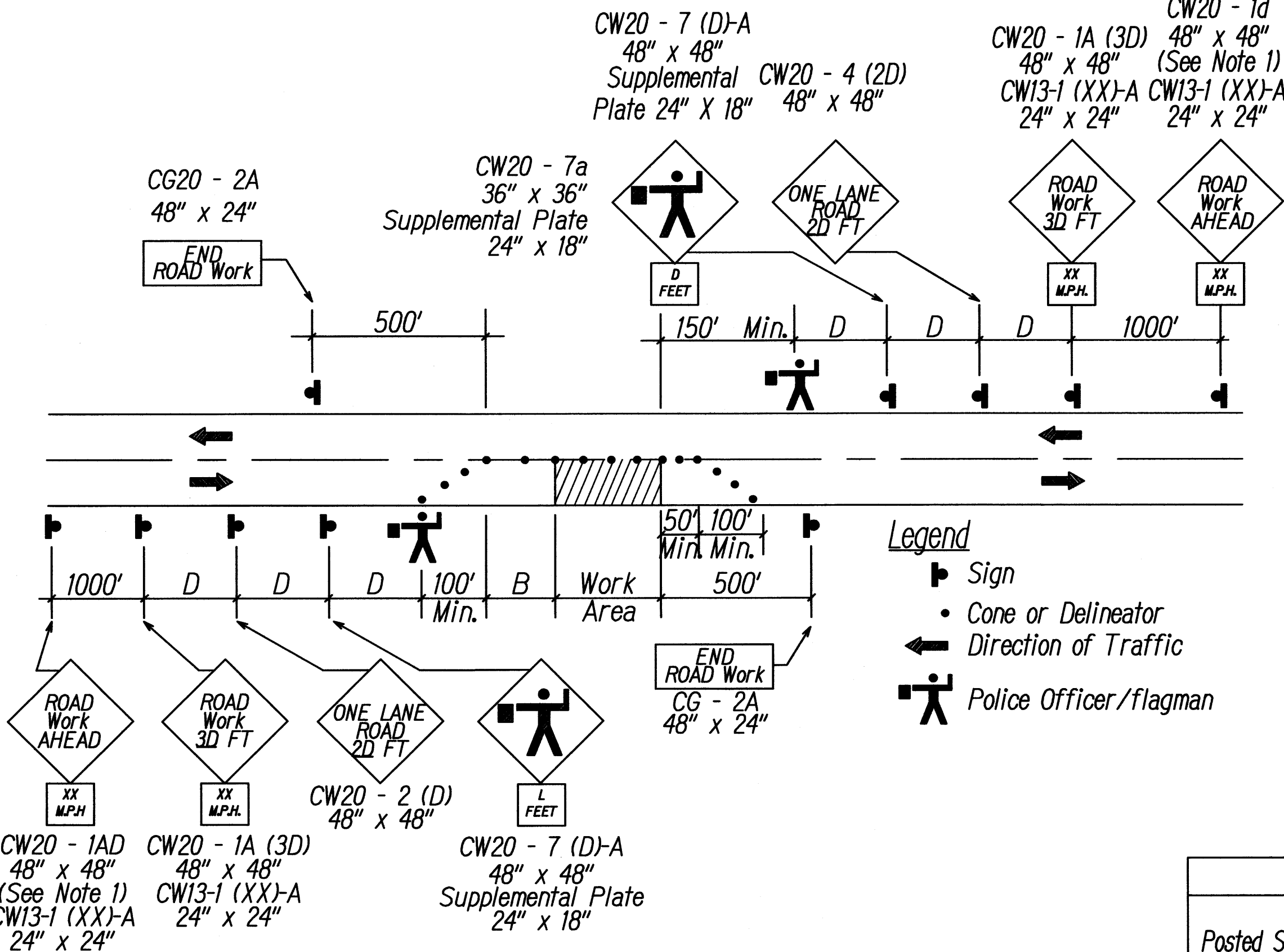
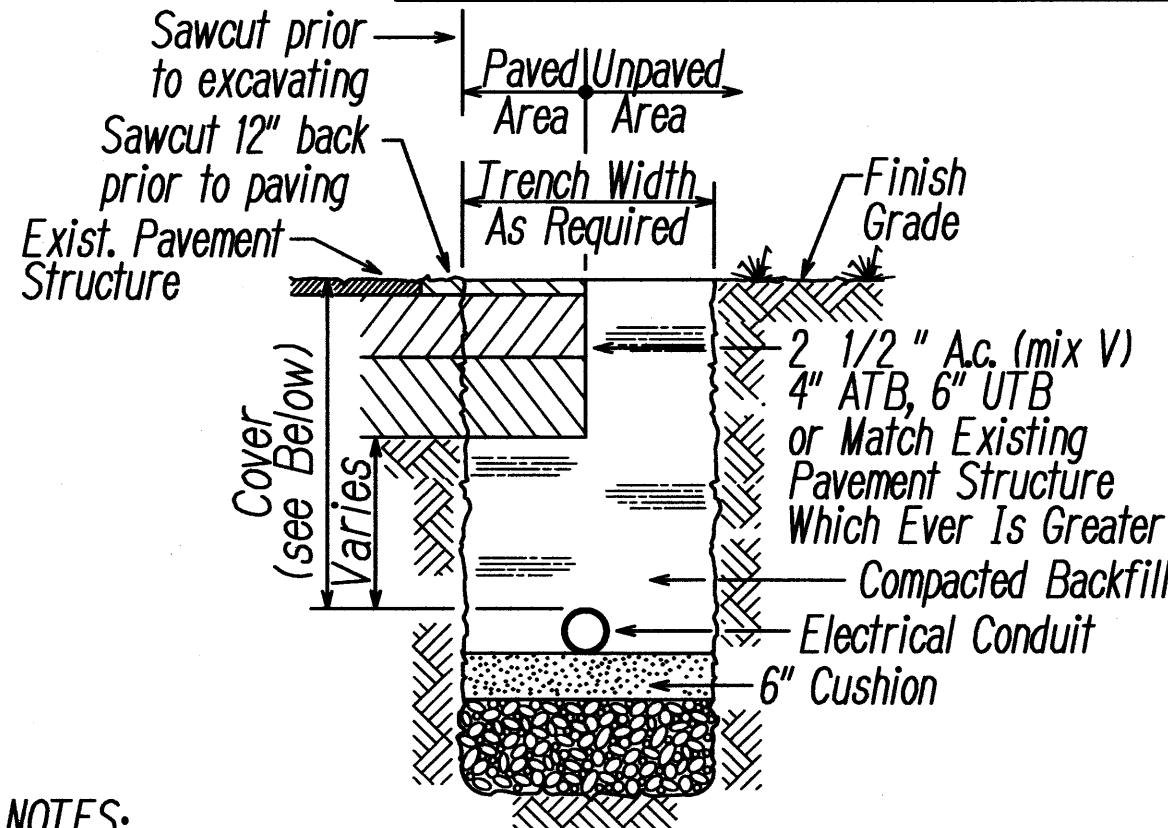


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-030-1(38)	2010	167	213



- NOTES:**
1. CW-20-IAD sign required for posted speed limit of 45 m.p.h. or greater.
  2. See table 1 for additional dimensions.
  3. One lane road (CW-20-4) and flagger ahead (CW20-7) signs shall be removed or covered when no work is being performed and lane is not closed.
  4. The advisory speed (XX) shall be determined by the Engineer.
  5. Cones or delineators shall be installed at 25' o.c. max. on tapers.

### TWO-LANE HIGHWAY - ONE LANE CLOSED FIGURE I - TRAFFIC CONTROL PLAN



- NOTES:**
1. Contractor shall provide a temporary cold mix patch if permanent restoration cannot be made within 24 hours of backfill
  2. All exposed areas to be grassed.
  3. Minimum Cover:  
A) Under road pavement = 36"  
B) Under shoulder area:  
B1) Smaller than 4" = 24"  
B2) 4" = 30"  
B3) 6" and larger = 36"
  4. Any damages to existing utilities shall be replaced and/or restored to its original condition at no additional cost to the owner.

### TRENCH RESTORATION DETAIL

Not to Scale  
(County Right-of-way)

### GENERAL NOTES FOR TRAFFIC CONTROL PLAN

1. The Permittee shall make minor adjustments at intersections, driveways, bridges, structures, etc., to fit field conditions.
2. Cones or delineators shall be extended to a point where they are visible to approaching traffic.
3. Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. The others shall then be placed progressively toward the work area.
4. Regulatory and warning signs within the construction zone that are in conflict with the traffic control plans shall be removed or covered.
5. All signs shall be restored upon completion of the work.
6. Flaggers and/or police officers shall be in sight of each other or in direct communications at all times.
7. When required by the issuing office, the Permittee shall install a flashing arrow signal as shown on the traffic control plans.
8. Signs spacing (l), taper lengths (t) and spacings of cones or delineators shall be as shown in table 1, unless otherwise noted on the traffic control plans.
9. All traffic lanes shall be a minimum of 10 feet wide. All construction warning signs shall be promptly removed or covered whenever the message is not applicable or not in use.
10. The backs of all signs used for traffic control shall be appropriately covered to preclude the display of inapplicable sign messages (i.e. when signs have messages on both faces).
11. At the end of each day's work or as soon as the work is completed, the Permittee shall remove all traffic control devices no longer needed to permit free and safe passage of public traffic.
12. Removal shall be in the reverse order of installation.
13. Replace permanent pavement markings and traffic signs upon completion of work.

Table I for Traffic Control Plan							
Posted Speed Limit (m.p.h.)	Sign Spacing (d) Feet	Taper Length (t) (feet)		Longitudinal Buffer Space (8) (feet)	Spacing of Cones or Delineators (feet)		
		W = 12' or Less ①	W = Greater Than 12' ①		Taper	Tangent	Work Area
20	250	200	W X 17	35	20	20	10
25	250	200	W X 17	55	25	25	10
30	250	250	W X 20	85	30	30	10
35	250	250	W X 20	120	35	35	10
40	500	350	W X 30	170	40	40	10
45	500	550	W X 45	220	45	45	10
50	1000	600	W X 50	280	50	50	10
55	1000	700	W X 55	335	55	55	10

Notes: ① W = Width of Lane, Shoulder, or Offset

### TRAFFIC CONTROL PLAN

Not to Scale

### GENERAL NOTES:

1. Plans subject to review and approval of utility companies.
2. Install conduit marking for all stub-out locations
3. Underground utilities to be installed outside of the road right of way, within a utility easement running through the edge of the new lots.
4. The Contractor/utility company shall contact the Department of Water Supply at phone \* 270-7340 one (1) week prior to commencement of work.
5. The Contractor/utility company shall be responsible to verify the exact depth and location of existing waterlines in the project area prior to commencement of work and shall meet with the Department of Water Supply personnel out in the field to help locate the existing waterlines in the project area if necessary.
6. Maintain a minimum of three (3) feet clear horizontal separation between existing waterlines and installed utilities.
7. Maintain a minimum of six (6) inches clear vertical separation between existing waterlines and installed utilities at all crossings.
8. Any installed utility crossing an existing waterline shall be concrete jacketed a minimum of five (5) feet on both sides of the crossing.

### Approvals:

DIRECTOR - DEPARTMENT OF PUBLIC WORKS & ENVIRONMENTAL  
MANAGEMENT (APPROVAL FOR WORK WITHIN COUNTY  
RIGHT OF WAY ONLY)

DATE

DIRECTOR - DEPARTMENT OF WATER SUPPLY, COUNTY OF  
MAUI (APPROVAL LIMITED TO WATER IMPROVEMENTS WHICH  
WILL BE DEDICATED TO THE DEPARTMENT OF WATER SUPPLY)

DATE



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

### CONSTRUCTION NOTES WITHIN COUNTY RIGHT-OF-WAY

1. Contractor shall obtain a permit to perform work on County highways from the development services administration two weeks prior to the commencement of work.
2. Standard detail drawings and standard specifications of the Department of Public Works shall be included as part of the construction plans.
3. All construction work shall strictly conform to the applicable sections of the 1994 Hawaii Standard Specifications for Road, Bridge and Public Works Construction, and the September 1984 "Standard Details" for Public Works Construction of the Department of Public Works.
4. If existing utilities, whether or not shown on plans, are damaged during construction, the Contractor shall at his own expense be required to repair such utilities.
5. Contractor shall provide, install and maintain all necessary signs, lights, flares, barricades, and other protective devices for the protection, safety and convenience of the public, according to the "Manual of Uniform Traffic Control Device for Streets and Highways", dated 2000 and to the rules and regulations governing the use of traffic control devices at worksites and/or adjacent to public streets and highways adopted by the highway safety coordinator and the U.S. Federal Highway Administration "Manual on Uniform Traffic Control Devices for Highway Construction and Maintenance Operations" dated 2001.
6. The Director Public Works and/or the Director of the Department of Water Supply has the right to stop construction should any work be found contrary to the approved construction plan or detrimental to the public's interest.
7. The Contractor shall schedule a pre-construction meeting with the Development Services Administration five (5) days prior to the commencement of construction.
8. The Contractor shall, at his own expense, keep the project area and surrounding area free from dust nuisance. The work shall be in conformance with Air Pollution Control Standards and regulations of the State Department of Health and County Grading Ordinance.
9. The Contractor shall remove all silt and debris resulting from his work and deposited in drainage facilities, roadways and other areas. The cost incurred for any necessary remedial action ordered by the Director of Public Works shall be paid by the Contractor.
10. Construction debris and wastes shall be deposited at an appropriate work site. The Contractor shall inform the Director of Public Works of the location of the disposal sites. The disposal site must fulfill the requirements of the grading ordinance.
11. The Contractor shall submit a tiff and five (5) copies of the "as-built" drawings prior to the final approval of the improvements.
12. If the clearance between a wastewater line and a new or existing waterline is eighteen inches (18") or less, the wastewater line shall be concrete-jacketed in accordance with the Standard Details of Public Works Construction dated September 1984.
13. Should historic sites such as walls, platforms, pavements, or mounds, or remains such as artifacts burials, concentration of shell or charcoal be encountered during construction activities, work shall cease immediately in the immediate vicinity of the find and the find shall be protected from further damage. The contractor and/or landowner shall immediately contact the State Historic Preservation Division @ 243-5169 which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.
14. Pursuant of Maui County Code section 3.44.015(c), the County of Maui is not responsible for any park, roadway, easement (including but not limited to drainage, sewer, access, reclaimed water, or avigation easement), or any other interest in real property shown on this map or shown on these plans, unless the Maui County Council has accepted its dedication by a resolution approved by a majority of Council's members at a regular or special meeting of the Maui County Council.

1/18/10	ADD. No. 1 - Revised Text Hts. & Fonts
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<b>TRAFFIC CONTROL NOTES &amp;</b>	
<b>DETAILS</b>	
HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1 Lahainaluna Rd. to Hokiokio PI. Federal Aid Project NO. NH-030-1(38)	
Scale: As Noted	Date: November 23, 2009

SHEET No. 1 OF 8 SHEETS

ADD. 167



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-030-1(38)	2010	168	213

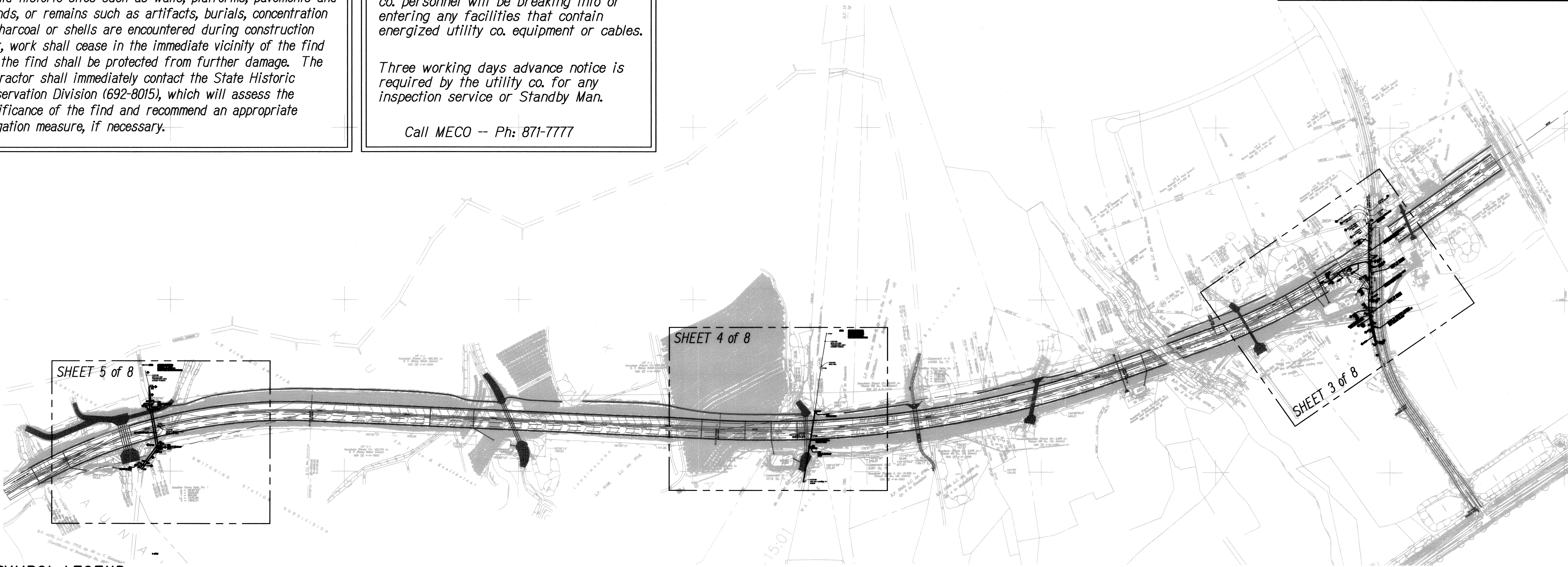
NOTE:

Should historic sites such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentration of charcoal or shells are encountered during construction work, work shall cease in the immediate vicinity of the find and the find shall be protected from further damage. The Contractor shall immediately contact the State Historic Preservation Division (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

A Utility Co. Standby Man is required to be at the site at the time any non-utility co. personnel will be breaking into or entering any facilities that contain energized utility co. equipment or cables.

Three working days advance notice is required by the utility co. for any inspection service or Standby Man.

Call MECO -- Ph: 871-7777



SYMBOL LEGEND

- New 250W HPS MECO St. Light Pole, Full Cut-off & Shielded
- New 250W HPS MECO Pole Mounted Street Light, Full Cut-off & Shielded
- New Pole
- Existing Pole
- Existing Pole (to be removed)
- Existing Anchor
- New Anchor
- Duct Line
- Stub-out Conduit, Cap, and Concrete Marker
- Handhole Group (existing)
- Handhole Group (new)
- New Transformer Pad (MECO)
- Existing Switchgear Pad (MECO)

- EP Electrical Primary Ducts, Qty. and Size as Indicated
- ES Electrical Secondary Ducts, Qty. and Size as Indicated
- T Telephone Ducts, Qty. and Size as Indicated
- TV CATV Ducts, Qty. and Size as Indicated
- SL Street Light Ducts, Qty. and Size as Indicated
- E-2 Electrical 2'x4' Handhole, MECO Dwg. 30-2005.
- E-3 Electrical 3'x5' Handhole, MECO Dwg. 101020/101028/101029.
- E-4 Electrical 4'x6' Handhole, MECO Dwg. 101024/101028/101029.
- E-5 Electrical 5'x7' Handhole, MECO Dwg. 102302/101028/101029.
- T-2 Telephone Pullbox, Type 435TB (2'x4') HTCO Dwg. 34056.
- T-3 Telephone Pullbox, Type 180045 (3'x5') HTCO Dwg. 34110A.
- C-2 CATV Pullbox, Similar to HTCO Type 435TB, HTCO Dwg. 34056.
- C-3 CATV Pullbox, Similar to HTCO Type 3660TB (3'x5')

PLAN NOTES:

- Existing utility pole to remain.
- Existing utility overhead lines to remain.
- Existing utility infrastructure to remain.
- New pole and related anchor to be installed by MECO.
- Coordinate with MECO to remove UG conductors where applicable prior to removal or relocation of existing MECO pullboxes and related facilities.
- Connect re-routed conduit.
- Equipment located in private property to be covered by easements (refer to MECO Dwg. No. 8-1-405).
- State owned street light.
- County owned street light.

OVERALL ELECTRICAL SITE PLAN  
Scale: 1" = 300'-0"

MAUI COUNTY CODE CHAPTER 20.35  
OUTDOOR LIGHTING

THE ELECTRICAL OUTDOOR LIGHTING SYSTEM AND EQUIPMENT HAVE BEEN REVIEWED BY ME AND TO THE BEST OF MY KNOWLEDGE, THIS DESIGN SUBSTANTIALLY CONFORMS TO THE REQUIREMENTS SPECIFIED IN MAUI COUNTY CODE CHAPTER 20.35 OUTDOOR LIGHTING.

MARK P. RICKARD  
NAME (PRINT)

PROJECT ENGINEER  
TITLE  
8991-E  
STATE OF HAWAII  
P.E. LICENSE NUMBER

APPROVALS:

MAUI ELECTRIC COMPANY  
HAWAIIAN TELCOM  
OCEANIC TIME WARNER CABLE

DATE  
DATE  
DATE

NOTE: PLAN NOT FOR CONSTRUCTION  
UNLESS APPROVED

GENERAL NOTES:

- Plans subject to review and approval of utility companies.
- Grade beyond the MECO boxes shall not exceed 2" rise per foot within a 2'-0" wide area property side of each box, otherwise a retaining wall will be required.
- Developer shall be responsible for the full cost to relocate MECO facilities as required.



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

DATE	REVISION
1/18/10	ADD. No. 1 - Revised Text Hts. & Fonts

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

OVERALL ELECTRICAL SITE PLAN  
SYMBOL LEGEND & NOTES  
HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1  
Lahainaluna Rd. to Hokiokio Pl.  
Federal Aid Project NO. NH-030-1(38)  
Scale: As Noted Date: November 23, 2009

SHEET No. 2 OF 8 SHEETS



1/18/10	ADD. No. 1 - Revised Text Hts. & Fonts
	Add 4 <sup>th</sup>
DATE	REVISION

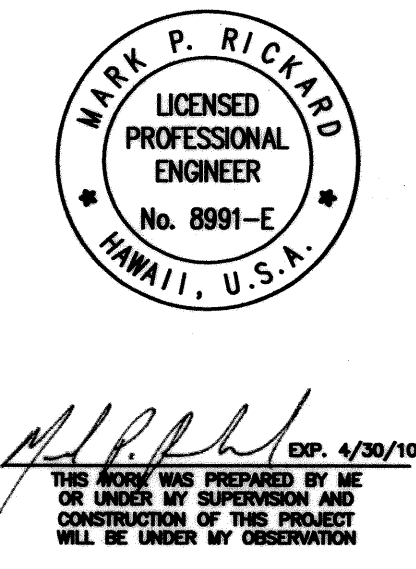
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PARTIAL ELECTRICAL SITE PLAN**

**SYMBOL LEGEND & NOTES**

HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1  
Lahainaluna Rd. to Hokiokio Pl.  
Federal Aid Project NO. NH-030-1(38)

Scale: As Noted                      Date: November 23, 2009



1. Plans subject to review and approval of utility companies.
2. Grade beyond the MECO boxes shall not exceed 2" rise per foot within a 2'-0" wide area property side of each box, otherwise a retaining wall will be required.
3. Developer shall be responsible for the full cost to relocate MECO facilities as required.

- 1 Existing utility pole to remain.
- 2 Existing utility overhead lines to remain.
- 3 Existing utility infrastructure to remain.
- 4 New pole and related anchor to be installed by MECO.
- 5 Coordinate with MECO to remove UG conductors where applicable prior to removal or relocation of existing MECO pullboxes and related facilities.
- 6 Connect re-routed conduit.
- 7 Equipment located in private property to be covered by easements (refer to MECO Dwg. No. 8-1-405).
- 8 State owned street light.
- 9 County owned street light.

Scale: 1" = 50'-0"



**GENERAL NOTES:**

1. Plans subject to review and approval of utility companies.
2. Grade beyond the MECO boxes shall not exceed 2" rise per foot within a 2'-0" wide area property side of each box, otherwise a retaining wall will be required.
3. Developer shall be responsible for the full cost to relocate MECO facilities as required.

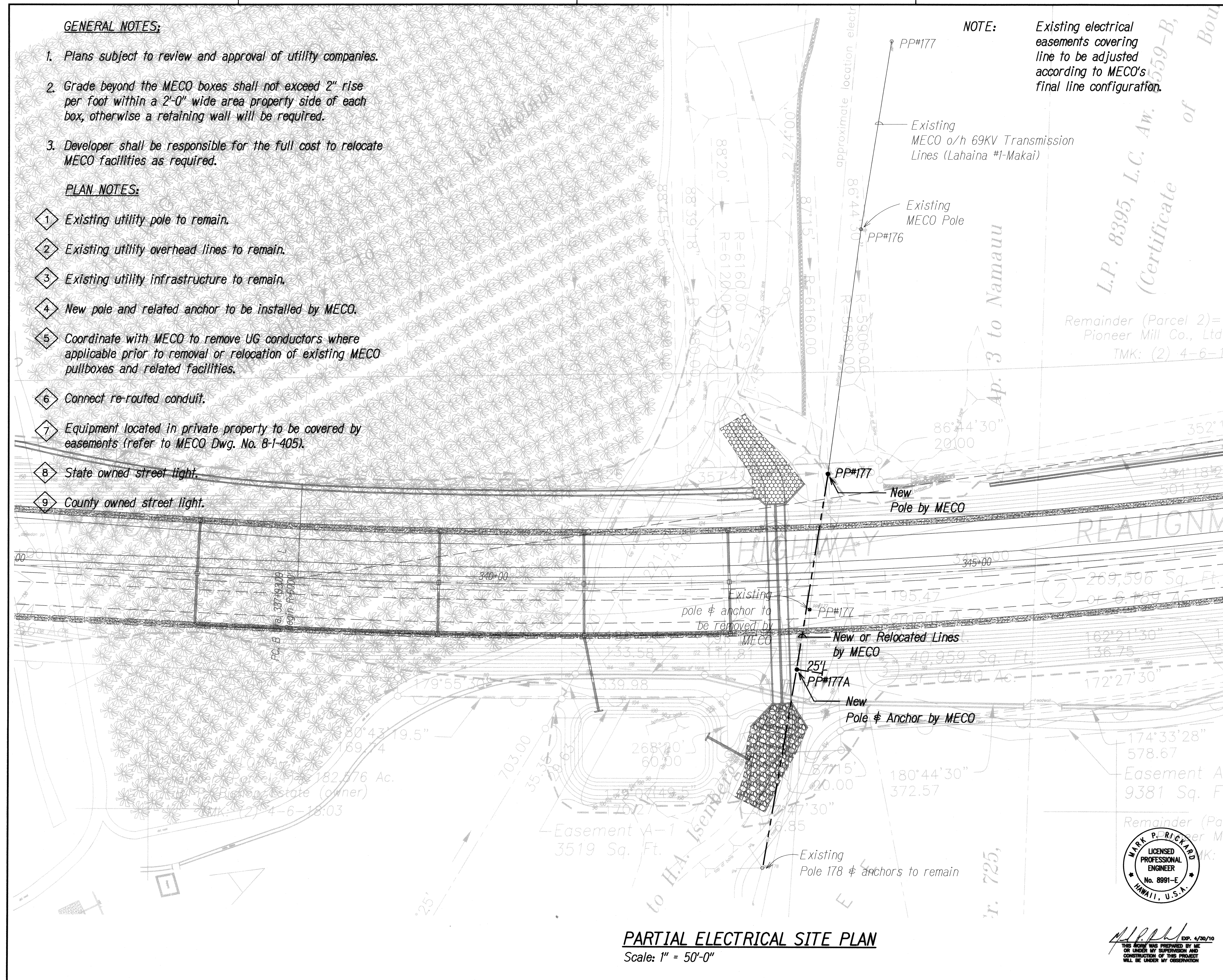
**PLAN NOTES:**

- 1 Existing utility pole to remain.
- 2 Existing utility overhead lines to remain.
- 3 Existing utility infrastructure to remain.
- 4 New pole and related anchor to be installed by MECO.
- 5 Coordinate with MECO to remove UG conductors where applicable prior to removal or relocation of existing MECO pullboxes and related facilities.
- 6 Connect re-routed conduit.
- 7 Equipment located in private property to be covered by easements (refer to MECO Dwg. No. 8-1-405).
- 8 State owned street light.
- 9 County owned street light.

**NOTE:**

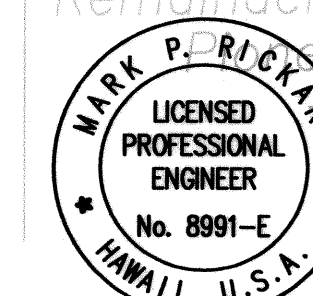
Existing electrical easements covering line to be adjusted according to MECO's final line configuration.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-030-1(38)	2010	170	213



**PARTIAL ELECTRICAL SITE PLAN**

Scale: 1" = 50'-0"



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

DATE	REVISION
1/18/10	ADD. No. 1 - Revised Text Hts. & Fonts
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<b>PARTIAL ELECTRICAL SITE PLAN</b>	
<b>SYMBOL LEGEND &amp; NOTES</b>	
HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1 Lahainaluna Rd. to Hokiokio Pl.	
Federal Aid Project NO. NH-030-1(38)	
Scale: As Noted	Date: November 23, 2009

SHEET No. 4 OF 8 SHEETS

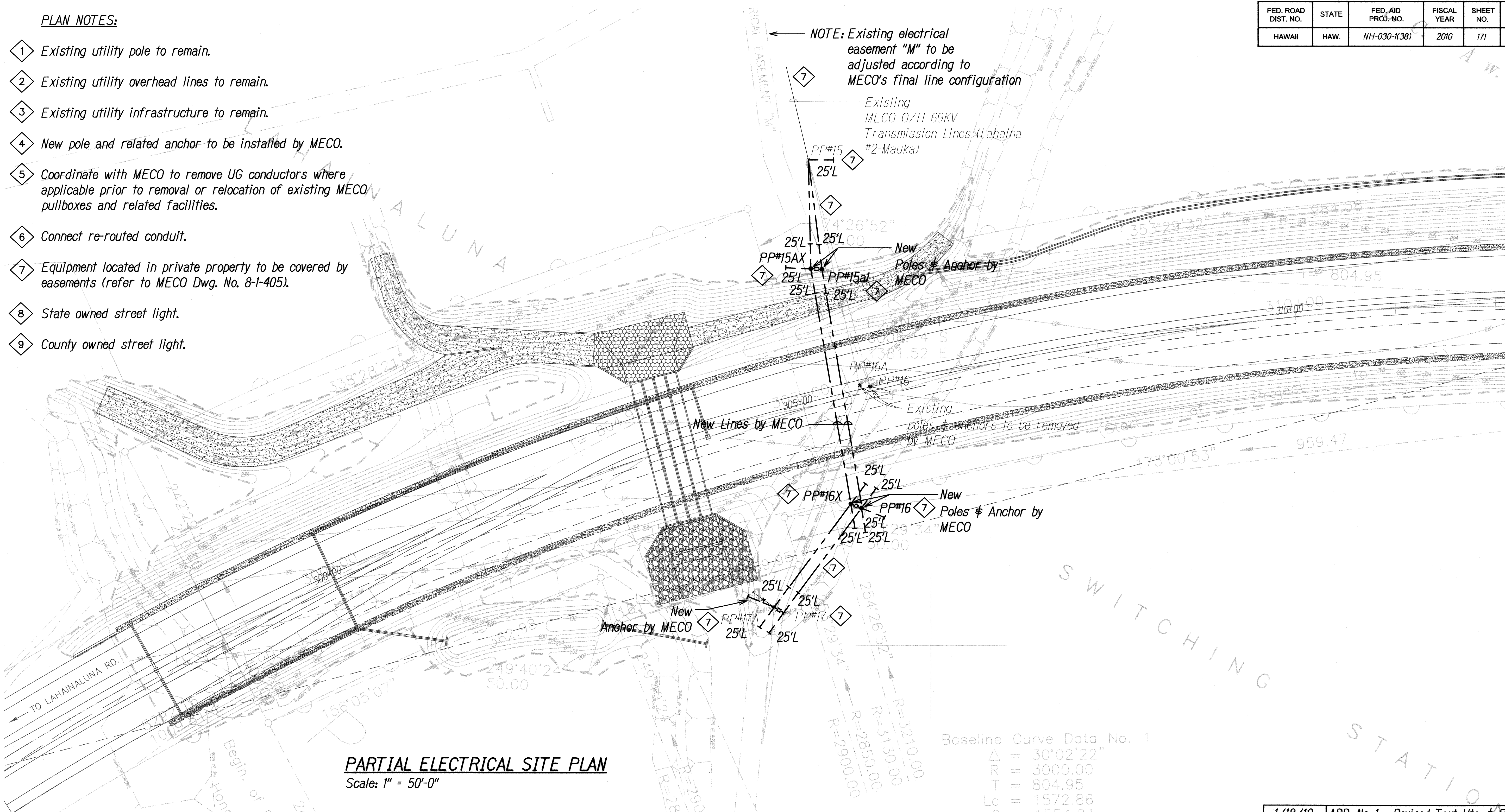
**ADD. 170**



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-030-1(38)	2010	171	213

PLAN NOTES:

- Existing utility pole to remain.
- Existing utility overhead lines to remain.
- Existing utility infrastructure to remain.
- New pole and related anchor to be installed by MECO.
- Coordinate with MECO to remove UG conductors where applicable prior to removal or relocation of existing MECO pullboxes and related facilities.
- Connect re-routed conduit.
- Equipment located in private property to be covered by easements (refer to MECO Dwg. No. 8-1-405).
- State owned street light.
- County owned street light.



PARTIAL ELECTRICAL SITE PLAN  
Scale: 1" = 50'-0"

GENERAL NOTES:

- Plans subject to review and approval of utility companies.
- Grade beyond the MECO boxes shall not exceed 2" rise per foot within a 2'-0" wide area property side of each box, otherwise a retaining wall will be required.
- Developer shall be responsible for the full cost to relocate MECO facilities as required.

Baseline Curve Data No. 1

Δ	= 30°02'22"
R	= 3000.00
T	= 804.95
Lc	= 1572.86
C	= 1554.91



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

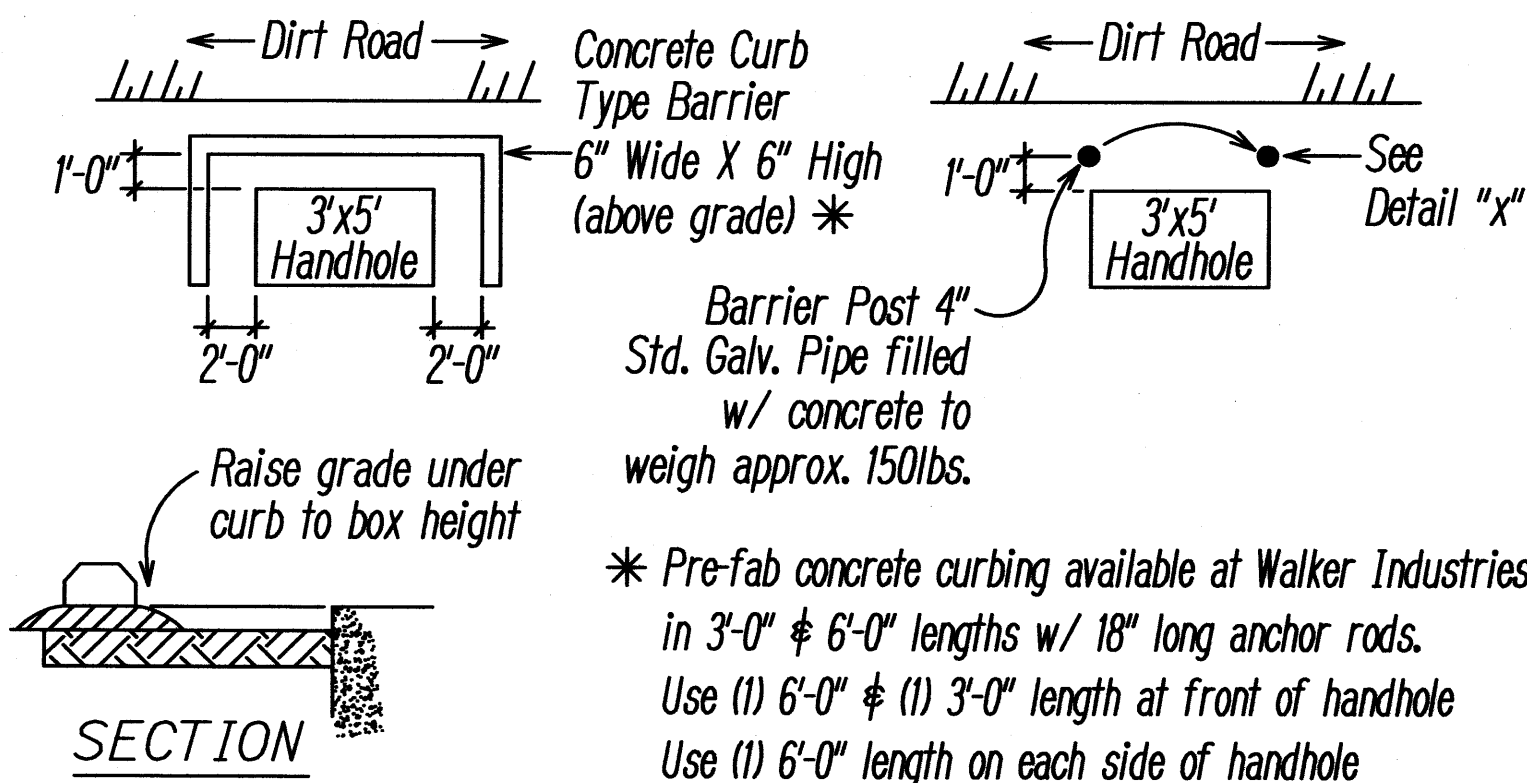
1/18/10	ADD. No. 1 - Revised Text Hts. & Fonts
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
PARTIAL ELECTRICAL SITE PLAN	
SYMBOL LEGEND & NOTES	
HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1	
Lahainaluna Rd. to Hokiokio PI.	
Federal Aid Project NO. NH-030-1(38)	
Scale: As Noted	Date: November 23, 2009

SHEET No. 5 OF 8 SHEETS



HAWAIIAN TELCOM GENERAL NOTES:

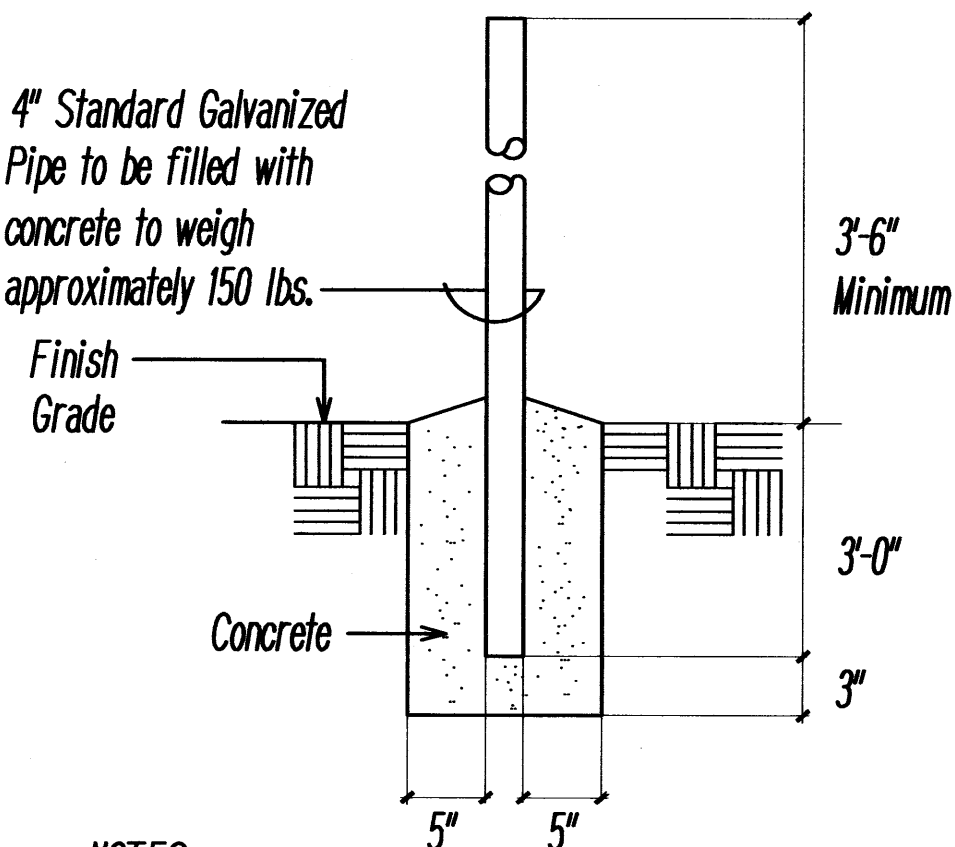
1. Installation of HTCO and communications ductline system shall be in conformance the requirements of HTCO "Standard Specifications for Placing Underground Telecommunications Systems", May 1992, unless otherwise modified in these plans. Check with HTCO prior to ordering material for the ductline system installation work.
2. The Contractor will provide a 5/8" x 8' galvanized ground rod in each handhole and/or pullbox and below a telephone cabinet. Minimum telephone cabinet size is 18" x 24" x 6".
3. All conduits will enter and leave the handhole/pullbox at 90 degrees to the face of the box.
4. The maximum size conduit that may enter the side wall of a handhole/pullbox is 2".
5. All conduits will be terminated with a bell end, grouted around the conduit. The bell end shall be flush with the inside face of the handhole/pullbox wall. No protrusion of the bell end will be permitted. The inside surface shall be finished smooth and flush with the existing wall surface.
6. All conduits shall have an 1800#, polyester mule tape (NEPTCO WP 1800P, HTCO Material Code No. 751154) installed throughout its entire length. All conduits shall be capped with a temporary cap to prevent the entry of foreign material during construction. The temporary caps shall remain installed on each conduit entering a handhole/pull box at the completion of the installation.
7. All conduit handhole/pull box installed by the Contractor for the use by HTCO will be subject to inspection. The inspection shall take place prior to back fill or concrete encasement. Inspections must be scheduled 3 working days in advance.
8. All handhole/pull boxes installed in non-sidewalk areas will require a 10" x 5" thick concrete collar around the entire frame, feathered to finished grade, placed on a compacted 6" base of sand or HTCO Type "B" backfill.
9. After ductline has been completed, a mandrel not less than 12" long and having a diameter of 1/4" less than the inside diameter of the duct shall be pulled through each duct.
10. A HTCO Standby Man is required to be at the job site anytime non-utility co. personnel will be breaking into or entering any structures that contain communication facilities. Three working days notice is required for any inspection or Standby Man. Five working days advance notice is required for underground cable locating and marking.
11. All conduits will enter telephone cabinets from the extreme left knockout.
12. The Developer will be responsible for all revisions required on telephone design due to field conditions.
13. One piece 2' x 4' pullboxes are non HTCO standard and will not be accepted.
14. The approval of the subject drawing(s) is good for a period of 180 days. If construction activities have not commenced within the 180 days of HTCO approved date, the approval will be void. Should this occur the Contractor will be notified upon receipt for inspection of underground.



HANDHOLE PROTECTION DETAILS  
Not to Scale

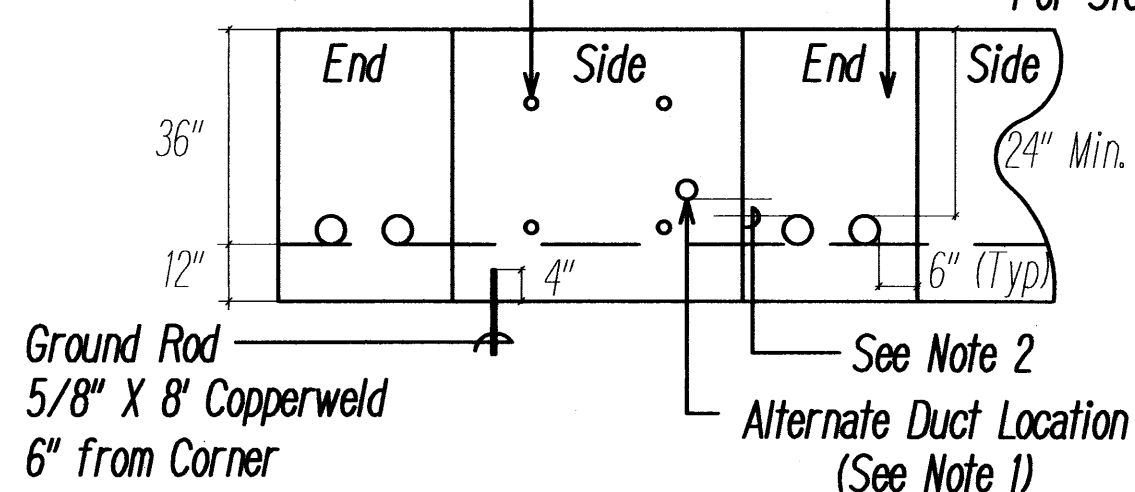
ELECTRICAL NOTES

1. For the construction of the utility companies' pull boxes or handholes, refer to their appropriate standard drawings.
2. The utility companies' standard drawings, specifications and construction practices indicated or referred to in the drawings and specifications shall be applicable to this project.
3. The Contractor shall be responsible for coordinating and detailed scheduling of the site inspection work by utility companies and all other concerned parties and agencies.
4. The Contractor shall familiarize himself with the project's construction plans and shall coordinate his work with that of the General Contractor.
5. Work under this contract shall include that of the electrical distribution system.
6. Install a polyolefin pull line in all ductlines.
7. Comply with the latest applicable rules, regulations, requirements, and specifications of the local laws and ordinances, State and Federal laws, National Electrical Code, County of Maui Electrical Ordinance, State Fire Marshall, Underwriter's Laboratory, Electrical Safety Code, and Life Safety Code.
8. Contractor to obtain and pay for the electrical permit as required by local ordinances and arrange for periodic inspection by local authorities as work progresses.
9. Provide protection for material and equipment from loss, damage, corrosion and effects of moisture. Repair or replace damaged items at no additional cost to the Owner.
10. Visit project site prior to bid submittal to ascertain conditions and cost allowances that affect the proposed work.
11. Install materials and equipment in workmanlike manner and in strict accordance with manufacturer's recommendations, unless otherwise specified or directed by the Engineer.
12. Materials and workmanship subject to inspection at any time by the owner or his representative; correct any work or materials not in accordance with drawings or found to be deficient or defective in a manner satisfactory to the Owner at no additional cost.
13. Provide all first quality, new materials, free from defects suitable for space provided and approved by UL where standards have been provided by that agency.
14. Provide standard materials and equipment of manufacturer's regularly engaged in the production of these products. Provide products of a single manufacturer where two or more units of the same call are required.



PIPE STANCHION DETAIL  
Not to Scale

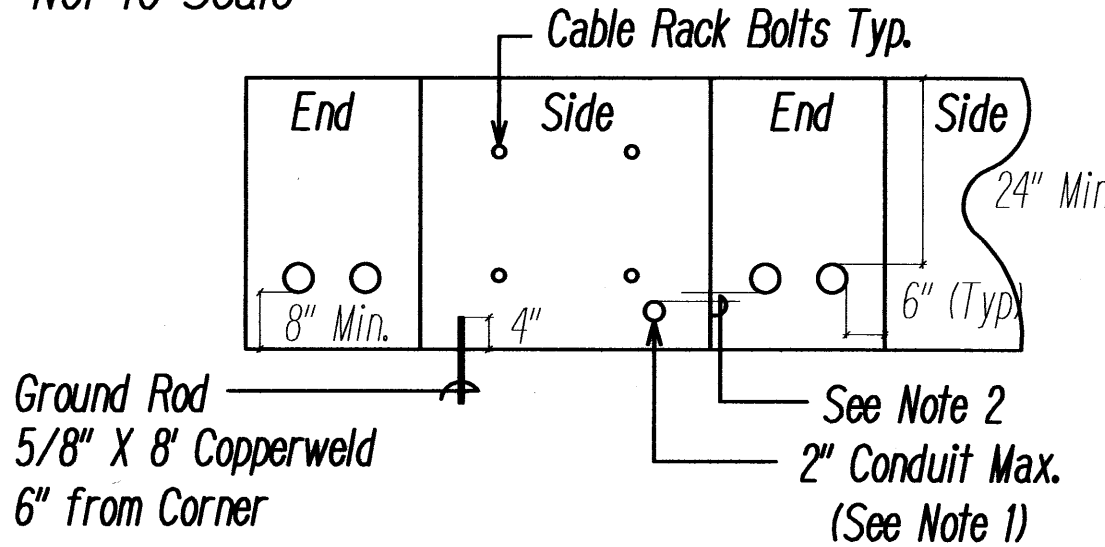
Cable Rack Bolts Typ.  
Concrete Box Only



NOTES:

1. A maximum of one 4"C. per quadrant will be permitted to enter the side wall of a pullbox. When 2"C. is used for service laterals two conduits may be permitted per Engineer specifications.
2. When a conduit enters the sidewall of a pullbox the conduit will be installed such that the difference in elevation between the outside surface of the conduit entering the end wall is 1".
3. A maximum of 2-4"C. shall enter the wall end of a 3' x 5' pullbox. No conduit will be permitted to enter the pullbox at locations other than those specified by the Engineer.
4. Conduits will enter the pullbox perpendicular to the wall at which they enter. No exceptions will be permitted.
5. All conduits will be terminated with a bell end. The bell end shall be installed flush with the inside surface of the of the pullbox. No protrusion into the pullbox will be permitted.
6. All openings made in the pullbox for the purpose of installing conduit will be securely sealed with concrete grout. The grout will be a minimum of 4" thick and in no case less than the thickness of the pullbox wall. The inside of the box will be finished smooth and flush with existing surface.
7. One 5/8" x 8' copperclad ground rod will be installed in the pullbox as per the detail attached.

3' x 5' TEL. PULLBOX FOLD OUT DETAIL  
Not to Scale

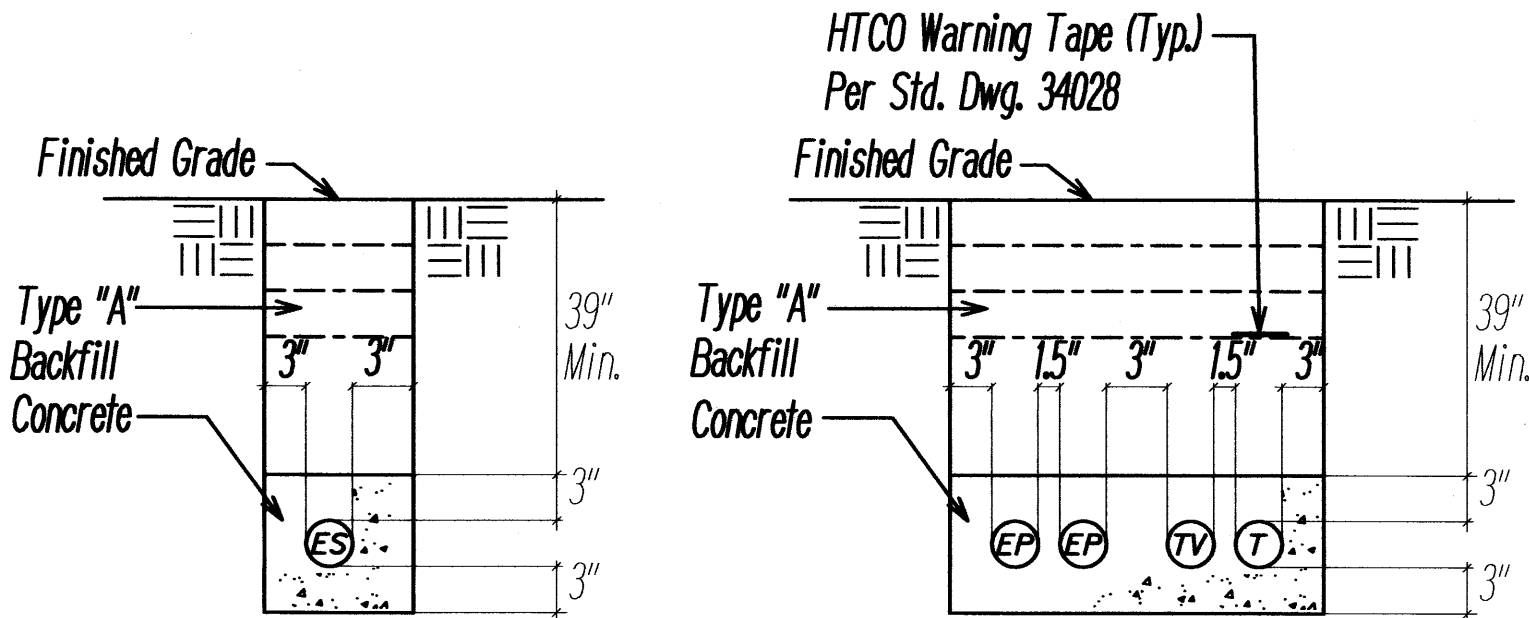


NOTES:

1. A maximum of one 2"C. per quadrant will be permitted to enter the side wall of a pullbox. When 2"C. is used for service laterals two conduits may be permitted per Engineer specifications.
2. When a conduit enters the sidewall of a pullbox the conduit will be installed such that the difference in elevation between the outside surface of the conduit entering the end wall is 1".
3. A maximum of 2-4"C. shall enter the wall end of a 2' x 4' pullbox. No conduit will be permitted to enter the pullbox at locations other than those specified by the Engineer.
4. Conduits will enter the pullbox perpendicular to the wall at which they enter. No exceptions will be permitted.
5. All conduits will be terminated with a bell end. The bell end shall be installed flush with the inside surface of the of the pullbox. No protrusion into the pullbox will be permitted.
6. All openings made in the pullbox for the purpose of installing conduit will be securely sealed with concrete grout. The grout will be a minimum of 4" thick and in no case less than the thickness of the pullbox wall. The inside of the box will be finished smooth and flush with existing surface.
7. One 5/8" x 8' copperclad ground rod will be installed in the pullbox as per the detail attached.

2' x 4' TEL. PULLBOX FOLD OUT DETAIL  
Not to Scale

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-030-1(38)	2010	172	213



TYPICAL SECONDARY  
ALONG OR WITHIN ROAD

TYPICAL MAIN SECTION  
ALONG OR WITHIN ROAD

DUCTLINE NOTES:

1. Refer to electrical plan for duct sizes and quantities.
2. Concrete encased conduits shall be PVC Type 'EB' or Sched. 40 PVC. ABS Type 'DB' pipes are also acceptable.
3. Direct buried conduits shall be PVC Sch. 40 pipes.
4. Concrete encased conduits of like use may be separated by 1 1/2". A minimum of 3" separation must be maintained between electrical ducts and tel./tv ducts.
5. Direct buried conduits of like use shall be separated by a minimum of 3". A minimum separation of 12" must be maintained between direct buried electrical conduits and tel./tv conduits.
6. Concrete comprehensive strength shall be 2,500 psi in 28 days.
7. Ductline trenches may be backfilled 24 hours after concrete is poured.
8. Contractor shall coordinate ductline and trenching details with utility company's project plan.
9. Reference specification: MECO Spec. CS7001 with latest revision.

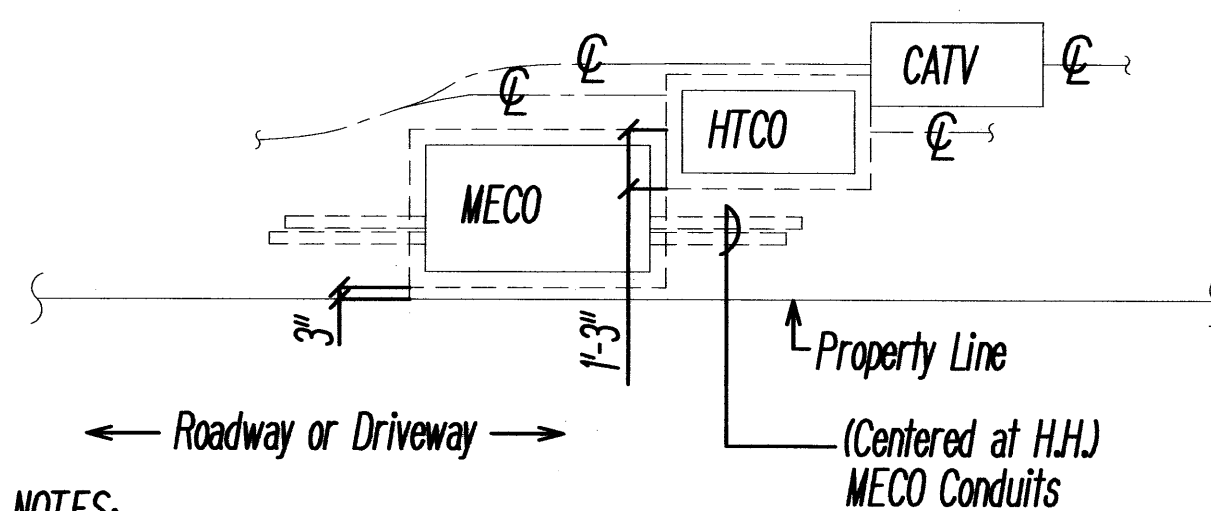
BACKFILL TYPES:

Type "A" - Beach sand, earth, or earth and gravel. If earth and gravel, the maximum rock size shall be 1"  $\phi$  the mixture shall contain not more than 50% by volume of rock particles.

TYPE "B" BACKFILL:

Beach sand, earth or earth and gravel. If and gravel, the mixture must pass a 1/2" mesh screen and contain not more than 20 of rocks particles

TYPICAL DUCTLINE AND TRENCHING DETAILS  
Not to Scale



NOTES:

1. Handhole sizes per plan

TYPICAL HANDHOLE GROUPING  
Not to Scale



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

1/18/10	ADD. No. 1 - Revised Text Hts. & Fonts
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>DETAILS &amp; NOTES</b> HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1 Lahainaluna Rd. to Hokiokio Pl. Federal Aid Project NO. NH-030-1(38) Scale: As Noted Date: November 23, 2009	

SHEET No. 6 OF 8 SHEETS







