LIFTING CABLES SHALL BE CAPABLE OF SUPPORTING TWO (2) TIMES THE WEIGHT OF THE PUMP DESIGNATED BY THE PUMP MANUFACTURER. THE STAINLESS STEEL SLIDE RAIL PIPES SHALL BE OF A DIAMETER SIZE REQUIRED BY THE MANUFACTURER. SUPPORT THE GUIDE RAILS WITH INTERMEDIATE SUPPORT BRACKETS AT A POSITION HALF WAY BETWEEN THE PUMP AND THE TOP OF THE WET WELL. ALL PUMP ASSEMBLY HARDWARE SHALL BE COMPOSED OF 316 STAINLESS STEEL.
11. INSTALL A 6-INCH DIAMETER, FLANGED CLASS 53 DUCTILE IRON PIPE SPOOL.
12. INSTALL A 6-INCH FLANGE X FLANGE CLASS 53 DUCTILE IRON 45 DEGREE ELBOW.
13. INSTALL A 6-INCH FLANGE X FLANGE CLASS 53 DUCTILE IRON 90 DEGREE ELBOW.
14. INSTALL A 6-INCH FLANGED DUCTILE IRON SPRING LOADED CHECK VALVE. THE CHECK VALVE SHALL BE A MUELLER MODEL NO. A-2602-6-02 OR AN APPROVED EQUAL.
15. INSTALL A 6-INCH FLANGE X FLANGE RESILIENT WEDGE GATE VALVE WITH HAND WHEEL OPERATOR. THE RESILIENT WEDGE GATE VALVE SHALL BE A MUELLER MODEL NO. A-2360-6 OR AN APPROVED EQUAL.
16. ~~INSTALL A 6-INCH FLANGED CLASS 53 DUCTILE IRON TRUE WYE. THE DUCTILE IRON TRUE WYE SHALL BE FUSION BONDED EPOXY LINED.~~
17. INSTALL A 2-INCH FLANGED, STAINLESS STEEL, COMBINATION AIR RELEASE / VACUUM VALVE. THE COMBINATION AIR RELEASE VALVE SHALL BE AN A.R.I. MODEL NO. D-020.
18. CAST A 3-INCH DIAMETER SCHEDULE 40 PVC CONDUIT WITHIN THE WET WELL ROOF CONCRETE SLAB BETWEEN THE ELECTRICAL PANEL AND ELECTRICAL JUNCTION BOX. INSTALL DUCT SEAL IN THE ANNULAR VOID OF THE INTERIOR CONDUIT SLEEVE TO "SEAL OFF" THE WET WELL GASES FROM ACCESSING THE MOTOR CONTROL CENTER.
19. ~~INSTALL A 3-INCH SCHEDULE 40 PVC CONDUIT. INSTALL THE CONDUIT AND "SO" RUBBER CORD CABLES PER TRENCH DETAIL E ON SHEET 3.~~
20. INSTALL THE "SO" RUBBER CORD CABLE SUPPLIED WITH THE PUMPS TO THE JUNCTION BOX AT THE TOP OF THE WET WELL. THE "SO" RUBBER CORD CABLE SHALL CONTINUE TO BE EXTENDED FROM THE ELECTRICAL JUNCTION BOX TO THE PUMP MOTOR CONTROL CENTER WITH NO SPLICES OCCURRING ALONG THE LENGTH OF THE "SO" RUBBER CORD CABLE. SUPPORT THE "SO" RUBBER CORD CABLE WITH STAINLESS STEEL KELLUMS GRIP AT THE TOP OF THE PUMP STATION WET WELL CEILING.
21. CAST A NEMA 4 APPLETON SERIES WYR-121212 12-INCH X 12-INCH X 12-INCH CAST IRON ELECTRICAL JUNCTION BOX OR AN APPROVED EQUAL LEVEL WITH THE P.C.C. SLAB. PLACE NON-FERROUS WATERTIGHT GROMMETS AT THE INTERIOR BASE OF THE PULLBOX TO SECURE THE MERCURY FLOAT CABLES FOR THE CONTROL CIRCUITRY AND "SO" RUBBER CORD CABLES FOR THE POWER CIRCUITRY.
22. CAST A 2-INCH SCHEDULE 40 PVC CONDUIT WITHIN THE WET WELL ROOF CONCRETE SLAB BETWEEN THE MOTOR CONTROL CENTER AND ELECTRICAL JUNCTION BOX. INSTALL DUCT SEAL IN THE ANNULAR VOID OF THE INTERIOR CONDUIT SLEEVE TO "SEAL OFF" THE WET WELL GASES FROM ACCESSING THE MOTOR CONTROL CENTER.
23. INSTALL FOUR (4) SJE-RHOMBUS MERCURY TYPE PVC FLOAT SWITCHES WITH 90 FEET OF SJTO-V/A RUBBER CORD CABLE. THE POLYPROPYLENE SENSORS SHALL BE SUPPLIED WITH WEIGHTS. EXTEND THE POLYPROPYLENE LIQUID LEVEL SENSOR CONDUCTORS TO THE APPROPRIATE ELECTRICAL TERMINATION POINT. NO SPLICING OF THE CABLE SHALL BE ALLOWED FROM THE POLYPROPYLENE LIQUID LEVEL SENSOR TO THE POINT OF TERMINATION WITHIN THE MOTOR CONTROL CENTER.
24. ~~BOLT A 12-GAUGE STAINLESS STEEL STRUT MEMBER TO THE ALUMINUM ACCESS COVER WITH STAINLESS STEEL BOLTS. SECURE A 2-INCH SCHEDULE 80 PVC SUPPORT MEMBER TO THE STRUT MEMBER WITH STAINLESS STEEL PIPE SUPPORT STRAPS. THE MERCURY FLOATS SHALL BE ATTACHED TO THE 2-INCH SCHEDULE 80 PVC SUPPORT MEMBER AND BE CONSTRUCTED FOR EASY REMOVAL FROM THE WET WELL FOR MAINTENANCE PURPOSES.~~
25. INSTALL THE 12-INCH DIAMETER SDR 35 PVC SANITARY SEWER EFFLUENT PIPELINE THROUGH THE PCC WET WELL WALL PER PENETRATION DETAIL DD ON SHEET 26.
26. INSTALL THE 12-INCH DIAMETER SDR 35 PVC SANITARY SEWER EFFLUENT PIPELINE FROM THE POINT OF CONNECTION ON THE EXISTING 12-INCH DIAMETER EFFLUENT PIPELINE NORTH OF THE EXISTING SAMPLING/FLOWMETER STRUCTURE. INSTALL THE SANITARY SEWER PIPELINE PER TRENCH DETAIL CC ON SHEET 26 OF THE IMPROVEMENT PLANS.
27. ~~INSTALL AN 8-INCH DEEP P.C.C. SLAB OVER 8 INCHES OF CLASS 2 BASE. COMPACT THE CLASS 2 BASE TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.~~
28. INSTALL AN 6-INCH DIAMETER AWWA C-900, CLASS 150 PVC VERTICAL VENT PIPELINE FLUSH WITH THE INTERIOR SURFACE OF THE WET WELL SLAB. PLACE A RING TIGHT PVC COVER OVER THE TOP OF THE PIPE. DRILL HORIZONTAL ROWS OF ½-INCH DIAMETER HOLES 6 INCHES ON CENTER AROUND THE CIRCUMFERENCE OF THE PIPELINE. THE VERTICAL DISTANCE BETWEEN THE HORIZONTAL ROWS SHALL MEASURE 6 INCHES.
29. INSTALL A 6-INCH DIAMETER, FLANGE X PLAIN END CLASS 53 DUCTILE IRON PIPE.
30. INSTALL A 6-INCH DUCTILE IRON EPOXY COATED TRANSITION COUPLING WITH 316 STAINLESS STEEL HARDWARE. THE TRANSITION COUPLING SHALL BE A SMITH-BLAIR MODEL NO. 461-06540765-031 OR AN APPROVED EQUAL.
31. INSTALL A 6-INCH DIAMETER AWWA C-900, CLASS 150 PVC PIPELINE. SEE SHEET 21 FOR PLAN AND PROFILE.
32. INSTALL A 6-INCH MECHANICAL JOINT X MECHANICAL JOINT 45-DEGREE DUCTILE IRON FUSION EPOXY LINED ELBOW WITH 316 STAINLESS STEEL HARDWARE AND THRUST BLOCK PER DETAIL EE ON SHEET 26.
33. INSTALL A 6-INCH DUCTILE IRON RESTRAINED JOINT FITTING WITH 316 STAINLESS STEEL HARDWARE. THE RESTRAINED JOINT FITTING SHALL BE A STAR PIPE PRODUCTS MODEL NO. PVC STARGRIP 4000 OR AN APPROVED EQUAL.
34. INSTALL A 6-INCH MECHANICAL JOINT X MECHANICAL JOINT 90-DEGREE DUCTILE IRON FUSION EPOXY LINED ELBOW WITH 316 STAINLESS STEEL HARDWARE AND THRUST BLOCK PER DETAIL EE ON SHEET 26.
35. INSTALL 12 INCHES OF CLASS 2 BASE FLUSH WITH THE TOP OF THE P.C.C. WET WELL COVER. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
36. INSTALL 18 INCHES OF CLASS 2 BASE ALONG THE 12-FOOT WIDE PUMP STATION ACCESS ROAD. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
37. INSTALL NATIVE MATERIAL TO DAYLIGHT FOR A DISTANCE OF 4 FEET FROM THE EDGE OF THE CLASS 2 BASE. COMPACT THE NATIVE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
38. SAWCUT THE EXISTING 12-INCH PVC SANITARY SEWER EFFLUENT PIPELINE.
39. ~~REMOVE AND DISPOSE OF THE EXISTING 12-INCH SANITARY SEWER EFFLUENT PIPELINE.~~
40. CONTRACTOR SHALL FILL THE ABANDONED PIPELINE WITH 2-SACK CEMENT SLURRY AND CAP THE EXPOSED ENDS WITH P.C.C. CONCRETE.
41. INSTALL AN 8-INCH DIAMETER AWWA DR 21 PVC PUMP STATION OVERFLOW PIPELINE PER TRENCH DETAIL CC ON SHEET 26. SEE SHEET 21 FOR PLAN AND PROFILE.
42. INSTALL AN 8-INCH DIAMETER MECHANICAL JOINT X MECHANICAL JOINT 22.5-DEGREE DUCTILE IRON ELBOW WITH RESTRAINED JOINT FITTINGS AND STAINLESS STEEL HARDWARE.
43. INSTALL AN 8-INCH DIAMETER MECHANICAL JOINT X MECHANICAL JOINT 90-DEGREE DUCTILE IRON ELBOW WITH RESTRAINED JOINT FITTINGS AND STAINLESS STEEL HARDWARE.
44. INSTALL 12-INCH MECHANICAL JOINT X MECHANICAL JOINT DUCTILE IRON 45-DEGREE ELBOW WITH RESTRAINED JOINT FITTINGS AND STAINLESS STEEL HARDWARE.

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES G. HOLT — No. 31773 — Exp. 12-31-24 — CIVIL — STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER — JOHN A. GAY — No. 62028 — Exp. 9-30-25 — CIVIL — STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS
10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/ INFILTRATION POND PUMP STATION PLAN

REFERENCE
THG #542.089
SHEET 24 OF 50

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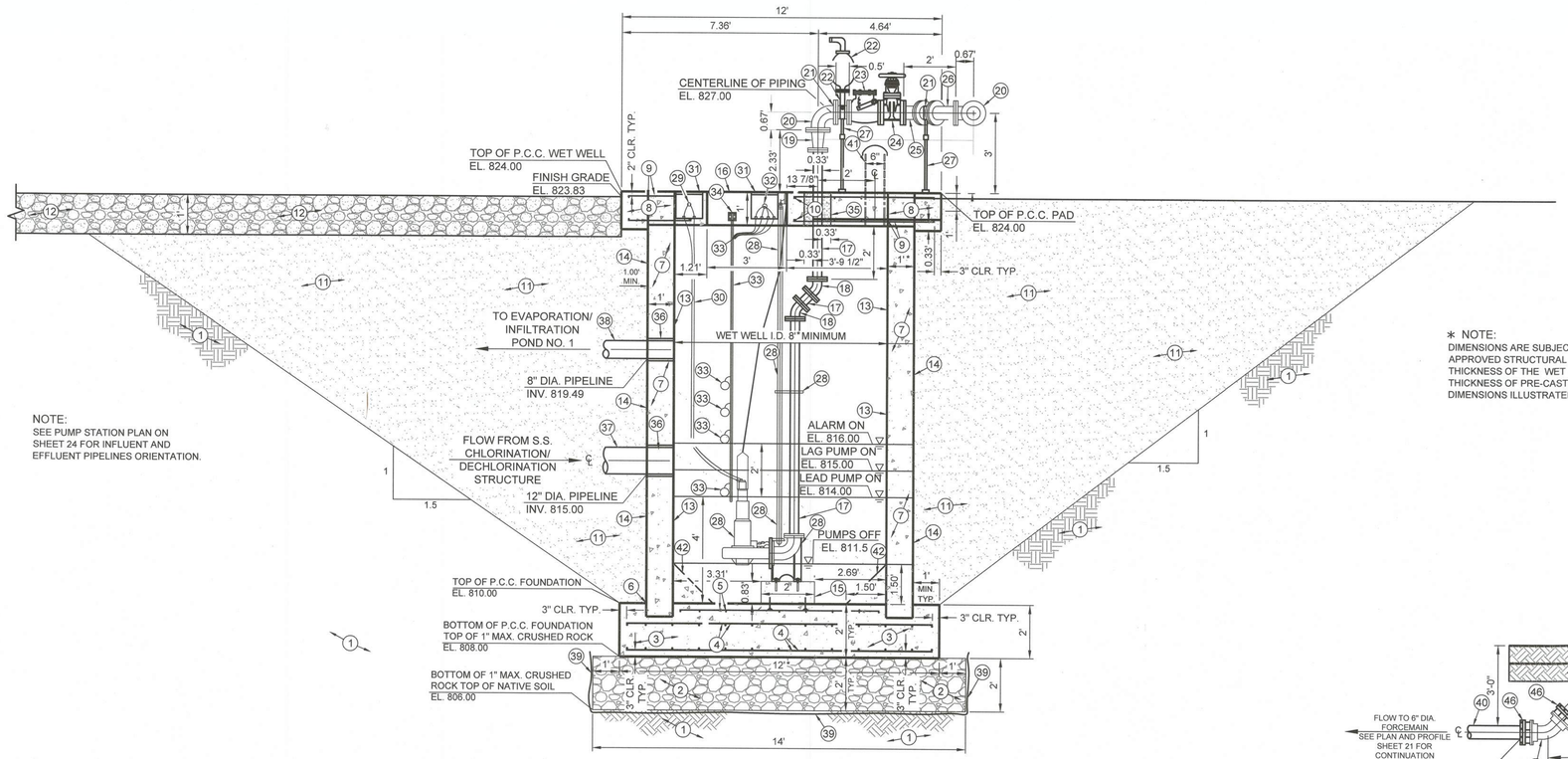


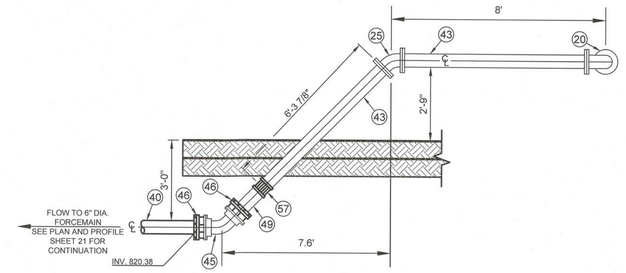
WASTEWATER PUMP STATION SECTION (X-X) 24|25

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

WATER TABLE
ELEVATION UNKNOWN
AS OF DATE OF PLANS.

NOTE:
SEE PUMP STATION PLAN ON
SHEET 24 FOR INFLUENT AND
EFFLUENT PIPELINES ORIENTATION.

* NOTE:
DIMENSIONS ARE SUBJECT TO CHANGE PER THE APPROVED STRUCTURAL CALCULATIONS. THE WALL THICKNESS OF THE WET WELL OR STANDARD THICKNESS OF PRE-CAST UNITS WILL DICTATE THE DIMENSIONS ILLUSTRATED WITH ASTERISKS.



WASTEWATER PUMP STATION SECTION (Y-Y) 24|25

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

KEYNOTES

1. EXISTING NATIVE MATERIAL TO REMAIN.
2. INSTALL 1-INCH MAXIMUM CRUSHED ROCK.
3. CONSTRUCT REINFORCED CAST-IN-PLACE CONCRETE 12'-0" x 12'-0" FOUNDATION. THE DIMENSIONS MAY VARY. SEE THE " * NOTE" ON THIS PLAN SHEET REGARDING DIMENSIONING. CONCRETE SHALL CONTAIN 6 1/2 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN 4,500 PSI COMPRESSIVE STRENGTH AFTER 28 DAYS CURING.
4. INSTALL NO. 6 REINFORCING STEEL BARS AT 12 INCHES ON CENTER EACH WAY.
5. INSTALL NO. 5 REINFORCING STEEL BARS AT 12 INCHES ON CENTER EACH WAY.
6. INSTALL FOUNDATION BLOCKOUT PER DETAIL HH ON PLAN SHEET 27.
7. INSTALL REINFORCED PRE-CAST OR CAST-IN-PLACE CONCRETE CIRCULAR WALLS. THE PRE-CAST OR CAST-IN-PLACE WALL SHALL BE DESIGNED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CALIFORNIA. THE WALL THICKNESS AND REINFORCING BAR PLACEMENT SHALL BE THE PER STRUCTURAL ENGINEER'S CALCULATIONS. THE STRUCTURAL CALCULATIONS SHALL BE STAMPED BY A CALIFORNIA REGISTERED STRUCTURAL ENGINEER. THE STRUCTURAL CALCULATIONS SHALL BE BASED ON ACI 350, LATEST EDITION. THE STRUCTURAL CALCULATIONS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE CITY ENGINEER FOR REVIEW AND APPROVAL DURING THE SUBMITTAL REVIEW PROCESS. THE SHOP DRAWINGS SHALL ILLUSTRATE THE REINFORCING BAR LAYOUT PATTERN AND "CALLOUTS." THE FOOTING AND WALL THICKNESSES AND DIMENSIONS SHALL BE ILLUSTRATED ON THE SHOP DRAWINGS. THE DEVELOPER / CONTRACTOR SHALL PAY FOR THE COST OF STRUCTURAL ENGINEERING CALCULATIONS.
8. CONSTRUCT THE REINFORCED CONCRETE SQUARE ROOF SECTION. THE ROOF SHALL BE OF CAST-IN-PLACE CONSTRUCTION. THE CONTRACTOR SHALL PLACE THE ELECTRICAL CONDUIT, ELECTRICAL JUNCTION BOXES, ALUMINUM ACCESS HATCH AND OTHER PUMP STATION ITEMS AS ILLUSTRATED ON THE PLANS WITHIN THE ROOF SECTION FORMWORK PRIOR TO THE PLACEMENT OF CONCRETE.
9. INSTALL NO. 5 REINFORCING STEEL BARS AT 12 INCHES ON CENTER EACH WAY.
10. INSTALL TWO NO. 5 REINFORCING STEEL BARS, TOP AND BOTTOM AT EACH SIDE OF ACCESS HATCH OPENING. TYPICAL, ALL SIDES OF ACCESS HATCH.
11. REMOVE AND DISPOSE OF THE EXISTING NATIVE BACKFILL MATERIAL PRIOR TO THE CONSTRUCTION OF THE PUMP STATION WET WELL. INSTALL GRANULAR SAND BACKFILL IN MAXIMUM 1 FOOT LIFTS. COMPACT GRANULAR SAND MATERIAL TO 95 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.
12. INSTALL 18 INCHES OF CLASS 2 BASE. COMPACT THE CLASS 2 BASE TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
13. COAT ALL INTERIOR CONCRETE SURFACES OF THE WET WELL WITH A MINIMUM OF 60 MILS OF A UTILITHANE 1600 POLYURETHANE MATERIAL. THE COATING SHALL BE APPLIED PER THE MANUFACTURERS RECOMMENDATIONS. APPLY PRIMER AND PREPARE PCC SURFACES PRIOR TO THE APPLICATION OF THE POLYURETHANE MATERIAL. BRUSH BLAST THE CONCRETE SURFACES PRIOR TO THE COATING APPLICATION.
14. THE EXTERIOR SURFACE OF THE WET WELL WALLS SHALL BE BE COATED WITH AN ELASTOMERIC COAL-TAR FREE FLUID 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 TREMPROOF 201/202 MEMBRANE PRODUCT AS MANUFACTURED BY MAMECO INTERNATIONAL, INC. OR AN APPROVED EQUIVALENT OR EQUAL SUBSTANCE AND FUNCTION. A 3/8-INCH POLYURETHANE GREEN FOAM BACKER BOARD SHALL BE PLACED OVER THE EXTERIOR SURFACE OF THE PCC WET WELL WALLS AFTER THE COATING SYSTEM IS APPLIED TO PROTECT THE COATING FROM BACKFILL OPERATIONS.
15. CONSTRUCT A 2'-0" W X 4'-6" L X 10" HIGH P.C.C. PEDESTAL. PLACE TWO (2) ROWS OF 5/8-INCH DIAMETER, 6-INCH LONG, 316 STAINLESS STEEL EXPANSION BOLTS 6 INCHES ON CENTER TO SECURE THE P.C.C. CONCRETE PEDESTAL TO THE PRE-CAST CONCRETE FLOOR. PLACE A 3/4-INCH CHAMFER ALONG THE UPPER PERIMETER EDGE OF THE P.C.C. PEDESTAL.
16. INSTALL A 3'-0" X 5'-0" INSIDE OPENING DOUBLE LEAF ALUMINUM ACCESS DOOR WITH EXTENDED ALUMINUM CHANNEL FRAME. 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 ALUMINUM ACCESS HATCH SHALL BE A BILCO TYPE J-AL OR JD-AL ALUMINUM DOUBLE LEAF ACCESS DOOR.
17. INSTALL A 4-INCH DIAMETER, FLANGED CLASS 53 FUSION BONDED EPOXY LINED DUCTILE IRON PIPE SECTION WITH 316 STAINLESS STEEL HARDWARE.
18. INSTALL A 4-INCH FL. X FL. 45-DEGREE DUCTILE IRON FUSION BONDED EPOXY LINED ELBOW WITH 316 STAINLESS STEEL HARDWARE.
19. INSTALL A 4-INCH X 6-INCH FL. X FL. DUCTILE IRON FUSION BONDED EPOXY LINED REDUCER WITH STAINLESS STEEL HARDWARE.
20. INSTALL A 6-INCH FLANGE X FLANGE FUSION BONDED EPOXY LINED DUCTILE IRON 90 DEGREE ELBOW.
21. INSTALL A 6-INCH DIAMETER, FLANGED CLASS 53 FUSION BONDED EPOXY LINED DUCTILE IRON PIPE SPOOL.
22. INSTALL A 2-INCH FLANGED, STAINLESS STEEL, COMBINATION AIR RELEASE / VACUUM VALVE. CONNECT THE VALVE WITH A 6-INCH LONG, MALE THREADED BY FLANGED, 2-INCH DIAMETER PIPE SECTION. CONNECT THE 6-INCH PIPE TO A 2-INCH FEMALE THREADED HOLE BUNG. THE COMBINATION AIR RELEASE VALVE SHALL BE AN A.R.I. MODEL NO. D-020.
23. INSTALL A 6-INCH FLANGED DUCTILE IRON SPRING LOADED CHECK VALVE. THE CHECK VALVE SHALL BE A MUELLER MODEL NO. A-2602-6-02 OR AN APPROVED EQUAL.
24. INSTALL A 6-INCH FL. X FL. RESILIENT WEDGE GATE VALVE WITH HAND WHEEL OPERATOR. THE RESILIENT WEDGE GATE VALVE SHALL BE A MUELLER MODEL NO. A-2360-6 OR AN APPROVED EQUAL.
25. INSTALL A 6-INCH FLANGE X FLANGE CLASS 53 FUSION BONDED EPOXY LINED DUCTILE IRON 45 DEGREE ELBOW.
26. INSTALL A 6-INCH FLANGED CLASS 53 FUSION BONDED EPOXY LINED DUCTILE IRON TRUE WYE.
27. INSTALL ADJUSTABLE STEEL PIPE SUPPORTS. WELD A 6-INCH X 6-INCH X 1/4-INCH STEEL PLATE TO THE BASE OF THE PIPE SUPPORTS. SECURE THE STEEL PLATE TO THE CONCRETE FLOOR WITH FOUR (4) 3/8-INCH DIAMETER, 6-INCH LONG EXPANSION BOLTS.
28. INSTALL TWO (2) 7.5-HORSEPOWER, 1750 RPM, 480 VOLT, 3-PHASE, 60-HERTZ FAIRBANKS MORSE, FLYGHT OR AN APPROVED EQUAL SUBMERSIBLE PUMPS WITH STAINLESS STEEL SLIDE RAIL ASSEMBLY, STAINLESS STEEL LIFTING CABLES, BREAKAWAY 90-DEGREE DISCHARGE ELBOW AND ALL ACCESSORIES. THE PUMP SLIDE RAIL ASSEMBLY, STAINLESS STEEL LIFT CABLES, BREAKAWAY DISCHARGE ELBOW AND ALL ACCESSORIES SHALL BE SUPPLIED BY A SINGLE MANUFACTURER. EACH PUMP SHALL DELIVER 410 GALLONS PER MINUTE AT 33 FEET OF TOTAL DYNAMIC HEAD. SECURE THE 90-DEGREE DISCHARGE ELBOW TO THE CONCRETE PEDESTAL WITH 316 STAINLESS STEEL BOLTS OF AN APPROPRIATE DIAMETER SIZE AS DESIGNATED BY THE MANUFACTURER. THE DISCHARGE ELBOW SHALL BE LEVELED IN BOTH HORIZONTAL DIRECTIONS TO INSURE THAT THE SLIDE BARS AND VERTICAL DISCHARGE PIPELINE ARE MAINTAINED IN A PLUMB CONDITION AND COINCIDE AND FIT APPROPRIATELY WITH THE ALUMINUM ACCESS FRAME. THE STAINLESS STEEL LIFTING CABLES SHALL BE CAPABLE OF SUPPORTING TWO (2) TIMES THE WEIGHT OF THE PUMP DESIGNATED BY THE PUMP MANUFACTURER. THE STAINLESS STEEL SLIDE RAIL PIPES SHALL BE OF A DIAMETER SIZE REQUIRED BY THE MANUFACTURER. SUPPORT THE GUIDE RAILS WITH INTERMEDIATE SUPPORT BRACKETS AT A POSITION HALF WAY BETWEEN THE PUMP AND THE TOP OF THE WET WELL. ALL PUMP ASSEMBLY HARDWARE SHALL BE COMPOSED OF 316 STAINLESS STEEL.
29. CAST A 3-INCH DIA. SCHEDULE 40 PVC CONDUIT WITHIN THE WET WELL ROOF CONCRETE SLAB BETWEEN THE ELECTRICAL PANEL AND ELECTRICAL JUNCTION BOX. INSTALL DUCT SEAL IN THE ANNULAR VOID OF THE INTERIOR CONDUIT SLEEVE TO "SEAL OFF" THE WET WELL GASES FROM ACCESSING THE MOTOR CONTROL CENTER.
30. INSTALL THE "SO" RUBBER CORD CABLE SUPPLIED WITH THE PUMPS TO THE JUNCTION BOX AT THE TOP OF THE WET WELL. THE "SO" RUBBER CORD CABLE SHALL CONTINUE TO BE EXTENDED FROM THE ELECTRICAL JUNCTION BOX TO THE PUMP MOTOR CONTROL CENTER WITH NO SPLICES OCCURRING ALONG THE LENGTH OF THE "SO" RUBBER CORD CABLE. SUPPORT THE "SO" RUBBER CORD CABLE WITH STAINLESS STEEL KELLUMS GRIP AT THE TOP OF THE PUMP STATION WET WELL CEILING.
31. CAST A NEMA 4 APPLETON SERIES WYR-121212 12" X 12" X 12" CAST IRON ELECTRICAL JUNCTION BOX OR AN APPROVED EQUAL LEVEL WITH THE P.C.C. SLAB. PLACE NON-FERROUS WATERTIGHT GROMMETS AT THE INTERIOR BASE OF THE PULLBOX TO SECURE THE MERCURY FLOAT CABLES FOR THE CONTROL CIRCUITRY AND "SO" RUBBER CORD CABLES FOR THE POWER CIRCUITRY.
32. INSTALL FOUR (4) SEPARATE RUBBER CORD ELECTRICAL CABLES IN A 2-INCH SCHEDULE 40 PVC CONDUIT FROM THE ELECTRICAL JUNCTION BOX TO THE MOTOR CONTROL CENTER.
33. INSTALL FOUR (4) SJE-RHOMBUS MERCURY TYPE PVC FLOAT SWITCHES WITH 90 FEET OF SJTO-V/A RUBBER CORD CABLE. THE POLYPROPYLENE SENSORS SHALL BE SUPPLIED WITH WEIGHTS. EXTEND THE POLYPROPYLENE LIQUID LEVEL SENSOR CONDUCTORS TO THE APPROPRIATE ELECTRICAL TERMINATION POINT. NO SPLICING OF THE CABLE SHALL BE ALLOWED FROM THE POLYPROPYLENE LIQUID LEVEL SENSOR TO THE POINT OF TERMINATION WITHIN THE MOTOR CONTROL CENTER.
34. BOLT A 12-GAUGE STAINLESS STEEL STRUT MEMBER TO THE ALUMINUM ACCESS COVER WITH STAINLESS STEEL BOLTS. SECURE A 2-INCH SCHEDULE 80 PVC PIPE SUPPORT MEMBER TO THE STRUT MEMBER WITH STAINLESS STEEL PIPE SUPPORT STRAPS. THE MERCURY FLOATS SHALL BE ATTACHED TO THE 2-INCH SCHEDULE 80 PVC SUPPORT PIPE MEMBER AND BE CONSTRUCTED FOR EASY REMOVAL FROM THE WET WELL FOR MAINTENANCE PURPOSES.
35. PLACE THE VERTICAL 4-INCH PIPELINE THROUGH A 10" AWWA C-900 PVC PIPE SLEEVE PLACED THROUGH THE FULL DEPTH OF THE WET WELL CEILING. PLACE P.C.C. NON-SHRINK GROUT WITHIN THE VOID BETWEEN THE PIPE SLEEVE AND DUCTILE IRON PIPELINE LEVEL WITH THE BOTTOM AND TOP OF THE P.C.C. WET WELL ROOF SLAB.
36. INSTALL THE 12-INCH DIAMETER SDR 35 PVC SANITARY SEWER INFLUENT PIPELINE THROUGH THE PCC WET WELL WALL PER PENETRATION DETAIL DD ON PLAN SHEET 26.
37. INSTALL THE 12-INCH DIAMETER SDR 35 PVC SANITARY SEWER EFFLUENT PIPELINE FROM THE POINT OF CONNECTION ON THE EXISTING 12-INCH DIAMETER EFFLUENT PIPELINE NORTH OF THE EXISTING SAMPLING/FLOW METER STRUCTURE. INSTALL THE SANITARY SEWER PIPELINE PER TRENCH DETAIL CC ON SHEET 26 OF THE IMPROVEMENT PLANS.
38. INSTALL 8-INCH DIAMETER AWWA DR21 PVC EMERGENCY OVERFLOW PIPELINE PER PLAN AND PROFILE SHEET 21 AND TRENCH DETAIL CC ON SHEET 26.
39. INSTALL MIRAFI 600X GEOTEXTILE FABRIC BENEATH THE ROCK. LAP THE FABRIC 48 INCHES.
40. INSTALL A 6-INCH DIAMETER AWWA C-900, CLASS 150 PVC PIPELINE.
41. INSTALL AN 8-INCH DIAMETER AWWA C-900, CLASS 150 PVC VERTICAL VENT PIPELINE FLUSH WITH THE INTERIOR SURFACE OF THE WET WELL SLAB. PLACE A RING TIGHT PVC COVER OVER THE TOP OF THE PIPE. DRILL HORIZONTAL ROWS OF 1/2 INCH DIAMETER HOLES 6 INCHES ON CENTER AROUND THE CIRCUMFERENCE OF THE PIPELINE. THE VERTICAL DISTANCE BETWEEN THE HORIZONTAL ROWS SHALL MEASURE 6 INCHES.
42. INSTALL A 18-INCH X 18-INCH, 45 DEGREE CEMENT GROUT FILLET ALONG THE INTERIOR BASE PERIMETER WALLS OF THE WET WELL.
43. INSTALL A 6-INCH DIAMETER, CLASS 53 FUSION BONDED EPOXY LINED FL. X P.E. DUCTILE IRON PIPE. THE LENGTH OF PIPE TO BE VERIFIED AND FIELD MODIFIED BY CONTRACTOR AS REQUIRED.
44. INSTALL A 6-INCH DUCTILE IRON EPOXY COATED TRANSITION COUPLING WITH 316 STAINLESS STEEL HARDWARE. THE TRANSITION COUPLING SHALL BE A SMITH-BLAIR MODEL NO. 461-06540765-031 OR AN APPROVED EQUAL.
45. INSTALL A 6-INCH M.J. X M.J. 45 DEGREE FUSION BONDED EPOXY LINED DUCTILE IRON ELBOW WITH 316 STAINLESS STEEL HARDWARE.
46. INSTALL A 6-INCH DUCTILE IRON RESTRAINED JOINT FITTING WITH 316 STAINLESS STEEL HARDWARE.

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES G. HOLT — No. 31773 — Exp. 12-31-24 — CIVIL — STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER — JOHN A. GAY — No. 62028 — Exp. 9-30-25 — CIVIL — STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS

12/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE

COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

EVAPORATION/ INFILTRATION POND PUMP STATION SECTION

REFERENCE

THG #542.089

SHEET 25 OF 50

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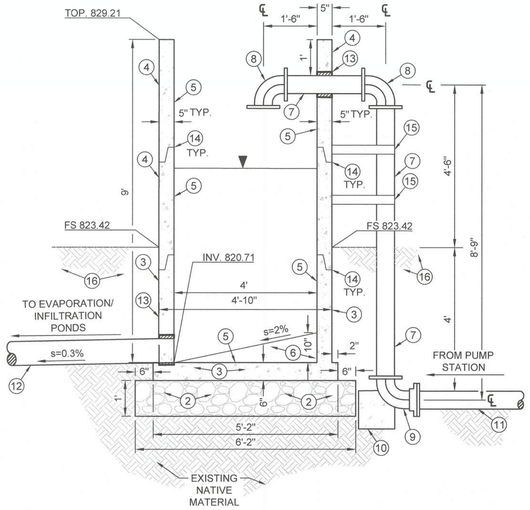
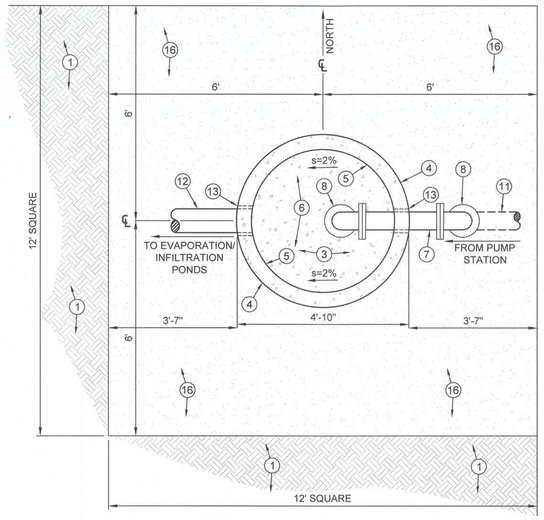


SECTION VIEW



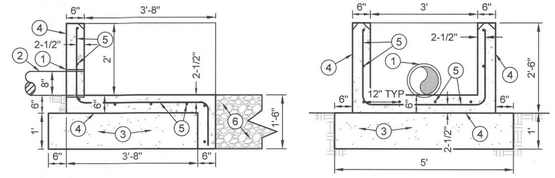
PLAIN VIEW

1. INSTALL NATIVE MATERIAL TO FINISH GRADE AS ILLUSTRATED ON SHEET 14 OF THE IMPROVEMENT PLANS. COMPACT THE NATIVE MATERIAL TO A MINIMUM OF 87 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
2. INSTALL 3/4" MAXIMUM CRUSHED ROCK.
3. INSTALL REINFORCED 4-FOOT INSIDE DIAMETER PRE-CAST CONCRETE MANHOLE BASE.
4. INSTALL REINFORCED 4-FOOT INSIDE DIAMETER PRE-CAST CONCRETE MANHOLE SHAFT.
5. COAT ALL INTERIOR CONCRETE SURFACES OF THE WET WELL WITH A RAVEN 405 HIGH BUILD EPOXY COATING SYSTEM. THE COATING SHALL BE APPLIED PER MANUFACTURER'S RECOMMENDATIONS.
6. INSTALL CEMENT GROUT AT THE INTERIOR BOTTOM OF THE WET WELL. PLACE THE CEMENT GROUT AT A 2 PERCENT SLOPE IN THE DIRECTION OF THE NEW 8-INCH EFLUENT HEADER PIPE. THE LOWER EDGE OF THE CEMENT GROUT SLOPE SHALL BE INSTALLED FLUSH WITH THE 8-INCH EFLUENT HEADER PIPE INVERT.
7. INSTALL 6-INCH DIAMETER DUCTILE IRON FLANGED SPOOL.
8. INSTALL 6-INCH DIAMETER DUCTILE IRON FLANGED 90-DEGREE ELBOW WITH STAINLESS STEEL HARDWARE.
9. INSTALL 6-INCH DIAMETER DUCTILE IRON FLANGE X MJ 90-DEGREE ELBOW WITH RESTRAINED JOINT FITTING AND STAINLESS STEEL HARDWARE.
10. INSTALL P.C.C. THRUST BLOCK PER DETAIL E ON SHEET 25.
11. INSTALL 6-INCH DIAMETER AWWA C-900, DR 18 PVC EFLUENT FORCE MAIN PER DETAIL C ON SHEET 25.
12. INSTALL 8-INCH DIAMETER AWWA C-900, DR 14 PVC EFLUENT HEADER PIPELINE PER DETAIL C ON SHEET 22. SEE GRADING PLAN SHEETS 15-17 AND SECTION E-E ON SHEET 20 FOR PIPELINE INVERT ELEVATIONS.
13. INSTALL THE PIPELINE THROUGH THE NEW P.C.C. WET WELL WALL PER PENETRATION DETAIL D ON SHEET 25.
14. INSTALL A BUTYL BLACK MAJESTIC ROPE BETWEEN THE PRECAST SHAFT COLD JOINT SECTIONS. INSTALL A NON-SHRINK GROUT IN THE INTERSTITIAL VOIDS ON THE COLD JOINTS AT THE INTERIOR AND EXTERIOR WALLS.
15. INSTALL STAINLESS STEEL PIPE SUPPORT BRACKETS.
16. INSTALL 12 INCHES OF CLASS 2 BASE MATERIAL. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.

STAND PIPE AND P.C.C. WATER WELL DETAIL

NOT TO SCALE

AA
15 | 26

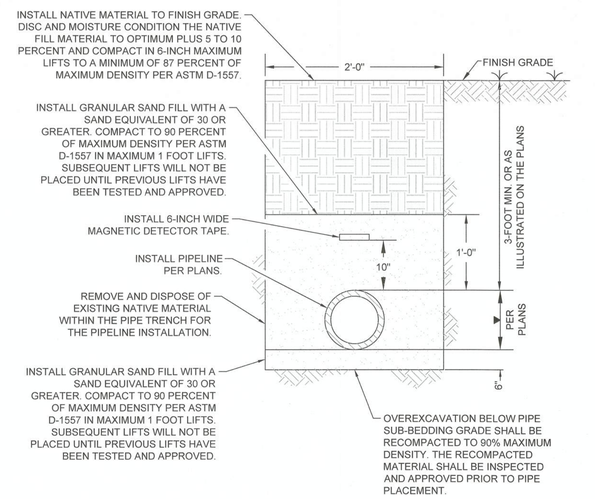


1. INSTALL THE COUPLING OF AN 8-INCH DIAMETER AWWA C-900, DR14 PVC PIPE FLUSH WITH THE INSIDE FACE OF THE CONCRETE HEADWALL STRUCTURE. THE COUPLING SHALL BE INSTALLED WITH THE FRAMEWORK PRIOR TO THE INSTALLATION OF THE CONCRETE. THE INVERT OF THE PIPE SHALL BE PLACED FLUSH WITH THE HEADWALL SLAB.
2. INSTALL 8-INCH DIAMETER AWWA C-900, DR14 PVC HEADER PIPELINE PER TRENCH DETAIL C ON SHEET 25.
3. INSTALL 12-INCHES OF CLASS 2 BASE MATERIAL BENEATH THE HEADWALL STRUCTURE . COMPACT THE CLASS 2 BASE TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
4. CONSTRUCT THE REINFORCED P.C.C. SLAB AND WALLS OF THE HEADWALL STRUCTURE. THE TOPS OF ALL CONCRETE WALLS SHALL BE CHAMFERED ON BOTH SIDES AND ALL SURFACES SHALL BE GIVEN A SMOOTH TROWELED FINISH.
5. PLACE #4 REINFORCING BARS 12 INCHES ON CENTER BOTH WAYS.
6. INSTALL A 6-FOOT WIDE X 5-FOOT LONG X 1-FOOT DEEP, 3/4-INCH CRUSHED ROCK RIP-RAP PROTECTION. INSTALL A NON-WOVEN GEOTEXTILE FABRIC ALONG THE SIDES AND BOTTOM OF THE CRUSHED ROCK. THE NON-WOVEN GEOTEXTILE FABRIC SHALL BE MIRAFI 600X OR AN APPROVED EQUAL.

EVAPORATION/INFILTRATION POND P.C.C. HEADWELL

NOT TO SCALE

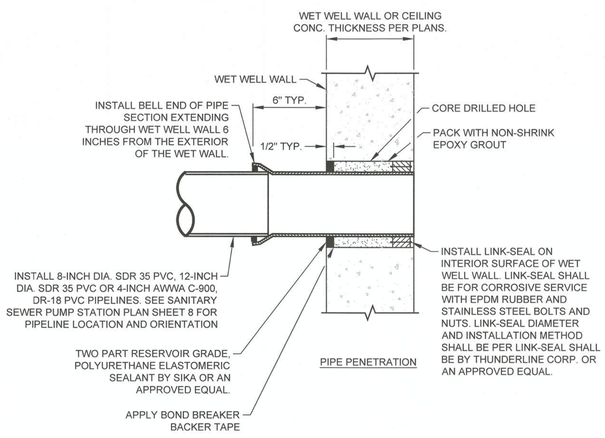
BB
15-17 | 26



6-INCH EFLUENT FORCE MAIN AND 8-INCH DISCHARGE HEADER PIPELINE TRENCH DETAIL

NOT TO SCALE

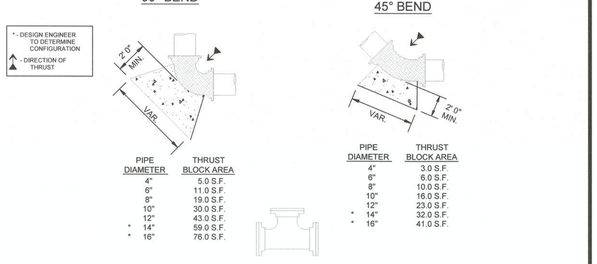
CC
15-17, 25 | 26



WET WELL PIPELINE PENETRATION DETAIL

NOT TO SCALE

DD
15 | 26



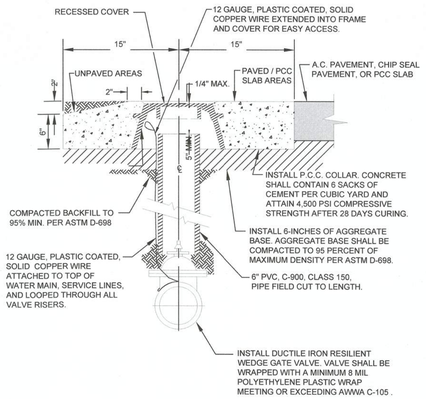
GENERAL NOTES:

1. BEARING AREAS MAY BE INCREASED AT THE OPTION OF THE COUNTY OF IMPERIAL IF SOIL BEARING PRESSURE IS LESS THAN 1,000 P.S.F.
2. APPROVED COMPACTED BACKFILL MAY BE REQUIRED BY THE COUNTY OF IMPERIAL TO IMPROVE THRUST BLOCK BEARING AREA.
3. ANY METAL COMPONENT WHICH IS NOT STAINLESS STEEL OR BRONZE SHALL BE WRAPPED WITH A 10 MIL. POLYETHYLENE PLASTIC SHEETING MATERIAL BEFORE CONCRETE PLACEMENT OR BURIAL.
4. UNLESS OTHERWISE NOTED, THRUST BLOCK BEARING FORCES SHALL BE POURED AGAINST UNDISTURBED SOIL OR APPROVED COMPACTED BACKFILL.
5. AFTER THE TRENCH HAS BEEN BACKFILLED TO THE TOP OF THE PIPE, AREAS TO BE OCCUPIED BY THRUST BLOCKS SHALL BE RE-EXCAVATED AND SHAPED. AFTER SHAPING, SIMPLE PLYWOOD OR BOX WOOD FORMS SHALL BE INSERTED ADJACENT TO THE VERTICAL NON-PRESSURE BEARING SIDES OF THE MOLD. CITY OF HOLTVILLE INSPECTION OF THE MOLD FORM MUST BE OBTAINED PRIOR TO CASTING THE CONCRETE THRUST BLOCK.
6. THE CONCRETE THRUST BLOCK IS TO BE CAST IN SUCH A MANNER AS TO CRADLE THE FITTING. CONCRETE ENCASEMENT SHALL BE PERPENDICULAR TO THE LINE OF THRUST. CONCRETE SHALL NOT CONTACT THE PIPE.
7. ALL FITTING HARDWARE SHALL REMAIN EXPOSED AFTER THE CONCRETE THRUST BLOCK PLACEMENT TO ALLOW FREE ACCESS FOR REMOVAL AND REPLACEMENT OF THE HARDWARE AS REQUIRED.
8. CONCRETE SHALL CONTAIN 6 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 4,000 PSI AFTER 28 DAYS CURING.

P.C.C. THRUST BLOCK DETAIL

NOT TO SCALE

EE
15 | 26



X

NOT TO SCALE

FF
15 | 26

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/INFILTRATION POND DETAILS

REFERENCE
THG #542.089
SHEET 26 OF 50

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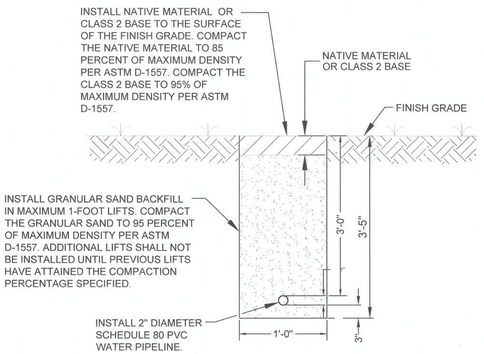
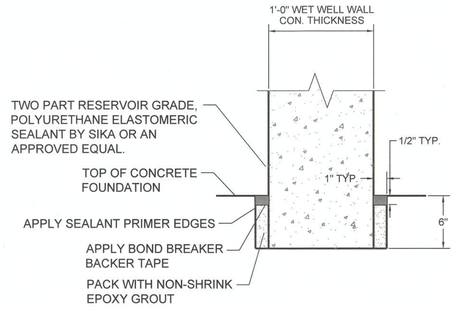


POTABLE WATER SERVICE PIPELINE DETAIL

NOT TO SCALE

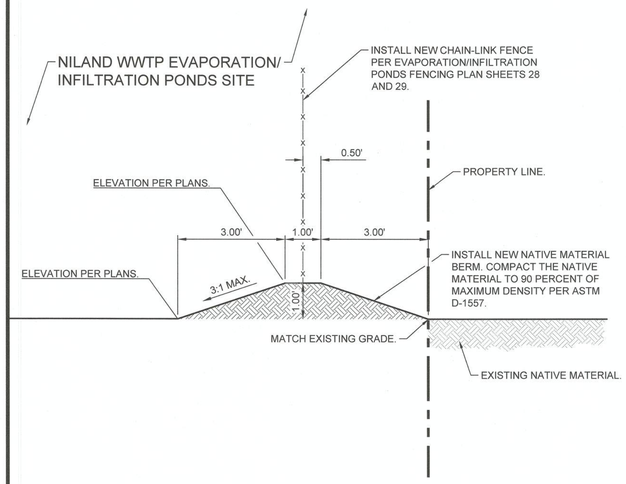
GG
24 | 27



FOUNDATION BLOCKOUT DETAIL

NOT TO SCALE

HH
25 | 27



STORM WATER DRAINAGE BERM DETAIL

NOT TO SCALE

II
15-17 | 27

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EVAPORATION/INFILTRATION POND DETAILS

REFERENCE
THG #542.089

SHEET 27 OF 50

DEMOLITION KEYNOTES

(1) REMOVE AND DISPOSE OF EXISTING CHAIN LINK FENCE

CONSTRUCTION KEYNOTES

(1) INSTALL NEW CHAINLINK FENCE PER PLAN SHEET 29.

(2) INSTALL NEW 20-FOOT WIDE DOUBLE SWING GATE PER DETAIL B ON SHEET 29.

Point Table

Point #	Northing	Easting	Description
2	2026180.68	6779958.16	FNC COR
3	2027002.26	6779951.84	FNC COR
4	2027013.23	6782582.63	FNC COR
5	2027013.08	6782547.46	GATE POST
6	2027013.17	6782567.46	GATE POST
7	2026231.34	6782588.17	GATE POST
8	2026211.34	6782588.32	GATE POST
9	2026191.69	6782573.52	GATE POST
10	2026191.60	6782553.53	GATE POST

EXISTING IID "R" CANAL
TO ℄
75' EASEMENT
EXISTING IID NATIVE EARTH ROAD
TOP OF SLOPE / EASEMENT LINE
TOE OF SLOPE
FENCE CORNER
50' EASEMENT
EASEMENT LINE
NEW 6-FOOT HIGH CHAIN LINK FENCE
NEW EVAPORATION/ INFILTRATION PONDS SITE
3.50'
5.00'
20.00'
SCALE 1" = 20'

EXISTING IID "R" CANAL
TO ℄
75' EASEMENT
EXISTING IID NATIVE EARTH ROAD
50' EASEMENT
TOP OF SLOPE / EASEMENT LINE
TOE OF SLOPE
20.00'
5.00'
20'
15'
NEW 6-FOOT HIGH CHAIN LINK FENCE
NEW FENCE CORNER
EXISTING 6-FOOT HIGH CHAIN LINK FENCE
NEW EVAPORATION PONDS SITE
EXISTING CONCRETE IRRIGATION CANAL
7'
SCALE 1" = 20'

PROPERTY LINE
IID "R" DRAIN
ALCOTT ROAD
IID "R" CANAL
75.00' EASEMENT
TOP OF SLOPE / EASEMENT LINE
5'
20'
TOE OF SLOPE
NEW 6 FOOT HIGH CHAIN LINK FENCE
EXISTING CHAIN LINK FENCE
NEW 6 FOOT HIGH CHAIN LINK FENCE SWING GATE

EVAPORATION/INFILTRATION POND NO. 3
BOTTOM EL. 813.20
AREA = 10.55 AC

EVAPORATION/INFILTRATION POND NO. 2
BOTTOM EL. 817.60
AREA = 10.45 AC

EVAPORATION/INFILTRATION POND NO. 1
BOTTOM EL. 813.20
AREA = 10.68 AC

WASTE WATER TREATMENT PLANT

EASEMENT LINE
50.00' EASEMENT
3.5'
PROPERTY LINE
NEW 6 FOOT HIGH CHAIN LINK FENCE
NEW 6-FOOT HIGH CHAIN LINK FENCE
NEW EVAPORATION/ INFILTRATION PONDS SITE
TO ℄
50' EASEMENT
3.50'
EXISTING FALLOWED AGRICULTURAL FIELD / IID PROPERTY
SCALE 1" = 20'

50' EASEMENT
13'
EXISTING EARTHEN IRRIGATION CANAL
NEW EVAPORATION /INFILTRATION POND SITE ACCESS ROAD
NEW EVAPORATION POND SITE
EXISTING 6-FOOT HIGH CHAIN LINK FENCE
NEW 6-FOOT HIGH CHAIN LINK FENCE
EXISTING WASTE WATER TREATMENT PLANT
EXISTING FALLOWED AGRICULTURAL FIELD / IID PROPERTY
SCALE 1" = 20'

NEW EVAPORATION/ INFILTRATION PONDS SITE ACCESS ROAD

100 0 100 200 300
SCALE 1"= 100'

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EL CENTRO, CALIFORNIA

DATE 09/25/2023
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DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/INFILTRATION POND FENCING PLAN

REFERENCE
THG #542.089
SHEET 28 OF 50

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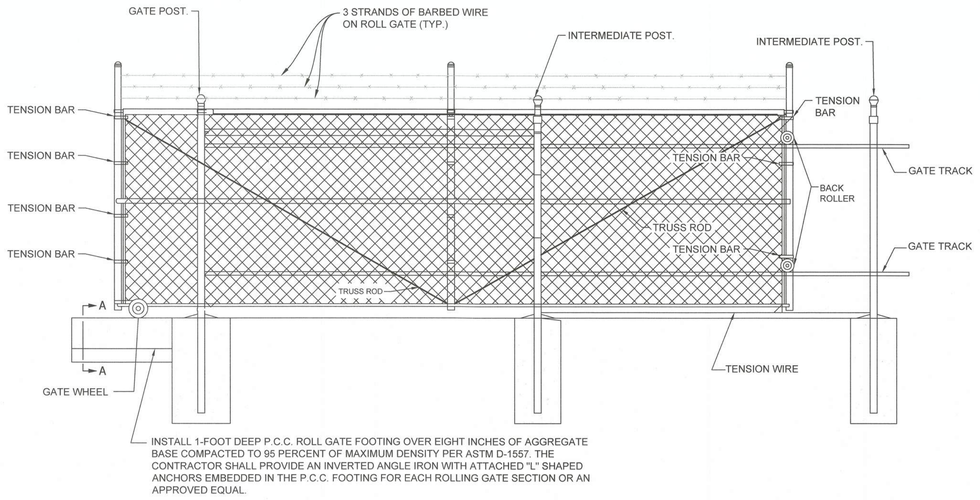
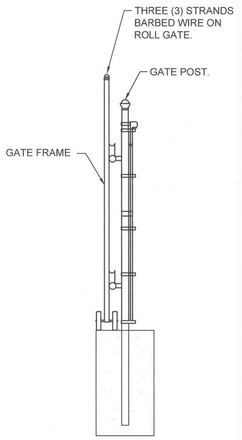


FRONT OF ROLL GATE DETAIL (A / C-110)
NOT TO SCALE



SIDE VIEW
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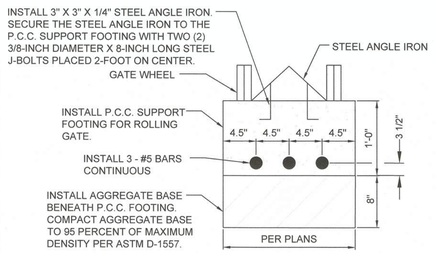

SECTION A-A
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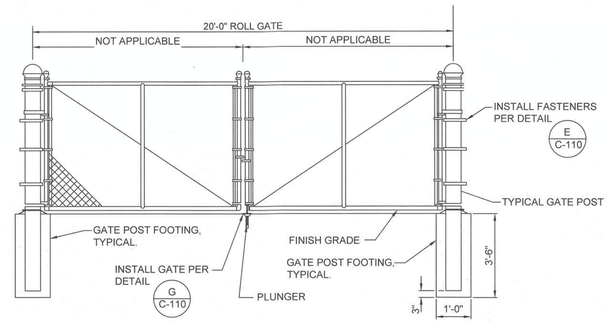
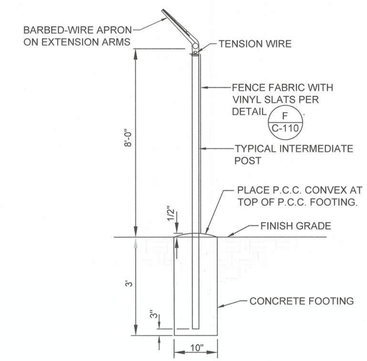


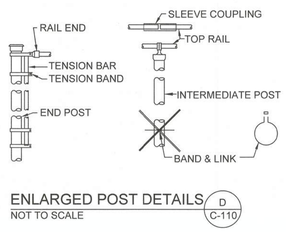
DOUBLE SWING GATE DETAIL (B / C-110)
NOT TO SCALE

MATERIALS SCHEDULE FOR FENCING

	DESCRIPTION	SIZE
I.	FABRIC	2" MESH, #11 GAUGE
II.	RAILS, POSTS AND GATES	
	A. END, CORNER AND PULL POSTS	4" O.D. @ 7.85 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 WIRE	#11 GAUGE
IV.	FOOTINGS	
	A. END, CORNER AND PULL POSTS	12" O.D. x 42" DEEP
	B. INTERMEDIATE POSTS	10" O.D. x 30" DEEP
	C. GATE POSTS	12" O.D. x 42" DEEP
	D. CONCRETE -	FOOTINGS SHALL CONSIST OF 6 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE AND SHALL ATTAIN A COMPRESSIVE STRENGTH OF 4,500 PSI AFTER 28 DAYS OF CURING.



INTERMEDIATE POST SECTION, TYPICAL (C / C-110)
NOT TO SCALE



ENLARGED POST DETAILS (D / C-110)
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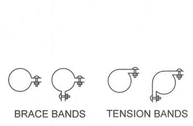

ENLARGED FASTENER DETAILS (E / C-110)
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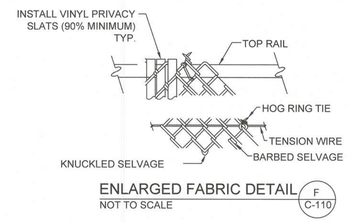

ENLARGED FABRIC DETAIL (F / C-110)
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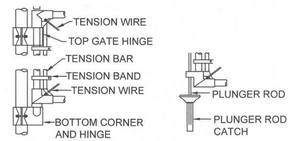


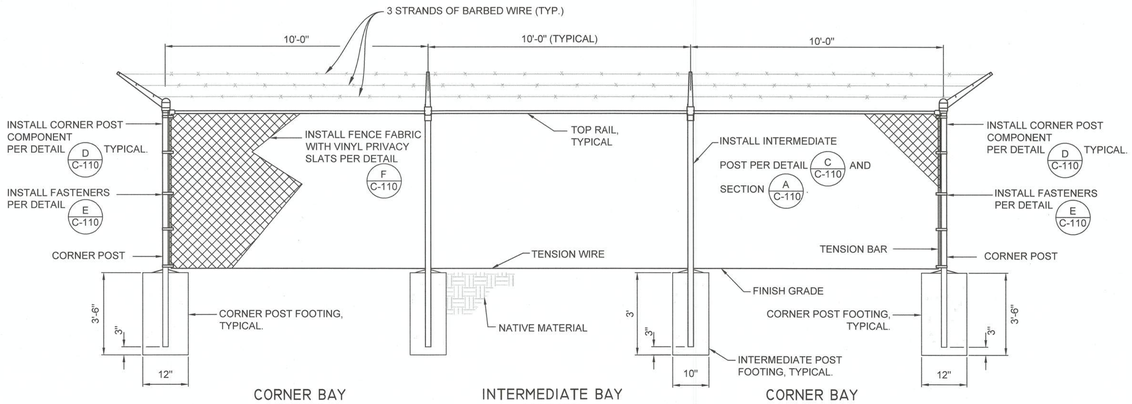
ENLARGED GATE DETAILS (G / C-110)
NOT TO SCALE

FENCING NOTES

1. 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.
2. THE CHAIN LINK FENCE FABRIC SHALL BE NO. 11 GAUGE STEEL WIRE, 2 INCH MESH, EIGHT (8) FEET HIGH AND SHALL BE GALVANIZED AFTER WEAVING. 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.
3. 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).
4. PIPE SHALL CONFORM TO ASTM STANDARD A-120.
5. 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,
6. PRIVACY SLATS SHALL BE INSTALLED ON ALL CHAIN LINK FABRIC. THE SLATS ARE TO PROVIDE A MINIMUM OF 85% BLOCKAGE. CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER FOR COLOR OF SLATS.
7. 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).
8. 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.
9. 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,
10. THE CONTRACTOR SHALL COLLECT ALL DEBRIS RESULTING FROM THE FENCE INSTALLATION AND REMOVE IT FROM THE PROJECT SITE.
11. THE GROUND ON EACH SIDE OF THE FENCE SHALL BE LEVELED EVEN WITH THE EXISTING GRADE.
12. A SUITABLE LOCK MECHANISM FOR THE SWING GATES 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.

ROLL GATE OPERATING SYSTEM NOTES:

1. ROLL GATE OPERATING MOTOR, KEYPAD / CARD READER, SAFETY LOOPS AND KNOX BOX SHALL BE INSTALLED AS SHOWN ON SHEETS C-103 THRU C-105.
2. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER TO DETERMINE THE EXACT LOCATION OF THE ROLL GATE OPERATING MOTORS, KEY PAD / CARD READERS AND SAFETY LOOPS PRIOR TO THE INSTALLATION OF THE CHAIN LINK FENCE.
3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL CIRCUITRY INSTALLATION NECESSARY FOR THE OPERATION OF THE ROLL GATES, INCLUDING THE MOTOR, KEYPAD / CARD READER, SAFETY LOOPS, KNOX BOX AND ALL OTHER APPURTENANCES.



CORNER BAY TYPICAL
NOT TO SCALE

INTERMEDIATE BAY TYPICAL
NOT TO SCALE

CORNER BAY TYPICAL
NOT TO SCALE

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES G. HOLT — No. 31773 — Exp. 12-31-24 — CIVIL — STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
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EL CENTRO, CALIFORNIA

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SCALE N/A
CHECKED JGH

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NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/INFILTRATION POND FENCING DETAILS

REFERENCE
THG #542.089
SHEET 29 OF 50

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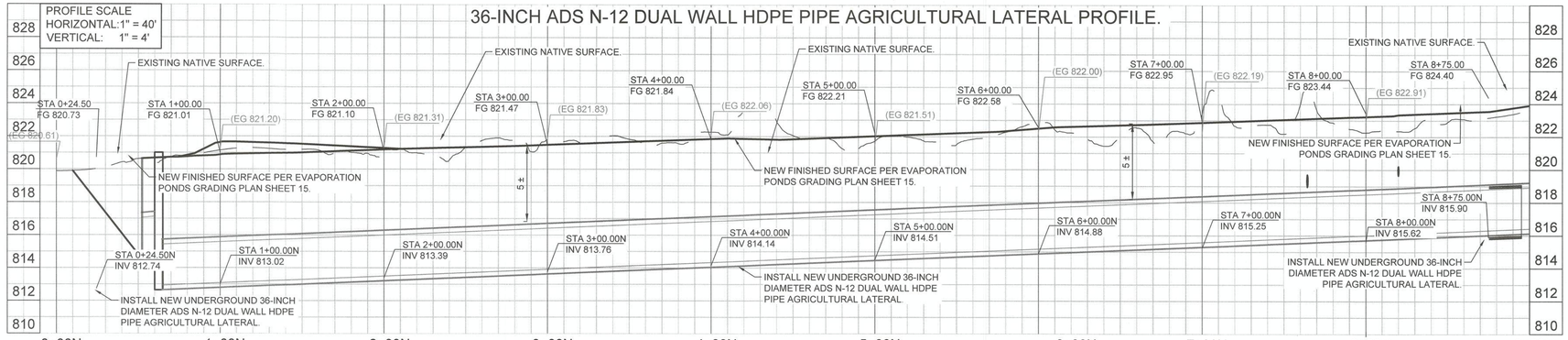
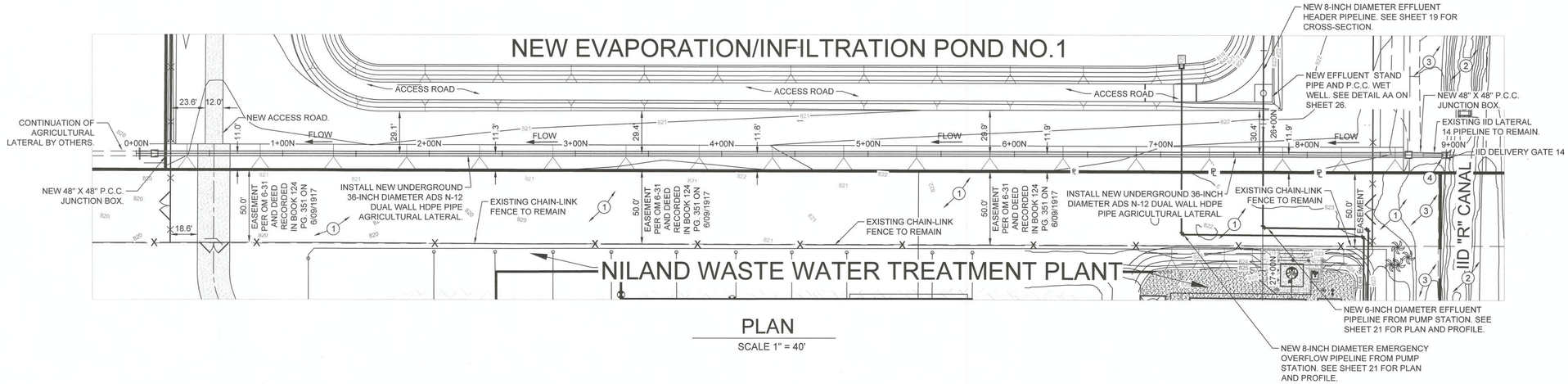
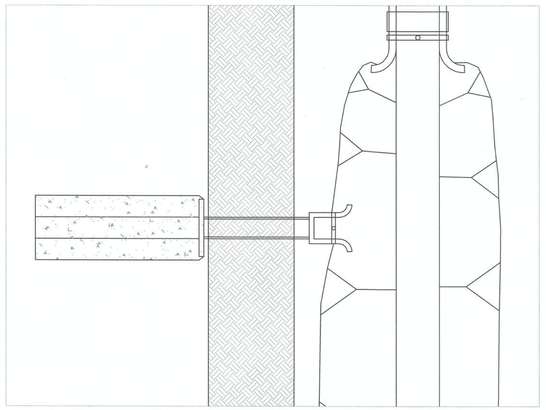


PROFILE



PLAN

SCALE 1" = 40'

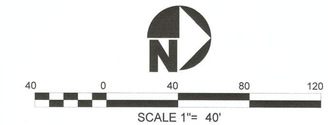


EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL TO REMAIN.
2. EXISTING IID IRRIGATION CANAL TO REMAIN
3. EXISTING DIRT ROAD TO REMAIN.
4. EXISTING IID DELIVERY 14 HEADWALL STRUCTURE TO REMAIN.
5. EXISTING IID "R" CANAL CHECK STRUCTURE TO REMAIN.
6. EXISTING DETERIORATED CONCRETE-LINED IRRIGATION LATERAL.
7. EXISTING EARTH-LINED IRRIGATION LATERAL.

CONSTRUCTION KEYNOTES

1. AFTER CLEARING AND GRUBBING IS COMPLETED, BLADE THE EXISTING NATIVE MATERIAL TO LEVEL THE SURFACE AND GRADE TO DESIGN ELEVATION.
2. PREWET THE TOP 3.5 FEET OF EXISTING NATIVE SOIL BENEATH THE NEW NATIVE EARTH EVAPORATION POND EMBANKMENTS TO A MINIMUM 20 PERCENT OF MOISTURE CONTENT.
3. PRIOR TO THE INSTALLATION OF THE NATIVE FILL EMBANKMENT, THE CONTRACTOR SHALL REMOVE AND STORE THE TOP 12 INCHES OF NATIVE SOIL. THE CONTRACTOR SHALL THEN MOISTURE CONDITION AND DISC THE TOP 8 INCHES OF THE EXPOSED SURFACE TO A MINIMUM OF OPTIMUM PLUS 5 PERCENT AND RE-COMPACT TO A MINIMUM OF 87 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
4. GRADE NATIVE MATERIAL EMBANKMENT TO SUB GRADE DESIGN ELEVATION. THE ENGINEERED FILL SHALL BE UNIFORMLY DISCED AND MOISTURE CONDITIONED TO OPTIMUM PLUS 5 TO 10 PERCENT AND COMPACTED IN 6-INCH MAXIMUM LIFTS TO A MINIMUM OF 87 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
5. GRADE NATIVE MATERIAL TO DESIGN GRADE ELEVATION WITHIN THE EVAPORATION PONDS BOTTOM AREA. WHERE NATIVE MATERIAL FILL IS REQUIRED, THE ENGINEERED FILL SHALL BE UNIFORMLY DISCED AND MOISTURE CONDITIONED TO OPTIMUM PLUS 5 TO 10 PERCENT. AFTER NATIVE MATERIAL GRADING HAS BEEN SATISFACTORILY COMPLETED, THE BOTTOM OF POND SURFACE SHALL BE SCARIFIED TO A DEPTH OF 18 INCHES.
6. REMOVE AND DISPOSE EXISTING NATIVE MATERIAL TO SUB BASE DESIGN GRADE. SCARIFY THE EXPOSED NATIVE MATERIAL FOR A DEPTH OF 12 INCHES AND COMPACT TO A MINIMUM OF 90 PERCENT AT A MINIMUM OF 2 PERCENT ABOVE OPTIMUM MOISTURE.
7. INSTALL 12 INCHES OF CLASS 2 BASE MATERIAL TO FINISH GRADE ELEVATION. COMPACT THE CLASS 2 BASE TO A MINIMUM OF 90 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
8. INSTALL 8-INCH DIAMETER AWWA C-900, DR14 PVC EFFLUENT HEADER PIPELINE PER CROSS SECTION E-E ON SHEET 19 AND TRENCH DETAIL CC ON SHEET 26.
9. INSTALL 8-INCH DIAMETER MJ X FL DUCTILE IRON TEE WITH RESTRAINED JOINTS AND STAINLESS STEEL HARDWARE.
10. INSTALL 8-INCH DIAMETER MJ X MJ DUCTILE IRON 90-DEGREE ELBOW WITH RESTRAINED JOINT FITTINGS AND STAINLESS STEEL HARDWARE.
11. INSTALL P.C.C. HEADWALL PER DETAIL BB ON SHEET 26.
12. INSTALL A 6-FOOT WIDE X 5-FOOT LONG X 1-FOOT DEEP 3/4-INCH CRUSHED ROCK RIP-RAP PROTECTION. INSTALL A NON-WOVEN GEOTEXTILE FABRIC ALONG THE SIDES AND BOTTOM OF THE CRUSHED ROCK. THE NON-WOVEN GEOTEXTILE FABRIC SHALL BE MIRAFI 600X OR AN APPROVED EQUAL.
13. INSTALL STAND PIPE AND P.C.C. WET WELL PER DETAIL AA ON SHEET 26.
14. INSTALL 6-INCH DIAMETER AWWA C-900, DR18 PVC EFFLUENT FORCE MAIN PER TRENCH DETAIL CC ON SHEET 26.
15. INSTALL 8-INCH DIAMETER FL X MJ ECCENTRIC PLUG VALVE WITH VALVE RISER AND COVER PER DETAIL FF ON SHEET 26.
16. INSTALL 8" DIAMETER AWWA C-900 DR 21 EMERGENCY OVERFLOW PIPELINE PER PLAN AND PROFILE SHEET 21 AND TRENCH DETAIL CC ON SHEET 26.
17. CONSTRUCT NEW EARTHEN BERM FOR STORM WATER RUNOFF PROTECTION PER DETAIL HH ON SHEET 27.
18. INSTALL NATIVE MATERIAL IN THE AREA BETWEEN THE EXISTING EDGE OF ROAD AND THE NEW TOP OF SLOPE. THE ENGINEERED FILL SHALL BE UNIFORMLY DISCED AND MOISTURE CONDITIONED TO OPTIMUM PLUS 5 TO 10 PERCENT.



REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.
10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
UNDER GROUND 36-INCH DIAMETER AGRICULTURAL LATERAL PLAN AND PROFILE

REFERENCE
THG #542.089
SHEET 30 OF 50

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EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL.
2. ~~EXISTING NATIVE MATERIAL BORROW AREA AND EMERGENCY WASTE WATER STORAGE POND.~~
3. ~~EXISTING BUILDING.~~
4. ~~EXISTING P.C.C. RIBBON GUTTER.~~
5. ~~EXISTING P.C.C. SIDEWALK.~~
6. ~~EXISTING ABANDONED EMERGENCY WASTE WATER STORAGE POND.~~
7. ~~EXISTING RAW WATER STORAGE POND.~~
8. EXISTING CHAIN LINK FENCE.
9. ~~EXISTING CHAIN LINK FENCE SWING GATE.~~
10. ~~EXISTING CHAIN LINK FENCE ROLL GATE.~~
11. ~~EXISTING IID IRRIGATION CANAL TO REMAIN.~~
12. ~~EXISTING IID EARTHEN DRAIN.~~
13. EXISTING 60 MIL HDPE LINED AERATION POND.
14. EXISTING DIRT ACCESS ROAD.
15. ~~EXISTING DIRT PILE.~~
16. ~~EXISTING TREE.~~
17. ~~EXISTING PALM TREE.~~
18. ~~EXISTING BRUSH VEGETATION.~~
19. EXISTING GRAVITY SANITARY SEWER PIPELINE.
20. EXISTING SANITARY SEWER FORCE MAIN.
21. ~~EXISTING SANITARY SEWER MANHOLE.~~
22. ~~EXISTING SANITARY SEWER FORCE MAIN FLOW METER VAULT.~~
23. EXISTING SANITARY SEWER FORCE MAIN VALVE.
24. EXISTING GRAVITY SANITARY SEWER VALVE.
25. EXISTING EMERGENCY WASTE WATER DISCHARGE PIPELINE.
26. ~~EXISTING GROUND WATER PUMP DISCHARGE PIPELINE.~~
27. EXISTING RAW WATER PIPELINE.
28. EXISTING HOSE BIB.
29. ~~EXISTING P.C.C. HEADWORKS STRUCTURE.~~
30. ~~EXISTING WASTE WATER INFLUENT PUMP STATION.~~
31. ~~EXISTING GROUND WATER PUMP STATION.~~
32. EXISTING CHLORINATION/DECHLORINATION STRUCTURE.
33. ~~EXISTING EFFLUENT FLOW METER / SAMPLING VAULT.~~
34. EXISTING CHEMICAL STORAGE TANK TO BE ABANDONED.
35. EXISTING CHEMICAL CONTAINMENT STRUCTURE TO BE ABANDONED.
36. EXISTING AERATION POND CATWALK STRUCTURE.
37. ~~EXISTING WWTP MAIN ACCESS WOODEN BRIDGE.~~
38. ~~SURVEY MONUMENTS NOTED AS "1-1/2 INCH IRON PIPE TAGGED LS5397" PER RECORD OF SURVEY ON FILE IN BOOK 10, PAGE 7 AT THE IMPERIAL COUNTY RECORDERS OFFICE. CONTRACTOR SHALL TAKE EXTREME CAUTION NOT TO DISTURB OR DESTROY THE EXISTING MONUMENTS DURING THE PROJECT CONSTRUCTION PERIOD. SEE THE MONUMENT PRESERVATION NOTE ON THIS PLAN SHEET.~~
39. ~~SURVEY MONUMENT NOTED AS "1-1/2 INCH IRON PIPE TAGGED LS5397" NOTED TO BE THE WEST 1/4 CORNER OF SECTION 9, TOWNSHIP 14 SOUTH, RANGE 14 EAST, SAN BERNARDINO MERIDIAN PER RECORD OF SURVEY ON FILE IN BOOK 10, PAGE 7 AT THE IMPERIAL COUNTY RECORDERS OFFICE.~~
40. ~~EXISTING SANITARY SEWER GRAVITY VALVES.~~
41. ~~EXISTING GRAVITY SANITARY SEWER PIPELINE.~~
42. ~~EXISTING GENERATOR SET.~~
43. EXISTING MOORING POST.
44. EXISTING 7.5 H.P. AERATOR.
45. EXISTING P.C.C. INLET STRUCTURE
46. EXISTING AERATOR ELECTRICAL FIELD CONTROL STATION AND AERATOR MOORING POST.
47. UNDERGROUND ELECTRICAL CONDUIT AND CONDUCTORS.

CONSTRUCTION KEYNOTES

1. REPAIR EXISTING HDPE LINER FAILURE AREAS PER DIMENSIONS SPECIFIED IN THIS PLAN SHEET.

NOTES

1. THE EXISTING 60 MIL HDPE LINER IN AERATION POND NUMBERS 2 AND 3 IS TO BE REPAIRED AS ILLUSTRATED ON THIS PLAN SHEET. THE EXISTING AERATION POND LINER IN AERATION POND NUMBER 1 IS TO BE REPLACED AFTER THE SLUDGE IS REMOVED FROM THE BOTTOM OF AERATION POND NUMBER 1. SEE PLAN SHEET NUMBERS 32, 33 AND 34 AND THE SPECIAL CONDITION SECTION ENTITLED, *"AERATION POND NUMBER 1 SLUDGE REMOVAL AND HDPE LINER REMOVAL AND REPLACEMENT"* FOR THE REMOVAL OF THE SLUDGE IN AERATION POND NUMBER 1 AND THE REMOVAL AND REPLACEMENT OF THE 60 MIL HDPE LINER IN AERATION POND NUMBER 1.
2. THE EXISTING SANITARY SEWER FORCE MAIN, GRAVITY SANITARY SEWER PIPELINE AND UNDERGROUND ELECTRICAL LINE LOCATIONS ILLUSTRATED ON THIS PLAN SHEET ARE APPROXIMATE. IT WILL BE NECESSARY FOR THE CONTRACTOR TO POTHOLE THE SANITARY SEWER PIPELINES AND ELECTRICAL LINES TO DETERMINE THE LOCATION OF THE UTILITIES DURING THE CONSTRUCTION PERIOD.

1' X 1.5' HDPE LINER FAILURE AREA
2' X 3' HDPE LINER FAILURE AREA
1' X 2' HDPE LINER FAILURE AREA
1' X 1' HDPE LINER FAILURE AREA
28' X 8' HDPE LINER FAILURE AREA
7' X 103' HDPE LINER FAILURE AREA
3' X 3' HDPE LINER FAILURE AREA
1.5' X 1.5' HDPE LINER FAILURE AREA
2' X 2' HDPE LINER FAILURE AREA
9' X 104' HDPE LINER FAILURE AREA
1' X 1' HDPE LINER FAILURE AREA
1' X 1' HDPE LINER FAILURE AREA
3' X 5' HDPE LINER FAILURE AREA
1.5' X 1.5' HDPE LINER FAILURE AREA
6' X 4' HDPE LINER FAILURE AREA
2' X 4' HDPE LINER FAILURE AREA
4' X 5' HDPE LINER FAILURE AREA
1.5' X 1.5' HDPE LINER FAILURE AREA
AERATION POND NO.3
AERATION POND NO.2
AERATION POND NO.1
1' X 1' HDPE LINER FAILURE AREA
1.5' X 1.5' HDPE LINER FAILURE AREA
1' X 1' HDPE LINER FAILURE AREA
5' X 4' HDPE LINER FAILURE AREA
7' X 4' HDPE LINER FAILURE AREA
3' X 1.5' HDPE LINER FAILURE AREA
1.5' X 1.5' HDPE LINER FAILURE AREA
1' X 1.5' HDPE LINER FAILURE AREA
TWO (2) 7.5 HP AERATORS IN EACH AERATION POND, TYP.
2' X 3' HDPE LINER FAILURE AREA
2' X 3' HDPE LINER FAILURE AREA
1' X 1.5' HDPE LINER FAILURE AREA
1' X 1' HDPE LINER FAILURE AREA
2' X 1.5' HDPE LINER FAILURE AREA
2' X 2' HDPE LINER FAILURE AREA
FLOW
(SS)
(RW)
(UE)
(FM)
SCALE 1"= 20'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.
10/9/23 DATE — 09/30/25 REG. EXP.

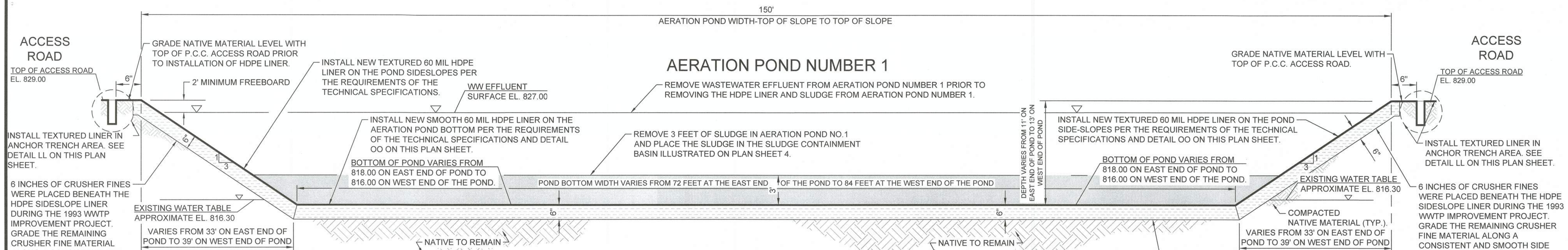
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE	09/25/2023
DRAWN	RS
DESIGNED	RS
SCALE	N/A
CHECKED	JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
WASTEWATER TREATMENT AERATION POND HDPE AERATION POND NUMBER 2 AND 3 LINER FAILURE AREAS AND AERATION POND NUMBER 1 SLUDGE REMOVAL AND LINER REPLACEMENT

REFERENCE
THG #542.089
SHEET 31 OF 50

C:\Users\fcastro.HOLTLEGION-HAN\The Holt Group\542.089 - 542.089\04 - CAD & PDF DRAWINGS\542.089 - SHEET 31_WWTP HDPE Liner Failure Areas.dwg 09/22/2023 17:10



NOTE

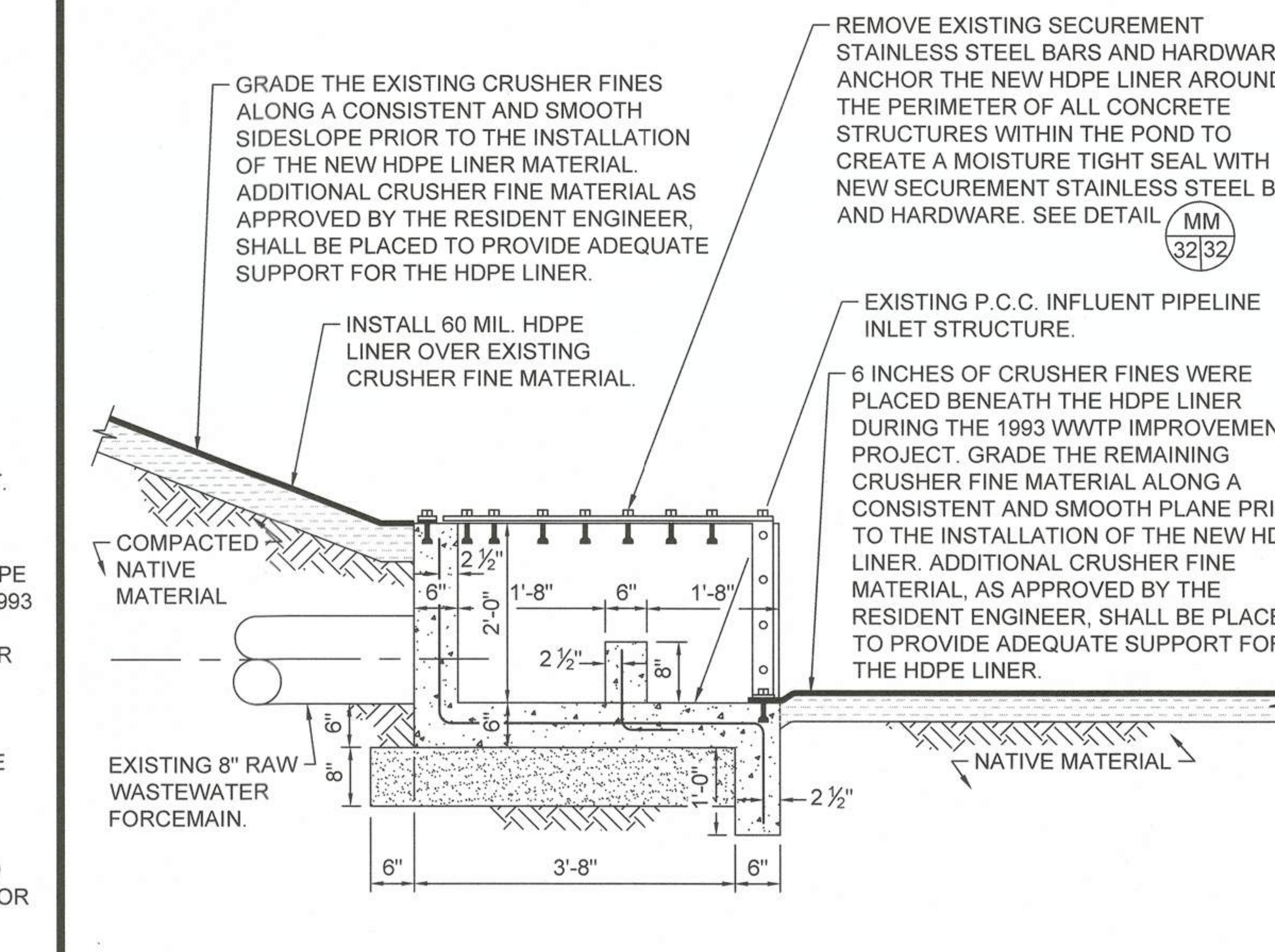
THERE IS 3 FEET OF SLUDGE IN THE BOTTOM OF AERATION POND NUMBER 1. THE SLUDGE IS OCCUPYING ¼ OF THE POND VOLUME, WHICH SIGNIFICANTLY DIMINISHES THE WASTEWATER TREATMENT PROCESS. THE EXISTING HDPE LINER IN AERATION POND NUMBER 1 IS 30 YEARS OLD AND REQUIRES REPLACEMENT. THE EXISTING HDPE LINER AND SLUDGE IN AERATION POND NUMBER 1 IS TO BE REMOVED.THE AERATION POND SIDESLOPES AND BOTTOM ARE TO BE REGRADED. ADDITIONAL CRUSHER FINE MATERIAL (IN ADDITION TO THE CRUSHER FINES INSTALLED IN THE 1993 WASTEWATER IMPROVEMENT PROJECT) IS TO BE PLACED AND GRADED TO SUPPORT THE NEW HDPE LINER MATERIAL. AFTER THE GRADING OF THE AERATION POND BOTTOM AND SIDESLOPES IS COMPLETED, NEW HDPE LINER IS TO BE INSTALLED IN AERATION POND NUMBER 1.

THE WATER TABLE BENEATH AERATION POND NUMBER 1 IS AT THE SAME LEVEL AS THE BOTTOM OF THE POND. A PERFORATED PIPING SYSTEM AND A GROUNDWATER PUMP STATION WERE CONSTRUCTED DURING THE 1993 NILAND WASTWATER TREATMENT PLANT EXPANSION. IT WILL BE NECESSARY TO RE-ACTIVATE THE GROUNDWATER PUMP STATION TO LOWER THE WATER TABLE PRIOR TO REMOVING THE EXISTING HDPE LINER AND REMOVING THE SLUDGE AT THE BOTTOM OF AERATION POND NUMBER 1.

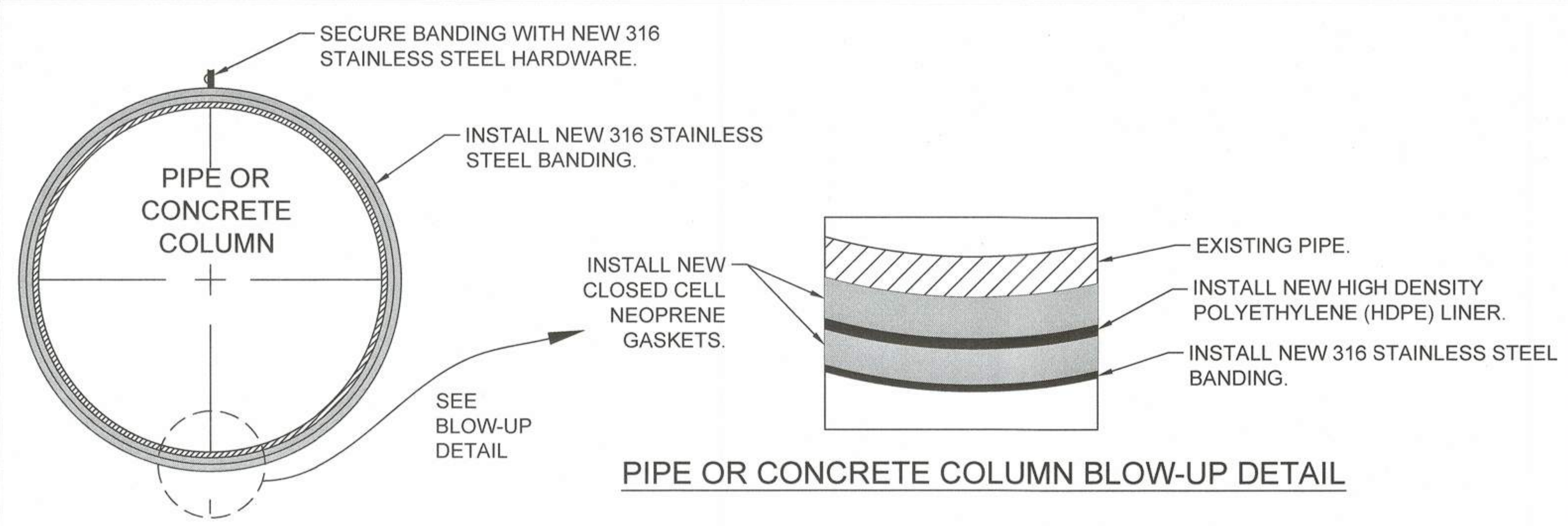
IT WILL BE NECESSARY TO COORDINATE THE AERATION POND NUMBER 1 SLUDGE REMOVAL AND HDPE REMOVAL AND REPLACEMENT WITH OTHER WASTEWATER TREATMENT PLANT IMPROVEMENTS. THE SLUDGE REMOVAL AND HDPE LINER REMOVAL AND INSTALLATION WILL BE REQUIRED TO BE ACCOMPLISHED ACCORDING TO A SEQUENCE OF EVENTS.

SEE THE SPECIAL CONDITIONS SECTION ENTITLED, ***"AERATION POND NUMBER 1 SLUDGE REMOVAL AND HDPE REMOVAL AND REPLACEMENT"*** FOR THE AERATION POND NUMBER 1 DETAILED DEMOLITION AND IMPROVEMENT REQUIREMENT. THE SPECIAL CONDITION SECTION INCLUDES THE SEQUENCE OF EVENTS THAT THE DEMOLITION AND IMPROVEMENT TASKS ARE TO BE ACCOMPLISHED.

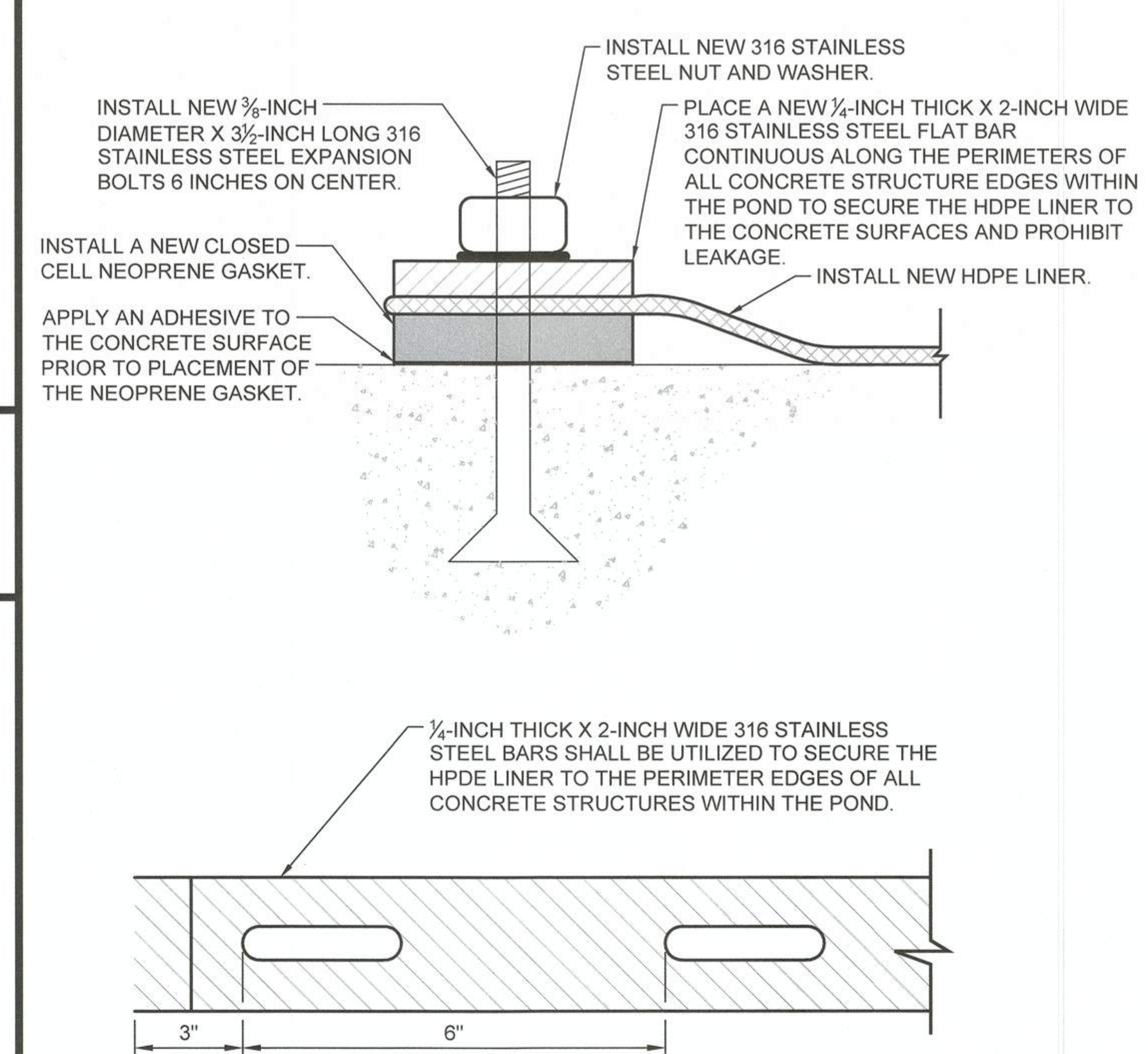
AERATION POND NUMBER 1 SECTION Z-Z (33|32)
NTS



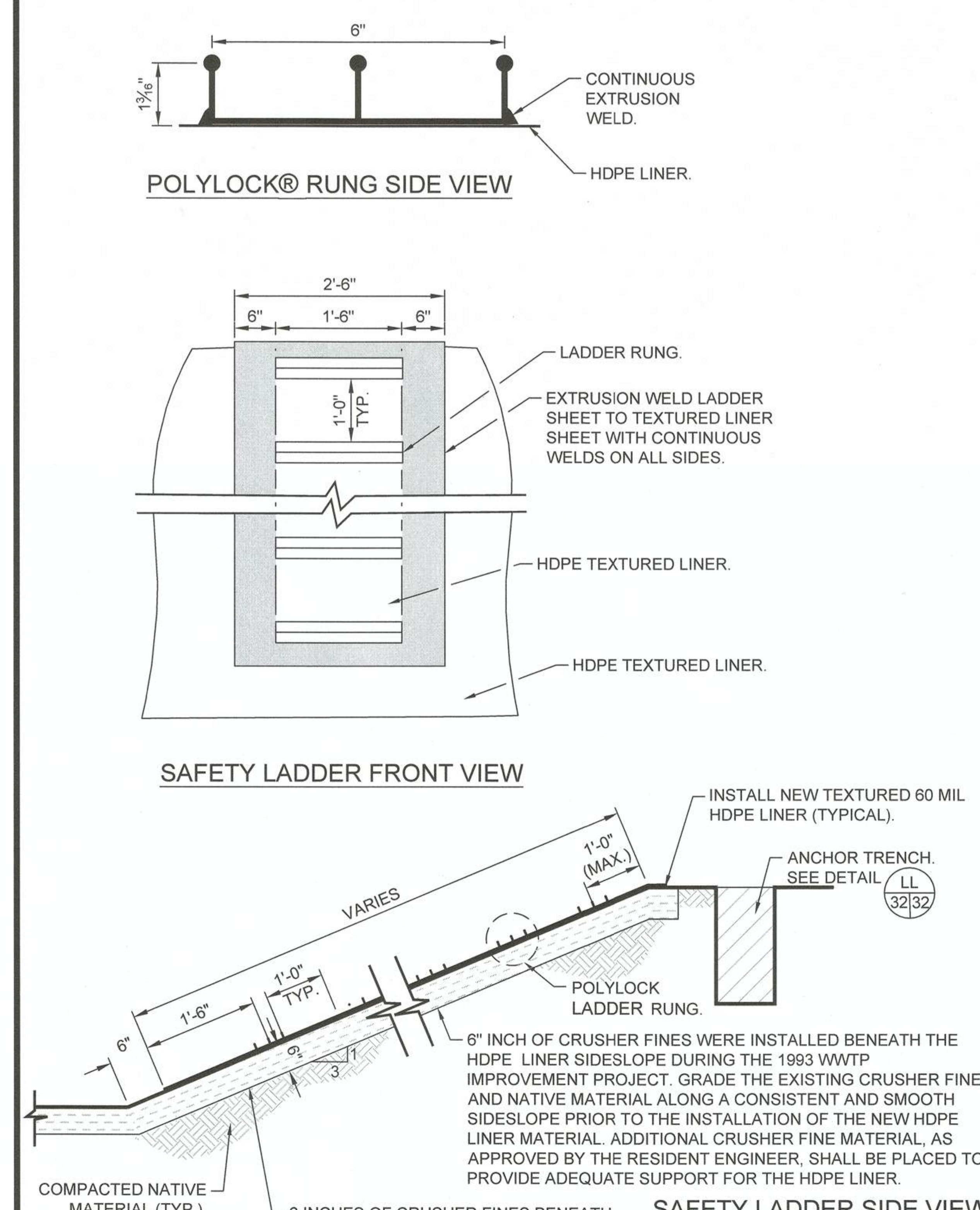
HDPE SECUREMENT TO CONCRETE INFLUENT PIPELINE INLET STRUCTURE DETAIL JJ (32|32)
NTS



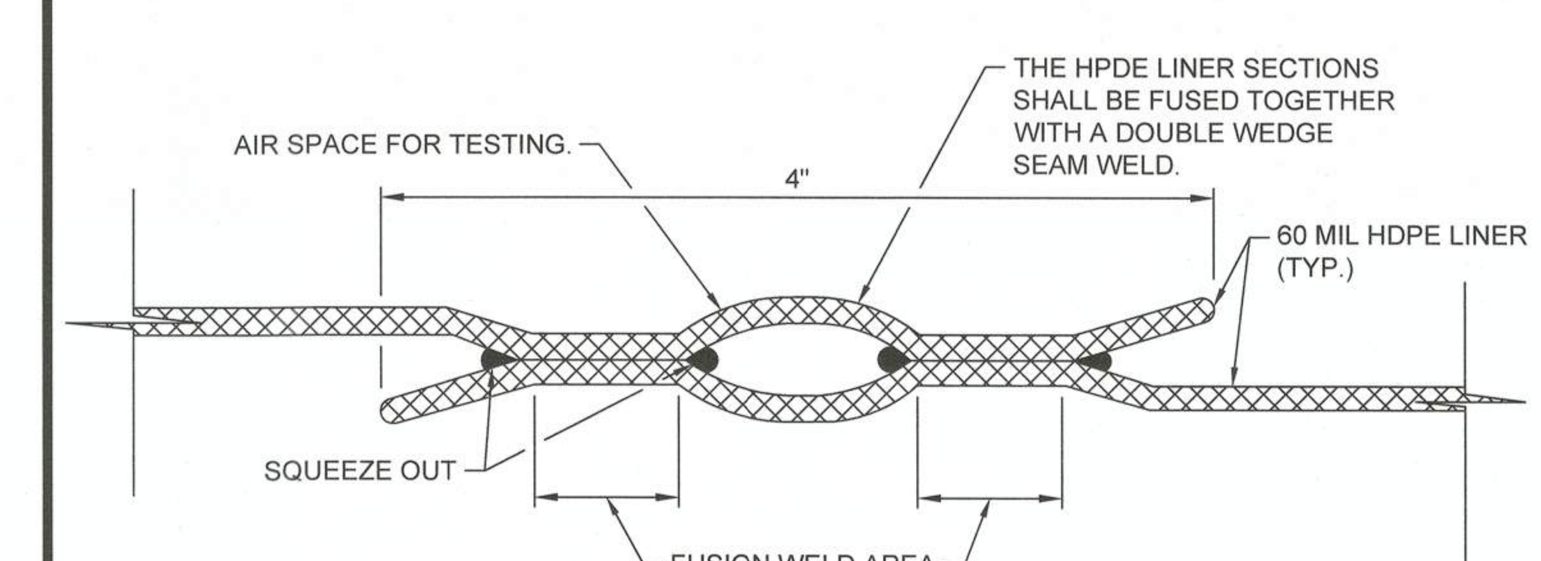
HDPE LINER CLAMP DETAIL KK (32|32)
NTS



SECUREMENT OF HDPE LINER TO PERIMETER EDGES OF ALL CONCRETE STRUCTURES DETAIL MM (32|32)
NTS



SAFETY LADDER DETAIL NN (32|32)
NTS



HDPE DOUBLE WEDGE SEAM FUSION WELD DETAIL OO (32|32)
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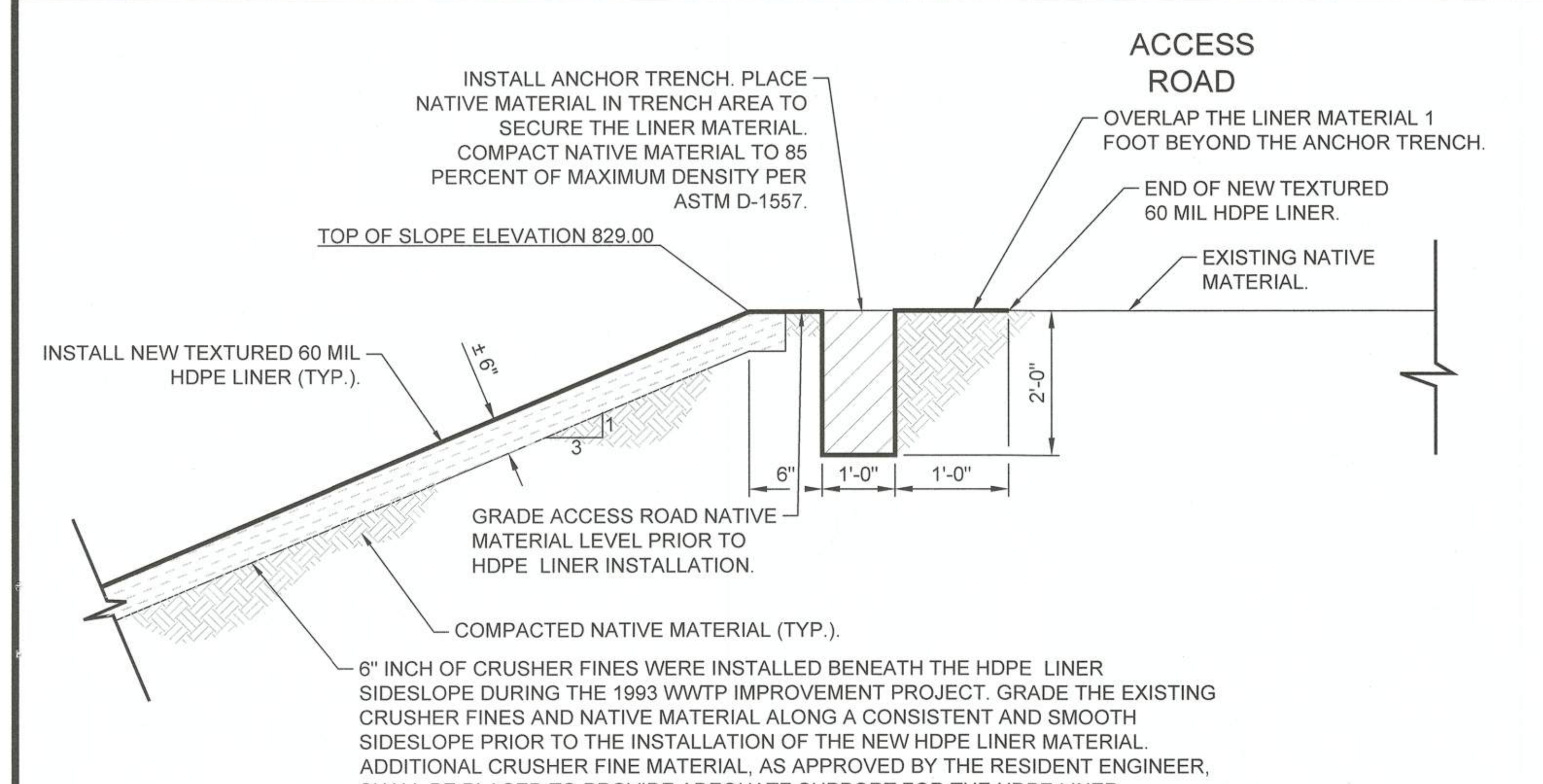

HDPE ANCHOR TRENCH DETAIL LL (32|32)
NTS

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.
10/9/23 DATE — 09/30/25 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023 | DRAWN RS | DESIGNED RS | SCALE N/A | CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

HDPE LINER DETAILS AND SECTIONS

REFERENCE — THG #542.089

SHEET 32 OF 50

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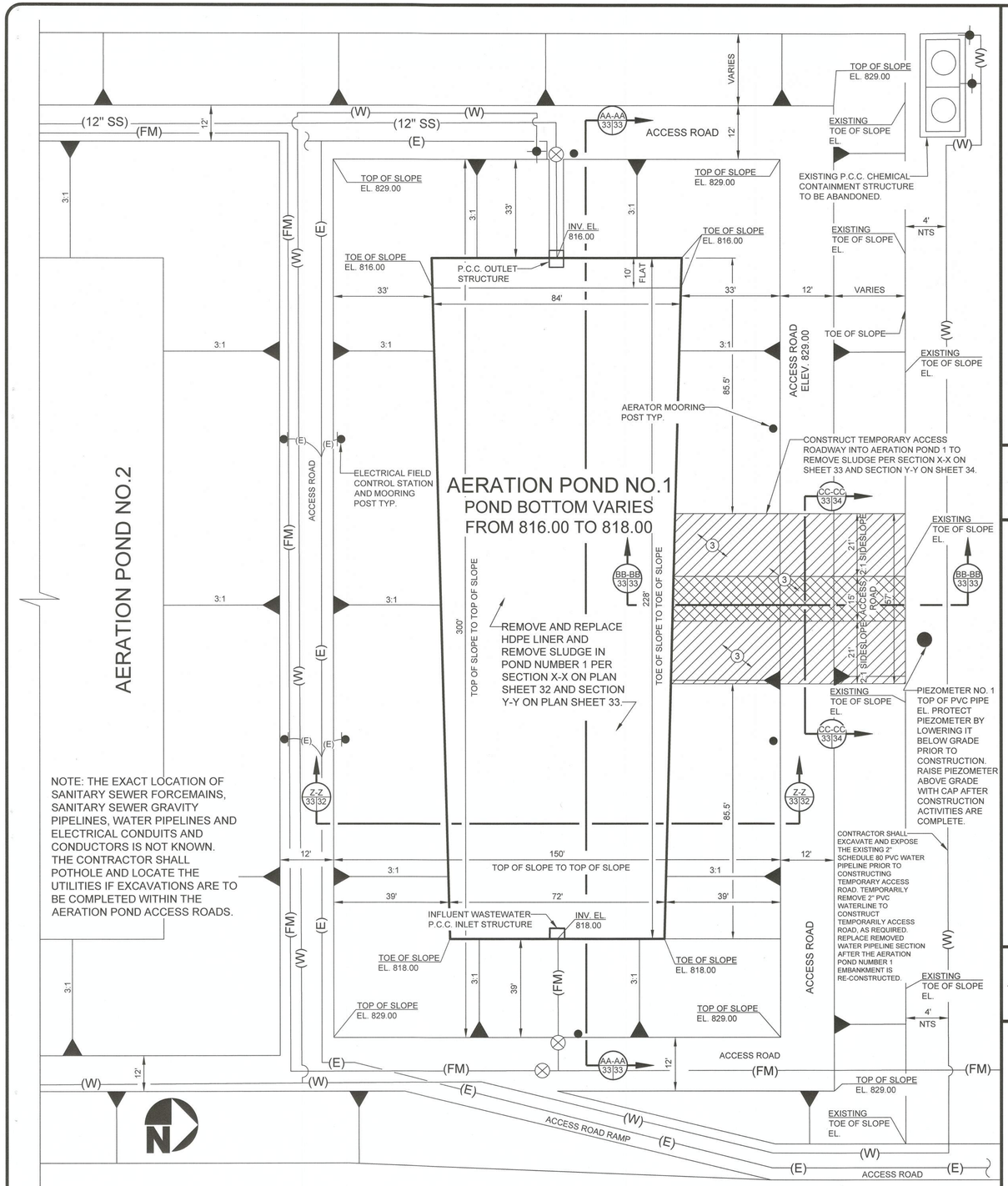
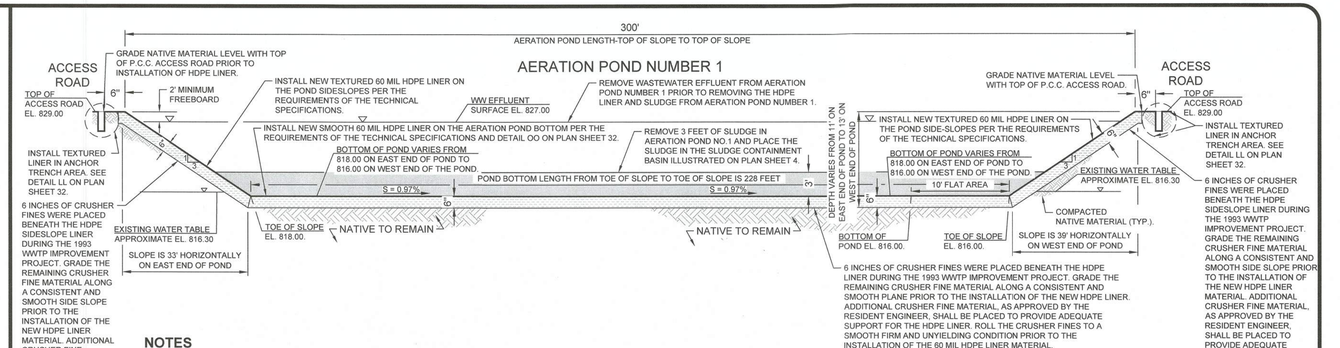


AERATION POND NUMBER 1 - HDPE LINER REMOVAL AND REPLACEMENT AND SLUDGE REMOVAL PLAN

SCALE:1" = 20'

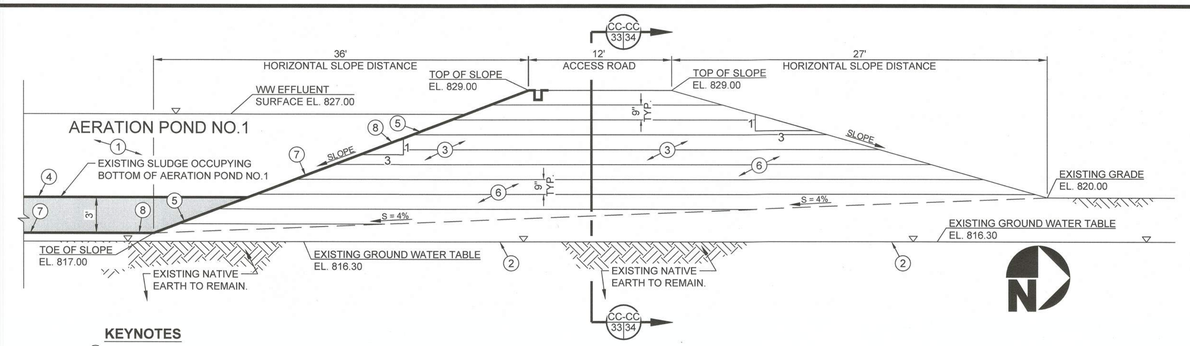


NOTES

1. THERE IS 3 FEET OF SLUDGE IN THE BOTTOM OF AERATION POND NUMBER 1. THE SLUDGE IS OCCUPYING ¼ OF THE POND VOLUME, WHICH SIGNIFICANTLY DIMINISHES THE WASTEWATER TREATMENT PROCESS. THE EXISTING HDPE LINER IN AERATION POND NUMBER 1 IS 30 YEARS OLD AND REQUIRES REPLACEMENT. THE EXISTING HDPE LINER AND SLUDGE IN AERATION POND NUMBER 1 IS TO BE REMOVED THE AERATION POND SIDESLOPES AND BOTTOM ARE TO BE REGRADED. ADDITIONAL CRUSHER FINE MATERIAL (IN ADDITION TO THE CRUSHER FINES INSTALLED IN THE 1993 WASTEWATER IMPROVEMENT PROJECT) IS TO BE PLACED AND GRADED TO A SMOOTH FIRM AND UNYIELDING CONDITION TO SUPPORT THE NEW HDPE LINER MATERIAL. AFTER THE GRADING OF THE AERATION POND BOTTOM AND SIDESLOPES IS COMPLETED, NEW HDPE LINER IS TO BE INSTALLED IN AERATION POND NUMBER 1.
2. THE WATER TABLE BENEATH AERATION POND NUMBER 1 IS AT THE SAME LEVEL AS THE BOTTOM OF THE POND. A PERFORATED PIPING SYSTEM AND A GROUNDWATER PUMP STATION WERE CONSTRUCTED DURING THE 1993 NILAND WASTWATER TREATMENT PLANT EXPANSION. IT WILL BE NECESSARY TO RE-ACTIVATE THE GROUNDWATER PUMP STATION TO LOWER THE WATER TABLE PRIOR TO REMOVING THE EXISTING HDPE LINER AND REMOVING THE SLUDGE AT THE BOTTOM OF AERATION POND NUMBER 1.
3. IT WILL BE NECESSARY TO COORDINATE THE AERATION POND NUMBER 1 SLUDGE REMOVAL AND HDPE REMOVAL AND REPLACEMENT WITH OTHER WASTEWATER TREATMENT PLANT IMPROVEMENTS. THE SLUDGE REMOVAL AND HDPE LINER REMOVAL AND INSTALLATION WILL BE REQUIRED TO BE ACCOMPLISHED ACCORDING TO A SEQUENCE OF EVENTS.
4. SEE THE SPECIAL CONDITIONS SECTION ENTITLED, ***"AERATION POND NUMBER 1 SLUDGE REMOVAL AND HDPE LINER REMOVAL AND REPLACEMENT"*** FOR THE AERATION POND NUMBER 1 HDPE LINER DEMOLITION, HDPE LINER IMPROVEMENT, AND SLUDGE REMOVAL REQUIREMENTS. THE SPECIAL CONDITION SECTION INCLUDES THE SEQUENCE OF EVENTS THAT THE HDPE LINER DEMOLITION AND IMPROVEMENTS AND SLUDGE REMOVAL TASKS ARE TO BE ACCOMPLISHED.

AERATION POND NUMBER 1 SECTION AA-AA 33|33

NTS



KEYNOTES

1. REMOVE THE WASTEWATER EFFLUENT CONTENTS FROM AERATION POND NUMBER 1 PRIOR TO REMOVING THE EXISTING HDPE LINER AND SLUDGE PER SECTION X ON PLAN SHEET 32, SECTION Y ON PLAN SHEET 33 AND THE SPECIAL CONDITIONS.
2. LOWER THE EXISTING GROUND WATER TABLE PRIOR TO REMOVING THE EXISTING HDPE LINER AND SLUDGE PER THE SPECIAL CONDITIONS.
3. REMOVE A 57 FOOT WIDE SECTION OF THE EXISTING AERATION POND NUMBER 1 EMBANKMENT AFTER AERATION POND NUMBER 1 EFFLUENT CONTENTS ARE REMOVED AND AFTER THE GROUND WATER TABLE IS LOWERED. SEE THE SPECIAL CONDITIONS AND SECTION X-X. STORE THE NATIVE MATERIAL IN THE AREA NORTH OF AERATION POND NUMBER 1.
4. REMOVE 3 FEET OF SLUDGE FROM THE BOTTOM OF AERATION POND NUMBER 1. PLACE THE SLUDGE IN THE SLUDGE CONTAINMENT BASIN ILLUSTRATED ON PLAN SHEET 4 AND SECTIONS AND DETAILS ON PLAN SHEET 34. CONSTRUCT SLUDGE CONTAINMENT BASIN PRIOR TO COMMENCING THE SLUDGE REMOVAL PROCESS FROM AERATION POND NUMBER 1. SEE THE SPECIAL CONDITIONS.
5. REMOVE AND DISPOSE OF EXISTING 60 MIL HDPE LINER MATERIAL AFTER THE SLUDGE IS REMOVED FROM AERATION POND NUMBER 1.
6. RECONSTRUCT AERATION POND NUMBER 1 EMBANKMENT AFTER REMOVAL OF SLUDGE FROM THE BOTTOM OF AERATION POND NUMBER 1. INSTALL THE STORED NATIVE MATERIAL PER KEYNOTE 3 IN 9 INCH LIFTS. COMPACT THE NATIVE MATERIAL TO 90 PERCENT MAXIMUM DENSITY PER ASTM D 1557. ADDITIONAL LIFTS SHALL NOT BE INSTALLED UNTIL PREVIOUS LIFTS HAVE BEEN TESTED AND ATTAINED THE REQUIRED COMPACTION DENSITY.
7. GRADE THE AERATION POND NUMBER 1 SIDESLOPES AND BOTTOM AFTER THE REMOVAL AND DISPOSAL OF THE EXISTING HDPE LINER AND RECONSTRUCTION OF THE AERATION POND NUMBER 1 EMBANKMENT. INSTALL ADDITIONAL CRUSHER FINES ON THE AERATION POND BOTTOM AND SIDESLOPES AND ROLL THE CRUSHER FINES TO PROVIDE A SMOOTH FIRM AND UNYIELDING CRUSHER FINE SURFACE AND PROVIDE ADEQUATE SUPPORT FOR THE NEW HDPE LINER MATERIAL.
8. INSTALL THE NEW 60 MIL HDPE LINER ALONG THE BOTTOM AND SIDESLOPES OF AERATION POND NUMBER 1 PER SECTION X ON PLAN SHEET 32 , SECTION Y ON PLAN SHEET 33, THE TECHNICAL SPECIFICATIONS AND THE SPECIAL CONDITIONS.

REMOVE AND REPLACE SECTION OF AERATION POND NUMBER 1 EMBANKMENT TO ACCESS AERATION POND NUMBER 1 TO REMOVE AND REPLACE EXISTING HDPE LINER AND REMOVE SLUDGE - SECTION BB-BB 33|33

SCALE:1" = 6'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS
10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
AERATION POND NUMBER 1 HDPE LINER REMOVAL AND REPLACEMENT AND SLUDGE REMOVAL

REFERENCE
THG #542.089
SHEET 33 OF 50

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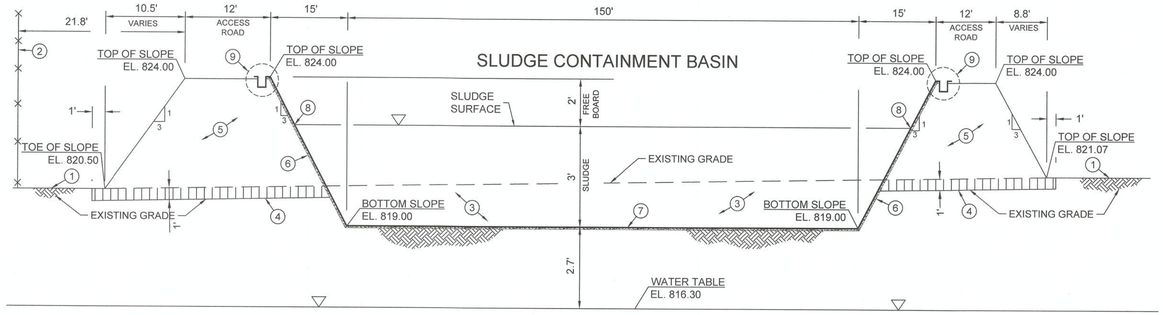


KEYNOTES

(1) EXISTING NATIVE GRADE TO REMAIN.

(2) EXISTING 6 FOOT HIGH CHAIN LINK FENCE TO REMAIN. SECTIONS OF THE FENCE SHALL BE ALLOWED TO BE TEMPORARILY REMOVED DURING THE CONSTRUCTION OF THE SLUDGE CONTAINMENT BASIN. IF SECTIONS OF THE FENCE ARE REMOVED THE CONTRACTOR IS RESPONSIBLE TO STORE THE REMOVED FENCING MATERIAL IN A SECURE LOCATION. AFTER THE CONSTRUCTION OF THE SLUDGE CONTAINMENT BASIN IS COMPLETED ANY TEMPORARILY REMOVED FENCE SECTIONS SHALL BE REPLACED. NEW VERTICAL POSTS WITH NEW PCC FOOTINGS SHALL BE CONSTRUCTED PER THE FENCING DETAIL ON SHEET 29. OTHER DAMAGED FENCE COMPONENTS SHALL BE REPLACED WITH NEW COMPONENTS PER FENCING DETAIL SHEET 29 REQUIREMENTS. THE FENCE SHALL BE REPLACED TO THE SATISFACTION OF THE RESIDENT ENGINEER.

(3) EXCAVATE NATIVE EARTH IN THE SLUDGE CONTAINMENT BASIN WITH 3:1 SIDESLOPES TO THE SLUDGE CONTAINMENT BASIN BOTTOM. EXCAVATED NATIVE MATERIAL SHALL BE USED TO CONSTRUCT THE ABOVE GRADE BASIN EMBANKMENTS. THE DEPTH FROM THE SLUDGE CONTAINMENT BASIN DESIGN BOTTOM TO THE EXISTING WATER TABLE IS APPROXIMATELY 2.7 FEET. PUMPING OF THE NATIVE EARTH ABOVE THE WATER TABLE CAN EASILY OCCUR IF SUBJECTED TO EQUIPMENT WITH LARGE POINT LOADS. THE CONTRACTOR SHALL COMPLETE THE NATIVE EARTH EXCAVATION WITH LIGHT EQUIPMENT. EQUIPMENT WHICH CREATES HEAVY POINT LOADS, SUCH AS FRONT END LOADERS, SHALL NOT BE ALLOWED TO COMPLETE THE EXCAVATION WORK. IF PUMPING OCCURS DURING THE EXCAVATION OF THE SLUDGE CONTAINMENT BASIN, THE RESIDENT ENGINEER SHALL BE IMMEDIATELY INFORMED OF THE PUMPING CONDITION. IF PUMPING OCCURS EXCAVATION WORK SHALL IMMEDIATELY CEASE. IF PUMPING OCCURS THE REMAINING EXCAVATION WORK TO THE DESIGN BOTTOM OF THE SLUDGE CONTAINMENT BASIN SHALL BE COMPLETED WITH A HOE TYPE EXCAVATOR OR A GRADALL.

(4) SCARIFY AND COMPACT EXISTING NATIVE MATERIAL FOR A DEPTH OF 1 FOOT BENEATH THE SLUDGE CONTAINMENT BASIN EMBANKMENTS. SCARIFY AND COMPACT THE EXISTING NATIVE MATERIAL FOR A HORIZONTAL DISTANCE OF 1 FOOT BEYOND THE EMBANKMENT EXTERIOR TOE OF SLOPE. THE NATIVE EARTH SHALL BE COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY AT OPTIMUM WATER CONTENT PER ASTM D 1557. CONSTRUCTION OF THE EMBANKMENTS SHALL NOT COMMENCE UNTIL THE SCARIFIED AND COMPACTED NATIVE MATERIAL HAS BEEN TESTED AND ATTAINED THE SPECIFIED COMPACTION DENSITY.

(5) INSTALL NATIVE MATERIAL FOR THE CONSTRUCTION OF THE EMBANKMENTS IN MAXIMUM 9 INCH LIFTS AT 90 PERCENT OF MAXIMUM DENSITY AT OPTIMUM WATER CONTENT PER ASTM D-1557. ADDITIONAL LIFTS SHALL NOT BE INSTALLED UNTIL PREVIOUS LIFTS HAVE BEEN TESTED AND ATTAINED THE SPECIFIED COMPACTION DENSITY. IF THE NATIVE EARTH EXCAVATED FROM THE SLUDGE CONTAINMENT BASIN IS NOT SUFFICIENT TO CONSTRUCT THE EMBANKMENTS THEN EXCESS EARTH FROM THE EVAPORATION BASIN EARTHWORK OR NATIVE EARTH OBTAINED FROM THE EXISTING EMERGENCY WASTEWATER POND SHALL BE USED TO COMPLETE THE CONSTRUCTION OF THE EMBANKMENTS. IF NATIVE EARTH IS OBTAINED FROM THE EMERGENCY WASTEWATER POND IT SHALL BE REMOVED IN 8 INCH LIFTS AT A UNIFORM ELEVATION ACROSS THE ENTIRE POND BOTTOM.

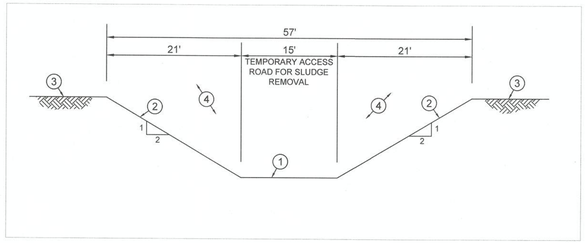
(6) INSTALL 6 INCHES OF CRUSHER FINES AT THE BOTTOM AND SIDESLOPES OF THE SLUDGE CONTAINMENT BASIN. ROLL THE CRUSHER FINES TO A SMOOTH, FIRM AND UNYEILDING CONDITION PRIOR TO THE INSTALLATION OF THE 60 MIL HDPE LINER MATERIAL.

(7) INSTALL NEW SMOOTH 60 MIL HDPE LINER ON THE AERATION POND BOTTOM PER THE REQUIREMENTS OF THE TECHNICAL SPECIFICATIONS.

(8) INSTALL NEW TEXTURED 60 MIL HDPE LINER ON THE POND SIDESLOPES PER THE REQUIREMENTS OF THE TECHNICAL SPECIFICATIONS.

(9) INSTALL HDPE ANCHOR TRENCH PER DETAIL X ON PLAN SHEET 32.

SLUDGE CONTAINMENT BASIN - SECTION A-A
NTS
4 | 34



KEYNOTES

(1) REMOVE A PORTION OF THE EXISTING NATIVE EARTH AERATION POND NUMBER 1 EMBANKMENT AS ILLUSTRATED ON THE AERATION POND NUMBER 1 PLAN AND SECTION X ON PLAN SHEET 33. A 15 FOOT WIDE TEMPORARY ACCESS ROAD IS TO BE CONSTRUCTED.

(2) THE AERATION POND NUMBER 1 TEMPORARY ACCESS ROAD IS TO BE PROVIDED WITH 2:1 SIDESLOPES AS ILLUSTRATED ON THE AERATION POND NUMBER 1 PLAN ON PLAN SHEET 33.

(3) TOP OF EXISTING AERATION POND NUMBER 1 EMBANKMENT TO REMAIN.

(4) RECONSTRUCT THE AERATION POND NUMBER 1 EMBANKMENT AFTER THE REMOVAL OF SLUDGE FROM THE BOTTOM OF AERATION POND NUMBER 1. SEE SECTION X ON PLAN SHEET 33.

REMOVE AND REPLACE SECTION OF AERATION POND NUMBER 1 EMBANKMENT TO REMOVE AND REPLACE EXISTING HDPE LINER AND REMOVE SLUDGE - SECTION CC-CC
NTS
33 | 34

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
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DIRECTOR OF PUBLIC WORKS
10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
SLUDGE CONTAINMENT BASIN AND AERATION POND NO.1 DETAILS AND SECTIONS

REFERENCE
THG #542.089
SHEET 34 OF 50

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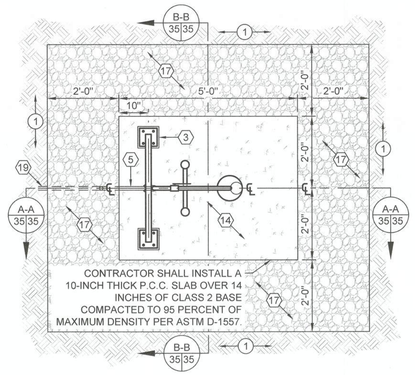
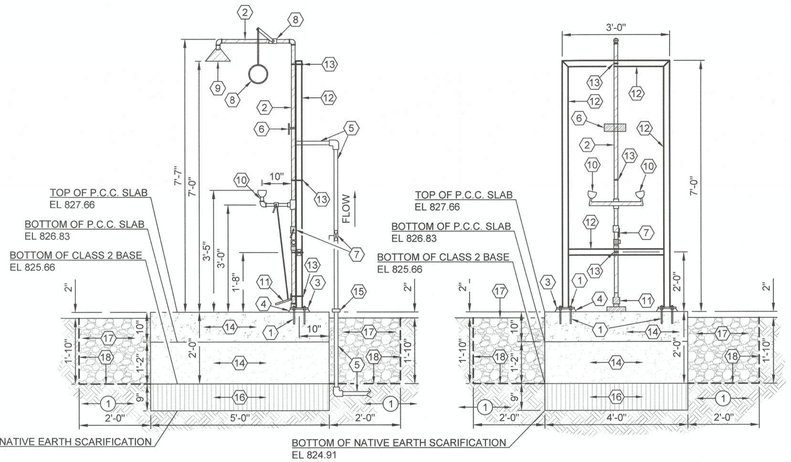


PLAN VIEW
SCALE ½" = 1'



LONG PROFILE VIEW (A-A 35|35)
SCALE ½" = 1'

WIDE PROFILE VIEW (B-B 35|35)
SCALE ½" = 1'

EXISTING KEYNOTES

(1) EXISTING NATIVE EARTH TO REMAIN TO REMAIN.

CONSTRUCTION KEYNOTES

(1) INSTALL ½-INCH ADHESIVE ANCHOR BOLTS WITH STAINLESS STEEL STUDS, WASHER AND NUT, EMBEDDED 4 INCHES. TYP.

(2) INSTALL 1½-INCH GALVANIZED PIPE AND FITTINGS.

(3) INSTALL 8-INCH X 8-INCH X ½-INCH GALVANIZED STEEL BASE PLATE WITH (4) ⅝-INCH HOLES NEAR THE CORNERS FOR ½-INCH BOLTS. TYP. PLACE BOLTS ABOVE AND BELOW THE BASE PLATE TO ALLOW THE LEVELING OF THE BASE PLATE.

(4) INSTALL 1-INCH MINIMUM, NON-SHRINK GROUT BELOW BASE PLATE AFTER LEVELING OF BASE PLATE IS ACCOMPLISHED. TYP.

(5) INSTALL 1½-INCH WATER SUPPLY PIPELINE AND FITTINGS, AS NEEDED TO PROVIDE WATER TO THE EMERGENCY SHOWER AND EYEWASH STATION. SEE CONSTRUCTION KEYNOTE X ON SHEET X. INSTALL GALVANIZED STEEL PIPELINE ABOVE GRADE. INSTALL SCHEDULE 80 PVC PIPELINE BELOW GRADE.

(6) INSTALL CLAMP FOR SUPPORT OF SAFETY SIGN. SAFETY SIGN TO BE FURNISHED BY THE EYEWASH STATION SUPPLIER.

(7) INSTALL 1½-INCH STAINLESS STEEL, BALL VALVE.

(8) INSTALL STAINLESS STEEL, PULL ROD WITH ROUND HANDLE.

(9) INSTALL 10-INCH DIAMETER BLUE ABS PLASTIC SHOWER HEAD.

(10) INSTALL STAINLESS STEEL EYE / FACE WASH UNIT.

(11) INSTALL FOOT PEDAL CONTROL.

(12) INSTALL 2-INCH X 2-INCH STEEL SQUARE TUBING, GALVANIZED, TYP.

(13) INSTALL ⅜-INCH U-BOLTS WITH WASHERS AND NUTS.

(14) THE CONTRACTOR SHALL INSTALL A 10-INCH THICK P.C.C. SLAB OVER 14 INCHES OF CLASS 2 BASE COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.

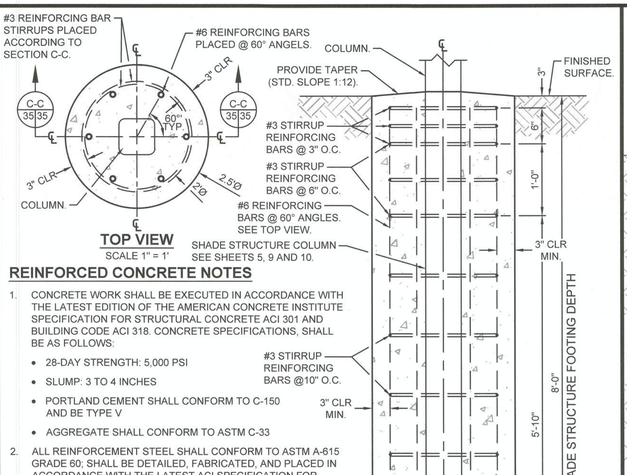
(15) 1½-INCH COUPLING CONNECTION FOR GALVANIZED TO PVC PIPING.

(16) SCARIFY AND COMPACT NATIVE MATERIAL TO 90 PERCENT OF MAXIMUM DENSITY AT 2 PERCENT OVER OPTIMUM WATER CONTENT PER ASTM D-1557.

(17) INSTALL 1'-10" DEEP X 2'-0" WIDE, ¾-INCH CRUSHED ROCK SUMP AROUND THE PERIMETER OF THE P.C.C. SLAB.

(18) PLACE MIRAFI FABRIC ENVELOPE AROUND THE EDGES AND BOTTOMS OF THE ¾-INCH CRUSHED ROCK SUMP TO MITIGATE NATIVE MATERIAL FROM MIGRATING INTO THE CRUSHED ROCK SUMP.

(19) CONTINUE INSTALLATION OF 1½-INCH WATER SUPPLY LINE TO CONNECTION POINT WITH EXISTING WATER PIPELINE IN THE VICINITY OF THE CHLORINATION / DECHLORINATION BASIN. SEE PLAN SHEET 4.



TOP VIEW
SCALE 1" = 1'

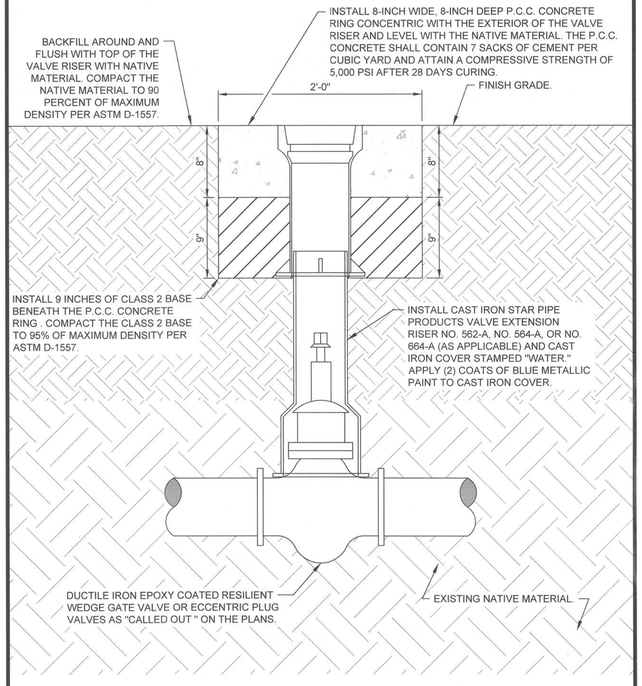
REINFORCED CONCRETE NOTES

1. CONCRETE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE SPECIFICATION FOR STRUCTURAL CONCRETE ACI 301 AND BUILDING CODE ACI 318. CONCRETE SPECIFICATIONS, SHALL BE AS FOLLOWS:
   - 28-DAY STRENGTH: 5,000 PSI
   - SLUMP: 3 TO 4 INCHES
   - PORTLAND CEMENT SHALL CONFORM TO C-150 AND BE TYPE V
   - AGGREGATE SHALL CONFORM TO ASTM C-33
2. ALL REINFORCEMENT STEEL SHALL CONFORM TO ASTM A-615 GRADE 60, SHALL BE DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH THE LATEST ACI SPECIFICATION FOR STRUCTURAL CONCRETE ACI 301, ACI DETAILING MANUAL AND CRSI MANUAL OF STANDARD PRACTICE.
3. ALL ANCHOR BOLTS SET IN NEW CONCRETE (WHEN APPLICABLE) SHALL COMPLY WITH ASTM F-1554 GRADE 55 (GALVANIZED).
4. ALL NON-SHRINK GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI AND SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C-109, ASTM C-939, ASTM C-1090, AND ASTM C-1107, WHEN APPLICABLE.
5. SOIL IS EXPANSIVE CLAY-SILT AND HIGHLY CORROSIVE. MAINTAIN 3 INCHES CLEAR FROM EXTERIOR CONCRETE SURFACES TO EXTERIOR REINFORCING BAR SURFACES.

NOTE

SEE POTABLE WATER SYSTEM SITE PLAN AND SECTION ON SHEET 5 AND SODIUM HYPOCHLORITE AND SODIUM METABISULFITE PLAN AND SECTION ON SHEETS 9 AND 10 FOR SHADE STRUCTURE FOOTING PEDESTAL LOCATIONS.

SHADE STRUCTURE FOOTING SECTION (C-C 35|35)
SCALE ½" = 1'



EMERGENCY SHOWER AND EYEWASH STATION DETAIL — N — 6, 9 | 35

SCALE ½" = 1'

KEYNOTES

(1) SEE PLAN SHEET 4 AND ELECTRICAL SITE PLAN SHEET 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 PSI AFTER 28 DAYS OF CURING. THE CONTRACTOR SHALL UTILIZE A 2-FOOT DIAMETER SONATUBE TO FORM THE PEDESTAL.

(3) INSTALL NUMBER 5 VERTICAL 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 FOOT-6 INCHES.

(4) INSTALL NUMBER 4 REINFORCING TIE BARS CONSTRUCTED IN A CIRCULAR SHAPE BASED ON A DIAMETER OF 1 FOOT-6 INCHES. 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.

(7) INSTALL A 20-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. THE ABOVE MENTIONED ITEMS SHALL BE CLEANED INSIDE AND OUT PRIOR TO THE SHIPMENT.

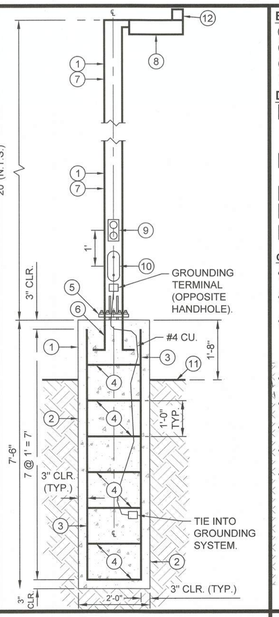
(8) INSTALL 120-VOLT, 1-PHASE, 150-WATT, LED LUMINAIRE.

(9) INSTALL A 120-VOLT, GROUND FAULT CIRCUIT INTERRUPTER (GFCI) DUPLEX RECEPTACLE IN POLE WITH STEEL 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) FINISH GRADE.

(12) PHOTOCELL TO ACTIVATE AND DE-ACTIVATE LIGHT FIXTURE.



SHADE STRUCTURE FOOTING PEDESTAL DETAIL — I — 5 | 35

SCALE 1" = 1'

EXISTING KEYNOTES

(1) EXISTING NATIVE EARTH ACCESS ROAD TO REMAIN.

(2) EXISTING CHAIN LINK FENCE TO REMAIN.

(3) EXISTING OVERHEAD ELECTRICAL LINE TO REMAIN.

(4) EXISTING WATER PIPELINE TO REMAIN.

DEMOLITION KEYNOTES

[1] TRIM AWAY TREE BRANCHES AS REQUIRED TO ALLOW INSTALLATION OF THE NEW CHAIN LINK ROLL GATE. TREE TRIMMING SHALL BE MINIMIZED TO REMOVE ONLY THE TREE BRANCH VEGETATION REQUIRED TO INSTALL THE ROLLING GATE.

[2] CUT AWAY 3.5-FEET IN LENGTH OF EXISTING CHAIN LINK FENCE AND BARBED WIRE TO ACCOMMODATE NEW 20 FOOT AUTOMATICALLY OPERATED ROLLING GATE.

[3] REMOVE AND DISPOSE OF EXISTING FENCE POST.

[4] UNFASTEN AND ROLL BACK EXISTING CHAIN LINK FENCE AND BARBED WIRE. STORE FASTENERS.

[5] REMOVE AND DISPOSE OF EXISTING 16.5-FOOT LONG CHAIN LINK FENCE DOUBLE SWING GATE.

CONSTRUCTION KEYNOTES

(1) INSTALL INTERMEDIATE POST PER DETAIL C ON PLAN SHEET 29.

(2) INSTALL GATE POST PER SIDE VIEW DETAIL A ON PLAN SHEET 29.

(3) INSTALL 1-FOOT DEEP, 1.5-FOOT WIDE P.C.C. ROLL GATE FOOTING OVER 6 INCHES OF AGGREGATE BASE COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. THE CONTRACTOR SHALL PROVIDE AN INVERTED ANGLE IRON WITH ATTACHED "L" SHAPED ANCHOR EMBEDDED IN THE P.C.C. FOOTING GUIDE. SEE SECTION DETAIL A-A ON PLAN SHEET 29.

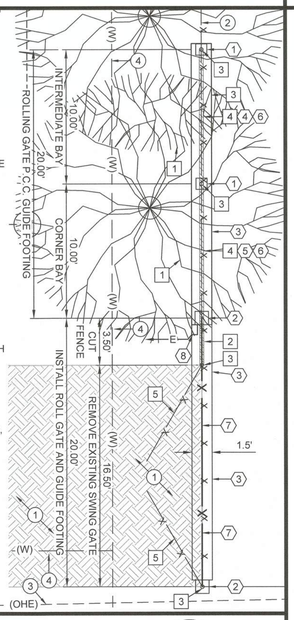
(4) INSTALL PREVIOUSLY STORED FENCING AND FASTENERS PER DETAIL "INTERMEDIATE BAY TYPICAL" ON PLAN SHEET 29.

(5) INSTALL PREVIOUSLY STORED FENCING AND FASTENERS PER DETAIL "CORNER BAY TYPICAL" ON PLAN SHEET 29.

(6) INSTALL PREVIOUSLY STORED BARBED WIRE AND FASTENERS, AND NEW GATE TRACK.

(7) INSTALL 20-FOOT LONG CHAIN LINK ROLL GATE PER FRONT AND SIDE VIEW DETAILS A ON PLAN SHEET 29.

(8) INSTALL A VIKING L3 SLIDE GATE OPENER (SPS MODEL) AUTOMATIC GATE OPENER OPERATING ON 240 VOLTS, 1 PHASE, 60 HERTZ POWER. INSTALL THE AUTOMATIC GATE OPENER ON A 2' WIDE X 3' LONG X 8 INCH DEEP P.C.C. FOUNDATION SLAB PLACED ON 1 FOOT OF CLASS 2 BASE COMPACT. THE CLASS 2 BASE TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557 PRIOR TO INSTALLING THE P.C.C. FOUNDATION SLAB. ELECTRICAL CIRCUITRY FOR THE GATE OPENER SHALL EXTEND TO THE CONTROL BUILDING. SEE ELECTRICAL PLANS FOR REQUIRED POWER CIRCUITRY. CONTRACTOR SHALL PROVIDE EIGHT (8) GATE OPENERS TO THE NILAND COUNTY SANITATION DISTRICT AFTER THE NEW ROLLING GATE IS INSTALLED AND OPERATIONAL.



LIGHT ASSEMBLY AND PEDESTAL DETAIL — O — 6, 9 | 35

SCALE ½" = 1'

CHAIN LINK FENCE ROLL GATE BLOW-UP DETAIL — PP — 4 | 35

SCALE 3/16" = 1'

SANITARY SEWER FORCE MAIN AND GRAVITY SANITARY SEWER PIPELINE VALVE RISER AND COVER — E — 4 | 35

SCALE 1 ½" = 1'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES G. HOLT — No. 31773 — Exp. 12-31-24 — CIVIL — STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

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COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE	09/25/2023
DRAWN	RS
DESIGNED	RS
SCALE	N/A
CHECKED	JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
WASTEWATER TREATMENT PLANT MISCELLANEOUS DETAILS

REFERENCE — THG #542.089

SHEET 35 OF 50

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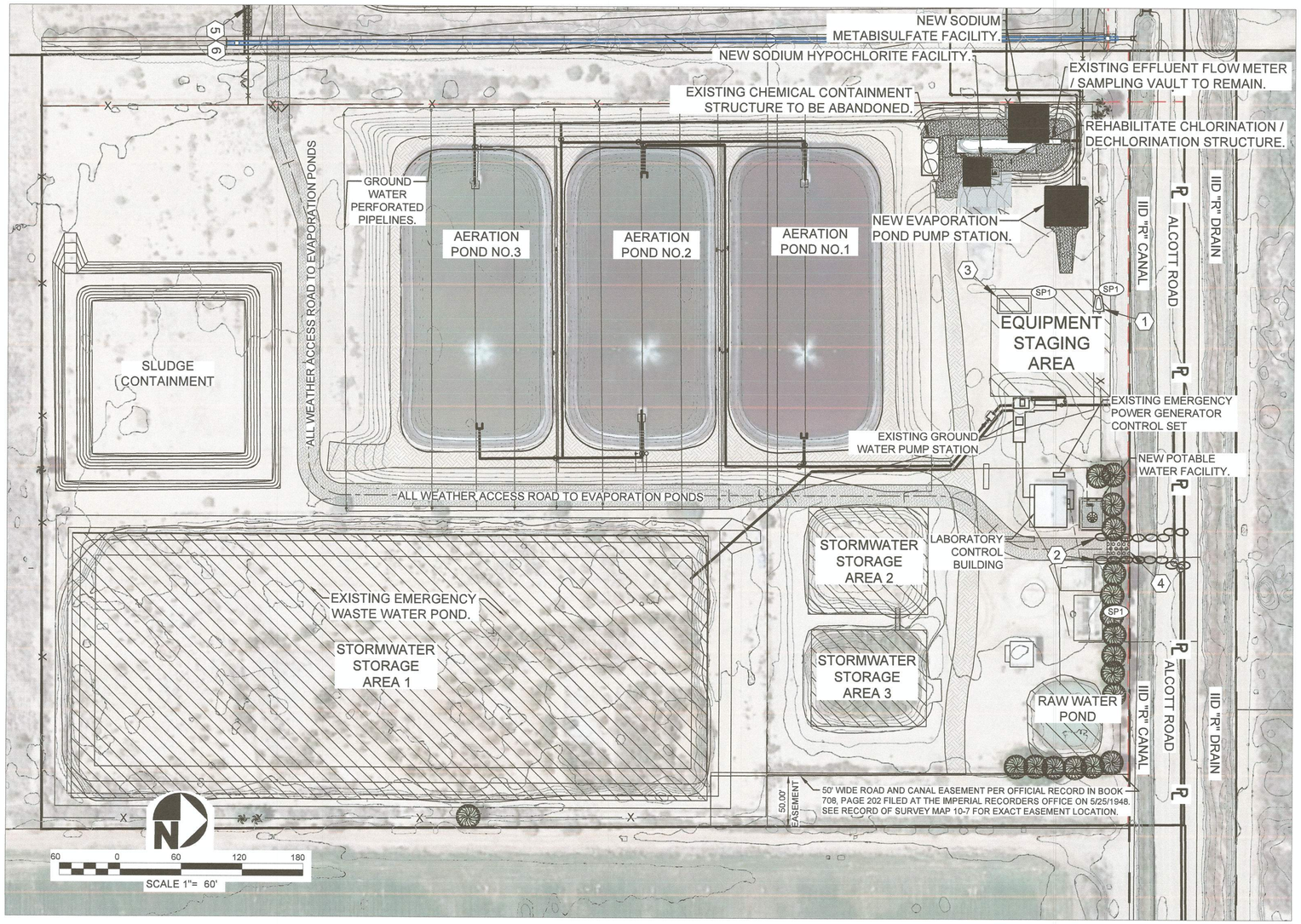

TEMPORARY CONSTRUCTION SITE BMPS				
BMP #	ITEM	UNIT	ESTIMATED QUANTITY	NOTES
-	CONSTRUCTION SITE AND WPCP MANAGEMENT BY QSP	LS	1	SITE MANAGEMENT INCLUDES, BUT IS NOT LIMITED TO , NS-1, NS-8 THRU NS-10 AND WM-1 THRU WM-10. REFER TO CALTRANS CONSTRUCTION SITE BMP FACT SHEETS AT WWW.DOT.CA.GOV/HQ/CONSTRUC/STORMWATER/FACTSHEETS.HTM
SC-10	TEMPORARY DRAINAGE INLET PROTECTION	EA	1	DRAINAGE INLETS SHALL BE PROTECTED WITH GRAVEL BAGS. THE GRAVEL BAGS SHALL NOT EXTEND MORE THAN 2' INTO THE TRAVELED WAY.
WM-8	TEMPORARY PORTABLE CONCRETE WASHOUT	EA	1	TEMPORARY PORTABLE CONCRETE WASHOUT SHALL BE PROVIDED THROUGHOUT THE DURATION OF CONCRETE WORK BEING PERFORMED.
WM-9	RESTROOM FACILITIES	EA	2	THE RESTROOM FACILITIES SHALL BE SECURED FROM OVERTURNING IN HIGH WIND CONDITIONS
SE-5	FIBER ROLLS	LF	3,840	EROSION CONTROL, PLACED ON TOE AND FACE OF SLOPES TO INTERCEPT RUNOFF, REDUCE IFS FLOW VELOCITY, RELEASE THE RUNOFF AS SHEET FLOW AND PROVIDE REMOVAL OF SEDIMENT FROM THE RUNOFF.
WE-1	WIND EROSION CONTROL	LS	1	MAINTAIN DUST CONTROL THROUGHOUT THE ENTIRE SITE FOR THE DURATION OF THE PROJECT. WATER TRUCKS, OR EQUIVALENT BMP, SHALL BE USED FOR DUST SUPPRESSION. CONTRACTOR SHALL OBSERVE COUNTY OF IMPERIAL AIR POLLUTION CONTROL DISTRICT REQUIREMENTS THROUGHOUT THE CONSTRUCTION PROJECT.
NS-2	DEWATERING OPERATIONS	LS	1	AN EXISTING PERFORATED PIPELINE SYSTEM IS LOCATED BENEATH A PORTION OF THE EXISTING WASTEWATER TREATMENT PLANT. THE PERFORATED PIPELINES TRANSMIT GROUND WATER TO AN EXISTING GROUND WATER PUMP STATION. THE GROUND WATER PUMP STATION WILL DIRECT THE GROUND WATER TO THE WASTEWATER TREATMENT PLANT POND NUMBER 2 FOR PROCESSING.

BMP KEYNOTES

1. CONTRACTOR SHALL LOCATE THE PORTABLE RESTROOM FACILITIES IN THE STAGING AREA. INSTALL TWO (2) PORTABLE RESTROOM FACILITIES. SEE DETAIL E5 FOR TYPICAL STAGING AREA ON SHEET 38.
2. INSTALL TWO (2) LAYER GRAVEL-FILLED BAGS. SEE DETAIL E3 ON SHEET 38.
3. INSTALL CONCRETE WASHOUT AREA. SEE DETAIL E4 ON SHEET 38.
4. INSTALL CONSTRUCTION ENTRANCE PER DETAIL E1 AND E5 ON SHEET 38.
5. INSTALL FIBER ROLLS PER DETAIL E2 ON SHEET 38. INSTALL FIBER ROLLS ON INTERIOR OF DIRT BERM TOE OF SLOPE. SEE BMP KEYNOTE 6.
6. INSTALL DIRT BERM PER DETAIL I ON SHEET 27.

LEGEND

- PORTABLE TOILET
- GRAVEL BAGS
- CONCRETE WASHOUT AREA
- CONSTRUCTION ENTRANCE
- FIBER ROLLS — FR —
- SAMPLE POINT (SP1)
- DIRT BERM

GENERAL EROSION CONTROL NOTES:

1. EROSION CONTROL PLAN INCLUDES ALL POSSIBLE BMPS FOR THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL APPLY APPROPRIATE BMPS FOR EACH PHASE OF CONSTRUCTION.
2. STREET SWEEPING (DURING MASS GRADING ACTIVITIES, STREETS WILL BE SWEPT AS NECESSARY TO PREVENT DIRT AND DUST FROM LEAVING THE CONSTRUCTION AREA).
3. CONTRACTOR SHALL PROVIDE ADEQUATE DUST SUPPRESSION TO MEET ALL COUNTY OF IMPERIAL AIR POLLUTION CONTROL DISTRICT REQUIREMENTS.
4. ALL BEST MANAGEMENT PRACTICES SHALL MEET THE REQUIREMENTS OF THE LATEST VERSION OF CALTRANS CONSTRUCTION SITE BMP FACT SHEETS.
5. SITE DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES.
6. NO SITE CLEARING OR GRADING SHALL BEGIN UNTIL ALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED.
7. GENERAL CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
8. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.

NOTE:
THE ENTIRE PROJECT AREA IS THE DRAINAGE AREA, EXCLUDING THE AERATION PONDS, THE EVAPORATION PONDS, SLUDGE CONTAINMENT BASIN, AND RAW WATER POND.

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES G. HOLT — No. 31773 Exp. 12-31-24 — CIVIL — STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER — JOHN A. GAY — No. 62028 Exp. 9-30-25 — CIVIL — STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS
62028 R.C.E. No.
10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EXISTING WASTEWATER TREATMENT PLANT EROSION CONTROL PLAN

REFERENCE
THG #542.089
SHEET 36 OF 50

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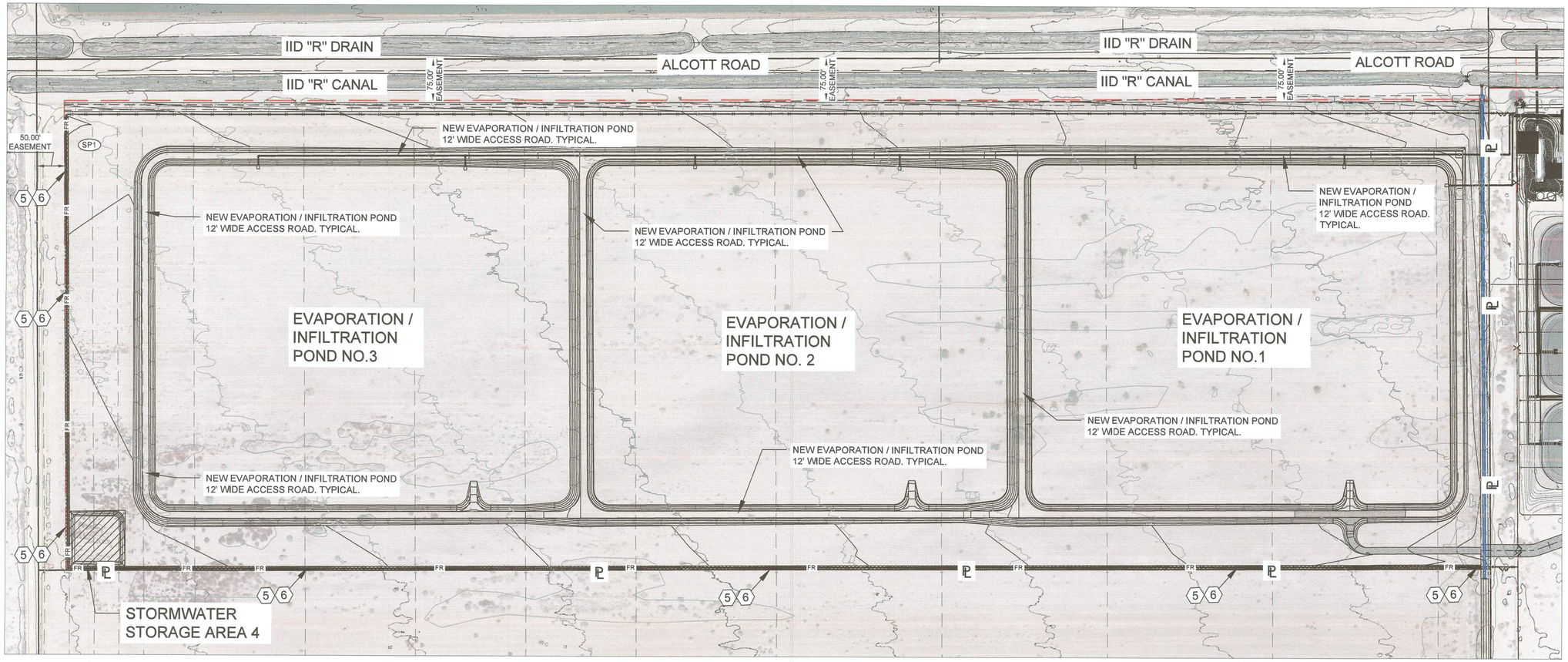

BMP KEYNOTES

1. CONTRACTOR SHALL LOCATE THE PORTABLE RESTROOM FACILITIES IN THE STAGING AREA. INSTALL TWO (2) PORTABLE RESTROOM FACILITIES. SEE DETAIL E5 FOR TYPICAL STAGING AREA ON SHEET 38.
2. INSTALL TWO (2) LAYER GRAVEL-FILLED BAGS. SEE DETAIL E3 ON SHEET 38.
3. INSTALL CONCRETE WASHOUT AREA. SEE DETAIL E4 ON SHEET 38.
4. INSTALL CONSTRUCTION ENTRANCE PER DETAIL E1 AND E5 ON SHEET 38.
5. INSTALL FIBER ROLLS PER DETAIL E2 ON SHEET 38. INSTALL FIBER ROLLS ON INTERIOR OF DIRT BERM TOE OF SLOPE. SEE BMP KEYNOTE 6.
6. INSTALL DIRT BERM PER DETAIL I ON SHEET 27.

LEGEND

- PORTABLE TOILET
- GRAVEL BAGS
- CONCRETE WASHOUT AREA
- CONSTRUCTION ENTRANCE
- FIBER ROLLS — FR —
- SAMPLE POINT (SP1)
- DIRT BERM

GENERAL EROSION CONTROL NOTES:

1. EROSION CONTROL PLAN INCLUDES ALL POSSIBLE BMPS FOR THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL APPLY APPROPRIATE BMPS FOR EACH PHASE OF CONSTRUCTION.
2. STREET SWEEPING (DURING MASS GRADING ACTIVITIES, STREETS WILL BE SWEPT AS NECESSARY TO PREVENT DIRT AND DUST FROM LEAVING THE CONSTRUCTION AREA).
3. CONTRACTOR SHALL PROVIDE ADEQUATE DUST SUPPRESSION TO MEET ALL COUNTY OF IMPERIAL AIR POLLUTION CONTROL DISTRICT REQUIREMENTS.
4. ALL BEST MANAGEMENT PRACTICES SHALL MEET THE REQUIREMENTS OF THE LATEST VERSION OF CALTRANS CONSTRUCTION SITE BMP FACT SHEETS.
5. SITE DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES.
6. NO SITE CLEARING OR GRADING SHALL BEGIN UNTIL ALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED.
7. GENERAL CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
8. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.

NOTE:
THE ENTIRE PROJECT AREA IS THE DRAINAGE AREA, EXCLUDING THE AERATION PONDS, THE EVAPORATION / INFILTRATION PONDS, SLUDGE CONTAINMENT BASIN, AND RAW WATER POND.

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES G. "JACK" HOLT — No. 31773 — Exp. 12-31-24 — CIVIL — STATE OF CALIFORNIA

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COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS
10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION / INFILTRATION POND EROSION CONTROL PLAN

REFERENCE
THG #542.089
SHEET 37 OF 50

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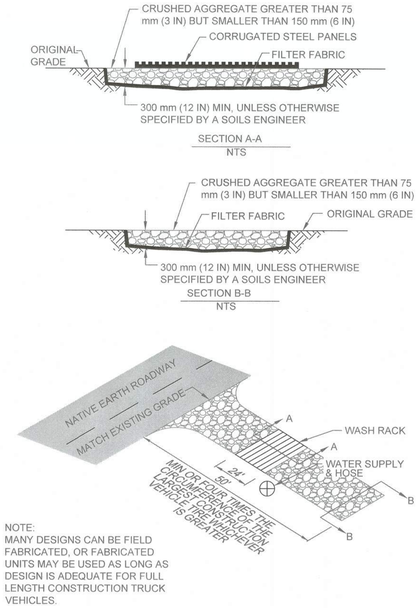
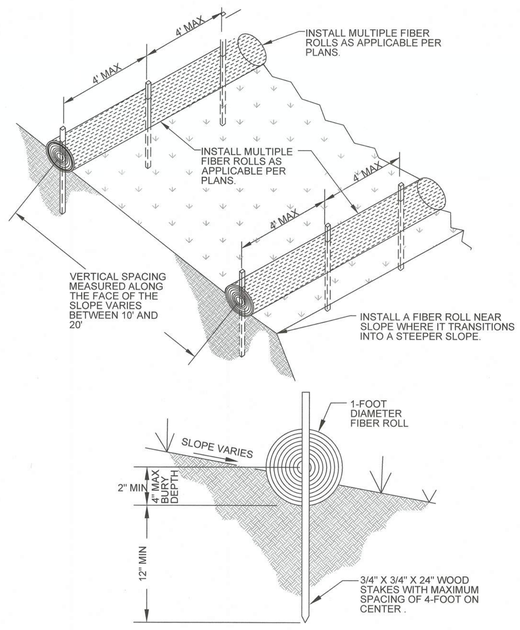
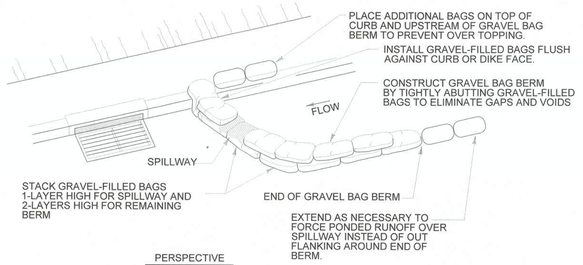


NOTE:
MANY DESIGNS CAN BE FIELD FABRICATED, OR FABRICATED UNITS MAY BE USED AS LONG AS DESIGN IS ADEQUATE FOR FULL LENGTH CONSTRUCTION TRUCK VEHICLES.

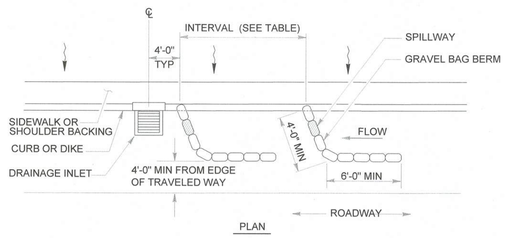
CONSTRUCTION ENTRANCE - DETAIL E1
NOT TO SCALE



TYPICAL FIBER ROLL INSTALLATION - DETAIL E2
NOT TO SCALE



PERSPECTIVE



PLAN

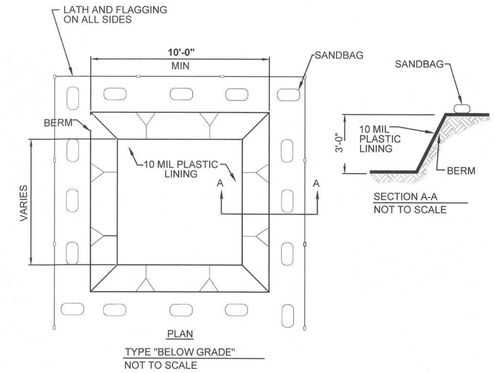
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3A) (GRAVEL BAG BERM)

GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

For slope of less than 1%, install barriers only if erosion/sediment is prevalent

GRAVEL BAG DETAIL - DETAIL E3
NOT TO SCALE



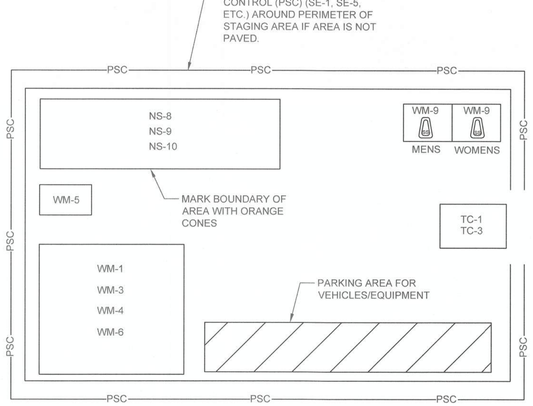
PLAN

TYPE "BELOW GRADE"
NOT TO SCALE

SECTION A-A
NOT TO SCALE

NOTE: CONTRACTOR SHALL USE A TEMPORARY WASHOUT AREA AT AREAS WHERE A PERMANENT CONCRETE WASHOUT IS NOT ALLOWED.

CONCRETE WASHOUT AREA - DETAIL E4
NOT TO SCALE



TYPICAL STAGING AREA LAYOUT

NOTES:
1. CONTRACTOR SHALL ADJUST THE LAYOUT OF STAGING AREA BASED ON PROJECT SITE CONDITIONS AS NECESSARY.
2. CONTRACTOR SHALL IMPLEMENT PERIMETER SEDIMENT CONTROL FOR STAGING AREA BASED ON PROJECT SITE CONDITIONS UPON THE APPROVAL OF THE RESIDENT ENGINEER.

LEGEND

SE-1	SILT FENCE
SE-5	FIBER ROLLS
NS-8	VEHICLE AND EQUIPMENT CLEANING
NS-9	VEHICLE AND EQUIPMENT FUELING
NS-10	VEHICLE AND EQUIPMENT MAINTENANCE
WM-1	MATERIAL DELIVERY AND STORAGE
WM-3	STOCKPILE MANAGEMENT
WM-4	SPILL PREVENTION AND CONTROL
WM-5	SOLID WASTE MANAGEMENT
WM-6	HAZARDOUS WASTE MANAGEMENT
WM-9	SANITARY/SEPTIC WASTE MANAGEMENT
TC-1	STABILIZED CONSTRUCTION ENTRANCE/EXIT
TC-3	TEMPORARY ENTRANCE/OUTLET TIRE WASH
WE-1	WIND EROSION CONTROL (TO BE IMPLEMENTED FOR UNPAVED/NATIVE AREAS STOCKPILE MANAGEMENT)

TYPICAL STAGING AREA - DETAIL E5
NOT TO SCALE

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

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09/25/2023 DATE — 12/31/24 REG. EXP.

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COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
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JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS
12/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EROSION CONTROL PLAN DETAILS

REFERENCE
THG #542.089
SHEET 38 OF 50

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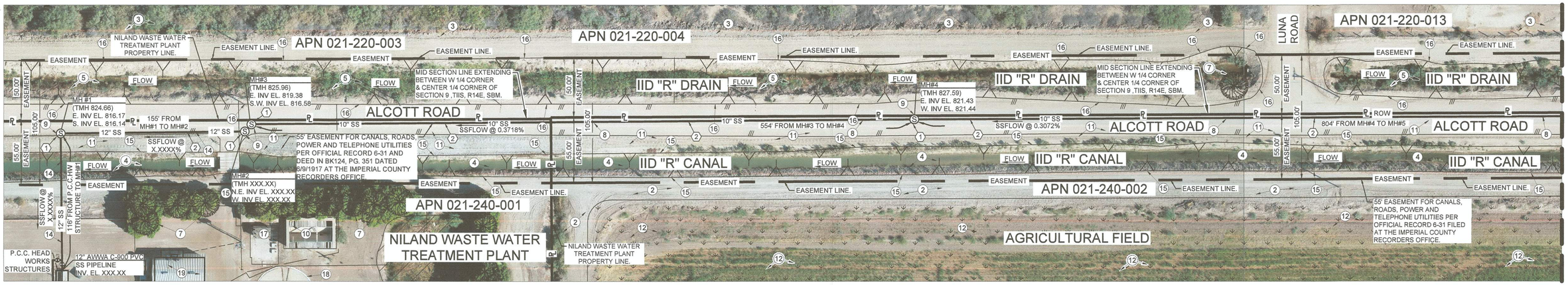

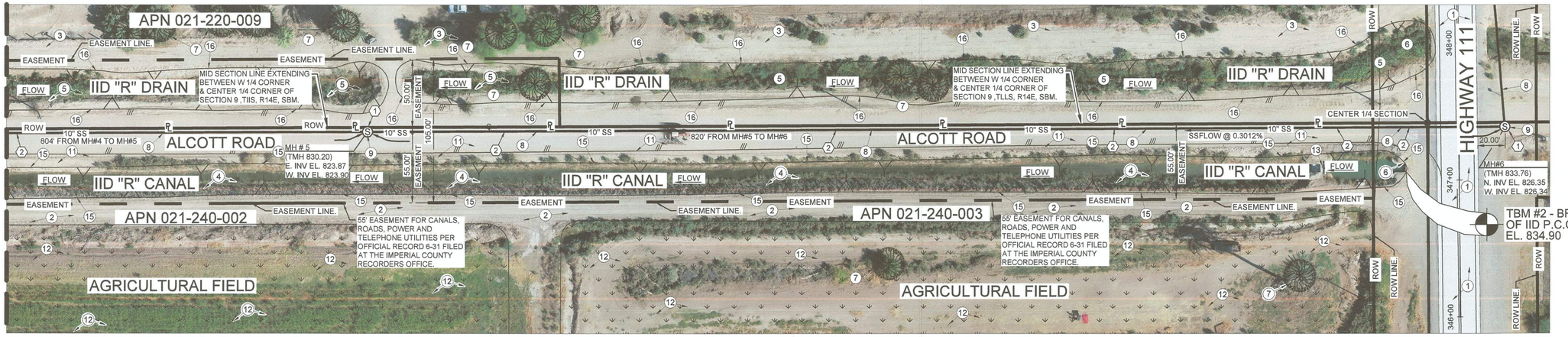

EXISTING KEYNOTES

1. EXISTING A.C. PAVEMENT.
2. EXISTING NATIVE EARTH ACCESS ROAD.
3. EXISTING NATIVE AREA.
4. EXISTING IID EARTH LINED "R" CANAL.
5. EXISTING IID EARTH LINED "R" DRAIN.
6. EXISTING IID P.C.C. HEADWALL STRUCTURE.
7. EXISTING TREE.
8. EXISTING 10 INCH DIAMETER VCP SANITARY SEWER PIPELINE.
9. EXISTING SANITARY SEWER MANHOLE.
10. EXISTING ABANDONED P.C.C. IMHOFF TANK.
11. EXISTING NATIVE EARTH ALCOTT ROAD.
12. EXISTING AGRICULTURAL FIELD.
13. EXISTING IID P.C.C. WEIR STRUCTURE.
14. EXISTING 12 INCH DIAMETER PVC SANITARY SEWER PIPELINE.
15. EARTH LINED CANAL TOP OF SLOPE.
16. EARTH LINED DRAIN TOP OF SLOPE.
17. EXISTING BUILDING P.C.C. SLAB.
18. EXISTING P.C.C. TANK SLAB.
19. EXISTING LABORATORY BUILDING.

CONSTRUCTION KEYNOTES

1. REHABILITATE EXISTING MANHOLE PER DETAIL QQ ON PLAN SHEET 40.
2. INSTALL CURED-IN-PLACE PIPE (CIPP) MATERIAL WITHIN THE EXISTING 10-INCH DIAMETER VITRIFIED CLAY PIPE (VCP) ALONG ALCOTT ROAD IN CONFORMANCE WITH THE TECHNICAL SPECIFICATIONS.

N

40 0 40 80 120

SCALE 1"= 40'

REVISION	DATE	COMMENTS

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10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
SANITARY SEWER PIPELINE PLAN ALONG ALCOTT ROAD FROM THE WWTP TO HIGHWAY 111

REFERENCE

THG #542.089

SHEET 39 OF 50

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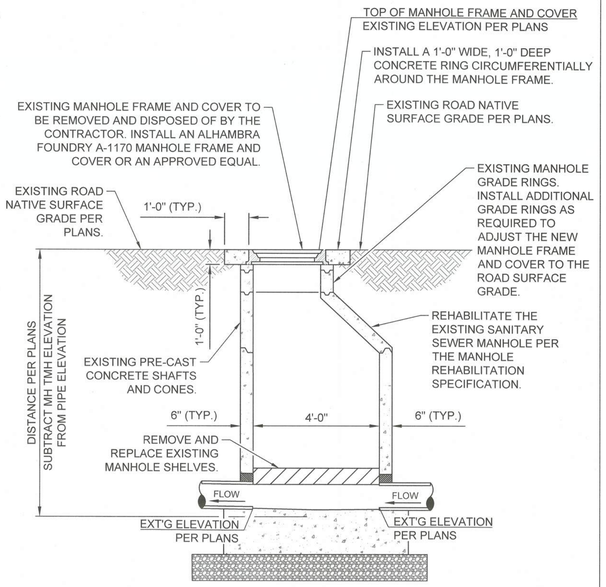


EXISTING MANHOLE SECTION VIEW
NTS

EXISTING MANHOLE REHABILITATION SPECIFICATION

THE INTERIOR OF THE EXISTING MANHOLE SHAFT SIDEWALLS, CONE AND GRADE RINGS SHALL BE HYDRO-BLASTED AND THE WALL SURFACES REPAIRED PRIOR TO THE INSTALLATION OF A HIGH STRENGTH MORTAR TO RE-BUILD THE MANHOLE SIDEWALLS. ADDITIONAL PCC GRADE RINGS SHALL BE ADDED AT THE MANHOLE ENTRANCE OPENING TO ELEVATE THE MANHOLE RING AND COVER TO THE EXISTING NATIVE GRADE, AS REQUIRED. A NEW MANHOLE FRAME AND COVER WITH A CONCRETE RING SHALL BE INSTALLED AT THE TOP OF THE REHABILITATED MANHOLE. PCC FLOOR SHELVES SHALL BE REPLACED AT THE BOTTOM OF THE MANHOLE. FOLLOWING IS THE LIST OF MANHOLE REHABILITATION ITEMS TO BE COMPLETED:

1. PRIOR TO COMMENCING WORK THE CONTRACTOR SHALL ENSURE THAT THE EXISTING WASTEWATER FLOW THROUGH THE MANHOLE WILL NOT BE IMPEDED. THE CONTRACTOR SHALL FURNISH AND INSTALL DEBRIS CONTAINMENT DEVICES TO CATCH ALL MANHOLE DEBRIS DURING THE MANHOLE REHABILITATION PROCESS WHILE MAINTAINING WASTEWATER FLOW THROUGH THE MANHOLE. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEBRIS COLLECTED FROM THE MANHOLE REHABILITATION EFFORT. THE CONTRACTOR SHALL ALSO PROVIDE PROPER EQUIPMENT TO COMPLY WITH CONFINED WORK SPACE WORK AREA AND HAZARDOUS ENVIRONMENT CONDITIONS. THE CONTRACTOR'S PERSONNEL SHALL BE TRAINED TO WORK IN CONFINED WORK SPACE AND ENVIRONMENTALLY HAZARDOUS AREAS.
2. THE CONTRACTOR SHALL ERECT BARRICADES AROUND THE MANHOLE TO INSURE PEDESTRIANS OR VEHICULAR TRAFFIC DOES NOT ENTER THE MANHOLE REHABILITATION AREA.
3. THE EXISTING INTERIOR CONCRETE MANHOLE SHAFT, CONE AND GRADE RING SURFACES SHALL BE HYDRO-BLASTED AT A MINIMUM 5,000 PSI PRESSURE OR AN APPROVED METHOD RECOMMENDED BY THE LINING SYSTEM MANUFACTURER AND APPROVED BY THE ENGINEER. A PNEUMATIC CHISEL MAY BE USED TO REMOVE DETERIORATED CONCRETE FROM ISOLATED AREAS WITHIN THE MANHOLE INTERIOR.
4. AFTER THE INTERIOR MANHOLE WALL SURFACES ARE CLEANED LOCALIZED REPAIRS SHALL BE PERFORMED USING RAPID SETTING MORTARS COMPATIBLE WITH THE LINING SYSTEM. REPAIR MORTARS SHALL BE USED TO FILL SURFACE IRREGULARITIES, VOIDS AND DETERIORATED SURFACES AND TO REPAIR THE UNDERLYING MANHOLE STRUCTURE TO A UNIFORM SURFACE. MANUFACTURER'S SPECIFICATIONS SHALL BE FOLLOWED WHEN PERFORMING REPAIRS, MATERIAL HANDLING, MIXING INSTALLATION AND CURING.
5. A HIGH STRENGTH MORTAR SHALL BE APPLIED TO THE INTERIOR SURFACES OF THE MANHOLE AFTER THE ABOVE ITEMS HAVE BEEN SATISFACTORILY COMPLETED. THE HIGH STRENGTH MORTAR SHALL BE APPLIED IN CONTINUOUS LIFTS OF ½ INCH MINIMUM THICKNESS. THE HIGH STRENGTH MORTAR SHALL BE APPLIED ACCORDING TO THE MANUFACTURERS RECOMMENDATION AND CREATE A SMOOTH AND STRUCTURALLY SOUND INTERIOR SURFACE. THE HIGH STRENGTH MORTAR SHALL BE CURED ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS.
6. A RAVEN 405 EPOXY COATING SYSTEM, OR AN APPROVED EQUAL, IS TO BE APPLIED TO THE INTERIOR SURFACE OF THE MANHOLE AFTER ITEM 5 ABOVE HAS BEEN SATISFACTORILY COMPLETED. A PRIMER RECOMMENDED BY THE MANUFACTURER SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF THE EPOXY COATING SYSTEM. THE MINIMUM THICKNESS OF THE EPOXY COATING SYSTEM SHALL BE 125 MILS. DURING THE EPOXY COATING SYSTEM INSTALLATION, A MIL GAUGE SHALL BE USED TO VERIFY THAT THE MINIMUM THICKNESS OF THE LINING MEETS AND/OR EXCEEDS THE MINIMUM SPECIFIED THICKNESS.
7. AFTER THE LINING SYSTEM IS INSTALLED THE LINING SHALL BE SPARK TESTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SPECIFICATION 2021 SECTION 502-6.2 AND REPAIRED PER SECTION 502-6.5.
8. THE CONCRETE BASE INCLUDING CHANNELS AND SHELVES SHALL BE REPLACED AT THE BOTTOM OF THE MANHOLE. THE CONCRETE SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS CURING.
9. INSTALL A NEW CONCRETE MANHOLE COVER AND CONCRETE RING AROUND THE MANHOLE COVER AS ILLUSTRATED ON THE EXISTING MANHOLE SECTION VIEW. THE CONCRETE RING SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS CURING.
10. COMPLETE MANHOLE REHABILITATION WORK AS NOTED IN ITEMS 1 THROUGH 9 ABOVE AND IN CONFORMANCE WITH THE PUBLIC WORKS SPECIFICATION SECTION 502-6.5, 2021 EDITION.

EXISTING MANHOLE REHABILITATION DETAIL

NTS

QQ 39|40

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.

10/9/23 DATE — 09/30/25 REG. EXP.

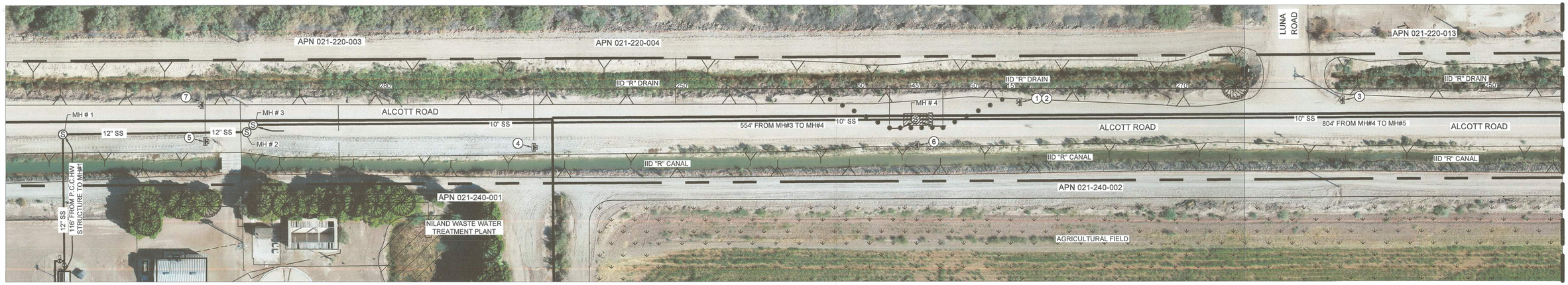
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
SANITARY SEWER COLLECTION SYSTEM DETAILS

REFERENCE
THG #542.089

SHEET 40 OF 50



SEE BELOW LEFT FOR MATCHLINE

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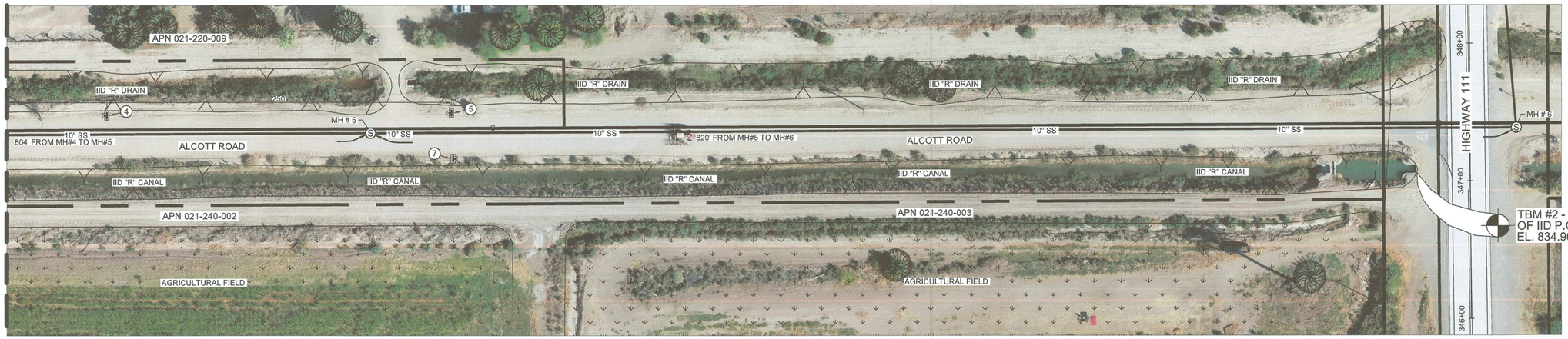

KEYNOTES

1. YIELD — R1-2
2. TO ONCOMING TRAFFIC — R1-2aP
3. W3-2a
4. ONE LANE ROAD AHEAD — W20-4
5. ROAD WORK AHEAD — W20-1
6. W1-4R
7. END ROAD WORK — G20-2a (OPTIONAL)

LEGEND

- TYPE III BARRICADE
- TTC SIGN
- CONE
- WORK AREA

NOTE: BASED ON MODIFIED TA-11 FROM CALIFORNIA MUTCD (LANE CLOSURE ON A TWO-LANE ROAD WITH LOW TRAFFIC VOLUMES.)

THIS TEMPORARY TRAFFIC CONTROL CONFIGURATION WILL BE USED FOR THE REMAINING IMPROVEMENTS TO THE SANITARY SEWER MANHOLES WITHIN THE SCOPE OF WORK.

SIGNAL LIGHTS TO BE TEMPORARILY SET TO FLASH RED DURING CONSTRUCTION TIME FRAME. COORDINATE WITH COUNTY PUBLIC WORKS FIELD OPERATIONS REPRESENTATIVES. MINIMUM TWO DAYS (48 HOURS) PRIOR TO START OF WORK.

N

40 0 40 80 120

SCALE 1"= 40'

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES G. HOLT — No. 31773 — Exp. 12-31-24 — CIVIL — STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

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EL CENTRO, CALIFORNIA

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CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
TRAFFIC CONTROL PLAN

REFERENCE

THG #542.089

SHEET 41 OF 50

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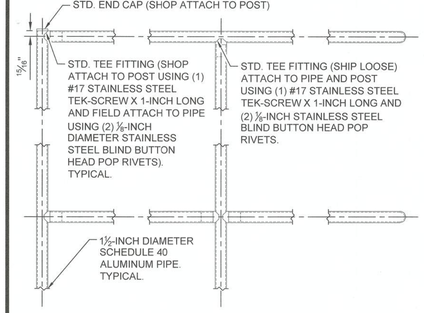
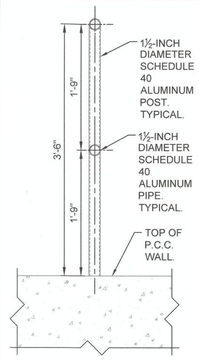


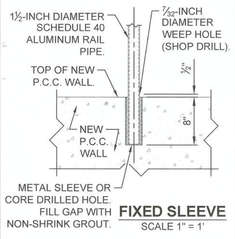
TYPICAL ALUMINUM HANDRAIL CONNECTIONS

SCALE 1" = 1'



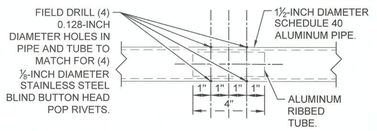
TYPICAL ALUMINUM HANDRAIL POST DETAIL

SCALE 1" = 1'



FIXED SLEEVE

SCALE 1" = 1'



ERECTOR NOTE:

FIELD JOINT IN INTERMEDIATE RAIL IS LOCATED AT FITTING. FIELD DRILL (4) 0.128-INCH DIAMETER HOLES IN PIPE AND FITTING TO MATCH FOR (4) ⅛-INCH DIAMETER STAINLESS STEEL BLIND BUTTON HEAD POP RIVETS.

TOP AND MID HANDRAIL CONNECTION

SCALE 3" = 1'

ALUMINUM HANDRAIL POST AND FIELD CONNECTION DETAILS

SCALE VARIES

P 7 42

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COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

MISCELLANEOUS DETAIL SHEET

REFERENCE

THG #542.089

SHEET 42 OF 50

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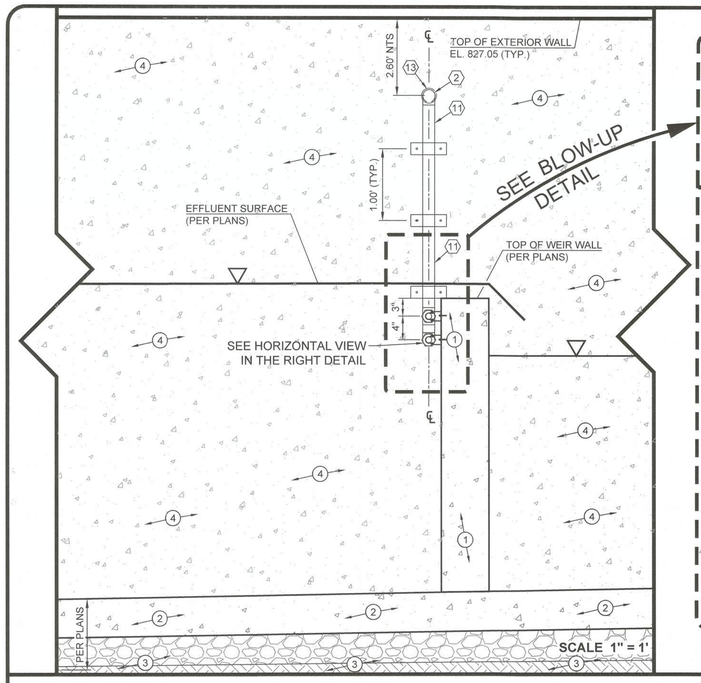

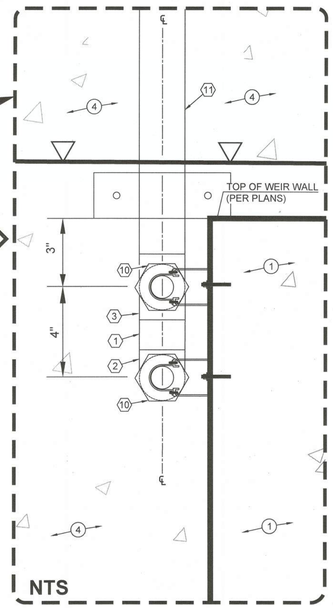

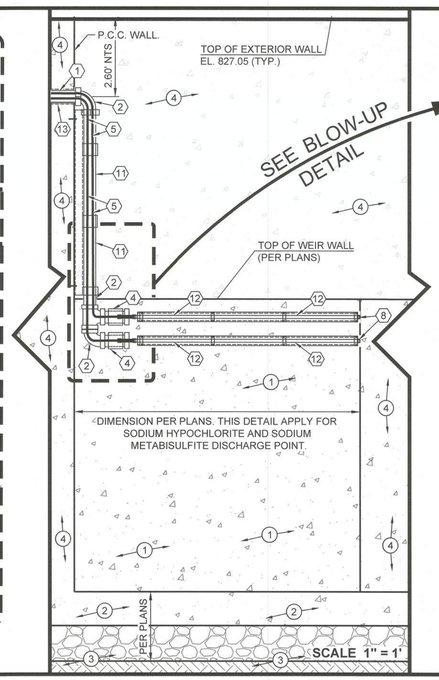

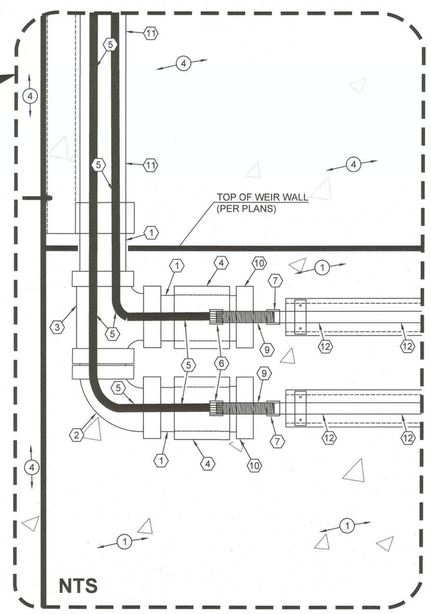

EXISTING KEYNOTES

1. EXISTING CHLORINATION / DECHLORINATION P.C.C. WEIR WALL.
2. EXISTING CHLORINATION / DECHLORINATION P.C.C. SLAB.
3. EXISTING CHLORINATION / DECHLORINATION SUB GRADE MATERIAL.
4. EXISTING CHLORINATION / DECHLORINATION P.C.C. WALL.

CONSTRUCTION KEYNOTES

1. INSTALL 2-INCH SCHEDULE 80 PVC PIPELINE.
2. INSTALL 2-INCH SCHEDULE 80 PVC PIPELINE 90 DEGREE ELBOW.
3. INSTALL 2-INCH SCHEDULE 80 PVC TEE FITTING.
4. INSTALL 2-INCH SCHEDULE 80 PVC COUPLING FITTING.
5. INSTALL 1/2-INCH SOFT TUBE CLEAR PLASTIC TUBING.
6. INSTALL RYAN-HERCO SOFT TUBE TRANSITION FITTING OR AN APPROVED EQUAL TO CONNECT THE CLEAR PVC TUBING WITH THE SCHEDULE 80 PVC PIPE.
7. INSTALL 1/2" PVC SCHEDULE 80 FEMALE ADAPTER NPT THREADED TO PVC PIPELINE FITTING.
8. INSTALL 1/2" SCHEDULE 80 PVC CAP SOCKET.
9. INSTALL 1/2" X 2-1/2" PVC SCHEDULE 80 PVC THREADED NIPPLE AT THE CENTER OF THE REDUCING BUSHING 2 INCH X 1/2 INCH SCHEDULE 80 MALE SPIGOT X FEMALE NPT FITTING . THE PVC SCHEDULE 80 NIPPLE MUST BE THREAD THE FOR COMPLETE LENGTH OF 2-1/2 INCHES WITH 1/2 INCH. - 14 IN . NPT STEEL HEX PIPE DIE.
10. INSTALL A REDUCING BUSHING 2 INCH X 1/2 INCH SCHEDULE 80 MALE SPIGOT X FEMALE NPT FITTING.
11. INSTALL 2 INCH SCHEDULE 80 PVC PIPELINE OVER THE TOP OF THE WALL. SUPPORT THE CHEMICAL PIPE TO THE CONCRETE WALL SURFACE WIT 1-5/8 304 STAINLESS STEEL UNISTRUT AND UNISTRUT CLAMPS PLACED 1-FEET ON CENTER. ANCHOR THE UNISTRUT TO THE CONCRETE WALL WITH (2) 304 STAINLESS STEEL EXPANSION BOLTS. COAT THE EXTERIOR PIPE EXPOSED TO SUNLIGHT WITH EXTERIOR LATEX PAINT.
12. INSTALL A 1/2 INCH PVC DIFFUSER PIPELINE. PLACE 3/16 INCH DIAMETER HOLES COMMENCING 6 INCHES FROM EACH INTERIOR WALL EDGE FACING STRAIGHT UP 6 INCHES ON CENTER. SUPPORT THE CHEMICAL PIPE TO THE CONCRETE WALL SURFACE WIT 1-5/8 304 STAINLESS STEEL UNISTRUT AND UNISTRUT CLAMPS PLACED 1-FEET ON CENTER. ANCHOR THE UNISTRUT TO THE CONCRETE WALL WITH (2) 304 STAINLESS STEEL EXPANSION BOLTS. ALIGN THE PVC ½ INCH PIPE WITH THE 2 INCH PIPE PREVIOUSLY INSTALLED VERTICALLY.
13. DRILL NEW 2 1/4-INCH DIAMETER HOLE IN THE EXISTING P.C.C. WALL . GROUT THE 2" SCHEDULE 80 PVC PIPE IN THE 2 1/4-INCH DRILLED HOLE.

DELIVERY PIPELINE SYSTEM OF SODIUM HYPOCHLORITE AND SODIUM METABISULFITE

Q
7,9,10 43

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

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PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

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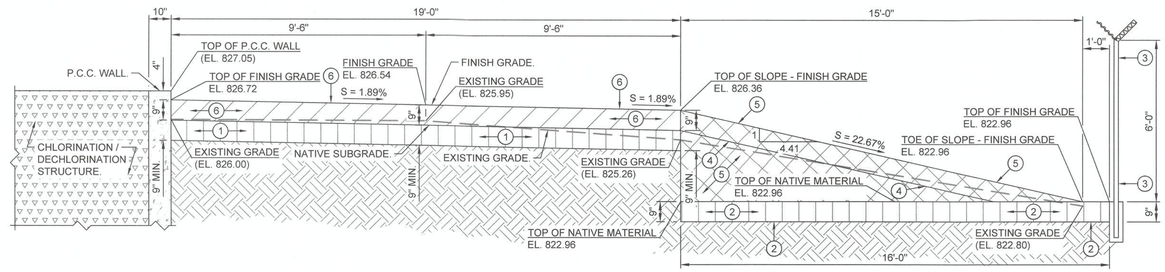
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

MISCELLANEOUS DETAIL SHEET

REFERENCE
THG #542.089

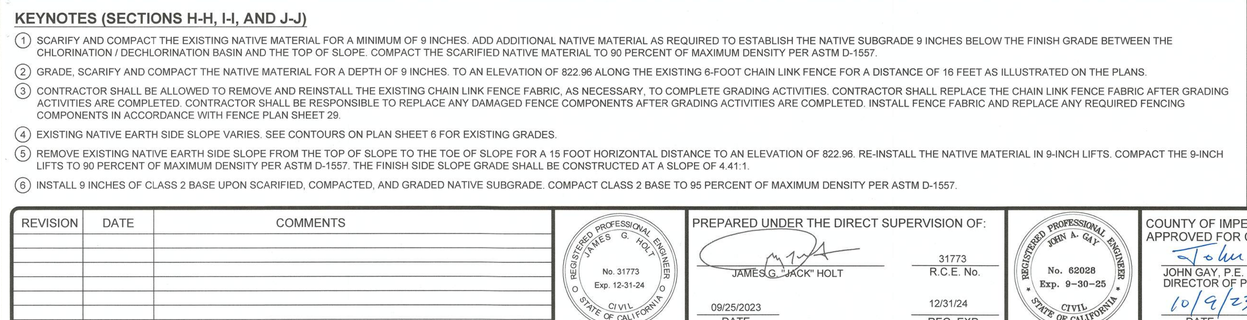
SHEET 43 OF 50



CHLORINATION / DECHLORINATION BASIN WEST-SIDE, SOUTH-FACING GRADING SECTION

SCALE ⅜" = 1'

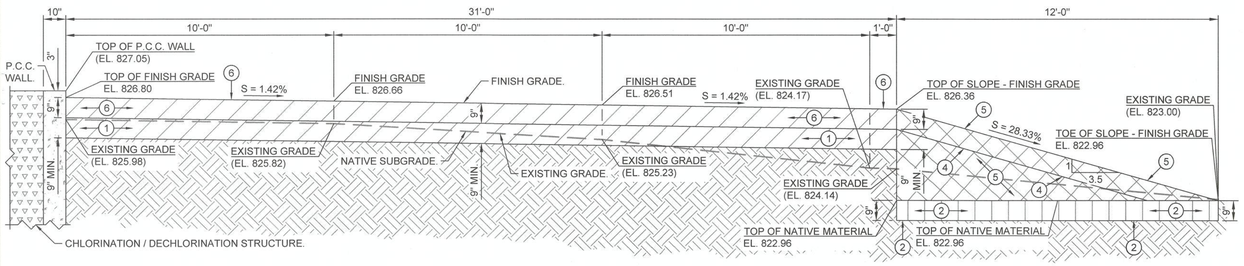
H-H
6 | 44



CHLORINATION / DECHLORINATION BASIN EAST-SIDE, NORTH-FACING GRADING SECTION

SCALE ½" = 1'

I-I
6 | 44



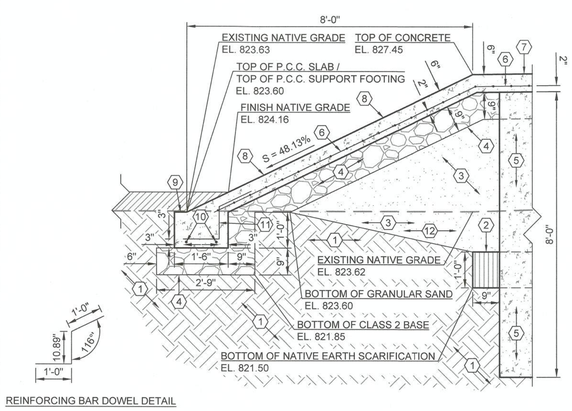
CHLORINATION / DECHLORINATION BASIN NORTH-SIDE, WEST-FACING GRADING SECTION

SCALE ⅜" = 1'

J-J
6 | 44

KEYNOTES (SECTIONS H-H, I-I, AND J-J)

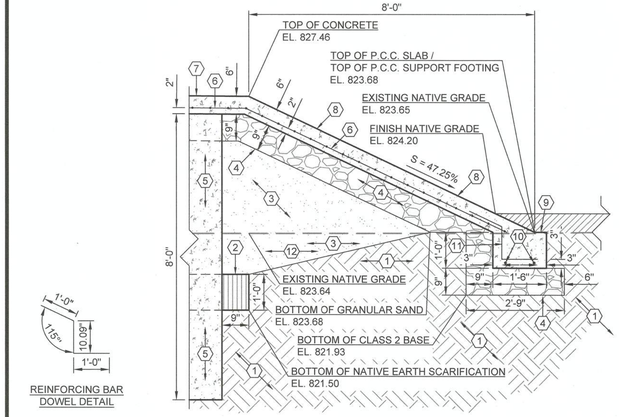
1. SCARIFY AND COMPACT THE EXISTING NATIVE MATERIAL FOR A MINIMUM OF 9 INCHES. ADD ADDITIONAL NATIVE MATERIAL AS REQUIRED TO ESTABLISH THE NATIVE SUBGRADE 9 INCHES BELOW THE FINISH GRADE BETWEEN THE CHLORINATION / DECHLORINATION BASIN AND THE TOP OF SLOPE. COMPACT THE SCARIFIED NATIVE MATERIAL TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
2. GRADE, SCARIFY AND COMPACT THE NATIVE MATERIAL FOR A DEPTH OF 9 INCHES. TO AN ELEVATION OF 822.96 ALONG THE EXISTING 6-FOOT CHAIN LINK FENCE FOR A DISTANCE OF 16 FEET AS ILLUSTRATED ON THE PLANS.
3. CONTRACTOR SHALL BE ALLOWED TO REMOVE AND REINSTALL THE EXISTING CHAIN LINK FENCE FABRIC, AS NECESSARY, TO COMPLETE GRADING ACTIVITIES. CONTRACTOR SHALL REPLACE THE CHAIN LINK FENCE FABRIC AFTER GRADING ACTIVITIES ARE COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE ANY DAMAGED FENCE COMPONENTS AFTER GRADING ACTIVITIES ARE COMPLETED. INSTALL FENCE FABRIC AND REPLACE ANY REQUIRED FENCING COMPONENTS IN ACCORDANCE WITH FENCE PLAN SHEET 29.
4. EXISTING NATIVE EARTH SIDE SLOPE VARIES. SEE CONTOURS ON PLAN SHEET 6 FOR EXISTING GRADES.
5. REMOVE EXISTING NATIVE EARTH SIDE SLOPE FROM THE TOP OF SLOPE TO THE TOE OF SLOPE FOR A 15 FOOT HORIZONTAL DISTANCE TO AN ELEVATION OF 822.96. RE-INSTALL THE NATIVE MATERIAL IN 9-INCH LIFTS. COMPACT THE 9-INCH LIFTS TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557. THE FINISH SIDE SLOPE GRADE SHALL BE CONSTRUCTED AT A SLOPE OF 4.41:1.
6. INSTALL 9 INCHES OF CLASS 2 BASE UPON SCARIFIED, COMPACTED, AND GRADED NATIVE SUBGRADE. COMPACT CLASS 2 BASE TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.



NEW SODIUM METABISULFITE STRUCTURE SOUTH SIDESLOPE SECTION

SCALE ½" = 1'

M-M
6,9 | 44



NEW SODIUM METABISULFITE STRUCTURE NORTH SIDESLOPE SECTION

SCALE ½" = 1'

N-N
6,9 | 44

KEYNOTES (SECTIONS D-D AND E-E)

1. EXISTING NATIVE SOIL TO REMAIN.
2. SCARIFY AND MOISTURE CONDITION EXISTING NATIVE MATERIAL FOR A DEPTH OF 1 FOOT. COMPACT SCARIFIED AND MOISTURE CONDITIONED NATIVE SOIL AT 2 PERCENT OVER OPTIMUM WATER CONTENT TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
3. INSTALL GRANULAR SAND MATERIAL IN MAXIMUM 9-INCH LIFTS. COMPACT GRANULAR SAND MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY AT OPTIMUM WATER CONTENT PER ASTM D-1557. SUCCESSIVE LIFTS SHALL NOT BE PLACED UNTIL PREVIOUS LIFTS HAVE BEEN TESTED AND ATTAINED THE REQUIRED COMPACTION DENSITY.
4. INSTALL CLASS 2 BASE. COMPACT THE CLASS 2 BASE MATERIAL TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D-1557.
5. INSTALL SHADE STRUCTURE FOOTING PER DETAIL X ON PLAN SHEET X. P.C.C. CONCRETE SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AFTER 28 DAYS OF CURING.
6. INSTALL 6-INCH X 6-INCH, 6-GAUGE WELDED WIRE FABRIC.
7. INSTALL 6-INCH P.C.C. SLAB.
8. INSTALL 6-INCH P.C.C. SIDESLOPE.
9. INSTALL P.C.C. SIDESLOPE SUPPORT FOOTING.
10. INSTALL TWO (2) CONTINUOUS NUMBER 5 HORIZONTAL REINFORCING BARS.
11. INSTALL NUMBER 4 REINFORCING BAR DOWEL 1.5 FEET ON CENTER PER RESPECTIVE DETAILS IN LOWER LEFT CORNER OF SECTION DETAILS D-D AND E-E ON THIS DETAIL SHEET. NO. 5 HORIZONTAL REINFORCING BARS AND 6-INCH X 6-INCH, 6-GAUGE WELDED WIRE FABRIC TO BE TIED TO THE NUMBER 4 REINFORCING DOWEL.
12. REMOVE AND DISPOSE OF EXISTING NATIVE MATERIAL TO THE BOTTOM OF THE GRANULAR SAND MATERIAL OR P.C.C FOOTING PRIOR TO CONSTRUCTING CHEMICAL STRUCTURES.

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES G. HOLT — No. 31773 — Exp. 12-31-24 — CIVIL — STATE OF CALIFORNIA

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MISCELLANEOUS DETAIL SHEET

REFERENCE
THG #542.089

SHEET 44 OF 50

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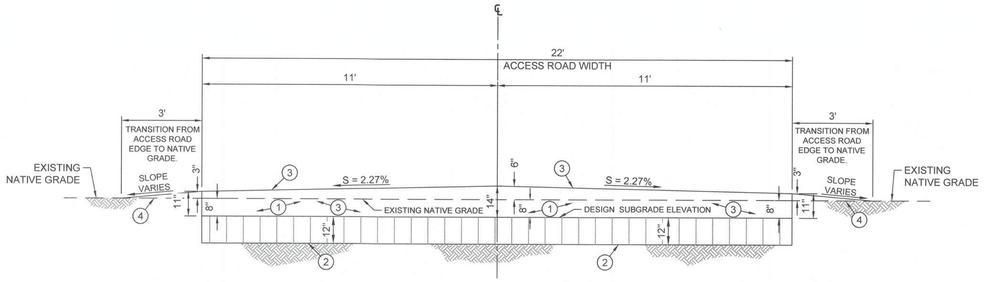

KEYNOTES

1. REMOVE EXISTING NATIVE MATERIAL TO DESIGN SUBGRADE ELEVATION. NATIVE EARTH SHALL BE USED AS FILL FOR OTHER PROJECT IMPROVEMENTS OR REMOVED AND DISPOSED OF FROM THE PROJECT SITE.
2. SCARIFY AND COMPACT NATIVE MATERIAL TO DESIGN SUBBASE GRADE FOR A DEPTH OF 12 INCHES AT 90 PERCENT OF MAXIMUM DENSITY AT OPTIMUM WATER CONTENT PER ASTM D-1557.
3. INSTALL CLASS 2 BASE ACCORDING TO THE CENTERLINE DESIGN GRADE ESTABLISHED BY THE FINISH GRADE ELEVATIONS AT B.C.'S, E.C.'S AND END POINTS AS ILLUSTRATED ON PLAN SHEET 4 AND THIS SECTION. THE CLASS 2 BASE DEPTH SHALL BE 14 INCHES AT THE ACCESS ROAD CENTERLINE AND 11 INCHES AT THE ACCESS ROAD EDGES.
4. GRADE NATIVE MATERIAL FROM THE ACCESS ROAD CLASS 2 BASE EDGES TO THE NATIVE GRADE IN A 3 FOOT HORIZONTAL DISTANCE.

NOTE:
THE SURVEYOR COMPLETING THE CONSTRUCTION STAKING SHALL PROVIDE ROADWAY DESIGN GRADE AND SUBGRADE ELEVATIONS ALONG THE ACCESS ROADWAY CENTERLINE AND ROAD EDGES AT 50 FOOT INTERVALS ALONG THE LINEAR ROAD SEGMENTS AND 15 FOOT INTERVALS ALONG THE CURVE CENTERLINES. THE DESIGN GRADE AND SUBBASE ELEVATIONS SHALL BE PROVIDED TO THE ENGINEER AS A SUBMITTAL DOCUMENT FOR REVIEW AND APPROVAL. EXCAVATION WORK FOR THE CONSTRUCTION OF THE ALL WEATHER ACCESS ROAD SHALL NOT COMMENCE UNTIL THE ENGINEER HAS APPROVED THE DESIGN GRADE SUBMITTAL DOCUMENT.

ALL WEATHER ACCESS ROAD SECTION B-B

SCALE 3/8" = 1'-0"

4 | 45

REVISION	DATE	COMMENTS

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MISCELLANEOUS DETAIL SHEET

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SHEET 45 OF 50

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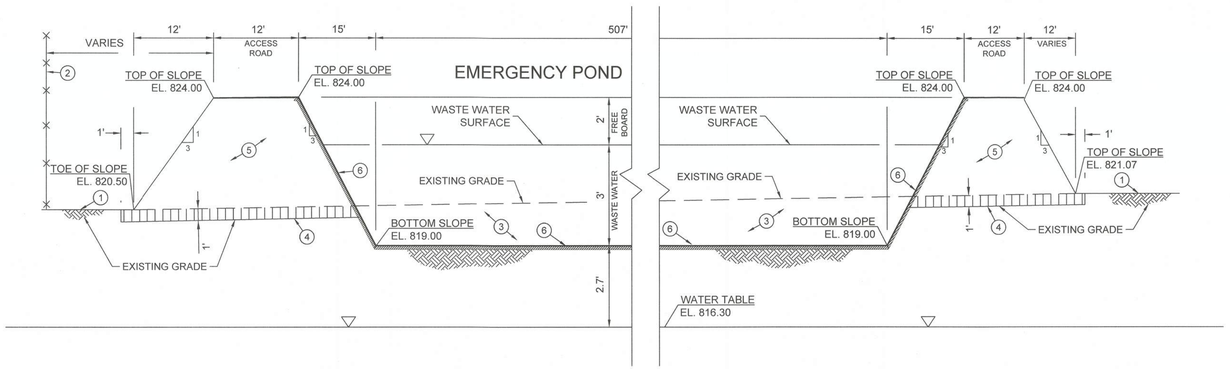
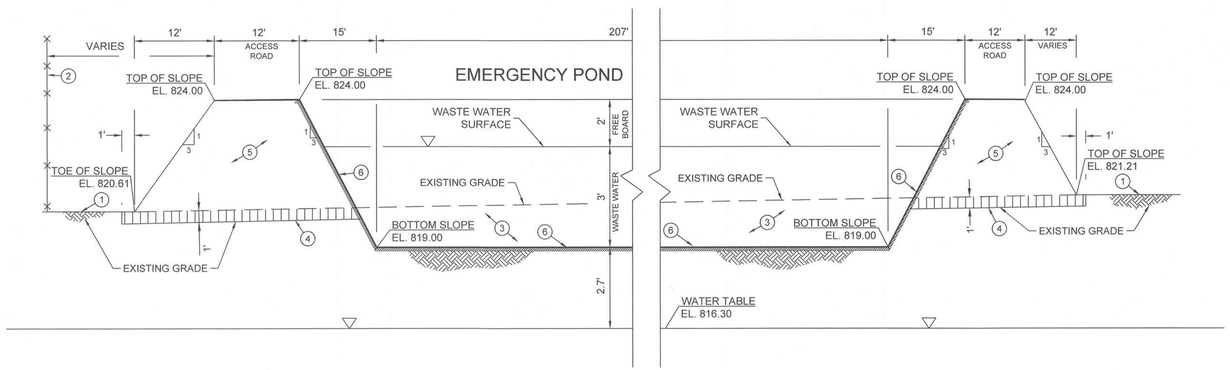


EMERGENCY POND - SECTION C-C

NTS

4 46



EMERGENCY POND - SECTION D-D

NTS

4 46

KEYNOTES

(1) EXISTING NATIVE GRADE TO REMAIN.

(2) EXISTING 6 FOOT HIGH CHAIN LINK FENCE TO REMAIN. SECTIONS OF THE FENCE SHALL BE ALLOWED TO BE TEMPORARILY REMOVED DURING THE CONSTRUCTION OF THE SLUDGE CONTAINMENT BASIN. IF SECTIONS OF THE FENCE ARE REMOVED THE CONTRACTOR IS RESPONSIBLE TO STORE THE REMOVED FENCING MATERIAL IN A SECURE LOCATION. AFTER THE CONSTRUCTION OF THE EMERGENCY POND IS COMPLETED ANY TEMPORARILY REMOVED FENCE SECTIONS SHALL BE REPLACED. NEW VERTICAL POSTS WITH NEW PCC FOOTINGS SHALL BE CONSTRUCTED PER THE FENCING DETAIL ON SHEET 29. OTHER DAMAGED FENCE COMPONENTS SHALL BE REPLACED WITH NEW COMPONENTS PER FENCING DETAIL SHEET 29 REQUIREMENTS. THE FENCE SHALL BE REPLACED TO THE SATISFACTION OF THE RESIDENT ENGINEER.

(3) EXCAVATE NATIVE EARTH IN THE EMERGENCY POND WITH 3:1 SIDESLOPES TO THE EMERGENCY POND BOTTOM. EXCAVATED NATIVE MATERIAL SHALL BE USED TO CONSTRUCT THE ABOVE GRADE BASIN EMBANKMENTS. THE DEPTH FROM THE EMERGENCY POND DESIGN BOTTOM TO THE EXISTING WATER TABLE IS APPROXIMATELY 2.7 FEET. PUMPING OF THE NATIVE EARTH ABOVE THE WATER TABLE CAN EASILY OCCUR IF SUBJECTED TO EQUIPMENT WITH LARGE POINT LOADS. THE CONTRACTOR SHALL COMPLETE THE NATIVE EARTH EXCAVATION WITH LIGHT EQUIPMENT. EQUIPMENT WHICH CREATES HEAVY POINT LOADS, SUCH AS FRONT END LOADERS, SHALL NOT BE ALLOWED TO COMPLETE THE EXCAVATION WORK. IF PUMPING OCCURS DURING THE EXCAVATION OF THE EMERGENCY POND, THE RESIDENT ENGINEER SHALL BE IMMEDIATELY INFORMED OF THE PUMPING CONDITION. IF PUMPING OCCURS EXCAVATION WORK SHALL IMMEDIATELY CEASE. IF PUMPING OCCURS THE REMAINING EXCAVATION WORK TO THE DESIGN BOTTOM OF THE EMERGENCY POND BASIN SHALL BE COMPLETED WITH A HOE TYPE EXCAVATOR OR A GRADALL.

(4) SCARIFY AND COMPACT EXISTING NATIVE MATERIAL FOR A DEPTH OF 1 FOOT BENEATH THE SLUDGE CONTAINMENT BASIN EMBANKMENTS. SCARIFY AND COMPACT THE EXISTING NATIVE MATERIAL FOR A HORIZONTAL DISTANCE OF 1 FOOT BEYOND THE EMBANKMENT EXTERIOR TOE OF SLOPE. THE NATIVE EARTH SHALL BE COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY AT OPTIMUM WATER CONTENT PER ASTM D 1557. CONSTRUCTION OF THE EMBANKMENTS SHALL NOT COMMENCE UNTIL THE SCARIFIED AND COMPACTED NATIVE MATERIAL HAS BEEN TESTED AND ATTAINED THE SPECIFIED COMPACTION DENSITY.

(5) INSTALL NATIVE MATERIAL FOR THE CONSTRUCTION OF THE EMBANKMENTS IN MAXIMUM 9 INCH LIFTS AT 90 PERCENT OF MAXIMUM DENSITY AT OPTIMUM WATER CONTENT PER ASTM D-1557. ADDITIONAL LIFTS SHALL NOT BE INSTALLED UNTIL PREVIOUS LIFTS HAVE BEEN TESTED AND ATTAINED THE SPECIFIED COMPACTION DENSITY. IF THE NATIVE EARTH EXCAVATED FROM THE SLUDGE CONTAINMENT BASIN IS NOT SUFFICIENT TO CONSTRUCT THE EMBANKMENTS THEN EXCESS EARTH FROM THE EVAPORATION BASIN EARTHWORK OR NATIVE EARTH OBTAINED FROM THE EXISTING EMERGENCY WASTEWATER POND SHALL BE USED TO COMPLETE THE CONSTRUCTION OF THE EMBANKMENTS. IF NATIVE EARTH IS OBTAINED FROM THE EMERGENCY WASTEWATER. IT SHALL BE REMOVED IN 8 INCH LIFTS AT A UNIFORM ELEVATION ACROSS THE ENTIRE POND BOTTOM.

(6) INSTALL NATIVE MATERIAL IN LAYERS OF 9 INCHES. THE NATIVE EARTH SHALL BE COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY AT OPTIMUM WATER CONTENT PER ASTM D 1557

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES G. "JACK" HOLT — 31773 R.C.E. No.

09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS

10/2/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

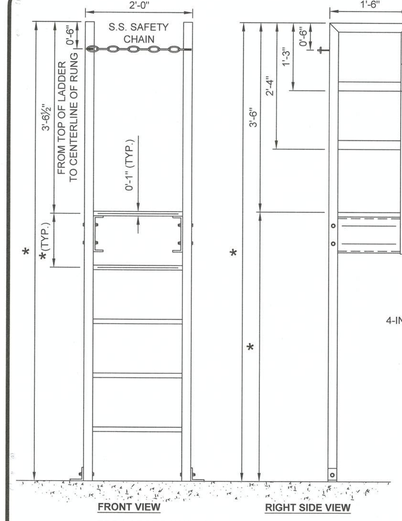
DATE 09/25/2023
DRAWN RS
DESIGNED RS
SCALE N/A
CHECKED JGH

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

MISCELLANEOUS DETAIL SHEET

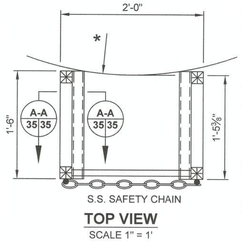
REFERENCE
THG #542.089

SHEET 46 OF 50

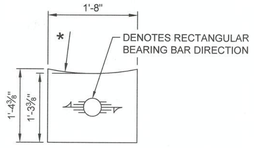


FRP LADDER WITH OPERATOR SAFETY DECK
SCALE 3/4" = 1'

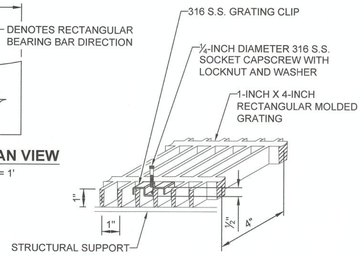
* NOTE: SEE PLAN SHEET 11 FOR APPROXIMATE POTABLE WATER TANK, HYPOCHLORITE TANK AND METABISULFITE TANK DIMENSIONS. EXACT LADDER DIMENSIONS TO BE DETERMINED DURING SHOP DRAWINGS REVIEW PROCESS. ALL LADDER ASSEMBLES ARE TO BE SUPPLIED WITH SAFETY DECK.



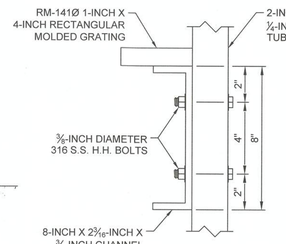
TOP VIEW
SCALE 1" = 1'



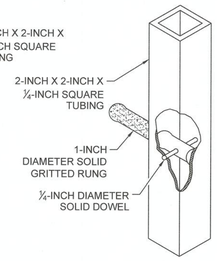
GRATING PLAN VIEW
SCALE ¾" = 1'



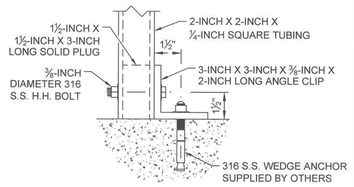
1-INCH RECTANGULAR GRATING AND CLIP ATTACHMENT DETAIL
SCALE 3" = 1'



SECTION A-A 35|35
SCALE 3" = 1'



LADDER RUNG ATTACHMENT DETAIL
SCALE 3" = 1'



LADDER ANCHOR CLIP ATTACHMENT DETAIL
SCALE 3" = 1'

FIBERGLASS REINFORCED PLASTIC (FRP)
LADDER WITH OPERATOR SAFETY DECK DETAIL
SCALE VARIES

Z
11 | 47

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES G. HOLT No. 31773 Exp. 12-31-24 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES G. "JACK" HOLT — 31773 R.C.E. No.
09/25/2023 DATE — 12/31/24 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS
10/9/23 DATE — 62028 R.C.E. No.
09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
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DESIGNED RS
SCALE N/A
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PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
MISCELLANEOUS DETAIL SHEET

REFERENCE
THG #542.089
SHEET 47 OF 50

C:\Users\ChristophersonGarcia\The Holt Group\542.089 - Documents\542.089\04 - CAD & PDF DRAWINGS\542.089 - SHEET 47_ Miscellaneous Details.dwg 09/22/2023 15:36

(1,125.15' PER OM 6-31)
50' WIDE EASEMENT FOR ROADS AND CANALS PER OM 6-31.
50.00' EASEMENT
(760' PER OM 6-31) (761.09' PER ROS 10-7)
(760' PER OM 6-31) (761.31' PER ROS 10-7)
LOT 25 OF ALEXANDER TRACT ACCORDING TO MAP NO. 360 ON FILE IN BOOK 6, PAGE 31 OF OFFICIAL MAPS AT THE IMPERIAL COUNTY RECORDERS OFFICE
AERATION POND NO.3
AERATION POND NO.2
AERATION POND NO.1
ACCESS ROAD
EFFLUENT FLOW METER / SAMPLING VAULT
NEW SODIUM METABISULFATE FACILITY. SEE CIVIL, PLAN SHEET 8.
EXISTING CHEMICAL CONTAINMENT STRUCTURE TO BE ABANDONED
NEW SODIUM HYPOCHLORITE FACILITY, SEE CIVIL, PLAN SHEET 8
REHABILITATE CHLORINATION / DECHLORINATION STRUCTURE, SEE CIVIL, PLAN SHEET 7
NEW EVAPORATION POND PUMP STATION SEE CIVIL, PLAN SHEET 24
POINT OF DISCHARGE.
IID "R" CANAL
ALCOTT ROAD
IID "R" DRAIN
55' EASEMENT FOR CANALS, ROADS, POWER AND TELEPHONE UTILITIES PER OFFICIAL RECORD 6-31 AND DEED IN BK124, PG. 351 DATED 6/9/1917 AT THE IMPERIAL RECORDERS OFFICE.
(E) HEADWORKS STRUCTURE
(E) RAW WASTEWATER INFLUENT PUMP STATION
EXISTING INFLUENT FLOWMETER
(E) GENERATOR
EXISTING GROUND WATER PUMP STATION.
(E) MCC
LABORATORY CONTROL BUILDING.
NEW POTABLE WATER FACILITY, SEE CIVIL, PLAN SHEET 6
ABANDONED BLDG.
STORM WATER POND
EXISTING EMERGENCY WASTEWATER POND.
EXISTING EMERGENCY WASTE WATER POND.
SLAB FOUNDATION FOR PREVIOUS ACTIVATED SLUDGE WW TANK
ABANDONED IMHOFF TANK
EXISTING GARAGE.
RAW WATER POND
50' WIDE ROAD AND CANAL EASEMENT PER OFFICIAL RECORD IN BOOK 708, PAGE 202 FILED AT THE IMPERIAL RECORDERS OFFICE ON 5/25/1948. SEE RECORD OF SURVEY MAP 10-7 FOR EXACT EASEMENT LOCATION.
(1,126.15' PER OM 6-31) (1,126.12' PER ROS 10-7)
DIGALERT
811
40.000000 0 40.000000 80.00000 120.0000
SCALE 1"= 40'

EXISTING KEY NOTES:

1. EXISTING NATIVE MATERIAL.
2. EXISTING NATIVE MATERIAL BORROW AREA AND EMERGENCY WASTE WATER STORAGE POND.
3. EXISTING BUILDING.
4. EXISTING P.C.C. RIBBON GUTTER.
5. EXISTING P.C.C. SIDEWALK.
6. EXISTING ABANDONED EMERGENCY WASTE WATER STORAGE POND CONVERTED TO STORM WATER STORAGE POND.
7. EXISTING RAW WATER STORAGE POND.
8. EXISTING CHAIN LINK FENCE.
9. EXISTING CHAIN LINK FENCE SWING GATE.
10. EXISTING CHAIN LINK FENCE ROLL GATE.
11. EXISTING IID IRRIGATION CANAL TO REMAIN
12. EXISTING IID EARTHEN DRAIN.
13. EXISTING HDPE LINED AERATION POND.
14. EXISTING DIRT ACCESS ROAD.
15. EXISTING MOORING POST. TYPICAL.
16. EXISTING TREE.
17. EXISTING PALM TREE.
18. EXISTING BRUSH VEGETATION.
19. EXISTING GRAVITY SANITARY SEWER PIPELINE.
20. EXISTING SANITARY SEWER FORCE MAIN.
21. EXISTING SANITARY SEWER MANHOLE.
22. EXISTING SANITARY SEWER FORCE MAIN INFLUENT FLOW METER VAULT.
23. EXISTING SANITARY SEWER FORCE MAIN VALVE.
24. EXISTING GRAVITY SANITARY SEWER VALVE.
25. EXISTING EMERGENCY WASTE WATER DISCHARGE PIPELINE.
26. EXISTING GROUND WATER PUMP DISCHARGE PIPELINE.
27. EXISTING RAW WATER PIPELINE.
28. EXISTING HOSE BIB.
29. EXISTING P.C.C. HEADWORKS STRUCTURE.
30. EXISTING WASTE WATER INFLUENT PUMP STATION.
31. EXISTING GROUND WATER PUMP STATION.
32. EXISTING CHLORINATION/DECHLORINATION STRUCTURE.
33. EXISTING EFFLUENT FLOW METER / SAMPLING VAULT.
34. EXISTING CHEMICAL STORAGE TANK.
35. EXISTING OUT OF SERVICE CHEMICAL STORAGE TANK.
36. EXISTING AERATION POND CATWALK STRUCTURE.
37. EXISTING AERATOR. TYPICAL.
38. SURVEY MONUMENTS NOTED AS "1 1/2 INCH IRON PIPE TAGGED LS5397" PER RECORD OF SURVEY ON FILE IN BOOK 10, PAGE 7 AT THE IMPERIAL COUNTY RECORDERS OFFICE. CONTRACTOR SHALL TAKE EXTREME CAUTION NOT TO DISTURB OR DESTROY THE EXISTING MONUMENTS DURING THE PROJECT CONSTRUCTION PERIOD.
39. SURVEY MONUMENT NOTED AS "1 1/2 INCH IRON PIPE TAGGED LS5397". NOTED TO BE THE WEST 1/4 CORNER OF SECTION 9, TOWNSHIP 11 SOUTH , RANGE 14 EAST, SAN BERNARDINO MERIDIAN PER RECORD OF SURVEY ON FILE IN BOOK 10, PAGE 7 AT THE IMPERIAL COUNTY RECORDERS OFFICE.
40. EXISTING SANITARY SEWER GRAVITY PIPELINE VALVES.
41. EXISTING GRAVITY SANITARY SEWER PIPELINE.
42. EXISTING EMERGENCY POWER GENERATOR SET.
43. EXISTING (2) HEAVY DUTY LIGHT FIXTURES MOUNTED ON A STEEL POLE ASSEMBLY AT THE TOP OF THE CHLOR./DECHLOR. STRUCTURE WALL & CONNECTED TO AN EXISTING 110V RECEPTACLE.

ELECTRICAL KEY NOTES:

1. IMPERIAL IRRIGATION DISTRICT POWER POLE NUMBER __________.
2. EXISTING 480V, 3ø, 4W UNDERGROUND SERVICE EXTENDING FROM IID POWER POLE NUMBER __________ TO THE EXISTING SERVICE ENTRANCE SECTION (SES).
3. EXISTING SERVICE ENTRANCE SECTION (SES), 300A, 480V, 3ø, 4W IN A NEMA 3R/12 DISTRIBUTION SWITCHBOARD. SEE ELECTRICAL ONE-LINE DIAGRAM.
4. EXISTING NEMA 1 MOTOR CONTROL CENTER (MCC) LOCATED INSIDE THE LABORATORY BUILDING. SEE ELECTRICAL ONE-LINE DIAGRAM.
5. NEW POTABLE WATER DUPLEX VARIABLE SPEED CENTRIFUGAL PUMPING SYSTEM CONTROL PANEL, SEE CIVIL. THE PUMPING SYSTEM WILL INCLUDE TWO (2) 2HP 480V, 3ø, CENTRIFUGAL PUMPS.
6. INSTALL DUPLEX MOTOR CONTROL CENTER FOR A DUPLEX EVAPORATION POND SUBMERSIBLE PUMP STATION. SEE CIVIL. EACH OF THE TWO (2) SUBMERSIBLE PUMPS SHALL BE RATED 480V, 3ø, 60HZ, 7.5HP.
7. NEW 1" PVC UG CONDUIT (FEEDER) & 1" PVC UG CONDUIT (CONTROL/SIGNAL). INSTALL ELECTRICAL CIRCUITRY FROM THE EXISTING MOTOR CONTROL CENTER INSIDE THE LABORATORY/CONTROL BUILDING TO THE NEW POTABLE WATER FACILITY VARIABLE SPEED CENTRIFUGAL PUMPING SYSTEM CP. SEE ELECTRICAL ONE-LINE DIAGRAM.
8. NEW 2" PVC UG CONDUIT (FEEDER) & 1" PVC UG CONDUIT (CONTROL/SIGNAL). INSTALL ELECTRICAL CIRCUITRY FROM THE EXISTING MOTOR CONTROL CENTER INSIDE THE LABORATORY/CONTROL BUILDING TO THE EVAPORATION POND SUBMERSIBLE PUMP STATION. SEE ELECTRICAL ONE-LINE DIAGRAM.
9. INSTALL NEW 110V, 1ø, 60HZ, GFI FOURPLEX RECEPTACLE IN AN EXTERIOR CAST ALUMINUM BOX WITH A WP-IU COVER SUPPORTED BY A UNI-STRUT SYSTEM. EACH DUPLEX RECEPTACLE TO BE RECONNECTED TO THE EXISTING EQUIPMENT DEDICATED BRANCH CIRCUIT IT IS REPLACING.
10. NEW (4) #10 CU THWN-2, (1) #10 CU GROUND, IN 1" PVC UG CONDUIT FROM THE LABORATORY/ CONTROL BUILDING MCC LOAD CENTER TO THE NEW FOURPLEX EXTERIOR RECEPTACLES AT THE NEW SODIUM METABISULFATE FACILITY. (MCC-A-24,36)
11. NEW (4) #10 CU THWN-2, (1) #10 CU GROUND, IN 1" PVC UG CONDUIT FROM THE LABORATORY/ CONTROL BUILDING MCC LOAD CENTER TO THE NEW FOURPLEX EXTERIOR RECEPTACLES AT THE NEW SODIUM HYPOCHLORITE FACILITY. (MCC-A-28,30)
12. REMOVE THE EXISTING FLASH MIXER FIELD CONTROL STATION FROM THE EXISTING CHLORINATION/ DECHLORINATION STRUCTURE SOUTH WALL PRIOR TO THE DEMOLITION AND RECONSTRUCTION OF A PORTION OF THE CHLORINATION/DECHLORINATION STRUCTURE. DISCONNECT THE ELECTRICAL CIRCUITRY PRIOR TO REMOVING THE EXISTING FLASH MIXER FIELD CONTROL STATION. SEE THE FLASH MIXER FIELD CONTROL STATION DETAIL 1/39. AFTER THE RECONSTRUCTION OF THE CHLORINATION/ DECHLORINATION STRUCTURE IS COMPLETE INSTALL A NEW FLASH MIXER FIELD CONTROL STATION. THE EXISTING ALUMINUM BACK PLATE OF THE REMOVED FLASH MIXER FIELD CONTROL STATION CAN BE REUSED. ALL OTHER FLASH MIXER FIELD CONTROL STATION ITEMS ARE TO BE CONSTRUCTED WITH NEW MATERIAL INCLUDING BUT NOT LIMITED TO THE 3 INCH GALVANIZED SUPPORT POST AND PCC SUPPORT PEDESTAL; GUTTER, STOP/START STATION AND DISCONNECT SWITCH. RECONNECT THE ELECTRICAL CIRCUITRY TO THE NEW FLASH MIXER FIELD CONTROL STATION.
13. EXISTING 7.5 HP 480V, 3ø AERATOR TO BE REPLACED (SEE CIVIL). (THERE ARE TWO (2) AERATORS IN EACH AERATION POND & A TOTAL OF SIX (6) AERATORS IN THE AERATION POND SYSTEM.) INSPECT, MAINTAIN, REPAIR, & REUSE EXISTING ELECTRICAL. COORDINATE EQUIPMENT CONNECTION WITH INSTALLER.
14. EXISTING AERATION ELECTRICAL LOCAL FIELD CONTROL STATION TO REMAIN. INSPECT, MAINTAIN, REPAIR, & REUSE FOR REPLACEMENT AERATOR.
15. EXISTING BRANCH CIRCUIT WIRING & ELECTRICAL CIRCUITRY FOR THE EXISTING SODIUM HYPOCHLORITE & SODIUM METABISULFITE PUMPS TO BE DISCONNECTED FROM THE MCC & PANEL IN THE LABORATORY BUILDING AFTER THE NEW SODIUM METABISULFATE & SODIUM HYPOCHLORITE FACILITIES ARE CONSTRUCTED AND OPERATIONAL.
16. EXISTING 480V, 3ø EXTERIOR ARC TYPE RECEPTACLE & STOP/START STATION FOR TEMPORARY PUMP AT THE TERMINATION POINT OF THE BRIDGE TO REMAIN. A 120V, 1ø EXTERIOR RECEPTACLE IS ALSO LOCATED AT THE TERMINATION POINT OF THE BRIDGE.

NOTES:

1. ALL ELECTRICAL WORK SHOWN IS NEW UNLESS OTHERWISE NOTED.
2. SEE PANEL SCHEDULES FOR BRANCH CIRCUIT WIRE SIZING UNLESS INDICATED OTHERWISE.
3. EXISTING ELECTRICAL NOT INDICATED TO BE REMOVED OR REPLACED SHALL BE PROTECTED DURING CONSTRUCTION & LEFT IN PLACE. CLEAN/REPAIR/RESTORE THIS EXISTING ELECTRICAL TO SERVICEABLE CONDITION PRIOR TO COMPLETION OF WORK.
4. 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 MECHANICAL DEMOLITION OR RENOVATIONS IDENTIFIED ON THE CIVIL PLANS. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE CIVIL PLANS & COORDINATING WORK RESPONSIBILITY WITH THE GENERAL CONTRACTOR & INCLUDING ALL SUCH WORK IN THE CONTRACT BID.

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES ROBERT ADLER No. E 16119 Exp. 12/31/23 ELECTRICAL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:

JAMES R. ADLER — E16119 R.C.E. No.

09/25/2023 DATE — 12/31/2023 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.

10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN STAFF
DESIGNED J.R.A.
SCALE 1" = 40'
CHECKED J.R.A.

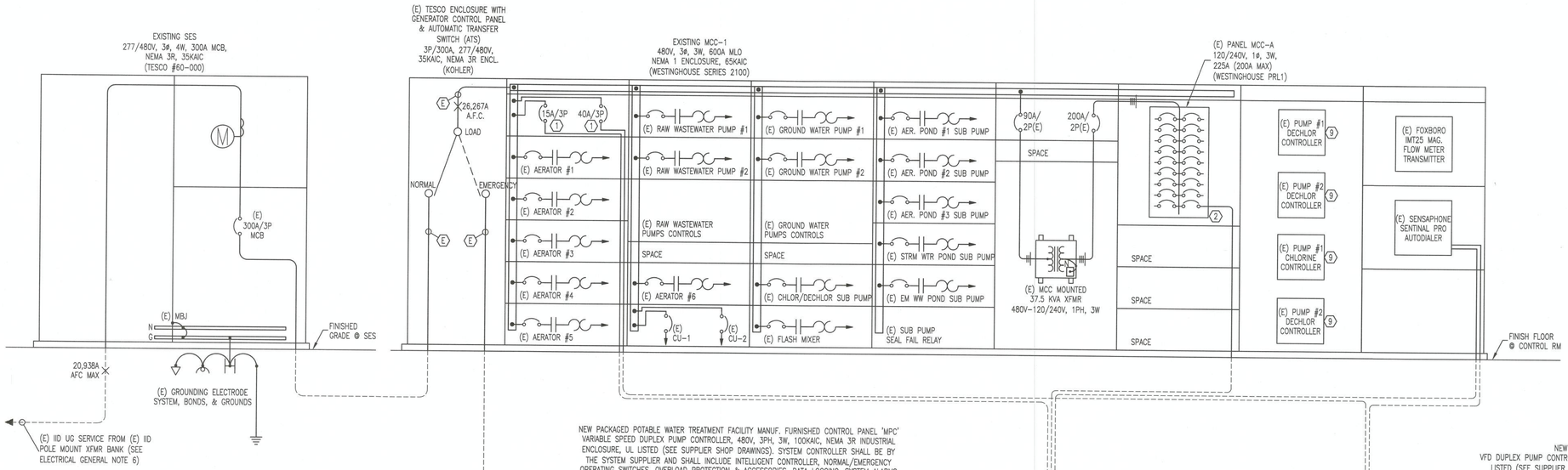
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

ELECTRICAL SITE PLAN

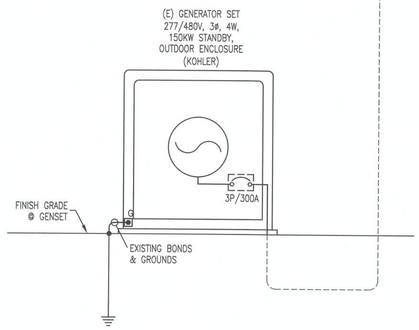
REFERENCE XX

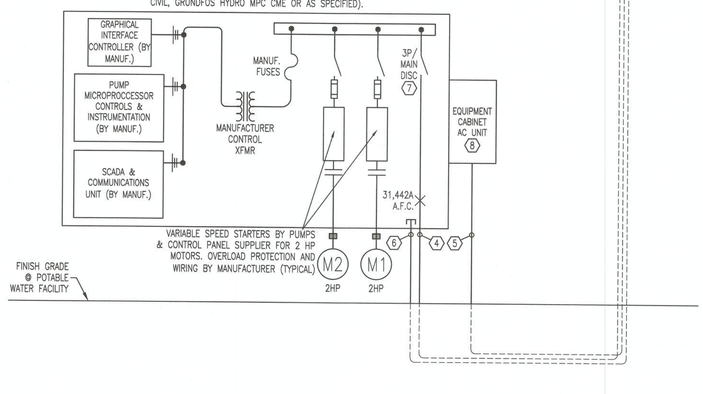
THG #542.089

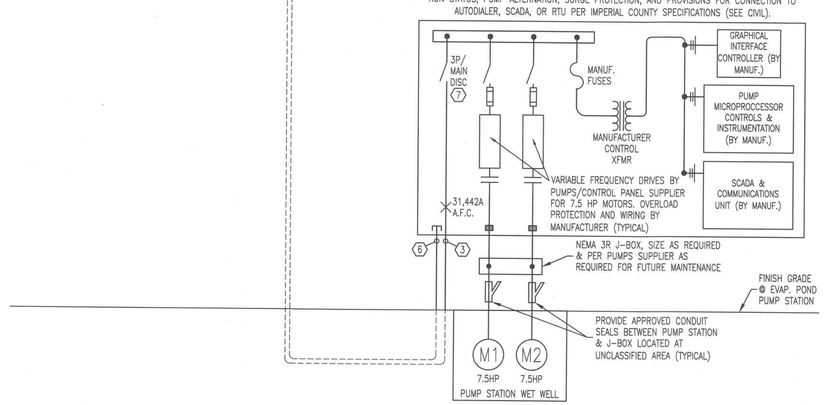
SHEET 48 OF 50



LOAD SUMMARY (EXISTING 300A SES) AMPS @ 277/480V/3PH					
EQUIPMENT	QTY	HP	KVA	SUB LOAD	TOTAL LOAD
EXISTING 300A SES & MCC					
(E) AC CONDENSING UNITS	2	1/3	-		1,662 VA
(E) GROUND WATER SUB. PUMPS	2	4	-		8,314 VA
(E) FLASH MIXER	1	5	-		6,319 VA
(E) AERATION POND AERATORS	6	7.5	-		54,870 VA
(E) AERATION POND SUB. PUMPS	3	10	-		34,917 VA
(E) RAW WASTEWATER PUMPS	2	10	-		23,278 VA
(E) CHLOR/DECHLOR SUB. PUMP	1	10	-		11,639 VA
(E) STORM WATER RET. BASIN PUMP	1	10	-		11,639 VA
(E) WASTE WATER STORAGE PUMP	1	10	-		11,639 VA
NEW EVAPORATION POND PUMP STATION	2	2	-		5,654 VA
NEW PACKAGE POTABLE WATER TREATMENT FAC	2	7.5	-		18,290 VA
(E) 37.5KVA XFMR & PANEL MCC-A					
NEW EQUIPMENT AC UNIT	-	-	-	1,620 VA	
(E) LOAD (SEE PANEL SCHEDULE)	-	-	-	20,322 VA	
SUBTOTAL					21,942 VA 26.4 A
25% LARGEST MOTOR	0.25	10	-		2,910 VA
TOTAL					213,073 VA 256.3 A







ELECTRICAL ONE-LINE DIAGRAM

(NO SCALE)

KEY NOTES:

1. VERIFY THE EXISTING MCC FOR ANY OTHER READILY AVAILABLE SPACE FOR THE NEW FEEDER BREAKERS PRIOR TO WORK. IF NO OTHER SPACE IS AVAILABLE, RELOCATE THE EXISTING AERATOR PUMP SEAL FAIL RELAYS TO A MORE APPROPRIATE LOCATION FOR CONTROL COMPONENTS AT THE RIGHT END OF THE MCC. PROVIDE & INSTALL NEW FEEDER BREAKERS COMPATIBLE TO THE EXISTING EQUIPMENT & RATINGS AT THE EXISTING AVAILABLE BUSSED SPACE. VERIFY CONTROL PANELS CAPACITY & REQUIREMENTS WITH SUPPLIER PRIOR TO WORK. ORDER BRANCH CIRCUIT BREAKERS & SIZE BRANCH CIRCUITS TO COORDINATE TO THE PANEL. CONNECT NEW FEEDERS. LABEL PER SPECIFICATIONS.
2. INSTALL NEW BRANCH BREAKERS AT EXISTING PANEL & CONNECT NEW BRANCH CIRCUITS AS SHOWN. SEE PANEL SCHEDULE.
3. (3) #8 CU THWN-2, (1) #10 CU GRD, 2" CONDUIT.
4. (3) #10 CU THWN-2, (1) #10 CU GRD, 1" CONDUIT.
5. (2) #10 CU THWN-2, (1) #10 CU GRD, 1" CONDUIT.
6. 1" CONDUIT WITH CONTROL/SIGNAL CABLING AS REQUIRED BY CONTROL PANEL SUPPLIER FOR CONTROL & MONITORING AT THE CONTROL BUILDING.
7. MOTOR STARTER, CONTROLS, DISCONNECT SWITCH, SHORT-CIRCUIT/GROUND-FAULT PROTECTION, OVERLOAD PROTECTION, WIRE, CONDUIT, & ACCESSORIES AT PACKAGED EQUIPMENT PER EQUIPMENT MANUFACTURER & ASSEMBLER. SEE EQUIPMENT SHOP DRAWINGS.
8. PROVIDE & INSTALL NEW EQUIPMENT ENCLOSURE HVAC UNIT. SEE CIVIL. HVAC UNIT TO BE AS RECOMMENDED BY SUPPLIER AND MINIMUM 4000BTU/HR, 115V, 13.5FLA MAX., NEMA 4X ENCLOSURE (HOFFMAN CR290416G068, PENTAIR APW MCLEAN CR29-0416-G06BH, OR EQUAL). CIRCUIT TO MCC-A-32.
9. VERIFY & REPAIR OR REPLACE EXISTING CHLORINATION & DECHLORINATION PUMP CONTROLLERS. EXISTING DEFAULT CONTROL IS BY MANUAL OPERATION.
E. EXISTING FEEDER WIRE & CONDUIT TO REMAIN.

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. OUTDOOR EQUIPMENT 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.
5. VERIFY EXISTING MCC CONFIGURATION & ARRANGEMENT, AVAILABLE SPACES, & AVAILABLE PARTS SUPPLY PRIOR TO BID. INCLUDE ALL NEW PARTS & INSTALLATION IN THE BID. INCLUDE COMPLETE REPLACEMENT MCC IF THE CONTRACTOR & SUPPLIER ARE UNABLE TO PROCURE THE NECESSARY PARTS TO MODIFY THE EXISTING WESTINGHOUSE EQUIPMENT AS REQUIRED BY THESE PLANS.

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REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER JAMES ROBERT ADLER No. E 16119 Exp.12/31/23 ELECTRICAL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES R ADLER — E16119 R.C.E. No.
09/25/2023 DATE — 12/31/2023 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER JOHN A. GAY No. 62028 Exp. 9-30-25 CIVIL STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS
10/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE	09/25/2023
DRAWN	STAFF
DESIGNED	J.R.A.
SCALE	NO SCALE
CHECKED	J.R.A.

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
ELECTRICAL ONE-LINE DIAGRAM

REFERENCE XX

THG #542.089

SHEET 49 OF 50

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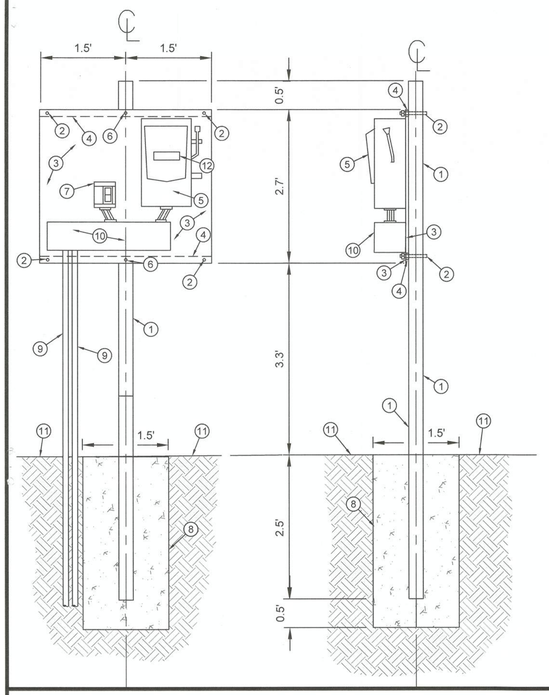

KEYNOTES:

1. INSTALL 3 INCH SCHEDULE 40 GALVANIZED STEEL SUPPORT POST.
2. INSTALL A 1/2 INCH x 4 INCH HEX BOLT AS REQUIRED. TYPICAL.
3. INSTALL A 3/16 INCH THICK ALUMINUM BACK PLATE SHEET. GRIND THE CORNERS SMOOTH FOR SAFETY CONSIDERATIONS.
4. INSTALL A 1 5/8 INCH X 7/8 INCH STRUT SUPPORT MEMBER FOR THE FULL WIDTH OF THE ALUMINUM BACK PLATE. INSTALL THE STRUT MEMBER BETWEEN THE BACK PLATE AND THE 3 INCH GALVANIZED STEEL SUPPORT POST.
5. INSTALL A HEAVY DUTY FUSIBLE DISCONNECT SWITCH, 30A/3P(480V), 9A RK5 FUSES, IN A NEMA 4 ENCLOSURE.
6. INSTALL 1/4 INCH BY 20 – 1" LONG ROUND HEX SCREWS WITH 1/4 INCH UNISTRUT SPRING NUTS AS REQUIRED.
7. INSTALL A NEMA 4 MOMENTARY CONTACT PUSH BUTTON STOP/START LOCAL CONTROL STATION (SQUARE D CATALOG NUMBER 9001-BW246, ALLEN-BRADLEY CATALOG NUMBER 800S-2SA4, OR APPROVED EQUAL).
8. INSTALL A P.C.C. CONCRETE PEDESTAL. THE CONCRETE SHALL CONTAIN 7 SACKS OF CEMENT PER CUBIC YARD AND ATTAIN 5,000 PSI COMPRESSIVE STRENGTH AFTER 28 DAYS CURING.
9. INSTALL POWER AND CONTROL CONDUIT AND CONDUCTORS PER THE ELECTRICAL SITE PLAN AND ELECTRICAL SINGLE LINE DIAGRAM.
10. INSTALL A 6 INCH X 6 INCH X 24 INCH NEMA 3R GUTTER. FASTEN THE GUTTER TO THE BACK PLATE AS REQUIRED.
11. FINISH SURFACE.
12. INSTALL A 2 INCH X 3 INCH MICARTA NAME PLATE. THE MICARTA NAMEPLATE SHALL BE 1/8 INCH THICK WITH A BLACK FACE AND WHITE LETTERING. THE MICARTA NAMEPLATE SHALL HAVE LETTERS 3/8 INCH IN HEIGHT. THE MICARTA NAME PLATE SHALL BE LABELED AS FOLLOWS:

    FLASHMIXER
    CHLORINATION -
    DECHLORINATION
    BASIN

FLASHMIXER CONTROL STATION DETAIL

NTS

1 | 37 | 39

PANEL: MCC-A (EXISTING WESTINGHOUSE PRL1)
VOLTS: 120/240V — AMPS: 225A (150A MAX) — MCB: MLO
AIC: 10,000A — MNTG: MCC MOUNTED — ENCL: NEMA 1

NO.	DESCRIPTION	QTY	WIRE	C.B.	PH B	PH C	C.B.	WIRE	QTY	DESCRIPTION	NO.
1	LIGHTS & HEATER (E)	-	(E)	20	750		(E)			S/M #1 CONTROLLER (E)	2
	MAIN SWITCH			(E)	186		20	(E)	-		
3	SPARE			20		0	(E)			S/M #2 CONTROLLER (E)	4
				(E)		186	20	(E)	-		
5	LIGHTING (E)	-	(E)	20	700		(E)			S/H #1 CONTROLLER (E)	6
	HEADWORKS			(E)	186		20	(E)	-		
7	RECEPTACLE (E)	-	(E)	20		400	(E)			S/H #2 CONTROLLER (E)	8
	HEADWORKS			(E)		186	20	(E)	-		
9	SPARE			20	0		(E)			CHART RECORDER (E)	10
				(E)	100		20	(E)	-		
11	SPARE			20		0	(E)			AUTO DIALER &	12
				(E)		200	20	(E)	-	FLOW METER (E)	
13	SPARE			20	0		(E)			SPARE	14
				(E)	0		20				
15	RECEPTACLE (E)	-	(E)	20		400	(E)			SPARE	16
	POND #2			(E)		0	20				
17	RECEPTACLE (E)	-	(E)	20	400		(E)			SPARE	18
	POND #1			(E)	0		20				
19	RECEPTACLE (E)	-	(E)	20		400	(E)			SPARE	20
	CHLORINE STRUCTURE #3			(E)		0	20				
21	RECEPTACLE (E)	-	(E)	20	400		(E)			SPARE	22
	POND #3			(E)	0		20				
23	RECEPTACLE (E)	-	(E)	20		400	(E)			RECEPTACLE (NOTE 1)	24
	CHLORINE STRUCTURE #1			(E)		350	20	10	-	S/M #1 PUMP	
25	RECEPTACLE (E)	-	(E)	20	400		(E)			RECEPTACLE (NOTE 1)	26
	CHLORINE STRUCTURE #2			(E)	350		20	10	-	S/M #2 PUMP	
27	RECEPTACLE (E)	-	(E)	20		720	(E)			RECEPTACLE (NOTE 1)	28
	G.WATER NORTH			(E)		350	20	10	-	S/H #1 PUMP	
29	RECEPTACLE (E)	-	(E)	20	720		(E)			RECEPTACLE (NOTE 1)	30
	G.WATER SOUTH			(E)	350		20	10	-	S/H #1 PUMP	
31	RECEPTACLE (E)	-	(E)	20		400	(E)			NEW WATER TREATMENT	32
	RAW WATER STATION			(E)		1620	20	10	-	ENCLOSURE HVAC UNIT	
33	RECEPTACLE (E)	-	(E)	20	400		(E)			RECEPTACLE (E)	34
	CHLORINE/DECHLORINE			(E)	400		20	(E)	-	FLOW METER VAULT	
35	RECEPTACLE (E)	-	(E)	20		400	(E)			SUB PANEL (E)	36
	CHLORINE/DECHLORINE			(E)		1000	30/2	(E)	-	GENERATOR	
37	SUB PANEL (E)	-	(E)	100/2	4294					"	38
				(E)	1000		-	-	-		
39	"	-	-	-		4294				SPACE	40
						0					
41	SPARE			20	0		(E)			CONTROLS (E)	42
				(E)	0		20	(E)	-		
			CONN VA		10636	11306					
			CONN AMPS		88.6	94.2					
			CODE VA		11011	11681	(25% LARGEST MOTOR)				
			CODE AMPS		91.8	97.3					

NOTES:
- E EXISTING EQUIPMENT, CIRCUIT BREAKER, OR WIRE AS INDICATED. VERIFY AND MAINTAIN ACCURATE PANEL DIRECTORY.
- N INSTALL NEW CIRCUIT BREAKER COMPATIBLE WITH EXISTING MANUFACTURER EQUIPMENT & RATINGS.
- 1. EXISTING WIRING TO EXISTING EQUIPMENT TO BE REMOVED, DISPOSED, & REPLACED BY NEW WIRING TO THE REPLACEMENT EQUIPMENT. DURING INTERUM PERIOD PRIOR TO ACCEPTANCE & CHANGEOVER TO THE NEW EQUIPMENT, BOTH NEW & EXISTING WIRING MAY BE TAPPED AT THE SAME BRANCH CIRCUIT.

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 FURNISHED 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 CONCEALED UNLESS NOTED OTHERWISE. ALL CEILING, FLOOR, AND WALL PENETRATIONS & BOXES SHALL BE CAULKED/SEALED TO PRESERVE FIRE RATINGS AND WATER PROOF INTEGRITY. FIRESTOPPING OF PENETRATIONS IN & 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 (SEE ARCHITECTURAL DRAWINGS). 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 SWITCHBOARDS, SERVICE EQUIPMENT, & 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 (MATCH EXISTING). PROVIDE UNDERGROUND WARNING TAPE & DETECTABLE TRACER WIRE 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.

ELECTRICAL SYMBOLS & ABBREVIATIONS:

- CWP COLD WATER PIPE.
- (E) EXISTING EQUIPMENT.
- F.G. FINISHED GRADE.
- GFI GROUND FAULT CIRCUIT INTERRUPTER.
- IID IMPERIAL IRRIGATION DISTRICT (ELECTRIC UTILITY).
- MCB MAIN CIRCUIT BREAKER.
- MBJ MAIN BONDING JUMPER.
- MCC MOTOR CONTROL CENTER.
- SES SERVICE ENTRANCE SECTION, SIZED AS SHOWN.
- XFMR TRANSFORMER.
- VFD VARIABLE FREQUENCY DRIVE (VARIABLE SPEED DRIVE).
- WP OUTDOOR WEATHERPROOF ENCLOSURE.
- WP-IU OUTDOOR WEATHERPROOF "IN-USE" ENCLOSURE.
- DUPLEX RECEPTACLE, 120V/20A, MOUNT 15" A.F.F. UNLESS NOTED OTHERWISE.
- JUNCTION BOX, MOUNT AS SHOWN.
- NUMBER OF WIRES IN CONDUIT, LONG SLASH DENOTES GROUND WIRE, SHORT SLASH DENOTES NUMBER OF CURRENT CARRYING CONDUCTORS & NEUTRALS, HALF SLASH DENOTES SWITCHED LEG.
- LIGHT CIRCUIT SWITCH, 120V/277V/20A, MOUNT 46" A.F.F. UNLESS NOTED OTHERWISE.
- FUSED OR NONFUSED DISCONNECT SAFETY SWITCH, SIZE & TYPE AS SHOWN.
- NEMA MOTOR STARTER, SIZE AS SHOWN.
- (PC) PHOTO CELL, 120V/20A, MOUNT AS SHOWN, NEMA 3R.
- UNDERGROUND (UG) CONDUIT.
- ABOVE GROUND CONCEALED OR SURFACE MOUNT CONDUIT.
- AREA LIGHT & POLE.
- E ELECTRIC PULL OR JUNCTION BOX, TRAFFIC RATED COVER, SIZE PER NEC, LABEL "ELECTRIC".

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 NATIONAL ELECTRICAL CODE AND ANY OTHER STATE AND LOCAL APPLICABLE CODES.
2. ALL CEILING, FLOOR, AND WALL PENETRATIONS AND BOXES SHALL BE CAULKED/SEALED TO PRESERVE FIRE RATINGS AND WATER PROOF INTEGRITY. FIRESTOPPING OF PENETRATIONS IN AND 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 (SEE ARCHITECTURAL DRAWINGS). 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". ALL CONDUITS AND BOXES SHALL BE CONCEALED ABOVE CEILINGS, IN WALLS OR UNDER FLOORS AS REQUIRED OR AS NOTED OTHERWISE ON THE DRAWINGS.

   B. UNDERGROUND CONDUIT SHALL BE MINIMUM OF SCHEDULE 40 PVC OR MEDIUM WALL (MW) FIBERGLASS RTRC, 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 MECHANICAL/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. ASBESTOS CONTAINING MATERIALS MAY BE PRESENT IN THE EXISTING STRUCTURES ON THIS PROJECT. THE CONTRACTOR SHALL TAKE APPROPRIATE SAFETY PRECAUTIONS IN ACCORDANCE WITH OSHA AND EPA REGULATIONS DURING INSTALLATION OF ELECTRICAL EQUIPMENT AND, OR REMOVAL OF EXISTING BUILDING MATERIALS WHICH MAY CONTAIN ASBESTOS. CONTRACTOR SHALL IMMEDIATELY CEASE WORK AND NOTIFY THE OWNER OF ANY MATERIALS BELIEVED TO CONTAIN ASBESTOS. WORK SHALL PROCEED ONLY UPON DIRECTION FROM THE OWNER.
10. MATERIALS & INSTALLATION SHALL COMPLY WITH REQUIREMENTS FOR INSTALLATION IN SEISMIC ZONE 4/DESIGN CATEGORY D.

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JOB. No.: 23-034

REVISION	DATE	COMMENTS

REGISTERED PROFESSIONAL ENGINEER — JAMES ROBERT RADLER — No. E 16119 — Exp.12/31/23 — ELECTRICAL — STATE OF CALIFORNIA

PREPARED UNDER THE DIRECT SUPERVISION OF:
JAMES R RADLER — E16119 R.C.E. No.
09/25/2023 DATE — 12/31/2023 REG. EXP.

REGISTERED PROFESSIONAL ENGINEER — JOHN A. GAY — No. 62028 — Exp. 9-30-25 — CIVIL — STATE OF CALIFORNIA

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E. — 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS
10/2/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023 | DRAWN STAFF | DESIGNED J.R.A. | SCALE NO SCALE | CHECKED J.R.A.

PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
ELECTRICAL DETAIL SHEET

REFERENCE XX — THG #542.089
SHEET 50 OF 50

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