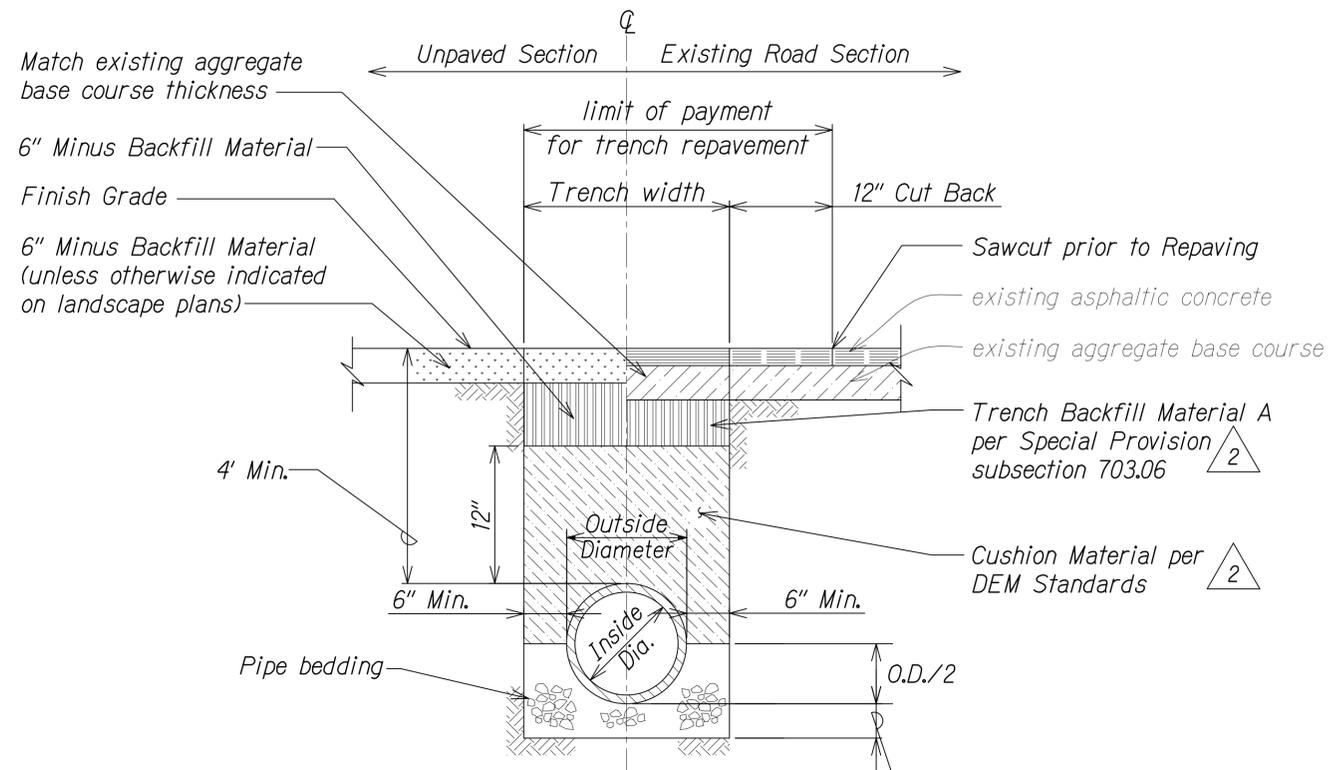


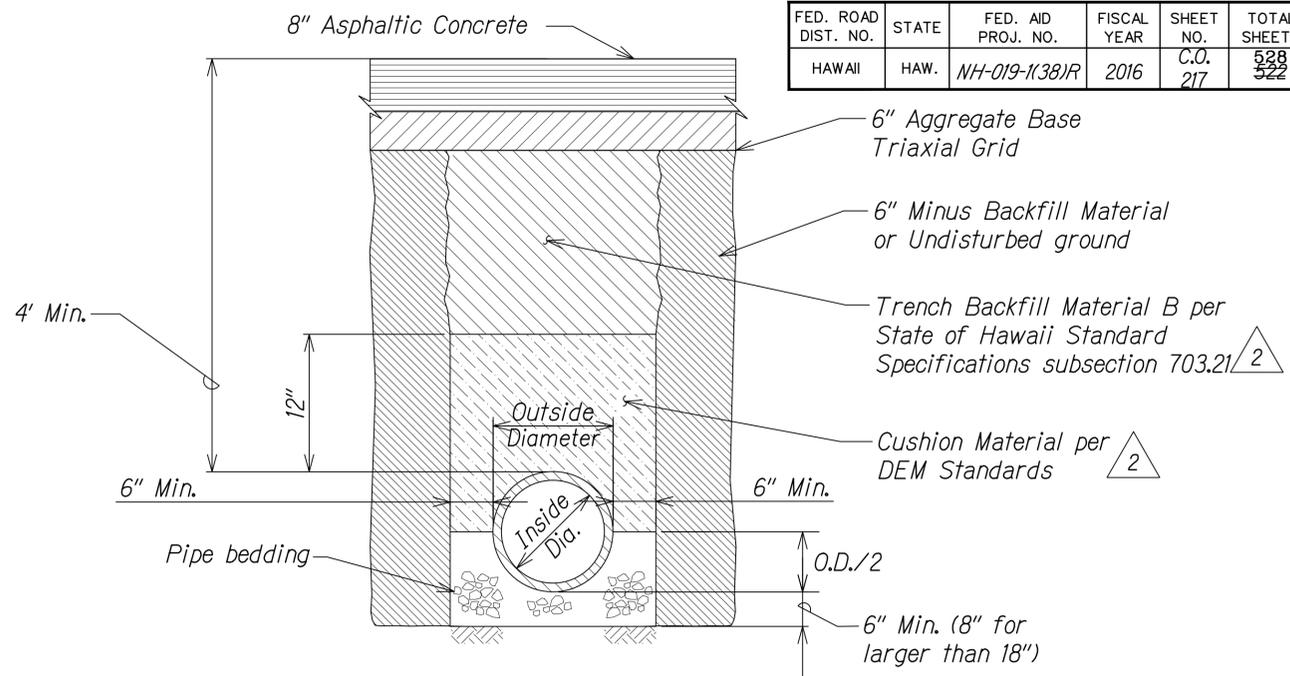
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(38)R	2016	C.O. 217	528 322



**NOTES:**

Materials for Class B pipe bedding shall be 3/4" Aggregate Base Course placed in successive horizontal layers of loose material not to exceed 6 inches in depth and shall be uniformly consolidated to 95 percent maximum dry density. Compaction testing for compliance shall be routinely performed and approved by the independent testing and quality control laboratory. All test results shall be submitted to the Engineer for final acceptance.

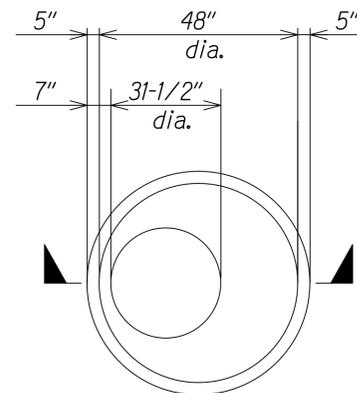
**TRENCH DETAIL UNDER EXISTING PAVEMENT OR UNPAVED AREAS WITHIN STATE HWY. RIGHT-OF-WAY**  
Not To Scale



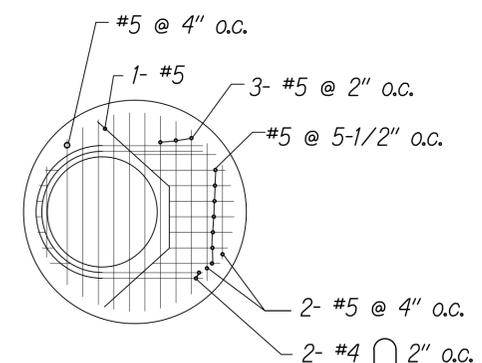
**TRENCH DETAIL UNDER NEW PAVEMENT WITHIN STATE HWY. RIGHT-OF-WAY**  
Not To Scale

**NOTES:**

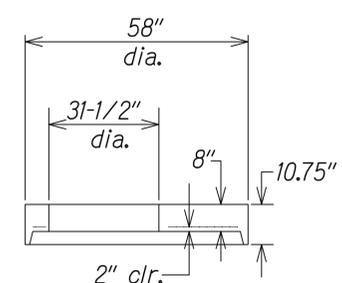
- Standard precast manhole elements conform to ASTM Standard C-478 and AASHTO M-199.
- Concrete shall have compressive strength of 5,000 psi at 28 days.
- All reinforcing steel shall be new stock deformed bars conforming to ASTM A-706, grade 60 unless otherwise noted. Placement of rebar shall be in accordance with ACI-315 and ACI-318. All bars shall be clean of rust, grease or other materials likely to impair bond. All bends shall be made cold.
- All reinforcing bars shall be accurately and securely placed.
- All reinforcing shall be lapped 40 bar diameters or eighteen (18") inches, whichever is greater at splices. All splices shall be away from point of maximum stress.



**PLAN**



**PLAN VIEW (REINF'G)**



**SECTION**

**8" FLAT TOP WITH 31-1/2" DIAMETER OPENING**  
Not To Scale

**LEGEND FOR AS-BUILT POSTINGS**

	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

Weight = 1,600 lbs.  
Concrete = 0.36 C.Y.  
Rebar = 10 lbs. (#4)  
50 lbs (#5)



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.  
Austen W. Drake APRIL 30, 2018  
SIGNATURE EXPIRATION DATE OF THE LICENSE

Approved under separate cover  
DIVISION CHIEF COUNTY OF HAWAII WASTEWATER DIVISION  
DATE

DATE	REVISION
8/1/16	2 Revised backfill specification ref.
1/22/16	1 Revised ref. to shallow drop MH; Added Type SA MH frame & cover detail ref.; Added flat top detail per DEM comment

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**GRAVITY SEWER DETAILS**

QUEEN KAAHUMANU HIGHWAY WIDENING  
Kealakehe Pkwy. To Keahole Airport Rd.(Ph. 2)  
Federal Aid Project No. NH-019-1(38)R  
Scale: AS NOTED Date: AUGUST 2016

SHEET No. 1 OF 1 SHEETS

ORIGINAL PLAN	DATE
NO. _____	_____
DESIGNED BY _____	CHECKED BY _____
QUANTITIES BY _____	
DATE _____	

H:\\_CIVIL\_3D\_PROJECTS\2008\_003\_001\_CBI\_QUEEN\_K\_HWY\_WIDENING\01\_CIVIL\_DRAWINGS\217\_GRAVITY\_SEWER\_DETAILS.DWG 8/5/2016 10:38 AM