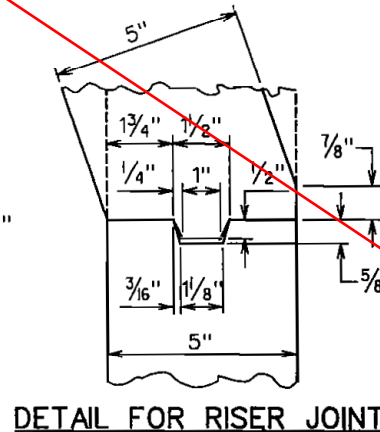
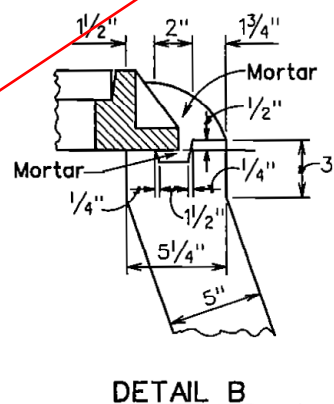
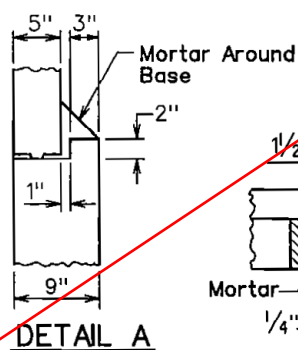
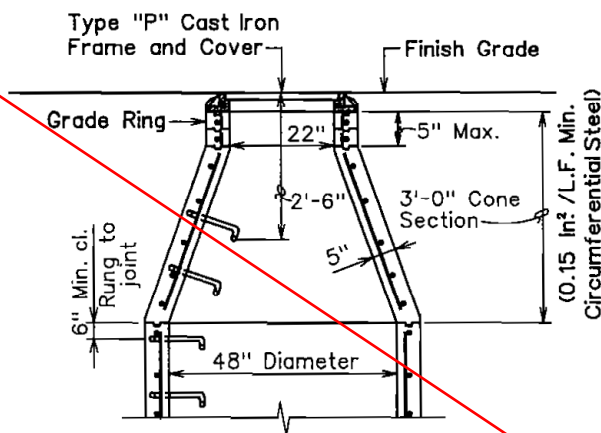
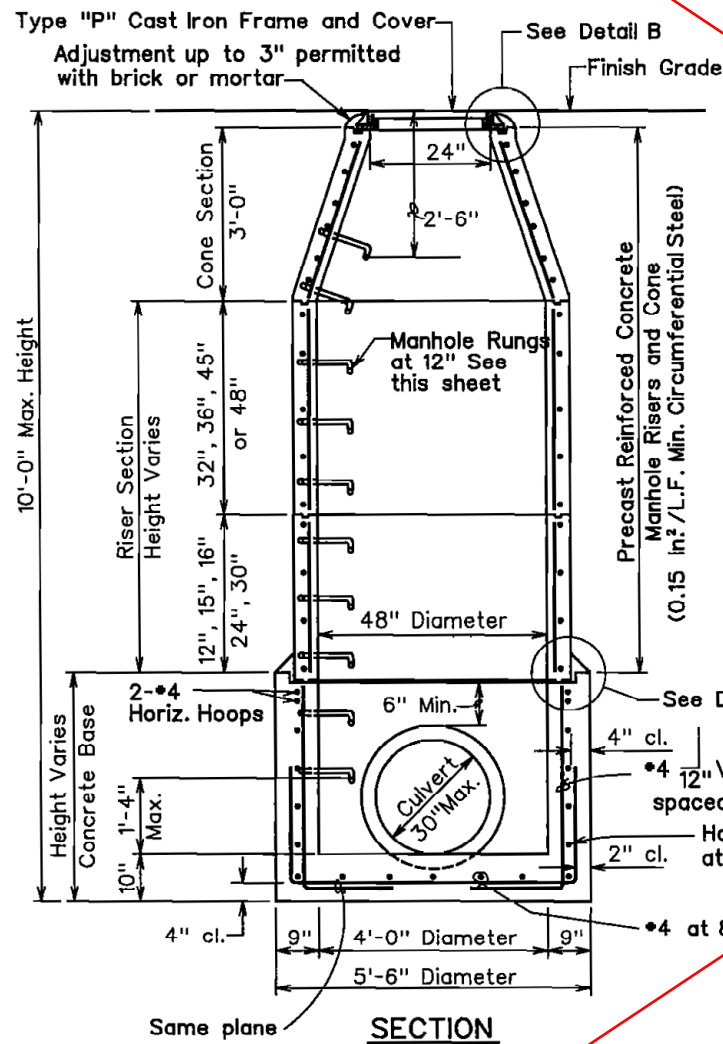
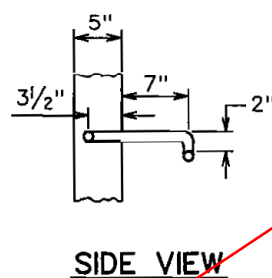
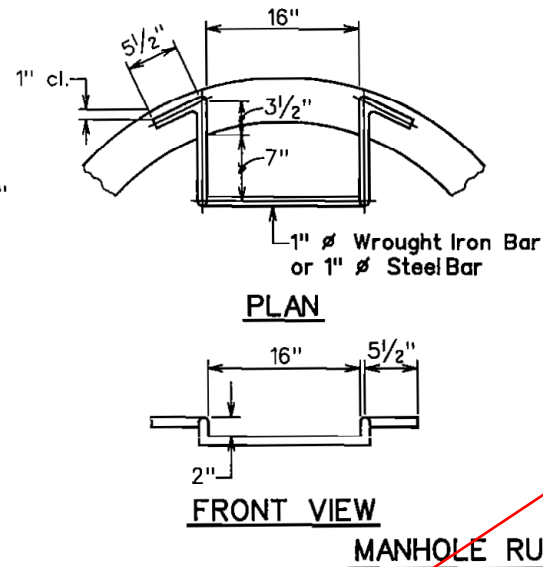
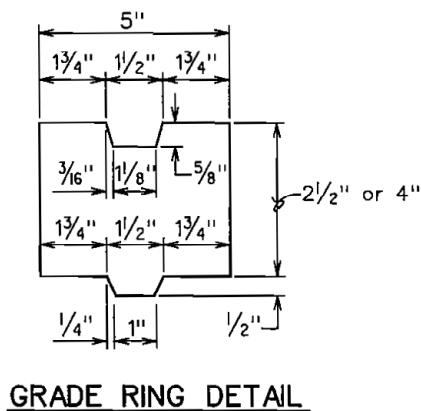
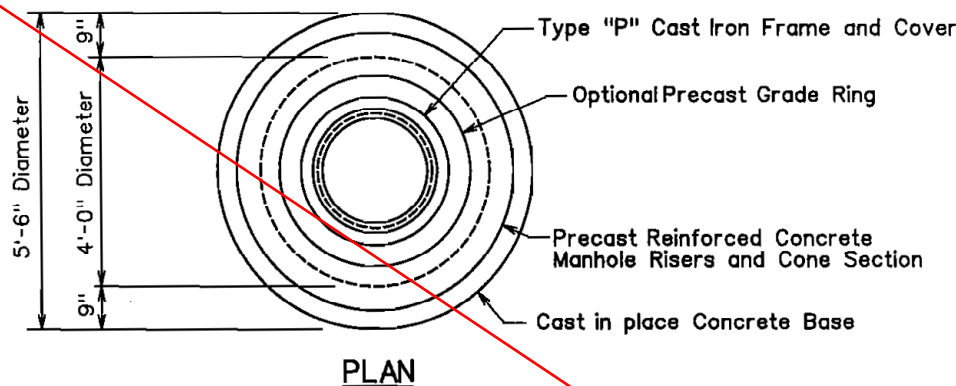


STATE	PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD 6(8)	G11	G19

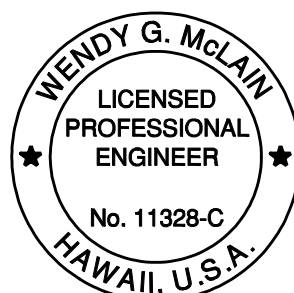
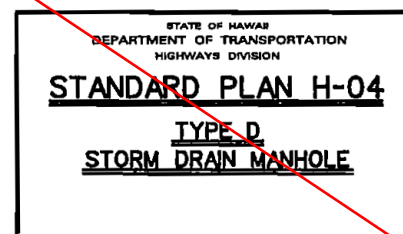


- General Notes:**
1. Select appropriate combination of risers and grade rings for required height.
 2. All joints to be grouted as set.
 3. General Criteria
 - a. At-rest Horizontal Pressure = 80 pcf (2 to 1 sloping backfill, above groundwater)
 - b. At-rest Vertical Pressure = 40 pcf (2 to 1 sloping backfill, above groundwater)
 - c. Allowable Bearing Capacity = 1,700 psf + 8 x (overburden pressure); where overburden pressure equals 100 pcf x H
For H = 0' to 5'; heq = 4'-0"
 - d. Live Load Surcharge (Equivalent Height of Soil)
For H = 5' to 20'; heq = 3'-0"
 4. Exposure Factor (For Crack Control) = 1.0 for Class 1 exposure.

TYPE "D" STORM DRAIN MANHOLE

DATE	REVISION	APP'D.
00/00/00	X	

STANDARD PLAN H-04 05/31/07



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature: Wendy G. McLain
EXPIRATION DATE OF THE LICENSE: 4/30/2016

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

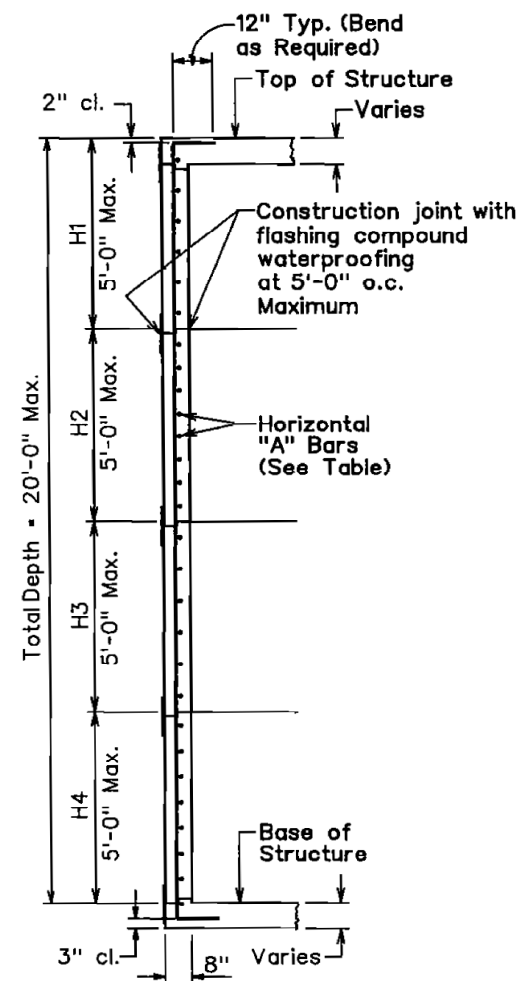
U.S. CUSTOMARY SPECIAL

(HDOT STD H-04)
TYPE D
STORM DRAIN MANHOLE

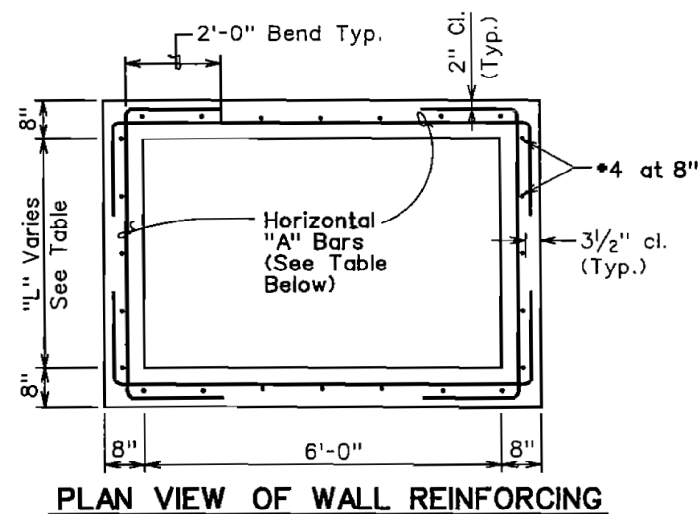
SPECIAL
604-A

Amendment A001
3/6/15 Contract negotiation revisions and NPDES compliance

NO SCALE



ELEVATION VIEW
OF WALL SECTION



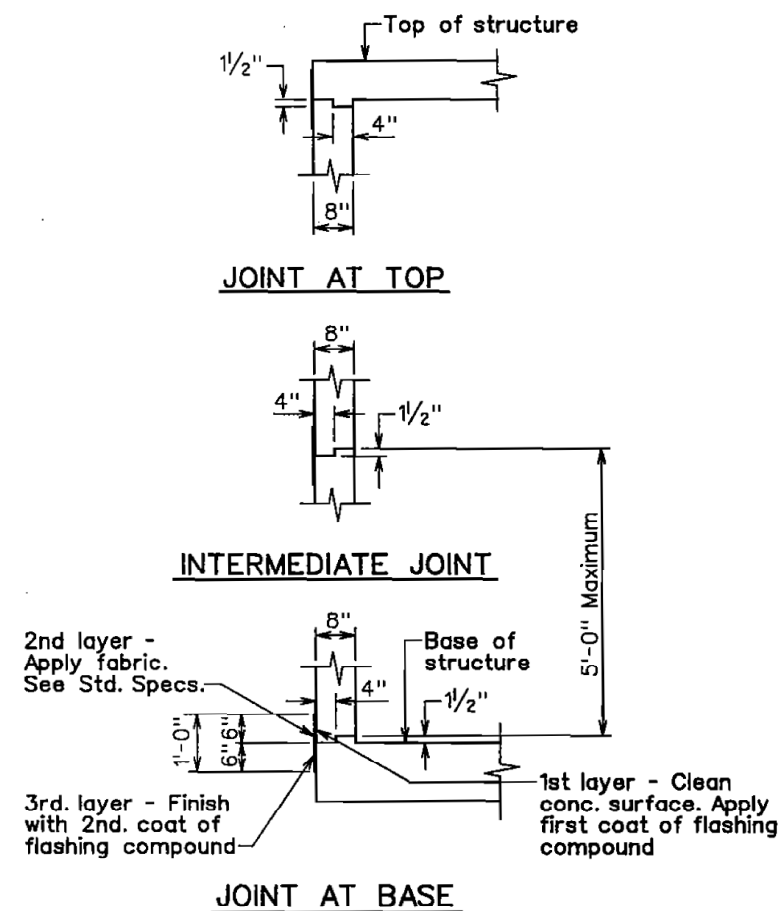
PLAN VIEW OF WALL REINFORCING

General Notes:

- General Criteria**
- a. At-rest Horizontal Pressure - 80 pcf (2 to 1 sloping backfill, above groundwater)
 - b. At-rest Vertical Pressure - 40 pcf (2 to 1 sloping backfill, above groundwater)
 - c. Allowable Bearing Capacity - 1,700 psf + 8 x (overburden pressure); where overburden pressure equals 100 pcf x H
 - d. Live Load Surcharge (Equivalent Height of Soil)
 - For H = 0' to 5'; heq = 4'-0"
 - For H = 5' to 20'; heq = 3'-0"
- 2. Exposure Factor (For Crack Control) - 1.0 for Class 1 exposure**

HORIZONTAL "A" BARS FOR CATCH BASINS						
DEPTH		"L" MAX.				
		4'-0"	6'-0"	7'-4"	8'-4"	9'-4"
H1	0" to 5'-0"	*5 at 10"	*5 at 10"	*5 at 8"	*5 at 6"	*5 at 5"
H2	5'-1" to 10'-0"	*5 at 8"	*5 at 8"	*5 at 6"	N.A.	N.A.
H3	10'-1" to 15'-0"	*5 at 6"	*5 at 6"	N.A.	N.A.	N.A.
H4	15'-1" to 20'-0"	*5 at 6"	N.A.	N.A.	N.A.	N.A.

Note: N.A. = Not Applicable



CONSTRUCTION JOINT AND WATERPROOFING DETAILS

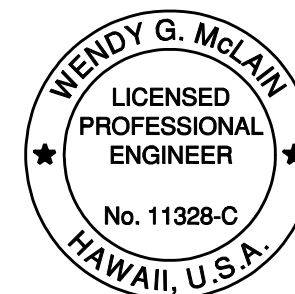
Note:
Waterproof all construction joints.
See Std. Spec. Sec. 705.05.

x	x	
DATE	REVISION	APP'D

STANDARD PLAN H-05 05/31/07

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD PLAN H-05
TYPICAL REINFORCING DETAILS
FOR DRAINAGE STRUCTURES



THIS WORK WAS PREPARED BY ME OR
UNDER MY SUPERVISION.

4/30/2016

SIGNATURE _____ EXPIRATION DATE
OF THE LICENSE

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

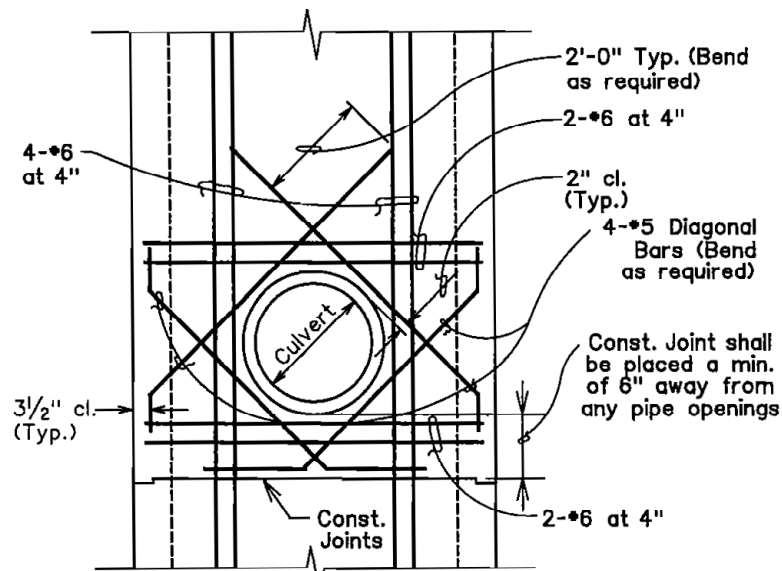
U.S. CUSTOMARY SPECIAL

(HDOT STD H-05)

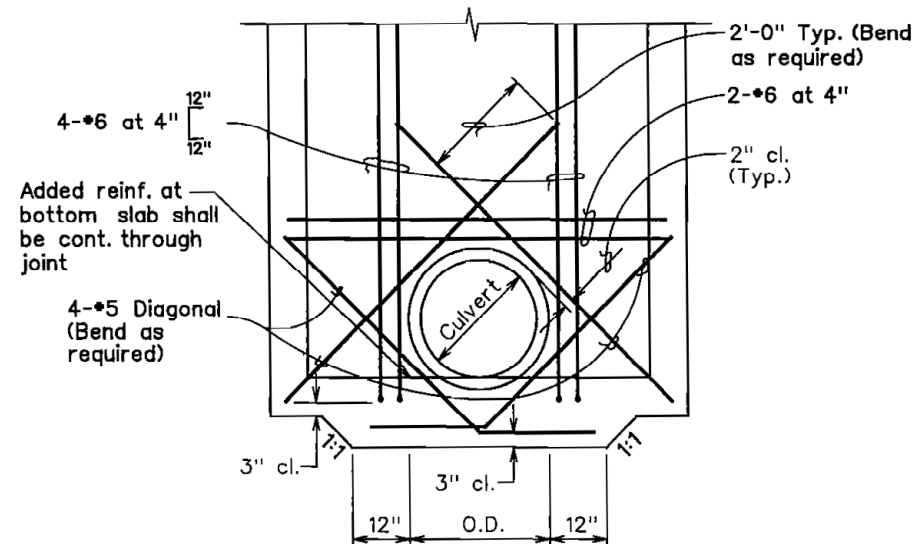
**TYP. REINFORCING DETAILS
FOR DRAINAGE STRUCTURES**

**SPECIAL
604-B**

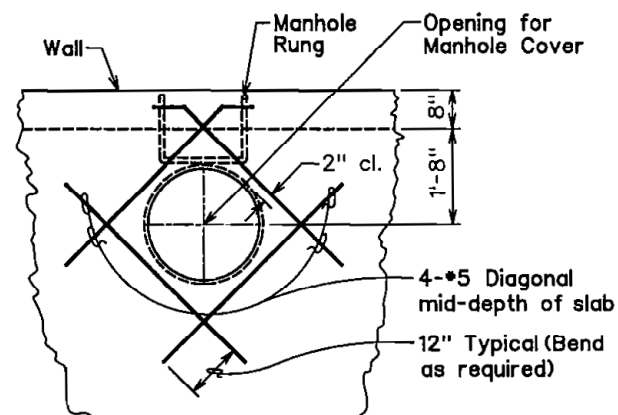
STATE	PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD 6(8)	G13	G19



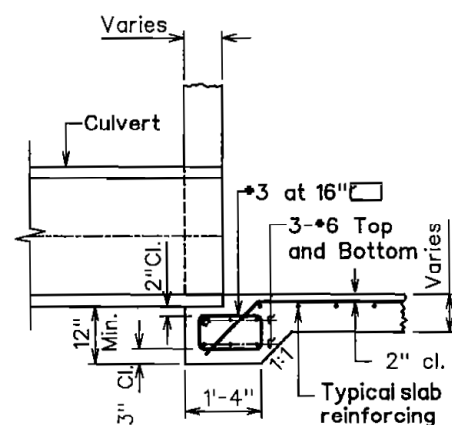
**ADDED REINFORCING
FOR CULVERT OPENINGS
(ABOVE BOTTOM SLAB)**



**ADDED REINFORCING FOR CULVERT
OPENINGS AT BOTTOM SLAB**

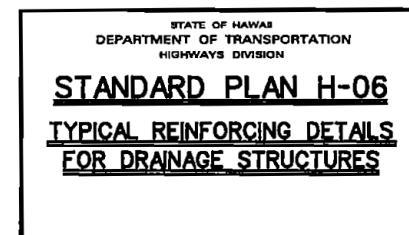


**ADDED REINFORCING
FOR MANHOLE OPENING**

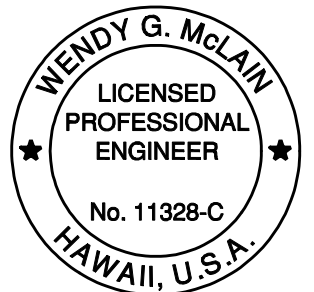


DETAIL OF CULVERT SEAT

X	X	
DATE	REVISION	APP'D.



STANDARD PLAN H-06 05/31/07

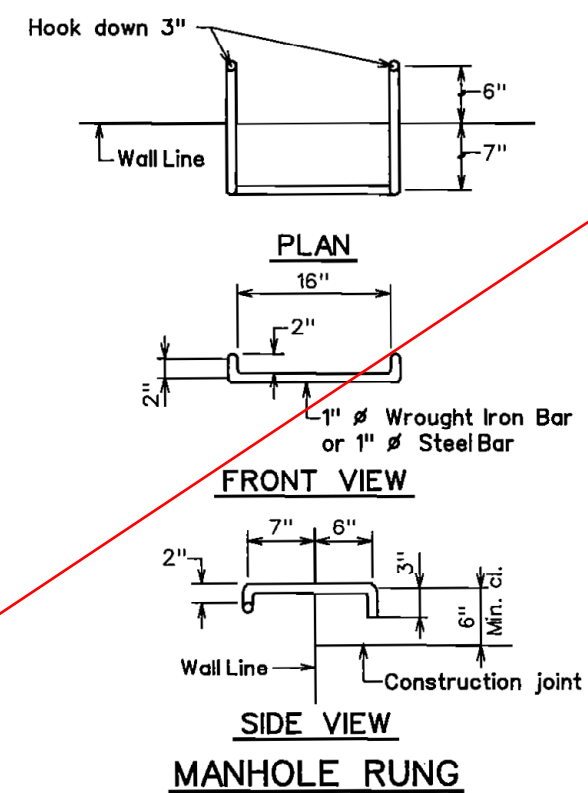
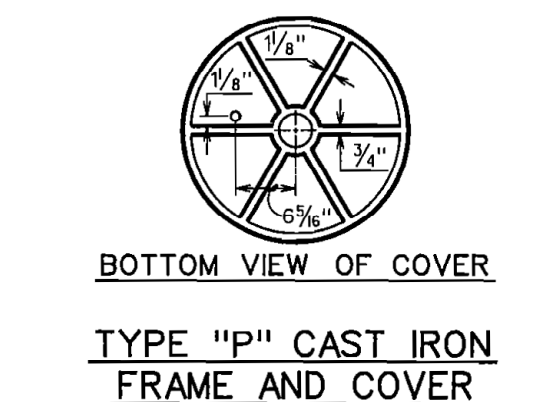
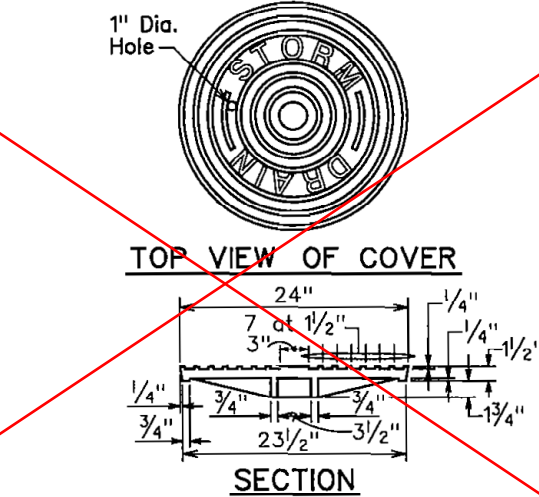
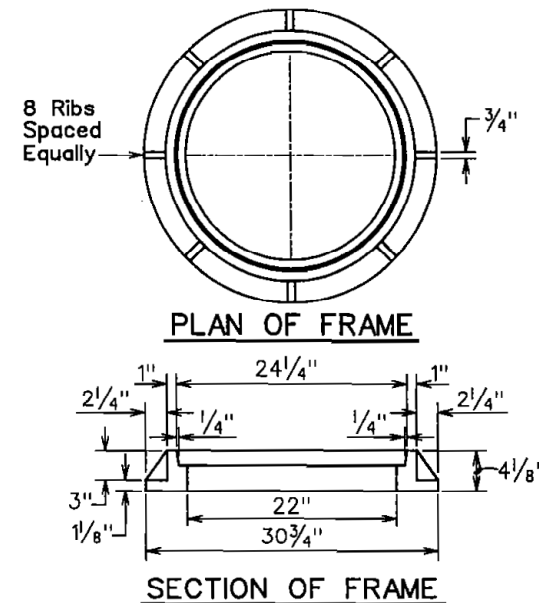
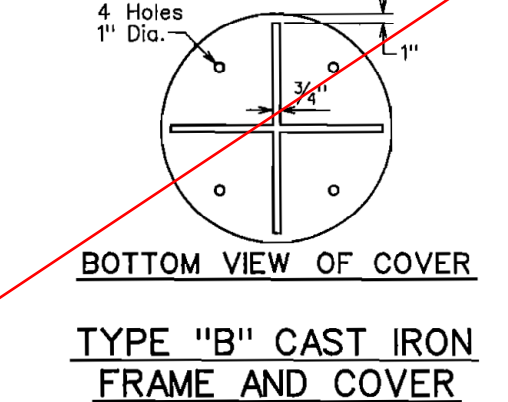
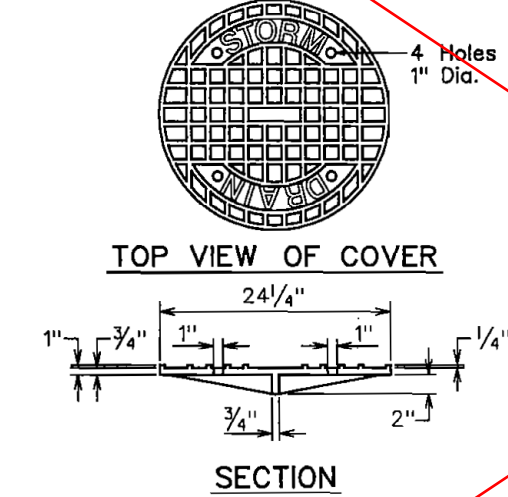
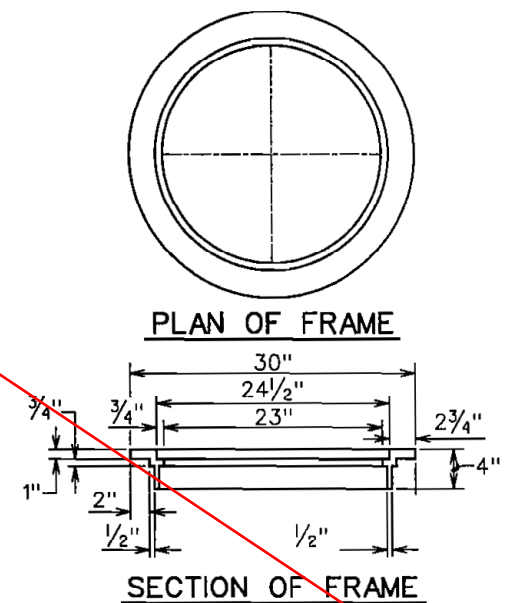
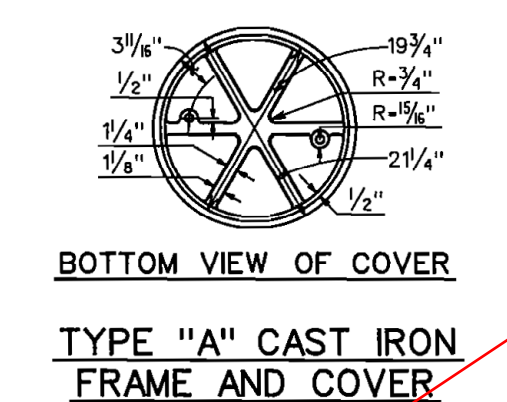
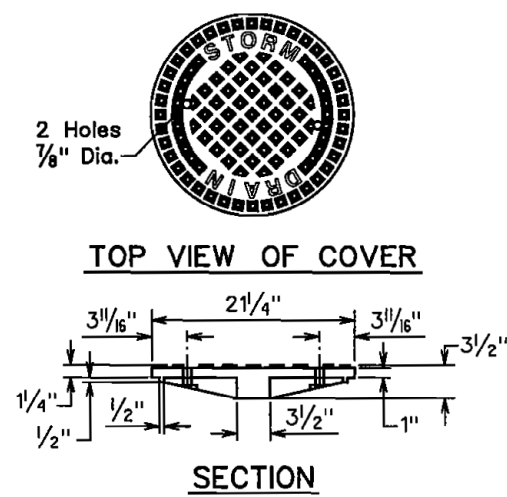
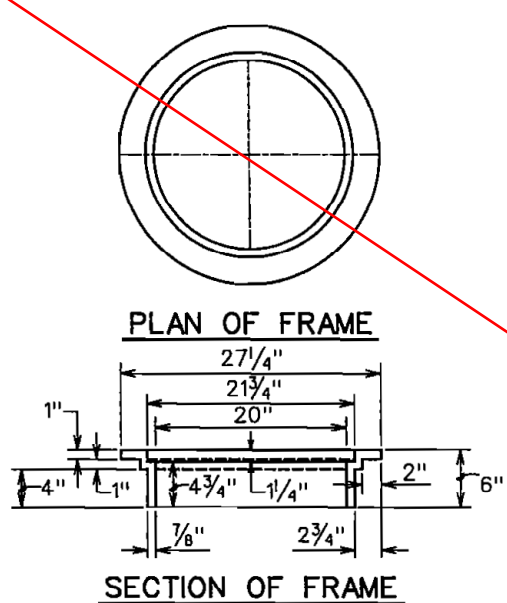


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE: *Wendy G. McLain* 4/30/2016
EXPIRATION DATE OF THE LICENSE

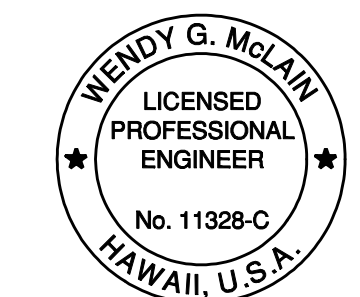
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY
U.S. CUSTOMARY SPECIAL (HDOT STD H-06) TYP. REINFORCING DETAILS FOR DRAINAGE STRUCTURES
SPECIAL 604-C

NO SCALE

STATE	PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD 6(8)	G14	G19



DATE	REVISION	APP'D.
X	X	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION STANDARD PLAN H-07 CATCH BASIN AND MANHOLE CASTINGS		



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE: *Wendy G. McLain* 4/30/2016
EXPIRATION DATE OF THE LICENSE

STANDARD PLAN H-07 05/31/07

Amendment A001
3/6/15 Contract negotiation revisions and NPDES compliance

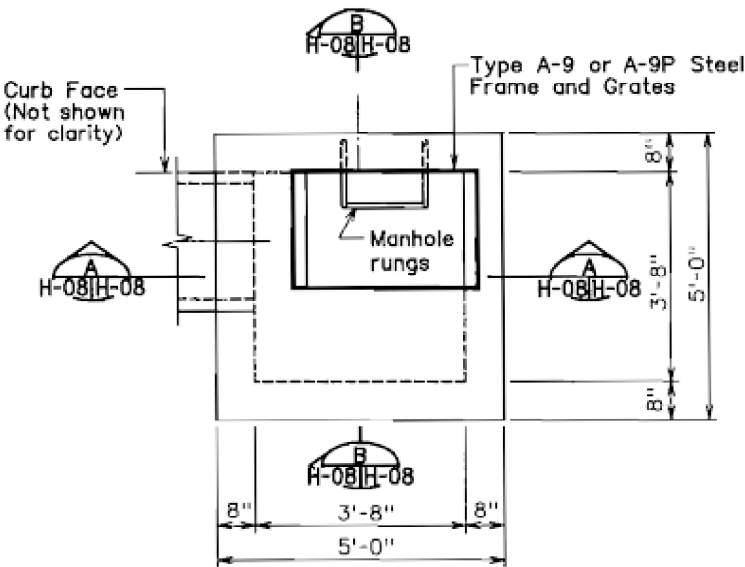
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

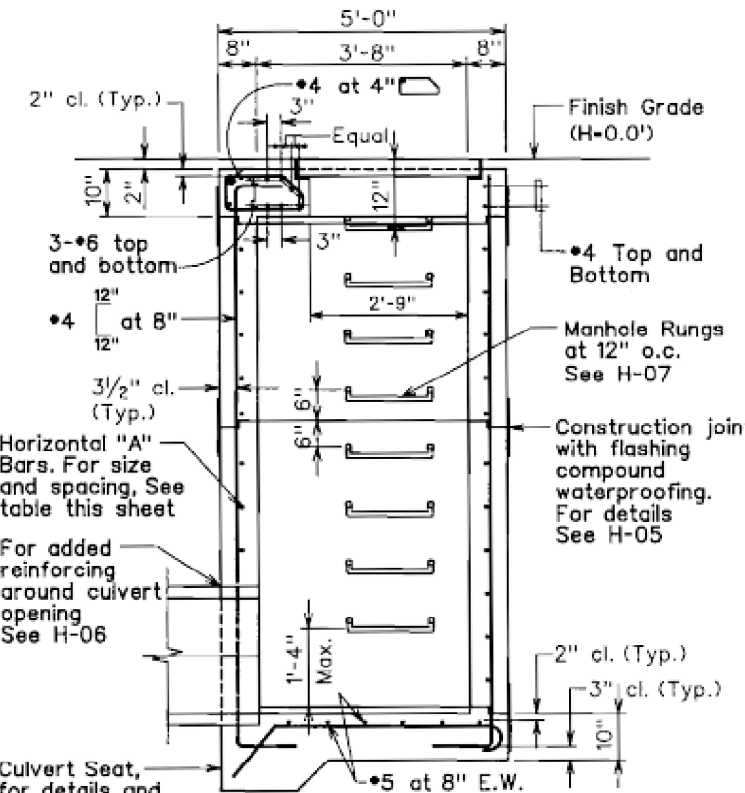
U.S. CUSTOMARY SPECIAL
(HDOT STD H-07)
CATCH BASIN AND
MANHOLE CASTINGS

SPECIAL
604-D

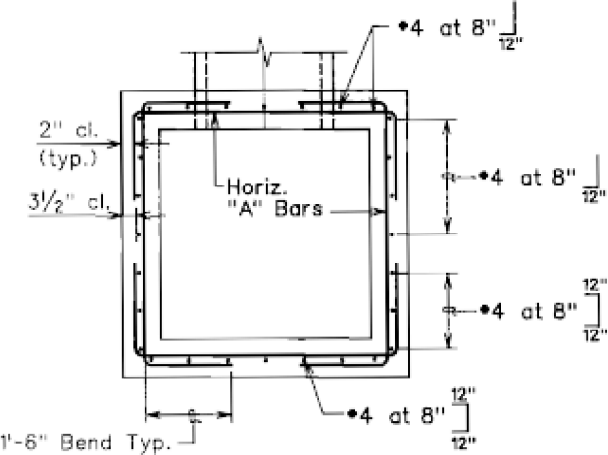
12/5/2014 4:14:57 PM W:\Civil 3D Projects\2014_027.001 ATKINS Saddle Road West Side Truck Escape Ramps\Roadway\Sheets\G-HI SR 200 00_sp604-D.dgn



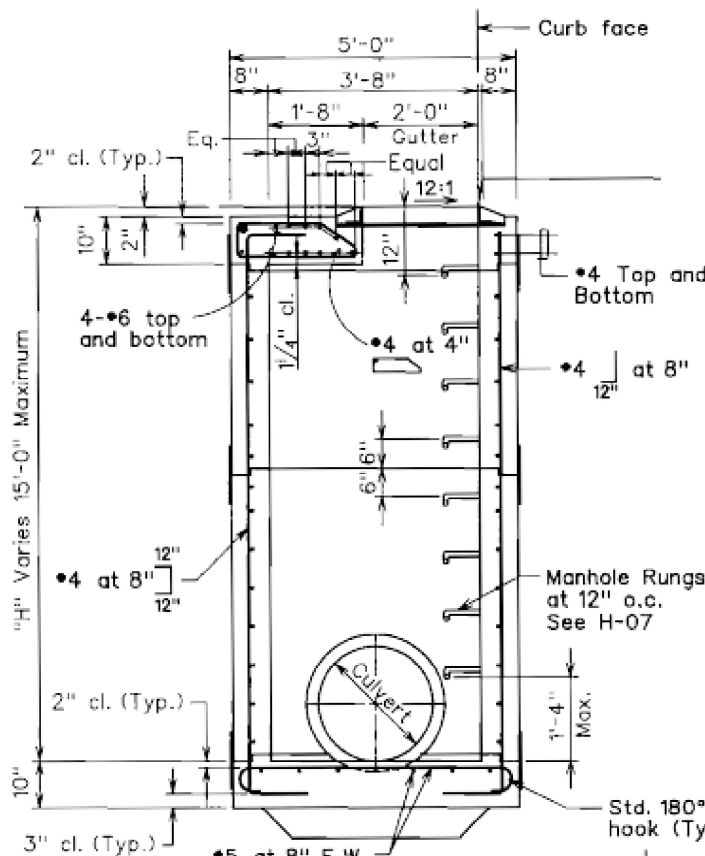
PLAN



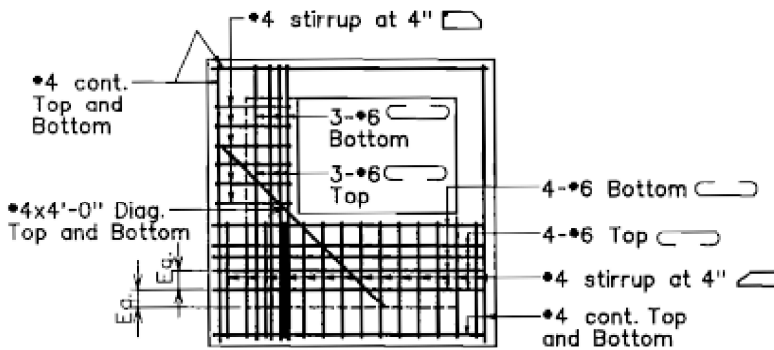
SECTION A-H-08H-08



PLAN VIEW OF WALL REINFORCING



SECTION B-H-08H-08



PLAN VIEW OF TOP SLAB REINFORCING

HORIZONTAL "A" BARS FOR GRATED DROP INLET	
DEPTH "H"	"A" BARS
0'-0" to 5'-0"	#4 at 12"
5'-1" to 10'-0"	#4 at 12"
10'-1" to 15'-0"	#4 at 9"

- General Notes:
- General Criteria
 - At-rest Horizontal Pressure - 80 pcf (2 to 1 sloping backfill, above groundwater)
 - At-rest Vertical Pressure - 40 pcf (2 to 1 sloping backfill, above groundwater)
 - Allowable Bearing Capacity - 1,700 psf + 8 x (overburden pressure); where overburden pressure equals 100 pcf x H
 - Live Load Surcharge (Equivalent Height of Soil)
 - For H = 0' to 5'; heq = 4'-0"
 - For H = 5' to 20'; heq = 3'-0"
 - Exposure Factor (For Crack Control) = 1.0 for Class 1 exposure
 - For vertical bar lap splice length, See H-03.
 - See B-01 for additional notes.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

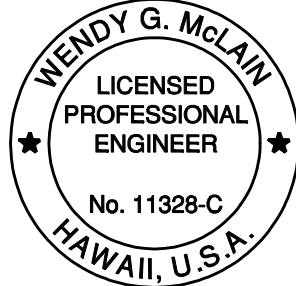
STANDARD PLAN H-08

TYPE 1A-9 AND 1A-9P

GRATED DROP INLET

X	X	
DATE	REVISION	APP'D.

STANDARD PLAN H-08 05/31/07



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

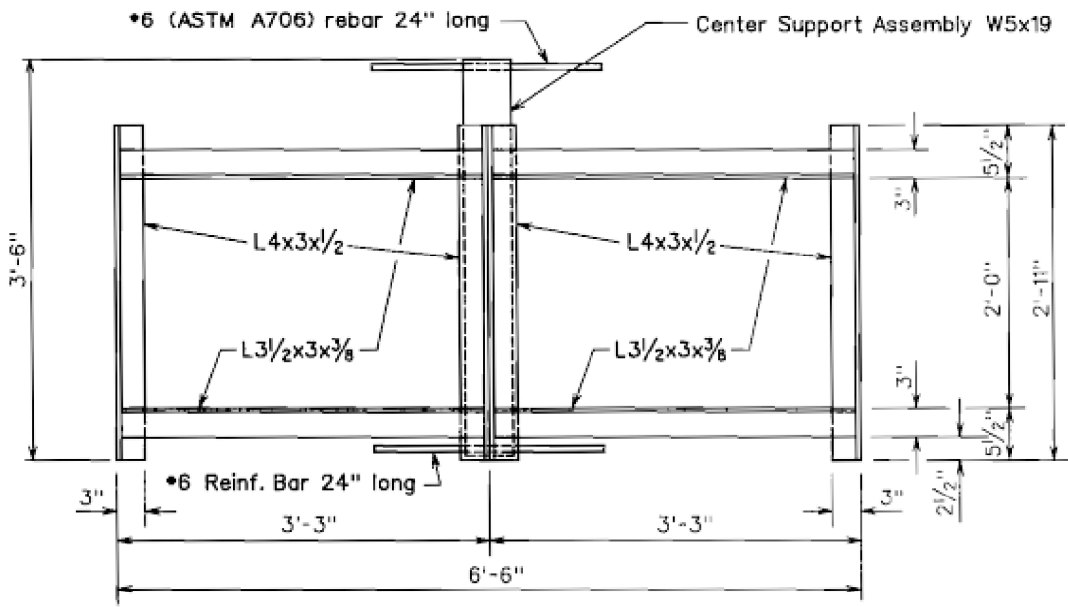
Wendy G. McLain 4/30/2016
SIGNATURE EXPIRATION DATE OF THE LICENSE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

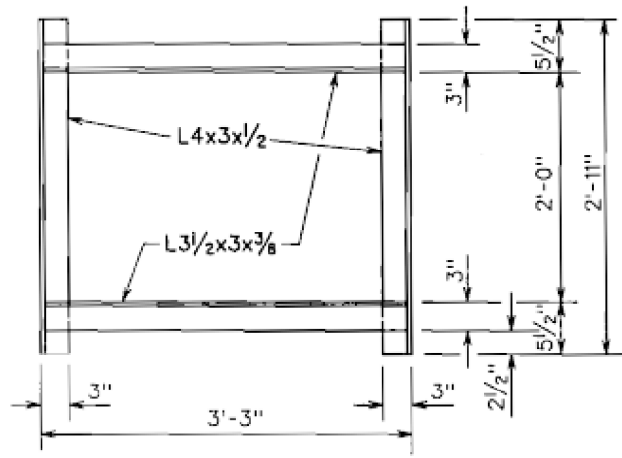
U.S. CUSTOMARY SPECIAL
(HDOT STD H-08)
TYPE 1A-9 AND 1A-9P
GRATED DROP INLET

SPECIAL
604-E

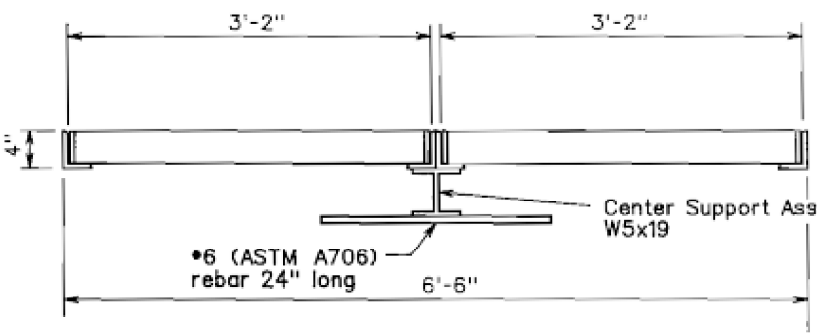
NO SCALE



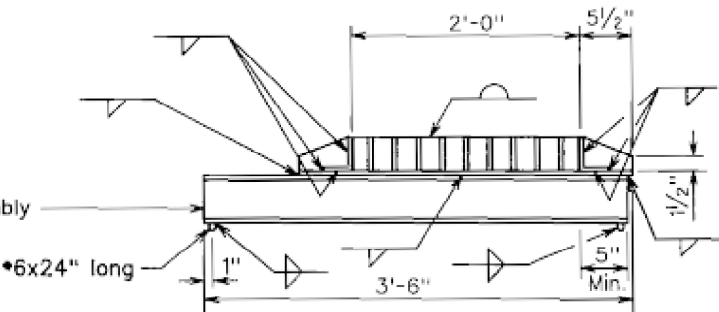
PLAN
(Two Grates. Similar for More Than Two Grates)



PLAN
(Single Grate)



LONGITUDINAL SECTION
(Thru Frame and Grates)



CROSS SECTION
(Thru Frame and Grates)

- General Notes:
1. All welds $\frac{3}{8}$ " unless otherwise noted.
 2. Frames and center support assembly shall be zinc coated after fabrication.
 3. See B-01 for additional notes.

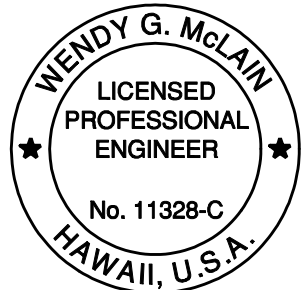
TYPE A-9 OR A-9P STEEL FRAMES

X	X	
DATE	REVISION	APP'D.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD PLAN H-10
TYPE A-9 OR A-9P STEEL FRAMES

STANDARD PLAN H-10 05/31/07



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Wendy G. McLain 4/30/2016
SIGNATURE EXPIRATION DATE OF THE LICENSE

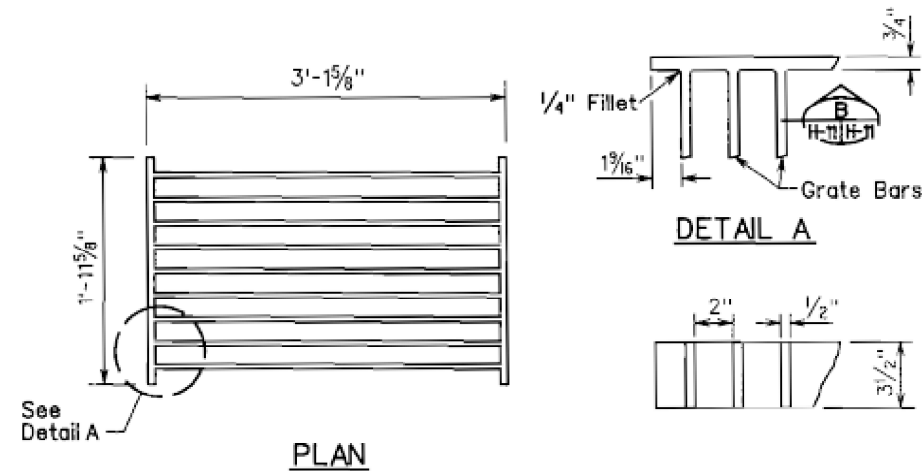
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY SPECIAL
(HDOT STD H-10)
TYPE A-9 OR A-9P
STEEL FRAMES

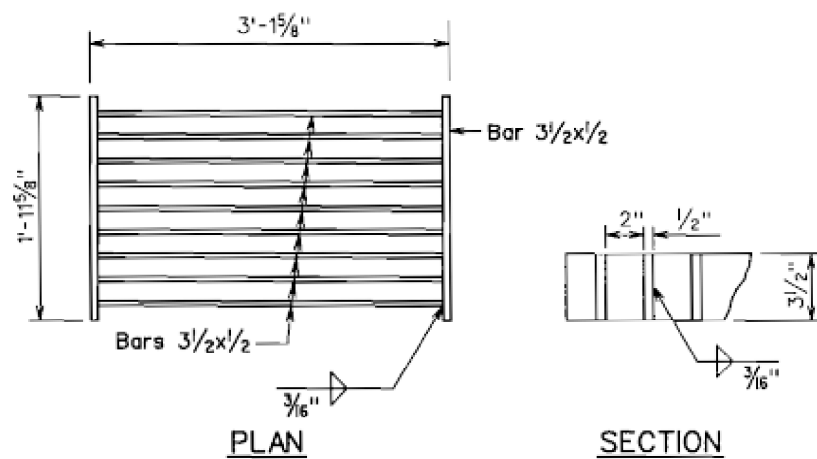
SPECIAL
604-F

NO SCALE

STATE	PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD 6(8)	G17	G19



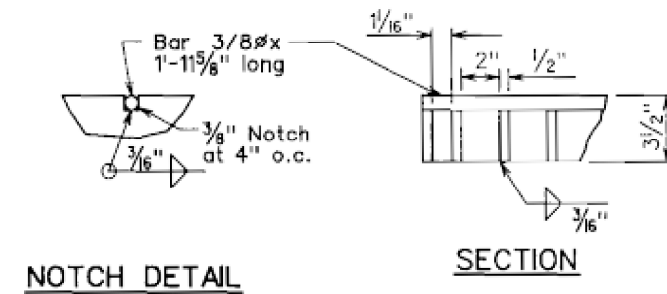
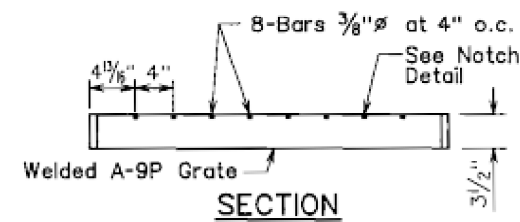
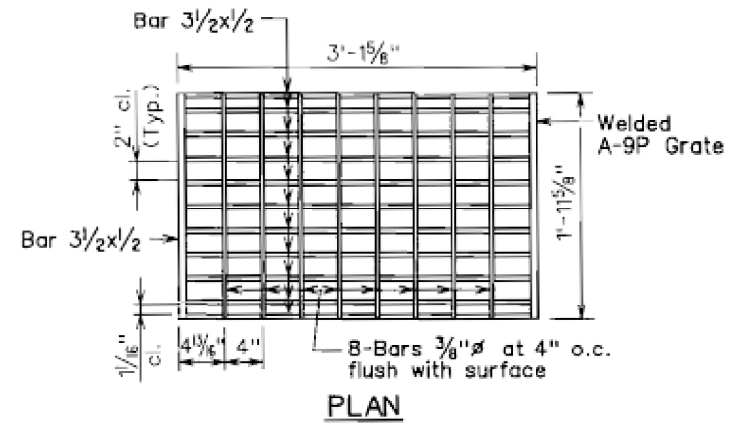
ALTERNATIVE CAST MALLEABLE IRON
OR CAST STEEL GRATES



TYPE A-9 STEEL GRATES

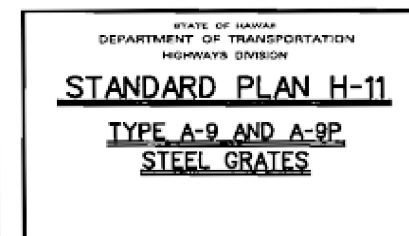
General Notes:

1. Contractor has the option of using cast malleable iron, cast steel or welded grate.
2. All welds $\frac{3}{8}$ " unless otherwise noted.
3. Grates shall be zinc coated after fabrication.
4. See B-01 for additional notes.

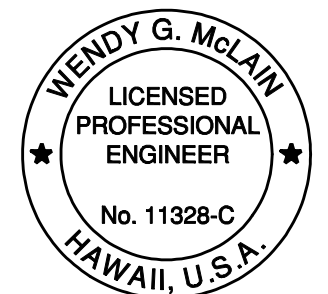


TYPE A-9P STEEL GRATES

DATE	REVISION	APP'D.
X	X	



STANDARD PLAN H-11 05/31/07



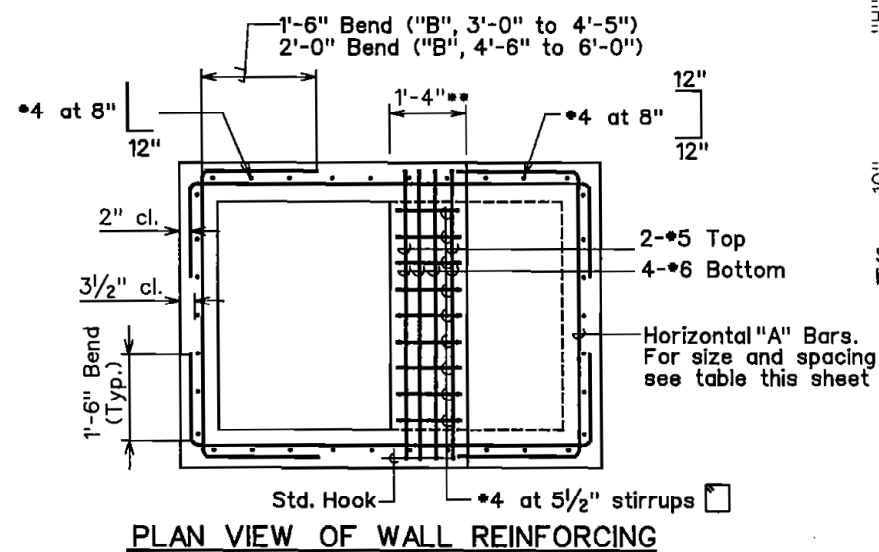
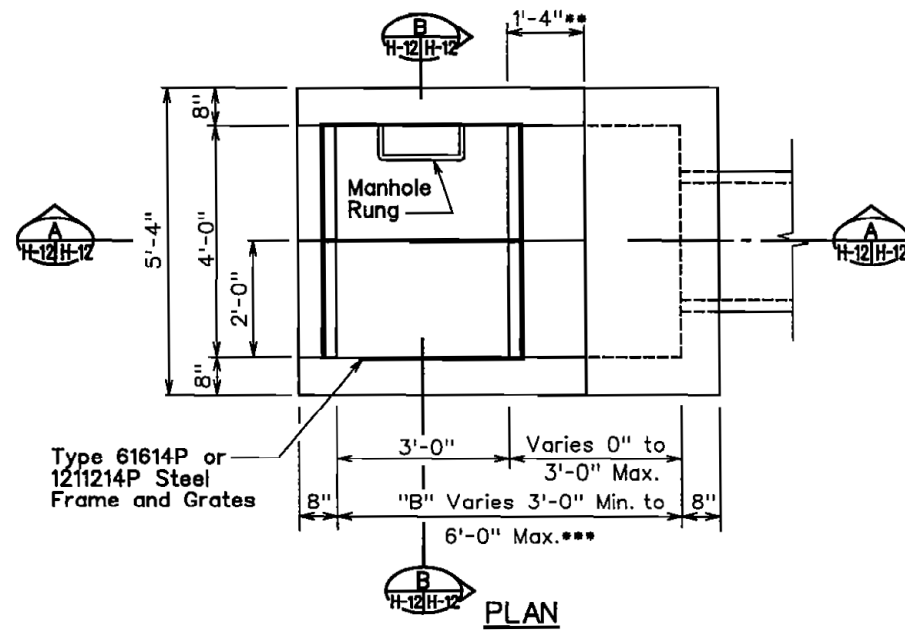
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE: *Wendy G. McLain* 4/30/2016
EXPIRATION DATE OF THE LICENSE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY SPECIAL
(HDOT STD H-11)
TYPE A-9 OR A-9P
STEEL GRATES

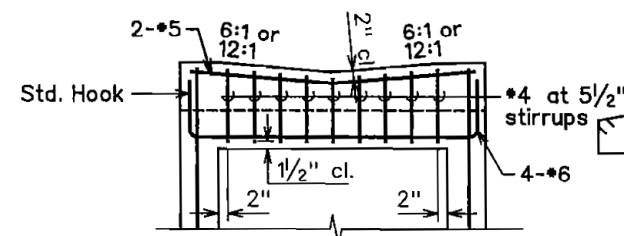
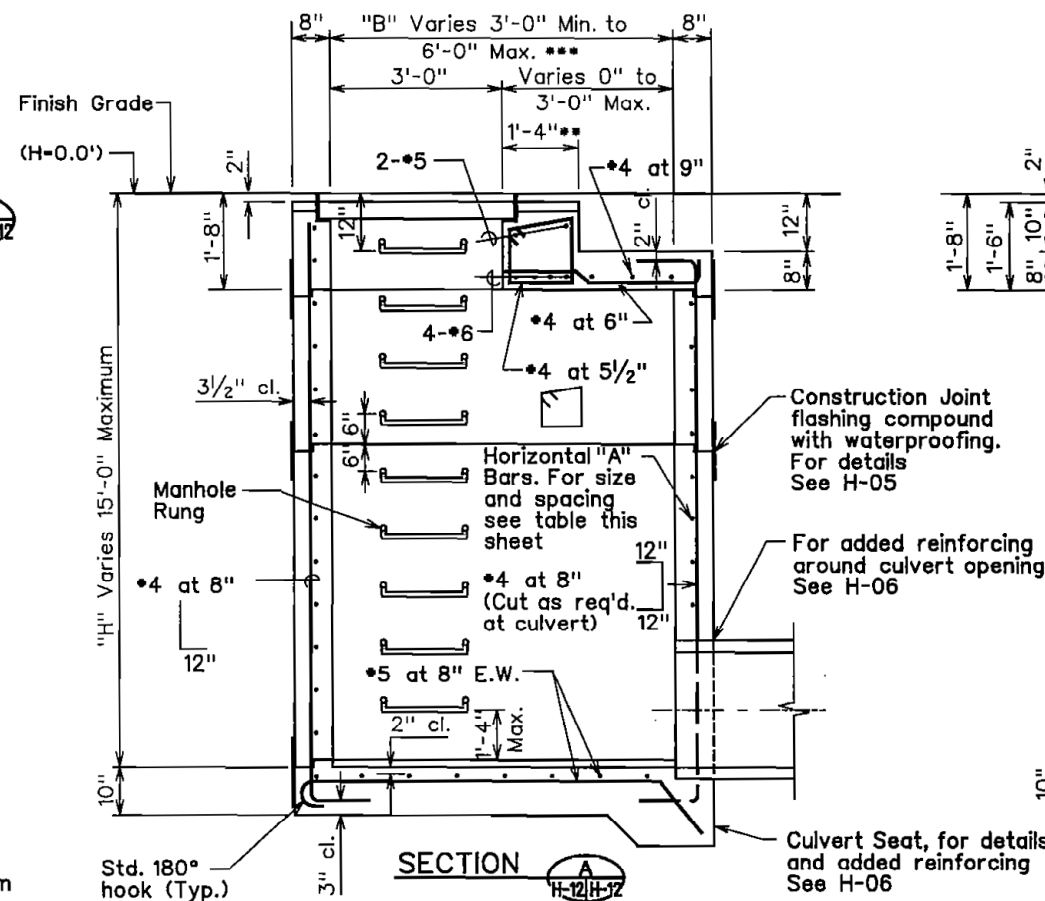
SPECIAL
604-G

NO SCALE



General Notes:

- General Criteria
 - At-rest Horizontal Pressure = 80 pcf (2 to 1 sloping backfill, above groundwater)
 - At-rest Vertical Pressure = 40 pcf (2 to 1 sloping backfill, above groundwater)
 - Allowable Bearing Capacity = 1,700 psf + 8 x (overburden pressure); where overburden pressure equals 100 pcf x H
 - Live Load Surcharge (Equivalent Height of Soil)
 - For H = 0' to 5'; heq = 4'-0"
 - For H = 5' to 20'; heq = 3'-0"
- Exposure Factor (For Crack Control) = 1.0 for Class 1 exposure.
- For vertical rebar lap splice length, See H-03.



TYPE 61614P AND 1211214P GRATED DROP INLET

Legend:

- For minimum size box (3'-0"), eliminate beam and use typical wall and wall reinforcing shown in the top portion.
- For culverts larger than 30", the minimum dimension shall be D (Diameter of pipe culvert) or 3'-0", whichever is bigger.

DATE	REVISION	APP'D.
X	X	

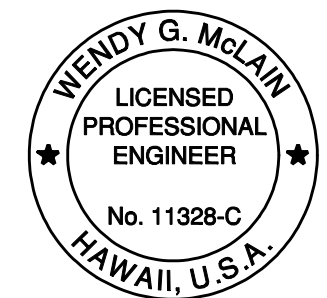
STANDARD PLAN H-12 05/31/07

HORIZ. "A" BARS FOR GRATED DROP INLET

DEPTH "H"	"A" BARS	
	"B"=3'-0" to 4'-5"	"B"=4'-6" to 6'-0"
0'-0" to 5'-0"	4 at 12"	5 at 10"
5'-1" to 10'-0"	4 at 10"	5 at 8"
10'-1" to 15'-0"	4 at 8"	5 at 6"

STANDARD PLAN H-12

TYPE 61614P AND 1211214P
GRATED DROP INLET



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
4/30/2016
EXPIRATION DATE OF THE LICENSE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY SPECIAL

(HDOT STD H-12)
TYPE 61614 AND 1211214
GRATED DROP INLET

NO SCALE

SPECIAL
604-H