FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99D/G-01-08	2008	52	89

STATE RIGHT-OF-WAY BACKFILL NOTES

Controlled low strength material (CLSM) approximately 50-150 PSI compressive strength at 28 days. CLSM shall comply with with sections 313 and 601 of the special provisions.

Concrete 3000 PSI compressive strength @ 28 days.

NOTE: Base course & sub-base course per 2005 State standard specifications for highway construction.

GENERAL NOTES

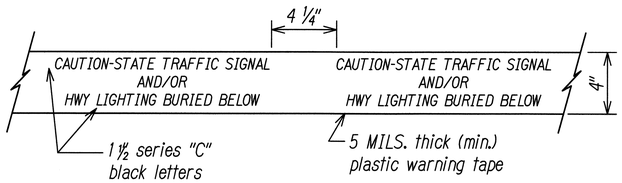
1. If trench is located on unpaved area, the contractor shall replace 10 glassphalt concrete and 4" A.C. pavement with type "A" trench backfill material. (Trench backfill material "A" consist of beach sand, Earth, or earth and gravel. If earth and gravel is used, the maximum shall contain not more than 50% by volume of rock particle. maximum 8" loose fill per lift obtain 95% compaction for each lift. Rock shall not exceed 1" Ø.)

2. The metal detectable red plastic warning tape shall be a minimum 5 MILS thick and 4" wide with a continuous metallic backing and corrosion resistant 1' MIL thick foil core. The message on the tape shall read, "CAUTION - STATE TRAFFIC SIGNAL AND/OR HWY LIGHTING BURIED BELOW," utilizing 1 ½ Inches series "C" black lettering. The message will be repeated with a 4 ¼" spacing between top line of message and start of next repeat.

3. The contractor may begin backfilling the conduit trench before the concrete reaches 2500 PSI compressive strength but after concrete has hardened sufficiently enough that backfilling will not damage the concrete jacket.

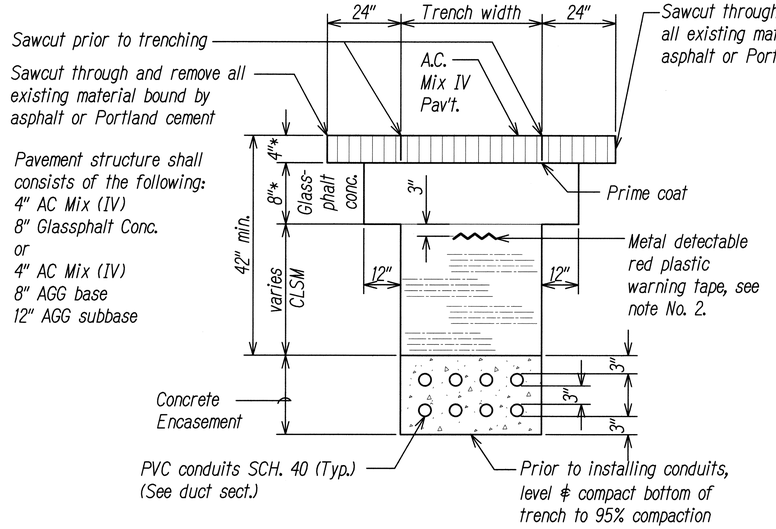
4. Maximum four (4) conduits per ROW for multiple conduit duct section. Ducts shall be installed with spacers and anchored to the ground before pouring concrete. Spacers shall be a maximum of 5' apart. Joints shall be staggered.

5. After installing all the traffic signal cables, the contractor shall duct seal all conduits in the pullboxes, traffic signal standards and traffic signal controller cabinet concrete base. The duct seal material shall be approved by the traffic signal inspector/engineer.

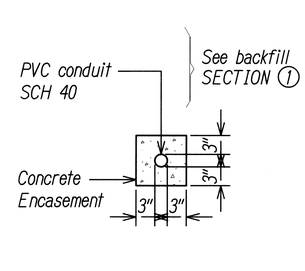


For additional information see note No.2.

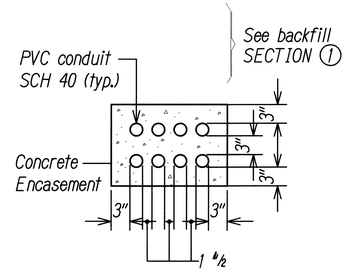
METAL DETECTABLE RED PLASTIC WARNING TAPE



① TYPICAL BACKFILL SECTION WITH CONCRETE ENCASED DUCTS

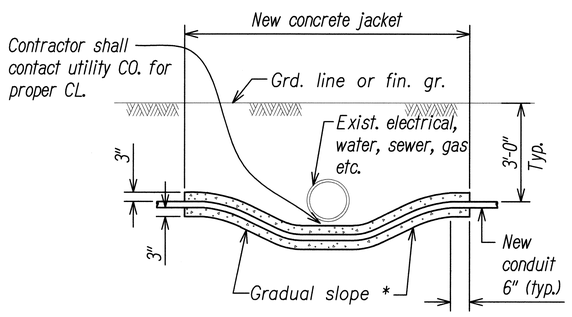


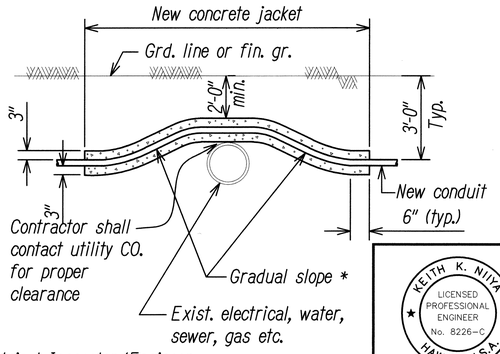
SINGLE CONDUIT



MULTIPLE CONDUIT

DUCT SECTIONS - CONC. ENCASED





* To be determined by State Electrical Inspector/Engineer

CONDUIT BY-PASS DETAIL AT VARIOUS UTILITIES

NOT TO SCALE

HAZARDOUS MATERIAL NOTES

1. General Waste Materials:

   All general waste materials (trash and construction debris) shall be collected and stored in a securely lidded metal dumpster.⅓The dumpster shall meet all local and State solid waste management regulations.⅓ All trash and construction debris from the site shall be deposited in the dumpster.⅓The dumpster shall be emptied a minimum of twice per week or as often as is deemed necessary.⅓No construction waste materials shall be buried onsite.⅓The contractor's supervisory personnel shall be instructed regarding the correct procedure for waste disposal.⅓Notice stating these practices shall be posted in the office trailer and the Contractor shall be responsible for seeing that these procedures are followed.

2. Petroleum-Contaminated Soil

   If petroleum-contaminated soil is encountered during construction it shall be stockpiled separately from other materials.⅓Soil contaminated with oil, diesel, or gasoline from sources such as underground storage tanks and underground pipelines is not hazardous waste and shall be managed by the contractor in compliance with all local and State requirements regarding the handling⅓(stockpiling, transportation, and disposal)⅓of petroleum-contaminated soil.⅓The stockpiled soil shall be characterized by the contractor for acceptance at an on-island petroleum-contaminated soil remediation/disposal facility.

3. Hazardous Waste

   In the unlikely event that hazardous waste is generated during the project all hazardous waste materials shall be disposed of in the manner specified by local, State, and Federal regulations by the Contractor or manufacturer. Hazardous waste is defined in 40 CFR Part 261 and can be either "listed" or "characteristic" hazardous waste. The Contractor's site personnel shall be instructed in how to identify hazardous wastes and manage them should a hazardous waste be encountered or generated. The Contractor's site personnel shall be instructed in these practices and shall be responsible for seeing that these practices are followed.

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

KEITH K. NIIYA
LICENSED PROFESSIONAL ENGINEER
No. 8226-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE — EXPIRATION DATE OF THE LICENSE 4/30/10

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

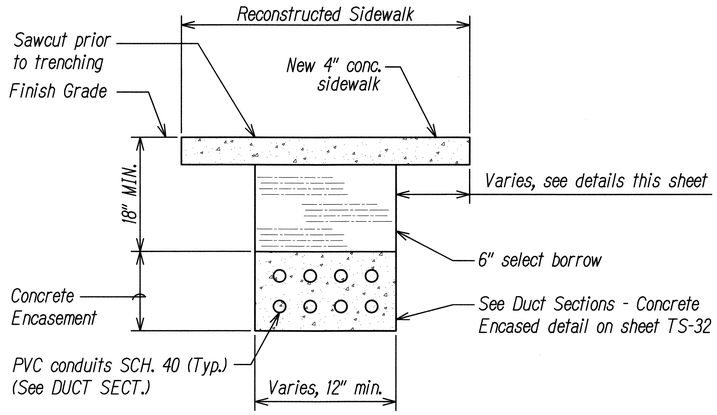
TRENCH DETAILS-1

KAMEHAMEHA HIGHWAY
TRAFFIC OPERATIONAL IMPROVEMENTS
VICINITY OF ACACIA ROAD TO CENTER DRIVE
PROJECT NO. 99D/G-01-08

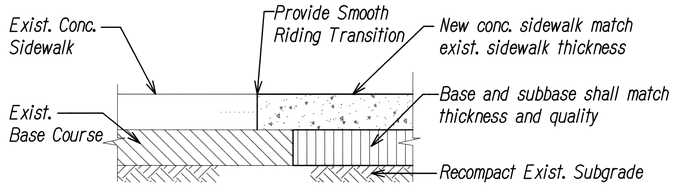
Scale: As Shown Date: April 2008

SHEET No. TS-33 OF 36 SHEETS

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99D/G-01-08	2008	53	89

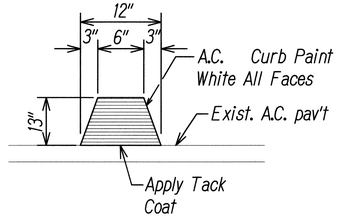


① TYPICAL BACKFILL SECTION WITH CONCRETE ENCASED DUCTS UNDER SIDEWALK AREAS



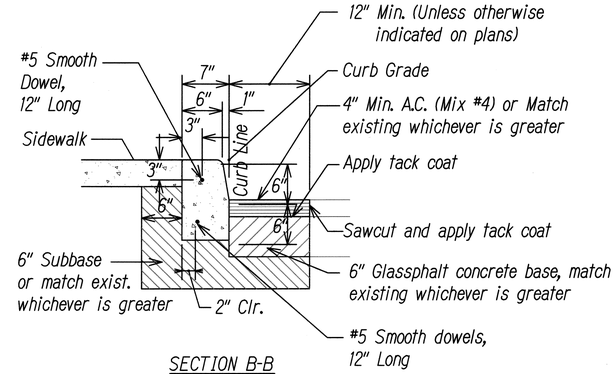
CONCRETE CONNECTION DETAIL

NOT TO SCALE



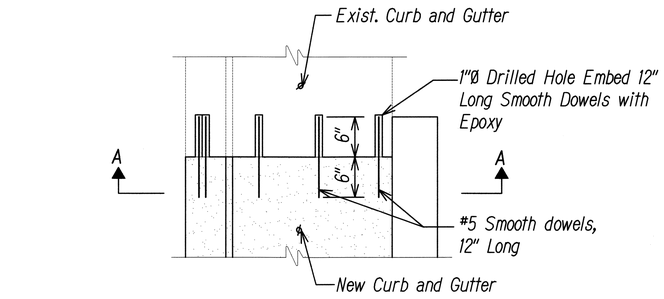
ASPHALT CONCRETE CURB DETAIL

NOT TO SCALE

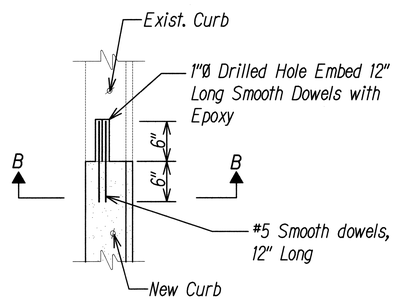


SECTION B-B

CURB CONNECTION DETAIL



PLAN



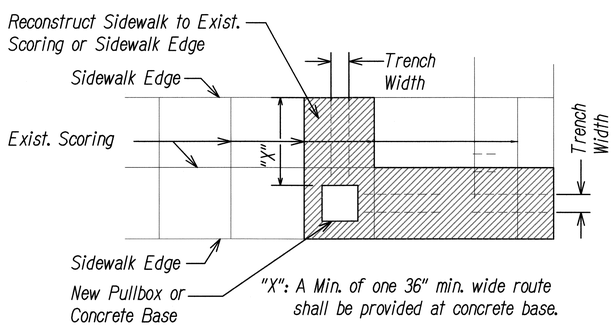
PLAN

SECTION A-A

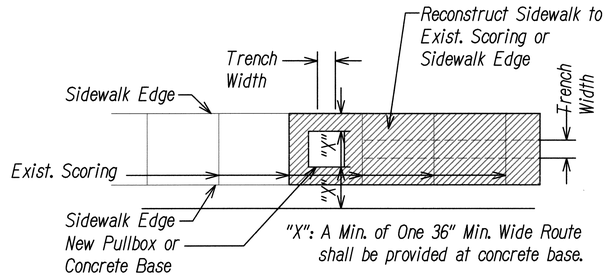
CURB AND GUTTER CONNECTION DETAIL

TYPICAL PAVEMENT RESTORATION DETAILS

NOT TO SCALE



AT MULTIPLE BLOCK-WIDTH SIDEWALKS



AT SINGLE BLOCK-WIDTH SIDEWALKS

SIDEWALK RECONSTRUCTION DETAILS

NOT TO SCALE

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

KEITH K. NIIYA
LICENSED PROFESSIONAL ENGINEER
No. 8226-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/10
SIGNATURE — EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRENCH DETAILS-2

KAMEHAMEHA HIGHWAY
TRAFFIC OPERATIONAL IMPROVEMENTS
VICINITY OF ACACIA ROAD TO CENTER DRIVE
PROJECT NO. 99D/G-01-08

Scale: As Shown Date: April 2008

SHEET No. TS-34 OF 36 SHEETS