

ELECTRICAL SYMBOL LIST

GENERAL NOTES:

1. PROVIDE 2'X4' LIGHTING HH AT EVERY PERMANENT POLE LIGHT. SEE MECO CONSTRUCTION DRAWINGS.
2. RELOCATION OF UTILITY LINES ALONG LAHAINALUNA ROAD AFFECTED BY THE CONSTRUCTION OF THE DETOUR ROAD AND OFF-RAMP WILL BE DONE BY UTILITY COMPANIES.
3. WIRING EXCLUDING RACEWAYS FOR PERMANENT STREET LIGHTS WILL BE DONE BY MECO.
4. VERIFY ALL REQUIREMENT PERTAINING TO LIGHTING AND POWER W/ MECO-MAUI REPRESENTATIVE
ALEX IDICA 872-3203, TELEPHONE WITH HAWAIIAN TELCOM-MAUI REPRESENTATIVE
SHERIANN TIHADA 242-5258, CATV WITH OCEANIC-MAUI BILL HANKE 877-4425 X838.
SEE UTILITY COMPANIES CONSTRUCTION DRAWINGS.
5. ALL INFRASTRUCTURES SUCH AS CONDUITS, HANDHOLES/MANHOLES AND JUNCTION BOXES ETC. SHALL BE PROVIDE BY CONTRACTOR. UNLESS NOTED OTHERWISE.
6. DEMOLITION WORKS INVOLVING STREET LIGHTS AND ASSOCIATED WIRING, INCLUDING MECO OWNED EQUIPMENT WILL BE PERFORMED BY MECO



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SYMBOL LIST,
GENERAL NOTES
HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1A
Future Keawe St Extension to Lohainaluna Rd
Part A: Off Ramp Mass Grading
Fed. Aid Proj. No. NH-030-1(35)R
Scale: As Noted Date: April, 2009
SHEET No. 1 OF 5 SHEETS



3' x 5' HANDHOLE (SPARE)

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

NOTES:

1. FURNISH 2 LIFTING HANDLES FOR EACH COVER.
2. PROVIDE TRAFFIC BEARING TYPE HANDHOLE.
3. COMPLY W/ MECO STANDARD.

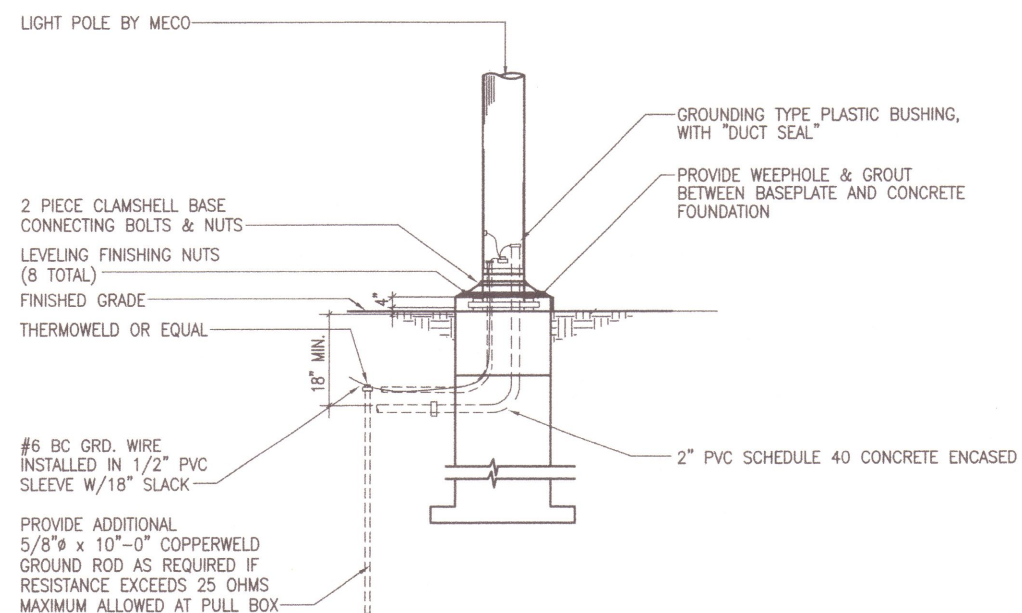


2' X 4' HANDHOLE (STREET LIGHTING)

NOT-TO-SCALE

NOTES:

1. PROVIDE TRAFFIC BEARING TYPE HANDHOLE.
2. COMPLY W/ MECO STANDARD.



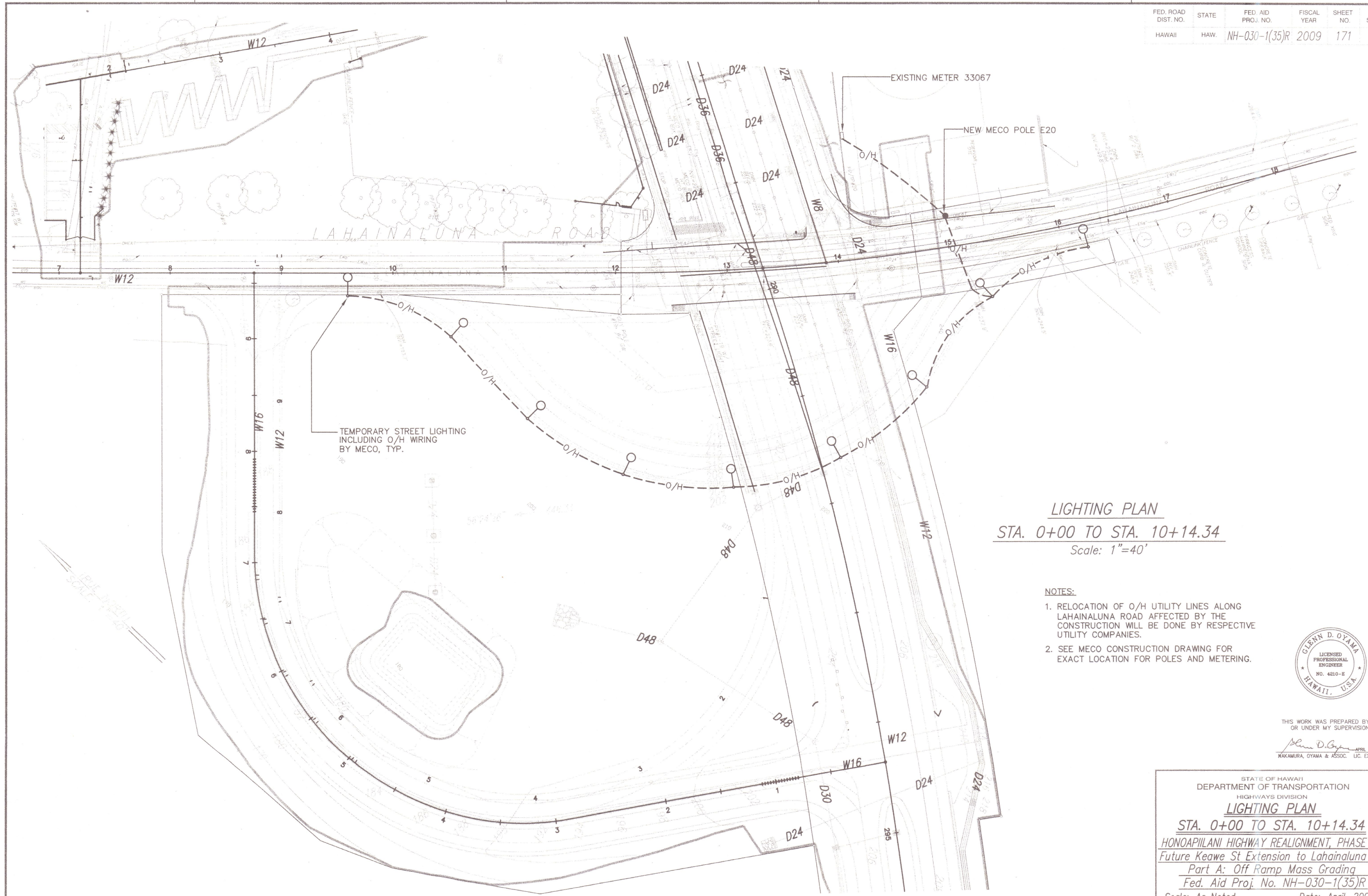
STREET LIGHT POLE DETAILS

NOT TO SCALE

STRUCTURAL NOTES:

1. SEE MECO CONSTRUCTION DRAWING FOR POLE BASE DETAILS.
COORDINATE W/ MECO FOR POLE BASE REQUIREMENT.

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



LIGHTING PLAN
STA. 0+00 TO STA. 10+14.34
 Scale: 1"=40'

NOTES:

1. RELOCATION OF O/H UTILITY LINES ALONG LAHAINALUNA ROAD AFFECTED BY THE CONSTRUCTION WILL BE DONE BY RESPECTIVE UTILITY COMPANIES.
2. SEE MECO CONSTRUCTION DRAWING FOR EXACT LOCATION FOR POLES AND METERING.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Glenn D. Oyama APRIL 30, 2010
 MAKAMURA, OYAMA & ASSOC. LIC. EXP. DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

LIGHTING PLAN

STA. 0+00 TO STA. 10+14.34

HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1A

Future Keawe St Extension to Lahainaluna Rd

Part A: Off Ramp Mass Grading

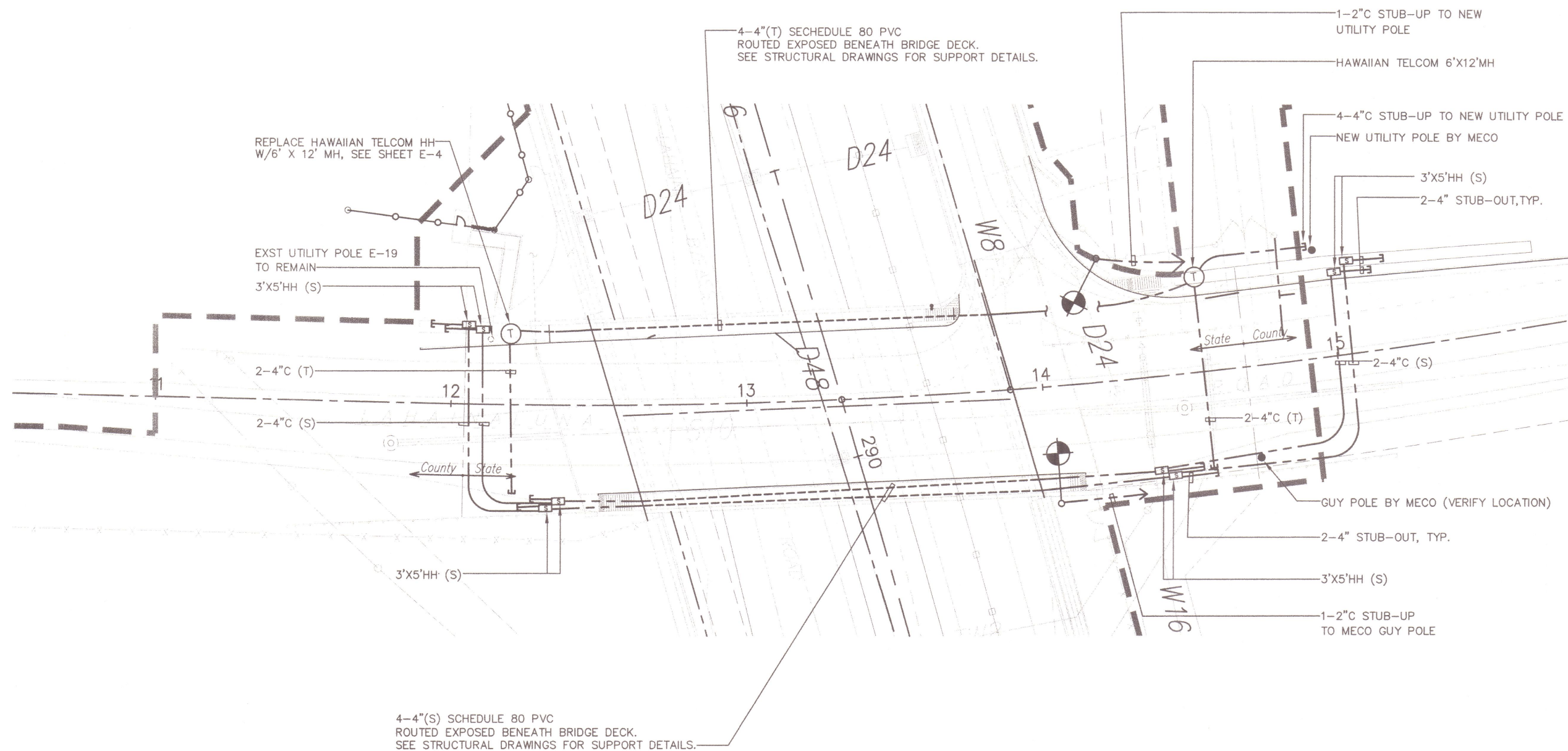
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SHEET No. 2 OF 5 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

TRUE NORTH
SCALE: 1"=20'



LIGHTING/TELECOM PLAN

Scale: 1"=20'

NOTES: 1. SEE E5 AND STRUCTURAL DRAWINGS FOR LOCATION AND DETAILS OF CONDUITS CROSSING LAHAINALUNA ROAD BRIDGE, INCLUDING EXPANSION FITTINGS THAT ALLOW AXIAL AND DEFLECTION MOVEMENT OF CONDUITS.



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Glenn D. Oyama APRIL 30, 2010
AKAMURA, OYAMA & ASSOC. LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING/TELECOM PLAN

HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1A
Future Keawe St Extension to Lahainaluna Rd

Part A: Off Ramp Mass Grading

Fed. Aid Proj. No. NH-030-1(35)R

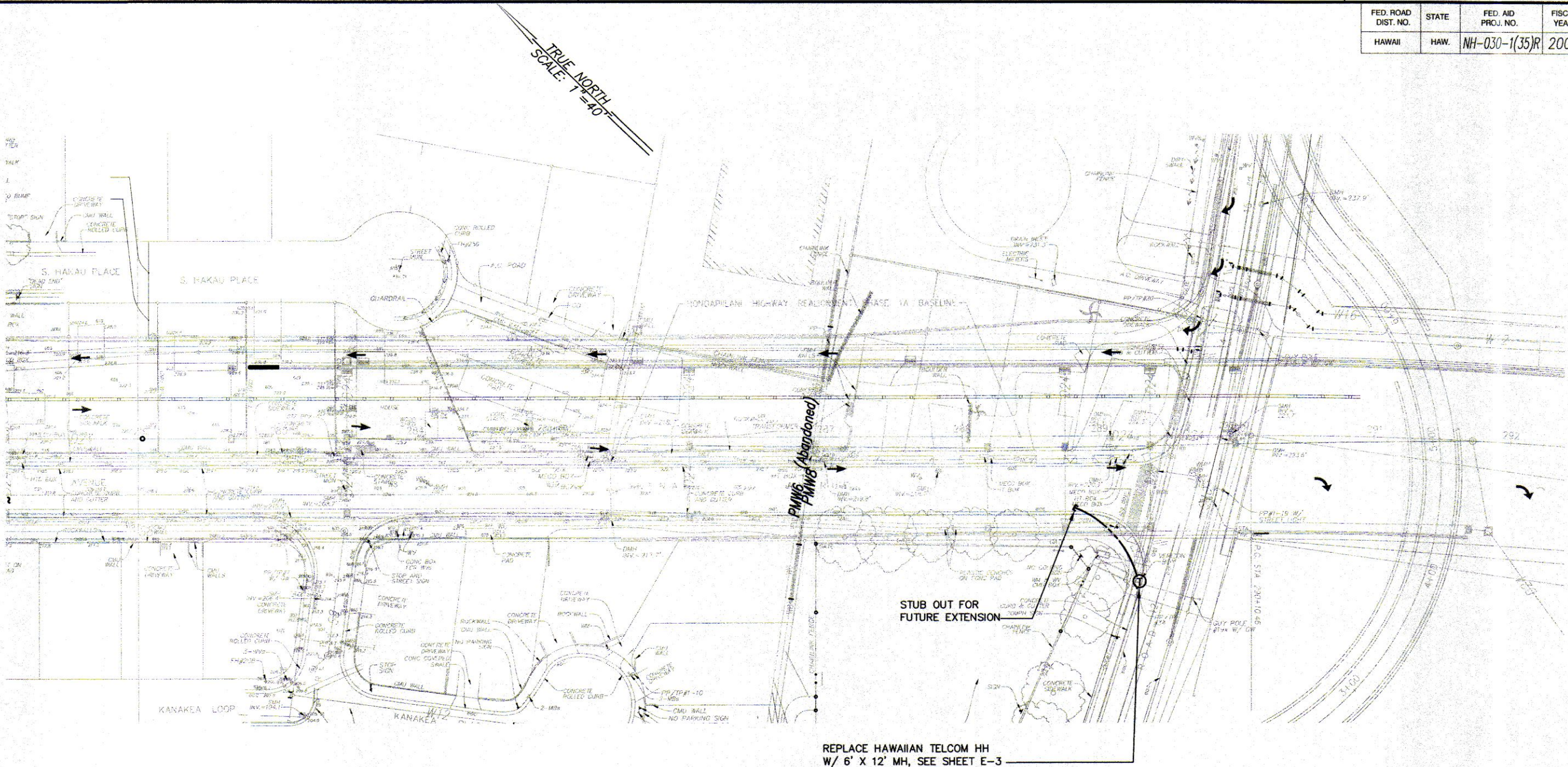
Scale: As Noted

Date: April, 2009

SHEET No. 3 OF 5 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-030-1(35)R	2009	173	176



TELECOM PLAN STA. 287+00 TO STA. 292+50
Scale: 1"=40'

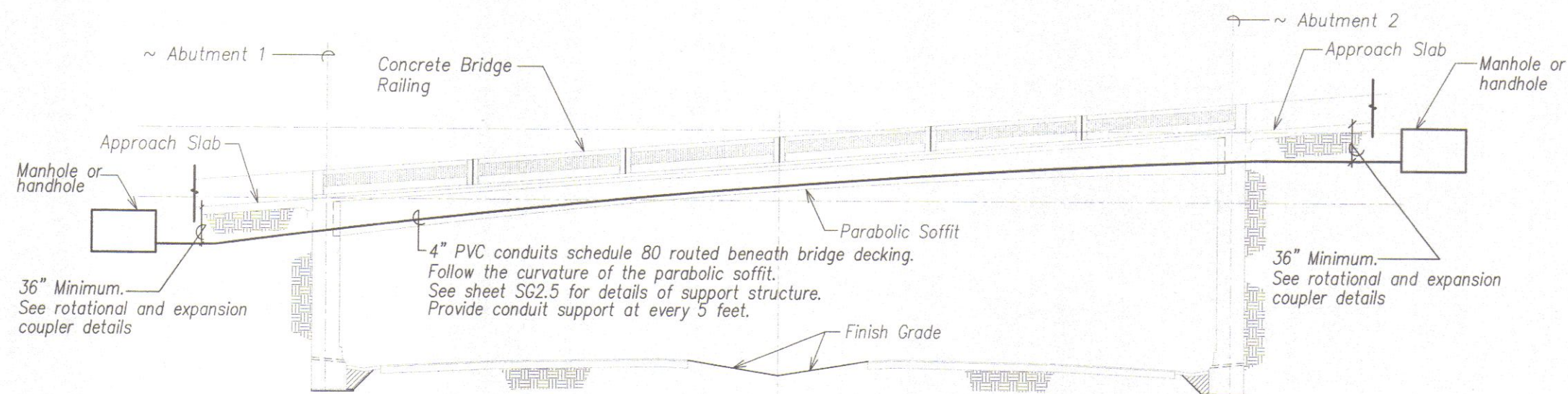


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Glenn D. Oyama
NAKAMURA, OYAMA & ASSOC. APRIL 30, 2010
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TELECOM PLAN
STA. 281+00 TO STA. 292+50
HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1A
Future Keawe St Extension to Lahainaluna Rd
Part A: Off Ramp Mass Grading
Fed. Aid Proj. No. NH-030-1(35)R
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SHEET No. 4 OF 5 SHEETS

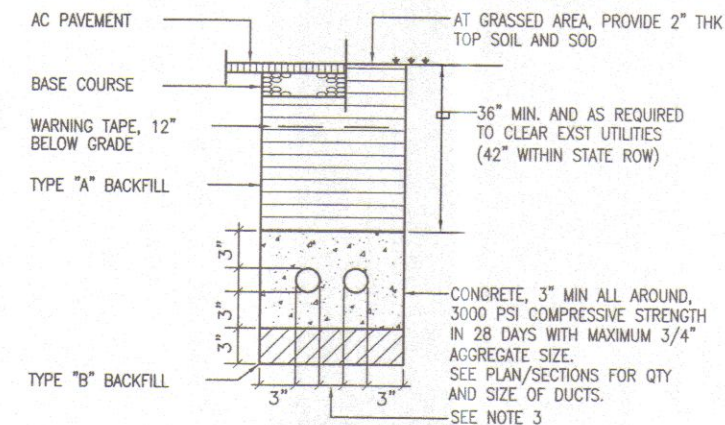
ORIGINAL PLAN	DATE
SURVEY PLATTED BY	
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-030-1(35)R	2009	174	176



CONDUITS CROSSING DETAIL AT LAHAINALUNA ROAD GRADE SEPARATION BRIDGE

Scale: NTS

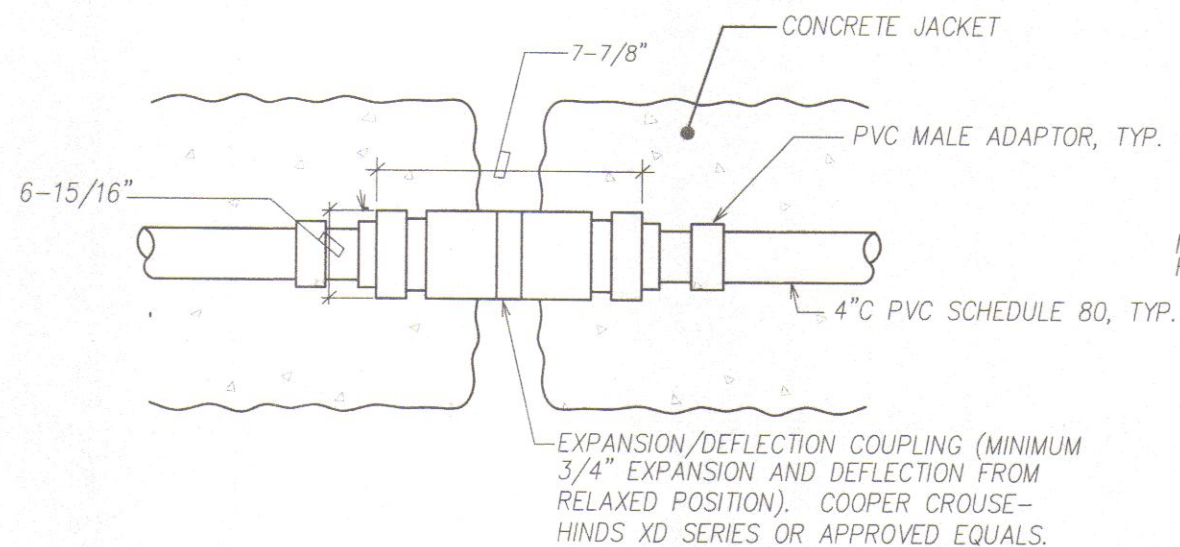


TYPICAL DUCT SECTION

NOTES:

- ALL DUCTS SHALL BE SCHEDULE 40 PVC OR AS INDICATED & PROVIDED WITH A POLYOLEFIN PULL LINE.
- BACKFILL DATA:
 - TYPE "A" BACKFILL: EARTH & GRAVEL, MAXIMUM ROCK SIZE SHALL BE 1" AND THE MIXTURE SHALL CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES, 95% COMPACTION. INSTALL TYPE "A" BACKFILL IN MAXIMUM 6" LAYERS LOOSE THICKNESS PRIOR TO COMPACTION
 - TYPE "B" BACKFILL: EARTH & GRAVEL, MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES, 95% COMPACTION. IF MATERIALS AT BOTTOM OF TRENCH IS NOT TYPE "B", AN ADDITIONAL 3" SHALL BE EXCAVATED AND TYPE "B" BACKFILL PROVIDED.
- DUCT SEPARATION REQUIREMENTS:

ELEC TO ELEC.....	2" MIN.
ELEC TO SIGNAL/COMM.....	12" MIN.
SIGNAL/COMM TO SIGNAL/COMM.....	2" MIN.
- SEE PLANS OR DIAGRAMS FOR SIZE & NUMBER OF DUCTS. FLATTEN DUCT BANK AS REQUIRED TO PASS OVER OR UNDER EXISTING AND NEW UTILITIES.
- COMPLY WITH MECO, HAWAIIAN TELCOM & OCEANIC TIME WARNER CABLE, UTILITY COMPANY REQUIREMENTS. PERFORM A MANDREL TEST AFTER DUCTS ARE INSTALLED.

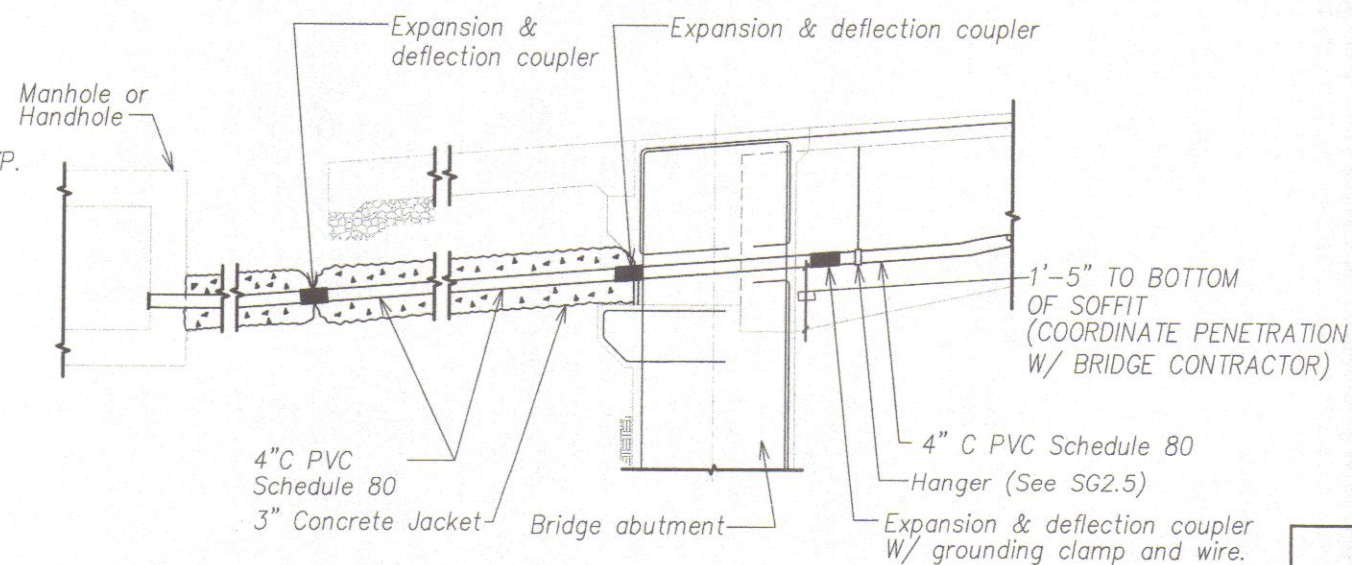


EXPANSION/DEFLECTION COUPLING DETAILS FOR UNDERGROUND INSTALLATION

Scale: N.T.S.

NOTES:

- SIMILAR FOR EXPOSED INSTALLATION BENEATH BRIDGE DECKING, EXCEPT WITHOUT CONCRETE JACKET.



ROTATIONAL AND EXPANSION COUPLES DETAILS

Scale: N.T.S.



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Glenn D. Oyama

APR. 30, 2010

AKAMURA, OYAMA & ASSOC. U.C. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**LAHAINALUNA ROAD GRADE SEPARATION STRUCTURE-
DETAILS**
HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1A
Future Keawe St Extension to Lahainaluna Rd
Part A: Off Ramp Mass Grading
Fed. Aid Proj. No. NH-030-1(35)R
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SHEET No. 5 OF 5 SHEETS

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ORIGINAL PLAN	
NOTE BOOK	
No.	