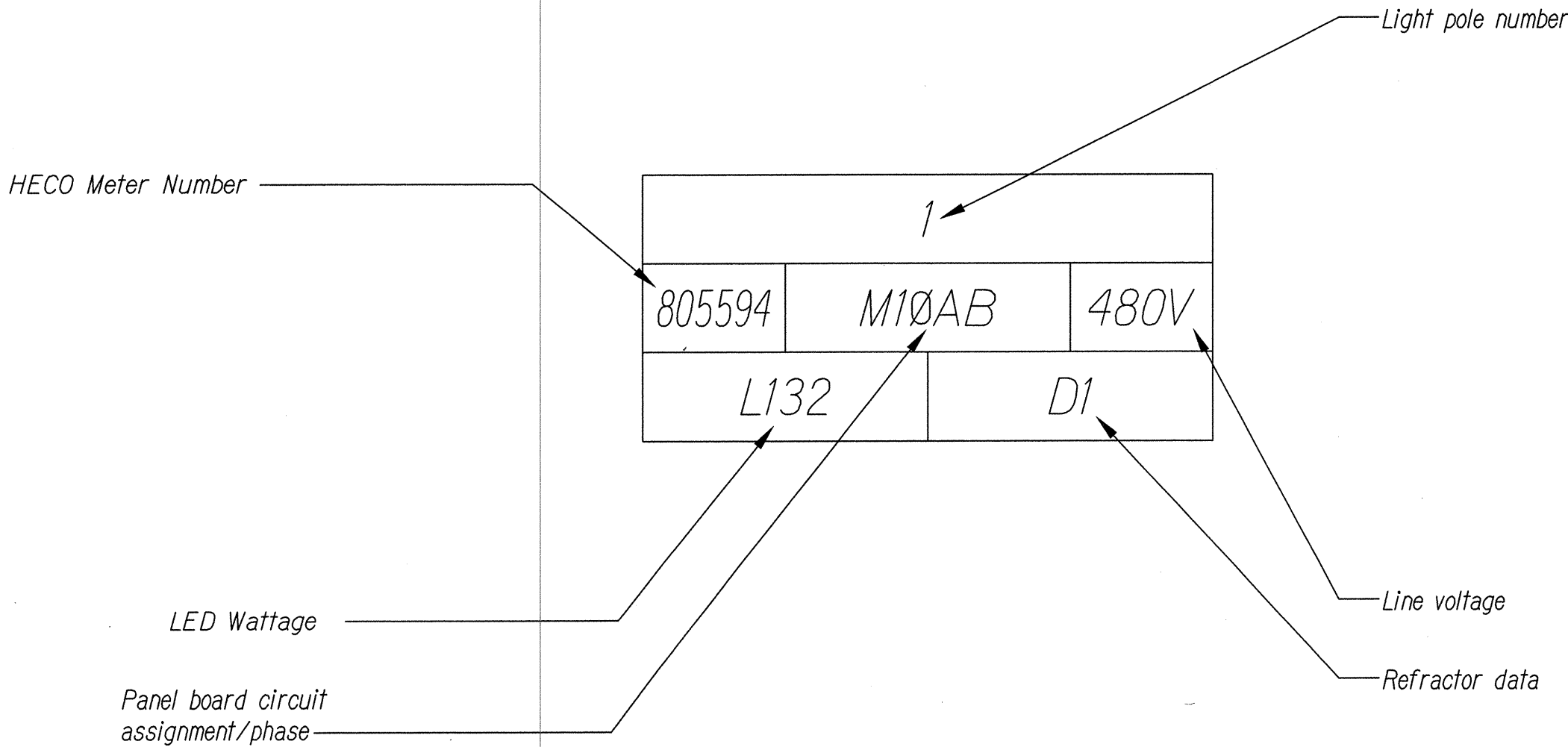
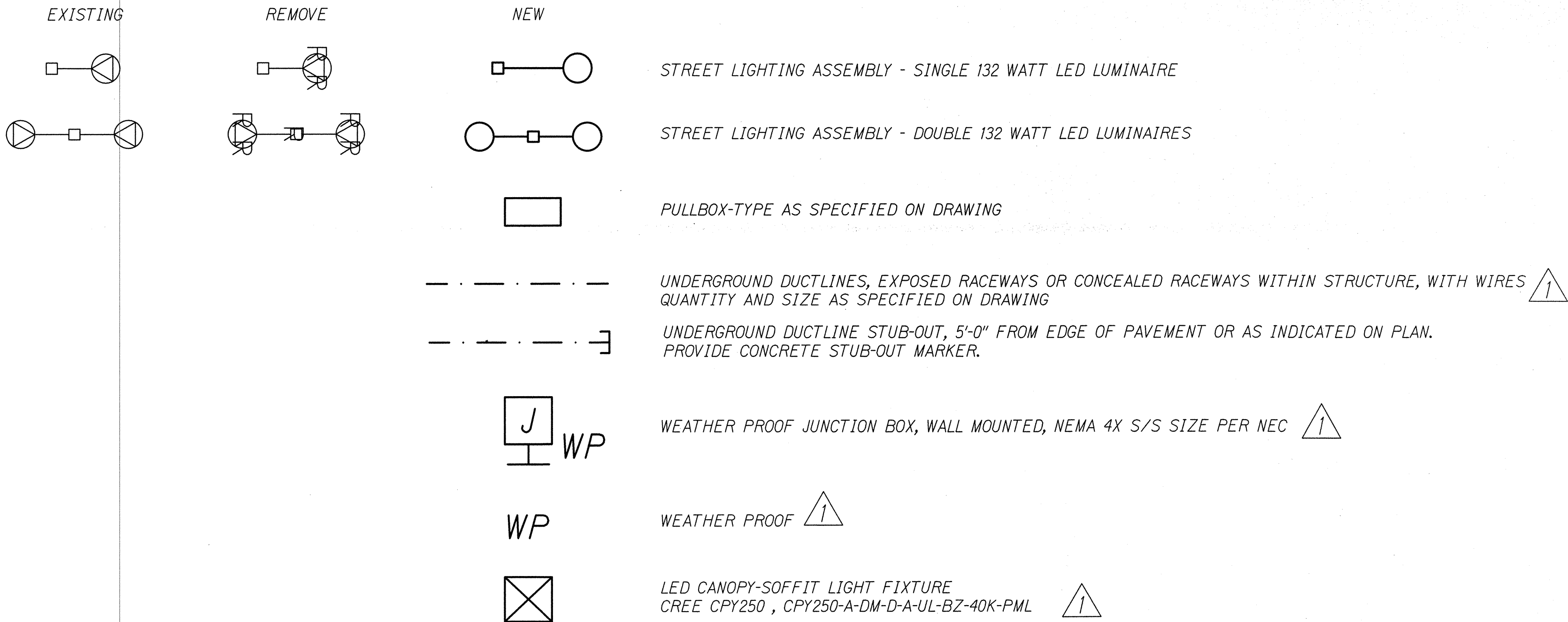


GENERAL NOTES:

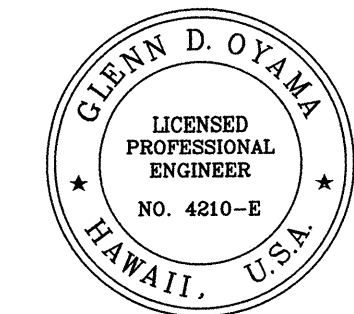
- CONTRACTOR TO PROVIDE NEW LED BASED LIGHTING SYSTEM THAT MEETS THE LATEST AASHTO ROADWAY LIGHTING DESIGN STANDARD AND AS SPECIFIED BY THIS CONTRACT.
- EXISTING CONDITION BASED ON LIMITED FIELD OBSERVATION AND REFERENCE DRAWINGS. CONTRACTOR TO VERIFY EXISTING CONDITION AND REPORT DISCREPANCY TO ENGINEER PRIOR TO CONSTRUCTION.
- ALL ELECTRICAL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE DEPARTMENT OF TRANSPORTATION, NEC AND LOCAL CODES AND AMENDMENTS, STATE OF HAWAII RULES AND REGULATIONS, NEC (ANSI C2), UTILITY APPLICABLE COMPANY STANDARDS AND REQUIREMENTS.
- COORDINATE ALL WORK WITH UTILITY COMPANIES.
- DRAWINGS ARE DIAGRAMMATIC AND SYMBOLIC AND MAY NOT SHOW ALL COMPONENTS AND DETAILS. INSTALL ALL WORK IN A NEAT AND LOGICAL MANNER AND PROVIDE ALL COMPONENTS FOR A COMPLETE AND OPERABLE SYSTEM WITHIN INTENT INDICATED ON DRAWINGS AND SPECIFICATIONS.
- SEE EROSION CONTROL, TRAFFIC CONTROL, AND STRUCTURAL PLANS AND DETAILS, AND PROVIDE ELECTRICAL WORK AS APPROPRIATE.
- COORDINATE ALL WORK WITH OTHER TRADES TO AVOID CONFLICTS. ADJUST LOCATION OF THE NEW ELECTRICAL EQUIPMENT AND WIRING AS REQUIRED TO CLEAR OBSTRUCTIONS AND EQUIPMENT. PROVIDE THE REQUIRED MOUNTING ACCESSORIES NEEDED TO PROPERLY INSTALL THE ELECTRICAL EQUIPMENT AND WIRING.
- ALL WIRES SHALL BE INSULATED COPPER CONDUCTORS AND INSTALLED IN RACEWAYS UNLESS INDICATED OTHERWISE.
- ALL RACEWAYS SHALL BE PVC COATED GRS WHERE EXPOSED AND CONCRETE ENCASED SCHEDULE 40 PVC FOR UNDERGROUND USE.
- TONE AREA OF TRENCHES PRIOR TO NEW UNDERGROUND WORK.
- REPAIR ANY DAMAGE MADE TO STRUCTURES AND UTILITIES CAUSED BY CONSTRUCTION.
- EXPOSED JUNCTION BOXES SHALL BE CAST METAL TYPE OR NEMA 4X S/S WITH NO UNUSED FACTORY KNOCK-OUTS.
- PAINT ALL EXPOSED METAL RACEWAYS AND BOXES WITH TWO COATS TWO-PART EPOXY BASED PRIMER AND TWO COATS POLYURETHANE ENAMEL FINISH TO MATCH SURROUNDING SURFACES.
- PROVIDE GROUND WIRES FOR ALL STREET LIGHT CIRCUITS.
- TEST COMPLETE STREET LIGHTING SYSTEM AND CORRECT ANY DEFICIENCIES.
- EXISTING HIGHWAY LIGHTING SYSTEM SHALL REMAIN IN OPERATION AT ALL TIMES. REMOVE LIGHT POLES AND CONDUCTORS ONLY AFTER THE NEW LIGHTING SYSTEM IS IN OPERATION. REMOVE LIGHT POLE CONCRETE FOUNDATION 12" BELOW FINISH GRADE. LIGHT POLE FOUNDATIONS INTEGRATED INTO EXISTING RETAINING WALL AND CONCRETE BARRIERS SHALL REMAIN. CUT ANCHOR BOLTS FLUSH W/ SURFACE.
- REMOVE STREET LIGHTING ASSEMBLY WHERE INDICATED ON PLANS, INCLUDING THE ASSOCIATED WIRES. REMOVE EXPOSED CONDUIT & HANDHOLES. ABANDON IN PLACE UNDERGROUND DUCTLINES AND INACCESSIBLE HANDHOLES. FIELD VERIFY EXISTING CONDITION.
- RESTORE LANDSCAPING TO MATCH EXISTING CONDITION IN PLANTER & SHOULDER AREAS.
- SALVAGE ALL LUMINAIRES AND RETURN TO DEPARTMENT OF TRANSPORTATION AS DIRECTED.

ELECTRICAL SYMBOLS:



STREET LIGHT POLE TAG DETAIL

1	9/13/17	Added Note 19, Revised Symbol List, Added New Light Fixture
DATE	REVISION	



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
GENERAL ELECTRICAL NOTES,
SYMBOLS

MOANALUA FREEWAY, HIGHWAY LIGHTING IMPROVEMENTS
Halawa Heights Off-ramp to Middle St. Overpass
FAP NO. NH-H201(005)

Scale: NTS Date: August 2017





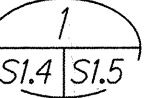

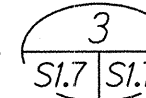
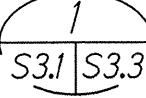
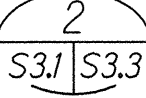

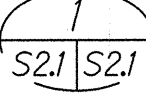
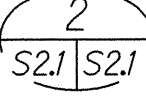

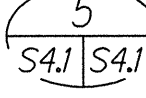
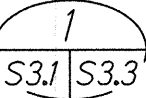
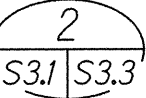

SHEET No. E-1 OF 53 SHEETS

ADD. 119


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

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	
NOTE BOOK	QUANTITIES BY	
	NO.	

CONSTRUCTION NOTES & MATERIAL LIST:

- ◆ Exist Highway Lighting Service Conduits to the HECo Service Point. Notify HECo Prior to Removal of Lighting Conductors. Abandon Conduit in Place.
- ◆ Highway Lighting Conduit 1-2".
- ◆ Highway Lighting Type "A" Pullbox. See HDOT Standard Plans TE-37A.
- ◆ Communication Type Pullbox. See HDOT Standard Plans TE-37B.
- ◆ Junction Box NEMA 4X Stainless Steel 2 each, 1 Highway Lighting and 1 Communication. 
- ◆ Communication Conduits 2-2".
- ◆ Conduit in Concrete Glare Screen. 
- ◆ Not Used. 
- ◆ PVC coated GRS Conduit Mounted on Side of Bridge, Overpass Structure, or above grade. See E-49 for details. 
- ◆ Conduit Under Roadway, Shoulder Area, or Grass Area.
- ◆ Conduit in Microtunnel.
- ◆ Highway Lighting Standard on Top of New Median Wall. See 
- ◆ Highway Lighting Standard on Grade. See 
- ◆ Highway Lighting Standard in Planter. See 
- ◆ Highway Lighting Standard Mounted on Side of Barrier Wall or Bridge. See   
- ◆ Highway Lighting Standard Mounted on Retaining Wall. See   
- ◆ Electrical/Communication Pullbox Insert in Median, Barrier, or Retaining Wall. See 
- ◆ Highway Lighting Conduit 1-2" with Spare 1-2" (2-2" Total).
- ◆ Communication Conduits 2-2" and Power Conduit 1-2" (3-2" Total).
- ◆ Electrical/Communication Pullbox. Minimum Sized per NEC for Power and TIA 569-B for Communication in Bridge Wall. See   

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H201(005)	2017	ADD. 121	171

	9/13/17	Revised Construction Note List
DATE	REVISION	



Glenn D. Oyama
EXPIRATION DATE OF THE LICENSE 4/30/2018
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL CONSTRUCTION NOTES

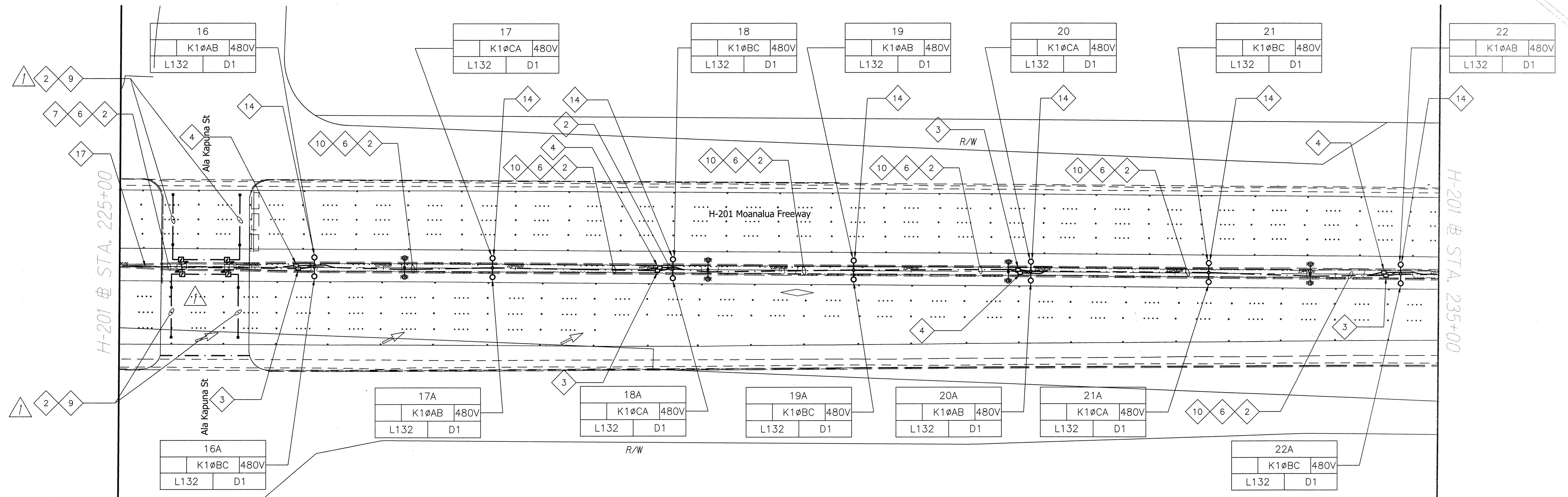
MOANALUA FREEWAY, HIGHWAY LIGHTING IMPROVEMENTS
Halawa Heights Off-ramp to Middle St. Overpass
FAP NO. NH-H201(005)

Scale: Date: August 2017

SHEET No. E-3 OF 53 SHEETS

ADD. 121

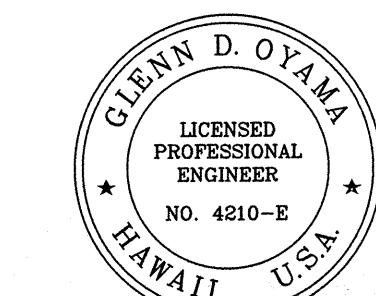
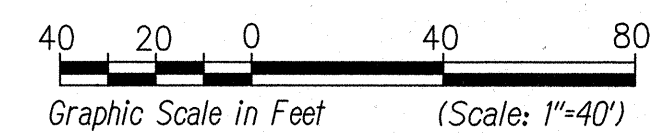
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H201(005)	2017	ADD. 126	171



TRUE NORTH
SCALE: 1" = 40'

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

H-201 LIGHTING PLAN-3
Scale 1"=40'-0"

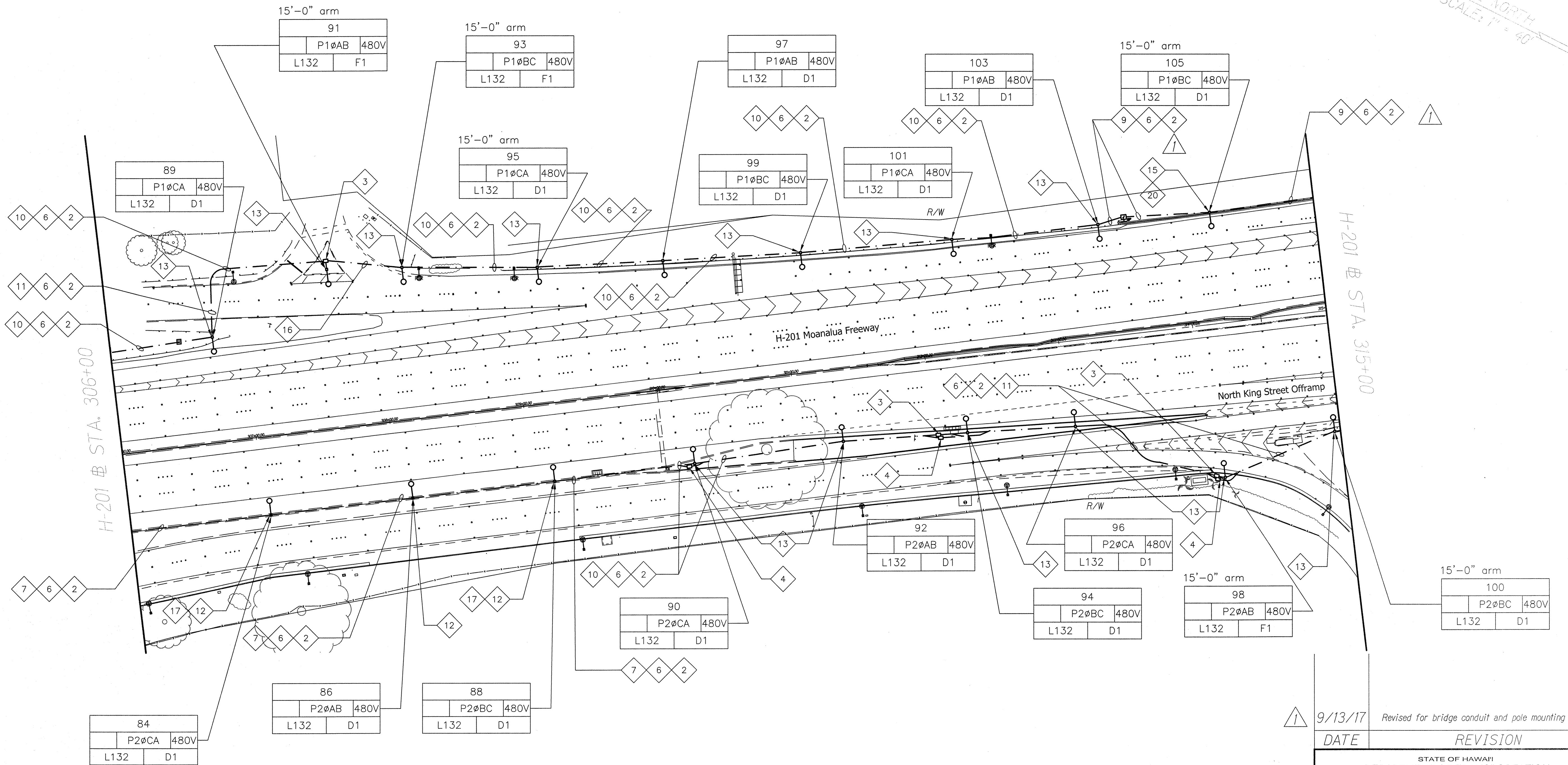


THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

9/13/17	Revised Conduit and added Light Fixtures for Underpass Areas
DATE	REVISION

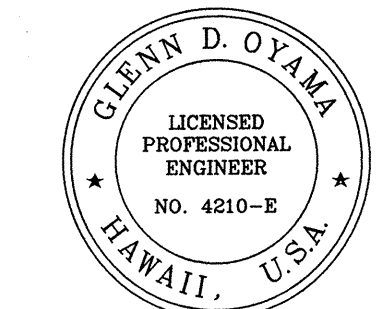
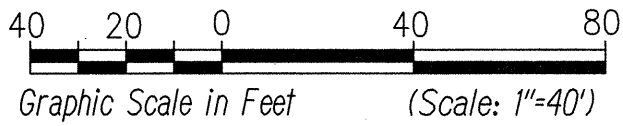
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
H-201 LIGHTING PLAN
STA. 225+00 TO 235+00
MOANALUA FREEWAY, HIGHWAY LIGHTING IMPROVEMENTS
Halawa Heights Off-ramp to Middle St. Overpass
FAP NO. NH-H201(005)
Scale: 1" = 40'-0" Date: August 2017
SHEET No. E-8 OF 53 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H201(005)	2017	ADD. 134	171



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

H-201 LIGHTING PLAN-11
Scale 1"=40'-0"



Glenn D. Oyama
EXPIRATION DATE OF THE LICENSE 4/30/2018
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

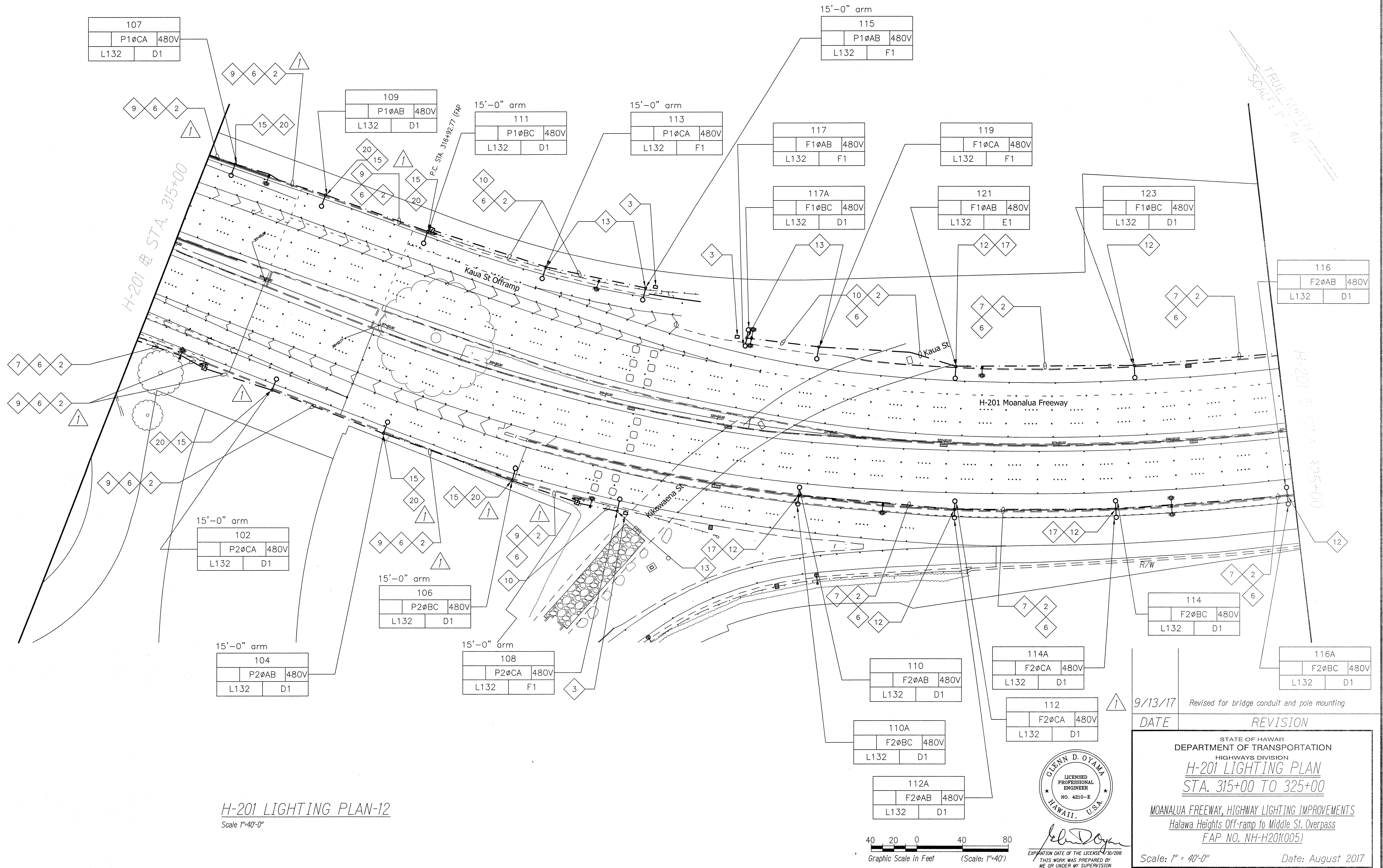
9/13/17	Revised for bridge conduit and pole mounting
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
H-201 LIGHTING PLAN
STA. 306+00 TO 315+00
MOANALUA FREEWAY, HIGHWAY LIGHTING IMPROVEMENTS
Halawa Heights Off-ramp to Middle St. Overpass
FAP NO. NH-H201(005)

Scale: 1" = 40'-0" Date: August 2017

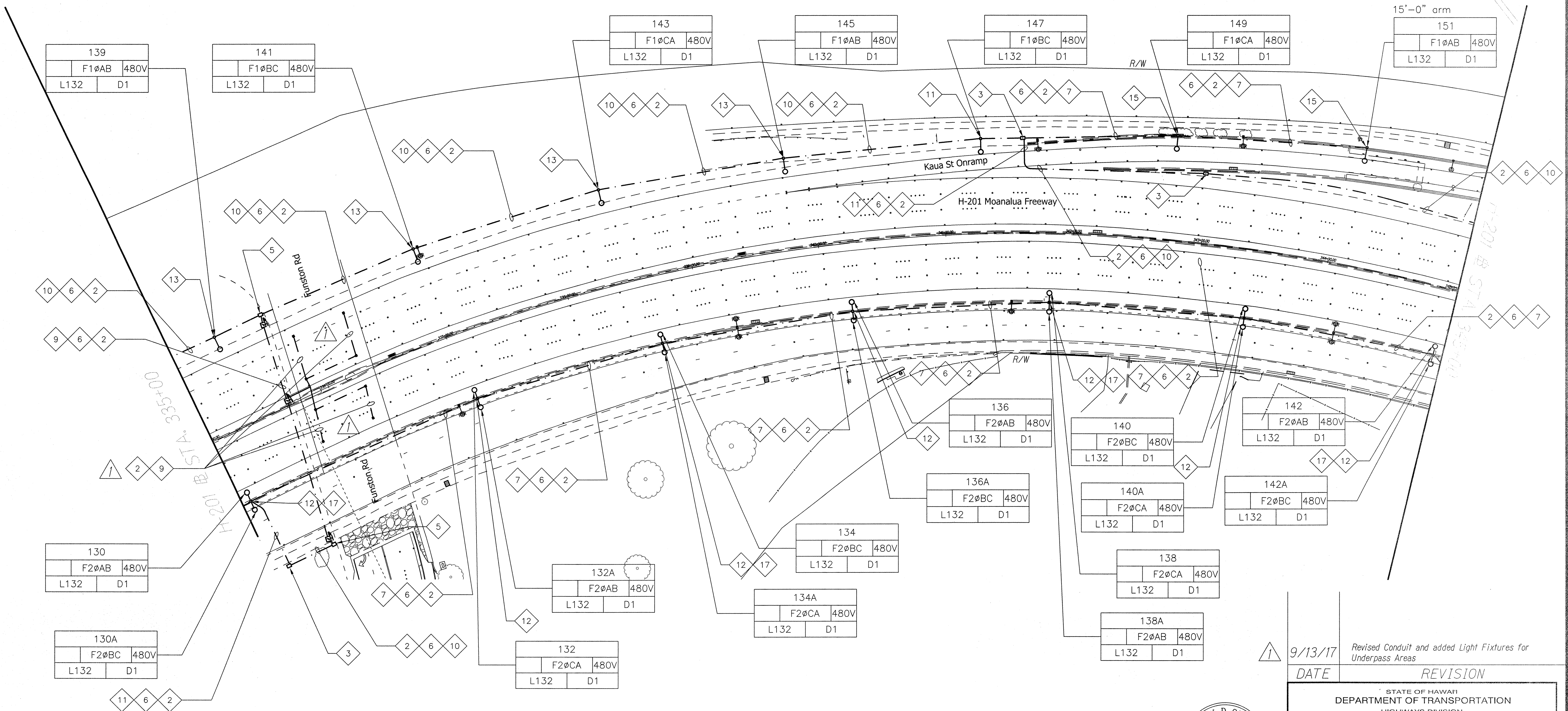
SHEET No. E-16 OF 53 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H201(005)	2017	ADD. 135	171



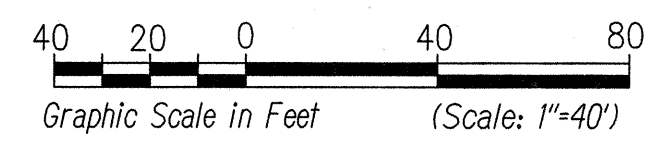
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	
NOTE BOOK	No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H20(K005)	2017	ADD. 137	171



SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

H-201 LIGHTING PLAN-14
Scale 1"=40'-0"

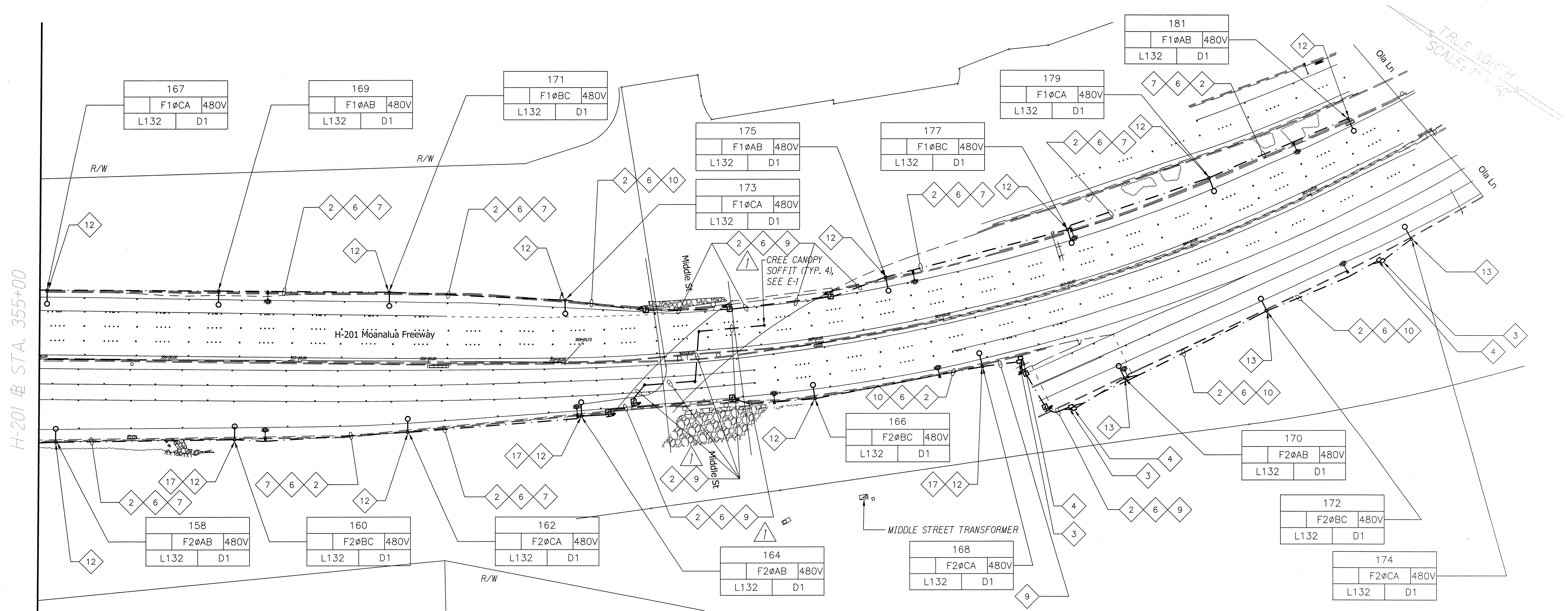


EXPIRATION DATE OF THE LICENSE 4/30/2018
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

9/13/17	Revised Conduit and added Light Fixtures for Underpass Areas
DATE	REVISION

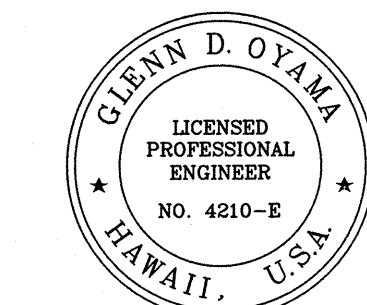
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
H-201 LIGHTING PLAN
STA. 335+00 TO 345+00
MOANALUA FREEWAY, HIGHWAY LIGHTING IMPROVEMENTS
Halawa Heights Off-ramp to Middle St. Overpass
FAP NO. NH-H20(K005)
Scale: 1" = 40'-0" Date: August 2017
SHEET No. E-19 OF 53 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H201(005)	2017	ADD. 139	171



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

H-201 LIGHTING PLAN-16
Scale 1"=40'-0"

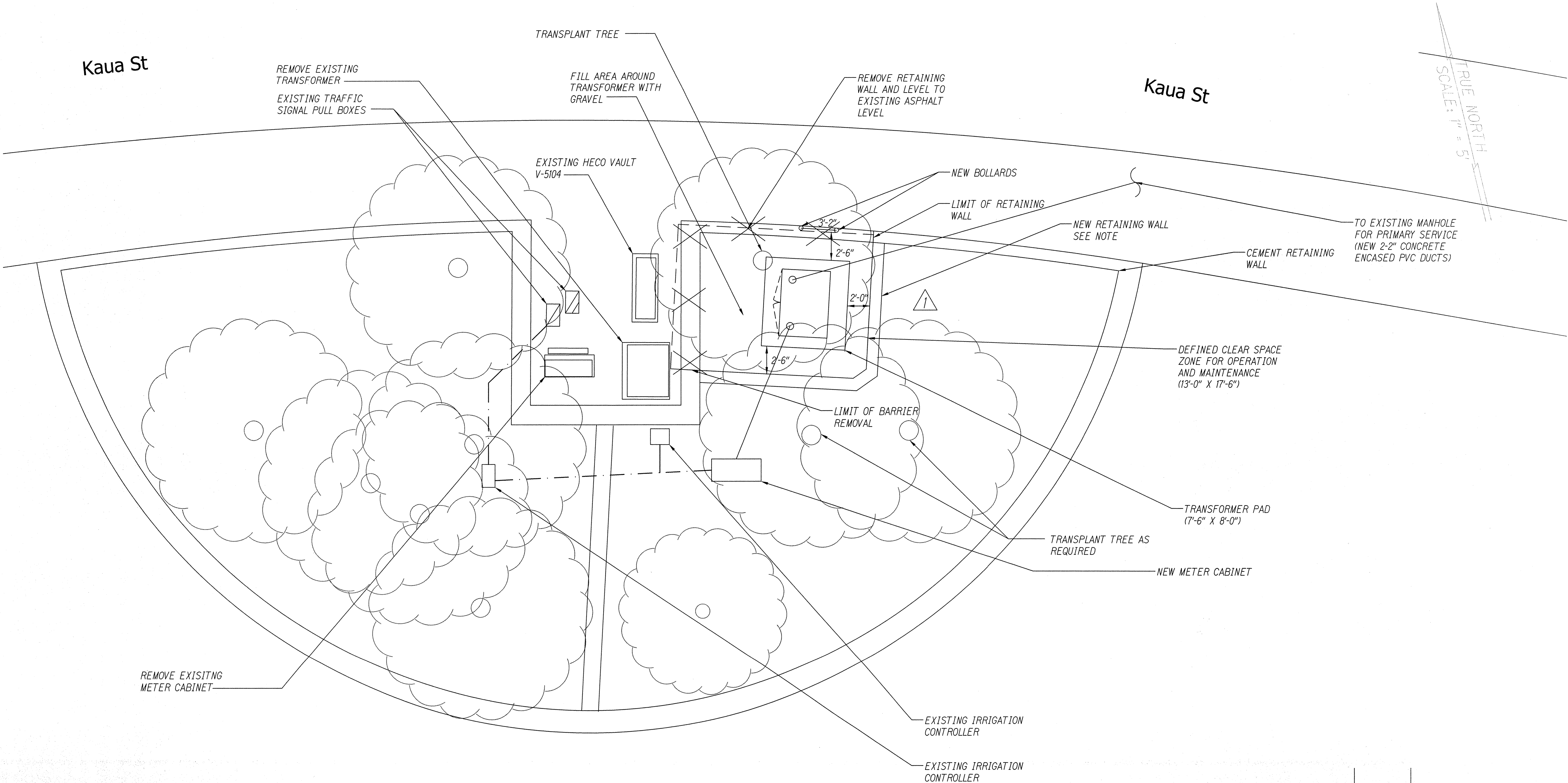


EXPIRATION DATE OF THE LICENSE 4/30/2018
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

9/13/17
DATE
Revised Conduit and added Light Fixtures for Underpass Areas
REVISION

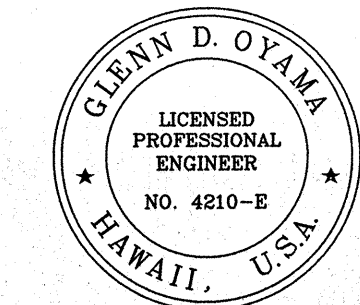
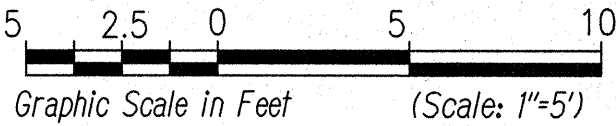
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
H-201 LIGHTING PLAN
STA. 355+00 TO 359+00
MOANALUA FREEWAY, HIGHWAY LIGHTING IMPROVEMENTS
Halawa Heights Off-ramp to Middle St. Overpass
FAP NO. NH-H201(005)
Scale: 1" = 40'-0" Date: August 2017
SHEET No. E-21 OF 53 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H20(K005)	2017	ADD. 140	171



FORT SHAFTER KAUA ST PARTIAL
ELECTRICAL SITE PLAN
Scale 1"=5'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

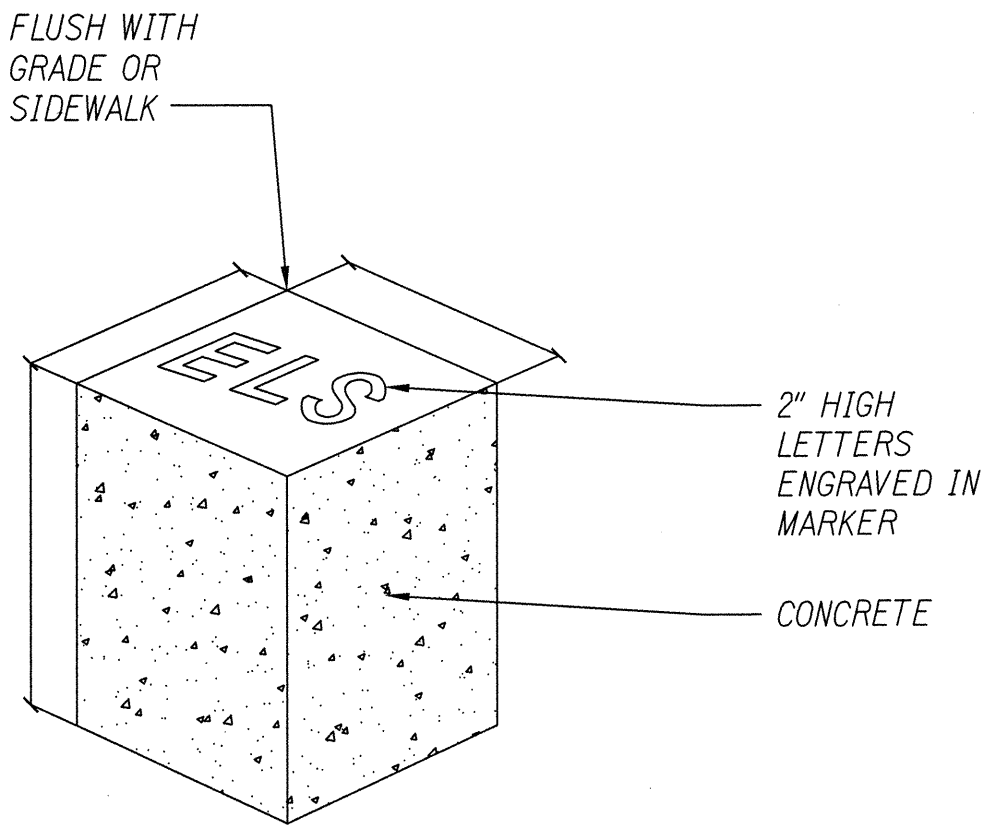


Expiration Date of the License 4/30/2018
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

9/13/17	Revised per HECO Comments
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
FORT SHAFTER KAUA ST
PARTIAL ELECTRICAL SITE PLAN
MOANALUA FREEWAY, HIGHWAY LIGHTING IMPROVEMENTS
Halawa Heights Off-ramp to Middle St. Overpass
FAP NO. NH-H20(K005)

Scale: 1" = 20'-0" Date: August 2017
SHEET No. E-22 OF 53 SHEETS

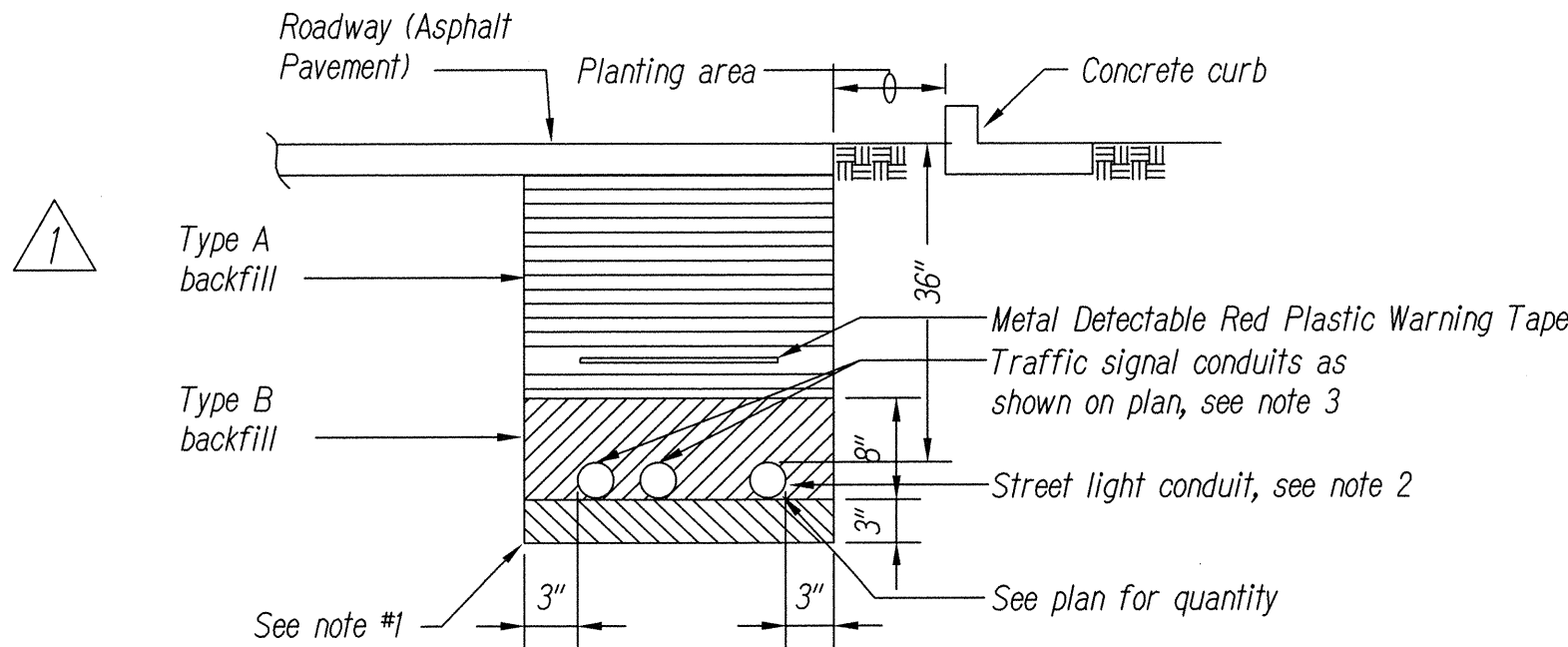


CONDUIT STUB-OUT MARKER

SCALE: NTS

NOTES:

1. "E"-Electric
"L"-Light
"S"-Traffic Signal

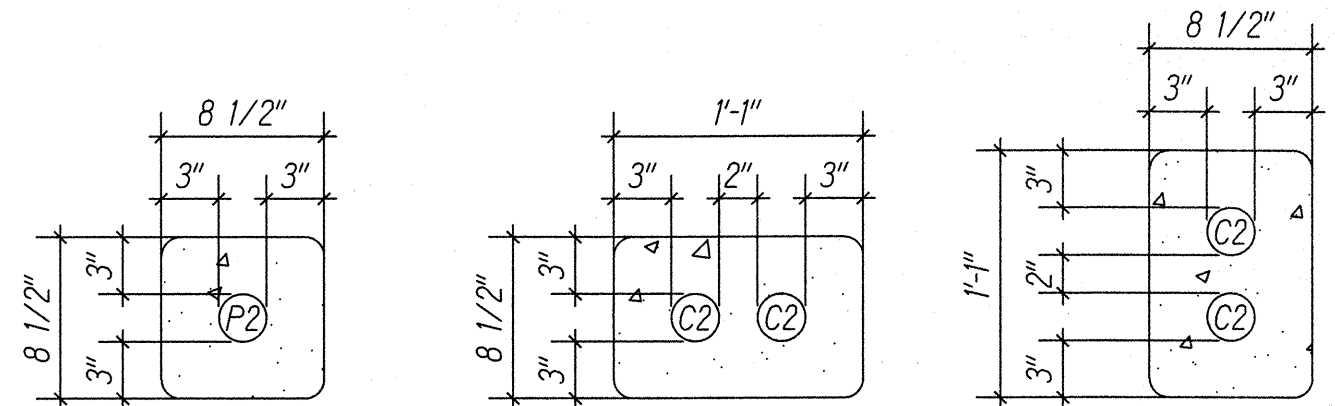


TRENCHING DETAIL

TYPE "A": Beach sand, earth or earth & gravel. If earth & gravel used, max. rock size shall be 1" & mixture shall contain not more than 50% by volume of rock particles. 95% compaction

TYPE "B": Same as Type "A" except that if earth & gravel used, the mixture must pass a 1/2" mesh screen & contain not more than 20% by volume of rock particles. 95% compaction

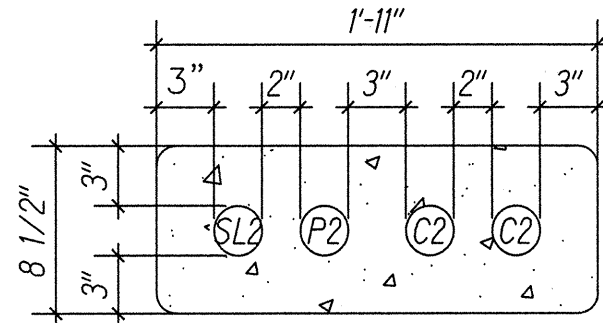
- NOTES:
1. If the normal material in the bottom of trench is not Type "B" an additional 3" shall be excavated & Type "B" backfill shall be provided.
2. All roadway crossing street light conduits shall be PVC schedule 40 with 3" concrete jacket. 2800 PSI @ 28 days compressive strength.
3. All traffic signal conduits shall be PVC schedule 40 with 3" concrete jacket. 2800 PSI @ 28 days compressive strength.



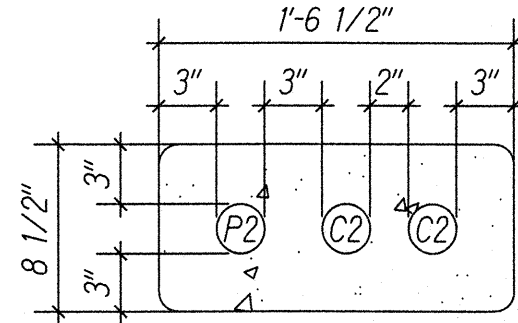
SECTION (SL1)

SECTION (SL2)

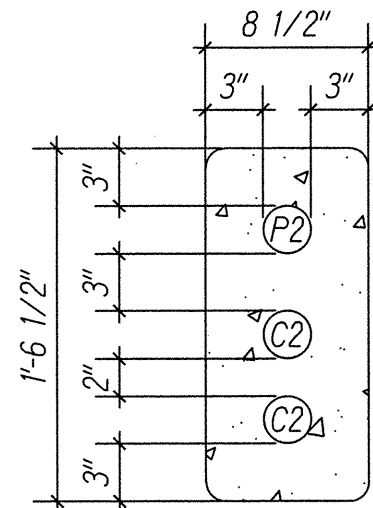
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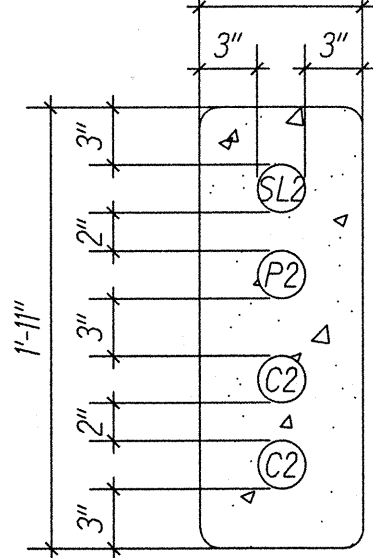
SECTION (SL2)



SECTION (SL1)



SECTION (SL2)

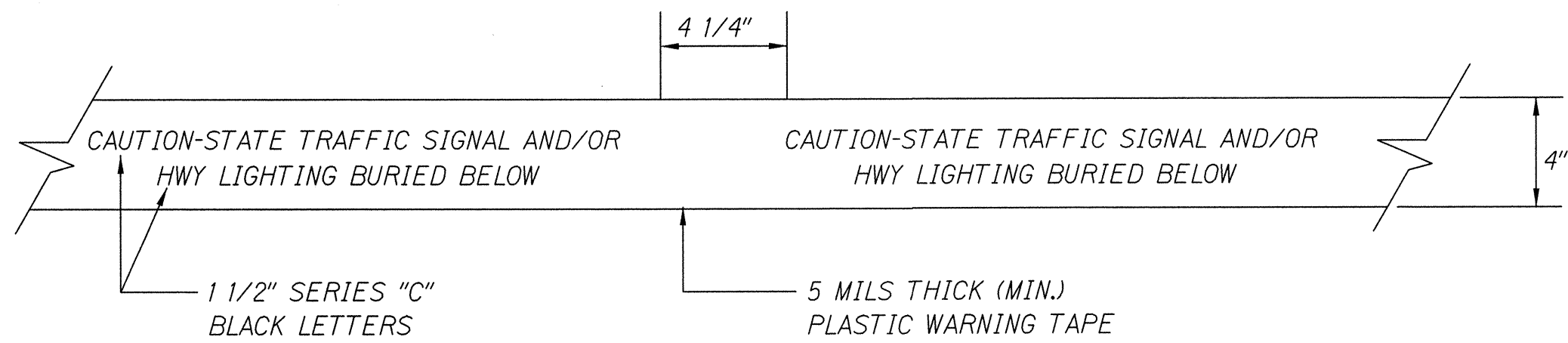


SECTION (SL3)

DUCT DETAILS

NOTES:

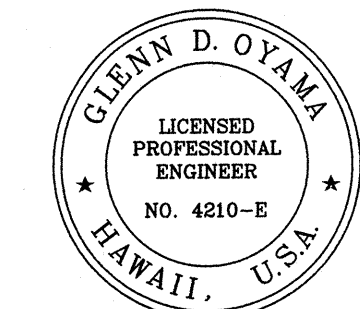
1. Contractor to determine applicability of duct section based on the duct complement noted on the plans.



METAL DETECTABLE RED PLASTIC WARNING TAPE

SCALE: NTS

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



EXPIRATION DATE OF THE LICENSE 4/30/2018
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

1	9/13/17	Revised Trenching and Duct Details
DATE	REVISION	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONDUIT DUCT DETAILS

MOANALUA FREEWAY, HIGHWAY LIGHTING IMPROVEMENTS
Halawa Heights Off-ramp to Middle St. Overpass
FAP NO. NH-H201(005)

Scale: Date: August 2017

SHEET No. E-51 OF 53 SHEETS

ADD. 169