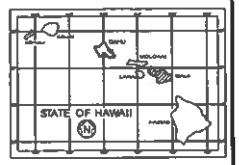
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	1	46



STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

Maui, HAWAII

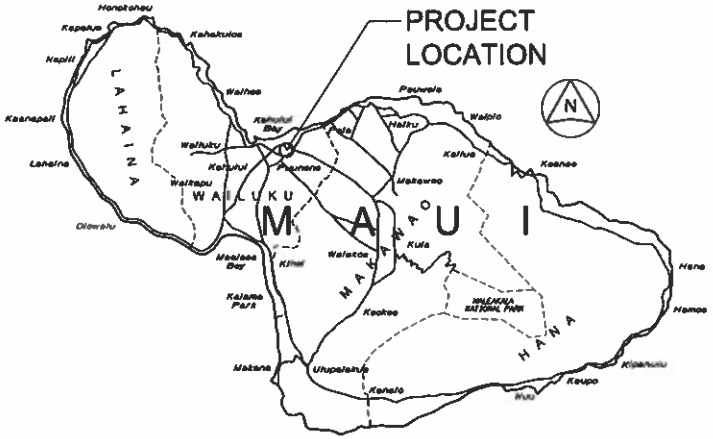
PLANS FOR

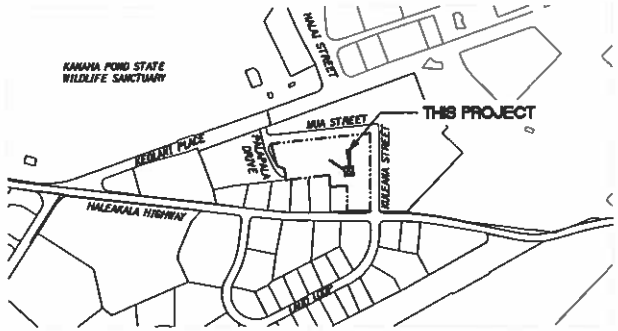
MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2

PROJECT NO. HWY-M-03-21, PHASE 2

DISTRICT OF WAILUKU

ISLAND OF MAUI





LOCATION PLAN

NOT TO SCALE

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UMTAGO CONSULTING GROUP	DESIGNED BY
HWY-MW	MANAGED BY
(808) 873-3535	PHONE
JULY 2022	DATE

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

APPROVED:

DIR. OF TRANSPORTATION — DATE: Sep 2, 2022

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	2	46

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4	C001	CONSTRUCTION AND EROSION CONTROL/BMP NOTES
5	C002	WATER POLLUTION AND EROSION CONTROL NOTES
6	C003	WATER POLLUTION AND EROSION CONTROL NOTES
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NOTE BOOK | No.

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LICENSED PROFESSIONAL ENGINEER No. 11144-C — YVONNE M. TURRO — HAWAII U.S.A.

4/30/24
EXP. DATE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INDEX TO DRAWINGS

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2

Scale: None Date: July 2022

SHEET No. T002 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	3	46

GENERAL NOTES

1. The general scope of work for this project includes electrical upgrades in various existing buildings; and replacement of fuel tanks, equipment, concrete pavement, and traffic bollards at the existing fuel station. During construction at fueling station, an alternate means of onsite fueling shall be provided.

2. The Contractor shall notify the Hawaii One Call Center (811 or 866-423-7287) no less than five (5) working days prior to excavation, on each or all locations, for locating underground facilities pursuant to HRS Section 269E-7.

3. The Contractor shall independently tone areas of excavation not more than 30 days prior to excavation. Provide written notice of scheduled toning and specific locations to the Engineer at least one week ahead of toning. The Contractor shall obtain DOT as-builts to locate potential conflicts with utilities prior to excavation. If there is a potential conflict, contractor shall inform DOT within 24 hours of discovery. Contractor shall probe around area and take precautions to not damage utilities. This work shall be incidental to various contract items and shall not be paid for separately.

4. Pursuant to HRS Chapter 6E Historic Preservation, in the event any historic resources, including cultural deposits or human skeletal remains, are uncovered during construction operations, the Contractor shall suspend work in the immediate vicinity of the find, protect the find from additional disturbance, and notify the Maui Police Department and the State Department of Transportation.

5. At the end of each day's work, the Contractor shall remove all equipment and other obstructions to permit free and safe passage of public traffic.

6. The existence and location of underground utilities, manholes, monuments, and structures as shown on the plans are from the latest available data, but the accuracy is not guaranteed. The encountering of other obstacles during the course of work is possible. The Contractor shall make an independent check on the ground by probing and/or checking with the various utility companies or government agencies to verify the exact location and depths of the existing utilities and obstructions. The Contractor shall exercise proper care in excavating in the area.

7. The Contractor shall verify the presence of existing utilities which may conflict with activities and shall coordinate with the utility company for temporary relocation, as necessary. All costs associated with the temporary relocation shall be borne by the Contractor. The Contractor shall comply with utility coordination requirements per Standard Specification Section 104.11. As a part of coordination requirements, the Contractor shall copy the Engineer in all correspondences with utilities.

8. The Contractor shall notify the Engineer in writing, two (2) weeks prior to starting construction operations.

9. All dimensions and details shown on the drawings shall be checked and verified prior to the start of construction, and any discrepancies shall be immediately brought to the attention of the Engineer for clarification.

10. The exact locations and limits of areas to be excavated or cleared shall be located in the field by the Contractor and accepted by the Engineer. The Contractor shall not begin any work until the Engineer verifies and accepts the location and limits of the area. Any area that is not accepted by the Engineer will be considered unauthorized work and shall not be paid for.

11. All existing utilities to remain in use, whether or not shown on the plans, shall be protected at all times by the Contractor during construction unless specified on the plans to be abandoned. Any damages to existing utilities shall be repaired and paid for by the Contractor.

12. Existing facilities, guardrail, landscaping and/or pavement to remain which has been damaged by the Contractor shall be restored to its original condition at no cost to the State.

13. When excavating in close proximity to walls, fences, and other improvements, the Contractor shall protect, support, secure, and take all precautions to prevent damaging these facilities and improvements.

14. No material or equipment shall be stockpiled or otherwise stored within onsite unless approved by the Engineer.

15. The Contractor 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 Maui County Code Chapter 20.08 "Soil Erosion and Sediment Control", as amended. Best Management Practices shall be employed during construction.

16. All material generated by the project and taken off-site shall be considered solid waste. The Contractor shall dispose of all removed material at an approved Department of Health waste management facility at no additional cost to the State. Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer by the last day of the month. Provide documentation from any intermediary facility where solid waste is handled or processed, haul tags, or any documentation as required by the Engineer. If the contractor elects to reclassify material as inert fill, DOH HEER testing guidance must be followed. No material generated from this project shall be classified as inert fill material for reuse without testing, obtaining required approvals/permits, providing disposal locations/quantities, and obtaining prior written approval from the Engineer.

17. After the project is completed, the Contractor shall restore grades and groundcover within the project limits to a condition equal to or better than existing condition prior to construction.

18. Project activities shall comply with Chapter 11-46, Community Noise Control of the Department of Health Administrative Rules.

19. All work specified in the contract but not listed separately in the proposal schedule shall be considered incidental to other various contract items and shall not be paid for separately.

20. The Contractor shall indemnify and be solely responsible for the protection of adjacent properties, utilities, and existing structures from damages due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer.

21. The Contractor shall provide for quality control of work. The Contractor shall submit copies of all measurements and tests to the Engineer on a weekly basis. This includes compaction, density, and pavement core thickness results.

22. All materials shall be new and free of defects, such as rust, damage, or corrosion. The Engineer will determine acceptability. No payment will be made for material that is not accepted by the Engineer.

ABBREVIATIONS

AC, ac	Asphalt Concrete
Alum	Aluminum
BMP	Best Management Practices
℄	Centerline
Conc.	Concrete
Con't.	Continue
Det.	Detail
Dia.	Diameter
Demo	Demolition
EA	Each
EC	Erosion Control
Elev	Elevation
EQ	Equal
exist.	Existing
Ga.	Gauge
Galv.	Galvanized
LP	Low Pressure Air
Max.	Maximum
Min.	Minimum
NTS	Not to Scale
O.C.	On Center
Pav't	Pavement
r/w	Right-of-Way
Std.	Standard
Temp	Temporary
Thk.	Thick
Typ.	Typical
W	Water

ORIGINAL PLAN
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QUANTITIES BY
CHECKED BY
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LICENSED PROFESSIONAL ENGINEER No. 11144-C
YVONNE M. TUREO
HAWAII U.S.A.
4/30/24
EXP. DATE
This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES AND ABBREVIATIONS

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: None Date: July 2022

SHEET No. T003 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	4	46

PUBLIC HEALTH, SAFETY, AND CONVENIENCE NOTES

1. Contractor shall observe and comply with all federal, state, and local laws required for the protection of public health, 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 Standards and Regulations of the State Department of Health. The State shall require supplementary measures if required.

3. The Contractor shall be responsible for the cleaning and removal of all silt and debris generated by his work and deposited and accumulated within downstream waterways, ditches and drain pipes and public and private roadways. The Contractor agrees to reimburse the State for all costs expended in performance of above work if required for public health and safety or made necessary by non-performance by the Contractor.

4. The Contractor shall not perform any construction operation so as to cause falling rocks, soil or debris in any form to fall, slide or flow into existing drainage systems, or adjoining properties, streets or natural watercourses. Should such violations occur, the Contractor may be cited and the Contractor shall immediately make all remedial actions necessary.

5. 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.

6. During non-working hours all excavated areas shall be covered with a safe non-skid bridging material or surrounded by reflectorized barricades equipped with lamps to the satisfaction of the Engineer.

7. The Contractor's attention is directed to HAR Title 11 Chapter 46, Public Health Regulations, Department of Health, State of Hawaii, "Community Noise Control," in which maximum permissible noise levels have been set. If the construction work requires a permit from the Director of Health, the Contractor shall obtain a copy of Chapter 46 and become familiar with the noise level restrictions and the procedures for obtaining a permit for the construction activities.

EROSION CONTROL/BEST MANAGEMENT PRACTICES NOTES

A. GENERAL:

1. The Contractor, at his own expense, shall keep the project areas and surrounding areas free from dust nuisance. The work shall be done in conformance with air pollution control standards contained in Hawaii Administrative Rules: Chapter 11-60, "Air Pollution Control".

2. Measures to control erosion and other pollutants shall be in place before any grading work is initiated. These measures shall be properly constructed and maintained throughout the construction period of each site.

3. Construction shall be sequenced to avoid disturbance at all project sites at one time and minimize exposure time of the demolition and reconstruction areas.

4. The Contractor shall observe and comply with the State Department of Health regulations regarding storm water discharge.

5. Inlet protection shall be implemented at all storm drain inlets and catch basins as indicated to prevent any sediment laden runoff from leaving the site. Inlet protection devices shall be removed during any event where flooding could occur if devices remain in place and replace after the event has passed. For inlet protection details, see Sheet C004.

EROSION CONTROL/BEST MANAGEMENT PRACTICES NOTES (CON'T.)

6. Good housekeeping shall be utilized to ensure protection of roadways from mud, dirt, and debris.

7. The Contractor shall provide erosion control measures for their construction, staging, and storage areas and shall inspect and monitor his construction, staging, and storage areas to ensure that no non-storm water discharges are emitted. If such sources are identified the Contractor shall provide immediate mitigative measures.

8. No sediment laden runoff shall leave the site.

9. Water trucks shall be utilized to minimize the amount of airborne dust.

10. Contractor shall ensure the proper working order and conduct regular maintenance of all construction equipment. All construction equipment shall be serviced offsite and no oil or fuel shall be stored on the site.

11. The Contractor shall dispose of equipment and hydraulic oils off-site and in accordance with County, State, and Federal regulations.

12. At the end of the construction, existing catch basins and drain inlets surrounding the project site shall be inspected and any accumulated sediment and debris found shall be removed. Flushing into the catch basins or drain inlets is prohibited.

13. Construction shall be staged and phased for large projects. Areas of one phase shall be stabilized before another phase is initiated. Stabilization shall be accomplished by temporarily or permanently protecting the disturbed soil surface from rainfall impacts and runoff.

14. Storm water flowing toward the construction area shall be diverted by using appropriate control measures, as practical.

15. Water must be discharged in a manner that the discharge shall not cause or contribute to a violation of the basic water quality criteria as specified in the Hawaii Administrative Rules, Section 11-54-04.

16. All grading work shall conform to Maui County Code chapter 20.08 "Soil Erosion and Sediment Control", as amended and applicable provisions of Chapter 54, Water Quality Standards and Chapter 55, Water Pollution Control, Title II, Administrative Rules of the State Department of Health.

17. The Contractor shall schedule construction during the dry weather periods and shall be prepared in case of rainfall events. The Contractor shall provide for temporary bypass or detention of storm water flows or other measures to avoid flooding of properties upstream or adjacent to the site.

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YVONNE M. TURRO
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4/30/24
EXP. DATE
This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONSTRUCTION AND EROSION CONTROL/BMP NOTES

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: None Date: July 2022

SHEET No. C001 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	5	46

WATER POLLUTION AND EROSION CONTROL NOTES

A. GENERAL:

1. Follow the guidelines in the current HDOT Construction Best Management Practices Field Manual in developing, installing and maintaining the BMPs for the project. For any conflicting requirements between the Manual and applicable bid documents, the applicable bid documents will govern. Should a requirement not be clearly described within the applicable bid documents, the Contractor shall notify the Engineer immediately for interpretation. "applicable bid documents" include the construction plans, standard specifications, and Special Provisions.

2. The Engineer will deduct the cost from the progress payment for all citations received by the Department for non-compliance, or the Contractor shall reimburse the State for the full amount of the outstanding cost incurred by the State.

3. The Engineer may assess liquidated damages of up to $27,500 for non-compliance of each BMP requirement and each requirement stated in Specifications, Section 2370 Sediment and Erosion Control, for every day of non-compliance. There is no maximum limit on the amount assessed per day.

4. The Contractor shall consider and install BMP measures which take into account high intensity and prolonged rainfall, and to address the potential problems that may result.

5. All areas used in support of construction activities disturbed or damaged by the Contractor, including but not limited to, staging areas, construction entrance/exit, and travel routes, shall be temporarily stabilized during construction in accordance with Section 209 of the 2005 Hawaii Standard Specifications for Road and Bridge Construction. These areas shall be restored to their original condition or better upon completion of construction. Disturbed and exposed areas shall be permanently stabilized using vegetative cover, pavement, or equivalent to match pre-existing or better condition as approved by the State.

6. Final stabilization and restoration of disturbed or damaged areas shall begin immediately as soon as construction is completed and the construction support areas are no longer used.

7. The State reserves the right to determine the appropriateness and adequacy of proposed and/or implemented BMPs. Additional BMP measures required by the State shall not be paid for by the State.

8. The Contractor shall be responsible for all damages and/or injuries resulting from the BMPs.

9. The Contractor shall be responsible for any citations or fines that may be levied as related to the NPDES program on this permit, whether directly levied against the Contractor or the Department of Transportation.

10. The Contractor may discuss proposed and implemented BMP measures and the adequacy of them, with District Engineer.

B. WASTE DISPOSAL:

1. Waste Materials
   Collect and store all waste materials in a securely lidded metal dumpster or roll off container with cover to keep rain out or loss of waste during windy conditions. The dumpster shall meet all local and State solid waste management regulations. Deposit all trash and construction debris from the site in the dumpster. Empty the dumpster weekly or when the container is two-thirds full, whichever is sooner. Do not bury construction waste materials onsite. The Contractor's supervisory personnel shall be instructed regarding the correct procedure for waste disposal. Post notices stating these practices, on a weatherproof bulletin board in an accessible location acceptable to the Engineer. The Contractor shall be responsible for seeing that these procedures are followed. Submit the Solid Waste Disclosure Form for Construction Sites to the Engineer within 30 calendar days of contract execution. Provide a copy of all the disposal receipts, which includes receipts for all excess excavated material, demolished material, etc., from the facility permitted by the Department of Health to receive solid waste to the Engineer monthly. This should also include documentation from any intermediary facility where solid waste is handled or processed.

2. Hazardous Waste
   Dispose all hazardous waste materials in the manner specified by local, State, and federal regulations and by the manufacturer. The Contractor's site personnel shall be instructed in these practices and shall be responsible for seeing that these practices are followed.

3. Sanitary Waste
   Collect all sanitary waste from the portable units a minimum of once per week, or as required. Position sanitary facilities where they are secure and will not be tipped over or knocked down.

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

1. Inspect all control measures weekly.

2. Maintain all erosion and sediment control measures in good working order. If repair is necessary, initiate repair immediately and complete by the close of the next work day if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance. When installation of a new erosion or sediment control or a significant repair is needed, install the new or modified control or complete the repair no later than 7 calendar days from the time of discovery. "Immediately" means the Contractor shall take all reasonable measures to minimize or prevent discharge of pollutants until a permanent solution is installed and made operational. If a problem is identified at a time in the day in which it is too late to initiate repair, initiation of repair shall begin on the following work day.

3. Complete and submit to the Engineer a maintenance inspection report within 24 hours after each inspection.

4. Clean the paved street adjacent to the site entrance daily or as required to remove any excess mud, cold-planed materials, dirt or rock tracked from the site. Do not hose down the street without containing or vacuuming wash water. Cover dump trucks hauling material from the construction site with a tarpaulin. Remove sediment tracked onto the street, sidewalk, or other paved area in which the track-out occurs by the end of the day or as directed by the Engineer.

5. Include designated Concrete Washout Area(s) in the Water Pollution, Dust, and Erosion Control submittals.

6. Submit the name of a specific individual designated responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.

7. Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. They shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.

8. Contain, remove, and dispose slurry generated from saw cutting of pavement in accordance with approved BMP practices. Do not allow discharge into the drainage system or State waters.

9. Complete initial stabilization within 14 calendar days after the temporary and permanent cessation of earth-disturbing activities.

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

1. Materials Pollution Prevention Plan
   a. Applicable materials or substances listed below are expected to be present onsite during construction. Other materials and substances not listed below shall be added to the inventory.

Concrete	Detergents
Paints (enamel and latex)	Tar
Cleaning Solvents	Petroleum Based Products
Curing Compounds	Adhesives

   b. Use Material Management Practices to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff. Make an effort to store only enough product as is required to do the job.

   c. Store all materials stored onsite in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.

   d. Keep products in their original containers with the original manufacturer's label.

   e. Do not mix substances with one another unless recommended by the manufacturer.

   f. Whenever possible, use a product up completely before disposing of the container.

   g. Follow manufacturer's recommendations for proper use and disposal.

   h. Conduct a daily inspection to ensure proper use and disposal of materials onsite.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER POLLUTION AND EROSION CONTROL NOTES

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2

Project No. HWY-M-03-21, Phase 2

Scale: None Date: July 2022

SHEET No. C002 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	6	46

WATER POLLUTION AND EROSION CONTROL NOTES (CON'T.)

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

2. Hazardous Material Pollution Prevention Plan
   a. Keep products in original containers unless they are not resealable.

   b. Retain original labels and safety data sheets (SDS) formerly material safety data sheets (MSDS).

   c. Dispose of surplus products according to manufacturers' instructions and local, State, and federal regulations.

3. Onsite and Offsite Product Specific Plan The following product specific practices shall be followed onsite:
   a. Petroleum Based Products:
      Monitor all onsite vehicles for leaks and perform regular preventive maintenance to reduce the chance of leakage. Store petroleum products in tightly sealed containers which are clearly labeled. Apply asphalt substances used onsite according to the manufacturer's recommendation.

   b. Paints:
      Seal and store all containers when not required for use. Do not discharge excess paint to the drainage system, sanitary sewer system, or State waters. Dispose properly according to manufacturers' instructions or State and local regulations.

   c. Concrete Trucks:
      Washout or discharge concrete truck drum wash water only at a designated site as far as practicable from storm drain inlets or State waters. Do not discharge water in the drainage system or State waters. Disposal by percolation is prohibited. Clean disposal site as required or as requested by the Engineer.

4. Spill Control Plan
   a. Post a spill prevention plan to include measures to prevent and clean up each spill.

   b. The Contractor shall be the spill prevention and cleanup coordinator. Designate at least three site personnel who shall receive spill prevention and cleanup training. These individuals shall each become responsible for a particular phase of prevention and cleanup. Post the names of responsible spill personnel in the material storage area on a weatherproof bulletin board or other accessible location acceptable to the Engineer.

   c. Clearly post manufacturers' recommended methods for spill cleanup. Make site personnel aware of the procedures and the location of the information and cleanup supplies.

   d. Keep ample materials and equipment necessary for spill cleanup in the material storage area onsite.

   e. Clean up all spills immediately after discovery.

   f. Keep the spill area well ventilated. Personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

   g. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, the Contractor shall notify the Engineer as soon as the Contractor has knowledge of the discharge. Note that the reportable quantity for oil and fuel products is a spill of 25 gallons or more, a spill not cleaned within 72 hours, or a spill that threatens ground or surface waters. The Engineer will notify the National Response Center (NRC) at (800) 424-8802, the Clean Water Branch during regular business hours at (808) 586-4309, the Clean Water Branch (DOH-CWB) via email at cleanwaterbranch@doh.hawaii.gov during non-business hours, the DOH Hazard Evaluation and Emergency Response Office at (808) 586-4249, the Coast Guard Maui Station at (808) 986-0023 and the local Emergency Planning Committee at (808) 720-7285. The Contractor shall also provide to the Engineer, within 1 calendar day of knowledge of the release, a description of the release, the circumstances leading to the release, and the date of the release. The Engineer will provide this information to the DOH-CWB. The Engineer will provide information to the NRC if requested.

E. PERMIT REQUIREMENTS:

1. The calculated land disturbance area for this project based on the construction plans is 0.16 acres not including Contractor Staging and Storage areas. If the total of the disturbed area and the Contractor Staging and Storage area is one acre or greater, the Contractor shall obtain the NPDES Construction Activities Permit using HDOT's latest SWPPP template. See Hawaii Administrative Rules Chapter 11-55, Appendix C for the definition of land disturbance. The Contractor shall be responsible for obtaining the required NPDES Construction Activities Permit and complying with the requirements of HAR 11-55 including, but not limited to:

   a. Deadlines for initiation and completing initial stabilization.
   b. Increased inspection frequency and installation of rain gage if applicable.
   c. Deadlines to initiate and complete repairs to BMPs.
   d. Reporting requirements and corrective action reports.

2. Comply with all applicable State and Federal Permit conditions.

   Each BMP below is referenced to the corresponding section of the current HDOT Construction Best Management Practices Field Manual dated October 2021 and appropriate Supplemental Sheets. The Manual may be obtained from the HDOT Statewide Stormwater Management Program Website at http://www.stormwaterhawaii.com/resources/ contractors-and-consultants/ under Construction Best Management Practices Field Manual.

   The requirements for Water Pollution, Dust, and Erosion Control submittals are included in Section 209 of the Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and applicable Special Provisions. A list of pollutant sources and corresponding BMP used to mitigate the pollutants are included in Section 209 of the Special Provisions under Appendix A.

Follow the requirements below:

1. Protect all Drainage Inlets receiving runoff from disturbed areas (SC-1).

2. Contain on-site runoff using Perimeter Sediment Controls
   a. SC-11 Construction Roads and Parking Area Stabilization

3. Incorporate applicable Site Management BMP
   a. SM-1 Construction BMP Training
   b. SM-2 Material Storage and Handling
   c. SM-3 Stockpile Management
   d. SM-4 Concrete Wash and Waste Management
   e. SM-6 Solid Waste Management
   f. SM-7 Sanitary Waste Management
   g. SM-9 Hazardous Materials and Waste Management
   h. SM-10 Spill Prevention and Control
   i. SM-11 Vehicle and Equipment Cleaning
   j. SM-12 Vehicle and Equipment Maintenance
   k. SM-13 Vehicle and Equipment Refueling
   l. SM-14 Scheduling
   m. SM-15 Location of Potential Sources of Sediment
   n. SM-16 Staging Area
   o. SM-19 Dust Control
   p. SM-20 Paving Operations
   q. SM-21 Structure Construction and Painting

4. Contain pollutants within the Construction Staging/Storage Area BMP with applicable Perimeter Sediment Controls and Site Management BMP.

5. Manage Concrete Waste including installing a Concrete Washout Area (SM-4) and properly disposing of Concrete Curing Water (California Stormwater BMP Handbook NS-12 Concrete Curing).

6. Remove saw cut slurry and hydrodemolition water from the site by vacuuming. Provide storm drain protection and/or perimeter sediment controls during saw cutting and hydrodemolition work.

ORIGINAL PLAN
NOTE BOOK
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10_NOTES_WATER POLLUTION EC.DWG 7/25/2022 3:05:50 PM

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4/30/24
EXP. DATE
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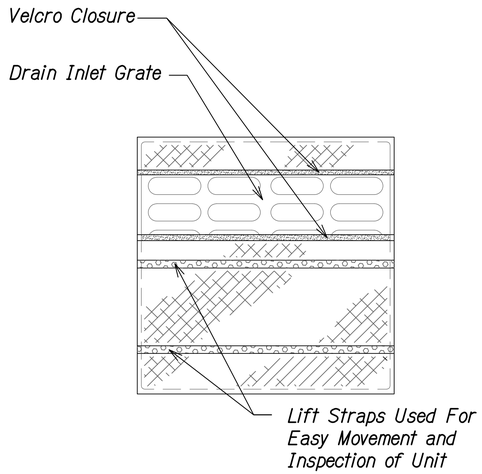
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

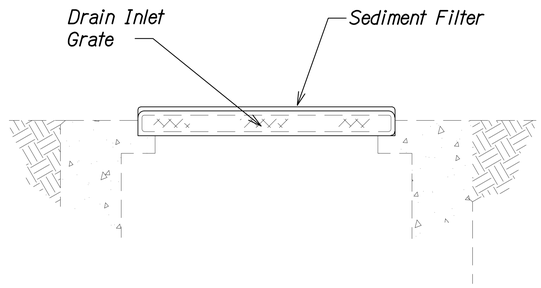
WATER POLLUTION AND EROSION CONTROL NOTES

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: None Date: July 2022
SHEET No. C003 OF 4 SHEETS

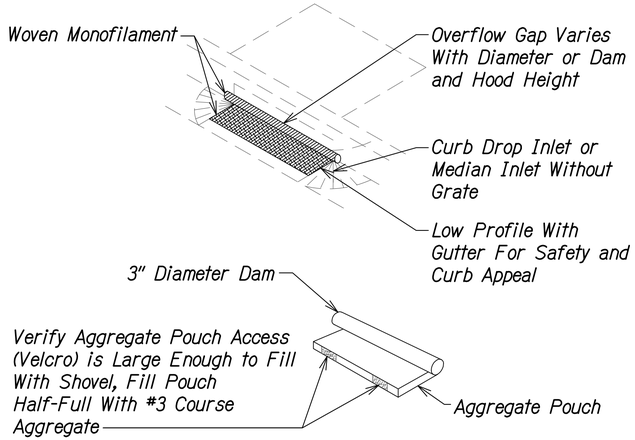
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	7	46



PLAN



SECTION



Note:
1. Sediment filter for catch basins shall meet the requirements of the State Construction BMP Field Manual, SC-1.

TEMPORARY CATCH BASIN PROTECTION DETAIL

Scale: Not to Scale

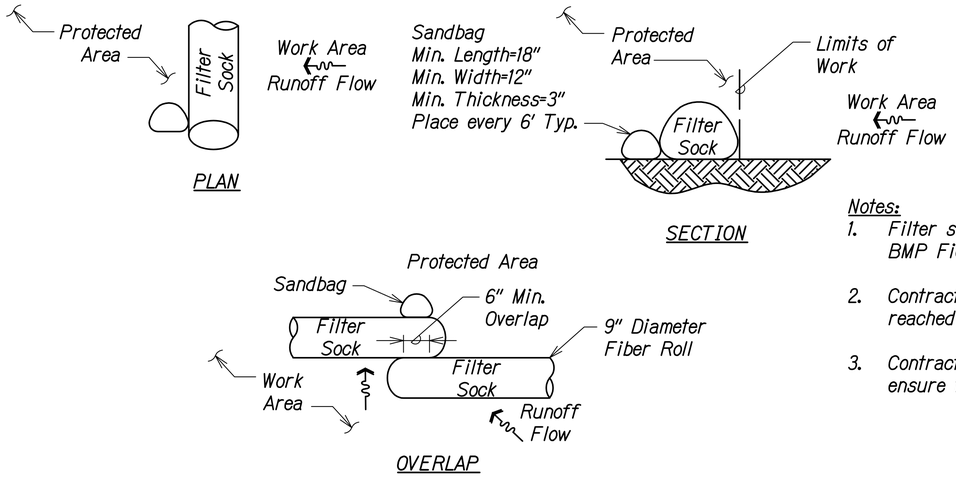
2 C101 C004

Note:
1. Drain inlet protection shall meet the requirements of the State Construction BMP Field Manual, SC-1.

TEMPORARY DRAIN INLET PROTECTION DETAIL

Scale: Not to Scale

1 C101 C004



PLAN

SECTION

OVERLAP

Notes:
1. Filter sock shall meet the requirements of the State Construction BMP Field Manual, SC-6 Compost Filter Berm/Sock.
2. Contractor shall remove debris behind filter sock when it has reached one-half the height of the fiber roll.
3. Contractor is not required to stake compost filter socks but shall ensure filter socks remain in place to provide adequate protection.

TEMPORARY FILTER SOCK DETAIL

Scale: Not to Scale

3 C101 C004

ORIGINAL PLAN	SURVEY PLOTTED BY:	DATE:
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4/30/24
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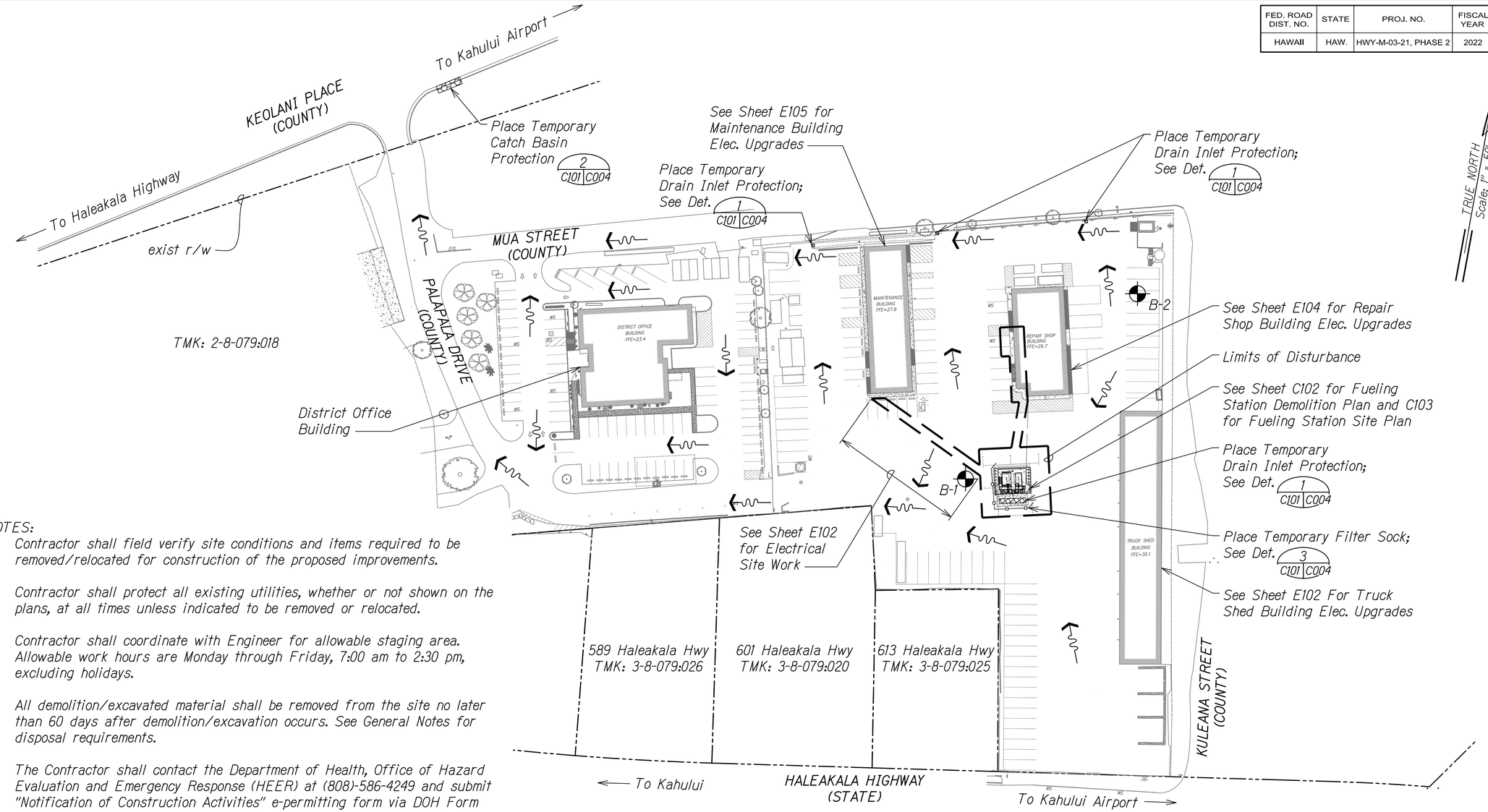
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER POLLUTION AND EROSION CONTROL DETAILS

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: Not to Scale Date: July 2022

SHEET No. C004 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	8	46



NOTES:

1. Contractor shall field verify site conditions and items required to be removed/relocated for construction of the proposed improvements.
2. Contractor shall protect all existing utilities, whether or not shown on the plans, at all times unless indicated to be removed or relocated.
3. Contractor shall coordinate with Engineer for allowable staging area. Allowable work hours are Monday through Friday, 7:00 am to 2:30 pm, excluding holidays.
4. All demolition/excavated material shall be removed from the site no later than 60 days after demolition/excavation occurs. See General Notes for disposal requirements.
5. The Contractor shall contact the Department of Health, Office of Hazard Evaluation and Emergency Response (HEER) at (808)-586-4249 and submit "Notification of Construction Activities" e-permitting form via DOH Form Finder at least 90 days prior to surface and subsurface disturbing activities.
6. Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMP requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMP's based upon their means and methods considering site conditions, expected run off flows, and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Bid Item No. 6 - Environmental.
7. For boring log data, see Geotechnical Engineering Exploration report included in the Project Specifications.

GENERAL SITE AND TEMPORARY EROSION CONTROL PLAN

Scale: 1" = 50'

LEGEND

- Direction of Flow Runoff
- Temporary Inlet Protection
- Temporary Sediment Filter for Catch Basins
- Limits of Disturbance
- B-1 Approx. Boring Location and ID Number

GRAPHIC SCALE: 1"=50'

ORIGINAL PLAN | SURVEY PLOTTED BY: DRAWN BY: TRACED BY: DESIGNED BY: QUANTITIES BY: CHECKED BY: DATE: | NOTE BOOK | No.

GEN SITE.DWG 7/5/2022 10:55:55 AM

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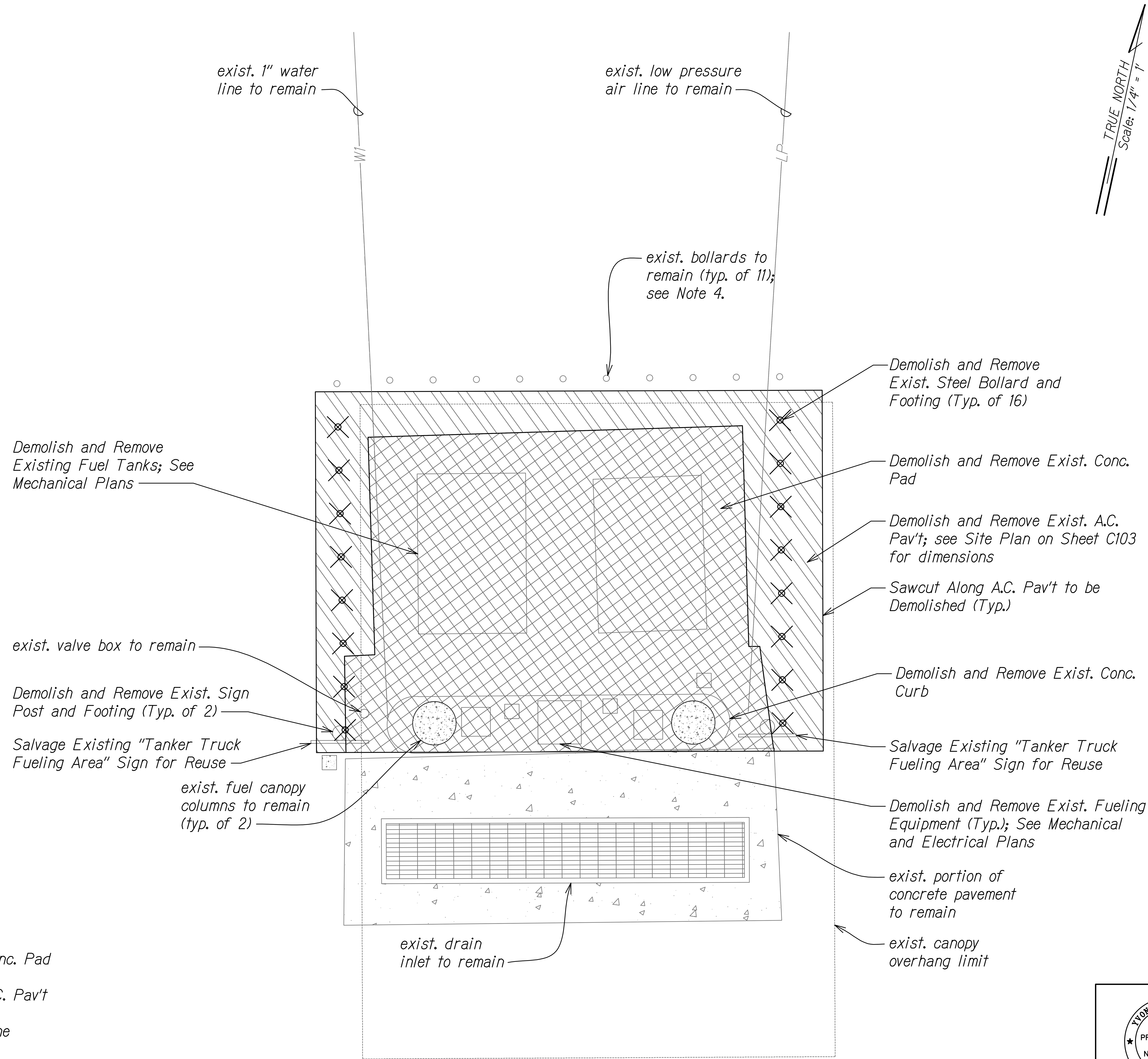
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL SITE AND TEMP EC PLAN

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: 1" = 50' Date: July 2022

SHEET No. C101 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	9	46



FUELING STATION DEMOLITION PLAN

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

NOTES:

1. Contractor shall protect all existing utilities, wether or not shown on plans, at all times unless indicated to be removed or relocated.

2. For additional demolition requirements, see Mechanical and Electrical plans.

3. Contractor may temporarily remove any bollards scheduled to remain in order to provide additional access during construction; however, Contractor will be required to replace bollards with new (see Det. 3/C105) at no additional cost to the State.

4. Contractor to restore pavement markings.

LEGEND

- Demo Exist Conc. Pad
- Demo Exist A.C. Pav't
- —W1— exist. water line
- —LP— exist. low pressure air line
- Demo Exist Bollard

4 0 4 8

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FUELING STATION DEMOLITION PLAN

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2

Project No. HWY-M-03-21, Phase 2

Scale: 1/4" = 1'-0" Date: July 2022

SHEET No. C102 OF 8 SHEETS

ORIGINAL PLAN | SURVEY PLOTTED BY ___ DATE ___
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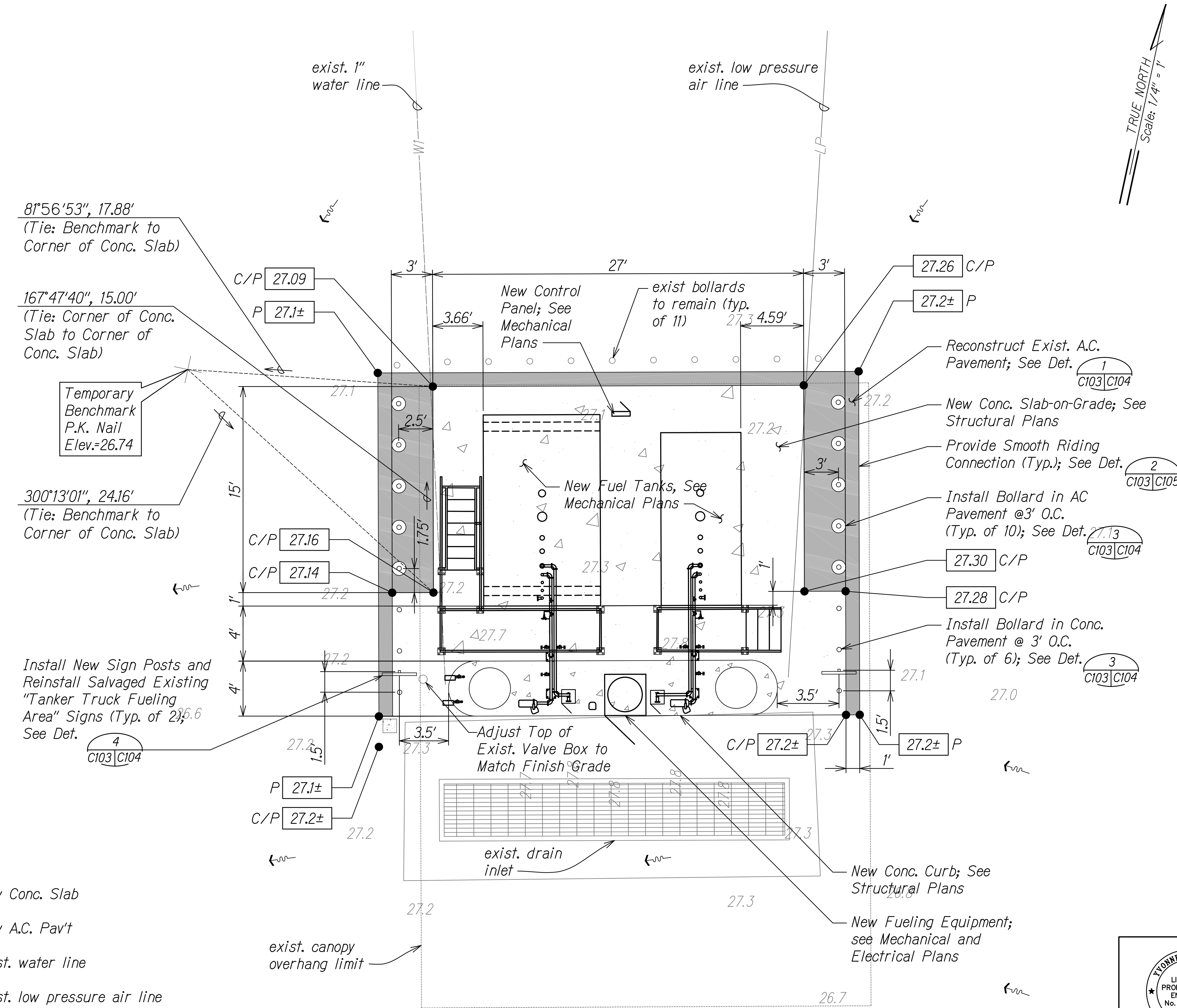
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	10	46

NOTES:

1. Contractor shall protect all existing utilities, whether or not shown on plans, at all times unless indicated to be removed or relocated.
2. Restore damaged A.C. pavement to meet or exceed existing pavement thickness.
3. For additional requirements, see also Structural, Mechanical, and Electrical plans.



FUELING STATION SITE AND SPOT ELEVATION PLAN

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

4 0 4 8
GRAPHIC SCALE: 1/4"=1'-0"

LEGEND

Symbol	Description
(slab hatch)	New Conc. Slab
(grey fill)	New A.C. Pav't
—W1—	exist. water line
—LP—	exist. low pressure air line
27.3± C	Conc. Pad Elevation
27.3± P	A.C. Pavement Elevation
—∿→	Surface Runoff Direction

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FUELING STATION SITE AND SPOT ELEVATION PLAN

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2

Project No. HWY-M-03-21, Phase 2

Scale: 1/4" = 1'-0" Date: July 2022

SHEET No. C103 OF 8 SHEETS

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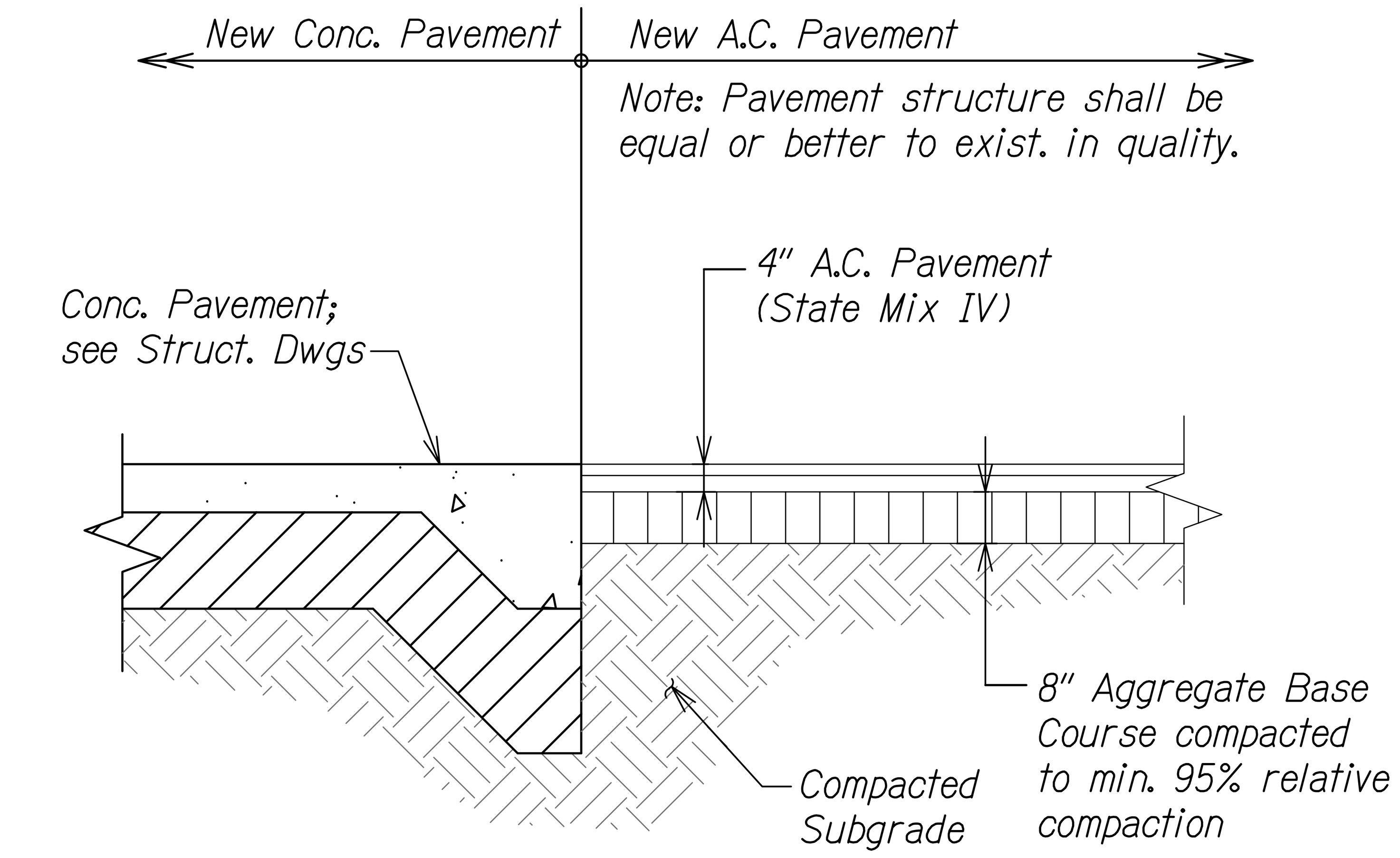
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	11	46



CONCRETE/A.C. PAVEMENT TRANSITION DETAIL 1 C103 C104

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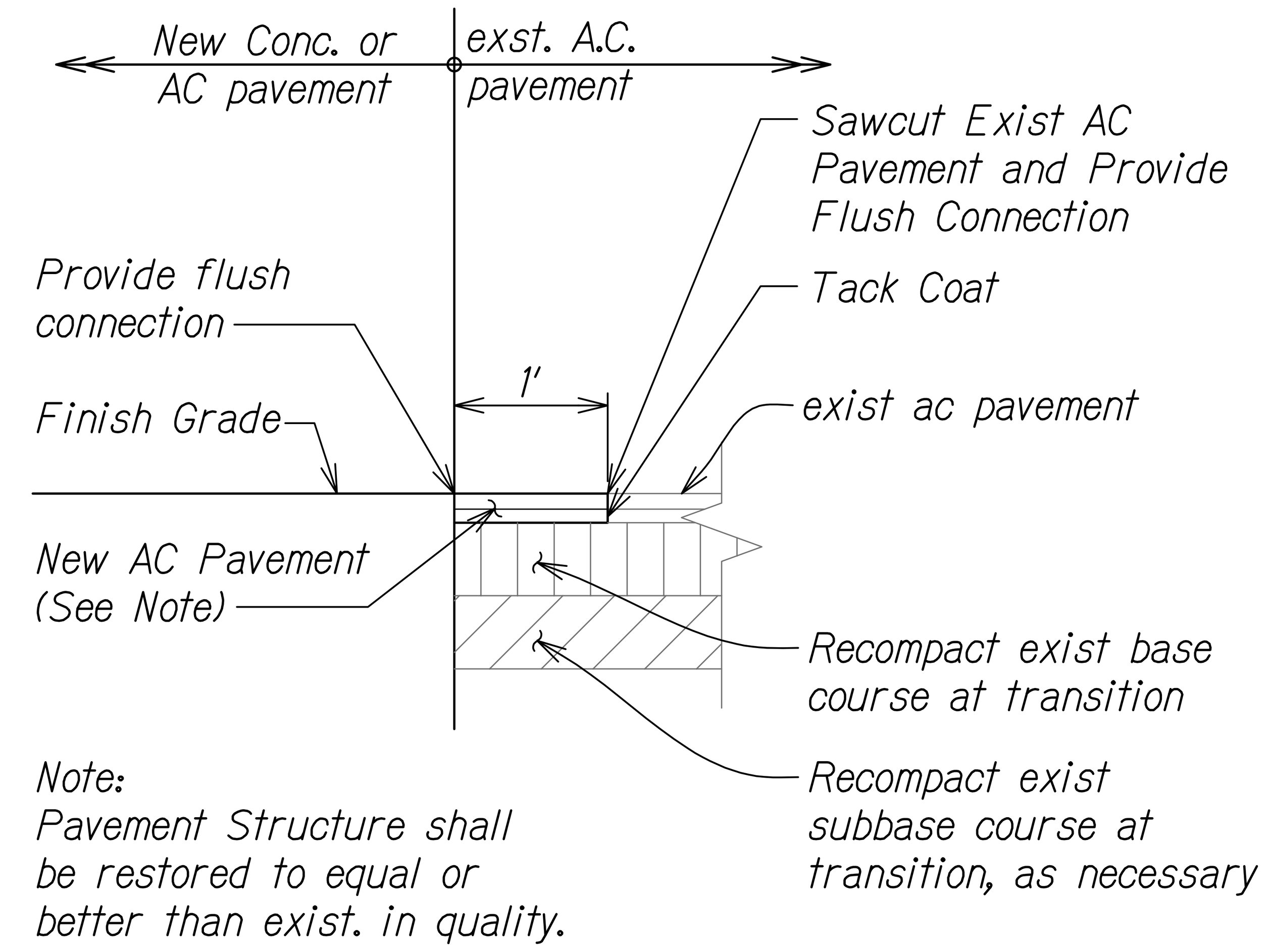
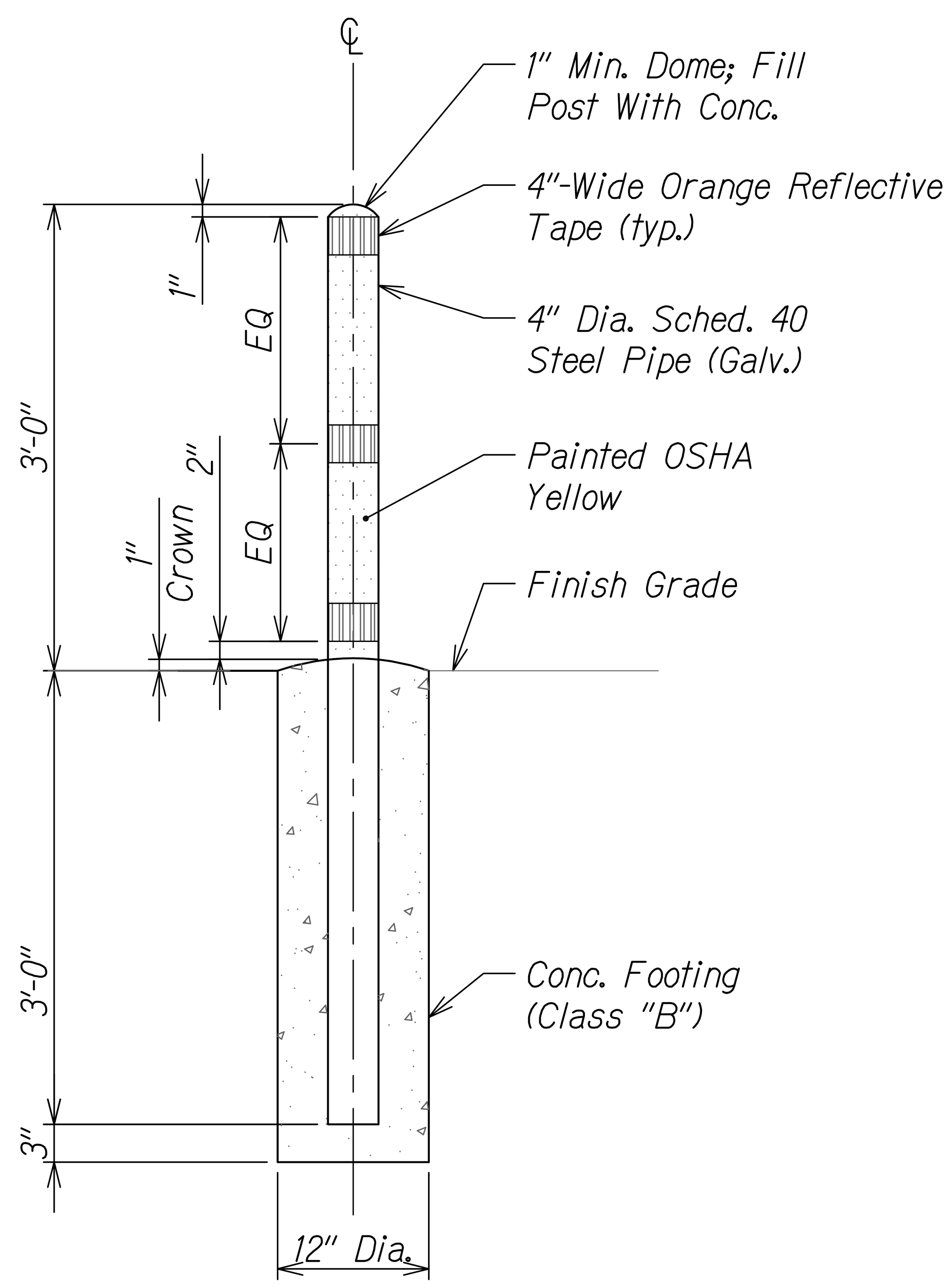


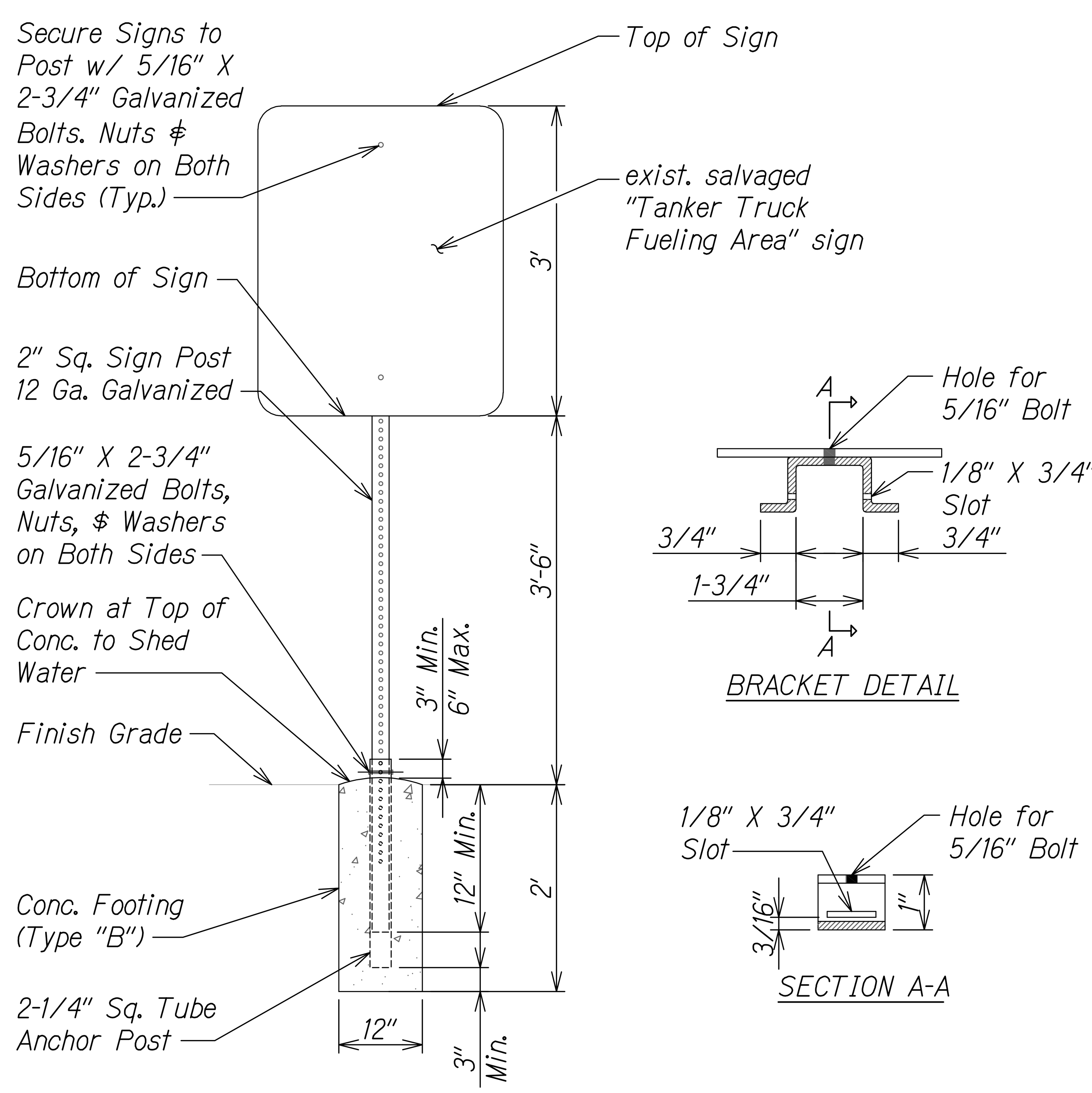
SMOOTH RIDING CONNECTION DETAIL 2 C103 C104

Scale: Not to Scale



BOLLARD DETAIL 3 C103 C104

Scale: Not to Scale



FUELING AREA SIGNAGE DETAIL 4 C103 C104

Scale: Not to Scale

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4/30/24

EXP. DATE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILS

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2

Project No. HWY-M-03-21, Phase 2

Scale: Not to Scale   Date: July 2022

SHEET No. C104 OF 8 SHEETS

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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, Phase 2	2022	12	46

GENERAL:

A. Workmanship and materials shall conform to the State Building Code of Hawaii (IBC, 2018 edition as amended by the State of Hawaii). However, where reference is made to performance conforming to other standards the more stringent shall apply.

B. The contractor shall compare all the contract documents with each other and report in writing to the engineer all inconsistencies and omissions.

C. The contractor shall take field measurements and verify field conditions and shall compare such field measurements and conditions with the drawings before commencing work. Report in writing to the engineer all inconsistencies and omissions.

D. The contractor shall be responsible for methods of construction, workmanship and job safety. The contractor shall provide temporary shoring and bracing as required for stability of structural members and systems.

E. Construction loading shall not exceed design live load unless special shoring is provided. Allowable loads shall be reduced in areas where the structure has not attained full design strength.

F. The contractor shall be responsible for protection of the adjacent properties, structures, streets and utilities during the construction period.

G. Details noted as typical on the structural drawings shall apply in all conditions unless specifically shown or noted.

H. The general contractor and his subcontractors must submit in writing any requests for modifications to the plans and specifications.

DESIGN CRITERIA:

A. Risk category ———— II

B. Seismic

- A. Seismic importance factor: ———— 1.00
- B. Mapped spectral response accelerations:
  - A. Ss ———— 0.987
  - B. S1 ———— 0.253
- C. Spectral response coefficients
  - a. Sds ———— 0.727
  - b. Sd1 ———— 0.319
- D. Seismic design category: ———— D
- E. Basic seismic force resisting system:

C. Wind

- A. Basic wind speed - 3 second gust ———— 140 mph
- B. Wind exposure category ———— C
- C. Ground elevation factor, Ke ———— 1.0
- D. Wind topographic factor, Kzt ———— 1.0
- E. Wind directionality factor, Kd ———— 0.85
- F. Internal pressure coefficient ———— 0.00

D. Allowable foundation bearing capacities

- A. Dead load + live load ———— 2500 psf
- B. Dead load + live load + lateral load ———— 3300 psf

FOUNDATION:

A. Foundation design is based on geotechnical investigation by Kokua Geotech LLC and report dated August 7, 2020.

B. Contractor shall provide for de-watering of excavation from surface water, ground water or seepage.

C. Contractor shall provide for design and installation of all cribbing, sheeting, and shoring necessary to preserve excavations and earth banks.

D. Footings shall bear on undisturbed in-situ firm soils or properly compacted structural fill. Structural fill shall consist of select granular material. Bottom of footings shall be compacted to provide a relatively firm and smooth bearing surface prior to placement of reinforcing steel and concrete. Bottom of footings shall be compacted to a minimum of 95% relative compaction.

E. SITE AND SUBGRADE PREPARATION:

- A. At the on-set of earthwork, areas within the contact grading limits shall be cleared thoroughly. Surface vegetation, debris, deleterious materials, existing structures and pavements to be demolished, and other unsuitable materials shall be removed and disposed of properly off-site.
- B. After clearing and demolition, areas at grade or areas designated to receive fills shall be sacrificed to a depth of about 10 inches, moisture-conditoned to above the optimum moisture content, and compacted to a minimum of 90 percent relative compaction. Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density as determined by ASTM d1557. Optimum moisture is the water content (percentage by weight) corresponding to the maximum dry density.
- C. Soft and yielding areas encountered during clearing and subgrade preparation shall be over-excavated to expose firm material, and the resulting excavation shall be backfilled with well-compacted general fill. The excavated soft soils shall be properly disposed of off-site and/or used in landscape areas, where appropriate.

FOUNDATION (CONT'D):

F. Excavations:

- A. All excavations shall be made in accordance with applicable occupational safety and health administration (OSHA) and state regulations. The contractor shall determine the method and equipment to be used for the excavations, subject to practical limits and safety considerations, in addition, the excavations shall comply with the applicable federal, state, and local safety requirements. the contractor shall be responsible for trench shoring design and installation.
- B. Based on the geotechnical engineer's report, excavations for the project will generally consist of excavations for foundation construction and utility installation. Based the borings, these excavations may encounter loose to medium sandy soils and stiff to very stiff sandy silt/clay. In addition, boulders and hard basalt rock formation bay be encountered in the planned excavations.
- C. It is anticipated that most of the material may be excavated with normal or heavy excavation equipment. However, deep excavations and excavations encountering boulders and hard basalt rock formation may require the use of hoerams. Contractors shall be encouraged to examine the site conditions and the subsurface data to make their own reasonable prudent interpretation.

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Expiration date of License: 4/30/24

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES-
STRUCTURAL

MAUI DISTRICT BASEYARD OFFICE EXPANSION &
RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2

Scale: None Date: July 2022

SHEET No. S001 OF 6 SHEETS

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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, Phase 2	2022	13	46

FOUNDATIONS (CONT'D):

G. FILL/BACKFILL MATERIALS:

A. In general, the excavated on-site soils may be re-used as a source for general fill provided they are free of vegetation, deleterious material, and rock fragments greater than 3 inches in maximum dimension.

B. Imported fill materials, if requested, shall consist of non-expansive structural fill material, such as crushed coral or basalt. The structural fill shall be well-graded from coarse to fine with particles no larger than 3 inches in largest dimension. the material shall have a cbr value of 20 or higher and a swell potential of 1 percent or less when tested in accordance with ASTM D1883. The material shall also contain between 10 and 30 percent particles passing the no. 200 sieve.

C. Aggregate base course and aggregate sub base materials shall consist of crushed basaltic aggregates and shall meet the requirements of sections 703.06 and 703.17, respectively, of the state of Hawaii, Standard Specifications for Road and Bridge Construction (2005). The geotechnical engineer shall test imported fill materials for conformance with these recommendations prior to delivery to the project site for the intended use.

H. Fill/backfill compaction requirements:

A. General fill and structural fill materials shall be moisture-conditioned to above the optimum moisture content, placed in level lifts not exceeding 8 inches in loose thickness, and compacted to a minimum of 90 percent relative compaction.

B. Fills and backfills within 2 feet of the pavement grade elevation shall be compacted to a minimum of 95 percent relative compaction. Aggregate base and subbase course materials shall be placed in level lifts of about 8 inches in loose thickness, moisture-conditioned to above the optimum moisture, and compacted to at least 95 percent relative compaction.

C. Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same soil determined in accordance with ASTM D1557. Optimum moisture is the water content (percentage by dry weight) corresponding to the maximum dry density. Site grading operations shall be observed by a representative from the geotechnical engineer. It is important that a representative observe the site grading operations to evaluate whether undesirable materials are encountered during the subgrade preparation process and whether the exposed soil/rock conditions are similar to those encountered in the field exploration.

D. The geotechnical engineer shall be retained to monitor the foundation excavations, site and subgrade preparation, fill and backfill placement, proof-rolling of pavement subgrade, aggregate base/subbase course placement and other aspects of earthwork construction to determine whether the recommendactions of the geotechnical report are followed. The recommendations provided in the geotechnical report are contingent upon such observations. If the actual exposed subsurface soil conditions encoutered during construction differ from those assumed or considred in this report, the geotechnical engineer shall be conacted to review and/or revise the recommendations of this section.

FOUNDATIONS (CONT'D):

CONCRETE:

A. Concrete construction shall conform to American Concrete Institute ACI 318R-14.

B. Concrete shall be regular weight hard rock concrete and shall have the following minimum 28 day compressive strengths:
   A. Mat foundation ——— 4,000 psi
   B. Slabs on grade ——— 4,000 psi
   C. All other concrete ——— 3,000 psi

C. Concrete delivery tickets shall record all free water in the mix: at batching by plant, for consistency by driver, and any additional request by contractor if permitted by the mix design.

D. All inserts, anchor bolts, plates, and other items to be cast in the concrete shall be hot-dipped galvanized unless otherwise noted.

E. Reinforcing bars, anchor bolts, inserts, and other items to be cast in the concrete shall be secured in position prior to placement of concrete.

F. Conduits, pipes, and sleeves passing through a slab or footing and not conforming to typical details shall be located and submitted to the engineer for approval.

G. The contractor shall locate construction joints so as not to impair the strength of the structure and to minimize shrinkage stresses. submit location of construction joints to the engineer for approval, unless otherwise noted.

H. See architectural drawings for chamfers, edge radii, drips, reglets, finishes and other non-structural items not shown or specified on the structural drawings.

I. Non-shrink grout shall be a premixed non-metallic formula, capable of developing a minimum compressive strength of 3,000 psi in 1 day and 5,000 psi in 28 days.

J. The engineer shall be notified at least 3 working days prior to any concrete pour. No concrete shall be poured prior to observation by the engineer or his representative.

FOUNDATIONS (CONT'D):

REINFORCING STEEL:

A. Reinforcing steel (for normal use, not welded) shall be deformed bars conforming to ASTM A615, Grade 60.

B. Welded wire fabric shall conform to ASTM A185, galvanized.

C. Clear concrete cover for reinforcing bars shall be as follows, unless otherwise noted:
   A. Mat foundations, etc. cast against earth ——— 3"
   B. Mat foundations, etc. formed and exposed to earth or weather ——— 2"

D. Clear distance between the surface of a bar and any surface of a masonry unit shall be not less than 1/2 inch, unless otherwise noted.

E. Reinforcing steel shall be spliced where indicated on plans. provide lap splice length per typical details and schedule, unless otherwise noted.

F. Bar laps shall be made away from points of maximum stress. unless noted otherwise, splices, laps, dowel extensions and embedments shall be 48 bar diameters, but not less than 24 inches. splices shall be staggered where possible.

G. Unless otherwise noted, all horizontal reinforcing steel at wall and wall footing corners and intersections shall extend to the far face of the corner and hooked a length of 48 bar diameters, but not less than 24 inches, around the corner.

H. Bar bends and hooks shall be "standard hooks" in accordance with ACI 318.

I. Welding of reinforcing steel is not permitted.

EPOXIED ANCHOR INSTALLATIONS:

A. Epoxy used for anchoring threaded rods and reinforcing steel into existing concrete shall be Hilti HIT-RE 500 V3 System, Simpson SET-3G System, Powers Pure 110+, or approved equal, and shall be installed per manufacturer's recommendations.

B. Anchors shall be installed with the minimum embedment requirements as indicated on the drawings.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES-STRUCTURAL

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: None Date: July 2022

SHEET No. S002 OF 6 SHEETS

ORIGINAL PLAN | SURVEY PLOTTED BY | DATE
NOTE BOOK | SURVEY DATA BY | DATE
DESIGNED BY | TRACED BY | DATE
QUANTITIES BY | DESIGNED BY | DATE
CHECKED BY | QUANTITIES BY | DATE
No. | CHECKED BY | DATE

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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, Phase 2	2022	14	46

SPECIAL INSPECTION:

A. Contractor shall be responsible for ensuring that special inspection of portions of the work, as required by the building code of the State of Hawaii, is made at the appropriate time. The contractor shall give timely notice of when and where inspections are to be made and provide access for the inspector. The contractor shall correct defective work at no additional cost to the state and pay for re-inspection.

B. General: Where application is made for construction as described in this section, the contractor shall employ one or more special inspectors to provide inspections during construction on the types of work listed under IBC section 1704. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection. These inspections are in addition to the inspections specified in section 109.

1. Statement of special inspections. The permit applicant shall submit a statement of special inspections prepared by the registered design professional in responsible charge in accordance with section 106.1 as a condition for permit issuance. this statement shall be in accordance with section 1705.

2. Report requirement. Special inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the building official, and to the registered design professional in responsible charge. Reports shall indicate that work inspected was done in conformance to approved construction documents. discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and to the registered design professional in responsible charge prior to the completion of that phase of the work. A final report documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon by the permit applicant and the building official prior to the start of work.

C. CONCRETE CONSTRUCTION: The special inspections and verifications for concrete construction shall be as required by this section and IBC table 1705.3.

D. Materials in the absence of sufficient data or documentation providing evidence of conformance to quality standards for materials in Chapter 3 of ACI 318, the building official shall require testing of materials in accordance with the appropriate standards and criteria for the material in chapter 3 of ACI 318. Weldability of reinforcement, except that which conforms to ASTM a 706, shall be determined in accordance with the requirements of section 3.5.2 of ACI 318.

E. SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE:
Special inspections for seismic resistance are required for the following:

1. The seismic force-resisting systems in structures assigned to category c, d, e, or f as determined by IBC section 1613.

2. Designated seismic systems in structures assigned to seismic category d, e, or f.

3. Architectural, mechanical, and electrical components in structures assigned to seismic design category c, d, e, or f that are required in IBC sections 1707.7 and 1707.8.

4. STRUCTURAL STEEL: continuous special inspection is required for structural welding in accordance with AISC 341 with the exception of the following:
1. Single-pass fillet welds not exceeding 5/16 inch in size

F. SPECIAL CASES: Special inspections shall be required for proposed work that is, in the opinion of the Contracting Officer, unusual in its nature, such as, but not limited to, the following examples:

1. Construction materials and systems that are alternatives to materials and systems prescribed by this code.

2. Unusual design applications of materials described in this code.

3. Materials and systems required to be installed in accordance with additional manufacturer's instructions that prescribe requirements not contained in this code or in standards referenced by this code.

(Based on IBC Table 1705.3) Required Special Inspections and Tests of Concrete Construction

Type	Continuous	Periodic	Referenced Standard	IBC Reference
1. Inspect reinforcement, including prestressing tendons, and verify placement	—	X	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. Inspect anchors cast in concrete:	—	X	ACI 318: 17.8.2	—
3. Inspect anchors post-installed in hardened concrete members[b] A. Adhesive anchors in horizontally or upwardly inclined orientations to resist sustained tension loads B. Mechanical anchors and adhesive anchors not defined in 4.a	X —	 X	 ACI 318: 17.8.2.4 ACI 318: 17.8.2	 — —
4. Verify use of required design mix	—	X	ACI 318: Ch.19, 26.4.3, 26.4.4	1904.1, 1904.2 1908.2, 1908.3
5. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of concrete	X	—	ASTM C172 ASTM C31 ACI 318: 26.5, 26.12	1908.10
6. Inspect concrete placement for proper application techniques	X	—	ACI 318: 26.5	1908.6, 1908.7, 1908.8
7. Verify maintenance of specified curing temperature and techniques	—	X	ACI 318: 26.5.3-26.5.5	1908.9
8. Inspect formwork for shape, location and dimensions of the concrete member being formed	—	X	ACI 318: 26.11.1.2 (b)	—

a. Where applicable, see section 1705.12, special inspections for seismic resistance
b. Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with 17.8.2 in ACI 318, or other qualification procedures. Where specific requirements are not provided, special inspection requirements shall be specified by the registered design professional and shall be approved by the building official prior to the commencement of the work

Conc Special Inspection Legend:

X indicates required inspections frequency required

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

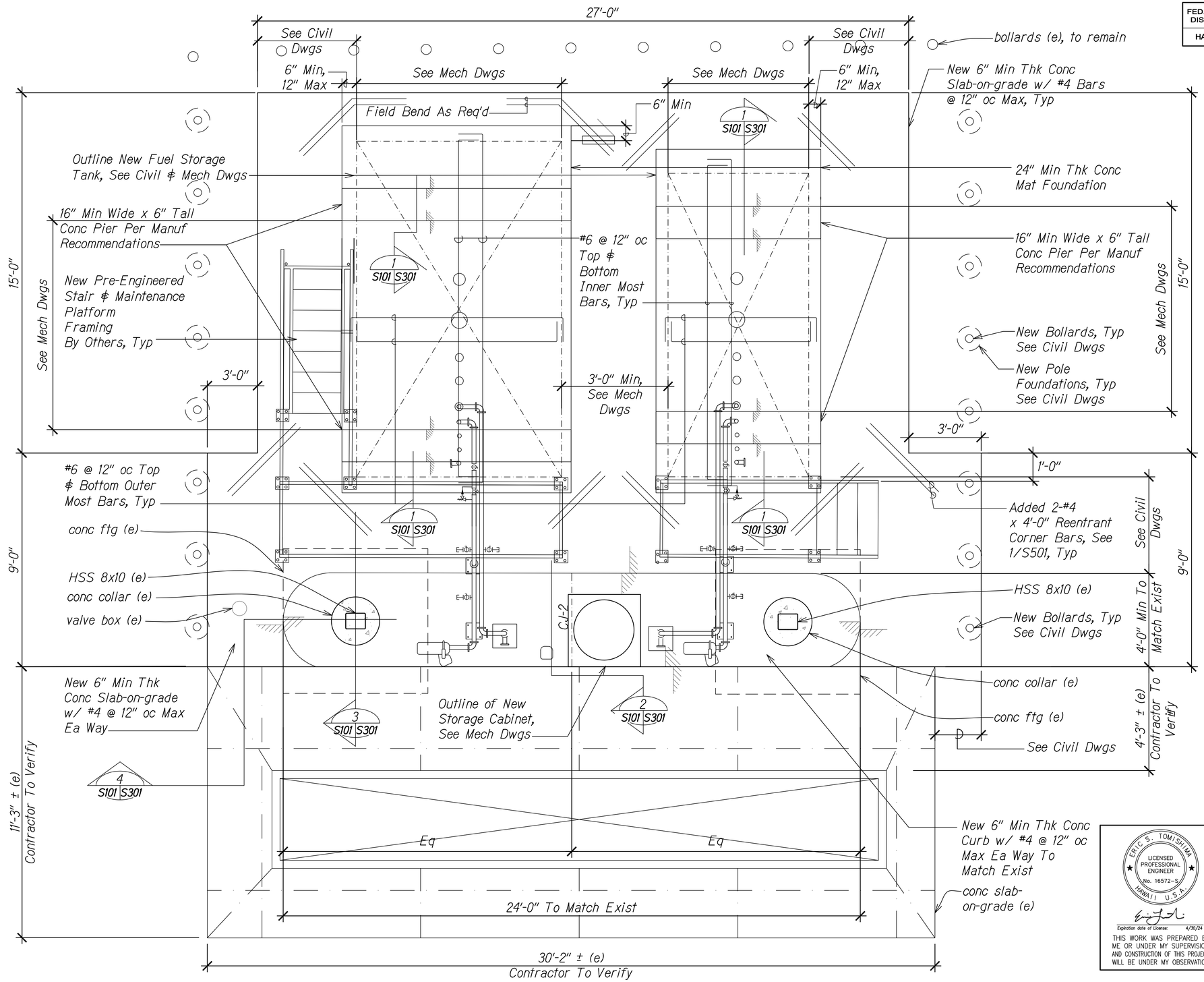
GENERAL NOTES-STRUCTURAL

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2

Scale: None Date: July 2022

SHEET No. S003 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, Phase 2	2022	15	46



LEGEND:

CJ-1 Indicates Control Joint Type, See 4/S501

EXISTING FUELING STATION FOUNDATION RETROFIT PLAN

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

ORIGINAL PLAT | NOTE BOOK | SURVEY PLOTTED BY | DATE | SURVEY DATA VER. BY | DATE | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | No.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXISTING FUELING STATION FOUNDATION RETROFIT PLAN

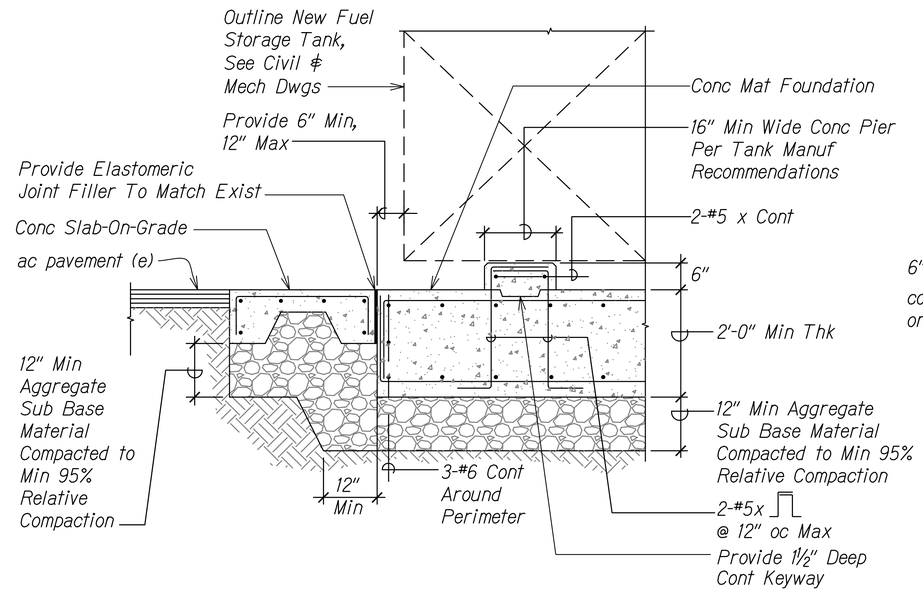
MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2

Project No. HWY-M-03-21, Phase 2

Scale: 1/2"= 1'-0" Date: July 2022

SHEET No. S101 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, Phase 2	2022	16	46



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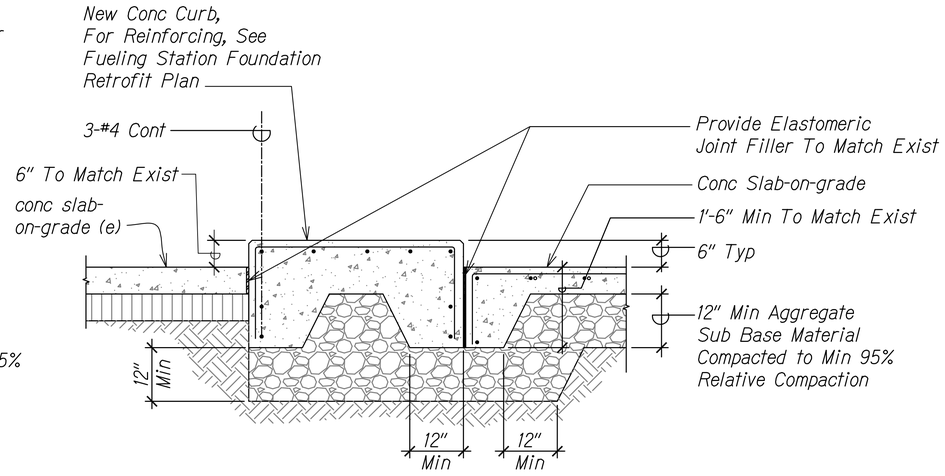
1 S101 S301



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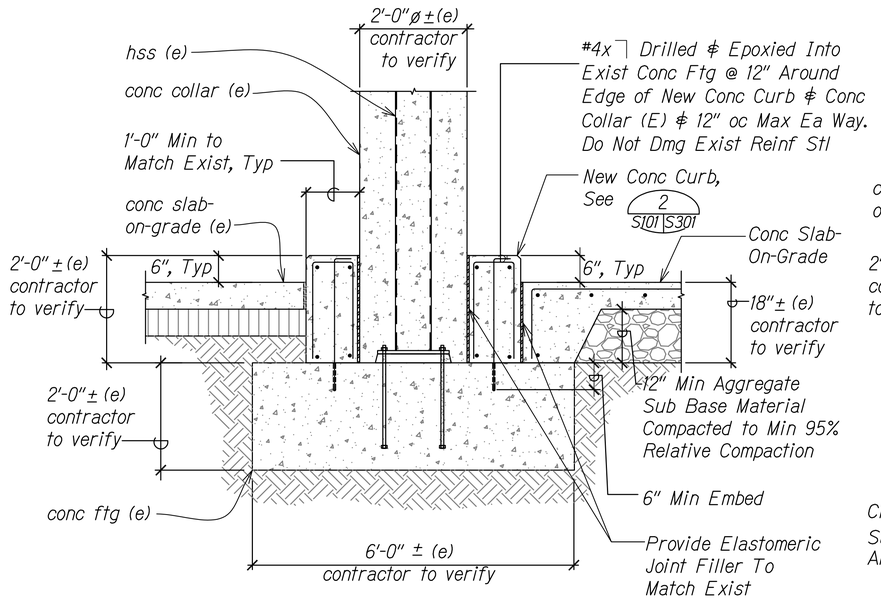
2 S101 S301



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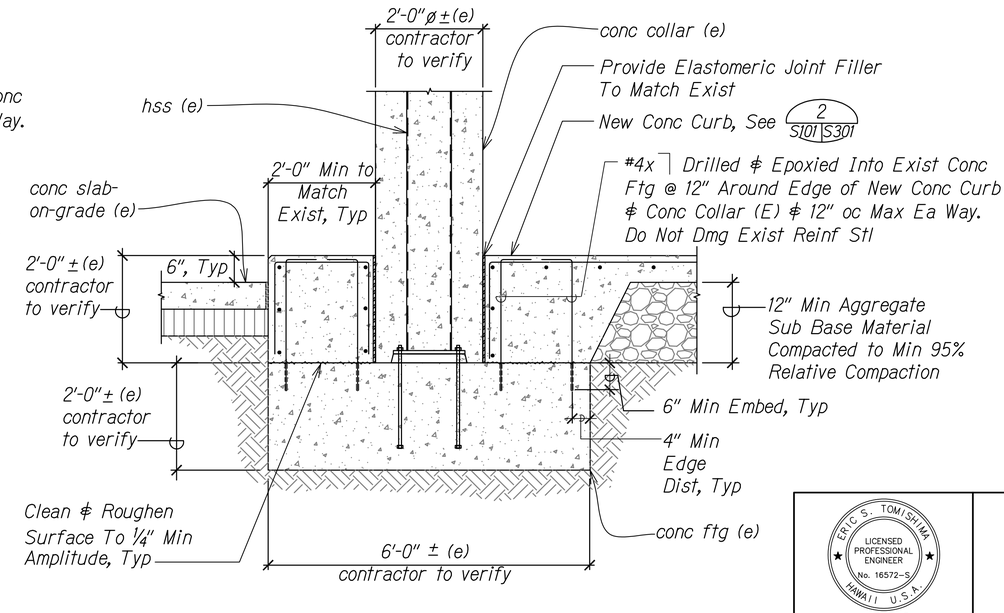

SECTION
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4 S101 S301

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SECTIONS

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: As Shown Date: July 2022

SHEET No. S301 OF 6 SHEETS

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NOTE: BOOK

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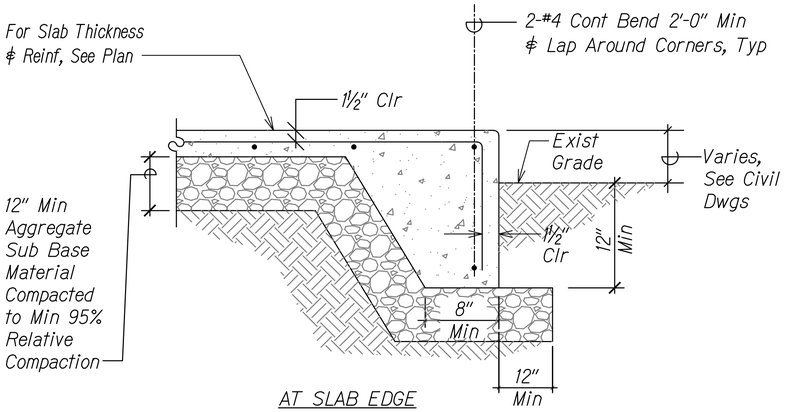
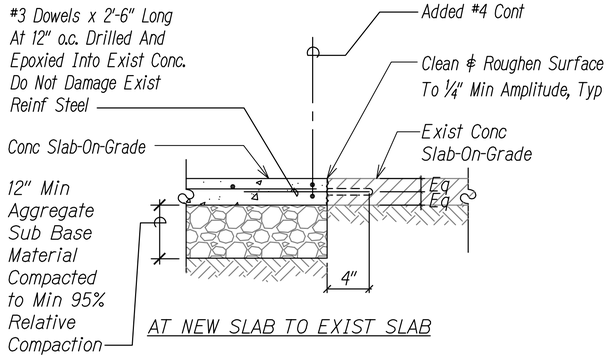
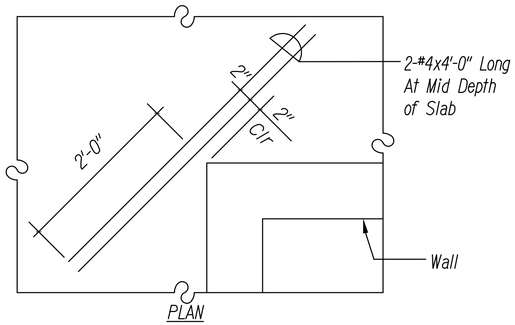
HAWAII	HAW.	HWY-M-03-21, Phase 2	2022	17	46



AT SLAB EDGE



AT NEW SLAB TO EXIST SLAB



REINF AT REENTRANT CORNERS

TYPICAL SLAB-ON-GRADE DETAILS

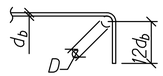
NOT TO SCALE

1 S501 S501

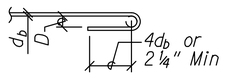
Minimum Splice & Embedment Lengths For Concrete					
	Lap Splice		Embedment		
			Straight		
Bar Size	Bot Bar Or Wall Bar	Top Bar	Bot Bar Or Wall Bar	Top Bar	w/ Std Hook
#3, #4	29"	38"	22"	29"	11"
#5	36"	47"	28"	36"	14"
#6	43"	56"	33"	43"	17"
#7	63"	82"	48"	63"	20"

1. Lengths Are For Concrete Beams & Columns With Rebar Spaced 1 Bar Diameter Min O.C. And Concrete Walls with Rebars Spaced 2 Bar Diameters Min O.C. Increase Bar Length 50% For Bars Spaced Closer Than Minimums Specified.

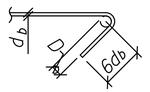
2. "Top Bars" Are Horizontal Bars With 12" Or More Of Concrete Cast Below.



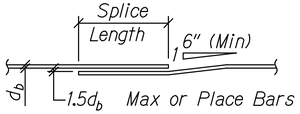
90 Degree Bend



180 Degree Bend



135 Degree Bend

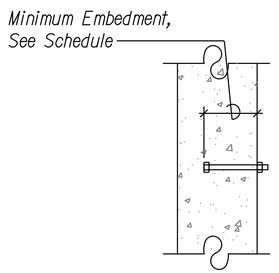


D = 6d_b For #8 and Smaller
D = 8d_b For #9 To #11

TYPICAL REBAR SPLICE & EMBEDMENT SCHEDULE

NOT TO SCALE

2 S501 S501



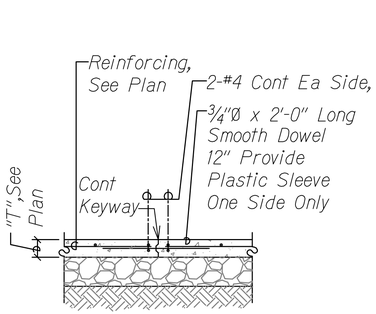
AT CONCRETE

Bolt Diameter	Minimum Embedment
1/2"	4"
5/8"	5"
3/4"	6"

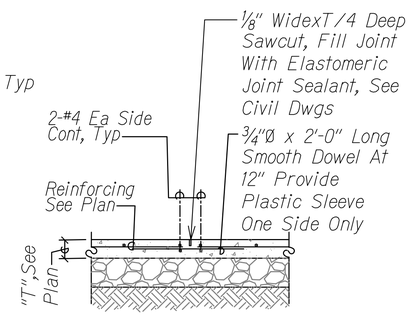
TYPICAL ANCHOR BOLT DETAIL

NOT TO SCALE

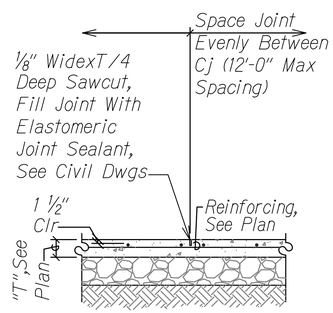
3 S501 S501



CONSTRUCTION JOINT CJ-1



CONTROL JOINT CJ-2 (TYPICAL)



SAWCUT JOINT (TYPICAL)

TYPICAL SLAB JOINT DETAILS

NOT TO SCALE

4 S501 S501

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: Not to Scale Date: July 2022

SHEET No. S501 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	18	46

MECHANICAL GENERAL NOTES:

1. THE ENTIRE INSTALLATION SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE BUILDING CODE OF MAUI COUNTY, STATE DEPARTMENT OF HEALTH REGULATIONS, 2012 INTERNATIONAL BUILDING CODE, 2006 UNIFORM PLUMBING CODE, 2015 ICC INTERNATIONAL ENERGY CONSERVATION CODE WITH LOCAL AMENDMENTS, NFPA 13, AND ALL OTHER AGENCIES HAVING JURISDICTION.

2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO COVER THE COMPLETE INSTALLATION OF SYSTEMS TO FUNCTION AS DESCRIBED AND SPECIFIED. THE OMISSION OF REFERENCE TO ANY NECESSARY ITEM OF LABOR OR MATERIAL SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH LABOR AND MATERIAL.

3. ALL EQUIPMENT SHALL BE CAPABLE OF FITTING INTO THE SPACES ALLOCATED WHILE MEETING THE MANUFACTURER'S RECOMMENDED CLEARANCES. THE CONTRACTOR SHALL VERIFY ALL CLEARANCES FOR EQUIPMENT TO BE INSTALLED PRIOR TO ORDERING OF EQUIPMENT AND NOTIFY THE CONTRACTING OFFICER OF ANY INADEQUATE CLEARANCES OR CONDITIONS THAT WILL PREVENT THE PROPER INSTALLATION, MAINTENANCE, AND OPERATION OF THE EQUIPMENT.

4. FOR MECHANICAL WORK, PROVIDE SHOP DRAWINGS FOR THE LAYOUT OF EQUIPMENT AND PIPING SHOWING COORDINATION OF ALL WORK WITH ALL OTHER TRADES, CONTROLS AND ELECTRICAL.

5. DRAWINGS DO NOT ATTEMPT TO SHOW EXACT DETAILS OF PIPING PROVIDE OFFSETS AS NECESSARY TO AVOID LOCAL OBSTRUCTIONS OR INTERFERENCE WITH OTHER TRADES. REVIEW ALL PIPING RUNS PRIOR TO FABRICATION AND IMMEDIATELY NOTIFY THE CONTRACTING OFFICER OF ANY INTERFERENCE AND/OR LACK OF ADEQUATE CLEARANCES.

6. SHOULD PROJECT CONDITIONS REQUIRE REARRANGEMENT OF WORK, MARK SUCH CHANGES ON THE RECORD DRAWINGS. IF THESE CHANGES REQUIRE ALTERNATE METHODS TO THOSE APPROVED BY THE CONTRACT DOCUMENTS, SUBMIT SHOP DRAWINGS SHOWING THE PROPOSED ALTERNATE METHODS TO THE CONTRACTING OFFICER FOR REVIEW. DO NOT PROCEED UNTIL REVIEWED.

7. ROUTE ALL CONTROL AND POWER WIRING IN CONDUIT. COORDINATE INSTALLATION OF ALL CONDUIT WITH ELECTRICAL SUB CONTRACTOR

8. ENSURE ADEQUATE CLEARANCES ARE PROVIDED TO SERVICE ALL NEW EQUIPMENT.

9. IF EQUIPMENT IS PROCURED WITH VOLTAGES DEVIATING FROM THE EQUIPMENT SCHEDULE, CONTRACTOR SHALL PROVIDE TRANSFORMERS AND OTHER NECESSARY ACCESSORIES TO PROVIDE A FUNCTIONAL SYSTEM.

LEGEND AND ABBREVIATIONS

SYMBOLS	ABBREVIATIONS	DESCRIPTIONS
	AG	ABOVE GROUND
		MOTORIZED ANTI-SIPHON BALL VALVE
		BALL VALVE, NORMALLY CLOSED
	BG	BELOW GROUND
	CL	CLASS
	CONC	CONCRETE
	CONT	CONTINUATION
	DEF	DIESEL EXHAUST FLUID
Ø	DIA	DIAMETER
	DN	DOWN
	EXST	EXISTING
	FL	FLANGE
	FMS	FUEL MANAGEMENT SYSTEM
	HP	HORSEPOWER
	HZ	HERTZ
	MAV	MANUAL AIR VENT
	MIN	MINIMUM
	PH	PHASE
	PNL	PANEL
	PRV	PRESSURE RELIEF VALVE
		PUMP
	RFH	RUBBER FLEX HOSE
	RPM	REVOLUTIONS PER MINUTE
	SSTL	316 STAINLESS STEEL
		THREADED CAP
	TYP	TYPICAL
	V	VOLT

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HIGHWAYS DIVISION

MECHANICAL NOTES AND LEGEND

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: NONE Date: JULY 2022

SHEET No. M001 OF 15 SHEETS

20955 M001 MECHANICAL NOTES AND LEGENDS 7/6/2022 10:59 PM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	19	46

MECHANICAL SITE PLAN
SCALE: 1" = 40'

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

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HIGHWAYS DIVISION

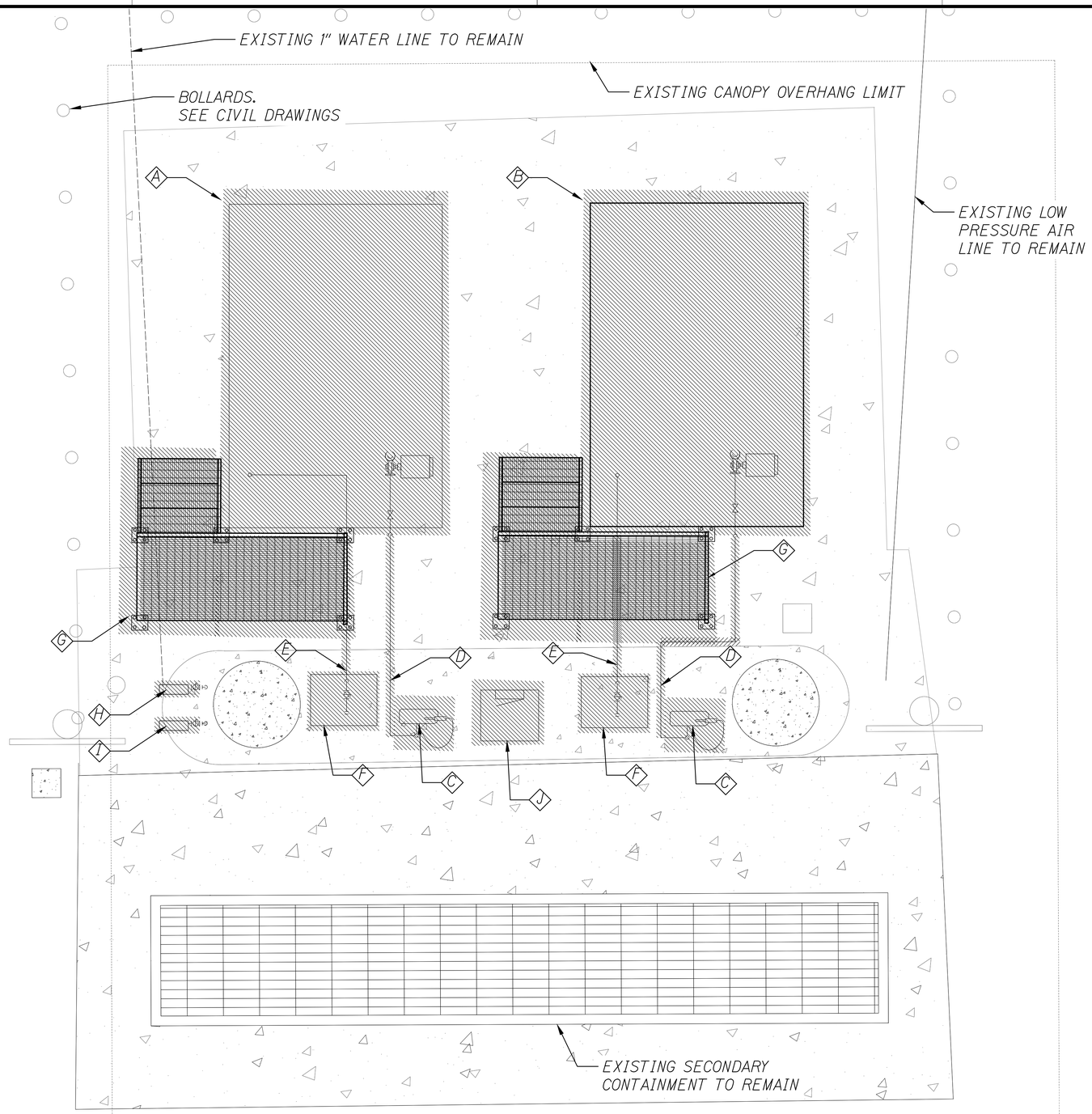
MECHANICAL SITE PLAN

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. M100 OF 15 SHEETS

22055_M100_SITE PLAN.DWG 7/6/2022 1:56:56 PM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	20	46



DEMOLITION WORK - KEY NOTES

- (A) REMOVE EXISTING 2,000 GALLON DIESEL STORAGE TANK, TANK MOUNTED PUMP, AND ALL APPURTENANCES.
- (B) REMOVE EXISTING 2,000 GALLON GASOLINE STORAGE TANK, TANK MOUNTED PUMP, AND ALL APPURTENANCES.
- (C) REMOVE EXISTING DISPENSER, AND SUPPORT FRAME
- (D) REMOVE EXISTING FUEL SUPPLY PIPING FROM STORAGE TANK TO DISPENSER. REMOVE ALL VALVES, PIPE SUPPORTS AND FILTER.
- (E) REMOVE FUEL FILL PIPE FROM 2" CAMLOCK CONNECTION AT REMOTE FILL ENCLOSURE TO STORAGE TANK. REMOVE ALL PIPE SUPPORTS.
- (F) REMOVE CAMLOCK FILL CONNECTION AND BALL VALVE IN REMOTE FILL ENCLOSURE. REMOVE REMOTE FILL ENCLOSURE.
- (G) REMOVE ACCESS STAIR AND PLATFORM.
- (H) REMOVE 50' WATER HOSE REEL. POR AT BALL VALVE.
- (I) REMOVE 50' AIR HOSE REEL. POR AT BALL VALVE.
- (J) REMOVE PHONE BOOTH ENCLOSURE AND ALL LEVEL MONITORING ALARM PANEL IN PHONE BOOTH.

MECHANICAL DEMOLITION PLAN
SCALE: 1/2" = 1'

TRUE NORTH
Scale: 1/2" = 1'

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

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4/30/24
EXP. DATE
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MECHANICAL DEMOLITION PLAN

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. MD101 OF 15 SHEETS

20055_MD101_MECHANICAL_DEMOLITION_PLA.DWG 7/19/2022 10:32:46 AM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	21	46

DEMOLITION WORK - KEY NOTES

Ⓐ REMOVE EXISTING 2,000 GALLON DIESEL STORAGE TANK, TANK MOUNTED PUMP, AND ALL APPURTENANCES.

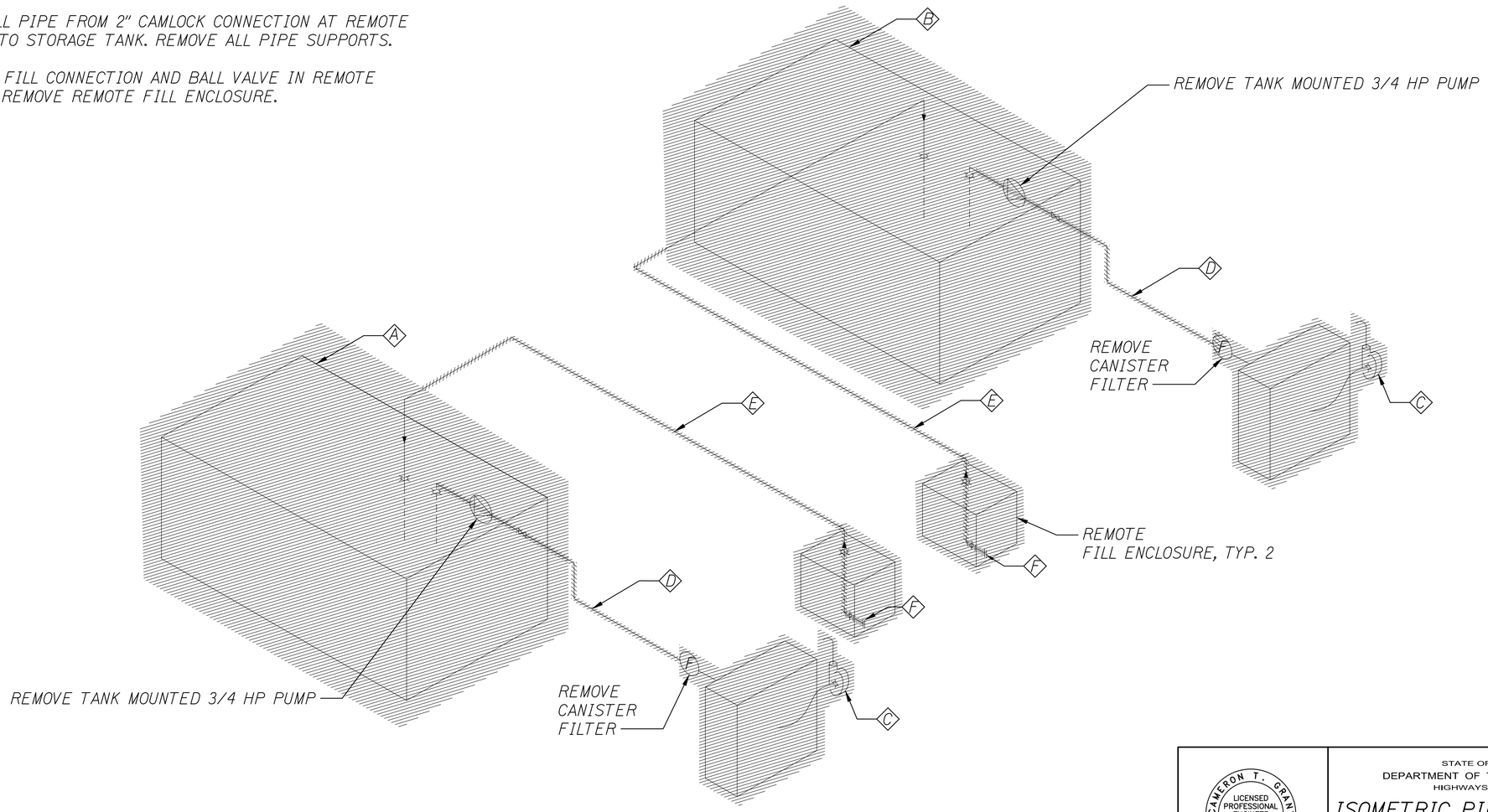
Ⓑ REMOVE EXISTING 2,000 GALLON GASOLINE STORAGE TAN, TANK MOUNTED PUMP, AND ALL APPURTENANCES.

Ⓒ REMOVE EXISTING DISPENSER, AND SUPPORT FRAME

Ⓓ REMOVE EXISTING FUEL SUPPLY PIPING FROM STORAGE TANK TO DISPENSER. REMOVE ALL VALVES, PIPE SUPPORTS AND FILTER.

Ⓔ REMOVE FUEL FILL PIPE FROM 2" CAMLOCK CONNECTION AT REMOTE FILL ENCLOSURE TO STORAGE TANK. REMOVE ALL PIPE SUPPORTS.

Ⓕ REMOVE CAMLOCK FILL CONNECTION AND BALL VALVE IN REMOTE FILL ENCLOSURE. REMOVE REMOTE FILL ENCLOSURE.



ISOMETRIC PIPING DIAGRAM - DEMOLITION WORK

SCALE: NOT TO SCALE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

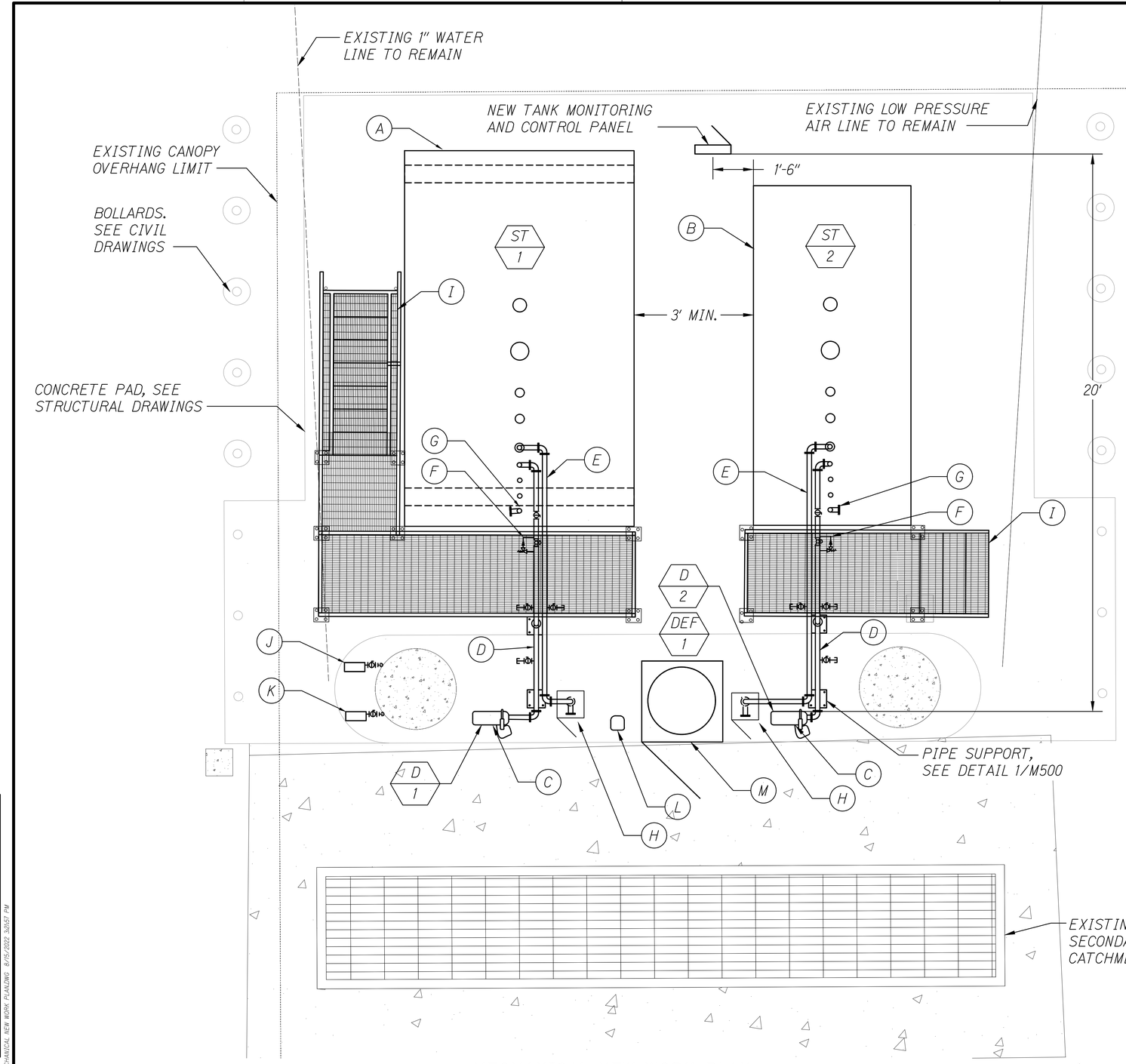
ISOMETRIC PIPING DIAGRAM - DEMOLITION WORK

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. MD901 OF 15 SHEETS

23055_MD901 - ISOMETRIC PIPING DIAGRAM - DEMOLITION WORK.DWG 7/6/2022 10:05 PM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	22	46



NEW WORK - KEY NOTES

(A) PROVIDE NEW 5000 GALLON DIESEL STORAGE TANK

(B) PROVIDE NEW 2,000 GALLON GASOLINE TANK

(C) PROVIDE NEW DISPENSER WITH INTEGRAL PUMP AND FUEL FILTER. FILL NOZZLE WITH 12' FILL HOSE. REFER TO M500 FOR DISPENSER LABEL DETAIL.

(D) PROVIDE 2" FLANGED, CL150 FUEL SUPPLY PIPING INCLUDING FOOT VALVE, LOW POINT DRAIN, AND MANUAL AIR VENT. PROVIDE NEW PIPE SUPPORTS AS REQUIRED. REFER TO M500 FOR PRODUCT FLOW SYMBOL DETAIL.

(E) PROVIDE 2" FLANGED, CL150 FUEL FILL PIPE INCLUDING CAMLOCK CONNECTION, BALL VALVE, AND MANUAL AIR VENT. PROVIDE NEW PIPE SUPPORTS AS REQUIRED. REFER TO M500 FOR PRODUCT FLOW SYMBOL DETAIL.

(F) PROVIDE ANTI-SIPHON MOTORIZED BALL VALVE ON THE FUEL SUPPLY LINE. CONNECT ANTI-SIPHON BALL VALVE CONTROL PANEL. PRESSURE RELIEVE VALVE ACROSS ANTI-SIPHON MOTORIZED BALL VALVE AND MANUAL BALL VALVE.

(G) PROVIDE CAMLOCK CONNECTION FOR WATER DRAW-OFF. PROVIDE DROP PIPE WITH FOOT VALVE WITHIN 1" OF TANK BOTTOM.

(H) PROVIDE NEW 2" CAMLOCK CONNECTION AND ISOLATION BALL VALVE IN STAINLESS STEEL REMOTE FILL ENCLOSURE.

(I) PROVIDE NEW ACCESS STAIR AND PLATFORM

(J) PROVIDE NEW 50' WATER HOSE REEL. POC AT BALL VALVE.

(K) PROVIDE NEW 50' AIR HOSE REEL, POC AT BALL VALVE.

(L) PROVIDE NEW FUEL MANAGEMENT SYSTEM (FMS) CONTROLLER. PROVIDE 120 V POWER CONNECTION. REFER TO E SHEETS.

(M) PROVIDE NEW DEF DISPENSER IN FRP ENCLOSURE.

MECHANICAL NEW WORK PLAN

SCALE: 1/2" = 1'

TRUE NORTH
Scale: 1/2" = 1'

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

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STATE OF HAWAII
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HIGHWAYS DIVISION

MECHANICAL NEW WORK PLAN

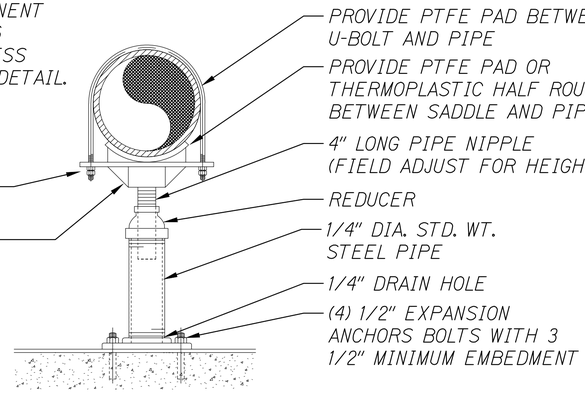
MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. M101 OF 15 SHEETS

22005_M101 MECHANICAL NEW WORK PLAN.DWG 8/15/2022 3:05:21 PM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	23	46

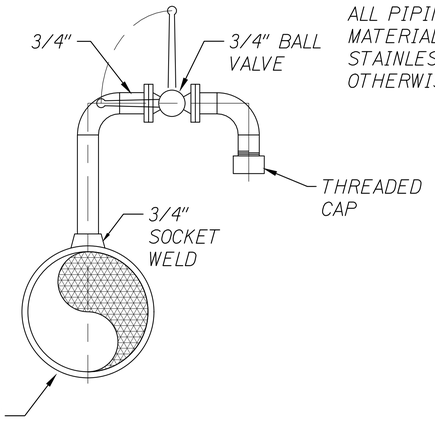
ALL PIPING AND COMPONENT MATERIAL SHALL BE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED ON DETAIL.



ADJUSTABLE FREESTANDING PIPE SUPPORT DETAIL

SCALE: NOT TO SCALE

1 / M101 | M500

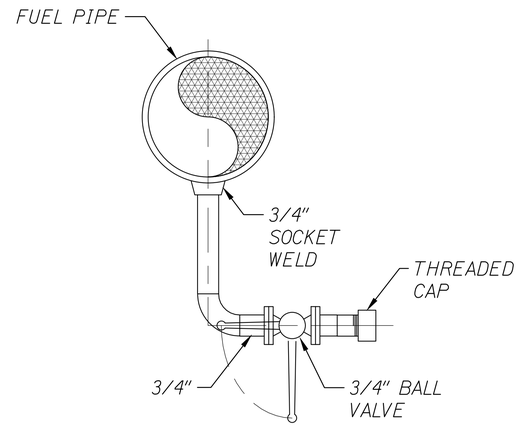


ALL PIPING AND COMPONENT MATERIAL SHALL BE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED ON DETAIL.

MANUAL AIR VENT

SCALE: NOT TO SCALE

2 / M900 | M500



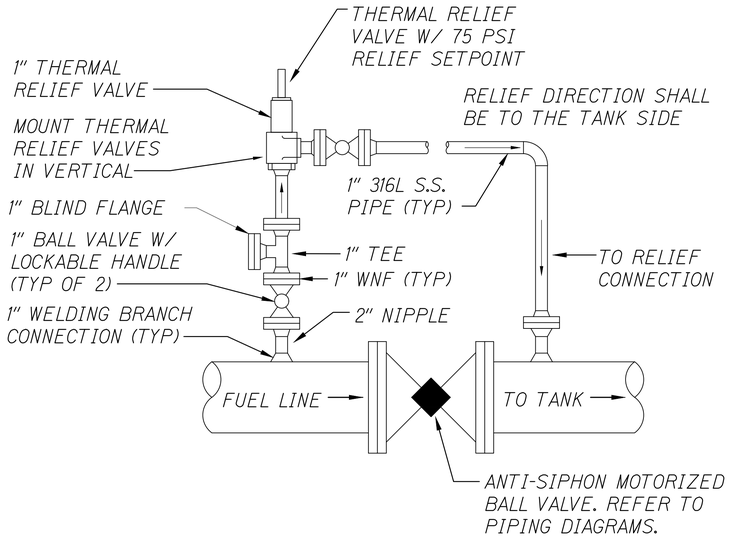
NOTES:

LOW POINT DRAIN PIPING AND COMPONENT MATERIAL SHALL BE 316 STAINLESS STEEL.

LOW POINT DRAIN

SCALE: NOT TO SCALE

3 / M900 | M500



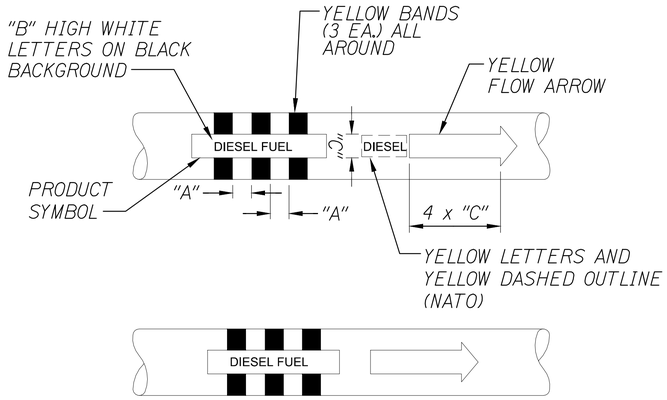
NOTES:

1. ALL PIPING JOINTS SHALL BE WELDED. BALL VALVES AND RELIEF VALVE SHALL BE FLANGED.
2. PIPING AND COMPONENT MATERIAL SHALL BE 316 STAINLESS STEEL.
3. VALVES SHALL BE SECURED IN THE OPEN POSITION.
4. INSTALL THERMAL RELIEVE VALVE IN VERTICAL POSITION.
5. RELIEVE VALVE SHALL BE BALANCED TYPE.

PRESSURE RELIEF VALVE ASSEMBLY

SCALE: NOT TO SCALE

4 / M101 | M500



SIZES OF LETTERS AND BANDS			
PIPE DIAMETER (INCHES)	A BAND WIDTH AND SPACING (INCHES)	B TITLE LETTER SIZE (INCHES)	C BACKGROUND AND ARROWS (INCHES)
UNDER 3	3	0.5	1

PRODUCT FLOW SYMBOL DETAILS

SCALE: NOT TO SCALE

5 / M101 | M500

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

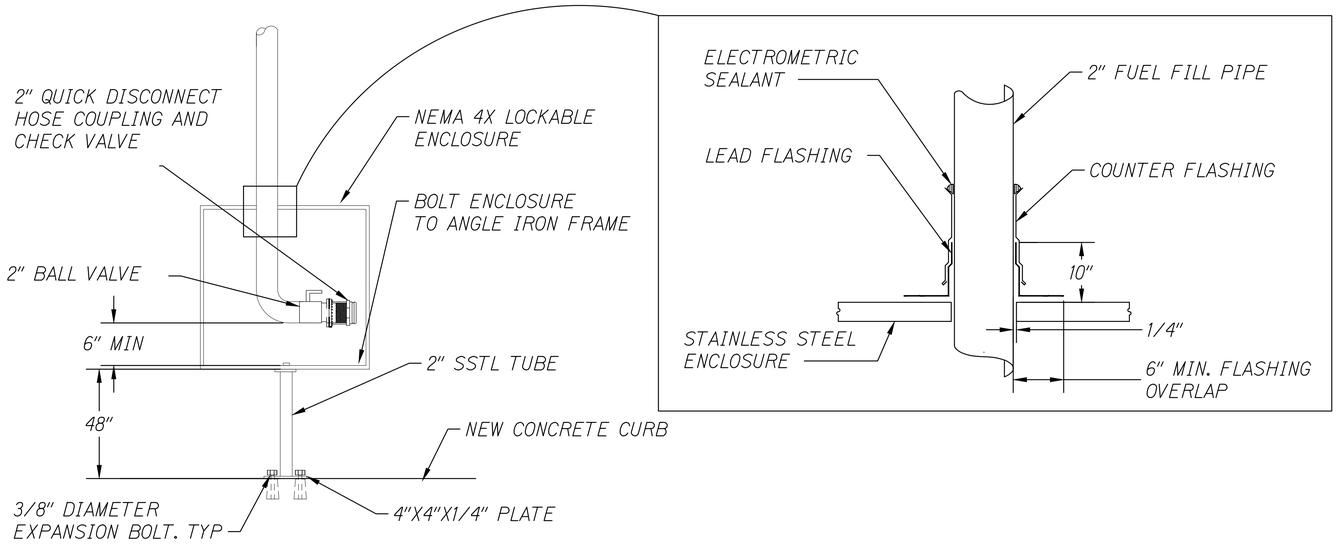
MECHANICAL DETAILS - 1

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. M500 OF 15 SHEETS

20955 M500_DETAILS.DWG 7/6/2022 10:54:41 PM

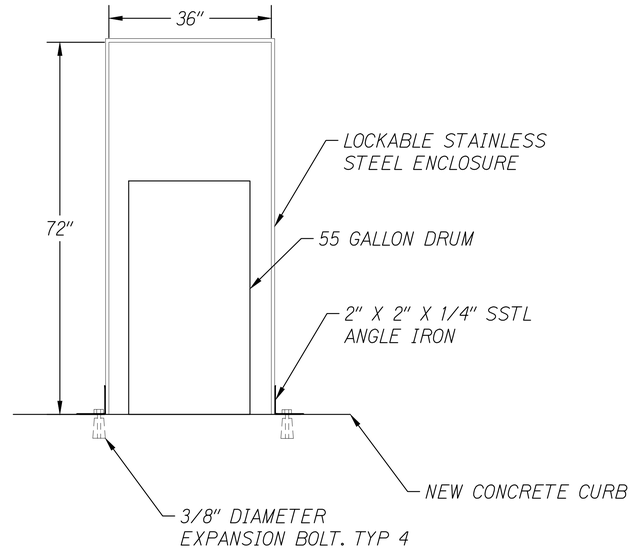
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	24	46



REMOTE FILL ENCLOSURE DETAIL

1 M101 | M501

SCALE: NOT TO SCALE

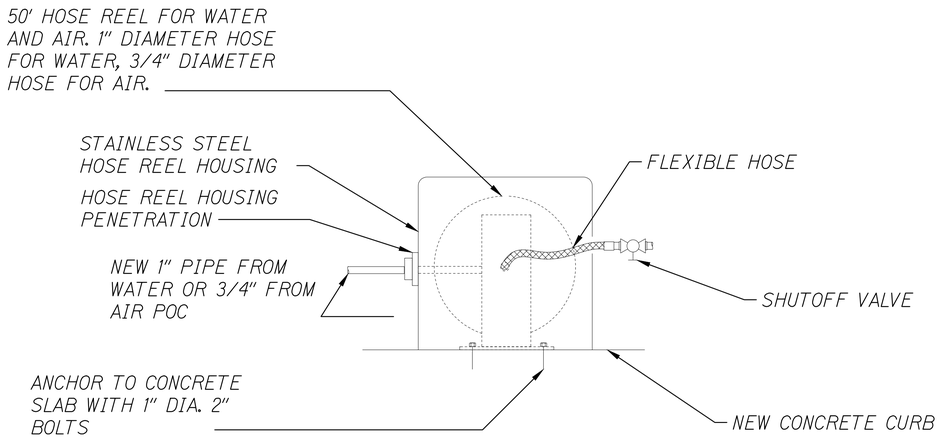


NOTE: SIZE OF ENCLOSURE MAY VARY ACCORDING TO MANUFACTURER AND MODEL OF 55 GALLON DEF DRUM. ADJUST ENCLOSURE SIZE AS REQUIRED.

DEF ENCLOSURE DETAIL

2 M101 | M501

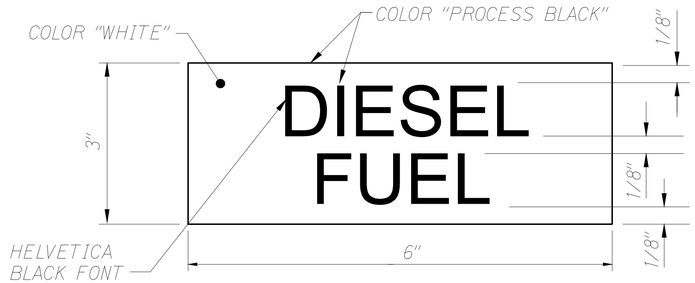
SCALE: NOT TO SCALE



HOSE REEL DETAIL

3 M101 | M501

SCALE: NOT TO SCALE



NOTE: MARKINGS SHOWN FOR DIESEL FUEL. ADJUST MARKINGS FOR GASOLINE DISPENSER.

TYPICAL DISPENSER LABEL

4 M101 | M501

SCALE: NOT TO SCALE

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STATE OF HAWAII
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HIGHWAYS DIVISION

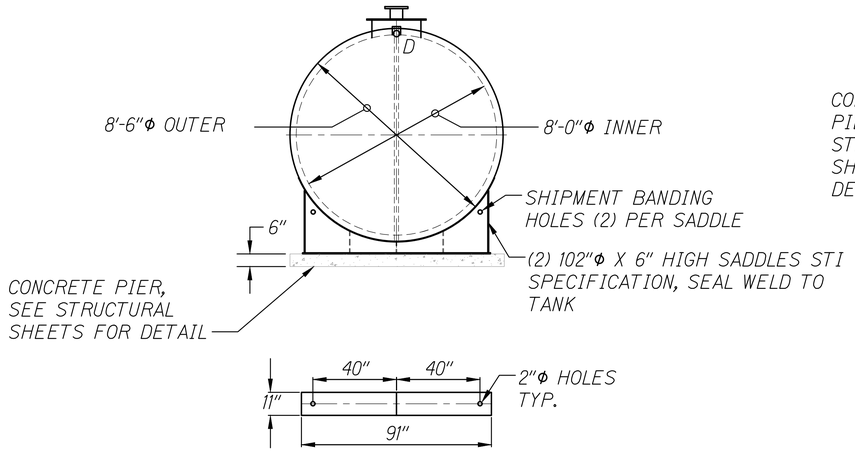
MECHANICAL DETAILS - 2

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

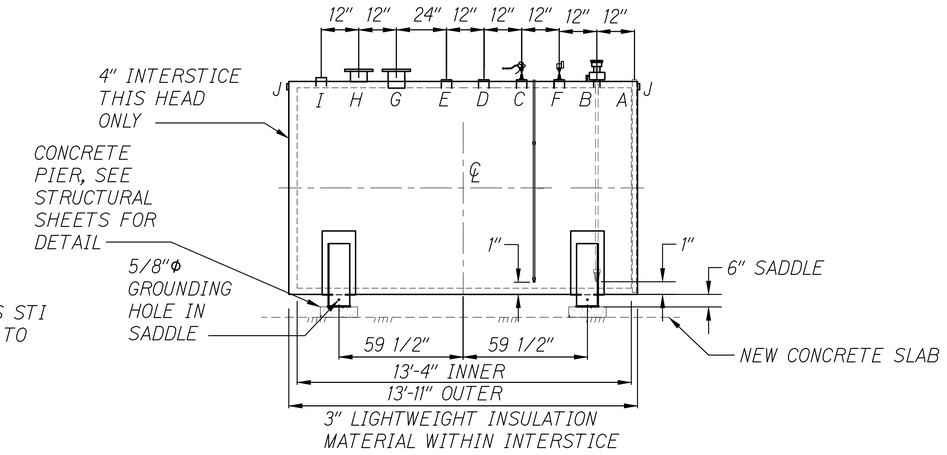
SHEET No. M501 OF 15 SHEETS

20065_M501_DETAILS.DWG 7/6/2022 3:56:25 PM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	25	46



FRONT VIEW



SIDE VIEW

5,000 GALLON TANK DETAIL (DIESEL)

SCALE: NOT TO SCALE

1 M101 | M502

FITTING LEGEND		DESIGN DATA
A	2" MONITOR PIPE WITH MALE NPT END (INTERSTITIAL LEAK DETECTION PROBE)	CAPACITY : 5,000 GALLONS
		TYPE: FIREGUARD® CYLINDRICAL
B	1" (316 SSTL) 150# RFSO FLANGE W/ (316 SS) INTERNAL FLANGE & 2" (316 SS) SCH. 40 DROP PIPE TO WITHIN 1" OF TANK BOTTOM AT FOOT VALVE. PROVIDE CAMLOCK AND 316 SSTL BALL VALVE AT TANK SHELL (WATER DRAW OFF).	FIREGUARD® IS A TRADEMARK OF THE STEEL TANK INSTITUTE
		OPERATING PRESSURE - ATMOSPHERIC
		SPECIFIC GRAVITY = 1.0
		TANK MATERIAL - 316 STAINLESS STEEL
C	4" FEMALE FG COUPLING FOR ELECTRICAL FUEL LEVEL GAUGE. CONNECT GAUGE TO CONTROL PANEL	THICKNESS - INNER - HEADS AND SHELL - 7 GAUGE THICKNESS - OUTER - HEADS AND SHELL - 7 GAUGE GAUGE OR THICKNESS (PER U.L. 2085)
D	2" FUEL SUPPLY.	
E	2" FUEL FILL	CONSTRUCTION - INNER - LAP WELD OUTSIDE ONLY CONSTRUCTION - OUTER - LAP WELD OUTSIDE ONLY
F	MECHANICAL FUEL LEVEL CLOCK GAUGE	TANK TEST - INNER - 5 PSIG OUTER - 5 PSIG
G	8" FFSO 150# FLANGE THROUGH OUTER SHELL ONLY, MARK WITH SPECIAL WARNING LABEL INTERSTITIAL EMERGENCY VENT USE ONLY	INT. FINISH - NONE EXT. FINISH - SP - 6 BLAST, FINISH PAINT WHITE
H	6" FFSO 150# FLANGE - PRIMARY EMERGENCY VENT USE ONLY	LABEL - UL 2085 AND FIREGUARD $^{29}/_{64}$ PER STI
I	PRESSURE VACUUM VENT	
J	2" FITTING THROUGH OUTER SHELL ONLY WITH CAST IRON PLUG - MFG USE ONLY	

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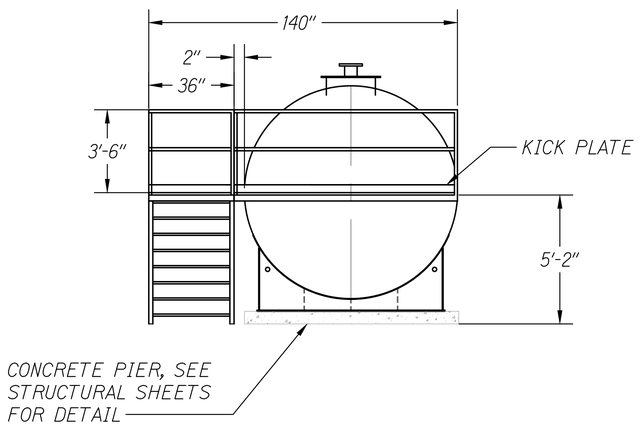
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

5,000 GALLON TANK DETAILS

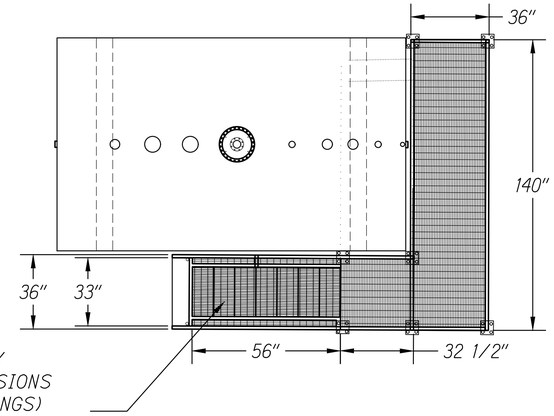
MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. M502 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	26	46



FRONT VIEW



TOP VIEW

5,000 GALLON TANK STAIR AND PLATFORM DETAILS

SCALE: NOT TO SCALE

1
M101 | M503

PLATFORM DESIGN DATA

MATERIAL

ALL FRAMEWORK AND GRATING - 316 STAINLESS STEEL OR FRP

HANDRAIL

TOP RAIL, MID RAIL, AND ALL UPRIGHTS CONSTRUCTED OF 316 STAINLESS STEEL OR FRP. 1-1/2" SQUARE TUBING. FB 4"x1/2" KICK PLATE. KICK PLATE CLEARANCE 1/4" MAX. ABOVE GRATING.

WALKWAY:

ALL GRATING AND TREADS ARE 1" THICK. MIN LIVE LOAD 40 PSF

CONSTRUCTION: WELDED OR BONDED, DEPENDING ON MATERIAL USED

FINISH

UNCOATED 316 STAINLESS STEEL OR EPOXY COATED FRP

LADDER AND CATWALK DESIGN AND FABRICATION PER OSHA STANDARDS

20955 M503 5000 GAL LADDER DETAILS.DWG 7/6/2022 8:58:37 PM

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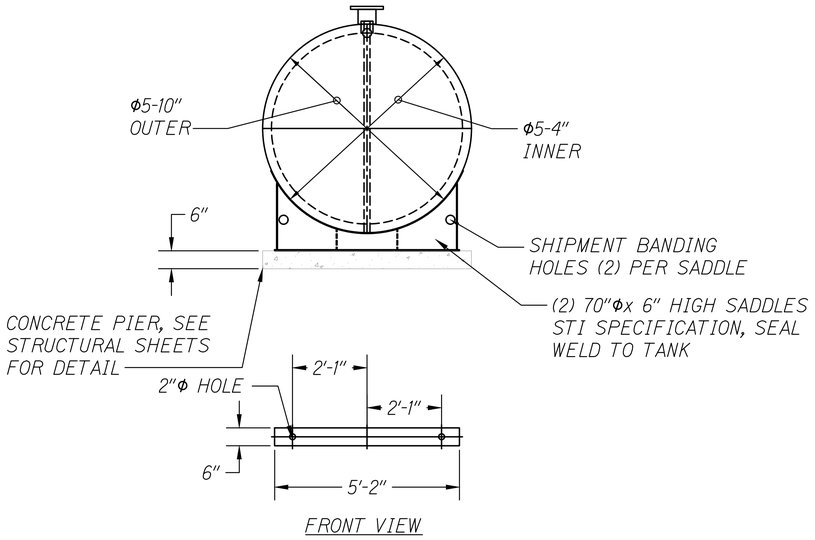
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

5,000 GALLON TANK STAIR AND PLATFORM DETAILS

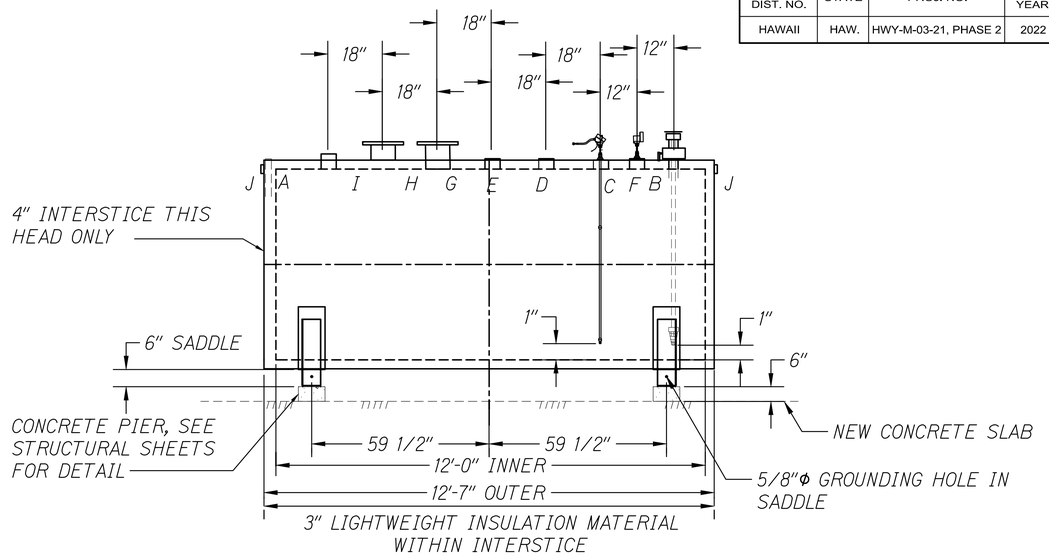
MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. M503 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	27	46



FRONT VIEW



SIDE VIEW

2,000 GALLON TANK DETAIL (GASOLINE)

SCALE: NOT TO SCALE

1 M101 | M504

FITTING LEGEND	
A	2" MONITOR PIPE WITH MALE NPT END (INTERSTITIAL LEAK DETECTION PROBE)
B	1" (316 SSTL) 150# RFSO FLANGE W/ (316 SS) INTERNAL FLANGE & 2" (316 SS) SCH. 40 DROP PIPE TO WITHIN 1" OF TANK BOTTOM AT FOOT VALVE. PROVIDE CAMLOCK AND 316 SSTL BALL VALVE AT TANK SHELL (WATER DRAW OFF).
C	4" FEMALE FG COUPLING FOR ELECTRICAL FUEL LEVEL GAUGE. CONNECT GAUGE TO CONTROL PANEL
D	2" FUEL SUPPLY.
E	2" FUEL FILL
F	MECHANICAL FUEL LEVEL CLOCK GAUGE
G	8" FFSO 150# FLANGE THROUGH OUTER SHELL ONLY, MARK WITH SPECIAL WARNING LABEL INTERSTITIAL EMERGENCY VENT USE ONLY
H	6" FFSO 150# FLANGE - PRIMARY EMERGENCY VENT USE ONLY
I	PRESSURE VACUUM VENT
J	2" FITTING THROUGH OUTER SHELL ONLY WITH CAST IRON PLUG - MFG USE ONLY

DESIGN DATA
CAPACITY : 2,000 GALLONS
TYPE: FIREGUARD® CYLINDRICAL
FIREGUARD® IS A TRADEMARK OF THE STEEL TANK INSTITUTE
OPERATING PRESSURE - ATMOSPHERIC
SPECIFIC GRAVITY = 1.0
TANK MATERIAL - 316 STAINLESS STEEL
THICKNESS - INNER - HEADS AND SHELL - 7 GAUGE THICKNESS - OUTER - HEADS AND SHELL - 7 GAUGE GAUGE OR THICKNESS (PER U.L. 2085)
CONSTRUCTION - INNER - LAP WELD OUTSIDE ONLY CONSTRUCTION - OUTER - LAP WELD OUTSIDE ONLY
TANK TEST - INNER - 5 PSIG OUTER - 5 PSIG
INT. FINISH - NONE EXT. FINISH - SP - 6 BLAST, FINISH PAINT WHITE
LABEL - UL 2085 AND FIREGUARD 29/64 PER STI

20655 M504 2,000 GAL TANK DETAILS.DWG 8/05/2022 3:56:49 PM

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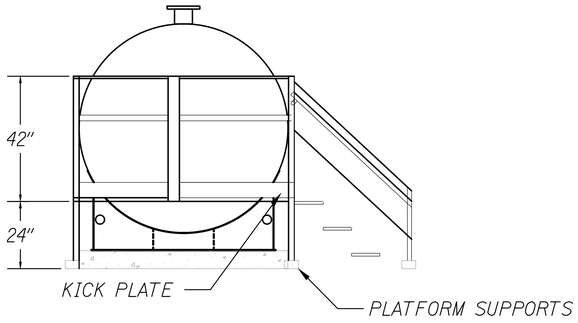
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

2,000 GALLON TANK DETAIL

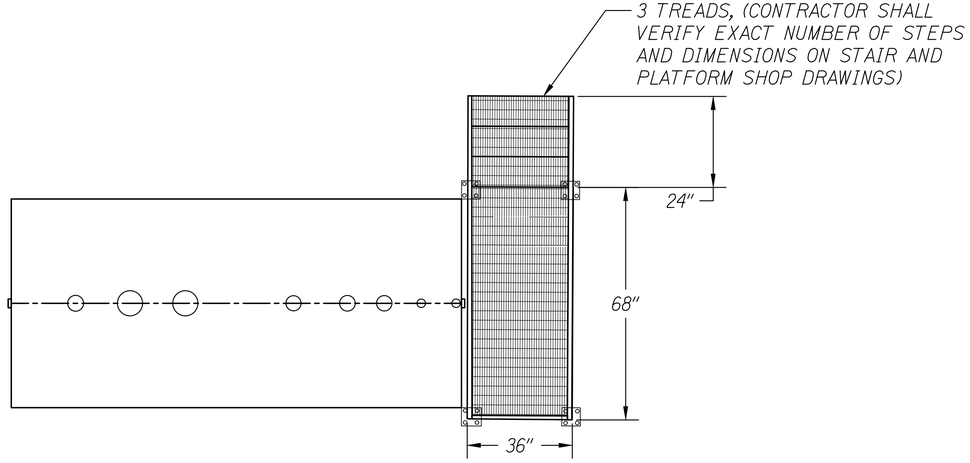
MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. M504 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	28	46



SIDE VIEW



TOP VIEW

PLATFORM DESIGN DATA

MATERIAL

ALL FRAMEWORK AND GRATING - 316 STAINLESS STEEL OR FRP

HANDRAIL

TOP RAIL, MID RAIL, AND ALL UPRIGHTS CONSTRUCTED OF 316 STAINLESS STEEL OR FRP. 1-1/2" SQUARE TUBING. FB 4"x1/2" KICK PLATE. KICK PLATE CLEARANCE 1/4" MAX. ABOVE GRATING.

WALKWAY:

ALL GRATING AND TREADS ARE 1" THICK. MIN LIVE LOAD 40 PSF

CONSTRUCTION: WELDED OR BONDED, DEPENDING ON MATERIAL USED

FINISH

UNCOATED 316 STAINLESS STEEL OR EPOXY COATED FRP

LADDER AND CATWALK DESIGN AND FABRICATION PER OSHA STANDARDS

2,000 GALLON STAIR AND PLATFORM DETAIL (GASOLINE)

SCALE: NOT TO SCALE

1
M101 | M505

20655 M505 2000 GAL LADDER DETAILS.DWG 7/6/2022 8:56:08 PM

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No. 17845-M
HAWAII, U.S.A.
4/30/24
EXP. DATE
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

2,000 GALLON STAIR AND PLATFORM DETAIL (GASOLINE)

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. M505 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	29	46

DISPENSER (D) SCHEDULE

UNIT	LOCATION	CONNECTED TANK	WORKING FLUID	INTEGRAL PUMP PARAMETERS								REMARKS
				TYPE	DISPENSER HOSE (FT)	GPM	FT HEAD	MOTOR				
								HP	V	PH	HZ	
D-1	FLEET REFUILING STATION	ST-1	DESIEL	ROTARY VANE	12	22	13.0	1	115	1	60.0	1, 2,3 4, 5, 6
D-2	FLEET REFUILING STATION	ST-2	GASOLINE	ROTARY VANE	12	22	13.0	1	115	1	60.0	1, 2,3 4, 5, 6

NOTES:
1. PROVIDE WITH FUEL FILTER INTERNAL TO DISPENSER
2. FURNISH WITH STAINLESS STEEL FILL NOZZLE
3. PROVIDE HOUSING WITH 316 STAINLESS STEEL SHEATHING, FURNISH WITH MANUFACTURERS HIGHEST CORROSION RESISTANT COATING FOR COASTAL ENVIRONMENT
4. PROVIDE WITH INTEGRAL PRESSURE REGULATING VALVE
5. PROVIDE WITH INTERFACE TO RADIO FREQUENCY IDENTIFICATION TAG VERIFICATION SYSTEM AT NEW FUEL MANAGEMENT CONTROLLER
6. PROVIDE DISPENSER WITH FUEL SUPPLY INLET FROM TANK, CONNECTION ABOVE GRADE AT REAR OR BOTTOM OF DISPENSER. IF BOTTOM CONNECTION, PROVIDE WITH CURB KIT.

FUEL STORAGE TANK (ST) SCHEDULE

UNIT NO.	SERVICE AREA	TYPE	WORKING FLUID	TANK MATERIAL	WALL TYPE	FITTINGS MATERIAL	VOLUME (GAL)	TANK DIMMENSIONS (IN)	TANK WEIGHT (LBS)	REMARKS
ST-1	FLEET REFUILDING STATION	ABOVE GROUND HOROZONTAL CYLINDRICAL	DIESEL	316 STAINLESS STEEL	DOUBLE WALL	316 STAINLESS STEEL	5,000	167" (L) x 102" (DIA)	52,425	1, 2, 3, 4, 5, 6
ST-2	FLEET REFUILDING STATION	ABOVE GROUND HOROZONTAL CYLINDRICAL	GASOLINE	316 STAINLESS STEEL	DOUBLE WALL	316 STAINLESS STEEL	2,000	151" (L) x 70" (DIA)	23,300	1, 2, 3, 4, 5, 6

NOTES:
1. TANK SHALL BE UL-2085 COMPLIANT
2. DOUBLE WALLED CONSTRUCTION WITH FACTORY FURNISHED ELECTRONIC LEAK DETECTION MONITORING PIPE FOR INTERSTITIAL SPACE.
3. FACOTRY FURHISH OR FIELD FABRICATE ACCESS LADDERS, STAIRS AND PLATFORM FOR TANK SERVICE AND ACCESS.
4. FACTORY FURNISH LIFTING LUGS.
5. FACTORY FURNISH WITH ELECTRONIC TANK LEVEL SENSOR WIRED TO ELECTRONIC CONTROL PANEL WITH AUDIO AND AND VISUAL ALARM. CONTROL PANEL SHALL BE FURNISHED FROM SAME SUPPLIER AS TANKS
6. FURNISH WITH VENT, PRIMARY AND SECONDARY EMERGENCY TANK VENTS, FURNISH WITH 316 STAINLESS STEEL VENT SCREENS

DIESEL EXHAUST FLUID TANK (DEF) SCHEDULE

UNIT NO.	SERVICE AREA	TYPE	WORKING FLUID	TANK MATERIAL	WALL TYPE	FITTINGS MATERIAL	VOLUME (GAL)	REMARKS
DEF-1	FLEET REFUILING STATION	VERTICAL CYLINDRICAL	DIESEL EXHAUST FLUID (32.5% UREA, 67.5% DEIONIZED WATER)	POLYETHYLENE	SINGLE WALL	316 STAINLESS STEEL	55	1,2,3

NOTES:
1. FURNISH WITH 6 GPM AIR HAND PUMP
2. FURNISH WITH 3/4" DIAMETER 12' DISCHARGE HOSE AND STAINLESS STEEL MANUAL NOZZLE
3. STAINLESS STEEL REUSABLE STAINLESS VALVE SPRING ACTUATED COUPLER

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MECHANICAL SCHEDULES

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: NONE Date: JULY 2022

SHEET No. M600 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	30	46

SEQUENCE OF OPERATIONS

FUEL DISPENSING SEQUENCE OF OPERATION:

THE FOLLOWING SEQUENCE OF OPERATIONS IS APPLICABLE FOR BOTH THE DIESEL AND GASOLINE FUEL DISPENSERS.

1. WHEN THE USER SCANS A RADIO FREQUENCY IDENTIFICATION (RFID) KEY AT THE FUEL MANAGEMENT SYSTEM (FMS) CONTROLLER, THE FMS CONTROLLER SHALL SIGNAL THE DISPENSER CONTROLLER TO ALLOW FUEL DISPENSING.
2. WHEN THE USER PULLS THE DISPENSER HANDLE, THE DISPENSER HANDLE RELAY SHALL PROVIDE A SIGNAL TO THE DISPENSER CONTROLLER.
3. THE DISPENSER CONTROLLER SHALL START THE FUEL PUMP.
4. THE DISPENSER CONTROLLER SHALL SEND A SIGNAL TO THE TANK CONTROL PANEL.
5. THE TANK CONTROL PANEL SHALL OPEN THE ANTI-SIPHON MOTORIZED BALL VALVE.
6. WHEN THE USER RELEASES THE DISPENSER HANDLE, THE FUEL PUMP SHALL STOP.
7. THE TANK CONTROL PANEL SHALL CLOSE THE ANTI-SIPHON MOTORIZED BALL VALVE AT THE DIESEL FUEL SUPPLY PIPE.

DIESEL AND GASOLINE STORAGE TANKS HIGH LEVEL-SHUTOFF SEQUENCE OF OPERATION:

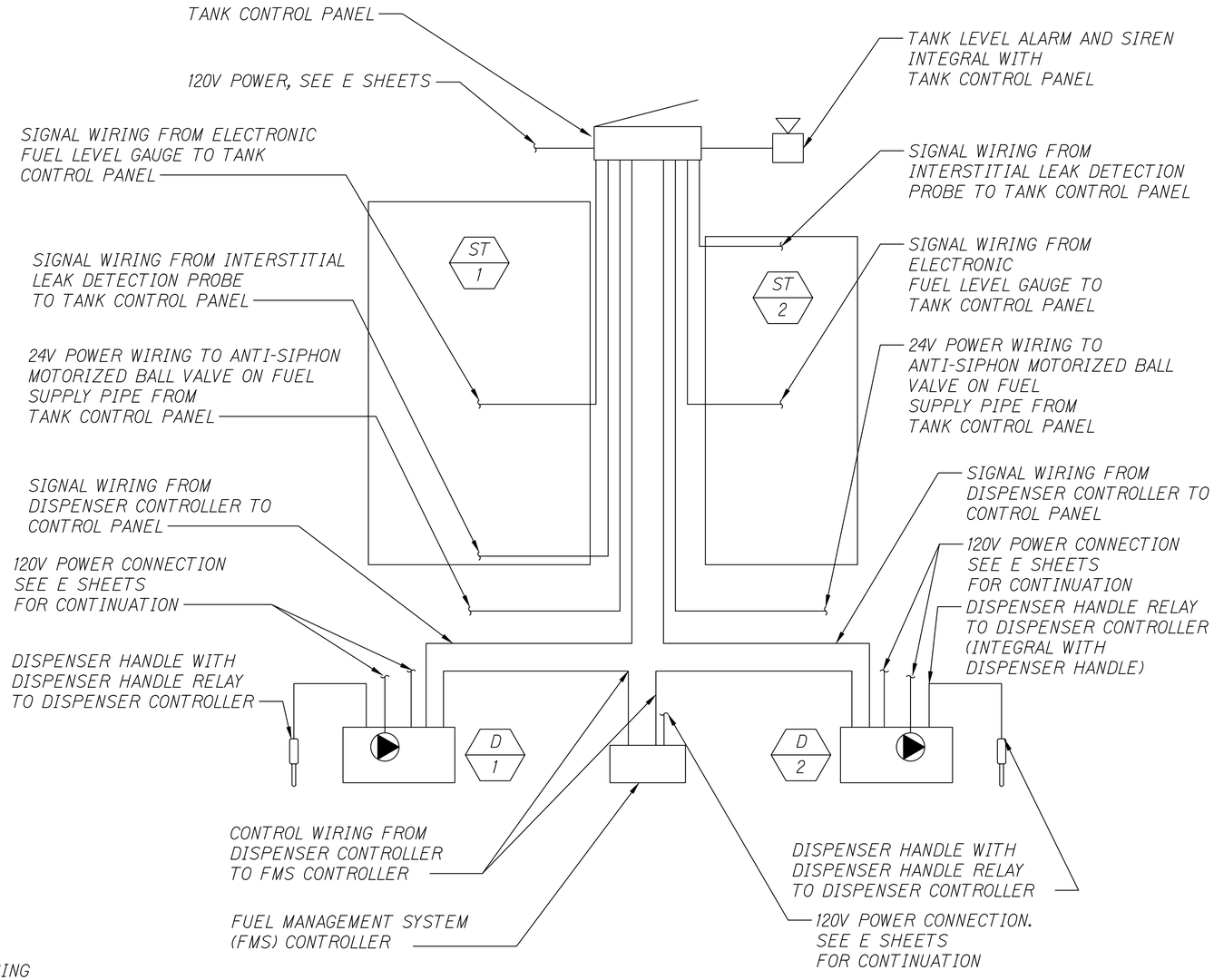
THE FOLLOWING SEQUENCE OF OPERATION SHALL BE PROVIDED AND PRE-PROGRAMMED INTO THE TANK CONTROL PANEL

1. WHEN THE FUEL LEVEL SENSOR AT THE DIESEL FUEL STORAGE TANK REACHES 90% CAPACITY
   - 1.1. THE FUEL LEVEL SENSOR WILL SIGNAL THE TANK CONTROL PANEL.
   - 1.2. THE TANK CONTROL PANEL SHALL START AN AUDIBLE AND VISIBLE HIGH LEVEL ALERT.
2. WHEN THE FUEL LEVEL SENSOR IN THE DIESEL FUEL STORAGE TANK REACHES 5% CAPACITY, THE TANK CONTROL PANEL SHALL START A VISIBLE LOW LEVEL ALERT.
3. WHEN THE FUEL LEVEL SENSOR AT THE GASOLINE FUEL STORAGE TANK REACHES 90% CAPACITY
   - 3.1. THE FUEL LEVEL SENSOR WILL SIGNAL THE TANK CONTROL PANEL.
   - 3.2. THE TANK CONTROL PANEL SHALL START AN AUDIBLE AND VISIBLE HIGH LEVEL ALERT.
4. WHEN THE FUEL LEVEL SENSOR IN THE DIESEL FUEL STORAGE TANK REACHES 5% CAPACITY, THE TANK CONTROL PANEL SHALL START A VISIBLE LOW LEVEL ALERT.

EMERGENCY SHUTOFF SEQUENCE OF OPERATION:

1. WHEN THE EMERGENCY SHUTOFF BUTTON IS PRESSED, ALL POWER TO THE DISPENSING FACILITY SHALL TERMINATE INCLUDING ALL POWER TO ALL DISPENSERS, PUMPS, TANK CONTROL PANELS, AND FUEL MANAGEMENT CONTROLLERS. REFER TO ELECTRICAL SHEETS FOR EMERGENCY SHUTOFF BUTTON LOCATIONS.
2. WHEN POWER IS RESTORED TO THE DISPENSING FACILITY FOLLOWING AN EMERGENCY SHUTOFF:
   - 2.1. THE FUEL MANAGEMENT CONTROLLER SHALL RETURN TO STANDBY MODE AND BE CAPABLE OF ACCEPTING RFID SCANS. THE FUEL MANAGEMENT CONTROLLER SHALL NOT REQUIRE MANUAL RESTART.
   - 2.2. THE DIESEL AND GASOLINE DISPENSERS SHALL RETURN TO STANDBY MODE AND BE READY TO DISPENSE FUEL UPON SIGNAL FROM THE FMS CONTROLLER. DISPENSERS SHALL NOT REQUIRE MANUAL RESTART.

NOTE: EMERGENCY SHUTDOWN IS PROVIDED BY ELECTRICAL CONTRACTOR



BASEYARD CONTROLS WIRING SCHEMATIC

SCALE: NOT TO SCALE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONTROL DIAGRAMS AND SEQUENCE OF OPERATIONS

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. M700 OF 15 SHEETS

23055_M700_CONTROL DIAGRAMS AND SEQUENCE OF OPERATIONS.DWG 7/6/2022 2:50:24 PM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21PHASE 2	2022		46

DEMOLITION WORK - KEY NOTES

(A) REMOVE EXISTING 2,000 GALLON DIESEL STORAGE TANK, TANK MOUNTED PUMP, AND ALL APPURTENANCES.

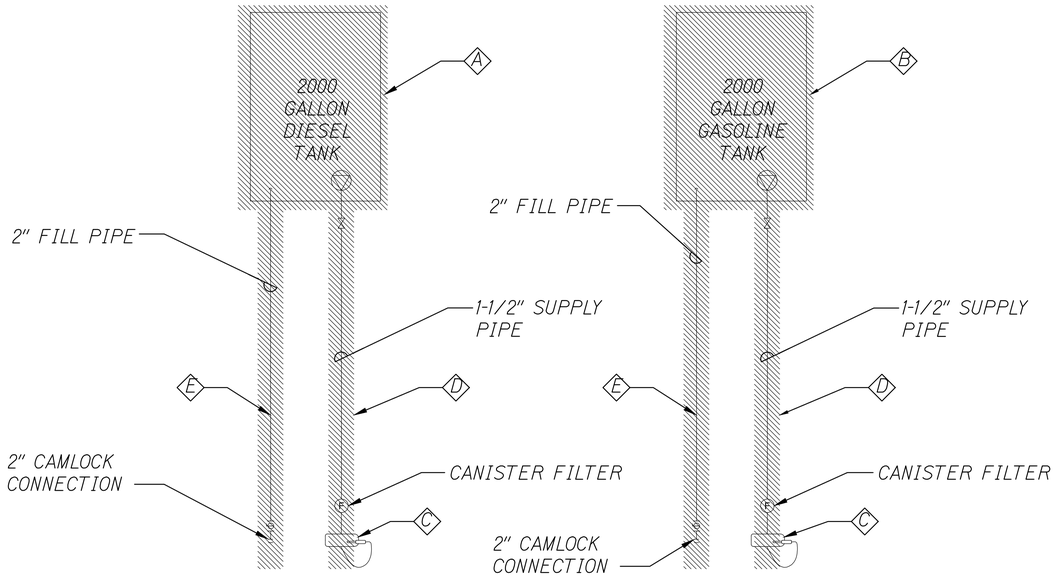
(B) REMOVE EXISTING 2,000 GALLON GASOLINE STORAGE TANK, TANK MOUNTED PUMP, AND ALL APPURTENANCES.

(C) REMOVE EXISTING DISPENSER, AND SUPPORT FRAME

(D) REMOVE EXISTING FUEL SUPPLY PIPING FROM STORAGE TANK TO DISPENSER. REMOVE ALL VALVES AND FILTER.

(E) REMOVE FUEL FILL PIPE FROM 2" CAMLOCK CONNECTION AT REMOTE FILL TO STORAGE TANK.

(F) REMOVE CAMLOCK FILL CONNECTION AND BALL VALVE IN REMOVE FILL ENCLOSURE. REMOVE REMOTE FILL ENCLOSURE.



FUEL PIPING DIAGRAM - DEMOLITION WORK

SALE: NOT TO SCALE

NEW WORK - KEY NOTES

(A) PROVIDE NEW 5000 GALLON DIESEL STORAGE TANK

(B) PROVIDE NEW 2,000 GALLON GASOLINE TANK

(C) PROVIDE NEW DISPENSER WITH INTEGRAL PUMP AND FUEL FILTER.

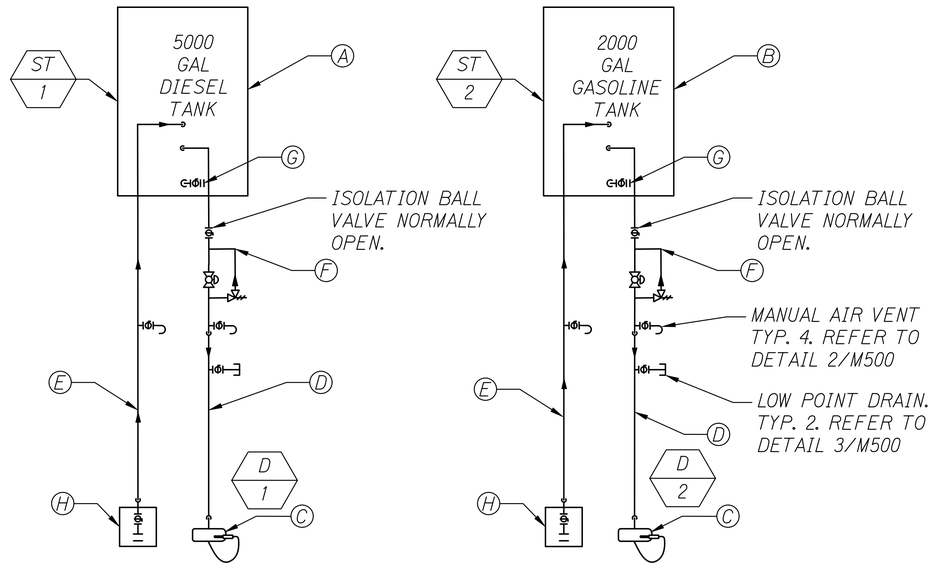
(D) PROVIDE FUEL SUPPLY PIPING INCLUDING FOOTVALVE IN TANK, LOW POINT DRAIN, AND MANUAL AIR VENT. PROVIDE NEW PIPE SUPPORTS AS REQUIRED.

(E) PROVIDE FUEL FILL PIPE INCLUDING CAMLOCK CONNECTION, BALL VALVE, AND MANUAL AIR VENT.

(F) ON THE FUEL SUPPLY LINE, PROVIDE ANTI-SIPHON MOTORIZED BALL VALVE CONNECTED TO CONTROL PANEL, THERMAL RELIEVE VALVE ACROSS ANTI-SIPHON MOTORIZED BALL VALVE AND MANUAL BALL VALVE.

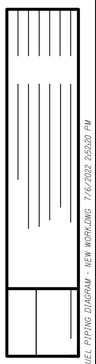
(G) PROVIDE CAMLOCK CONNECTION FOR WATER DRAW-OFF. PROVIDE DROP PIPE WITH FOOT VALVE WITHIN 1" OF TANK BOTTOM.

(H) PROVIDE NEW 2" CAMLOCK CONNECTION AND ISOLATION BALL VALVE IN STAINLESS STEEL REMOTE FILL ENCLOSURE.



FUEL PIPING DIAGRAM - NEW WORK

SCALE: NOT TO SCALE



22055_M900 - FUEL PIPING DIAGRAM NEW WORK.DWG 7/6/2022 2:53:02 PM

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FUEL PIPING DIAGRAMS

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. M900 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	32	46

NEW WORK - KEY NOTES

(A) PROVIDE NEW 5000 GALLON DIESEL STORAGE TANK

(B) PROVIDE NEW 2,000 GALLON GASOLINE TANK

(C) PROVIDE NEW DISPENSER WITH INTEGRAL PUMP AND FUEL FILTER. FILL NOZZLE WITH 12' FILL HOSE. REFER TO M500 FOR DISPENSER LABEL DETAIL.

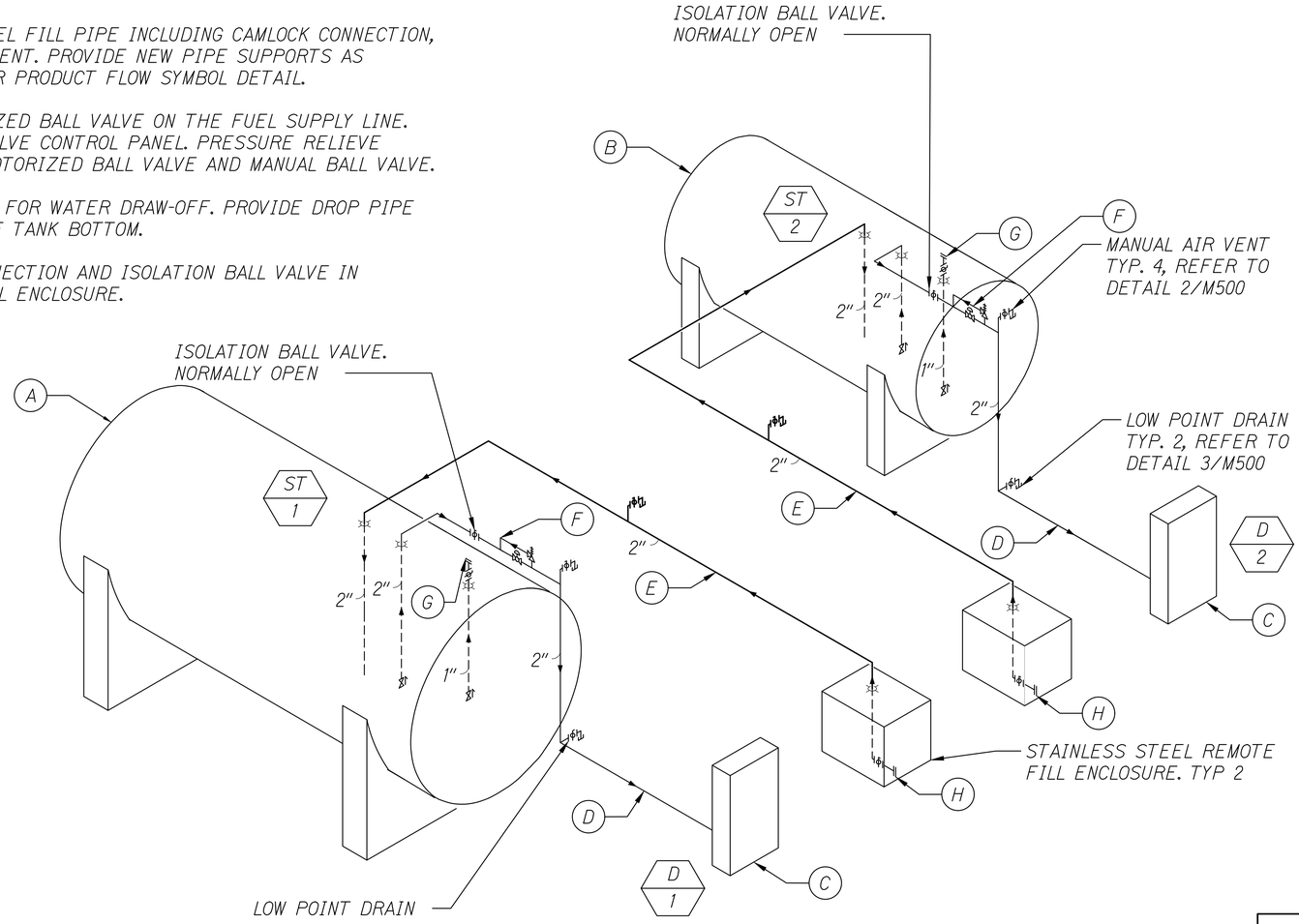
(D) PROVIDE 2" FLANGED, CL150 FUEL SUPPLY PIPING INCLUDING FOOT VALVE, LOW POINT DRAIN, AND MANUAL AIR VENT. PROVIDE NEW PIPE SUPPORTS AS REQUIRED. REFER TO M500 FOR PRODUCT FLOW SYMBOL DETAIL.

(E) PROVIDE 2" FLANGED, CL150 FUEL FILL PIPE INCLUDING CAMLOCK CONNECTION, BALL VALVE, AND MANUAL AIR VENT. PROVIDE NEW PIPE SUPPORTS AS REQUIRED. REFER TO M500 FOR PRODUCT FLOW SYMBOL DETAIL.

(F) PROVIDE ANTI-SIPHON MOTORIZED BALL VALVE ON THE FUEL SUPPLY LINE. CONNECT ANTI-SIPHON BALL VALVE CONTROL PANEL. PRESSURE RELIEVE VALVE ACROSS ANTI-SIPHON MOTORIZED BALL VALVE AND MANUAL BALL VALVE.

(G) PROVIDE CAMLOCK CONNECTION FOR WATER DRAW-OFF. PROVIDE DROP PIPE WITH FOOT VALVE WITHIN 1" OF TANK BOTTOM.

(H) PROVIDE NEW 2" CAMLOCK CONNECTION AND ISOLATION BALL VALVE IN STAINLESS STEEL REMOTE FILL ENCLOSURE.



ISOMETRIC FUEL PIPING DIAGRAM - NEW WORK

SCALE: NOT TO SCALE

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ISOMETRIC PIPING DIAGRAM - NEW WORK

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. M901 OF 15 SHEETS

22055_M901 - ISOMETRIC PIPING DIAGRAM - NEW WORK.DWG 7/6/2022 2:55:25 PM

ELECTRICAL SYMBOL LIST / MOUNTING HEIGHT SCHEDULE

MOUNTING HEIGHT FROM FLOOR TO		(SPECIAL MOUNTING HEIGHTS INDICATED ON PLAN)		
		SYMBOL		DESCRIPTION
TOP	℄	EXISTING	NEW	
6'6"				PANELBOARD
				TELEPHONE EQUIPMENT
18"		J	J	JUNCTION BOX, LARGE, WALL MOUNTED
18"		J	J	JUNCTION BOX, LARGE, MOUNTED ON STRUT RACK SUPPORT FRAME
				CONDUIT STUB OUT
				PUSH TO CLOSE MOMENTARY SWITCH
				GROUND
				PUSH BUTTON, WALL MOUNTED
		T		TRANSFORMER, PAD OR FLOOR MOUNTED
				POWER TRANSFORMER
				CIRCUIT BREAKER
				NON-FUSED DISCONNECT SWITCH
				TRANSFER SWITCH
		$M	$M	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD (SINGLE POLE) 1HP MAXIMUM
			M	MOTOR CONNECTION
			E	EQUIPMENT CONNECTION
			ST	SHUNT TRIP
				GROUND ROD
			A-1,3	HOMERUN ARROW TO PANELBOARD. LETTER INDICATES PANELBOARD, NUMBERS INDICATES CIRCUITS.
			C	CONTROLS CONNECTION POINT. 1" CONDUIT CONNECT TO EQUIPMENT FOR CONTROLS CABLING. CONDUIT MUST BE COORDINATED WITH MECHANICAL AND CONTROLS CONTRACTORS TO ENSURE EQUIPMENT CONNECTIONS ARE CORRECT.
				<u>INTERIOR WORK:</u> CONCEALED CONDUIT IN FINISHED FLOOR OR BELOW GRADE (NO HASHMARKS INDICATE 2 CURRENT CARRYING CONDUCTORS AND 1 GROUND CONDUCTOR WITHIN, ALL OTHERS SIMILAR). <u>EXTERIOR WORK:</u> CONCRETE ENCASED UNDERGROUND DUCT LINE, SEE DUCT SECTION INDICATOR AND SCHEDULE. SAWCUT ROADWAY, PAVING, SIDEWALK, OR CONCRETE SLAB, REPAIR TO MATCH EXISTING.
				EXPOSED RACEWAY, PROVIDE STRAP 8'-0" ON CENTER MAXIMUM
				CONDUIT SEAL, EYS FITTING TYPE
			—T— —T— —T—	TELECOMMUNICATIONS SYSTEM RACEWAY, 1" MINIMUM CONDUIT WITH PULLSTRING
				DENOTES DEMOLITION/REMOVAL
			EF 1 / EF-1	EQUIPMENT TAG; EXHAUST FAN "EF-1" INDICATED; ALL OTHERS SIMILAR
			1	DUCT SECTION INDICATOR, SEE E501
			1	KEYNOTE INDICATOR - DEMOLITION WORK
			1	KEYNOTE INDICATOR - NEW WORK
			1 EXXX EXXX	DETAIL INDICATOR: TOP HALF DENOTES DETAIL NUMBER, BOTTOM HALF LEFT DENOTES WHERE THE REFERENCE TO THE DETAIL IS LOCATED. BOTTOM HALF RIGHT DENOTES DETAIL SHEET LOCATION.

ELECTRICAL ABBREVIATIONS

(K)AIC	(KILO) AMPERE-INTERRUPTING CAPACITY	LTG	LIGHTING
AFF	ABOVE FINISH FLOOR	MH	MANHOLE
A	AMPERE	MAX	MAXIMUM
AWG	AMERICAN WIRE GAUGE	MIN	MINIMUM
BC	BARE COPPER	MLO	MAIN LUGS ONLY
BKR	BREAKER	MTD	MOUNTED
BLDG	BUILDING	MTG	MOUNTING
BKBD	BACKBOARD	NEC	NATIONAL ELECTRICAL CODE
C	CONDUIT	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
CATV	CABLE TELEVISION	NO., #	NUMBER
CKT	CIRCUIT	O.C.	ON CENTER
CONC	CONCRETE	OCPD	OVER CURRENT PROTECTION DEVICE
CT	CURRENT TRANSFORMER	PB	PULLBOX
D	DEEP	PFB	PROVISION FOR FUTURE BREAKER
Δ	DELTA SYSTEM	PNL	PANEL
DISC	DISCONNECT	ɸ	PHASE
DIST	DISTRIBUTION	RM	ROOM
HH	HANDHOLE	SMH	SEWER MANHOLE
EFSO	EMERGENCY FUEL SHUT OFF	SN	SOLID NATURAL
ELEC	ELECTRICAL	S/S	STAINLESS STEEL
EMH	ELECTRICAL MANHOLE	ST	STREET
ENCL	ENCLOSURE	SURF	SURFACE
EMT	ELECTRICAL METALLIC TUBING	SW	SWITCH
EQUIP	EQUIPMENT	TBB	TELECOMMUNICATIONS BACKBOARD
EXIST,(E)	EXISTING	THK	THICK
FLA	FULL LOAD AMPERE	TYP	TYPICAL
GALV	GALVANIZED	UG	UNDER GROUND
GFC	GROUND FAULT CIRCUIT INTERRUPTOR	UON	UNLESS OTHERWISE NOTED
GND	GROUND	V	VOLTS
GRS	GALVANIZED RIGID STEEL	W	WIRE, WIDE, WATTS, WITH
H	HEIGHT	WP	WEATHERPROOF
HP	HORSEPOWER	XFMR	TRANSFORMER
JB	JUNCTION BOX	Y	WYE SYSTEM
KV	KILO-VOLT	ɸ	PHASE
KVA	KILO-VOLT AMPERE	'	FOOT, FEET
KW	KILOWATT	"	INCH, INCHES
L	LENGTH	&	AND
LT	LIGHT		

COUNTY OF MAUI
MAUI COUNTY CODE, CHAPTER 16.16B, ENERGY CODE
COMMERCIAL PROVISIONS

COMPLIANCE METHOD
CHECK APPLICABLE METHOD

- ☐ C401.2(1) ANSI/ASHRAE/IESNA 90.1
- ☒ C401.2(2) SECTIONS C402 THROUGH C406
- ☐ C401.2(3) SECTIONS C402.5, C403.2, C404, C405.2, C405.3, C405.4, C405.6 & C407
- ☐ C102.1 ALTERNATIVE

TO THE BEST OF MY KNOWLEDGE, THIS PROJECT'S DESIGN SUBSTANTIALLY CONFORMS TO THE ENERGY CODE

SIGNATURE: Garret A. Masuda DATE: 06/XX/2022
NAME: GARRET MASUDA, P.E.
TITLE: ELECTRICAL ENGINEER
LICENSE No.: 9756-E

GARRET A. MASUDA LICENSED PROFESSIONAL ENGINEER No. 9756-E HAWAII, U.S.A.

GARRET A. MASUDA LICENSED PROFESSIONAL ENGINEER No. 9756-E HAWAII, U.S.A.

4/30/24
EXP. DATE
Garret A. Masuda
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SYMBOLS AND ABBREVIATIONS-ELECTRICAL

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2

Project No. HWY-M-03-21, Phase 2

Scale: NONE Date: JULY 2022

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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	34	46

GENERAL NOTES - ELECTRICAL

1. ALL WORK SHOWN ON THE ELECTRICAL DRAWINGS IS NEW UNLESS OTHERWISE NOTED. ALL MATERIALS SHALL BE NEW AND "LISTED" OR "LABELED" AS DEFINED BY THE NATIONAL ELECTRICAL CODE (NEC). WORK FOR THIS PROJECT SHALL CONSIST OF RENOVATION OF THE EXISTING FUEL SERVICE STATION INFRASTRUCTURE AND EXISTING DISTRIBUTION SYSTEMS COMPLETE AND OPERATIONAL AS LIMITED BY THE INTENT OF THE CONTRACT DOCUMENTS.

2. ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRIC SAFETY CODE (NESC) AND BUILDING ORDINANCES OF THE COUNTY OF MAUI. CONSTRUCTION PRACTICES SHALL CONFORM TO THE LATEST EDITION OF AMERICAN ELECTRICIANS' HANDBOOK BY CROFT, AND APPLICABLE INSTRUCTIONS OF MANUFACTURERS OF EQUIPMENT AND MATERIAL SUPPLIED FOR THIS PROJECT.

3. RETENTION OF PLANS: ONE SET OF APPROVED PLANS, SPECIFICATIONS, AND COMPUTATIONS SHALL BE RETAINED BY THE BUILDING OFFICIAL FOR A PERIOD OF NOT LESS THAN 90 DAYS FROM DATE OF COMPLETION OF THE WORK COVERED THEREIN, AND ONE SET OF APPROVED PLANS SHALL BE RETURNED TO THE APPLICANT, AND SAID SET SHALL BE KEPT ON THE SITE OF THE BUILDING OR WORK AT ALL TIMES DURING WHICH THE WORK AUTHORIZED THEREBY IS IN PROGRESS.

4. STRUCTURES UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION OPERATIONS, INCLUDING THOSE IN UNDERGROUND LOCATIONS, SHALL COMPLY WITH NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND NFPA 1, AS LOCALLY AMENDED.

5. FIRE SAFETY DURING ALTERATION:
   a. NFPA 1, 16.4.4.1 WHERE THE BUILDING IS PROTECTED BY FIRE PROTECTION SYSTEMS, SUCH SYSTEMS SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES DURING ALTERATION.
   b. NFPA 1, 16.4.4.3 WHEN IT IS NECESSARY TO SHUT DOWN THE SYSTEM, THE AHJ SHALL HAVE THE AUTHORITY TO REQUIRE ALTERNATE MEASURES OF PROTECTION UNTIL THE SYSTEM IS RETURNED TO SERVICE.
   c. NFPA 1, 10.7.1.1 AS NECESSARY DURING EMERGENCIES, MAINTENANCE, DRILLS, PRESCRIBED TESTING, ALTERATIONS, OR RENOVATIONS, PORTABLE OR FIXED FIRE-EXTINGUISHING SYSTEMS OR DEVICES OR ANY FIRE-WARNING SYSTEM SHALL BE PERMITTED TO BE MADE INOPERATIVE OR INACCESSIBLE. A FIRE WATCH SHALL BE REQUIRED AS SPECIFIED IN SECTIONS 13.3.3.6.5.2(4)(b), 13.7.1.5.3, 16.5.4, 34.6.3.3, 41.2.2.6, 41.2.2.7, 41.2.4, 41.3.5, 41.4.1, 34.5.4.3, AND 25.1.8 AT NO COST TO THE AHJ. NFPA 1, AS LOCALLY AMENDED.

6. IT IS NOT THE INTENT OF THESE PLANS AND SPECIFICATIONS TO INDICATE ALL EXISTING CONDITIONS THAT MAY BE ENCOUNTERED DURING CONSTRUCTION. THE INFORMATION ON THE EXISTING UTILITIES ARE BASED ON AVAILABLE PLANS AND A LIMITED AMOUNT OF FIELD WORK. THE LOCATIONS ARE APPROXIMATE ONLY AND THE CONTRACTOR SHALL VISIT THE PROJECT SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS, THE EXTENT OF ANY DEMOLITION, RELOCATION, RECONNECTION, AND THE NEW WORK PRIOR TO THE START OF ON-SITE CONSTRUCTION ACTIVITIES. ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THE PLANS SHALL BE PROTECTED AT ALL TIMES BY THE CONTRACTOR UNLESS SPECIFIED ON THE PLANS TO BE ABANDONED OR DEMOLISHED. REPORT ANY DISCREPANCIES AND/OR DIFFERENCES BETWEEN THE EXISTING CONDITIONS AND THE CONSTRUCTION DOCUMENTS TO THE CONTRACTING OFFICER. RESOLVE ALL DISCREPANCIES AND QUESTIONS PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE FACILITIES WHETHER SHOWN OR NOT SHOWN ON PLANS. ANY REPAIR WORK SHALL BE PROVIDED AT NOT ADDITIONAL COST TO THIS PROJECT. BID SUBMISSION SHALL BE CONSIDERED AS EVIDENCE THAT THE CONTRACTOR HAS VISITED THE SITE AND RESOLVED ALL DISCREPANCIES AND QUESTIONS AND NO EXTRA PAYMENT WILL BE AUTHORIZED FOR WORK REQUIRED BY THE CONTRACTOR'S FAILURE TO DO SO.

7. COORDINATE ALL ELECTRICAL WORK WITH THE WORK OF THE OTHER TRADES AND SCHEDULE WORK TO MINIMIZE THE NUMBER AND DURATION OF ELECTRICAL OUTAGES AND IMPACT TO THE OPERATIONS IN OR ADJACENT TO THE PROJECT AREA. COORDINATE ACCESS TO THE PROJECT AREA AND SCHEDULE ALL REQUIRED SYSTEM OUTAGES WITH THE OWNER.

8. VERIFY AND COORDINATE ALL PENETRATIONS PRIOR TO THE START OF CONSTRUCTION. OBTAIN APPROVAL BEFORE MAKING ANY PENETRATIONS THROUGH STRUCTURAL MEMBERS OR FIRE RATED WALLS AND CEILINGS.

9. SCAN (E.G. X-RAY, ELECTROMAGNETIC, ETC.) ALL CONCRETE WALLS OR FLOOR STRUCTURES PRIOR TO COMMENCING WITH CORING/DRILLING WORK FOR PENETRATIONS TO AVOID DAMAGING THE EXISTING REINFORCING STEEL.

10. COORDINATE AND PROVIDE ACCESS PANELS FOR ALL CONCEALED ELECTRICAL EQUIPMENT, DEVICES, BOXES AND CONDUIT BODIES SO THAT THEY ARE ACCESSIBLE.

11. TONING: EXISTING UNDERGROUND UTILITY LINES INDICATED ON THE DRAWINGS ARE SHOWN IN APPROXIMATE LOCATIONS BASED ON BEST AVAILABLE "RECORD" DRAWINGS AND ARE SUBJECT TO FIELD VERIFICATION BY THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR TONING THE PROPOSED ROUTES OF THE PROJECT DUCTLINES TO IDENTIFY ANY POTENTIAL CONFLICTS PRIOR TO EXCAVATION. DAMAGE TO EXISTING UTILITIES CAUSED BY THE CONTRACTOR, AS A RESULT OF THE FAILURE TO TONE THE ROUTE PRIOR TO EXCAVATION WORK, WILL REQUIRE THE CONTRACTOR TO REPAIR THE DAMAGE AT NO ADDITIONAL COST TO THE PROJECT. THE DAMAGED UTILITIES SHALL BE REPAIRED/RESTORED TO ITS ORIGINAL WORKING CONDITION AND TO THE SATISFACTION OF THE OWNER.

12. PROVIDE ALL LABOR, EQUIPMENT, AND HAULING/DISPOSAL SERVICE FOR DEWATERING EFFORTS FOR NEW BELOW GRADE EXCAVATION/TRENCHING IF GROUND WATER IS ENCOUNTERED IN THE PROJECT AREA.

13. EXISTING DEVICE AND EQUIPMENT LOCATIONS, CIRCUIT ASSIGNMENTS, WIRING CONNECTIONS, AND CONDUIT RUNS INDICATED WERE DERIVED FROM AVAILABLE REFERENCE DOCUMENTS AND LIMITED FIELD INVESTIGATION. FIELD VERIFY ALL EXISTING CONDITIONS AND MAKE ANY NECESSARY ADJUSTMENTS TO SATISFY THE INTENT OF THE DRAWINGS AND SPECIFICATION.

14. RE-ROUTE ALL EXISTING CONDUIT, WIRING AND CABLING TO REMAIN WITHIN THE PROJECT AREA AS NECESSARY TO FACILITATE THE INSTALLATION OF ALL NEW EQUIPMENT. REMOVE AND RE-INSTALL ELECTRICAL EQUIPMENT, INCLUDING LIGHTS, TO REMAIN AS REQUIRED.

15. WORK INCIDENTAL TO THE CONTRACT AND NECESSARY TO COMPLETE THE PROJECT, ALTHOUGH NOT SPECIFICALLY REFERRED TO IN THE CONTRACT DOCUMENTS, SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT. AN EXAMPLE OF SUCH INCIDENTAL WORK ARE OUTLET BOXES, JUNCTION BOXES AND PULL BOXES REQUIRED FOR THE INSTALLATION OF ELECTRICAL DEVICES, AND EQUIPMENT. ALL INCIDENTAL WORK SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

16. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL CONDUIT AND WIRING FOR THE POWER CONNECTION TO ALL EQUIPMENT AS INDICATED IN THE DRAWINGS AND SPECIFICATIONS. ALL INCIDENTAL CONDUIT AND WIRING REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM MAY NOT BE SHOWN IN THE DRAWINGS OR SPECIFICATIONS. CONTRACTOR SHALL COORDINATE INCIDENTAL CONDUIT AND WIRING REQUIREMENTS BETWEEN ALL TRADES TO ENSURE THE INCIDENTAL CONDUIT AND WIRING IS PROVIDED AND THE AFFECTED SYSTEMS OPERATE AS INTENDED.

17. THE LOCATION OF ALL ELECTRICAL APPARATUS AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND BEFORE INSTALLING, STUDY THE CIVIL AND MECHANICAL DETAILS AND MAKE INSTALLATION IN THE MOST LOGICAL MANNER. CIRCUIT ROUTING IS TYPICAL AND MAY BE VARIED IN ANY MANNER. ANY PIECE OF EQUIPMENT/DEVICE MAY BE RELOCATED WITHIN 10' BEFORE INSTALLATION AT THE DIRECTION OF THE CONTRACTING OFFICER WITHOUT ADDITIONAL CHARGE TO THE PROJECT.

18. SHOULD PROJECT CONDITIONS REQUIRE REARRANGEMENT OF THE PROJECT'S WORK, THE CONTRACTOR SHALL MARK SUCH CHANGES ON THE AS-BUILT DRAWINGS. IF THESE CHANGES REQUIRE AN ALTERNATE METHOD TO THOSE SPECIFIED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SUBMIT DRAWINGS TO REFLECT THE PROPOSED ALTERNATE METHODS TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL NOT PROCEED UNTIL APPROVAL IS OBTAINED. REARRANGEMENT OF WORK FOR THE PURPOSE OF COORDINATION SHALL NOT BE CONSIDERED AN ITEM FOR EXTRA COST.

19. THE EXISTING ELECTRICAL, TELECOM, FIRE ALARM, AND OTHER ELECTRICALLY-RELATED SYSTEMS IN AREAS ADJACENT TO, OUTSIDE OF, AND/OR OTHERWISE PASSING THROUGH THE PROJECT LIMITS, MUST REMAIN OPERATIONAL DURING THE CONSTRUCTION PERIOD AND POST-CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE DUE CARE AND CAUTION WHEN WORKING NEAR ANY EXISTING EQUIPMENT, DEVICES, OR CABLING/CIRCUITING. PROVIDE NEW JUNCTION BOXES, CONDUITS & WIRING, AND THE LABOR REQUIRED TO FACILITATE THE REQUIRED OPERATIONAL CONTINUITY. BOXES, CONDUITS AND WIRING SHALL BE IN ACCORDANCE WITH THE NEC. ANY DAMAGE TO THE EXISTING EQUIPMENT, DEVICES OR CABLING/CIRCUITING RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY REPAIRED OR OTHERWISE RESTORED TO ITS ORIGINAL WORKING CONDITION AT NO ADDITIONAL COST TO THE PROJECT.

20. THE ELECTRICAL DRAWINGS ARE BASED ON PROPOSED EQUIPMENT. VERIFY ALL SYSTEM REQUIREMENTS (ELECTRICAL, MECHANICAL, SPECIALTY SYSTEMS, ETC.) WITH THE SELECTED SYSTEM'S MANUFACTURER OR AUTHORIZED REPRESENTATIVE PRIOR TO COMMENCING WITH ANY WORK. COORDINATE RATINGS OF OVERCURRENT PROTECTION DEVICES, DISCONNECT SWITCHES, CONDUIT & WIRING TO MATCH THE ACTUAL EQUIPMENT SUPPLIED FOR THE PROJECT. CORRECT ALL DISCREPANCIES SO AS TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM. RECORD CHANGES ON THE AS-BUILT DRAWINGS.

21. ALL EQUIPMENT AND APPARATUS SHALL BE CAPABLE OF FITTING IN THE SPACES SHOWN WHILE MEETING THE MANUFACTURER'S RECOMMENDED ACCESS REQUIREMENTS AND APPLICABLE CODE REQUIREMENTS. REVIEW ALL SPACES WHERE EQUIPMENT IS TO BE INSTALLED PRIOR TO ORDERING OF EQUIPMENT AND NOTIFY THE CONTRACTING OFFICER OF ANY INADEQUATE CLEARANCES OR CONDITIONS THAT WILL PREVENT THE PROPER INSTALLATION, MAINTENANCE, AND OPERATION OF THE EQUIPMENT.

22. CONCEAL ALL CONDUIT WHEREVER REASONABLY POSSIBLE; EXPOSED CONDUITS ARE PERMITTED ONLY WHERE SPECIFICALLY SHOWN ON THE DRAWINGS. ALL EXPOSED CONDUITS IN FINISHED AREAS SHALL BE INSTALLED IN THE LEAST VISIBLE LOCATIONS. CARE SHALL BE TAKEN TO INSTALL CONDUIT IN THE MOST AESTHETICALLY PLEASING MANNER.

23. PROVIDE TYPEWRITTEN CIRCUIT DIRECTORIES FOR ALL PANELS, NEW OR MODIFIED, REFLECTING THE CIRCUIT ARRANGEMENTS AS THEY WERE ACTUALLY INSTALLED.

24. AN ADHESIVE VINYL NAMEPLATE SHALL BE PROVIDED FOR ALL SWITCHES, RECEPTACLES, DISCONNECT SWITCHES, MOTOR STARTERS AND MISCELLANEOUS DEVICES REQUIRING POWER. THE NAMEPLATE SHALL INDICATE THE PANELBOARD SERVING THE DEVICE AND THE CORRESPONDING CIRCUIT ASSIGNMENT. LETTERING SHALL BE A MINIMUM OF 1/4" HIGH. UTILIZE BROTHER "P-TOUCH" LABEL MAKER OR APPROVED SUBSTITUTE.

25. A GREEN, EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH THE NEC ARTICLE 250 SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS WHETHER INDICATED ON CONTRACT DRAWINGS OR NOT. INSTALL THIS CONDUCTOR IN ALL RACEWAYS INCLUDING THOSE INSTALLED FOR SWITCH LEGS AND ATTACH TO THE DEVICE OR EQUIPMENT USING A SUITABLE GROUNDING LUG.

26. DO NOT USE A COMMON NEUTRAL FOR MULTIPLE BRANCH CIRCUITS INSTALLED IN A COMMON CONDUIT. PROVIDE A DEDICATED NEUTRAL FOR EACH INDIVIDUAL CIRCUIT. WHERE MULTIPLE DEDICATED NEUTRALS ARE INSTALLED IN A COMMON CONDUIT, PROVIDE COLOR CODING OF THE DIFFERENT NEUTRAL CONDUCTORS IN ACCORDANCE WITH THE NEC (WHITE, GRAY, THREE CONTINUOUS WHITE OR GRAY STRIPES, ETC.)

27. PROVIDE NYLON PULLSTRINGS IN ALL EMPTY CONDUITS UNLESS OTHERWISE INDICATED.

28. THE TELECOMMUNICATIONS RACEWAY SYSTEM INSTALLATION SHALL COMPLY WITH TIA/EIA AND BISCI STANDARDS UNLESS OTHERWISE NOTED.

29. CONDUIT BODIES (e.g. LB, LR, etc.) SHALL NOT BE PERMITTED IN THE TELECOMMUNICATIONS RACEWAY SYSTEMS UNLESS SPECIFICALLY INDICATED TO BE UTILIZED AND LISTED FOR TELECOMMUNICATIONS SYSTEM USE.

30. PROVIDE INSULATED BUSHINGS AT ALL TELECOMMUNICATIONS CONDUIT TERMINATIONS AT ALL BOXES, BACKBOARDS, AND CONDUIT STUBS.

31. ALL SURFACE MOUNTED DEVICES SHALL BE INSTALLED UTILIZING FACTORY PAINTED SURFACE MOUNTING ACCESSORIES AND MATCHING DEVICE BOXES FOR THE MOST AESTHETICALLY PLEASING INSTALLATION.

32. PROVIDE KNOCK-OUT PLUGS FOR ALL UNUSED CONDUIT PENETRATIONS IN BOXES AND ENCLOSURES DUE TO CONDUIT REMOVAL.

33. PENETRATIONS THROUGH FIRE-RATED WALLS, CEILINGS AND FLOORS SHALL BE SEALED TO MAINTAIN FIRE RATINGS. UTILIZE 3M CP25, PUTTY 303 OR OTHER SUITABLE UL-LISTED SEALING SYSTEM.

34. PATCH, REFINISH, AND PAINT ALL PENETRATIONS THROUGH WALLS AND SLABS TO MATCH FINISH OF ADJACENT SURFACES.

35. RESTORE/REPAIR ANY DAMAGE TO EXISTING SURFACES RESULTING FROM THE INSTALLATION OF NEW ELECTRICAL ITEMS. THE AREAS REPAIRED SHALL MATCH THE ADJACENT SURFACES IN TEXTURE, FINISH, AND COLOR.

36. PAINTING OF ELECTRICAL EQUIPMENT:
   a. INTERIOR LOCATIONS - PRIME AND PAINT ALL EXPOSED CONDUITS, BOXES, FITTINGS, SUPPORT CHANNELS, MOUNTING HARDWARE AND ACCESSORIES WITH TWO FINISH COATS TO MATCH THE SURFACE ON WHICH THEY ARE MOUNTED OR TO MATCH THE FINISH OF THE ADJACENT SURFACES. EQUIPMENT SURFACES/COMPONENTS WITH A FACTORY-APPLIED PAINT FINISH NEED NOT BE PAINTED.
   b. EXTERIOR LOCATIONS - PRIME ALL EXPOSED CONDUITS, BOXES, FITTINGS, SUPPORT CHANNELS, MOUNTING HARDWARE AND ACCESSORIES WITH A 2-PART EPOXY PRIMER AND FINISH WITH 2 COATS OF AN ALIPHATIC ACRYLIC URETHANE PAINT. PAINT FINISH TO MATCH THE SURFACE ON WHICH THEY ARE MOUNTED OR TO MATCH THE FINISH OF THE ADJACENT SURFACES. STAINLESS STEEL MATERIALS NEED NOT BE PAINTED.

37. FOR ALL SWITCHGEAR, SWITCHBOARDS AND PANELBOARDS, PROVIDE A PERMANENTLY AFFIXED PLAQUE INDICATING THE SOURCE OF THE POWER SERVING THE APPARATUS IN QUESTION IN ACCORDANCE WITH THE NEC FOR WORKSPACE CLEARANCE IN AREAS OF LIMITED ACCESS.

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4/30/24
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES-ELECTRICAL

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: NONE Date: JULY 2022

SHEET No. E002 OF 14 SHEETS

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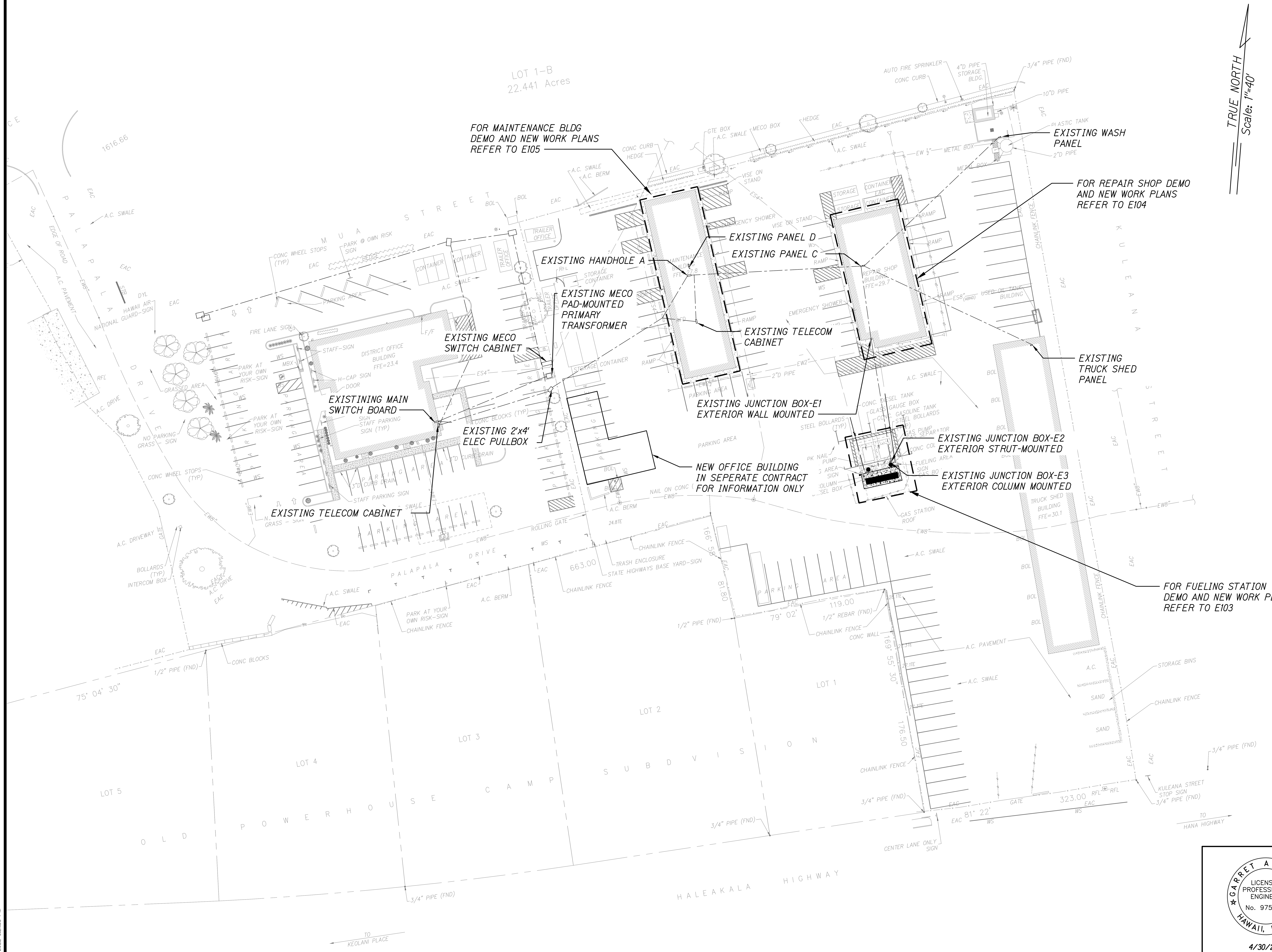
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	35	46



SHEET NOTES:

1. EXISTING ELECTRICAL AND TELECOM SITE CONDITIONS FOR REFERENCE ONLY. WORK TO BE PERFORMED SHOWN ON SHEET E102.
2. COORDINATE WITH DEPARTMENT OF TRANSPORTATION (DOT) BASEYARD VIA CONTRACTING OFFICER REGARDING POTENTIAL CONCURRENT WORK WITH PROJECT HWY-M-ART18-01 THAT INCLUDES RELOCATION/REPLACEMENT OF THE MAIN SWITCHBOARD AND AN ADDITIONAL OFFICE BUILDING AS INDICATED FOR REFERENCE ON THE PLAN.

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

OVERALL BASEYARD ELECTRICAL SITE PLAN

SCALE: 1" = 40'

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERALL BASEYARD ELECTRICAL SITE PLAN

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022
SHEET No. E101 OF 14 SHEETS

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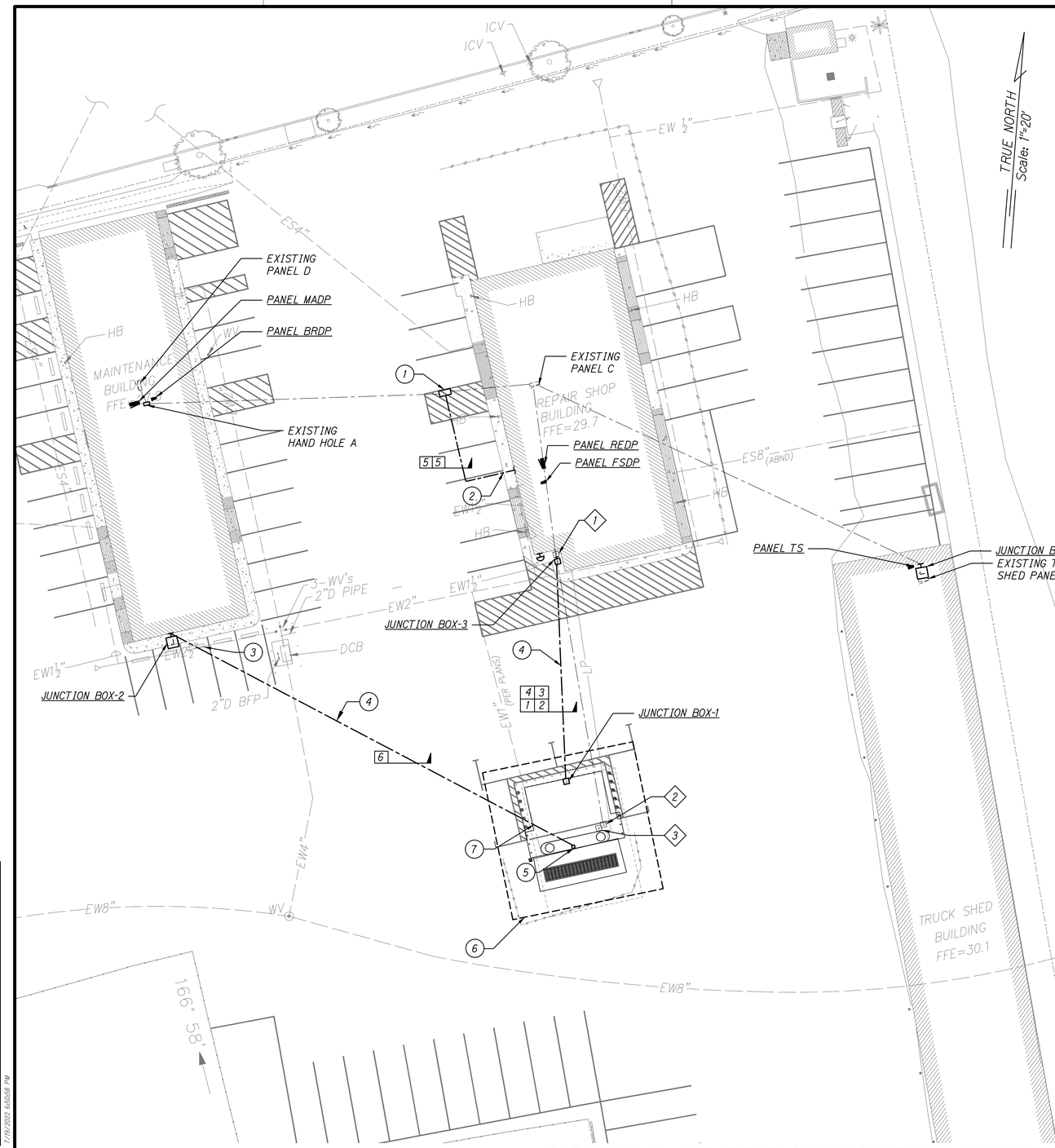
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	36	46



DEMOLITION NOTES:

1. *EXISTING JUNCTION BOX-E1. DEMOLISH BOX AND ASSOCIATED WALL-MOUNTED CONDUITS AND CONDUCTORS FOR EXISTING EM STOP. ABANDON ASSOCIATED DUCTBANKS, AND CUT/CAP EXISTING CONDUIT STUB-UPS BELOW PAVEMENT. PATCH AND REFINISH DAMAGED AREA.*
2. *EXISTING JUNCTION BOX-E2. DEMOLISH BOX, ABANDON ASSOCIATED DUCTBANKS, AND CUT/CAP EXISTING CONDUIT STUB-UPS BELOW PAVEMENT. DISCONNECT AND REMOVE ALL EXISTING ABOVE GROUND CONDUITS/CONDUCTORS TO LIGHT CIRCUIT BOX-E3, FUEL PUMPS, EM STOPS, & CONTROL CIRCUITS TO ACCOMMODATE REPLACEMENT OF FUEL TANK SYSTEM, EXISTING CIRCUIT C-36, 38, 40. FIELD VERIFY ALL REQUIREMENTS. PATCH AND REFINISH DAMAGED AREA.*
3. *EXISTING JUNCTION BOX-E3 TO REMAIN. DEMOLISH CONDUIT/CONDUCTORS FOR LIGHTING CIRCUIT TO JUNCTION BOX-E2. CONDUIT AND CIRCUITRY FROM JUNCTION BOX-E3 TO LIGHT FIXTURES SHALL REMAIN. FIELD VERIFY ALL REQUIREMENTS.*

SHEET NOTES:

1. *EXISTING ELECTRICAL AND TELECOM SITE CONDITIONS FOR REFERENCE ONLY.*
2. *COORDINATE WITH DEPARTMENT OF TRANSPORTATION (DOT) BASEYARD VIA CONTRACTING OFFICER REGARDING POTENTIAL CONCURRENT WORK WITH PROJECT HWY-M-ART18-01 THAT INCLUDES RELOCATION/REPLACEMENT OF THE MAIN SWITCHBOARD AND AN ADDITIONAL OFFICE BUILDING AS INDICATED FOR REFERENCE ON THE PLAN.*

KEY NOTES:

1. *PROVIDE TRAFFIC RATED HANDHOLE HH-1 TO INTERCEPT DUCTBANK TO PANEL C. SEE SHEET E502 FOR MORE INFORMATION.*
2. *DUCTBANK TO ENTER BUILDING THROUGH DOORWAY TO AVOID BREAKING THROUGH EXISTING WALLS. SAWCUT THROUGH THE EXISTING SIDEWALK. TRANSITION UNDERGROUND CONDUIT BURIAL DEPTH TO AVOID DAMAGING EXISTING REBAR, CMU WALL REINFORCING, AND OTHER EXISTING OBSTACLES. MAINTAIN A 4" CONCRETE COVER TO INCLUDE SIDEWALK AND FLOOR SLAB CONSTRUCTION. PATCH, REPAIR, AND REFINISH SIDEWALK TO MATCH EXISTING CONDITIONS. SEE E104 FOR CONTINUATION.*
3. *SALVAGE RUBBER WHEEL STOPS (TYP. OF 2) PRIOR TO TRENCHING, PATCH EXISTING HOLES IN AC PAVEMENT AS NECESSARY AND REINSTALL IN SAME LOCATION AND PER MANUFACTURER'S INSTRUCTIONS AFTER TRENCH RESTORATION IS COMPLETE.*
4. *SAWCUT THROUGH THE EXISTING PAVEMENT. PATCH, REPAIR, AND REFINISH TO MATCH EXISTING CONDITIONS.*
5. *STUB UP UNDER FUEL MANAGEMENT SYSTEM CONTROLLER PROVIDED BY MECHANICAL CONTRACTOR. VERIFY SYSTEM LOCATION WITH MECHANICAL DRAWINGS. SEE SHEET E103 FOR CONTINUATION.*
6. *CLASS 1 DIV 2 HAZARDOUS AREA BOUNDARY, UP TO 18" ABOVE GRADE LEVEL & WITHIN 20' HORIZONTALLY FROM DISPENSER AND 10' FROM VENT LOCATION WITHIN SHELL ENDS, OR ROOF TANK.*
7. *TRANSITION UNDERGROUND CONDUIT BURIAL DEPTH TO AVOID DAMAGING EXISTING WATER LINE AT CROSSING.*

20 0 20 40

GRAPHIC SCALE: 1"=20'

ELECTRICAL AND TELECOMMUNICATIONS DEMOLITION AND NEW SITE WORK

SCALE: 1" = 20'

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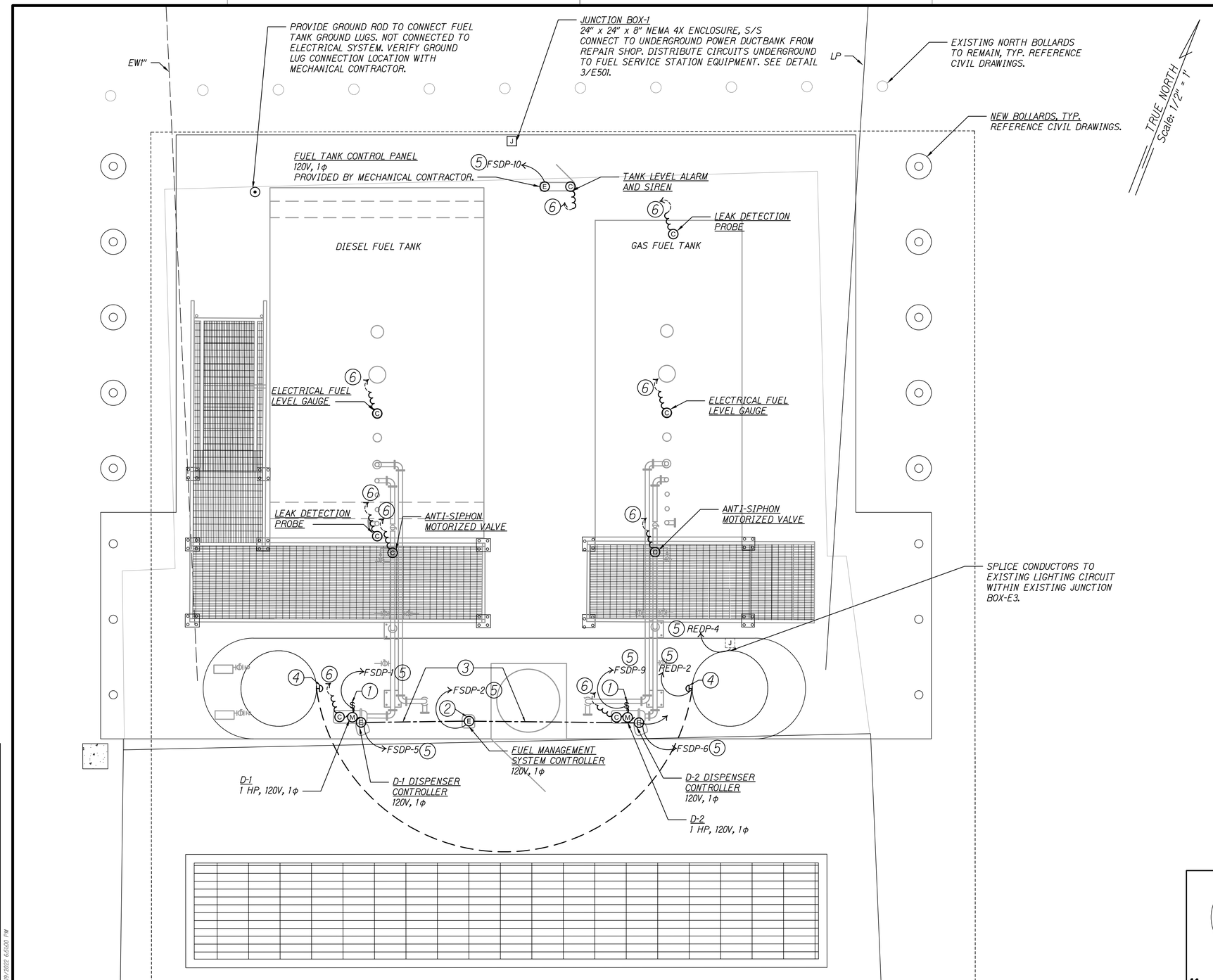
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL & TELECOM
DEMO & NEW SITE WORK

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2

Scale: AS SHOWN Date: JULY 2022

SHEET No. E102 OF 14 SHEETS



2 0 2 4

GRAPHIC SCALE: 1/2"=1'

FUEL SERVICE STATION ELECTRICAL PLAN

SCALE: 1/2" = 1'

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	37	46

SHEET NOTES:

1. EXISTING CONCRETE PAD AND CURB WILL BE DEMOLISHED AND REPLACED WITH NEW. SEE CIVIL DRAWINGS FOR DETAILS.
2. COORDINATE WITH THE MECHANICAL CONTRACTOR FOR EQUIPMENT AND CONTROLS CONNECTION REQUIREMENTS.
3. WORK WITHIN HAZARDOUS AREAS SHALL COMPLY WITH NEC 2017 501.10(B), 514.4, 514.7, & 514.8 FOR WIRING METHODS:
   - 3.a. UNDERGROUND DUCTS SHALL BE CONCRETE ENCASED, PVC SCH 40 UNDER MINIMUM 2' BELOW GRADE. SEE E-501.
   - 3.b. THREADED GRS SHALL BE USED FOR THE LAST 2' OF UNDERGROUND RUN TO EMERGENCE OR POINT OF CONNECTION.
   - 3.c. ALL ABOVE CONDUIT SHALL BE GRS.
   - 3.d. CONDUCTOR INSULATION SHALL BE LISTED FOR USE WITHIN THE HAZARDOUS AREA PER NEC 501.20.
   - 3.e. PROVIDE LISTED EXPLOSION PROOF SEALS WITHIN 10'-0" OF EITHER SIDE OF THE BOUNDARY, IN EACH CONDUIT RUN ENTERING OR LEAVING A DISPENSER OR ANY CAVITIES OR ENCLOSURES IN DIRECT COMMUNICATION THEREWITH.

KEY NOTES:

(1) PROVIDE SUPPORT FRAME FOR MOUNTING OF EQUIPMENT. UTILIZE STAINLESS STEEL STRUT, HARDWARE, AND FASTENERS AND SECURE TO CONCRETE SLAB IN AN APPROPRIATE LOCATION.

(2) PROVIDE POWER AND TELECOM INFRASTRUCTURE TO SUPPORT NEW FUEL MANAGEMENT SYSTEM (FMS) CONTROLLER, PROVIDED BY THE MECHANICAL CONTRACTOR. COORDINATE WITH THE MECHANICAL CONTRACTOR AND FMS MANUFACTURER FOR CONNECTION REQUIREMENTS.

(3) INSTALL 1"C W/ (2) #14 AWG UNDER CURB FOR CONTROL SIGNAL BETWEEN FMS CONTROLLER AND PUMP DISPENSERS. COORDINATE WITH MECHANICAL AND CONTROLS CONTRACTORS FOR CONNECTION REQUIREMENTS.

(4) PROVIDE NEW EMERGENCY FUEL SHUT OFF BUTTON TO SHUNT TRIP MAIN BREAKER FOR PANEL FSDP. SEE SHEET E503 FOR MORE INFORMATION.

(5) CIRCUIT HOMERUN FED VIA JUNCTION BOX-1.

(6) PROVIDE 1"C FROM FUEL TANK CONTROL PANEL TO CONTROLS CONNECTION POINT SHOWN. CONTROL CABLING PROVIDED BY OTHERS. COORDINATE INSTALLATION WITH MECHANICAL AND CONTROLS CONTRACTOR. PROVIDE REQUIRED SUPPORTS, MOUNTING FRAMES, FASTENERS, AND MISCELLANEOUS HARDWARE TO FACILITATE INSTALLATION OF CONDUIT RUNS. ALL MATERIALS SHALL BE STAINLESS STEEL WHERE AVAILABLE.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FUEL SERVICE STATION ELECTRICAL PLAN

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2

Scale: AS SHOWN Date: JULY 2022

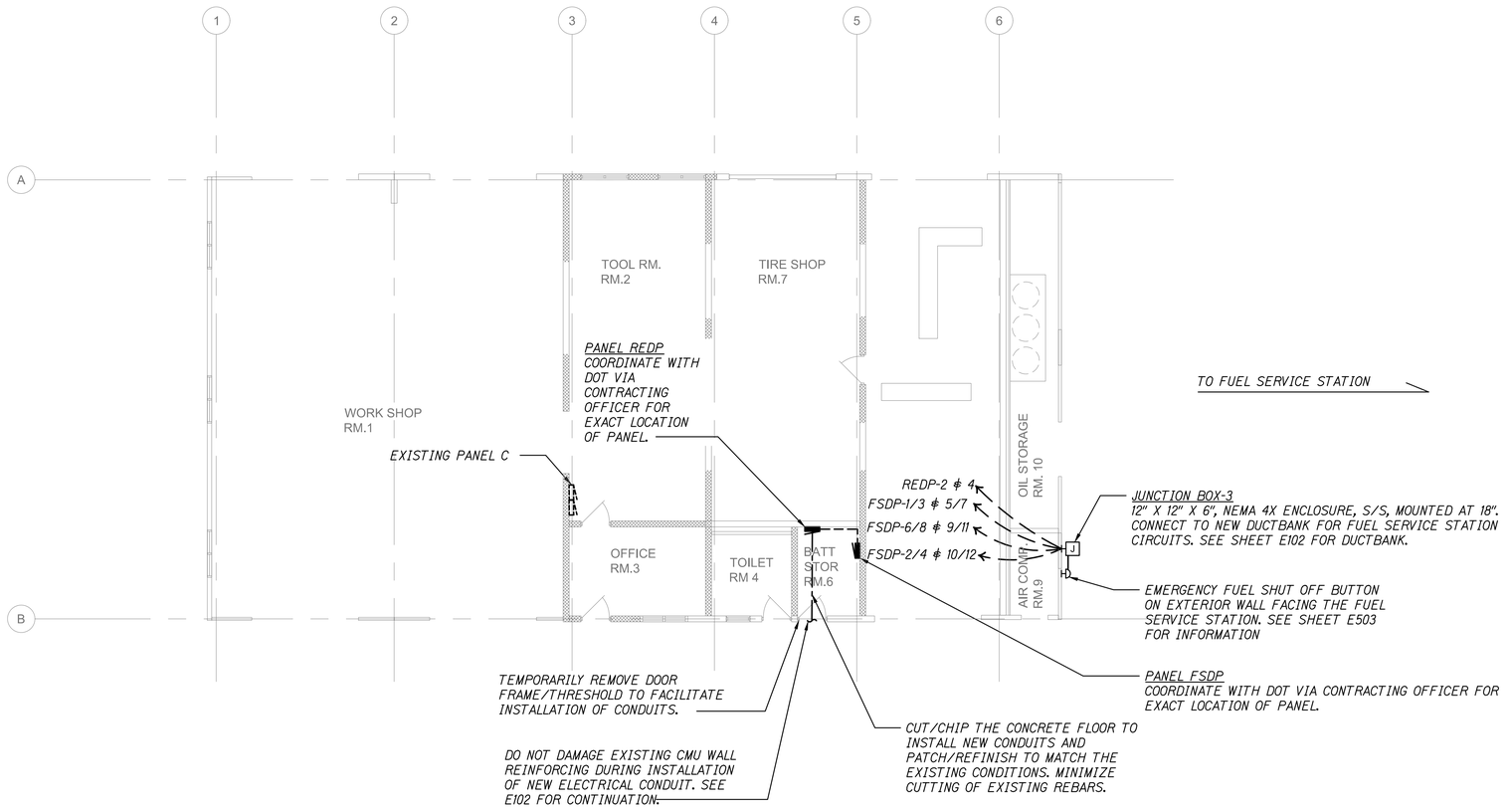
SHEET No. E103 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	38	46

Scale: 1/8" = 1'
TRUE NORTH

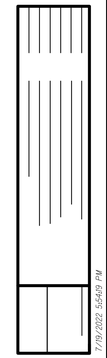
SHEET NOTES:

1. SEE ONE-LINE DIAGRAM SHEET E601 FOR MORE INFORMATION.
2. ALL EXISTING BRANCH CIRCUITRY TO REMAIN IN PLACE UNLESS OTHERWISE NOTED.
3. MAINTAIN WORKING CLEARANCE REQUIREMENTS PER THE NEC.



4 0 4 8 12 16 20
GRAPHIC SCALE: 1/8"=1'

REPAIR SHOP ELECTRICAL PLAN
SCALE: 1/8" = 1'



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REPAIR SHOP ELECTRICAL PLAN

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

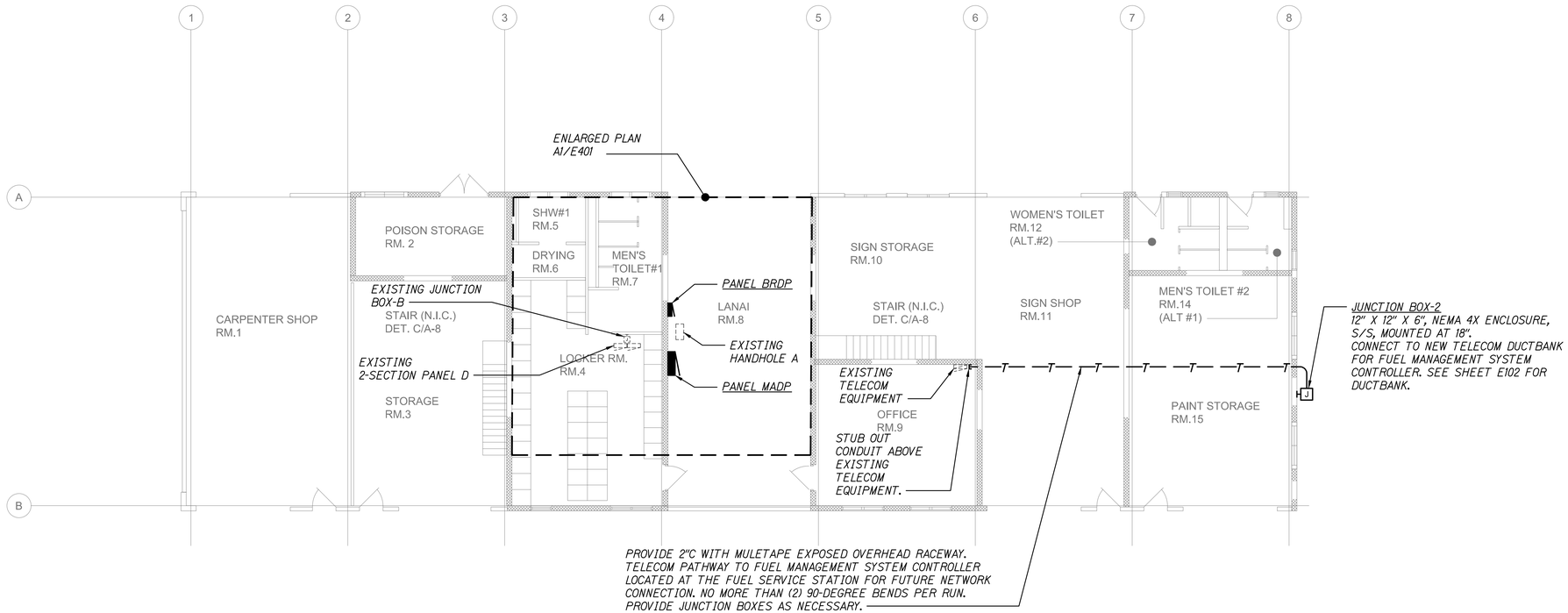
SHEET No. E104 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	39	46

Scale: 1/8" = 1'
TRUE NORTH

SHEET NOTES:

1. THE EXISTING STORAGE ROOM WALL CURRENTLY ENCROACHING INTO THE EXISTING PANEL D'S FRONT WORKSPACE SHALL BE REMOVED PRIOR TO THIS CONTRACT. A MINIMUM OF 36" CLEAR WORKSPACE FROM THE FACE OF THE EXISTING PANEL IS REQUIRED.
2. SEE ONE-LINE DIAGRAM SHEET E601 FOR MORE INFORMATION.



4 0 4 8 12 16 20
GRAPHIC SCALE: 1/8"=1'

MAINTENANCE BUILDING ELECTRICAL PLAN
SCALE: 1/8" = 1'

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAINTENANCE BUILDING
ELECTRICAL PLAN
MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

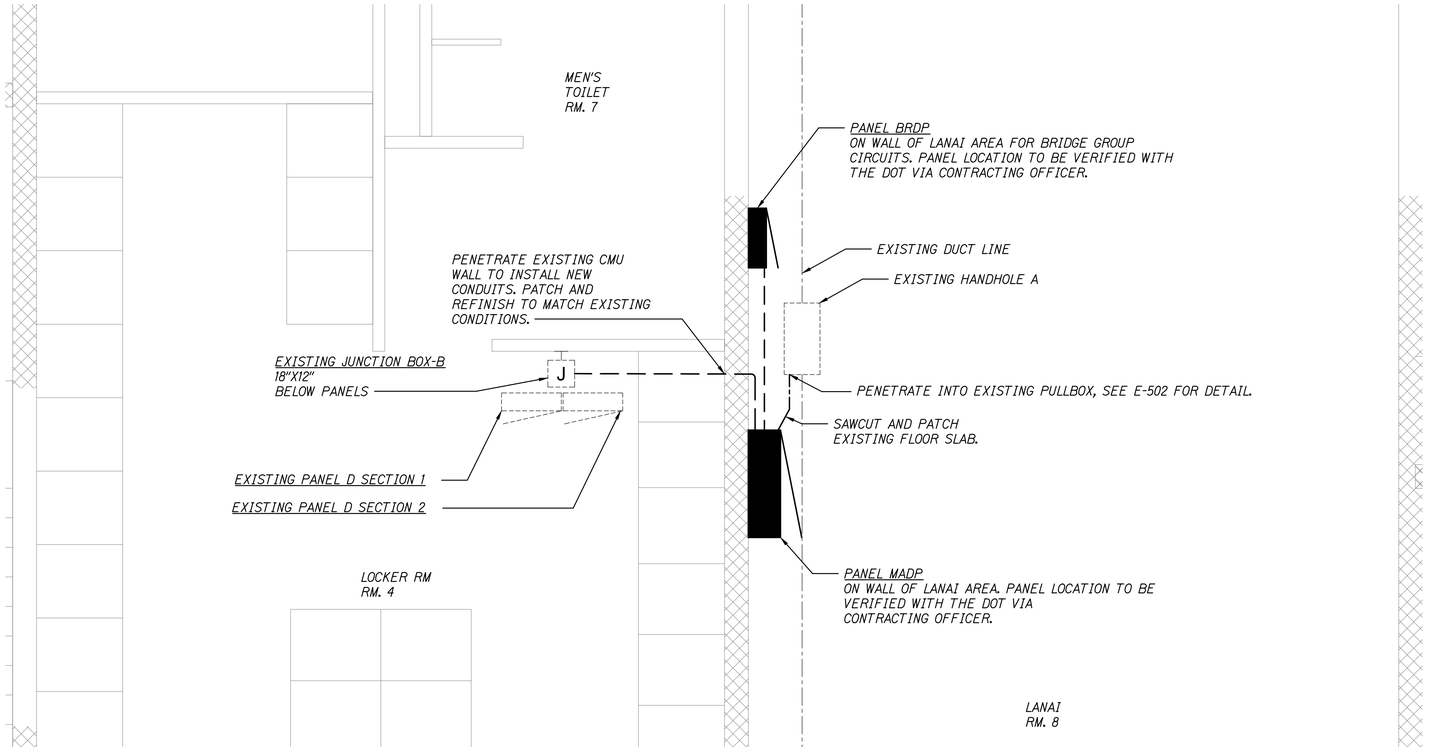
SHEET No. E105 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	40	46

Scale: 1/2" = 1'
TRUE NORTH

SHEET NOTES:

1. SEE ONE-LINE DIAGRAM SHEET E601 FOR MORE INFORMATION.



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GRAPHIC SCALE: 1/2"=1'

MAINTENANCE BUILDING ENLARGED ELECTRICAL PLAN

SCALE: 1/2" = 1'

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4/30/24
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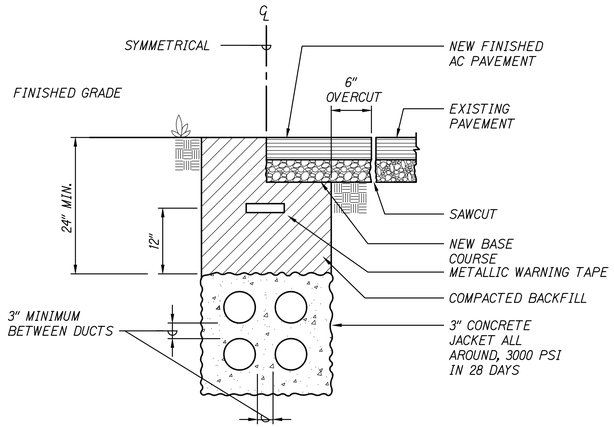
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MAINTENANCE BUILDING
ENLARGED ELECTRICAL PLAN

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. E401 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	41	46



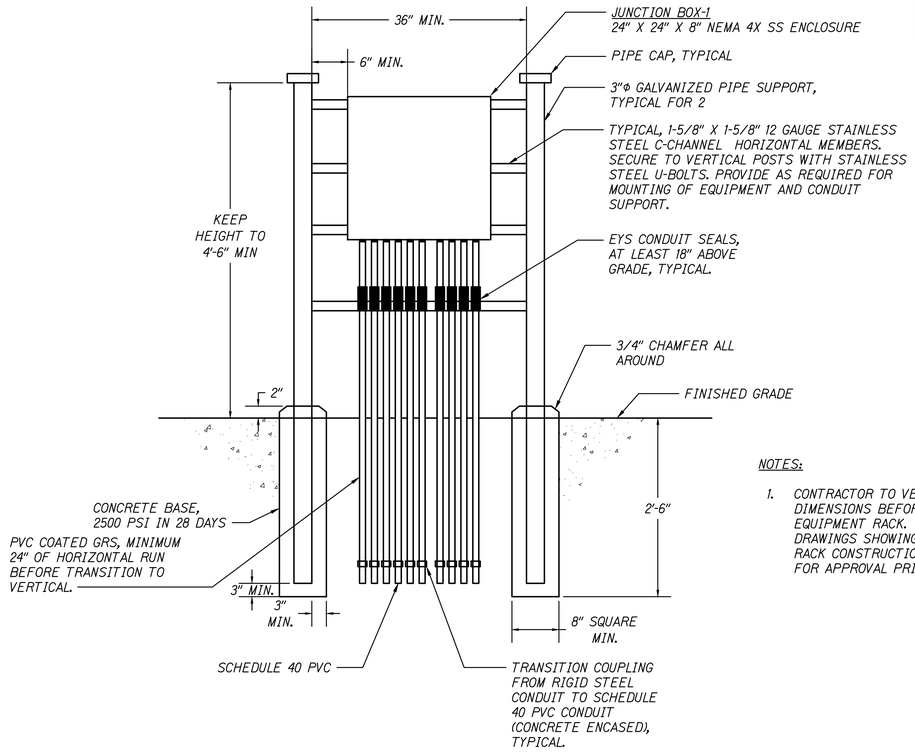
DUCT SECTION NOTE:

1. DUCTBANKS SHALL BE CONCRETE ENCASED.
2. PROVIDE ALL EMPTY/SPARE CONDUITS WITH PULLSTRING. PROVIDE ALL EMPTY/SPARE TELECOMMUNICATIONS CONDUIT WITH MULETAPE.
3. RESTORE DISTURBED SURFACES TO MATCH THE EXISTING SURROUNDING SURFACES.
4. WHERE ELECTRICAL OR TELECOMMUNICATIONS DUCTLINES CROSS OTHER UTILITIES, MAINTAIN A MINIMUM OF 12" VERTICAL SEPARATION BETWEEN THE ELECTRICAL/TELECOMMUNICATIONS DUCTS AND THE OTHER UTILITY LINES (GAS, WATER, SEWER, DRAIN, ETC.)
5. PAVEMENT STRUCTURE SHALL BE RESTORED TO EQUAL OR BETTER TO EXISTING IN QUALITY.

TYPICAL COVER FOR CONCRETE ENCASED DUCT

1 / E102 | E501

SCALE: NOT TO SCALE



NOTES:

1. CONTRACTOR TO VERIFY EQUIPMENT DIMENSIONS BEFORE FABRICATING EQUIPMENT RACK. SUBMIT SHOP DRAWINGS SHOWING EQUIPMENT LAYOUT, RACK CONSTRUCTION AND FOUNDATION FOR APPROVAL PRIOR TO FABRICATION.

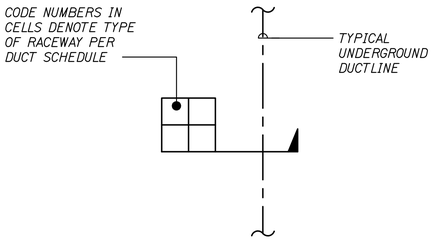
EXTERIOR JUNCTION BOX MOUNTING DETAIL

3 / E103 | E501

SCALE: NOT TO SCALE

DUCT SCHEDULE

NO.	DESCRIPTION	CONDUCTORS/CABLES
1	1" SCH PVC 40, PANEL FSDP - CIRCUITS 1/3 ∉ 5/7. CIRCUITS FOR DISPENSER D-1 (DIESEL SYSTEM).	SEE PANEL SCHEDULE
2	1" SCH PVC 40, PANEL FSDP - CIRCUITS 6/8 ∉ 9/11. CIRCUITS FOR DISPENSER D-2 (GAS SYSTEM).	SEE PANEL SCHEDULE
3	1" SCH PVC 40, PANEL FSDP - CIRCUITS 2/4 ∉ 10/12. CIRCUITS FOR FUEL MANAGEMENT SYSTEM AND FUEL TANK CONTROL.	SEE PANEL SCHEDULE
4	1" SCH PVC 40, PANEL REDP - CIRCUITS 2 ∉ 4. EMERGENCY FUEL SHUT OFF SYSTEM ∉ FUEL CANOPY LIGHTS.	SEE PANEL SCHEDULE
5	3-1/2" SCH PVC 40, NEW TRAFFIC RATED HANDHOLE TO PANEL REDP	SEE ONELINE FEEDER SCHEDULE
6	2" SCH PVC 40, FUEL STATION FUTURE TELECOM	MULETAPE/PULLSTRING.



DUCT DECTION FLAG CODE

2 / E501 | E501

SCALE: NOT TO SCALE

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4/30/24
EXP. DATE

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

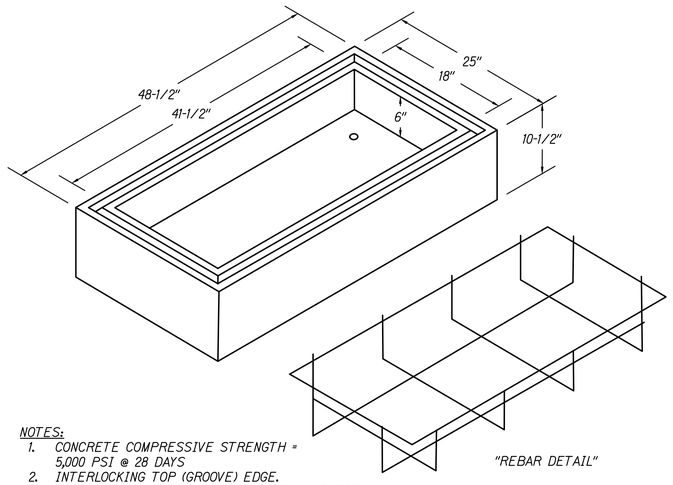
ELECTRICAL INSTALLATION DETAILS

MAUI DISTRICT BASEYARD OFFICE EXPANSION ∉ RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: AS SHOWN Date: JULY 2022

SHEET No. E501 OF 14 SHEETS

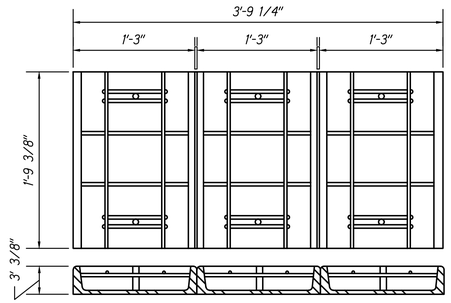
20055_F-SOLDWG 7/20/2022 8:59:40 AM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	42	46



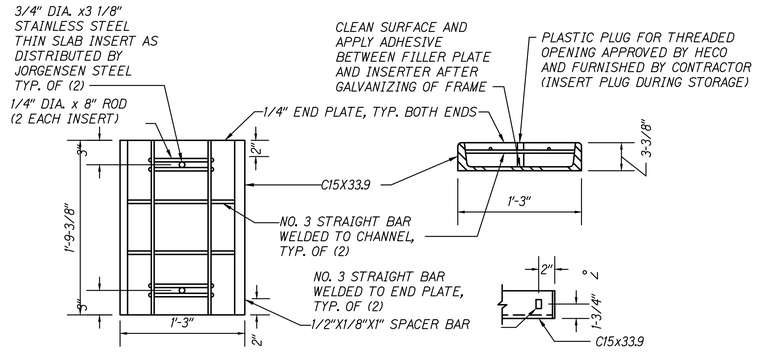
"REBAR DETAIL"

NOTES:
1. CONCRETE COMPRESSIVE STRENGTH = 5,000 PSI @ 28 DAYS
2. INTERLOCKING TOP (GROOVE) EDGE.
3. REINFORCED WITH #4 @ 12" (SEE REBAR DETAIL)
4. 2 -1" DIAMETER HOLES FOR GROUND RODS.



3 PC. COVER PLAN AND SECTION

NOTES:
1. GALVANIZE CHANNEL PER ASTM 153 (AS AMENDED TO DATE OF FABRICATION).
2. CONCRETE COMPRESSIVE STRENGTH = 5000 PSI AT 28 DAYS.
3. FINISHED SURFACE SHALL BE BROOMED OR ROUGHENED TO SIMULATE SIDEWALK FINISH.



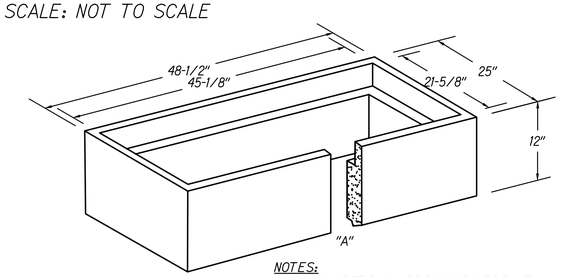
COVER FRAME (TYP. OF 3)

SPACER BAR DETAIL

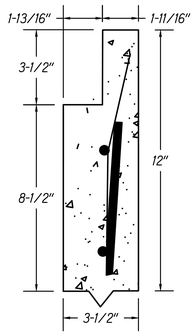
2'x4' TRAFFIC RATED HH BOX FLOOR DETAIL

1 E502 E502

SCALE: NOT TO SCALE



NOTES:
1. CONCRETE COMPRESSIVE STRENGTH = 5,000 PSI @ 28 DAYS
2. INTERLOCKING BOTTOM (TONGUE) EDGE
3. REINFORCED WITH 2-#3 CONT.
4. REINFORCED WITH #3 VERT @ 12"
5. REINFORCED WITH 2X 2X #16 WIRE MESH CONT.
6. CLEAR INSIDE DIMENSION 18" X 41-1/2"

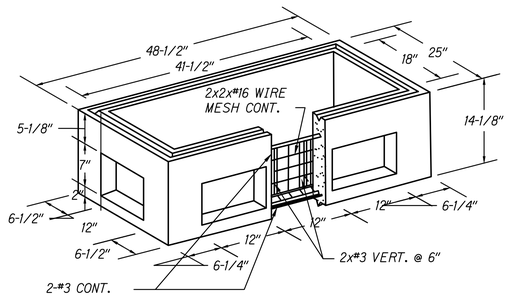


DETAIL "A"
SCALE: 3" = 1"

2'x4' TRAFFIC RATED HH BOX COVERS DETAIL

2 E502 E502

SCALE: NOT TO SCALE



NOTES:
1. CONCRETE COMPRESSIVE STRENGTH = 5,000 PSI @ 28 DAYS
2. REINFORCED WITH 2-#3 CONT.
3. REINFORCED WITH 2X 2X #16 WIRE MESH CONT.
4. CLEAR INSIDE DIMENSIION 18" X 41-1/2"

2'x4' TRAFFIC RATED HH BASES RISER DETAIL

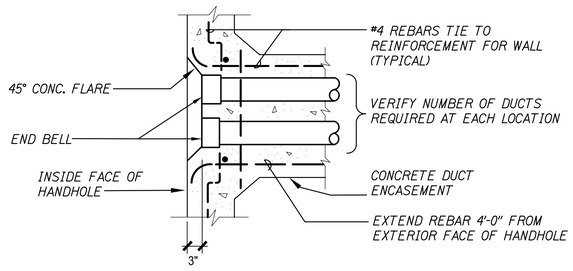
4 E502 E502

SCALE: NOT TO SCALE

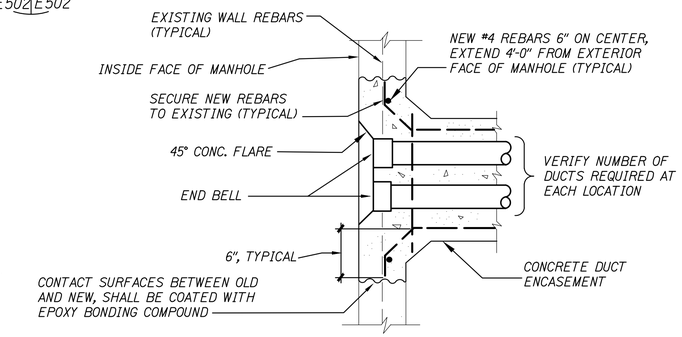
2'x4' TRAFFIC RATED HH BOX BODY DETAIL

3 E502 E502

SCALE: NOT TO SCALE



SECTION AT NEW HANDHOLE



SECTION AT NEW PENETRATION OF EXISTING HANDHOLE

TYPICAL DUCT ENTRANCE DETAIL

5 E502 E502

SCALE: NOT TO SCALE

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4/30/24
EXP. DATE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

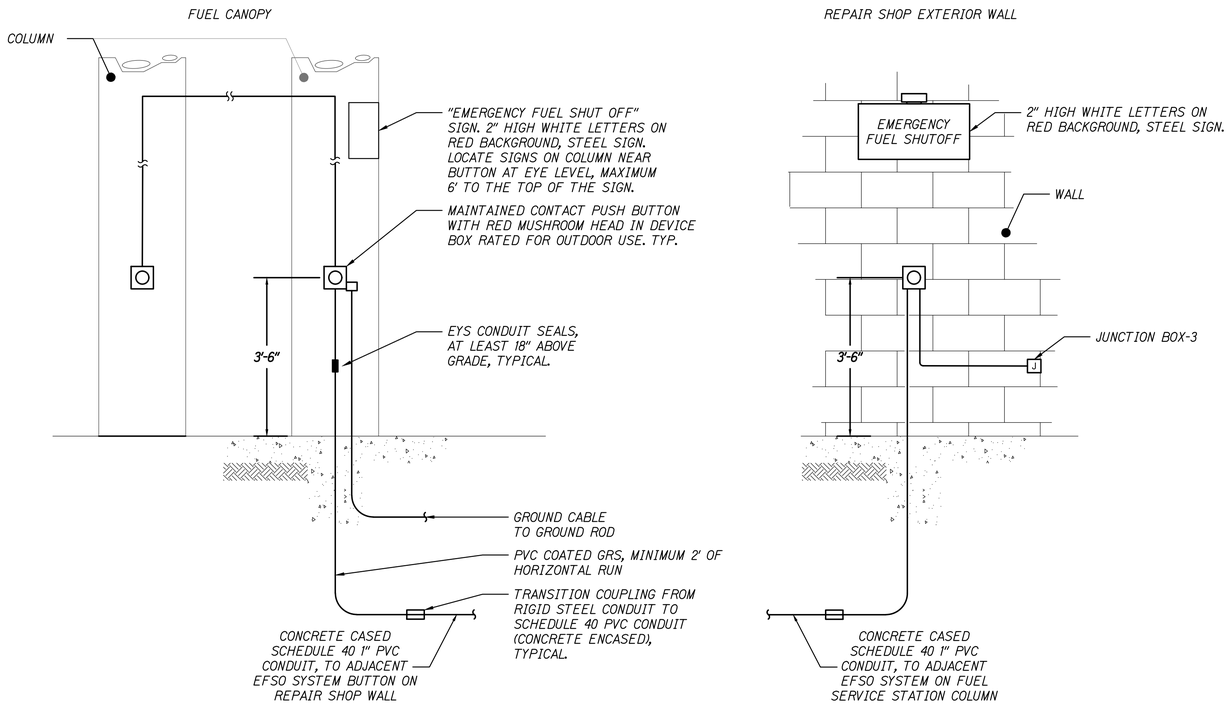
TRAFFIC RATED HANDHOLE DETAILS

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2

Scale: AS SHOWN Date: JULY 2022

SHEET No. E502 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	43	46

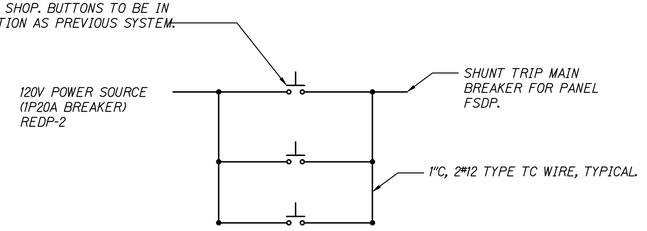


EMERGENCY FUEL SHUT OFF EFSO PUSHBUTTON DETAIL

1 / E104 | E503

SCALE: NOT TO SCALE

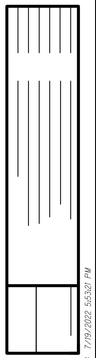
EMERGENCY FUEL SHUT OFF PUSHBUTTONS. TYPICAL. MAINTAINED CONTACT PUSH BUTTON WITH RED MUSHROOM HEAD IN NEMA 4X DEVICE BOX. MOUNTED TO COLUMNS FOR FUEL CANOPY AND MOUNTED TO THE EXTERIOR WALL OF THE REPAIR SHOP. BUTTONS TO BE IN THE SAME LOCATION AS PREVIOUS SYSTEM.



EMERGENCY FUEL SHUT OFF CONTROL DIAGRAM

2 / E503 | E503

SCALE: NOT TO SCALE



20555_E-503.DWG 7/19/2022 5:53:07 PM

GARRET A. MASUDA — LICENSED PROFESSIONAL ENGINEER — No. 9756-E — HAWAII, U.S.A.

4/30/24
EXP. DATE

Garret A. Masuda

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

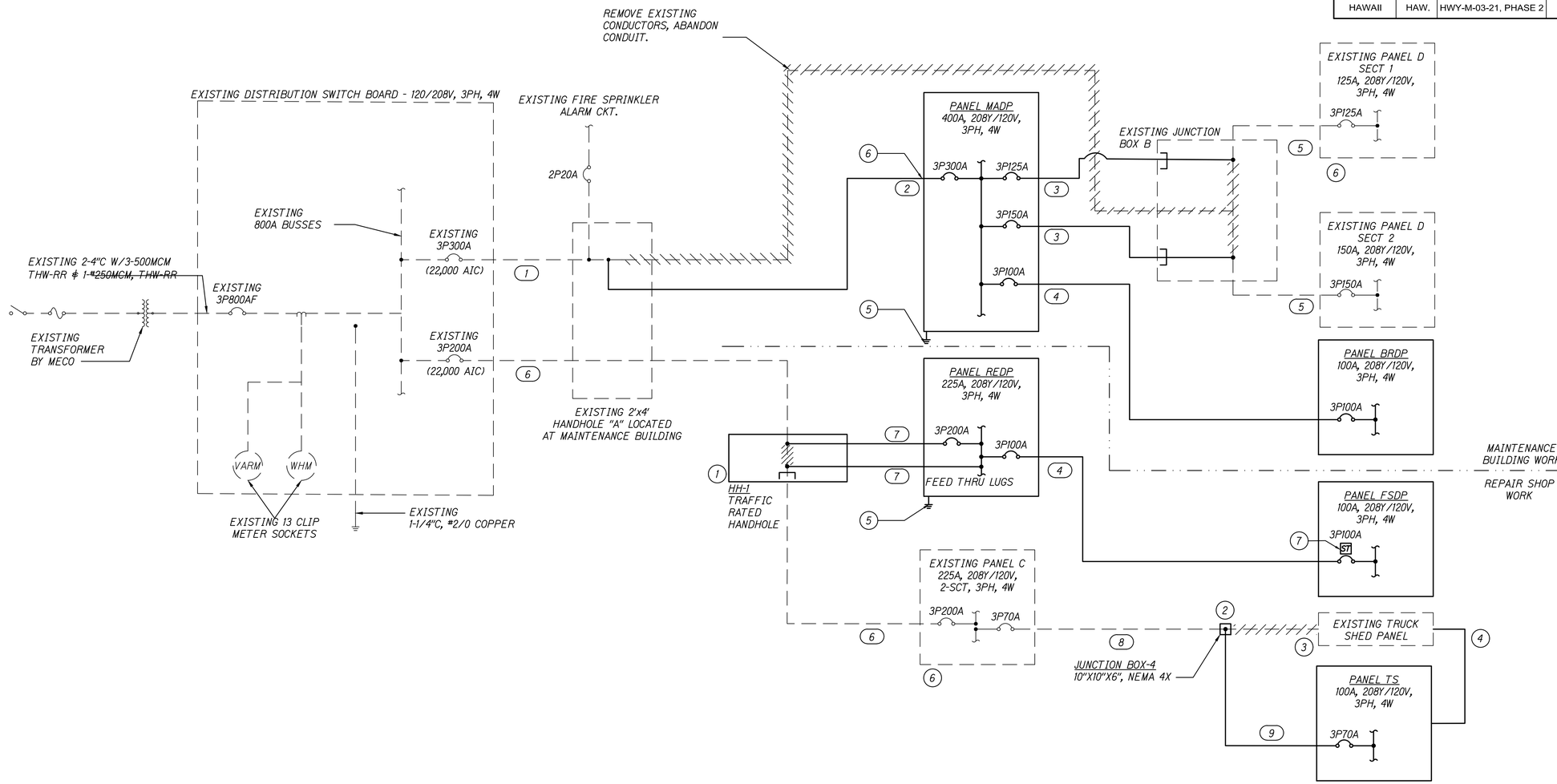
EM FUEL SHUT OFF SYSTEM & CONTROL DIAGRAM

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2

Scale: AS SHOWN Date: JULY 2022

SHEET No. E503 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	44	46



SHEET NOTES:

1. *DASHED LINES INDICATE EXISTING.*
2. *SOLID LINES INDICATE NEW WORK.*
3. *EXISTING SINGLE LINE DIAGRAM WAS TAKEN FROM THE BEST AVAILABLE REFERENCE DRAWINGS. CONTRACTOR TO VERIFY ACTUAL CONDITIONS AND TO NOTIFY CONTRACTING OFFICER OF ANY DISCREPANCIES.*
4. *COORDINATE WITH DEPARTMENT OF TRANSPORTATION (DOT) BASEYARD VIA CONTRACTING OFFICER REGARDING POTENTIAL CONCURRENT WORK WITH PROJECT HWY-M-ART-18-01 THAT INCLUDES RELOCATION/REPLACEMENT OF THE MAIN SWITCHBOARD AND AN ADDITIONAL OFFICE BUILDING ON THE SOUTH END OF SITE.*

KEY NOTES:

(1) *INTERCEPT EXISTING FEEDER DUCTLINE WITH NEW TRAFFIC RATED HANDHOLE. INTERCEPT EXISTING FEEDER CONDUCTORS WITH NEW AND RECONNECT AS INDICATED.*

(2) *INTERCEPT EXISTING FEEDER WITH JUNCTION BOX-4. INTERCEPT EXISTING FEEDER CONDUCTORS WITH NEW AND RECONNECT AS INDICATED.*

(3) *GUT EXISTING TRUCK SHED PANEL AND MAINTAIN ALL EXISTING BRANCH CIRCUITS TO BE RECONNECTED IN PANEL TS.*

(4) *PROVIDE CONDUIT AND WIRING AS REQUIRED TO RECONNECT EXISTING CIRCUITS. REFERENCE PANEL SCHEDULE "TS" FOR EXISTING BREAKER RATINGS AND QUANTITY. REPLACE CIRCUITRY TO MATCH EXISTING CONDITIONS.*

(5) *3/4" PVC, #1/0 B.C. TO GROUND ROD AND METALLIC UNDERGROUND WATER PIPE (WHERE ACCESSIBLE) PER NEC 250. DO NOT BOND NEUTRAL TO GROUND AT BUILDING FEEDER ENTRANCE.*

(6) *DISCONNECT AND REMOVE EXISTING NEUTRAL-TO-GROUND BOND AT EXISTING BUILDING FEEDER ENTRANCE PANELS.*

(7) *SEE DETAIL 2/E503 FOR SHUNT TRIP EMERGENCY FUEL SHUT OFF DIAGRAM.*

FEEDER SCHEDULE: (X)

(1) *EXISTING 3-1/2"C, 3-350KCMIL, 4/0 NEUTRAL, 2 GND.*
(2) *3-1/2"C, 3-350KCMIL, 4/0 NEUTRAL, 2 GND.*
(3) *2"C, 4-#1/0, #6 GND.*
(4) *1-1/4"C, 4-#2, #8 GND.*
(5) *EXISTING 2"C, 4-#1/0.*
(6) *EXISTING 3-1/2"C, 4-350KCMIL, #6 GND.*
(7) *3-1/2"C, 4-350KCMIL, #6 GND.*
(8) *EXISTING 4-#4, #8 GND. FIELD VERIFY EXISTING CONDITION.*
(9) *1-1/2"C, 4-#4, #8 GND.*

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4/30/24
EXP. DATE
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MODIFICATION OF EXISTING ONE-LINE DIAGRAM

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: NONE
Date: JULY 2022

SHEET No. E601 OF 14 SHEETS

23055_E-601.DWG 7/20/2022 8:40:03 AM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	45	46

PANEL: MADP | VOLTAGE: 208Y/120V | 3 PHASE | POLES: 42
MAIN BUS: 400A | MAIN BKR: 300A | 4 WIRE | MIN. A.I.C.: 10KAIC
MOUNTING: SURFACE EXTERIOR WALL - NEMA 4X | BKR TYPE: BOLT-ON | CABINET WIDTH: 28"

GND	WIRE	CKT NO.	DESCRIPTION	TYPE	CKT BKR	KVA A	KVA B	KVA C	CKT BKR	TYPE	DESCRIPTION	CKT NO.	WIRE	GND
#6	#1/0	1	PANEL D SECTION 1		3P125A	10.2	14.4		3P150A		PANEL D SECTION 2	2	#1/0	#6
#6	#1/0	3	-		-		10.2	14.4	-		-	4	#1/0	#6
#6	#1/0	5	-		-			10.2 14.4	-		-	6	#1/0	#6
#8	#2	7	PANEL BRDP		3P100A	2.0	1.0		1P20A		SPARE	8	-	-
#8	#2	9	-				2.0	1.0	1P20A		SPARE	10	-	-
#8	#2	11	-					2.0 1.0	1P20A		SPARE	12	-	-
		13	PFB								PFB	14		
		15	PFB								PFB	16		
		17	PFB								PFB	18		
		19	PFB								PFB	20		
		21	PFB								PFB	22		
		23	PFB								PFB	24		
		25	PFB								PFB	26		
		27	PFB								PFB	28		
		29	PFB								PFB	30		
		31	PFB								PFB	32		
		33	PFB								PFB	34		
		35	PFB								PFB	36		
		37	PFB								PFB	38		
		39	PFB								PFB	40		
		41	PFB								PFB	42		

	A	B	C
TOTAL PHASE A, B, C	27.6	27.6	27.6
CONNECTED KVA:	82.8	KVA	
DEMAND FACTOR:	100	%	
DEMAND KVA:	82.8	KVA	
DEMAND AMPS:	230	AMPS	
DEMAND KVA	A	B	C
	27.6	27.6	27.6

PANEL: REDP | VOLTAGE: 208Y/120V | 3 PHASE | POLES: 42
MAIN BUS: 225A | MAIN BKR: 200A | 4 WIRE | MIN. A.I.C.: 10KAIC
MOUNTING: SURFACE NEMA 1 | BKR TYPE: BOLT-ON | CABINET WIDTH: 20"

GND	WIRE	CKT NO.	DESCRIPTION	TYPE	CKT BKR	KVA A	KVA B	KVA C	CKT BKR	TYPE	DESCRIPTION	CKT NO.	WIRE	GND
#10	#8	1	PANEL FSDP		3P100A	4.2	0.5		1P20A		EMERGENCY FUEL SHUT OFF SYSTEM	2	#12	#12
#10	#8	3	-		-		3.1	0.7	1P20A		FUEL CANOPY LIGHTS	4	#10	#12
#10	#8	5	-		-			2.8			PFB	6		
		7	PFB								PFB	8		
		9	PFB								PFB	10		
		11	PFB								PFB	12		
		13	PFB								PFB	14		
		15	PFB								PFB	16		
		17	PFB								PFB	18		
		19	PFB								PFB	20		
		21	PFB								PFB	22		
		23	PFB								PFB	24		
		25	PFB								PFB	26		
		27	PFB								PFB	28		
		29	PFB								PFB	30		
		31	PFB								PFB	32		
		33	PFB								PFB	34		
		35	PFB								PFB	36		
		37	PFB								PFB	38		
		39	PFB								PFB	40		
		41	PFB								PFB	42		

	A	B	C
EXISTING PANEL C *	14.5	14.5	14.5
TOTAL PHASE A, B, C	19.2	18.3	17.3
CONNECTED KVA:	54.8	KVA	
DEMAND FACTOR:	100	%	
DEMAND KVA:	54.8	KVA	
DEMAND AMPS:	152	AMPS	
DEMAND KVA	A	B	C
	19.2	18.3	17.3

NOTES:
* FEED THROUGH LUG
TYPE "S" INDICATES SHUNT TRIP CIRCUIT BREAKER

PANEL: BRDP | VOLTAGE: 208Y/120V | 3 PHASE | POLES: 18
MAIN BUS: 100A | MAIN BKR: 100A | 4 WIRE | MIN. A.I.C.: 10KAIC
MOUNTING: SURFACE EXTERIOR WALL - NEMA 3R | BKR TYPE: BOLT-ON | CABINET WIDTH: 20"

GND	WIRE	CKT NO.	DESCRIPTION	TYPE	CKT BKR	KVA A	KVA B	KVA C	CKT BKR	TYPE	DESCRIPTION	CKT NO.	WIRE	GND
-	-	1	SPARE		1P20A	1.0	1.0		1P20A		SPARE	2	-	-
-	-	3	SPARE		1P20A		1.0	1.0	1P20A		SPARE	4	-	-
-	-	5	SPARE		1P20A			1.0 1.0	1P20A		SPARE	6	-	-
		7	PFB								PFB	8		
		9	PFB								PFB	10		
		11	PFB								PFB	12		
		13	PFB								PFB	14		
		15	PFB								PFB	16		
		17	PFB								PFB	18		

	A	B	C
TOTAL PHASE A, B, C	2.0	2.0	2.0
CONNECTED KVA:	6.0	KVA	
DEMAND FACTOR:	100	%	
DEMAND KVA:	6.0	KVA	
DEMAND AMPS:	17	AMPS	
DEMAND KVA	A	B	C
	2.0	2.0	2.0

NOTES:
PANEL PROVIDED TO ALLOT FOR EXTRA CIRCUIT CAPACITY TO ALLEVIATE NUISANCE TRIPPING ON EXISTING BRANCH CIRCUITS. CIRCUITS TO BE TRANSFERRED BY THE STATE IN THE FUTURE.

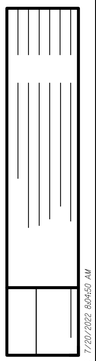
PANEL: FSDP | VOLTAGE: 208Y/120V | 3 PHASE | POLES: 18
MAIN BUS: 100A | MAIN BKR: 100A SHUNT TRIP | 4 WIRE | MIN. A.I.C.: 10KAIC
MOUNTING: SURFACE NEMA 1 | BKR TYPE: BOLT-ON | CABINET WIDTH: 20"

GND	WIRE	CKT NO.	DESCRIPTION	TYPE	CKT BKR	KVA A	KVA B	KVA C	CKT BKR	TYPE	DESCRIPTION	CKT NO.	WIRE	GND
#8	#6	1	DISPENSER D-1 (DIESEL PUMP)	N	1P40A	1.9	0.2		1P20A	N	FUEL MANAGEMENT SYSTEM CONTROLLER	2	#12	#12
-	-	3	-	-	-		0.0	0.0	-	-	-	4	-	-
#8	#8	5	D-1 DISPENSER CONTROLLER	N	1P15A			1.4 1.4	1P15A	N	D-2 DISPENSER CONTROLLER	6	#8	#8
-	-	7	-	-	-	0.0	0.0		-	-	-	8	-	-
#8	#6	9	DISPENSER D-2 (GAS PUMP)	N	1P40A		1.9	1.2	1P20A	N	FUEL TANK CONTROL PANEL	10	#8	#8
-	-	11	-	-	-			0.0 0.0	-	-	-	12	-	-
		13	SPARE	N	1P20A	1.0	1.0		1P20A	N	SPARE	14		
		15	-	-	-		0.0	0.0	-	-	-	16		
		17	PFB								PFB	18		

	A	B	C
TOTAL PHASE A, B, C	4.2	3.1	2.8
CONNECTED KVA:	10.1	KVA	
DEMAND FACTOR:	100	%	
DEMAND KVA:	10.1	KVA	
DEMAND AMPS:	28	AMPS	
DEMAND KVA	A	B	C
	4.2	3.1	2.8

NOTES:
TYPE "N" INDICATES SWITCHED NEUTRAL CIRCUIT BREAKER.
ALL BREAKERS ON THIS PANEL REQUIRED TO BE SWITCHED NEUTRAL TYPE BREAKERS.

PANEL SHALL NOT BE ALLOWED TO INCLUDE ANY OTHER LOADS OUTSIDE OF THE ONES LISTED. PROVIDE PLAQUE ON PANEL COVER STATING, "FUEL STATION LOADS ONLY."



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GARRET A. MASUDA
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No. 9756-E
HAWAII, U.S.A.

4/30/24
EXP. DATE
Garret A. Masuda
This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PANEL SCHEDULES

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
Project No. HWY-M-03-21, Phase 2
Scale: NONE Date: JULY 2022

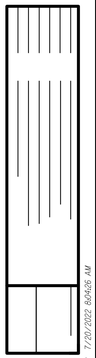
SHEET No. E701 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-21, PHASE 2	2022	46	46

PANEL: TS	VOLTAGE: 208Y/120V	3 PHASE	POLES: 18
MAIN BUS: 100A	MAIN BKR: 3P 70A	4 WIRE	MIN. A.I.C.: 10KAIC
MOUNTING: SURFACE EXTERIOR WALL - NEMA 3R	BKR TYPE: BOLT-ON		CABINET WIDTH: 20"

GND	WIRE	CKT NO.	DESCRIPTION	TYP	CKT BKR	KVA A	KVA B	KVA C	CKT BKR	TYP	DESCRIPTION	CKT NO.	WIRE	GND
#10	#10	1	(E) LIFT		3P30A	1.0 0.2			1P20A		(E) GFI ABOVE	2	#12	#12
#10	#10	3	-		-		1.0 1.9		2P20A		(E) BATTERY CHARGE	4	#12	#12
#10	#10	5	-		-			1.0 1.9	-		-	6	#12	#12
#12	#12	7	(E) LIGHTS		1P20A	1.0 1.0			1P20A		(E) TRAFFIC SIGNS OUTLETS	8	#12	#12
#12	#12	9	(E) TRAFFIC SIGNAL OUTLETS		1P20A		1.0 1.0		1P20A		(E) TRAFFIC SIGNS OUTLETS	10	#12	#12
#12	#12	11	(E) BRIDGE BAY OUTLETS		1P20A			1.0 1.0	1P20A		(E) SIGN BOARDS OUTLETS	12	#12	#12
		13	PFB			1.0			1P20A		(E) SIGN BOARDS OUTLETS	14	#12	#12
		15	PFB								PFB	16		
		17	PFB								PFB	18		

TOTAL PHASE A, B, C	4.2	4.9	4.9	NOTES:
CONNECTED KVA:	14.0	KVA		PROVID
DEMAND FACTOR:	100	%		CIRCUIT
DEMAND KVA:	14.0	KVA		
DEMAND AMPS:	39	AMPS		
DEMAND KVA	A	B	C	
	4.2	4.9	4.9	



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PANEL SCHEDULES

MAUI DISTRICT BASEYARD OFFICE EXPANSION & RENOVATION, PART 2
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SHEET No. E702 OF 14 SHEETS