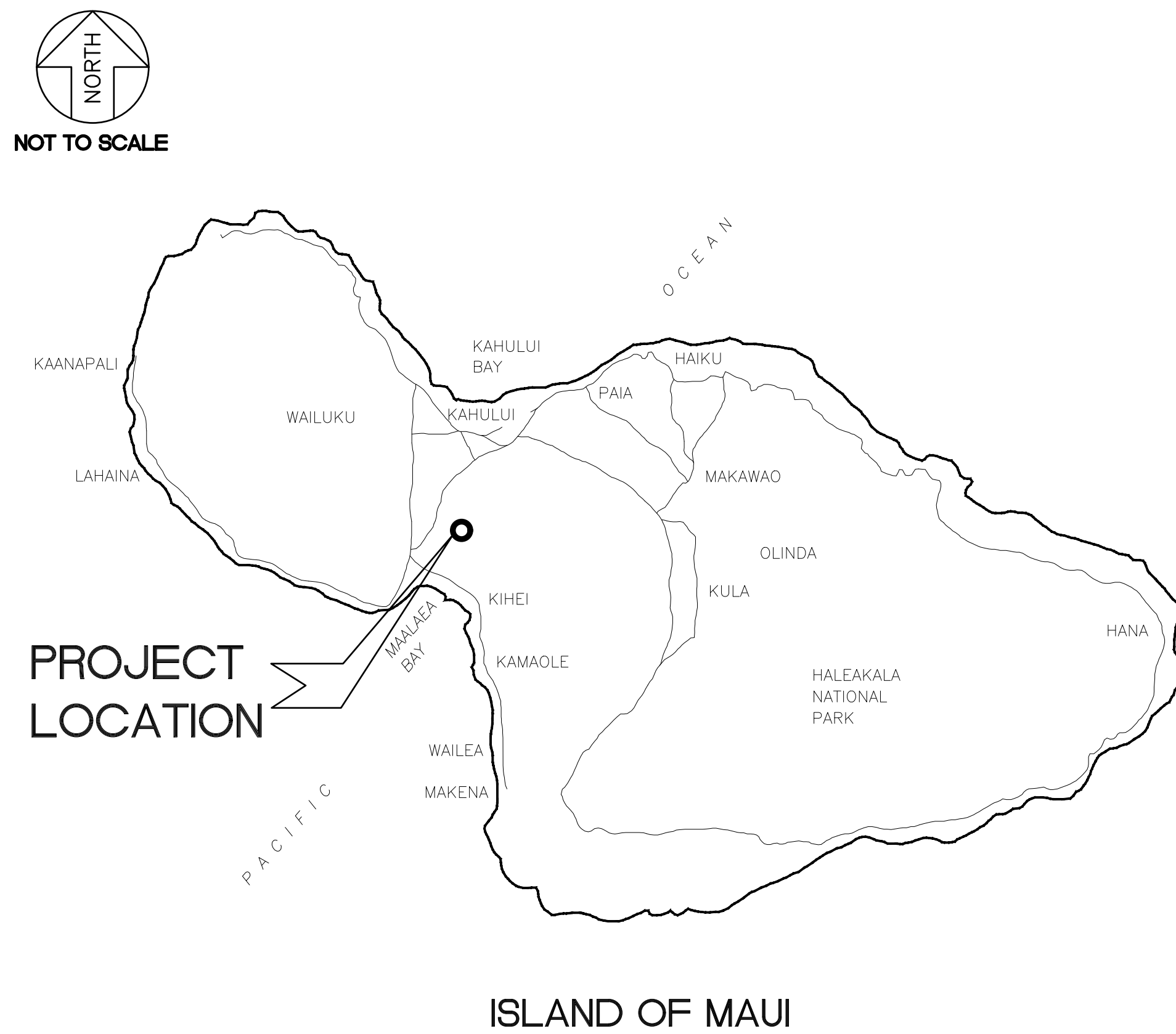


STATE OF HAWAII
 DEPARTMENT OF HAWAIIAN HOME LANDS
 PŪLEHUNUI, MAUI, HAWAII

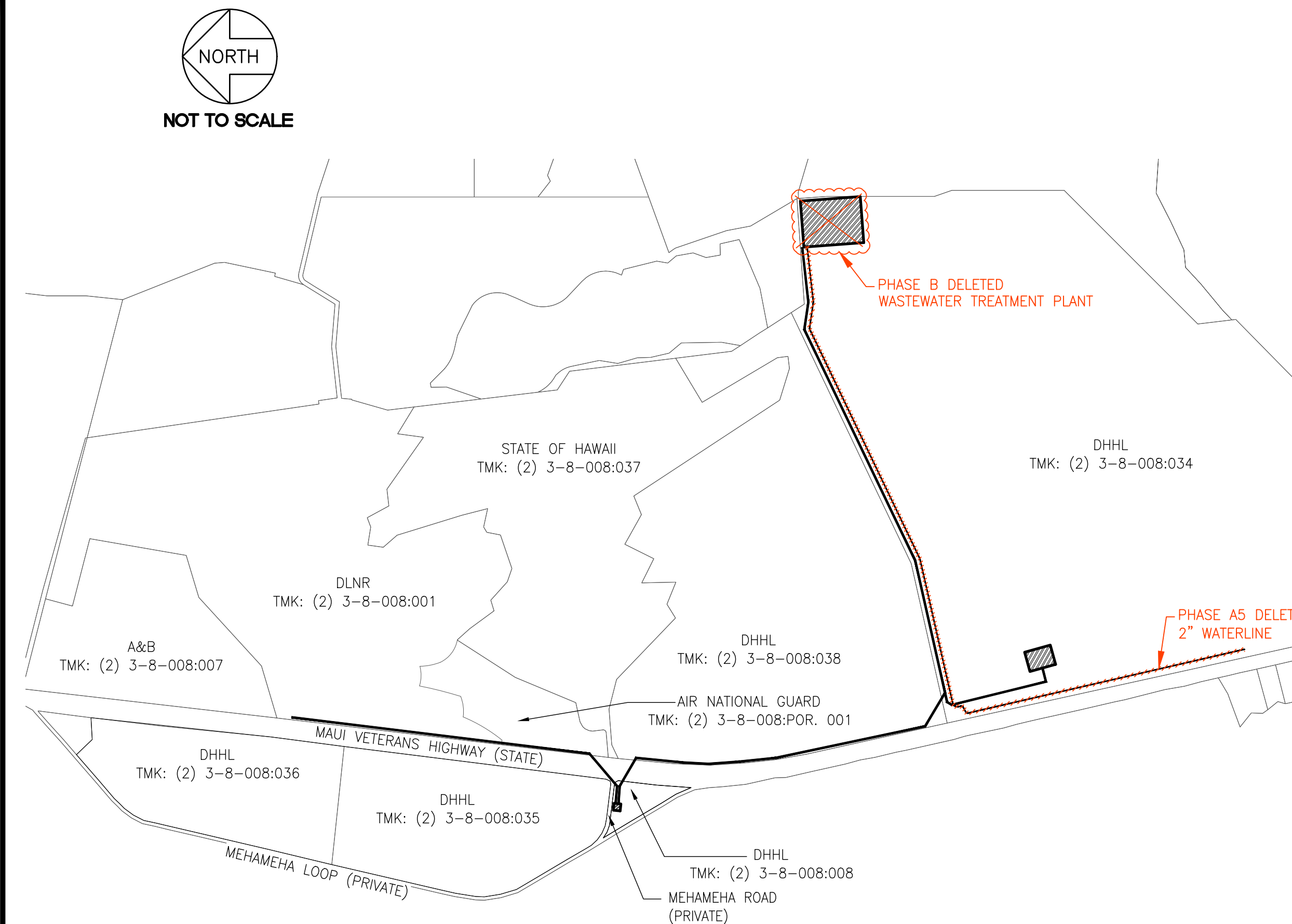
PŪLEHUNUI WASTEWATER SYSTEM

TAX MAP KEY: (2) 3-8-008: 001 (DLNR), 008, 034, 035 AND 038 (DHHL)

LOCATION MAP



VICINITY MAP



APPROVED

CHIEF, ENVIRONMENTAL MANAGEMENT DIVISION
 DEPARTMENT OF HEALTH, STATE OF HAWAII

DATE

DIRECTOR, DEPARTMENT OF WATER SUPPLY
 COUNTY OF MAUI

DATE

DIRECTOR, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF MAUI

DATE

ADMINISTRATOR, HIGHWAYS DIVISION
 STATE DEPARTMENT OF TRANSPORTATION
 (APPROVAL GRANTED FOR WORK WITHIN STATE
 RIGHT-OF-WAY ONLY)

DATE

CHAIRMAN, DEPARTMENT OF HAWAIIAN HOME LANDS
 STATE OF HAWAII

DATE

DWG. NO. **T-1**
 SHEET 1 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. MEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\T-1 - TITLE SHEET.DWG

JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\T-2 INDEX OF DRAWINGS.DWG

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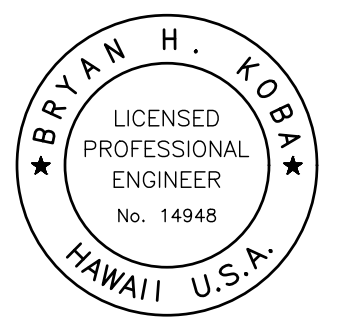
PENDING CONTRACT

Austin Tsutsumi
 A. S. S. C. I. A. T. E. S., I. N. C.
 CIVIL ENGINEERS, I SURVEYORS
 HONOLULU I WAILUKU I HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

PULEHUNUI REGIONAL INFRASTRUCTURE

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

Bryan H. Kobayashi APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

JOB NO. 0-11-056.004
FN: F:\CONG VEC\18-524 (16-576) PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY\BRYAN\DWG-G-1 CONSTRUCTION NOTES-I.DWG

GENERAL CONSTRUCTION NOTES

- ALL CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AS AMENDED, AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", DATED SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTIES OF THE STATE OF HAWAII, THE "STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION STANDARD PLANS" 2008, THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE FOR STREETS AND HIGHWAYS", 2009, AND THE CONSTRUCTION DRAWINGS, DETAILS, AND SPECIFICATIONS PREPARED FOR THIS PROJECT.
- WHEREVER CROSSINGS OR CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR DAMAGES TO THE FACILITIES WHETHER SHOWN OR NOT ON THE PLANS.
- NO CONSTRUCTION EQUIPMENT SHALL BE PARKED WITHIN THE ROAD RIGHT-OF-WAY IN SUCH A MANNER THAT THE EQUIPMENT WILL OBSTRUCT THE NORMAL MOVEMENT AND SIGHT DISTANCE OF THE DRIVING MOTORIST, EXCEPT DURING ACTUAL WORKING HOURS.
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA, BUT ARE NOT GUARANTEED AS TO THE ACCURACY OF THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF LOCATION OF UNCHARTED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE, AND SHALL PAY FOR ALL DAMAGES TO EXISTING UTILITIES.
- EXCEPT DURING ACTUAL WORKING HOURS, ALL SIGNS WHICH DO NOT PERTAIN TO THE CONSTRUCTION ACTIVITY, SUCH AS "MEN WORKING" AND "FLAGMEN AHEAD" SHALL BE COVERED OR LAID DOWN. HOWEVER, ALL SIGNS NECESSARY FOR THE SAFETY OF THE PUBLIC SHALL BE MAINTAINED.
- THE CONTRACTOR SHALL EMPLOY A HAWAII REGISTERED PROFESSIONAL LAND SURVEYOR TO PERFORM ALL CONSTRUCTION STAKEOUTS, THE COST OF WHICH SHALL BE BORNE BY THE CONTRACTOR.
- THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR, AND PAY FOR ALL TEMPORARY UTILITIES REQUIRED FOR HIS WORK.
- SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS AND MOUNDS, OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF CHARCOAL OR SHELLS BE ENCOUNTERED DURING CONSTRUCTION WORK, WORK SHALL CEASE IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION ((808) 243-5169), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY. A MINIMUM 3-METER / 10-FOOT WIDE BUFFER ZONE EXISTS AROUND ALL SITES IN PRESERVATION DURING CONSTRUCTION. IT IS HIGHLY IMPORTANT THAT THE PRESERVED SITES REMAIN UNDISTURBED.
- THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES AND PERMITS AND SHALL GIVE ALL NOTICES NECESSARY AND INCIDENTAL TO THE DUE AND LAWFUL PROSECUTION OF THE WORK.
- THE CONTRACTOR SHALL RESTORE ALL EXISTING FACILITIES INCLUDING BUT NOT LIMITED TO PAVEMENT, DRAINAGE FACILITIES, CURBS, GUTTERS, SIGNS, LANDSCAPING, IRRIGATION SYSTEMS, ETC., REMOVED OR DAMAGED AS A RESULT OF HIS OPERATION USING MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH "HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION", 2005 AS AMENDED, "STANDARD DETAILS", SEPTEMBER 1984 FOR PUBLIC WORKS CONSTRUCTION OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF MAUI, AS AMENDED.
- THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES AND OTHER PROTECTIVE DEVICES FOR THE PROTECTION, SAFETY AND CONVENIENCE OF THE PUBLIC ACCORDING TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", 2009 AND THE "RULES AND REGULATIONS GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON/OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS", ADOPTED BY THE HIGHWAY SAFETY COORDINATOR AND THE U.S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS", DATED 2009.
- THE DIRECTOR OF PUBLIC WORKS HAS THE RIGHT TO STOP CONSTRUCTION SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED CONSTRUCTION PLAN OR DETRIMENTAL TO THE PUBLIC'S INTEREST.
- THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH, AND COUNTY GRADING ORDINANCE.
- THE CONTRACTOR SHALL REMOVE AND DISPOSE ALL SILT AND DEBRIS DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS RESULTING FROM HIS WORK. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION ORDERED BY THE DIRECTOR OF PUBLIC WORKS SHALL BE PAID BY THE CONTRACTOR.
- CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE SITE. THE CONTRACTOR SHALL INFORM THE DIRECTOR OF PUBLIC WORKS OF THE LOCATION OF THE DISPOSAL SITES. THE DISPOSAL SITE MUST FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE. THE CONTRACTOR SHALL MINIMIZE ITS CONSTRUCTION DEBRIS AND SOLID WASTES.
- CONTRACTOR SHALL PROVIDE VEHICULAR AND PEDESTRIAN ACCESS ROUTES AT ALL TIMES TO ALL EXISTING FACILITIES.

GENERAL CONSTRUCTION NOTES (CONT.)

- THE EXISTING ASPHALTIC CONCRETE (A.C.) PAVEMENT SHALL BE SAW CUT BEFORE COMMENCEMENT OF WORK.
- ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS SHALL BE CHECKED AND VERIFIED PRIOR TO THE START OF CONSTRUCTION, AND ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
- PURSUANT OF MAUI COUNTY CODE SECTION 3.44.015(C), THE COUNTY OF MAUI IS NOT RESPONSIBLE FOR ANY PARK, ROADWAY, EASEMENT (INCLUDING BUT NOT LIMITED TO DRAINAGE, SEWER, ACCESS, RECLAIMED WATER OR AVIGATION EASEMENT), OR ANY OTHER INTEREST IN REAL PROPERTY SHOWN ON THIS MAP OR SHOWN ON THESE PLANS, UNLESS THE MAUI COUNTY COUNCIL HAS ACCEPTED ITS DEDICATION BY A RESOLUTION APPROVED BY A MAJORITY OF COUNCIL'S MEMBERS AT A REGULAR OR SPECIAL MEETING OF THE MAUI COUNTY COUNCIL.
- THE CONTRACTOR SHALL SUBMIT ONE HARDCOPY AND ONE COMPLETE ELECTRONIC SET (TIF OR PDF) OF THE FINAL FIELD POSTED AS-BUILT DRAWINGS PRIOR TO THE FINAL APPROVAL AND ACCEPTANCE OF THE IMPROVEMENTS.
- COMPACTION REQUIREMENTS:
 - TESTING OF MATERIALS SHALL BE CONDUCTED BY AN APPROVED INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH ASTM STANDARD METHODS OR AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION, AS FOLLOWS:
 - EMBANKMENT/SELECT BORROW AND SUBGRADE MATERIALS: ONE (1) COMPACTION TEST PER 600 SQUARE YARDS PER LIFT;
 - AGGREGATE SUBBASE COURSE: ONE (1) COMPACTION TEST PER 400 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
 - AGGREGATE BASE COURSE: ONE (1) COMPACTION TEST PER 300 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
 - ASPHALT CONCRETE PAVEMENT OR ASPHALT TREATED BASE COURSE: THREE (3) A.C. CORES FOR THICKNESS AND DENSITY TESTS PER PROJECT;
 - TRENCH BACKFILL MATERIAL: ONE (1) TEST FOR EACH 300 LINEAL FEET OF TRENCH PER LIFT OF MATERIAL.
 - ADDITIONAL TESTING MAY BE REQUIRED FOR ANY REASON INCLUDING RESULTS TO THE COUNTY'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO THE COUNTY'S ACCEPTANCE OF WORK.
 - CONTRACTOR SHALL SUBMIT ALL TESTING REPORTS, INCLUDING RESULTS TO THE COUNTY'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO COUNTY'S ACCEPTANCE OF WORK.
 - THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE COUNTY OF ANY TESTING FAILURES AND CORRECT EACH FAILURE PRIOR TO PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION.
- A CCTV MAY ALSO BE REQUIRED BY THE CONTRACTOR FOR APPROVAL AND ACCEPTANCE OF THE CONSTRUCTION IMPROVEMENTS FOR ANY PRIVATE SEWER MAINS/LATERALS AS REQUIRED BY THE COUNTY DEPT. OF ENV. MANAGEMENT, WASTE WATER RECLAMATION DIVISION.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY

- CONTRACTOR SHALL OBTAIN A PERMIT TO PERFORM WORK ON COUNTY HIGHWAYS FROM THE DEPARTMENT SERVICES ADMINISTRATION TWO WEEKS PRIOR TO THE COMMENCEMENT OF WORK.
- STANDARD DETAIL DRAWINGS AND STANDARD SPECIFICATIONS OF THE DEPARTMENT OF PUBLIC WORKS SHALL BE INCLUDED AS PART OF THE CONSTRUCTION PLANS.
- ALL CONSTRUCTION WORK SHALL STRICTLY CONFORM TO THE LATEST VERSION OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE PUBLIC WORKS CONSTRUCTION, AND THE SEPTEMBER 1984 "STANDARD DETAILS" FOR PUBLIC WORKS CONSTRUCTION OF THE DEPARTMENT OF PUBLIC WORKS, AS AMENDED.
- IF EXISTING UTILITIES, WHETHER OR NOT SHOWN ON PLANS, ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL AT HIS OWN EXPENSE BE REQUIRED TO REPAIR SUCH UTILITIES.
- CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER PROTECTIVE DEVICES FOR THE PROTECTION, SAFETY AND CONVENIENCE OF THE PUBLIC, ACCORDING TO THE LATEST VERSION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE FOR STREETS AND HIGHWAYS", AND TO THE RULES AND REGULATIONS GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORKSITES AND/OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS ADOPTED BY THE HIGHWAY SAFETY COORDINATOR AND THE U.S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS".
- THE DIRECTOR OF PUBLIC WORKS AND/OR THE DIRECTOR OF THE DEPARTMENT OF WATER SUPPLY HAS THE RIGHT TO STOP CONSTRUCTION SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED CONSTRUCTION PLAN OR DETRIMENTAL TO THE PUBLIC'S INTEREST.
- THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH DEVELOPMENT SERVICES ADMINISTRATION FIVE (5) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY (CONT.)

- THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH AND COUNTY GRADING ORDINANCE.
- THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION ORDERED BY THE DIRECTOR OF PUBLIC WORKS SHALL BE PAID BY THE CONTRACTOR.
- CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE WORK SITE. THE CONTRACTOR SHALL INFORM THE DIRECTOR OF PUBLIC WORKS OF THE LOCATION OF THE DISPOSAL SITES. THE DISPOSAL SITE MUST FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
- THE CONTRACTOR SHALL SUBMIT A TIF AND FIVE (5) COPIES OF THE "AS-BUILT" DRAWINGS PRIOR TO THE FINAL APPROVAL OF THE IMPROVEMENTS.
- IF THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING WATERLINE IS EIGHTEEN INCHES (18") OR LESS, THE WASTEWATER LINE SHALL BE CONCRETE JACKETED IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1984, AS AMENDED.
- SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS, OR MOUNDS, OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR AND/OR LANDOWNER SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION ((808) 692-8015, WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.
- THE COUNTY OF MAUI IS NOT RESPONSIBLE FOR ANY PARK, ROADWAY, EASEMENT (INCLUDING BUT NOT LIMITED TO DRAINAGE, SEWER, ACCESS, RECLAIMED WATER, OR AVIGATION EASEMENT), OR ANY OTHER INTEREST IN REAL PROPERTY SHOWN ON THIS MAP OR SHOWN ON THESE PLANS, UNLESS THE MAUI COUNTY COUNCIL HAS ACCEPTED ITS DEDICATION BY A RESOLUTION APPROVED BY A MAJORITY OF COUNCIL MEMBERS AT A REGULAR OR CONVEYANCE DOCUMENT RECORDED IN THE BUREAU OF CONVEYANCES OF THE STATE OF HAWAII IN COMPLIANCE WITH MAUI COUNTY CODE SECTION 3.44.015.
- STEEL PLATE WARNING SIGNS ARE REQUIRED FOR ALL STEEL PLATES IN THE RIGHT-OF-WAY.
- WHEELCHAIR RAMP INSPECTION/CERTIFICATION FORMS SHALL BE REQUIRED FOR ALL NEWLY CONSTRUCTED RAMPS.
- ALL STRIPING AND PAVEMENT MARKINGS SHALL BE OF THERMOPLASTIC MATERIAL.
- COMPACTION REQUIREMENTS:
 - TESTING OF MATERIALS SHALL BE CONDUCTED BY AN APPROVED INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH ASTM STANDARD METHODS OR AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION AS FOLLOWS:
 - EMBANKMENT/SELECT BORROW AND SUBGRADE MATERIALS: ONE (1) COMPACTION TEST PER 600 SQUARE YARDS PER LIFT;
 - AGGREGATE SUBBASE COURSE: ONE (1) COMPACTION TEST PER 400 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
 - AGGREGATE BASE COURSE: ONE (1) COMPACTION TEST PER 300 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
 - ASPHALT CONCRETE PAVEMENT OR ASPHALT TREATED BASE COURSE: THREE (3) A.C. CORES FOR THICKNESS AND DENSITY TESTS PER PROJECT;
 - TRENCH BACKFILL MATERIAL: ONE (1) TEST FOR EACH 300 LINEAL FEET OF TRENCH PER LIFT OF MATERIAL.
 - CONTRACTOR SHALL SUBMIT ALL TESTING REPORTS INCLUDING RESULTS TO THE COUNTY'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO COUNTY'S ACCEPTANCE OF WORK.
 - THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE COUNTY OF ANY TESTING FAILURES AND CORRECT EACH FAILURE PRIOR TO PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION.

GRADING NOTES

- ALL GRADING AND STOCKPILING WORK SHALL BE IN ACCORDANCE WITH MAUI COUNTY CODE, TITLE 20, CHAPTER 8.
- ALL DEBRIS SHALL BE REMOVED FROM THE SITE AND PREMISES LEFT IN A "RAKE CLEAN" CONDITION.
- THE CONTRACTOR, AT HIS EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREA FREE FROM DUST NUISANCE.
- ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF CHAPTER 54, WATER QUALITY STANDARDS, AND CHAPTER 55, WATER POLLUTION CONTROL, OF TITLE 11, ADMINISTRATIVE RULES OF THE STATE DEPARTMENT OF HEALTH, AND IF APPLICABLE, THE NPDES PERMIT FOR THE PROJECT.
- ALL EXISTING UTILITIES, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE PROTECTED AT ALL TIMES, UNLESS NOTED OTHERWISE.
- ALL PLANTER AREAS SHALL BE SODDED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE PLANTED. PLANTING SHALL BE MAINTAINED TO MINIMIZE EROSION.

GRADING NOTES (CONT.)

- THE CONTRACTOR SHALL OBTAIN A GRADING PERMIT FROM THE DEVELOPMENT SERVICES ADMINISTRATION TWO WEEKS PRIOR TO COMMENCEMENT OF ANY CLEARING AND GRUBBING WORK. A SITE SPECIFIC EROSION CONTROL PLAN SHOWING STRUCTURAL & NON-STRUCTURAL BEST MANAGEMENT PRACTICES MUST BE SUBMITTED TO AND APPROVED BY THE DEVELOPMENT SERVICES ADMINISTRATION PRIOR TO ISSUANCE OF A GRADING PERMIT AND COMMENCEMENT OF ANY CLEARING AND GRUBBING WORK.
- THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
- THE COUNTY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
- NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE CHIEF ENGINEER.
- THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.

SOLID WASTE CONSTRUCTION NOTES

- UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER HANDLING, STORAGE AND/OR DISPOSAL OF ALL WASTE GENERATED BY CONSTRUCTION ACTIVITIES INCLUDING GRUBBING AND EXCESS EXCAVATED MATERIALS. ANY MATERIAL BROUGHT TO THE COUNTY LANDFILLS WILL BE SUBJECT TO THE INSTITUTED TIPPING FEE SYSTEM WITH NO EXCEPTIONS OR EXEMPTIONS.

TEMPORARY DUST CONTROL MEASURES

- EXCAVATION, EMBANKMENT AND IMPORTED MATERIALS SHALL BE KEPT DAMPENED WITH WATER DURING THE GRADING OPERATIONS.
- THE CONTRACTOR SHALL MAINTAIN A SUITABLE WATER SYSTEM AND DAMPEN THE GRADED OR GRUBBED SITE WITH WATER.
- AT THE END OF EACH DAY, SEVEN (7) DAYS A WEEK, THE PROJECT SITE SHALL BE KEPT DAMP WITH WATER. THE SITE SHALL BE SUFFICIENTLY DAMPENED SO THAT THE SITE WILL REMAIN MOISTENED DURING THE NIGHT.

TEMPORARY EROSION CONTROL MEASURES

- TEMPORARY GROUND COVER SHALL BE APPLIED WITHIN A PERIOD OF 14 CALENDAR DAYS AFTER THE SITE HAS BEEN GRADED, OR BARED OF VEGETATION, OR IF FINAL GRADING OF THE SITE WILL BE SUSPENDED FOR MORE THAN 21 CALENDAR DAYS. ALL COST FOR MAINTAINING IRRIGATING AND REMOVING TEMPORARY EROSION CONTROL MEASURES WILL BE BORNE BY THE CONTRACTOR.
- THE CONTRACTOR MAY USE HYDRO-MULCH TO APPLY THE TEMPORARY GROUND COVER.
- TEMPORARY GROUND COVER SHALL CONSIST OF 2,000 LBS. PER ACRE WOOD CELLULOSE FIBER MULCH AND 65 LBS. PER ACRE TACKIFIER.

PERMANENT EROSION CONTROL MEASURES

- THE CONTRACTOR SHALL GRASS ALL EXPOSED AREAS THAT HAVE BEEN CONSTRUCTED TO FINAL GRADES. SITES THAT WILL NOT BE DISTURBED FOR A PERIOD OF TWENTY-ONE (21) DAYS OR MORE WILL BE STABILIZED FOURTEEN (14) DAYS AFTER THE LAST DISTURBANCE AS PER SECTION 20.08.035(G) OF THE MAUI COUNTY CODE. ALL COSTS FOR MAINTAINING AND WATERING PERMANENT EROSION CONTROL MEASURES WILL BE BORNE BY THE CONTRACTOR.
- THE CONTRACTOR MAY USE HYDRO-MULCH TO APPLY THE PERMANENT GROUND COVER.
- PERMANENT BERMUDA GROUND COVER SHALL CONSIST OF 75 LBS. PER ACRE BERMUDA GRASS, 50 LBS. PER ACRE RYE GRASS, 6,000 LBS. PER ACRE GYPSUM BASED GEOBINDER, 2,000 LBS. PER ACRE WOOD CELLULOSE FIBER MULCH, AND 400 LBS. PER ACRE 10-30-10 FERTILIZER.
- PERMANENT GROUND COVER ALONG NATURAL DRAINAGEWAYS SHALL CONSIST OF 100 LBS. PER ACRE BERMUDA GRASS, 50 LBS. PER ACRE RYE GRASS, 1,500 LBS. PER ACRE WOOD CELLULOSE FIBER MULCH, 400 LBS. PER ACRE 10-30-10 FERTILIZER, AND PERMANENT EROSION CONTROL/TURF REINFORCEMENT MATTING.

NOTES FOR ENVIRONMENTAL PROTECTION

- ENVIRONMENTAL PROTECTION NOTES PERTAINING TO AIR AND WATER POLLUTION SHALL BE ADMINISTERED AND MONITORED BY THE DEPARTMENT OF HEALTH.
- THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL PROVIDE EFFECTIVE MEASURES FOR THE CONTROL OF FUGITIVE DUST EMISSIONS FROM THE PROJECT AND SURROUNDING AREAS CAUSED BY HIS OPERATIONS. THESE MEASURES SHALL MEET THE REQUIREMENTS OF STATE ADMINISTRATIVE RULES, DEPARTMENT OF HEALTH, AIR POLLUTION CONTROL (11-60.1).
- ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE GRADING ORDINANCE TO PREVENT VIOLATION OF THE STATE ADMINISTRATIVE RULES, DEPARTMENT OF HEALTH, WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS (11-54, 11-55) DUE TO EROSION AND RUNOFF TO STATE WATERS.
- GRUB MATERIAL, DEMOLITION WASTES, AND CONSTRUCTION WASTES SHALL BE DISPOSED OF AT AN AUTHORIZED SITE HAVING A DEPARTMENT OF HEALTH SOLID WASTE MANAGEMENT PERMIT. OPEN BURNING IS PROHIBITED.

NOTES FOR ENVIRONMENTAL PROTECTION (CONT.)

5. PERMITS REQUIRED:

- A NPDES PERMIT MAY BE REQUIRED FROM THE CLEAN WATER BRANCH OF THE DEPARTMENT OF HEALTH FOR STORM WATER DISCHARGE AND HYDROTESTING.
- A DEWATERING PERMIT MAY BE REQUIRED TO BE OBTAINED FROM THE CLEAN WATER BRANCH OF THE DEPARTMENT OF HEALTH IF DISCHARGING INTO STATE WATERS.
- PERMIT MUST BE OBTAINED PRIOR TO START OF CONSTRUCTION.
- IF A NPDES PERMIT IS REQUIRED FOR THIS PROJECT, THE CONTRACTOR SHALL MAINTAIN A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WHICH INCLUDES A "SITE SPECIFIC BEST MANAGEMENT PRACTICES PLAN" IN ACCORDANCE WITH THE NPDES PERMIT AND STATE OF HAWAII, DEPARTMENT OF HEALTH, CLEAN WATER BRANCH REQUIREMENTS. CONTRACTOR IS RESPONSIBLE TO FILE ANY AMENDMENTS TO THE NPDES PERMIT WITH THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH.

CONTRACTOR'S RESPONSIBILITY FOR EXISTING LINES, PIPES, SERVICES AND FEATURES

- INFORMATION REGARDING THE SITE SHOWN ON THE DRAWINGS OR SPECIFICATIONS HAS BEEN OBTAINED BY THE ENGINEER AND IS BELIEVED TO BE REASONABLY CORRECT; HOWEVER, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SUCH INFORMATION. THE CONTRACTOR SHALL TONE THE AREA TO BE EXCAVATED TO ASCERTAIN THE LOCATION OF UNCHARTED UTILITIES. CONTRACTOR SHALL CONTACT HAWAII ONE CALL CENTER TEN (10) DAYS PRIOR TO ANY EXCAVATION WITHIN STATE OR COUNTY RIGHT-OF-WAY TO ALLOW FOR ADEQUATE RESPONSE TIME IF CONFLICTS ARE FOUND AND NOT CAUSE DELAYS TO THE CONTRACTOR'S WORK.
- ANY UTILITIES THAT THE CONTRACTOR ENCOUNTERS DURING THE PROGRESS OF THE WORK, SUCH AS BUT NOT LIMITED TO TELEPHONE DUCTS, ELECTRIC DUCTS, WATER LINES, SEWER LINES, ELECTRIC LINES, TRAFFIC SIGNAL DETECTION LOOPS OR DEVICES, AND DRAINAGE PIPES, WHETHER SHOWN OR NOT ON THE CONTRACT PLANS, SHALL NOT BE DISTURBED OR DAMAGED UNLESS OTHERWISE INSTRUCTED IN THE PLANS AND SPECIFICATIONS.
- IN THE EVENT THE UTILITIES ARE DAMAGED OR DISTURBED BY THE CONTRACTOR, THE CONTRACTOR SHALL BE HELD LIABLE FOR THE DAMAGED OR DISTURBED UTILITIES AND SHALL REPAIR THE DAMAGED OR DISTURBED UTILITIES TO EXISTING OR BETTER CONDITION AT NO COST TO THE OWNER. ANY DAMAGE CLAIMS DUE TO THE DISRUPTION OF SERVICE CAUSED BY THE UTILITIES BEING DAMAGED SHALL BE PAID BY THE CONTRACTOR, WHO SHALL SAVE HARMLESS THE OWNER AND ENGINEER FROM ALL SUITS, ACTIONS OR CLAIMS OF ANY CHARACTER BROUGHT ON ACCOUNT OF SUCH DAMAGES.
- IN THE EVENT UTILITIES WHICH WERE NOT SHOWN ON THE PLANS AND SPECIFICATIONS ARE DAMAGED OR DISTURBED BY THE CONTRACTOR, THE CONTRACTOR SHALL BE HELD LIABLE. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND EXPOSE ALL UTILITY LINES PRIOR TO ANY EXCAVATION AND/OR INSTALLATION OF LINES.
- ANY EXISTING IRRIGATION LINES, LANDSCAPE AND/OR DECORATIVE FEATURES DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING OR BETTER CONDITION AT NO COST TO THE OWNER.
- ALL EXISTING TRAFFIC SIGNALS, IF APPLICABLE, SHALL BE KEPT OPERATIONAL DURING THE COURSE OF CONSTRUCTION. APPROVED DETECTION DEVICES USED ON A TEMPORARY BASIS DURING CONSTRUCTION SHALL BE INSTALLED THREE (3) WORKING DAYS PRIOR TO ANY SIGNALIZED INTERSECTION WORK WHICH INCLUDES BUT NOT LIMITED TO PAVEMENT RECONSTRUCTION, UTILITY TRENCHING, AND COLD PLANING. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005 AND AT THE CONTRACTOR'S EXPENSE.

PUBLIC HEALTH, SAFETY, AND CONVENIENCE

- THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.
- THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREAS FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. THE COUNTY OF MAUI MAY REQUIRE SUPPLEMENTARY MEASURES AS NECESSARY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANING AND REMOVAL OF ALL SILT AND DEBRIS DEPOSITED AND ACCUMULATED WITHIN DOWNSTREAM WATERWAYS, DITCHES AND DRAIN PIPES AND ON PUBLIC AND PRIVATE ROADWAYS GENERATED BY HIS WORK. THE CONTRACTOR AGREES TO REIMBURSE THE COUNTY OF MAUI FOR ALL COSTS EXPENDED IN PERFORMANCE OF THE ABOVE WORK IF REQUIRED FOR PUBLIC HEALTH AND SAFETY, OR MADE NECESSARY BY NON-PERFORMANCE BY THE CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC.
- THE CONTRACTOR SHALL PROVIDE A NOISE POLLUTION CONTROL PLAN WHEN APPLYING FOR A CONSTRUCTION PERMIT.
- TEMPORARY PEDESTRIAN ROUTES SHALL BE MAINTAINED IN SAFE, PASSABLE AND ACCESSIBLE CONDITION COMPLYING WITH ADAAG 402.1.



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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SCALE
 (IF NOT 2-INCHES : Scale Accordingly)

REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

CONSTRUCTION NOTES - 1

DWG. NO.

 SHEET 3 OF 201

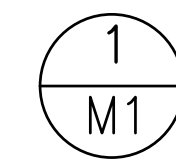
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JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG-G-3 ABBREVIATIONS AND SYMBOLS.DWG

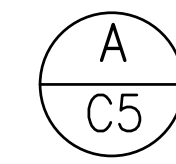
ABBREVIATIONS

△	DELTA	LAT.	LATERAL
∠	AND	LC	LENGTH OF CURVE
@	AT	LEN	LENGTH
A.C. OR A/C	ASPHALT CONCRETE	LF	LINEAL FEET
AD	AREA DRAIN	LP	LIGHT POLE
ADJ.	ADJUST	LP	LOW POINT
ARCH.	ARCHITECT	LT	LEFT
ARV	AIR RELIEF VALVE		
ASSY.	ASSEMBLY	MAX	MAXIMUM
AZ	AZIMUTH	MB	MAILBOX
		MECH.	MECHANICAL
Ⓟ	BASELINE	MECO	MAUI ELECTRIC CO.
BC	BOTTOM CURB	MH	MANHOLE
BCT	BREAKAWAY CABLE TERMINAL	MON	MONUMENT
BEG	BEGIN	NO.	NUMBER
BLDG.	BUILDING		
BLK.	BLOCK	O.C.	ON CENTER
BOTT	BOTTOM	O.D.	OUTSIDE DIAMETER
BVC	BEGIN VERTICAL CURVE	O/S	OFFSET
		PAV'T	PAVEMENT
C	COVER	PC	POINT OF CURVATURE
CATV	CABLE TELEVISION	PCC	POINT OF COMPOUND CURVE
C.B.	CATCH BASIN	PE	PEDESTRIAN
C.C.P.	CONCRETE CYLINDER PIPE	PI	POINT OF INTERSECTION
CH	CHORD LENGTH	PVC	POINT OF INTERSECTION ON VERTICAL CURVE
C	CENTERLINE		
C.I.	CAST IRON	PL.	PLACE
CL	CLASS	PL	PROPERTY LINE
C.L.	CHAIN LINK	PP	POWER POLE
CLR.	CLEAR	PT	POINT OF TANGENCY
CLVRT.	CULVERT	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE		
CMU	CONCRETE MASONRY UNIT	R	RADIUS
CONC	CONCRETE	R.C.	REINFORCED CONCRETE
CONT	CONTINUATION OR CONTINUOUS	RCP	REINFORCED CONCRETE PIPE
CRM	CONCRETE RUBBLE MASONRY	RD	ROAD
COL.	COLUMN	REFL.	REFLECTOR
C.O.	CLEAN OUT	REINF.	REINFORCED OR REINFORCEMENT
∅, D	DIAMETER	RET.	RETENTION
DBL.	DOUBLE	RP	RADIUS POINT
DET.	DETAIL	RT	RIGHT
DI	DRAIN INLET	R.O.W. OR R/W	RIGHT-OF-WAY
D.I.	DUCTILE IRON		
DL	DRAIN LINE	S	SLOPE
DMH	DRAIN MANHOLE	S/DMH	STORM DRAIN MANHOLE
DPW	DEPARTMENT OF PUBLIC WORKS	S	SUPER ELEVATION
DWGS	DRAWINGS	SDOT	HAWAII STATE DEPT. OF TRANSPORTATION
DWY. OR D/W	DRIVEWAY	SF	SQUARE FOOT
		SHT	SHEET
EA	EACH	SPR.	SPRINKLER
EHH	ELECTRIC HANDHOLE	ST.	STREET
ELEC.	ELECTRICAL	STA	STATION
ELEV. OR EL	ELEVATION	STD	STANDARD
EQ.	EQUAL	STRUCT.	STRUCTURE
EXIST.	EXISTING	SVC.	SERVICE
EP	EDGE OF PAVEMENT	S/W	SIDEWALK
EVC	END ELECTRIC POLE	T	TANGENT
		TBOX	TELEPHONE BOX
F&C	FRAME & COVER	TC	TOP CURB
FFE	FINISH FLOOR ELEVATION	TEL	TELEPHONE
FH	FIRE HYDRANT	TEMP	TEMPORARY
FIN	FINISHED	THH	TELEPHONE HANDHOLE
FL	FLOW LINE	THK.	THICK
FT	FEET	TM	TRANSMISSION MAIN
		TRAV.	TRAVERSE
GA	GUY ANCHOR	TW	TOP WALL
G.D.I.	GRATED DROP INLET	TYP	TYPICAL
G.I.	GALVANIZED IRON		
GRD.	GRADE	VB	VALVE BOX
GRP	GROUTED RUBBLE PAVING	V.C.	VERTICAL CURVE
G.V.	GATE VALVE	VEH.	VEHICLE
		VERT	VERTICAL
HT/HTCO	HAWAIIAN TELEPHONE CO.	VPI	VERTICAL POINT OF INTERSECTION
HT	HEIGHT		
HB	HOSE BIBB	W	WIDE
HGL	HYDRAULIC GRADE LINE	W//	WITH
HORIZ	HORIZONTAL	W/L OR WL	WATER LINE
HP	HIGH POINT	WM	WATER METER
		WV	WATER VALVE
INTER.	INTERSECTION		
INV	INVERT ELEVATION		

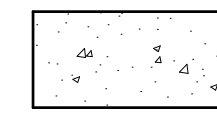
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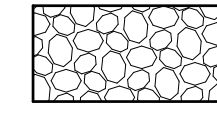
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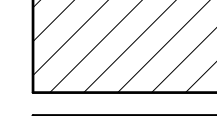
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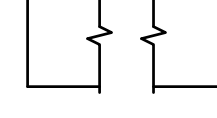
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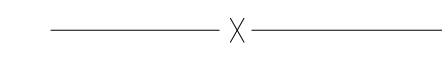
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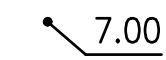
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x 7.00

EXIST. GRADE SPOT ELEVATION



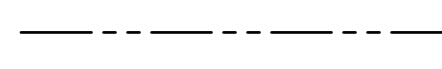
FINISH GRADE SPOT ELEVATION



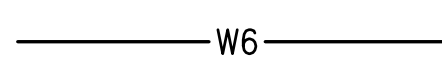
FINISH GRADE



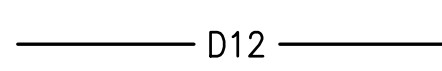
WATER LEVEL



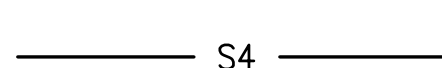
PROPERTY LINE



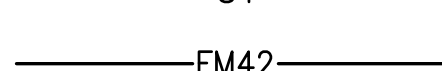
WATER LINE WITH SIZE



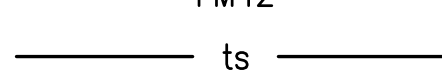
DRAIN LINE WITH SIZE



SEWER LINE WITH SIZE



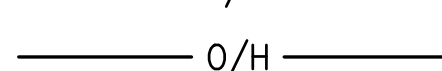
SEWER FORCE MAIN WITH SIZE



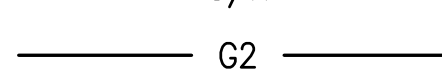
TRAFFIC SIGNAL CONDUIT



TRAFFIC SIGNAL/FIBER OPTIC CONDUIT



OVER HEAD ELECTRICAL LINE



GAS LINE WITH SIZE



BURIED FIBER OPTIC CABLES

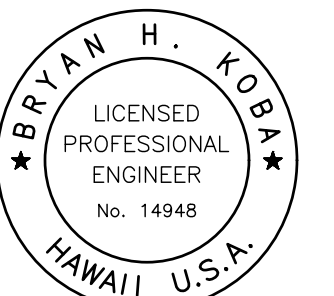
Austin Tsutsumi
A S S C I A T E S , I N C .
CIVIL ENGINEERS & SURVEYORS
HONOLULU | WAILUKU | HILO, HAWAII
501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817
PHONE: 808-533-3646
FAX: 808-526-1267



STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

PŪLEHUNUI
REGIONAL
INFRASTRUCTURE

AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(IF NOT 2-INCHES : Scale Accordingly)

REVISION	DATE	BRIEF	BY

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

CONSTRUCTION NOTES - 3
ABBREVIATIONS AND
SYMBOLS

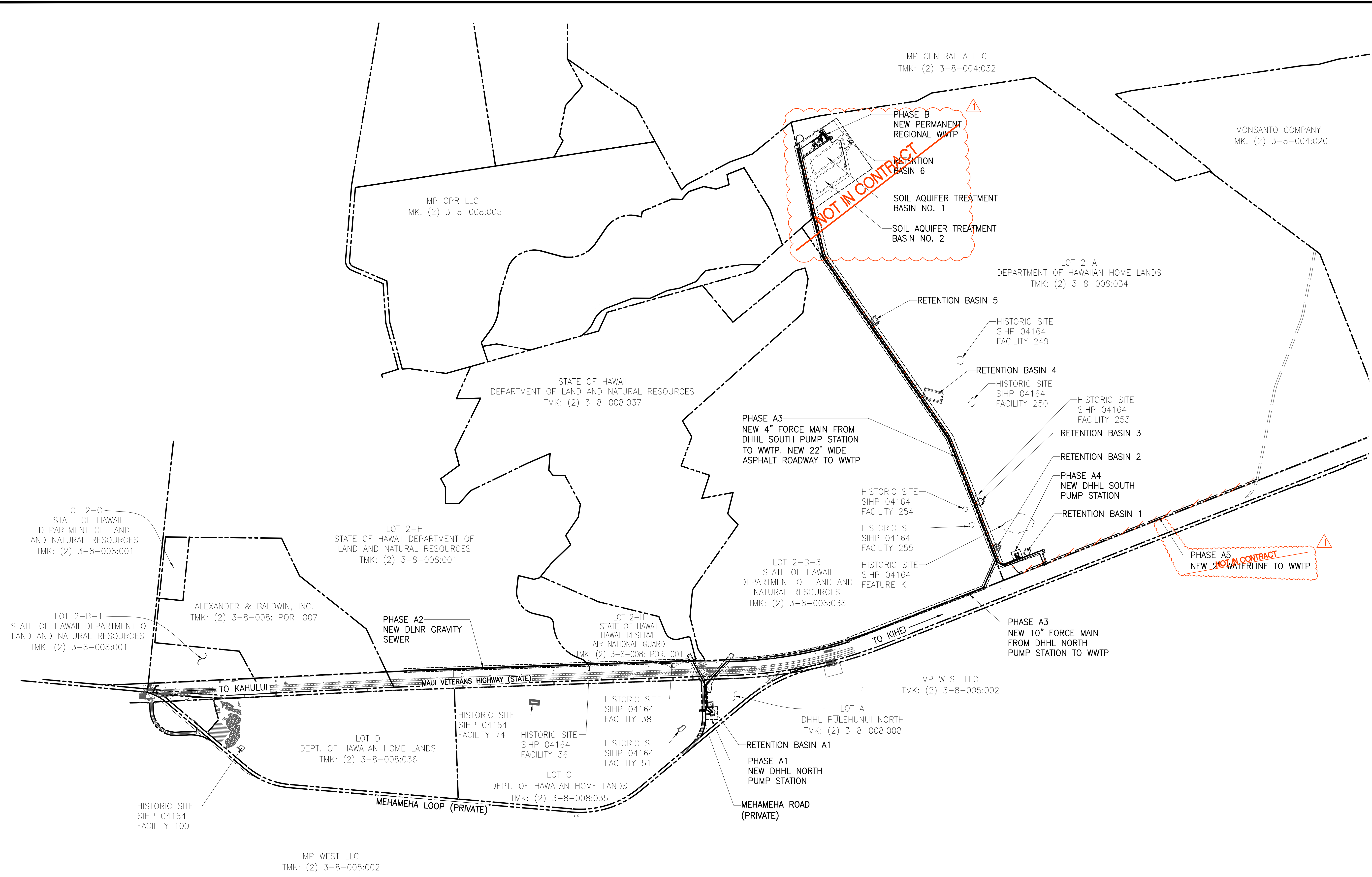
DWG. NO.

G-3

SHEET 5 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG-G-4 OVERALL PROJECT PLAN.DWG

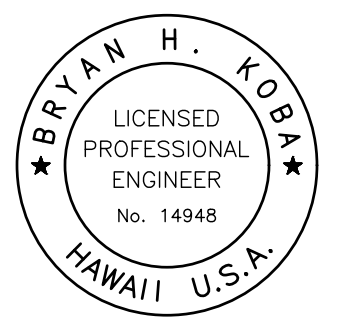


OVERALL PROJECT PLAN
 SCALE: 1"=600'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
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 HONOLULU, HAWAII 96817
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STATE OF HAWAII
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Signature: *Bryan H. Kobayashi* APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
▲	4/15/20	ADDENDUM 5	BHK

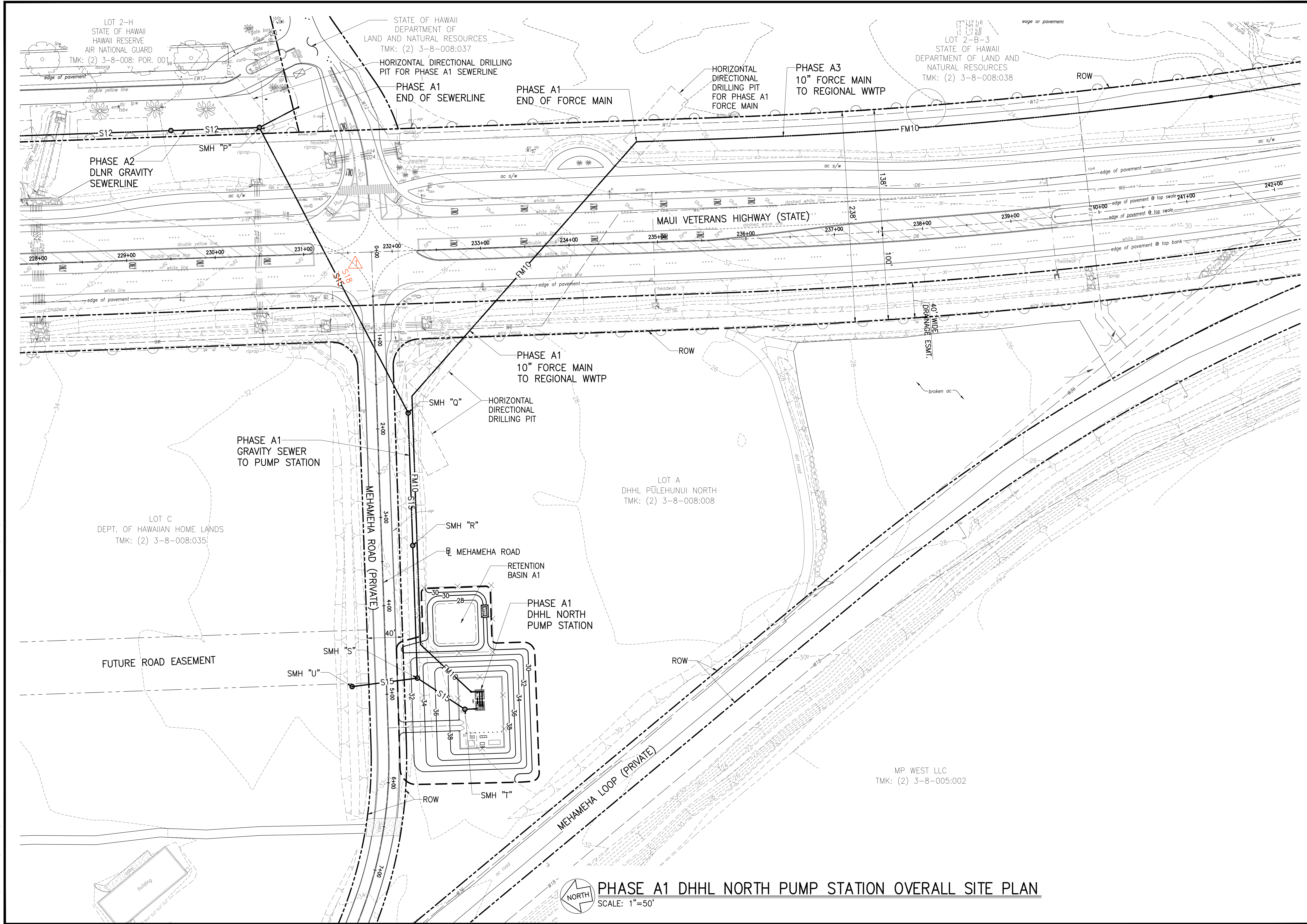
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

OVERALL PROJECT PLAN

DWG. NO.
G-4
 SHEET 6 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY\BRYAN\DWG\CA1-1 PHASE A1 DHHL NORTH PUMP STATION OVERALL SITE PLAN.DWG



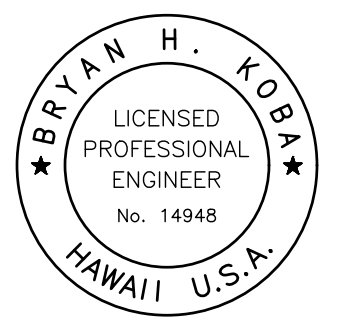
PHASE A1 DHHL NORTH PUMP STATION OVERALL SITE PLAN
 SCALE: 1"=50'

Austin Tsutsumi
 A. S. S. G. C. I. A. T. E. S., I. N. C.
 CIVIL ENGINEERS, I. SURVEYORS
 HONOLULU I WAILUKU I HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
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STATE OF HAWAII
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**PULEHUNUI
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

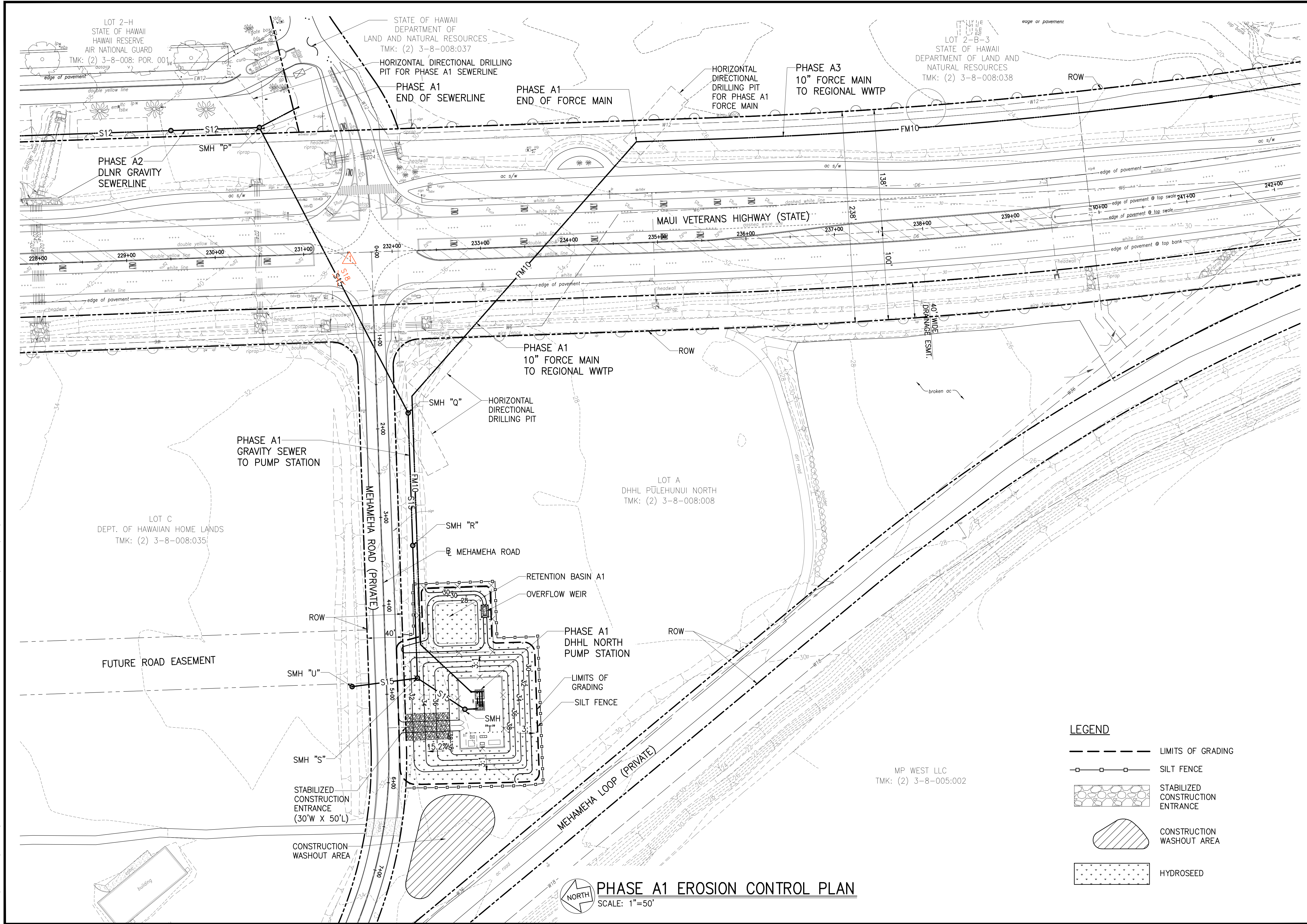
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PHASE A1 DHHL
 NORTH PUMP STATION
 OVERALL SITE PLAN**

DWG. NO.
CA1-1
 SHEET 7 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY\BRYAN\DWG\CA1-2 PHASE A1 EROSION CONTROL PLAN.DWG



PHASE A1 EROSION CONTROL PLAN
 SCALE: 1"=50'

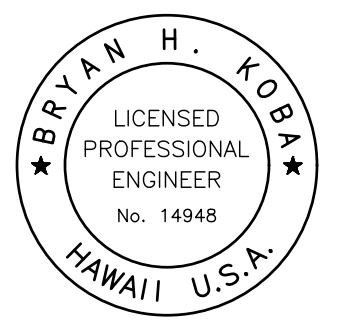
- LEGEND**
- LIMITS OF GRADING
 - SILT FENCE
 - STABILIZED CONSTRUCTION ENTRANCE
 - CONSTRUCTION WASHOUT AREA
 - HYDROSEED

Austin Tsutsumi
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

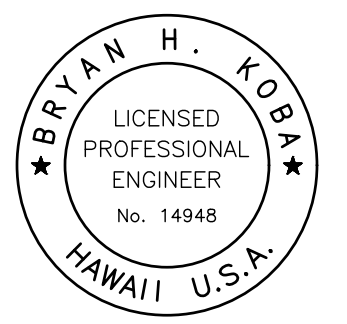
0	1	2	
LINE IS 2 INCHES AT FULL SIZE (If NOT 2-inches : Scale Accordingly)			
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PHASE A1 EROSION CONTROL PLAN

DWG. NO.
CA1-2
 SHEET 8 OF 201

FILE	POCKET	FOLDER	NO.



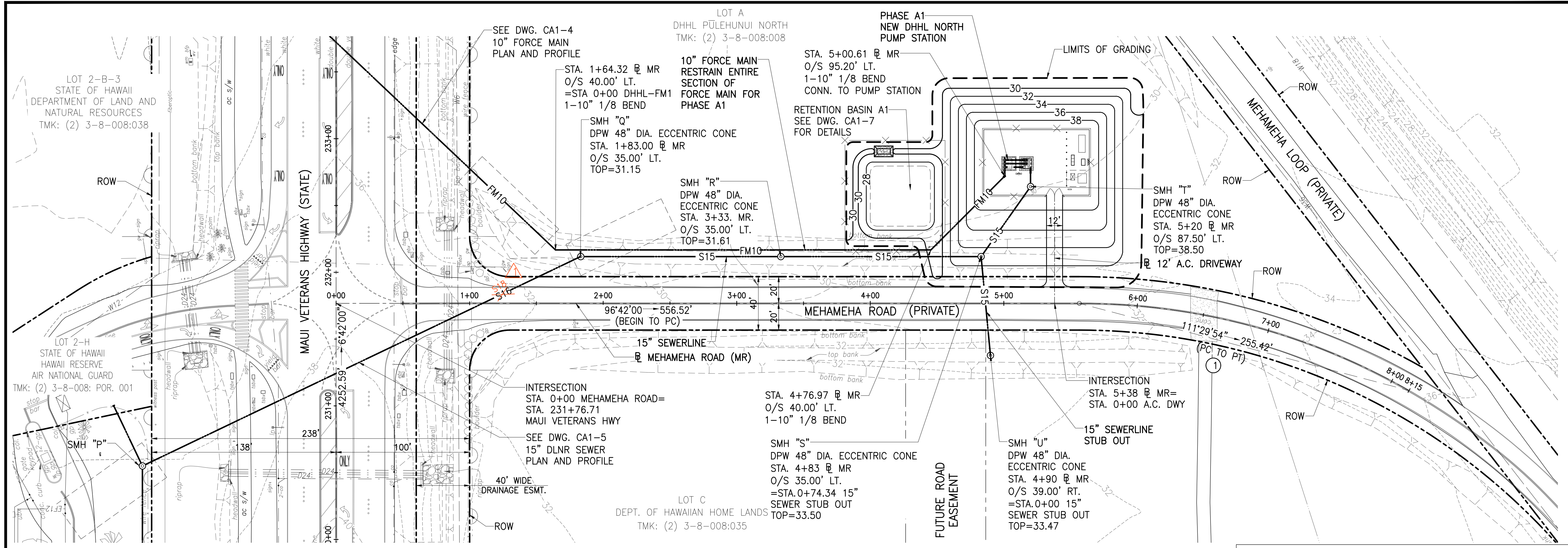
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

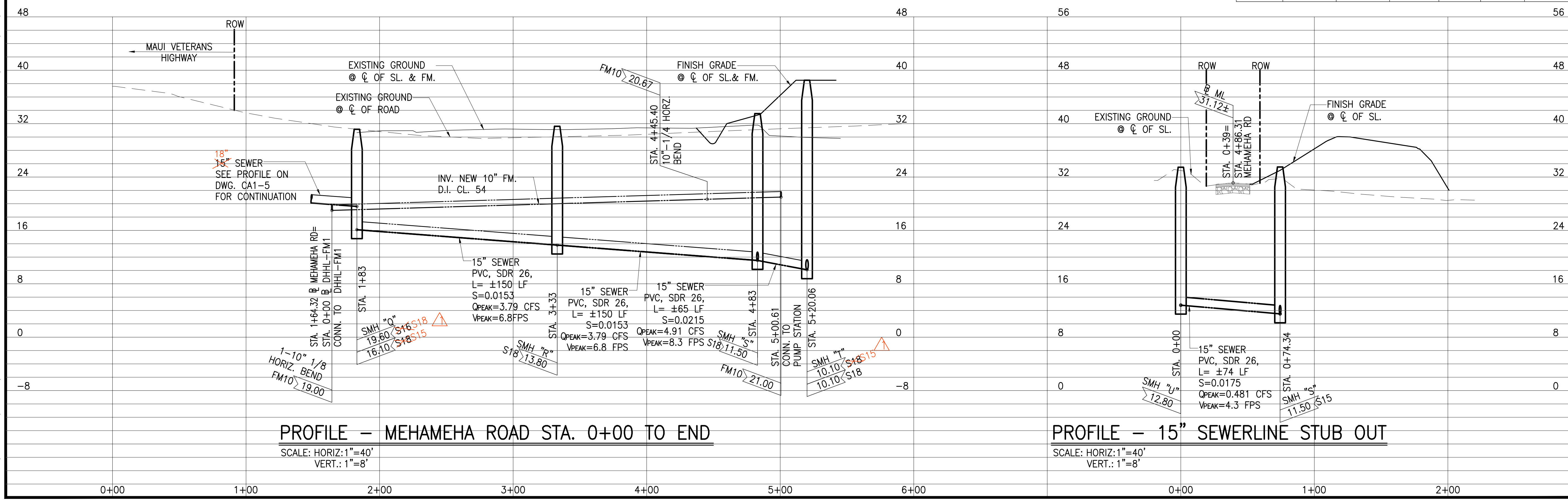
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLAN AND PROFILE
 MEHAMEHA ROAD
 STA 0+00 TO END**



PLAN - MEHAMEHA ROAD STA. 0+00 TO END
 SCALE: 1"=40'

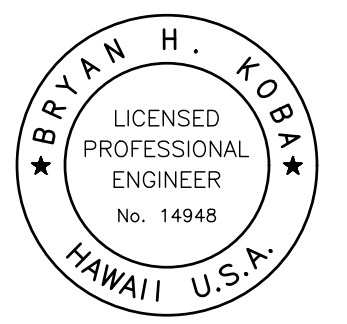
Curve #	Δ	Δ/2	R	T	Ch	Lc
①	29°35'47"	14°47'54"	500.00'	132.09'	255.42'	258.28'



PROFILE - MEHAMEHA ROAD STA. 0+00 TO END
 SCALE: HORIZ.: 1"=40'
 VERT.: 1"=8'

PROFILE - 15" SEWERLINE STUB OUT
 SCALE: HORIZ.: 1"=40'
 VERT.: 1"=8'

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PŪLEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CA1-3 PP MEHAMEHA RD STA 0+00 TO END.DWG



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

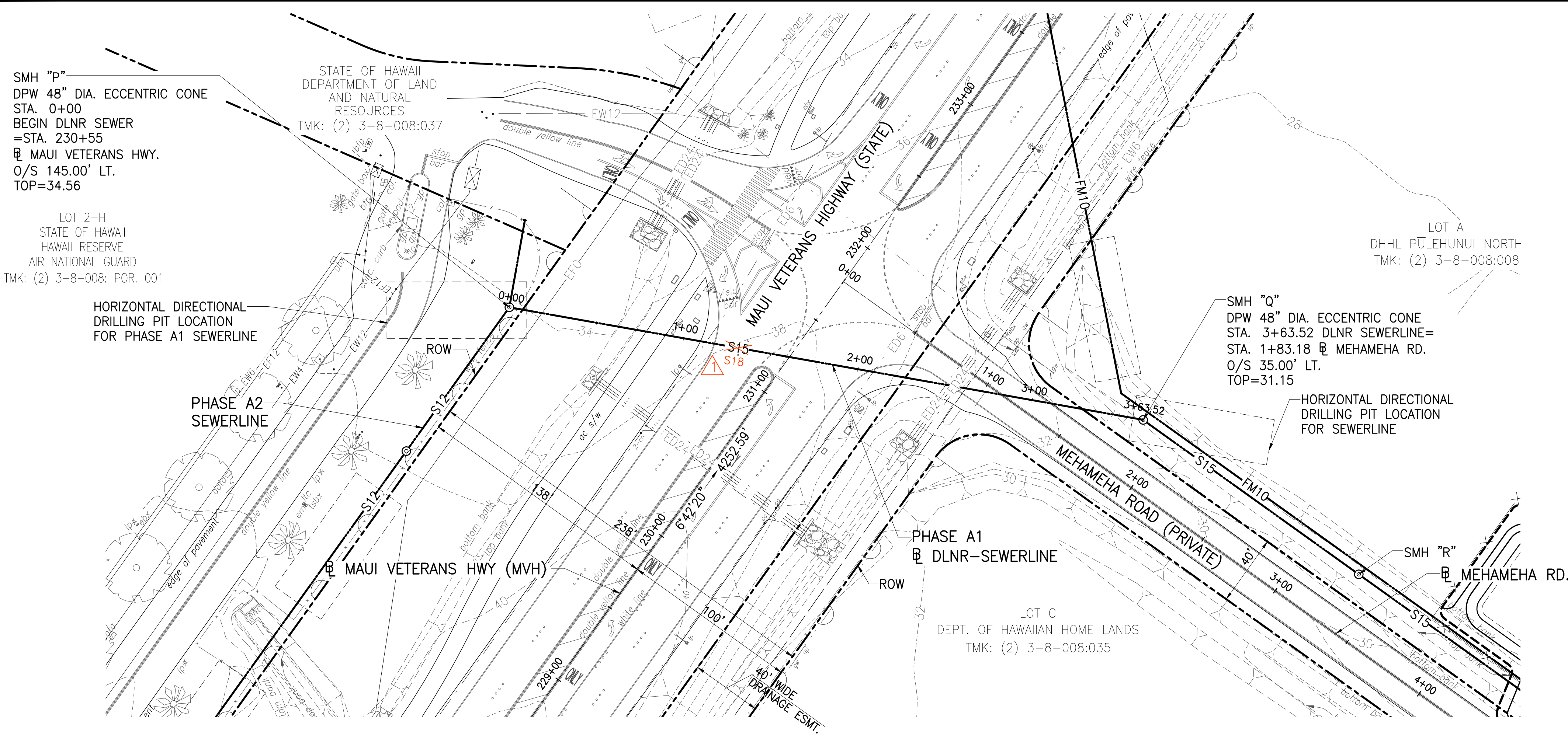
PLAN AND PROFILE
 DLNR SEWER STA 0+00
 TO END

DWG. NO.
CA1-5
 SHEET 11 OF 201

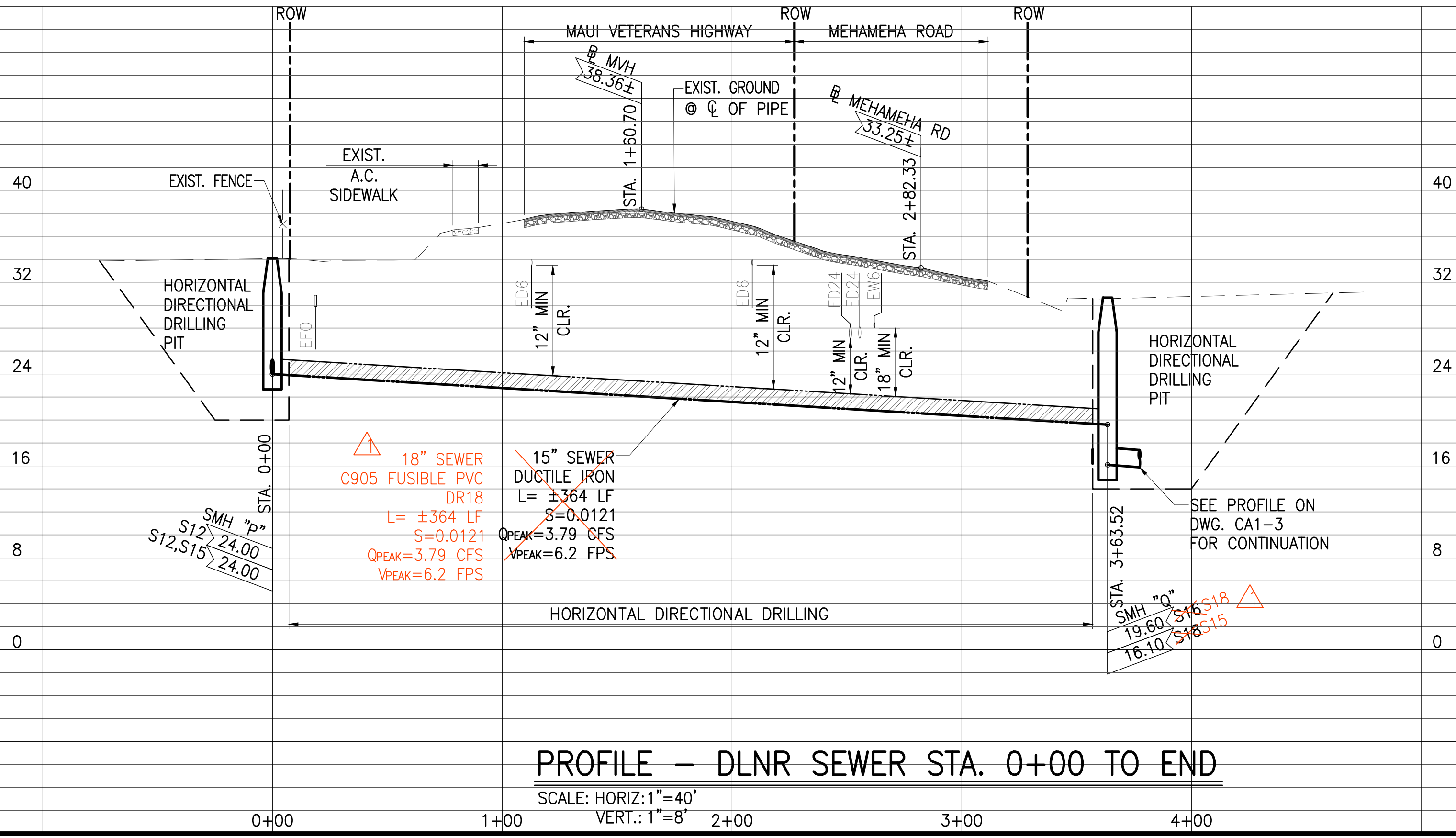
FILE	POCKET	FOLDER	NO.

NOTES:

- CONTRACTOR TO PROVIDE INGRESS/EGRESS RE-ROUTING IN HAWAII RESERVE AIR NATIONAL GUARD PROPERTY IF HORIZONTAL DIRECTIONAL DRILLING PIT ENCLOSES INTO EXIST. ROADWAY.
- CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE EXCAVATING FOR THE DRILLING PIT AND SEWERLINE IN HAWAII RESERVE AIR NATIONAL GUARD PROPERTY. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR TO COORDINATE WITH HAWAII RESERVE AIR NATIONAL GUARD REGARDING ACCESS DURING CONSTRUCTION.
- CONTRACTOR TO REPLACE LANDSCAPING AND IRRIGATION DISTURBED DURING CONSTRUCTION.



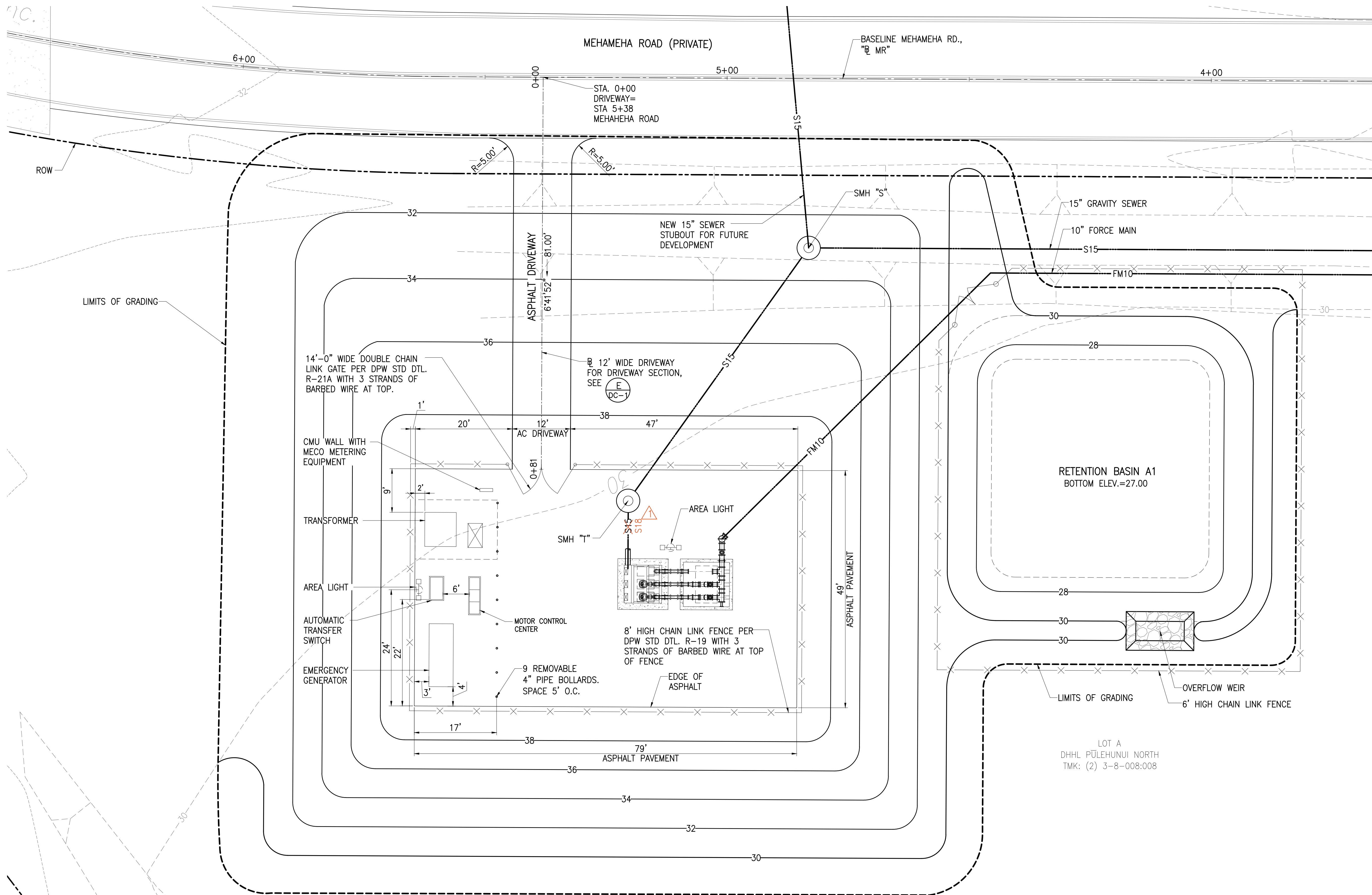
PLAN - DLNR SEWER STA. 0+00 TO END
 SCALE: 1"=40'



PROFILE - DLNR SEWER STA. 0+00 TO END
 SCALE: HORIZ.: 1"=40'
 VERT.: 1"=8'

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PŪLEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY).BRYAN\DWG\CA1-5 PP DLNR SEWER STA 0+00 TO END.DWG

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\CA1-6 DHHL NORTH PUMP STATION SITE PLAN.DWG



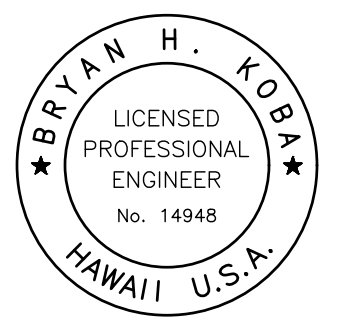
DHHL NORTH PUMP STATION SITE PLAN
 SCALE: 1"=10'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Signature: *Bryan H. Kobayashi* APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : Scale Accordingly)

REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

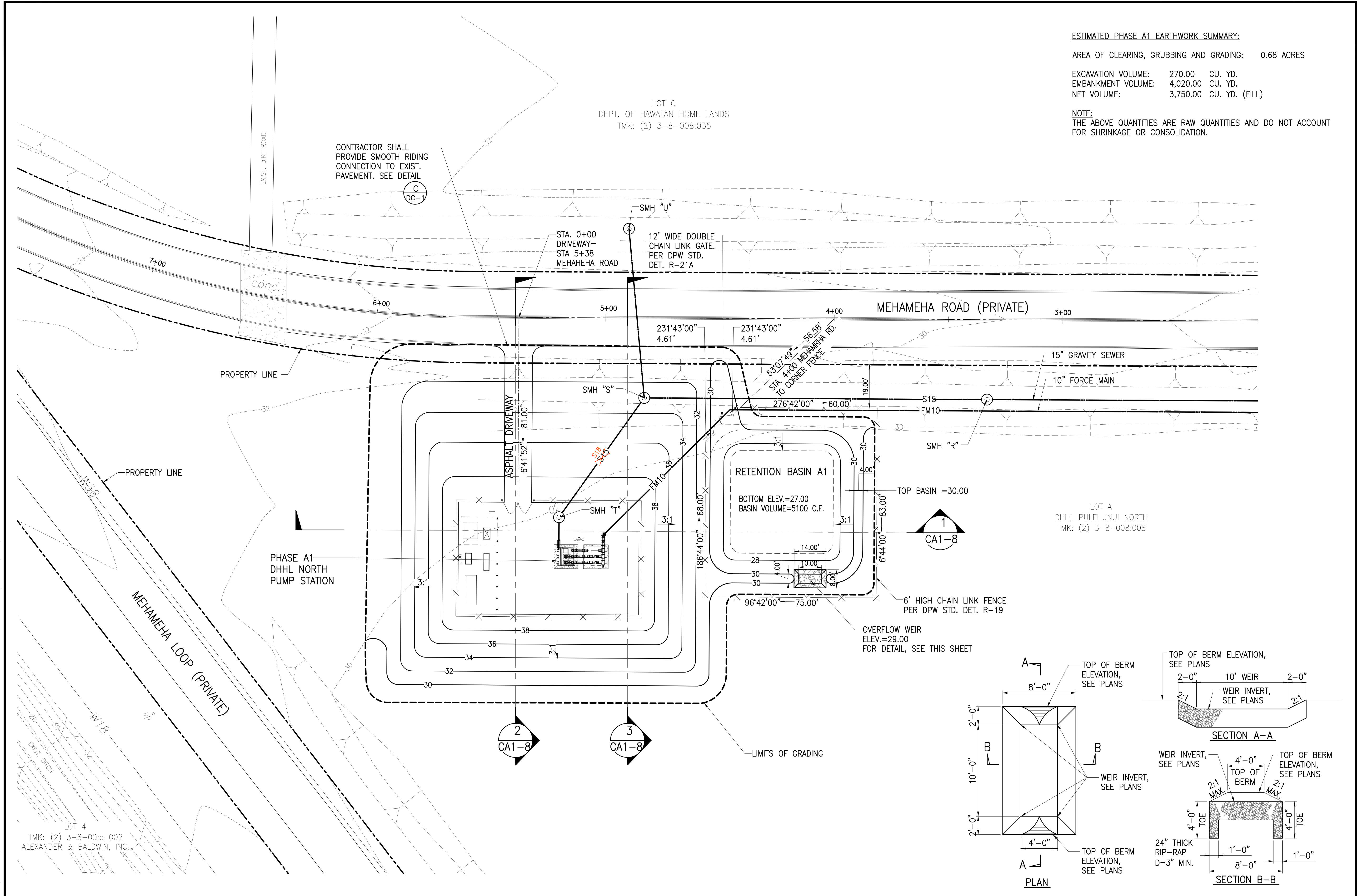
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

DHHL NORTH
 PUMP STATION
 SITE PLAN

DWG. NO.
CA1-6
 SHEET 12 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\CA1-7 DHHL NORTH PS GRADING PLAN.DWG

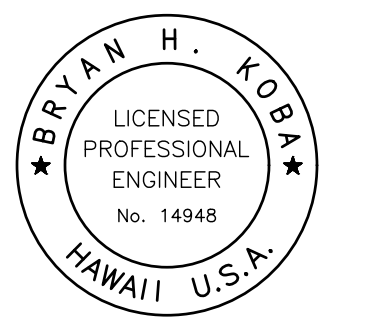


ESTIMATED PHASE A1 EARTHWORK SUMMARY:
 AREA OF CLEARING, GRUBBING AND GRADING: 0.68 ACRES
 EXCAVATION VOLUME: 270.00 CU. YD.
 EMBANKMENT VOLUME: 4,020.00 CU. YD.
 NET VOLUME: 3,750.00 CU. YD. (FILL)
NOTE:
 THE ABOVE QUANTITIES ARE RAW QUANTITIES AND DO NOT ACCOUNT FOR SHRINKAGE OR CONSOLIDATION.

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
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Bryan H. Kobayashi APRIL 30, 2020
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REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

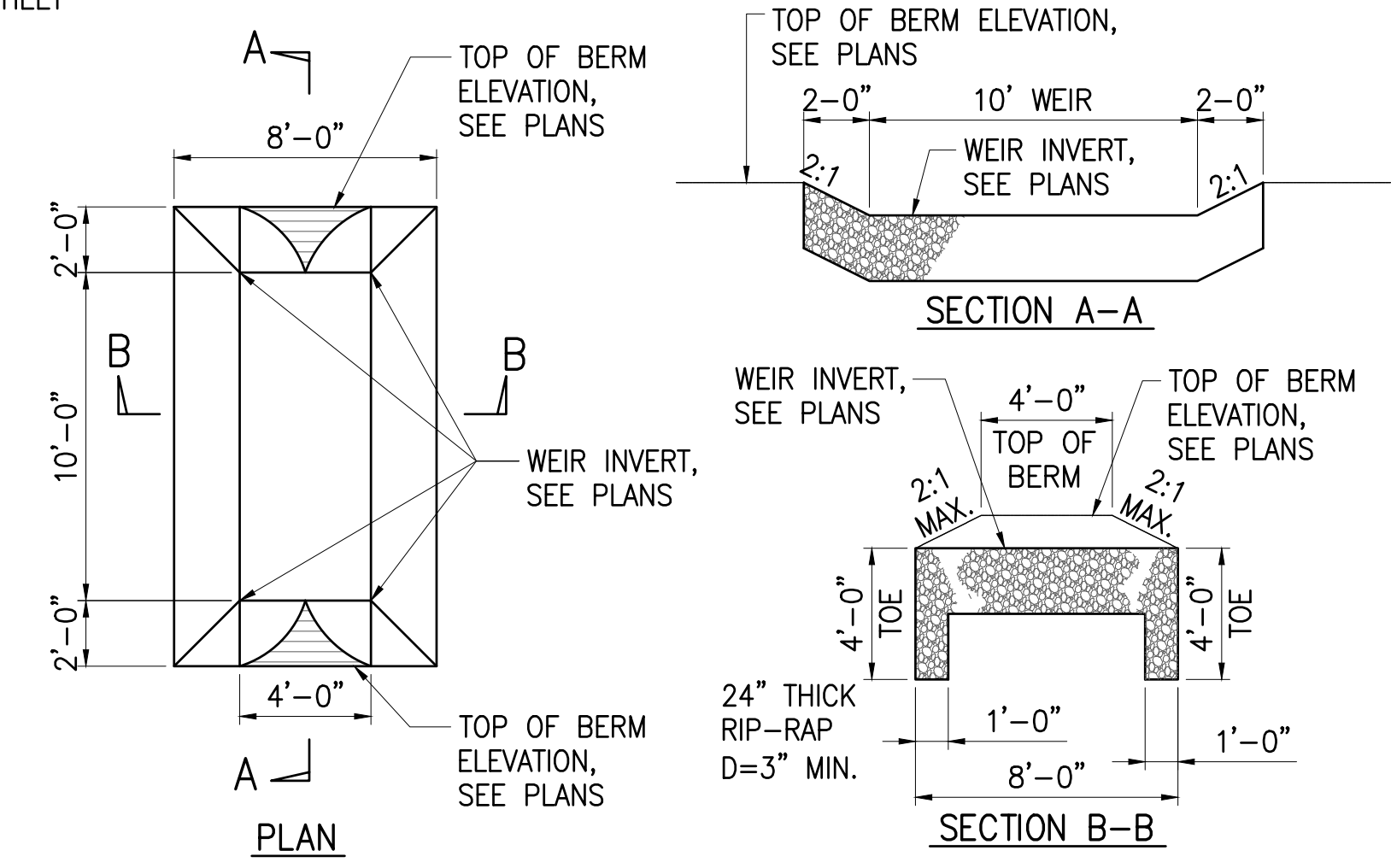
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**DHHL NORTH
 PUMP STATION
 GRADING PLAN**

DWG. NO.
CA1-7
 SHEET 13 OF 201

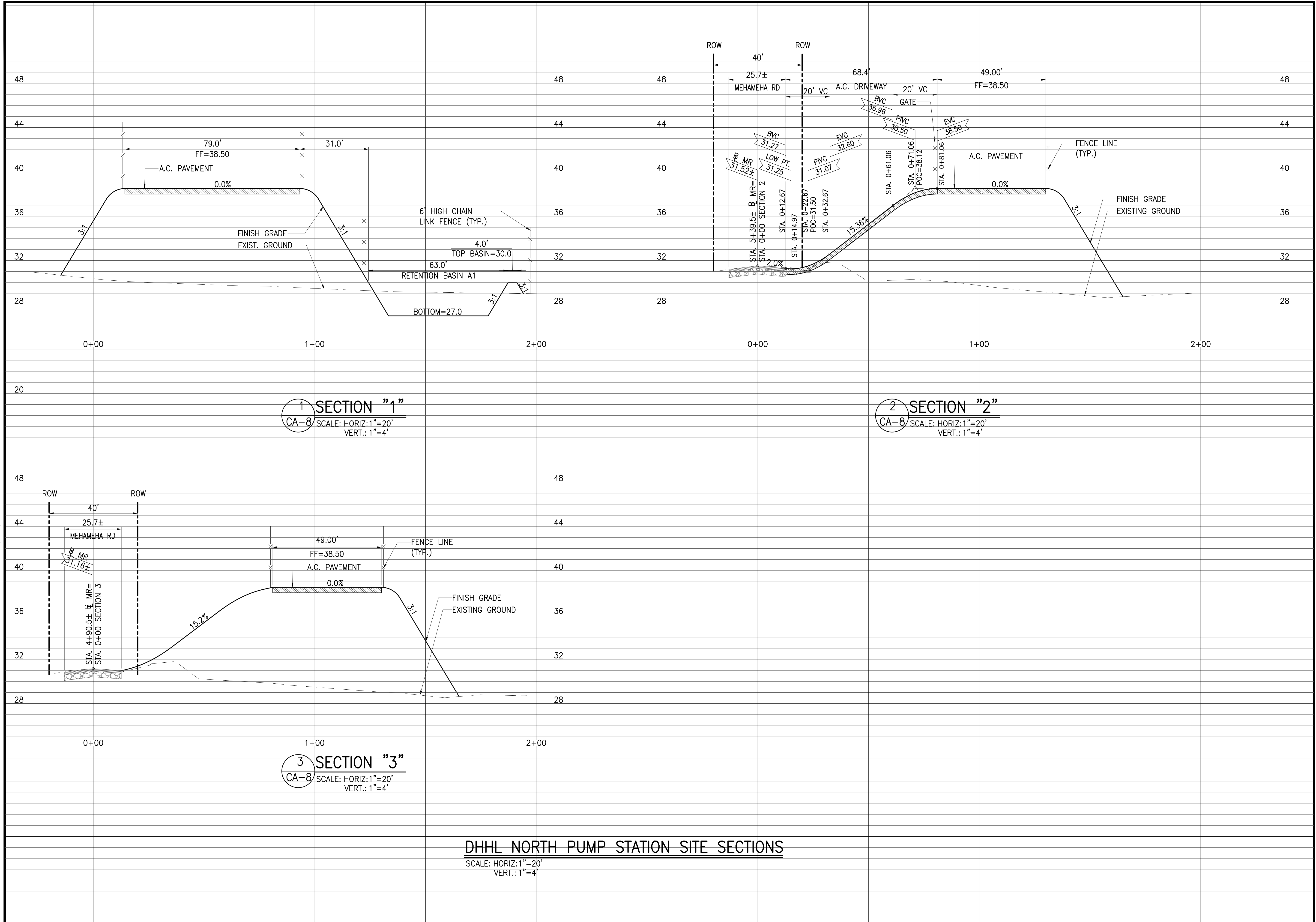
FILE	POCKET	FOLDER	NO.

DHHL NORTH PUMP STATION GRADING PLAN
 SCALE: 1"=20'



OVERFLOW WEIR DETAIL
 NOT TO SCALE

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CA1-8_DHHL NORTH_PS SITE SECTIONS.DWG



1 SECTION "1"
 CA-8 SCALE: HORIZ: 1"=20'
 VERT.: 1"=4'

2 SECTION "2"
 CA-8 SCALE: HORIZ: 1"=20'
 VERT.: 1"=4'

3 SECTION "3"
 CA-8 SCALE: HORIZ: 1"=20'
 VERT.: 1"=4'

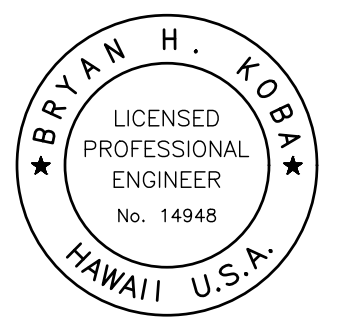
DHHL NORTH PUMP STATION SITE SECTIONS
 SCALE: HORIZ: 1"=20'
 VERT.: 1"=4'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
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PULEHUNUI REGIONAL INFRASTRUCTURE

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

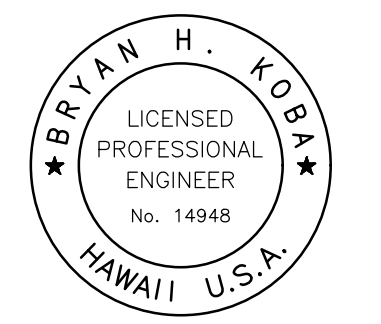
REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

DHHL NORTH PUMP STATION SITE SECTIONS

DWG. NO.
CA1-8
 SHEET 14 OF 201

FILE	POCKET	FOLDER	NO.



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Bryan H. Koba APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

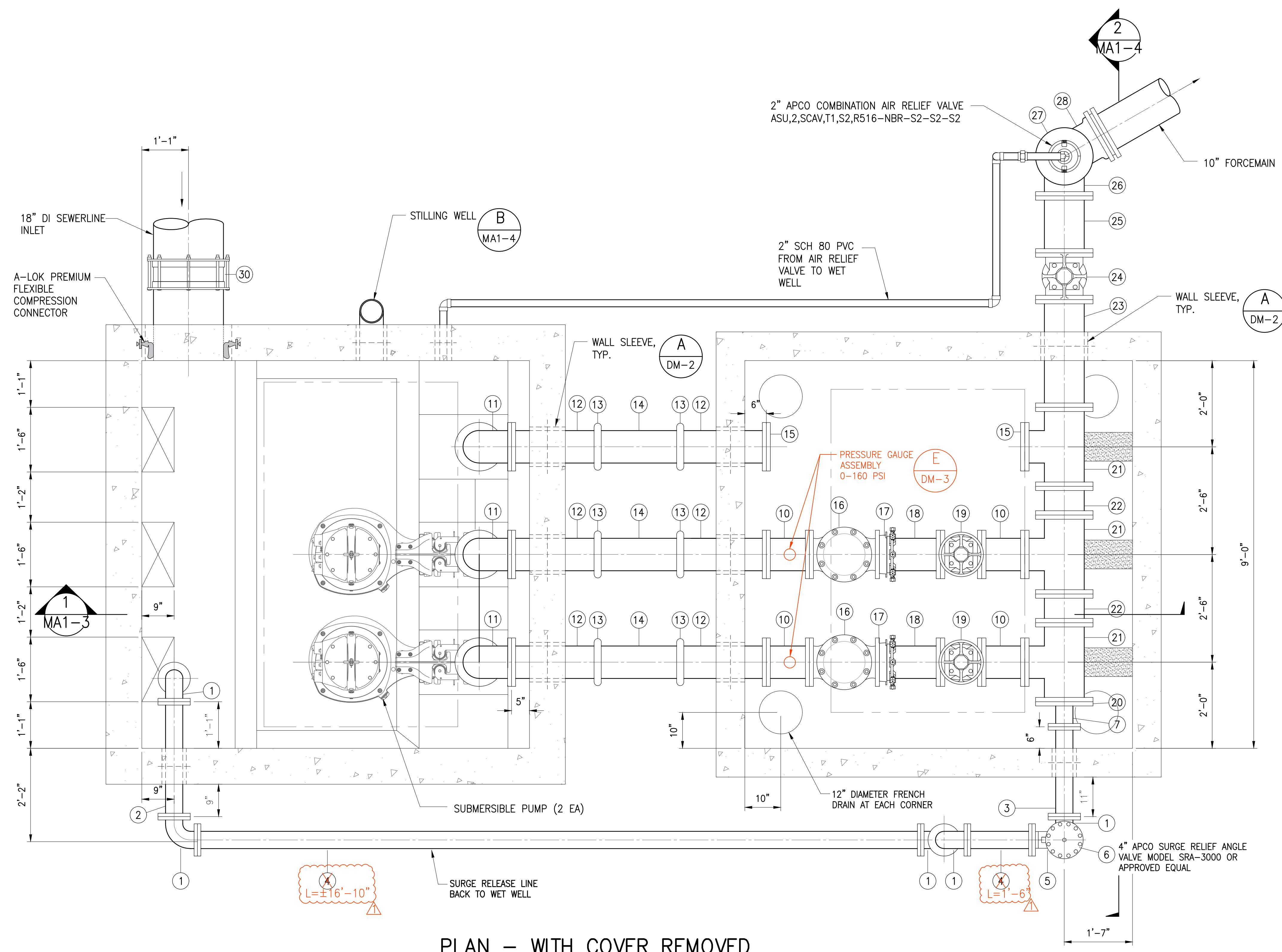
**DHHL NORTH
 PUMP STATION
 PLAN**

DWG. NO.
MA1-1
 SHEET 15 OF 201

FILE	POCKET	FOLDER	NO.

SCHEDULE OF VALVES AND FITTINGS	
NO.	DESCRIPTION
①	4" 1/4 BEND, DI, FE
②	4" WALL SPOOL, DI, FE, 2'-8" LONG
③	4" WALL SPOOL, DI, FE, 2'-1" LONG
④	4" SPOOL, DI, FE, L=1'-6" L=4'-3" Δ
⑤	4" TEE, DI, FE
⑥	4" PRESSURE RELIEF VALVE
⑦	4" SPOOL, FEXNPT, ±7" LONG
⑧	4" GATE VALVE, FE
⑨	8"x6" CONCENTRIC REDUCER, DI, FE
⑩	8" SPOOL, DI, FE, L=1'-0"
⑪	8" 1/4 BEND, FE
⑫	8" WALL SPOOL, DI, FEXGE, 2'-0" LONG
⑬	8" VICTAULIC COUPLING, STYLE 31
⑭	8" SPOOL, CLASS 54 GE, 1'-11" LONG
⑮	8" BLIND FLANGE
⑯	8" SWING CHECK VALVE, APCO MODEL CVS-6000-BMB OR APPROVED EQUAL
⑰	8" RESTRAINED FLANGE COUPLING ADAPTOR
⑱	8" SPOOL, DI, FEXPE, LTS
⑲	8" GATE VALVE, FE
⑳	10" BLIND FLANGE, TAPPED FROM 4" NPT
㉑	10"x8" TEE, DI, FE
㉒	10" SPOOL, DI, FE, 8" LONG
㉓	10" WALL SPOOL, DI, FE, 2'-6" LONG
㉔	10" GATE VALVE, FE
㉕	10" SPOOL, DI, FE, L=1'-4" L=3'-10" Δ
㉖	10" TEE, FE
㉗	10" BLIND FLANGE, DI, 2" TAPPED NPT
㉘	10" 1/4 BEND, MJ, W/ RESTRAINED JOINTS
㉙	10" SPOOL, DI FEXPE, LTS
㉚	18" COUPLING ADAPTOR

- NOTE:
- ALL FITTINGS TO BE OF DUCTILE IRON UNLESS INDICATED OTHERWISE.
 - ALL DUCTILE IRON PIPING SHALL BE CLASS 54 UNLESS INDICATED OTHERWISE

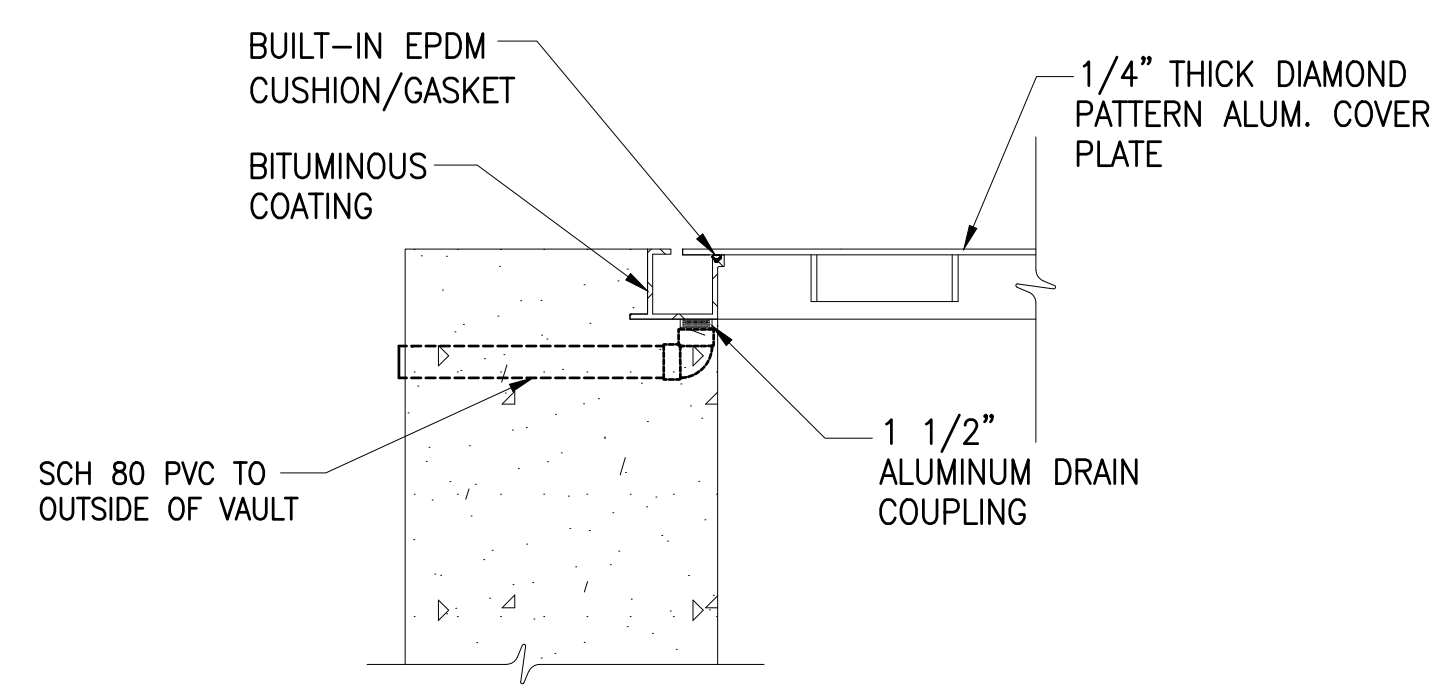
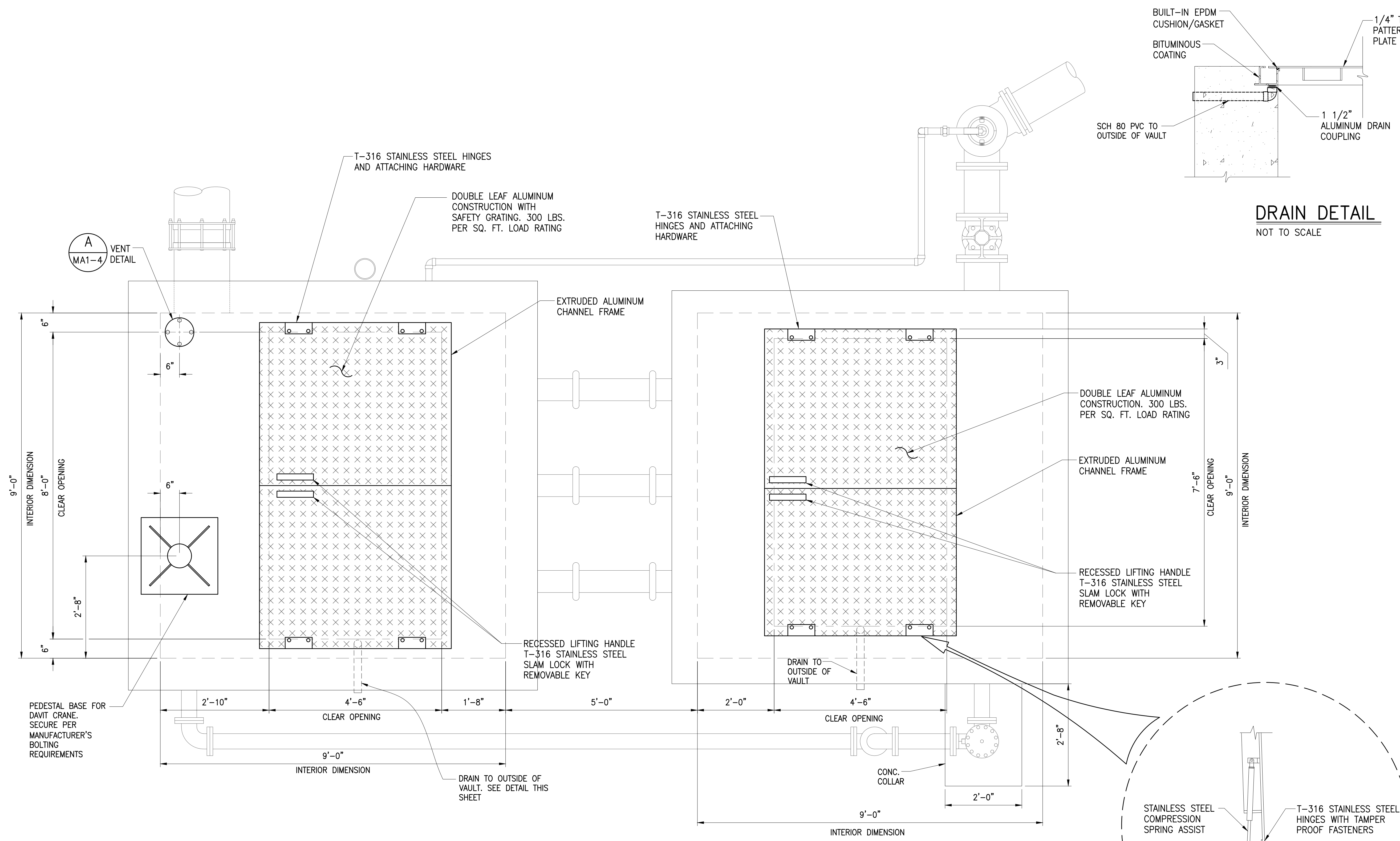


PLAN - WITH COVER REMOVED
 SCALE: 3/4"=1'-0"

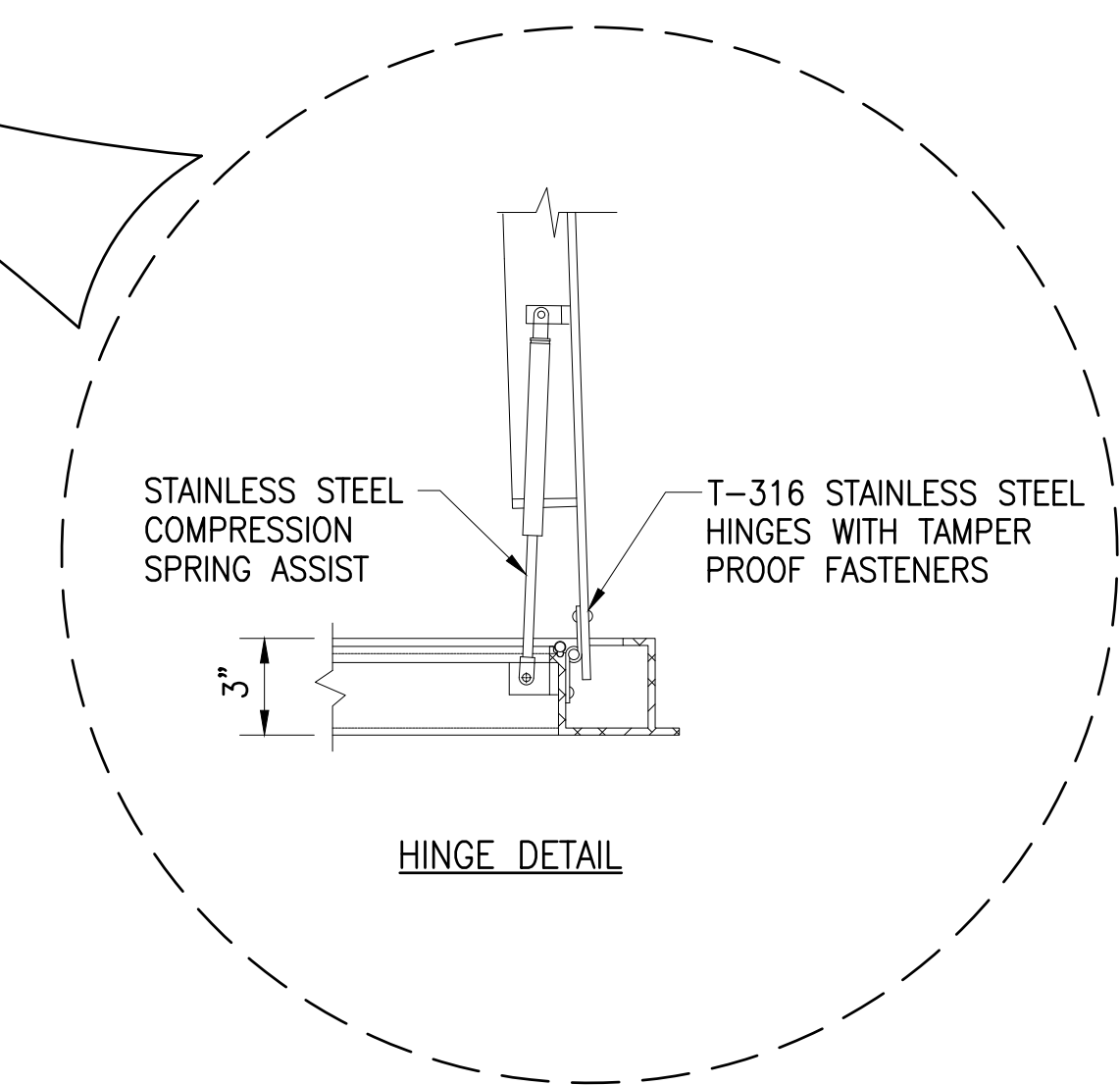
PUMP MANUF.	NO. OF UNITS	TYPE	MODEL NO.	FLOW, GPM	STATIC, FT	TDH, FT	SPEED, RPM	Hp	PUMP EFF.	VAC	PHASE	FREQUENCY
FLYGT	TWO (2)	SUBMERSIBLE	NP 3315 HT3-455	1400	122	255	1780	160	65.0%	480	3	60Hz

JOB NO. 0-11-056.004
 FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\MA1-1, MA1-2, MA1-3, MA1-4 DHHL NORTH PSDWG

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\MA1-1, MA1-2, MA1-3, MA1-4, DHHL NORTH PS.DWG



DRAIN DETAIL
 NOT TO SCALE



HINGE DETAIL

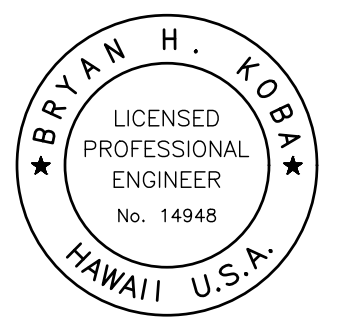
PLAN — DHHL NORTH PUMP STATION GRATING PLAN
 SCALE: 3/4"=1'-0"

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
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 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY

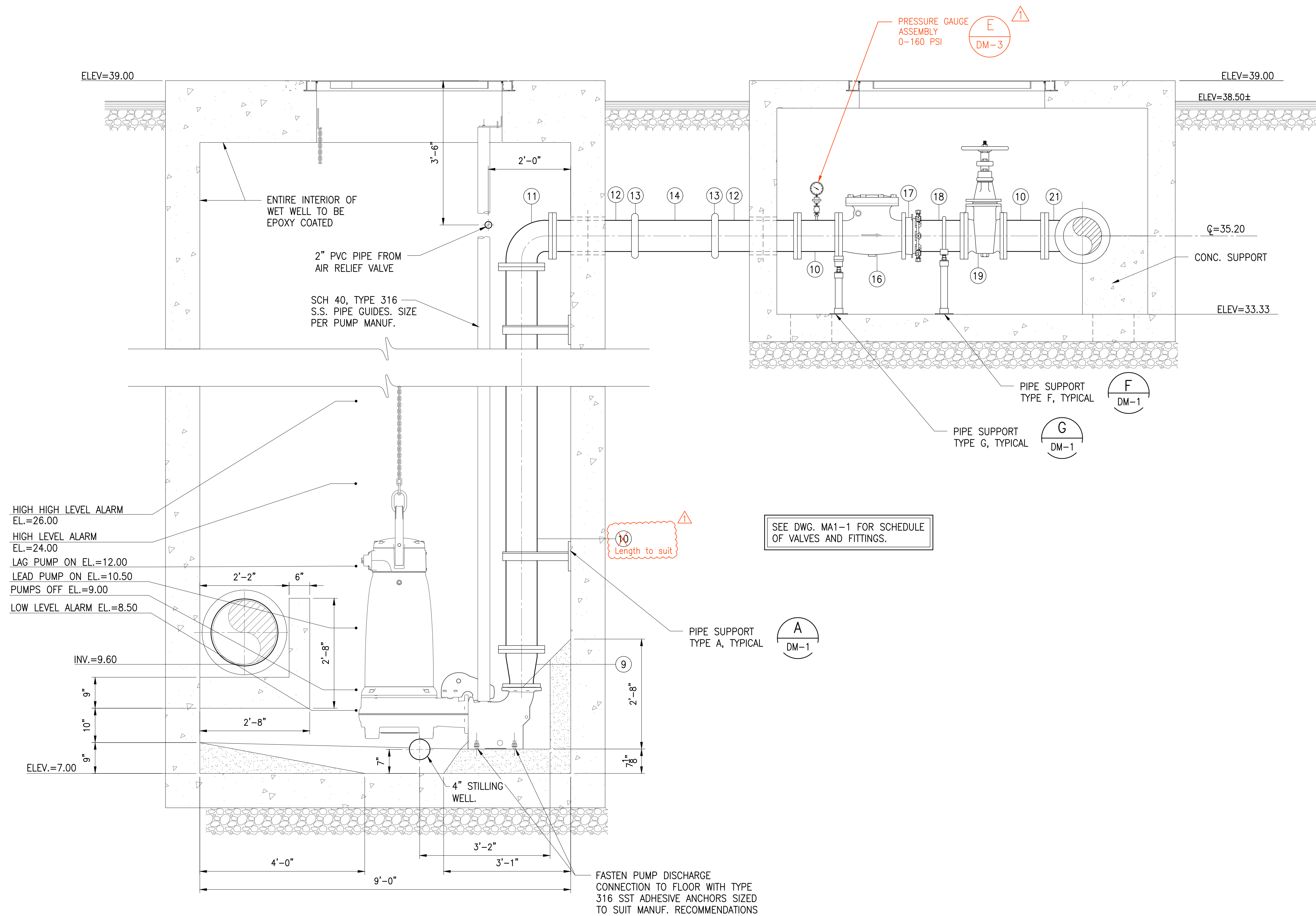
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**DHHL NORTH PUMP
 STATION GRATING
 PLAN**

DWG. NO.
MA1-2
 SHEET 16 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\MA1-1, MA1-2, MA1-3, MA1-4 DHHL NORTH PSD.WG

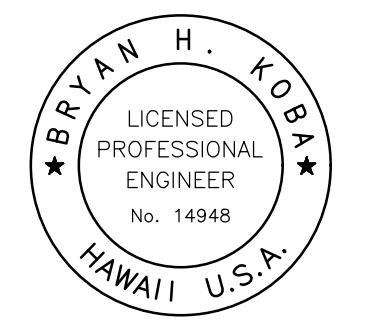


SECTION 1
 SCALE: 3/4"=1'-0" MA1-3

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STATE OF HAWAII
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Bryan H. Koba APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

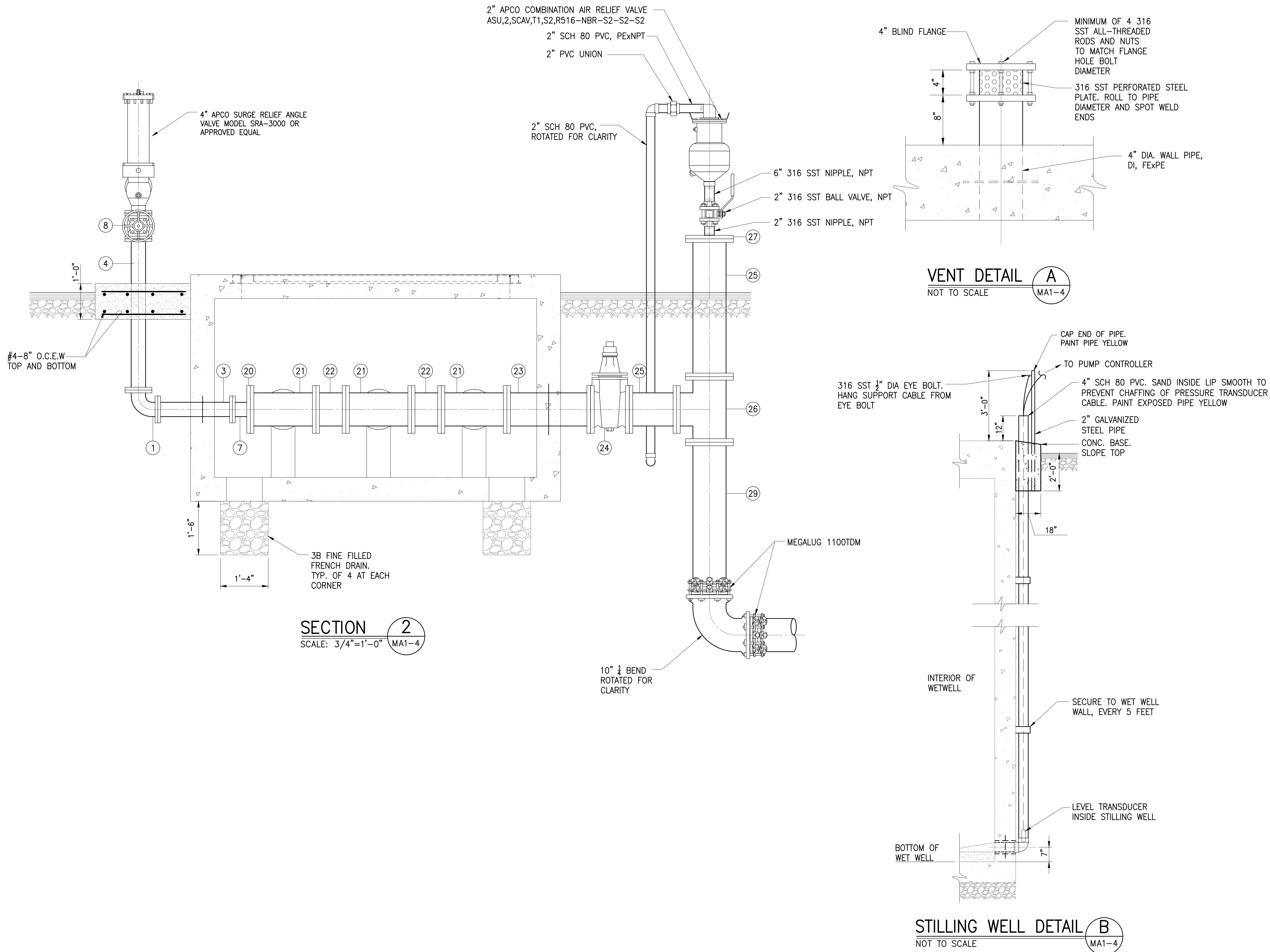
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**DHHL NORTH
 PUMP STATION
 SECTION**

DWG. NO.
MA1-3
 SHEET 17 OF 201

FILE	POCKET	FOLDER	NO.

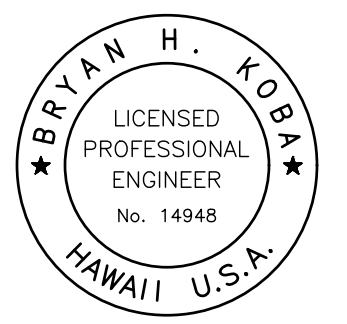
JOB NO. 0-11-056.004
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STATE OF HAWAII
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY

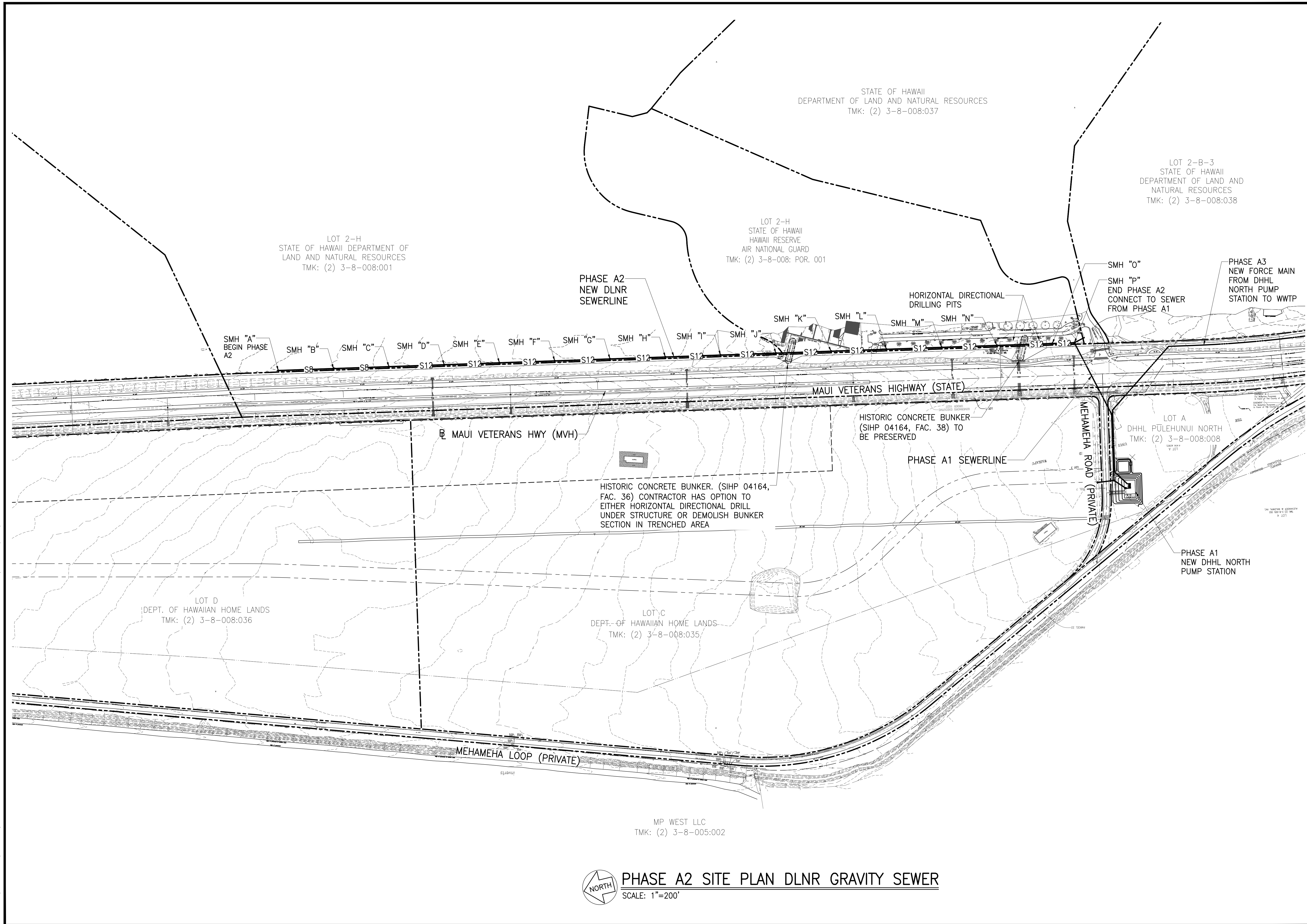
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

DHHL NORTH PUMP
 STATION MECHANICAL
 SECTION

DWG. NO.
MA1-4
 SHEET 18 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CA2-1 PHASE A2 SITE PLAN DLNR GRAVITY SEWER.DWG

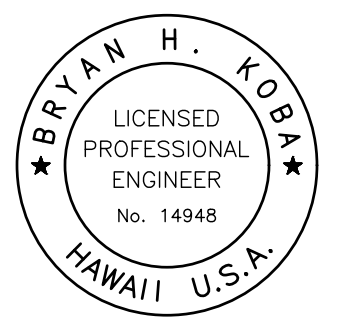


PHASE A2 SITE PLAN DLNR GRAVITY SEWER
 SCALE: 1"=200'

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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : Scale Accordingly)

REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PHASE A2 SITE PLAN DLNR GRAVITY SEWER

DWG. NO.
CA2-1
 SHEET 19 OF 201

FILE	POCKET	FOLDER	NO.



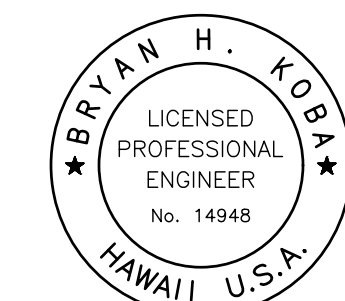
Austin Tsutsumi
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 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
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STATE OF HAWAII
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**PŪLEHUNUI
 REGIONAL
 INFRASTRUCTURE**

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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

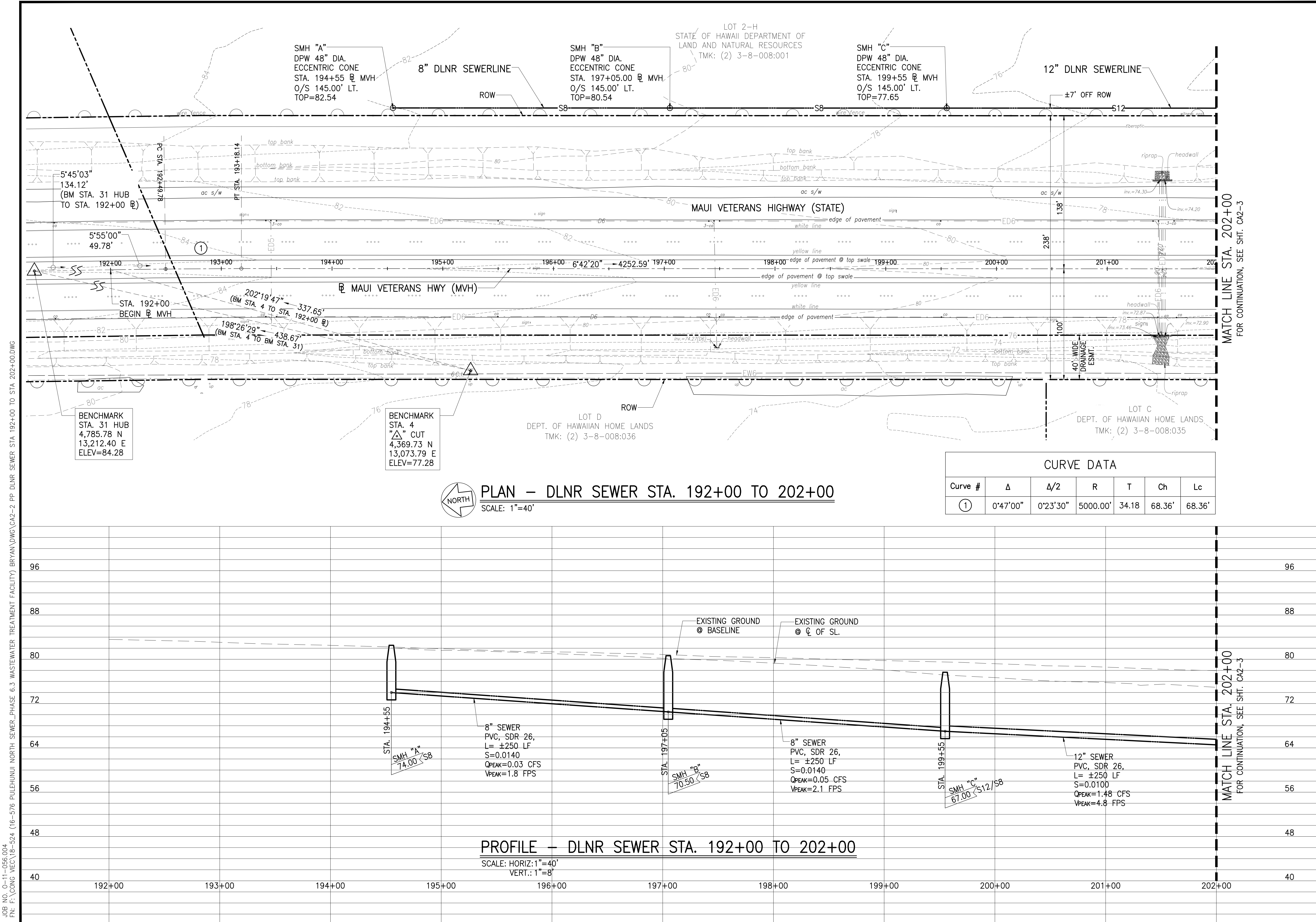
REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLAN AND PROFILE
 DLNR SEWER STA
 192+00 TO 202+00**

DWG. NO.
CA2-2
 SHEET 20 OF 201

FILE	POCKET	FOLDER	NO.



JOB NO. 0-11-056.004
 FN: F:\CONG_VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CA2-2_PP_DLNR_SEWER_STA_192+00_TO_STA_202+00.DWG



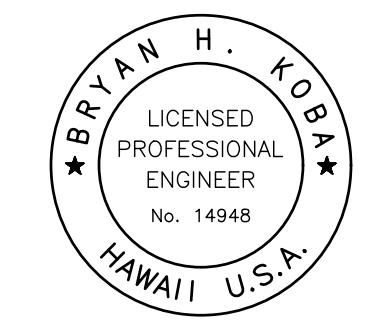
Austin Tsutsumi
 A S S C I A T E S , I N C .
 CIVIL ENGINEERS, I SURVEYORS
 HONOLULU I WAILUKU I HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

**PŪLEHUNUI
 REGIONAL
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AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : Scale Accordingly)

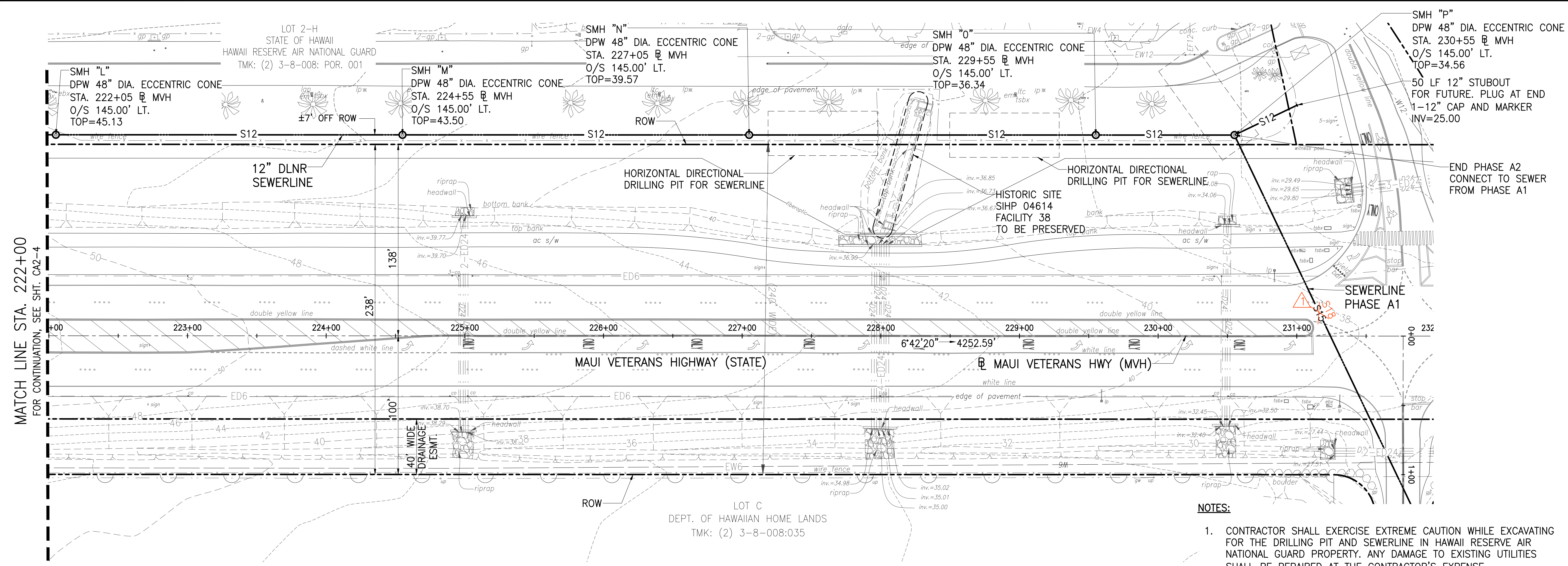
REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLAN AND PROFILE
 DLNR SEWER STA
 222+00 TO 232+00**

DWG. NO.
CA2-5
 SHEET 23 OF 201

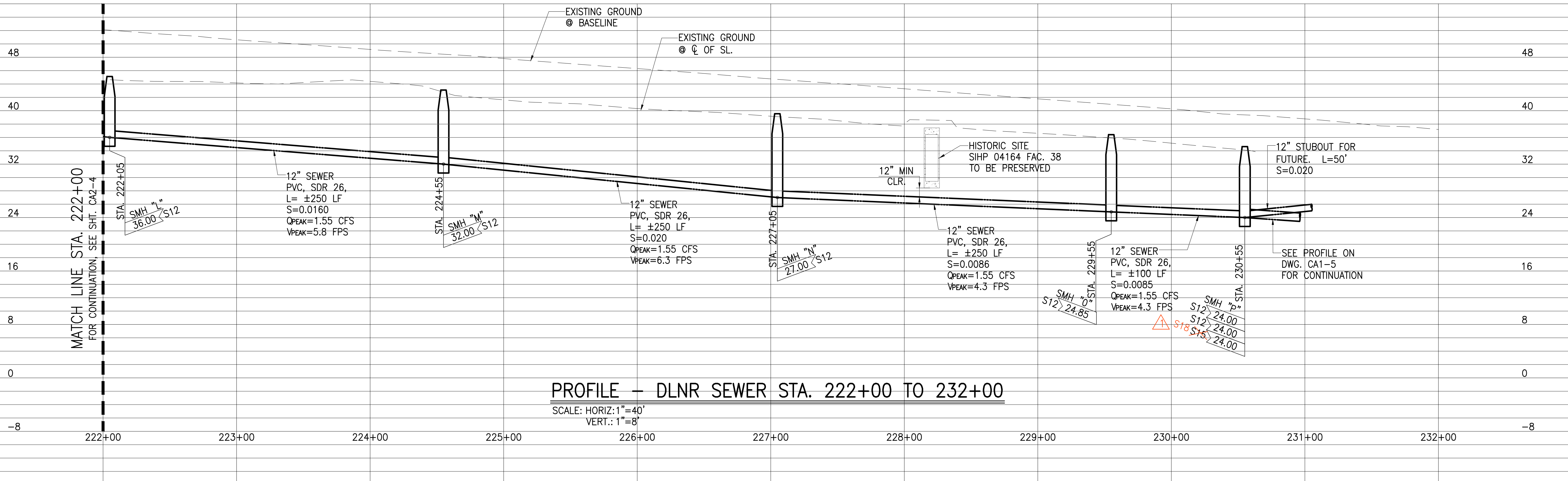
FILE	POCKET	FOLDER	NO.



PLAN - DLNR SEWER STA. 222+00 TO 232+00
 SCALE: 1"=40'

NOTES:

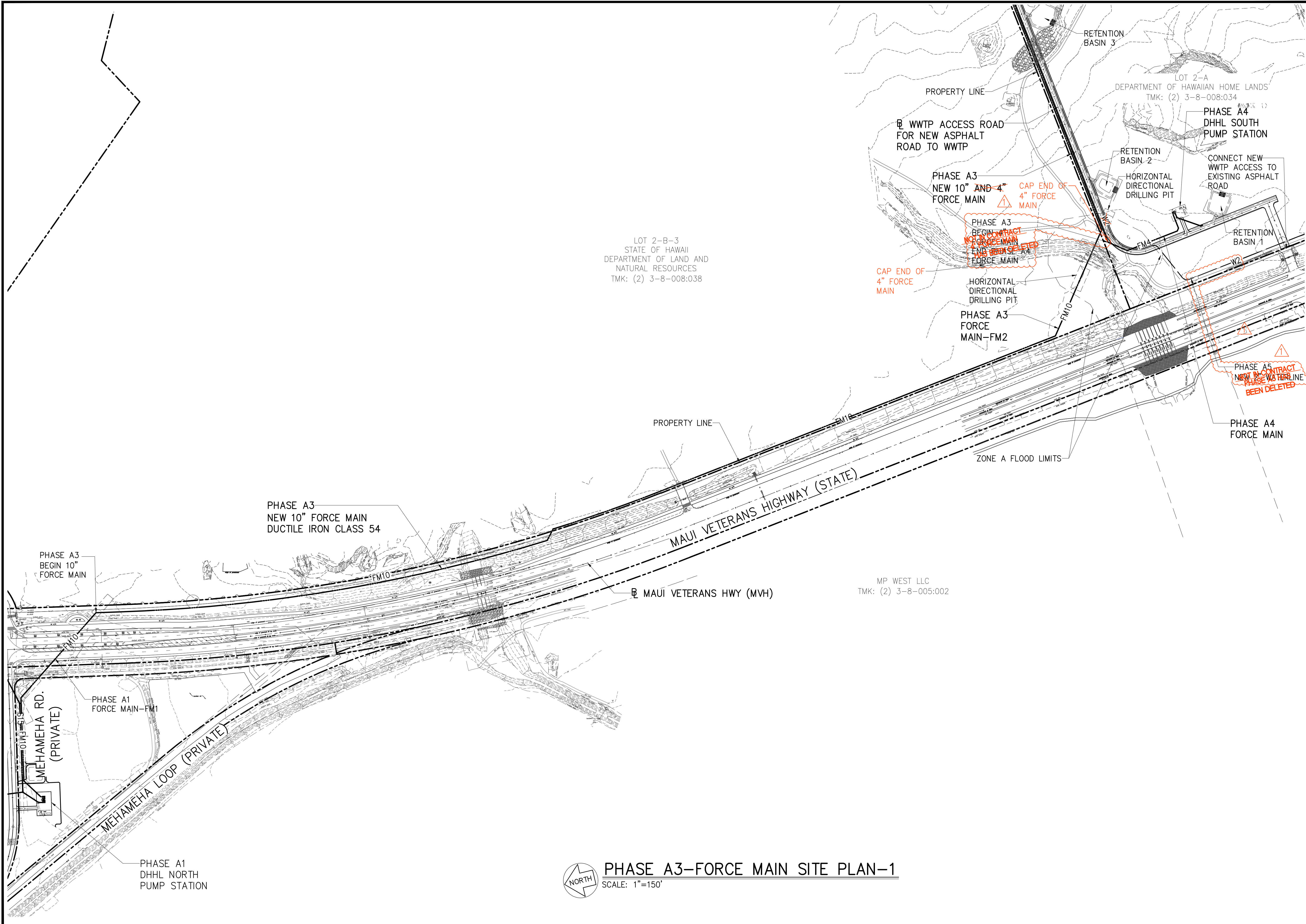
- CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE EXCAVATING FOR THE DRILLING PIT AND SEWERLINE IN HAWAII RESERVE AIR NATIONAL GUARD PROPERTY. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR TO COORDINATE WITH HAWAII RESERVE AIR NATIONAL GUARD REGARDING ACCESS DURING CONSTRUCTION.
- CONTRACTOR TO REPLACE LANDSCAPING AND IRRIGATION DISTURBED DURING CONSTRUCTION.



PROFILE - DLNR SEWER STA. 222+00 TO 232+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

JOB NO. 0-11-056.004
 FN: F:\CONG VEC\18-524 (16-576 PŪLEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CA2-5_PP_DLNR_SEWER_STA_222+00_TO_STA_232+00.DWG


JOB NO. 0-11-056.004
 FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\CA3-1 PHASE A3 FORCE MAIN SITE PLAN 1.DWG



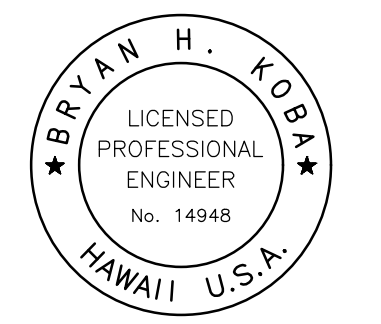
PHASE A3-FORCE MAIN SITE PLAN-1

SCALE: 1"=150'

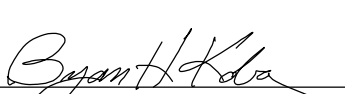

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 PHONE: 808-533-3646
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 STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS
PŪLEHUNUI
 REGIONAL
 INFRASTRUCTURE


AUSTIN, TSUTSUMI & ASSOC., INC.
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 construction of this project will be under my observation.
 (Observation of construction as defined in Chapter 16-115
 Subchapter 1, Definitions of the Hawaii Administrative Rules
 *Professional Engineers, Architects, Surveyors, and
 Landscape Architects.*)


 APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

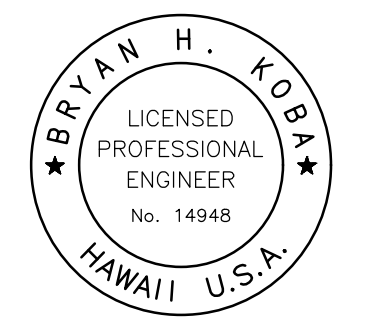
REVISION	DATE	BREF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PHASE A3 FORCE MAIN
SITE PLAN - 1**

DWG. NO.
CA3-1
 SHEET 24 OF 201

FILE	POCKET	FOLDER	NO.



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Bryan H. Koba APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

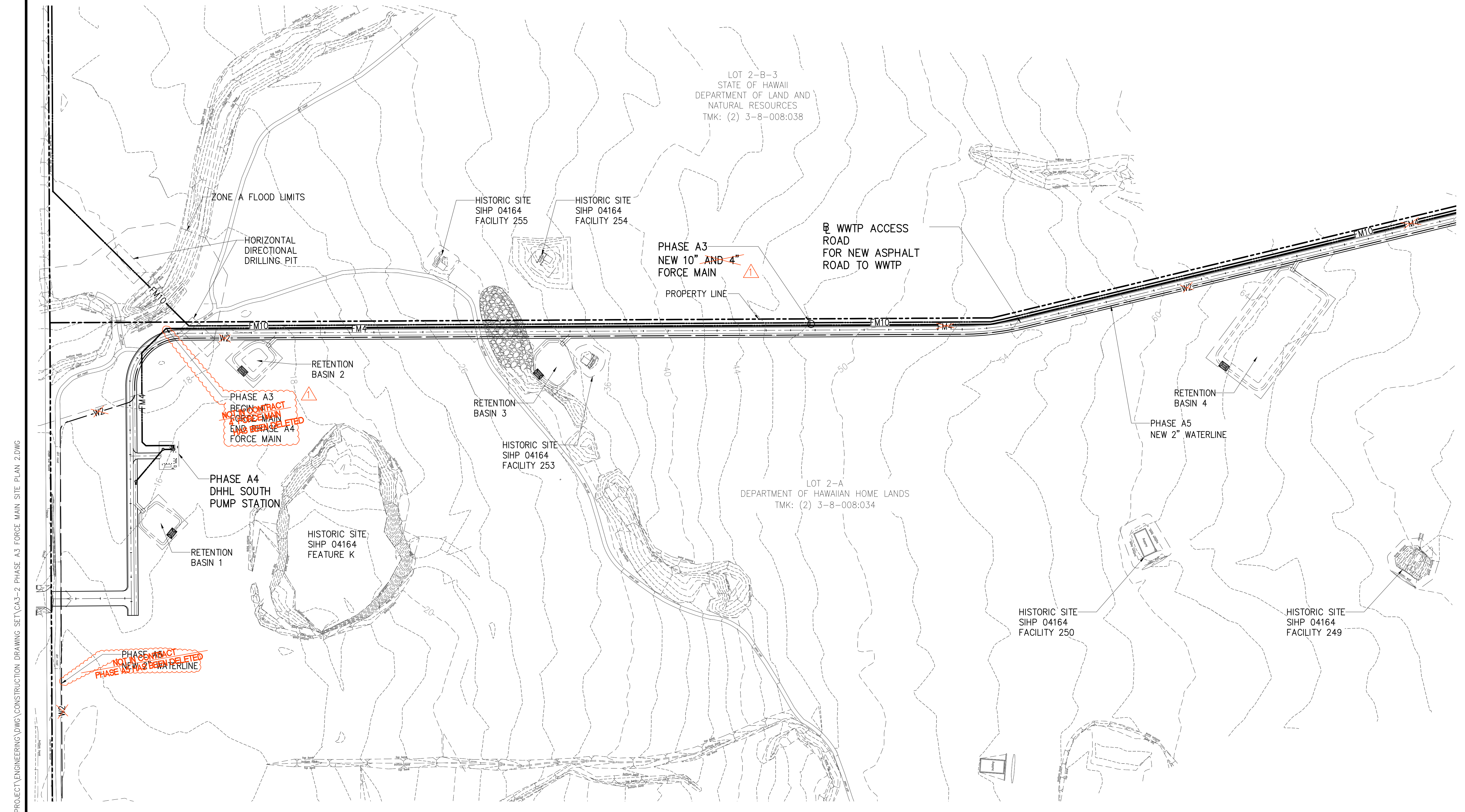
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PHASE A3 FORCE MAIN
 SITE PLAN - 2

DWG. NO.
CA3-2
 SHEET 25 OF 201

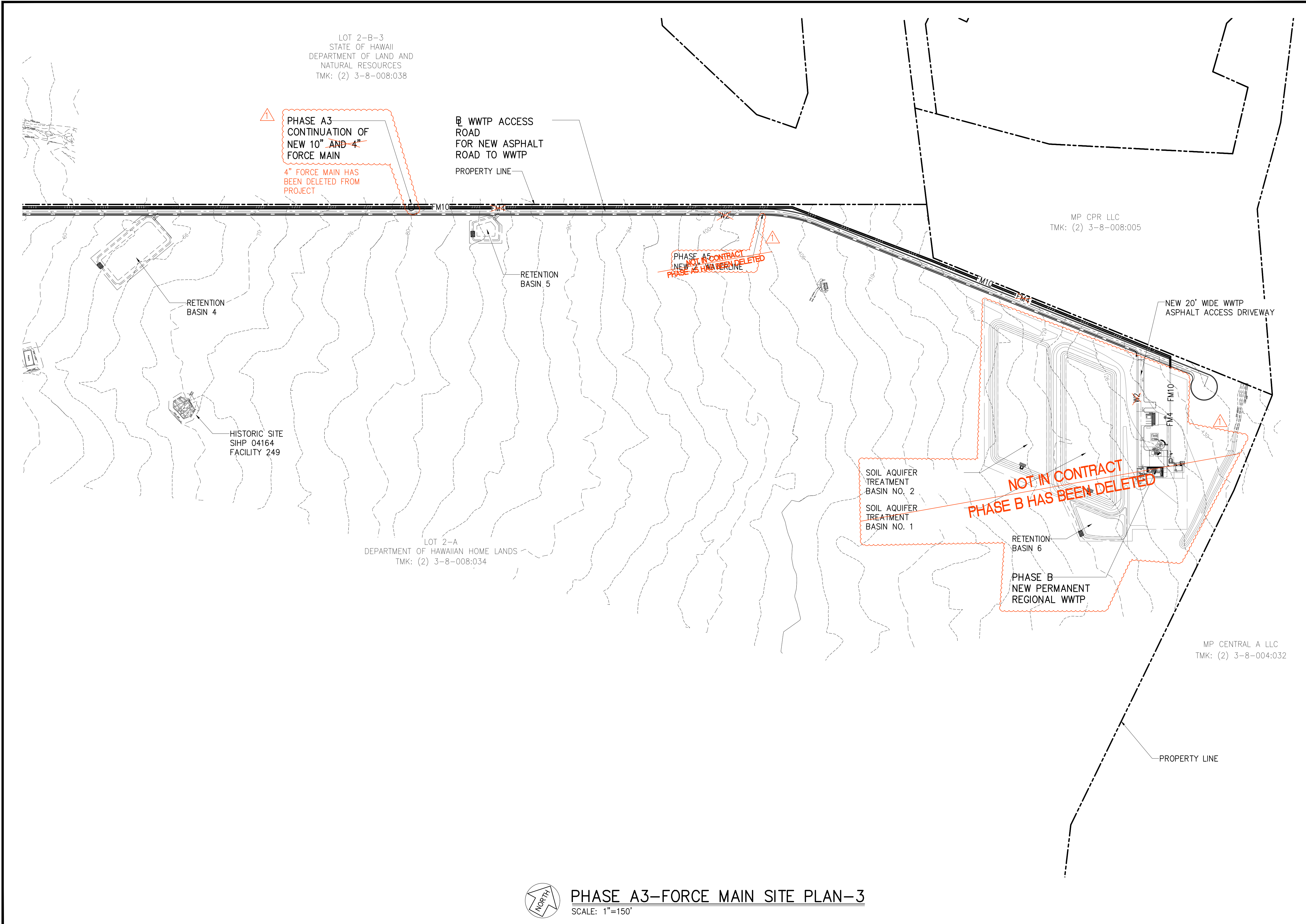
FILE	POCKET	FOLDER	NO.



PHASE A3-FORCE MAIN SITE PLAN - 2
 SCALE: 1"=100'

JOB NO. 0-11-056.004
 FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\CA3-2 PHASE A3 FORCE MAIN SITE PLAN 2.DWG

JOB NO. 0-11-056.004
 FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\CA3-3 PHASE A3 FORCE MAIN SITE PLAN 3.DWG



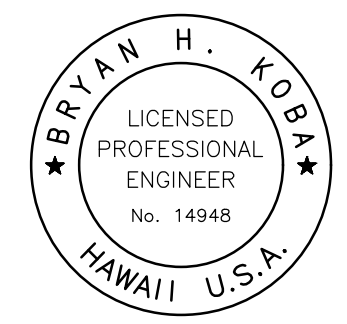
PHASE A3-FORCE MAIN SITE PLAN-3
 SCALE: 1"=150'

Austin Tsutsumi
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 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
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**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

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 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Koba APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BREF	BY
△	4/15/20	ADDENDUM 5	BHK

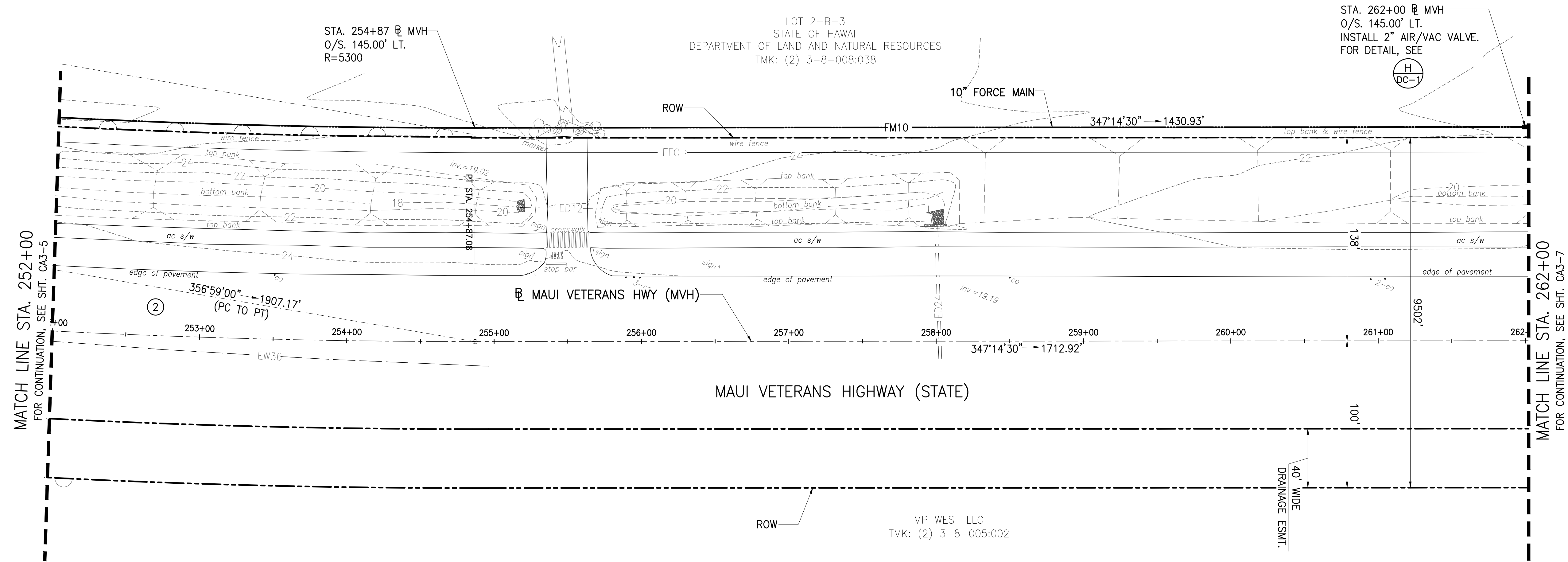
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PHASE A3 FORCE MAIN
 SITE PLAN 3**

DWG. NO.
CA3-3
 SHEET 26 OF 201

FILE	POCKET	FOLDER	NO.

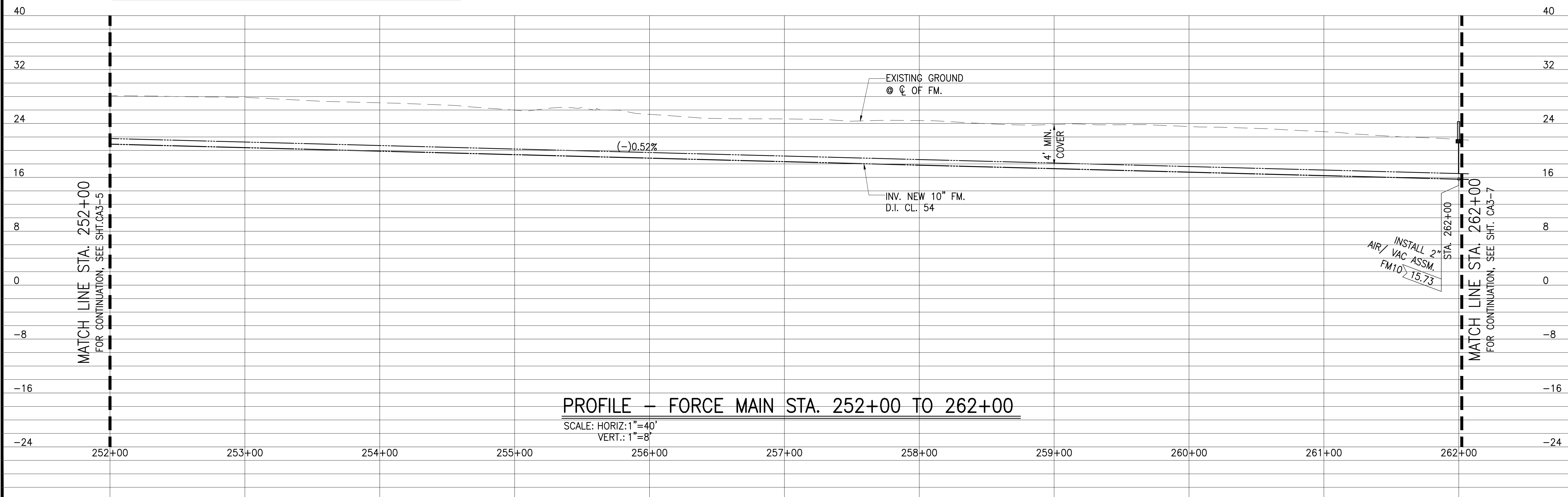
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CURVE DATA TABLE						
CURVE #	Δ	Δ/2	R	T	Ch	Lc
②	19°26'00"	9°43'00"	5650.00'	967.46'	1907.17'	1916.34'



PLAN - FORCE MAIN STA. 252+00 TO 262+00
 SCALE: 1"=40'

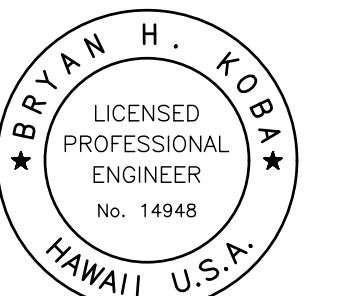


PROFILE - FORCE MAIN STA. 252+00 TO 262+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS
**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLAN AND PROFILE
 FORCE MAIN STA 252+00
 TO 262+00**

DWG. NO.
CA3-6
 SHEET 29 OF 201

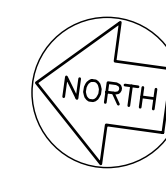
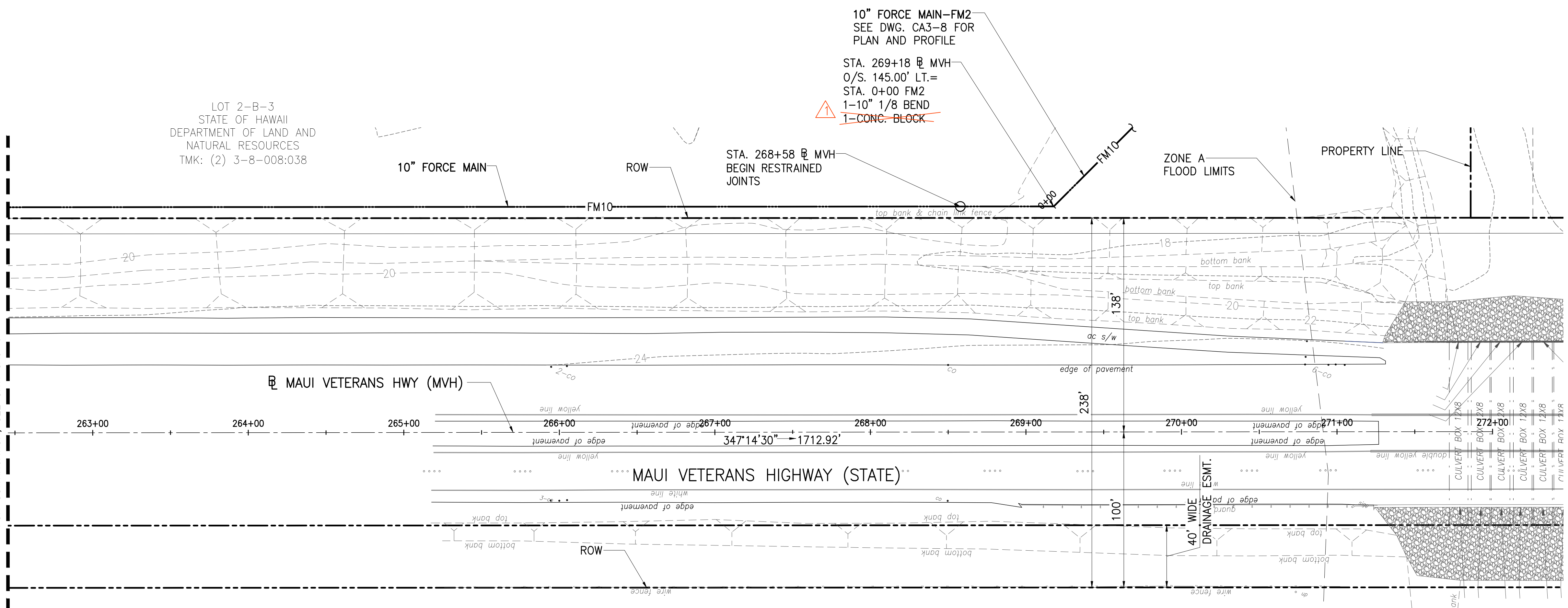
FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CA3-7 PP FORCE MAIN STA. 262+00 TO STA. 272+00.DWG

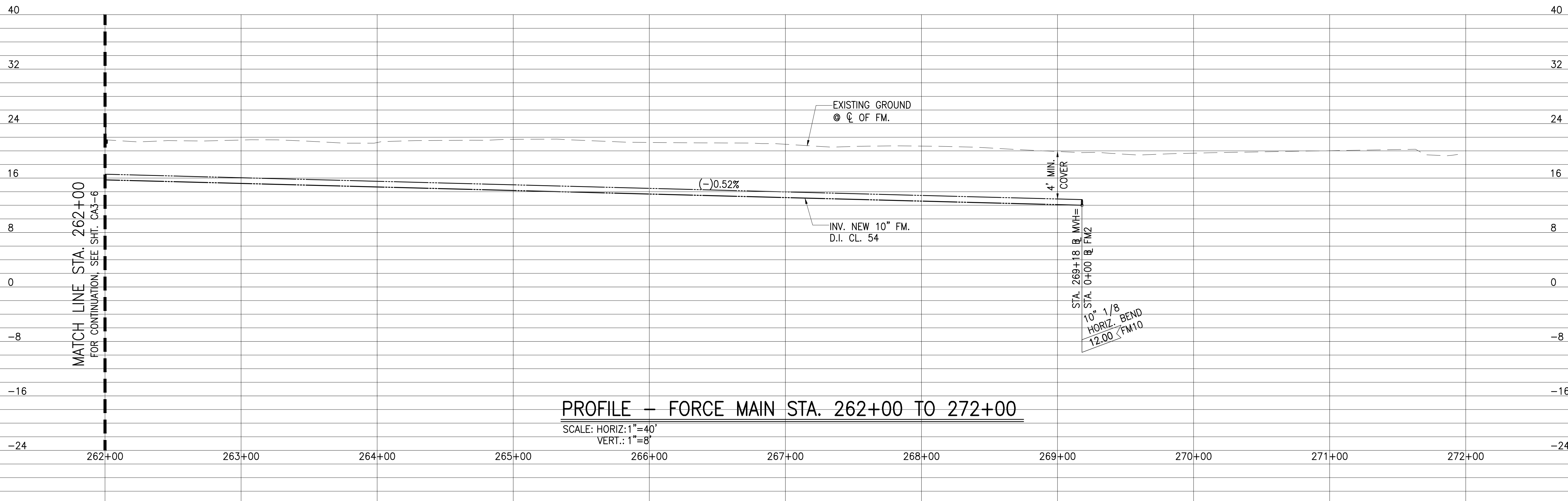
MATCH LINE STA. 262+00
 FOR CONTINUATION, SEE SHT. CA3-6

MATCH LINE STA. 262+00
 FOR CONTINUATION, SEE SHT. CA3-6

LOT 2-B-3
 STATE OF HAWAII
 DEPARTMENT OF LAND AND
 NATURAL RESOURCES
 TMK: (2) 3-8-008:038



PLAN - FORCE MAIN STA. 262+00 TO 272+00
 SCALE: 1"=40'



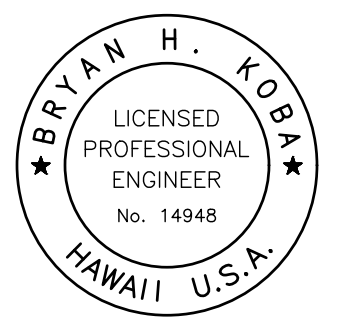
PROFILE - FORCE MAIN STA. 262+00 TO 272+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

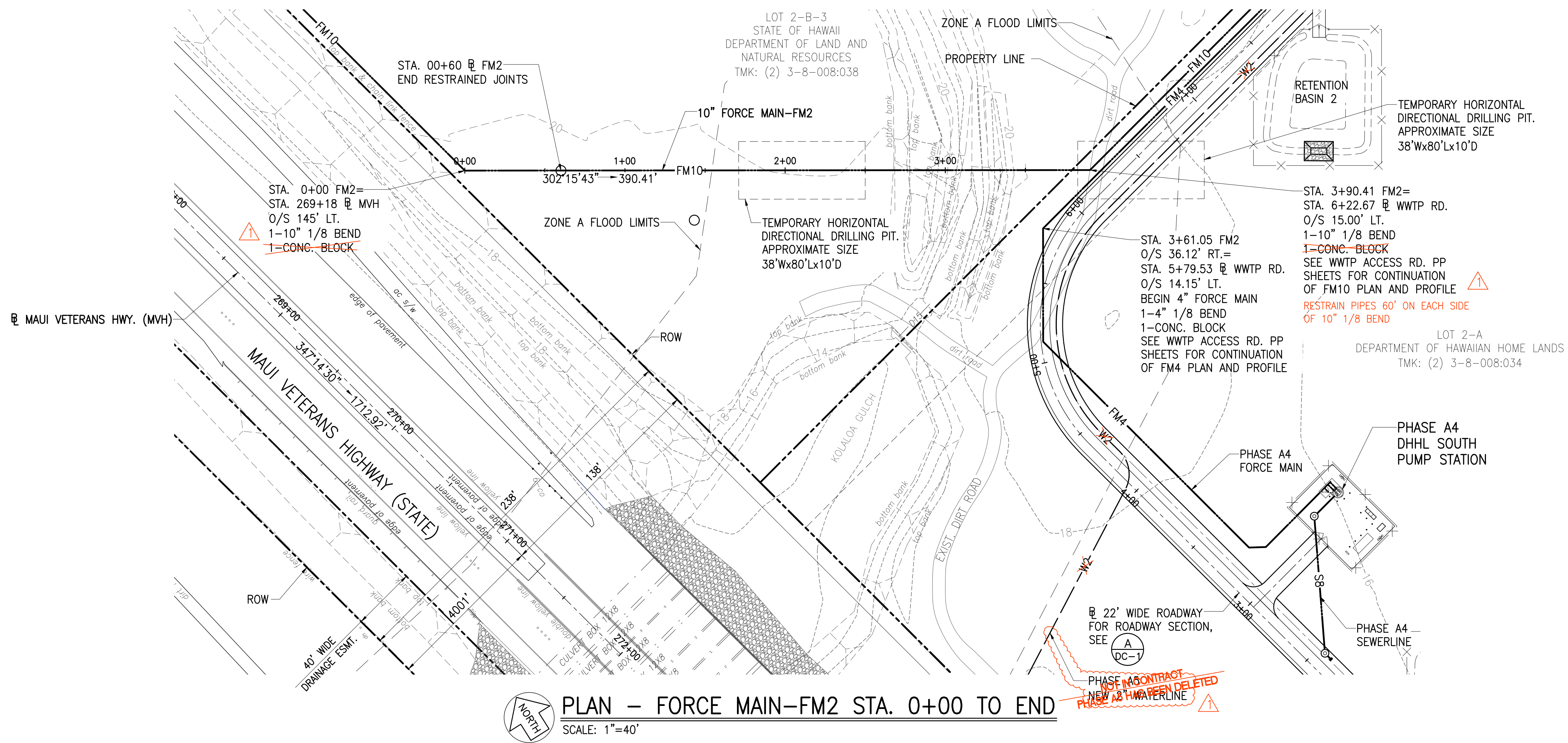
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLAN AND PROFILE
 FORCE MAIN STA 262+00
 TO 272+00**

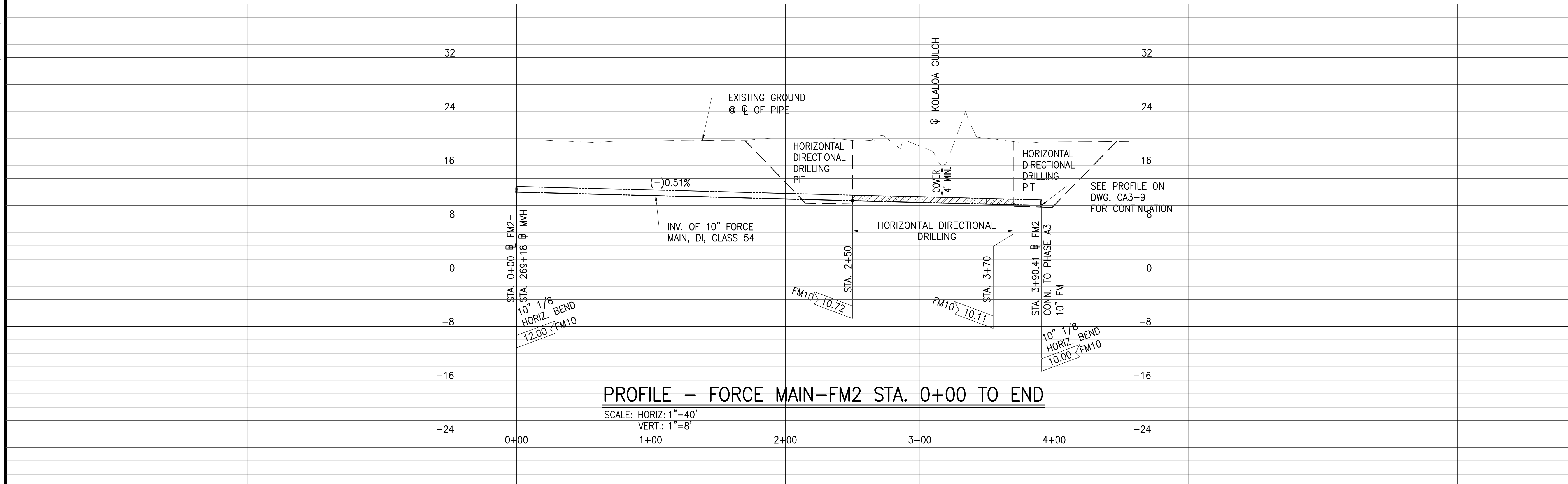
DWG. NO.
CA3-7
 SHEET 30 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONC. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN\DWG\CA3-8 PP FORCE MAIN-FM2 STA. 0+00 TO END.DWG



PLAN - FORCE MAIN-FM2 STA. 0+00 TO END
 SCALE: 1"=40'

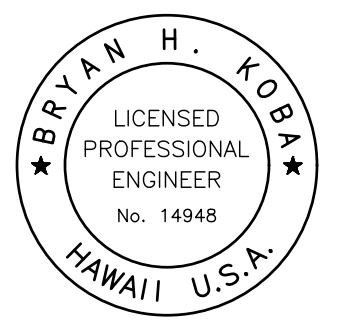


PROFILE - FORCE MAIN-FM2 STA. 0+00 TO END
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS
**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : Scale Accordingly)

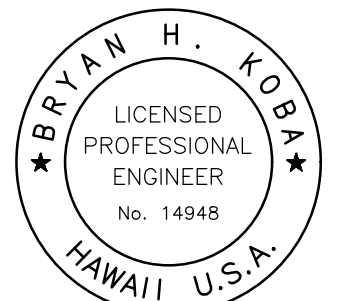
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLAN AND PROFILE
 FORCE MAIN-FM2
 STA 0+00 TO END**

DWG. NO.
CA3-8
 SHEET 31 OF 201

FILE	POCKET	FOLDER	NO.
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APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES, SCALE ACCORDINGLY)

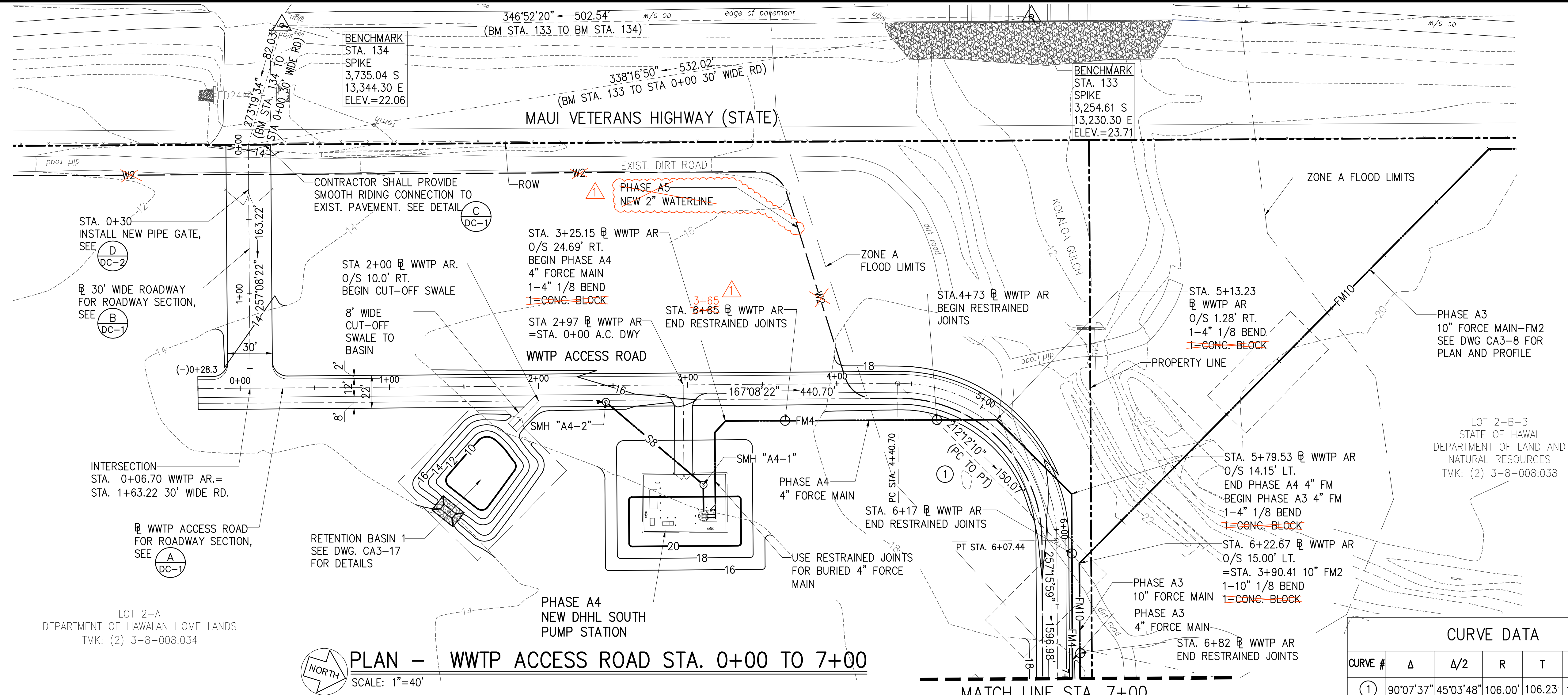
REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

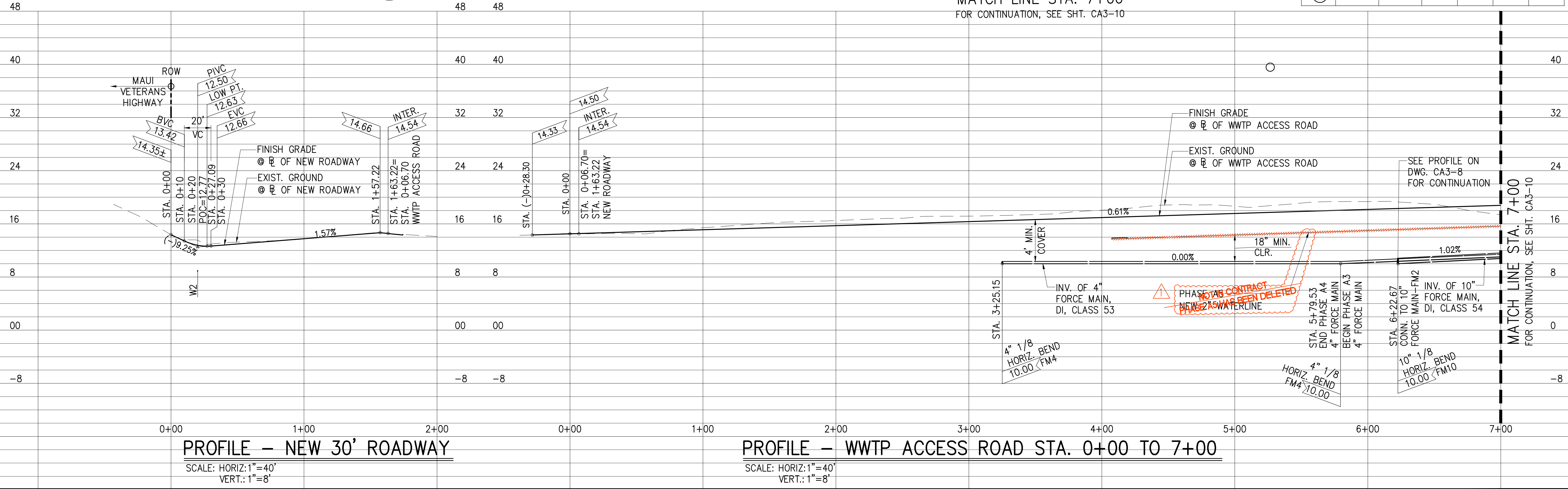
PLAN AND PROFILE
 WWTP ACCESS ROAD
 STA 0+00 TO 7+00

DWG. NO.
CA3-9
 SHEET 32 OF 201

FILE	POCKET	FOLDER	NO.



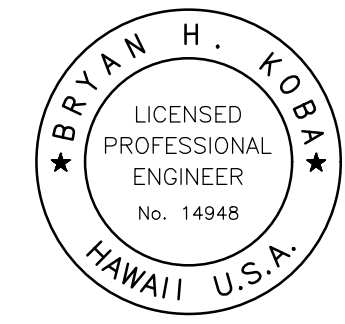
CURVE #	Δ	Δ/2	R	T	Ch	Lc
1	90°07'37"	45°03'48"	106.00'	106.23	150.07'	166.74'



PROFILE - NEW 30' ROADWAY
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

PROFILE - WWTP ACCESS ROAD STA. 0+00 TO 7+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

JOB NO. 0-11-066.004
 FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\CA3-9 PP WWTP ACCESS ROAD STA. 0+00 TO 7+00.DWG



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Bryan H. Koba APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

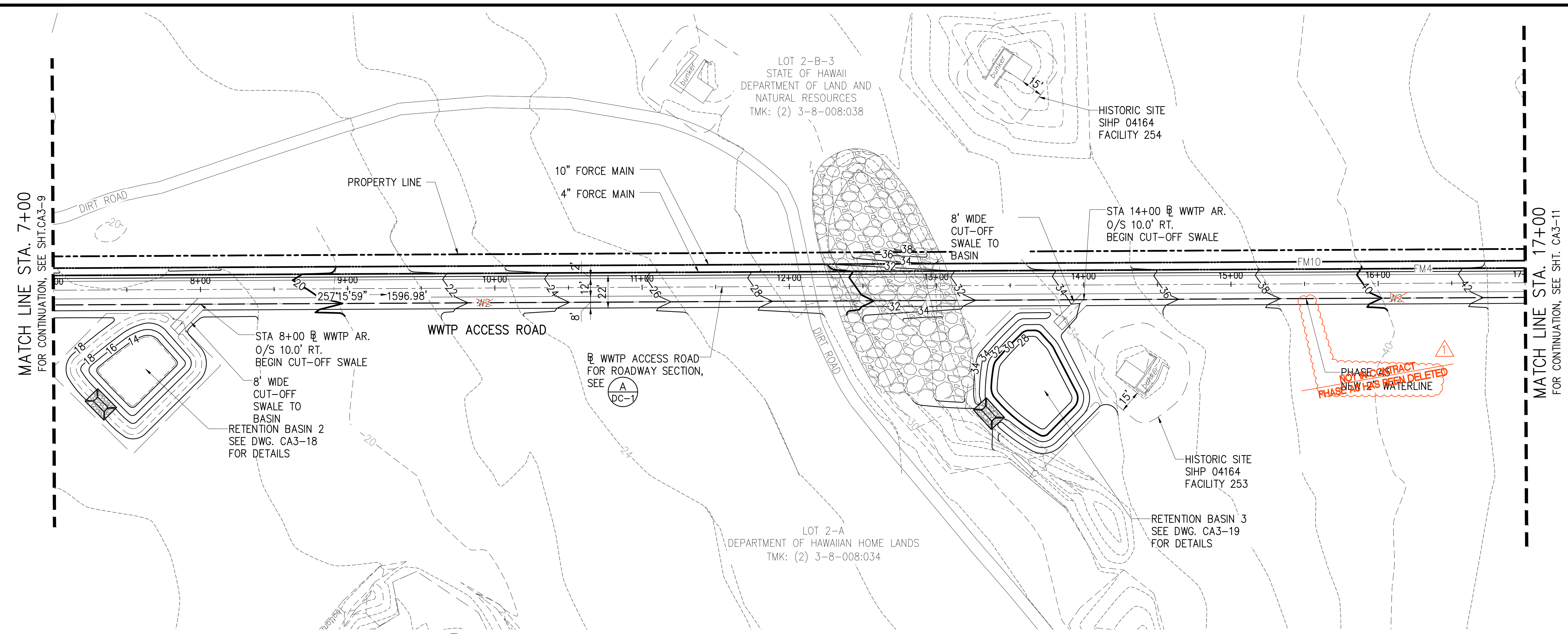
REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

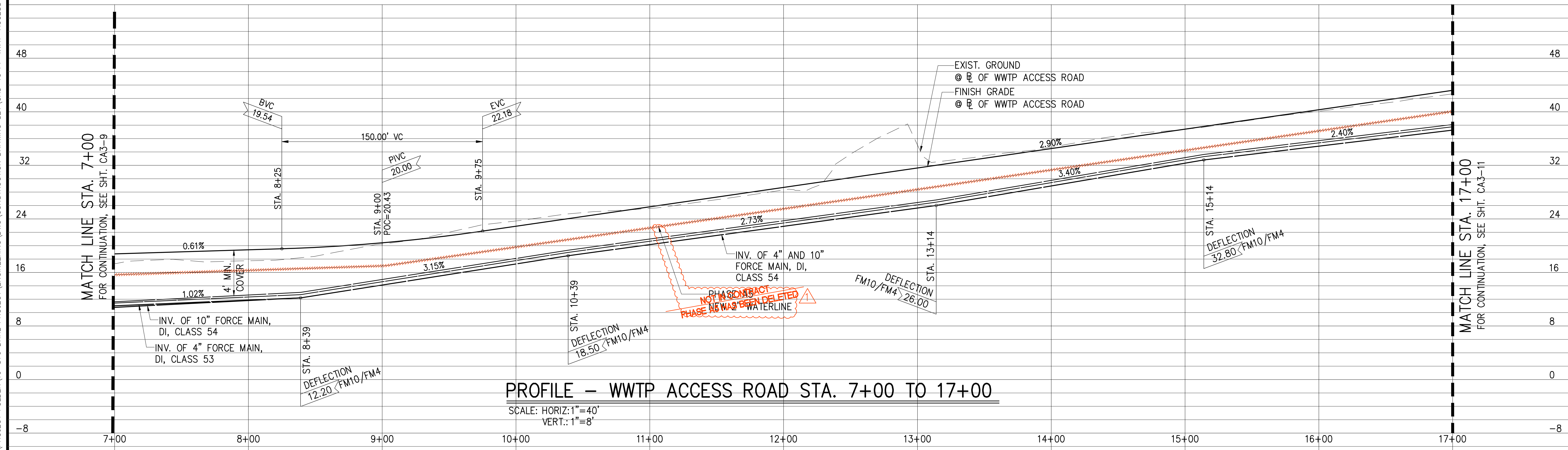
**PLAN AND PROFILE
 WWTP ACCESS ROAD
 STA 7+00 TO 17+00**

DWG. NO.
CA3-10
 SHEET 33 OF 201

FILE	POCKET	FOLDER	NO.

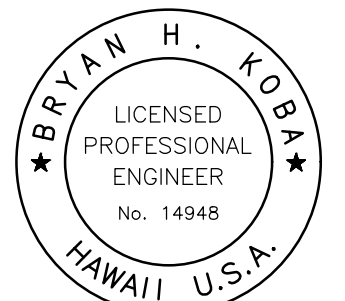


PLAN - WWTP ACCESS ROAD STA. 7+00 TO 17+00
 SCALE: 1"=40'



PROFILE - WWTP ACCESS ROAD STA. 7+00 TO 17+00
 SCALE: HORIZ: 1"=40'
 VERT: 1"=8'

JOB NO. 0-11-066.004
 FN. C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION SET\CA3-10 PP WWTP ACCESS ROAD STA. 7+00 TO 17+00.DWG



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Bryan H. Koba APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

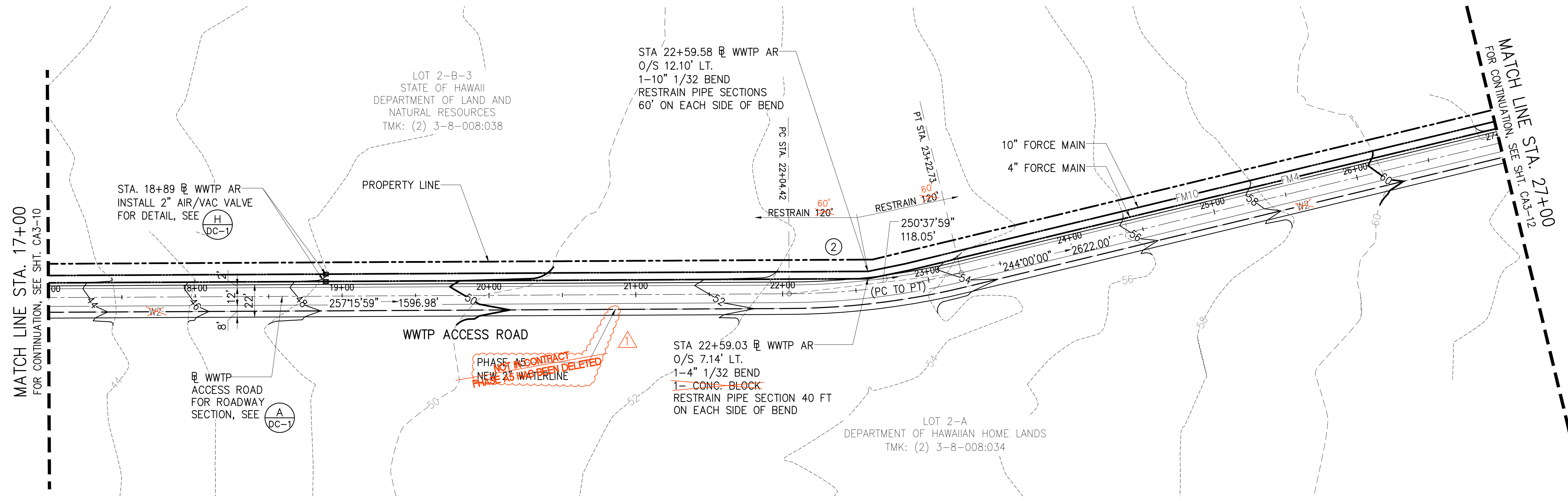
REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PLAN AND PROFILE
WWTP ACCESS ROAD
STA 17+00 TO
27+00

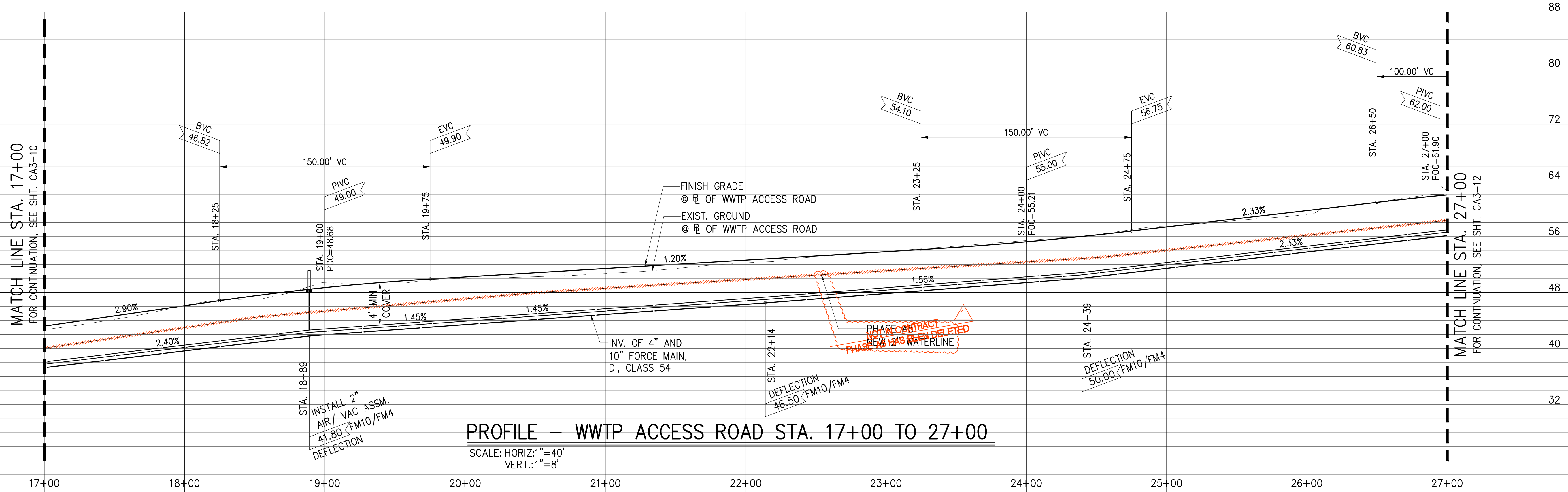
DWG. NO.
CA3-11
 SHEET 34 OF 201

FILE	POCKET	FOLDER	NO.



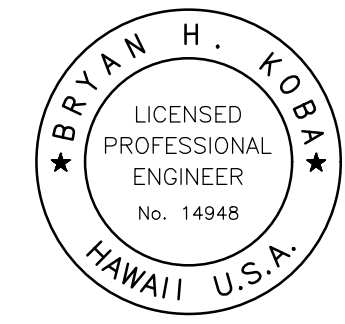
PLAN - WWTP ACCESS ROAD STA. 17+00 TO 27+00
 SCALE: 1"=40'

Curve #	Δ	Δ/2	R	T	Ch	Lc
②	13°15'59"	6°37'59"	511.00'	59.42	118.05'	118.32'



PROFILE - WWTP ACCESS ROAD STA. 17+00 TO 27+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

JOB NO. 0-11-066.004
 FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\CA3-11 PP WWTP ACCESS ROAD STA 17+00 TO 27+00.DWG



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Bryan H. Koba APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

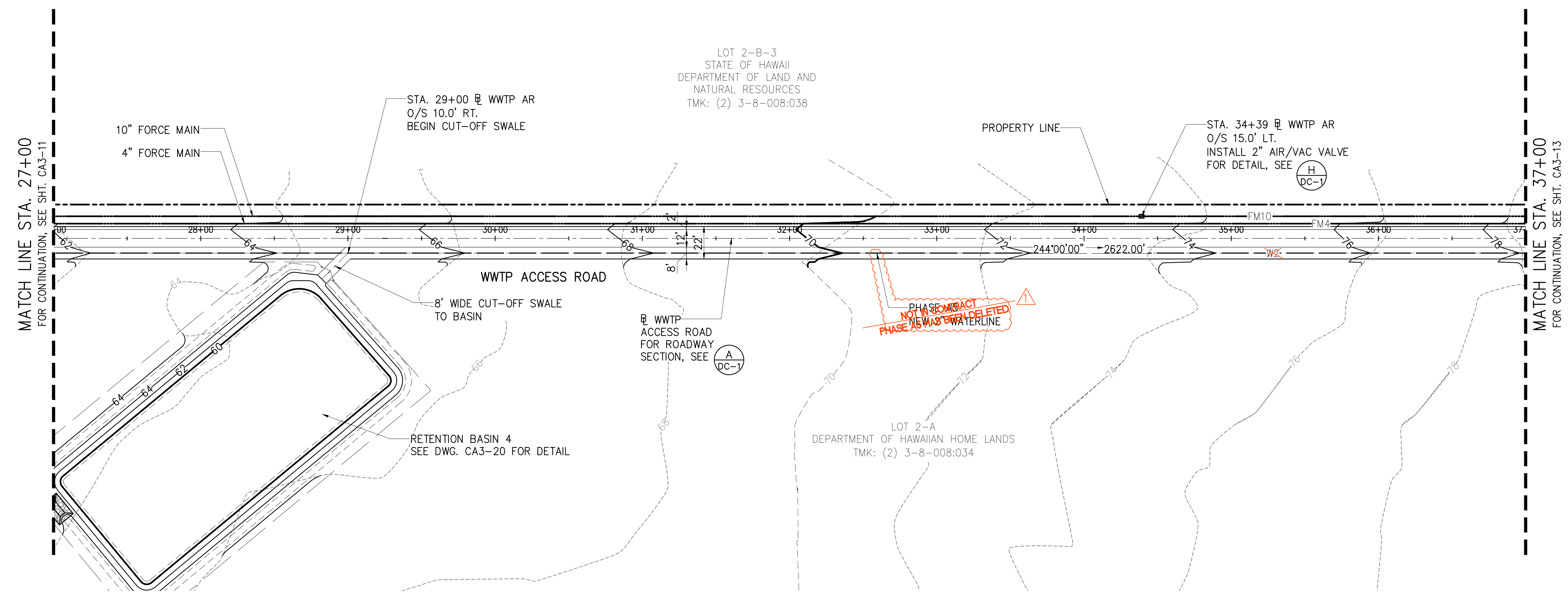
REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

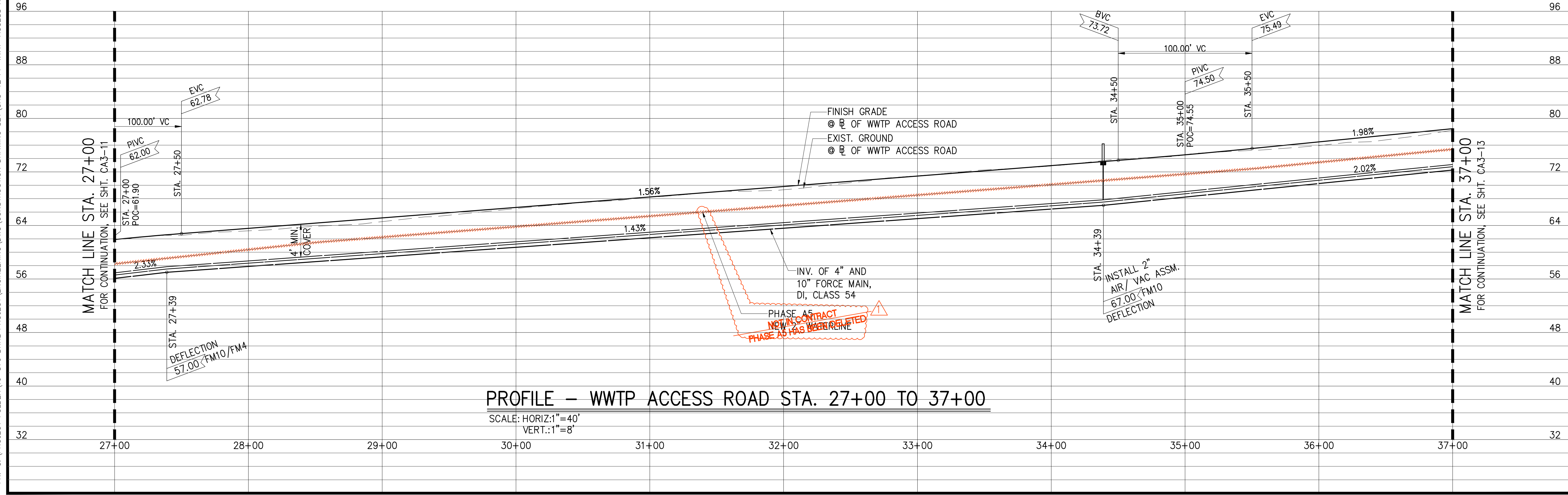
**PLAN AND PROFILE
 WWTP ACCESS ROAD
 STA 27+00 TO
 37+00**

DWG. NO.
CA3-12
 SHEET 35 OF 201

FILE	POCKET	FOLDER	NO.
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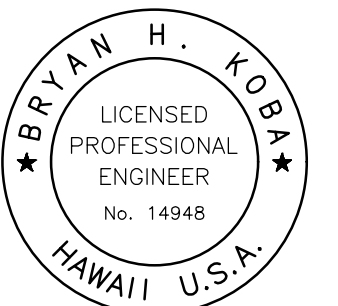


PLAN - WWTP ACCESS ROAD STA. 27+00 TO 37+00
 SCALE: 1"=40'



PROFILE - WWTP ACCESS ROAD STA. 27+00 TO 37+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

JOB NO. 0-11-066.004
 FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\CA3-12 PP WWTP ACCESS ROAD STA. 27+00 TO 37+00.DWG



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Bryan H. Koba APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

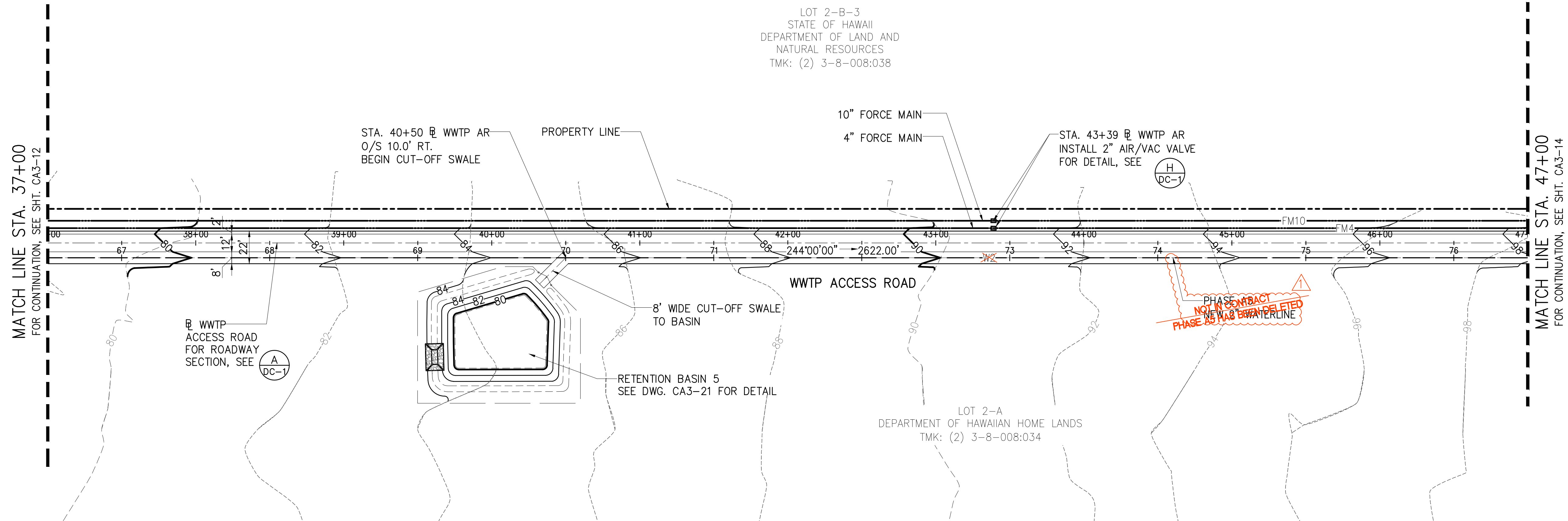
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PLAN AND PROFILE
 WWTP ACCESS ROAD
 STA 37+00 TO
 47+00

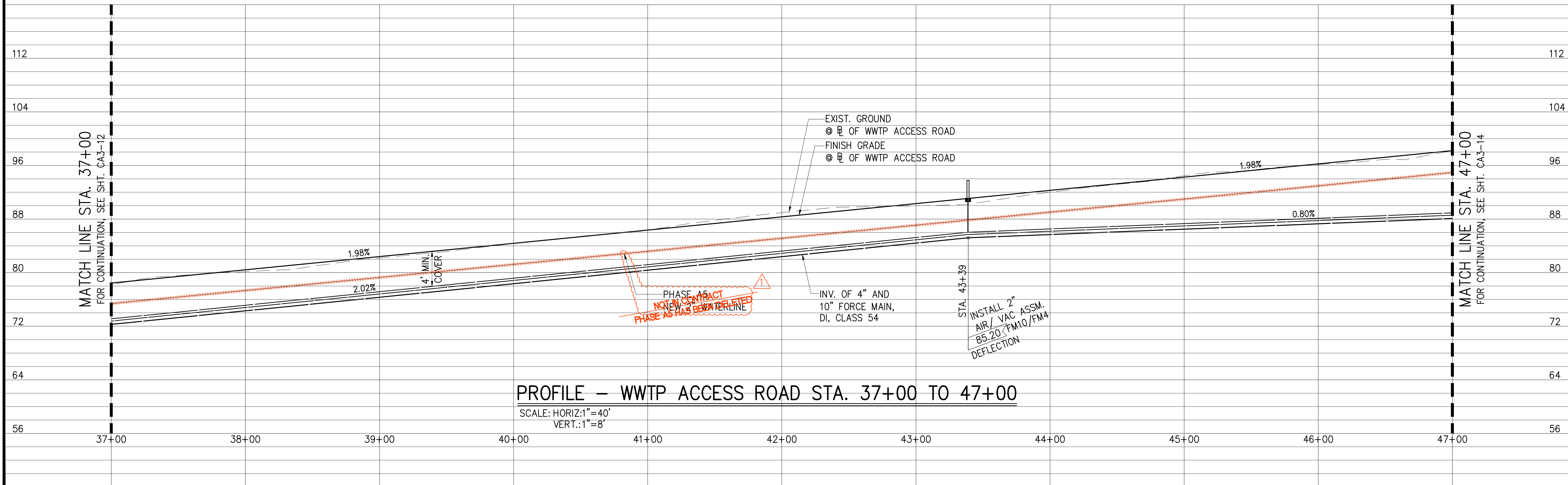
DWG. NO.
CA3-13
 SHEET 36 OF 201

FILE	POCKET	FOLDER	NO.

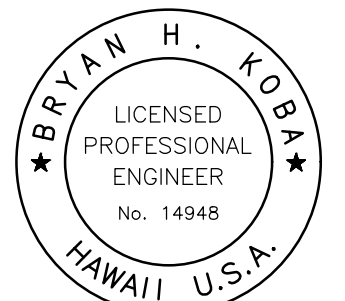
JOB NO. 0-11-066.004
 FN: C:\PROJECT FOLDER\16-576 DPHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\CA3-13 PP WWTP ACCESS ROAD STA. 37+00 TO 47+00.DWG



PLAN - WWTP ACCESS ROAD STA. 37+00 TO 47+00
 SCALE: 1"=40'



PROFILE - WWTP ACCESS ROAD STA. 37+00 TO 47+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'



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Bryan H. Koba APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

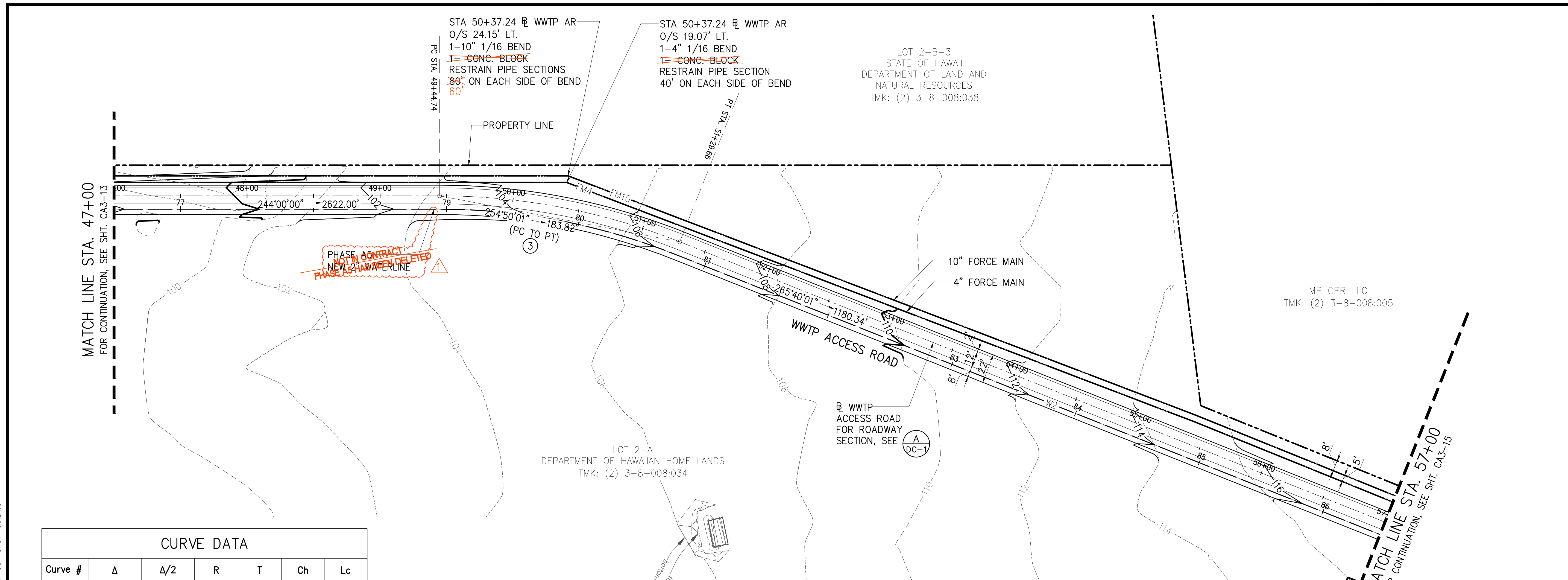
REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLAN AND PROFILE
 WWTP ACCESS ROAD
 STA 47+00 TO
 57+00**

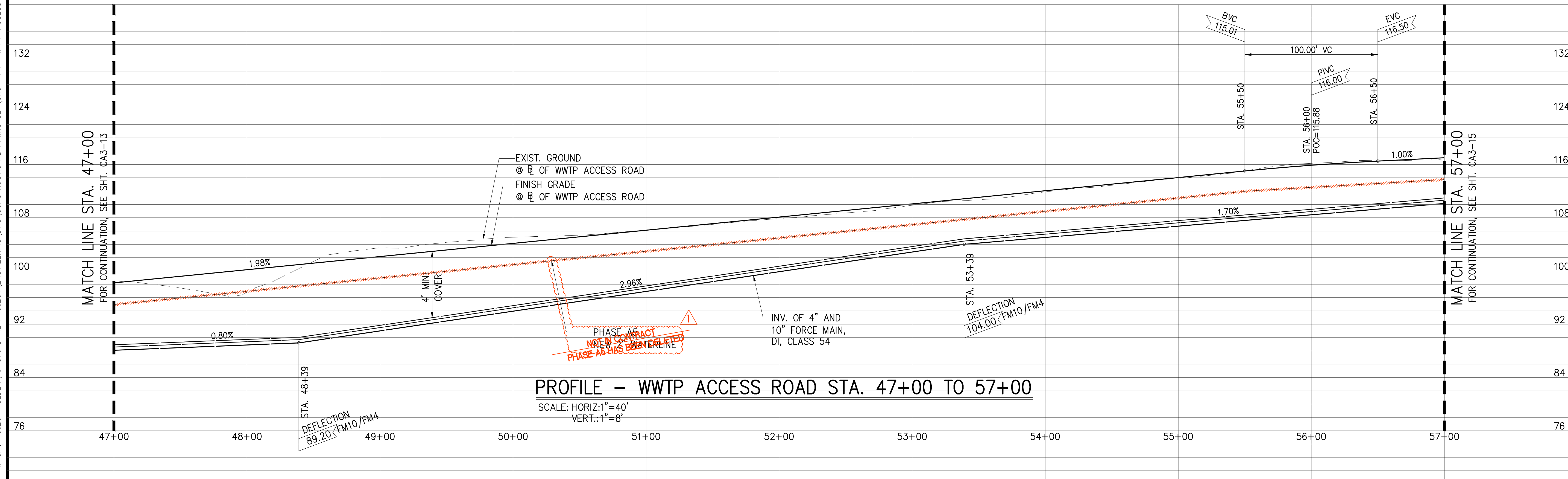
DWG. NO.
CA3-14
 SHEET 37 OF 201

FILE	POCKET	FOLDER	NO.



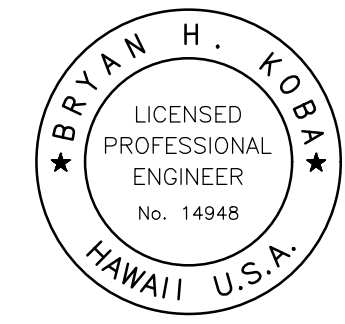
Curve #	Δ	Δ/2	R	T	Ch	Lc
③	21°40'01"	10°50'01"	489.00'	93.58	183.82'	184.92'

PLAN – WWTP ACCESS ROAD STA. 47+00 TO 57+00
 SCALE: 1"=40'



PROFILE – WWTP ACCESS ROAD STA. 47+00 TO 57+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

JOB NO. 0-11-066.004
 FN. C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION SET\CA3-14 PP WWTP ACCESS ROAD STA. 47+00 TO 57+00.DWG



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Bryan H. Koba APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : Scale Accordingly)

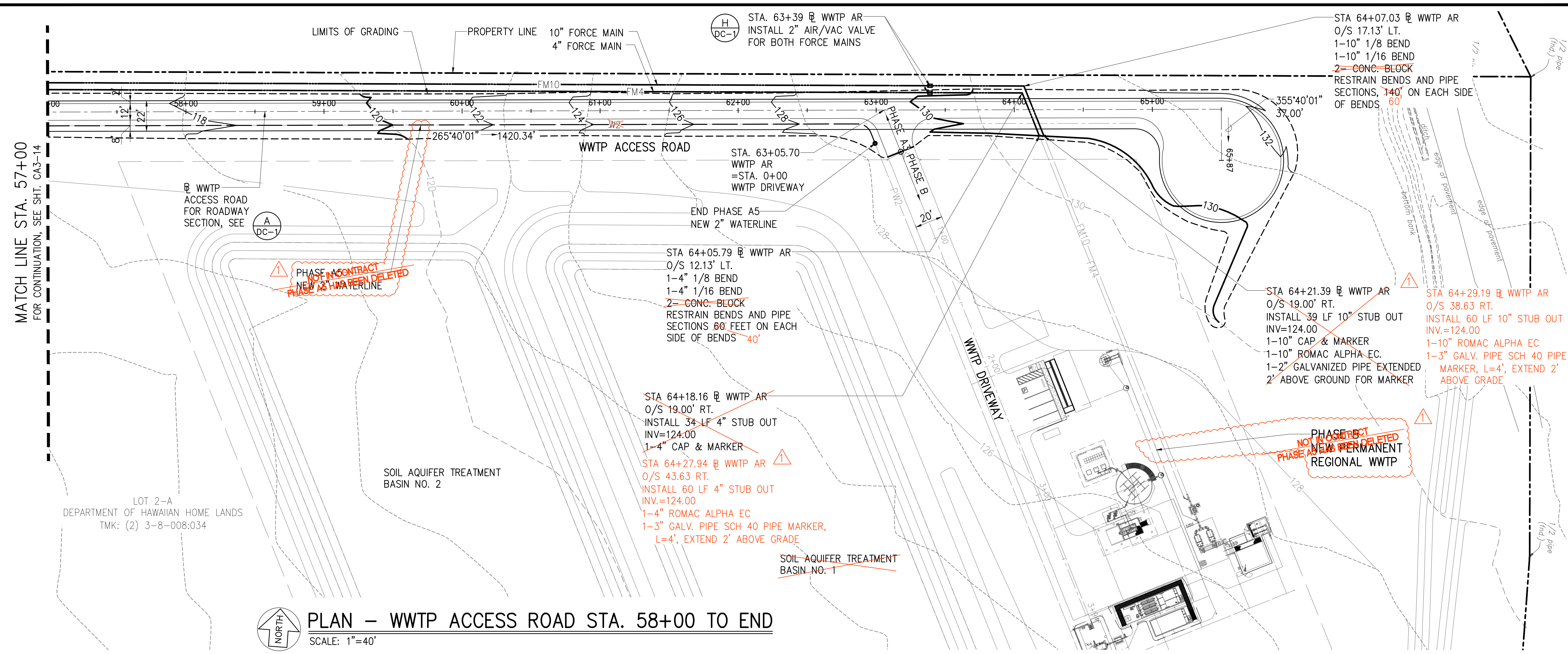
REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

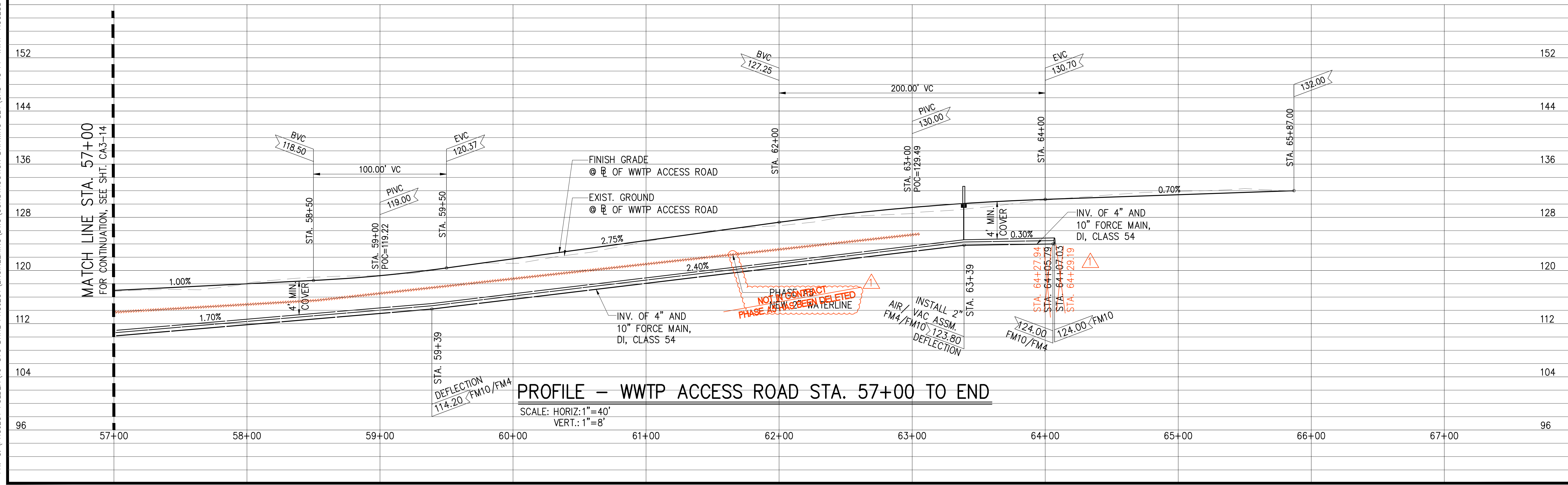
**PLAN AND PROFILE
 WWTP ACCESS ROAD
 STA 57+00 TO END**

DWG. NO.
CA3-15
 SHEET 38 OF 201

FILE	POCKET	FOLDER	NO.
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PLAN - WWTP ACCESS ROAD STA. 57+00 TO END
 SCALE: 1"=40'

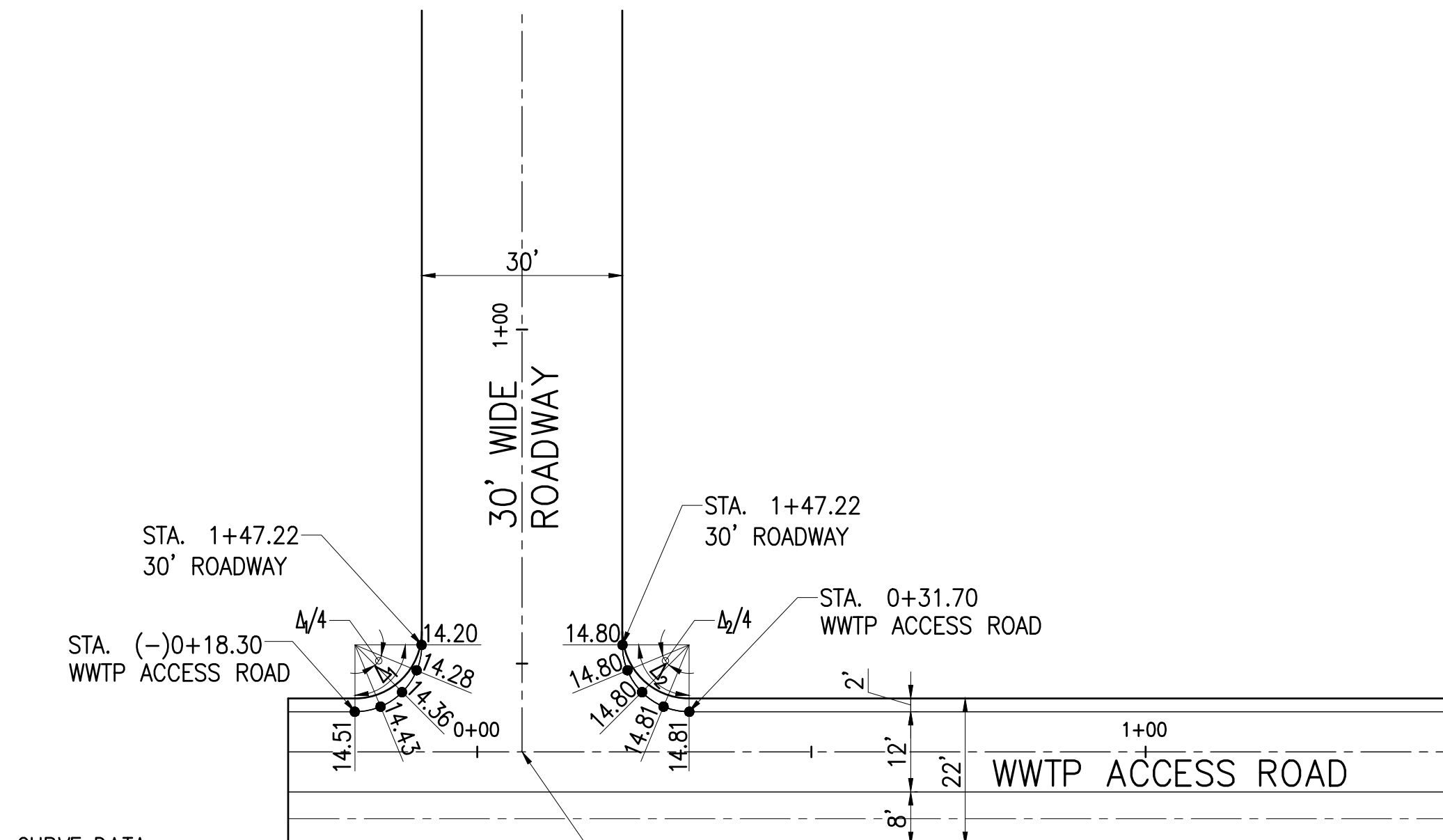


PROFILE - WWTP ACCESS ROAD STA. 57+00 TO END
 SCALE: HORIZ: 1"=40'
 VERT: 1"=8'

JOB NO. 0-11-066.004
 FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\CA3-15 PP WWTP ACCESS ROAD STA. 57+00 TO END.DWG

MATCH LINE STA. 57+00
 FOR CONTINUATION, SEE SHT. CA3-14

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\CA3-16 CURVE RETURN AND CUL DE SAC DETAILS.DWG

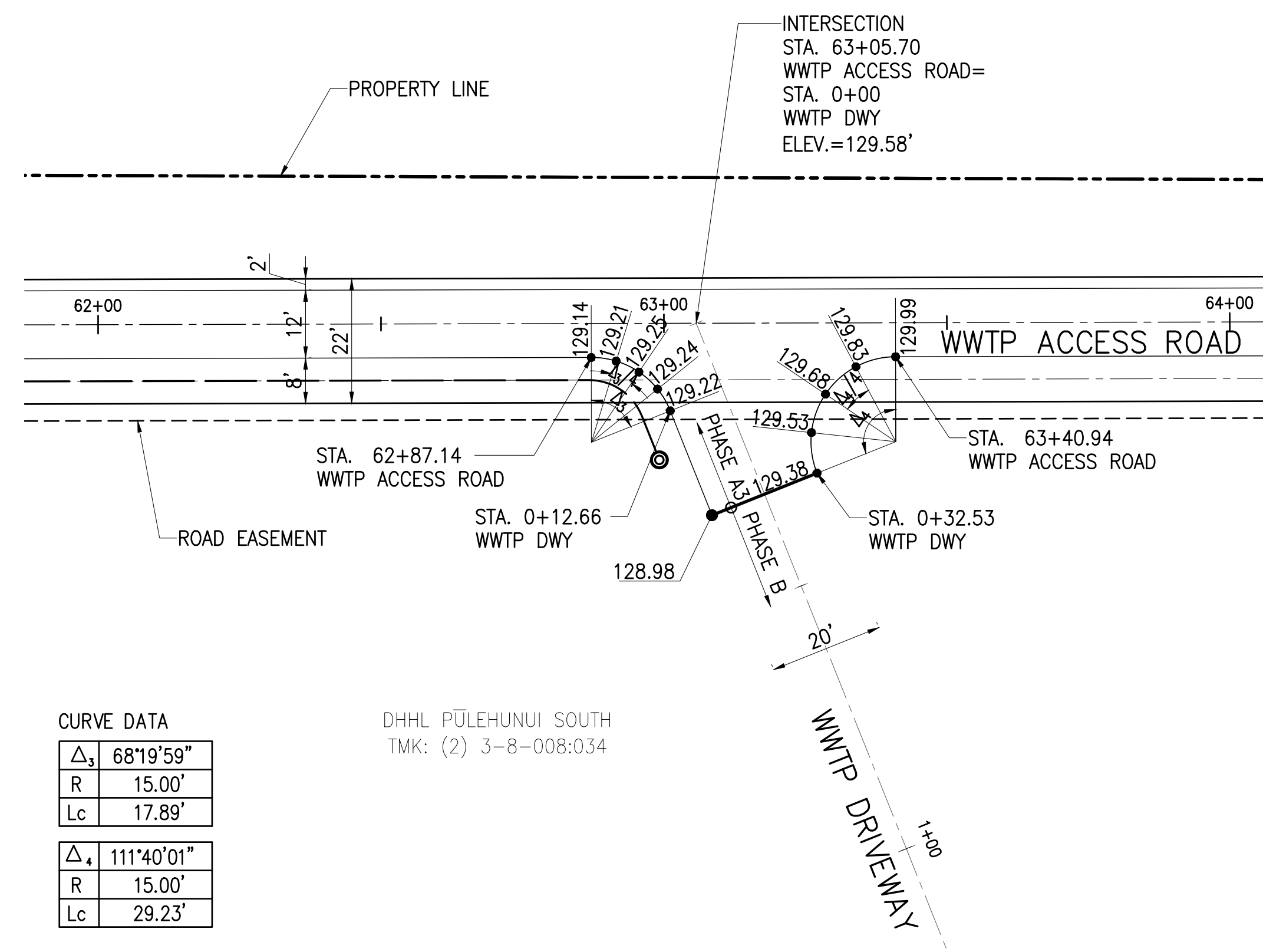


CURVE DATA

Δ ₁	90°00'00"
R	10.00'
Lc	15.71'
Δ ₂	90°00'00"
R	10.00'
Lc	15.71'

INTERSECTION
 STA. 0+06.70 WWTP AR.=
 STA. 1+63.22 30' WIDE RD.
 ELEV.=14.45'

PHASE A3 – CURVE RETURN–WWTP ACCESS RD & 30' WIDE ROADWAY
 SCALE: 1"=20'

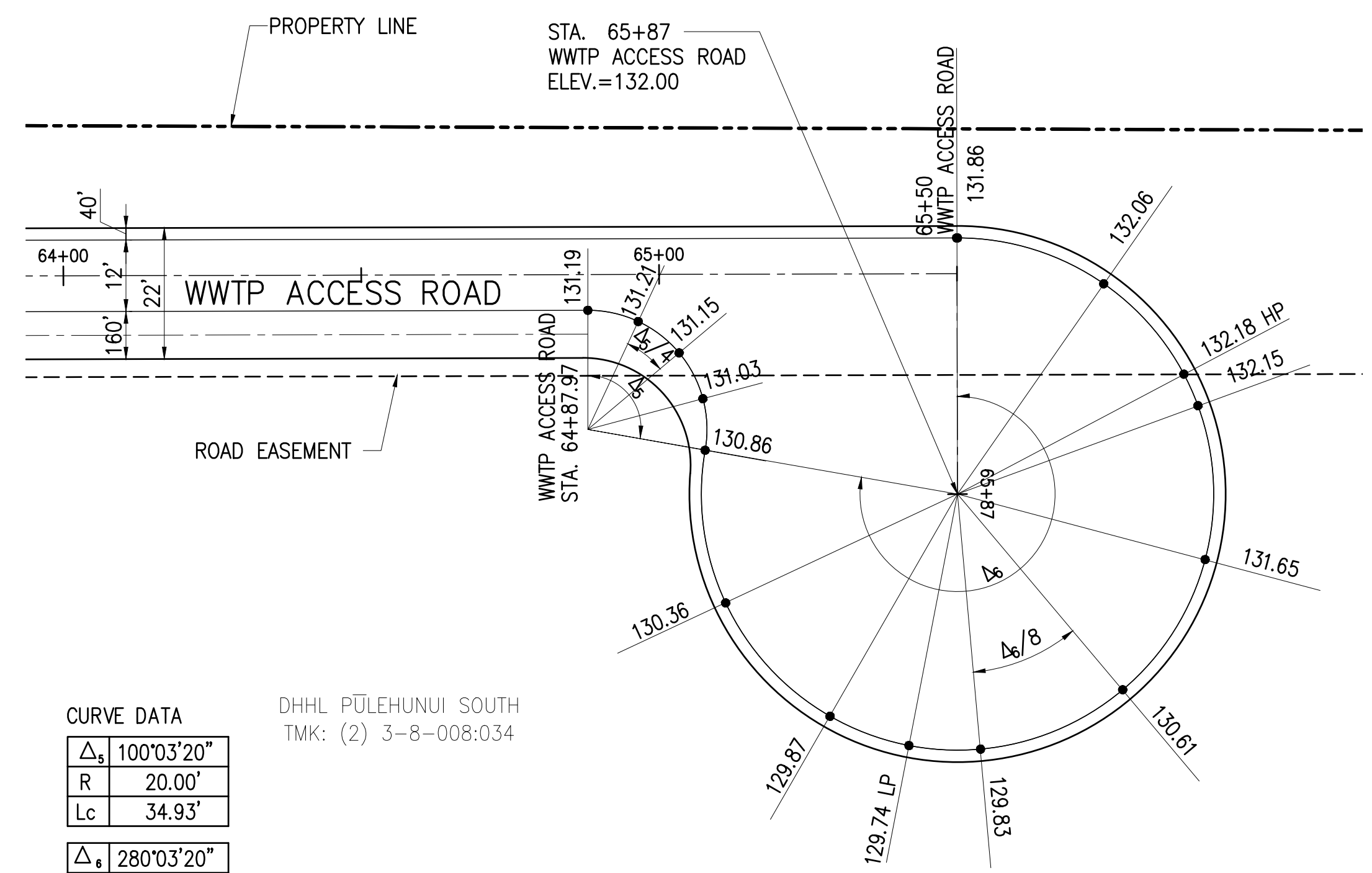


CURVE DATA

Δ ₃	68°19'59"
R	15.00'
Lc	17.89'
Δ ₄	111°40'01"
R	15.00'
Lc	29.23'

DHHL PULEHUNUI SOUTH
 TMK: (2) 3-8-008:034

PHASE A3 – CURVE RETURN–WWTP ACCESS RD & WWTP DRIVEWAY
 SCALE: 1"=20'



CURVE DATA

Δ ₅	100°03'20"
R	20.00'
Lc	34.93'
Δ ₆	280°03'20"
R	43.00'
Lc	210.18'

DHHL PULEHUNUI SOUTH
 TMK: (2) 3-8-008:034

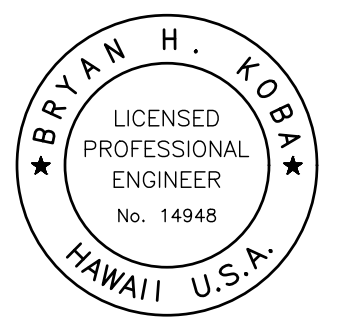
PHASE A3 – CUL-DE-SAC
 SCALE: 1"=20'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY

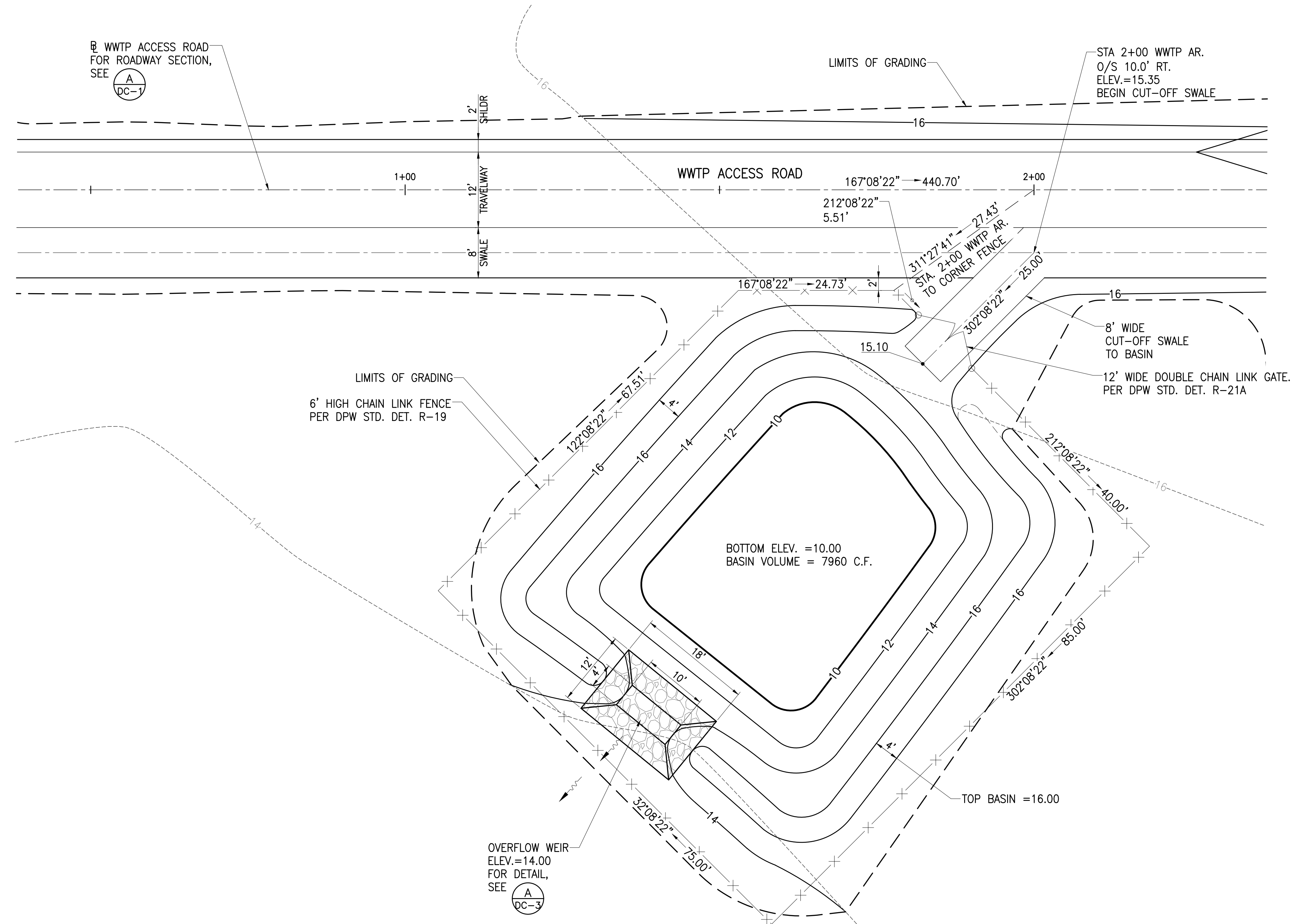
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**CURVE RETURN AND
 CUL DE SAC DETAILS**

DWG. NO.
CA3-16
 SHEET 39 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) \BRYAN\DWG\CA3-17 RETENTION BASIN 1 DETAIL.DWG



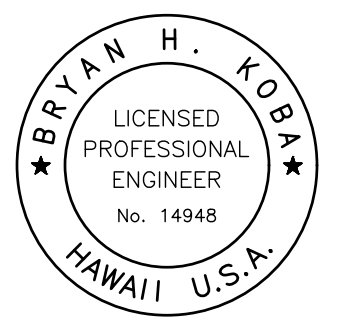
LOT 2-A
 DEPARTMENT OF HAWAIIAN HOME LANDS
 TMK: (2) 3-8-008:034

RETENTION BASIN 1
 SCALE: 1"=10'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
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STATE OF HAWAII
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

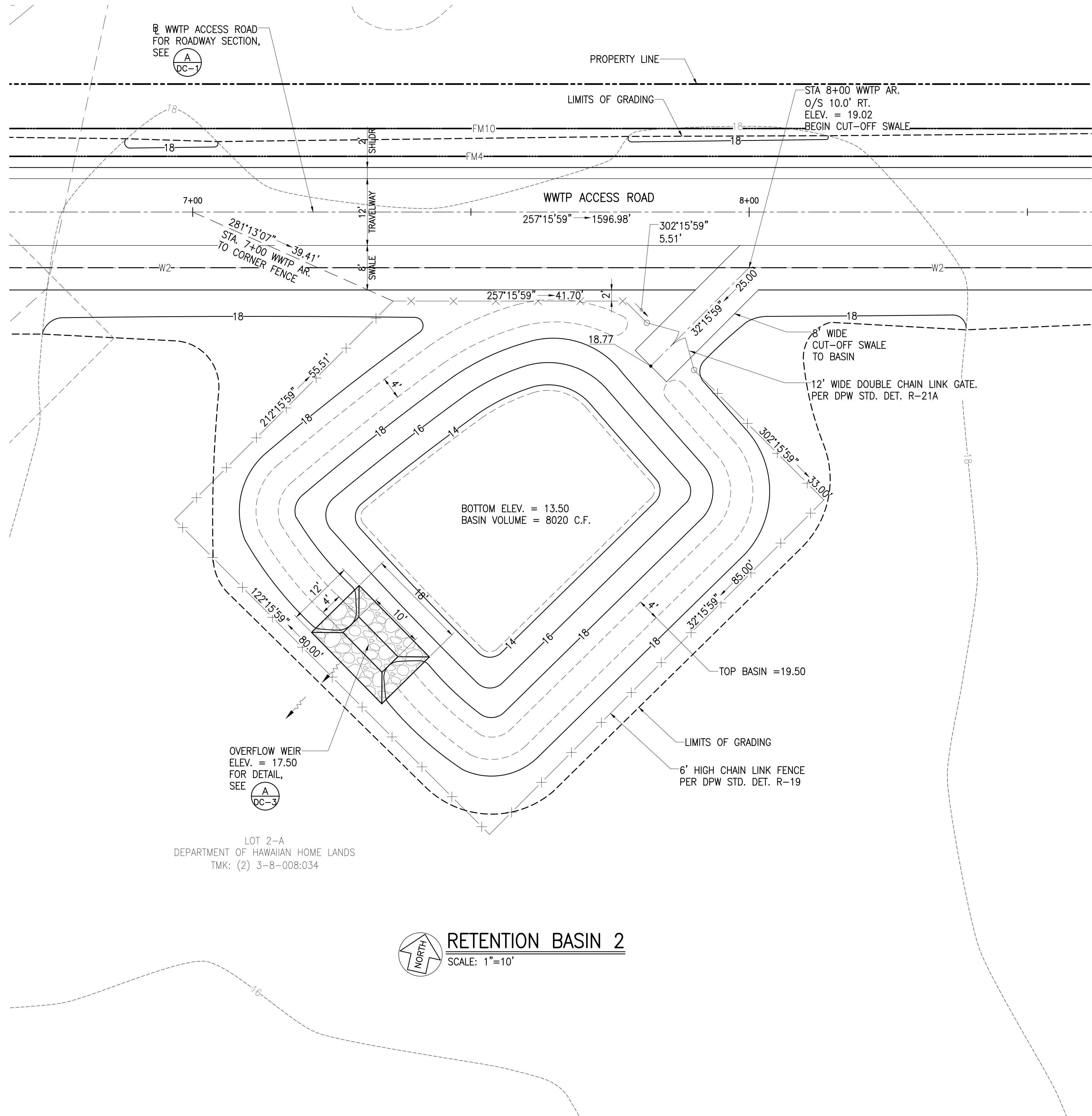
REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**RETENTION BASIN 1
 DETAIL**
 DWG. NO.
CA3-17
 SHEET 40 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) \BRYAN\DWG\CA3-18 RETENTION BASIN 2 DETAIL.DWG



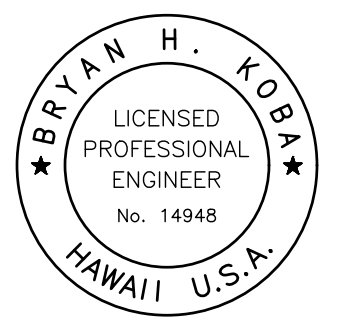
LOT 2-A
 DEPARTMENT OF HAWAIIAN HOME LANDS
 TMK: (2) 3-8-008:034

RETENTION BASIN 2
 SCALE: 1"=10'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS
**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

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 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

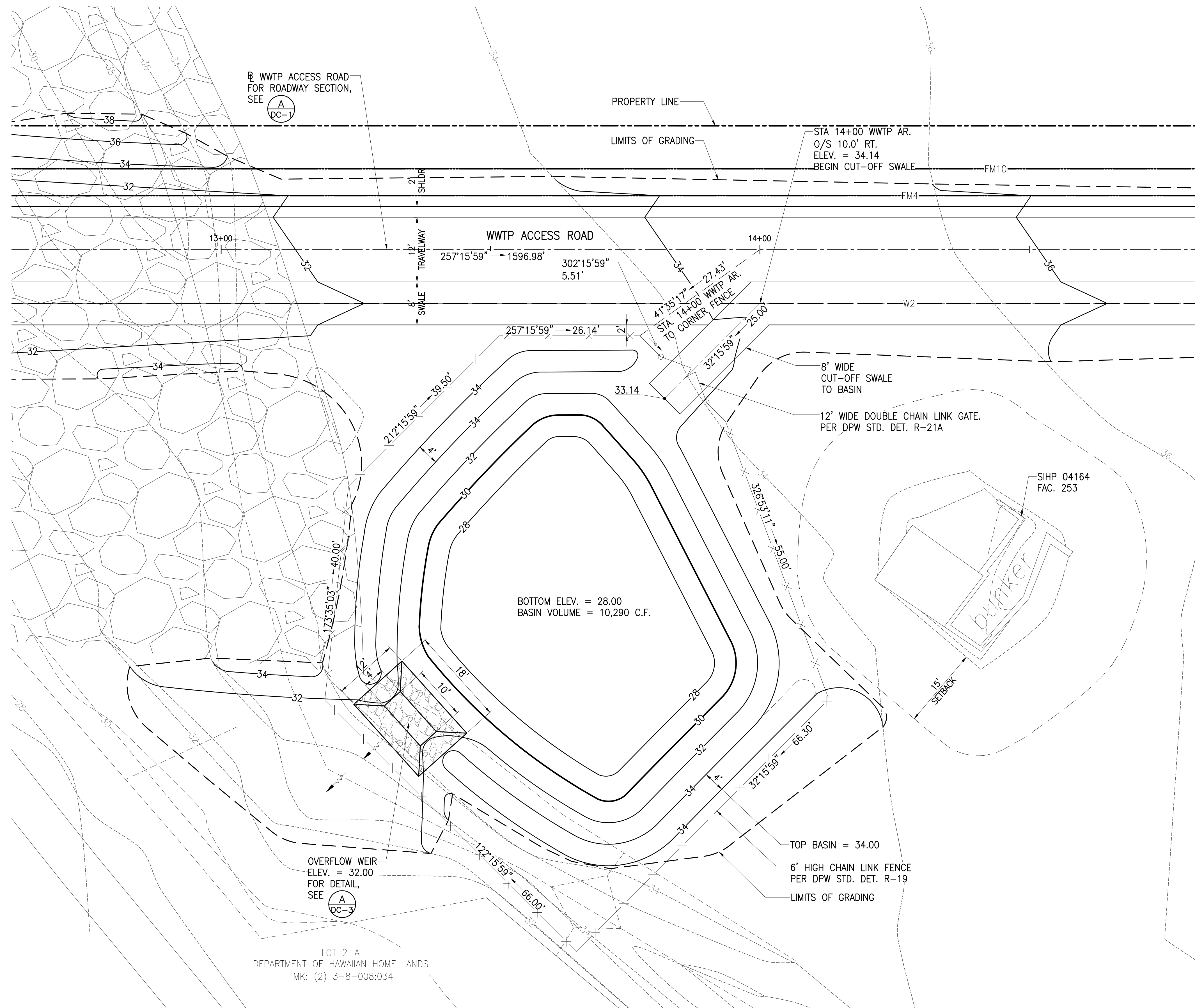
REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**RETENTION BASIN 2
 DETAIL**
 DWG. NO.
CA3-18
 SHEET 41 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\CA3-19 RETENTION BASIN 3 DETAIL.DWG



LOT 2-A
 DEPARTMENT OF HAWAIIAN HOME LANDS
 TMK: (2) 3-8-008:034

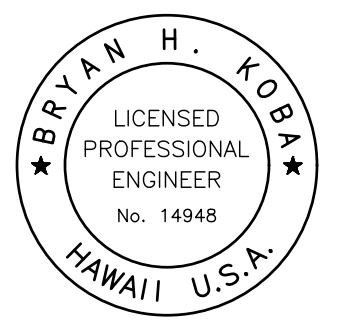
RETENTION BASIN 3
 SCALE: 1"=10'

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 501 SUMNER STREET, SUITE 521
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STATE OF HAWAII
 DEPARTMENT OF
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 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY

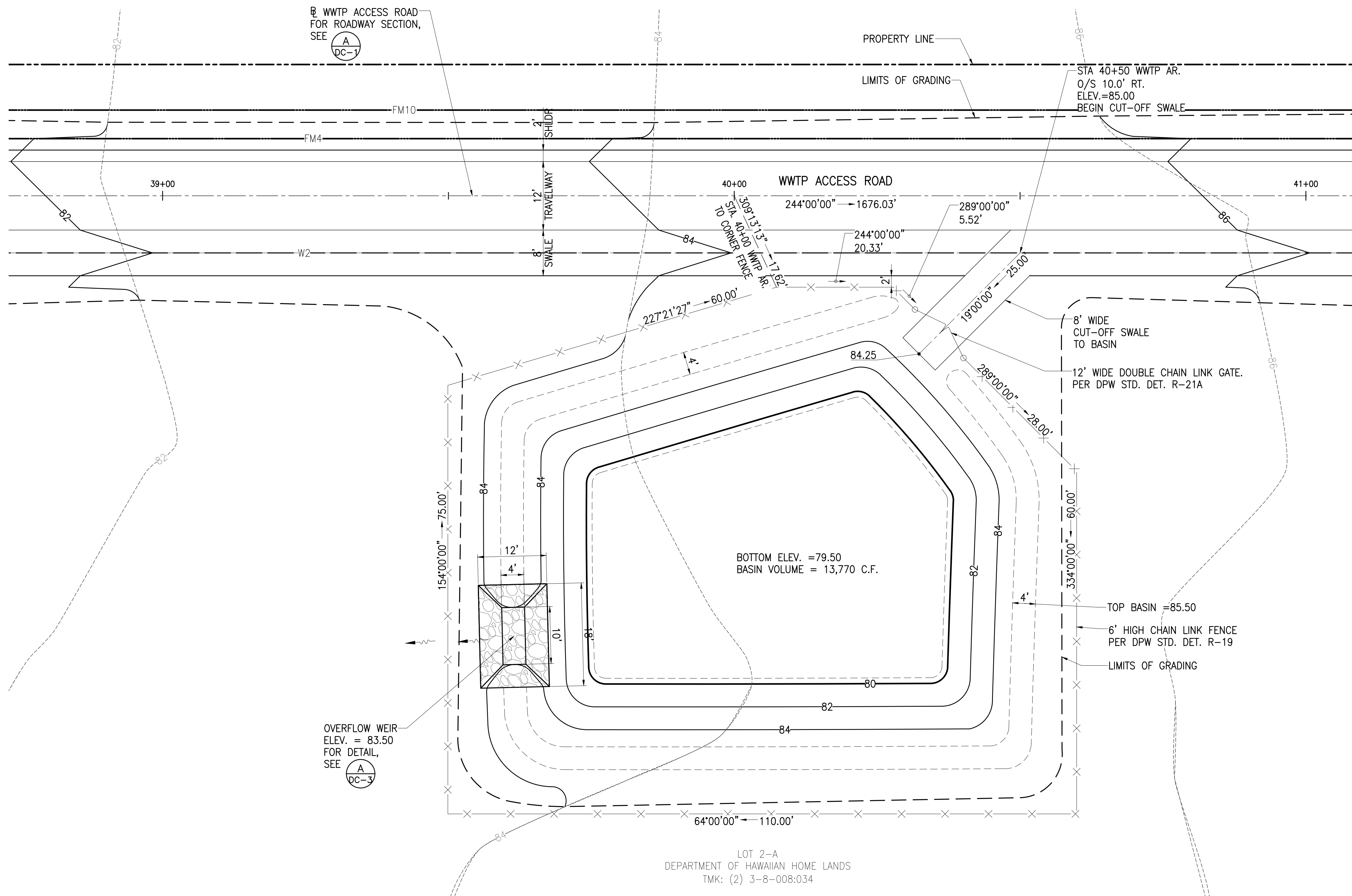
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**RETENTION BASIN 3
 DETAIL**

DWG. NO.
CA3-19
 SHEET 42 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CA3-21 RETENTION BASIN 5 DETAIL.DWG



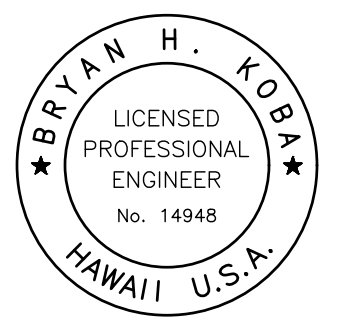
RETENTION BASIN 5
 SCALE: 1"=10'

LOT 2-A
 DEPARTMENT OF HAWAIIAN HOME LANDS
 TMK: (2) 3-8-008:034

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STATE OF HAWAII
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 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY

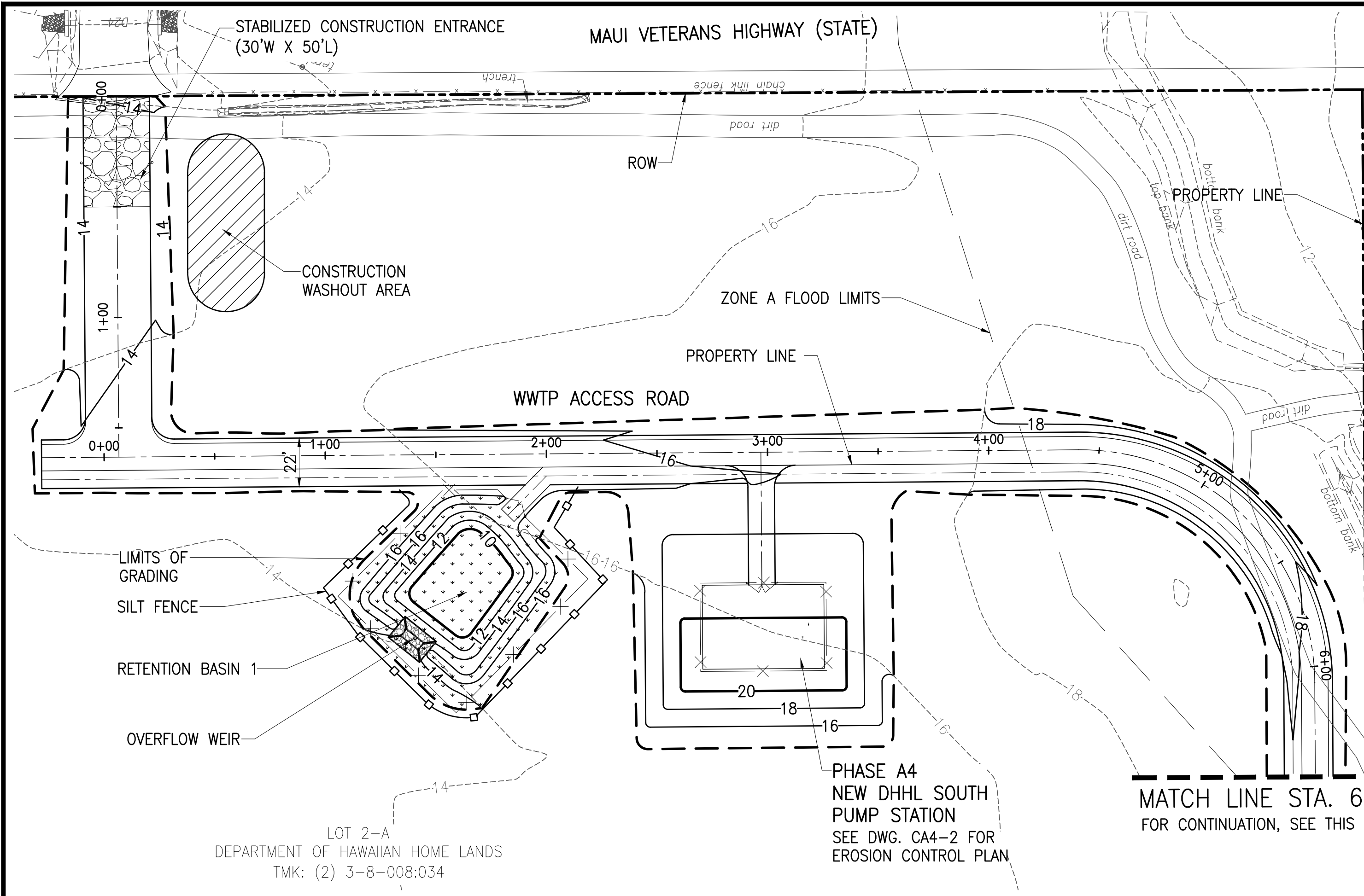
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**RETENTION BASIN 5
 DETAIL**

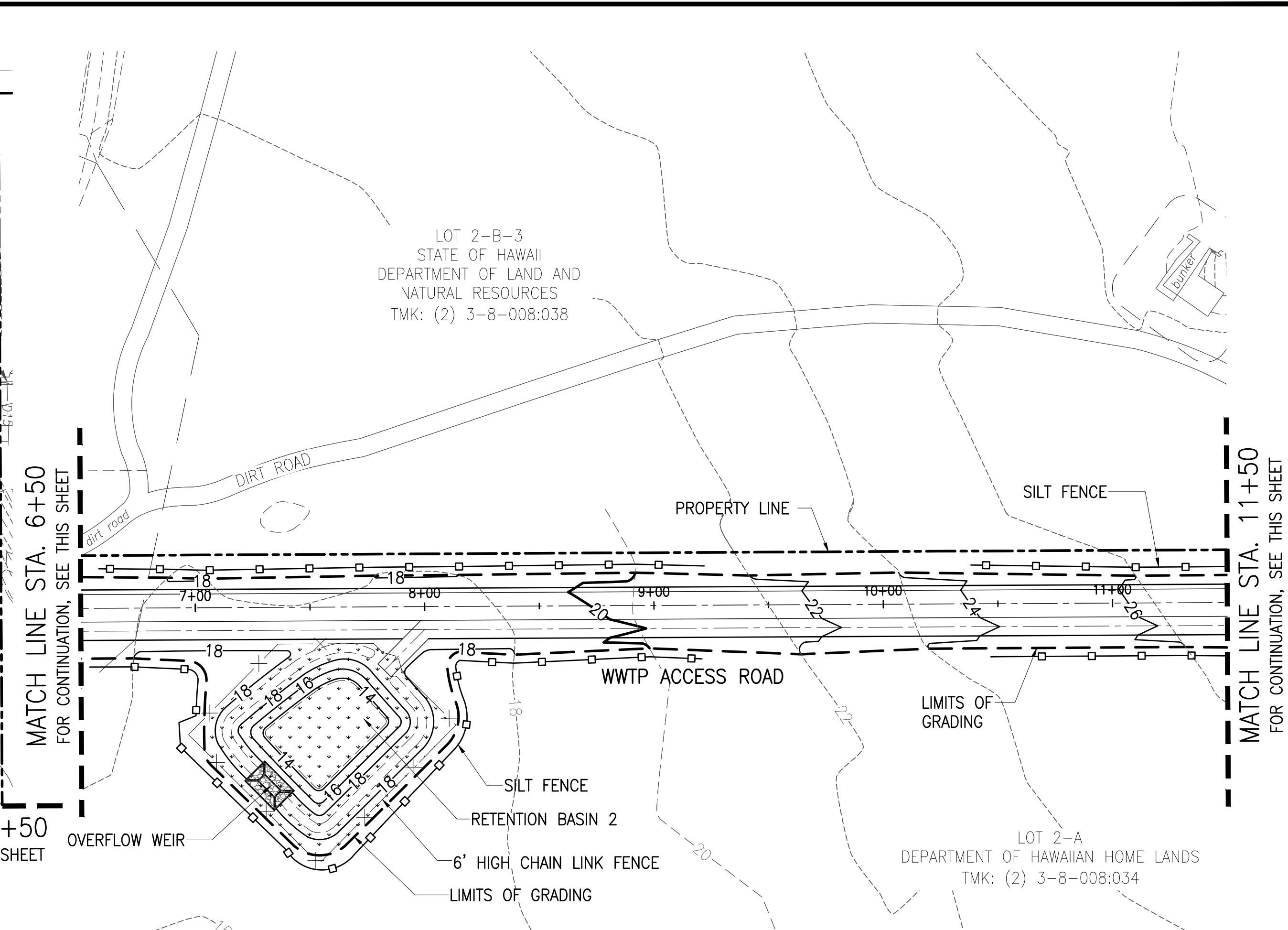
DWG. NO.
CA3-21
 SHEET 44 OF 201

FILE	POCKET	FOLDER	NO.

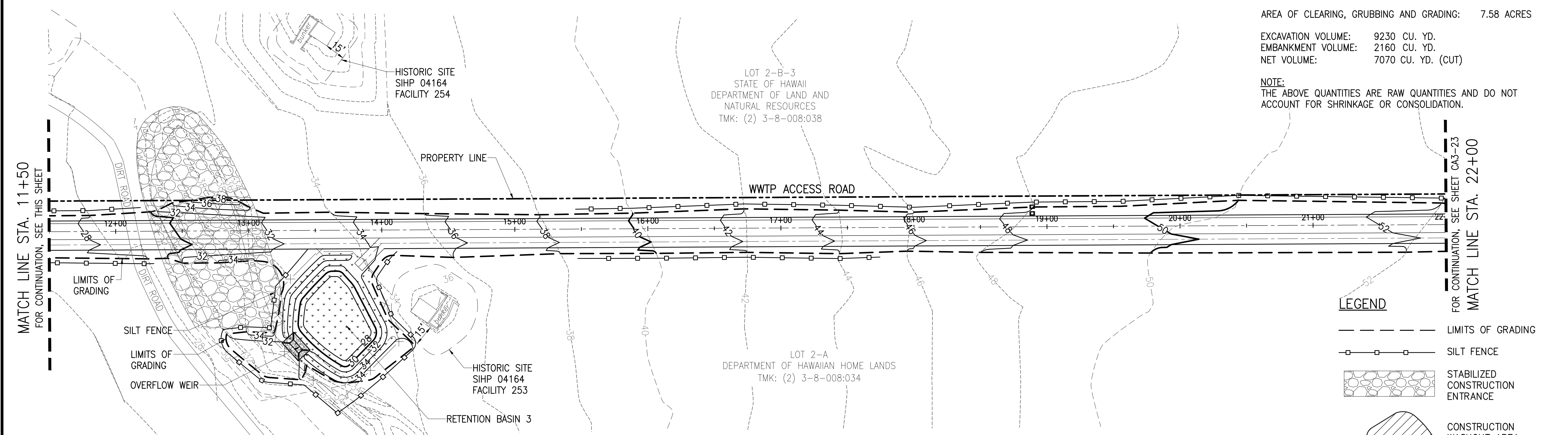
JOB NO. 0-11-056.004
 FN: F:\CONG_VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\CA3-22 PHASE A3 ECP STA. 0+00 TO 22+00.DWG



PHASE A3 - EROSION CONTROL PLAN STA. 0+00 TO 6+50
 SCALE: 1"=40'



PHASE A3 - EROSION CONTROL PLAN STA. 6+50 TO 11+50
 SCALE: 1"=40'



PHASE A3 - EROSION CONTROL PLAN STA. 11+50 TO 22+00
 SCALE: 1"=40'

ESTIMATED PHASE A3 EARTHWORK SUMMARY:
 AREA OF CLEARING, GRUBBING AND GRADING: 7.58 ACRES
 EXCAVATION VOLUME: 9230 CU. YD.
 EMBANKMENT VOLUME: 2160 CU. YD.
 NET VOLUME: 7070 CU. YD. (CUT)

NOTE:
 THE ABOVE QUANTITIES ARE RAW QUANTITIES AND DO NOT ACCOUNT FOR SHRINKAGE OR CONSOLIDATION.

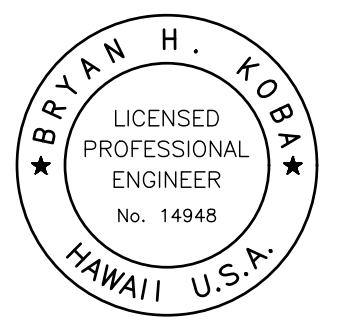
- LEGEND**
- LIMITS OF GRADING
 - - - SILT FENCE
 - [Stippled Box] STABILIZED CONSTRUCTION ENTRANCE
 - [Hatched Box] CONSTRUCTION WASHOUT AREA
 - [Dotted Box] HYDROSEED

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 CIVIL ENGINEERS & SURVEYORS
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Bryan H. Kobayashi APRIL 30, 2020
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY

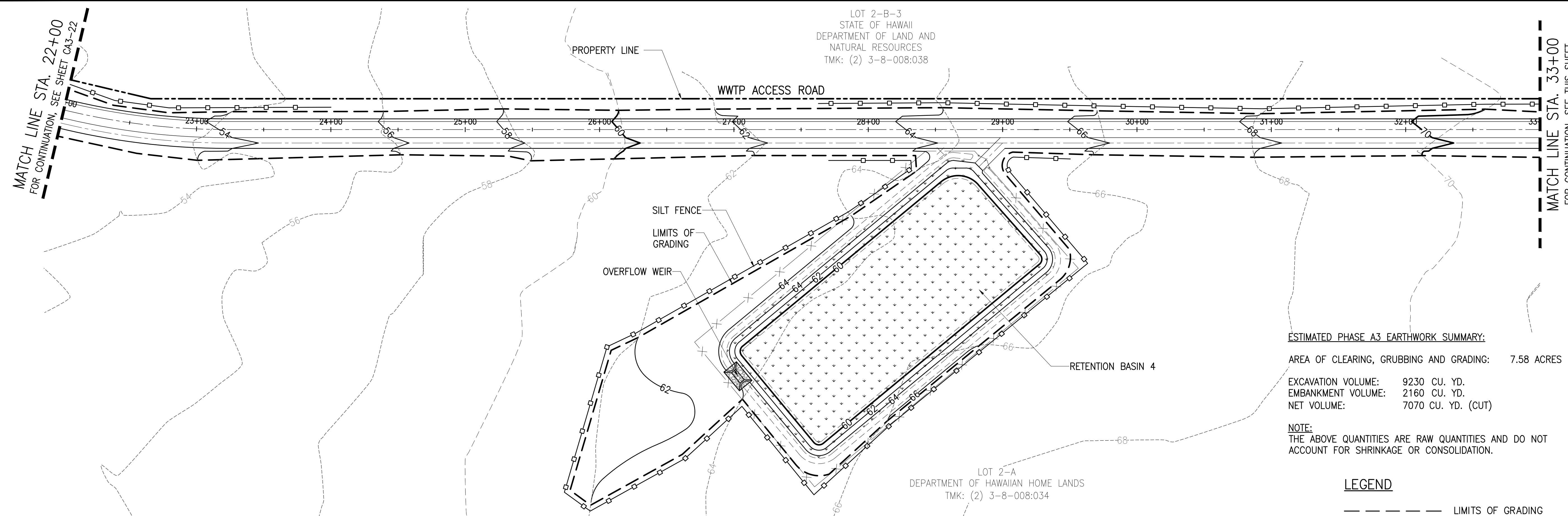
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PHASE A3 - EROSION CONTROL PLAN STA. 0+00 TO 22+00

DWG. NO.
CA3-22
 SHEET 45 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\CA3-23 PHASE A3 ECP STA. 22+00 TO 44+00.DWG

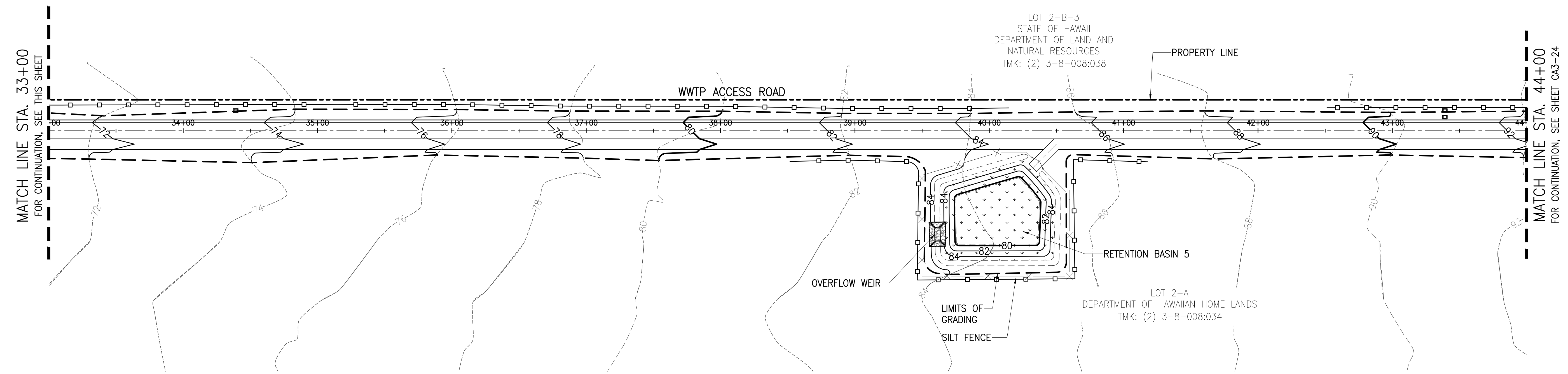


PHASE A3 - EROSION CONTROL PLAN STA. 22+00 TO 33+00
 SCALE: 1"=40'

ESTIMATED PHASE A3 EARTHWORK SUMMARY:
 AREA OF CLEARING, GRUBBING AND GRADING: 7.58 ACRES
 EXCAVATION VOLUME: 9230 CU. YD.
 EMBANKMENT VOLUME: 2160 CU. YD.
 NET VOLUME: 7070 CU. YD. (CUT)

NOTE:
 THE ABOVE QUANTITIES ARE RAW QUANTITIES AND DO NOT ACCOUNT FOR SHRINKAGE OR CONSOLIDATION.

- LEGEND**
- LIMITS OF GRADING
 - o-o- SILT FENCE
 - [Stippled Box] HYDROSEED

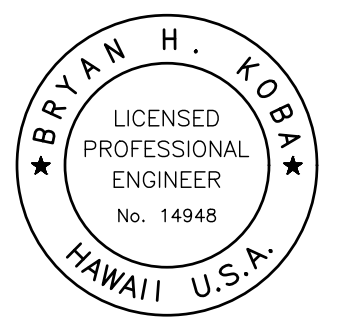


PHASE A3 - EROSION CONTROL PLAN STA. 33+00 TO 44+00
 SCALE: 1"=40'

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 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
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 INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2			
LINE IS 2 INCHES AT FULL SIZE (If NOT 2-inches : Scale Accordingly)			
REVISION	DATE	BRIEF	BY

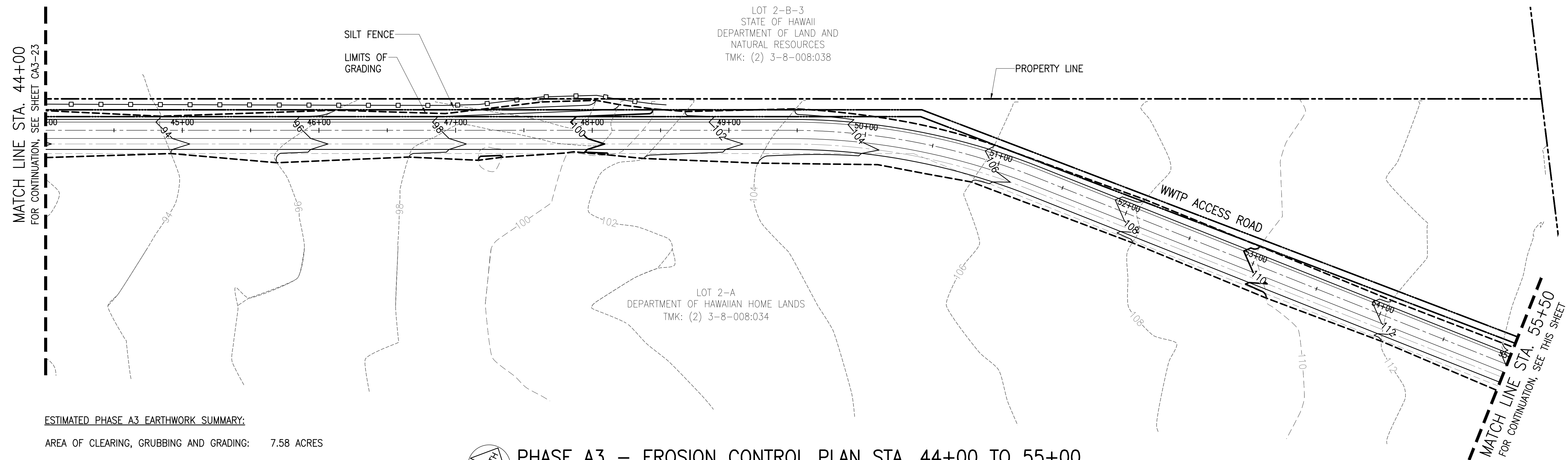
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PHASE A3 - EROSION CONTROL PLAN STA. 22+00 TO 44+00

DWG. NO.
CA3-23
 SHEET 46 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CA3-24 PHASE A3 ECP STA. 44+00.R0 END.DWG

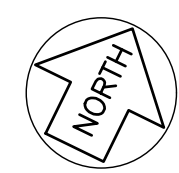


ESTIMATED PHASE A3 EARTHWORK SUMMARY:

AREA OF CLEARING, GRUBBING AND GRADING: 7.58 ACRES

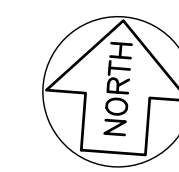
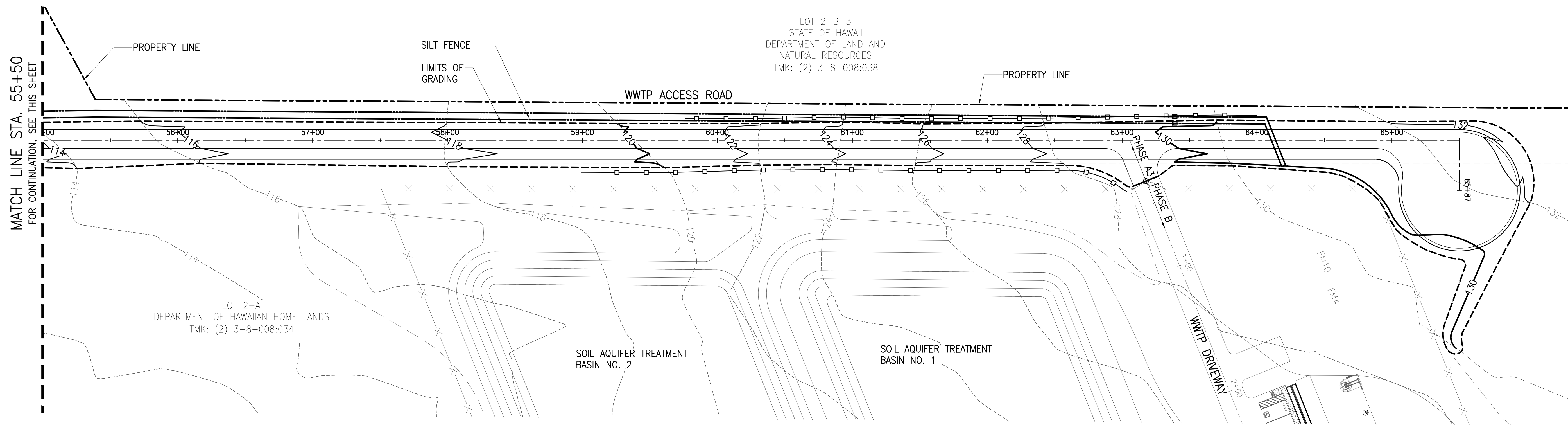
EXCAVATION VOLUME: 9230 CU. YD.
 EMBANKMENT VOLUME: 2160 CU. YD.
 NET VOLUME: 7070 CU. YD. (CUT)

NOTE:
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PHASE A3 - EROSION CONTROL PLAN STA. 44+00 TO 55+00

SCALE: 1"=40'



PHASE A3 - EROSION CONTROL PLAN STA. 55+00 TO END

SCALE: 1"=40'

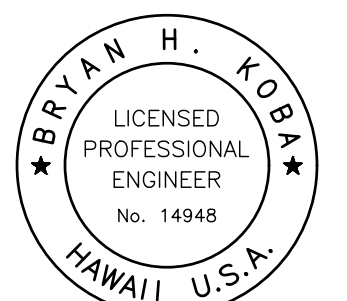
LEGEND

- LIMITS OF GRADING
- SILT FENCE

Austin Tsutsumi
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 CIVIL ENGINEERS & SURVEYORS
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Bryan H. Kobayashi APRIL 30, 2020
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY

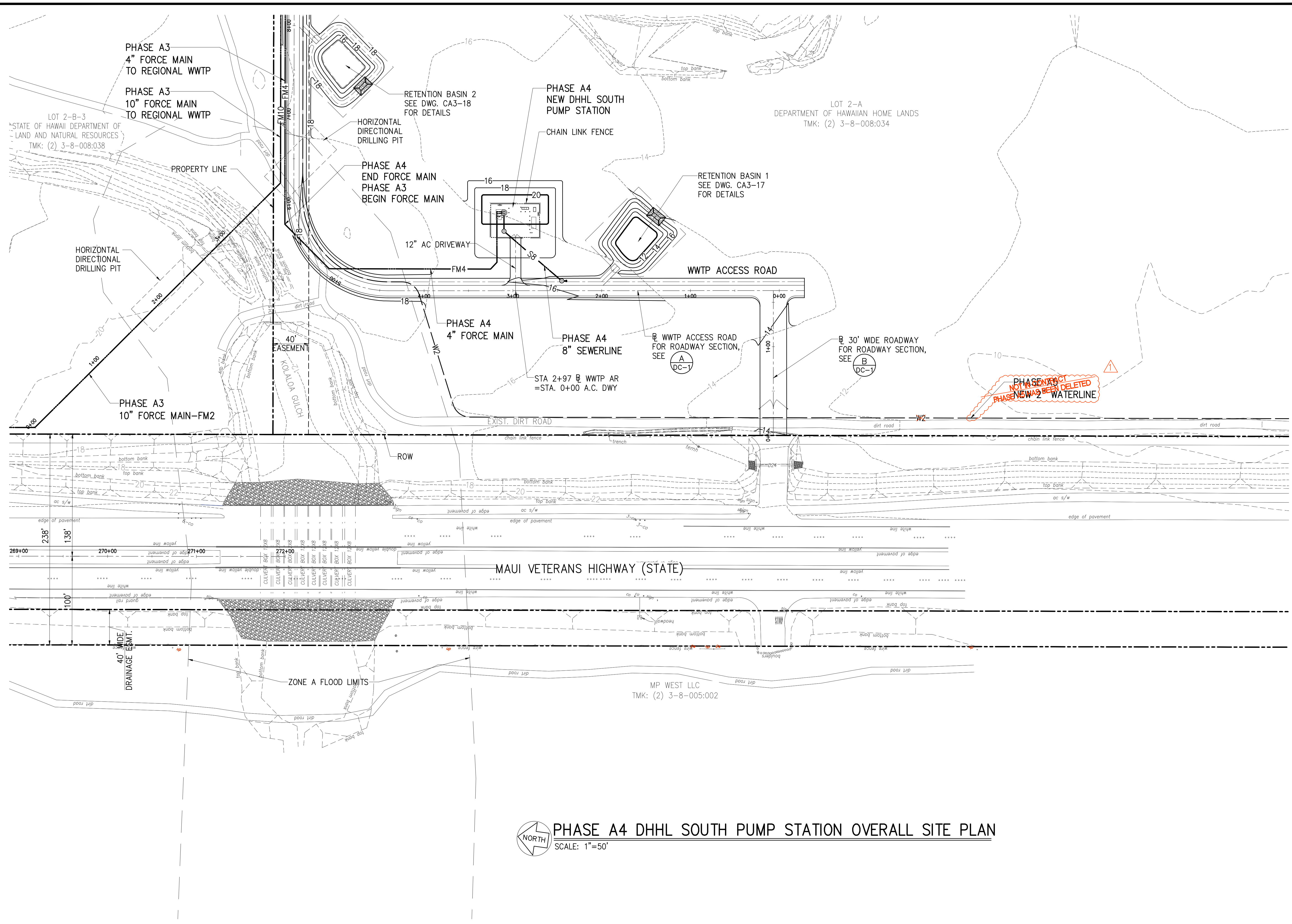
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PHASE A3 - EROSION CONTROL PLAN STA. 44+00 TO END

DWG. NO.
CA3-24
 SHEET 47 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-066.004
 FN. C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\CA4-1 PHASE A4 DHHL SOUTH PUMP STATION OVERALL SITE PLAN.DWG

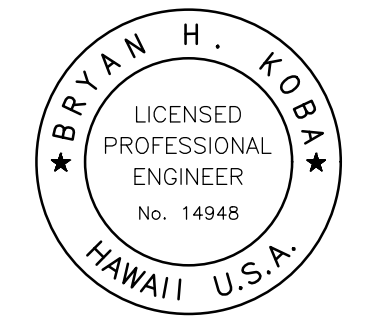


PHASE A4 DHHL SOUTH PUMP STATION OVERALL SITE PLAN
 SCALE: 1"=50'

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Bryan H. Koba APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES, SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

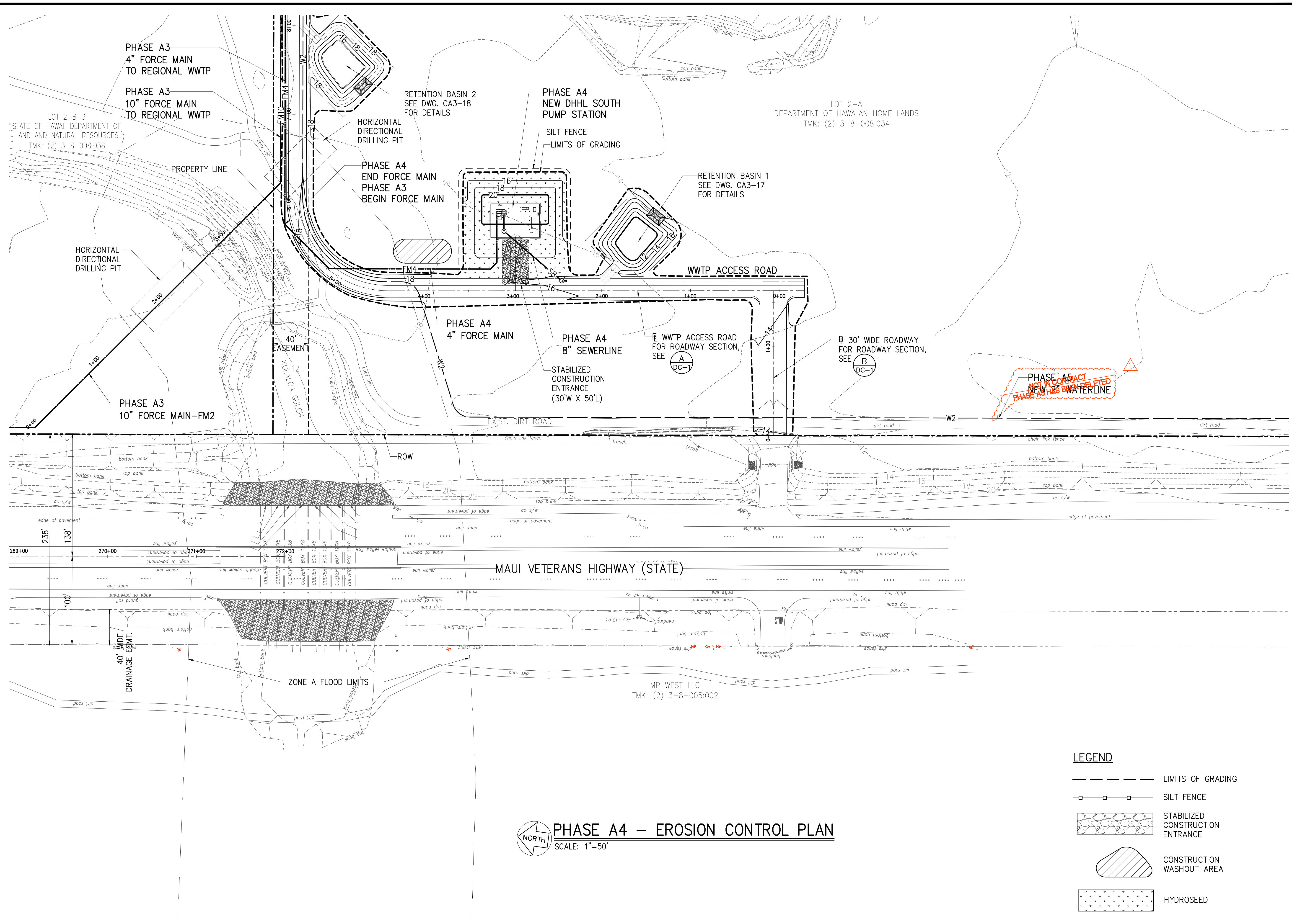
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PHASE A4 DHHL SOUTH
 PUMP STATION OVERALL
 SITE PLAN**

DWG. NO.
CA4-1
 SHEET 48 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-066.004
 FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\CA4-2 PHASE A4 EROSION CONTROL PLAN.DWG



PHASE A4 - EROSION CONTROL PLAN
 SCALE: 1"=50'

- LEGEND**
- LIMITS OF GRADING
 - SILT FENCE
 - STABILIZED CONSTRUCTION ENTRANCE
 - CONSTRUCTION WASHOUT AREA
 - HYDROSEED

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 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII

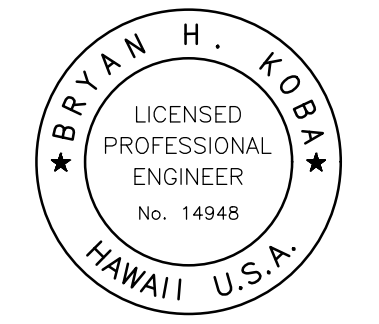
501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817

PHONE: 808-533-3646
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES: SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

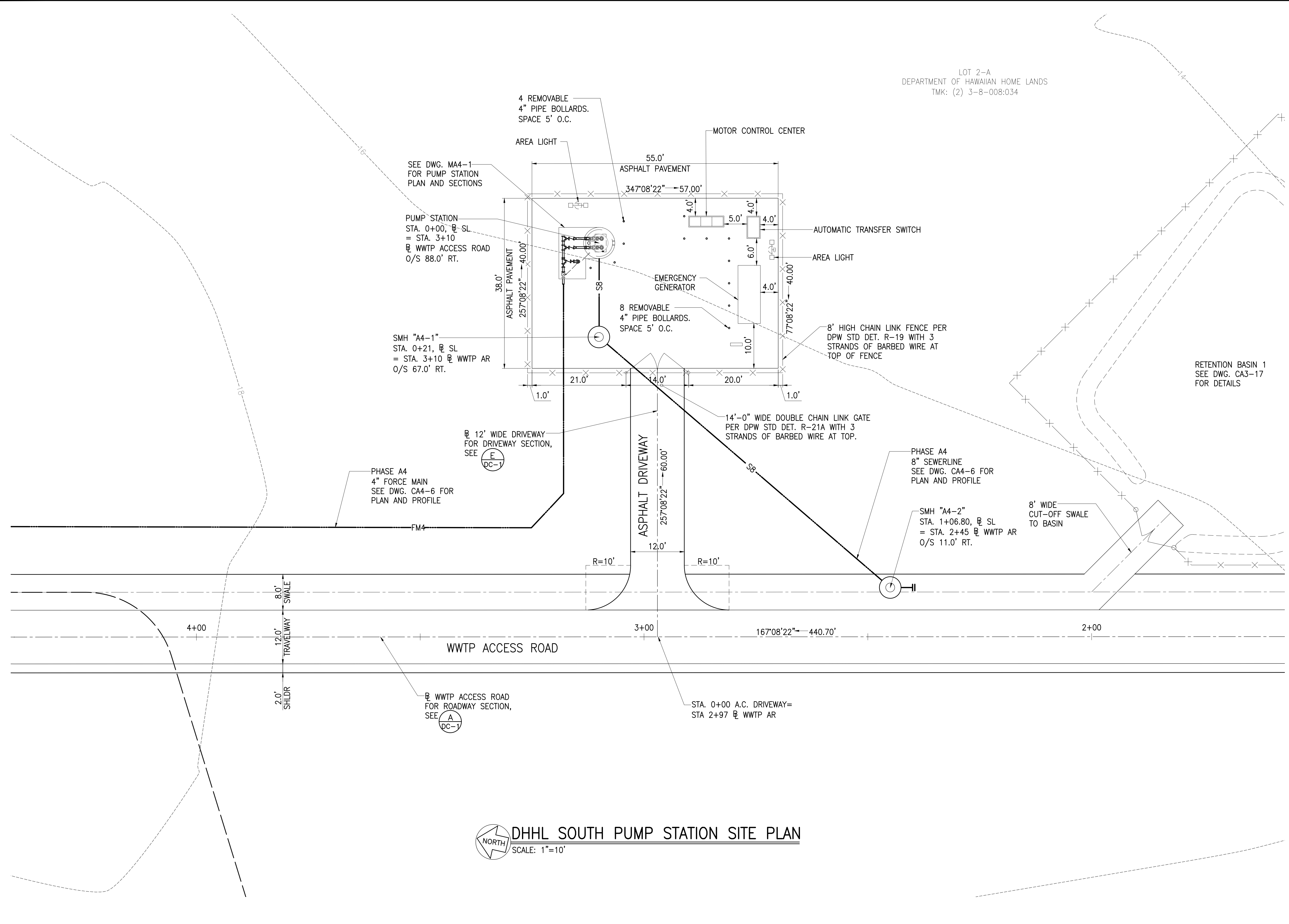
**PHASE A4 -
 EROSION
 CONTROL PLAN**

DWG. NO.
CA4-2
 SHEET 49 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\CA4-3 DHHL SOUTH PUMP STATION SITE PLAN.DWG

LOT 2-A
 DEPARTMENT OF HAWAIIAN HOME LANDS
 TMK: (2) 3-8-008:034

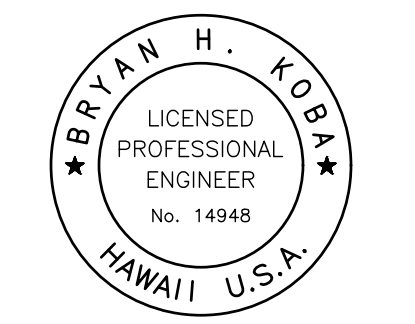


DHHL SOUTH PUMP STATION SITE PLAN
 SCALE: 1"=10'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
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 HONOLULU, HAWAII 96817
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY

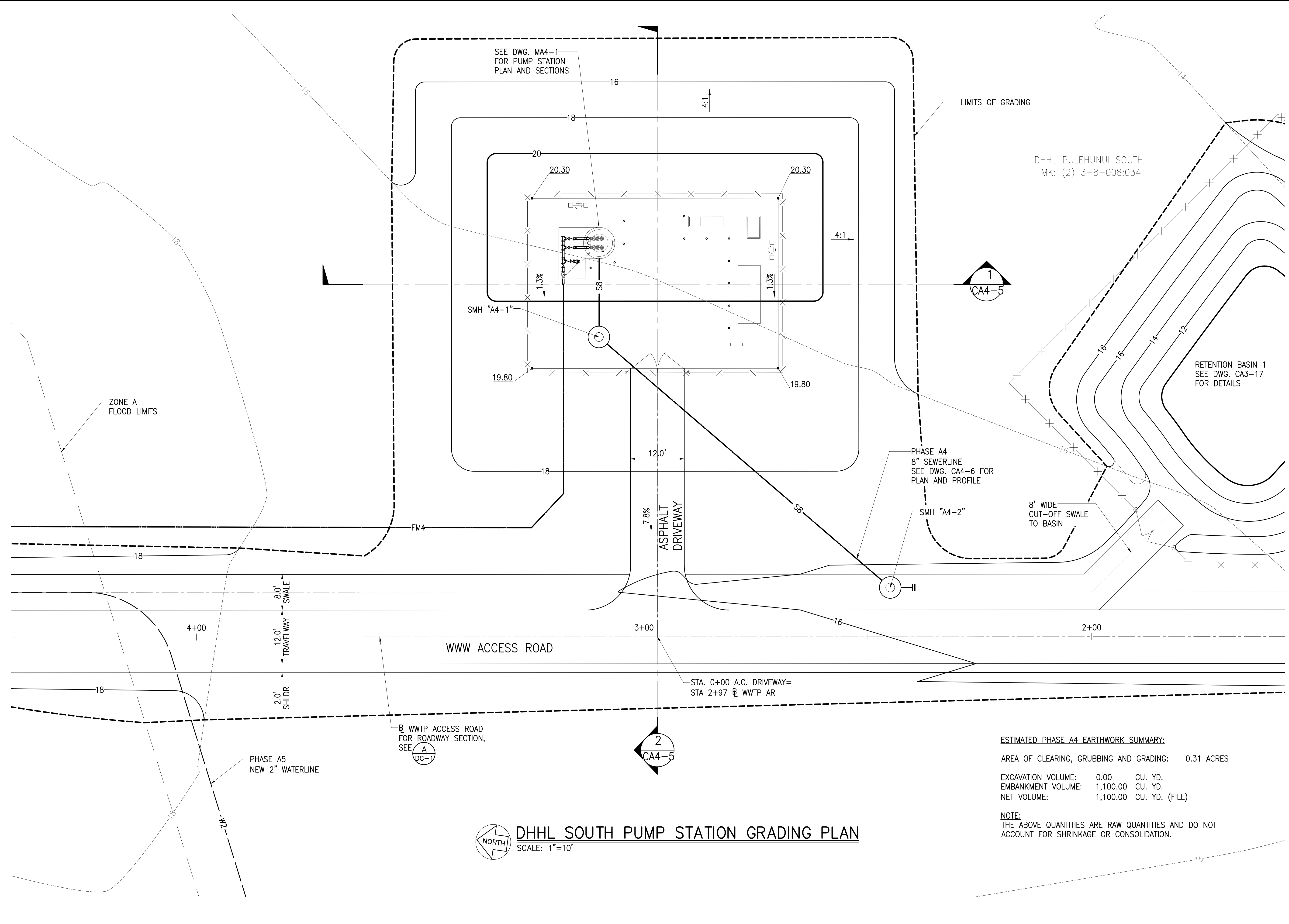
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**DHHL SOUTH PUMP
 STATION SITE PLAN**

DWG. NO.
CA4-3
 SHEET 50 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\CA4-4 DHHL SOUTH PUMP STATION GRADING PLAN.DWG



DHHL SOUTH PUMP STATION GRADING PLAN
 SCALE: 1"=10'

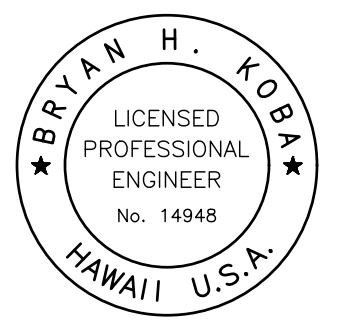
ESTIMATED PHASE A4 EARTHWORK SUMMARY:
 AREA OF CLEARING, GRUBBING AND GRADING: 0.31 ACRES
 EXCAVATION VOLUME: 0.00 CU. YD.
 EMBANKMENT VOLUME: 1,100.00 CU. YD.
 NET VOLUME: 1,100.00 CU. YD. (FILL)

NOTE:
 THE ABOVE QUANTITIES ARE RAW QUANTITIES AND DO NOT ACCOUNT FOR SHRINKAGE OR CONSOLIDATION.

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS
**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0	1	2	
LINE IS 2 INCHES AT FULL SIZE (If NOT 2-inches : Scale Accordingly)			
REVISION	DATE	BRIEF	BY

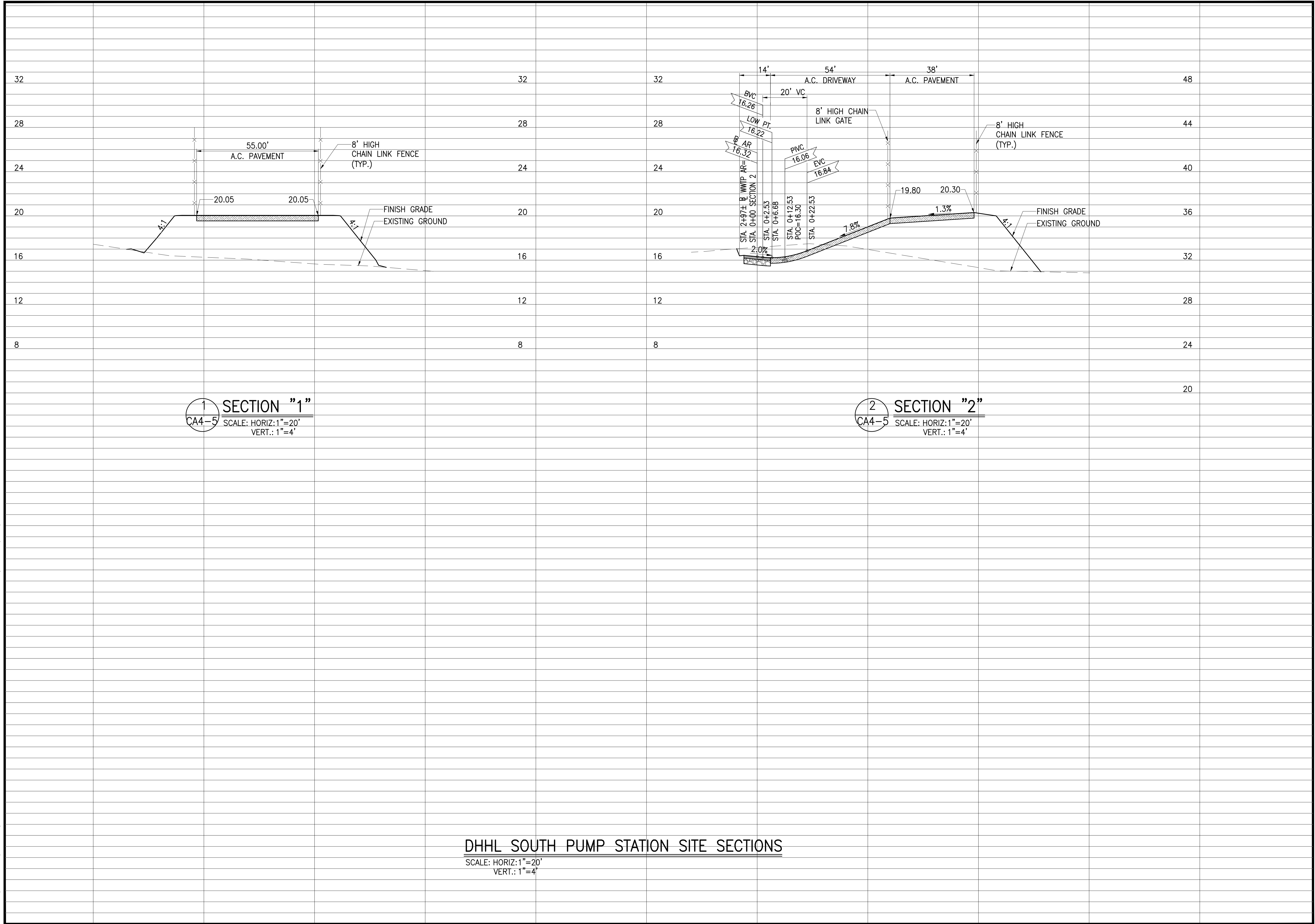
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**DHHL SOUTH PUMP STATION
 GRADING PLAN**

DWG. NO.
CA4-4
 SHEET 51 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CA4-5 DHHL SOUTH PUMP STATION SITE SECTIONS.DWG



SECTION "1"
 CA4-5 SCALE: HORIZ.: 1"=20'
 VERT.: 1"=4'

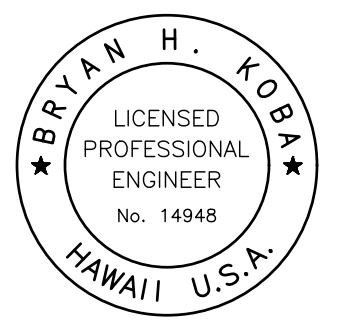
SECTION "2"
 CA4-5 SCALE: HORIZ.: 1"=20'
 VERT.: 1"=4'

DHHL SOUTH PUMP STATION SITE SECTIONS
 SCALE: HORIZ.: 1"=20'
 VERT.: 1"=4'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
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STATE OF HAWAII
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AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**DHHL SOUTH PUMP STATION
 SITE SECTIONS**

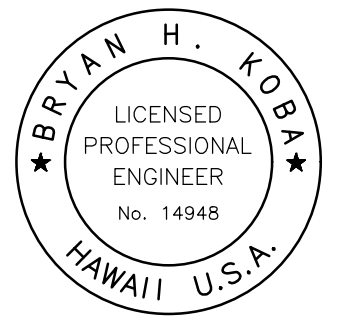
DWG. NO.
CA4-5
 SHEET 52 OF 201

FILE	POCKET	FOLDER	NO.

PHASE A3
 10" FORCE MAIN-FM2
 SEE DWG CA3-8 FOR
 PLAN AND PROFILE

TEMPORARY HORIZONTAL
 DIRECTIONAL DRILLING PIT.

LOT 2-B-3
 STATE OF HAWAII
 DEPARTMENT OF LAND AND
 NATURAL RESOURCES
 TMK: (2) 3-8-008:038



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Bryan H. Koba APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

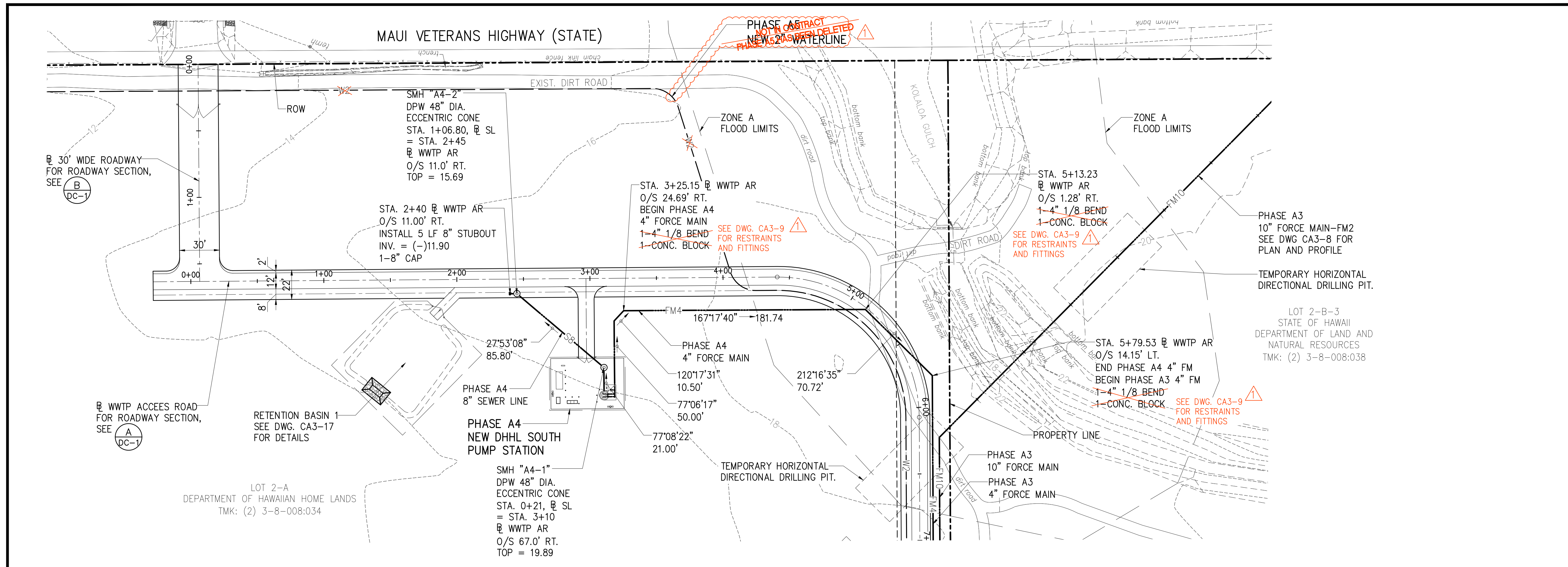
REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

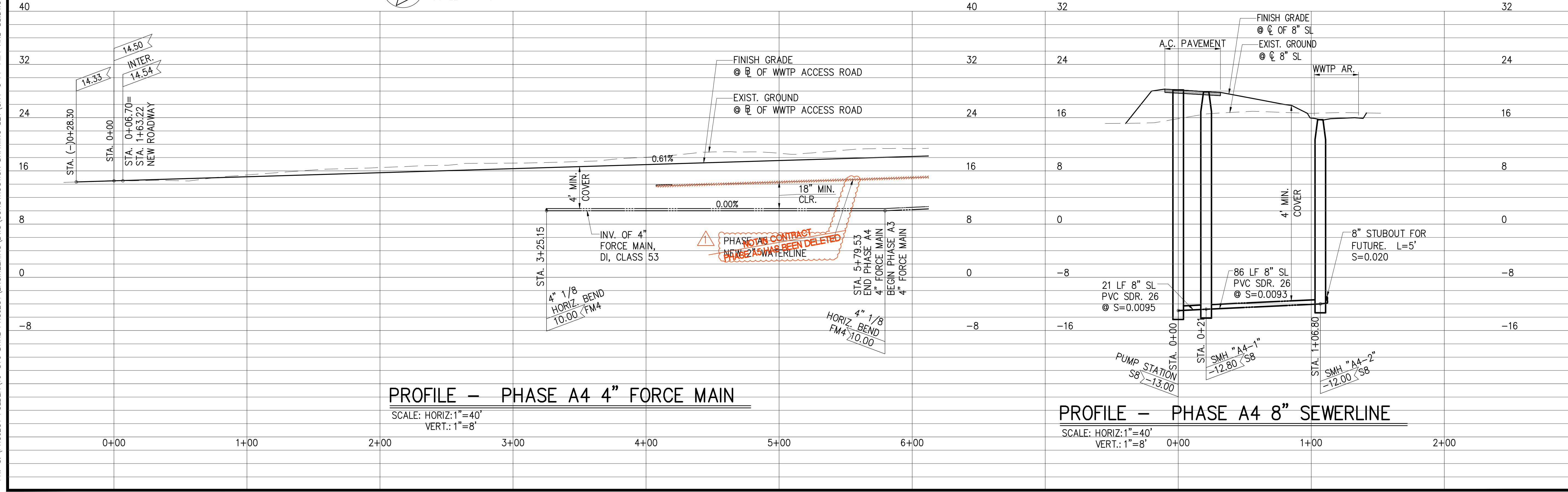
PLAN AND PROFILE
 4" FORCE MAIN AND
 8" SEWERLINE

DWG. NO.
CA4-6
 SHEET 53 OF 201

FILE	POCKET	FOLDER	NO.



PLAN - PHASE A4 4" FORCE MAIN AND 8" SEWERLINE
 SCALE: 1"=40'

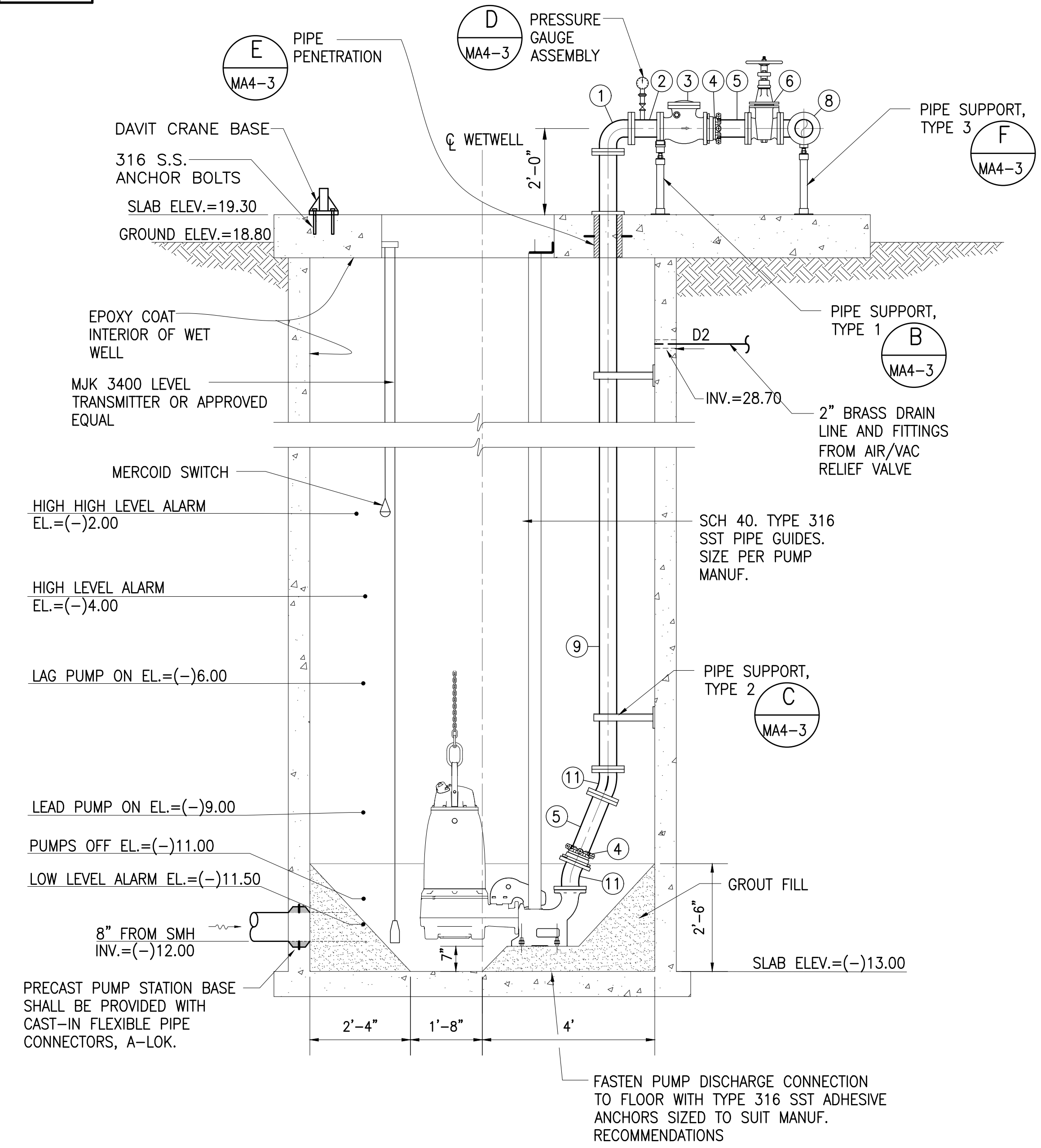
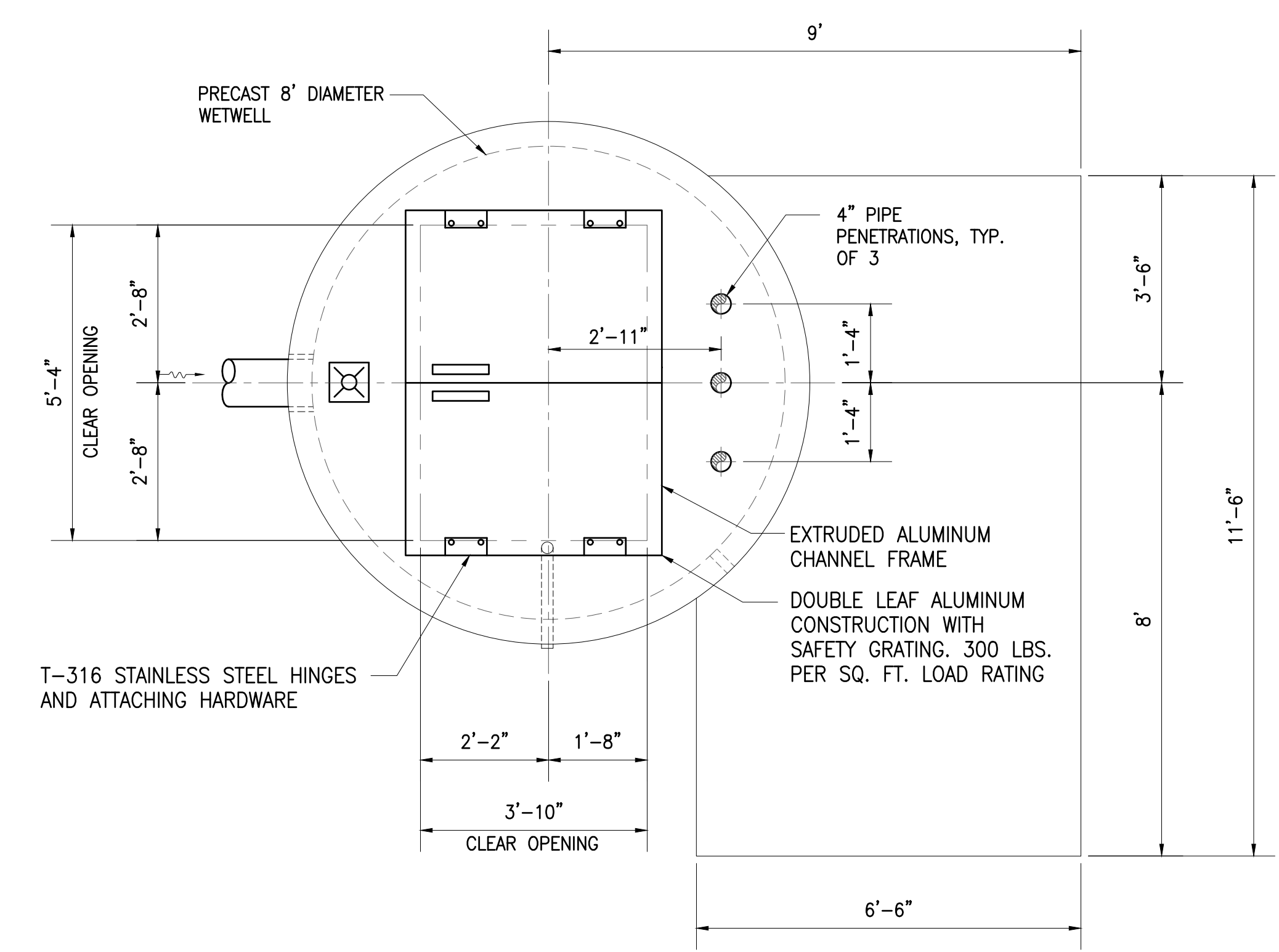
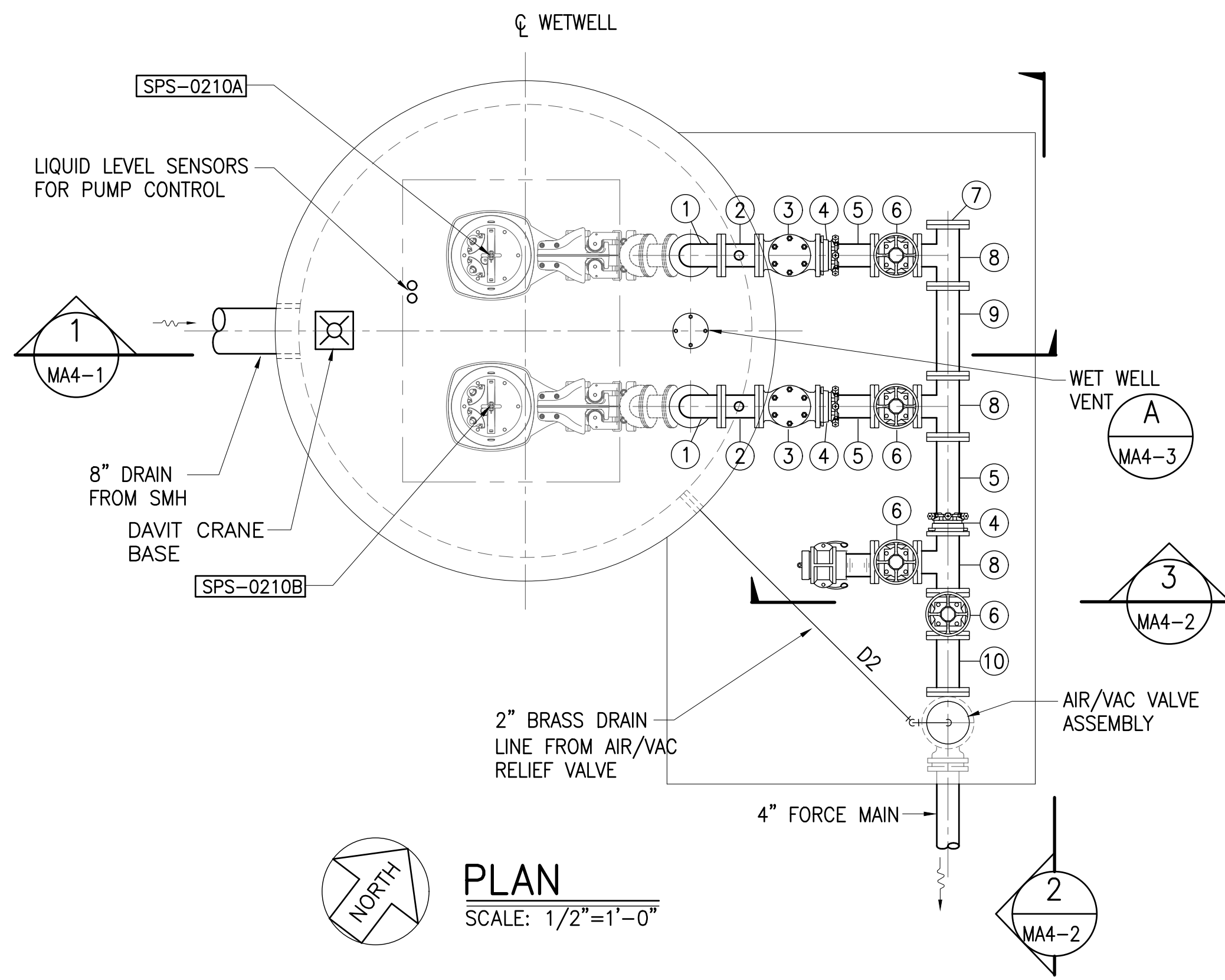


PROFILE - PHASE A4 4" FORCE MAIN
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

PROFILE - PHASE A4 8" SEWERLINE
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

JOB NO. 0-11-066.004
 FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\CA4-6 PP FM4 AND SB.DWG

PUMP MANUF.	NO. OF UNITS	TYPE	MODEL NO.	FLOW, GPM	STATIC, FT	TDH, FT	SPEED, RPM	HP	PUMP EFF.	VAC	PHASE	FREQUENCY
FLYGT	TWO (2)	SUBMERSIBLE	NP 3202 SH 3-273	197	144	320	3550	72	30.0%	480	3	60Hz



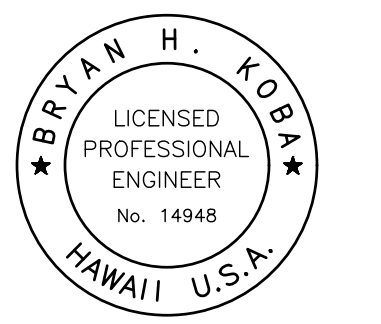
SCHEDULE OF VALVES AND FITTINGS	
NO.	DESCRIPTION
①	4" 1/4 BEND, DI, FE
②	4" SPOOL, DI, L=8", FE
③	4" SWING CHECK VALVE, APCO MODEL CVS-6000-AC OR APPROVED EQUAL
④	4" EBAA SERIES 2100 MEGA FLANGE
⑤	4" SPOOL, DI, LENGTH TO SUIT, FE, XPE
⑥	4" GATE VALVE, FE
⑦	4" BLIND FLANGE, DI
⑧	4" TEE, DI, FE
⑨	4" SPOOL, DI, L=1'-7", FE
⑩	4" SPOOL, DI, L=12", FE
⑪	4" 1/16 BEND, DI, FE
⑫	4" SPOOL, DI, LENGTH TO SUIT, FE

JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\MA4-1 DHH SOUTH PUMP STATION PLAN AND SECTION.DWG

Austin Tsutsumi
A S S C I A T E S , I N C .
CIVIL ENGINEERS I SURVEYORS
HONOLULU I WAILUKU I HILO, HAWAII
501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817
PHONE: 808-533-3646
FAX: 808-526-1267

STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS
**PULEHUNUI
REGIONAL
INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY

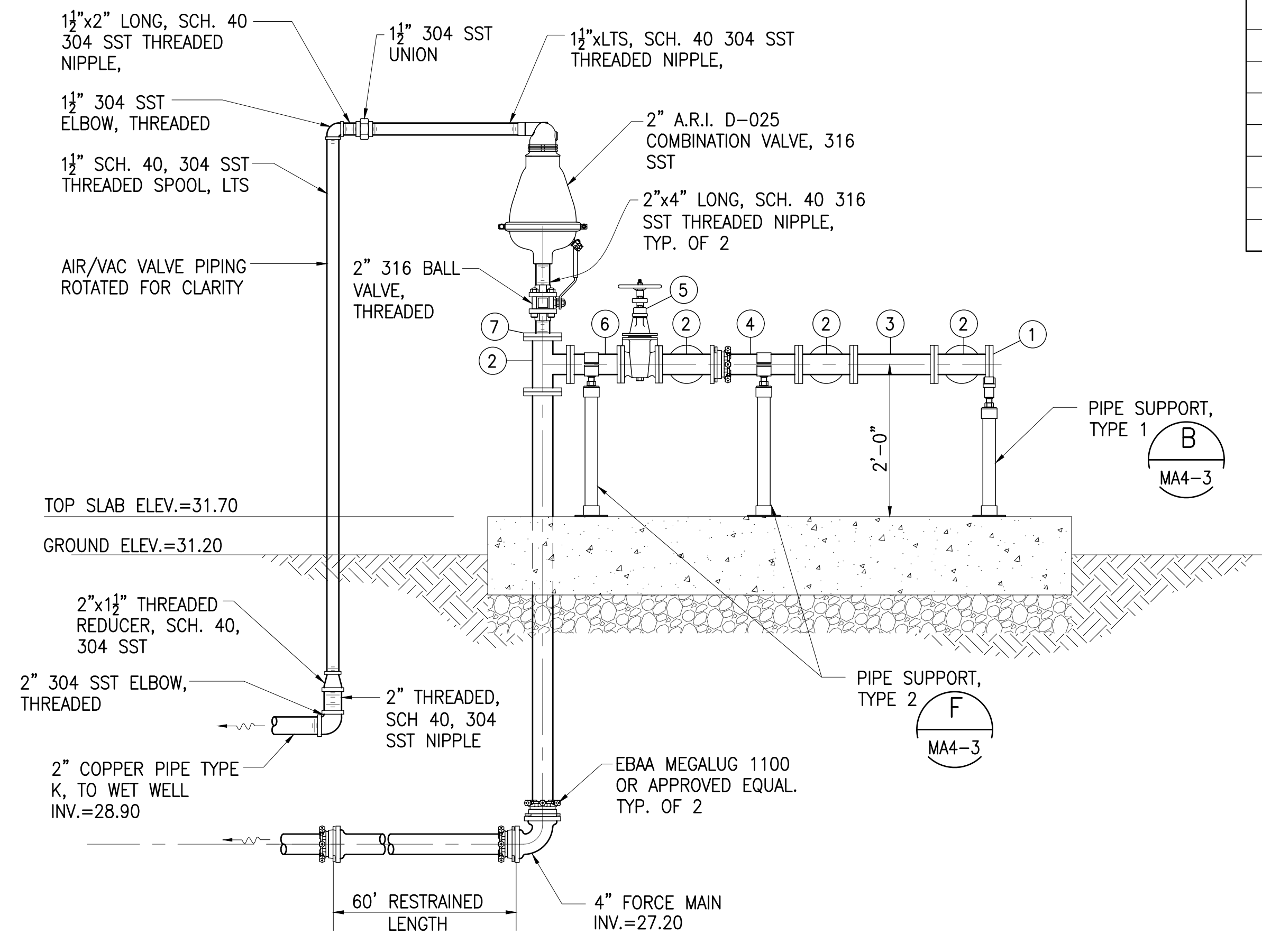
Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

DHHL SOUTH PUMP STATION
PLAN AND SECTION

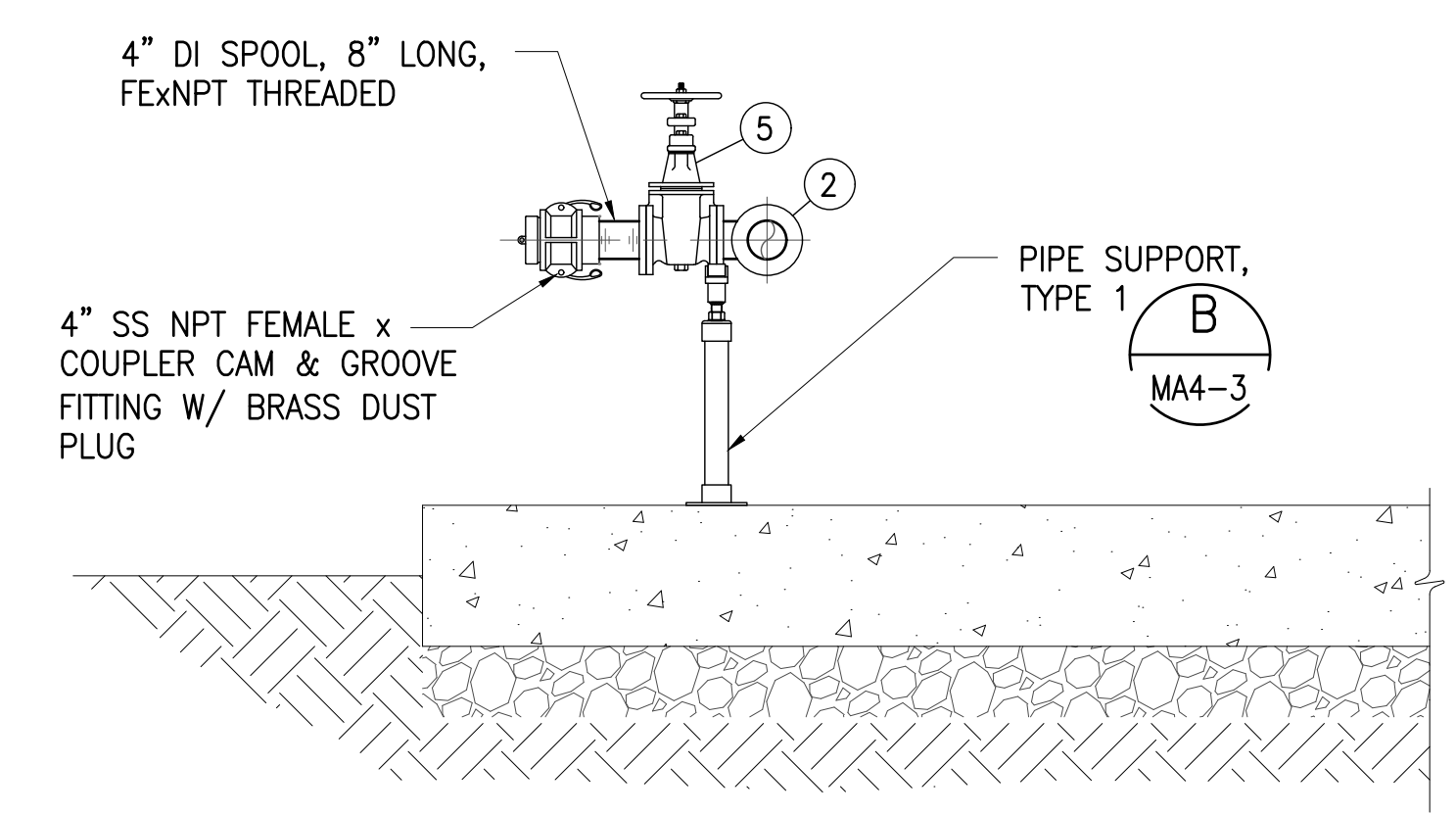
DWG. NO.
MA4-1
SHEET 54 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\MA4-2 MECHANICAL DETAILS 1.DWG



SECTION 2
 SCALE: 3/4"=1'-0" MA4-2



SECTION 3
 SCALE: 3/4"=1'-0" MA4-2

SCHEDULE OF VALVES AND FITTINGS	
NO.	DESCRIPTION
①	4" BLIND FLANGE, DI
②	4" TEE, D1, FE
③	4" SPOOL, DI, L=1'-7", FE
④	4" SPOOL, DI, LENGTH TO SUIT, FE x PE
⑤	4" GATE VALVE, FE
⑥	4" SPOOL, DI, L=12", FE
⑦	4" BLIND FLANGE, DI, TAPPED FOR 2" THREADED PIPE

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII

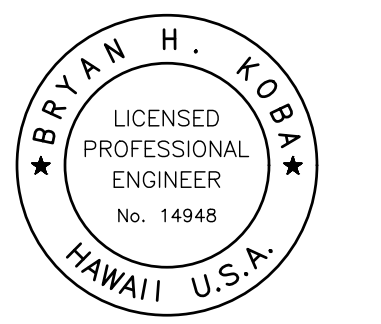
501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817

PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

PULEHUNUI
 REGIONAL
 INFRASTRUCTURE

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

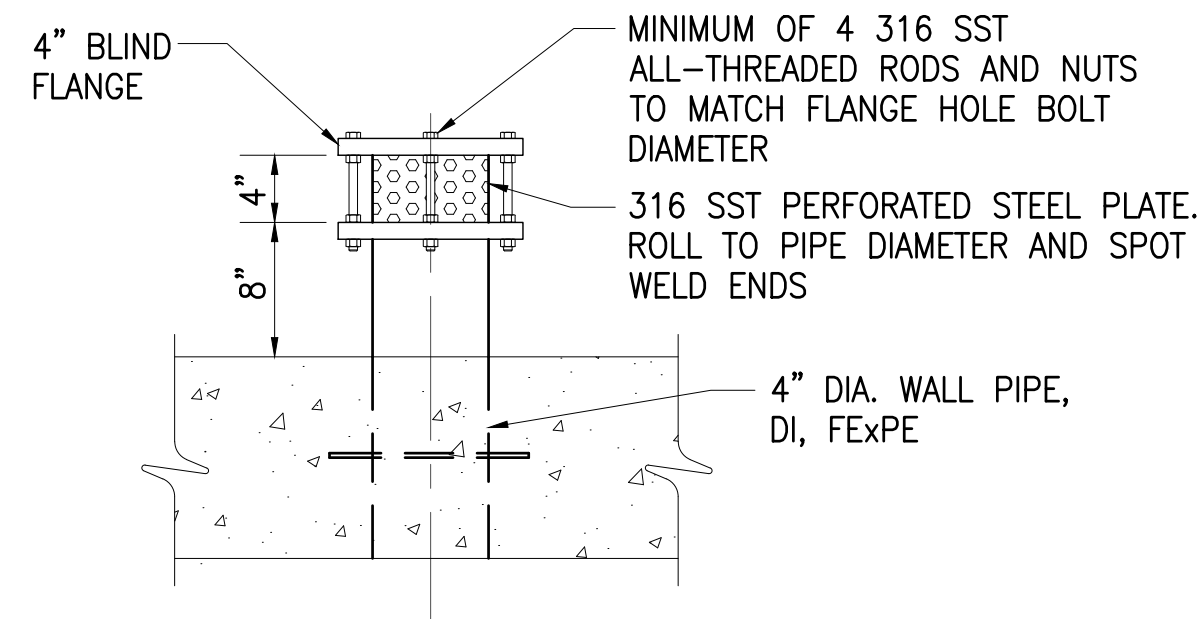
REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

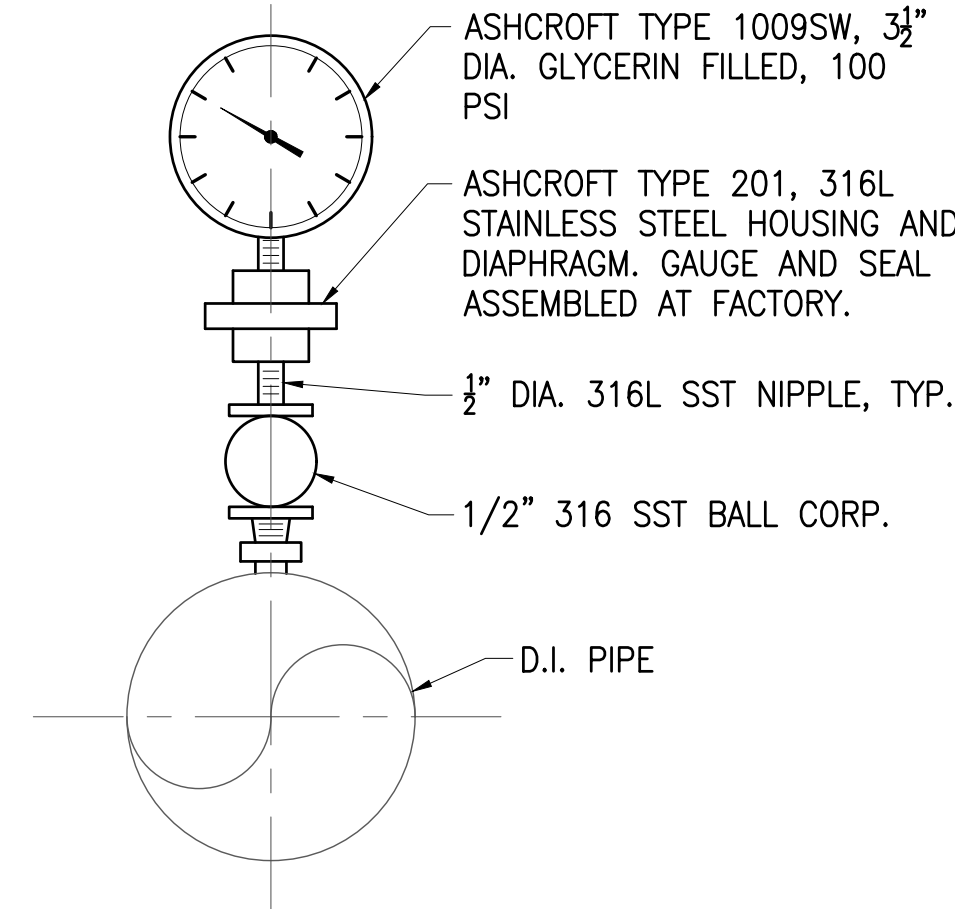
MECHANICAL DETAILS 1

DWG. NO.
MA4-2
 SHEET 55 OF 201

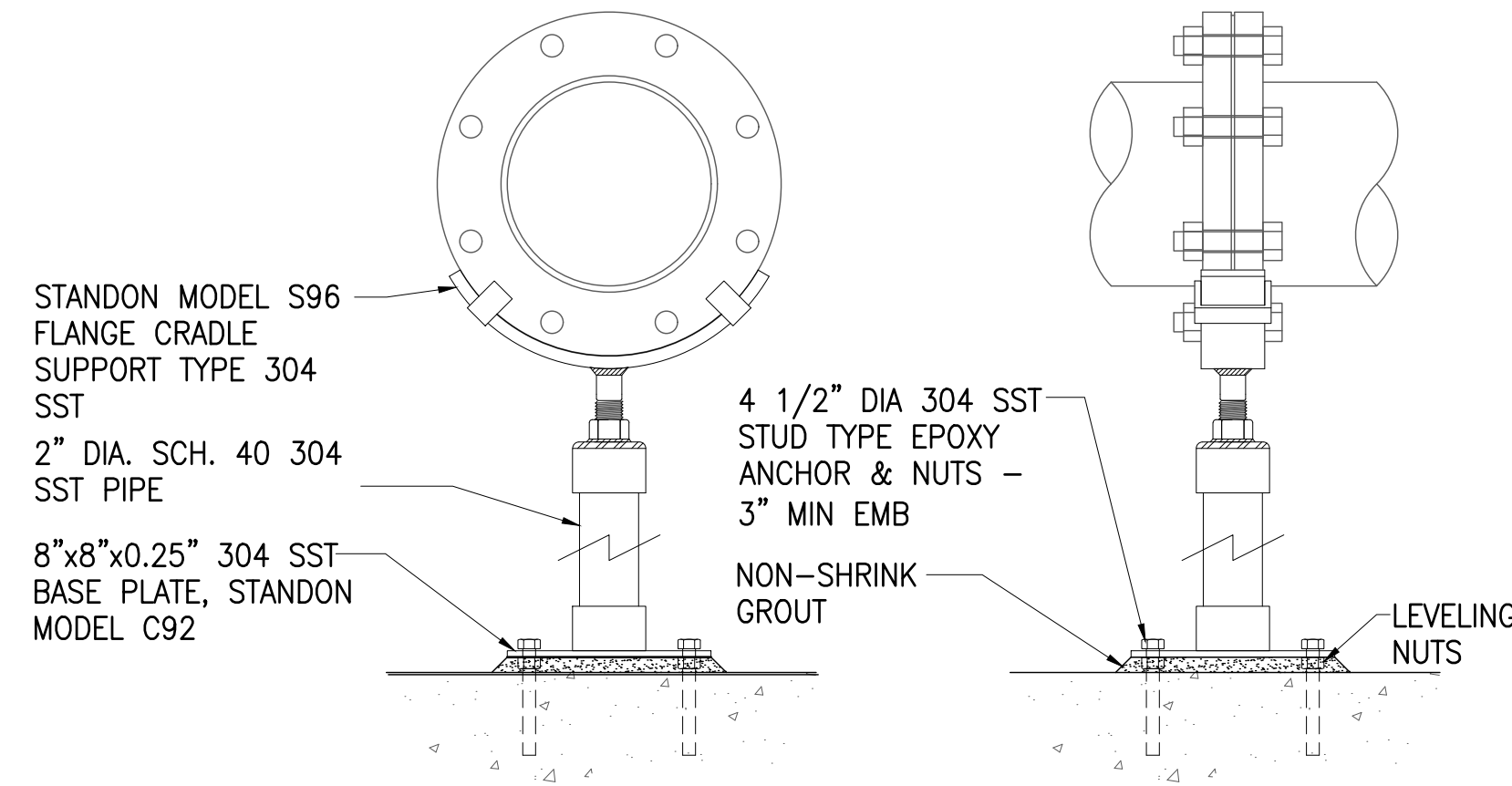
FILE	POCKET	FOLDER	NO.



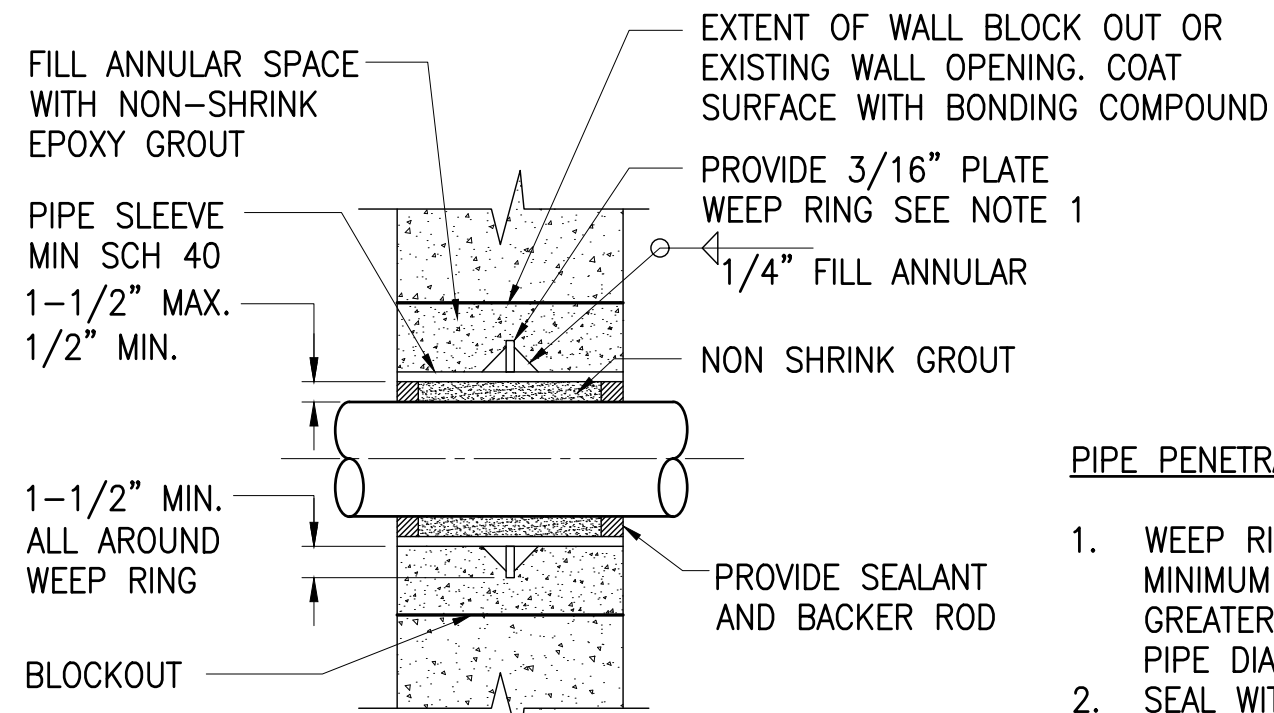
WET WELL VENT DETAIL A
NOT TO SCALE MA4-3



PRESSURE GAUGE D
NOT TO SCALE MA4-3

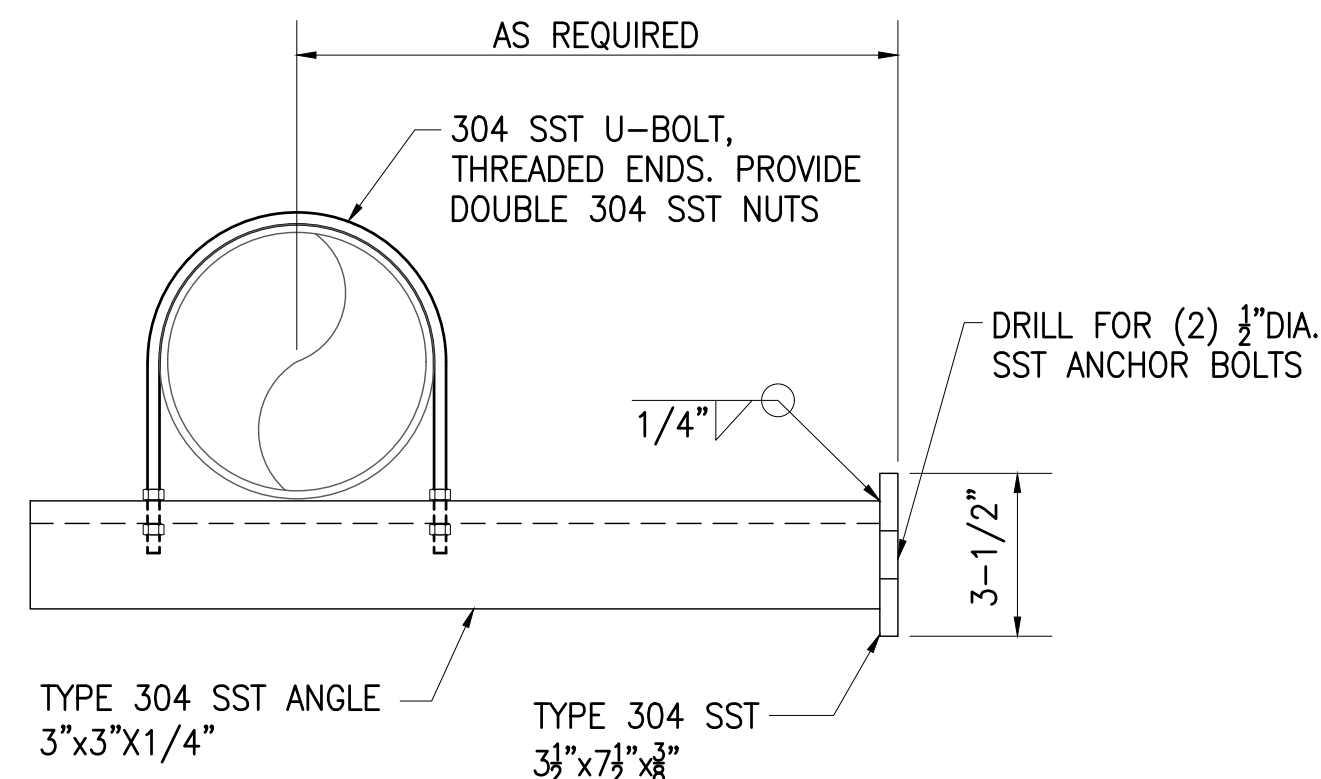


PIPE SUPPORT, TYPE 1 B
NOT TO SCALE MA4-3

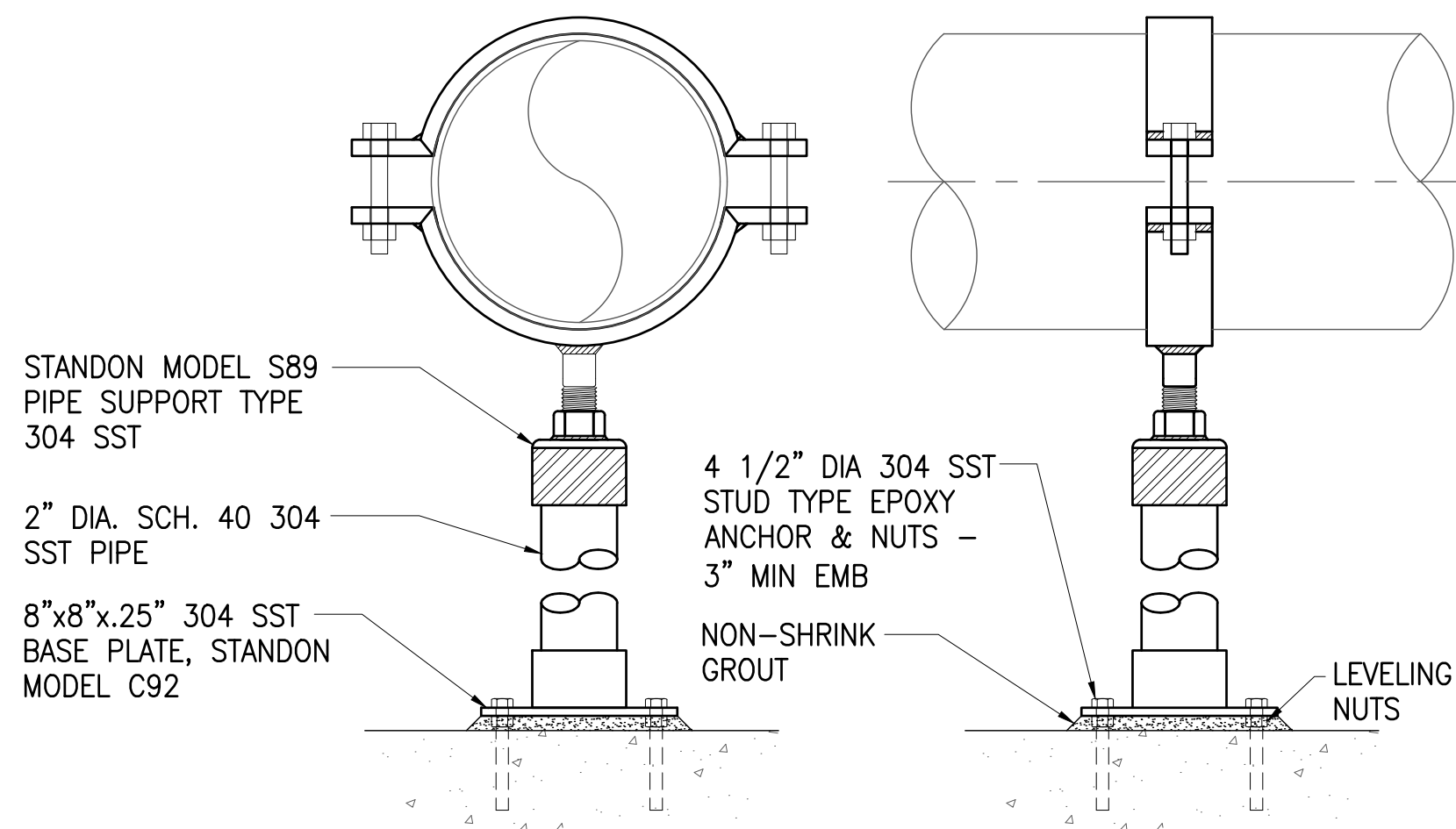


- PIPE PENETRATION NOTES:**
1. WEEP RINGS SHALL HAVE A MINIMUM DIAMETER 3 INCHES GREATER THAN THE OUTSIDE PIPE DIAMETER.
 2. SEAL WITH MASTIC SEALANT WHERE WALL IS EXPOSED TO LIQUID OR EARTH.

PIPE PENETRATION DETAIL E
NOT TO SCALE MA4-3



PIPE SUPPORT, TYPE 2 C
NOT TO SCALE MA4-3



PIPE SUPPORT, TYPE 3 F
NOT TO SCALE MA4-3

JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN\DWG\MA4-3 MECHANICAL DETAILS 2.DWG



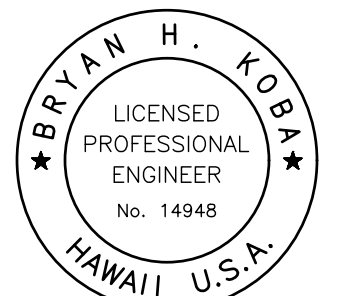
Austin Tsutsumi
A S S C I A T E S , I N C .
CIVIL ENGINEERS, I SURVEYORS
HONOLULU I WAILUKU I HILO, HAWAII
501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817
PHONE: 808-533-3646
FAX: 808-526-1267



STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

PULEHUNUI
REGIONAL
INFRASTRUCTURE

AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
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REVISION	DATE	BRIEF	BY

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

MECHANICAL DETAILS 2

DWG. NO.
MA4-3
SHEET 56 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CA5-1 PHASE A5 DHHL WATERLINE SITE PLAN - 1.DWG

MP WEST LLC
TMK: (2) 3-8-005:002

MAUI VETERANS HIGHWAY (STATE)

PROPERTY LINE

PHASE A5
BEGIN 2" WATERLINE

PHASE A5
NEW 2" WATERLINE

**NOT IN CONTRACT
PHASE B HAS BEEN DELETED**

LOT 2-A
DEPARTMENT OF HAWAIIAN HOME LANDS
TMK: (2) 3-8-008:034



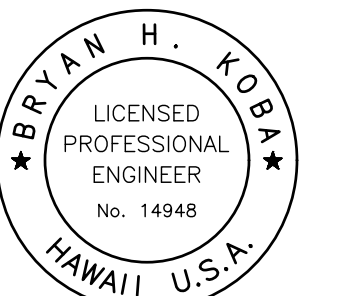
PHASE A5-DHHL WATERLINE SITE PLAN - 1

SCALE: 1"=100'

Austin Tsutsumi
& ASSOCIATES, INC.
CIVIL ENGINEERS & SURVEYORS
HONOLULU | WAILUKU | HILO, HAWAII
501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817
PHONE: 808-533-3646
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STATE OF HAWAII
DEPARTMENT OF
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PULEHUNUI
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AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

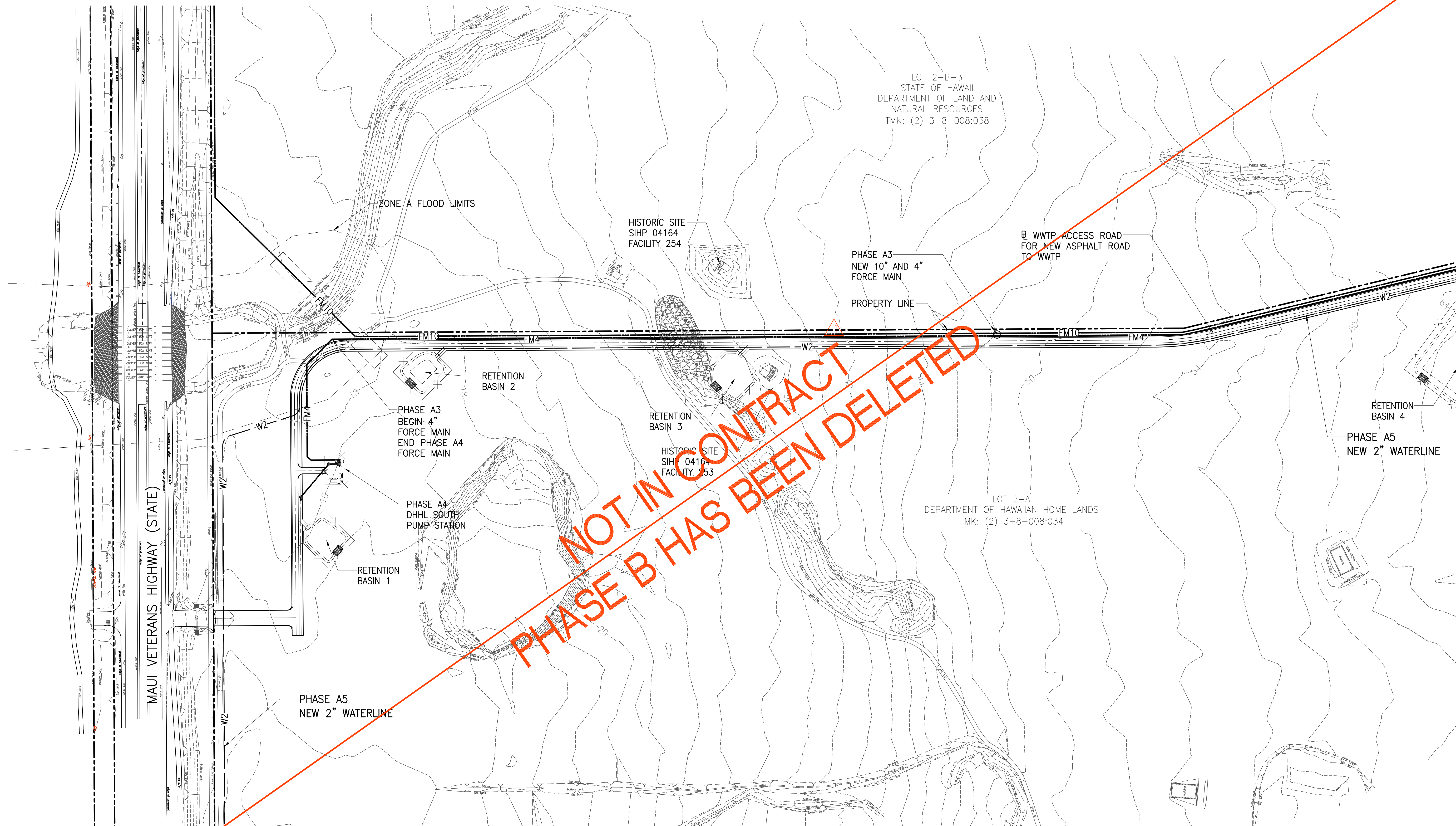
Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

PHASE A5 DHHL
WATERLINE SITE PLAN - 1

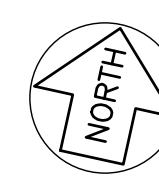
DWG. NO.
CA5-1
SHEET 57 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CA5-2 PHASE A5 DHHL WATERLINE SITE PLAN - 2.DWG



**NOT IN CONTRACT
PHASE B HAS BEEN DELETED**



PHASE A5-DHHL WATERLINE SITE PLAN - 2

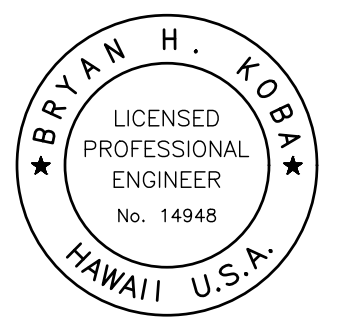
SCALE: 1"=100'

Austin Tsutsumi
A S S O C I A T E S , I N C .
CIVIL ENGINEERS | SURVEYORS
HONOLULU | WAILUKU | HILO, HAWAII
501 SUMNER STREET, SUITE 521
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REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

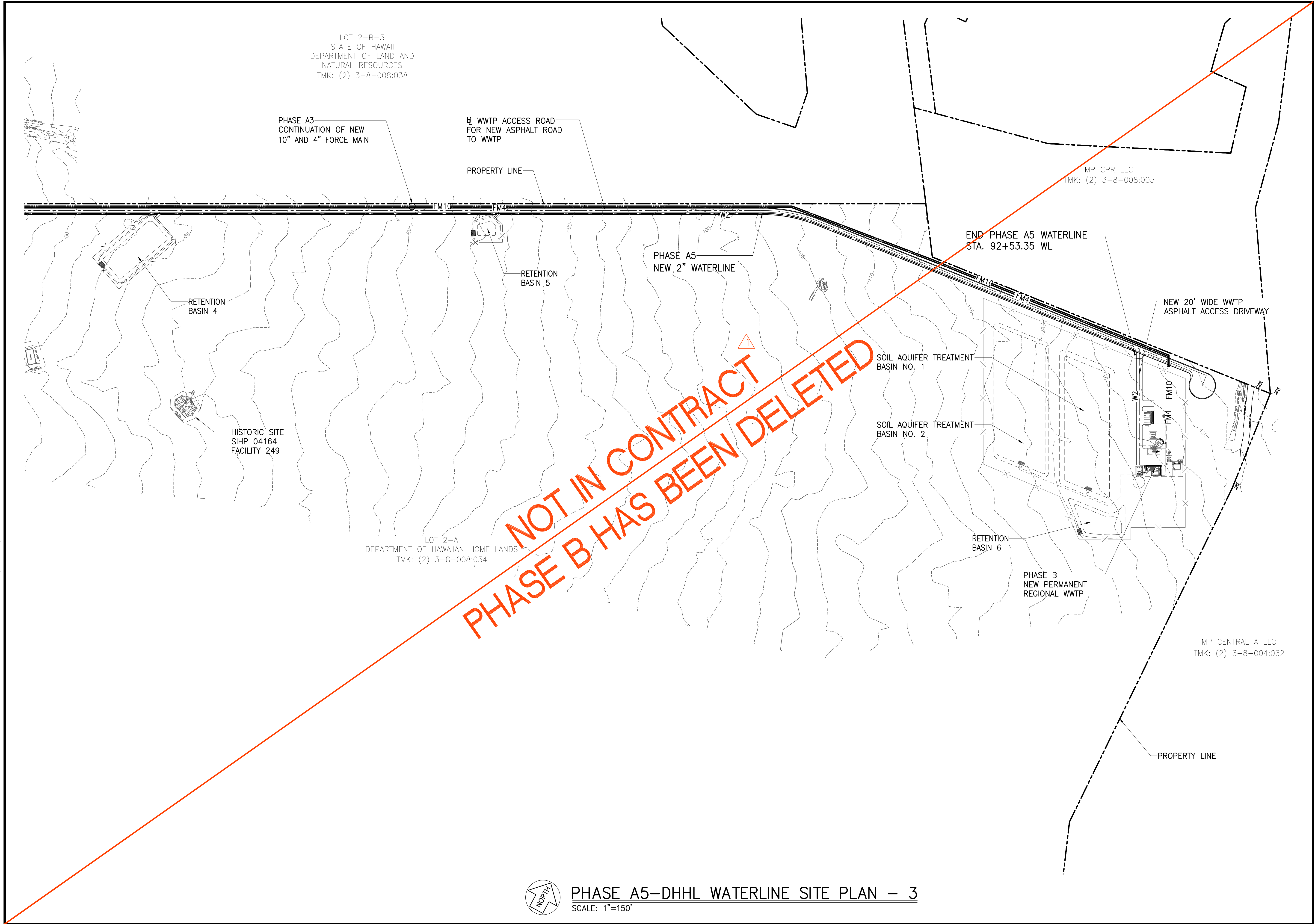
Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

**PHASE A5 DHHL
WATERLINE SITE PLAN - 2**

DWG. NO.
CA5-2
SHEET 58 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CA5-3 PHASE A5 DHHL WATERLINE SITE PLAN - 3.DWG



LOT 2-B-3
STATE OF HAWAII
DEPARTMENT OF LAND AND
NATURAL RESOURCES
TMK: (2) 3-8-008:038

PHASE A3
CONTINUATION OF NEW
10" AND 4" FORCE MAIN

WWTP ACCESS ROAD
FOR NEW ASPHALT ROAD
TO WWTP

PROPERTY LINE

MP CPR LLC
TMK: (2) 3-8-008:005

END PHASE A5 WATERLINE
STA. 92+53.35 WL

PHASE A5
NEW 2" WATERLINE

RETENTION
BASIN 4

RETENTION
BASIN 5

HISTORIC SITE
SIHP 04164
FACILITY 249

LOT 2-A
DEPARTMENT OF HAWAIIAN HOME LANDS
TMK: (2) 3-8-008:034

SOIL AQUIFER TREATMENT
BASIN NO. 1

SOIL AQUIFER TREATMENT
BASIN NO. 2

NEW 20' WIDE WWTP
ASPHALT ACCESS DRIVEWAY

RETENTION
BASIN 6

PHASE B
NEW PERMANENT
REGIONAL WWTP

MP CENTRAL A LLC
TMK: (2) 3-8-004:032

PROPERTY LINE

**NOT IN CONTRACT
PHASE B HAS BEEN DELETED**



PHASE A5-DHHL WATERLINE SITE PLAN - 3
SCALE: 1"=150'



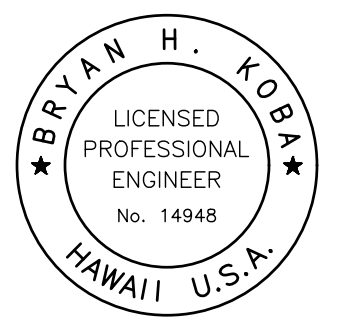
Austin Tsutsumi
A S S O C I A T E S, I N C.
CIVIL ENGINEERS, SURVEYORS
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501 SUMNER STREET, SUITE 521
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STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

**PULEHUNUI
REGIONAL
INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

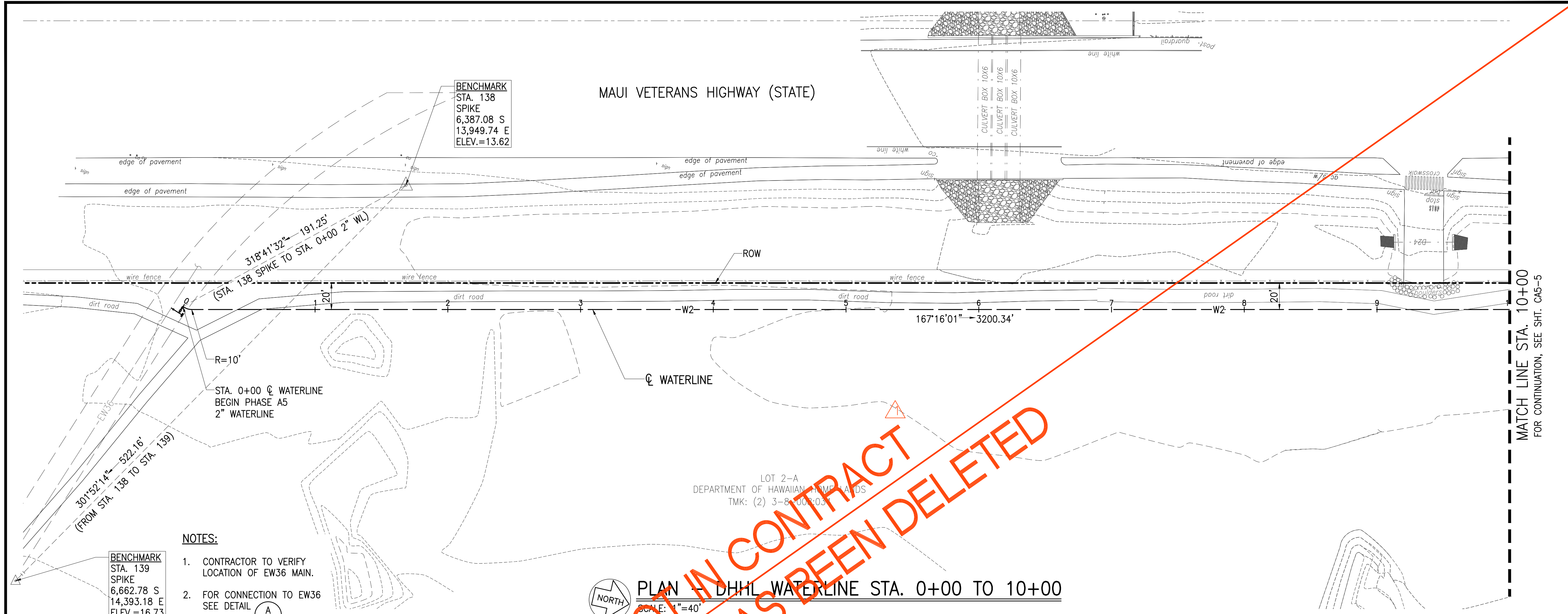
Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

**PHASE A5 DHHL
WATERLINE SITE PLAN - 3**

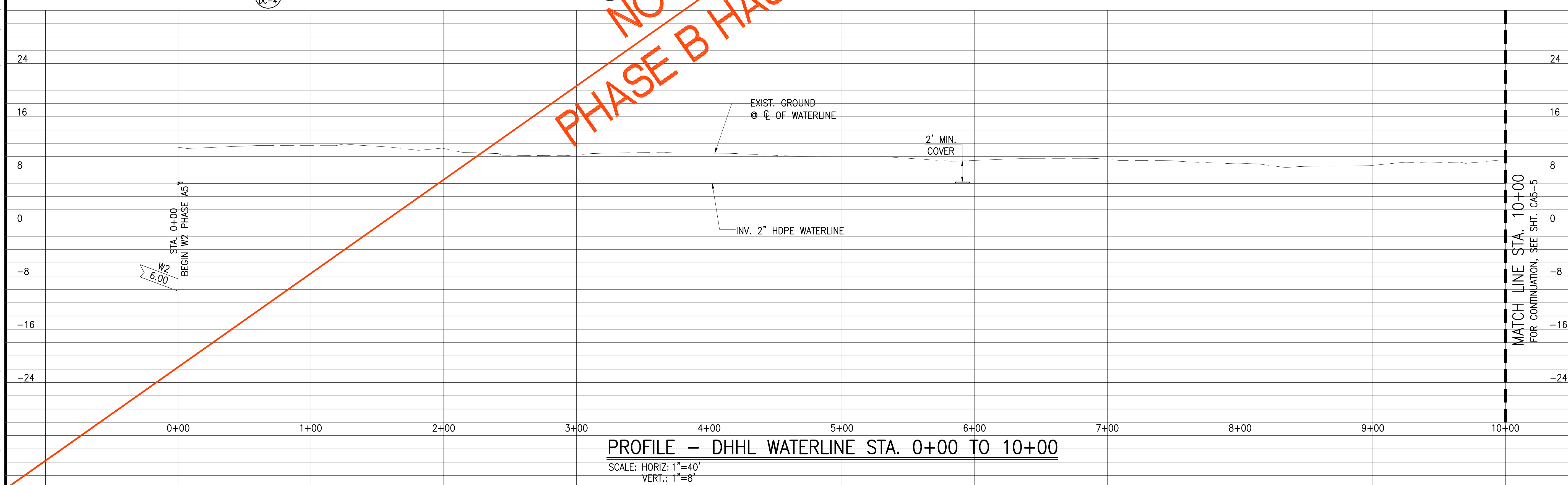
DWG. NO.
CA5-3
SHEET 59 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CA5-4_PP_DHHL_WATERLINE_STA_0+00_TO_10+00.DWG



PLAN - DHHL WATERLINE STA. 0+00 TO 10+00
 SCALE: 1"=40'

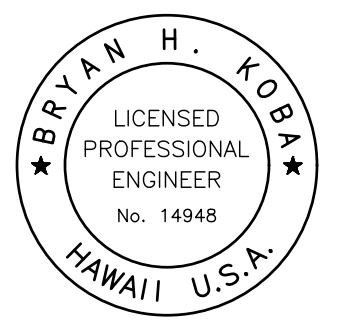


PROFILE - DHHL WATERLINE STA. 0+00 TO 10+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

Austin Tsutsumi
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 501 SUMNER STREET, SUITE 521
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STATE OF HAWAII
 DEPARTMENT OF
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**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

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 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLAN AND PROFILE
 DHHL WATERLINE
 STA. 0+00 TO 10+00**

DWG. NO.
CA5-4
 SHEET 60 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CA5-5_PP_DHHL_WATERLINE_STA_10+00_TO_20+00.DWG

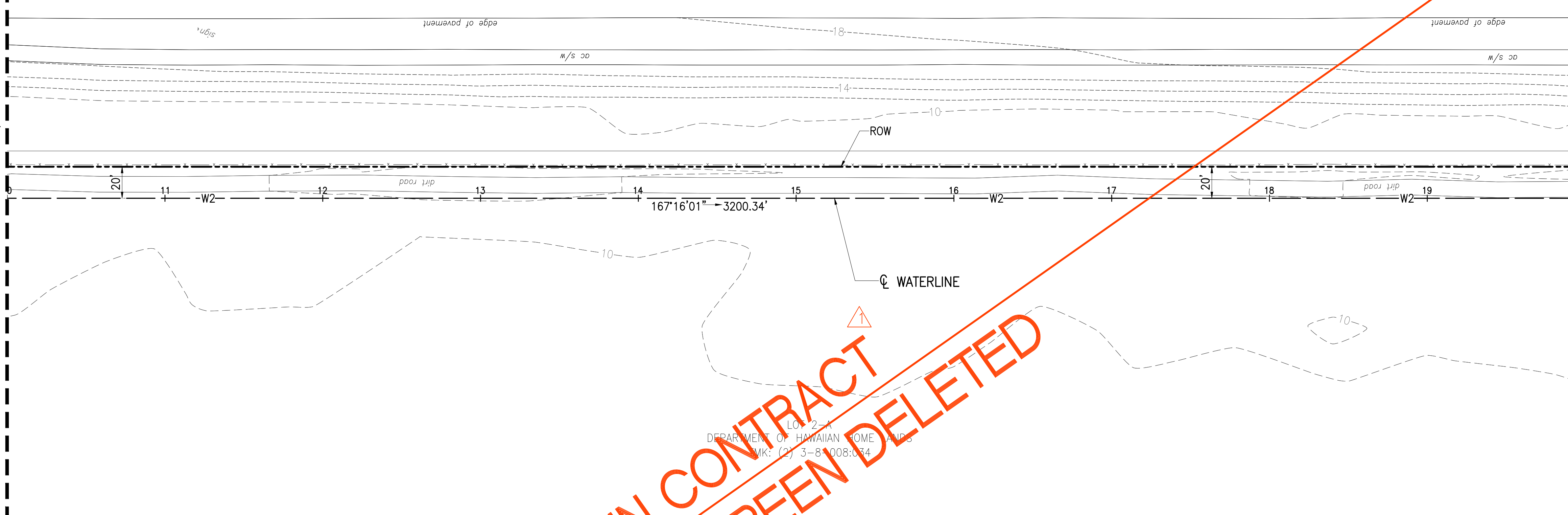
MATCH LINE STA. 10+00
 FOR CONTINUATION, SEE SHT. CA5-4

MATCH LINE STA. 10+00
 FOR CONTINUATION, SEE SHT. CA5-4

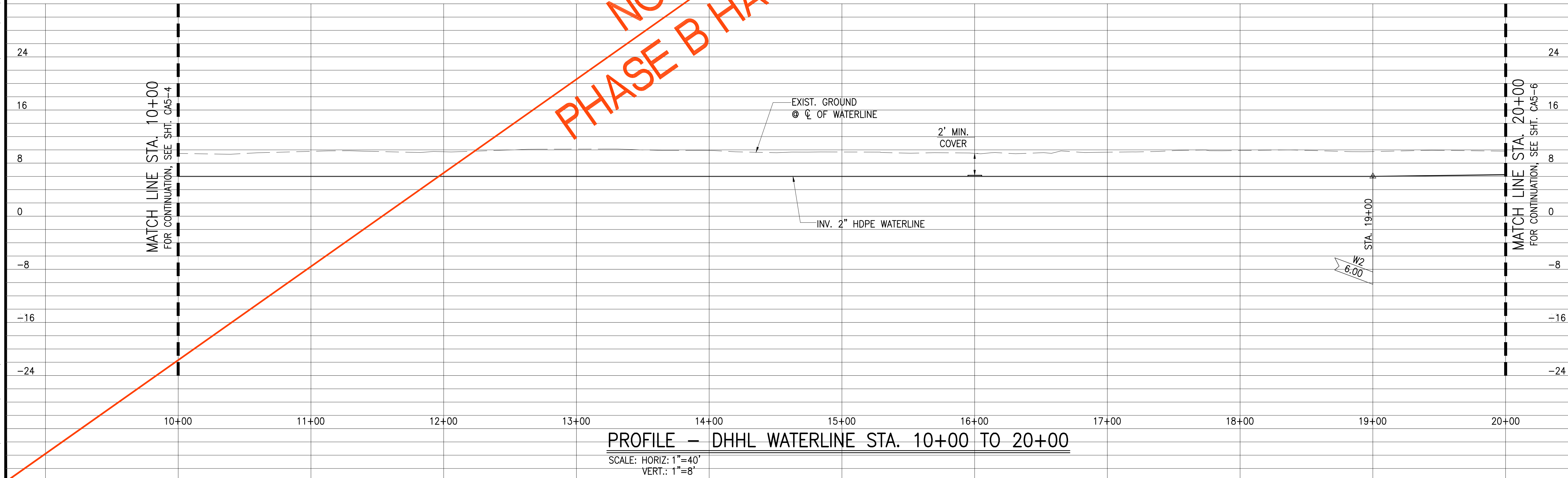
MATCH LINE STA. 20+00
 FOR CONTINUATION, SEE SHT. CA5-6

MATCH LINE STA. 20+00
 FOR CONTINUATION, SEE SHT. CA5-6

MAUI VETERANS HIGHWAY (STATE)



PLAN - DHHL WATERLINE STA. 10+00 TO 20+00
 SCALE: 1"=40'

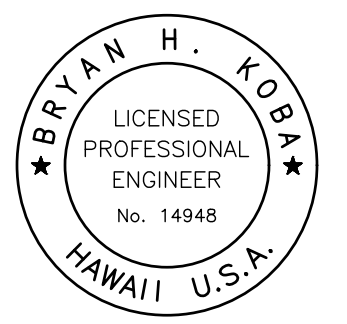


PROFILE - DHHL WATERLINE STA. 10+00 TO 20+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

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STATE OF HAWAII
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

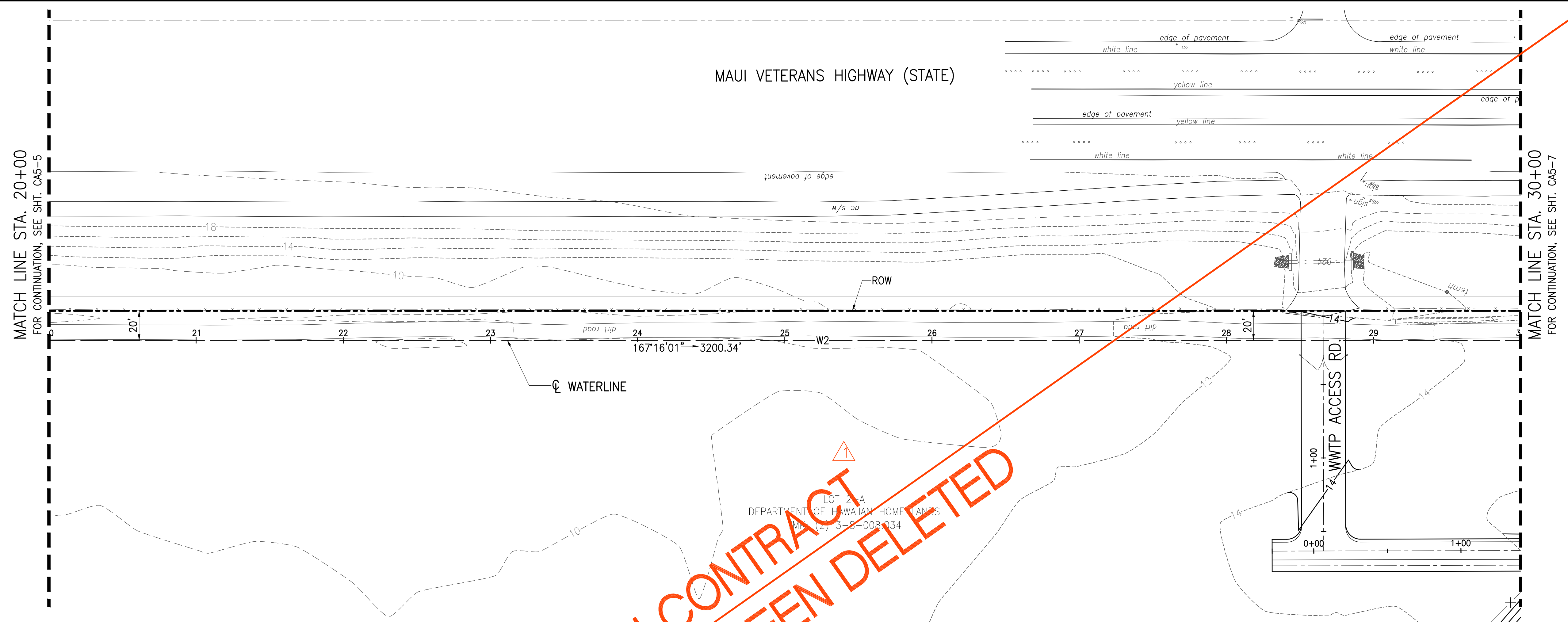
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLAN AND PROFILE
 DHHL WATERLINE
 STA. 10+00 TO 20+00**

DWG. NO.
CA5-5
 SHEET 61 OF 201

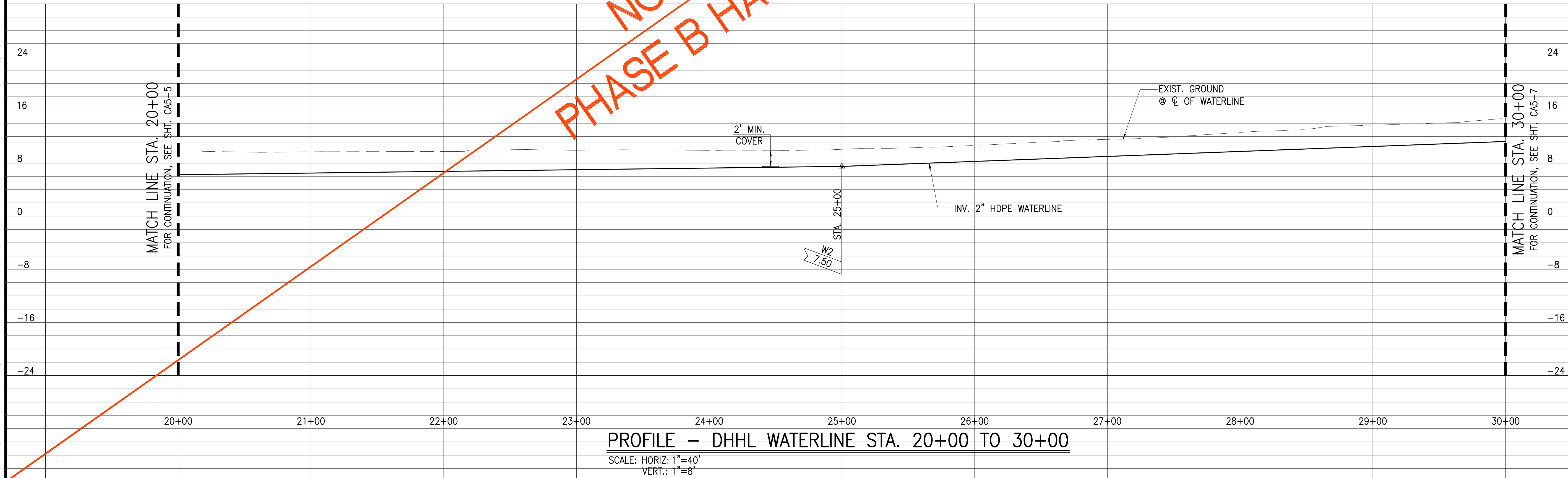
FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CA5-6 PP DHHL WATERLINE STA. 20+00 TO 30+00.DWG



NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

PLAN - DHHL WATERLINE STA. 20+00 TO 30+00
 SCALE: 1"=40'

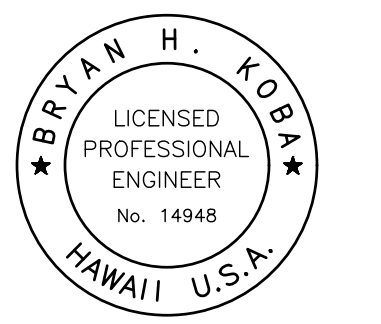


PROFILE - DHHL WATERLINE STA. 20+00 TO 30+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2			
LINE IS 2-INCHES AT FULL SIZE			
(IF NOT 2-INCHES : SCALE ACCORDINGLY)			
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

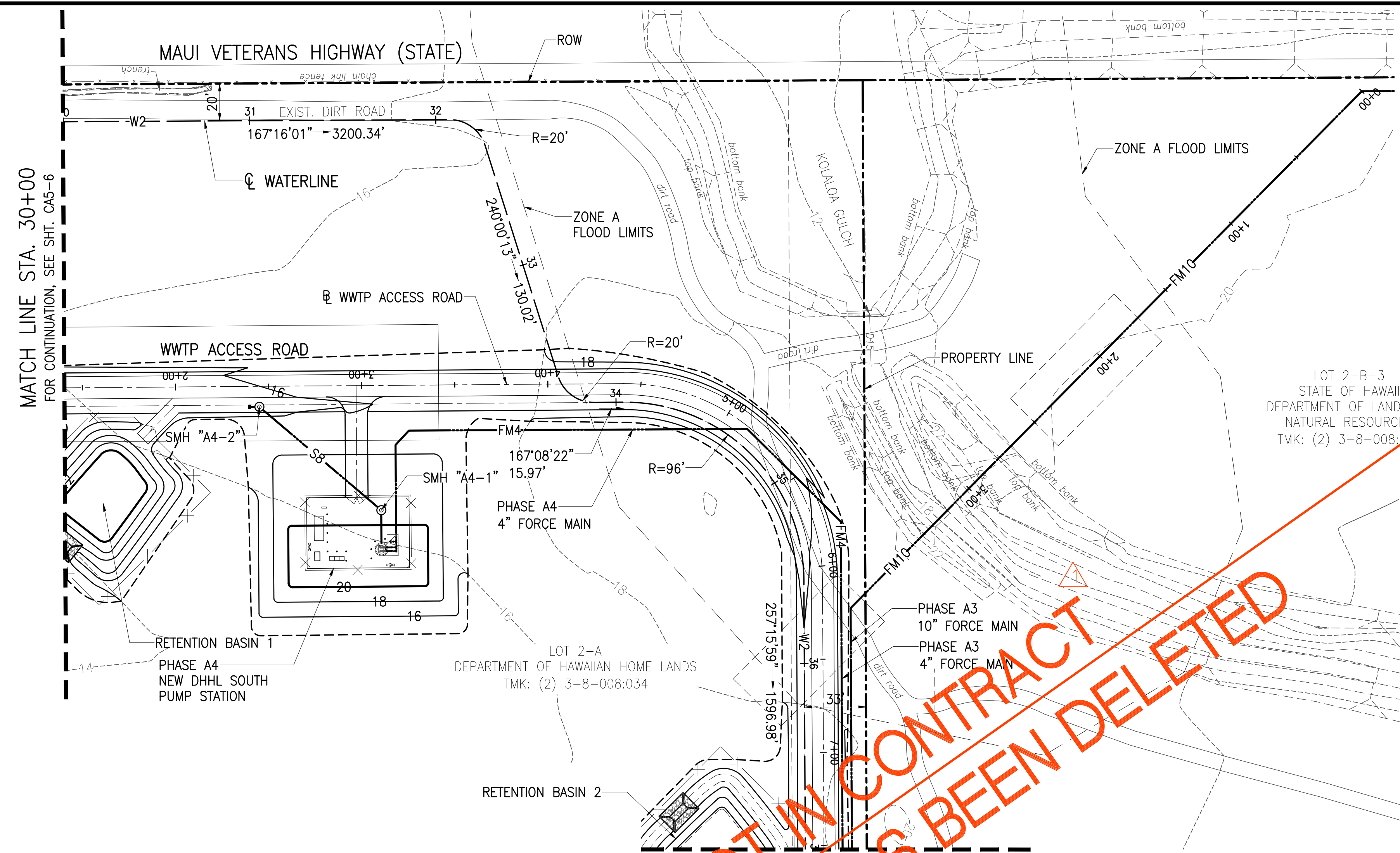
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLAN AND PROFILE
 DHHL WATERLINE
 STA. 20+00 TO 30+00**

DWG. NO.
CA5-6
 SHEET OF 201

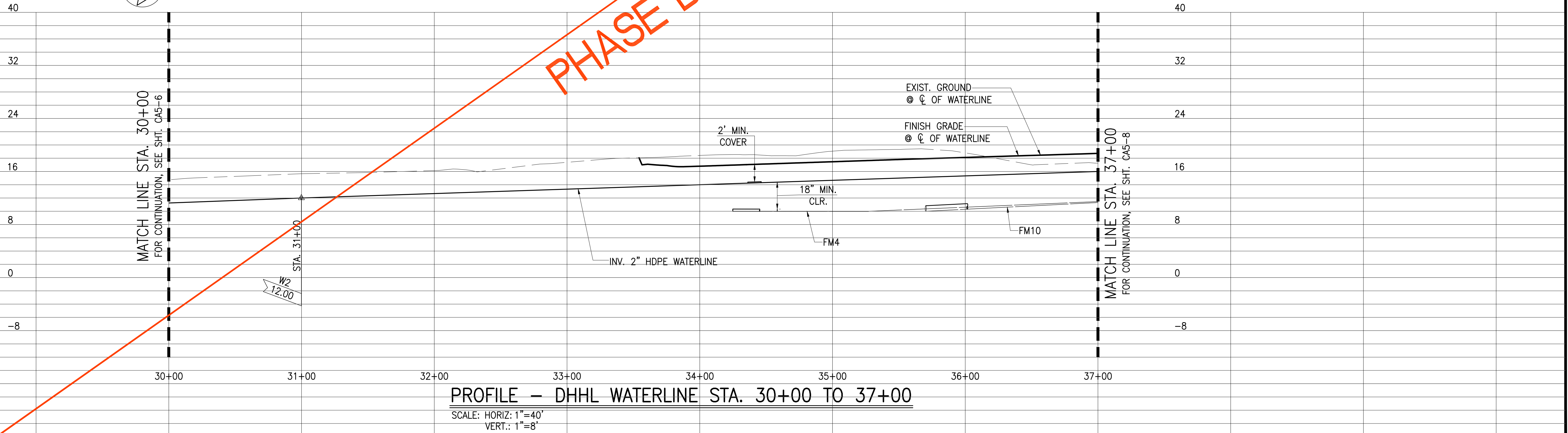
FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CA5-7 PP DHHL WATERLINE STA. 30+00 TO 37+00.DWG



PLAN - DHHL WATERLINE STA. 30+00 TO 37+00

SCALE: 1"=40'



PROFILE - DHHL WATERLINE STA. 30+00 TO 37+00

SCALE: HORIZ.: 1"=40'
 VERT.: 1"=8'

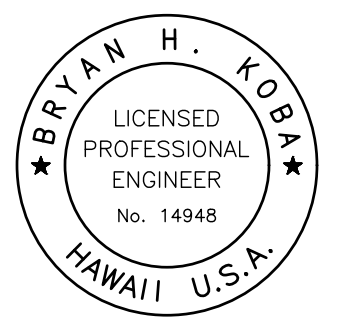
NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

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Bryan H. Kobayashi APRIL 30, 2020
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REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

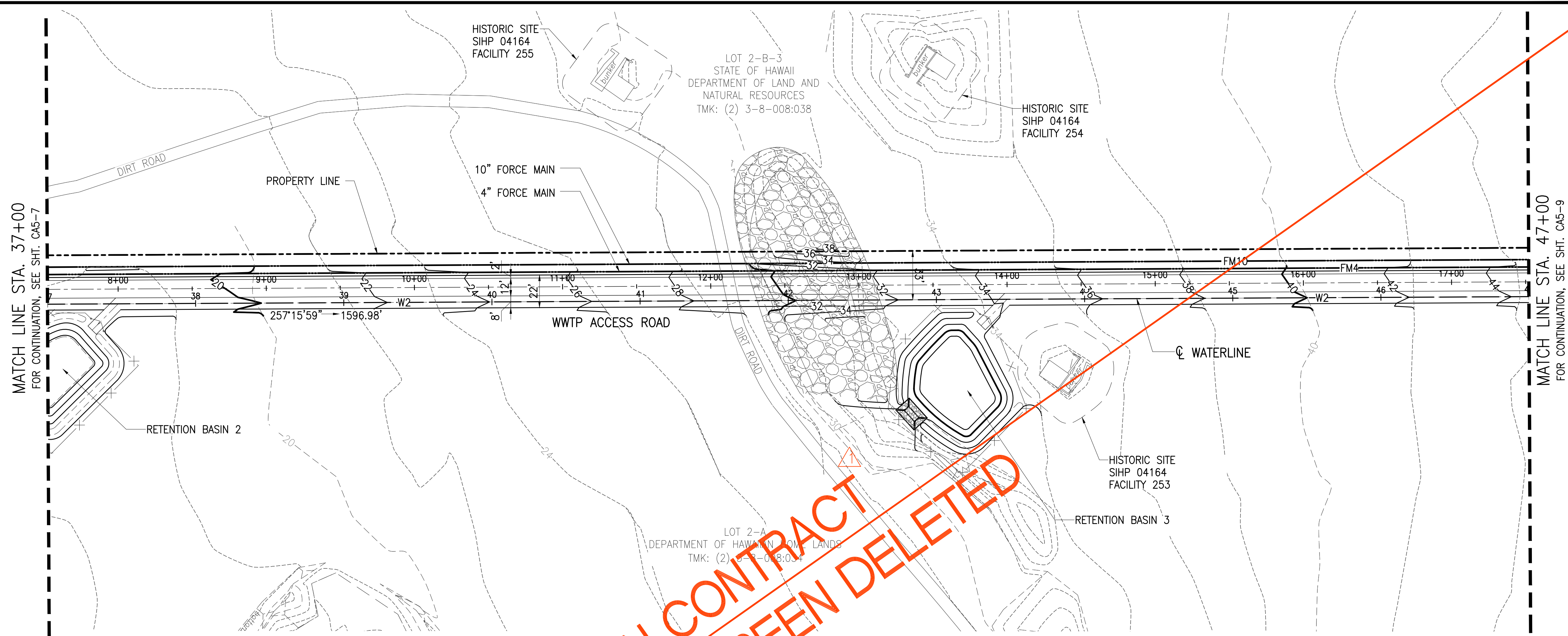
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLAN AND PROFILE
 DHHL WATERLINE
 STA. 30+00 TO 37+00**

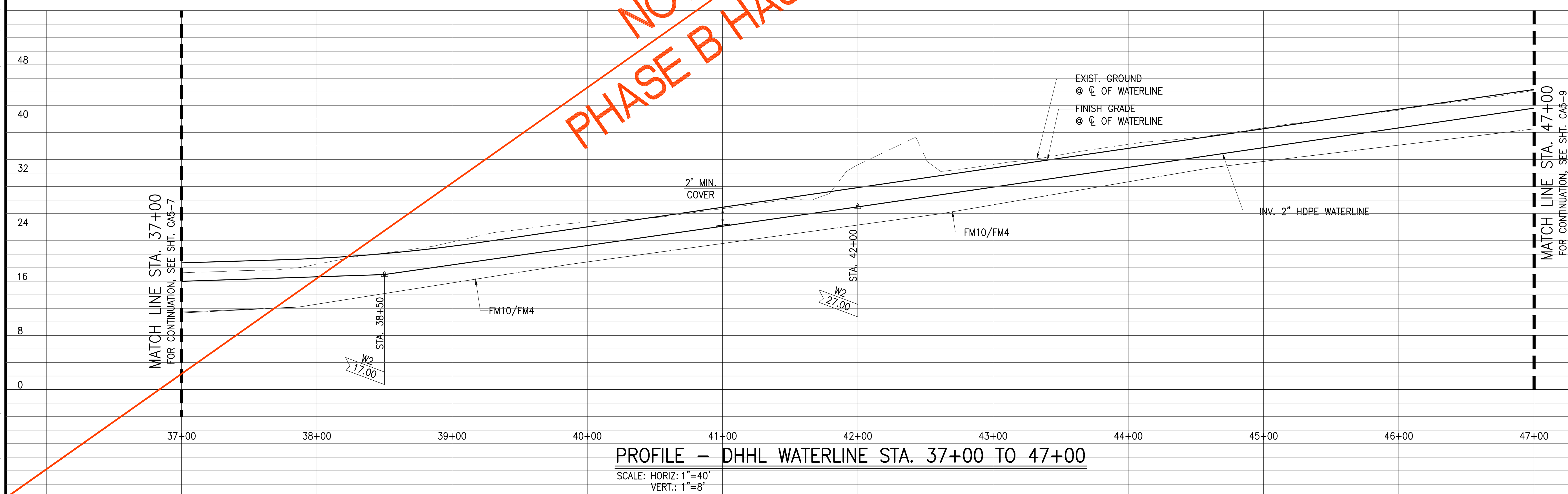
DWG. NO.
CA5-7
 SHEET 63 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY)\BRYAN\DWG\CA5-8_PP_DHHL_WATERLINE_STA_37+00_TO_47+00.DWG



PLAN - DHHL WATERLINE STA. 37+00 TO 47+00
 SCALE: 1"=40'



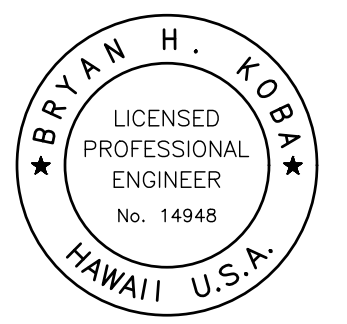
PROFILE - DHHL WATERLINE STA. 37+00 TO 47+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

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Bryan H. Kobayashi APRIL 30, 2020
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0 1 2
 LINE IS 2-INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

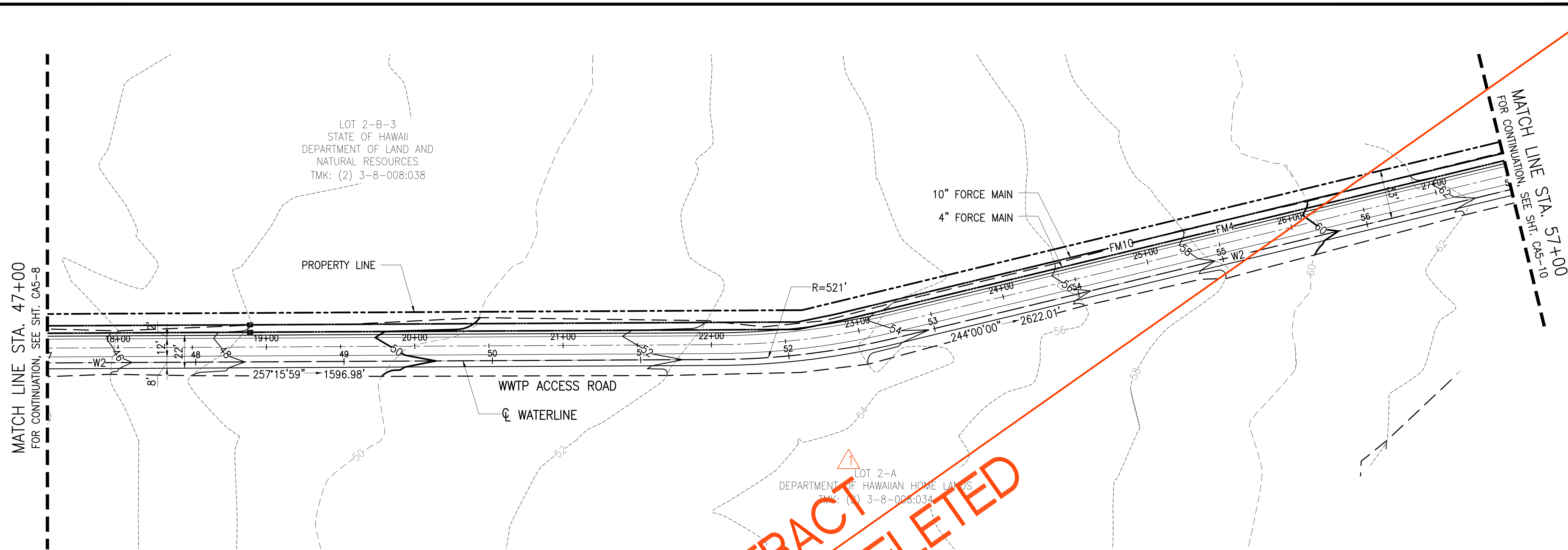
Project No:	16-576
Scale:	AS NOTED
Date:	1/31/2020
Designed By:	BHK
Drawn By:	BHK
Checked By:	

**PLAN AND PROFILE
 DHHL WATERLINE
 STA. 37+00 TO 47+00**

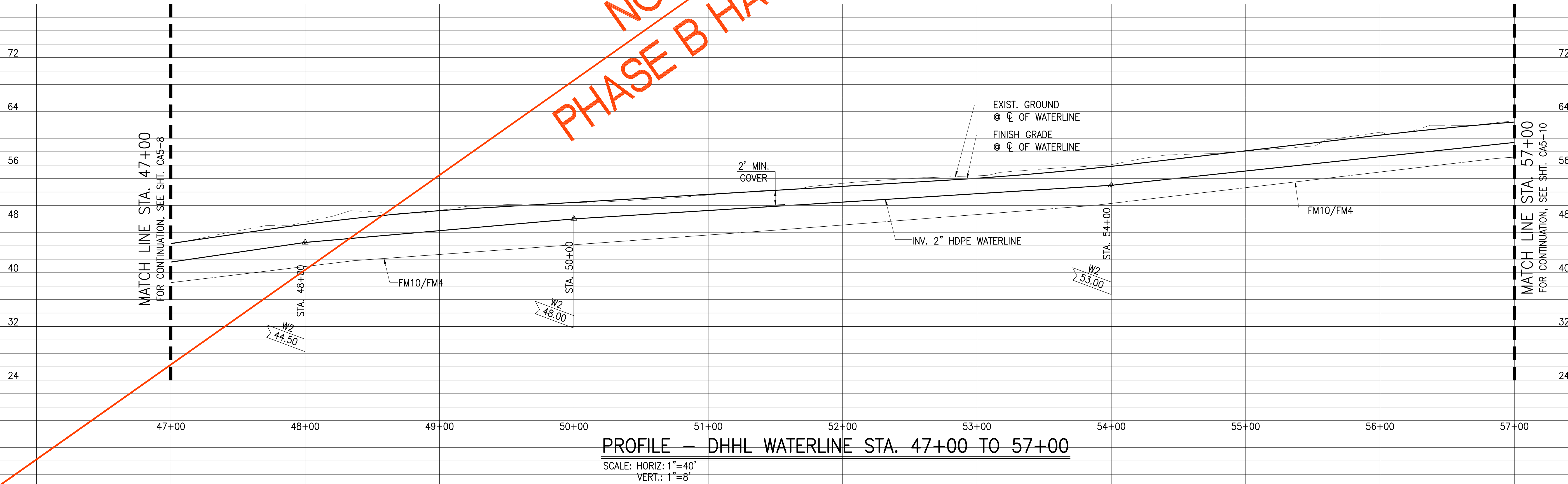
DWG. NO.
CA5-8
 SHEET 64 OF 201

FILE	POCKET	FOLDER	NO.
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JOB NO. 0-11-056.004
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PLAN - DHHL WATERLINE STA. 47+00 TO 57+00
 SCALE: 1"=40'



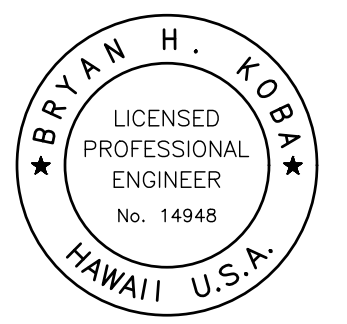
PROFILE - DHHL WATERLINE STA. 47+00 TO 57+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

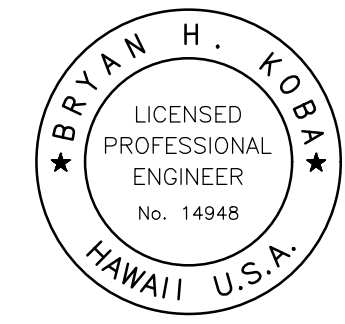
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PLAN AND PROFILE
 DHHL WATERLINE
 STA. 47+00 TO 57+00

DWG. NO.
CA5-9
 SHEET 65 OF 201

FILE	POCKET	FOLDER	NO.



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Bryan H. Kobayashi APRIL 30, 2020
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

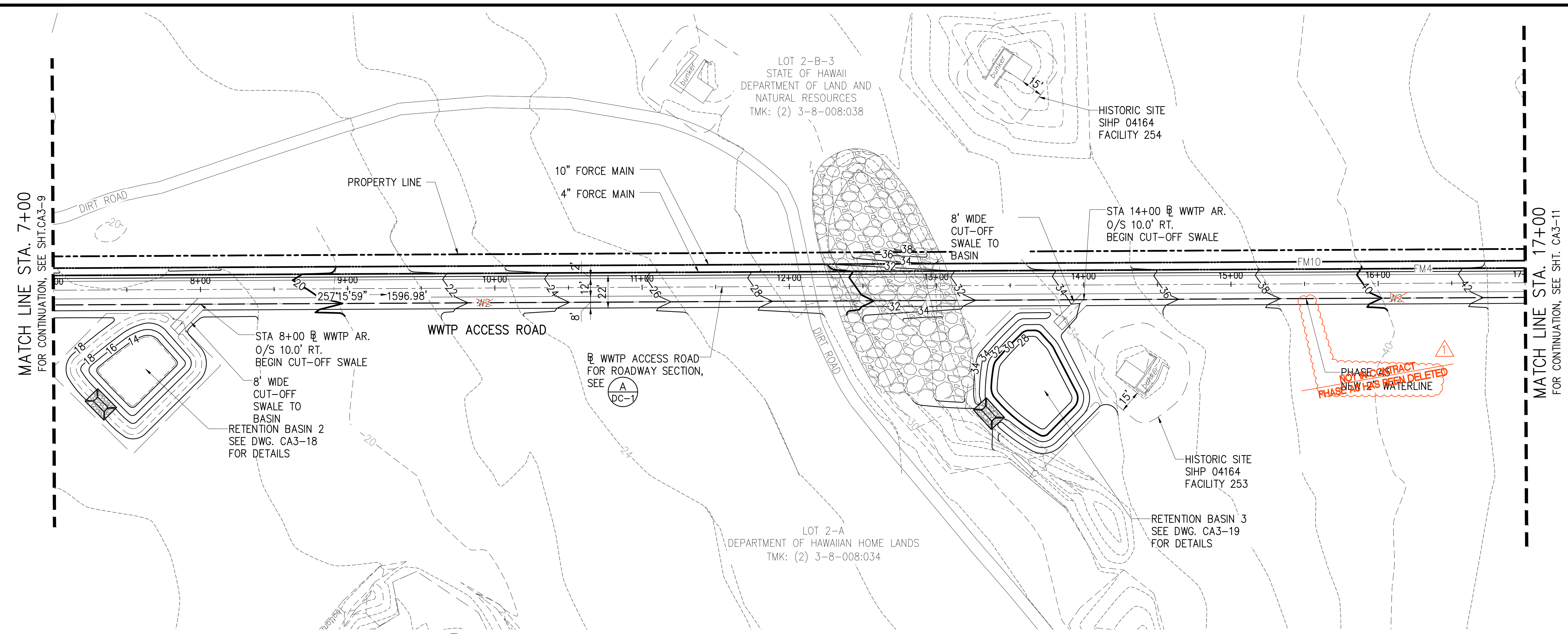
REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

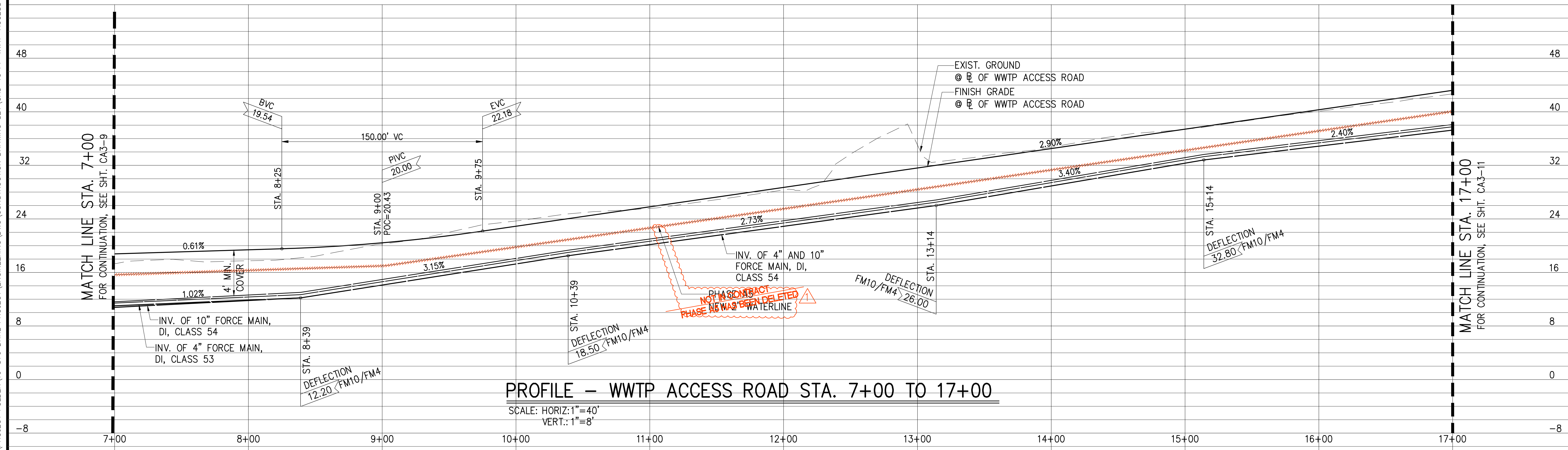
**PLAN AND PROFILE
 WWTP ACCESS ROAD
 STA 7+00 TO 17+00**

DWG. NO.
CA3-10
 SHEET 33 OF 201

FILE	POCKET	FOLDER	NO.



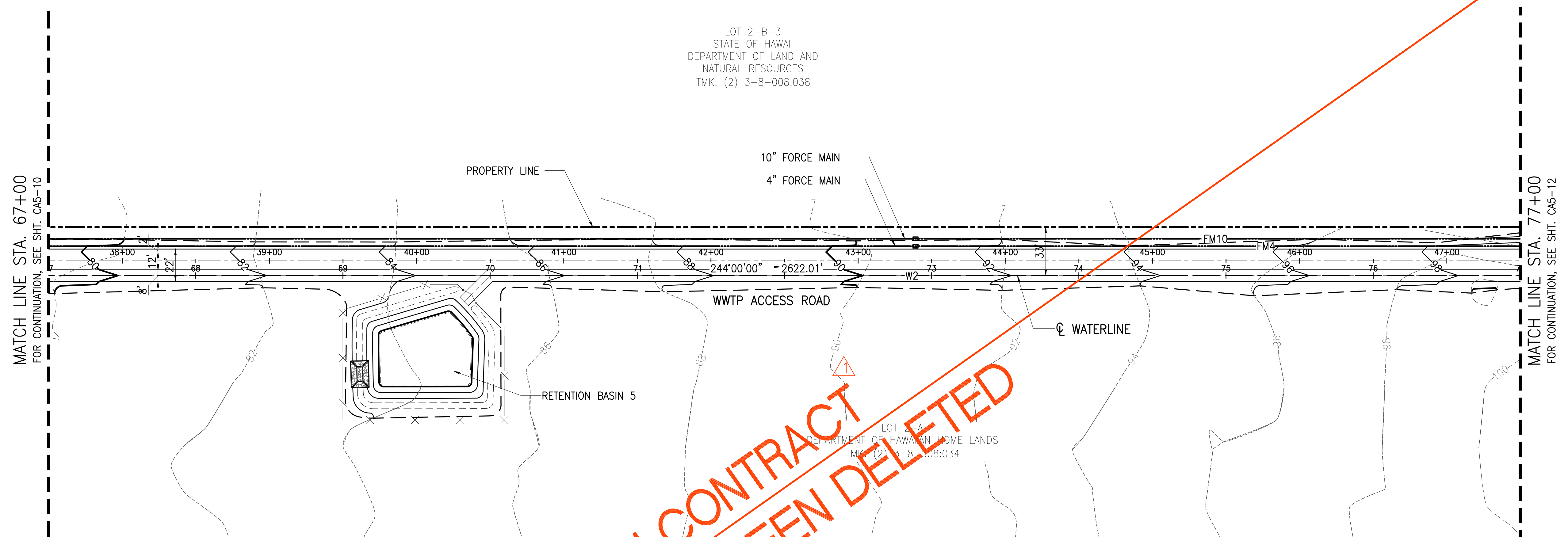
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 SCALE: 1"=40'



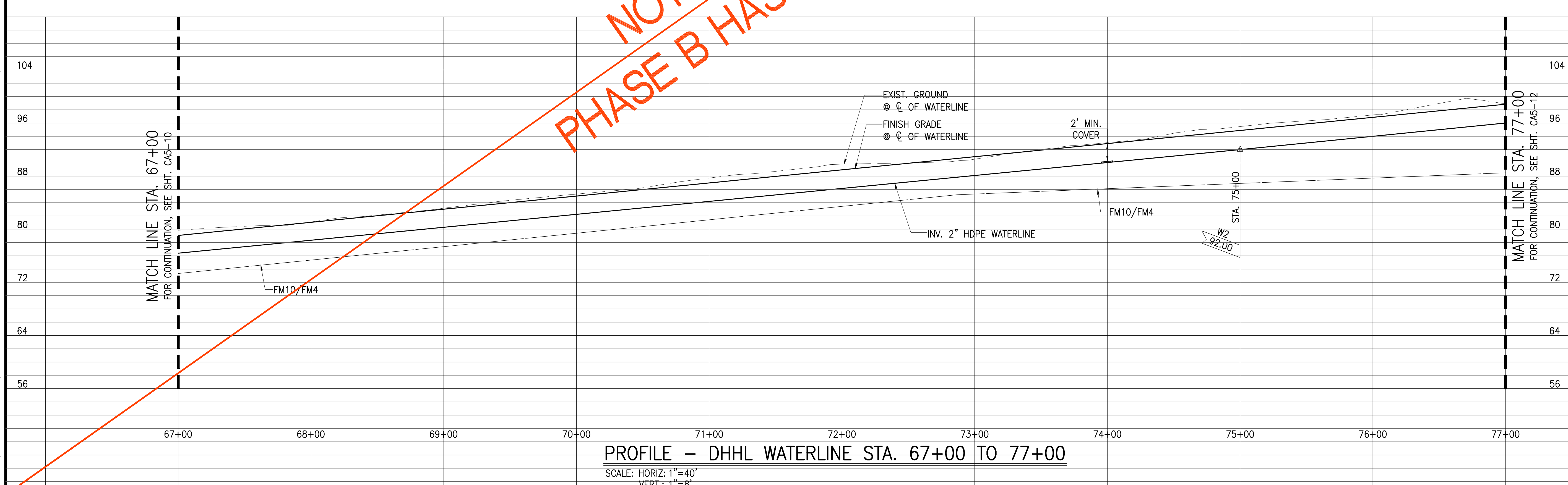
PROFILE - WWTP ACCESS ROAD STA. 7+00 TO 17+00
 SCALE: HORIZ: 1"=40'
 VERT: 1"=8'

JOB NO. 0-11-066.004
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JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER, PHASE 6.3 WASTEWATER TREATMENT FACILITY). BRYAN.DWG\CA5-11.PP.DHHL WATERLINE STA. 67+00 TO 77+00.DWG



PLAN - DHHL WATERLINE STA. 67+00 TO 77+00
 SCALE: 1"=40'



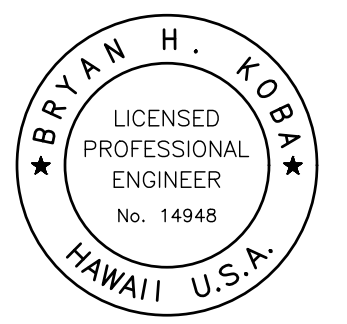
PROFILE - DHHL WATERLINE STA. 67+00 TO 77+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

Austin Tsutsumi
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 CIVIL ENGINEERS, SURVEYORS
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PULEHUNUI
 REGIONAL
 INFRASTRUCTURE

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 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PLAN AND PROFILE
 DHHL WATERLINE
 STA. 67+00 TO 77+00

DWG. NO.
CA5-11
 SHEET 67 OF 201

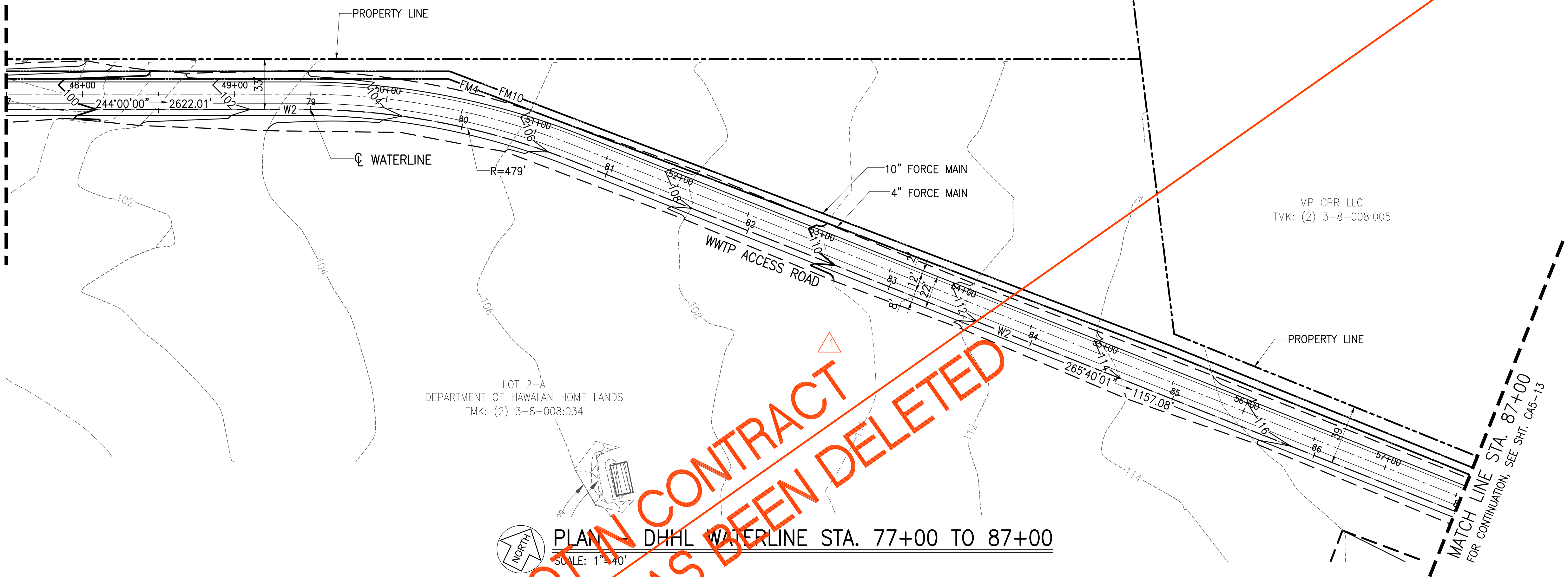
FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CA5-12.PP.DHLL WATERLINE STA. 77+00 TO 87+00.DWG

MATCH LINE STA. 77+00
 FOR CONTINUATION, SEE SHT. CA5-11

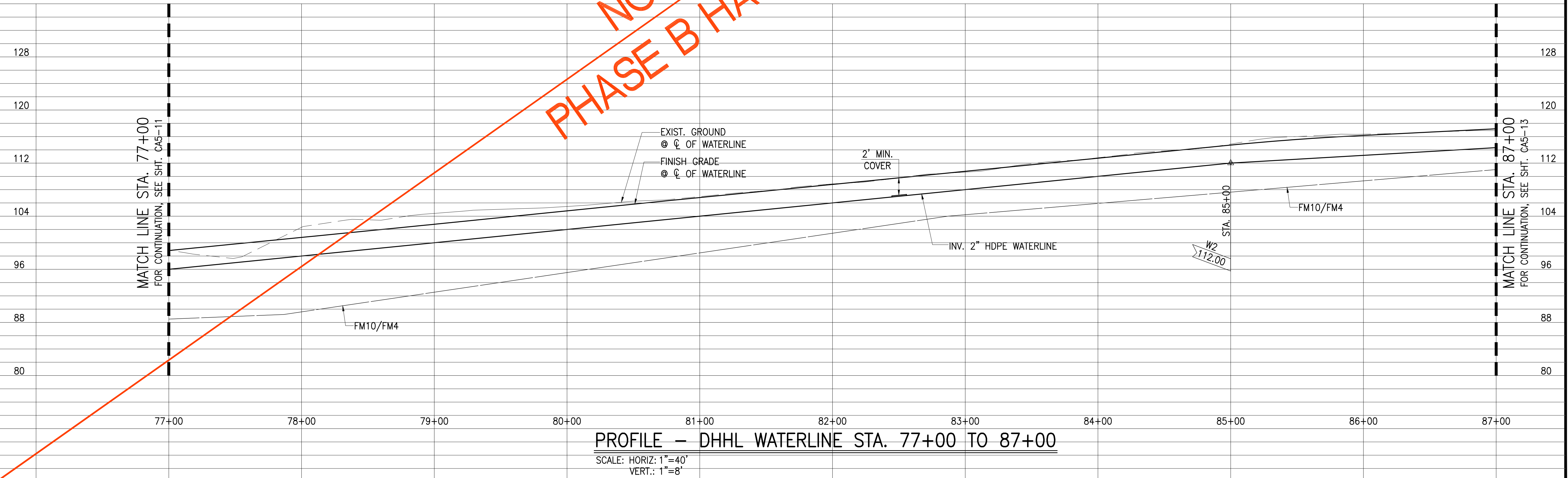
MATCH LINE STA. 77+00
 FOR CONTINUATION, SEE SHT. CA5-11

MATCH LINE STA. 87+00
 FOR CONTINUATION, SEE SHT. CA5-13



NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

PLAN - DHHL WATERLINE STA. 77+00 TO 87+00
 SCALE: 1"=40'



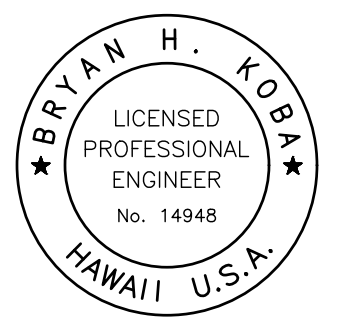
PROFILE - DHHL WATERLINE STA. 77+00 TO 87+00
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
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 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

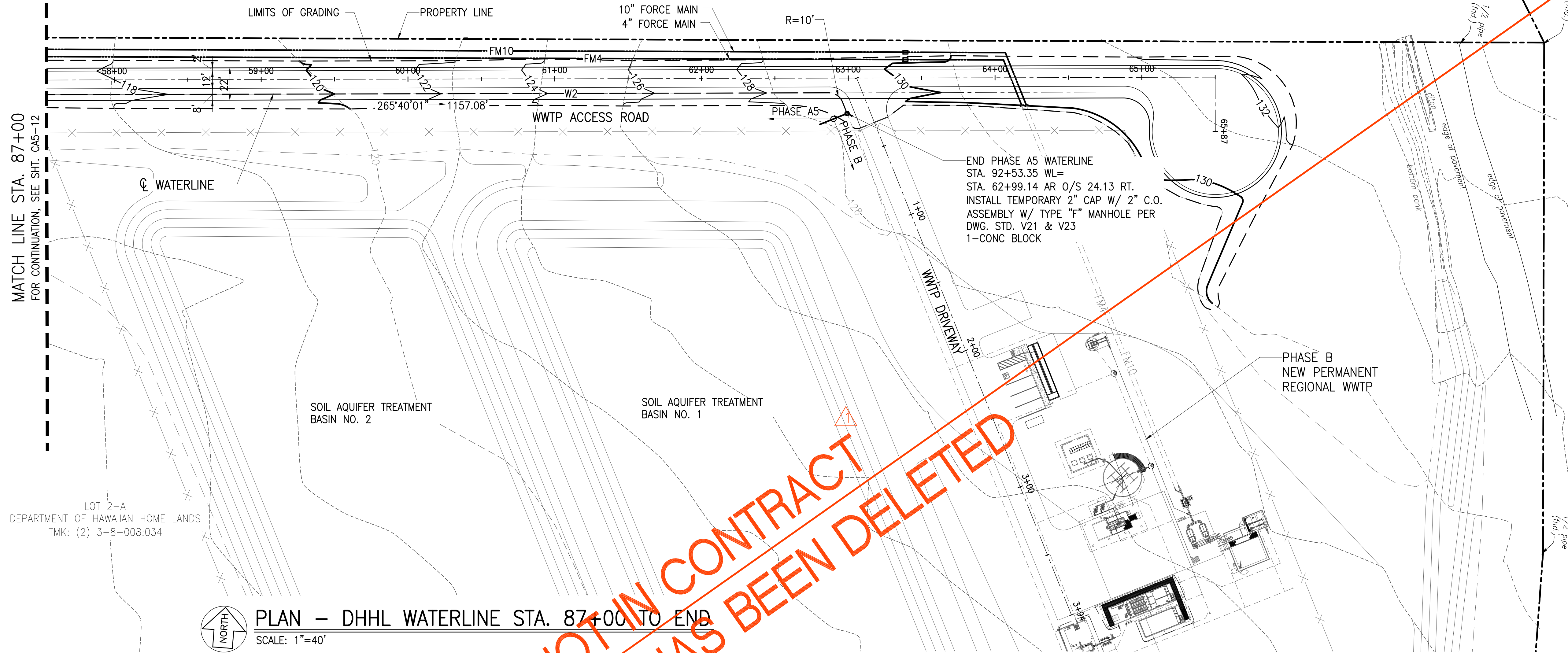
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PLAN AND PROFILE
 DHHL WATERLINE
 STA. 77+00 TO 87+00

DWG. NO.
CA5-12
 SHEET 68 OF 201

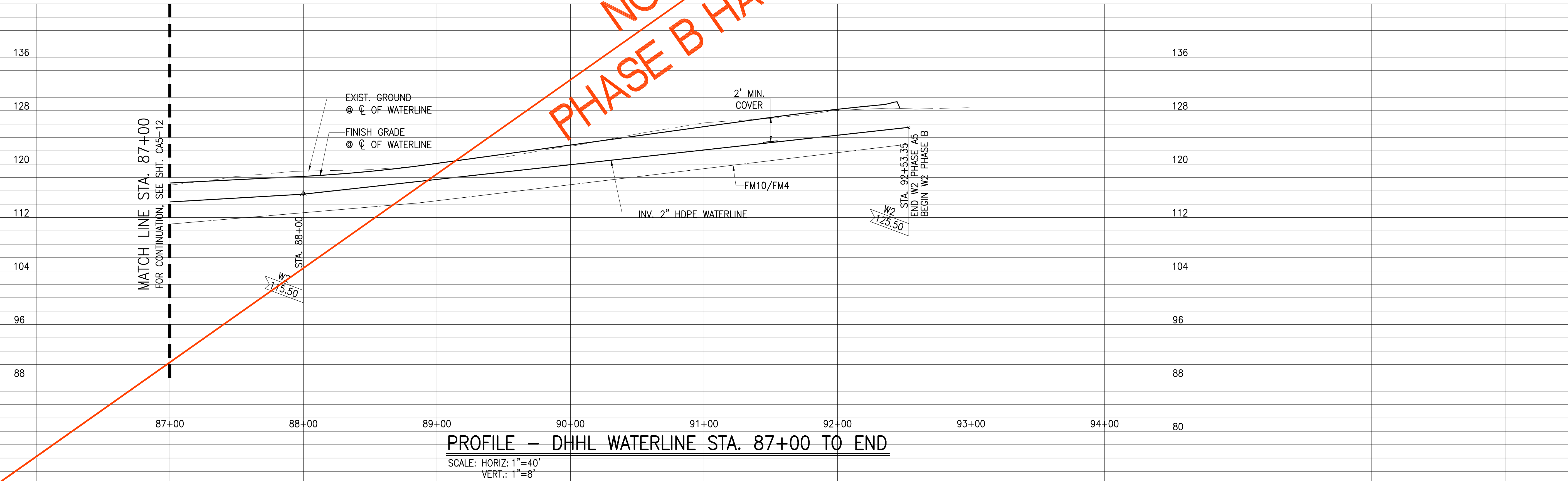
FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONC.VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY).BRYAN\DWG\CA5-13 PP.DHHL WATERLINE STA. 87+00 TO END.DWG



PLAN - DHHL WATERLINE STA. 87+00 TO END
 SCALE: 1"=40'

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

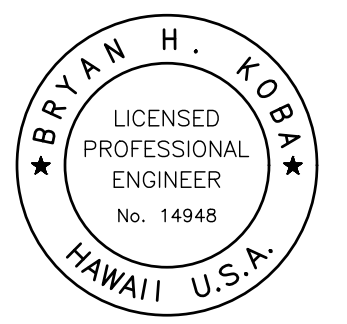


PROFILE - DHHL WATERLINE STA. 87+00 TO END
 SCALE: HORIZ: 1"=40'
 VERT.: 1"=8'

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 & ASSOCIATES, INC.
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 HAWAIIAN HOME LANDS
**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

PLAN AND PROFILE
 DHHL WATERLINE
 STA. 87+00 TO END

DWG. NO.
CA5-13
 SHEET 69 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\GB-1 LEGEND.DWG

PROCESS AND INSTRUMENTATION DIAGRAM IDENTIFICATION LETTERS					
FIRST LETTER		SUCCEEDING LETTERS			
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, VIEW DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOISTURE	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, OR LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED, FINAL CONTROL ELEMENT	

LINES	
	MAIN PROCESS FLOW (WITH TYPICAL DIRECTION OF SHOWN)
	MAIN (EXISTING)
	SECONDARY PROCESS FLOW
	SECONDARY (EXISTING)
	INSTRUMENT SUPPLY PROCESS TAPS, NON PROCESS FLOW
	PNEUMATIC SIGNAL
	ANALOG ELECTRIC SIGNAL
	DISCRETE ELECTRIC SIGNAL
	CAPILLARY TUBE OR FILLED SYSTEM
	ELECTROMAGNETIC OF SONIC SIGNAL (UNGUDED)
	SOFTWARE OR DATA LINK
	MECHANICAL
	HYDRAULIC
	POWER SUPPLY
	SERVICE AIR SUPPLY

VALVES	
	GATE VALVES (2-WAY AND 3-WAY)
	GLOBAL VALVE (3-WAY AND 2-WAY)
	PLUG VALVE
	KNIFE GATE VALVE
	CHECK VALVE AND BALL CHECK VALVE
	DIAPHRAGM VALVE (PINCH VALVE)
	BUTTERFLY VALVE
	BALL VALVE (2-WAY AND 3-WAY)
	NEEDLE VALVE
	INTERLOCK
	PRESSURE REDUCING REGULATING VALVE. SELF-CONTAINED
	BACK PRESSURE REGULATING VALVE. SELF-CONTAINED
	SOLENOID VALVE
	PRESSURE SURGE DISCHARGE
	CONTROL VALVE
	TELESCOPING VALVE
	NORMALLY CLOSED
	NORMALLY NUMBER

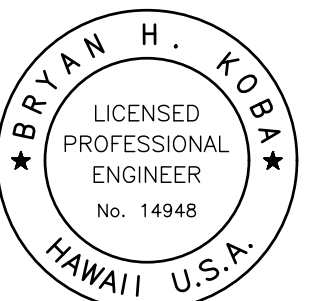
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 PHASE B HAS BEEN DELETED

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS, SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

PULEHUNUI
 REGIONAL
 INFRASTRUCTURE

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REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

LEGEND

DWG. NO.

GB-1

SHEET 70 OF 201

FILE	POCKET	FOLDER	NO.

BASIC DESIGN CRITERIA

PARAMETER	VALUE	UNITS
PLANT CAPACITY		
DESIGN AVERAGE FLOW	0.090	MGD
DESIGN MAXIMUM FLOW	0.072	MGD
DESIGN PEAK DAILY FLOW	0.120	MGD
BOD AVERAGE CONCENTRATION	350	mg/L
BOD TOTAL	84	LBS/DAY
TSS AVERAGE CONCENTRATION	300	mg/L
TSS TOTAL	72	LBS/DAY
NH ₃ AVERAGE CONCENTRATION	13	mg/L
NH ₃ TOTAL	3	LBS/DAY
REQUIRED EFFLUENT QUALITY		
BOD MONTHLY AVERAGE	30	mg/L
DAILY MAXIMUM	60	mg/L
PERCENT REMOVAL	90	% MONTHLY AVERAGE
TSS MONTHLY AVERAGE	30	mg/L
DAILY MAXIMUM	60	mg/L
E. COLI 7-DAY GEO. MEAN	≤ 2.2/100 ml	
30-DAY GEO. MEAN	≤ 23/100 ml	
MAXIMUM	≤ 200/100 ml	
EFFLUENT CLASSIFICATION	R-1	
INFLUENT METERING		
EQUIPMENT NUMBER	FE-0090	
FLOW TYPE	10" ELECTROMAGNETIC	
MANUFACTURER	MJK MAGFLUX	
METER RANGE	0-10.00	FT/SEC
SCREENS (SCR-0101A/B)		
EQUIPMENT NUMBER	SCR-0100A/B	
TYPE	DRUM SCREEN	
MANUFACTURER	ROTAMAT-HUBER TECHNOLOGY	
NUMBER OF SCREENS	2	
NUMBER OF SCREENS	3	mm
SCREEN CAPACITY	2.0	MGD
MOTOR HORSEPOWER	2.00	HP
SPRAY WASH CONSUMPTION	35	GPM
SPRAY WASH PRESSURE	75	PSI
FLOW EQUALIZATION		
NUMBER	1	
WORKING VOLUME	58,500	GAL
AERATION		
EQUIPMENT NUMBER	JA-0201	
TYPE	SELF-ASPIRATING JET AERATOR	
MANUFACTURER	ITT FLYGT	
NUMBER	1	
MOTOR	10	HP
EQUALIZATION PUMPS		
EQUIPMENT NUMBER	EQP-0200A/B	
TYPE	NON-CLOG SUBMERSIBLE	
MANUFACTURER	ITT FLYGT	
NUMBER	2	
MOTOR	2.0	HP
OPERATION	VARIABLE SPEED	
PERFORMANCE PER PUMP	325 GPM @ 33.2'	
ANOXIC TANK*		
NUMBER	1	
VOLUME	5,500	GAL
ANOXIC MLSS	8,000	mg/L
RECYCLE RATE	4Q	
ANOXIC TANK MIXER		
EQUIPMENT NUMBER	MX-0300	
TYPE	2-BLADE PROPELLER	
MANUFACTURER	ITT FLYGT	
NUMBER	1	
MODEL	4620 WITH JETRING	
MOTOR	3.1	HP
NOMINAL THRUST	125	N

PARAMETER	VALUE	UNITS
OXIC TANK*		
NUMBER	2	
VOLUME EACH TANK	10,900	GAL
VOLUME TOTAL	21,800	GAL
ANOXIC MLSS	8,000	mg/L
FINE BUBBLE DIFFUSER AOR	135	LB O ₂ /DAY
MEMBRANE TANKS*		
NUMBER	2	
VOLUME EACH TANK	5,400	GAL
VOLUME TOTAL	10,800	GAL
NUMBER OF MEMBRANES PER TANK	1	
MEMBRANE MANUFACTURER	KUBOTA	
MEMBRANE UNIT TYPE	RM-200, CARTRIDGE:515HP	
MLSS	10,000	mg/L
FINE BUBBLE DIFFUSER AOR	135	LB O ₂ /DAY
MEMBRANE AIR SCOUR RATE	60.1	SCFM/UNIT
TOTAL SYSTEM AOR	194	LB O ₂ /DAY
PERMEATE PUMP		
EQUIPMENT NUMBER	P-0601A/B	
TYPE	ROTARY LOBE	
MANUFACTURER	BOERGER	
NUMBER	2	
MODEL	PL 100	
MOTOR	3	HP
OPERATION	VARIABLE SPEED	
PERFORMANCE PER PUMP	90	GPM
RECYCLE PUMP		
EQUIPMENT NUMBER	P-0700A/B	
TYPE	ROTARY LOBE	
MANUFACTURER	BOERGER	
NUMBER	1	INSTALLED/1 SHELVED
MODEL	CL 520	
MOTOR	10	HP
OPERATION	VARIABLE SPEED	
PERFORMANCE PER PUMP	340	GPM
ULTRAVIOLET (UV) DISINFECTION		
TYPE	CLOSED SYSTEM REACTOR	
MANUFACTURER	TROJAN	
NO. OF UNITS	2	
LAMPS PER REACTOR	18	
AVERAGE DESIGN FLOW	0.090	MGD
PEAK DESIGN FLOW	0.180	MGD
AEROBIC DIGESTER		
NUMBER	1	
VOLUME	54,200	GAL
SRT@0.090 MGD	<22	DAYS
AERATION	MEDIUM BUBBLE	
BLOWERS		
EQUIPMENT NUMBER	B-1101A/B	
TYPE	POSITIVE DISPLACEMENT ROTARY	
MANUFACTURER	KAESER	
NUMBER	2	
MOTOR	25	HP
OPERATION	VARIABLE SPEED	
BLOWER SIZE	300	SCFM
WASTE SLUDGE PUMP**		
EQUIPMENT NUMBER	P-1102A/B	
TYPE	ROTARY LOBE	
MANUFACTURER	BOERGER	
NUMBER	2	
MOTOR	2	HP
OPERATION	VARIABLE SPEED	
PERFORMANCE PER PUMP	7-25	GPM

PARAMETER	VALUE	UNITS
SCREW DEWATERING PRESS		
EQUIPMENT NUMBER	SCR-0100A/B	
TYPE	DRUM SCREEN	
MANUFACTURER	ROTAMAT-HUBER TECHNOLOGY	
NUMBER OF SCREENS	2	
NUMBER OF SCREENS	3	mm
SCREEN CAPACITY	2.0	MGD
MOTOR HORSEPOWER	2.00	HP
SPRAY WASH CONSUMPTION	35	GPM
SPRAY WASH PRESSURE	75	PSI
TYPE		
TYPE	DRYING BEDS	
NUMBER OF BEDS	2	PRESENT/1 FUTURE
DIMENSIONS	16'x26.6'	
SURFACE AREA, EACH	426	SF
BEDDING	SAND ON GRAVEL	
SLUDGE LOADING	22	LB/SQ FT/YEAR

NOT IN CONTRACT
PHASE B HAS BEEN DELETED

* SUPPLIED BY MEMBRANE BIOREACTOR MANUF.
** SUPPLIED BY SCREW DEWATERING PRESS MANUF.

Austin Tsutsumi
A S S C I A T E S , I N C .
CIVIL ENGINEERS, I SURVEYORS
HONOLULU I WAILUKU I HILO, HAWAII

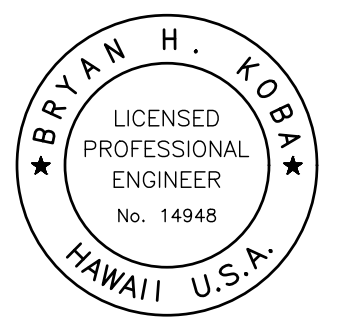
501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817

PHONE: 808-533-3646
FAX: 808-526-1267



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REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

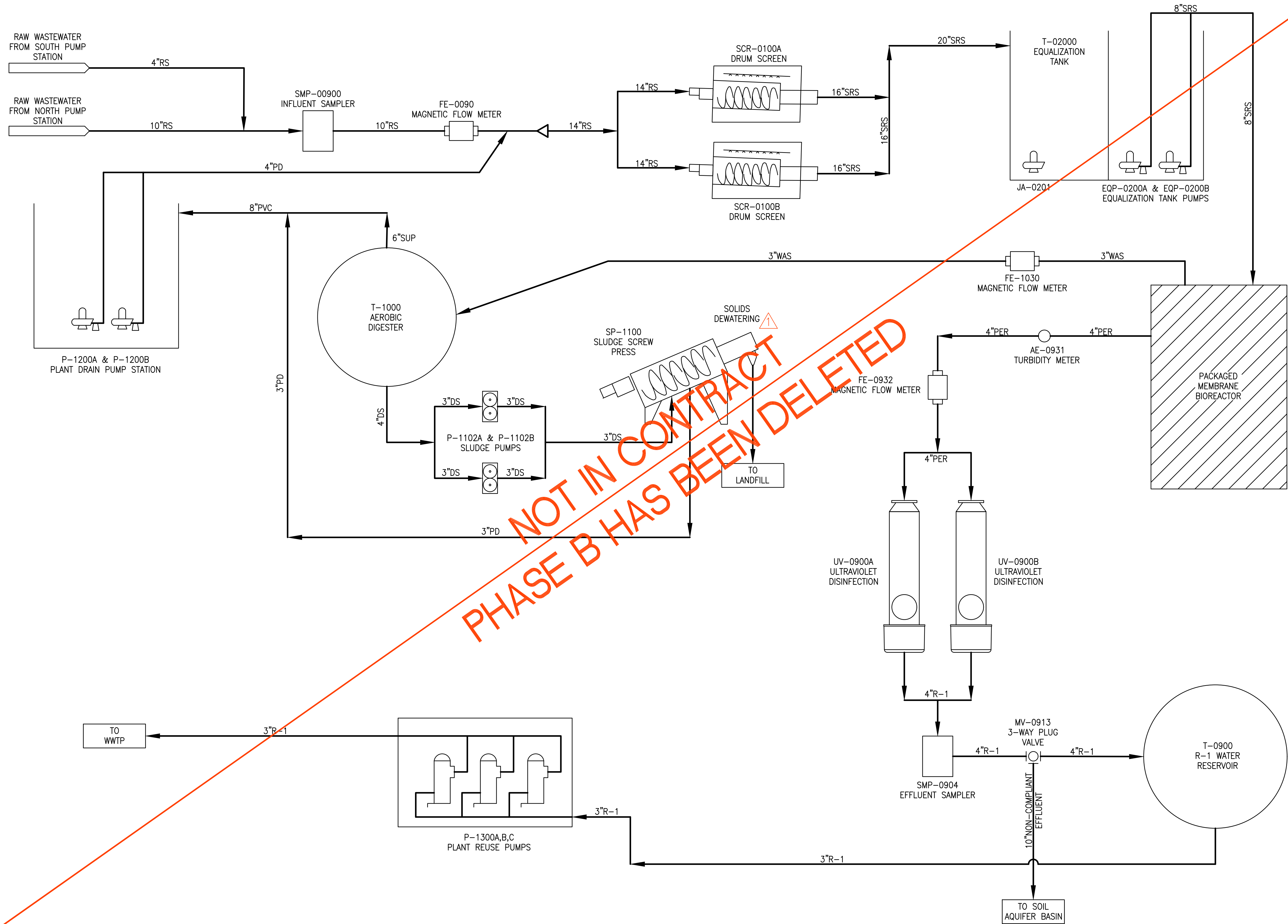
DESIGN DATA

DWG. NO.
GB-2
SHEET 71 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\GB-2 DESIGN DATA.DWG

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\GB-3 PROCESS FLOW DIAGRAM.DWG

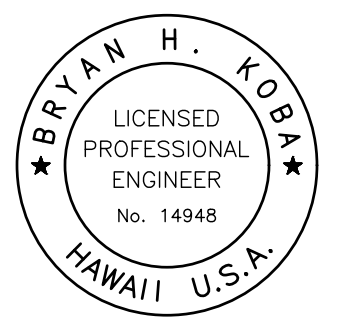


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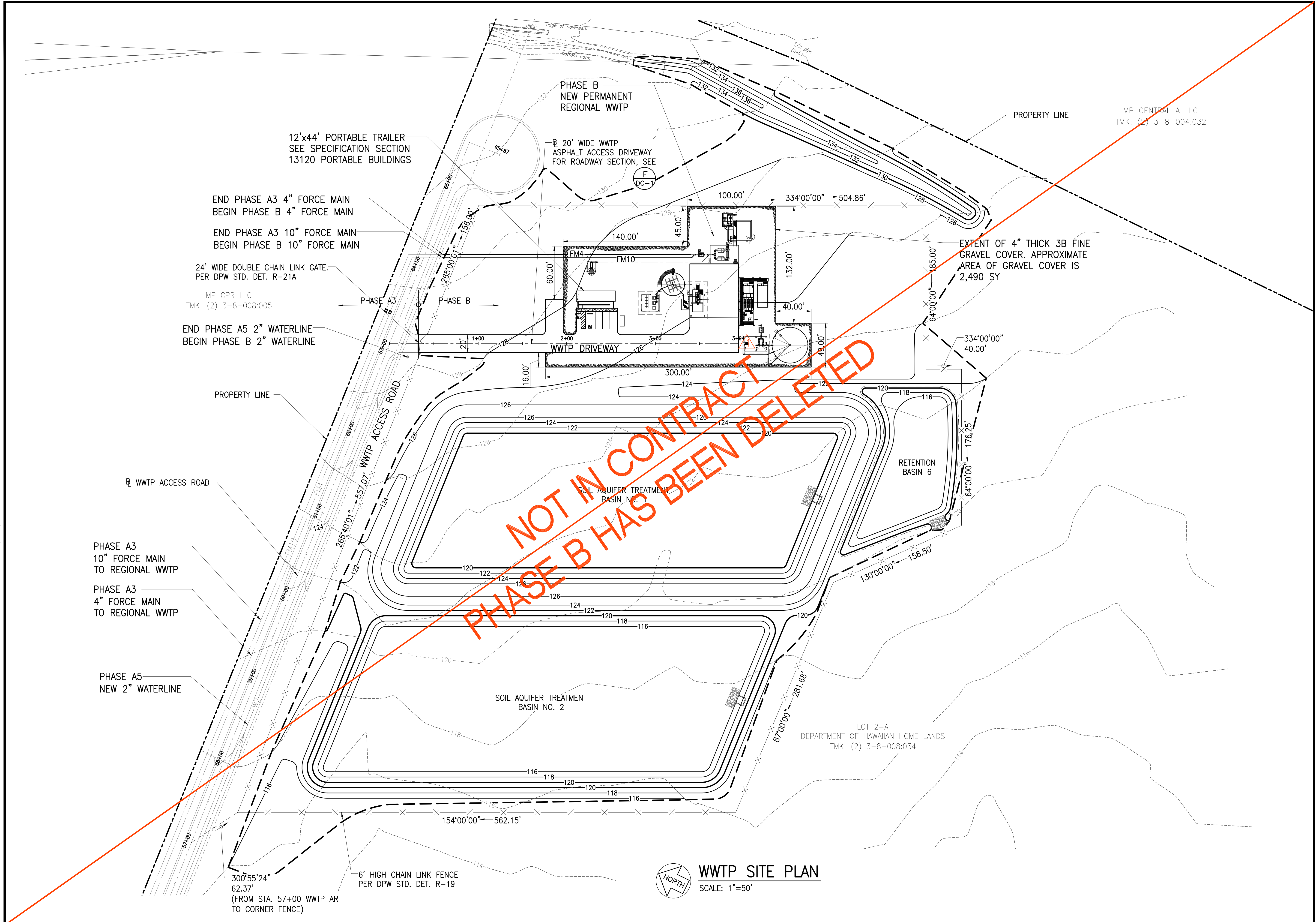
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PROCESS FLOW DIAGRAM

DWG. NO.
GB-3
 SHEET 72 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\CB-1 WWTP SITE PLAN.DWG

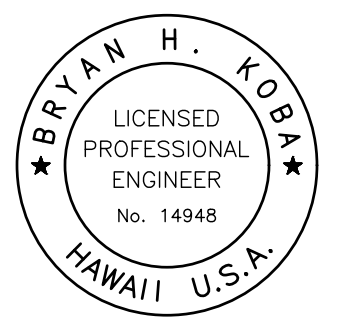


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Δ	4/15/20	ADDENDUM 5	BHK

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WWTP SITE PLAN

DWG. NO.

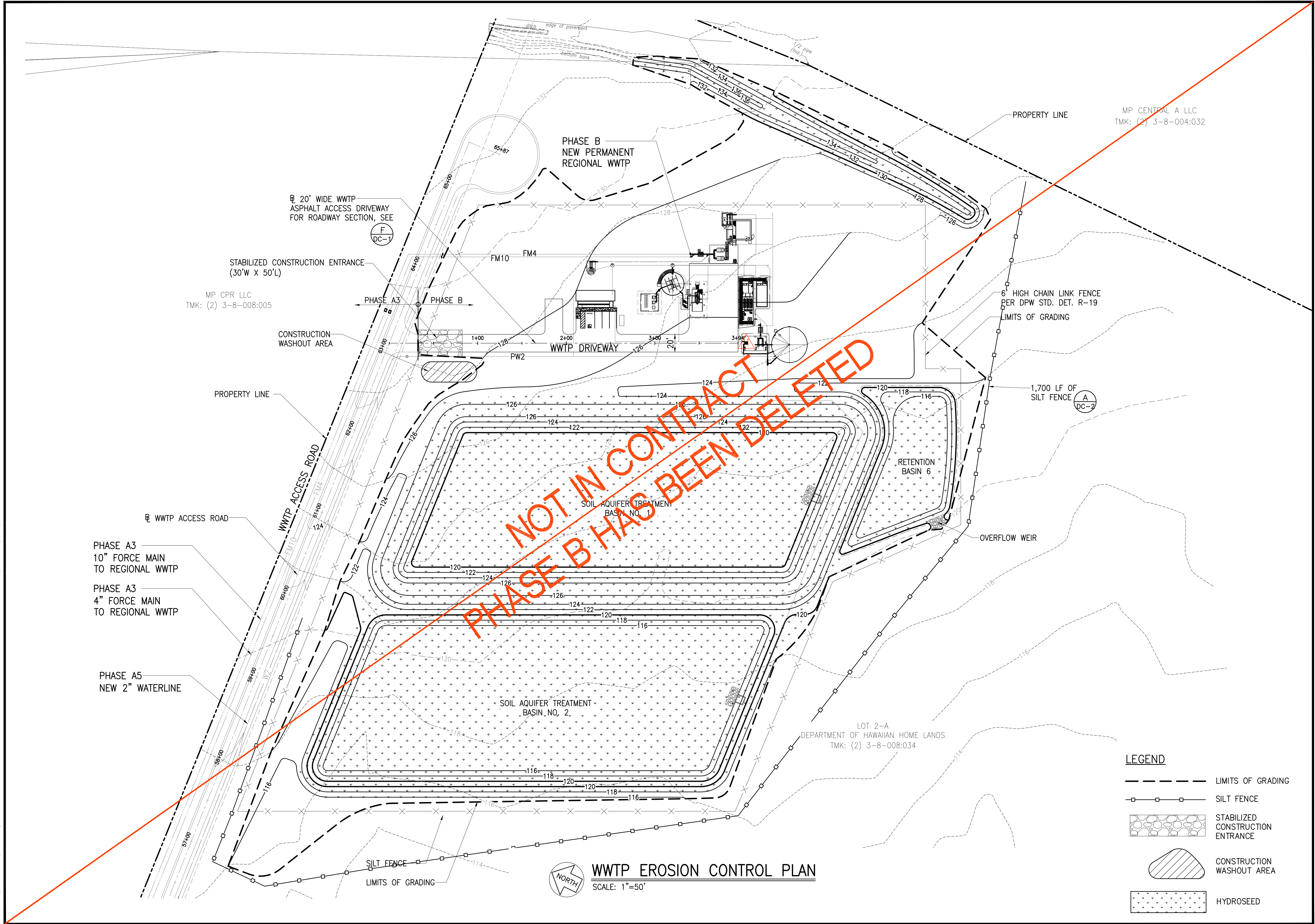
CB-1

SHEET 73 OF 201

FILE	POCKET	FOLDER	NO.

WWTP SITE PLAN
 SCALE: 1"=50'

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY).BRYAN.DWG\CB-2 WWTP EROSION CONTROL PLAN.DWG



WWTP EROSION CONTROL PLAN
 SCALE: 1"=50'

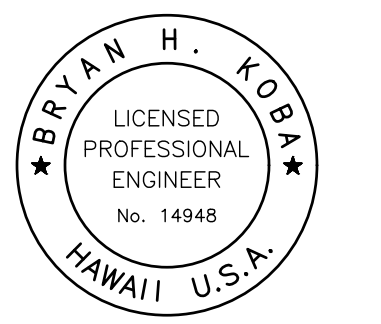
- LEGEND**
- LIMITS OF GRADING
 - SILT FENCE
 - ▨ STABILIZED CONSTRUCTION ENTRANCE
 - ▨ CONSTRUCTION WASHOUT AREA
 - ▨ HYDROSEED

Austin Tsutsumi
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 Designed By: BHK
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 Checked By:

WWTP EROSION CONTROL PLAN

DWG. NO.
CB-2
 SHEET 74 OF 201

FILE	POCKET	FOLDER	NO.



Austin Tsutsumi

REGISTERED PROFESSIONAL ENGINEERS & SURVEYORS
HONOLULU | WAILUKU | HILO, HAWAII

501 SUMNER STREET, SUITE 521
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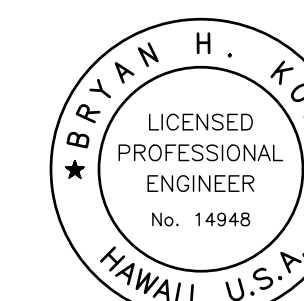
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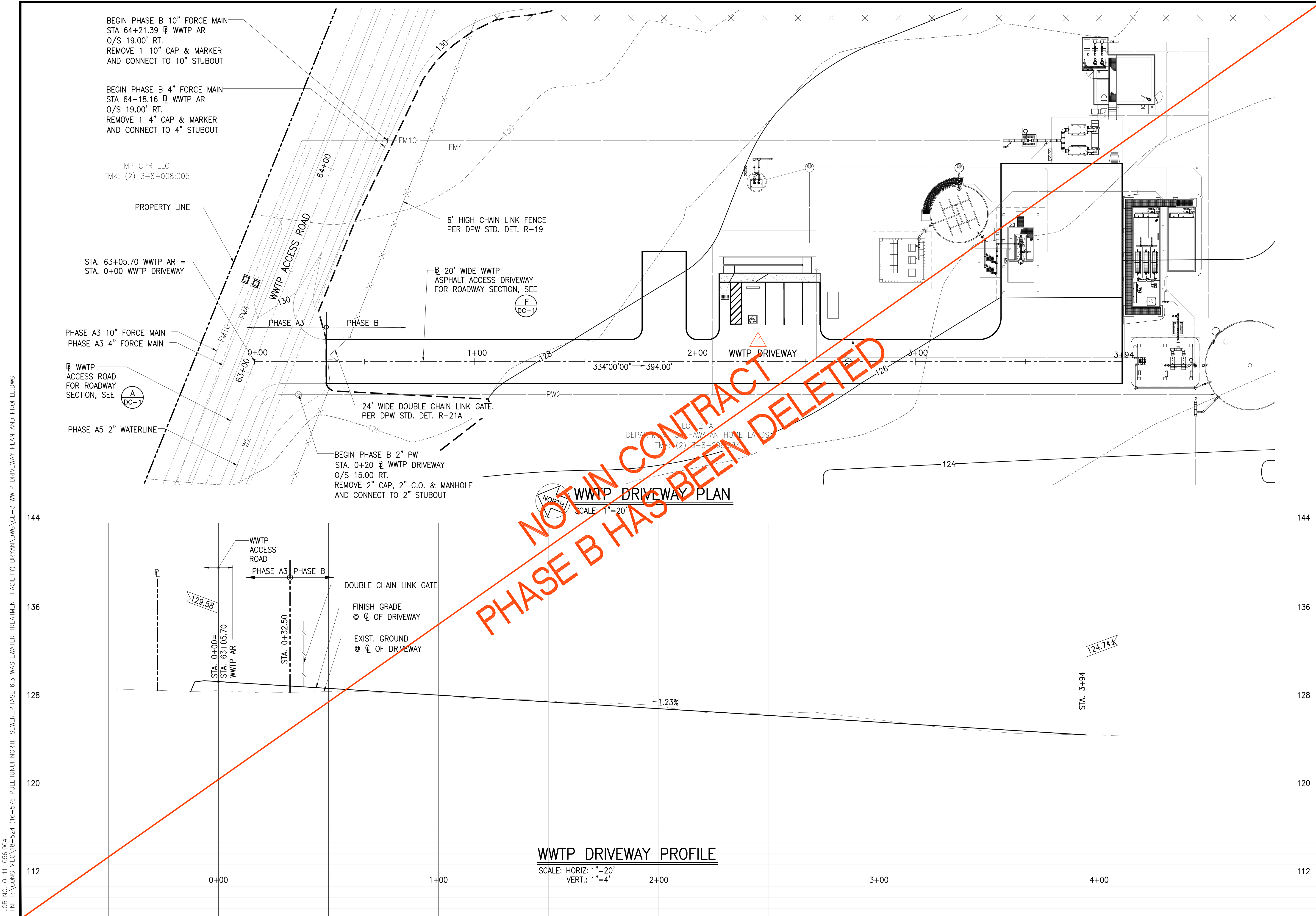
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△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
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 Designed By: BHK
 Drawn By: BHK
 Checked By:

WWTP DRIVEWAY PLAN
AND PROFILE

DWG. NO.
CB-3
SHEET 75 OF 201

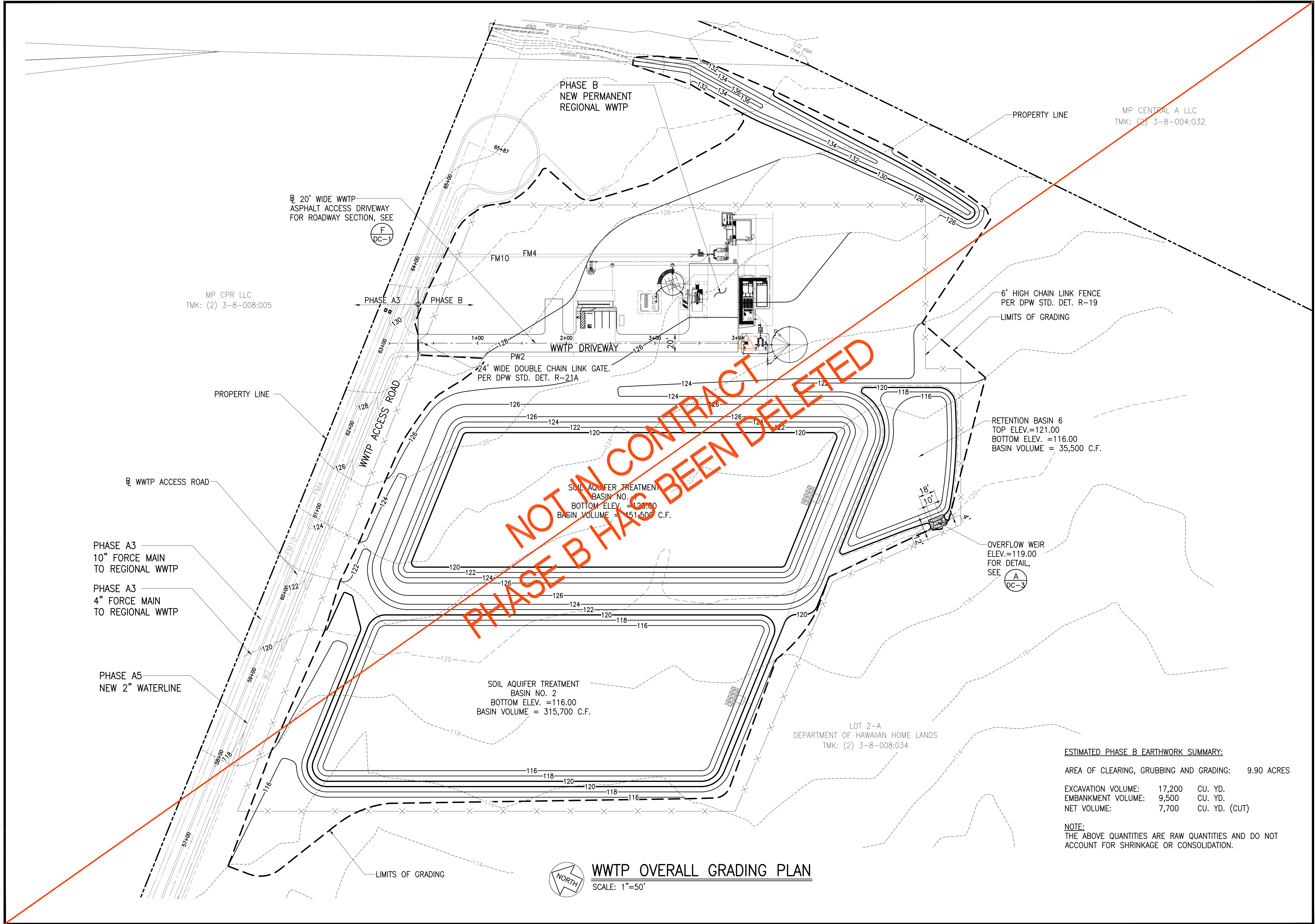
FILE	POCKET	FOLDER	NO.



JOB NO. 0-11-056.004
FN: F:\CONC. VEC\18-524 (16-576 PŪLEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\CB-3 WWTP DRIVEWAY PLAN AND PROFILE.DWG

WWTP DRIVEWAY PROFILE
SCALE: HORIZ: 1"=20'
VERT.: 1"=4'

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\CB-4 WWTP OVERALL GRADING PLAN.DWG



WWTP OVERALL GRADING PLAN
 SCALE: 1"=50'

ESTIMATED PHASE B EARTHWORK SUMMARY:

AREA OF CLEARING, GRUBBING AND GRADING:	9.90 ACRES
EXCAVATION VOLUME:	17,200 CU. YD.
EMBANKMENT VOLUME:	9,500 CU. YD.
NET VOLUME:	7,700 CU. YD. (CUT)

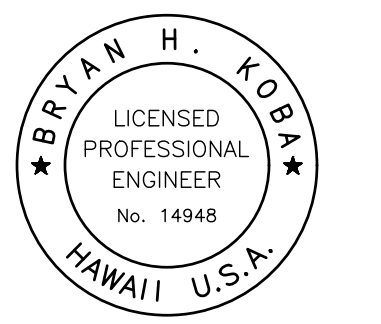
NOTE:
 THE ABOVE QUANTITIES ARE RAW QUANTITIES AND DO NOT ACCOUNT FOR SHRINKAGE OR CONSOLIDATION.

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REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 6	BHK

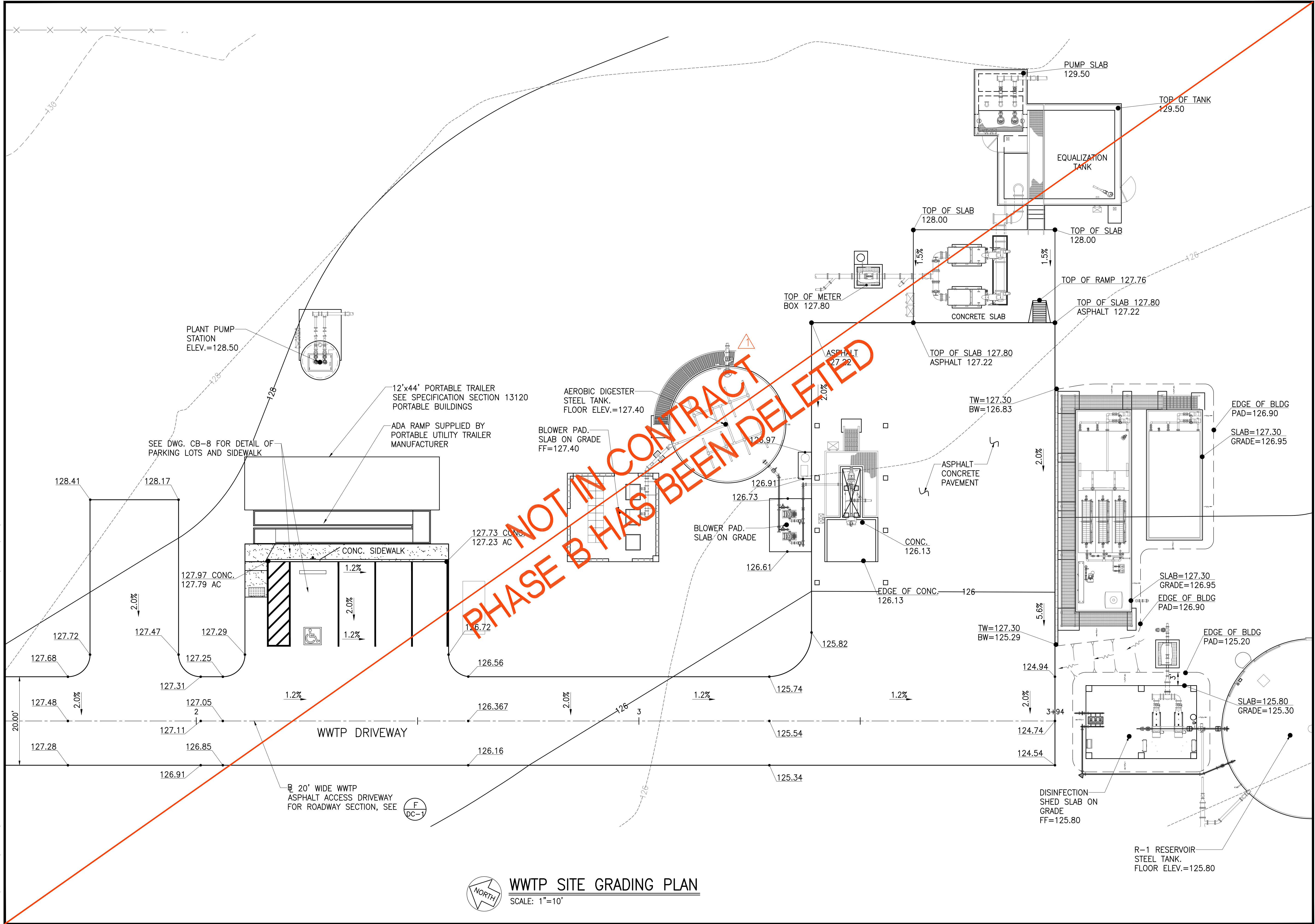
Project No: 16-576
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 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

WWTP OVERALL GRADING PLAN

DWG. NO.
CB-4
 SHEET 76 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONC. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CB-5 WWTP SITE GRADING PLAN.DWG

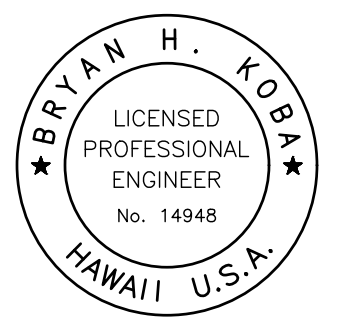


WWTP SITE GRADING PLAN
 SCALE: 1"=10'

Austin Tsutsumi & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF HAWAIIAN HOME LANDS
PULEHUNUI REGIONAL INFRASTRUCTURE

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0	1	2	
LINE IS 2 INCHES AT FULL SIZE (IF NOT 2-INCHES : Scale Accordingly)			
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

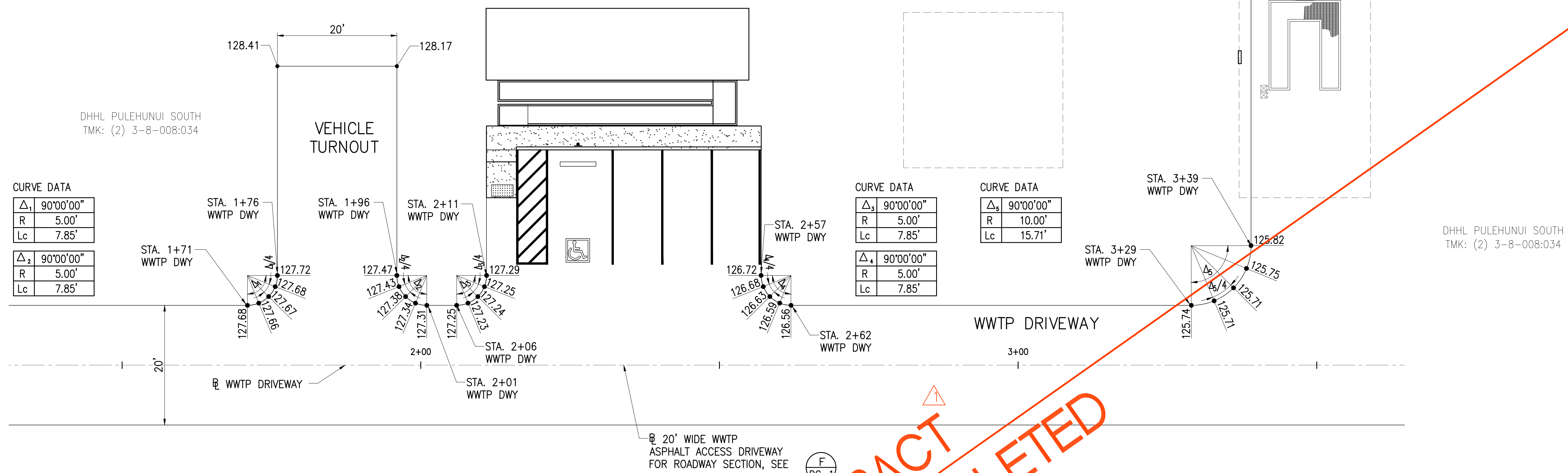
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

WWTP SITE GRADING PLAN

DWG. NO.
CB-5
 SHEET 77 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CB-7 CURVE RETURN DETAILS.DWG



CURVE DATA

Δ_1	90°00'00"
R	5.00'
Lc	7.85'

Δ_2	90°00'00"
R	5.00'
Lc	7.85'

CURVE DATA

Δ_3	90°00'00"
R	5.00'
Lc	7.85'

Δ_4	90°00'00"
R	5.00'
Lc	7.85'

CURVE DATA

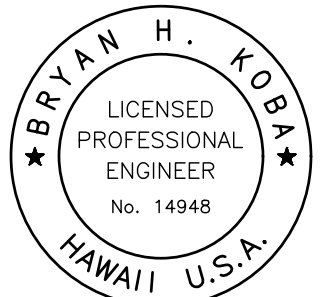
Δ_5	90°00'00"
R	10.00'
Lc	15.71'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
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STATE OF HAWAII
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Bryan H. Kobayashi APRIL 30, 2020
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0 1 2
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 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

CURVE RETURN DETAILS

DWG. NO.
CB-7
 SHEET 79 OF 201

FILE	POCKET	FOLDER	NO.



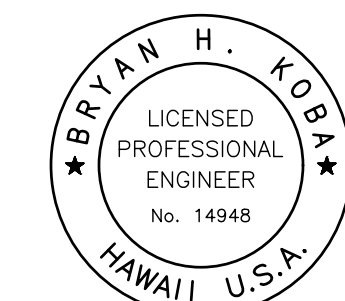
Austin Tsutsumi
 A S S C I A T E S , I N C .
 CIVIL ENGINEERS I SURVEYORS
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 HONOLULU, HAWAII 96817
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0 1 2
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 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

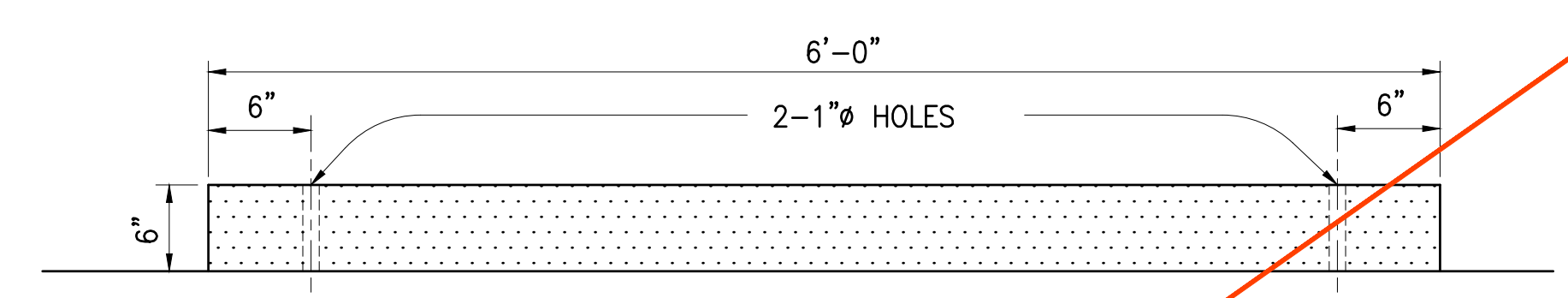
WWTP CURB RAMP DETAILS

DWG. NO.

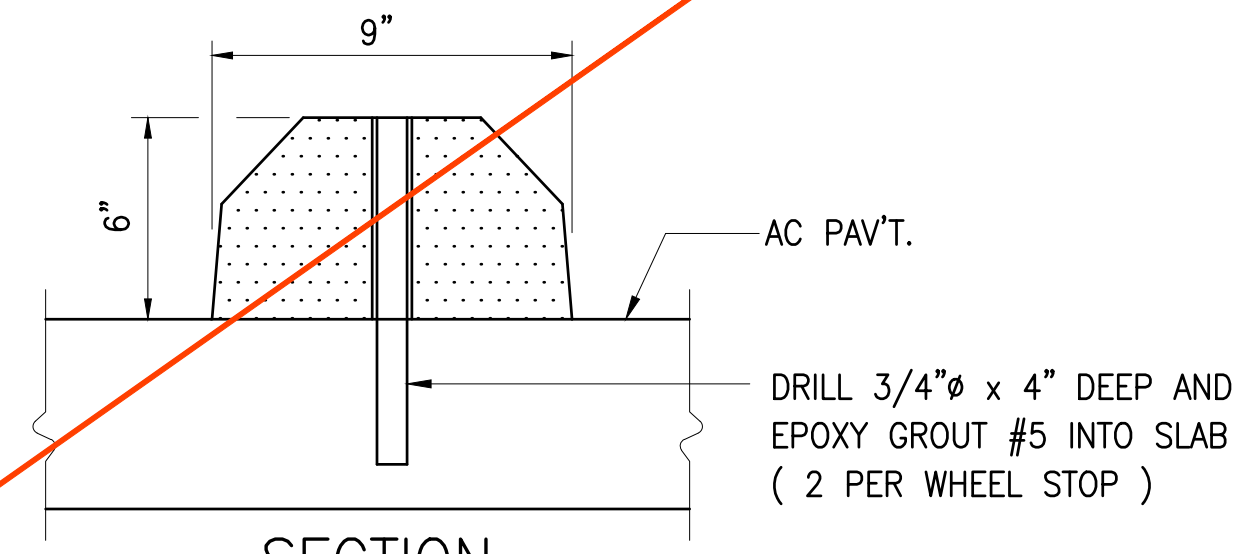
CB-8

SHEET 80 OF 201

FILE	POCKET	FOLDER	NO.

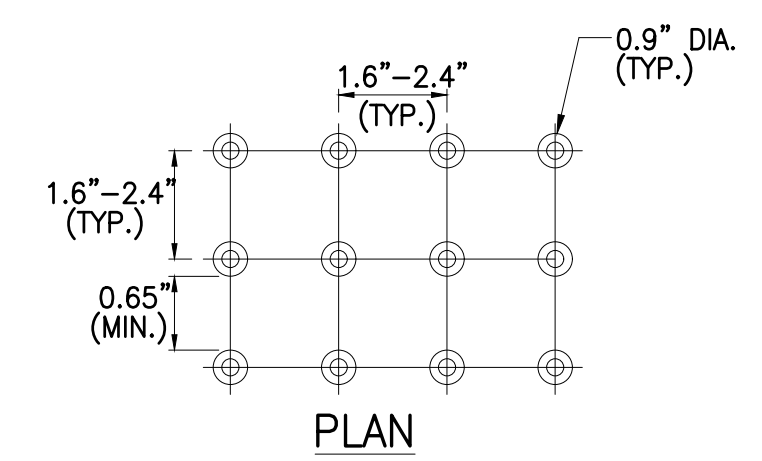


ELEVATION



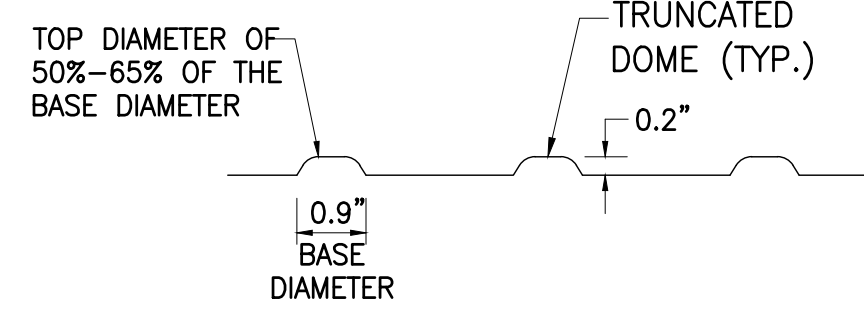
SECTION

CONC. WHEEL STOP DETAIL
 NOT TO SCALE



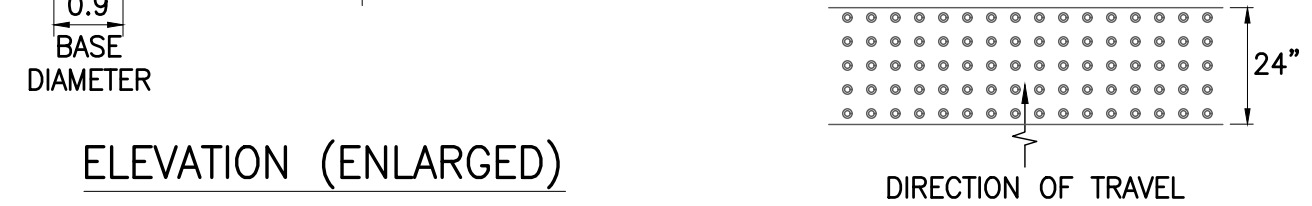
PLAN

NOTE:
 DETECTABLE WARNINGS ARE REQUIRED AT CURB RAMP. (ADAAG SECTION 406.8) DETECTABLE WARNINGS FOR CURB RAMP SHALL COMPLY TO ADAAG SECTION 705.1, 705.1.1, 705.1.2 & 705.1.3 AND SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.

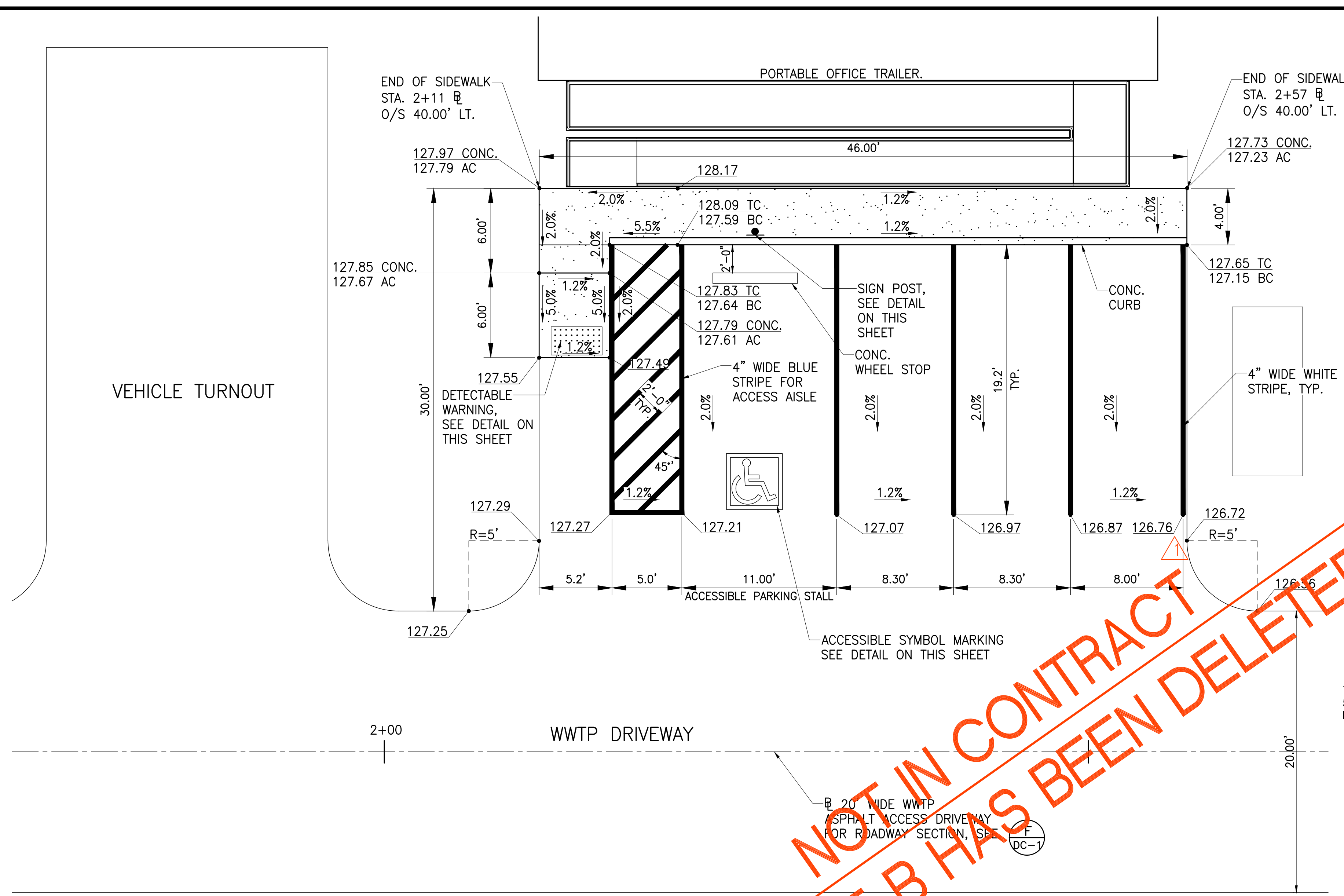


ELEVATION (ENLARGED)

DETECTABLE WARNING
 TRUNCATED DOMES DETAIL
 NOT TO SCALE



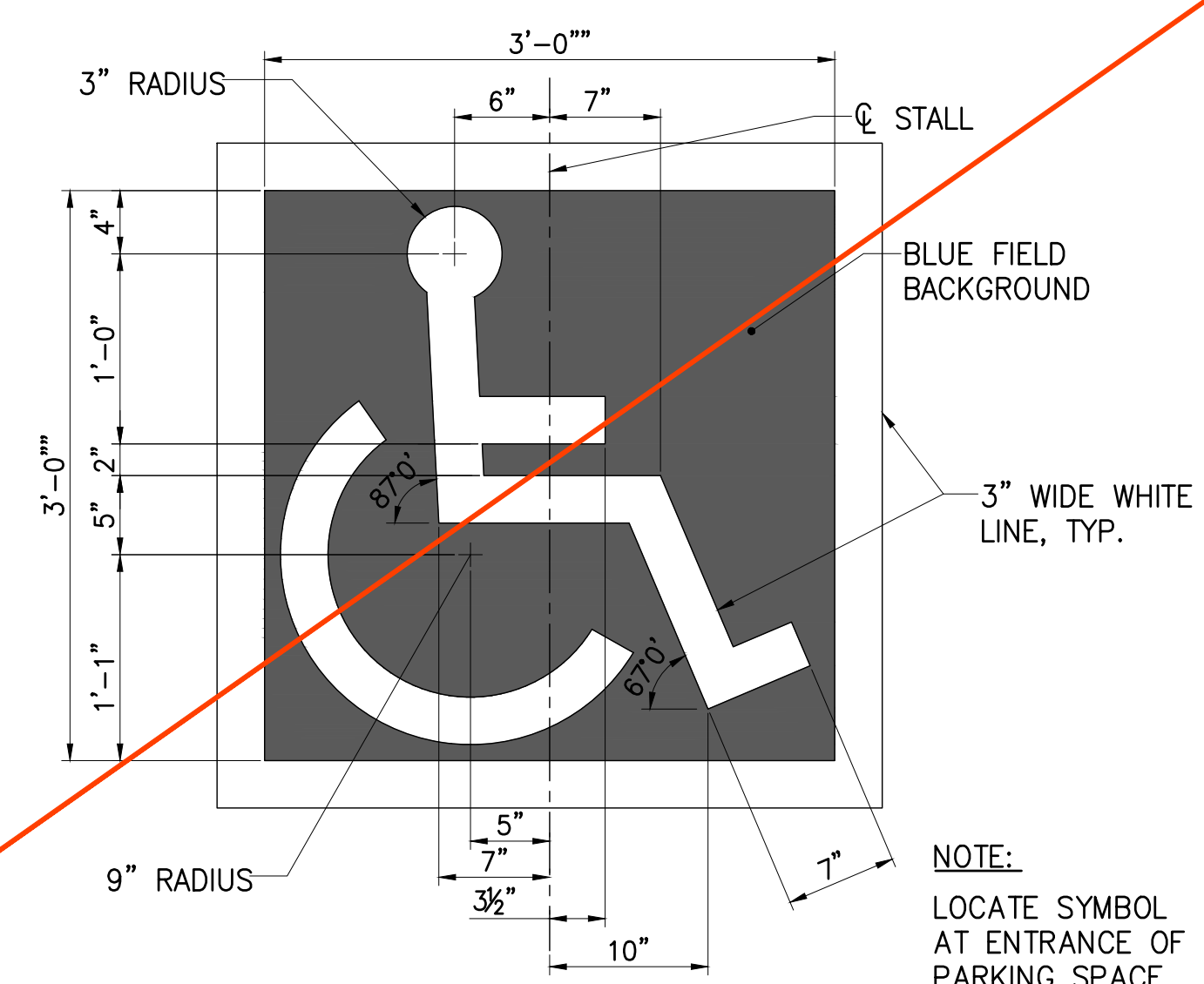
DIRECTION OF TRAVEL



WWTP CURB RAMP DETAILS

SCALE: 1"=5'

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED



ACCESSIBILITY SYMBOL MARKING
 NOT TO SCALE



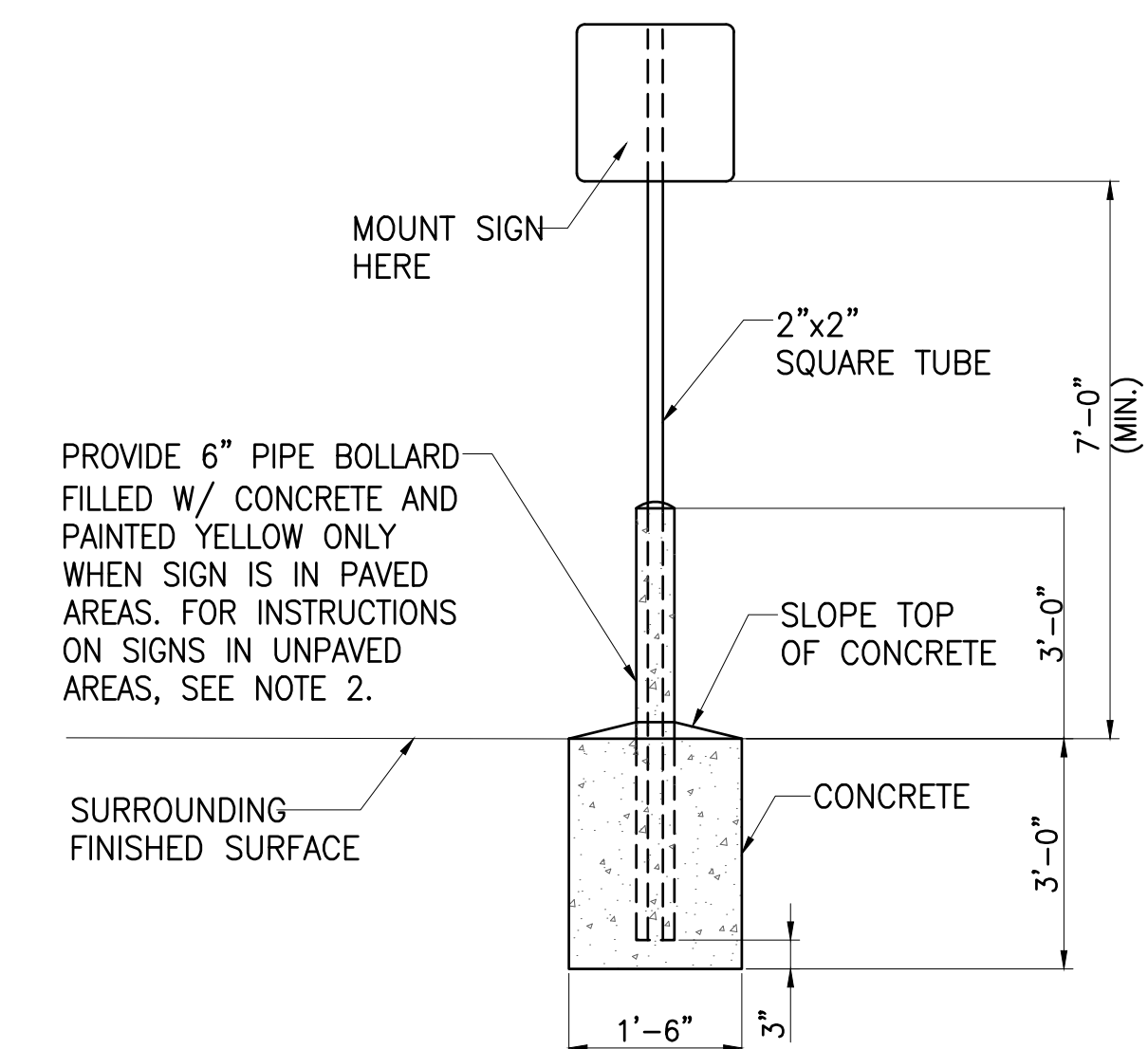
NOTES:

- SIGN SHALL BE ALUM T6061 SHEET COVERED WITH ENGINEERING GRADE REFLECTIVE SHEETING.
- SIGN LETTERING SHALL BE UPPERCASE LETTERS OF THE TYPE APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- ELEMENTS (TEXT AND GRAPHIC) REQUIRED ON SIGN MAY BE PLACED ON MORE THAN ONE SIGN. DIMENSIONS OF ELEMENTS ON SIGN ARE MINIMUM REQUIREMENTS.

ACCESSIBLE PARKING SPACE SIGNS
 NOT TO SCALE

NOTES:

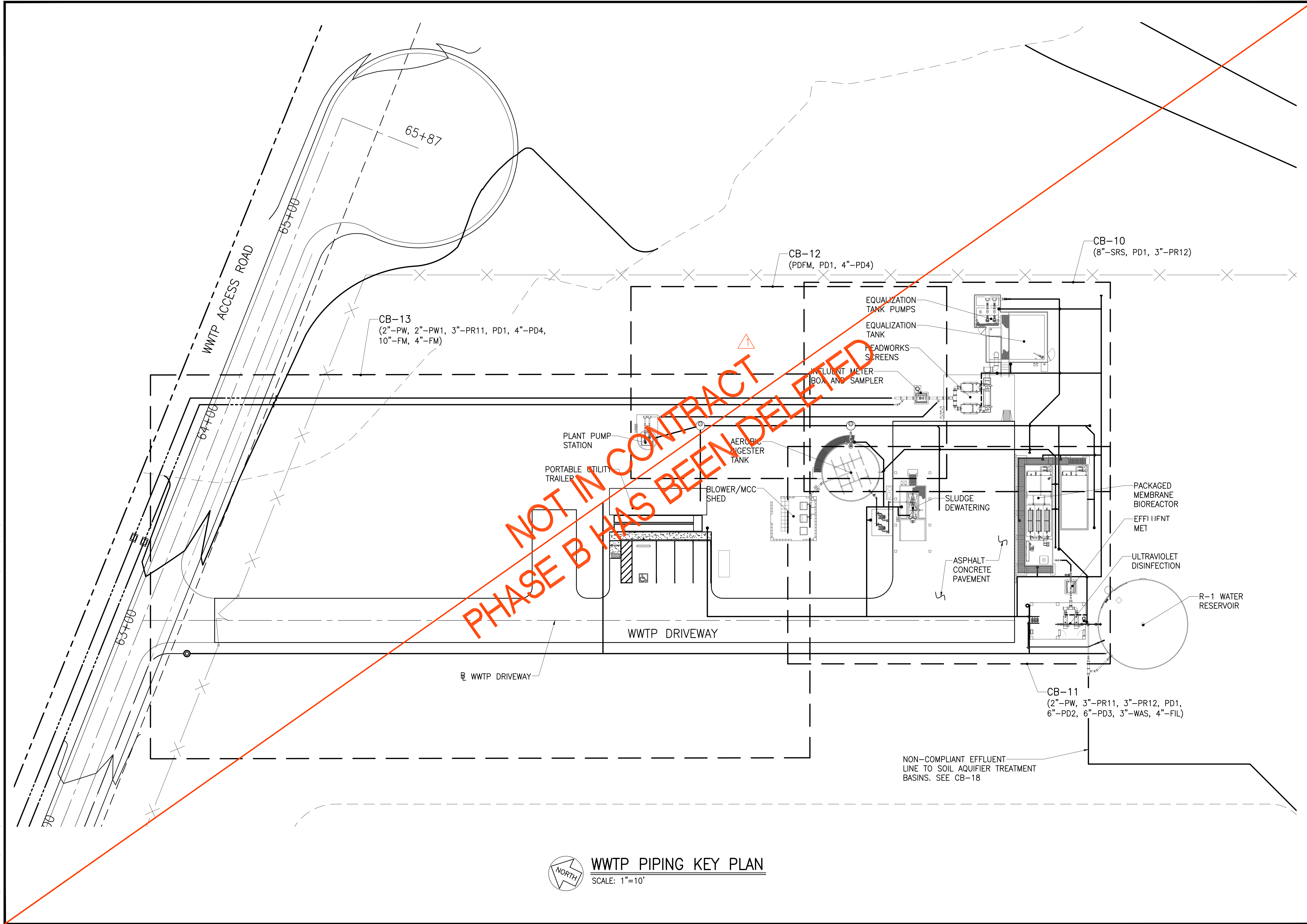
- ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL TRAFFIC CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- FOR SIGNS IN UNPAVED AREAS, PROVIDE 2 1/4"x2 1/4"x2'-0" SQUARE TUBE SIGN POST ANCHOR. POST ANCHOR TO BE CENTERED AND EMBEDDED IN A 1'-6" DIAMETER, 2'-0" DEEP CONCRETE FOOTING.
- BOLT POST TUBE TO POST ANCHOR IN ACCORDANCE TO MANUFACTURER'S INSTRUCTIONS.



SIGN POST DETAIL
 NOT TO SCALE

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY\BRYAN\DWG\CB-8 WWTP CURB RAMP DETAILS.DWG

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\CB-9 WWTP PIPING KEY PLAN.DWG



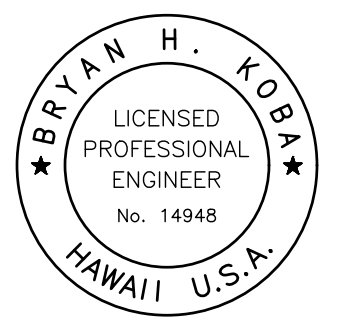
WWTP PIPING KEY PLAN
 SCALE: 1"=10'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS | SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
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STATE OF HAWAII
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AUSTIN, TSUTSUMI & ASSOC., INC.
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

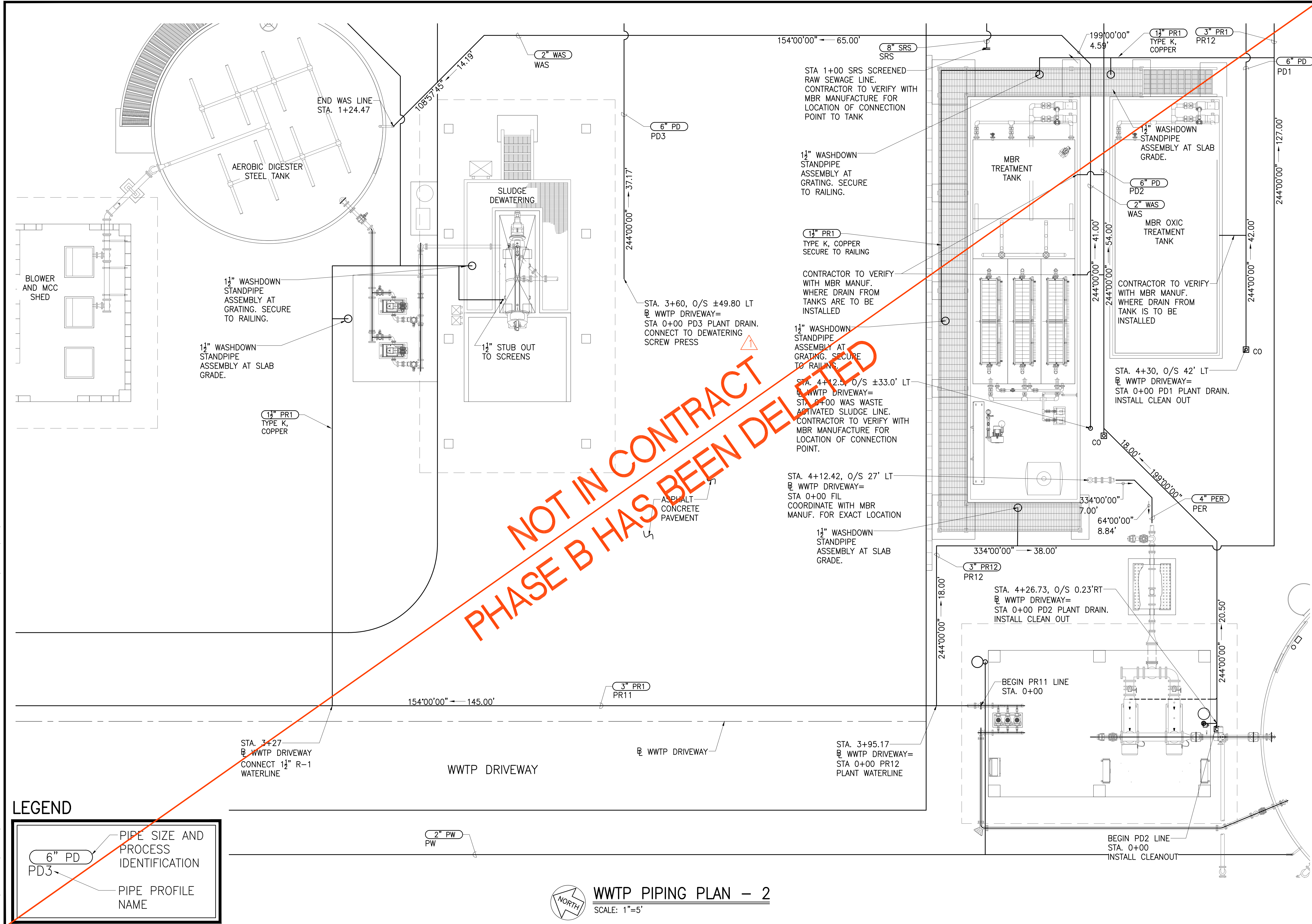
WWTP PIPING KEY PLAN

DWG. NO.
CB-9

SHEET 81 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CB-11 WWTP PIPING PLAN - 2.DWG



LEGEND

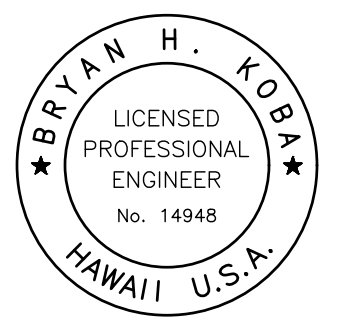
	PIPE SIZE AND PROCESS IDENTIFICATION
	PIPE PROFILE NAME

WWTP PIPING PLAN - 2
 SCALE: 1"=5'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
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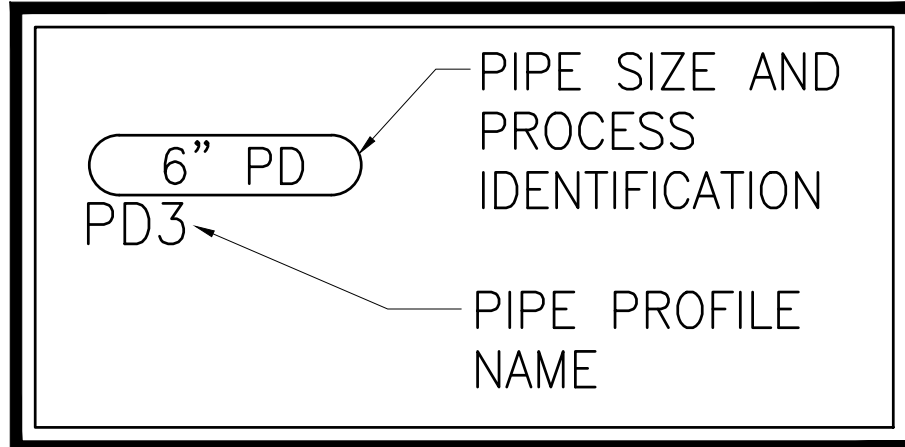
0	1	2	
LINE IS 2 INCHES AT FULL SIZE (If NOT 2-inches : Scale Accordingly)			
REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

WWTP PIPING PLAN - 2
 DWG. NO.
CB-11
 SHEET 83 OF 201

FILE	POCKET	FOLDER	NO.
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LEGEND

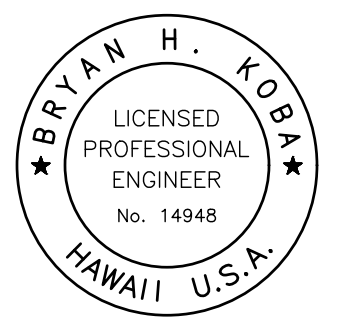


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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

**PŪLEHUNUI
 REGIONAL
 INFRASTRUCTURE**

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 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
▲	4/15/20	ADDENDUM 5	BHK

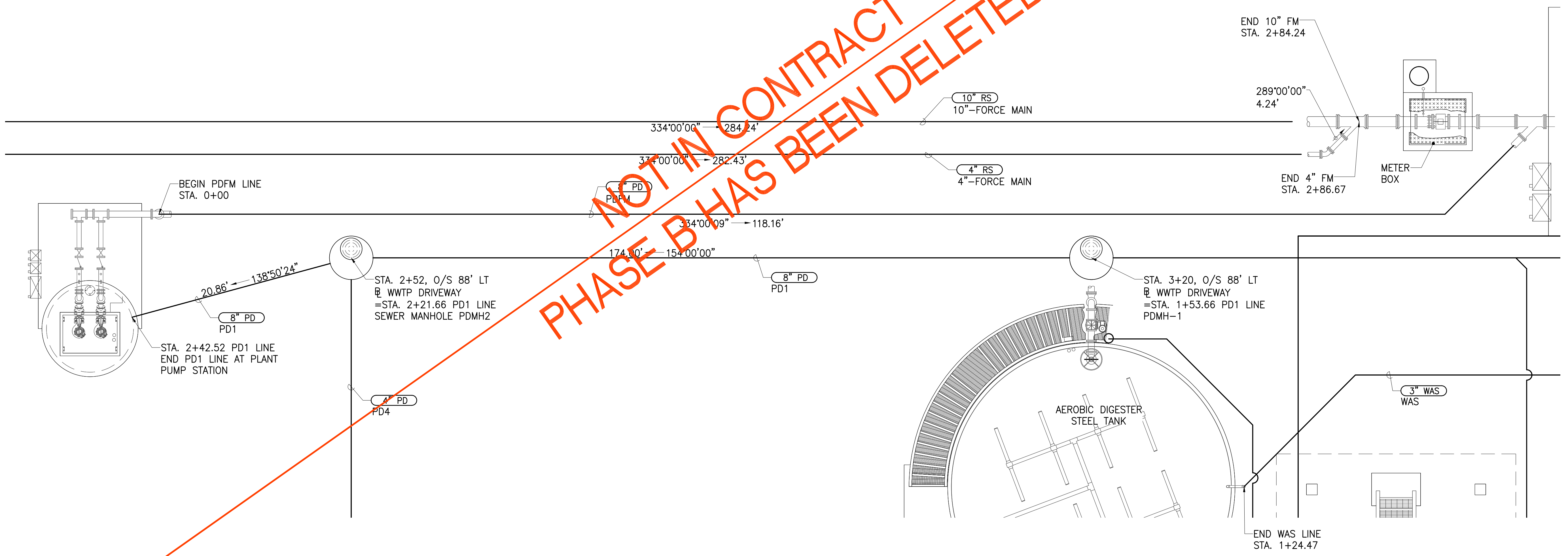
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

WWTP PIPING PLAN - 3

DWG. NO.
CB-12
 SHEET 84 OF 201

FILE	POCKET	FOLDER	NO.

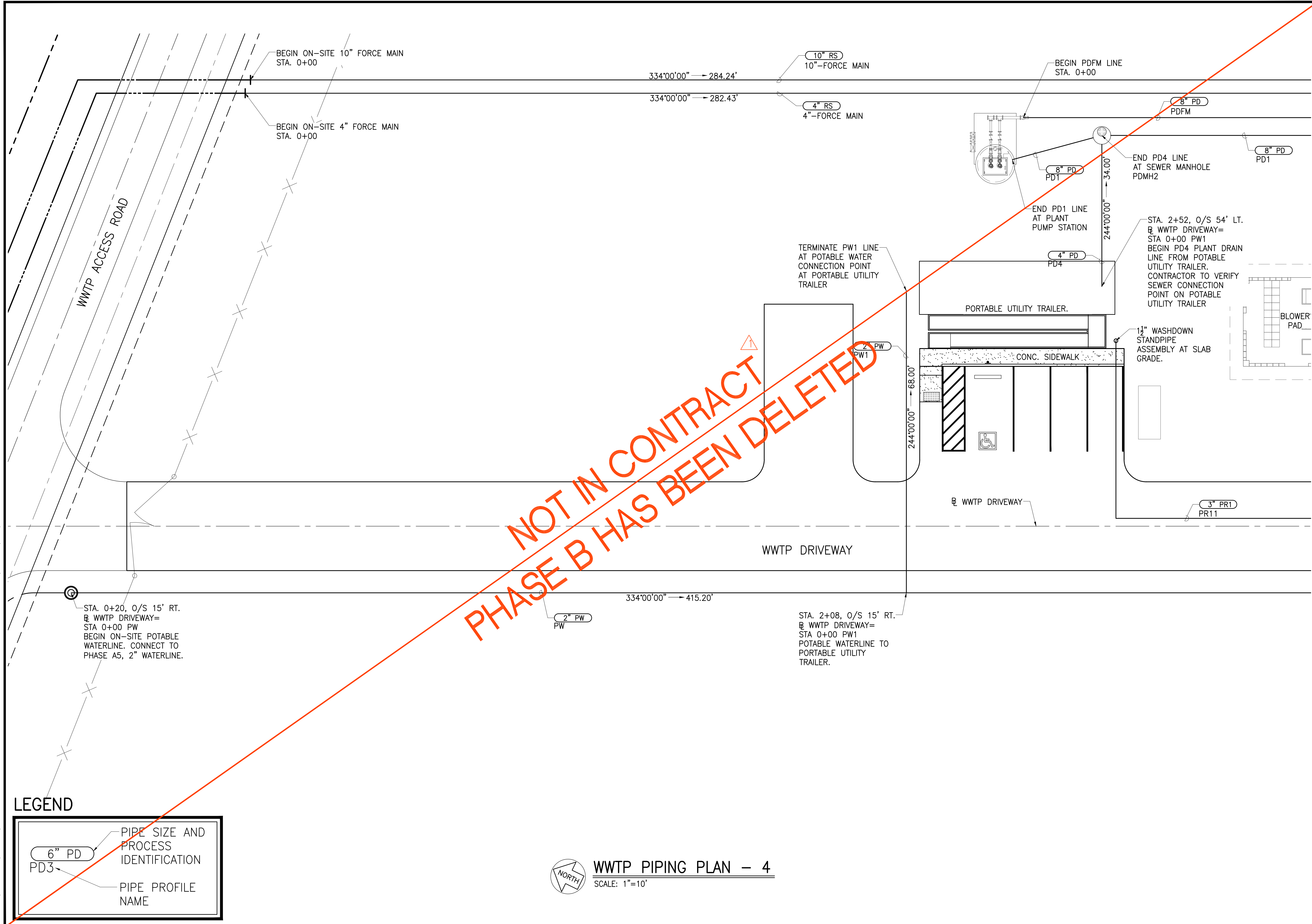
**NOT IN CONTRACT
 PHASE B HAS BEEN DELETED**



WWTP PIPING PLAN - 3
 SCALE: 1"=5'

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CB-12 WWTP PIPING PLAN - 3.DWG

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CB-13 WWTP PIPING PLAN - 4.DWG



NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

LEGEND

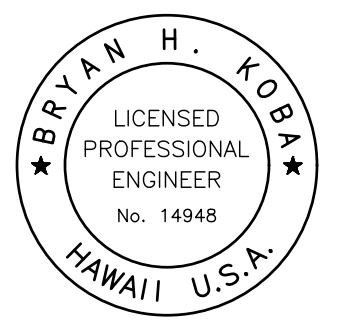
	PIPE SIZE AND PROCESS IDENTIFICATION
	PIPE PROFILE NAME

WWTP PIPING PLAN - 4
 SCALE: 1"=10'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS | SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
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REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

WWTP PIPING PLAN - 4
 DWG. NO.
CB-13
 SHEET 85 OF 201

FILE	POCKET	FOLDER	NO.

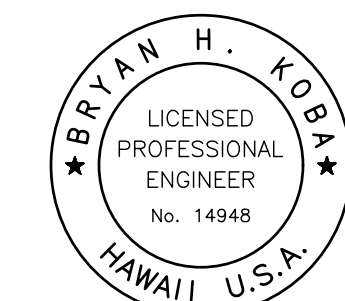


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0 1 2
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REVISION	DATE	BRIEF	BY
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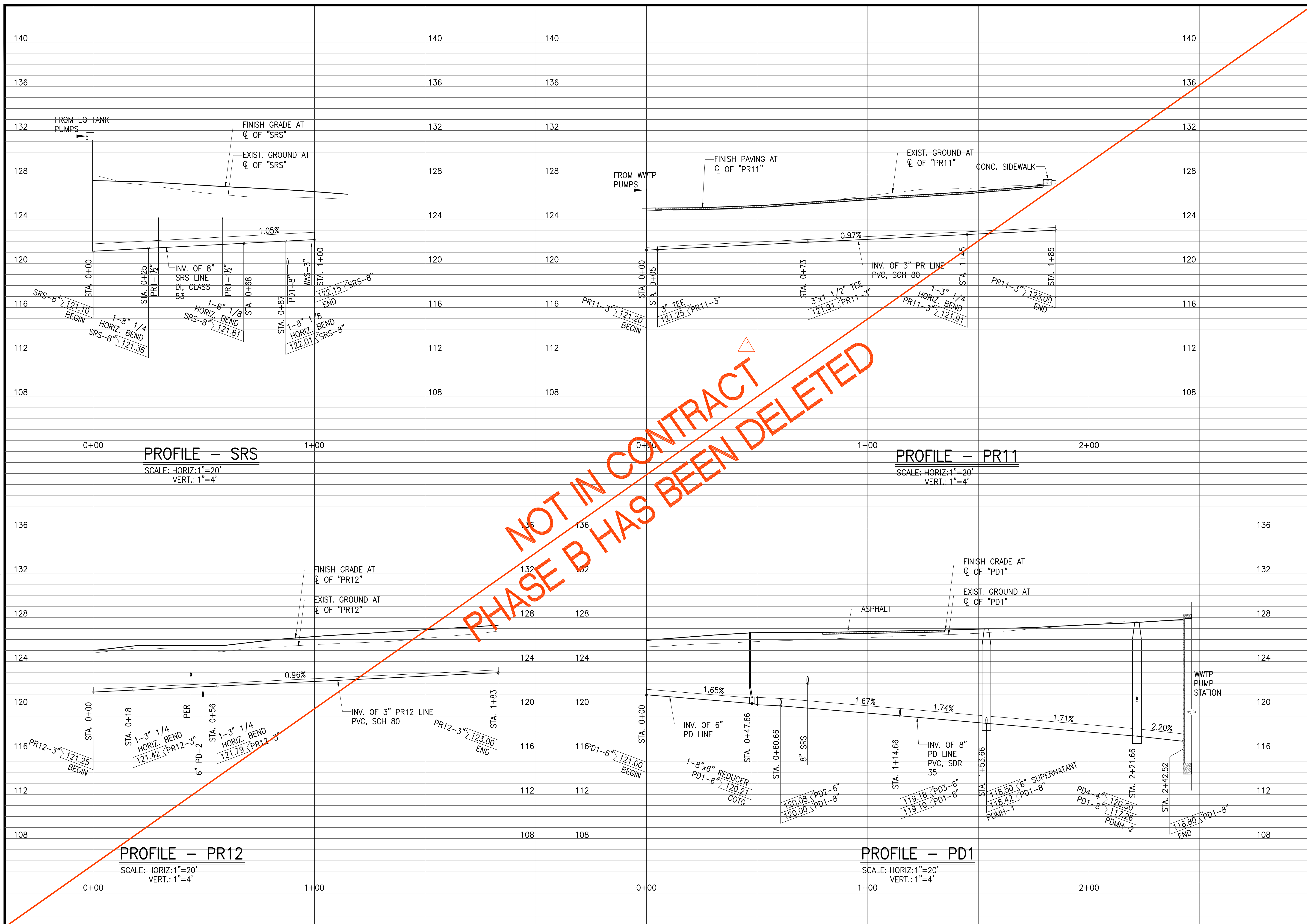
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

WWTP PIPING PROFILES - 1

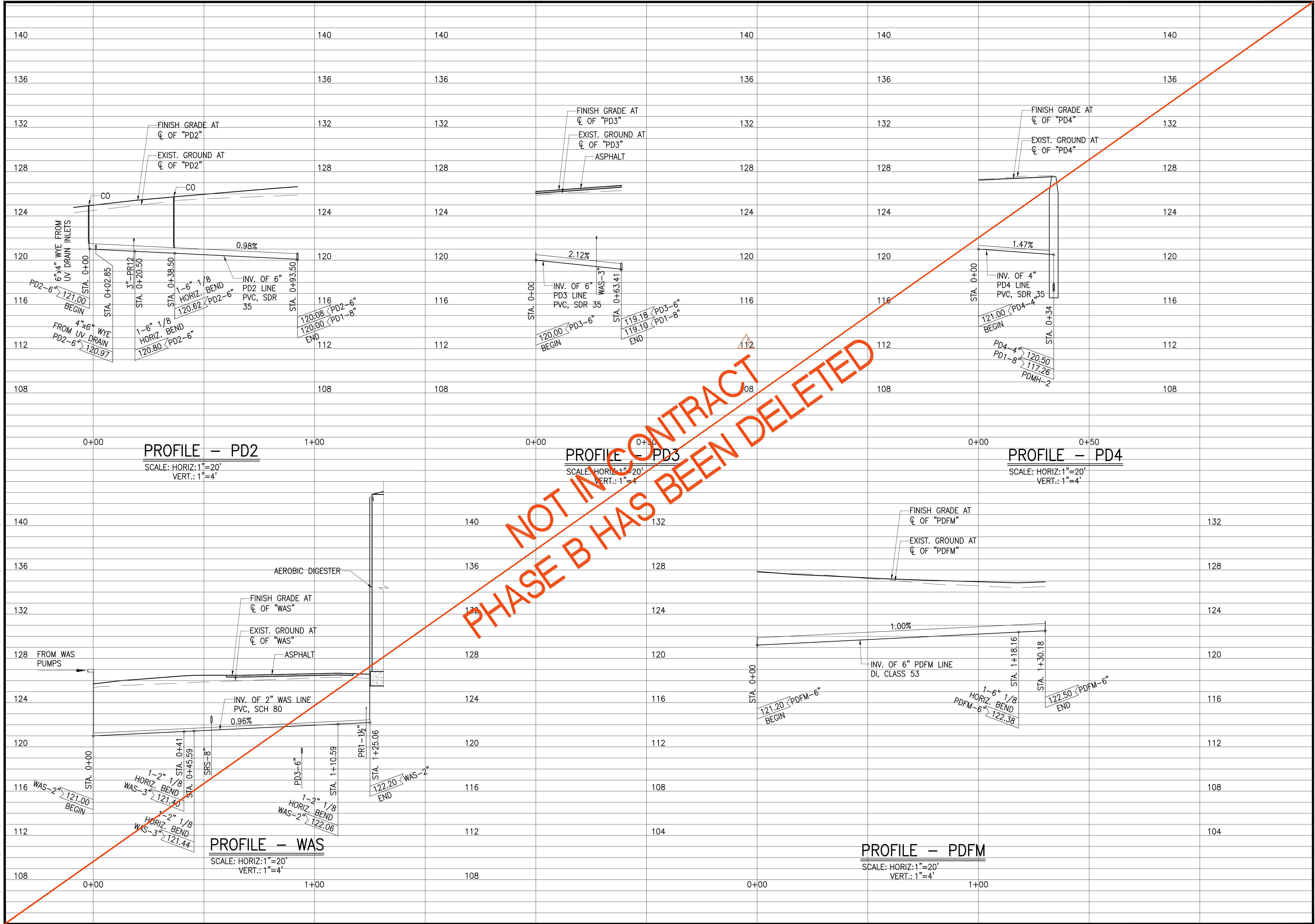
DWG. NO.
CB-14
 SHEET 86 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CB-14 WWTP PIPING PROFILES - 1.DWG



JOB NO. 0-11-056.004
 FN: F:\CONC. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY).BRYAN\DWG\CB-15 WWP PIPING PROFILES - 2.DWG

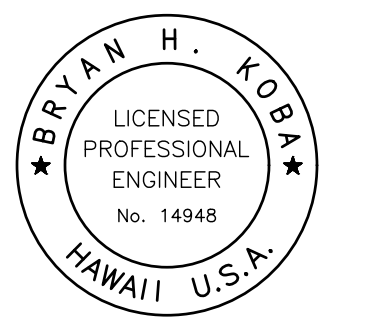


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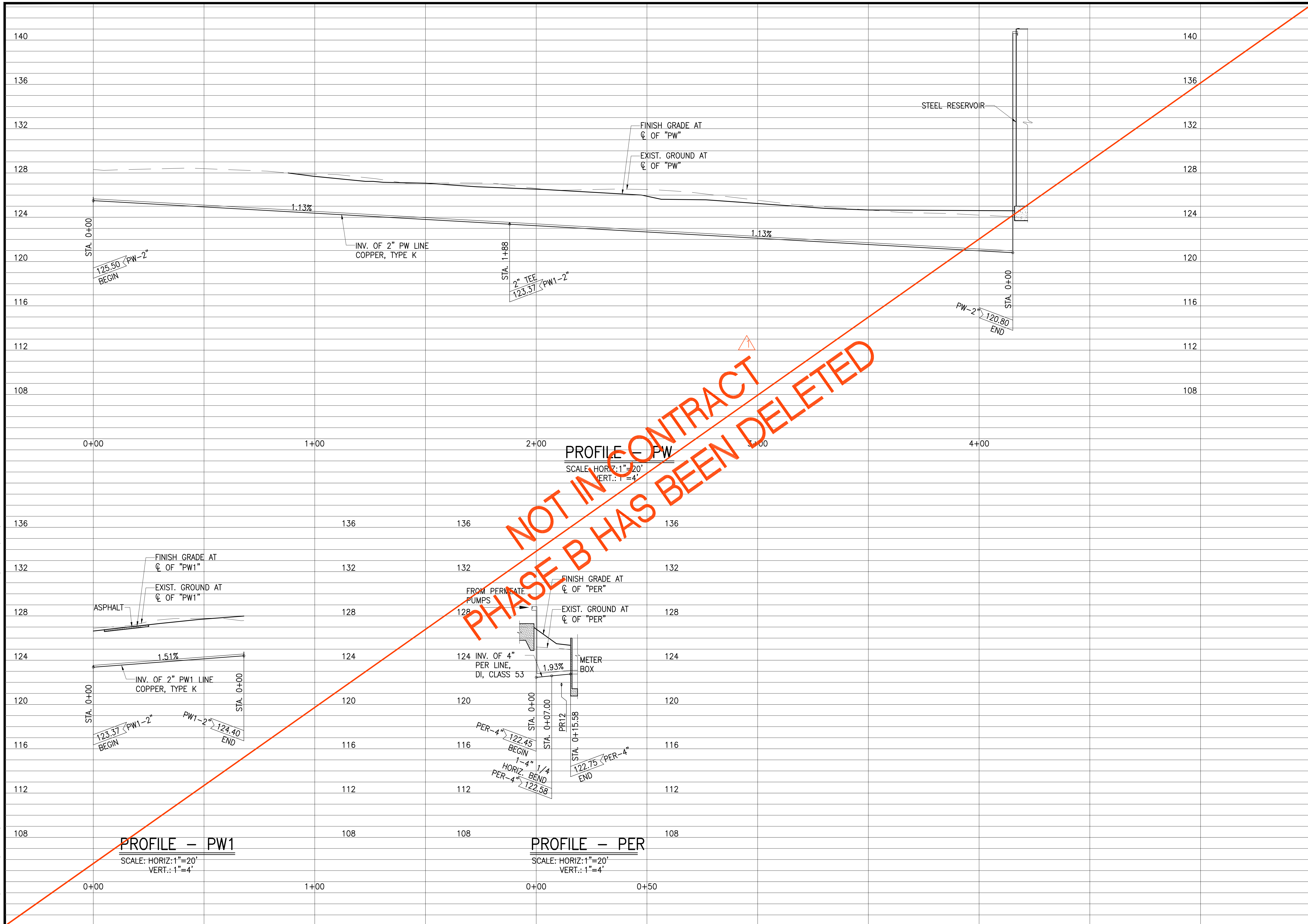
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

WWTP PIPING PROFILES - 2

DWG. NO.
CB-15
 SHEET 87 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY\BRYAN\DWG\CB-16 WWP PIPING PROFILES - 3.DWG



STA. 0+00
 125.50 PW-2"
 BEGIN

1.13%

INV. OF 2" PW LINE
 COPPER, TYPE K

STA. 1+88
 2" TEE
 123.37 PW1-2"

1.13%

STEEL RESERVOIR

PW-2"
 120.80
 END

STA. 0+00

PROFILE - PW
 SCALE: HORIZ.: 1"=20'
 VERT.: 1"=4'

FINISH GRADE AT
 C OF "PW1"
 EXIST. GROUND AT
 C OF "PW1"

ASPHALT
 1.51%
 INV. OF 2" PW1 LINE
 COPPER, TYPE K

STA. 0+00
 123.37 PW1-2"
 BEGIN
 PW1-2" 124.40
 END

PROFILE - PW1
 SCALE: HORIZ.: 1"=20'
 VERT.: 1"=4'

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

FROM PERMEATE
 PUMPS
 FINISH GRADE AT
 C OF "PER"
 EXIST. GROUND AT
 C OF "PER"

124 INV. OF 4"
 PER LINE,
 DI, CLASS 53

1.93%
 STA. 0+07.00
 STA. 0+15.58
 PER-4" 122.45
 BEGIN
 1-4" 1/4
 HORIZ. BEND
 PER-4" 122.58
 END

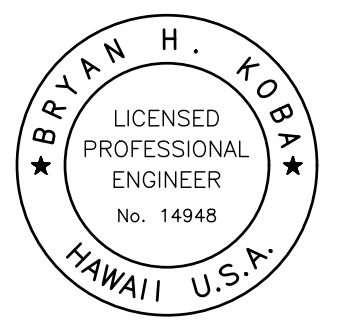
PROFILE - PER
 SCALE: HORIZ.: 1"=20'
 VERT.: 1"=4'

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS | SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267



**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

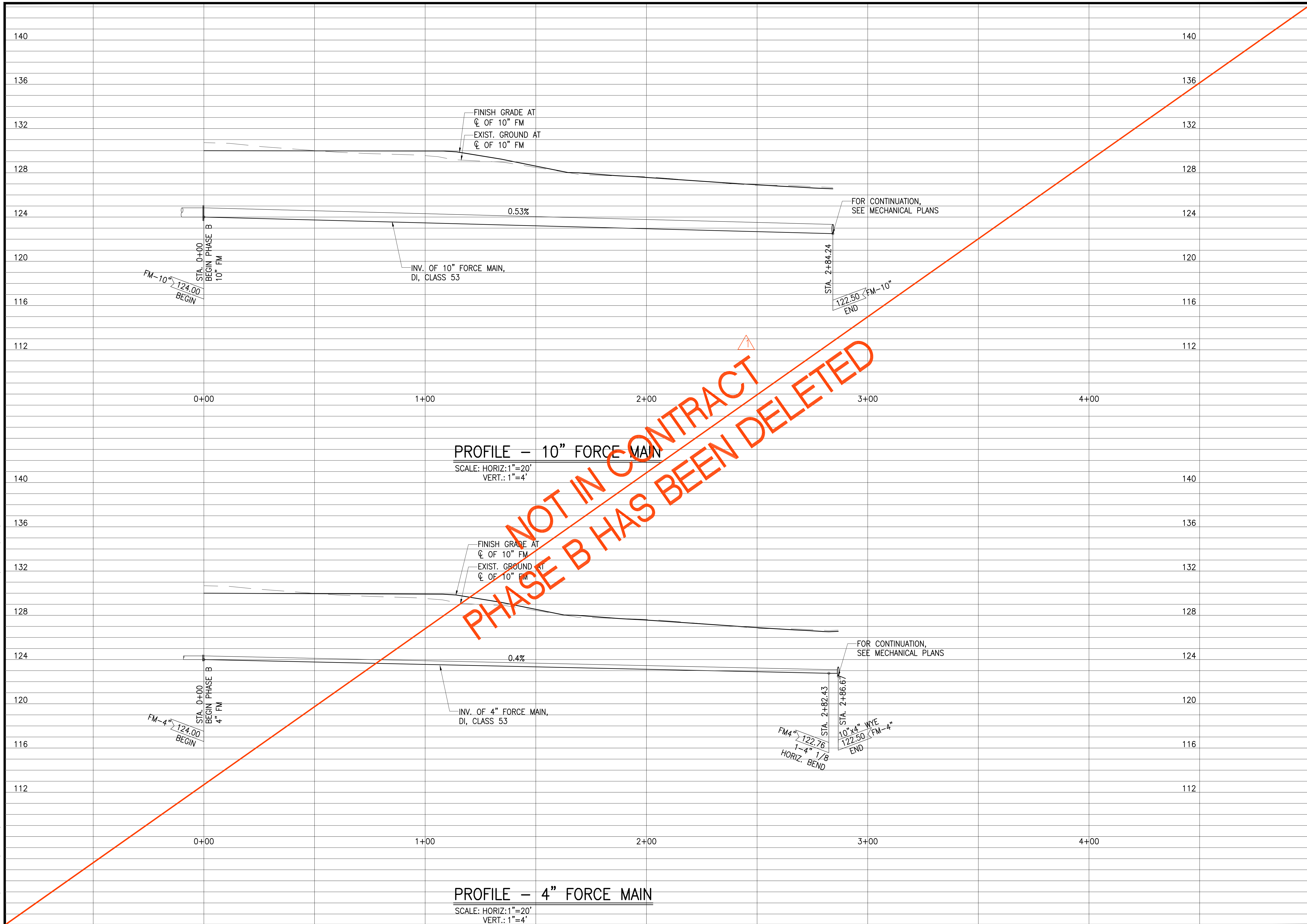
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

WWTP PIPING PROFILES - 3

DWG. NO.
CB-16
 SHEET 88 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\CB-17 WWP PIPING PROFILES - 4.DWG

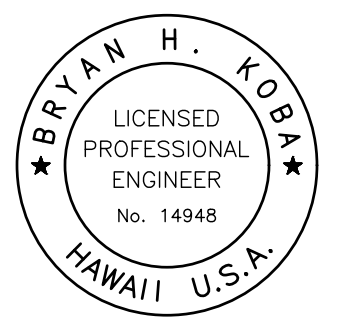


Austin Tsutsumi
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 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

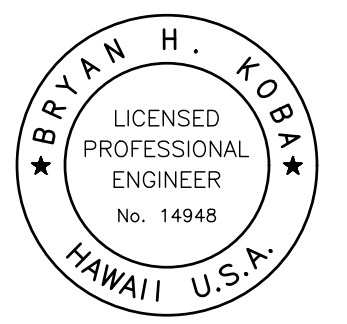
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

WWTP PIPING PROFILES - 4

DWG. NO.
CB-17
 SHEET 89 OF 201

FILE	POCKET	FOLDER	NO.



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

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 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

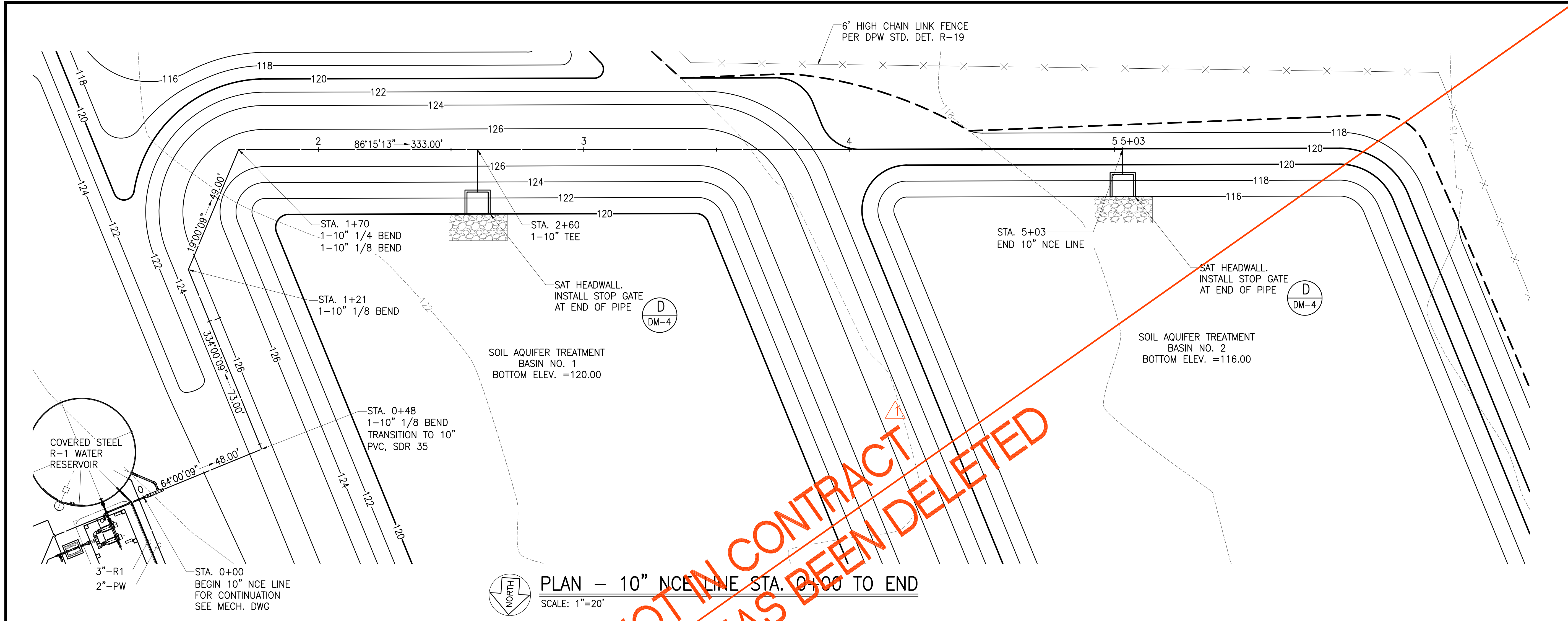
REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

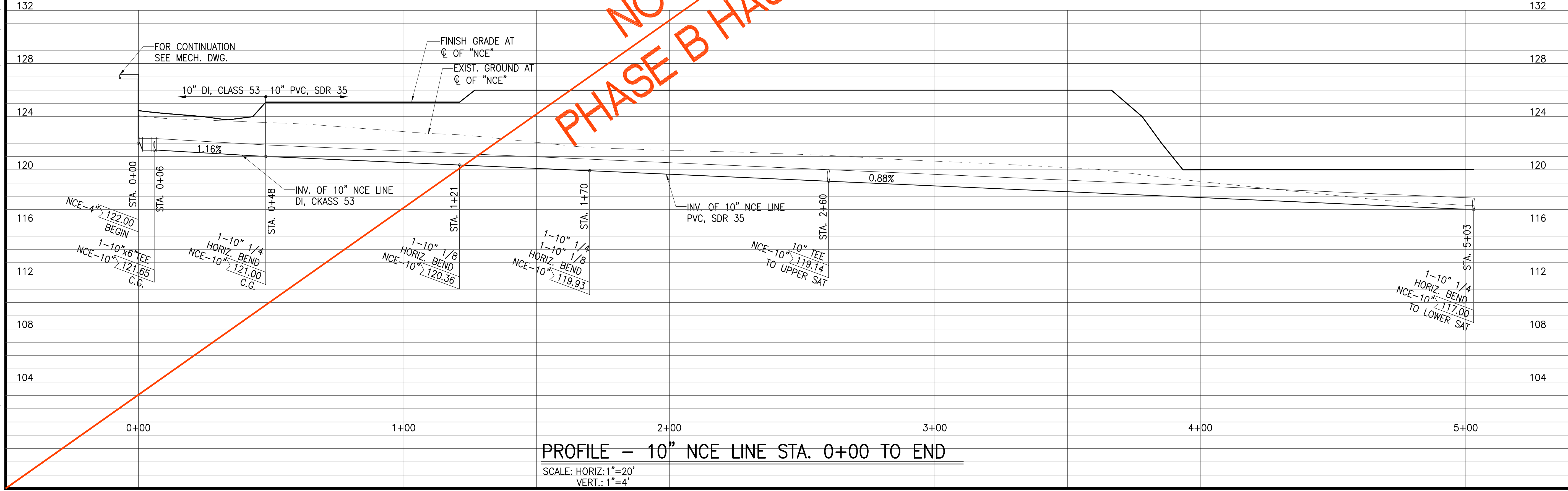
PLAN AND PROFILE
 10" NCE LINE

DWG. NO.
CB-18
 SHEET 90 OF 201

FILE	POCKET	FOLDER	NO.



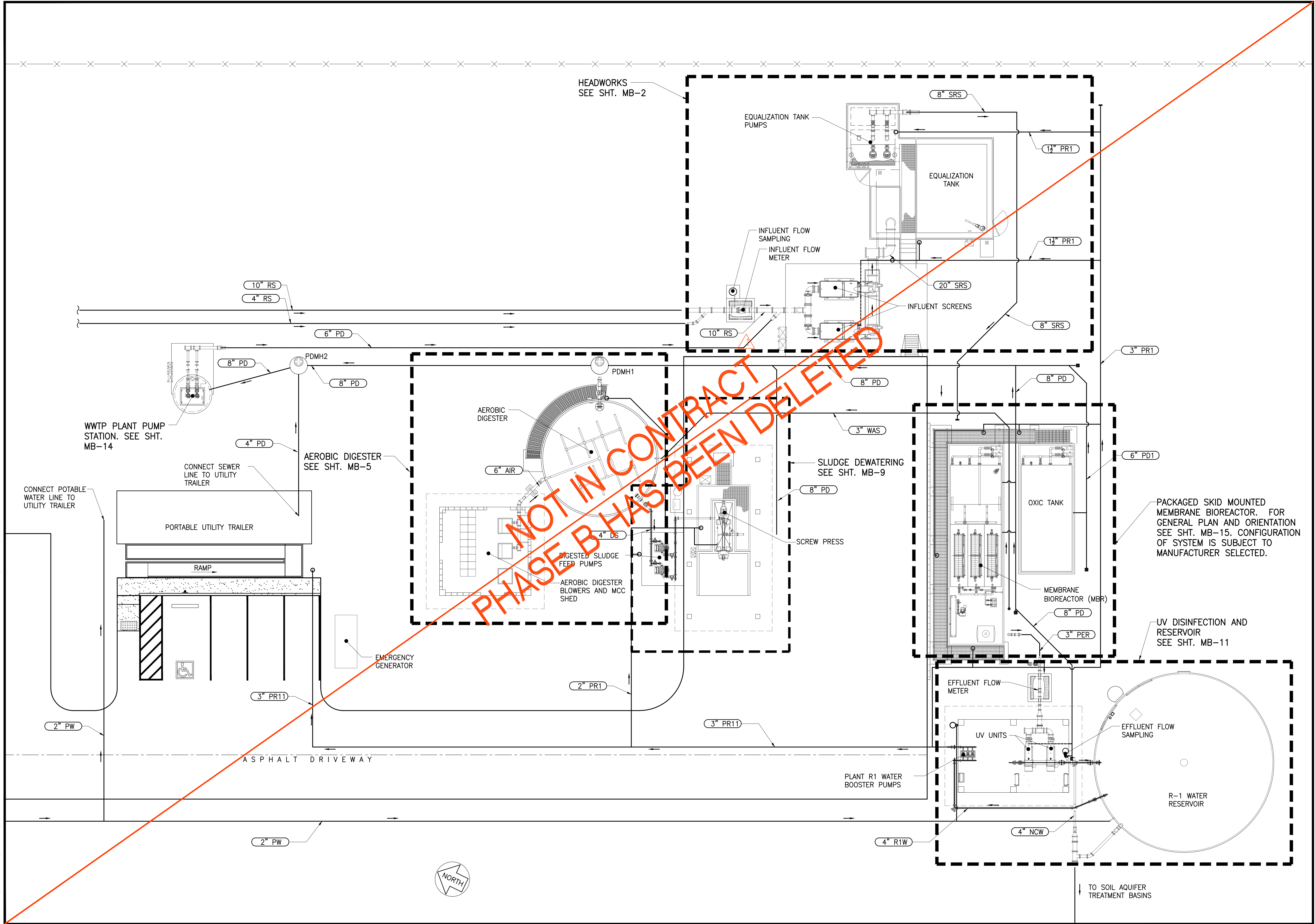
NOT IN CONTRACT
 PHASE B HAS BEEN DELETED



PROFILE - 10" NCE LINE STA. 0+00 TO END
 SCALE: HORIZ: 1"=20'
 VERT.: 1"=4'

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PŪLEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\CB-18.WWP\NCE10.PLAN AND PROFILE.DWG

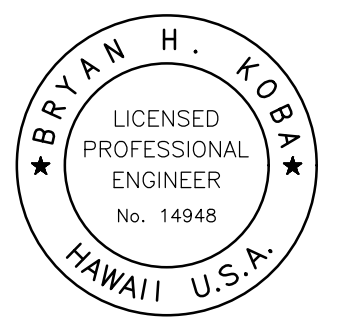
JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY). BRYAN.DWG\MB-1 PROCESS GENERAL PLAN.DWG



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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS
**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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 (IF NOT 2-INCHES : Scale Accordingly)

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

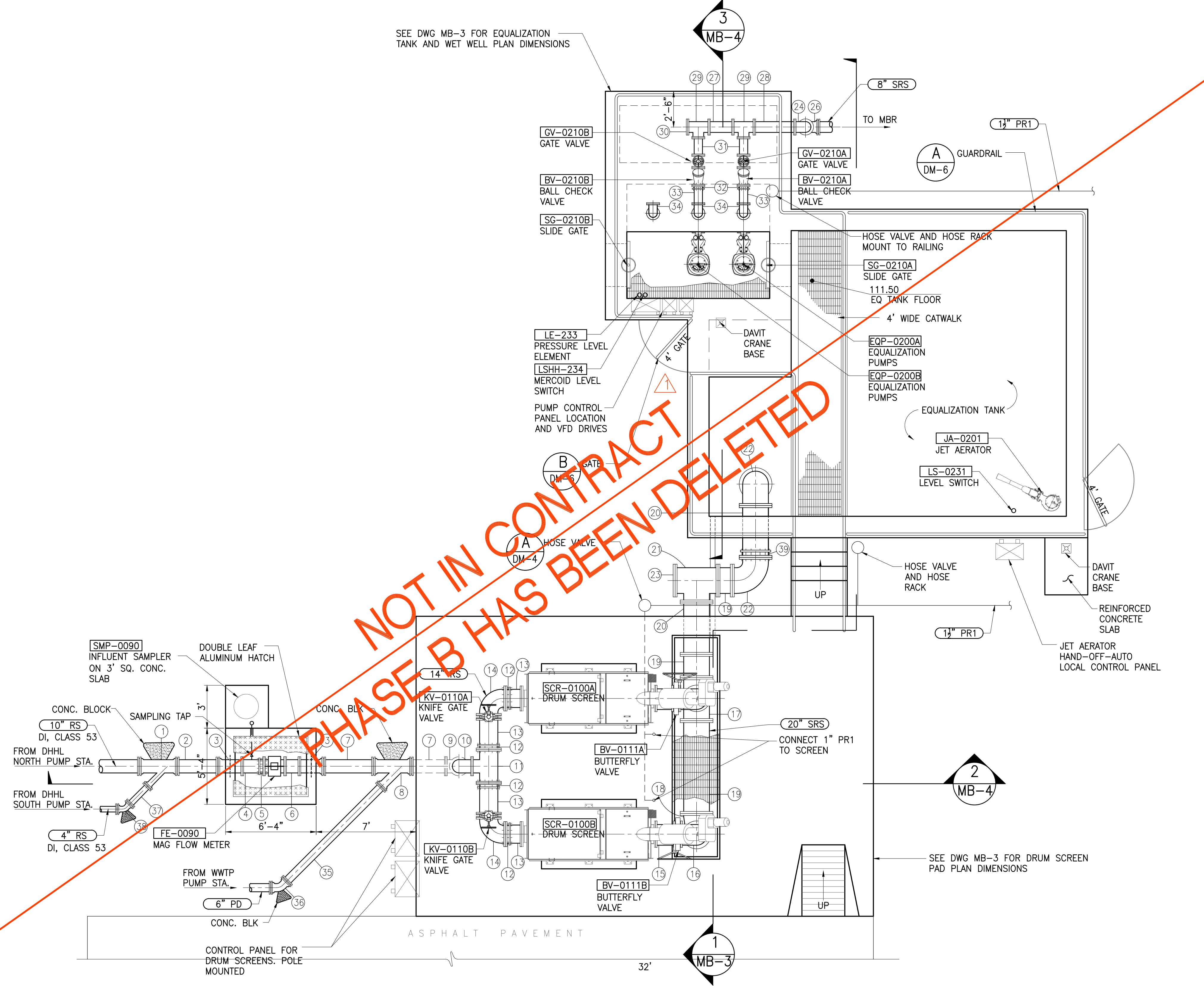
**WWTP PROCESS
 GENERAL PLAN**

DWG. NO.
MB-1
 SHEET 91 OF 201

FILE	POCKET	FOLDER	NO.

ITEM	DESCRIPTION
1	10"x4" WYE, DI, MJ
2	10" SPOOL, DI, L=3'-0", PE
3	10" WALL SPOOL, DI, FEXMJ
4	10" SPOOL, DI, LENGTH TO SUIT, FEXPE
5	10" FLANGE COUPLING ADAPTER
6	10" SPOOL, DI, L=12", FE
7	10" SPOOL, DI, LENGTH TO SUIT, PE
8	10"x6" WYE, DI, MJ
9	10" 1/4 BEND, DI, MJ
10	10" 1/4 BEND, DI, FE
11	14"x10" TEE, DI, FE
12	14" FLANGE COUPLING ADAPTER
13	14" SPOOL, DI, LENGTH TO SUIT, FEXPE
14	14" 1/4 BEND, DI, FE
15	16" SPOOL, DI, LENGTH TO SUIT, FE
16	16" 1/4 BEND, DI, FE
17	20"x16" TEE, DI, FE
18	20"x16" REDUCING ELBOW, DI, FE
19	20" SPOOL, DI, LENGTH TO SUIT, FE
20	20" WALL SPOOL, DI, FEXPE
21	20" TEE, DI, FE
22	20" 1/4 BEND, DI, FE
23	20" BLIND FLANGE, DI
24	8" 1/4 BEND, DI, FE
25	8" SPOOL, DI, LENGTH TO SUIT, FEXPE
26	8" 1/4 BEND, DI, MJ
27	8" SPOOL, DI, L=1'8", FE
28	8" SPOOL, DI, L=2'-10", PE
29	8"x6" TEE, DI, FE
30	8" BLIND FLANGE, DI
31	6" SPOOL, DI, LENGTH TO SUIT, FE
32	6" MEGAFLANGE 2100 OR APPROVED EQUAL
33	6" SPOOL, DI, LENGTH TO SUIT, FEXPE
34	6" 1/4 BEND, DI, FE
35	6" SPOOL, DI, LENGTH TO SUIT, PE
36	6" 1/8 BEND, DI, MJ
37	4" SPOOL, DI, LENGTH TO SUIT, PE
38	4" 1/8 BEND, DI, MJ
39	20" FLANGE COUPLING ADAPTER

EQUIPMENT NO.	PUMP MANUF.	NO. OF UNITS	TYPE	MODEL NO.	FLOW, GPM	TDH, FT	SPEED, RPM	HP	VAC	PHASE	FREQUENCY
P-0200 A/B	FLYGT	TWO (2)	SUBMERSIBLE	NP 3127 SH3-446	159	31.4	1750 (VAR)	7.5	480	3	60Hz



HEADWORKS PLAN
SCALE: 1/4"=1'-0"

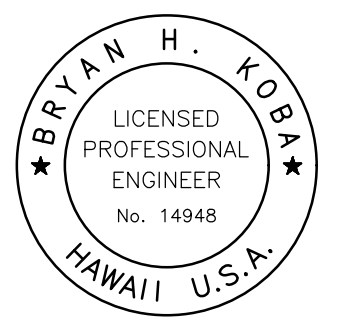
JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN\DWG\MB-2 HEADWORKS PLAN.DWG

Austin Tsutsumi
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STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

**PULEHUNUI
REGIONAL
INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

HEADWORKS PLAN

DWG. NO.
MB-2

SHEET 92 OF 201

FILE	POCKET	FOLDER	NO.



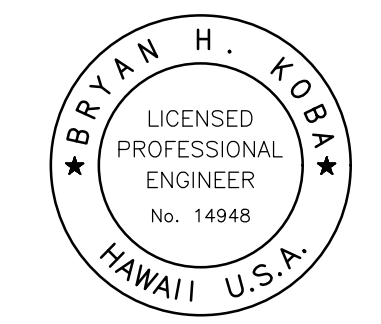
Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
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STATE OF HAWAII
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 LINE IS 2 INCHES AT FULL SIZE
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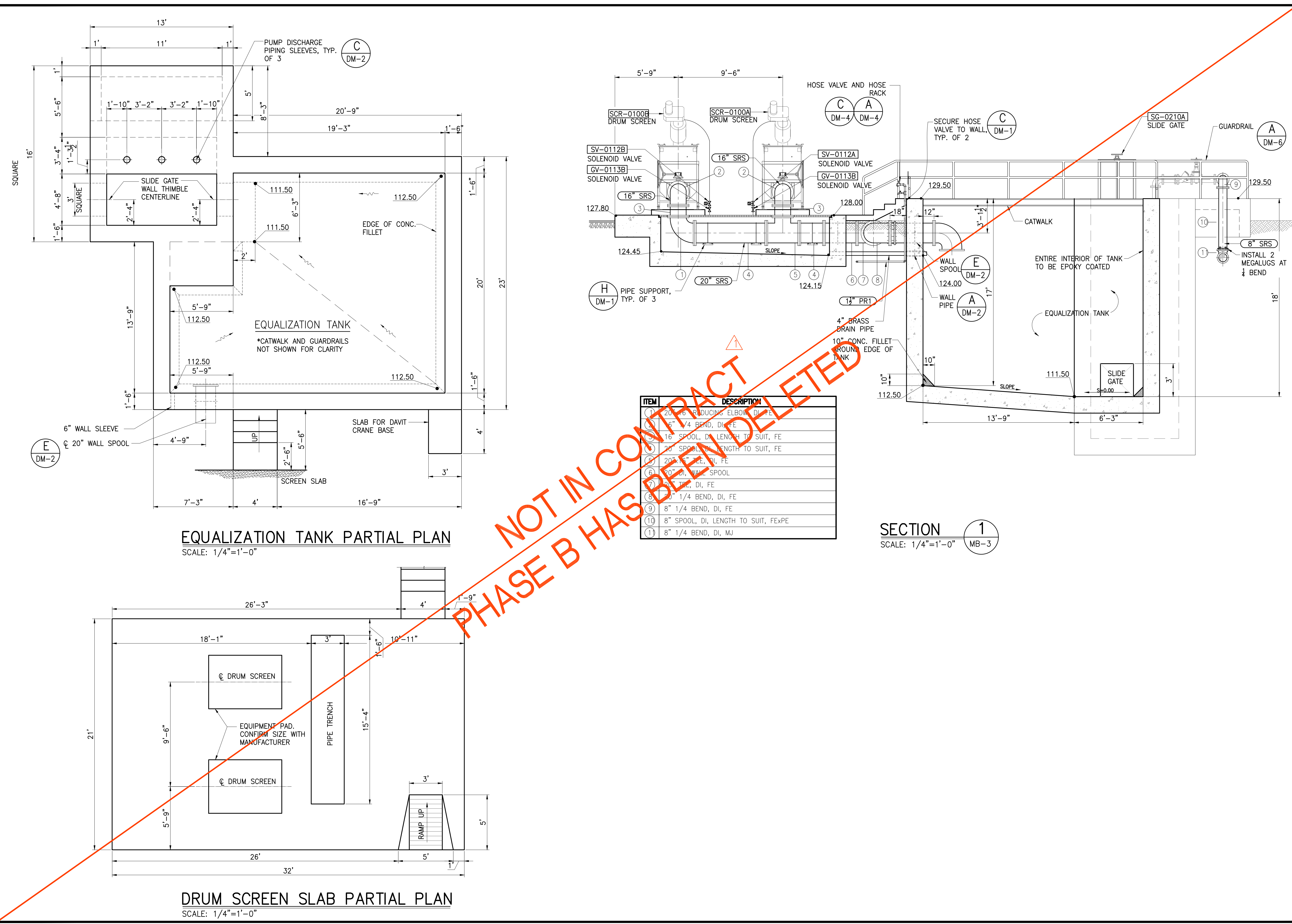
REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

HEADWORKS SECTIONS - 1

DWG. NO.
MB-3
 SHEET 93 OF 201

FILE	POCKET	FOLDER	NO.



EQUALIZATION TANK PARTIAL PLAN
 SCALE: 1/4"=1'-0"

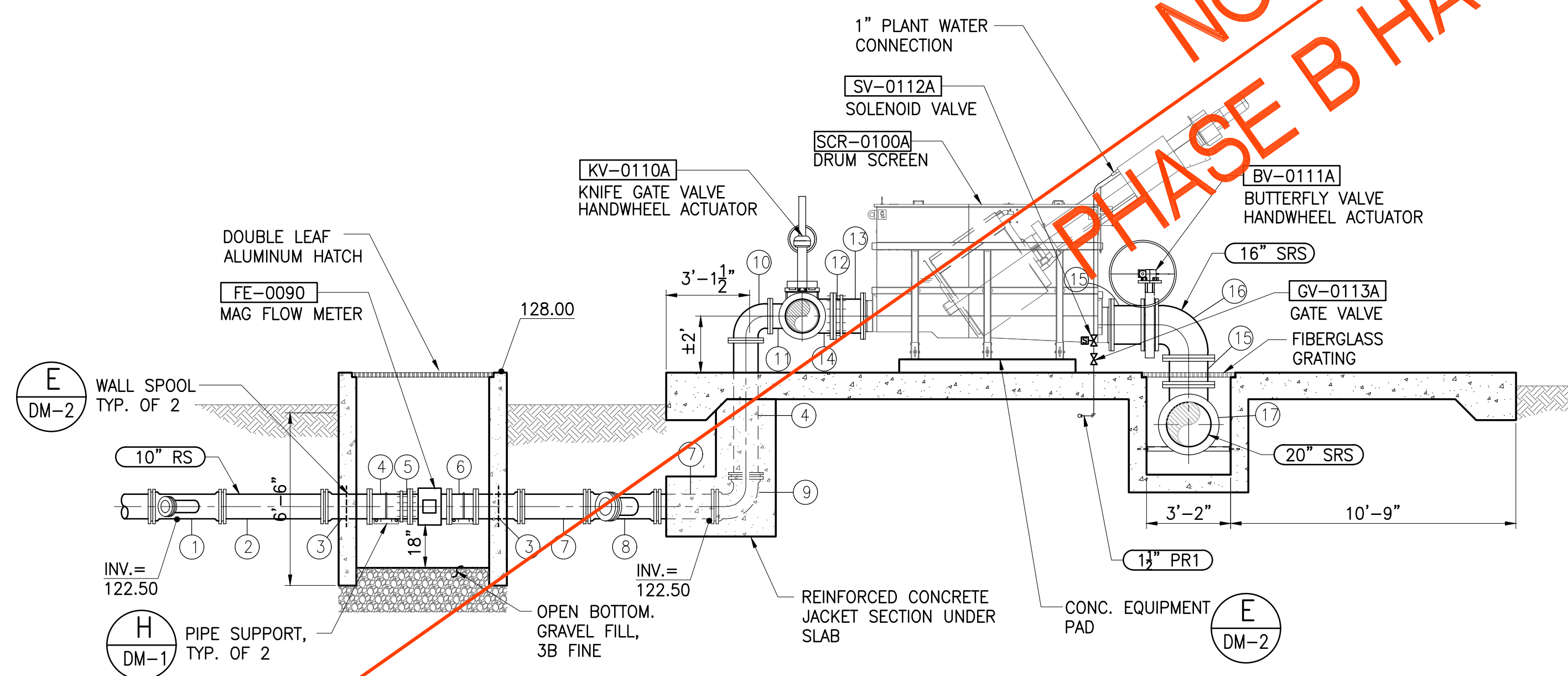
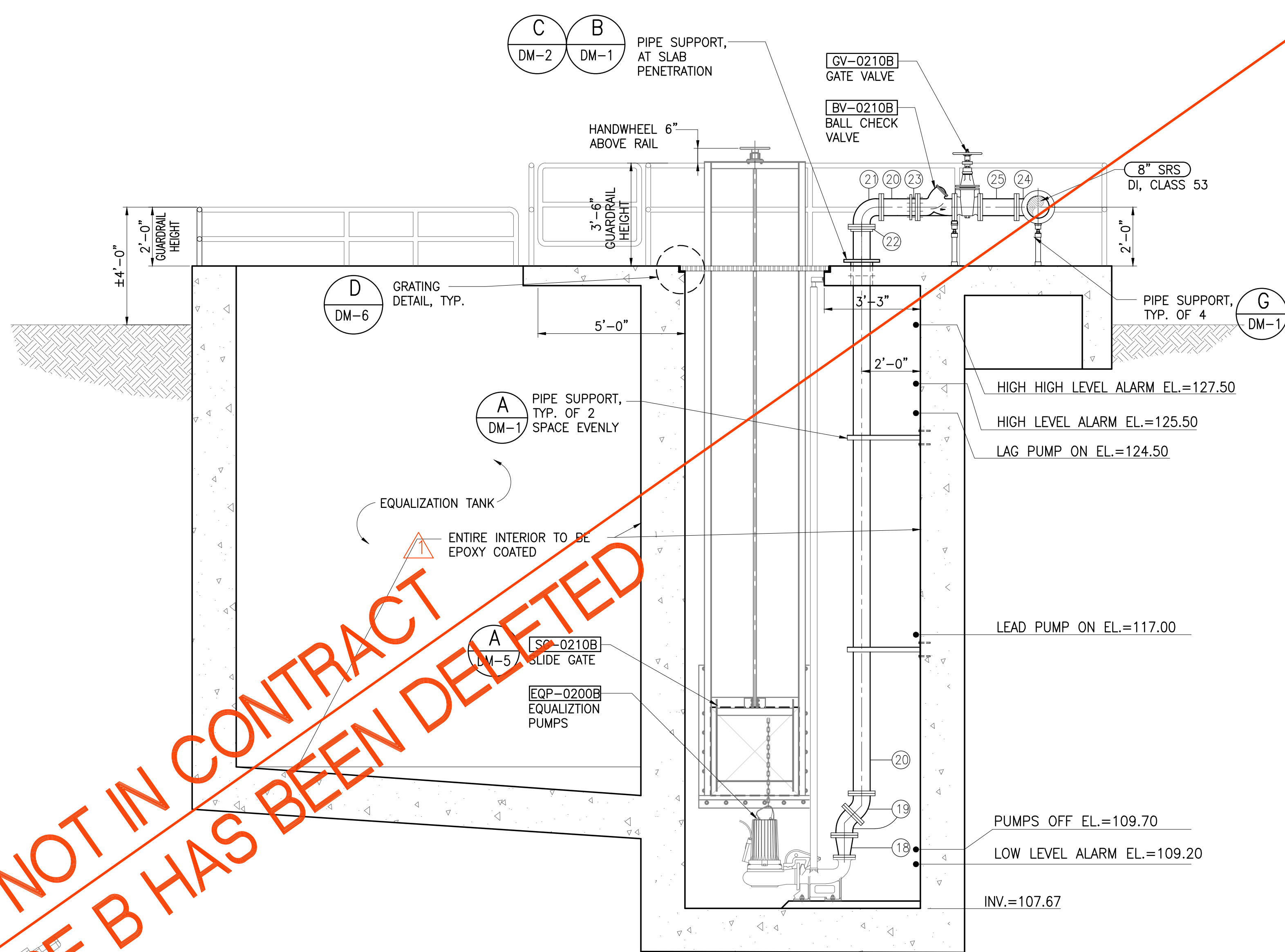
SECTION 1
 SCALE: 1/4"=1'-0" MB-3

DRUM SCREEN SLAB PARTIAL PLAN
 SCALE: 1/4"=1'-0"

ITEM	DESCRIPTION
1	20" 90° REDUCING ELBOW, DI, FE
2	6" 1/4 BEND, DI, FE
3	16" SPOOL, DI, LENGTH TO SUIT, FE
4	20" SPOOL, DI, LENGTH TO SUIT, FE
5	20" 90° ELBOW, DI, FE
6	20" 90° WALL SPOOL
7	1/2" J, DI, FE
8	2" 1/4 BEND, DI, FE
9	8" 1/4 BEND, DI, FE
10	8" SPOOL, DI, LENGTH TO SUIT, FE&PE
11	8" 1/4 BEND, DI, MJ

JOB NO. 0-11-056.004
 FN: F:\CONC. VEC\18-524 (16-576 PŪLEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY).BRYAN.DWG\MB-3 HEADWORKS SECTIONS 1.DWG

ITEM	DESCRIPTION
1	10"x4" WYE, DI, MJ
2	10" SPOOL, DI, L=4'-0", PE
3	10" WALL SPOOL, DI, FExMJ
4	10" SPOOL, DI, LENGTH TO SUIT, FExPE
5	10" FLANGE COUPLING ADAPTER
6	10" SPOOL, DI, L=12", FExFE
7	10" SPOOL, DE, LENGTH TO SUIT, PE
8	10"x6" WYE, DI, MJ
9	10" 1/4 BEND, DI, MJ
10	10" 1/4 BEND, DI, FE
11	14"x10" TEE, DI, MJ
12	14" FLANGE COUPLING ADAPTER
13	14" SPOOL, DI, LENGTH TO SUIT, FExPE
14	14" 1/4 BEND, DI, FE
15	16" SPOOL, DI, LENGTH TO SUIT, FE
16	16" 1/4 BEND, DI, FE
17	20"x16" TEE, DI, FE
18	6"x4" REDUCER, DI, FE
19	6" 1/8" BEND, DE, FE
20	6" SPOOL, LENGTH TO SUIT, FExPE
21	6" 1/4" BEND, DE, FE
22	6" EBAA 1000 E-Z FLANGE ADAPTER OR EQUAL
23	6" MEGAFLANGE 2100 OR EQUAL
24	8"x6" TEE, DI, FE
25	6" SPOOL, DI, L=1'-3", FE



SECTION 2
SCALE: 1/4"=1'-0" MB-4

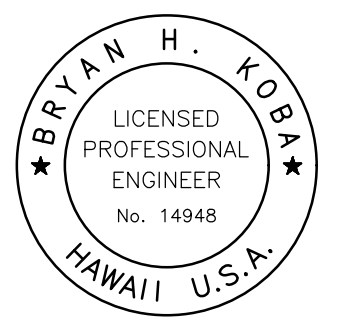
SECTION 3
SCALE: 3/8"=1'-0" MB-4

NOT IN CONTRACT
PHASE B HAS BEEN DELETED

Austin Tsutsumi
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CIVIL ENGINEERS & SURVEYORS
HONOLULU & WAILUKU & HILO, HAWAII
501 SUMNER STREET, SUITE 521
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STATE OF HAWAII
DEPARTMENT OF
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**PŪLEHUNUI
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AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

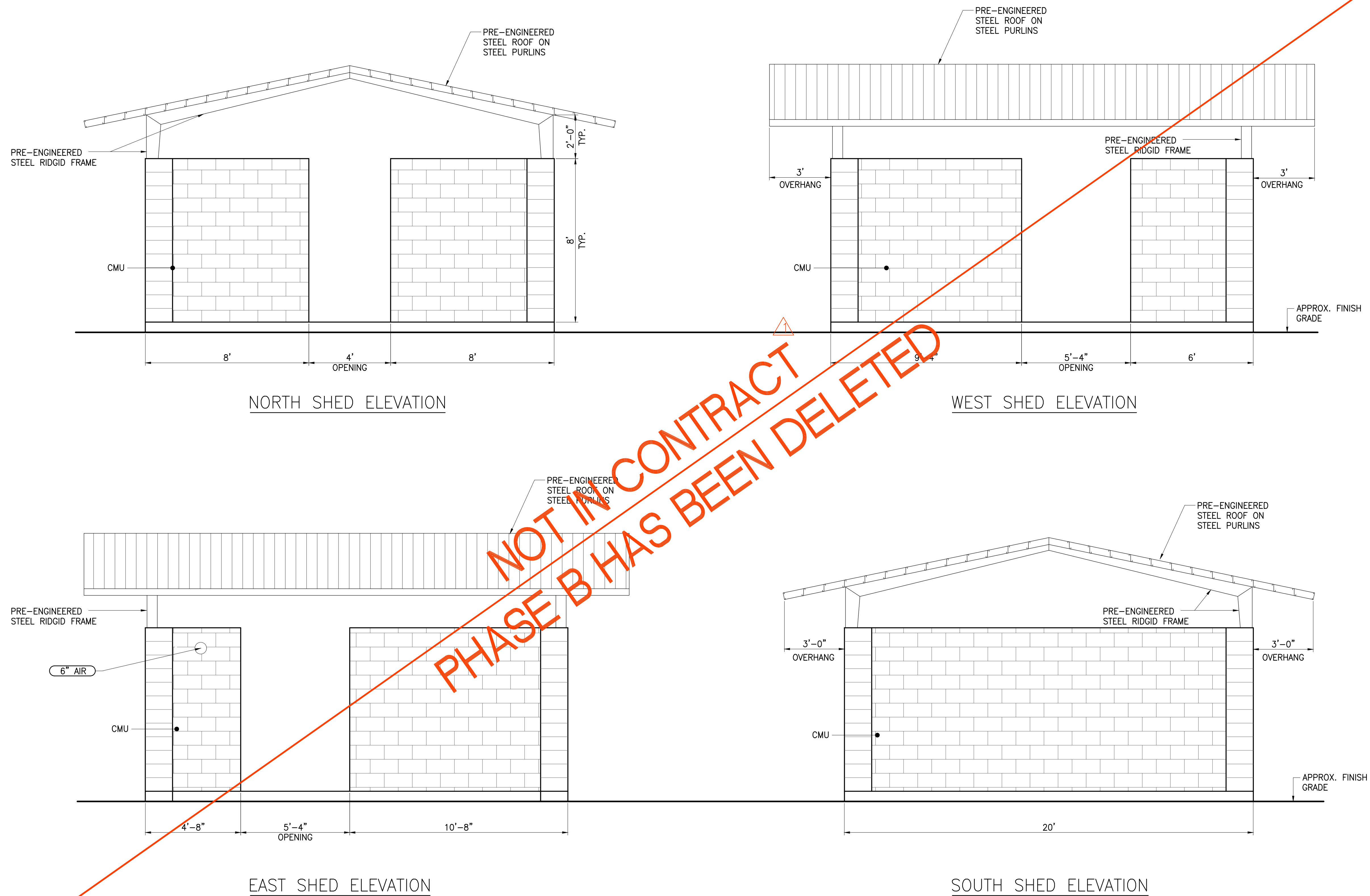
HEADWORKS SECTIONS - 2

DWG. NO.
MB-4
SHEET 94 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\MB-4 HEADWORKS SECTIONS 2.DWG

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\MB-6 BLOWER AND MCC SHED ELEVATIONS.DWG



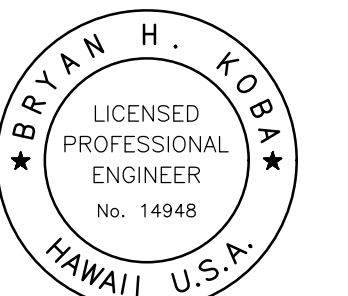
BLOWER AND MCC SHED ELEVATIONS
 SCALE: 3/8"=1'-0"

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS | SURVEYORS
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REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

BLOWER AND MCC SHED ELEVATIONS

DWG. NO.
MB-6

SHEET 96 OF 201

FILE	POCKET	FOLDER	NO.

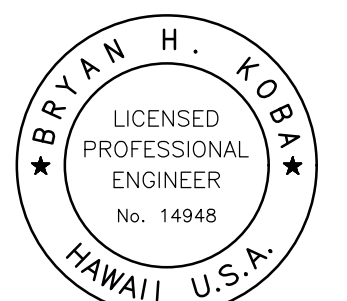
ITEM	DESCRIPTION
1	6" BLIND FLANGE, DI
2	6"x4" TEE, DI, FE
3	6" SPOOL, DI, LENGTH TO SUIT, FExPE
4	6" WALL SPOOL, FExPE
5	6" 1/8 BEND, DI, FE
6	6" 1/4 BEND, DI, FE
7	6" 1/4 BEND, DI, MJ
8	4" 1/4 BEND, DI, FE
9	4" SPOOL, DI, L=12", FE
10	4" 1/8 BEND, DI, FE
11	4" SPOOL, DI, L=2'-0", FE
12	4" FLANGED FLARE, DI, FE
13	4"x3" CONCENTRIC REDUCER, DI, FE
14	4" BASE ELBOW, DI, FE
15	4" SPOOL, DI, LENGTH TO SUIT, FExPE
16	EBAA 1000 E-Z FLANGE ADAPTER, EPDM GASKETS
17	6" BASE ELBOW, DI, FE
18	6" SPOOL, DI, L=12", FE

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 & ASSOCIATES, INC.
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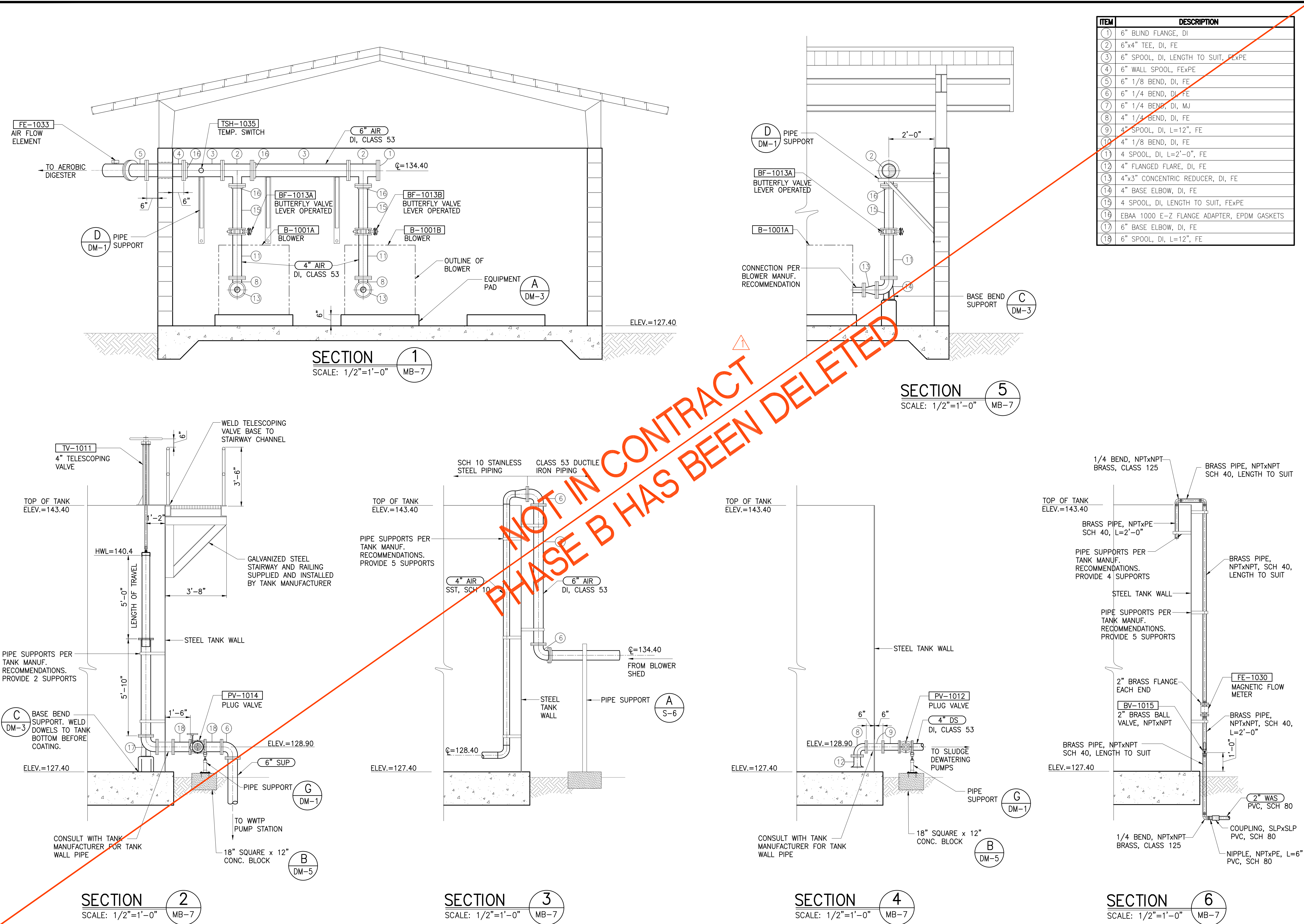
REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

AEROBIC DIGESTER
 SECTIONS

DWG. NO.
MB-7
 SHEET 97 OF 201

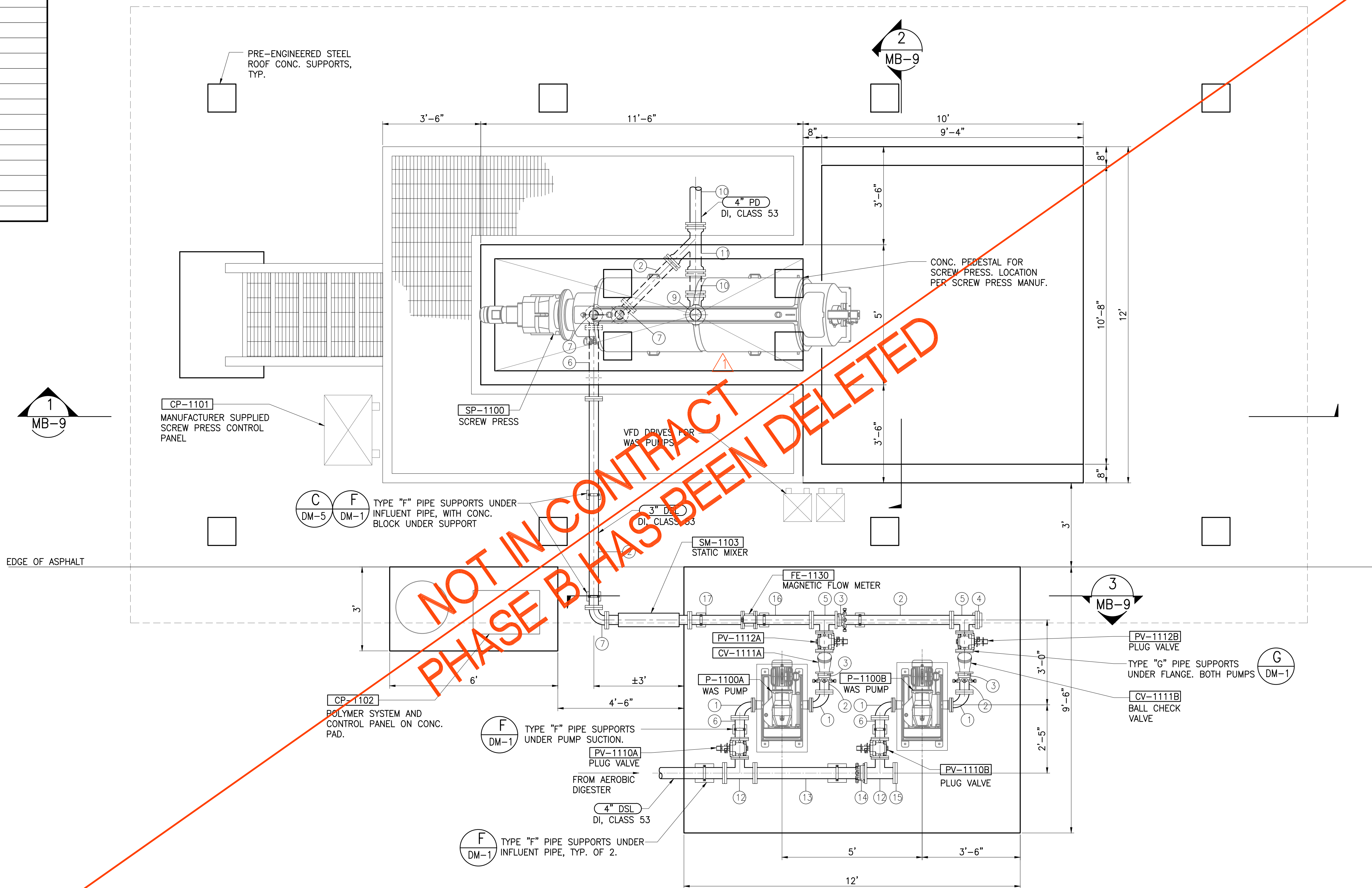
FILE	POCKET	FOLDER	NO.



NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

JOB NO. 0-11-056.004
 FN: F:\CONC. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\MB-7 AEROBIC DIGESTER SECTIONS.DWG

ITEM	DESCRIPTION
1	3"x2" REDUCING ELBOW, DI, FE
2	3" SPOOL, DI, LENGTH TO SUIT, FE/XPE
3	3" MEGAFLANGE 2100
4	3" BLIND FLANGE, DI
5	3" TEE, DI, FE
6	3" SPOOL, DI, L=9", FE
7	3" 1/4 BEND, DI, FE
8	3" 1/4 BEND, DI, MJ
9	4" 1/4 BEND, DI, MJ
10	4" SPOOL, DI, LENGTH TO SUIT, PE
11	4"x3" WYE, DI, MJ
12	4"x3" TEE, DI, FE
13	4" SPOOL, DI, LENGTH TO SUIT, FE/XPE
14	4" MEGAFLANGE 2100
15	4" BLIND FLANGE, FE
16	3" SPOOL, DI, L=2'-0", FE
17	3" SPOOL, DI, LENGTH TO SUIT, FE



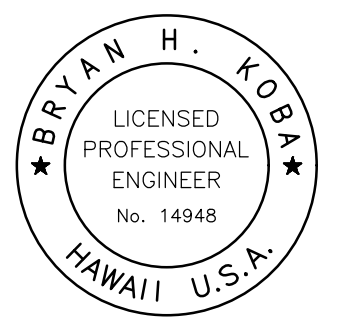
EQUIPMENT NO.	PUMP MANUF.	NO. OF UNITS	TYPE	MODEL NO.	FLOW, GPM	TDH, FT	H _p	VAC	PHASE	FREQUENCY
P-1100 A/B	BORGER	TWO (2)	ROTARY LOBE	AL 25	7 - 25	10	2	480	3	60Hz

SLUDGE DEWATERING PLAN
SCALE: 1/4"=1'-0"

Austin Tsutsumi
A S S C I A T E S , I N C .
CIVIL ENGINEERS | SURVEYORS
HONOLULU | WAILUKU | HILO, HAWAII
501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817
PHONE: 808-533-3646
FAX: 808-526-1267

STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS
**PŪLEHUNUI
REGIONAL
INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

Bryan H. Kobayashi APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

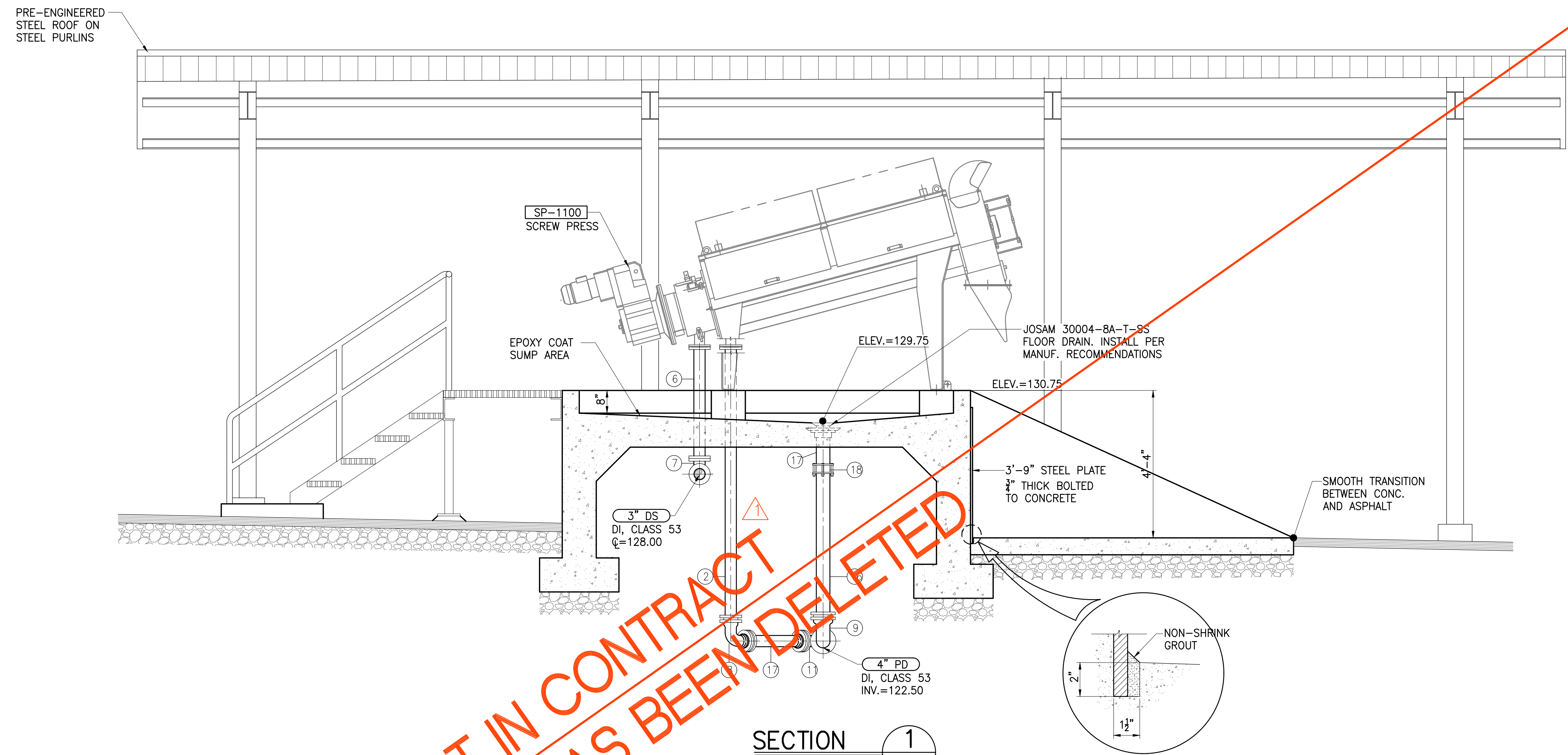
SLUDGE DEWATERING PLAN

DWG. NO.
MB-8
SHEET 98 OF 201

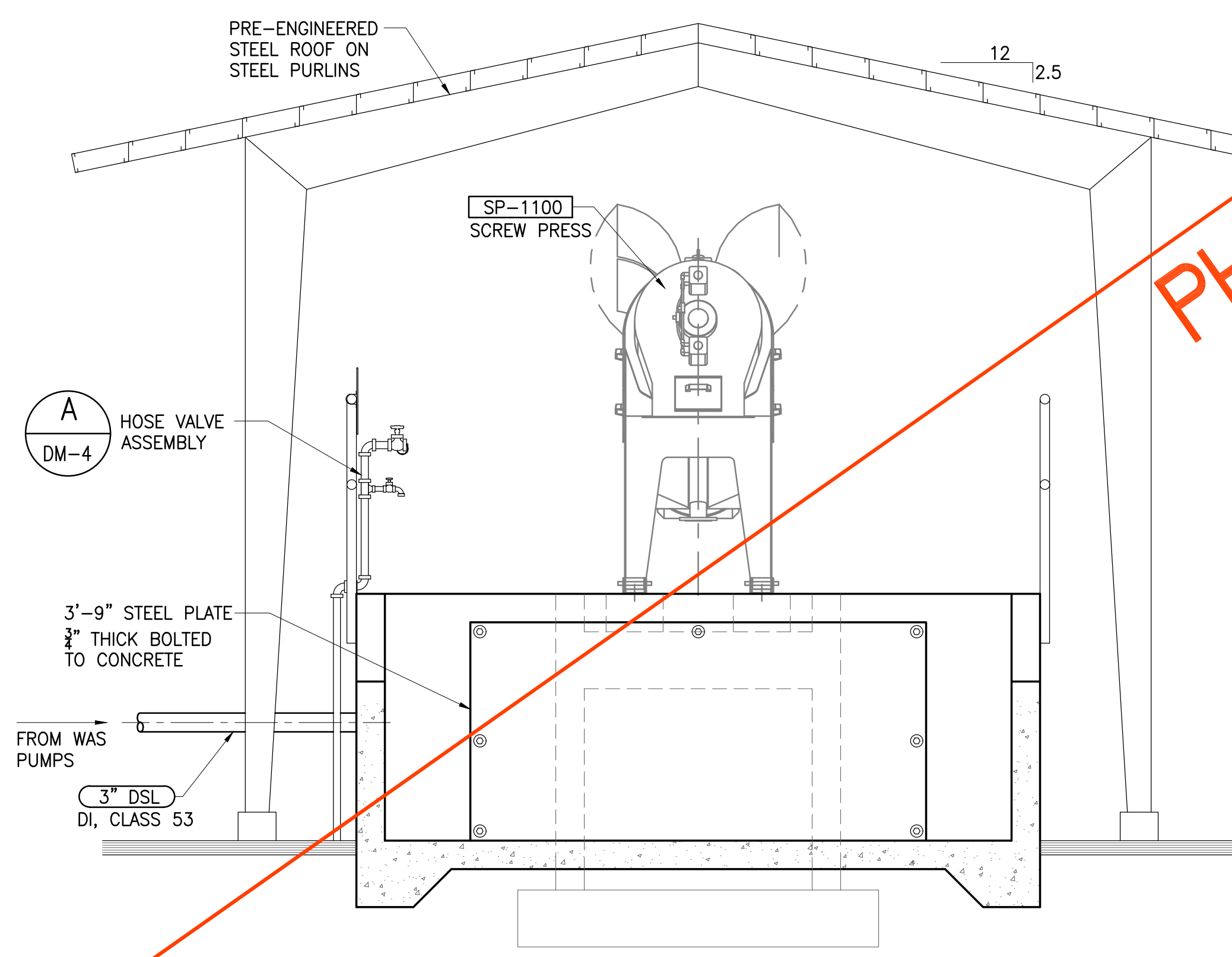
FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
FN: F:\CONC. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY)\BRYAN\DWG\MB-8 SLUDGE DEWATERING PLAN.DWG

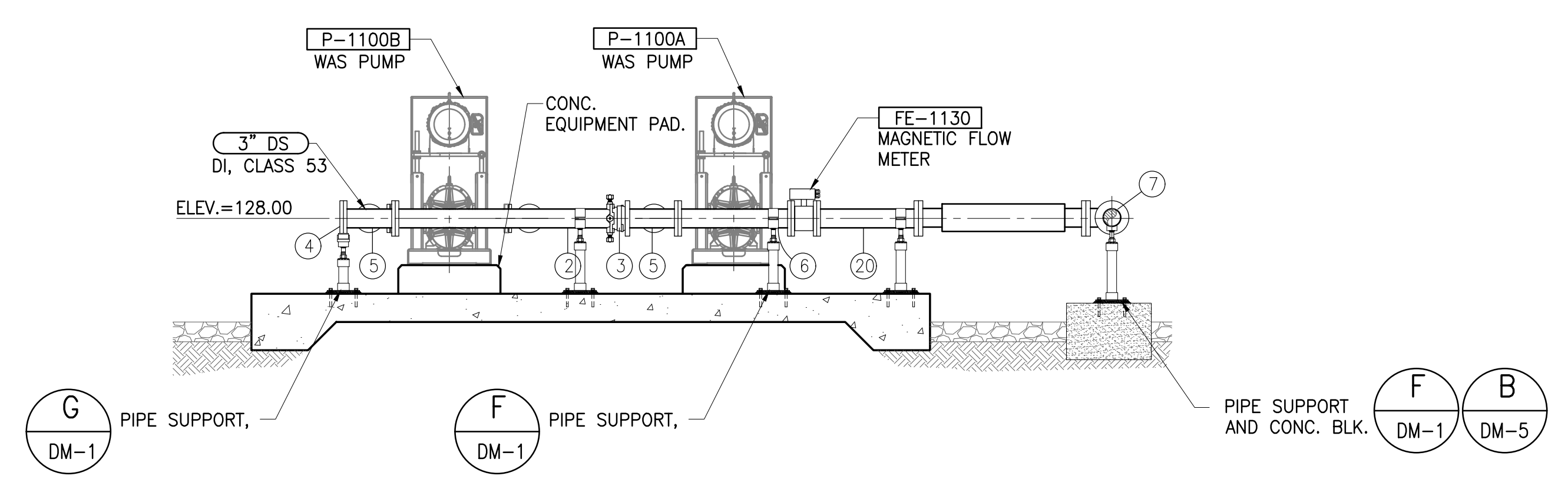
ITEM	DESCRIPTION
1	3"x2" REDUCING ELBOW, DI, FE
2	3" SPOOL, DI, LENGTH TO SUIT, FE&PE
3	3" MEGAFANGE 2100
4	3" BLIND FLANGE, DI
5	3" TEE, DI, FE
6	3" SPOOL, DI, L=2'-0", FE
7	3" 1/4 BEND, DI, FE
8	3" 1/4 BEND, DI, MJ
9	4" 1/4 BEND, DI, MJ
10	4" SPOOL, DI, LENGTH TO SUIT, PE
11	4"x3" WYE, DI, MJ
12	4"x3" TEE, DI, FE
13	4" SPOOL, DI, LENGTH TO SUIT, FE&PE
14	4" RESTRAINED FLANGE COUPLING ADAPTER
15	4" BLIND FLANGE, FE
16	4" SPOOL, DI, LENGTH TO SUIT, PE
17	3" SPOOL, DI, LENGTH TO SUIT, PE
18	4" COUPLING
19	4" BRASS SPOOL, L=12", PE&NPT
20	3" SPOOL, DI, LENGTH TO SUIT, FE



SECTION 1
SCALE: 1/2"=1'-0" MB-9



SECTION 2
SCALE: 1/2"=1'-0" MB-9



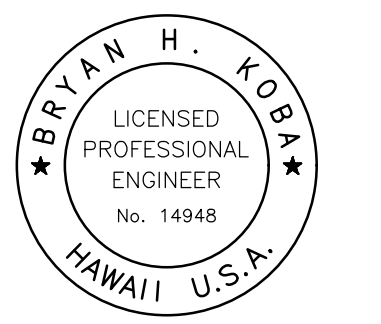
SECTION 3
SCALE: 1/2"=1'-0" MB-9

NOT IN CONTRACT
PHASE B HAS BEEN DELETED

Austin Tsutsumi
A S S C I A T E S , I N C .
CIVIL ENGINEERS | SURVEYORS
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SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

**SLUDGE DEWATERING
SECTIONS**

DWG. NO.
MB-9
SHEET 99 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576) PŪLEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY\BRYAN\DWG\MB-9 SLUDGE DEWATERING SECTIONS.DWG



Austin Tsutsumi

REGISTERED PROFESSIONAL ENGINEERS & SURVEYORS
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501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817

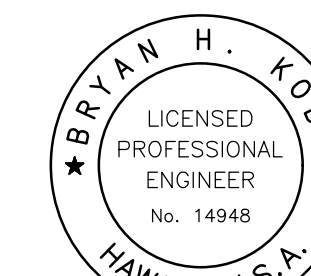
PHONE: 808-533-3646
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REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576

Scale: AS NOTED

Date: 1/31/2020

Designed By: BHK

Drawn By: BHK

Checked By:

PLAN-UV DISINFECTION AND
R-1 WATER RESERVOIR

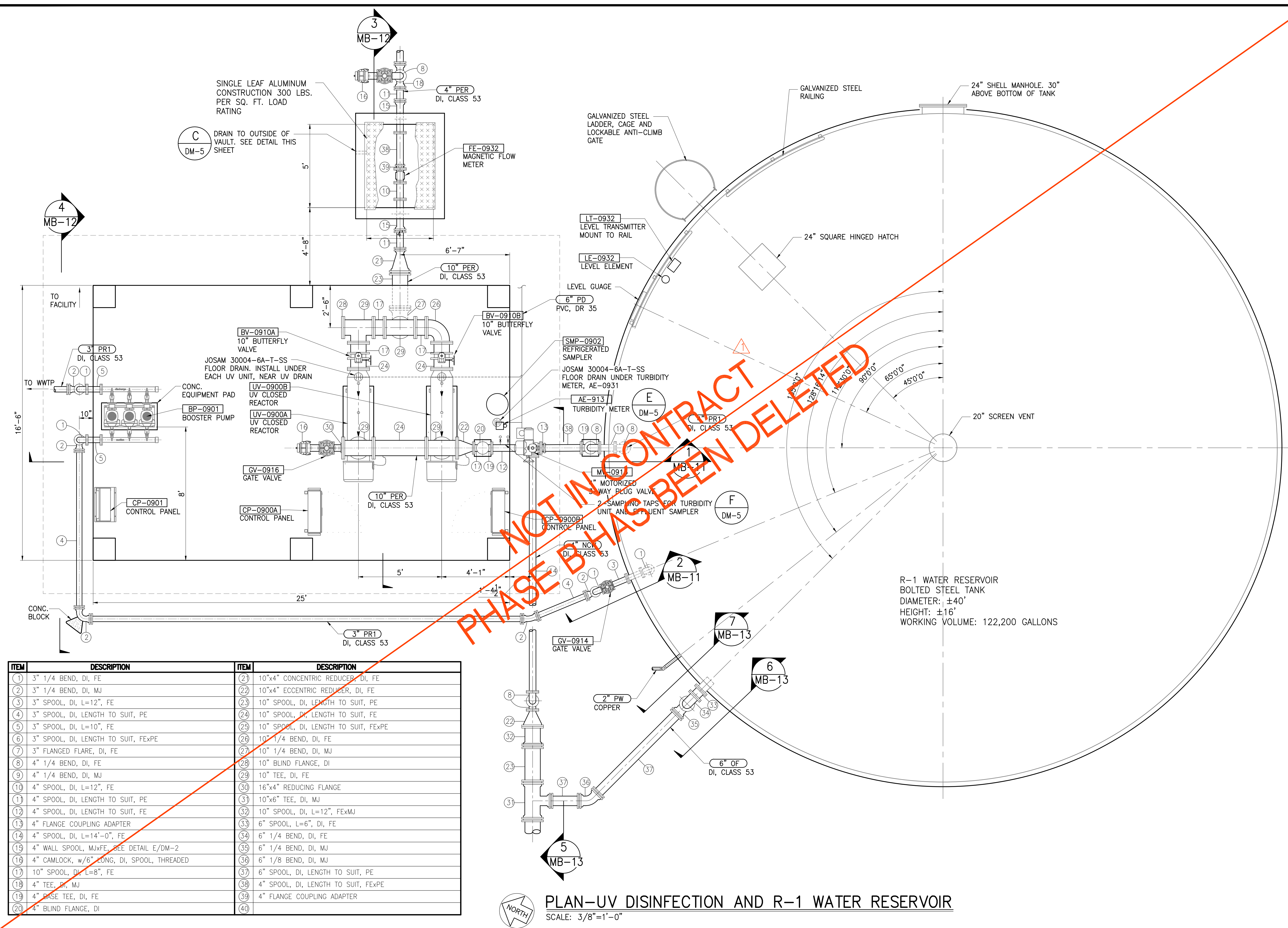
DWG. NO.

MB-10

SHEET 100 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
FN: F:\CONC. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER TREATMENT FACILITY\BRYAN\DWG\MB-10 PLAN-UV DISINFECTION AND RESERVOIR.DWG

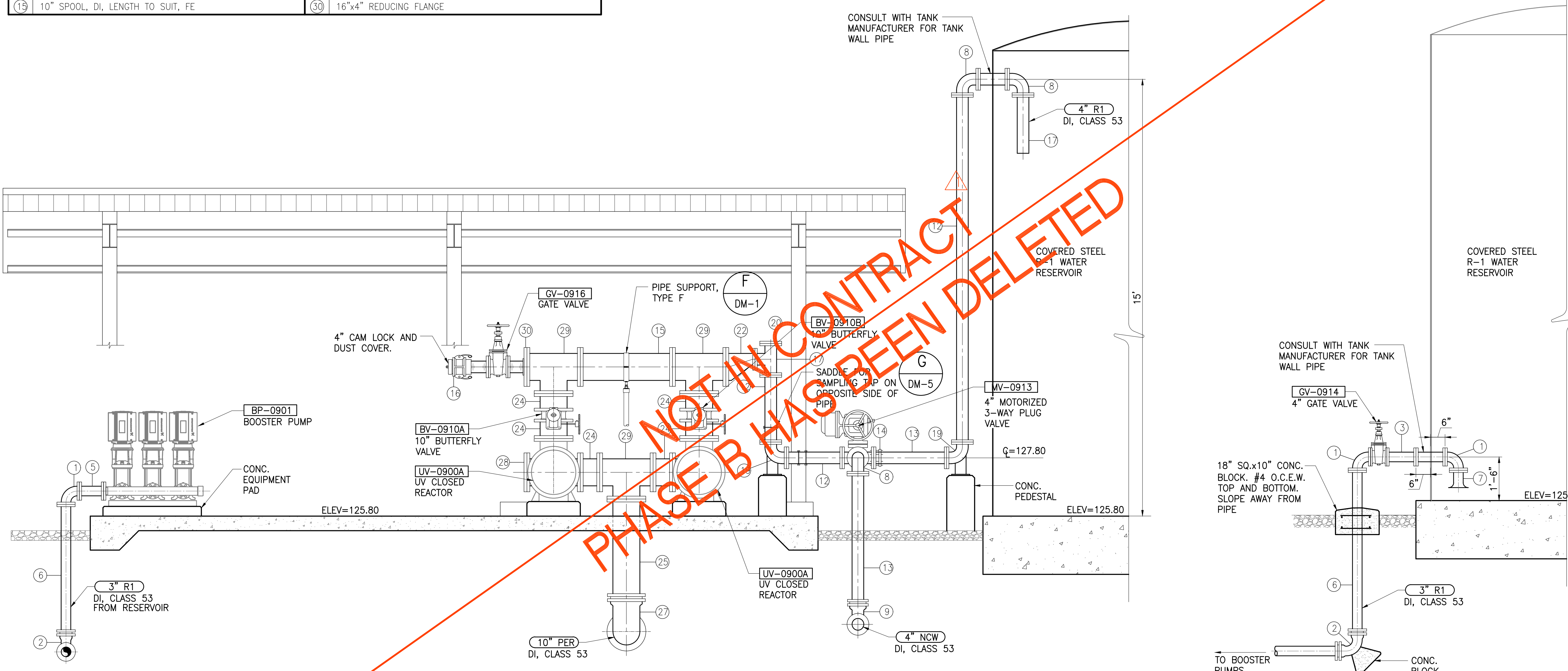


ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	3" 1/4 BEND, DI, FE	21	10"x4" CONCENTRIC REDUCER, DI, FE
2	3" 1/4 BEND, DI, MJ	22	10"x4" ECCENTRIC REDUCER, DI, FE
3	3" SPOOL, DI, L=12", FE	23	10" SPOOL, DI, LENGTH TO SUIT, PE
4	3" SPOOL, DI, LENGTH TO SUIT, PE	24	10" SPOOL, DI, LENGTH TO SUIT, FE
5	3" SPOOL, DI, L=10", FE	25	10" SPOOL, DI, LENGTH TO SUIT, FExPE
6	3" SPOOL, DI, LENGTH TO SUIT, FExPE	26	10" 1/4 BEND, DI, FE
7	3" FLANGED FLARE, DI, FE	27	10" 1/4 BEND, DI, MJ
8	4" 1/4 BEND, DI, FE	28	10" BLIND FLANGE, DI
9	4" 1/4 BEND, DI, MJ	29	10" TEE, DI, FE
10	4" SPOOL, DI, L=12", FE	30	16"x4" REDUCING FLANGE
11	4" SPOOL, DI, LENGTH TO SUIT, PE	31	10"x6" TEE, DI, MJ
12	4" SPOOL, DI, LENGTH TO SUIT, FE	32	10" SPOOL, DI, L=12", FExMJ
13	4" FLANGE COUPLING ADAPTER	33	6" SPOOL, L=6", DI, FE
14	4" SPOOL, DI, L=14'-0", FE	34	6" 1/4 BEND, DI, FE
15	4" WALL SPOOL, MJxFE, SEE DETAIL E/DM-2	35	6" 1/4 BEND, DI, MJ
16	4" CAMLOCK, w/6" LONG, DI, SPOOL, THREADED	36	6" 1/8 BEND, DI, MJ
17	10" SPOOL, DI, L=8", FE	37	6" SPOOL, DI, LENGTH TO SUIT, PE
18	4" TEE, DI, MJ	38	4" SPOOL, DI, LENGTH TO SUIT, FExPE
19	4" BASE TEE, DI, FE	39	4" FLANGE COUPLING ADAPTER
20	4" BLIND FLANGE, DI	40	



PLAN-UV DISINFECTION AND R-1 WATER RESERVOIR
SCALE: 3/8"=1'-0"

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	3" 1/4 BEND, DI, FE	16	4" CAMLOCK, w/ 6" LONG, DI, SPOOL, FLANGE x THREADED
2	3" 1/4 BEND, DI, MJ	17	4" SPOOL, DI, L=2'-0", FEXPE
3	3" SPOOL, DI, L=12", FE	18	4" TEE, DI, MJ
4	3" SPOOL, DI, LENGTH TO SUIT, PE	19	4" BASE TEE, DI, FE
5	3" SPOOL, DI, L=10", FE	20	4" BLIND FLANGE, DI
6	3" SPOOL, DI, LENGTH TO SUIT, FEXPE	21	10"x4" CONCENTRIC REDUCER, DI, FE
7	3" FLANGED FLARE, DI, FE	22	10"x4" ECCENTRIC REDUCER, DI, FE
8	4" 1/4 BEND, DI, FE	23	10" SPOOL, DI, LENGTH TO SUIT, PE
9	4" 1/4 BEND, DI, MJ	24	10" SPOOL, DI, L=8", FE
10	NOT USED	25	10" SPOOL, DI, LENGTH TO SUIT, FEXPE
11	4" SPOOL, DI, LENGTH TO SUIT, PE	26	10" 1/4 BEND, DI, FE
12	4" SPOOL, DI, LENGTH TO SUIT, FE	27	10" 1/4 BEND, DI, MJ
13	4" SPOOL, DI, LENGTH TO SUIT, FEXPE	28	10" BLIND FLANGE, DI
14	4" FLANGE COUPLING ADAPTER	29	10" TEE, DI, FE
15	10" SPOOL, DI, LENGTH TO SUIT, FE	30	16"x4" REDUCING FLANGE



SECTION 1
SCALE: 1/2"=1'-0" MB-11

SECTION 2
SCALE: 1/2"=1'-0" MB-11

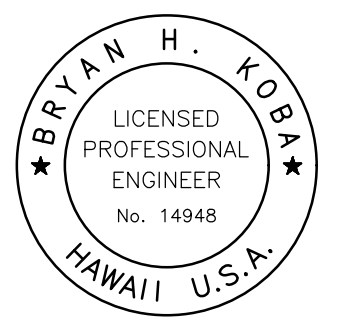
SECTIONS-UV DISINFECTION AND R-1 WATER RESERVOIR - 1
SCALE: 1/2"=1'-0"

Austin Tsutsumi
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CIVIL ENGINEERS | SURVEYORS
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STATE OF HAWAII
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AUSTIN, TSUTSUMI & ASSOC., INC.
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Bryan H. Kobayashi APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
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(If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

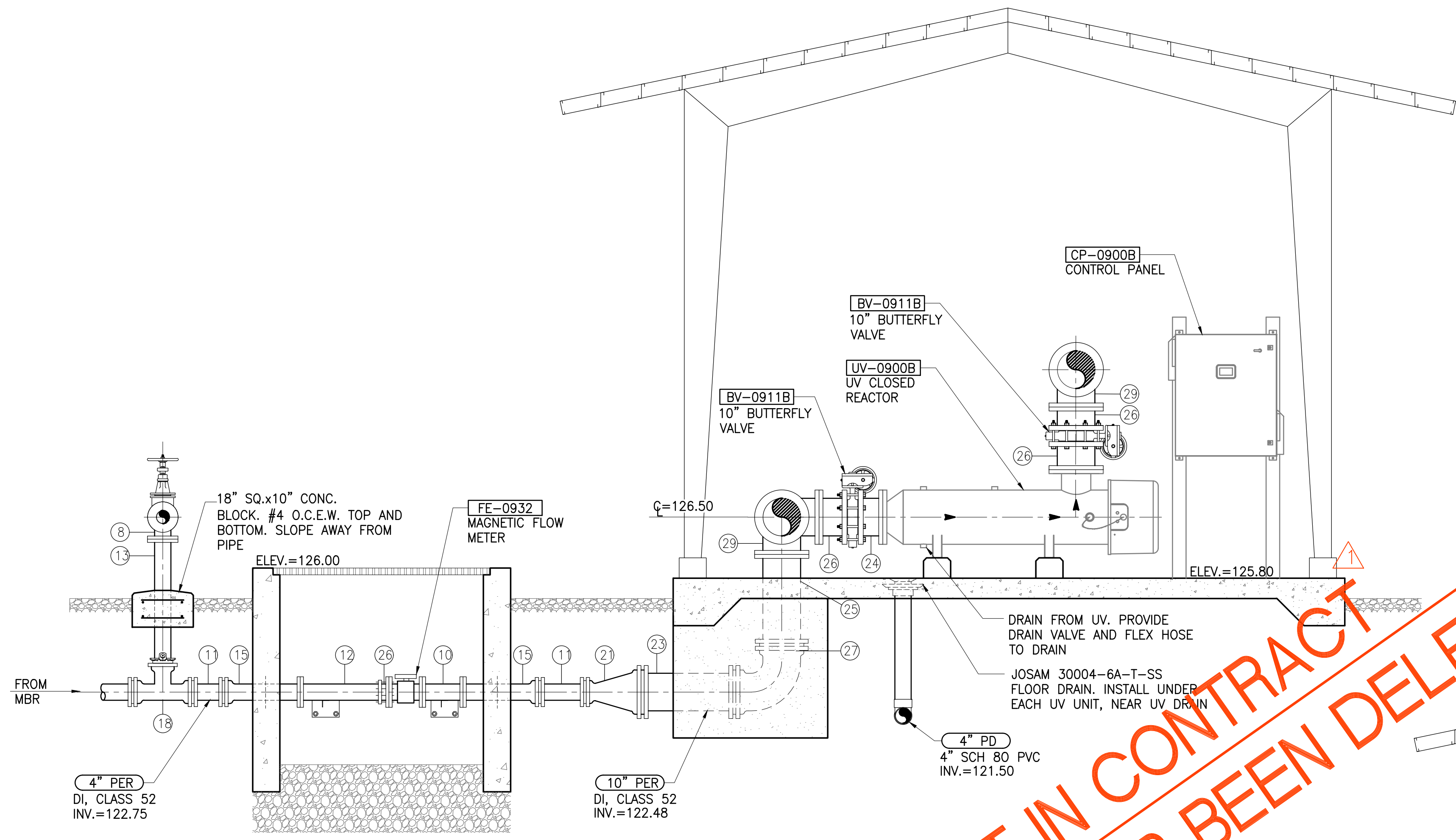
SECTIONS-UV DISINFECTION
AND R-1 WATER
RESERVOIR - 1

DWG. NO.
MB-11
SHEET 101 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
FN: F:\CONC. VEC\18-524 (16-576) PŪLEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\MB-11 SECTIONS-UV DISINFECTION AND RESERVOIR - 1.DWG

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN\DWG\MB-12 SECTIONS-UV DISINFECTION AND RESERVOIR - 2.DWG

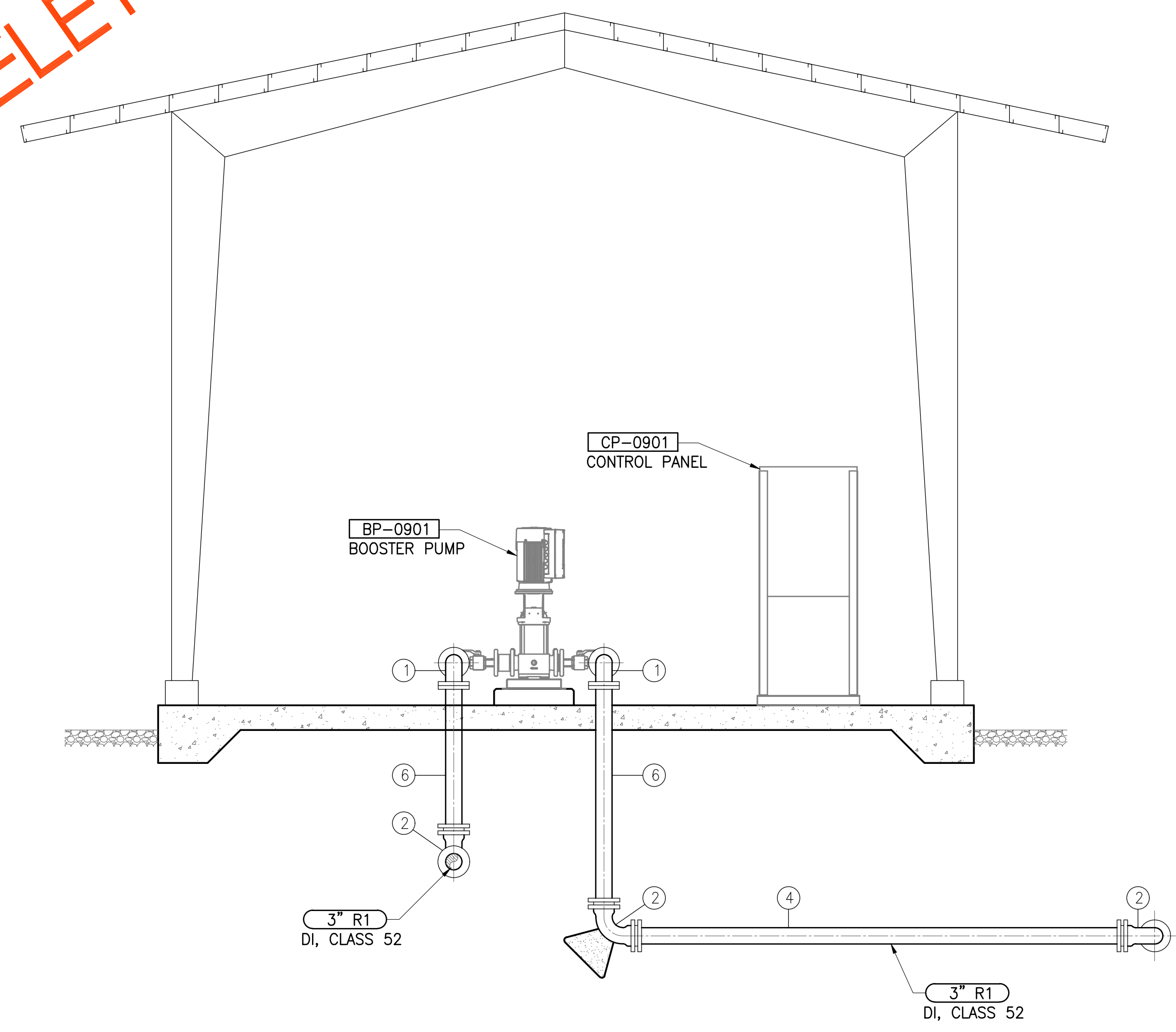


SECTION 3
 SCALE: 1/2"=1'-0" MB-12

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	3" 1/4 BEND, DI, FE	16	4" CAMLOCK, w/ 12" LONG, DI, SPOOL, FLANGE x THREADED
2	3" 1/4 BEND, DI, MJ	17	4" TEE, DI, FE
3	3" SPOOL, DI, L=12", FE	18	4" TEE, DI, MJ
4	3" SPOOL, DI, LENGTH TO SUIT, PE	19	4" BASE TEE, DI, FE
5	3" SPOOL, DI, LENGTH TO SUIT, FE	20	4" BLIND FLANGE, DI
6	3" SPOOL, DI, LENGTH TO SUIT, FE&PE	21	10"x4" CONCENTRIC REDUCER, DI, FE
7	3" FLANGED FLARE, DI, FE	22	10"x4" ECCENTRIC REDUCER, DI, FE
8	4" 1/4 BEND, DI, FE	23	10" SPOOL, DI, LENGTH TO SUIT, PE
9	4" 1/4 BEND, DI, MJ	24	10" SPOOL, DI, LENGTH TO SUIT, FE
10	4" SPOOL, DI, L=12", FE	25	10" SPOOL, DI, LENGTH TO SUIT, FE&PE
11	4" SPOOL, DI, LENGTH TO SUIT, PE	26	10" SPOOL, DI, L-8", FE&PE
12	4" SPOOL, DI, LENGTH TO SUIT, FE&PE	27	10" 1/4 BEND, DI, MJ
13	4" SPOOL, DI, L=3'-3", FE&PE	28	10" BLIND FLANGE, DI
14	4" RESTRAINED FLANGE COUPLING ADAPTER	29	10" TEE, DI, FE
15	4" WALL SPOOL, MJ&FE, SEE DETAIL E/DM-2	30	16"x4" REDUCING FLANGE

SECTIONS-UV DISINFECTION AND R-1 WATER RESERVOIR - 2
 SCALE: 1/2"=1'-0"

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED



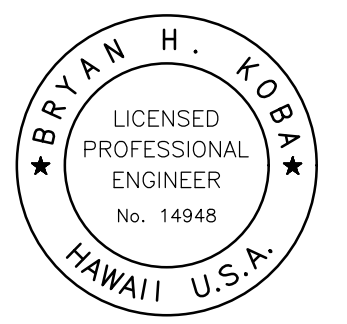
SECTION 4
 SCALE: 1/2"=1'-0" MB-12

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS | SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
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 DEPARTMENT OF
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 REGIONAL
 INFRASTRUCTURE

AUSTIN, TSUTSUMI & ASSOC., INC.
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Bryan H. Kobayashi APRIL 30, 2020
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REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

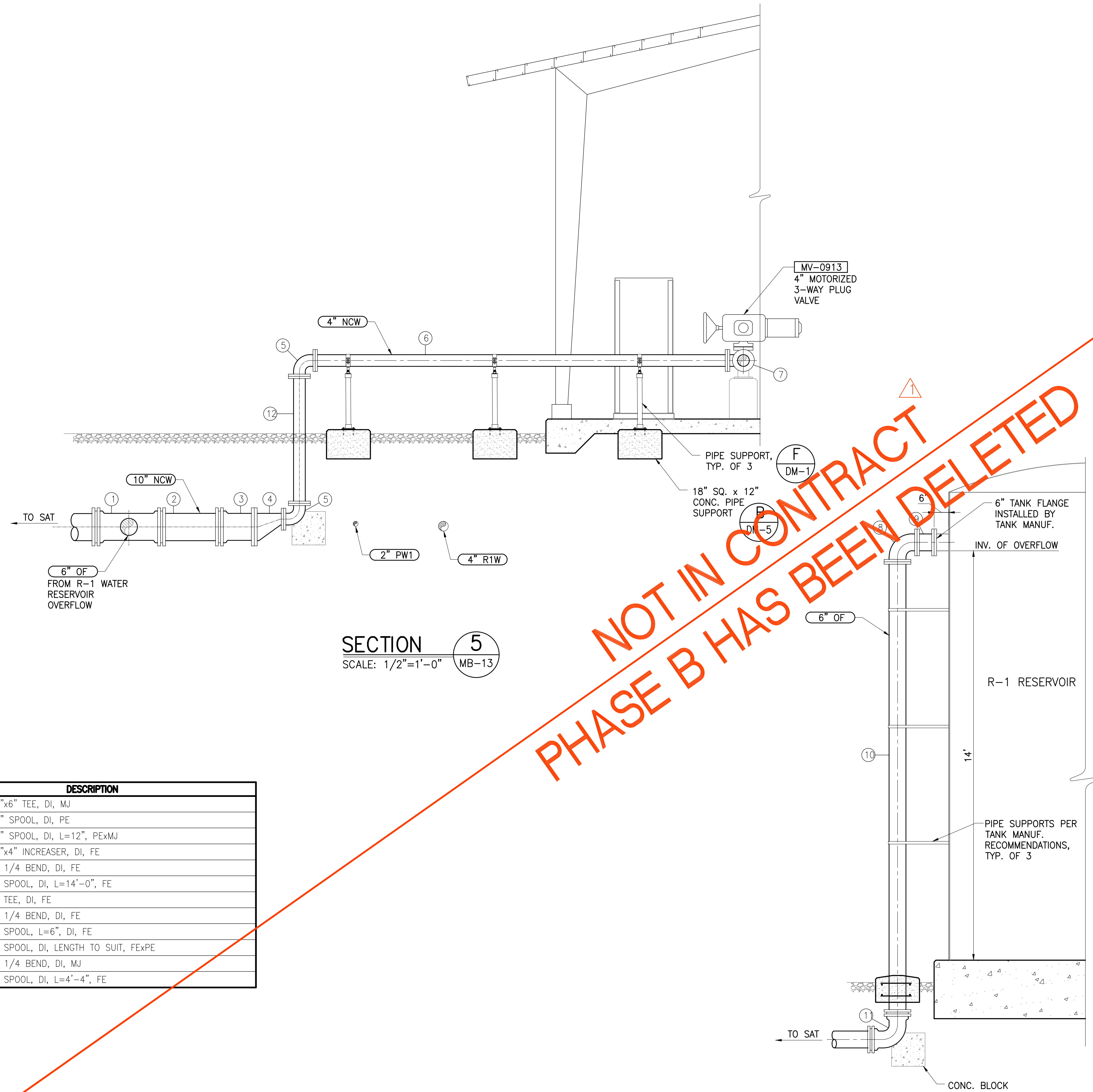
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

SECTIONS-UV DISINFECTION AND R-1 WATER RESERVOIR - 2

DWG. NO.
MB-12
 SHEET 102 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONC. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER TREATMENT FACILITY\BRYAN\DWG\MB-13 SECTIONS-UV DISINFECTION AND RESERVOIR - 3.DWG

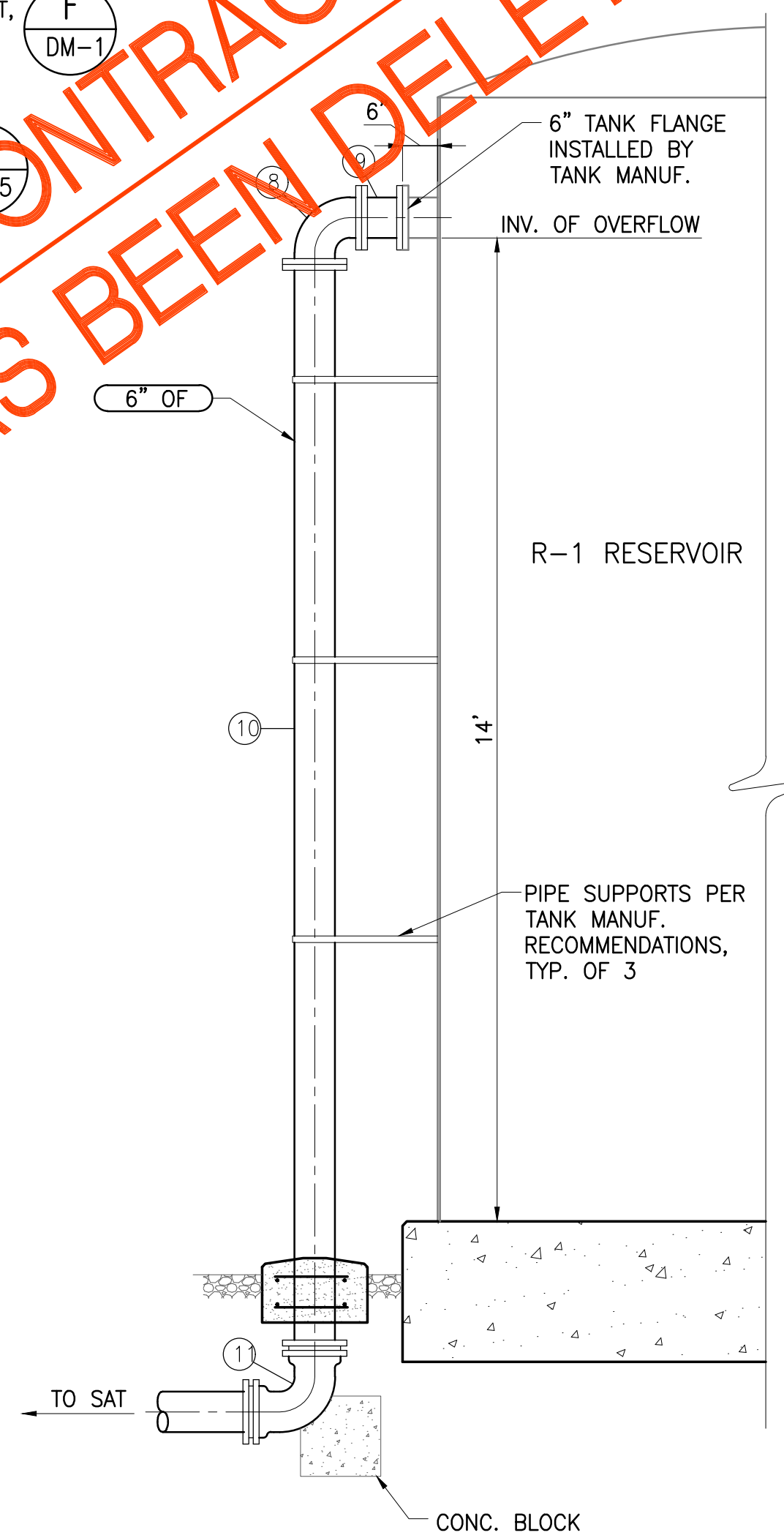


SECTION 5
 SCALE: 1/2"=1'-0" MB-13

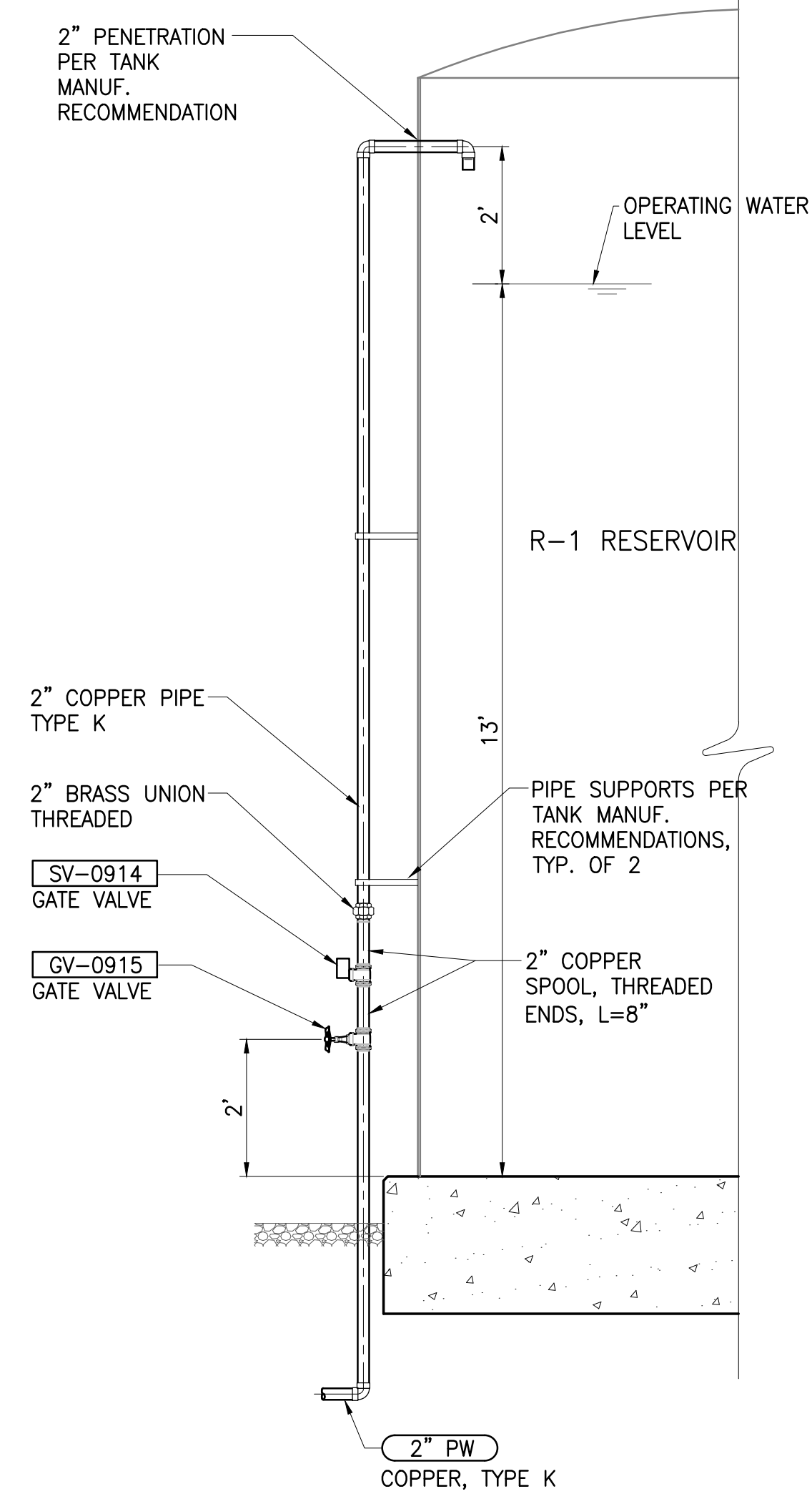
ITEM	DESCRIPTION
1	10"x6" TEE, DI, MJ
2	10" SPOOL, DI, PE
3	10" SPOOL, DI, L=12", PEXMJ
4	10"x4" INCREASER, DI, FE
5	4" 1/4 BEND, DI, FE
6	4" SPOOL, DI, L=14'-0", FE
7	4" TEE, DI, FE
8	6" 1/4 BEND, DI, FE
9	6" SPOOL, L=6", DI, FE
10	6" SPOOL, DI, LENGTH TO SUIT, FEXPE
11	6" 1/4 BEND, DI, MJ
12	4" SPOOL, DI, L=4'-4", FE

SECTIONS-UV DISINFECTION AND R-1 WATER RESERVOIR - 3
 SCALE: 1/2"=1'-0"

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED



SECTION 6
 SCALE: 1/2"=1'-0" MB-13



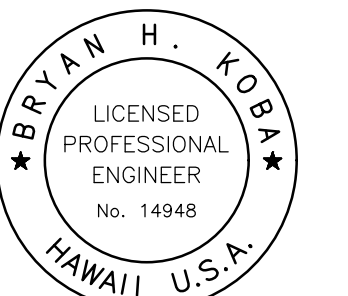
SECTION 7
 SCALE: 1/2"=1'-0" MB-13

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
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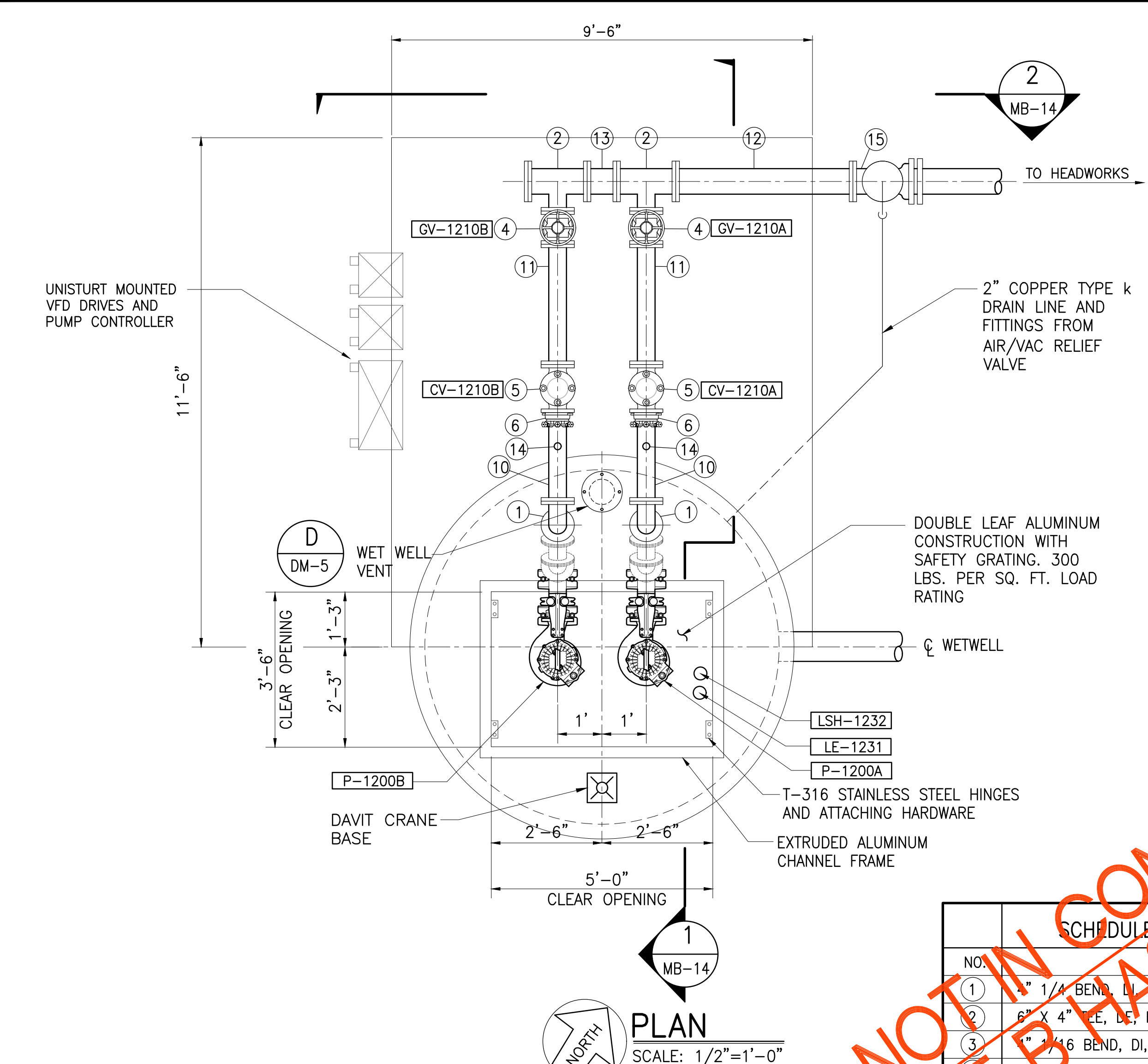
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

SECTIONS-UV DISINFECTION
 AND R-1 WATER
 RESERVOIR - 3

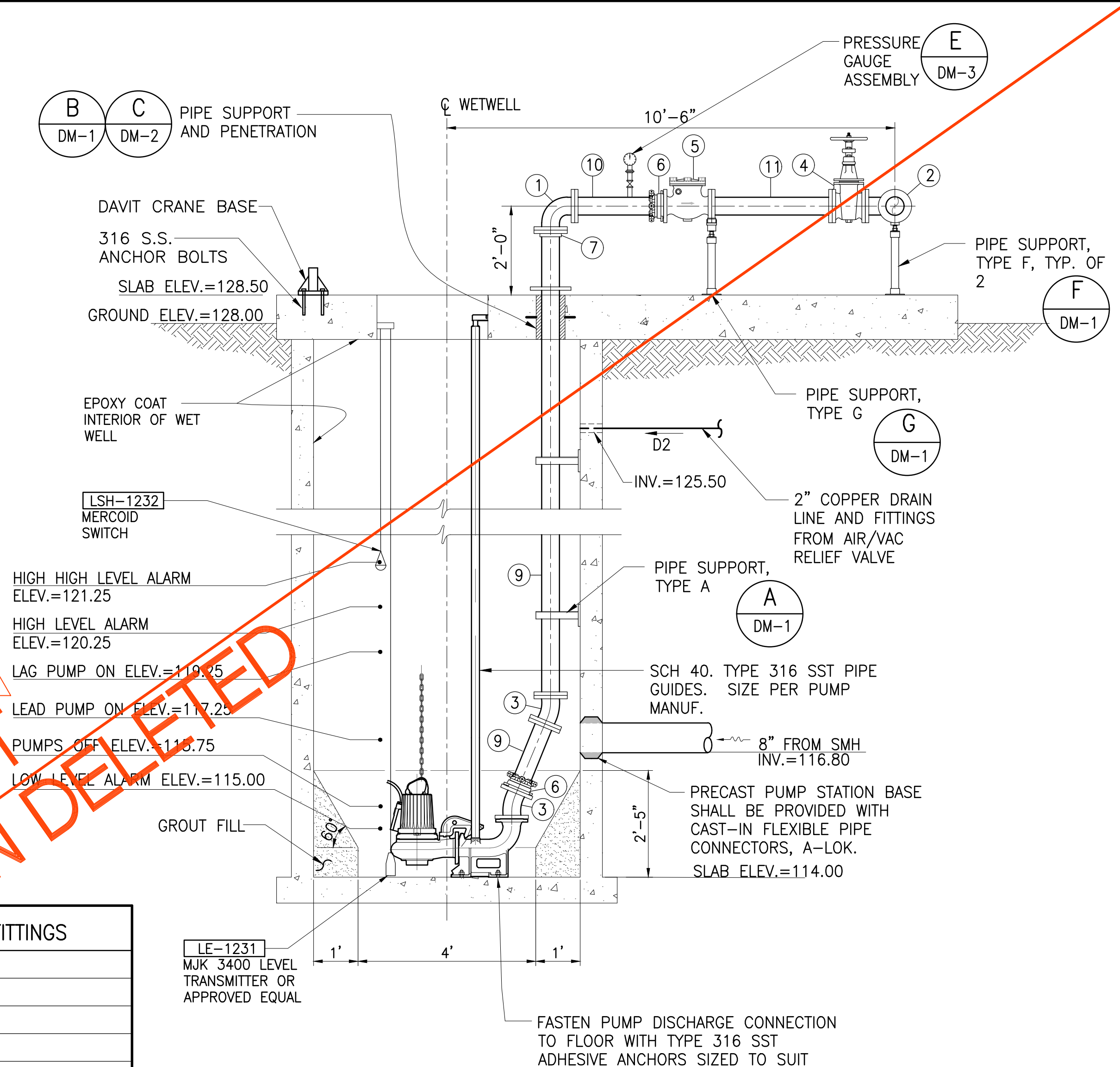
DWG. NO.
MB-13
 SHEET 103 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY\BRYAN\DWG\MB-14 WWTP PUMP STATION.DWG

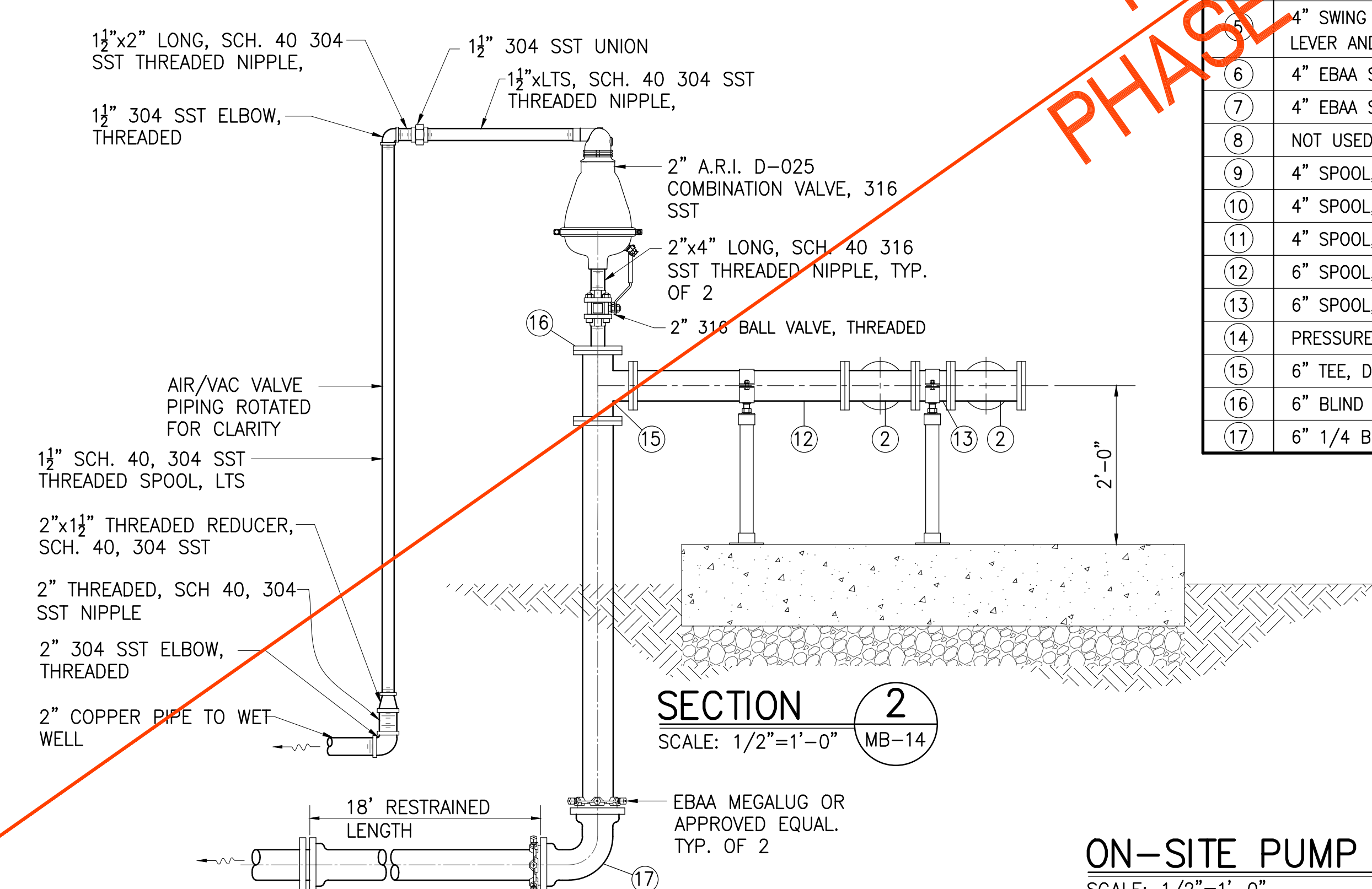


PLAN
SCALE: 1/2"=1'-0"
MB-14



SECTION 1
SCALE: 1/2"=1'-0"
MB-14

SCHEDULE OF VALVES AND FITTINGS	
NO.	DESCRIPTION
1	1/4" BEND, DI, FE
2	6" X 4" TEE, DI, FE
3	1/4" X 1/2" BEND, DI, FE
4	4" GATE VALVE, FE
5	4" SWING CHECK VALVE, FE, VALMATIC SERIES 7800 LEVER AND WEIGHT OR APPROVED EQUAL
6	4" EBAA SERIES 2100 MEGA FLANGE
7	4" EBAA SERIES 1000 E-Z FLANGE
8	NOT USED
9	4" SPOOL, DI, LENGTH TO SUIT, FExPE
10	4" SPOOL, DI, L=2'-0", FExPE
11	4" SPOOL, DI, L=2'-9", FE
12	6" SPOOL, DI, L=4'-0", FE
13	6" SPOOL, DI, L=0'-8", FExPE
14	PRESSURE GAUGE ASSEMBLY
15	6" TEE, DI, FE
16	6" BLIND FLANGE WITH 2" THREADED HOLE, DI
17	6" 1/4 BEND, DI, MJ



SECTION 2
SCALE: 1/2"=1'-0"
MB-14

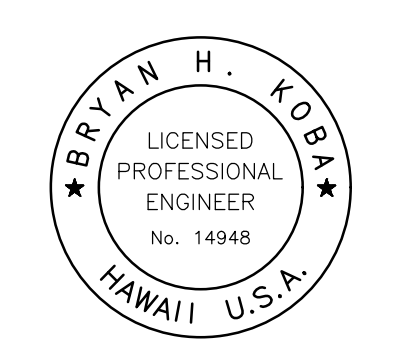
ON-SITE PUMP STATION PLAN AND SECTION
SCALE: 1/2"=1'-0"

EQUIPMENT NO.	PUMP MANUF.	NO. OF UNITS	TYPE	FLOW, GPM	STATIC	TDH, FT	SPEED, RPM	TDH, FT	Hp	VAC	PHASE	FREQUENCY
P-1200 A/B	FLYGT	TWO (2)	SUBMERSIBLE	333	25	28	1800(VAR)	10	5.5	480	3	60Hz

Austin Tsutsumi
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REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

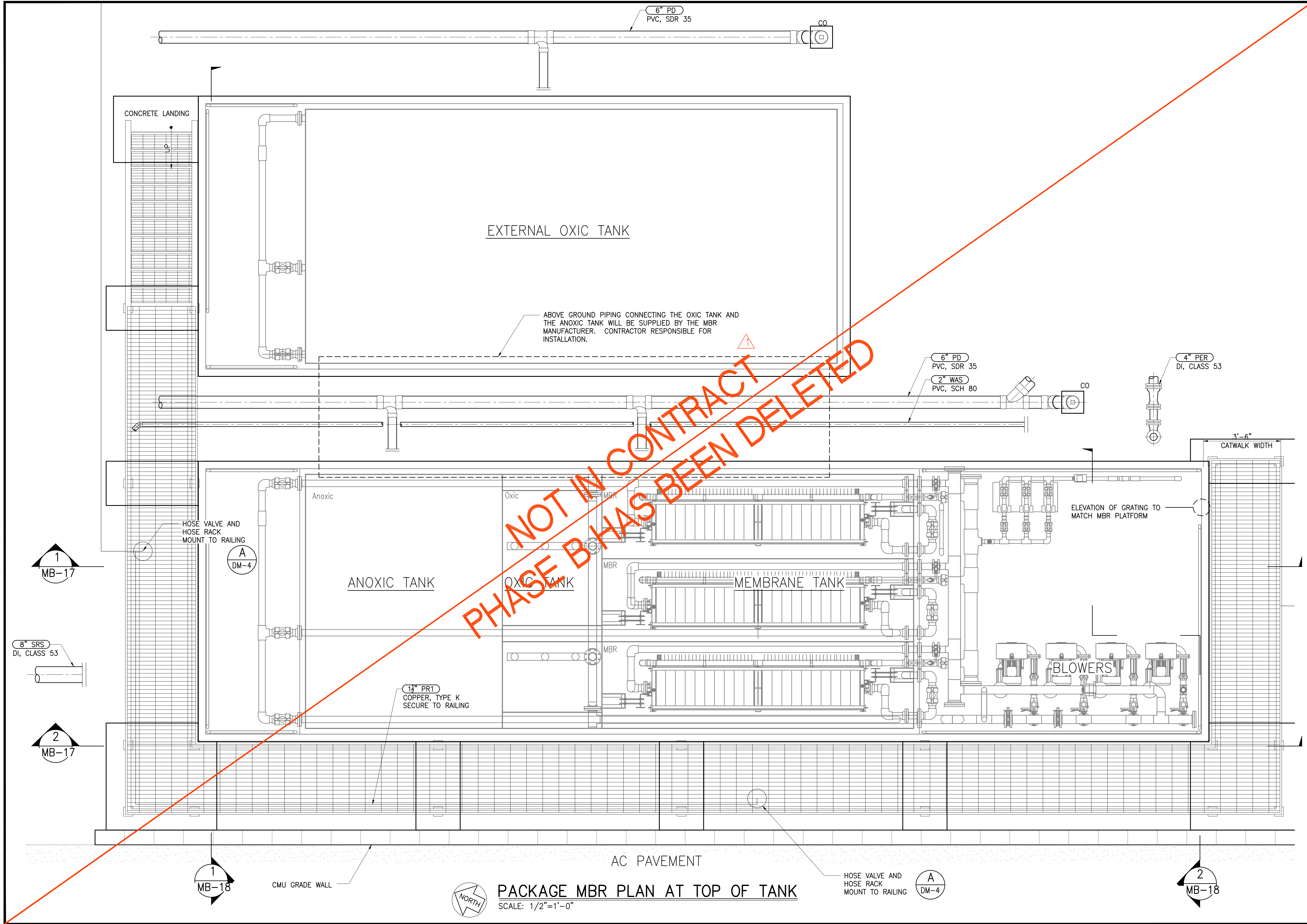
Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

**ON-SITE PUMP STATION
PLAN AND SECTION**

DWG. NO.
MB-14
SHEET 104 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\MB-15 PACKAGE MBR PLAN.DWG



NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

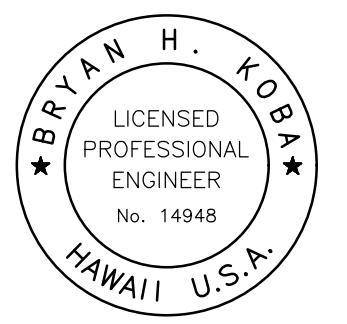


PACKAGE MBR PLAN AT TOP OF TANK
 SCALE: 1/2"=1'-0"

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS
 PULEHUNUI
 REGIONAL
 INFRASTRUCTURE

AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

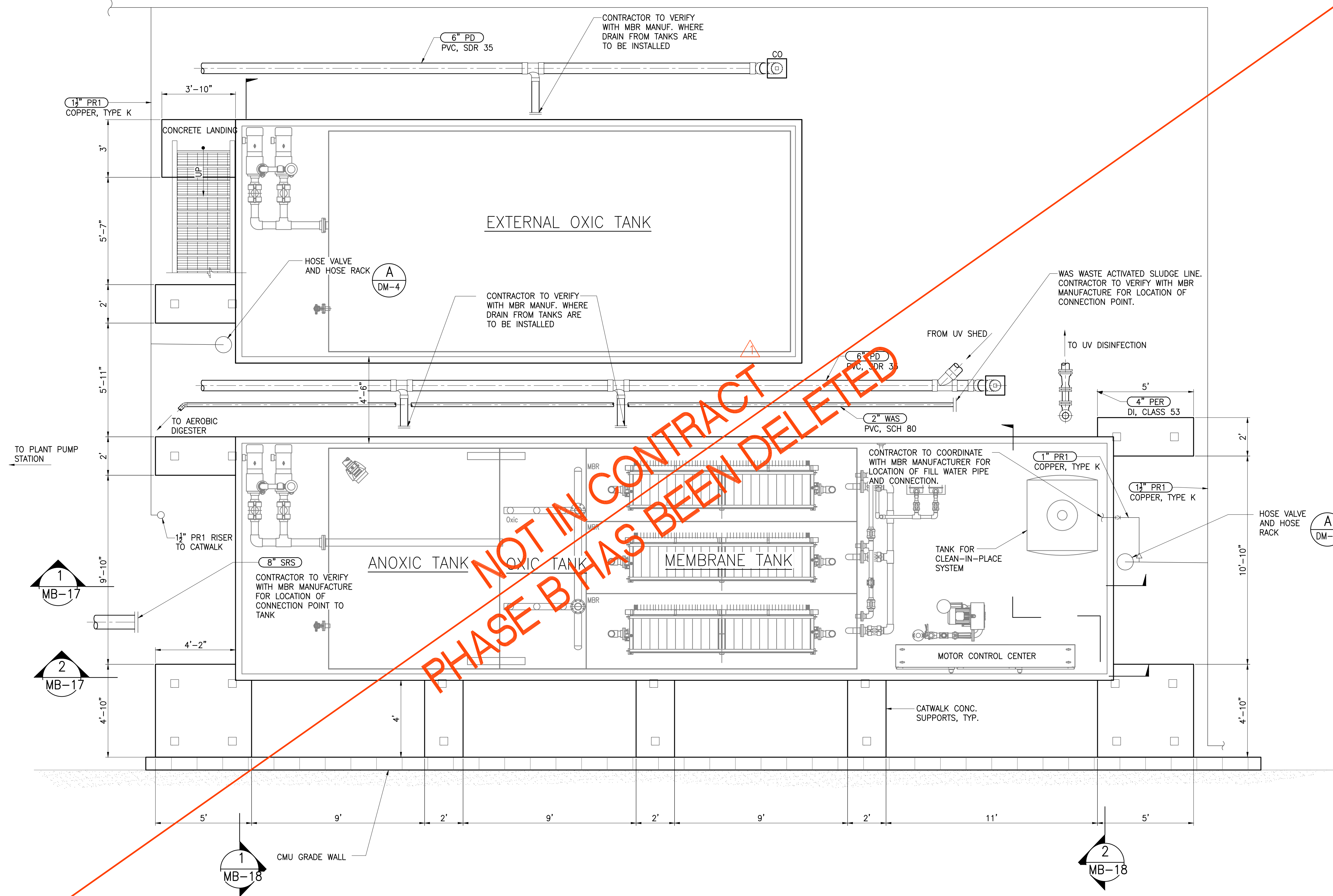
**PACKAGE MBR PLAN
 AT TOP OF TANK**

DWG. NO.
MB-15

SHEET 105 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY). BRYAN.DWG\MB-16 PACKAGE MBR PLAN AT GRADE.DWG

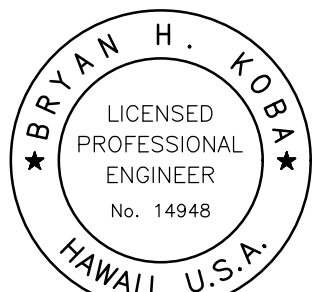


PACKAGE MBR PLAN AT GRADE
 SCALE: 3/8"=1'-0"

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 & ASSOCIATES, INC.
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

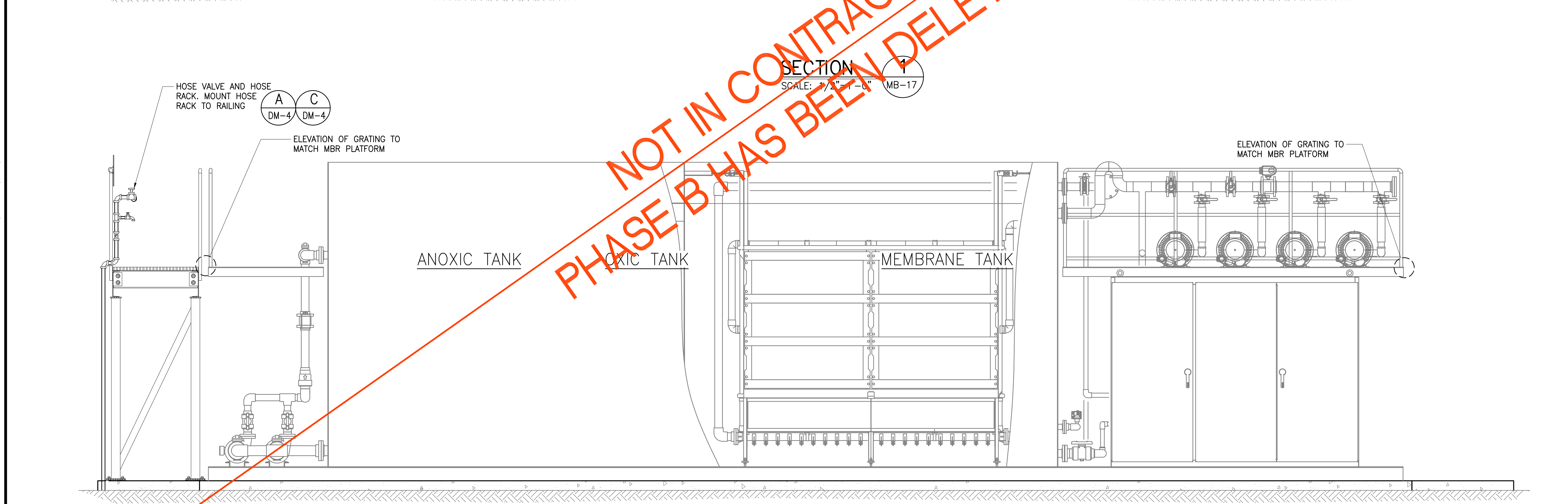
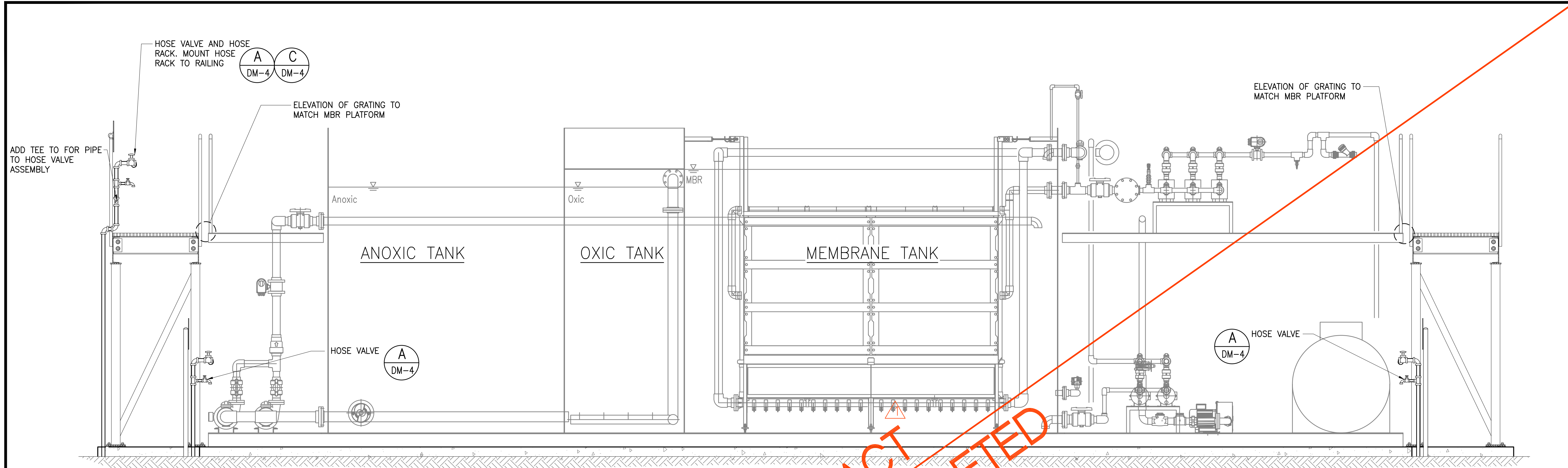
**PACKAGE MBR PLAN
 AT GRADE**

DWG. NO.
MB-16

SHEET 106 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONC. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY (BRYAN.DWG)\MB-17 PACKAGE MBR SECTIONS - 1.DWG

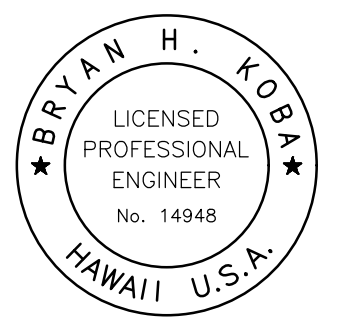


SECTION 2
 SCALE: 1/2" = 1'-0" MB-17

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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

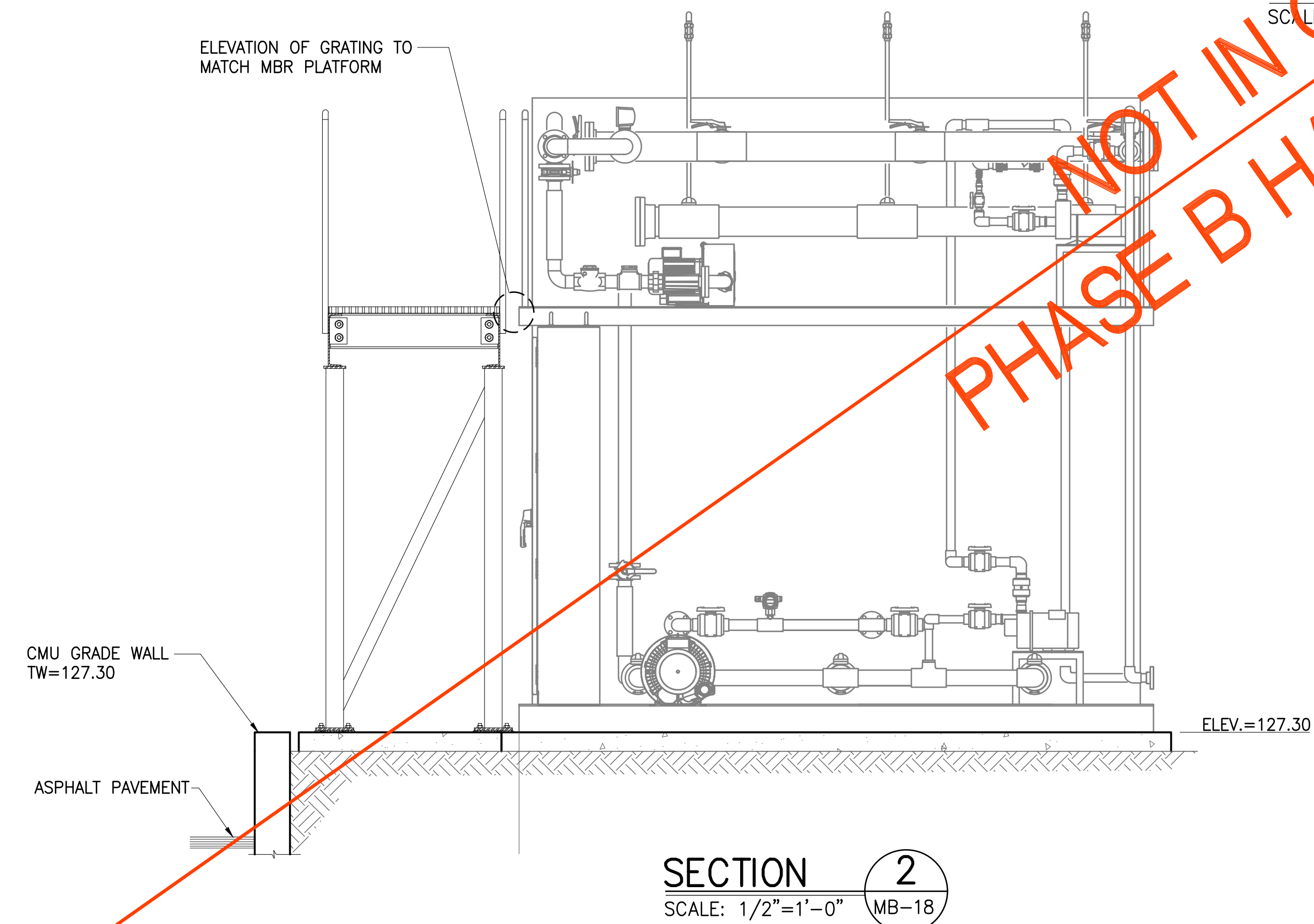
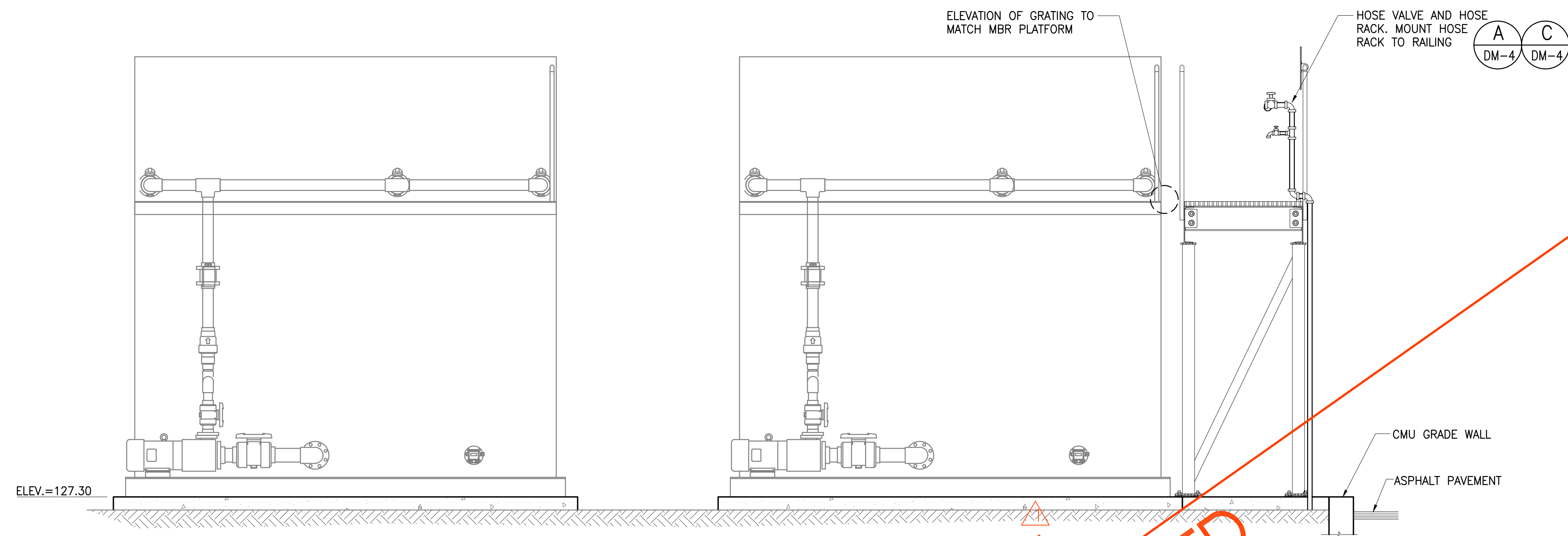
PACKAGE MBR
 SECTIONS - 1

DWG. NO.
MB-17

SHEET 107 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN\DWG\MB-18 PACKAGE MBR SECTIONS - 2.DWG



NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

SECTION 1
 SCALE: 1/2"=1'-0" MB-18

SECTION 2
 SCALE: 1/2"=1'-0" MB-18

PACKAGE MBR SECTIONS - 2
 SCALE: 1/2"=1'-0"



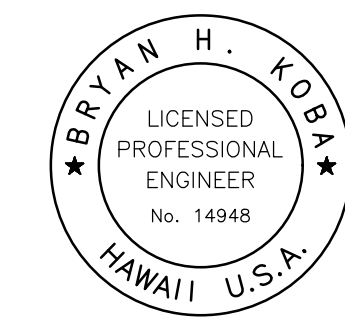
Austin Tsutsumi
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

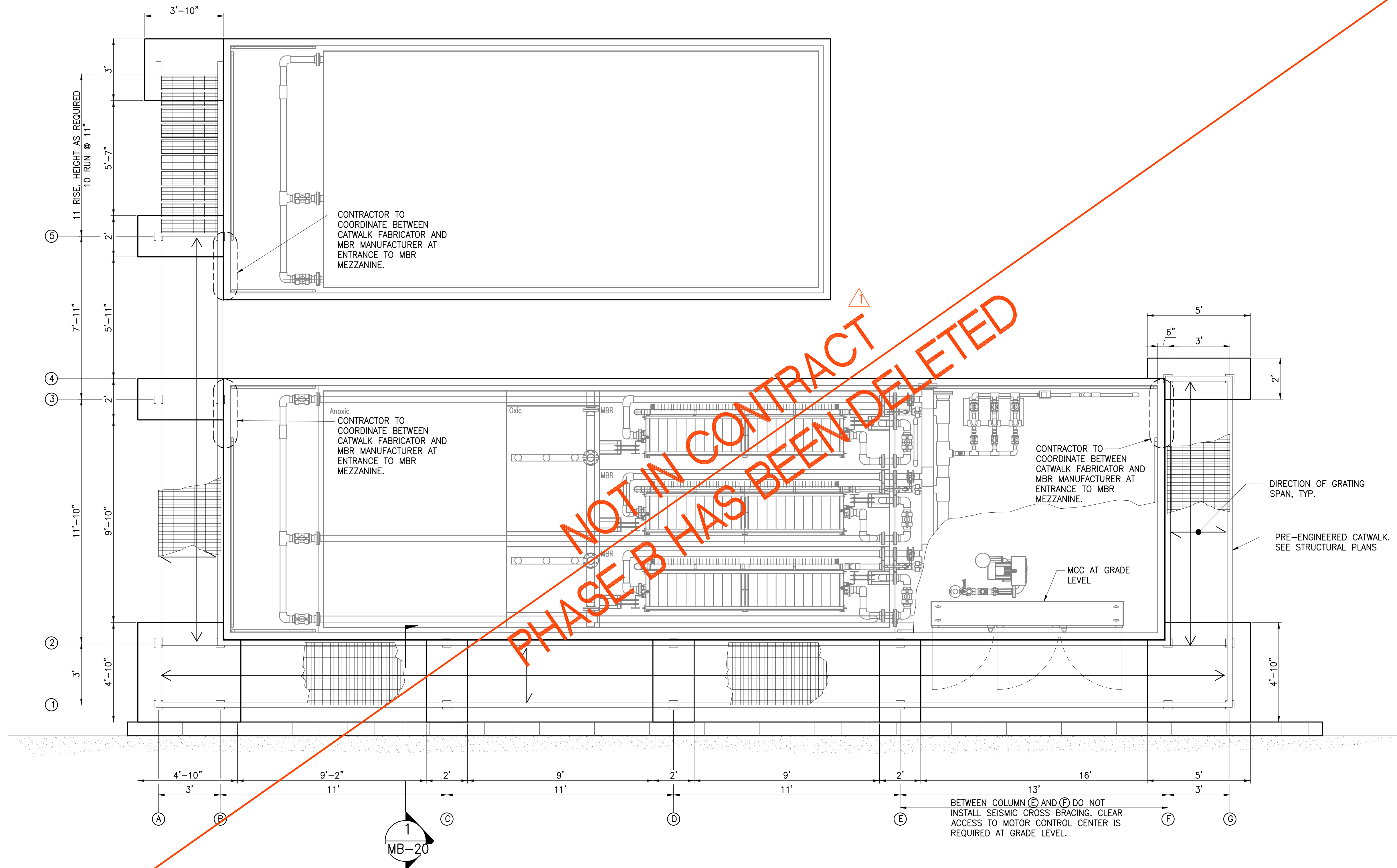
PACKAGE MBR
 SECTIONS - 2

DWG. NO.
MB-18

SHEET 108 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN\DWG\MB-19 PACKAGE MRB GRATING PLAN AND DETAIL.DWG



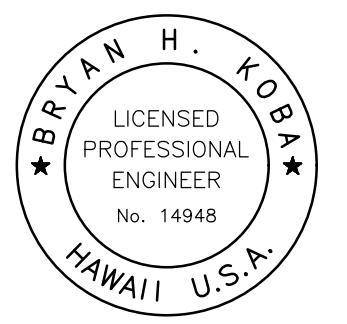
PACKAGE MRB GRATING PLAN
 SCALE: 3/8"=1'-0"

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Bryan H. Kobayashi APRIL 30, 2020
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

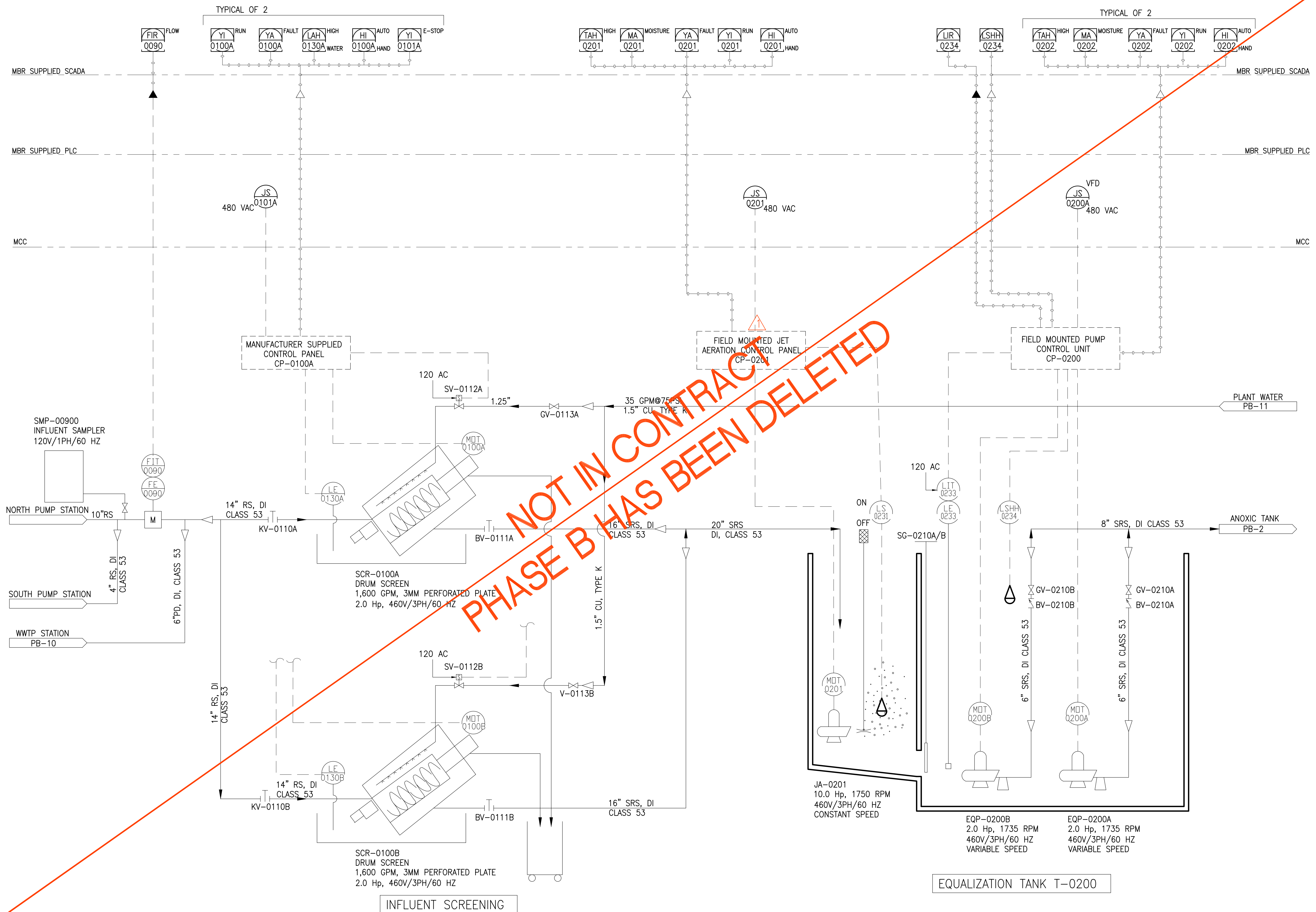
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PACKAGE MRB GRATING
 PLAN AND DETAIL**

DWG. NO.
MB-19
 SHEET 109 OF 201

FILE	POCKET	FOLDER	NO.

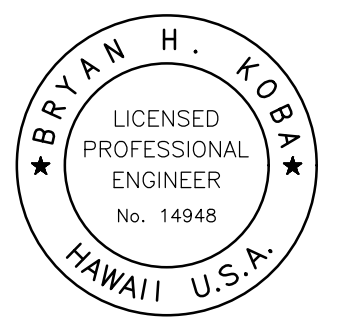
JOB NO. 0-11-056.004
 FN: F:\CONC. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\PB P&ID SHEETS.DWG



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Bryan H. Kobayashi APRIL 30, 2020
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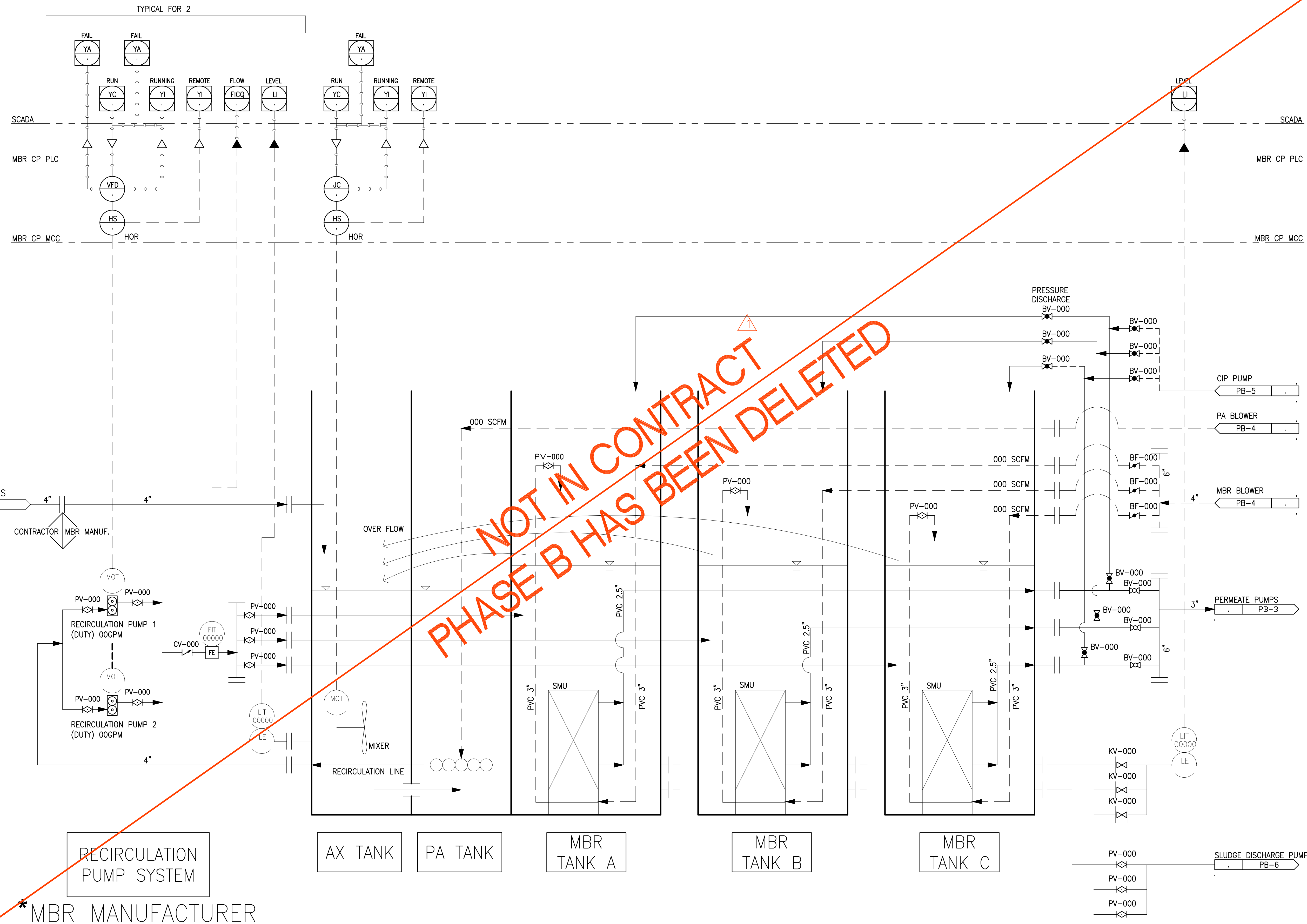
0	1	2	
LINE IS 2 INCHES AT FULL SIZE (If NOT 2-inches : Scale Accordingly)			
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

P&ID HEADWORKS
 DWG. NO.
PB-1
 SHEET 110 OF 201

FILE	POCKET	FOLDER	NO.

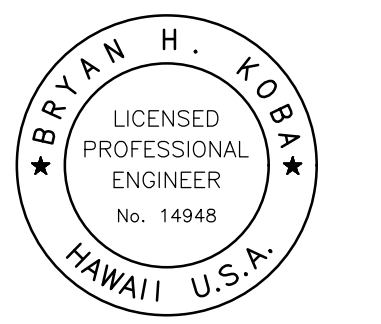
JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN\DWG\PB P&ID SHEETS.DWG



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STATE OF HAWAII
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

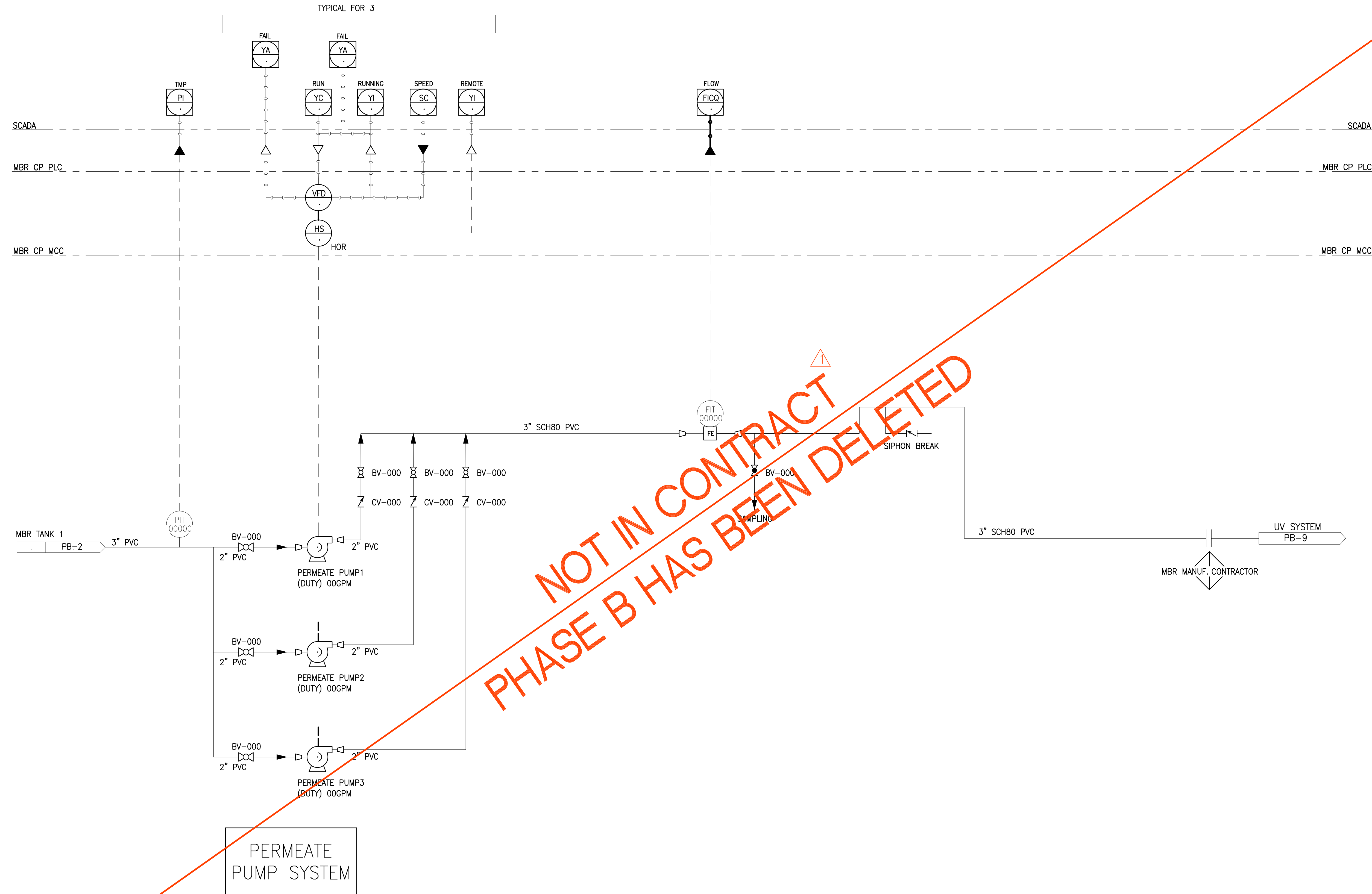
0	1	2	
LINE IS 2 INCHES AT FULL SIZE (If NOT 2-inches : Scale Accordingly)			
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**MBR
 (ON MBR SKIDS)**
 DWG. NO.
PB-2
 SHEET 111 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG(PB 2) SHEETS.DWG



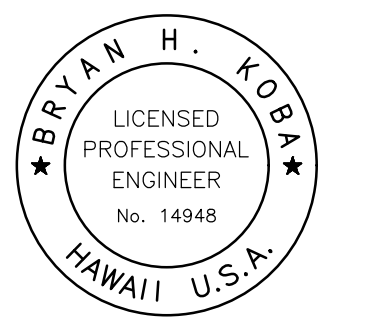
PERMEATE PUMP SYSTEM
 * MBR MANUFACTURER

**NOT IN CONTRACT
 PHASE B HAS BEEN DELETED**

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 CIVIL ENGINEERS | SURVEYORS
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 501 SUMNER STREET, SUITE 521
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

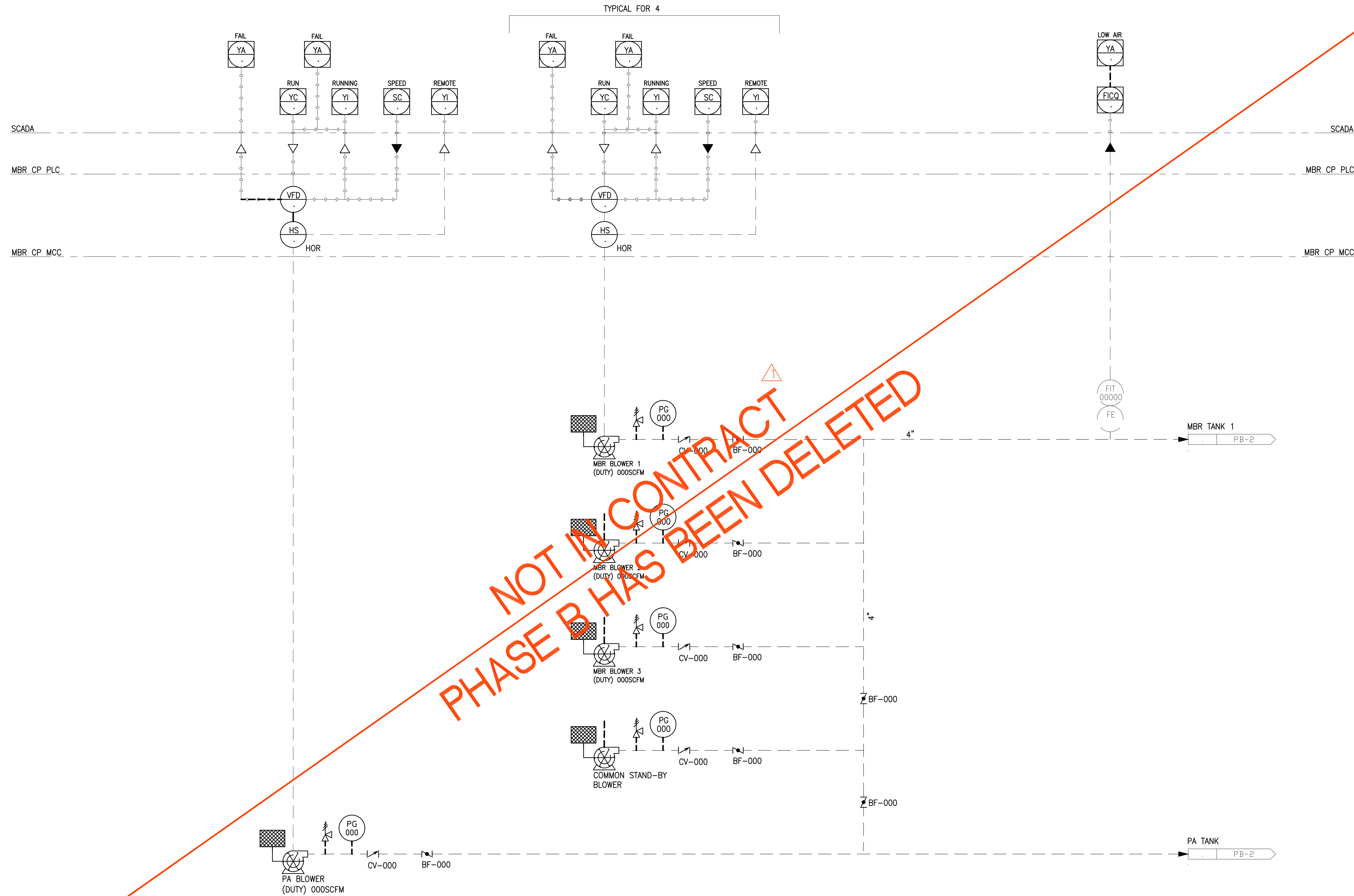
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

MBR-PERMEATE PUMPS (ON MBR SKIDS)

DWG. NO.
PB-3
 SHEET 112 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\PB P&ID SHEETS.DWG



Blower System

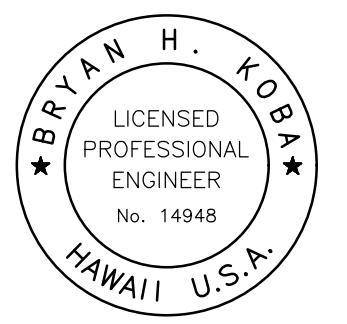
* MBR MANUFACTURER

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 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

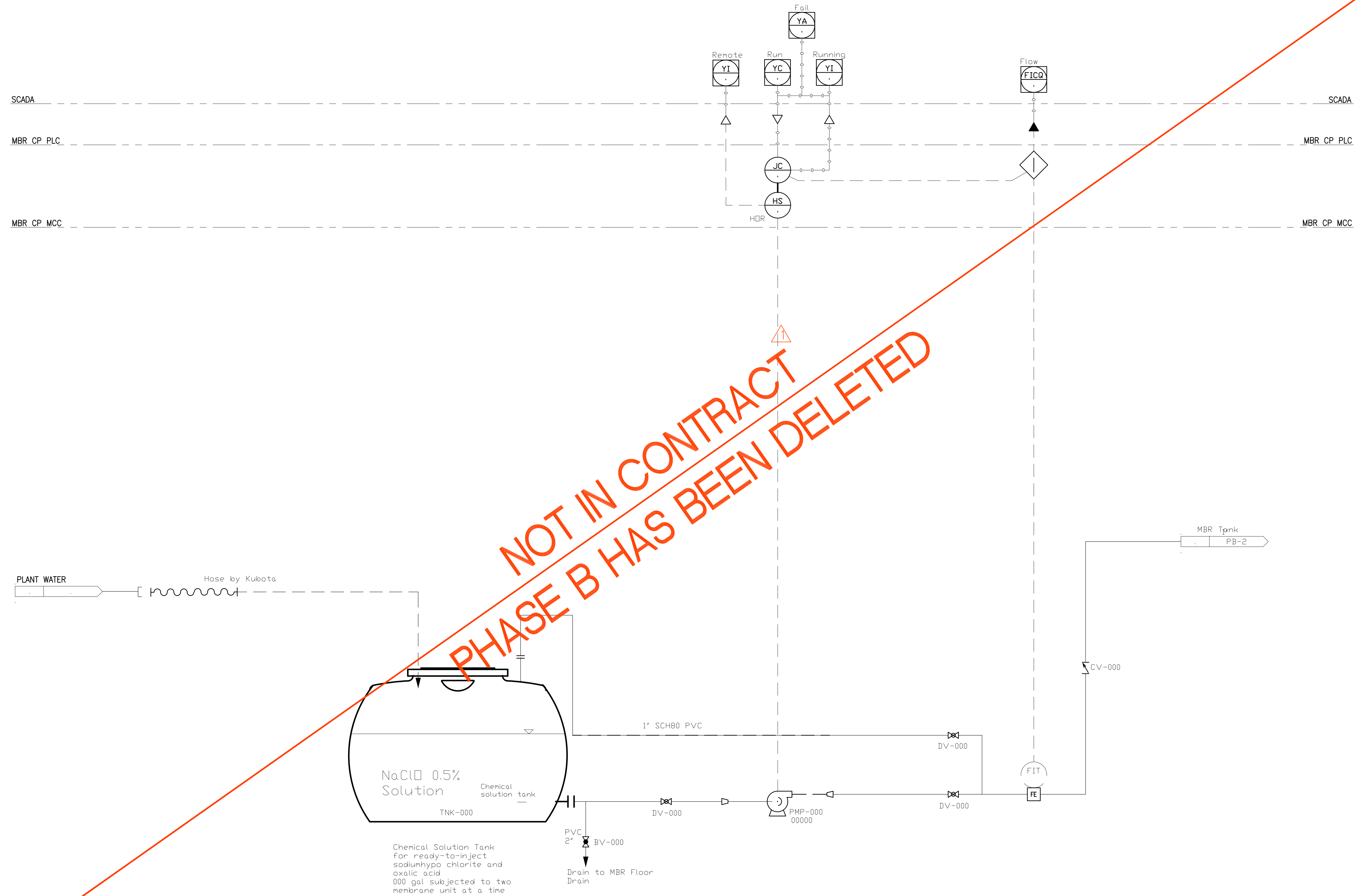
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**MBR-BLOWERS
 (ON MBR SKIDS)**

DWG. NO.
PB-4
 SHEET 113 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG(PB P&ID SHEETS.DWG

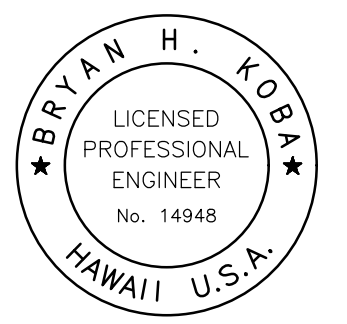


CIP System
 * MBR MANUFACTURER

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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

MBR-CIP SYSTEM
(ON MBR SKIDS)

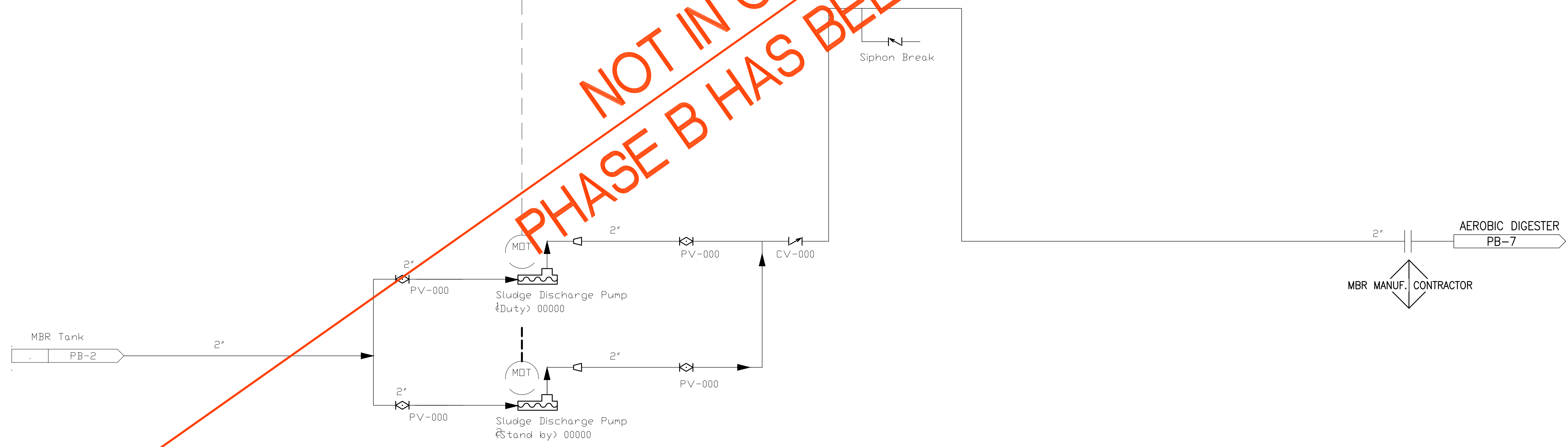
DWG. NO.
PB-5
 SHEET 114 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) \BRYAN\DWG\PB P&ID SHEETS.DWG



**NOT IN CONTRACT
 PHASE B HAS BEEN DELETED**



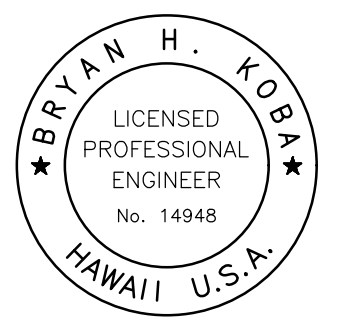
Sludge Discharge Pump System

* MBR MANUFACTURER

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Bryan H. Kobayashi APRIL 30, 2020
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

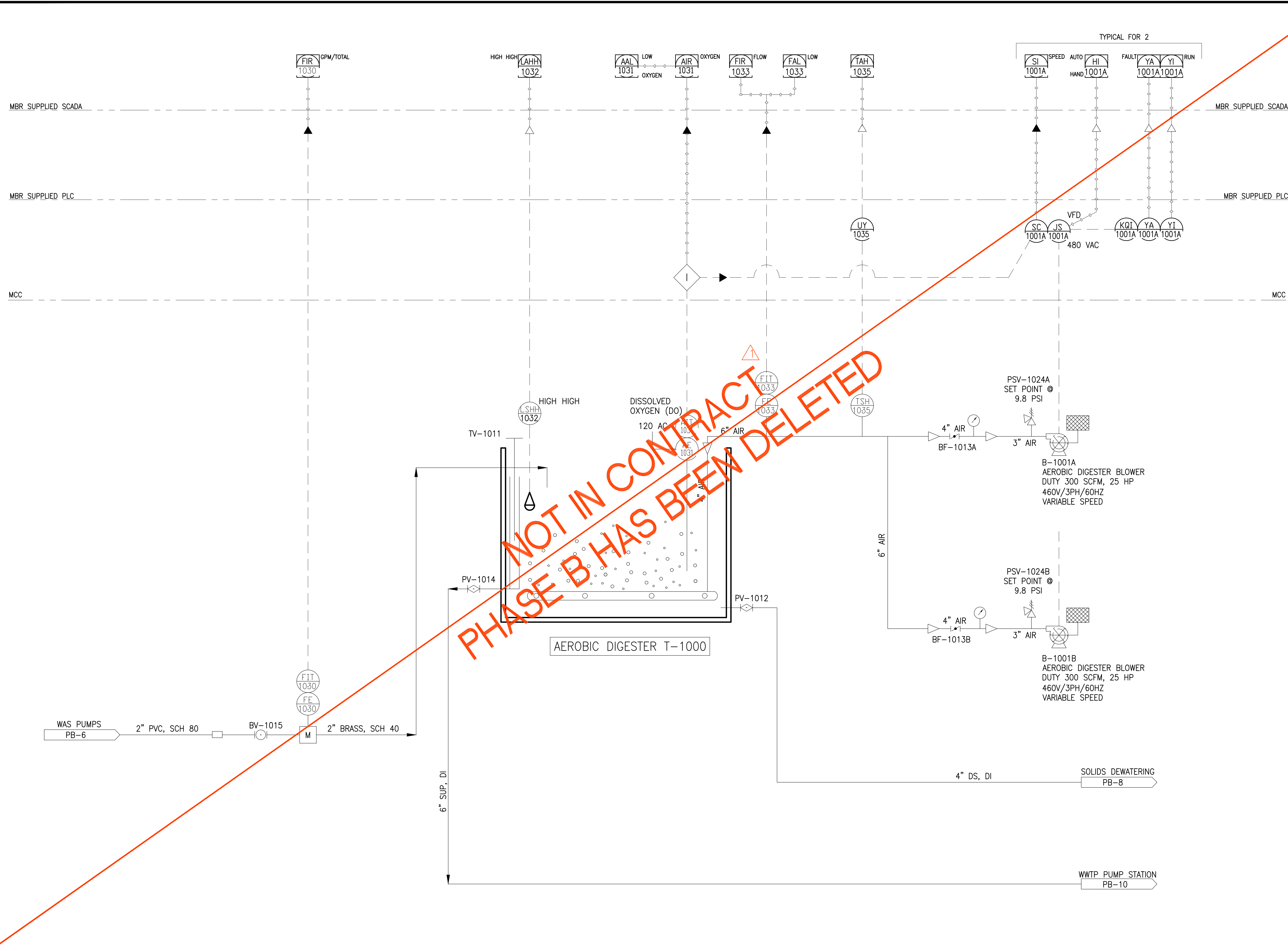
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**MBR-WAS PUMPS
 (ON MBR SKIDS)**

DWG. NO.
PB-6
 SHEET 115 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\PB P&ID SHEETS.DWG

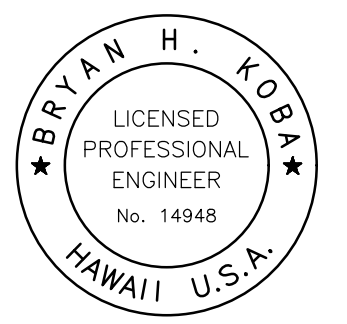


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 HONOLULU, HAWAII 96817
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Bryan H. Kobayashi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

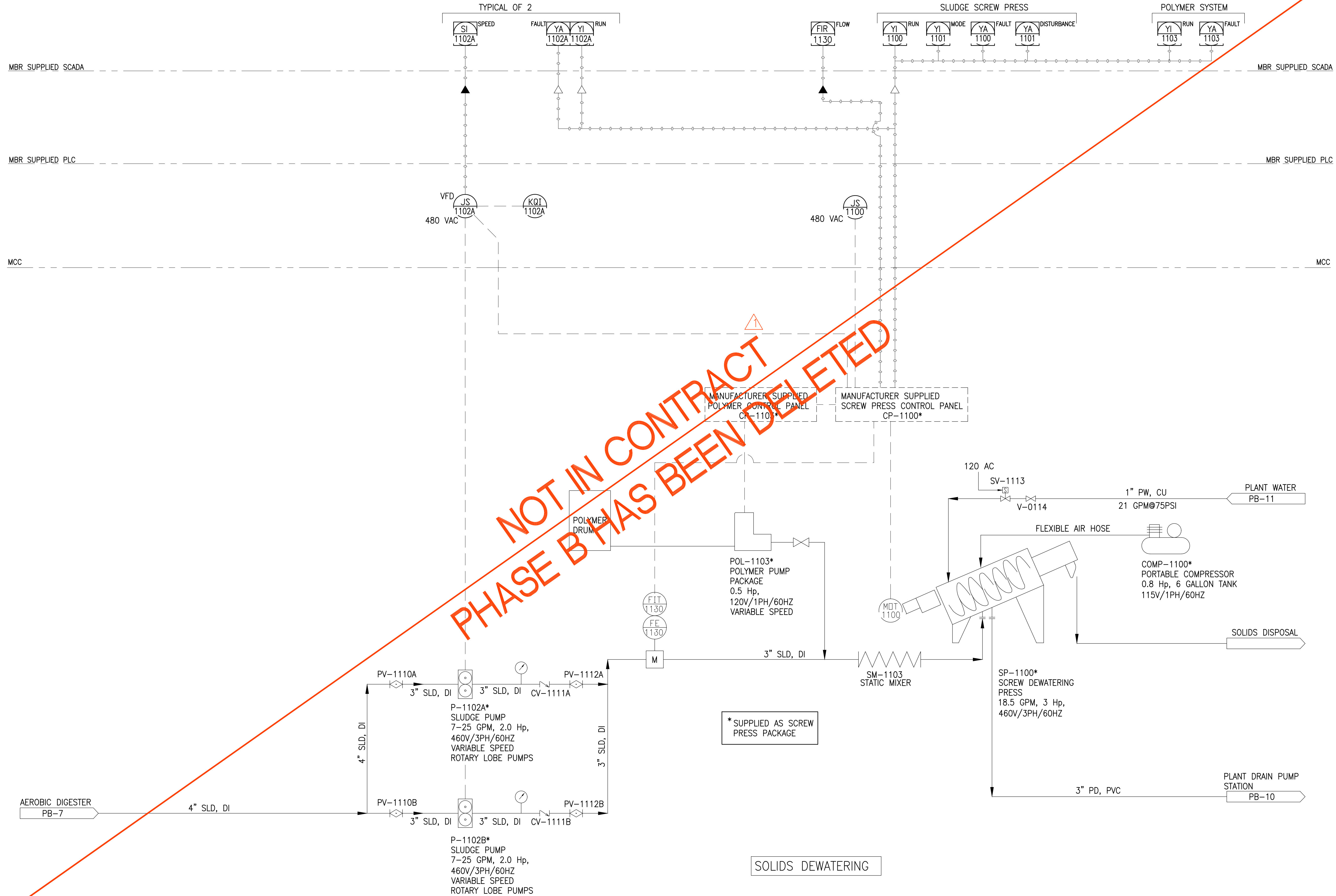
**AEROBIC
 DIGESTER**

DWG. NO.
PB-7

SHEET 116 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
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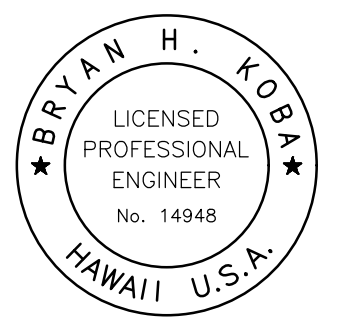
NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

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 & ASSOCIATES, INC.
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 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

PULEHUNUI
 REGIONAL
 INFRASTRUCTURE

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1	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
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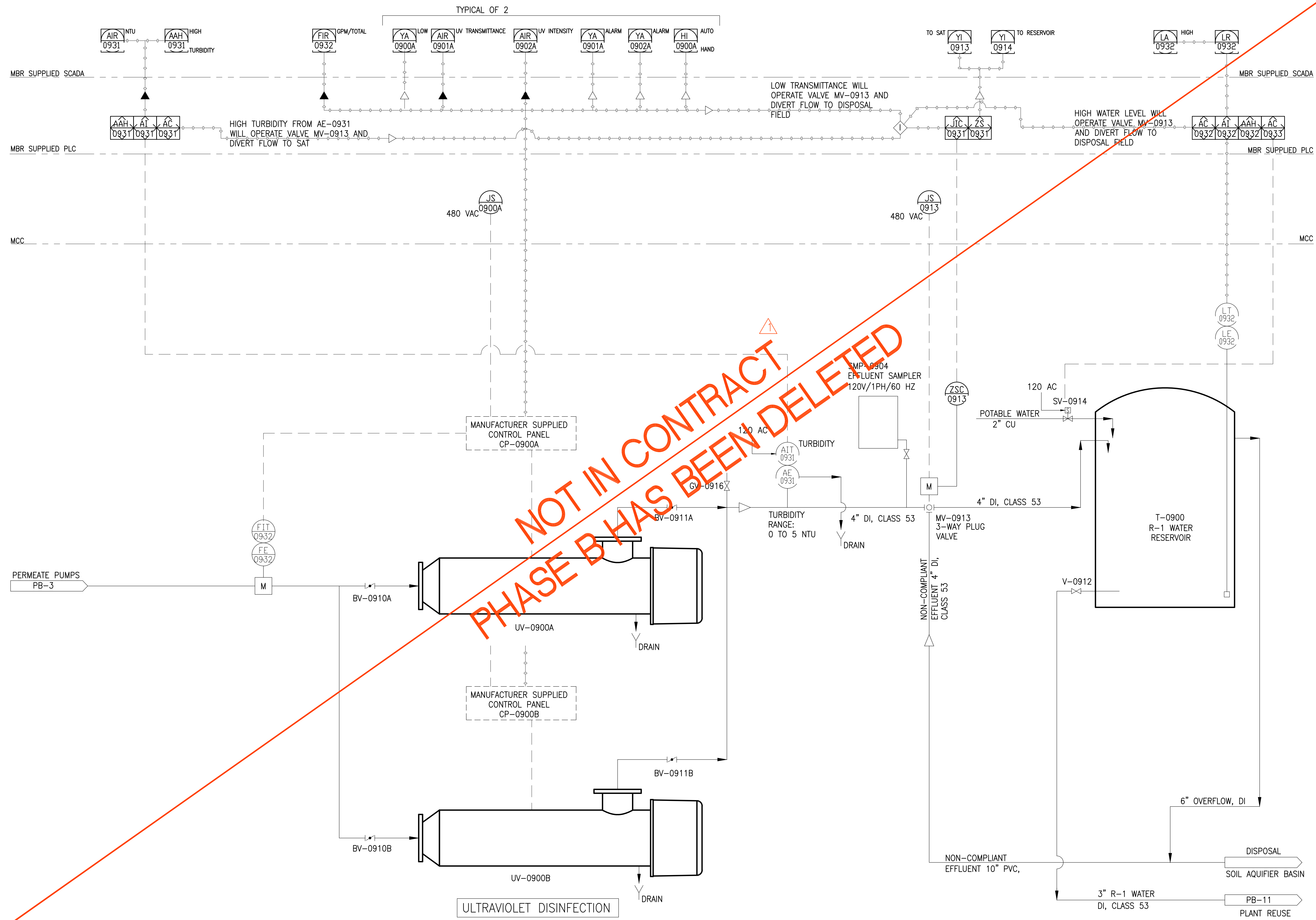
SOLIDS DEWATERING

DWG. NO.
PB-8

SHEET 117 OF 201

FILE	POCKET	FOLDER	NO.

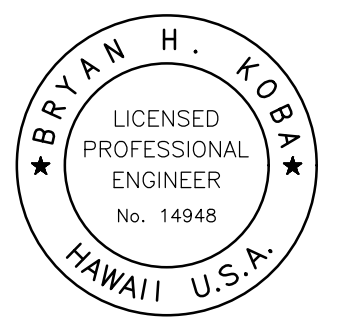
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 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG(PB P&ID SHEETS.DWG



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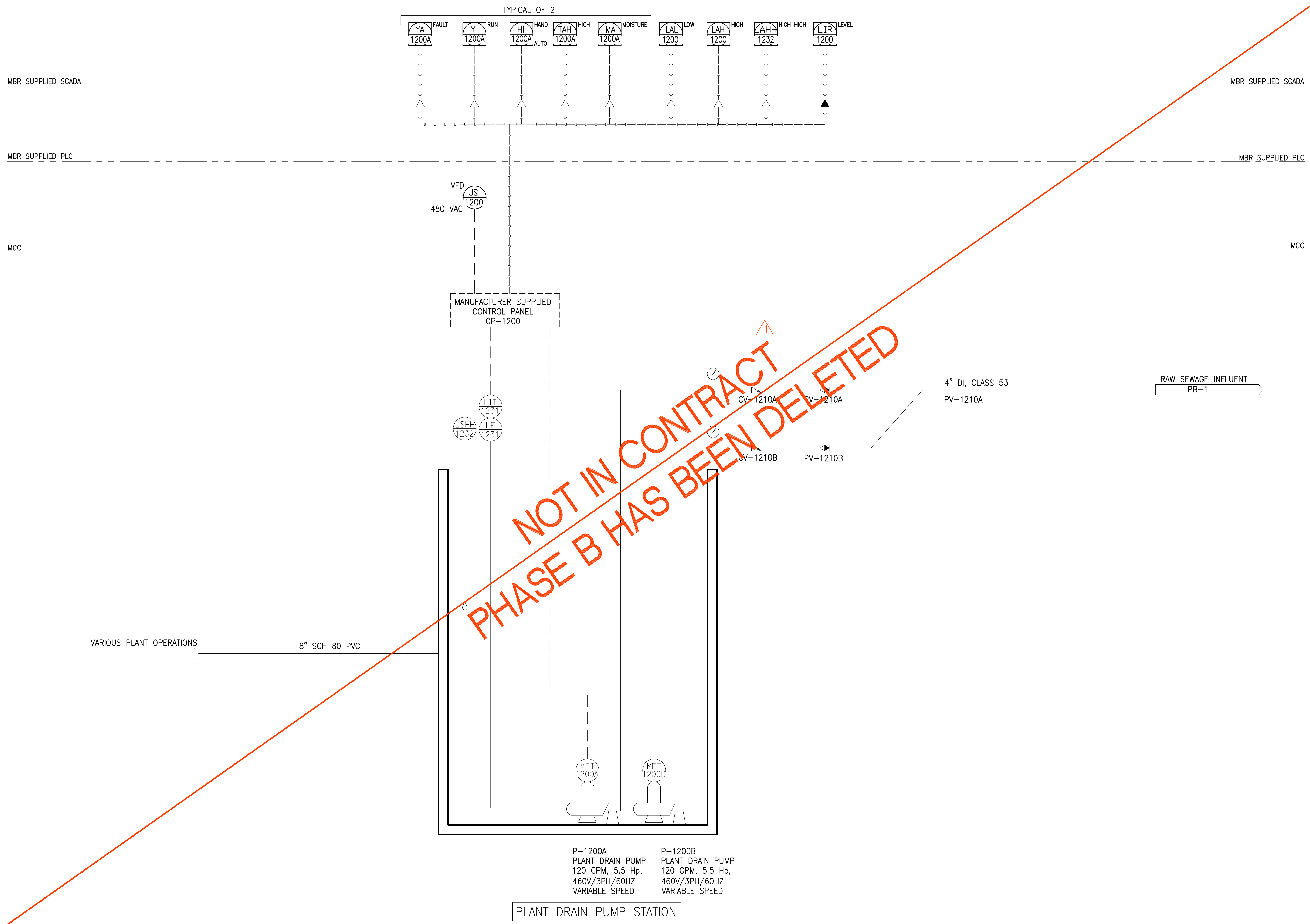
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LINE IS 2 INCHES AT FULL SIZE (If NOT 2-inches : Scale Accordingly)			
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

UV DISINFECTION SYSTEM
 DWG. NO. **PB-9**
 SHEET 118 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\PB P&ID SHEETS.DWG



**NOT IN CONTRACT
 PHASE B HAS BEEN DELETED**

P-1200A
 PLANT DRAIN PUMP
 120 GPM, 5.5 Hp,
 460V/3PH/60HZ
 VARIABLE SPEED

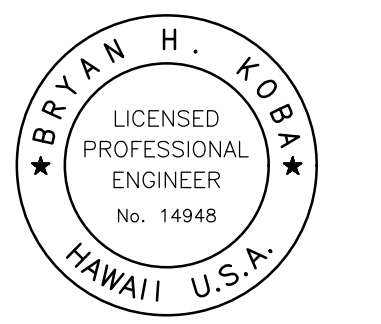
P-1200B
 PLANT DRAIN PUMP
 120 GPM, 5.5 Hp,
 460V/3PH/60HZ
 VARIABLE SPEED

PLANT DRAIN PUMP STATION

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REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

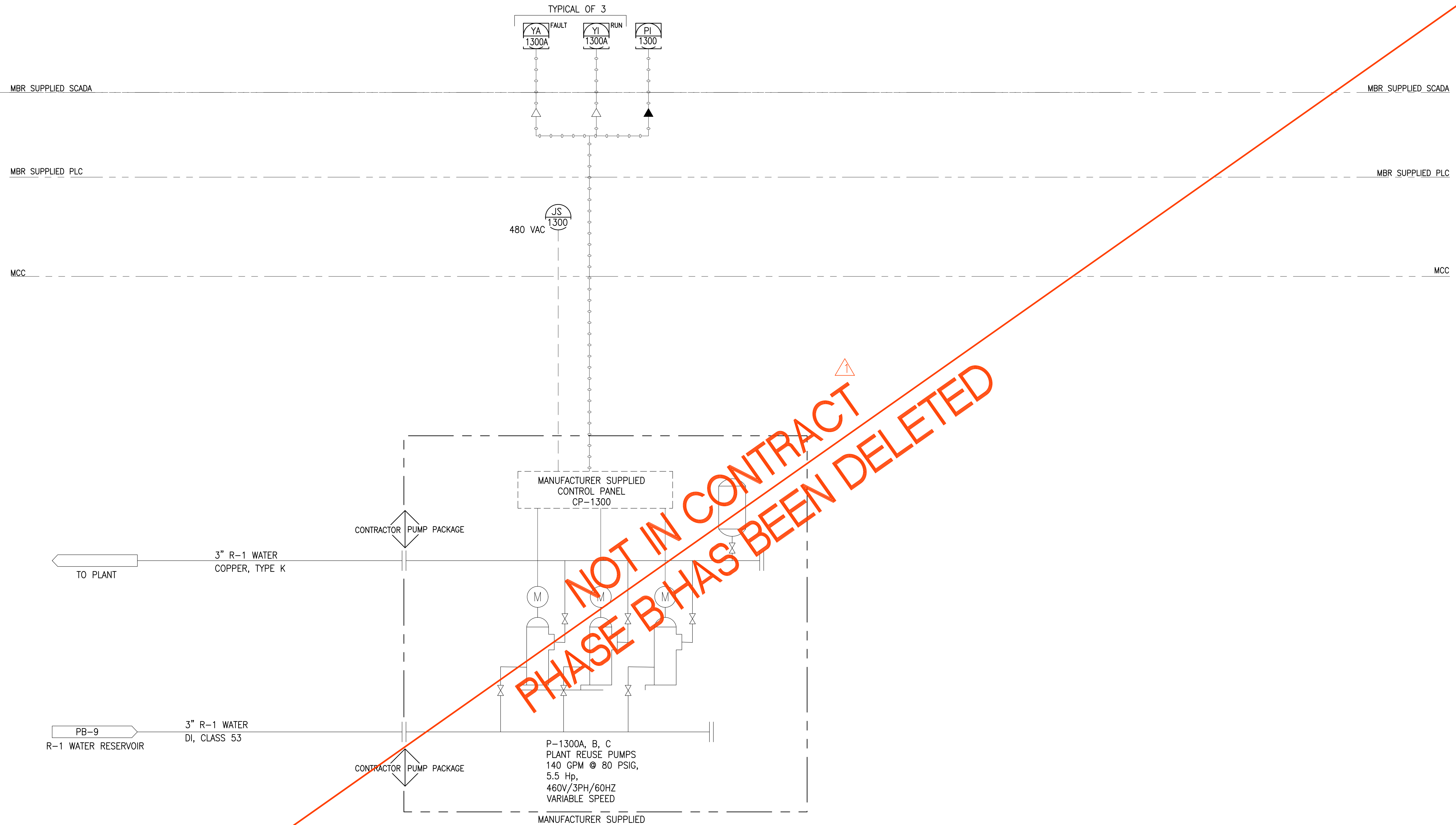
Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLANT DRAIN
 PUMP STATION**

DWG. NO.
PB-10
 SHEET 119 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER_PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG(PB P&ID SHEETS.DWG

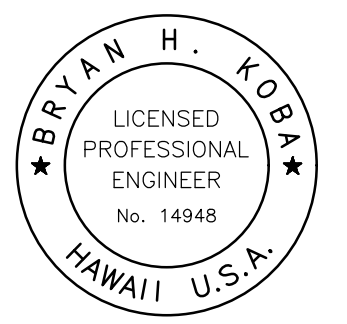


NOT IN CONTRACT
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Bryan H. Kobayashi APRIL 30, 2020
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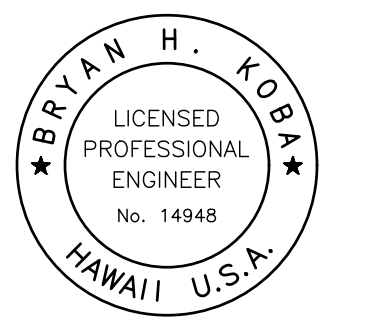
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 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	BHK

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

**PLANT REUSE
 PUMPS**
 DWG. NO.
PB-11
 SHEET 120 OF 201

FILE	POCKET	FOLDER	NO.



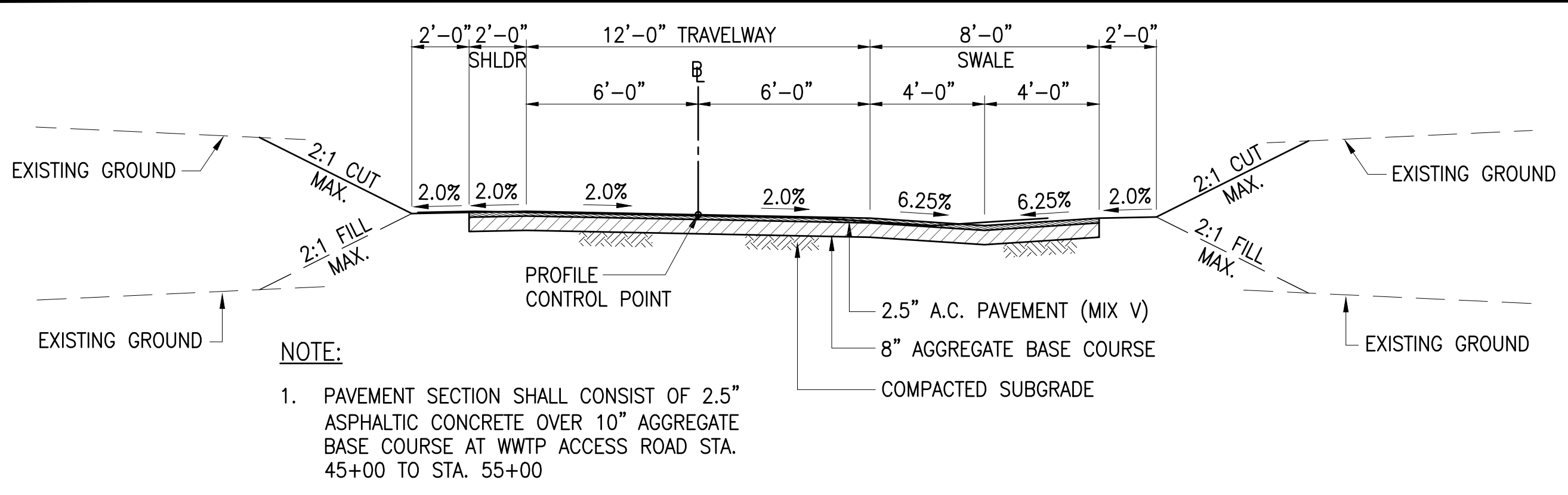
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Bryan H. Kobayashi APRIL 30, 2020
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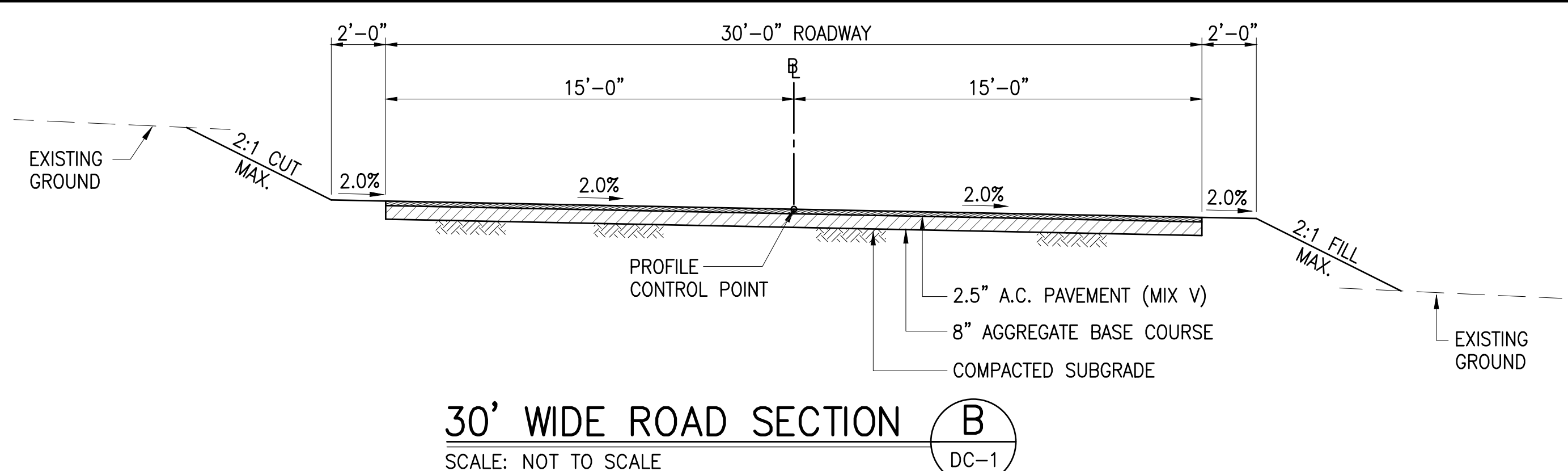
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LINE IS 2 INCHES AT FULL SIZE (IF NOT 2-INCHES : SCALE ACCORDINGLY)			
REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

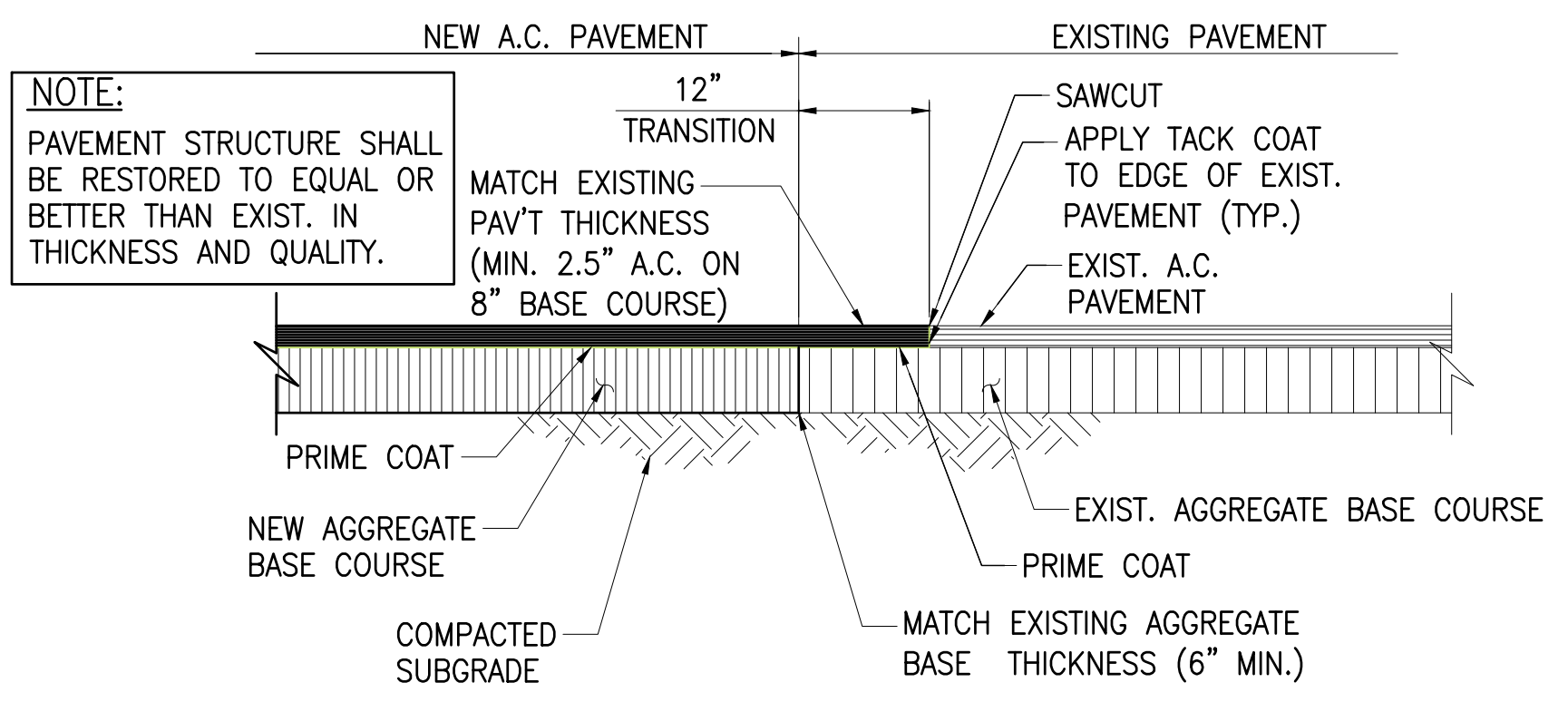
FILE	POCKET	FOLDER	NO.



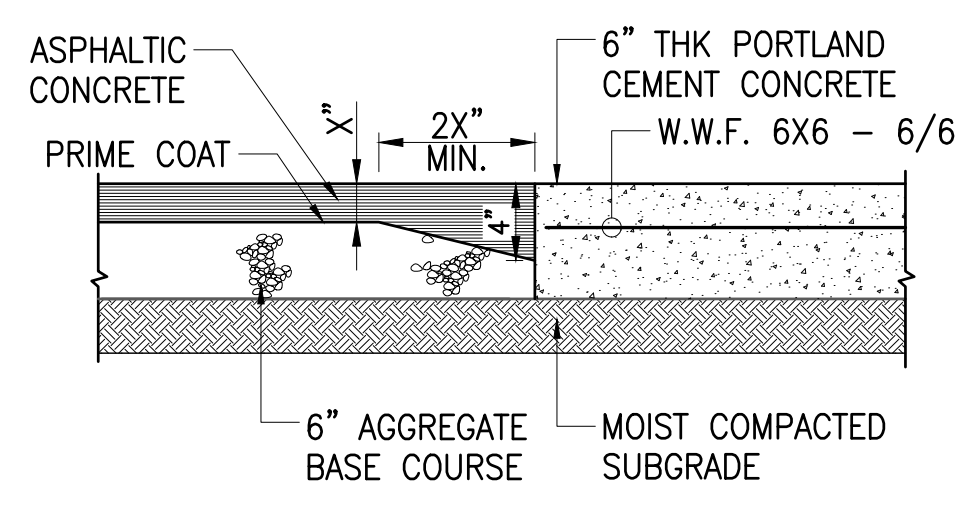
22' WIDE ROAD SECTION A
 SCALE: NOT TO SCALE
 DC-1



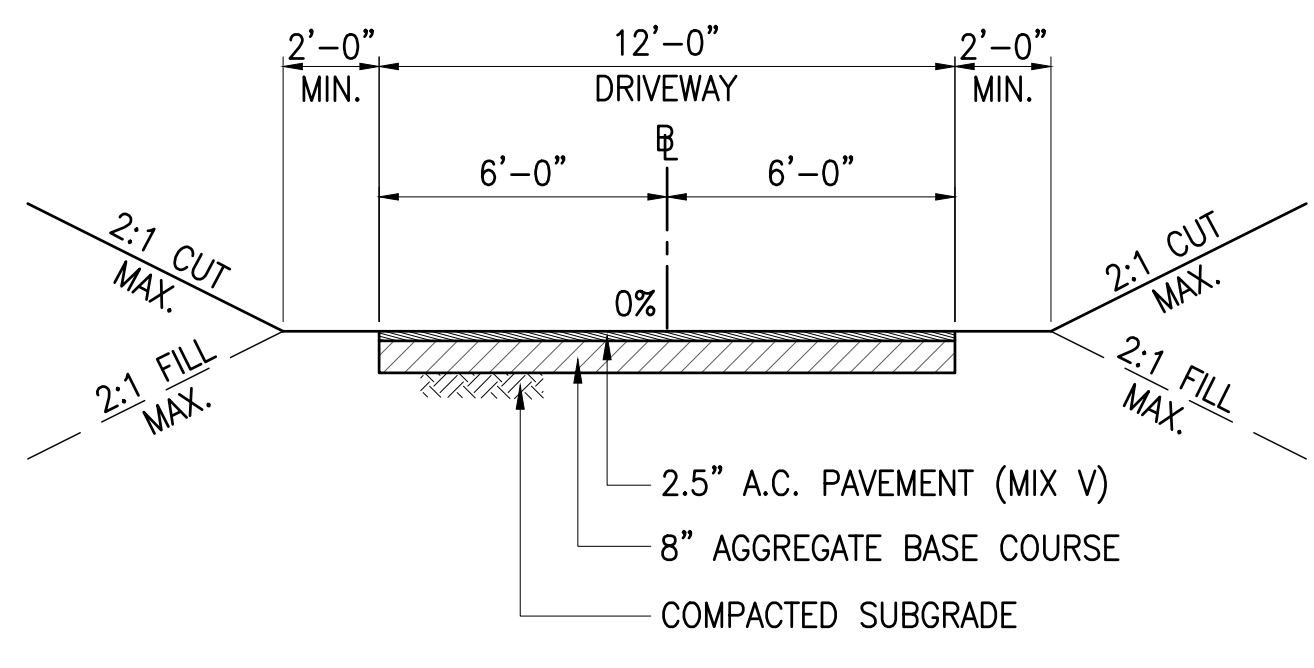
30' WIDE ROAD SECTION B
 SCALE: NOT TO SCALE
 DC-1



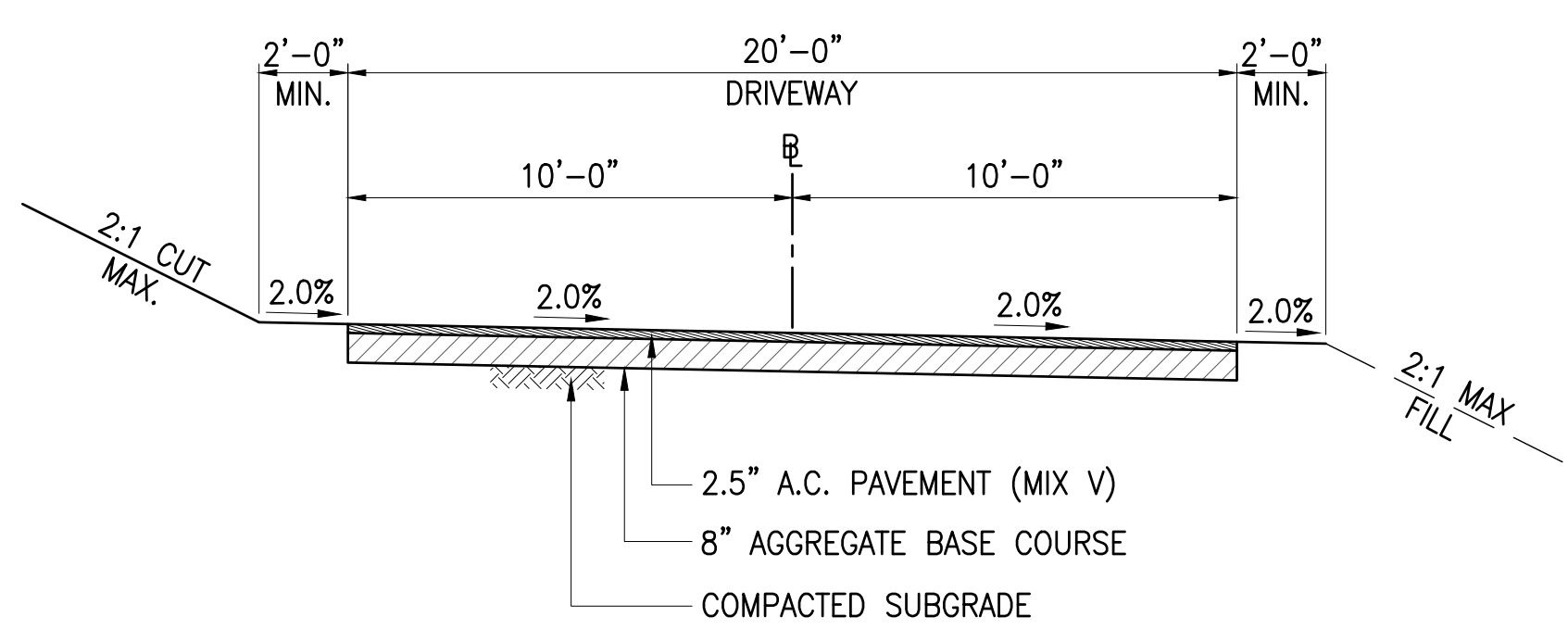
ASPHALT CONNECTION DETAIL C
 NOT TO SCALE
 DC-1



ASPHALT TO CONCRETE TRANSITION DETAIL D
 DC-1

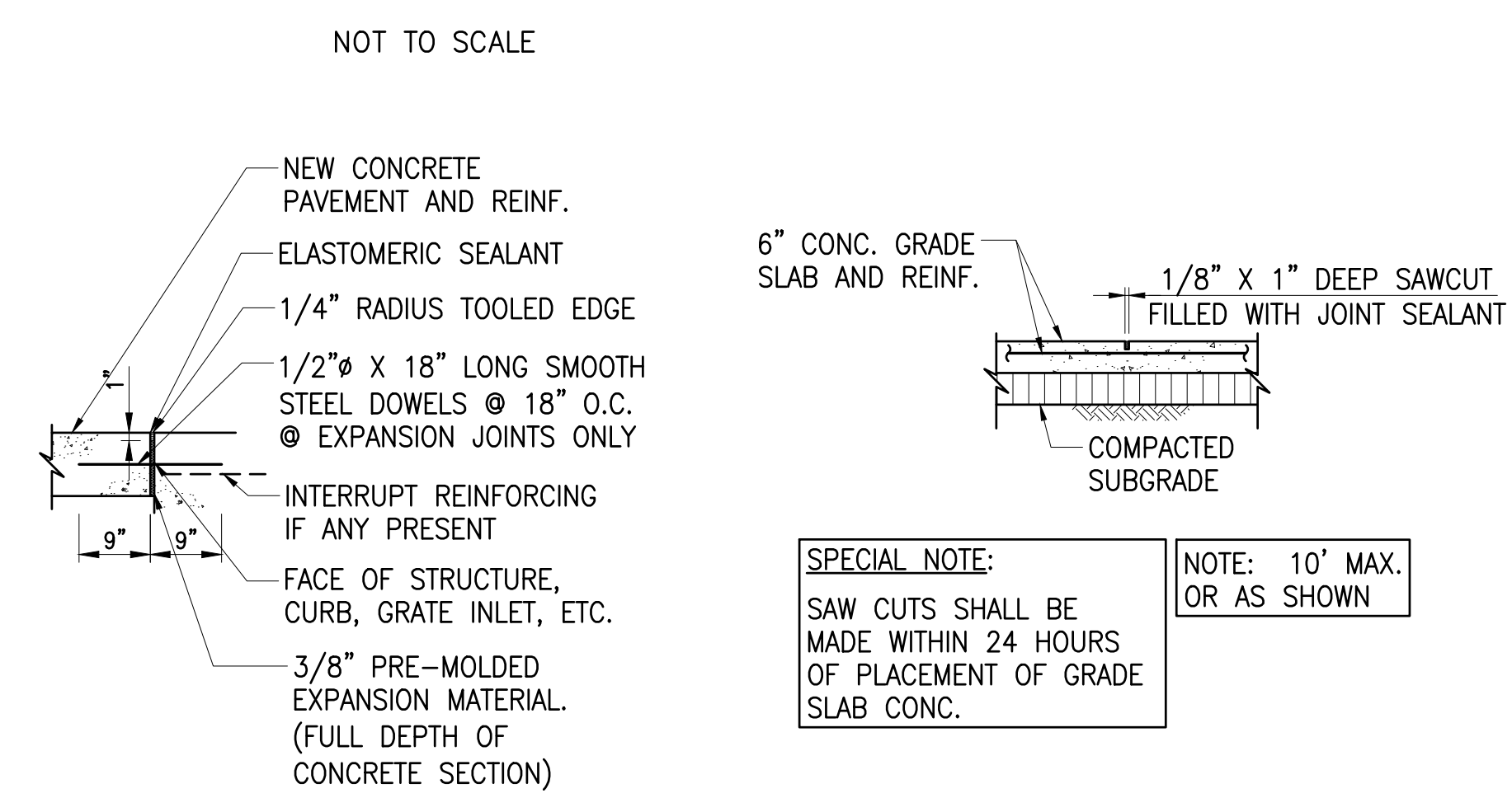


12' WIDE DRIVEWAY SECTION E
 SCALE: NOT TO SCALE
 DC-1



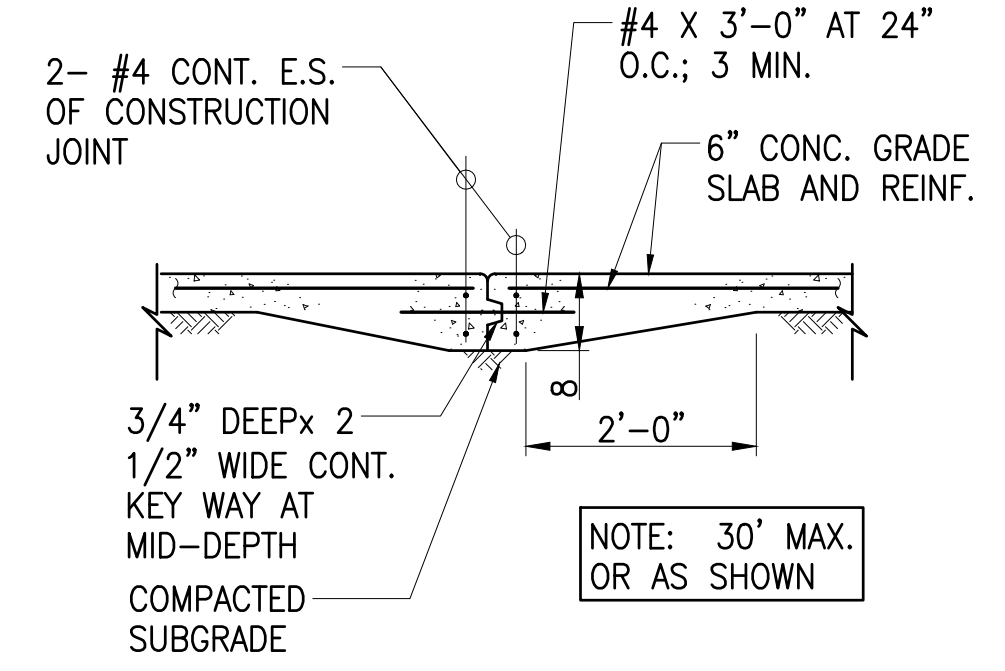
20' WIDE DRIVEWAY SECTION F
 SCALE: NOT TO SCALE
 DC-1

NOTE:
 FOR PARKING AREAS, PAVEMENT SECTION SHALL CONSIST OF 2.0" ASPHALTIC CONCRETE OVER 6.0" AGGREGATE BASE COURSE.



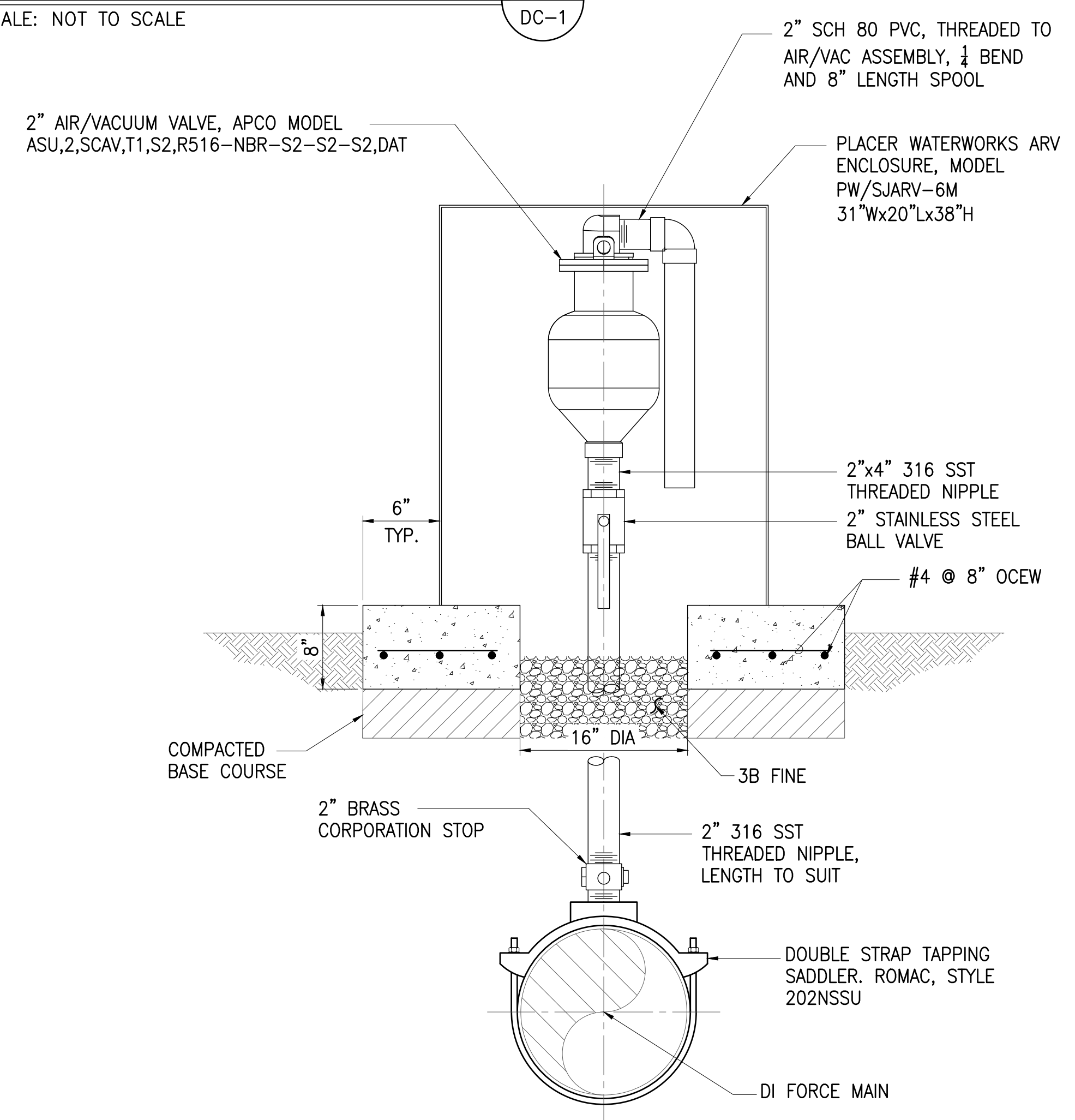
EXPANSION JOINT

SAWCUT TRANSVERSE JOINT



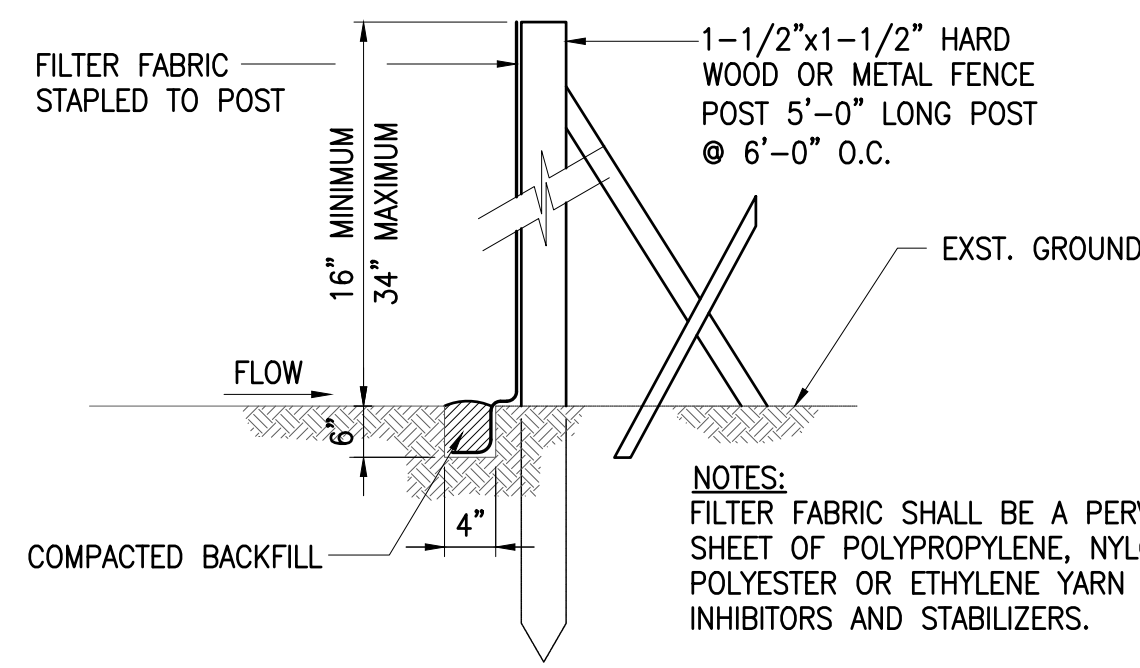
CONSTRUCTION JOINT

CONCRETE JOINT DETAIL G
 NOT TO SCALE
 DC-1

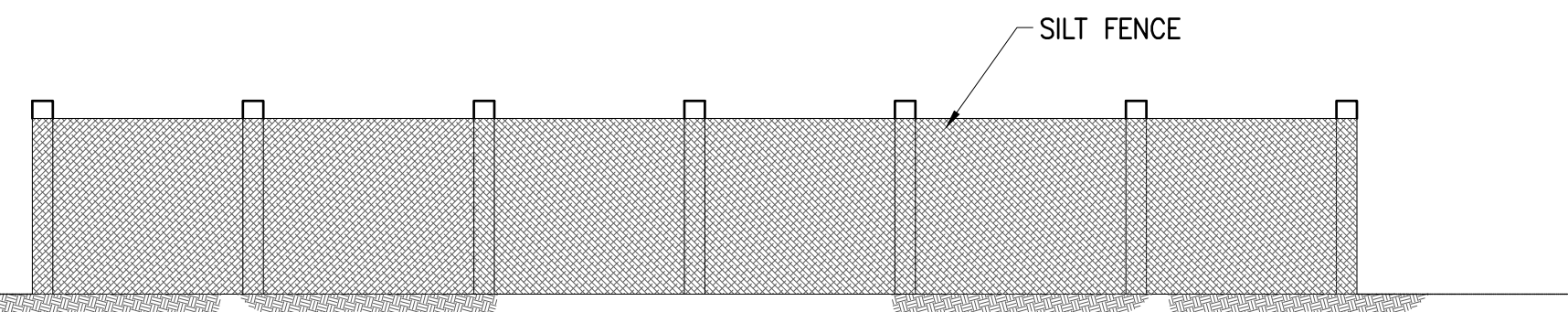


2" AIR/VACUUM VALVE DETAIL H
 NOT TO SCALE
 DC-1

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\DC-1 MISCELLANEOUS CIVIL DETAILS - 1.DWG

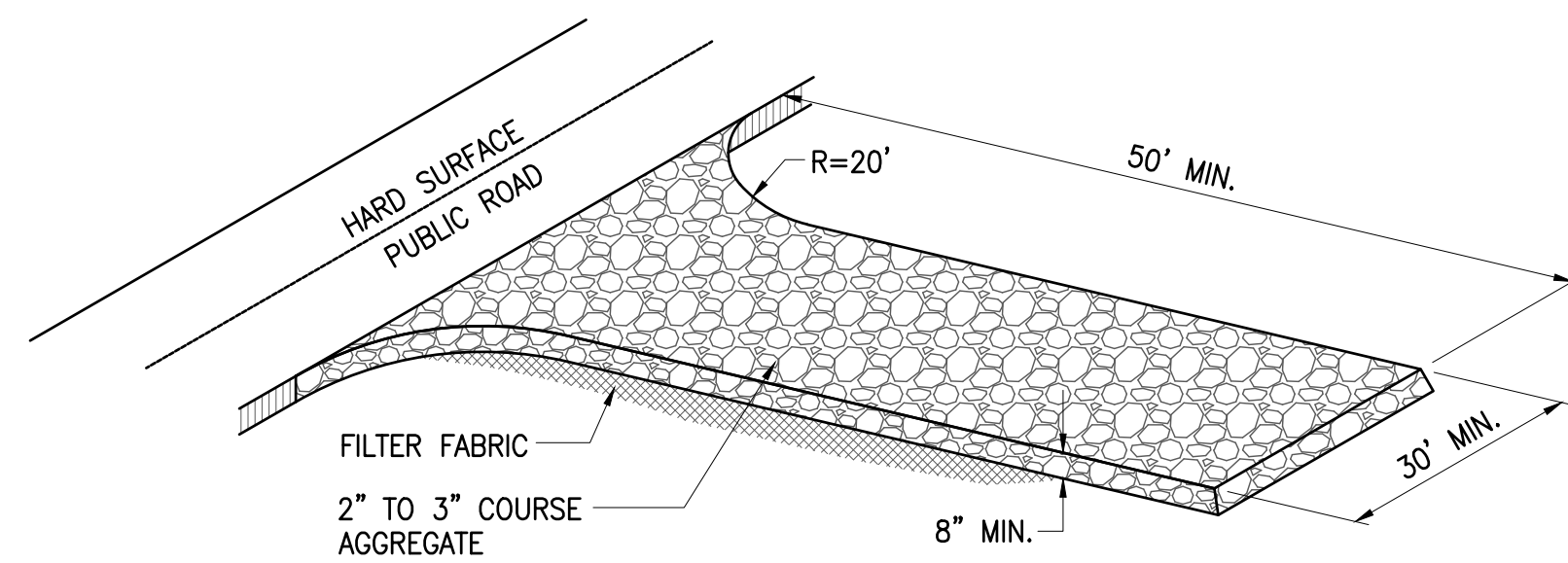


SECTION

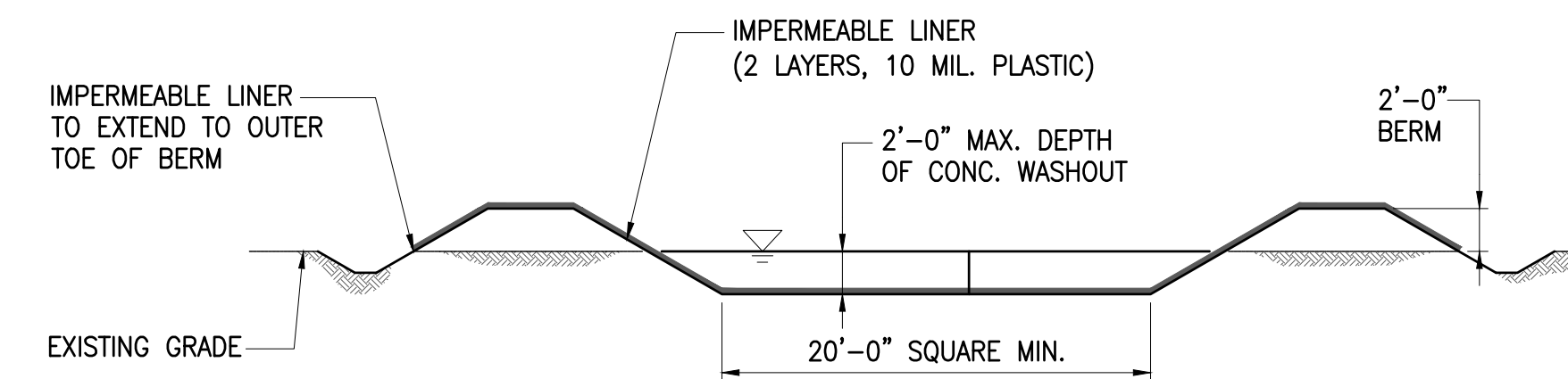


ELEVATION

DETAIL SILT FENCE **A**
NOT TO SCALE DC-2

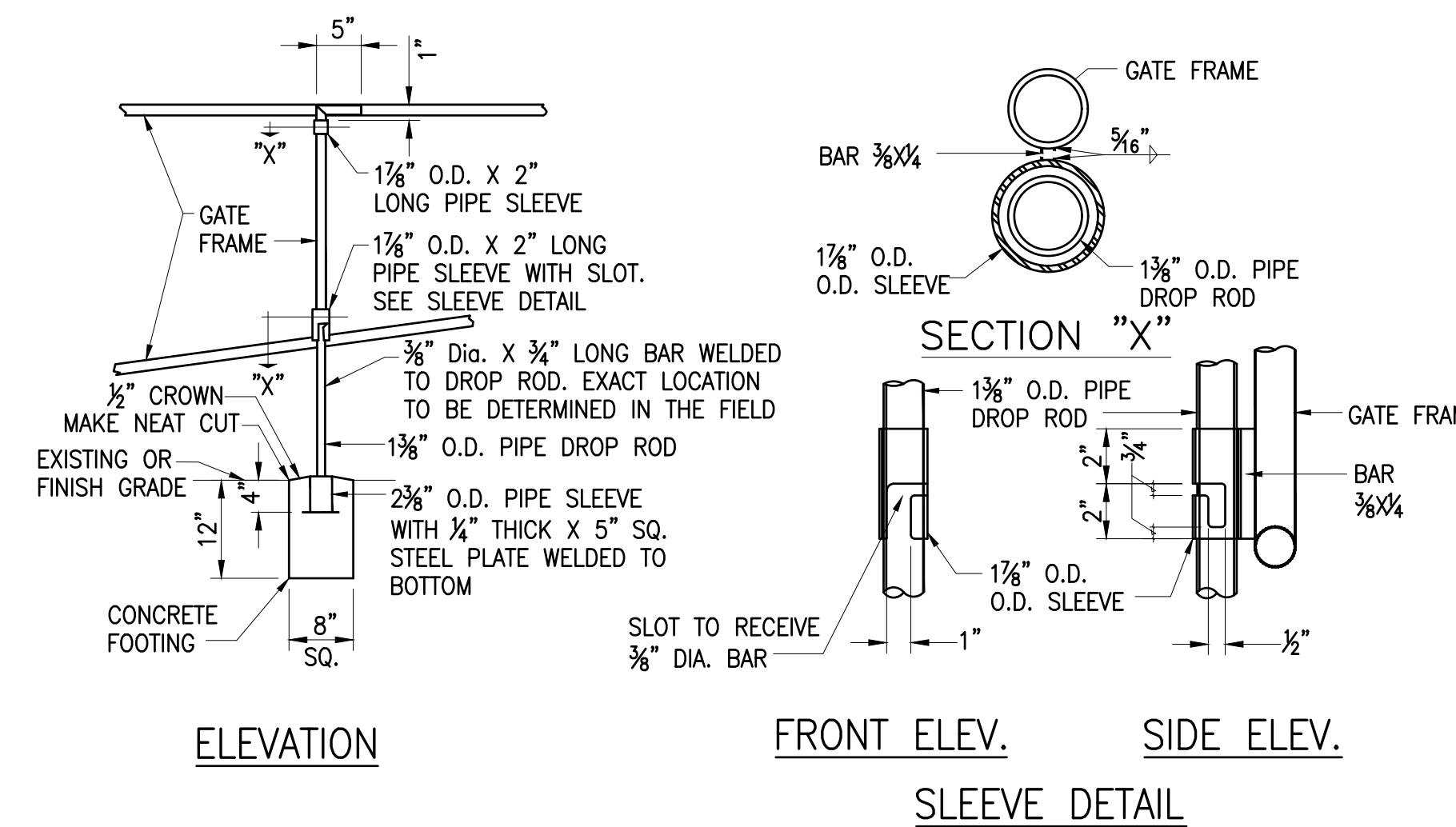


STABILIZED CONSTRUCTION ENTRANCE **B**
NOT TO SCALE DC-2



NOTE:
WASHOUT TO BE INSPECTED, CLEANED AND LINER CHANGED ONCE FILLED TO 75% CAPACITY. RESIDUAL WASTE AND LINER TO BE REMOVED AND HAULED TO APPROVED CONSTRUCTION WASTE LANDFILL.

CONCRETE WASHOUT **C**
NOT TO SCALE DC-2



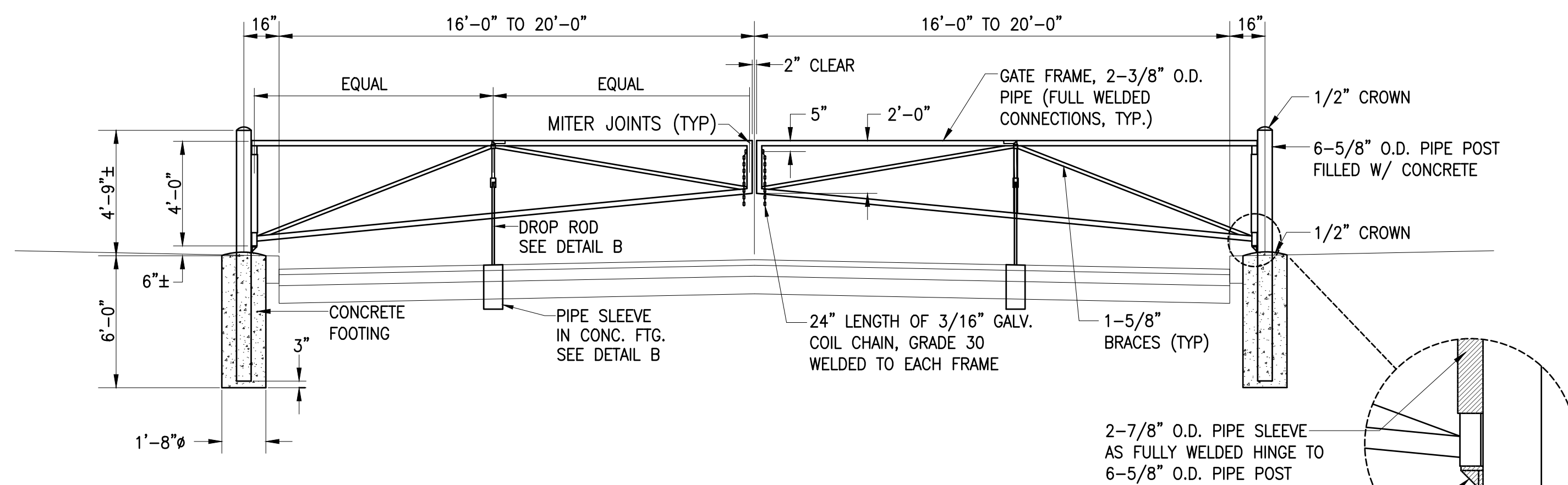
ELEVATION

FRONT ELEV.

SIDE ELEV.

SLEEVE DETAIL

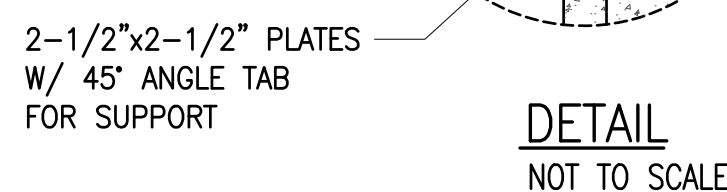
DROP ROD DETAIL "B"
NOT TO SCALE



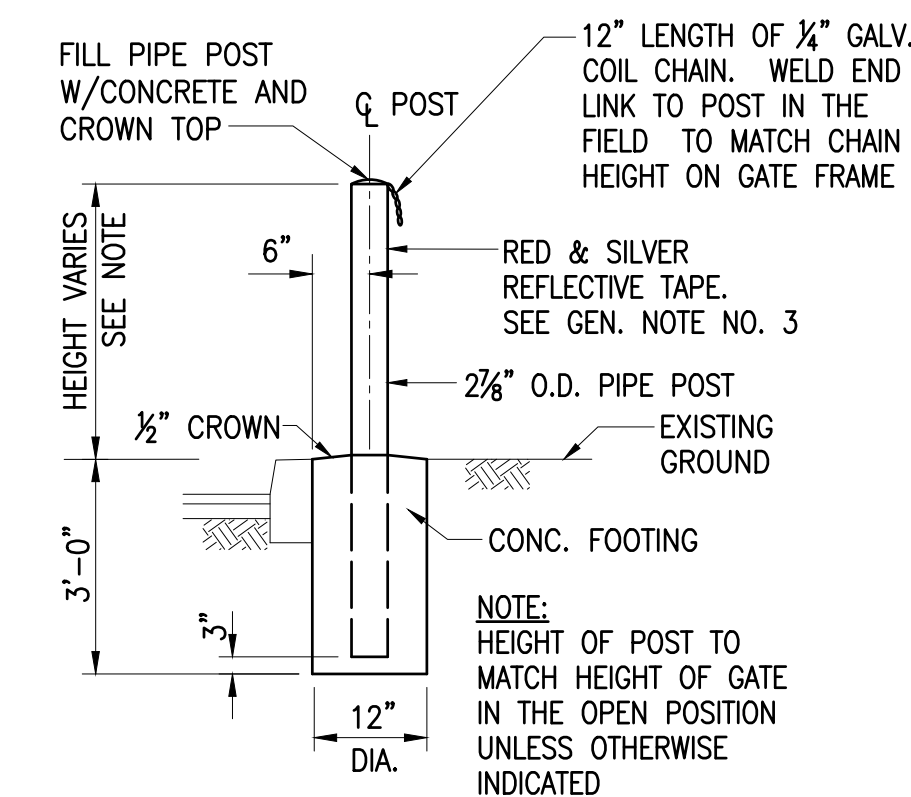
NOTES

1. ALL PIPES SHALL BE TUFF 40 OR EQUAL, ASTM A120, GALVANIZED STEEL.
2. ADJUST CLEAR DIMENSIONS TO MAKE BOTH FRAMES LEVEL WITH EACH OTHER AND TO ALLOW GROUND CLEARANCE FOR GATE SWING.
3. ALL SHOP AND FIELD WELDS SHALL BE COATED WITH GALVALOY OR EQUAL.
4. GATE SHALL HAVE THE CAPACITY TO OPEN 180 DEGREES.
5. WRAP REFLECTIVE TAPE AROUND ENTIRE NEW PIPE FRAME GATES AND POSTS (EXCEPT AT WELDED CONNECTIONS). ALTERNATE 12" BANDS OF RED AND SILVER TAPE.

PIPE GATE DETAIL **D**
NOT TO SCALE DC-2



DETAIL
NOT TO SCALE



GATE STOP POST DETAIL
NOT TO SCALE

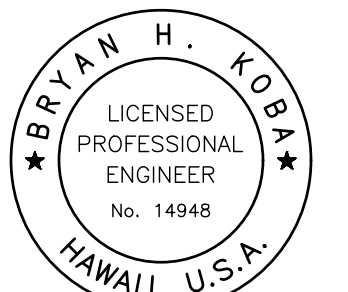
GENERAL NOTES

1. CONCRETE SHALL BE CLASS "A".
2. ALL WELDS SHALL BE GROUND SMOOTH.
3. WRAP REFLECTIVE TAPE AROUND ENTIRE NEW PIPE FRAME GATES AND POSTS (EXCEPT AT WELDED CONNECTIONS). ALTERNATE 12" BANDS OF RED AND SILVER TAPE. REFLECTIVE TAPE SHALL BE SCOTCHLITE BRAND REFLECTIVE SHEETING HIGH INTENSITY GRADE HIGH TACK PRESSURE SENSITIVE (RED-MODEL NO. 5872, SILVER-MODEL NO. 5870) OR APPROVED EQUAL.
4. ADJUST DIMENSION TO MAKE GATE FRAME LEVEL TO EACH OTHER.
5. PROVIDE 2 PADLOCKS FOR EACH PAIR OF DOUBLE SWING GATES, PADLOCKS SHALL BE KEYED ALIKE. LOCKS SHALL BE MASTERED-KEYED TO THE SCHOOL'S SYSTEM UNLESS OTHERWISE INDICATED.
6. HAND EXCAVATE FOR POST FOOTINGS NEAR EXISTING UNDERGROUND UTILITIES

Austin Tsutsumi
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Bryan H. Kobayashi APRIL 30, 2020
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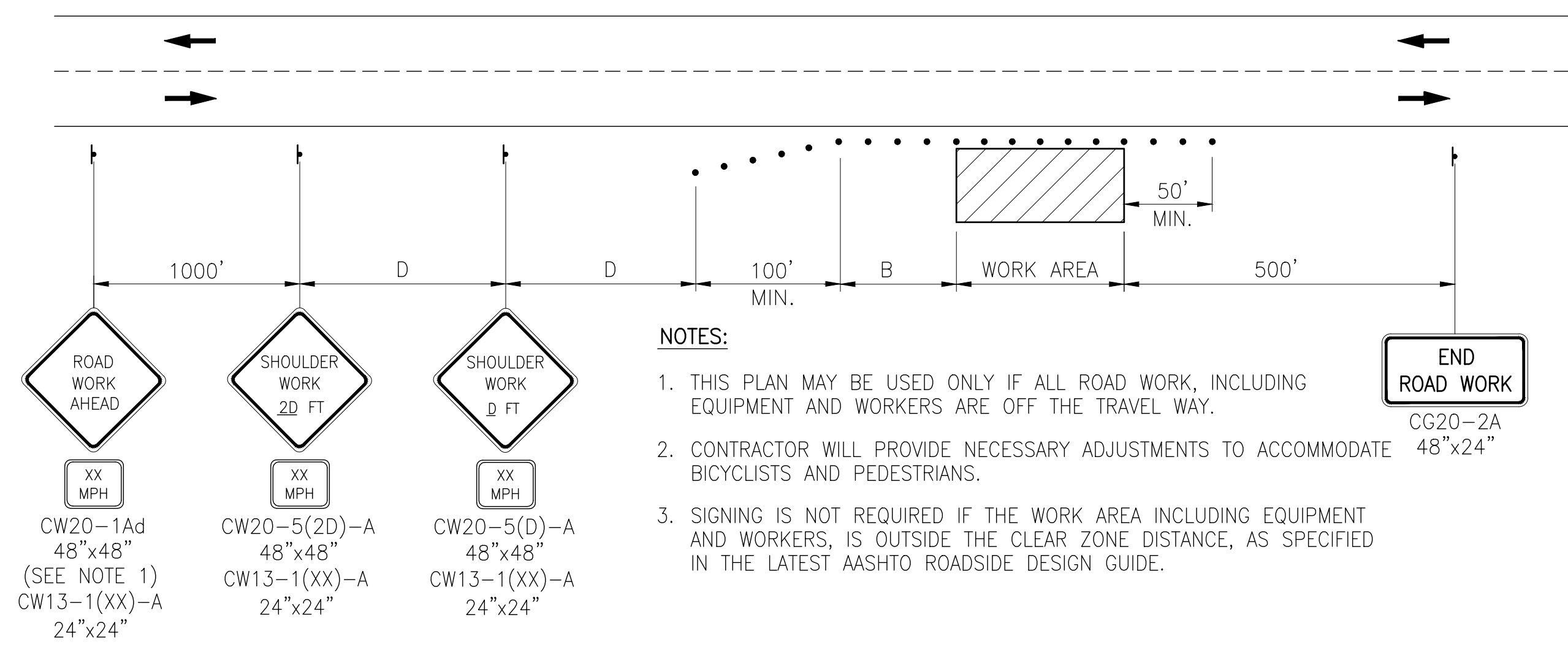
REVISION	DATE	BRIEF	BY

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

MISCELLANEOUS
CIVIL DETAILS - 2

DWG. NO.
DC-2
SHEET 122 OF 201

FILE	POCKET	FOLDER	NO.



- NOTES:**
1. THIS PLAN MAY BE USED ONLY IF ALL ROAD WORK, INCLUDING EQUIPMENT AND WORKERS ARE OFF THE TRAVEL WAY.
 2. CONTRACTOR WILL PROVIDE NECESSARY ADJUSTMENTS TO ACCOMMODATE BICYCLISTS AND PEDESTRIANS.
 3. SIGNING IS NOT REQUIRED IF THE WORK AREA INCLUDING EQUIPMENT AND WORKERS, IS OUTSIDE THE CLEAR ZONE DISTANCE, AS SPECIFIED IN THE LATEST AASHTO ROADSIDE DESIGN GUIDE.

CW20-1Ad
48"x48"
(SEE NOTE 1)
CW13-1(XX)-A
24"x24"

CW20-5(2D)-A
48"x48"
CW13-1(XX)-A
24"x24"

CW20-5(D)-A
48"x48"
CW13-1(XX)-A
24"x24"

WORK ON SHOULDER OR ROADSIDE

TRAFFIC CONTROL PLAN
NOT TO SCALE

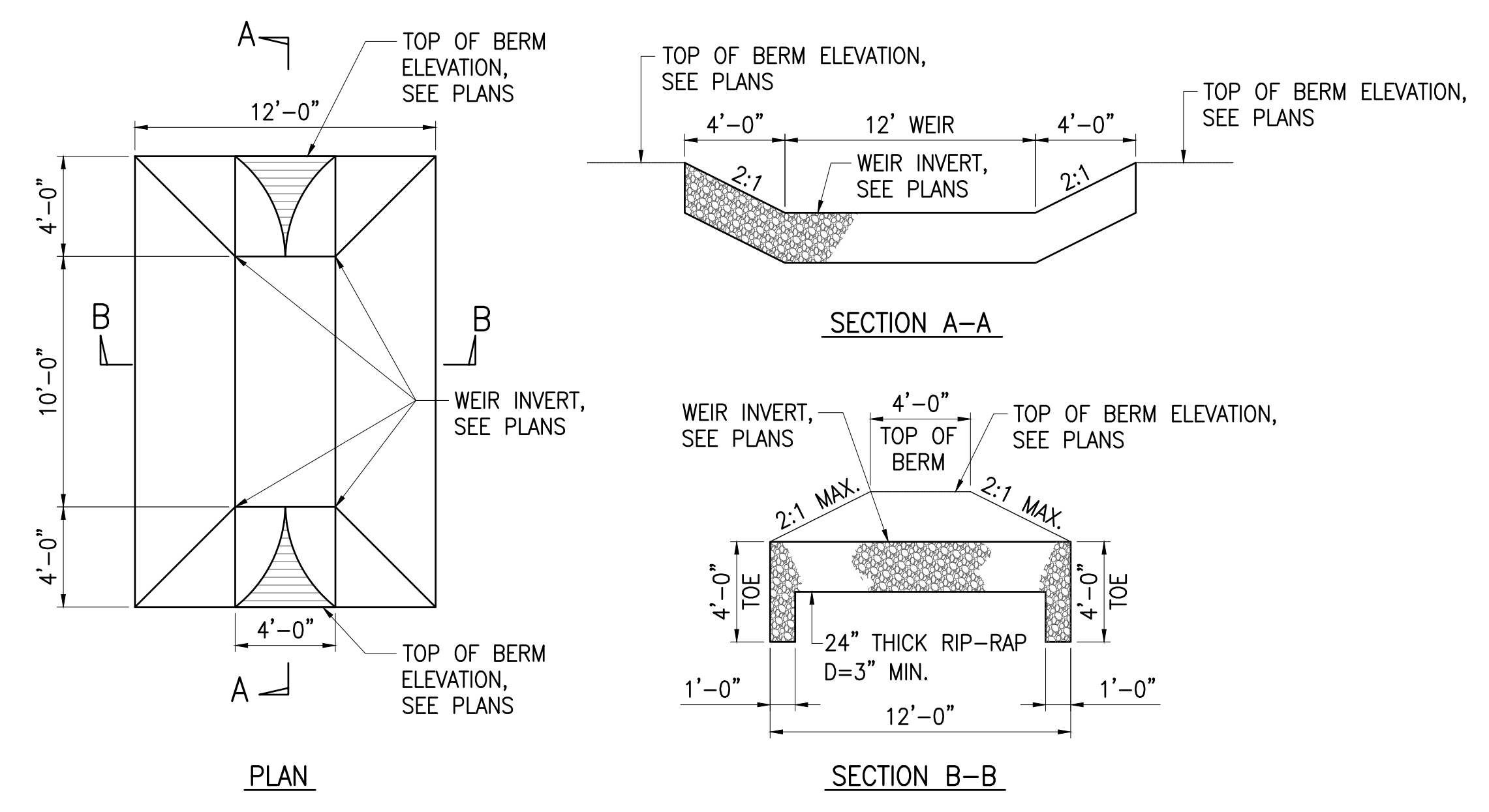
"TABLE 1 FOR TRAFFIC CONTROL PLAN"

POSTED SPEED LIMIT (MPH)	SIGN SPACING (D) (FEET)	TAPER LENGTH (T) (FEET)		LONGITUDINAL BUFFER SPACE (B) (FEET)	SPACING OF CONES OR DELINEATORS (FEET) ②		
		W = 12' OR LESS ②	W = GREATER THAN 12' ①		TAPER	TANGENT	WORK AREA--
20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10

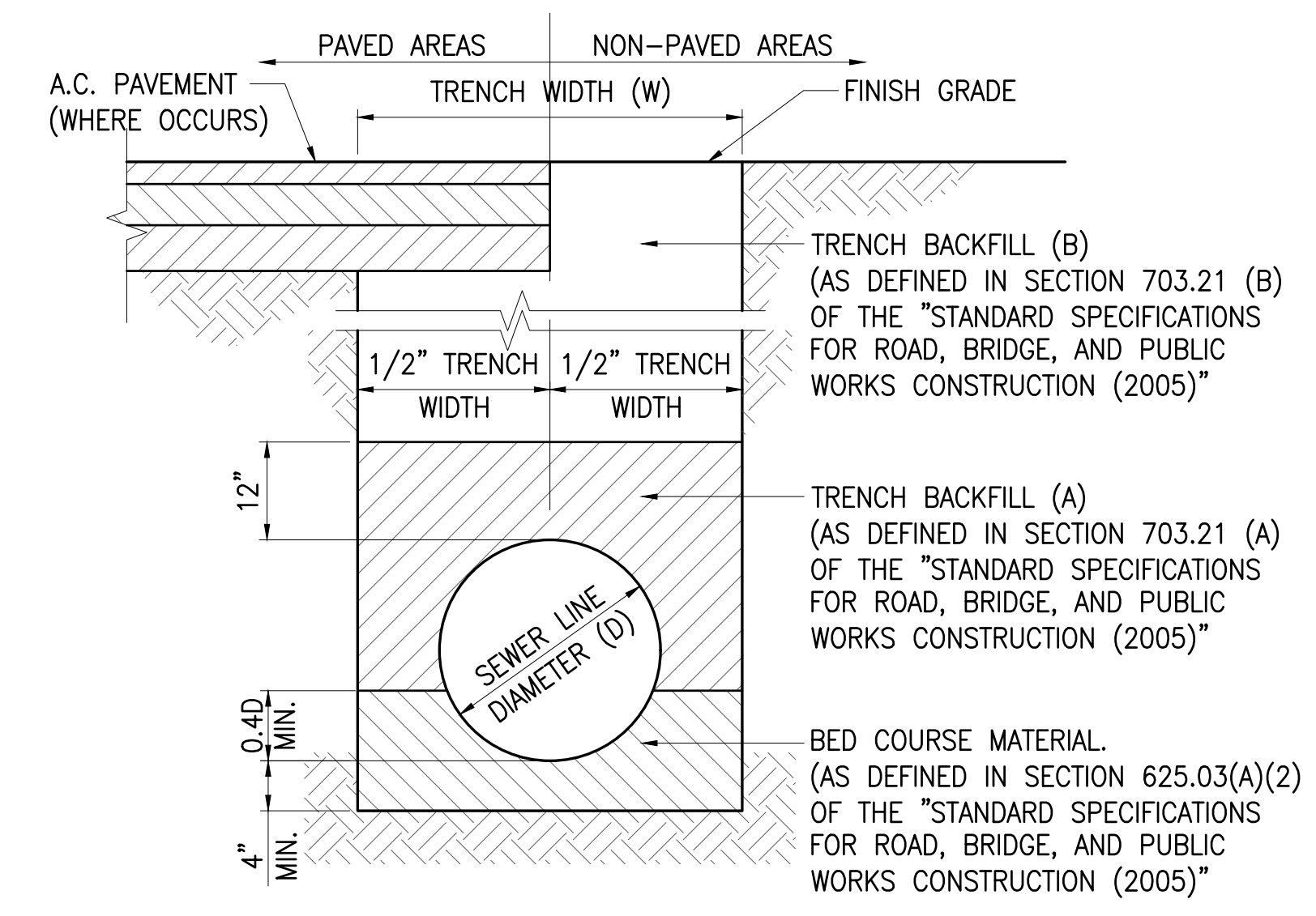
- NOTES**
- ① USE ADVISORY SPEEDS WHEN POSTED
 - ② W= WIDTH OF LANE OR OFFSET
 - ③ NOT APPLICABLE FOR "TWO-LANE HIGHWAYS"

GENERAL TRAFFIC CONTROL NOTES:

1. THE PERMITTEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT ACTUAL FIELD CONDITIONS.
2. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
3. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREAS SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
4. REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
5. FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT TIMES.
6. WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITTEE SHALL INSTALL A FLASHING ARROW SIGNAL AS SHOWN ON THE TRAFFIC CONTROL PLANS.
7. SIGNS SPACINGS (D), TAPER LENGTHS (T) AND SPACINGS OF CONES OR DELINEATORS SHALL BE AS SHOWN IN TABLE 1, UNLESS OTHERWISE NOTED ON THE TRAFFIC CONTROL PLANS.
8. TRAFFIC LANES SHALL BE A MINIMUM OF 10' WIDE.
9. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
10. THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (i.e., WHEN SIGNS HAVE MESSAGES ON BOTH FACES).
11. AT THE END OF EACH DAY'S WORK, OR AS SOON AS THE WORK IS COMPLETED, THE PERMITTEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION. REPLACE EXISTING FADED OR OBLITERATED PAVEMENT MARKINGS THAT ARE NECESSARY FOR SAFE TRAFFIC FLOW IN THE CONSTRUCTION AREA WITH TEMPORARY OR PERMANENT MARKINGS BEFORE OPENING THE ROADWAY TO PUBLIC TRAFFIC EACH DAY.
12. REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGN UPON COMPLETION OF EACH PHASE OF WORK.
13. THE CONTRACTOR SHALL CONTROL TRAFFIC IN AND OUT OF DRIVEWAYS.
14. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH PART VI, STANDARDS AND GUIDES FOR TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS, OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD) 2009 EDITION.



OVERFLOW WEIR DETAIL A
NOT TO SCALE DC-3



TYPICAL TRENCH SECTION PVC SEWERLINE B
NOT TO SCALE DC-3

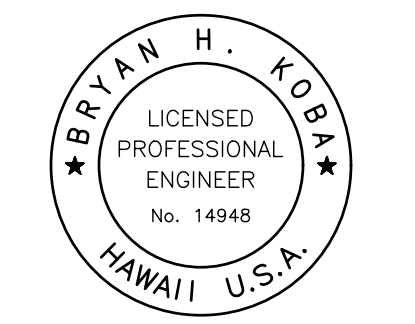
- NOTES:**
1. TRENCH BACKFILL SHALL CONFORM TO SECTION 703, "AGGREGATES" OF THE "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION (2005)" AND BED COURSE MATERIAL.
 2. INSTALLATION OF SEWERLINES SHALL CONFORM TO SECTION 625, "SEWER SYSTEM" OF THE "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION (2005)".
 3. TRENCH WIDTHS SHALL CONFORM TO TABLE 625-1 OF THE "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION (2005)".
 4. LOAD IMPOSED BY CONSTRUCTION VEHICLES WITH AXLE LOADS IN EXCESS OF THE AASHTO HS-20-44 VEHICLE (32,000 LBS/AXE) SHOULD BE MINIMIZED BY DESIGNATED CONSTRUCTION VEHICLE CROSSING. ADDITIONAL FILL SHOULD BE PLACED OVER THE SEWERLINES AT THE DESIGNATED CONSTRUCTION VEHICLE CROSSING IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, OR STRUTTING TO SUPPORT THE PIPE SHOULD BE PLACED IN ACCORDANCE WITH THE CURRENT "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION (2005)". ALL SEWERLINES DAMAGED BY CONSTRUCTION VEHICLE LOADING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
 5. PVC PIPE AND FITTINGS SHALL CONFORM TO SDR 26.

JOB NO. 0-11-056.004
FN: F:\CONG. VEC\18-524 (16-576) PULEHUNUI NORTH SEWER TREATMENT FACILITY) BRYAN.DWG\DC-3 WASTEWATER TREATMENT FACILITY) BRYAN.DWG\DC-3 MISCELLANEOUS CIVIL DETAILS - 3.DWG

Austin Tsutsumi
A S S C I A T E S , I N C .
CIVIL ENGINEERS I SURVEYORS
HONOLULU I WAILUKU I HILO, HAWAII
501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817
PHONE: 808-533-3646
FAX: 808-526-1267

STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS
**PULEHUNUI
REGIONAL
INFRASTRUCTURE**

AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Kobayashi APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

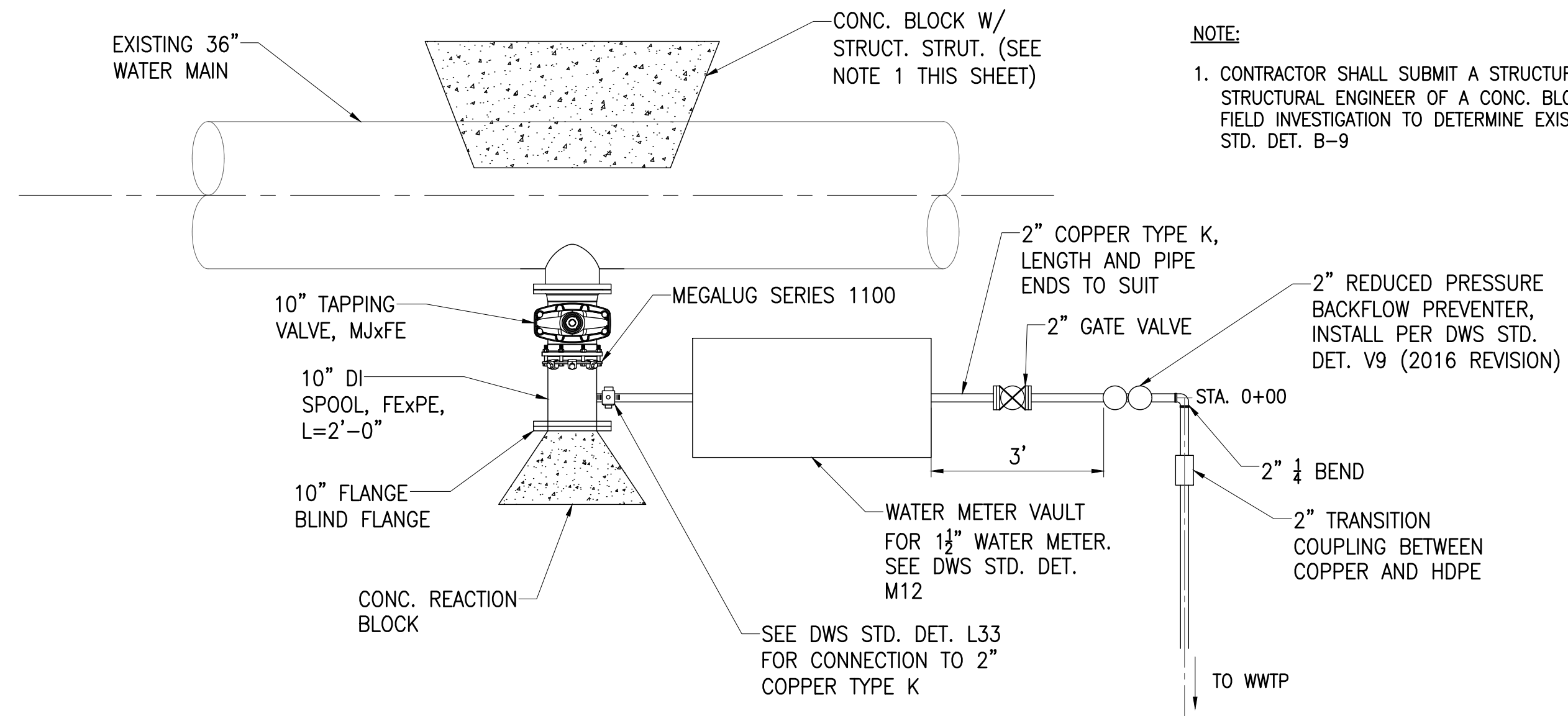
0	1	2	
LINE IS 2 INCHES AT FULL SIZE (If NOT 2-inches : Scale Accordingly)			
REVISION	DATE	BRIEF	BY

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

MISCELLANEOUS
CIVIL DETAILS - 3
DWG. NO.
DC-3
SHEET 123 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\CONG. VEC\18-524 (16-576 PULEHUNUI NORTH SEWER PHASE 6.3 WASTEWATER TREATMENT FACILITY) BRYAN\DWG\DC-4 MISCELLANEOUS CIVIL DETAILS - 4.DWG

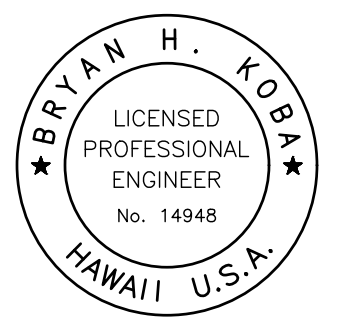


CONNECTION TO EW36 DETAIL **A**
 SCALE: NOT TO SCALE DC-4

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
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Bryan H. Kobayashi APRIL 30, 2020
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

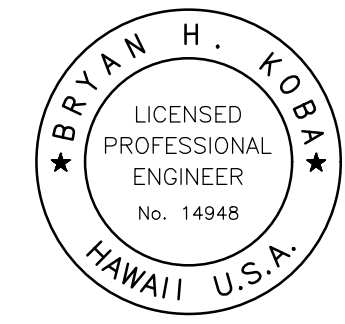
REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

MISCELLANEOUS
 CIVIL DETAILS - 4

DWG. NO.
DC-4
 SHEET 124 OF 201

FILE	POCKET	FOLDER	NO.



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Bryan H. Koba APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

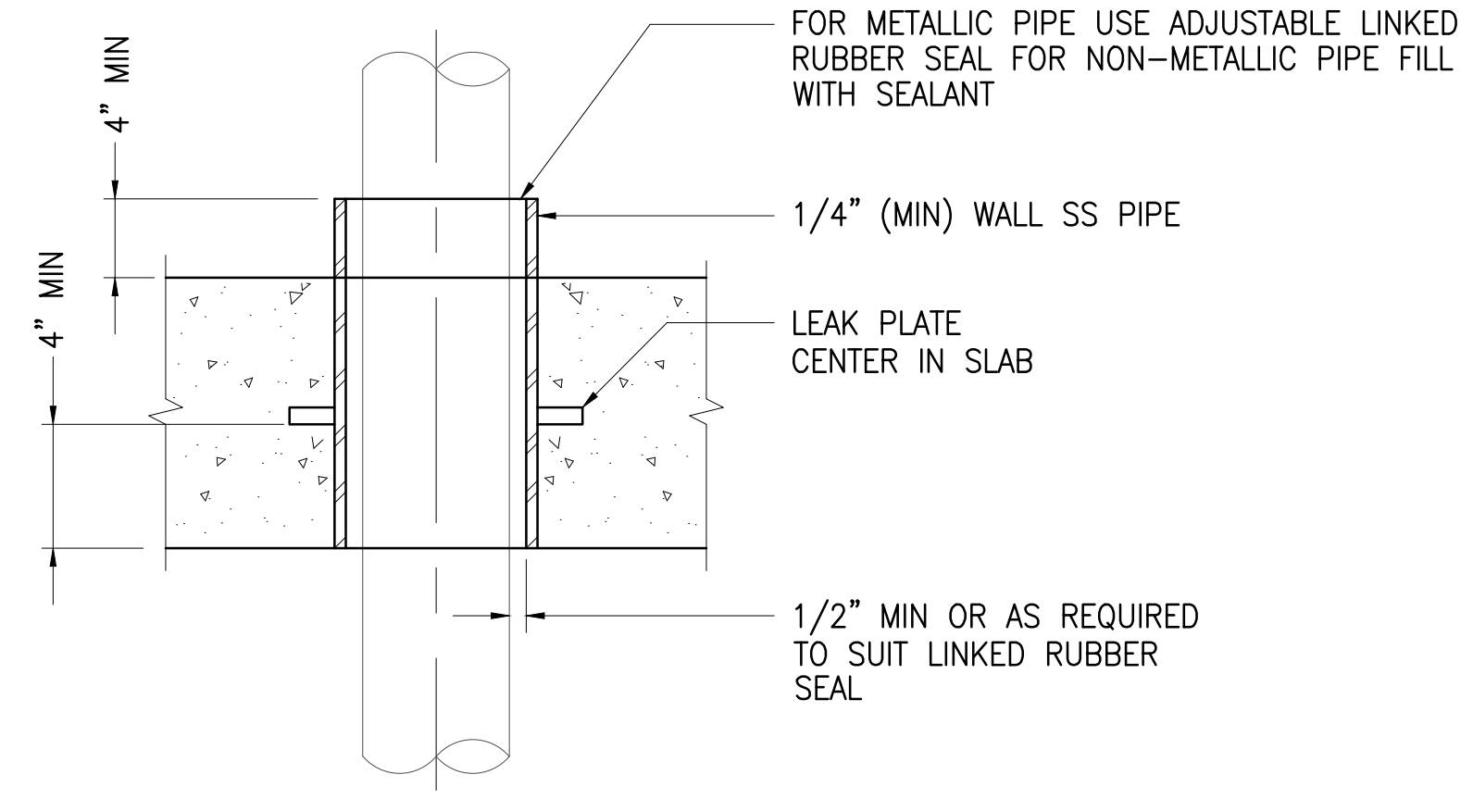
REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
 Checked By:

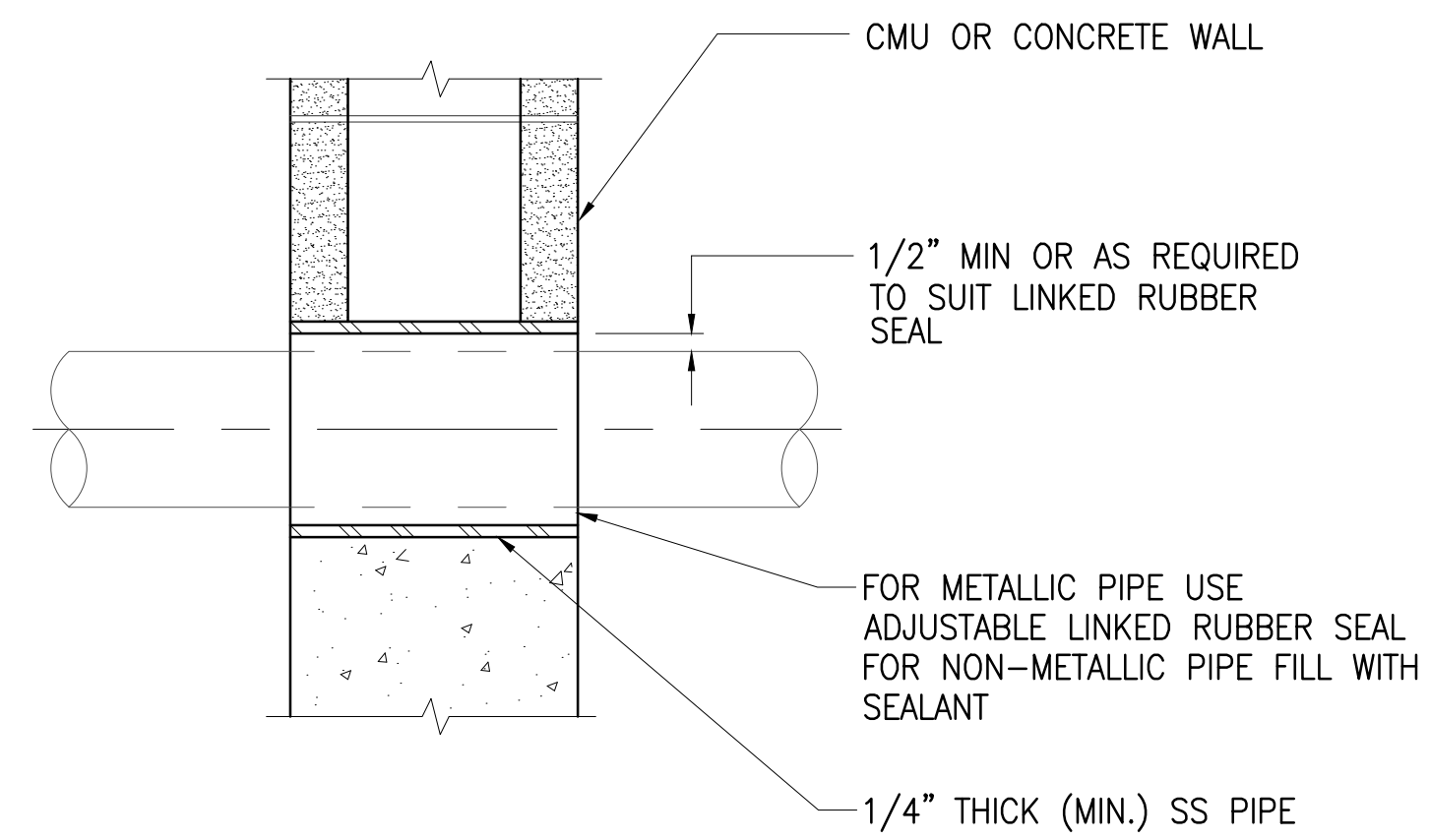
**MISCELLANEOUS
 MECHANICAL
 DETAILS - 2**

DWG. NO.
DM-2
 SHEET 126 OF 201

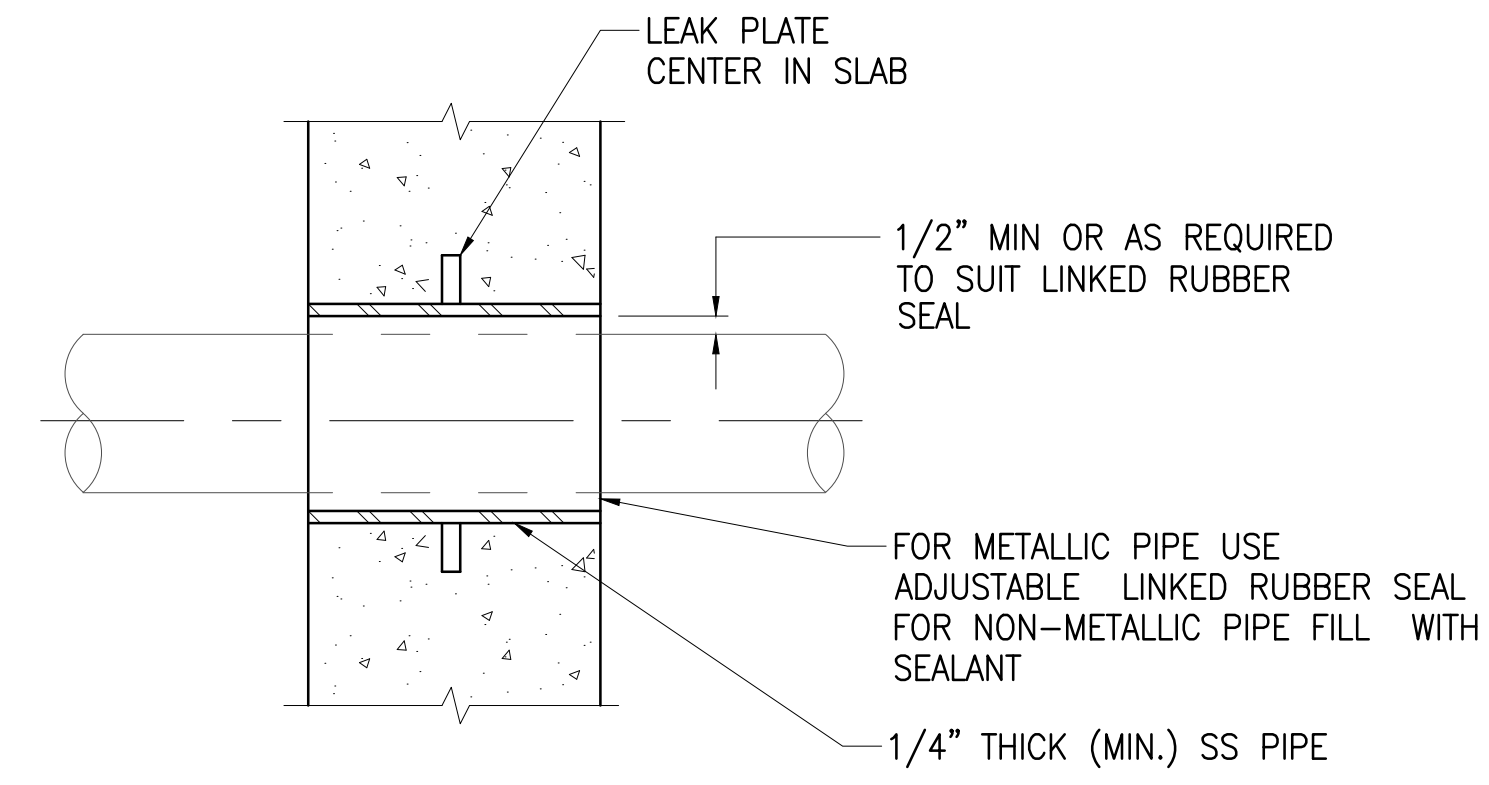
FILE	POCKET	FOLDER	NO.



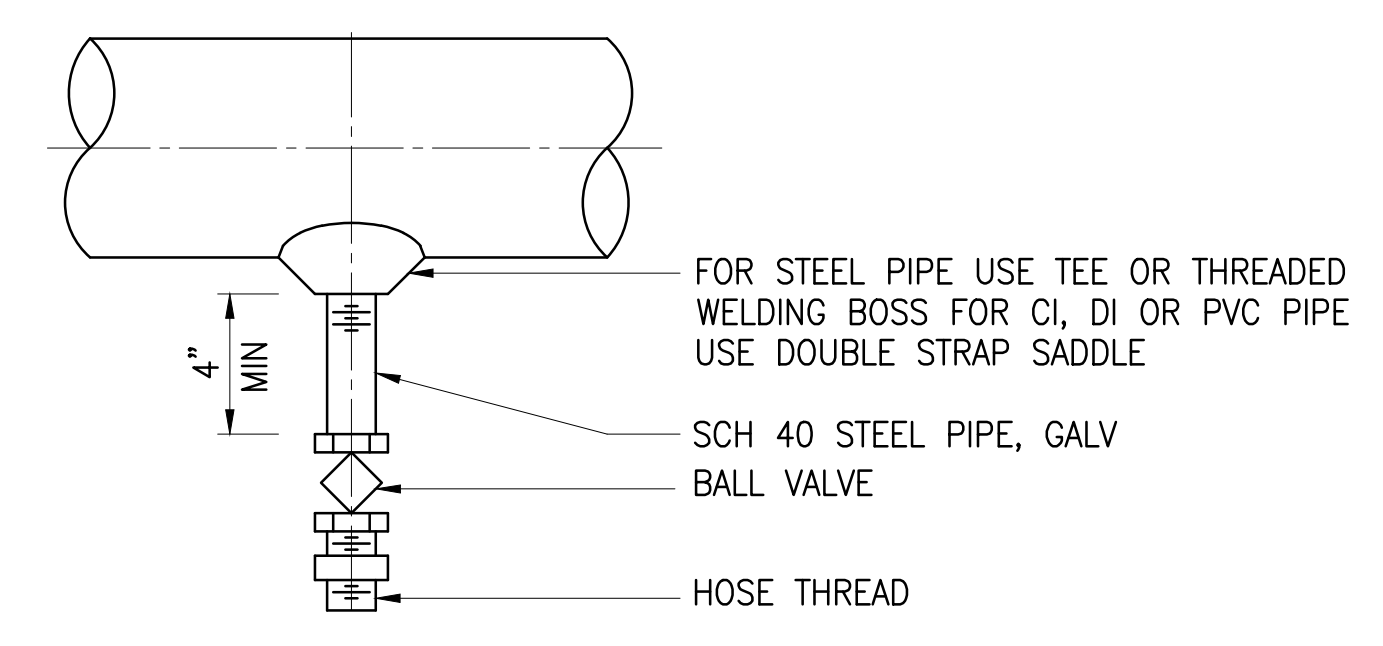
FLOOR SLEEVE C
 NOT TO SCALE DM-2



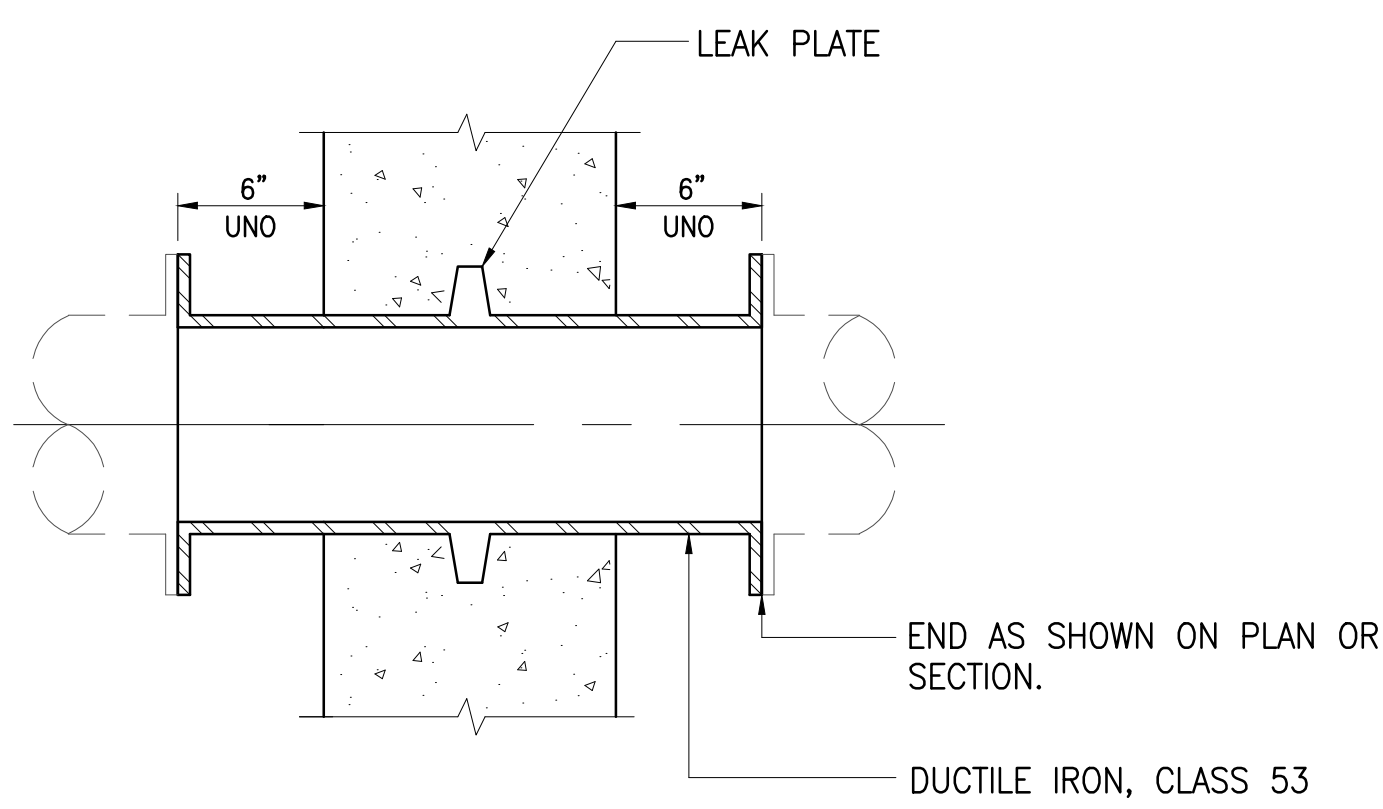
WALL SLEEVE B
 NOT TO SCALE DM-2



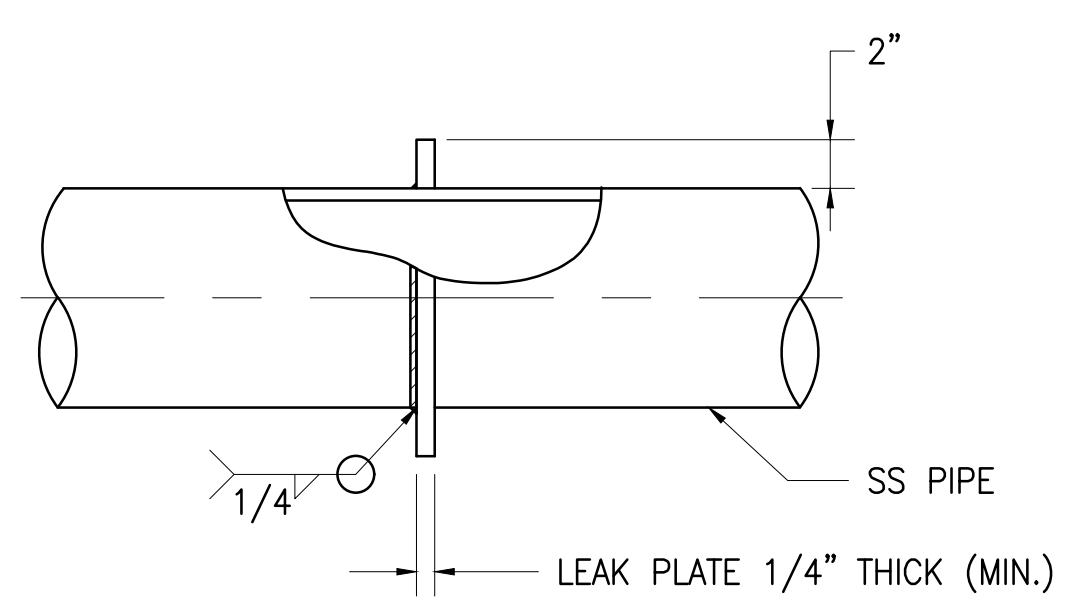
WALL SLEEVE A
 NOT TO SCALE DM-2



PIPE DRAIN F
 NOT TO SCALE DM-2

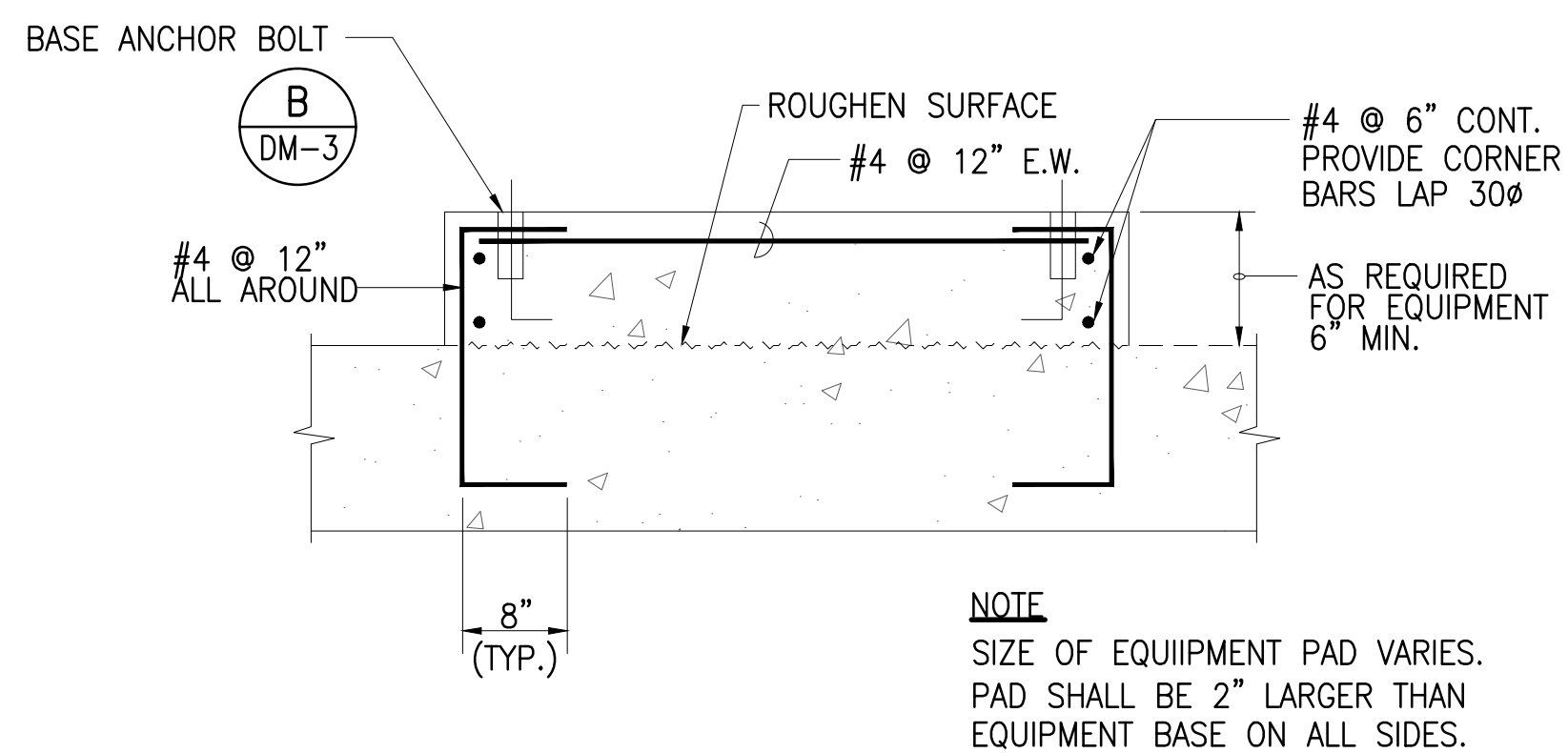


WALL PIPE E
 NOT TO SCALE DM-2

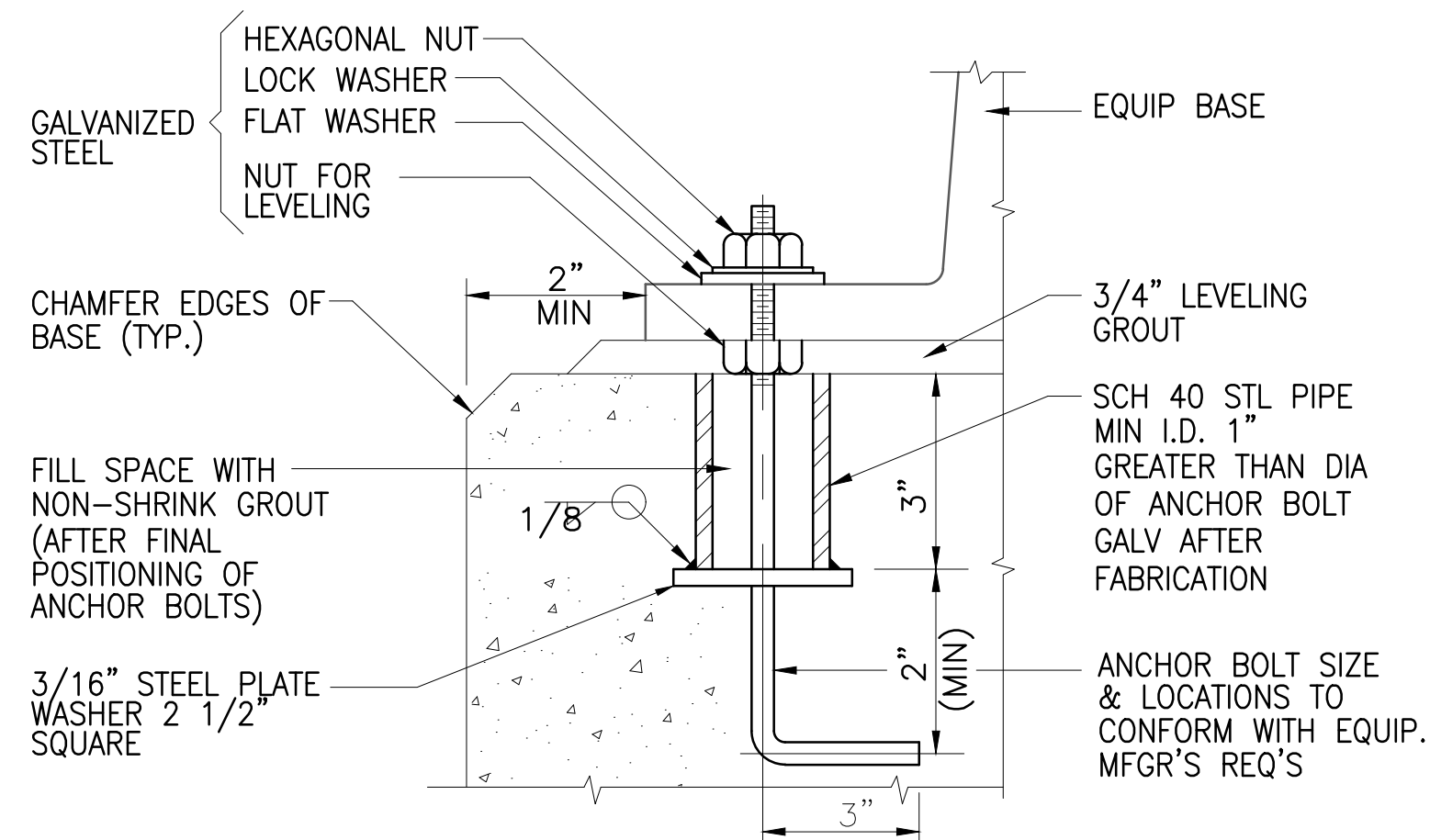


LEAK PLATE D
 NOT TO SCALE DM-2

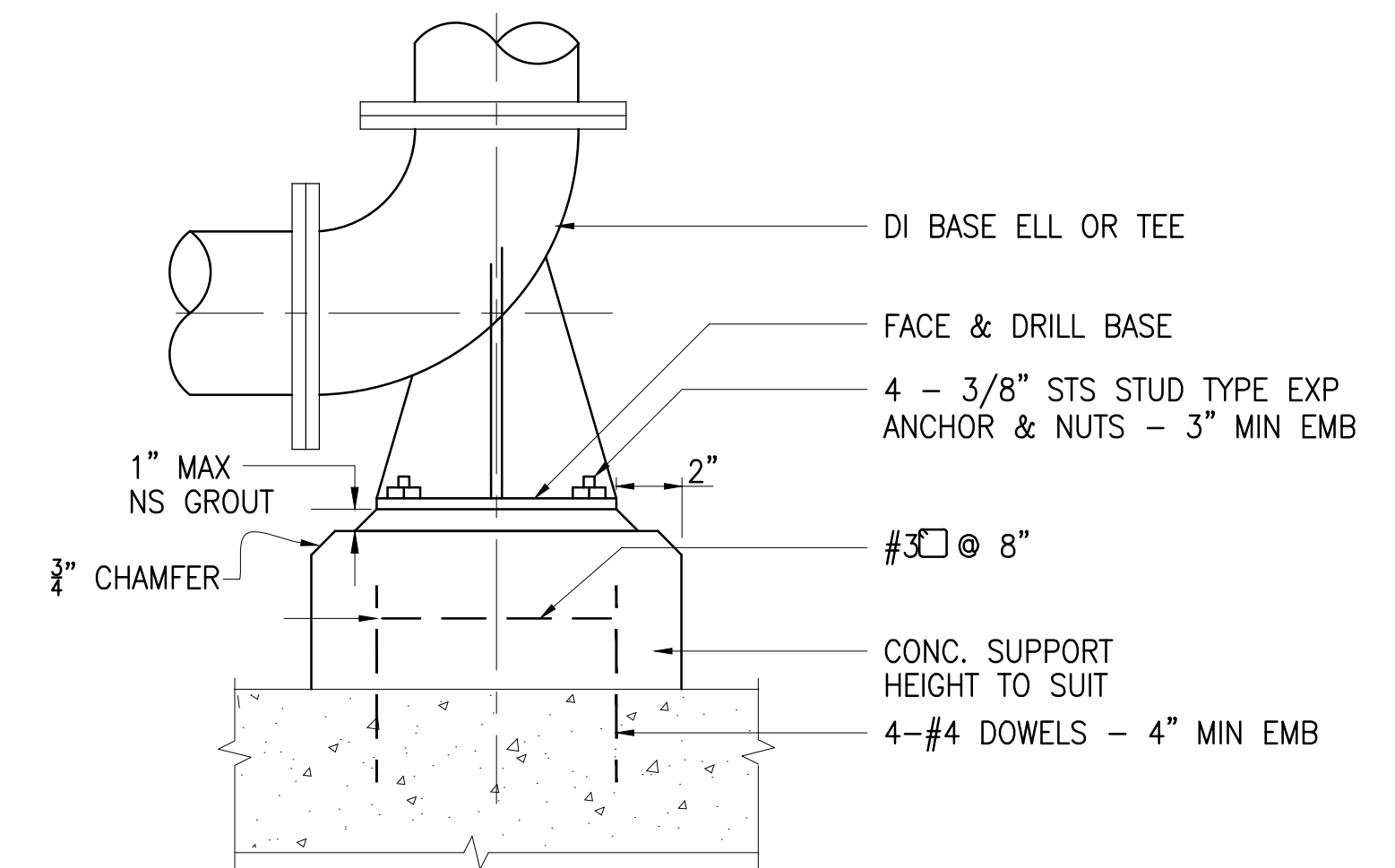
JOB NO. 0-11-066.004
 FN: C:\PROJECT FOLDER\16-576 DPHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\DM-2 MISCELLANEOUS MECHANICAL DETAILS - 2.DWG



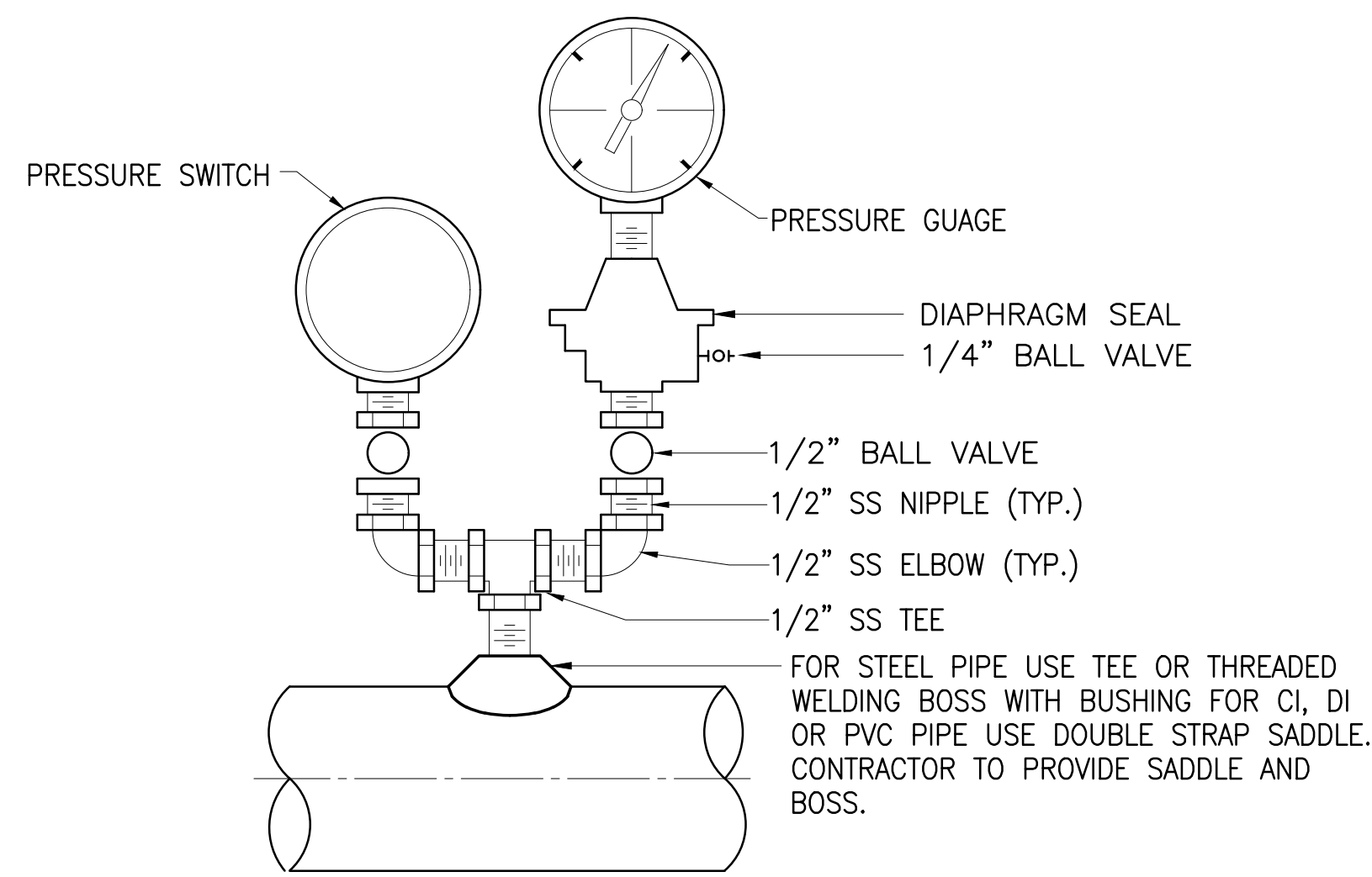
EQUIPMENT PAD A
NOT TO SCALE
DM-3



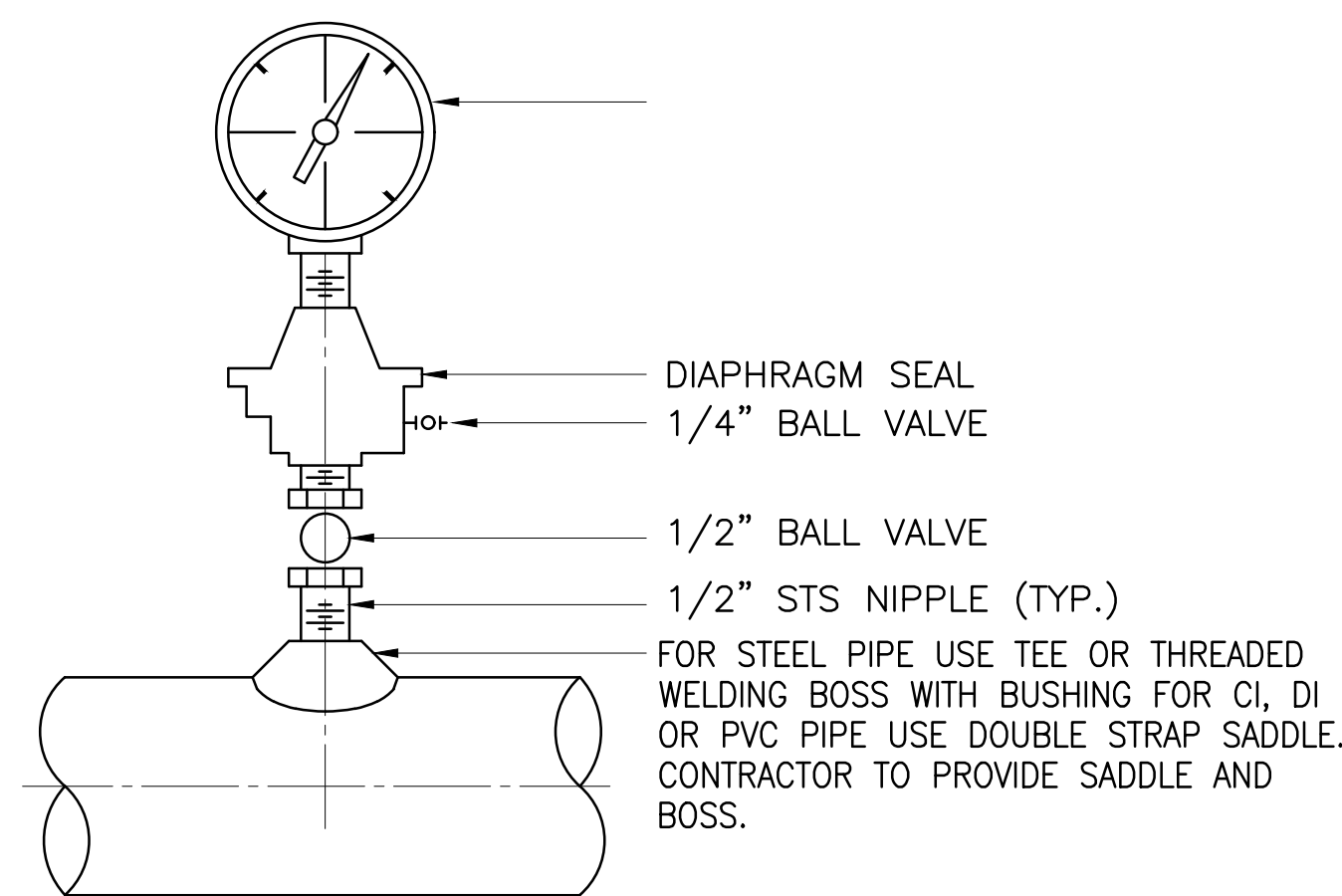
BASE ANCHOR BOLT B
NOT TO SCALE
DM-3



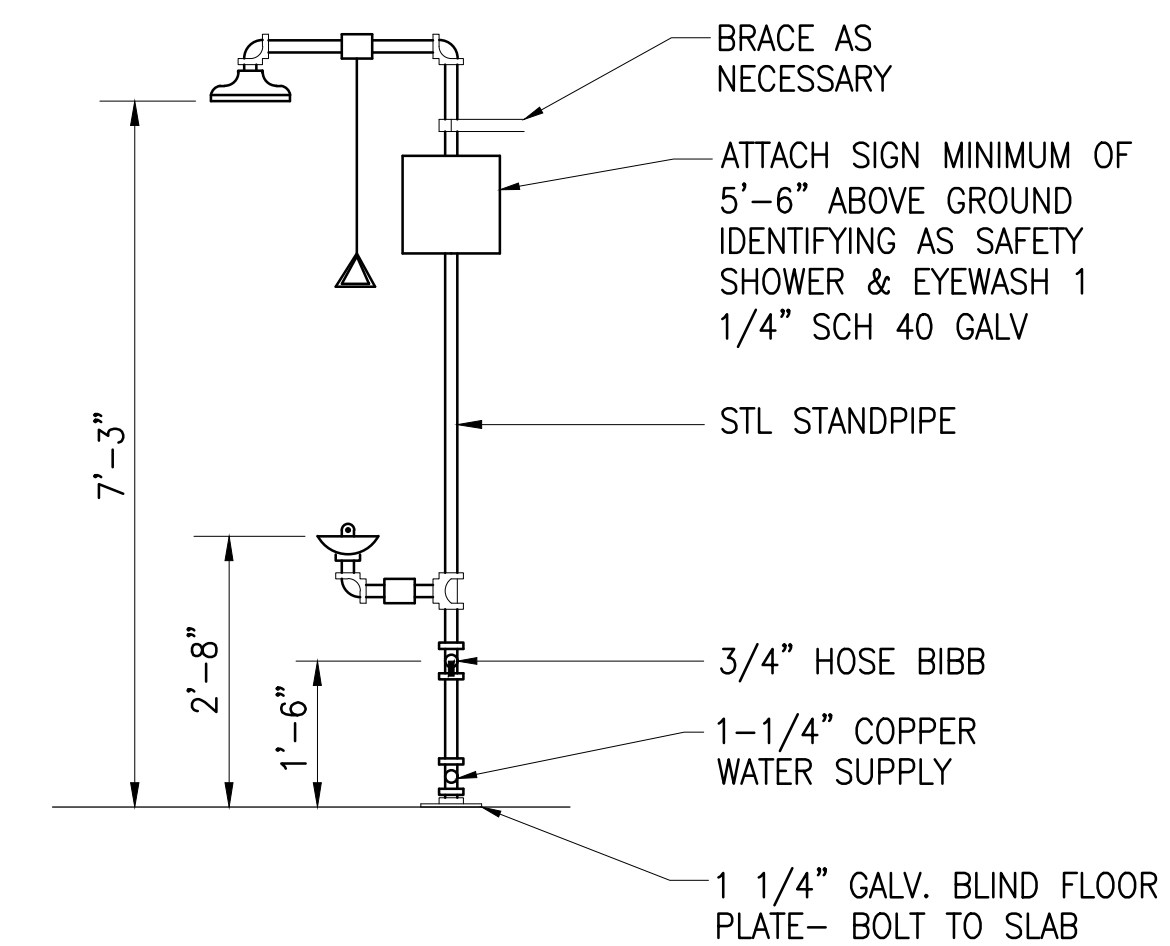
BASE BEND SUPPORT C
NOT TO SCALE
DM-3



PRESSURE GAUGE AND SWITCH D
NOT TO SCALE
DM-3



PRESSURE GAUGE E
NOT TO SCALE
DM-3



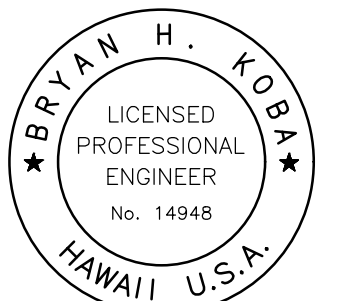
EMERGENCY SHOWER AND EYEWASH X
NOT TO SCALE
C-102

JOB NO. 0-11-066.004
FN: C:\PROJECT FOLDER\16-576 DPHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\DM-3 MISCELLANEOUS MECHANICAL DETAILS - 3.DWG

Austin Tsutsumi & Associates, Inc.
CIVIL ENGINEERS & SURVEYORS
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STATE OF HAWAII
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**PŪLEHUNUI
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AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Koba APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

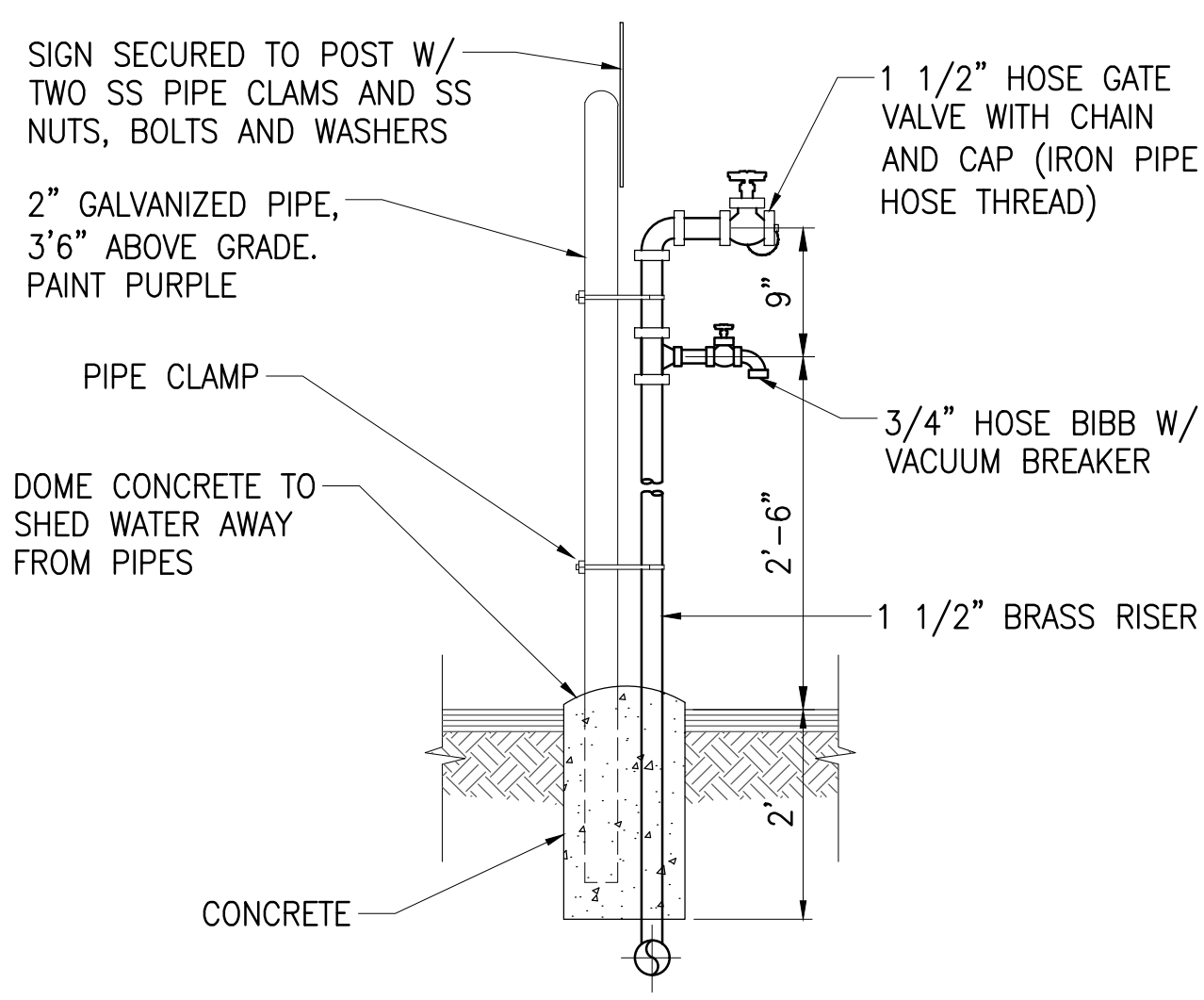
REVISION	DATE	BRIEF	BY

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

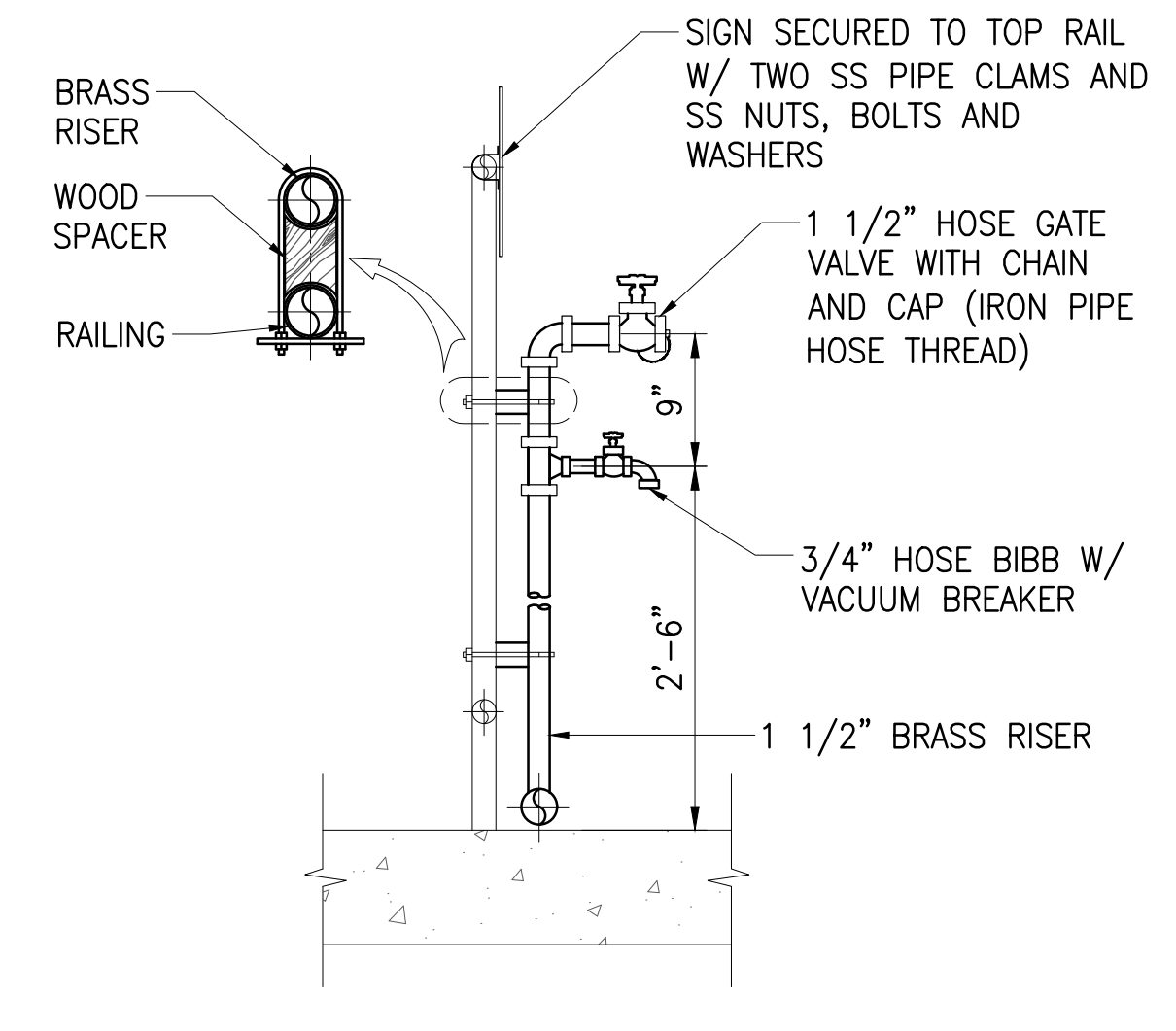
**MISCELLANEOUS
MECHANICAL
DETAILS - 3**

DWG. NO.
DM-3
SHEET 127 OF 201

FILE	POCKET	FOLDER	NO.



FIELD MOUNTED

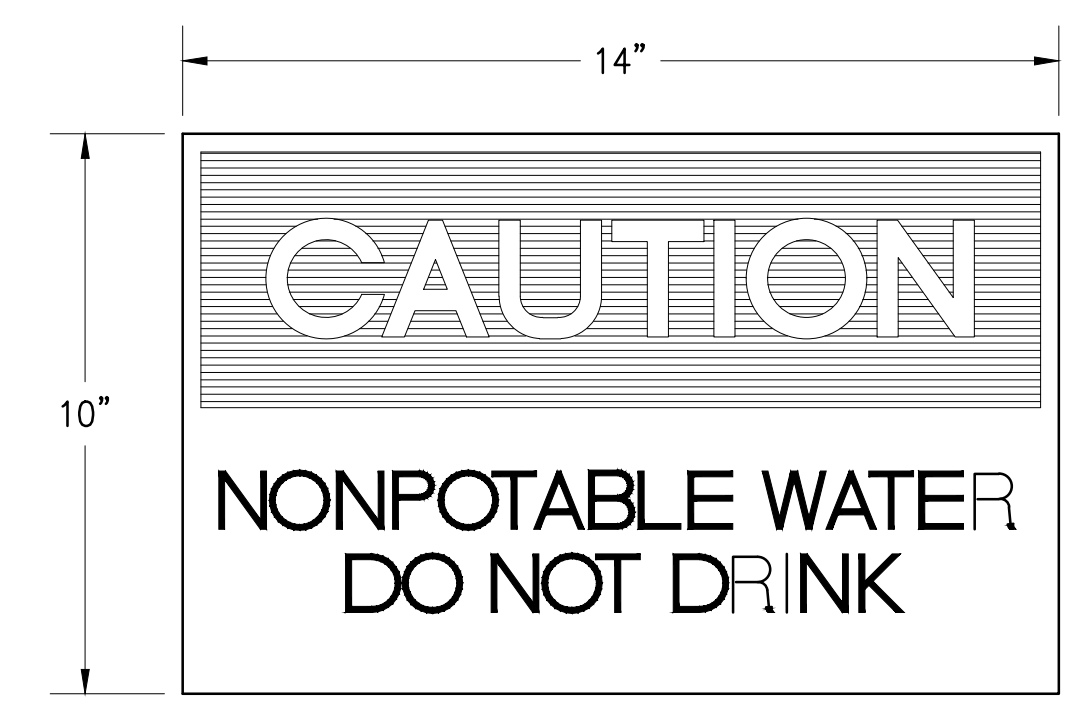


RAILING MOUNTED

NOTES:

1. VALVES SHALL BE RISING OR NON- RISING STEM DESIGN.
2. 3/4" HOSE BIBB AND 1 1/2" GATE VALVE SHALL BE 90° APART
3. SIGN SHALL BE PLACED AT ALL NON-POTABLE WASHDOWN STATIONS AS SHOWN IN DETAIL "B" THIS SHEET.
4. A HOSE RACK SHALL BE SECURED NEAR WASHDOWN STATIONS WHERE INDICATED AND AS SHOWN IN DETAIL "C" THIS SHEET.
5. ALL PIPING AND FITTING SHALL BE PAINTED PURPLE TO IDENTIFY AS RECYCLED WATER. DO NOT PAINT VALVES AND HOSE BIBBS.

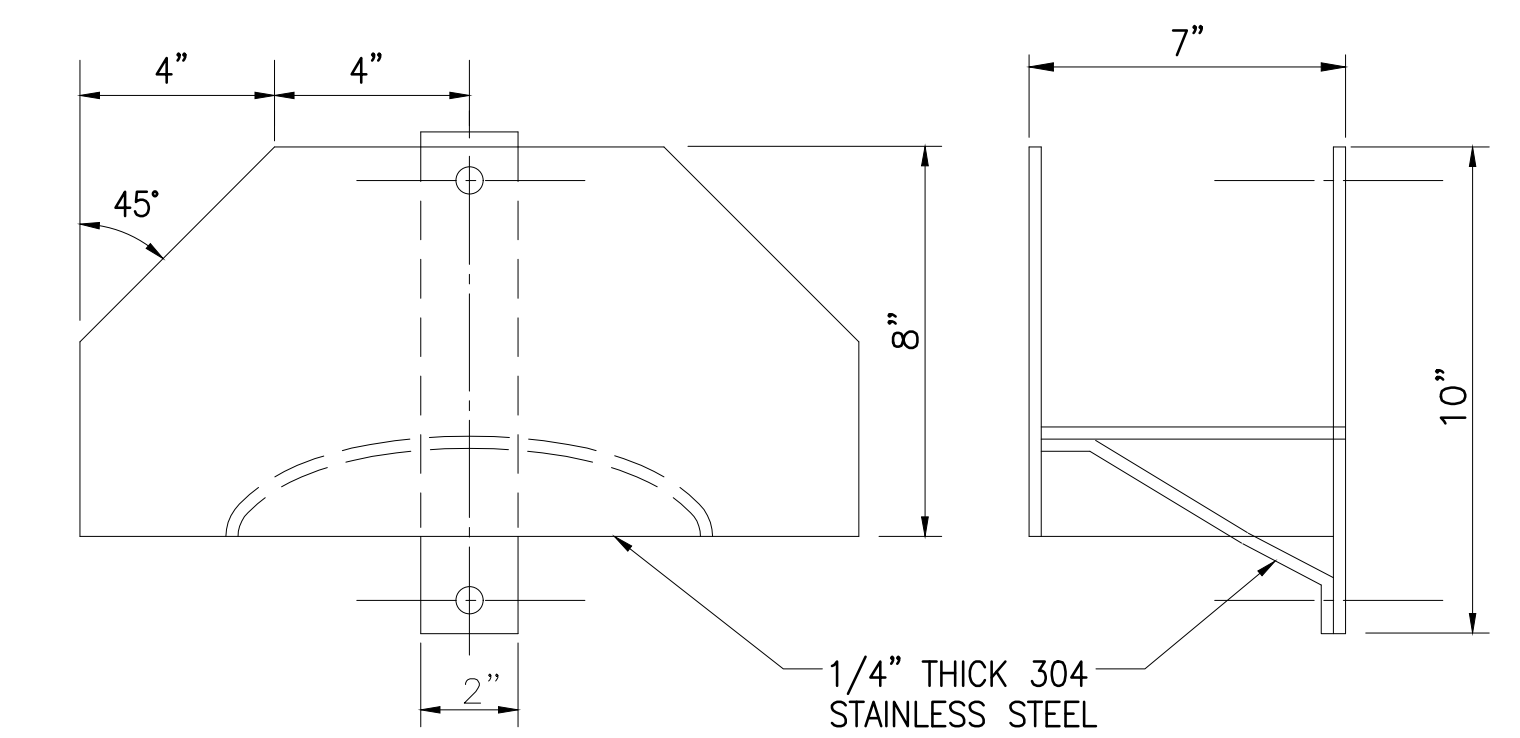
1 1/2" WASHDOWN STANDPIPE DETAIL (A)
NOT TO SCALE (DM-4)



NOTES:

1. COLORS AND LETTER SIZES TO BE PER OSHA STANDARDS FOR CAUTION SIGNS.
2. PROVIDE THIS SIGN AT ALL HOSE BIBB LOCATIONS WHERE WATER IS NONPOTABLE.
3. SIGNS SHALL BE SHEET ALUMINUM ALLOY 6061T6, 0.063 THICK
4. SECURE SIGNS TO WALL USING 4-SS STAINLESS STEEL SCREWS AND ANCHORS

HOSE BIBB SIGN (B)
NOT TO SCALE (DM-4)



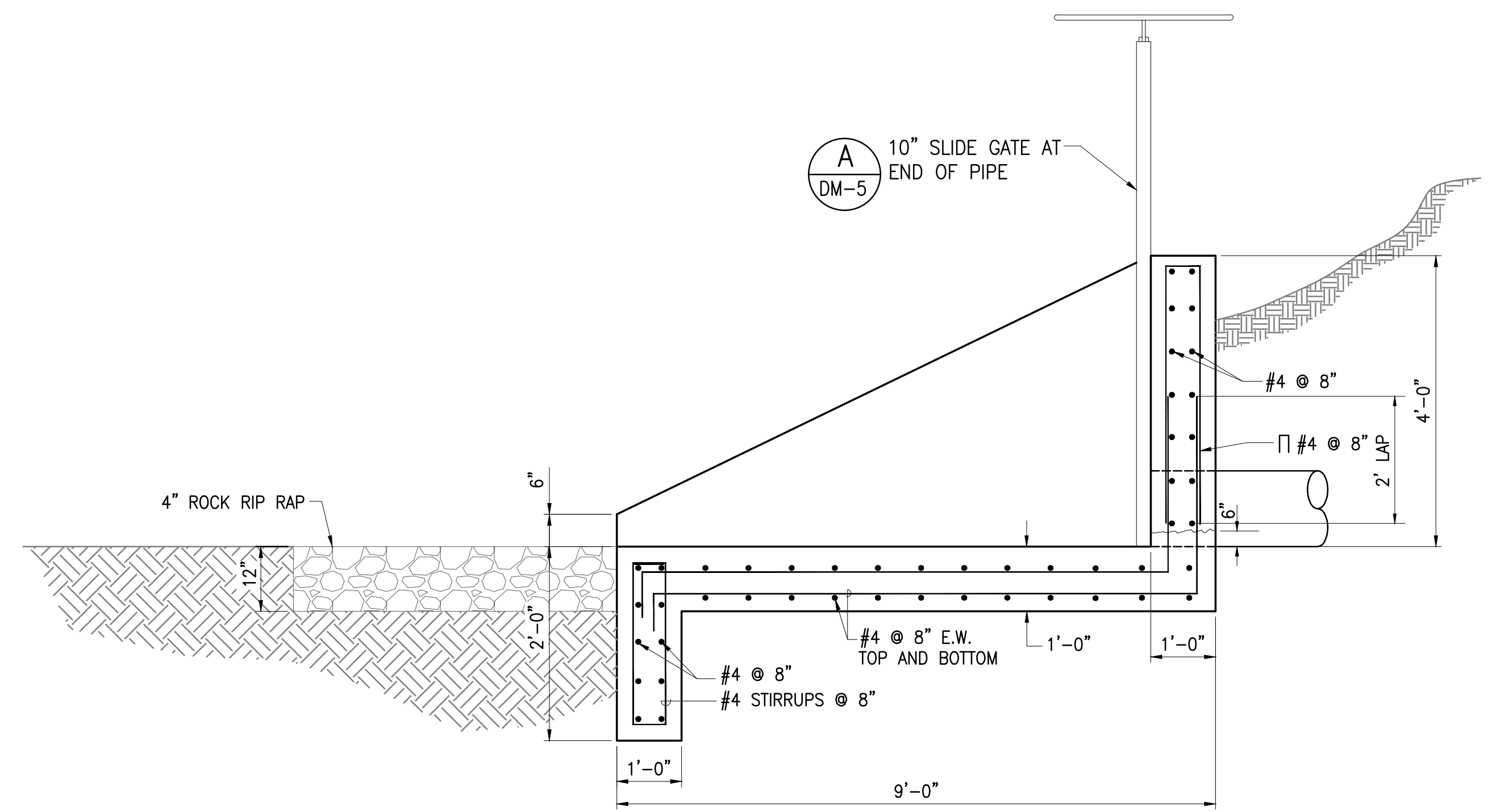
FRONT VIEW

SIDE VIEW

NOTE:

EACH HOSE RACK WILL BE SUPPLIED WITH 50' LONG 5/8" HEAVY DUTY HOSE.

HOSE RACK (C)
NOT TO SCALE (DM-4)



SAT HEADWALL DETAIL (D)
NOT TO SCALE (DM-4)

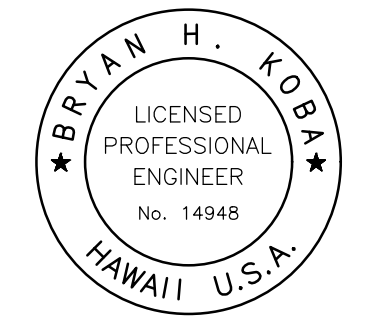
JOB NO. 0-11-066.004
FN: C:\PROJECT FOLDER\16-576 DPHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\DM-4 MISCELLANEOUS MECHANICAL DETAILS - 4.DWG

Austin Tsutsumi & Associates, Inc.
CIVIL ENGINEERS & SURVEYORS
HONOLULU | WAILUKU | HILO, HAWAII
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STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

PŪLEHUNUI REGIONAL INFRASTRUCTURE

AUSTIN, TSUTSUMI & ASSOC., INC.
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Bryan H. Koba APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(IF NOT 2-INCHES : Scale Accordingly)

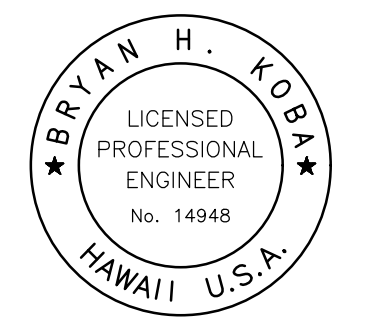
REVISION	DATE	BRIEF	BY

Project No: 16-576
Scale: AS NOTED
Date: 1/31/2020
Designed By: BHK
Drawn By: BHK
Checked By:

MISCELLANEOUS MECHANICAL DETAILS - 4

DWG. NO.
DM-4
SHEET 128 OF 201

FILE	POCKET	FOLDER	NO.



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Bryan H. Koba APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
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 (If NOT 2-inches : Scale Accordingly)

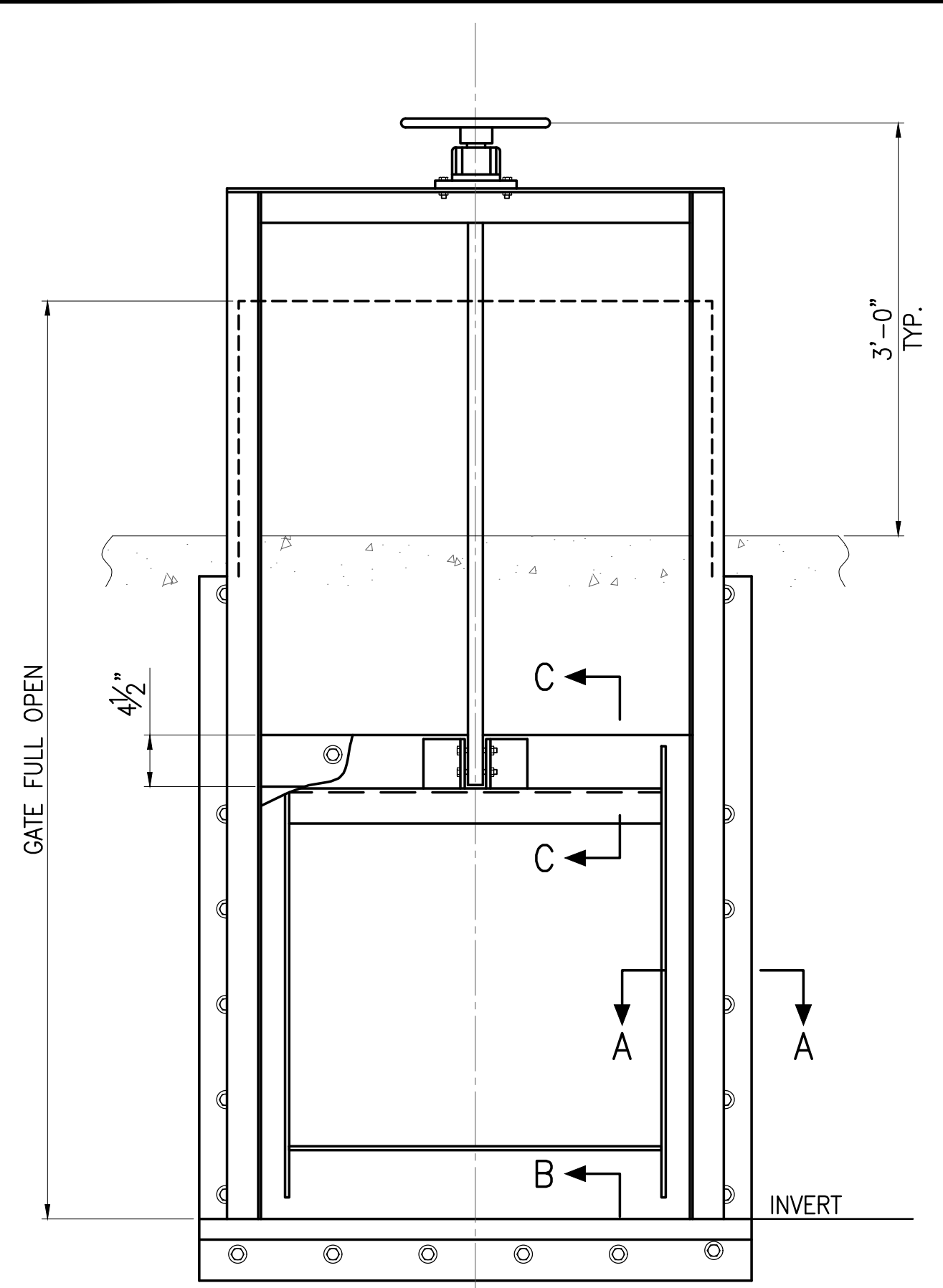
REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/2020
 Designed By: BHK
 Drawn By: BHK
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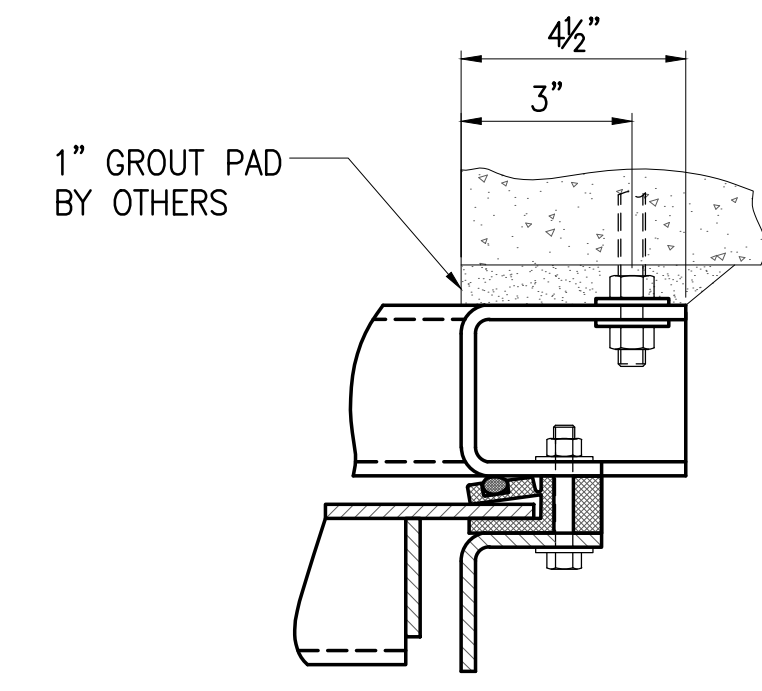
MISCELLANEOUS
 MECHANICAL
 DETAILS - 5

DWG. NO.
DM-5
 SHEET 129 OF 201

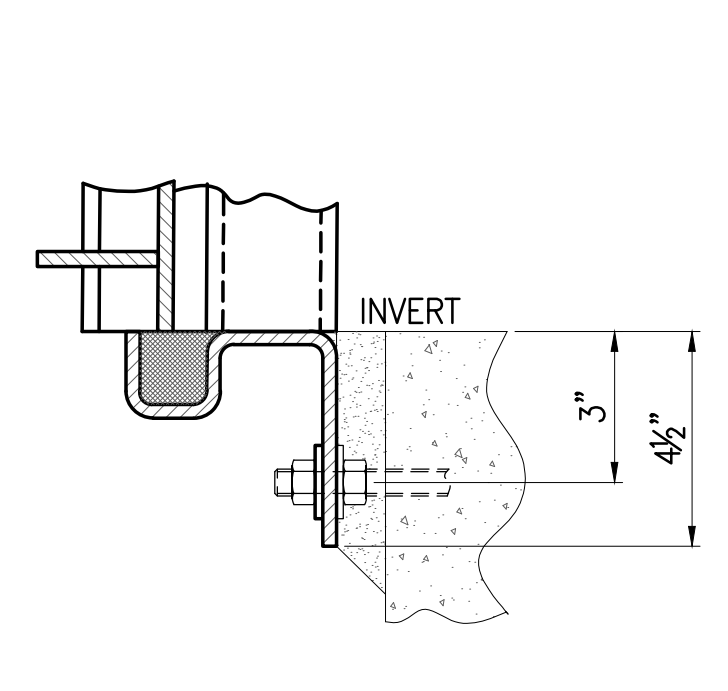
FILE	POCKET	FOLDER	NO.



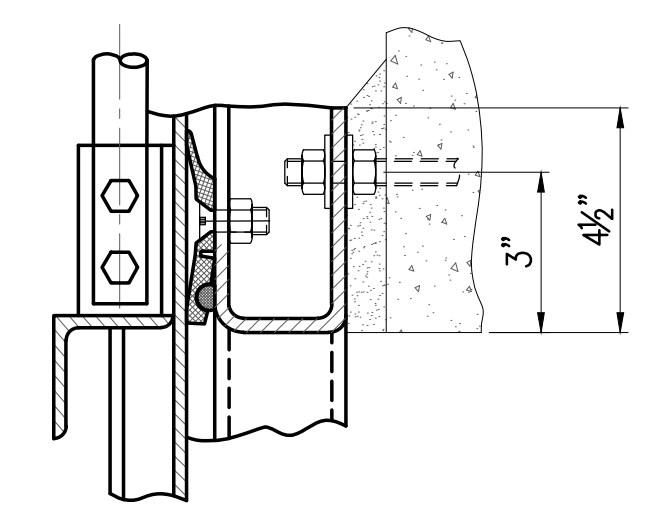
SLIDE GATE DETAIL A
 NOT TO SCALE
 DM-5



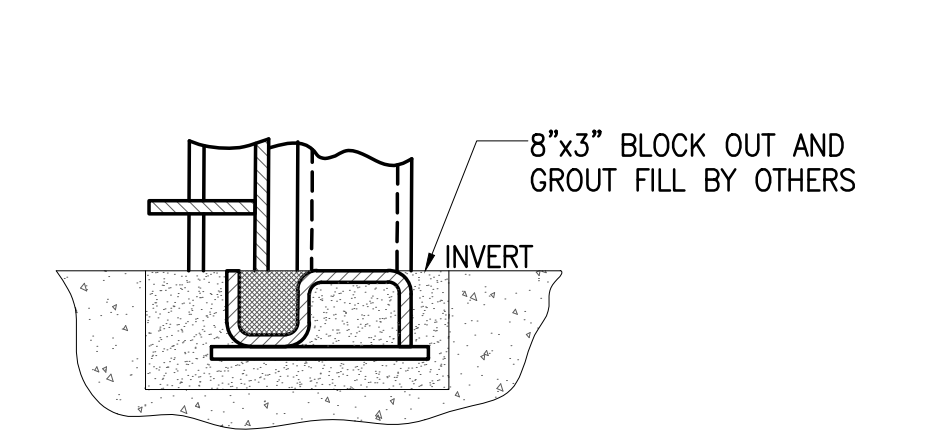
SECTION "A"



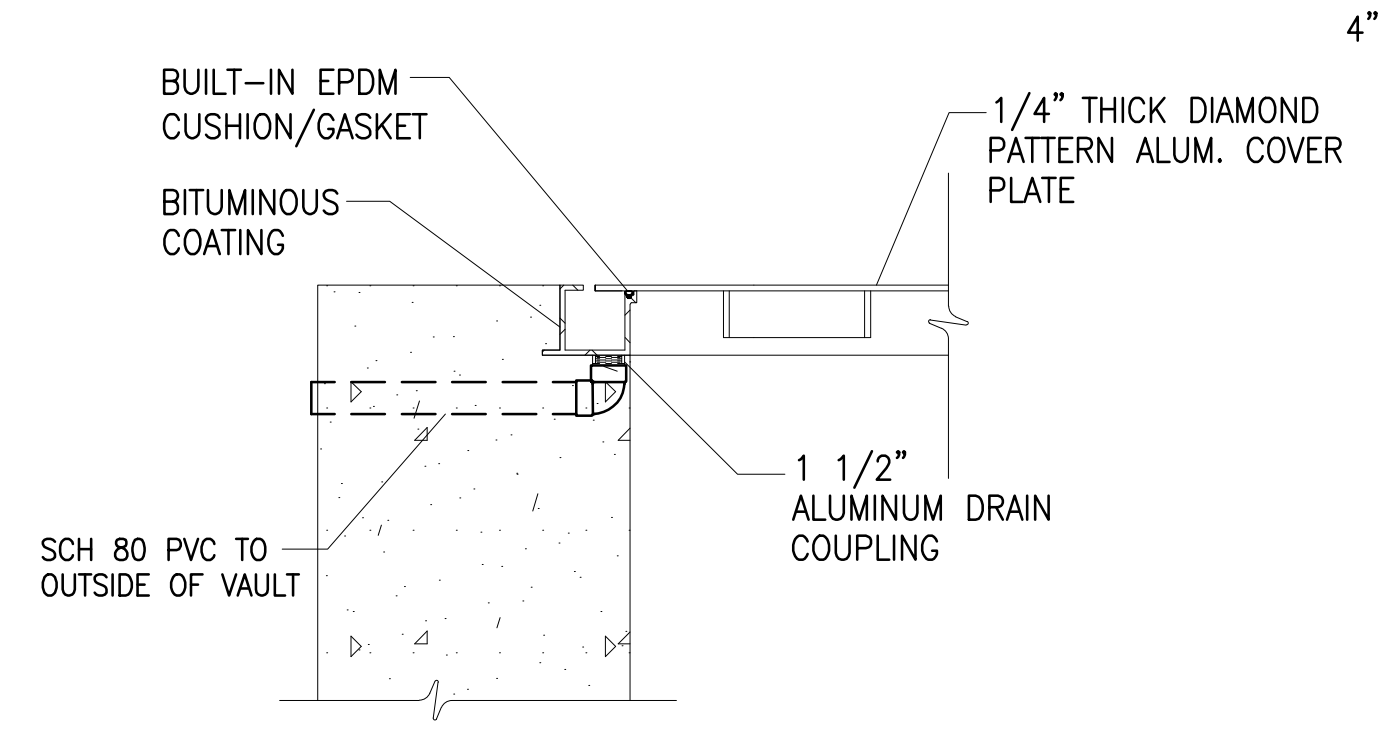
SECTION "B"



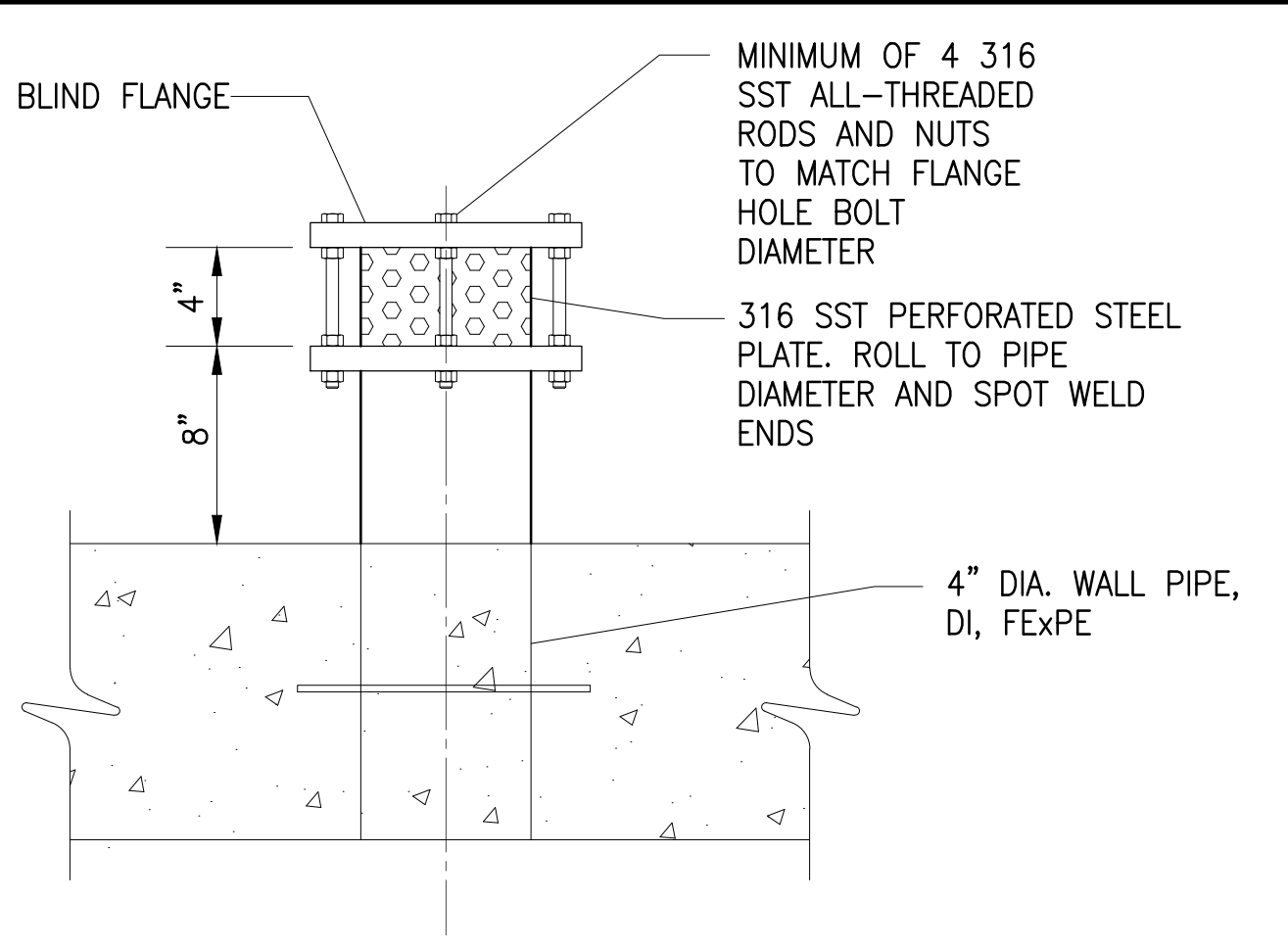
SECTION "C"



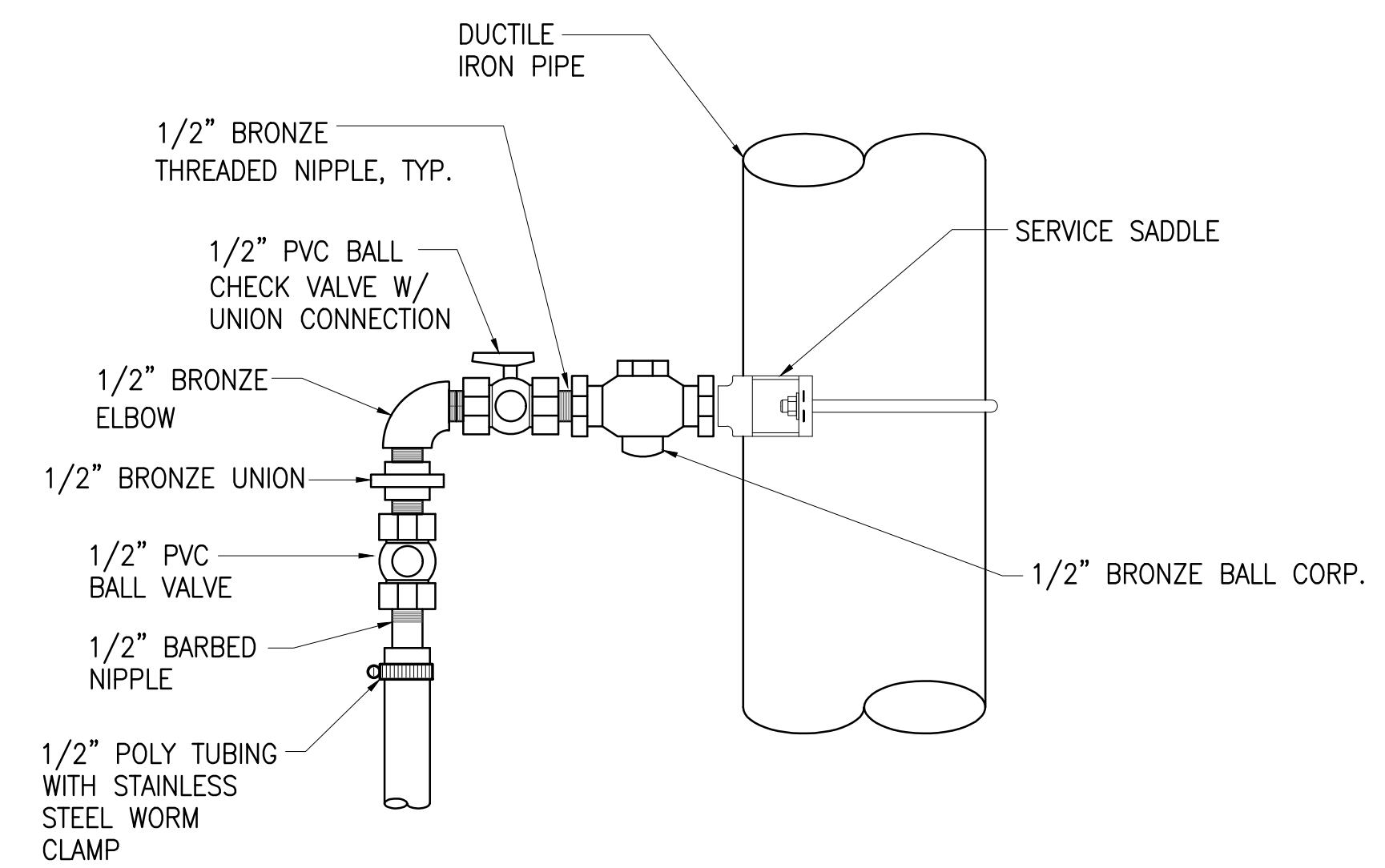
SECTION "B"-BOTTOM AT HEADWALL



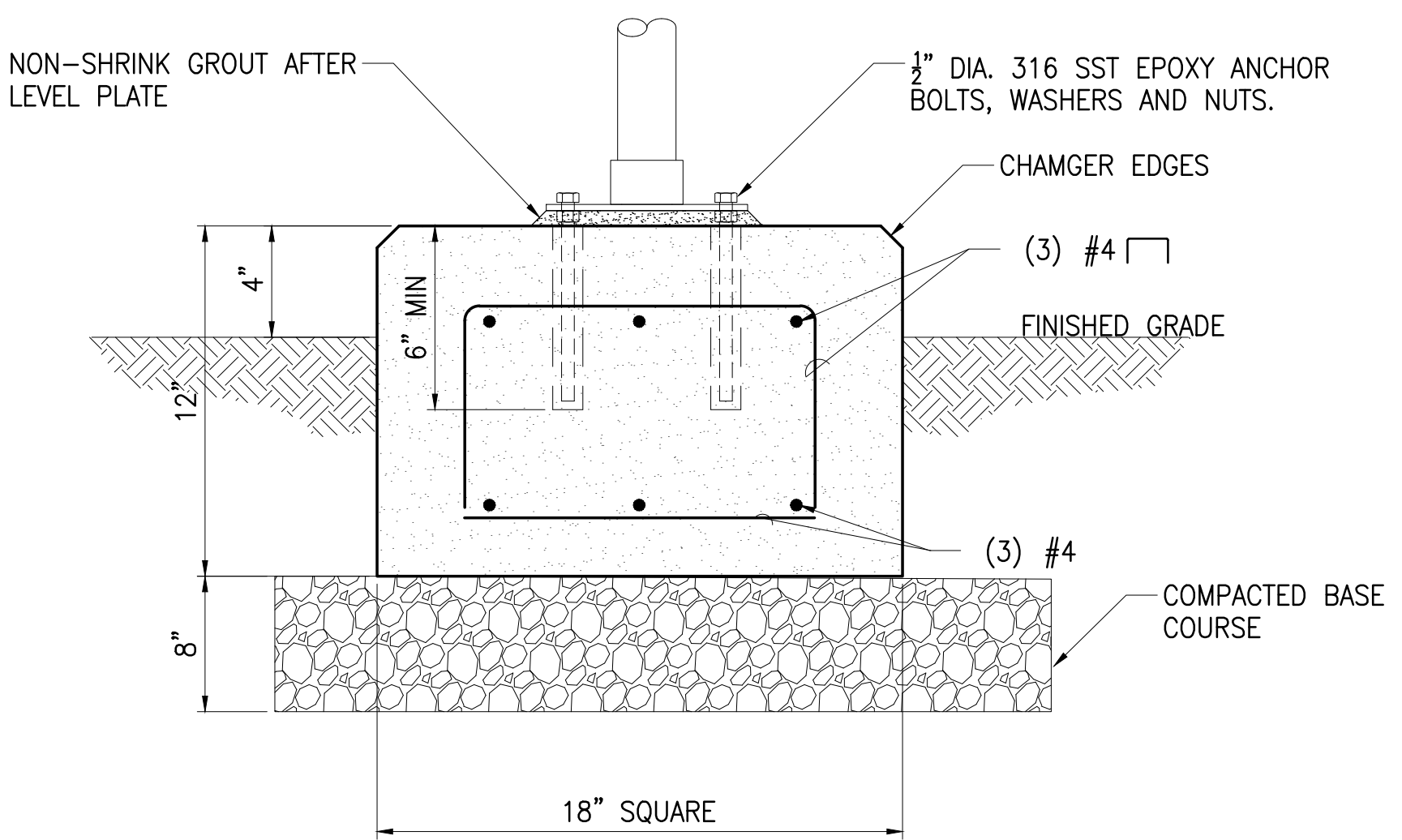
HATCH DRAIN DETAIL C
 NOT TO SCALE
 DM-5



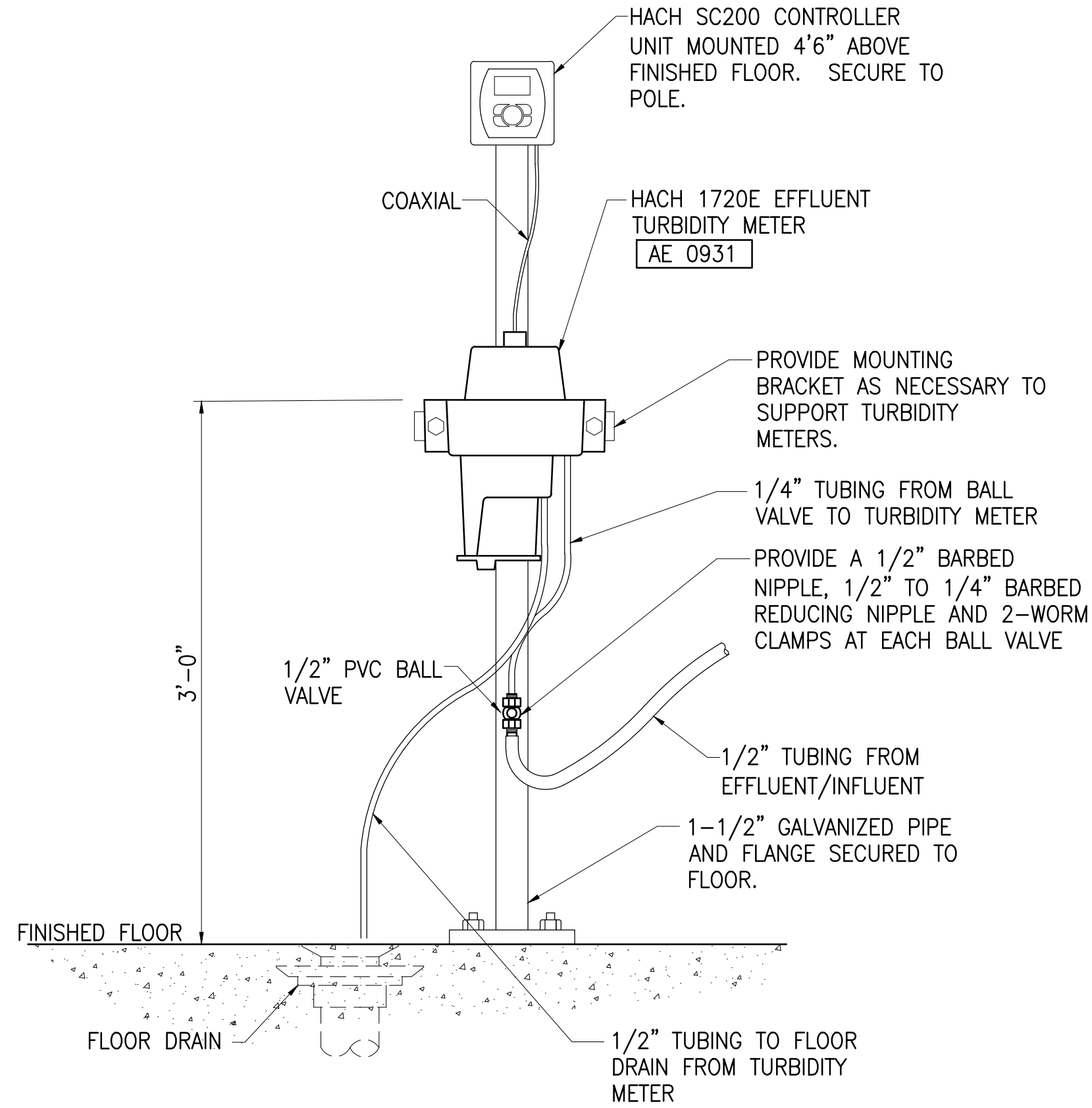
WET WELL VENT DETAIL D
 NOT TO SCALE
 DM-5



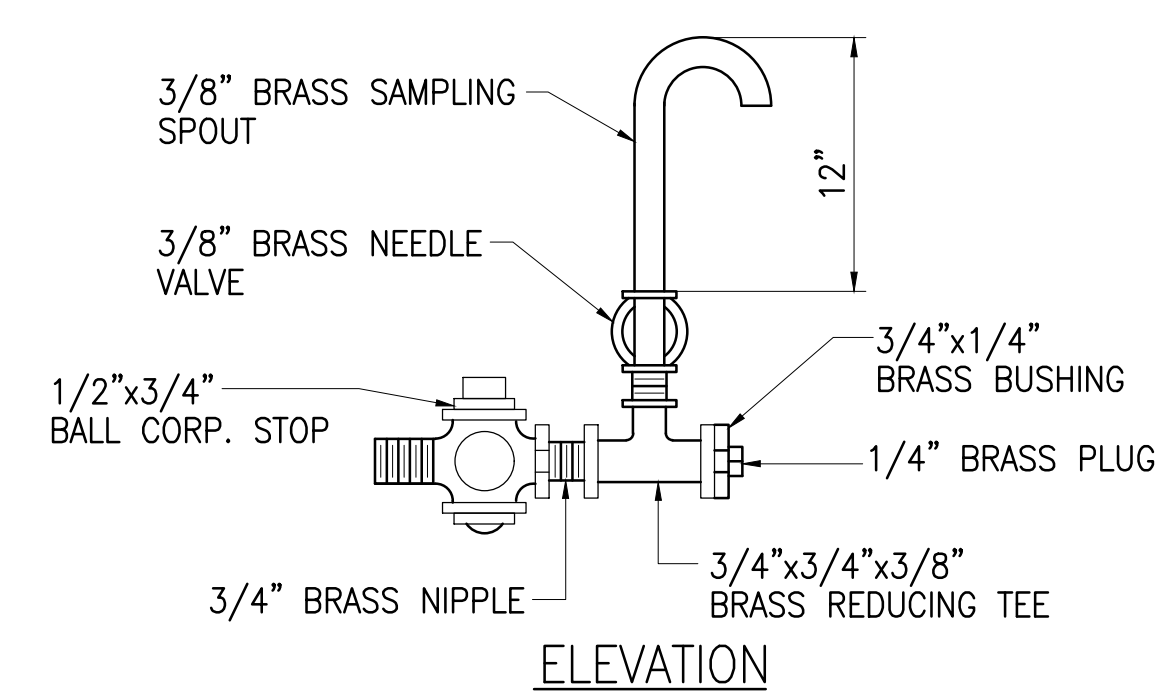
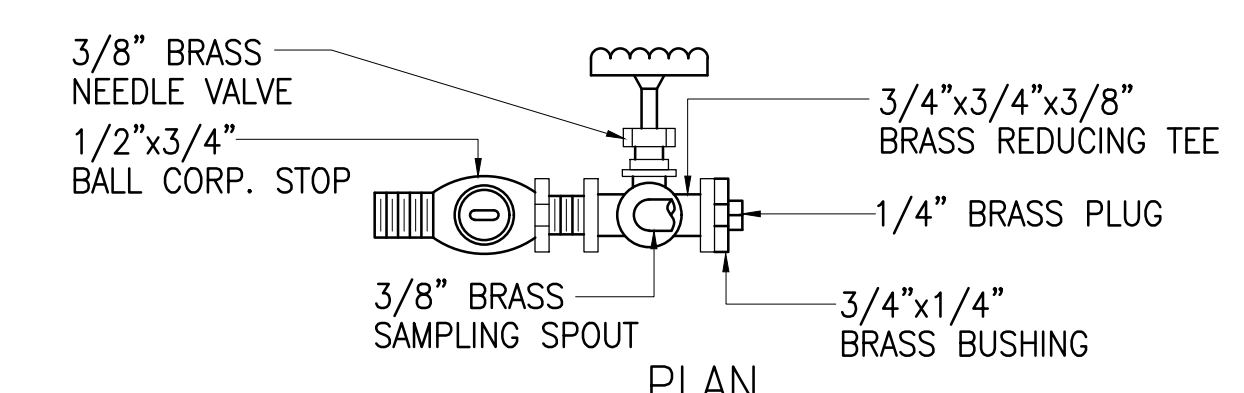
TURBIDITY AND SAMPLING CONNECTION F
 NOT TO SCALE
 DM-5



CONC. BASE PIPE SUPPORT B
 NOT TO SCALE
 DM-5

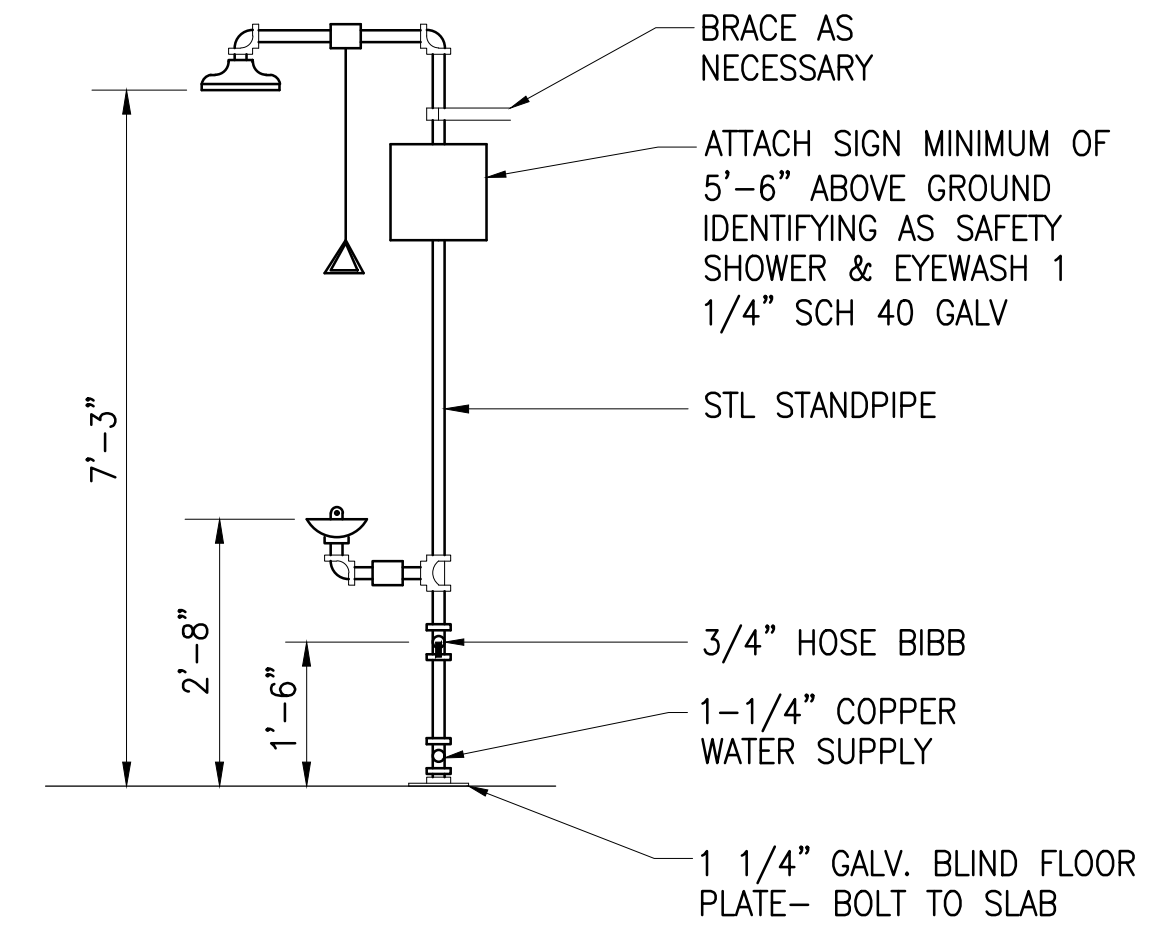
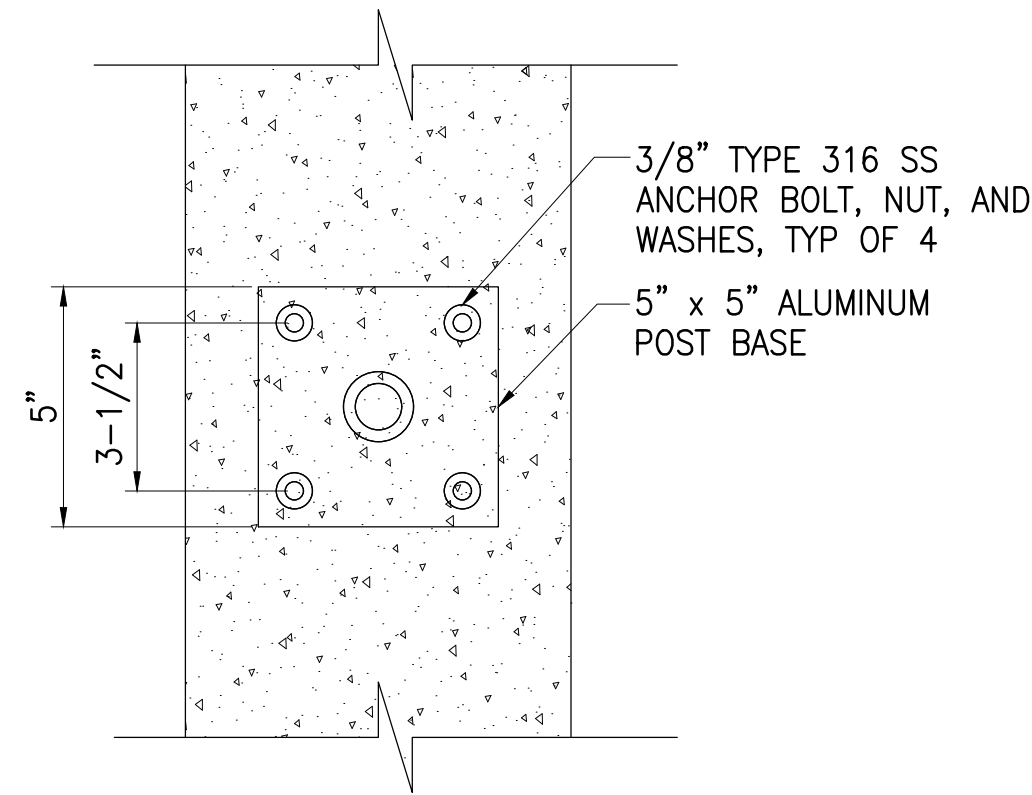
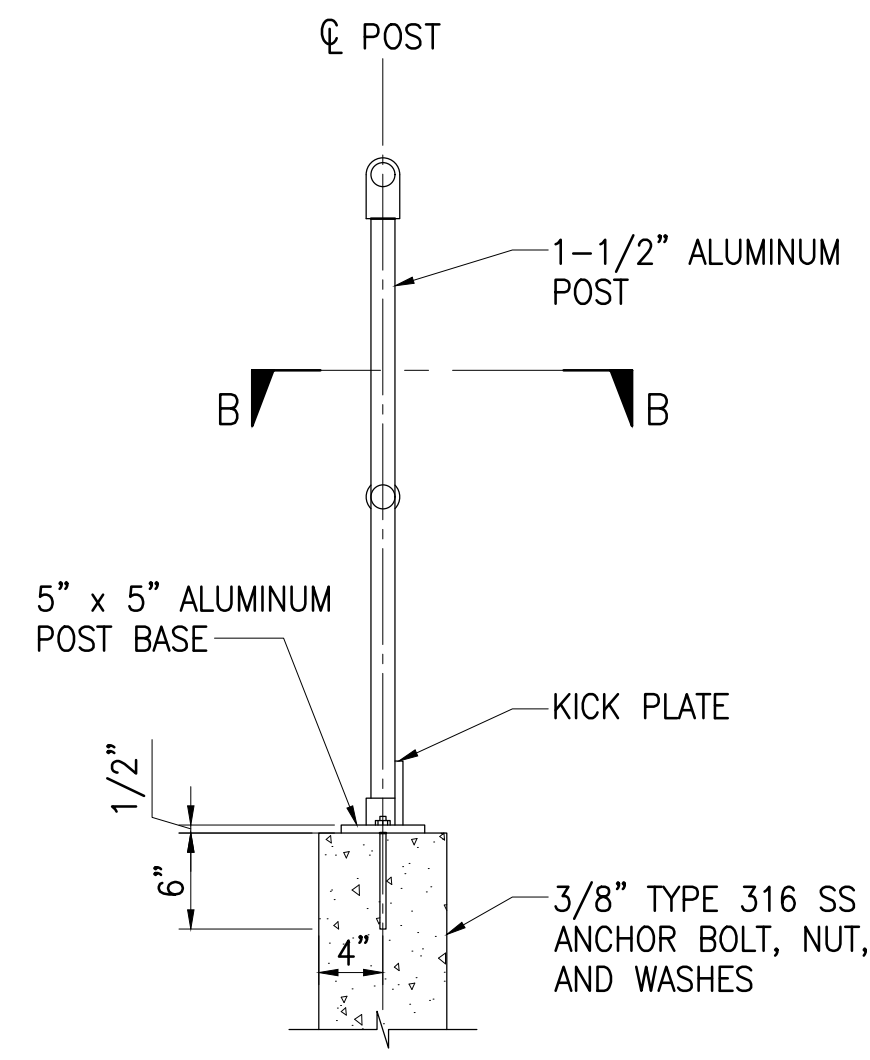
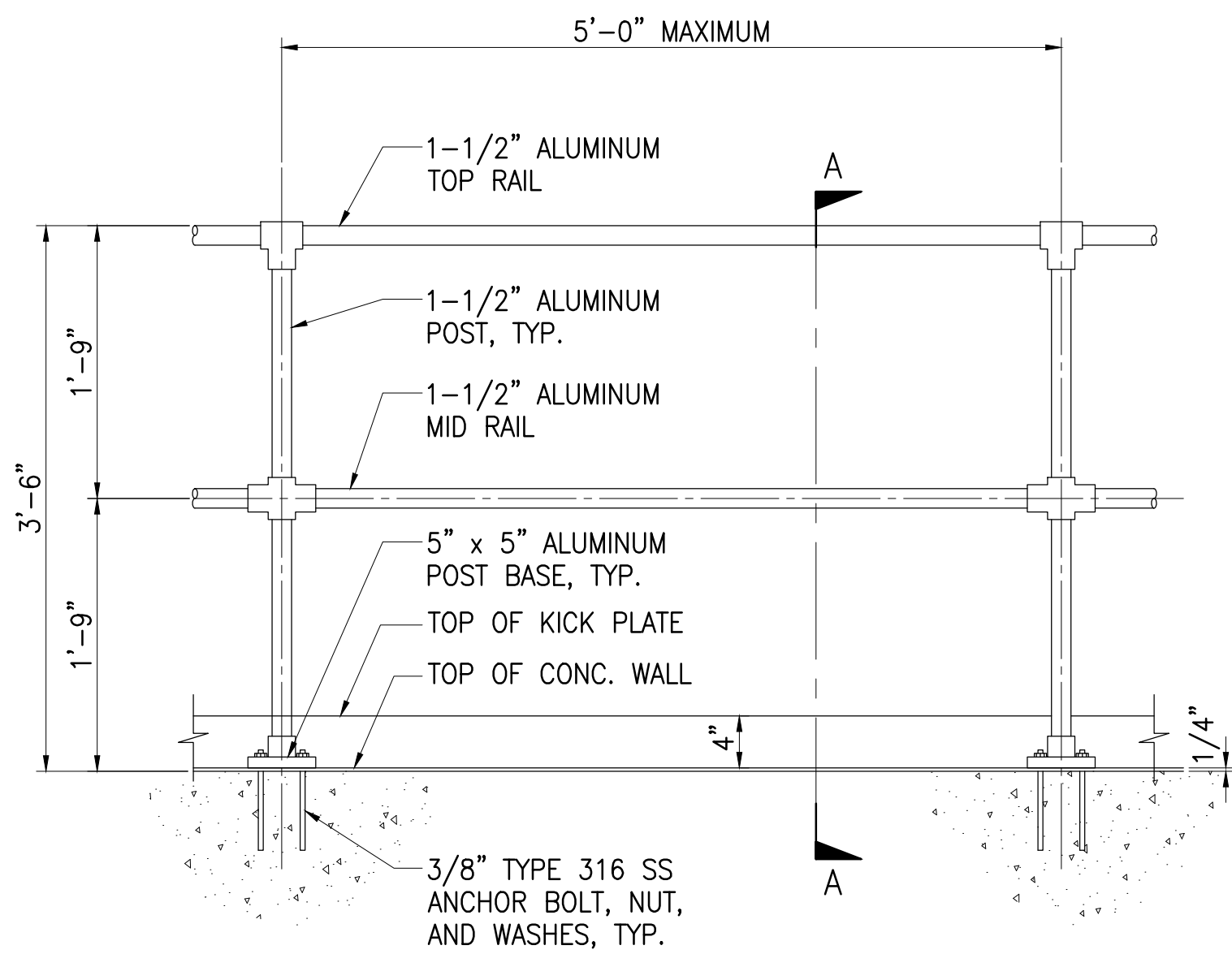


TURBIDITY METERS DETAIL E
 NOT TO SCALE
 DM-5



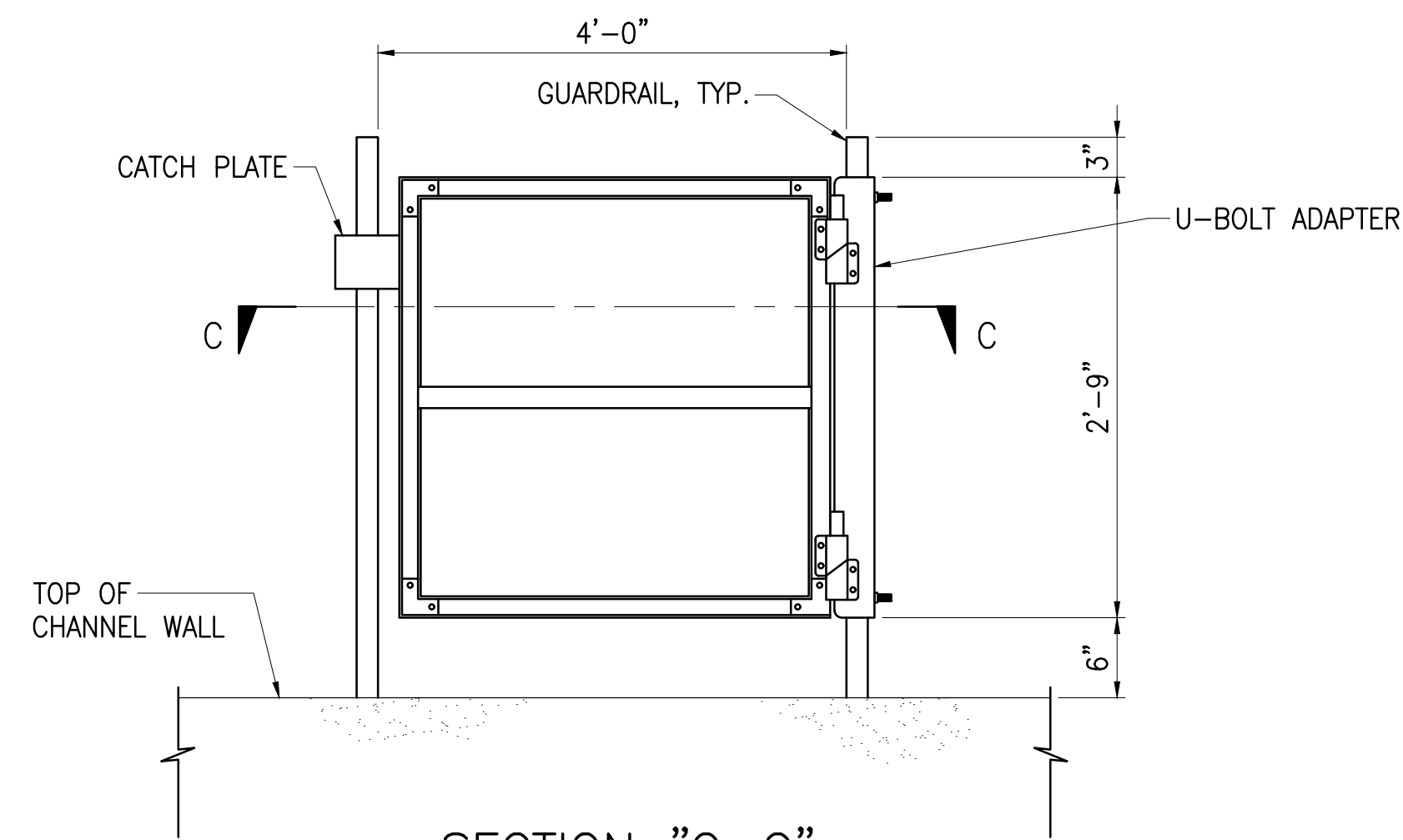
SECURED SAMPLE TAP G
 NOT TO SCALE
 DM-5

JOB NO. 0-11-056.004
 FN: C:\PROJECT FOLDER 16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\DM-5 MISCELLANEOUS MECHANICAL DETAILS - 5.DWG

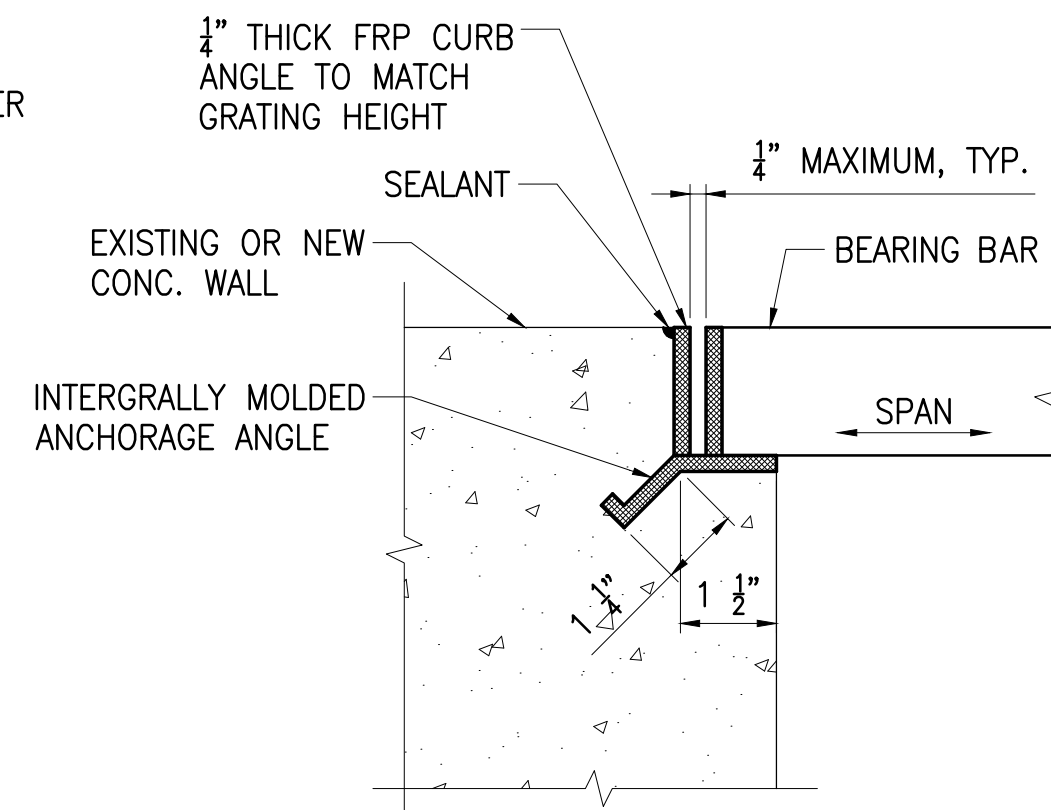


EMERGENCY SHOWER AND EYEWASH C
NOT TO SCALE DM-6

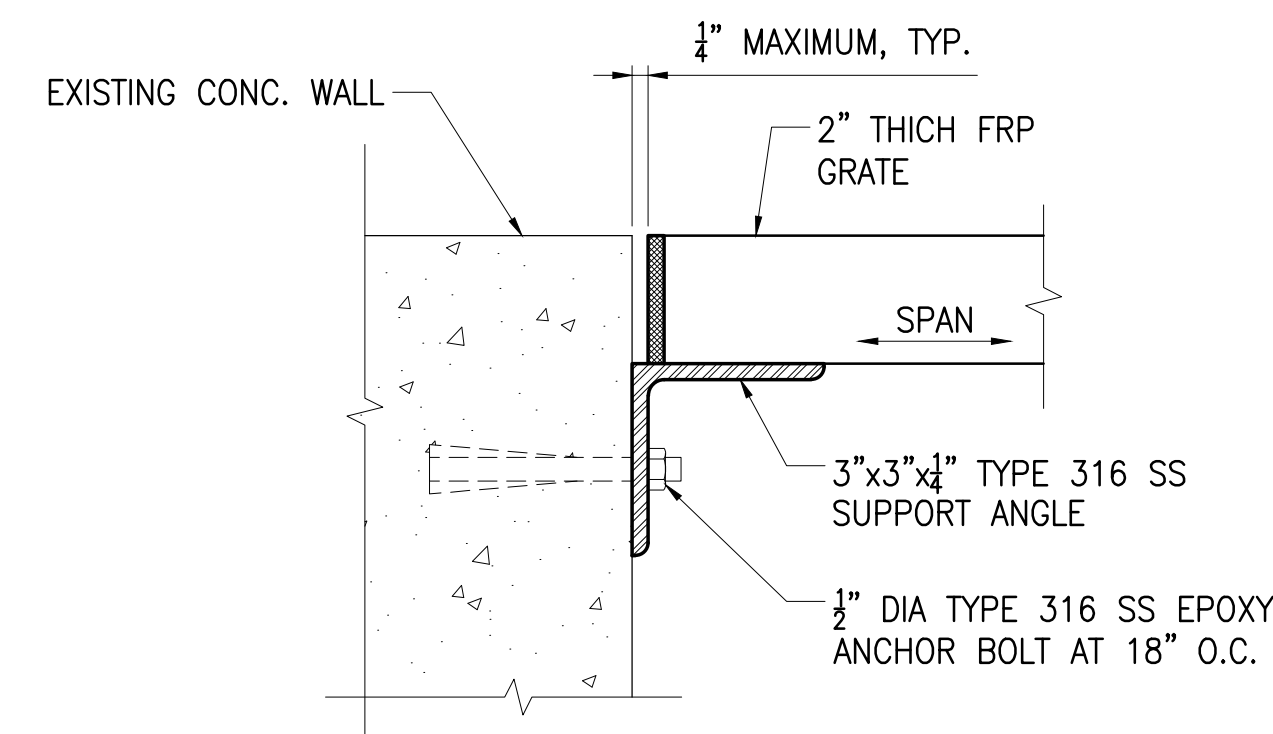
GUARDRAIL DETAIL A
NOT TO SCALE DM-6



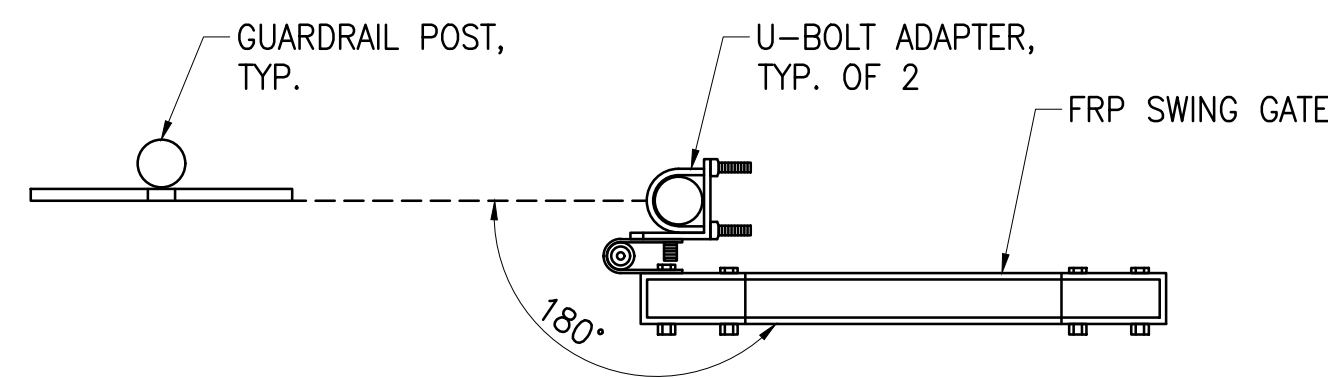
SECTION "C-C"



EMBEDDED GRATING SUPPORT SEAT DETAIL D
NOT TO SCALE DM-6



WALL MOUNTED GRATING SUPPORT SEAT DETAIL E
NOT TO SCALE DM-6



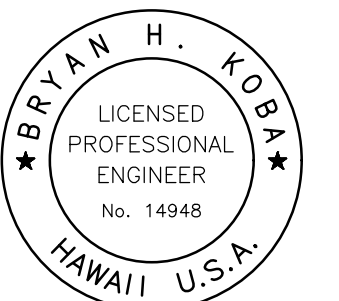
DOUBLE SWING GATE B
NOT TO SCALE DM-6

JOB NO. 0-11-056.004
FN: C:\PROJECT FOLDER\16-576 DHHL PROJECT\ENGINEERING\DWG\CONSTRUCTION DRAWING SET\DM-6 MISCELLANEOUS MECHANICAL DETAILS - 6.DWG

Austin Tsutsumi & Associates, Inc.
CIVIL ENGINEERS & SURVEYORS
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**STATE OF HAWAII
DEPARTMENT OF
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**PŪLEHUUNI
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INFRASTRUCTURE**

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Bryan H. Koba APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

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REVISION	DATE	BRIEF	BY

Project No: 16-576
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Designed By: BHK
Drawn By: BHK
Checked By:

**MISCELLANEOUS
MECHANICAL
DETAILS - 6**

DWG. NO.
DM-6
SHEET 130 OF 201

FILE	POCKET	FOLDER	NO.

GENERAL

- 1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE DRAWINGS AND SPECIFICATIONS.
2. THE STRUCTURAL, ARCHITECTURAL, CIVIL AND MECHANICAL DRAWINGS REPRESENT THE FINISHED STRUCTURE.
3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT STRUCTURES, AND UTILITIES AND DE-WATERING AS NECESSARY.
4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS.
5. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
6. SEE MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS REQUIRED FOR DUCTS, PIPES AND ALL PIPE SLEEVES, ELECTRICAL CONDUITS AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE OR OTHERWISE INCORPORATED IN STRUCTURAL WORK.
7. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.
8. DESIGN CRITERIA:
A. GENERAL STRUCTURAL DESIGN: 2012 INTERNATIONAL BUILDING CODE W/ STATE OF HAWAII AMENDMENTS
B. DESIGN LIVE LOADS:
ROOFS = 20 PSF
SUSPENDED SLABS = 100 PSF OR EQUIPMENT WEIGHT
STAIRS, WALKWAYS, CATWALKS = 100 PSF
C. WIND (ASCE 7-10):
BASIC WIND SPEED = 145 MPH
EXPOSURE CATEGORY = C
RISK CATEGORY = III
TOPOGRAPHIC FACTOR, Kzt = 1.1
D. SEISMIC (IBC 2012):
SOIL SITE CLASSIFICATION = C
SEISMIC DESIGN CATEGORY = D
DESIGN SPECTRAL ACCELERATION:
SDS = 0.657g
SDI = 0.259g
IMPORTANCE FACTOR = 1.25
RISK CATEGORY = III

SPECIAL INSPECTION

- 1. ALL SPECIAL INSPECTIONS SHALL BE DONE PER IBC SPECIAL INSPECTIONS PROVISIONS OF SECTION 1705 OF THE 2012 INTERNATIONAL BUILDING CODE GOVERNING PORTIONS OF THE STRUCTURAL WORK SHOWN IN THE STRUCTURAL DRAWINGS.
2. CONTRACTOR SHALL HIRE AND PAY FOR ALL CERTIFIED THIRD PARTY STRUCTURAL SPECIAL INSPECTIONS. THE CONTRACTOR SHALL HIRE AND PAY FOR ALL THIRD-PARTY TESTING AS REQUIRED PER SPECIFICATIONS. THE CONTRACTOR SHALL NOTIFY SPECIAL INSPECTOR AND TESTING AGENCY AT LEAST 72 HOURS IN ADVANCE FOR WORK TO BE PERFORMED REQUIRING SPECIAL INSPECTION. THE CONSTRUCTION OF THE FOLLOWING STRUCTURAL WORK SHALL REQUIRE SPECIAL INSPECTION:
A. BOLTS INSTALLED IN CONCRETE = REQUIRED
B. CAST-IN-PLACE CONCRETE = REQUIRED
C. REINFORCING STEEL = REQUIRED
D. ERECTION OF PRECAST CONCRETE = REQUIRED
E. HIGH STRENGTH BOLTING = REQUIRED
F. FIELD WELDING = REQUIRED
G. MASONRY (LEVEL 1) = REQUIRED
3. SPECIAL INSPECTIONS DO NOT TAKE THE PLACE FOR CONTRACTOR'S QUALITY CONTROL MEASURES. SPECIAL INSPECTION DOES NOT RELIEVE THE GENERAL CONTRACTOR OF HIS RESPONSIBILITIES TO PERFORM QUALITY ASSURANCE AND QUALITY CONTROL, TO COMPLETE THE PROJECT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND TO PROVIDE SAFETY ON THE JOB SITE. CONTRACTOR SHALL PROVIDE ACCESS FOR THE SPECIAL INSPECTOR SUCH AS LADDERS, SCAFFOLDING, FALL PROTECTION, MANLIFT, ETC. CONTRACTOR SHALL CORRECT DEFECTIVE WORK AT NO ADDITIONAL COST TO THE STATE AND PAY FOR ANY RE-INSPECTIONS ON NON-CONFORMING WORK.

FOUNDATION

- 1. FOUNDATION DESIGN IS BASED ON GEOLABS, INC. GEOTECHNICAL REPORT DATED NOVEMBER 25, 2019, "GEOTECHNICAL ENGINEERING EXPLORATION DHHL PULEHUNUI WASTEWATER SYSTEM."
A. ALLOWABLE BEARING PRESSURES (DL+LL) = 3,000 PSF (WIND/SEISMIC 1/3 INCREASE ALLOWED)
B. COEFFICIENT OF FRICTION = 0.35
C. PASSIVE PRESSURE = 300 PCF
2. CONTRACTOR SHALL PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM EITHER SURFACE WATER, GROUND WATER OR SEEPAGE AS NECESSARY.
3. TANK AND UNDERGROUND STRUCTURE FOUNDATIONS:
A. SEE GEOTECHNICAL REPORT AND NOTES ON PLANS.
4. BUILDING AND SLAB-ON-GRADE FOUNDATION:
A. FOOTING SUBGRADES SHALL BE RE-COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION TO PROVIDE A RELATIVELY FIRM AND UNYIELDING SURFACE PRIOR TO THE PLACEMENT OF REINFORCING STEEL OR CONCRETE.
B. SOFT AND/OR LOOSE MATERIALS ENCOUNTERED AT THE BOTTOM OF FOOTING EXCAVATIONS SHALL BE OVER-EXCAVATED TO EXPOSE THE UNDERLYING FIRM MATERIALS.
C. A MINIMUM 6-INCH THICK CAPPING FILL LAYER SHALL BE PROVIDED BELOW THE SLAB CUSHION FILL.
D. THE ON-SITE SUBGRADE SOILS SHALL BE SCARIFIED TO A DEPTH OF ABOUT 8 INCHES, MOISTURE CONDITIONING TO AT LEAST 2 PERCENT ABOVE THE OPTIMUM MOISTURE, AND RECOMPACTING TO A MINIMUM OF 90 PERCENT RELATIVE COMPACTION.
E. FOR INTERIOR BUILDING SLABS (NOT SUBJECTED TO VEHICULAR TRAFFIC OR MACHINERY VIBRATION), PLACE A MINIMUM 4-INCH THICK LAYER OF CUSHION FILL CONSISTING OF OPEN-GRADED GRAVEL (ASTM C33, NO. 67 GRADATION) BELOW THE SLABS.
F. WHERE THE SLABS WILL BE SUBJECTED TO VEHICULAR TRAFFIC OR MACHINERY VIBRATION PROVIDE A 6-INCH LAYER OF AGGREGATE SUBBASE BELOW THE SLABS IN LIEU OF THE 4-INCH THICK GRAVEL CUSHION LAYER.
G. EXTERIOR FLATWORK, SUCH AS SIDEWALKS, SHALL BE SUPPORTED ON A MINIMUM 6-INCH THICK CAPPING FILL LAYER CONSISTING OF NON-EXPANSIVE SELECT GRANULAR FILL MATERIALS.

- H. THE THICKENED EDGES OF SLABS ADJACENT TO UNPAVED AREAS SHALL BE EMBEDDED AT LEAST 12 INCHES BELOW THE LOWEST ADJACENT GRADE. IT SHALL BE EMPHASIZED THAT THE AREAS ADJACENT TO THE SLAB EDGES SHALL BE BACKFILLED TIGHTLY AGAINST THE EDGES OF THE SLABS WITH RELATIVELY IMPERVIOUS SOILS.
5. FOR EXCAVATION AND DEWATERING RECOMMENDATIONS, REFER TO PROJECT GEOTECHNICAL REPORT.
6. AT THE ON-SET OF EARTHWORK, THE AREA WITHIN THE CONTRACT GRADING LIMITS SHALL BE THOROUGHLY CLEARED AND GRUBBED.
7. SOFT AND YIELDING AREAS ENCOUNTERED DURING CLEARING AND GRUBBING SHALL BE OVER-EXCAVATED TO EXPOSE FIRM NATURAL MATERIAL, AND THE RESULTING EXCAVATION SHALL BE BACKFILLED WITH WELL-COMPACTED FILLS.
8. AREAS TO RECEIVE FILL AND FINISHED SUBGRADES IN CUT AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 8 INCHES, MOISTURE-CONDITIONED TO AT LEAST 2 PERCENT ABOVE THE OPTIMUM MOISTURE, AND COMPACTED TO A MINIMUM OF 90 PERCENT RELATIVE COMPACTION.
9. IMPORTED FILL MATERIALS SHALL BE TESTED BY GEOLABS PRIOR TO DELIVERY FOR CONFORMANCE WITH REQUIREMENTS AS NOTED BELOW AND IN PROJECT GEOTECHNICAL REPORT.

IMPORTED FILL MATERIALS SHALL CONSIST OF NON-EXPANSIVE SELECT GRANULAR FILL MATERIAL SUCH AS CRUSHED CORAL OR BASALT GRAVEL SHALL BE WELL-GRADED FROM COARSE TO FINE WITH PARTICLES NO GREATER THAN 3 INCHES IN LARGEST DIMENSION. THE IMPORTED MATERIAL SHALL CONTAIN BETWEEN 10 TO 30 PERCENT PARTICLES PASSING THE NO. 200 SIEVE, A LABORATORY CBR VALUE OF AT LEAST 20, AND A MAXIMUM SWELL POTENTIAL OF 1 PERCENT OR LESS WHEN TESTED IN ACCORDANCE WITH ASTM D1883. NON-EXPANSIVE SELECT GRANULAR FILL SHALL BE MOISTURE CONDITIONED TO ABOVE THE OPTIMUM MOISTURE CONTENT, PLACED IN LEVEL LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS, AND COMPACTED TO A MINIMUM OF 90 PERCENT RELATIVE COMPACTION - 95 PERCENT RELATIVE COMPACTION FOR THE UPPER 3 FEET OF FILL AT AREAS BELOW VEHICULAR TRAFFIC.
COMPACTION SHALL BE ACCOMPLISHED BY SHEEPSFOOT ROLLERS, VIBRATORY ROLLERS, OR OTHER TYPES OF ACCEPTABLE COMPACTION EQUIPMENT.
WHERE GROUNDWATER IS ENCOUNTERED (WITHIN THE EXCAVATIONS), BACKFILL MATERIALS SHALL CONSIST OF FREE-DRAINING GRANULAR MATERIALS, SUCH AS NO. 3B FINE GRAVEL (ASTM C33, NO. 67 GRADATION), WRAPPED ON ALL SIDES WITH NON-WOVEN FILTER FABRIC. THE FREE-DRAINING GRANULAR MATERIALS SHALL BE USED UP TO A LEVEL OF ABOUT 12 INCHES ABOVE THE GROUNDWATER LEVEL TO FACILITATE COMPACTION OF THE FILL MATERIALS. THE FREE-DRAINING GRANULAR FILL MATERIALS SHALL BE USED IN A CONFINED CONDITION. ALTERNATIVELY, LEAN CONCRETE MAY BE USED AS BACKFILL MATERIAL.

IN GENERAL, CUT AND FILL SLOPES PLANNED AT THE SITE SHALL BE DESIGNED WITH A SLOPE INCLINATION OF 2H:1V OR FLATTER. THE FILLING OPERATION SHALL START AT THE LOWEST POINT AND CONTINUE UP IN LEVEL HORIZONTAL COMPACTED LAYERS IN ACCORDANCE WITH THE ABOVE FILL PLACEMENT RECOMMENDATIONS. FILL SLOPES SHALL BE CONSTRUCTED BY OVERFILLING AND CUTTING BACK TO THE DESIGN SLOPE RATIO TO OBTAIN A WELL-COMPACTED SLOPE FACE. WATER SHALL BE DIVERTED AWAY FROM THE TOPS OF SLOPES, AND SLOPE PLANTING SHALL BE PROVIDED AS SOON AS POSSIBLE TO REDUCE THE POTENTIAL FOR EROSION OF THE FINISHED SLOPES.

CONCRETE

- 1. SCHEDULE OF STRUCTURAL CONCRETE 28-DAY STRENGTH AND TYPES:
ALL CONCRETE STRUCTURES = 5,500 PSI (W/C=0.40)
2. CLEAR COVERAGE OF CONCRETE OVER OUTER REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
CAST-IN-PLACE CONCRETE:
A. CONCRETE POURED DIRECTLY AGAINST EARTH = 3" CLEAR
B. FORMED AND EXPOSED TO EARTH OR WEATHER = 2" CLEAR
C. WALLS, SLABS, BEAMS IN CONTACT WITH LIQUIDS = 3" CLEAR
D. SLAB ON GRADE = 2" CLEAR AT TOP, UON
PRECAST CONCRETE:
MANUFACTURED UNDER PLANT PER ACI 318-11 SECTION 7.7.3 CONTROL CONDITIONS.
A. CONCRETE EXPOSED TO EARTH OR WEATHER = 2"
3. FOR ALL SEWAGE STRUCTURES AN APPROVED ADMIXTURE WHOSE ACTIVE INGREDIENT IS A METALLIC SALT OF HYDROXYLATED CARBONIC ACID AND CONFORMING TO ASTM C 494, TYPE D, SHALL BE ADDED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
4. ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
5. PROJECTING CORNERS OF BEAMS, WALLS, ETC. SHALL BE FORMED WITH 3/4" CHAMFER, UNLESS OTHERWISE NOTED ON DRAWINGS.
6. PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. CORING IN CONCRETE IS NOT PERMITTED UNLESS SPECIFICALLY APPROVED BY THE OWNER.
7. CONTRACTOR SHALL PROVIDE DRAWINGS AND CALCULATIONS STAMPED BY A HAWAII LICENSED STRUCTURAL ENGINEER FOR ALL PRECAST STRUCTURES AS NOTED IN DETAILS.
8. CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW SHOP DRAWINGS FOR ALL PRECAST STRUCTURES PRIOR TO FABRICATION.
9. CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO CONCRETE POUR.
10. NOTIFY CONTRACTING OFFICER AND STRUCTURAL ENGINEER 72 HOURS PRIOR TO ANY CONCRETE POUR.

CONCRETE MASONRY (CMU)

- 1. CONCRETE BLOCK SHALL BE HOLLOW LOAD-BEARING CONCRETE MASONRY UNITS CONFORMING TO ASTM C90, NORMAL WEIGHT, ASSEMBLY F'm = 1,900 PSI.
2. ALL WALLS SHALL BE CONSTRUCTED IN RUNNING BOND WITH TYPE M MORTAR UNLESS INDICATED OTHERWISE. MORTAR SHALL ATTAIN COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
3. GROUT SHALL FLOW INTO ALL JOINTS OF THE MASONRY WITHOUT SEGREGATION. COMPRESSIVE STRENGTH AT 28 DAYS = 3,000 PSI.
4. REINFORCING BARS: SEE NOTES UNDER "REINFORCING STEEL" FOR REQUIREMENTS.
5. PROVIDE A MINIMUM OF 1/2" GROUT BETWEEN MAIN REINFORCING AND MASONRY UNITS.
6. GROUT SOLID ALL CELLS.
7. CELLS SHALL BE IN VERTICAL ALIGNMENT. DOWELS IN FOOTING SHALL BE SET TO ALIGN WITH CORES CONTAINING REINFORCING STEEL. SECURE VERTICAL BARS WITH POSITIONERS AT 8'-0" MAX.
8. IF BLOCK IS LAYED TO A HEIGHT EXCEEDING 5'-4" FOR EACH GROUT LIFT, PROVIDE CLEANOUT AT BASE FOR CELL CONTAINING REINFORCING.
9. CONCRETE SURFACES SHALL BE CLEANED OF ALL LAITANCE PRIOR TO SETTING BLOCKS.
10. UNLESS NOTED OTHERWISE, ALL WALLS SHALL BE CONSTRUCTED IN CONVENTIONAL, RUNNING BOND. REFER TO ARCHITECTURAL DRAWINGS FOR SURFACE TEXTURE AND HEIGHT OF UNITS, LAYING PATTERN AND JOINT TYPE.

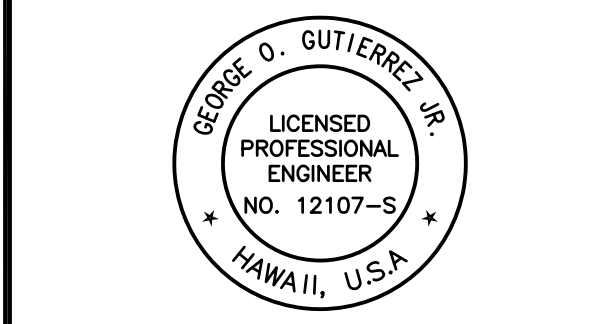
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FN: F:\9060\DWG\19060\19060\STRUCT\19060\DWG\S\19060\DRAWINGS.DWG

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PULEHUNUI REGIONAL INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS
HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation.
(Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules (Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Signature: [Handwritten Signature]
APRIL 30, 2020
EXP. DATE OF THE LICENSE

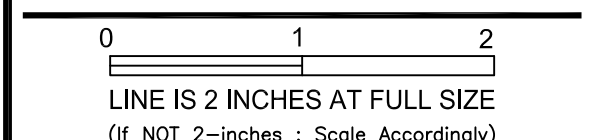


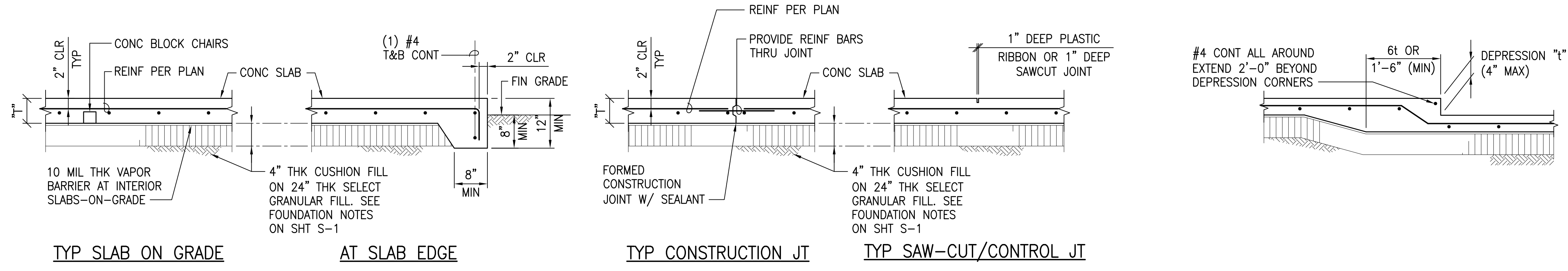
Table with 4 columns: REVISION, DATE, BRIEF, BY. Contains multiple empty rows for revisions.

Project No: 16-576
Scale: AS NOTED
Date: 1/22/20
Designed By: CK
Drawn By: LL
Checked By: GG

STRUCTURAL GENERAL NOTES

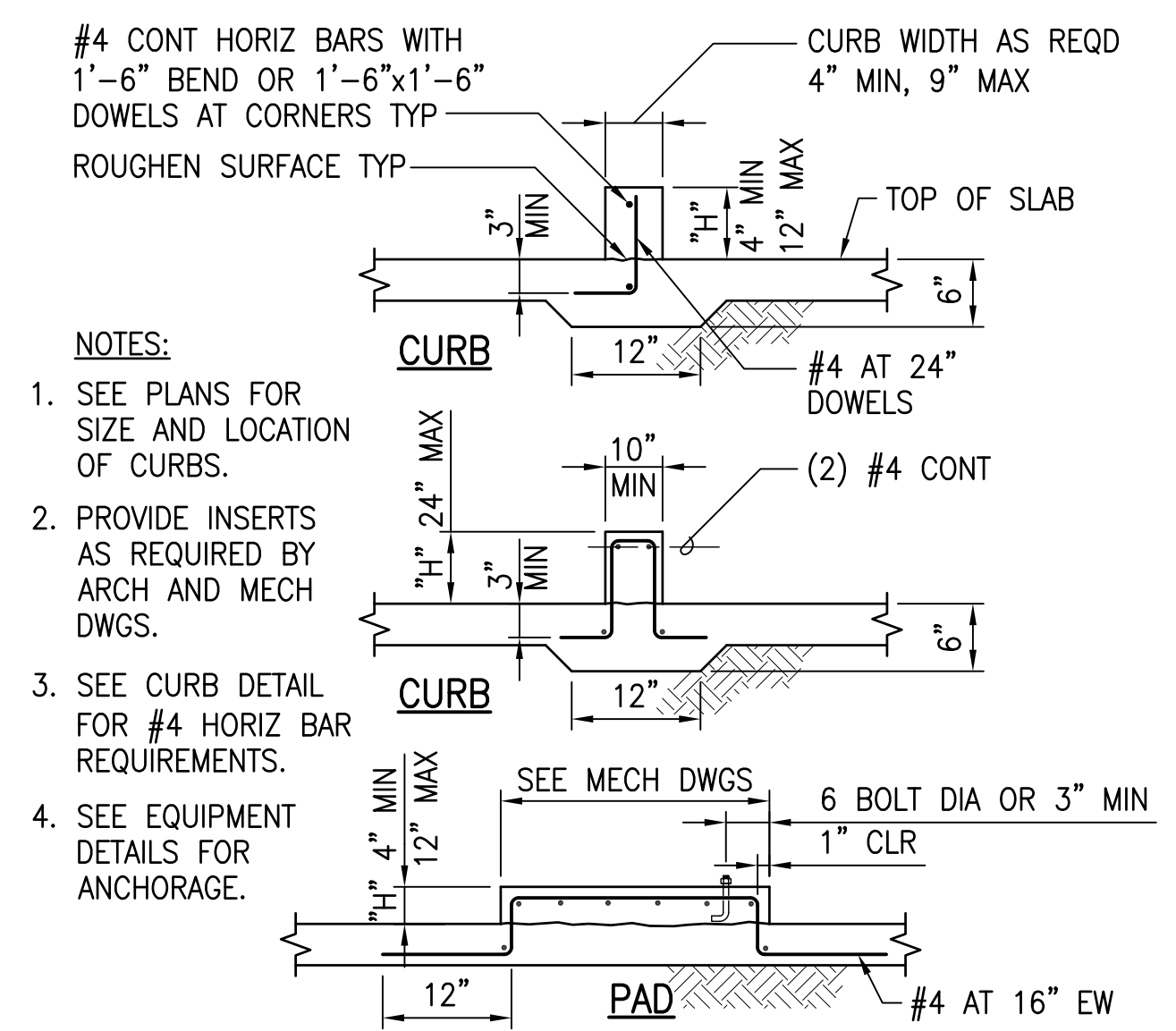
DWG. NO.
S-1
SHEET 131 OF 201

Table with 4 columns: FILE, POCKET, FOLDER, NO.



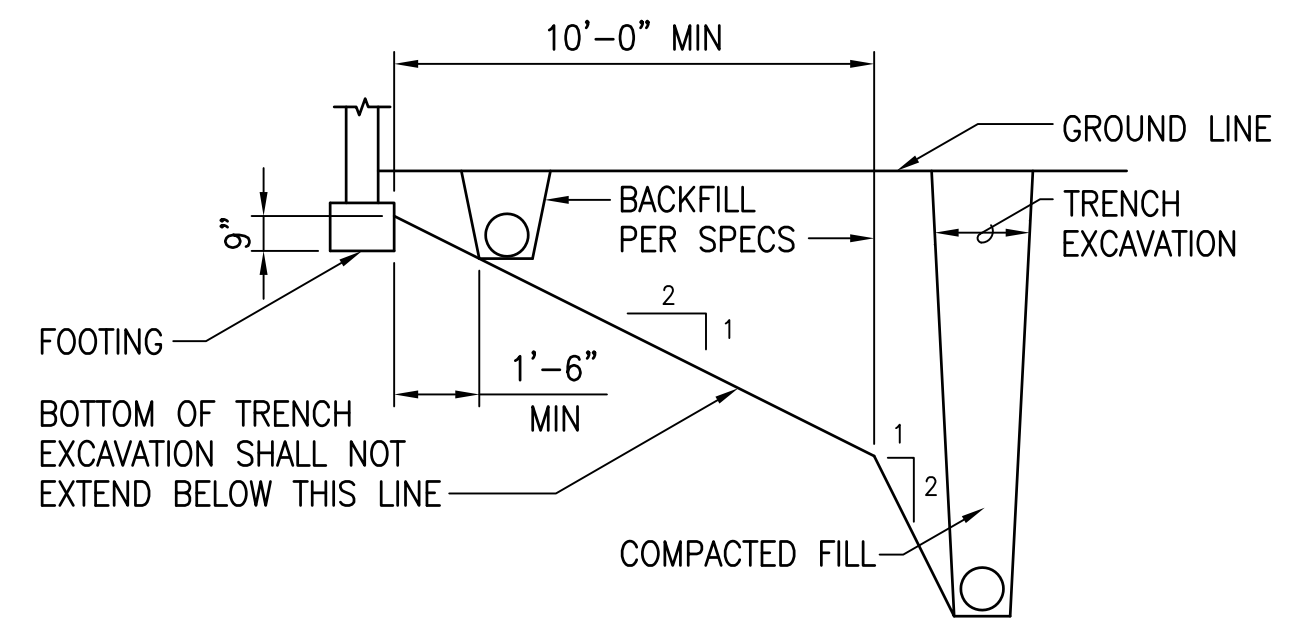
1 TYPICAL SLAB ON GRADE
NOT TO SCALE

2 DEPRESSED SLAB
NOT TO SCALE



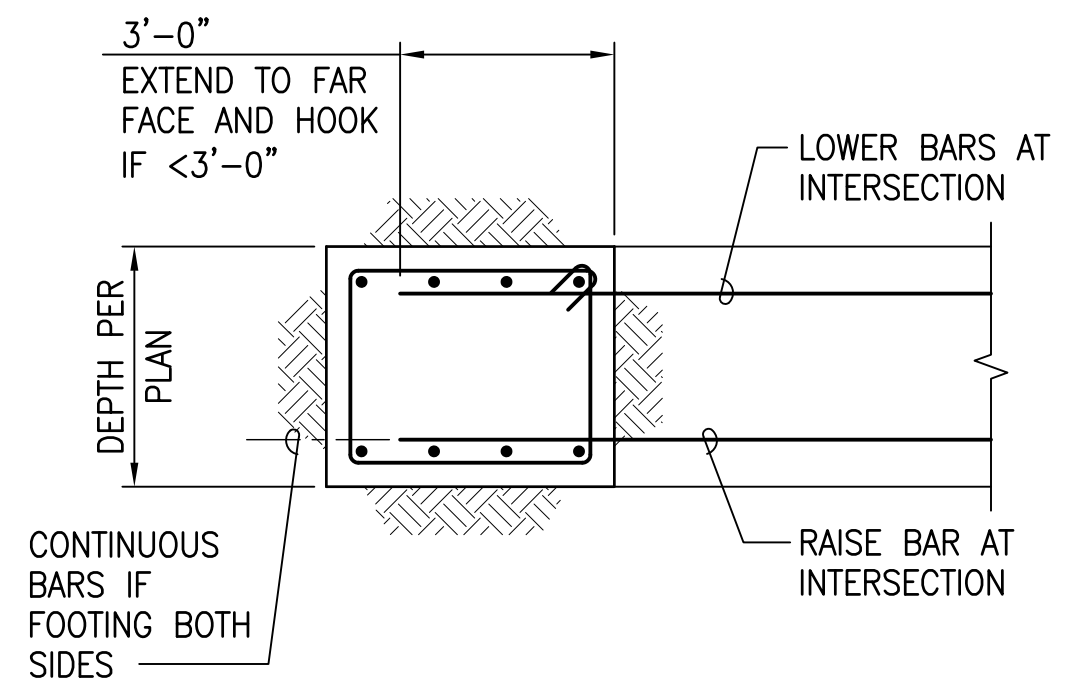
- NOTES:**
- SEE PLANS FOR SIZE AND LOCATION OF CURBS.
 - PROVIDE INSERTS AS REQUIRED BY ARCH AND MECH DWGS.
 - SEE CURB DETAIL FOR #4 HORIZ BAR REQUIREMENTS.
 - SEE EQUIPMENT DETAILS FOR ANCHORAGE.

3 CONCRETE CURBS AND PADS
NOT TO SCALE



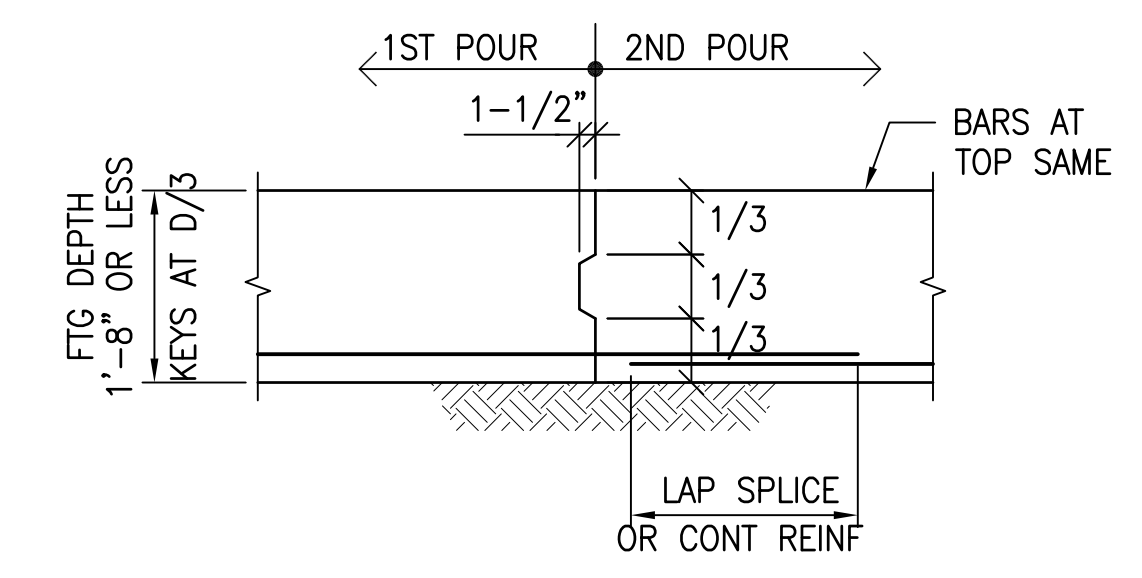
NOTE:
THE CONTRACTOR SHALL PROVIDE SHORING, SHEATHING OR OTHERWISE MAINTAINING THE SIDE OF THE EXCAVATION FROM CAVE-INS UNTIL ALL BACKFILL IS COMPLETED PER SPECIFICATIONS.

4 EXCAVATIONS PARALLEL TO FILL
NOT TO SCALE

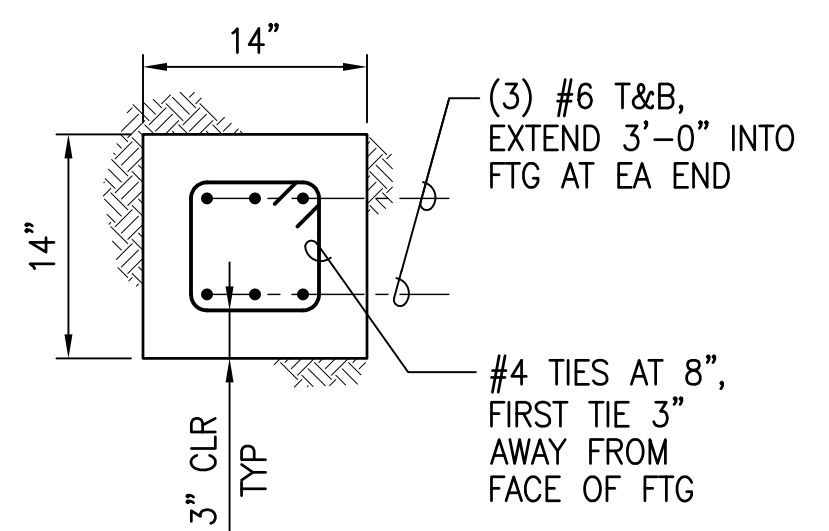


NOTE:
SEE **6 S-3** FOR FOOTING CONSTRUCTION JOINT DETAIL.

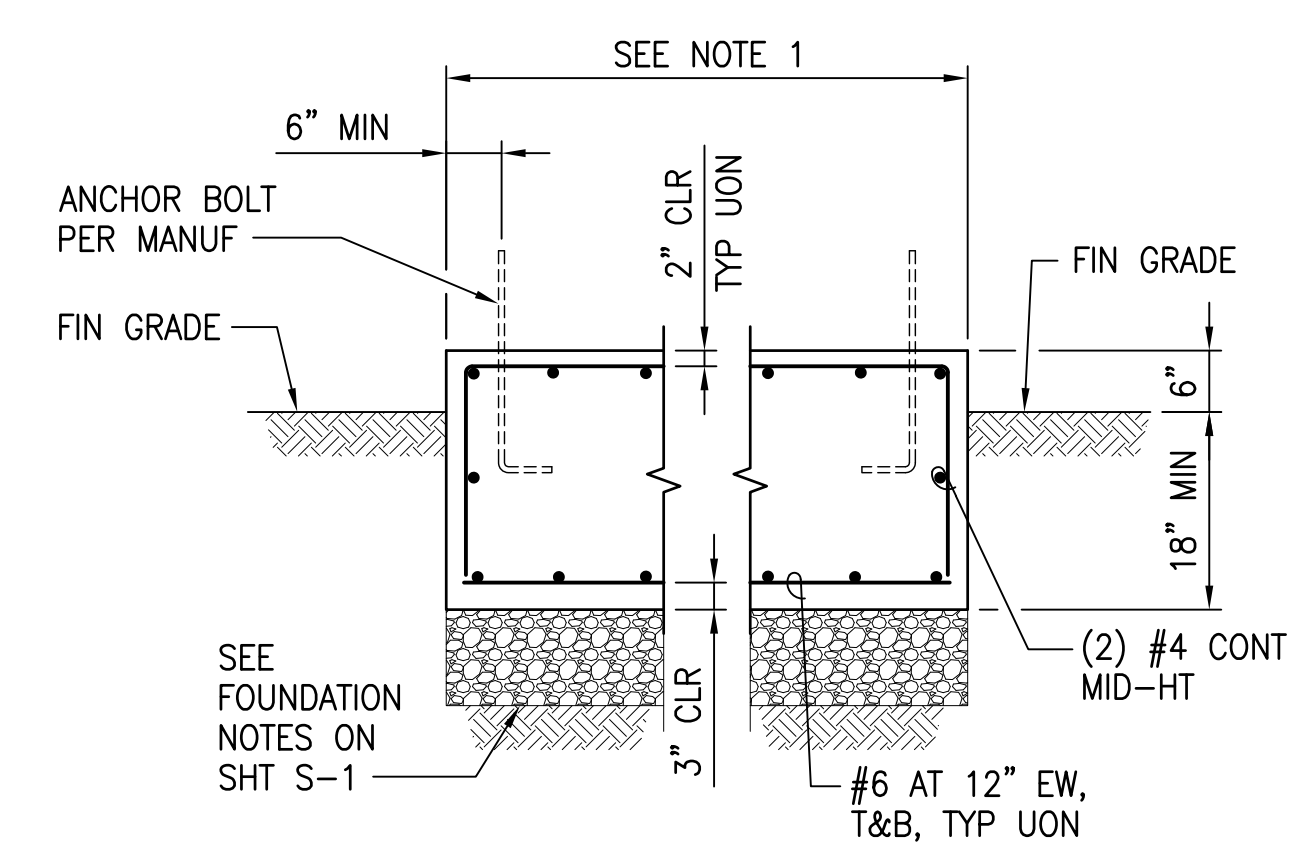
5 INTERSECTING WALL FOOTING
NOT TO SCALE



6 WALL FOOTING CONSTRUCTION JOINT
NOT TO SCALE



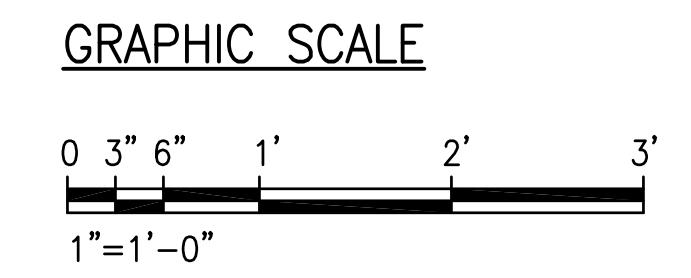
7 TIE BEAM CROSS SECTION
SCALE: 1" = 1'-0"



NOTE:

- CONTRACTOR TO COORDINATE SIZE OF CONCRETE BASE AND GENERATOR ANCHORAGE REQUIREMENTS WITH GENERATOR MANUFACTURER. CONCRETE PAD SHALL EXTEND 12" OUT FROM EDGE OF GENERATOR EQUIPMENT ON ALL SIDES.

8 CONCRETE PAD FOR GENERATOR
NOT TO SCALE

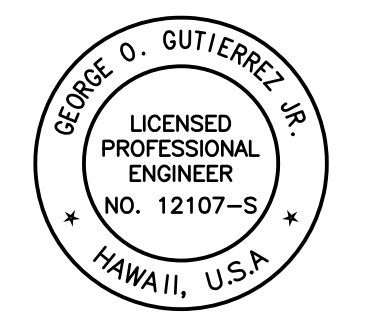


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STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

PULEHUNUI
REGIONAL
INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
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George O. Gutierrez
SIGNATURE APRIL 30, 2020
EXP. DATE OF THE LICENSE

REVISION	DATE	BREF	BY

Project No: 16-576
Scale: AS NOTED
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Designed By: CK
Drawn By: LL
Checked By: GG

TYPICAL DETAILS
- CONCRETE

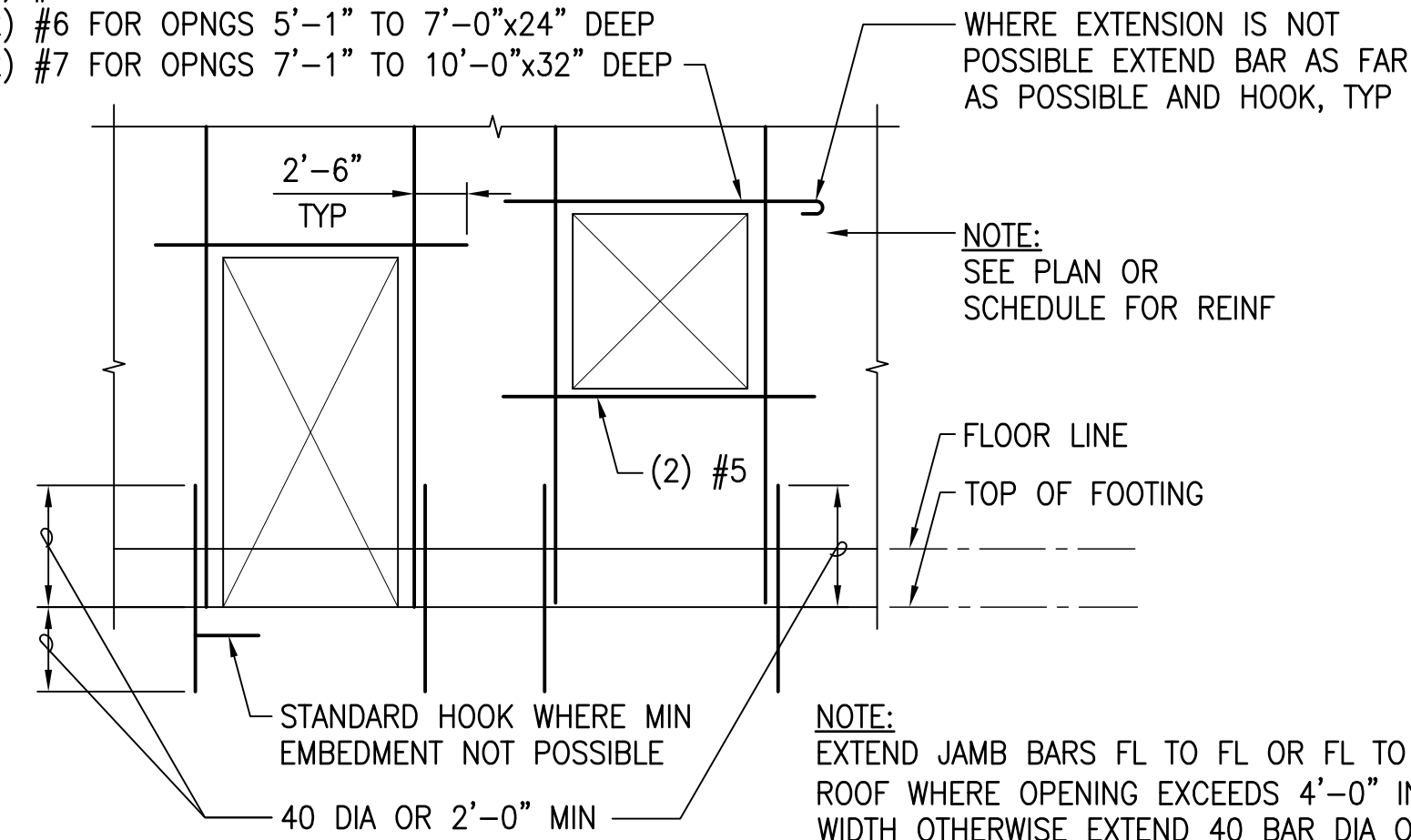
DWG. NO.
S-3
SHEET 133 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
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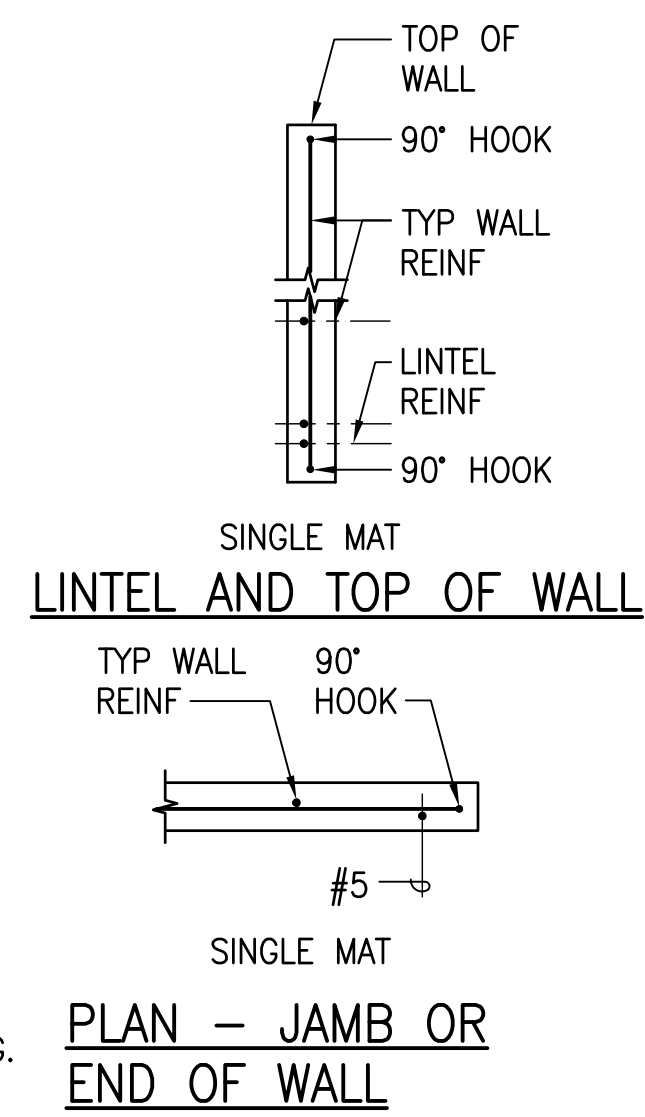
LINTEL REINFORCING:

- (2) #5 FOR OPNGS LESS THAN 5'-0"x16" DEEP
- (2) #6 FOR OPNGS 5'-1" TO 7'-0"x24" DEEP
- (2) #7 FOR OPNGS 7'-1" TO 10'-0"x32" DEEP

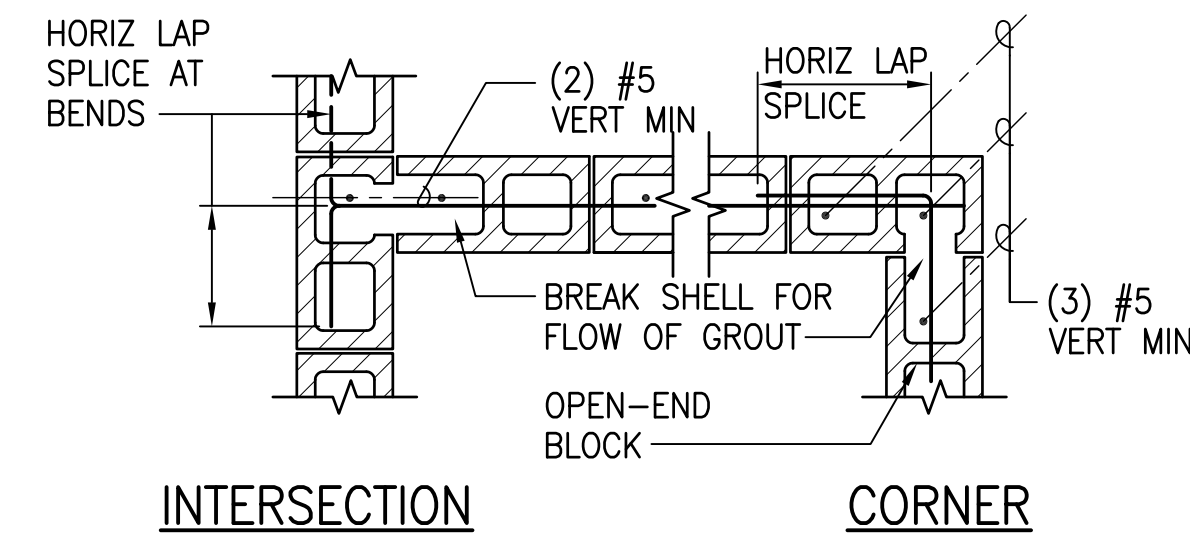


ELEVATION

1 MINIMUM REINFORCING AT MASONRY WALL OPENINGS
NOT TO SCALE



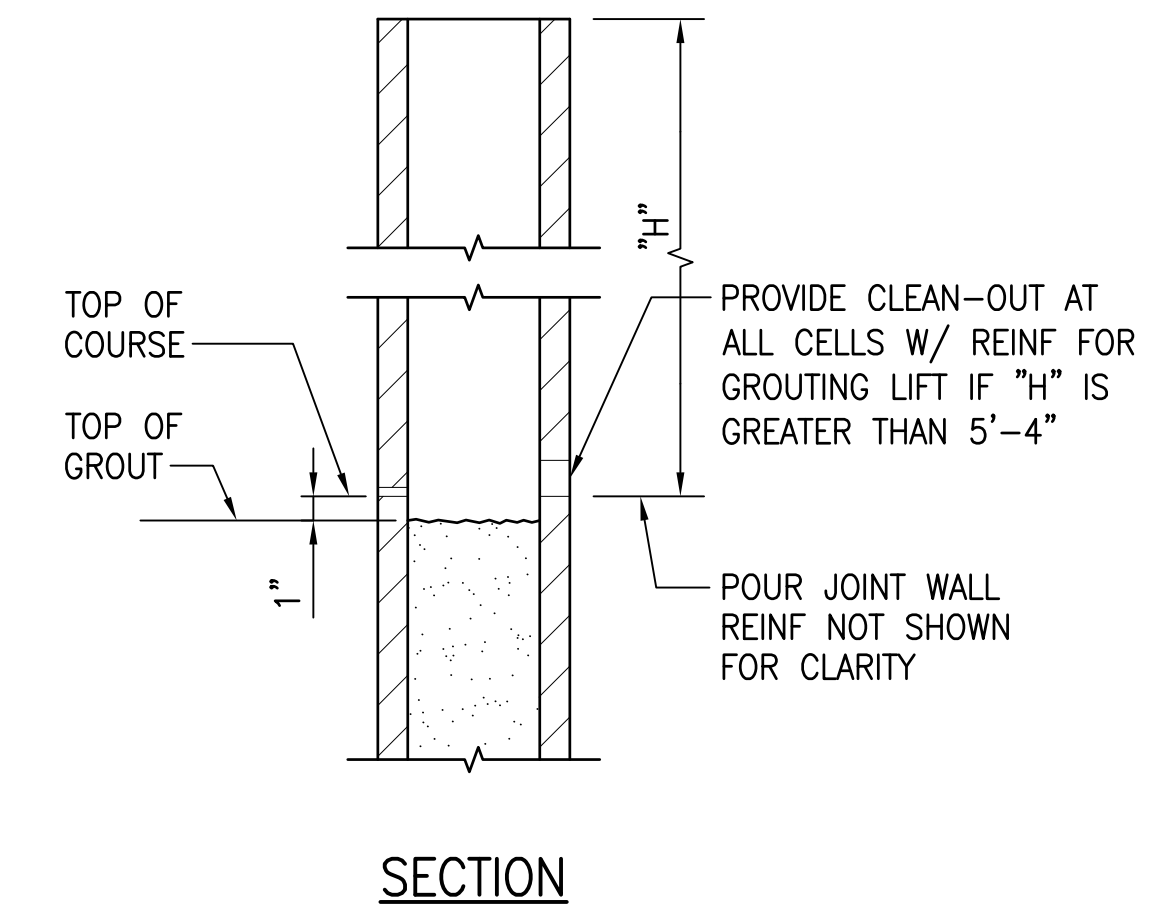
PLAN - JAMB OR END OF WALL



INTERSECTION

CORNER

2 CONC MASONRY WALL INTERSECTIONS
NOT TO SCALE



SECTION

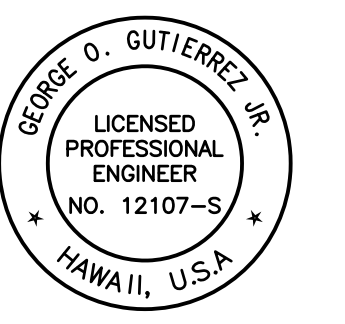
3 HORIZ CONSTR JT IN MASONRY WALL
NOT TO SCALE

JOB NO. 0-11-056.004
FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\19060\STRUCT\19060\DWG\19060\DRAWINGS.DWG

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STATE OF HAWAII
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**PULEHUNUI
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George O. Gutierrez
SIGNATURE APRIL 30, 2020
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0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

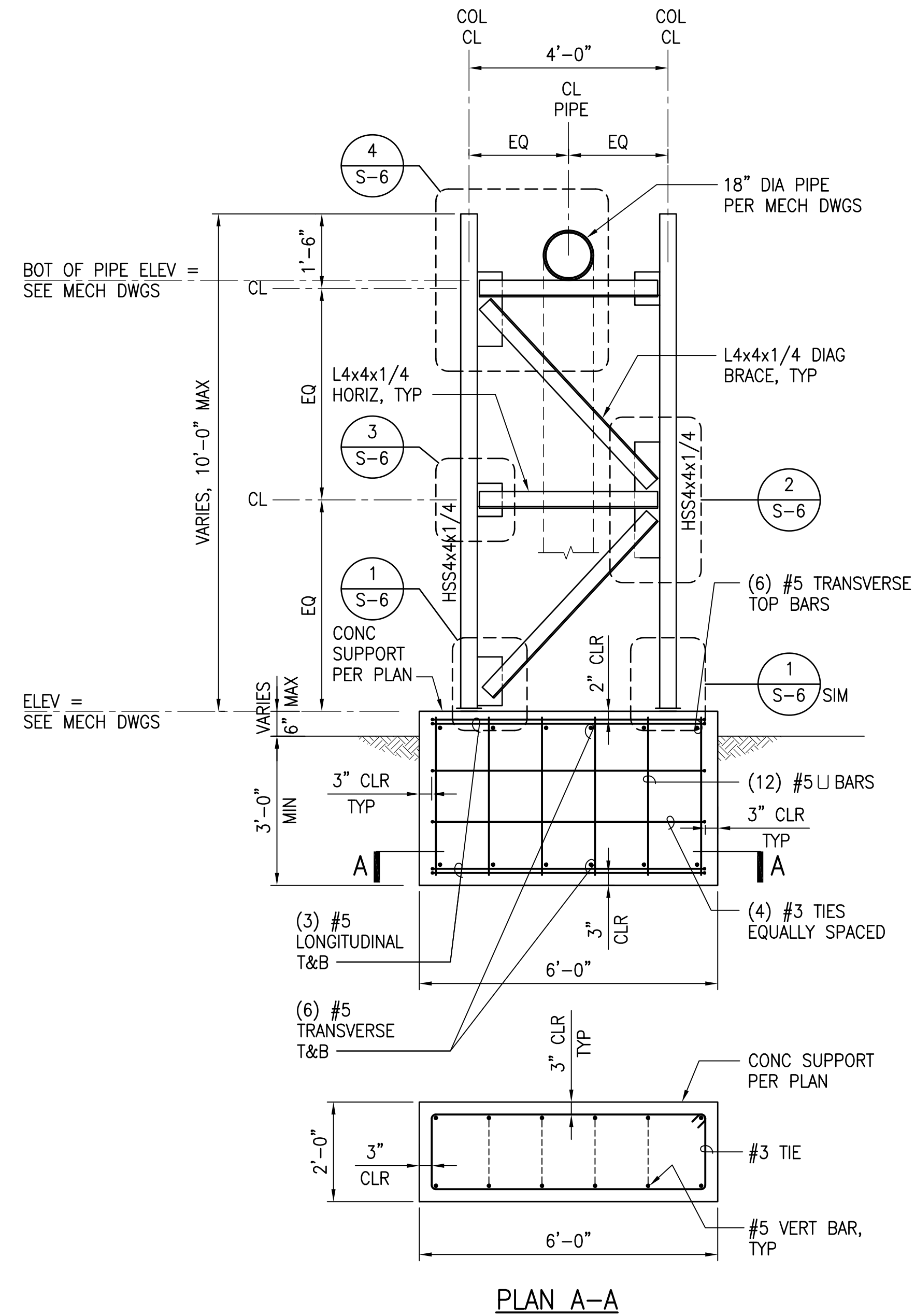
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Project No: 16-576
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TYPICAL DETAILS
- CMU
DWG. NO.
S-5
SHEET 135 OF 201

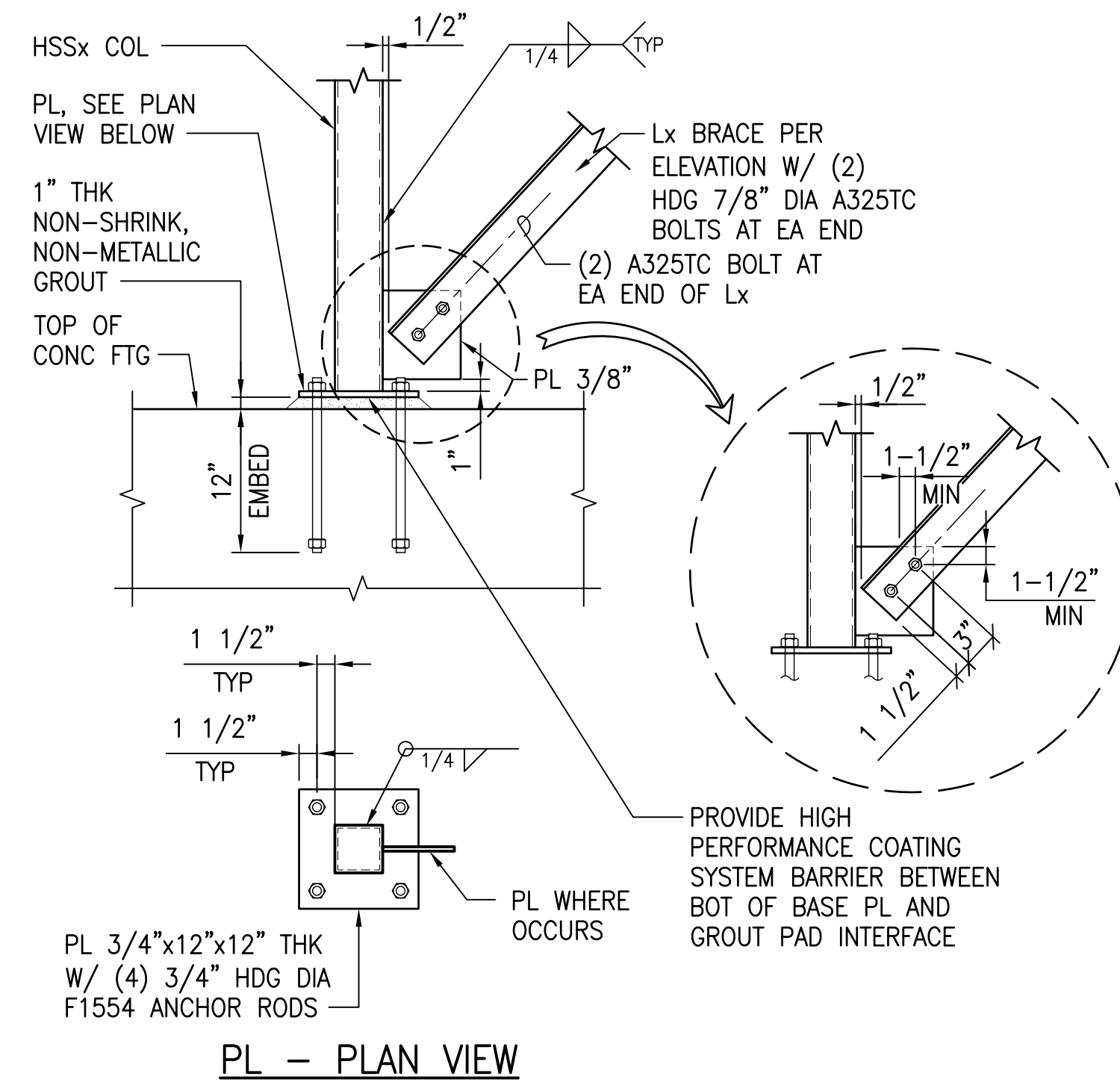
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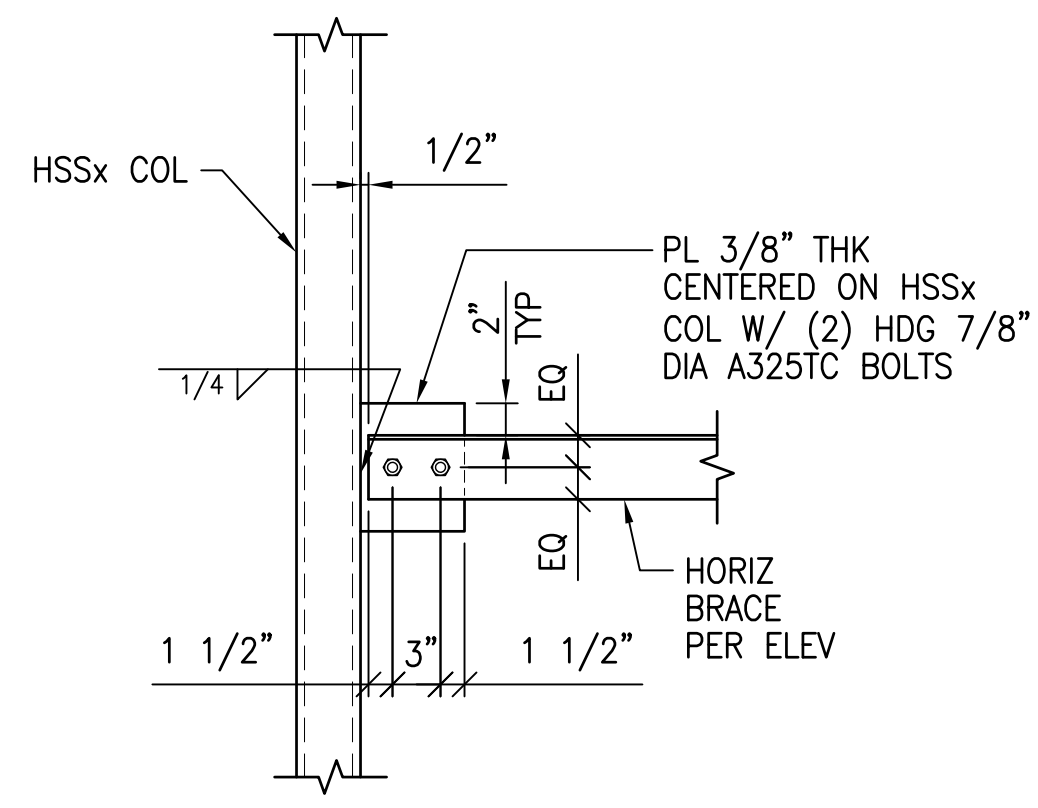


A FRAME ELEVATION - PIPE SUPPORT
SCALE: 1/2" = 1'-0"

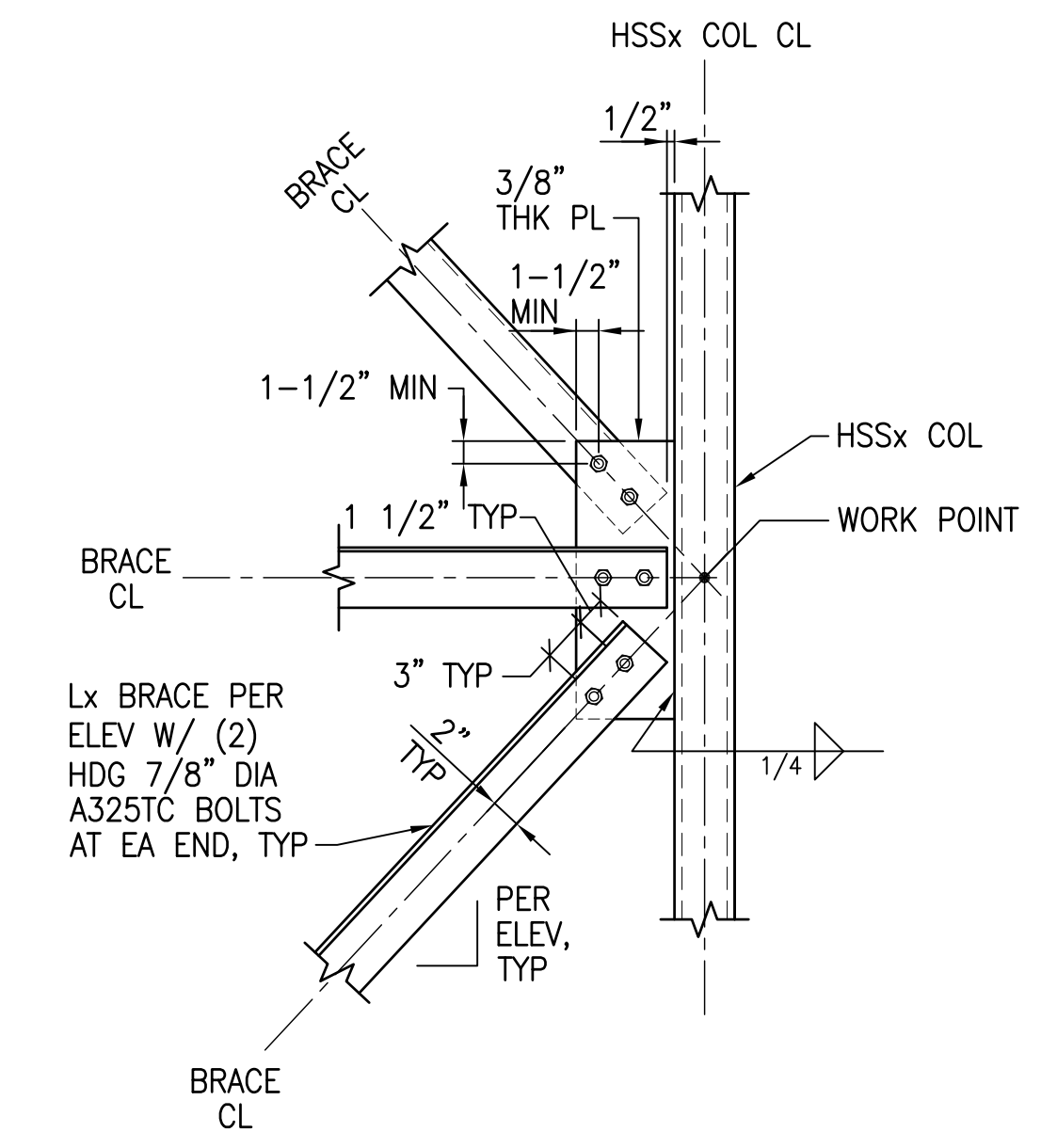
NOTE:
ALL STEEL AND CONNECTORS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION AND CONFORM TO ASTM A123 REQUIREMENTS. SEE STRUCTURAL STEEL NOTES ON SHEET S-2. ALL HOT-DIPPED GALVANIZED STRUCTURAL STEEL, BOLTS AND ATTACHMENTS SHALL BE PAINTED PER STRUCTURAL STEEL NOTE #10 ON SHEET S-2.



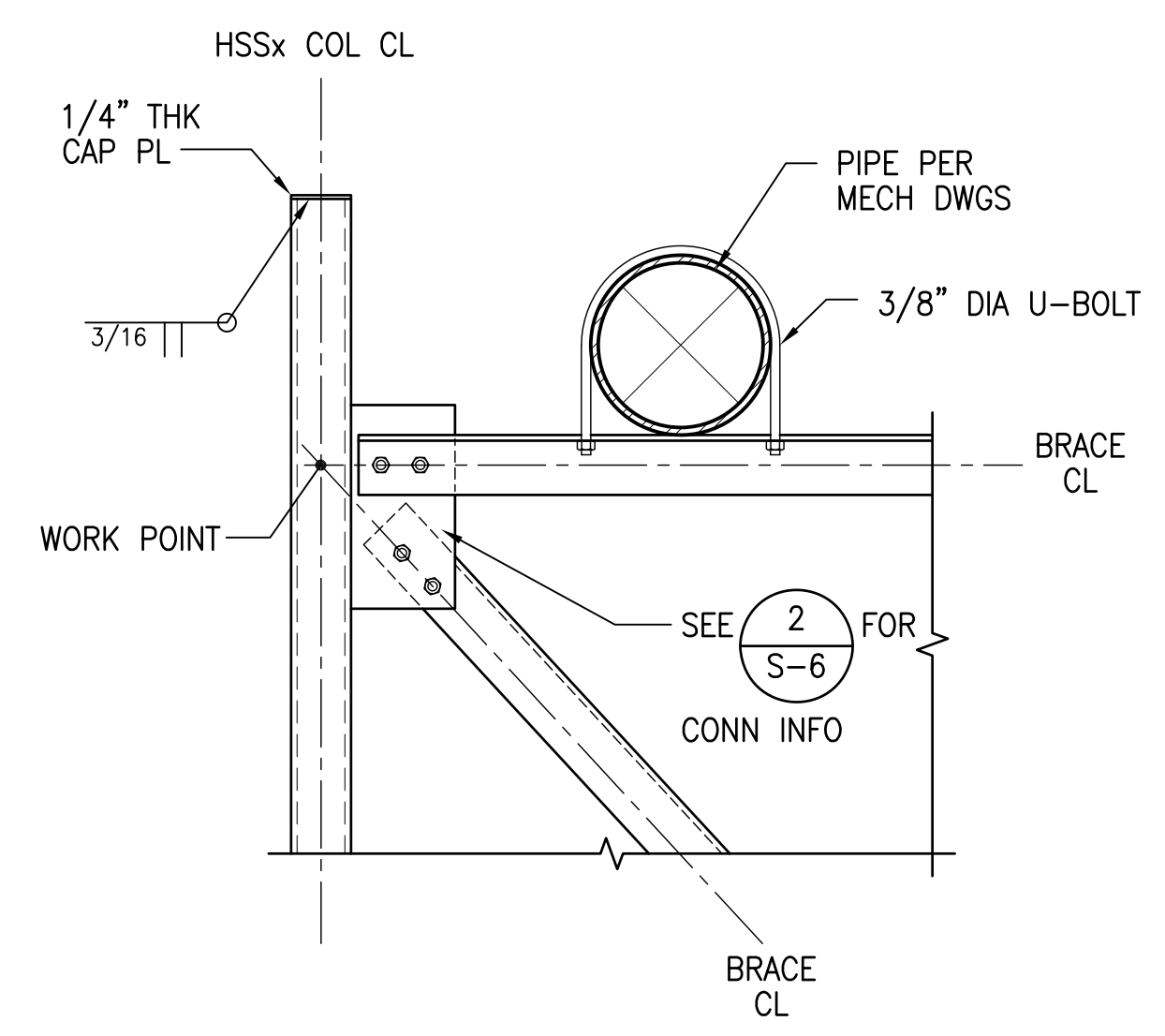
1 DETAIL
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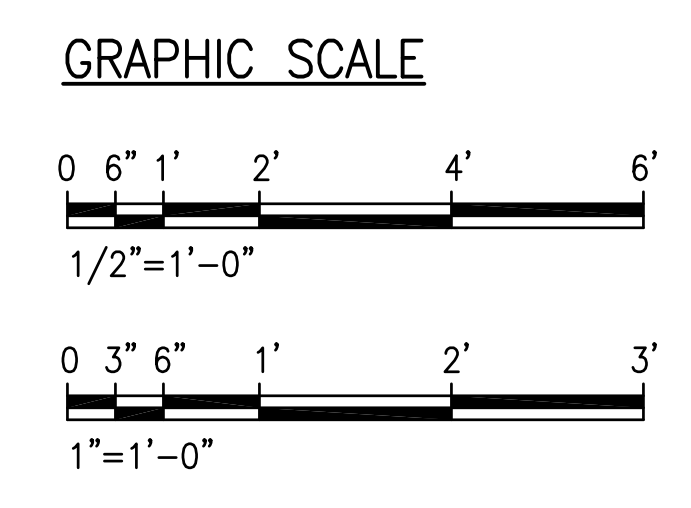
3 DETAIL
SCALE: 1" = 1'-0"



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



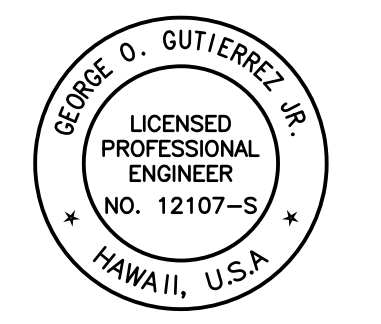
4 DETAIL
SCALE: 1" = 1'-0"



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George O. Gutierrez, Jr.
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EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

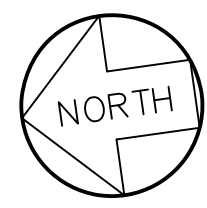
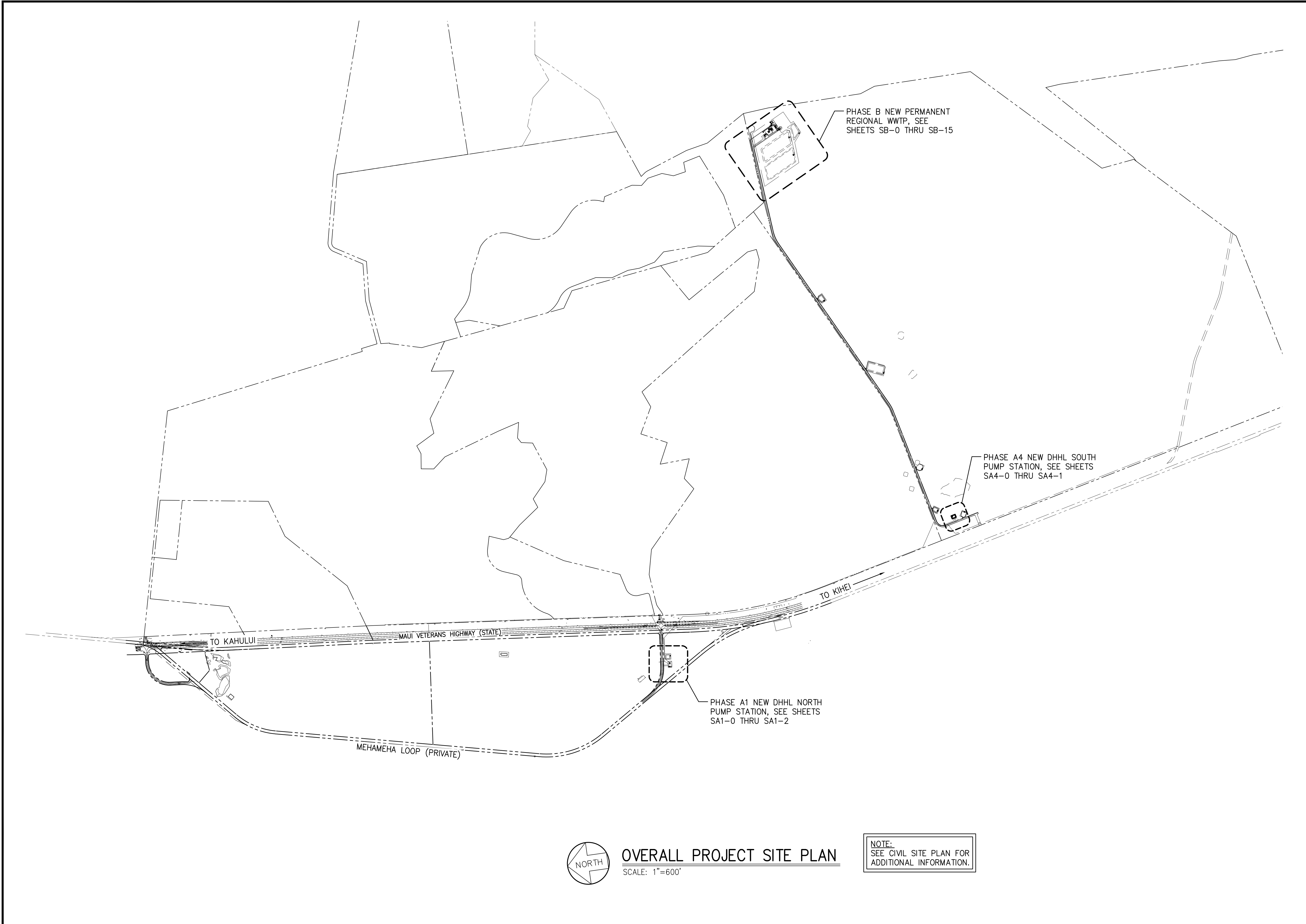
REVISION	DATE	BRIEF	BY

Project No: 16-576
Scale: AS NOTED
Date: 1/22/20
Designed By: CK
Drawn By: LL
Checked By: GG

PIPE SUPPORT
DETAILS
DWG. NO.
S-6
SHEET 136 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO.: 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG_S-7_SITE_MAP.DWG



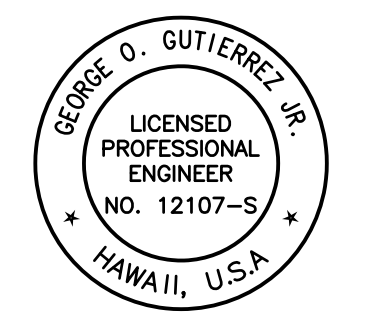
OVERALL PROJECT SITE PLAN
 SCALE: 1"=600'

NOTE:
 SEE CIVIL SITE PLAN FOR
 ADDITIONAL INFORMATION.

Austin Tsutsumi & Associates, Inc.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS
**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS * HONOLULU, HAWAII



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George O. Gutierrez
 APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BREF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

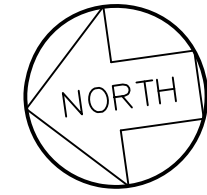
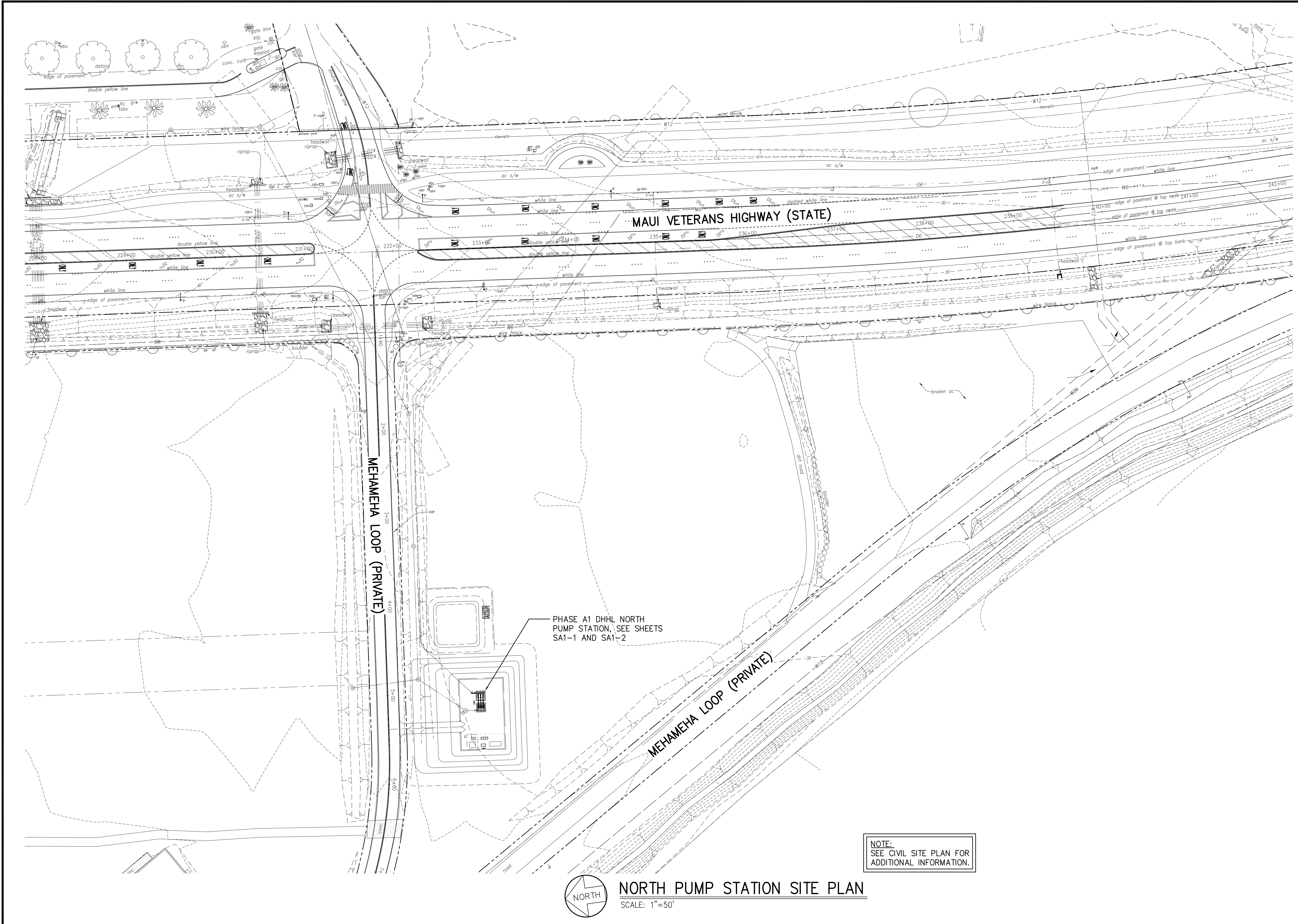
OVERALL PROJECT
 SITE PLAN

DWG. NO.
S-7

SHEET 137 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\190606\DWG\190606 DHHL PULEHUNUI\DWG\190606\STRUCT\190606\SA1-0_S44-0_SB-0_MAPS.DWG



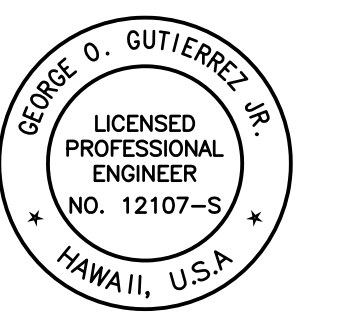
NORTH PUMP STATION SITE PLAN
 SCALE: 1"=50'

Austin Tsutsumi & Associates, Inc.
 CIVIL ENGINEERS & SURVEYORS
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STATE OF HAWAII
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George O. Gutierrez
 SIGNATURE APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
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 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY

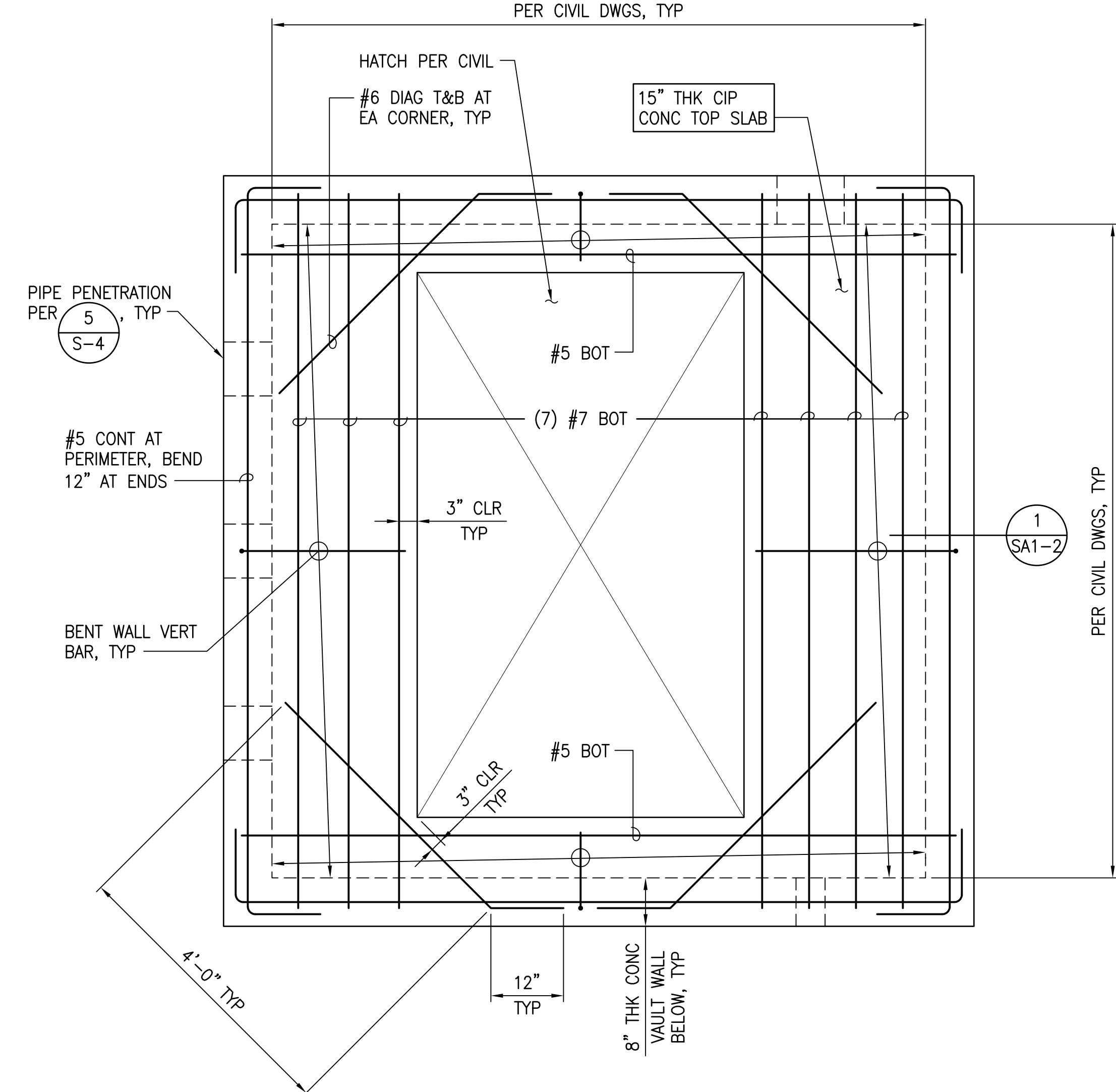
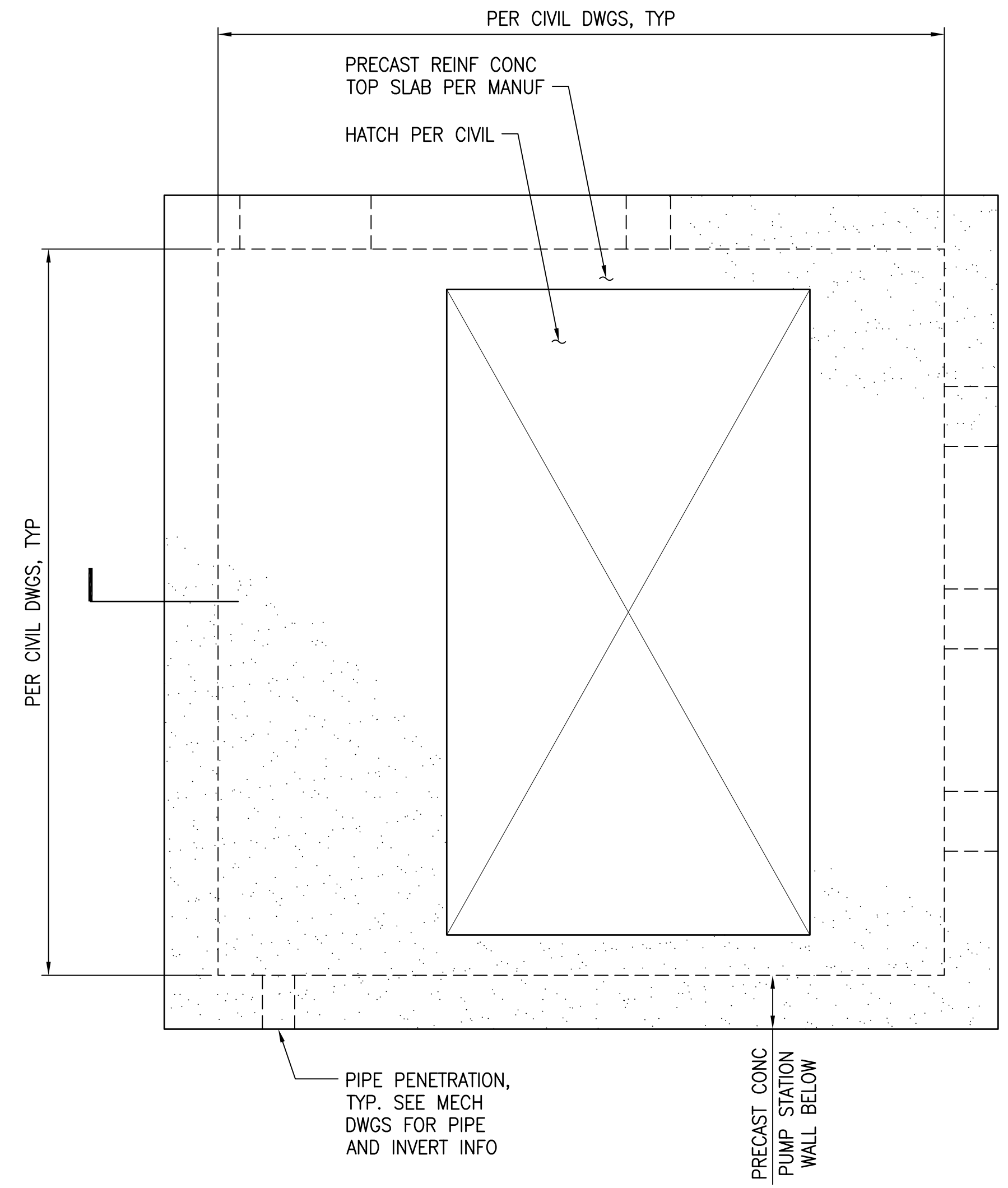
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

**NORTH PUMP
 STATION SITE PLAN**

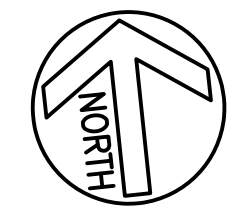
DWG. NO.
SA1-0
 SHEET 138 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\19060\STRUCT\19060\DWG\19060\DRAWINGS.DWG



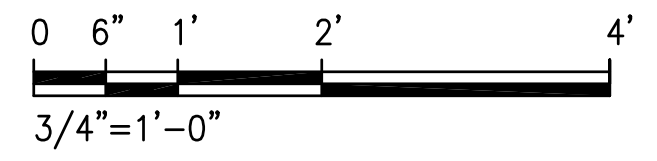
A NORTH PUMP STATION PLAN
 SCALE: 3/4" = 1'-0"



NOTES:

- REFER TO CIVIL/MECHANICAL DRAWINGS FOR ELEVATIONS AND DIMENSIONS NOT SHOWN, LOCATION OF WELL PIPES, EQUIPMENT SUPPORTS, ACCESS HATCH, ETC.
- FOR ADDITIONAL INFORMATION SEE NOTES ON SHEET SA1-2.

GRAPHIC SCALE

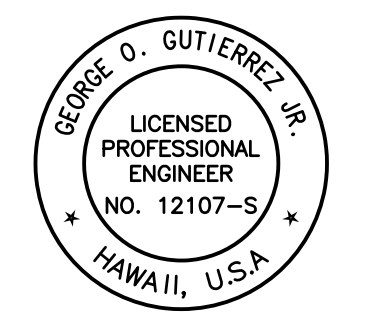


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 & ASSOCIATES, INC.
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PULEHUNUI REGIONAL INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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George O. Gutierrez, Jr.
 SIGNATURE APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY

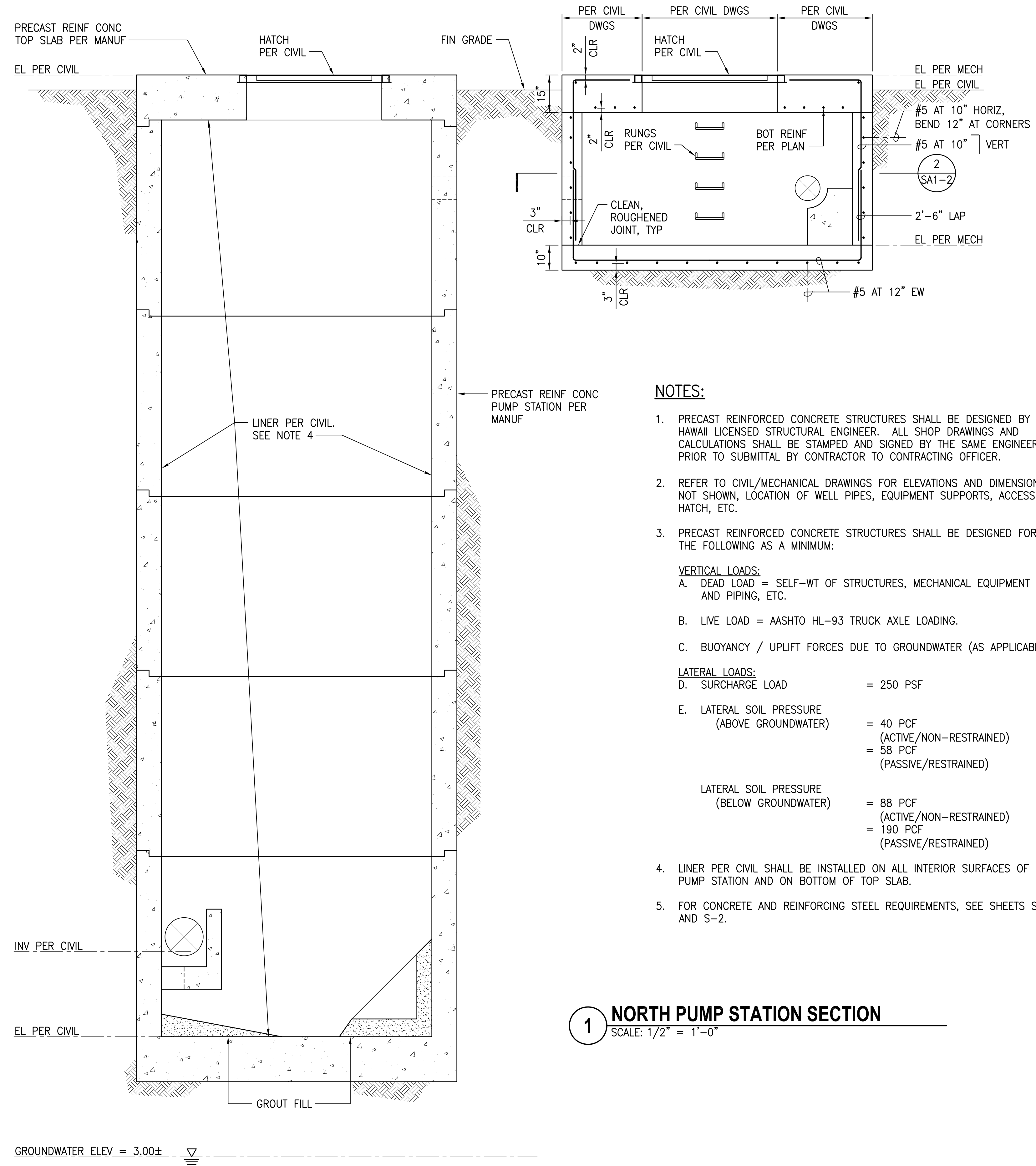
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

NORTH PUMP STATION PLAN

DWG. NO.
SA1-1
 SHEET 139 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\190606.DWG\190606.DHLL_PULEHUNUI\DWGS_190606\STRUCT_190606\DRAWINGS.DWG



1 NORTH PUMP STATION SECTION
 SCALE: 1/2" = 1'-0"

NOTES:

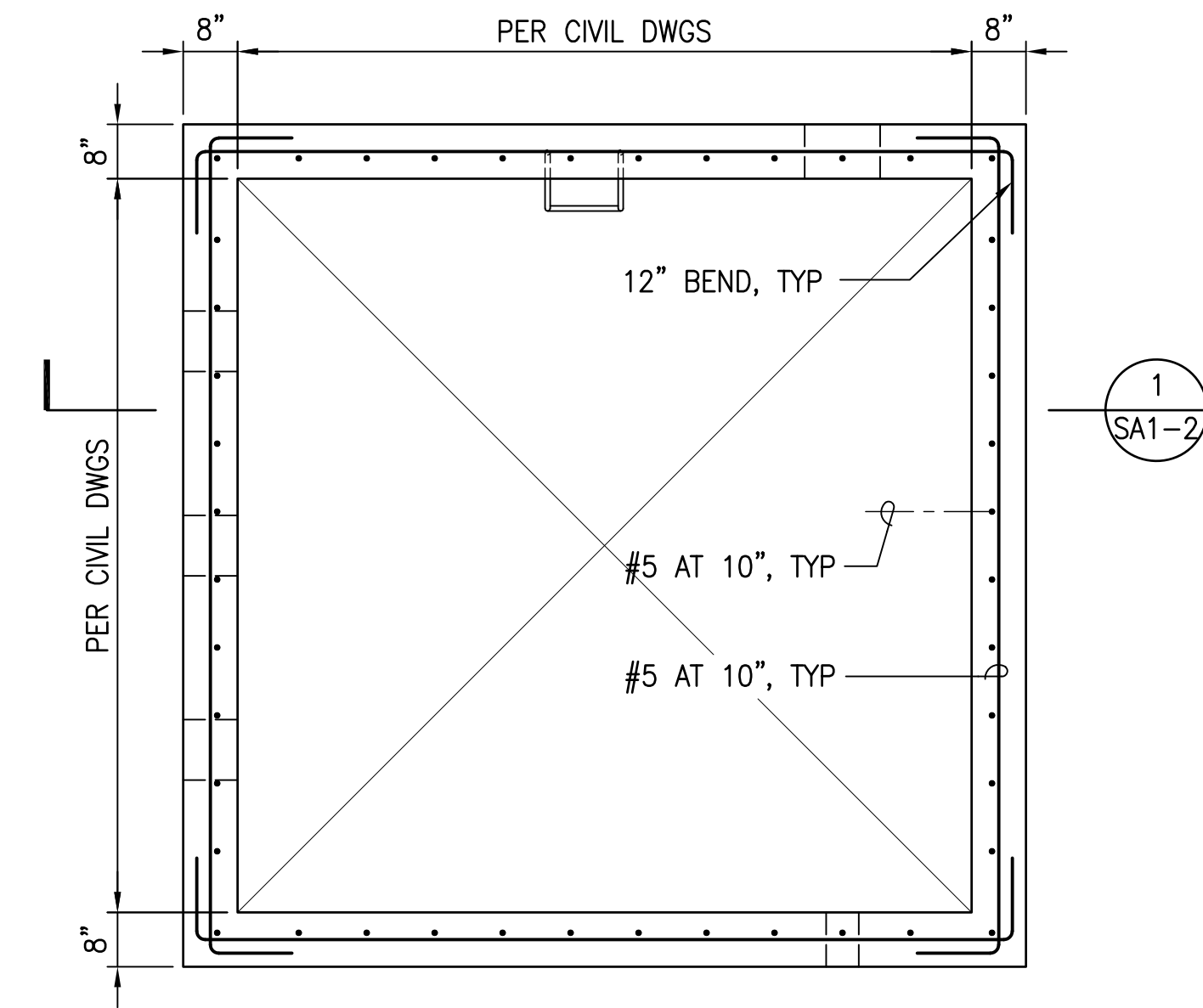
1. PRECAST REINFORCED CONCRETE STRUCTURES SHALL BE DESIGNED BY A HAWAII LICENSED STRUCTURAL ENGINEER. ALL SHOP DRAWINGS AND CALCULATIONS SHALL BE STAMPED AND SIGNED BY THE SAME ENGINEER PRIOR TO SUBMITTAL BY CONTRACTOR TO CONTRACTING OFFICER.
2. REFER TO CIVIL/MECHANICAL DRAWINGS FOR ELEVATIONS AND DIMENSIONS NOT SHOWN, LOCATION OF WELL PIPES, EQUIPMENT SUPPORTS, ACCESS HATCH, ETC.
3. PRECAST REINFORCED CONCRETE STRUCTURES SHALL BE DESIGNED FOR THE FOLLOWING AS A MINIMUM:

VERTICAL LOADS:

 - A. DEAD LOAD = SELF-WT OF STRUCTURES, MECHANICAL EQUIPMENT AND PIPING, ETC.
 - B. LIVE LOAD = AASHTO HL-93 TRUCK AXLE LOADING.
 - C. BUOYANCY / UPLIFT FORCES DUE TO GROUNDWATER (AS APPLICABLE)

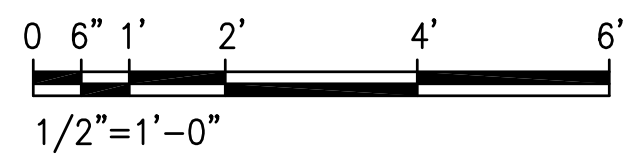
LATERAL LOADS:

 - D. SURCHARGE LOAD = 250 PSF
 - E. LATERAL SOIL PRESSURE (ABOVE GROUNDWATER) = 40 PCF (ACTIVE/NON-RESTRAINED) = 58 PCF (PASSIVE/RESTRAINED)
 - LATERAL SOIL PRESSURE (BELOW GROUNDWATER) = 88 PCF (ACTIVE/NON-RESTRAINED) = 190 PCF (PASSIVE/RESTRAINED)
4. LINER PER CIVIL SHALL BE INSTALLED ON ALL INTERIOR SURFACES OF PUMP STATION AND ON BOTTOM OF TOP SLAB.
5. FOR CONCRETE AND REINFORCING STEEL REQUIREMENTS, SEE SHEETS S-1 AND S-2.



2 NORTH PUMP STATION PLAN SECTION
 SCALE: 1/2" = 1'-0"

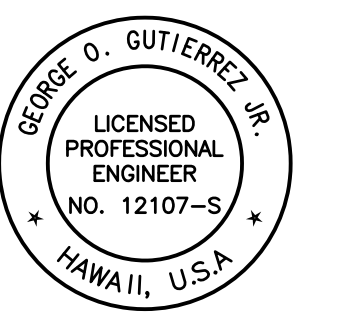
GRAPHIC SCALE



Austin Tsutsumi & Associates, Inc.
 CIVIL ENGINEERS & SURVEYORS
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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS
 PULEHUNUI
 REGIONAL
 INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS HONOLULU, HAWAII



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George D. Gutierrez
 SIGNATURE APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BREF	BY

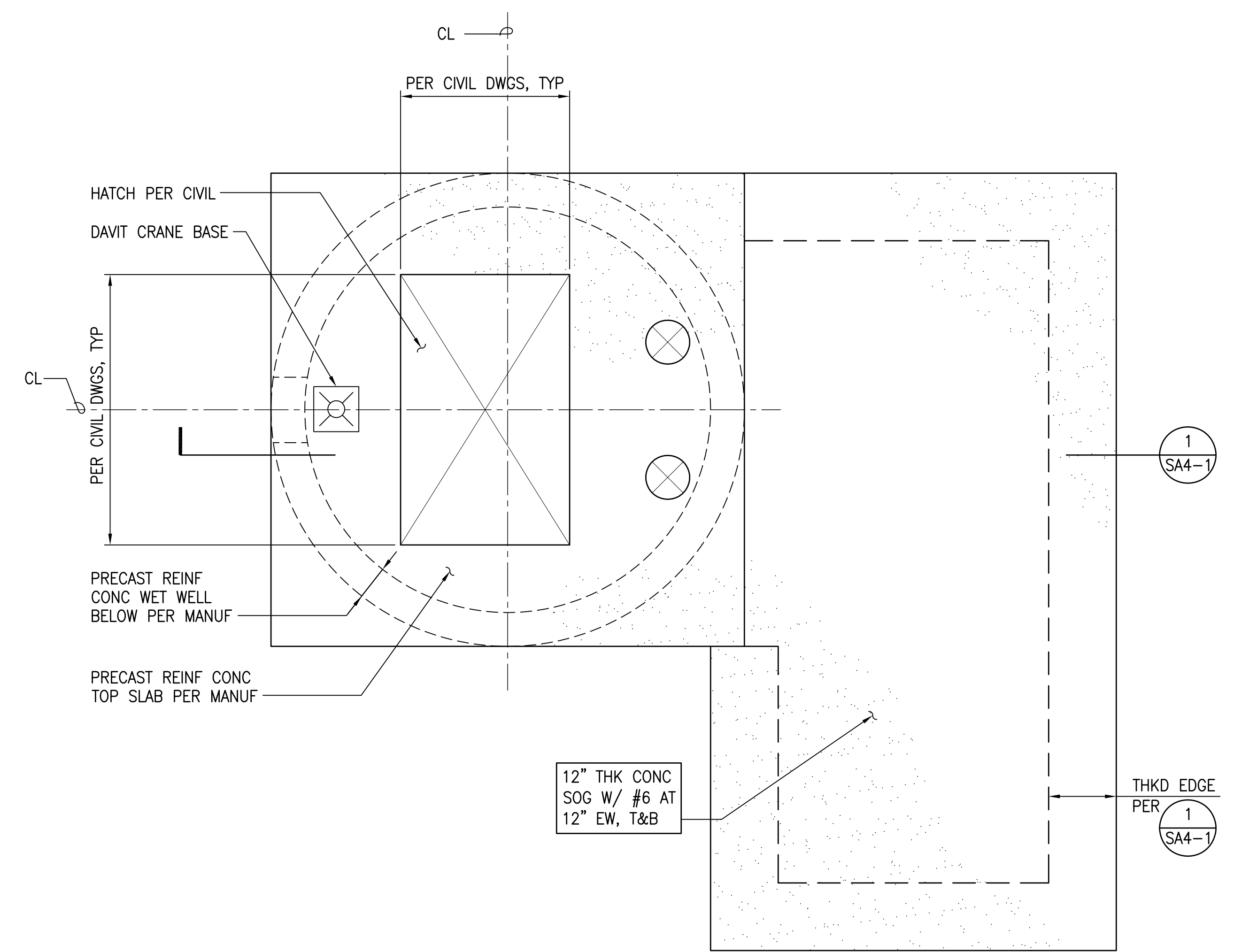
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

NORTH PUMP STATION SECTION

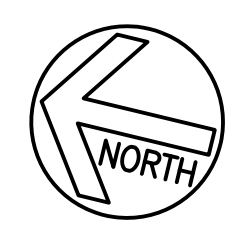
DWG. NO.
SA1-2
 SHEET 140 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\190606\DWG\190606\DHHL_PULEHUNUI\DWG\STRUCT\190606\DWG\190606\DRAWINGS.DWG



A SOUTH PUMP STATION PLAN
 SCALE: 3/4" = 1'-0"



NOTES:

1. PRECAST REINFORCED CONCRETE STRUCTURES SHALL BE DESIGNED BY A HAWAII LICENSED STRUCTURAL ENGINEER. ALL SHOP DRAWINGS AND CALCULATIONS SHALL BE STAMPED AND SIGNED BY THE SAME ENGINEER PRIOR TO SUBMITTAL BY CONTRACTOR TO CONTRACTING OFFICER.
2. REFER TO CIVIL/MECHANICAL DRAWINGS FOR ELEVATIONS AND DIMENSIONS NOT SHOWN, LOCATION OF WELL PIPES, EQUIPMENT SUPPORTS, ACCESS HATCH, ETC.
3. PRECAST REINFORCED CONCRETE STRUCTURES SHALL BE DESIGNED FOR THE FOLLOWING AS A MINIMUM:

VERTICAL LOADS:

A. DEAD LOAD = SELF-WT OF STRUCTURES, MECHANICAL EQUIPMENT AND PIPING, ETC.

B. LIVE LOAD = AASHTO HL-93 TRUCK AXLE LOADING.

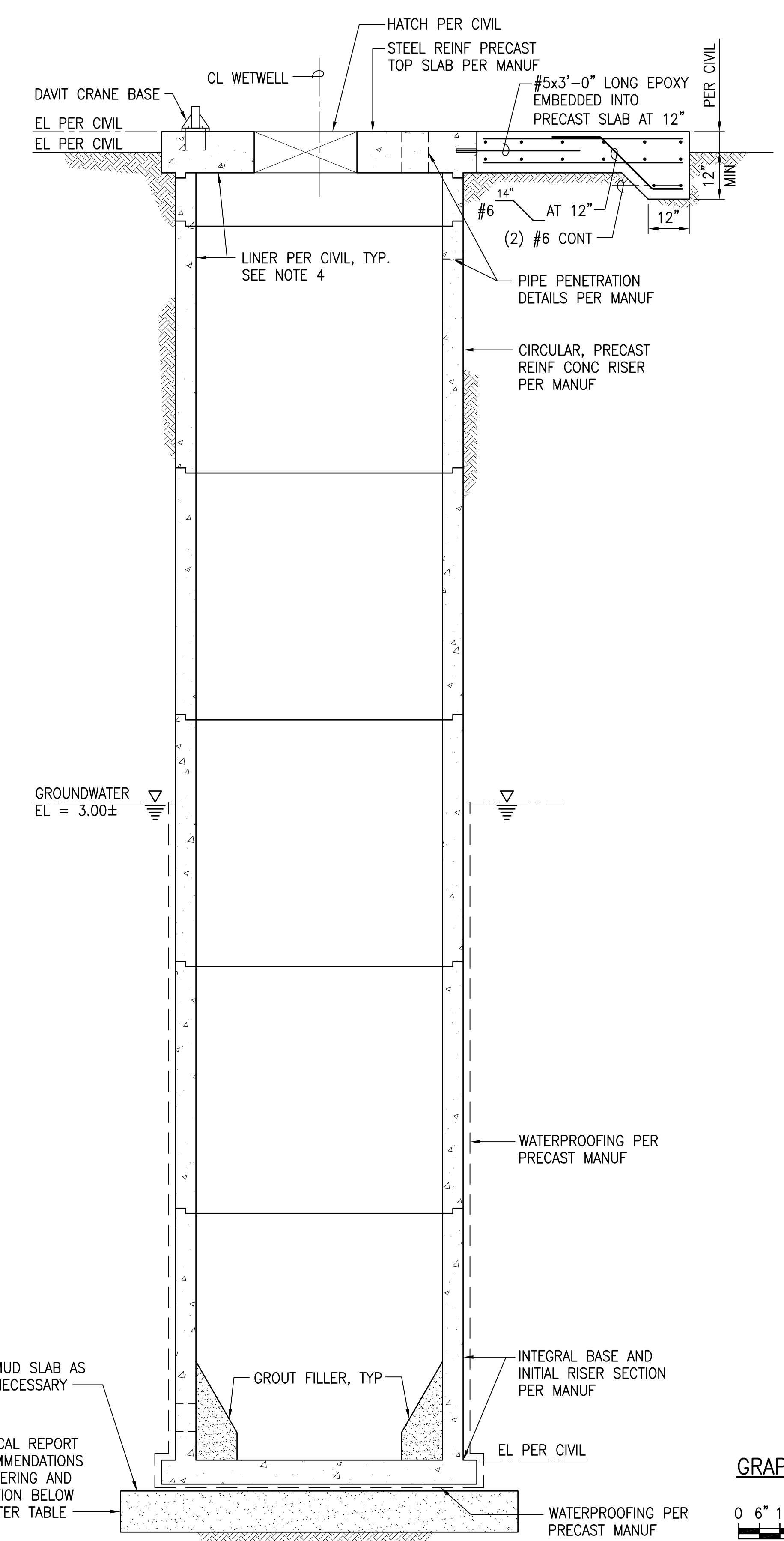
C. BUOYANCY / UPLIFT FORCES DUE TO GROUNDWATER

LATERAL LOADS:

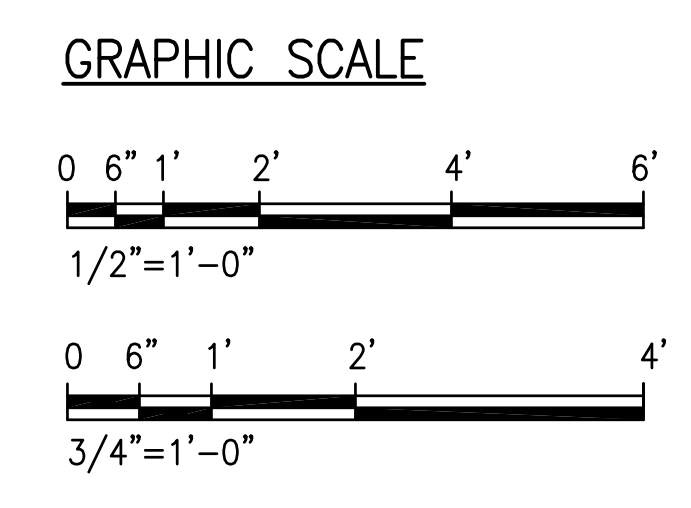
D. SURCHARGE LOAD = 250 PSF

E. LATERAL SOIL PRESSURE (ABOVE GROUNDWATER) = 40 PCF (ACTIVE/NON-RESTRAINED) = 58 PCF (PASSIVE/RESTRAINED)

LATERAL SOIL PRESSURE (BELOW GROUNDWATER) = 88 PCF (ACTIVE/NON-RESTRAINED) = 190 PCF (PASSIVE/RESTRAINED)
4. LINER PER CIVIL SHALL BE INSTALLED ON ALL INTERIOR SURFACES OF PUMP STATION AND ON BOTTOM OF TOP SLAB.
5. FOR CONCRETE AND REINFORCING STEEL REQUIREMENTS, SEE SHEETS S-1 AND S-2.



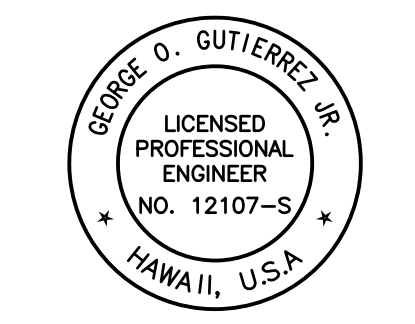
1 SOUTH PUMP STATION SECTION
 SCALE: 1/2" = 1'-0"



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 CIVIL ENGINEERS | SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
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 PHONE: 808-533-3646
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STATE OF HAWAII
 DEPARTMENT OF HAWAIIAN HOME LANDS
PULEHUNUI REGIONAL INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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George O. Gutierrez
 APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BREF	BY

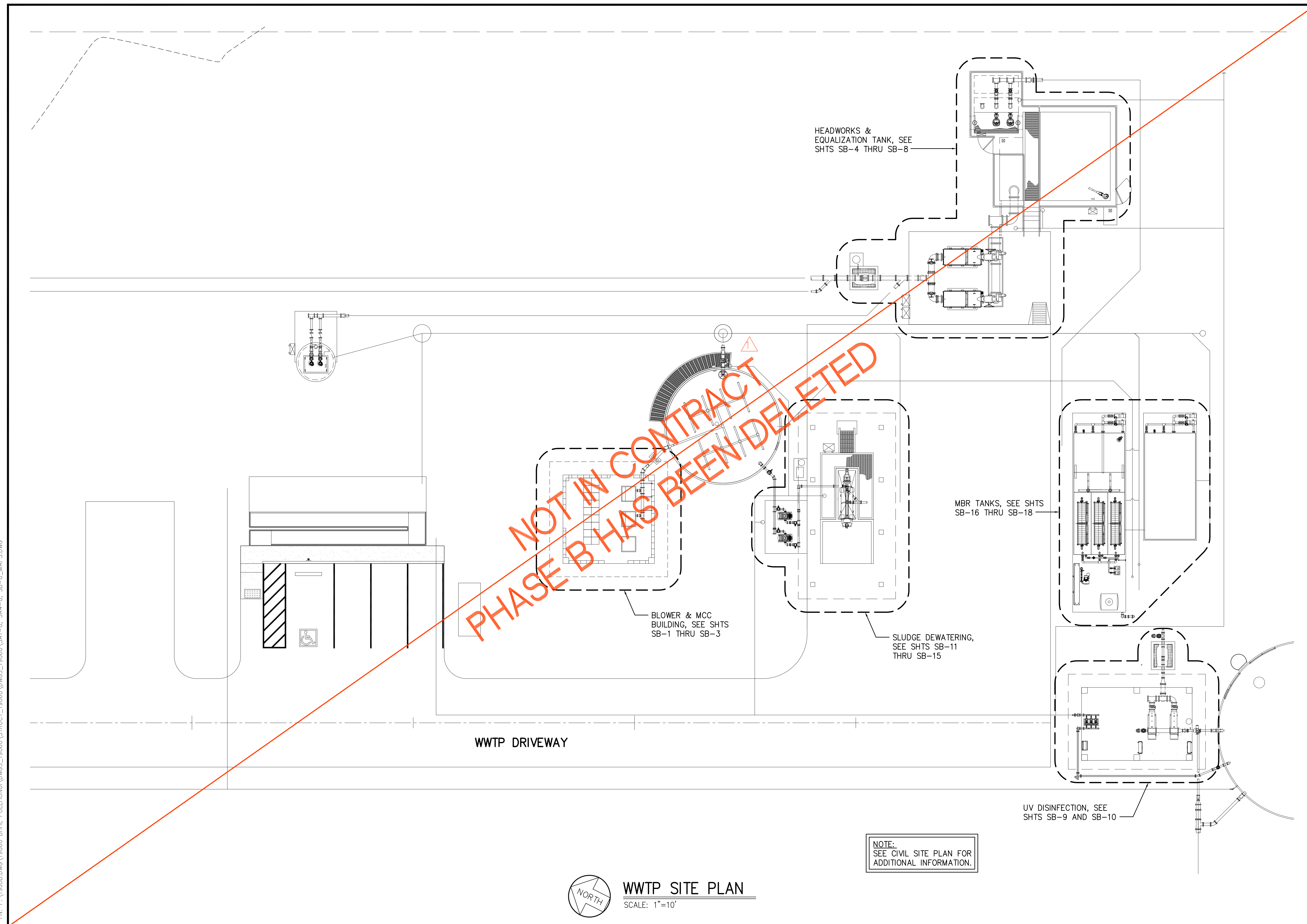
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

SOUTH PUMP STATION PLAN AND SECTION

DWG. NO.
SA4-1
 SHEET 142 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\STRUCT\19060\DWG\19060\SAT-0_S44-0_SB-0_MAPS.DWG



HEADWORKS & EQUALIZATION TANK, SEE SHTS SB-4 THRU SB-8

BLOWER & MCC BUILDING, SEE SHTS SB-1 THRU SB-3

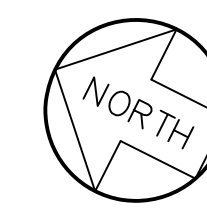
MBR TANKS, SEE SHTS SB-16 THRU SB-18

SLUDGE DEWATERING, SEE SHTS SB-11 THRU SB-15

UV DISINFECTION, SEE SHTS SB-9 AND SB-10

**NOT IN CONTRACT
PHASE B HAS BEEN DELETED**

NOTE:
SEE CIVIL SITE PLAN FOR ADDITIONAL INFORMATION.

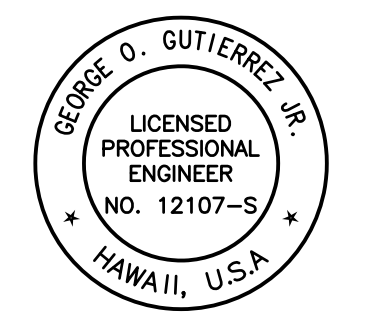


WWTP SITE PLAN
SCALE: 1"=10'

Austin Tsutsumi & Associates, Inc.
CIVIL ENGINEERS & SURVEYORS
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George O. Gutierrez
SIGNATURE APRIL 30, 2020
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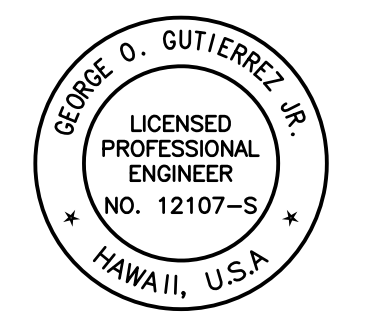
REVISION	DATE	BREF	BY
▲	4/15/20	ADDENDUM 5	

Project No: 16-576
Scale: AS NOTED
Date: 1/22/20
Designed By: CK
Drawn By: LL
Checked By: GG

WWTP SITE PLAN

DWG. NO.
SB-0
SHEET 143 OF 201

FILE	POCKET	FOLDER	NO.



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George O. Gutierrez
 APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

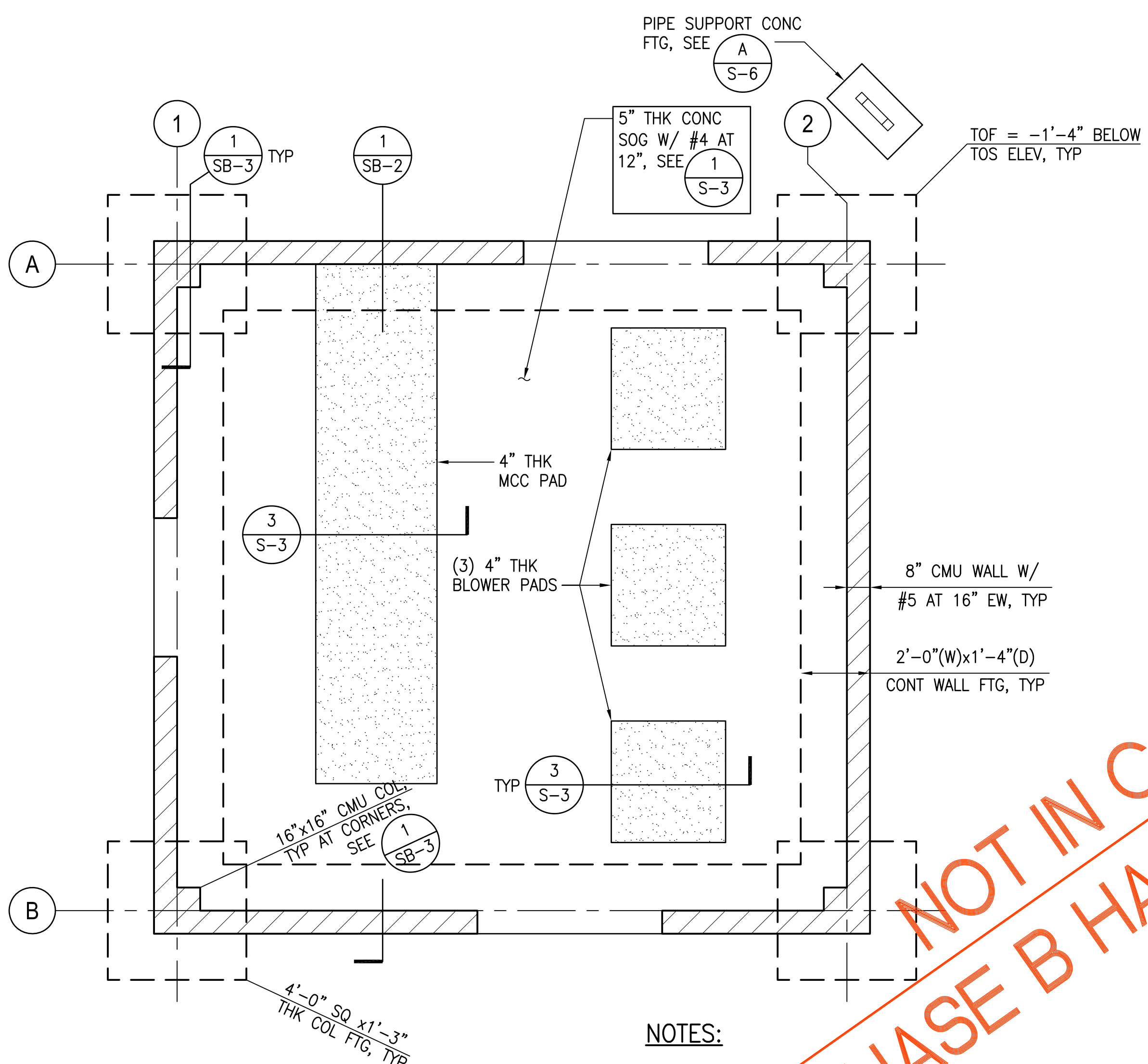
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
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BLOWER AND MCC
 BUILDING FOUNDATION
 AND ROOF FRAMING
 PLANS

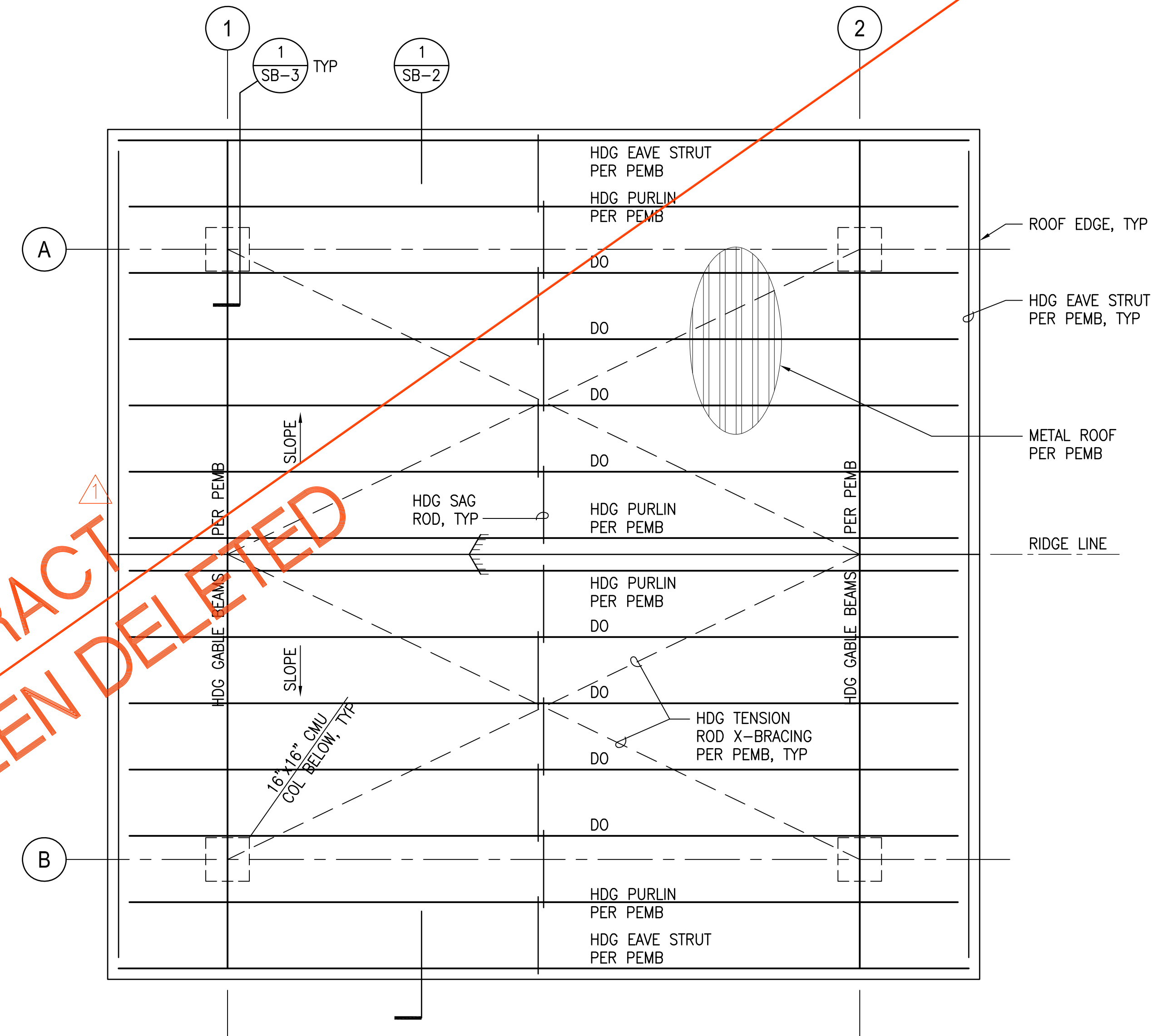
DWG. NO.
SB-1
 SHEET 144 OF 201

FILE	POCKET	FOLDER	NO.

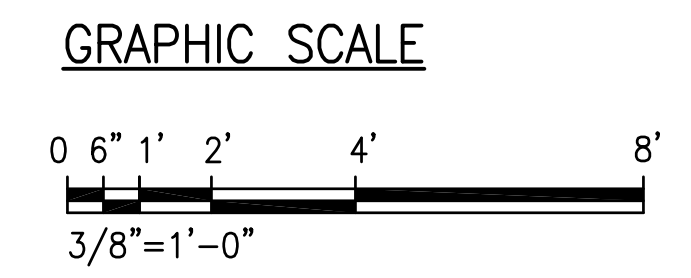


- NOTES:**
- SEE GENERAL NOTES ON SHEET S-1 TO S-2 AND TYPICAL DETAILS ON SHEETS S-3 TO S-5 FOR ADDITIONAL INFORMATION.
 - SEE ARCHITECTURAL DRAWINGS FOR ROOFING GUTTERS, DOWNSPOUTS, AND ADDITIONAL INFORMATION.
 - REFER TO CIVIL AND MECHANICAL DRAWINGS FOR SITE PLAN, LOCATION OF STRUCTURES AND ALL INFORMATION AND DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
 - SEE (4) S-3 FOR REQUIREMENTS AT EXCAVATIONS PARALLEL TO BUILDING FOUNDATION.

A BLOWER AND MCC BUILDING FOUNDATION PLAN
 SCALE: 3/8" = 1'-0"



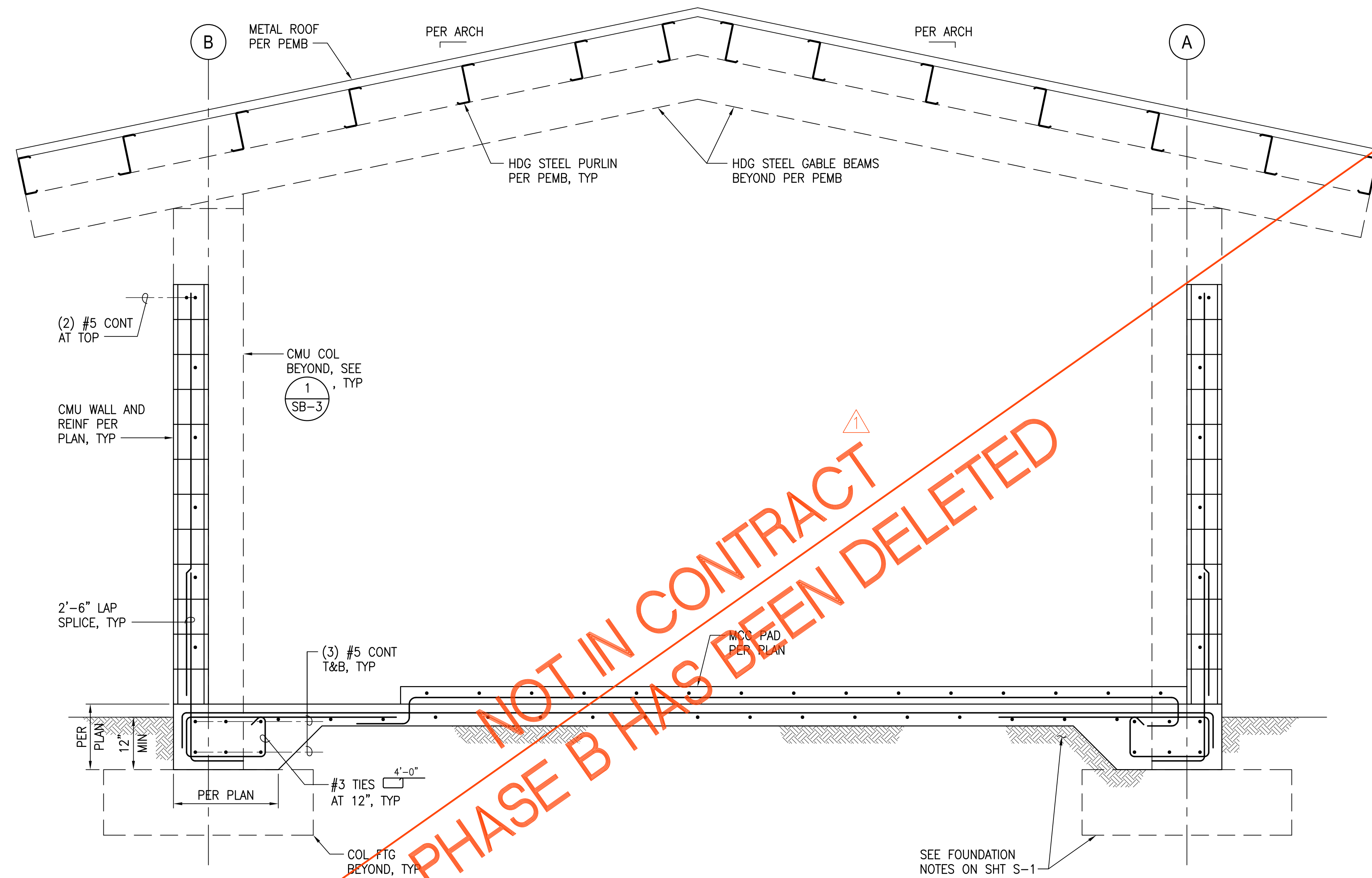
B BLOWER AND MCC BUILDING ROOF FRAMING PLAN
 SCALE: 3/8" = 1'-0"



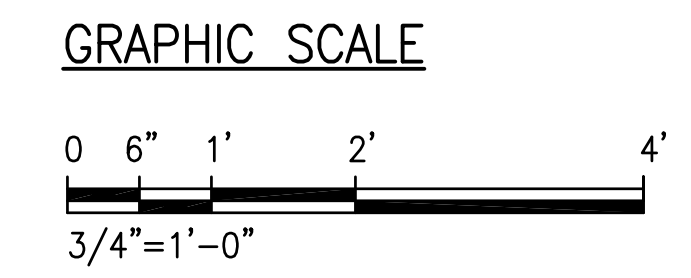
JOB NO.: 0-11-056.004
 FN: F:\190606.DWG\190606.DWG\190606.DWG\STRUCT_190606.DWG\190606.DWG\DRAWINGS.DWG

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

JOB NO. 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\STRUCT\19060\DWG\19060\DRAWINGS.DWG



1 BLOWER AND MCC BUILDING SECTION
 SCALE: 3/4" = 1'-0"

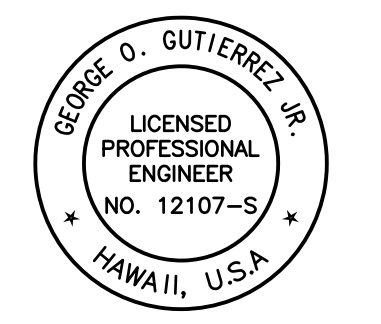


Austin Tsutsumi
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 CIVIL ENGINEERS & SURVEYORS
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PULEHUNUI REGIONAL INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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George O. Gutierrez, Jr.
 APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

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 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BREF	BY
△	4/15/20	ADDENDUM 5	

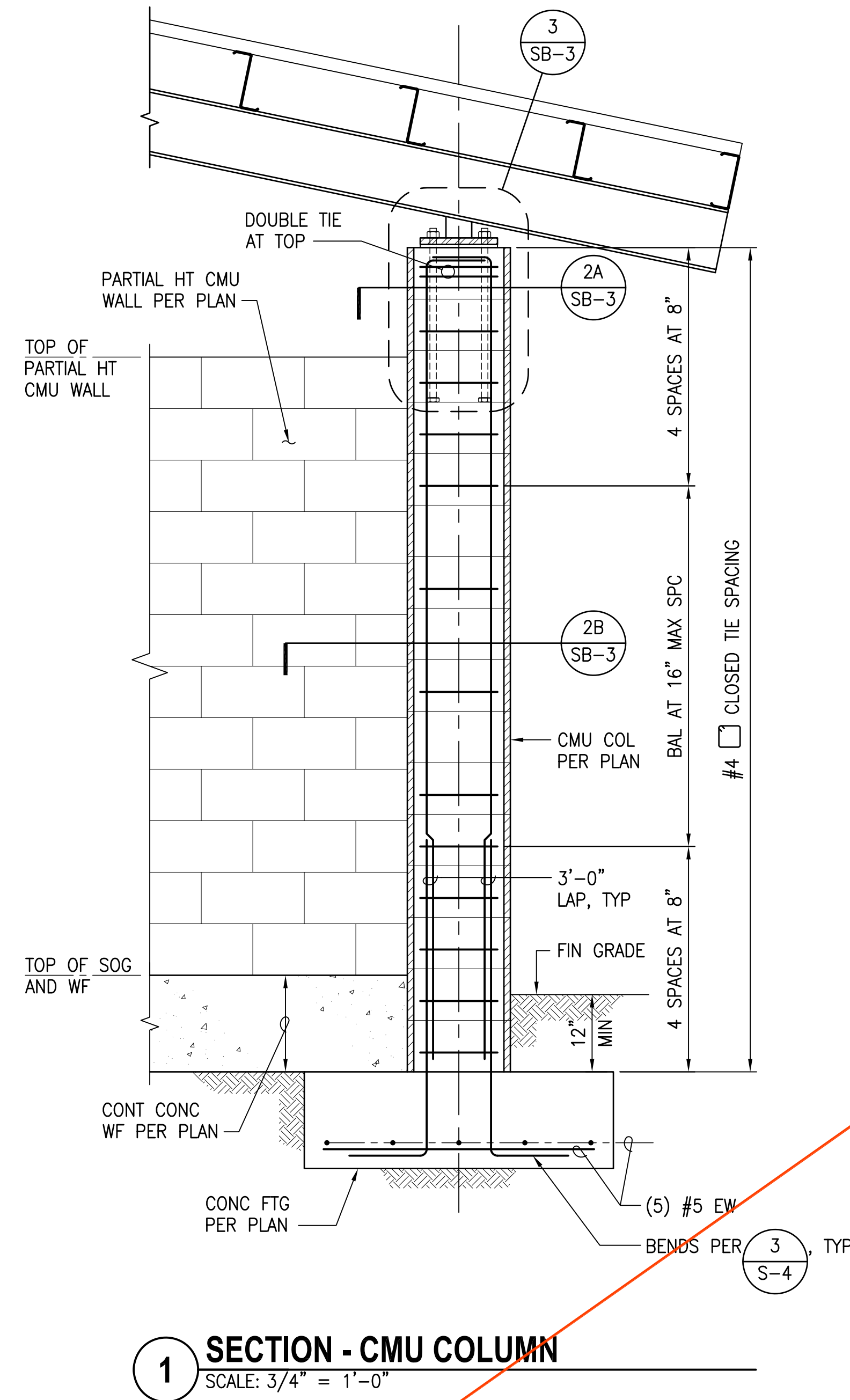
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

BLOWER AND MCC BUILDING SECTION

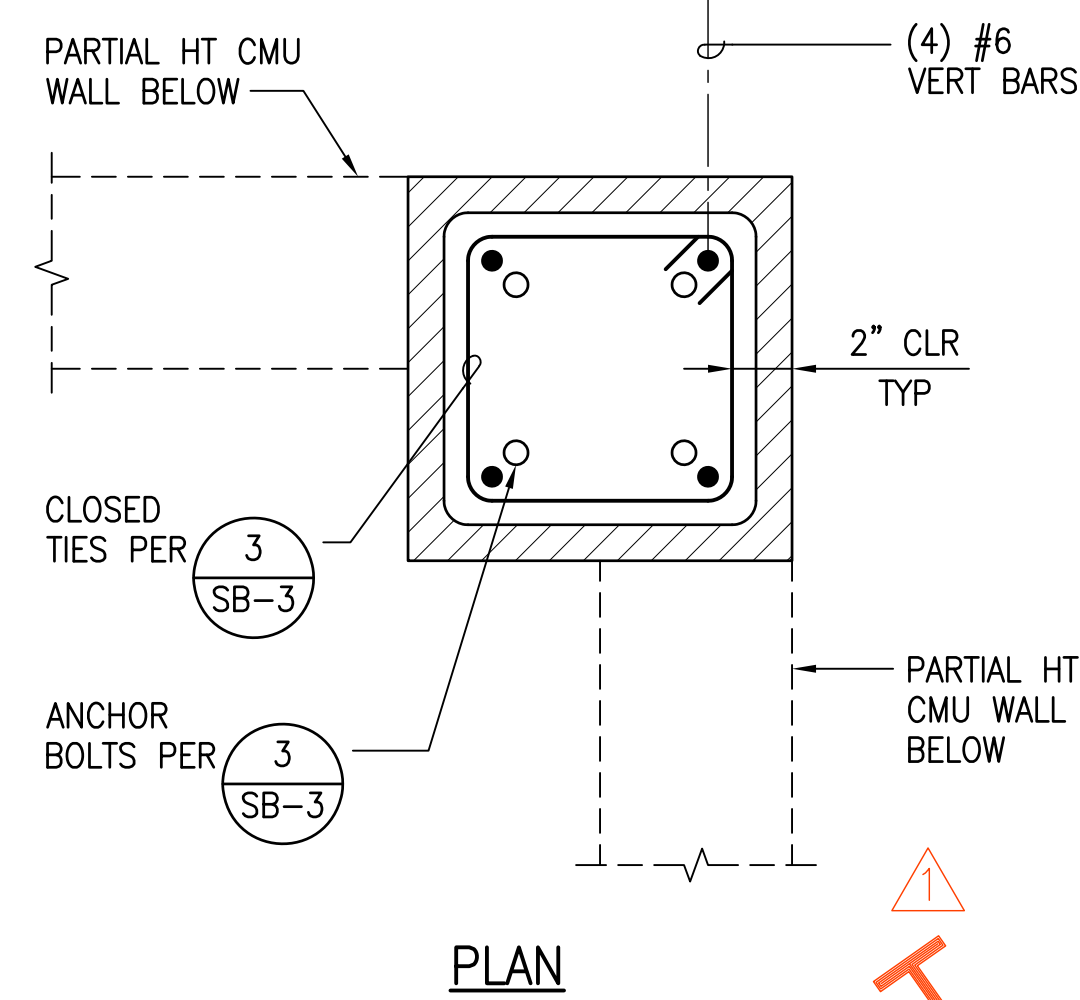
DWG. NO. SB-2
 SHEET 145 OF 201

FILE	POCKET	FOLDER	NO.

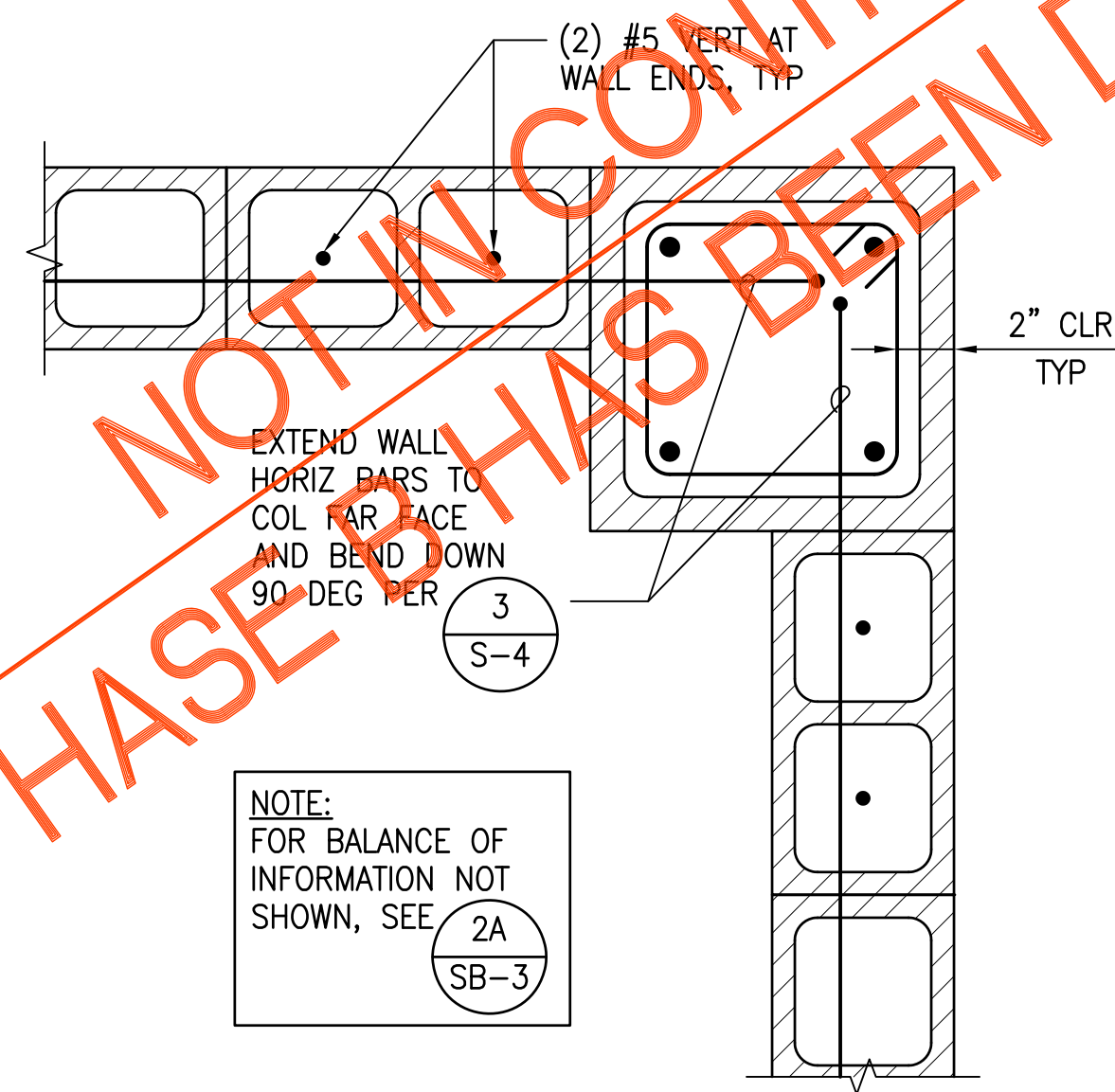
JOB NO. 0-11-056.004
 FN: F:\190606.DWG\190606.DHLL_PULEHUNUI\DWGS_190606\STRUCT\190606\DWGS_190606\DRAWINGS.DWG



1 SECTION - CMU COLUMN
 SCALE: 3/4" = 1'-0"

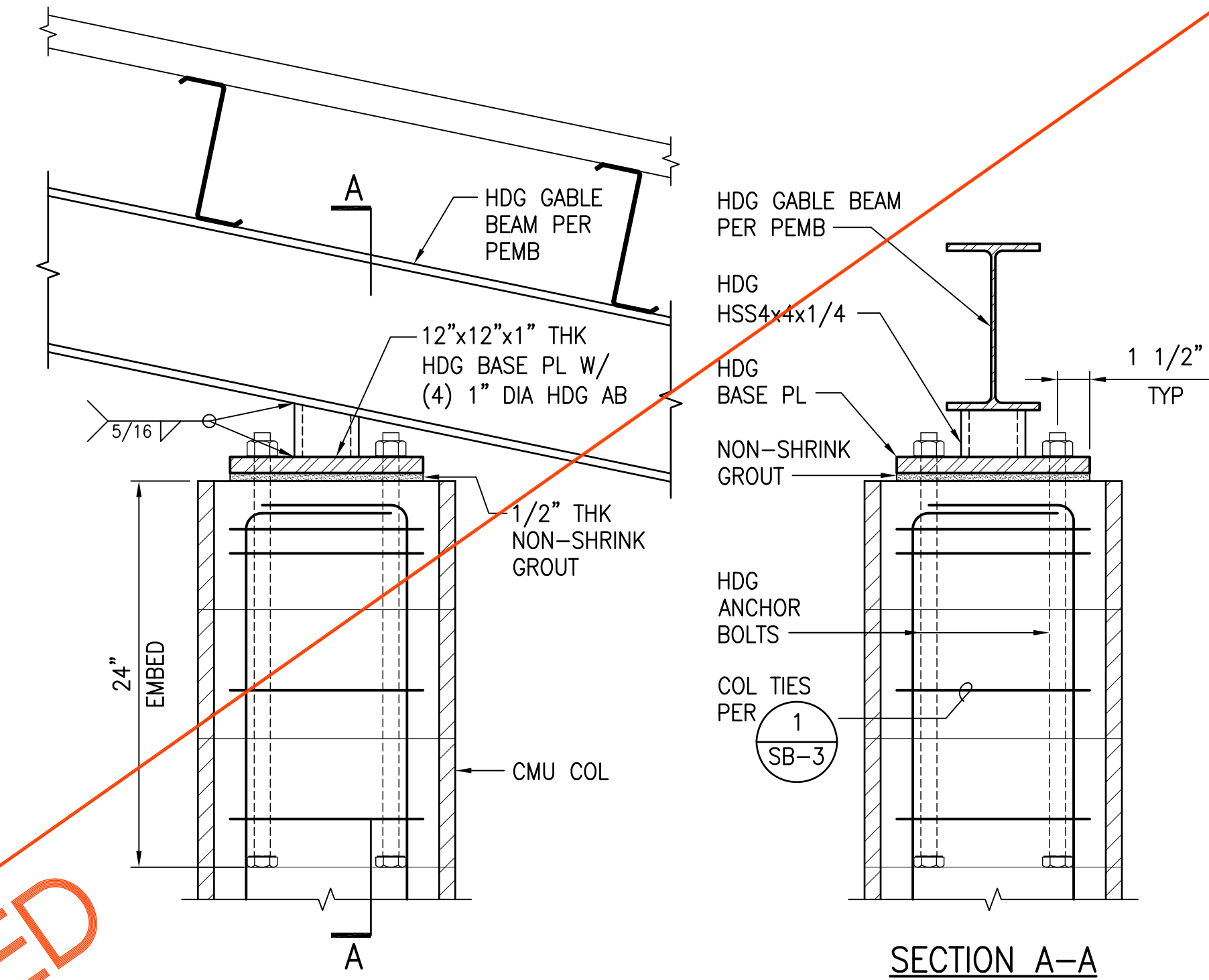


2A SECTION - CMU COLUMN
 SCALE: 1-1/2" = 1'-0"



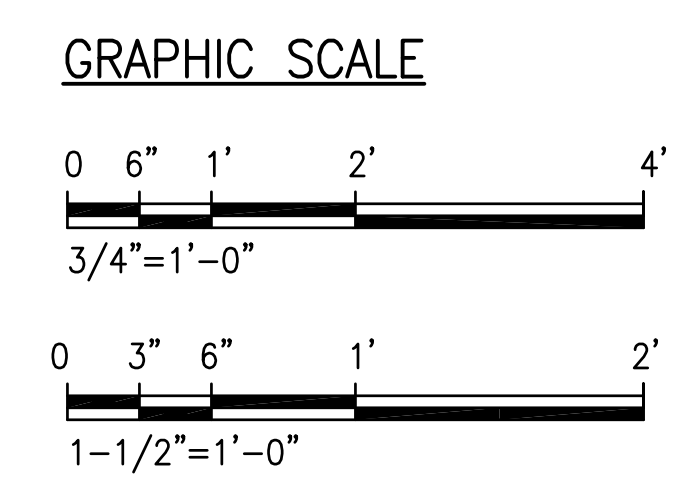
2B SECTION - CMU COLUMN
 SCALE: 1-1/2" = 1'-0"

NOTE:
 FOR BALANCE OF
 INFORMATION NOT
 SHOWN, SEE
 2A
 SB-3



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

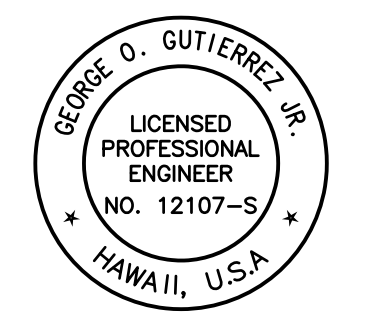
NOT IN CONTRACT
 PHASE 2 HAS BEEN DELETED



Austin Tsutsumi & Associates, Inc.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU 1 WAILUKU 1 HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS
**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS * HONOLULU, HAWAII



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George O. Gutierrez, Jr.
 APRIL 30, 2020
 EXP. DATE OF THE LICENSE

REVISION	DATE	BREF	BY
Δ	4/15/20	ADDENDUM 5	

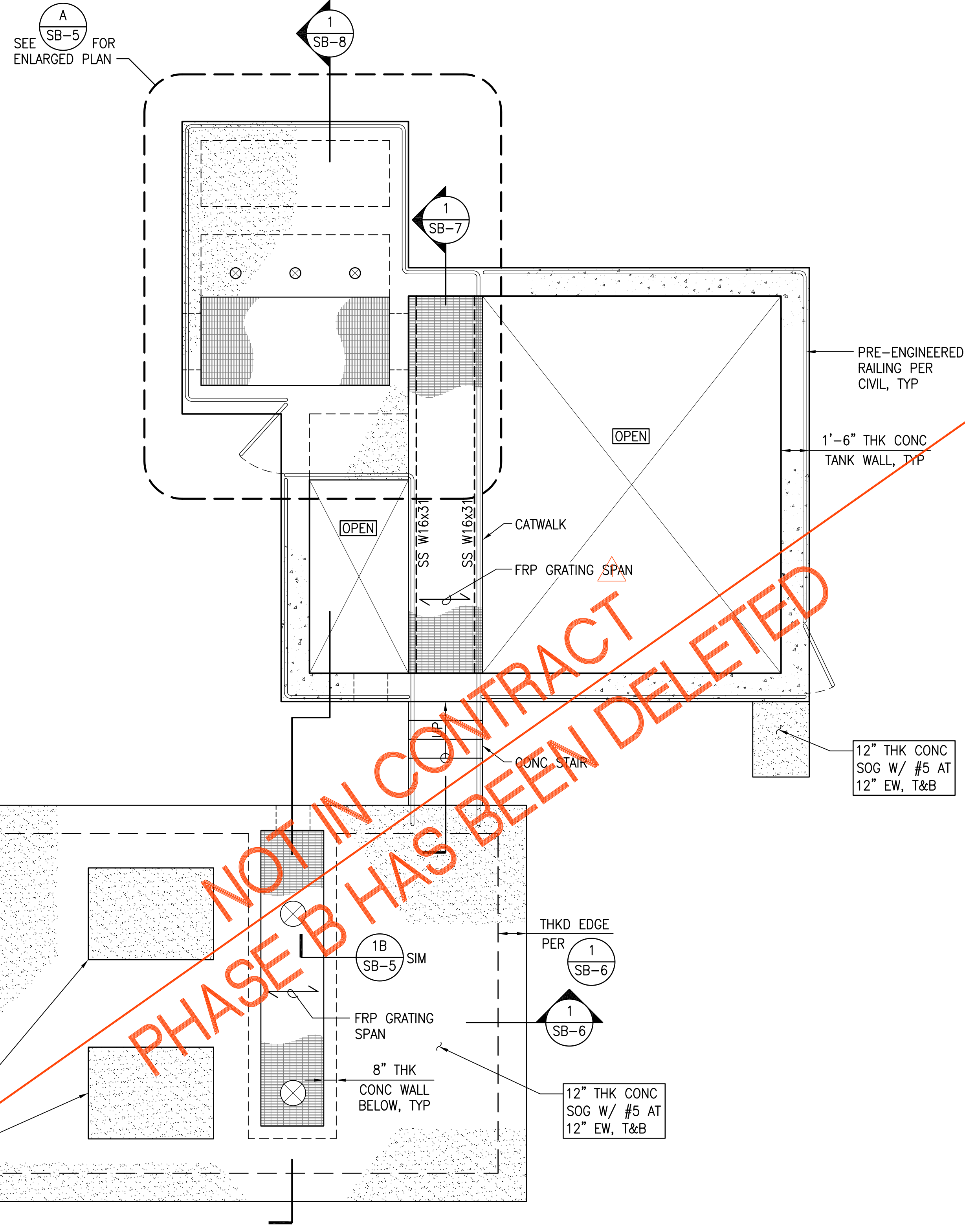
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

BLOWER AND MCC
 BUILDING SECTIONS
 AND DETAILS

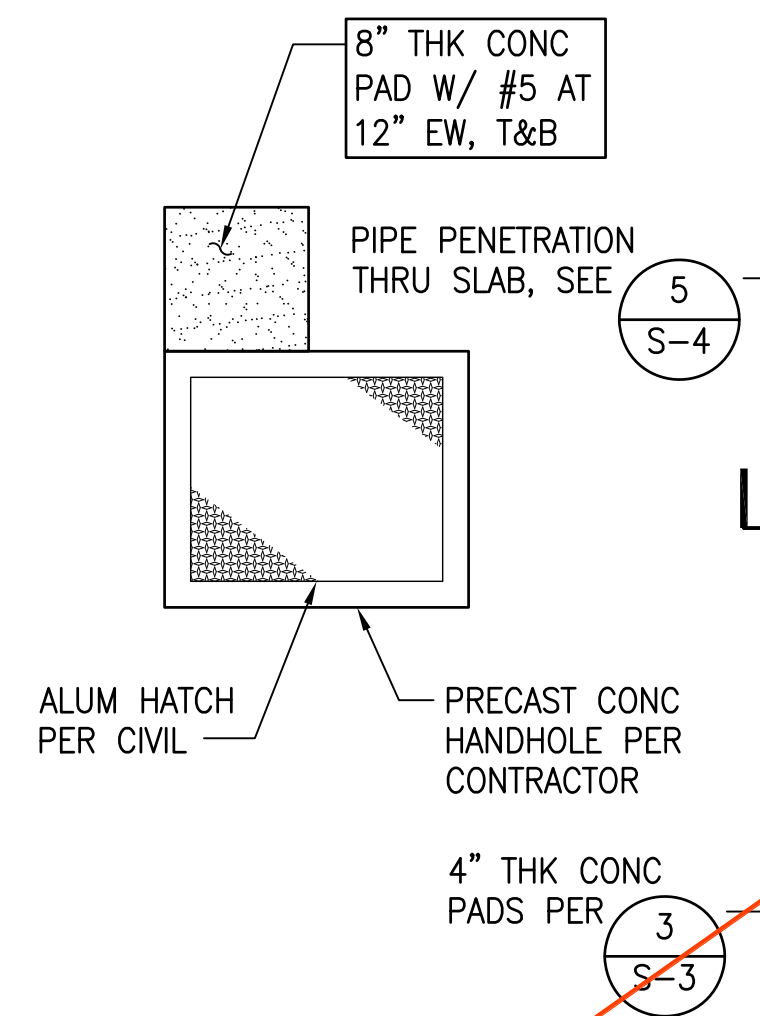
DWG. NO.
SB-3
 SHEET 146 OF 201

FILE	POCKET	FOLDER	NO.

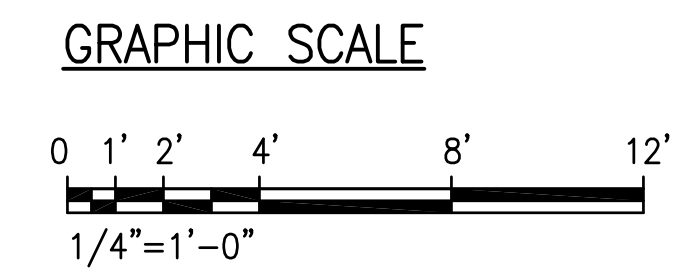
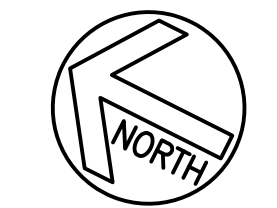
JOB NO. 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\STRUCT\19060\DWG\DRAWINGS.DWG



- NOTES:**
1. SEE GENERAL NOTES ON SHEET S-1 TO S-2 AND TYPICAL DETAILS ON SHEETS S-3 TO S-5 FOR ADDITIONAL INFORMATION.
 2. SEE MECHANICAL AND CIVIL DRAWINGS FOR TANK DIMENSIONS AND OTHER DIMENSIONS NOT INDICATED ON STRUCTURAL DRAWINGS.



A EQUALIZATION TANK & HEADWORKS FOUNDATION PLAN
 SCALE: 1/4" = 1'-0"



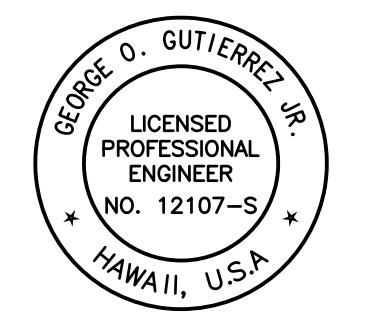
NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

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 CIVIL ENGINEERS & SURVEYORS
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PULEHUNUI REGIONAL INFRASTRUCTURE

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George O. Gutierrez, Jr.
 SIGNATURE APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BREF	BY
△	4/15/20	ADDENDUM 5	

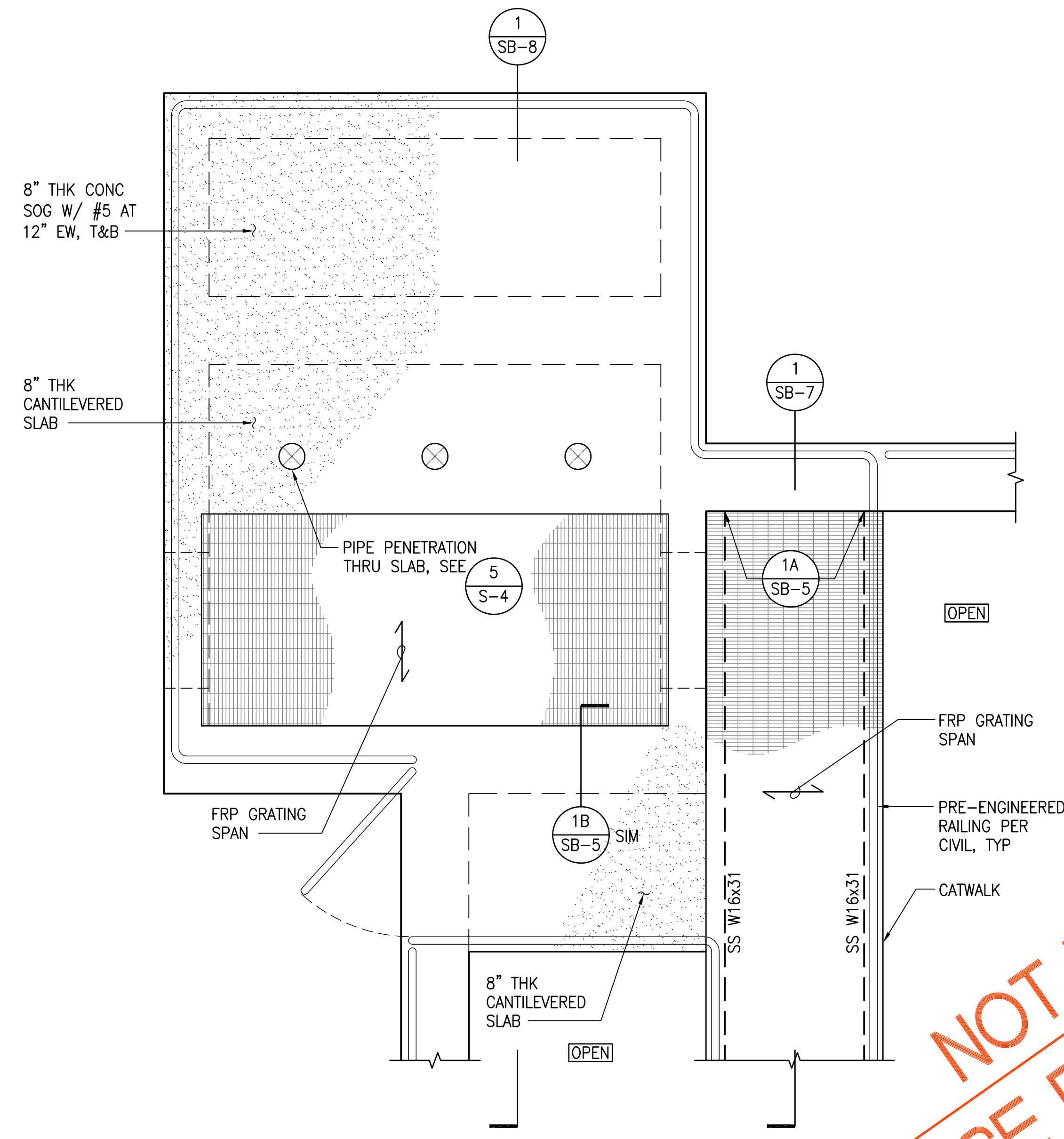
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

EQUALIZATION TANK & HEADWORKS FOUNDATION PLAN

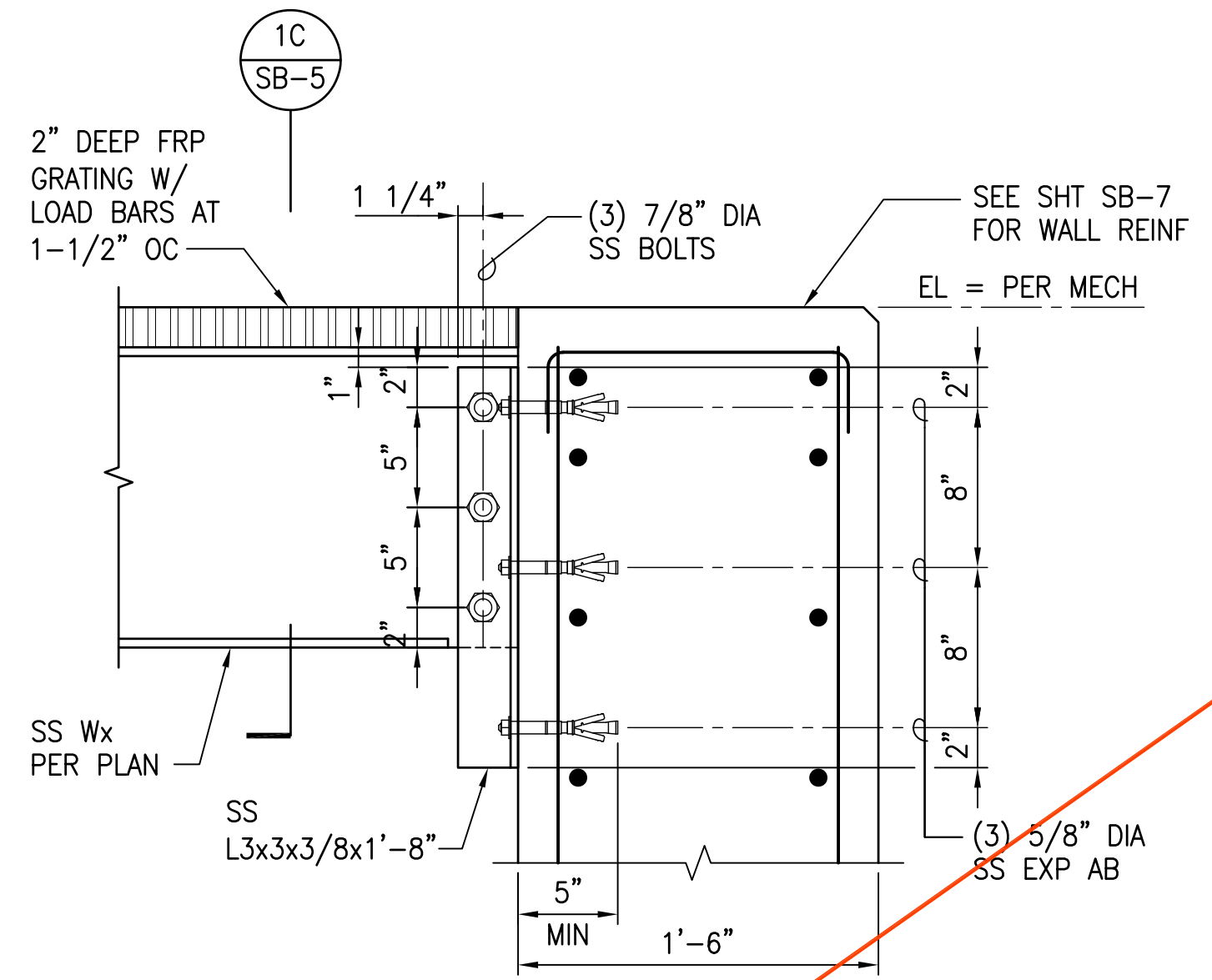
DWG. NO.
SB-4
 SHEET 147 OF 201

FILE	POCKET	FOLDER	NO.

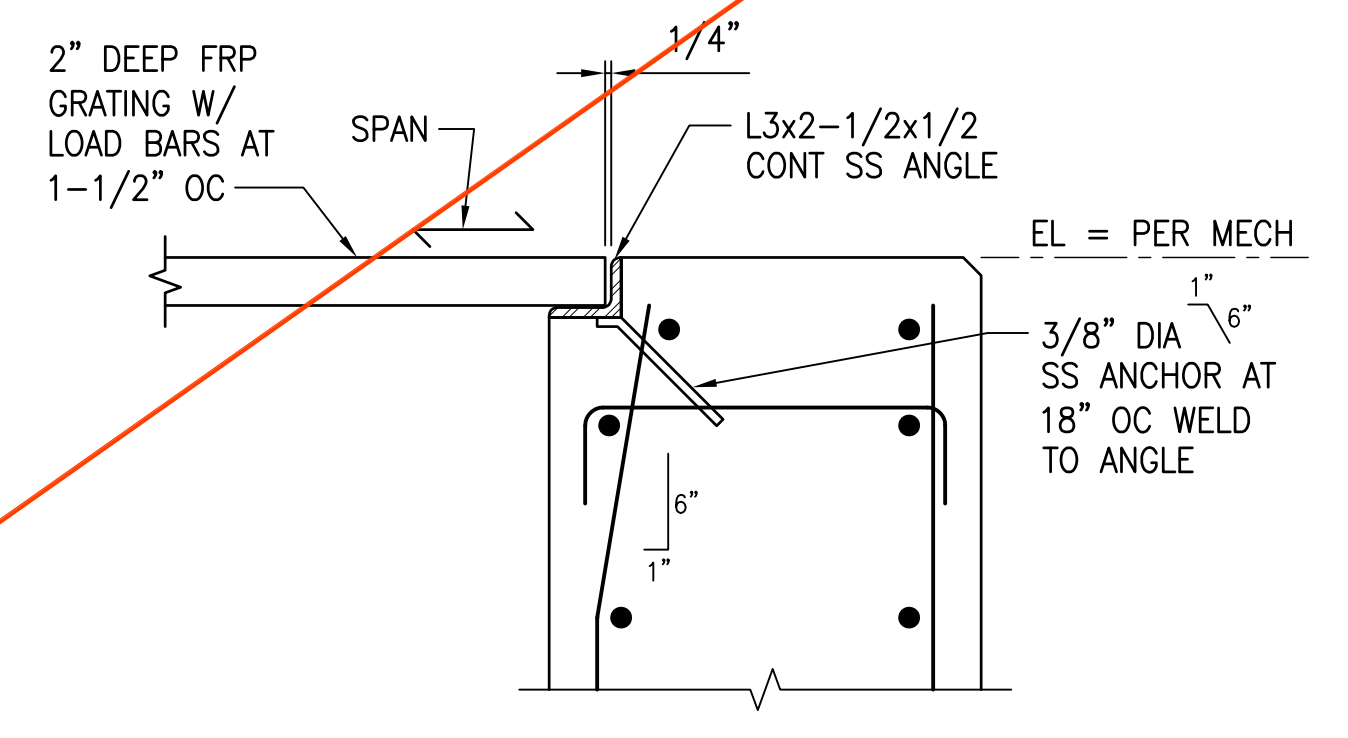
JOB NO. 0-11-056.004
 FN: F:\19060.DWG\19060 DHHL PULEHUNUI\DWGS\19060\STRUCT\19060\DWGS_19060\DRAWINGS.DWG



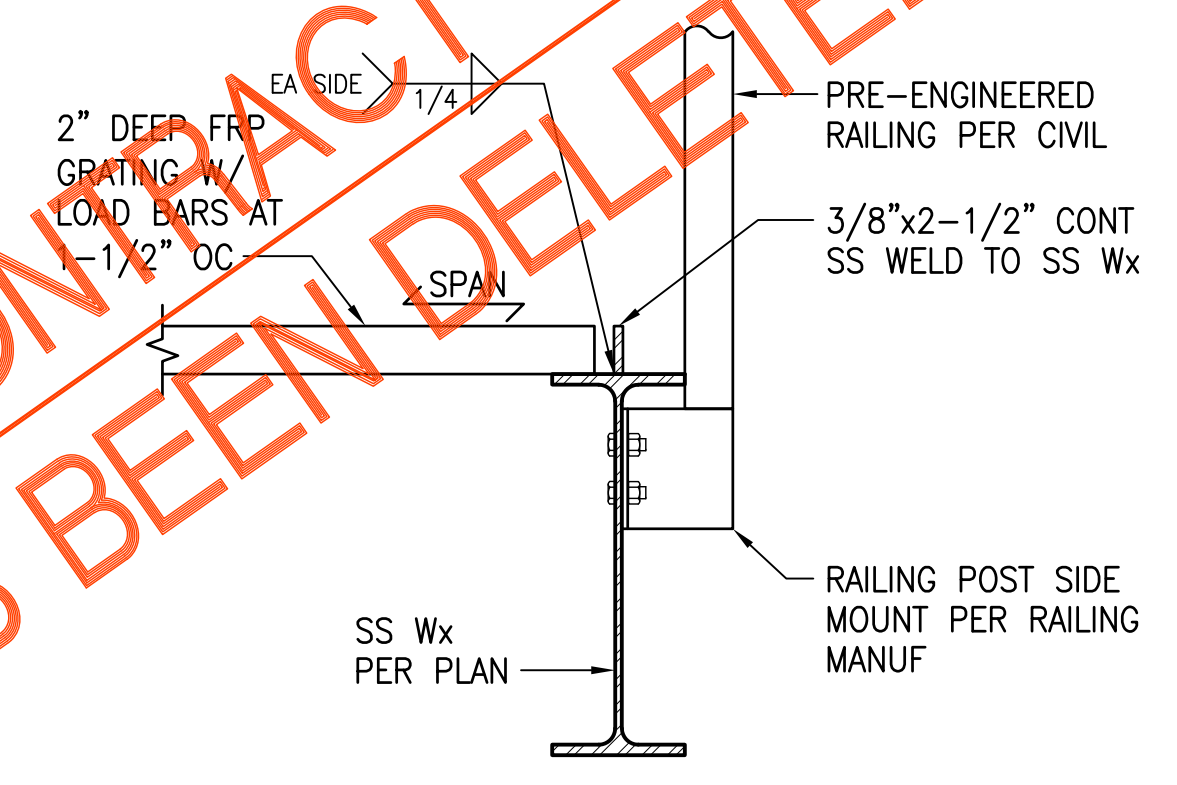
A EQUALIZATION TANK ENLARGED PLAN
 SCALE: 1/2" = 1'-0"



1A Wx SS CONN TO CONC WALL
 SCALE: 1-1/2" = 1'-0"



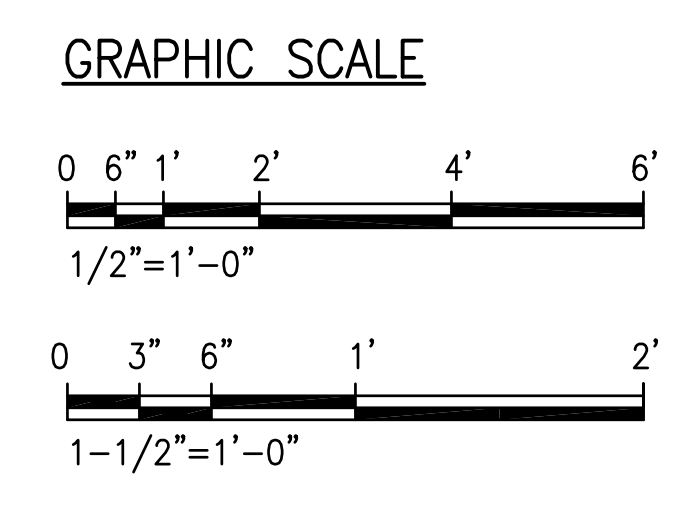
1B TYP FRP GRATING SEAT ANGLE
 SCALE: 1-1/2" = 1'-0"



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

1 DETAIL - GRATING SUPPORT BEAM AND TYPICAL SEAT ANGLE
 SCALE: 1-1/2" = 1'-0"

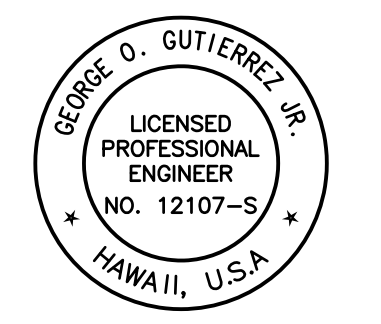
NOT IN CONTRACT
 PHASE B HAS BEEN DELETED



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STATE OF HAWAII
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George O. Gutierrez
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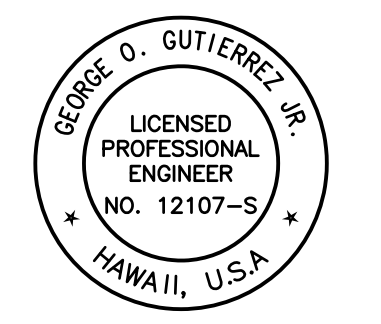
REVISION	DATE	BREF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

EQUALIZATION TANK
 ENLARGED PLAN
 AND FRP GRATING
 DETAILS

DWG. NO.
SB-5
 SHEET 148 OF 201

FILE	POCKET	FOLDER	NO.



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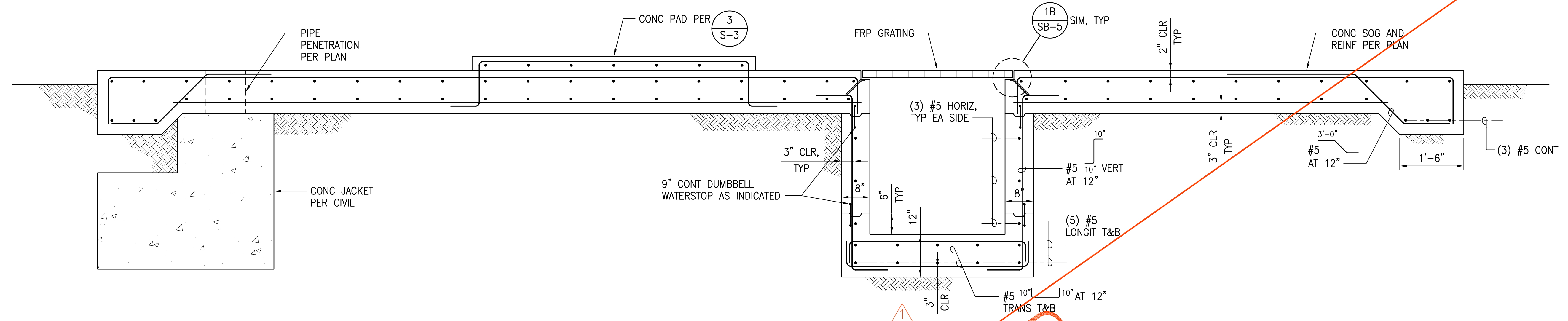
George O. Gutierrez
 APRIL 30, 2020
 EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

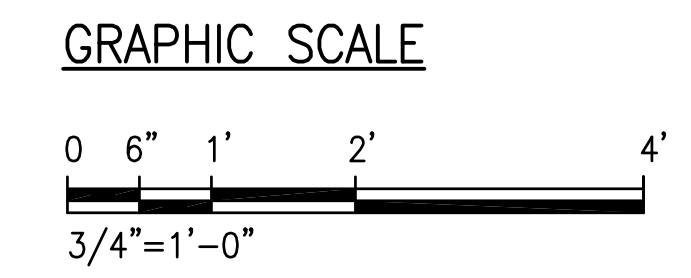
HEADWORKS SECTION
 DWG. NO. SB-6
 SHEET 149 OF 201

FILE	POCKET	FOLDER	NO.



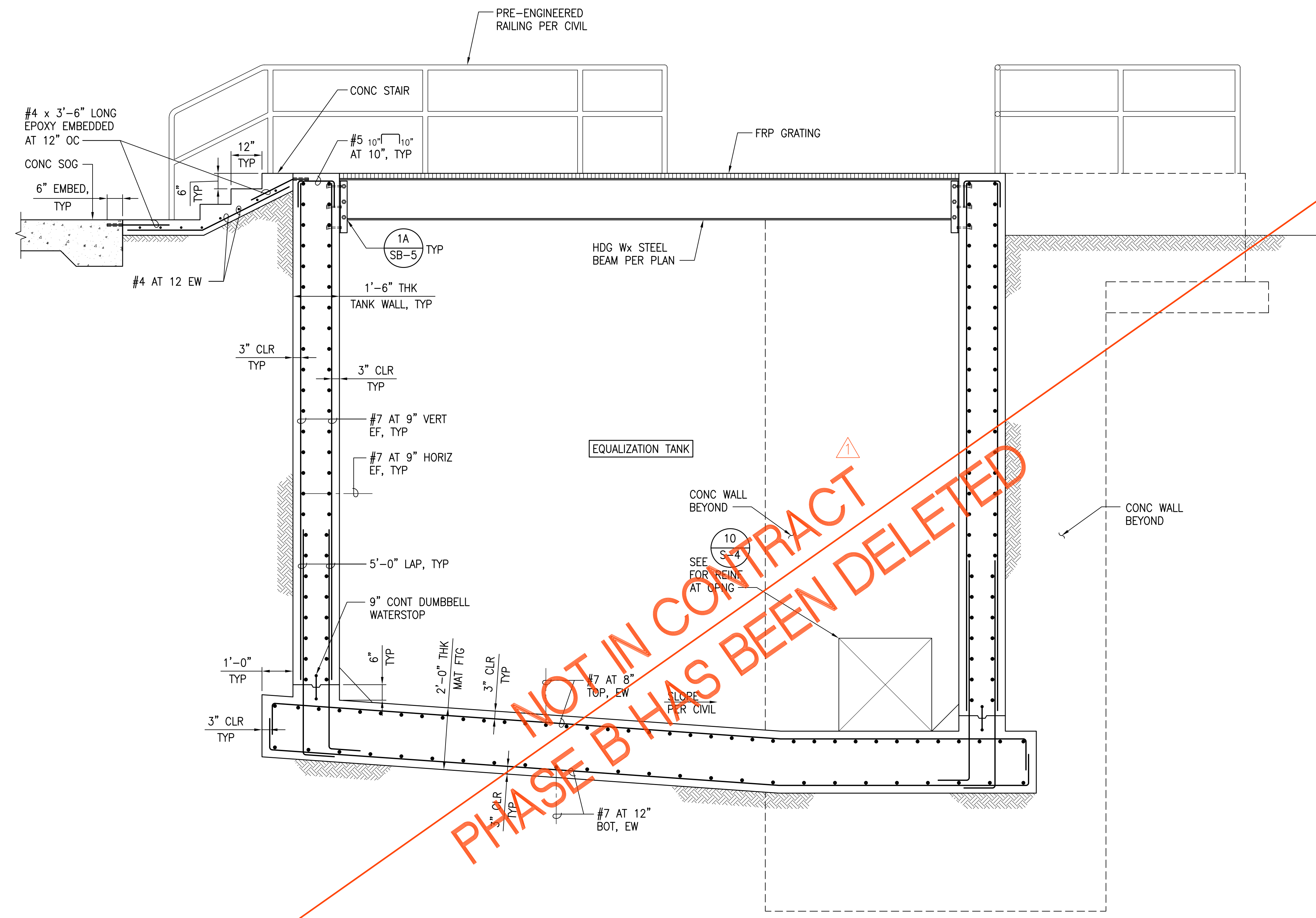
1 HEADWORKS SECTION
 SCALE: 3/4" = 1'-0"

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

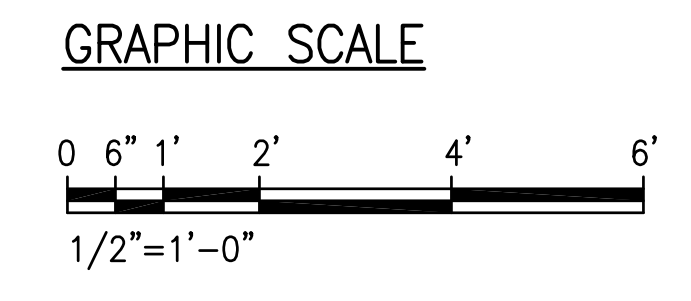


JOB NO. 0-11-056.004
 FN: F:\9006.DWG\19060 DHHL PULEHUNUI\DWGS_19060\STRUCT_19060\DWGS_19060\DRAWINGS.DWG

JOB NO. 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\STRUCT\19060\DWG\19060\DRAWINGS.DWG



1 EQUALIZATION TANK SECTION
 SCALE: 1/2" = 1'-0"

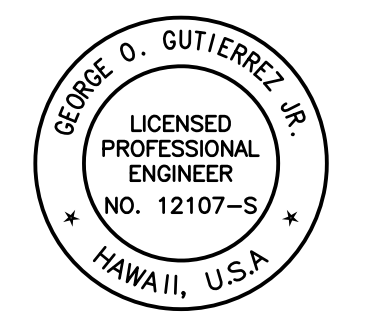


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STATE OF HAWAII
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George O. Gutierrez, Jr.
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0 1 2
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REVISION	DATE	BREF	BY
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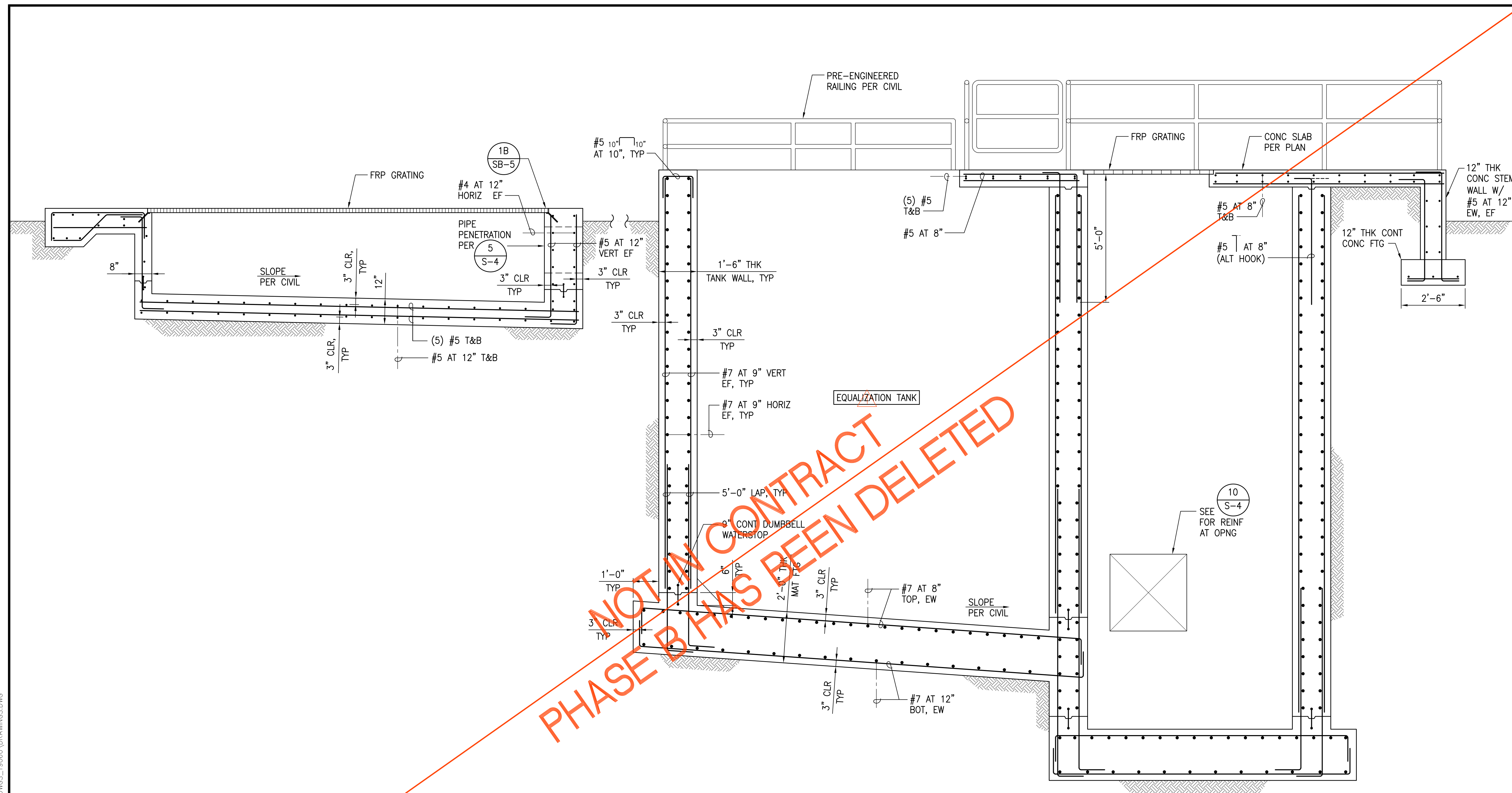
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

EQUALIZATION
 TANK SECTION

DWG. NO.
SB-7
 SHEET 150 OF 201

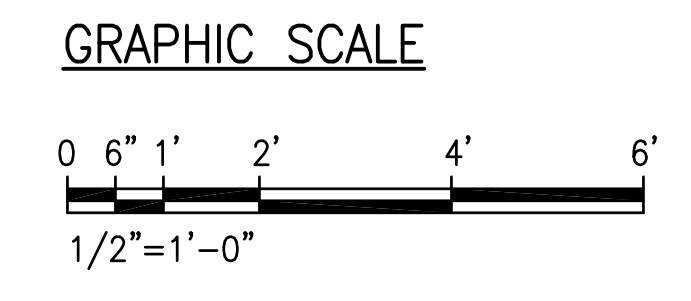
FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG_S\19060\STRUCT\19060\DRAWINGS\DWG



NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

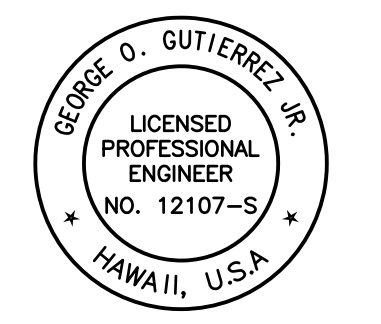
1 HEADWORKS AND EQUALIZATION TANK SECTION
 SCALE: 1/2" = 1'-0"



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George O. Gutierrez, Jr.
 SIGNATURE APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
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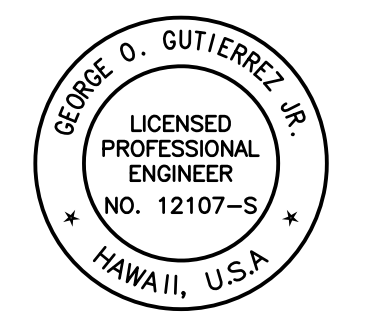
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

HEADWORKS AND
 EQUALIZATION
 TANK SECTION

DWG. NO.
SB-8
 SHEET 151 OF 201

FILE	POCKET	FOLDER	NO.



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George O. Gutierrez
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0 1 2
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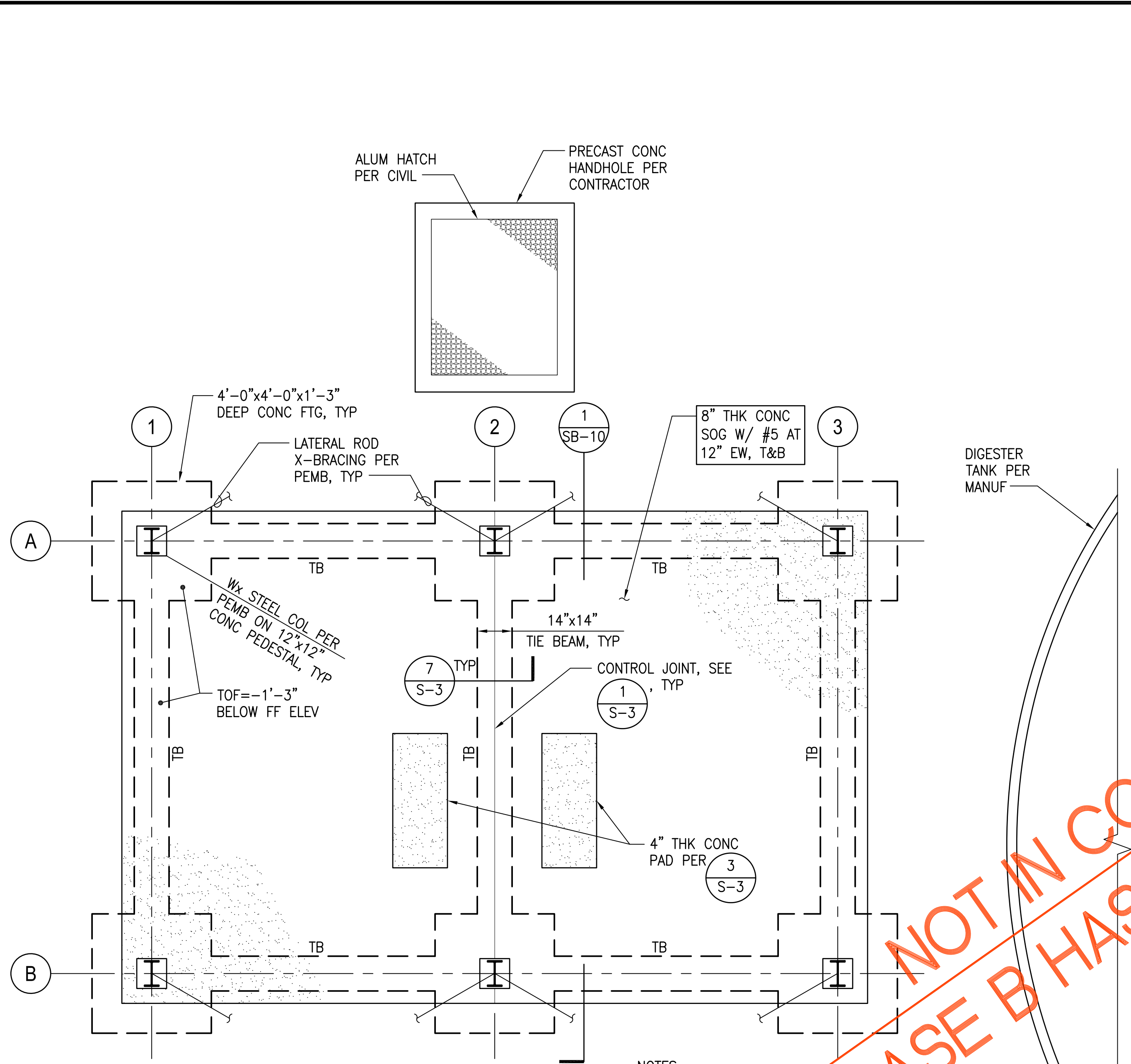
REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

UV DISINFECTION
 FOUNDATION AND
 ROOF FRAMING
 PLANS

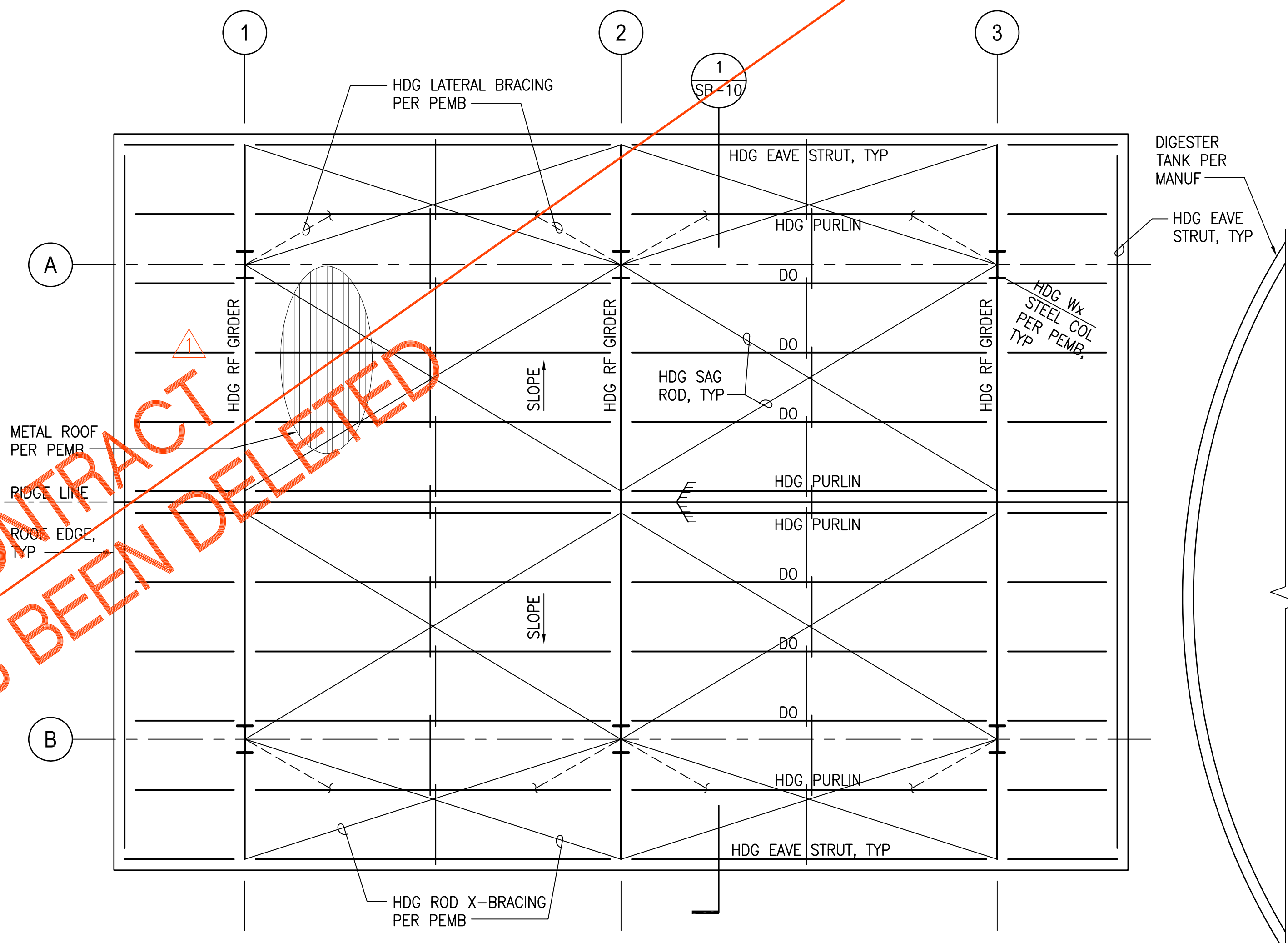
DWG. NO.
SB-9
 SHEET 152 OF 201

FILE	POCKET	FOLDER	NO.

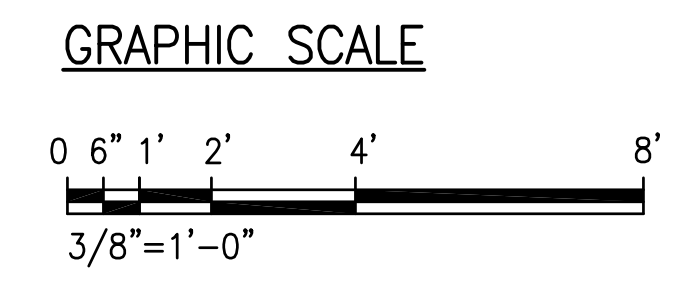


- NOTES:
- SEE GENERAL NOTES ON SHEET S-1 TO S-2 AND TYPICAL DETAILS ON SHEETS S-3 TO S-5 FOR ADDITIONAL INFORMATION.
 - SEE ARCHITECTURAL DRAWINGS FOR ROOFING GUTTERS, DOWNSPOUTS, AND ADDITIONAL INFORMATION.
 - REFER TO CIVIL AND MECHANICAL DRAWINGS FOR SITE PLAN, LOCATION OF STRUCTURES AND ALL INFORMATION AND DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
 - SEE (4/S-3) FOR REQUIREMENTS AT EXCAVATIONS PARALLEL TO BUILDING FOUNDATION.

A UV DISINFECTION FOUNDATION PLAN
 SCALE: 3/8" = 1'-0"



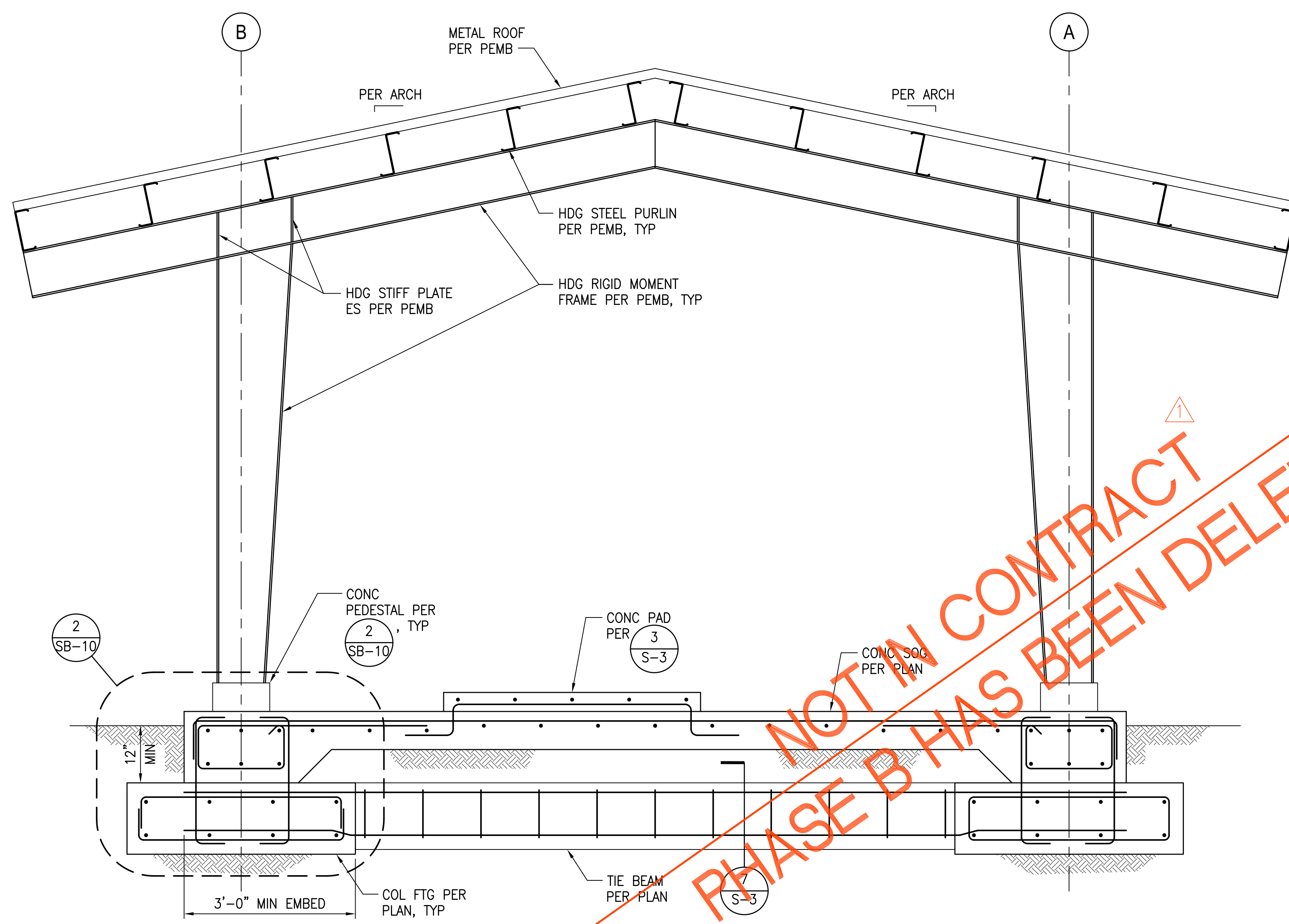
B UV DISINFECTION ROOF FRAMING PLAN
 SCALE: 3/8" = 1'-0"



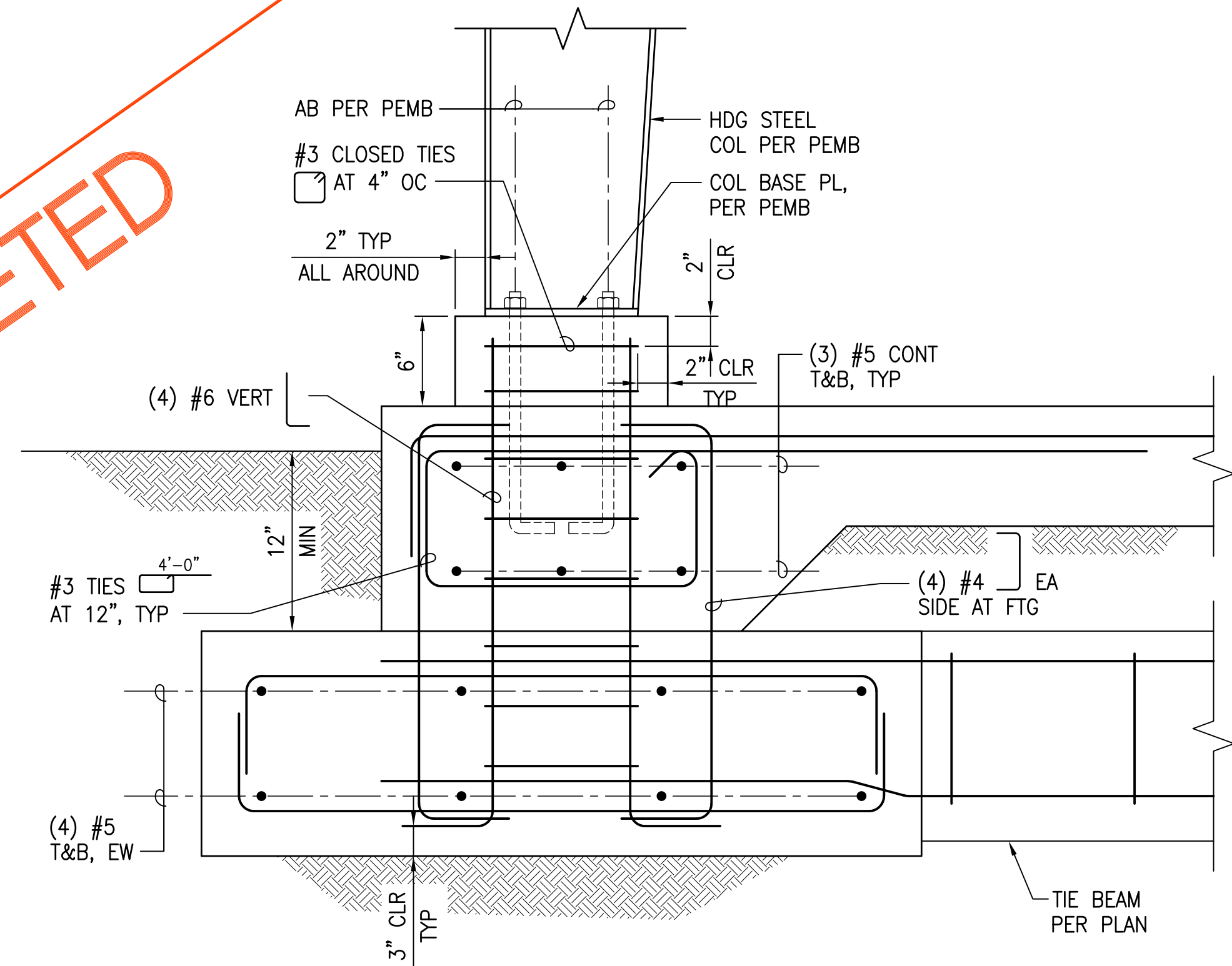
NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

JOB NO.: 0-11-056.004
 FN: F:\190606\DWG\190606 DHHL PULEHUNUI\DWG\SUBSTRUCT_190606\DWG\S_190606\DRAWINGS.DWG

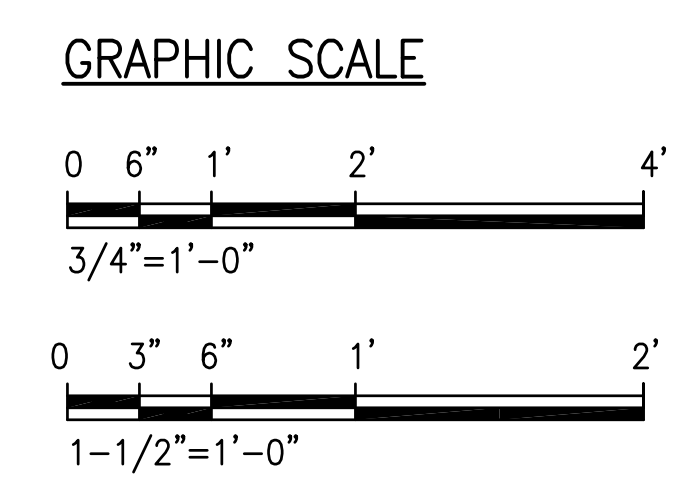
JOB NO.: 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\STRUCT\19060\DWG\19060\DRAWINGS.DWG



1 UV DISINFECTION SECTION
 SCALE: 3/4" = 1'-0"



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

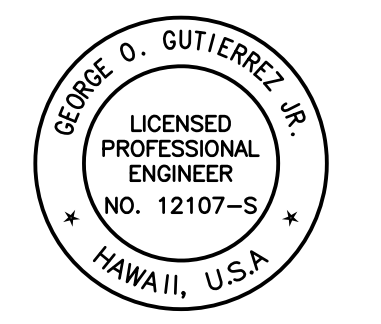


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APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
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REVISION	DATE	BREF	BY
⚠	4/15/20	ADDENDUM 5	

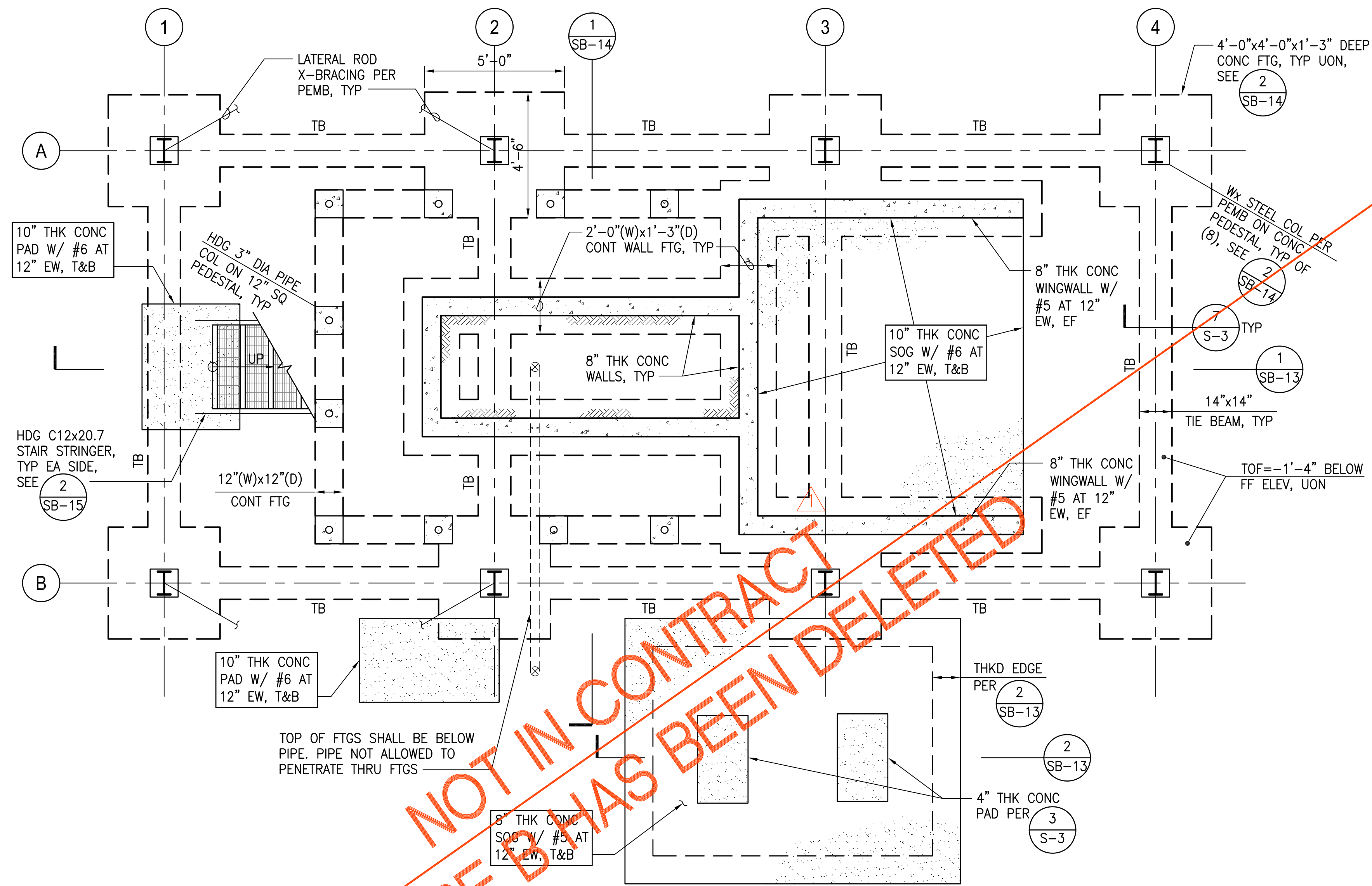
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

UV DISINFECTION SECTION

DWG. NO.
SB-10
 SHEET 153 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\STRUCT\19060\DWG\19060\DRAWINGS.DWG

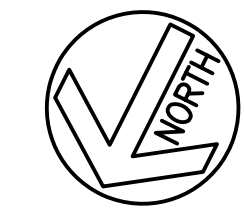


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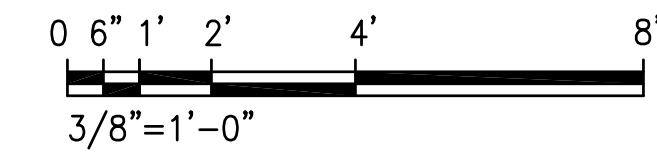
- SEE GENERAL NOTES ON SHEET S-1 TO S-2 AND TYPICAL DETAILS ON SHEETS S-3 TO S-5 FOR ADDITIONAL INFORMATION.
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- SEE (S-3) FOR REQUIREMENTS AT EXCAVATIONS PARALLEL TO BUILDING FOUNDATION.

NOT IN CONTRACT
 PHASE 2 HAS BEEN DELETED

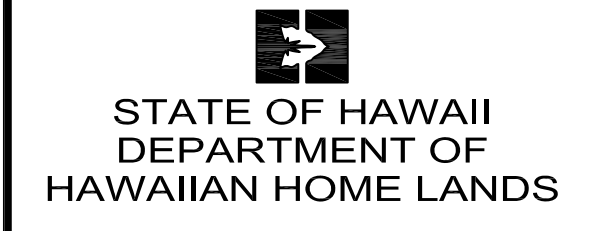
A SLUDGE DEWATERING FOUNDATION PLAN
 SCALE: 3/8" = 1'-0"



GRAPHIC SCALE

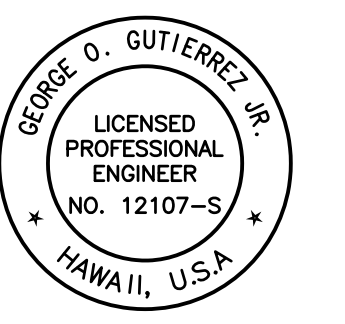


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0 1 2
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REVISION	DATE	BREF	BY
△	4/15/20	ADDENDUM 5	

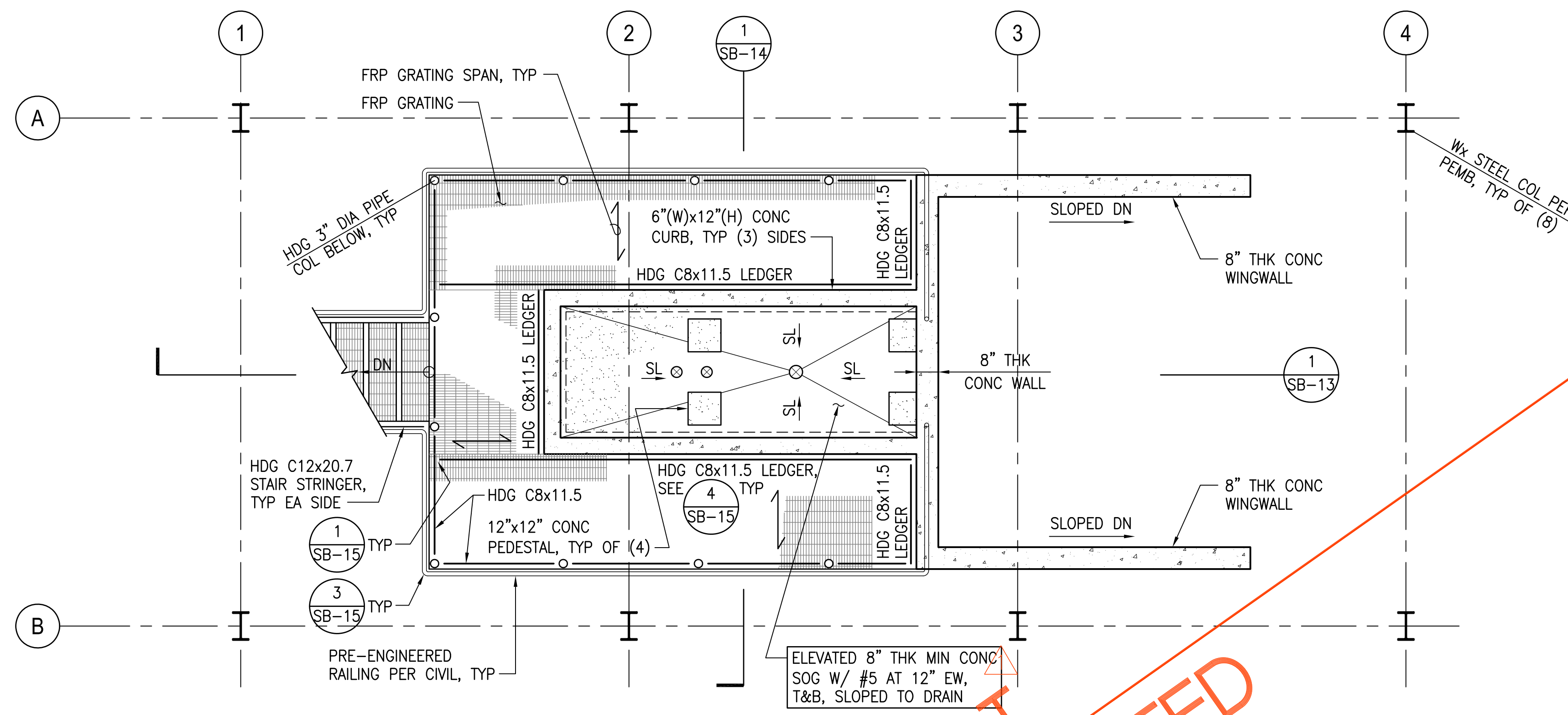
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

SLUDGE DEWATERING FOUNDATION PLAN

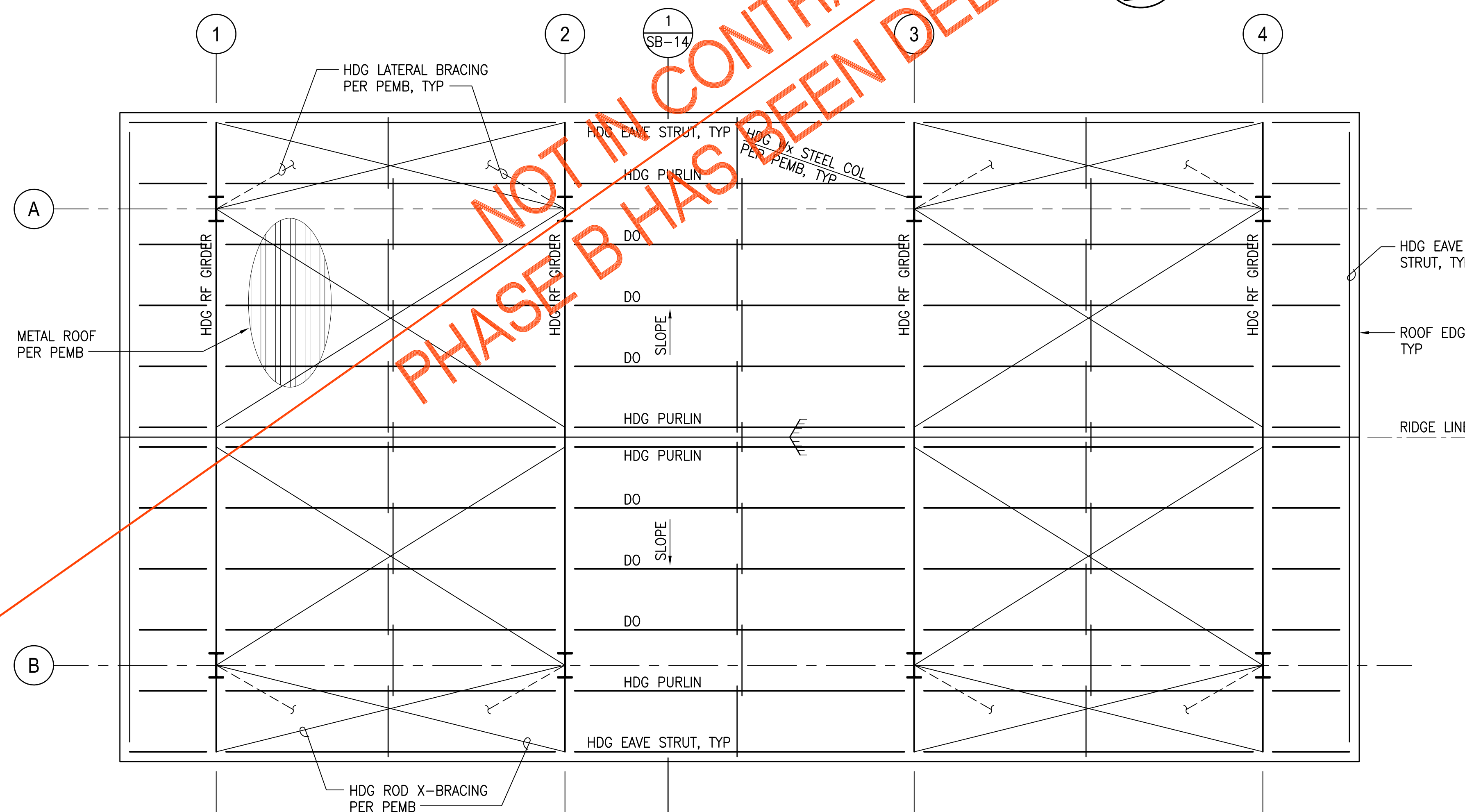
DWG. NO.
SB-11
 SHEET 154 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\STRUCT\19060\DWG\19060\DRAWINGS.DWG

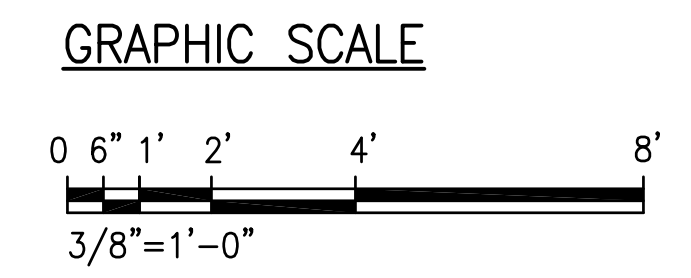


A SLUDGE DEWATERING PLATFORM FRAMING PLAN
 SCALE: 3/8" = 1'-0"



B SLUDGE DEWATERING ROOF FRAMING PLAN
 SCALE: 3/8" = 1'-0"

- NOTES:**
1. SEE GENERAL NOTES ON SHEET S-1 TO S-2 AND TYPICAL DETAILS ON SHEETS S-3 TO S-5 FOR ADDITIONAL INFORMATION.
 2. SEE ARCHITECTURAL DRAWINGS FOR ROOFING GUTTERS, DOWNSPOUTS, AND ADDITIONAL INFORMATION.
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 4. SEE (4/S-3) FOR REQUIREMENTS AT EXCAVATIONS PARALLEL TO BUILDING FOUNDATION.



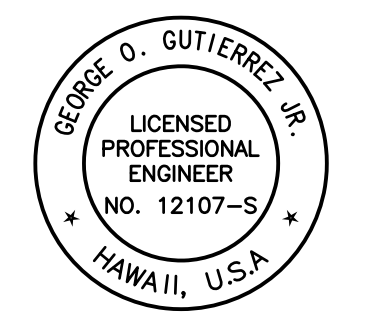
NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

Austin Tsutsumi & Associates, Inc.
 CIVIL ENGINEERS | SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS * HONOLULU, HAWAII



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George O. Gutierrez, Jr.
 APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

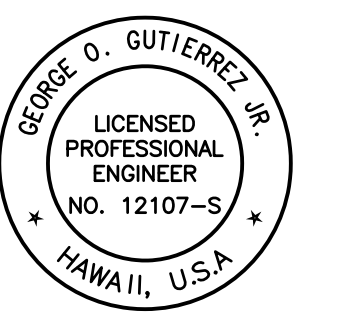
REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

SLUDGE DEWATERING
 PLATFORM AND ROOF
 FRAMING PLANS

DWG. NO.
SB-12
 SHEET 155 OF 201

FILE	POCKET	FOLDER	NO.



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Signature
 APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

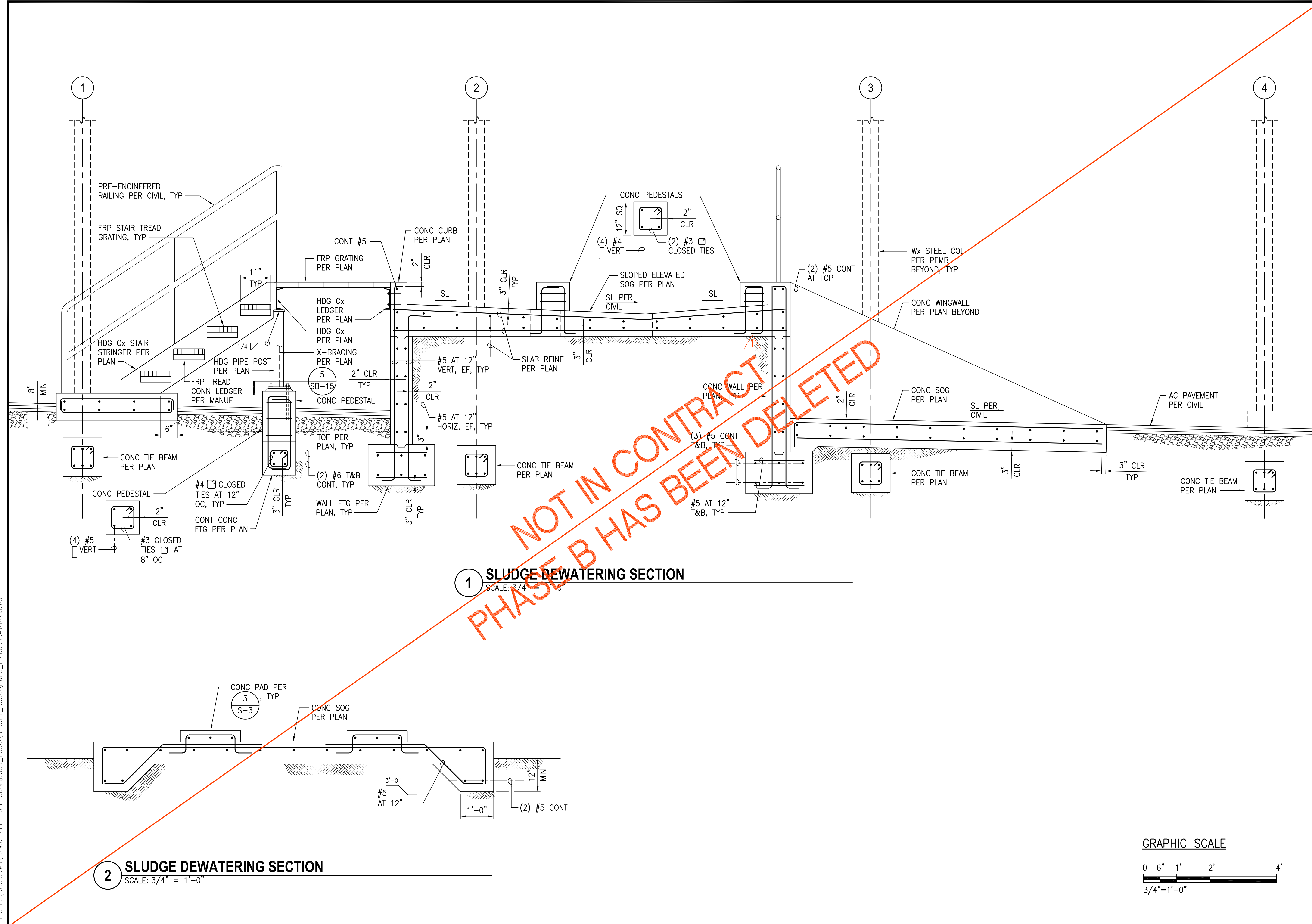
REVISION	DATE	BREF	BY
Δ	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

SLUDGE
 DEWATERING
 SECTIONS

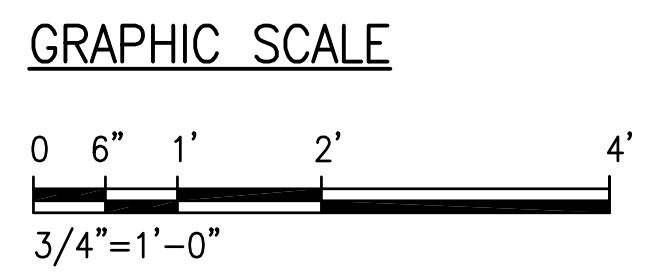
DWG. NO.
SB-13
 SHEET 156 OF 201

FILE	POCKET	FOLDER	NO.

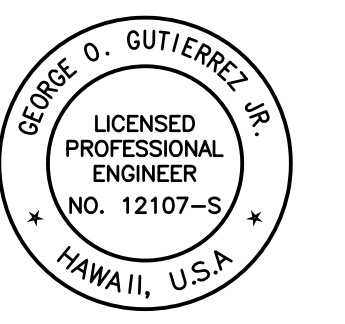


1 SLUDGE DEWATERING SECTION
 SCALE: 3/4" = 1'-0"

2 SLUDGE DEWATERING SECTION
 SCALE: 3/4" = 1'-0"



JOB NO.: 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\STRUCT\19060\DWG\S_19060\DRAWINGS.DWG



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George O. Gutierrez
 APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

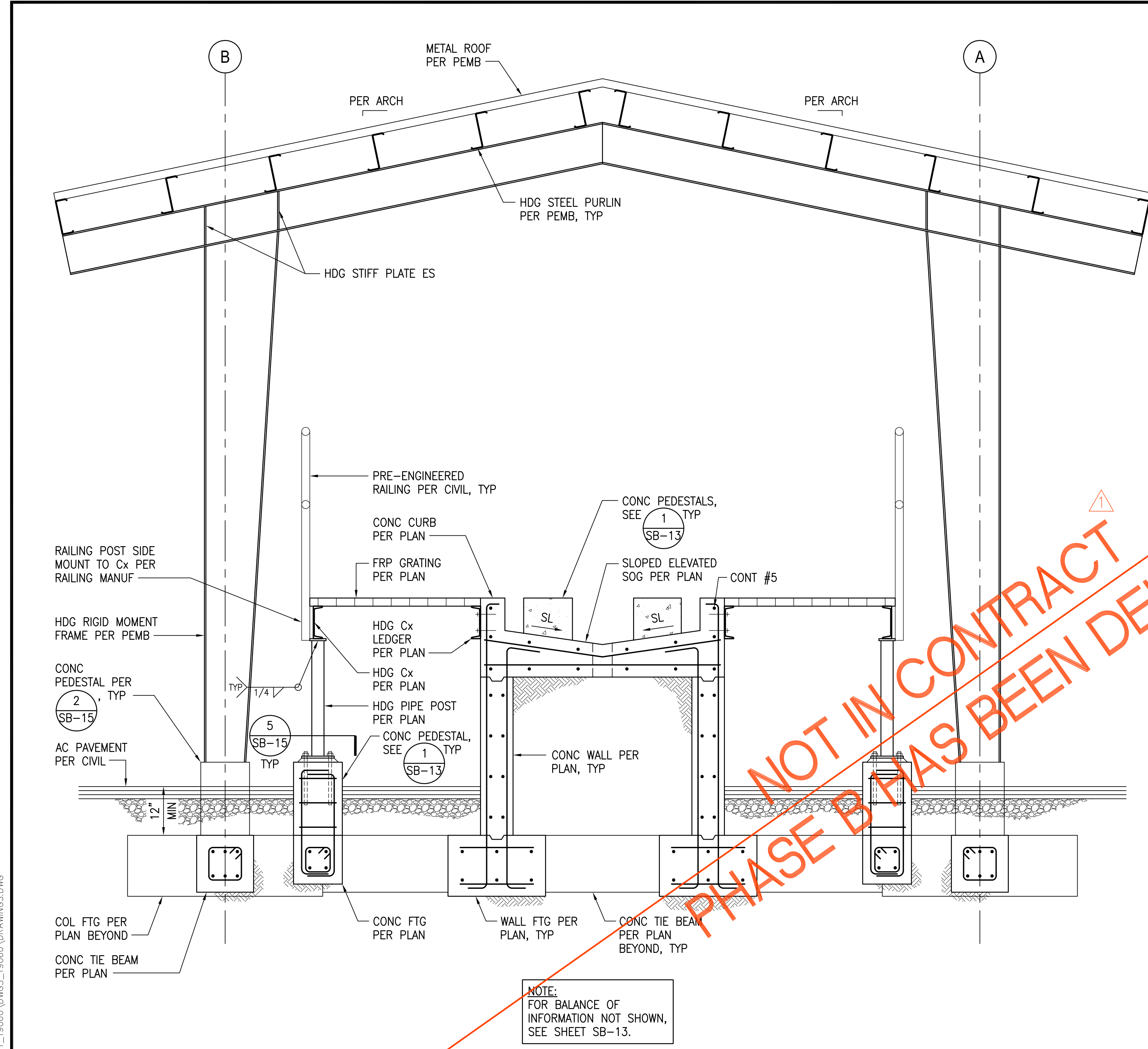
REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

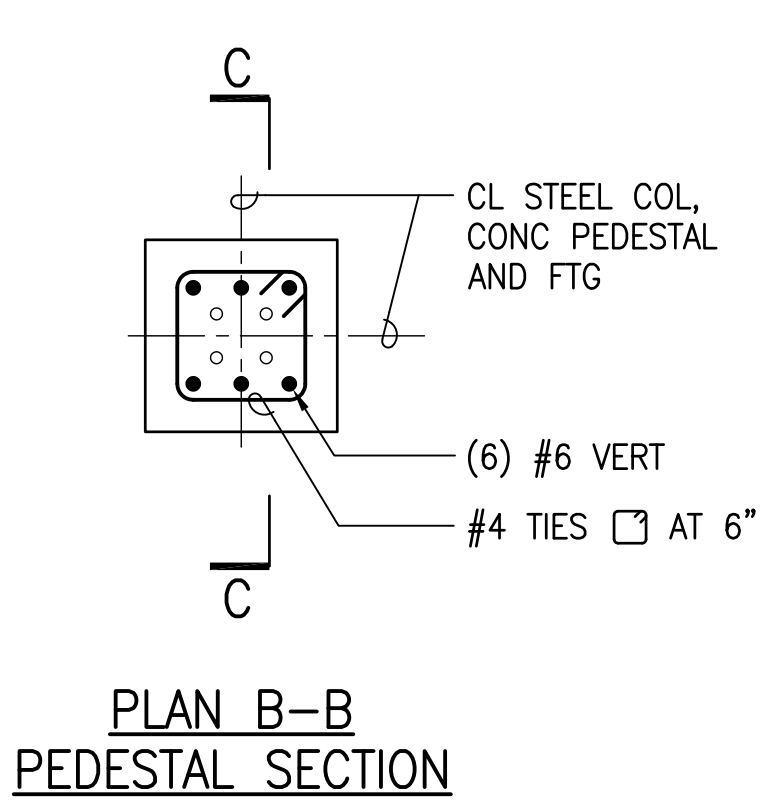
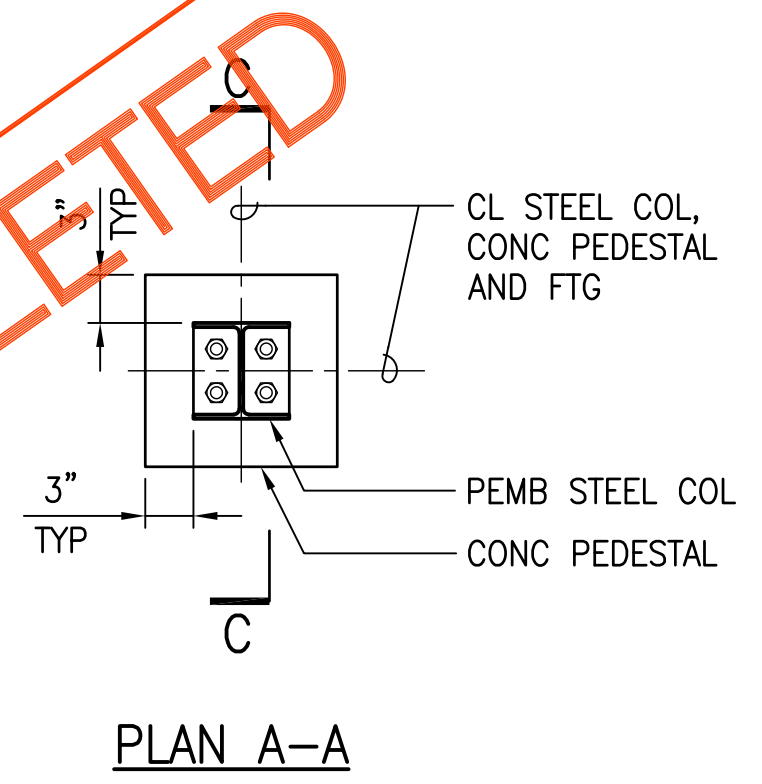
SLUDGE DEWATERING
 SECTION AND DETAIL

DWG. NO.
SB-14
 SHEET 157 OF 201

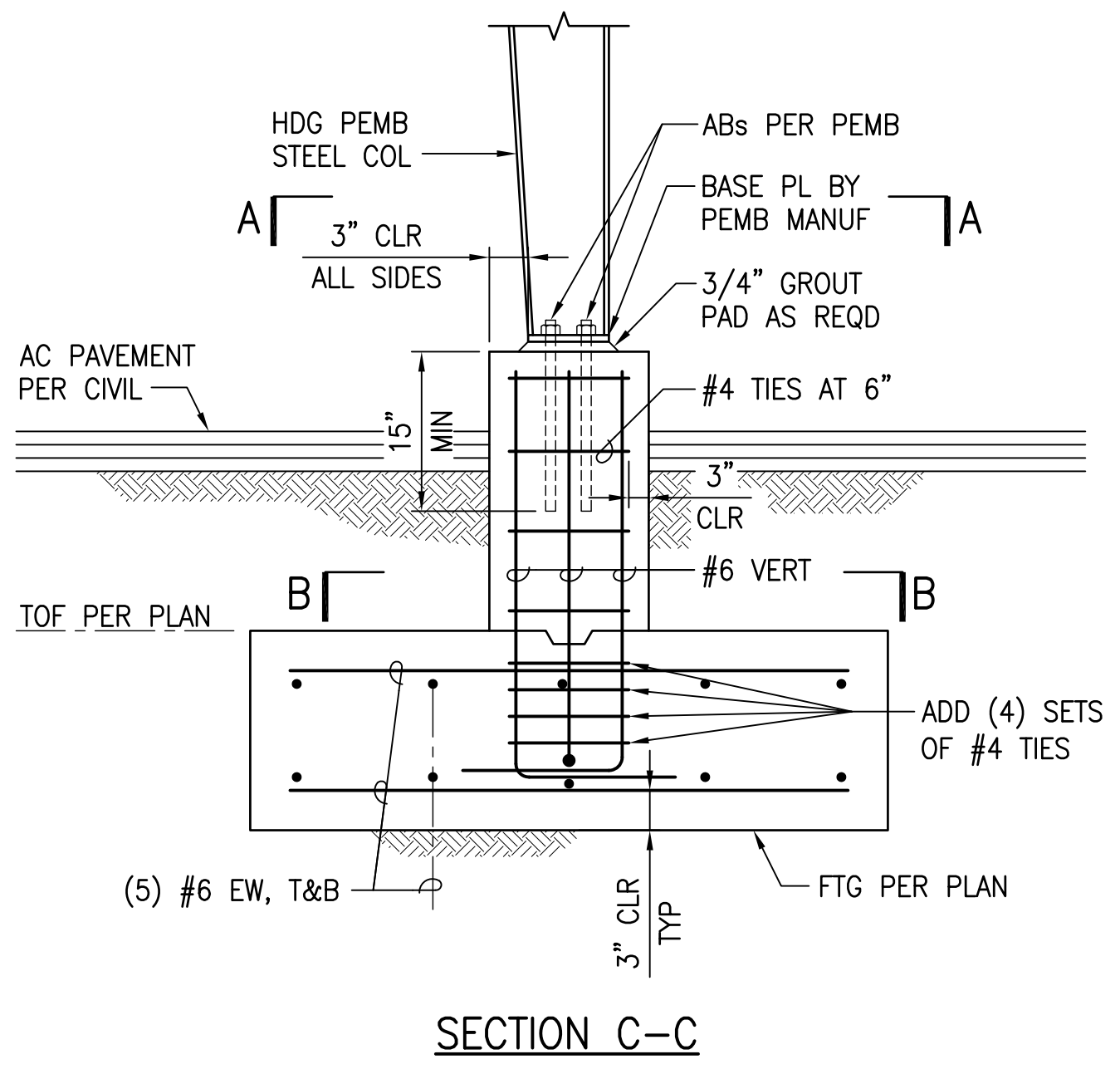
FILE	POCKET	FOLDER	NO.



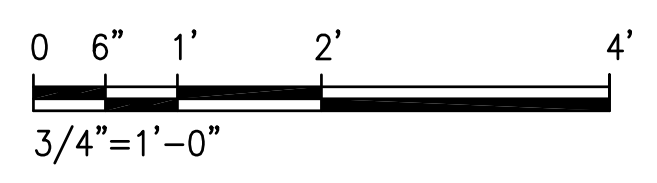
1 SLUDGE DEWATERING SECTION
 SCALE: 3/4" = 1'-0"



2 DETAIL - PEDESTAL AT PORTAL FRAME
 SCALE: 1" = 1'-0"

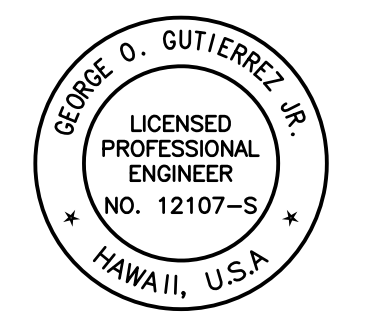


GRAPHIC SCALE



JOB NO. 0-11-056.004
 FN: F:\19060\DWG\19060 DHHH PULEHUNUI\DWG\19060\STRUCT\19060\DWG\19060\DRAWINGS.DWG

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED



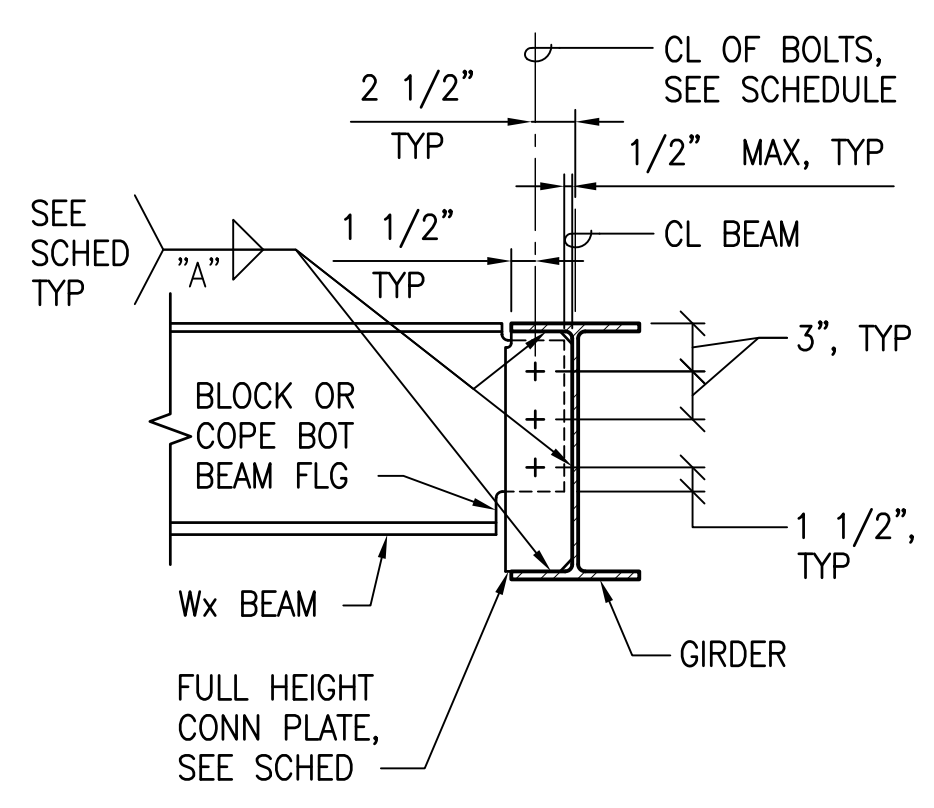
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George O. Gutierrez
 SIGNATURE APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

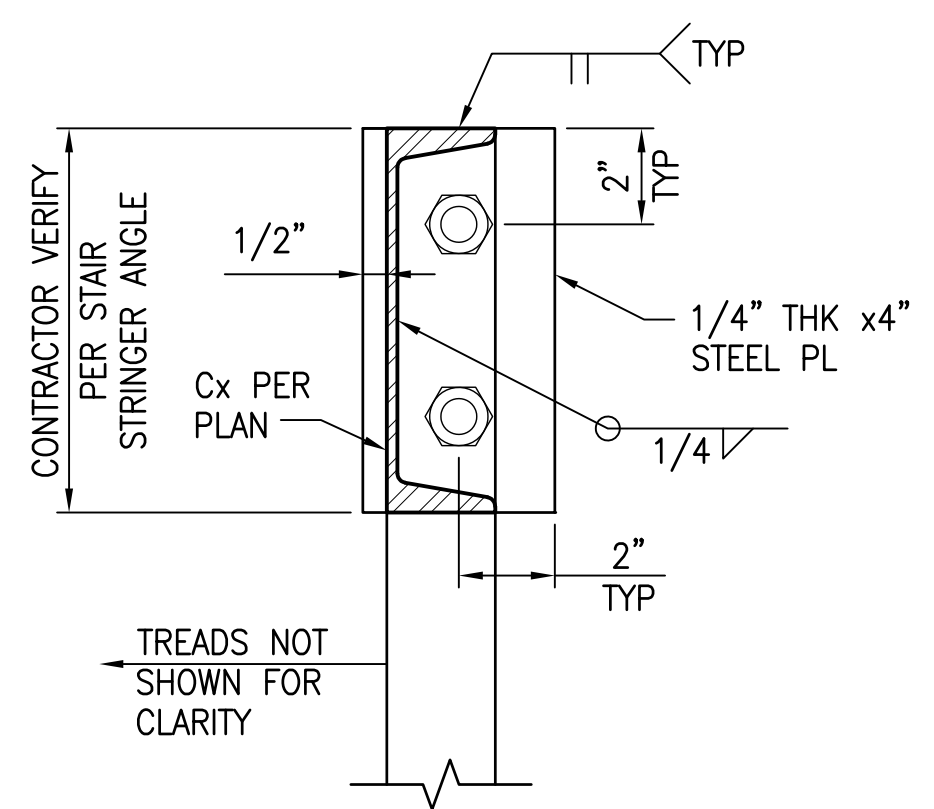


ONE SIDE BEAM TO BEAM

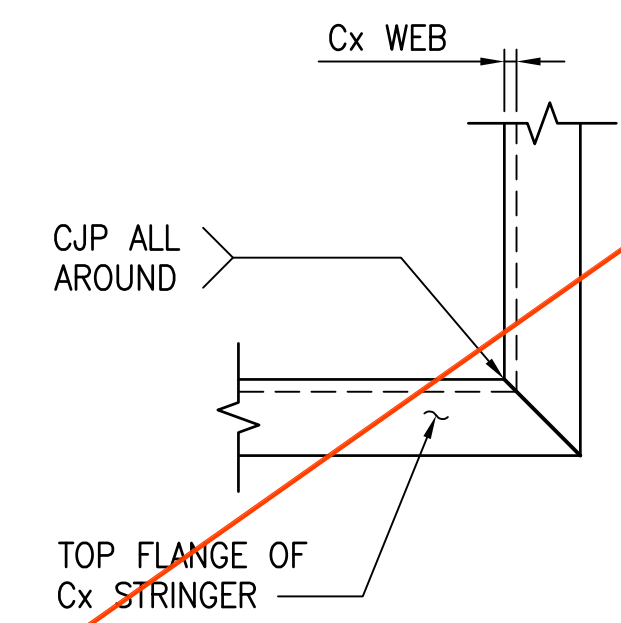
1 TYPICAL BEAM TO BEAM SHEAR CONNECTION DETAILS
 NOT TO SCALE

BEAM SHEAR CONNECTION SCHEDULE				
SHEAR PLATE CONNECTION				SLOTTED HOLES (NOTE 2)
MEMBER (DEPTH)	# OF BOLTS 7/8" DIA	CONN PL "t"	WELD SIZE "A"	
W6, C6, W8, C8	2	1/4"	1/4"	-
W10, C10	2	1/4"	1/4"	-
W12, C12	3	1/4"	1/4"	-

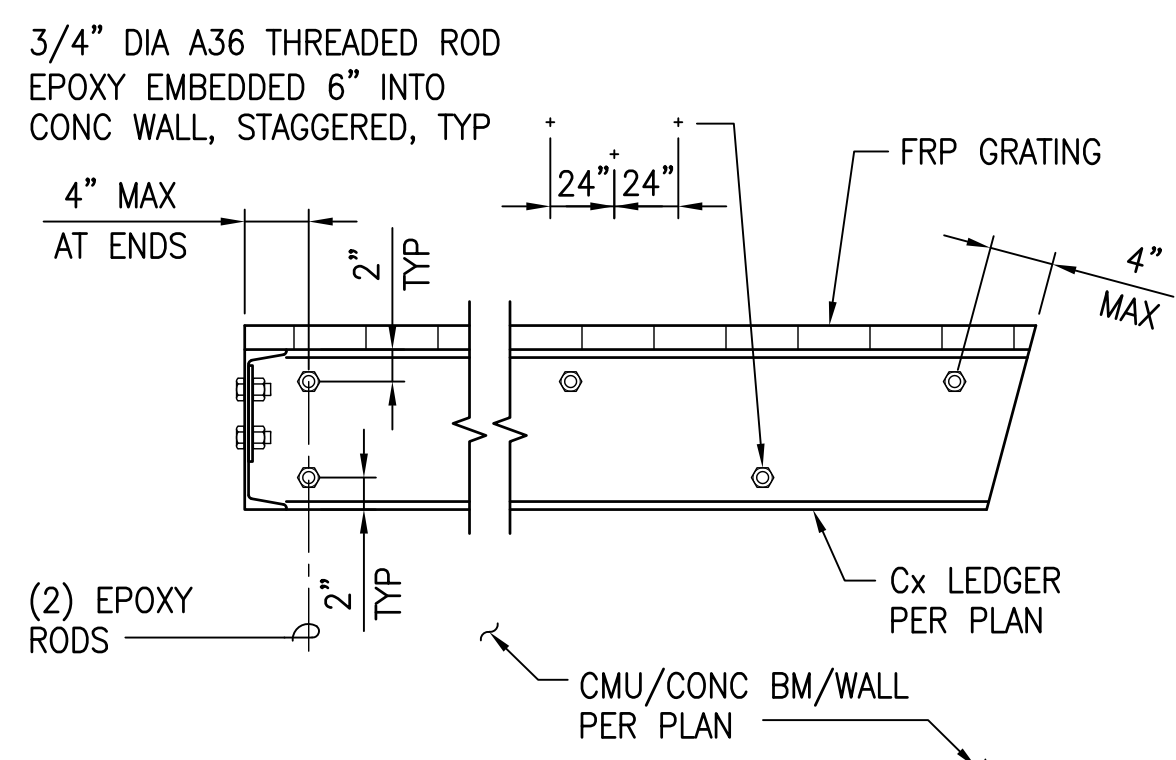
- BEAM CONNECTION NOTES
- ALL BOLTS: SEE S-1.
 - BEAM SHALL HAVE HORIZONTAL SHORT SLOTTED HOLES IN THE TOP MOST AND BOTTOM MOST BOLT HOLES FOR THE NUMBER NOTED IN THE CONNECTION SCHEDULE.



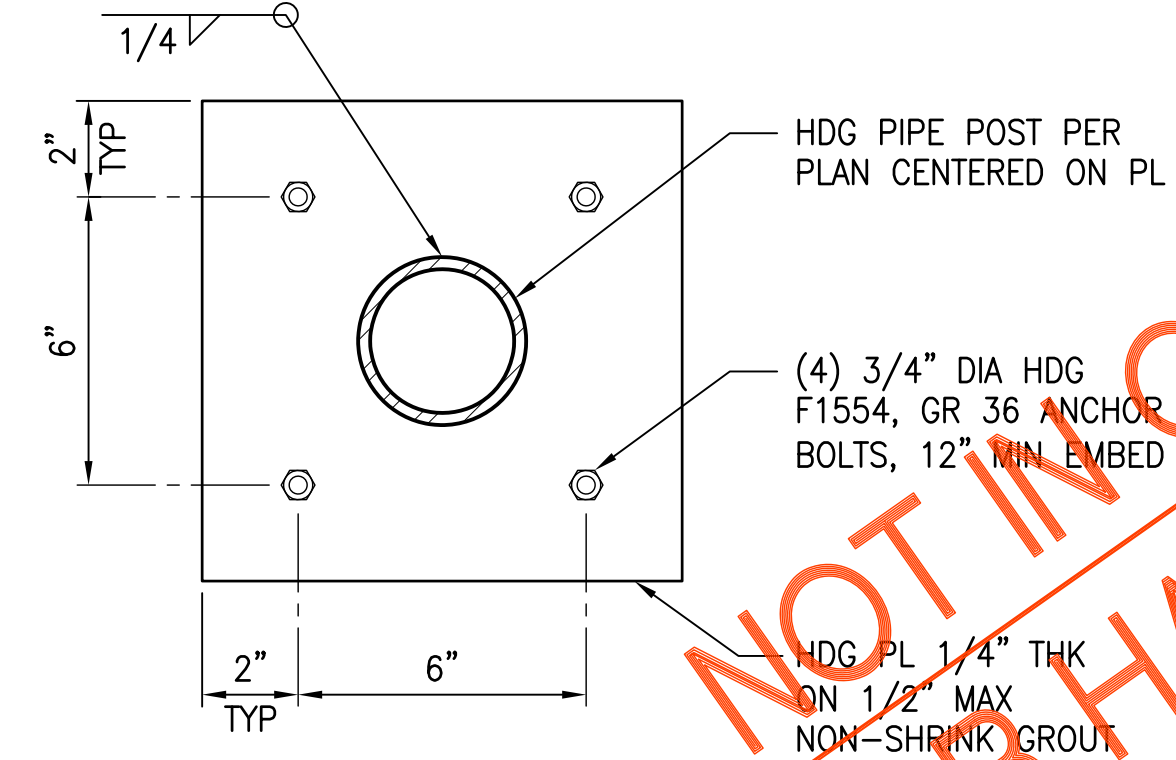
2 DETAIL - STAIR STRINGER ANCHORAGE
 NOT TO SCALE



3 DETAIL - Cx CORNER
 NOT TO SCALE

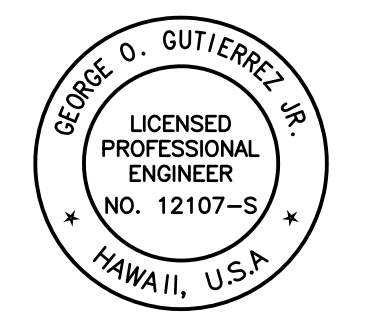


4 DETAIL - Cx LEDGER
 NOT TO SCALE



5 DETAIL - POST BASE PLATE
 NOT TO SCALE

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 APRIL 30, 2020
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

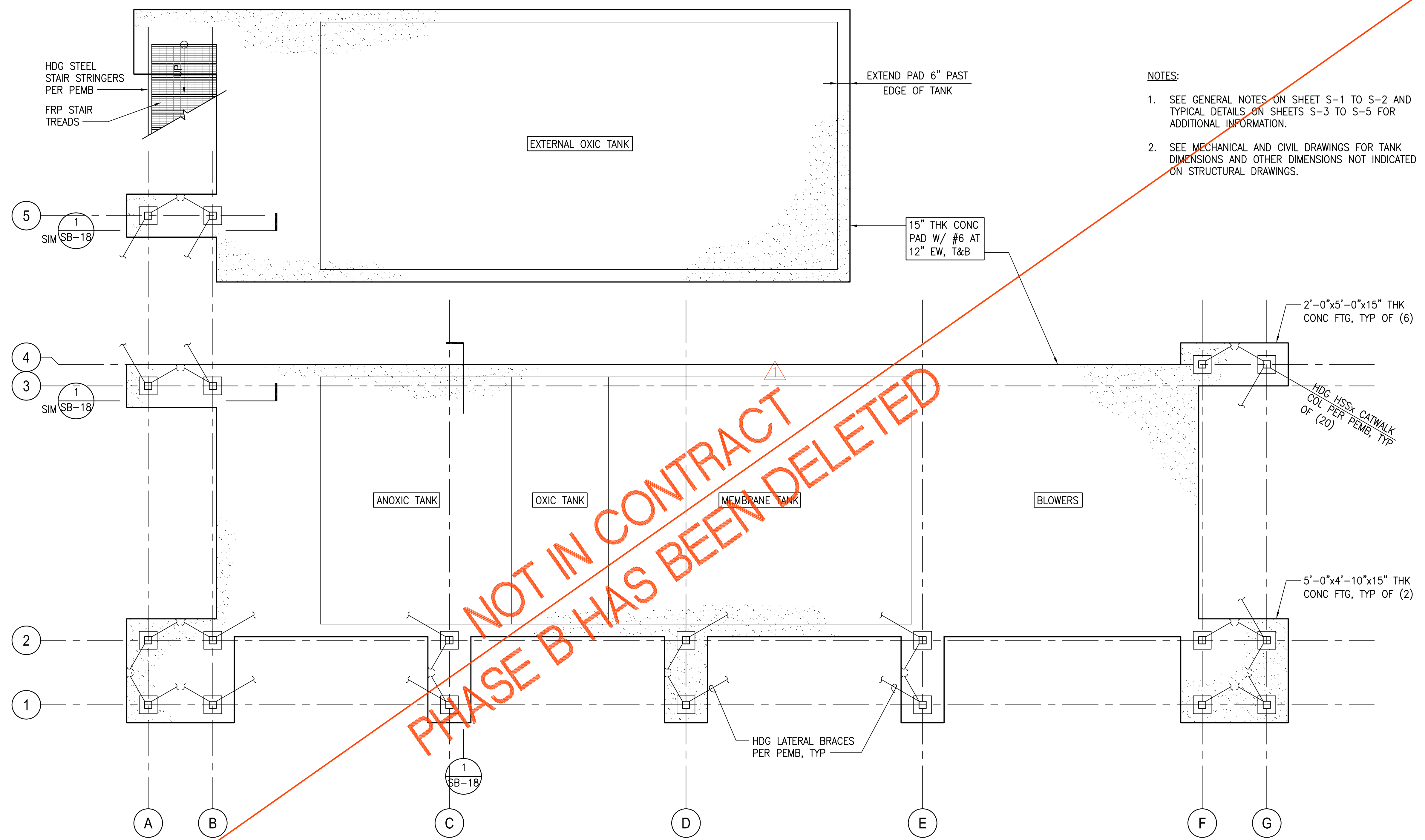
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

MBR TANK
 FOUNDATION PLAN

DWG. NO.
SB-16
 SHEET 159 OF 201

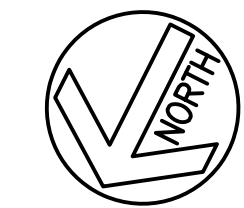
FILE	POCKET	FOLDER	NO.



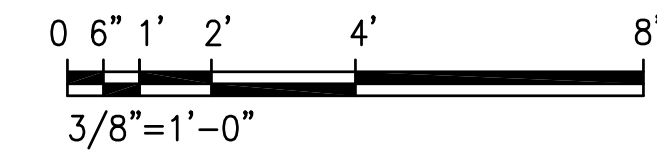
- NOTES:
- SEE GENERAL NOTES ON SHEET S-1 TO S-2 AND TYPICAL DETAILS ON SHEETS S-3 TO S-5 FOR ADDITIONAL INFORMATION.
 - SEE MECHANICAL AND CIVIL DRAWINGS FOR TANK DIMENSIONS AND OTHER DIMENSIONS NOT INDICATED ON STRUCTURAL DRAWINGS.

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

A MBR TANK FOUNDATION PLAN
 SCALE: 3/8" = 1'-0"

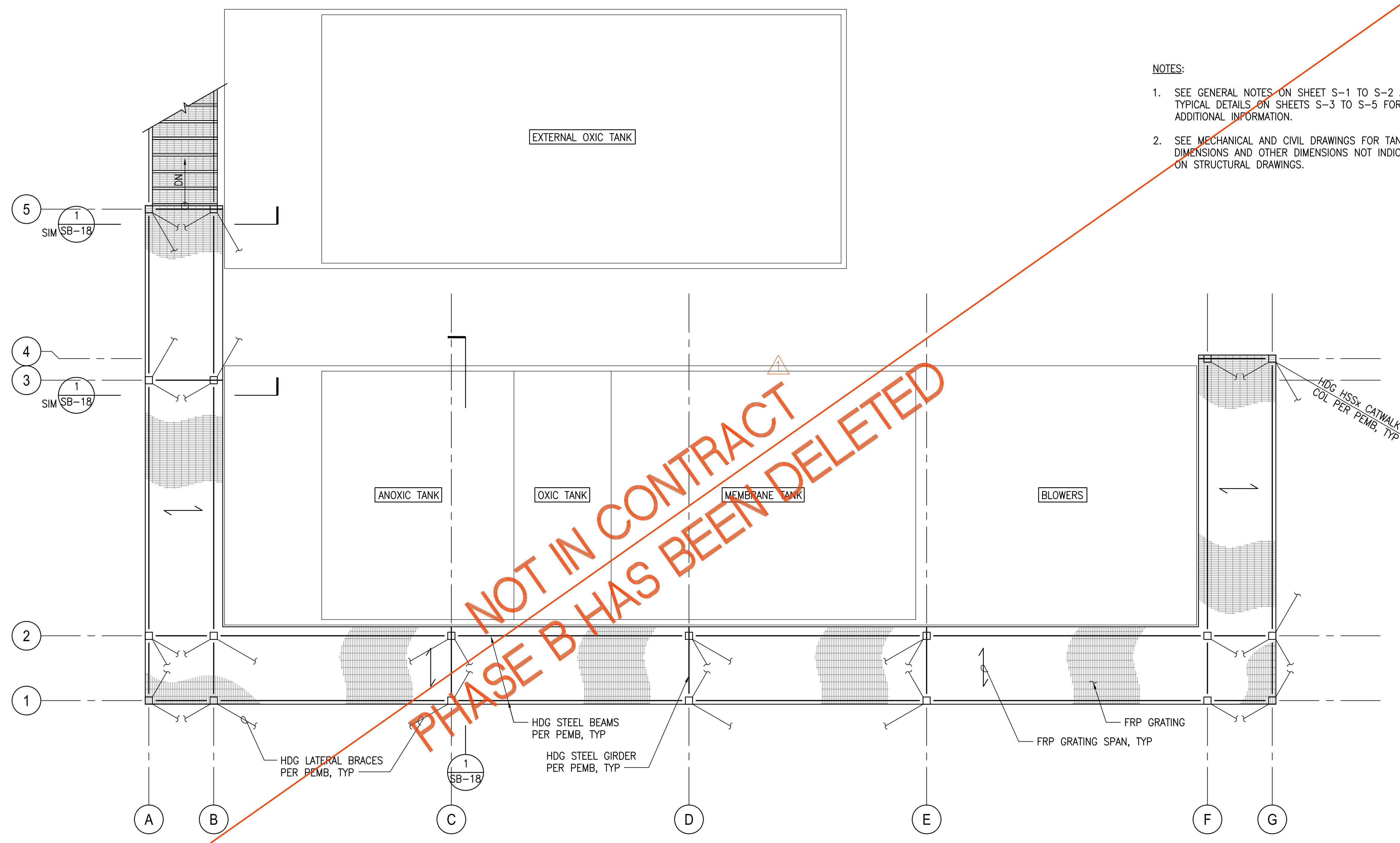


GRAPHIC SCALE



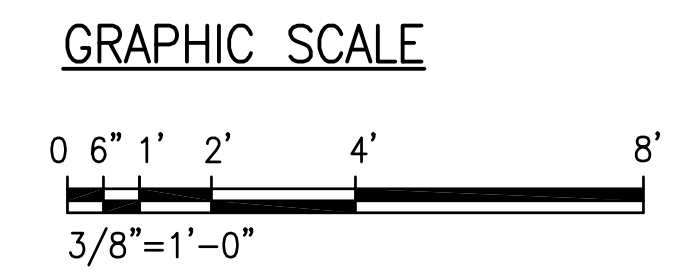
JOB NO.: 0-11-056.004
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JOB NO. 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\STRUCT\19060\19060\DRAWINGS.DWG



- NOTES:
1. SEE GENERAL NOTES ON SHEET S-1 TO S-2 AND TYPICAL DETAILS ON SHEETS S-3 TO S-5 FOR ADDITIONAL INFORMATION.
 2. SEE MECHANICAL AND CIVIL DRAWINGS FOR TANK DIMENSIONS AND OTHER DIMENSIONS NOT INDICATED ON STRUCTURAL DRAWINGS.

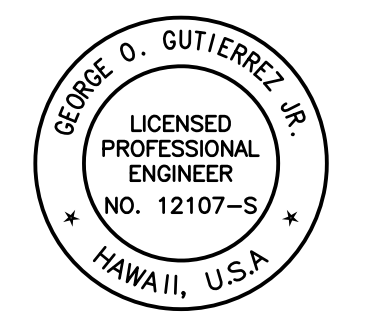
A MBR TANK CATWALK FRAMING PLAN
 SCALE: 3/8" = 1'-0"



Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS
**PULEHUNUI
 REGIONAL
 INFRASTRUCTURE**

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 APRIL 30, 2020
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0 1 2
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 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

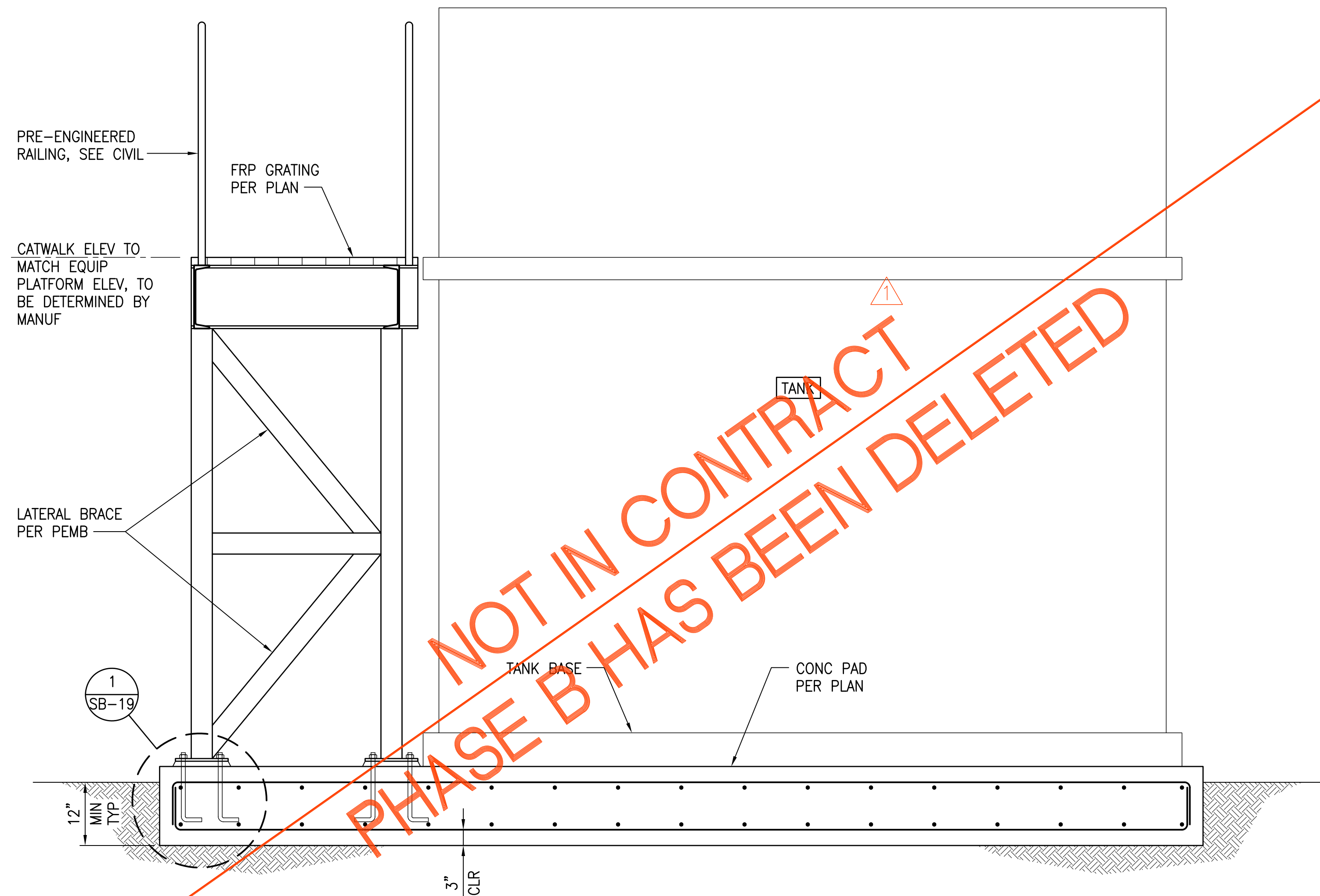
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

MBR TANK CATWALK
 FRAMING PLAN

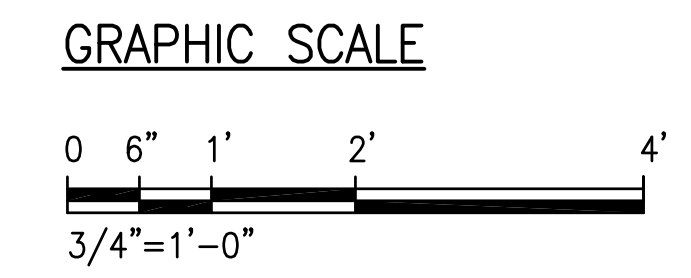
DWG. NO.
SB-17
 SHEET 160 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: F:\19060\DWG\19060 DHHL PULEHUNUI\DWG\STRUCT\19060\DWG\19060\DRAWINGS.DWG



1 MBR TANK CATWALK SECTION
 SCALE: 3/4" = 1'-0"

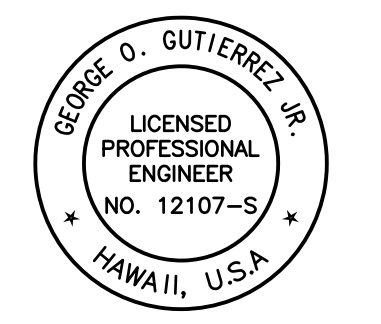


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 APRIL 30, 2020
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0 1 2
 LINE IS 2 INCHES AT FULL SIZE
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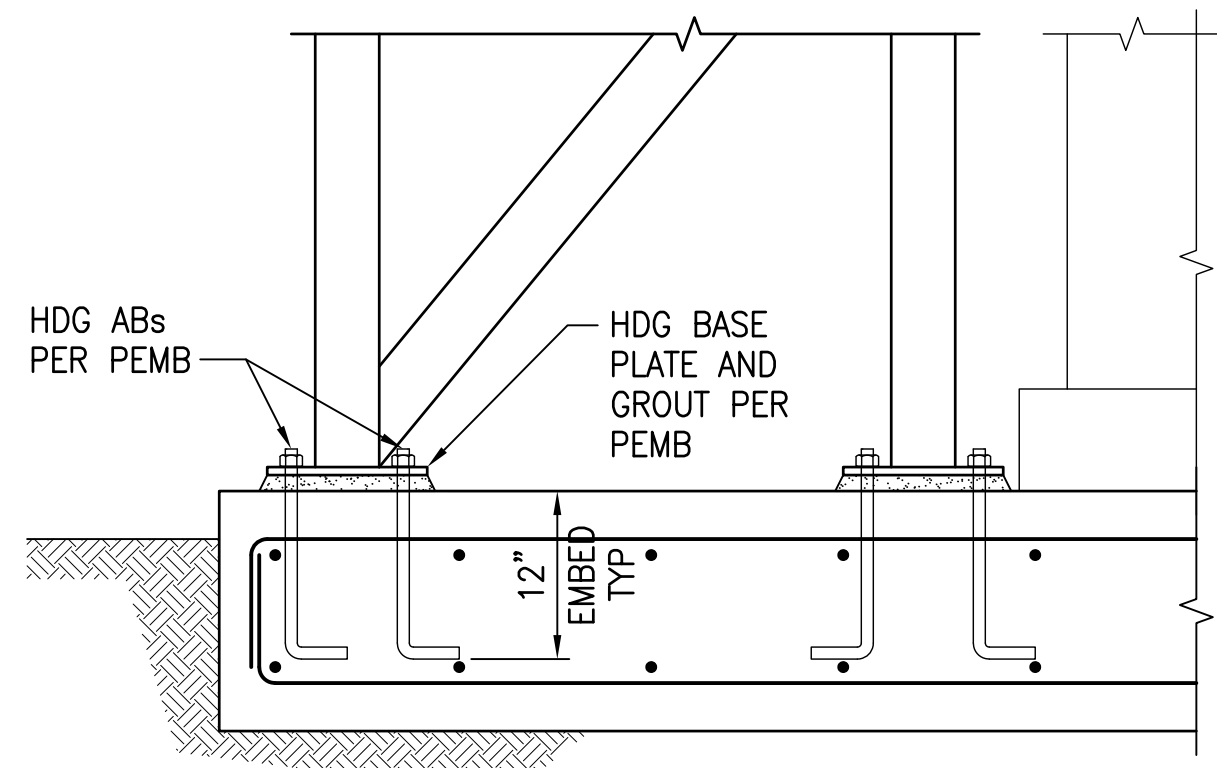
REVISION	DATE	BREF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/20
 Designed By: CK
 Drawn By: LL
 Checked By: GG

MBR TANK
 CATWALK SECTION

DWG. NO.
SB-18
 SHEET 161 OF 201

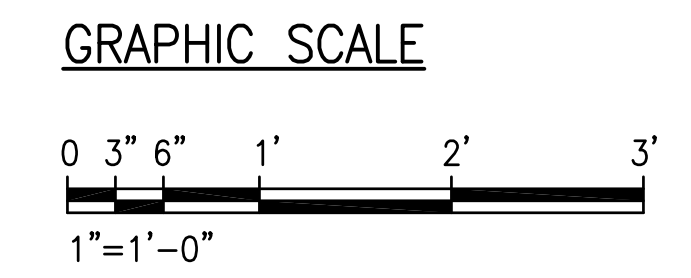
FILE	POCKET	FOLDER	NO.




1 CATWALK COLUMN ANCHORAGE
SCALE: 1" = 1'-0"

NOT IN CONTRACT
PHASE B HAS BEEN DELETED

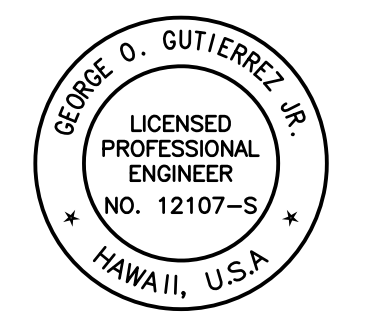
JOB NO. 0-11-056.004
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STATE OF HAWAII
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George O. Gutierrez, Jr.
SIGNATURE APRIL 30, 2020
EXP. DATE OF THE LICENSE

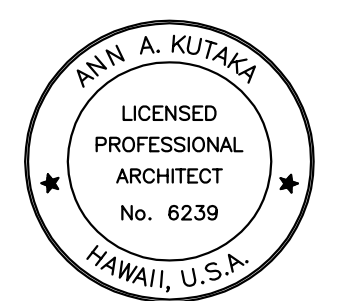
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LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BREF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
Scale: AS NOTED
Date: 1/22/20
Designed By: CK
Drawn By: LL
Checked By: GG

DETAILS
DWG. NO.
SB-19
SHEET 162 OF 201

FILE	POCKET	FOLDER	NO.



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M. K. Tsutsumi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (If NOT 2-inches, Scale Accordingly)

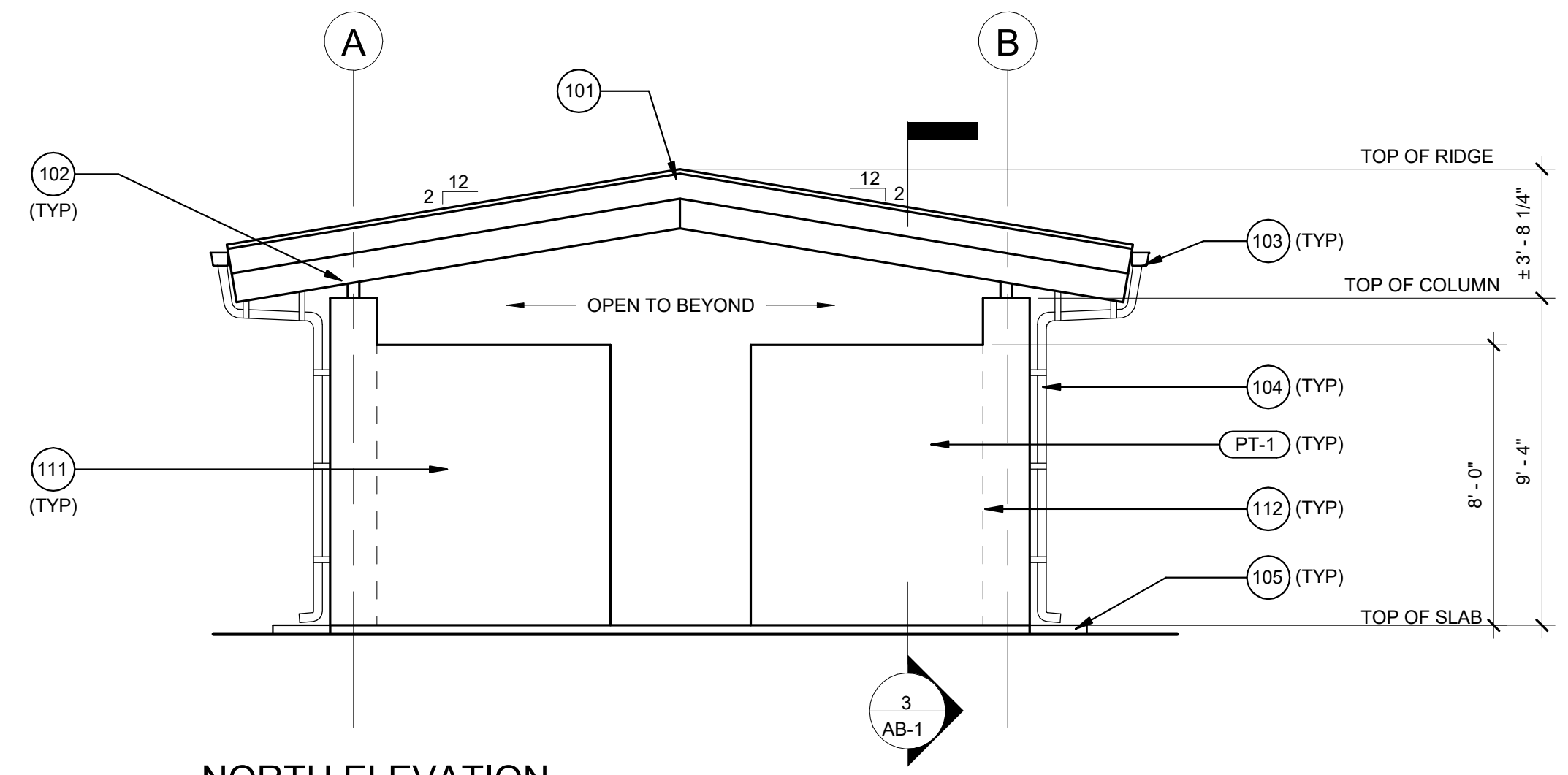
REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/31/20
 Designed By: BHK
 Drawn By: BHK
 Checked By:

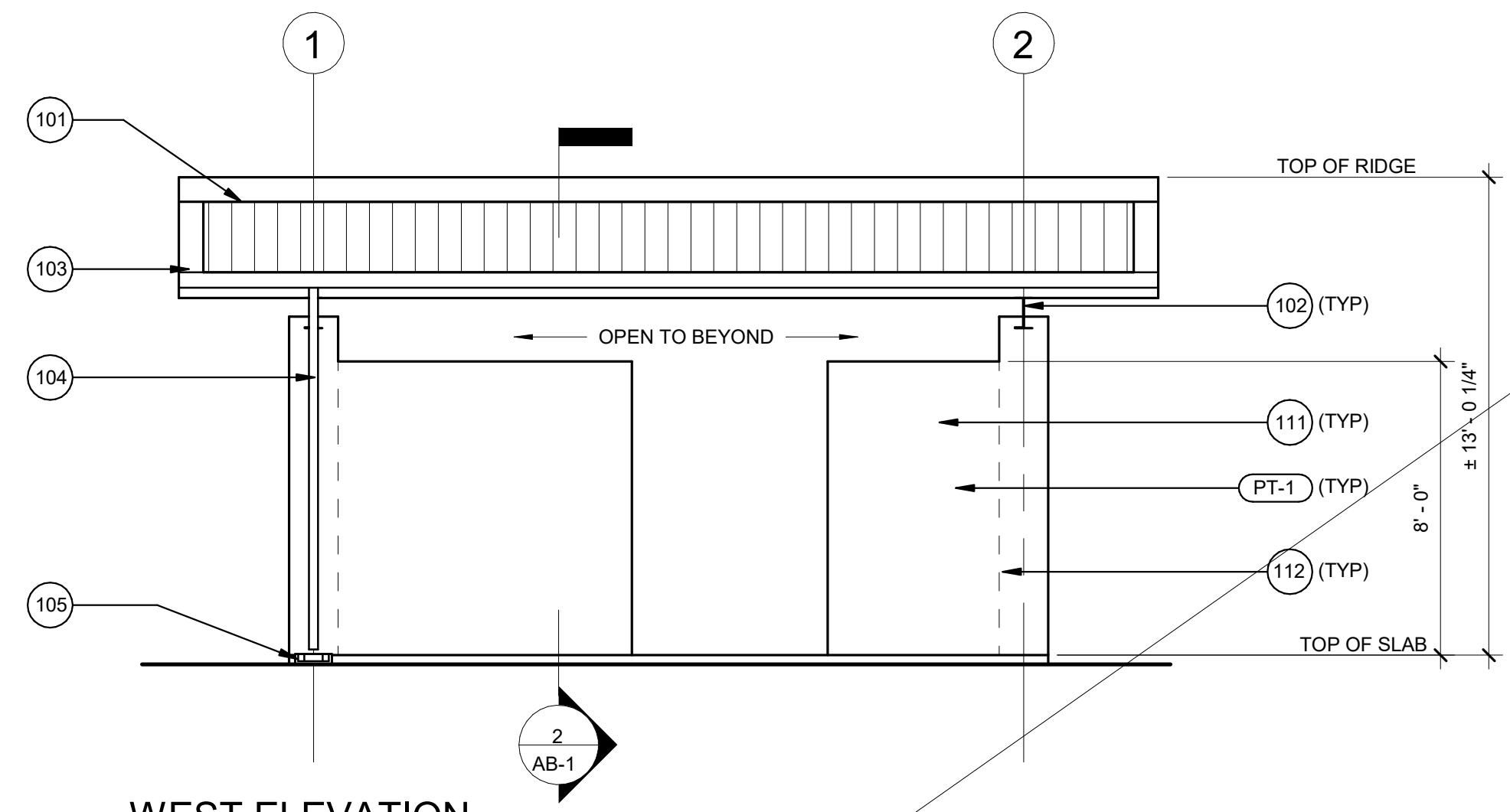
**BLOWER AND MCC
 ELEVATION &
 SECTION**

DWG. NO.
AB-1
 SHEET 163 OF 201

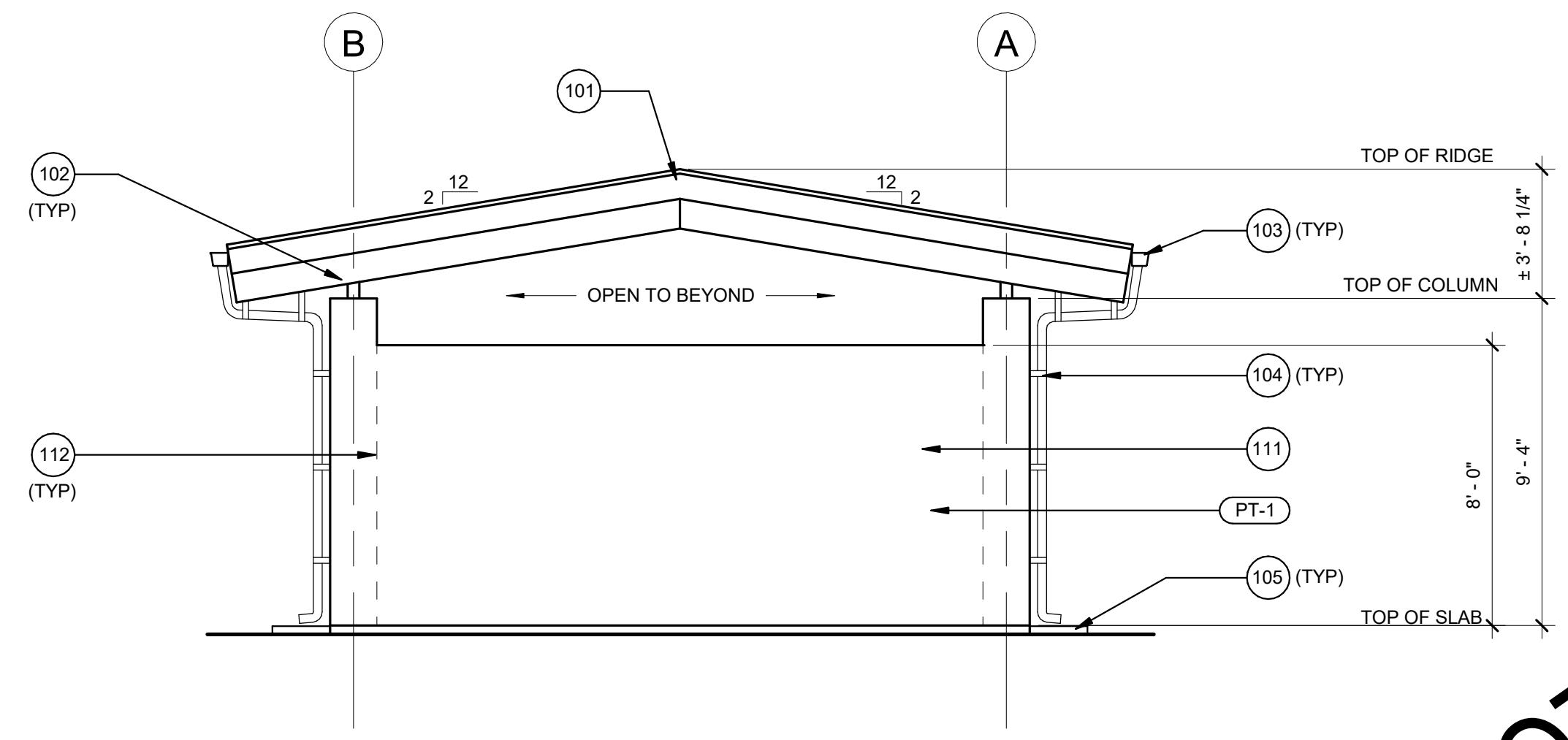
FILE	POCKET	FOLDER	NO.



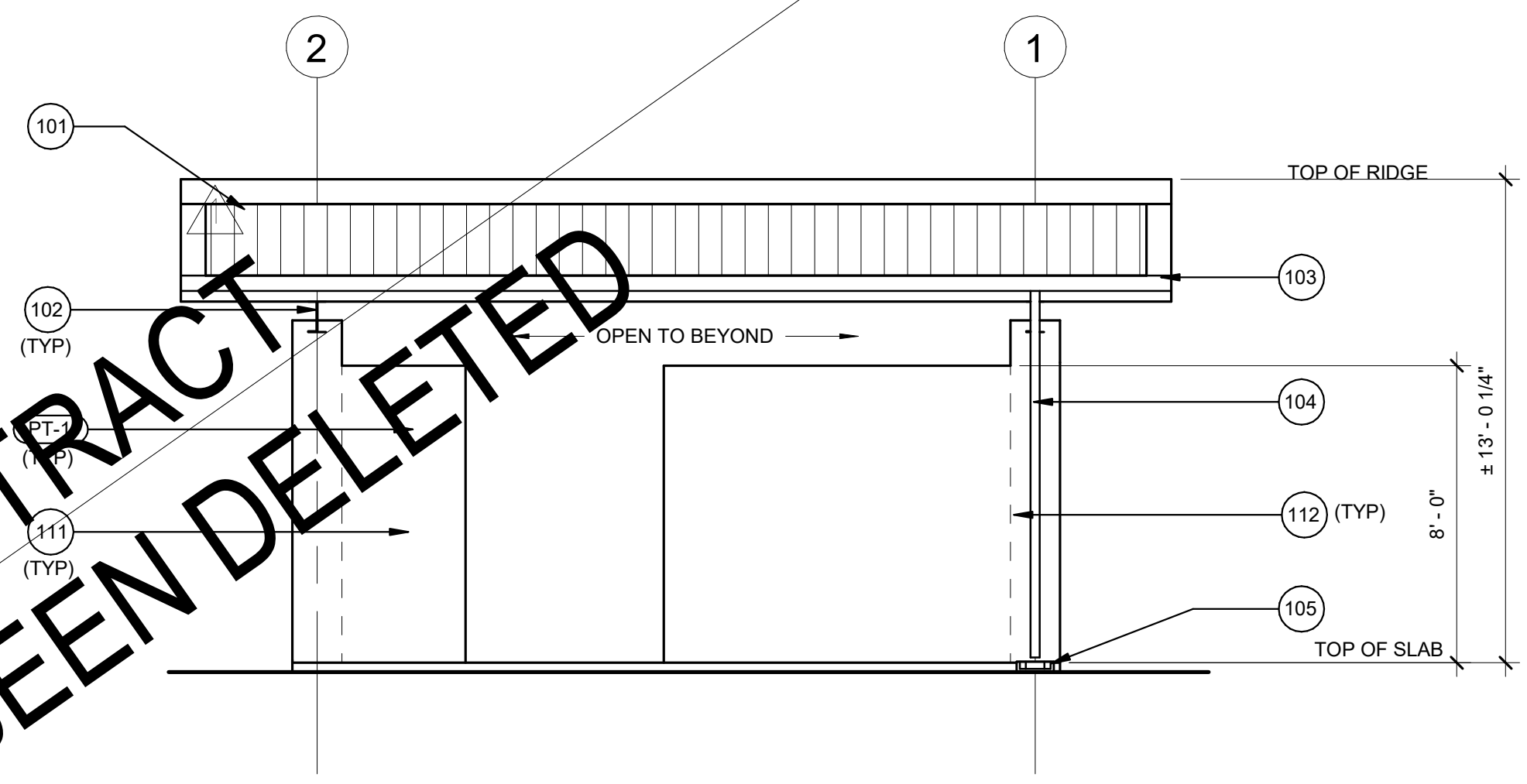
NORTH ELEVATION



WEST ELEVATION

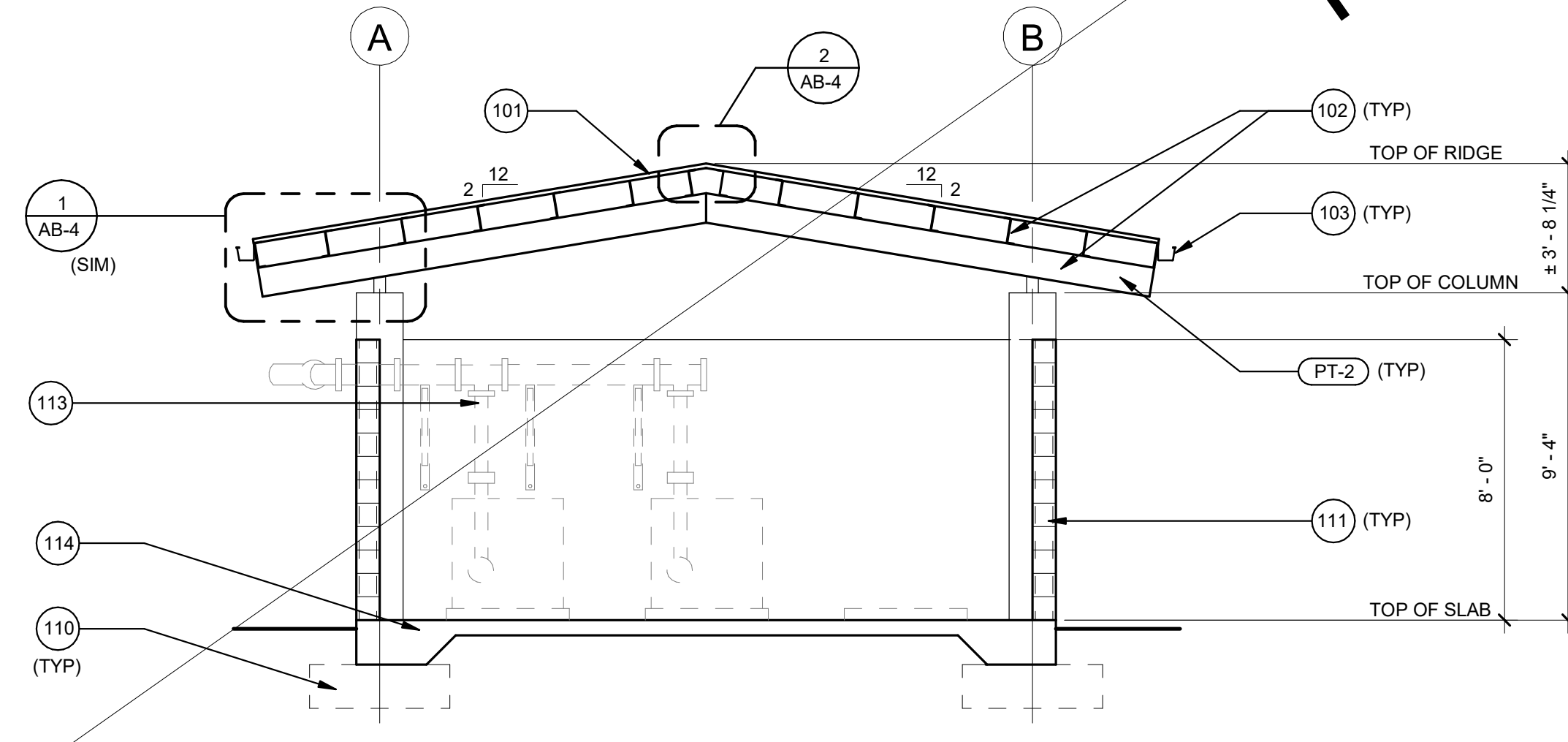


SOUTH ELEVATION

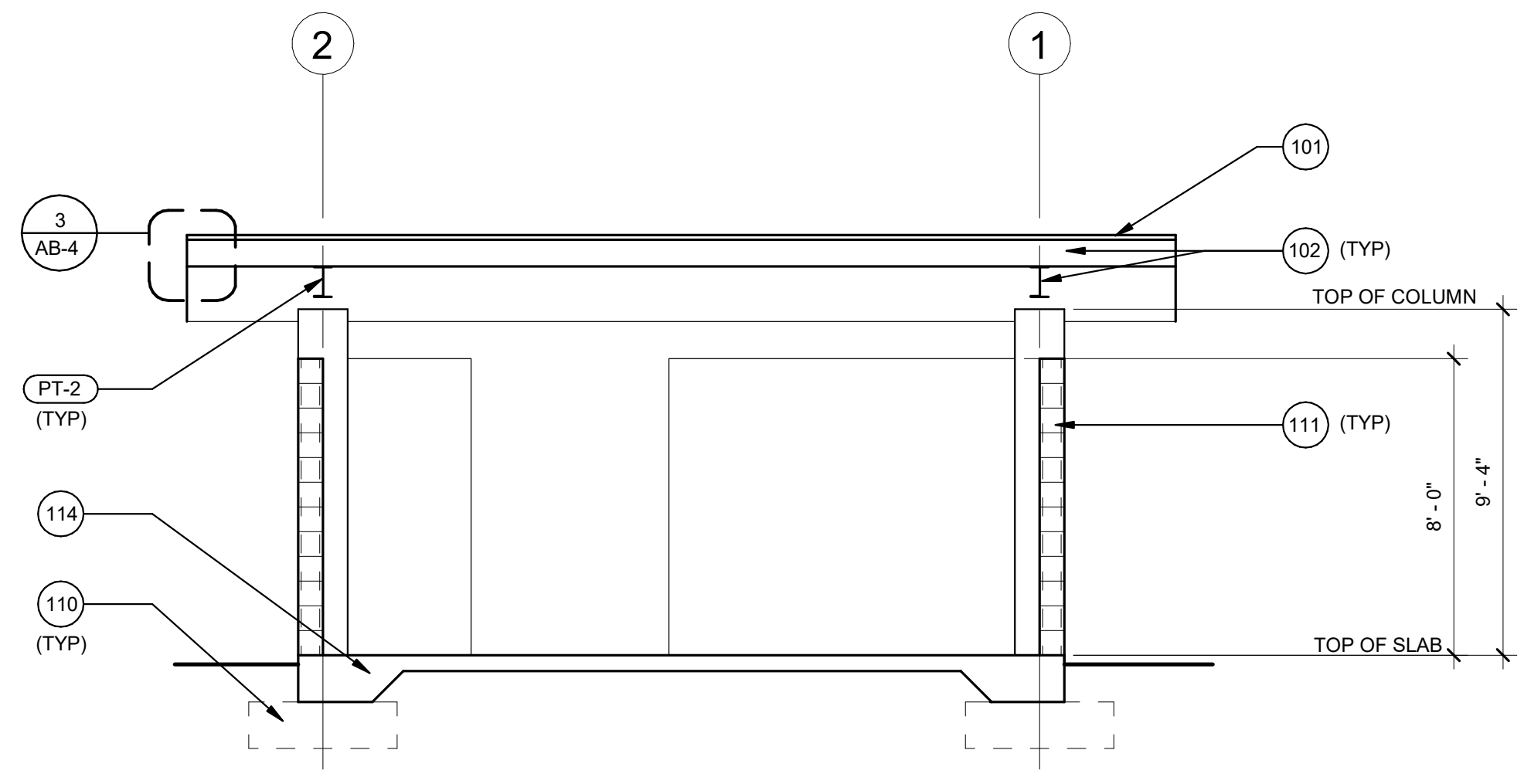


EAST ELEVATION

1 BLOWER AND MCC EXTERIOR ELEVATIONS
 SCALE: 1/4" = 1'-0"



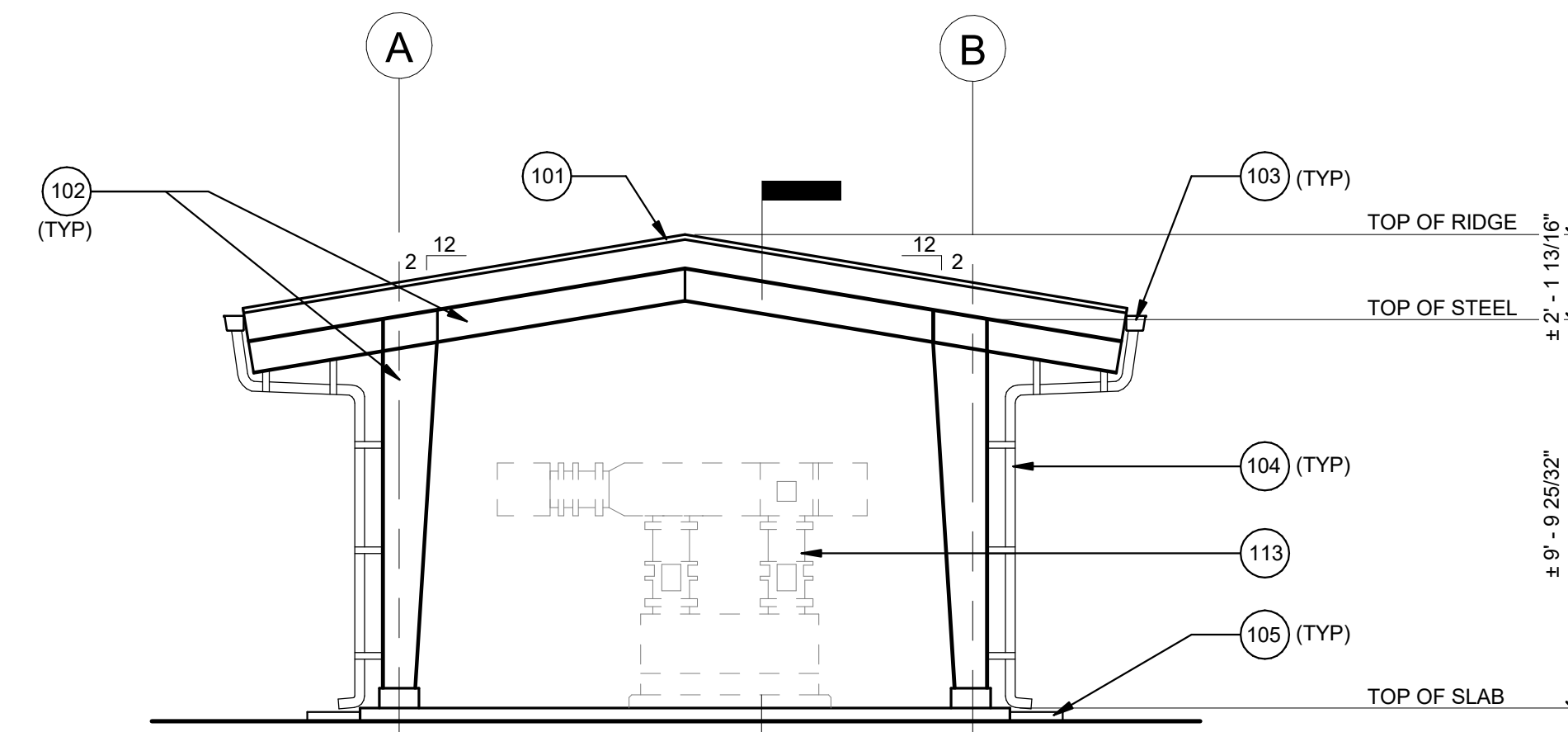
2 BLOWER AND MCC CROSS SECTION
 SCALE: 1/4" = 1'-0"



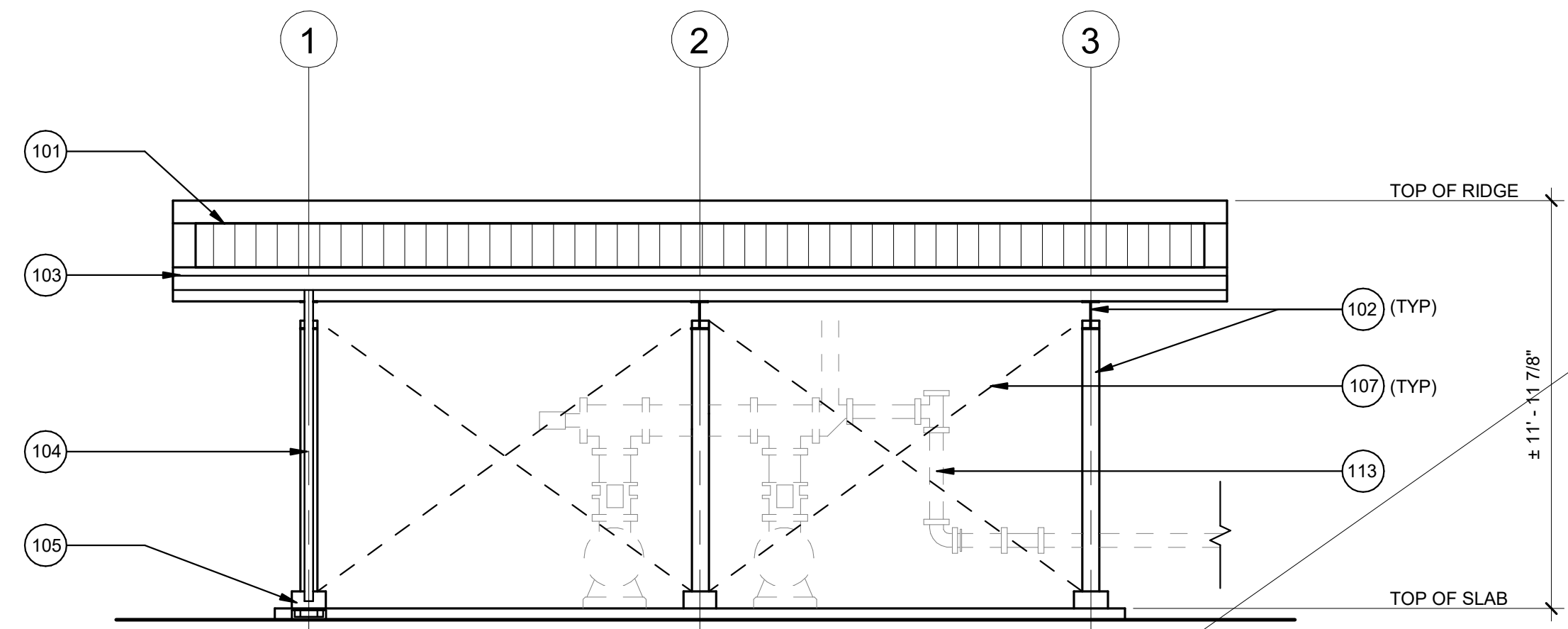
3 BLOWER AND MCC LONGITUDINAL SECTION
 SCALE: 1/4" = 1'-0"

**NOT IN CONTRACT
 PHASE B HAS BEEN DELETED**

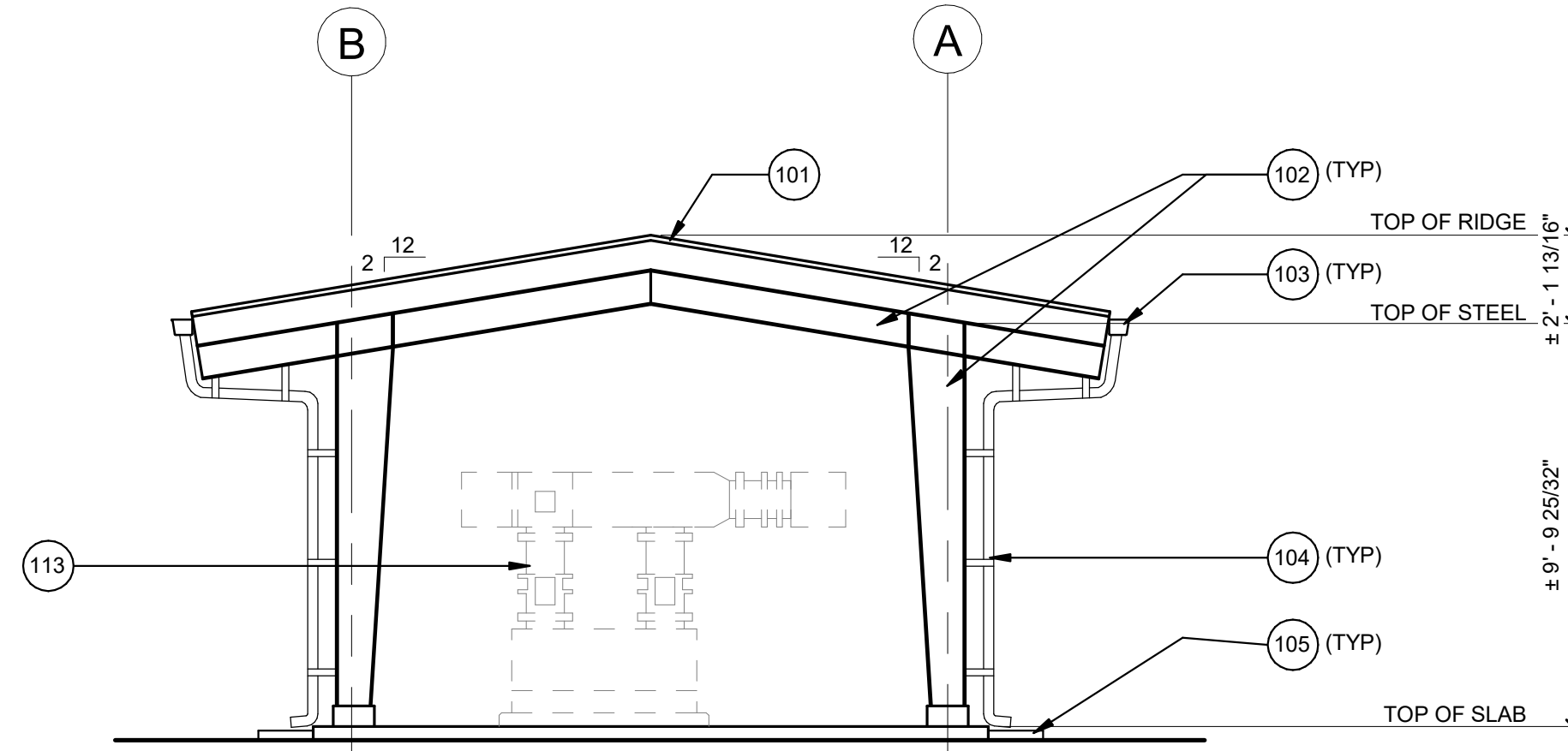
JOB NO. 0-11-056.004
 C:\Users\jtsutsumi\Documents\190056_Pulehunu_RDC-C_Corp_ID.rvt



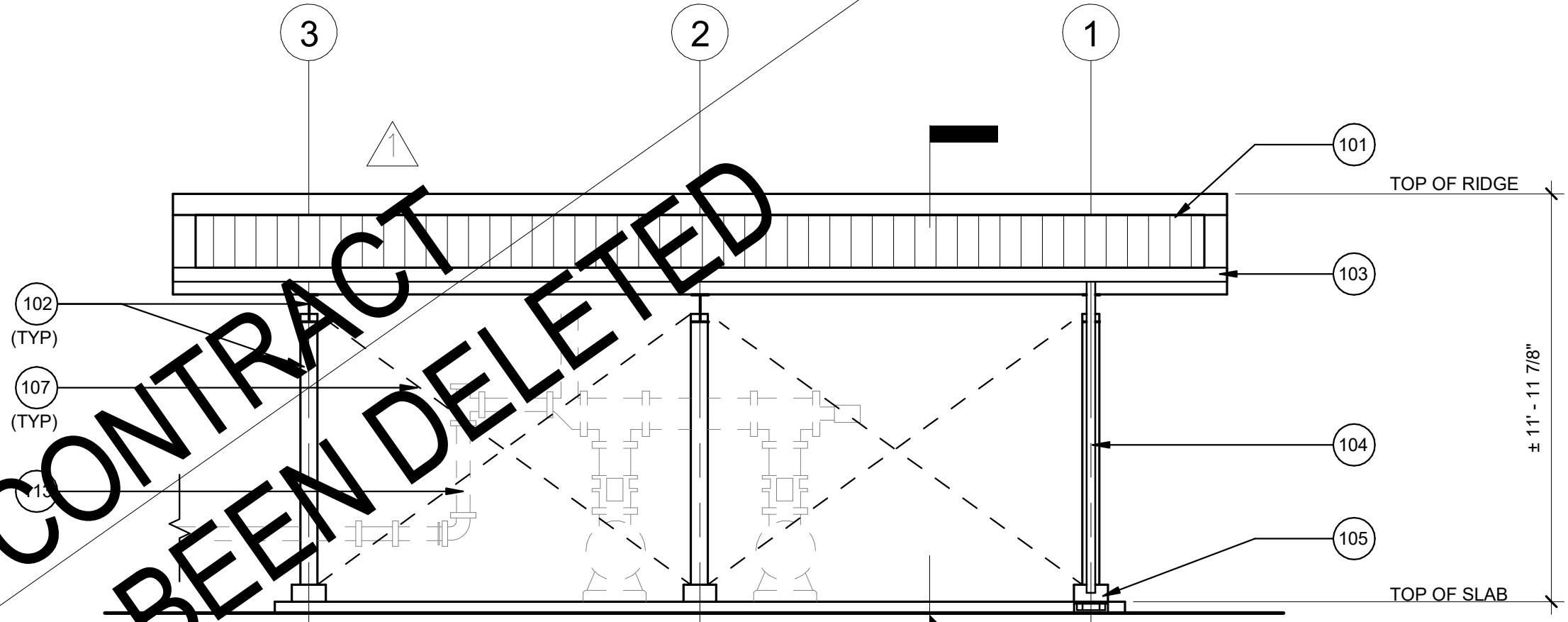
NORTH ELEVATION



WEST ELEVATION

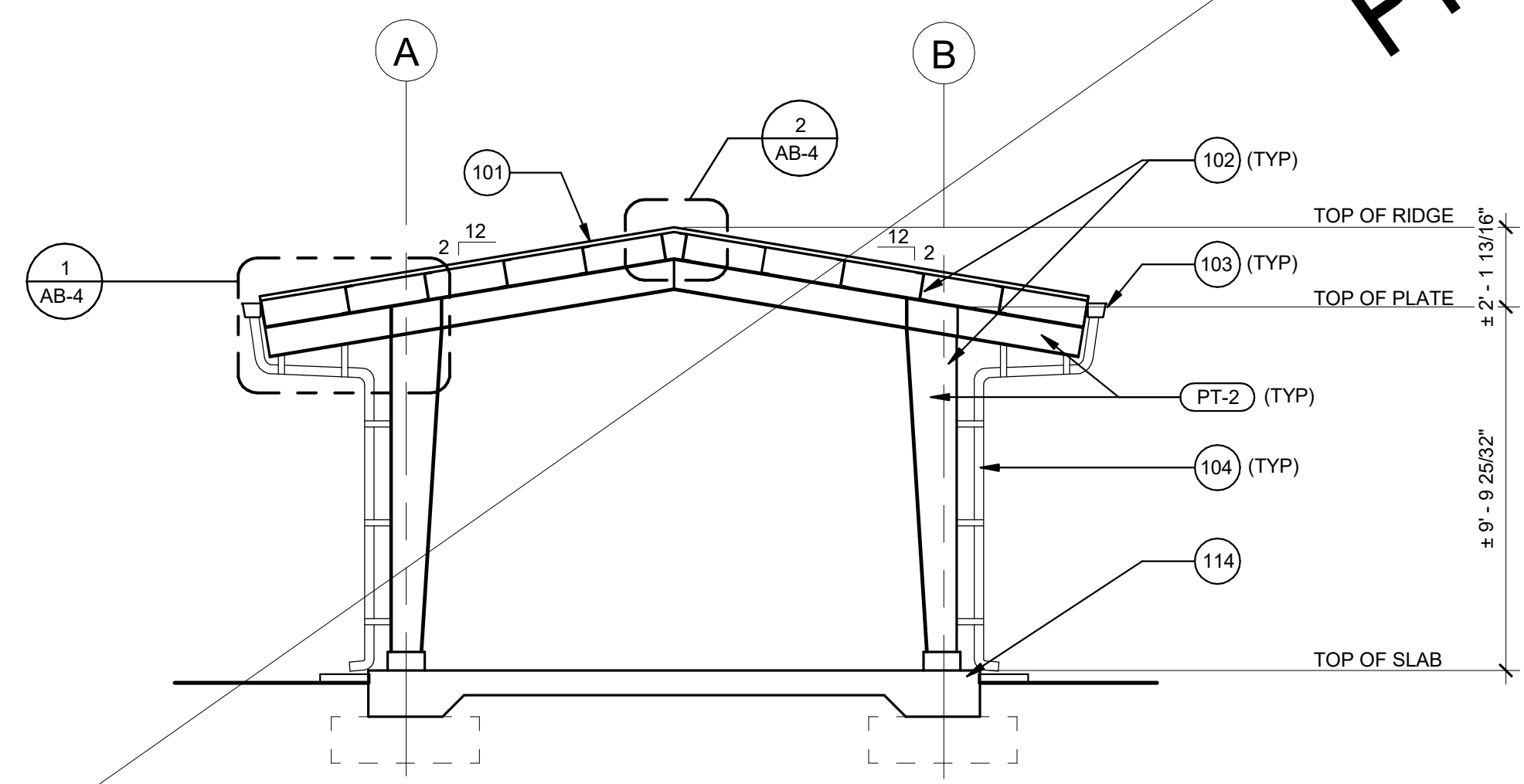


SOUTH ELEVATION

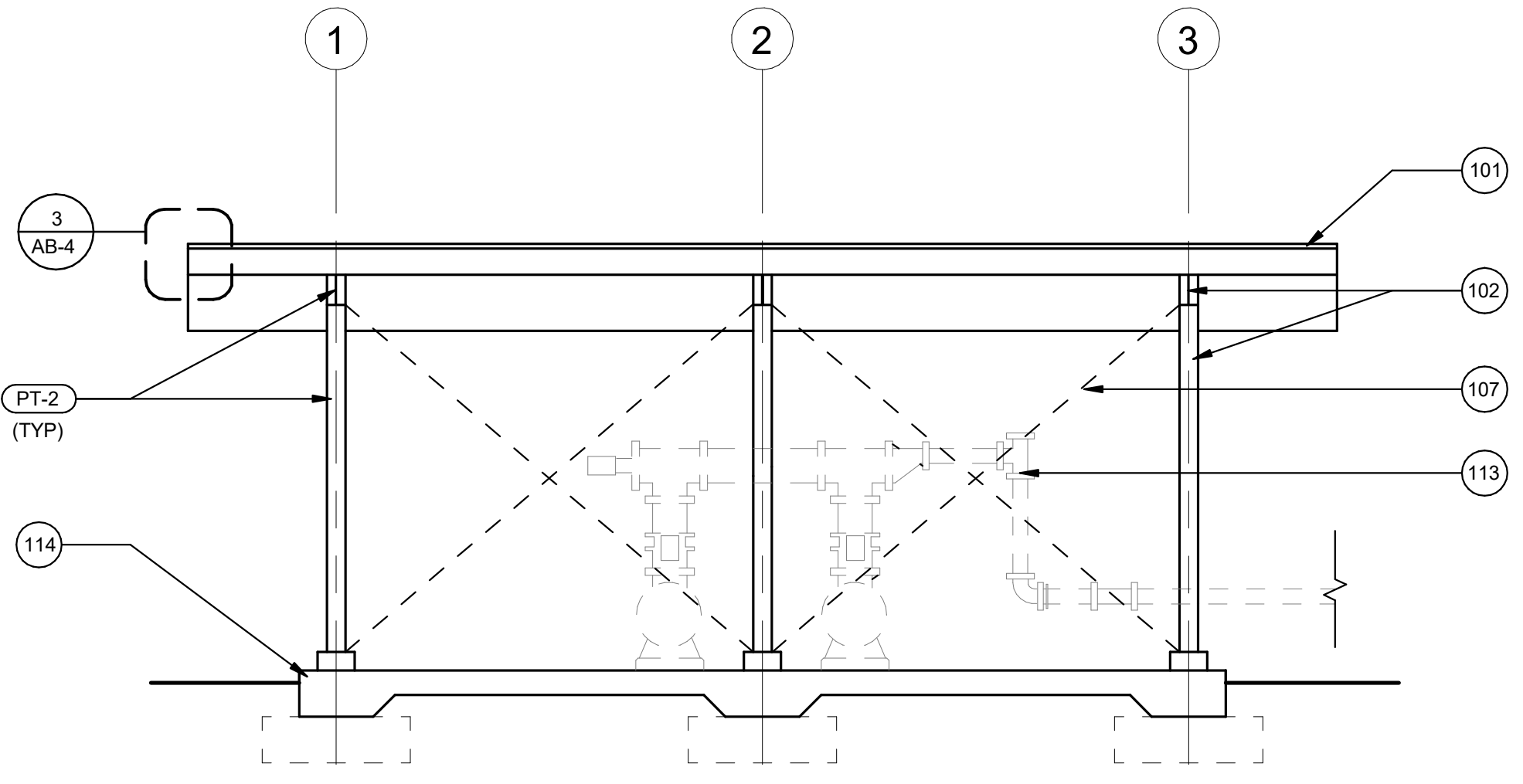


EAST ELEVATION

1 AEROBIC DIGESTER EXTERIOR ELEVATIONS
SCALE: 1/4" = 1'-0"



2 AEROBIC DIGESTER CROSS SECTION
SCALE: 1/4" = 1'-0"



3 AEROBIC DIGESTER LONGITUDINAL SECTION
SCALE: 1/4" = 1'-0"

KEYNOTES

KEY	DESCRIPTION
101	PRE-FINISHED METAL ROOF & FLASHING (SEE STRUCTURAL DRAWINGS)
102	PRE-ENGINEERED METAL BUILDING (SEE STRUCTURAL DRAWINGS)
103	PRE-FINISHED METAL GUTTER
104	3" DIA PRE-FINISHED METAL DOWNSPOUT W/ S.S. DOWNSPOUT BRACKETS @ 40" O.C. (MAX)
105	PRE-CAST SPLASH BLOCK
106	PRE-ENGINEERED RAILING (SEE CIVIL DRAWINGS)
107	CROSS BRACING (SEE STRUCTURAL DRAWINGS)
108	CONCRETE WALL (SEE STRUCTURAL DRAWINGS)
109	CONCRETE TIE BEAM (SEE STRUCTURAL DRAWINGS)
110	CONCRETE FOOTING (SEE STRUCTURAL DRAWINGS)
111	CMU WALL (SEE STRUCTURAL DRAWINGS)
112	COLUMN BEYOND (SEE STRUCTURAL DRAWINGS)
113	EQUIPMENT (SEE CIVIL DRAWINGS)
114	CONCRETE SLAB (SEE STRUCTURAL DRAWINGS)
115	AC PAVEMENT (SEE CIVIL DRAWINGS)

NOT IN CONTRACT
PHASE B HAS BEEN DELETED

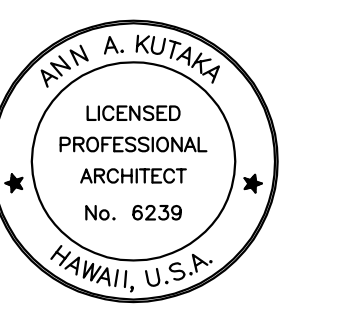
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HONOLULU | WAILUKU | HILO, HAWAII

501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817
PHONE: 808-533-3646
FAX: 808-526-1267

STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

PULEHUNUI
REGIONAL
INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

M. K. [Signature] APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(IF NOT 2-INCHES, SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
Scale: AS NOTED
Date: 1/31/20
Designed By: BHK
Drawn By: BHK
Checked By:

**AEROBIC
DIGESTER
ELEVATION &
SECTION**

DWG. NO.
AB-2
SHEET 164 OF 201

JOB NO. 0-11-056.004
C:\Users\jtsutsumi\Documents\1900-00_Pulehunu_RDC-C_Cap_ID.rvt



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M. K. Tsutsumi APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

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 (IF NOT 2-INCHES, SCALE ACCORDINGLY)

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△	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
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 Drawn By: BHK
 Checked By:

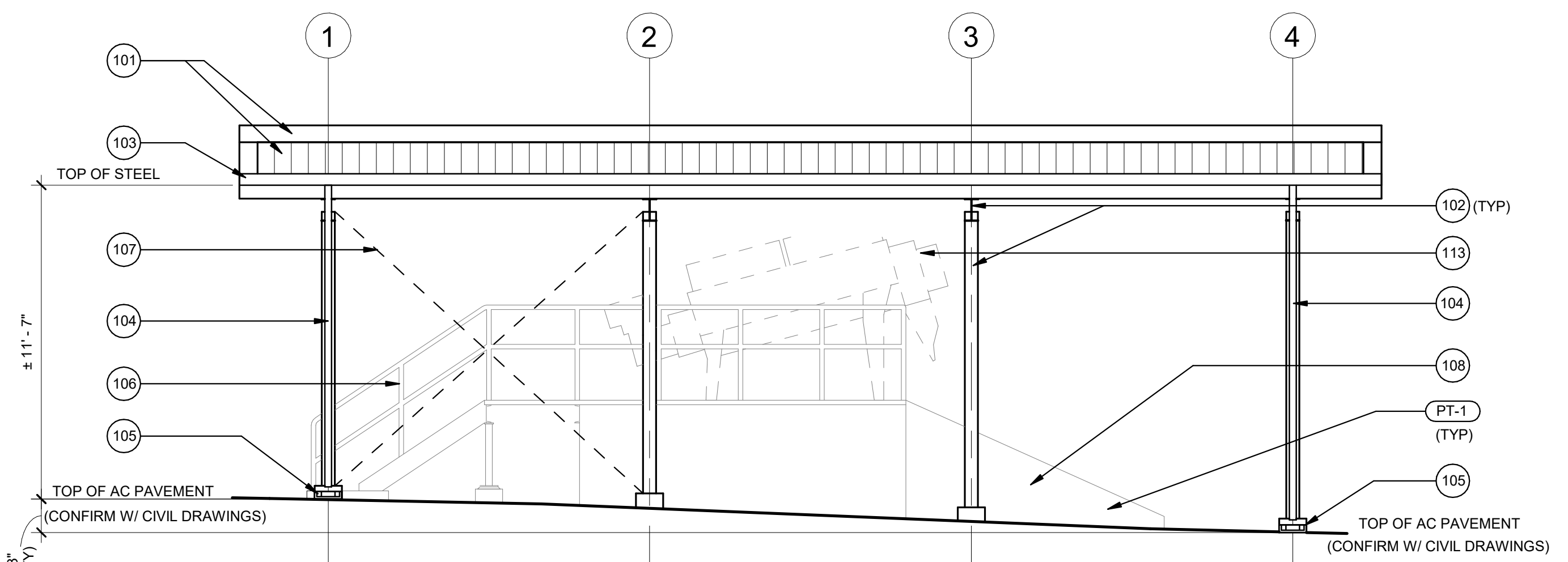
SOLIDS DEWATERING ELEVATION AND SECTION

DWG. NO.
AB-3
 SHEET 165 OF 201

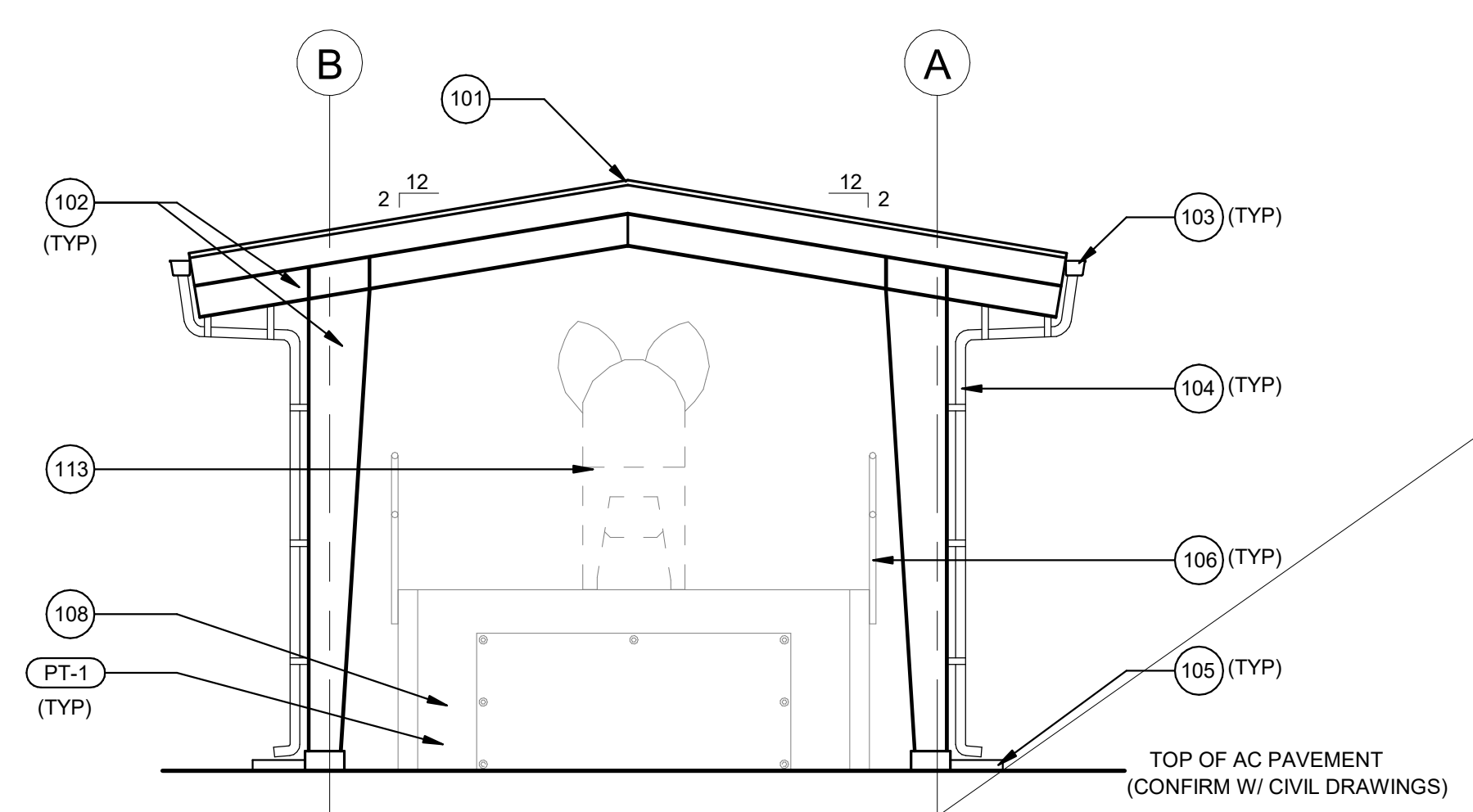
FILE	POCKET	FOLDER	NO.

KEYNOTES

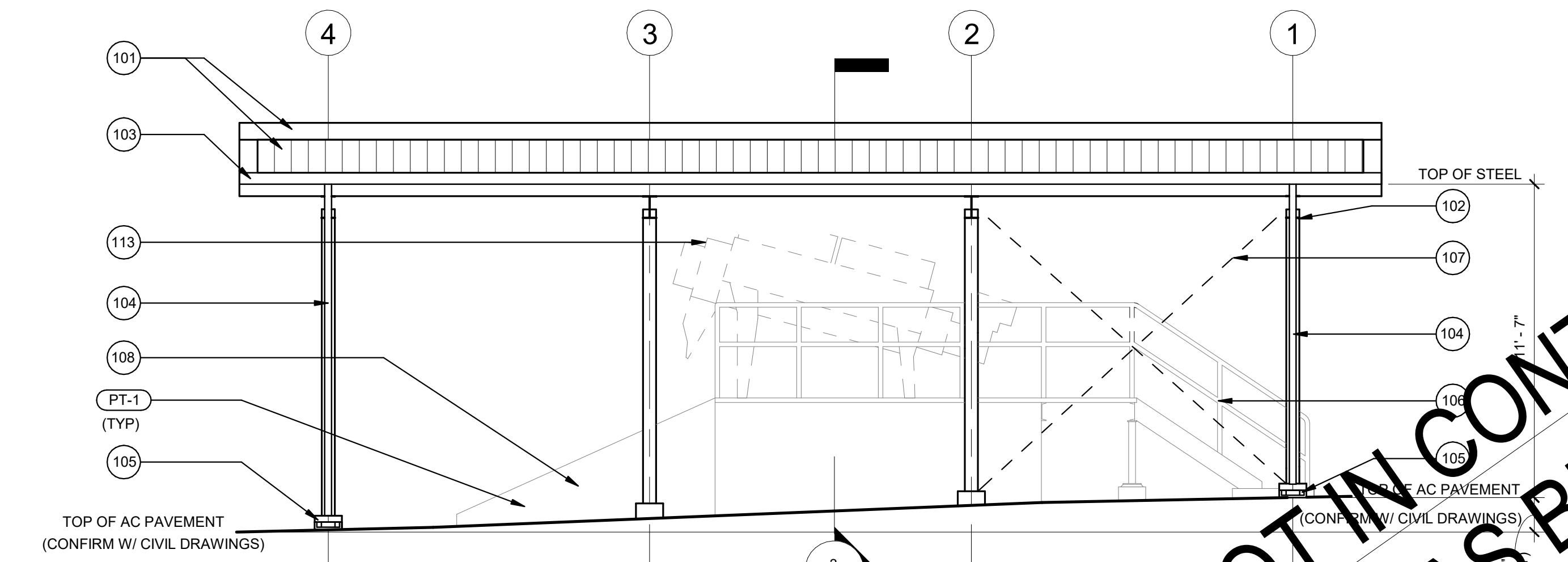
KEY	DESCRIPTION
101	PRE-FINISHED METAL ROOF & FLASHING
102	PRE-ENGINEERED METAL BUILDING (SEE STRUCTURAL DRAWINGS)
103	PRE-FINISHED METAL GUTTER
104	3" DIA PRE-FINISHED METAL DOWNSPOUT W/ S.S. DOWNSPOUT BRACKETS @ 4'0" O.C. (MAX)
105	PRE-CAST SPLASH BLOCK
106	PRE-ENGINEERED RAILING (SEE CIVIL DRAWINGS)
107	CROSS BRACING (SEE STRUCTURAL DRAWINGS)
108	CONCRETE WALL (SEE STRUCTURAL DRAWINGS)
109	CONCRETE TIE BEAM (SEE STRUCTURAL DRAWINGS)
110	CONCRETE FOOTING (SEE STRUCTURAL DRAWINGS)
111	CMU WALL (SEE STRUCTURAL DRAWINGS)
112	COLUMN BEYOND (SEE STRUCTURAL DRAWINGS)
113	EQUIPMENT (SEE CIVIL DRAWINGS)
114	CONCRETE SLAB (SEE STRUCTURAL DRAWINGS)
115	AC PAVEMENT (SEE CIVIL DRAWINGS)



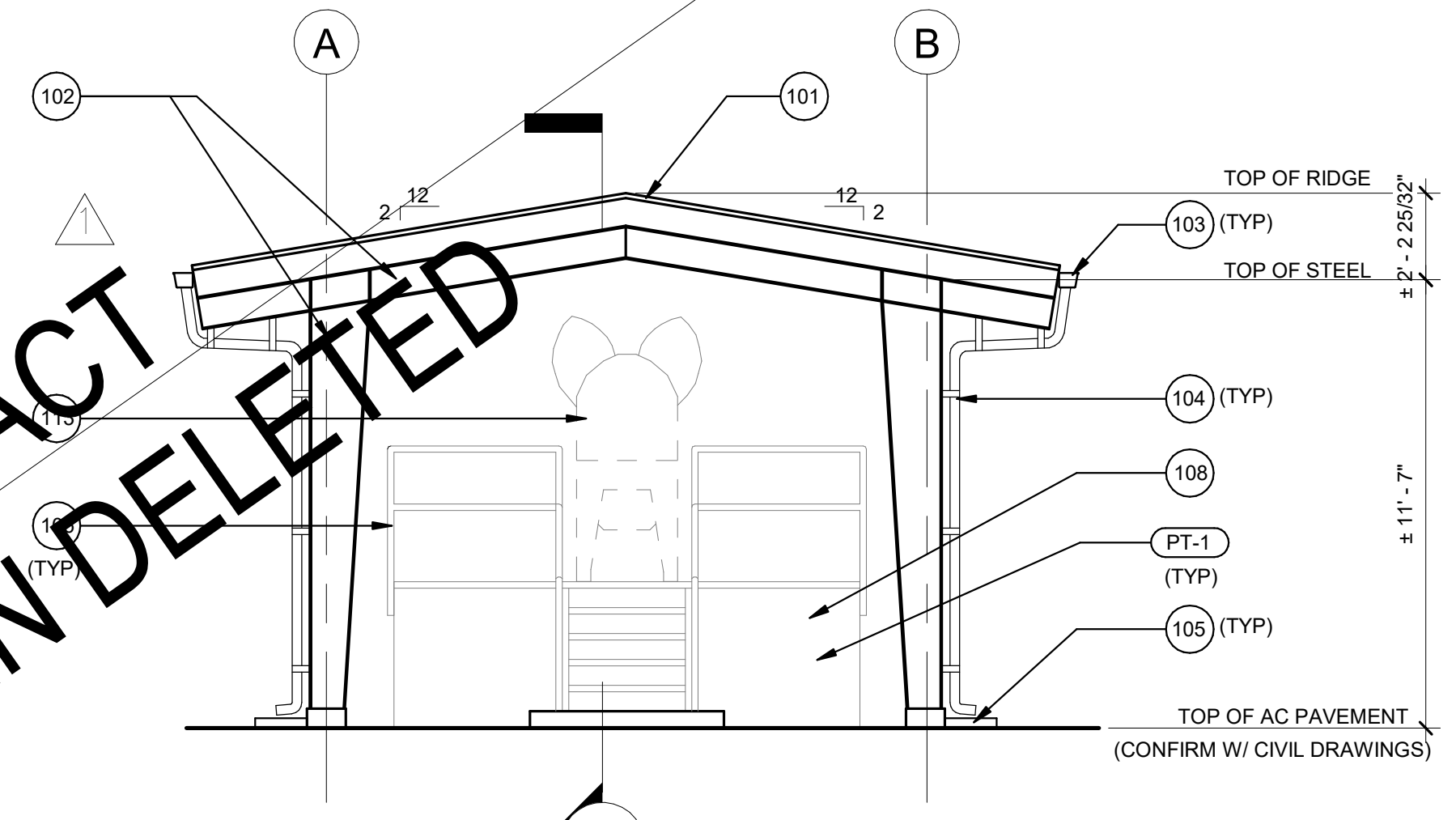
NORTH ELEVATION



WEST ELEVATION

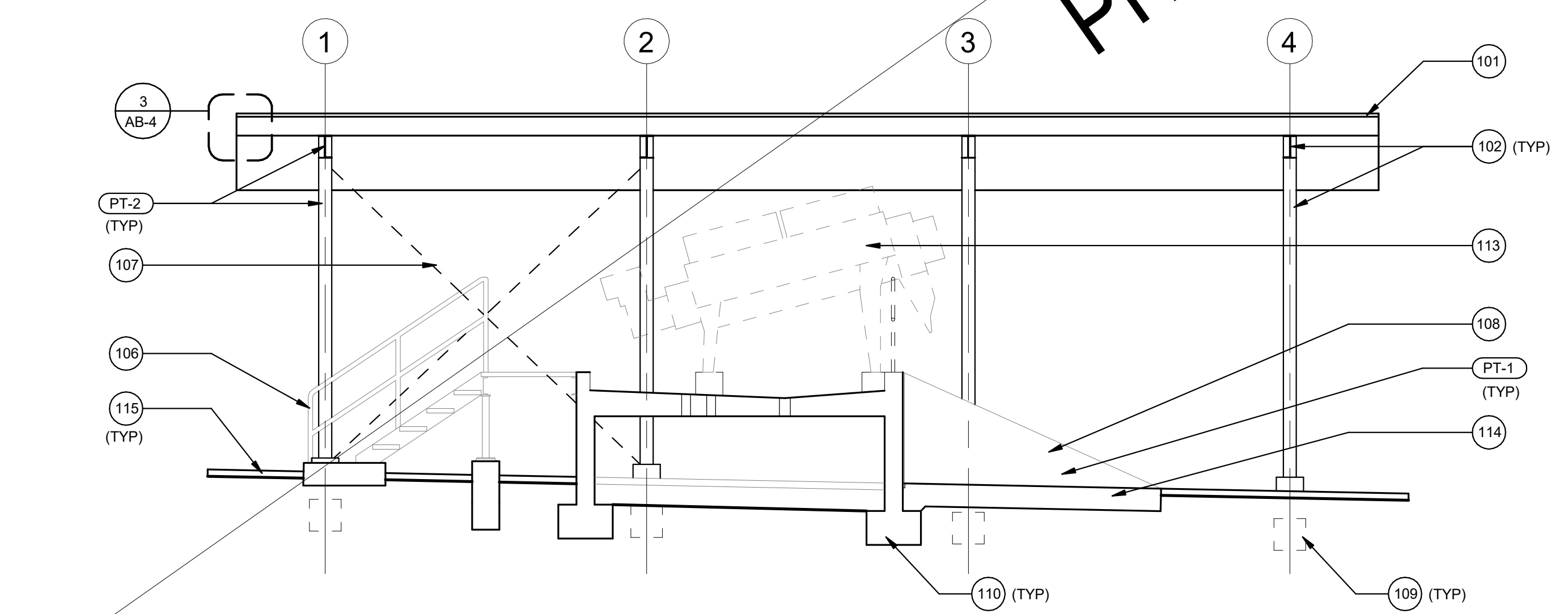


SOUTH ELEVATION

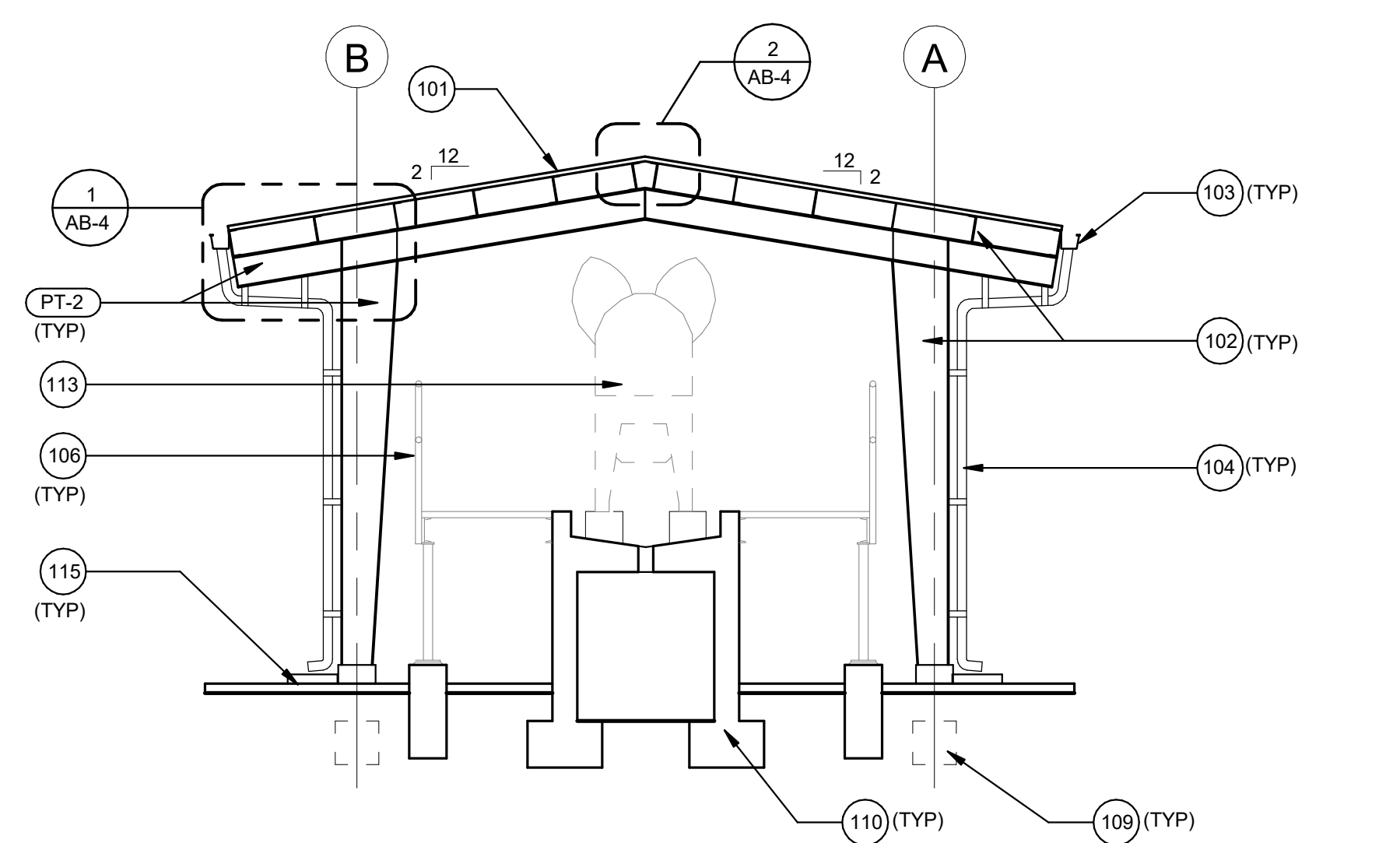


EAST ELEVATION

1 SOLIDS DEWATERING EXTERIOR ELEVATIONS
 SCALE: 1/4" = 1'-0"



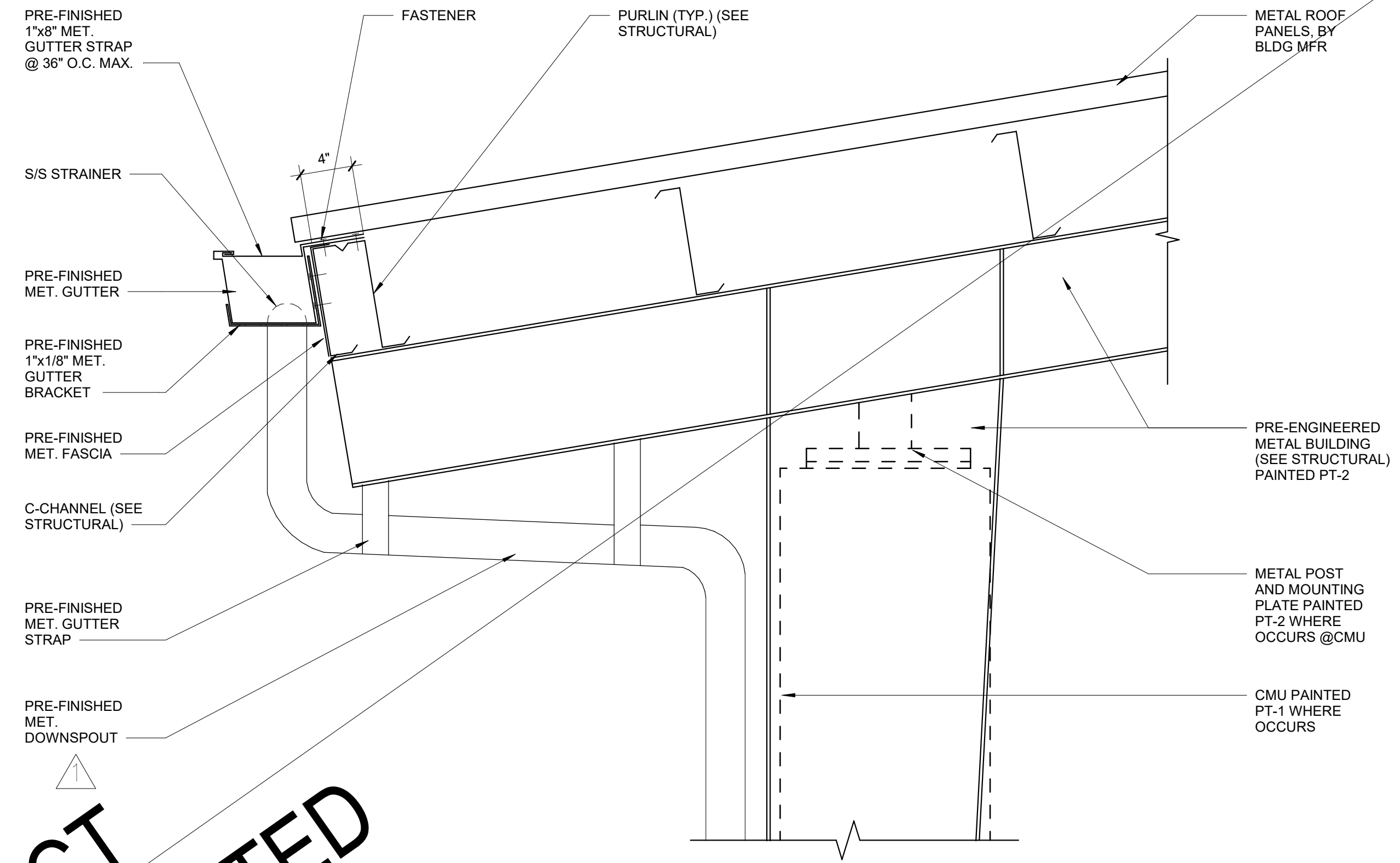
2 SOLIDS DEWATERING LONGITUDINAL SECTION
 SCALE: 1/4" = 1'-0"



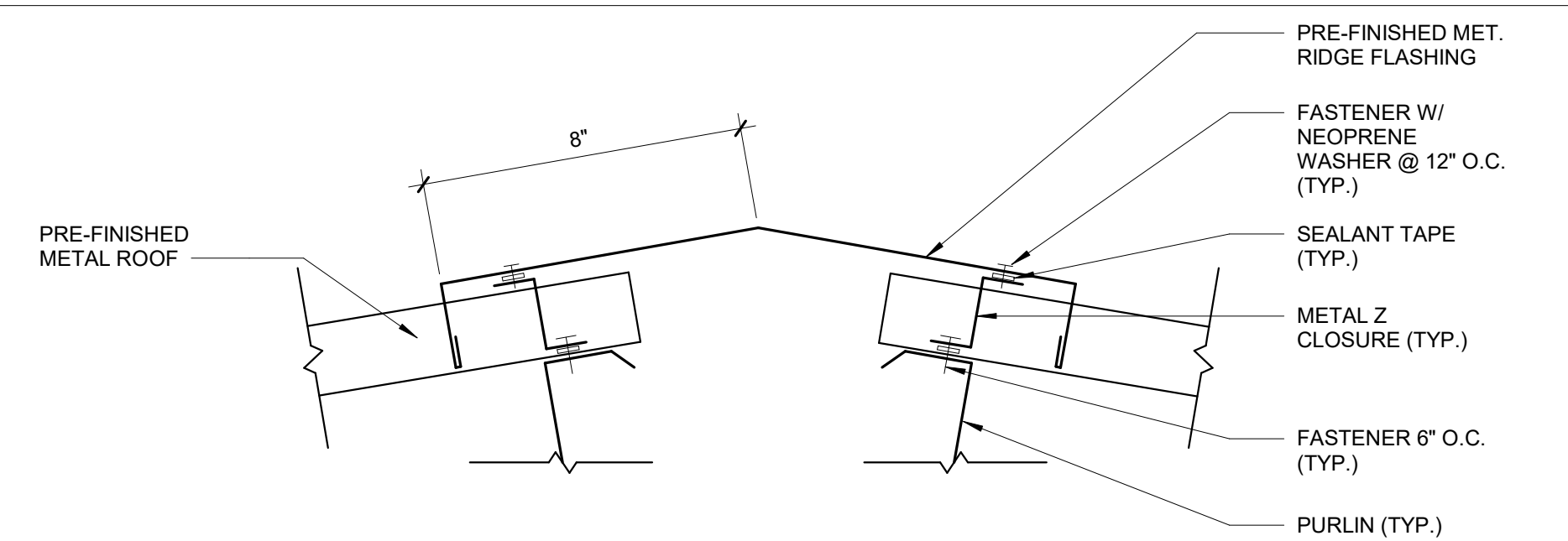
3 SOLIDS DEWATERING CROSS SECTION
 SCALE: 1/4" = 1'-0"

**NOT IN CONTRACT
 PHASE B HAS BEEN DELETED**

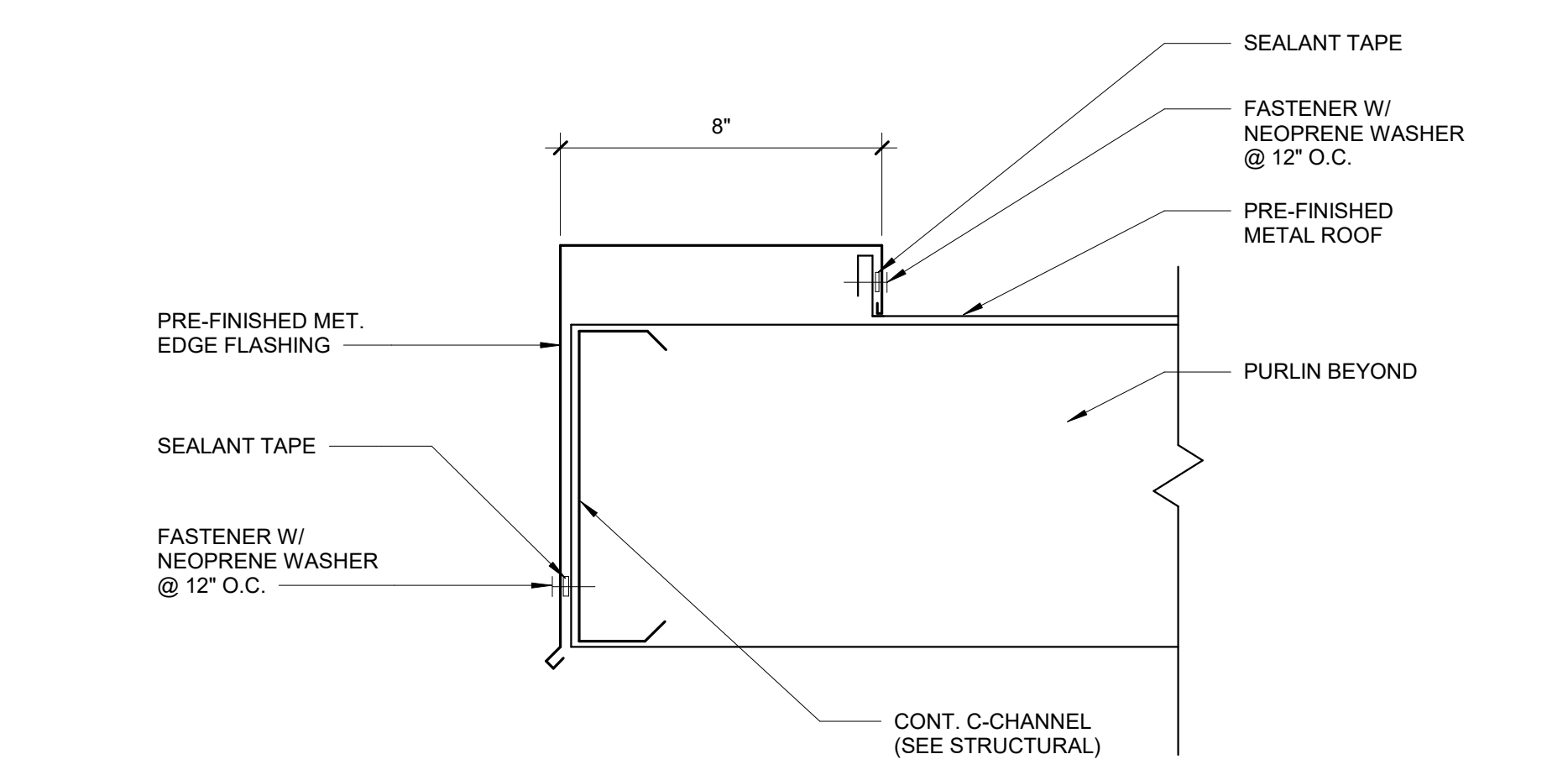
MATERIAL SCHEDULE						
MARK	DESCRIPTION	LOCATION	COLOR	FINISH	MANUFACTURER	COMMENTS
PT-1	EXTERIOR PAINT	CMU WALLS	TBD	GLOSS	-	-
PT-2	EXTERIOR PAINT	PRE-ENGINEERED METAL COLUMNS, BEAMS, POSTS, PURLINS, X-BRACING, & FRAMES	TBD	GLOSS	-	-



1 GUTTER DETAIL
SCALE: 3" = 1'-0"



2 RIDGE FLASHING DETAIL
SCALE: 3" = 1'-0"



3 RAKE FLASHING DETAIL
SCALE: 3" = 1'-0"

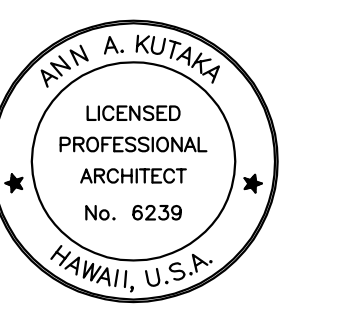
NOT IN CONTRACT
PHASE B HAS BEEN DELETED

Austin Tsutsumi
& ASSOCIATES, INC.
CIVIL ENGINEERS & SURVEYORS
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DEPARTMENT OF
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**PULEHUNUI
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INFRASTRUCTURE**

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS HONOLULU, HAWAII



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Ann A. Kutaka
SIGNATURE APRIL 30, 2020
EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches, Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

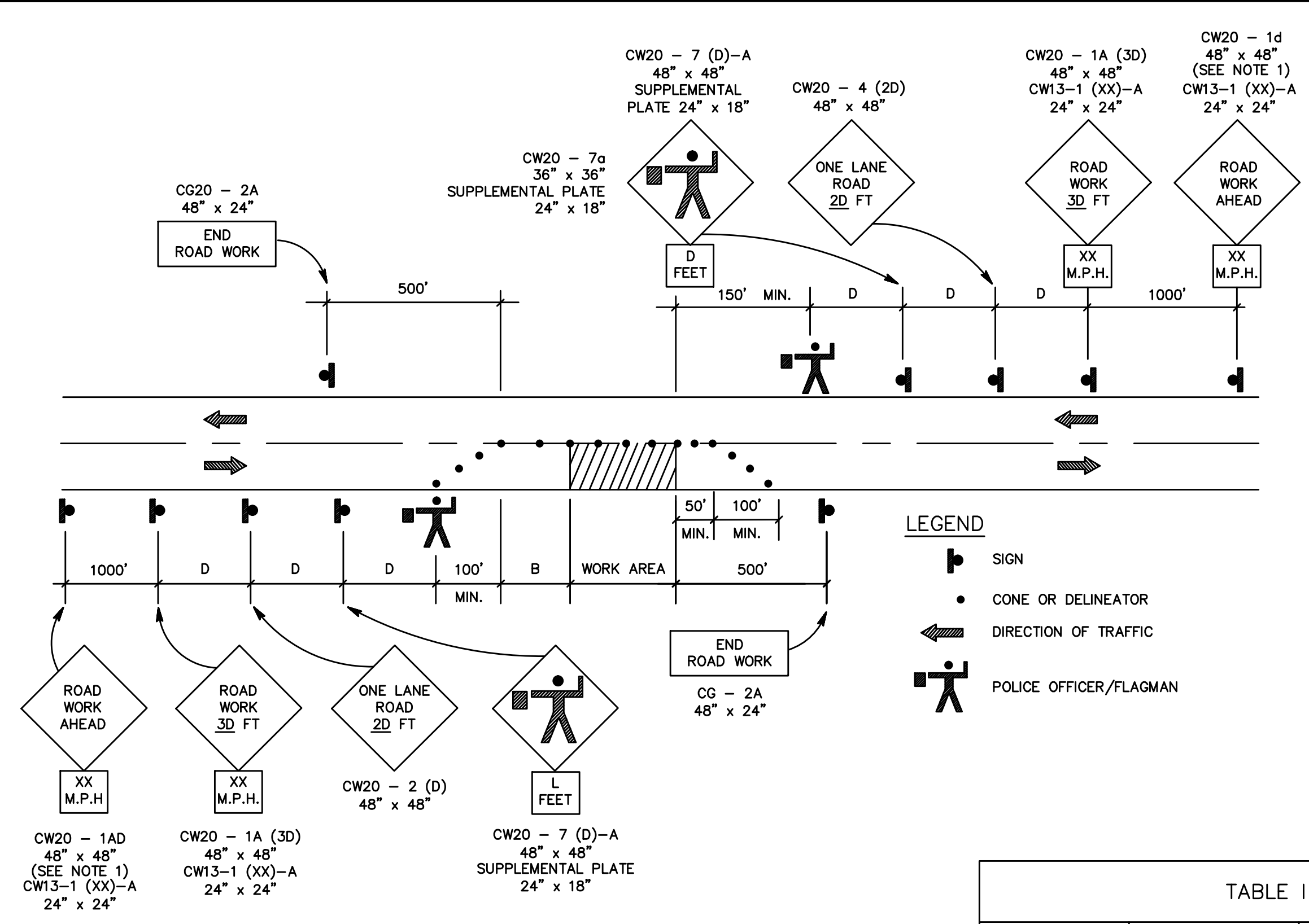
Project No: 16-576
Scale: AS NOTED
Date: 1/31/20
Designed By: BHK
Drawn By: BHK
Checked By:

**DETAILS &
MATERIAL
SCHEDULE**

DWG. NO.
AB-4
SHEET 166 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: H: VACADZ 2019-60 PULEHUUNI NORTH AND SOUTH PUMP STATIONS/NORTH PUMP STATION/E-O.DWG



- GENERAL NOTES FOR TRAFFIC CONTROL PLAN**
- THE PERMITEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
 - CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
 - TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
 - REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED.
 - ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
 - FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATIONS AT ALL TIMES.
 - WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITEE SHALL INSTALL A FLASHING ARROW SIGNAL AS SHOWN ON THE TRAFFIC CONTROL PLANS.
 - SIGNS SPACING (L), TAPER LENGTHS (T) AND SPACINGS OF CONES OR DELINEATORS SHALL BE AS SHOWN IN TABLE 1, UNLESS OTHERWISE NOTED ON THE TRAFFIC CONTROL PLANS.
 - ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
 - ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
 - THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (i.e. WHEN SIGNS HAVE MESSAGES ON BOTH FACES).
 - AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OR INSTALLATION.
 - REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF WORK.

TABLE 1 FOR TRAFFIC CONTROL PLAN

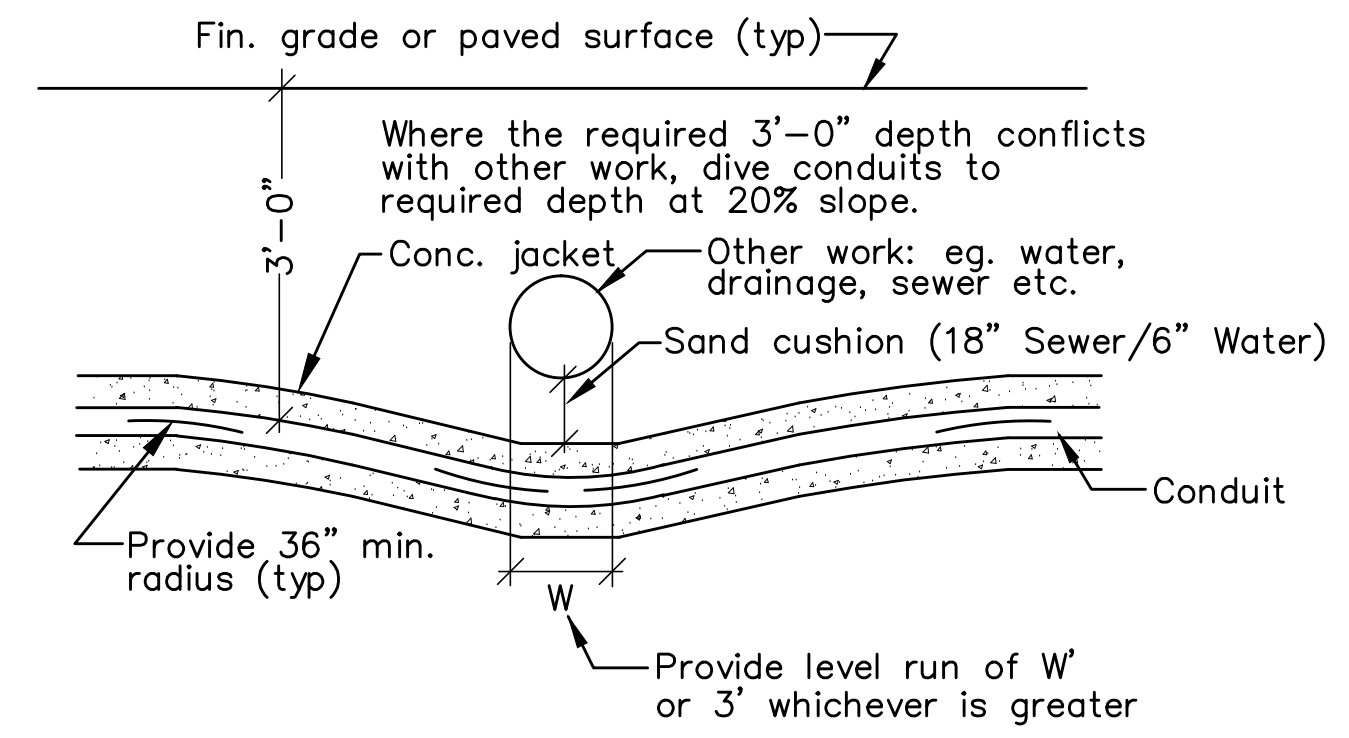
POSTED SPEED LIMIT (M.P.H.)	SIGN SPACING (D) FEET	TAPER LENGTH (T) (FEET)		LONGITUDINAL BUFFER SPACE (B) (FEET)	SPACING OF CONES OR DELINEATORS (FEET)		
		W = 12' OR LESS (1)	W = GREATER THAN 12' (1)		TAPER	TANGENT	WORK AREA
20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10

NOTES:
 (1) W = WIDTH OF LANE, SHOULDER, OR OFFSET

**TWO-LANE HIGHWAY - ONE LANE CLOSED
 FIGURE I - TRAFFIC CONTROL PLAN**

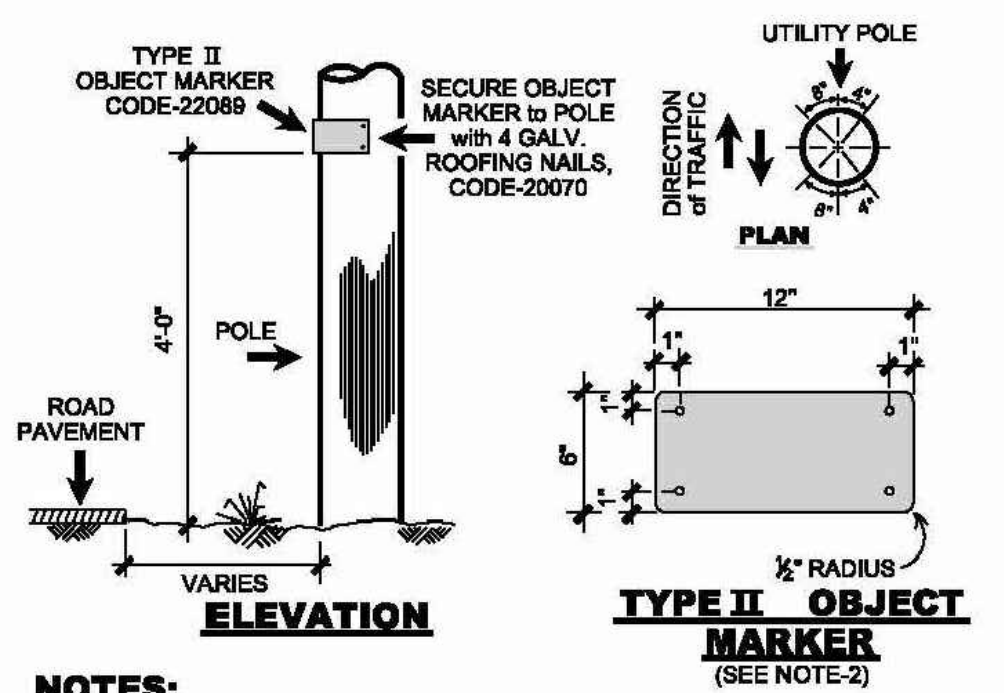
GENERAL NOTES:

- PLANS SUBJECT TO REVIEW AND APPROVAL OF UTILITY COMPANIES.
- THE CONTRACTOR/UTILITY COMPANY SHALL CONTACT THE DEPARTMENT OF WATER SUPPLY AT PHONE # 270-7340 ONE (1) WEEK PRIOR TO COMMENCEMENT OF WORK.
- THE CONTRACTOR/UTILITY COMPANY SHALL BE RESPONSIBLE TO VERIFY THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES IN THE PROJECT AREA PRIOR TO COMMENCEMENT OF WORK AND SHALL MEET WITH THE DEPARTMENT OF WATER SUPPLY PERSONNEL OUT IN THE FIELD TO HELP LOCATE THE EXISTING WATERLINES IN THE PROJECT AREA IF NECESSARY.
- MAINTAIN A MINIMUM OF THREE (3) FEET CLEAR HORIZONTAL SEPARATION BETWEEN EXISTING WATERLINES AND INSTALLED UTILITIES.
- MAINTAIN A MINIMUM OF SIX (6) INCHES CLEAR VERTICAL SEPARATION BETWEEN EXISTING WATERLINES AND INSTALLED UTILITIES AT ALL CROSSINGS.
- ANY INSTALLED UTILITY CROSSING AN EXISTING WATERLINE SHALL BE CONCRETE JACKETED A MINIMUM OF FIVE (5) FEET ON BOTH SIDES OF THE CROSSING.



**TYPICAL DUCTS CROSSING UNDER OTHER WORK
 NOT TO SCALE**

**TRAFFIC CONTROL PLAN
 NOT TO SCALE**



- NOTES:**
- THE TYPE II OBJECT MARKER (OM2-2H, 12"x6", per MUTCD 2003) shall be made of HIGH INTENSITY AMBER REFLECTIVE SHEETING MATERIAL OVERLAPPED ON 0.020" ALUMINUM SHEETING.
 - INSTALL TWO(2) OBJECT MARKERS: ONE ON EACH SIDE OF POLE FACING ONCOMING TRAFFIC AS SHOWN ON THIS PLAN VIEW.
- COUNTY REQUIRED TYPE II MARKER**

DEPARTMENT OF WATER SUPPLY NOTES:

- THE CONTRACTOR SHALL CONTACT THE DWS (PH# 243-7633) PRIOR TO COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL CONTACT THE DWS FOR THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES. SERVICE LATERALS, AND APPURTENANCES TO BE DETERMINED IN THE FIELD.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SAME ITEM #2) PRIOR TO TRENCHING. FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT HIS/HER EXPENSE.
- KEEP 3 FEET MINIMUM HORIZONTAL CLEARANCE AND / OR 6 INCH MINIMUM VERTICAL CLEARANCE BETWEEN EXISTING WATER SYSTEM IMPROVEMENTS AND ELECTRICAL UTILITIES.
- ANY ELECTRICAL CONDUIT, WHEN INDEPENDENTLY INSTALLED AND CROSSING AN EXISTING WATERLINE, GAS, OIL, OR OTHER PIPE SYSTEMS, SHALL BE CONCRETE JACKETED 5 FEET OF BOTH SIDES OF CROSSING IF IT IS SEPARATED BY LESS THAN 6 INCHES.

APPROVALS:

DIRECTOR - DEPARTMENT OF PUBLIC WORKS
 (APPROVAL FOR WORK WITHIN COUNTY RIGHT OF WAY ONLY) _____ DATE _____

DIRECTOR - DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 (APPROVAL FOR WORK WITHIN COUNTY RIGHT OF WAY ONLY) _____ DATE _____

DIRECTOR - DEPARTMENT OF WATER SUPPLY. COUNTY OF MAUI
 (APPROVAL LIMITED TO WATER IMPROVEMENTS WHICH WILL BE DEDICATED TO THE DEPARTMENT OF WATER SUPPLY) _____ DATE _____

- CONSTRUCTION NOTES WITHIN COUNTY RIGHT-OF-WAY**
- CONTRACTOR SHALL OBTAIN A PERMIT TO PERFORM WORK ON COUNTY HIGHWAYS FROM THE DEVELOPMENT SERVICES ADMINISTRATION TWO WEEKS PRIOR TO THE COMMENCEMENT OF WORK.
 - STANDARD DETAIL DRAWINGS AND STANDARD SPECIFICATIONS OF THE DEPARTMENT OF PUBLIC WORKS SHALL BE INCLUDED AS PART OF THE CONSTRUCTION PLANS.
 - ALL CONSTRUCTION WORK SHALL STRICTLY CONFORM TO THE LATEST VERSION OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE PUBLIC WORKS CONSTRUCTION, AND THE SEPTEMBER 1984 "STANDARD DETAILS" FOR PUBLIC WORKS CONSTRUCTION OF THE DEPARTMENT OF PUBLIC WORKS, AS AMENDED.
 - IF EXISTING UTILITIES, WHETHER OR NOT SHOWN ON PLANS, ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL AT HIS OWN EXPENSE BE REQUIRED TO REPAIR SUCH UTILITIES.
 - CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER PROTECTIVE DEVICES FOR THE PROTECTION, SAFETY AND CONVENIENCE OF THE PUBLIC, ACCORDING TO THE LATEST VERSION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", AND TO THE RULES AND REGULATIONS GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORKSITES AND/OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS ADOPTED BY THE HIGHWAY SAFETY COORDINATOR AND THE U.S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS".
 - THE DIRECTOR PUBLIC WORKS AND/OR THE DIRECTOR OF THE DEPARTMENT OF WATER SUPPLY HAS THE RIGHT TO STOP CONSTRUCTION SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED CONSTRUCTION PLAN OR DETRIMENTAL TO THE PUBLIC'S INTEREST.
 - THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE DEVELOPMENT SERVICES ADMINISTRATION FIVE (5) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 - THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH AND COUNTY GRADING ORDINANCE.
 - THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION ORDERED BY THE DIRECTOR OF PUBLIC WORKS SHALL BE PAID BY THE CONTRACTOR.
 - CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE WORK SITE. THE CONTRACTOR SHALL INFORM THE DIRECTOR OF PUBLIC WORKS OF THE LOCATION OF THE DISPOSAL SITES. THE DISPOSAL SITE MUST FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
 - THE CONTRACTOR SHALL SUBMIT A TIF AND FIVE (5) COPIES OF THE "AS-BUILT" DRAWINGS PRIOR TO THE FINAL APPROVAL OF THE IMPROVEMENTS.
 - IF THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING WATERLINE IS EIGHTEEN INCHES (18") OR LESS, THE WASTEWATER LINE SHALL BE CONCRETE-JACKETED IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1984, AS AMENDED.
 - SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS, OR MOUNDS, OR REMAINS SUCH AS ARTIFACTS BURIALS, CONCENTRATION OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR AND/OR LANDOWNER SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (692-8015), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.
 - PURSUANT TO MAUI COUNTY CODE SECTION 3.44.015(C), THE COUNTY OF MAUI IS NOT RESPONSIBLE FOR ANY PARK, ROADWAY, EASEMENT (INCLUDING BUT NOT LIMITED TO DRAINAGE, SEWER, ACCESS, RECLAIMED WATER, OR AVIGATION EASEMENT), OR ANY OTHER INTEREST IN REAL PROPERTY SHOWN ON THIS MAP OR SHOWN ON THESE PLANS, UNLESS THE MAUI COUNTY COUNCIL HAS ACCEPTED ITS DEDICATION BY A RESOLUTION APPROVED BY A MAJORITY OF COUNCIL'S MEMBERS AT A REGULAR OR SPECIAL MEETING OF THE MAUI COUNTY COUNCIL.
 - STEEL PLATE WARNING SIGNS ARE REQUIRED FOR ALL STEEL PLATES IN THE RIGHT-OF-WAY.
 - WHEELCHAIR RAMP INSPECTION/CERTIFICATION FORMS SHALL BE REQUIRED FOR ALL NEWLY CONSTRUCTED RAMPS.
 - ALL STRIPING AND PAVEMENT MARKINGS SHALL BE OF THERMOPLASTIC MATERIAL.
 - COMPACTION REQUIREMENTS
 - EMBANKMENT/SELECT BORROW AND SUBGRADE MATERIALS: ONE (1) COMPACTION TEST PER 600 SQUARE YARDS PER LIFT;
 - AGGREGATE SUBBASE COURSE: ONE (1) COMPACTION TEST PER 400 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
 - AGGREGATE BASE COURSE: ONE (1) COMPACTION TEST PER 300 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
 - ASPHALT CONCRETE PAVEMENT OR ASPHALT TREATED BASE COURSE; THREE (3) A.C. CORES FOR THICKNESS AND DENSITY TESTS PER PROJECT;
 - TRENCH BACKFILL MATERIAL: ONE (1) TEST FOR EACH 300 LINEAL FEET OF TRENCH PER LIFT OF MATERIAL.
 - CONTRACTOR SHALL SUBMIT ALL TESTING REPORTS INCLUDING RESULTS TO THE COUNTY'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO COUNTY'S ACCEPTANCE OF WORK.
 - THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE COUNTY OF ANY TESTING FAILURES AND CORRECT EACH FAILURE PRIOR TO PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION.

Austin Tsutsumi & Associates, Inc.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU 1 WAILUKU 1 HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3648
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

PULEHUUNI
 REGIONAL
 INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII

MARK P. RICHARD
 LICENSED PROFESSIONAL ENGINEER
 No. 8991-E
 HAWAII, U.S.A.

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APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: AKK
 Checked By: MPR

PHASE A1 - DHHL
 NORTH PUMP
 STATION
 NOTES & DETAILS

DWG. NO.
EA1-1
 SHEET 167 OF 201

FILE	POCKET	FOLDER	NO.

SYMBOL LEGEND

- NEW 3Ø PRIMARY OVERHEAD LINE
- - - EXISTING OVERHEAD LINE
- ▲▲▲ NEW POLE MOUNTED TRANSFORMER BANK (3PH)
- EXISTING UTILITY POLE
- NEW UTILITY POLE
- | EXISTING UTILITY ANCHOR
- | NEW UTILITY ANCHOR
- NEW DUCTS
- T TELEPHONE DUCTS, QTY. AND SIZE AS INDICATED
- ES ELECTRICAL DUCTS, QTY AND SIZE AS INDICATED
- ▨ NEW METERING EQUIPMENT (SEE SHEET E-4)

GENERAL NOTES:

1. PLANS SUBJECT TO REVIEW AND APPROVAL OF UTILITY COMPANIES.
2. ALL NEW POLE & ANCHOR LOCATIONS ARE TO BE STAKED OUT BY THE DEVELOPER'S SURVEYOR. COORDINATION REQUIRED WITH MECO'S ASSIGNED PLANNER.
3. DEVELOPER SHALL BE RESPONSIBLE FOR THE FULL COST TO RELOCATE MECO FACILITIES IF REQUIRED TO ADEQUATELY CLEAR ALL DRIVEWAYS & THEIR RESPECTIVE APPROACHES WHICH ARE NOT INDICATED ON THIS PLAN.
4. THE UTILITY COMPANY SHALL BE RESPONSIBLE TO VERIFY THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES IN THE PROJECT AREA PRIOR TO COMMENCEMENT OF WORK AND SHALL MEET WITH THE DEPARTMENT OF WATER SUPPLY PERSONNEL OUT IN THE FIELD TO HELP LOCATE THE EXISTING WATERLINES IN THE PROJECT AREA IF NECESSARY.
5. THE DEVELOPER OR ITS CONTRACTOR WILL BE RESPONSIBLE IN SUBMITTING LANDSCAPE PLANS IN THE PROXIMITY OF THE PROPOSED ELECTRICAL INFRASTRUCTURES AND/OR FACILITIES TO MECO-ENGINEERING FOR ITS REVIEW PRIOR TO THEIR ACCEPTANCE OF SAID INFRASTRUCTURES AND/OR FACILITIES.

PLAN NOTES:

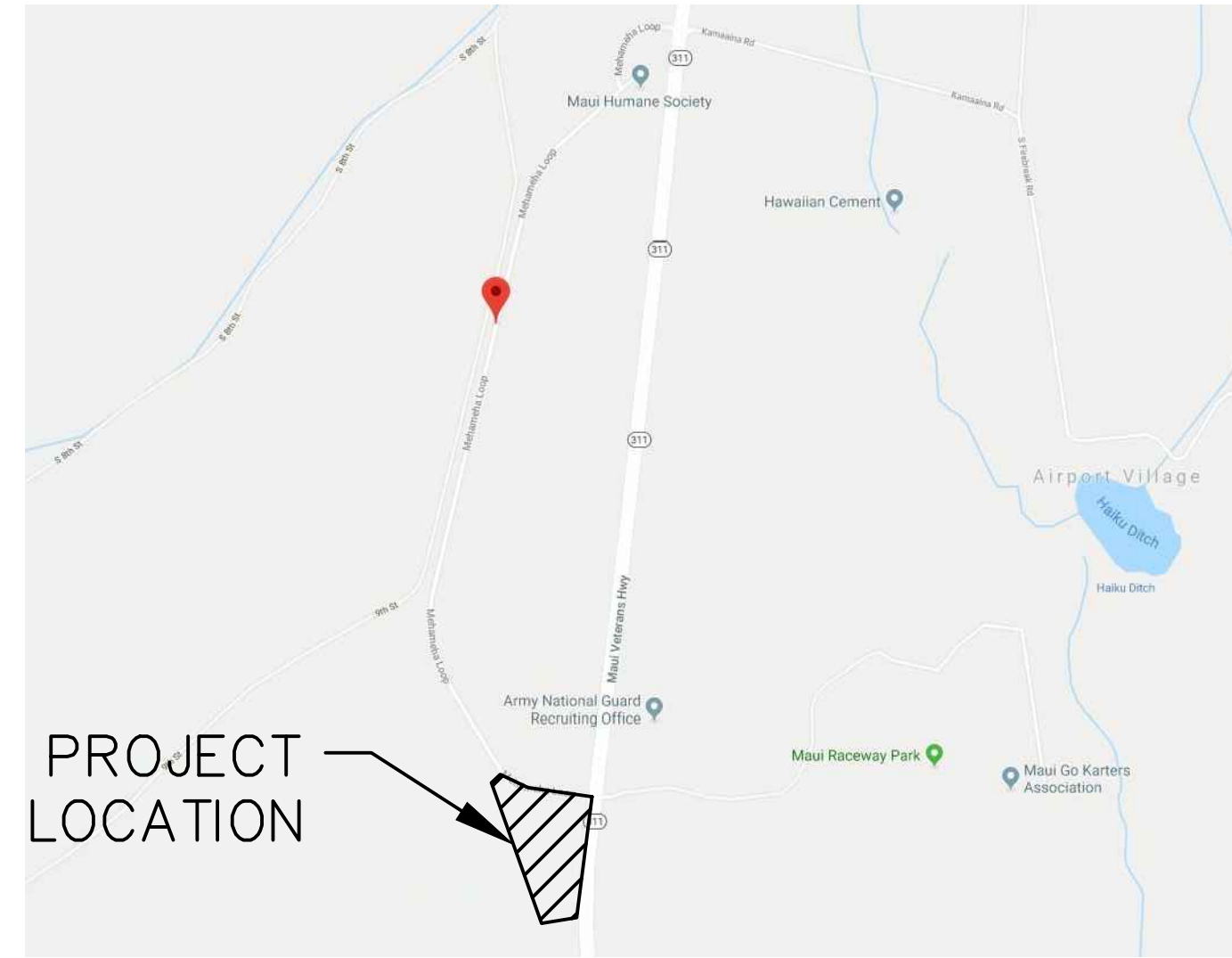
- ① EASEMENT REQUIRED FOR FACILITIES LOCATED IN PRIVATE PROPERTY (REFER TO MECO DWG.).
- ② NEW UTILITY POLE.
- ③ NEW UTILITY RISERS.
- ④ NEW OVERHEAD UTILITY LINE EXTENSION.
- ⑤ EXISTING UTILITY POLES.

NOTE:
 SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS AND MOUNDS, OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF CHARCOAL OR SHELLS ARE ENCOUNTERED DURING CONSTRUCTION WORK, WORK SHALL CEASE IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (692-8023), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.

APPROVALS:

MAUI ELECTRIC COMPANY	DATE
HAWAIIAN TELCOM	DATE
SPECTRUM	DATE

NOTE: PLAN NOT FOR CONSTRUCTION UNLESS APPROVED



LOCATION MAP
NOT TO SCALE



ELECTRICAL SITE PLAN
SCALE: 1" = 60'-0"

JOB NO. C-11-056.004
 FR: H: VACADZ 2019-60 PULEHUNUI NORTH AND SOUTH PUMP STATIONS NORTH PUMP STATION E-1.DWG

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Signature: [Signature] APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: AKK
 Checked By: MPR

**NORTH PUMP STATION
 ELECTRICAL SITE PLAN,
 SYMBOL LEGEND,
 NOTES**

DWG. NO.
EA1-2
 SHEET 168 OF 201

FILE	POCKET	FOLDER	NO.

DUCTLINE NOTES:

- REFER TO ELECTRICAL PLAN FOR DUCT SIZES AND QUANTITIES.
- DIRECT BURIED AND CONCRETE ENCASED ELECTRICAL AND CONDUITS SHALL BE PVC SCHEDULE 40 CONDUITS.
- DIRECT BURIED CONDUITS OF LIKE USE SHALL BE SEPARATED BY A MINIMUM OF 3". A MINIMUM SEPARATION OF 12" MUST BE MAINTAINED BETWEEN ELECTRICAL CONDUITS AND TELEMETRY CONDUITS.

CONCRETE ENCASED CONDUITS OF LIKE USE MAY BE SEPARATED BY 1-1/2". CONDUITS OF UNLIKE USES MUST BE SEPARATED BY 3".

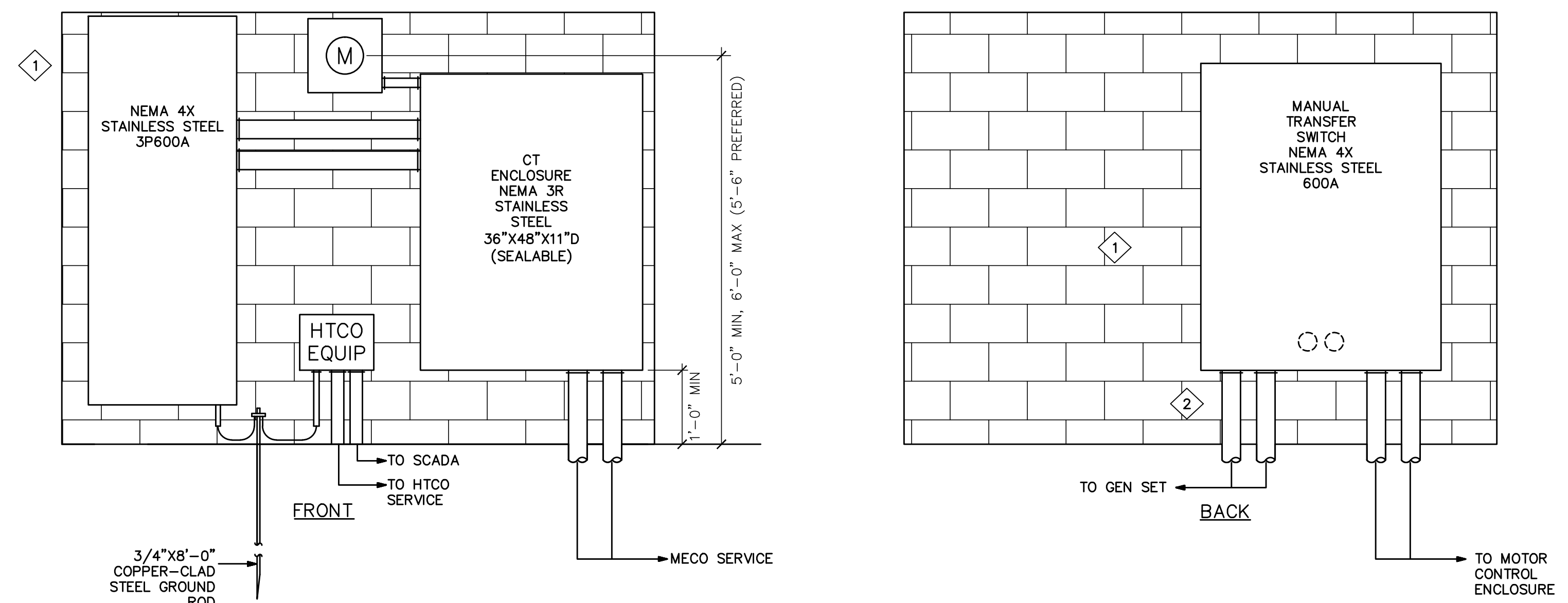
- CONTRACTOR SHALL COORDINATE DUCTLINE AND TRENCHING DETAILS WITH UTILITY COMPANIES.
- UPON COMPLETION OF ALL DUCTLINES, THE CONTRACTOR SHALL PASS A BULLET SHAPED, WOODEN TEST MANDREL 1/2" SMALLER IN DIAMETER THAN THE CONDUITS, THROUGH THE ENTIRE LENGTH OF EACH DUCT SECTION TO TEST FOR FREEDOM OF BURRS AND OBSTRUCTIONS. THE CONTRACTOR SHALL REMOVE ALL BURRS, OBSTRUCTION AND FOREIGN MATTER TO THE SATISFACTION OF THE UTILITY COMPANIES' INSPECTORS.

UPON COMPLETION OF THE TELEMETRY DUCTLINE, THE CONTRACTOR SHALL PASS A BLOCKED SHAPED, WOODEN TEST MANDREL, 12" LONG AND 1/4" SMALLER IN DIAMETER THAN THE CONDUIT THROUGH THE ENTIRE LENGTH OF EACH DUCT SECTION. THE DUCTS SHALL BE SWABBED AND CLEARED OF ALL BURRS, OBSTRUCTIONS AND FOREIGN MATERIAL.

- THE UTILITY COMPANIES' INSPECTORS SHALL INSPECT THE UNDERGROUND DUCTLINES AND STRUCTURES PRIOR TO AND DURING ALL CONCRETE POUR AND BACKFILL OPERATIONS.
- ALL HORIZONTAL AND VERTICAL BENDS SHALL HAVE A MINIMUM RADIUS OF 20'-0".
- CONCRETE COMPRESS STRENGTH SHALL BE 3,000 PSI IN 28 DAYS.
- THE CONTRACTOR SHALL INSTALL A WARNING TAPE OVER DUCTLINE AS SHOWN THE TAPE SHALL BE 4" WIDE AND 8 MILS THICK, YELLOW IN COLOR WITH BLACK IMPRINTED WARNING MESSAGE.

GENERAL NOTES:

- PROVIDE A COMPLETE AND OPERATING ELECTRICAL SYSTEM. PROVIDE SHALL MEAN "FURNISH AND INSTALL". WORK INCLUDES INSTALLATION OF ALL ELECTRICAL EQUIPMENT AND SYSTEMS, INCLUDING ANY FURNISHED BY OWNER, COMPLETE AND OPERATIONAL TO DOCUMENTS.
- THE CONTRACTOR SHALL COMPLY WITH THE CONSTRUCTION PRACTICES AND REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NFPA 70), NATIONAL ELECTRICAL SAFETY CODE, AMERICAN ELECTRICIANS HANDBOOK BY CROFT EDISON ELECTRIC INSTITUTE, APPLICABLE INSTRUCTIONS OF MANUFACTURERS OF EQUIPMENT AND MATERIALS SUPPLIED FOR THE PROJECT, AND ALL ORDINANCES, RULES AND POLICIES OF THE STATE AND COUNTY IN WHICH THE WORK IS TO BE PERFORMED.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL FEES, PERMITS, LICENSES AND INSPECTIONS REQUIRED FOR THIS WORK.
- ALL CONDUIT SHALL BE MINIMUM SIZE 3/4 INCH. EMT SHALL BE USED INDOORS. GALVANIZED RIGID STEEL SHALL BE USED IN EXPOSED OUTDOOR LOCATIONS. CONDUIT BELOW GRADE SHALL BE SCHEDULE 40 PVC. TRANSFORM ALL PVC CONDUIT TO RIGID GALVANIZED STEEL BEFORE PENETRATING SLAB.
- FITTINGS FOR EMT CONDUIT SHALL BE COMPRESSION TYPE. SET SCREW FITTINGS SHALL NOT BE ALLOWED.
- CONDUITS SIZES CALLED OUT ON THE DRAWINGS ARE NOT NECESSARILY BASED ON THE MINIMUM SIZE ALLOWED BY THE NATIONAL ELECTRICAL CODE AND MAY BE PURPOSELY OVERSIZED FOR FUTURE CONDUCTORS OR TO AVOID EXCESS CONDUIT HEATING. CONDUIT SIZES NOT CALLED OUT ON THE DRAWINGS SHALL BE SIZED BY THE CONTRACTOR BASED ON THE ACTUAL NUMBER OF CONDUCTORS TO BE INSTALLED, USING THE NATIONAL ELECTRICAL CODE AS A GUIDE. IN NO CASE SHALL CONDUIT SIZES BE SMALLER THAN IS REQUIRED BY THE NATIONAL ELECTRICAL CODE.
- ALL CIRCUITS SHALL INCLUDE AN INSULATED GREEN GROUNDING CONDUCTOR, SIZED PER TABLE 250-122 OF THE NATIONAL ELECTRICAL CODE. THIS CONDUCTOR SHALL BE CARRIED IN ALL RACEWAYS INCLUDING THOSE INSTALLED FOR SWITCH LEGS AND SHALL BE ATTACHED TO THE DEVICE OR EQUIPMENT HOUSING USING A SUITABLE GROUNDING LUG.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL JUNCTION AND PULL BOXES REQUIRED FOR THE INSTALLATION OF ELECTRICAL DEVICES AND EQUIPMENT, WHETHER OR NOT SPECIFICALLY INDICATED ON THE PLANS. SIZING OF THESE BOXES SHALL BE PER THE NATIONAL ELECTRICAL CODE.
- THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT FOR TEMPORARY CONSTRUCTION POWER AS REQUIRED.
- SHOULD PROJECT CONDITIONS REQUIRE REARRANGEMENT OF WORK, THE CONTRACTOR SHALL MARK SUCH CHANGES ON THE FIELD POSTED DRAWINGS. IF THESE CHANGES REQUIRE ALTERNATE METHODS TO THOSE SPECIFIED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SUBMIT DRAWINGS SHOWING THE PROPOSED ALTERNATE METHODS TO THE CONTRACTING OFFICER. THE CONTRACTOR SHALL NOT PROCEED UNTIL APPROVAL IS OBTAINED. REARRANGEMENT OF WORK FOR THE PURPOSE OF COORDINATION SHALL NOT BE CONSIDERED AN ITEM FOR EXTRA COST.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND DETAILED SCHEDULING OF THE SITE INSPECTION WORK BY UTILITY COMPANIES AND ALL OTHER CONCERNED PARTIES AND AGENCIES.
- PROVIDE PROTECTION FOR MATERIAL AND EQUIPMENT FROM LOSS, DAMAGE, CORROSION AND EFFECTS OF MOISTURE. REPAIR OR REPLACE DAMAGED ITEMS AT NO ADDITIONAL COST TO THE OWNER.
- VISIT PROJECT SITE PRIOR TO BID SUBMITTAL TO ASCERTAIN CONDITIONS AND COST ALLOWANCES THAT AFFECT THE PROPOSED WORK.
- INSTALL MATERIALS AND EQUIPMENT IN WORKMANLIKE MANNER AND IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.
- MATERIALS AND WORKMANSHIP SUBJECT TO INSPECTION AT ANY TIME BY THE OWNER OR HIS REPRESENTATIVE; CORRECT ANY WORK OR MATERIALS NOT IN ACCORDANCE WITH DRAWINGS OR FOUND TO BE DEFICIENT OR DEFECTIVE IN A MANNER SATISFACTORY TO THE OWNER AT NO ADDITIONAL COST.
- PROVIDE ALL FIRST QUALITY, NEW MATERIALS, FREE FROM DEFECTS SUITABLE FOR SPACE PROVIDED AND APPROVED BY UL WHERE STANDARDS HAVE BEEN PROVIDED BY THAT AGENCY.
- PROVIDE STANDARD MATERIALS AND EQUIPMENT OF MANUFACTURER'S REGULARLY ENGAGED IN THE PRODUCTION OF THESE PRODUCTS. PROVIDE PRODUCTS OF A SINGLE MANUFACTURER WHERE TWO OR MORE UNITS OF THE SAME CALL ARE REQUIRED.
- ALL WIRING TO BE STRANDED TYPE THWN COPPER UNLESS NOTED OTHERWISE, #12 AWG MINIMUM, ALL WIRING SHALL BE IN CONDUIT, 3/4" MINIMUM. THIN IS ALLOWABLE FOR #10 AND SMALLER.

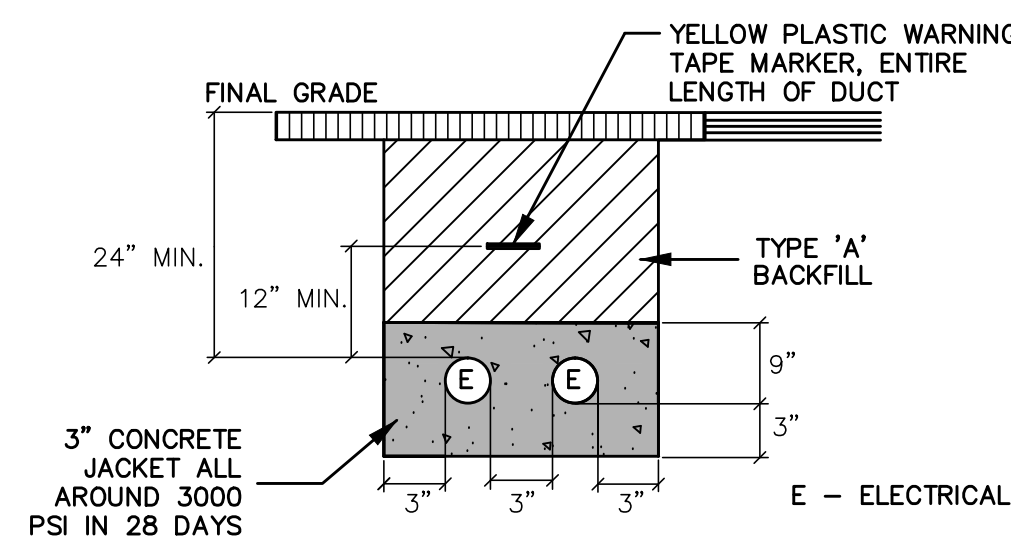


SERVICE EQUIPMENT WALL ELEVATION

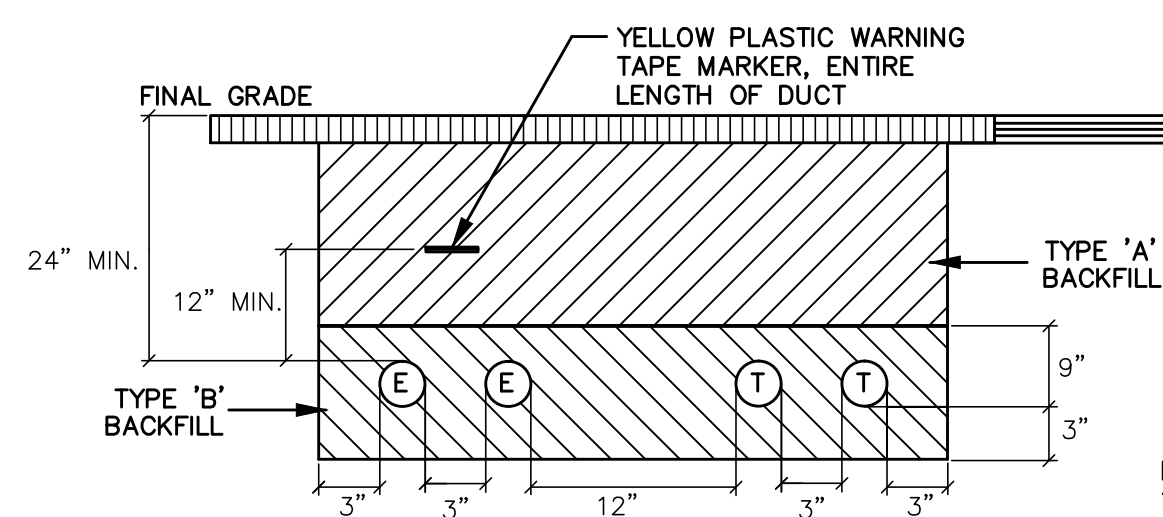
SCALE: 3/4" = 1'-0"

PLAN NOTES:

- 1 SEE SERVICE EQUIPMENT WALL DETAILS.
- 2 STUB WITH CAP.



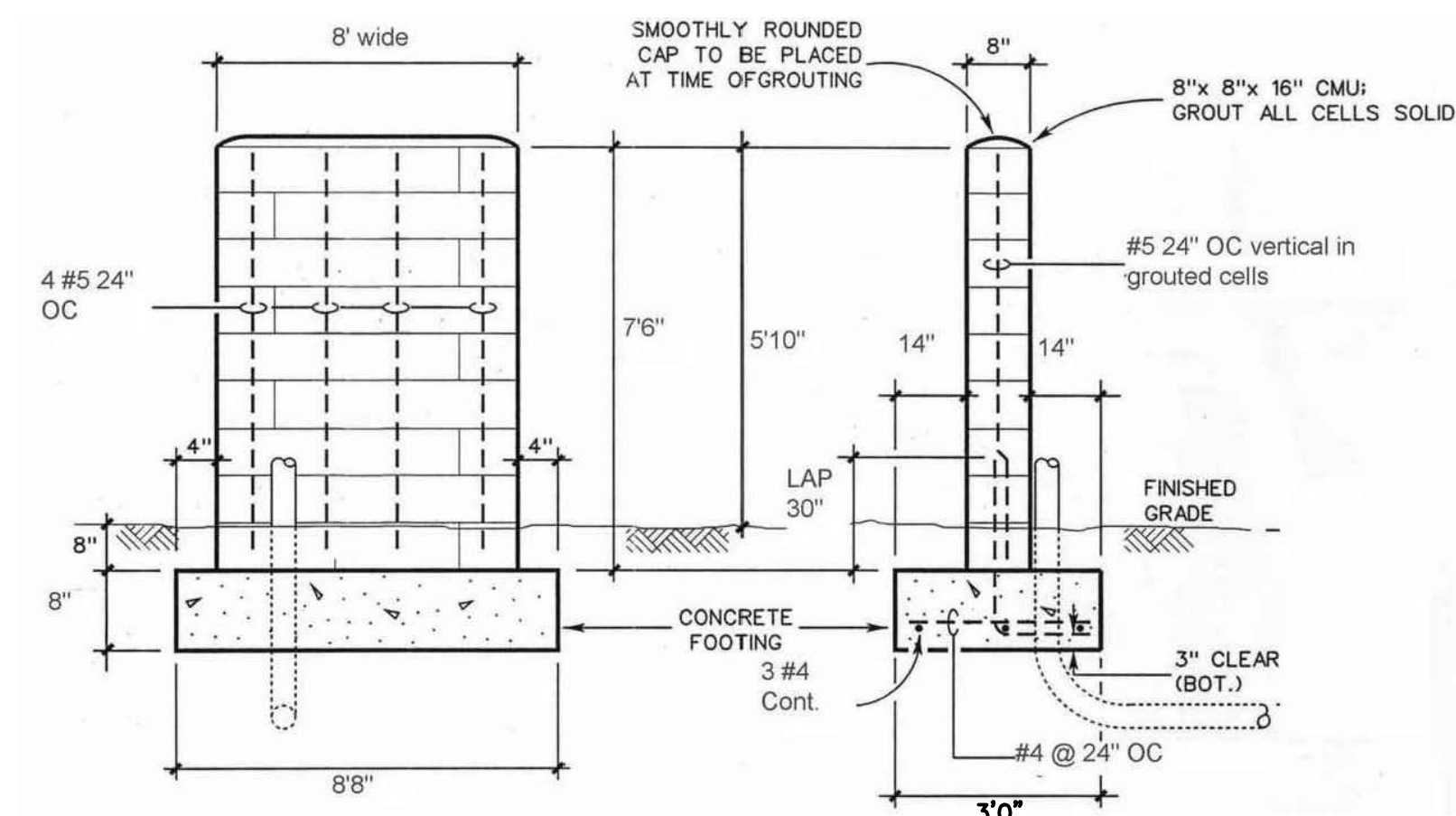
DUCT SECTION - MECO SERVICE FEED



TYPE "A" - BEACH SAND, EARTH, OR EARTH AND GRAVEL. IF EARTH AND GRAVEL, THE MAXIMUM ROCK SHALL BE 1" AND THE MIXTURE SHALL CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES.

TYPE "B" - BEACH SAND, EARTH, OR EARTH AND GRAVEL. IF EARTH AND GRAVEL, THE MIXTURE MUST PASS A 1/2" MESH SCREEN AND CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. CORAL OR CORAL WASTE WILL NOT BE ACCEPTABLE.

E - ELECTRICAL
T - TELEMETRY (IF APPLICABLE)



FRONT VIEW SIDE VIEW

SERVICE EQUIPMENT WALL DETAILS

NOT TO SCALE

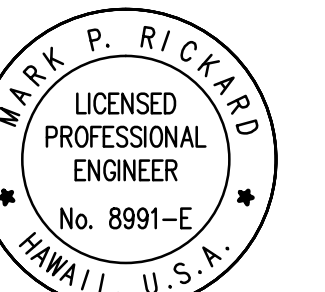
JOB NO. C-11-056.004
FN: H:\ACAD\2019-60 PULEHUUNI NORTH AND SOUTH PUMP STATIONS\NORTH PUMP STATION\E-4.DWG

Austin Tsutsumi
& ASSOCIATES, INC.
CIVIL ENGINEERS | SURVEYORS
HONOLULU | WAILUKU | HILO, HAWAII
501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817
PHONE: 808-533-3646
FAX: 808-526-1267

STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

PULEHUUNI
REGIONAL
INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Signature: *Mark P. Rickard*
APRIL 30, 2020
EXP. DATE OF THE LICENSE

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(IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY


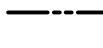


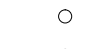


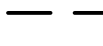
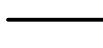



Project No: 16-576
Scale: AS NOTED
Date: 1/22/19
Designed By: MPR
Drawn By: AKK
Checked By: MPR

NORTH PUMP STATION
DETAILS

DWG. NO.
EA1-5
SHEET 171 OF 201

FILE	POCKET	FOLDER	NO.

SYMBOL LEGEND

-  NEW MECO 150W HPS ST. LIGHT ON WOOD POLE, FULLY CUT-OFF
-  NEW 3Ø PRIMARY OVERHEAD LINE
-  EXISTING OVERHEAD LINE
-  NEW POLE MOUNTED TRANSFORMER BANK (3PH)
-  EXISTING UTILITY POLE
-  NEW UTILITY POLE
-  EXISTING UTILITY ANCHOR
-  NEW UTILITY ANCHOR
-  NEW DUCTS
-  T TELEPHONE DUCTS, QTY. AND SIZE AS INDICATED
-  ES ELECTRICAL DUCTS, QTY. AND SIZE AS INDICATED
-  NEW METERING EQUIPMENT (SEE SHEET E-4)

GENERAL NOTES:

1. PLANS SUBJECT TO REVIEW AND APPROVAL OF UTILITY COMPANIES.
2. ALL NEW POLE & ANCHOR LOCATIONS ARE TO BE STAKED OUT BY THE DEVELOPER'S SURVEYOR. COORDINATION REQUIRED WITH MECO'S ASSIGNED PLANNER.
3. DEVELOPER SHALL BE RESPONSIBLE FOR THE FULL COST TO RELOCATE MECO FACILITIES IF REQUIRED TO ADEQUATELY CLEAR ALL DRIVEWAYS & THEIR RESPECTIVE APPROACHES WHICH ARE NOT INDICATED ON THIS PLAN.
4. THE UTILITY COMPANY SHALL BE RESPONSIBLE TO VERIFY THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES IN THE PROJECT AREA PRIOR TO COMMENCEMENT OF WORK AND SHALL MEET WITH THE DEPARTMENT OF WATER SUPPLY PERSONNEL OUT IN THE FIELD TO HELP LOCATE THE EXISTING WATERLINES IN THE PROJECT AREA IF NECESSARY.
5. THE DEVELOPER OR ITS CONTRACTOR WILL BE RESPONSIBLE IN SUBMITTING LANDSCAPE PLANS IN THE PROXIMITY OF THE PROPOSED ELECTRICAL INFRASTRUCTURES AND/OR FACILITIES TO MECO-ENGINEERING FOR ITS REVIEW PRIOR TO THEIR ACCEPTANCE OF SAID INFRASTRUCTURES AND/OR FACILITIES.

PLAN NOTES:

- ① EASEMENT REQUIRED FOR FACILITIES LOCATED IN PRIVATE PROPERTY (REFER TO MECO DWG.).
- ② NEW UTILITY RISER POLE.
- ③ NEW POLE-MOUNTED TRANSFORMERS AND UTILITY RISERS.
- ④ NEW OVERHEAD LINE EXTENSION.
- ⑤ EXISTING UTILITY POLES TO REMAIN.

A UTILITY CO. STANDBY MAN IS REQUIRED TO BE AT THE SITE AT THE TIME ANY NON-UTILITY CO. PERSONNEL WILL BE BREAKING INTO OR ENTERING ANY FACILITIES THAT CONTAIN ENERGIZED UTILITY CO. EQUIPMENT OR CABLES.

THREE WORKING DAYS ADVANCE NOTICE IS REQUIRED BY THE UTILITY CO. FOR ANY INSPECTION SERVICE OR STANDBY MAN.

CALL MECO -- PH: 871-7777

NOTE:
SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS AND MOUNDS, OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF CHARCOAL OR SHELLS ARE ENCOUNTERED DURING CONSTRUCTION WORK, WORK SHALL CEASE IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (692-8023), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.

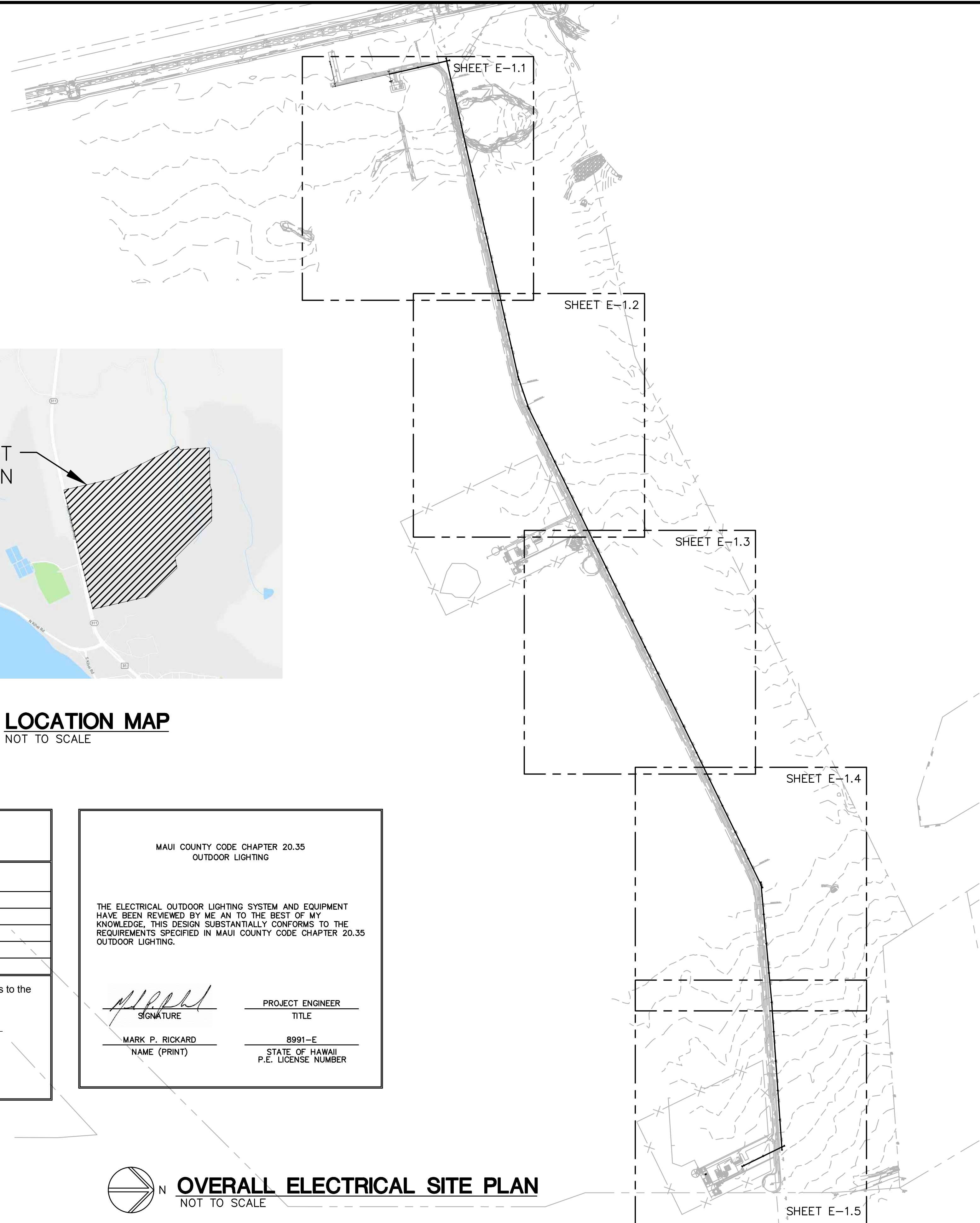
APPROVALS:

MAUI ELECTRIC COMPANY	DATE
HAWAIIAN TELCOM	DATE
SPECTRUM	DATE

NOTE: PLAN NOT FOR CONSTRUCTION UNLESS APPROVED



LOCATION MAP
NOT TO SCALE

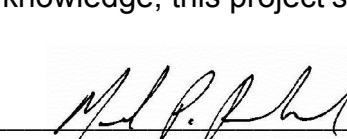


**COUNTY OF MAUI
MAUI COUNTY CODE, CHAPTER 16.16B ENERGY CODE
RESIDENTIAL PROVISIONS**

COMPLIANCE METHOD
Check applicable method

<input type="checkbox"/>	R401.2(1) R401.3 through R404 (Prescriptive)
<input checked="" type="checkbox"/>	R401.2(2) R405 (Simulated PERFORMANCE ALTERNATIVE)
<input type="checkbox"/>	R401.2(3) R406 (Energy Rating Index Compliance Alternative)
<input type="checkbox"/>	R401.2(4) R401.2.1 (Tropical Zone)
<input type="checkbox"/>	R102.1 (Alternative)

To the best of my knowledge, this project's design substantially conforms to the Energy Code.

Signature:  Date: 06-27-19


Name: MARK P. RICKARD

Title: PROJECT ENGINEER

License No.: 8991-E

MAUI COUNTY CODE CHAPTER 20.35
OUTDOOR LIGHTING

THE ELECTRICAL OUTDOOR LIGHTING SYSTEM AND EQUIPMENT HAVE BEEN REVIEWED BY ME AND TO THE BEST OF MY KNOWLEDGE, THIS DESIGN SUBSTANTIALLY CONFORMS TO THE REQUIREMENTS SPECIFIED IN MAUI COUNTY CODE CHAPTER 20.35 OUTDOOR LIGHTING.

 PROJECT ENGINEER
SIGNATURE TITLE

MARK P. RICKARD 8991-E
NAME (PRINT) STATE OF HAWAII
P.E. LICENSE NUMBER

OVERALL ELECTRICAL SITE PLAN
NOT TO SCALE

JOB NO. C-11-056.004
PR: H: VACADZ 2019-60.01 PULEHUNUI GRAMITY SEWER WWP DRAWINGS PHASE A3-E-1.DWG

Austin Tsutsumi & Associates, Inc.
CIVIL ENGINEERS | SURVEYORS
HONOLULU | WAILUKU | HILO, HAWAII
501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817
PHONE: 808-533-3646
FAX: 808-526-1267

STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

PULEHUNUI
REGIONAL
INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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 APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
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(IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY

Project No: 16-576
Scale: AS NOTED
Date: 1/22/19
Designed By: MPR
Drawn By: AKK
Checked By: MPR

**WWTF ACCESS ROAD
OVERALL ELECTRICAL
SITE PLAN, SYMBOL
LEGEND, NOTES**

DWG. NO.
EA3-2
SHEET 176 OF 201

FILE	POCKET	FOLDER	NO.

SYMBOL LEGEND

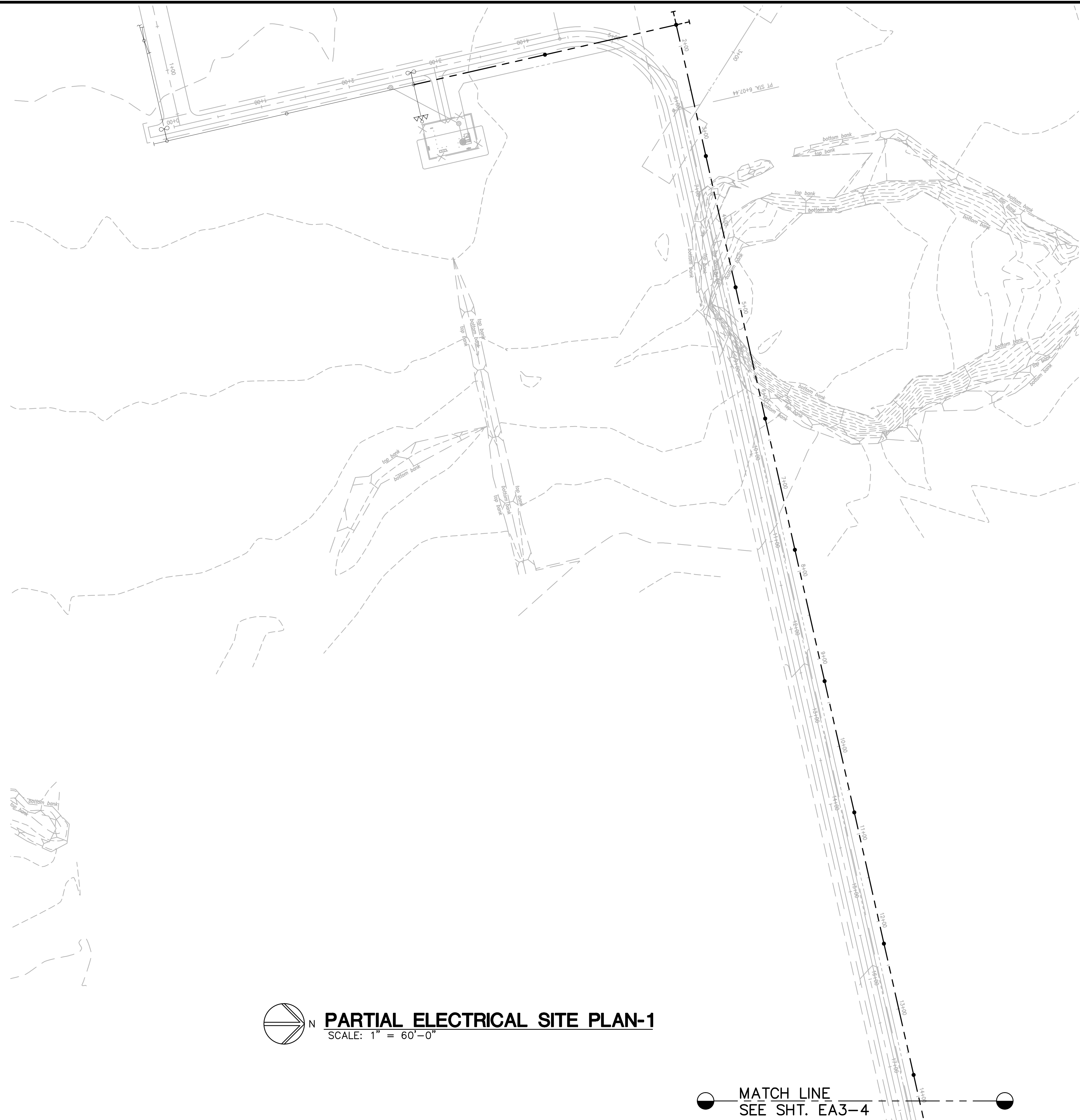
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- EXISTING UTILITY ANCHOR
- NEW UTILITY ANCHOR
- NEW DUCTS
- T TELEPHONE DUCTS, QTY. AND SIZE AS INDICATED
- ES ELECTRICAL DUCTS, QTY AND SIZE AS INDICATED
- ▨ NEW METERING EQUIPMENT (SEE SHEET E-4)

GENERAL NOTES:

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2. ALL NEW POLE & ANCHOR LOCATIONS ARE TO BE STAKED OUT BY THE DEVELOPER'S SURVEYOR. COORDINATION REQUIRED WITH MECO'S ASSIGNED PLANNER.
3. DEVELOPER SHALL BE RESPONSIBLE FOR THE FULL COST TO RELOCATE MECO FACILITIES IF REQUIRED TO ADEQUATELY CLEAR ALL DRIVEWAYS & THEIR RESPECTIVE APPROACHES WHICH ARE NOT INDICATED ON THIS PLAN.
4. THE UTILITY COMPANY SHALL BE RESPONSIBLE TO VERIFY THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES IN THE PROJECT AREA PRIOR TO COMMENCEMENT OF WORK AND SHALL MEET WITH THE DEPARTMENT OF WATER SUPPLY PERSONNEL OUT IN THE FIELD TO HELP LOCATE THE EXISTING WATERLINES IN THE PROJECT AREA IF NECESSARY.
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- ⑤ EXISTING UTILITY POLES TO REMAIN.



PARTIAL ELECTRICAL SITE PLAN-1
SCALE: 1" = 60'-0"

MATCH LINE
SEE SHT. EA3-4

JOB NO. C-11-056.004
FR: H:\ACAD\2019-60.01 PULEHUNUI GRAVITY SEWER WWP DRAWINGS\PHASE A3\EA3-1.DWG

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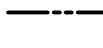


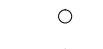


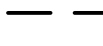
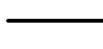



Project No: 16-576
Scale: AS NOTED
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Designed By: MPR
Drawn By: AKK
Checked By: MPR

WWTF ACCESS ROAD
PARTIAL ELECTRICAL
SITE PLAN-1

DWG. NO.
EA3-3
SHEET 177 OF 201

FILE	POCKET	FOLDER	NO.

SYMBOL LEGEND

-  NEW MECO 150W HPS ST. LIGHT ON WOOD POLE, FULLY CUT-OFF
-  NEW 3Ø PRIMARY OVERHEAD LINE
-  EXISTING OVERHEAD LINE
-  NEW POLE MOUNTED TRANSFORMER BANK (3PH)
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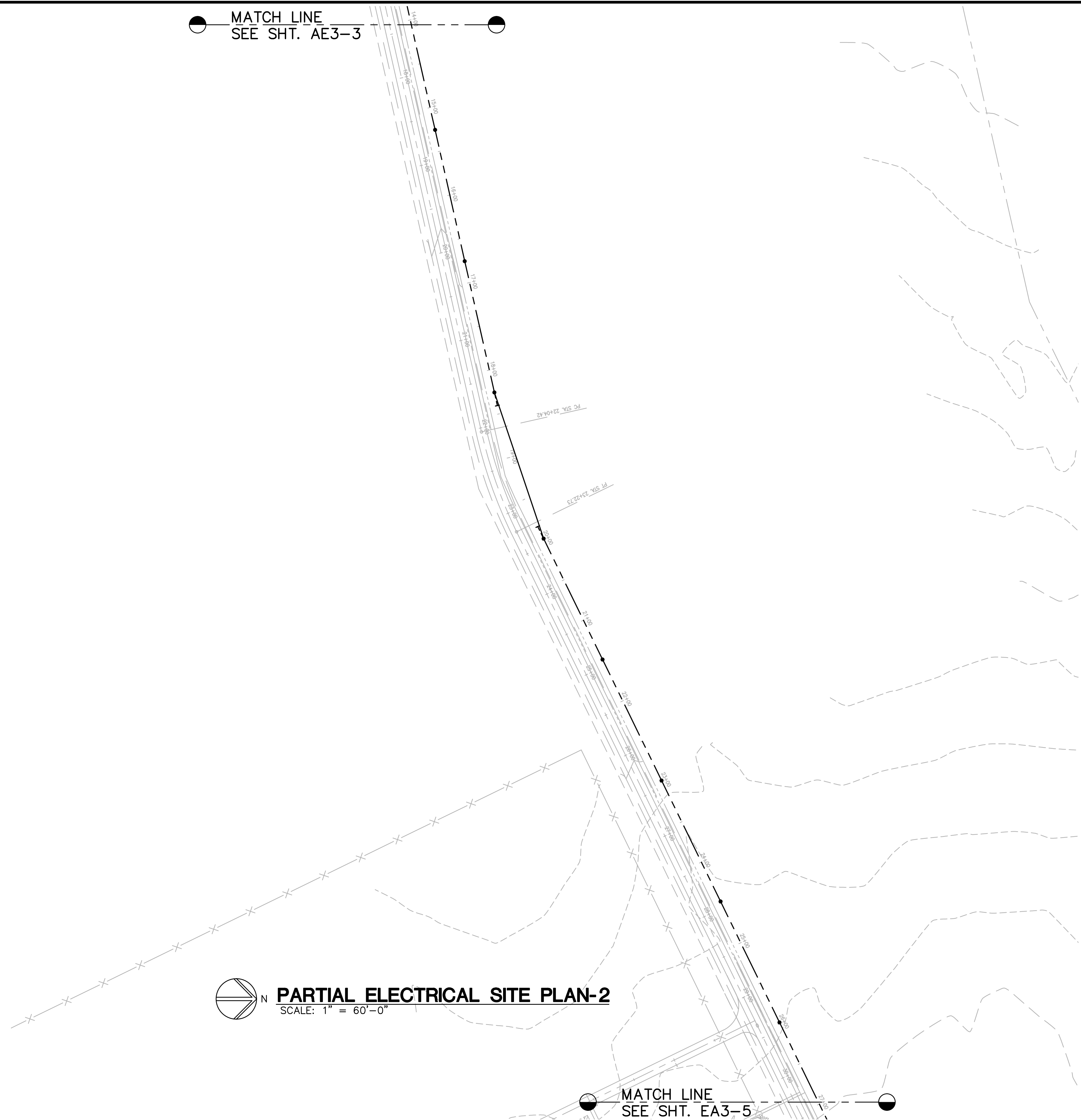
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- ③ NEW POLE-MOUNTED TRANSFORMERS AND UTILITY RISERS.
- ④ NEW OVERHEAD LINE EXTENSION.
- ⑤ EXISTING UTILITY POLES TO REMAIN.

MATCH LINE
SEE SHT. AE3-3



 N
PARTIAL ELECTRICAL SITE PLAN-2
SCALE: 1" = 60'-0"

MATCH LINE
SEE SHT. EA3-5

JOB NO. C-11-056.004
FR: H: \A\CADZ\2019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS\PHASE A3\EA-1.DWG

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STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

PULEHUNUI
REGIONAL
INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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 APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BREF	BY


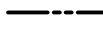


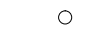

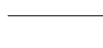
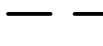
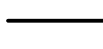



Project No: 16-576
Scale: AS NOTED
Date: 1/22/19
Designed By: MPR
Drawn By: AKK
Checked By: MPR

WWTF ACCESS ROAD
PARTIAL ELECTRICAL
SITE PLAN-2

DWG. NO.
EA3-4
SHEET 178 OF 201

FILE	POCKET	FOLDER	NO.

SYMBOL LEGEND

-  NEW MECO 150W HPS ST. LIGHT ON WOOD POLE, FULLY CUT-OFF
-  NEW 3Ø PRIMARY OVERHEAD LINE
-  EXISTING OVERHEAD LINE
-  NEW POLE MOUNTED TRANSFORMER BANK (3PH)
-  EXISTING UTILITY POLE
-  NEW UTILITY POLE
-  EXISTING UTILITY ANCHOR
-  NEW UTILITY ANCHOR
-  NEW DUCTS
-  T TELEPHONE DUCTS, QTY. AND SIZE AS INDICATED
-  ES ELECTRICAL DUCTS, QTY. AND SIZE AS INDICATED
-  NEW METERING EQUIPMENT (SEE SHEET E-4)

GENERAL NOTES:

1. PLANS SUBJECT TO REVIEW AND APPROVAL OF UTILITY COMPANIES.
2. ALL NEW POLE & ANCHOR LOCATIONS ARE TO BE STAKED OUT BY THE DEVELOPER'S SURVEYOR. COORDINATION REQUIRED WITH MECO'S ASSIGNED PLANNER.
3. DEVELOPER SHALL BE RESPONSIBLE FOR THE FULL COST TO RELOCATE MECO FACILITIES IF REQUIRED TO ADEQUATELY CLEAR ALL DRIVEWAYS & THEIR RESPECTIVE APPROACHES WHICH ARE NOT INDICATED ON THIS PLAN.
4. THE UTILITY COMPANY SHALL BE RESPONSIBLE TO VERIFY THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES IN THE PROJECT AREA PRIOR TO COMMENCEMENT OF WORK AND SHALL MEET WITH THE DEPARTMENT OF WATER SUPPLY PERSONNEL OUT IN THE FIELD TO HELP LOCATE THE EXISTING WATERLINES IN THE PROJECT AREA IF NECESSARY.
5. THE DEVELOPER OR ITS CONTRACTOR WILL BE RESPONSIBLE IN SUBMITTING LANDSCAPE PLANS IN THE PROXIMITY OF THE PROPOSED ELECTRICAL INFRASTRUCTURES AND/OR FACILITIES TO MECO-ENGINEERING FOR ITS REVIEW PRIOR TO THEIR ACCEPTANCE OF SAID INFRASTRUCTURES AND/OR FACILITIES.

PLAN NOTES:

- ① EASEMENT REQUIRED FOR FACILITIES LOCATED IN PRIVATE PROPERTY (REFER TO MECO DWG.).
- ② NEW UTILITY RISER POLE.
- ③ NEW POLE-MOUNTED TRANSFORMERS AND UTILITY RISERS.
- ④ NEW OVERHEAD LINE EXTENSION.
- ⑤ EXISTING UTILITY POLES TO REMAIN.



 **PARTIAL ELECTRICAL SITE PLAN-3**
SCALE: 1" = 60'-0"

MATCH LINE
SEE SHT. EA3-6

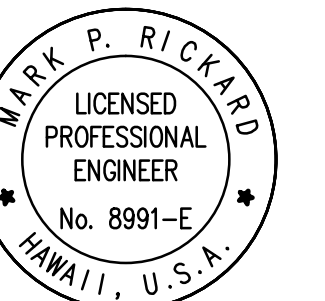
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REVISION	DATE	BRIEF	BY


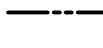


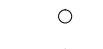


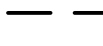
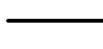



Project No: 16-576
Scale: AS NOTED
Date: 1/22/19
Designed By: MPR
Drawn By: AKK
Checked By: MPR

WWTF ACCESS ROAD
PARTIAL ELECTRICAL
SITE PLAN-3

DWG. NO.
EA3-5
SHEET 179 OF 201

FILE	POCKET	FOLDER	NO.

SYMBOL LEGEND

-  NEW MECO 150W HPS ST. LIGHT ON WOOD POLE, FULLY CUT-OFF
-  NEW 3Ø PRIMARY OVERHEAD LINE
-  EXISTING OVERHEAD LINE
-  NEW POLE MOUNTED TRANSFORMER BANK (3PH)
-  EXISTING UTILITY POLE
-  NEW UTILITY POLE
-  EXISTING UTILITY ANCHOR
-  NEW UTILITY ANCHOR
-  NEW DUCTS
-  T TELEPHONE DUCTS, QTY. AND SIZE AS INDICATED
-  ES ELECTRICAL DUCTS, QTY AND SIZE AS INDICATED
-  NEW METERING EQUIPMENT (SEE SHEET E-4)

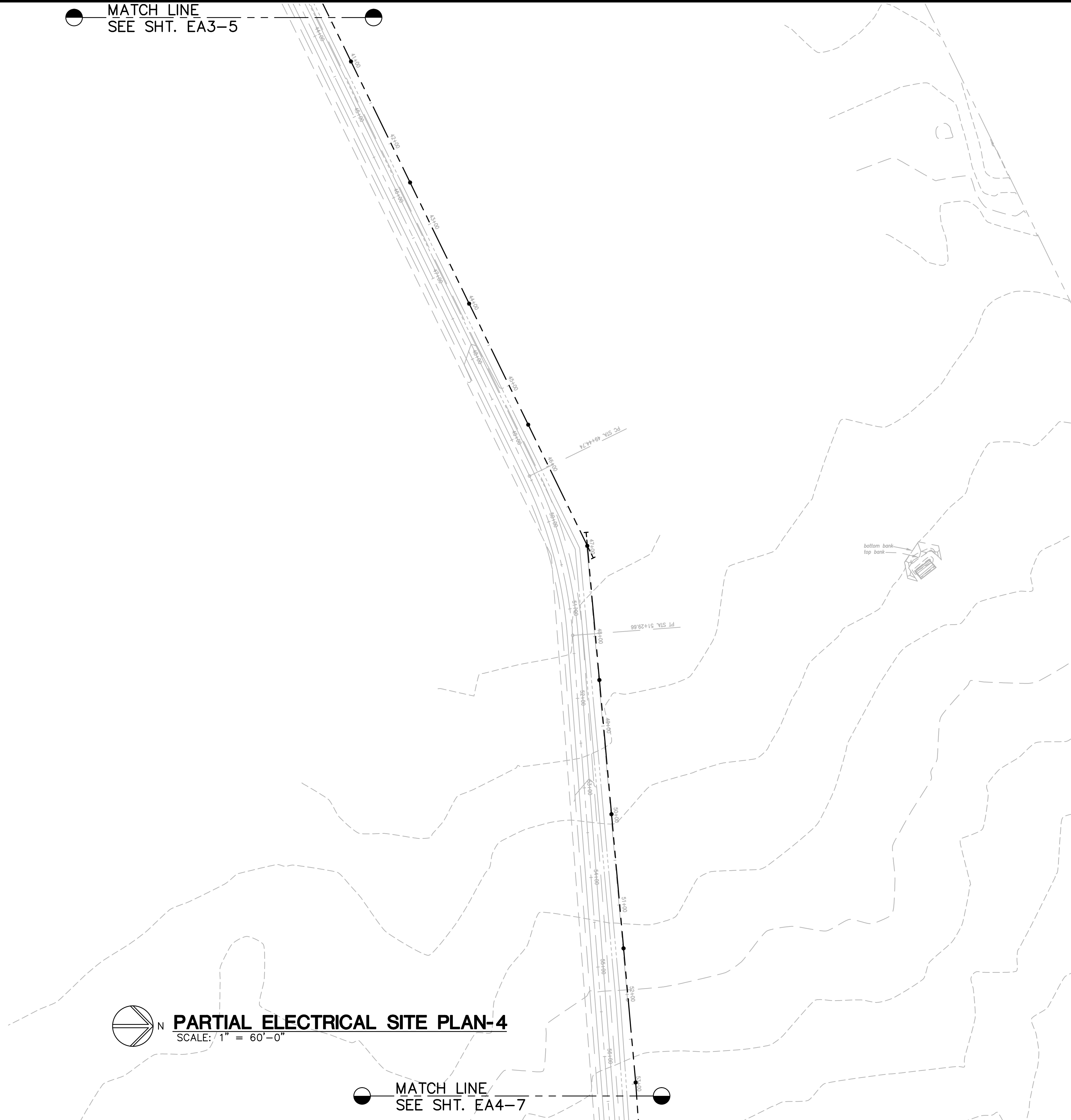
GENERAL NOTES:

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4. THE UTILITY COMPANY SHALL BE RESPONSIBLE TO VERIFY THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES IN THE PROJECT AREA PRIOR TO COMMENCEMENT OF WORK AND SHALL MEET WITH THE DEPARTMENT OF WATER SUPPLY PERSONNEL OUT IN THE FIELD TO HELP LOCATE THE EXISTING WATERLINES IN THE PROJECT AREA IF NECESSARY.
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- ⑤ EXISTING UTILITY POLES TO REMAIN.

MATCH LINE
SEE SHT. EA3-5



PARTIAL ELECTRICAL SITE PLAN-4
SCALE: 1" = 60'-0"

MATCH LINE
SEE SHT. EA4-7

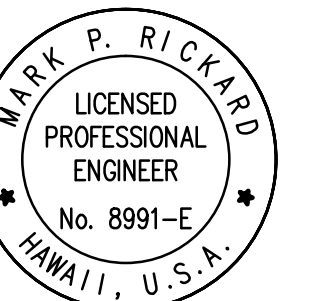
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MPR APRIL 30, 2020
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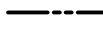


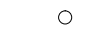

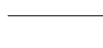
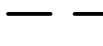
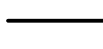



Project No: 16-576
Scale: AS NOTED
Date: 1/22/19
Designed By: MPR
Drawn By: AKK
Checked By: MPR

WWTF ACCESS ROAD
PARTIAL ELECTRICAL
SITE PLAN-4

DWG. NO.
EA3-6
SHEET 180 OF 201

FILE	POCKET	FOLDER	NO.

SYMBOL LEGEND

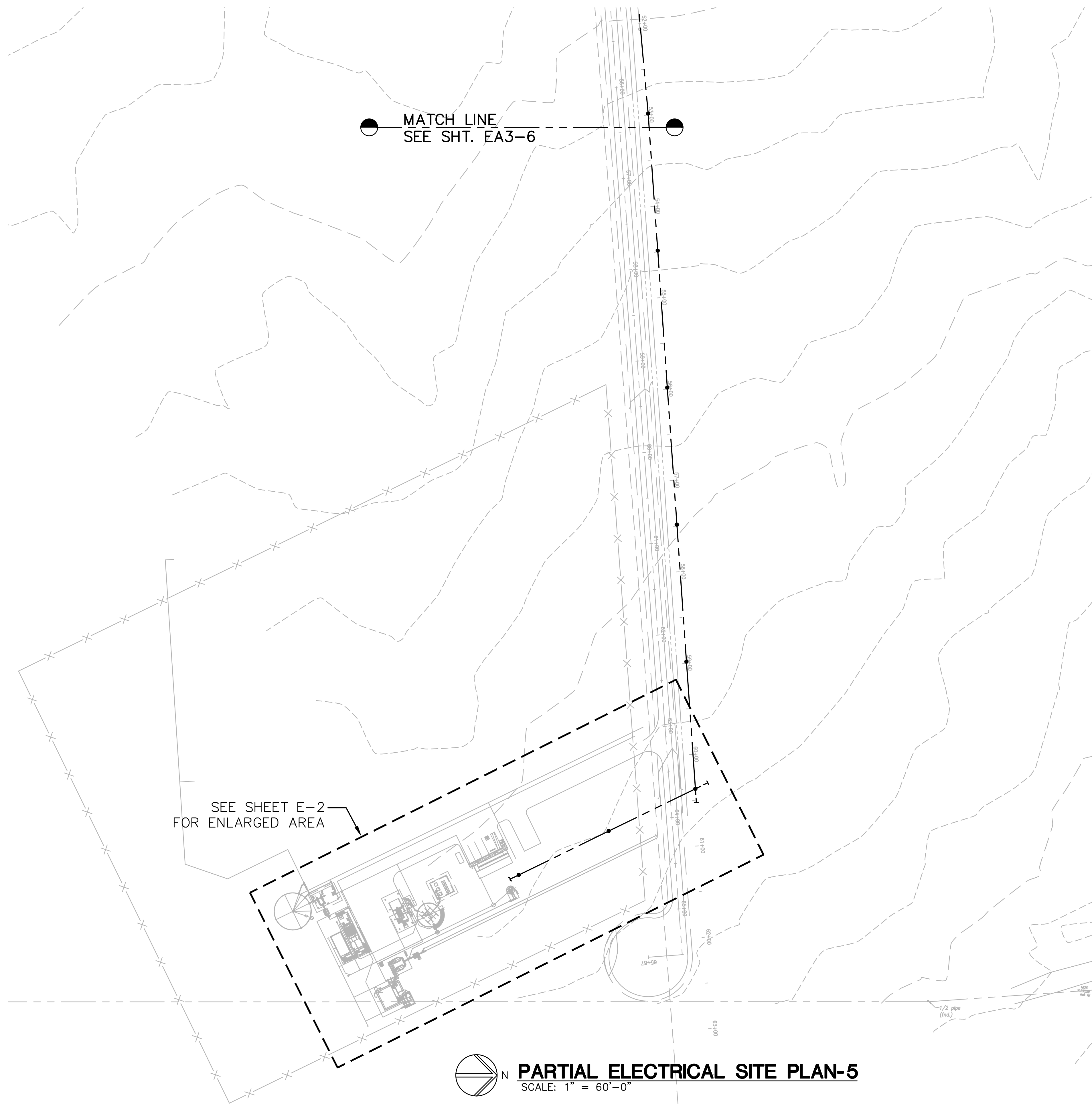
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-  NEW 3Ø PRIMARY OVERHEAD LINE
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-  T TELEPHONE DUCTS, QTY. AND SIZE AS INDICATED
-  ES ELECTRICAL DUCTS, QTY. AND SIZE AS INDICATED
-  NEW METERING EQUIPMENT (SEE SHEET E-4)

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- ④ NEW OVERHEAD LINE EXTENSION.
- ⑤ EXISTING UTILITY POLES TO REMAIN.



MATCH LINE
SEE SHT. EA3-6

SEE SHEET E-2
FOR ENLARGED AREA

 **PARTIAL ELECTRICAL SITE PLAN-5**
SCALE: 1" = 60'-0"

JOB NO. 0-11-056.004
FR: H: VACADZ\2019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS PHASE A3\E-1.1R.DWG

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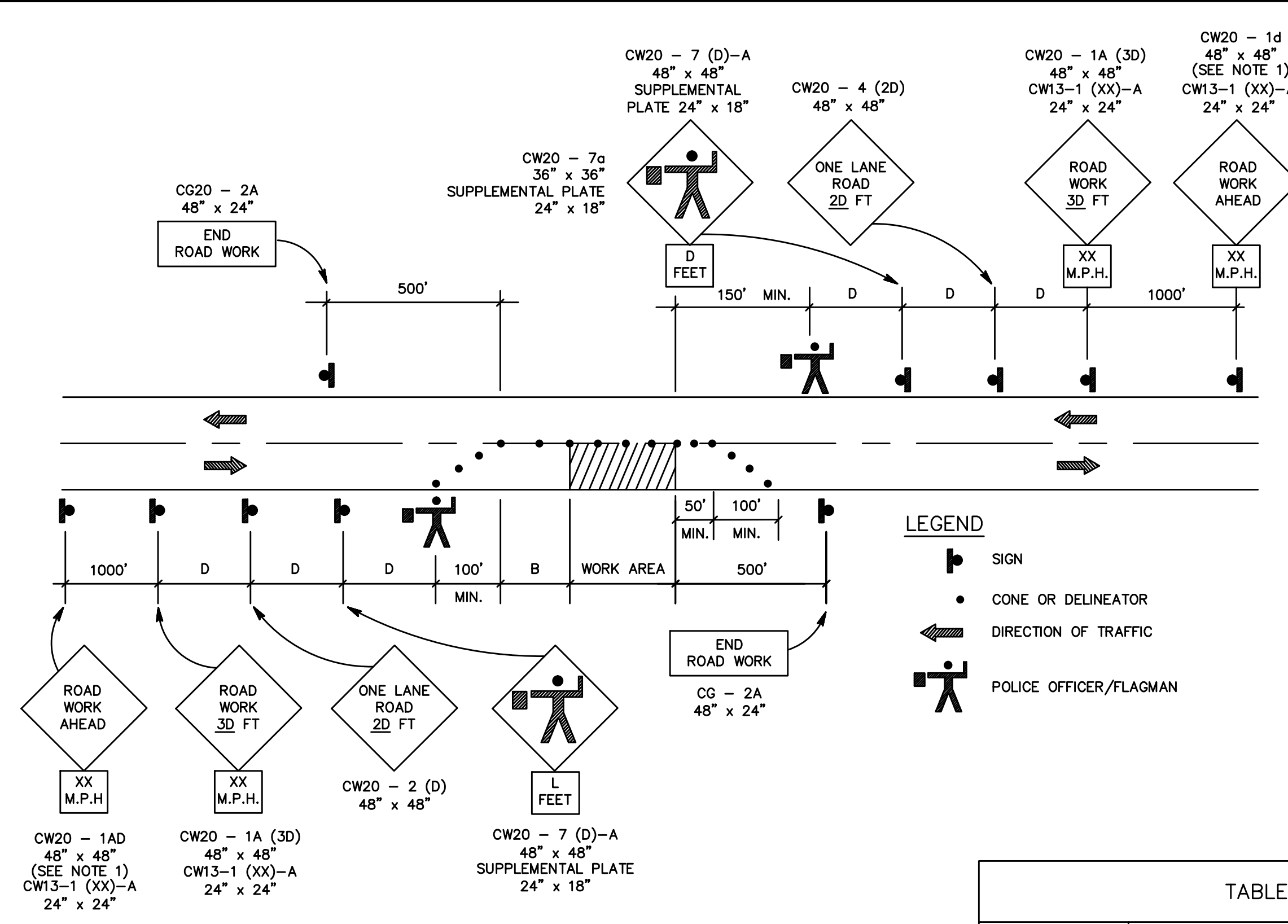
Project No: 16-576
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Designed By: MPR
Drawn By: AKK
Checked By: MPR

**WWTP ACCESS ROAD
PARTIAL ELECTRICAL
SITE PLAN-5**

DWG. NO.
EA3-7
SHEET 181 OF 201

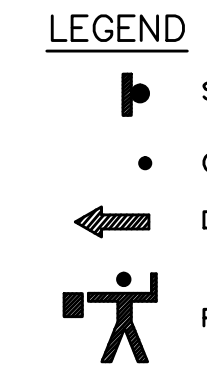
FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: H: VACADZ 2019-60 PULEHUUNI NORTH AND SOUTH PUMP STATIONS/SOUTH PUMP STATION (E-O.DWG)



GENERAL NOTES FOR TRAFFIC CONTROL PLAN

1. THE PERMITEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
2. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
3. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
4. REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED.
5. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
6. FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATIONS AT ALL TIMES.
7. WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITEE SHALL INSTALL A FLASHING ARROW SIGNAL AS SHOWN ON THE TRAFFIC CONTROL PLANS.
8. SIGNS SPACING (L), TAPER LENGTHS (T) AND SPACINGS OF CONES OR DELINEATORS SHALL BE AS SHOWN IN TABLE 1, UNLESS OTHERWISE NOTED ON THE TRAFFIC CONTROL PLANS.
9. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
10. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
11. THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (i.e. WHEN SIGNS HAVE MESSAGES ON BOTH FACES).
12. AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OR INSTALLATION.
13. REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF WORK.



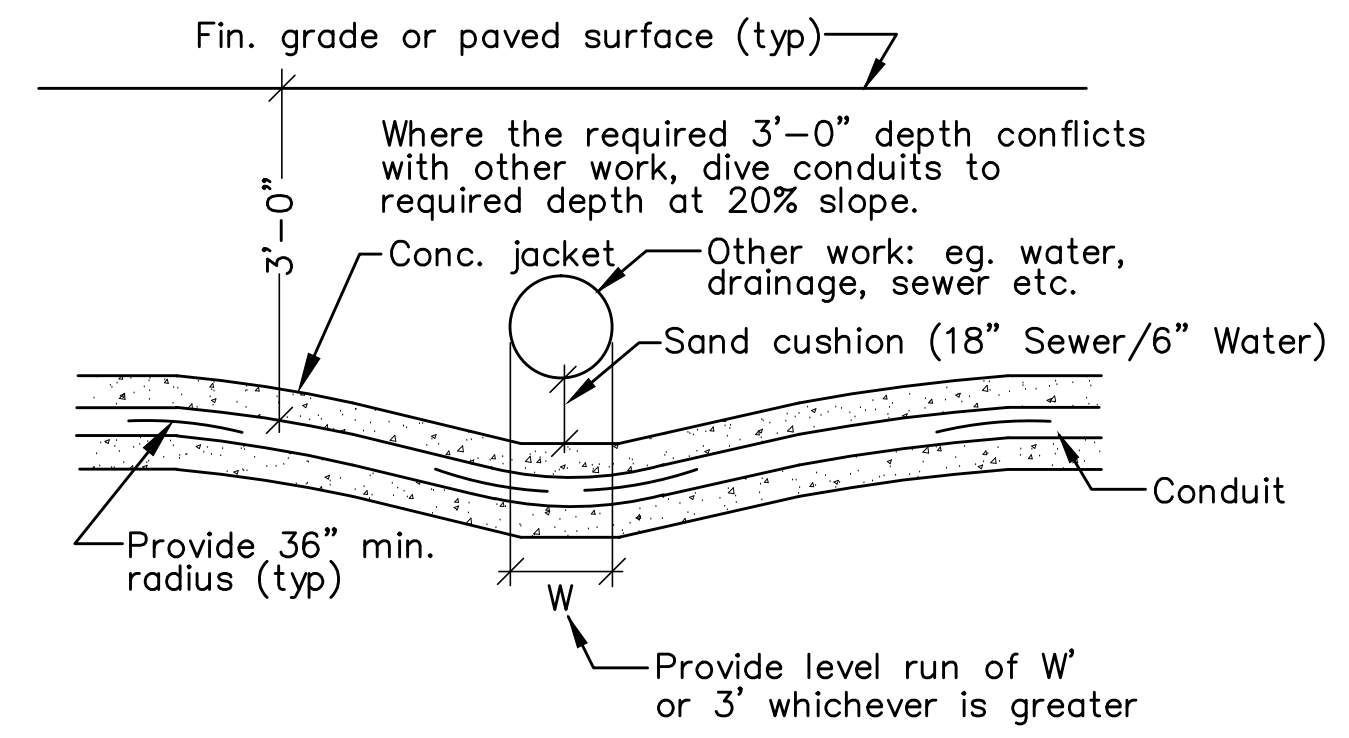
POSTED SPEED LIMIT (M.P.H.)	SIGN SPACING (D) FEET	TAPER LENGTH (T) (FEET)		LONGITUDINAL BUFFER SPACE (B) (FEET)	SPACING OF CONES OR DELINEATORS (FEET)		
		W = 12' OR LESS (1)	W = GREATER THAN 12' (1)		TAPER	TANGENT	WORK AREA
20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10

NOTES:
 (1) W = WIDTH OF LANE, SHOULDER, OR OFFSET

**TWO-LANE HIGHWAY - ONE LANE CLOSED
 FIGURE I - TRAFFIC CONTROL PLAN**

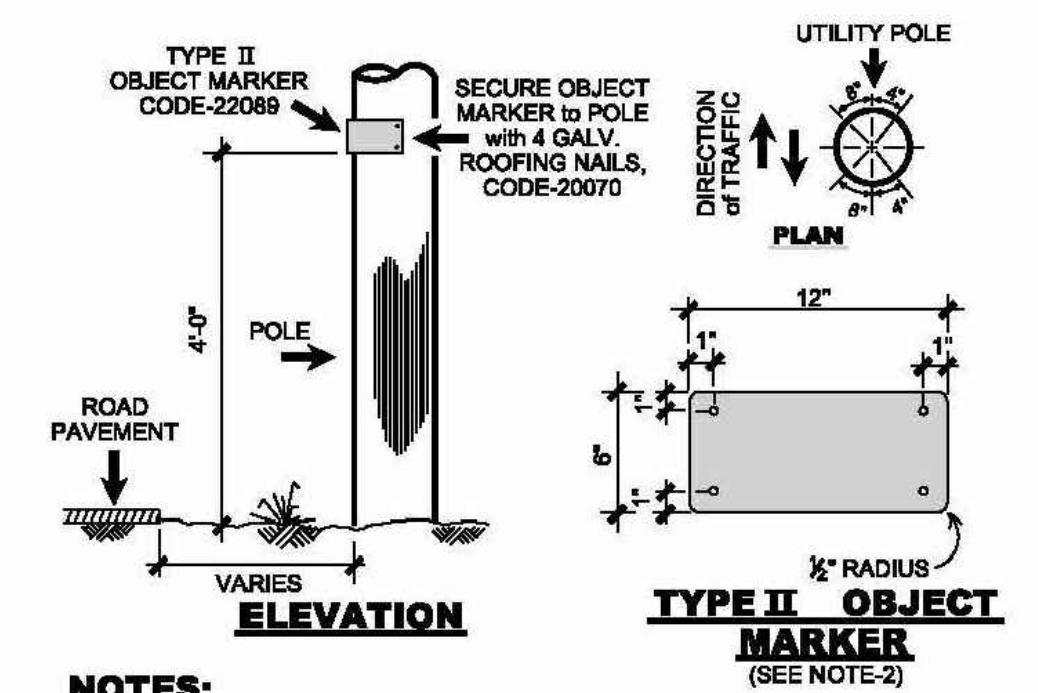
GENERAL NOTES:

1. PLANS SUBJECT TO REVIEW AND APPROVAL OF UTILITY COMPANIES.
2. THE CONTRACTOR/UTILITY COMPANY SHALL CONTACT THE DEPARTMENT OF WATER SUPPLY AT PHONE # 270-7340 ONE (1) WEEK PRIOR TO COMMENCEMENT OF WORK.
3. THE CONTRACTOR/UTILITY COMPANY SHALL BE RESPONSIBLE TO VERIFY THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES IN THE PROJECT AREA PRIOR TO COMMENCEMENT OF WORK AND SHALL MEET WITH THE DEPARTMENT OF WATER SUPPLY PERSONNEL OUT IN THE FIELD TO HELP LOCATE THE EXISTING WATERLINES IN THE PROJECT AREA IF NECESSARY.
4. MAINTAIN A MINIMUM OF THREE (3) FEET CLEAR HORIZONTAL SEPARATION BETWEEN EXISTING WATERLINES AND INSTALLED UTILITIES.
5. MAINTAIN A MINIMUM OF SIX (6) INCHES CLEAR VERTICAL SEPARATION BETWEEN EXISTING WATERLINES AND INSTALLED UTILITIES AT ALL CROSSINGS.
6. ANY INSTALLED UTILITY CROSSING AN EXISTING WATERLINE SHALL BE CONCRETE JACKETED A MINIMUM OF FIVE (5) FEET ON BOTH SIDES OF THE CROSSING.



**TYPICAL DUCTS CROSSING UNDER OTHER WORK
 NOT TO SCALE**

**TRAFFIC CONTROL PLAN
 NOT TO SCALE**



- NOTES:**
1. THE TYPE II OBJECT MARKER (OM2-2H, 12"x6", per MUTCD 2003) shall be made of HIGH INTENSITY AMBER REFLECTIVE SHEETING MATERIAL OVERLAYED ON 0.020" ALUMINUM SHEETING.
 2. INSTALL TWO(2) OBJECT MARKERS: ONE ON EACH SIDE OF POLE FACING ONCOMING TRAFFIC AS SHOWN ON THIS PLAN VIEW.
- COUNTY REQUIRED TYPE II MARKER**

DEPARTMENT OF WATER SUPPLY NOTES:

1. THE CONTRACTOR SHALL CONTACT THE DWS (PH# 243-7633) PRIOR TO COMMENCEMENT OF WORK.
2. THE CONTRACTOR SHALL CONTACT THE DWS FOR THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES. SERVICE LATERALS, AND APPURTENANCES TO BE DETERMINED IN THE FIELD.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SAME ITEM #2) PRIOR TO TRENCHING. FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT HIS/HER EXPENSE.
4. KEEP 3 FEET MINIMUM HORIZONTAL CLEARANCE AND / OR 6 INCH MINIMUM VERTICAL CLEARANCE BETWEEN EXISTING WATER SYSTEM IMPROVEMENTS AND ELECTRICAL UTILITIES.
5. ANY ELECTRICAL CONDUIT, WHEN INDEPENDENTLY INSTALLED AND CROSSING AN EXISTING WATERLINE, GAS, OIL, OR OTHER PIPE SYSTEMS, SHALL BE CONCRETE JACKETED 5 FEET OF BOTH SIDES OF CROSSING IF IT IS SEPARATED BY LESS THAN 6 INCHES.

CONSTRUCTION NOTES WITHIN COUNTY RIGHT-OF-WAY

1. CONTRACTOR SHALL OBTAIN A PERMIT TO PERFORM WORK ON COUNTY HIGHWAYS FROM THE DEVELOPMENT SERVICES ADMINISTRATION TWO WEEKS PRIOR TO THE COMMENCEMENT OF WORK.
2. STANDARD DETAIL DRAWINGS AND STANDARD SPECIFICATIONS OF THE DEPARTMENT OF PUBLIC WORKS SHALL BE INCLUDED AS PART OF THE CONSTRUCTION PLANS.
3. ALL CONSTRUCTION WORK SHALL STRICTLY CONFORM TO THE LATEST VERSION OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE PUBLIC WORKS CONSTRUCTION, AND THE SEPTEMBER 1984 "STANDARD DETAILS" FOR PUBLIC WORKS CONSTRUCTION OF THE DEPARTMENT OF PUBLIC WORKS, AS AMENDED.
4. IF EXISTING UTILITIES, WHETHER OR NOT SHOWN ON PLANS, ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL AT HIS OWN EXPENSE BE REQUIRED TO REPAIR SUCH UTILITIES.
5. CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER PROTECTIVE DEVICES FOR THE PROTECTION, SAFETY AND CONVENIENCE OF THE PUBLIC, ACCORDING TO THE LATEST VERSION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", AND TO THE RULES AND REGULATIONS GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORKSITES AND/OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS ADOPTED BY THE HIGHWAY SAFETY COORDINATOR AND THE U.S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS".
6. THE DIRECTOR PUBLIC WORKS AND/OR THE DIRECTOR OF THE DEPARTMENT OF WATER SUPPLY HAS THE RIGHT TO STOP CONSTRUCTION SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED CONSTRUCTION PLAN OR DETRIMENTAL TO THE PUBLIC'S INTEREST.
7. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE DEVELOPMENT SERVICES ADMINISTRATION FIVE (5) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
8. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH AND COUNTY GRADING ORDINANCE.
9. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION ORDERED BY THE DIRECTOR OF PUBLIC WORKS SHALL BE PAID BY THE CONTRACTOR.
10. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE WORK SITE. THE CONTRACTOR SHALL INFORM THE DIRECTOR OF PUBLIC WORKS OF THE LOCATION OF THE DISPOSAL SITES. THE DISPOSAL SITE MUST FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
11. THE CONTRACTOR SHALL SUBMIT A TIF AND FIVE (5) COPIES OF THE "AS-BUILT" DRAWINGS PRIOR TO THE FINAL APPROVAL OF THE IMPROVEMENTS.
12. IF THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING WATERLINE IS EIGHTEEN INCHES (18") OR LESS, THE WASTEWATER LINE SHALL BE CONCRETE-JACKETED IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1984, AS AMENDED.
13. SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS, OR MOUNDS, OR REMAINS SUCH AS ARTIFACTS BURIALS, CONCENTRATION OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR AND/OR LANDOWNER SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (692-8015), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.
14. PURSUANT OF MAUI COUNTY CODE SECTION 3.44.015(C), THE COUNTY OF MAUI IS NOT RESPONSIBLE FOR ANY PARK, ROADWAY, EASEMENT (INCLUDING BUT NOT LIMITED TO DRAINAGE, SEWER, ACCESS, RECLAIMED WATER, OR AVIGATION EASEMENT), OR ANY OTHER INTEREST IN REAL PROPERTY SHOWN ON THIS MAP OR SHOWN ON THESE PLANS, UNLESS THE MAUI COUNTY COUNCIL HAS ACCEPTED ITS DEDICATION BY A RESOLUTION APPROVED BY A MAJORITY OF COUNCIL'S MEMBERS AT A REGULAR OR SPECIAL MEETING OF THE MAUI COUNTY COUNCIL.
15. STEEL PLATE WARNING SIGNS ARE REQUIRED FOR ALL STEEL PLATES IN THE RIGHT-OF-WAY.
16. WHEELCHAIR RAMP INSPECTION/CERTIFICATION FORMS SHALL BE REQUIRED FOR ALL NEWLY CONSTRUCTED RAMPS.
17. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE OF THERMOPLASTIC MATERIAL.
18. COMPACTION REQUIREMENTS
 - a. TESTING OF MATERIALS SHALL BE CONDUCTED BY AN APPROVED INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH ASTM STANDARD METHODS OR AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION, AS FOLLOWS:
 - i. EMBANKMENT/SELECT BORROW AND SUBGRADE MATERIALS: ONE (1) COMPACTION TEST PER 600 SQUARE YARDS PER LIFT;
 - ii. AGGREGATE SUBBASE COURSE: ONE (1) COMPACTION TEST PER 400 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
 - iii. AGGREGATE BASE COURSE: ONE (1) COMPACTION TEST PER 300 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
 - iv. ASPHALT CONCRETE PAVEMENT OR ASPHALT TREATED BASE COURSE; THREE (3) A.C. CORES FOR THICKNESS AND DENSITY TESTS PER PROJECT;
 - v. TRENCH BACKFILL MATERIAL: ONE (1) TEST FOR EACH 300 LINEAL FEET OF TRENCH PER LIFT OF MATERIAL.
 - b. CONTRACTOR SHALL SUBMIT ALL TESTING REPORTS INCLUDING RESULTS TO THE COUNTY'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO COUNTY'S ACCEPTANCE OF WORK.
 - c. THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE COUNTY OF ANY TESTING FAILURES AND CORRECT EACH FAILURE PRIOR TO PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION.

APPROVALS:

DIRECTOR - DEPARTMENT OF PUBLIC WORKS _____ DATE _____
 (APPROVAL FOR WORK WITHIN COUNTY RIGHT OF WAY ONLY)

DIRECTOR - DEPARTMENT OF ENVIRONMENTAL MANAGEMENT _____ DATE _____
 (APPROVAL FOR WORK WITHIN COUNTY RIGHT OF WAY ONLY)

DIRECTOR - DEPARTMENT OF WATER SUPPLY, COUNTY OF MAUI (APPROVAL LIMITED TO WATER IMPROVEMENTS WHICH WILL BE DEDICATED TO THE DEPARTMENT OF WATER SUPPLY) _____ DATE _____

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS & SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII

501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3648
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

PULEHUUNI
 REGIONAL
 INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII

MARK P. RICHARD
 LICENSED PROFESSIONAL ENGINEER
 No. 8991-E
 HAWAII, U.S.A.

This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

APRIL 30, 2020
 EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY


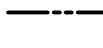


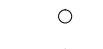


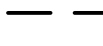
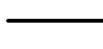



Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: RMB
 Checked By: MPR

**PHASE A4 - DHHL
 SOUTH PUMP
 STATION
 NOTES & DETAILS**

DWG. NO.
EA4-1
 SHEET 182 OF 201

FILE	POCKET	FOLDER	NO.

SYMBOL LEGEND

-  NEW MECO 150W HPS ST. LIGHT ON WOOD POLE, FULLY CUT-OFF
-  NEW 3Ø PRIMARY OVERHEAD LINE
-  EXISTING OVERHEAD LINE
-  NEW POLE MOUNTED TRANSFORMER BANK (3PH)
-  EXISTING UTILITY POLE
-  NEW UTILITY POLE
-  EXISTING UTILITY ANCHOR
-  NEW UTILITY ANCHOR
-  NEW DUCTS
-  T TELEPHONE DUCTS, QTY. AND SIZE AS INDICATED
-  ES ELECTRICAL DUCTS, QTY. AND SIZE AS INDICATED
-  NEW METERING EQUIPMENT (SEE SHEET E-4)

GENERAL NOTES:

1. PLANS SUBJECT TO REVIEW AND APPROVAL OF UTILITY COMPANIES.
2. ALL NEW POLE & ANCHOR LOCATIONS ARE TO BE STAKED OUT BY THE DEVELOPER'S SURVEYOR. COORDINATION REQUIRED WITH MECO'S ASSIGNED PLANNER.
3. DEVELOPER SHALL BE RESPONSIBLE FOR THE FULL COST TO RELOCATE MECO FACILITIES IF REQUIRED TO ADEQUATELY CLEAR ALL DRIVEWAYS & THEIR RESPECTIVE APPROACHES WHICH ARE NOT INDICATED ON THIS PLAN.
4. THE UTILITY COMPANY SHALL BE RESPONSIBLE TO VERIFY THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES IN THE PROJECT AREA PRIOR TO COMMENCEMENT OF WORK AND SHALL MEET WITH THE DEPARTMENT OF WATER SUPPLY PERSONNEL OUT IN THE FIELD TO HELP LOCATE THE EXISTING WATERLINES IN THE PROJECT AREA IF NECESSARY.
5. THE DEVELOPER OR ITS CONTRACTOR WILL BE RESPONSIBLE IN SUBMITTING LANDSCAPE PLANS IN THE PROXIMITY OF THE PROPOSED ELECTRICAL INFRASTRUCTURES AND/OR FACILITIES TO MECO-ENGINEERING FOR ITS REVIEW PRIOR TO THEIR ACCEPTANCE OF SAID INFRASTRUCTURES AND/OR FACILITIES.

PLAN NOTES:

- ① EASEMENT REQUIRED FOR FACILITIES LOCATED IN PRIVATE PROPERTY (REFER TO MECO DWG.).
- ② NEW UTILITY RISER POLE.
- ③ NEW POLE-MOUNTED TRANSFORMERS AND UTILITY RISERS.
- ④ NEW OVERHEAD LINE EXTENSION.
- ⑤ EXISTING UTILITY POLES TO REMAIN.

A UTILITY CO. STANDBY MAN IS REQUIRED TO BE AT THE SITE AT THE TIME ANY NON-UTILITY CO. PERSONNEL WILL BE BREAKING INTO OR ENTERING ANY FACILITIES THAT CONTAIN ENERGIZED UTILITY CO. EQUIPMENT OR CABLES.

THREE WORKING DAYS ADVANCE NOTICE IS REQUIRED BY THE UTILITY CO. FOR ANY INSPECTION SERVICE OR STANDBY MAN.

CALL MECO -- PH: 871-7777

NOTE:
SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS AND MOUNDS, OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF CHARCOAL OR SHELLS ARE ENCOUNTERED DURING CONSTRUCTION WORK, WORK SHALL CEASE IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (692-8023), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.

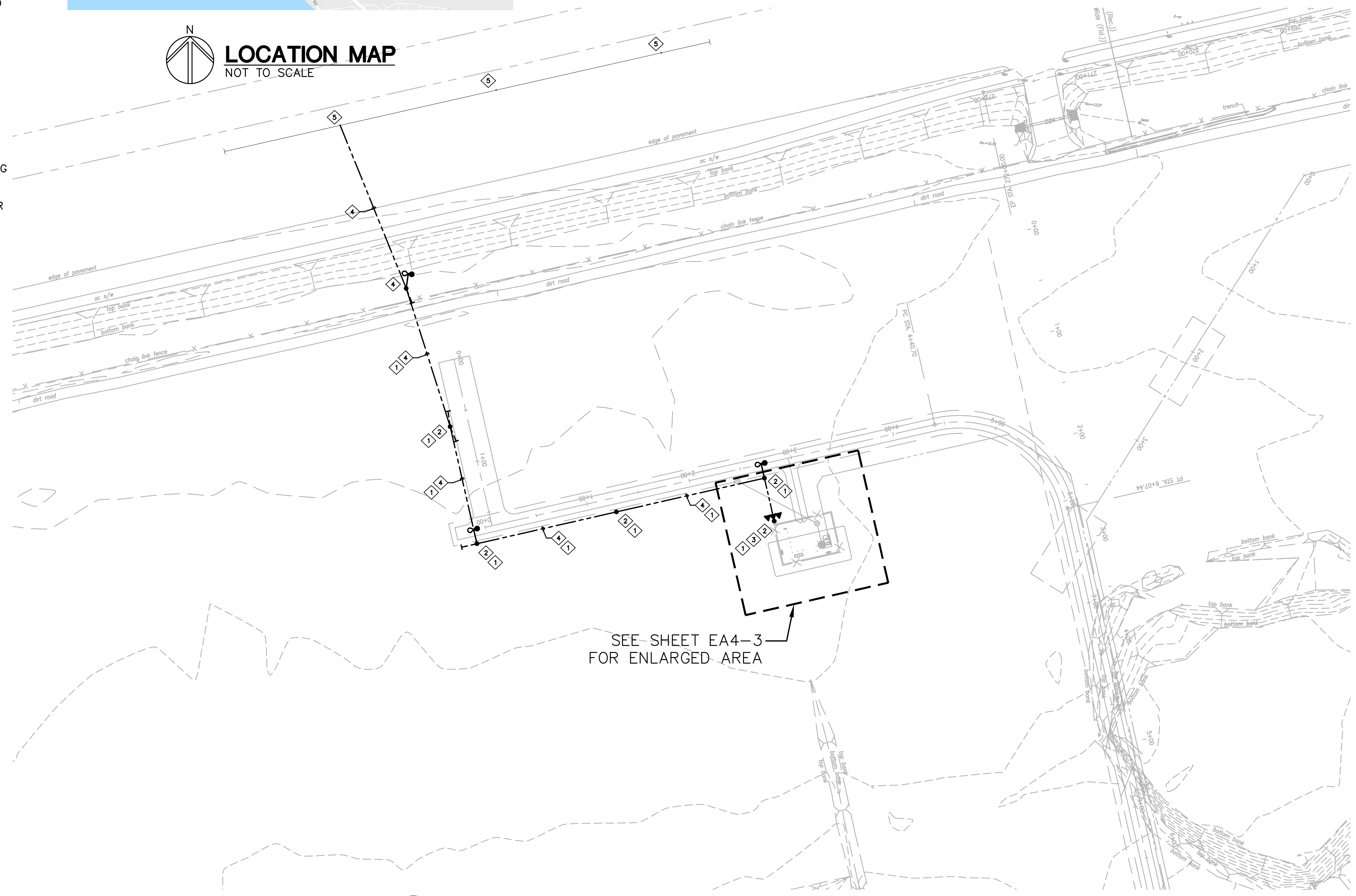
APPROVALS:

MAUI ELECTRIC COMPANY	DATE
HAWAIIAN TELCOM	DATE
SPECTRUM	DATE

NOTE: PLAN NOT FOR CONSTRUCTION UNLESS APPROVED



LOCATION MAP
NOT TO SCALE



SEE SHEET EA4-3 FOR ENLARGED AREA

ELECTRICAL SITE PLAN
SCALE: 1" = 60'-0"

JOB NO. C-11-056.004
FR: H: VACADZ\2019-60 PULEHUNUI NORTH AND SOUTH PUMP STATIONS\SOUTH PUMP STATION\E-1.DWG

Austin Tsutsumi & Associates, Inc.
CIVIL ENGINEERS | SURVEYORS
HONOLULU | WAILUKU | HILO, HAWAII
501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817
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STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

PULEHUNUI
REGIONAL
INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

MPR APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY

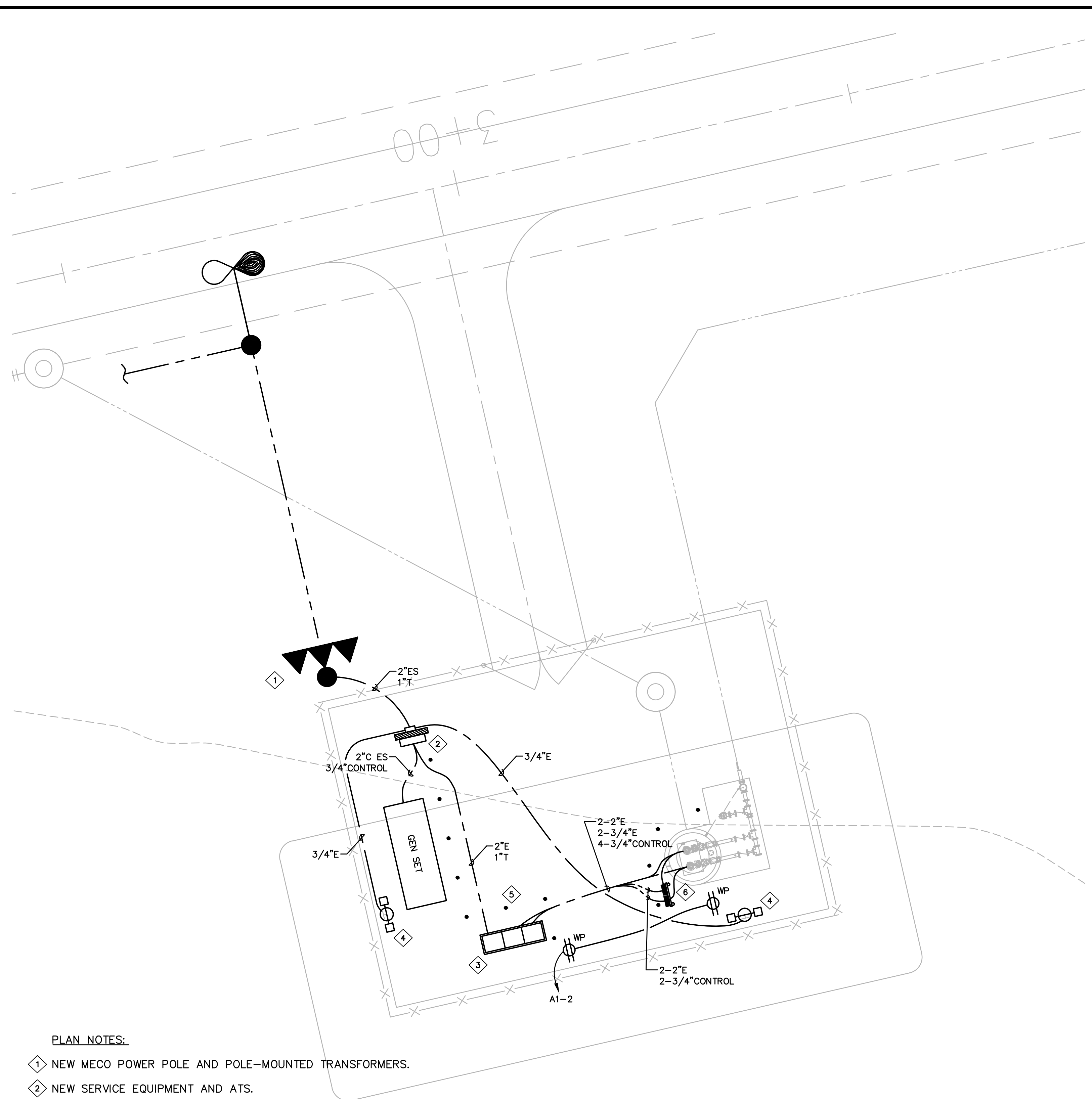
Project No: 16-576
Scale: AS NOTED
Date: 1/22/19
Designed By: MPR
Drawn By: RMB
Checked By: MPR

**SOUTH PUMP STATION
ELECTRICAL SITE PLAN,
SYMBOL LEGEND,
NOTES**

DWG. NO.
EA4-2
SHEET 183 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 FN: H: VACADZ\2019-60 PULEHUNUI NORTH AND SOUTH PUMP STATIONS\SOUTH PUMP STATION\E-2.DWG



- PLAN NOTES:**
- ① NEW MECO POWER POLE AND POLE-MOUNTED TRANSFORMERS.
 - ② NEW SERVICE EQUIPMENT AND ATS.
 - ③ MCC (BY OTHERS).
 - ④ NEW LIGHTS.
 - ⑤ PIPE STANCHIONS (TYPICAL).
 - ⑥ (2) VFD ON STAINLESS STEEL FRAME.

SOUTH PUMP - ELECTRICAL PLAN
 SCALE: 1" = 60'-0"

COUNTY OF MAUI
MAUI COUNTY CODE, CHAPTER 16.16B ENERGY CODE
(2015 IECC) COMMERCIAL PROVISIONS

COMPLIANCE METHOD
 Check applicable method

C401.2(1) ANSI/ASHRAE/IESNA 90.1
 C401.2(2) Section C405
 C401.2(3) Sections C405.2, 405.3, C405.4, C405.6 & C407
 C102.1 Alternative

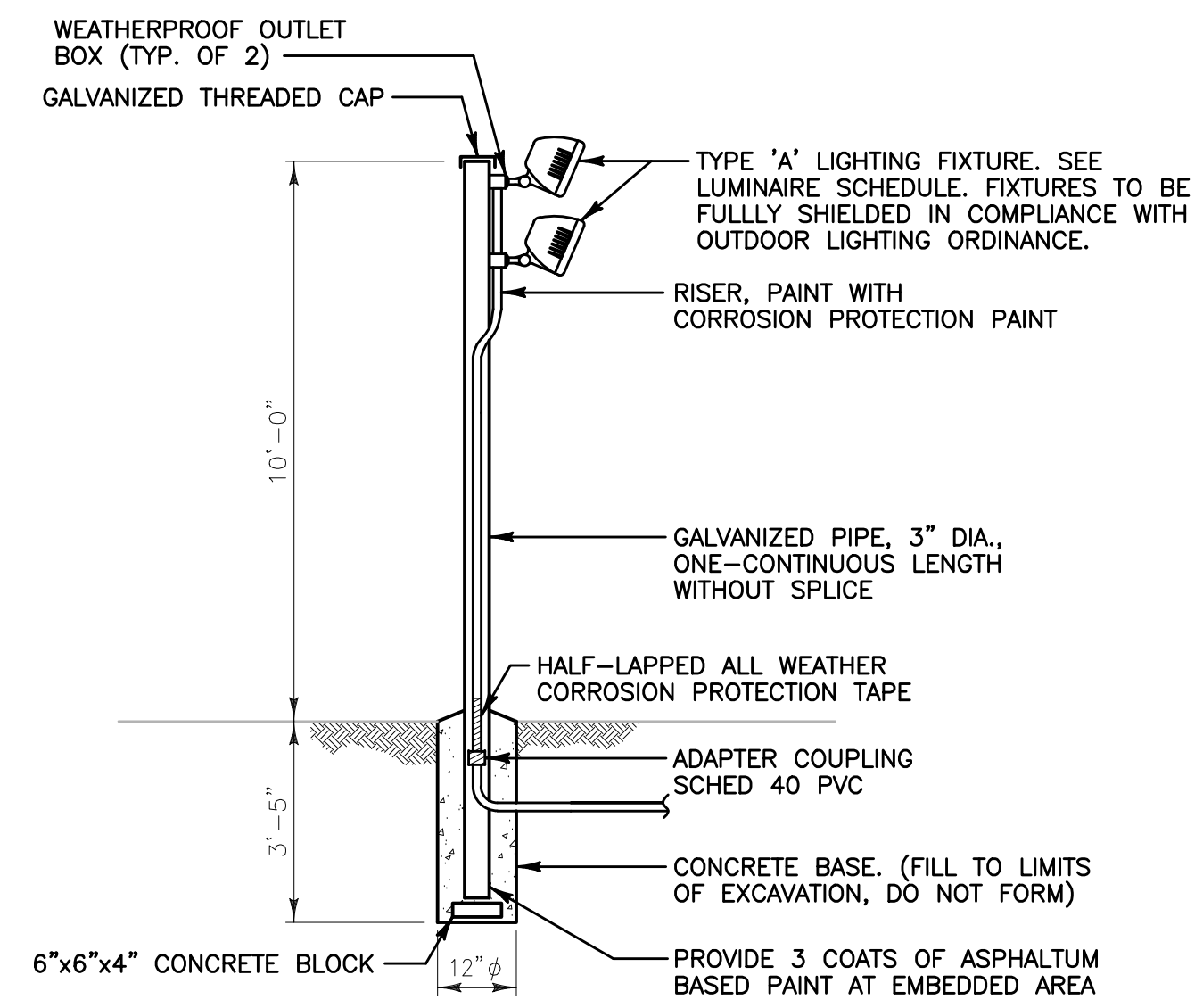
To the best of my knowledge, this project's design substantially conforms to the Energy Code.

Signature: [Signature] Date: _____
 Name: MARK P. RICKARD
 Title: PROJECT ENGINEER
 License No.: 8891-E

MAUI COUNTY CODE CHAPTER 20.35
OUTDOOR LIGHTING

THE ELECTRICAL OUTDOOR LIGHTING SYSTEM AND EQUIPMENT HAVE BEEN REVIEWED BY ME AND TO THE BEST OF MY KNOWLEDGE, THIS DESIGN SUBSTANTIALLY CONFORMS TO THE REQUIREMENTS SPECIFIED IN MAUI COUNTY CODE CHAPTER 20.35 OUTDOOR LIGHTING.

[Signature] PROJECT ENGINEER
 MARK P. RICKARD 8891-E
 NAME (PRINT) STATE OF HAWAII
 P.E. LICENSE NUMBER



FLOODLIGHT DETAIL
 NOT TO SCALE

Austin Tsutsumi
 & ASSOCIATES, INC.
 CIVIL ENGINEERS | SURVEYORS
 HONOLULU | WAILUKU | HILO, HAWAII
 501 SUMNER STREET, SUITE 521
 HONOLULU, HAWAII 96817
 PHONE: 808-533-3646
 FAX: 808-526-1267

STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

PULEHUNUI
 REGIONAL
 INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
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This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

[Signature] APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: RMB
 Checked By: MPR

SOUTH PUMP STATION
ELECTRICAL PLAN

DWG. NO.
EA4-3
 SHEET 184 OF 201

FILE	POCKET	FOLDER	NO.



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APRIL 30, 2020
 EXP. DATE OF THE LICENSE

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 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

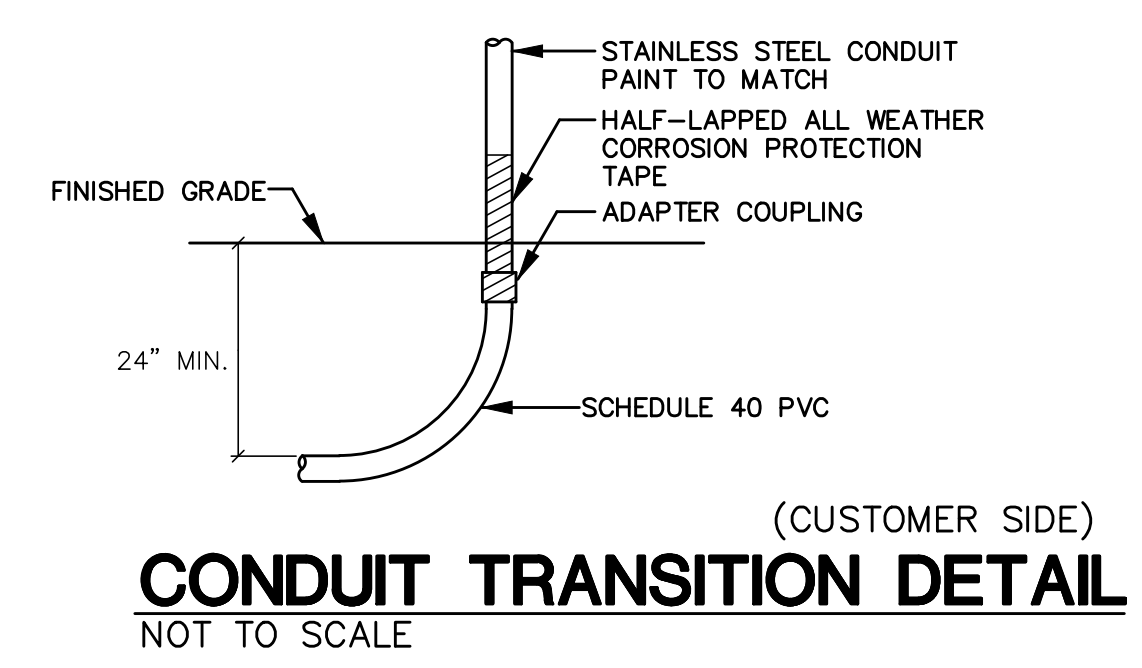
REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: AKK
 Checked By: MPR

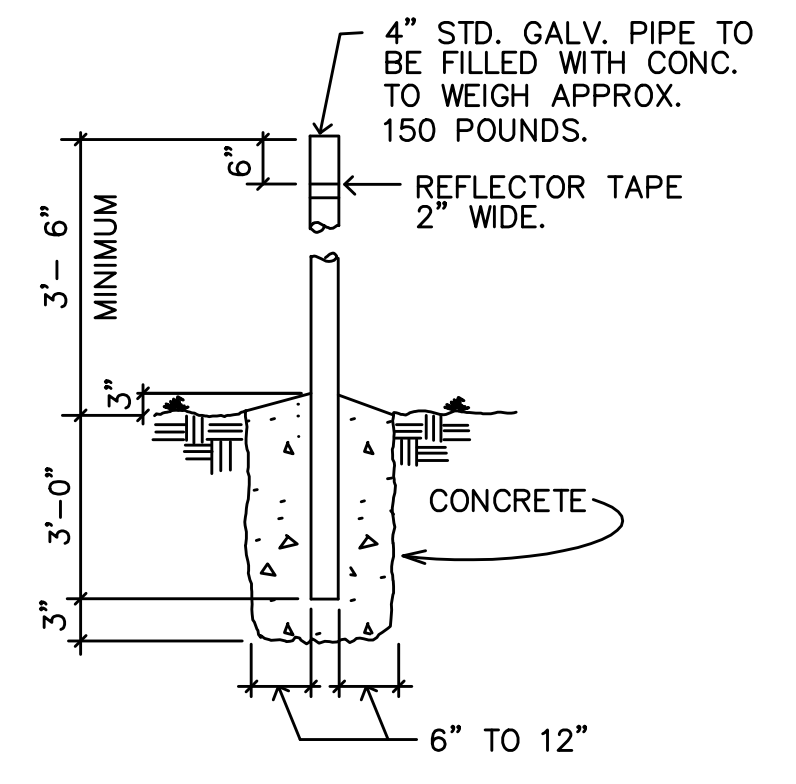
SOUTH PUMP STATION
 DETAILS

DWG. NO.
EA4-5
 SHEET 186 OF 201

FILE	POCKET	FOLDER	NO.



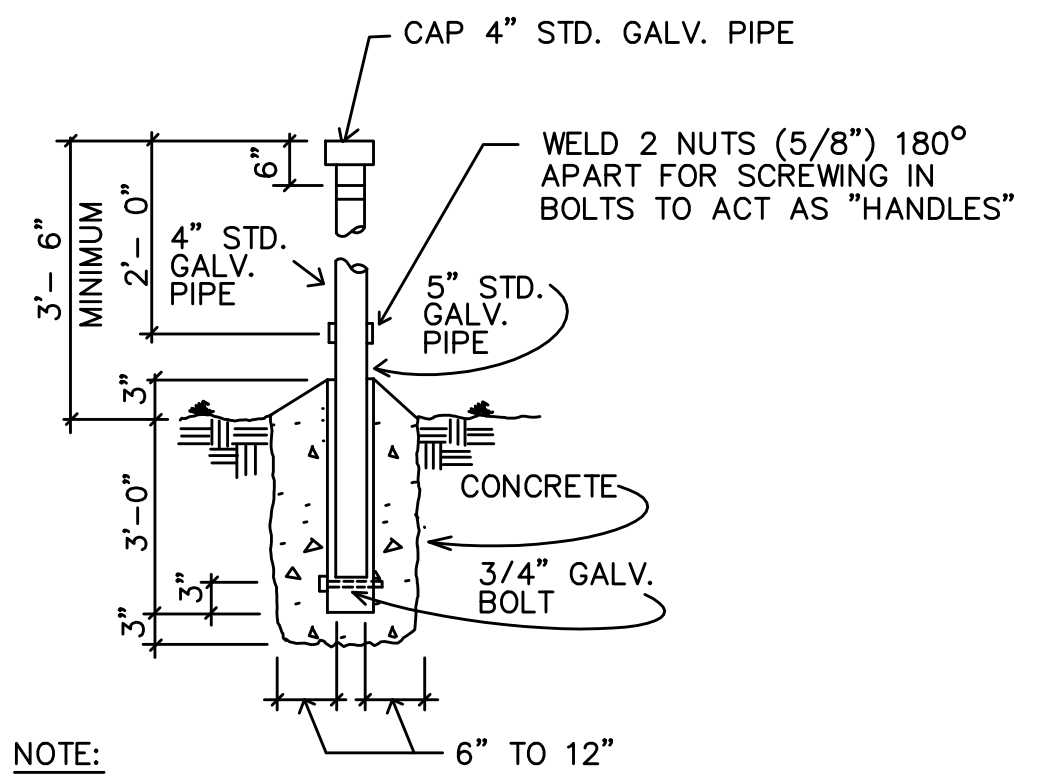
(CUSTOMER SIDE)
CONDUIT TRANSITION DETAIL
 NOT TO SCALE



NOTE:
 BARRIER POSTS ARE TO BE PAINTED YELLOW ACCORDING TO ANSI SPEC Z535.1 TO COMPLY WITH OSHA STANDARD 1910.144 FOR COLORING CODE. A 2" WIDE STRIPE OF REFLECTIVE TAPE MUST BE PLACED 6" BELOW THE TOP OF THE POST.

UG-30-5000

DETAIL "X"
 NOT TO SCALE

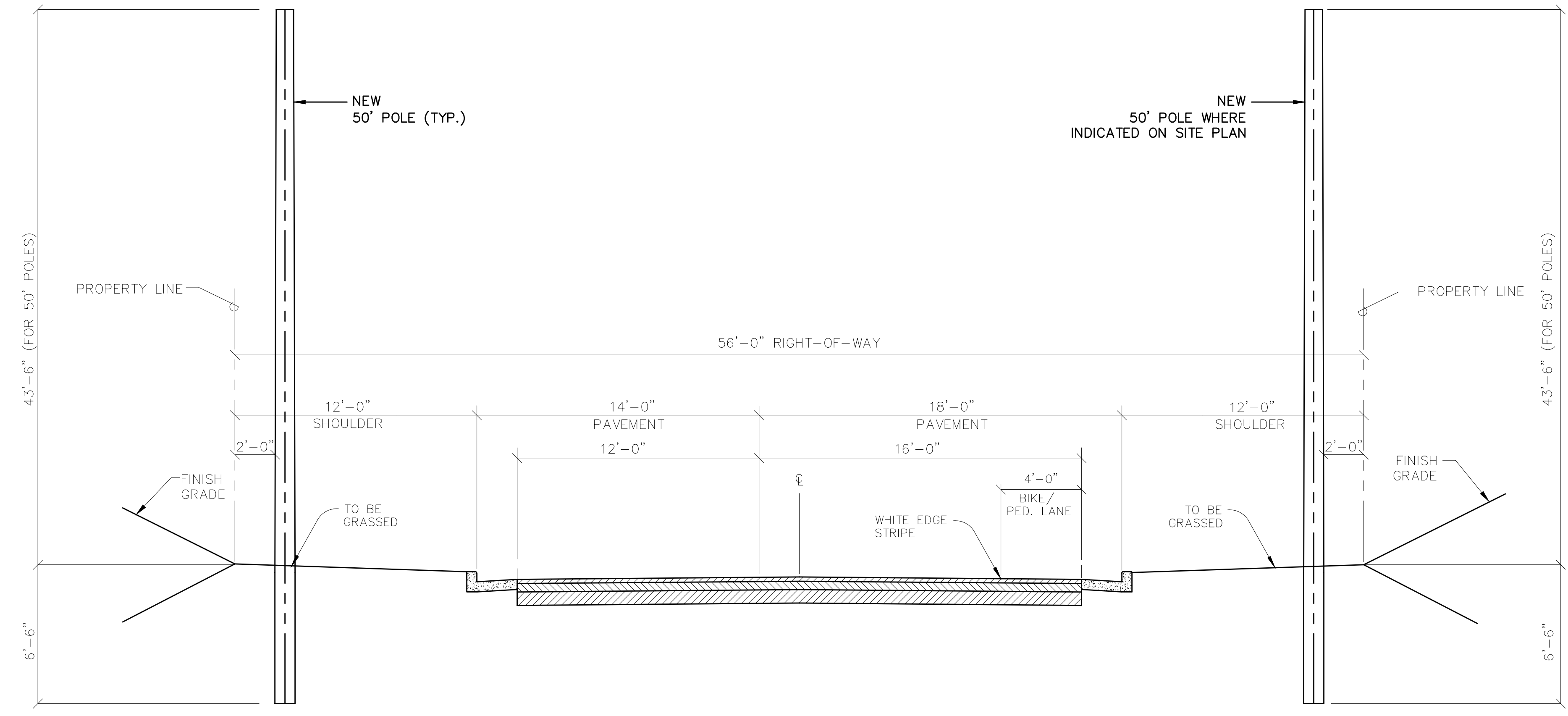


NOTE:
 BARRIER POSTS ARE TO BE PAINTED YELLOW ACCORDING TO ANSI SPEC Z535.1 TO COMPLY WITH OSHA STANDARD 1910.144 FOR COLORING CODE. A 2" WIDE STRIPE OF REFLECTIVE TAPE MUST BE PLACED 6" BELOW THE TOP OF THE POST.

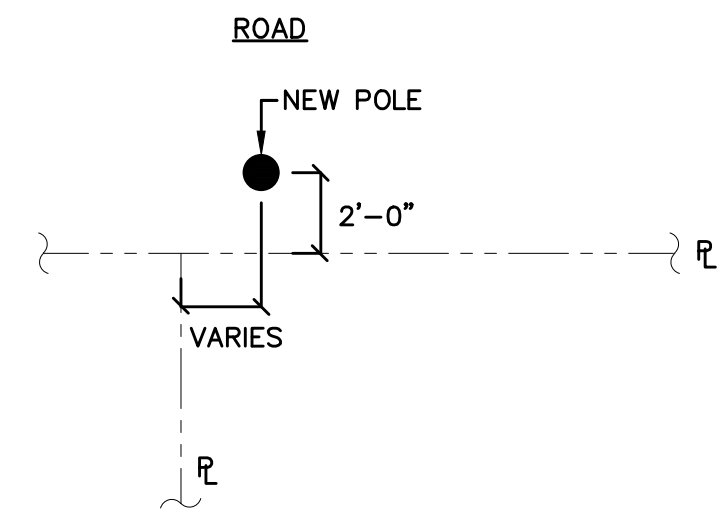
THE PIPE THAT IS TO BE PLACED DIRECTLY IN FRONT OF THE DOORS SHALL NOT BE FILLED WITH CONCRETE. THE PIPE SHALL BE CAPPED AND THE WELDED NUTS USED TO SCREW IN BOLTS TO ACT AS HANDLES FOR LIFTING. THE BOLTS ARE TO BE REMOVED AFTER INSTALLATION.

UG-30-5000

DETAIL "X-1"
 NOT TO SCALE



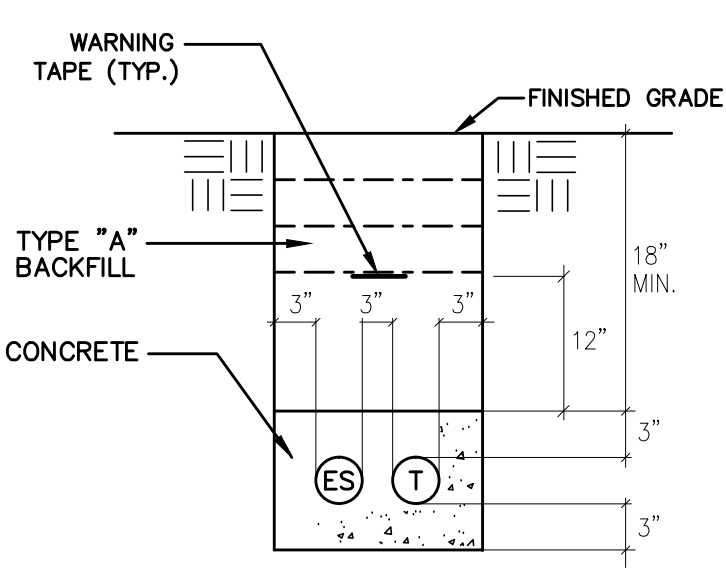
POLE DETAIL @ TYPICAL SECTION - 56 FT. RIGHT-OF-WAY
 NOT TO SCALE



TYPICAL POLE LOCATION IN R-O-W
 NOT TO SCALE

DUCT NOTES

- ALL CONDUITS TO BE PVC SCHEDULE 40.
- ALL CONDUITS TO CONTAIN A "MULE TAPE" PULL LINE (WESCO CAT. #0725-92000 OR EQUIVALENT).
- AFTER THE CONDUITS ARE INSTALLED, THE CUSTOMER SHALL PASS A SMOOTH BULLET-SHAPED WOODEN TEST MANDREL THROUGH THE ENTIRE LENGTH OF EACH CONDUIT TO TEST FOR FREEDOM OF BURRS AND OBSTRUCTIONS.
- BACKFILL LEGEND:
 TYPE "A" BACKFILL: BEACH SAND, EARTH, OR EARTH AND GRAVEL. IF EARTH AND GRAVEL, THE MAXIMUM ROCK SIZE SHALL BE 1" AND THE MIXTURE SHALL CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES.
 TYPE "B" BACKFILL: BEACH SAND, EARTH, OR EARTH AND GRAVEL. IF EARTH AND GRAVEL, THE MIXTURE MUST PASS A 1/2" MESH SCREEN AND CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES.
 NOTE: IF THE NORMAL MATERIAL IN THE BOTTOM OF THE TRENCH IS NOT TYPE "B", AN ADDITIONAL 3" SHALL BE EXCAVATED AND TYPE "B" BACKFILL SHALL BE PROVIDED.
 CONCRETE ENCASEMENT STRENGTH: 2500 PSI IN 28 DAYS
 MAXIMUM AGGREGATE: 3/4"

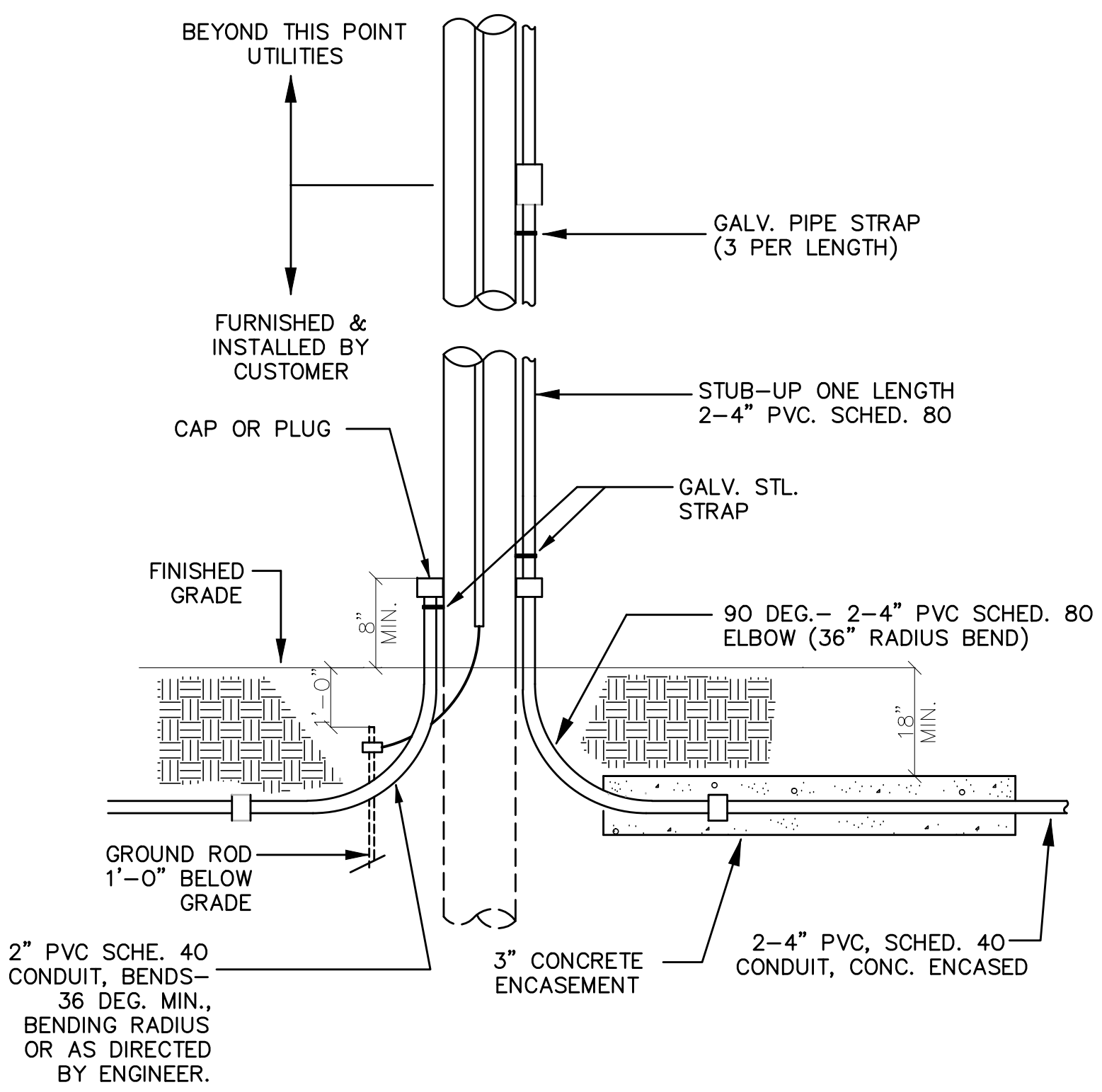


TYPICAL SERVICE LATERAL STREET CROSSING SECTION

DUCTLINE NOTES:

- REFER TO ELECTRICAL PLAN FOR DUCT SIZES AND QUANTITIES.
- CONCRETE ENCASED CONDUITS SHALL BE PVC SCHED. 40 PVC.
- CONCRETE ENCASED CONDUITS OF LIKE USE MAY BE SEPARATED BY 1 1/2".
- CONCRETE COMPREHENSIVE STRENGTH SHALL BE 2,500 PSI IN 28 DAYS.
- DUCTLINE TRENCHES MAY BE BACKFILLED 24 HOURS AFTER CONCRETE IS POURED.
- CONTRACTOR SHALL COORDINATE DUCTLINE AND TRENCHING.

TYPICAL DUCTLINE and TRENCHING DETAILS
 NOT TO SCALE



RISER POLE DETAIL
 NOT TO SCALE

JOB NO. 0-11-056.004
 FR: H: VACADZ 2019-60 PULEHUNUI NORTH AND SOUTH PUMP STATIONS SOUTH PUMP STATION E-4.DWG



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Mark P. Rickard APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

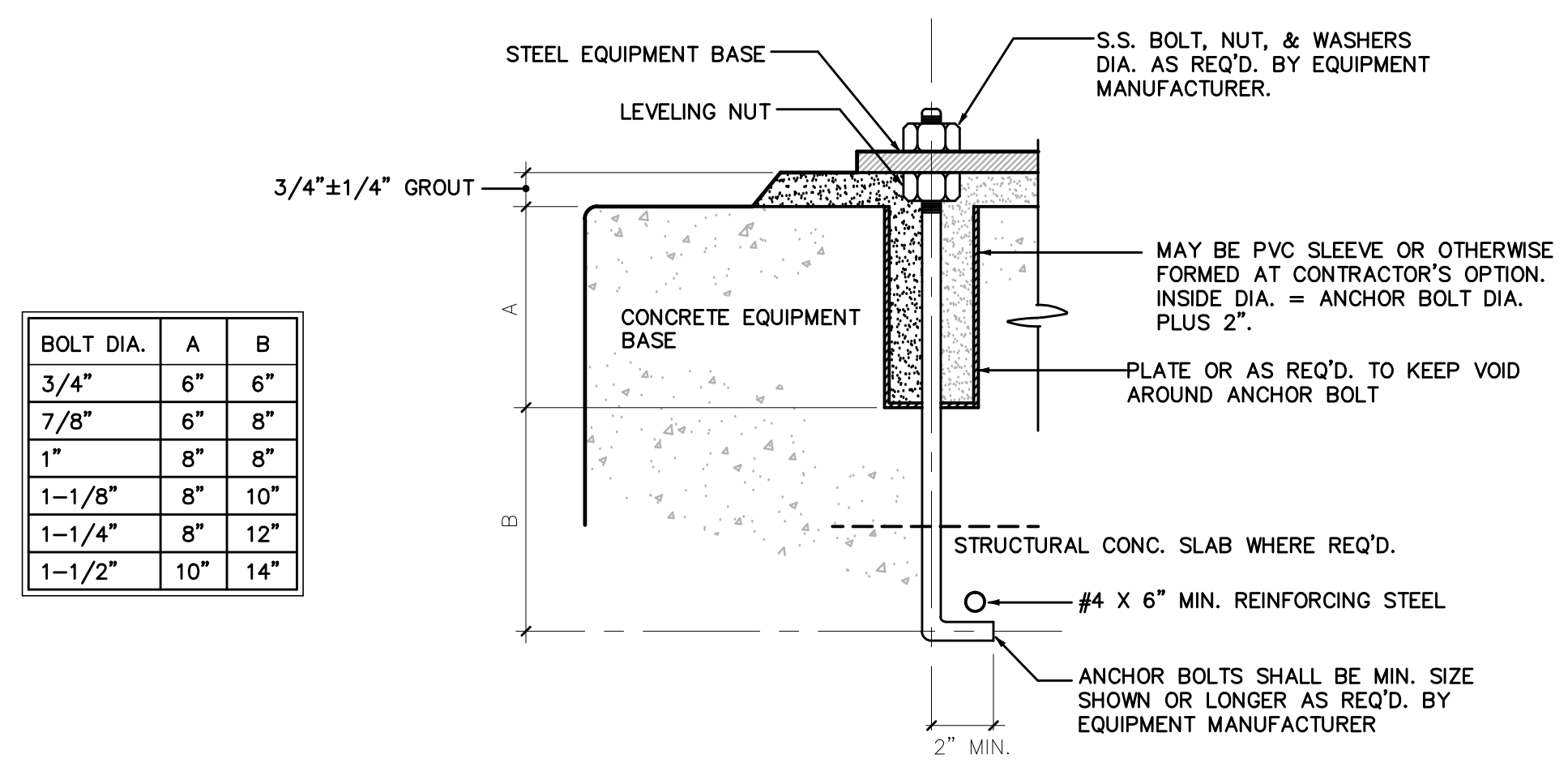
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LINE IS 2 INCHES AT FULL SIZE (IF NOT 2-INCHES : Scale Accordingly)			
REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: RMB
 Checked By: MPR

SOUTH PUMP STATION
 DETAILS

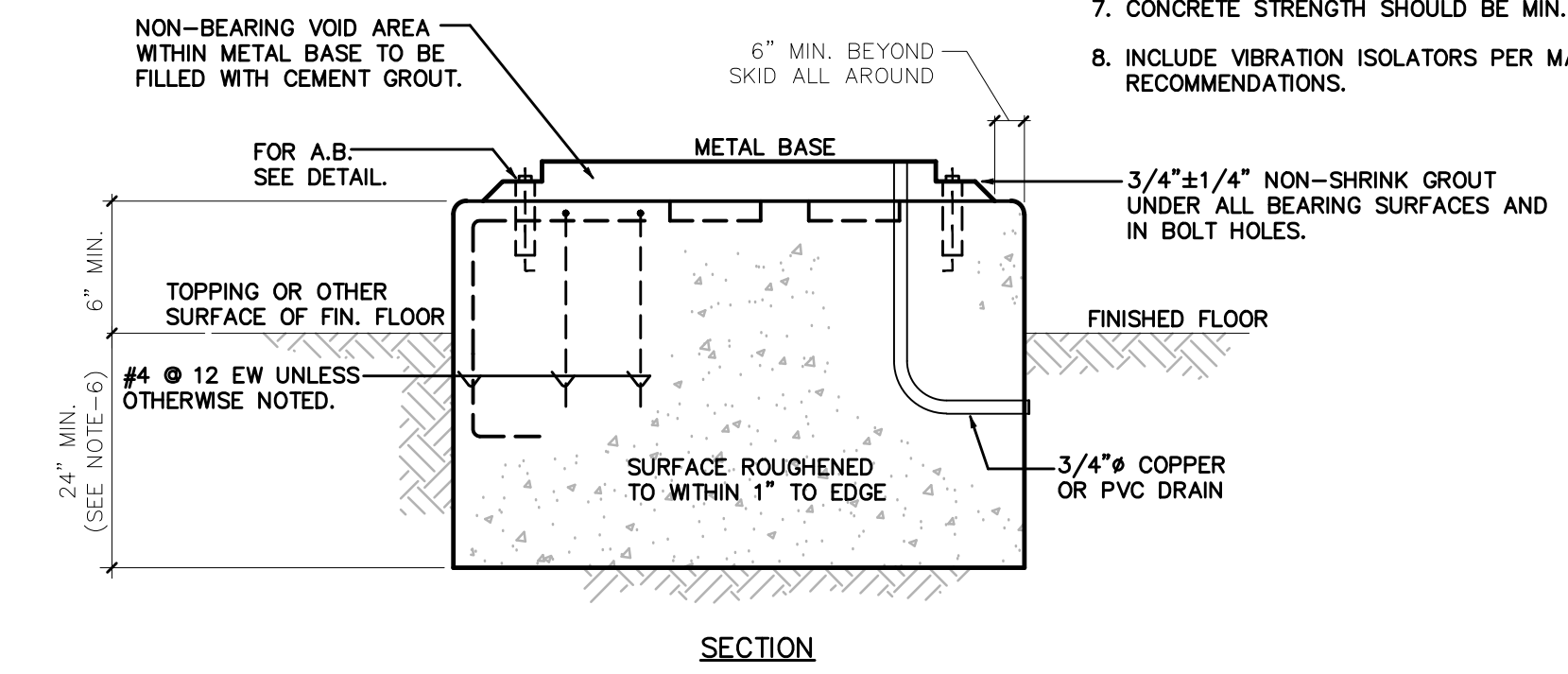
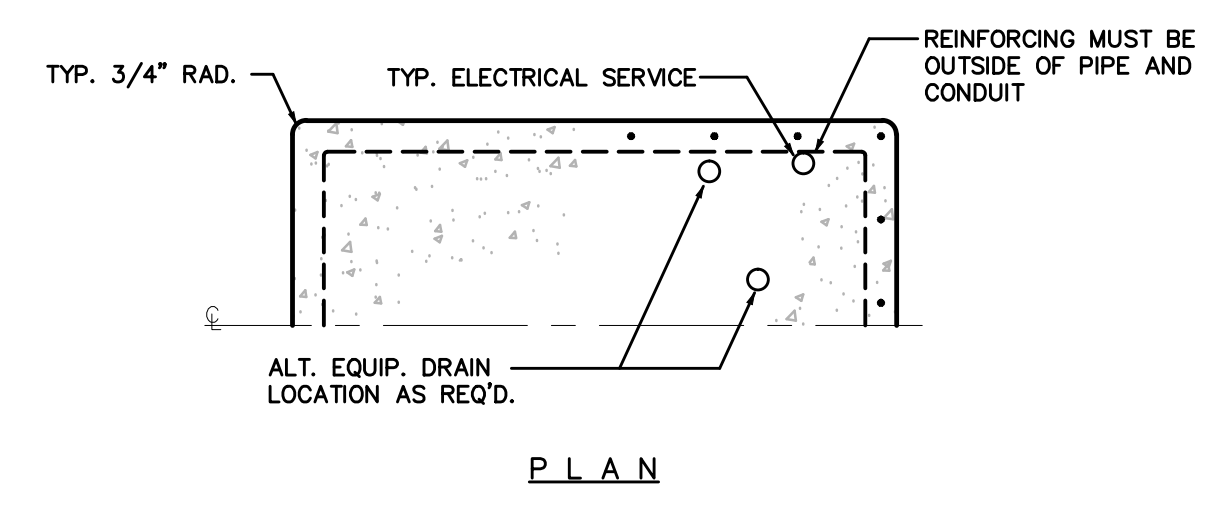
DWG. NO.
EA4-6
 SHEET 187 OF 201

FILE	POCKET	FOLDER	NO.

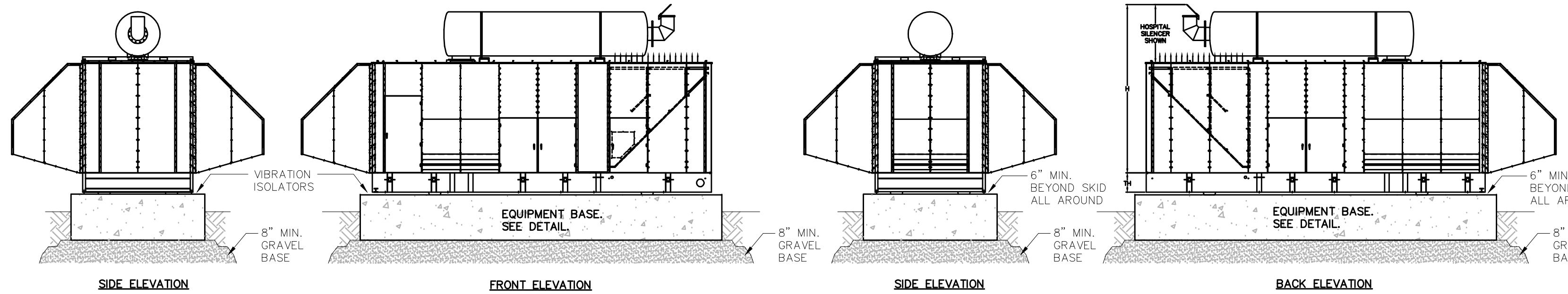
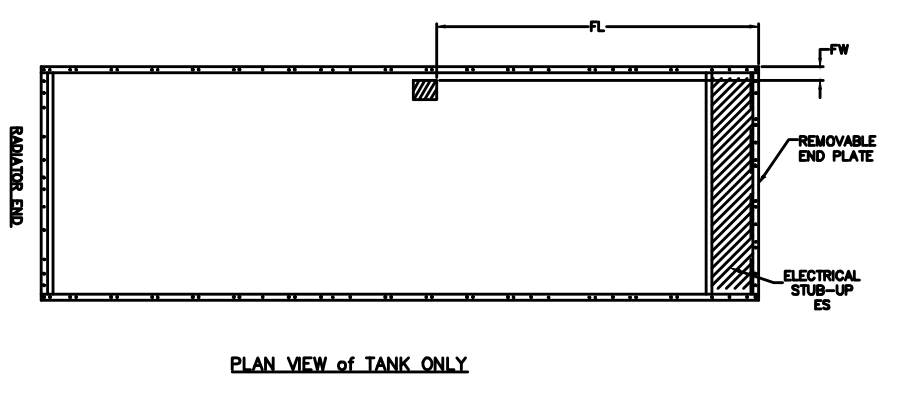
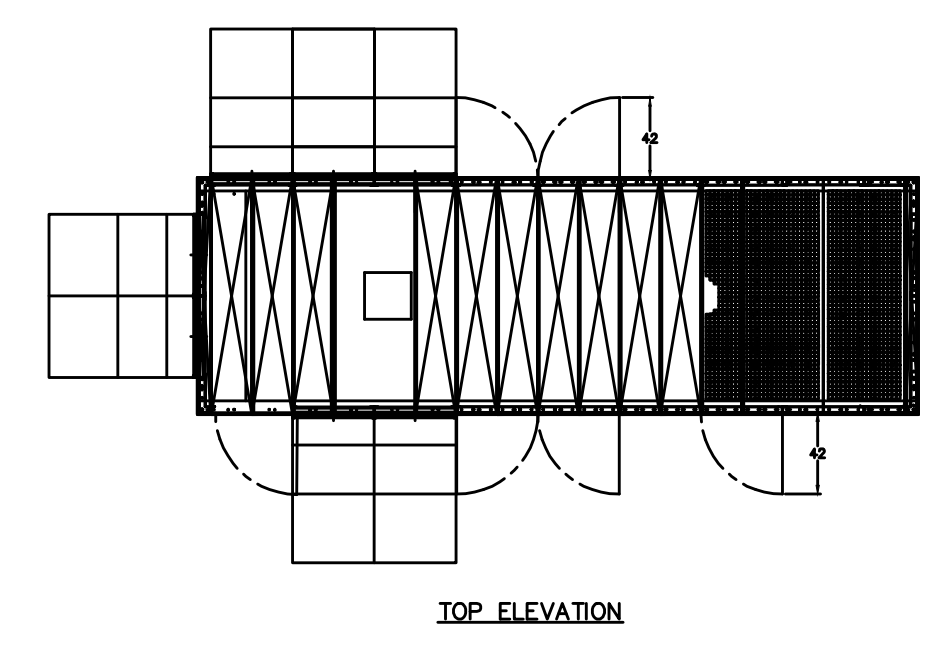


ANCHOR BOLT DETAIL
 NOT TO SCALE

- NOTES:**
- ALL EQUIPMENT, INCLUDING TANKS, SHALL HAVE A CONCRETE EQUIPMENT BASE TO SUIT.
 - ANCHOR BOLTS SHALL BE SIZED FOR THE EQUIPMENT LOAD PLUS SEISMIC LOADS (ZONE 2006IBC SEISMIC DESIGN CATEGORY D).
 - ANCHOR BOLTS SHALL BE SET IN POCKETS, EITHER PIPE OR BLOCKOUTS. SEE ANCHOR BOLT DETAIL. ANCHOR BOLT SHALL PENETRATE STRUCTURAL SLAB AS REQ'D TO MEET MINIMUM EMBEDMENT SPECIFIED.
 - DRILLED HOLES WITH A.B. SET IN NON-SHRINK GROUT MAY BE USED IN LIEU OF HOOKED BOLTS. EXPANSION SHIELD TYPE BOLTS SHALL NOT BE USED.
 - ALL PENETRATIONS FOR CONDUIT AND PIPING SHALL BE WITHIN CONCRETE EQUIPMENT PAD. PAD TO BE CONFIGURED ACCORDINGLY.
 - DEPTH OF SLAB TO BE AT MINIMUM THE LENGTH OF ANCHOR BOLTS, PLUS 6". SLAB DEPTH TO BE A MINIMUM OF 30", VERIFY MANUFACTURER'S RECOMMENDATIONS.
 - CONCRETE STRENGTH SHOULD BE MIN. 4000 PSI, IN 28 DAYS.
 - INCLUDE VIBRATION ISOLATORS PER MANUFACTURER'S RECOMMENDATIONS.



EQUIPMENT BASE DETAIL
 NOT TO SCALE



GENERATOR SET ELEVATIONS
 NOT TO SCALE

- NOTES:**
- 175KW GENSET W/ QUIET SITE HOUSING AND SKID MOUNTED DAY TANK (CUMMINGS C175D6D).

JOB NO. 0-11-056.004
 PR: H: VACADZ 2019-60 PULEHUNUI NORTH AND SOUTH PUMP STATIONS SOUTH PUMP STATION E-5.DWG



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

MPR APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : Scale Accordingly)

REVISION	DATE	BRIEF	BY

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: RMB
 Checked By: MPR

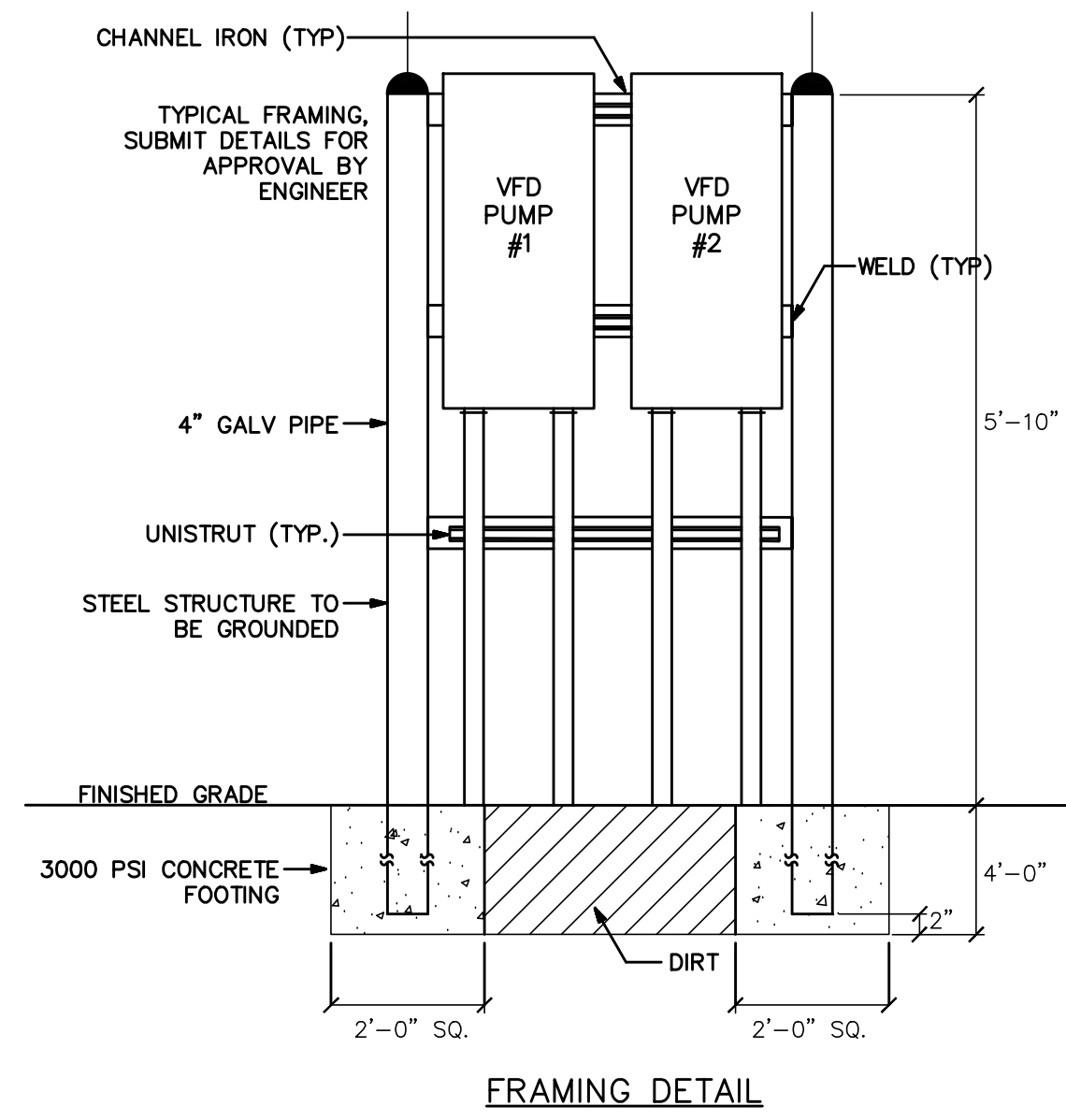
SOUTH PUMP STATION
 DETAILS

DWG. NO.
EA4-7
 SHEET 188 OF 201

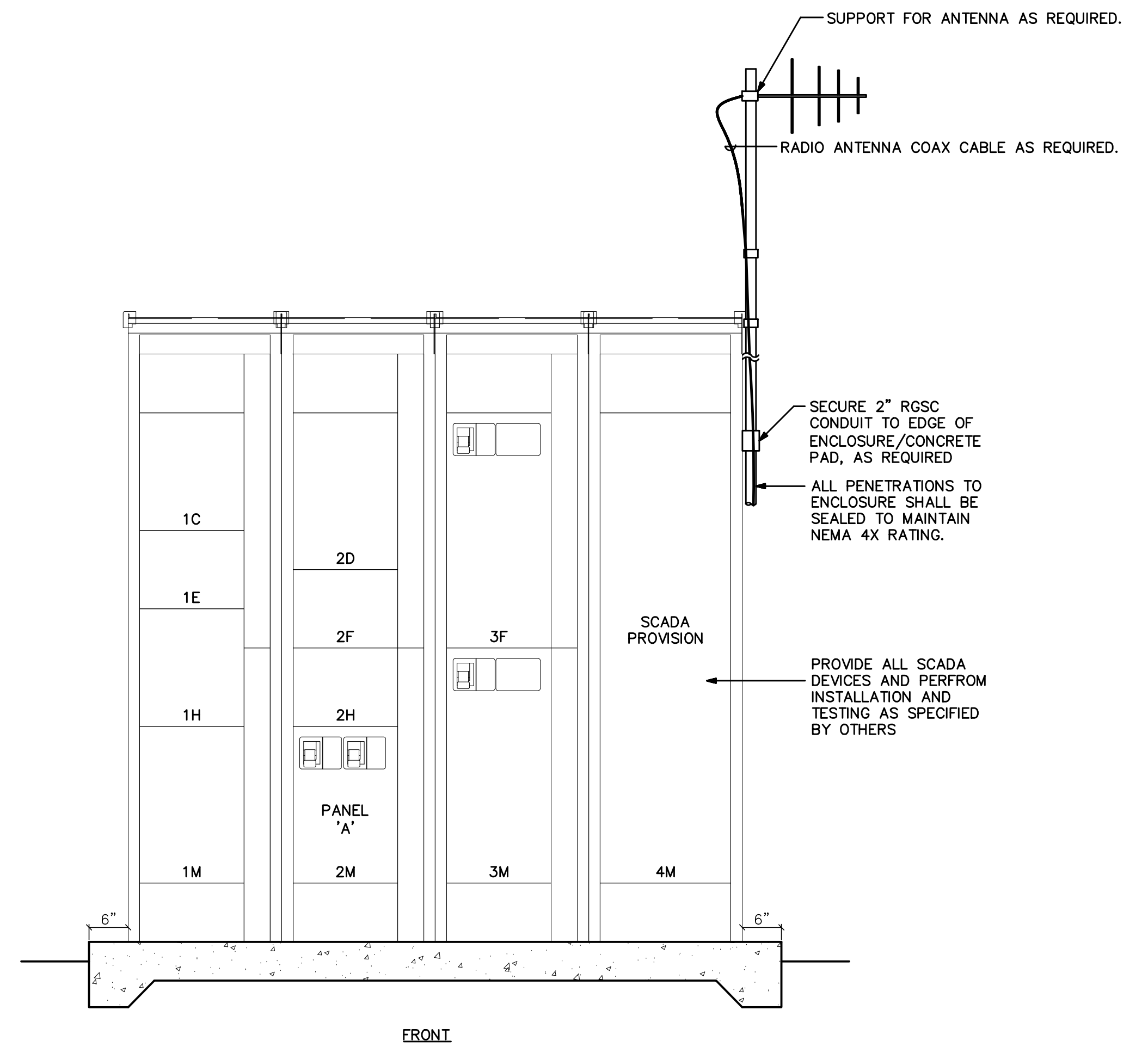
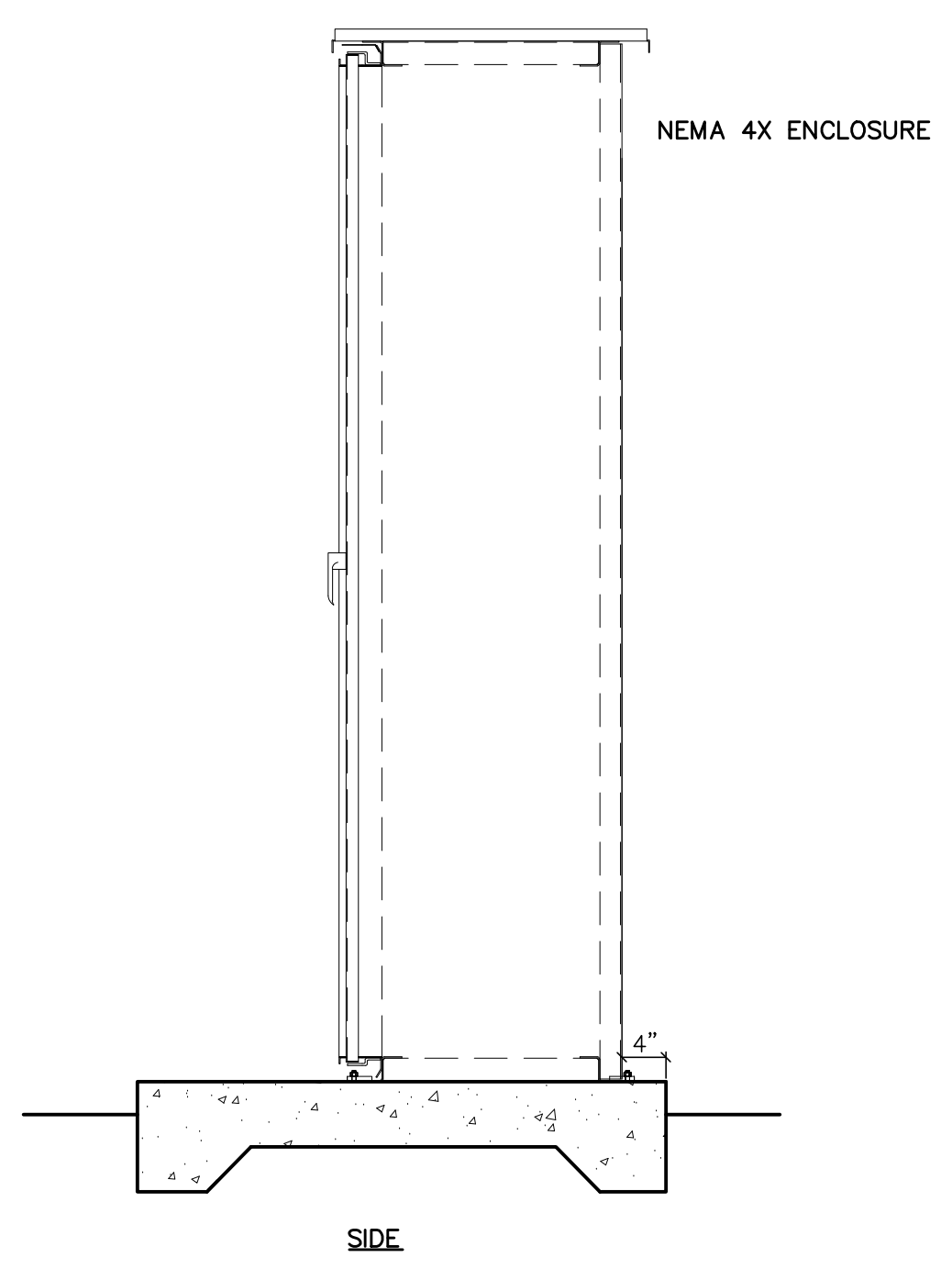
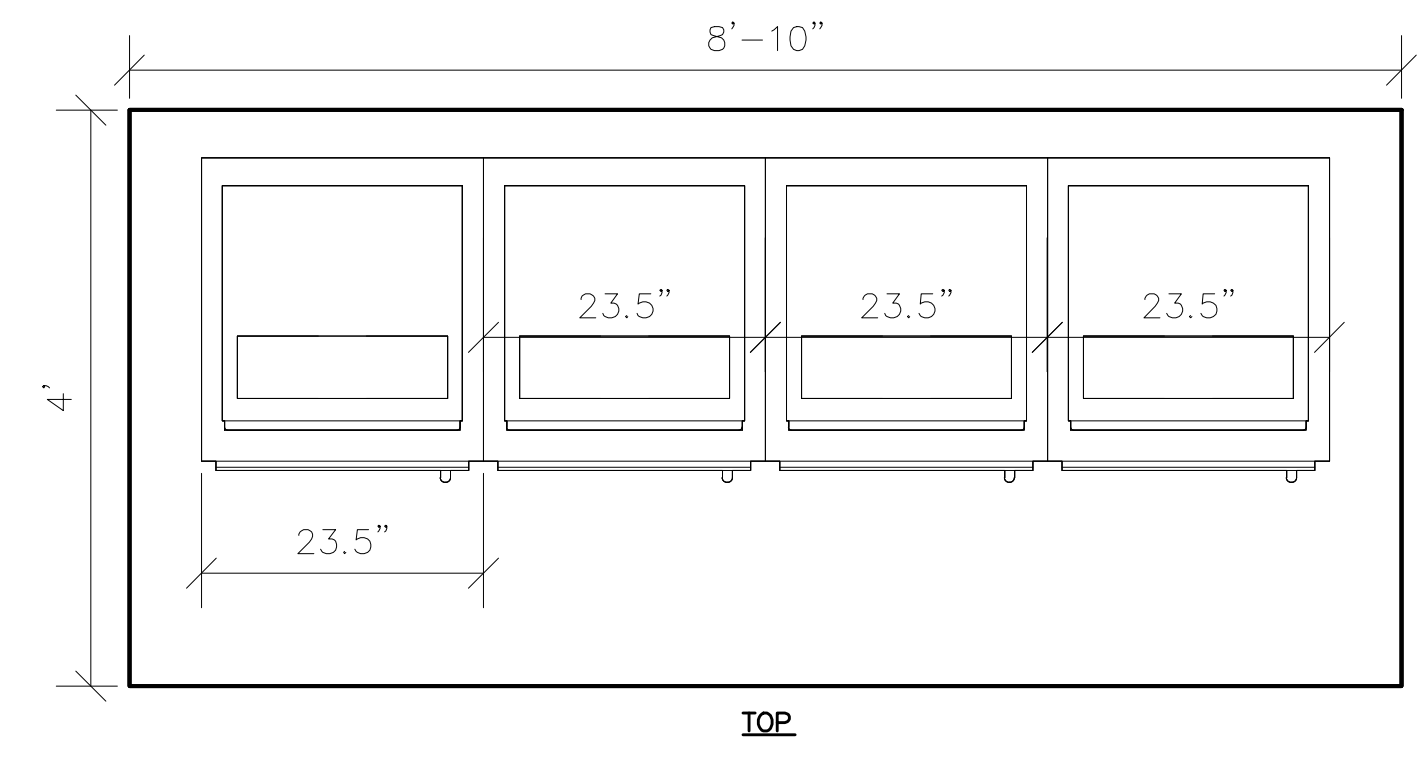
FILE	POCKET	FOLDER	NO.

MCC UNIT SCHEDULE					
SECTION NUMBER	CELL	DEVICE INFORMATION			
		CIRCUIT NAMEPLATE	DEVICE TYPE	DEVICE MOUNTING (SEE NOTES)	DEVICE SIZE
1	C	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS)	D	200 kA
1	E				
1	H		DOOR (BLANK)		
1	M		MAIN LUGS (MLO)		
2	D		DOOR (BLANK)		
2	F	PANEL-A	PANELBOARD (PNLBD)	F	100A
2	H		DOOR (BLANK)		
2	M	1 PHASE 5 KVA	DISTRIBUTION TRANSFORMER (XFMR)	F	5 kVA
3	F	PUMP NO. 1	CIRCUIT BREAKER	D	100A
3	M	PUMP NO. 2	CIRCUIT BREAKER	D	100A
4	M	SCADA	RELAY STRUCTURE (RLYSTR)		

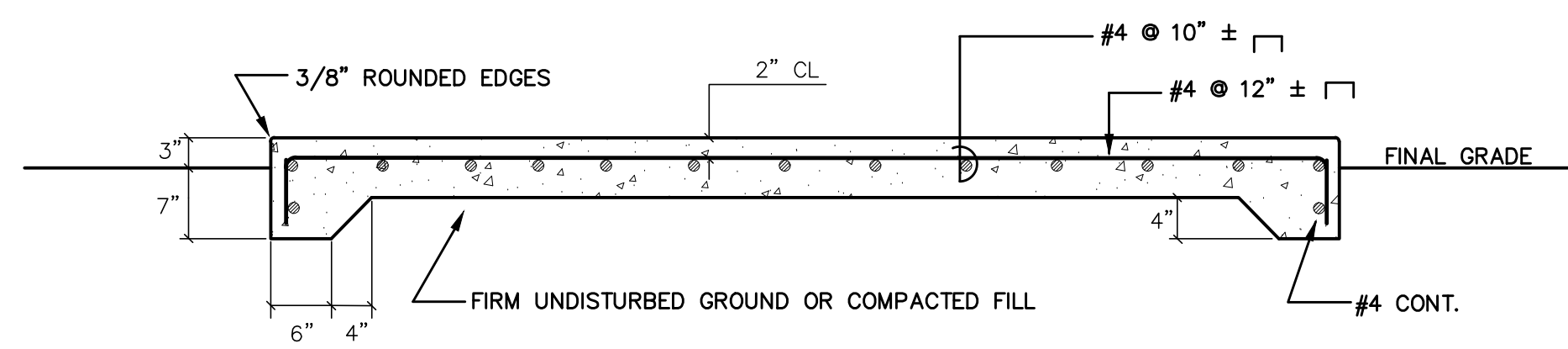
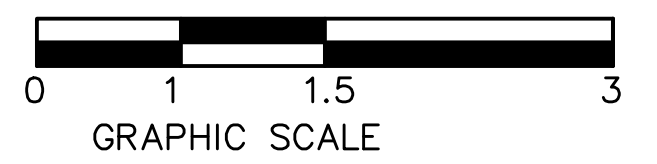
NOTES:
 1. DEVICE MOUNTING: D = DRAWOUT, F = FIXED



VFD EQUIPMENT ELEVATION
 NOT TO SCALE



MOTOR CONTROL ENCLOSURE DETAILS (BY OTHERS)
 SCALE: 3/4" = 1'-0"



MOTOR CONTROL ENCLOSURE PAD DETAILS
 SCALE: 3/4" = 1'-0"

JOB NO. 0-11-056.004
 FR: H: VACADZ\2019-60 PULEHUNUI NORTH AND SOUTH PUMP STATIONS\SOUTH PUMP STATION\E-6.DWG



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Signature: *MPR* APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

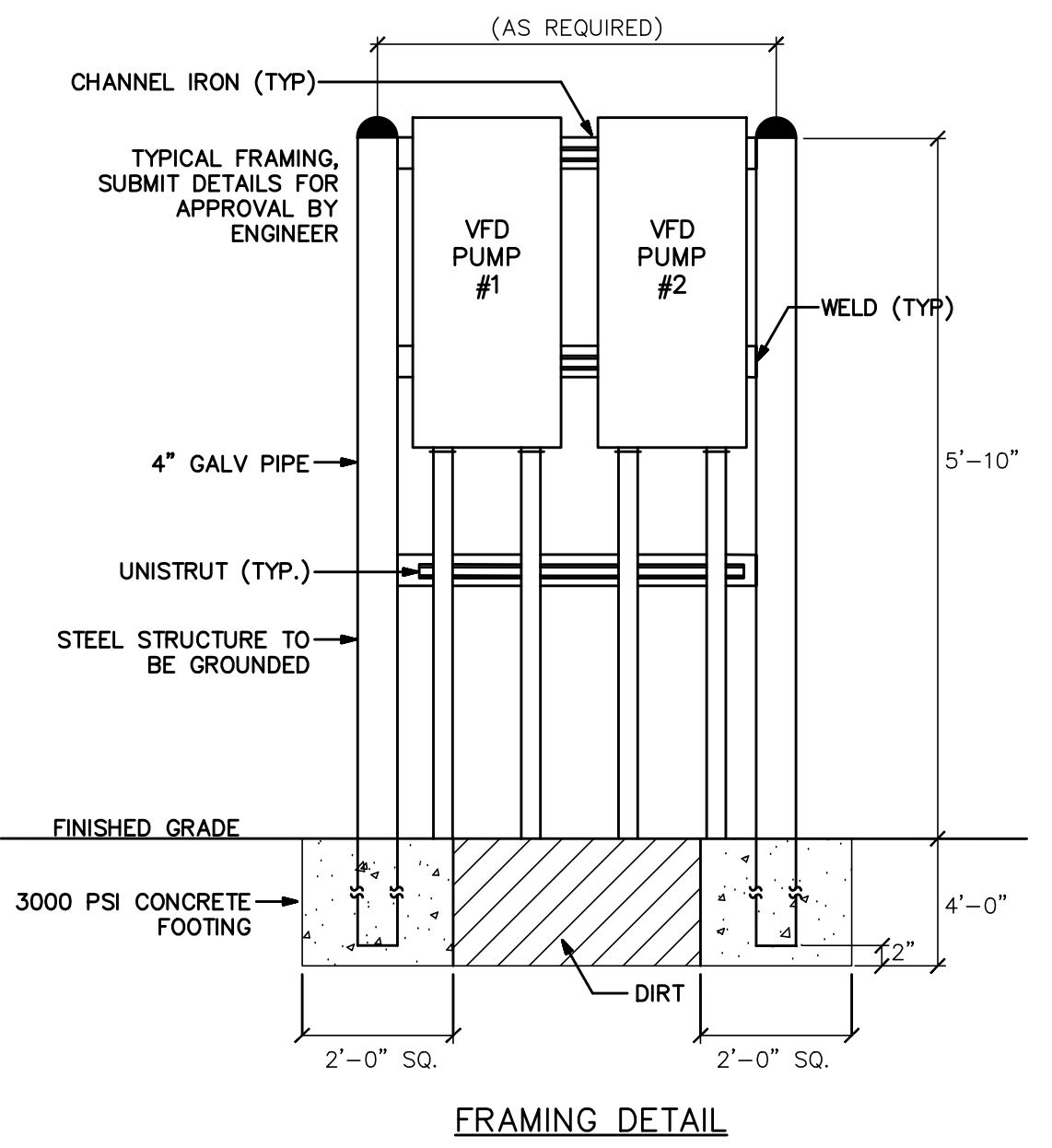
REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: AKK
 Checked By: MPR

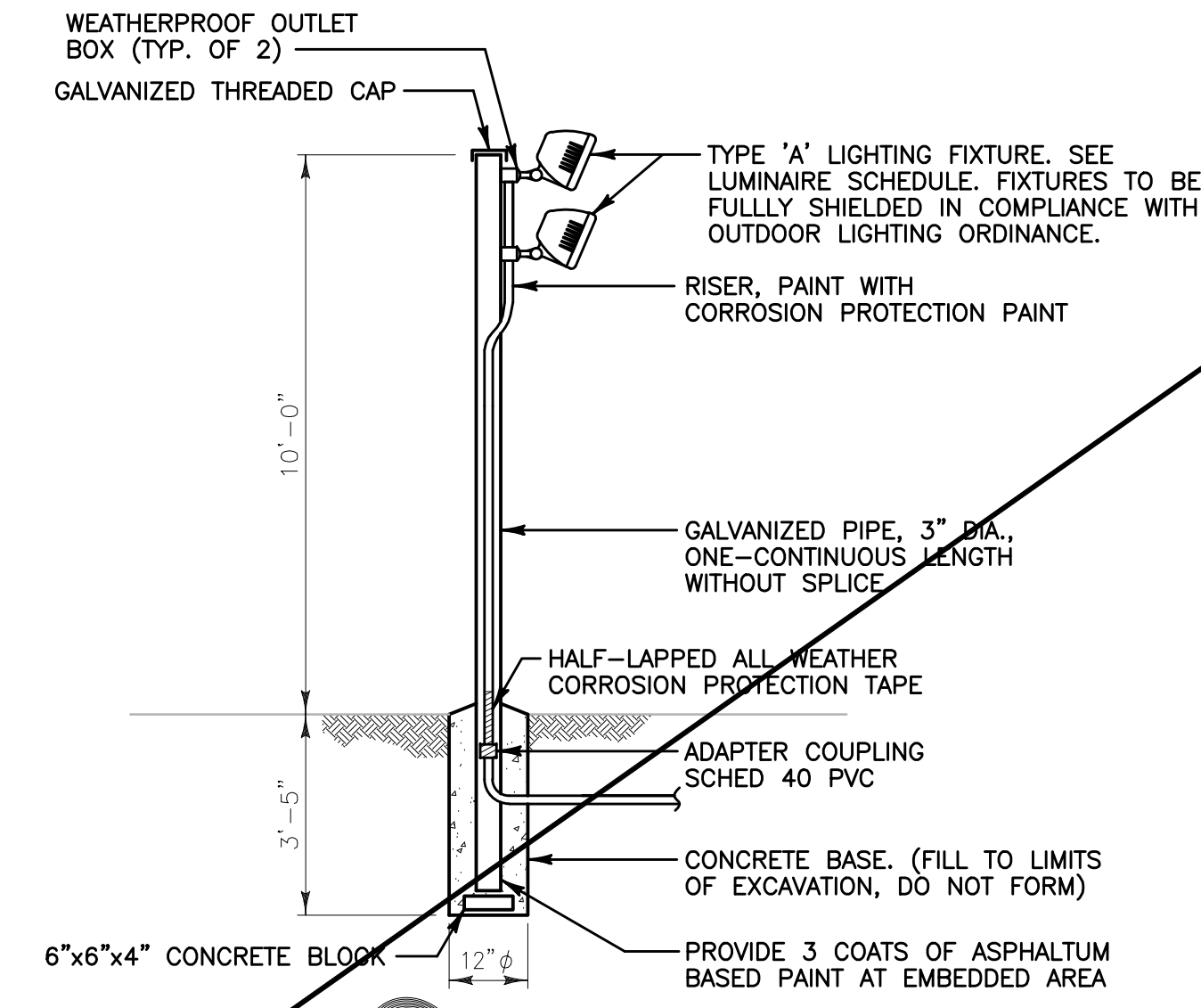
REGIONAL WWTP -
 OVERALL SITE PLAN

DWG. NO.
EB-2
 SHEET 190 OF 201

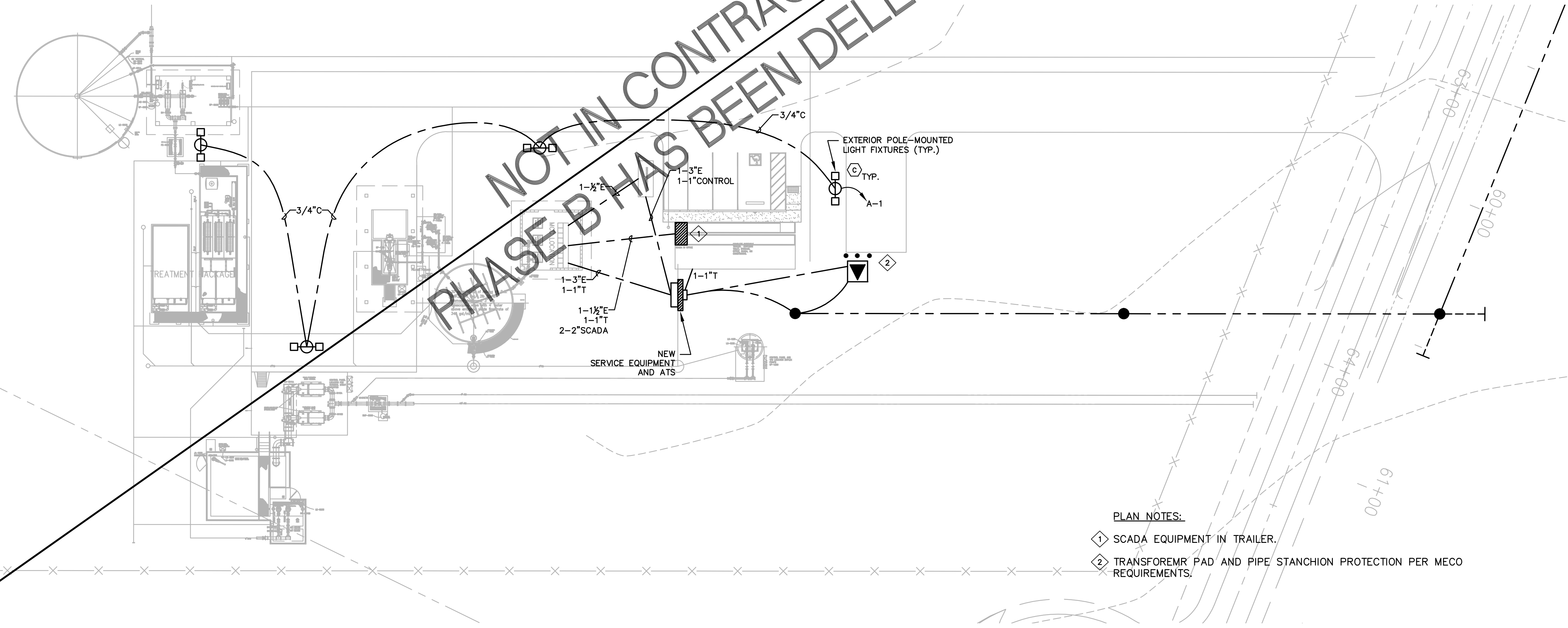
FILE	POCKET	FOLDER	NO.



TYPICAL VFD EQUIPMENT ELEVATION
 NOT TO SCALE



FLOODLIGHT DETAIL
 NOT TO SCALE



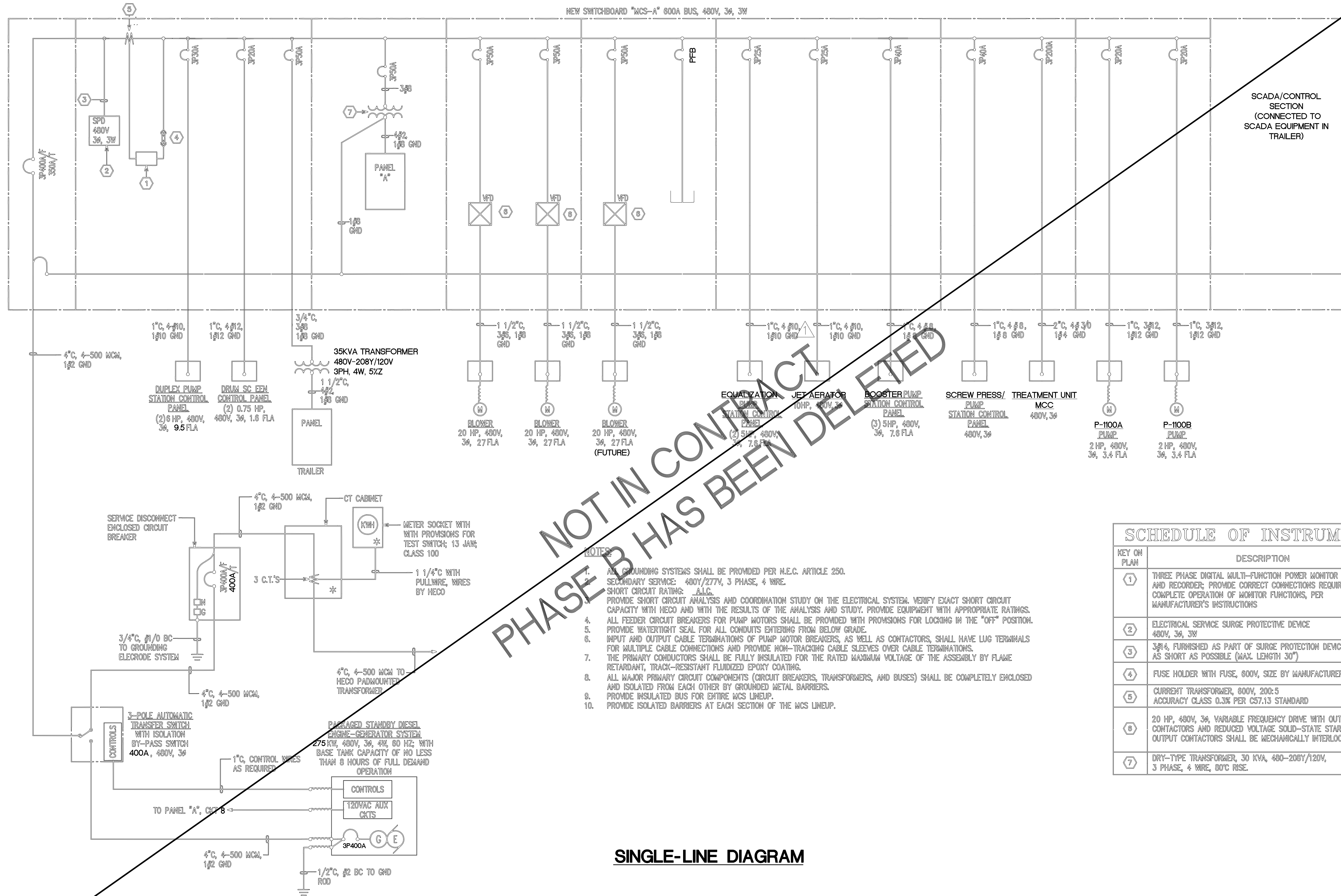
- PLAN NOTES:
- ① SCADA EQUIPMENT IN TRAILER.
 - ② TRANSFORMER PAD AND PIPE STANCHION PROTECTION PER MECO REQUIREMENTS.

WWTP - OVERALL SITE PLAN
 SCALE: 1" = 20'-0"

JOB NO. C-11-056.004
 PR: H: VACADZ 2019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS PHASE B VE-2R.DWG

H:\2019\16-576\16-576-01-Pulehunu-Gravity-Sewer-WWTP-Drawings-Phase-B-VE-2R.DWG

JOB NO. 0-11-056.004
 FR: H: VACADZ\2019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS PHASE B/E-JR-DWG



SINGLE-LINE DIAGRAM

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

KEY ON PLAN	DESCRIPTION
①	THREE PHASE DIGITAL MULTI-FUNCTION POWER MONITOR AND RECORDER; PROVIDE CORRECT CONNECTIONS REQUIRED FOR COMPLETE OPERATION OF MONITOR FUNCTIONS, PER MANUFACTURER'S INSTRUCTIONS
②	ELECTRICAL SERVICE SURGE PROTECTIVE DEVICE 480V, 3Φ, 3W
③	3/4", FURNISHED AS PART OF SURGE PROTECTION DEVICE, AS SHORT AS POSSIBLE (MAX. LENGTH 30")
④	FUSE HOLDER WITH FUSE, 800V, SIZE BY MANUFACTURER
⑤	CURRENT TRANSFORMER, 800V, 200:5 ACCURACY CLASS 0.3% PER C57.13 STANDARD
⑥	20 HP, 480V, 3Φ, VARIABLE FREQUENCY DRIVE WITH OUTPUT CONTACTORS AND REDUCED VOLTAGE SOLID-STATE STARTER; OUTPUT CONTACTORS SHALL BE MECHANICALLY INTERLOCKED
⑦	DRY-TYPE TRANSFORMER, 30 KVA, 480-208Y/120V, 3 PHASE, 4 WIRE, 80°C RISE

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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

PULEHUNUI
 REGIONAL
 INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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MPR APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
①	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: AKK
 Checked By: MPR

REGIONAL WWTP -
 DETAILS

DWG. NO.
EB-3
 SHEET 191 OF 201

FILE	POCKET	FOLDER	NO.

DUCTLINE NOTES:

- REFER TO ELECTRICAL PLAN FOR DUCT SIZES AND QUANTITIES.
- DIRECT BURIED AND CONCRETE ENCASED ELECTRICAL AND CONDUITS SHALL BE PVC SCHEDULE 40 CONDUITS.
- DIRECT BURIED CONDUITS OF LIKE USE SHALL BE SEPARATED BY A MINIMUM OF 3". A MINIMUM SEPARATION OF 12" MUST BE MAINTAINED BETWEEN ELECTRICAL CONDUITS AND TELEMETRY CONDUITS.

CONCRETE ENCASED CONDUITS OF LIKE USE MAY BE SEPARATED BY 1-1/2". CONDUITS OF UNLIKE USES MUST BE SEPARATED BY 3".

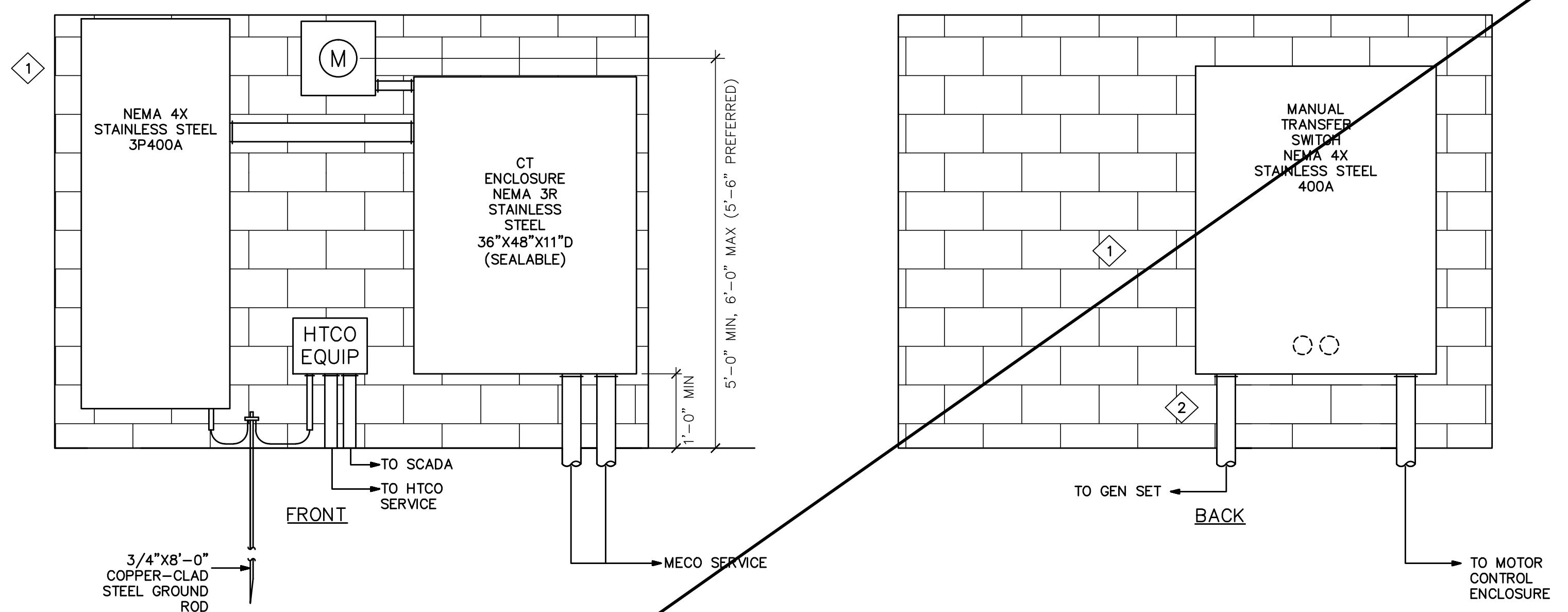
- CONTRACTOR SHALL COORDINATE DUCTLINE AND TRENCHING DETAILS WITH UTILITY COMPANIES.
- UPON COMPLETION OF ALL DUCTLINES, THE CONTRACTOR SHALL PASS A BULLET SHAPED, WOODEN TEST MANDREL 1/2" SMALLER IN DIAMETER THAN THE CONDUITS, THROUGH THE ENTIRE LENGTH OF EACH DUCT SECTION TO TEST FOR FREEDOM OF BURRS AND OBSTRUCTIONS. THE CONTRACTOR SHALL REMOVE ALL BURRS, OBSTRUCTION AND FOREIGN MATTER TO THE SATISFACTION OF THE UTILITY COMPANIES' INSPECTORS.

UPON COMPLETION OF THE TELEMETRY DUCTLINE, THE CONTRACTOR SHALL PASS A BLOCKED SHAPED, WOODEN TEST MANDREL, 12" LONG AND 1/4" SMALLER IN DIAMETER THAN THE CONDUIT THROUGH THE ENTIRE LENGTH OF EACH DUCT SECTION. THE DUCTS SHALL BE SWABBED AND CLEARED OF ALL BURRS, OBSTRUCTIONS AND FOREIGN MATERIAL.

- THE UTILITY COMPANIES' INSPECTORS SHALL INSPECT THE UNDERGROUND DUCTLINES AND STRUCTURES PRIOR TO AND DURING ALL CONCRETE POUR AND BACKFILL OPERATIONS.
- ALL HORIZONTAL AND VERTICAL BENDS SHALL HAVE A MINIMUM RADIUS OF 20'-0".
- CONCRETE COMPRESS STRENGTH SHALL BE 3,000 PSI IN 28 DAYS.
- THE CONTRACTOR SHALL INSTALL A WARNING TAPE OVER DUCTLINE AS SHOWN THE TAPE SHALL BE 4" WIDE AND 8 MILS THICK, YELLOW IN COLOR WITH BLACK IMPRINTED WARNING MESSAGE.

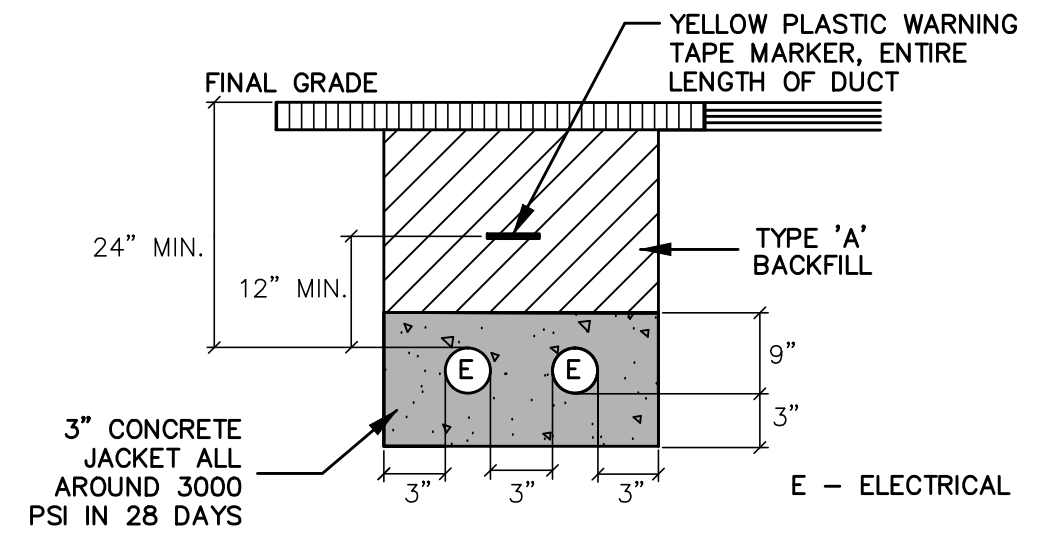
GENERAL NOTES:

- PROVIDE A COMPLETE AND OPERATING ELECTRICAL SYSTEM. PROVIDE SHALL MEAN "FURNISH AND INSTALL". WORK INCLUDES INSTALLATION OF ALL ELECTRICAL EQUIPMENT AND SYSTEMS, INCLUDING ANY FURNISHED BY OWNER, COMPLETE AND OPERATIONAL TO DOCUMENTS.
- THE CONTRACTOR SHALL COMPLY WITH THE CONSTRUCTION PRACTICES AND REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NFPA 70), NATIONAL ELECTRICAL SAFETY CODE, AMERICAN ELECTRICIANS HANDBOOK BY CROFT EDISON ELECTRIC INSTITUTE, APPLICABLE INSTRUCTIONS OF MANUFACTURERS OF EQUIPMENT AND MATERIALS SUPPLIED FOR THE PROJECT, AND ALL ORDINANCES, RULES AND POLICIES OF THE STATE AND COUNTY IN WHICH THE WORK IS TO BE PERFORMED.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL FEES, PERMITS, LICENSES AND INSPECTIONS REQUIRED FOR THIS WORK.
- ALL CONDUIT SHALL BE MINIMUM SIZE 3/4 INCH. EMT SHALL BE USED INDOORS. GALVANIZED RIGID STEEL SHALL BE USED IN EXPOSED OUTDOOR LOCATIONS. CONDUIT BELOW GRADE SHALL BE SCHEDULE 40 PVC. TRANSFORM ALL PVC CONDUIT TO RIGID GALVANIZED STEEL BEFORE PENETRATING SLAB.
- FITTINGS FOR EMT CONDUIT SHALL BE COMPRESSION TYPE. SET SCREW FITTINGS SHALL NOT BE ALLOWED.
- CONDUITS SIZES CALLED OUT ON THE DRAWINGS ARE NOT NECESSARILY BASED ON THE MINIMUM SIZE ALLOWED BY THE NATIONAL ELECTRICAL CODE AND MAY BE PURPOSELY OVERSIZED FOR FUTURE CONDUCTORS OR TO AVOID EXCESS CONDUIT HEATING. CONDUIT SIZES NOT CALLED OUT ON THE DRAWINGS SHALL BE SIZED BY THE CONTRACTOR BASED ON THE ACTUAL NUMBER OF CONDUCTORS TO BE INSTALLED, USING THE NATIONAL ELECTRICAL CODE AS A GUIDE. IN NO CASE SHALL CONDUIT SIZES BE SMALLER THAN IS REQUIRED BY THE NATIONAL ELECTRICAL CODE.
- ALL CIRCUITS SHALL INCLUDE AN INSULATED GREEN GROUNDING CONDUCTOR, SIZED PER TABLE 250-122 OF THE NATIONAL ELECTRICAL CODE. THIS CONDUCTOR SHALL BE CARRIED IN ALL RACEWAYS INCLUDING THOSE INSTALLED FOR SWITCH LEGS AND SHALL BE ATTACHED TO THE DEVICE OR EQUIPMENT HOUSING USING A SUITABLE GROUNDING LUG.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL JUNCTION AND PULL BOXES REQUIRED FOR THE INSTALLATION OF ELECTRICAL DEVICES AND EQUIPMENT, WHETHER OR NOT SPECIFICALLY INDICATED ON THE PLANS. SIZING OF THESE BOXES SHALL BE PER THE NATIONAL ELECTRICAL CODE.
- THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT FOR TEMPORARY CONSTRUCTION POWER AS REQUIRED.
- SHOULD PROJECT CONDITIONS REQUIRE REARRANGEMENT OF WORK, THE CONTRACTOR SHALL MARK SUCH CHANGES ON THE FIELD POSTED DRAWINGS. IF THESE CHANGES REQUIRE ALTERNATE METHODS TO THOSE SPECIFIED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SUBMIT DRAWINGS SHOWING THE PROPOSED ALTERNATE METHODS TO THE CONTRACTING OFFICER. THE CONTRACTOR SHALL NOT PROCEED UNTIL APPROVAL IS OBTAINED. REARRANGEMENT OF WORK FOR THE PURPOSE OF COORDINATION SHALL NOT BE CONSIDERED AN ITEM FOR EXTRA COST.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND DETAILED SCHEDULING OF THE SITE INSPECTION WORK BY UTILITY COMPANIES AND ALL OTHER CONCERNED PARTIES AND AGENCIES.
- PROVIDE PROTECTION FOR MATERIAL AND EQUIPMENT FROM LOSS, DAMAGE, CORROSION AND EFFECTS OF MOISTURE. REPAIR OR REPLACE DAMAGED ITEMS AT NO ADDITIONAL COST TO THE OWNER.
- VISIT PROJECT SITE PRIOR TO BID SUBMITTAL TO ASCERTAIN CONDITIONS AND COST ALLOWANCES THAT AFFECT THE PROPOSED WORK.
- INSTALL MATERIALS AND EQUIPMENT IN WORKMANLIKE MANNER AND IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.
- MATERIALS AND WORKMANSHIP SUBJECT TO INSPECTION AT ANY TIME BY THE OWNER OR HIS REPRESENTATIVE; CORRECT ANY WORK OR MATERIALS NOT IN ACCORDANCE WITH DRAWINGS OR FOUND TO BE DEFICIENT OR DEFECTIVE IN A MANNER SATISFACTORY TO THE OWNER AT NO ADDITIONAL COST.
- PROVIDE ALL FIRST QUALITY, NEW MATERIALS, FREE FROM DEFECTS SUITABLE FOR SPACE PROVIDED AND APPROVED BY UL WHERE STANDARDS HAVE BEEN PROVIDED BY THAT AGENCY.
- PROVIDE STANDARD MATERIALS AND EQUIPMENT OF MANUFACTURER'S REGULARLY ENGAGED IN THE PRODUCTION OF THESE PRODUCTS. PROVIDE PRODUCTS OF A SINGLE MANUFACTURER WHERE TWO OR MORE UNITS OF THE SAME CALL ARE REQUIRED.
- ALL WIRING TO BE STRANDED TYPE THWN COPPER UNLESS NOTED OTHERWISE, #12 AWG MINIMUM, ALL WIRING SHALL BE IN CONDUIT, 3/4" MINIMUM. THIN IS ALLOWABLE FOR #10 AND SMALLER.

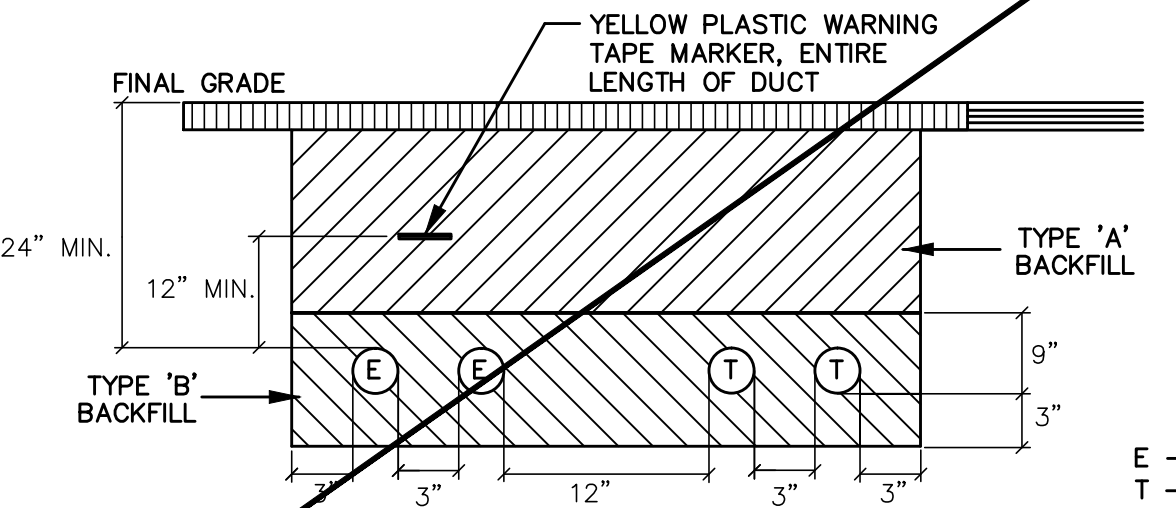


SERVICE EQUIPMENT WALL ELEVATION
SCALE: 3/4" = 1'-0"

- PLAN NOTES:**
- 1 SEE SERVICE EQUIPMENT WALL DETAILS.
 - 2 STUB WITH CAP.



DUCT SECTION - MECO SERVICE FEED

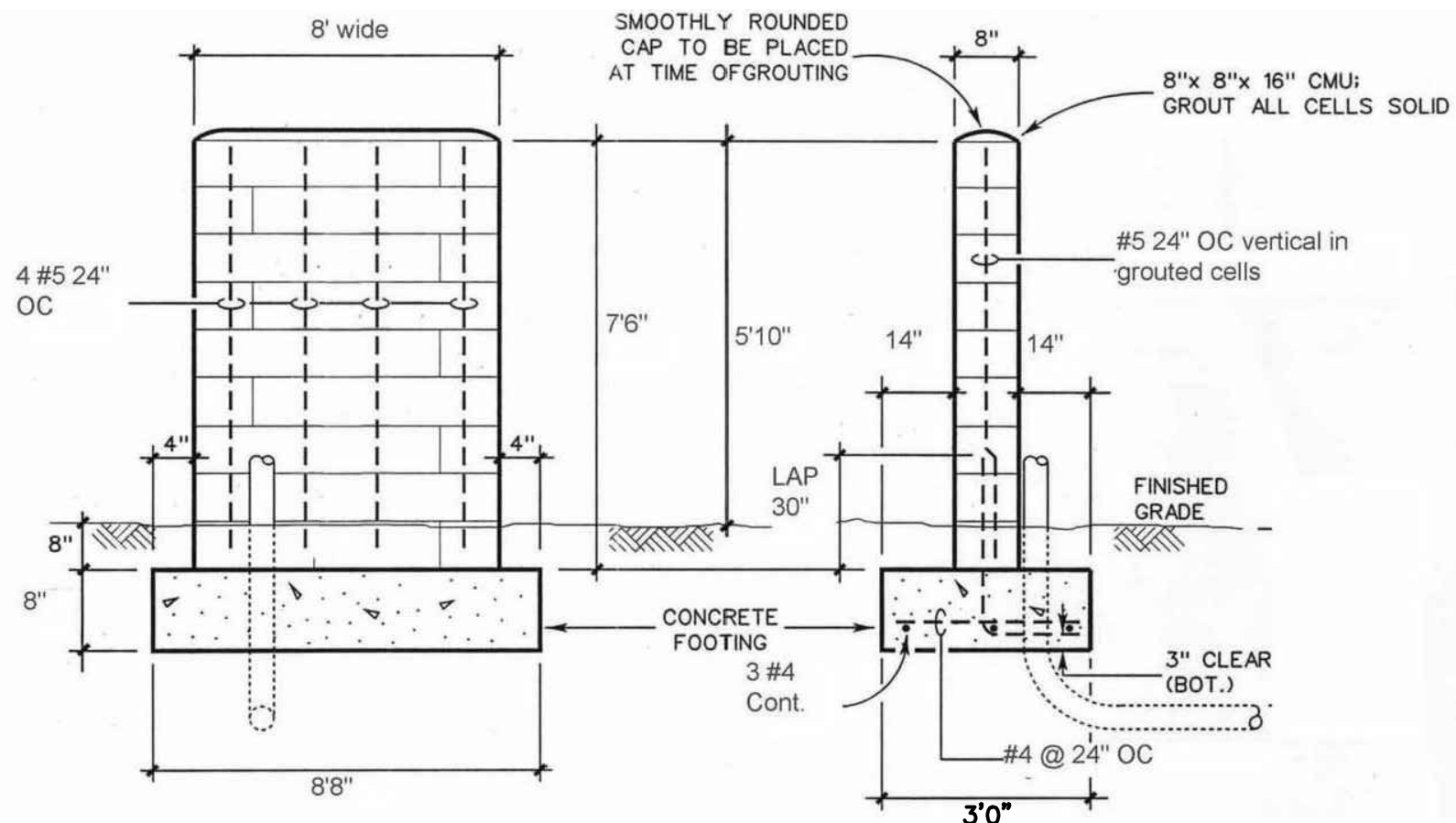


TYPICAL DUCT SECTION

TYPE "A" - BEACH SAND, EARTH, OR EARTH AND GRAVEL. IF EARTH AND GRAVEL, THE MAXIMUM ROCK SHALL BE 1" AND THE MIXTURE SHALL CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES.

TYPE "B" - BEACH SAND, EARTH, OR EARTH AND GRAVEL. IF EARTH AND GRAVEL, THE MIXTURE MUST PASS A 1/2" MESH SCREEN AND CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. CORAL OR CORAL WASTE WILL NOT BE ACCEPTABLE.

E - ELECTRICAL
T - TELEMETRY (IF APPLICABLE)



SERVICE EQUIPMENT WALL DETAILS
NOT TO SCALE

JOB NO. 0-11-056.004
PR: H: VACADZ\2019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS PHASE B EB-3.1.R.DWG

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Signature: *Mark P. Rickard*
APRIL 30, 2020
EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(IF NOT 2-INCHES : SCALE ACCORDINGLY)

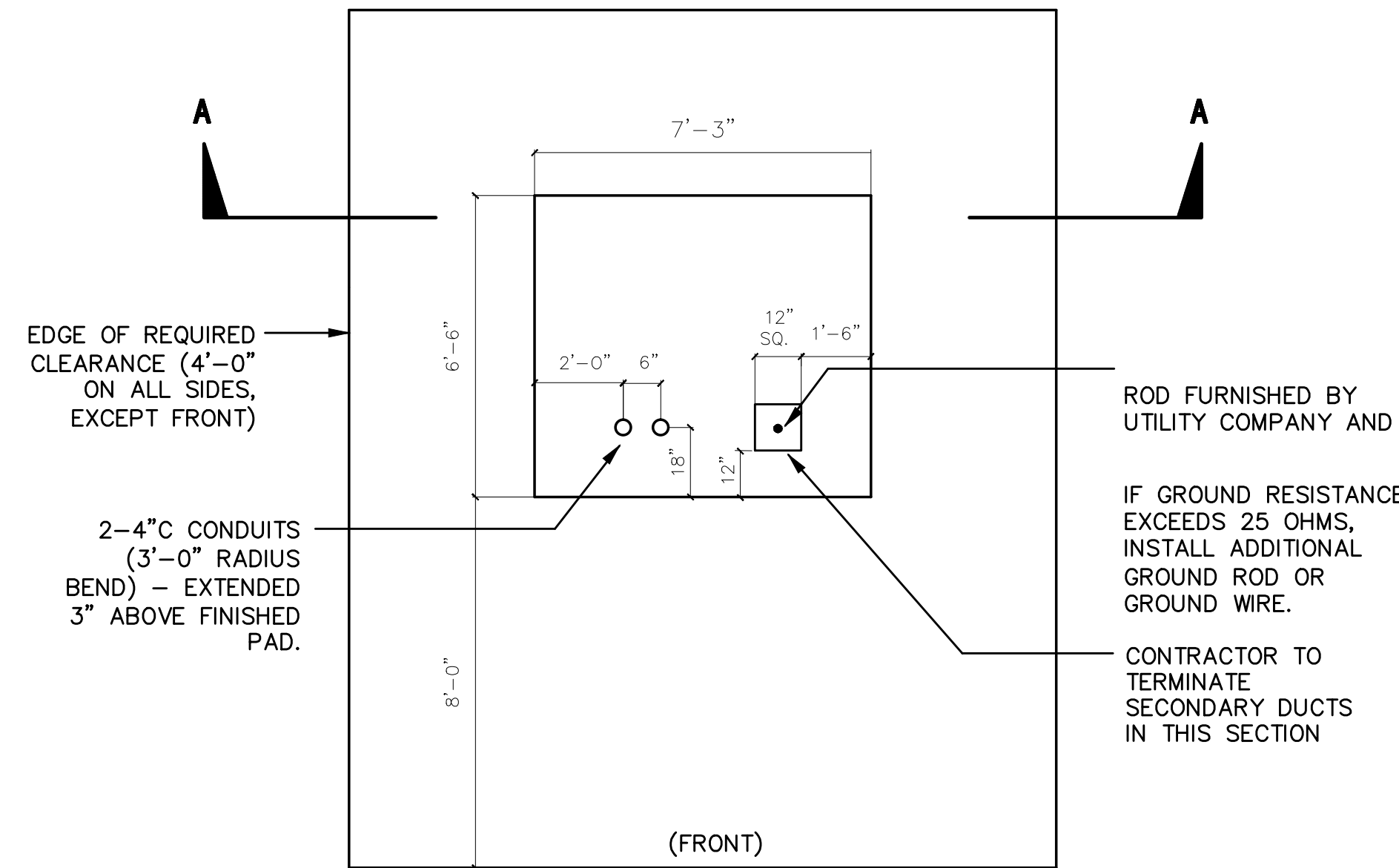
REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	

Project No: 16-576
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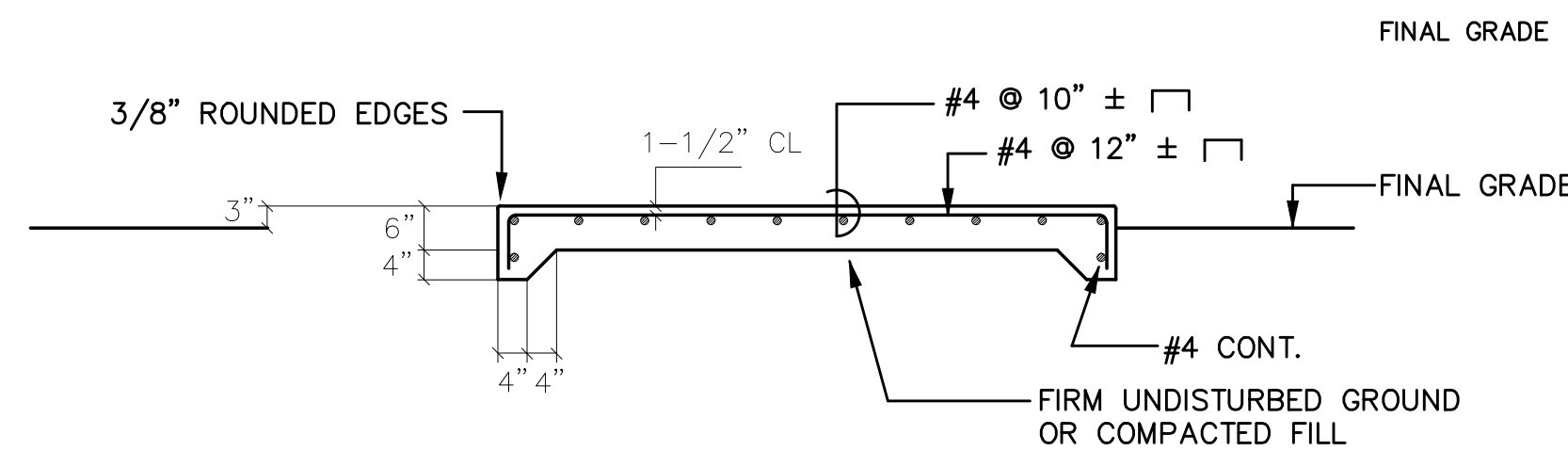
REGIONAL WWTP
DETAILS

DWG. NO.
EB-3.1
SHEET 192 OF 201

FILE	POCKET	FOLDER	NO.



PLAN VIEW



SECTION 'A-A'

THREE PHASE TRANSFORMER PAD
NOT TO SCALE

CONTRACTOR NOTES:

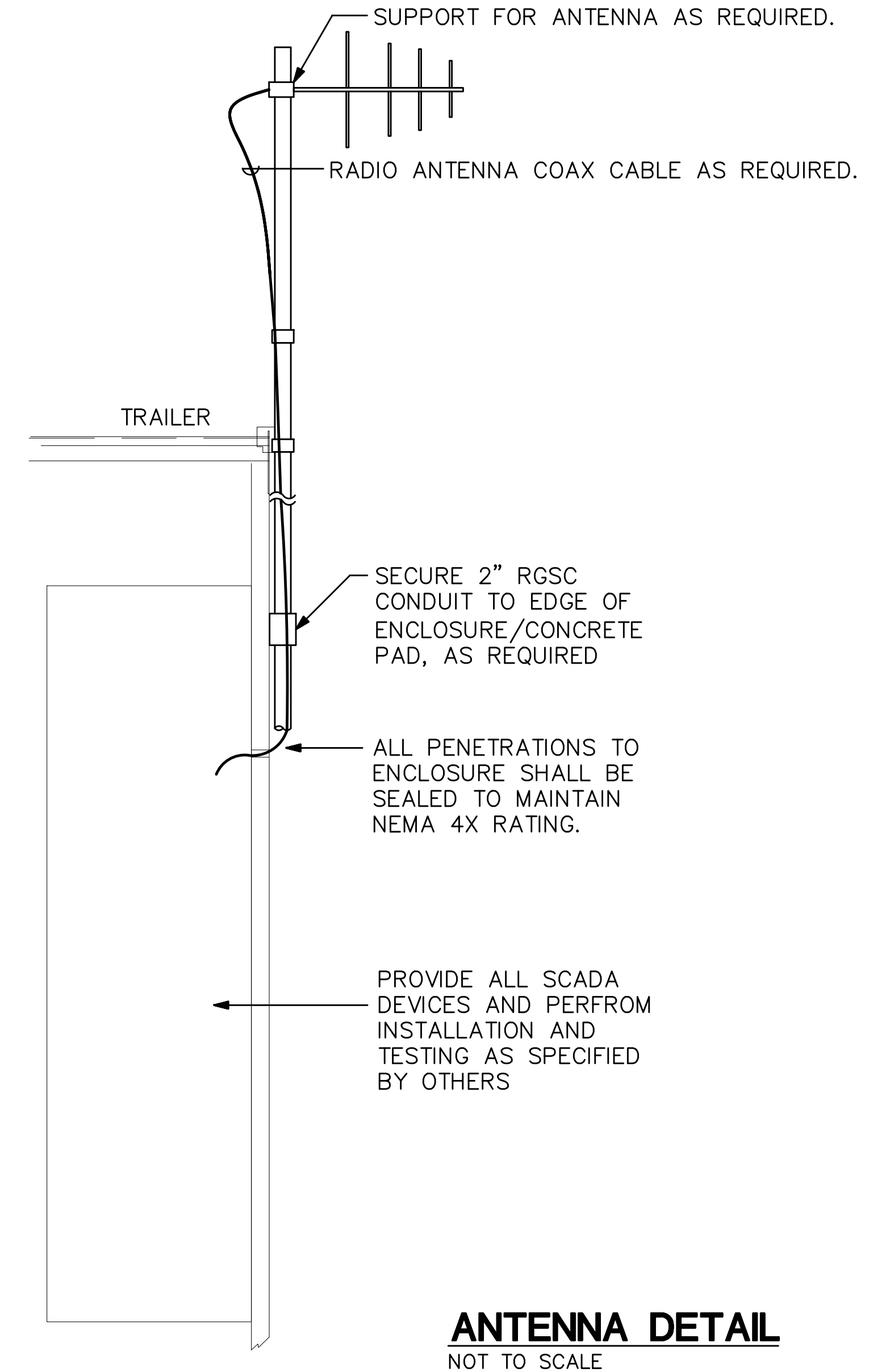
- THE CONTRACTOR IS TO FURNISH MATERIALS AND CONSTRUCT THE FACILITIES FOR THE PADMOUNT TRANSFORMER INCLUDING THE CONCRETE PAD, PRIMARY AND SECONDARY DUCTS AND ANCHOR BOLTS. CONCRETE CURB AND ROCK FILL AROUND THE PAD, WHEN REQUIRED, SHALL ALSO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
- MECO SHALL HAVE 24-HOUR ACCESS TO THE TRANSFORMER WITHOUT GOING THROUGH LOCKED AREAS.
- MECO SHALL HAVE A MINIMUM OF 10 FEET WIDE VEHICULAR ACCESS TO THE TRANSFORMER INSTALLATION.
- BENDS DUE TO CHANGES OF GRADE ARE TO HAVE MINIMUM RADIUS OF 20 FEET. THE DUCT IS TO BE PVC SCHEDULE 40 PIPE. THE CONTRACTOR IS TO INSTALL DUCT FROM THE PAD TO THE RISER POLE OR HANDHOLE AS DESIGNATED ON THE PLAN.
- ONE COPPER WELD GROUND ROD 5/8 INCH DIAM. X 8 FEET LONG IS TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR. THE ROD IS TO EXTEND 6 INCHES ABOVE THE FINISHED PAD. TIE THE ROD TO A WATER PIPE WITH #1/0 COPPER WIRE. THIS TIE MAY BE ELIMINATED WHERE THE WATER PIPE IS MORE THAN 25 FEET AWAY.
- NO PERMANENT OR TEMPORARY STRUCTURE OR OBJECT SHALL BE ERECTED OR PLACED WITHIN FOUR FEET OF THE EDGE OF THE CONCRETE TRANSFORMER PAD AND 8 FEET IN FRONT, UNLESS APPROVED BY MECO.
- WHEN THE CONCRETE PAD IS LOCATED IN THE VICINITY OF EXISTING OR FUTURE COMBUSTIBLE MATERIAL, COMBUSTIBLE BUILDINGS, THE CONTRACTOR SHALL PROVIDE SAFEGUARDS AS OUTLINED IN THE NEC LATEST REVISION SUBJECT TO THE APPROVAL OF THE CITY & COUNTY BUILDING INSPECTORS.
- THE FRONT SIDE OF THE CONCRETE PAD SHALL ALWAYS BE LOCATED TO FACE THE VEHICULAR ACCESS AND SHALL BE FREE OF ANY OBSTRUCTIONS AT ALL TIMES.
- WHEN PARTS OF BUILDING STRUCTURES ARE LOCATED DIRECTLY OVER THE CONCRETE PAD, A MINIMUM CLEARANCE OF 9 FEET FROM THE PAD GRADE IS REQUIRED. THE CUSTOMER SHALL PROVIDE ADEQUATE SAFEGUARDS AS OUTLINED IN THE NEC, LATEST REVISION, AND IS SUBJECT TO APPROVAL OF THE CITY & COUNTY BUILDING INSPECTORS.
- ALL DUCTLINES SHALL CONTAIN A "MULE TAPE" PULL LINE (WESCO CAT. #072592000 OR EQUIVALENT).
- AFTER THE CONDUITS ARE INSTALLED, THE CONTRACTOR SHALL PASS A SMOOTH BULLET-SHAPED WOODEN TEST MANDREL THROUGH THE ENTIRE LENGTH OF EACH CONDUIT TO TEST FOR FREEDOM OF BURRS AND OBSTRUCTIONS.
- A UTILITY STAND-BY MAN IS REQUIRED TO BE AT THE SITE AT THE TIME ANY NON-UTILITY CO. PERSONNEL WILL BE BREAKING INTO OR ENTERING ANY FACILITIES THAT CONTAIN ENERGIZED UTILITY EQUIPMENT OR CABLES. CALL MECO - PHONE 871-777.

LOAD CALCULATIONS:

SERVICE: 480/277V, 3 PHASE, 4 WIRE

BLOWERS (2-20HP) 1 @ 125% & 1 @ 100%	=	45 KVA
BLOWER (FUTURE-20HP)	=	20 KVA
JET AERATOR (10HP)	=	10 KVA
WWTP PLANT PUMPS (2-6HP)	=	12 KVA
INFLUENT PUMPS (2-5HP)	=	10 KVA
BOOSTER PUMPS (3-5HP)	=	15 KVA
SCREW PUMPS (2-2HP)	=	4 KVA
SCREEN (2-0.75HP)	=	2 KVA
UV UNITS (2-4.9KVA)	=	10 KVA
TREATMENT PACKAGE (200A)	=	167 KVA
MISC. (120/208V. LIGHTS/RCPT.)	=	25 KVA
TOTAL LOAD	=	320 KVA
	=	385.9 AMPS
	=	@ 480V, 3PH

NOT FOR CONTRACT PHASE B HAS BEEN DELETED



ANTENNA DETAIL
NOT TO SCALE

LUMINAIRE SCHEDULE - NEW				
TYPE	SYMBOL	LAMP/WATTAGE	DESCRIPTION	MANUFACTURER
A	[Symbol]	23W LED 3500K	4FT WRAP, SURFACE MOUNT	COLUMBIA LAW-4-35-LW-E-U OR EQUAL
AE	[Symbol]	23W LED 3500K	SAME AS TYPE A EXCEPT WITH EMERGENCY BATTERY PACK	COLUMBIA LAW-4-35-LW-E-U-ELL14 OR EQUAL
B	[Symbol]	22W LED 5000K	LED EXTERIOR WALLPACK, WEATHERPROOF, PHOTOCELL, BRONZE FINISH	HUBBELL LNC-9L-U-5K-3-1-PCU OR EQUAL
C	[Symbol]	25W LED 4000K	COMPACT FLOOD, DIE CAST ALUMINUM, WET LOCATION, CORROSION RESISTANT, BRONZE FINISH, POLYCARBONATE SHIELD	HUBBELL FSL-10E-25-4K-M-W-K-OB-PC-F OR EQUAL
D	[Symbol]	33W LED 3500K	4FT WRAP, ENCLOSED AND GASKETED, SURFACE MOUNT	COLUMBIA LXEM4-35LW-RP-E-U

PANEL A										A.I.C. RATING: 10K			
VOLTAGE: 120/208V		PHASE: 3		WIRE: 4WSN		CIRCUITS: 30							
MOUNTING: SURFACE		MAIN BRKR: 100A		BREAKER: BOLT ON		MAIN BUS: 100A							
CKT	DESCRIPTION	PHASE A	PHASE B	PHASE C	BRKR	WIRE	CKT	DESCRIPTION	PHASE A	PHASE B	PHASE C	BRKR	WIRE
1	L: SITE POLETOP	1.0			1P20A	#12	2	STRUT SCRN CP	1.0			1P20A	#12
3	L: MCC BUILDING		1.0		1P20A	#12	4	SCREW PRESS CP		1.0		1P20A	#12
5	R: MCC BUILDING			1.0	1P20A	#12	6	UV CP			1.0	1P20A	#12
7	CONTROL POWER	1.0			1P20A	#12	8	GENERATOR AUX LOADS	1.0			1P20A	#12
9	LVL ELMNT. EQ PUMP CP		1.0		1P20A	#12	10	L-SLUDGE		0.3		1P20A	#12
11	MAG FLW MTR. SOLEND			0.4	1P20A	#12	12	OXYGEN MTR/LEVEL			0.4	1P20A	#12
13	FLW MTR	0.4			1P20A	#12	14	PE-1030	0.2			1P20A	#12
15	AE-1031		0.4		1P20A	#12	16	PFB					
17	R: SCREW PRESS			0.4	1P20A	#12	18	UV CONTROLS			2.4	2P	#10
19	UV MAG METER	0.4			1P20A	#12	20	#1	2.4			30A	#10
21	UV LEVEL SENSOR		0.4		1P20A	#12	22	UV CONTROLS		2.4		2P	#10
23	UV SOLENOID			0.4	1P20A	#12	24	#2			2.4	30A	#10
25	PFB						26	PFB					
27	PFB						28	PFB					
29	PFB						30	PFB					
TOTALS		2.8	2.8	2.2			TOTALS		4.6	3.7	6.2		
TOTAL CONNECTED LOAD:		22.3 KVA						* SHUNT TRIP BREAKER REQUIRED		R: DENOTES RECEPTACLE LOAD			
ESTIMATED DEMAND:		1.0						L: DENOTES LIGHTING LOAD					
TOTAL EST. DEMAND LOAD:		22.3 KVA		62 A @ V = 208V				E: DENOTES A/C EQUIPMENT					

JOB NO. 0-11-056.004
FR: H: VACADZ\2019-60.01 PULEHUNUI GRAMITY SEWER WWTP DRAWINGS\PHASE B\EB-3.2R.DWG

Austin Tsutsumi
& ASSOCIATES, INC.
CIVIL ENGINEERS & SURVEYORS
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STATE OF HAWAII
DEPARTMENT OF
HAWAIIAN HOME LANDS

PULEHUNUI
REGIONAL
INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Signature: *[Signature]* APRIL 30, 2020
EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	

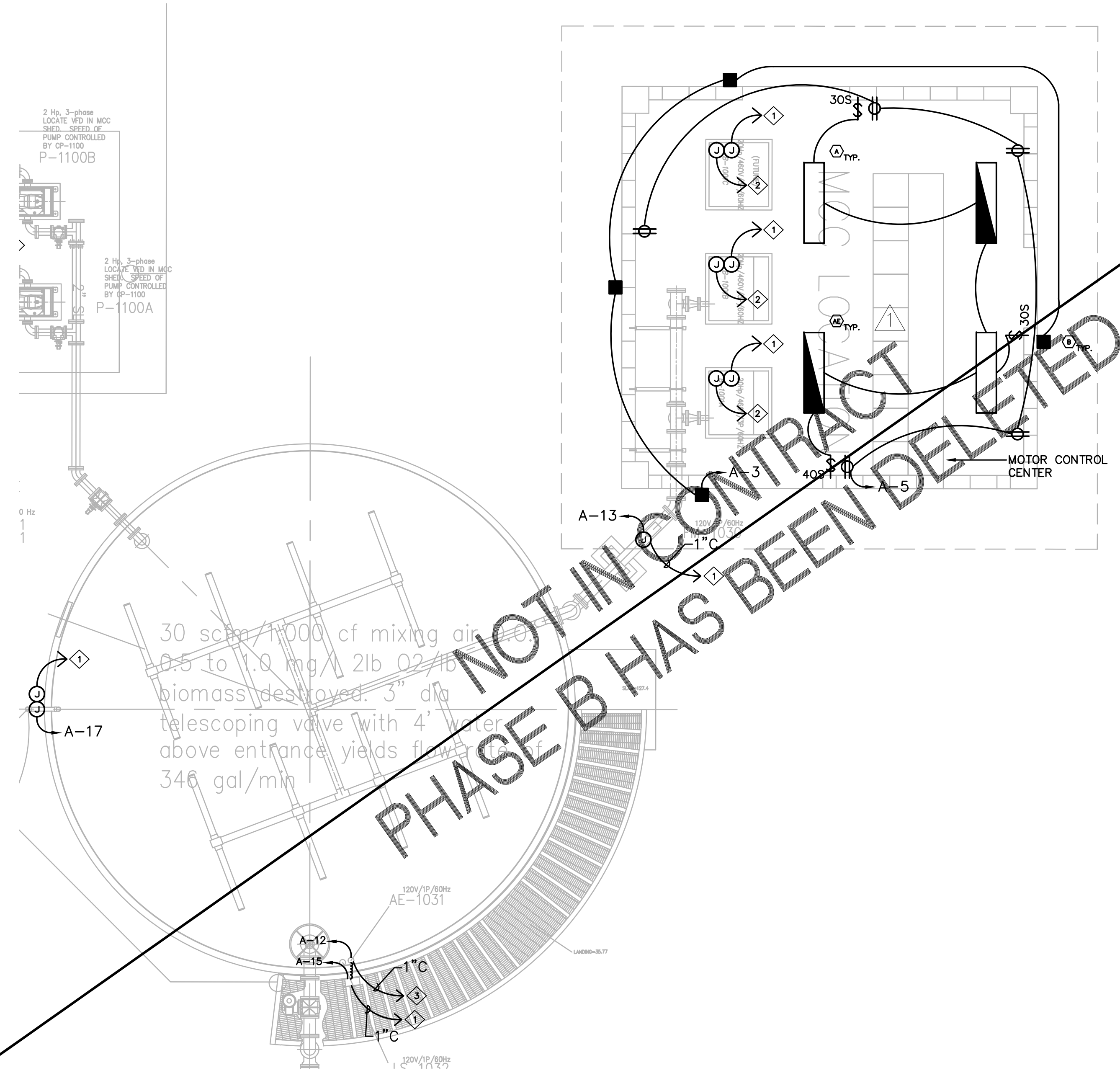
Project No: 16-576
Scale: AS NOTED
Date: 1/22/19
Designed By: MPR
Drawn By: AKK
Checked By: MPR

REGIONAL WWTP
DETAILS

DWG. NO.
EB-3.2
SHEET 193 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. 0-11-056.004
 PRJ: H: VACADZ 2019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS PHASE B VE-4R.DWG



NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

PLAN NOTES:

- 1 HOMERUN CONTROL WIRE IN 1" CONDUIT TO SCADA SYSTEM.
- 2 HOMERUN TO MCC LOCATED IN THE MCC BUILDING.
- 3 CONTROL CABLES TO MCC IN THE MCC BUILDING FOR BLOWER CONTROL.



AustinTsunami
 & ASSOCIATES, INC.
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PULEHUNUI
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MPR APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: AKK
 Checked By: MPR

REGIONAL WWTP –
 MCC BUILDING

DWG. NO.
EB-4
 SHEET 195 OF 201

FILE	POCKET	FOLDER	NO.



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MPR APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

0 1 2			
LINE IS 2 INCHES AT FULL SIZE (If NOT 2-inches : Scale Accordingly)			
REVISION	DATE	BRIEF	BY
⚠	4/15/20	ADDENDUM 5	

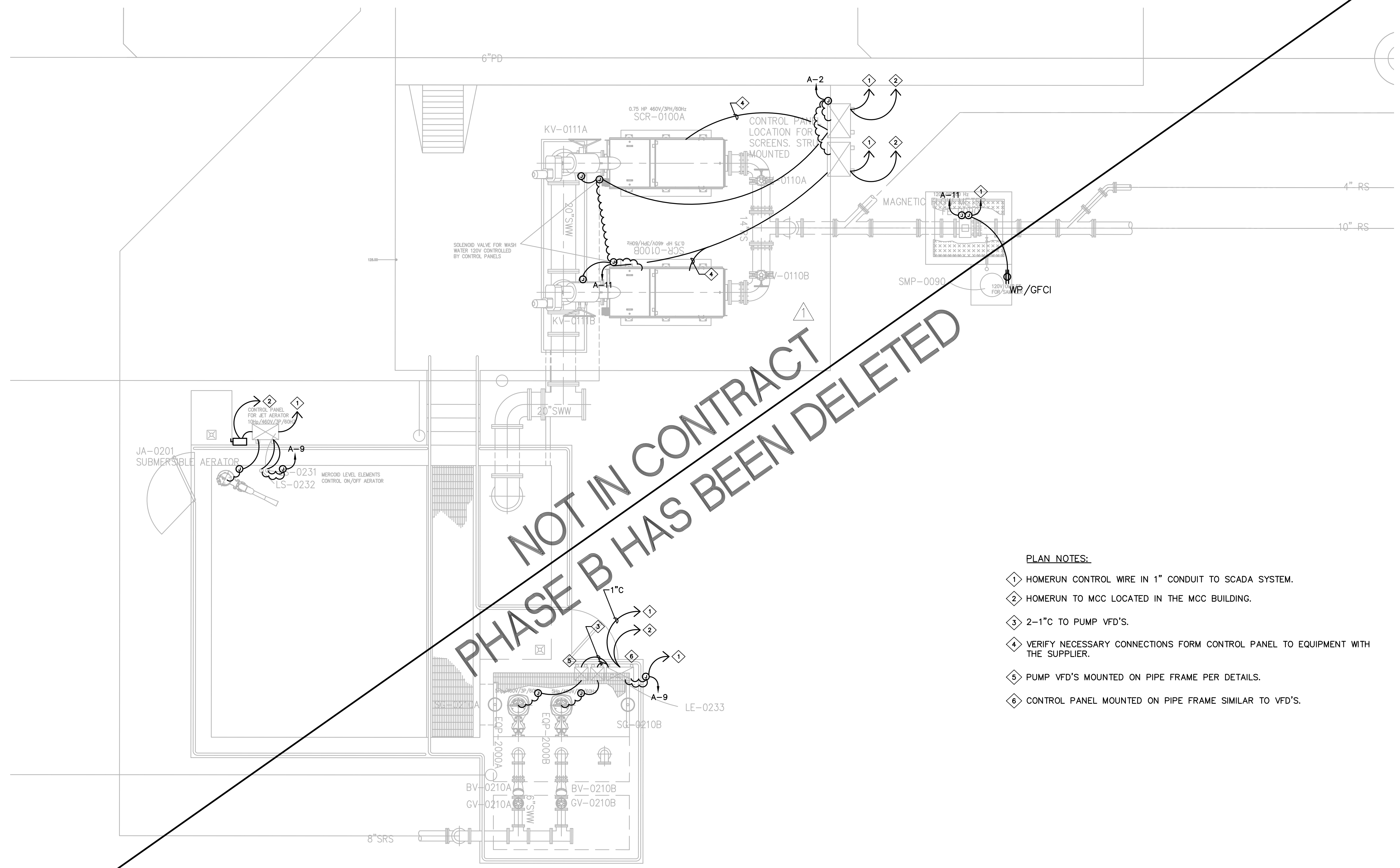
Project No:	16-576
Scale:	AS NOTED
Date:	1/22/19
Designed By:	MPR
Drawn By:	AKK
Checked By:	MPR

REGIONAL WWTP -
 PARTIAL SITE PLAN 1

DWG. NO.
EB-5
 SHEET 196 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. C-11-056.004
 FR: H: VACADZ\2019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS PHASE B VE-SR.DWG



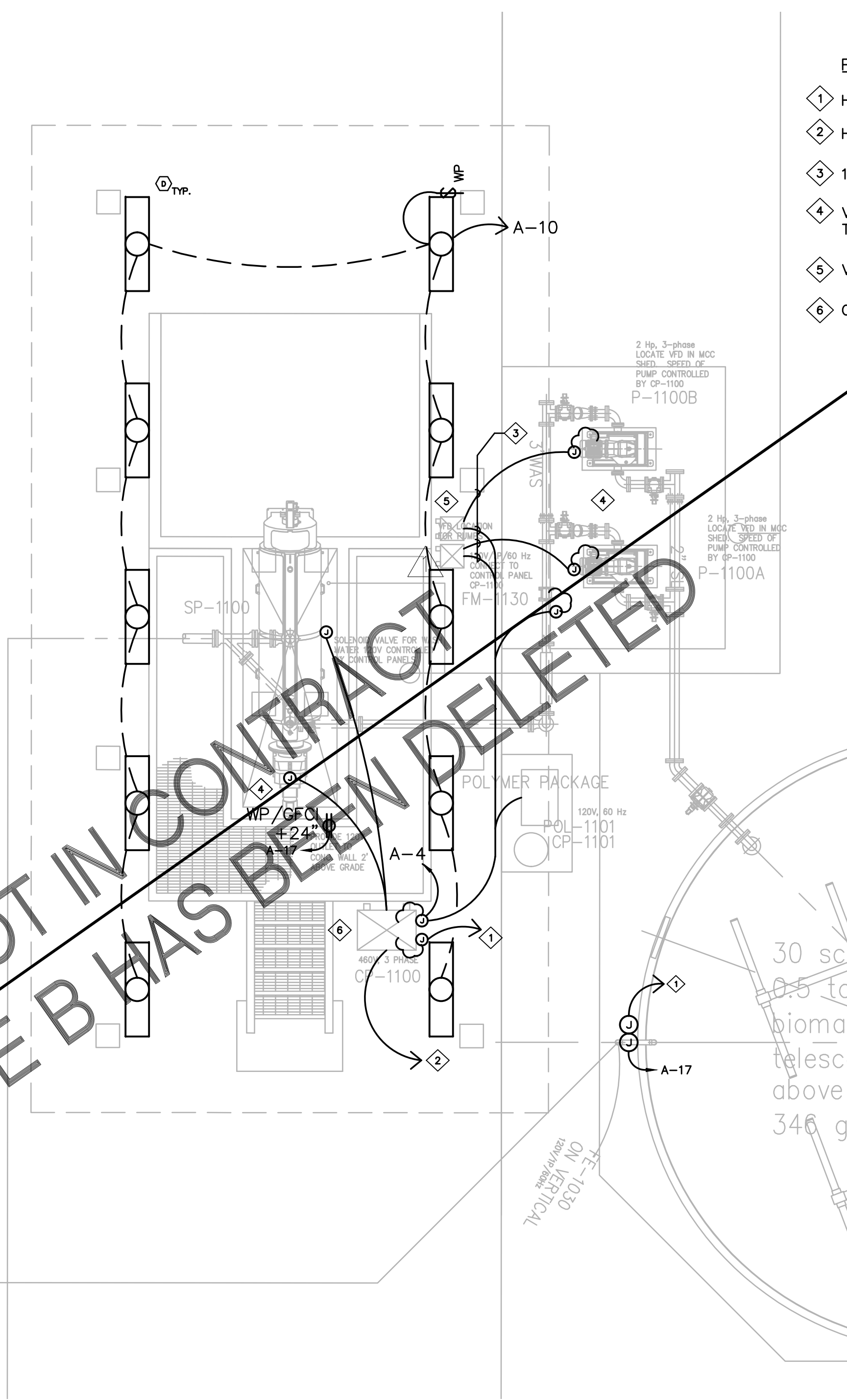
NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

- PLAN NOTES:**
- ① HOMERUN CONTROL WIRE IN 1" CONDUIT TO SCADA SYSTEM.
 - ② HOMERUN TO MCC LOCATED IN THE MCC BUILDING.
 - ③ 2-1"C TO PUMP VFD'S.
 - ④ VERIFY NECESSARY CONNECTIONS FORM CONTROL PANEL TO EQUIPMENT WITH THE SUPPLIER.
 - ⑤ PUMP VFD'S MOUNTED ON PIPE FRAME PER DETAILS.
 - ⑥ CONTROL PANEL MOUNTED ON PIPE FRAME SIMILAR TO VFD'S.

WWTP - HEAD WORKS
 SCALE: 1/4" = 1'-0"

JOB NO. C-11-056.004
 FR: H: VACADZ\2019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS\PHASE B\VE-GR.DWG

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED



- PLAN NOTES:**
- 1 HOMERUN CONTROL WIRE IN 1" CONDUIT TO SCADA SYSTEM.
 - 2 HOMERUN TO MCC LOCATED IN THE MCC BUILDING.
 - 3 1"C TO PUMP VFD'S.
 - 4 VERIFY NECESSARY CONNECTIONS FORM CONTROL PANEL TO EQUIPMENT WITH THE SUPPLIER.
 - 5 VFD'S MOUNTED ON PIPE FRAME PER DETAILS.
 - 6 CONTROL PANEL MOUNTED ON PIPE FRAME SIMILAR TO VFD'S.

WWTP - SCREW PRESS
 SCALE: 1/4" = 1'-0"

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PULEHUNUI
 REGIONAL
 INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
 ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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MPR
 SIGNATURE APRIL 30, 2020
 EXP. DATE OF THE LICENSE

0 1 2
 LINE IS 2-INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

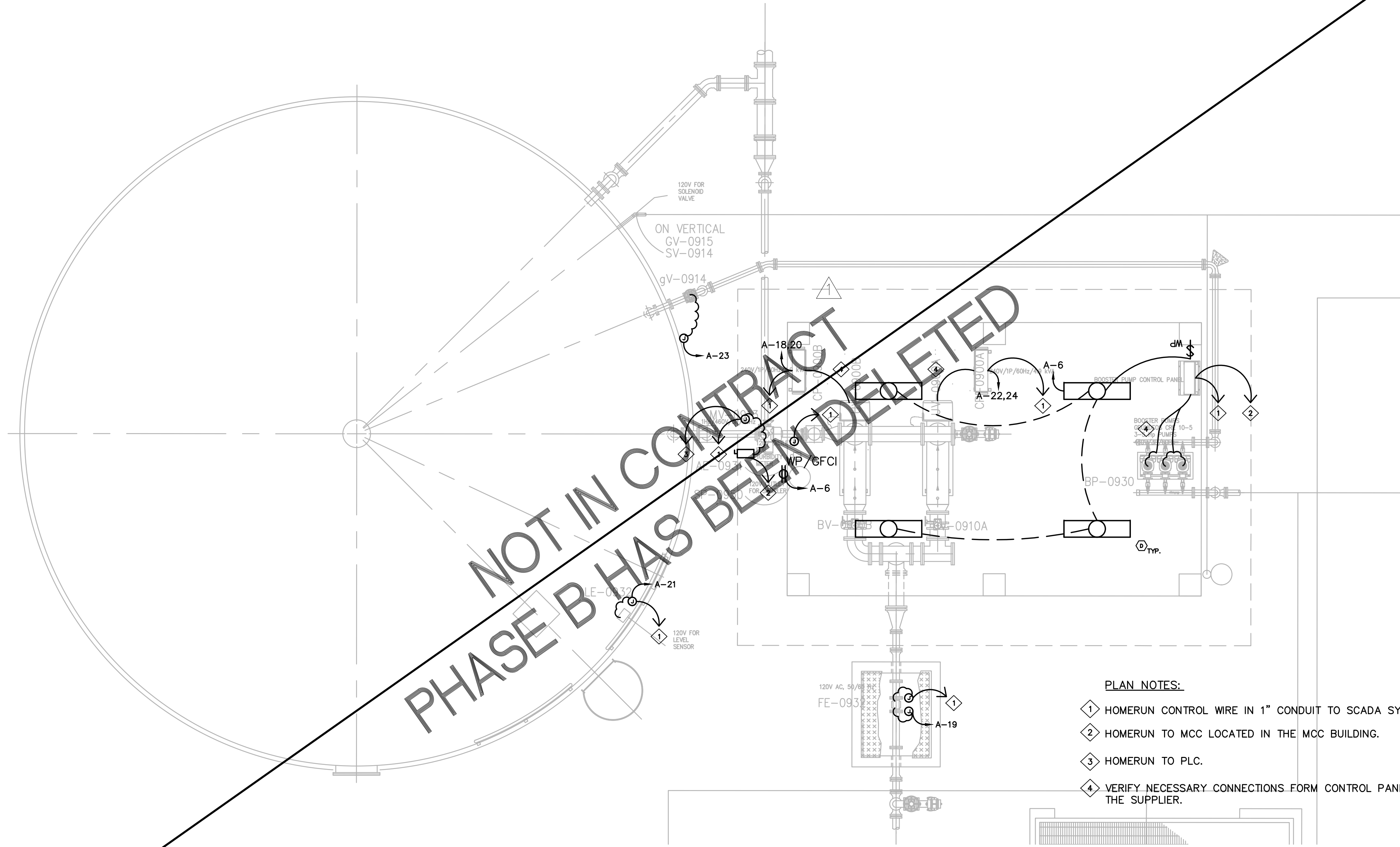
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: AKK
 Checked By: MPR

REGIONAL WWTP -
 PARTIAL SITE PLAN 2

DWG. NO.
EB-6
 SHEET 197 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. C-11-056.004
 FR: H: VACADZ 12019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS PHASE B VE-7R.DWG



NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

- PLAN NOTES:**
- ① HOMERUN CONTROL WIRE IN 1" CONDUIT TO SCADA SYSTEM.
 - ② HOMERUN TO MCC LOCATED IN THE MCC BUILDING.
 - ③ HOMERUN TO PLC.
 - ④ VERIFY NECESSARY CONNECTIONS FORM CONTROL PANEL TO EQUIPMENT WITH THE SUPPLIER.

WWTP - UV DISINFECTION
 SCALE: 1/4" = 1'-0"

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STATE OF HAWAII
 DEPARTMENT OF
 HAWAIIAN HOME LANDS

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APRIL 30, 2020
 SIGNATURE EXP. DATE OF THE LICENSE

LINE IS 2 INCHES AT FULL SIZE
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
Δ	4/15/20	ADDENDUM 5	

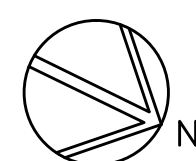
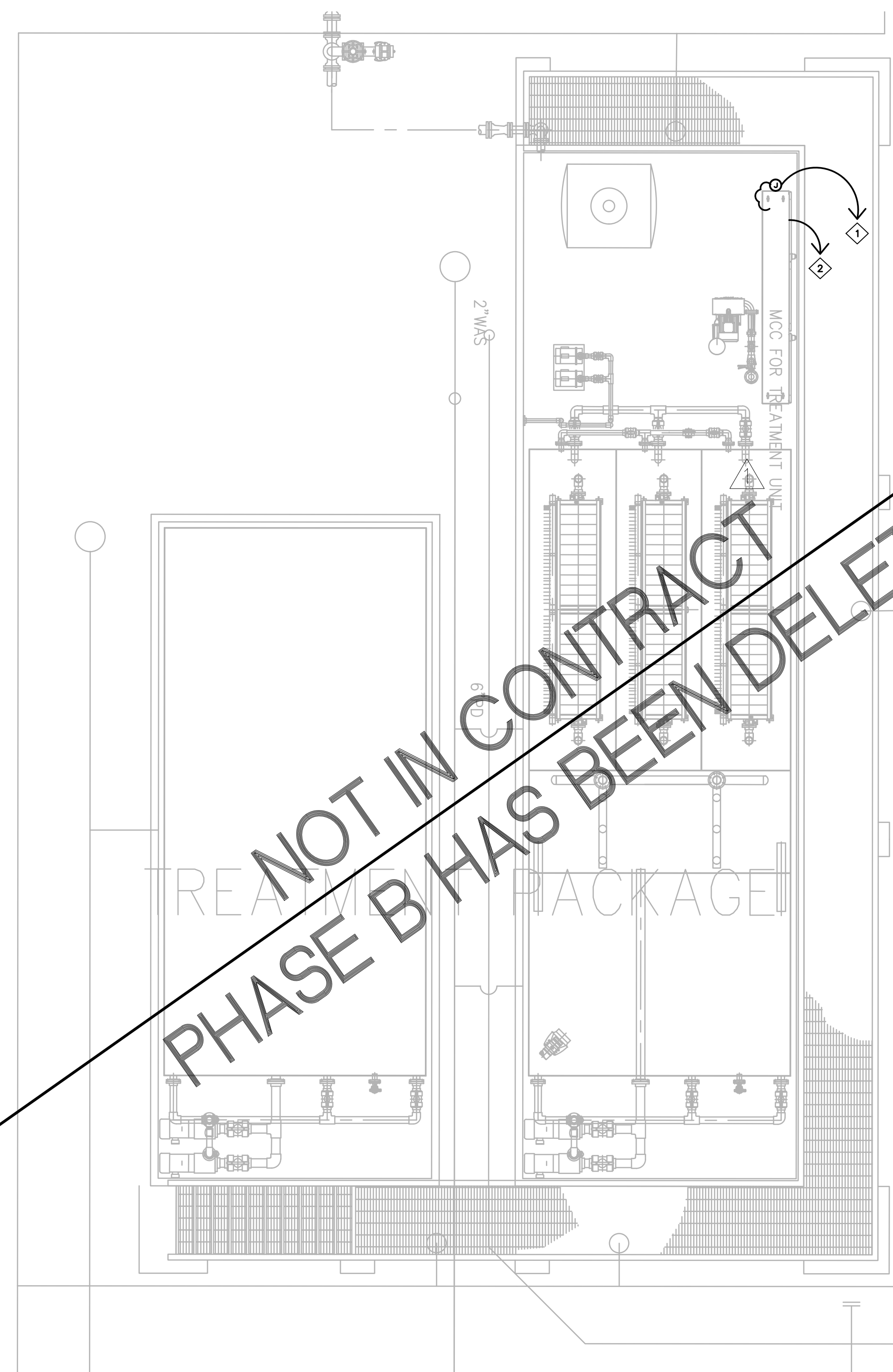
Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: AKK
 Checked By: MPR

**REGIONAL WWTP -
 PARTIAL SITE PLAN 3**

DWG. NO.
EB-7
 SHEET 198 OF 201

FILE	POCKET	FOLDER	NO.

JOB NO. C-11-056.004
FR: H:\ACAD\2019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS\PHASE B\EB-8R.DWG



WWTP - TREATMENT PACKAGE
SCALE: 1/4" = 1'-0"

PLAN NOTES:

- ① HOMERUN CONTROL WIRE IN 2-1" CONDUIT TO SCADA SYSTEM.
- ② HOMERUN TO MCC LOCATED IN THE MCC BUILDING.
- ③ VERIFY NECESSARY CONNECTIONS FORM CONTROL PANEL TO EQUIPMENT WITH THE SUPPLIER.

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MPR APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(if NOT 2-inches : Scale Accordingly)

REVISION	DATE	BRIEF	BY
△	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: AKK
 Checked By: MPR

REGIONAL WWTP -
PARTIAL SITE PLAN 4

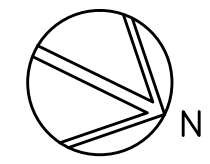
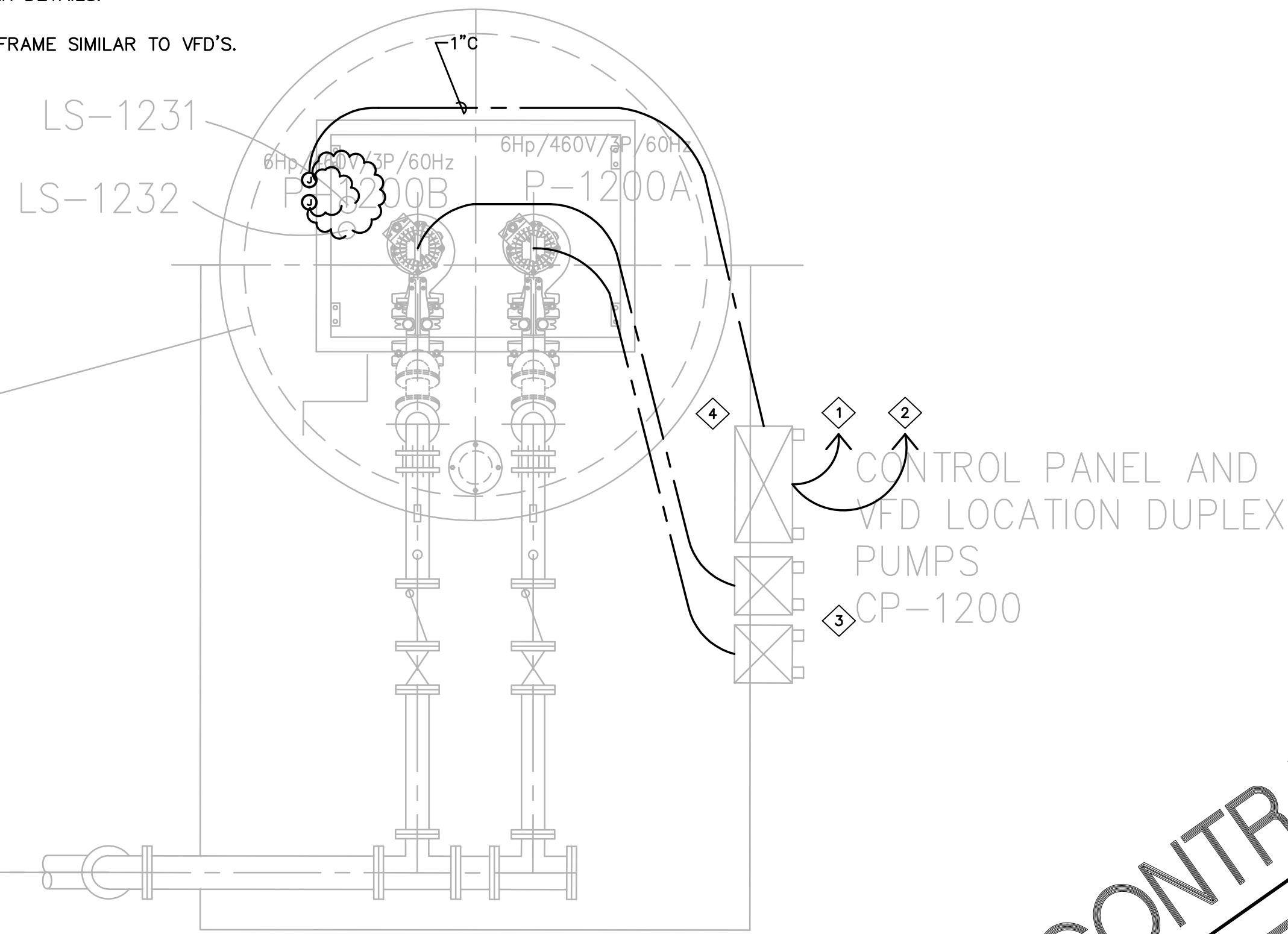
DWG. NO.
EB-8

SHEET 199 OF 201

FILE	POCKET	FOLDER	NO.

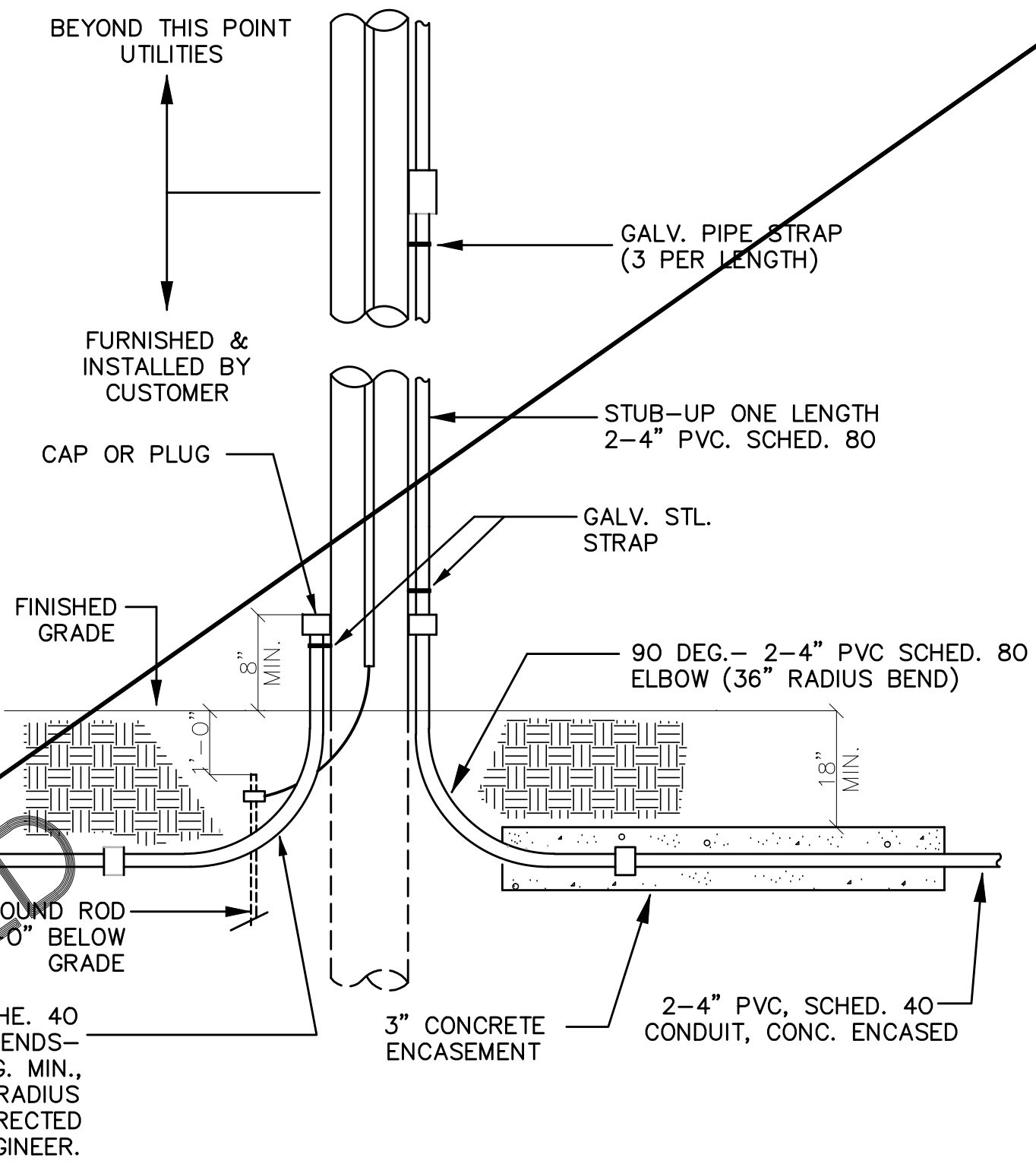
PLAN NOTES:

- ① HOMERUN CONTROL WIRE IN CONDUIT TO SCADA SYSTEM.
- ② HOMERUN TO MCC LOCATED IN THE MCC BUILDING.
- ③ VFD'S MOUNTED ON PIPE FRAMES PER DETAILS.
- ④ CONTROL PANEL MOUNTED ON PIPE FRAME SIMILAR TO VFD'S.

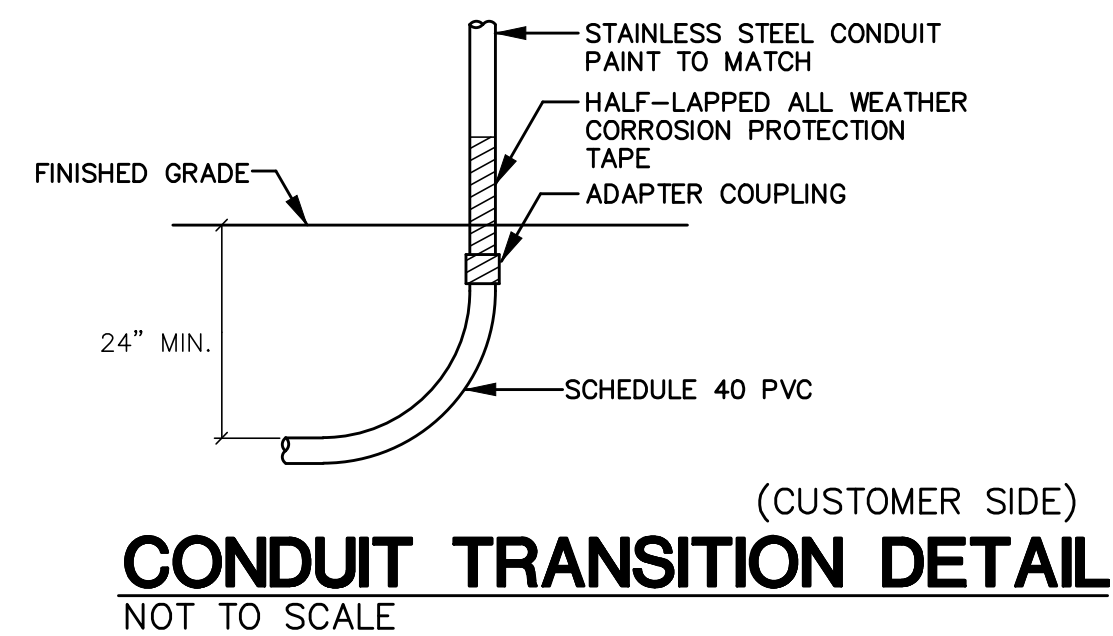


ON-SITE PUMP STATION PLAN AND SECTION

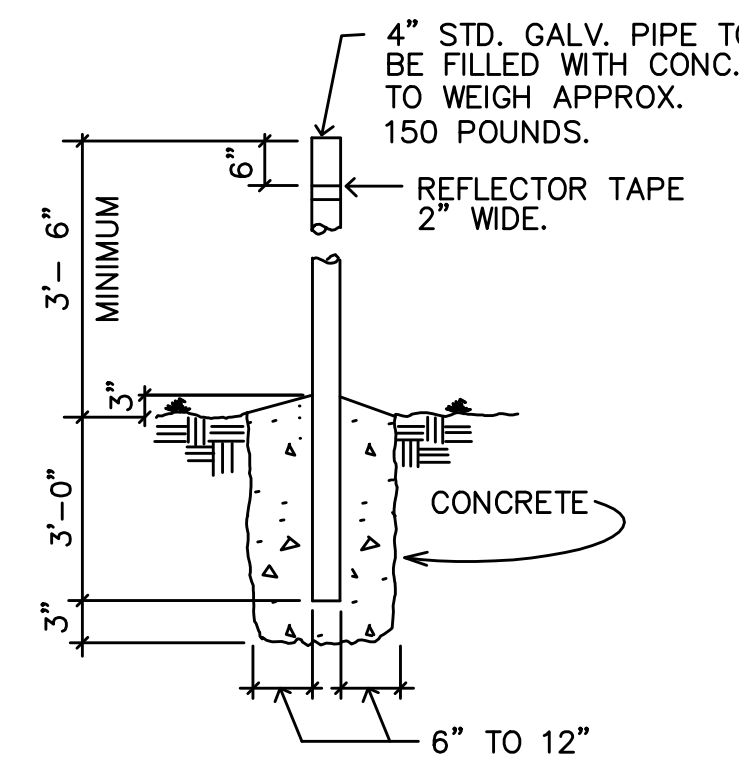
SCALE: 1/2" = 1'-0"



RISER POLE DETAIL
NOT TO SCALE



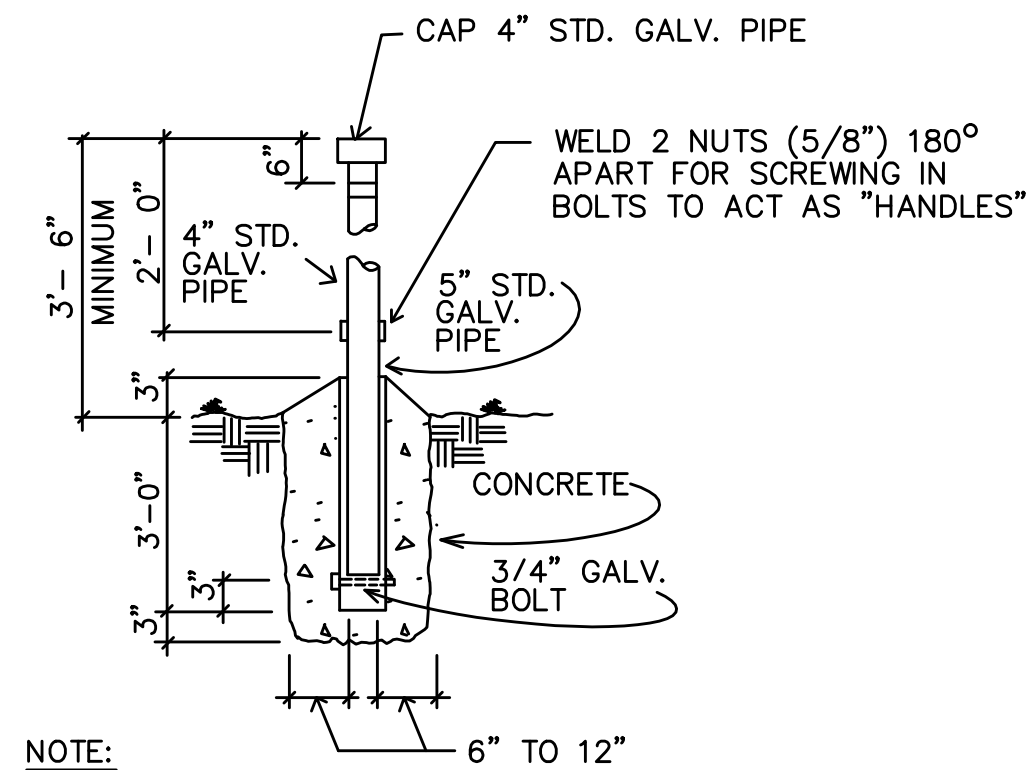
CONDUIT TRANSITION DETAIL
NOT TO SCALE



NOTE:
BARRIER POSTS ARE TO BE PAINTED YELLOW ACCORDING TO ANSI SPEC Z535.1 TO COMPLY WITH OSHA STANDARD 1910.144 FOR COLORING CODE. A 2" WIDE STRIPE OF REFLECTIVE TAPE MUST BE PLACED 6" BELOW THE TOP OF THE POST.

UG-30-5000

DETAIL "X"
NOT TO SCALE



NOTE:
BARRIER POSTS ARE TO BE PAINTED YELLOW ACCORDING TO ANSI SPEC Z535.1 TO COMPLY WITH OSHA STANDARD 1910.144 FOR COLORING CODE. A 2" WIDE STRIPE OF REFLECTIVE TAPE MUST BE PLACED 6" BELOW THE TOP OF THE POST.

THE PIPE THAT IS TO BE PLACED DIRECTLY IN FRONT OF THE DOORS SHALL NOT BE FILLED WITH CONCRETE. THE PIPE SHALL BE CAPPED AND THE WELDED NUTS USED TO SCREW IN BOLTS TO ACT AS HANDLES FOR LIFTING. THE BOLTS ARE TO BE REMOVED AFTER INSTALLATION.

UG-30-5000

DETAIL "X-1"
NOT TO SCALE

NOT IN CONTRACT
PHASE B HAS BEEN DELETED

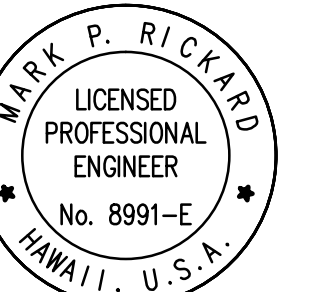
JOB NO. C-11-056.004
FR: H: VACADZ\2019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS PHASE B\EB-9R.DWG

Austin Tsutsumi
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PULEHUNUI
REGIONAL
INFRASTRUCTURE

ATA AUSTIN, TSUTSUMI & ASSOC., INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII



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Mark P. Rickard
SIGNATURE APRIL 30, 2020
EXP. DATE OF THE LICENSE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(IF NOT 2-INCHES : SCALE ACCORDINGLY)

REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	

Project No: 16-576
Scale: AS NOTED
Date: 1/22/19
Designed By: MPR
Drawn By: AKK
Checked By: MPR

REGIONAL WWTP -
PARTIAL SITE PLAN 5/
DETAILS

DWG. NO.
EB-9
SHEET 200 OF 201

FILE	POCKET	FOLDER	NO.



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Signature: *Mark P. Rickard* APRIL 30, 2020
 EXP. DATE OF THE LICENSE

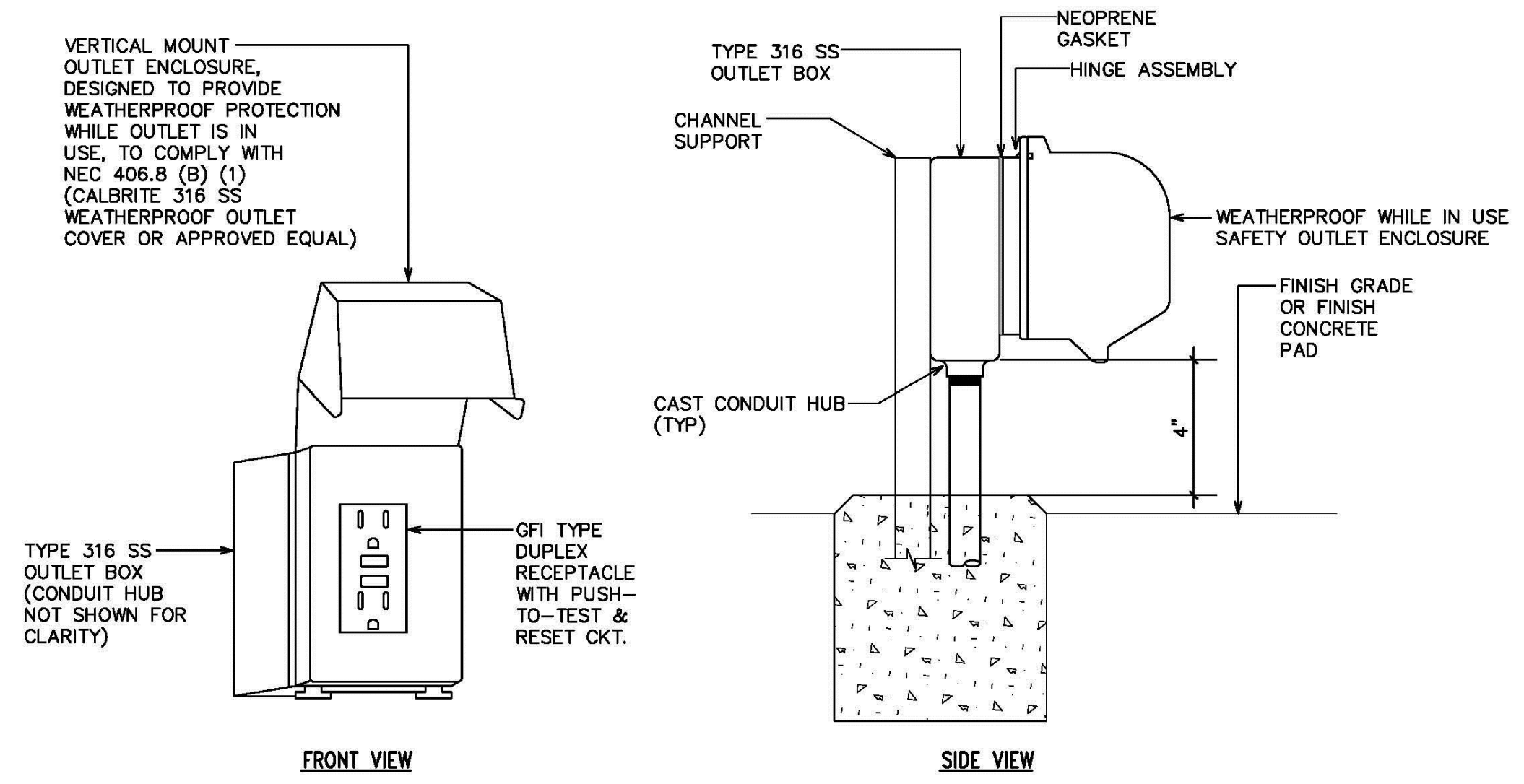
REVISION	DATE	BRIEF	BY
1	4/15/20	ADDENDUM 5	

Project No: 16-576
 Scale: AS NOTED
 Date: 1/22/19
 Designed By: MPR
 Drawn By: AKK
 Checked By: MPR

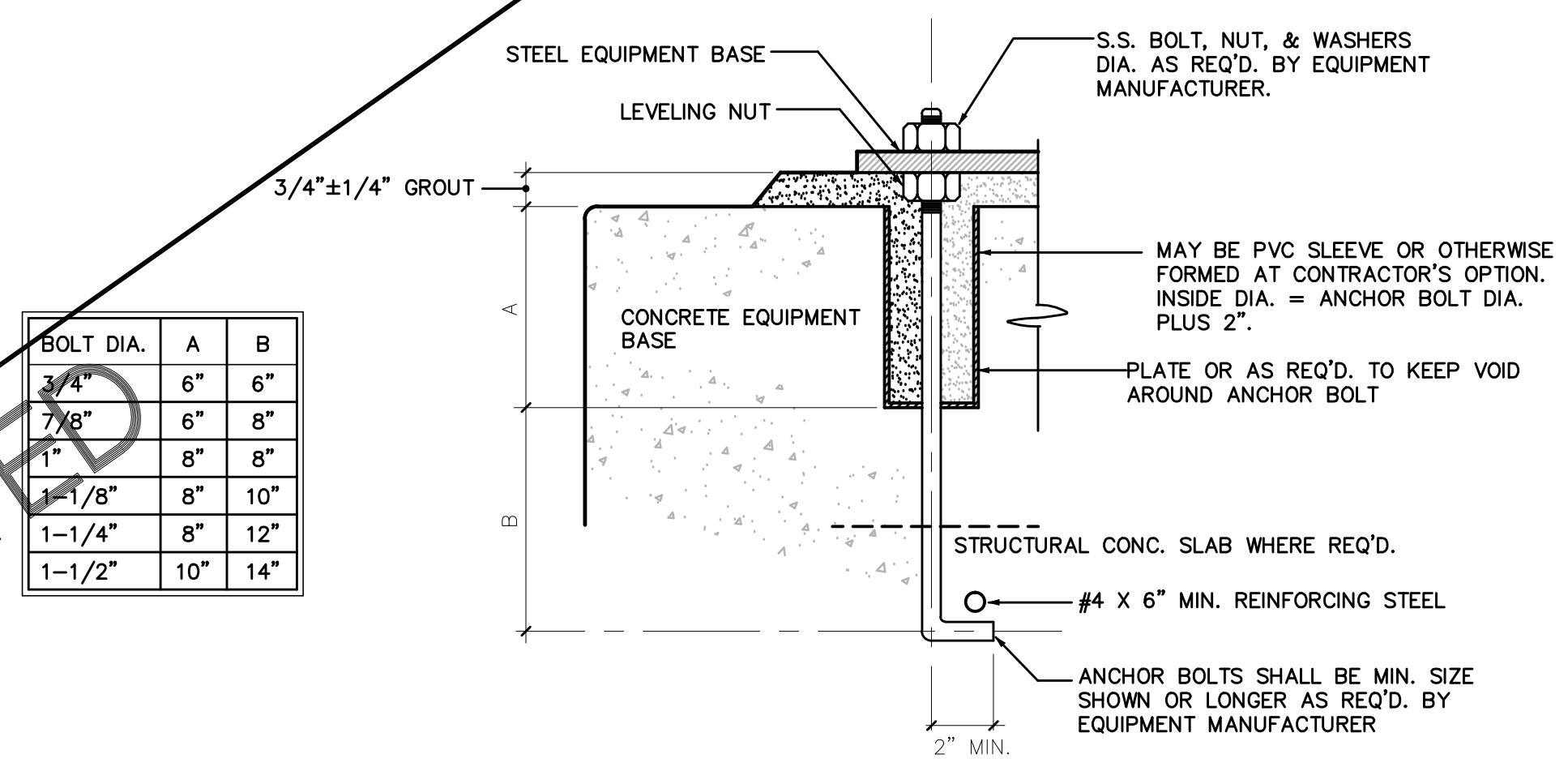
REGIONAL WWTP -
 DETAILS

DWG. NO.
EB-10
 SHEET 201 OF 201

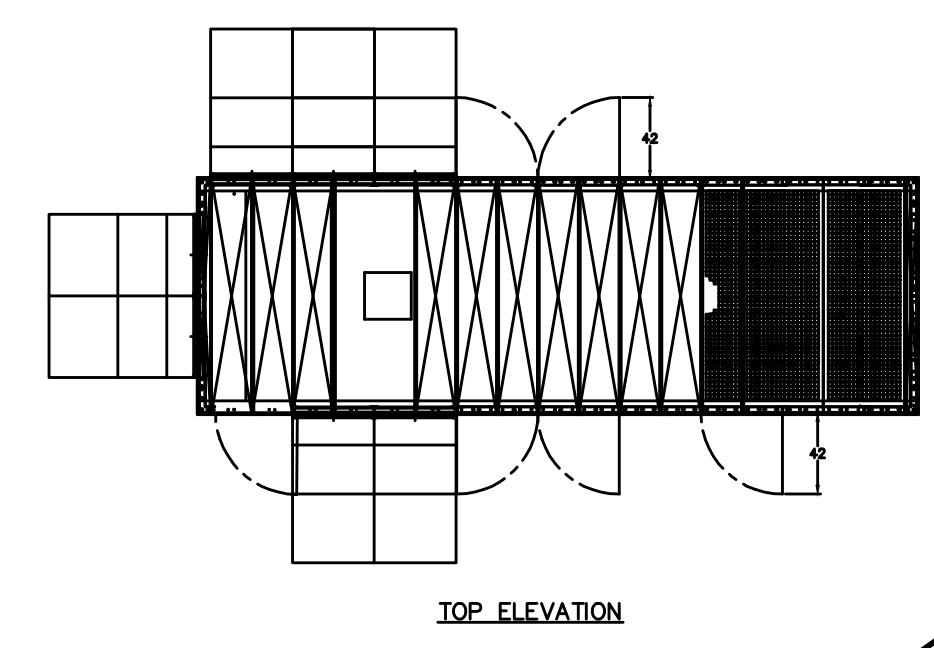
FILE	POCKET	FOLDER	NO.



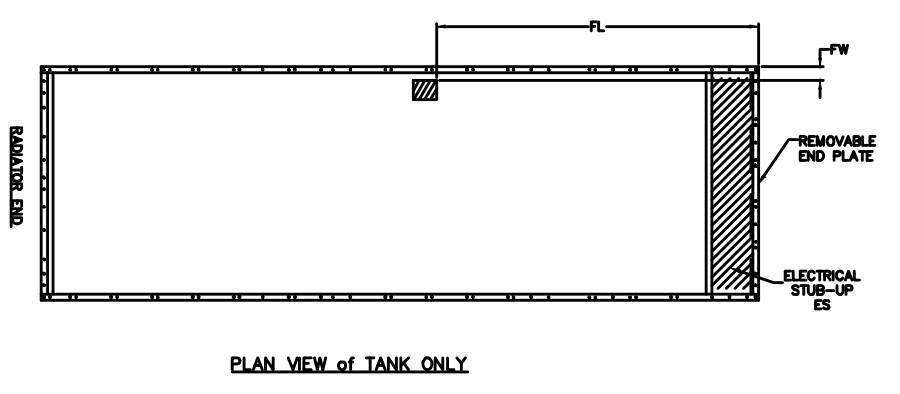
WEATHERPROOF RECEPTACLE DETAIL
 NOT TO SCALE



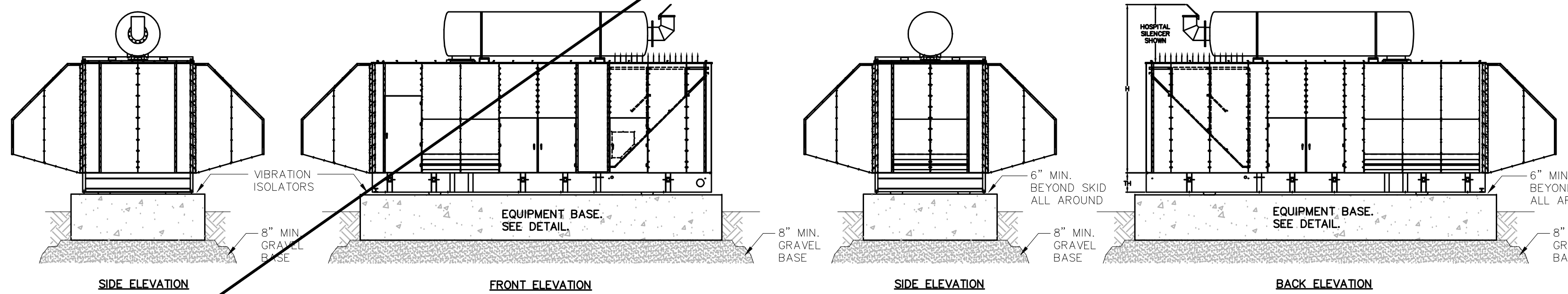
ANCHOR BOLT DETAIL
 NOT TO SCALE



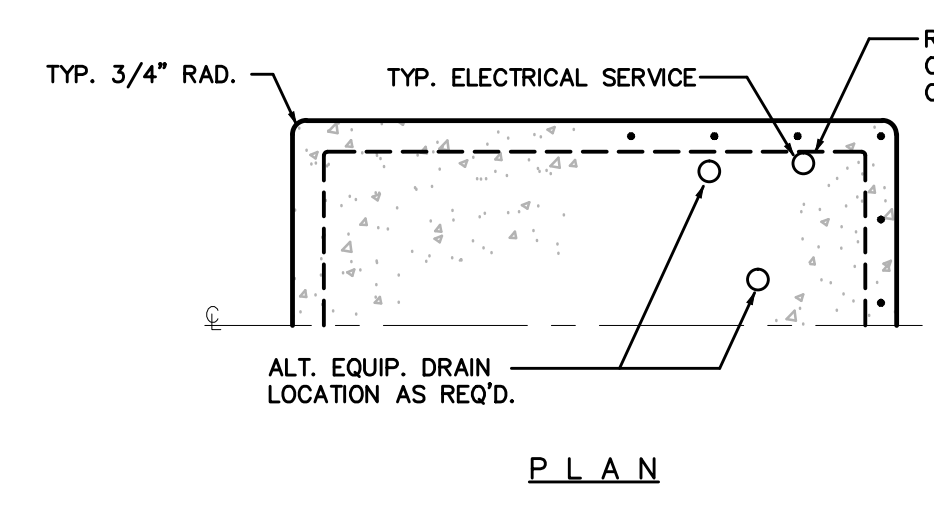
TOP ELEVATION



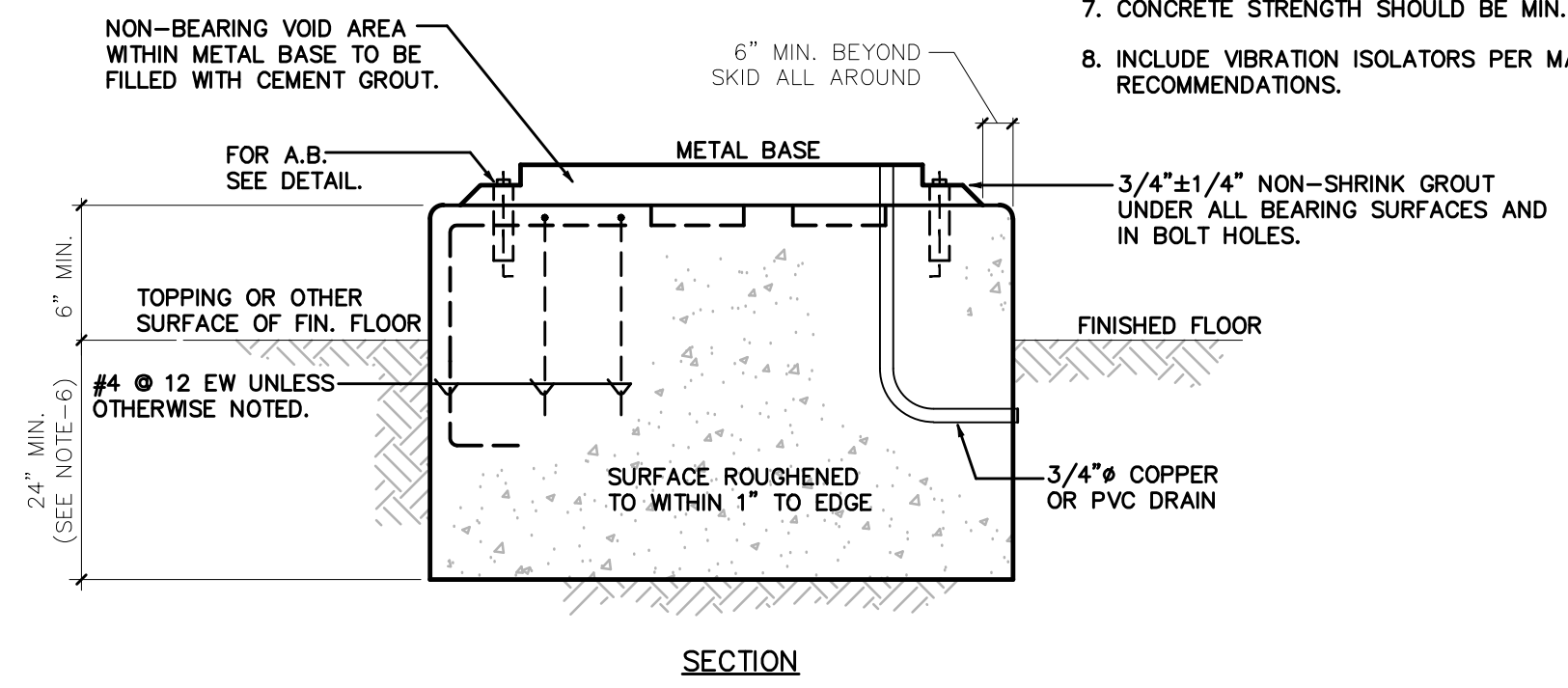
PLAN VIEW of TANK ONLY



GENERATOR SET ELEVATIONS
 NOT TO SCALE



PLAN



SECTION

EQUIPMENT BASE DETAIL
 NOT TO SCALE

- NOTES:**
- ALL EQUIPMENT, INCLUDING TANKS, SHALL HAVE A CONCRETE EQUIPMENT BASE TO SUIT.
 - ANCHOR BOLTS SHALL BE SIZED FOR THE EQUIPMENT LOAD PLUS SEISMIC LOADS (ZONE 2006IBC SEISMIC DESIGN CATEGORY D).
 - ANCHOR BOLTS SHALL BE SET IN POCKETS, EITHER PIPE OR BLOCKOUTS. SEE ANCHOR BOLT DETAIL. ANCHOR BOLT SHALL PENETRATE STRUCTURAL SLAB AS REQ'D TO MEET MINIMUM EMBEDMENT SPECIFIED.
 - DRILLED HOLES WITH A.B. SET IN NON-SHRINK GROUT MAY BE USED IN LIEU OF HOOKED BOLTS. EXPANSION SHIELD TYPE BOLTS SHALL NOT BE USED.
 - ALL PENETRATIONS FOR CONDUIT AND PIPING SHALL BE WITHIN CONCRETE EQUIPMENT PAD. PAD TO BE CONFIGURED ACCORDINGLY.
 - DEPTH OF SLAB TO BE AT MINIMUM THE LENGTH OF ANCHOR BOLTS, PLUS 6". SLAB DEPTH TO BE A MINIMUM OF 30", VERIFY MANUFACTURER'S RECOMMENDATIONS.
 - CONCRETE STRENGTH SHOULD BE MIN. 4000 PSI, IN 28 DAYS.
 - INCLUDE VIBRATION ISOLATORS PER MANUFACTURER'S RECOMMENDATIONS.

NOT IN CONTRACT
 PHASE B HAS BEEN DELETED

JOB NO. C-11-056.004
 FR: H: VACADZ 2019-60.01 PULEHUNUI GRAVITY SEWER WWTP DRAWINGS PHASE B EB-10.DWG