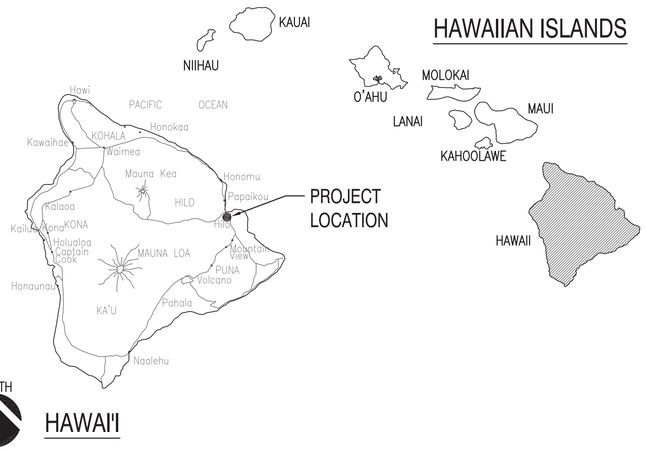
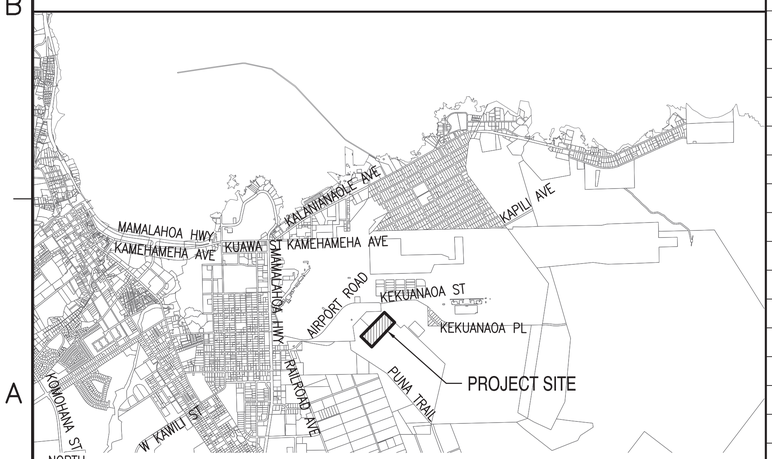
DEPARTMENT OF DEFENSE, STATE OF HAWAII
HAWAII ARMY NATIONAL GUARD (HIARNG)
HILO CA-202004-C6

HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS

HILO, HAWAII



VICINITY MAP



LOCATION MAP

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BOWERS + KUBOTA CONSULTING
Project Management • Planning • Architecture/Engineering Design • Construction Management

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APPR. | DATE | DESCRIPTION | SYM

SUBMITTAL PHASE

SUBMITTAL DATE 09/15/23

DES CP | DRW RAI | CHK HW

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DESIGN AND PROJECT MANAGEMENT BRANCH
STATE OF HAWAII
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TITLE SHEET, VICINITY MAP, LOCATION MAP, & INDEX TO DRAWINGS

SCALE: AS NOTED

STATE JOB NO. HILO CA-202004-C6

FEDERAL PROJECT NO. 15190005

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G001

GENERAL NOTES:

1. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL DESIGN, MATERIALS, FABRICATION, TESTING, AND CONSTRUCTION MUST BE IN ACCORDANCE WITH THE FOLLOWING NOTES, REFERENCED CODES, SPECIFICATIONS, AND STANDARDS. SHOULD THESE NOTES, CODES, SPECIFICATIONS OR STANDARDS DISAGREE, THE MORE STRINGENT REQUIREMENT AS DETERMINED BY THE OWNER'S REPRESENTATIVE MUST GOVERN.

2. THE LATEST EDITION OF REFERENCED CODES, SPECIFICATIONS, OR STANDARDS IS APPLICABLE, UNLESS OTHERWISE SPECIFIED.

3. COPIES OF ALL CODES, SPECIFICATIONS AND STANDARDS REFERENCED IN THESE NOTES ARE AVAILABLE FROM THE FOLLOWING ORGANIZATIONS:

   AMERICAN CONCRETE INSTITUTE (ACI)
   AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
   AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
   AMERICAN WELDING SOCIETY (AWS)
   INTERNATIONAL BUILDING CODE (IBC)
   OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)

EARTHWORK:

GEOTECH

1. CONCRETE SLABS-ON-GRADE MUST BE UNDERLAIN BY A MINIMUM OF 18 INCHES OF IMPORTED GRANULAR MATERIAL. THE UPPER 4 INCHES OF GRANULAR MATERIAL MUST CONSIST OF #3 FINE (ASTM C 33, NO. 67) AGGREGATE BASE COURSE COMPACTED TO A MINIMUM OF 95 PERCENT AS DETERMINED BY ASTM D 1557. THE REMAINDER OF GRANULAR FILL SECTION MUST CONSIST OF IMPORTED GRANULAR STRUCTURAL FILL.

   THICKENED FOOTING MUST BE UNDERLAIN BY A MINIMUM OF 18 INCHES OF IMPORTED GRANULAR STRUCTURAL FILL.

2. IMPORTED GRANULAR STRUCTURAL FILL MUST BE WELL-GRADED, NON-EXPANSIVE GRANULAR MATERIAL. MAXIMUM PARTICLE SIZE MUST BE 3 INCHES AND 8-20 PERCENT OF SOIL BY WEIGHT MUST PASS THROUGH #200 SIEVE. PLASTICITY INDEX OF SOIL PASSING #40 SIEVE MUST NOT BE GREATER THAN 10. FILL MUST BE RESTRICTED TO HORIZONTAL LIFTS OF 8 INCHES OF LOOSE THICKNESS AND COMPACTED TO AT LEAST 95 PERCENT AS DETERMINED BY ASTM D 1557.

3. SUBGRADE BELOW GRANULAR STRUCTURAL FILL AND AGGREGATE BASE COURSE MUST BE SCARIFIED TO A DEPTH OF 6 INCHES AND COMPACTED TO A MINIMUM 90 PERCENT COMPACTION AS DETERMINED BY ASTM D 1557.

EXCAVATING

1. ALL EXCAVATION MUST COMPLY WITH OSHA STANDARDS.

2. DEMOLISH AND REMOVE ALL OBSTRUCTIONS AS REQUIRED. AREAS TO RECEIVE BACKFILL MUST BE STRIPPED TO REMOVE ALL ORGANIC MATERIAL AND CONTAMINATED OR SOFT SOIL. DISPOSAL OF ALL DEBRIS FROM DEMOLITION AND STRIPPING OPERATIONS MUST BE AS SPECIFIED BY OWNER.

3. CARE MUST BE TAKEN NOT TO OVER EXCAVATE FOR CONCRETE FOUNDATIONS. ANY OVER EXCAVATION BELOW BOTTOM OF FOUNDATION ELEVATION MUST BE BACKFILLED WITH LEAN CONCRETE BY THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE.

4. ALL FOUNDATION EXCAVATIONS MUST BE INSPECTED BY PROOF-ROLLING OR PROBING TO DETERMINE THAT ALL LOOSE, SOFT, OR OTHERWISE UNDESIRABLE MATERIALS ARE REMOVED. IF AN AREA OF UNDESIRABLE MATERIAL IS DISCOVERED BELOW THE BOTTOM OF THE FOOTING, IT MUST BE REMOVED AND BACKFILLED WITH LEAN CONCRETE OR REPLACED WITH COMPACTED STRUCTURAL FILL.

5. WHERE SOIL CONDITIONS PERMIT, FOUNDATIONS BELOW GRADE MAY BE EARTH FORMED UNLESS OTHERWISE NOTED.

BACKFILL

1. UNLESS OTHERWISE SPECIFIED, BACKFILL MAY BE EXCAVATED, UNCONTAMINATED, ON-SITE MATERIAL WHICH HAS BEEN APPROVED BEFORE INSTALLATION.

2. IN UNPAVED AREAS, COMPACT BACKFILL WITHIN 2% OF OPTIMUM MOISTURE CONTENT, TO AT LEAST 80% OF MODIFIED PROCTOR DRY DENSITY (ASTM D 1557).

3. IN PAVED AREAS, COMPACT BACKFILL, WITHIN 2% OF OPTIMUM MOISTURE CONTENT, TO AT LEAST 90% OF MODIFIED PROCTOR DRY DENSITY (ASTM D 1557).

4. FOR COMPACTION BY MANUALLY-GUIDED POWER COMPACTORS, BACKFILL MUST BE PLACED IN LIFTS OF 6" MAXIMUM LOOSE THICKNESS.

TESTING

1. DENSITY TESTING FOR THE BACKFILL MUST BE PERFORMED BY AN INDEPENDENT LAB. FOR EACH CLASS OF FILL, NOT LESS THAN ONE TEST MUST BE MADE FOR EACH FOOT OF FILL THICKNESS, NOR LESS THAN 1000 CUBIC YARDS OF FILL. IF THE FILL FAILS TO MEET THE SPECIFIED PERCENT OF MODIFIED PROCTOR OR THE SPECIFIED RELATIVE DENSITY BY MORE THAN 2 PERCENT, THE ENTIRE ONE FOOT OF THICKNESS MUST BE REMOVED, REPLACED, RECOMPACTED, AND RETESTED. IF THE FILL FAILS TO MEET THE ABOVE REQUIREMENTS BY LESS THAN 2 PERCENT, THE INDEPENDENT LAB MUST BE CONSULTED FOR METHODS TO INCREASE THE SOIL DENSITY SUCH AS CHANGING METHODS FOR MORE UNIFORM MOISTURE CONTROL, ALTERING THE NUMBER OF PASSES, DECREASING THE LIFT THICKNESS OR CHANGING THE COMPACTION EQUIPMENT.

CONCRETE:

APPLICABLE CODES OR STANDARDS

ALL CONCRETE DESIGN, TESTING, AND CONSTRUCTION MUST BE IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS.

1. ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
2. ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
3. ACI 304, "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE".
4. ASTM STANDARDS FOR THE MATERIALS LISTED.
5. OSHA STANDARDS.

MATERIALS AND CONCRETE STRENGTH

1. ALL CONCRETE MUST BE READY-MIXED CONFORMING TO ASTM C94 AND MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS WITH A MINIMUM CEMENT CONTENT OF 470 LBS PER CUBIC YARD, A MAXIMUM WATER CEMENT RATIO OF 0.45, AND A MAXIMUM SIZE OF AGGREGATE OF 1-1/2" INCHES. EXCEPT AS NOTED BELOW:
   A. CONCRETE FOR SEAL SLABS (LEAN CONCRETE) MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1,500 PSI AT 28 DAYS.
2. ALL REINFORCING STEEL MUST MEET ASTM A615, GRADE 60 SPECIFICATIONS.

CONSTRUCTION

1. ALL EXPOSED EDGES OF CONCRETE ABOVE GRADE MUST HAVE A 3/4" 45° CHAMFER UNLESS OTHERWISE NOTED.
2. CONSTRUCTION JOINTS
   A. WHEN NO KEY HAS BEEN PROVIDED, CONSTRUCTION JOINTS MUST BE ROUGHENED TO AN AMPLITUDE OF 1/4 INCH.
   B. THE SURFACES OF JOINTS MUST BE CLEANED AND LAITANCE REMOVED.
   C. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS MUST BE WETTED AND STANDING WATER REMOVED.
3. UNLESS OTHERWISE SPECIFIED, CONCRETE SLUMP RANGE MUST BE 2" MINIMUM TO 5" MAXIMUM AND CONCRETE MUST BE CONSOLIDATED WITH MECHANICAL VIBRATORS.
4. CONCRETE AIR CONTENT MUST BE 5% ± 1% UNLESS OTHERWISE SPECIFIED.
5. CONCRETE MUST BE MAINTAINED ABOVE 50° F AND MOIST CURED FOR AT LEAST 7 DAYS UNLESS OTHERWISE SPECIFIED.

CONCRETE COVER

1. PROVIDE THE FOLLOWING CONCRETE PROTECTIVE COVERINGS FOR REINFORCEMENT, UNLESS NOTED:
   A. 3" FOR ALL CONCRETE DEPOSITED DIRECTLY AGAINST THE GROUND.
   B. 2" FOR ALL FORMED CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND.
   C. 2" FOR CONCRETE CURBS AND PADS AND 2" FOR FORMED CONCRETE NOT EXPOSED TO WEATHER NOR IN CONTACT WITH THE GROUND.

CONCRETE FINISHING

1. PAVING MUST BE FINISHED PER THE FOLLOWING: IMMEDIATELY AFTER STRIKE-OFF OR SCREEDING, A BULL-FLOAT MUST BE USED TO ELIMINATE HIGH AND LOW SPOTS. WHEN THE BLEED WATER SHEEN HAS EVAPORATED, AND THE CONCRETE WILL SUSTAIN FOOT PRESSURE WITH ONLY A SLIGHT INDENTATION, THE CONCRETE MUST BE FLOATED WITH WOOD OR METAL HAND FLOATS OR WITH A FINISHING MACHINE USING FLOAT BLADES. AFTER THE CONCRETE HAS BEEN FLOATED TO A SMOOTH SURFACE, IT MUST BE BRUSHED WITH A SOFT-BRISTLE BROOM THAT IS SPECIALLY MADE FOR TEXTURING CONCRETE.
2. ALL FORMED SURFACES MUST RECEIVE AN AS-CAST PLYWOOD FINISH, SURFACE FINS MUST BE REMOVED. TIE HOLES MUST BE FILLED SOLID WITH PATCHING MORTAR. ALL HONEYCOMBED AND OTHER DEFECTIVE CONCRETE MUST BE REMOVED DOWN TO SOUND CONCRETE AND REPAIRED TO AN APPROVED CONDITION WITH BONDING GROUT AND SAND-CEMENT PATCHING MORTAR OF THE SAME MATERIAL AND APPROXIMATELY THE SAME PROPERTIES AS USED FOR THE CONCRETE, EXCEPT THAT THE COURSE AGGREGATE MUST BE OMITTED.
3. ALL OTHER SURFACES MUST HAVE A "FLOATED FINISH" AS DEFINED BY ACI 301.

CONCRETE MASONRY UNITS (CMU):

1. ALL STANDARD UNITS MUST BE 2-CELL TYPE, CONFORMING TO ASTM C-90, GRADE N, TYPE II, WITH F'm = 1,500 PSI, PROVIDE OPENED KNOCK-OUT UNITS AS REQUIRED.
2. MORTAR MUST CONFORM TO ASTM C270, TYPE M.
3. ALL CELLS MUST BE SOLIDLY FILLED WITH GROUT.
4. GROUT MUST CONFORM TO ASTM C476 WITH A MINIMUM COMPRESSIVE STRENGTH, F'c = 3,000 PSI.

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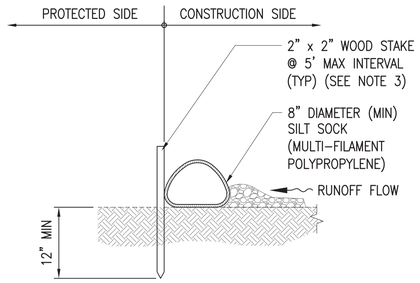
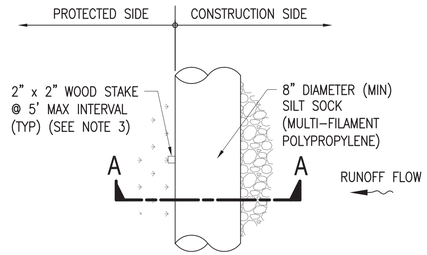
SHEET 2 OF 15

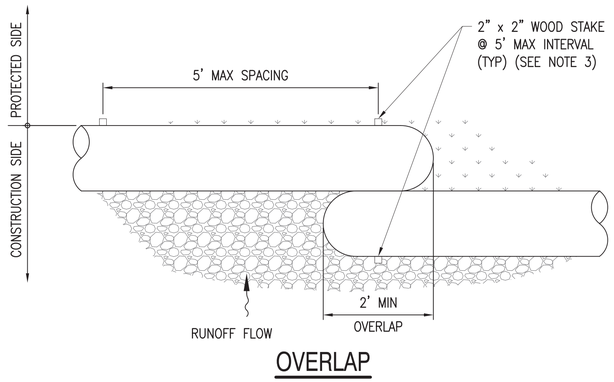
C001



SECTION A-A



PLAN VIEW



OVERLAP

NOTES:

1. SILT SOCK COMPOST FILL MUST NOT CONTAIN BIOSOLIDS AND SHOULD BE CONSISTENT WITH EPA GUIDELINES.
2. SILT SOCK MUST BE PLACED HORIZONTAL ON SLOPES WITH THE ENDS OF THE SILT SOCK POINTING UPSLOPE TO PREVENT STORM WATER FROM RUNNING AROUND SILT SOCK ENDS.
3. AREAS WHERE SILT SOCK WILL BE ON HARD SURFACE/PAVEMENT, THE CONTRACTOR MUST PROVIDE CMU BLOCKS OR GRAVEL BAGS CONTAINING CLEAN PEA-SIZE IN LIEU OF STAKES AND SPACED AS NOTED FOR STAKES. THE CONTRACTOR MUST ASSURE THE SILT SOCK FIRMLY SECURED.
4. THE CONTRACTOR MUST INSPECT THE SILT SOCK REGULARLY OR AFTER EACH RAIN EVENT AND ASSURE THE SILT SOCK IS PERFORMING PROPERLY.
5. SOCK MESH MUST BE A SINGLE-PLY, POLYPROPYLENE, KNITTED MESH WITH 1/8" TO 3/8" OPENINGS.
6. MANUFACTURER MUST PROVIDE THIRD PARTY TESTING/RESEARCH ON THEIR PRODUCT PERFORMANCE, WHICH MUST MEET OR EXCEED 80% TSS REMOVAL EFFICIENCY.

A1 SILT SOCK DETAILS
NTS

LEGEND:

	EXISTING:	NEW:
TRAVERSE LINE		
CONTOUR MAJOR	40	
CONTOUR MINOR	41	
CHAIN LINK FENCE		
UTILITY/ELECTRICAL LINE	e	e
WATERLINE/IRR LINE	W2	
FUEL LINE	LPG	
SEWER LINE	SS	
TEL/COMM LINE	COMM	
SILT SOCK		
SURFACE FLOW		
BUILDING OR STRUCTURE		
CONCRETE PAVING		
TILE WALL		
GRADING SLOPE	TOP / BOT.	
PALM TREE		
TREE		
SHRUB		
SEWER CLEANOUT	SWRCO	
WATER VALVE		
ELECT JUNCTION BOX		
ELECT SWITCH BOX		
ELECT VAULT	ELECT VAULT	
CABLE TV BOX	CATV	
ELECT CHILLER		
HE BOX	HE BOX	
IRR CONTROL VALVE	ICV	
ARV BOX		
SPOT ELEVATION	575	
MONUMENT		
SIGN		

CIVIL NOTES:

1. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY MUST BE IMMEDIATELY BROUGHT TO THE ATTENTION OF CONTRACTING OFFICER FOR CLARIFICATION.
2. THE CONTRACTOR MUST OBSERVE AND COMPLY WITH ALL FEDERAL AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.
3. THE CONTRACTOR MUST PREVENT SILT AND DEBRIS FROM ENTERING DRAINAGE, ROADWAYS AND OTHER AREAS. IF A BREECH OCCURS, THE CONTRACTOR MUST REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS.
4. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE BASED ON THE LATEST AVAILABLE DATA. THE CONTRACTOR MUST VERIFY THE LOCATIONS AND DEPTHS OF THE EXISTING UTILITIES SHOWN AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA.
5. EXISTING UTILITIES MUST REMAIN IN-SERVICE AND IN PLACE UNLESS NOTED OTHERWISE. INTERRUPTION OF SERVICE MUST BE KEPT TO A MINIMUM AND MUST BE DONE ONLY WITH THE APPROVAL OF THE CONTRACTING OFFICER AND FACILITY USERS.
6. THE CONTRACTOR MUST PROVIDE SAFE ACCESS TO AND FROM ALL PARKING LOTS, SIDEWALKS, DRIVEWAYS AND STREETS.
7. THE CONTRACTOR MUST RESTORE TO THEIR OWN ORIGINAL CONDITION ALL IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION, INCLUDING PAVEMENTS, EMBANKMENTS, CURBS, SIGNS, LANDSCAPING, STRUCTURES, UTILITIES, WALLS, FENCES, ETC.
8. THE PROJECT DESIGN MUST COMPLY WITH THE LATEST UNIFIED FACILITIES CRITERIA (UFC), UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS), NAVY SAFETY REQUIREMENTS, AND ALL APPLICABLE CODES.

SURVEY NOTES:

1. EXISTING CONDITIONS ARE BASED ON TOPOGRAPHIC SURVEY CONDUCTED BY PARK ENGINEERING DATED APRIL 22, 2021 FIELD BOOK NO. 3715.
2. UNDERGROUND UTILITY LINES AND STRUCTURES ARE PROVIDED FOR INFORMATION ONLY AND ARE BASED ON INFORMATION SHOWN ON PLANS AND MAPS PREPARED BY OTHERS. THE INFORMATION SHOWN, THEREFORE MAY OR MAY NOT BE REPRESENTATIVE OF ACTUAL FIELD CONDITIONS. THE UNDERGROUND UTILITY LINES AND STRUCTURES MAY OR MAY NOT BE PRESENT AT THE LOCATIONS SHOWN OR UNDERGROUND UTILITY LINES AND/OR STRUCTURES NOT SHOWN MAY BE PRESENT.
3. UNLESS OTHERWISE NOTED, ALL LOCATIONS OF UNDERGROUND UTILITY LINES AND/OR STRUCTURES ARE APPROXIMATE. NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE USER(S) OF THIS TOPOGRAPHIC SURVEY MAP MUST VERIFY THE INFORMATION, AS NEEDED, DURING CONSTRUCTION.

DEMOLITION NOTES:

1. FOR ELECTRICAL DEMOLITION WORK, SEE ELECTRICAL DRAWINGS.
2. EXISTING UTILITIES MUST REMAIN UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR MUST VERIFY TYPE OF UTILITY LINES PRIOR TO REMOVAL.

ABBREVIATIONS:

APPROX	APPROXIMATE	LF	LINEAR FEET
BLDG	BUILDING	MAX	MAXIMUM
BMP	BEST MANAGEMENT PRACTICES	MIN	MINIMUM
CONC	CONCRETE	NO	NUMBER
CL	CENTER LINE OR CLASS	NTS	NOT TO SCALE
CLF	CHAIN LINK FENCE	OC	ON CENTER
CONST	CONSTRUCTION OR CONSTRUCT	OD	OUTSIDE DIAMETER
D, DIA	DIAMETER	PAV'T	PAVEMENT
DEMO	DEMOLISH	PCC	PORTLAND CEMENT CONCRETE
DET	DETAIL	PL	PROPERTY LINE
DWG	DRAWING	PSI	POUNDS PER SQUARE INCH
ELEV	ELEVATION	STD	STANDARD
EX, EXIST	EXISTING	TYP	TYPICAL
EW	EACH WAY	UON	UNLESS OTHERWISE NOTED
FG	FINISHED GRADE	VIF	VERIFY IN FIELD
FOUND	FOUNDATION	W/	WITH
FT	FOOT		
GALV	GALVANIZED		
GOV'T	GOVERNMENT		

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SHEET 3 OF 15

C002

EROSION PREVENTION/SEDIMENT CONTROL NOTES

1. GRADING MUST BE HELD TO THE MINIMUM NECESSARY. GRADING MUST BE SEQUENCED TO MINIMIZE THE EXPOSURE TIME OF CLEARED SURFACE AREA.

2. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE EARTHWORK IS INITIATED.

3. EROSION CONTROL MEASURES MUST BE CHECKED AND REPAIRED AS NECESSARY, FOR EXAMPLE, WEEKLY IN DRY PERIODS AND WITHIN 24 HOURS AFTER RAINFALL OF 0.25 INCHES OR GREATER WITHIN A 24–HOUR PERIOD. DURING PROLONGED RAINFALL, DAILY CHECK IS NECESSARY. THE RECORDS OF CHECKS AND REPAIRS MUST BE MAINTAINED.

4. TEMPORARY STABILIZATION IS REQUIRED ON DISTURBED AREAS WHICH ARE AT FINAL GRADE OR WHEN THE DISTURBED AREA WILL NOT BE WORKED FOR 14 CONSECUTIVE DAYS OR MORE.

5. DISTURBED AREAS MUST BE PERMANENTLY STABILIZED USING PAVEMENT OR EQUIVALENT SURFACE TREATMENT, PRIOR TO REMOVING EROSION AND SEDIMENT CONTROL MEASURES. TRAPPED SEDIMENT AND AREAS OF DISTURBED SOIL WHICH RESULT FROM THE REMOVAL OF THE TEMPORARY MEASURES MUST BE IMMEDIATELY AND PERMANENTLY STABILIZED.

6. PERIMETER CONTROLS ARE REQUIRED DOWNSLOPE OF ALL DISTURBED AREAS.

7. INLET PROTECTION
   - STORM DRAIN INLETS ON–SITE AND THOSE OFF–SITE WHICH MAY RECEIVE RUN–OFF FROM THE SITE MUST USE AN INLET PROTECTION DEVICE.
   - SEDIMENT LEVELS MAY NOT EXCEED ONE THIRD OF THE HEIGHT OF A SEDIMENT BARRIER OR INLET PROTECTION DEVICE ALONG THE LENGTH OF THE SEDIMENT BARRIER OF 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.

8. TRACKING CONTROL
   - MINIMIZE SEDIMENT TRACK–OUT ONTO OFF–SITE STREETS, OTHER PAVED AREAS, AND SIDEWALK FROM VEHICLES EXITING THE CONSTRUCTION SITE BY RESTRICTING VEHICLES 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 MUST BE MARKED WITH FLAGS OR BOUNDARY FENCING.
   - 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 DRAINAGE SYSTEM MUST BE CLEANED USING DRY METHODS SUCH AS SWEEPING OR VACUUMING BY THE END OF EACH WORK DAY.
   - WASHING POLLUTANTS AND MATERIALS THAT ARE DISCHARGED FROM THE PROJECT SITE TO THE DRAINAGE SYSTEM DRAIN INLETS IS PROHIBITED.

9. THE STABILIZED AREAS MUST BE MAINTAINED AND EROSION CONTROL MEASURES REMOVED AFTER THE DISTURBED SITE IS PERMANENTLY STABILIZED.

10. EROSION AND SEDIMENT CONTROL PLAN MUST BE MODIFIED THROUGHOUT CONSTRUCTION TO RECTIFY EROSION AND SEDIMENT PROBLEMS BY DESIGNING, CONSTRUCTING AND PROVIDING BMP STRUCTURES AS NEEDED.

11. CONTRACTOR AND SUBCONTRACTORS MUST BE TRAINED ON THE BEST MANAGEMENT PRACTICES.

12. CONSTRUCT FACILITIES TO RETAIN ON–SITE WASTEWATER SUCH AS WASH WATER AFTER CLEANING CONCRETE TRUCKS.

13. STORM WATER FLOWING TOWARD THE CONSTRUCTION AREA MUST BE DIVERTED BY USING APPROPRIATE CONTROL MEASURES AS PRACTICAL.

14. THE FINAL LIFT OF EACH DAYS WORK MUST BE COMPACTED TO PREVENT EROSION OF FILL MATERIALS.

15. DEMOLITION MATERIALS AND CONSTRUCTION WASTES MUST BE PROPERLY DISPOSED.

16. FILTER SOCK OR OTHER EROSION CONTROL BARRIERS MUST BE CLEARED OF SILT IMMEDIATELY FOLLOWING THE END OF RAINFALL THAT CAUSES SILT BUILDUP ON THE FABRIC.

17. PRIOR TO A LARGE STORM EVENT, DISTURBED EARTH MUST BE ROLLED TO SEAL THE SURFACE AND REDUCE SOIL EROSION.

18. LIQUIDS AND HAZARDOUS MATERIALS MUST BE STORED OVER A ROOFED SECONDARY CONTAINMENT. THE CONTAINMENT VOLUME MUST BE EQUAL TO THE LARGEST CONTAINER VOLUME. SECONDARY CONTAINMENT MUST BE LOCATED AT LEAST 50 FEET AWAY FROM DRAIN INLETS AND RECEIVING WATERS.

GOOD HOUSEKEEPING BMPS

1. POLLUTANTS DISCHARGED FROM THE CONSTRUCTION SITE TO OFF–SITE AREAS MUST BE SWEPT OR VACUUMED EACH DAY BEFORE LEAVING THE JOB SITE.

2. 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 ON–SITE, STORING MATERIALS IN A DESIGNATED AREA, AND INSTALLING SECONDARY CONTAINMENT. CONSTRUCTION MATERIALS, WASTE, TOXIC AND HAZARDOUS SUBSTANCES, STOCKPILES AND OTHER SOURCES OF POLLUTION MUST NOT BE STORED IN BUFFER AREAS, NEAR AREAS OF CONCENTRATED FLOW, OR AREAS ABUTTING THE EXISTING DRAINAGE SYSTEM, RECEIVING WATERS, OR DRAINAGE IMPROVEMENTS THAT DISCHARGE OFF–SITE. PRIMARY AND SECONDARY CONTAINMENT CONTROLS AND COVERS MUST BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE. IN THE EVENT THAT HAZARDOUS MATERIALS ARE DISCHARGED TO THE DRAINAGE SYSTEM, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE CONTRACTING OFFICER'S REPRESENTATIVE (COR).

3. SPILL PREVENTION AND CONTROL. CREATE AND IMPLEMENT SPILL PREVENTION AND RESPONSE PLANS TO ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO THE DRAINAGE SYSTEM 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 MUST CLEANUP ALL LEAKS AND SPILLS IMMEDIATELY.

4. 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, OR INFILTRATING WASH WATER FOR EXTERIOR CLEANING ACTIVITIES THAT USE WATER ONLY.

5. 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.

6. 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.

7. 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.

8. SANITARY/SEPTIC WASTE MANAGEMENT. TEMPORARY AND PORTABLE SANITARY AND SEPTIC WASTE SYSTEMS MUST BE MOUNTED OR STAKED IN, WELL–MAINTAINED AND SCHEDULED FOR REGULAR WASTE DISPOSAL AND SERVICING. SOURCES OF SANITARY AND/OR SEPTIC WASTE MUST NOT BE STORED NEAR THE DRAINAGE SYSTEM OR RECEIVING WATERS.

9. STOCKPILE MANAGEMENT. STOCKPILES MUST NOT BE LOCATED IN DRAINAGE WAYS, WITHIN 50 FEET FROM AREAS OF CONCENTRATED FLOWS. FILTER SOCKS MUST BE USED AROUND THE BASE OF ALL STOCKPILES. STOCKPILES MUST NOT EXCEED 15 FEET IN HEIGHT. STOCKPILES GREATER THAN 15 FEET IN HEIGHT MUST REQUIRE 8 FOOT WIDE BENCHING. STOCKPILES MUST BE COVERED WITH PLASTIC SHEETING OR A COMPARABLE MATERIAL IF THEY WILL NOT BE ACTIVELY USED WITHIN 7 DAYS.

10. LIQUID WASTE MANAGEMENT. LIQUID WASTE MUST 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 MUST NOT BE LOCATED WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS.

11. CONCRETE WASTE MANAGEMENT. PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM CONCRETE WASTE BY CONDUCTING WASHOUT OFF–SITE OR PERFORMING ON–SITE WASHOUT IN A DESIGNATED AREA CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. PLASTIC LINING MATERIAL MUST BE A MINIMUM OF 10 MILLIMETER POLYETHYLENE SHEETING AND MUST BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL. CONTAINMENT AREAS OR DEVICES MUST 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 MUST BE BROKEN UP, REMOVED, AND DISPOSED OF AS SOLID WASTES.

12. 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 MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH APPLICABLE REGULATIONS.

EROSION AND SEDIMENT CONTROL PLAN SCHEDULE AND RAIN RESPONSE PLAN

PROJECT SEQUENCE:

1. INSTALL PERIMETER CONTROLS, INLET PROTECTION, AND CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF THESE BMPS.
2. CLEAR, GRUB, AND GRADE THE SITE. RELOCATE, RECONSTRUCT AND MAINTAIN BMPS AS NEEDED TO KEEP THEM EFFECTIVE AT ALL TIMES. INITIATE TEMPORARY STABILIZATION IMMEDIATELY ONCE GRADING IS COMPLETED.
3. PRACTICE GOOD HOUSEKEEPING MEASURES THROUGHOUT THE DURATION OF CONSTRUCTION.

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 GRADING.
2. INSPECT ALL PERIMETER CONTROLS, AND INLET PROTECTION DEVICES, 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. PLACE SPILL PANS OR OIL–ONLY SPILL PADS UNDER CONSTRUCTION VEHICLES TO PREVENT RUN–OFF FROM CONTACTING ANY SPILLED PETROLEUM PRODUCTS. PROPERLY DISPOSE OF ANY ACCUMULATED OILY WATER AFTER THE RAIN EVENT.
4. RE–INSPECT AFTER THE APPROACHING HEAVY RAINS, TROPICAL STORM OR HURRICANE AND REPLACE OR MAINTAIN BMPS AS NEEDED.

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HENRY A. WENDT
LICENSED PROFESSIONAL ENGINEER
No. 10142–C
HAWAII, U.S.A.

Signature 04/30/2024 Expiration Date of the License

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STM	DESCRIPTION	DATE	APPR

SUBMITTAL PHASE

SUBMITTAL DATE 09/15/23

DES CP | DRW RAI | CHK HW

DEPARTMENT OF DEFENSE
HAWAII ARMY NATIONAL GUARD
DESIGN AND PROJECT MANAGEMENT BRANCH
STATE OF HAWAII
FACILITY MANAGEMENT OFFICE

HILO, HAWAII
HILO AASF #2 BLDG. 00672

HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS

EROSION AND SEDIMENT CONTROL NOTES

SCALE: AS NOTED

STATE JOB NO. HILO CA-202004-C6

FEDERAL PROJECT NO. 15190005

SHEET 4 OF 15

C003

TRUE NORTH
SCALE: 1"=5'

ARMY AVIATION
SUPPORT BUILDING
(BLDG 672)

SITE

BLDG #672

METAL DRAIN COVER

DS

SIGNAL CORPS MH

TONED COMM/L

CONC SIDEWALK

A.C. PAVEMENT

FOR DEMOLITION WORK, SEE A3 / C102

FOR NEW WORK, SEE A3 / C103

FOR EROSION AND SEDIMENT CONTROL PLAN, SEE A1 / C102

GENERAL LYMAN FIELD
GOVERNOR'S EXECTIVE ORDER 1519

CONC RAMP

CONC HEADER, W=0.5

A.C. PATCH

METAL TRENCH DRAIN

30

DOORWAY

ELEC BOX

BLDG #672

LIMITS OF PROJECT/
DISTURBED AREA

TONED 1" COMM/L

TONED 2" COMM/L

BAY DOOR OPENING

(8)-2"PIPES

GATE

DS

CONC SIDEWALK

(3)-ELEC BOX

BUILDING EAVELINE

(2)-2"PIPES

2"PIPE

1"PIPE

TONED E/L

CONC DRIVEWAY

(3)-2"PIPES

(3)-AC UNIT,
H=5.6'

CONC GATE STOP

CHAIN LINK GATE

A.C. Patch

CHAIN LINK FENCE
W/ BARBED WIRE, H=9'

CHAIN LINK FENCE
W/ BARB WIRE, H=9'

CHAIN LINK SLIDING GATE
W/ BARB WIRE, H=7'

CHAIN LINK FENCE
W/ BARB WIRE,H=7'

A3 GENERAL SITE PLAN
SCALE: 1"=5'

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

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APPR	DATE	DESCRIPTION	SYM

SUBMITTAL PHASE

SUBMITTAL DATE 09/15/23

DES	CP	DRW	RAI	CHK	HW

STATE OF HAWAII
FACILITY MANAGEMENT OFFICE

DEPARTMENT OF DEFENSE
DESIGN AND PROJECT MANAGEMENT BRANCH

HAWAII ARMY NATIONAL GUARD

HILO AASF #2 BLDG. 00672

HILO, HAWAII

HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS

GENERAL SITE PLAN

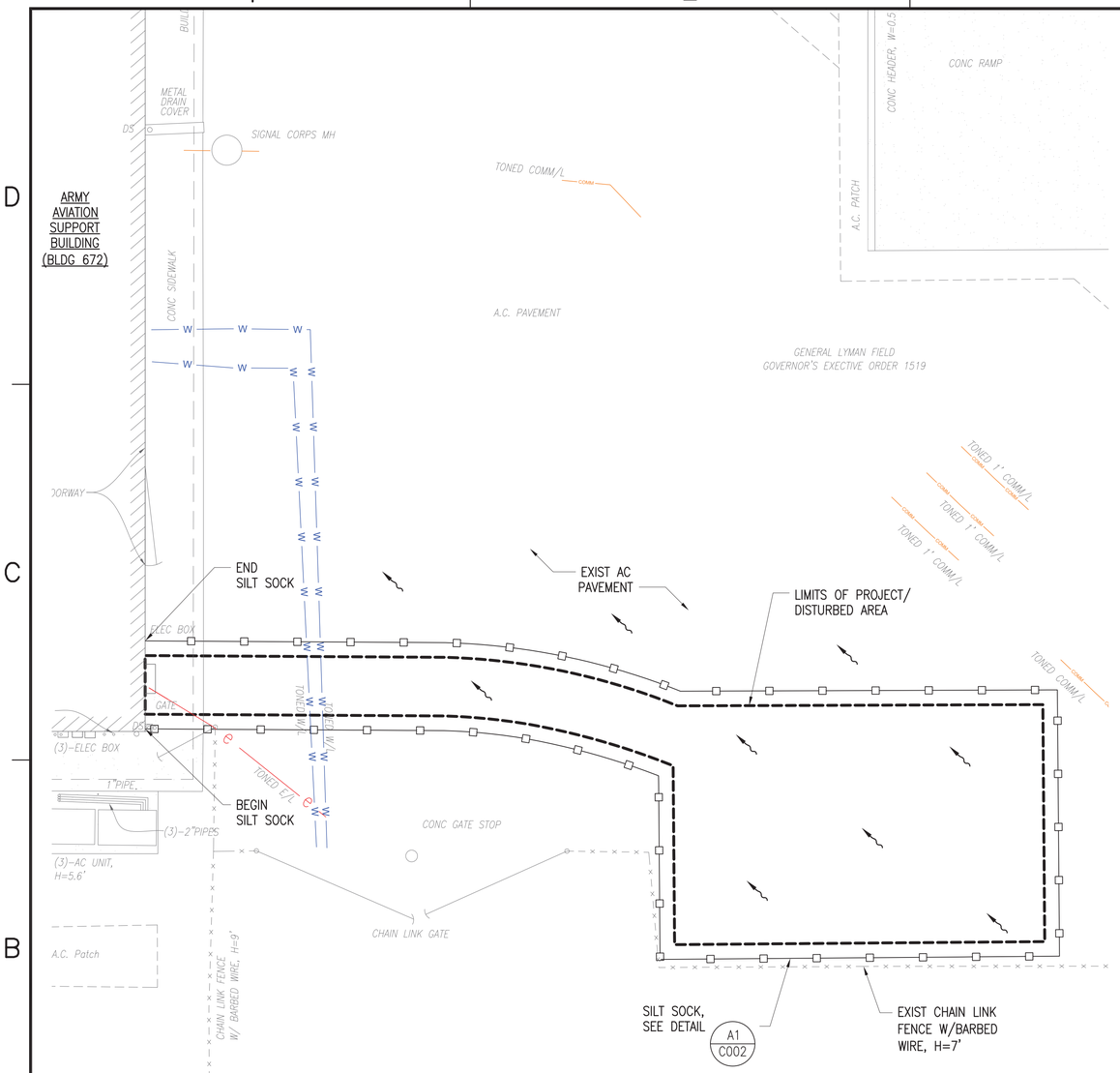
SCALE: AS NOTED

STATE JOB NO.
HILO CA-202004-C6

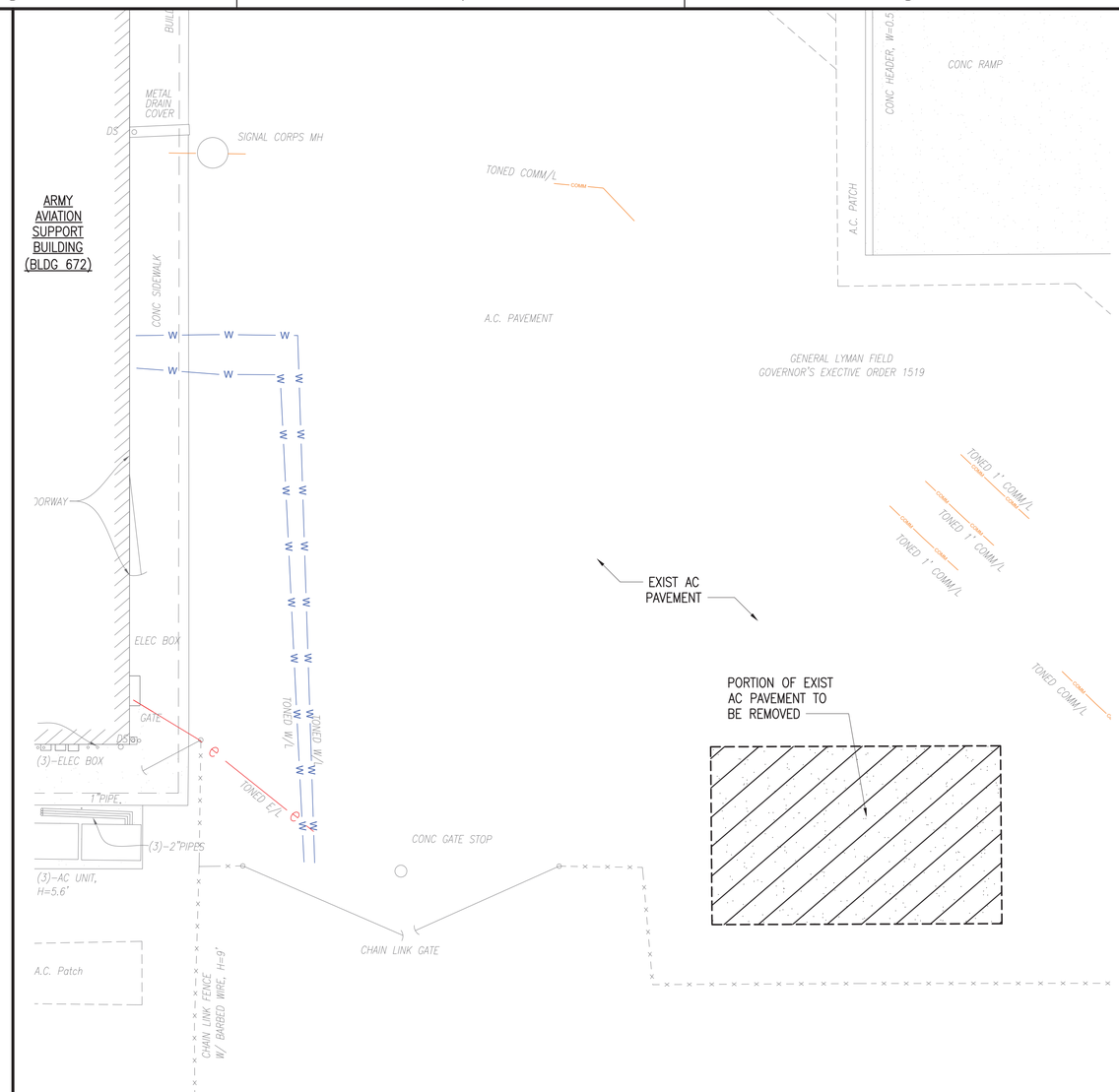
FEDERAL PROJECT NO.
15190005

SHEET 5 OF 15

C101



A1 EROSION AND SEDIMENT CONTROL PLAN
SCALE: 1"=5'



A3 PARTIAL SITE PLAN - DEMOLITION WORK
SCALE: 1"=5'

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

HAWAII ARMY NATIONAL GUARD

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APPR	DATE	DESCRIPTION

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HAWAII ARMY NATIONAL GUARD
DESIGN AND PROJECT MANAGEMENT BRANCH
STATE OF HAWAII
FACILITY MANAGEMENT OFFICE
HILO AAFSF #2 BLDG. 00672
HILO, HAWAII

HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS

EROSION AND SEDIMENT CONTROL PLAN & PARTIAL SITE PLAN - DEMOLITION WORK

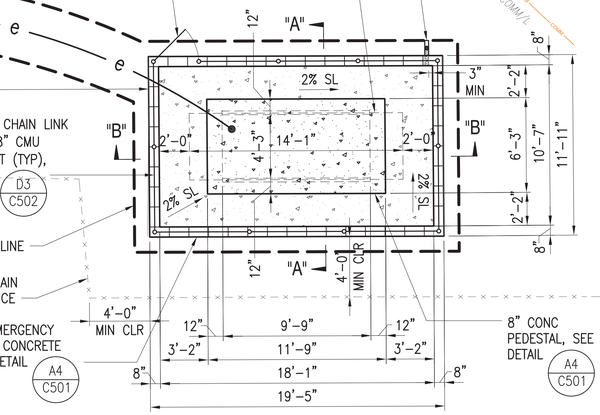
SCALE: AS NOTED

STATE JOB NO. HILO CA-202004-C6

FEDERAL PROJECT NO. 15190005

SHEET 6 OF 15

C102



A3 SITE PLAN - NEW WORK

SCALE: 1"=5'

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STATE OF HAWAII
DEPARTMENT OF DEFENSE
HAWAII ARMY NATIONAL GUARD
FACILITY MANAGEMENT OFFICE
DESIGN AND PROJECT MANAGEMENT BRANCH

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HILO, HAWAII

HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS

PARTIAL SITE PLAN - NEW WORK

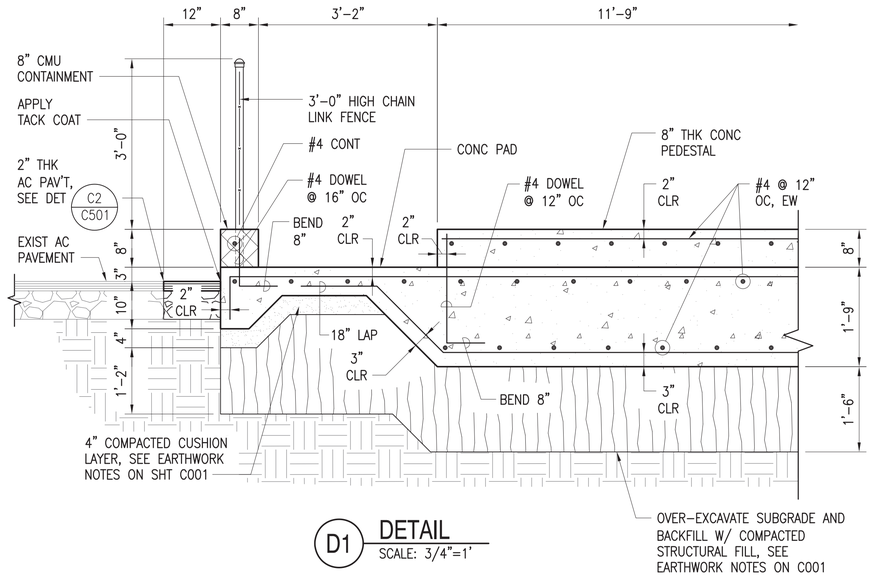
SCALE: AS NOTED

STATE JOB NO.: HILO CA-202004-C6

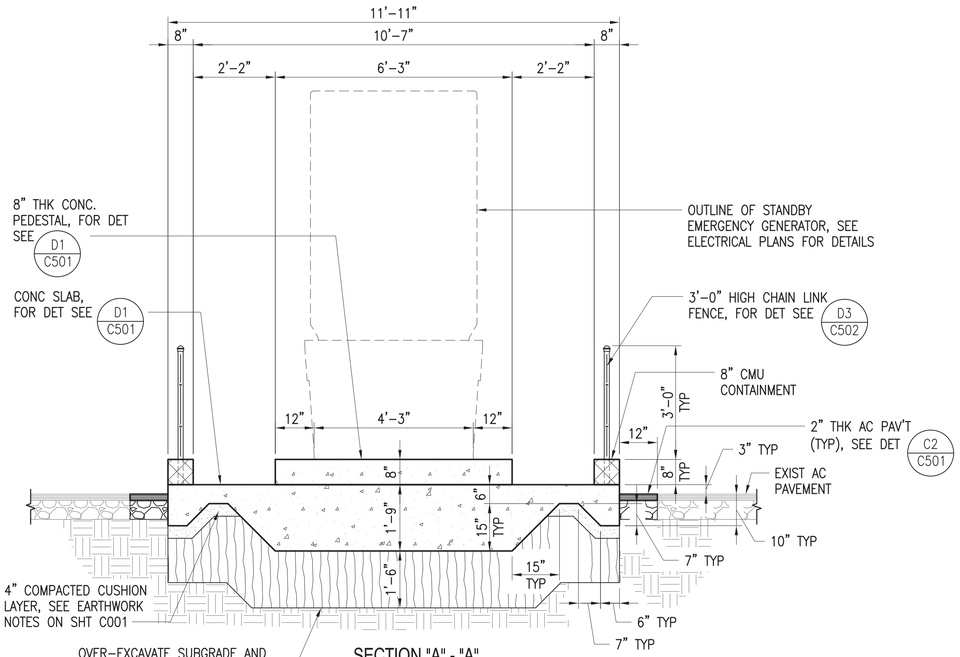
FEDERAL PROJECT NO.: 15190005

SHEET 7 OF 15

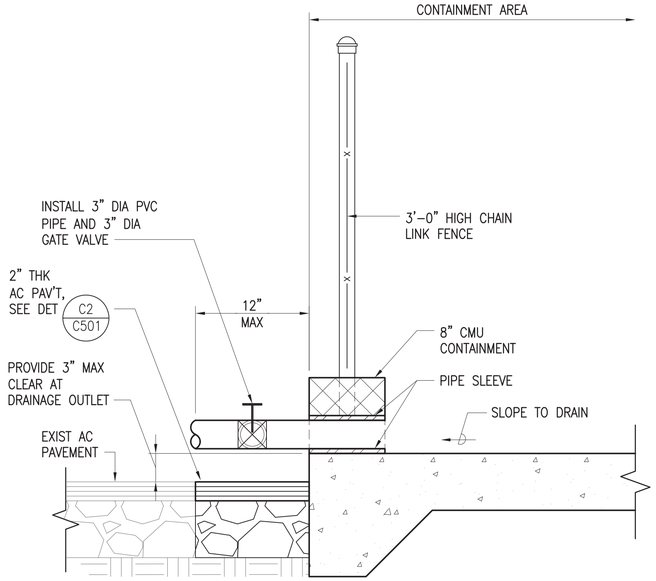
C103



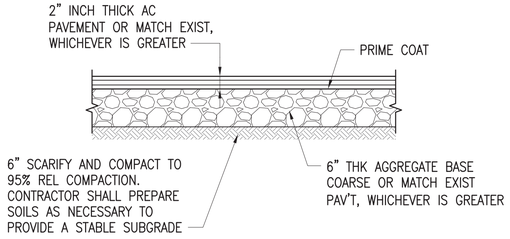
D1 DETAIL
SCALE: 3/4"=1'



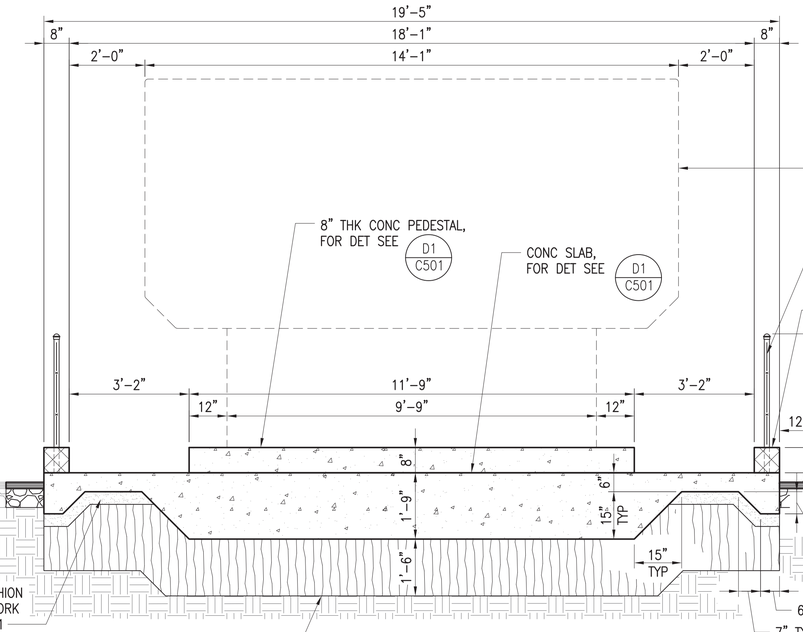
SECTION "A" - "A"



B1 DRAINAGE OUTLET DETAIL
SCALE: 1 1/2"=1'



C2 ASPHALT PAVEMENT DETAIL
NTS



SECTION "B" - "B"

NOTES:

1. CONTRACTOR TO PROVIDE SELECTED GENERATOR INFORMATION FOR ANCHOR BOLT SIZE AND PATTERN TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
2. HILTI HVU2 CAPSULE ADHESIVE ANCHORING SYSTEM FOR THE RECOMMENDED GENERATOR ANCHOR BOLT SIZE AND QUANTITY MUST BE USED FOR ANCHORING THE GENERATOR TO THE CONCRETE PEDESTAL, OR APPROVED EQUAL.

A4 CONCRETE PAD DETAIL
SCALE: 1/2"=1'

GRAPHIC SCALE:

0 1' 2' 4'
SCALE: 1/2"=1'

0 1' 2' 3'
SCALE: 3/4"=1'

0 1' 1'-6"
SCALE: 1 1/2"=1'

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FACILITY MANAGEMENT OFFICE
HILO AASF #2 BLDG. 00672
HILO, HAWAII

HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS

MISCELLANEOUS DETAILS - 1

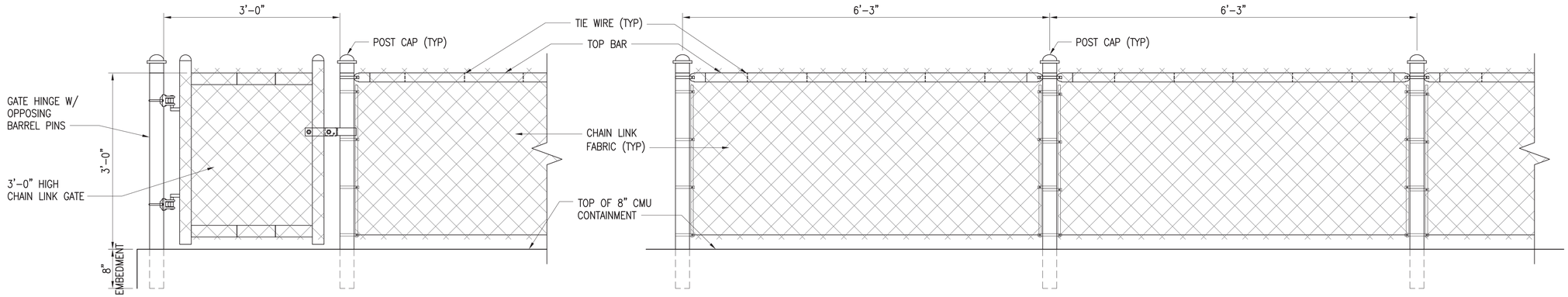
SCALE: AS NOTED

STATE JOB NO. HILO CA-202004-C6

FEDERAL PROJECT NO. 15190005

SHEET 8 OF 15

C501



AT CHAIN LINK GATE

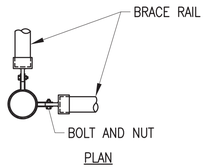
AT CHAIN LINK FENCE

D3 3'-0" HIGH CHAIN LINK GATE AND FENCE DETAILS

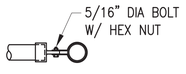
SCALE: 1/2"=1'

NOTES:

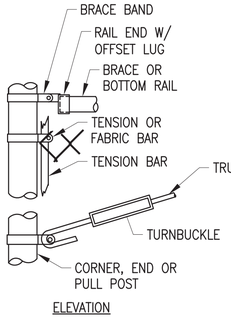
1. POST AND BRACES SHALL BE SCHEDULE 40 (STANDARD WEIGHT) PIPE. SIZES SPECIFIED ARE OUTSIDE DIAMETER.
2. ALL FENCING MATERIAL SHALL BE ZINC COATED STEEL.
3. TOP RAIL COUPLINGS SHALL BE LOCATED WITHIN 6" OF LINE POSTS.
4. TOP OF CONCRETE FOOTING SHALL BE CROWNED TO SHED WATER.
5. TOP AND BOTTOM SELVAGES SHALL BE TWISTED AND BARBED FINISH.



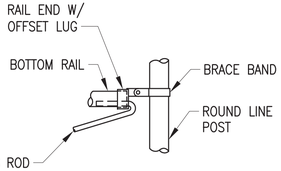
PLAN



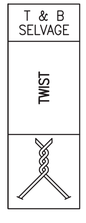
PLAN – ROUND POST



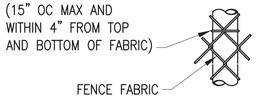
ELEVATION



ELEVATION – ROUND POST

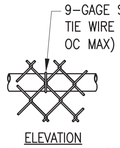


PLAN – ROUND POST

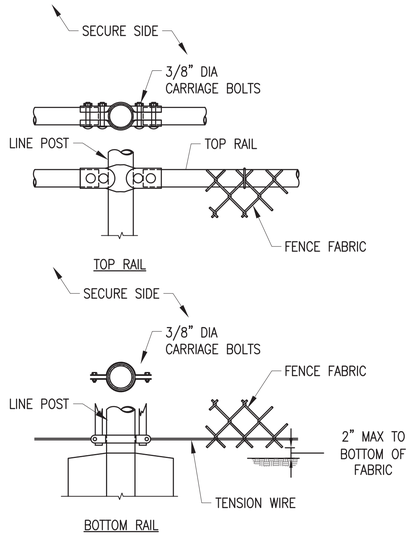


ELEVATION – ROUND POST

POST DETAILS



ELEVATION
BRACE RAIL ATTACHMENT



NOTES:

1. STANDARD SIZES AND WEIGHTS OF MATERIALS IN ACCORDANCE WITH FEDERAL SPECIFICATIONS RR-F-191/GEN, RR-F-191/1, RR-F-191/2, RR-F-191/3, RR-F-191/4, AND AS INDICATED.
2. FABRIC: FS RR-F-191/1; TYPE I, ZINC-COATED STEEL, 9-GAUGE STEEL WIRE, WOVEN IN 2" MESH, TWISTED AND BARBED AT BOTH SELVAGES.
3. POSTS: LINE POSTS, END POSTS, CORNER POSTS, AND PULL POSTS: FS RR-F-191/3., ZINC-COATED STEEL PIPE, CLASS 1, GRADE A. BRACES TO BE CLASS 1, ZINC COATED STEEL PIPE, GRADE A. FOR 3'-0" HIGH FENCE: LINE POST – 2 1/2" OD; CORNER, END, AND PULL POSTS – 2.5" OD; RAILS AND BRACES – 1 5/8" OD.
4. CONCRETE: ASTM C 94, USING 3/4" MAX SIZED AGGREGATE, 4,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS.
5. FENCE POSTS AND RAILS TO BE PLUMB AND LEVEL. SPACING OF POSTS: SEE D3/C502. INSTALL POST CAPS AS RECOMMENDED BY THE MANUFACTURERS.

TYPICAL ACCESSORY DETAILS

NTS

GRAPHIC SCALE:
0 1' 2' 4'
SCALE: 1/2"=1'

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HILO AASF #2 BLDG. 00672
HILO, HAWAII
HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS
MISCELLANEOUS DETAILS - 2

SCALE: AS NOTED

STATE JOB NO. HILO CA-202004-C6

FEDERAL PROJECT NO. 15190005

SHEET 9 OF 15

C502

GENERAL ELECTRICAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS PRIOR TO BIDDING. BID SUBMISSION SHALL BE CONSIDERED AS CONFIRMATION THAT THE CONTRACTOR HAS VISITED THE SITE AND HAS RESOLVED ALL DISCREPANCIES AND QUESTIONS REGARDING THE WORK. NO EXTRA PAYMENT WILL BE GIVEN FOR WORK MADE NECESSARY BY THE CONTRACTOR'S FAILURE TO VISIT THE SITE.
2. ALL NEW RACEWAYS AND OUTLETS IN BUILDING SHALL BE SURFACE MOUNTED UNLESS OTHERWISE NOTED.
3. CONDUIT SIZES INDICATED ON THE DRAWINGS ARE NOT NECESSARILY BASED ON THE MINIMUM SIZE ALLOWED BY THE NATIONAL ELECTRICAL CODE AND MAY BE PURPOSELY OVERSIZED FOR FUTURE CONDUCTORS OR TO AVOID CONDUIT HEATING. CONDUIT SIZES NOT CALLED OUT ON THE DRAWINGS SHALL BE SIZED BY THE CONTRACTOR, BASED ON THE ACTUAL NUMBER OF CONDUCTORS TO BE INSTALLED, USING THE NATIONAL ELECTRICAL CODE AS A GUIDE. IN NO CASE SHALL CONDUIT SIZES BE SMALLER THAN 3/4" DIAMETER.
4. ALL WIRING SHALL INCLUDE AN INSULATED GREEN GROUNDING CONDUCTOR SIZED PER TABLE 250.122 OF THE NATIONAL ELECTRICAL CODE. THIS CONDUCTOR SHALL BE CARRIED IN ALL RACEWAYS INCLUDING THOSE INSTALLED FOR SWITCH LEGS AND SHALL BE ATTACHED TO THE DEVICE, LIGHT FIXTURE, OR EQUIPMENT HOUSING USING A SUITABLE GROUNDING LUG.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL JUNCTION AND PULL BOXES REQUIRED FOR THE INSTALLATION OF ELECTRICAL DEVICES AND EQUIPMENT, WHETHER OR NOT SPECIFICALLY INDICATED ON THE PLANS. SIZING OF THESE BOXES SHALL BE PER THE NATIONAL ELECTRICAL CODE.
6. PROJECT CONDITIONS MAY REQUIRE REARRANGEMENT OF ELECTRICAL WORK, THE CONTRACTOR SHALL INDICATE SUCH CHANGES ON THE AS-BUILT DRAWINGS. WHERE CHANGES REQUIRE ALTERNATE METHODS TO THOSE SPECIFIED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SUBMIT DRAWINGS SHOWING THE PROPOSED METHOD FOR APPROVAL. THE CONTRACTOR SHALL NOT PROCEED UNTIL APPROVAL IS OBTAINED. REARRANGEMENT OF WORK FOR THE PURPOSE OF COORDINATION BETWEEN TRADES SHALL NOT BE CONSIDERED A REASON FOR EXTRA COST.
7. EXISTING CONDITION SHOWN ON DRAWINGS ARE TAKEN FROM PAST DESIGN DRAWINGS AND VISUAL FIELD INVESTIGATION. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS SHOWN. DEVIATIONS SHALL BE SHOWN ON AS-BUILT DRAWINGS.
8. THE CONTRACTOR SHALL PAINT ALL NEW EXPOSED RACEWAYS AND BOXES TO MATCH SURROUNDING FINISH.
9. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES.
10. ALL MATERIAL, EQUIPMENT, AND WIRING LOCATED OUTDOORS SHALL BE RATED FOR WET LOCATIONS.
11. THE CONTRACTOR SHALL FILL-IN THE PANEL SCHEDULES OF ELECTRIC PANEL USING A TYPEWRITER. PROVIDE CIRCUIT DESCRIPTIONS BASED ON PANEL SCHEDULE DESCRIPTIONS FOR NEW CIRCUITS.
12. ALL MULTIWIRE BRANCH CIRCUITS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 210.4. ALL CIRCUITS SHALL HAVE INDIVIDUAL NEUTRALS.
13. THE CONTRACTOR SHALL PROVIDE TEMPORARY STANDBY ELECTRICAL POWER FOR ANY AND ALL SERVICE OUTAGES EXCEEDING TWO (2) HOURS.

ELECTRICAL SYMBOL LIST

EXISTING	NEW	DESCRIPTION
	(E)	EQUIPMENT CONNECTION.
	(G)	GENERATOR CONNECTION.
	(G)-(E)	ENGINE GENERATOR CONNECTION.
	(J)	JUNCTION BOX, WALL MOUNTED.
		ELECTRIC PANEL.
		ELECTRICAL EQUIPMENT.
		METER SOCKET.
—e—	—e—	RACEWAY, CONCEALED BELOW FINISH FLOOR, NUMBER OF HASHMARKS INDICATE NUMBER OF WIRES WITHIN.
		EXPOSED RACEWAY.
		FLEXIBLE RACEWAY.
		ARROW, HOMERUN TO PANEL OR CABINET.
		RACEWAY, STUBBED AND CAPPED.
		STUB-UP LOCATION
(2)	(2)	ELECTRICAL NOTE INDICATOR.
	(A)	DUCT SECTION INDICATOR.
	2 / E-2	DETAIL INDICATOR UPPER HALF: DETAIL NUMBER. LOWER HALF: SHEET NUMBER, DETAIL LOCATION.
	WP	INDICATES WEATHERPROOF.
	HH	INDICATES HANDHOLE.
	HHG	INDICATES HANDHOLE GROUP.

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BRIAN T. ITOZAKI
LICENSED PROFESSIONAL ENGINEER
No. 9058-E
HAWAII, U.S.A.

Signature — Expiration Date of the License: 04/30/2024

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

APPR	DATE	DESCRIPTION	SYM

SUBMITTAL PHASE

SUBMITTAL DATE 09/15/23

DES	SM	DRW	KN	CHK	SM

DEPARTMENT OF DEFENSE
HAWAII ARMY NATIONAL GUARD
DESIGN AND PROJECT MANAGEMENT BRANCH
STATE OF HAWAII
FACILITY MANAGEMENT OFFICE

HILO, HAWAII
HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS
HILO AASF #2 BLDG. 00672

SYMBOL LIST, GENERAL NOTES

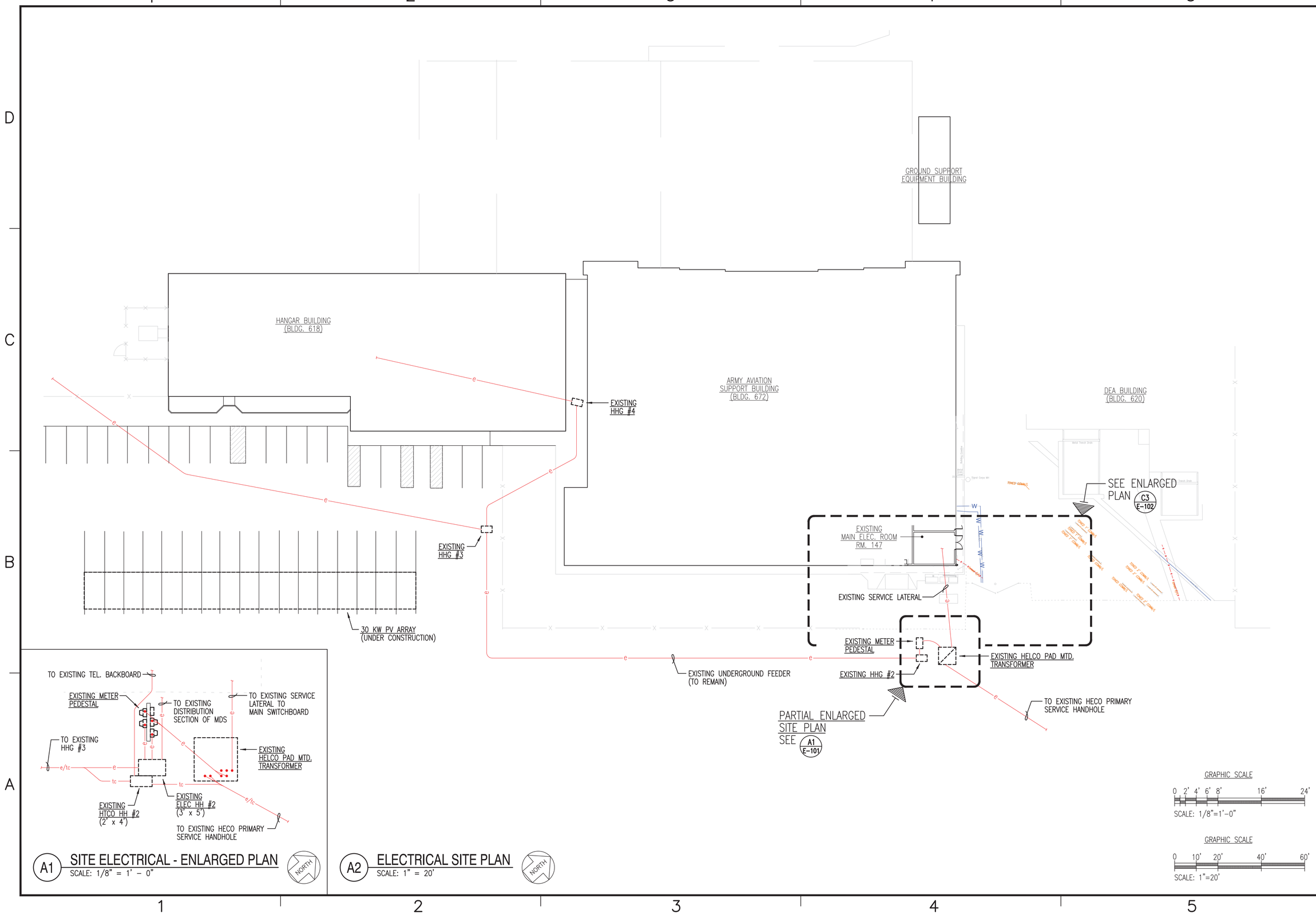
SCALE: AS NOTED

STATE JOB NO. HILO CA-202004-C6

FEDERAL PROJECT NO. 15190005

SHEET 10 OF 15

E001



A1 SITE ELECTRICAL - ENLARGED PLAN
SCALE: 1/8" = 1' – 0"

A2 ELECTRICAL SITE PLAN
SCALE: 1" = 20'

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DESCRIPTION	DATE	APPR
SYM		

SUBMITTAL PHASE

SUBMITTAL DATE 09/15/23

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FACILITY MANAGEMENT OFFICE
DEPARTMENT OF DEFENSE
HAWAII ARMY NATIONAL GUARD
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HILO AASF #2 BLDG. 00672
HILO, HAWAII

HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS

SITE ELECTRICAL PLAN

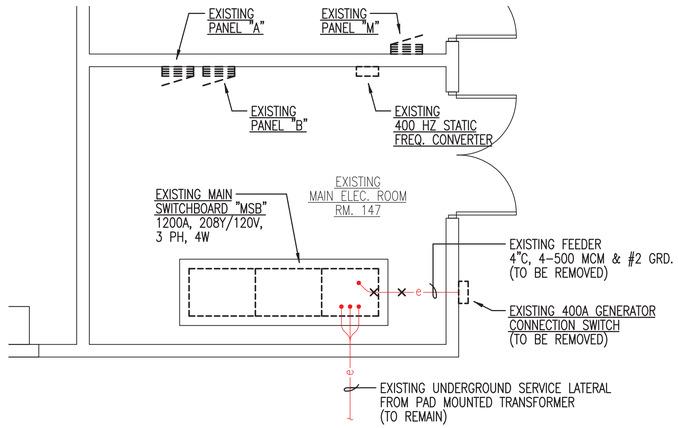
SCALE: AS NOTED

STATE JOB NO. HILO CA-202004-C6

FEDERAL PROJECT NO. 15190005

SHEET 11 OF 15

E101



C1 BLDG. 672 ELEC. RM. 147 - EXISTING ELECTRICAL PLAN (REMOVAL WORK)

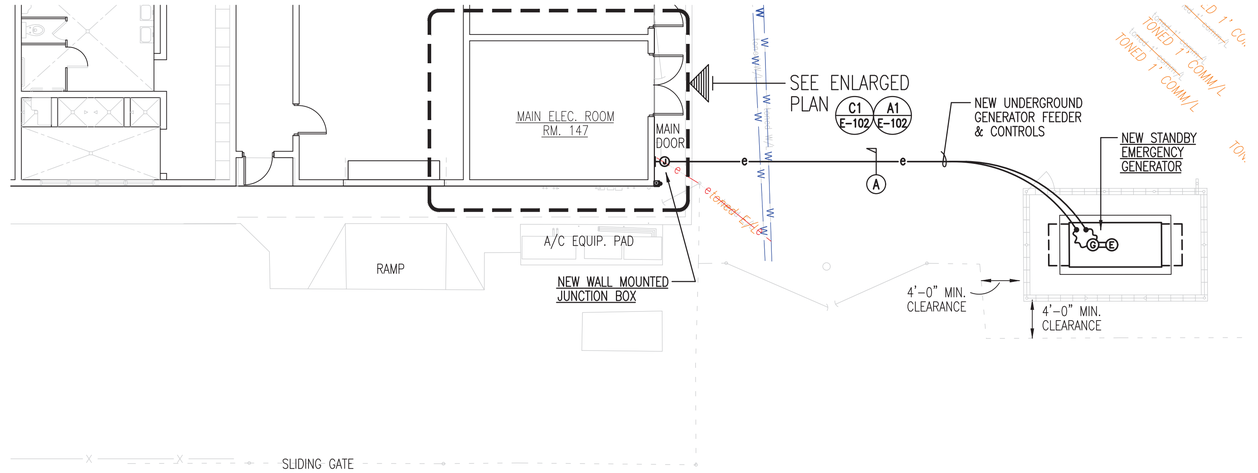
SCALE: 1/4" = 1' – 0"

NORTH

GRAPHIC SCALE

0 1' 2' 4' 6' 8' 12'

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



C3 BLDG. 672 ELEC. RM. 147 - ELECTRICAL PLAN

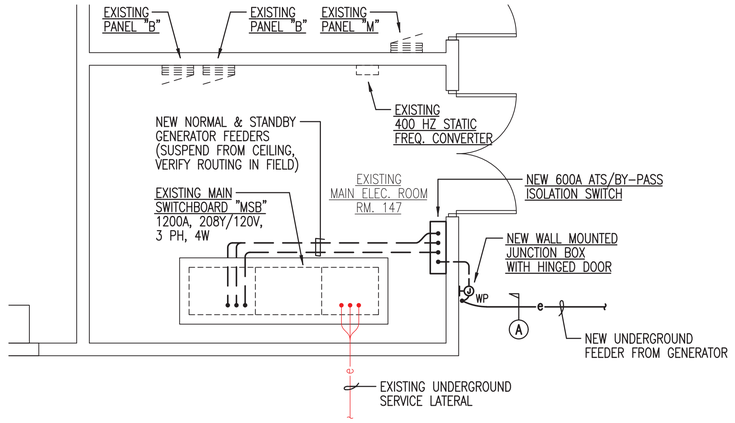
SCALE: 1/8" = 1' – 0"

NORTH

GRAPHIC SCALE

0 2' 4' 6' 8' 16' 24'

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



A1 BLDG. 672 ELEC. RM. 147 - NEW ELECTRICAL PLAN

SCALE: 1/4" = 1' – 0"

NORTH

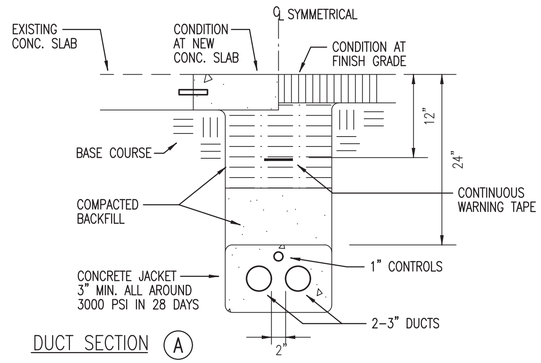
GRAPHIC SCALE

0 1' 2' 4' 6' 8' 12'

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

NOTES:

1. BACKFILL MATERIAL TYPE " A"
   BLACK OR BEACH SAND, EARTH AND GRAVEL MIXTURE. IF EARTH & GRAVEL MIXTURE, ROCK SIZE SHALL BE 1-INCH OR SMALLER AND SHALL NOT CONTAIN MORE THAN 50% ROCK PARTICLES BY VOLUME. THIS FILL SHALL BE USED OVER CONCRETE ENCASED DUCTS IN ACCORDANCE WITH DRAWINGS.
2. ALL DUCTS SHALL BE PVC SCHEDULE 40.
3. PROVIDE DETECTABLE DUCT WARNING TAPE 12" BELOW FINISH GRADE OR PAVEMENT DIRECTLY ABOVE DUCTS.
4. PROVIDE SMOOTH TRANSITION BETWEEN NEW AND EXISTING PAVEMENT SURFACES.
5. TUNNEL UNDER EXISTING CONCRETE WALKWAYS TO INSTALL NEW DUCTLINE. DO NOT CUT SIDEWALKS.
6. PROVIDE AC SEALER AT SAWCUT TRANSITION BETWEEN NEW AND EXISTING AC. SEALER SHALL BE PER NEW AC MATERIAL REQUIREMENTS.



DUCT SECTION (A)

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HILO, HAWAII

HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS

ELEC. RM. 147 AND SITE ELECTRICAL PLAN

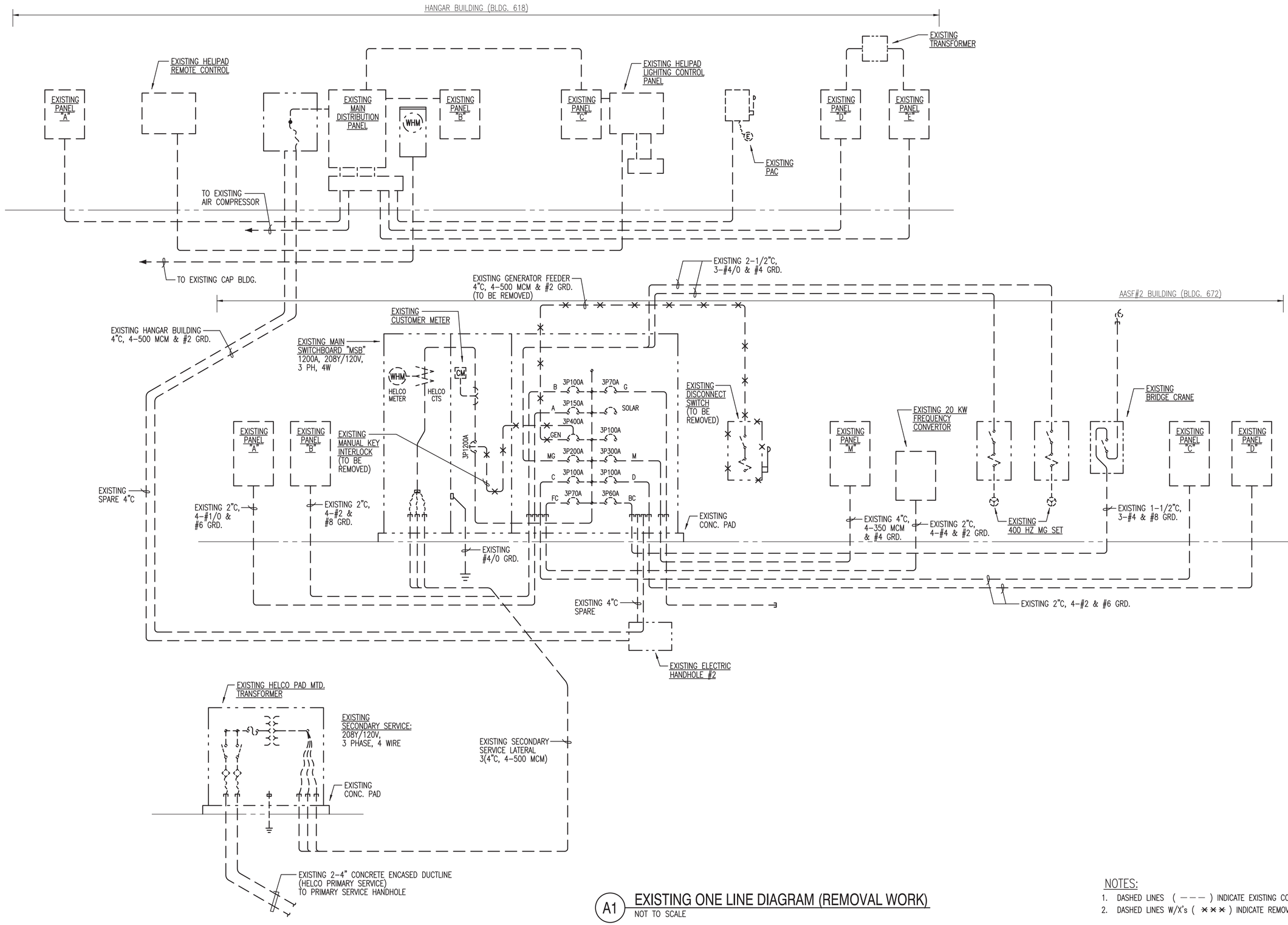
SCALE: AS NOTED

STATE JOB NO. HILO CA-202004-C6

FEDERAL PROJECT NO. 15190005

SHEET 12 OF 15

E102



A1 EXISTING ONE LINE DIAGRAM (REMOVAL WORK)
NOT TO SCALE

NOTES:
1. DASHED LINES (– – –) INDICATE EXISTING CONDITION.
2. DASHED LINES W/X's (✕✕✕) INDICATE REMOVAL WORK.

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EXISTING ONE LINE DIAGRAM (REMOVAL WORK)

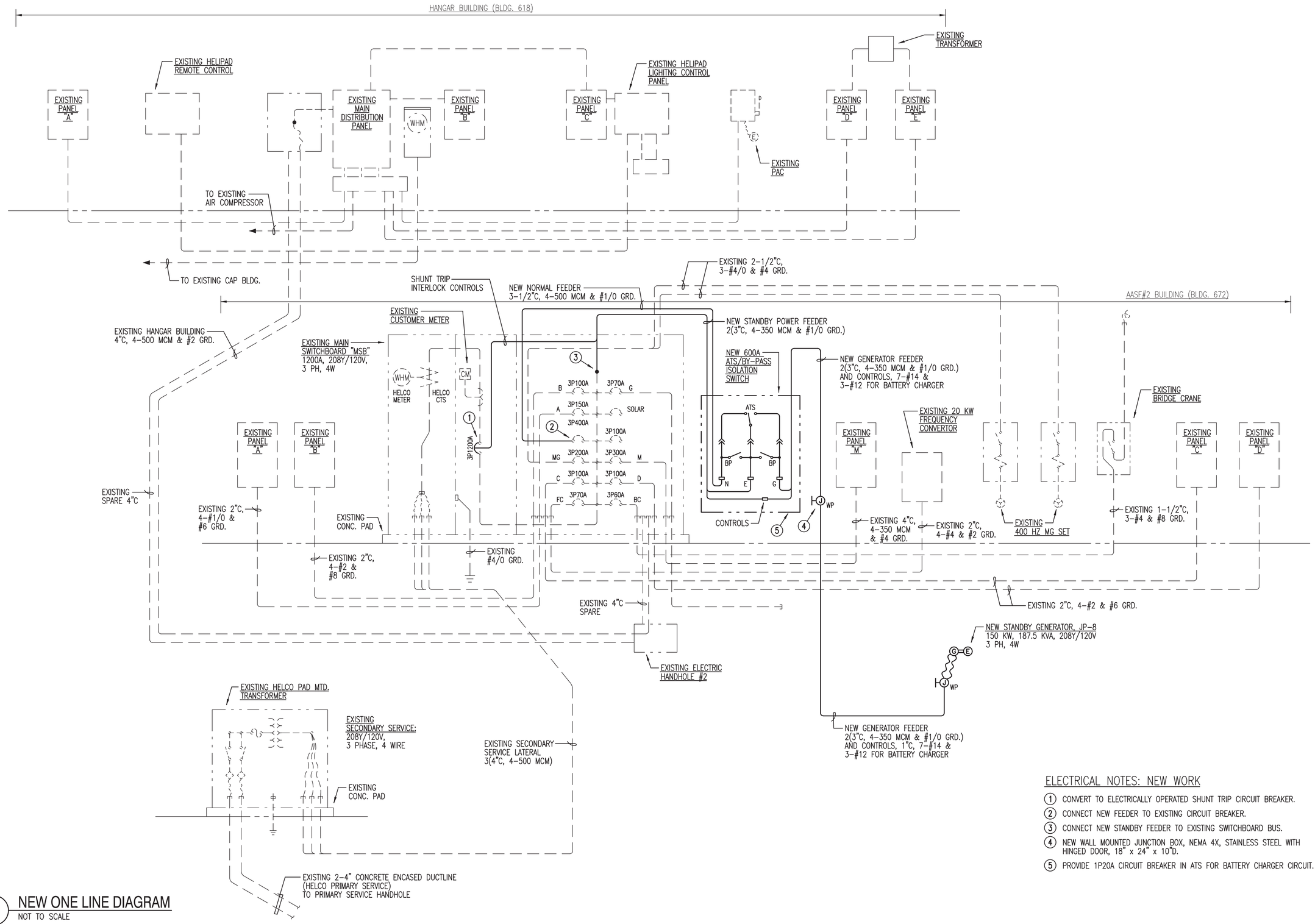
SCALE: AS NOTED

STATE JOB NO. HILO CA-202004-C6

FEDERAL PROJECT NO. 15190005

SHEET 13 OF 15

E201



A1 NEW ONE LINE DIAGRAM
NOT TO SCALE

ELECTRICAL NOTES: NEW WORK

1. CONVERT TO ELECTRICALLY OPERATED SHUNT TRIP CIRCUIT BREAKER.
2. CONNECT NEW FEEDER TO EXISTING CIRCUIT BREAKER.
3. CONNECT NEW STANDBY FEEDER TO EXISTING SWITCHBOARD BUS.
4. NEW WALL MOUNTED JUNCTION BOX, NEMA 4X, STAINLESS STEEL WITH HINGED DOOR, 18" x 24" x 10"D.
5. PROVIDE 1P20A CIRCUIT BREAKER IN ATS FOR BATTERY CHARGER CIRCUIT.

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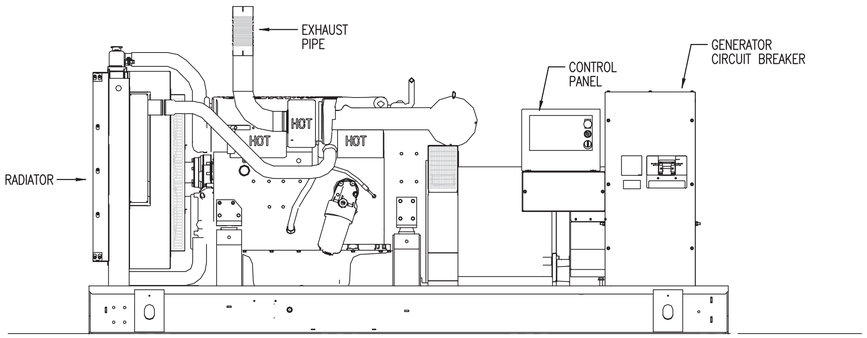
HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS

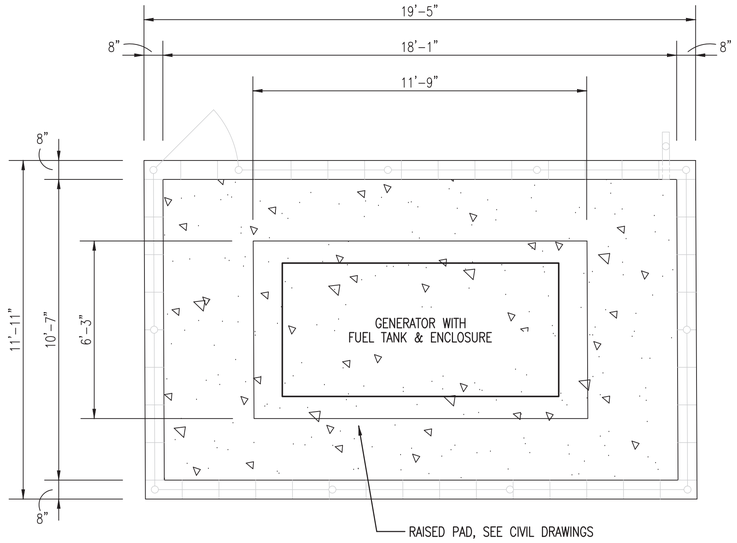
NEW ONE LINE DIAGRAM

SCALE: AS NOTED
STATE JOB NO. HILO CA-202004-C6
FEDERAL PROJECT NO. 15190005
SHEET 14 OF 15

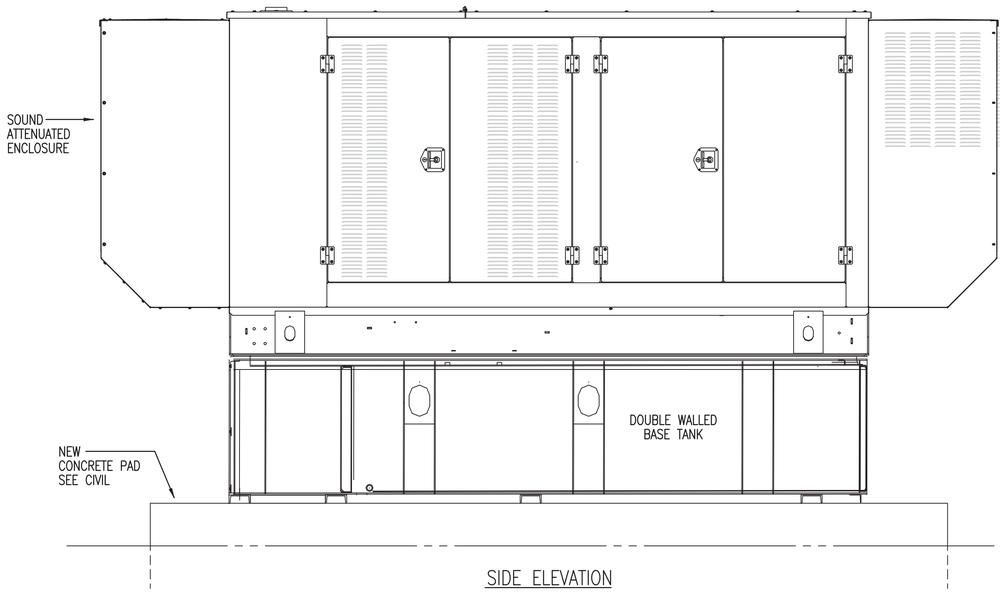
E202



C1 ELEVATION - GENERATOR ONLY (NO BASE TANK & ENCLOSURE SHOWN)
NOT TO SCALE



C3 PLAN - GENERATOR & ENCLOSURE WITH CONCRETE PAD
NOT TO SCALE



A1 ELEVATION - BASE TANK AND SOUND ATTENUATED ENCLOSURE
NOT TO SCALE

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HILO, HAWAII

HILO CONSTRUCTION OF STAND-BY EMERGENCY GENERATOR INSTALLATIONS

GENERATOR DETAILS

SCALE: AS NOTED

STATE JOB NO. HILO CA-202004-C6

FEDERAL PROJECT NO. 15190005

SHEET 15 OF 15

E301