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

PROJECT DESCRIPTION

[illegible]

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 [illegible]

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 8 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 [illegible]

1.14 [illegible]

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 58 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 [illegible]

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 10 "S" LATERAL AND DRAIN AT THE INTERSECTION OF HOTTSINGER 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 10 "R" DRAIN WITH A CURED IN PLACED PIPING (CIPP) METHOD. REPLACE THE 10 INCH VCP PIPELINE SECTIONS SIMILARLY UPSTREAM AND DOWNSTREAM OF THE 8 INCH PIPELINE SIPHON WITH NEW 10 INCH SDR 26 PVC SANITARY SEWER PIPELINES.

3.6 [illegible]

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. [illegible]
6. [illegible]
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 PUBLIC WORKS [illegible] PE
- B. [illegible]
- C. [illegible]
- D. [illegible] COMPANY-PLANNING
- E. [illegible] GAS COMPANY
- F. IMPERIAL IRRIGATION DISTRICT - POWER DIVISION [illegible]
- G. IMPERIAL IRRIGATION DISTRICT - WATER DIVISION [illegible]
- H. AT&T, 1075 S. SECOND STREET, EL CENTRO, CA 92243, PHONE: 760-337-3299, 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 HEREON AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

[illegible]

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. [illegible]
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. [illegible]
13. CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY STRIPING, PAVEMENT MARKERS OR LEGENDS OBLITERATED BY THE CONSTRUCTION OF THIS PROJECT.
14. [illegible]
15. [illegible]
16. [illegible]
17. [illegible]
18. UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL OFFSITE IMPROVEMENTS SHALL CONFORM TO THE CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD [illegible] 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 [illegible] SACRAMENTO, CALIFORNIA 95812.
21. [illegible]
22. [illegible] EITHER TO BE CONNECTED TO, EXTENDED, ADJUSTED, DRAINED TO OR [illegible] AND/OR CLEARED TO MAKE THEM FUNCTIONAL AND ACCEPTABLE AS [illegible]
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. [illegible]
25. [illegible]
26. [illegible]

GRADING PLAN GENERAL NOTES

1.–27. [illegible]

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. [illegible] DATED NOVEMBER [illegible] PREPARED IN OUR OFFICE.

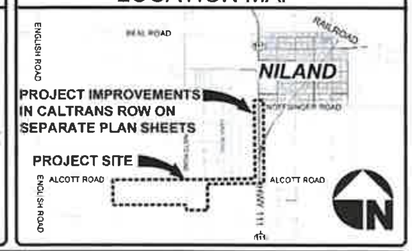
PETER E. LABRUCHERIE, P.E.
LANDMARK CONSULTANTS, INC.
780 N. 4TH STREET
EL CENTRO, CALIFORNIA 92243
PHONE: (760) 370-3000

PETER E. LABRUCHERIE, P.E.
RCE [illegible]

DATE

VICINITY MAP

LOCATION MAP



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50	ELECTRICAL DETAIL SHEET

DECLARATION OF RESPONSIBLE CHARGE

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 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 A REVIEW ONLY AND DOES NOT RELIEVE ME AS ENGINEER OF WORK, OF MY RESPONSIBILITY 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

DIGALERT

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF:

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

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY

JOHN GAY, PE
DIRECTOR OF PUBLIC WORKS — 82028 RCE No — 1/9/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

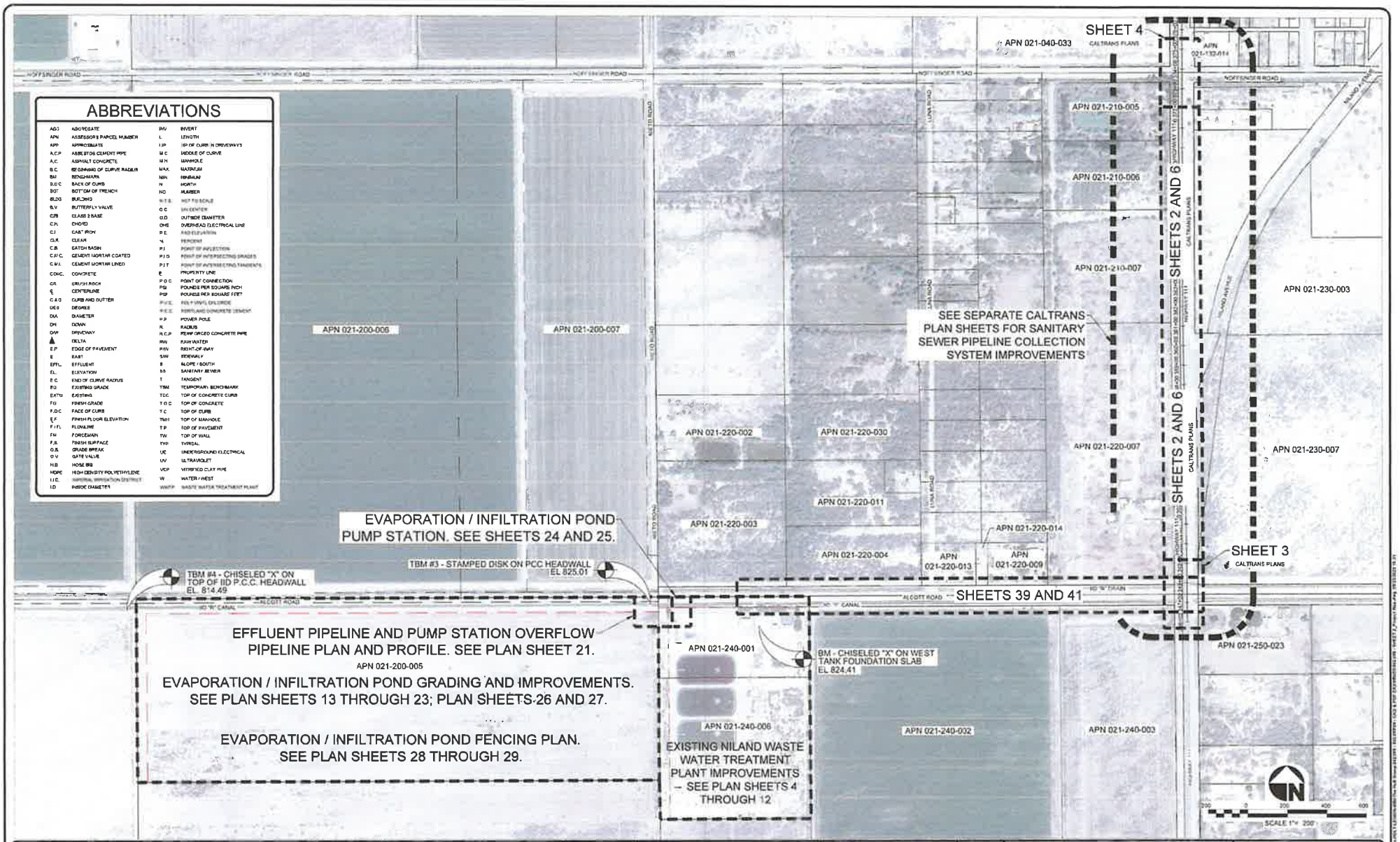
DATE: 09/25/2023
DRAWN: RS
DESIGNED: RS
CHECKED: N/A

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

TITLE SHEET

REFERENCE

SHEET 1 OF 50



REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMIE D. SACK HOLT — 31773 R.C.E. No. — 09/23/2023 DATE — 12/31/24 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62026 R.C.E. No. — 10/4/23 DATE — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

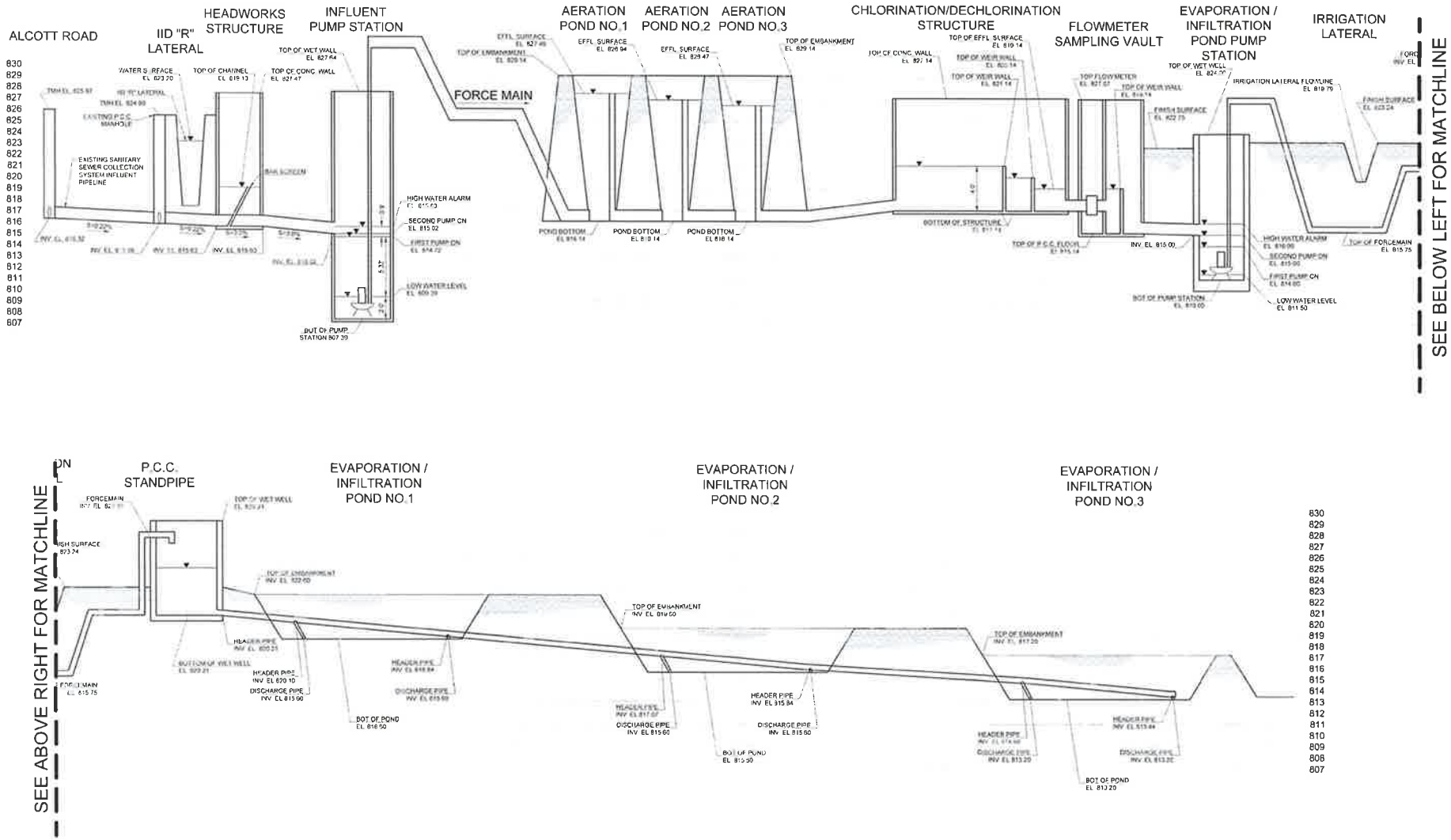
DATE 09/23/2023 — DESIGNED RS — DRAWN RS — CHKD N/A — APPROVED JGH

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



NILAND WASTE WATER TREATMENT PLANT HYDRAULIC PROFILE

NOT TO SCALE

REVISION	DATE	COMMENTS

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

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

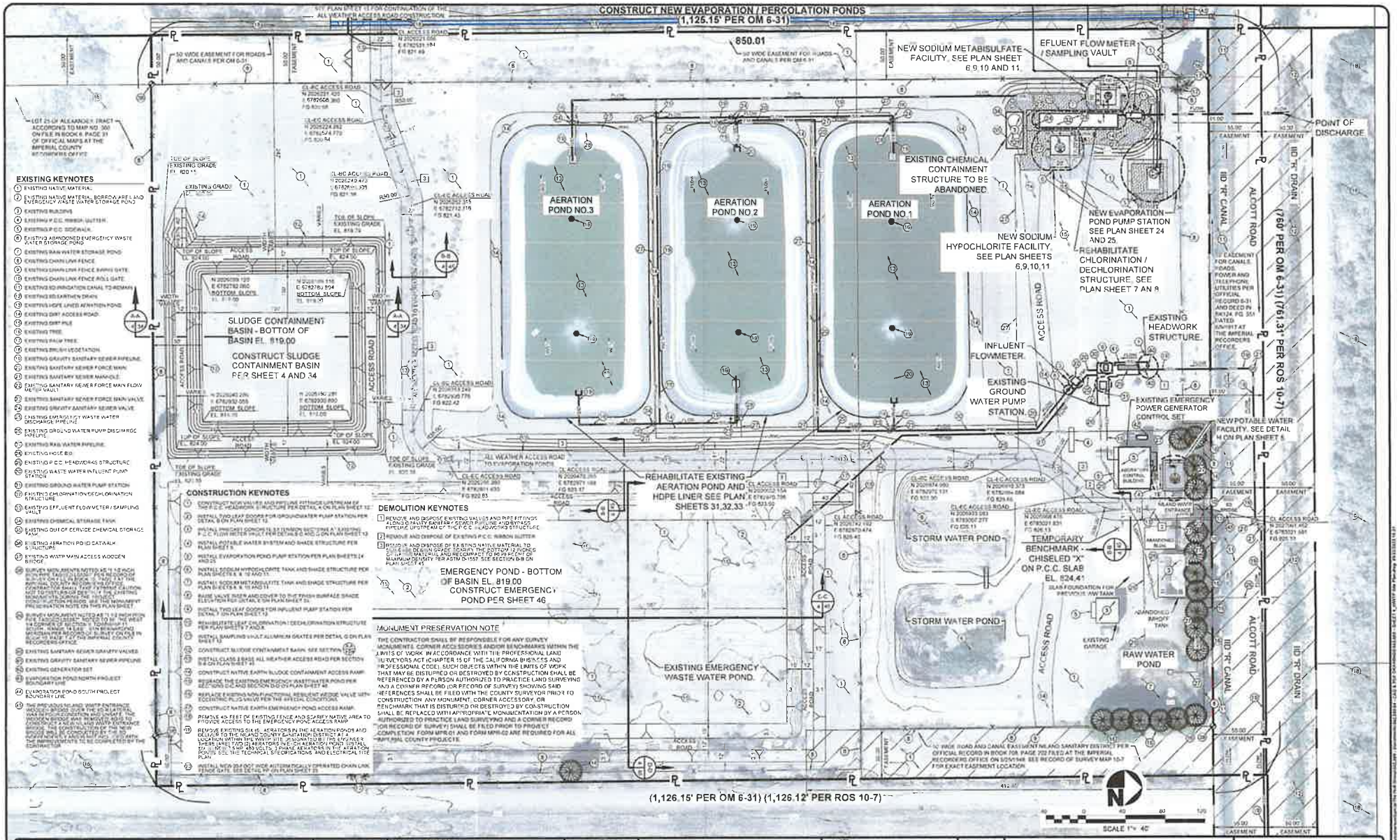
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023 — DRAWN RS — CHECKED RS — SCALE N/A — FILE NO. JOH

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

REFERENCE — THG #642 089

SHEET 3 OF 50



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
36. EXISTING AERATION POND CATWALK STRUCTURE
37. EXISTING WWTP MAIN ACCESS WOODEN BRIDGE
38. SURVEY MON. PRESENT NOTED AS "1-1/2 INCH BRASS DISK STAMPED "LS 5151" FOUND IN CONCRETE IN THE EAST EDGE OF ACCESS ROAD. NOTED TO BE THE IMPERIAL COUNTY MONUMENT "SHEET 1" 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 MON. PRESENT NOTED AS "1-1/2 INCH BRASS DISK STAMPED "LS 5151" FOUND IN CONCRETE NOTED TO BE THE WEST 1/4 CORNER OF SECTION 1 TOWNSHIP 11 SOUTH, RANGE 14 EAST. SEE BENCHMARKS MONUMENTS PER RECORD OF SURVEY ON FILE IN THE NILAND SANITARY AND 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 AT THE IID HOURLY RATE. IID WILL REIMBURSE NILAND FOR THE IMPROVEMENTS TO BE COMPLETED BY THE CONTRACTOR.

CONSTRUCTION KEYNOTES

1. CONSTRUCT NEW VALVES AND PIPELINE FITTINGS UPSTREAM OF THE P.C.C. HEADWORKS 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 PROCESS TONGUE & GROOVE EXTENSION BETWEEN A EXISTING P.C.C. FLOW METER VAULT PER DETAILS C AND C 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, 10 AND 11
7. INSTALL SODIUM METABISULFITE TANK AND SHADE STRUCTURE PER PLAN SHEETS 6, 10 AND 11
8. RAISE VALVE RISER AND COVER TO THE FINISH SURFACE GRADE ELEVATION PER DETAIL K ON PLAN SHEET 34
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 2/34
13. INSTALL CLASS 2 BASE ALL WEATHER ACCESS ROAD PER SECTION B & C ON PLAN SHEET 33
14. CONSTRUCT NATIVE EARTH SLUDGE CONTAINMENT ACCESS RAMP
15. REGRADE THE EXISTING EMERGENCY WASTEWATER POND PER SECTIONS D-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 SURPLUS 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 5 AND 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 SWING GATE. SEE DETAIL M 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 ACHIEVE DESIGN SURFACE TO SUBGRADE. THE BOTTOM 12 INCHES OF THE 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

PREPARED UNDER THE DIRECT SUPERVISION OF
JOSE G. LOPEZ POLT — 31773 R.C.E. No — 10/31/24 REG. EXP. — 09/01/2023 DATE

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
Talmadge — 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 09/01/2023 — DRAWN RS — CHECKED RS — SCALE AS — DWG. JCH

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

REFERENCE

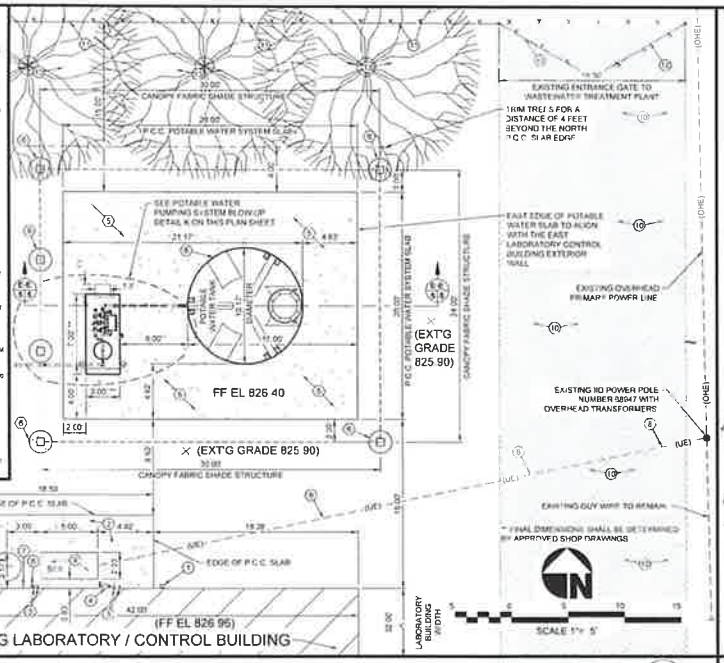
THG #542 069
SHEET 4 OF 50

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 3-INCH PVC STUB OUT PIPE CARRYING CONDENSATE FROM AC UNITS ON THE ROOF TO REMAIN
4. EXISTING ELECTRICAL DISCONNECT SWITCH FOR ROOF MOUNTED AC UNIT TO REMAIN
5. EXISTING 100 GALLON, 30-INCH DIAMETER, 30-INCH TALL "DRAFT" ELEVATED POTABLE WATER TANK TO REMAIN
6. EXISTING ELECTRICAL CONDUIT FITTING FOR ELECTRICAL CIRCUITRY FROM THE ELECTRICAL SERVICE ENTRANCE SECTION (SES) TO THE ELECTRICAL MPC INSIDE THE LABORATORY BUILDING TO REMAIN
7. EXISTING 3/4-INCH NON POTABLE WATER PIPELINE WITH WATER FAUCET TO REMAIN THE 3/4-INCH NON POTABLE WATER PIPELINE SUPPLIES WATER TO THE INTERIOR OF THE LABORATORY BUILDING
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 4-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)

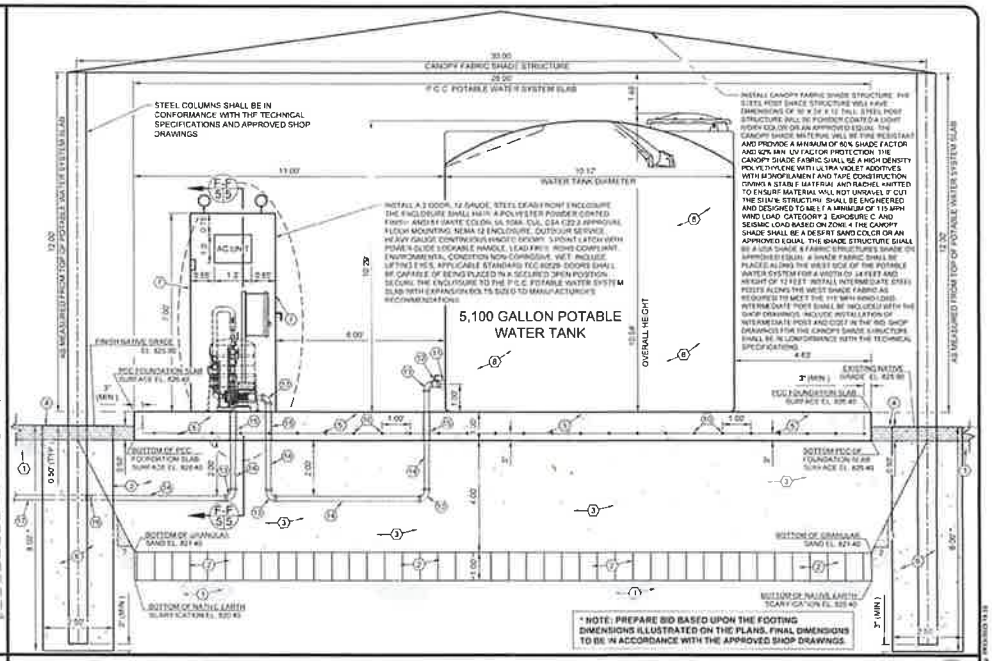
1. EXISTING NATIVE SOIL TO REMAIN
2. SCARIFY AND MOISTURE CONDITION EXISTING NATIVE MATERIAL FOR A DEPTH OF 1 FOOT. COMPACT SCARIFIED AND MOISTURE CONDITIONED NATIVE SOIL AT 5 PERCENT OVER OPTIMUM WATER CONTENT TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D1557
3. INSTALL GRANULAR SAND MATERIAL IN MAXIMUM 8 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 D 557
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 FOOTINGS PER DETAIL 1 ON PLAN SHEET 11. 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 3-FOOT X 7-FOOT X 8-FOOT METAL DEAD FRONT ENCLOSURE TO CONTAIN POTABLE WATER PUMPING SYSTEM AND BLADDER TANK. EXACT DIMENSIONS SHALL DEPEND UPON THE ENCLOSURE MANUFACTURER AND BE PER THE APPROVED SHOP DRAWINGS
8. INSTALL 5,100 GALLON POTABLE WATER TANK WITH INLETS, OUTLETS, VENTS, MANWAYS, LADDERS, GRADING, AND APPURTENANCES PER DETAIL 1 ON PLAN SHEET 11
9. INSTALL INTERMEDIATE STEEL POST AND P.C.C. FOOTING PER APPROVED SHADE STRUCTURE SHOP DRAWINGS
10. INSTALL 4 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 8



POTABLE WATER SYSTEM PLAN VIEW DETAIL

SCALE 1" = 5'

H 4 5



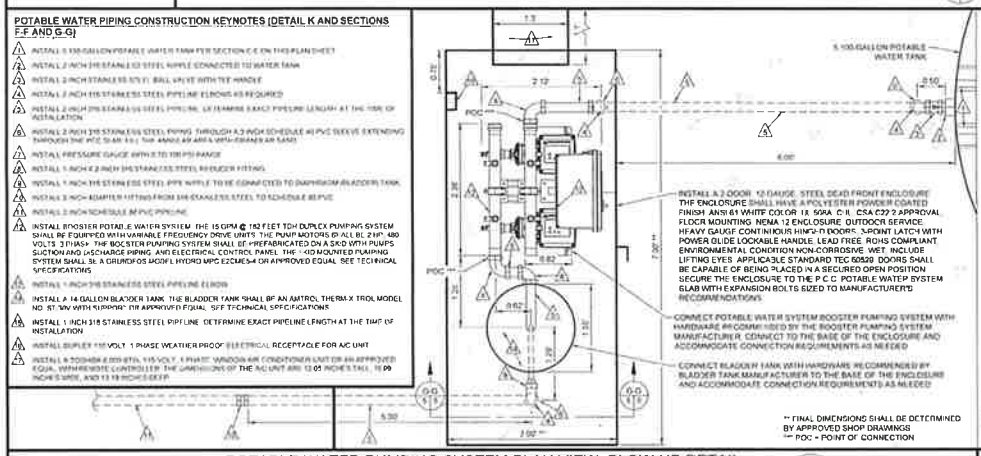
POTABLE WATER SYSTEM ELEVATION VIEW SECTION

SCALE 1" = 2'

E-E 5 5

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

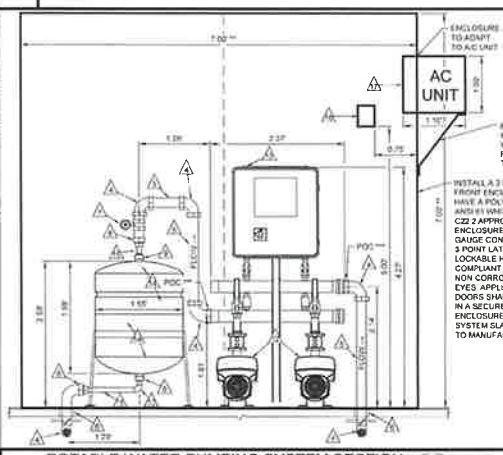
1. INSTALL 5,100 GALLON POTABLE WATER TANK PER SECTION E-E ON THIS PLAN SHEET
2. INSTALL 2-INCH 316 STAINLESS STEEL NIPPLE CONNECTED TO WATER TANK
3. INSTALL 2-INCH STAINLESS STEEL BALL VALVE WITH TEE HANDLE
4. INSTALL 2-INCH 316 STAINLESS STEEL PIPELINE ELBOWS AS REQUIRED
5. INSTALL 2-INCH 316 STAINLESS 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 P.C.C. 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 3-INCH ADAPTER FITTING FROM 316 STAINLESS STEEL TO SCHEDULE 80 PVC
11. INSTALL 3-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 (2) ALL 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 E2CME3-4 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-12W 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 AC UNIT
17. INSTALL A 2,000 BTU, 115 VOLT, 1 PHASE WINDOW AIR CONDITIONER UNIT OR AN APPROVED EQUAL, WITH REMOTE CONTROLLER. THE DIMENSIONS OF THE AC UNIT ARE: 12.05 INCHES TALL, 15.09 INCHES WIDE, AND 13.18 INCHES DEEP



POTABLE WATER PUMPING SYSTEM PLAN VIEW BLOW-UP DETAIL

SCALE 1' = 1'

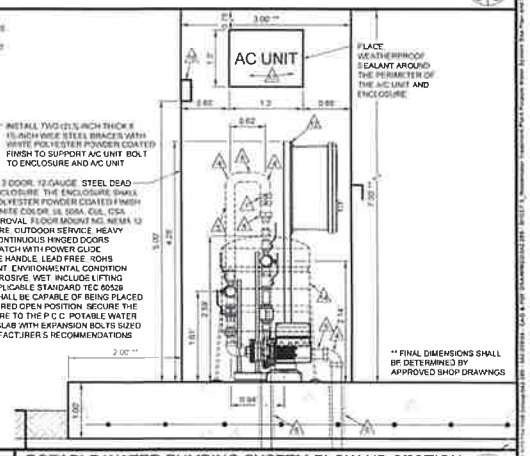
K 5 5



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

PREPARED UNDER THE DIRECT SUPERVISION OF

JOHN D. MICHAEL HOLT — 31772 RCE No — 09/25/2023 DATE — 12/31/24 REG. EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY

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

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

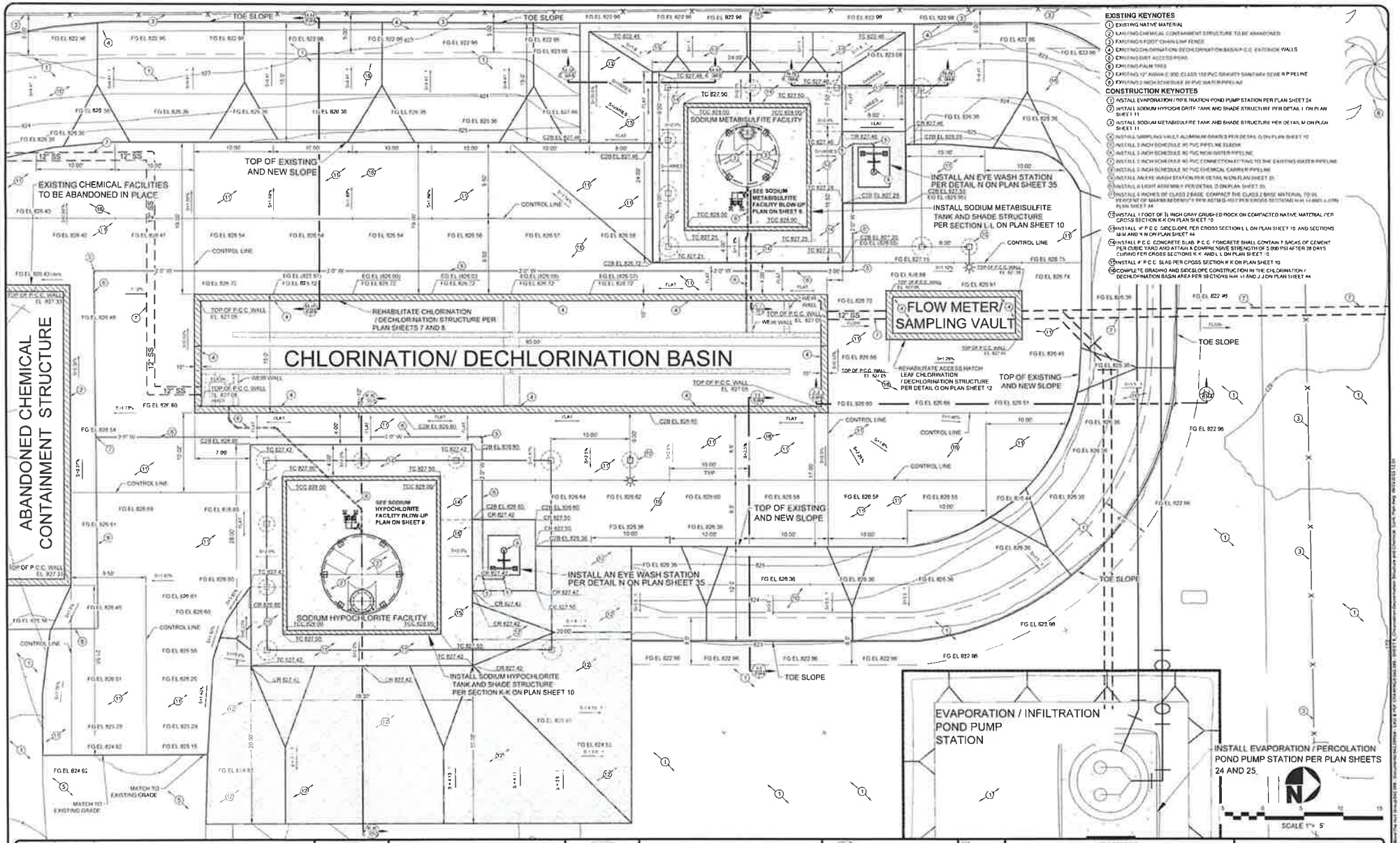
DATE 09/25/2023 | DESIGNED RG | DRAWN RG | CHECKED NG | PLANNED JGH

PROJECT TITLE: COUNTY OF IMPERIAL — MILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

WASTEWATER TREATMENT PLANT POTABLE WATER SYSTEM DETAILS AND SECTIONS

REFERENCE: THG 8642 080

SHEET 5 OF 50



REVISION	DATE	COMMENTS

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

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 — 08/30/25 REG EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

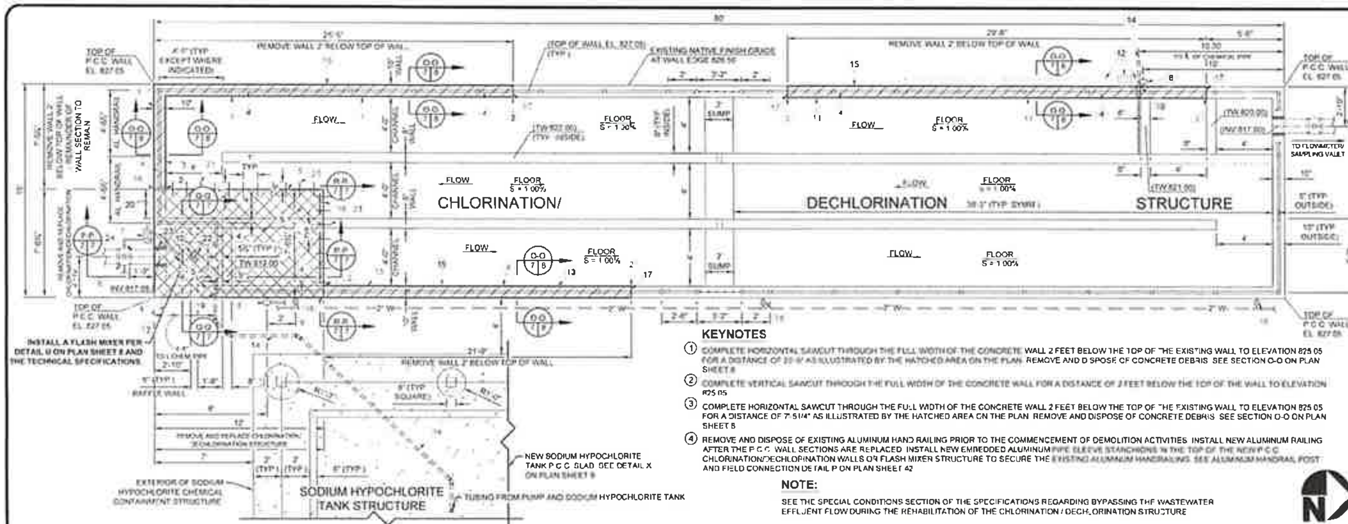
DATE 09/25/2023
DR RS
DS RS
CHECKED N/A
APPROVED JGH

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

DWG #543.060

SHEET 6 OF 50



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 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
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'-5 1/4" 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:

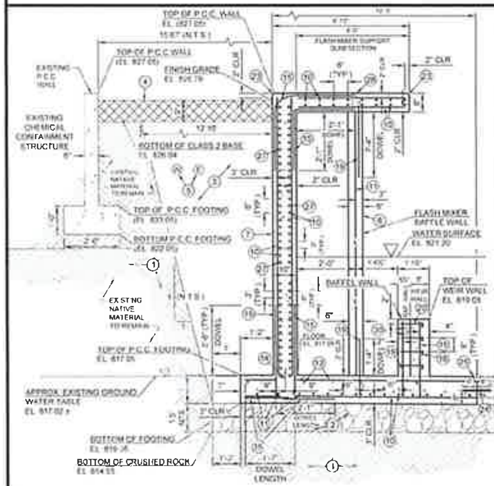
SEE THE SPECIAL CONDITIONS SECTION OF THE SPECIFICATIONS REGARDING BYPASSING THE WASTEWATER EFFLUENT FLOW DURING THE REHABILITATION OF THE CHLORINATION / DECHLORINATION STRUCTURE

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 [illegible]
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 4-INCH GALVANIZED [illegible] PRIOR TO THE DEMOLITION OF THE CONCRETE WALL. DISCONNECT AND DE-ENERGIZE ¾-INCH CONDUIT, JUNCTION BOX AND ELECTRICAL CIRCUITRY PRIOR TO REMOVING AND STORING THE ELECTRICAL FACILITIES. DISCONNECT THE ELECTRICAL [illegible] 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 [illegible]
9. REMOVE EXISTING [illegible] WATER FAUCET [illegible]
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 [illegible] 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'-8" 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 [illegible]
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 [illegible] SUPPORT SLAB SECTION AND WITHOUT THE REINFORCING DOWELS
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'

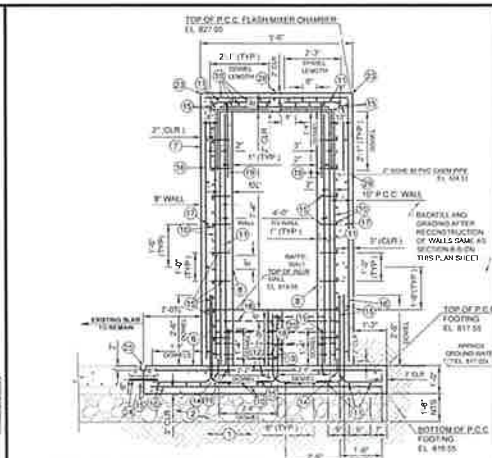


NOTE: PROVIDE SHORING FOR EXCAVATION PER CAL OSHA REQUIREMENTS

CHLORINATION / DECHLORINATION STRUCTURE WEST FACING SECTION

P-P 7/7

SCALE ½" = 1'

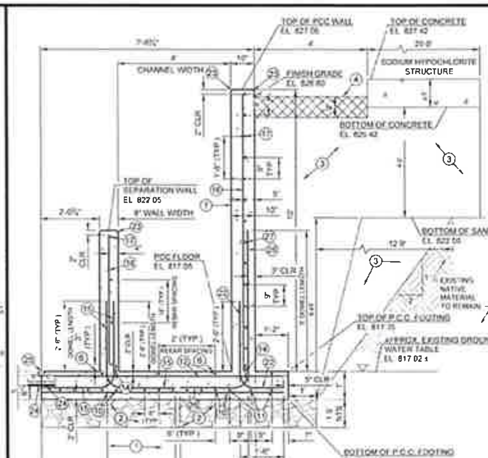


NOTE: PROVIDE SHORING FOR EXCAVATION OR COMPLETE EXCAVATION WITH MORE GRADUAL SIDESLOPES PER CAL OSHA REQUIREMENTS

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 8 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 8 DOWELS AT 1 FOOT ON CENTER. SEE DETAIL R ON PLAN SHEET 8
16. INSTALL NUMBER 8 REINFORCING BARS AT 12 INCHES ON CENTER
17. INSTALL NUMBER 8 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 8 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 8 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 "[illegible]" 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-SHRINK 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

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

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No — 09/30/25 REG. EXP — 10/4/23 DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

09/25/2023 — RS — RS — N/A — JGH

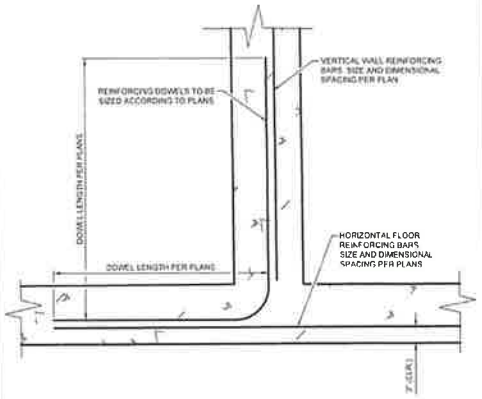
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

CHLORINATION / DECHLORINATION STRUCTURE REHABILITATION DETAILS AND SECTIONS

REFERENCE

THG #542 089

SHEET 7 OF 50



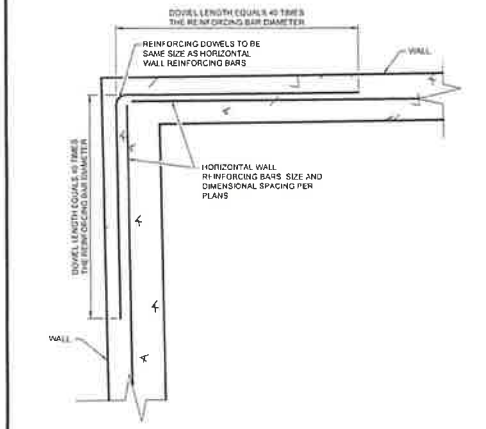
NOTE

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

WALL / FLOOR OR FOOTING REINFORCING BAR LAP DETAIL

NOT TO SCALE

R 7 | 8



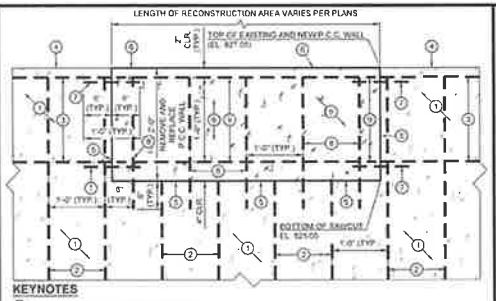
NOTE

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

HORIZONTAL WALL REINFORCING BAR LAP DETAIL

NOT TO SCALE

T 7 | 8



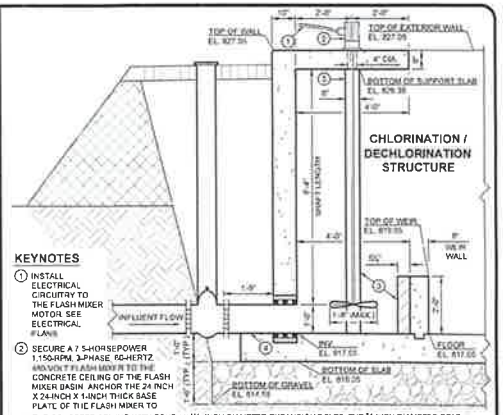
KEYNOTES

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 ½-INCH DIAMETER HOLES IN THE CENTER OF THE EXISTING 10-INCH WIDE P.C.C. WALL FOR A DISTANCE OF 8 INCHES. INSTALL NEW NO. 5, 1-FOOT LONG DOWEL REINFORCING BARS IN THE ½-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 ¾-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 ¾-INCH DIAMETER HOLES AND SECURE THE BARS IN THE ¾-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

SCALE 1" = 1'

O-O 7 | 8



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, ANSI/NSF 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) 1¼-INCH DIAMETER EXPANSION BOLTS. THE ½-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 ¼-INCH DIAMETER FLASH MIXER SHAFT. DIMENSIONS, BASE PLATE SIZES, BOLT REQUIREMENT 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 5¼-INCH X 8-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

SCALE ½" = 1"

U 7 | 8

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.)

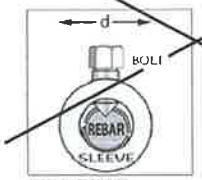
3. REPEAT STEPS 1 AND 2 WITH THE SECOND REINFORCING BAR ON THE OTHER SIDE OF THE COUPLER.

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 REMOVE 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 1281	5.0	1.25	0.6	1.5	1/2	150	6
#4	LL 1281	5.0	1.25	0.6	1.5	1/2	150	6
#5	LL 1681	6.3	1.38	0.7	2.6	1/2	150	6
#6	LL 2081	7.9	1.75	0.9	3.8	1/2	150	8
#7	LL 2281	9.7	1.88	1.1	4.3	5/8	200	8
#8	LL 2581	10.5	2.13	1.2	7.4	5/8	300	8
#9	LL 2981	11.3	2.4	1.3	10.2	5/8	300	10
#10	LL 3081	12.7	2.6	1.5	13.1	13/16	500	8
#11	LL 3681	14.1	2.8	1.7	17.3	13/16	550	10

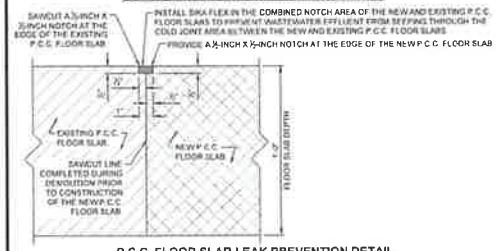
NOT APPLICABLE TO THIS PROJECT

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

NOT TO SCALE

X 8 | X

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

FLOOR SLAB AND WALL LEAK PREVENTION DETAIL

SCALE 3" = 1'

S 7 | 8

REVISION	DATE	COMMENTS

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

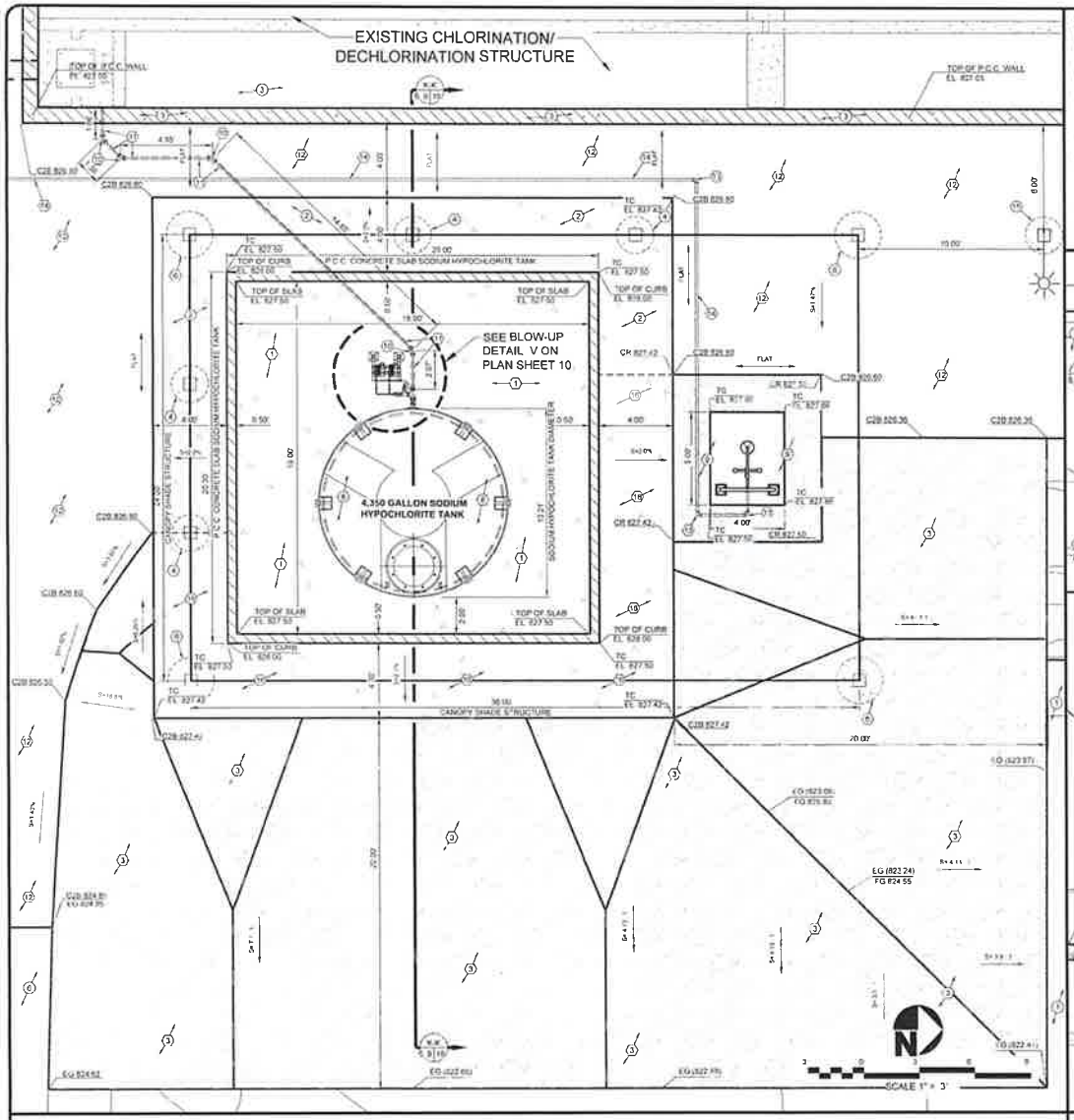
COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 10/9/23 DATE — 62028 R.C.E. No. — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023 — DRAWN RS — DESIGNED RS — FILE N/A — DRAWING 2024

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 #542.009



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

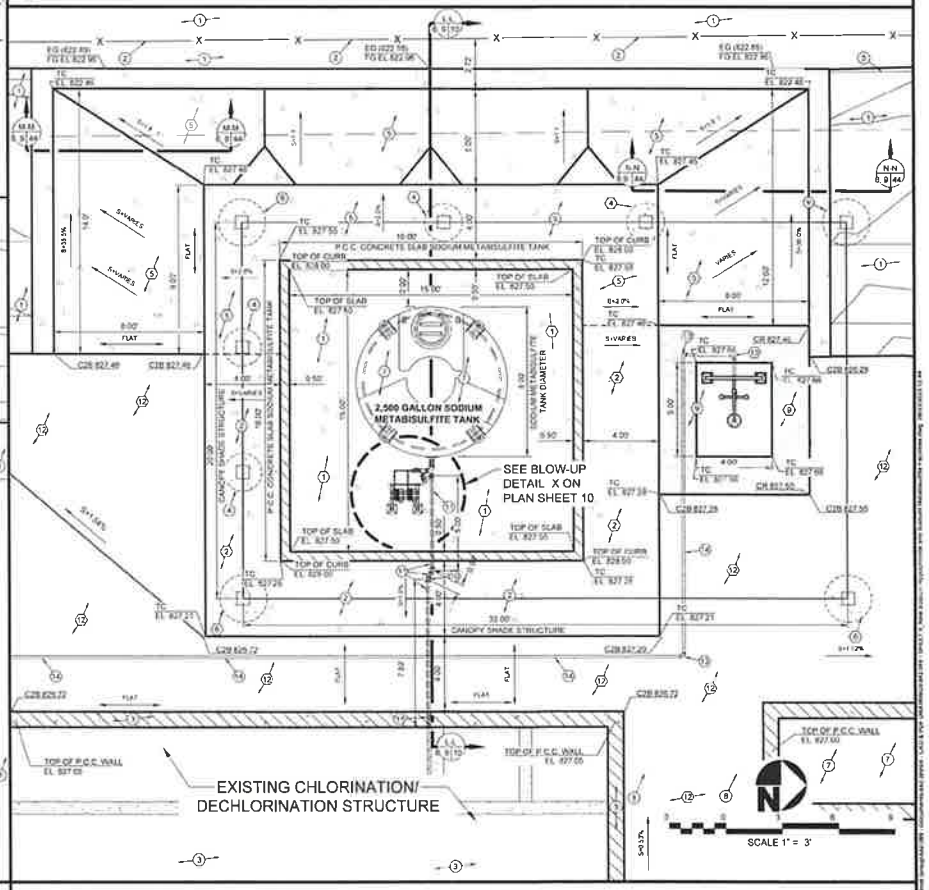
SCALE 1" = 3'

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 3/4-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 2,100-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 8-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 2,500-GALLON SODIUM METABISULFITE TANK BLOW-UP PLAN

SCALE 1" = 3'

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF:
JOSIE G. CANDY HOLT — 31773 RCE No — 09/25/2023 DATE — 12/31/24 REG EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN GAY P.E. DIRECTOR OF PUBLIC WORKS — 10/4/23 DATE — 62028 RCE No — 09/30/25 REG EXP

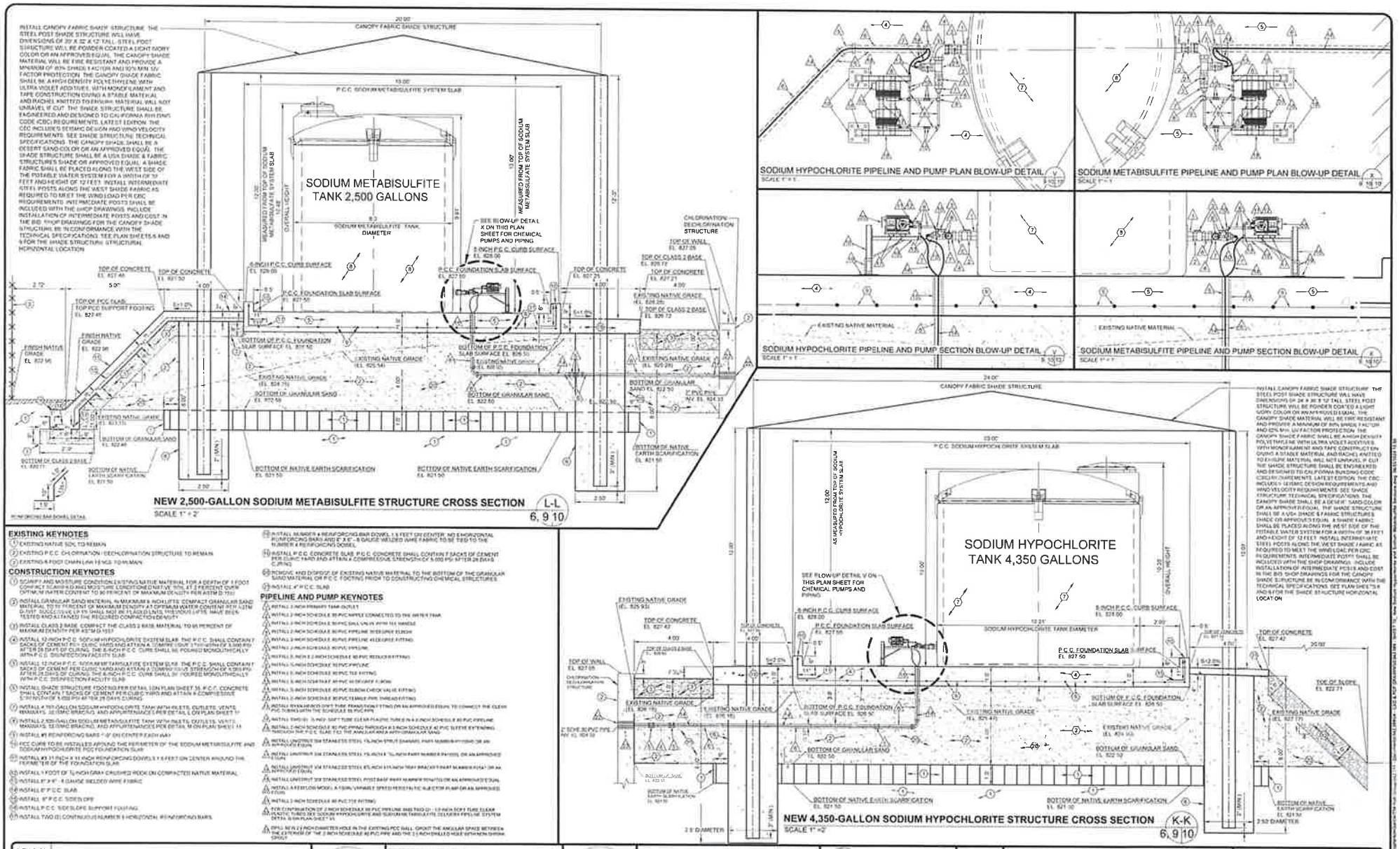
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023 — DESIGNED RG — DRAWN RS — CHECKED NA — APPROVED 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



EXISTING KEYNOTES

1. EXISTING NATIVE SOIL TO REMAIN
2. EXISTING P.C.C. CHLORINATION / DECHLORINATION STRUCTURE TO REMAIN
3. EXISTING 4 FOOT CHAIN LINK FENCE TO REMAIN

CONSTRUCTION KEYNOTES

1. SCARIFY AND MOISTURE CONDITION EXISTING NATIVE MATERIAL FOR A DEPTH OF 2 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 8 INCH LIFTS. COMPACT GRANULAR SAND MATERIAL TO 90 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 3,000 PSI AFTER 28 DAYS OF CURING. THE 8 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 3,000 PSI AFTER 28 DAYS OF CURING. THE 8 INCH P.C.C. CURB SHALL BE POURED MONOLITHICALLY WITH P.C.C. DISINFECTION FACILITY SLAB
6. INSTALL SHADE STRUCTURE FOOTINGS 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 3,000 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 37
8. INSTALL 2,500-GALLON SODIUM METABISULFITE TANK WITH INLETS, OUTLETS, VENTS, MANWAYS, SEISMIC BRACING, AND APPURTENANCES PER DETAIL M ON PLAN SHEET 37
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 #5 31 INCH x 31 INCH REINFORCING DOWELS 1.5 FEET ON CENTER AROUND THE PERIMETER OF THE FOUNDATION SLAB
12. INSTALL 1 FOOT OF 1/2 INCH GRAY CRUSHED ROCK ON COMPACTED NATIVE MATERIAL
13. INSTALL 6" X 6" - 8 GAUGE WELDED WIRE FABRIC
14. INSTALL 6" P.C.C. SLAB
15. INSTALL 8" P.C.C. SIDES OFF
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 HORIZONTAL REINFORCING BARS AND 6" X 6" - 8 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 3,000 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 2 INCH X 1 INCH SCHEDULE 80 PVC REDUCER FITTING
8. INSTALL 1 INCH SCHEDULE 80 PVC PIPELINE
9. INSTALL 1 INCH SCHEDULE 80 PVC TEE FITTING
10. INSTALL 1 INCH SCHEDULE 80 PVC ELBOW CHECK VALVE FITTING
11. INSTALL 1 INCH SCHEDULE 80 PVC FEMALE PIPE THREAD FITTING
12. INSTALL 1 INCH SCHEDULE 80 PVC ELBOW FITTING ON AN APPROVED EQUAL TO CONNECT THE CLEAR PVC TUBING WITH THE SCHEDULE 80 PVC PIPE
13. INSTALL 1 INCH ID - 1.5 INCH SOFT TUBE CLEAR PLASTIC TUBING IN A 2 INCH SCHEDULE 80 PVC PIPELINE
14. INSTALL 2 INCH SCHEDULE 80 PVC PIPING THROUGH A 2 INCH SCHEDULE 40 PVC SLEEVE EXTENDING THROUGH THE P.C.C. SLAB TO THE ANNULAR AREA WITH GRANULAR SAND
15. INSTALL UNISTRUT 304 STAINLESS STEEL 1 5/8 INCH STRUT CHANNEL PART NUMBER P1000 OR AN APPROVED EQUAL
16. INSTALL UNISTRUT 304 STAINLESS STEEL 1 5/8 INCH 1 5/8 INCH TEE PART NUMBER P1010 OR AN APPROVED EQUAL
17. INSTALL UNISTRUT 304 STAINLESS STEEL 1 5/8 INCH 1 5/8 INCH TEE BRACKET PART NUMBER P1767 OR AN APPROVED EQUAL
18. INSTALL UNISTRUT 304 STAINLESS STEEL POST BASE PART NUMBER P2476 OR AN APPROVED EQUAL
19. INSTALL A FEELUGS MODEL A 150N VARIABLE SPEED PERISTALTIC INJECTOR PUMP OR AN APPROVED EQUAL
20. INSTALL 2 INCH SCHEDULE 80 PVC TEE FITTING
21. FOR CONTINUATION OF 2 INCH SCHEDULE 80 PVC PIPELINE AND TWO (2) - 1.5 INCH SOFT TUBE CLEAR PLASTIC TUBES FOR SODIUM HYPOCHLORITE AND SODIUM METABISULFITE DELIVERY PIPELINE SYSTEM DETAIL S ON PLAN SHEET 37
22. OPTIONAL NEW 2.5 INCH DIAMETER HOLE IN THE EXISTING PCC WALL. GROUT THE ANNULAR SPACE BETWEEN THE EXTERIOR OF THE 2 INCH SCHEDULE 80 PVC PIPE AND THE 2.5 INCH SHOULD HOLE BETWEEN SHRINK GROUT

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMIE RD. SANCHEZ HOLT — 31773 RCE No — 09/25/2023 DATE — 12/31/24 REG EXP

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

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

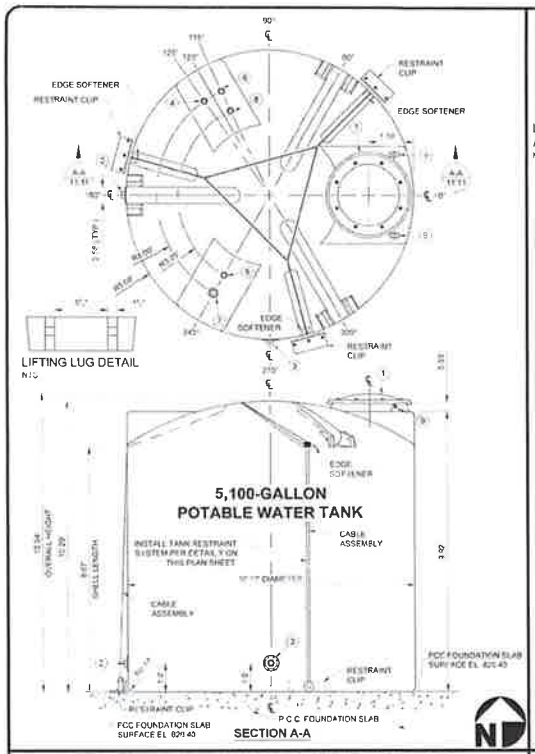
DATE 09/25/2023 — DRAWN RS — REVIEWED RS — SCALE N/A — PROJECT NO. 2284

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

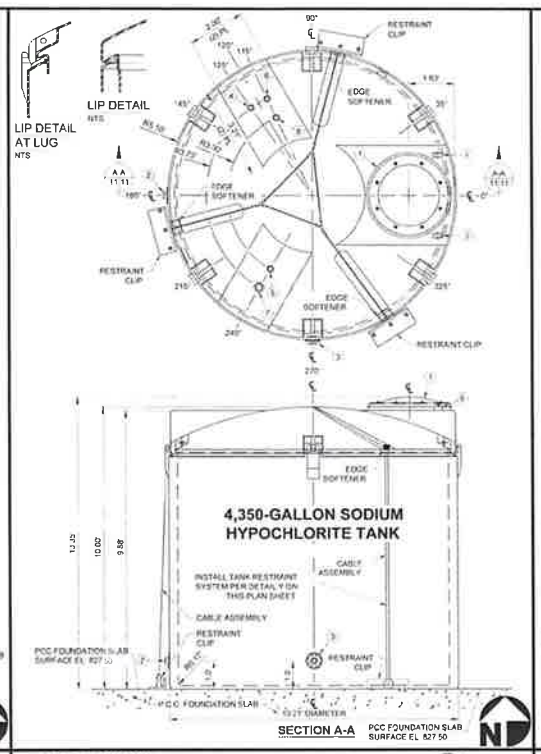
REFERENCE

THG #542 080

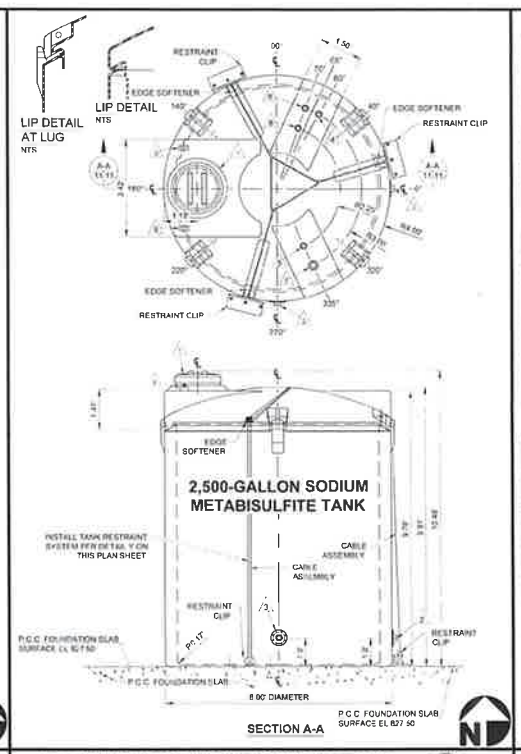
SHEET 10 OF 50



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'

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°	839.94
OUTLET	2	8743 *	2"	2-INCH PRIMARY TANK OUTLET	180°	827.40
DRAIN	3	8743 *	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	245°	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°	837.80
OUTLET	2	8743 *	2"	2-INCH PRIMARY TANK OUTLET	180°	828.50
DRAIN	3	8743 *	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	245°	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

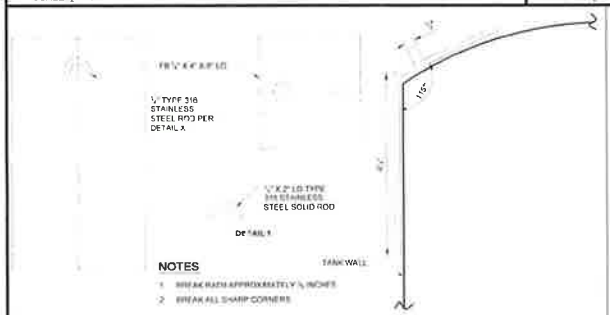
NOZZLE SCHEDULE & ACCESSORIES

SERVICE	MK.	STOCK NO.	SIZE	FITTING	DEG.	ELEV.
CAP	1	4558 *	12"	12-INCH MANWAY	90°	837.98
OUTLET	2	8743 *	2"	2-INCH PRIMARY TANK OUTLET	0°	828.50
DRAIN	3	8743 *	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	330°	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 PRODUCTS

NOTE

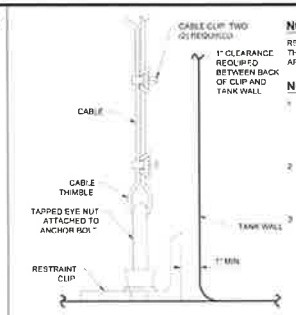
TANK RESTRAINT SYSTEM SUBMITTAL DOCUMENTS TO BE APPROVED PRIOR TO CONSTRUCTION OF P C C DISINFECTION SYSTEM SLAB



NOTES

1. BREAK EDGE APPROXIMATELY ¼ INCHES
2. BREAK ALL SHARP CORNERS

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



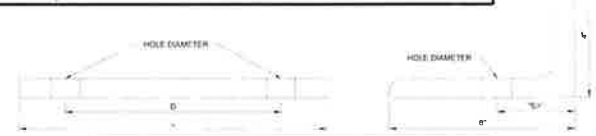
RESTRAINT CLIP / CABLE CONNECTION

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



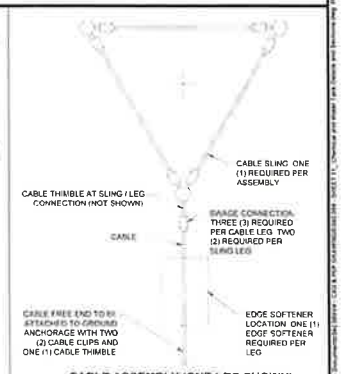
HOT ROLLED STRUCTURAL ANGLE SIZE	"L" CLIP LENGTH	"D" DISTANCE BETWEEN HOLES	HOLE DIAMETER	NUMBER OF HOLES REQUIRED	RESTRAINT CLIP DESIGNATION	DIM "DIA" *
L 6 X 4 X ⅜	4"	N/A	⅝"	1	RC 6 X 4 X ⅜ X 4	2"
L 6 X 4 X ⅜	10"	7½"	⅝"	2	RC 6 X 4 X ⅜ X 10	2½"
L 6 X 4 X ⅜	16"	13"	⅝"	2	RC 6 X 4 X ⅜ X 16	2½"
L 6 X 4 X ⅜	24"	10½"	⅝"	3	RC 6 X 4 X ⅜ X 24	2½"

* TOLERANCE ON DIMENSION "DIA" = ± 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

PREPARED UNDER THE DIRECT SUPERVISION OF
JOHN G. EL CHEIKH HOLT — 21713 RCE No — 09/25/2023 DATE — 12/31/24 REG. EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 RCE No — 10/9/23 DATE — 06/30/25 REG. EXP

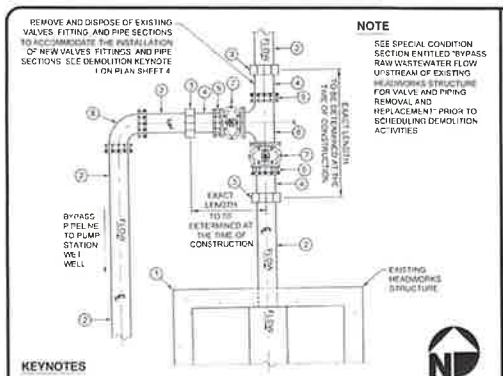
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023 — DRAWN RS — REVIEWED RS — APP. N/A — SUBMITTED 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



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 7A
8. EXISTING 12 INCH 90 DEGREE DUCTILE IRON ELBOW TO REMAIN

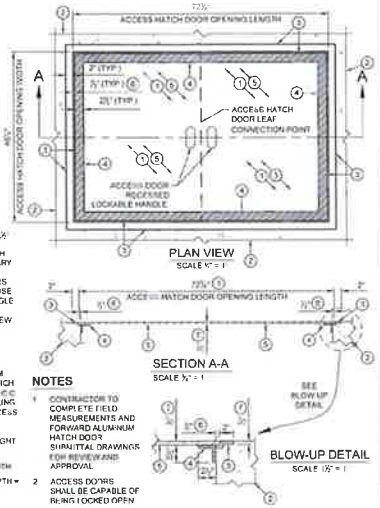
NEW VALVE AND PIPELINE FITTING REPLACEMENT UPSTREAM OF P.C.C. HEADWORKS STRUCTURE DETAIL

A 4 | 12

SCALE 1" = 3'

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 ALUMINUM 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

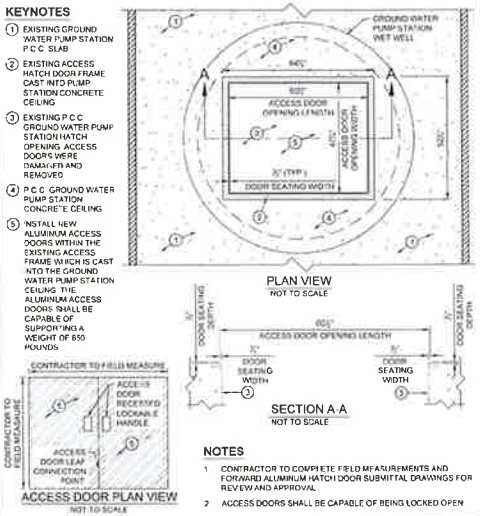
SANITARY SEWER INFLUENT PUMP STATION ACCESS HATCH DETAIL

F 4 | 12

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

KEYNOTES

1. EXISTING 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

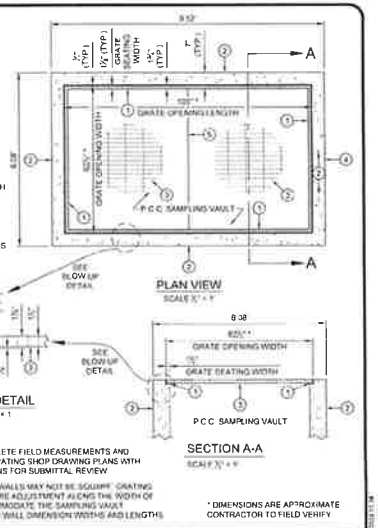
GROUND WATER PUMP STATION ACCESS HATCH DETAIL

B 4 | 12

NOT TO SCALE

KEYNOTES

1. 1½-INCH X 1½-INCH X ⅛-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 P.C.C. SAMPLING VAULT OUTLET STRUCTURE NEW ALUMINUM GRATE DETAIL

G 4, 6 | 12

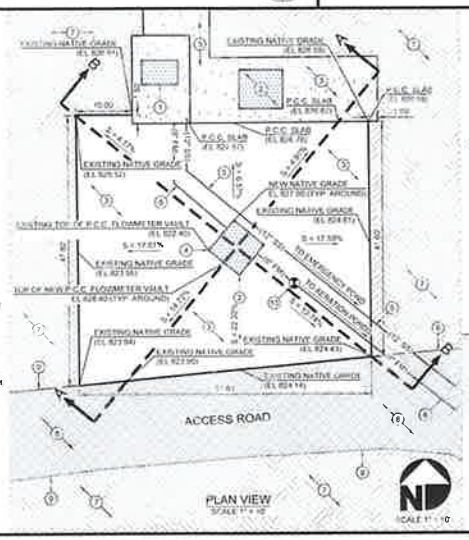
PLAN AND SECTION SCALE ½" = 1', BLOW UP SCALE 1½" = 1'

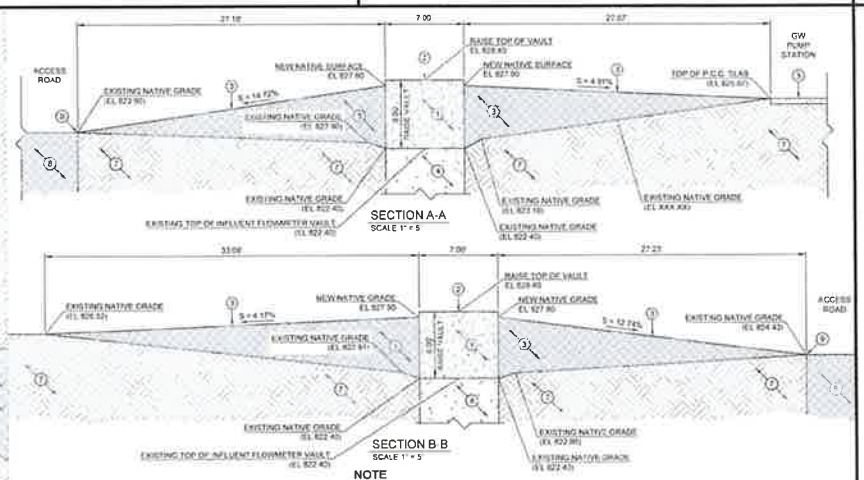
EXISTING KEYNOTES

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 8 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

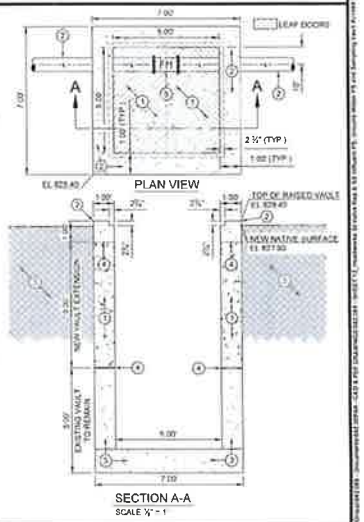
PLAN SCALE 1" = 10', SECTIONS SCALE 1" = 5'

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 A ON THIS PLAN SHEET



PRECAST CONCRETE INFLUENT FLOWMETER VAULT EXTENSION DETAIL

D 4 | 12

SCALE ½" = 1'

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF

JAMES HILL SANDY HOLT — 31773 R.C.E. No — 09/25/2023 DATE — 12/31/24 REG. EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY

JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No — 10/1/23 DATE — 09/30/25 REG. EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

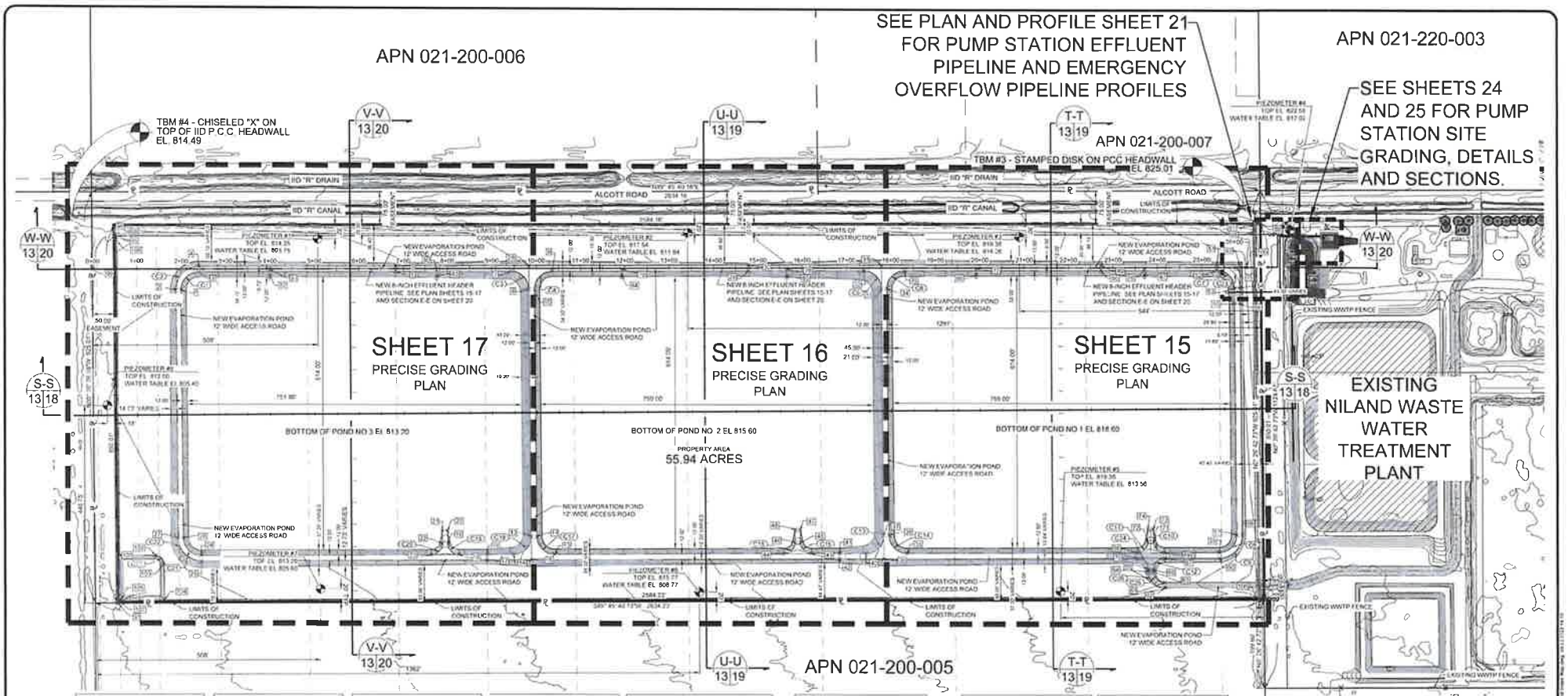
PROJECT TITLE

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 #542 069

SHEET 12 OF 50



Point Table			
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Point Table			
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Point Table			
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[illegible]	[illegible]	[illegible]	[illegible]

Point Table			
Point #	Northing	Easting	Description
[illegible]	[illegible]	[illegible]	[illegible]

Point Table			
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Curve Table				
Curve #	Length	Radius	Delta	Tangent
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Curve Table				
Curve #	Length	Radius	Delta	Tangent
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
SEAN M. G. MOLT — 31173 R.C.E. No — 09/25/2023 DATE — 12/31/24 REG. EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GUY O'BRIEN — 62028 R.C.E. No — DIRECTOR OF PUBLIC WORKS — 10/2/23 DATE — 09/30/25 REG. EXP

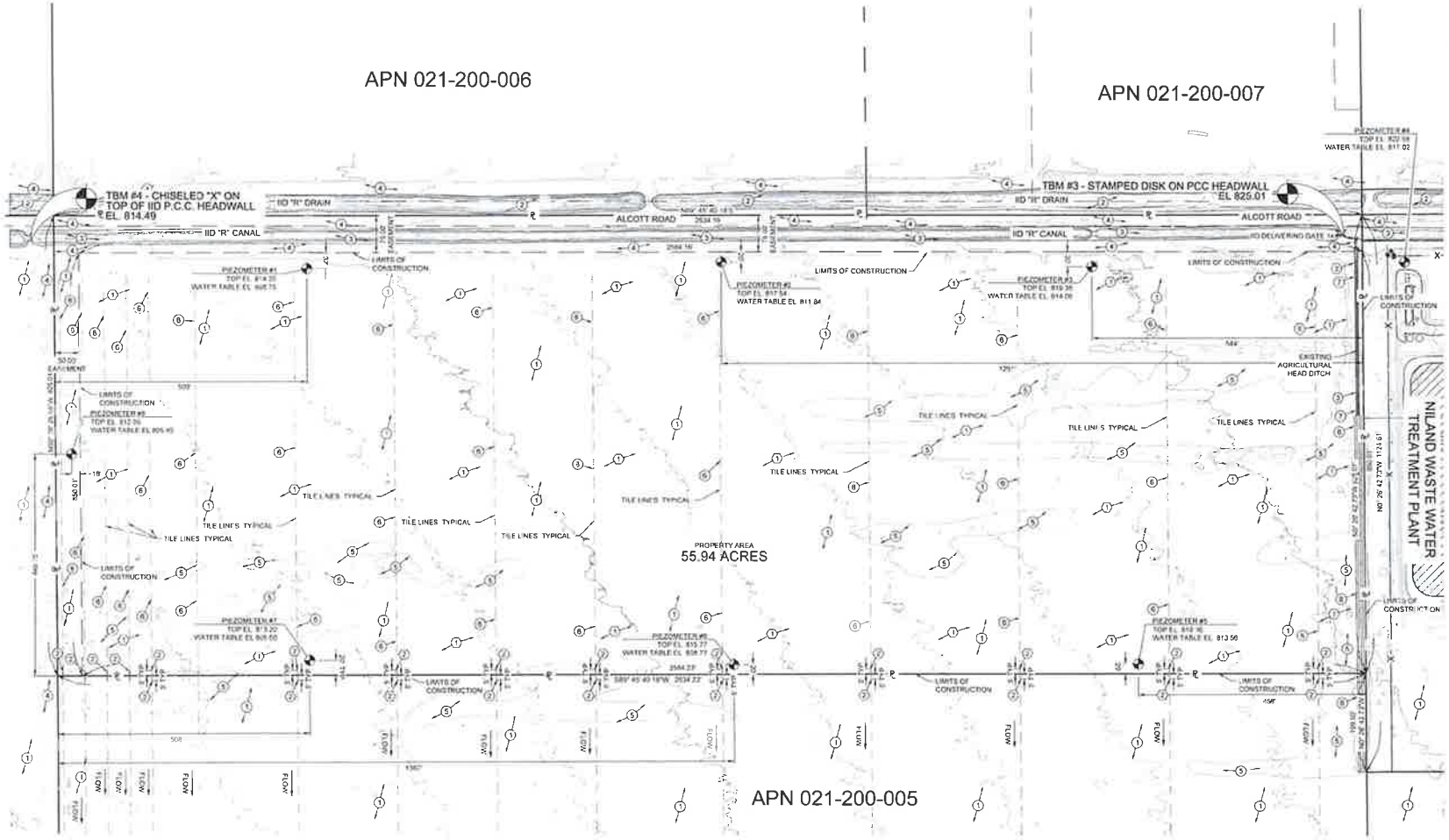
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
DESIGNED RS
CHECKED N/A
PROJECT ENGINEER JGO

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 #942 089

SHEET 13 OF 50



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

N

100 0 100 200 300

SCALE 1"= 100'

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMIE G. JACOB HOLT — 31173 RCE No — 09/25/2023 DATE — 12/31/24 REG. EXP

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

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

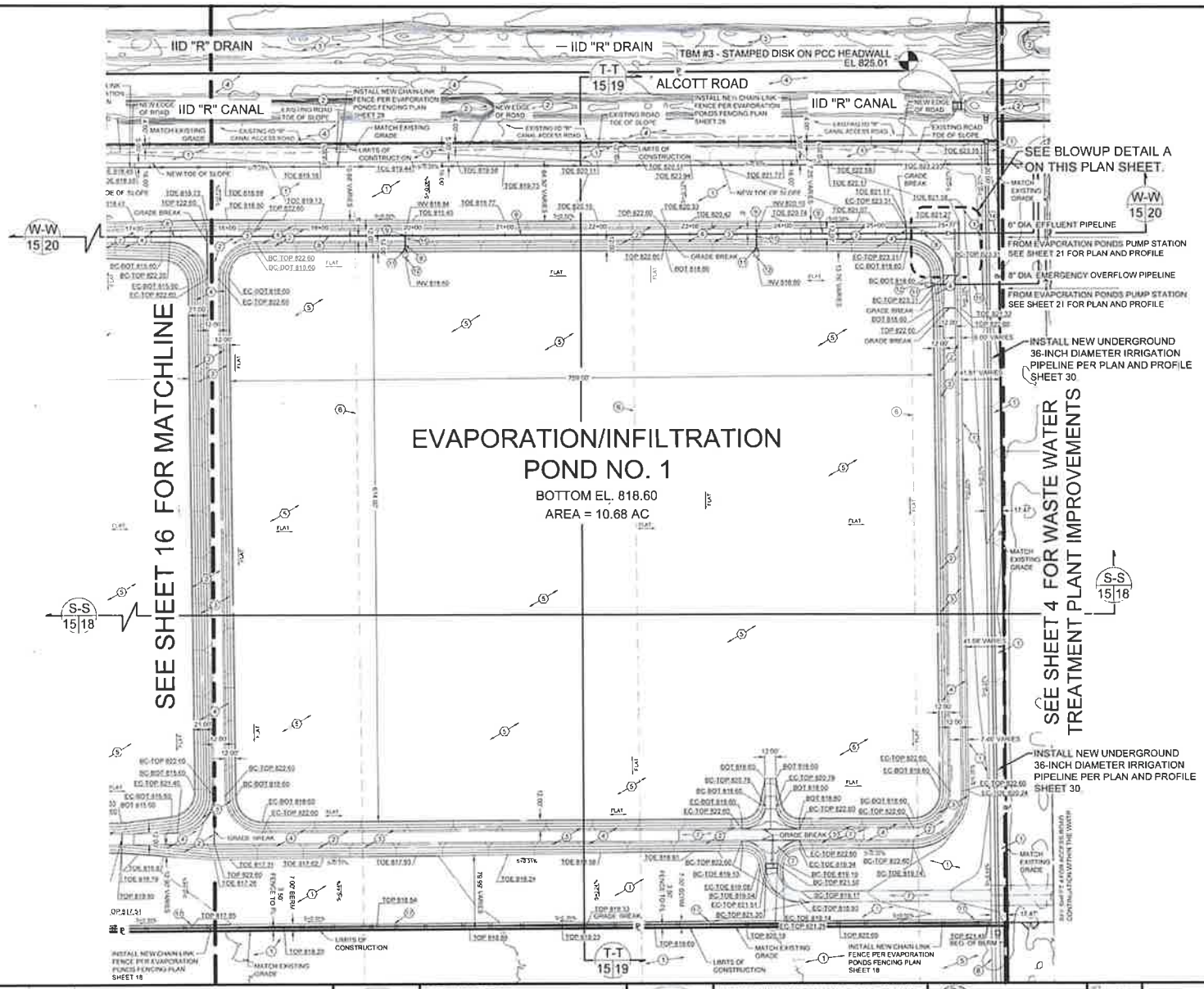
DATE 09/25/2023 — DESIGNED RS — DRAWN RS — CHECKED N/A — PROJECT ENGINEER JGH

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

EVAPORATION/INFILTRATION POND EXISTING SITE PLAN

REFERENCE — THG #542 009

SHEET 14 OF 50



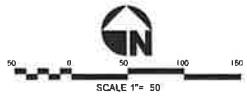
EXISTING KEYNOTES

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 8-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 6-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 6-INCH DIAMETER MJ X FL DUCTILE IRON TEE WITH RESTRAINED JOINTS AND STAINLESS STEEL HARDWARE
10. INSTALL 6-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 5-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 180X 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 FLX 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

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES G. HICK HOLT — 09/25/2023 DATE — 51773 RCE No — 12/31/24 REG EXP

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

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

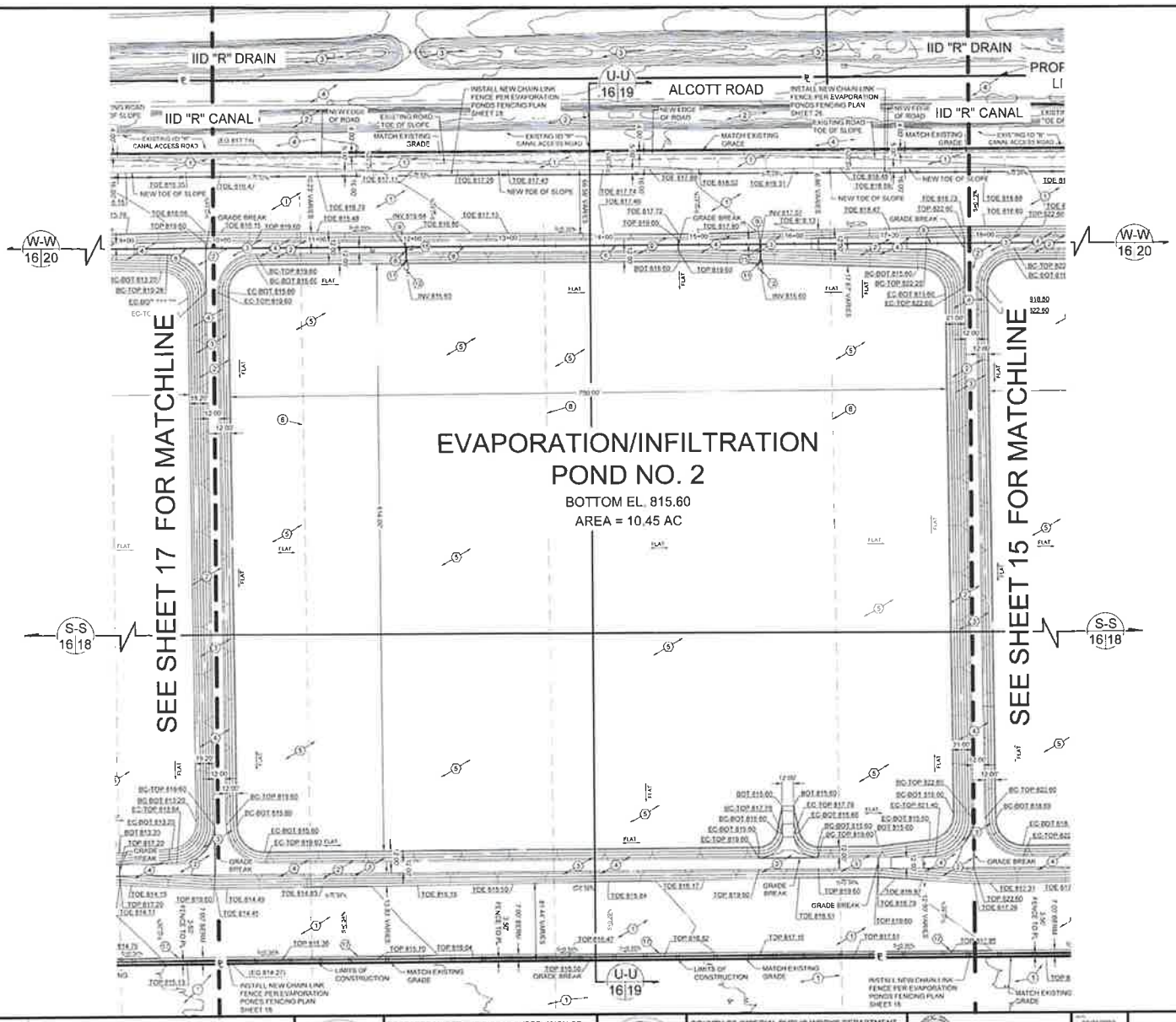
DATE 09/25/2023 — DRAWN BS — CHECK N/A — DESIGN JDH

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



EVAPORATION / INFILTRATION PONDS EXISTING KEYNOTES

1. EXISTING NATIVE MATERIAL
2. EXISTING IID IRRIGATION CANAL TO REMAIN
3. EXISTING IID EARTH IN 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 RIP 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 1 TO 10 PERCENT AND COMPACTED IN 8 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 POND BOTTOM AREA. WHERE NATIVE MATERIAL FILL IS REQUIRED, THE ENGINEERED FILL SHALL BE UNIFORMLY DISCED AND MOISTURE CONDITIONED TO OPTIMUM PLUS 1 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 10 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 FEEDER 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 L BOW WITH RESTRAINED JOINT FITTINGS AND STAINLESS STEEL HARDWARE
11. INSTALL P.C.C. HEADWALL PER DETAIL BB ON SHEET 25
12. INSTALL A 5-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 140N OR AN APPROVED EQUAL
13. INSTALL STAND PIPE AND P.C.C. WET WELL PER DETAIL AA ON SHEET 26
14. INSTALL 8-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

SCALE 1"= 50'

REVISION	DATE	COMMENTS

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

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62029 R.C.E. No — 10/9/23 DATE — 06/30/25 REG. EXP

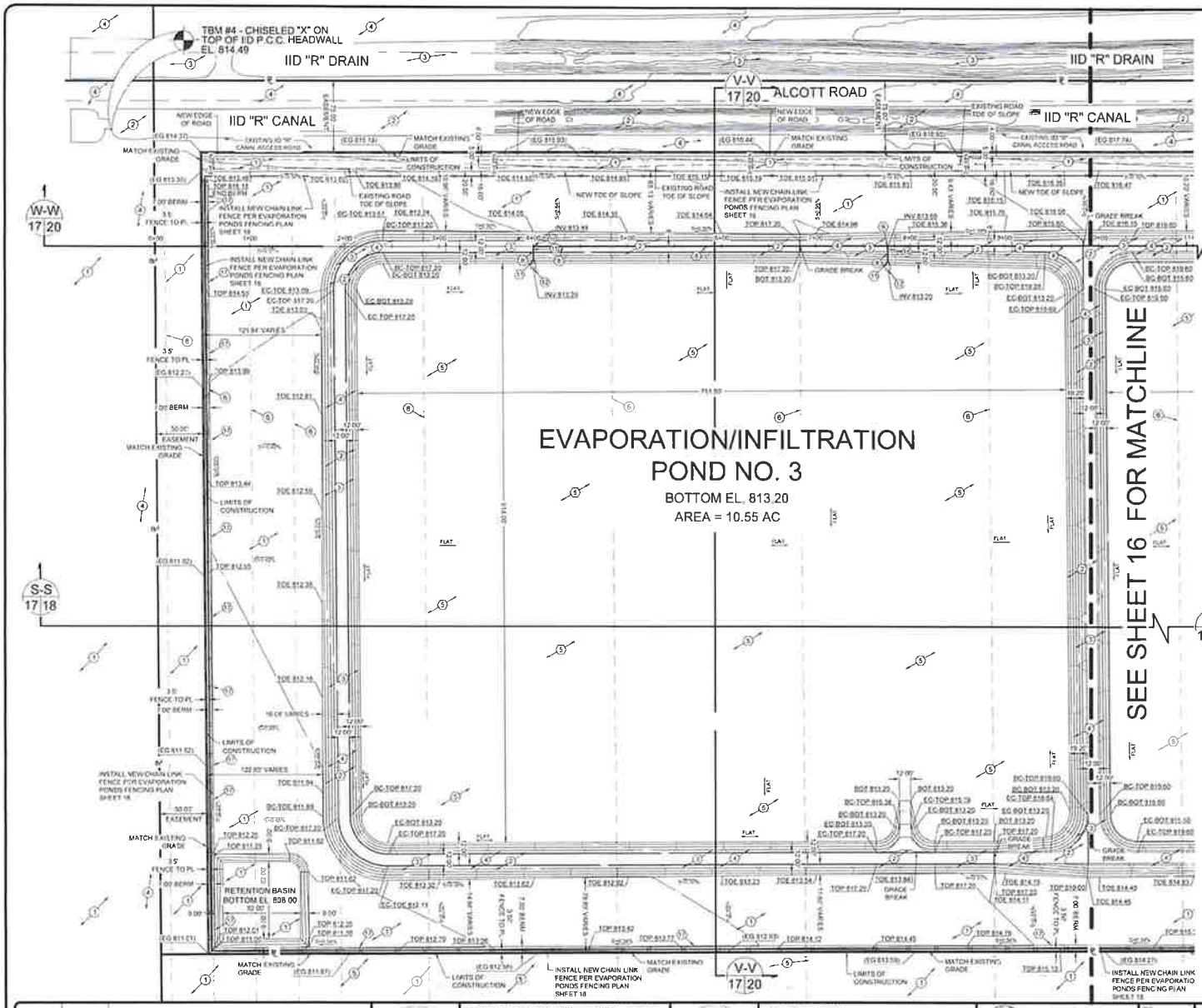
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023 — DESIGN RS — DRAWN RS — CHECK N/A — APPROVED 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



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 18" REINFORCED 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. REWET 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
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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 18 AND TRENCH DETAIL C ON SHEET 26
9. INSTALL 8-INCH DIAMETER M J 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 B 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 A ON SHEET 26
14. INSTALL 8-INCH DIAMETER AWWA C-900 DR-18 PVC EFFLUENT FORCE MAIN PER TRENCH DETAIL C ON SHEET 26
15. INSTALL 8-INCH DIAMETER FL X ML ECCENTRIC PLUG VALVE WITH VALVE BUILD 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
17. CONSTRUCT NEW EARTHEN BERM FOR STORM WATER RUNOFF PROTECTION PER DETAIL H 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

SCALE 1"= 50

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
STEVEN G. SACHS, P.E.T.
31773 R.C.E. No
09/25/2023 DATE
12/31/24 REG. EXP

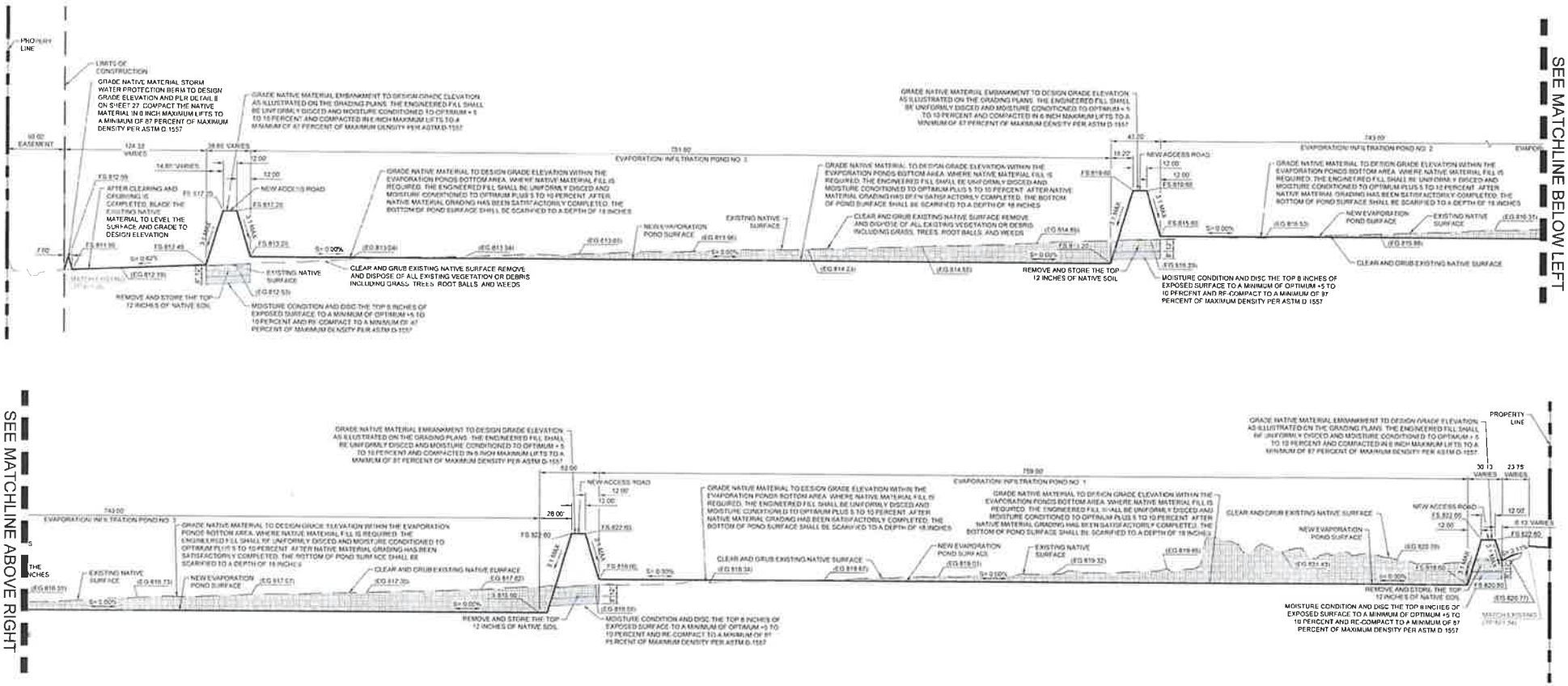
COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS
10/9/23 DATE
60029 R.C.E. No
09/30/25 REG. EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

09/25/2023
RS
RS
NR
JSH

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



EVAPORATION/ INFILTRATION POND CROSS SECTION (S-S)

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

13-17/18

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES D. "JACK" HOLT — 31773 RCE No — 09/25/2023 DATE — 12/31/24 REG. EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 RCE No — 10/9/23 DATE — 05/30/25 REG. EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

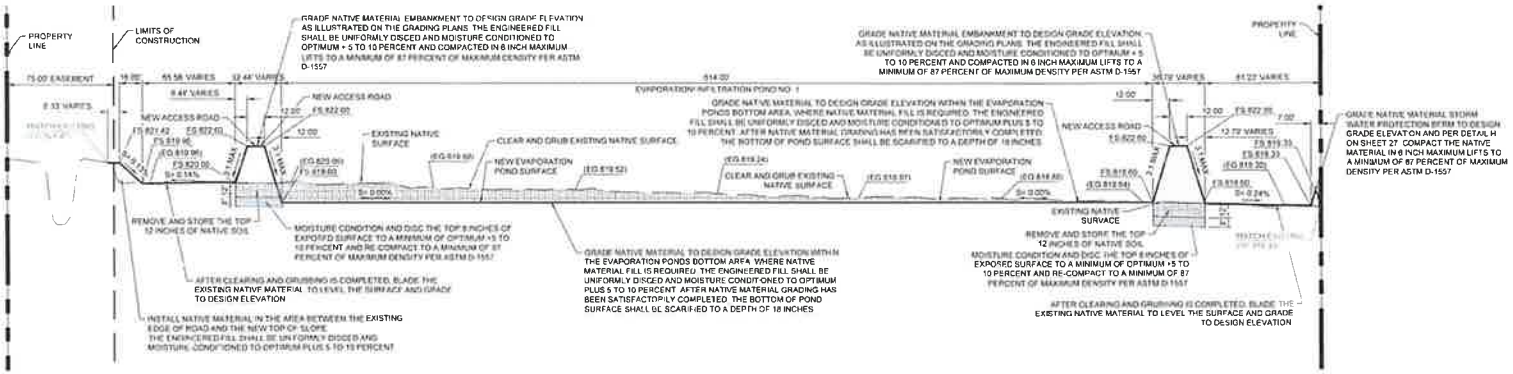
DATE 09/25/2023 | DESIGNED RS | DRAWN RS | CHECKED N/A | SCALE 1:20 | SURVEYED JSH

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

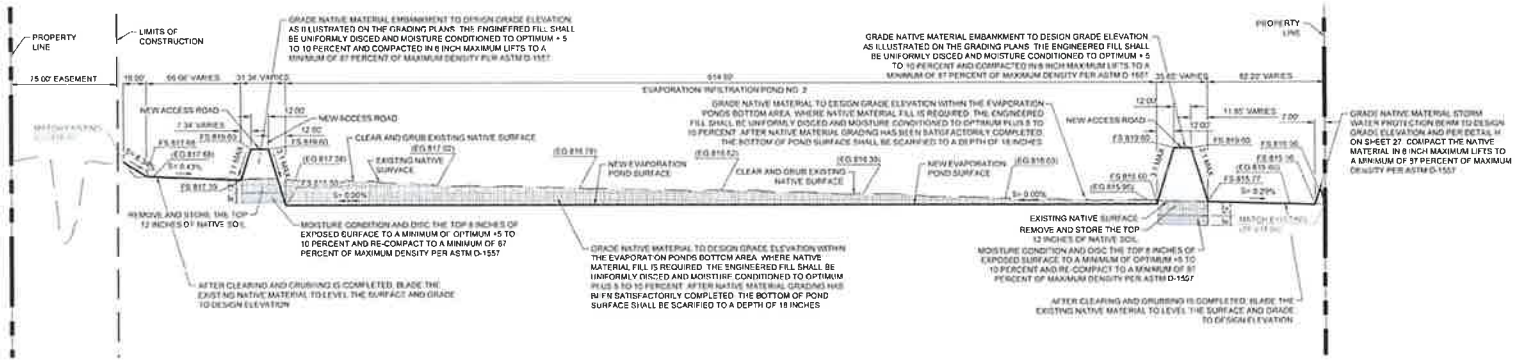
SHEET 18 OF 50



EVAPORATION/ INFILTRATION POND CROSS SECTION (T-T)

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

13,15|19



EVAPORATION/ INFILTRATION POND CROSS SECTION (U-U)

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

13,16|19

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES D. "JACK" HOLT — 31773 RCE No — 09/25/2023 DATE — 12/31/24 REG EXP

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

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

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

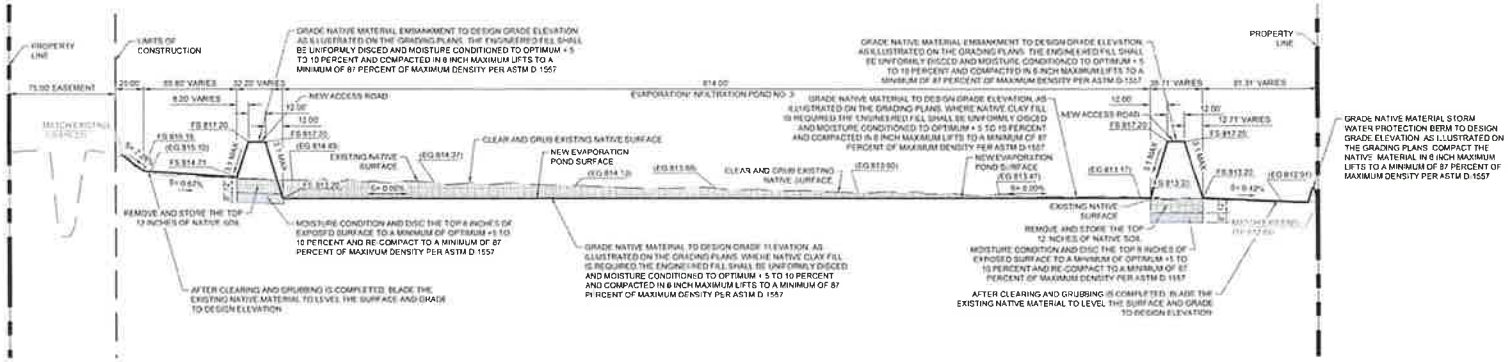
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

EVAPORATION/ INFILTRATION POND CROSS SECTIONS

REFERENCE

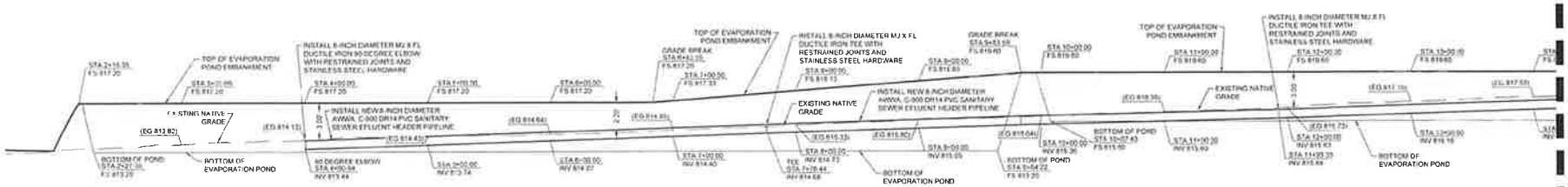
THG #542 089

SHEET 19 OF 50



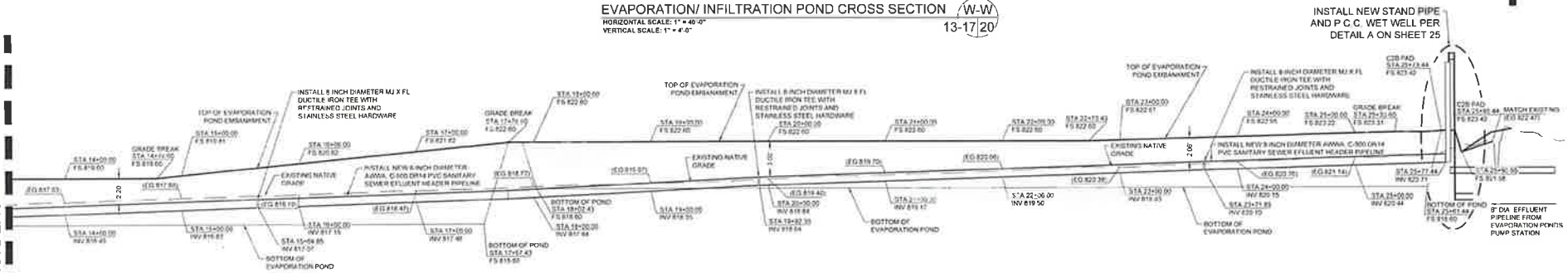
EVAPORATION/ INFILTRATION POND CROSS SECTION (V-V)
HORIZONTAL SCALE: 1" = 40'-0"
VERTICAL SCALE: 1" = 4'-0"
13,17|20

SEE MATCHLINE BELOW LEFT



EVAPORATION/ INFILTRATION POND CROSS SECTION (W-W)
HORIZONTAL SCALE: 1" = 40'-0"
VERTICAL SCALE: 1" = 4'-0"
13-17|20

SEE MATCHLINE ABOVE RIGHT



EVAPORATION/ INFILTRATION POND CROSS SECTION (W-W)
HORIZONTAL SCALE: 1" = 40'-0"
VERTICAL SCALE: 1" = 4'-0"
13-17|20

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES G. JAMES HOLT
09/25/2023 DATE
35773 R.C.E. No
12/31/24 REG. EXP

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

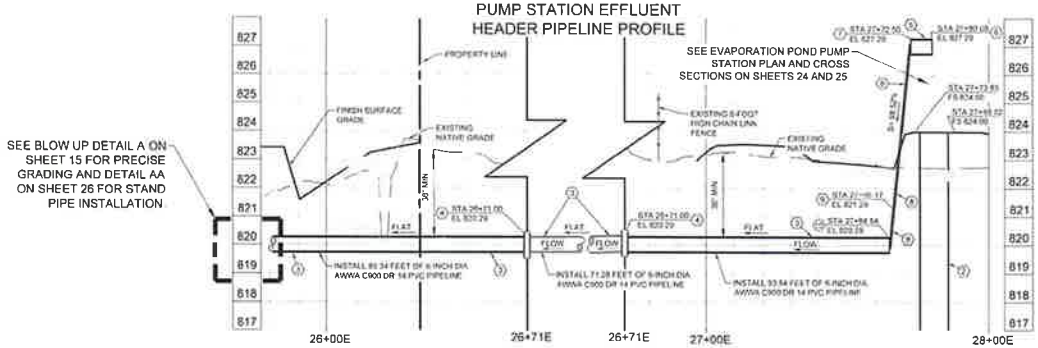
DATE 09/25/2023
DRAWN RS
CHECKED RS
SCALE N/A
PROJECT NO. JGR

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

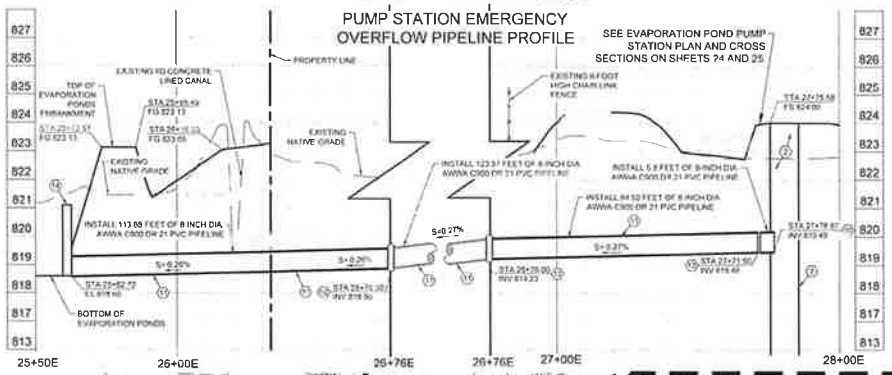
REFERENCE
THG #542 089

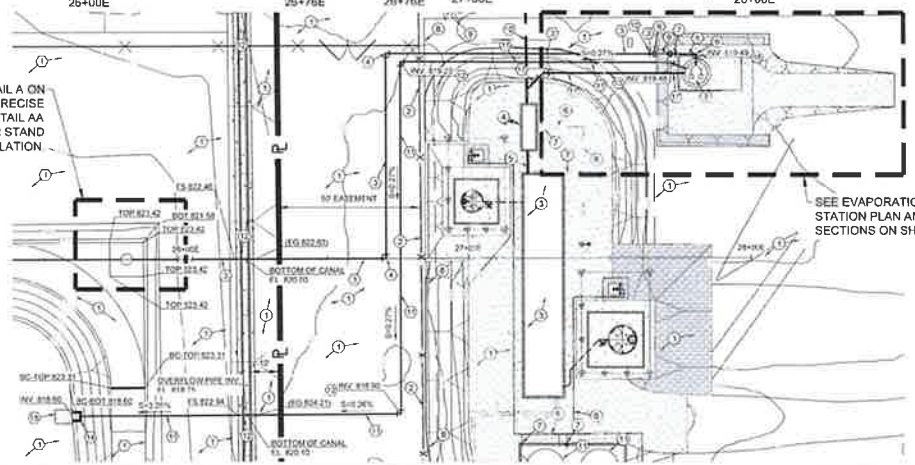
SHEET 20 OF 50

PUMP STATION EFFLUENT HEADER PIPELINE PROFILE



PUMP STATION EMERGENCY OVERFLOW PIPELINE PROFILE





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 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
11. EXISTING CHEMICAL STORAGE TANK TO REMAIN
12. EXISTING 10' 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 441 (905/905-051) 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 6 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

REVISION	DATE	COMMENTS

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

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 RCE No — 6/9/23 DATE — 09/30/25 REG. EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

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

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

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

LIMITS OF CONSTRUCTION

TOP OF ROAD

TOE OF SLOPE

TOP OF SLOPE

NEW EVAPORATION/INFILTRATION POND 12' WIDE ACCESS ROAD

BOTTOM OF POND NO. 3 EL. 813.20

BOTTOM OF POND NO. 2 EL. 815.60

SEE SHEET 23 FOR MATCHLINE

SCALE 1" = 50'

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JOHN G. "JACK" WOLT — 31773 RCE No — 09/25/2023 DATE — 12/31/24 REG EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY P.E. DIRECTOR OF PUBLIC WORKS — 62028 RCE No — 6/9/23 DATE — 09/30/25 REG EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

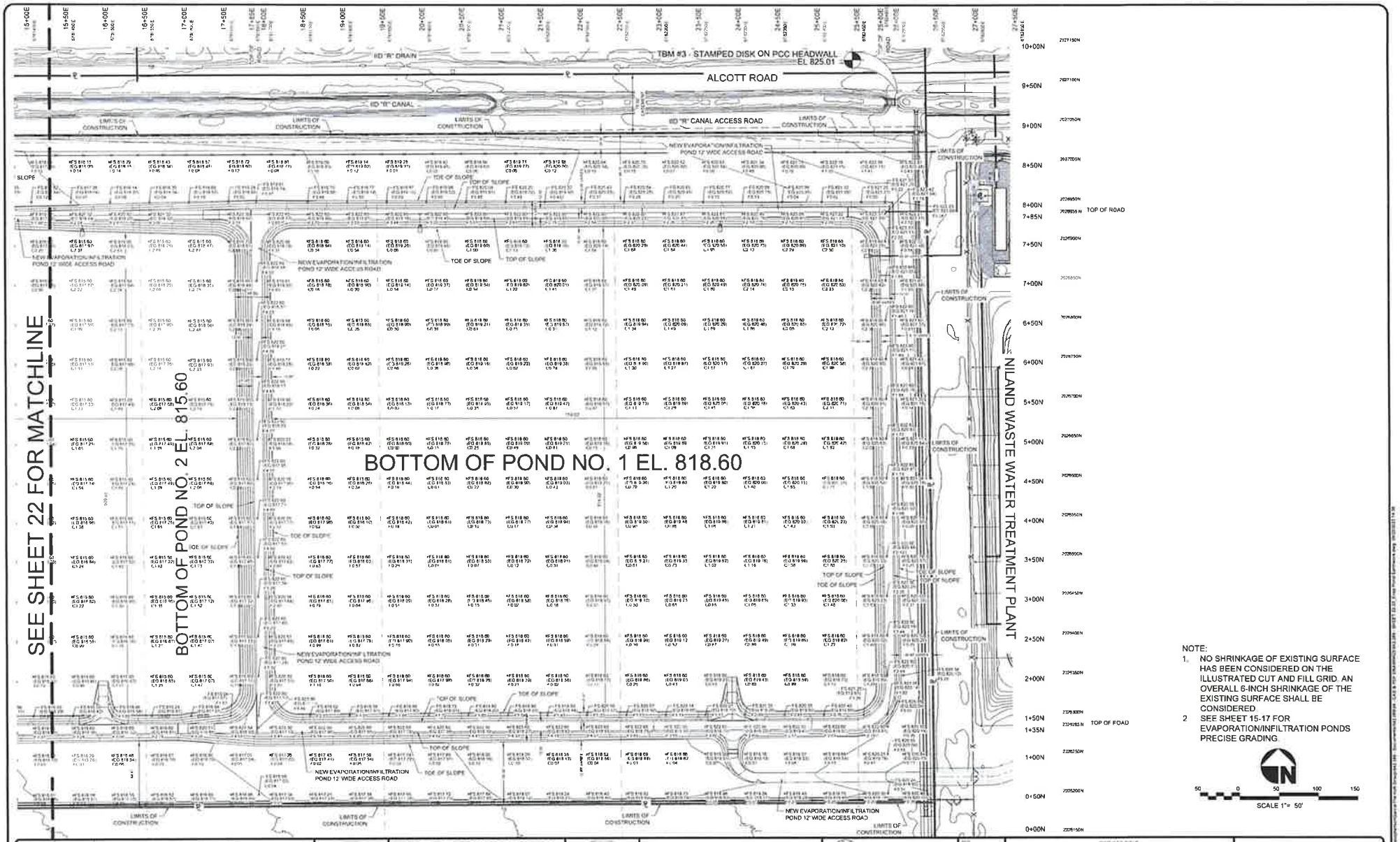
DATE 09/25/2023 — DRAWN RS — DESIGNED RS — CHECKED NB — SUPV

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

REFERENCE

THO #542 089

SHEET 22 OF 50



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.

N

50 0 50 100 150
SCALE 1" = 50'

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

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R C E No — 10/9/23 DATE — 09/30/25 REG. EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

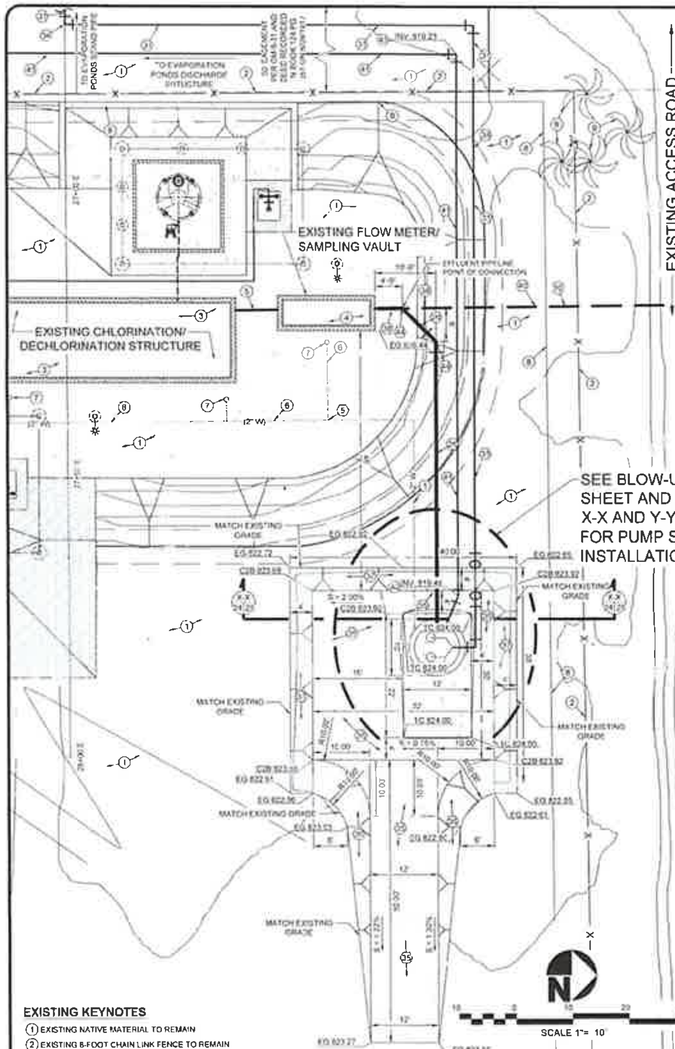
DATE 09/25/2023
DR RS
CHKD RS
APR NVR
SCALE 1" = 50'
DRAWN JGM

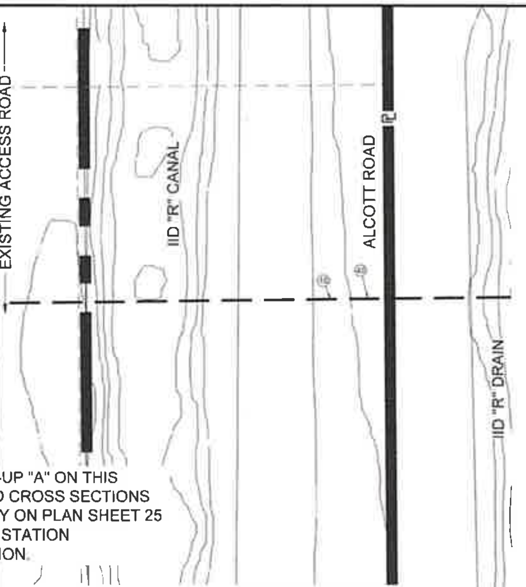
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/INFILTRATION POND SITE EARTHWORK

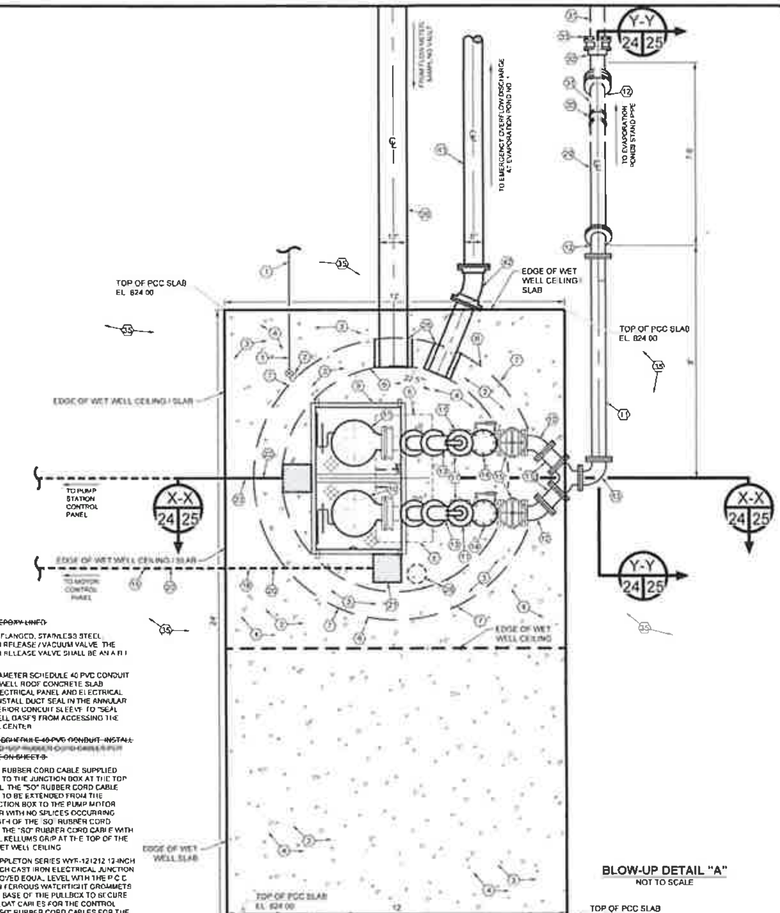
REFERENCE

THG #542 080

SHEET 23 OF 50







BLOW-UP DETAIL "A"
NOT TO SCALE

TOP OF PCC SLAB
EL. 824.00

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

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 1-INCH TYPE K HARD COPPER PIPELINE. THE 1-INCH TYPE K HARD COPPER PIPELINE SHALL BE SUPPORTED BY A 5-FOOT LONG, 1⅝ INCH X 1⅝-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 PE'S 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 COATED WITH AN ELASTOMERIC COAL-TAR FREE FLUID APPLIED WATERPROOFING MEMBRANE. THE MEMBRANE SHALL BE APPLIED TO A DRY FILM THICKNESS OF 40 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 ½-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.

PEDESTAL. PLACE TWO (2) ROWS OF ⅜-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 ... SUPPLIED WITH A STAINLESS STEEL PADLOCK LOOP. THE ACCESS HATCHES SHALL BE CAPABLE OF BEING PLACED IN A LOCK OPEN POSITION. THE CONTRACTOR SHALL SUPPLY A PADLOCK AND SIX (6) SETS OF KEYS TO THE OWNER. THE 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, 460-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
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 ...
16. ~~INSTALL A 6-INCH FLANGE X 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. ...
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 ... 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 WYE-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. ... 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.
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 28
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/FLOW METER STRUCTURE. INSTALL THE SANITARY SEWER PIPELINE PER TRENCH DETAIL CC ON SHEET 28 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. 461-06540705-031 OR AN APPROVED EQUAL
31. INSTALL A 6 INCH DIAMETER AWWA C-900, CLASS 150 PVC PIPELINE. SEE SHEET 21 FOR PLAN AND PROFILE
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. ... 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
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
40. CONTRACTOR SHALL FILL THE ABANDONED PIPELINE WITH 2 SACK CEMENT SLURRY AND CAP THE EXPOSED ENDS WITH P.C.C. CONCRETE
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

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES G. "JACK" HOLT
31173 R.C.E. No
09/25/2023 DATE
12/31/24 REG. EXP

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

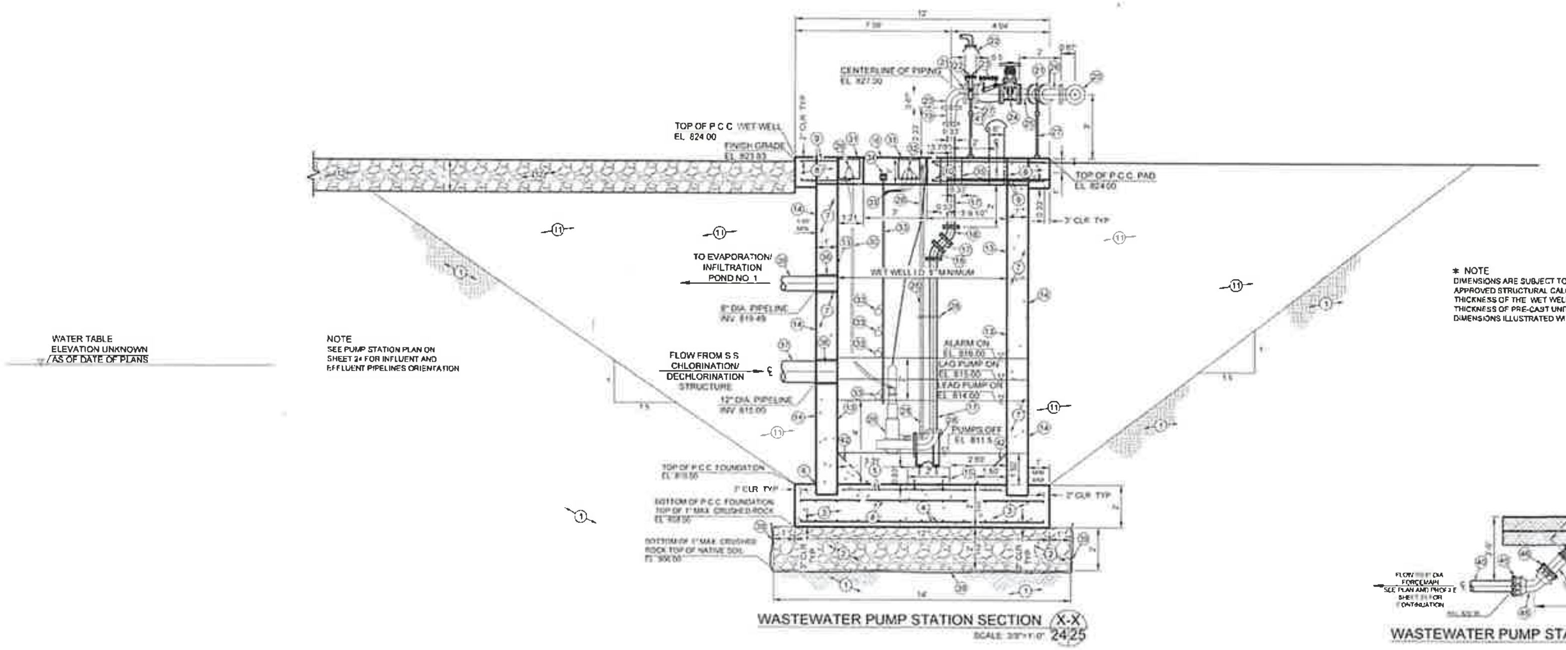
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS

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

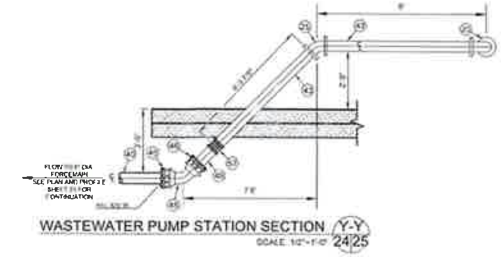
EVAPORATION/ INFILTRATION POND PUMP STATION PLAN

REFERENCE
THG #542.009
SHEET 24 OF 50



WASTEWATER PUMP STATION SECTION X-X 24/25
SCALE 3/8"=1'-0"

* 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. 5 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 ULTRITHANE 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, 8-INCH LONG, 316 STAINLESS STEEL EXPANSION BOLTS 8 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. [illegible] OF KEYS [illegible]
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. [illegible] DEGREE ELBOW
21. [illegible] 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 BLIND. THE COMBINATION AIR RELEASE VALVE SHALL BE AN A.R.I. MODEL NO. D-070
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, 8-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 30 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 3 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 60 FEET OF SJTO-VA 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 [illegible] AND PROFILE SHEET 21 AND TRENCH DETAIL CC ON SHEET 26
39. INSTALL MIRAFI 600X GEOTEXTILE FABRIC BENEATH THE ROCK. LAP THE FABRIC 45 INCHES
40. INSTALL A 8-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 8-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 8-INCH DUCTILE IRON EPOXY COATED TRANSITION COUPLING WITH 316 STAINLESS STEEL HARDWARE. THE TRANSITION COUPLING SHALL BE A SMITH BLAIR MODEL NO. 441-08540765-001 OR AN APPROVED EQUAL
45. INSTALL A 8-INCH M.J. X M.J. 45 DEGREE FUSION BONDED EPOXY LINED DUCTILE IRON ELBOW WITH 316 STAINLESS STEEL HARDWARE
46. INSTALL A 8-INCH DUCTILE IRON RESTRAINED JOINT FITTING WITH 316 STAINLESS STEEL HARDWARE

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES G. "ROCK" HOLT — 31773 RCE No — 12/31/24 REG EXP
09/25/2023 DATE

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS — 82028 RCE No — 09/30/25 REG EXP
10/9/23 DATE

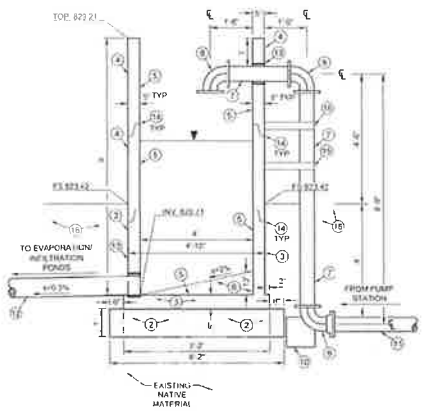
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

09/25/2023 · RS · RS · N/A · JGH

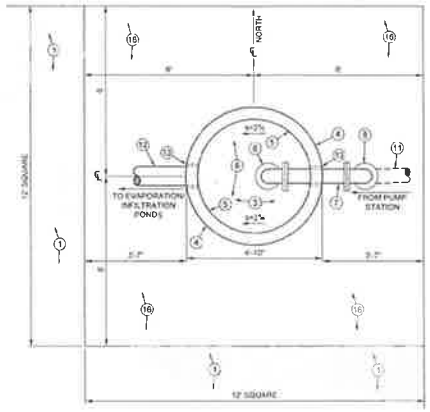
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

EVAPORATION/ INFILTRATION POND PUMP STATION SECTION

REFERENCE
THG #542 089
SHEET 25 OF 50



SECTION VIEW



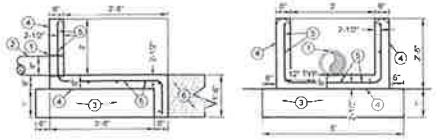
PLAIN VIEW

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 8 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

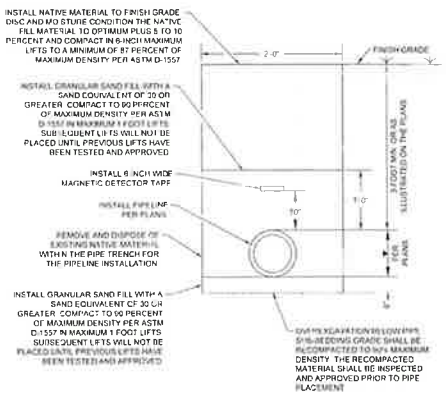


1. INSTALL THE COUPLING OF AN 8 INCH DIAMETER AWWA C-900 DR14 PVC PIPE FLUSH WITH THE INSIDE FACE OF THE CONCRETE HEADWALL STRUCTURE THE COUPLING SHALL BE INSTALLED WITH THE FRAMWORK PRIOR TO THE INSTALLATION OF THE CONCRETE THE INVERT OF THE PIPE SHALL BE PLACED FLUSH WITH THE HEADWALL SLAB
2. INSTALL 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. HEADWALL

NOT TO SCALE

BB 15-17 | 26



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

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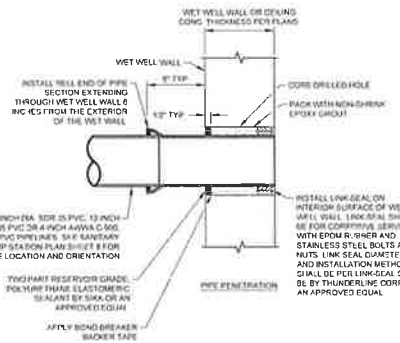
CC 15-17, 25 | 26



WET WELL PIPELINE PENETRATION DETAIL

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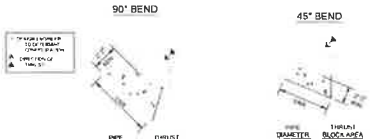

PIPE DIAMETER	THRUST BLOCK AREA
4"	3.0 S.F.
6"	5.0 S.F.
8"	10.0 S.F.
10"	16.0 S.F.
12"	23.0 S.F.
14"	32.0 S.F.
16"	41.0 S.F.

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 PUMPING
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

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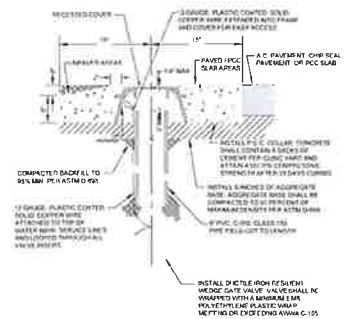

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REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF

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

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY

JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No — 10/9/23 DATE — 06/30/25 REG. EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

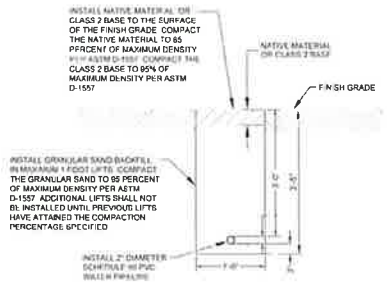
09/25/2023 | RS | RS | N/A | JGH

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

EVAPORATION/INFILTRATION POND DETAILS

REFERENCE: THG #542 009

SHEET 26 OF 50



POTABLE WATER SERVICE PIPELINE DETAIL

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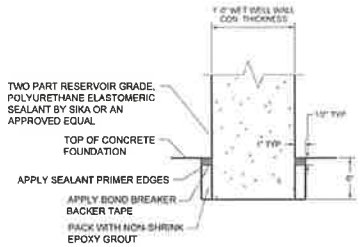

FOUNDATION BLOCKOUT DETAIL

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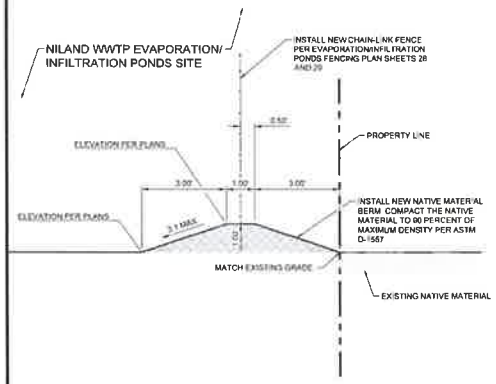


STORM WATER DRAINAGE BERM DETAIL

NOT TO SCALE

II 15-17 27

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF

JAMES D. SMOKE HOLT — 31773 R.C.E. No — 09/25/2023 DATE — 12/31/24 REG. EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY

JOHN GAY P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No — 1-9-23 DATE — 09/30/25 REG. EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

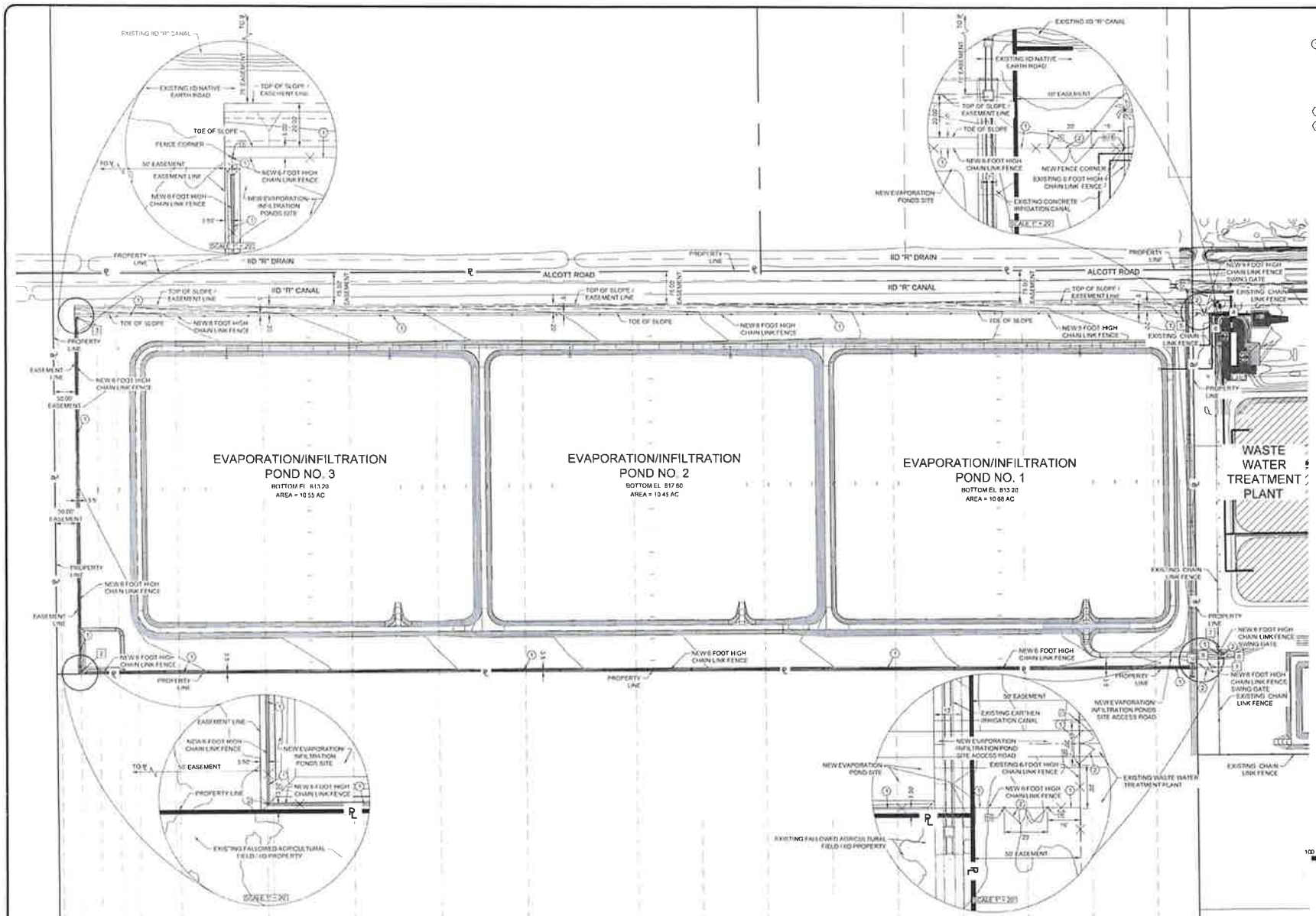
DATE 09/25/2023 — DESIGNED RS — DRAWN RS — CHECKED N/A — PROJECT JOB#

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 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	2026180.48	6779558.18	FNC COR
3	2027002.26	6779951.84	FNC COR
4	2027013.73	6782582.63	FNC COR
5	2027013.86	6782547.46	GATE POST
6	2027013.17	6782547.46	GATE POST
7	2026031.34	6782585.11	GATE POST
8	2026015.34	6782588.32	GATE POST
9	2026181.89	6782573.52	GATE POST
10	2026181.60	6782583.53	GATE POST

SCALE 1" = 100'

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES D. CHOK HOLT — 31773 RCE No — 09/25/2023 DATE — 12/31/24 REG EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY
JOHN GAY P.E. — 62028 RCE No
DIRECTOR OF PUBLIC WORKS — 09/30/25 REG EXP
10/7/23 DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

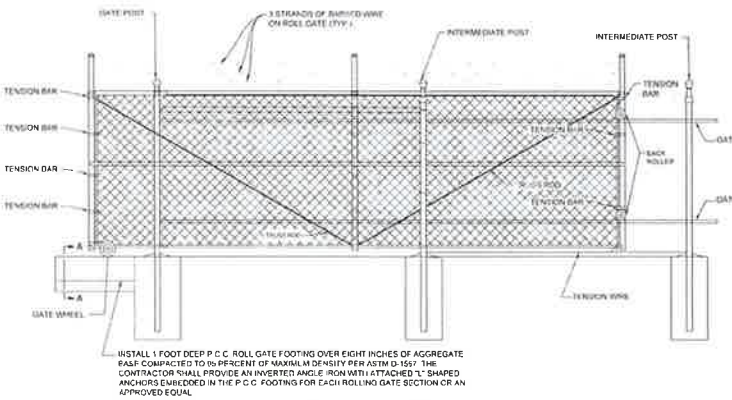
DATE 09/25/2023
DESIGN RS
REVISED RS
DRAWN NA
REVIEWED JGH

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

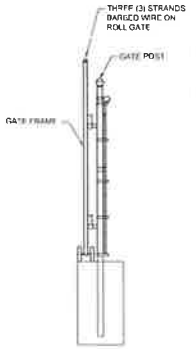
REFERENCE

THG #542 080

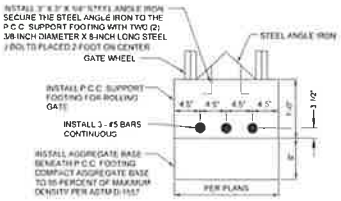
SHEET 28 OF 50



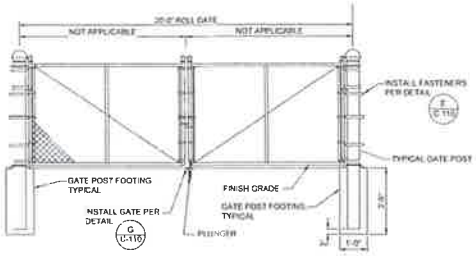
FRONT OF ROLL GATE DETAIL (A / C-110)
NOT TO SCALE



SIDE VIEW
NOT TO SCALE



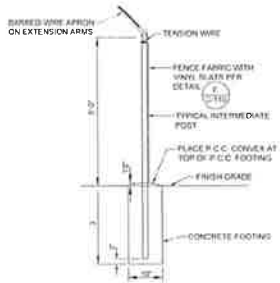
SECTION A-A
NOT TO SCALE



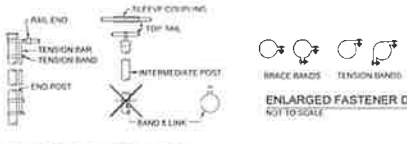
DOUBLE SWING GATE DETAIL (B / C-110)
NOT TO SCALE

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. @ 7.55 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 8 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE AND SHALL ATTAIN A COMPRESSIVE STRENGTH OF 4,500 PSI AFTER 28 DAYS OF CURING

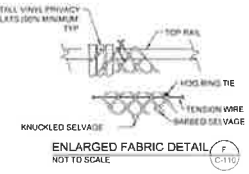


INTERMEDIATE POST SECTION, TYPICAL (C / C-110)
NOT TO SCALE



ENLARGED POST DETAILS (D / C-110)
NOT TO SCALE

ENLARGED FASTENER DETAILS (E / C-110)
NOT TO SCALE



ENLARGED FABRIC DETAIL (F / C-110)
NOT TO SCALE

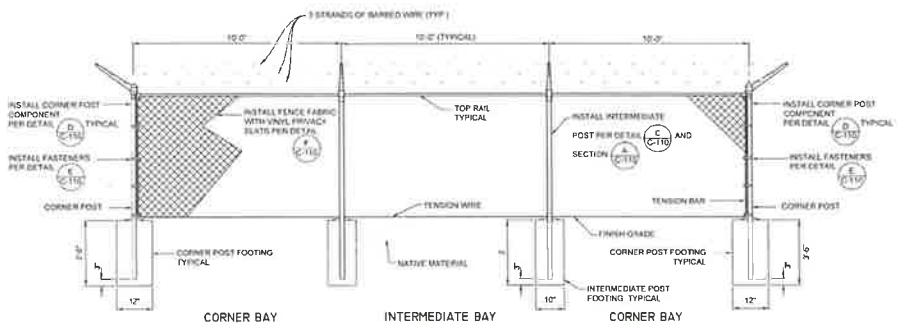
ENLARGED GATE DETAILS (G / C-110)
NOT TO SCALE

FENCING NOTES

1. GRADING OF THE GROUNDS 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-116. 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-239-48).
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 EVENLY 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

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES D. JACKSON-HOLT — 31773 R.C.E. No — 09/25/2023 DATE — 12/31/24 REG. EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN GAY, P.E. — 42008 R.C.E. No
DIRECTOR OF PUBLIC WORKS — 10/9/23 DATE — 06/30/25 REG. EXP

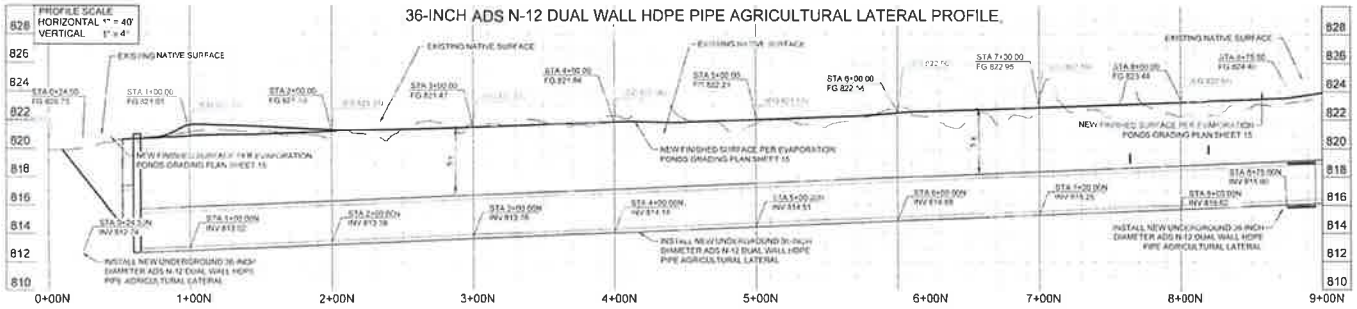
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

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

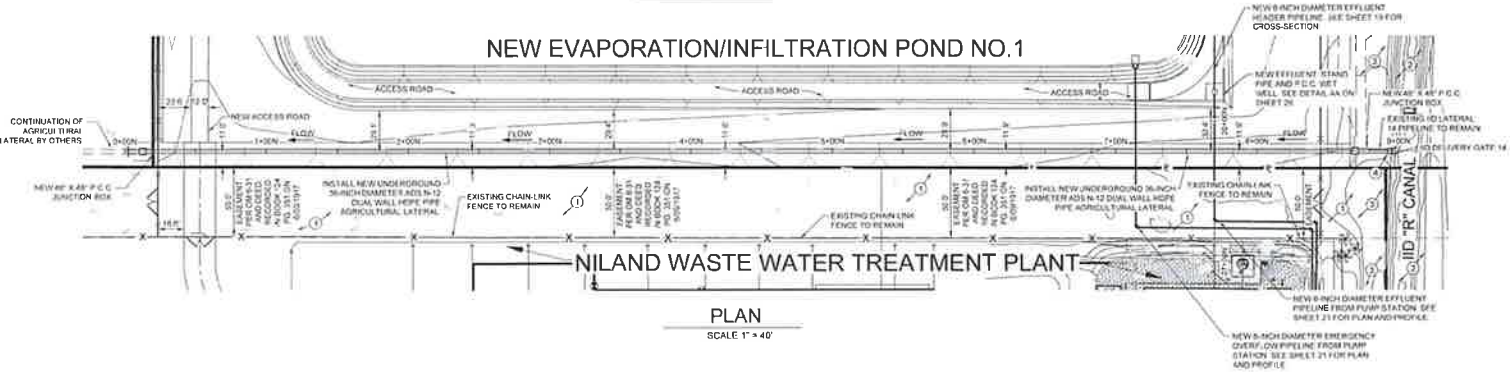
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
EVAPORATION/INFILTRATION POND FENCING DETAILS

REFERENCE
THG #542 089

SHEET 29 OF 50



PROFILE



PLAN

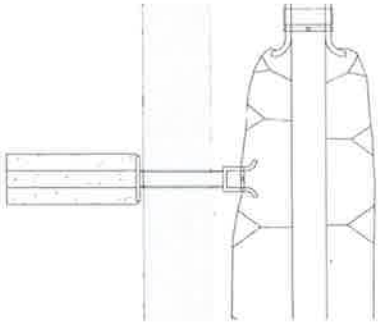
SCALE 1" = 40'

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 25 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 8-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 K.F.L. DUCTILE IRON T.C.E WITH RESTRAINED JOINTS AND STAINLESS STEEL HARDWARE
10. INSTALL 8-INCH DIAMETER MJ K 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 500X OR AN APPROVED EQUAL
13. INSTALL STAND PIPE AND P.C.C. WET WELL PER DETAIL AA ON SHEET 26
14. INSTALL 8-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

PREPARED UNDER THE DIRECT SUPERVISION OF
JESSE H.G. "JACK" HOLT — 31773 RCE No — 09/25/2023 DATE — 12/31/24 REG EXP

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

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

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

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

EXISTING KEYNOTES

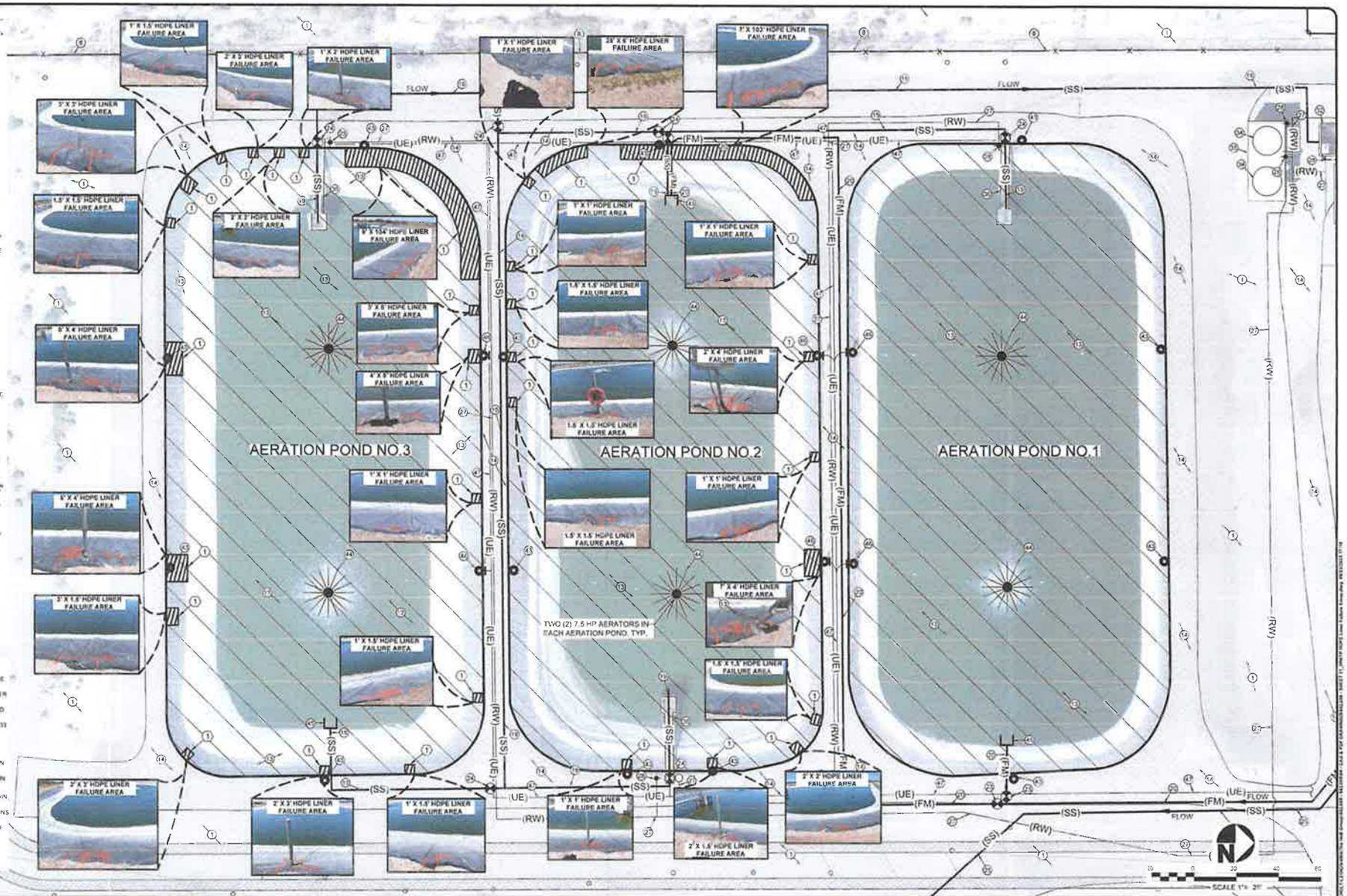
1. EXISTING NATIVE MATERIAL
2. EXISTING NATIVE MATERIAL TO BE REGRADED AND MADE THE TOP OF WATER OF SLUDGE POND
3. EXISTING BUILDING
4. EXISTING PCC ROLLER GUTTER
5. EXISTING PCC INLET BASIN
6. EXISTING CHANNEL CONNECTED TO WASTE WATER CHANNEL
7. EXISTING RAW WATER STORAGE POND
8. EXISTING CHAIN LINK FENCE
9. EXISTING CHAIN LINK FENCE GATE
10. EXISTING CHAIN LINK FENCE ROLL GATE
11. EXISTING RECREATION AREA TO REMAIN
12. EXISTING RECREATION AREA
13. EXISTING 60 MIL HDPE LINED AERATION POND
14. EXISTING DIRT ACCESS ROAD
15. EXISTING DIRT PAD
16. EXISTING TREE
17. EXISTING PALM TREE
18. EXISTING BUTTONWOOD TREE
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
23. EXISTING SANITARY SEWER FORCE MAIN VALVE
24. EXISTING GRAVITY SANITARY SEWER VALVE
25. EXISTING EMERGENCY WASTE WATER DISCHARGE PIPELINE
26. EXISTING GRAVITY WATER PLANT DISCHARGE PIPELINE
27. EXISTING RAW WATER PIPELINE
28. EXISTING HOSE BIB
29. EXISTING PCC CONTROL STRUCTURE
30. EXISTING WASTE WATER VALVE IN PLUG BUTTON
31. EXISTING UNDERGROUND WATER PUMP STATION
32. EXISTING DIR CHLORINATION/DECHLORINATION STRUCTURE
33. EXISTING EFFLUENT FLOWING FROM SAMPLING WELL
34. EXISTING CHEMICAL STORAGE TANK TO BE ABANDONED
35. EXISTING CHEMICAL CONTAINMENT STRUCTURE TO BE ABANDONED
36. EXISTING AERATION POND CATWALK STRUCTURE
37. EXISTING WATER MAIN ADDED WHERE REQUIRED
38. EXISTING MONITORING WELLS AND PIEZOMETERS (WELLS TO BE DESTROYED BY CONTRACTOR PRIOR TO CONSTRUCTION AND PROPERLY DESTROYED AND ABANDONED DURING AND FOLLOWING CONSTRUCTION. EXISTING CHAIN LINK FENCE AROUND WELLS TO REMAIN. CONTRACTOR SHALL PROVIDE REPLACEMENT FENCING FOR THE WELLS AFTER DESTRUCTION.
39. EXISTING MONITORING WELLS AND PIEZOMETERS (WELLS TO BE DESTROYED BY CONTRACTOR PRIOR TO CONSTRUCTION AND PROPERLY DESTROYED AND ABANDONED DURING AND FOLLOWING CONSTRUCTION. EXISTING CHAIN LINK FENCE AROUND WELLS TO REMAIN. CONTRACTOR SHALL PROVIDE REPLACEMENT FENCING FOR THE WELLS AFTER DESTRUCTION.
40. EXISTING SANITARY SEWER MANHOLE
41. EXISTING GRAVITY SANITARY SEWER PIPELINE
42. EXISTING GENERATOR
43. EXISTING MOORING POST
44. EXISTING 7.5 HP AERATOR
45. EXISTING PCC INLET STRUCTURE
46. EXISTING AERATOR ELECTRICAL FIELD CONTROL STATION AND AERATOR MOORING POST
47. UNDERGROUND ELECTRICAL CONDUIT AND CONDUCTOR

CONSTRUCTION KEYNOTES

1. REPAIR EXISTING HDPE LINER FAILURE AREAS IN 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.



REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JOHN W. GRACE HOLT — 31772 R.C.E. No. — 05/05/2023 DATE — 12/31/24 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62008 R.C.E. No. — 10/9/23 DATE — 09/30/25 REG. EXP.

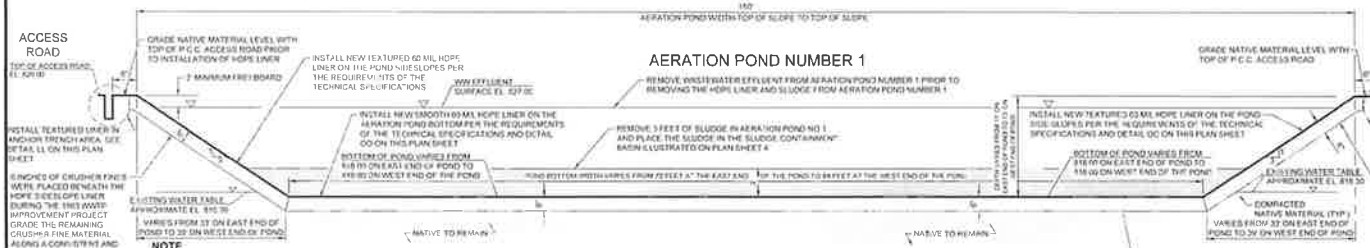
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 05/05/2023 — DESIGN RS — DRAWN RS — CHECK N/A — SHEET DWN 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 — TMO #542.599

SHEET 31 OF 50



NOTE

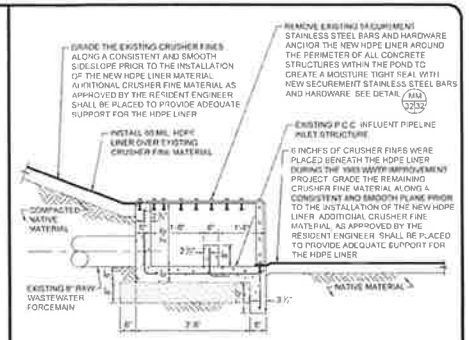
THERE IS 3 FEET OF SLUDGE IN THE BOTTOM OF AERATION POND NUMBER 1. THE SLUDGE IS OCCUPYING ½ OF THE POND VOLUME, WHICH SIGNIFICANTLY DIMINISHES THE WASTEWATER TREATMENT PROCESS. THE EXISTING HDPE LINER IN AERATION POND NUMBER 1 IS 20 YEARS OLD AND REQUIRES REPLACEMENT. THE EXISTING HDPE LINER AND SLUDGE 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 WASTEWATER 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.

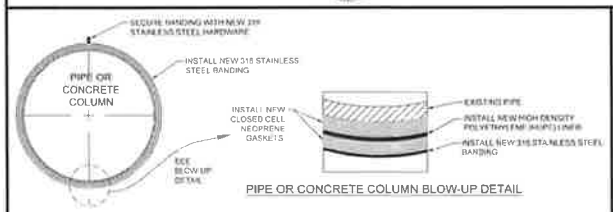
IT WILL BE NECESSARY TO COORDINATE THE AERATION POND NUMBER 1 SLUDGE REMOVAL, AND HDPE REMOVAL AND REPLACEMENT WITH OTHER WASTEWATER TREATMENT PLANT IMPROVEMENTS. THE SLUDGE REMOVAL AND HDPE LINER REMOVAL AND INSTALLATION WILL BE REQUIRED TO BE ACCOMPLISHED ACCORDING TO A SEQUENCE OF EVENTS.

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

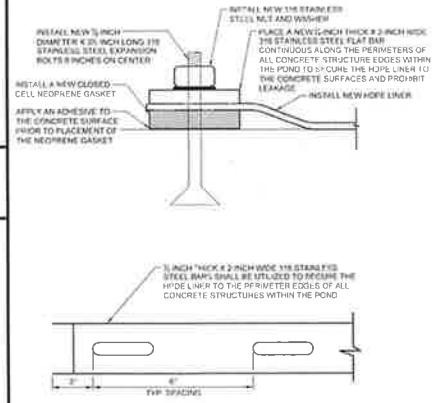


HDPE SECUREMENT TO CONCRETE INFLUENT PIPELINE INLET STRUCTURE DETAIL JJ (32/32)
NTS

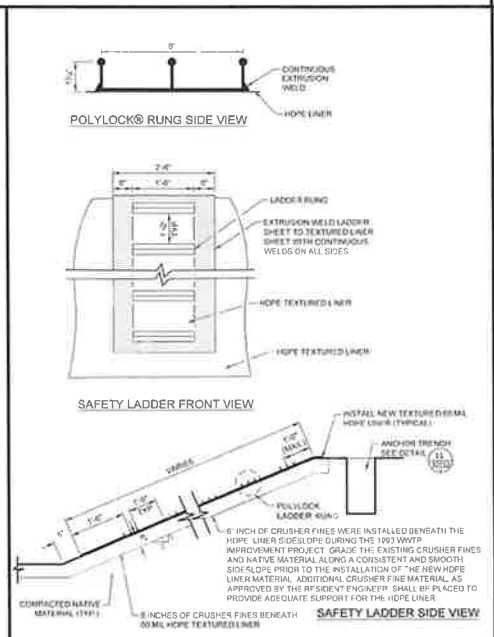


PIPE OR CONCRETE COLUMN BLOW-UP DETAIL

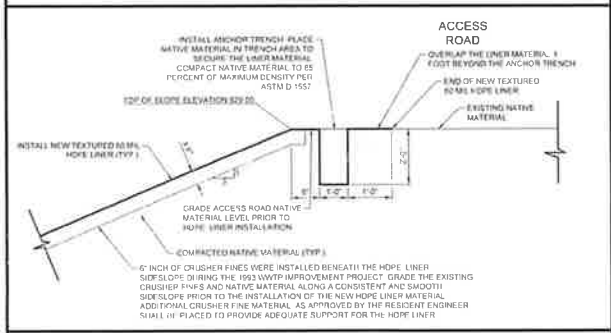
HDPE LINER CLAMP DETAIL KK (32/32)
NTS



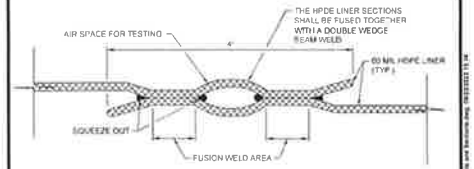
SECUREMENT OF HDPE LINER TO PERIMETER EDGES OF ALL CONCRETE STRUCTURES DETAIL MM (32/32)
NTS



SAFETY LADDER DETAIL NN (32/32)
NTS



HDPE ANCHOR TRENCH DETAIL LL (32/32)
NTS



HDPE DOUBLE WEDGE SEAM FUSION WELD DETAIL OO (32/32)
NTS

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES C. HACK HOLT — 51173 RCE No — 10/2/24 REG. EXP — 09/25/2023 DATE

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

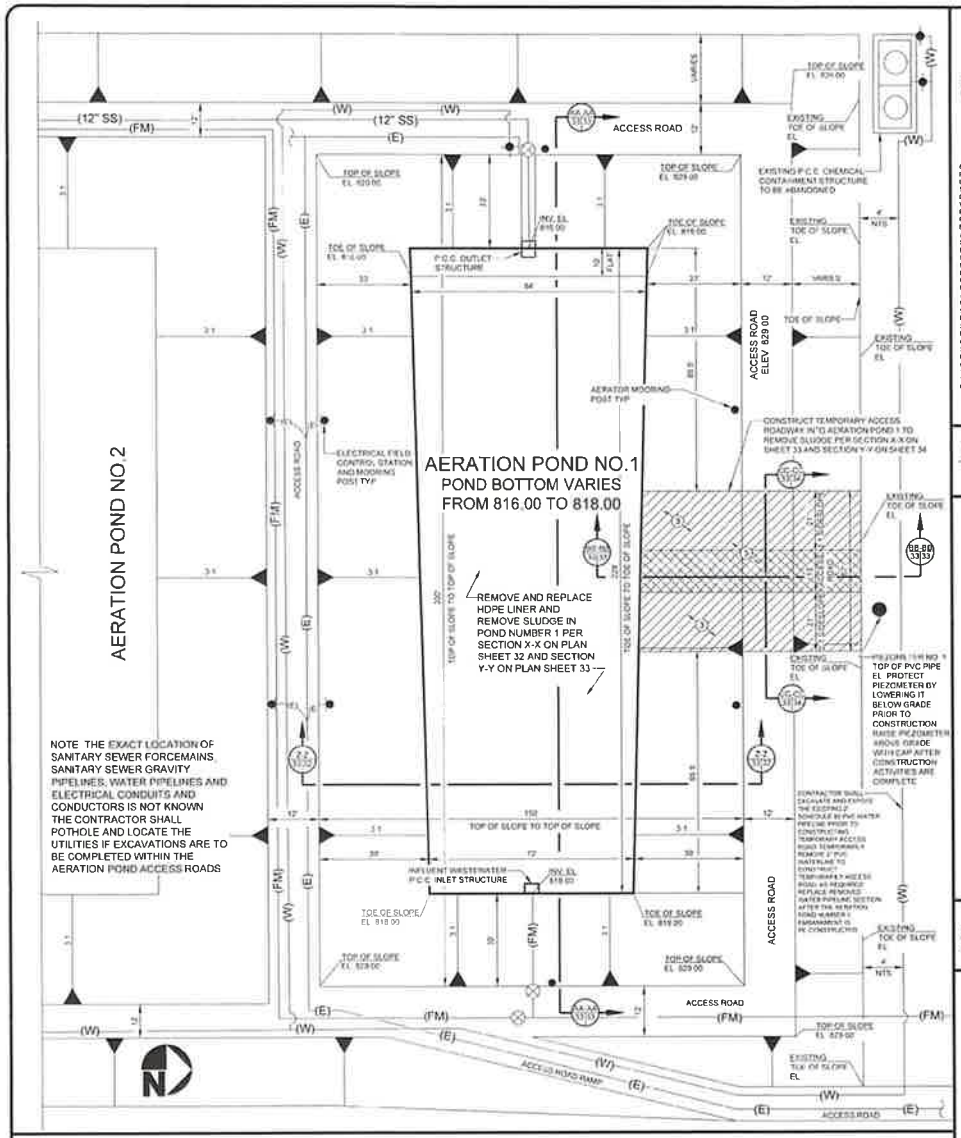
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

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

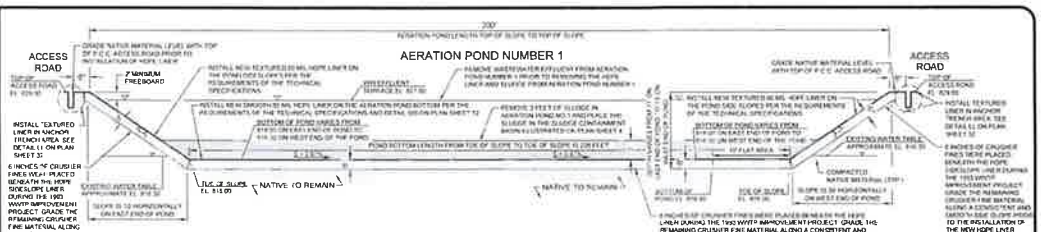
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
HDPE LINER DETAILS AND SECTIONS

REFERENCE THG #542 080

SHEET 32 OF 50



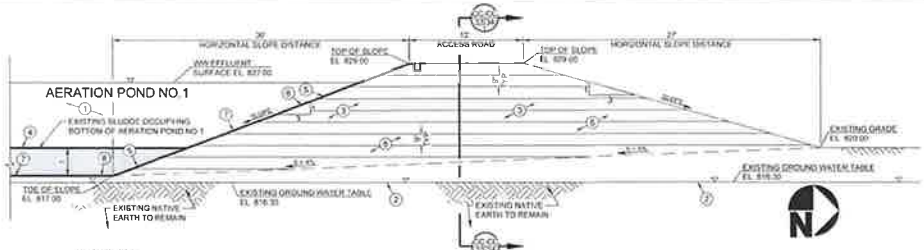
AERATION POND NUMBER 1 - HDPE LINER REMOVAL AND REPLACEMENT AND SLUDGE REMOVAL PLAN
SCALE 1" = 20'



NOTES

1. THERE IS 3 FEET OF SLUDGE IN THE BOTTOM OF AERATION POND NUMBER 1. THE SLUDGE IS DOUBLING 1/3 OF THE POND VOLUME WHICH SIGNIFICANTLY DIMINISHES THE WASTEWATER TREATMENT PROCESS. THE EXISTING HDPE LINER IN AERATION POND NUMBER 1 IS 10 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 WASTEWATER TREATMENT PLANT EXPANSION. IT WILL BE NECESSARY TO REACTIVATE 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 ASSOCIATED 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 DESCRIPTION, 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 B ON PLAN SHEET 33, SECTION A 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 47 FOOT WIDE SECTION OF THE EXISTING EMBANKMENT AFTER AERATION POND NUMBER 1 EFFLUENT CONTENTS ARE REMOVED AND AFTER THE GROUND WATER TABLE IS LOWERED. SEE THE SPECIAL CONDITIONS AND DETAIL B, SHEET 33. 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 SHOWN ILLUSTRATED ON PLAN SHEET 4 AND SECTIONS AND DETAILS ON PLAN SHEET 34. CONSTRUCT SLUDGE CONTAINMENT
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 REPORTS FOR INCLUDING COMPACT THE NATIVE MATERIAL TO 90 PERCENT MAXIMUM DENSITY PER ASTM D697. 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 A ON PLAN SHEET 33, 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

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES D. GROW HOLT
09/25/2023 DATE
31773 RCE No
12/31/24 REG EXP

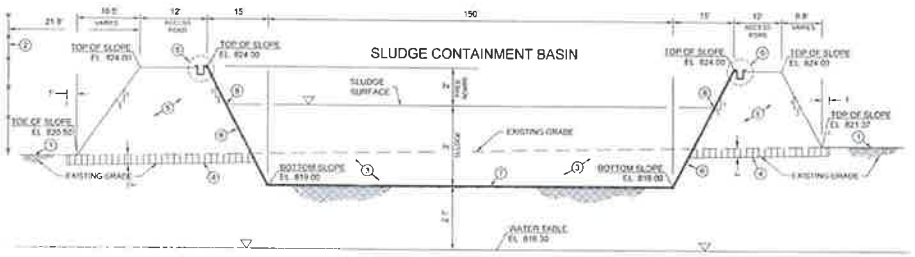
COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS
10/9/23 DATE
82028 RCE No
09/30/25 REG EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DESIGNED RS
DRAWN RS
CHECKED RS
SUPERVISED 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

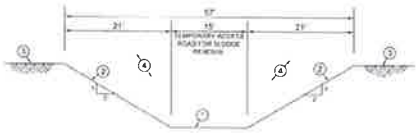
REFERENCE
THG #542 086



KEYNOTES

1. EXISTING NATIVE GRADE TO REMAIN
2. EXISTING 8 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 BOTTOM TO THE EXISTING WATER TABLE IS APPROXIMATELY 2.1 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 9-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 UNYIELDING 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 33

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



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 (33|34)
NTS

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES D. GRADY HOLT — 21773 R.C.E. No — 09/29/2023 DATE — 12/31/24 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY P.E. DIRECTOR OF PUBLIC WORKS — 62029 R.C.E. No — 10/9/23 DATE — 09/30/25 REG. EXP.

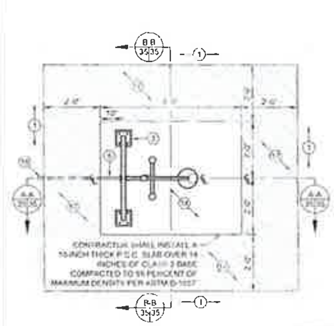
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/29/2023 | DRAWN RS | CHECKED RS | SCALE N/A | DWG JGH

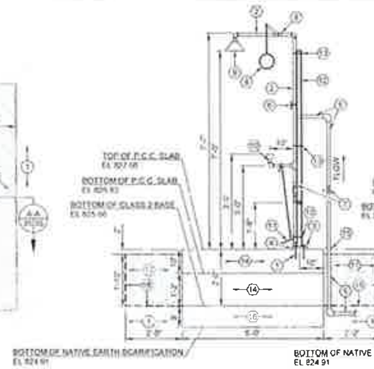
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
SLUDGE CONTAINMENT BASIN AND AERATION POND NO.1 DETAILS AND SECTIONS

REFERENCE
DHS 4542 069

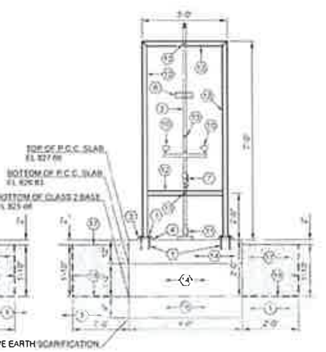
SHEET 34 OF 50



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 ⅜-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 K 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

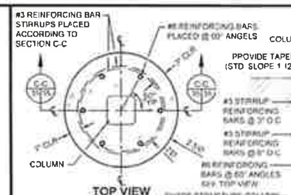
(17) INSTALL 1'-10" DEEP X 2'-0" WIDE ¾-INCH CRUSHED ROCK SUMP AROUND THE PERIMETER OF THE P.C.C. SLAB

(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

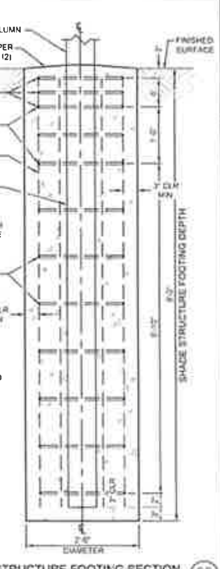
(19) CONTINUE INSTALLATION OF 1½-INCH WATER SUPPLY LINE TO CONNECTION POINT WITH EXISTING WATER PIPELINE IN THE VICINITY OF THE CHLORINATION / DECHLORINATION BASIN. SEE PLAN SHEET 4

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

SCALE ½" = 1'



TOP VIEW
SCALE 1" = 1'



SHADE STRUCTURE FOOTING SECTION (C-C 35|35)
SCALE 2" = 1'

REINFORCED CONCRETE NOTES

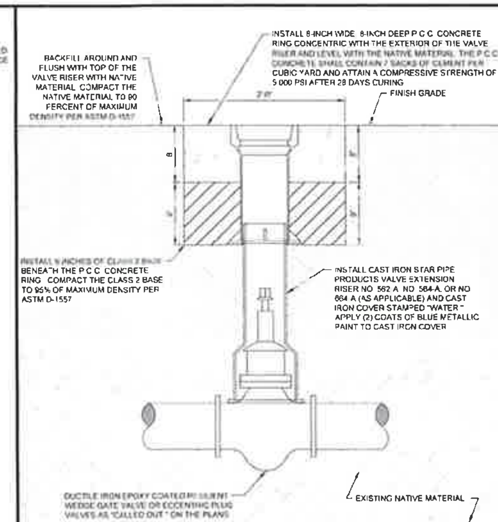
1. CONCRETE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE SPECIFICATION FOR STRUCTURAL CONCRETE ACI 301 AND BUILDING CODE ACI 318. CONCRETE SPECIFICATIONS SHALL BE AS FOLLOWS
   - 28-DAY STRENGTH: 5,000 PSI
   - SLUMP: 3 TO 4 INCHES
   - PORTLAND CEMENT 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 PEDESTAL DETAIL (I 5|35)

SCALE 1" = 1'



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

SCALE 1 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-8 INCHES

(4) INSTALL NUMBER 4 REINFORCING TIE BARS CONSTRUCTED IN A CIRCULAR SHAPE BASED ON A DIAMETER OF 1 FOOT-8 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

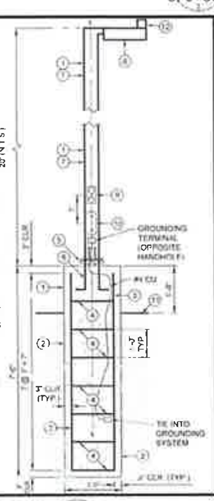
(8) INSTALL 120-VOLT 1 PHASE 150 WATT LED LUMINAIRE

(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 8-INCH HAND HOLE

(11) FINISH GRADE

(12) PHOTOCELL TO ACTIVATE AND DE ACTIVATE LIGHT FIXTURE



LIGHT ASSEMBLY AND PEDESTAL DETAIL (O 6,9|35)

SCALE ½" = 1'

EXISTING KEYNOTES

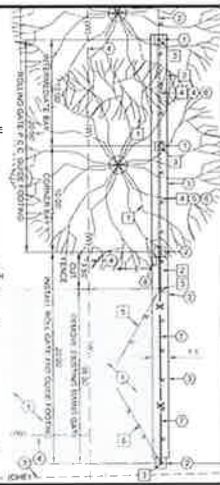
(1) EXISTING NATIVE EARTH ACCESS ROAD TO REMAIN
(2) EXISTING CHAIN LINK FENCE TO REMAIN
(3) EXISTING OVERHEAD ELECTRICAL LINE TO REMAIN
(4) EXISTING WATER PIPELINE TO REMAIN

DEMOLITION KEYNOTES

[1] TRIM AWAY TREE BRANCHES AS REQUIRED TO ALLOW INSTALLATION OF THE ROLLING GATE. [illegible]
[2] CUT AWAY 3.5 FEET IN LENGTH OF EXISTING CHAIN LINK FENCE AND BARBED WIRE TO ACCOMMODATE THE 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 18.5 FOOT LONG CHAIN LINK FENCE DOUBLE SWING GATE

CONSTRUCTION KEYNOTES

(1) INSTALL INTERMEDIATE POST PER DETAIL C ON PLAN SHEET
(2) INSTALL GATE POST PER SIDE VIEW DETAIL A ON PLAN SHEET 28
(3) INSTALL 4 FOOT DEEP, 1.5 FOOT WIDE P.C.C. ROLL GATE FOOTING [illegible]
(4) INSTALL PREVIOUSLY STORED FENCING AND FASTENERS PER DETAIL "INTERMEDIATE BAY TYPICAL" ON PLAN SHEET 22
(5) INSTALL PREVIOUSLY STORED FENCING AND FASTENERS PER DETAIL "CORNER BAY TYPICAL" ON PLAN SHEET 22
(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 28
(8) INSTALL A VIKING [illegible] SLIDE GATE OPENER [illegible]



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

SCALE ³⁄₁₆" = 1'

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES D. "JACK" HOLT — 31173 R.C.E. No — 09/25/2023 DATE — 12/31/24 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 10/4/23 DATE — 62028 R.C.E. No — 09/30/25 REG. EXP.

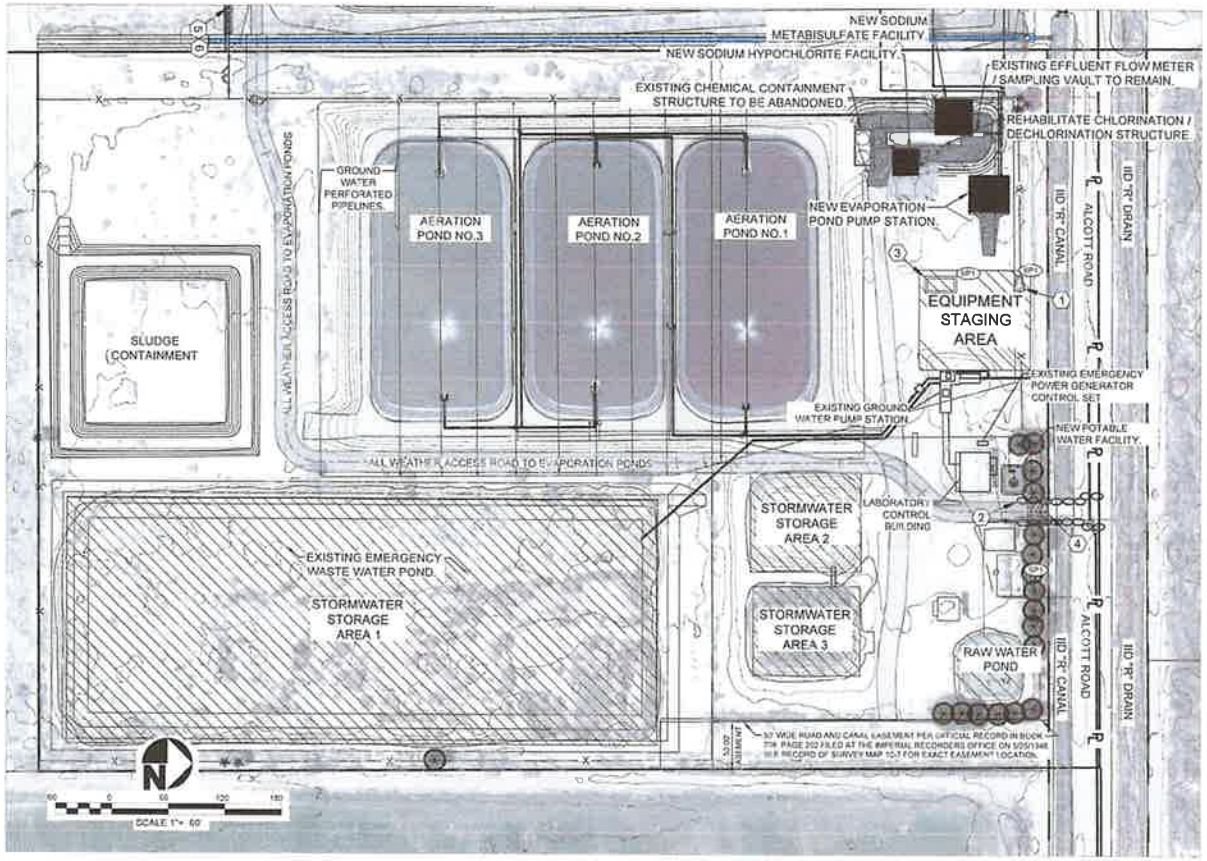
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

09/25/2023 — RS — RS — N/A — JDH

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

REFERENCE

SHEET 35 OF 50



TEMPORARY CONSTRUCTION SITE BMPS				
BMP #	ITEM	UNIT	ESTIMATED QUANTITY	NOTES
-	CONSTRUCTION SITE AND WPCP MANAGEMENT BY OSP	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/CONSTRUCS/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 IT'S 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 PIPELINE 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 1 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

PREPARED UNDER THE DIRECT SUPERVISION OF
DAMIAN L. JACK HILF — 31773 R.C.E. No — 09/25/2023 DATE — 12/31/24 REG. EXP.

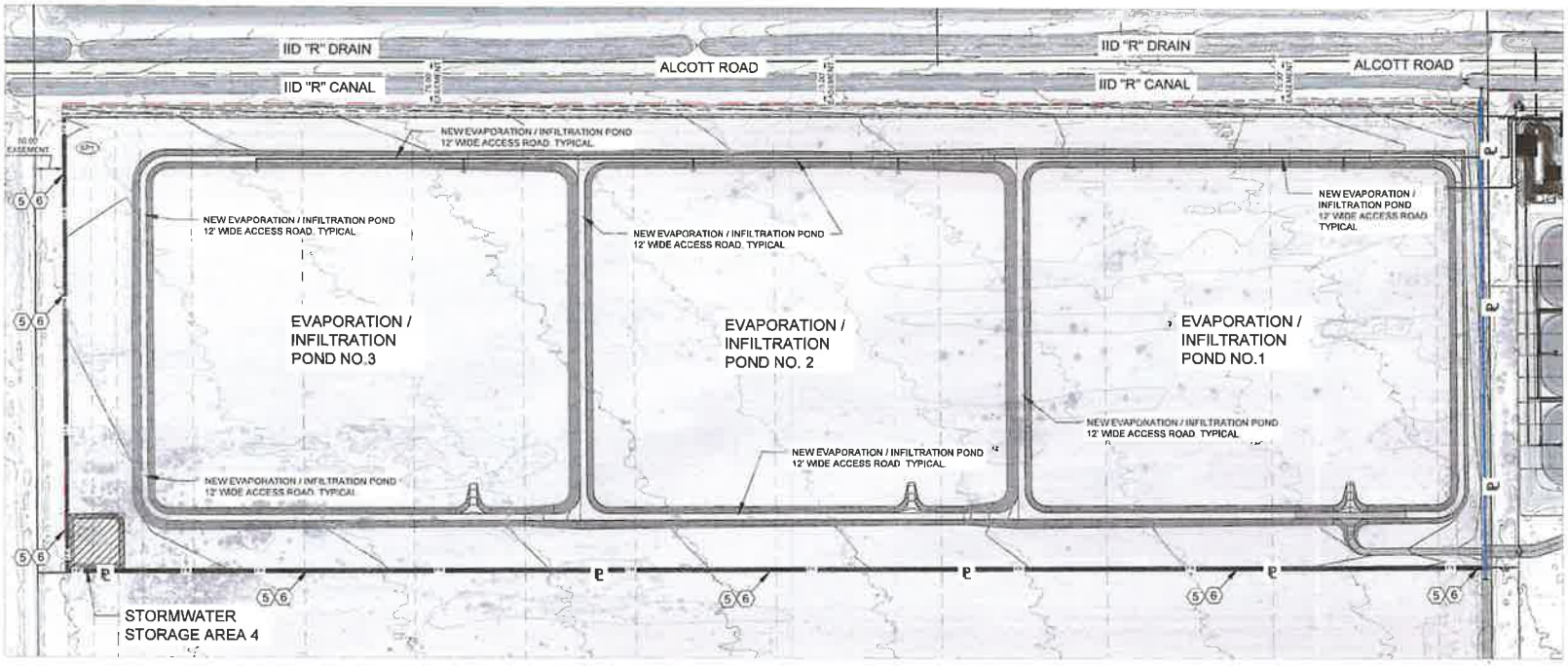
COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN GAY P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No — 10/9/23 DATE — 09/30/25 REG. EXP.

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 #542.069
SHEET 36 OF 50



BMP KEYNOTES

1. CONTRACTOR SHALL LOCATE THE PORTABLE RESTROOM FACILITIES IN THE STAGING AREA. INSTALL TWO (2) PORTABLE RESTROOM FACILITIES. SEE DETAIL E1 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 AREAS
3. CONTRACTOR SHALL PROVIDE ADEQUATE DUST SUPPRESSION TO MEET ALL COUNTY OF IMPERIAL APCD 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

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES NG, JACK HOLT — 31773 R.C.E. No — 12/31/24 REG. EXP.
05/05/2023 DATE

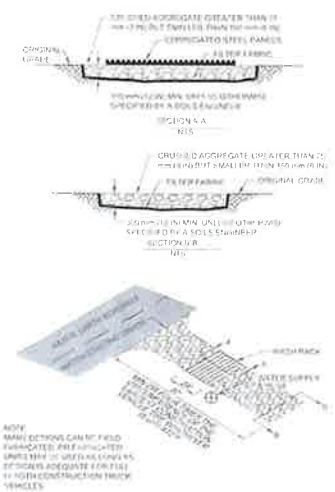
COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY
JOHN CAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No
10/9/23 DATE — 06/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

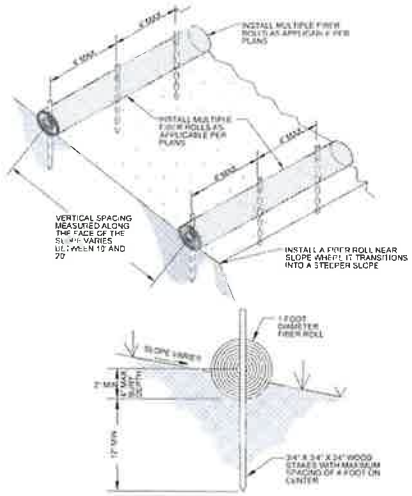
DATE 09/25/2023
DRAWN RG
DESIGNED RG
SCALE N/A
REVISED JGH

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

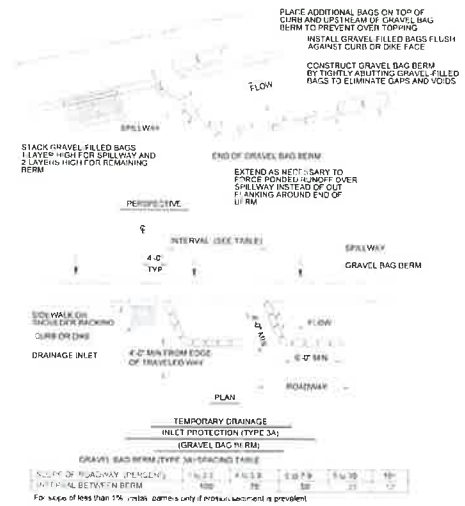
REFERENCE
THG #542.089
SHEET 37 OF 50



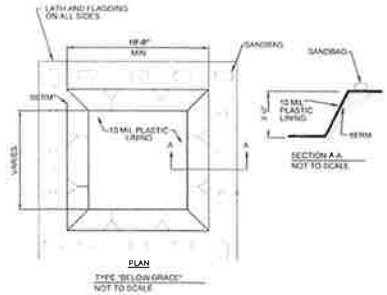
CONSTRUCTION ENTRANCE - DETAIL E1
NOT TO SCALE



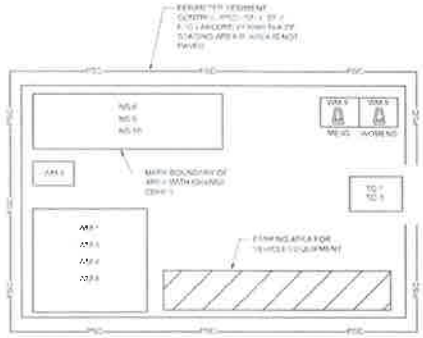
TYPICAL FIBER ROLL INSTALLATION - DETAIL E2
NOT TO SCALE



GRAVEL BAG DETAIL - DETAIL E3
NOT TO SCALE



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 THE [illegible] OF THE PERMANENT STAGING AREA.

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-8	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

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES D. PROCHOLT — 31773 R.C.E. No — 09/25/2023 DATE — 12/31/24 REG. EXP

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

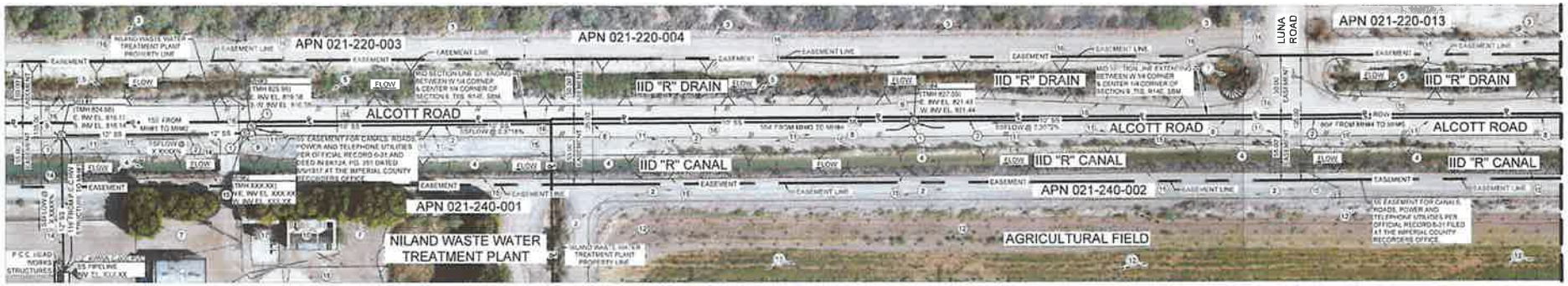
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

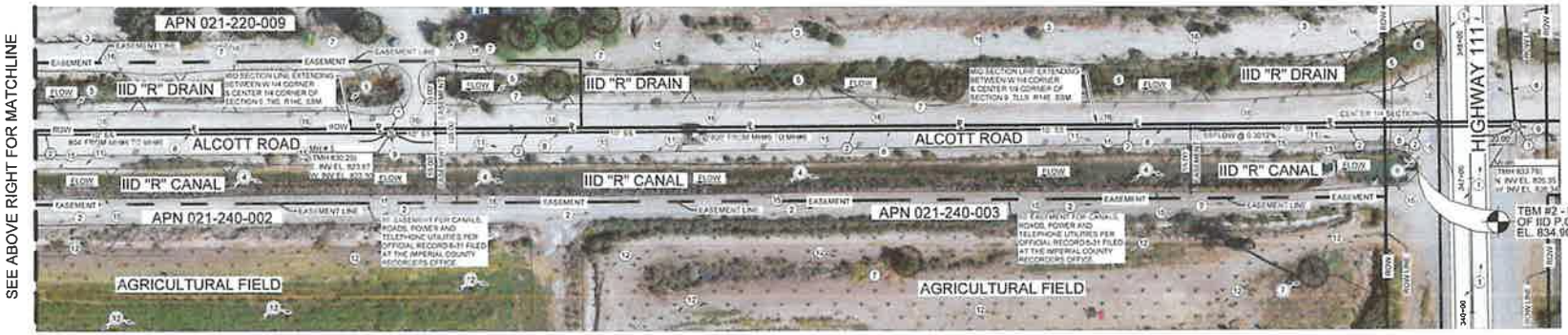
DATE 09/25/2023 — DESIGNED RS — DRAWN RS — CHECKED N/A — APPROVED JGH

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

REFERENCE — THG #542 069

SHEET 38 OF 50





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 00 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

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

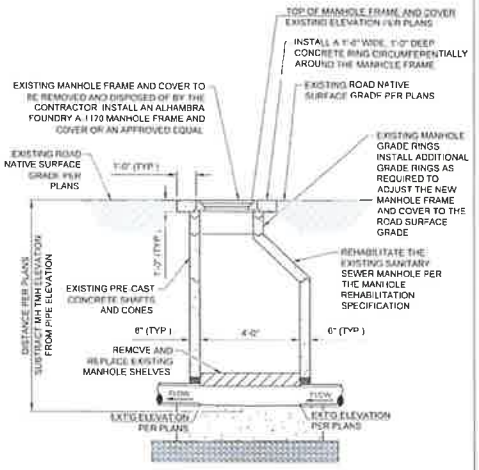
COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No — 10/4/23 DATE — 06/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023 | DRAWN RS | CHECKED RS | SCALE N/A | SHEET 24

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



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 MANUFACTURER'S RECOMMENDATION AND CREATE A SMOOTH AND STRUCTURALLY SOUND INTERIOR SURFACE. THE HIGH STRENGTH MORTAR SHALL BE CURED ACCORDING TO THE MANUFACTURER'S 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

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

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

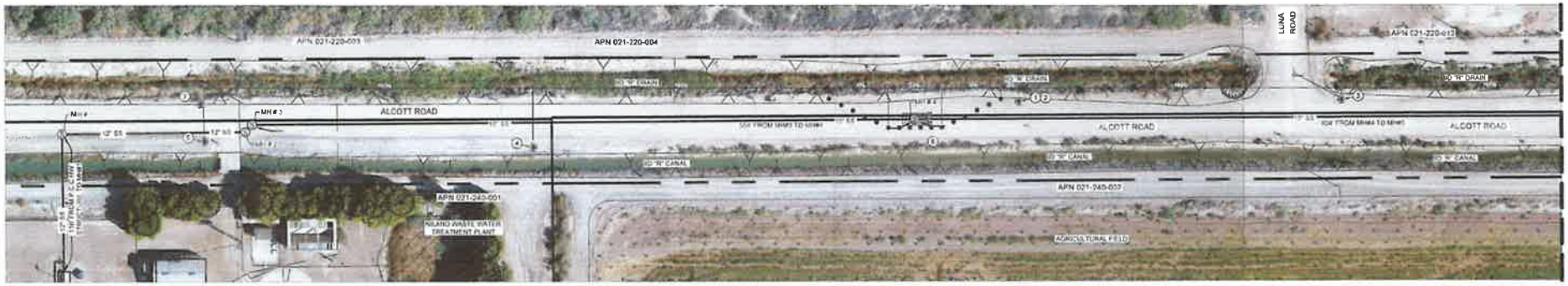
DATE 09/25/2023
DRAWN RS
DESIGNED RS
CHECKED NA
APPROVED JGH

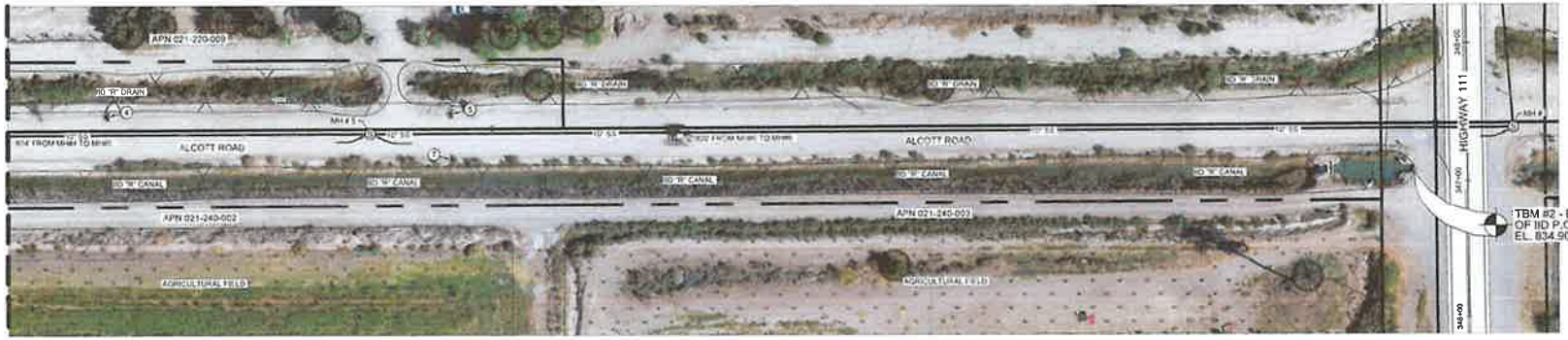
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS
SANITARY SEWER COLLECTION SYSTEM DETAILS

REFERENCE

THG #142 080

SHEET 40 OF 50





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

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

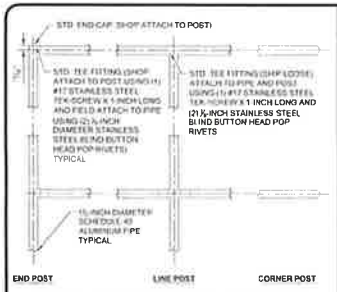
COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No.
10/9/23 DATE — 09/30/23 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

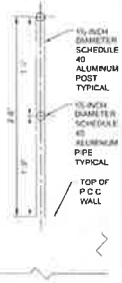
DATE 09/21/2023
DRAWN RS
CHECKED RS
R.M.S. N.S.
DESIGN JCH

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

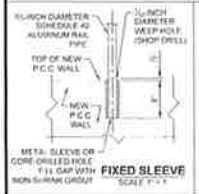
REFERENCE
THG #542.089
SHEET 41 OF 50



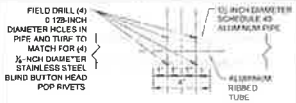
TYPICAL ALUMINUM HANDRAIL CONNECTIONS
SCALE 1" = 1'



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) ¼-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

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JEREMIAH D. HOLT — 09/25/2023 DATE — 55273 RCE No — 12/31/24 REG EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS
DATE 10/9/23
82028 RCE No
06/30/25 REG EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

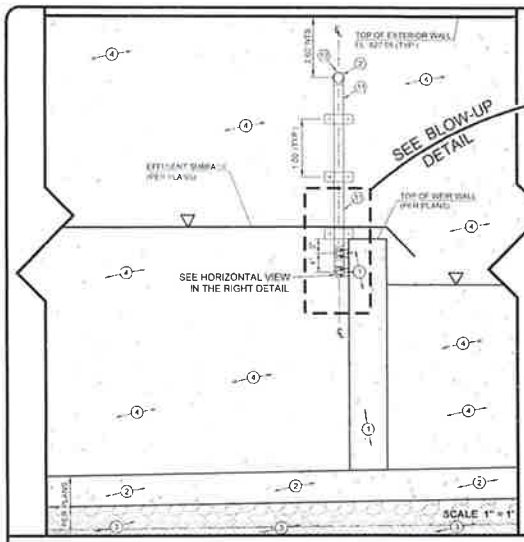
DATE 09/25/2023
DRAWN RS
DESIGNED RS
CHECKED N/A
APPROVED JGH

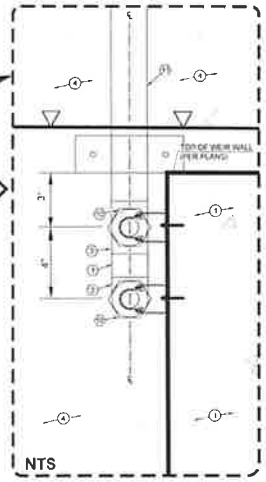
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

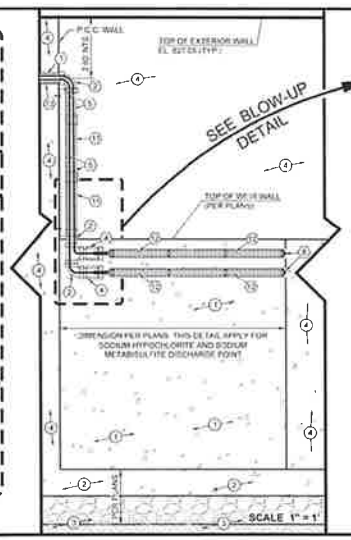
MISCELLANEOUS DETAIL SHEET

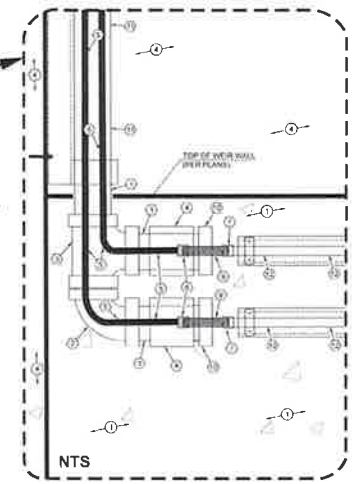
REFERENCE
THG #542 060

SHEET 42 OF 50









EXISTING KEYNOTES

1. EXISTING CHLORINATION / DECHLORINATION P.C.C. WEIR WALL
2. EXISTING CHLORINATION / DECHLORINATION P.C.C. SLAB
3. EXISTING CHLORINATION / DECHLORINATION FOR 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 TUCE 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 HER 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 FRONT 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 1/2 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

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES G. LINDCHOLT — 31773 RCE No — 09/25/2023 DATE — 12/31/24 REG. EXP

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

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

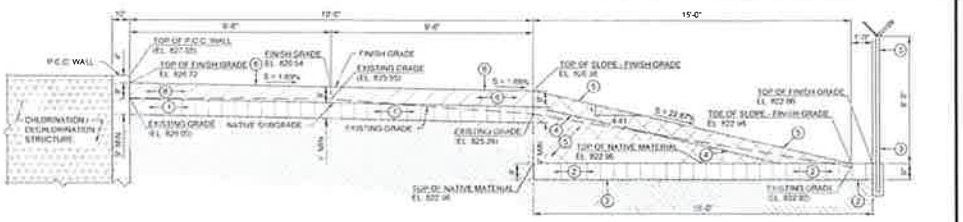
DATE 09/25/2023 — DRAWN RS — CHECKED RS — SCALE N/A — DESIGN JGM

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

MISCELLANEOUS DETAIL SHEET

REFERENCE — THG #142 D89

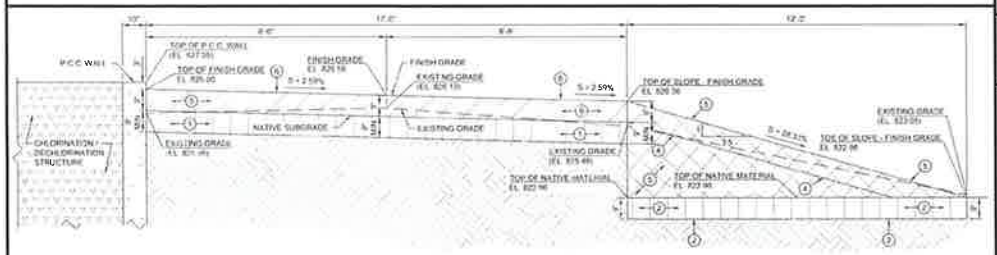
SHEET 43 OF 50



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

SCALE ¾" = 1'

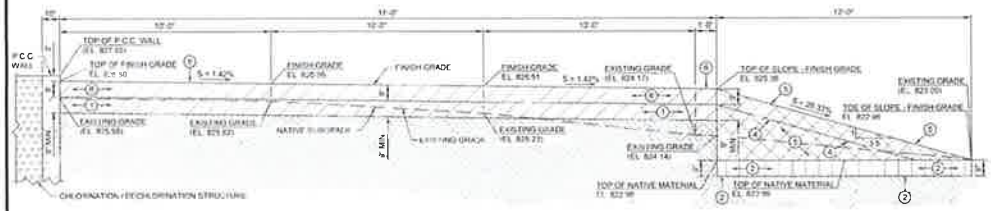
H-H 6 44



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

SCALE ½" = 1'

I-I 6 44



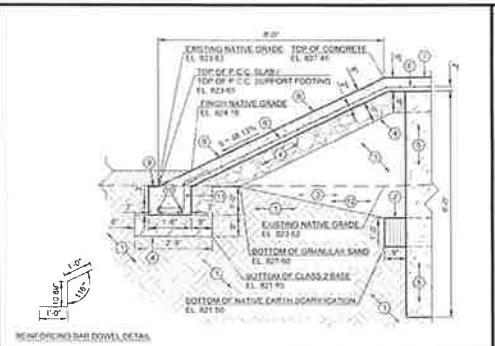
CHLORINATION / DECHLORINATION BASIN NORTH-SIDE, WEST-FACING GRADING SECTION

SCALE ½" = 1'

J-J 6 44

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

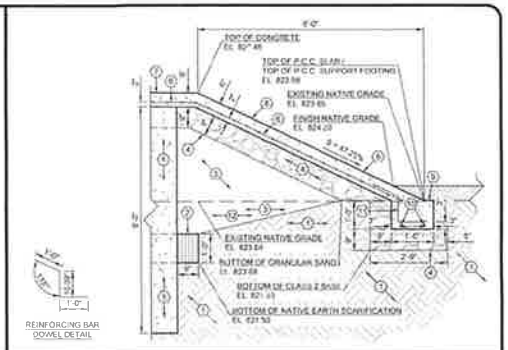
1. SCARIFY AND COMPACT THE EXISTING NATIVE MATERIAL FOR A MINIMUM OF 9 INCHES. ADD ADDITIONAL NATIVE MATERIAL AS REQUIRED TO ESTABLISH THE NATIVE SUBGRADE 9 INCHES BELOW THE FINISH GRADE BETWEEN THE CHLORINATION / DECHLORINATION BASIN AND THE TOP OF SLOPE. COMPACT THE SCARIFIED NATIVE MATERIAL TO 90 PERCENT OF MAXIMUM DENSITY PER ASTM D 1557
2. GRADE, SCARIFY AND COMPACT THE NATIVE MATERIAL FOR A DEPTH OF 8 INCHES TO AN ELEVATION OF 822.86 ALONG THE EXISTING 6 FOOT CHAIN LINK FENCE FOR A DISTANCE OF 15 FEET AS ILLUSTRATED ON THE PLANS
3. CONTRACTOR SHALL BE ALLOWED TO REMOVE AND RE-INSTALL 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 0 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 822.98. 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
3. 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 8-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

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

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No — 10/9/23 DATE — 09/30/25 REG. EXP

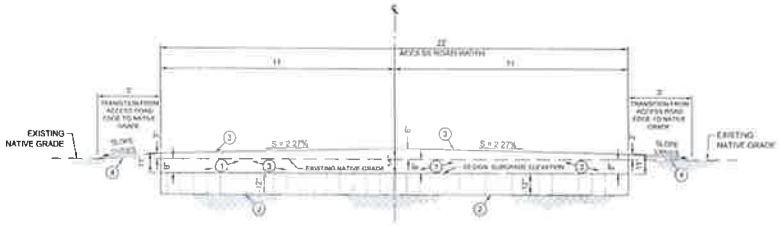
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

09/20/2023 — RS — RS — N/A — JGH

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

REFERENCE — THG #542 082

SHEET 44 OF 50



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

DRAWING NOT

ALL WEATHER ACCESS ROAD SECTION B-B

SCALE 3/8" = 1'-0"

4 | 45

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF

JAMES SCHOENHOLT — 31773 R.C.E. No — 09/25/2023 DATE — 12/31/24 REG. EXP

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
CHKD AER
APPD JGH

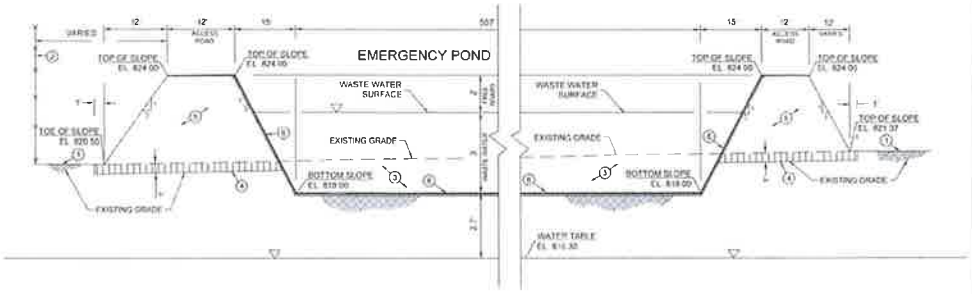
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

MISCELLANEOUS DETAIL SHEET

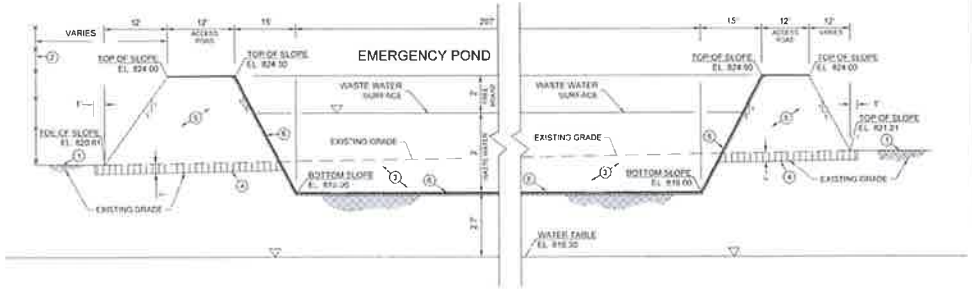
REFERENCE

THIS #42 DIS

SHEET 45 OF 50



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 8 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 8 INCHES. THE NATIVE EARTH SHALL BE COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY AT OPTIMUM WATER CONTENT PER ASTM D 1557.

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JESSE R.O. "JACK" HOLT — 51773 RCE No — 09/25/2023 DATE — 12/31/24 REG EXP

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E. — 52028 RCE 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 | CHECKED RS | PLAN N/A | SCALE JOH

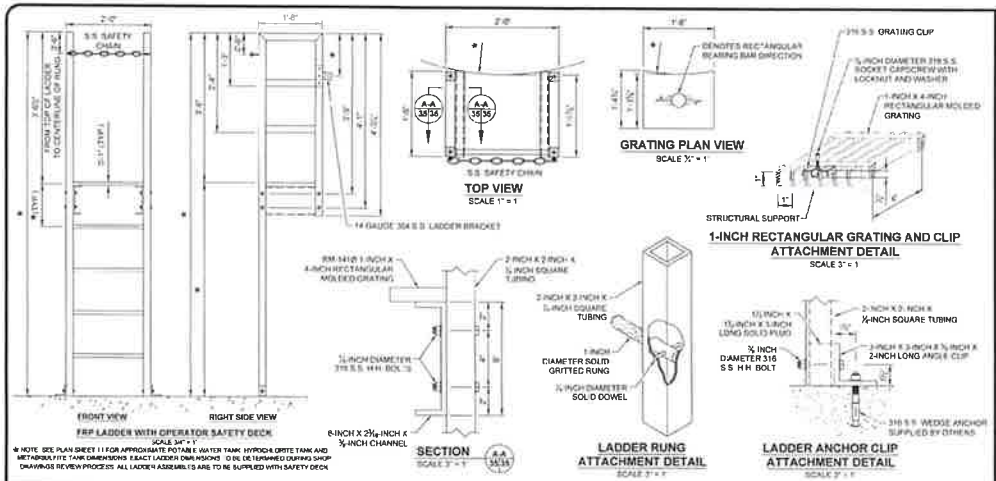
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

MISCELLANEOUS DETAIL SHEET

REFERENCE

THG #542-089

SHEET 46 OF 50



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

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

Z
11 | 47

REVISION	DATE	COMMENTS

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

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
JOHN GAY, P.E.
DIRECTOR OF PUBLIC WORKS
10/7/25 DATE
62028 R.C.E. No
09/30/25 REG. EXP

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DRAWN RS
REVIEWED RS
APPR. TEA
CHK'D JGH

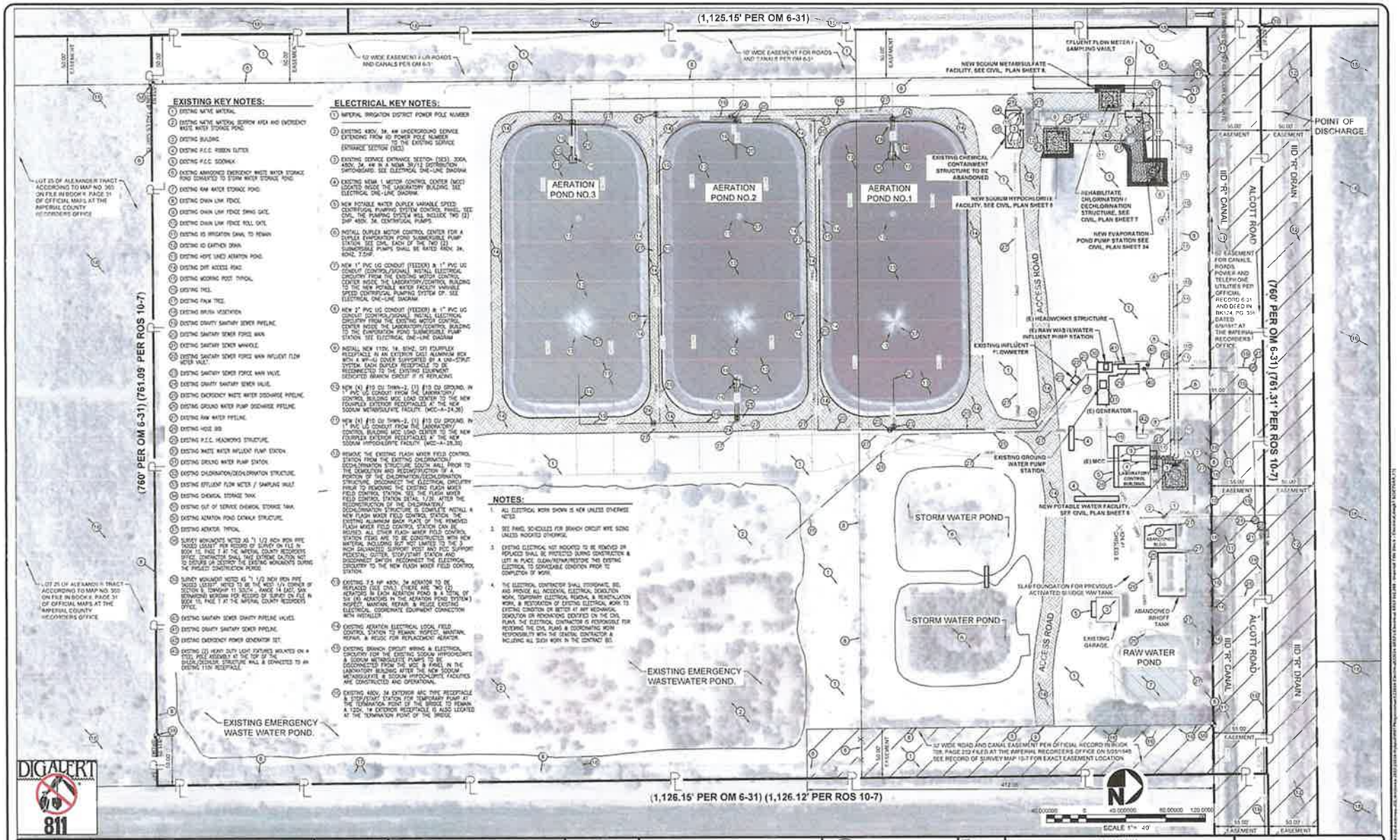
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

MISCELLANEOUS DETAIL SHEET

REFERENCE

THG #542.000

SHEET 47 OF 50



EXISTING KEY NOTES:

1. EXISTING NATIVE MATERIAL
2. EXISTING NATIVE MATERIAL BERMS 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 LS8917" 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 LS8917" 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), 3000A 480V, 3ø, 4W WITH 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) 3HP 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, (20) FOURPLEX RECEPTACLE IN AN EXTERIOR CAST ALUMINUM BOX WITH 4 WP-40 COVER SUPPORTED BY A UNI-STRUT SYSTEM. EACH DUPLEX RECEPTACLE TO BE RECONNECTED TO THE EXISTING EQUIPMENT DEDICATED BRANCH CIRCUIT IF IN 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 METABISULFITE 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-28.36)
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 1/26. 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, OUTDOOR RATED DISCONNECT 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 METABISULFITE & 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 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 DISCONNECT, BID, AND PROVIDE ALL INCIDENTAL ELECTRICAL DEMOLITION WORK, TEMPORARY ELECTRICAL REGIONAL & 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

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES R. FIDLER — 09/05/2023 — DATE — E10119 R.C.E. No. — 12/31/2023 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY
CHRIS GAY R.E. DIRECTOR OF PUBLIC WORKS — 10/9/23 — DATE — 52028 R.C.E. No. — 09/30/25 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/05/2023 | DESIGN STAFF | DRAWN JRA | CHECKED | SCALE 1" = 40' | REVIEW JRA

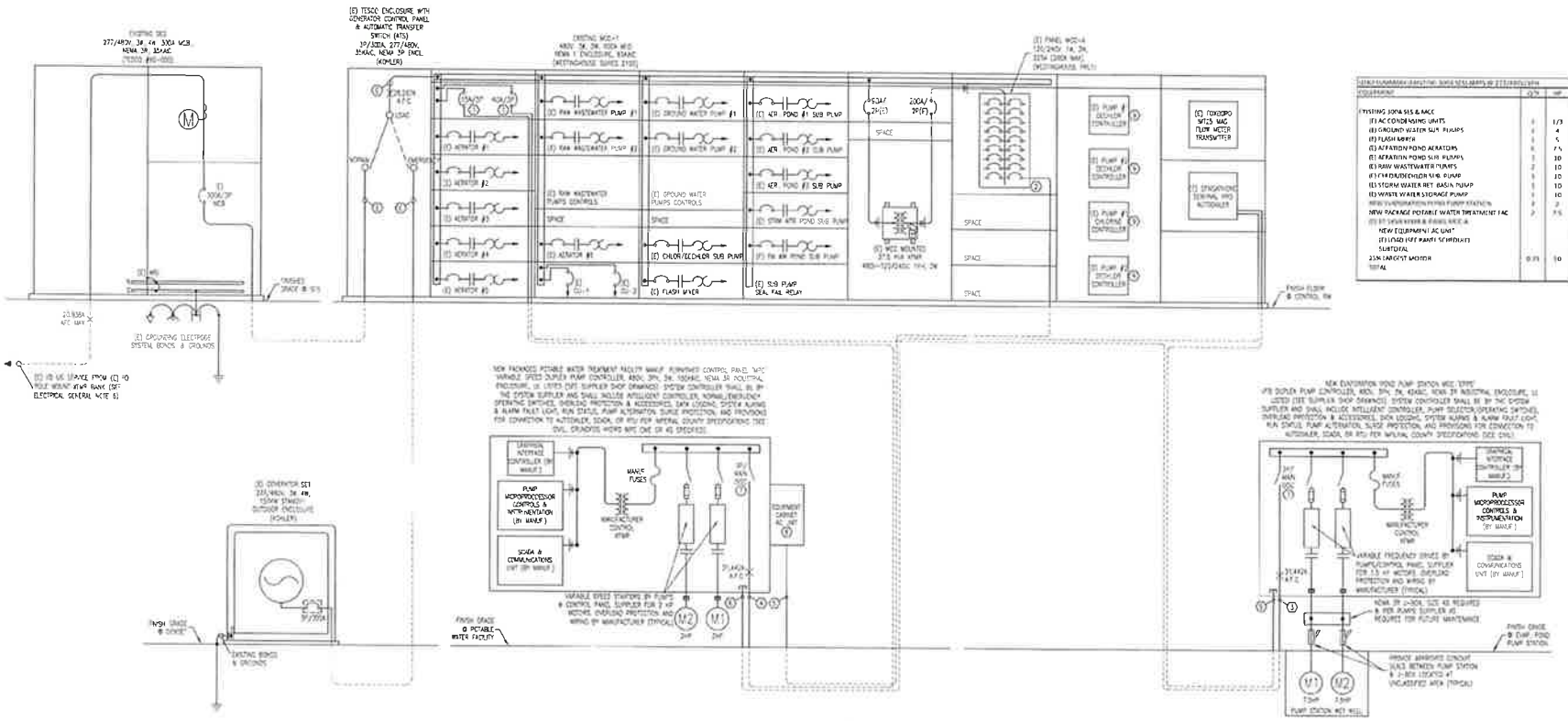
PROJECT TITLE
COUNTY OF IMPERIAL
NILAND COUNTY SANITATION DISTRICT - WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS

ELECTRICAL SITE PLAN

REFERENCE

THIS # 52 059

SHEET 48 OF 50



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 AERATION 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 ADDEQUIVAR 11EN 13.5PLA MAX., NEMA 4X ENCLOSURE (HOFFMAN CR230418SG068, PENTAIR APW MOLDAN CR23-0418-SG068H, LH EQUAL) CIRCUIT TO MCC-A-32
9. VERIFY & REPAIR OR REPLACE EXISTING CHLORINATION & DECHLORINATION PUMP CONTROLLERS. EXISTING DEFAULT CONTROL IS BY MANUAL OPERATION.
10. 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 SWITCHGEARS, 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 MINIMUM AMBIENT OF 50°C (122°F). PROVIDE ADDITIONAL VENTILATION AND AMBIENT COMPENSATED (ATS. 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.

JOL ENTERPRISES, INC.

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES R. JACKEN
09/25/2023 DATE
E18119 R.C.E. No
12/31/2023 REG. EXP

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

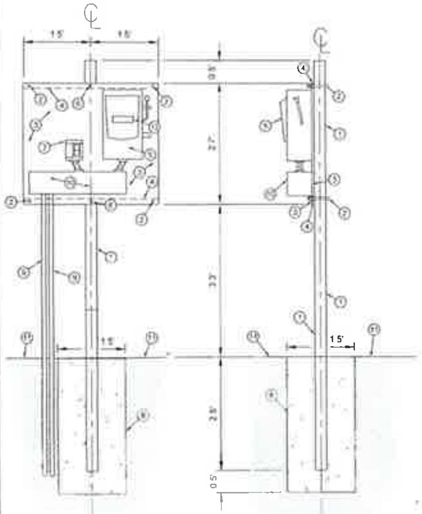
DATE 09/25/2023
DRAWN STAFF
CHECKED JRA
SCALE NO SCALE
PREPARED JRA

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

ELECTRICAL ONE-LINE DIAGRAM

REFERENCE

SHEET 49 OF 50



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 [illegible] 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 [illegible] MICARTA NAME PLATE. THE MICARTA NAMEPLATE SHALL BE [illegible] 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 [illegible]	VOLTS 120/240V	A/C [illegible]			AMPS 225A (150A MAIN)	MNTG. [illegible]			MCB	ENCL. NEMA 1	
NO.	DESCRIPTION	QTY	WIRE	C.B.	PH A	PH B	C.B.	WIRE	QTY	DESCRIPTION	NO.
1	LIGHTS & HEATER (E) MAIN SWITCH		(E)	20 (E)	750 186		(E) 20	(E)		S/M #1 CONTROLLER (E)	2
3	SPARE			20 (E)		0 186	(E) 20	(E)		S/M #2 CONTROLLER (E)	4
5	LIGHTING (E) HEADWORKS		(E)	20 (E)	700 186		(E) 20	(E)		S/M #3 CONTROLLER (E)	6
7	RECEPTACLE (E) HEADWORKS		(E)	20 (E)		400 186	(E) 20	(E)		S/M #4 CONTROLLER (E)	8
9	SPARE			20 (E)	0 400		(E) 20	(E)		CHART RECORDER (E)	10
11	SPARE			20 (E)		0 [illegible]	(E) 20	(E)		AUTO DIALER & FLOW METER (E)	12
13	SPARE			20 (E)	0 0		(E) 20			SPARE	14
15	RECEPTACLE (E) POND #2		(E)	20 (E)		400 0	(E) 20			SPARE	16
17	RECEPTACLE (E) POND #1		(E)	20 (E)	400 0		(E) 20			SPARE	18
19	RECEPTACLE (E) CHLORINE STRUCTURE #3		(E)	20 (E)		400 0	(E) 20			SPARE	20
21	RECEPTACLE (E) POND #3		(E)	20 (E)	400 0		(E) 20			SPARE	22
23	RECEPTACLE (E) CHLORINE STRUCTURE #1		(E)	20 (E)		400 [illegible]	(E) 20	12		RECEPTACLE (NOTE 1) S/M #1 PUMP	24
25	RECEPTACLE (E) CHLORINE STRUCTURE #2		(E)	20 (E)	400 [illegible]		(E) 20	12		RECEPTACLE (NOTE 1) S/M #2 PUMP	26
27	RECEPTACLE (E) [illegible] NORTH		(E)	20 (E)		720 [illegible]	(E) 20	12		RECEPTACLE (NOTE 1) S/M #3 PUMP	28
29	RECEPTACLE (E) [illegible] SOUTH		(E)	20 (E)	720 [illegible]		(E) 20	12		RECEPTACLE (NOTE 1) S/M #4 PUMP	30
31	RECEPTACLE (E) RAW WATER STATION		(E)	20 (E)		400 [illegible]	(E) 20	12		NEW WATER TREATMENT ENCLOSURE HVAC UNIT	32
33	RECEPTACLE (E) CHLORINE/DECHLORINE		(E)	20 (E)	800 800		(E) 20	(E)		RECEPTACLE (E) FLOW METER VAULT	34
35	RECEPTACLE (E) CHLORINE/DECHLORINE		(E)	20 (E)		400 3000	(E) [illegible]	(E)		SUB PANEL (E) GENERATOR	36
37	SUB PANEL (E)		(E)	[illegible] (E)	[illegible]						38
39						[illegible]				SPACE	40
41	SPARE			20 (E)	0 0		(E) 20	(E)		[illegible]	42
			CONN VA		[illegible]	[illegible]					
			CONN AMPS		[illegible]	[illegible]					
			CODE VA		[illegible]	[illegible]	(25% LARGEST MOTOR)				
			CODE AMPS		[illegible]	[illegible]					

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 [illegible] CONDUIT
ABOVE GROUND CONCEALED OR SURFACE MOUNT CONDUIT
AREA LIGHT & POLE
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 FRPC. 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 EXISTING 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

JOL ENTERPRISES, INC.
JOB No. 13-034

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
JAMES P. ADLER
09/25/2023 DATE
E16118 RCE No
12/31/2023 REG EXP

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

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 09/25/2023
DESIGNED STAFF
DRAWN JRA
SCALE NO SCALE
CHECKED JRA

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

ELECTRICAL DETAIL SHEET

REFERENCE
THG #542 088
SHEET 50 OF 50