2022/CP-133

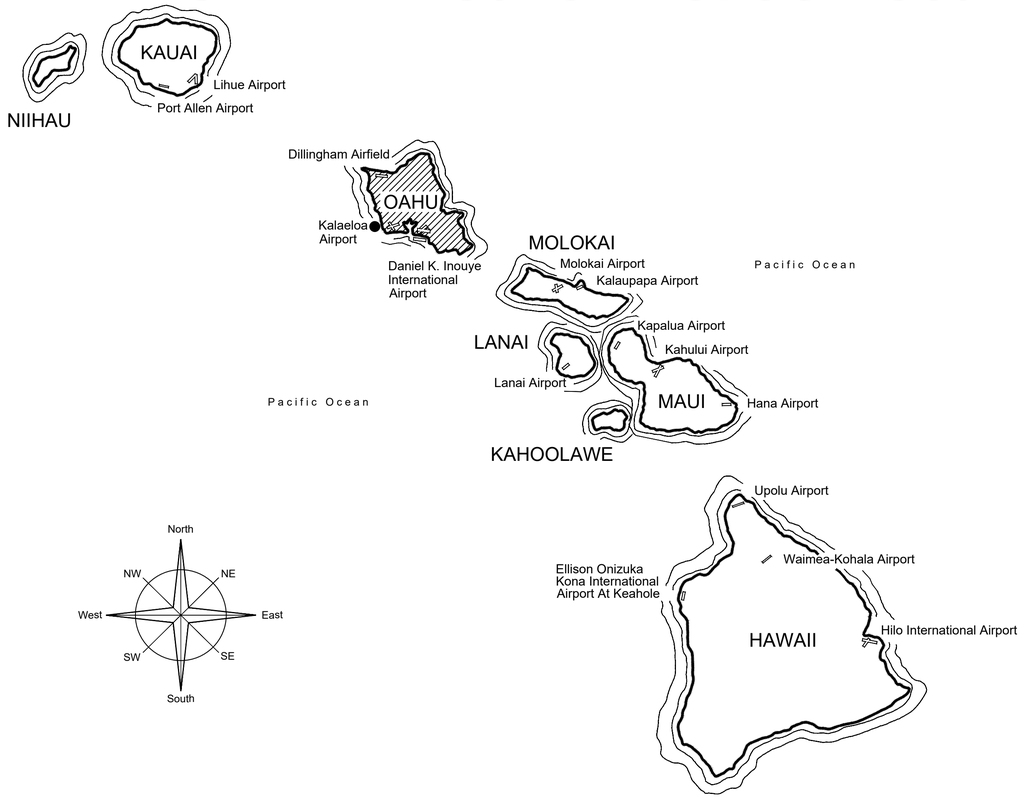
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

PLANS FOR

UTILITY SYSTEM IMPROVEMENTS

AT

KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII
STATE PROJECT NO. CO AO5021-17



PROJECT TEAM

CIVIL:
BELT COLLINS HAWAII LLC
2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819
(808) 521-5361

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No.4575-C
HAWAII, U.S.A.

CARY K. KONDO
CVIL ENGINEER

ELECTRICAL:
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ASSOCIATES
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GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
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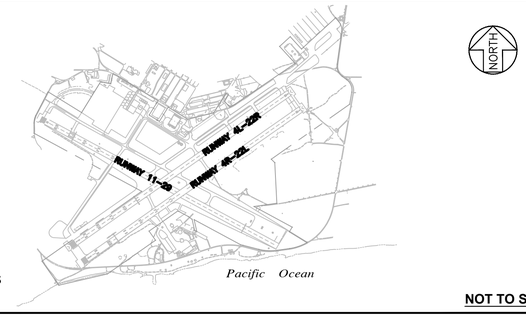
GEORGE TAKASE
ELECTRICAL ENGINEER

GEOTECHNICAL:
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SUITE 200
WIAPAHU, HI 96797
(808) 841-5064

GERALD Y. SEKI
LICENSED PROFESSIONAL ENGINEER
No.5635-C
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GERALD Y. SEKI
GEOTECHNICAL ENGINEER

AIRPORT VICINITY MAP



NOTE:
THE AIRPORT VICINITY MAP SCALE CAN BE ADJUSTED AS NECESSARY

NOT TO SCALE

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

APPROVED:

05/11/2026
FOR DIRECTOR OF TRANSPORTATION — DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No.4575-C
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04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS

AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

COVER SHEET, VICINITY MAP, PROJECT TEAM

DATE :
JANUARY 2025

SHEET :
1 OF 80 SHEETS

DWG. NO.
G-001

T:\DOT KALAELOA AIRPORT\2019\2020\04 GRAPHICS\CAD\SHEETS\G-001 COVER SHEET VICINITY MAP.DWG

DRAWING NO.	SHEET NO.	SHEET TITLE	DRAWING NO.	SHEET NO.	SHEET TITLE	DRAWING NO.	SHEET NO.	SHEET TITLE
G-001	1	COVER SHEET, VICINITY MAP, PROJECT TEAM			**KALAELOA AIRPORT PACKAGE**	E-1	57	ELEC. SYMBOL LIST, CONDUIT & EQUIPMENT SCHEDULE, NOTES FOR CONSTRUCTION
G-002	2	DRAWING INDEX	C-17	19	GENERAL SITE PLAN - KALAELOA AIRPORT PACKAGE			
		MIDWAY PACKAGE (WORK WITHIN C&C ROW)	C-18	20	CONSTRUCTION NOTES	E-2	58	HAWAIIAN ELECTRIC COMPANY NOTES 1
C-01	3	GENERAL SITE PLAN - MIDWAY PACKAGE	C-19	21	EROSION AND SEDIMENT CONTROL NOTES	E-3	59	HAWAIIAN ELECTRIC COMPANY NOTES 2
C-02	4	CONSTRUCTION NOTES	C-20	22	EROSION AND SEDIMENT CONTROL PLAN - 1 AND DETAILS	E-4	60	HAWAIIAN TELCOM (HTCO) NOTES
C-03	5	EROSION AND SEDIMENT CONTROL DETAILS AND NOTES	C-21	23	EROSION AND SEDIMENT CONTROL PLAN - 2	E-5	61	SPECTRUM OCEANIC (CATV) NOTES
C-04	6	EROSION AND SEDIMENT CONTROL PLAN - 1	C-22	24	PAVEMENT RESTORATION AND STRIPING PLAN - 1	E-6	62	ELECTRICAL SITE PLAN
C-05	7	EROSION AND SEDIMENT CONTROL PLAN - 2	C-23	25	PAVEMENT RESTORATION AND STRIPING PLAN - 2	E-7	63	ELECTRICAL DISTRIBUTION PLAN 1
C-06	8	TRAFFIC CONTROL NOTES	C-24	26	PAVEMENT RESTORATION AND STRIPING PLAN - 3	E-8	64	ELECTRICAL DISTRIBUTION PLAN 2
C-07	9	MIDWAY ROAD DETOUR PLAN - 1	C-25	27	UTILITY PLAN - 1	E-9	65	ELECTRICAL DISTRIBUTION PLAN 3
C-08	10	MIDWAY ROAD DETOUR PLAN - 2	C-26	28	UTILITY PLAN - 2	E-10	66	ELECTRICAL DISTRIBUTION PLAN 4
C-09	11	MIDWAY ROAD DETOUR PLAN - 3	C-27	29	UTILITY PLAN - 3	E-11	67	ELECTRICAL DISTRIBUTION PLAN 5
C-10	12	MIDWAY ROAD DETOUR PLAN - 4	C-28	30	UTILITY PLAN - 4	E-12	68	ELECTRICAL DISTRIBUTION PLAN 6
C-11	13	TRAFFIC CONTROL PLAN - 1	C-29	31	UTILITY PLAN - 5	E-13	69	DUCT SECTIONS
C-12	14	TRAFFIC CONTROL PLAN - 2	C-30	32	UTILITY PLAN - 5A	E-14	70	HANGAR 110 ONE-LINE DIAGRAM
C-13	15	TRAFFIC CONTROL PLAN - 3	C-31	33	UTILITY PLAN - 6	E-15	71	HANGAR 110 SWITCHGEAR DETAIL
C-14	16	MIDWAY ROAD PAVEMENT RESTORATION AND STRIPING PLAN - 1	C-32	34	UTILITY PLAN - 7	E-16	72	HANGAR 111 ONE-LINE DIAGRAM
C-15	17	MIDWAY ROAD PAVEMENT RESTORATION AND STRIPING PLAN - 2	C-33	35	UTILITY PLAN - 8	E-17	73	WEST AIRPORT ELECTRICAL BLDG ONE-LINE DIAGRAM & PLAN
C-16	18	MISCELLANEOUS DETAILS	C-34	36	UTILITY PLAN - 9	E-18	74	WEST AIRPORT SWITCHGEAR DETAIL
			C-35	37	UTILITY PLAN - 10	E-19	75	HECO TRANSFORMER DETAIL
			C-36	38	UTILITY PLAN - 11	E-20	76	HECO SWITCH PAD DETAILS
			C-37	39	UTILITY PLAN - 12	E-21	77	ELECTRICAL PLAN AND PROFILE 1 - MIDWAY ROAD
			C-38	40	WATER LINE PROFILES - 1	E-22	78	ELECTRICAL PLANS AND PROFILE 2 - FRANKLIN AVE & LEXINGTON STREET
			C-39	41	WATER LINE PROFILES - 2			
			C-40	42	WATER LINE PROFILES - 3	E-23	79	ELECTRICAL PLANS AND PROFILE 3 - FRANKLIN AVE & LEXINGTON STREET
			C-41	43	WATER LINE PROFILES - 4			
			C-42	44	SEWER LINE PROFILES - 1	E-24	80	HANDHOLE DEVELOPMENT 1
			C-43	45	SEWER LINE PROFILES - 2			
			C-44	46	WATER DETAILS - 1			
			C-45	47	WATER DETAILS - 2			
			C-46	48	WATER DETAILS - 3			
			C-47	49	WATER DETAILS - 4			
			C-48	50	MISCELLANEOUS DETAILS - 1			
			C-49	51	MISCELLANEOUS DETAILS - 2			
			C-50	52	WATER CONNECTION SCHEMATIC DIAGRAMS			
			B-1	53	BORING LOG LEGENDS			
			B-2	54	BORING LOG LEGEND AND NOTES			
			B-3	55	BORING LOGS - 1			
			B-4	56	BORING LOGS - 2			

APPROVED:

Julian Gandara — 10/24/2024

KALAELOA WATER COMPANY — DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
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HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

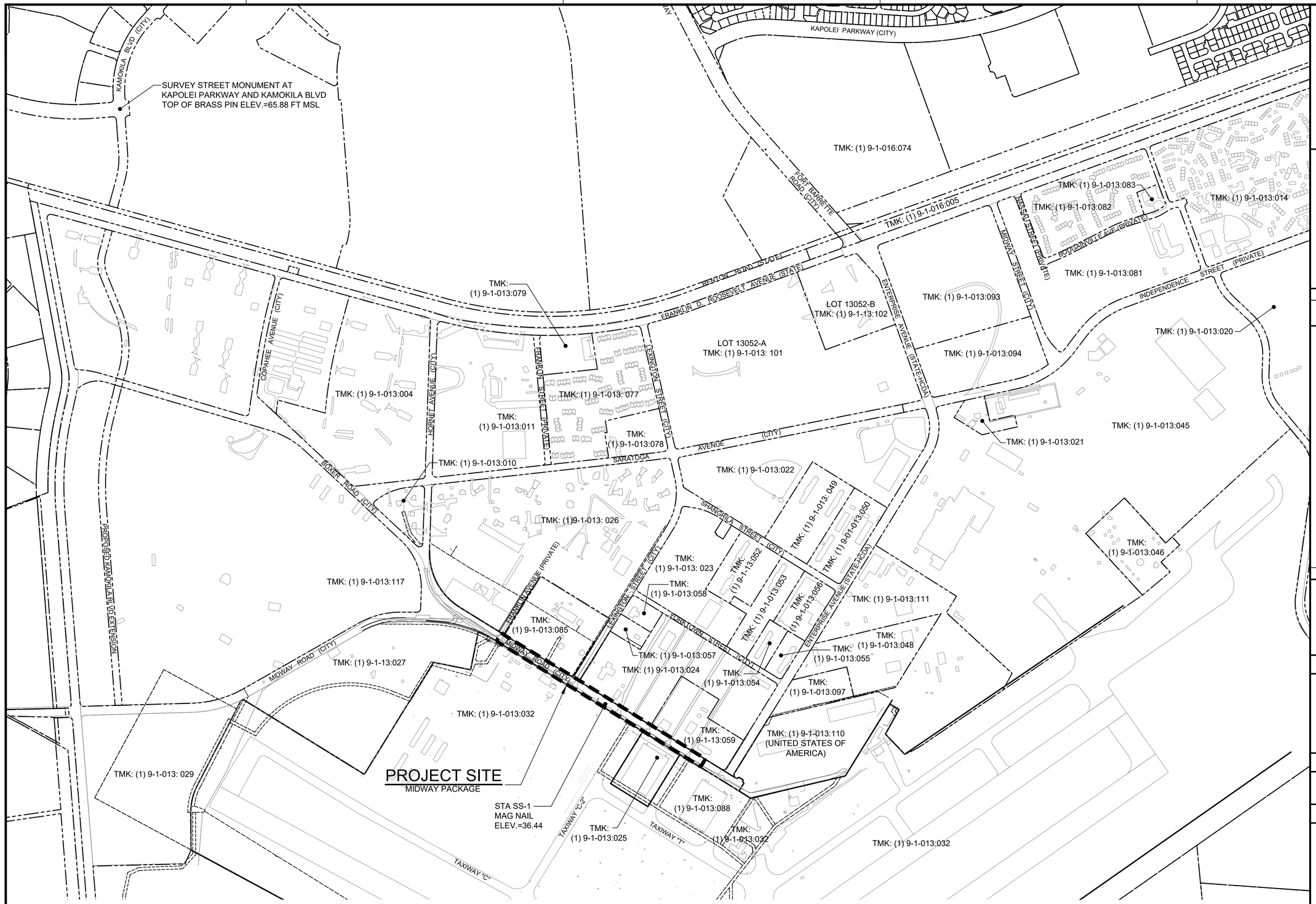
DRAWING INDEX

DATE :

SHEET :
2 OF 80 SHEETS

DWG. NO.
G-002

T:\DOT KALAELOA AIRPORT\2019700280\04 GRAPHICS\CAD\SHEETS\G-002 DRAWING INDEX.DWG



GENERAL SITE PLAN - MIDWAY PACKAGE

SCALE: 1"=400'

400 0 400 800

SCALE IN FEET

NORTH

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
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PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

GENERAL SITE PLAN - MIDWAY PACKAGE

DATE :

SHEET :

3 OF 80 SHEETS

DWG. NO.

C-01

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-01 GENERAL SITE PLAN - MIDWAY PACKAGE.DWG

GENERAL NOTES

1. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
2. WORK INCIDENTAL TO THE CONTRACT AND NECESSARY TO COMPLETE THE PROJECT, ALTHOUGH NOT SPECIFICALLY REFERRED TO ON THE CONTRACT DOCUMENTS, SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR.
3. IN PERFORMING ALL WORK, THE CONTRACTOR SHALL EXERCISE DUE CARE AND CAUTION NECESSARY TO AVOID ANY DAMAGE TO AND IMPAIRMENT IN THE USE OF ANY EXISTING UTILITY LINE. ANY DAMAGE INFLICTED ON EXISTING UTILITY LINES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY REPAIRED OR RESTORED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY; AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE ENGINEER.
5. THE CONTRACTOR, AT HIS/HER OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM RUBBISH, DUST, NOISE, EROSION, ETC. THE WORK SHALL BE DONE IN CONFORMANCE WITH THE AIR AND WATER POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
6. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM APPROPRIATE GOVERNMENT AGENCIES.
7. ALL CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG). THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES WHICH SHALL CONFORM WITH THE ADAAG.

PUBLIC HEALTH, SAFETY AND CONVENIENCE NOTES

1. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF THE PUBLIC HEALTH AND SAFETY AND ENVIRONMENTAL QUALITY.
2. THE CONTRACTOR, AT HIS OWN EXPENSE SHALL KEEP THE PROJECT AND ITS SURROUNDING AREAS FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. THE CITY MAY REQUIRE SUPPLEMENTARY MEASURES AS NECESSARY.
3. NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION ACTIVITY SO AS TO CAUSE FALLING ROCK, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.
4. 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 APPLY FOR A CONSTRUCTION PERMIT WITH A NOISE POLLUTION CONTROL PLAN.

GENERAL UTILITY NOTES

1. "UTILITIES" SHALL INCLUDE NEW OR EXISTING WATER LINES, SEWER LINES, ELECTRIC LINES, AND COMMUNICATION LINES, AND ALL RELATED FACILITIES AND APPURTENANCES.
2. THE CONSTRUCTION NOTES ON THIS SHEET SHALL APPLY TO ALL UTILITY WORK.
3. KALAELOA WATER COMPANY SHALL BE INFORMED 60 DAYS IN ADVANCE OF ANY WORK ON WATER OR SEWER LINES.
4. ADJUSTMENTS TO THE ALIGNMENTS OR GRADES OF PROPOSED NEW UTILITIES MAY BE REQUIRED DUE TO UNFORSEEN CONFLICTS OR DISCREPANCIES. IN THE EVENT THAT SUCH ADJUSTMENTS ARE FOUND TO BE NECESSARY, THE CONTRACTOR SHALL IMMEDIATELY INFORM THE ENGINEER WHO SHALL DETERMINE THE NECESSARY ADJUSTMENTS SUBJECT TO THE APPROVALS OF THE UTILITY AGENCIES.
5. THE CONTRACTOR SHALL TONE THE AREA PRIOR TO EXCAVATING TO VERIFY THE LOCATION AND INVERTS OF ALL EXISTING UTILITIES AND SHALL PROTECT SUCH UTILITIES AT ALL TIMES.
6. SHOULD ANY ABANDONED WATER LINE BE ENCOUNTERED IN ANY TRENCH OF NEW UTILITY LINES AND IS WITHIN 1.5 FEET FROM OUTER DIAMETER OF ANY NEW UTILITY LINE, THE ABANDONED WATER LINE SHALL BE CUT AND CAPPED. THE LIMITS OF REMOVAL SHALL BE THE WIDTH OF THE TRENCH.

CONSTRUCTION NOTES

1. ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," SEPTEMBER 1986, AND "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION," SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII.
2. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS/HER SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS 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.
3. THE GENERAL CONTRACTOR/DEVELOPER/OWNER OF THE PROJECT SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS," AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL," AS WELL AS, CHAPTER 14 OF THE REVISED ORDINANCES OF HONOLULU, AS AMENDED. BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.

   THE GENERAL CONTRACTOR/DEVELOPER/OWNER OF THE PROJECT SHALL OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE(S) FOR THE FOLLOWING:

   1. STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE (1) ACRE OR MORE, AND
   2. DISCHARGES OF HYDROTESTING EFFLUENT, DEWATERING EFFLUENT, AND WELL DRILLING EFFLUENT TO STATE WATERS.

   IN ACCORDANCE WITH STATE LAW, ALL DISCHARGES RELATED TO PROJECT CONSTRUCTION OR OPERATIONS ARE REQUIRED TO COMPLY WITH STATE WATER QUALITY STANDARDS (HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54). BEST MANAGEMENT PRACTICES SHALL BE USED TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENT, DEBRIS, AND OTHER POLLUTANTS TO STATE WATERS. PERMIT COVERAGE IS AVAILABLE FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH AT http://health.hawaii.gov/cwb. THE OWNER/DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS AS REQUIRED BY LAW.

4. FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, D.P.P. AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTIONAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.
5. CONFINED SPACE

   FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMIT REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910.146(B), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING:

   I. ALL SAFETY EQUIPMENT REQUIRED BY THE CONFINED SPACE REGULATIONS APPLICABLE TO ALL PARTIES OTHER THAN THE CONSTRUCTION INDUSTRY, TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

      A. FULL BODY HARNESSES FOR UP TO TWO PERSONNEL.
      B. LIFELINE AND ASSOCIATED CLIPS.
      C. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT.
      D. TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT.
      E. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION).
      F. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE.
      G. CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE AND FLAMMABLES (CAPABLE OF MONITORING AT A DISTANCE AT LEAST 20 FEET AWAY).
      H. PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.

   II. CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.

   III. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT).

7. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.
8. FOR PROJECTS ABUTTING STATE HIGHWAYS' RIGHTS-OF WAY, THE OWNER OR HIS/HER AUTHORIZED REPRESENTATIVE SHALL NOTIFY THE STATE DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, OAHU DISTRICT, DRAINAGE DISCHARGE UNIT AT 831-6793 FOR AN ASSESSMENT OF STATE HIGHWAYS PERMIT REQUIREMENTS.
9. FOR BENCHMARK, SEE SHEET T-01.

TOPOGRAPHIC SURVEY NOTES:

1. TOPOGRAPHIC SURVEY COMPLETED BY GROUND SURVEY BY CONTROLPOINT SURVEYING, INC., MAP ENTITLED "TOPOGRAPHIC SURVEY MAP DOT - KALAELOA AIRPORT, BARBERS POINT AIRPORT," DATED JULY 24, 2020.
2. ALL COORDINATES AND AZIMUTHS ARE BASED ON STATE PLANE, ZONE 3.
3. ELEVATIONS ARE REFERENCED TO MEAN SEA LEVEL.
4. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY AND ARE BASED ON RECORD INFORMATION.
5. ALL ELEVATIONS AND DISTANCES SHOWN ARE IN FEET.
6. BENCHMARK IS REFERRED TO SURVEY STREET MONUMENT AT KAPOLEI PARKWAY AND KAMOKILA BLVD. TOP OF BRASS PIN ELEV.=65.88 FT. MSL. SEE SHEET C-01.

APPROVED BY:

Wesley J. Watanabe — 6/6/2025
DIRECTOR, DEPARTMENT OF PLANNING AND PERMITTING — DATE
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY)

For Melvin Takafuna — 6/16/23
CHIEF, CIVIL ENGINEERING BRANCH, DPP — DATE
CITY AND COUNTY OF HONOLULU

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 14575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

CONSTRUCTION NOTES

DATE :

SHEET :
4 OF 80 SHEETS

DWG. NO.
C-02

T:\DOT\KALAELOA AIRPORT\2019760\800\04 GRAPHICS\CAD\SHEETS\C-02 CONSTRUCTION NOTES.DWG

EROSION PREVENTION / SEDIMENT CONTROL NOTES:

1. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE CITY AND COUNTY OF HONOLULU'S "RULES RELATING TO WATER QUALITY," EFFECTIVE 08/10/2017; AND IS REQUIRED TO COMPLY WITH THE PROJECT SCHEDULING REQUIREMENTS THEREOF.
2. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTHWORK IS INITIATED.
3. PERMANENT STABILIZATION. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED USING VEGETATIVE COVERING, PAVEMENT, OR EQUIVALENT, PRIOR TO REMOVING EROSION AND SEDIMENT MEASURES. TRAPPED SEDIMENT AND AREAS OF DISTURBED SOIL WHICH RESULT FROM THE REMOVAL OF THE TEMPORARY MEASURES SHALL BE IMMEDIATELY AND PERMANENTLY STABILIZED.
4. INLET PROTECTION
   - ALL STORM DRAIN INLETS ONSITE AND THOSE OFFSITE WHICH MAY RECEIVE RUNOFF FROM THE SITE SHALL USE AN INLET PROTECTION DEVICE UNLESS THEY ARE DIRECTED TO A SEDIMENT BASIN.
   - SEDIMENT LEVELS MAY NOT EXCEED ONE THIRD OF THE HEIGHT OF A SEDIMENT BARRIER OR INLET PROTECTION DEVICE AT ANY POINT ALONG THE LENGTH OF THE SEDIMENT BARRIER OR THE INLET PROTECTION DEVICE.
   - SEDIMENT BARRIERS AND INLET PROTECTION DEVICES MUST BE UNCLOGGED AND CLEANED WHEN PERFORMANCE IS COMPROMISED.
   - TORN, WEATHERED OR SAGGING SEDIMENT BARRIERS OR INLET PROTECTION DEVICES MUST BE REPAIRED OR REPLACED IMMEDIATELY.
5. TRACKING CONTROL
   - MINIMIZE SEDIMENT TRACK-OUT ONTO OFF-SITE STREETS, OTHER PAVED AREAS, AND SIDEWALKS FROM VEHICLES EXITING THE CONSTRUCTION SITE BY RESTRICTING VEHICLE TRAFFIC TO PROPERLY DESIGNATED AREAS AND USING ADDITIONAL CONTROLS TO REMOVE SEDIMENT FROM VEHICLE TIRES PRIOR TO EXITING THE SITE.
   - VEHICULAR PARKING AND MOVEMENTS ON PROJECT SITES MUST BE CONFINED TO PAVED SURFACES OR PREDEFINED PARKING AREAS AND VEHICLE PATHS, WHICH SHALL BE MARKED WITH FLAGS OR BOUNDARY FENCING.
   - ALL POLLUTANTS AND MATERIALS THAT ARE DROPPED, WASHED, TRACKED, SPILLED, OR OTHERWISE DISCHARGED FROM A PROJECT SITE TO OFF-SITE STREETS, OTHER PAVED AREAS, SIDEWALKS OR THE MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) MUST BE CLEANED USING DRY METHODS SUCH AS SWEEPING OR VACUUMING.
   - WASHING POLLUTANTS AND MATERIALS THAT ARE DISCHARGED FROM THE PROJECT SITE TO THE MS4 INTO DRAIN INLETS OR CATCH BASINS IS PROHIBITED UNLESS THE MATERIAL IS SEDIMENT AND THE INLETS ARE DIRECTED TO A SEDIMENT BASIN OR SEDIMENT TRAP.
6. BEST MANAGEMENT PRACTICES (BMPS) SHALL NOT BE REMOVED UNTIL FINAL STABILIZATION IS COMPLETE FOR THAT PHASE.
7. REFER TO CITY AND COUNTY OF HONOLULU BEST MANAGEMENT PRACTICES MANUAL - CONSTRUCTION, DATED NOV. 2011 FOR MORE INFORMATION ON BMPS.
8. GOOD HOUSEKEEPING BMPs:
   - A. STREET SWEEPING AND VACUUMING. ALL POLLUTANTS DISCHARGED FROM CONSTRUCTION SITE TO OFF-SITE AREAS MUST BE SWEPT OR VACUUMED EACH DAY BEFORE LEAVING THE JOB SITE.
   - B. MATERIALS DELIVERY, STORAGE AND USE MANAGEMENT. PREVENT, REDUCE, OR ELIMINATE THE DISCHARGE OF POLLUTANTS FROM MATERIAL DELIVERY, STORAGE, AND USE TO THE STORM WATER SYSTEM OR WATERCOURSES BY MINIMIZING THE STORAGE OF HAZARDOUS MATERIALS ONSITE, STORING MATERIALS IN A DESIGNATED AREA, AND INSTALLING SECONDARY CONTAINMENT. CONSTRUCTION MATERIALS, WASTE, TOXIC AND HAZARDOUS SUBSTANCES, STOCKPILES AND OTHER SOURCES OF POLLUTION SHALL NOT BE STORED IN BUFFER AREAS, NEAR AREAS OF CONCENTRATED FLOW, OR AREAS ABUTTING THE MS4, RECEIVING WATERS, OR DRAINAGE IMPROVEMENTS THAT DISCHARGE OFF-SITE. PRIMARY AND SECONDARY CONTAINMENT CONTROLS AND COVERS SHALL BE IMPLEMENTED TO THE MAXIMUM EXTENT POSSIBLE.
   - C. SPILL PREVENTION AND CONTROL. CREATE AND IMPLEMENT SPILL PREVENTION AND RESPONSE PLANS TO ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO THE MS4 AND RECEIVING WATERS FROM LEAKS AND SPILLS BY REDUCING THE CHANCE FOR SPILLS, ABSORBING, CONTAINING, AND CLEANING UP SPILLS AND PROPERLY DISPOSING OF SPILL MATERIALS. AT A MINIMUM, ALL PROJECTS SHALL CLEANUP ALL LEAKS AND SPILLS IMMEDIATELY.
   - D. HAZARDOUS MATERIALS. PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM HAZARDOUS WASTE THROUGH PROPER MATERIAL USE AND WASTE DISPOSAL. IN THE EVENT THAT HAZARDOUS MATERIALS ARE DISCHARGED TO THE MS4, THE PROPERTY OWNER OR ESCP COORDINATOR SHALL IMMEDIATELY NOTIFY THE DEPARTMENT OF FACILITIES MAINTENANCE, HONOLULU FIRE DEPARTMENT, AND HONOLULU POLICE DEPARTMENT OF THE DISCHARGE BY TELEPHONE. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED, THE REASONS FOR THE DISCHARGE, AND THE MEASURES THAT HAVE BEEN TAKEN OR WILL BE TAKEN TO PREVENT A REOCCURRENCE OF THE DISCHARGE SHALL BE SUBMITTED TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.
   - E. NONHAZARDOUS MATERIALS. IN THE EVENT THAT NONHAZARDOUS MATERIALS ARE DISCHARGED TO THE MS4, THE PROPERTY OWNER OR ESCP COORDINATOR SHALL NOTIFY THE CITY DEPARTMENT OF FACILITIES MAINTENANCE BY TELEPHONE NO LATER THAN THE NEXT BUSINESS DAY. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED. THE REASONS FOR THE DISCHARGE, AND THE MEASURES THAT HAVE BEEN TAKEN OR WILL BE TAKEN TO PREVENT A REOCCURRENCE OF THE DISCHARGE SHALL BE SUBMITTED TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.
   - F. VEHICLE AND EQUIPMENT CLEANING. ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM VEHICLE AND EQUIPMENT CLEANING OPERATIONS BY USING OFF-SITE FACILITIES WHEN FEASIBLE, WASHING IN DESIGNATED, CONTAINED AREAS ONLY, AND ELIMINATING DISCHARGES TO THE STORM DRAIN SYSTEM BY EVAPORATING AND/OR TREATING WASH WATER, AS APPROPRIATE OR INFILTRATING WASH WATER FOR EXTERIOR CLEANING ACTIVITIES THAT USE WATER ONLY.
   - G. VEHICLE AND EQUIPMENT FUELING. PREVENT FUEL SPILLS AND LEAKS BY USING OFF-SITE FACILITIES, FUELING ONLY IN DESIGNATED AREAS, ENCLOSING OR COVERING STORED FUEL, AND IMPLEMENTING SPILL CONTROLS SUCH AS SECONDARY CONTAINMENT AND ACTIVE MEASURES USING SPILL RESPONSE KITS.

EROSION PREVENTION/SEDIMENT CONTROL NOTES (CONT):

- H. VEHICLE AND EQUIPMENT MAINTENANCE. ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM VEHICLE AND EQUIPMENT MAINTENANCE OPERATIONS BY USING OFF-SITE FACILITIES WHEN FEASIBLE, PERFORMING WORK IN DESIGNATED AREAS ONLY, USING SPILL PADS UNDER VEHICLES AND EQUIPMENT, CHECKING FOR LEAKS AND SPILLS, AND CONTAINING AND CLEANING UP SPILLS IMMEDIATELY.
- I. SOLID WASTE MANAGEMENT. PREVENT OR REDUCE DISCHARGE OF POLLUTANTS TO THE LAND, GROUNDWATER, AND IN STORM WATER FROM SOLID WASTE OR CONSTRUCTION AND DEMOLITION WASTE BY PROVIDING DESIGNATED WASTE COLLECTION AREAS, COLLECT SITE TRASH DAILY, AND ENSURING THAT CONSTRUCTION WASTE IS COLLECTED, REMOVED, AND DISPOSED OF ONLY AT AUTHORIZED DISPOSAL AREAS.
- J. SANITARY/SEPTIC WASTE MANAGEMENT. TEMPORARY AND PORTABLE SANITARY AND SEPTIC WASTE SYSTEMS SHALL BE MOUNTED OR STAKED IN, WELL-MAINTAINED AND SCHEDULED FOR REGULAR WASTE DISPOSAL AND SERVICING. SOURCES OF SANITARY AND/OR SEPTIC WASTE SHALL NOT BE STORED NEAR THE MS4 OR RECEIVING WATERS.
- K. STOCKPILE MANAGEMENT. STOCKPILES SHALL NOT BE LOCATED IN DRAINAGE WAYS, WITHIN 50 FEET FROM AREAS OF CONCENTRATED FLOWS, AND ARE NOT ALLOWED IN THE CITY RIGHT-OF-WAY. SEDIMENT BARRIERS OR SILT FENCES SHALL BE USED AROUND THE BASE OF ALL STOCKPILES. STOCKPILES SHALL NOT EXCEED 15 FEET IN HEIGHT. STOCKPILES GREATER THAN 15 FEET IN HEIGHT SHALL REQUIRE 8 FOOT WIDE BENCHING IN ACCORDANCE WITH REVISED ORDINANCES OF HONOLULU CHAPTER 14, ARTICLE 15. STOCKPILES MUST BE COVERED WITH PLASTIC SHEETING OR A COMPARABLE MATERIAL IF THEY WILL NOT BE ACTIVELY USED WITHIN 7 DAYS.
- L. LIQUID WASTE MANAGEMENT. LIQUID WASTE SHALL BE CONTAINED IN A CONTROLLED AREA SUCH AS A HOLDING PIT, SEDIMENT BASIN, ROLL-OFF BIN, OR PORTABLE TANK OF SUFFICIENT VOLUME AND TO CONTAIN THE LIQUID WASTES GENERATED. CONTAINMENT AREAS OR DEVICES MUST BE IMPERMEABLE AND LEAK FREE AND SHOULD NOT BE LOCATED WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS.
- M. CONCRETE WASTE MANAGEMENT. PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM CONCRETE WASTE BY CONDUCTING WASHOUT OFFSITE OR PERFORMING ONSITE WASHOUT IN A DESIGNATED AREA CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MILLIMETER POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL. CONTAINMENT AREAS OR DEVICES SHOULD NOT BE LOCATED WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75 PERCENT FULL. ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHOULD BE BROKEN UP, REMOVED, AND DISPOSED OF AS SOLID WASTES.
- N. CONTAMINATED SOIL MANAGEMENT. AT MINIMUM CONTAIN CONTAMINATED MATERIAL SOIL BY SURROUNDING WITH IMPERMEABLE LINED BERMS OR COVER EXPOSED CONTAMINATED MATERIAL WITH PLASTIC SHEETING. CONTAMINATED SOIL SHOULD BE DISPOSED OF PROPERLY IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
- O. DUST CONTROL

  DUST FROM THE PROJECT SITE SHALL NOT BE TRANSPORTED OR DISCHARGED TO OFF-SITE AREAS.

15. A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON THE PROJECT SITE.
16. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE TRAINED ON THE BEST MANAGEMENT PRACTICES.
17. ADDITIONAL BMP INSPECTIONS AND REQUIREMENTS:
    - A. THE NAME, PHONE NUMBER, MAILING ADDRESS, AND EMAIL ADDRESS OF THE ESCP COORDINATOR SHALL BE SUBMITTED TO THE DPP DIRECTOR IN WRITING AT LEAST 2 WEEKS PRIOR TO COMMENCING ANY WORK.
    - B. A PRECONSTRUCTION INSPECTION MUST BE PERFORMED BY THE ESCP COORDINATOR PRIOR TO COMMENCING GROUND-DISTURBING ACTIVITIES TO CONFIRM THAT BMPS ARE INSTALLED CORRECTLY AND ACCORDING TO THE ESCP.
    - C. ESCP COORDINATOR MUST INSPECT THE PROJECT ONCE EVERY SEVEN DAYS. INSPECTION RESULTS AND CORRECTIVE ACTIONS SHALL BE DOCUMENTED WITH PHOTOGRAPHS AND BY COMPLETING THE REQUIRED FORMS.
    - D. ANY DEFICIENCIES OR BMPS THAT MAY VIOLATE ANY PROVISIONS OF THE RULES RELATING TO WATER QUALITY, OR MAY RESULT IN POLLUTANT DISCHARGES TO THE MS4 OR STATE WATERS, AND REQUIRES CORRECTIVE ACTIONS SHALL BE ADDRESSED IMMEDIATELY.
    - E. ALL PHOTOGRAPHS AND INSPECTION REPORTS MUST BE COMPILED IN A 3-RING FOLDER OR BINDER OR KEPT ELECTRONICALLY, WHICH SHALL BE THE PROJECT LOG. THE PROJECT LOG SHALL BE KEPT ON-SITE OR ELECTRONICALLY ACCESSIBLE FROM THE SITE AT ALL TIMES, IN A COMPLETE CONDITION, AND IMMEDIATELY PRODUCED FOR INSPECTION IF REQUIRED BY THE DPP DIRECTOR.
    - F. AT THE CONCLUSION OF THE PROJECT, THE ESCP COORDINATOR SHALL:
    - INSPECT THE SITE AND CONFIRM THAT ALL DISTURBED AREAS HAVE BEEN STABILIZED AND ALL TEMPORARY BMPS HAVE BEEN REMOVED.
    - PREPARE AND TRANSMIT AN ELECTRONIC COPY OF THE FINAL PROJECT LOG AND A LETTER CONFIRMING COMPLIANCE TO THE DPP DIRECTOR WITHIN 5 BUSINESS DAYS OF COMPLETING THE WORK.
12. THE FOLLOWING BMPS WERE DETERMINED TO BE NOT APPLICABLE BASED ON SPECIFIC SITE CONDITIONS. AS CONSTRUCTION PROGRESSES, REVISIONS MAY BE NECESSARY AND WILL BE PROVIDED TO OPP INSPECTORS.
    - A. DEWATERING PRACTICES - GROUNDWATER IS NOT ANTICIPATED
13. AN ESCP COORDINATOR MUST BE DESIGNATED USING THE FORM IN APPENDIX A TO THE RULES RELATING TO WATER QUALITY PRIOR TO PERMITTING.
14. PRACTICE GOOD HOUSEKEEPING MEASURES THROUGHOUT THE DURATION OF CONSTRUCTION. INSPECTIONS WILL BE PERFORMED WEEKLY.

EROSION AND SEDIMENT CONTROL PLAN SCHEDULE AND RAIN RESPONSE PLAN:

PROJECT SEQUENCE:

1. INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES AS SHOWN ON SHEETS C-04 AND C-05.
2. PROCEED WITH CONSTRUCTION WITH LEAST POSSIBLE DISTURBANCE OF VEGETATIVE AREAS AND TEMPORARY STRUCTURES.
3. REMOVE OR DISMANTLE TEMPORARY EROSION CONTROL STRUCTURES UPON COMPLETION OF TRENCH REPAVING OR AFTER FULL ESTABLISHMENT OF PERMANENT VEGETATIVE COVER, WHICHEVER IS LATER.
4. PRACTICE GOOD HOUSEKEEPING MEASURES THROUGHOUT THE DURATION OF CONSTRUCTION.
5. INSPECTIONS WILL BE PERFORMED WEEKLY AND WITHIN 24-HOURS AFTER ANY RAINFALL OF 0.25 INCHES OR GREATER WITHIN A 24-HOUR PERIOD. DURING PROLONGED RAINFALL, DAILY CHECKING IS NECESSARY. THE CONTRACTOR SHALL MAINTAIN RECORDS OF CHECKS AND REPAIRS.

RAIN RESPONSE PLAN:

THE FOLLOWING WILL BE PERFORMED WHEN HEAVY RAINS, TROPICAL STORM OR HURRICANE IS IMMINENT OR IS FORECASTED IN THE NEXT 48 HOURS:

1. TEMPORARY SUSPENSION OF ACTIVE TRENCHING.
2. INSPECT ALL BMPS AND MAINTAIN AS NEEDED. REINSTALL ANY PERIMETER CONTROLS THAT WERE REMOVED DUE TO ACTIVE WORK IN THE AREA. IF A SEVERE STORM IS EXPECTED, REMOVE INLET PROTECTION DEVICES TO PREVENT FLOODING ON SURROUNDING STREETS.
3. COVER OR RELOCATE MATERIAL STOCKPILES AND LIQUID MATERIAL CONTAINERS TO AVOID CONTACT WITH RAINWATER.
4. PLACE SPILL PANS OR OIL-ONLY SPILL PADS UNDER CONSTRUCTION VEHICLES TO PREVENT RUNOFF FROM CONTACTING ANY SPILLED PETROLEUM PRODUCTS. PROPERLY DISPOSE OF ANY ACCUMULATED OILY WATER AFTER THE RAIN EVENT.
5. RE-INSPECT AFTER THE APPROACHING HEAVY RAINS, TROPICAL STORM OR HURRICANE HAS PASSED; AND REPLACE OR MAINTAIN BMPS AS NEEDED.

APPROVED BY:

FOR Melvin Nishikawa
CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU

6/16/23
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 14578-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

EROSION AND SEDIMENT CONTROL DETAILS AND NOTES

DATE :

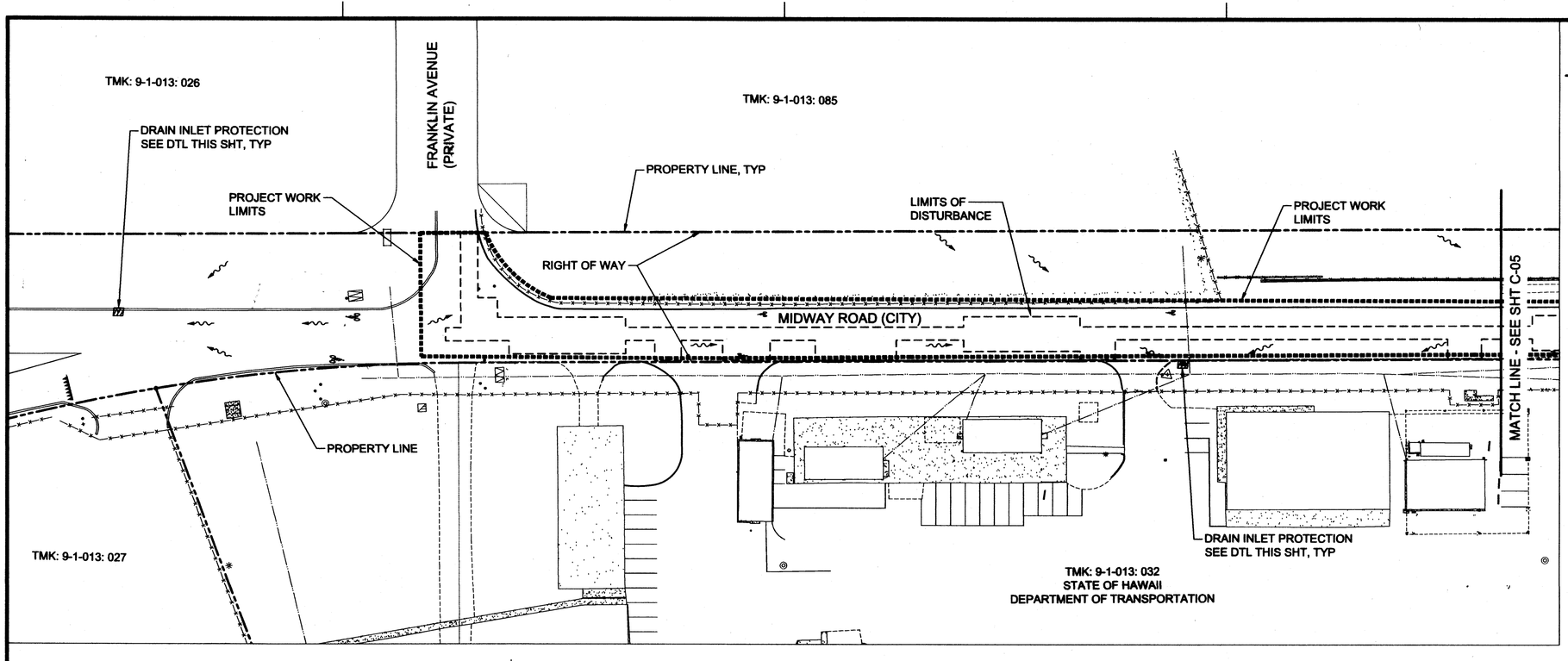
SHEET :

5 OF 80 SHEETS

DWG. NO.

C-03

T:\DOT KALAELOA AIRPORT\2019\7020004 GRAPHICS\CADD\SHEETS\C-03 EROSION AND SEDIMENT CONTROL DETAILS AND NOTES.DWG



LEGEND:

- EXISTING CONTOUR
- PROPERTY LINE
- LIMITS OF DISTURBANCE
- PROJECT WORK LIMITS
- DRAIN INLET PROTECTION
- APPROXIMATE DIRECTION OF SURFACE DRAINAGE RUNOFF FLOW

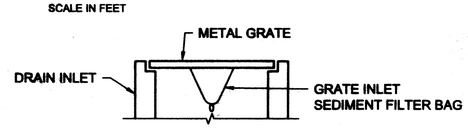
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EROSION AND SEDIMENT CONTROL PLAN - 1 (TRENCHING PROJECT)

SCALE: 1"=40'

40 0 40 80

SCALE IN FEET



DRAIN INLET PROTECTION DETAIL

NOT TO SCALE

NOTE:

1. SEE SHEET C-03 FOR EROSION AND SEDIMENT CONTROL NOTES.

APPROVED BY:

FOR Melvin Tokuhara
CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU

6/14/23
DATE

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DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

EROSION AND SEDIMENT CONTROL PLAN - 1

DATE :

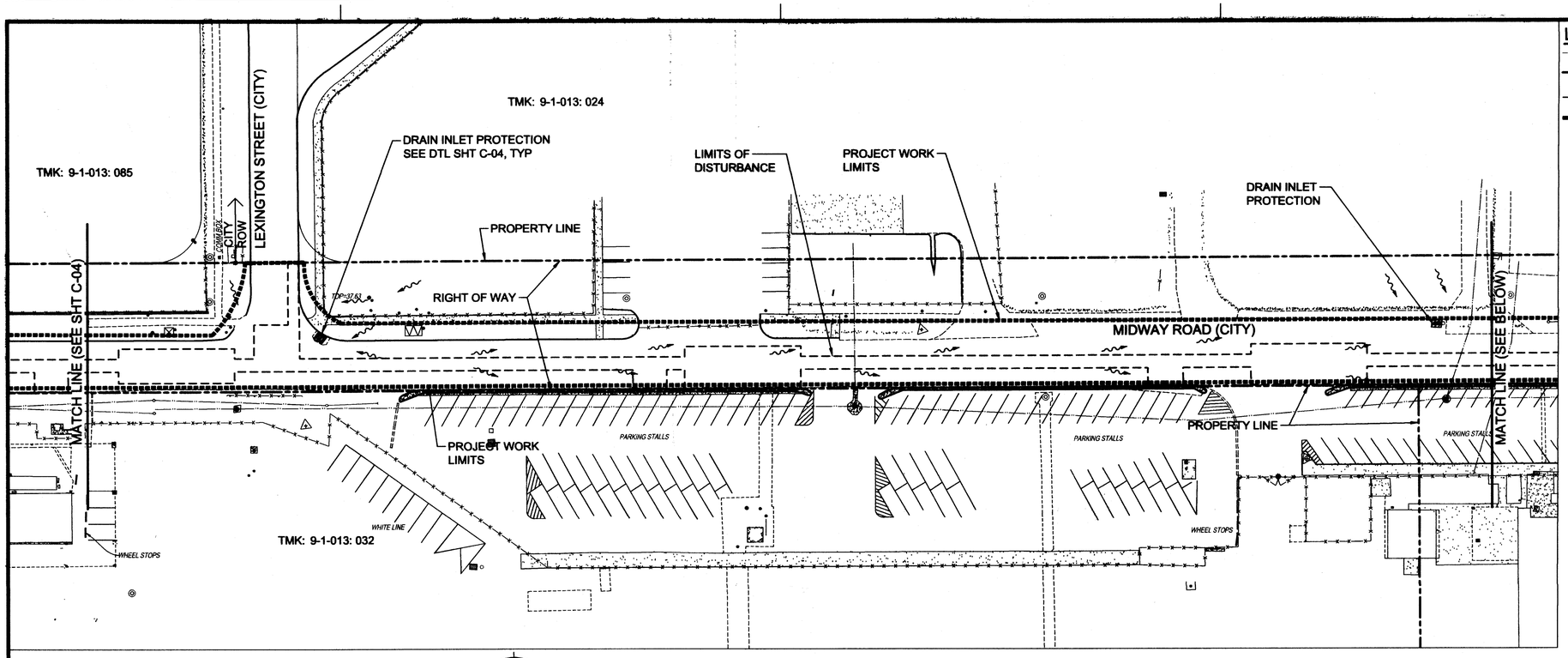
SHEET :

6 OF 80 SHEETS

DWG. NO.

C-04

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CADD\SHEETS\C-04 EROSION AND SEDIMENT CONTROL PLAN - 1.DWG



LEGEND:

- EXISTING CONTOUR
- PROPERTY LINE
- LIMITS OF DISTURBANCE
- PROJECT WORK LIMITS
- DRAIN INLET PROTECTION
- APPROXIMATE DIRECTION OF SURFACE DRAINAGE RUNOFF FLOW

NORTH

EROSION AND SEDIMENT CONTROL PLAN - 2 (TRENCHING PERMIT)

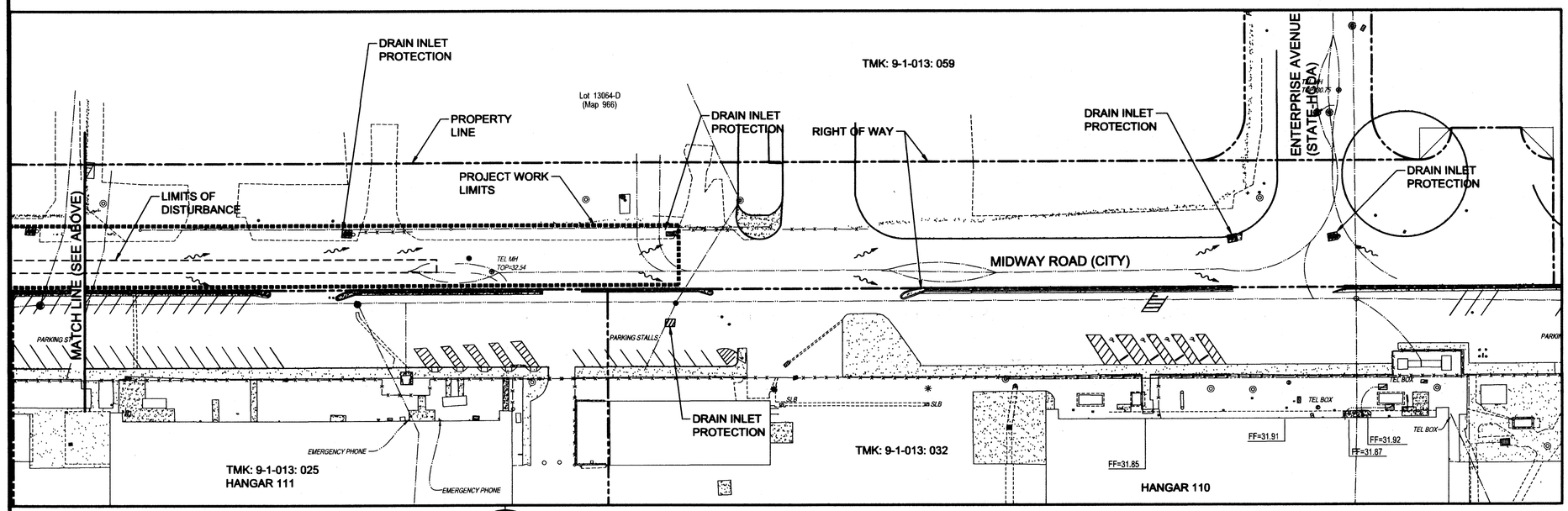
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SCALE IN FEET

NOTE:

1. SEE SHEET C-03 FOR EROSION AND SEDIMENT CONTROL NOTES.



NORTH

EROSION AND SEDIMENT CONTROL PLAN - 2 (TRENCHING PERMIT)

SCALE: 1"=40'

40 0 40 80

SCALE IN FEET

APPROVED BY:

For Malmi Johnson
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(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY)

6/16/23
DATE

STATE OF HAWAII
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AIRPORTS

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04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

EROSION AND SEDIMENT CONTROL PLAN - 2

DATE :

SHEET :
7 OF 80 SHEETS

DWG. NO.
C-05

T:\DOT KALAELOA AIRPORT\30197002\04 GRAPHICS\CAD\SHEETS\C-05 EROSION AND SEDIMENT CONTROL PLAN - 2.DWG

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

1. THE PERMITTEE 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 IS 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. FLAGGERS AND/OR OFF-DUTY POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
6. WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITTEE SHALL INSTALL A FLASHING ARROW SIGNAL AS SHOWN ON THE TRAFFIC CONTROL PLANS.
7. ALL TRAFFIC LANES SHALL BE A MINIMUM OF TEN (10) FEET WIDE.
8. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
9. 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).
10. LANE CLOSURE SHALL BE LIMITED ONLY TO THE EXTENT OF ACCOMPLISHING EACH DAY'S WORK. AS SOON AS EACH DAY'S 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. EXISTING FADED OR OBLITERATED PAVEMENT MARKINGS THAT ARE NECESSARY FOR SAFE TRAFFIC FLOW IN THE CONSTRUCTION AREA SHALL BE REPLACED WITH TEMPORARY OR PERMANENT MARKINGS BEFORE OPENING THE ROADWAY TO PUBLIC TRAFFIC EACH DAY.
11. PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS SHALL BE REPLACED UPON COMPLETION OF EACH PHASE OF WORK.
12. CONES AND DELINEATORS SHALL BE SPACED AT A MAXIMUM DISTANCE OF 20 FEET APART. A MINIMUM OF SIX CHANNELIZING DEVICES SHALL BE USED FOR EACH TAPER LENGTH.
13. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THE DRIVEWAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY. FURTHER, THE PERMITTEE SHALL CONTROL TRAFFIC GOING IN AND OUT OF DRIVEWAYS.
14. BUFFER AND TAPER AREA ON APPROACH TO ANY WORK AREA SHALL BE KEPT CLEAR OF VEHICLES AND EQUIPMENT.
15. A HIGH LEVEL WARNING DEVICE (FLAG TREE) SHALL BE INSTALLED ON APPROACH TO ALL WORK AREAS.
16. "NO PARKING" SIGNS SHALL BE POSTED WITHIN ANY WORK AREA AND FOR THE BUFFER AND TAPER AREAS APPROACHING THE WORK AREA.
17. WHERE AN ACCESSIBLE PEDESTRIAN ROUTE IS CLOSED OR BLOCKED DURING CONSTRUCTION, CONTRACTOR TO PROVIDE TEMPORARY, ACCESSIBLE PEDESTRIAN ROUTE.
18. TRAFFIC CONTROL PLANS ARE APPROVED FOR WORK ON ANY CITY STREET AREA ONLY BETWEEN THE HOURS OF 08:30 A.M. AND 03:30 P.M. (MONDAY-FRIDAY)

TRAFFIC NOTES FOR WORK ON CITY & COUNTY STREETS

1. A PERMIT SHALL BE OBTAINED FROM THE DEPARTMENT OF TRANSPORTATION SERVICES BEFORE WORK ON ANY PORTION OF A PUBLIC STREET OR HIGHWAY MAY BEGIN. CONSTRUCTION TRAFFIC CONTROL PLANS APPROVED BY THE DEPARTMENT OF TRANSPORTATION SERVICES AND/OR THE DEPARTMENT OF PLANNING AND PERMITTING MUST BE PROVIDED WHEN APPLYING FOR THE PERMIT.
2. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES, WHICH SHALL CONFORM TO THE "HAWAII ADMINISTRATION RULES GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITE ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE CURRENT U.S. FEDERAL HIGHWAYS ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS, PART VI - TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS."
3. WORK ON ANY CITY STREET AREA MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:30 A.M. TO 3:30 P.M., MONDAY THROUGH FRIDAY, UNLESS OTHERWISE PERMITTED BY THE DEPARTMENT OF TRANSPORTATION SERVICES.
4. DURING WORKING HOURS, THE CONTRACTOR SHALL PROVIDE FOR THROUGH TRAFFIC. DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL AND ALL LANES SHALL BE OPEN TO TRAFFIC.
5. AS REQUIRED BY THE DEPARTMENT OF TRANSPORTATION SERVICES, THE CONTRACTOR SHALL PROVIDE OFF-DUTY POLICE OFFICERS TO CONTROL THE FLOW OF TRAFFIC.
6. WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
7. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHTS-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
8. THE CONTRACTOR SHALL REFERENCE TO THE APPROVAL OF THE DEPARTMENT OF TRANSPORTATION SERVICES AND THE DEPARTMENT OF PLANNING AND PERMITTING, ALL EXISTING TRAFFIC SIGNS, POSTS AND PAVEMENT MARKINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL REPLACE OR REPAIR ALL TRAFFIC SIGNS, POSTS AND PAVEMENT MARKINGS DISTURBED BY HIS ACTIVITIES.
9. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PLANNING AND PERMITTING, AT 808-768-8084 ONE (1) WEEK PRIOR TO ANY WORK TO BE DONE ON SIGNS, POST AND PAVEMENT MARKINGS.
10. NO EQUIPMENT SHALL BE STORED WITHIN STREET RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE DEPARTMENT OF TRANSPORTATION SERVICES.
11. DEPARTMENT OF TRANSPORTATION SHALL ENSURE THAT THE CONTRACTOR INSTALLS THE CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD AND THE HAWAII ADMINISTRATION RULES AS SPECIFIED IN TRAFFIC NOTE #2.

SIGNS AND MARKINGS NOTES

1. ALL TRAFFIC SIGN AND PAVEMENT MARKING INSTALLATIONS SHALL BE DONE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS," 2023 EDITION, AS AMENDED, THE LATEST SPECIFICATIONS FROM THE TRAFFIC REVIEW BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, AND AS SHOWN ON THE PLANS.
2. CONTRACTOR SHALL NOTIFY AND COORDINATE WORK WITH THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, ONE (1) WEEK IN ADVANCE OF COMMENCING WORK AT 808-768-8084.
3. CONTRACTOR SHALL SUBMIT MATERIAL BROCHURES FOR ALL SIGNS AND PAINT MATERIALS TO THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING.
4. THE SIGNING AND/OR STRIPING CONTRACTOR SHALL KEEP ONE (1) SET OF APPROVED PLANS AT THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION WORK.
5. CONTRACTOR SHALL PAINT TEMPORARY GUIDELINES AND OUTLINE OF ARROWS, LEGENDS AND CROSSWALKS WITH A TWO (2") INCH WIDE BRUSHED LINE ON THE DAY THE ROADWAY IS OPENED TO TRAFFIC. THESE MARKINGS MUST BE APPROVED BY THE INSPECTOR FROM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING.
6. CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 808-768-8084, THREE (3) DAYS IN ADVANCE OF FINAL INSPECTION.
7. CONTRACTOR SHALL MEET WITH THE INSPECTOR FROM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING DURING THE FINAL INSPECTION.
8. WITHIN TEN (10) DAYS FOLLOWING NOTIFICATION OF AWARD OF CONTRACT, THE CONTRACTOR SHALL SUBMIT TO THE DEPARTMENT OF PLANNING AND PERMITTING (PHONE: 808-768-8084) FOR APPROVAL, A LIST OF ANY SIGNING AND PAVEMENT MARKING MATERIAL WHICH HE PROPOSES TO INSTALL. THE LIST SHALL BE COMPLETE AS TO THE NAME OF MANUFACTURER, CATALOG NUMBER, AND SHALL BE SUPPLEMENTED WITH MATERIAL BROCHURES.
9. UPON FINAL INSPECTION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT A LETTER OF CERTIFICATION FOR ALL TRAFFIC SIGNING AND PAVEMENT MARKING MATERIALS INSTALLED.
10. SIGNS SHALL BE ATTACHED TO BRACKETS WITH 5/16" ZINC PLATED STEEL BOLTS, NUTS AND WASHERS. SIGNS 48" WIDE OR LARGER THAN 10 SQ. FT. IN AREA SHALL BE MOUNTED ON TWO-2" GALV. PIPE POST. THE SIGN SHALL BE INSTALLED WITH AT LEAST ONE (1) FOOT CLEARANCE FROM THE SIGN EDGE TO THE CURB FACE.
11. ALL TRAFFIC SIGNS SHALL BE REFLECTORIZED.
12. RAISED PAVEMENT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DEPARTMENT OF PLANNING AND PERMITTING STANDARDS.
13. LOCATION OF "STOP" SIGN:
    - A. INSTALL "STOP" SIGN AT CURB POINT OF CURVATURE.
    - B. INSTALL "STOP" SIGN ON METAL STREET LIGHT STANDARD IF A STANDARD IS LOCATED WITHIN TEN (10) FEET OF CURB RETURN.
    - C. INSTALL "STOP" SIGN IN FRONT OF UTILITY POLE IF A POLE IS LOCATED WITHIN TEN (10) FEET OF CURB RETURN.
    - D. PAVEMENT WORD AND SYMBOL MARKINGS SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF PLANNING AND PERMITTING STANDARDS.
    - E. THE CONTRACTOR SHALL USE THERMOPLASTIC MATERIAL, APPROVED BY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, FOR ALL CROSSWALKS, STOP BARS, PAVEMENT ARROWS, CENTER LINES, LANE LINES, ARC LINES, CHANNELIZED TRAFFIC ISLANDS, AND LEGENDS.
14. PAVEMENT WORD AND SYMBOL MARKINGS SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF PLANNING AND PERMITTING STANDARDS.
15. THE CONTRACTOR SHALL USE THERMOPLASTIC MATERIAL, APPROVED BY THE PERMITTING AND INSPECTION SECTION OF THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, FOR ALL CROSSWALKS, STOP BARS, PAVEMENT ARROWS, CENTER LINES, LANE LINES, ARC LINES, CHANNELIZED TRAFFIC ISLANDS AND LEGENDS.

APPROVED BY:

CHIEF, TRAFFIC REVIEW BRANCH, DPP
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY)

1/23/25
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4573
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

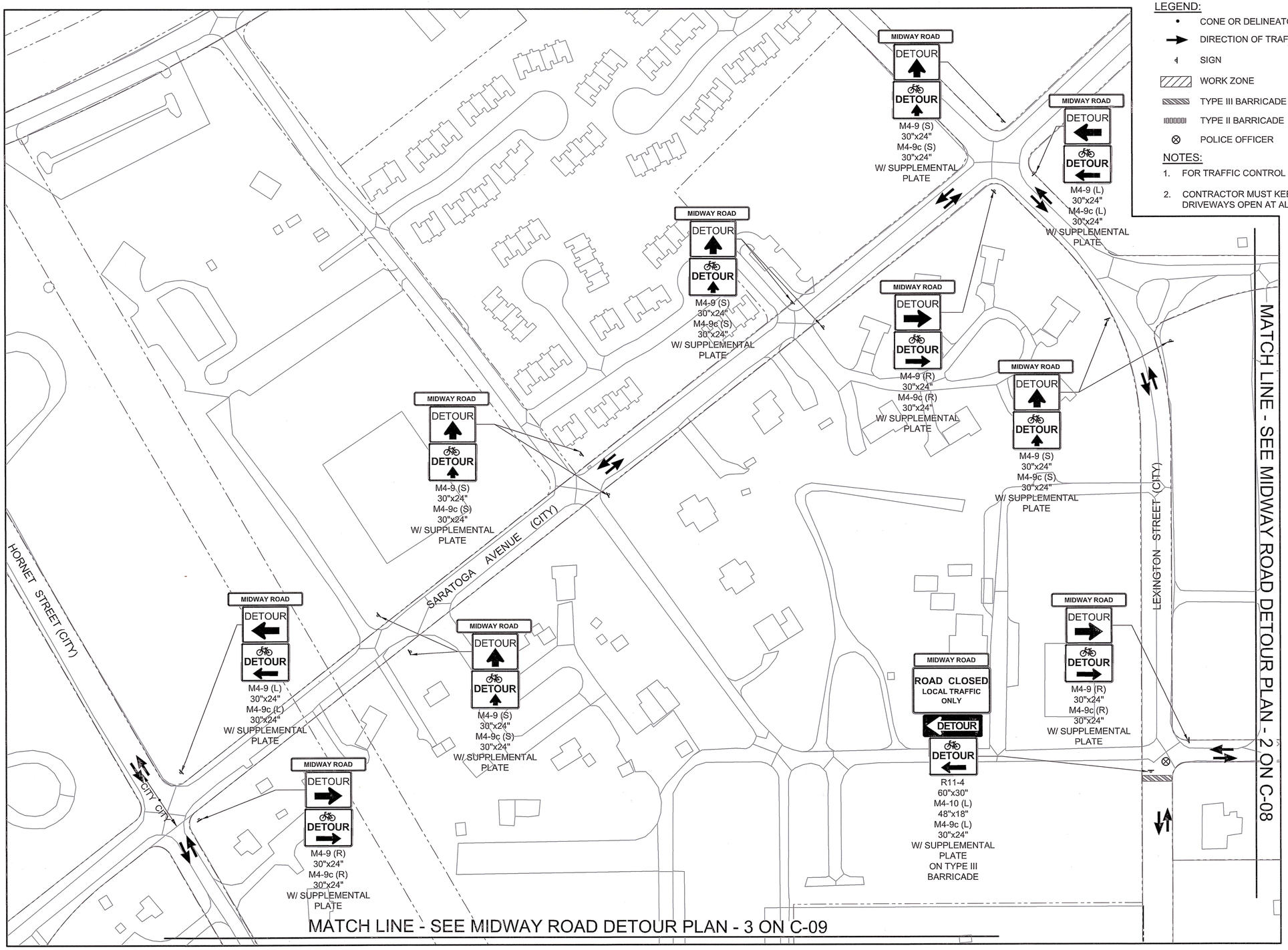
TRAFFIC CONTROL NOTES

DATE :

SHEET :
8 OF 80 SHEETS

DWG. NO.
C-06

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-06 TRAFFIC CONTROL NOTES.DWG



LEGEND:

- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- SIGN
- WORK ZONE
- TYPE III BARRICADE
- TYPE II BARRICADE
- POLICE OFFICER

NOTES:

1. FOR TRAFFIC CONTROL NOTES, SEE SHEET C-06.
2. CONTRACTOR MUST KEEP ACCESS TO DRIVEWAYS OPEN AT ALL TIMES.

NORTH

MIDWAY ROAD - DETOUR PLAN - 1

SCALE: 1"=100'

100 0 100 200

SCALE IN FEET

APPROVED BY:

CHIEF, TRAFFIC REVIEW BRANCH, DPP
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY)

4/28/25
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4573-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

MIDWAY ROAD DETOUR PLAN - 1

DATE :

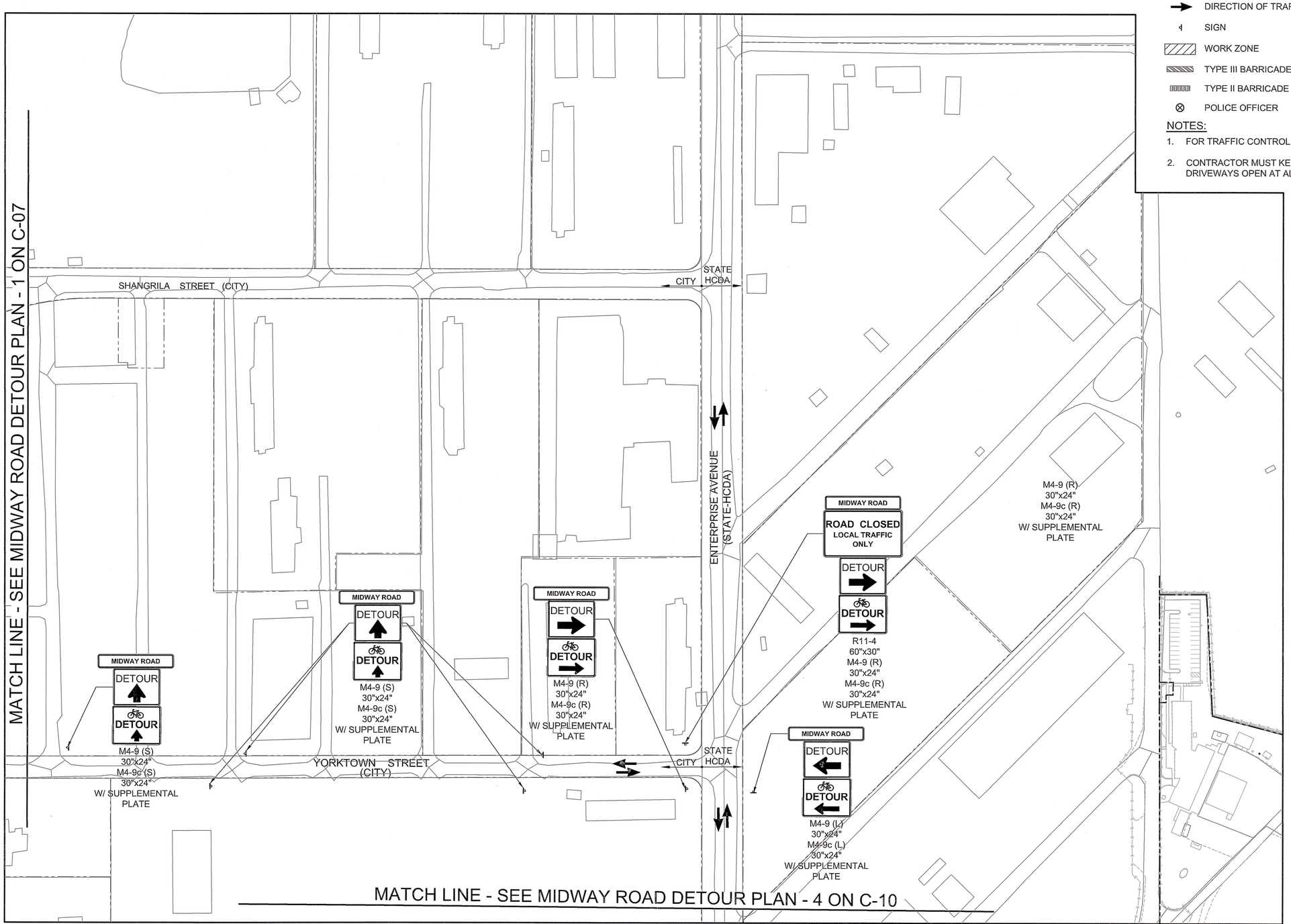
SHEET :

9 OF 80 SHEETS

DWG. NO.

C-07

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-07 MIDWAY ROAD DETOUR PLAN.DWG



LEGEND:

- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- SIGN
- WORK ZONE
- TYPE III BARRICADE
- TYPE II BARRICADE
- POLICE OFFICER

NOTES:

1. FOR TRAFFIC CONTROL NOTES, SEE SHEET C-06.
2. CONTRACTOR MUST KEEP ACCESS TO DRIVEWAYS OPEN AT ALL TIMES.

NORTH

MIDWAY ROAD - DETOUR PLAN - 2

SCALE: 1"=100'

100 0 100 200

SCALE IN FEET

APPROVED BY:

CHIEF, TRAFFIC REVIEW BRANCH, DPP
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY)

DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

MIDWAY ROAD DETOUR PLAN - 2

DATE :

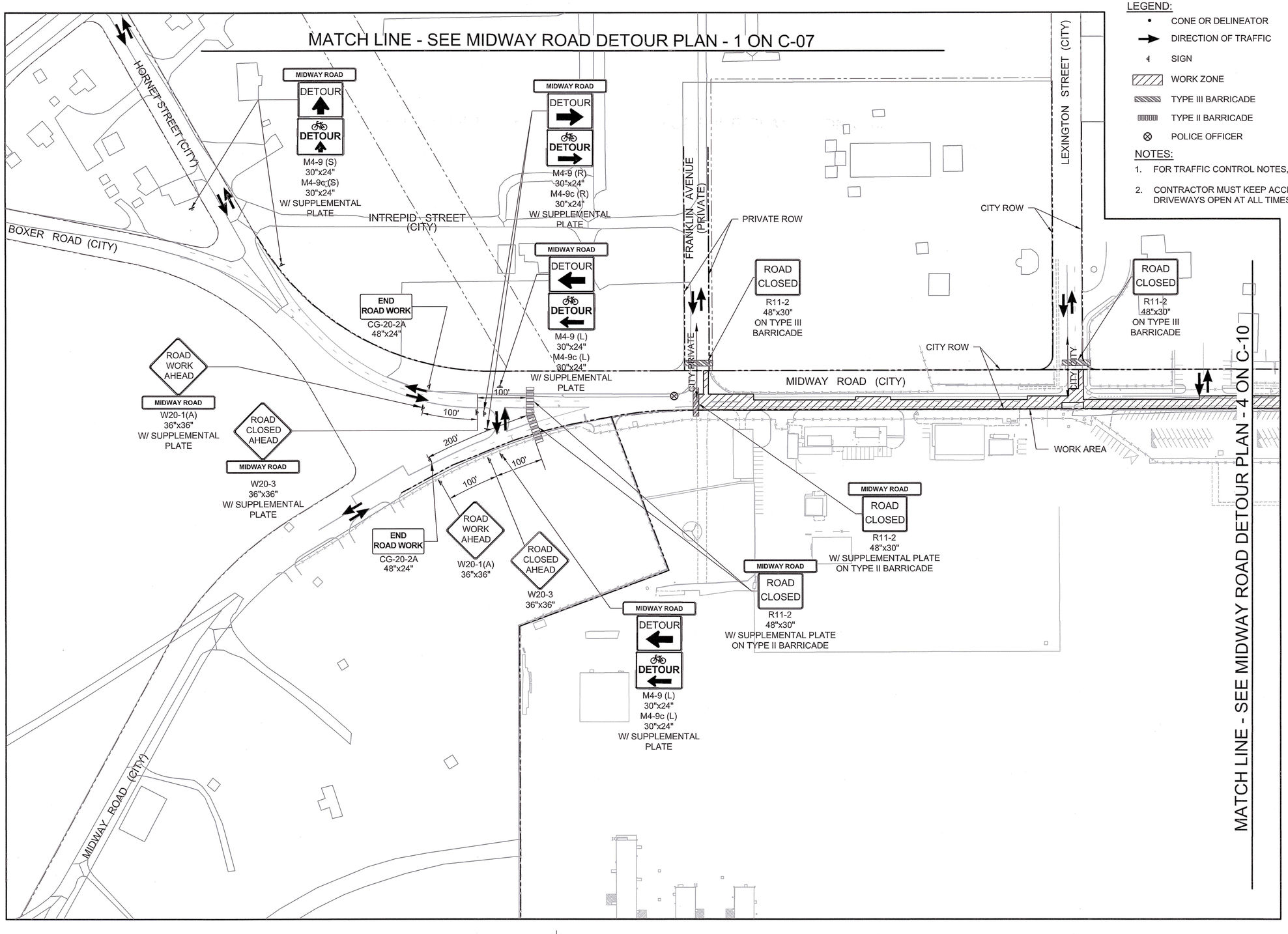
SHEET :

10 OF 80 SHEETS

DWG. NO.

C-08

T:\DOT KALAELOA AIRPORT\2019\7002009\04 GRAPHICS\CAD\SHEETS\C-08 MIDWAY ROAD DETOUR PLAN 2.DWG



LEGEND:

- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- SIGN
- WORK ZONE
- TYPE III BARRICADE
- TYPE II BARRICADE
- POLICE OFFICER

NOTES:

1. FOR TRAFFIC CONTROL NOTES, SEE SHEET C-06.
2. CONTRACTOR MUST KEEP ACCESS TO DRIVEWAYS OPEN AT ALL TIMES.

MIDWAY ROAD - DETOUR PLAN - 3

SCALE: 1"=100'

100 0 100 200

SCALE IN FEET

NORTH

APPROVED BY:

CHIEF, TRAFFIC REVIEW BRANCH, DPP
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY)

4/28/25
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

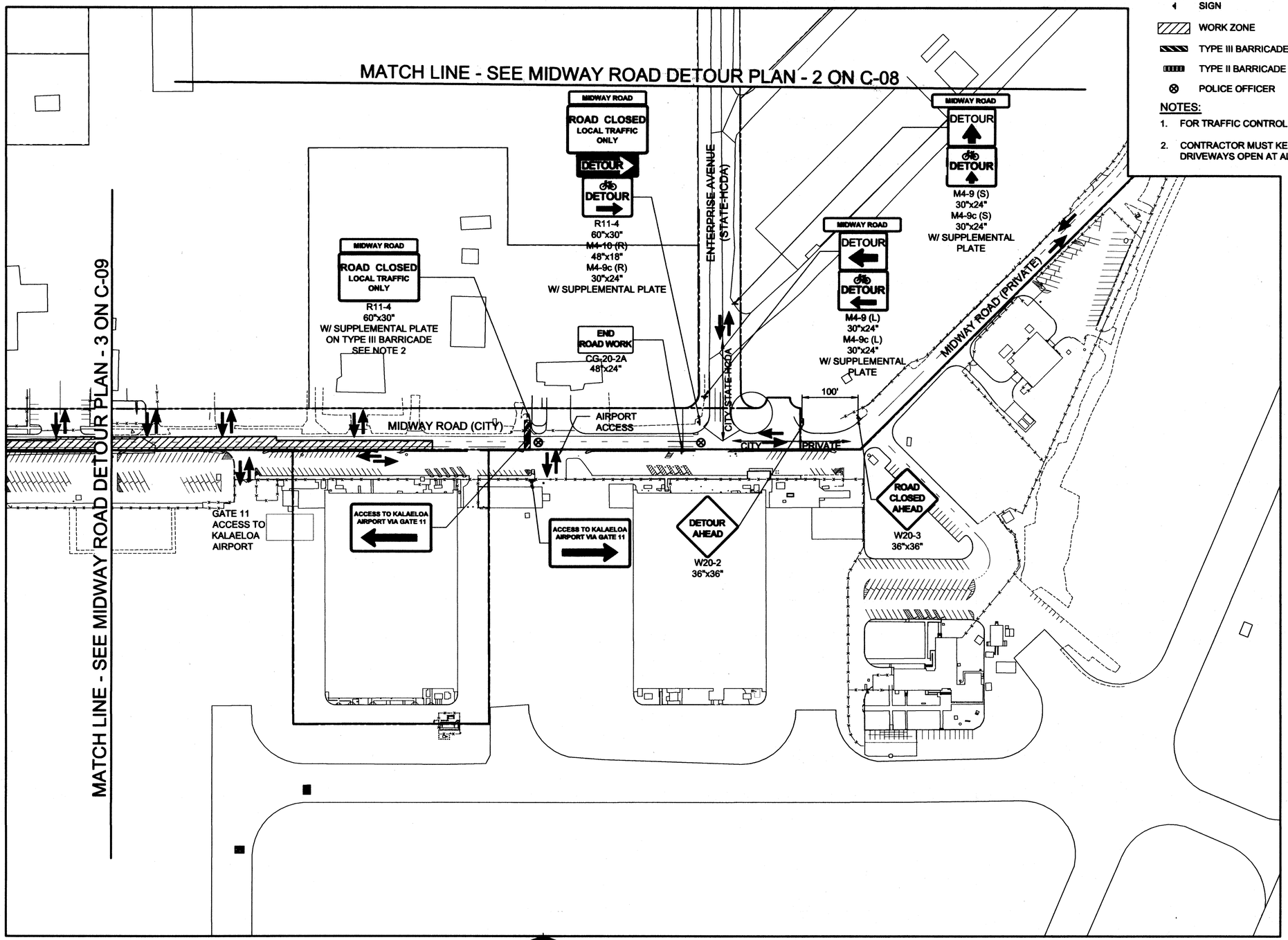
MIDWAY ROAD DETOUR PLAN - 3

DATE :

SHEET :
11 OF 80 SHEETS

DWG. NO.
C-09

T:\DOT KALAELOA AIRPORT\2019\7002000\04 GRAPHICS\CAD\SHEETS\C-09 MIDWAY ROAD DETOUR PLAN 3.DWG



LEGEND:

- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- SIGN
- WORK ZONE
- TYPE III BARRICADE
- TYPE II BARRICADE
- POLICE OFFICER

NOTES:

1. FOR TRAFFIC CONTROL NOTES, SEE SHEET C-06.
2. CONTRACTOR MUST KEEP ACCESS TO DRIVEWAYS OPEN AT ALL TIMES.

NORTH

MIDWAY ROAD - DETOUR PLAN - 4

SCALE: 1"=100'

100 0 100 200

SCALE IN FEET

APPROVED BY:

CHIEF, TRAFFIC REVIEW BRANCH, DPP
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY)

4/24/25
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
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HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

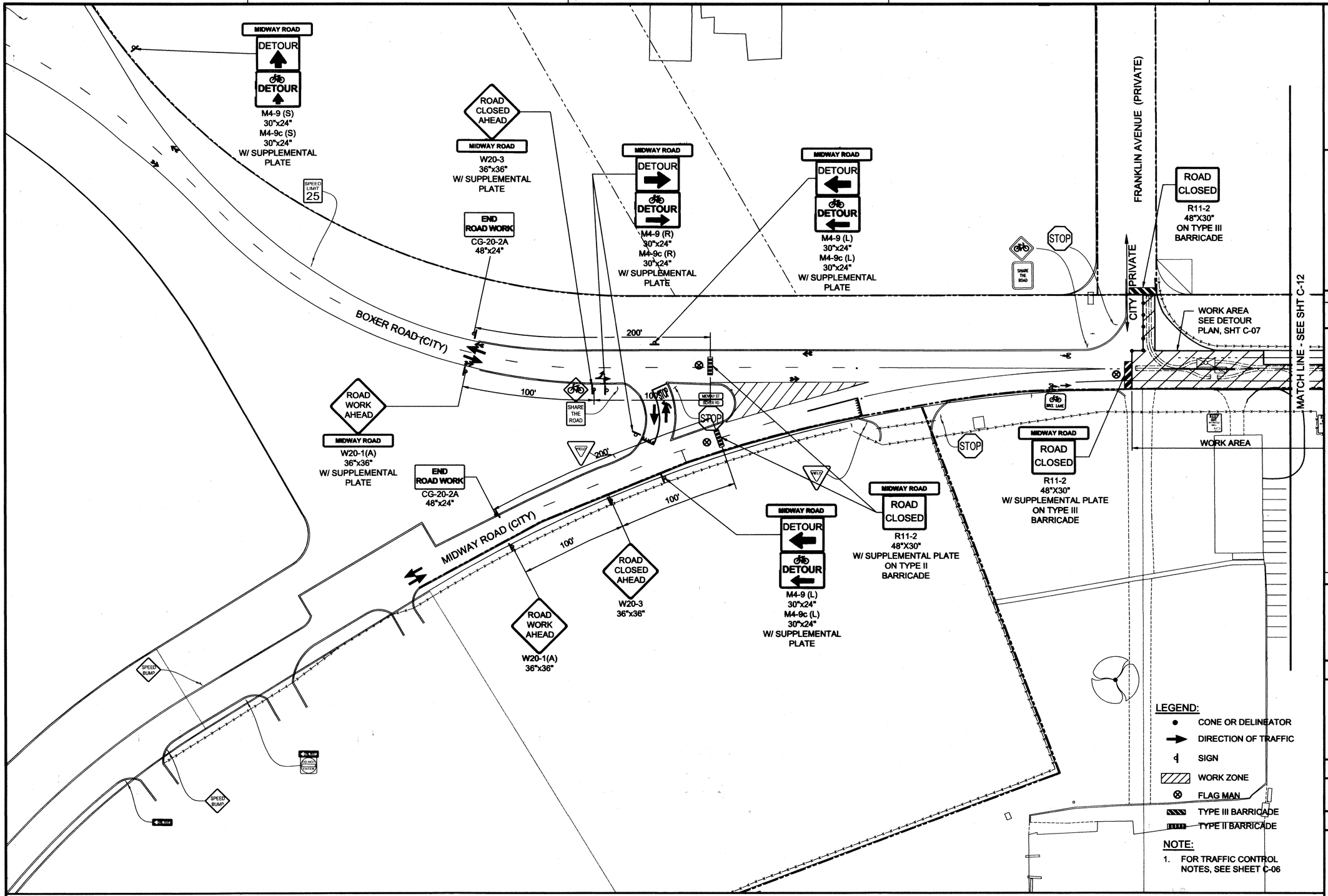
MIDWAY ROAD
DETOUR PLAN - 4

DATE :

SHEET :
12 OF 80 SHEETS

DWG. NO.
C-10

T:\DOT KALAELOA AIRPORT\3019700200\04 GRAPHICS\RCAD\SHEETS\C-10 MIDWAY ROAD DETOUR PLAN 4.DWG



TRAFFIC CONTROL PLAN - 1

SCALE: 1"=40'

40 0 40 80

SCALE IN FEET

APPROVED BY:

CHIEF, TRAFFIC REVIEW BRANCH, DPP
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY)

1/8/25
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 8818-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

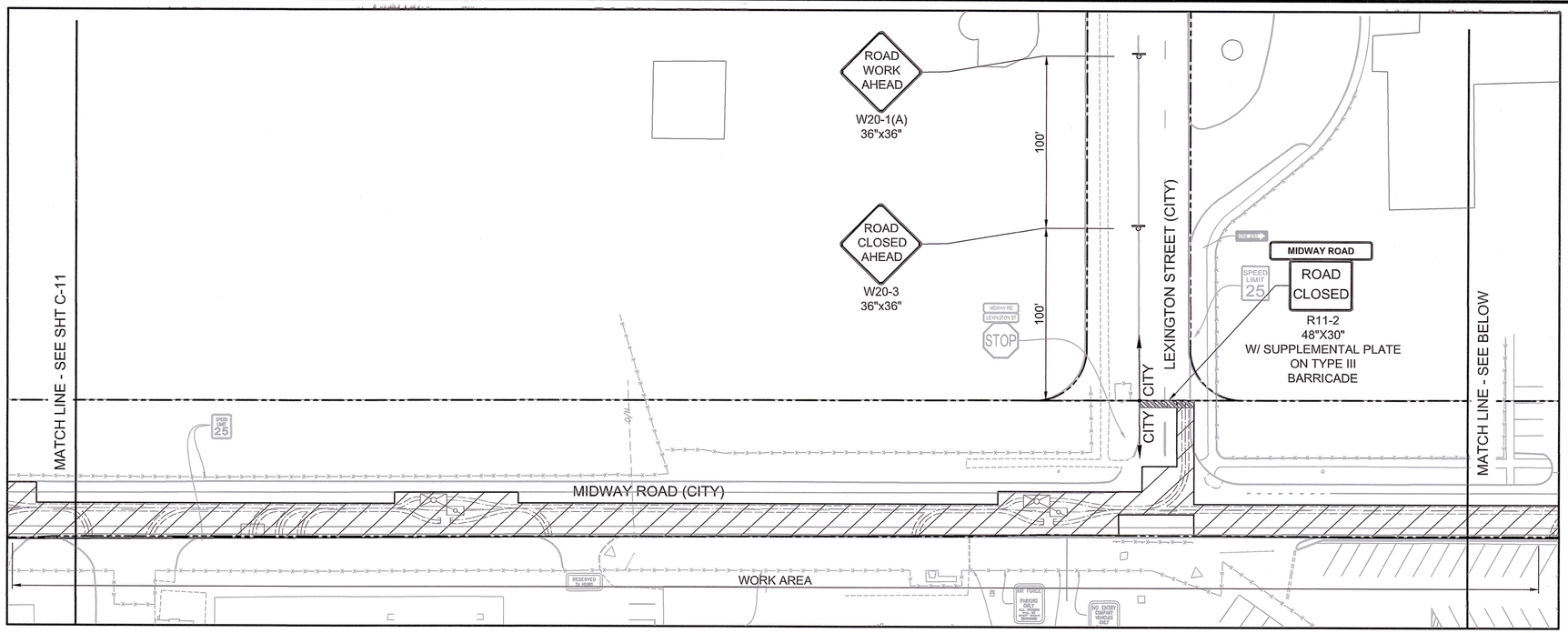
TRAFFIC CONTROL PLAN - 1

DATE :

SHEET :
13 OF 80 SHEETS

DWG. NO.
C-11

I:\PDT KALAELOA AIRPORT\2019\19023004 GRAPHICS\CADD\SHEETS\C-11 TRAFFIC CONTROL PLAN - 1.DWG



NORTH

TRAFFIC CONTROL PLAN - 2A

SCALE: 1"=40'

40 0 40 80

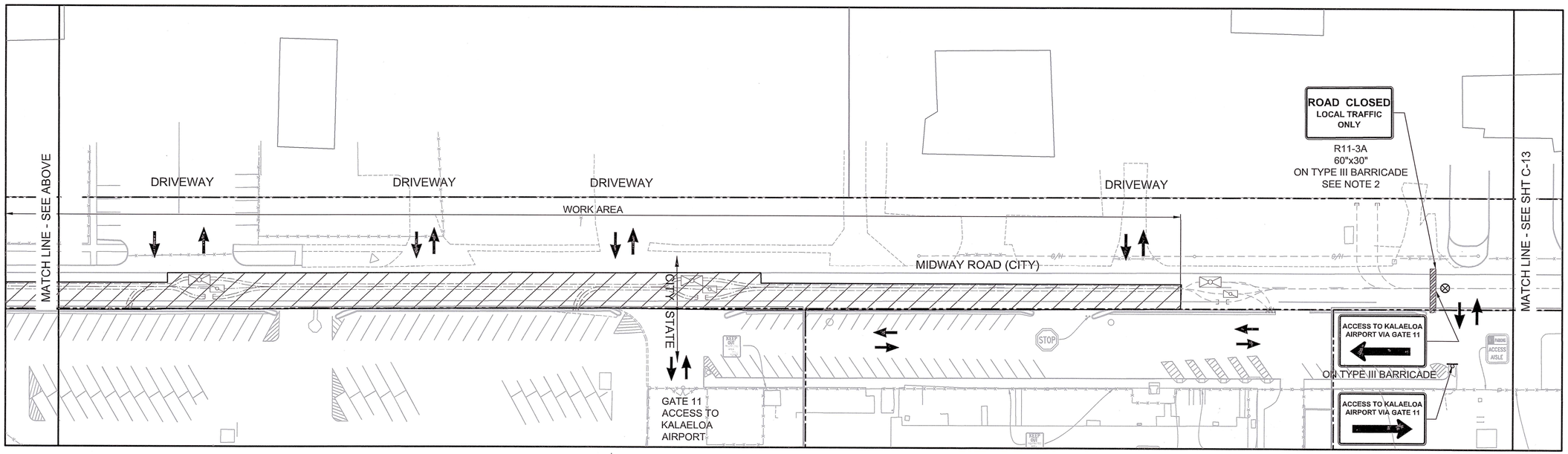
SCALE IN FEET

LEGEND:

- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- SIGN
- WORK ZONE
- FLAG MAN
- TYPE III BARRICADE

NOTES:

1. FOR TRAFFIC CONTROL NOTES, SEE SHEET C-06.
2. CONTRACTOR MUST KEEP ACCESS TO DRIVEWAYS OPEN AT ALL TIMES.



NORTH

TRAFFIC CONTROL PLAN - 2B

SCALE: 1"=40'

40 0 40 80

SCALE IN FEET

APPROVED BY:

CHIEF, TRAFFIC REVIEW BRANCH, DPP
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY)

4/23/25
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
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No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

TRAFFIC CONTROL PLAN - 2

DATE :

SHEET :

14 OF 80 SHEETS

DWG. NO.

C-12

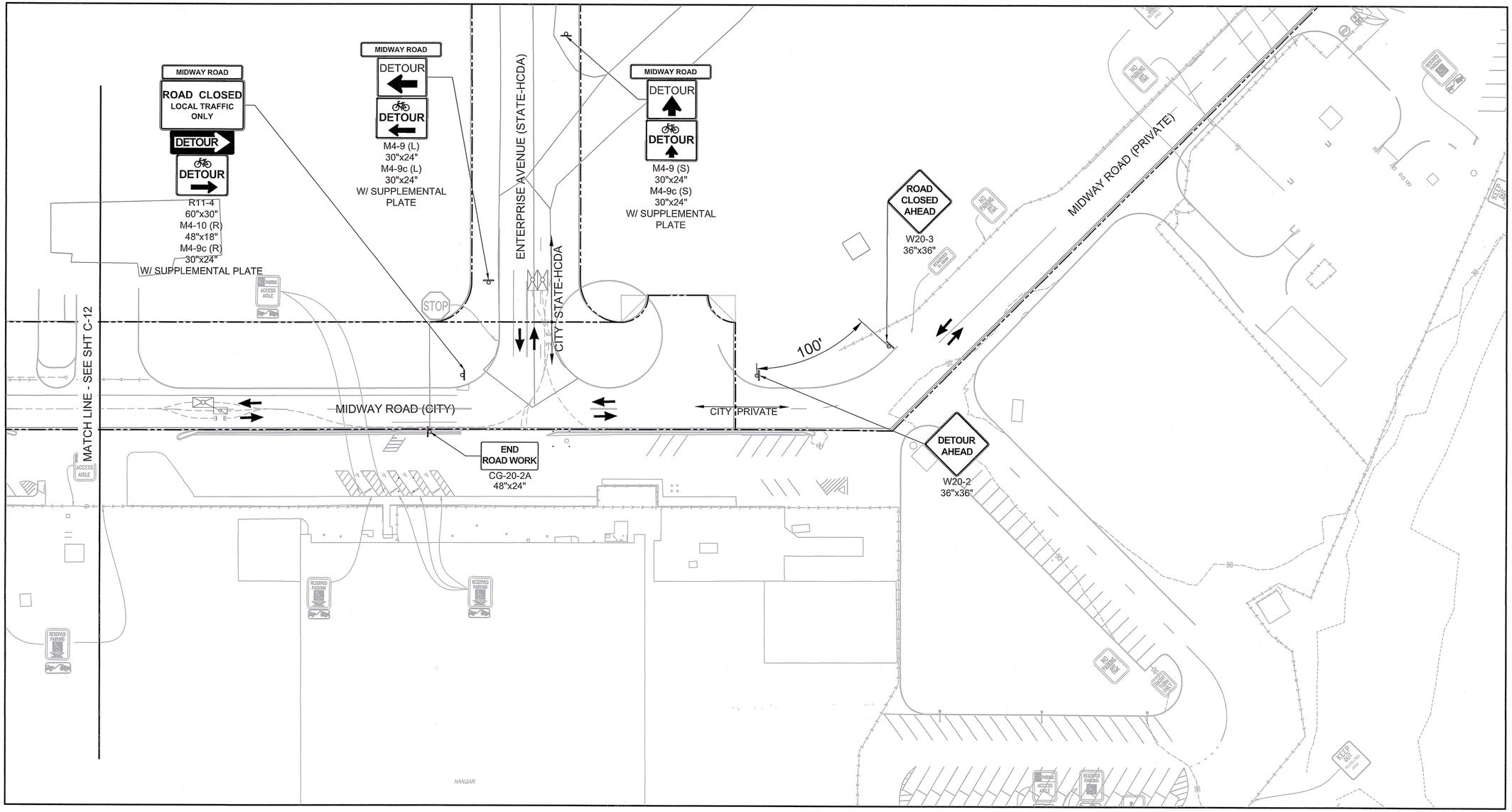
T:\DOT KALAELOA AIRPORT\2019\2002004 GRAPHICS\CAD\SHEETS\C-12 TRAFFIC CONTROL PLAN - 2.DWG

LEGEND:

- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- SIGN
- WORK ZONE
- FLAG MAN
- TYPE III BARRICADE

NOTE:

1. FOR TRAFFIC CONTROL NOTES, SEE SHEET C-06



NORTH

TRAFFIC CONTROL PLAN - 3

SCALE: 1"=40'

40 0 40 80

SCALE IN FEET

APPROVED BY:

CHIEF, TRAFFIC REVIEW BRANCH, DPP
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY)

4/29/25
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 14751-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

TRAFFIC CONTROL PLAN - 3

DATE :

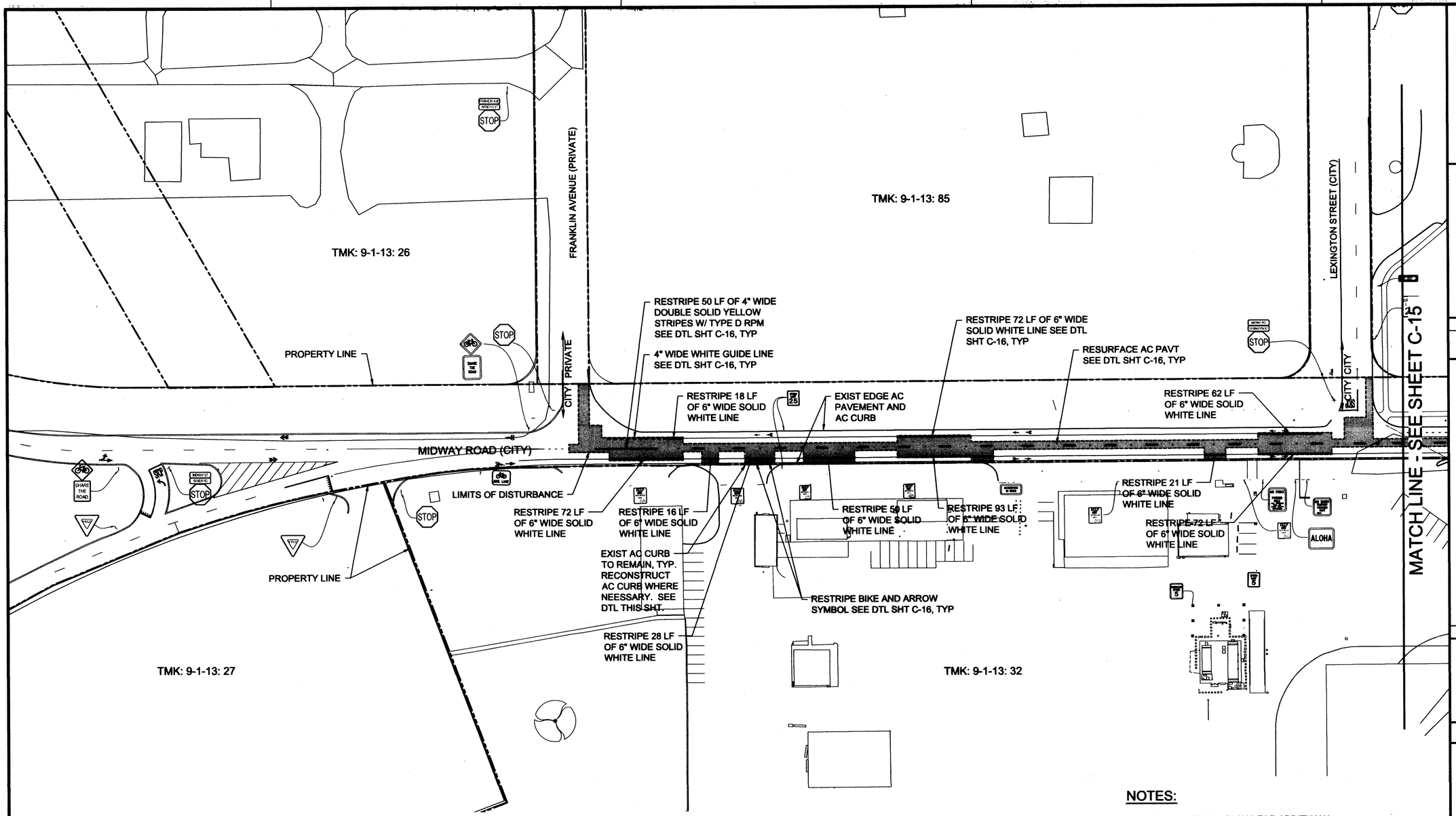
SHEET :

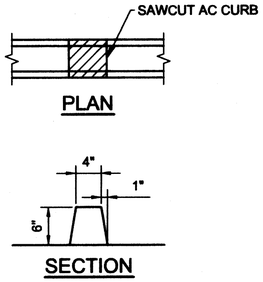
15 OF 80 SHEETS

DWG. NO.

C-13

T:\DOT KALAELOA AIRPORT\2019702020\04 GRAPHICS\CAD\SHEETS\C-13 TRAFFIC CONTROL PLAN - 3.DWG





NOTE:
RECONSTRUCT AC CURB TO MATCH EXISTING

RECONSTRUCT AC CURB

NOT TO SCALE

NORTH

MIDWAY ROAD PAVEMENT RESTORATION AND STRIPING PLAN - 1

SCALE: 1"=50'

50 0 50 100

SCALE IN FEET

NOTES:

1. SEE ELECTRICAL PLANS FOR ADDITIONAL DEMOLITION/REPLACEMENT WORK.
2. FOR TRAFFIC CONTROL PLAN, SEE SHEETS C-11 TO C-13.
3. SEE TYPICAL SECTION-AC CONNECTION TO EXIST PAVEMENT DETAIL, SHEET C-13.

LEGEND

NEW PAVEMENT

---------- LIMITS OF DISTURBANCE

APPROVED:

For Melvin Tokeshima 6/16/23
CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU — DATE

Dir 4/03/25
CHIEF, TRAFFIC REVIEW BRANCH, DPP
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY) — DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

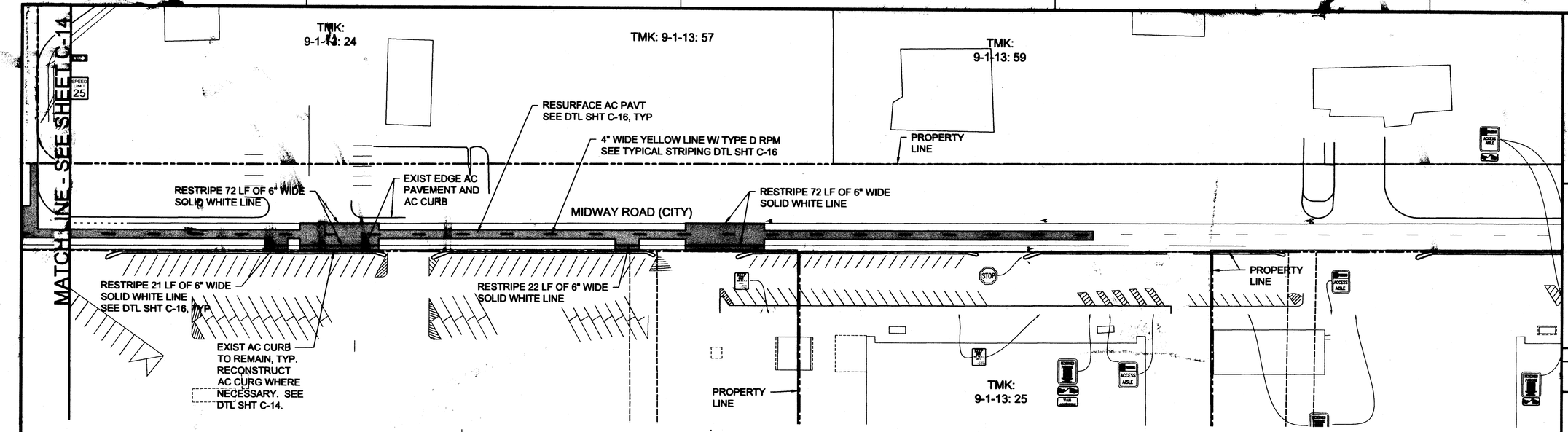
MIDWAY ROAD PAVEMENT RESTORATION AND STRIPING PLAN - 1

DATE :

SHEET :
16 OF 80 SHEETS

DWG. NO.
C-14

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-14 MIDWAY ROAD PAVEMENT RESTORATION AND STRIPING PLAN - 1.DWG



NORTH

MIDWAY ROAD PAVEMENT RESTORATION AND STRIPING PLAN - 2

SCALE: 1"=50'

50 0 50 100

SCALE IN FEET

NOTES:

1. SEE ELECTRICAL PLANS FOR ADDITIONAL DEMOLITION/REPLACEMENT WORK.
2. FOR TRAFFIC CONTROL PLAN, SEE SHEETS C-11 AND C-12.

LEGEND

NEW PAVEMENT

---------- LIMITS OF DISTURBANCE

APPROVED:

for Melvin Takabuna — 6/14/23
CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU — DATE

4/28/25
CHIEF, TRAFFIC REVIEW BRANCH, DPP
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY) — DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 15575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

MIDWAY ROAD PAVEMENT RESTORATION AND STRIPING PLAN - 2

DATE :

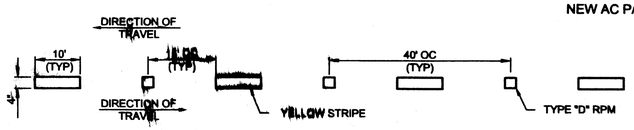
SHEET :

17 OF 80 SHEETS

DWG. NO.

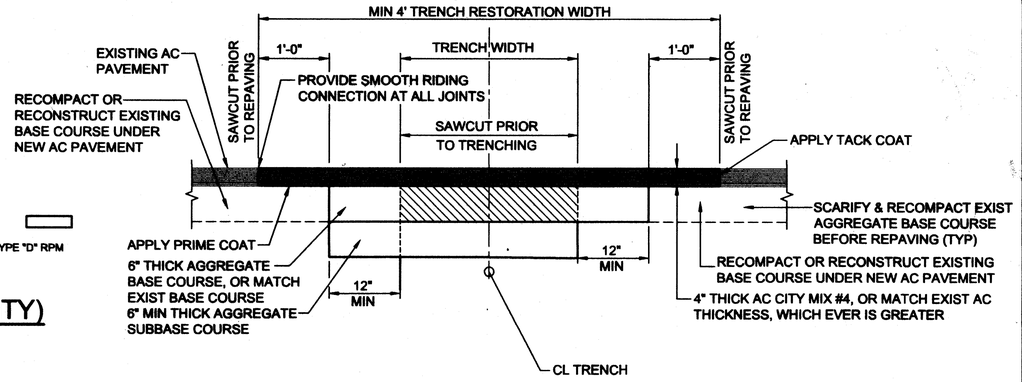
C-15

I:\DOT KALAELOA AIRPORT\26\1979020004 GRAPHICS\CAD\SHEETS\C-15 MIDWAY ROAD PAVEMENT RESTORATION AND STRIPING PLAN - 2.DWG



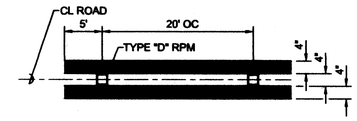
TYPICAL PAVEMENT STRIPING DETAILS (CITY)

NOT TO SCALE



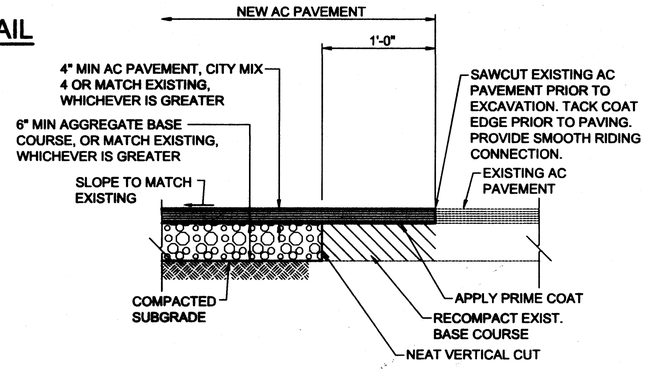
TRENCH RESTORATION DETAIL - FLEXIBLE PAVEMENT W/IN MIDWAY ROAD

NOT TO SCALE



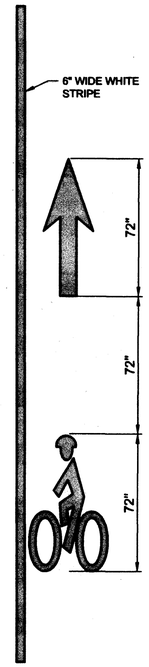
4" DOUBLE YELLOW STRIPE TYPICAL STRIPING DETAIL

NOT TO SCALE



TYPICAL SECTION-AC CONNECTION TO EXIST PAVEMENT

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



BIKE LANE WITH STRIPING DETAIL

NOT TO SCALE

APPROVED:

For CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU — DATE 6/16/23

CHIEF, TRAFFIC REVIEW BRANCH, DPP
CITY AND COUNTY OF HONOLULU
(FOR WORK WITHIN CITY RIGHT-OF-WAY ONLY) — DATE 4/30/25

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KOMEIJI
LICENSED PROFESSIONAL ENGINEER
No. 13575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

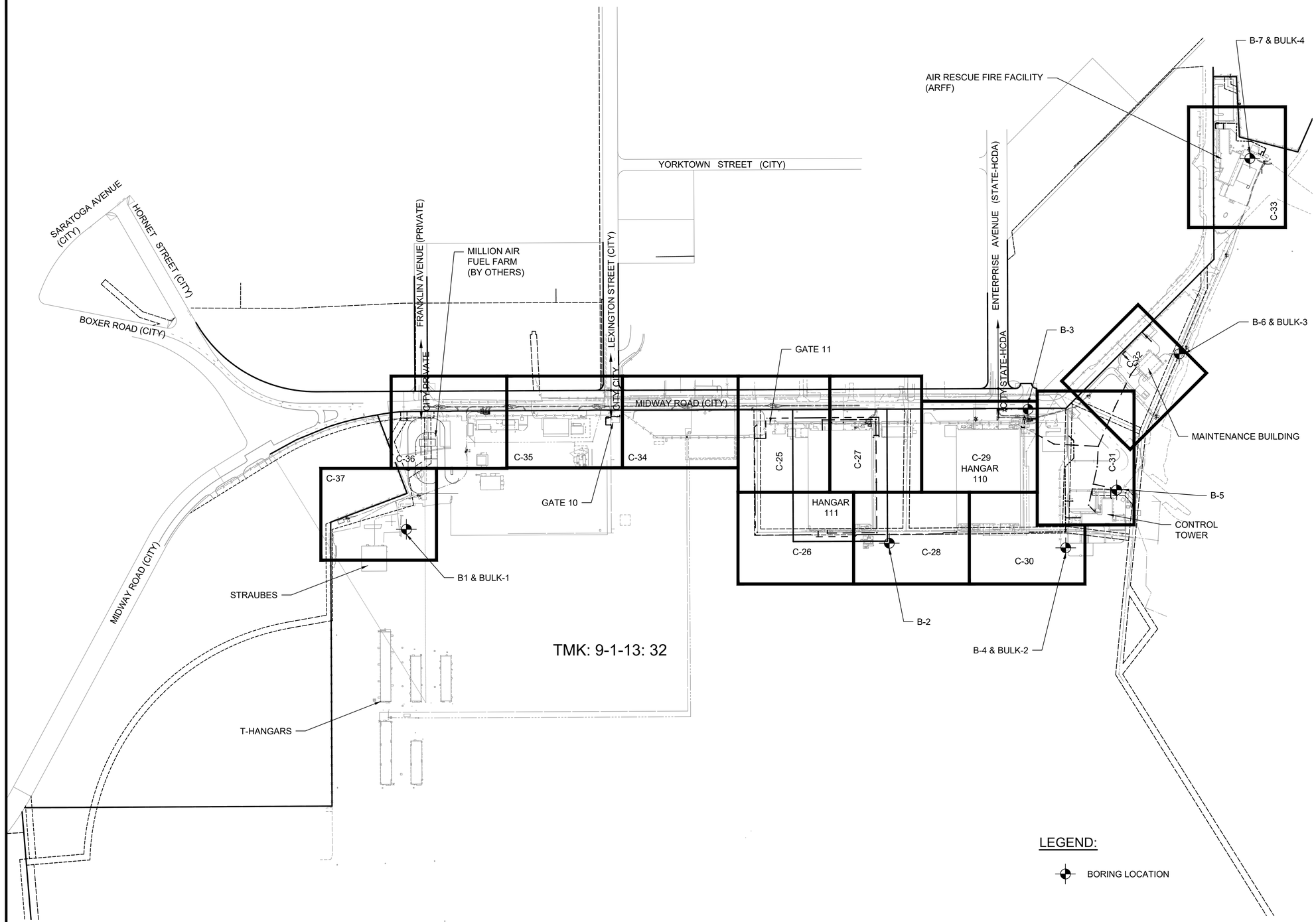
MISCELLANEOUS DETAILS

DATE :

SHEET :
18 OF 80 SHEETS

DWG. NO.
C-16

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GENERAL SITE PLAN - KALAELOA AIRPORT PACKAGE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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GENERAL SITE PLAN - KALAELOA AIRPORT PACKAGE

DATE :

SHEET :
19 OF 80 SHEETS

DWG. NO.
C-17

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-17 GENERAL SITE PLAN - KALAELOA AIRPORT PACKAGE.DWG

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLETE ALL REQUIREMENTS STATED IN THE CONTRACT.

2. THE CONTRACTOR SHALL INSURE THAT ALL PRE-AWARD DOCUMENTATION REQUIRED BY THE CONTRACT ARE SUBMITTED TO THE STATE PROJECT MANAGER LISTED ON THE PROPOSAL PAGE P-1; AS WELL AS, ENSURE THAT THE REQUIREMENTS FOR ALL TECHNICAL PROVISIONS ARE MET WITHIN FOURTEEN (14) DAYS AFTER BID OPENING. FAILURE TO MEET THESE REQUIREMENTS WILL RESULT IN THE STATE'S REJECTION OF THE CONTRACTOR'S BID, AND MAY RESULT IN THE AWARD OF THE CONTRACT TO ANOTHER BIDDER.

3. THE CONTRACTOR'S NORMAL WORKING HOURS SHALL BE IN ACCORDANCE WITH TECHNICAL PROVISION SECTION 01000. NO WORK WILL BE PERFORMED ON STATE HOLIDAYS, AIRPORT EMERGENCIES, OR WHEN POOR WEATHER RESTRICTS CONSTRUCTION.

4. THE EXISTING TOPOGRAPHY AND LOCATIONS OF EXISTING AIRPORT LAYOUT AS SHOWN ON THE DRAWINGS ARE BASED ON AVAILABLE RECORDS OF THE AIRPORT BASE MAP, PROVIDED BY THE AIRPORTS DIVISION AND TOPOGRAPHIC SURVEY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING CONDITIONS.

5. PRIOR TO STARTING ANY WORK, THE ENGINEER WILL DETERMINE IF ENVIRONMENTAL CONTROLS ARE NEEDED. NO WORK SHALL COMMENCE UNTIL THE ENGINEER'S WRITTEN AUTHORIZATION TO COMMENCE WORK IS RECEIVED. THE ENGINEER MAY REQUIRE WORK UNDER ENVIRONMENTAL CONTROLS AT ANY TIME DURING THE PROJECT, EVEN IF IT IS NOT REQUIRED PRIOR TO THE PERFORMANCE OF ANY WORK.

6. TO ENSURE PUBLIC AND WORKER SAFETY ON THIS PROJECT, THE STATE WILL NOT ALLOW ANY WORK TO COMMENCE UNTIL THE CONTRACTOR'S DETAILED PROJECT WORK SCHEDULE IS APPROVED BY THE STATE PROJECT MANAGER. SAID SCHEDULE SHALL PICTORIALLY SHOW THE WORK AREA(S) FOR EACH WORKDAY. THE CONTRACTOR SHALL KEEP ALL PERSONNEL AND EQUIPMENT UNDER ITS JURISDICTION WITHIN THE WORK AREA(S) AND ASSIGNED AIRPORT OPERATIONS AREA (AOA) TRAVEL ROUTE(S).

7. THE CONTRACTOR SHALL STAGE THEIR EQUIPMENT ONLY AT STATE DESIGNATED LOCATIONS AND SHALL COMPLY WITH ALL ASSOCIATED REQUIREMENTS. THE STAGING AREA(S) WILL BE DETERMINED BY THE AIRPORT OPERATION DISTRICT OFFICE.

8. THE CONTRACTOR SHALL ONLY ENTER AND EXIT THE AOA THROUGH STATE ASSIGNED GATES.

9. THE CONTRACTOR MAY NOT USE TEMPORARY AOA BADGES/PERMITS. THESE ITEMS WILL ONLY BE ISSUED BY THE STATE DURING STATE EMERGENCIES.

10. THE CONTRACTOR SHALL CLEAN UP MATERIAL SPILLS AT THE END OF EACH WORK DAY AND/OR WHENEVER THEY OCCUR AND SHALL ONLY DISCARD EXCESS ASPHALT CONCRETE AT AREAS DESIGNATED BY THE STATE.

11. THE CONSTRUCTION STAGING AND MATERIAL STOCKPILING AREAS WILL BE DETERMINED BY THE AIRPORT OPERATIONAL MANAGER.

12. WORK TO BE DONE IN THE INTERSECTION AREAS, INCLUDING RUNWAYS AND TAXIWAYS, MAY BE SCHEDULED ON THE WEEKEND WITHOUT ADDITIONAL COST TO THE AIRPORTS DIVISION.

13. THE CONTRACTOR SHALL OPERATE BOTH A POWER BROOM AND VACUUM SWEEPER AT ALL TIMES TO ENSURE THAT THE AOA REMAINS FOD FREE.

14. THE RUNWAY AND TAXIWAY LIGHTS SHOULD BE SWITCHED OFF WHEN WORK IS OCCURRING OR WHEN NOT IN USE.

15. THE CONTRACTOR SHALL HAVE AT LEAST TWO (2) PEOPLE ON THE AOA POSSESSING AND CONTINUOUSLY MONITORING THE FOLLOWING FULLY CHARGED COMMUNICATION DEVICES:
    1. A TWO-WAY RADIO CAPABLE OF COMMUNICATING ON APPLICABLE FREQUENCIES; AND
    2. A CELLULAR TELEPHONE, WITH A LISTING OF ALL REQUIRED EMERGENCY CONTACT NUMBERS.

WATER SYSTEM NOTES

1. UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3. DATED 2021, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.

2. ALL WATER SYSTEM WORK SHALL BE PERFORMED BY CONTRACTORS POSSESSING VALID STATE OF HAWAII CONTRACTOR'S LICENSES, REGARDLESS OF THE VALUE OF THE WORK.

3. THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES ARE NOT KNOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SAME PRIOR TO TRENCHING FOR THE NEW WATERLINE. THE COST OF LOWERING, RELOCATING OR ADJUSTING EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE NEW WATERLINE, UNLESS NOTED OTHERWISE, AND WILL NOT BE PAID FOR SEPARATELY.

4. CONCRETE FOR REACTION BLOCKS AND ANCHOR BLOCKS SHALL BE DWS CLASS 2500.

5. THE MAXIMUM DISTANCE BETWEEN VALVE NUT AND TOP OF VALVE MANHOLE COVER SHALL BE THREE (3) FEET.

6. THE CONTRACTOR SHALL SUBMIT A MATERIALS LIST TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION

7. COVER OVER WATER MAIN, 6" DIAMETER OR LARGER, SHALL BE 3'-0" MINIMUM COVER FOR 4" DIAMETER SHALL BE 2'-6". MINIMUM COVER FOR DIAMETERS LESS THAN 4" SHALL BE 1'-6".

WATER SYSTEM NOTES (CONT.)

8. BOLTS FOR EXPOSED FLANGED DUCTILE IRON PIPE JOINTS SHALL BE EITHER SILICON BRONZE BOLTS AND NUTS OR 316 STAINLESS STEEL BOLTING WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED T-BOLTS FOR DUCTILE IRON MECHANICAL JOINT (MJ) PIPE AND FITTING CONNECTIONS IN UNDERGROUND SITUATIONS SHALL BE ONE OF THE FOLLOWING SYSTEMS:
    A. 316 STAINLESS STEEL T-BOLTS WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM ANTI-SEIZE SHALL NOT BE USED.
    B. COR-TEN T-BOLTS AND NUTS WITH HIGH GRADE ZINC SACRIFICIAL ANODES, EQUIVALENT TO "DURATRON" SACRIFICIAL "SAC-NUT" MODULES, INSTALLED ON THE NUTS FOR ALL STANDARD COR-TEN T-BOLTS.
    C. COR-TEN T-BOLTS AND NUTS BOTH FACTORY COATED WITH TRIPAC 2000 BLUE COATING SYSTEM BY "TRIPAC FASTENERS".

9. ALL BURIED METALS SHALL BE WRAPPED WITH POLY-WRAP. FOR ALL BURIED INSTALLATIONS OF DUCTILE IRON PIPE AND FITTINGS, POLY-WRAP IS REQUIRED EXCEPT WITHIN CONCRETE JACKETS.

10. LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.

11. WATER MAINS AND APPURTENANCES SHALL BE SUBJECT TO HYDROSTATIC TESTING IN ACCORDANCE WITH THE LATEST REVISION OF AWWA C600, UNDER THE "HYDROSTATIC TESTING". SECTION, TO A PRESSURE OF AT LEAST 1.5 TIMES THE WORKING PRESSURE. UNLESS OTHERWISE STATED IN THE CONSTRUCTION DOCUMENTS OR LIMITED BY THE PRESSURE RATING OF EQUIPMENT, THE PRESSURE TEST AND LEAKAGE TEST SHALL BE PERFORMED AT 225 POUNDS PER SQUARE INCH PRESSURE.

12. CONTRACTOR SHALL NOTIFY KALAELOA WATER COMPANY FOURTEEN (14) DAYS PRIOR TO CONNECTING TO ANY WATER LINE AND THIRTY (30) DAYS PRIOR TO THE DESIRED DATE OF WATER OUTAGE.

CHLORINATION NOTES

1. WATER MAINS AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. ALL PROCEDURES AND MATERIALS (LIQUID CHLORINE OR CALCIUM HYPOCHLORITE) USED FOR THE CHLORINATION OF THE PROJECT SHALL CONFORM TO AWWA REQUIREMENTS.

2. PRIOR TO CHLORINATION, THE PROJECT PIPELINES SHALL BE THOROUGHLY CLEANED CLEANING OF LINES 8" AND LARGER SHALL BE BY PIGGING USING FOAM PIGS.SMALLER LINES CAN BE FLUSHED IN ACCORDANCE WITH AWWA REQUIREMENTS IF ADEQUATE WATER SUPPLY IS PROVIDED, OTHERWISE BY PIGGING.THE CONTRACTOR SHALL SUBMIT HIS PLAN FOR PIPELINE CLEANING, INCLUDING FITTING REQUIREMENTS FOR PIGGING, FOR APPROVAL PRIOR TO PROCEEDING.

3. THE INTERIOR SURFACES OF THE PROJECT SHALL BE EXPOSED TO THE CHLORINATING SOLUTION FOR A MINIMUM OF 24 HOURS AND THE CHLORINE RESIDUAL SHALL NOT BE LESS THAN 10 PPM AFTER SUCH TIME.

4. SHOULD CALCIUM HYPOCHLORITE BE USED, NO SOLID AND/OR UNDISSOLVED PORTION OF THE COMPOUND SHALL BE INTRODUCED INTO ANY SECTION OF THE PROJECT TO BE CHLORINATED.

5. AT THE END OF THE 24-HOUR DISINFECTION PERIOD, REPRESENTATIVE SAMPLES SHALL BE TAKEN AND ANALYZED TO ASSURE A CHLORINE RESIDUAL OF AT LEAST 10 PPM MEASUREMENTS FOR CHLORINE RESIDUAL TESTS SHALL BE BY A TRAINED, QUALIFIED TESTER APPROVED BY THE DIRECTOR.

6. SHOULD THE RESULTS INDICATE ADEQUATE CHLORINATION, THE PROJECT SHALL BE THOROUGHLY FLUSHED AND FILLED WITH POTABLE WATER FROM THE EXISTING POTABLE WATER SYSTEM AND AGAIN TESTED FOR CHLORINE RESIDUAL. THE FLUSHING SHALL BE CONSIDERED ADEQUATE IF THE TEST RESULTS INDICATE THAT THE WATER IN THE PROJECT HAS A COMPARABLE CHLORINE RESIDUAL AS THE WATER IN THE EXITING SYSTEM.

7. FOLLOWING THE ACCEPTABLE FLUSHING OF THE HIGH CONCENTRATION CHLORINE SOLUTION, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART FROM REPRESENTATIVE POINTS IN THE PROJECT AND SUBJECTED TO MICROBIOLOGICAL TESTS PERFORMED BY A CERTIFIED LABORATORY APPROVED BY THE DEPARTMENT OF HEALTH AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED AND TESTED FROM EVERY 1,200 FEET OF THE NEW WATER MAIN, PLUS ONE SET FROM THE END OF THE LINE AND AT LEAST ONE SET FROM EACH BRANCH. POSITIVE RESULTS WILL NOT BE ACCEPTABLE AND THE ENTIRE CHLORINATION PROCESS WILL BE REPEATED.

8. ANALYSIS FOR RESIDUAL CHLORINE SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.

9. MICROBIOLOGICAL TESTS SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ALL OF THE FOREGOING.

TOPOGRAPHIC SURVEY NOTES:

1. TOPOGRAPHIC SURVEY COMPLETED BY GROUND SURVEY BY CONTROLPOINT SURVEYING, INC., MAP ENTITLED "TOPOGRAPHIC SURVEY MAP DOT - KALAELOA AIRPORT, BARBERS POINT AIRPORT," DATED JULY 24, 2020.

2. ALL COORDINATES AND AZIMUTHS ARE BASED ON STATE PLANE, ZONE 3.

3. ELEVATIONS ARE REFERENCED TO MEAN SEA LEVEL.

4. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY AND ARE BASED ON RECORD INFORMATION.

5. ALL ELEVATIONS AND DISTANCES SHOWN ARE IN FEET.

6. BENCHMARK IS REFERRED TO SURVEY STREET MONUMENT AT KAPOLEI PARKWAY AND KAMOKILA BLVD. TOP OF BRASS PIN ELEV.=65.88 FT. MSL. SEE SHEET C-01.

SEWER NOTES

1. ALL SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", SEPTEMBER 1986, "WASTEWATER SYSTEM STANDARD DETAILS," CITY AND COUNTY OF HONOLULU, JULY 2017, AND THE "DESIGN STANDARDS OF THE DEPARTMENT OF ENVIRONMENTAL SERVICES, VOL. 1, JULY 2017.

2. CRUSHED ROCK CRADLE IS PERMITTED WHERE SOIL IS STABLE. IN AREAS OF UNSTABLE SOIL, THE MAKER OF THE PLANS AND THE CONSTRUCTION ENGINEER WILL DETERMINE THE PIPE SUPPORT REQUIRED.

3. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES, INCLUDING AND AFFECTING SEWER LINES, AND EXERCISE PROPER CARE IN EXCAVATING THE AREA THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGED UTILITIES.

4. CONTRACTOR TO VERIFY LOCATION AND INVERT ELEVATION AT BUILDING CONNECTIONS PRIOR TO INSTALLATION OF ANY SEWER LINES.

5. SLOPE FOR SEWER LATERALS SHALL BE 1.00% UNLESS OTHERWISE NOTED.

6. BUILDING PLUMBING FACILITIES SHALL BE CONTROLLED BY SEWER LATERAL INVERTS.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SEWAGE SPILLS CAUSED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE STATE DEPARTMENT OF HEALTH AND UTILIZE APPROPRIATE SAMPLING AND ANALYZING PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC NOTIFICATIONS AND PRESS RELEASES.

8. THE CONTRACTOR SHALL INSTALL "RAINSTOPPER" MANHOLE INSERTS IN ALL SEWER MANHOLES WITH TYPE "S" FRAME AND COVER.

9. ALL DROP AND SHALLOW DROP SEWER MANHOLES SHALL BE LINED WITH PLASTIC LINERS ALSO, IF THE VELOCITY EXCEEDS TEN (10) FEET PER SECOND (FPS), THE SEWER MANHOLE SHALL BE PLASTIC LINED.

10. ALL SEWER PIPE JOINTS WITHIN EASEMENTS SHALL BE WRAPPED WITH GEOTEXTILE ROOT BARRIER.

11. S4C PIPE CRADLE SEALS SHALL BE INSTALLED TEN (10) FEET FROM ALL SEWER MANHOLES TO PREVENT SOIL MIGRATION.

12. GEOTEXTILE FABRIC TO ENVELOP THE PIPE CRADLE AND SELECT BACKFILL MATERIAL SHALL BE PROVIDED WHERE WATER OR UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED.

13. CONFINED SPACE

    FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMIT REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910 146(B), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING:

    I. ALL SAFETY EQUIPMENT REQUIRED BY THE CONFINED SPACE REGULATIONS APPLICABLE TO ALL PARTIES OTHER THAN THE CONSTRUCTION INDUSTRY, TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:
        A. FULL BODY HARNESSES FOR UP TO TWO PERSONNEL.
        B. LIFELINE AND ASSOCIATED CLIPS.
        C. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT.
        D. TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT.
        E. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION).
        F. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE.
        G. CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON.
        H. PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.

    II. CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAVE ENTRY CONDITIONS.

    III. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT)

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY UTILITY SYSTEM RESULTING FROM CONSTRUCTION OPERATIONS; ANY DAMAGE SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.

16. THE CONTRACTOR WILL BE RESPONSIBLE FOR REGULATORY FINES OR PENALTIES THAT MAY BE IMPOSED BY ENVIRONMENTAL REGULATORY AGENCIES (EPA AND/OR STATE DOH) IN THE EVENT OF SEWAGE OVERFLOW OR SPILL RESULTING FROM CONSTRUCTION OPERATIONS.

17. THE CONTRACTOR SHALL REIMBURSE THE GOVERNMENT FOR ANY EMERGENCY RESPONSE EFFORT THAT MAY BE REQUIRED BY GOVERNMENT FORCES TO MITIGATE THE ADVERSE EFFECTS OF ANY SEWAGE OVERFLOW OR SPILL RESULTING FROM THE CONTRACTOR'S OPERATIONS.

18. THE CONTRACTOR SHALL REIMBURSE THE GOVERNMENT FOR ANY EMERGENCY RESPONSE EFFORT THAT MAY BE REQUIRED BY GOVERNMENT FORCES TO MITIGATE THE ADVERSE EFFECTS OF ANY SEWAGE OVERFLOW OR SPILL RESULTING FROM THE CONTRACTOR'S OPERATIONS.

19. THE CONTRACTOR SHALL ENSURE THAT LOOSE MATERIAL, TOOLS AND EQUIPMENT FROM CONSTRUCTION OPERATIONS ARE APPROPRIATELY REMOVED FROM THE SEWER COLLECTION SYSTEM. ANY DAMAGE TO DOWNSTREAM LIFT STATION EQUIPMENT RESULTING FROM NEGLIGENCE WILL BE ASSESSED TO THE CONTRACTOR.

20. WHERE POSSIBLE, FENCE POST FOOTINGS, GATE FOOTINGS, SIGN FOOTINGS, BOLLARDS, ETC. SHALL BE AT LEAST 3' AWAY FROM ANY ACTIVE SEWER MAIN OR LATERAL.

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CONSTRUCTION NOTES

DATE :

SHEET :

20 OF 80 SHEETS

DWG. NO.

C-18

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-18 CONSTRUCTION NOTES.DWG

EROSION PREVENTION / SEDIMENT CONTROL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES (HAR), TITLE 11, CHAPTER 54 "WATER QUALITY STANDARDS," AND TITLE 11, CHAPTER 55 "WATER POLLUTION CONTROL."

2. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTHWORK IS INITIATED.

3. PERMANENT STABILIZATION. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED USING VEGETATIVE COVERING, PAVEMENT, OR EQUIVALENT, PRIOR TO REMOVING EROSION AND SEDIMENT MEASURES. TRAPPED SEDIMENT AND AREAS OF DISTURBED SOIL WHICH RESULT FROM THE REMOVAL OF THE TEMPORARY MEASURES SHALL BE IMMEDIATELY AND PERMANENTLY STABILIZED.

4. INLET PROTECTION

   - ALL STORM DRAIN INLETS ONSITE AND THOSE OFFSITE WHICH MAY RECEIVE RUNOFF FROM THE SITE SHALL USE AN INLET PROTECTION DEVICE UNLESS THEY ARE DIRECTED TO A SEDIMENT BASIN.
   - SEDIMENT LEVELS MAY NOT EXCEED ONE THIRD OF THE HEIGHT OF A SEDIMENT BARRIER OR INLET PROTECTION DEVICE AT ANY POINT ALONG THE LENGTH OF THE SEDIMENT BARRIER OR THE INLET PROTECTION DEVICE.
   - SEDIMENT BARRIERS AND INLET PROTECTION DEVICES MUST BE UNCLOGGED AND CLEANED WHEN PERFORMANCE IS COMPROMISED.
   - TORN, WEATHERED OR SAGGING SEDIMENT BARRIERS OR INLET PROTECTION DEVICES MUST BE REPAIRED OR REPLACED IMMEDIATELY.

5. TRACKING CONTROL

   - MINIMIZE SEDIMENT TRACK-OUT ONTO OFF-SITE STREETS, OTHER PAVED AREAS, AND SIDEWALKS FROM VEHICLES EXITING THE CONSTRUCTION SITE BY RESTRICTING VEHICLE TRAFFIC TO PROPERLY DESIGNATED AREAS AND USING ADDITIONAL CONTROLS TO REMOVE SEDIMENT FROM VEHICLE TIRES PRIOR TO EXITING THE SITE.
   - VEHICULAR PARKING AND MOVEMENTS ON PROJECT SITES MUST BE CONFINED TO PAVED SURFACES OR PREDEFINED PARKING AREAS AND VEHICLE PATHS, WHICH SHALL BE MARKED WITH FLAGS OR BOUNDARY FENCING.
   - ALL POLLUTANTS AND MATERIALS THAT ARE DROPPED, WASHED, TRACKED, SPILLED, OR OTHERWISE DISCHARGED FROM A PROJECT SITE TO OFF-SITE STREETS, OTHER PAVED AREAS, SIDEWALKS OR THE MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) MUST BE CLEANED USING DRY METHODS SUCH AS SWEEPING OR VACUUMING.
   - WASHING POLLUTANTS AND MATERIALS THAT ARE DISCHARGED FROM THE PROJECT SITE TO THE MS4 INTO DRAIN INLETS OR CATCH BASINS IS PROHIBITED UNLESS THE MATERIAL IS SEDIMENT AND THE INLETS ARE DIRECTED TO A SEDIMENT BASIN OR SEDIMENT TRAP.

6. BEST MANAGEMENT PRACTICES (BMPS) SHALL NOT BE REMOVED UNTIL FINAL STABILIZATION IS COMPLETE FOR THAT PHASE.

7. REFER TO DEPARTMENT OF TRANSPORTATION AIRPORTS DIVISION'S "CONSTRUCTION ACTIVITIES BMP FIELD MANUAL" DATED AUG. 2019 FOR MORE INFORMATION ON BMPS.

8. GOOD HOUSEKEEPING BMPs:

   A. STREET SWEEPING AND VACUUMING. ALL POLLUTANTS DISCHARGED FROM CONSTRUCTION SITE TO OFF-SITE AREAS MUST BE SWEPT OR VACUUMED EACH DAY BEFORE LEAVING THE JOB SITE.

   B. MATERIALS DELIVERY, STORAGE AND USE MANAGEMENT. PREVENT, REDUCE, OR ELIMINATE THE DISCHARGE OF POLLUTANTS FROM MATERIAL DELIVERY, STORAGE, AND USE TO THE STORM WATER SYSTEM OR WATERCOURSES BY MINIMIZING THE STORAGE OF HAZARDOUS MATERIALS ONSITE, STORING MATERIALS IN A DESIGNATED AREA, AND INSTALLING SECONDARY CONTAINMENT. CONSTRUCTION MATERIALS, WASTE, TOXIC AND HAZARDOUS SUBSTANCES, STOCKPILES AND OTHER SOURCES OF POLLUTION SHALL NOT BE STORED IN BUFFER AREAS, NEAR AREAS OF CONCENTRATED FLOW, OR AREAS ABUTTING THE MS4, RECEIVING WATERS, OR DRAINAGE IMPROVEMENTS THAT DISCHARGE OFF-SITE. PRIMARY AND SECONDARY CONTAINMENT CONTROLS AND COVERS SHALL BE IMPLEMENTED TO THE MAXIMUM EXTENT POSSIBLE.

   C. SPILL PREVENTION AND CONTROL. CREATE AND IMPLEMENT SPILL PREVENTION AND RESPONSE PLANS TO ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO THE MS4 AND RECEIVING WATERS FROM LEAKS AND SPILLS BY REDUCING THE CHANCE FOR SPILLS, ABSORBING, CONTAINING, AND CLEANING UP SPILLS AND PROPERLY DISPOSING OF SPILL MATERIALS. AT A MINIMUM, ALL PROJECTS SHALL CLEANUP ALL LEAKS AND SPILLS IMMEDIATELY.

   D. HAZARDOUS MATERIALS. PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM HAZARDOUS WASTE THROUGH PROPER MATERIAL USE AND WASTE DISPOSAL. IN THE EVENT THAT HAZARDOUS MATERIALS ARE DISCHARGED TO THE MS4, THE PROPERTY OWNER OR ESCP COORDINATOR SHALL IMMEDIATELY NOTIFY THE DEPARTMENT OF FACILITIES MAINTENANCE, HONOLULU FIRE DEPARTMENT, AND HONOLULU POLICE DEPARTMENT OF THE DISCHARGE BY TELEPHONE. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED, THE REASONS FOR THE DISCHARGE, AND THE MEASURES THAT HAVE BEEN TAKEN OR WILL BE TAKEN TO PREVENT A REOCCURRENCE OF THE DISCHARGE SHALL BE SUBMITTED TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.

   E. NONHAZARDOUS MATERIALS. IN THE EVENT THAT NONHAZARDOUS MATERIALS ARE DISCHARGED TO THE MS4, THE PROPERTY OWNER OR ESCP COORDINATOR SHALL NOTIFY THE CITY DEPARTMENT OF FACILITIES MAINTENANCE BY TELEPHONE NO LATER THAN THE NEXT BUSINESS DAY. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED. THE REASONS FOR THE DISCHARGE, AND THE MEASURES THAT HAVE BEEN TAKEN OR WILL BE TAKEN TO PREVENT A REOCCURRENCE OF THE DISCHARGE SHALL BE SUBMITTED TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.

   F. VEHICLE AND EQUIPMENT CLEANING. ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM VEHICLE AND EQUIPMENT CLEANING OPERATIONS BY USING OFF-SITE FACILITIES WHEN FEASIBLE, WASHING IN DESIGNATED, CONTAINED AREAS ONLY, AND ELIMINATING DISCHARGES TO THE STORM DRAIN SYSTEM BY EVAPORATING AND/OR TREATING WASH WATER, AS APPROPRIATE OR INFILTRATING WASH WATER FOR EXTERIOR CLEANING ACTIVITIES THAT USE WATER ONLY.

EROSION PREVENTION/SEDIMENT CONTROL NOTES (CONT):

   G. VEHICLE AND EQUIPMENT FUELING. PREVENT FUEL SPILLS AND LEAKS BY USING OFF-SITE FACILITIES, FUELING ONLY IN DESIGNATED AREAS, ENCLOSING OR COVERING STORED FUEL, AND IMPLEMENTING SPILL CONTROLS SUCH AS SECONDARY CONTAINMENT AND ACTIVE MEASURES USING SPILL RESPONSE KITS.

   H. VEHICLE AND EQUIPMENT MAINTENANCE. ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM VEHICLE AND EQUIPMENT MAINTENANCE OPERATIONS BY USING OFF-SITE FACILITIES WHEN FEASIBLE, PERFORMING WORK IN DESIGNATED AREAS ONLY, USING SPILL PADS UNDER VEHICLES AND EQUIPMENT, CHECKING FOR LEAKS AND SPILLS, AND CONTAINING AND CLEANING UP SPILLS IMMEDIATELY.

   I. SOLID WASTE MANAGEMENT. PREVENT OR REDUCE DISCHARGE OF POLLUTANTS TO THE LAND, GROUNDWATER, AND IN STORM WATER FROM SOLID WASTE OR CONSTRUCTION AND DEMOLITION WASTE BY PROVIDING DESIGNATED WASTE COLLECTION AREAS, COLLECT SITE TRASH DAILY, AND ENSURING THAT CONSTRUCTION WASTE IS COLLECTED, REMOVED, AND DISPOSED OF ONLY AT AUTHORIZED DISPOSAL AREAS.

   J. SANITARY/SEPTIC WASTE MANAGEMENT. TEMPORARY AND PORTABLE SANITARY AND SEPTIC WASTE SYSTEMS SHALL BE MOUNTED OR STAKED IN, WELL-MAINTAINED AND SCHEDULED FOR REGULAR WASTE DISPOSAL AND SERVICING. SOURCES OF SANITARY AND/OR SEPTIC WASTE SHALL NOT BE STORED NEAR THE MS4 OR RECEIVING WATERS.

   K. STOCKPILE MANAGEMENT. STOCKPILES SHALL NOT BE LOCATED IN DRAINAGE WAYS, WITHIN 50 FEET FROM AREAS OF CONCENTRATED FLOWS, AND ARE NOT ALLOWED IN THE CITY RIGHT-OF-WAY. SEDIMENT BARRIERS OR SILT FENCES SHALL BE USED AROUND THE BASE OF ALL STOCKPILES. STOCKPILES SHALL NOT EXCEED 15 FEET IN HEIGHT. STOCKPILES GREATER THAN 15 FEET IN HEIGHT SHALL REQUIRE 8 FOOT WIDE BENCHING IN ACCORDANCE WITH REVISED ORDINANCES OF HONOLULU CHAPTER 14, ARTICLE 15. STOCKPILES MUST BE COVERED WITH PLASTIC SHEETING OR A COMPARABLE MATERIAL IF THEY WILL NOT BE ACTIVELY USED WITHIN 7 DAYS.

   L. LIQUID WASTE MANAGEMENT. LIQUID WASTE SHALL BE CONTAINED IN A CONTROLLED AREA SUCH AS A HOLDING PIT, SEDIMENT BASIN, ROLL-OFF BIN, OR PORTABLE TANK OF SUFFICIENT VOLUME AND TO CONTAIN THE LIQUID WASTES GENERATED. CONTAINMENT AREAS OR DEVICES MUST BE IMPERMEABLE AND LEAK FREE AND SHOULD NOT BE LOCATED WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS.

   M. CONCRETE WASTE MANAGEMENT. PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM CONCRETE WASTE BY CONDUCTING WASHOUT OFFSITE OR PERFORMING ONSITE WASHOUT IN A DESIGNATED AREA CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MILLIMETER POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL. CONTAINMENT AREAS OR DEVICES SHOULD NOT BE LOCATED WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75 PERCENT FULL. ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHOULD BE BROKEN UP, REMOVED, AND DISPOSED OF AS SOLID WASTES.

   N. CONTAMINATED SOIL MANAGEMENT. AT MINIMUM CONTAIN CONTAMINATED MATERIAL SOIL BY SURROUNDING WITH IMPERMEABLE LINED BERMS OR COVER EXPOSED CONTAMINATED MATERIAL WITH PLASTIC SHEETING. CONTAMINATED SOIL SHOULD BE DISPOSED OF PROPERLY IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

9. A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON THE PROJECT SITE.

10. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE TRAINED ON THE BEST MANAGEMENT PRACTICES.

11. ADDITIONAL BMP INSPECTIONS AND REQUIREMENTS:

   A. THE NAME, PHONE NUMBER, MAILING ADDRESS, AND EMAIL ADDRESS OF THE ESCP COORDINATOR SHALL BE SUBMITTED TO THE DPP DIRECTOR IN WRITING AT LEAST 2 WEEKS PRIOR TO COMMENCING ANY WORK.

   B. A PRECONSTRUCTION INSPECTION MUST BE PERFORMED BY THE ESCP COORDINATOR PRIOR TO COMMENCING GROUND-DISTURBING ACTIVITIES TO CONFIRM THAT BMPS ARE INSTALLED CORRECTLY AND ACCORDING TO THE ESCP.

   C. ESCP COORDINATOR MUST INSPECT THE PROJECT ONCE EVERY SEVEN DAYS. INSPECTION RESULTS AND CORRECTIVE ACTIONS SHALL BE DOCUMENTED WITH PHOTOGRAPHS AND BY COMPLETING THE REQUIRED FORMS.

   D. ANY DEFICIENCIES OR BMPS THAT MAY VIOLATE ANY PROVISIONS OF THE RULES RELATING TO WATER QUALITY, OR MAY RESULT IN POLLUTANT DISCHARGES TO THE MS4 OR STATE WATERS, AND REQUIRES CORRECTIVE ACTIONS SHALL BE ADDRESSED IMMEDIATELY.

   E. ALL PHOTOGRAPHS AND INSPECTION REPORTS MUST BE COMPILED IN A 3-RING FOLDER OR BINDER OR KEPT ELECTRONICALLY, WHICH SHALL BE THE PROJECT LOG. THE PROJECT LOG SHALL BE KEPT ON-SITE OR ELECTRONICALLY ACCESSIBLE FROM THE SITE AT ALL TIMES, IN A COMPLETE CONDITION, AND IMMEDIATELY PRODUCED FOR INSPECTION IF REQUIRED BY THE DPP DIRECTOR.

   F. AT THE CONCLUSION OF THE PROJECT, THE ESCP COORDINATOR SHALL:

   - INSPECT THE SITE AND CONFIRM THAT ALL DISTURBED AREAS HAVE BEEN STABILIZED AND ALL TEMPORARY BMPS HAVE BEEN REMOVED.
   - PREPARE AND TRANSMIT AN ELECTRONIC COPY OF THE FINAL PROJECT LOG AND A LETTER CONFIRMING COMPLIANCE TO THE DPP DIRECTOR WITHIN 5 BUSINESS DAYS OF COMPLETING THE WORK.

12. CONTRACTOR TO CONSTRUCT THE STAGING AREA AND PROVIDE THE APPLICABLE EROSION CONTROL AND BMP MEASURES FOR SUCH AS REFLECTED ON SHEET C-20.

13. DEWATERING OPERATIONS ARE NOT APPLICABLE.

EROSION AND SEDIMENT CONTROL PLAN SCHEDULE AND RAIN RESPONSE PLAN:

PROJECT SEQUENCE:

1. INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES AS SHOWN ON SHEETS #### TO ####.
2. PROCEED WITH CONSTRUCTION WITH LEAST POSSIBLE DISTURBANCE OF VEGETATIVE AREAS AND TEMPORARY STRUCTURES.
3. REMOVE OR DISMANTLE TEMPORARY EROSION CONTROL STRUCTURES UPON COMPLETION OF TRENCH REPAVING OR AFTER FULL ESTABLISHMENT OF PERMANENT VEGETATIVE COVER, WHICHEVER IS LATER.
4. PRACTICE GOOD HOUSEKEEPING MEASURES THROUGHOUT THE DURATION OF CONSTRUCTION.
5. INSPECTIONS WILL BE PERFORMED WEEKLY AND WITHIN 24-HOURS AFTER ANY RAINFALL OF 0.25 INCHES OR GREATER WITHIN A 24-HOUR PERIOD. DURING PROLONGED RAINFALL, DAILY CHECKING IS NECESSARY. THE CONTRACTOR SHALL MAINTAIN RECORDS OF CHECKS AND REPAIRS.

RAIN RESPONSE PLAN:

THE FOLLOWING WILL BE PERFORMED WHEN HEAVY RAINS, TROPICAL STORM OR HURRICANE IS IMMINENT OR IS FORECASTED IN THE NEXT 48 HOURS:

1. TEMPORARY SUSPENSION OF ACTIVE TRENCHING.
2. INSPECT ALL BMPS AND MAINTAIN AS NEEDED. REINSTALL ANY PERIMETER CONTROLS THAT WERE REMOVED DUE TO ACTIVE WORK IN THE AREA. IF A SEVERE STORM IS EXPECTED, REMOVE INLET PROTECTION DEVICES TO PREVENT FLOODING ON SURROUNDING STREETS.
3. COVER OR RELOCATE MATERIAL STOCKPILES AND LIQUID MATERIAL CONTAINERS TO AVOID CONTACT WITH RAINWATER.
4. PLACE SPILL PANS OR OIL-ONLY SPILL PADS UNDER CONSTRUCTION VEHICLES TO PREVENT RUNOFF FROM CONTACTING ANY SPILLED PETROLEUM PRODUCTS. PROPERLY DISPOSE OF ANY ACCUMULATED OILY WATER AFTER THE RAIN EVENT.
5. RE-INSPECT AFTER THE APPROACHING HEAVY RAINS, TROPICAL STORM OR HURRICANE HAS PASSED; AND REPLACE OR MAINTAIN BMPS AS NEEDED.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) NOTES

1. ALL GRADING AND CONSTRUCTION WORK SHALL IMPLEMENT MEASURES TO ENSURE THAT THE DISCHARGE OF POLLUTANTS FROM THE CONSTRUCTION SITE WILL BE REDUCED TO THE MAXIMUM EXTENT PRACTICABLE AND WILL NOT CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF WATER QUALITY STANDARDS.
2. FOR ALL PROJECTS WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND, THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL A NOTICE OF NPDES PERMIT COVERAGE IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAI'I, AND HAS SATISFIED ANY OTHER APPLICABLE REQUIREMENTS OF THE NPDES PERMIT PROGRAM.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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04/30/2026
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CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

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JANUARY 2025
DATE

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UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

EROSION AND SEDIMENT CONTROL NOTES

DATE :

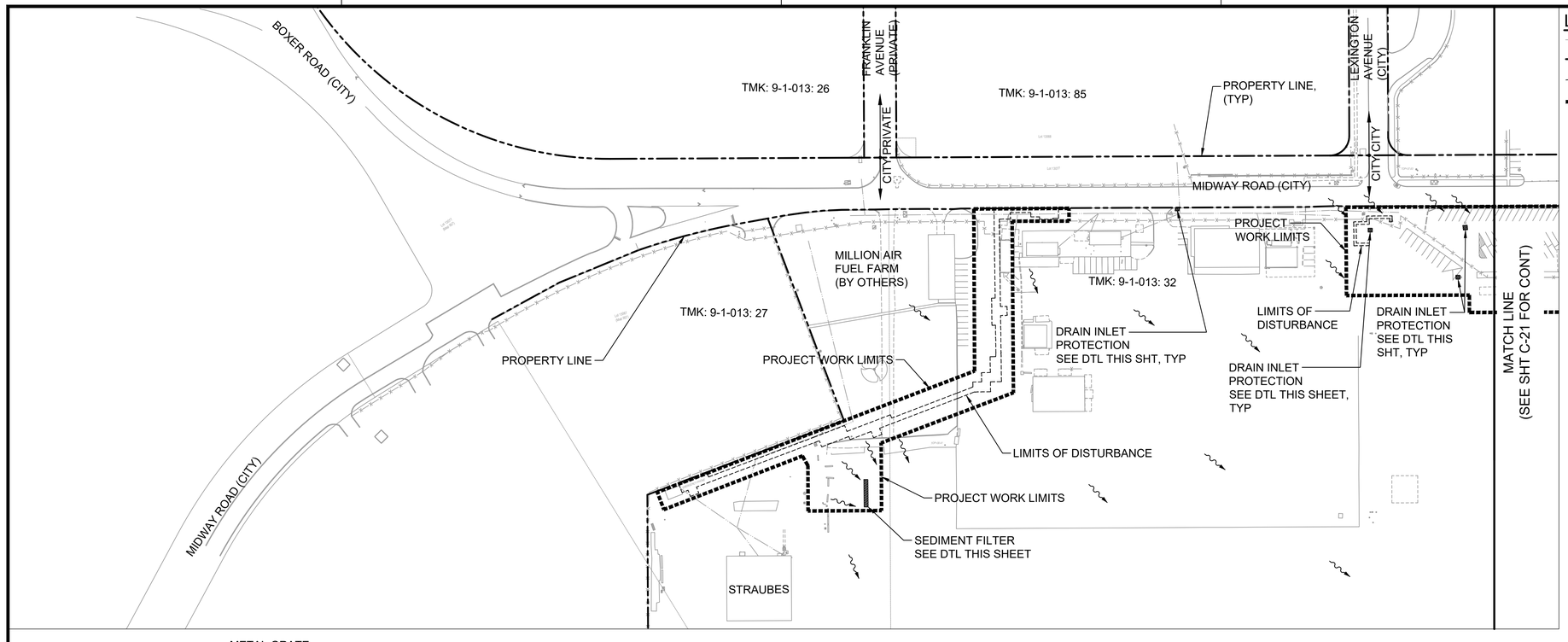
SHEET :

21 OF 80 SHEETS

DWG. NO.

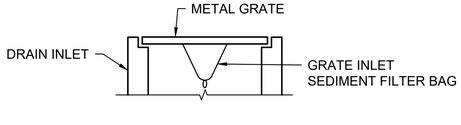
C-19

T:\DOT KALAELOA AIRPORT\2019\02020\04 GRAPHICS\CAD\SHEETS\C-19 EROSION AND SEDIMENT CONTROL NOTES.DWG



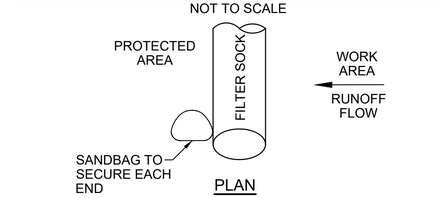
LEGEND:

- EXISTING CONTOUR
- PROPERTY LINE
- LIMITS OF DISTURBANCE
- PROJECT WORK LIMITS
- DRAIN INLET PROTECTION
- APPROXIMATE DIRECTION OF SURFACE DRAINAGE RUNOFF FLOW



DRAIN INLET PROTECTION DETAIL

NOT TO SCALE



FILTER SOCK

NOT TO SCALE

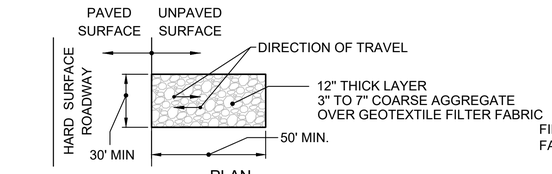


EROSION AND SEDIMENT CONTROL PLAN - 1

SCALE: 1"=100'

100 0 100 200

SCALE IN FEET



NOTE:

12" COARSE AGGREGATE LAYER SHALL BE REMOVED IMMEDIATELY PRIOR TO INSTALLATION OF ROADWAY BASE COURSE.

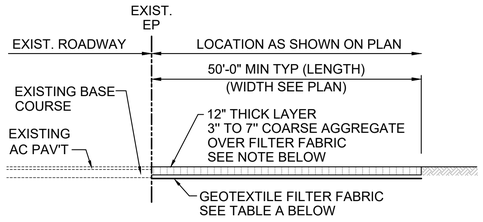
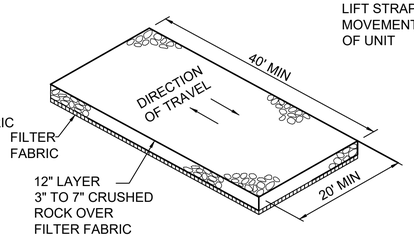


TABLE A GEOTEXTILE REQUIREMENTS	
PHYSICAL PROPERTY	REQUIREMENTS
GRAB TENSILE STRENGTH	220 LB (ASTM D1682)
ELONGATION FAILURE	60% (ASTM D1682)
MULLEN BURST STRENGTH	430 LB (ASTM D3768)
PUNCTURE STRENGTH	125 LB (ASTM D751, MODIFIED)
EQUIVALENT OPENING	SIZE 40-80 (U.S. STD SIEVE, CW-02215)

CONSTRUCTION INGRESS/EGRESS DETAIL

NOT TO SCALE

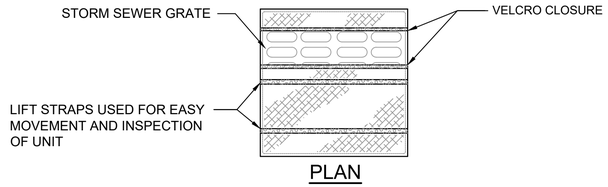


NOTES:

1. MONITOR VOIDS IN ROCK SURFACE. REPLACE/CLEAN AREAS WHERE SILT BUILD-UP IS WITHIN 2 INCHES OF SURFACE.

TIRE WASH AREA

NOT TO SCALE



SEDIMENT FILTER FOR DRAIN INLETS

NOT TO SCALE

MECHANICAL PROPERTIES	TEST METHOD	UNITS	MARV
GRAB TENSILE STRENGTH	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
GRAB TENSILE ELONGATION	ASTM D 4632	%	24 X 10
PUNCTURE STRENGTH	ASTM D 4833	kN (lbs)	0.40 (90)
MULLEN BURST STRENGTH	ASTM D 3786	kPa (psi)	3097 (450)
TRAPEZOID TEAR STRENGTH	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV RESISTANCE	ASTM D 4355	%	90
APPARENT OPENING SIZE	ASTM D 4751	Mm (US STD SIEVE)	0.425 (40)
FLOW RATE	ASTM D 4491	$1/MIN/M^2$ $(GAL/MIN/FT)^2$	5907 (145)
PERMITTIVITY	ASTM D 4491	SEC^{-1}	2.1

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04/30/2026
Licensed Expiration Date

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CKK	BHK	CKK	JS

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JANUARY 2025
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UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

EROSION AND SEDIMENT CONTROL PLAN - 1 AND DETAILS

DATE :

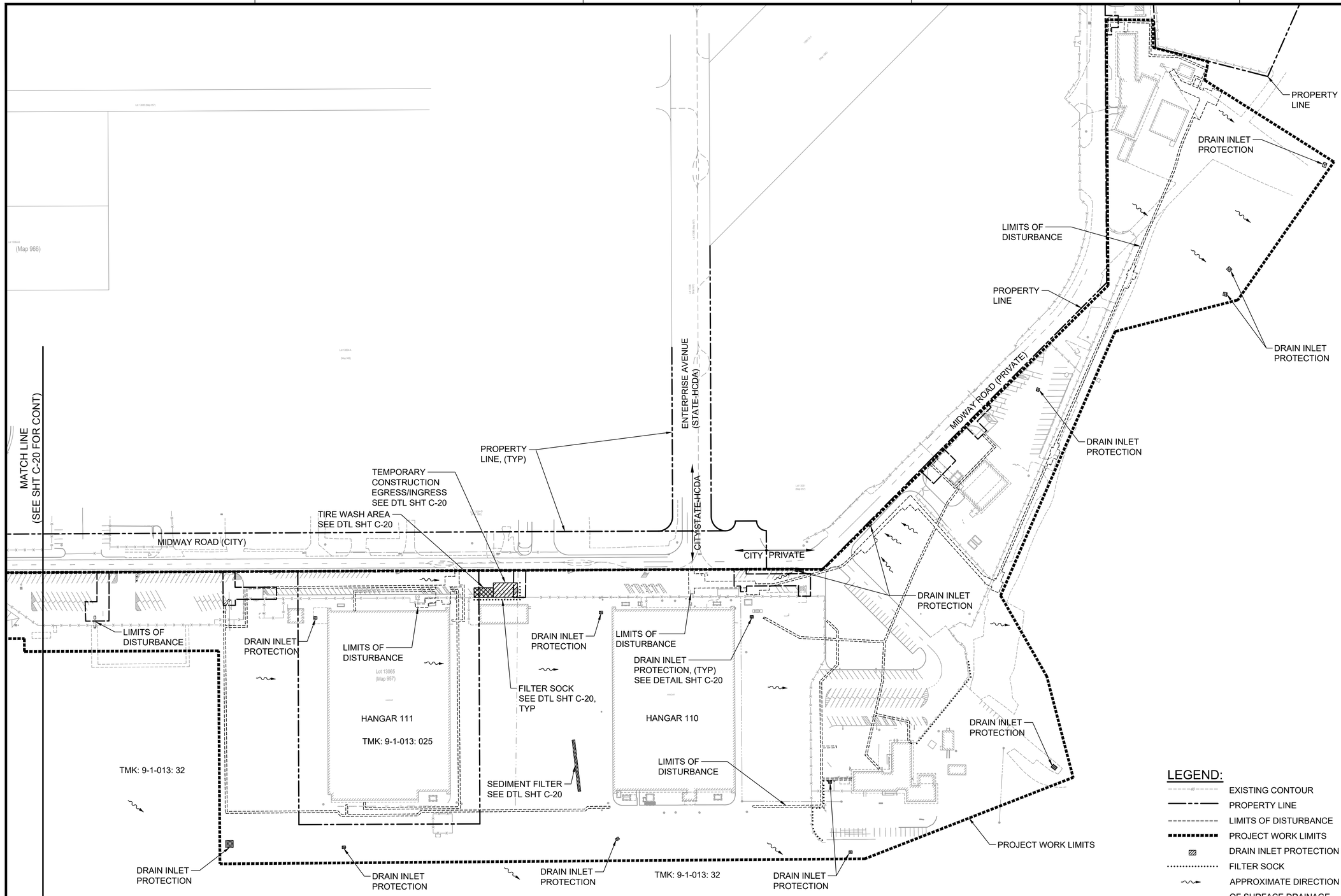
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22 OF 80 SHEETS

DWG. NO.

C-20

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-20 EROSION AND SEDIMENT CONTROL PLAN - 1 AND DETAILS.DWG



EROSION AND SEDIMENT CONTROL PLAN - 2

SCALE: 1"=100'

100 0 100 200

SCALE IN FEET

LEGEND:

- EXISTING CONTOUR
- PROPERTY LINE
- LIMITS OF DISTURBANCE
- PROJECT WORK LIMITS
- DRAIN INLET PROTECTION
- FILTER SOCK
- APPROXIMATE DIRECTION OF SURFACE DRAINAGE RUNOFF FLOW
- TEMPORARY CONSTRUCTION ENTRANCE INGRESS/EGRESS
- TIRE WASH AREA

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SHEET TITLE:

EROSION AND SEDIMENT CONTROL PLAN - 2

DATE :

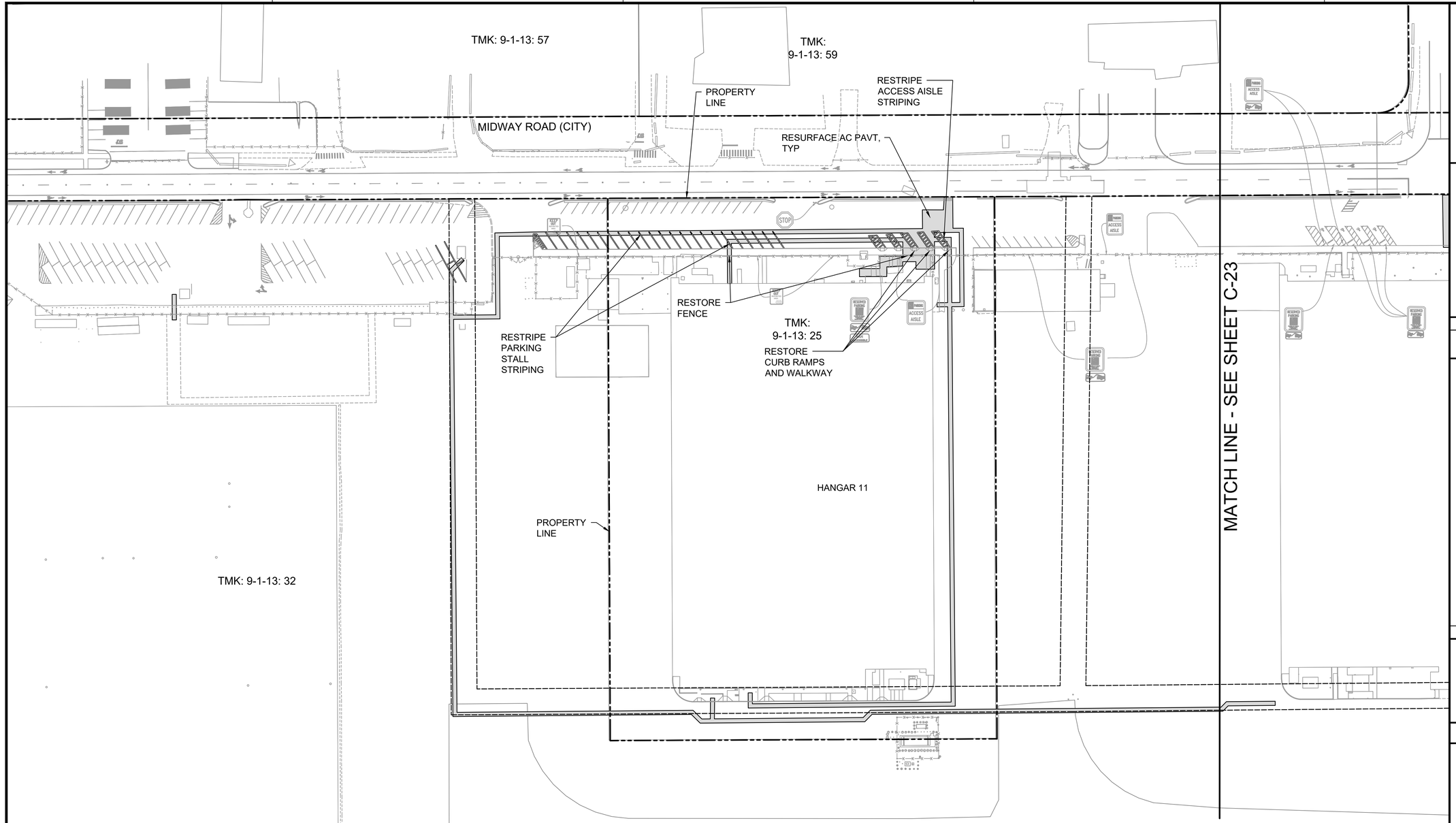
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23 OF 80 SHEETS

DWG. NO.

C-21

T:\DOT KALAELOA AIRPORT\2019702020\04 GRAPHICS\CAD\SHEETS\C-21 EROSION AND SEDIMENT CONTROL PLAN - 2.DWG



PAVEMENT RESTORATION AND STRIPING PLAN - 1

SCALE: 1"=50'

50 0 50 100

SCALE IN FEET

NOTES:

1. FOR AC PAVING RESTORATION DETAIL, SEE SHT C-49.
2. FOR CONC SIDEWALK RESTORATION DETAIL, SEE SHT C-48.
3. FOR CONC CURB RESTORATION DETAIL, SEE SHT C-48.
4. FOR STRIPING RESTORATION DETAIL, SEE SHT C-49.

LEGEND

NEW PAVEMENT

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SHEET TITLE:

PAVEMENT RESTORATION AND STRIPING PLAN - 1

DATE :

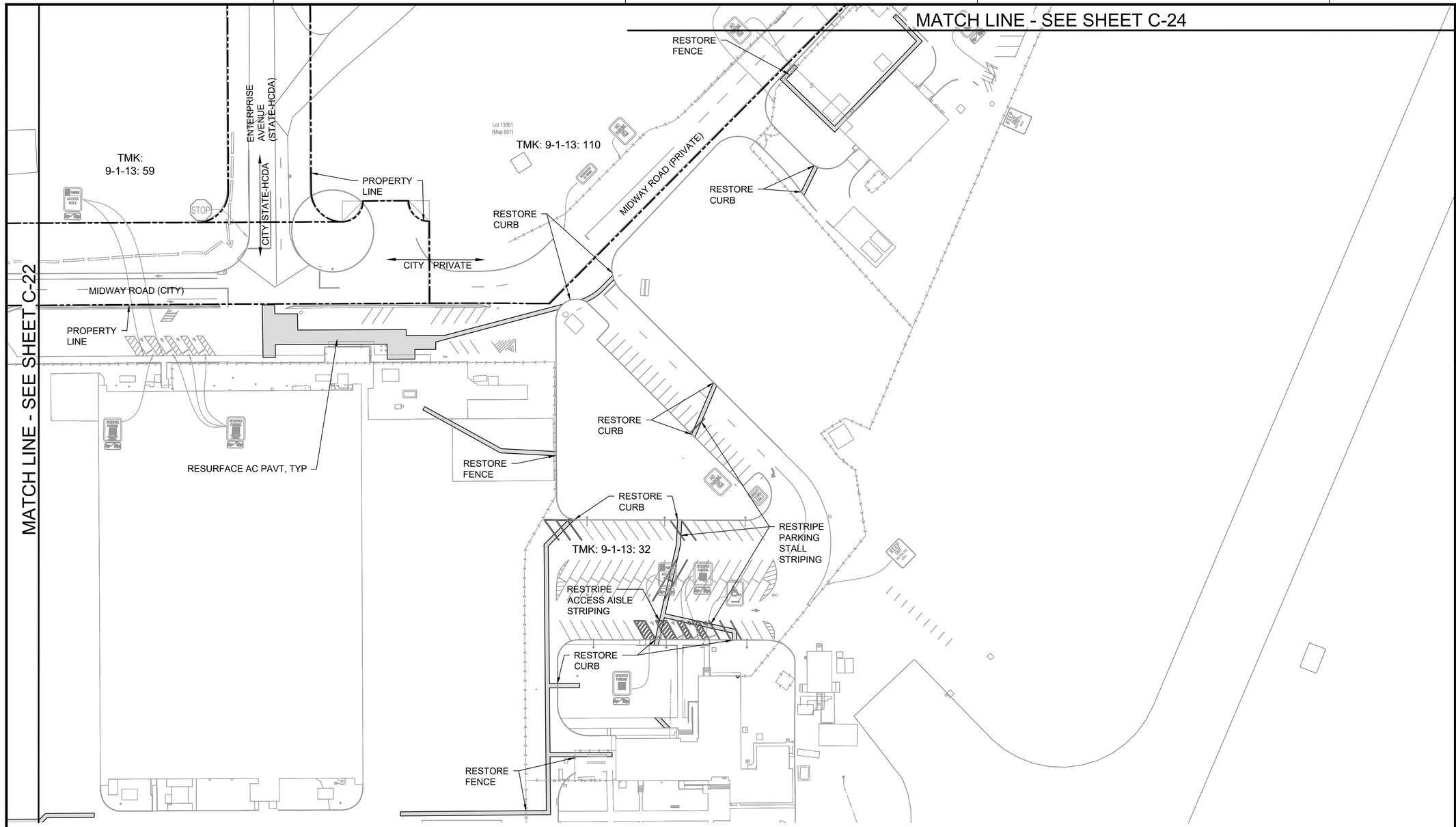
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24 OF 80 SHEETS

DWG. NO.

C-22

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-22 PAVEMENT RESTORATION AND STRIPING PLAN - 1.DWG



PAVEMENT RESTORATION AND STRIPING PLAN - 2

NORTH

SCALE: 1"=50'

50 0 50 100

SCALE IN FEET

NOTES:

1. FOR AC PAVING RESTORATION DETAIL, SEE SHT C-49.
2. FOR CONC SIDEWALK RESTORATION DETAIL, SEE SHT C-48.
3. FOR CONC CURB RESTORATION DETAIL, SEE SHT C-48.
4. FOR STRIPING RESTORATION DETAIL, SEE SHT C-49.

LEGEND

NEW PAVEMENT

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PAVEMENT RESTORATION AND STRIPING PLAN - 2

DATE :

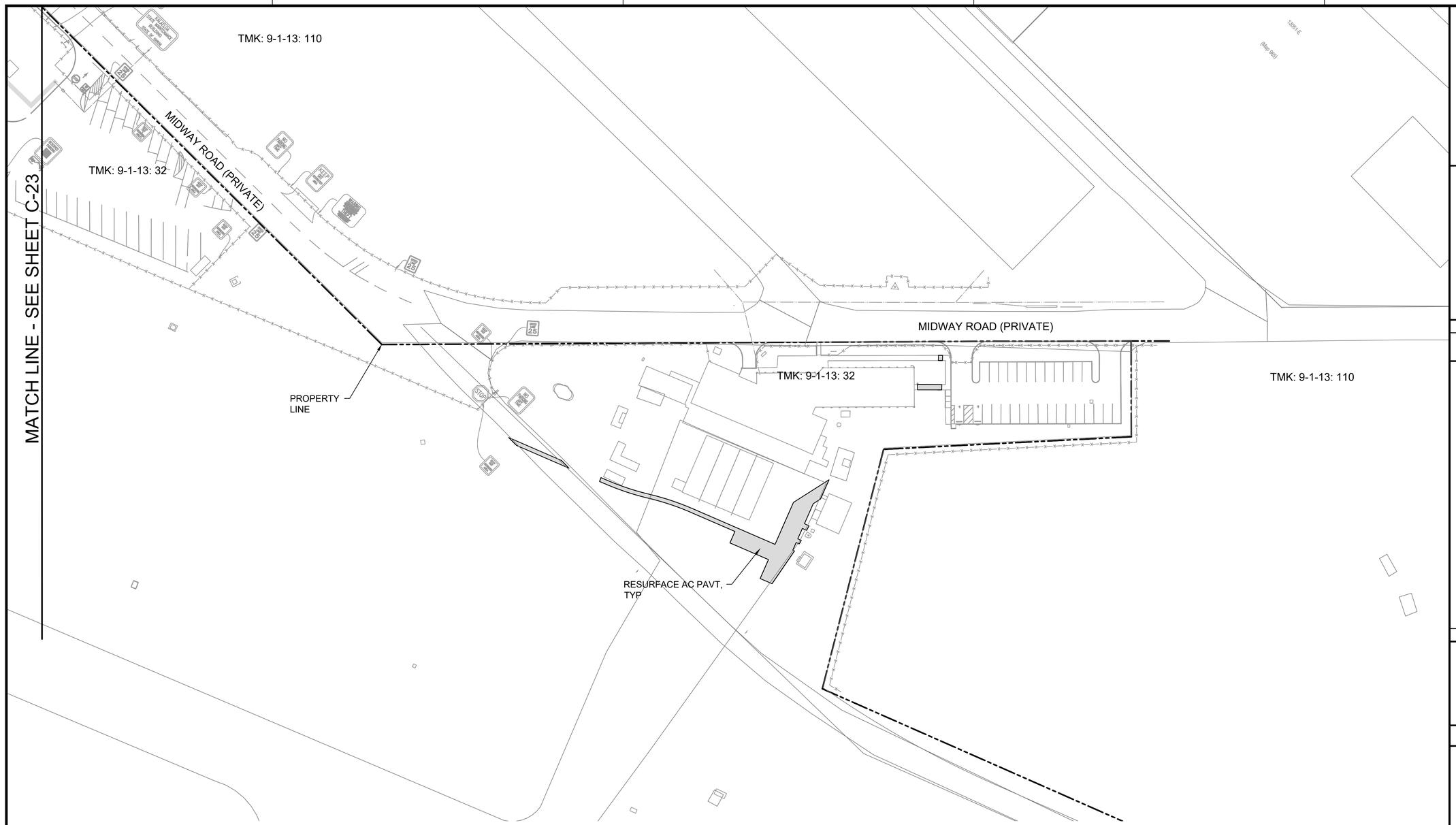
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25 OF 80 SHEETS

DWG. NO.

C-23

T:\DOT KALAELOA AIRPORT\2019\90200\04 GRAPHICS\CAD\SHEETS\C-23 PAVEMENT RESTORATION AND STRIPING PLAN - 2.DWG



PAVEMENT RESTORATION AND STRIPING PLAN - 3

SCALE: 1"=50'

50 0 50 100

SCALE IN FEET

NOTES:

1. FOR AC PAVING RESTORATION DETAIL, SEE SHT C-49.
2. FOR CONC SIDEWALK RESTORATION DETAIL, SEE SHT C-48.
3. FOR CONC CURB RESTORATION DETAIL, SEE SHT C-48.
4. FOR STRIPING RESTORATION DETAIL, SEE SHT C-49.

LEGEND

NEW PAVEMENT

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SHEET TITLE:

PAVEMENT RESTORATION AND STRIPING PLAN - 3

DATE :

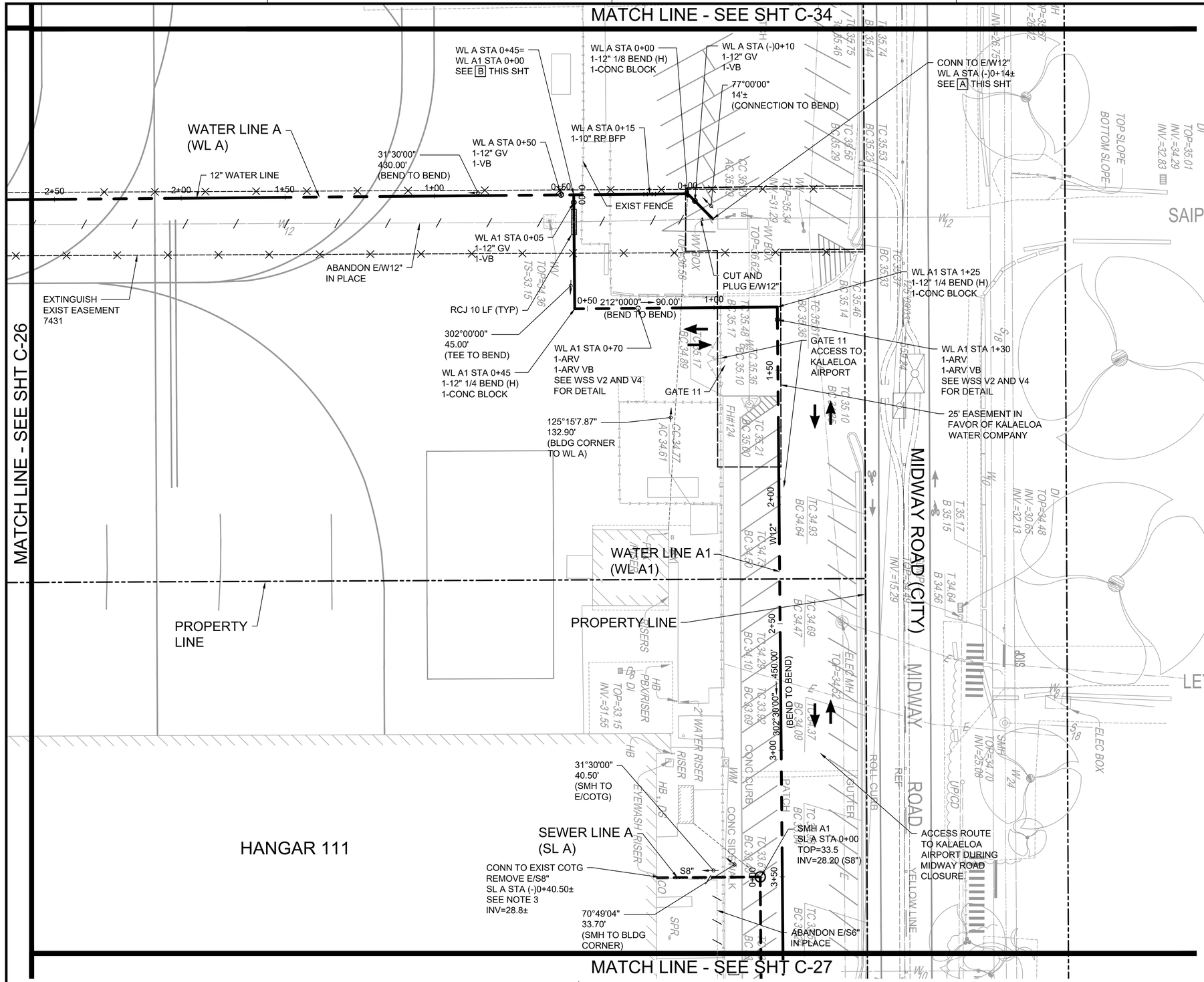
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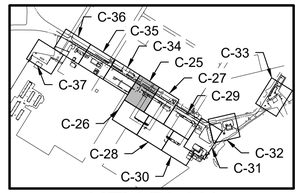
26 OF 80 SHEETS

DWG. NO.

C-24

T:\DOT KALAELOA AIRPORT\2019702020\04 GRAPHICS\CAD\SHEETS\C-24 PAVEMENT RESTORATION AND STRIPING PLAN - 3.DWG





KEY PLAN

LEGEND:

EXISTING:	PROPOSED:	
		PROPERTY LINE
W24	W12"	WATER LINE
W24		ABANDON WATERLINE
S8	S8"	SEWER LINE
S8		ABANDON SEWERLINE
D18		DRAIN LINE
E		ELECTRICAL LINE
		EASEMENT
		EXTINGUISH EASEMENT

NOTES:

1. FOR CONC BLOCK DETAIL SEE SHT C-47.
2. FOR CONC BLOCK W/ STRUC STRUT DETAIL SEE SHT C-47.
3. FOR FH AND WATER LATERAL PROFILES SEE SHT C-41.
4. FOR WL PROFILES SEE SHTS C-38 TO C-40.

SEWER NOTES:

1. FOR CLEANOUT DETAIL SEE SHT C-48.
2. FOR SEWER LINE A PROFILE, SEE SHT C-42.
3. PRIOR TO MAKING SEWER CONNECTIONS, THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND VERIFY PIPE INVERT, SIZE, MATERIAL, AND LOCATION.
4. FOR TYPICAL SEWER TRENCH DETAIL, SEE WWS STD DET S-01.
5. FOR REINFORCED CONCRETE JACKET, SEE WWS STD DET S-03.
6. FOR SEWER MANHOLE DETAILS, SEE WWS STD DET S-09 THROUGH S-11.

A
SEE SHT C-50 FOR CONN SCHEMATIC
SEE SHT C-38 FOR PROFILE
TEMP FOR TESTING/CLEANING:
1-12" CAP W/ 4" CO
1-CONC BLOCK
MATERIALS FOR CONNECTION:
2-12" 1/8 BEND (H)
1-CONC BLOCK W/STRUCT STRUTS
1-12" GV W/VB SEE WSS V14, V15 & V16 FOR DETAILS
1-10" RP BFP ASSEMBLY SEE WSS V9 FOR DETAIL
2-12"X10" REDUCER
2-10" 1/4 BEND
2-12" SLEEVE, 12" LONG
2-MIN 2 LF 12" PIPE
PRIOR TO MAKING WATER CONNECTIONS THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND VERIFY PIPE INVERT AND SIZE

B
SEE SHT C-50 FOR CONN SCHEMATIC
SEE SHT C-38 FOR PROFILE
MATERIALS FOR CONNECTION:
1-12"x12" TEE (H)
1-CONC BLOCK
2-12" GV W/VB SEE WSS V14, V15, AND V16 FOR DETAILS

UTILITY PLAN - 1

SCALE: 1"=20'

20 0 20 40

SCALE IN FEET

NORTH

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

UTILITY PLAN - 1

DATE :

SHEET :

27 OF 80 SHEETS

DWG. NO.

C-25

T:\DOT KALAELOA AIRPORT\2019\70020\04 GRAPHICS\CAD\SHEETS\C-25 UTILITY PLAN - 1.DWG

MATCH LINE - SEE SHT C-25

MATCH LINE - SEE SHT C-27

MATCH LINE - SEE SHT C-28

ABANDON E/W12" IN PLACE

31°30'00" 430.00' (BEND TO BEND)

PROPERTY LINE

HANGAR 111

WATER LINE A (WL A)

EXTINGUISH EXIST EASEMENT 7431

PATCH

CUT AND PLUG

WL A STA 4+30
1-12" 1/4 BEND (H)
1-CONC BLOCK

Easement 7431 (25-ft. wide) (Map 1069)

12" WATER LINE

DEMOLISH AND REMOVE EXIST FH SEE SHT C-44 FOR DETAIL

ABANDON E/W12" IN PLACE

SMH TOP=34.42 INV.=28.72

301°30'00" 230.00' (BEND TO BEND)

WL A STA 6+50
1-12" GV
1-VB
SEE WSS V14, V15, AND V16 FOR DETAILS

WL A STA 6+60
1-12" 1/8 BEND (H)
1-CONC BLOCK

346°30'00" 12.00' (BEND TO BEND)

WL A STA 6+72
1-12" 1/8 BEND (H)
1-CONC BLOCK

CONN TO EXIST COTG SL A STA 8+72 SEE NOTE 3 INV=29.8±

211°30'00" 11.61' (SMH TO CONN)

8" SEWER LINE 121°30'00" 196.73' (SMH TO SMH)

WL A STA 6+83
FH CONN
SEE [A] THIS SHEET

SMH A5
SL A STA 8+60.39
TOP=33.4
INV=29.64 (S8")
29.47 (S10")

SEWER LINE A (SL A)

ABANDON E/S18" IN PLACE

ABANDON E/S8" IN PLACE

10" SEWER LINE

301°30'00" 158.00' (BEND TO BEND)

DI TOP=33.09 BOT=28.62

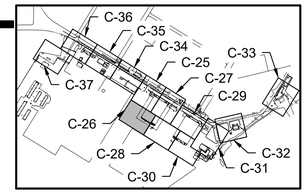
DI TOP=32.60 INV.=28.13

SUMP TOP=32.50 DEEPER THAN 27'

INV.=30.76

4+00 5+00 5+50 6+00 6+50 7+00 7+50 8+00 8+50

[A]
SEE SHT C-41 FOR PROFILE
1-12"X6" TEE
1-6" GV W/VB SEE WSS V14, V15, AND V16 FOR DETAILS
20.2 LF 6" PIPE
1-FH
2-CONC BLOCKS
1-FH MARKER
1-FH EXTENSION PIECE
SEE WSS FH4, FH8, AND FH12 FOR DETAILS



KEY PLAN

LEGEND:

EXISTING:	PROPOSED:	
		PROPERTY LINE
W 24	W12"	WATER LINE
W 24	W 24	ABANDON WATERLINE
S 8	S8"	SEWER LINE
S 8	S 8	ABANDON SEWERLINE
D 18		DRAIN LINE
E	E	ELECTRICAL LINE
		EASEMENT
		EXTINGUISH EASEMENT

SEWER NOTES:

1. FOR CLEANOUT DETAIL SEE SHT C-48.
2. FOR SEWER LINE A PROFILE, SEE SHT C-42.
3. PRIOR TO MAKING SEWER CONNECTIONS, THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND VERIFY PIPE INVERT, SIZE, MATERIAL, AND LOCATION.
4. FOR TYPICAL SEWER TRENCH DETAIL, SEE WWS STD DET S-01.
5. FOR REINFORCED CONCRETE JACKET, SEE WWS STD DET S-03.
6. FOR SEWER MANHOLE DETAILS, SEE WWS STD DET S-09 THROUGH S-11.

NORTH

UTILITY PLAN - 2

SCALE: 1"=20'

20 0 20 40

SCALE IN FEET

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

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AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

UTILITY PLAN - 2

DATE :

SHEET :

28 OF 80 SHEETS

DWG. NO.

C-26

T:\DOT KALAELOA AIRPORT\2019\02020\04 GRAPHICS\CAD\SHEETS\C-26 UTILITY PLAN - 2.DWG

MATCH LINE - SEE SHT C-25

MATCH LINE - SEE SHT C-26

MATCH LINE - SEE SHT C-28

MATCH LINE - SEE SHT C-29

HANGAR 111

HANGAR

HANCOCK

MIDWAY ROAD (CITY)

8" DCDA METER
CONN TO E/W10"
2-10"x8" REDUCERS
2-CONC THRUST BEAMS

SEWER LINE A
(SL A)

ABANDON E/S6"
IN PLACE

12 LF RCJ

WL A1 STA 4+00
1-ARV

301°30'00" — 213.16' (SMH TO SMH)

302°00'00" — 450.00' (BEND TO BEND)

ACCESS ROUTE TO KALAELOA AIRPORT DURING MIDWAY ROAD CLOSURE

CUT AND PLUG

ABANDON E/SMH
IN PLACE

12 LF RCJ

SMH A2
SL A STA 2+13.16
CONSTRUCT OVER E/S12"
TOP=33.4
INV=27.03 (S8")
INV=26.87 (S10")
INV=26.7± (E/S12")
SEE SEWER NOTE 3

ABANDON E/S8"
IN PLACE

ABANDON E/W
IN PLACE

CUT E/W

121°30'00"
20.00'
(BEND TO BFP)

4-UTILITY BOX

31°30'00" — 260' (SMH TO SMH)

SMH A3
SL A STA 4+63.16
TOP=33.5
INV=28.87 (S10")

WL A1 STA 6+47±
(o/s 20' RT)
CONN TO E/BFP

31°30'00" — 72.00' (BEND TO BEND)

2" GV W/ BOX

CUT AND PLUG W4"
1-4" CAP
1-CONC BLOCK

WL A1 STA 5+75
1-12" 1/4 BEND (H)
1-CONC BLOCK

WATER LINE A1
(WL A1)

PROPERTY LINE

WL A1 STA 6+47
1-12" TEE (H)
1-12" GV W/VB
1-12" CAP W/ 4" C.O.
1-12" CAP TAPPED FOR 2" PIPE
2-CONC BLOCK
SEE NOTE A

TIRE WASH
40'x20'

CONSTRUCTION
ENTRANCE
30'x50'

ACCESS TO KALAELOA AIRPORT VIA GATE 11

EXTINGUISH EXIST
EASEMENT 7432

Easement 7432
(25-ft. wide)
(Map 1069)

CUT AND PLUG

TYPE III
BARRICADE

ROAD
CLOSED

NEW 25' WATER EASEMENT
IN FAVOR OF KALAELOA
WATER COMPANY

ACCESS TO KALAELOA AIRPORT VIA GATE 11

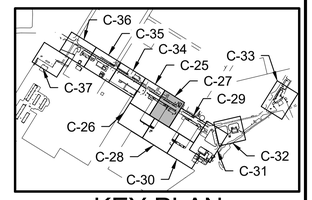
NORTH

UTILITY PLAN - 3

SCALE: 1"=20'

20 0 20 40

SCALE IN FEET



KEY PLAN

LEGEND:

EXISTING:	PROPOSED:	
		PROPERTY LINE
W12" W24	W12"	WATER LINE
	W24	ABANDON WATERLINE
S8" S8	S8"	SEWER LINE
	S8	ABANDON SEWERLINE
D18		DRAIN LINE
E		ELECTRICAL LINE
		EASEMENT
		EXTINGUISH EASEMENT
		TEMPORARY CONSTRUCTION ENTRANCE INGRESS/EGRESS
		TIRE WASH AREA

NOTES:

1. FOR CONC BLOCK DETAIL SEE SHT C-47.
2. FOR CONC BLOCK W/ STRUC STRUT DETAIL SEE SHT C-47.
3. FOR FH AND WATER LATERAL PROFILES SEE SHT C-41.
4. FOR WL PROFILES SEE SHTS C-38 TO C-40.

SEWER NOTES:

1. FOR CLEANOUT DETAIL SEE SHT C-48.
2. FOR SEWER LINE A PROFILE, SEE SHT C-42.
3. PRIOR TO MAKING SEWER CONNECTIONS, THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND VERIFY PIPE INVERT, SIZE, MATERIAL, AND LOCATION.
4. FOR TYPICAL SEWER TRENCH DETAIL, SEE WWS STD DET S-01.
5. FOR REINFORCED CONCRETE JACKET, SEE WWS STD DET S-03.
6. FOR SEWER MANHOLE DETAILS, SEE WWS STD DET S-09 THROUGH S-11.

A
SEE SHT C-50 FOR CONN 5
SEE SHT C-40 FOR PROFILE
TEMP FOR TESTING:
1-4" CO
1-CONC BLOCK
MATERIALS FOR CONNECTION:
1-12"X12" TEE
1-12" CAP TAPPED FOR 2" PIPE
2-CONC BLOCK
1-12" GV W/VALVE BOX
SEE WSS V14, V15, AND V16
FOR DETAIL
PRIOR TO MAKING WATER CONNECTIONS, THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND VERIFY PIPE INVERT AND SIZE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

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JANUARY 2025
DATE

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UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

UTILITY PLAN - 3

DATE :

SHEET :
29 OF 80 SHEETS

DWG. NO.
C-27

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-27 UTILITY PLAN - 3.DWG

MATCH LINE - SEE SHT C-27

MATCH LINE - SEE SHT C-29

MATCH LINE - SEE SHT C-26

MATCH LINE - SEE SHT C-30

HANGAR 111

HANGAR 110

ABANDON E/S8" IN PLACE

ABANDON E/W IN PLACE

EXTINGUISH EXIST EASEMENT 7432

PROPERTY LINE

200.50' (SMH TO SMH)

31°30'00"

10" SEWER LINE

ABANDON E/SMH IN PLACE

EXTINGUISH EXIST EASEMENT 7431

ABANDON E/W12" IN PLACE

SMH A4
SL A STA 6+63.66
TOP=33.2
INV =28.67 (S10")
INV.=28.06

WATER LINE A (WL A)

12" WATER LINE

ABANDONED EXIST W/12"

EXIST TRENCH DRAIN

WL A STA 11+87.40
1-12" 1/8 BEND (H)
1-CONC BLOCK

301°30'00"
44.85'
(BEND TO CONN)

256°30'00"
7.40'
(BEND TO BEND)

ABANDON E/W12"

CUT E/W12"

SEWER LINE A (SL A)

121°30'00"
197.73'
(SMH TO SMH)

3' MIN CLEARANCE

301°30'00"
340.00'
(BEND TO BEND)

WL A STA 11+80
1-12" 1/8 BEND (H)
1-CONC BLOCK

WL A STA 12+28
1-12" GV
1-VB

WL A STA 12+38.25±
CONN TO E/W12" TEE
SEE [A] THIS SHT

EXIST ABANDONED W/12"

WL A STA 8+40
1-12" 1/8 BEND (H)
1-CONC BLOCK

256°30'00"
10.00'
(BEND TO BEND)

WL A STA 8+30
1-12" 1/8 BEND (H)
1-CONC BLOCK

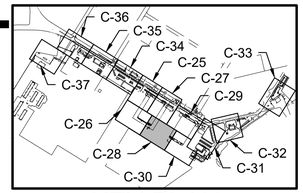
PATCH

SUMP
TOP=30.76
INV.=4.26

INV.=27.44

7+50 8+00 8+50 9+00 9+50 10+00 10+50 11+00 11+50 12+00 12+50 13+00

KEY PLAN



LEGEND:

EXISTING: PROPOSED:

- PROPERTY LINE
- W12" WATER LINE
- ABANDON WATERLINE
- S8" SEWER LINE
- ABANDON SEWERLINE
- DRAIN LINE
- ELECTRICAL LINE
- EASEMENT
- EXTINGUISH EASEMENT

NOTES:

1. FOR CONC BLOCK DETAIL SEE SHT C-47.
2. FOR CONC BLOCK W/ STRUC STRUT DETAIL SEE SHT C-47.
3. FOR FH AND WATER LATERAL PROFILES SEE SHT C-41.
4. FOR WL PROFILES SEE SHTS C-38 TO C-40.

SEWER NOTES:

1. FOR CLEANOUT DETAIL SEE SHT C-48.
2. FOR SEWER LINE A PROFILE, SEE SHT C-42.
3. PRIOR TO MAKING SEWER CONNECTIONS, THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND VERIFY PIPE INVERT, SIZE, MATERIAL, AND LOCATION.
4. FOR TYPICAL SEWER TRENCH DETAIL, SEE WWS STD DET S-01.
5. FOR REINFORCED CONCRETE JACKET, SEE WWS STD DET S-03.
6. FOR SEWER MANHOLE DETAILS, SEE WWS STD DET S-09 THROUGH S-11.

[A]
FOR CONN SCHEMATIC
SEE SHT C-50
SEE SHT C-38 FOR PROFILE
REMOVE:
1-12" CAP
1-CONC BLOCK
TEMP FOR TESTING:
1-4" CO
1-CONC BLOCK
MATERIALS FOR CONN:
1-12" SLEEVE, 12" LONG
1-12" GV W/VB SEE WSS V14, V15, AND V16 FOR DETAILS
1-MIN 2 LF 12" PIPE
PRIOR TO MAKING WATER CONNECTIONS, THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND VERIFY PIPE INVERT AND SIZE.

NORTH

UTILITY PLAN - 4

SCALE: 1"=20'

20 0 20 40

SCALE IN FEET

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

UTILITY PLAN - 4

DATE :

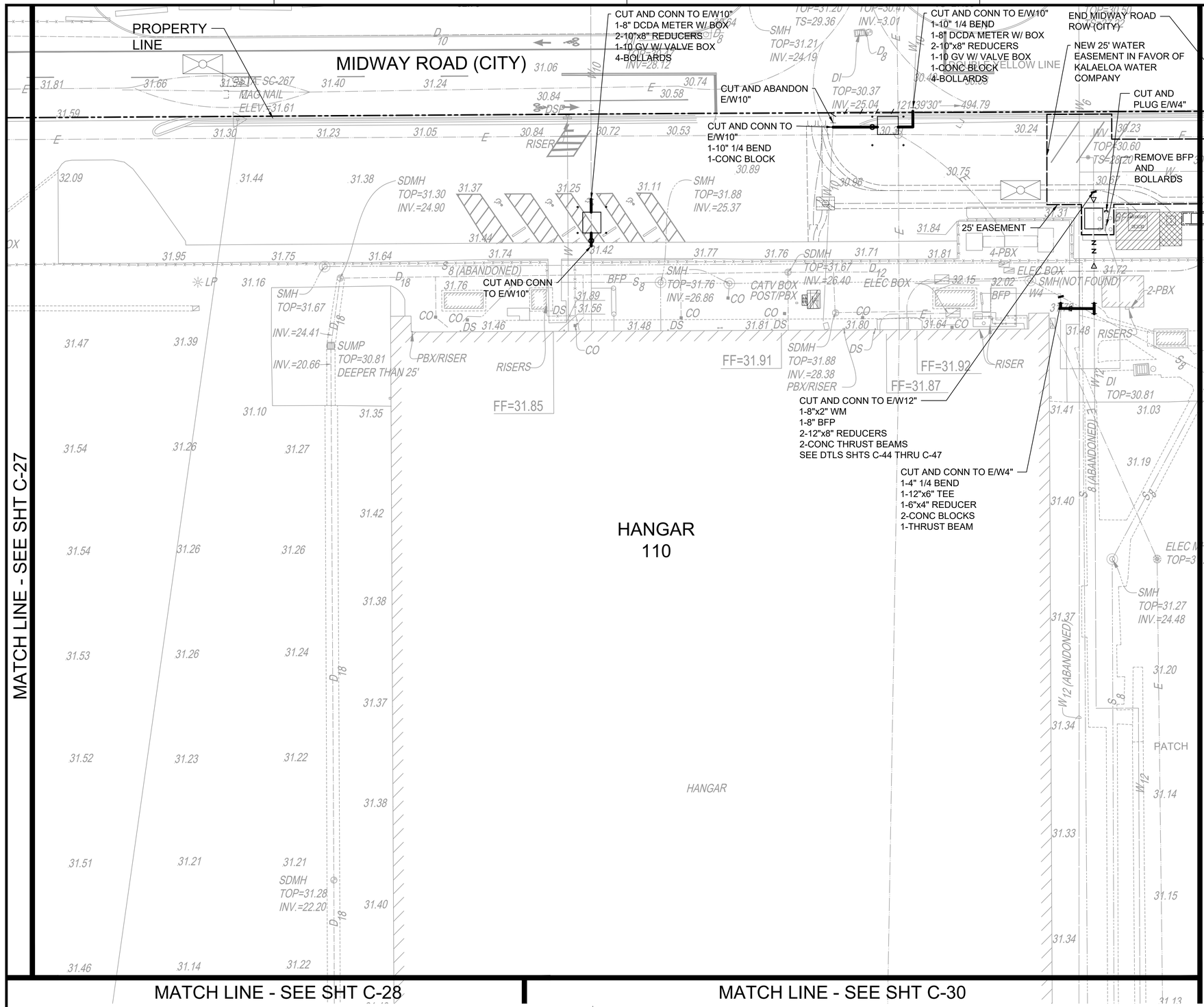
SHEET :

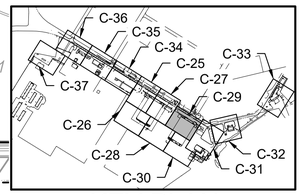
30 OF 80 SHEETS

DWG. NO.

C-28

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-28 UTILITY PLAN - 4.DWG





KEY PLAN

LEGEND:

EXISTING:	PROPOSED:	
		PROPERTY LINE
W24	W12"	WATER LINE
W24		ABANDON WATERLINE
S8	S8"	SEWER LINE
S8		ABANDON SEWERLINE
D18		DRAIN LINE
E		ELECTRICAL LINE
		EASEMENT
		EXTINGUISH EASEMENT

NOTES:

1. FOR CONC BLOCK DETAIL SEE SHT C-47.
2. FOR CONC BLOCK W/ STRUC STRUT DETAIL SEE SHT C-47.
3. FOR FH AND WATER LATERAL PROFILES SEE SHT C-41.
4. FOR WL PROFILES SEE SHTS C-38 TO C-40.

NORTH

UTILITY PLAN - 5

SCALE: 1"=20'

20 0 20 40

SCALE IN FEET

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

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HAWAII, U.S.A.

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AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

UTILITY PLAN - 5

DATE :

SHEET :
31 OF 80 SHEETS

DWG. NO.
C-29

T:\DOT KALAELOA AIRPORT\2019\90200\04 GRAPHICS\CAD\SHEETS\C-29 UTILITY PLAN - 5.DWG

MATCH LINE - SEE SHT C-29

MATCH LINE - SEE SHT C-28

MATCH LINE - SEE SHT C-31

HANGAR 110

CONTROL TOWER

EXTIGUISH EXIST EASEMENT 7433

EXTIGUISH EXIST EASEMENT 7432

EXIST ABANDONED W12"

ABANDON E/W12"

211°30'00" 55.87.00' (BEND TO TEE)

REMOVE AND REPLACE E/D18"

RCJ (TYP) 10 LF

RCJ (TYP) 6 LF

WATER LINE A (WL A)

15+50 301°30'00" 145.00' (BEND TO BEND)

W12"

E/W12"

WL A STA 16+72.61
1-12" 1/4 BEND (H)
1-CONC BLOCK

WL A STA 15+27.61±
CONN TO E/W12" TEE
SEE NOTE [A]

WL A STA 15+33±
1-12" GV
1-VB

WL A STA 15+40
1-ARV
1-ARV VB
SEE WSS V2 AND V4 FOR DETAIL

ELEC MH TOP=30.93

ELEC MH TOP=30.85

ELEC MH TOP=30.35

SMH TOP=31.08 TS=30.61

SMH TOP=31.09 INV.=27.65

SMH TOP=31.08 INV.=27.46

SMH TOP=31.06 INV.=27.16

SMH TOP=31.04 INV=26.70

SMH TOP=31.33 INV=22.88

INV.=25.80

WMH(ARV) TOP=31.08 TS=30.61

WMH(ARV) TOP=31.11 TV=30.66

WV TOP=31.73 TS=30.20

WV TOP=31.43 TS=28.49

WV TOP=31.20 TS=29.42

WV TOP=30.61 TS=29.08

WV TOP=30.74 TS=30.24

DI TOP=29.83 INV=26.33 INV=28.93

DI TOP=28.69 INV=27.19

INV=27.64

FH #119 TOP=31.04 TS=29.30

FH #120

PBX/RISER

CO

2-CO

RISER

BFP

DS RISERS

HB

PBX

LP

RISER

5-LL

6-LL

LL

0+50

13+00

14+00

14+50

15+00

16+00

16+50

17+00

17+50

18+00

LEGEND:

EXISTING:	PROPOSED:	
		PROPERTY LINE
	W12"	WATER LINE
		ABANDON WATERLINE
	S8"	SEWER LINE
		ABANDON SEWERLINE
		DRAIN LINE
		ELECTRICAL LINE
		EASEMENT
		EXTINGUISH EASEMENT

NOTES:

1. FOR CONC BLOCK DETAIL SEE SHT C-47.
2. FOR CONC BLOCK W/ STRUC STRUT DETAIL SEE SHT C-47.
3. FOR FH AND WATER LATERAL PROFILES SEE SHT C-41.
4. FOR WL PROFILES SEE SHTS C-38 TO C-40.

[A]
SEE SHT C-50 FOR CONN 3
SEE SHT C-39 FOR PROFILE
REMOVE:
1-12" CAP
1-CONC BLOCK
TEMP FOR TESTING:
1-12" CAP W/ 4" CO
1-CONC BLOCK
MATERIALS FOR CONNECTION:
1-CONC BLOCK
1-12" SLEEVE, 12" LONG
1-12"GV W/VB SEE WSS V14, V15, AND V16 FOR DETAILS
1-MIN 2 LF 12" PIPE
PRIOR TO MAKING WATER CONNECTIONS THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND VERIFY PIPE INVERT AND SIZE

KEY PLAN

C-36 C-35 C-34 C-33 C-25 C-27 C-37 C-29 C-26 C-28 C-32 C-31 C-30

NORTH

UTILITY PLAN - 5A

SCALE: 1"=20'

20 0 20 40

SCALE IN FEET

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
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BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

UTILITY PLAN - 5A

DATE :

SHEET :

32 OF 80 SHEETS

DWG. NO.

C-30

T:\DOT KALAELOA AIRPORT\2019702020\04 GRAPHICS\CAD\SHEETS\C-30 UTILITY PLAN - 5A.DWG

MATCH LINE - SEE SHT C-30

MATCH LINE - SEE SHT C-29

MATCH LINE - SEE SHT C-30

NOTES:

1. FOR CONC BLOCK DETAIL SEE SHT C-47.
2. FOR CONC BLOCK W/ STRUC STRUT DETAIL SEE SHT C-47.
3. FOR FH AND WATER LATERAL PROFILES SEE SHT C-41.
4. FOR WL PROFILES SEE SHTS C-38 TO C-40.

SEWER NOTES:

1. FOR CLEANOUT DETAIL SEE SHT C-48.
2. FOR SEWER LINE A PROFILE, SEE SHT C-42.
3. PRIOR TO MAKING SEWER CONNECTIONS, THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND VERIFY PIPE INVERT, SIZE, MATERIAL, AND LOCATION.
4. FOR TYPICAL SEWER TRENCH DETAIL, SEE WWS STD DET S-01.
5. FOR REINFORCED CONCRETE JACKET, SEE WWS STD DET S-03.
6. FOR SEWER MANHOLE DETAILS, SEE WWS STD DET S-09 THROUGH S-11.
7. FOR SEWER MANHOLE FRAME AND COVER LOCATED IN UNPAVED AREAS DETAIL, SEE WWS STD DET S-29.

CONN TO EXIST SMH
SL B STA 0+00
INV=23.74± (E/S8")
RECHANNELIZE SMH.
SEE WWS STD DET S-25.
SEE SEWER NOTE 3

331°00'00"
83.00'
(E/SMH TO SMH)

SMH B1
SL B STA 0+83
TOP=30.7
INV=24.24 (S8")

NEW 25' WATER EASEMENT
IN FAVOR OF KALAELOA
WATER COMPANY

267°44'06"
86.34'
(SMH TO BOX CORNER)

CUT E/W12"

WL A STA 20+77.69±
CONNECT TO E/W12"
SEE NOTE B

CUT AND PLUG

WL A STA 17+28.50
1-12"X4 TEE
2-12" GV W/VB
1-4" GV W/VB
1-CONC BLOCK

211°30'00"
55.87'
(BEND TO TEE)

WL A STA 17+95
FH CONN
SEE NOTE A

WL A STA 18+60
1-ARV
1-ARV VB
SEE WSS V2 AND V4
FOR DETAIL

WATER LINE A
(WL A)

WL A STA 19+30.61
1-12" 1/8 BEND (H)
1-CONC BLOCK

256°30'00"
50.00'
(BEND TO BEND)

4" LATERAL

211°30'00"
202.13'
(TEE TO BEND)

176.00'
(SMH TO SMH)

305°00'00"

167°00'00"
26.26'
(BEND TO CONN)

WL A STA 20+65
1-12" GV
1-VB

PORTION OF EASEMENT
TO REMAIN

WL A STA 20+56
1-10" RP BFP

WL A STA 20+50
1-12" 1/8 BEND
1-CONC BLOCK

8 LF
RCJ
(TYP)

211°30'00"
69.39'
(BEND TO BEND)

WL A STA 19+80.61
1-12" 1/8 BEND (H)
1-CONC BLOCK

EXTINGUISH EXIST
EASEMENT 7433

Easement 7433
(25-ft. wide)
(Map 1069)

REMOVE
EXIST FH
SEE SHT
C-44 FOR
DETAIL

FH 2

CONN. TO E/W4"
WL A STA 17+28.50
o/s 60.0'±
1-4" SLEEVE

302°00'00"
60.00'
(TEE TO CONN)

SMH B-5
SL B STA 4+97
TOP=32.1
INV=27.00 (S6")
INV=26.83 (S8")

44°30'00"
86.50'
(SMH TO SMH)

ABANDON E/S6"
IN PLACE

348°10'29"
37.10'±
(SMH TO CONN)

COTG B1
CONN TO E/S6"
SL B STA 5+34.10
INV=28.3±
SEE SEWER NOTE 3
INSTALL:
1-COTG

CUT AND
PLUG E/S6"

SMH B4
SL B STA 4+10.50=
SL B2 STA 0+00
TOP=31.4
INV=26.04 (S8")

SEWER LINE B
(SL B)

SMH B2
SL B STA 2+59=
SL B1 STA 0+00
TOP=32.0
INV=25.16 (S8")

235°00'00"
170.00'
(SMH TO SMH)

44°30'00"
70.00'
(SMH TO SMH)

71.00'
(SMH TO SMH)

314°30'00"
(SMH TO SMH)

35°00'00"
81.50'
(SMH TO SMH)

SMH B3
SL B STA 3+40.50
TOP=31.4
INV=25.59 (S8")

SEWER LINE B2
(SL B2)

ABANDON E/SMH
IN PLACE

32°00'00"
39.18'
(SMH TO WYE)

347°00'00"
4.43'±
(WYE TO
E/COTG)

SMH B2-1
SL B2 STA 0+71
TOP=31.1
INV=26.56 (S6")
INV=26.39 (S8")

COTG B2-2
REPLACE EXIST COTG
CONN TO E/S6"
SL B2 STA 1+14.61±
INV=28.0±
SEE SEWER NOTE 3
INSTALL:
1-COTG

EXTINGUISH EXIST
EASEMENT 7049

Easement 7049
(25-ft. wide)
(Map 1069)

E/S8" ABANDON
IN PLACE

PLUG E/S8" AT
E/SMH TO BE
ABANDONED

6" WYE
SL B2 STA 1+10.18
TOP=32.7
INV=27.85 (S6")

CONTROL
TOWER

SEWER LINE B1
(SL B1)

MIDWAY ROAD
(PRIVATE)

MATCH LINE - SEE SHT C-32

A
SEE SHT C-41
FOR PROFILE
1-12"X6" TEE
1-6" GV W/VB SEE
WSS V14, V15, V16
FOR DETAILS
30 LF 6" PIPE
1-FH
2-CONC BLOCKS
1-FH MARKER
1-FH EXTENSION
SEE WSS FH4, FH8,
AND FH12 FOR
DETAILS

B
SEE SHT C-50 FOR CONN 4
SEE SHEET C-39
FOR PROFILE
TEMP FOR TESTING:
1-4" CO
1-CONC BLOCK
MATERIALS FOR
CONNECTION:
1-12" 1/8 BEND (H)
1-CONC BLOCK
W/STRUCT STRUTS
2-12" SLEEVE 12" LONG
2-MIN 2 LF 12" PIPE
1-12" GV W/VB SEE WSS
V14, V15, AND V16 FOR
DETAILS
1-10" RP BFP ASSEMBLY
SEE
WSS V9 FOR DETAIL
PRIOR TO MAKING WATER
CONNECTIONS THE
CONTRACTOR MUST
EXPOSE POINT OF
CONNECTION AND VERIFY
PIPE INVERT AND SIZE

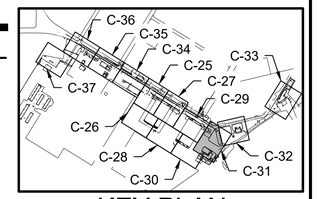
LEGEND:

EXISTING:	PROPOSED:	
		PROPERTY LINE
W 24	W12"	WATER LINE
W 24	W 24	ABANDON WATERLINE
S 8	S8"	SEWER LINE
S 8	S 8	ABANDON SEWERLINE
D 18		DRAIN LINE
E	E	ELECTRICAL LINE
		EASEMENT
		EXTINGUISH EASEMENT

NORTH

UTILITY PLAN - 6
SCALE: 1"=20'
20 0 20 40
SCALE IN FEET

KEY PLAN



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

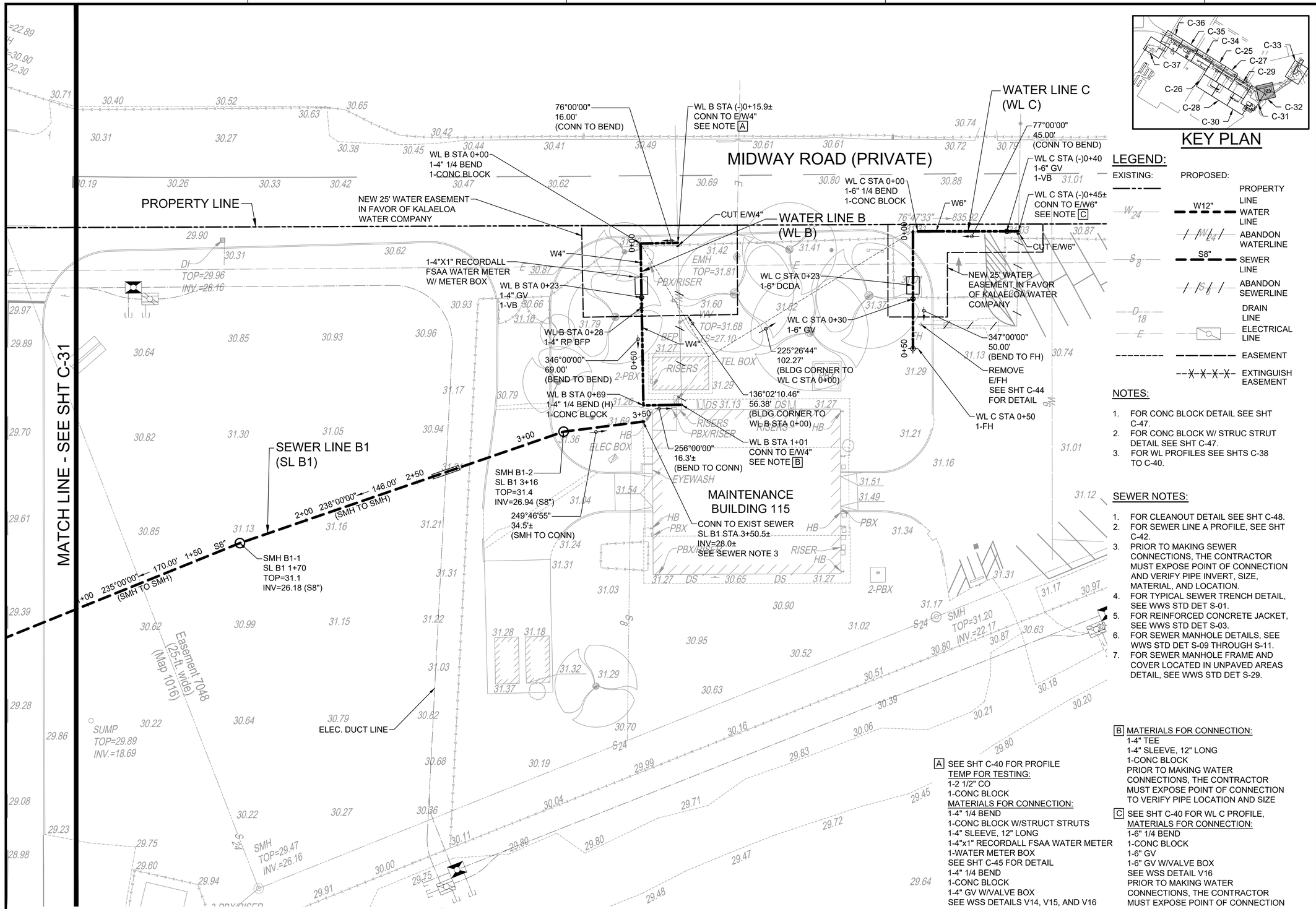
UTILITY PLAN - 6

DATE :

SHEET :
33 OF 80 SHEETS

DWG. NO.
C-31

T:\DOT KALAELOA AIRPORT\2019\2020\04 GRAPHICS\CAD\SHEETS\C-31 UTILITY PLAN - 6.DWG



KEY PLAN

LEGEND:

EXISTING: / PROPOSED:

- PROPERTY LINE
- W12" WATER LINE
- ABANDON WATERLINE
- S8" SEWER LINE
- ABANDON SEWERLINE
- DRAIN LINE
- ELECTRICAL LINE
- EASEMENT
- EXTINGUISH EASEMENT

NOTES:

1. FOR CONC BLOCK DETAIL SEE SHT C-47.
2. FOR CONC BLOCK W/ STRUC STRUT DETAIL SEE SHT C-47.
3. FOR WL PROFILES SEE SHTS C-38 TO C-40.

SEWER NOTES:

1. FOR CLEANOUT DETAIL SEE SHT C-48.
2. FOR SEWER LINE A PROFILE, SEE SHT C-42.
3. PRIOR TO MAKING SEWER CONNECTIONS, THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND VERIFY PIPE INVERT, SIZE, MATERIAL, AND LOCATION.
4. FOR TYPICAL SEWER TRENCH DETAIL, SEE WWS STD DET S-01.
5. FOR REINFORCED CONCRETE JACKET, SEE WWS STD DET S-03.
6. FOR SEWER MANHOLE DETAILS, SEE WWS STD DET S-09 THROUGH S-11.
7. FOR SEWER MANHOLE FRAME AND COVER LOCATED IN UNPAVED AREAS DETAIL, SEE WWS STD DET S-29.

A SEE SHT C-40 FOR PROFILE
TEMP FOR TESTING:
1-2 1/2" CO
1-CONC BLOCK
MATERIALS FOR CONNECTION:
1-4" 1/4 BEND
1-CONC BLOCK W/STRUCT STRUTS
1-4" SLEEVE, 12" LONG
1-4"x1" RECORDALL FSAA WATER METER
1-WATER METER BOX
SEE SHT C-45 FOR DETAIL
1-4" 1/4 BEND
1-CONC BLOCK
1-4" GV W/VALVE BOX
SEE WSS DETAILS V14, V15, AND V16
1-4" RP BFP ASSEMBLY
SEE WSS DETAIL V9
PRIOR TO MAKING WATER CONNECTIONS, THE CONTRACTOR MUST EXPOSE POINT OF CONNECTIONS AND SIZE

B MATERIALS FOR CONNECTION:
1-4" TEE
1-4" SLEEVE, 12" LONG
1-CONC BLOCK
PRIOR TO MAKING WATER CONNECTIONS, THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION TO VERIFY PIPE LOCATION AND SIZE

C SEE SHT C-40 FOR WL C PROFILE,
MATERIALS FOR CONNECTION:
1-6" 1/4 BEND
1-CONC BLOCK
1-6" GV
1-6" GV W/VALVE BOX
SEE WSS DETAIL V16
PRIOR TO MAKING WATER CONNECTIONS, THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND SIZE

UTILITY PLAN - 7

SCALE: 1"=20'
20 0 20 40
SCALE IN FEET

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
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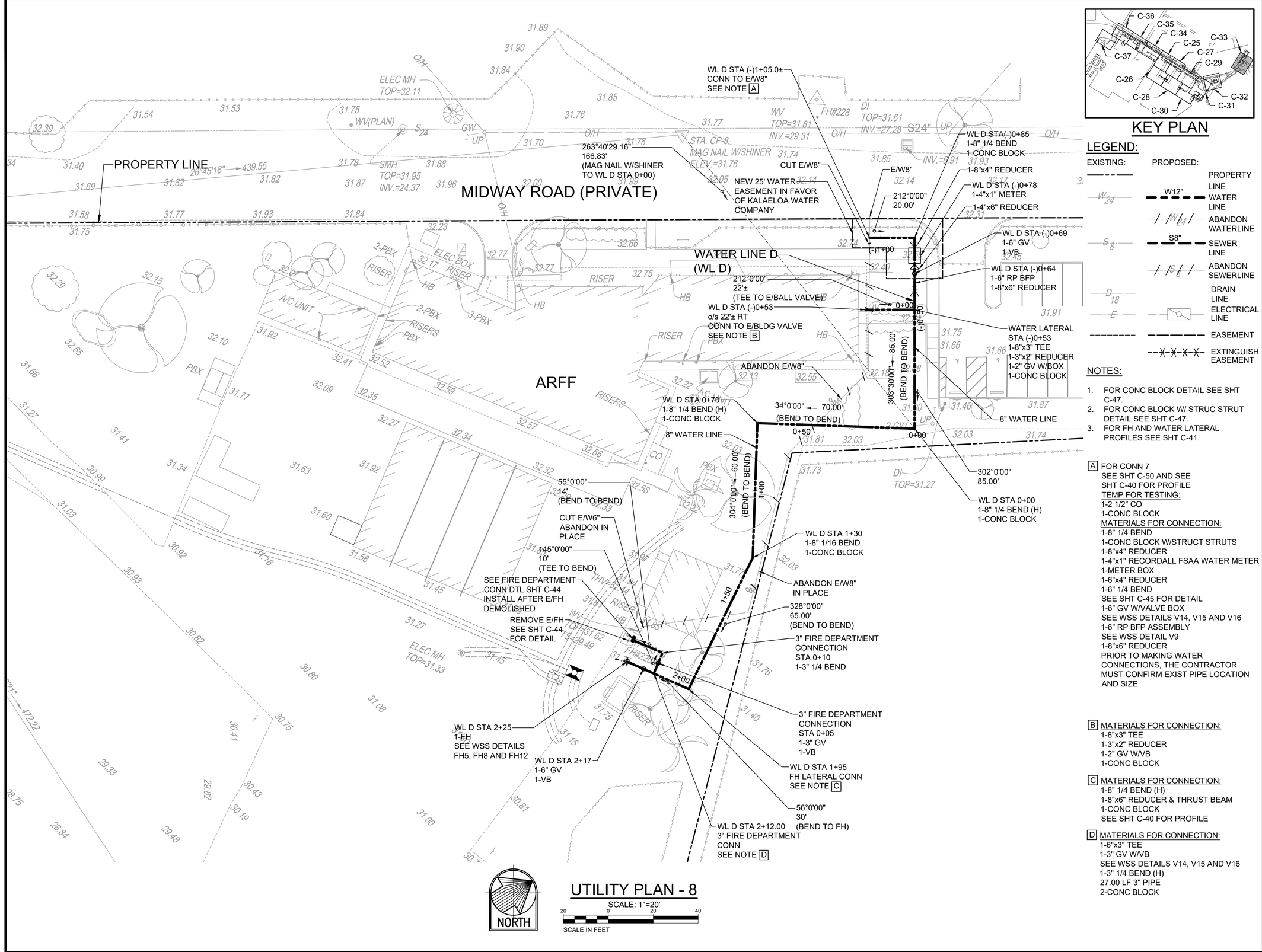
UTILITY PLAN - 7

DATE :

SHEET :
34 OF 80 SHEETS

DWG. NO.
C-32

T:\DOT KALAELOA AIRPORT\2019\0200\04 GRAPHICS\CAD\SHEETS\C-32 UTILITY PLAN - 7.DWG



UTILITY PLAN - 8

SCALE: 1"=20'

SCALE IN FEET

KEY PLAN

LEGEND:

EXISTING:	PROPOSED:	
		PROPERTY LINE
W24	W12"	WATER LINE
	W12"	ABANDON WATERLINE
S8	S8"	SEWER LINE
	S8"	ABANDON SEWERLINE
D18		DRAIN LINE
E		ELECTRICAL LINE
		EASEMENT
		EXTINGUISH EASEMENT

NOTES:

1. FOR CONC BLOCK DETAIL SEE SHT C-47.
2. FOR CONC BLOCK W/ STRUC STRUT DETAIL SEE SHT C-47.
3. FOR FH AND WATER LATERAL PROFILES SEE SHT C-41.

A FOR CONN 7
SEE SHT C-50 AND SEE
SHT C-40 FOR PROFILE
TEMP FOR TESTING:
1-2 1/2" CO
1-CONC BLOCK
MATERIALS FOR CONNECTION:
1-8" 1/4 BEND
1-CONC BLOCK W/STRUCT STRUTS
1-8"x4" REDUCER
1-4"x1" RECORDALL FSAA WATER METER
1-METER BOX
1-6"x4" REDUCER
1-6" 1/4 BEND
SEE SHT C-45 FOR DETAIL
1-6" GV W/VALVE BOX
SEE WSS DETAILS V14, V15 AND V16
1-6" RP BFP ASSEMBLY
SEE WSS DETAIL V9
1-8"x6" REDUCER
PRIOR TO MAKING WATER
CONNECTIONS, THE CONTRACTOR
MUST CONFIRM EXIST PIPE LOCATION
AND SIZE

B MATERIALS FOR CONNECTION:
1-8"x3" TEE
1-3"x2" REDUCER
1-2" GV W/VB
1-CONC BLOCK

C MATERIALS FOR CONNECTION:
1-8" 1/4 BEND (H)
1-8"x6" REDUCER & THRUST BEAM
1-CONC BLOCK
SEE SHT C-40 FOR PROFILE

D MATERIALS FOR CONNECTION:
1-6"x3" TEE
1-3" GV W/VB
SEE WSS DETAILS V14, V15 AND V16
1-3" 1/4 BEND (H)
27.00 LF 3" PIPE
2-CONC BLOCK

STATE OF HAWAII
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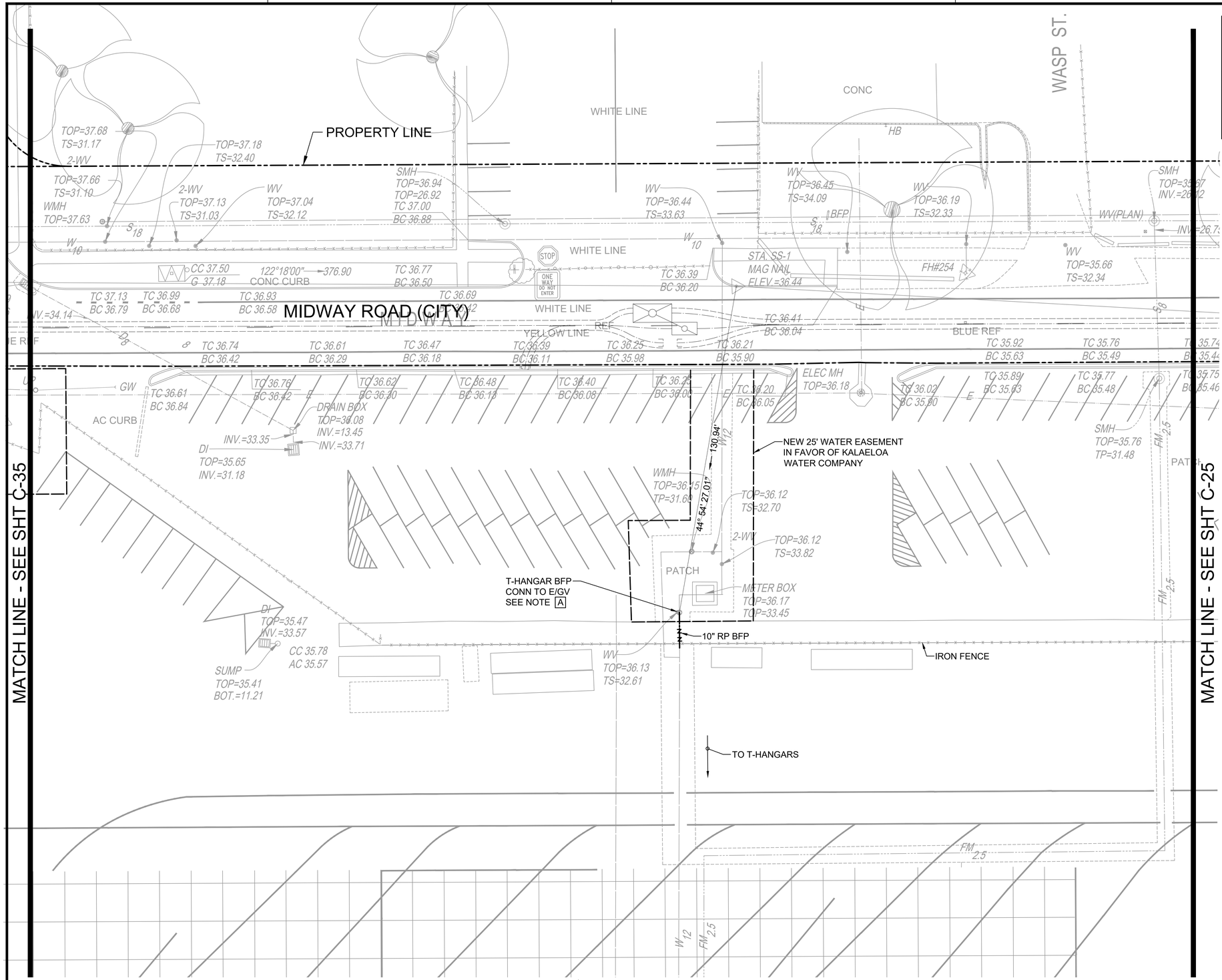
UTILITY PLAN - 8

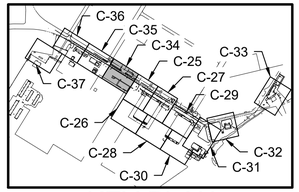
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SHEET :
35 OF 80 SHEETS

DWG. NO.
C-33

T:\DOT KALAELOA AIRPORT\2019\02000\04 GRAPHICS\CAD\SHEETS\C-33 UTILITY PLAN - 8.DWG





KEY PLAN

LEGEND:

EXISTING:	PROPOSED:	
		PROPERTY LINE
W 24	W12"	WATER LINE
W 24		ABANDON WATERLINE
S 8	S8"	SEWER LINE
S 8		ABANDON SEWERLINE
D 18		DRAIN LINE
E		ELECTRICAL LINE
		EASEMENT
		EXTINGUISH EASEMENT

NOTES:

1. FOR CONC BLOCK DETAIL SEE SHT C-47.
2. FOR CONC BLOCK W/ STRUC STRUT DETAIL SEE SHT C-47.

A MATERIALS FOR CONNECTION:
2-12" SLEEVE, 12' LONG
1-12" GV W/VB SEE WSS DETAILS V14, V15 AND V16
2-12"X10" REDUCER
4-10" 1/4 BENDS
14 LF OF 12" PIPE, NIPPLES (AS REQ'D)
2-CONC BLOCKS
1-10" RP BFP SEE WSS DETAIL V9
PRIOR TO MAKING WATER CONNECTIONS THE CONTRACTOR MUST EXPOSE POINT OF CONNECTION AND VERIFY PIPE INVERT AND SIZE

UTILITY PLAN - 9

SCALE: 1"=20'

20 0 20 40

SCALE IN FEET

NORTH

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

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LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

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BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

UTILITY PLAN - 9

DATE :

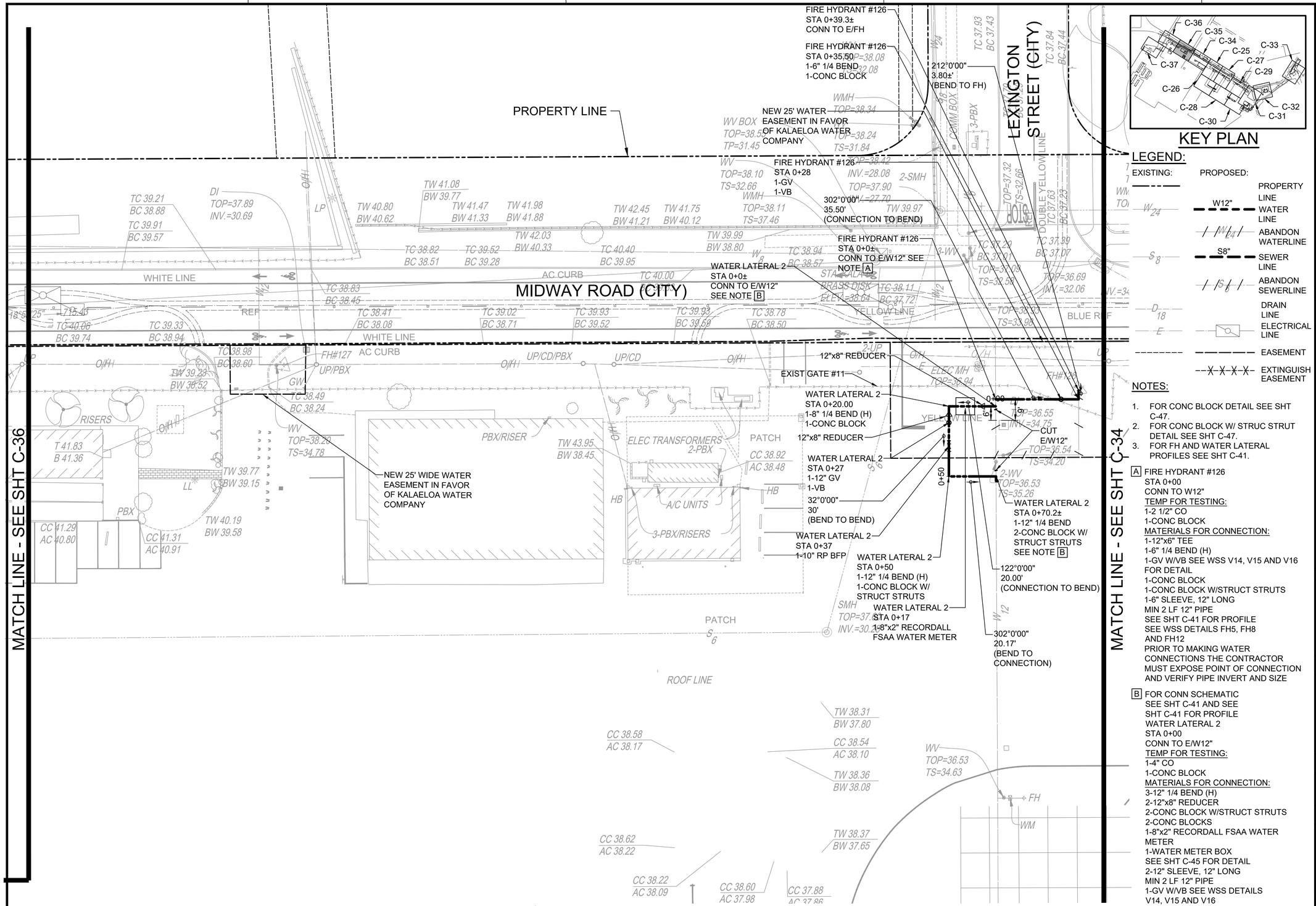
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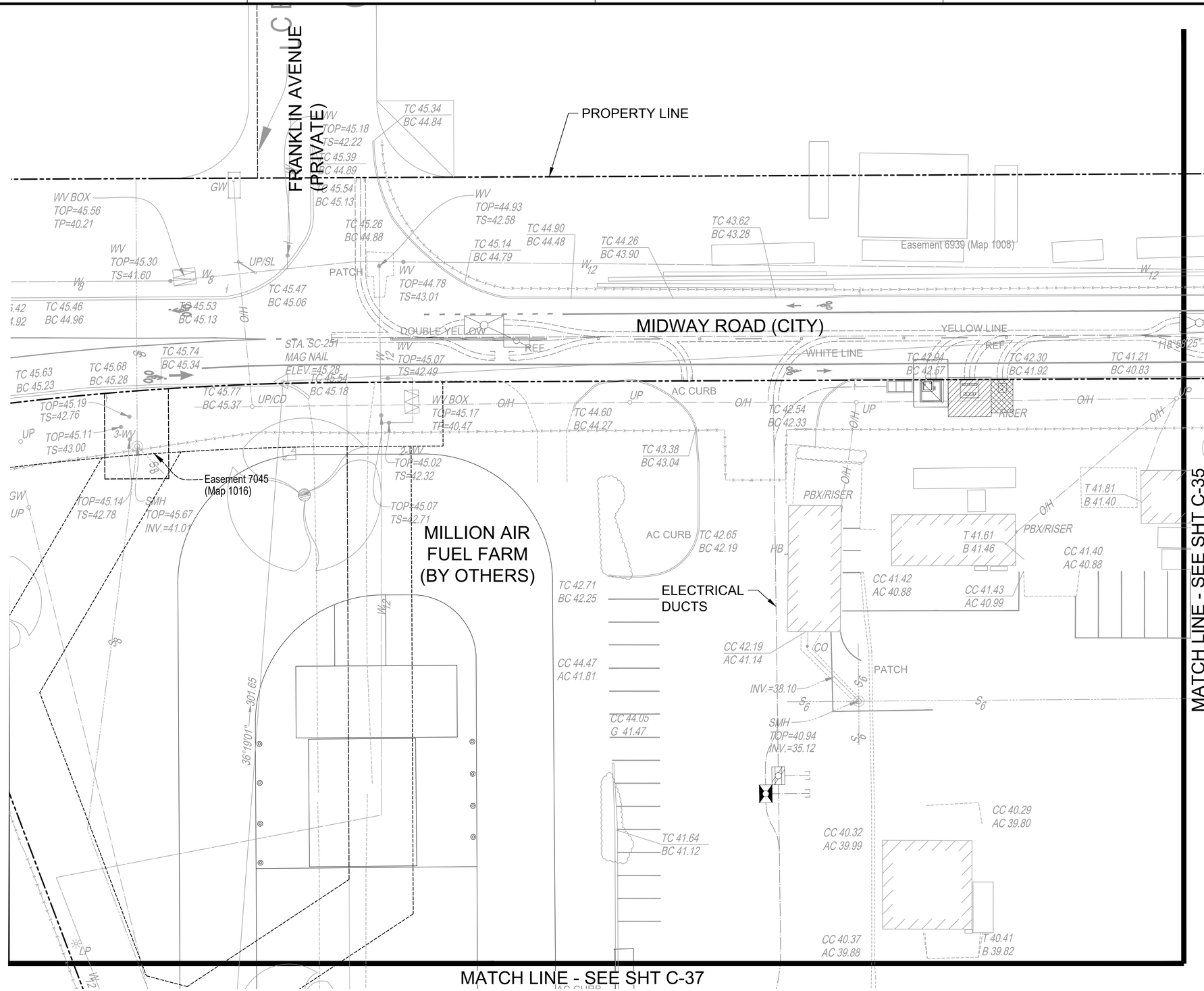
36 OF 80 SHEETS

DWG. NO.

C-34

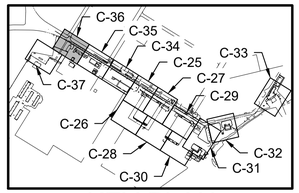
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PROPERTY LINE
MIDWAY ROAD (CITY)
LEXINGTON STREET (CITY)
WHITE LINE
AC CURB
YELLOW LINE
BLUE REF
DOUBLE YELLOW LINE
MATCH LINE - SEE SHT C-36
MATCH LINE - SEE SHT C-34
FIRE HYDRANT #126
STA 0+39.3±
CONN TO E/FH
FIRE HYDRANT #126
STA 0+35.50
1-6" 1/4 BEND
1-CONC BLOCK
212°0'00"
3.80±'
(BEND TO FH)
NEW 25' WATER EASEMENT IN FAVOR OF KALAELOA WATER COMPANY
FIRE HYDRANT #126
STA 0+28
1-GV
1-VB
302°0'00"
35.50'
(CONNECTION TO BEND)
FIRE HYDRANT #126
STA 0+0±
CONN TO E/W12" SEE NOTE A
WATER LATERAL 2
STA 0+0±
CONN TO E/W12"
SEE NOTE B
12"x8" REDUCER
EXIST GATE #11
WATER LATERAL 2
STA 0+20.00
1-8" 1/4 BEND (H)
1-CONC BLOCK
12"x8" REDUCER
CUT E/W12"
WATER LATERAL 2
STA 0+27
1-12" GV
1-VB
32°0'00"
30'
(BEND TO BEND)
WATER LATERAL 2
STA 0+37
1-10" RP BFP
WATER LATERAL 2
STA 0+70.2±
1-12" 1/4 BEND
2-CONC BLOCK W/ STRUCT STRUTS
SEE NOTE B
122°0'00"
20.00'
(CONNECTION TO BEND)
WATER LATERAL 2
STA 0+50
1-12" 1/4 BEND (H)
1-CONC BLOCK W/ STRUCT STRUTS
WATER LATERAL 2
STA 0+17
1-8"x2" RECORDALL FSAA WATER METER
302°0'00"
20.17'
(BEND TO CONNECTION)
NEW 25' WIDE WATER EASEMENT IN FAVOR OF KALAELOA WATER COMPANY
PATCH
ELEC TRANSFORMERS
2-PBX
A/C UNITS
3-PBX/RISERS
PBX/RISER
RISERS
ROOF LINE
WMH TOP=38.34
WV BOX TOP=38.56 TP=31.45
WV TOP=38.10 TS=32.66
WMH TOP=38.11 TS=37.46
3-PBX
2-SMH
2-WV
2-UP
ELEC MH TOP=36.94
WV TOP=36.53 TS=35.26
WV TOP=36.53 TS=34.63
SMH TOP=37.32 INV.=30.21
WV TOP=36.55 INV=34.75
WV TOP=36.54 TS=34.20
2-WV TOP=36.53 TS=35.26
WV TOP=36.53 TS=34.63
FH
WM
0+00
0+50
TW 41.08 BW 39.77
TW 40.80 BW 40.62
TW 41.47 BW 41.33
TW 41.98 BW 41.88
TW 42.45 BW 41.21
TW 41.75 BW 40.12
TW 42.03 BW 40.33
TW 39.99 BW 38.80
TW 40.40 BW 39.95
TW 39.97
TW 39.23 BW 38.52
TW 39.77 BW 39.15
TW 40.19 BW 39.58
TW 43.95 BW 38.45
TW 38.31 BW 37.80
TW 38.36 BW 38.08
TW 38.37 BW 37.65
CC 41.29 AC 40.80
CC 41.31 AC 40.91
CC 38.58 AC 38.17
CC 38.54 AC 38.10
CC 38.62 AC 38.22
CC 38.22 AC 38.09
CC 38.60 AC 37.98
CC 37.88 AC 37.86
CC 38.92 AC 38.48
T 41.83 B 41.36
TC 39.21 BC 38.88
TC 39.91 BC 39.57
TC 38.82 BC 38.51
TC 39.52 BC 39.28
TC 40.40 BC 39.95
TC 38.94 BC 38.57
TC 38.83 BC 38.45
TC 38.41 BC 38.08
TC 39.02 BC 38.71
TC 39.93 BC 39.52
TC 39.93 BC 39.59
TC 38.78 BC 38.50
TC 38.11 BC 37.72
TC 38.98 BC 38.60
TC 38.49 BC 38.24
TC 40.06 BC 39.74
TC 39.33 BC 38.94
TC 37.93 BC 37.43
TC 37.84 BC 37.44
TC 37.29 BC 37.01
TC 37.39 BC 37.07
TC 37.32 BC 37.23
DI TOP=37.89 INV.=30.69
DI TOP=38.08 INV.=32.08
DI TOP=38.42 INV.=28.08
DI TOP=37.90 INV.=27.70
DI TOP=38.08 INV.=32.06
DI TOP=36.69 INV.=32.06
DI TOP=38.08 INV.=32.08
DI TOP=38.08 INV.=32.08
DI TOP=38.08 INV.=32.08



UTILITY PLAN - 11

SCALE: 1"=20'



KEY PLAN

LEGEND:

EXISTING:	PROPOSED:	
		PROPERTY LINE
W 24	W12"	WATER LINE
W 24		ABANDON WATERLINE
S 8	S8"	SEWER LINE
S 8		ABANDON SEWERLINE
D 18		DRAIN LINE
E		ELECTRICAL LINE
		EASEMENT
		EXTINGUISH EASEMENT

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SHEET TITLE:

UTILITY PLAN - 11

DATE :

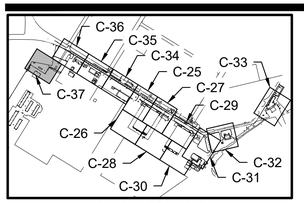
SHEET :

38 OF 80 SHEETS

DWG. NO.

C-36

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-36 UTILITY PLAN - 11.DWG



KEY PLAN

LEGEND:

EXISTING:	PROPOSED:	
		PROPERTY LINE
W 24	W12"	WATER LINE
W 24		ABANDON WATERLINE
S 8	S8"	SEWER LINE
S 8		ABANDON SEWERLINE
D 18		DRAIN LINE
E		ELECTRICAL LINE
		EASEMENT
		EXTINGUISH EASEMENT

MATCH LINE - SEE SHT C-36

PROPERTY LINE

Easement 7427 (Map 1069)

EXISTING EASEMENT

EXISTING WASH RACK

STRAUBES PAINT SHOP

SEWAGE PUMP STATION

EMERGENCY PHONE

3-PBX

SUMP TOP=45.41 BOT=22.81

SUMP TOP=39.98 DEEPER THAN 27'

ELEC BOX

STA. STA-26 PK NAIL ELEV.=43.30

AC CURB

WV TOP=43.99 TS=38.17

WV TOP=43.98 TS=39.43

WV TOP=39.41

WV TOP=40.57 TS=39.89

SMH TOP=40.21 INV=36.17

INV=37.12

DI TOP=39.40

WMH TOP=39.48 COVER=38.78

TOP=39.53 RISER

TP=42.01 TP=42.74 TP=42.03 TP=41.99 TP=42.68 TP=42.70

26"36"0" ⟶ 431.95

UTILITY PLAN - 12

SCALE: 1"=20'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

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UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

UTILITY PLAN - 12

DATE :

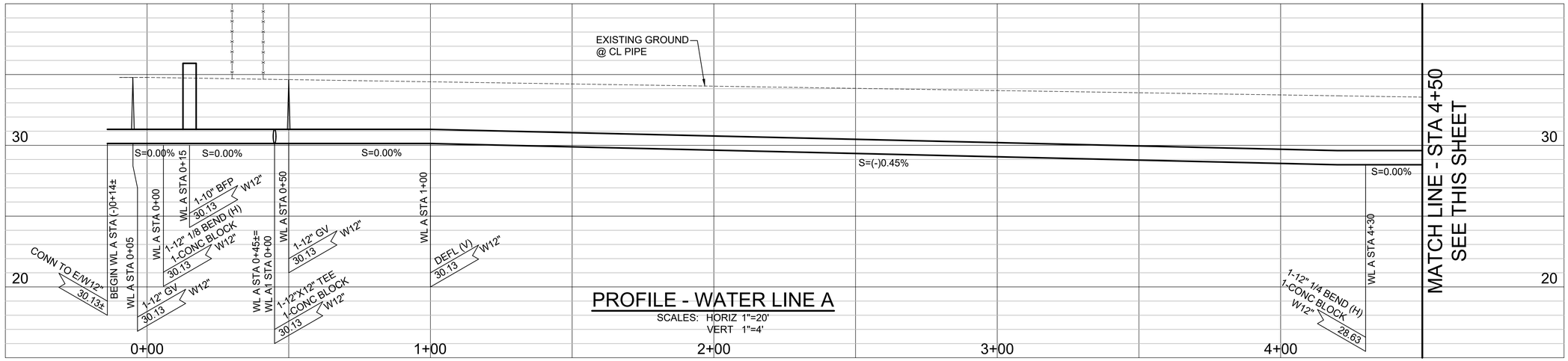
SHEET :

39 OF 80 SHEETS

DWG. NO.

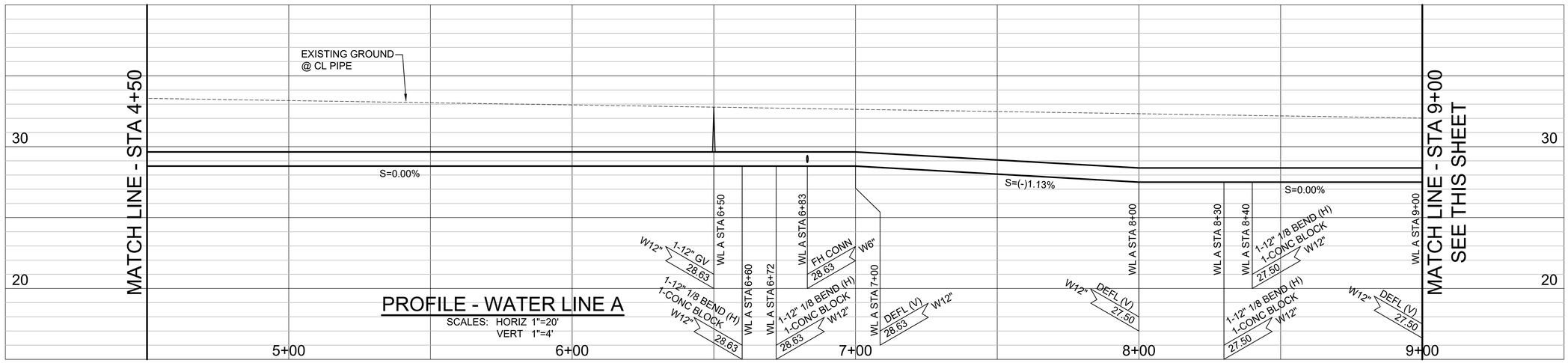
C-37

T:\DOT KALAELOA AIRPORT\2019\0200\04 GRAPHICS\CAD\SHEETS\C-37 UTILITY PLAN - 12.DWG



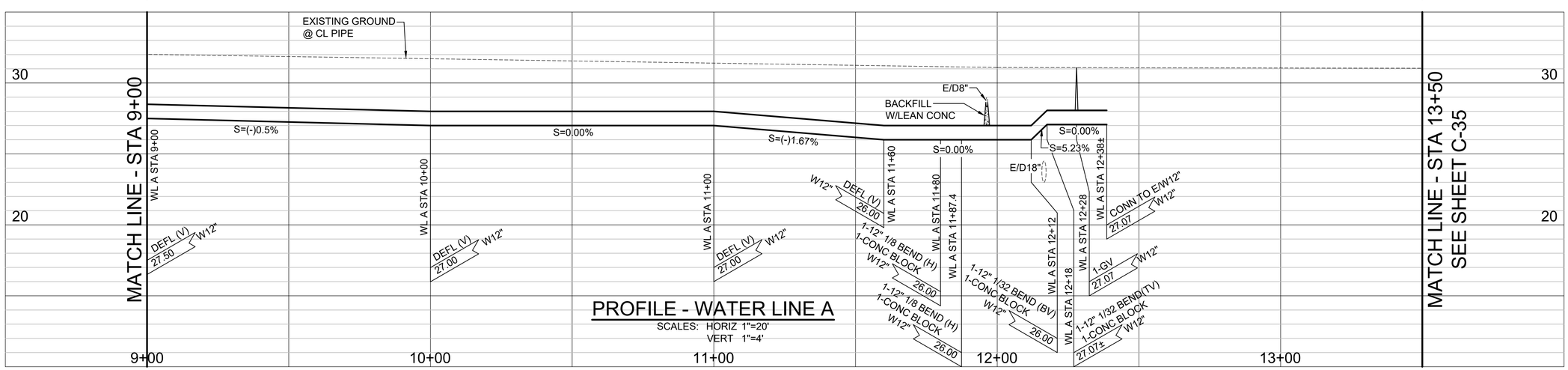
PROFILE - WATER LINE A

SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - WATER LINE A

SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - WATER LINE A

SCALES: HORIZ 1"=20'
VERT 1"=4'

20 0 20 40
SCALE IN FEET

4 0 4 8
SCALE IN FEET

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WATER LINE PROFILES - 1

DATE :

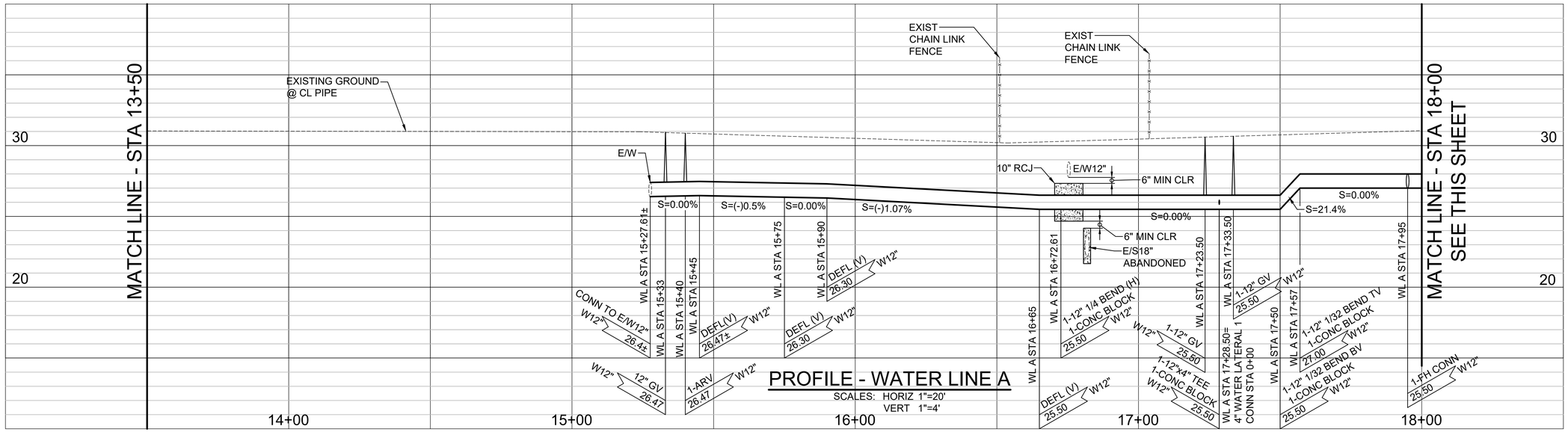
SHEET :

40 OF 80 SHEETS

DWG. NO.

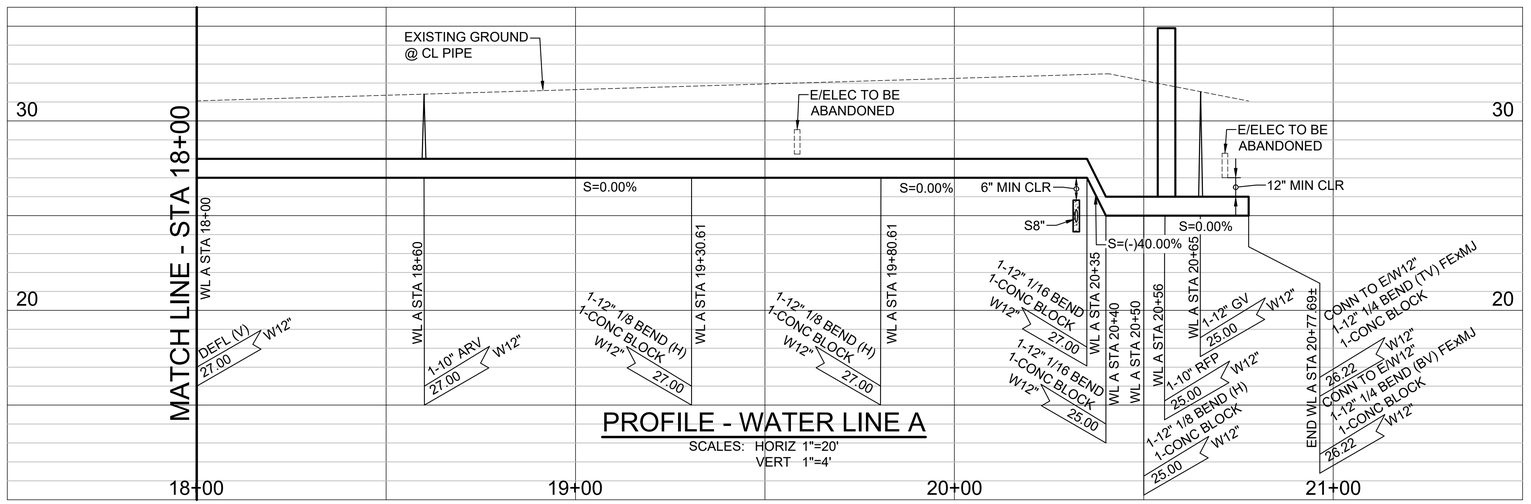
C-38

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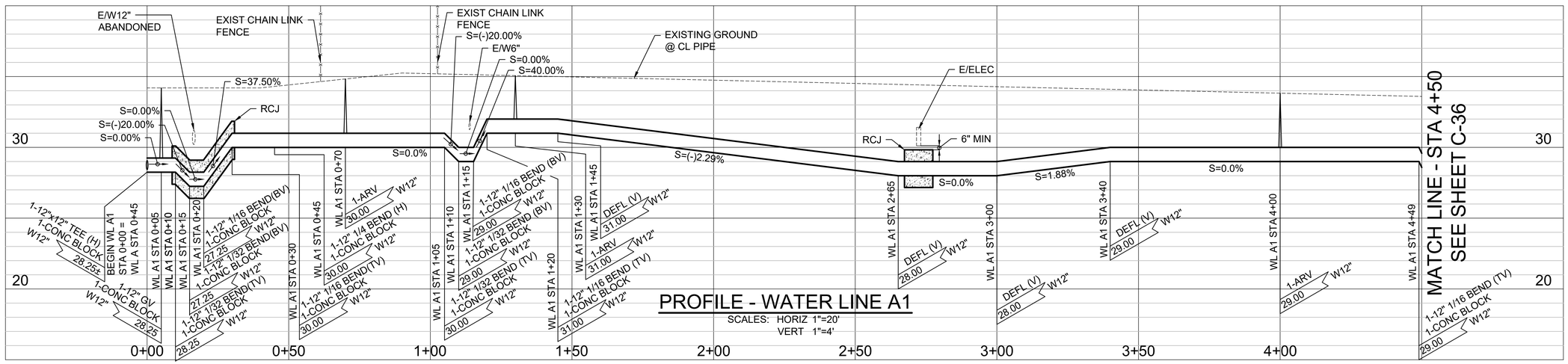
PROFILE - WATER LINE A

SCALES: HORIZ 1"=20'
VERT 1"=4'



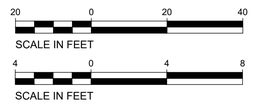
PROFILE - WATER LINE A

SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - WATER LINE A1

SCALES: HORIZ 1"=20'
VERT 1"=4'



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SHEET TITLE:

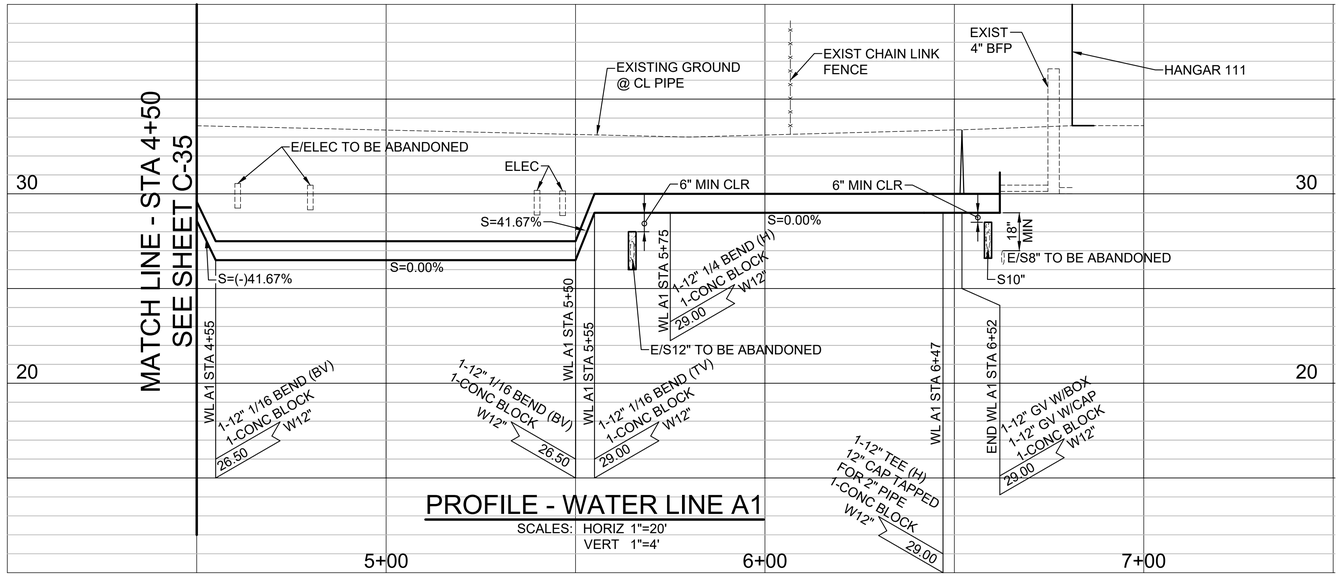
WATER LINE PROFILES - 2

DATE :

SHEET :
41 OF 80 SHEETS

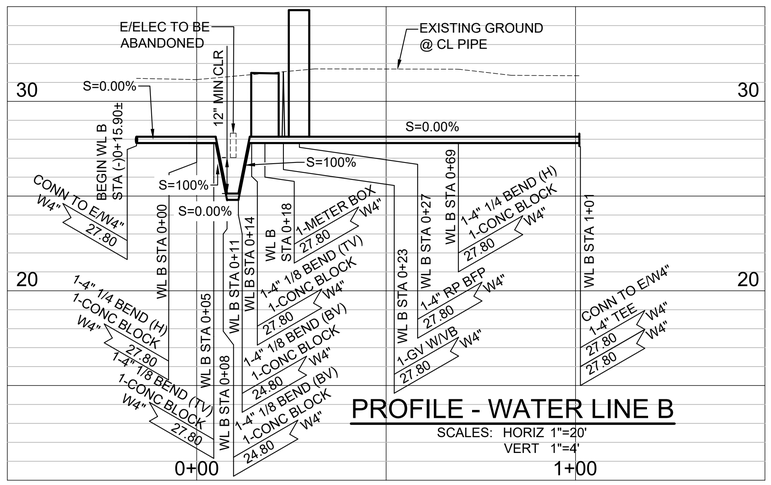
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C-39

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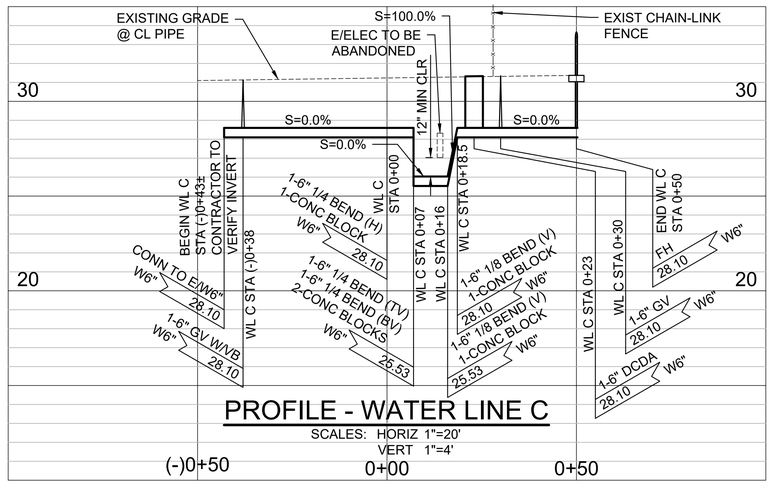
PROFILE - WATER LINE A1

SCALES: HORIZ 1"=20'
VERT 1"=4'



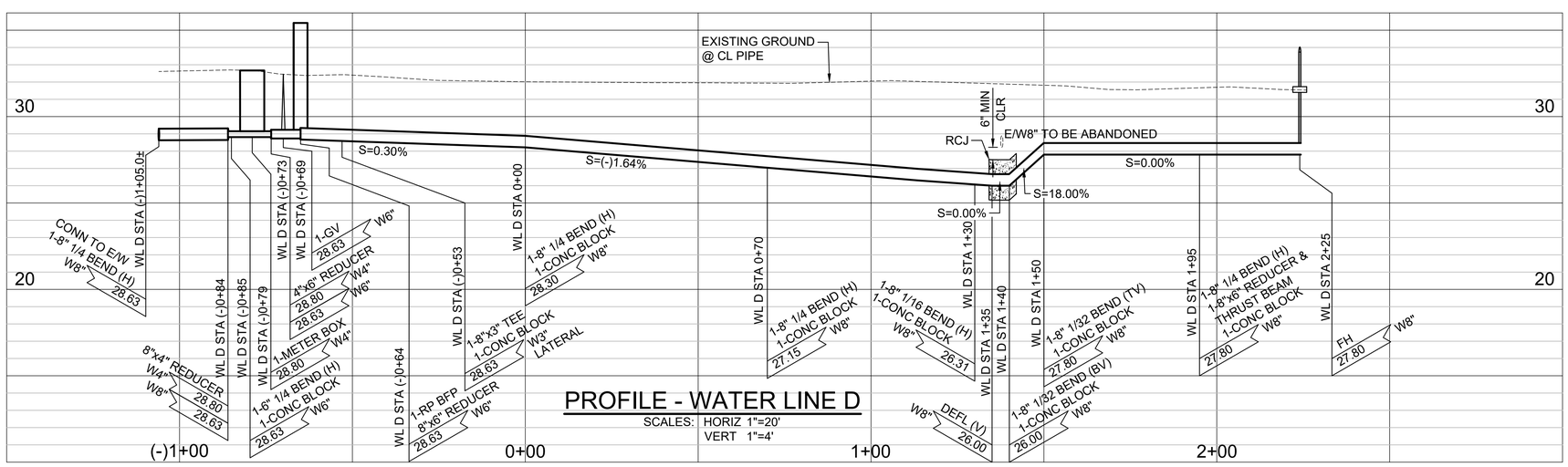
PROFILE - WATER LINE B

SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - WATER LINE C

SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - WATER LINE D

SCALES: HORIZ 1"=20'
VERT 1"=4'

SCALE IN FEET (20 0 20 40)

SCALE IN FEET (4 0 4 8)

STATE OF HAWAII
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PROJECT NO.:

AO5021-17

SHEET TITLE:

WATER LINE PROFILES - 3

DATE :

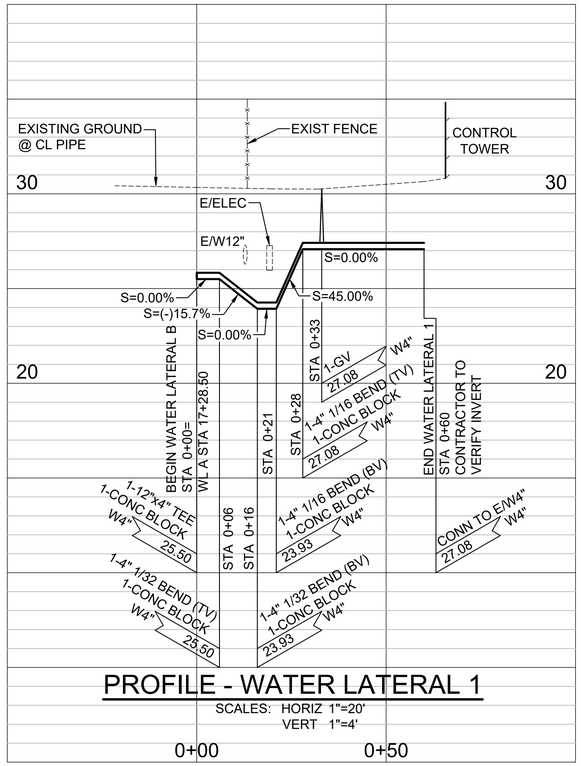
SHEET :

42 OF 80 SHEETS

DWG. NO.

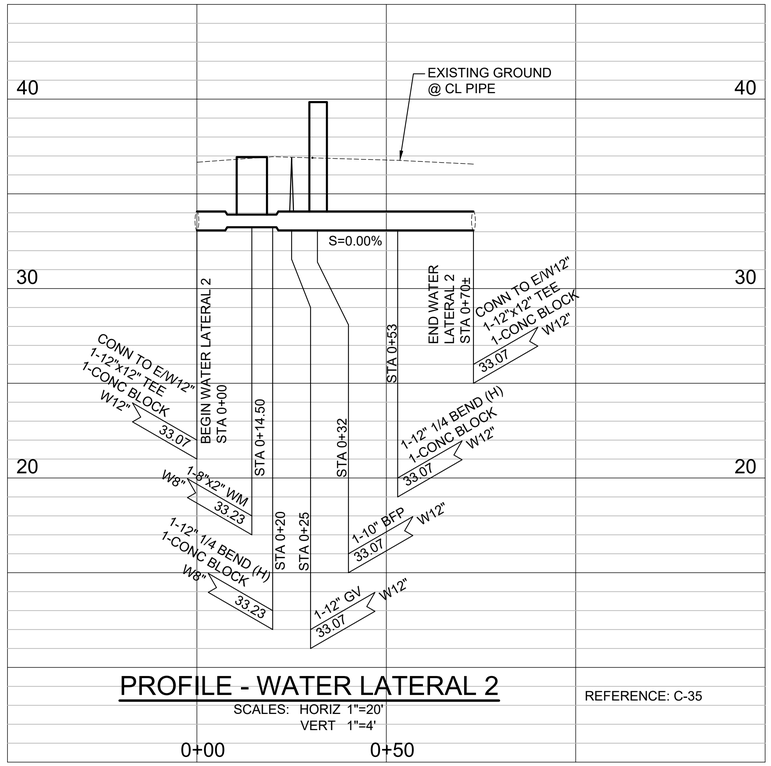
C-40

I:\DOT KALAELOA AIRPORT\2019\7002800\04 GRAPHICS\CAD\SHEETS\C-40 WATER LINE PROFILES - 3.DWG



PROFILE - WATER LATERAL 1

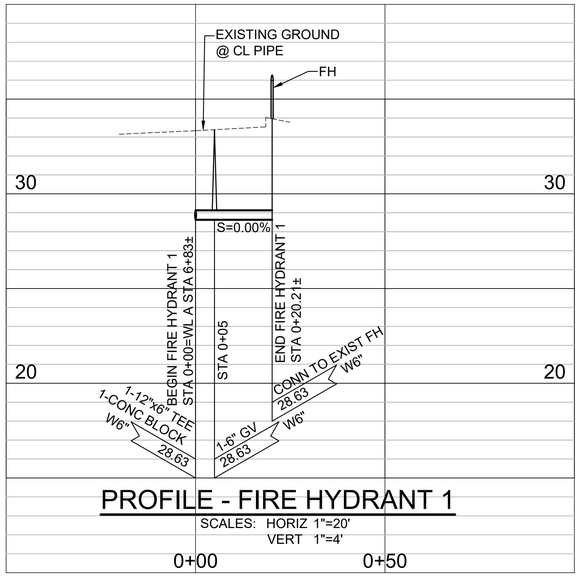
SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - WATER LATERAL 2

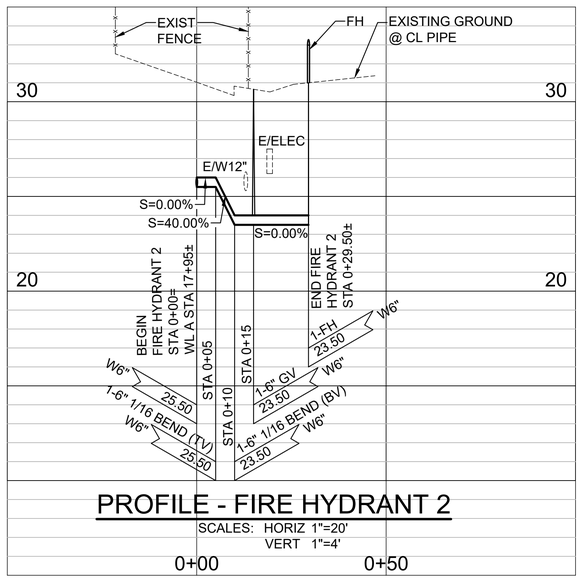
SCALES: HORIZ 1"=20'
VERT 1"=4'

REFERENCE: C-35



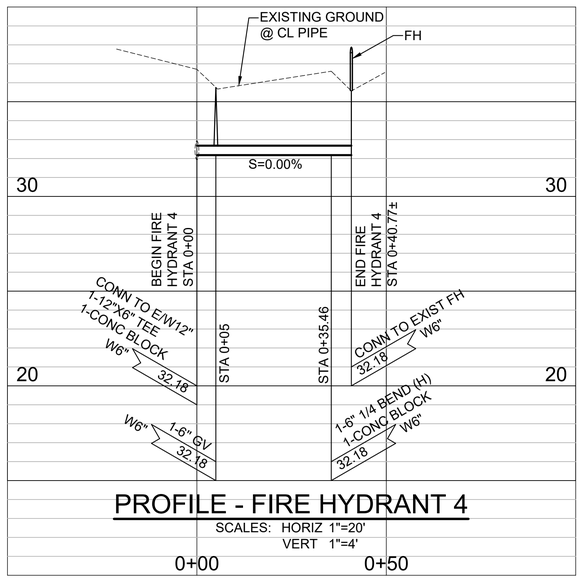
PROFILE - FIRE HYDRANT 1

SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - FIRE HYDRANT 2

SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - FIRE HYDRANT 4

SCALES: HORIZ 1"=20'
VERT 1"=4'

20 0 20 40
SCALE IN FEET

4 0 4 8
SCALE IN FEET

STATE OF HAWAII
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SHEET TITLE:

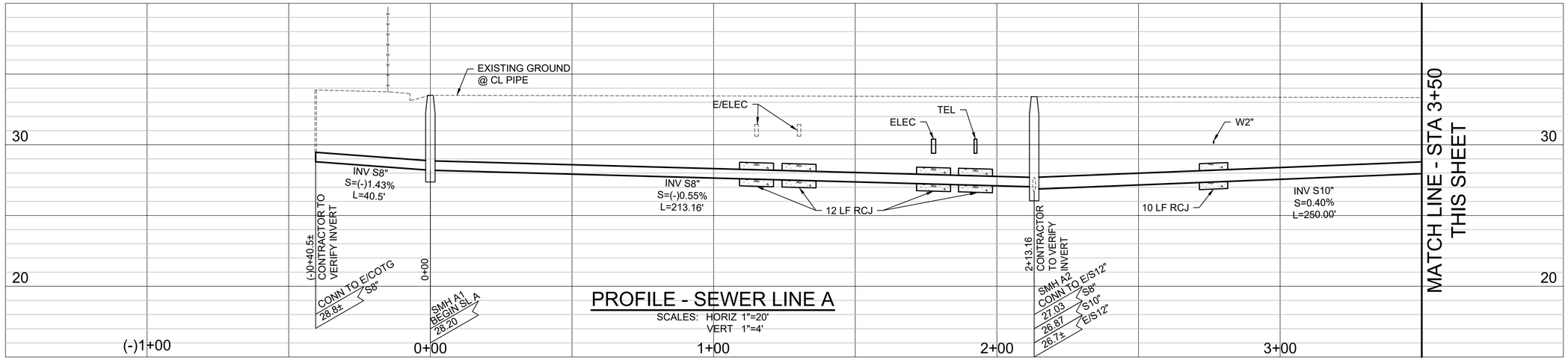
WATER LINE PROFILES - 4

DATE :

SHEET :
43 OF 80 SHEETS

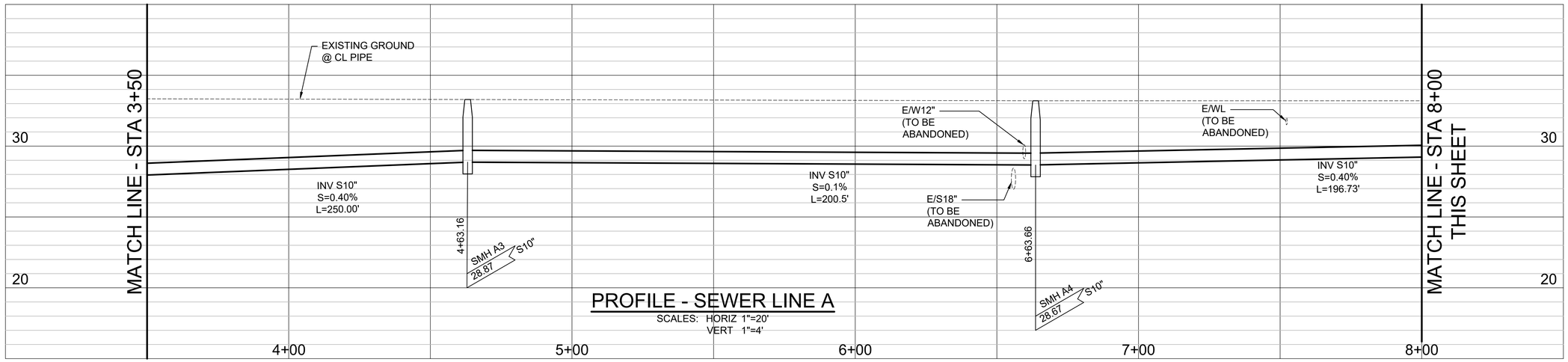
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C-41

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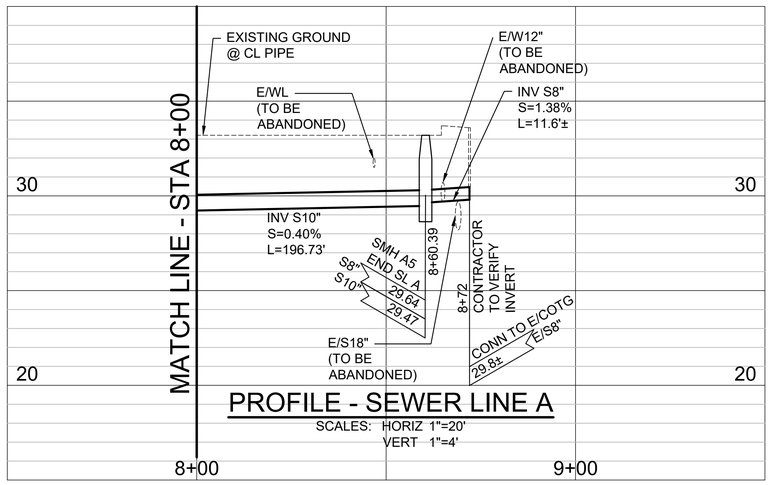
PROFILE - SEWER LINE A

SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - SEWER LINE A

SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - SEWER LINE A

SCALES: HORIZ 1"=20'
VERT 1"=4'

NOTES:

1. FOR SEWER LINE A UTILITY PLANS SEE SHTS C-25 THROUGH C-28.

20 0 20 40
SCALE IN FEET

4 0 4 8
SCALE IN FEET

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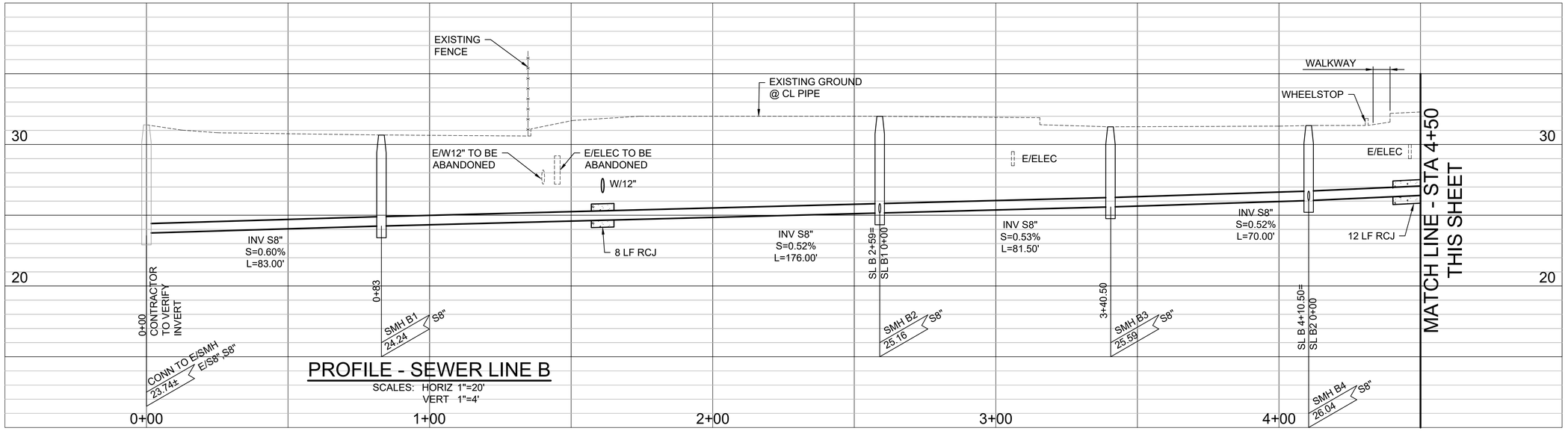
AO5021-17

SHEET TITLE:

SEWER LINE PROFILES - 1

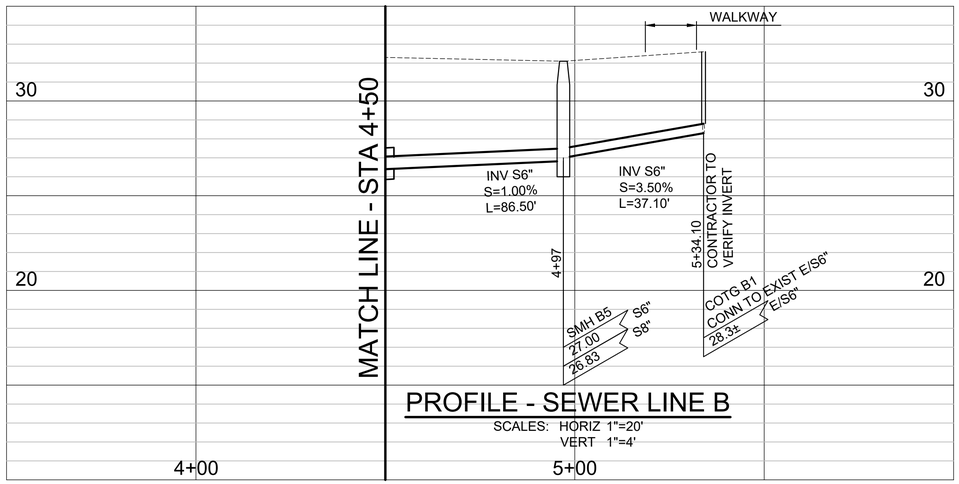
DATE :	DWG. NO.
SHEET : 44 OF 80 SHEETS	C-42

T:\DOT KALAELOA AIRPORT\2019\2020\04 GRAPHICS\CAD\SHEETS\C-42 SEWER LINE PROFILES - 1.DWG



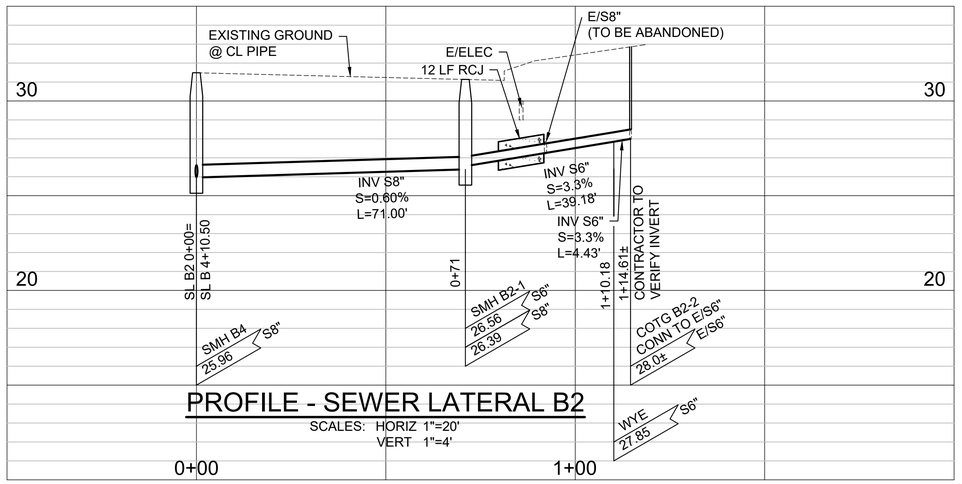
PROFILE - SEWER LINE B

SCALES: HORIZ 1"=20'
VERT 1"=4'



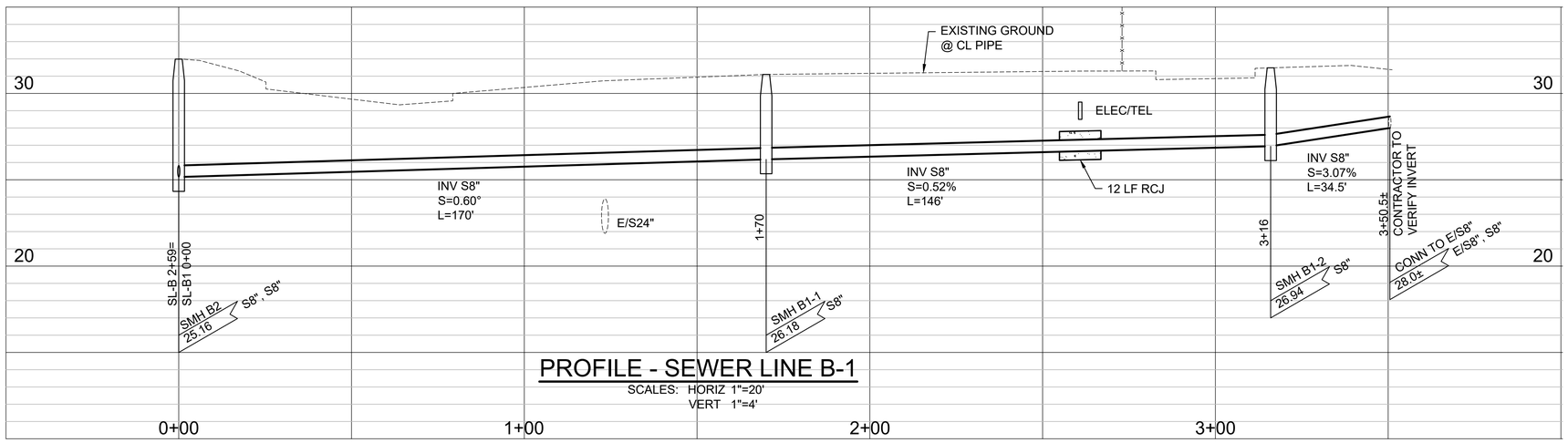
PROFILE - SEWER LINE B

SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - SEWER LATERAL B2

SCALES: HORIZ 1"=20'
VERT 1"=4'



PROFILE - SEWER LINE B-1

SCALES: HORIZ 1"=20'
VERT 1"=4'

NOTES:

1. FOR SEWER LINE B, B1, AND B2 UTILITY PLANS SEE SHTS C-31 AND C-32.

SCALE: HORIZ. 1"=20'
VERT. 1"=4'

20' 0' 20' 40'
Scale: 1"=20'

4' 0' 4' 8'
Scale: 1"=4'

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PROJECT NO.:

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SHEET TITLE:

SEWER LINE PROFILES - 2

DATE :

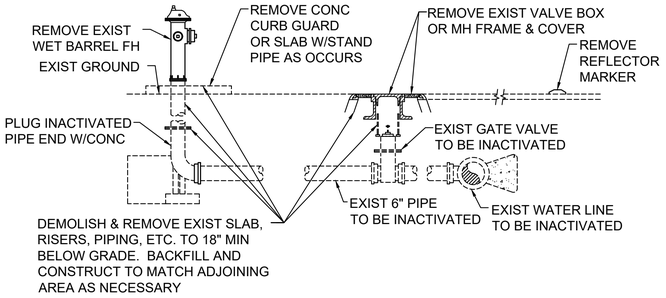
SHEET :

45 OF 80 SHEETS

DWG. NO.

C-43

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-43 SEWER LINE PROFILES - 2.DWG

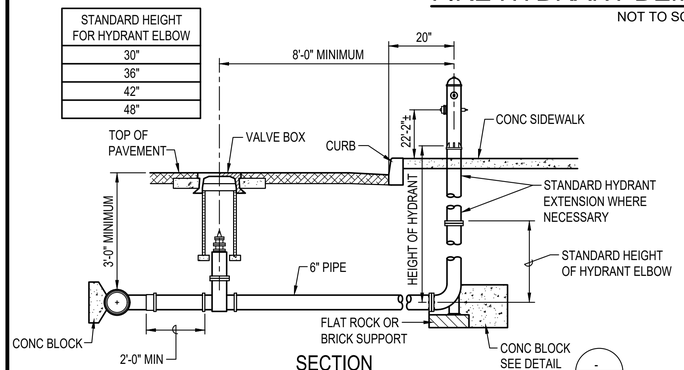


NOTE:
FIRE HYDRANT SHALL BE DEMOLISHED ONLY AFTER NEW HYDRANT WITHIN 200 FEET THEREOF HAS BEEN PUT INTO SERVICE.

FIRE HYDRANT DEMOLITION DETAIL

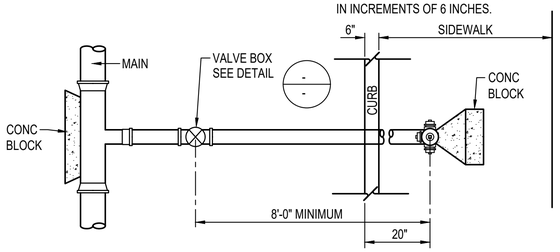
NOT TO SCALE

STANDARD HEIGHT FOR HYDRANT ELBOW
30"
36"
42"
48"



SECTION

STANDARD HYDRANT EXTENSIONS ARE AVAILABLE IN THE FOLLOWING LENGTHS: 6 TO 30 INCHES LONG IN INCREMENTS OF 6 INCHES.



PLAN

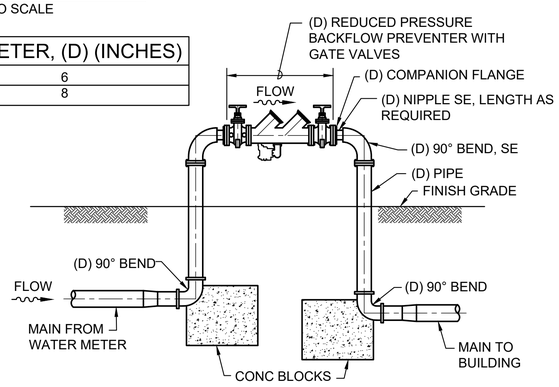
FIRE HYDRANT DETAIL

NOT TO SCALE

HYDRANT CONNECTION NOTES:

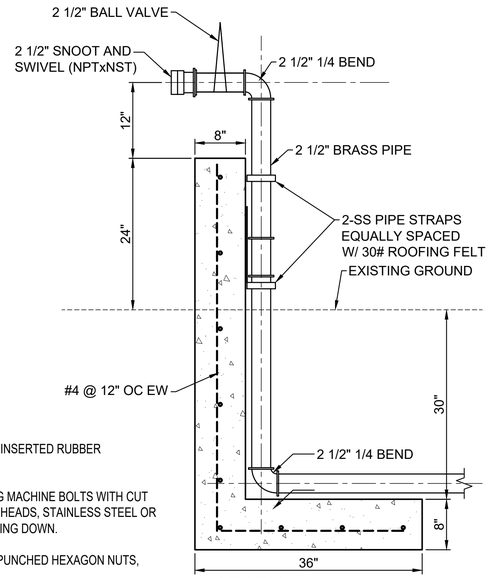
1. GASKETS FOR FLANGED JOINTS SHALL BE 1/8" DUCK-INSERTED RUBBER PACKING GARLOCK NO. 19.
2. BOLTS SHALL BE BREAK-OFF TYPE, 5/8" DIA. x 3" LONG MACHINE BOLTS WITH CUT THREADS, AMERICAN STANDARD COARSE HEXAGON HEADS, STAINLESS STEEL OR SILICON BRONZE. INSTALL BOLT WITH THREADS FACING DOWN.
3. NUTS SHALL BE AMERICAN STANDARD HEAVY COLD PUNCHED HEXAGON NUTS, STAINLESS STEEL OR SILICON BRONZE.
4. CONCRETE SHALL BE 2500 PSI.
5. FLANGED OUTLET FOR THE TEE IS OPTIONAL.
6. LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
7. INSTALL HYDRANT MARKERS, SEE FIRE HYDRANT REFLECTIVE MARKER DETAIL
8. FOR FIRE HYDRANT INSTALLATION WITH GUARD POSTS, SEE DETAIL

DIAMETER, (D) (INCHES)
6
8

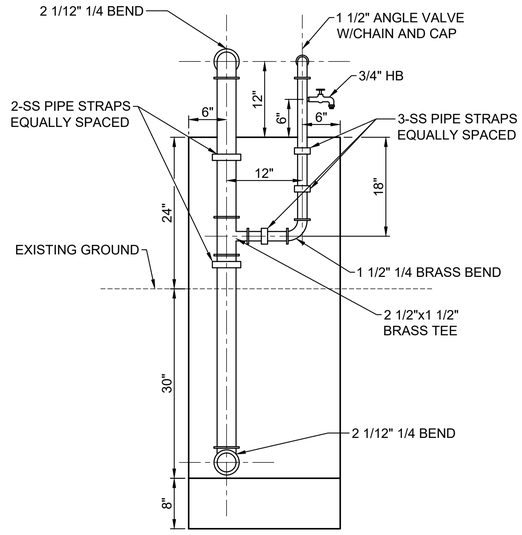


REDUCED PRESSURE BACKFLOW PREVENTER

NOT TO SCALE



SECTION



ELEVATION

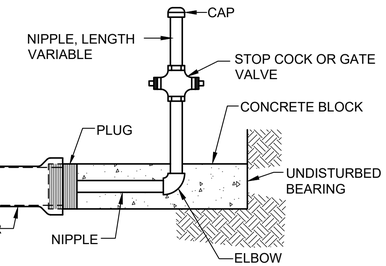
FIRE DEPARTMENT CONNECTION DETAIL

SCALE: 1"=1'-0"

PIPE SIZE	CLEANOUT SIZE
8" & SMALLER	2 1/2"
12"	4"

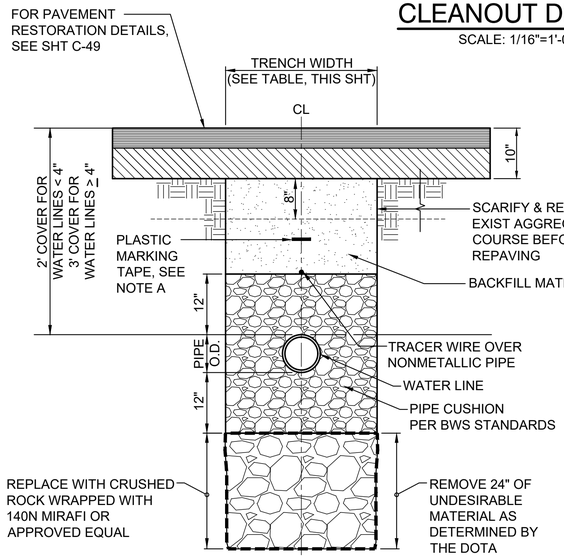
NOTES:

1. CLEANOUT MUST INCLUDE THE CAP, CONC BLOCK, REINFORCED STEEL AND ALL APPURTENANCES AS SHOWN.
2. PIPE MUST BE OF BRASS.



CLEANOUT DETAIL

SCALE: 1/16"=1'-0"



WATER LINE TRENCH DETAIL

NOT TO SCALE

TRENCH DETAIL NOTES:

A. INSTALL 4 MIL THICK, NON-METALLIC, BLUE COLORED, WARNING TAPE 6" WIDE OVER CENTERLINE OF THE PIPE AND BELOW THE BASE COURSE ALONG THE ENTIRE LENGTH OF TRENCH. TAPE SHOULD BE MARKED WITH" CAUTION WATER LINE BURIED BELOW".

B. PAVEMENT AND BASE COURSE TO MATCH EXISTING THICKNESS OR THE MINIMUM THICKNESS SHOWN, WHICHEVER IS GREATER.

C. PAVEMENT STRUCTURE SHALL BE EQUAL OR BETTER THAN EXISTING IN THICKNESS AND QUALITY.

D. AC PAVEMENT SHALL EXTEND 2'-0" BEYOND LONGITUDINAL END OF TRENCH.

TRENCH WIDTH	
PIPE DIA (IN)	TRENCH WIDTH (IN)
TUBING < 4	12
4 TO 12	24

REFERENCE: BWS STANDARDS TABLE 300-1

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

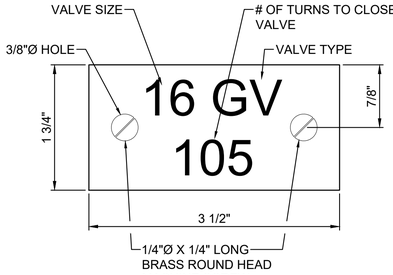
WATER DETAILS - 1

DATE :

SHEET :
46 OF 80 SHEETS

DWG. NO.
C-44

T:\DOT KALAELOA AIRPORT\2019700200\04 GRAPHICS\CAD\SHEETS\C-44 WATER DETAILS - 1.DWG



VALVE ID TAG DETAIL

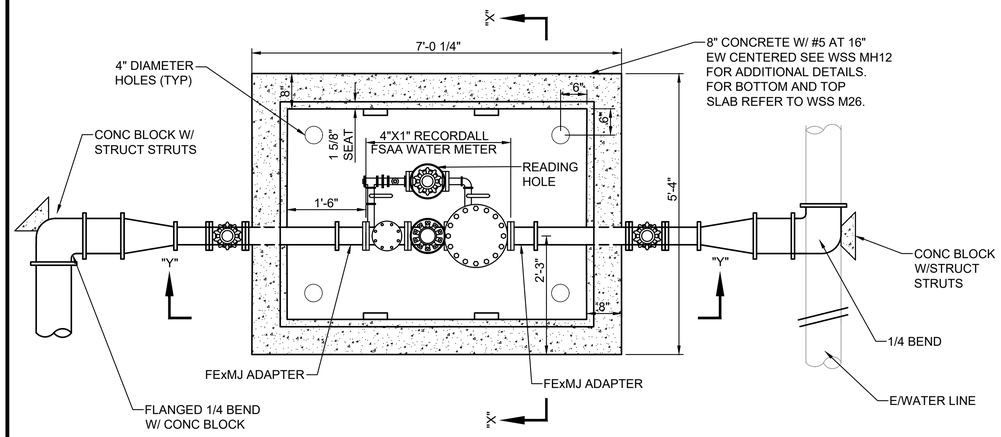
NOT TO SCALE

NOTES:

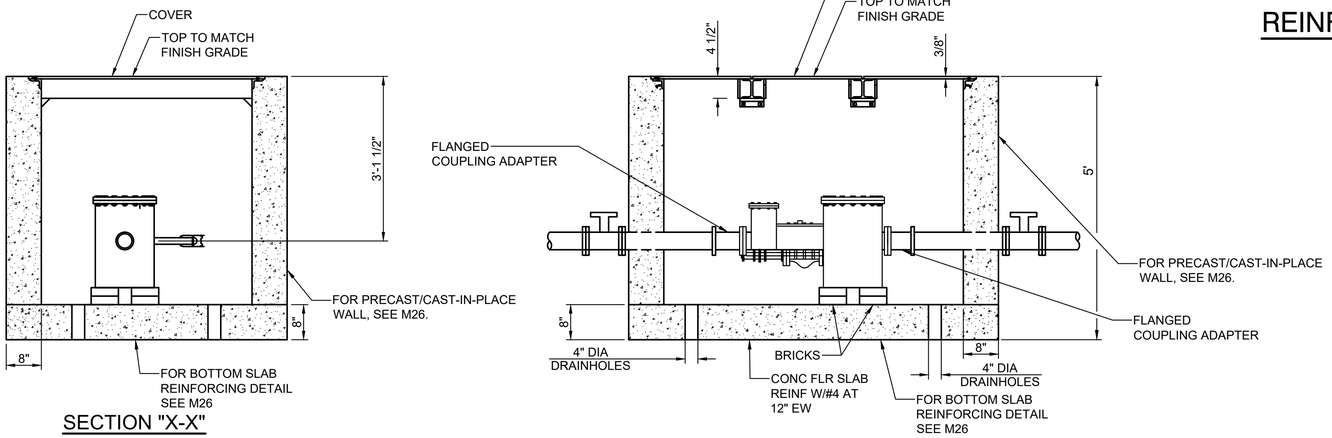
1. VERIFY VALVE DATA WITH THE VALVE MANUFACTURER PRIOR TO STAMPING I.D. TAG.
2. I.D. TAG MUST BE INSTALLED ON UNDERSIDE OF ALL NEW MANHOLE OR VALVE BOX COVER.
3. PAYMENT FOR THE FURNISHING AND INSTALLATION OF I.D. TAGS WILL NOT BE MADE DIRECTLY BUT MUST BE INCLUDED IN THE UNIT PRICE BIDS FOR VALVES.

VALVE TYPE ABBREVIATIONS

GATE VALVE	GV
BEVEL GEARED GATE VALVE	BGGV
BUTTERFLY VALVE	BV



PLAN VIEW



SECTION "X-X"

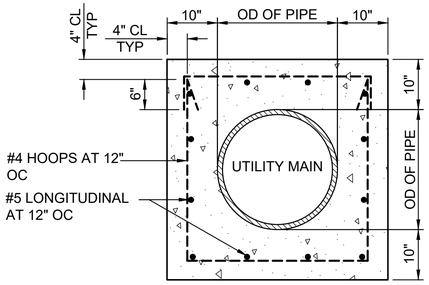
SECTION "Y-Y"

NOTES:

1. FOR METER BOX DETAILS SEE WSS DETAILS M26 AND M31.
2. CONCRETE SHALL BE DWS 3500.
3. REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.
4. DESIGN IS BASED ON: 250 PSF LIVE LOAD; 0 SURCHARGE; 60 PCF/FT AT REST PRESSURE; AND WATER TABLE BELOW BOTTOM SLAB, PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (1998). NON-TRAFFIC TYPE.

WATER METER BOX FOR 4"X1" WATER METER

NOT TO SCALE

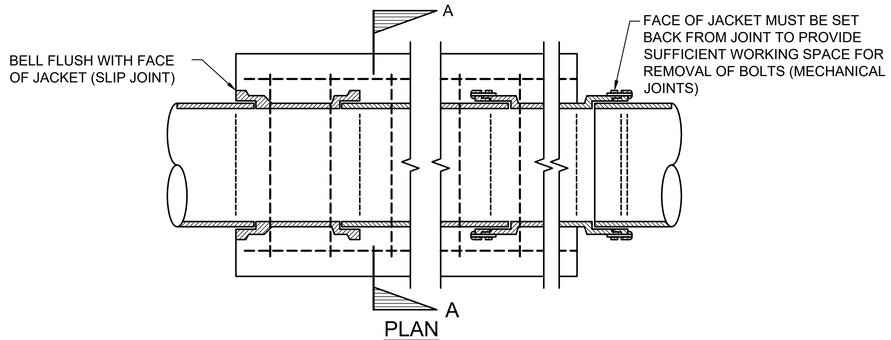


SECTION "A-A"

SCALE: 1/16"=1'-0"

NOTES:

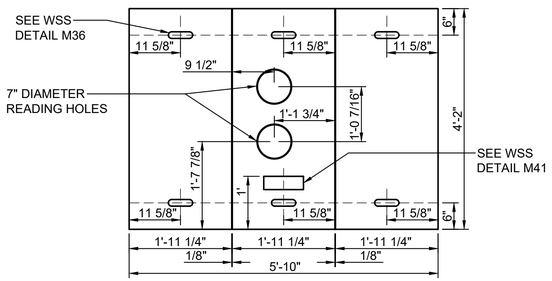
1. WHEREVER CONSTRUCTION JOINTS ARE REQUIRED, 6" RUBBER OR NEOPRENE WATER STOPS OR CONCRETE BONDING AGENT APPROVED BY THE CONTRACTING OFFICER MUST BE PROVIDED.
2. NO CONCRETE JACKETING OF PVC PIPE OR EXISTING AC PIPE WILL BE ALLOWED.
3. CONCRETE MUST BE 2500 PSI EXCEPT UNDER RESERVOIR FLOOR SLABS WHERE IT MUST BE 3600 PSI.
4. REINFORCING DESIGN APPLICABLE FOR STRAIGHT PIPE JACKETED SEGMENT. FOR SIPHON OR OFFSET, SUBMIT SHOP DRAWINGS.
5. PRECAST JACKETED WATERLINE SEGMENT MUST BE DESIGNED AND STAMPED BY A LICENSED STRUCTURAL ENGINEER AND APPROVED BY THE CONTRACTING OFFICER.



PLAN

REINFORCED CONCRETE JACKET DETAIL

SCALE: 1/16"=1'-0"



NOTES

1. CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2. LOCATION OF READING LID SHALL BE VERIFIED BY CONTRACTOR.
3. FOR WATER METER COVER DETAILS SEE DETAILS M41 AND M42.

WATER METER BOX COVER FOR 4"X1" WATER METER

NOT TO SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

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BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

WATER DETAILS - 2

DATE :

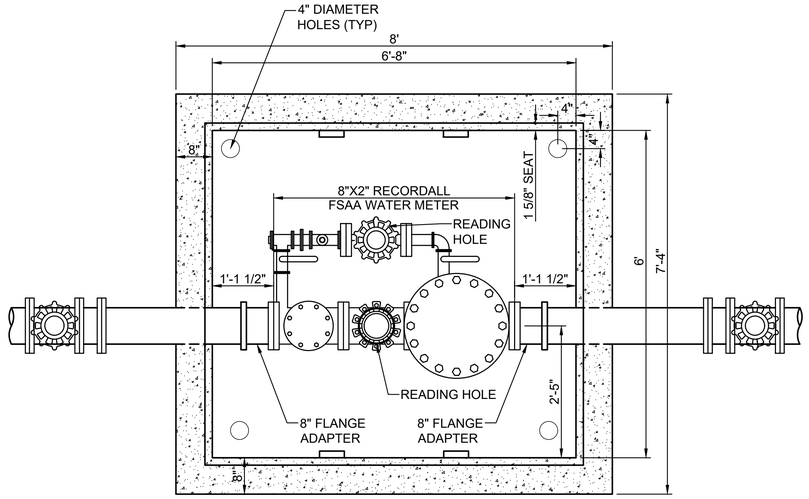
SHEET :

47 OF 80 SHEETS

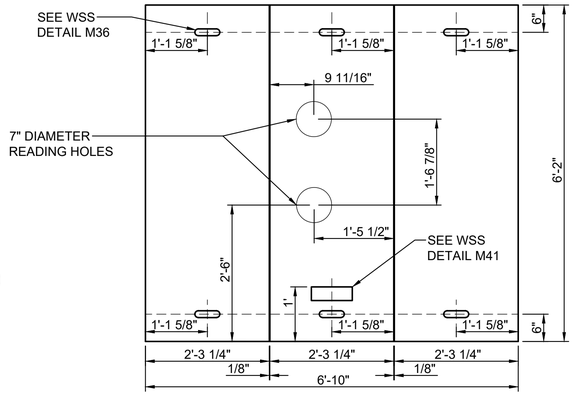
DWG. NO.

C-45

T:\DOT KALAELOA AIRPORT\2019\7020\04 GRAPHICS\CAD\SHEETS\C-45 WATER DETAILS - 2.DWG



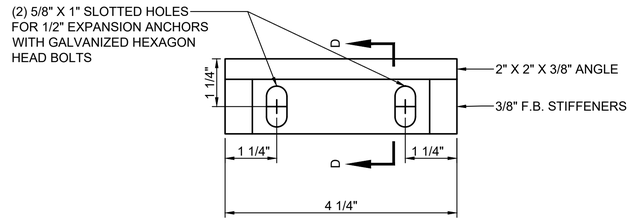
PLAN

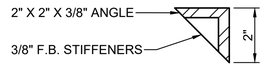


NOTES
1. CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2. LOCATION OF READING LID SHALL BE VERIFIED BY CONTRACTOR.
3. FOR WATER METER COVER DETAILS SEE DETAILS M41 AND M42.

WATER METER BOX COVER FOR 8"X2" WATER METER

NOT TO SCALE

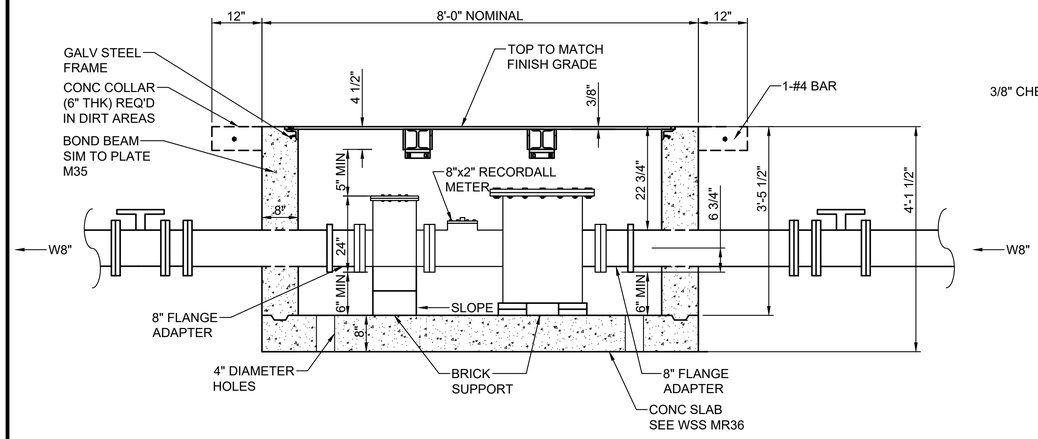




SECTION "D-D"

CLIP DETAIL

NOT TO SCALE

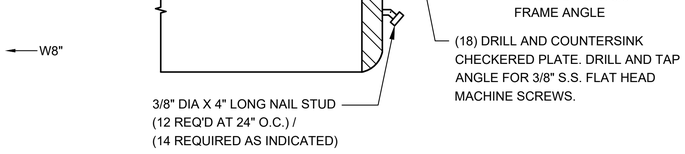


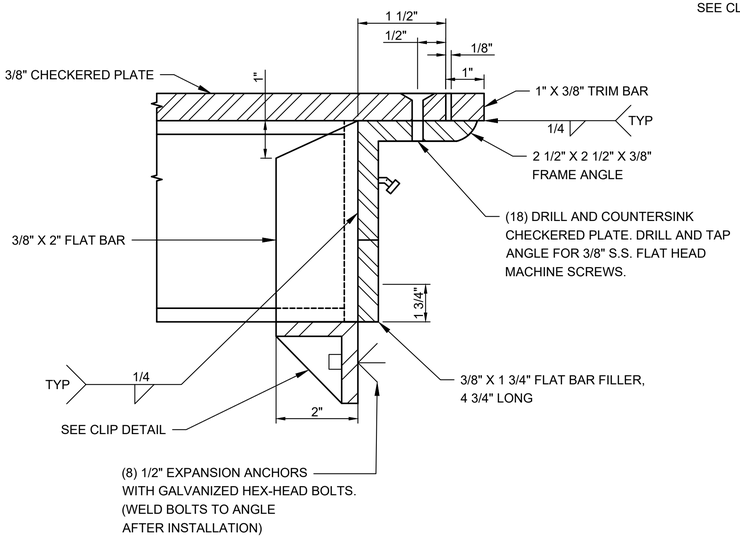
SECTION

NOTES FOR PRECAST/CAST-IN-PLACE WALL MANHOLE
1. FOR METER BOX DETAILS SEE WSS DETAIL M37, M38, AND M39.
2. CONCRETE SHALL BE DWS 3500.
3. REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.
4. DESIGN IS BASED ON: 250 PSF LIVE LOAD; 0 SURCHARGE; 60 PCF/FT AT REST PRESSURE; AND WATER TABLE BELOW BOTTOM SLAB, PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (1998). NON-TRAFFIC TYPE.

WATER METER BOX (PRE CAST) FOR 8"X2" WATER METER

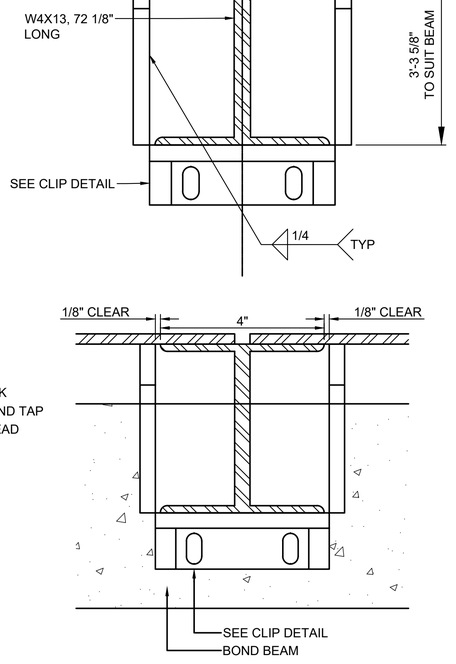
NOT TO SCALE





FRAME DETAILS

NOT TO SCALE



REMOVABLE SUPPORT DETAILS

NOT TO SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

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BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

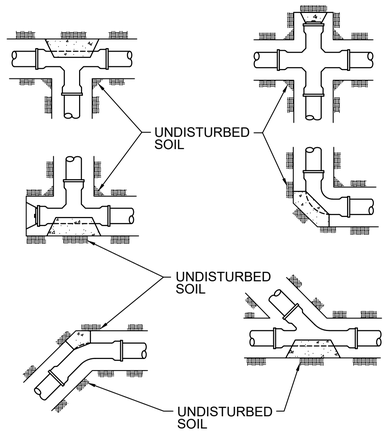
WATER DETAILS - 3

DATE :

SHEET :
48 OF 80 SHEETS

DWG. NO.
C-46

T:\DOT KALAELOA AIRPORT\2019\02020\04 GRAPHICS\CAD\SHEETS\C-46 WATER DETAILS - 3.DWG



NOTE:

REFER TO HORIZONTAL THRUST BLOCK SCHEDULE FOR THE SIZE OF REACTION BLOCKS. REACTION BLOCKS SHALL BEAR AGAINST UNDISTURBED SOIL. CONCRETE SHALL BE DWS 2500.

MINIMUM BEARING AREAS (SQ.FT.) FOR HORIZONTAL THRUST BLOCKS

PIPE SIZE	BEND	PRESSURE 250 PSI							PRESSURE 200 PSI							PRESSURE 150 PSI						
		TYPE OF SOIL CONDITION							TYPE OF SOIL CONDITION							TYPE OF SOIL CONDITION						
		A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	D	E	F	G
4"	TEES, CAPS	6.5	3.5	2.0	1.5	1.0	1.0	1.0														
	1/4	9.0	4.5	3.0	2.5	1.5	1.0	1.0														
	1/8	5.0	2.5	1.5	1.5	1.0	1.0	1.0														
	1/16	2.5	1.5	1.0	1.0	1.0	1.0	1.0														
	1/32	1.5	1.0	1.0	1.0	1.0	1.0	1.0														
6"	TEES, CAPS	14.0	7.0	5.0	3.5	2.5	2.0	1.5														
	1/4	20.0	10.0	7.0	5.0	3.5	2.5	2.0														
	1/8	11.0	5.5	3.5	3.0	2.0	1.5	1.0														
	1/16	5.5	3.0	2.0	1.5	1.0	1.0	1.0														
	1/32	3.0	1.5	1.0	1.0	1.0	1.0	1.0														
8"	TEES, CAPS	25.0	12.5	8.5	6.5	4.0	3.0	2.5														
	1/4	35.0	18.0	12.0	9.0	6.0	4.5	3.5														
	1/8	20.0	9.5	6.5	5.0	3.0	2.5	2.0														
	1/16	10.0	5.0	3.5	2.5	1.5	1.0	1.0														
	1/32	5.0	2.5	1.5	1.5	1.0	1.0	1.0														
12"	TEES, CAPS	56.5	28.5	19.0	14.0	9.5	7.0	5.5	45.5	22.5	15.0	11.5	7.5	5.5	4.5	34.0	17.0	11.5	8.5	5.5	4.5	3.5
	1/4	80.0	40.0	26.5	20.0	13.5	10.0	8.0	64.0	32.0	21.5	16.0	11.0	8.0	6.5	48.0	24.0	16.0	12.0	8.0	6.0	5.0
	1/8	43.5	21.5	14.5	11.0	7.0	5.5	4.5	35.0	17.5	11.5	9.0	6.0	4.5	3.5	26.0	13.0	8.5	6.5	4.5	3.5	2.5
	1/16	22.0	11.0	7.5	5.5	3.5	3.0	2.5	17.5	9.0	6.0	4.5	3.0	2.5	2.0	13.0	6.5	4.5	3.5	2.0	1.5	1.5
	1/32	11.5	5.5	4.0	3.0	2.0	1.5	1.0	9.0	4.5	3.0	2.5	1.5	1.0	1.0	7.0	3.5	2.5	2.0	1.0	1.0	1.0
16"	TEES, CAPS	101.0	50.5	34.0	25.5	17.0	13.0	10.5	80.5	40.5	27.0	20.5	13.5	10.5	8.5	60.5	30.5	20.5	15.5	10.5	8.0	6.5
	1/4	142.5	71.5	47.5	35.5	24.0	18.0	14.5	114.0	57.0	38.0	28.5	19.0	14.5	11.5	85.5	43.0	28.4	21.5	14.5	11.0	8.5
	1/8	77.0	38.5	26.0	19.5	13.0	10.0	8.0	62.0	31.0	20.5	15.5	10.5	8.0	6.5	46.5	23.5	15.5	11.5	8.0	6.0	5.0
	1/16	39.5	20.0	13.5	10.0	6.5	5.0	4.0	31.5	16.0	10.5	8.0	5.5	4.0	3.5	23.5	12.0	8.0	6.0	4.0	3.0	2.5
	1/32	20.0	10.0	7.0	5.0	3.5	2.5	2.0	16.0	8.0	5.5	4.0	3.0	2.0	2.0	12.0	6.0	4.0	3.0	2.0	1.5	1.5

USE FIGURES UNDER 250 PSI

TYPE OF SOIL CONDITION — LATERAL BEARING PRESSURE

A. SOFT CLAY; FINE LOOSE SAND.....500 LBS. PER SQ. FT.
B. SAND & CLAY; MIXED OR IN LAYERS; FINE CONFINED SAND.....1000 LBS. PER SQ. FT.
C. HARD DRY CLAY.....1500 LBS. PER SQ. FT.
D. COARSE SAND.....2000 LBS. PER SQ. FT.
E. GRAVEL.....3000 LBS. PER SQ. FT.
F. SOFT ROCK.....4000 LBS. PER SQ. FT.
G. HARDPAN.....5000 LBS. PER SQ. FT.

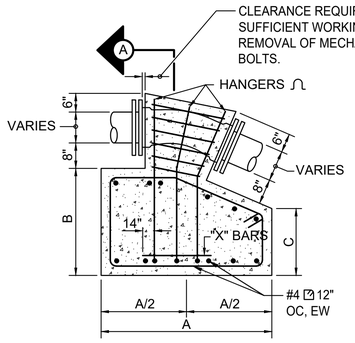
NOTE:

1. ACTUAL FIELD CONDITIONS AND SOIL TYPE SHALL BE VERIFIED IN THE FIELD. THE SCHEDULE, DIMENSIONS AND DETAILS AS SHOWN ARE PROVIDED AS A GUIDE ONLY. THE CONTRACTOR SHALL SUBMIT THE FINAL DESIGN AND DETAILS TO THE DOTA FOR REVIEW AND APPROVAL AFTER FIELD VERIFICATION AND PRIOR TO INSTALLATION.

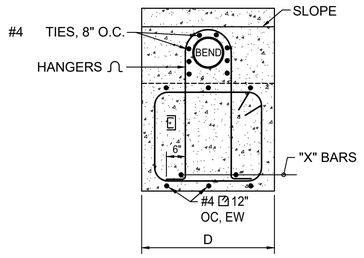
HORIZONTAL THRUST BLOCK SCHEDULE

HORIZONTAL REACTION BLOCK FOR WATER MAINS

NOT TO SCALE



ELEVATION



SECTION A

TOP VERTICAL THRUST BLOCK SCHEDULE

PIPE SIZE	BEND	PRESSURE 250 PSI						PRESSURE 200 PSI						PRESSURE 150 PSI					
		CONCRETE BLOCK				HANGER	"X" BAR	CONCRETE BLOCK				HANGER	"X" BAR	CONCRETE BLOCK				HANGER	"X" BAR
		A	B	C	D			A	B	C	D			A	B	C	D		
4"	1/4	4'-6"	4'-0"	4'-0"	2'-6"	(2)#4	(2)#4												
	1/8	3'-9"	3'-0"	1'-6"	2'-6"	(2)#3	(2)#3												
	1/16	2'-6"	2'-3"	1'-9"	2'-6"	(2)#3	(2)#3												
	1/32	2'-3"	1'-6"	1'-3"	2'-6"	(2)#3	(2)#3												
6"	1/4	4'-6"	4'-3"	4'-3"	4'-6"	(2)#5	(2)#5												
	1/8	5'-0"	3'-9"	1'-6"	3'-0"	(2)#4	(2)#4												
	1/16	3'-9"	3'-3"	2'-6"	2'-6"	(2)#3	(2)#3												
	1/32	3'-0"	2'-3"	2'-0"	2'-6"	(2)#3	(2)#3												
8"	1/4	5'-3"	5'-0"	5'-0"	5'-3"	(2)#6	(2)#6												
	1/8	5'-3"	4'-9"	2'-3"	4'-0"	(2)#5	(2)#5												
	1/16	5'-9"	3'-6"	2'-6"	2'-6"	(2)#4	(2)#4												
	1/32	3'-6"	2'-9"	2'-6"	2'-6"	(2)#3	(2)#3												
12"	1/4	6'-6"	7'-0"	7'-0"	6'-6"	(3)#7	(2)#7	6'-3"	6'-3"	6'-3"	5'-6"	(3)#7	(2)#7	6'-0"	6'-0"	6'-0"	4'-6"	(2)#7	(2)#7
	1/8	6'-3"	5'-9"	2'-9"	5'-6"	(2)#7	(2)#7	5'-6"	5'-6"	2'-9"	4'-6"	(2)#6	(2)#6	5'-0"	5'-3"	2'-9"	3'-9"	(2)#6	(2)#6
	1/16	5'-6"	4'-6"	3'-6"	4'-0"	(2)#5	(2)#5	5'-8"	4'-6"	3'-4"	2'-6"	(3)#4	(2)#4	6'-0"	4'-0"	2'-9"	2'-0"	(2)#4	(2)#4
	1/32	5'-3"	4'-3"	3'-9"	2'-6"	(2)#4	(2)#4	4'-3"	3'-9"	3'-3"	2'-0"	(2)#3	(2)#3	4'-0"	3'-0"	2'-6"	2'-0"	(2)#3	(2)#3

USE FIGURES UNDER 250 PSI

NOTE:

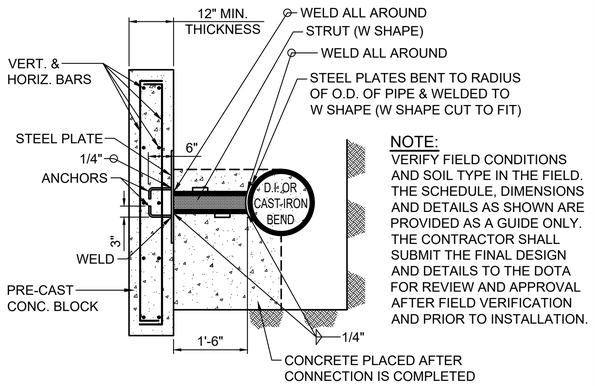
1. ACTUAL FIELD CONDITIONS SHALL BE VERIFIED IN THE FIELD. THE SCHEDULE, DIMENSIONS AND DETAILS AS SHOWN ARE PROVIDED AS A GUIDE ONLY. THE CONTRACTOR SHALL SUBMIT THE FINAL DESIGN AND DETAILS TO THE MANAGER FOR REVIEW AND APPROVAL AFTER FIELD VERIFICATION AND PRIOR TO INSTALLATION.
2. SCHEDULE IS NOT APPLICABLE TO BLOCKS FULLY OR PARTLY SUBMERGED IN WATER.
3. SAFETY FACTOR 1.5 BASED ON PIPE LOCATION MINIMUM 2' BELOW GROUND.

NOTES:

1. DWS 2500 CONCRETE.
2. MIN 2" COVER OVER ALL REINFORCEMENT.
3. SEE TOP VERTICAL THRUST BLOCK SCHEDULE FOR SCHEDULE AND DIMENSIONS.
4. AWWA C153 FITTINGS NOT ACCEPTABLE FOR THIS APPLICATION.
5. UNLESS OTHERWISE NOTED, ALL REINFORCING BARS SHALL BE ASTM A615, GRADE 60.

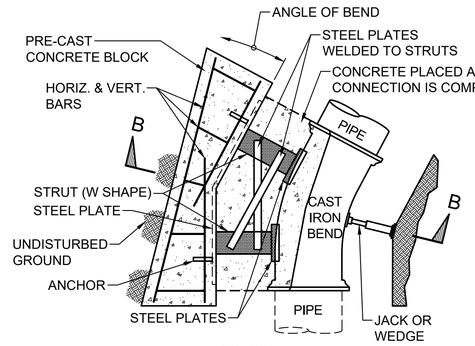
TYPICAL THRUST BLOCK AT VERTICAL BENDS

NOT TO SCALE



NOTE:
VERIFY FIELD CONDITIONS AND SOIL TYPE IN THE FIELD. THE SCHEDULE, DIMENSIONS AND DETAILS AS SHOWN ARE PROVIDED AS A GUIDE ONLY. THE CONTRACTOR SHALL SUBMIT THE FINAL DESIGN AND DETAILS TO THE DOTA FOR REVIEW AND APPROVAL AFTER FIELD VERIFICATION AND PRIOR TO INSTALLATION.

SECTION "B-B"



PLAN

TYPICAL THRUST BLOCK WITH STRUCTURAL STRUT FOR CONNECTION

NOT TO SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

WATER DETAILS - 4

DATE :

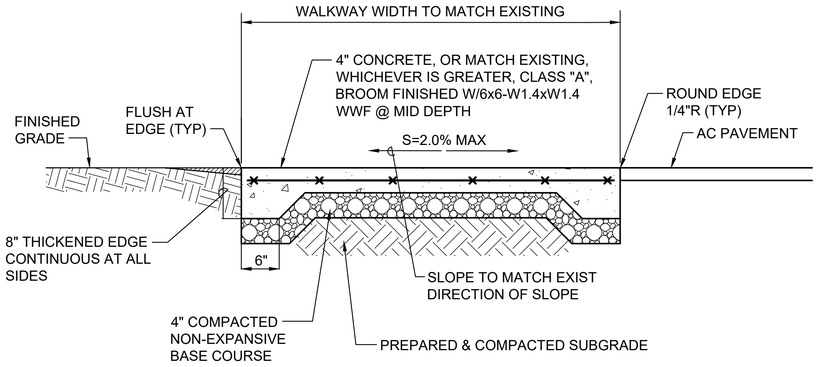
SHEET :

49 OF 80 SHEETS

DWG. NO.

C-47

T:\DOT KALAELOA AIRPORT\2019\7002800\04 GRAPHICS\CAD\SHEETS\C-47 WATER DETAILS - 4.DWG

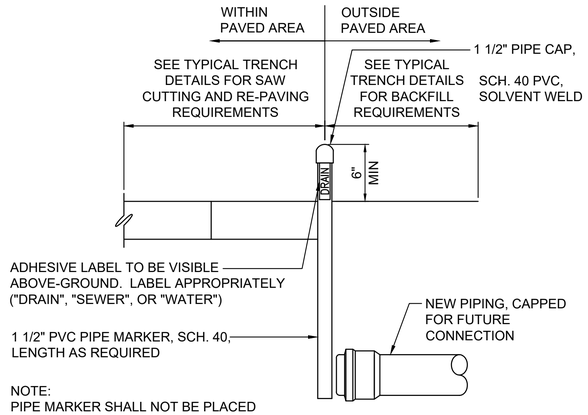


NOTES:

1. CONCRETE WALKWAY SHALL HAVE A MAXIMUM LONGITUDINAL SLOPE OF 5 PERCENT.
2. SCORE JOINTS SHALL BE INSTALLED AT 5-FEET MAXIMUM INTERVALS. SEE DETAIL THIS SHEET.
3. EXPANSION JOINTS SHALL BE INSTALLED IN NEW WALKWAYS AT 100' MAXIMUM INTERVALS.

CONCRETE WALKWAY DETAIL

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



NOTE:
PIPE MARKER SHALL NOT BE PLACED WHERE EXPOSED PIPE WILL BE AN OBSTRUCTION TO HANGAR OPERATION FIELD ADJUST AS NECESSARY

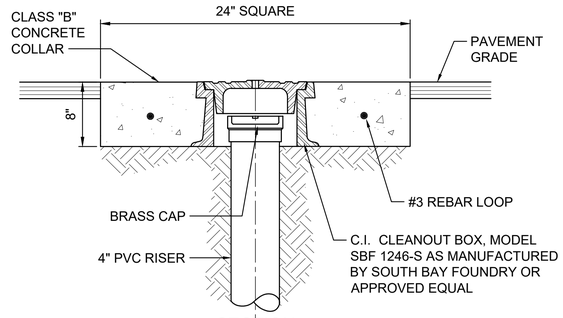
PIPE MARKER DETAIL

NOT TO SCALE

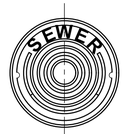
NOTE:
INSTALL CLEAN OUT WITH BRASS COUNTER-SUNK SCREW PLUG, FLUSH WITH GRADE.

SEWER COTG DETAIL

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



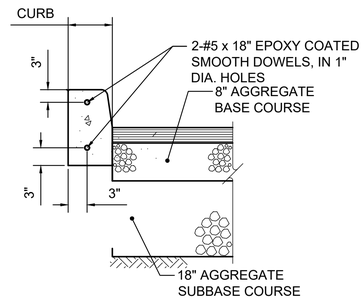
SECTION

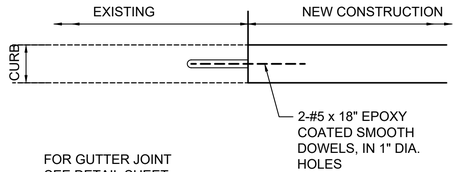


FRAME AND COVER (LABEL APPROPRIATELY, "SEWER" OR "DRAIN")

TRAFFIC RATED CLEANOUT COVER DETAIL

NOT TO SCALE

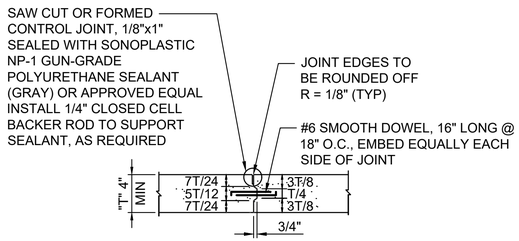




FOR GUTTER JOINT SEE DETAIL SHEET C-36

CURB RESTORATION DETAIL

NOT TO SCALE



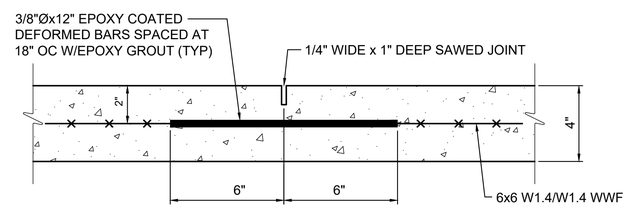
NOTES:

1, CONSTRUCTION JOINTS SHALL BE PLACED AT ALL LOCATIONS WHERE NEW CONCRETE MATCHES EXISTING.

2, CONCRETE THICKNESS SHALL BE 4" MIN OR MATCH EXISTING, WHICHEVER IS GREATER.

CONSTRUCTION JOINT DETAIL

NOT TO SCALE



TRANSVERSE CONSTRUCTION JOINT DETAIL

SCALE: 3"=1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

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UTILITY SYSTEM IMPROVEMENTS
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BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

MISCELLANEOUS DETAILS - 1

DATE :

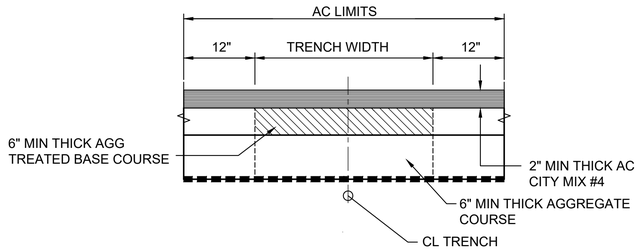
SHEET :

50 OF 80 SHEETS

DWG. NO.

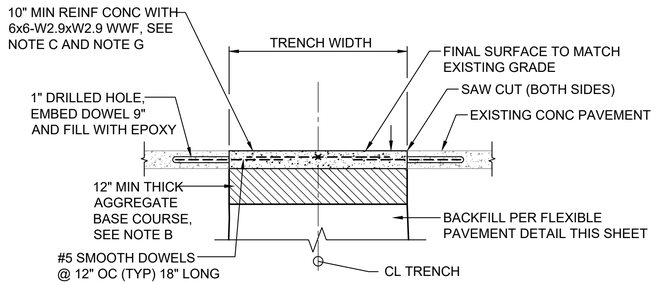
C-48

T:\DOT KALAELOA AIRPORT\2019\700200\04 GRAPHICS\CAD\SHEETS\C-48 MISCELLANEOUS DETAILS - 1.DWG



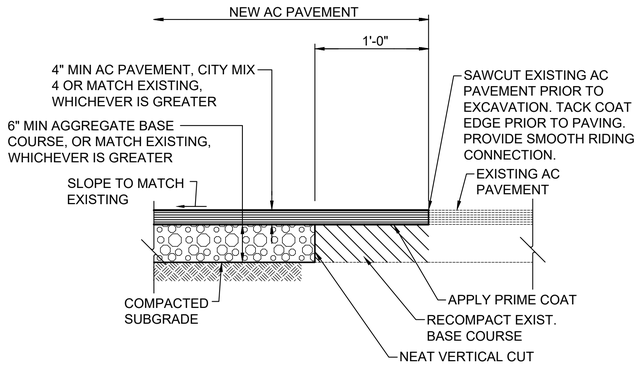
TRENCH RESTORATION DETAIL - FLEXIBLE PAVEMENT W/IN DOTA

NOT TO SCALE



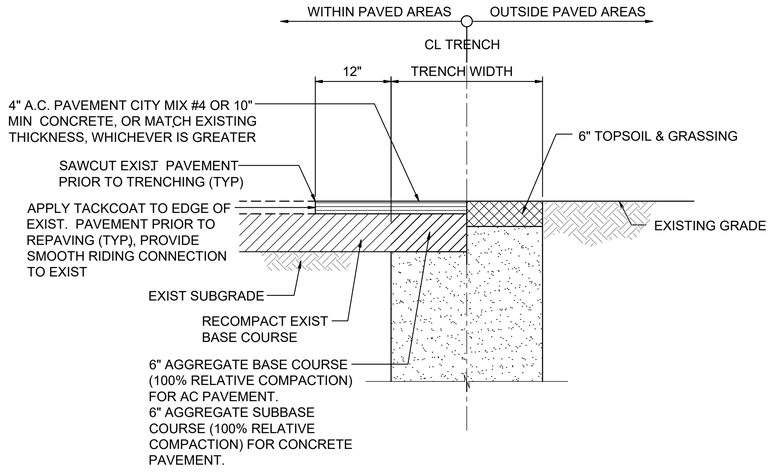
TRENCH RESTORATION DETAIL - RIGID PAVEMENT

NOT TO SCALE



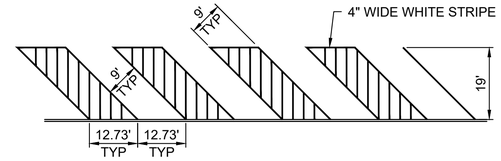
TYPICAL SECTION-AC CONNECTION TO EXIST PAVEMENT

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



TRENCH RESTORATION DETAIL

NOT TO SCALE



TYPICAL PARKING STRIPING DETAIL

NOT TO SCALE

STATE OF HAWAII
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SHEET TITLE:

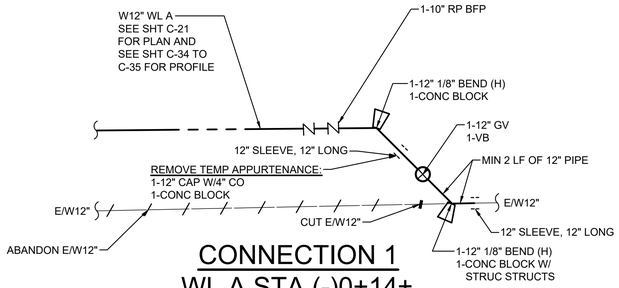
MISCELLANEOUS DETAILS - 2

DATE :

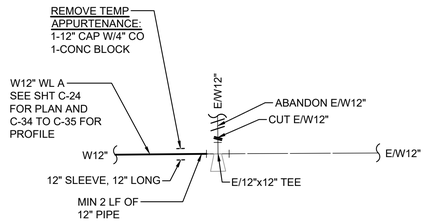
SHEET :
51 OF 80 SHEETS

DWG. NO.
C-49

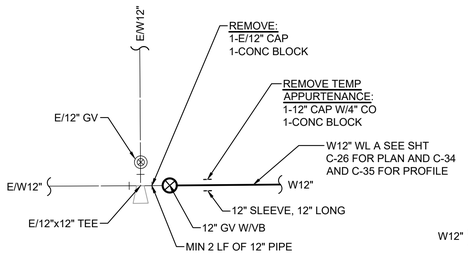
T:\DOT KALAELOA AIRPORT\2019\190200\04 GRAPHICS\CAD\SHEETS\C-49 MISCELLANEOUS DETAILS - 2.DWG



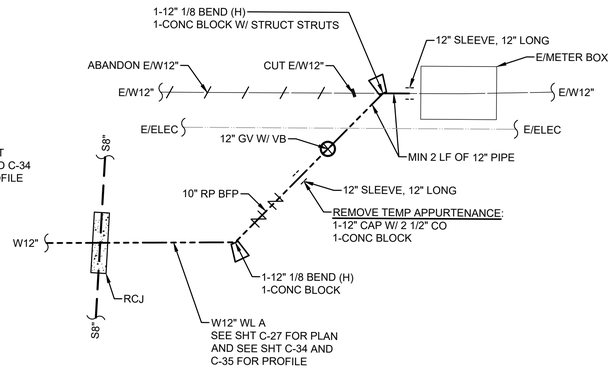
CONNECTION 1
WL A STA (-)0+14±
NOT TO SCALE



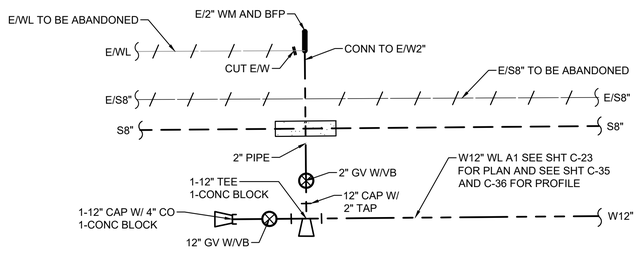
CONNECTION 2
WL A STA 12+38.25±
NOT TO SCALE



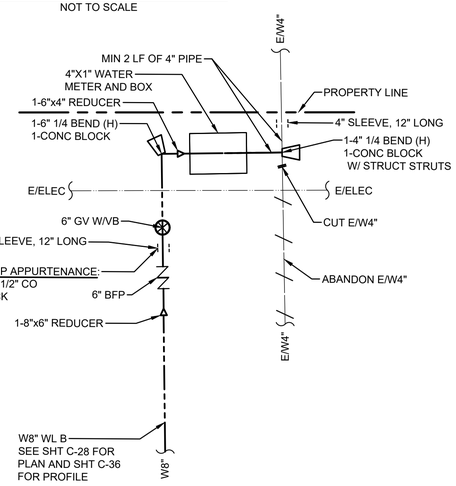
CONNECTION 3
WL A STA 15+27.6±
NOT TO SCALE



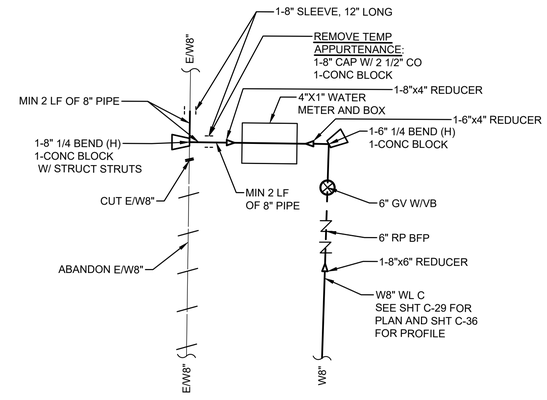
CONNECTION 4
WL A STA 20+77.69 ±
NOT TO SCALE



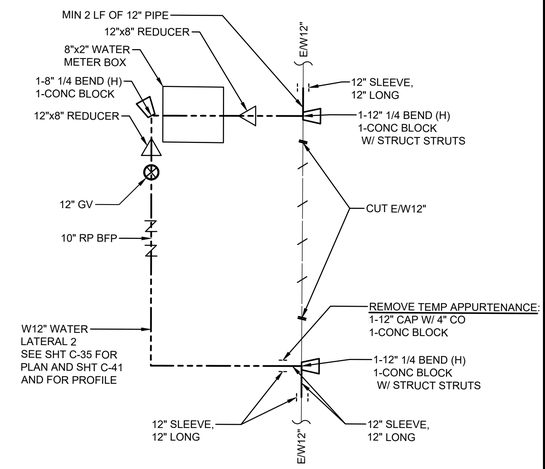
CONNECTION 5
WL A1 STA 6+81±
NOT TO SCALE



CONNECTION 6 (MAIN BLDG)
WL B STA (-) 0+18±
NOT TO SCALE



CONNECTION 7 (ARFF)
WL C STA (-)1+05.0±
NOT TO SCALE



CONNECTION 8
WATER LATERAL 2 STA 0+00±
NOT TO SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

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No. 4575-C
HAWAII, U.S.A.

04/30/2026
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AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

WATER CONNECTION SCHEMATIC DIAGRAMS

DATE :

SHEET :

52 OF 80 SHEETS

DWG. NO.

C-50

T:\DOT KALAELOA AIRPORT\2019\0200\04 GRAPHICS\CAD\SHEETS\C-50 WATER CONNECTION SCHEMATIC DIAGRAMS.DWG

GEOLABS, INC.

Geotechnical Engineering

Soil Log Legend

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

MAJOR DIVISIONS			USCS	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	LESS THAN 5% FINES	GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
		MORE THAN 12% FINES	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS	CLEAN SANDS	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	50% OR MORE OF COARSE FRACTION PASSING THROUGH NO. 4 SIEVE	LESS THAN 5% FINES	SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES	SM	SILTY SANDS, SAND-SILT MIXTURES
		MORE THAN 12% FINES	SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE-GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
50% OR MORE OF MATERIAL PASSING THROUGH NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT 50 OR MORE	MH	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

LEGEND

- (2-INCH) O.D. STANDARD PENETRATION TEST
- (3-INCH) O.D. MODIFIED CALIFORNIA SAMPLE
- SHELBY TUBE SAMPLE
- GRAB SAMPLE
- CORE SAMPLE
- WATER LEVEL OBSERVED IN BORING AT TIME OF DRILLING
- WATER LEVEL OBSERVED IN BORING AFTER DRILLING
- WATER LEVEL OBSERVED IN BORING OVERNIGHT

- LL LIQUID LIMIT (NP=NON-PLASTIC)
- PI PLASTICITY INDEX (NP=NON-PLASTIC)
- TV TORVANE SHEAR (tsf)
- UC UNCONFINED COMPRESSION OR UNIAXIAL COMPRESSIVE STRENGTH
- TXUU UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (ksf)

Plate

A-0.1

LOG LEGEND FOR SOIL 8327-00.GPJ GEOLABS.GDT 10/31/21

GEOLABS, INC.

Geotechnical Engineering

Soil Classification Log Key

(with deviations from ASTM D2488)

GEOLABS, INC. CLASSIFICATION*

GRANULAR SOIL (- #200 <50%)	COHESIVE SOIL (- #200 ≥ 50%)
• PRIMARY constituents are composed of the largest percent of the soil mass. Primary constituents are capitalized and bold (i.e., GRAVEL, SAND)	• PRIMARY constituents are based on plasticity. Primary constituents are capitalized and bold (i.e., CLAY, SILT)
• SECONDARY constituents are composed of a percentage less than the primary constituent. If the soil mass consists of 12 percent or more fines content, a cohesive constituent is used (SILTY or CLAYEY); otherwise, a granular constituent is used (GRAVELLY or SANDY) provided that the secondary constituent consists of 20 percent or more of the soil mass. Secondary constituents are capitalized and bold (i.e., SANDY GRAVEL, CLAYEY SAND) and precede the primary constituent.	• SECONDARY constituents are composed of a percentage less than the primary constituent, but more than 20 percent of the soil mass. Secondary constituents are capitalized and bold (i.e., SANDY CLAY, SILTY CLAY, CLAYEY SILT) and precede the primary constituent.
• accessory descriptions compose of the following: with some: >12% with a little: 5 - 12% with traces of: <5% accessory descriptions are lower cased and follow the Primary and Secondary Constituents (i.e., SILTY GRAVEL with a little sand)	• accessory descriptions compose of the following: with some: >12% with a little: 5 - 12% with traces of: <5% accessory descriptions are lower cased and follow the Primary and Secondary Constituents (i.e., SILTY CLAY with some sand)

EXAMPLE: Soil Containing 60% Gravel, 25% Sand, 15% Fines. Described as: SILTY GRAVEL with some sand

RELATIVE DENSITY / CONSISTENCY

Granular Soils			Cohesive Soils			
N-Value (Blows/Foot)		Relative Density	N-Value (Blows/Foot)		PP Readings (tsf)	Consistency
SPT	MCS		SPT	MCS		
0 - 4	0 - 7	Very Loose	0 - 2	0 - 4		Very Soft
4 - 10	7 - 18	Loose	2 - 4	4 - 7	< 0.5	Soft
10 - 30	18 - 55	Medium Dense	4 - 8	7 - 15	0.5 - 1.0	Medium Stiff
30 - 50	55 - 91	Dense	8 - 15	15 - 27	1.0 - 2.0	Stiff
> 50	> 91	Very Dense	15 - 30	27 - 55	2.0 - 4.0	Very Stiff
			> 30	> 55	> 4.0	Hard

MOISTURE CONTENT DEFINITIONS

Dry: Absence of moisture, dry to the touch

Moist: Damp but no visible water

Wet: Visible free water

GRAIN SIZE DEFINITION

Description	Sieve Number and / or Size
Boulders	> 12 inches (305-mm)
Cobbles	3 to 12 inches (75-mm to 305-mm)
Gravel	3-inch to #4 (75-mm to 4.75-mm)
Coarse Gravel	3-inch to 3/4-inch (75-mm to 19-mm)
Fine Gravel	3/4-inch to #4 (19-mm to 4.75-mm)
Sand	#4 to #200 (4.75-mm to 0.075-mm)
Coarse Sand	#4 to #10 (4.75-mm to 2-mm)
Medium Sand	#10 to #40 (2-mm to 0.425-mm)
Fine Sand	#40 to #200 (0.425-mm to 0.075-mm)

ABBREVIATIONS

WOH: Weight of Hammer

WOR: Weight of Drill Rods

SPT: Standard Penetration Test Split-Spoon Sampler

MCS: Modified California Sampler

PP: Pocket Penetrometer

**Soil descriptions are based on ASTM D2488-09a, Visual-Manual Procedure, with the above modifications by Geolabs, Inc. to the Unified Soil Classification System (USCS).*

Plate

A-0.2

SOIL_CLASS_LOG_KEY 8327-00.GPJ GEOLABS.GDT 10/31/21

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GERALD Y. SEKI
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04/30/2026
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NOVEMBER 2024
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UTILITY SYSTEM IMPROVEMENTS
AT
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BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

BORING LOG LEGENDS

DATE :
JANUARY 2025
SHEET :
53 OF 80 SHEETS

DWG. NO.
B-1

B:\DRAFTING\DRAFTING\WORKING\8327-00_KALAELOA_AIRPORT_IMPROVEMENTS\001_B-1.DWG

GEOLABS, INC.

Geotechnical Engineering

Rock Log Legend

ROCK DESCRIPTIONS

	BASALT		CONGLOMERATE
	BOULDERS		LIMESTONE
	BRECCIA		SANDSTONE
	CLINKER		SILTSTONE
	COBBLES		TUFF
	CORAL		VOID/CAVITY

ROCK DESCRIPTION SYSTEM

ROCK FRACTURE CHARACTERISTICS

The following terms describe general fracture spacing of a rock:

Massive:	Greater than 24 inches apart
Slightly Fractured:	12 to 24 inches apart
Moderately Fractured:	6 to 12 inches apart
Closely Fractured:	3 to 6 inches apart
Severely Fractured:	Less than 3 inches apart

DEGREE OF WEATHERING

The following terms describe the chemical weathering of a rock:

Unweathered:	Rock shows no sign of discoloration or loss of strength.
Slightly Weathered:	Slight discoloration inwards from open fractures.
Moderately Weathered:	Discoloration throughout and noticeably weakened though not able to break by hand.
Highly Weathered:	Most minerals decomposed with some corestones present in residual soil mass. Can be broken by hand.
Extremely Weathered:	Saprolite. Mineral residue completely decomposed to soil but fabric and structure preserved.

HARDNESS

The following terms describe the resistance of a rock to indentation or scratching:

Very Hard:	Specimen breaks with difficulty after several "pinging" hammer blows. Example: Dense, fine grain volcanic rock
Hard:	Specimen breaks with some difficulty after several hammer blows. Example: Vesicular, vugular, coarse-grained rock
Medium Hard:	Specimen can be broked by one hammer blow. Cannot be scraped by knife. SPT may penetrate by ~25 blows per inch with bounce. Example: Porous rock such as clinker, cinder, and coral reef
Soft:	Can be indented by one hammer blow. Can be scraped or peeled by knife. SPT can penetrate by ~100 blows per foot. Example: Weathered rock, chalk-like coral reef
Very Soft:	Crumbles under hammer blow. Can be peeled and carved by knife. Can be indented by finger pressure. Example: Saprolite

Plate

A-0.3

LOG LEGEND FOR ROCK 8327-00.GPJ GEOLABS.GDT 10/31/21

GEOTECHNICAL NOTES:

1. *A geotechnical engineering report entitled "Geotechnical Engineering Exploration, Infrastructure Improvements at Kalaeloa Airport, Kapolei, Oahu, Hawaii" dated October 19, 2021 has been prepared by Geolabs, Inc. A copy of the report is on file at the office of the Engineer for review by the Contractor.*

2. *For boring locations, see Sheet C-14.*

3. *The information presented in the logs of borings depict the subsurface conditions encountered at that specified location and at the time of the field exploration only. Variations of subsoil conditions from those depicted in the logs of borings may occur between and beyond the borings.*

4. *The penetration resistance shown on the logs of borings indicate the number of blows required for the specific sampler type used. The blow counts may need to be factored to obtain the Standard Penetration Test (SPT) blow counts.*

5. *The data given is for general information only. Bidders shall examine the site and the boring data and draw their own conclusions therefrom as to the character of materials to be encountered. The Engineer will not assume responsibility for variations of subsoil quality or conditions other than at the boring locations shown and at the time the borings were taken.*

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GERALD Y. SEKI
LICENSED PROFESSIONAL ENGINEER
No. 5635-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

PRE-FINAL SUBMITTAL

NOVEMBER 2024
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

BORING LOG LEGEND AND NOTES

DATE :
JANUARY 2025

SHEET :
54 OF 80 SHEETS

DWG. NO.
B-2

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GEOLABS, INC.
Geotechnical Engineering

INFRASTRUCTURE IMPROVEMENTS
AT KALAELOA AIRPORT
KAPOLEI, OAHU, HAWAII

Log of Boring **1**

Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Approximate Ground Surface Elevation (feet MSL): 40.5 * / Description
							0				10-inch CONCRETE
	14	95			20					SM	Tan SILTY SAND (CORALLINE) with some gravel (coralline), medium dense to very dense, moist (fill)
	23				60						
	12	87			29		5			SM	Tan SILTY SAND (CORALLINE) with some gravel (coralline), medium dense, dry (coralline detritus)
	14				32		10				grades to dense
	3	86			54		15			GP-GM	Tan SANDY GRAVEL (CORALLINE) with a little silt, medium dense, dry (weathered coral)
											Boring terminated at 16.5 feet
							20				* Elevations estimated from Site Plans prepared by Belt Collins Hawaii LLC. dated May 18, 2021.
											Latitude: 21.31439° N Longitude: 158.07789° W
							25				

Date Started:	July 21, 2021	Water Level: ▼	Not Encountered
Date Completed:	July 21, 2021		
Logged By:	D. Gremminger	Drill Rig:	CME-75DR *(Energy Transfer Ratio = 73.6%)*
Total Depth:	16.5 feet	Drilling Method:	4" Solid-Stem Auger
Work Order:	8327-00	Driving Energy:	140 lb. wt., 30 in. drop

BORING_LOG_DOT_HALF.DXF 8327-00.GPJ GEOLABS.GDT 10/31/21

GEOLABS, INC.
Geotechnical Engineering

INFRASTRUCTURE IMPROVEMENTS
AT KALAELOA AIRPORT
KAPOLEI, OAHU, HAWAII

Log of Boring **3**

Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Approximate Ground Surface Elevation (feet MSL): 30.5 * / Description
							0				3-inch ASPHALTIC CONCRETE
	34	71			26					SM	Brown SILTY SAND with some gravel and a little clay, medium dense, moist (fill)
	35				7						
	38	77			32		5				Tannish white SILTY SAND (CORALLINE) with a little gravel (coralline), loose to medium dense, moist (coralline detritus)
	5				14		10			SP	Tannish white SAND (CORALLINE) with a little gravel (coralline), medium dense, dry (coralline detritus)
	6	91			38		15				
											Boring terminated at 16.5 feet
							20				
											Latitude: 21.31191° N Longitude: 158.07099° W
							25				

Date Started:	July 22, 2021	Water Level: ▼	Not Encountered
Date Completed:	July 22, 2021		
Logged By:	D. Gremminger	Drill Rig:	CME-75DR *(Energy Transfer Ratio = 73.6%)*
Total Depth:	16.5 feet	Drilling Method:	4" Solid-Stem Auger
Work Order:	8327-00	Driving Energy:	140 lb. wt., 30 in. drop

BORING_LOG_DOT_HALF.DXF 8327-00.GPJ GEOLABS.GDT 10/31/21

GEOLABS, INC.
Geotechnical Engineering

INFRASTRUCTURE IMPROVEMENTS
AT KALAELOA AIRPORT
KAPOLEI, OAHU, HAWAII

Log of Boring **2**

Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Approximate Ground Surface Elevation (feet MSL): 32.5 * / Description
							0				5-inch ASPHALTIC CONCRETE
Sieve - #200 = 13.7%	11	102			50					SM	Brownish tan SILTY SAND (CORALLINE) with some gravel, medium dense, dry (fill)
	10				76/6"					SM	grades to very dense
Direct Shear	7	90			26		5				Tan SILTY SAND (CORALLINE) with some gravel and a little cobbles (coralline), medium dense, dry (coralline detritus)
	8				11		10				grades to grayish tan
	6	103			37		15				
											Boring terminated at 16.5 feet
							20				
											Latitude: 21.31157° N Longitude: 158.07312° W
							25				

Date Started:	July 21, 2021	Water Level: ▼	Not Encountered
Date Completed:	July 21, 2021		
Logged By:	D. Gremminger	Drill Rig:	CME-75DR *(Energy Transfer Ratio = 73.6%)*
Total Depth:	16.5 feet	Drilling Method:	4" Solid-Stem Auger
Work Order:	8327-00	Driving Energy:	140 lb. wt., 30 in. drop

BORING_LOG_DOT_HALF.DXF 8327-00.GPJ GEOLABS.GDT 10/31/21

GEOLABS, INC.
Geotechnical Engineering

INFRASTRUCTURE IMPROVEMENTS
AT KALAELOA AIRPORT
KAPOLEI, OAHU, HAWAII

Log of Boring **4**

Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Approximate Ground Surface Elevation (feet MSL): 30.5 * / Description
							0				4.5-inch ASPHALTIC CONCRETE
Sieve - #200 = 10.6%	7	78			20					SW-SM	Tan GRAVELLY SAND (CORALLINE) with a little silt (coralline), medium dense, dry (fill)
	4				99					SP-SM	Whitish tan SAND (CORALLINE) with a little silt and gravel (coralline), very dense, dry (weathered coral)
	6	91			6		5			SP	possible VOID
	5				50/4"		10				Whitish tan SAND (CORALLINE), very dense, dry (weathered coral)
	3	77			25/1"		15				
											Boring terminated at 15.6 feet
							20				
											Latitude: 21.31056° N Longitude: 158.07159° W
							25				

Date Started:	July 21, 2021	Water Level: ▼	Not Encountered
Date Completed:	July 21, 2021		
Logged By:	D. Gremminger	Drill Rig:	CME-75DR *(Energy Transfer Ratio = 73.6%)*
Total Depth:	15.6 feet	Drilling Method:	4" Solid-Stem Auger
Work Order:	8327-00	Driving Energy:	140 lb. wt., 30 in. drop

BORING_LOG_DOT_HALF.DXF 8327-00.GPJ GEOLABS.GDT 10/31/21

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GERALD Y. SEKI
LICENSED PROFESSIONAL ENGINEER
No. 5635-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

PRE-FINAL SUBMITTAL
NOVEMBER 2024
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

BORING LOGS - 1

DATE :	DWG. NO.
JANUARY 2025	B-3
SHEET : 55 OF 80 SHEETS	

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GEOLABS, INC.
Geotechnical Engineering

INFRASTRUCTURE IMPROVEMENTS
AT KALAELOA AIRPORT
KAPOLEI, OAHU, HAWAII

Log of Boring **5**

Approximate Ground Surface Elevation (feet MSL): 30.5 *

Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
	10	76			20		0			GM	4-inch ASPHALTIC CONCRETE
	19				28					SM	Grayish brown SILTY GRAVEL (BASALTIC), medium dense, dry (fill)
	12	93			40/3"		5				Brownish tan SILTY SAND (CORALLINE) with some gravel (coralline), medium dense, dry (fill)
UC= 560 psi			91	32							Whitish tan CORAL, moderately fractured, moderately weathered, hard (coral formation)
UC= 440 psi			93	53			10				Tan cemented CORAL, severely to moderately fractured, highly to moderately weathered, soft to hard (coral formation)
Sieve - #200 = 13.2%	14				37		15				(breaks down to SILTY SAND with some gravel when sampled)
UC= 360 psi			100	43							
			67	40			20				
	13				21						
			38	0			25				
	6				70		30				
UC= 410 psi			100	71							
	15				36		35				
	17				19		40				
	14				50		45				
	20				27		50				
											Boring terminated at 51.5 feet
							55				
							60				
							65				
							70				

Latitude: 21.3107° N
Longitude: 158.07058° W

Date Started:	July 27, 2021	Water Level: ▽	29.2 ft. 07/27/2021 1100 HRS
Date Completed:	July 28, 2021	▼	29.0 ft. 07/28/2021 0900 HRS
Logged By:	D. Gremminger	Drill Rig:	CME-75DR
Total Depth:	51.5 feet	Drilling Method:	4" Solid-Stem Auger & PQ Coring
Work Order:	8327-00	Driving Energy:	140 lb. wt., 30 in. drop

BORING_LOG_DOT.GXF 8327-00.GPJ GEOLABS.GDT 10/31/21

GEOLABS, INC.
Geotechnical Engineering

INFRASTRUCTURE IMPROVEMENTS
AT KALAELOA AIRPORT
KAPOLEI, OAHU, HAWAII

Log of Boring **6**

Approximate Ground Surface Elevation (feet MSL): 31 *

Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
Direct Shear	4	93			26		0			SM	Brownish tan SILTY SAND (CORALLINE) with some gravel (coralline), medium dense, dry (fill)
	4				25/1"					GP	Tannish white SANDY GRAVEL (CORALLINE), very dense, dry (weathered coral)
	7	81			25/1"		5				possible VOID
							10				
							15			SM	Tan SILTY SAND (CORALLINE) with some gravel (coralline), medium dense to dense, dry (weathered coral)
	12				55						Boring terminated at 16.5 feet
							20				
							25				

Latitude: 21.31156° N
Longitude: 158.06915° W

Date Started:	July 22, 2021	Water Level: ▼	Not Encountered
Date Completed:	July 22, 2021		
Logged By:	D. Gremminger	Drill Rig:	CME-75DR *(Energy Transfer Ratio = 73.6%)*
Total Depth:	16.5 feet	Drilling Method:	4" Solid-Stem Auger
Work Order:	8327-00	Driving Energy:	140 lb. wt., 30 in. drop

BORING_LOG_DOT_HALF.GXF 8327-00.GPJ GEOLABS.GDT 10/31/21

GEOLABS, INC.
Geotechnical Engineering

INFRASTRUCTURE IMPROVEMENTS
AT KALAELOA AIRPORT
KAPOLEI, OAHU, HAWAII

Log of Boring **7**

Approximate Ground Surface Elevation (feet MSL): 31.5 *

Other Tests	Moisture Content (%)	Dry Unit Weight (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
							0			GM	2.5-inch ASPHALTIC CONCRETE
Sieve - #200 = 19.5%	10	98			32					SM	Grayish brown SILTY GRAVEL (BASALTIC) with some sand, very dense, dry (fill)
	12				9/6" +40/3"					SM	Brownish tan SILTY SAND (CORALLINE) with some gravel (coralline), medium dense, dry (fill)
	34	81			29		5				Tan SILTY SAND (CORALLINE) with some gravel (coralline), medium dense, dry (coralline detritus)
	3				76		10			SP	Tannish white SAND (CORALLINE), very dense, dry (weathered coral)
	4	100			7		15				grades to loose
											Boring terminated at 16.5 feet
							20				
							25				

Latitude: 21.31283° N
Longitude: 158.06715° W

Date Started:	July 22, 2021	Water Level: ▼	Not Encountered
Date Completed:	July 22, 2021		
Logged By:	D. Gremminger	Drill Rig:	CME-75DR *(Energy Transfer Ratio = 73.6%)*
Total Depth:	16.5 feet	Drilling Method:	4" Solid-Stem Auger
Work Order:	8327-00	Driving Energy:	140 lb. wt., 30 in. drop

BORING_LOG_DOT_HALF.GXF 8327-00.GPJ GEOLABS.GDT 10/31/21

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GERALD Y. SEKI
LICENSED PROFESSIONAL ENGINEER
No. 5635-C
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
CKK	BHK	CKK	JS

NO.	DATE	REVISIONS

PRE-FINAL SUBMITTAL
NOVEMBER 2024
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

BORING LOGS - 2

DATE :	DWG. NO.
JANUARY 2025	B-4
SHEET :	
56 OF 80 SHEETS	

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ELECTRICAL SYMBOL LIST

SYMBOL EXST	SYMBOL NEW	DESCRIPTION
		HECO 6' X 14' MANHOLE
		HTCO 5' X 10' MANHOLE
		AIRPORT ELEC 4' X 6' MANHOLE
		HTCO 3' X 5' HANDHOLE
		CATV 4' X 6' MANHOLE
		AIRPORT COMM 4' X 6' MANHOLE
		AIRPORT ELEC 4' X 6' HANDHOLE
		HECO TRANSFORMER. SEE SHEET E-19.
		HECO PME-9 SWITCHPAD. SEE SHEET A/E-20.
		HECO PMH-3 SWITCHPAD. SEE SHEET B/E-20.
e		UNDERGROUND ELECTRICAL DUCTLINE
		SAWCUT AND PATCH EXIST AC PAVEMENT/CONCRETE SIDEWALK.
		ELECTRIC/SIGNAL DUCTLINE WITH DESIGNATORS; INDICATES TYPE "A"
	A 2-2E	DUCT SECTION WITH "2-2E" DUCTS. SEE SHEET E-15 FOR DUCT SECTIONS
		AND CONDUIT SCHEDULES. DASH LINES INDICATE EXISTING.
	S	CONCRETE STUB-OUT MARKER. SEE SHEET E-13.
		UTILITY POLE

CONDUIT SCHEDULE

ITEM	DESCRIPTION
2E	HECO 1-2" CONDUIT, PVC SCHD. 40
2-4E	HECO 2-4" CONDUITS, PVC SCHD. 40
3-4E	HECO 3-4" CONDUITS, PVC SCHD. 40
4-4E	HECO 4-4" CONDUITS, PVC SCHD. 40
6-4E	HECO 6-4" CONDUITS, PVC SCHD. 40
2-5E	HECO 2-5" CONDUITS, PVC SCHD. 40
4-5E	HECO 4-5" CONDUITS, PVC SCHD. 40
6-5E	HECO 6-5" CONDUITS, PVC SCHD. 40
4T	HTCO 1-4" CONDUIT, PVC SCHD. 40
2-4T	HTCO 2-4" CONDUITS, PVC SCHD. 40
4-4T	HTCO 4-4" CONDUITS, PVC SCHD. 40
5-4T	HTCO 5-4" CONDUITS, PVC SCHD. 40
4V	CATV 1-4" CONDUIT, PVC SCHD. 40
2-4C	AIRPORT COMM 2-4" CONDUIT, PVC SCHD. 40
4P	AIRPORT POWER 1-4" CONDUITS, PVC SCHD. 40
2-4P	AIRPORT POWER 2-4" CONDUITS, PVC SCHD. 40
4-4P	AIRPORT POWER 4-4" CONDUITS, PVC SCHD. 40

EQUIPMENT SCHEDULE

THE HAWAIIAN ELECTRIC C0. (HECO), HAWAIIAN TELCOM (HTCO), OCEANIC TIME WARNER (CATV) PULLBOXES, & HANDHOLES SHALL BE CONSTRUCTED BY THE CONTRACTOR AS SHOWN IN THESE DRAWINGS & IN ACCORDANCE WITH THE FOLLOWING STANDARD DRAWINGS:

ITEM	DESCRIPTION
4' X 6' ELEC HANDHOLE	4' X 6' TYPE 46 REINFORCED CONCRETE HANDHOLE WITH PRECAST CONCRETE COVERS, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 101024 EXCEPT WITH "ELEC" INSCRIBED.
4' X 6' ELEC MANHOLE	4' X 6' REINFORCED CONCRETE MANHOLE WITH TRAFFIC RATED FRAME AND COVER, PROVDIED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 100906 EXCEPT WITH "ELEC" INSCRIBED.
6' X 14' HECO LRFD MANHOLE	6' X 14' PRECAST LRFD CONCRETE VAULT WITH PRECAST CONCRETE COVER, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 103777.
3' X 5' HTCO HANDHOLE	3' X 5' X 4'D REINFORCED CONCRETE HANDHOLE WITH TWO PIECE POLYMER COVERS, SIDE ENTRY KNOCKOUTS, CONCRETE COLLAR AND GROUND ROD, PROVIDED IN ACCORDANCE WITH HTCO STANDARD DRAWING NO. 180045.
4' X 6' HTCO MANHOLE	4' X 6'-6" REINFORCED CONCRETE MANHOLE WITH TRAFFIC RATED FRAME AND COVER, AND GROUND ROD, PROVIDED IN ACCORDANCE WITH GTE STANDARD DRAWING NO. 180014.
5' x 10.5' HTCO MANHOLE	5' X 10'-6" REINFORCED CONCRETE MANHOLE WITH TRAFFIC RATED FRAME AND COVER, AND GROUND ROD, PROVIDED IN ACCORDANCE WITH HTCO STANDARD DRAWING NO. 34108.
4' X 6' CATV MANHOLE	4'-0" X 6'-0" REINFORCED CONCRETE MANHOLE WITH TRAFFIC RATED FRAME AND COVER, CABLE RACKS, AND GROUND ROD, SIMILAR TO HTI STANDARD DRAWING NO. 180014, EXCEPT WITH "CATV" INSCRIBED ON COVER.

NOTES FOR CONSTRUCTION

a. THE LOCATION OF OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN PROXIMITY OF UNDERGROUND LINES AND UTILITIES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT UNDER ANY OVERHEAD LINES. THE CONTRACTOR IS TO COMPLY WITH THE DIRECTIONS OF THE STATE OF HAWAII OCCUPATIONAL SAFETY AND HEALTH LAW (DOSH).

b. WHEN TRENCH EXCAVATION IS ADJACENT TO EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.

c. AS REQUIRED BY THE CITY AND COUNTY OF HONOLULU, THE CONTRACTOR SHALL PROVIDE OFF-DUTY POLICE OFFICERS TO CONTROL THE FLOW OF TRAFFIC.

d. WHERE PEDESTRIAN WALKWAYS EXIST, SUCH WALKWAYS SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.

e. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHT-OF-WAYS ARE OTHERWISE PROVIDED FOR SATISFACTORILY.

f. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN BY THE ENGINEER TO EXIST 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 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.

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By Michael Hahn Date 1/13/25

Customer Installations Department
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

APPROVED BY:

Cody Jaramillo Digitally signed by Cody Jaramillo Date: 2025.01.21 11:25:40 -10'00'

HAWAIIAN TELCOM DATE

SPECTRUM OCEANIC 1/14/2025 DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
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PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

ELEC. SYMBOL LIST, CONDUIT & EQUIPMENT SCHEDULE, NOTES FOR CONSTRUCTION

DATE :	DWG. NO.
JANUARY 2025	E-1
SHEET :	
57 OF 80 SHEETS	

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HAWAIIAN ELECTRIC COMPANY NOTES (REV. 08/04/2021)

1. LOCATION OF HAWAIIAN ELECTRIC FACILITIES

THE LOCATION OF HAWAIIAN ELECTRIC'S OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATIONS OF THE FACILITIES AND SHALL EXERCISE PROPER CARE IN EXCAVATING AND WORKING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES AND UTILITY CROSSINGS ARE SHOWN, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS AND CROSSINGS TO VERIFY THE DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HAWAIIAN ELECTRIC'S FACILITIES WHETHER SHOWN OR NOT SHOWN ON THE PLANS.

2. COMPLIANCE WITH HAWAII OCCUPATIONAL SAFETY AND HEALTH LAWS

THE CONTRACTOR SHALL COMPLY WITH THE STATE OF HAWAII'S OCCUPATIONAL SAFETY AND HEALTH LAWS AND REGULATIONS, INCLUDING WITHOUT LIMITATION, THOSE RELATED TO WORKING ON OR NEAR EXPOSED OR ENERGIZED ELECTRICAL LINES AND EQUIPMENT.

3. EXCAVATION CLEARANCE

THE CONTRACTOR SHALL OBTAIN AN EXCAVATION CLEARANCE FROM HAWAIIAN ELECTRIC'S PLANNING AND DESIGN SECTION OF THE TRANSMISSION & DISTRIBUTION ENGINEERING DEPARTMENT (543-5654) LOCATED AT 820 WARD AVENUE, 4TH FLOOR, A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO STARTING CONSTRUCTION.

4. CAUTION!!! ELECTRICAL HAZARD!!!

EXISTING HAWAIIAN ELECTRIC OVERHEAD AND UNDERGROUND LINES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH HAWAIIAN ELECTRIC. ONLY HAWAIIAN ELECTRIC PERSONNEL ARE TO HANDLE THESE ENERGIZED LINES AND ERECT TEMPORARY GUARDS TO PROTECT THESE LINES FROM DAMAGE. CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING HAWAIIAN ELECTRIC FACILITIES, WHICH CAN RESULT IN ELECTROCUTION.

5. OVERHEAD LINES

STATE LAW (OSHA) REQUIRES THAT A WORKER AND THE LONGEST OBJECT HE OR SHE MAY CONTACT CANNOT COME CLOSER THAN A SPECIFIED MINIMUM RADIAL CLEARANCE WHEN WORKING CLOSE TO OR UNDER ANY OVERHEAD LINES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE INFORMED OF AND COMPLY WITH THE LAW.

AT ANY TIME SHOULD THE CONTRACTOR ANTICIPATE THAT HIS WORK WILL RESULT IN THE NEED TO ENCROACH WITHIN THE MINIMUM REQUIRED CLEARANCE AS STATED IN THE LAW, THE CONTRACTOR SHALL NOTIFY HAWAIIAN ELECTRIC AT LEAST THREE (3) MONTHS PRIOR TO THE PLANNED ENCROACHMENT SO THAT, IF FEASIBLE, THE NECESSARY PROTECTIONS (E.G. RELOCATE OR DE-ENERGIZE HAWAIIAN ELECTRIC LINES) CAN BE INVESTIGATED. HAWAIIAN ELECTRIC MAY ALSO BE ABLE TO BLANKET ITS DISTRIBUTION (12KV AND BELOW) LINES TO PROVIDE A VISUAL AID PREVENTING ACCIDENTAL CONTACT. HAWAIIAN ELECTRIC'S COST OF SAFEGUARDING OR IDENTIFYING ITS LINES WILL BE CHARGED TO THE CONTRACTOR.

CONTACT HAWAIIAN ELECTRIC'S CUSTOMER RELATIONS AT 543-7070 FOR ASSISTANCE IN IDENTIFYING AND SAFEGUARDING OVERHEAD POWER LINES.

6. POLE BRACING

a) CONTRACTOR SHALL NOT EXCAVATE WITHIN 10 FEET OF HAWAIIAN ELECTRIC'S UTILITY POLES OR ANY ANCHOR SYSTEM SUPPORTING THE UTILITY POLE. IF CONTRACTOR MUST EXCAVATE AN AREA MORE THAN 12 INCHES DEEP BY 12 INCHES WIDE, AND CLOSER THAN 10 FEET FROM A UTILITY POLE OR ITS ANCHOR SYSTEM, EXCEPT WHEN EXCAVATING FOR RISER IN A SINGLE TRENCH NOT WIDER THAN 12 INCHES AND NOT DEEPER THAN 3 FEET, CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING, SUPPORTING, SECURING AND TAKING ALL PRECAUTIONS TO PREVENT DAMAGE TO OR LEANING OF EXISTING POLES. BEFORE COMMENCING SUCH EXCAVATION, CONTRACTOR MUST NOTIFY HAWAIIAN ELECTRIC WHICH MAY LEAD TO IMPLEMENTING POLE BRACING REQUIREMENTS. HAWAIIAN ELECTRIC REQUIRES A MINIMUM OF TEN (10) WORKING DAYS TO CONDUCT THE REVIEW OF CONTRACTOR'S SUBMITTAL. CONTRACTOR SHALL SUBMIT ITS BRACING CALCULATIONS AND DRAWINGS, PREPARED AND STAMPED BY A LICENSED STRUCTURAL ENGINEER, TO HAWAIIAN ELECTRIC'S CUSTOMER RELATIONS (543-7070) FOR REVIEW. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND REMOVAL OF THE TEMPORARY POLE BRACING SYSTEM, AS WELL AS ALL COSTS INCURRED BY HAWAIIAN ELECTRIC TO REVIEW CONTRACTOR'S DRAWINGS AND TO REPAIR OR STRAIGHTEN POLES IMPACTED BY CONTRACTOR'S ACTIVITIES, INCLUDING RESPONSE AND RESTORATION COSTS INCURRED BY HAWAIIAN ELECTRIC ARISING OUT OF OR RELATED TO OUTAGES CAUSED BY CONTRACTOR'S FAILURE TO MEET THE FOREGOING REQUIREMENTS. HAWAIIAN ELECTRIC'S RECEIPT OF POLE BRACING CALCULATION OR DRAWING SUBMITTALS OF ANY CONTRACTOR, INCLUDING WORK PROCEDURE, SHALL NOT RELIEVE CONTRACTOR FROM ANY LIABILITY RESULTING FROM CONTRACTOR'S EXCAVATION NEAR OR AROUND HAWAIIAN ELECTRIC'S UTILITY POLES.

b) HAWAIIAN ELECTRIC MAY PROVIDE TO THE CUSTOMER INFORMATION RELATED TO POLE BRACING, INCLUDING CALCULATIONS AND OTHER BASIC ENGINEERING. HOWEVER, HAWAIIAN ELECTRIC PROVIDES THIS INFORMATION FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT WARRANT ANY OF THE INFORMATION PROVIDED TO CUSTOMER. HAWAIIAN ELECTRIC HEREBY DISCLAIMS ANY LIABILITY ASSOCIATED WITH THE CUSTOMER'S USE OF INFORMATION PROVIDED TO THE CUSTOMER FROM HAWAIIAN ELECTRIC. IT IS THE CUSTOMER'S DUTY TO OBTAIN ENGINEERING FROM ITS OWN ENGINEER OR CONTRACTOR IN ORDER TO BRACE POLES AND THE USE OF HAWAIIAN ELECTRIC'S INFORMATION DOES NOT EXCUSE THE CUSTOMER FROM PERFORMING ITS OWN EVALUATION OF THE BRACING NEEDS. SHOULD THE CUSTOMER INSTALL BRACING AT ANY POLE LOCATION, CUSTOMER SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS HAWAIIAN ELECTRIC FROM ANY THIRD-PARTY CLAIMS ASSOCIATED WITH THE CUSTOMER'S BRACING OF A POLE. SHOULD THE WORK CUSTOMER PERFORM AT OR NEAR THE POLE LOCATION COMPROMISE THE POLE OR ITS SURROUNDINGS IN ANY WAY, CUSTOMER SHALL RESTORE OR REPLACE THE POLE SO THAT IT IS NO LONGER COMPROMISED.

7. UNDERGROUND LINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND LINES. HAWAIIAN ELECTRIC'S EXISTING ELECTRICAL CABLES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION. ONLY HAWAIIAN ELECTRIC PERSONNEL ARE TO BREAK INTO EXISTING HAWAIIAN ELECTRIC FACILITIES, HANDLE THESE CABLES, AND ERECT TEMPORARY GUARDS TO PROTECT THESE CABLES FROM DAMAGE. THE COST OF HAWAIIAN ELECTRIC'S ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF ITS UNDERGROUND LINES WILL BE CHARGED TO THE CONTRACTOR. FOR ASSISTANCE/COORDINATION IN PROVIDING PROPER SUPPORT AND PROTECTION OF THESE LINES, THE CONTRACTOR SHALL CALL HAWAIIAN ELECTRIC'S CUSTOMER RELATIONS AT 543-7070 A MINIMUM OF TEN (10) WORKING DAYS IN ADVANCE.

SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HAWAIIAN ELECTRIC'S 138KV OR 46KV UNDERGROUND LINES (SEE HAWAIIAN ELECTRIC INSTRUCTIONS TO CONSULTANTS/CONTRACTORS ON "EXCAVATION NEAR HAWAIIAN ELECTRIC'S UNDERGROUND 138KV AND/OR 46KV LINES" FOR DETAILED REQUIREMENTS).

FOR VERIFICATION OF UNDERGROUND LINES, THE CONTRACTOR SHALL CALL THE HAWAII ONE CALL CENTER AT 866-423-7287 MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE.

8. UNDERGROUND FUEL PIPELINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF HAWAIIAN ELECTRIC'S UNDERGROUND FUEL OIL PIPELINES. SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HAWAIIAN ELECTRIC'S UNDERGROUND FUEL OIL PIPELINES (SEE HAWAIIAN ELECTRIC'S SPECIFIC FUEL PIPELINE "GUIDELINES" TO CONSULTANTS/CONTRACTORS ON EXCAVATION NEAR HAWAIIAN ELECTRIC'S UNDERGROUND FUEL PIPELINES FOR DETAILED REQUIREMENTS).

9. EXCAVATIONS

WHEN TRENCH EXCAVATION IS ADJACENT TO OR BENEATH HAWAIIAN ELECTRIC'S EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR:

a) ARRANGING FOR HAWAIIAN ELECTRIC STANDBY PERSONNEL TO OBSERVE WORK AT CONTRACTOR'S COST.
b) SHEETING, BRACING, OR OTHERWISE SUPPORTING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE AND TO PREVENT POSSIBLE SLIDES, CAVE-INS, AND SETTLEMENTS.
c) PROPERLY SUPPORTING EXISTING STRUCTURES OR FACILITIES WITH BEAMS, STRUTS, UNDER-PINNINGS, OR OTHER NECESSARY METHODS TO FULLY PROTECT IT FROM DAMAGE.
d) BACKFILLING WITH PROPER BACKFILL MATERIAL INCLUDING SPECIAL THERMAL BACKFILL WHERE EXISTING (REFER TO ENGINEERING DIVISION FOR THERMAL BACKFILL SPECIFICATIONS).

10. RELOCATION OF HAWAIIAN ELECTRIC FACILITIES

ANY WORK REQUIRED TO RELOCATE OR MODIFY HAWAIIAN ELECTRIC FACILITIES SHALL BE DONE BY HAWAIIAN ELECTRIC, OR BY THE CONTRACTOR UNDER HAWAIIAN ELECTRIC'S SUPERVISION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION, AND SHALL PROVIDE NECESSARY SUPPORT FOR HAWAIIAN ELECTRIC'S WORK, WHICH MAY INCLUDE, BUT NOT BE LIMITED TO, STAKING OF POLE/ANCHOR LOCATIONS, IDENTIFYING RIGHT OF WAY AND PROPERTY LINES, EXCAVATION AND BACKFILL, PERMITS AND TRAFFIC CONTROL, BARRICADING, AND RESTORATION OF PAVEMENT, SIDEWALKS, AND OTHER FACILITIES.

ALL COSTS ASSOCIATED WITH ANY RELOCATION OR MODIFICATION (EITHER TEMPORARY OR PERMANENT) FOR THE CONVENIENCE OF THE CONTRACTOR, OR TO ENABLE THE CONTRACTOR TO PERFORM HIS WORK IN A SAFE AND EXPEDITIOUS MANNER IN FULFILLING HIS CONTRACT OBLIGATIONS SHALL BE BORNE BY THE CONTRACTOR.

11. CONFLICTS

ANY REDESIGN OR RELOCATION OF HAWAIIAN ELECTRIC'S FACILITIES NOT SHOWN ON THE PLANS MAY BE CAUSE FOR LENGTHY DELAYS. THE CONTRACTOR ACKNOWLEDGES THAT HAWAIIAN ELECTRIC IS NOT RESPONSIBLE FOR ANY DELAY OR DAMAGE THAT MAY ARISE AS A RESULT OF ANY CONFLICTS DISCOVERED OR IDENTIFIED WITH RESPECT TO THE LOCATION OR CONSTRUCTION OF HAWAIIAN ELECTRIC'S ELECTRICAL FACILITIES IN THE FIELD, REGARDLESS OF WHETHER THE CONTRACTOR HAS MET THE REQUESTED MINIMUM ADVANCE NOTICES. IN ORDER TO MINIMIZE ANY DELAY OR IMPACT ARISING FROM SUCH CONFLICTS, HAWAIIAN ELECTRIC SHOULD BE NOTIFIED IMMEDIATELY UPON DISCOVERY OR IDENTIFICATION OF SUCH CONFLICT.

12. DAMAGE TO HAWAIIAN ELECTRIC FACILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL HAWAIIAN ELECTRIC SURFACE AND SUBSURFACE UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HAWAIIAN ELECTRIC'S FACILITIES AS A RESULT OF HIS OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY REPORT SUCH DAMAGES OR ANY HAZARDOUS CONDITIONS RELATED TO HAWAIIAN ELECTRIC'S LINES TO HAWAIIAN ELECTRIC'S TROUBLE DISPATCHER AT 548-7961. REPAIR WORK SHALL BE DONE BY HAWAIIAN ELECTRIC OR BY THE CONTRACTOR UNDER HAWAIIAN ELECTRIC'S SUPERVISION. COSTS FOR DAMAGES TO HAWAIIAN ELECTRIC'S FACILITIES SHALL BE BORNE BY THE CONTRACTOR.

IN CASE OF DAMAGE OR SUSPECTED DAMAGE TO HAWAIIAN ELECTRIC'S FUEL PIPELINE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY HAWAIIAN ELECTRIC'S SECURITY COMMAND CENTER AT 543-7685 (A 24-HOUR NUMBER) SO HAWAIIAN ELECTRIC PERSONNEL CAN SECURE THE DAMAGED SECTION AND REPORT ANY OIL SPILLS TO THE PROPER AUTHORITIES. ALL COSTS ASSOCIATED WITH THE DAMAGE, REPAIR, AND OIL SPILL CLEANUP SHALL BE BORNE BY THE CONTRACTOR.

13. HAWAIIAN ELECTRIC STAND-BY PERSONNEL

THE CONTRACTOR MAY REQUEST HAWAIIAN ELECTRIC TO PROVIDE AN INSPECTOR TO STAND-BY DURING CONSTRUCTION NEAR HAWAIIAN ELECTRIC'S FACILITIES. THE COST OF SUCH INSPECTION WILL BE CHARGED TO THE CONTRACTOR.

THE CONTRACTOR SHALL CALL HAWAIIAN ELECTRIC'S CUSTOMER RELATIONS AT 543-7070 A MINIMUM OF THREE (3) MONTHS IN ADVANCE TO ARRANGE FOR HAWAIIAN ELECTRIC STAND-BY PERSONNEL.

14. CLEARANCES

THE FOLLOWING CLEARANCES SHALL BE MAINTAINED BETWEEN HAWAIIAN ELECTRIC'S DUCTLINE AND ALL ADJACENT STRUCTURES (CHARTED AND UNCHARTED) IN THE TRENCH:

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By Michael Hahn Date 1/13/25

Customer Installations Department
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

HAWAIIAN ELECTRIC COMPANY NOTES 1

DATE :	DWG. NO.
JANUARY 2025	E-2
SHEET :	
58 OF 80 SHEETS	

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GUIDELINES FOR MINIMUM HORIZONTAL (PARALLEL) CLEARANCES BETWEEN HAWAIIAN ELECTRIC AND OTHER UNDERGROUND UTILITIES

UNDERGROUND UTILITY	HAWAIIAN ELECTRIC DIRECT BURIED CABLE	HAWAIIAN ELECTRIC DIRECT BURIED IN CONDUIT (NO CONCRETE ENCASEMENT)	HAWAIIAN ELECTRIC 3" (MINIMUM) CONCRETE ENCASEMENT	APPLICABLE NOTES:
HAWAIIAN ELECTRIC DB CONDUITS	12"	3"	0"	
HAWAIIAN ELECTRIC 3" ENCASEMENT	0"	0"	0"	
TELEPHONE/CATV DB	12"	12"	6"	
TELEPHONE/CATV DB DUCTS	12"	12"	6"	
TELEPHONE/CATV 3" ENCASEMENT	0"	0"	0"	5
TRAFFIC SIGNAL	12"	12"	12"	
WATER DB (BWS OWNED)	36"	36"	36"	1, 4
CUSTOMER OWNED WATER SERVICE LATERALS	12"	12"	12"	
WATER (CONCRETE JACKETED) (BWS OWNED)	36"	36"	36"	1, 4
GAS DB	12"	12"	12"	1
GAS (CONCRETE JACKETED)	12"	12"	12"	1
SEWER DB	36"	36"	36"	1, 2
SEWER (CONCRETE JACKETED)	36"	36"	36"	1, 2
DRAIN	12"	12"	12"	1
FUEL PIPELINES				3

NOTES:

1. WHERE SPACE IS AVAILABLE, PARALLEL CLEARANCE TO OTHER UTILITIES, OR FOREIGN STRUCTURES OTHER THAN COMMUNICATION OR TRAFFIC SIGNAL SHALL BE 36"
2. IF 36" CLEARANCE CANNOT BE MET:
   - IF CLEARANCE IS LESS THAN 12", JACKET SEWER LINE WITH REINFORCED CONCRETE (PER HAWAIIAN ELECTRIC'S STD. 30-1030) FOR A DISTANCE OF 5' PLUS PIPE DIAMETER.
   - IF CLEARANCE IS BETWEEN 12" AND 36", JACKET SEWER LINE WITH PLAIN CONCRETE.
3. ALL FUEL PIPELINE CROSSINGS SHALL BE REVIEWED AND APPROVED BY THE COMPANY THAT OWNS AND MAINTAINS IT.
4. 5 FEET CLEAR TO WATER MAINS 16" OR LARGER.
5. FOR SITUATIONS WITH 0" MINIMUM SEPARATION, A 6" SEPARATION IS RECOMMENDED.
6. CLEARANCES MEASURED FROM OUTER EDGES OR DIAMETERS OF UTILITIES. WHENEVER CONCRETE JACKETS ARE INVOLVED, CLEARANCES SHALL BE TOTAL CLEAR DISTANCE BETWEEN THE CONCRETE JACKET AND UTILITY CONCERNED.

GUIDELINES FOR MINIMUM VERTICAL (CROSSING) CLEARANCES HAWAIIAN ELECTRIC AND OTHER UNDERGROUND UTILITIES

UNDERGROUND UTILITY	HAWAIIAN ELECTRIC DIRECT BURIED CABLE	HAWAIIAN ELECTRIC DIRECT BURIED IN CONDUIT (NO CONCRETE ENCASEMENT)	HAWAIIAN ELECTRIC 3" (MINIMUM) CONCRETE ENCASEMENT	APPLICABLE NOTES:
HAWAIIAN ELECTRIC DB CONDUITS	6"	3"	0"	
HAWAIIAN ELECTRIC 3" ENCASEMENT	0"	0"	0"	
TELEPHONE/CATV DB	12"	12"	6"	
TELEPHONE/CATV DB DUCTS	12"	12"	6"	
TELEPHONE/CATV 3" ENCASEMENT	0"	0"	0"	3
TRAFFIC SIGNAL	12"	12"	6"	
WATER DB (BWS OWNED)	12"	12"	12"	5
CUSTOMER OWNED WATER SERVICE LATERALS	6"	6"	6"	
WATER (CONCRETE JACKETED) (BWS OWNED)	12"	12"	12"	5
GAS DB	12"	12"	12"	
GAS (CONCRETE JACKETED)	12"	12"	12"	
SEWER DB	24"	24"	24"	1
SEWER (CONCRETE JACKETED)	24"	24"	24"	1
DRAIN	12"	12"	6"	
FUEL PIPELINES				2

NOTES:

1. IF CLEARANCE CANNOT BE MET:
   - IF CLEARANCE IS LESS THAN 12", JACKET SEWER LINE WITH REINFORCED CONCRETE (PER HAWAIIAN ELECTRIC'S STD. 30-1030) FOR A DISTANCE OF 5' PLUS PIPE DIAMETER.
   - IF CLEARANCE IS BETWEEN 12" AND 24", JACKET SEWER LINE WITH PLAIN CONCRETE.
2. ALL FUEL PIPELINE CROSSINGS SHALL BE REVIEWED AND APPROVED BY THE COMPANY THAT OWNS AND MAINTAINS IT.
3. FOR SITUATIONS WITH 0" MINIMUM SEPARATION, A 6" SEPARATION IS RECOMMENDED.
4. CLEARANCES MEASURED FROM OUTER EDGES OR DIAMETERS OF UTILITIES. WHENEVER CONCRETE JACKETS ARE INVOLVED, CLEARANCES SHALL BE TOTAL CLEAR DISTANCE BETWEEN THE CONCRETE JACKET AND UTILITY CONCERNED.
5. 36" CLEARANCE IS REQUIRED FOR TRENCHLESS INSTALLATION WORK.

THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER & HAWAIIAN ELECTRIC OF ANY HEAT SOURCES (POWER CABLE DUCT BANK, STEAMLINE, ETC.) ENCOUNTERED THAT ARE NOT PROPERLY IDENTIFIED ON THE DRAWING.

15. INDEMNITY

THE CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS HAWAIIAN ELECTRIC FROM AND AGAINST ALL LOSSES, DAMAGES, CLAIMS, AND ACTIONS, INCLUDING BUT NOT LIMITED TO REASONABLE ATTORNEY'S FEES AND COSTS BASED UPON OR ARISING OUT OF DAMAGE TO PROPERTY OR INJURIES TO PERSONS, OR OTHER TORTIOUS ACTS CAUSED OR CONTRIBUTED TO BY CONTRACTOR OR ANYONE ACTING UNDER ITS DIRECTION OR CONTROL OR ON ITS BEHALF; PROVIDED CONTRACTOR'S INDEMNITY SHALL NOT BE APPLICABLE TO ANY LIABILITY BASED UPON THE SOLE NEGLIGENCE OF HAWAIIAN ELECTRIC.

ADDITIONAL NOTES WHEN WORK INVOLVES CONSTRUCTION OF HAWAIIAN ELECTRIC FACILITIES

16. SCHEDULE

CONTRACTOR SHALL FURNISH HIS CONSTRUCTION SCHEDULE SIX (6) MONTHS PRIOR TO STARTING WORK ON HAWAIIAN ELECTRIC FACILITIES. CONTRACTOR SHALL GIVE HAWAIIAN ELECTRIC, IN WRITING, THREE (3) MONTHS NOTICE TO PROCEED WITH HAWAIIAN ELECTRIC'S PORTION OF WORK.

17. AUTHORITY

ALL CONSTRUCTION, RESTORATION WORK, AND INSPECTION SHALL BE SUBJECT TO WHICHEVER GOVERNMENTAL AGENCY HAS AUTHORITY OVER THE WORK.

18. SPECIFICATIONS

CONSTRUCTION OF HAWAIIAN ELECTRIC'S UNDERGROUND FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISIONS OF HAWAIIAN ELECTRIC SPECIFICATIONS CS7001, CS7003, CS7202, CS9301, AND CS9401 AND APPLICABLE HAWAIIAN ELECTRIC STANDARDS.

19. CONSTRUCTION

CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES TO PROPERLY PERFORM AND FULLY COMPLETE ALL WORK SHOWN ON THE CONTRACT, DRAWINGS, AND SPECIFICATIONS. ALL MATERIALS SHALL BE NEW AND MANUFACTURED IN THE UNITED STATES OF AMERICA. ALL MANHOLE, HANDHOLE, AND DUCTLINE INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY HAWAIIAN ELECTRIC PRIOR TO EXCAVATION AND PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL NOTIFY HAWAIIAN ELECTRIC'S INSPECTION GROUP AT 543-2567 AT LEAST FIVE (5) WORKING DAYS PRIOR TO INSTALLING FACILITIES OR PLACING CONCRETE.

CONTRACTOR TO COORDINATE WORK TO BREAK INTO HAWAIIAN ELECTRIC'S EXISTING ELECTRICAL FACILITIES WITH HAWAIIAN ELECTRIC'S INSPECTION GROUP AT 543-2567 AT LEAST TEN (10) WORKING DAYS IN ADVANCE.

20. STAKEOUT

THE CONTRACTOR SHALL ARRANGE FOR TONEOUTS OF ALL UNDERGROUND FACILITIES AND SHALL STAKEOUT ALL PROPOSED HAWAIIAN ELECTRIC FACILITIES WITHIN THE PROJECT AREA SO AS TO NOT CONFLICT WITH ANY UTILITY (EXISTING OR PROPOSED) AND ANY PROPOSED CONSTRUCTION OR IMPROVEMENT WORK FOR VERIFICATION BY HAWAIIAN ELECTRIC BEFORE PROCEEDING WITH HAWAIIAN ELECTRIC WORK.

21. DUCTLINES

ALL DUCTLINE INSTALLATIONS SHALL BE PVC SCHEDULE 40 ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED. ALL COMPLETED DUCTLINES SHALL BE MANDREL TESTED BY THE CONTRACTOR IN THE PRESENCE OF HAWAIIAN ELECTRIC'S INSPECTOR USING HAWAIIAN ELECTRIC'S STANDARD PRACTICE. THE CONTRACTOR SHALL INSTALL 1800# TENSILE STRENGTH MULETAPE PULL LINE IN ALL COMPLETED DUCTLINES AFTER MANDREL TESTING IS COMPLETE.

22. JOINT POLE REMOVAL

THE LAST JOINT POLE OCCUPANT OFF THE POLES SHALL REMOVE THE POLES.

23. AS-BUILT PLANS

THE CONTRACTOR SHALL PROVIDE HAWAIIAN ELECTRIC WITH A SET OF ELECTRONIC AND HARD COPY PLANS OF EACH SHEET SHOWING THE OFFSETS, STATIONING, AND VERTICAL ELEVATION OF THE DUCT LINE(S) CONSTRUCTED.

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By Michael Hahn Date 1/13/25

Customer Installations Department
Hawaiian Electric

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

HAWAIIAN ELECTRIC COMPANY NOTES 2

DATE : JANUARY 2025

SHEET : 59 OF 80 SHEETS

DWG. NO. E-3

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HAWAIIAN TELCOM (HTCO) NOTES:

1. THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES AND PERMITS AND SHALL GIVE ALL NOTICES NECESSARY AND INCIDENT TO THE DUE AND LAWFUL PROSECUTION OF THE WORK.

2. THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT AND TONING REQUEST FROM HAWAIIAN TELCOM'S EXCAVATION PERMIT SECTION, LOCATED AT 1177 BISHOP STREET, TWO WEEKS PRIOR TO THE START OF CONSTRUCTION. HOURS OF BUSINESS ARE 8:00 A.M. TO 11:00 A.M. AND 12:00 P.M. TO 3:00 P.M. MONDAY THROUGH FRIDAY, EXCEPT HOLIDAYS.

3. PRIOR TO THE EXCAVATION OF THE DUCTLINE, THE CONTRACTOR SHALL REQUEST HAWAIIAN TELCOM TO LOCATE EXISTING DUCTLINE WHEREVER REQUIRED. FOR UNDERGROUND CABLE LOCATING AND MARKING, FIVE (5) WORKING DAYS ADVANCE NOTICE IS REQUIRED. THREE (3) WORKING DAYS ADVANCE NOTICE IS REQUIRED FOR ANY INSPECTION BY A DESIGNATED REPRESENTATIVE.

4. THE LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION AND SHALL MAINTAIN PROPER CLEARANCES WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF HAWAIIAN TELCOM FACILITIES. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND SHALL BE LIABLE FOR ANY DAMAGES TO HAWAIIAN TELCOM FACILITIES. ANY DAMAGES SHALL BE REPORTED IMMEDIATELY TO HAWAIIAN TELCOM'S REPAIR SECTION AT #611 (24 HOURS) OR TO THE EXCAVATION PERMIT SECTION AT 546-7746 (NORMAL WORKING HOURS, MONDAY THROUGH FRIDAY, EXCEPT HOLIDAYS). AS A RESULT OF HIS OPERATIONS, ADJUSTMENTS TO THE NEW DUCTLINE ALIGNMENT, IF REQUIRED, SHALL BE MADE TO PROVIDE THE REQUIRED CLEARANCES.

5. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE EXISTING CABLES OR DUCTS. A HAWAIIAN TELCOM INSPECTOR OR DESIGNATED REPRESENTATIVE IS REQUIRED TO BE AT ANY JOB SITE WHENEVER THERE WILL BE A BREAKAGE INTO OR ENTRY INTO ANY STRUCTURE THAT CONTAIN HAWAIIAN TELCOM FACILITIES. TEMPORARY CABLE AND DUCT SUPPORTS SHALL BE PROVIDED WHEREVER NECESSARY.

6. THE CONTRACTOR SHALL NOTIFY HAWAIIAN TELCOM'S INSPECTOR OR DESIGNATED REPRESENTATIVE A MINIMUM OF 72 HOURS PRIOR TO EXCAVATION, BRACING, OR BACKFILLING OF HAWAIIAN TELCOM'S STRUCTURES OR FACILITIES.

7. ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE "HAWAIIAN TELCOM STANDARD SPECIFICATIONS FOR PLACING TELEPHONE SYSTEMS" DATED JANUARY 2007, ALL SUBSEQUENT AMENDMENTS AND ADDITIONS, AND ALL OTHER PERTINENT STANDARDS FOR TELEPHONE CONSTRUCTION. CONTRACTOR SHALL FAMILIARIZE HIS PERSONNEL BY OBTAINING APPLICABLE SPECIFICATIONS.

8. WHEN EXCAVATION IS ADJACENT TO OR BENEATH HAWAIIAN TELCOM'S EXISTING STRUCTURES \OR FACILITIES, THE CONTRACTOR SHALL:

   A. SHEET AND/OR BRACE THE EXCAVATION TO PREVENT SLIDES, CAVE-INS, OR SETTLEMENTS TO ENSURE NO MOVEMENT TO HAWAIIAN TELCOM'S STRUCTURES OR FACILITIES.

   B. PROTECT EXISTING STRUCTURES AND/OR FACILITIES WITH BEAMS, STRUTS, OR UNDERPINNING WHILE EXCAVATING BENEATH THEM TO ENSURE NO MOVEMENT TO HAWAIIAN TELCOM'S STRUCTURES OR FACILITIES.

9. THE CONTRACTOR SHALL BRACE ALL POLES OR LIGHT STANDARDS NEAR THE NEW DUCTLINE, MANHOLE, OR HANDHOLE DURING HIS OPERATIONS.

10. THE CONTRACTOR SHALL SAW-CUT AC. PAVEMENT AND CONCRETE GUTTER WHEREVER NEW MANHOLES, HANDHOLES, OR DUCTLINES ARE TO BE PLACED AND SHALL RESTORE TO EXISTING CONDITION OR BETTER.

11. THE CONTRACTOR SHALL COMPLY WITH THE POLICY ADOPTED BY THE DEPARTMENT OF PLANNING AND PERMITTING, CITY AND COUNTY OF HONOLULU, CONCERNING THE REPLACEMENT OF CONCRETE SIDEWALKS AFTER EXCAVATION WORK.

12. 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 LOCATIONS AND DEPTHS 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.

13. WHEREVER CONNECTIONS TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES PRIOR TO EXCAVATION OF THE MAIN TRENCHES TO VERIFY THEIR LOCATIONS AND DEPTHS.

14. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE COST FOR SUPPLEMENTARY MEASURES, WHICH WILL BE REQUIRED BY THE CITY AND COUNTY, SHALL BE BORNE BY THE CONTRACTOR.

15. THE CONTRACTOR SHALL PUMP ALL MANHOLES DRY DURING FINAL INSPECTION.

16. THE CONTRACTOR SHALL NOTIFY HAWAIIAN TELCOM INSPECTOR 24 HOURS PRIOR TO THE POURING OF CONCRETE OR BACKFILLING.

17. WHEN CONNECTING TO MANHOLE WALLS, ALL EXISTING REINFORCING BARS SHALL BE LEFT INTACT. DUCTS SHALL BE ADJUSTED IN THE FIELD IN ORDER TO CLEAR REINFORCING

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT ALL REQUIRED LINES AND GRADES AND SHALL PRESERVE ALL BENCH MARKS AND WORKING POINTS NECESSARY TO LAY OUT THE WORK CORRECTLY. THE NEW DUCTLINE SHALL BE ADJUSTED BY THE CONTRACTOR TO SUIT THE EXISTING CONDITIONS AND THE DETAILS AS DESCRIBED IN THE PLANS.

19. MINIMUM CONCRETE STRENGTH SHALL BE:
    -FOR DUCTLINE 2500 PSI AT 28 DAYS
    -FOR MANHOLE 3000 PSI AT 28 DAYS OR AS SPECIFIED IN DESIGN NOTES

20. BENDS IN THE DUCT ALIGNMENT, DUE TO CHANGES IN GRADE SHALL HAVE A MINIMUM RADIUS OF 25 FEET. ALL 90 DEGREE C-BENDS AT A POLE OR AT THE BUILDING FLOOR SLAB PENETRATION, SHALL HAVE A BEND RADIUS OF TEN TIMES THE DIAMETER OF THE DUCT OR GREATER.

21. AFTER DUCTLINE HAS BEEN COMPLETED, A MANDREL WITH A SQUARE FRONT NOT LESS THAN 12" LONG AND HAVING A DIAMETER OF 1/4" LESS THAN THE INSIDE DIAMETER OF THE DUCT, SHALL BE PULLED THROUGH EACH DUCT AFTER WHICH A BRUSH WITH STIFF BRISTLES SHALL BE PULLED THROUGH TO MAKE CERTAIN THAT NO PARTICLES OF EARTH, SAND, OR GRAVEL HAVE BEEN LEFT INSIDE. DUCTS SHALL BE COMPLETELY DRY AND CLEAN.

22. ALL DUCTS AND CONDUITS SHALL HAVE AN 1800# POLYESTER MULE-TAPE (NEPTCO, WP1800P, HAWAIIAN TELCOM MATERIAL CODE NO. 571154) INSTALLED THROUGHOUT ITS ENTIRE LENGTH. ALL DUCTS SHALL BE CAPPED TO PREVENT ENTRY OF FOREIGN MATERIAL DURING CONSTRUCTION AND AT THE COMPLETION OF INSTALLATION.

APPROVED BY
Cody Jaramillo
Digitally signed by Cody Jaramillo
Date: 2025.01.21 11:26:09 -10'00'
HAWAIIAN TELCOM DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

HAWAIIAN TELCOM (HTCO) NOTES

DATE :
JANUARY 2025
SHEET :
60 OF 80 SHEETS

DWG. NO.
E-4

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SPECTRUM OCEANIC (CATV) NOTES:

1. THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES AND PERMITS AND SHALL GIVE ALL NOTICES NECESSARY AND INCIDENT TO THE DUE AND LAWFUL PROSECUTION OF THE WORK.

2. THE LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THESE UTILITIES AS A RESULT OF HIS OPERATIONS. ADJUSTMENTS TO THE NEW DUCTLINE ALIGNMENT, IF REQUIRED, SHALL BE MADE TO PROVIDE THE REQUIRED CLEARANCES.

3. THE CONTRACTOR SHALL BRACE ALL POLES OR LIGHT STANDARDS NEAR THE NEW DUCTLINE, MANHOLE OR HANDHOLE DURING ITS OPERATIONS.

4. THE CONTRACTOR SHALL SAW-CUT A.C. PAVEMENT, CONCRETE GUTTER, AND CONCRETE SIDEWALK WHEREVER NEW MANHOLES, HANDHOLES, PULLBOXES OR DUCTLINES ARE TO BE PLACED AND SHALL RESTORE TO EXISTING CONDITION OR BETTER.

5. 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 LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREAS. 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.

6. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE COST FOR SUPPLEMENTARY MEASURES, WHICH WILL BE REQUIRED BY THE CITY AND COUNTY, SHALL BE BORNE BY THE CONTRACTOR.

7. PRIOR TO THE EXCAVATION OF THE DUCTLINE, THE CONTRACTOR SHALL REQUEST SPECTRUM OCEANIC TO LOCATE EXISTING DUCTLINE WHEREVER REQUIRED.

8. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE EXISTING CABLES OR DUCTS. ANY WORK INVOLVING EXISTING CABLES OR DUCTS SHALL BE DONE IN THE PRESENCE OF THE SPECTRUM OCEANIC'S INSPECTOR OR HIS REPRESENTATIVE. TEMPORARY CABLE AND DUCT SUPPORT SHALL BE PROVIDED WHEREVER NECESSARY.

9. THE CONTRACTOR SHALL NOTIFY THE SPECTRUM OCEANIC INSPECTOR 72 HOURS PRIOR TO THE START OF WORK NN CATV INFRASTRUCTURE, POURING CONCRETE, OR BACKFILLING. SPECTRUM OCEANIC'S INSPECTOR(S): PERRY SAMUELU AT 387-2496 OR PAUL CASPILLO AT 479-1637.

10. WHEREVER CONNECTIONS TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES PRIOR TO EXCAVATION OF THE MAIN TRENCHES TO VERIFY THEIR LOCATIONS AND DEPTHS.

11. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND FURNISH ALL LABOR AND EQUIPMENT NECESSARY TO INSTALL THE DUCTLINE IN PLACE COMPLETE.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT ALL REQUIRED LINES AND GRADES AND SHALL PRESERVE ALL BENCH MARKS AND WORKING POINTS NECESSARY TO LAY OUT THE WORK CORRECTLY. THE NEW DUCTLINE SHALL BE ADJUSTED BY THE CONTRACTOR TO SUIT THE EXISTING CONDITIONS AND THE DETAILS AS DESCRIBED IN THE PLANS.

13. THE CONTRACTOR, AT HIS OWN EXPENSES, SHALL KEEP THE PROJECT AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE OF HAWAII, DEPARTMENT OF HEALTH.

14. THE LOCATION F CATV FACILITIES SHOWN ON PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AS TO ITS ACTUAL FIXED LOCATION. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN CLOSE PROXIMITY OF CATV FACILITIES.

15. THE CONTRACTOR SHALL OBTAIN EXCAVATION PERMIT CLEARANCE FROM SPECTRUM OCEANIC'S ENGINEERING SECTION LOCATED AT 200 AKAMAINUI ST., MILILANI TECH PARK.

16. FOR ANY FIELD ASSISTANCE OR VERIFICATION OF CATV FACILITIES, THE CONTRACTOR SHALL CALL SPECTRUM OCEANIC AT 625-2100 AND ASK FOR THE OSP ENGINEERING DEPARTMENT.

17. ANY WORK REQUIRED TO RELOCATE CATV FACILITIES SHALL BE DONE BY SPECTRUM OCEANIC AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION REQUIREMENTS AND ASSOCIATED COSTS.

18. ANY DAMAGE TO SPECTRUM OCEANIC'S FACILITIES SHALL BE REPORTED TO SPECTRUM OCEANIC'S TOC DEPARTMENT AT 625-8169.

19. THE CONTRACTOR SHALL TUNNEL UNDER EXISTING CONCRETE CURB AND GUTTER AS NECESSARY TO EXTEND CONDUIT INTO EXISTING CATV PULLBOX AND INTO THE PROPOSED POWER SUPPLY PULLBOX.

20. ALL EXISTING IMPROVEMENTS THAT ARE DISTURBED DURING THE CONSTRUCTION PHASE SHALL BE RESTORED TO ITS ORIGINAL OR BETTER CONDITION AT NO COST TO THE CITY AND COUNTY IN ACCORDANCE WITH CITY'S STANDARDS.

21. AT LOCATIONS WHERE EXISTING CATV PULLBOX REPLACEMENT IS PROPOSED, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTION NOT TO DAMAGE THE EXISTING CABLES IN THE PULLBOX. ALL DAMAGES TO EXISTING CABLES SHALL BE REPAIRED BY SPECTRUM OCEANIC AND PAID FOR BY THE CONTRACTOR.

22. COORDINATE ALL PENETRATION OF TELEPHONE PULLBOXES WITH HAWAIIAN TELCOM INSPECTOR.

23. SMOOTH FINISH INSIDE WALL OF EXISTING PULLBOXES AND HANDHOLES TO ITS ORIGINAL CONDITION OR BETTER.

24. ALL NEW CONCRETE ENCASED CONDUIT SHALL BE PVC PIPE-SCHEDULE 40. ALL NEW DIRECT-BURIED CONDUIT SHALL BE PVC PIPE-SCHEDULE 80. USE OF ANY OTHER MATERIAL TYPE (GTS, ETC) SHALL BE LIMITED TO MATCHING EXISTING FACILITIES. CONNECTION OF DISSIMILAR MATERIALS TO REQUIRE APPROVAL FROM SPECTRUM OCEANIC'S INSPECTOR AND ENGINEERING DEPT.

25. THE CONTRACTOR SHALL PLACE POLY CORD THROUGHOUT PROJECT, AND SECURE IN MANHOLES, HANDHOLES AND PULLBOXES.

26. FOR 3" CONDUITS OR LARGER, THE CONTRACTOR SHALL INSTALL NEPTCO WP1800 MULETAPE OR APPROVED EQUAL IN ALL DUCTLINES, LEAVE MULETAPE IN PLACE FOR FUTURE USE AS A PULL OR FISH LINE, UNLESS OTHERWISE NOTED. REFERENCE GTE MATERIAL CODE NO. 571154. ALL DUCTS SHALL BE CAPPED TO PREVENT ENTRY OF FOREIGN MATERIAL DURING CONSTRUCTION AND AT COMPLETION OF INSTALLATION. ENDBELLS ARE REQUIRED FOR CONDUITS 2" AND LARGER.

27. PENETRATION INTO PULLBOXES IF NECESSARY TO BE FROM FACTORY INSTALLED OPENING OR FROM BRICKS POSITION. PENETRATION FROM PULLBOX WALLS IS NOT ACCEPTABLE.

28. BENDS IN THE DUCT ALIGNMENT, DUE TO CHANGES IN GRADE SHALL HAVE A MINIMUM RADIUS FF 20-FEET. ALL 90-DEGREE C-BENDS AT A POLE OR AT THE BUILDING FLOOR SLAB PENETRATION, SHALL HAVE A BEND RADIUS OF 10 TIMES THE DIAMETER OF THE DUCT OR GREATER.

29. MINIMUM LENGTH OF CONDUIT USED SHALL NOT BE LESS THAN 5-FEET IN LENGTH. USE OF PARTIAL CONDUIT SECTIONS ALLOWABLE IS AT SPECTRUM OCEANIC'S INSPECTOR(S) DISCRETION.

30. ALL CONDUITS SHALL ENTER THROUGH THE END "SHORT WALL" OF THE PULLBOX. ENTRY SHALL BE AT 90 DEGREES (PERPENDICULAR) TO WALL FACE WITH BENDS NO LESS THAN 12" FROM EXTERIOR WALL.

31. A MINIMUM OF (2) PRECAST RISER SECTIONS MUST BE USED ON ALL 2X4 OR 2X6 PULLBOXES.

32. ALL NEW CONSTRUCTION SHALL UTILIZE CONCRETE PRECAST BASE UNLESS OTHERWISE APPROVED OR SPECIFIED BY SPECTRUM OCEANIC'S INSPECTOR(S).

33. WHEN THREE (3) OR MORE 4" CONDUITS ENTER ONE END WALL OF ANY PULLBOX, ONLY BRICK BASES WILL BE ALLOWED UNLESS OTHERWISE INSTRUCTED/APPROVED BY SPECTRUM OCEANIC'S INSPECTOR(S).

34. TWO MINIMUM LAYERS OF BRICKS TO BE USED LOWER THAN THE LOWEST DUCT ENTERING THE PULLBOX. TOP LAYER OF BRICK TO BE FLUSH WITH TOP OF CONDUIT OR HIGHER.

35. FOR UPGRADE/REPAIRS TO EXISTING PULLBOXES, BRICKS MAY BE USED AND SHALL ALWAYS BE AT LEAST TWO LAYERS LOWER THAN THE LOWEST DUCT ENTERING THE PULLBOX.

36. AT NO TIME SHALL CEMENT MORTAR, WOOD OR ANY OTHER MATERIAL BE USED BETWEEN PRECAST SECTIONS.

37. LEVELING OR RAISING OF BOXES TO GRADE MUST BE DONE:
    A. PRE-CAST BASE(S) - USING GRAVEL LAYER UNDER BASE (TYPE 3B OR EQUIVALENT APPROVED BY SPECTRUM OCEANIC'S INSPECTOR
    B. BRICK BASE(S) - ADJUSTMENTS TO BRICKWORK SECTION. THE PERMANENT INSTALLATION OF WOODEN WEDGES TO ACCOMPLISH THIS PURPOSE WILL NOT BE ACCEPTED.

38. 5/8" COPPER GROUND RODS SHALL BE PLACED IN ALL PULLBOXES UNLESS OTHERWISE DIRECTED BY SPECTRUM OCEANIC. GROUND RODS WILL BE PLACED IN THE CORNER 3" TO 4" FROM THE WALL AND AWAY FROM ANY CONDUIT WITH NO MORE THAN 8" STICKING UP ABOVE GROUND.

39. TRENCHING TO BE BY HAND DIGGING NEAR AND ACROSS EXISTING UTILITY LINES.

40. MINIMUM CLEARANCE BETWEEN STREET LIGHT STAND AND FIRE HYDRANTS SHALL BE THREE FEET.

41. UNDERGROUND UTILITIES SHOWN HEREON IS FOR INFORMATION ONLY. NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INSTALLATION.

42. FOR UNDERGROUND CABLE LOCATING AND MARKING, FIVE WORKING DAYS ADVANCE NOTICE IS REQUIRED. THREE WORKING DAYS ADVANCE NOTICE IS REQUIRED FOR ANY INSPECTION BY A DESIGNATED REPRESENTATIVE. CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE ANY EXISTING CABLES OR DUCTS. SPECTRUM OCEANIC'S INSPECTOR OR DESIGNATED REPRESENTATIVE IS REQUIRED TO BE AT ANY JOB SITE WHEREVER THERE WILL BE A BREAKAGE INTO OR ENTRY INTO ANY STRUCTURE THAT CONTAIN SPECTRUM OCEANIC'S FACILITIES.

43. CONCRETE STRENGTH SHALL BE 3000 PSI IN 28 DAYS.

44. CURING AND BACKFILLING. MAINTAIN CONCRETE IN A MOIST CONDITION FOR 24 HOURS MINIMUM FOR 3,000 PSI AND 48 HOURS MINIMUM FOR 2,500 PSI BEFORE COMPACTED BACKFILLING; 72 HOURS MINIMUM BEFORE PERMITTING MOTOR TRAFFIC LOAD ON DUCTLINE CURING METHOD SHALL MEET SPECTRUM OCEANIC'S INSPECTOR'S APPROVAL.

45. INSTALL 4-MIL. THICK ORANGE COLOR WARNING TAPE 3-INCH WIDE, ENTIRE LENGTH OF TRENCH WHEN PLACING CATV CONDUITS. TAPE SHOULD READ "CAUTION BURIED CABLE LINE BELOW". MANUFACTURED BY HARRIS INDUSTRIES, INC., CATALOG NUMBER UT-43 OR EQUIVALENT TAPE. TAPE TO BE INSTALLED 12-INCHES BELOW GRADE.

46. AFTER DUCTLINE HAS BEEN COMPLETED, A MANDREL WITH A SQUARE FRONT NOT LESS THAN 12-INCH LONG AND HAVING A DIAMETER OR 1/4-INCH LESS THAN THE INSIDE DIAMETER OF DUCT, SHALL BE PULLED THROUGH EACH DUCT AFTER WHICH A BRUSH WITH STIFF BRISTLES SHALL BE PULLED THROUGH TO MAKE CERTAIN THAT NO PARTICLES OF EARTH, SAND, OR GRAVEL HAVE BEEN LEFT INSIDE. DUCTS SHALL BE COMPLETELY DRY AND CLEAN.

47. METALLIC ENTRANCE CONDUITS SHALL BE GROUNDED.

48. ALL CONDUITS WITHIN A BUILDING SHALL:
    A. BE INSTALLED IN THE SHORTEST AND STRAIGHTEST POSSIBLE RUN.
    B. HAVE NO SECTION LONGER THAN 100-FEET NOR CONTAIN MORE THAN TWO 90-DEGREE BENDS. AN APPROVED SIZED JUNCTION BOX RR GUTTER BOX SHALL BE PLACED IF THIS IS EXCEEDED.
    C. ALL BENDS SHALL BE LONG SWEEP-RADIUS BENDS BUT THE INSIDE RADIUS OF THE BEND MUST NEVER BE LESS THAN TEN TIMES THE DIAMETER OF THE CONDUIT.

49. ALL CONSTRUCTION MUST BE INSPECTED AND APPROVED BY SPECTRUM OCEANIC PRIOR TO THE INSTALLATION OF ANY OF ITS FACILITIES AND THE ENERGIZING OF ITS SYSTEM.

50. CONTRACTOR AND/OR CUSTOMER SHALL PROVIDE SPECTRUM OCEANIC WITH SUFFICIENT INSTALLATION TIME IN THEIR OCCUPANCY TIME TABLE.

51. FOR PULLBOX LOCATIONS WERE VEHICULAR INTRUSION POSSIBLE, CONCRETE COLLAR REQUIRED PER SPECTRUM STANDARD AND SPECIFICATIONS MANUAL. EXAMPLES INCLUDE BUT NOT LIMITED TO, ROLLED CURBS, CURB/HEADERS LESS THAN 5" IN HEIGHT, VEHICULAR TRAVELWAYS WITH NO DEFINED CURB/HEADER, ETC.

    A. NON SIDEWALK AREA, SEE FIGURE 18.1C, 19.1C AND 20.1B IN THE SPECTRUM SPECIFICATIONS MANUAL.

APPROVED BY
SPECTRUM OCEANIC — DATE 1/10/2025

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

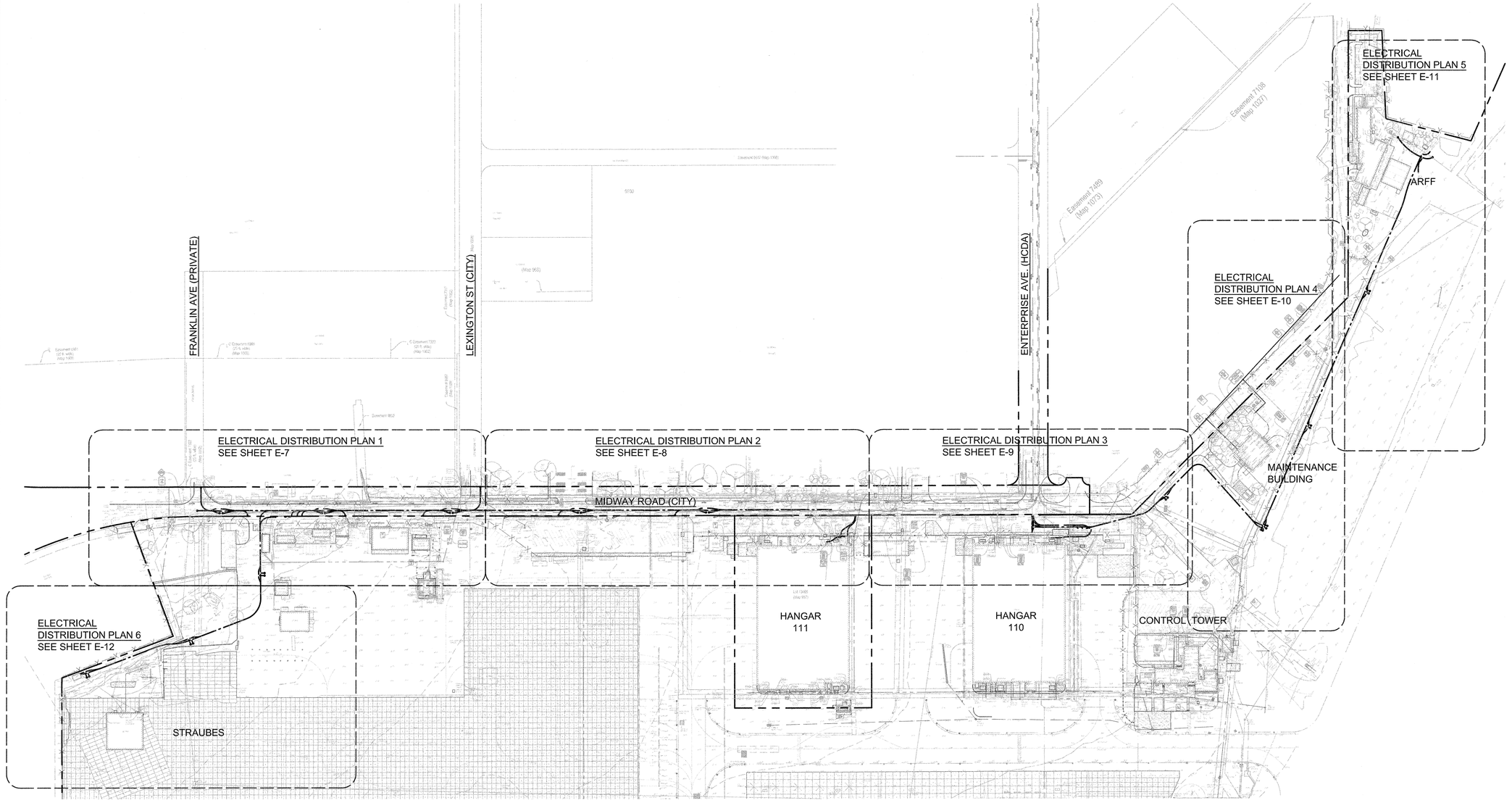
SPECTRUM OCEANIC (CATV) NOTES

DATE :
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NORTH

ELECTRICAL SITE PLAN
SCALE: 1"=150'

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By Michael Hahn Date 1/13/25

Customer Installations Department
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

APPROVED BY:

for Melvin Takabayashi 4/16/25
CHIEF, CIVIL ENGINEERING BRANCH, DPP — DATE

Cody Jaramillo Digitally signed by Cody Jaramillo Date: 2025.01.21 11:26:35 -10'00'
HAWAIIAN TELCOM — DATE

SPECTRUM OCEANIC 1/16/2025
DATE

150' 75' 0 150' 300'
SCALE: 1"=150'
GRAPHIC SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
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HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

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AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

ELECTRICAL SITE PLAN

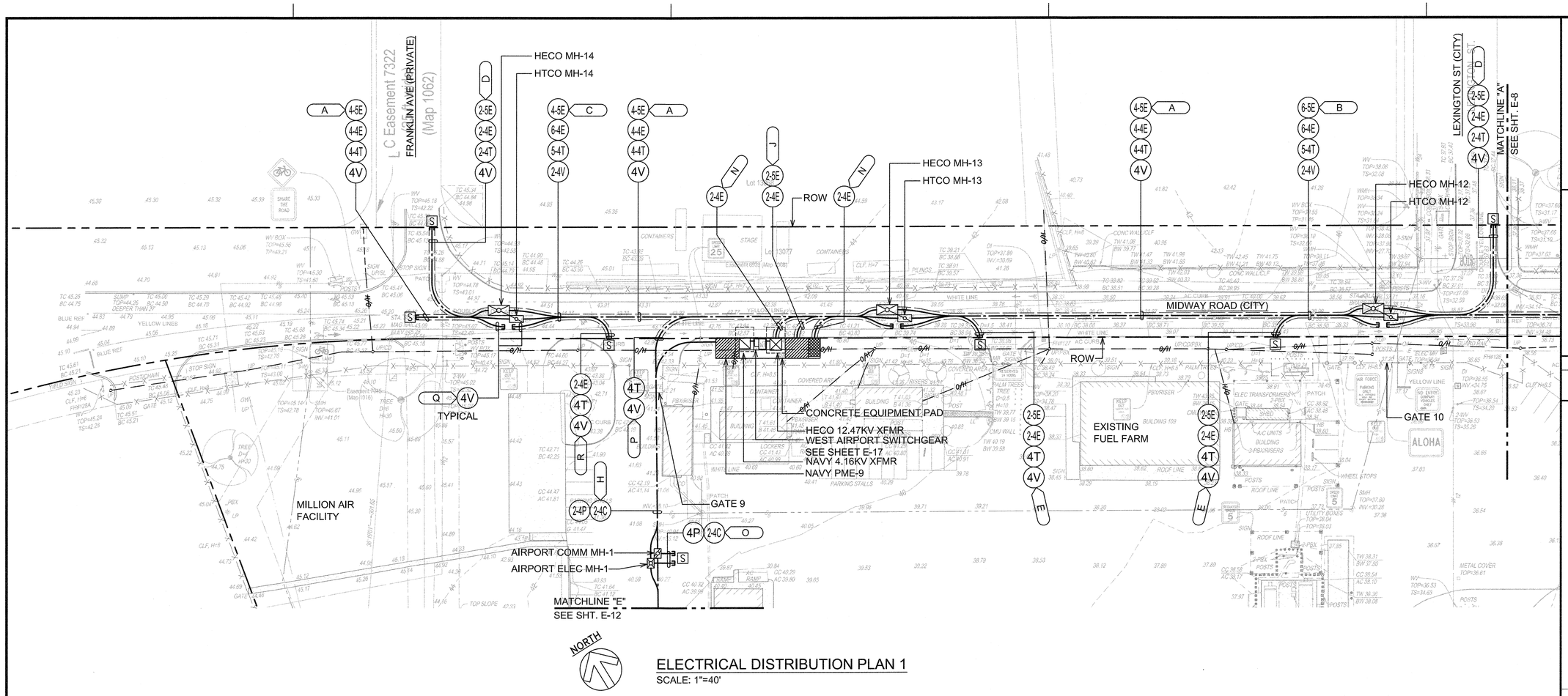
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ELECTRICAL DISTRIBUTION PLAN 1

SCALE: 1"=40'

DRAWING REVIEW

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Req# _____ By Michael Hahn Date 1/13/25

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Hawaiian Electric

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APPROVED BY:

for Melvin Takabayashi 6/16/23
CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE

Cody Jaramillo Digitally signed by Cody Jaramillo Date: 2025.01.21 11:26:57 -10'00'
HAWAIIAN TELCOM DATE

1/16/2025
SPECTRUM OCEANIC DATE

40' 20' 0 40' 80'
SCALE: 1"=40'
GRAPHIC SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

ELECTRICAL DISTRIBUTION PLAN 1

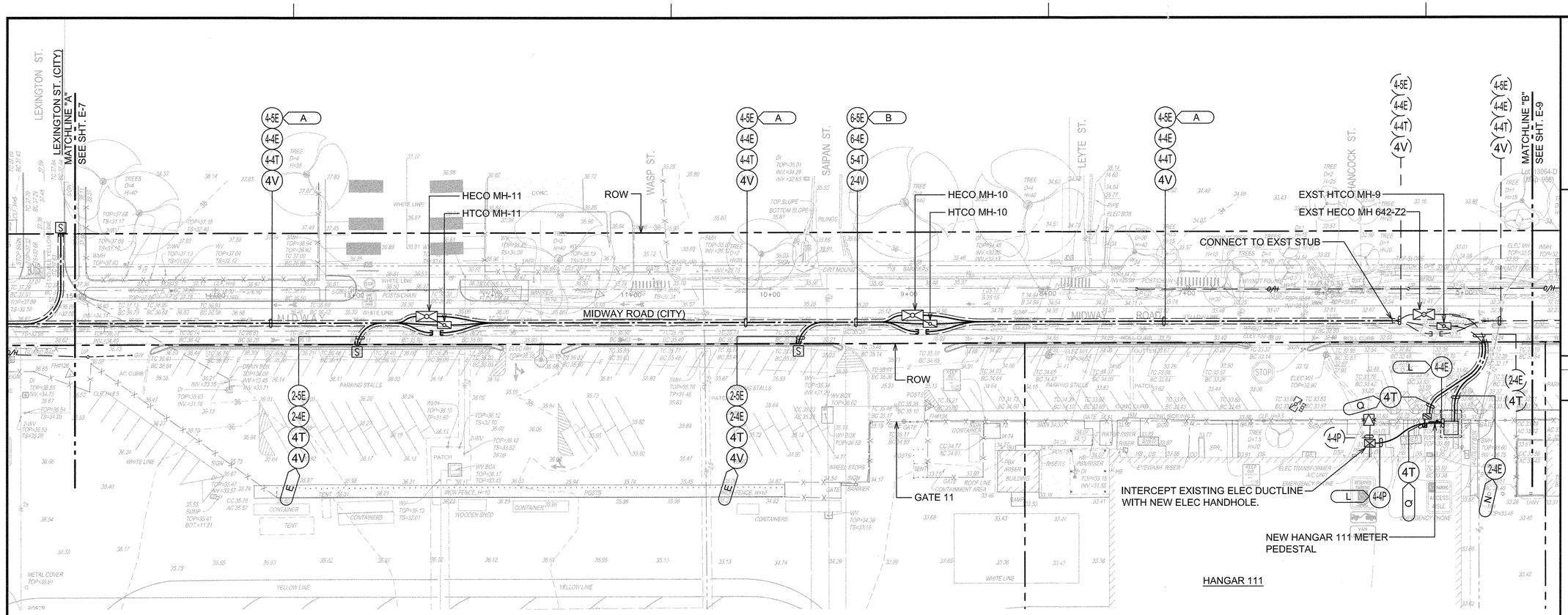
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JANUARY 2025

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63 OF 80 SHEETS

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NORTH

ELECTRICAL DISTRIBUTION PLAN 2

SCALE: 1"=40'

DRAWING REVIEW

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Req# _____ By Michael Hahn Date 1/13/25

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APPROVED BY:

for Melvin Takabuga 6/10/25
CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE

Cody Jaramillo Digitally signed by Cody Jaramillo Date: 2025.01.21 11:27:24 -10'00'
HAWAIIAN TELCOM DATE

Linda Fay 1/16/2025
SPECTRUM OCEANIC DATE

40' 20' 0 40' 80'
SCALE: 1"=40'
GRAPHIC SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

ELECTRICAL DISTRIBUTION PLAN 2

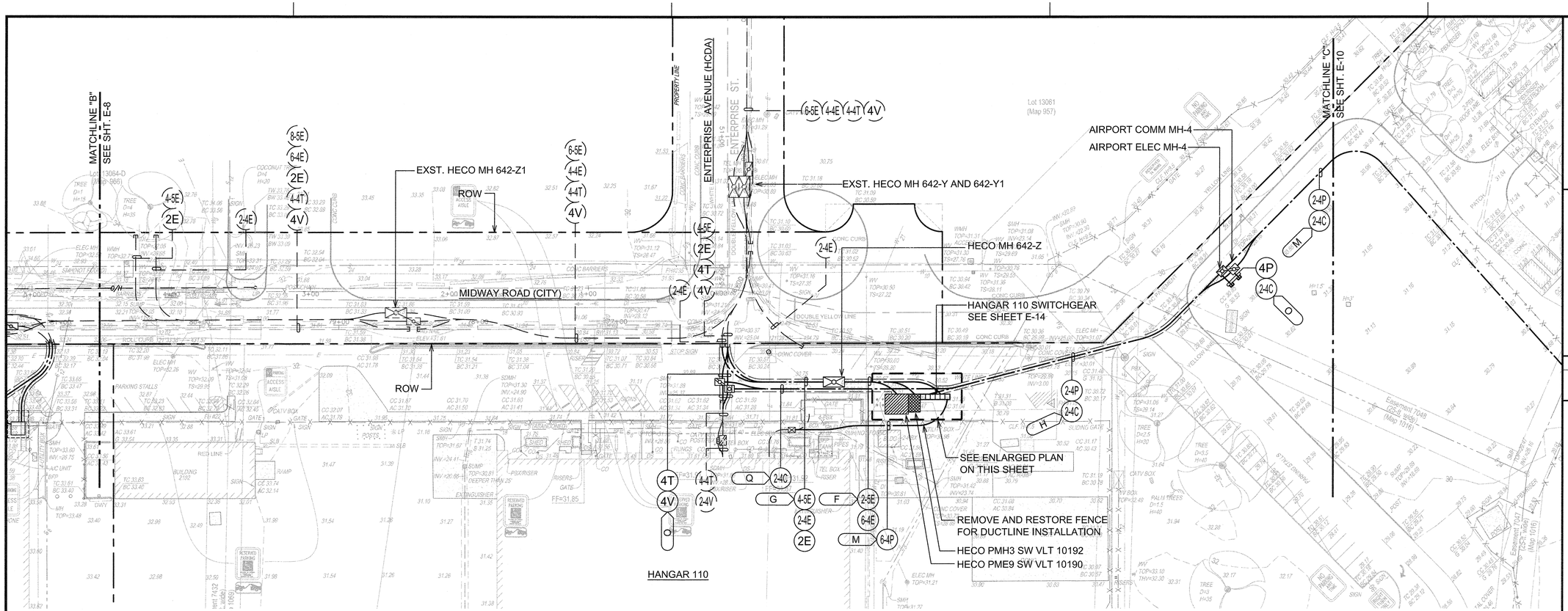
DATE :
JANUARY 2025

SHEET :
64 OF 80 SHEETS

DWG. NO.
E-8

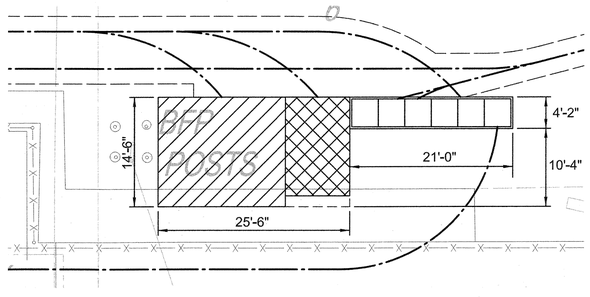
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NORTH

ELECTRICAL DISTRIBUTION PLAN 3
SCALE: 1"=40'



NORTH

ENLARGED PLAN
SCALE: 1"=10'

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By Michael Hahn Date 1/13/25

Customer Installations Department
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

APPROVED BY:

Cody Jaramillo — Digitally signed by Cody Jaramillo Date: 2025.01.21 11:27:57 -10'00'
HAWAIIAN TELCOM — DATE

SPECTRUM OCEANIC — 1/16/2025 DATE

10' 5' 0 10' 20'
SCALE: 1"=10'
GRAPHIC SCALE

40' 20' 0 40' 80'
SCALE: 1"=40'
GRAPHIC SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

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UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

ELECTRICAL DISTRIBUTION PLAN 3

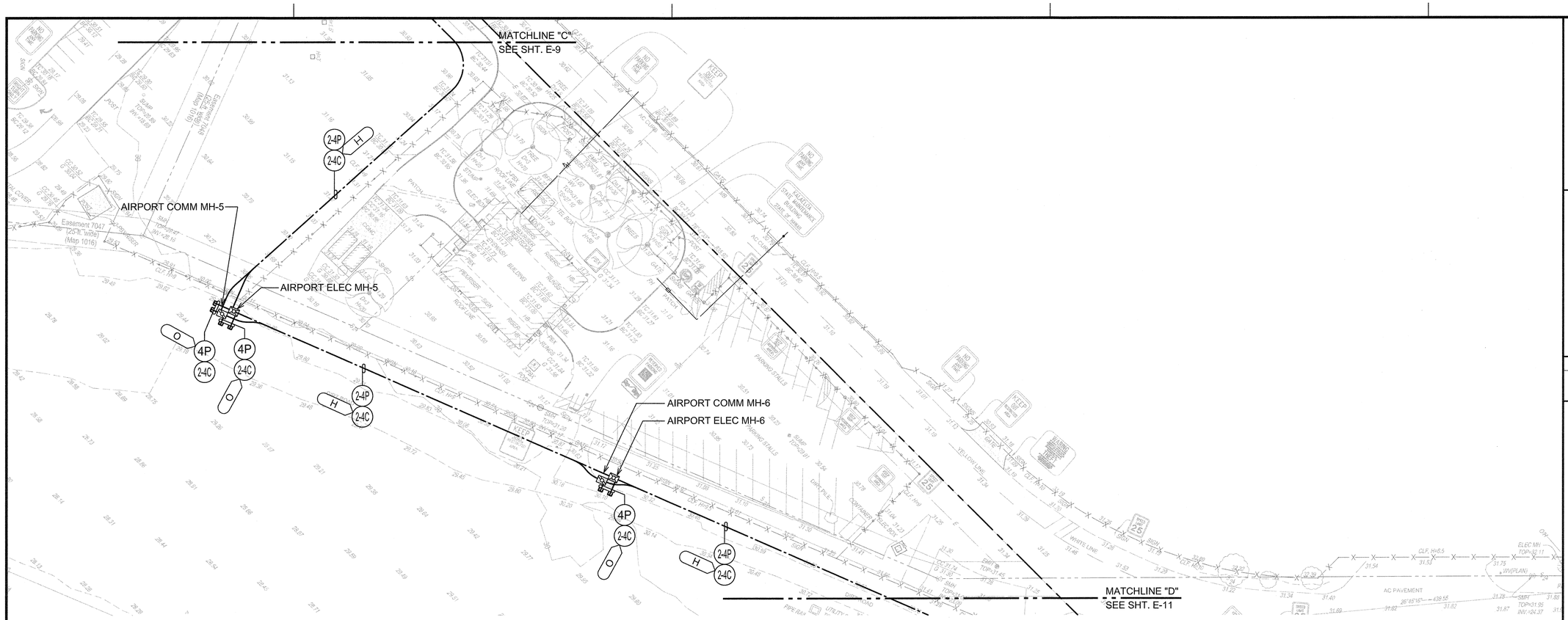
DATE : JANUARY 2025

SHEET : 65 OF 80 SHEETS

DWG. NO. E-9

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NORTH

ELECTRICAL DISTRIBUTION PLAN 4

SCALE: 1"=40'

APPROVED BY:

Cody Jaramillo Digitally signed by Cody Jaramillo
Date: 2025.01.21 11:28:27 -10'00'

HAWAIIAN TELCOM DATE

40' 20' 0 40' 80'

SCALE: 1"=40'

GRAPHIC SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
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GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

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UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

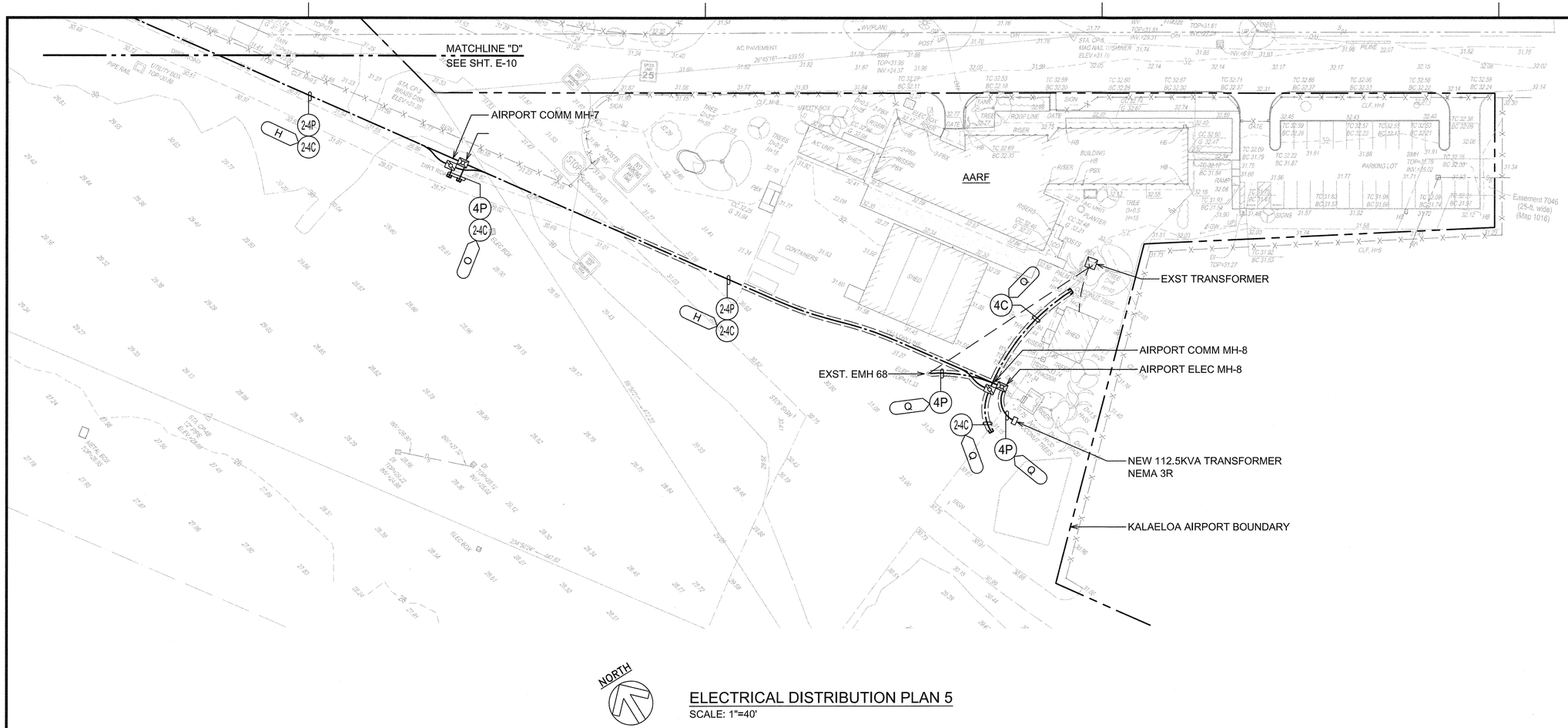
ELECTRICAL DISTRIBUTION PLAN 4

DATE :
JANUARY 2025
SHEET :
66 OF 80 SHEETS

DWG. NO.
E-10

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"Z:\Acad\projects\219055\E010-Elec Dist Plan 4.dwg"



NORTH

ELECTRICAL DISTRIBUTION PLAN 5
SCALE: 1"=40'

APPROVED BY:

Cody Jaramillo — Digitally signed by Cody Jaramillo Date: 2025.01.21 11:28:57 -10'00'

HAWAIIAN TELCOM — DATE

40' 20' 0 40' 80'

SCALE: 1"=40'

GRAPHIC SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
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GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

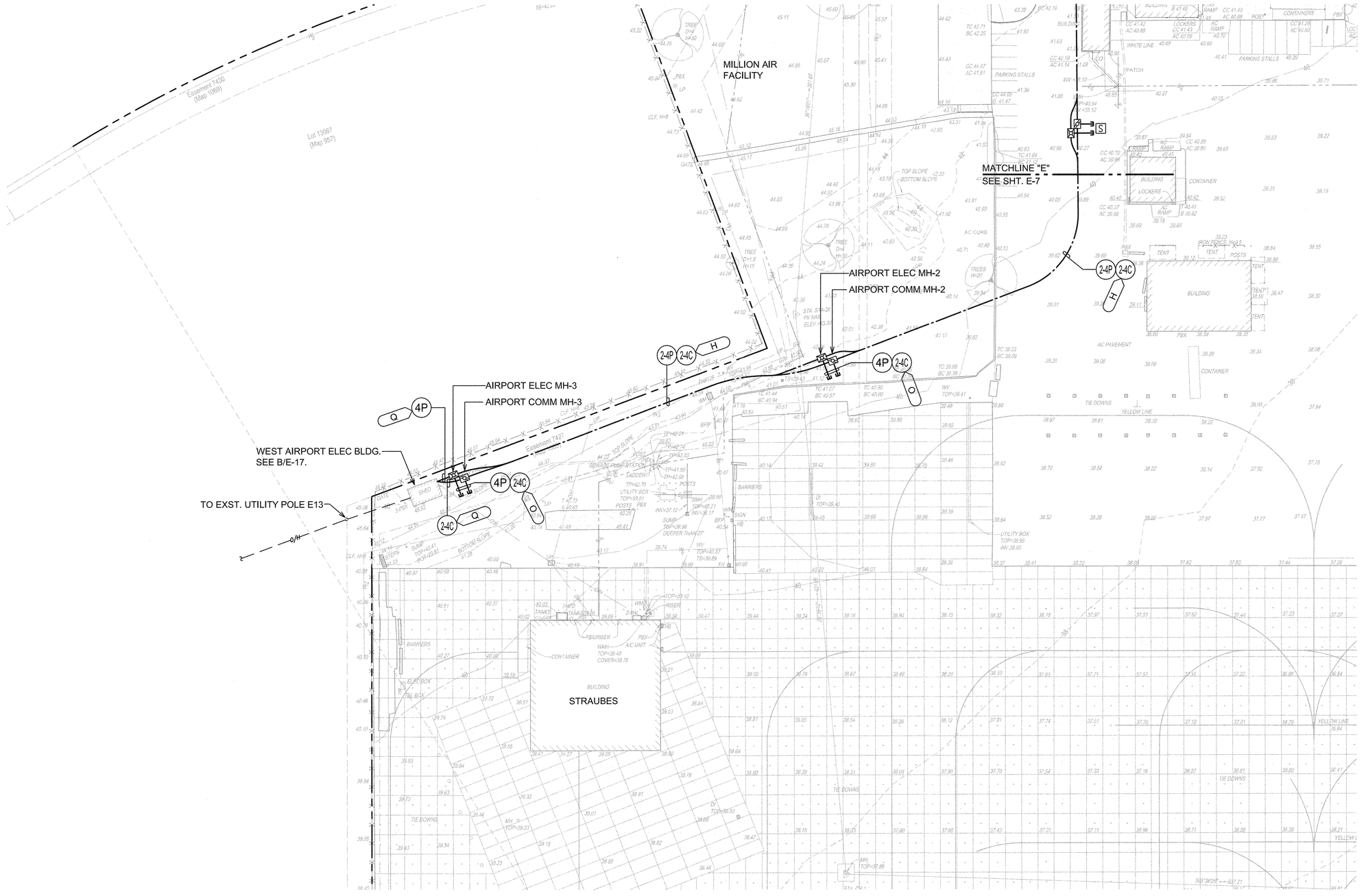
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DATE :
JANUARY 2025
SHEET :
67 OF 80 SHEETS

DWG. NO.
E-11

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NORTH

ELECTRICAL DISTRIBUTION PLAN 6
SCALE: 1"=40'

APPROVED BY:

Cody Jaramillo
Digitally signed by Cody Jaramillo
Date: 2025.01.21 11:29:46 -10'00'

HAWAIIAN TELCOM DATE

40' 20' 0 40' 80'
SCALE: 1"=40'
GRAPHIC SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

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UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

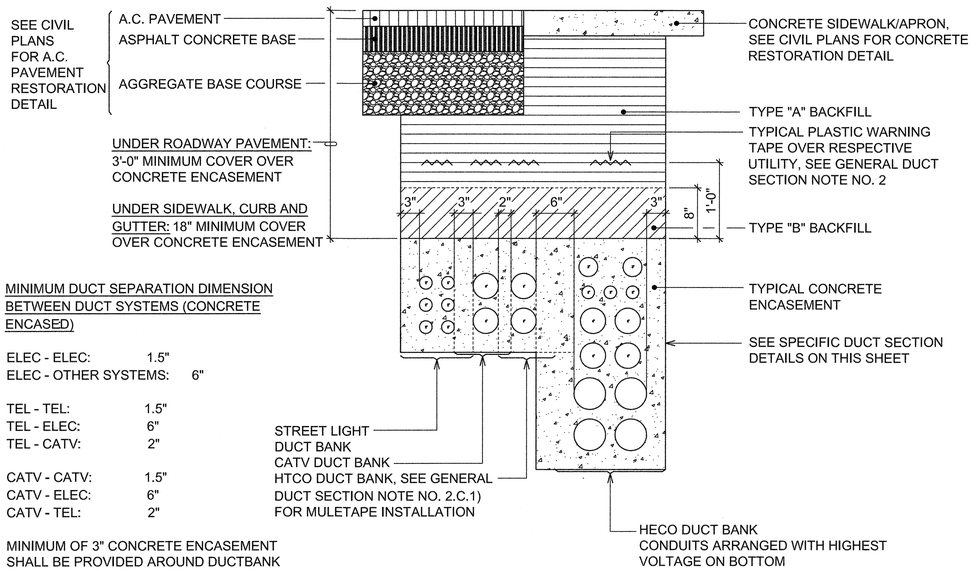
ELECTRICAL DISTRIBUTION PLAN 6

DATE :
JANUARY 2025
SHEET :
68 OF 80 SHEETS

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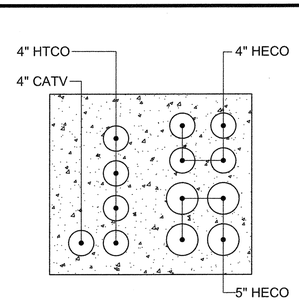
MINIMUM DUCT SEPARATION DIMENSION BETWEEN DUCT SYSTEMS (CONCRETE ENCASED)

ELEC - ELEC:	1.5"
ELEC - OTHER SYSTEMS:	6"
TEL - TEL:	1.5"
TEL - ELEC:	6"
TEL - CATV:	2"
CATV - CATV:	1.5"
CATV - ELEC:	6"
CATV - TEL:	2"

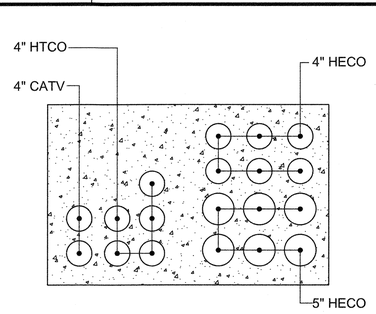
MINIMUM OF 3" CONCRETE ENCASEMENT SHALL BE PROVIDED AROUND DUCTBANK

TYPICAL CONCRETE ENCASED DUCT SECTION DETAILS

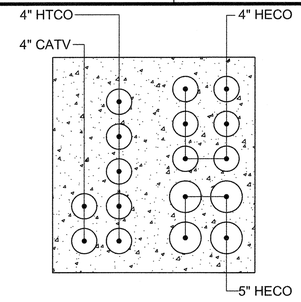
NOT TO SCALE



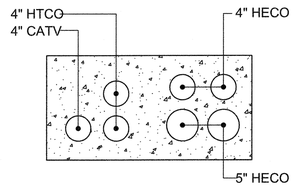
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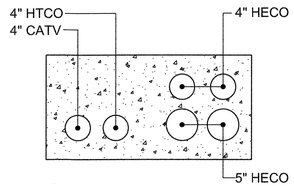
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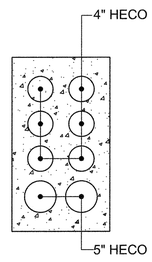
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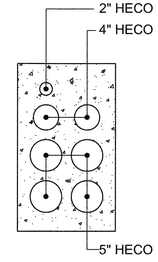
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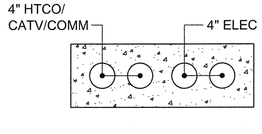
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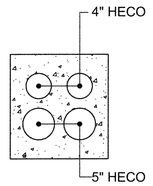
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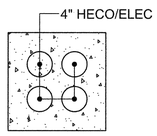
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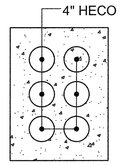
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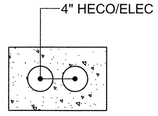
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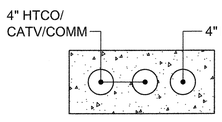
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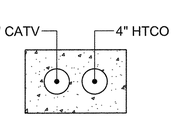
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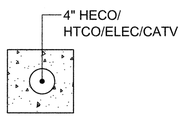
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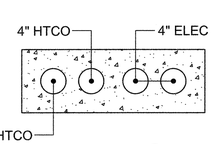
SECTION (O)



SECTION (P)



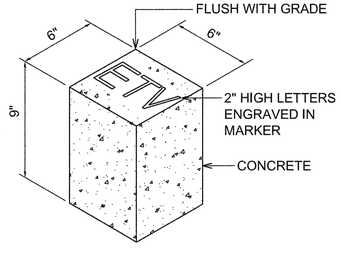
SECTION (Q)



SECTION (R)

GENERAL DUCT SECTION NOTES

1. FOR TRENCH RESTORATION DETAIL REQUIREMENTS, SEE SHEET CIVIL SHEETS.
2. THE METAL DETECTABLE RED PLASTIC WARNING TAPE SHALL BE A MINIMUM 5 MILS THICK AND 4" WIDE WITH A CONTINUOUS METALLIC BACKING AND CORROSION RESISTANT 1' MIN THICK FOIL CORE.
   - A. FOR DUCTS, PROVIDE METAL DETECTABLE WARNING TAPE OVER RESPECTIVE UTILITY COMPANY DUCTS PER RESPECTIVE UTILITY COMPANY REQUIREMENTS AND APPROVAL.
   - B. FOR HECO, PROVIDE WARNING TAPE PER HECO SPECIFICATION M0302-0.
   - C. FOR HTCO:
     1) CONTRACTOR SHALL PLACE MULETAPE (WP 1800P) IN EACH DUCT THROUGHOUT ITS ENTIRE LENGTH WITH PROTRUSIONS OF 2 FEET IN MANHOLES AND HANDHOLES AT EACH END, AND 1 FOOT IN PULLBOXES. MULETAPE IS RATED FOR 1800 LB PULL AND HAS FOOTAGE MARKINGS FOR MEASURING DUCT LENGTHS.
     2) CONTRACTOR SHALL PLACE 8-MIL ORANGE COLORED PLASTIC WARNING TAPE, NOT LESS THAN 4" WIDE, ENTIRE LENGTH OF TRENCH FOR ALL UNDERGROUND INSTALLATIONS. TAPE SHOULD READ "WARNING-STOP DIGGING-CALL HTCO, COMMUNICATIONS CABLE BURIED BELOW, FAILURE TO COMPLY COULD RESULT IN LEGAL ACTION".
3. THE CONTRACTOR MAY BEGIN BACKFILLING THE CONDUIT TRENCH WHEN THE CONCRETE REACHES 2800 PSI COMPRESSIVE STRENGTH OR AFTER 3 DAYS, WHICHEVER IS LATER.
4. CLEARANCES: REFER TO HECO NOTE NO. 14 FOR CLEARANCE REQUIREMENTS BETWEEN ALL DUCTLINES AND ALL ADJACENT STRUCTURES (CHARTED AND UNCHARTED) NEAR THE TRENCH.



"E" = ELECTRIC
"T" = TELEPHONE
"V" = CATV
"L" = STREET LIGHTING
"S" = TRAFFIC SIGNAL
"P" = PRIVATE POWER
"C" = COMMUNICATION

CONCRETE CONDUIT STUB-OUT MARKER

NOT TO SCALE

BACKFILL NOTES:

TYPE "A" BACKFILL - EARTH & GRAVEL. ROCK SIZE TO BE 1" MAX & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. THE MATERIAL SHALL BE NONEXPANSIVE. 95% COMPACTION.

TYPE "B" BACKFILL - EARTH & GRAVEL. MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.

NOTE - IF NORMAL MATERIAL AT BOTTOM OF TRENCH IS NOT TYPE "B", AN ADDITIONAL 3" SHALL BE EXCAVATED & TYPE "B" BACKFILL PROVIDED.

CONCRETE - 3" ENCASEMENT, 2800 PSI COMPRESSIVE STRENGTH @ 28 DAYS. WITH A MAXIMUM AGGREGATE SIZE OF 3/4".

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By Michael Hahn Date 1/13/25

Customer Installations Department
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

APPROVED BY:

Melvin Inafuku 1/14/25
for CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE

Cody Jaramillo Digitally signed by Cody Jaramillo Date: 2025.01.21 11:30:31 -10'00'
HAWAIIAN TELCOM DATE

SPECTRUM OCEANIC 1/16/2025 DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

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UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

DUCT SECTIONS

DATE : JANUARY 2025

SHEET : 69 OF 80 SHEETS

DWG. NO. E-13

RHAOCE01_DOTA_STD-2022.CTB
1/9/2025 2:51 PM
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PRIMARY METER AND DISTRIBUTION SWITCHGEAR
12.47KV, 3PH, 4W, DEADFRONT, NEMA 3R, 65kAIC

2-4" HECO CONDUIT, HECO TO PULL CONDUCTORS

HECO SERVICE

M

1500kVA TRANSFORMER, 12.47kV-480Y/277V, 3-PHASE

20A

SPARE 0-150A

100A

3P1600A

EQUIPMENT GROUND
3/4"Ø X 10'-0" GND ROD &
#4/O SDBC GND

EXST AARF

EXST EMH 68

EXST 75kVA TRANSFORMER, 4.16kV-208/120Y, 3-PHASE

TO EMH 65

P1

DISCONNECT EXISTING SERVICE CONDUCTORS AND RECONNECT TO NEW SERVICE IN EXST EMH 68. CUT AND TAPE EXISTING SERVICE CONDUCTORS IN MH.

TO AARF BLDG

EXST 45kVA TRANSFORMER, 4.16kV-208/120Y, 3-PHASE

TO AARF BLDG

NEW 112.5kVA TRANSFORMER, 12.47kV-4.16kV, 3-PHASE, 3W

4"C, 3#8, #8 GND
4"C, SPARE

ELECTRIC MANHOLE-8

4"C, 3#8, #8 GND
4"C, SPARE

4"C, 3-1/C#4/O, #2 GND
PEIPJ, 15KV

NEW 6 X (4"C, 4#350MCM, 3/0 GND)

EXST HANGAR 110 UNIT SUBSTATION

EXST LOAD INTERRUPTER SWITCHES, 15KV

EXST PRIMARY METERING & DISTRIBUTION SWITCHGEAR, TOTALLY METAL ENCLOSED NEMA 3R, NON-WALKIN

EXST VACUUM CIRCUIT BREAKERS, 15KV

EXST 3P600A LOAD INTERRUPTER SWITCH

WHM

3P1600A MAIN

SW. B 3P600A

SW. A 3P600A

0-150A

0-150A

52A 3P200A 15KV

52A 3P200A 15KV

0-150A

0-150A

2-50/51 1-51N

2-50/51 1-51N

EXST AUTOMATIC TRANSFER CIRCUIT

EXST CONTROL TRANSFORMER

EXST INCOMING PRIMARY SERVICE CABLES & CONNECTIONS BY HECO

INTERCEPT EXST DUCTLINE WITH NEW MANHOLE. DISCONNECT EXISTING SERVICE CONDUCTORS AND RECONNECT TO NEW CONDUCTORS IN MANHOLE. CUT AND TAPE EXISTING CONDUCTORS IN MANHOLE.

EXST EMH 18

TO EMH 15

D2

AD

EXST PRIMARY SERVICE DUCTS
2-4" PVC, CONCRETE ENCASED
PRIMARY CABLES TO EMH-18

TO HANGAR 110

EXST FEEDER A
4"C, 3-1/C #4/0, 1-#2 GND.,
PEIPJ, 15KV

EXST. 6 X (4"C, 4#350MCM, 3/0 GND)

EXST. ELEC HANDHOLE

CHANGE PRIMARY TAP FROM 12kV TO 12.6kV

TO AIRPORT TOWER

EXST 1000kVA TRANSFORMER, 12kV-480/277Y, 3-PHASE

NEW ELEC 6'X14' MANHOLE

EXST FEEDER B
4"C, 3-1/C #4/0, 1-#2 GND.,
PEIPJ, 15KV

HANGAR 110 ONE-LINE DIAGRAM

NOT TO SCALE

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By Michael Hahn Date 1/13/25

Customer Installations Department
Hawaiian Electric

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

HANGAR 110
ONE-LINE DIAGRAM

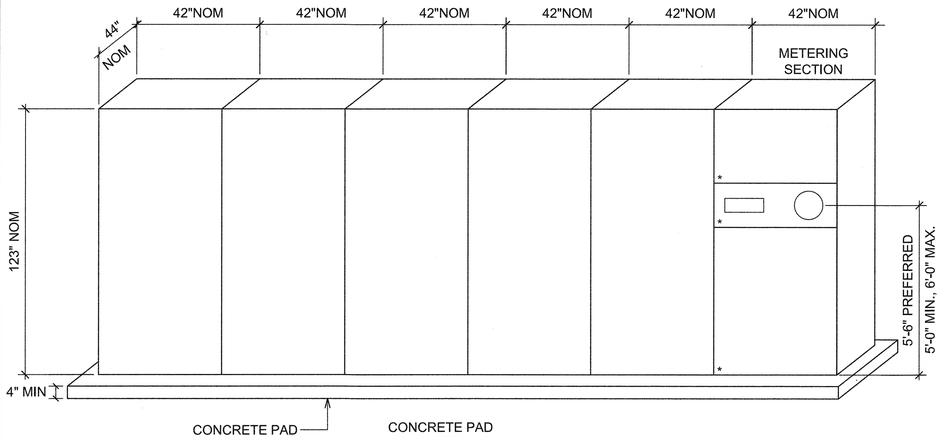
DATE : **JANUARY 2025**

SHEET : 70 OF 80 SHEETS

DWG. NO. **E-14**

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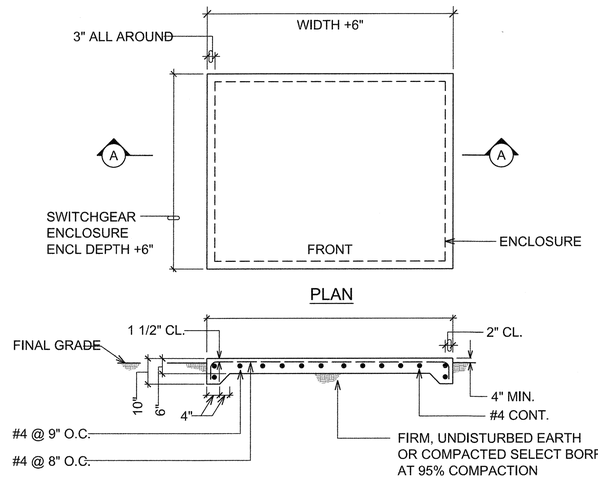
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NOTES:

1. "*" - PROVISION FOR HECO SEAL.
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4. HECO SHALL SUPPLY AND INSTALL THE PRIMARY VOLTAGE, CURRENT TRANSFORMERS AND POTENTIAL TRANSFORMERS FOR METERING. HECO ALSO FURNISHES AND INSTALLS THE METER(S), TEST SWITCH(S), AND ASSOCIATED WIRING. CONTRACTOR SHALL PROVIDE SWITCHGEAR WITH 1-INCH CONDUIT FOR SECONDARY WIRING OF INSTRUMENT TRANSFORMERS.
5. SWITCHGEAR MUST BE DESIGNED SO THE HECO'S VOLTAGE/POTENTIAL TRANSFORMERS ARE TAPPED BEFORE OR ON THE LINE-SIDE OF THE POWER COMPANY CURRENT TRANSFORMERS. SWITCHGEAR MUST HAVE A PT DISCONNECT WITH AN INTERLOCK SYSTEM AND VIEWING WINDOW OF DISCONNECT BLADES. SEE EUSERC DRAWING 400.
6. SWITCHGEAR PT FUSE MOUNTING CLIPS MUST BE CONSTRUCTED TO ACCOMMODATE CURRENT LIMITING FUSES. CONTRACTOR TO COORDINATE FUSE RATING W/ HECO AND PROVIDE PRIMARY FUSES FOR POTENTIAL TRANSFORMERS. PROVIDE THE PRIMARY LEADS FROM THE LEAD HOLDERS TO PT TERMINALS.
7. FURNISH SWITCHGEAR WITH INSULATING BOOTS OR COVERS, OR AN INSULATED BUS AT CT TERMINATION POINTS. PROVIDE GROUNDING KNOBS ON LINE AND LOAD SIDE OF BUS AT EACH CURRENT TRANSFORMER LOCATION FOR SAFETY GROUNDS.
8. PROVIDE SELF-SHORTING AND NON-SHORTING TERMINAL BLOCKS (6-POINT TERMINALS) FOR INSTRUMENT TRANSFORMER SECONDARY WIRING. CONSULT HECO FOR SPECIFICATIONS AND REQUIREMENTS.
9. SWITCHGEAR MUST HAVE MOUNTING RACKS OR SUPPORTS FOR POTENTIAL AND CURRENT TRANSFORMERS.
10. PERMANENTLY LABEL SWITCHGEAR METERING COMPARTMENTS WITH MACHINE ENGRAVED LAMINATED PHENOLIC (OR EQUAL) TAGS. USE QUARTER-INCH WHITE LETTERS AND NUMBERS ON RED-COLORED MATERIAL THAT IS READILY VISIBLE AND ATTACHED TO METERING COMPARTMENTS. SEE EUSERC DRAWING 400.
11. SWITCHGEAR MUST HAVE ADEQUATE SPACE BETWEEN PANELS AND FACILITES TO INSTALL METER(S), TEST SWITCH(S), AND AUXILIARY DEVICES FURNISHED BY THE POWER COMPANY. CONSULT WITH HECO FOR WIRING SPACE REQUIREMENTS BEHIND THE METER.
12. DO NOT MOUNT EQUIPMENT ON THE FLOOR OR CEILING WITHIN 6 INCHES OF THE SWITCHGEAR.
13. SWITCHGEAR USED FOR SERVICE ENTRANCE EQUIPMENT AND FOR POWER COMPANY METERING MUST BE CONSTRUCTED IN COMPLIANCE WITH LATEST REVISION OF EUSERC (ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE) SPECIFICATIONS.
14. METER SOCKETS SHALL BE INSTRUMENT RATED AND BE PROVIDED WITH A CLEAR PLASTIC COVER AND SECURING BAND.
15. THE ENCLOSURE FOR THE SWITCHGEAR MUST COMPLY WITH EUSERC SPECIFICATIONS. ENCLOSURE DOOR MUST BE CAPABLE OF BEING OPENED AT LEAST 90 DEGREES, AND HAVE A LATCH OR LOCKING SYSTEM TO HOLD THE DOOR(S) OPEN.

A / E-15 HANGAR 110 4.16kV SWITCHGEAR ELEVATION
NOT TO SCALE

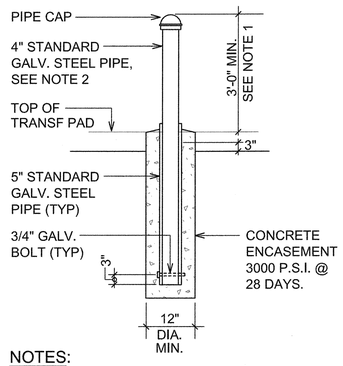


SECTION "A-A"

NOTES:

1. CONCRETE: 3000 PSI COMPRESSIVE STRENGTH IN 28 DAYS. MOISTURE CURE CONCRETE A MINIMUM OF 7 DAYS.
2. REINFORCING: ASTM A615, GRADE 40 MINIMUM.
3. LOCATE, SECURE, AND CAP ALL CONDUITS BEFORE POURING PAD, TOP OF CONCRETE TO BE SMOOTH AND TRUE, WOOD-FLOAT FINISH, FREE OF DEFECTS, AS PER APPLICABLE CITY AND COUNTY SPECIFICATIONS. ROUND ALL EXPOSED EDGES TO 3/4" CHAMFER.

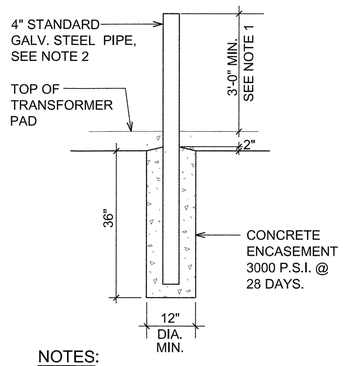
B / E-15 SWITCHGEAR CONCRETE PAD DETAIL
NOT TO SCALE



NOTES:

1. ALL STANCHIONS SHALL BE INSTALLED AT SAME HEIGHT. ABOVE TOP OF CONCRETE TRANSFORMER PAD.
2. REMOVABLE GALV. PIPE TO BE FILLED WITH CONCRETE TO WEIGH APPROXIMATELY 150 LBS.
3. WELDED NUTS ARE FOR SCREWING IN BOLTS TO ACT AS HANDLES FOR LIFTING REMOVABLE STANCHIONS. BOLT TO BE REMOVED AFTER INSTALLATION.
4. STANCHIONS SHALL BE PAINTED YELLOW PER ANSI SPEC. Z53.1 TO COMPLY WITH OSHA STANDARDS PER COLOR CODING.
5. STANCHION SHALL COMFORM TO ASTM A53.

C / E-15 REMOVABLE STANCHION DETAIL
NOT TO SCALE



NOTES:

1. ALL STANCHIONS SHALL BE INSTALLED AT SAME HEIGHT. ABOVE TOP OF CONCRETE TRANSFORMER PAD.
2. PERMANENT NON-REMOVABLE NON-CONCRETE FILLED POST BARRIER.
3. STANCHIONS SHALL BE PAINTED YELLOW PER ANSI SPEC. Z53.1 TO COMPLY WITH OSHA STANDARDS PER COLOR CODING.
4. STANCHION SHALL COMFORM TO ASTM A53.

D / E-15 PERMANENT STANCHION DETAIL
NOT TO SCALE

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PROJECT NO.:

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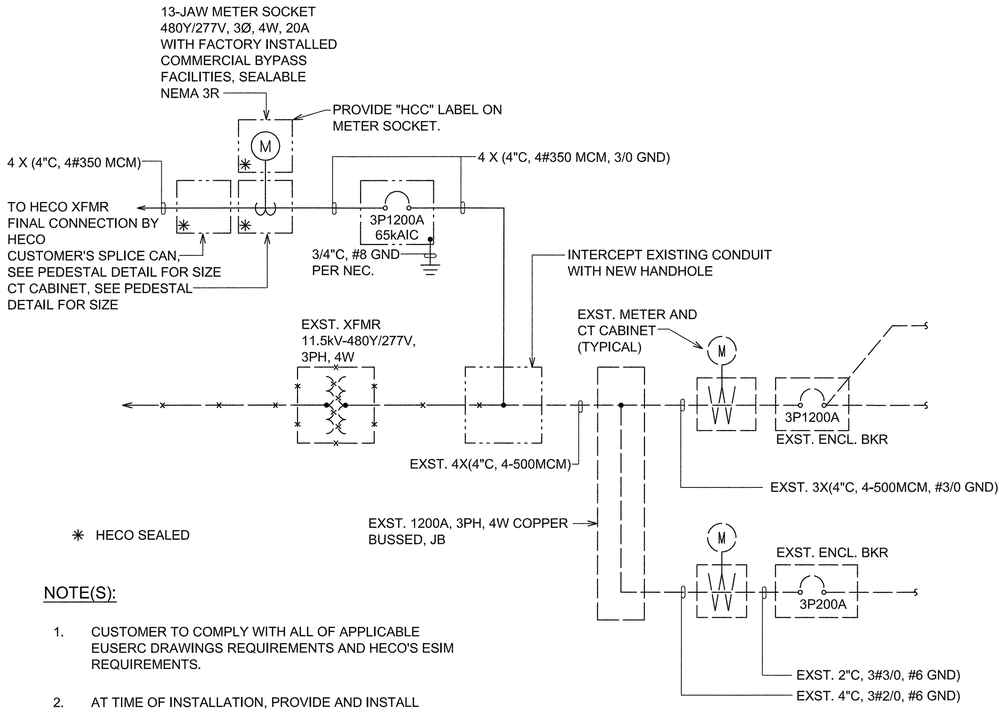
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HANGAR 110
SWITCHGEAR DETAIL

DATE :	DWG. NO.
JANUARY 2025	E-15
SHEET :	
71 OF 80 SHEETS	

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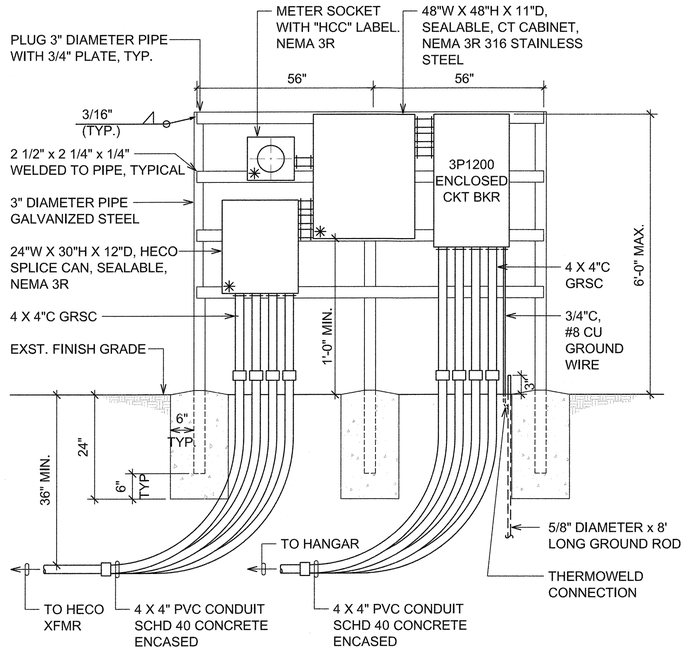
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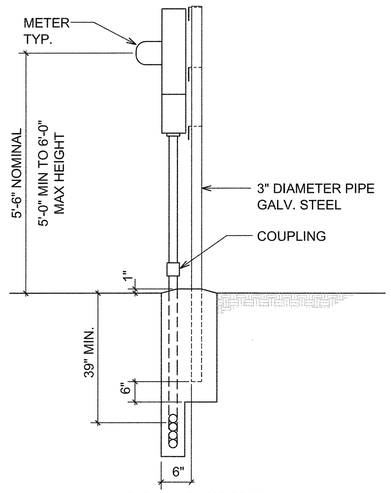
NOTE(S):

1. CUSTOMER TO COMPLY WITH ALL OF APPLICABLE EUSERC DRAWINGS REQUIREMENTS AND HECO'S ESIM REQUIREMENTS.
2. AT TIME OF INSTALLATION, PROVIDE AND INSTALL METER SOCKET COVERS (PLASTIC) AND BANDS FOR ALL BLANK METER SOCKETS. IDENTIFY COVERS SO COVERS CAN BE RETURNED.

A / E-16 HANGAR 111 ONE-LINE DIAGRAM
NOT TO SCALE



FRONT ELEVATION



SIDE ELEVATION

NOTE(S):

1. ALL CONDUITS TO CONTAIN A POLYOLEFIN PULL LINE. (JET LINE CAT #232 OR EQUIV)
2. PEDESTAL SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
3. ALL FASTENING BOLTS, NUTS & WASHERS SHALL BE 316 STAINLESS STEEL.
4. PROVIDE 4 FT CLEARANCE IN FRONT OF METER.
5. SEE ONELINE DIAGRAM ON THIS SHEET.
6. CONCRETE BASE 3000 PSI @ 28 DAYS

B / E-16 METER PEDESTAL DETAIL
NOT TO SCALE

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HANGAR 111
ONE-LINE DIAGRAM

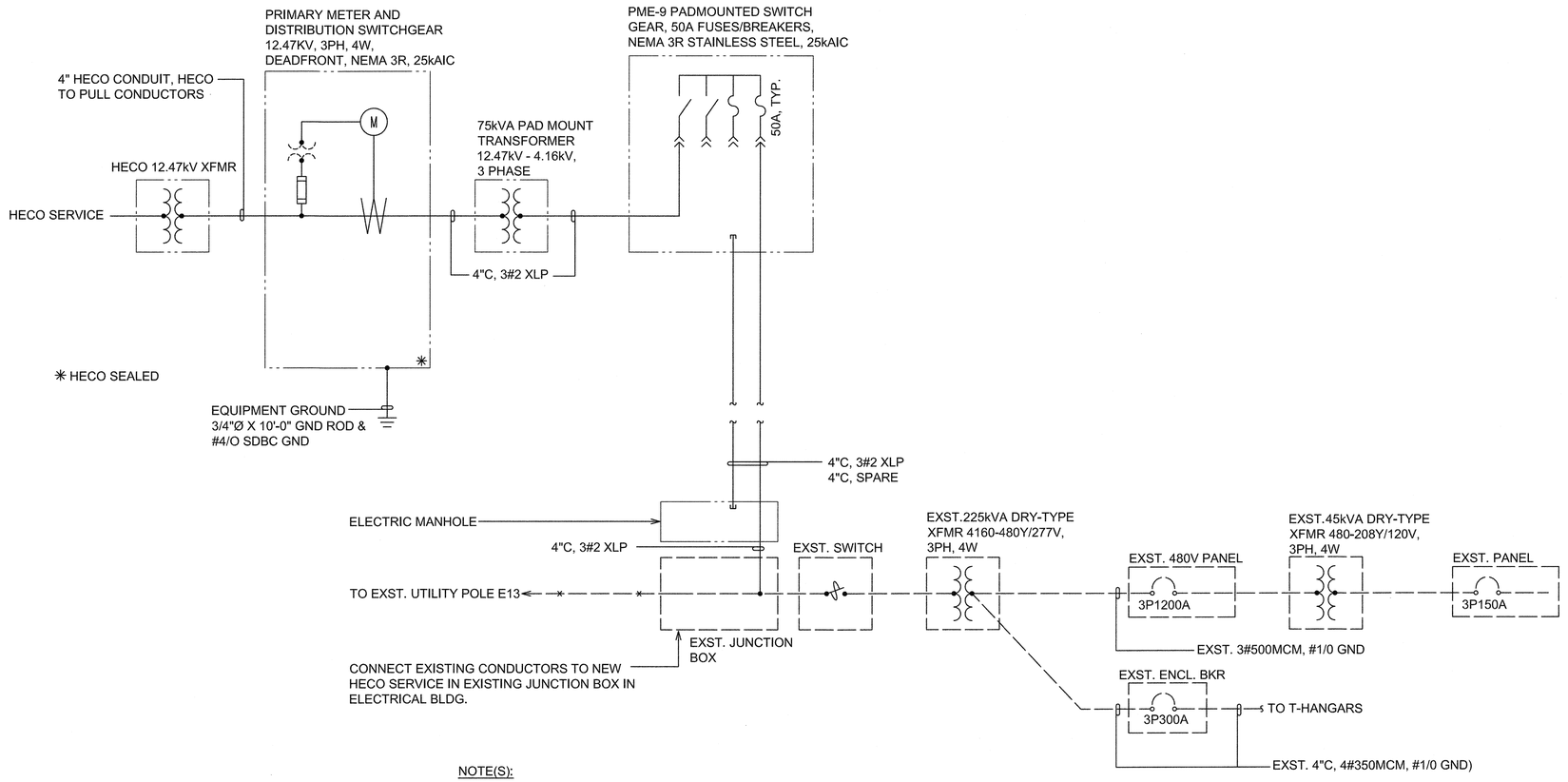
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SHEET :
72 OF 80 SHEETS

DWG. NO.
E-16

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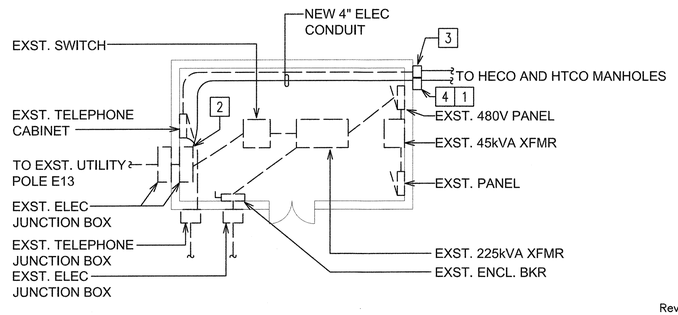
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NOTE(S):

1. CUSTOMER TO COMPLY WITH ALL OF APPLICABLE EUSERC DRAWING AND HECO'S ESIM REQUIREMENTS.

A / E-17 WEST AIRPORT ELEC BLDG ONE-LINE DIAGRAM
NOT TO SCALE



NOTE(S):

1. PENETRATE CMU WALL TO ACCOMMODATE CONDUIT INSTALLATION.
2. PENETRATE EXISTING JUNCTION BOX FOR CONDUIT INSTALLATION.
3. INTERCEPT EXST CONDUIT WITH 12" X 12" X8" JUNCTION BOX.
4. INSTALL NEW ELEC 12" X 12" X 8" JUNCTION BOX.

B / E-17 WEST AIRPORT ELEC BLDG PLAN
NOT TO SCALE

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APPROVED BY:

Cody Jaramillo Digitally signed by Cody Jaramillo Date: 2025.01.21 11:32:24 -10'00'

HAWAIIAN TELCOM DATE

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DEPARTMENT OF TRANSPORTATION
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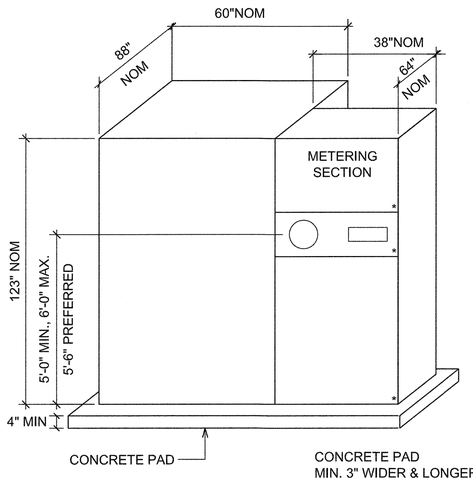
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WEST AIRPORT ELECTRICAL BLDG ONE-LINE DIAGRAM & PLAN

DATE :	DWG. NO.
JANUARY 2025	E-17
SHEET :	
73 OF 80 SHEETS	

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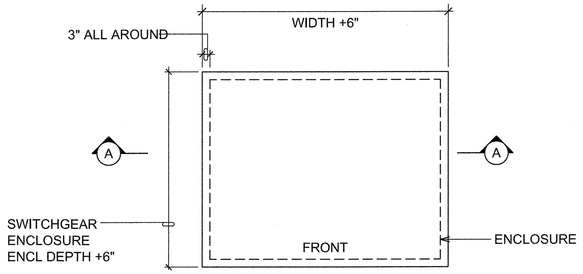
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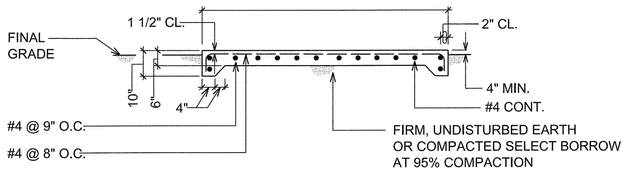
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7. FURNISH SWITCHGEAR WITH INSULATING BOOTS OR COVERS, OR AN INSULATED BUS AT CT TERMINATION POINTS. PROVIDE GROUNDING KNOBS ON LINE AND LOAD SIDE OF BUS AT EACH CURRENT TRANSFORMER LOCATION FOR SAFETY GROUNDS.
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A / E-18 4.16kV SWITCHGEAR ELEVATION
NOT TO SCALE



PLAN



SECTION "A-A"

NOTES:

1. CONCRETE: 3000 PSI COMPRESSIVE STRENGTH IN 28 DAYS. MOISTURE CURE CONCRETE A MINIMUM OF 7 DAYS.
2. REINFORCING: ASTM A615, GRADE 40 MINIMUM.
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B / E-18 SWITCHGEAR CONCRETE PAD DETAIL
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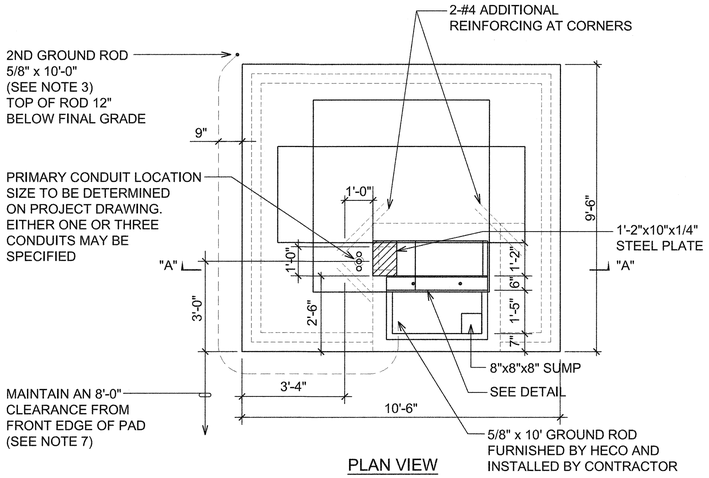
WEST AIRPORT SWITCHGEAR DETAIL

DATE :
JANUARY 2025
SHEET :
74 OF 80 SHEETS

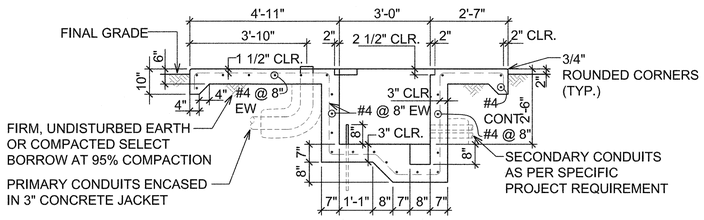
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E-18

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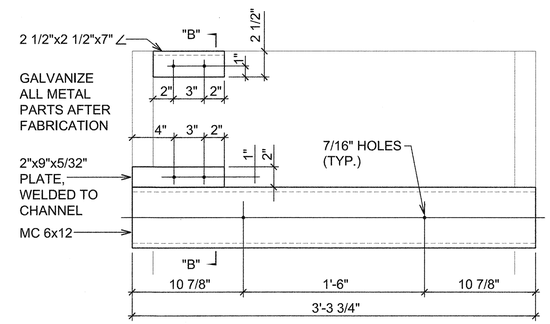
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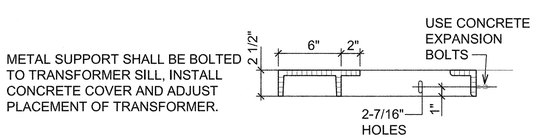
PLAN VIEW



SECTION "A-A"



METAL SUPPORT DETAIL



SECTION "B-B"

HECO NOTES:

1. REFER TO STD. 30-5000 FOR LOCATIONS AND CLEARANCES.
2. REFER TO STD. 22-2005 FOR 3 PHASE PADMOUNTED TRANSFORMER REQUIREMENTS.
3. 5/8" DIAMETER X 10'-0" GROUND ROD (STOCK CODE 193457) FURNISHED BY HECO AND INSTALLED BY CUSTOMER. IF GROUND RESISTANCE IS MORE THAN 25 OHMS, INSTALL ADDITIONAL 5/8" DIAMETER X 8'-0" GROUND ROD (STOCK CODE 101527) AND CONNECT 4/0 BARE COPPER GROUND WIRE BETWEEN GROUND RODS. A MINIMUM OF 6'-0" SHALL BE MAINTAINED BETWEEN THE DRIVEN GROUND RODS. A SECOND GROUND WILL PROBABLY BE REQUIRED WHEN SOIL RESISTIVITY IS GREATER THAN 67 OHM-METERS.
4. CONCRETE: 3000 PSI COMPRESSIVE STRENGTH IN 28 DAYS. MOISTURE CURE CONCRETE PAD A MINIMUM OF 7 DAYS. DO NOT INSTALL TRANSFORMER UNTIL CONCRETE COMPRESSIVE STRENGTH REACHES 1,500 PSI MINIMUM OR AFTER 14 DAYS.
5. REINFORCING: ASTM A615, GRADE 40 MINIMUM.
6. LOCATE, SECURE, AND CAP ALL CONDUITS BEFORE POURING PAD. TOP OF CONCRETE TO BE SMOOTH AND TRUE , WOOD-FLOAT FINISH, FREE OF DEFECTS, AS PER APPLICABLE CITY AND COUNTY SPECIFICATIONS, ROUND ALL EXPOSED EDGES TO 3/4" CHAMFER.
7. MAINTAIN A RELATIVELY LEVEL, MINIMUM CLEARANCE OF 2'-6" FROM THE SIDES OF THE PAD, 2'-0" FROM THE BACK OF PAD, AND 8'-0" IN FRONT OF PAD. EXTEND CONCRETE PAD AN ADDITIONAL 8'-0" IN FRONT IF LOCATED IN PLANTING AREA.

A / E-19 CONCRETE PAD FOR 1000-2500 KVA 3-PHASE TRANSFORMER

NOT TO SCALE

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By Michael Hahn Date 1/13/25

Customer Installations Department
Hawaiian Electric

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

HECO TRANSFORMER DETAIL

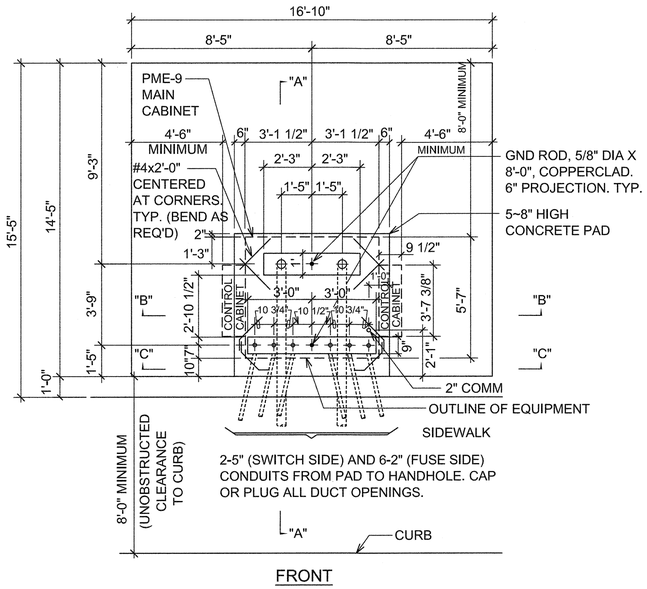
DATE : JANUARY 2025

SHEET : 75 OF 80 SHEETS

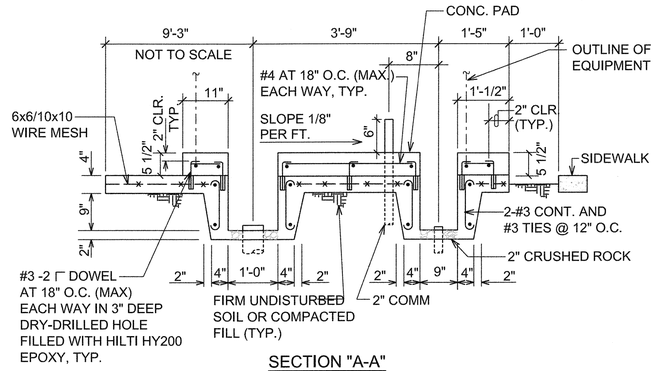
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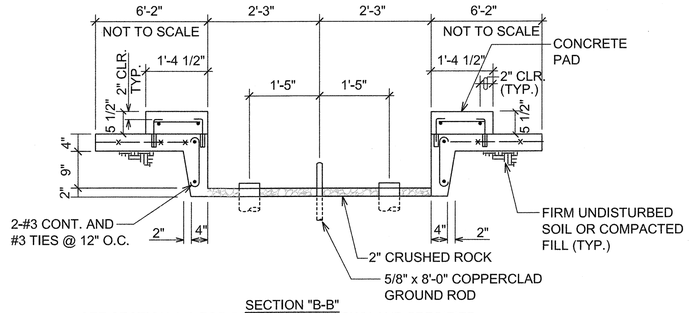
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FRONT



SECTION "A-A"



SECTION "B-B"
SEE SECTION A-A FOR DETAILS NOT SHOWN AND SPECIFIED

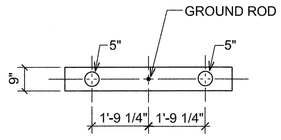
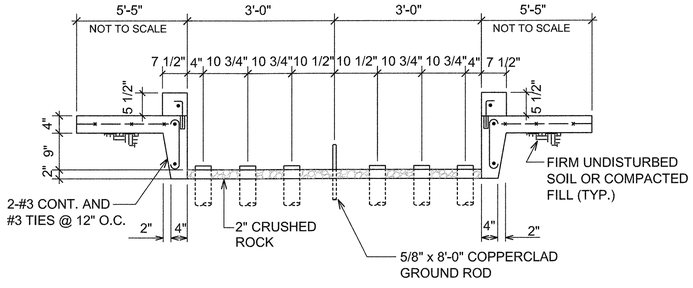


FIGURE 1

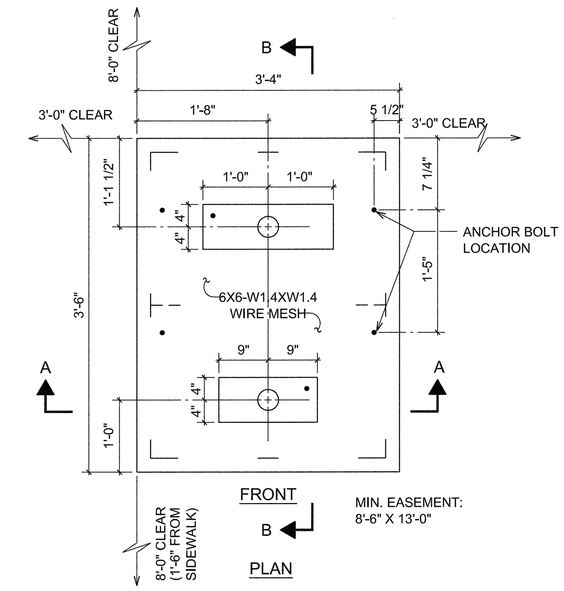


SECTION "C-C"
SEE SECTION A-A FOR DETAILS NOT SHOWN AND SPECIFIED

NOTES:

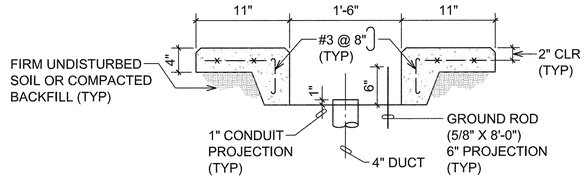
1. CONCRETE COMPRESSIVE STRENGTH: 3,000 P.S.I. IN 28 DAYS.
2. REINFORCING: CLEAN AND NEW ROUND DEFORMED BARS AND GALVANIZED 6x6x/10x10 WIRE MESH. REINFORCING STEEL SHALL BE ASTM A615, GRADE 60.
3. TOP OF CONCRETE PAD TO BE SMOOTH AND TRUE. OTHER EXPOSED SURFACES TO BE SMOOTH AND FREE FROM DEFECTS. SIDEWALK FINISH AS PER CITY AND COUNTY SPECIFICATIONS.
4. CONSTRUCTION TO COMPLY WITH AMERICAN CONCRETE INSTITUTE (ACI 318) AS AMENDED.
5. WEIGHT OF SWITCHGEAR EQUALS 2,650 POUNDS.
6. IF FRONT OF PAD FACES SIDEWALK WITH UNOBSTRUCTED 8"-0" MINIMUM CLEARANCE TO CURB, PAD CAN BE 14'-5" IN LENGTH BUT WIDTH MUST COVER ENTIRE EASEMENT/CLEARANCE WIDTH (16'-10"). (INCLUDES 8'-0" MINIMUM CLEARANCE IN BACK AND 4'-6" MINIMUM CLEARANCE ON EACH SIDE OF PME-9).
7. THIS ASSUMES SIDEWALK IN FRONT OF PAD.
8. CONDUITS FOR FUSE SIDE ASSUME 3-1/C CABLES, IF 1-3/C CABLE USED, MAKE PROVISIONS FOR 2-5" CONDUITS INSTEAD (SEE FIGURE 1).

A / E-20 PME-9 AUTOMATIC TRANSFER SWITCHING EQUIPMENT PAD
NOT TO SCALE (WITH SIDEWALK)

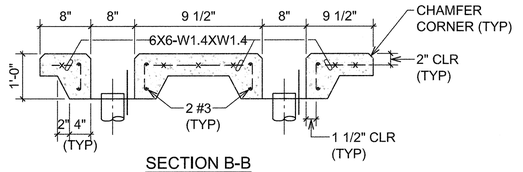


FRONT

PLAN



SECTION A-A



SECTION B-B

NOTES:

1. CONCRETE COMPRESSIVE STRENGTH: 3000 PSI IN 28 DAYS.
2. REINFORCING: CLEAN AND NEW ROUND DEFORMED BARS (GR 40) AND 6X6-W1.4XW1.4 WIRE MESH.
3. TOP OF CONCRETE PAD TO BE SMOOTH AND TRUE & FREE FROM DEFECTS. SIDEWALK FINISH AS PER C&C SPECIFICATIONS. ROUND ALL EXPOSED EDGES TO ~6" RADIUS.
4. IF ADDITIONAL GROUND RESISTANCE IS MORE THAN 25 OHMS, INSTALL ADDITIONAL GROUND ROD OR WIRE.

B / E-20 HECO PMH-3 (15KV) SWITCH EQUIPMENT PAD LOT
NOT TO SCALE

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By Michael Hahn Date 1/13/25

Customer Installations Department
Hawaiian Electric

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

HECO SWITCH PAD DETAILS

DATE :	DWG. NO.
JANUARY 2025	E-20
SHEET :	
76 OF 80 SHEETS	

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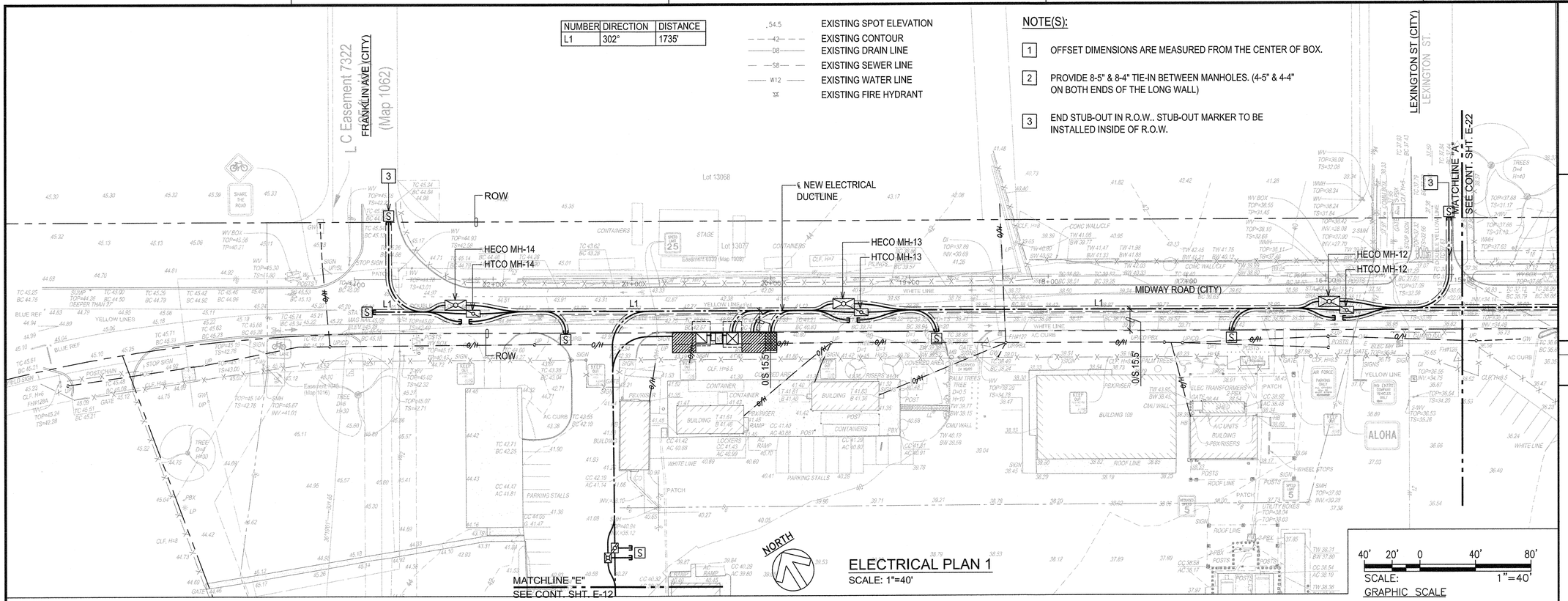
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NUMBER	DIRECTION	DISTANCE
L1	302°	1735'

54.5 EXISTING SPOT ELEVATION
42 EXISTING CONTOUR
D8 EXISTING DRAIN LINE
S8 EXISTING SEWER LINE
W12 EXISTING WATER LINE
EXISTING FIRE HYDRANT

NOTE(S):

1. OFFSET DIMENSIONS ARE MEASURED FROM THE CENTER OF BOX.
2. PROVIDE 8-5" & 8-4" TIE-IN BETWEEN MANHOLES. (4-5" & 4-4" ON BOTH ENDS OF THE LONG WALL)
3. END STUB-OUT IN R.O.W.. STUB-OUT MARKER TO BE INSTALLED INSIDE OF R.O.W.

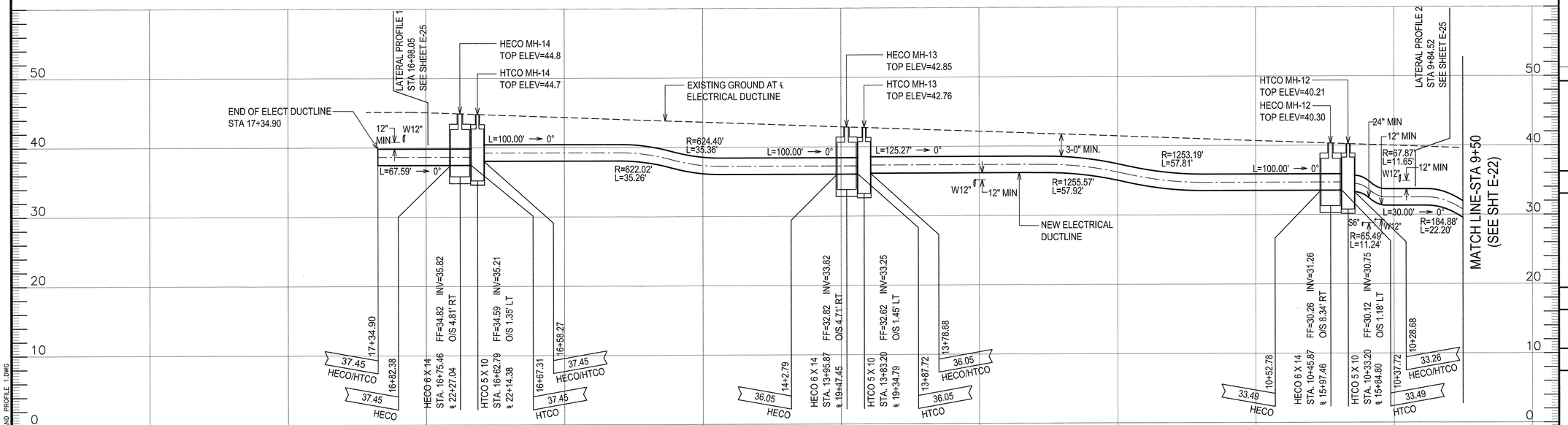


ELECTRICAL PLAN 1

SCALE: 1"=40'

40' 20' 0 40' 80'

SCALE: GRAPHIC SCALE 1"=40'



PROFILE 1 - MIDWAY ROAD (CITY)

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

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By Michael Hahn Date 1/13/25

Customer Installations Department
Hawaiian Electric

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APPROVED BY:

for Melvin Kaku 6/16/25
CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE

Cody Jaramillo
HAWAIIAN TELCOM DATE

Digitally signed by Cody Jaramillo
Date: 2025.01.21 11:33:15 -10'00'

7/16/2025
SPECTRUM OCEANIC DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

ELECTRICAL PLAN AND PROFILE 1 - MIDWAY ROAD

DATE :	DWG. NO.
JANUARY 2025	E-21
SHEET :	
77 OF 80 SHEETS	

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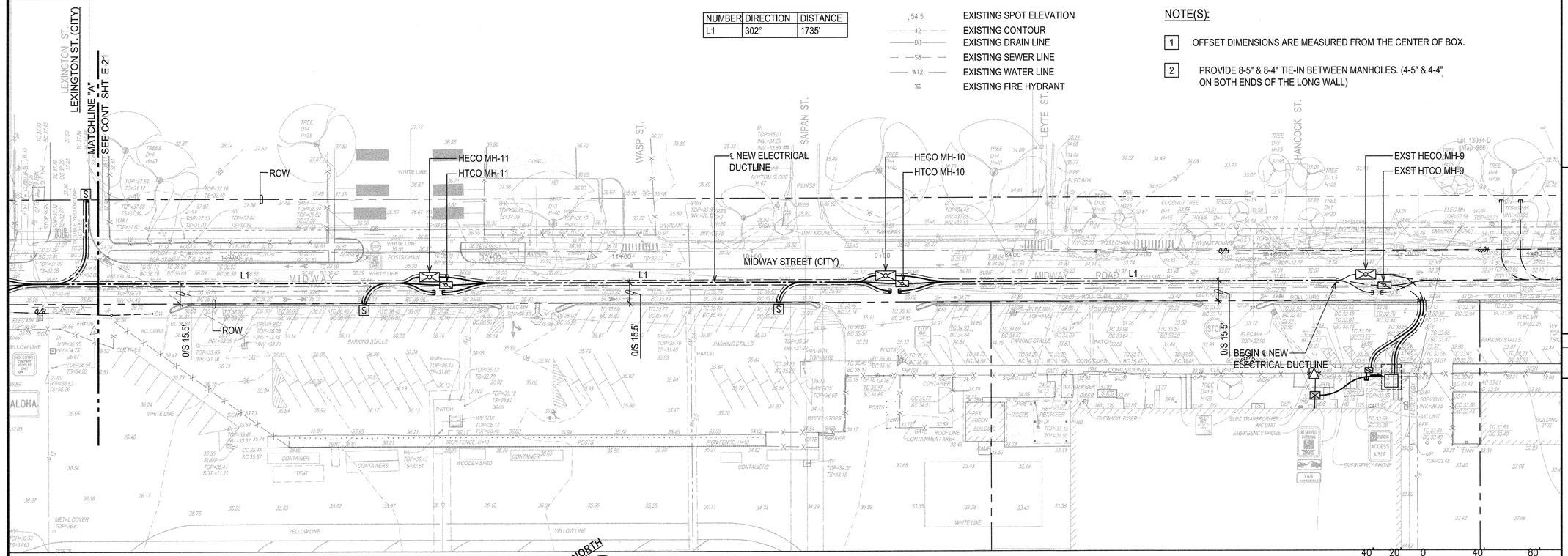
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NUMBER	DIRECTION	DISTANCE
L1	302°	1735'

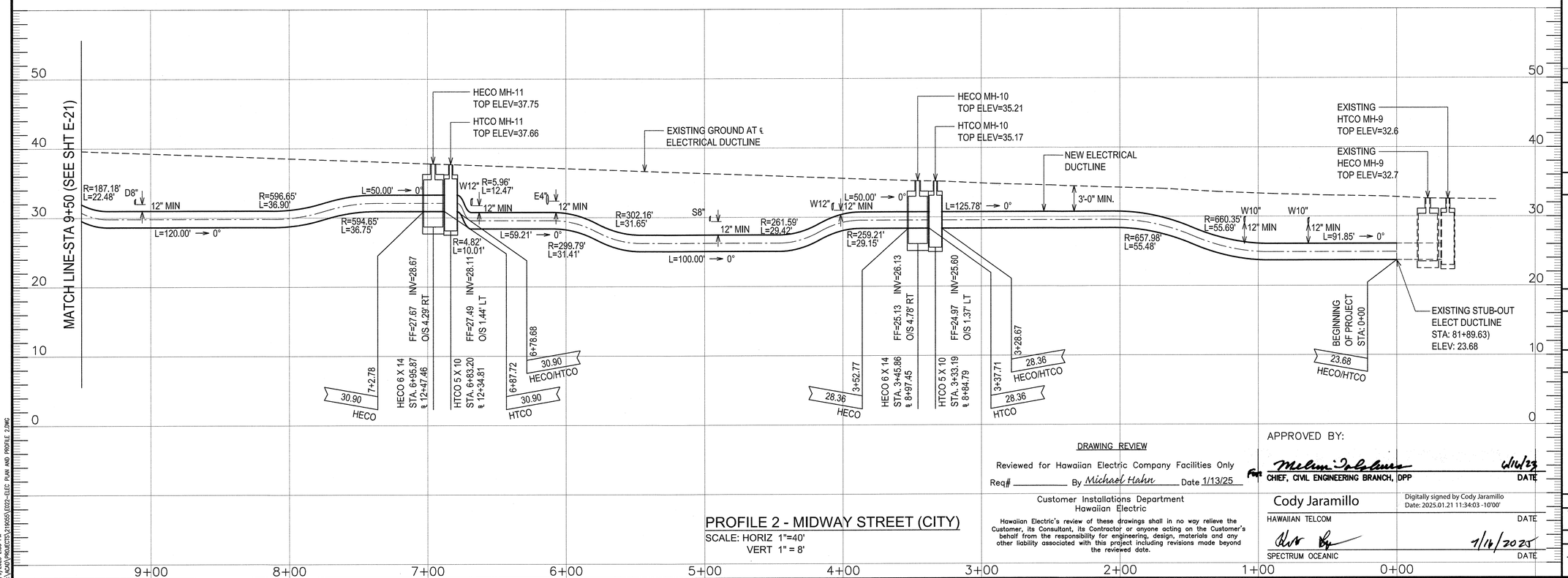
54.5 EXISTING SPOT ELEVATION
42 EXISTING CONTOUR
D8 EXISTING DRAIN LINE
S8 EXISTING SEWER LINE
W12 EXISTING WATER LINE
EXISTING FIRE HYDRANT

NOTE(S):

1. OFFSET DIMENSIONS ARE MEASURED FROM THE CENTER OF BOX.
2. PROVIDE 8-5" & 8-4" TIE-IN BETWEEN MANHOLES. (4-5" & 4-4" ON BOTH ENDS OF THE LONG WALL)



ELECTRICAL PLAN 2
SCALE: 1"=40'



PROFILE 2 - MIDWAY STREET (CITY)
SCALE: HORIZ 1"=40'
VERT 1" = 8'

DRAWING REVIEW

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Req# _____ By Michael Hahn Date 1/13/25

Customer Installations Department
Hawaiian Electric

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APPROVED BY:

For CHIEF, CIVIL ENGINEERING BRANCH, DPP — DATE 1/14/25

Cody Jaramillo — Digitally signed by Cody Jaramillo Date: 2025.01.21 11:34:03 -10'00'

HAWAIIAN TELCOM — DATE

SPECTRUM OCEANIC — DATE 1/14/2025

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

JANUARY 2025
DATE

PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

ELECTRICAL PLAN AND PROFILE 2 - FRANKLIN AVE & LEXINGTON STREET

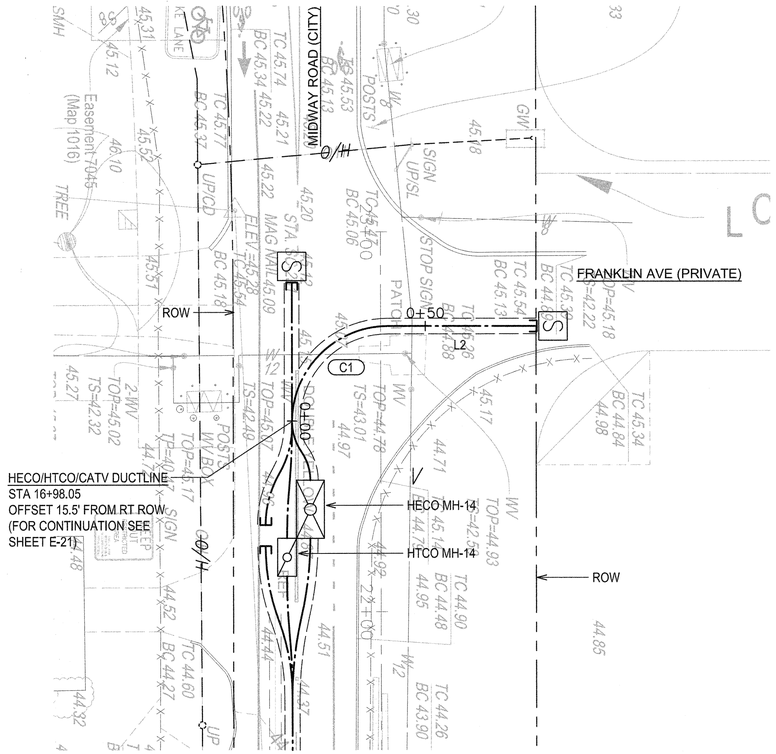
DATE : JANUARY 2025

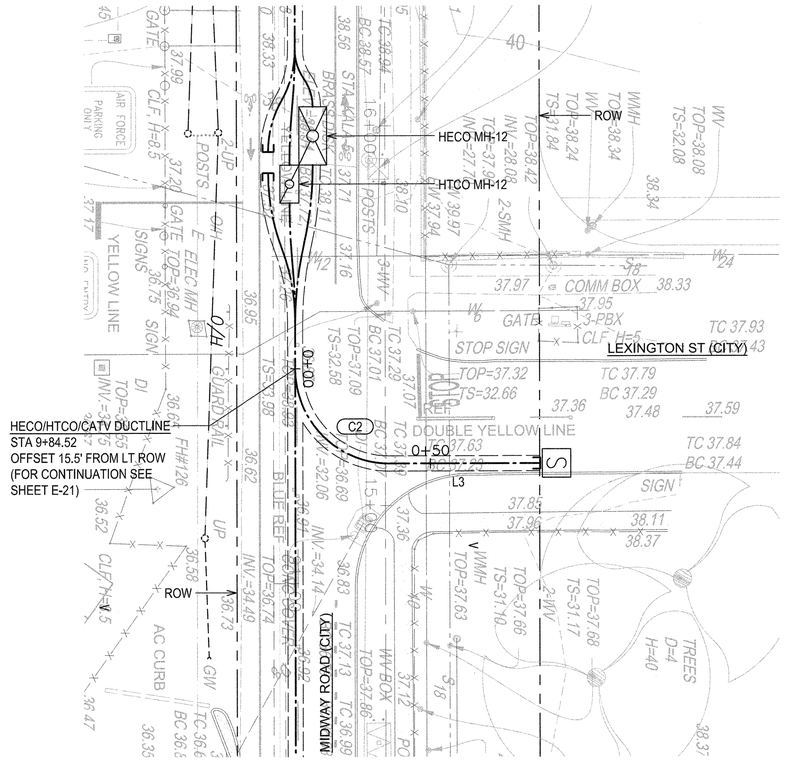
SHEET : 78 OF 80 SHEETS

DWG. NO. E-22

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NUMBER	DIRECTION	DISTANCE
L2	212°	39'
L3	212°	40'

NO.	DELTA	TANGENT	R	Ch	Lc
C1	91°	25	25	36	40
C2	90°	25	25	35	39

54.5 EXISTING SPOT ELEVATION
43 EXISTING CONTOUR
S8 EXISTING SEWER LINE
W12 EXISTING WATER LINE
EXISTING FIRE HYDRANT

NOTE(S):

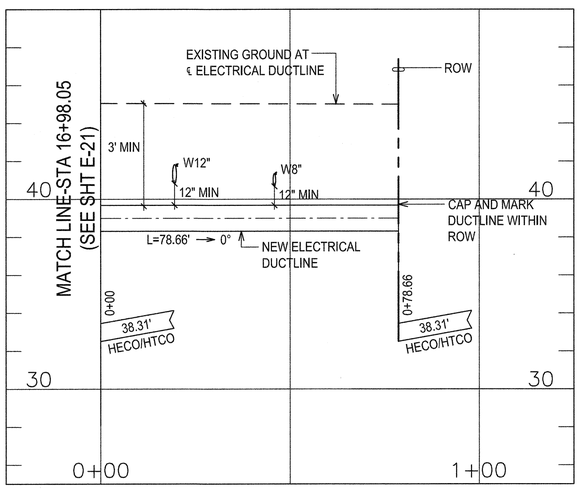
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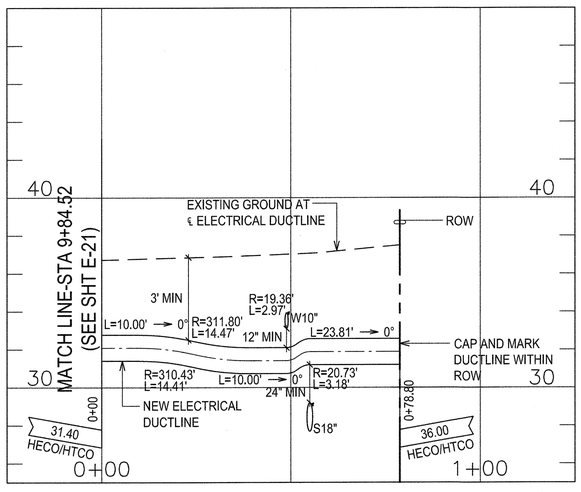
NORTH

ELECTRICAL PLAN - FRANKLIN AVE (PRIVATE)
SCALE: 1"=20'

NORTH

ELECTRICAL PLAN - LEXINGTON STREET (CITY)
SCALE: 1"=20'





PROFILE - FRANKLIN AVE (PRIVATE)
SCALE: HORIZ 1"=20'
VERT 1" = 4'

PROFILE - LEXINGTON (CITY)
SCALE: HORIZ 1"=20'
VERT 1" = 4'

DRAWING REVIEW

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Req# _____ By Michael Hahn Date 1/13/25

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Hawaiian Electric

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APPROVED BY:

Melvin Takabuna 6/16/25
for CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE

Cody Jaramillo Digitally signed by Cody Jaramillo Date: 2025.01.21 11:34:37 -10'00'
HAWAIIAN TELCOM DATE

7/14/2025
SPECTRUM OCEANIC DATE

20' 10' 0 20' 40'
SCALE: 1"=20'
GRAPHIC SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

04/30/2026
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DSGN.	DRWN.	CHKD.	APPD.
GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

FINAL SUBMITTAL

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PROJECT TITLE :

UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

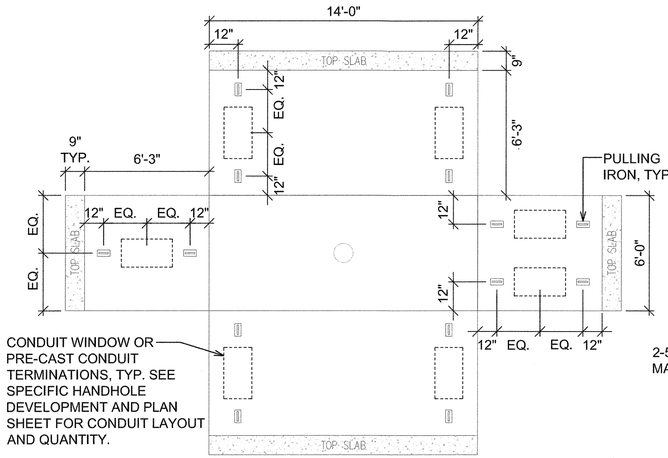
ELECTRICAL PLAN AND PROFILE 3 - FRANKLIN AVE & LEXINGTON STREET

DATE :
JANUARY 2025
SHEET :
79 OF 80 SHEETS

DWG. NO.
E-23

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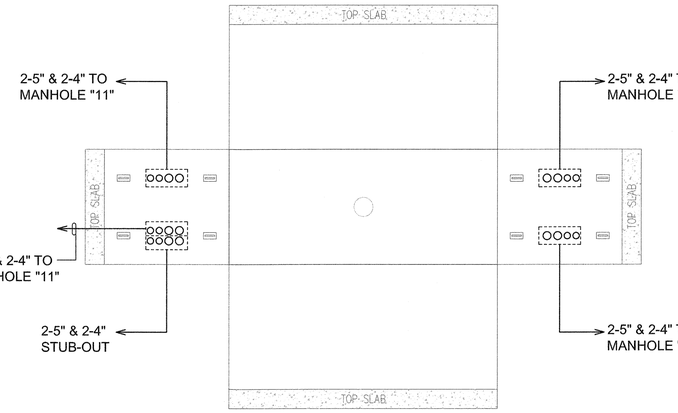
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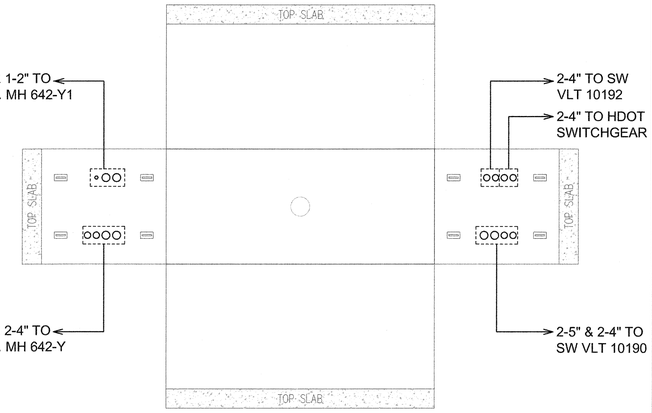
NOTE(S):

1. SEE HECO STD DWG 103777: HECO HL-93 RATED MANHOLES, VAULTS AND HANDHOLES.
2. SEE HECO STD DWG 103764: HECO HL-93 RATED MANHOLES, VAULTS AND HANDHOLES TYPICAL ACCESSORY DETAILS.

TYPICAL HECO 6'X14' HH DIMENSIONS



6'X14' HANDHOLE "10"



6'X14' HANDHOLE "642-Z"

6'X14' HANDHOLE "11"

6'X14' HANDHOLE "12"

6'X14' HANDHOLE "13"

6'X14' HANDHOLE "14"

DRAWING REVIEW

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GDT	CAD	GDT	GDT

NO.	DATE	REVISIONS

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UTILITY SYSTEM IMPROVEMENTS
AT
KALAELOA AIRPORT
BARBERS POINT, OAHU, HAWAII

PROJECT NO.:

AO5021-17

SHEET TITLE:

HANDHOLE DEVELOPMENT 1

DATE :	DWG. NO.
JANUARY 2025	E-24
SHEET :	
80 OF 80 SHEETS	

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