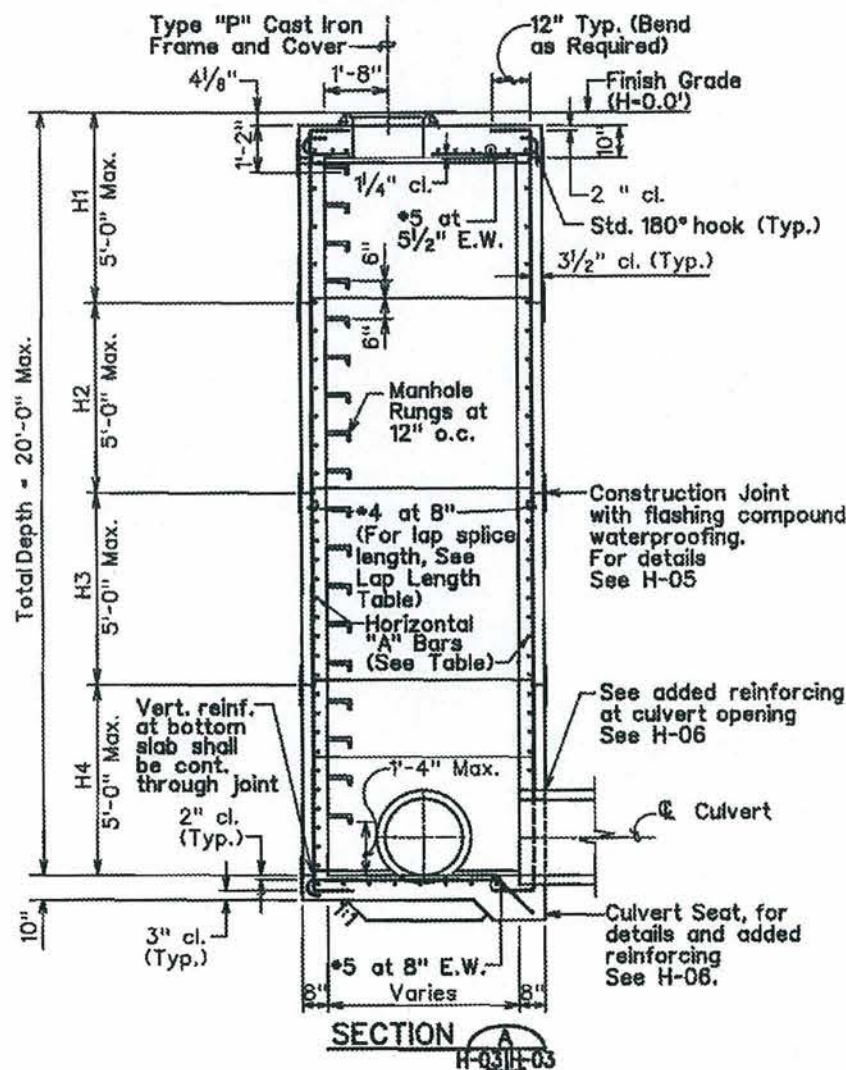
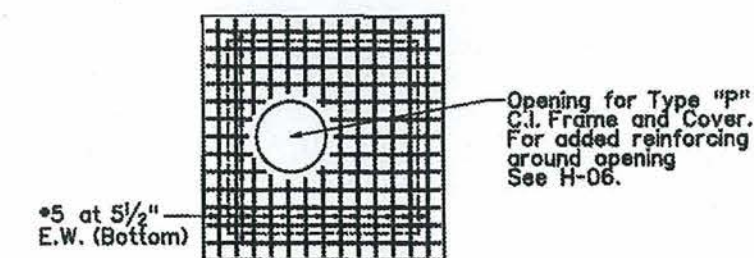
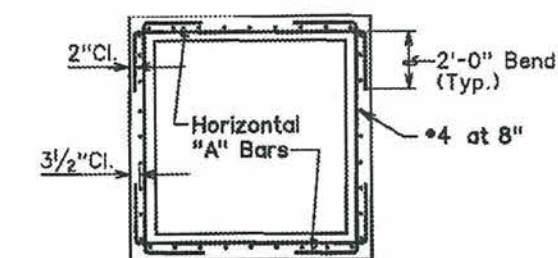
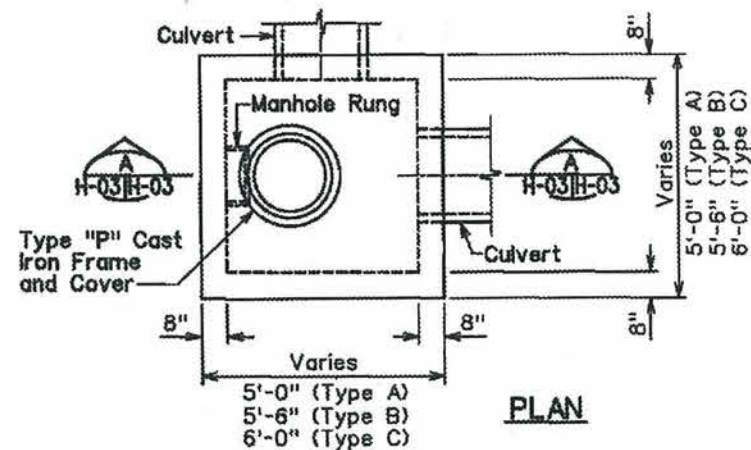


STATE	PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD 6(7)	G18	G25



HORIZONTAL "A" BARS FOR STORM DRAIN MANHOLE	
SDMH DEPTH	HORIZONTAL "A" BARS
H1 0'-0" to 5'-0"	*5 at 10"
H2 5'-1" to 10'-0"	*5 at 8"
H3 10'-1" to 15'-0"	*5 at 6"
H4 15'-1" to 20'-0"	*5 at 6"

VERT. BAR LAP SPLICE	
BAR	VERT. LAP LENGTH
*4	1'-8"
*5	2'-2"

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.

AS-BUILT DRAWINGS/SPECIFICATIONS

This certifies that the dimensions and details shown on this sheet reflect the dimensions and details and specifications as constructed in the field.

GOODELLOW BROS., INC.
Contractor's Name:

Signature: *[Signature]* Date: 1/2/14



X	X	
DATE	REVISION	APP'D.

STANDARD PLAN H-03 05/31/07



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Signature: *[Signature]* 4/30/2012
EXPIRATION DATE OF THE LICENSE

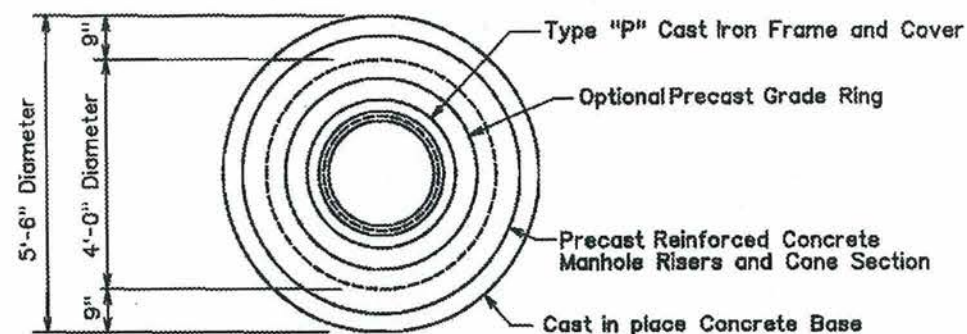
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
**(HDOT STD H-03)
TYPE A, B AND C
STORM DRAIN MANHOLE**

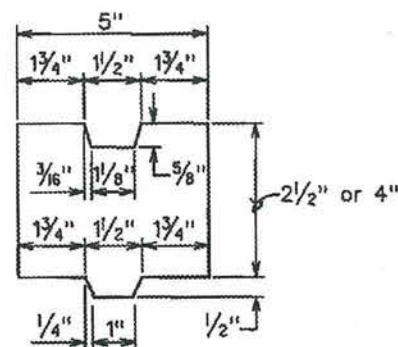
NO SCALE

SPECIAL
604-A

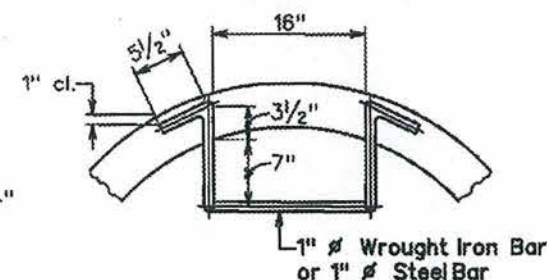
STATE	PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD 6(7)	G19	G25



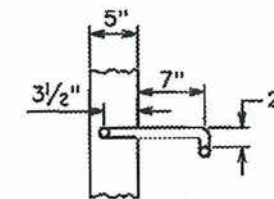
PLAN



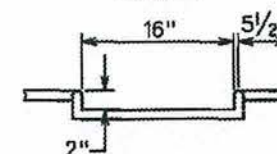
GRADE RING DETAIL



PLAN

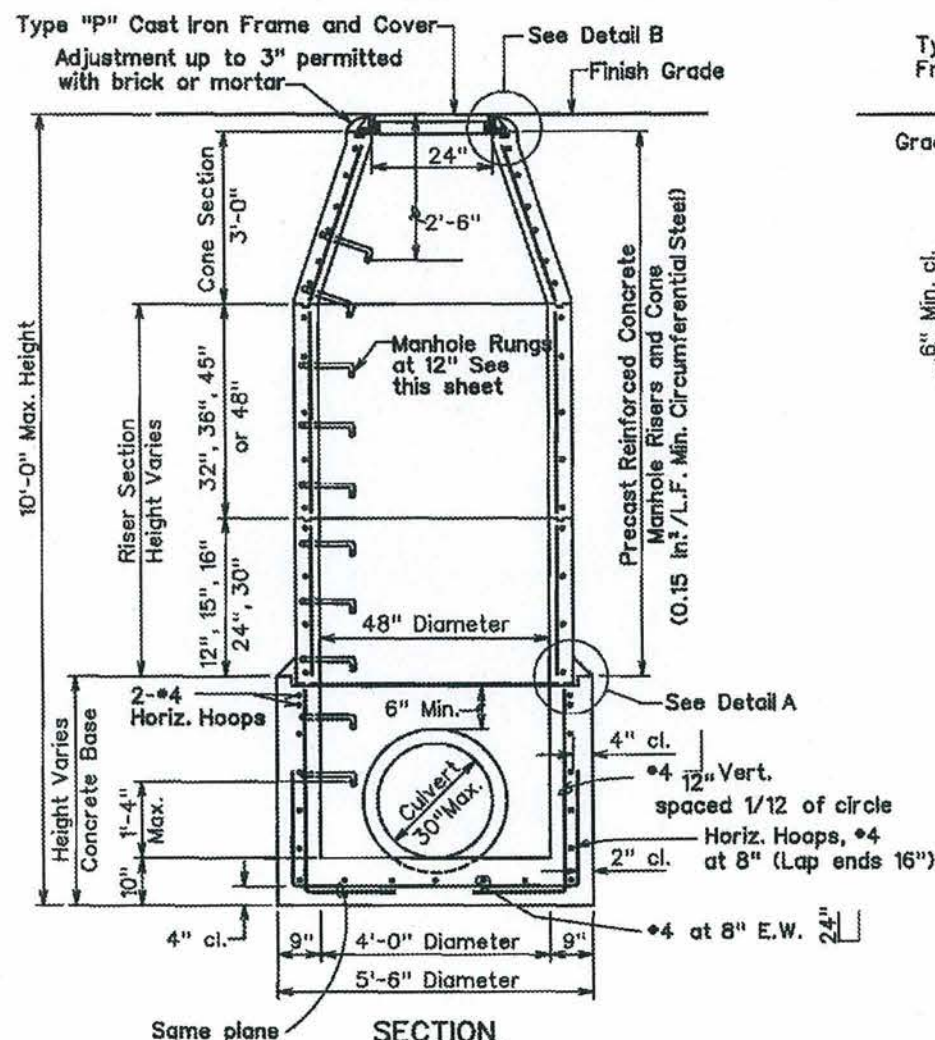


SIDE VIEW



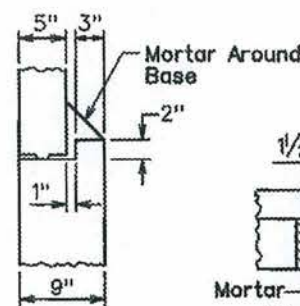
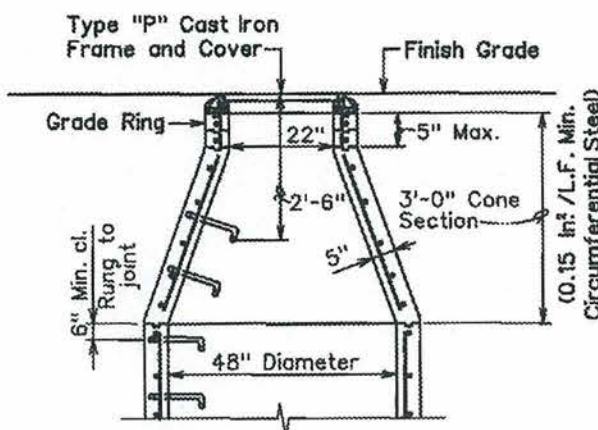
FRONT VIEW

MANHOLE RUNG

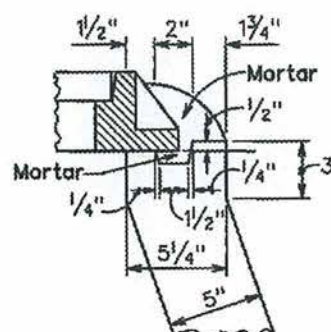


SECTION

TYPE "D" STORM DRAIN MANHOLE

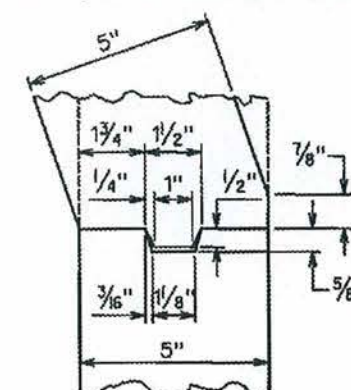


DETAIL A



DETAIL B

DETAIL FOR RISER JOINTS



General Notes:

- Select appropriate combination of risers and grade rings for required height.
- All joints to be grouted as set.
- 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.

AS-BUILT DRAWINGS/SPECIFICATIONS

This certifies that the dimensions and details shown on this sheet reflect the dimensions and details and specifications as constructed in the field.

GOODELLOW BROS., INC.
Contractor's Name:

Signature: *John R. Goodelow* Date: 4/2/14



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

STANDARD PLAN H-04 05/31/07



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Signature: *Wendy G. McLain* Date: 4/30/2012
EXPIRATION DATE OF THE LICENSE

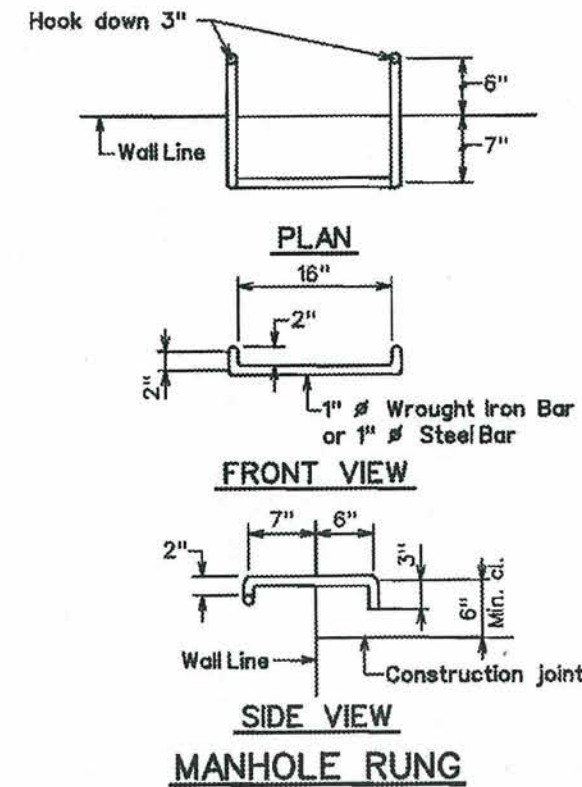
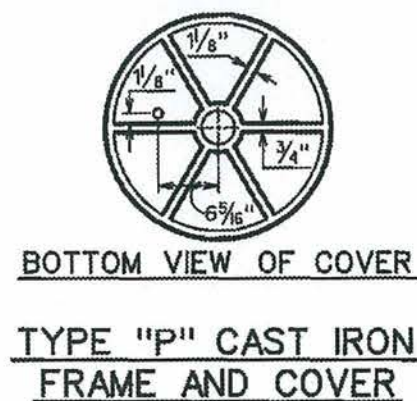
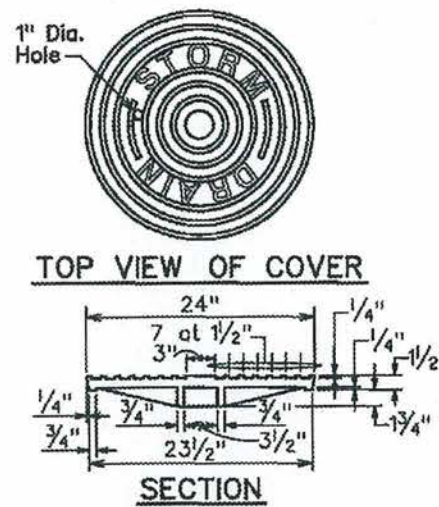
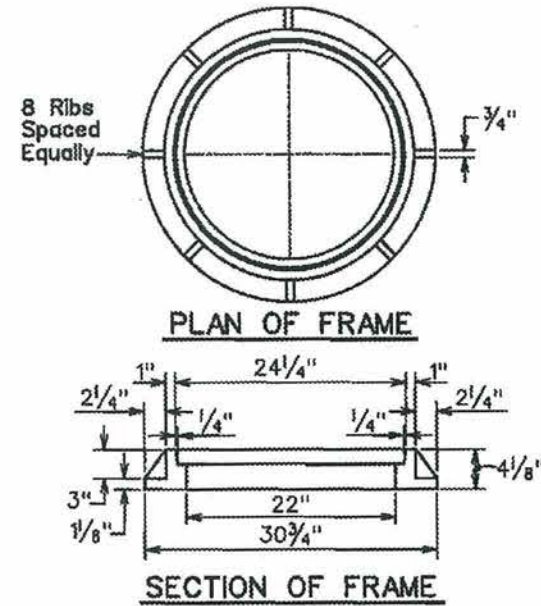
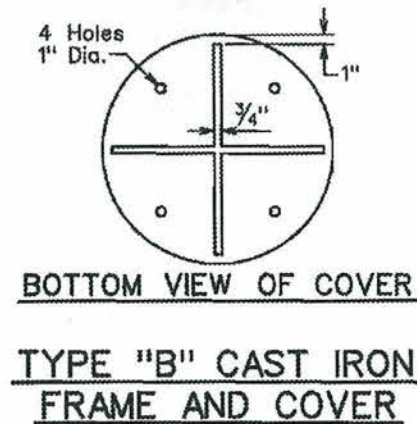
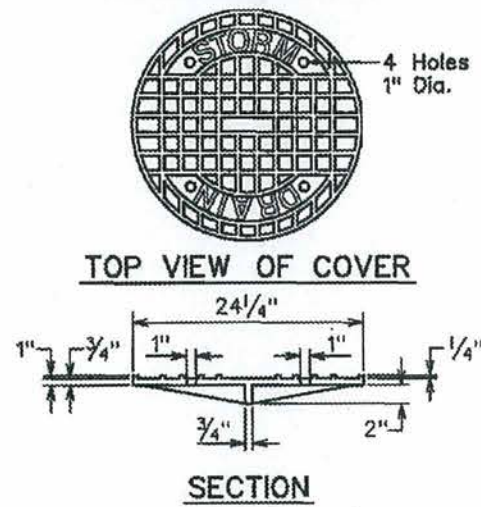
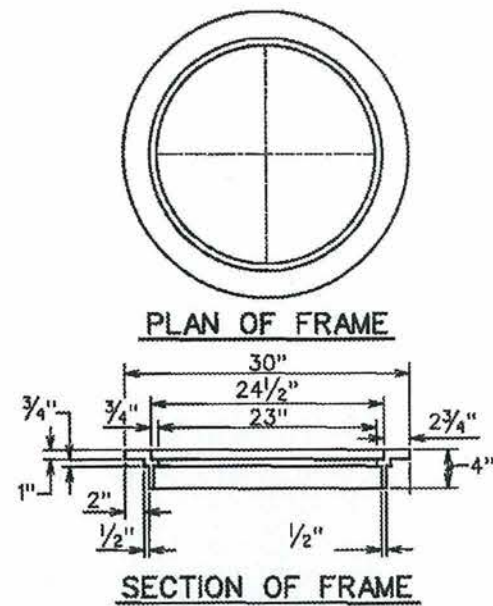
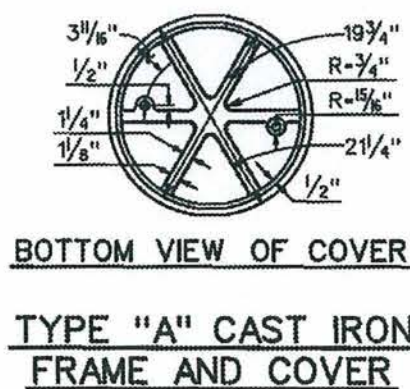
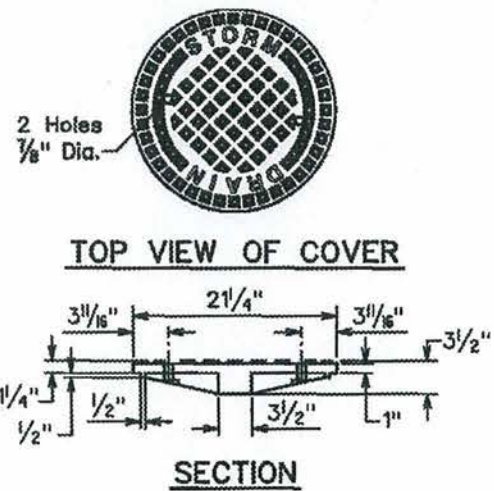
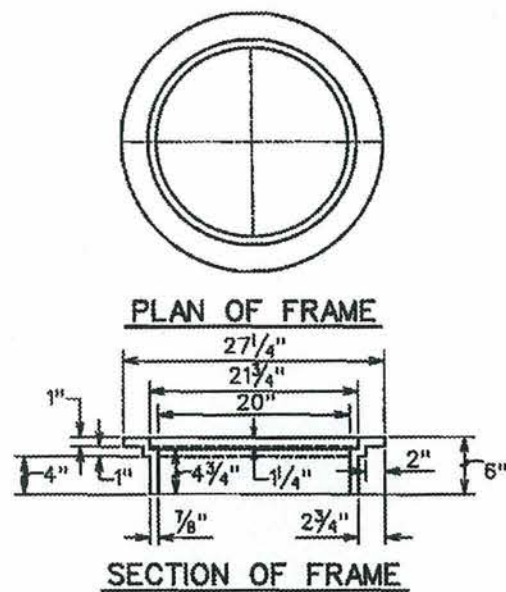
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL
(HDOT STD H-04)
TYPE D
STORM DRAIN MANHOLE

NO SCALE

SPECIAL
604-B

STATE	PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD 6(7)	G20	G25



AS-BUILT DRAWINGS/SPECIFICATIONS
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GOODFELLOW BROS., INC.
Contractor's Name:

Contractor's Name:

Signature: [Signature] Date: 1/2/14

X	X		
DATE	REVISION		APP

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD PLAN H-07

CATCH BASIN AND
MANHOLE CASTINGS



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UNDER MY SUPERVISION.

4/30/2012

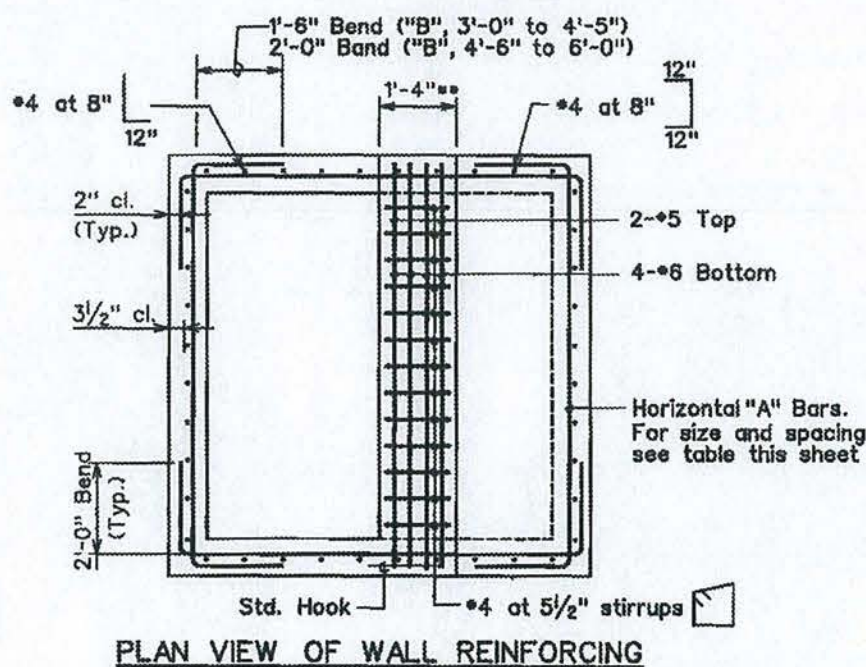
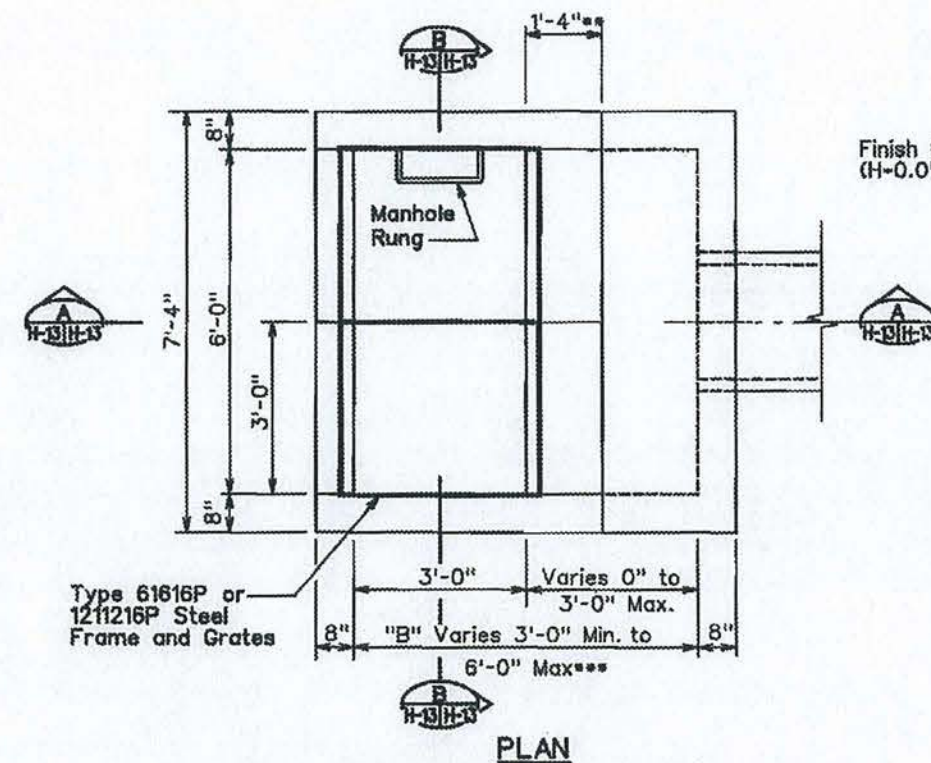
SIGNATURE _____ EXPIRATION DATE
OF THE LICENSE

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

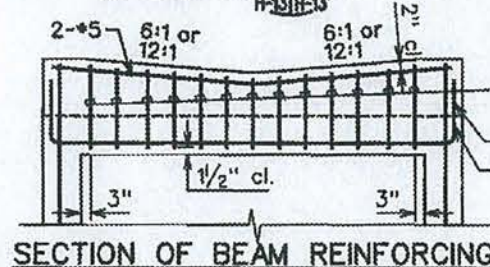
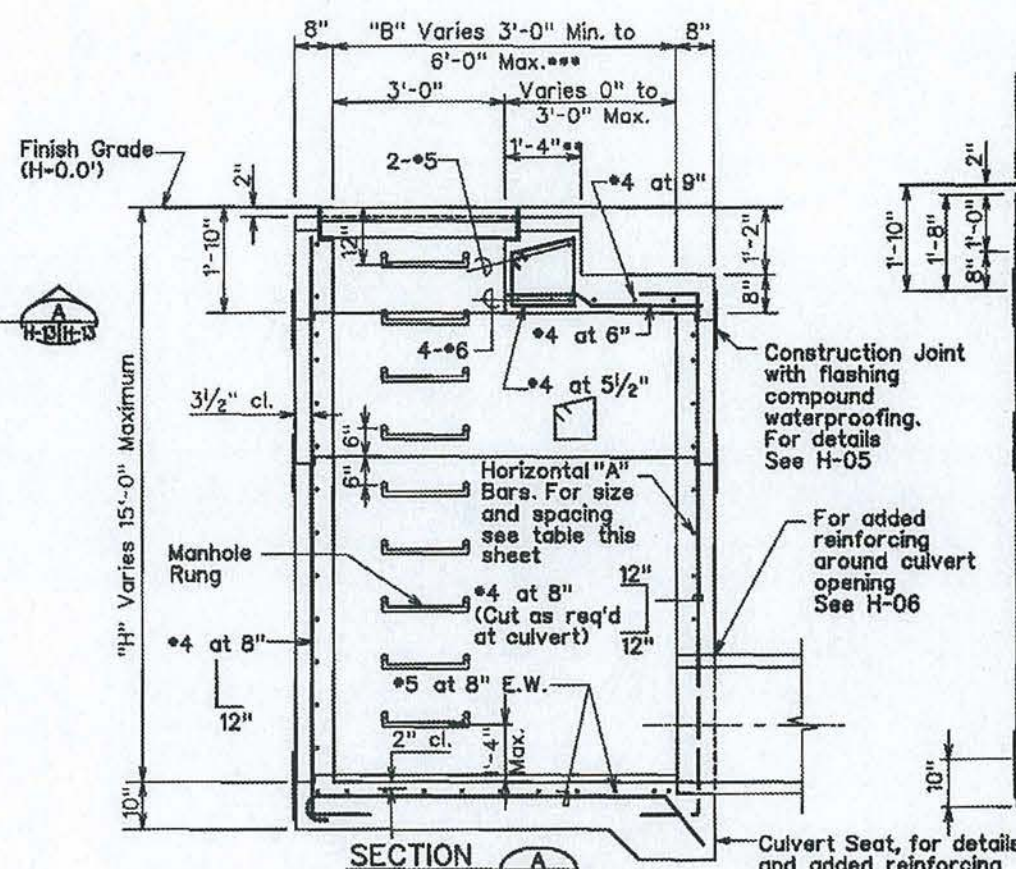
**U.S. CUSTOMARY SPECIAL
(HDOT STD H-07)
CATCH BASIN AND
MANHOLE CASTINGS**

NO SCALE

SPECIAL
604-C



TYPE 61616P AND 1211216P GRATED DROP INLET



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 lengths, See H-03

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.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD PLAN H-13
TYPE 61616P AND 1211216P
GRATED DROP INLET

DATE	REVISION	APP'D.
X	X	

STANDARD PLAN H-13 05/31/07

SECTION B-B

DEPTH "H"	"A" BARS
0'-0" to 5'-0"	#5 at 10"
5'-1" to 10'-0"	#5 at 8"
10'-1" to 15'-0"	#5 at 6"

AS-BUILT DRAWINGS/SPECIFICATIONS
This certifies that the dimensions and details shown on this sheet reflect the dimensions and details and specifications as constructed in the field.

GOODFELLOW BROS., INC.
Contractor's Name:

Signature: *[Signature]* Date: 1/2/14



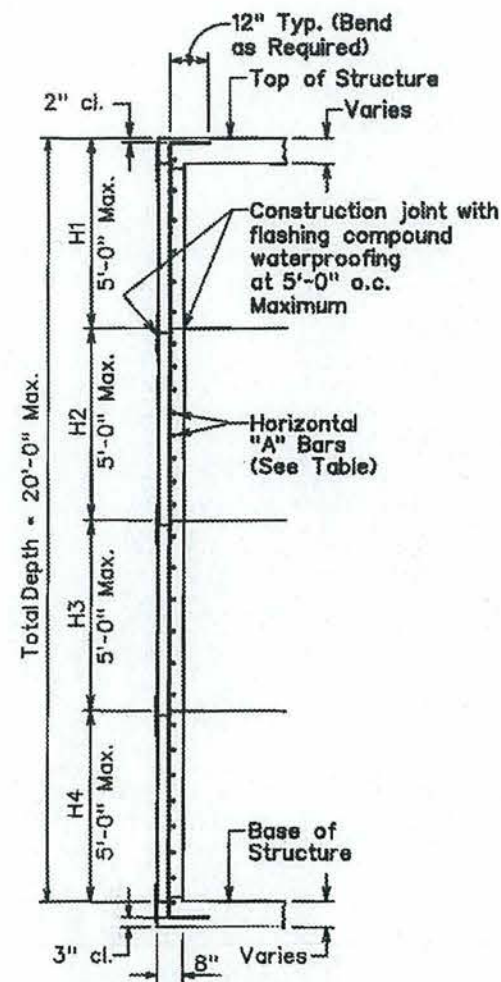
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature: *[Signature]* 4/30/2012
EXPIRATION DATE OF THE LICENSE

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

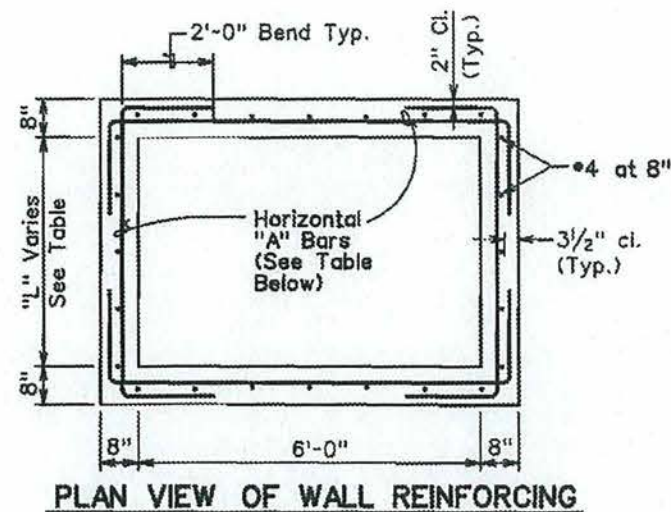
U.S. CUSTOMARY SPECIAL
(HDOT STD H-13)
TYPE 61616P and 1211216P
GRATED DROP INLET

SPECIAL
604-G

NO SCALE



ELEVATION VIEW OF WALL SECTION

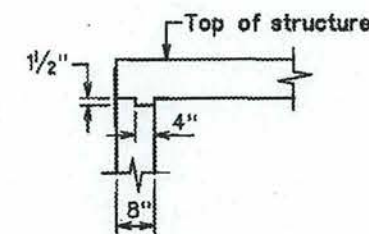


General Notes:

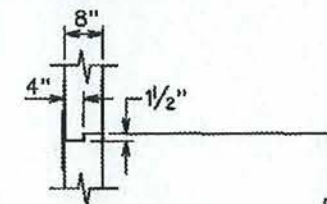
- General Criteria
 - At-rest Horizontal Pressure = 80 pcf (2 to 1 sloping backfill, above groundwater)
 - At-rest Vertical Pressure = 40 pcf (2 to 1 sloping backfill, above groundwater)
 - Allowable Bearing Capacity = 1,700 pcf + 8 x (overburden pressure); where overburden pressure equals 100 pcf x 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

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.

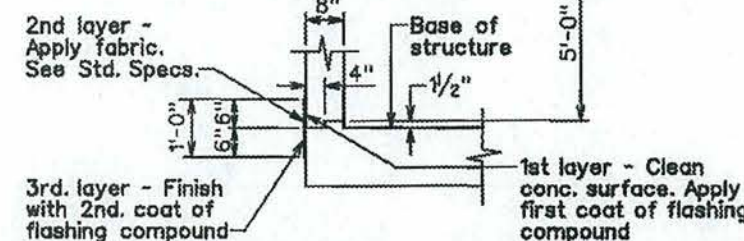
Note: N.A. = Not Applicable



JOINT AT TOP



INTERMEDIATE JOINT



JOINT AT BASE

Note: Waterproof all construction joints.

CONSTRUCTION JOINT AND WATERPROOFING DETAILS

AS-BUILT DRAWINGS/SPECIFICATIONS

This certifies that the dimensions and details shown on this sheet reflect the dimensions and details and specifications as constructed in the field.

GOODEFELLOW BROS., INC.

Contractor's Name:

Signature: *[Signature]* Date: 1/2/14



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Signature: *[Signature]* 4/30/2012
EXPIRATION DATE OF THE LICENSE



DATE	REVISION	APP'D.
X	X	

STANDARD PLAN H-05 05/31/07

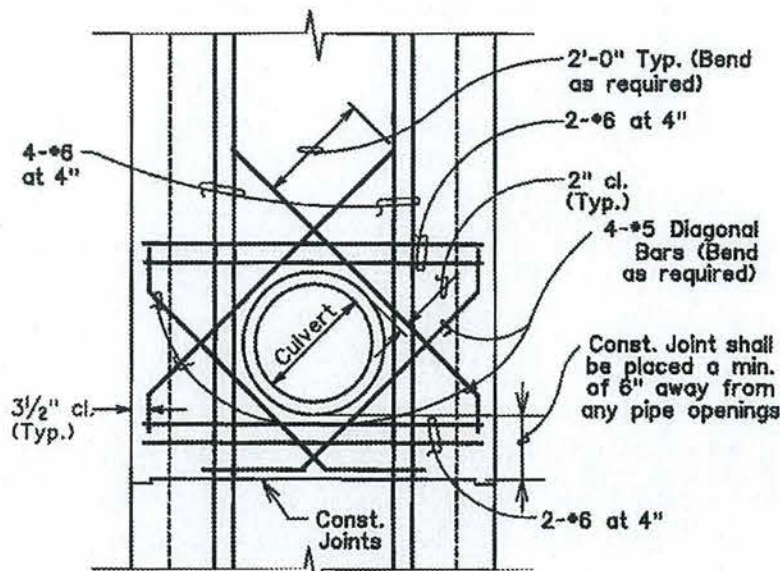
NO SCALE

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

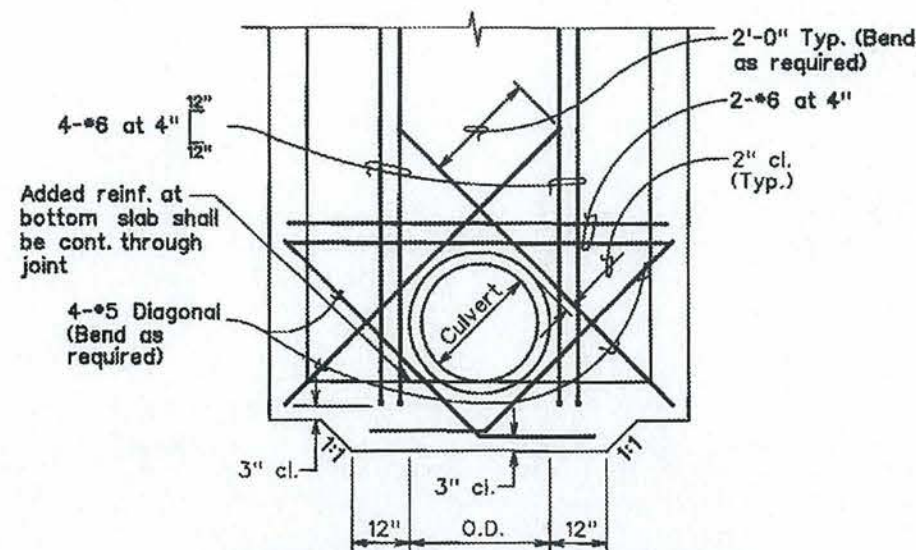
U.S. CUSTOMARY SPECIAL
(HDOT STD H-05)
TYP. REINFORCING DETAILS FOR DRAINAGE STRUCTURES

SPECIAL
604-I

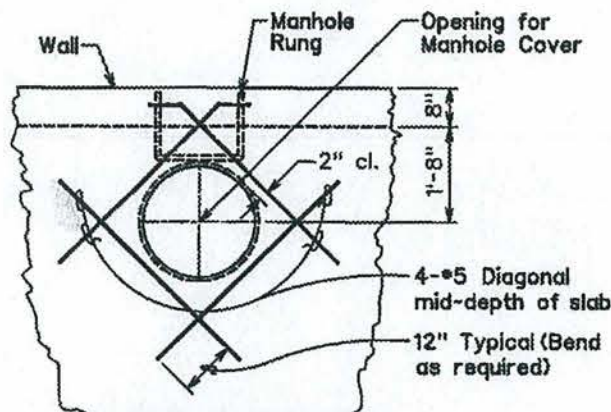
STATE	PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI A-AD 6(7)	G23	G25



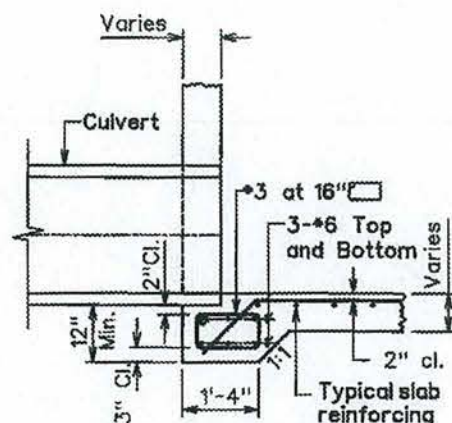
ADDED REINFORCING
FOR CULVERT OPENINGS
(ABOVE BOTTOM SLAB)



ADDED REINFORCING FOR CULVERT
OPENINGS AT BOTTOM SLAB



ADDED REINFORCING
FOR MANHOLE OPENING



DETAIL OF CULVERT SEAT

AS-BUILT DRAWINGS/SPECIFICATIONS
This certifies that the dimensions and
details shown on this sheet reflect the
dimensions and details and specifications
as constructed in the field.

GOODFELLOW BROS., INC.
Contractor's Name:

Signature: *[Signature]* Date: 1/2/14



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UNDER MY SUPERVISION.
Signature: *[Signature]* 4/30/2012
EXPIRATION DATE
OF THE LICENSE

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

U.S. CUSTOMARY SPECIAL
(HDOT STD H-06)
TYP. REINFORCING DETAILS
FOR DRAINAGE STRUCTURES

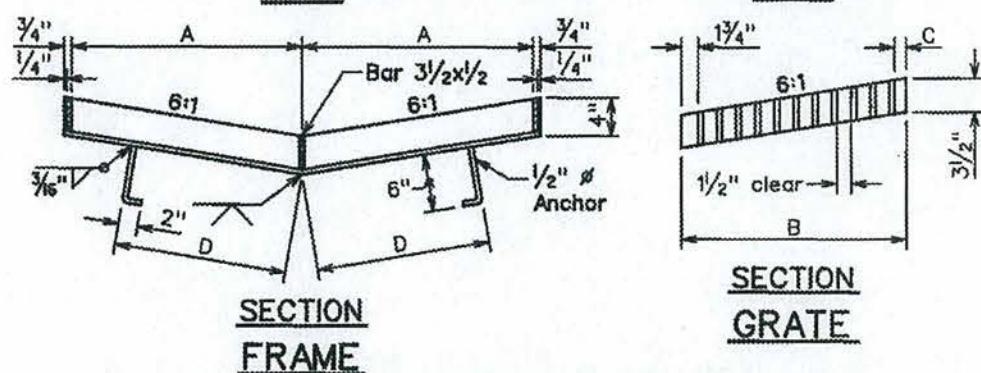
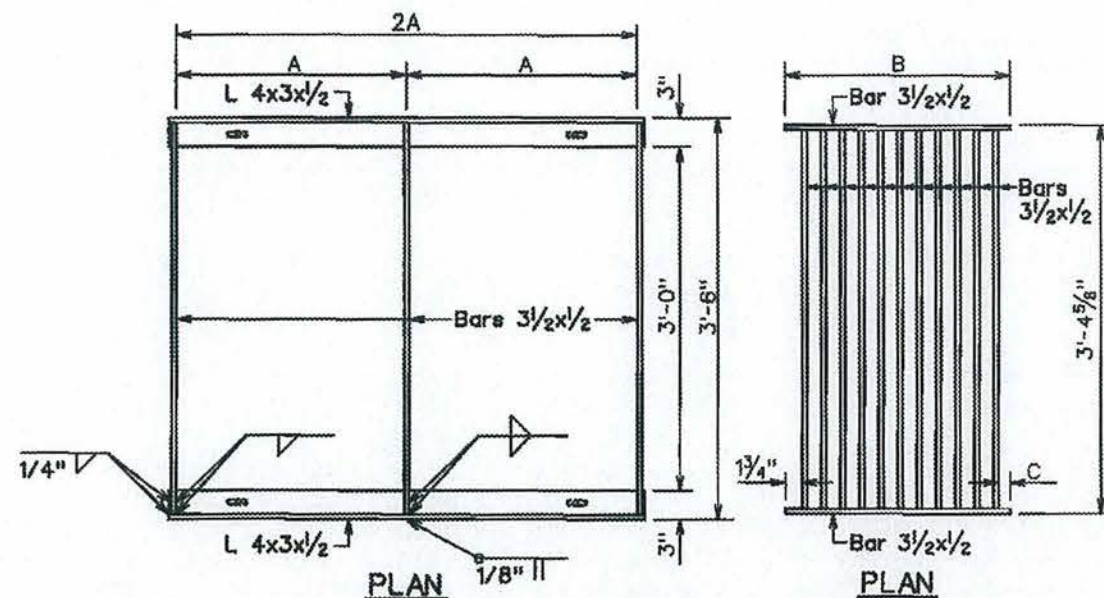
SPECIAL
604-J

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD PLAN H-06
TYPICAL REINFORCING DETAILS
FOR DRAINAGE STRUCTURES

DATE	REVISION	APP'D.
X	X	

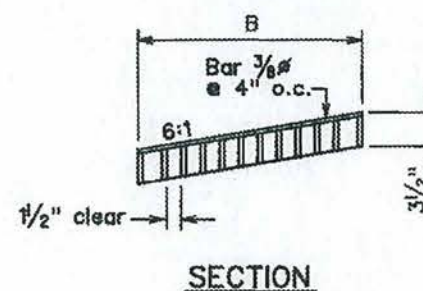
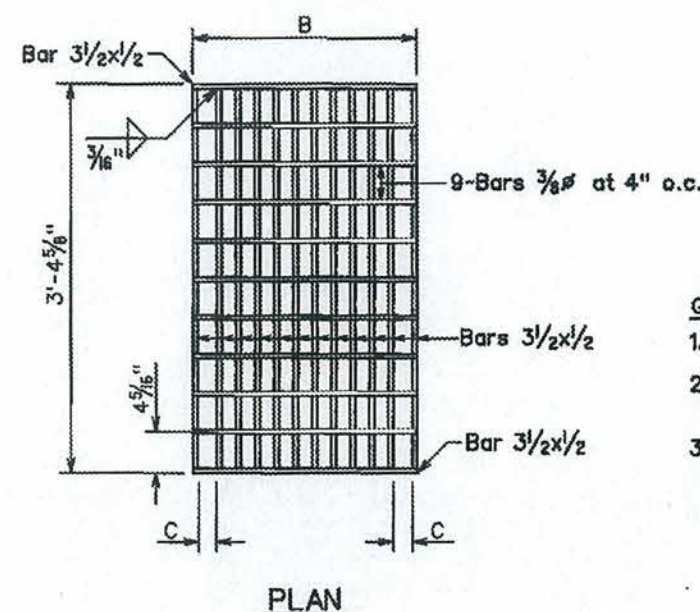
STANDARD PLAN H-06 05/31/07

NO SCALE



DIMENSIONS					
TYPE	NO. BARS	A	B	C	D
61614	11	2'-0"	1'-11 1/2"	1/4"	1'-6"
61616	17	3'-0"	2'-11 3/8"	1/8"	2'-0"

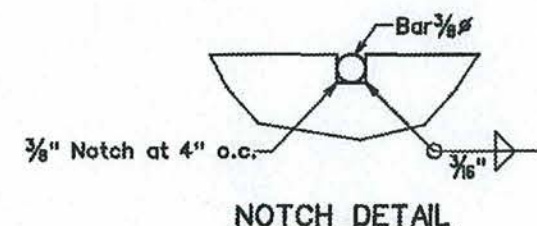
TYPE 61614 AND 61616 STEEL FRAME AND GRATES
(GRATE PLAN AND SECTION DRAWN FOR TYPE 61614, TYPE 61616 SIMILAR)



DIMENSIONS			
TYPE	NO. BARS	B	C
61614P	12	1'-11 1/2"	2"
61616P	18	2'-11 3/8"	1 5/8"

TYPE 61614P AND 61616P STEEL GRATES
(GRATE PLAN AND SECTIONS DRAWN FOR TYPE 61614P, TYPE 61616P SIMILAR)

- General Notes:**
1. All welds 3/8" unless otherwise noted.
 2. Grates and frames shall be zinc coated after fabrication.
 3. Anchors shall be ASTM A 307 and zinc coated.



NOTCH DETAIL
GRATE

AS-BUILT DRAWINGS/SPECIFICATIONS
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GOODFELLOW BROS., INC.
Contractor's Name:

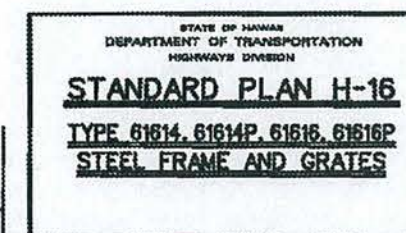
Signature: *[Signature]* Date: 1/2/14



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Signature: *[Signature]* 4/30/2012
EXPIRATION DATE OF THE LICENSE

DATE	REVISION	APP'D.
X	X	

STANDARD PLAN H-16 05/31/07



NO SCALE

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

U.S. CUSTOMARY SPECIAL
(HDOT STD H-16)
**TYPE 61614, 61614P, 61616, 61616P
STEEL FRAME AND GRATES**

SPECIAL
604-K