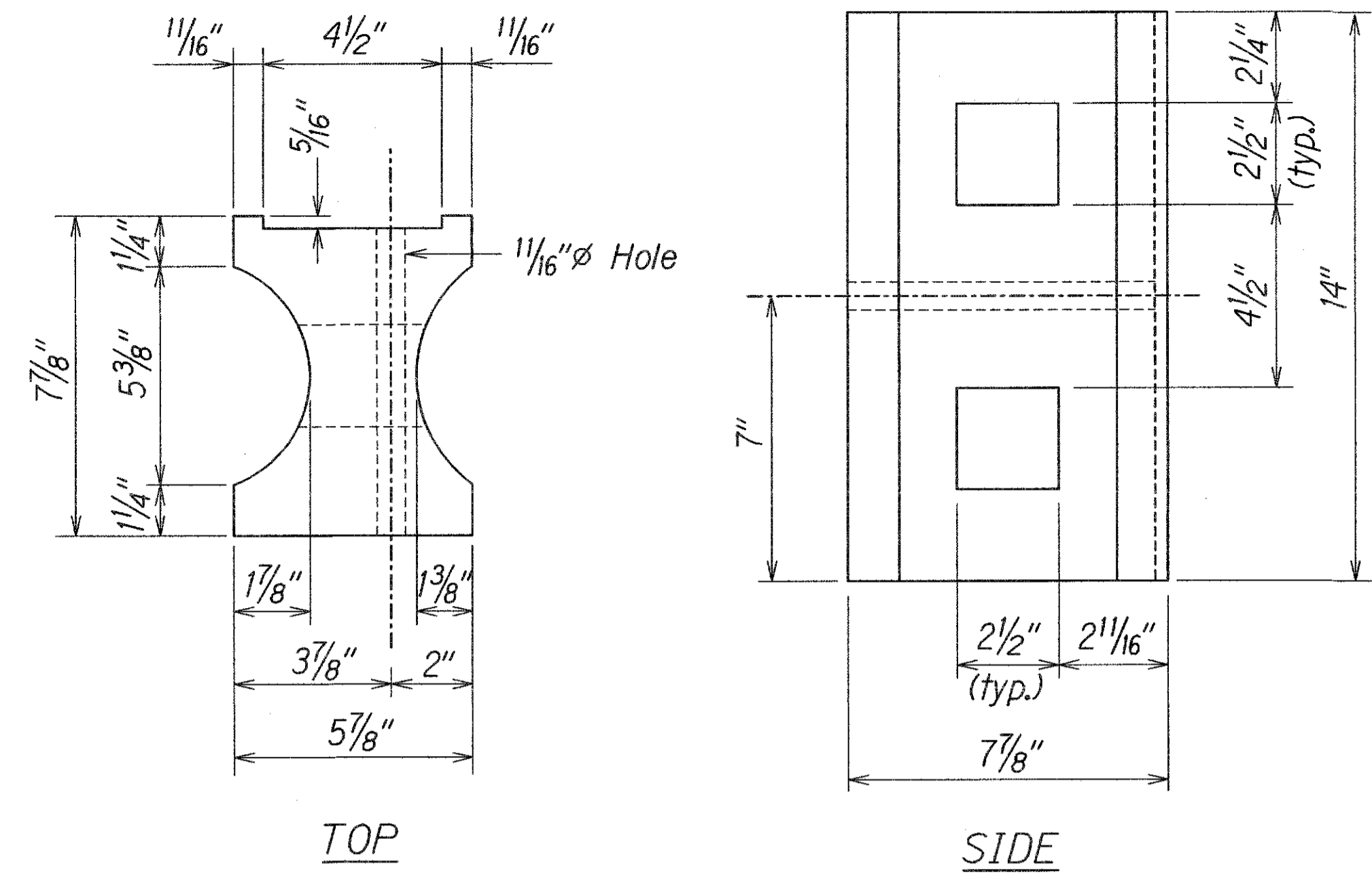
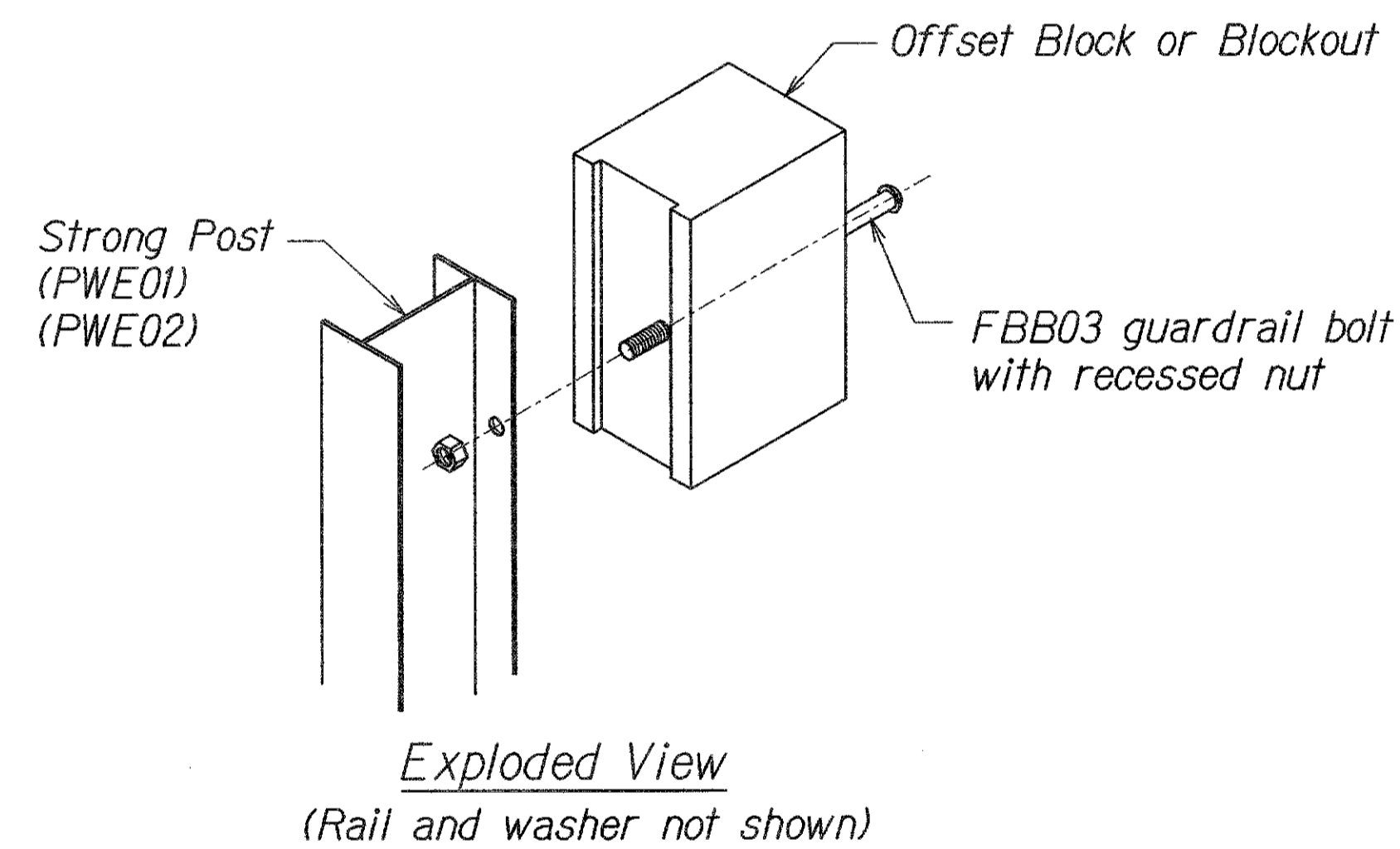


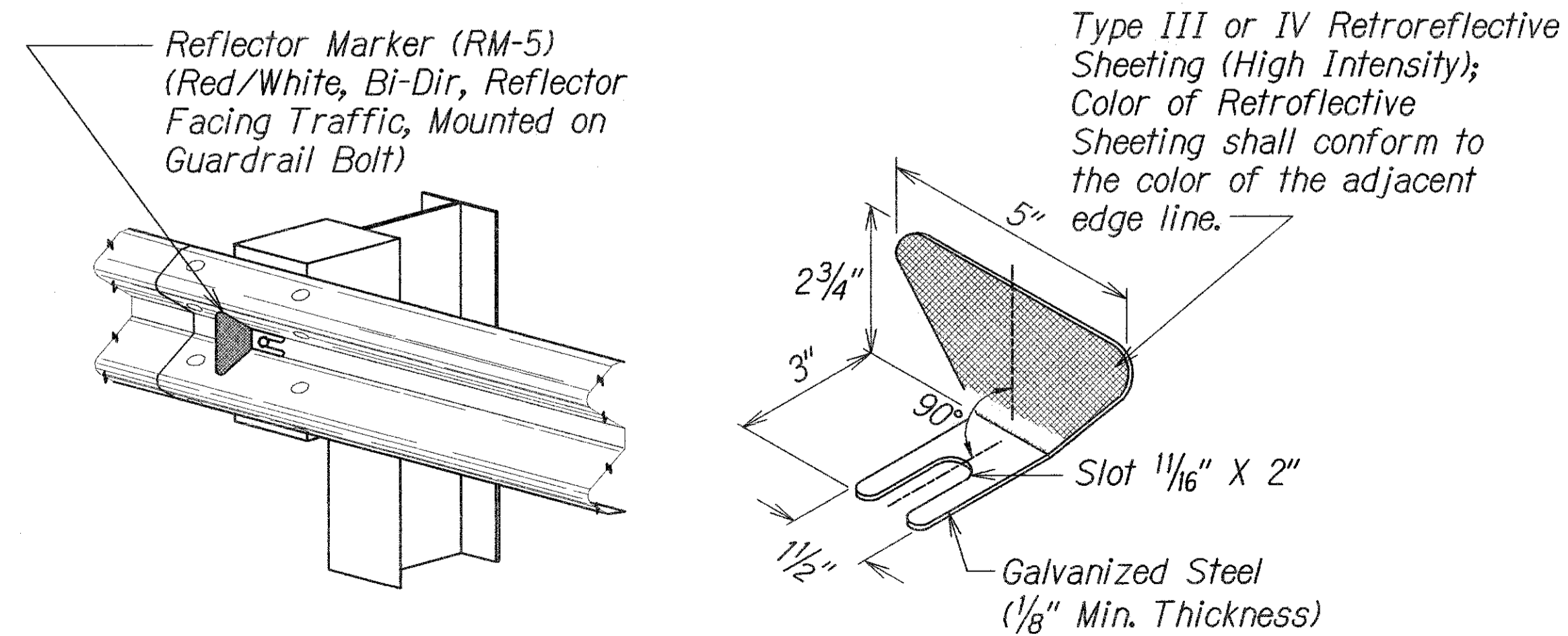
FED. ROAD DIST. NO.	STATE	FEDERAL PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0190(015)	2011	9	59



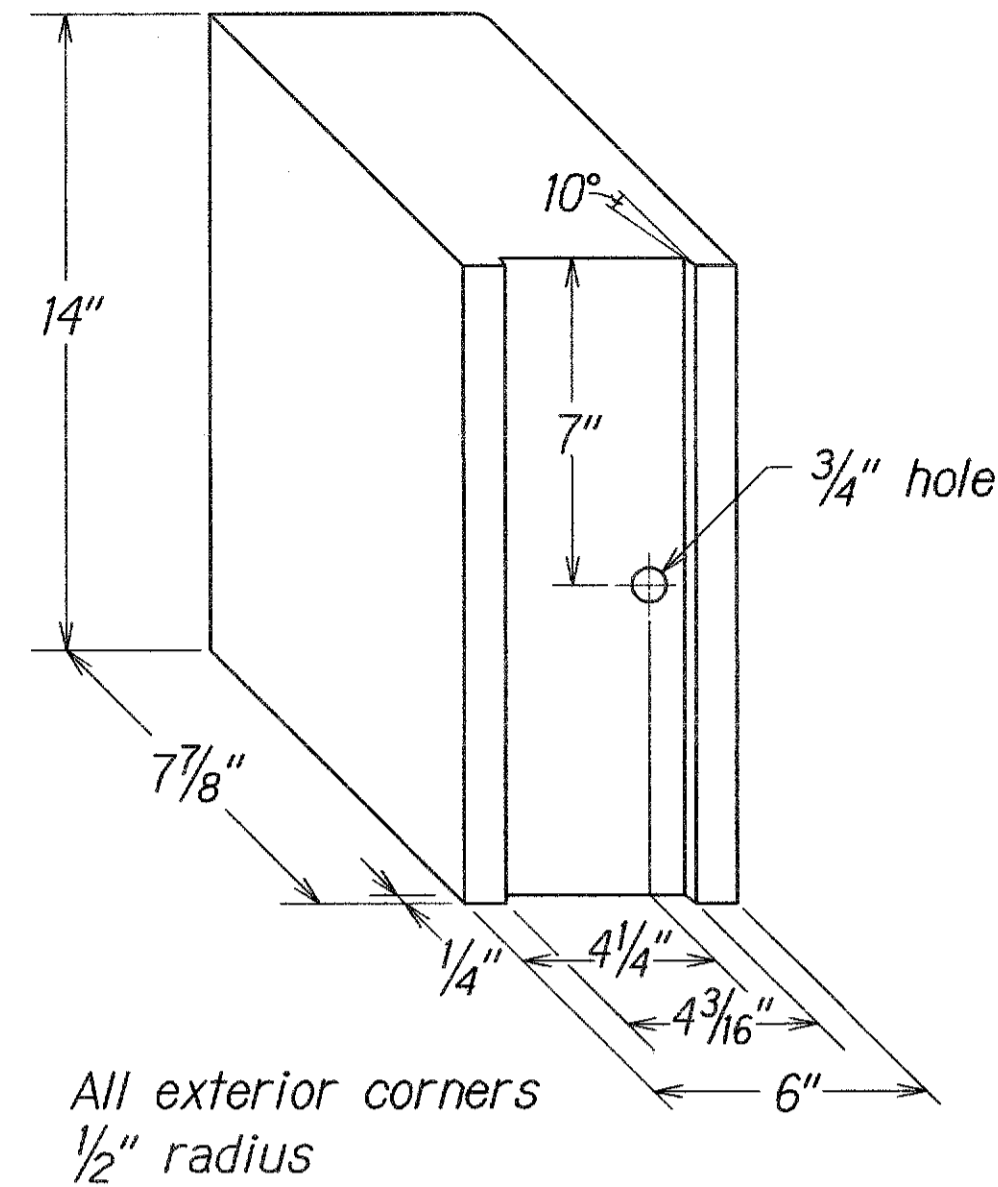
TOP  
SIDE  
RECYCLED PLASTIC BLOCKOUT (TYPE I)



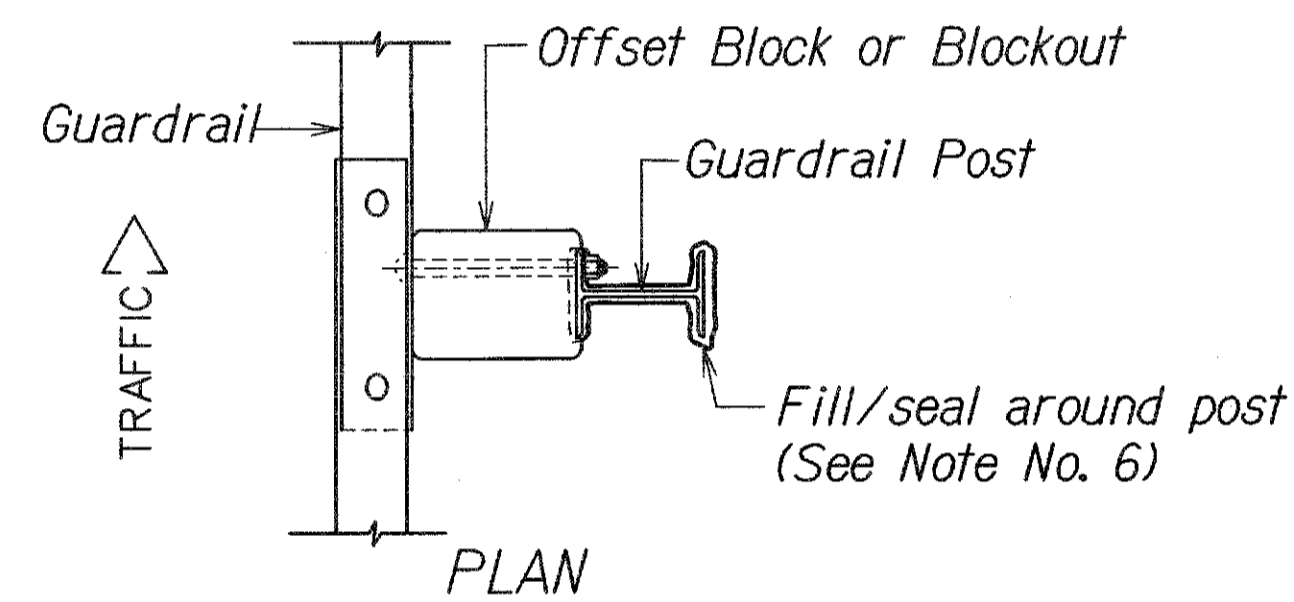
STEEL POST AND BLOCK DETAIL



RM-5 REFLECTOR MARKER DETAIL AND TYPICAL INSTALLATION

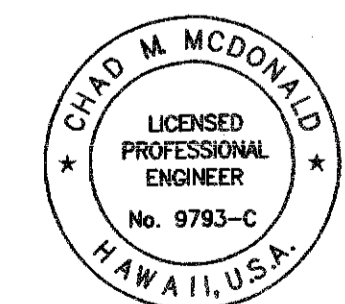


RECYCLED POLYETHYLENE  
OFFSET BLOCK (TYPE II)



#### GENERAL NOTES

1. All hardware, posts and fasteners shall be hot-dip zinc coated galvanized after fabrication. No punching, drilling or cutting will be permitted after galvanizing.
2. Where conditions require, special post lengths in increments of 6 inches may be specified.
3. All fasteners, posts, and rail elements (i.e. FBB03, PWE01, RWM02b, etc.) shall conform to the latest edition and amendments of "A Guide to Standardized Highway Barrier Rail Hardware", a report prepared and approved by the AASHTO-AGC-ARTBA Joint Cooperative Committee, Subcommittee On New Highway Materials, Task Force 13 Report. Dimensions of fastners, posts and rail elements have been converted from metric units into their present form.
4. The Recycled Plastic Block or Offset Block shall be approved by the State.
5. All new guardrail systems (system consists of total length of guardrail including both end treatments) shall include the Additional Paved Area.
6. After the guardrail posts are installed in the paved area, the Contractor shall fill/seal around each guardrail post and all cracks in the paved area caused during the guardrail post installation. If required by the inspector/engineer, the Contractor shall tamper the paved area around the guardrail post prior to filling/sealing. All costs associated with this work shall not be paid for separately, but shall be considered incidental to the various guardrail items.
7. When standards for the fill slope area cannot be met, a site specific, engineer approved design may be used.
8. New A.C. pavement at guardrails shall extend 6 feet longitudinally beyond terminal ends.
9. Reflector Markers (RM-5) mounted on guardrails shall be spaced every 25 feet. RM-5's shall not be installed on Terminal Sections. Furnishing and installing of each RM-5 shall be considered incidental to the adjacent guardrail system.



This work was prepared by me or under my supervision  
Chad M. McDonald  
MITSUNAGA & ASSOCIATES, INC. EXP. DATE 4/30/2012  
NOTE: Contractor to check and verify dimensions of job before proceeding with work.

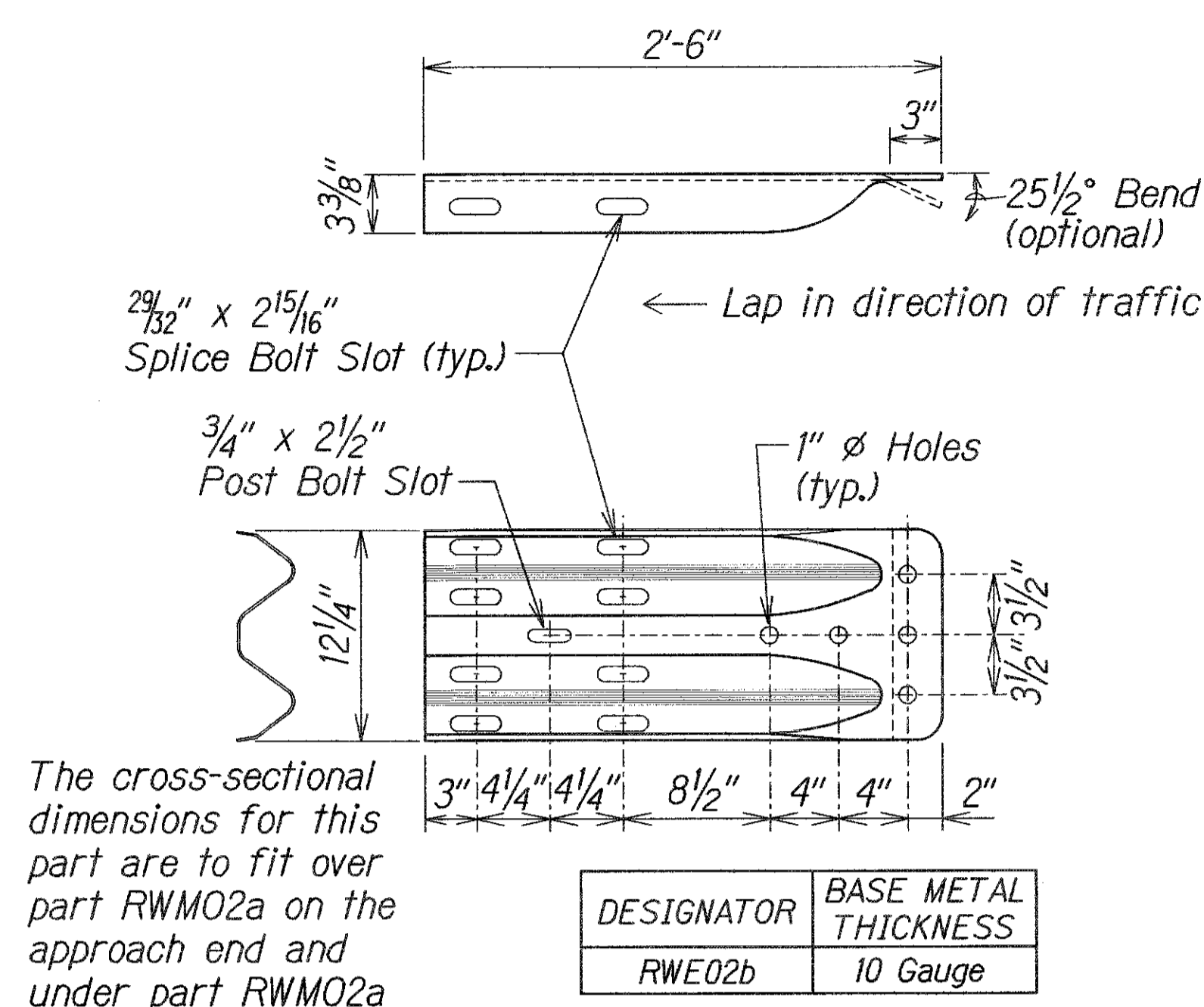
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**GUARDRAIL DETAILS & NOTES**  
  
MAMALAHOA HIGHWAY RESURFACING  
Makalei to Palani Road Junction  
F.A. Project No. STP-0190(015)  
Scale: As Noted Date: November 2011  
SHEET No. C-7 OF 59 SHEETS

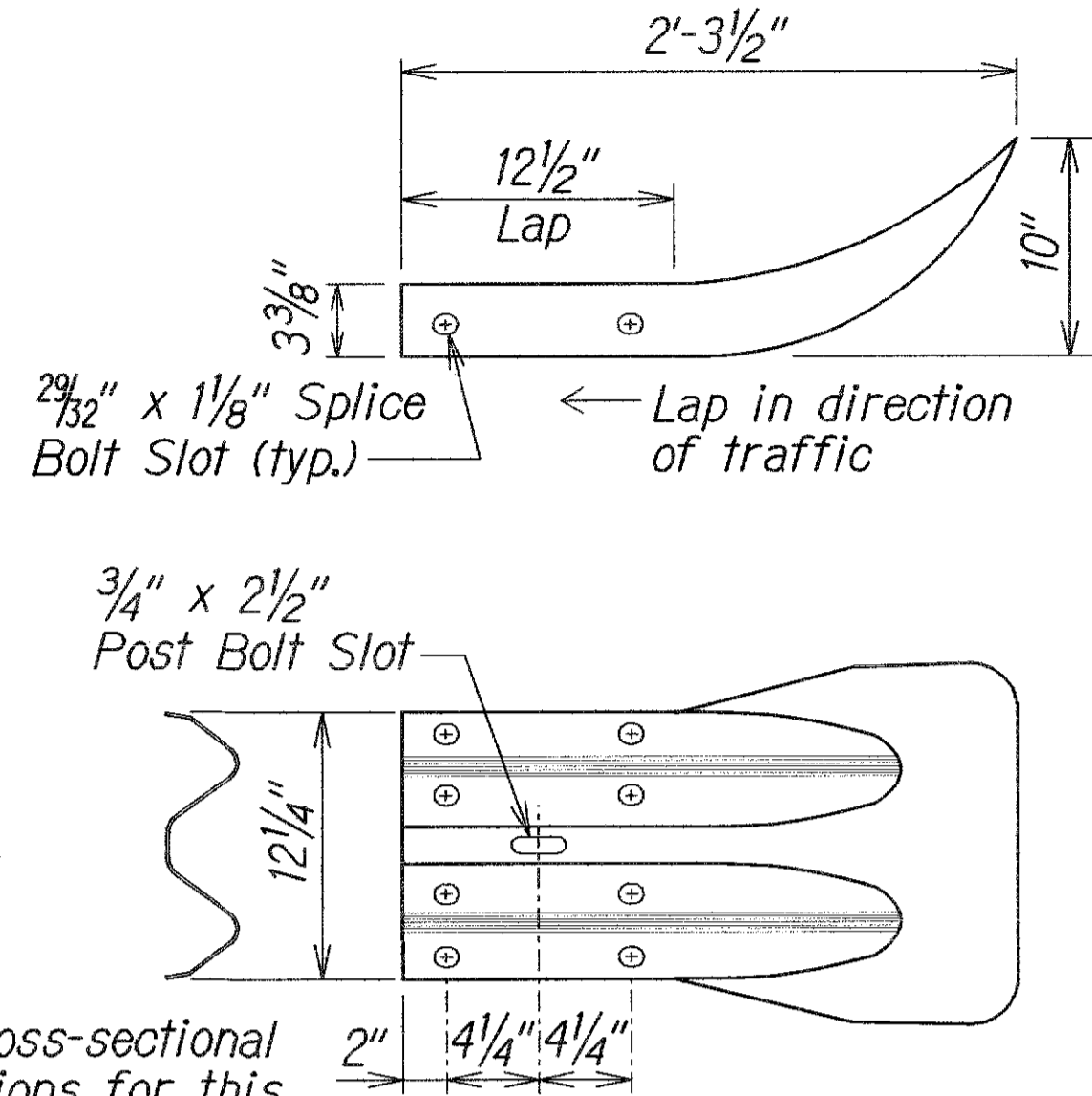
SURVEY PLOTTED BY	DATE
DRAWN BY	Aug. 2011
CHECKED BY	Aug. 2011
NOTED BY	Aug. 2011
ORIGINAL PLAN	
NOTE BOOK	
N.	



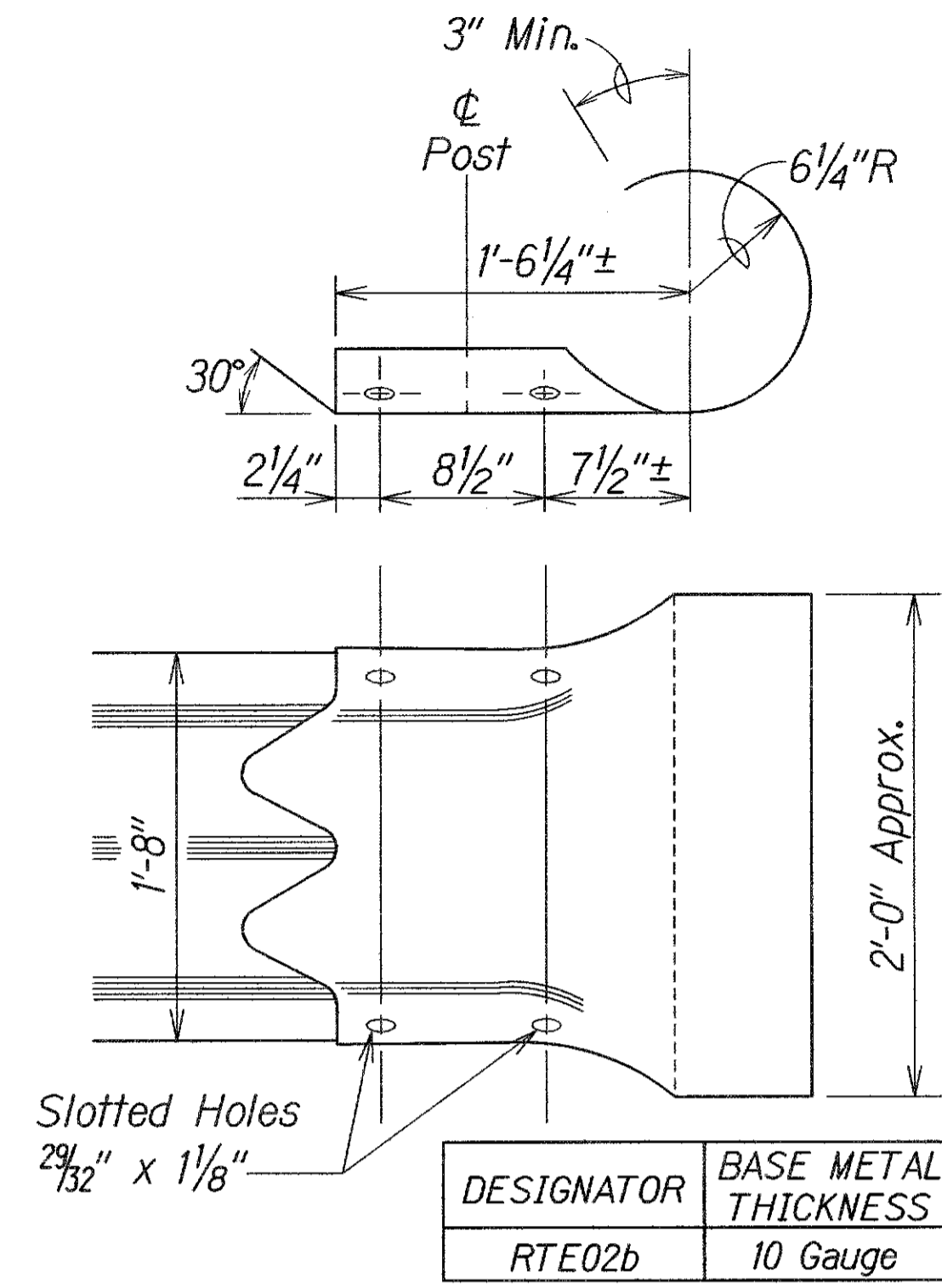
FED. ROAD DIST. NO.	STATE	FEDERAL PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0190(015)	2011	11	59



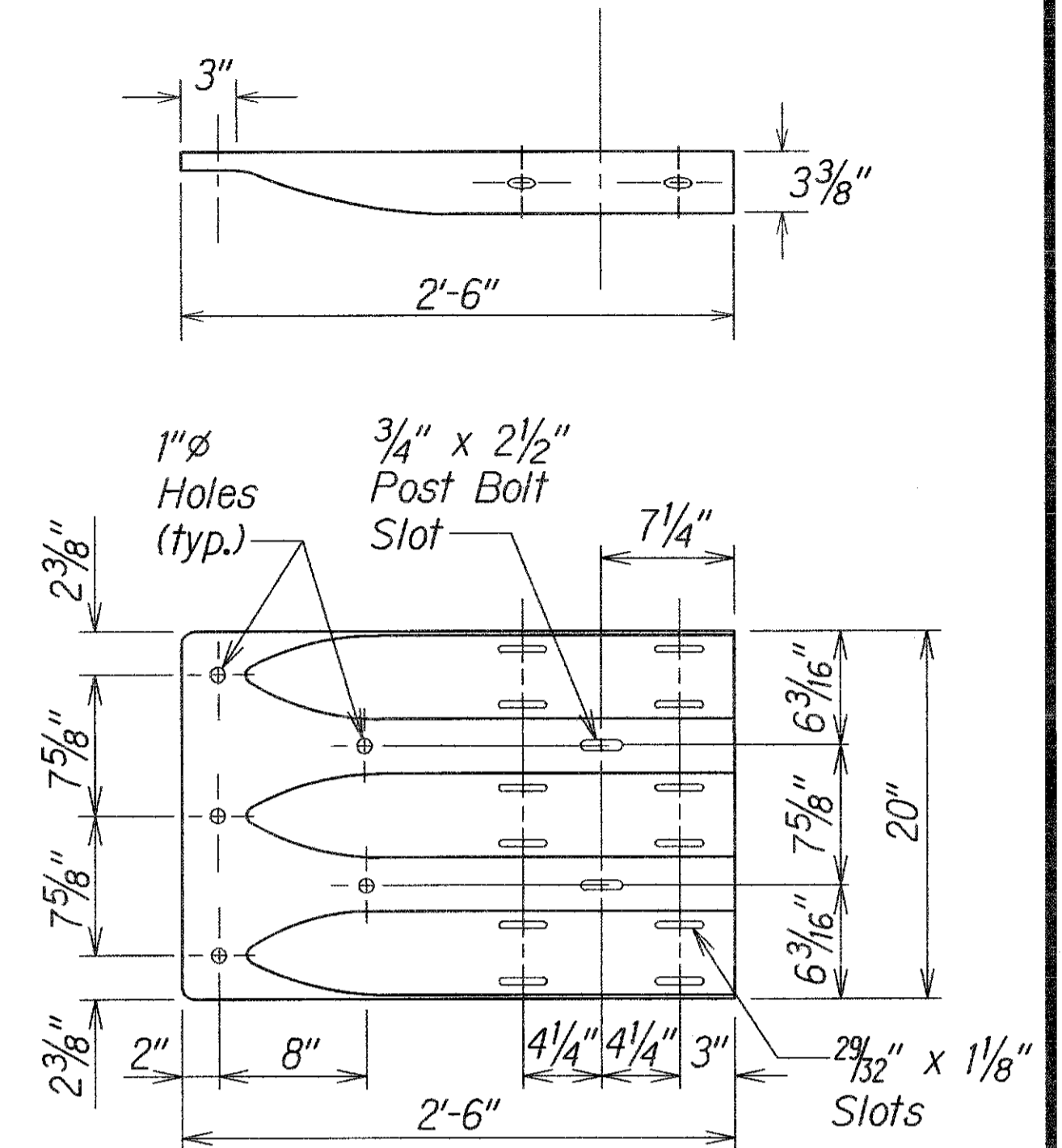
W-BEAM TERMINAL CONNECTOR (RWE02b)



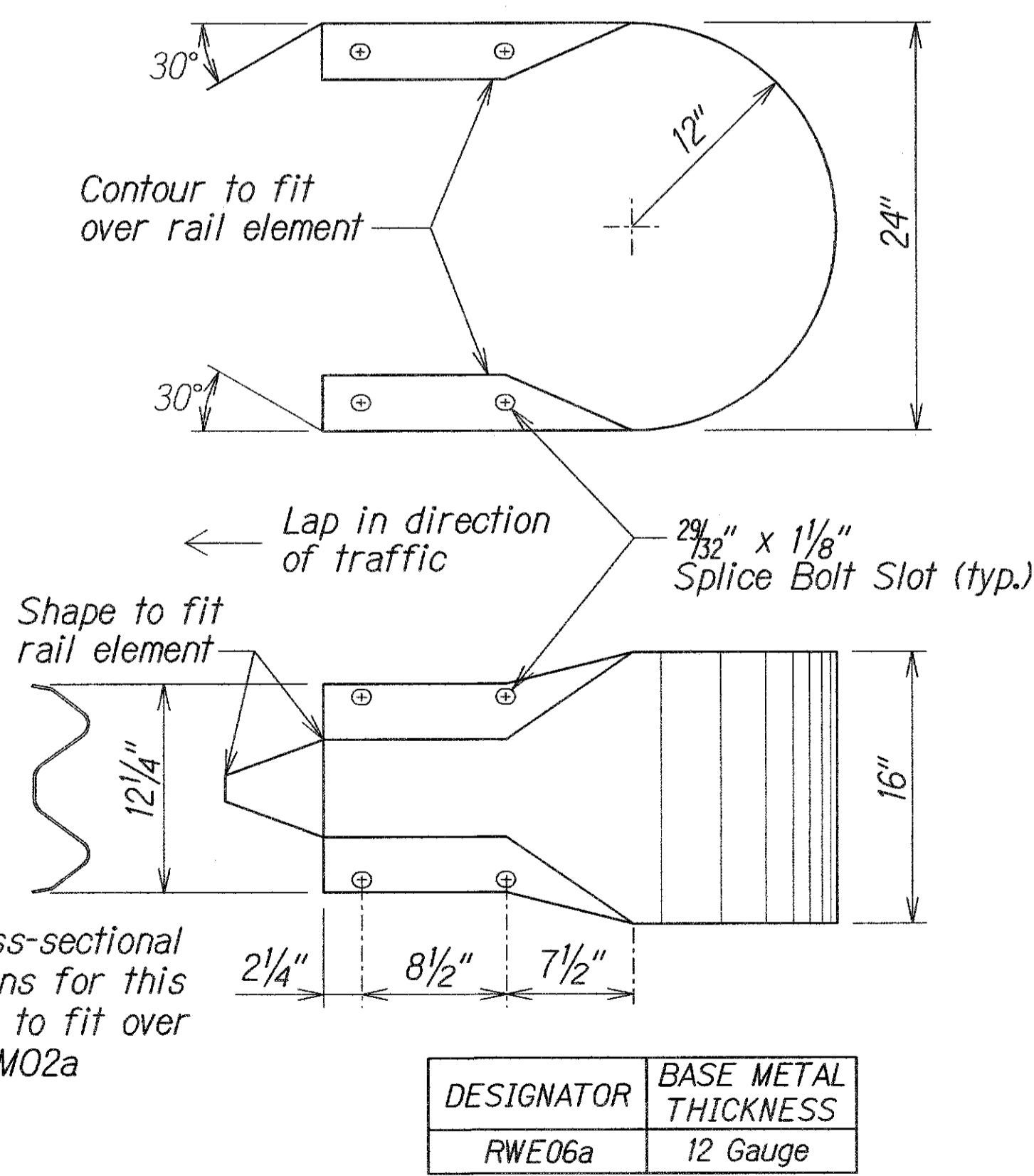
W-BEAM END SECTION (FLARED RWE01a)



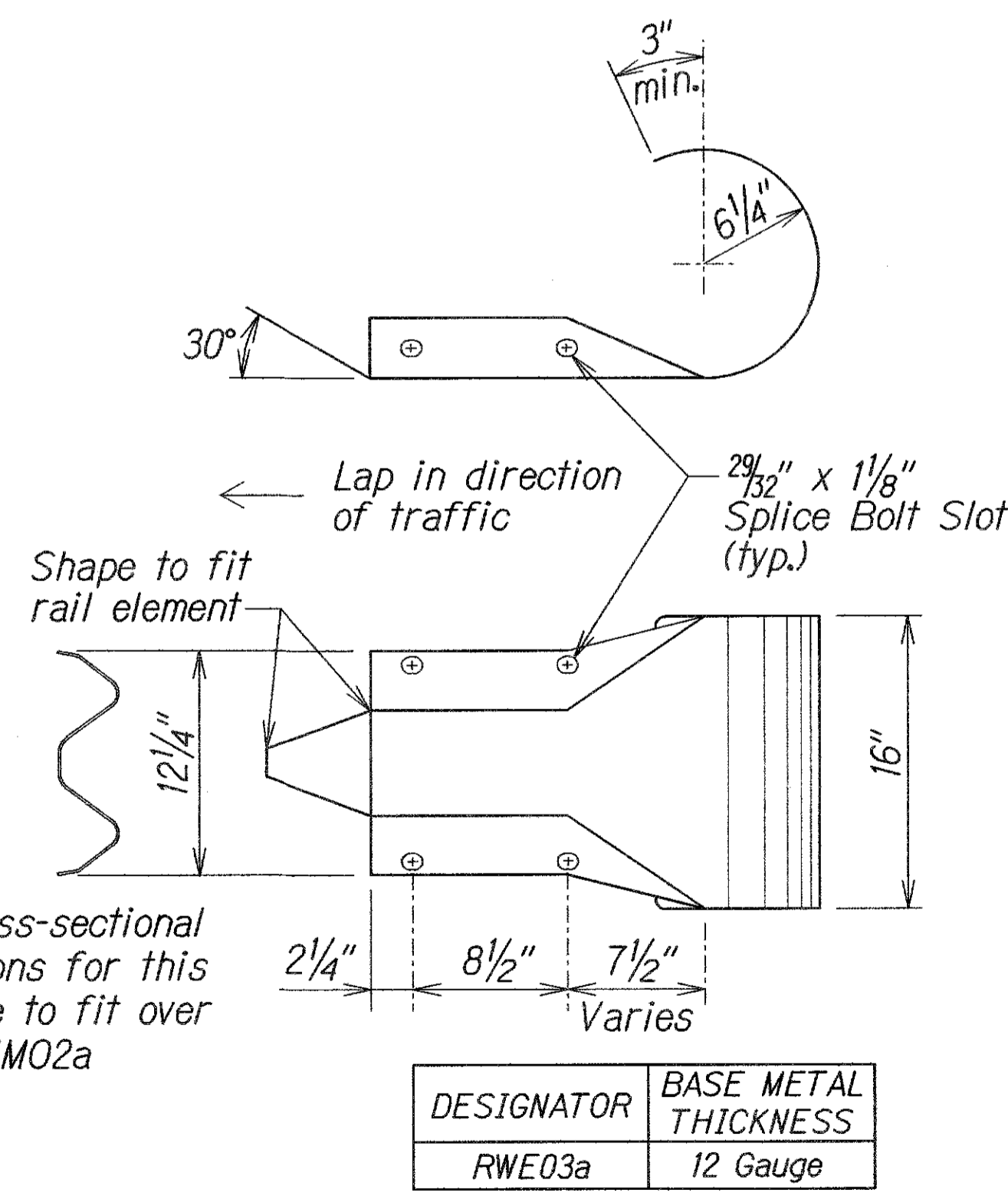
THRIE-BEAM SECTION (ROUNDED) (RTE02b)



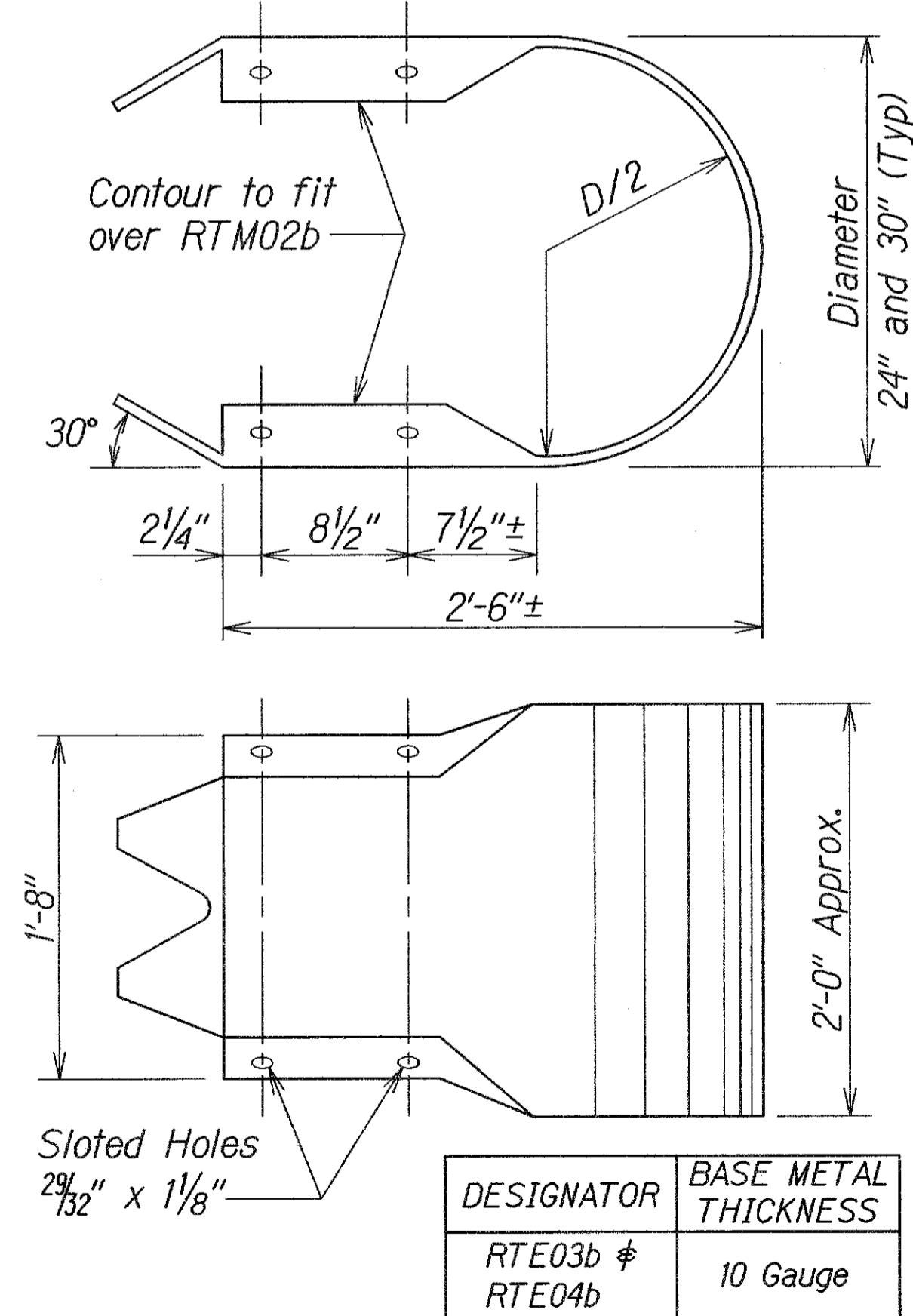
THRIE-BEAM TERMINAL CONNECTOR (RTE01b)



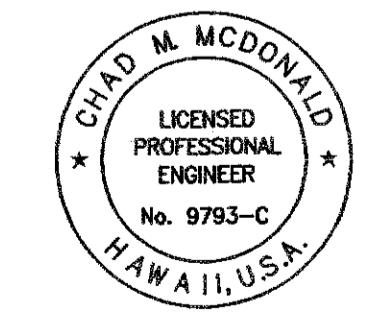
W-BEAM END SECTION (BUFFER RWE06a)



W-BEAM END SECTION (ROUNDED RWE03a)



THRIE-BEAM END SECTION (BUFFER RTE03b or RTE04b)



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 4/30/2012  
 MITSUNAGA & ASSOCIATES, INC. EXP. DATE  
 NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

GUARDRAIL TERMINAL CONNECTORS

AND END SECTIONS

MAMALAHOA HIGHWAY RESURFACING

Makalei to Palani Road Junction

F.A. Project No. STP-0190(015)

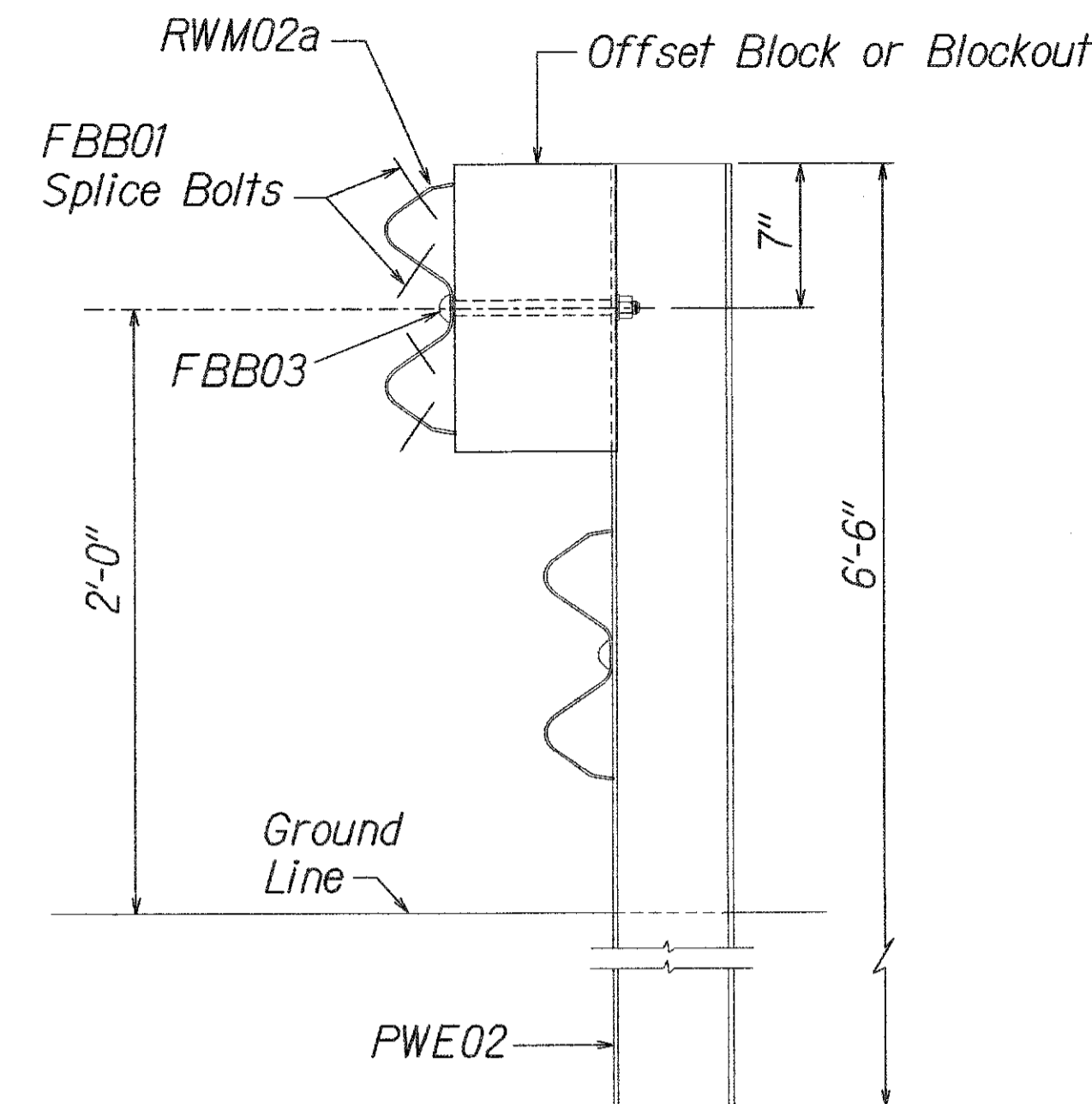
Scale: As Noted

Date: November 2011

SHEET No. C-9 OF 59 SHEETS

SURVEY PLOTTED BY: DATE: AUG. 2011  
 PLAN: MITSUNAGA & ASSOCIATES  
 DRAWN BY: MITSUNAGA & ASSOCIATES  
 CHECKED BY: MITSUNAGA & ASSOCIATES  
 NOTE BOOK: N/A

FED. ROAD DIST. NO.	STATE	FEDERAL PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0190(015)	2011	12	59

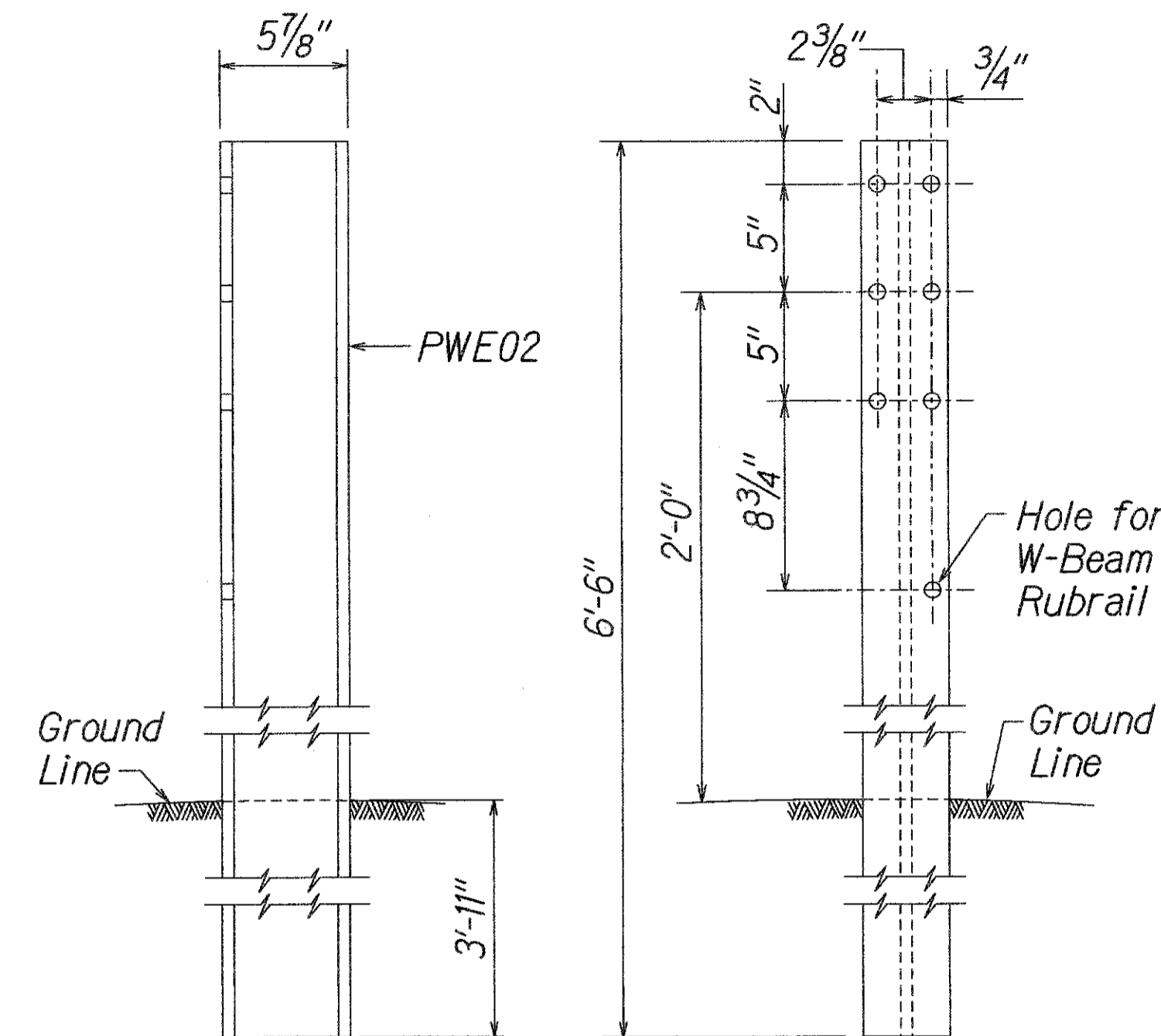


ELEVATION

**STRONG POST RUBRAIL  
(W-BEAM) GUARDRAIL**

NOTE:  
All Holes are  $\frac{3}{4}$ " Dia.

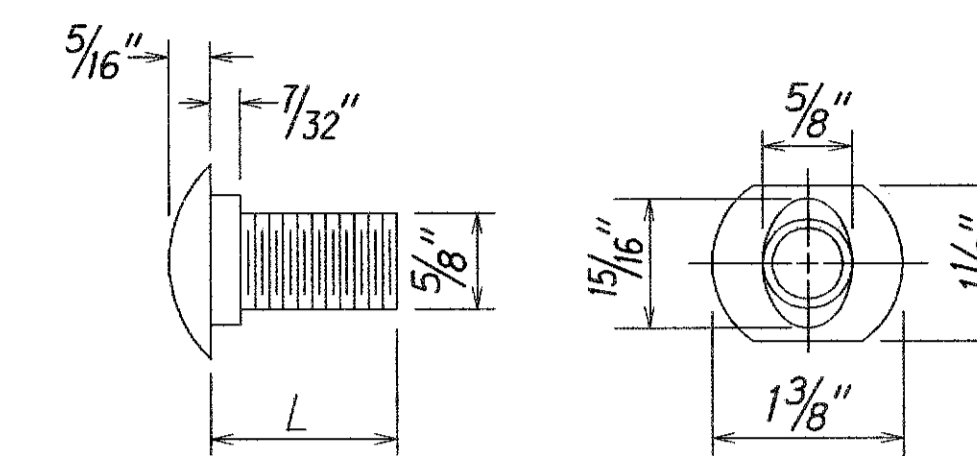
W6x8.5  
Structural  
Shape



SIDE

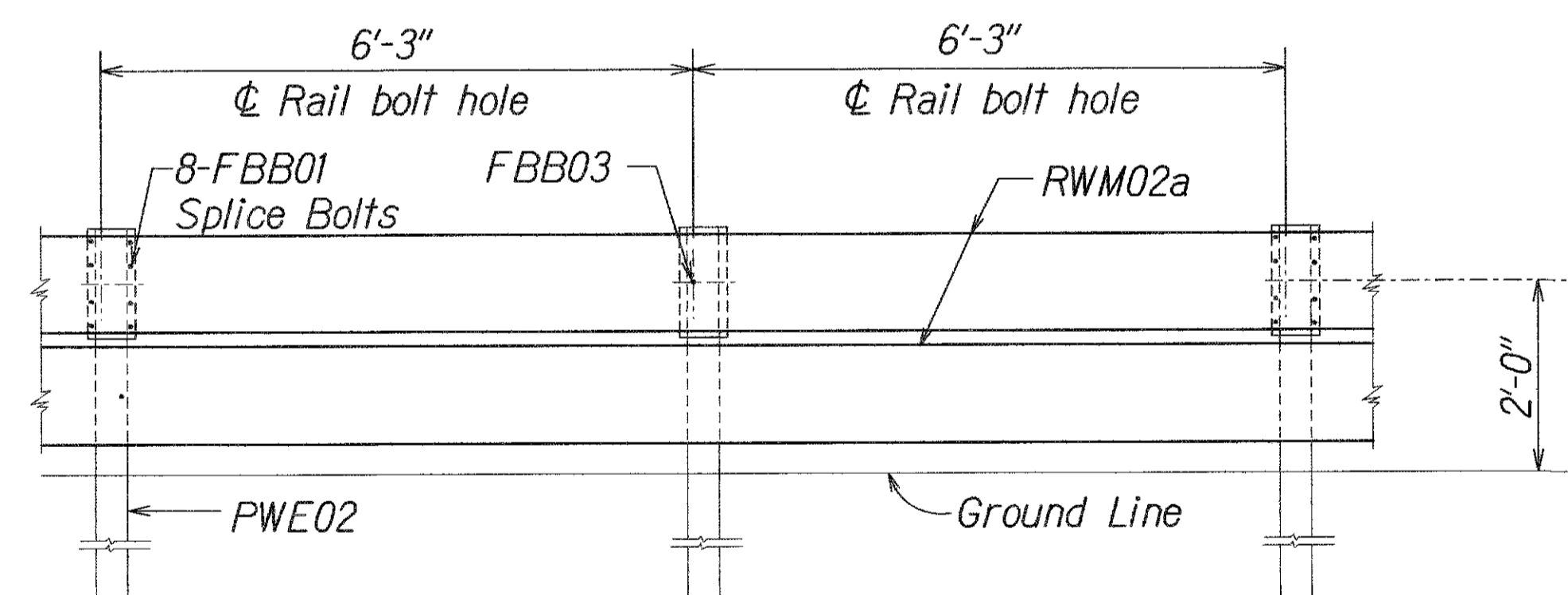
FRONT

**W-BEAM STRONG POST (PWE02)**



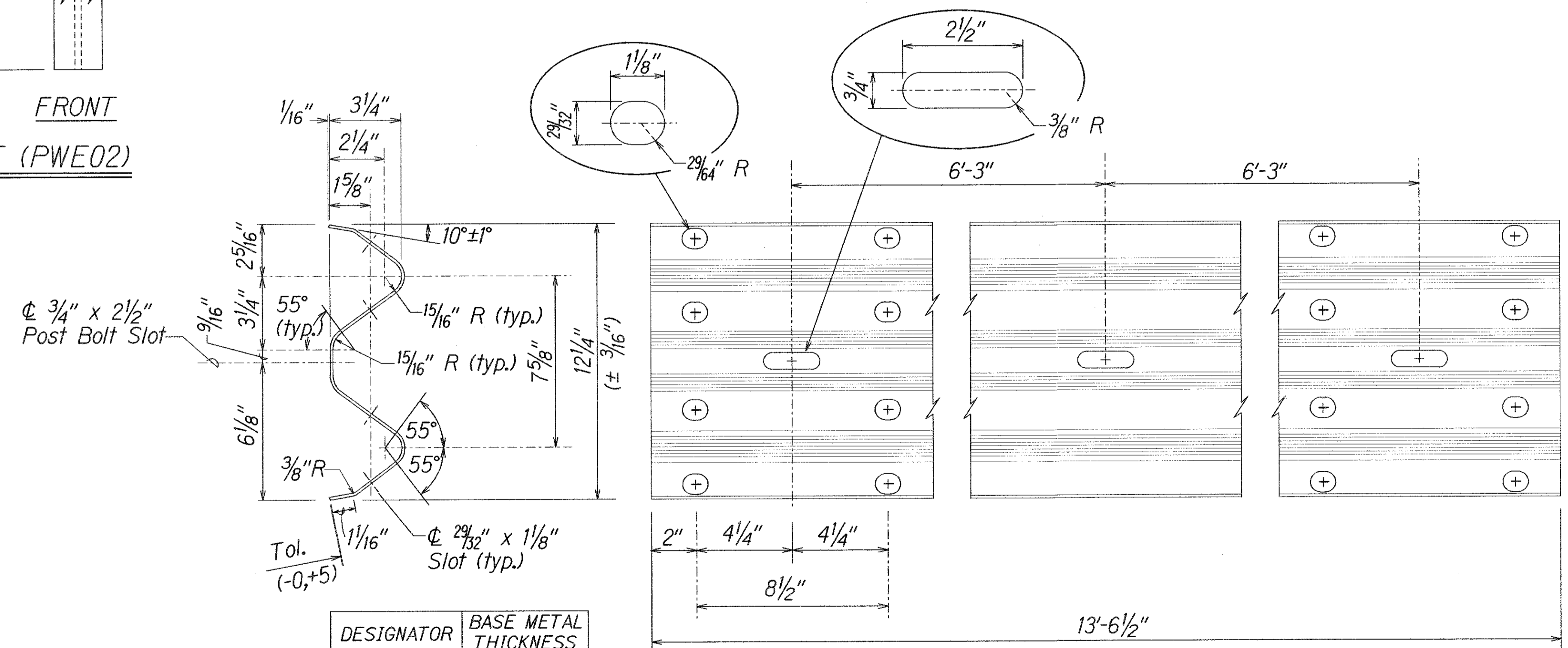
DESIGNATOR	L
FBB01	1 3/8"
FBB02	2"
FBB03	10"

**GUARDRAIL BOLTS AND RECESSED NUT**



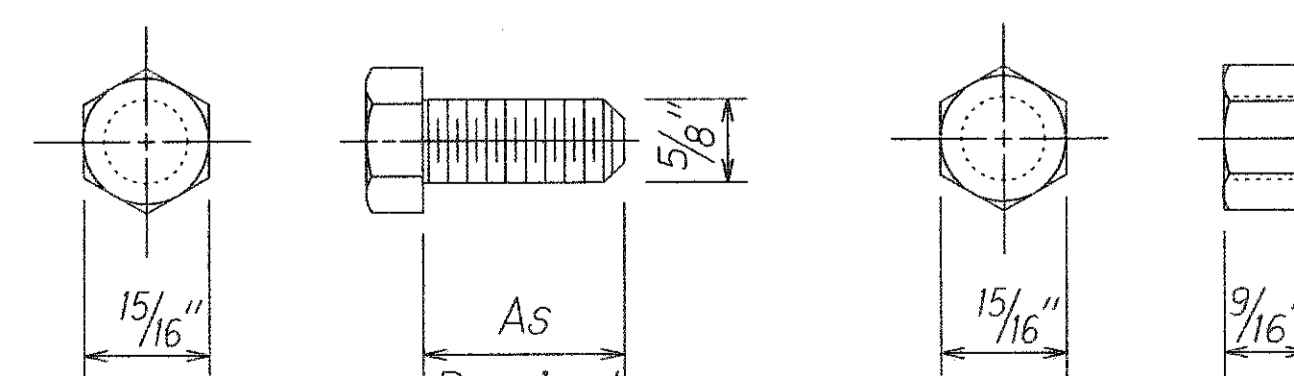
ELEVATION

**STRONG POST RUBRAIL (W-BEAM) GUARDRAIL WITH  
RECYCLED OFFSET BLOCK OR PLASTIC BLOCKOUT**

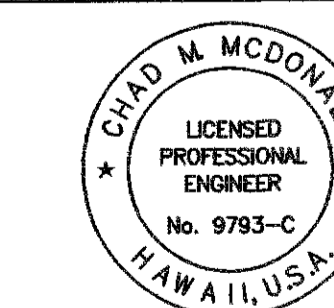


DESIGNATOR	BASE METAL THICKNESS
RWM02a	12 Gauge

**2 SPACE W-BEAM GUARDRAIL (RWM02a)**



**HEX BOLT & NUT (FBX16a)**



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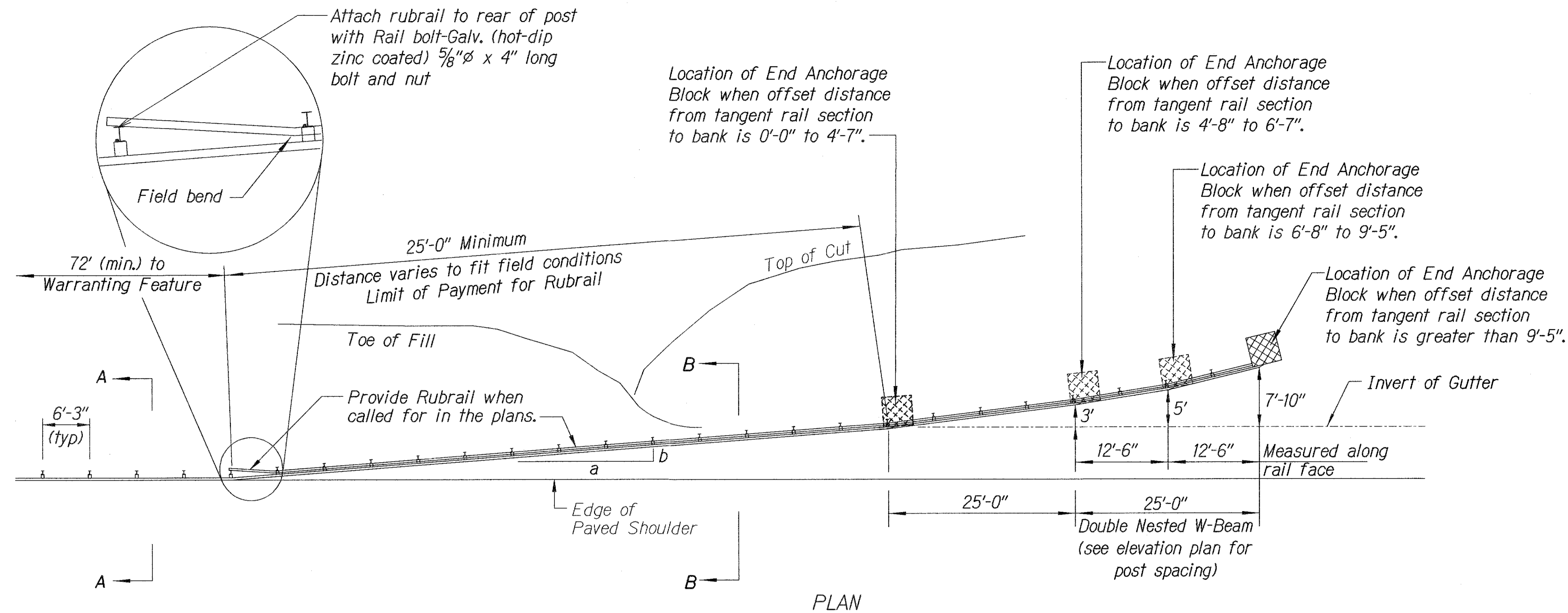
Chad M. McDonald  
MITSUNAGA & ASSOCIATES, INC. EXP. DATE

NOTE: Contractor to check and verify  
dimensions of job before proceeding with work.

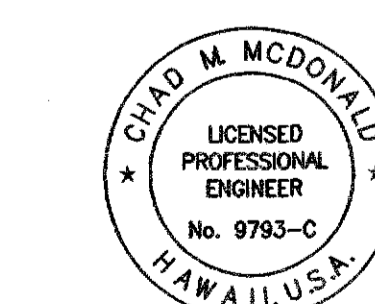
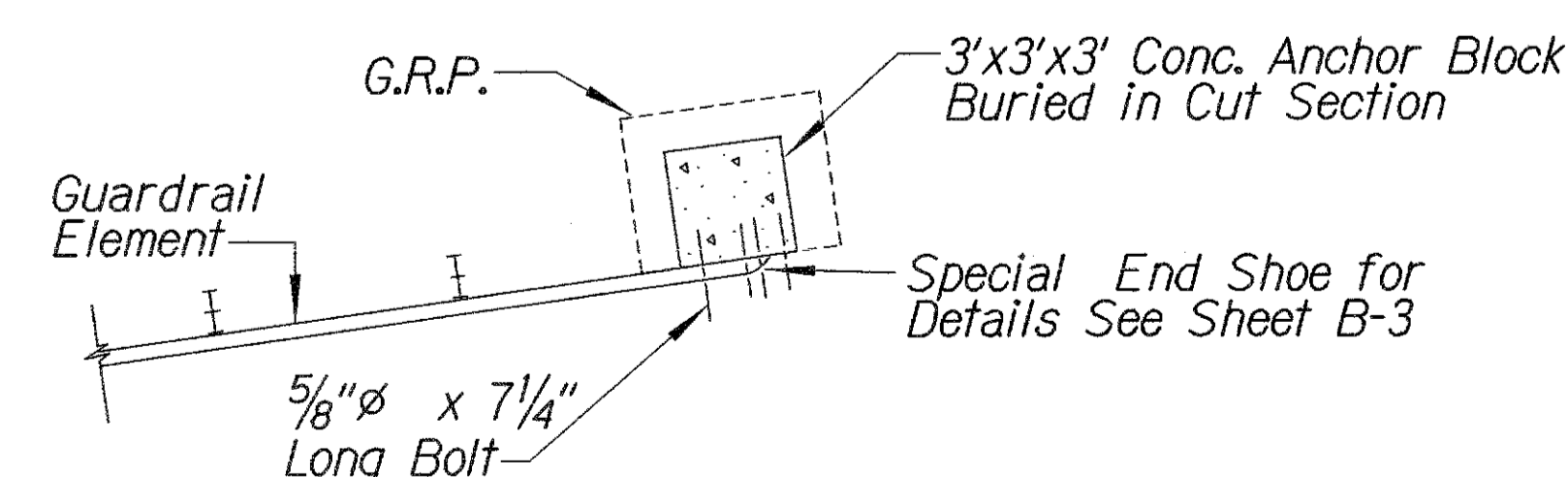
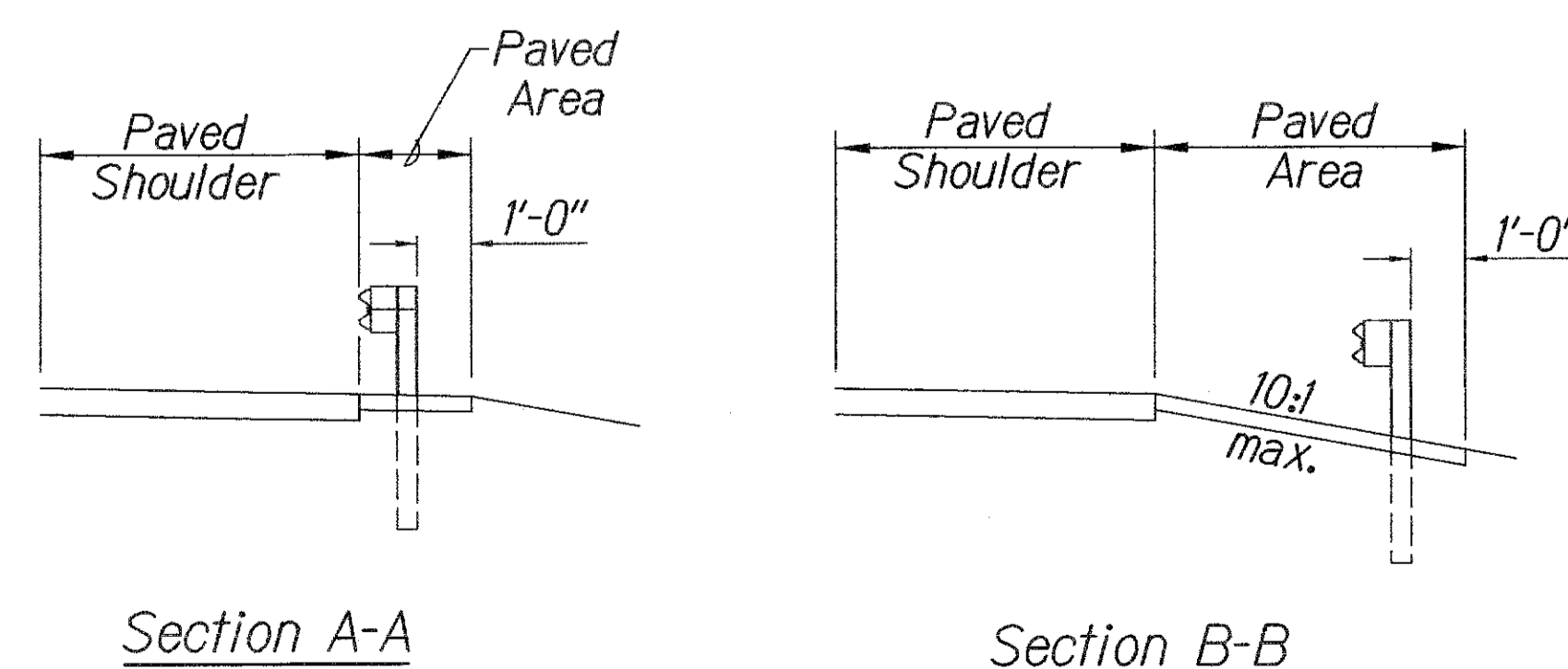
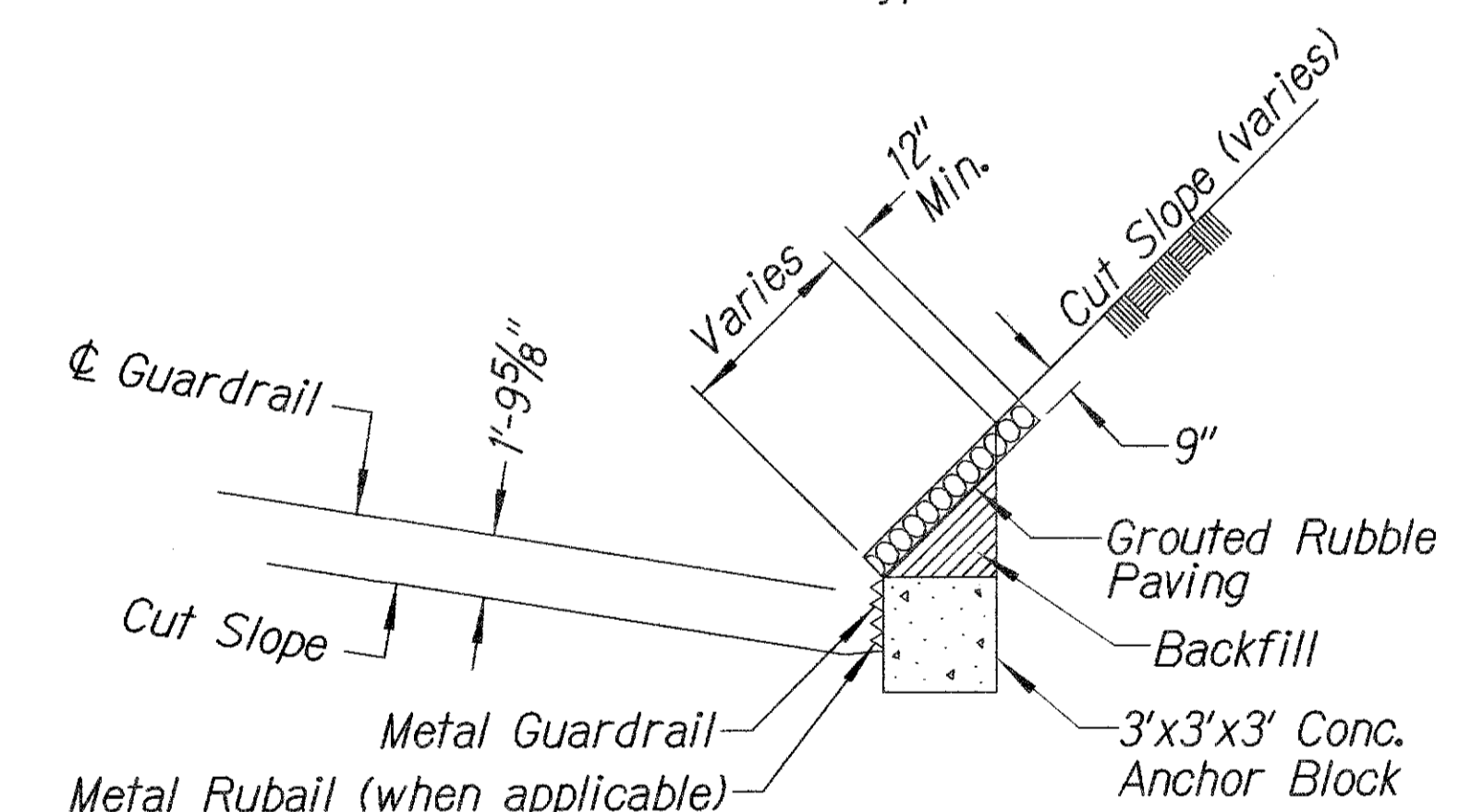
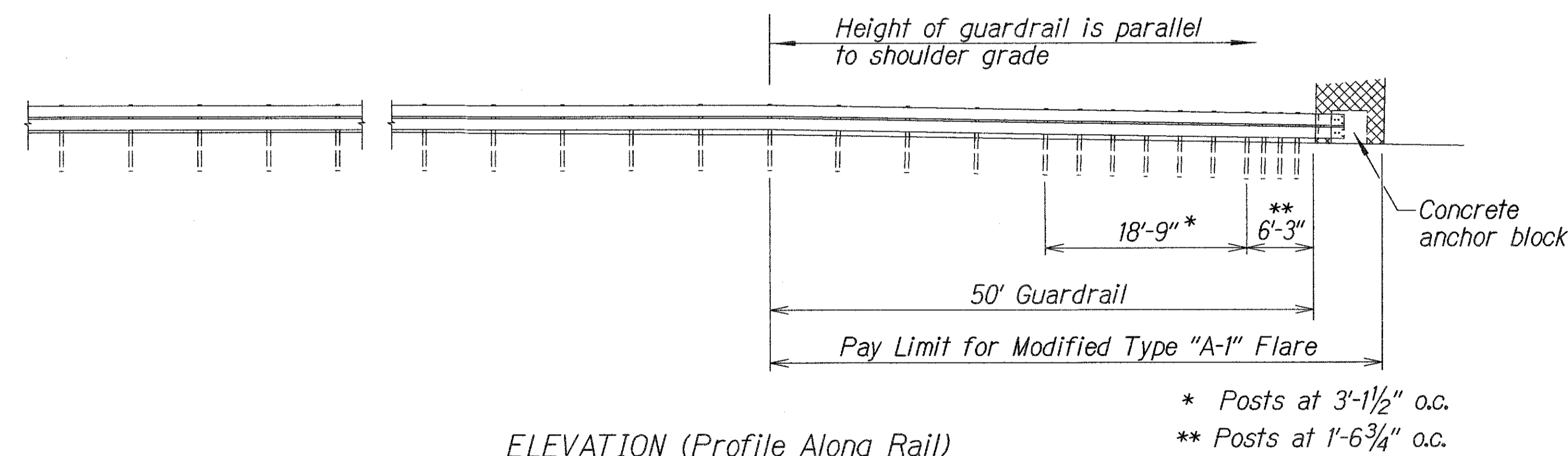
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**STRONG POST RUBRAIL  
(W-BEAM) GUARDRAIL**  
MAMALAHOA HIGHWAY RESURFACING  
Makalei to Palani Road Junction  
F.A. Project No. STP-0190(015)  
Scale: As Noted Date: November 2011

SHEET No. C-10 OF 59 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0190(015)	2011	13	59



Design speed mph	a:b
68	15:1
62	13:1
56	12:1
50	11:1
43	10:1
37	9:1
31	7:1



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Chad M. McDonald

4/30/2012

MITSUNAGA & ASSOCIATES, INC. EXP. DATE

NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**MODIFIED TYPE "A-1" FLARE**  
MAMALAHOA HIGHWAY RESURFACING  
Makalei to Palani Road Junction  
F.A. Project No. STP-0190(015)  
Scale: As Noted Date: November 2011

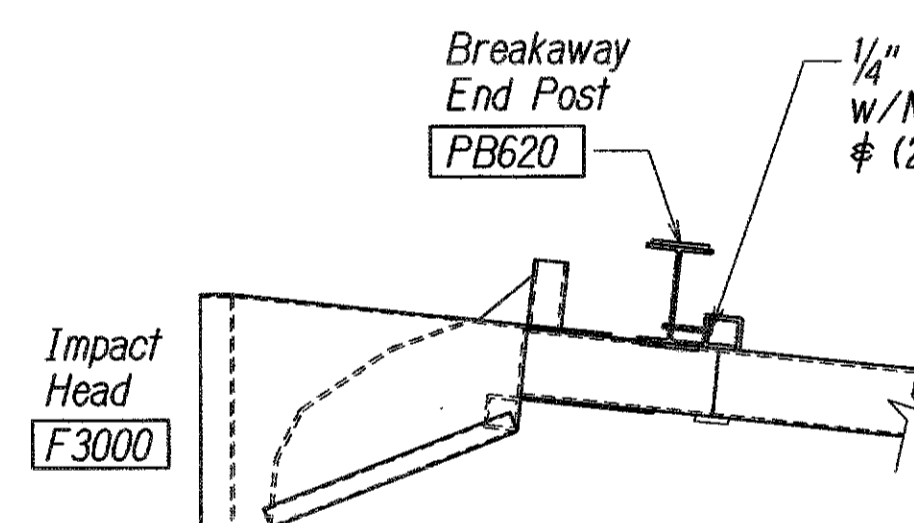
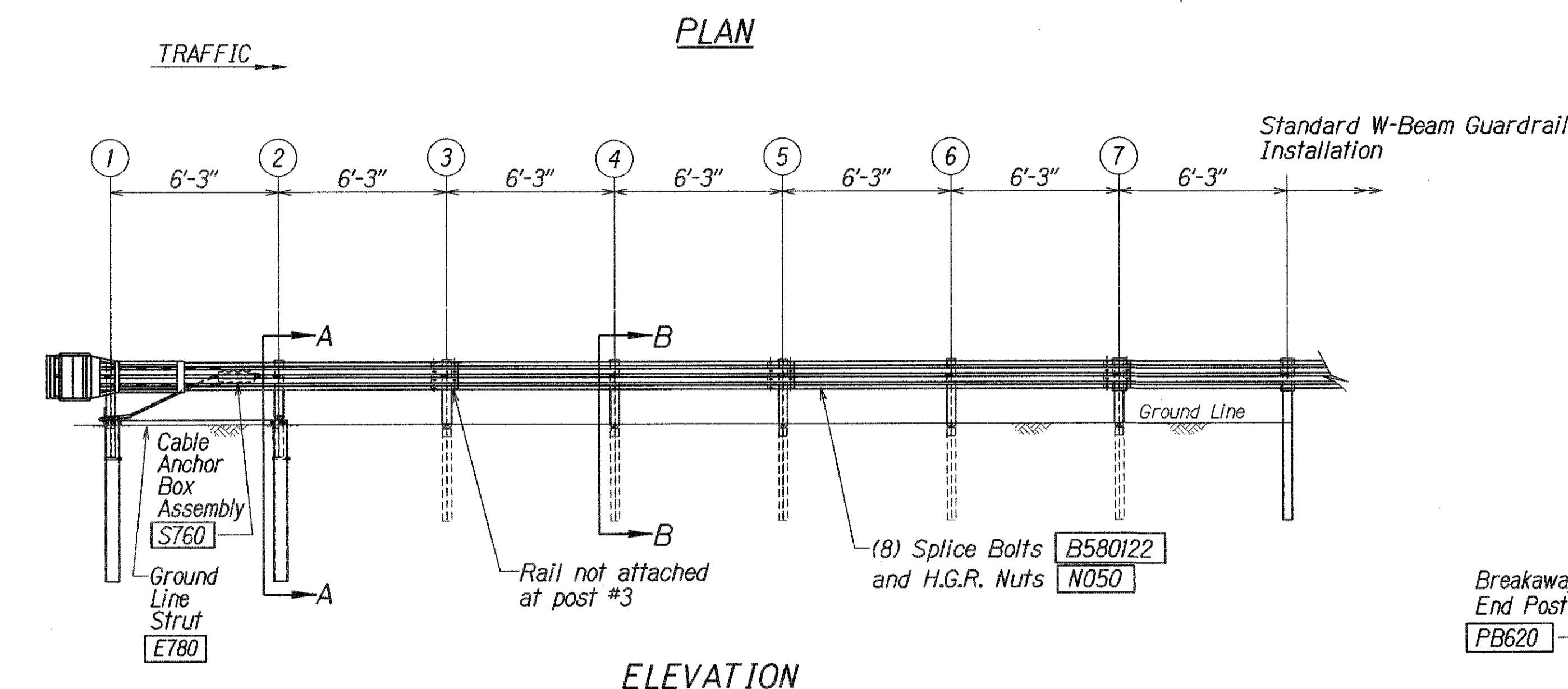
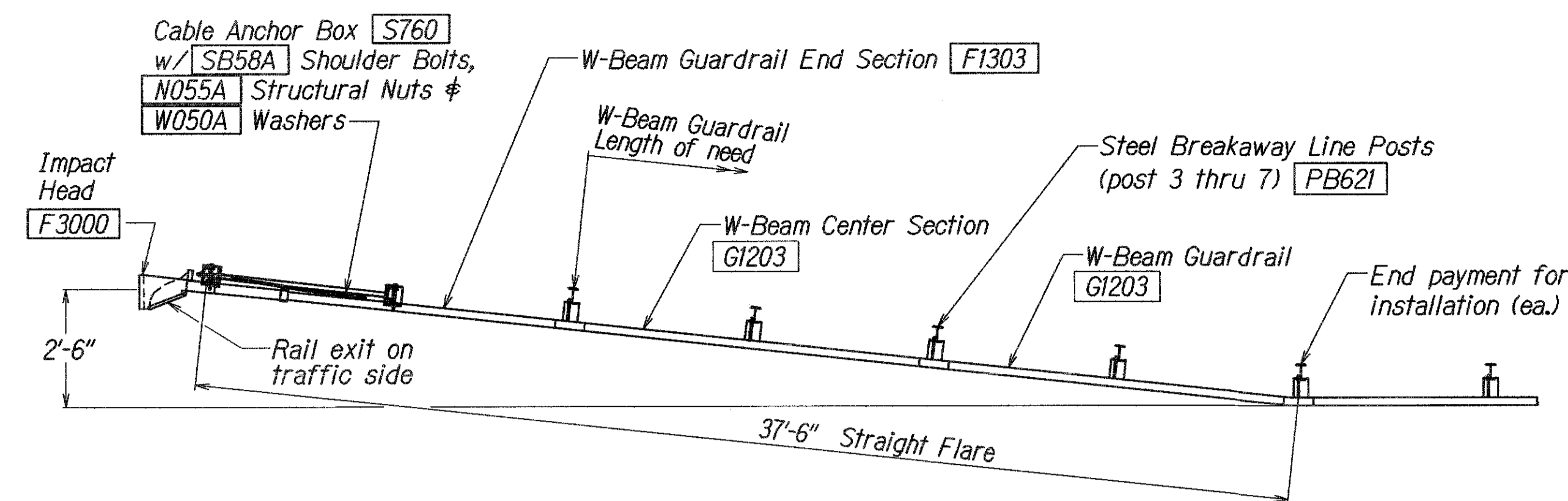
SHEET No. C-11 OF 59 SHEETS

SURVEY PLOTTED BY	DATE
PLAN	Aug. 2011
DRAWN BY	Mitsunaga & Associates
TRACED BY	Aug. 2011
NOTE BOOK	Aug. 2011
CHECKED BY	Aug. 2011

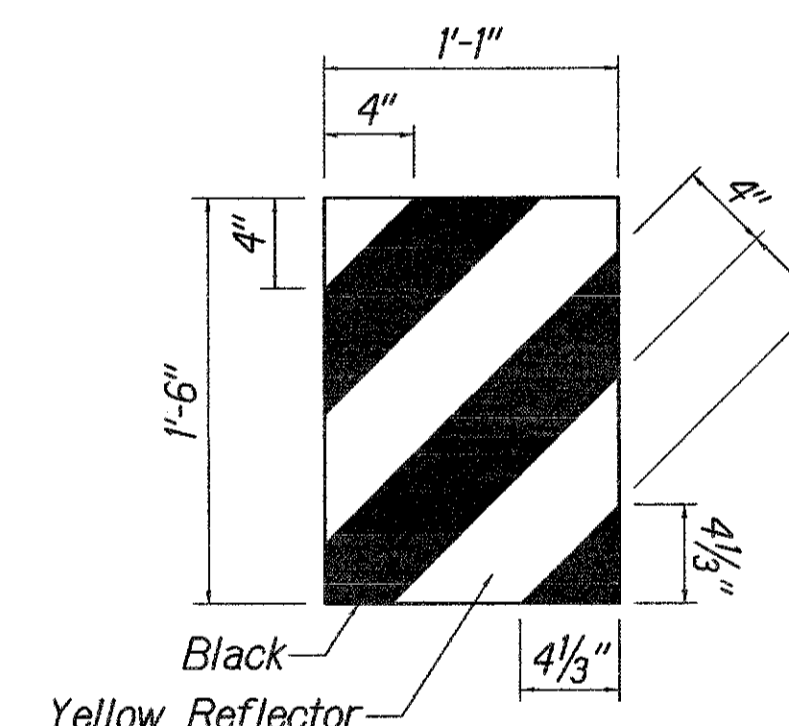
14



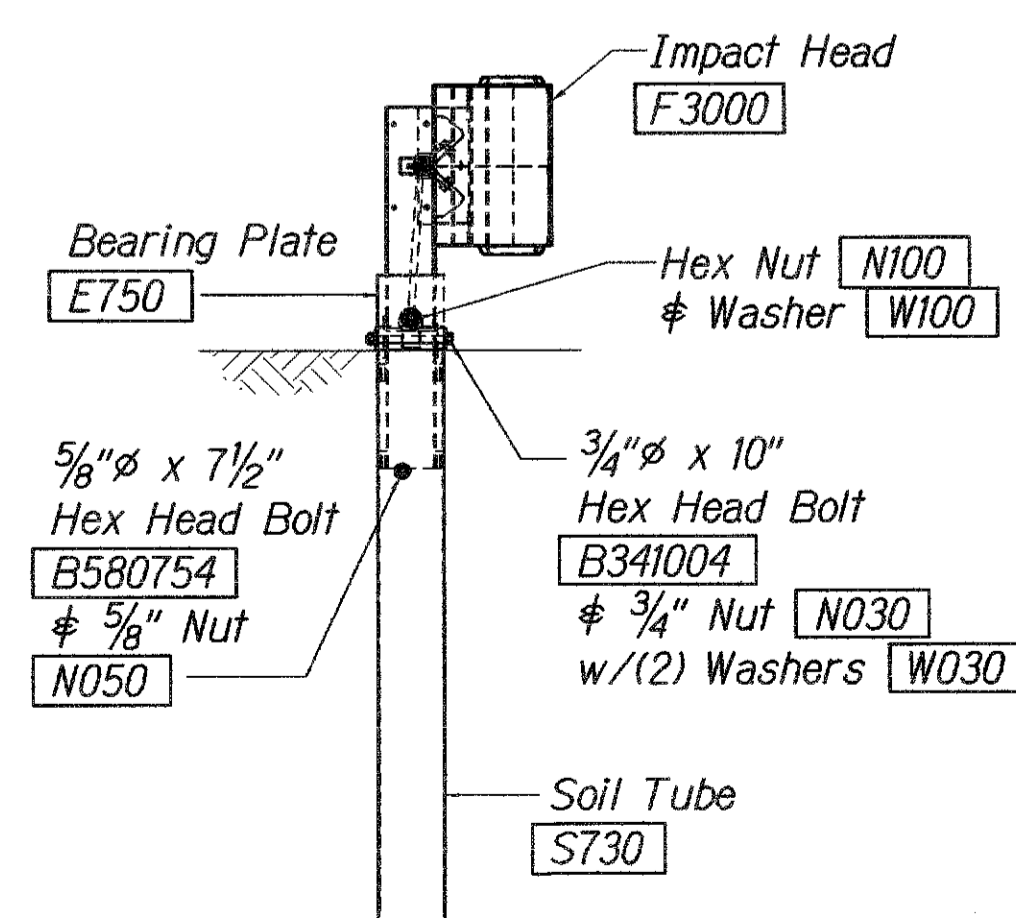
FED. ROAD DIST. NO.	STATE	FEDERAL PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0190(015)	2011	16	59



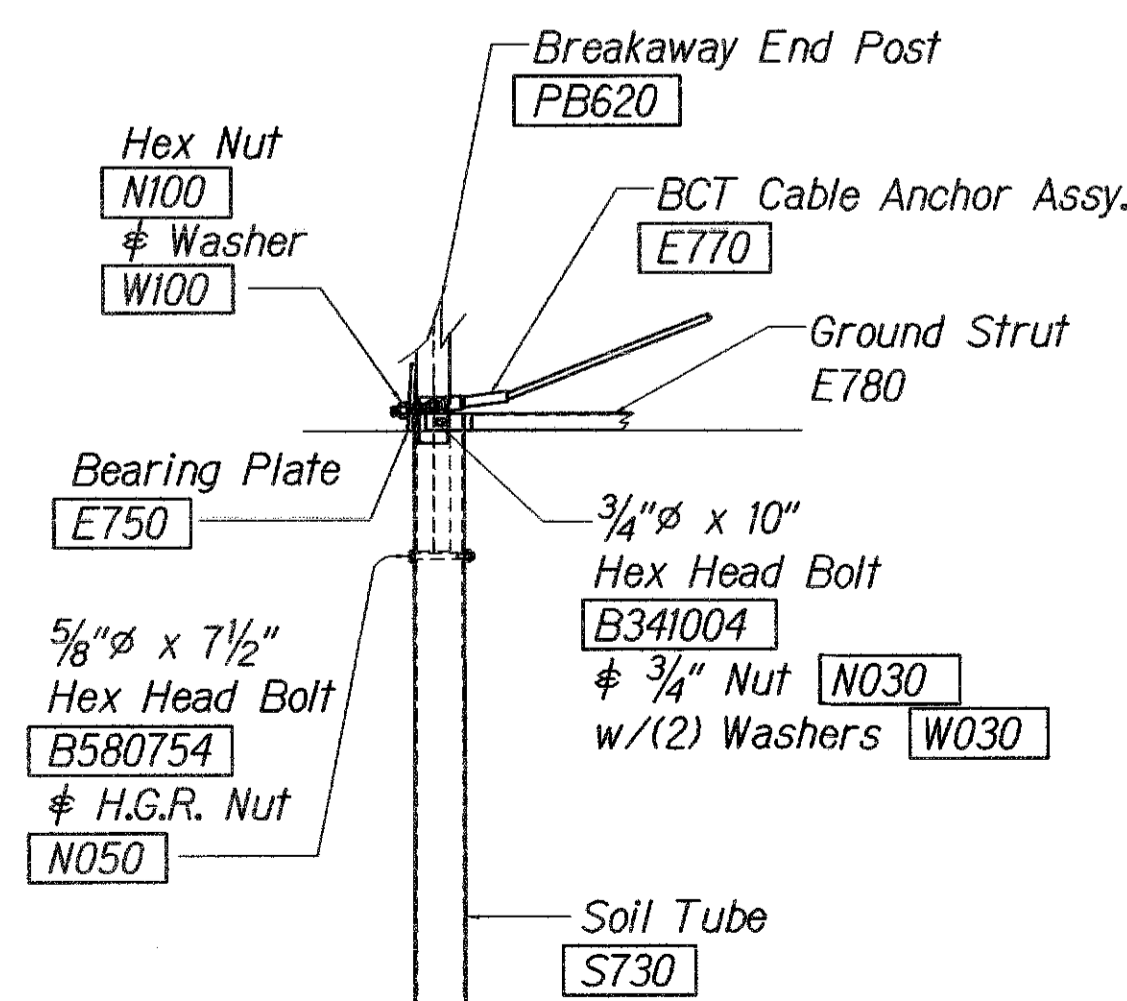
IMPACT HEAD CONNECTING DETAIL



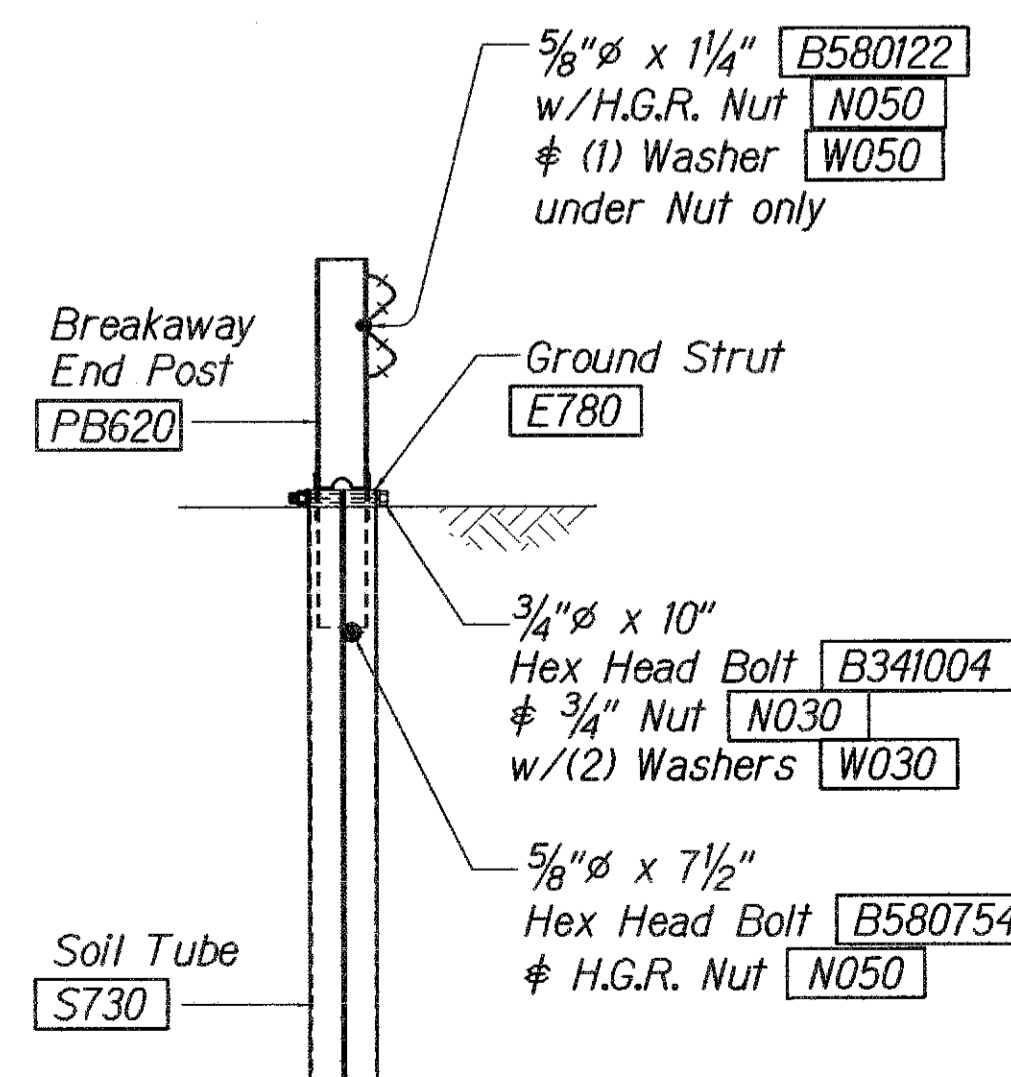
IHRM(R)  
IMPACT HEAD REFLECTOR  
MARKER INSERT  
DETAIL



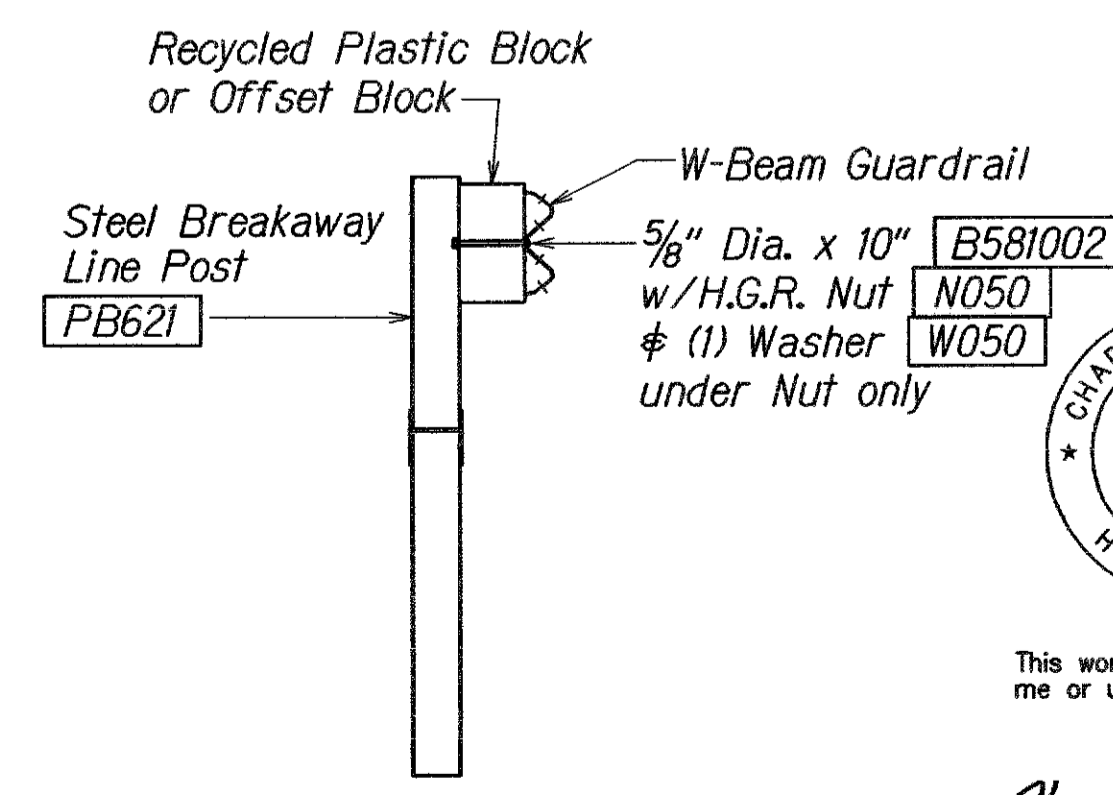
FRONT VIEW OF POST 1



PARTIAL VIEW OF POST 1



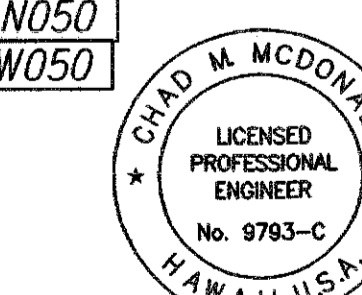
SECTION A-A  
at Post #2



SECTION B-B  
(Typical @ Post 3 - 7)  
NOTE: RAIL NOT BOLTED @ POST #3

ITEM NO.	QTY.	BILL OF MATERIALS
F3000	1	IMPACT HEAD
F1303	1	W-BEAM GUARDRAIL END SECTION, 12 GA.
G1203	2	W-BEAM GUARDRAIL, 12 GA.
S730	2	*FOUNDATION SOIL TUBE, 6" x 8" x 72"
E750	1	BEARING PLATE
S760	1	CABLE ANCHOR BOX
E770	1	BCT CABLE ANCHOR ASSEMBLY
E780	1	GROUND STRUT
PB620	2	STEEL BREAKAWAY END POST
PB621	5	STEEL BREAKAWAY LINE POST
	5	RECYCLED PLASTIC BLOCKOUT OR OFFSET BLOCK
	1	IMPACT HEAD REFLECTOR MARKER - IHRM(R) OR (L)
HARDWARE		
B580122	25	5/8" Dia. x 1 1/4" SPLICE BOLT, POST #2
B580754	2	5/8" Dia. x 7 1/2" HEX BOLT
B341004	2	3/4" Dia. x 10" HEX BOLT
B581002	5	5/8" Dia. x 10" H.G.R. BOLT (POST 3 THRU 7)
N050	32	5/8" Dia. H.G.R. NUT (SPLICE 24, SOIL TUBES 2, POST 2 THRU 7, 6)
N030	2	3/4" Dia. HEX NUT
W050	6	H.G.R. WASHER
W030	4	3/4" ID WASHER
N100	2	1" ANCHOR CABLE HEX NUT
W100	2	1" ANCHOR CABLE WASHER
B140404	2	1/4" x 4" HEX BOLT
N014	2	1/4" HEX NUT
W014	4	1/4" WASHER
SB58A	8	CABLE ANCHOR BOX SHOULDER BOLT
N055A	8	1/2" A325 STRUCTURAL NUT
W050A	16	1 1/16" OD x 3/16" ID A325 STR. WASHER

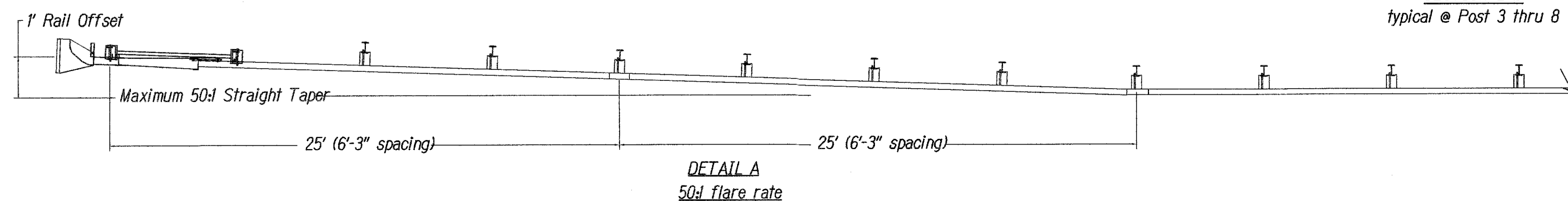
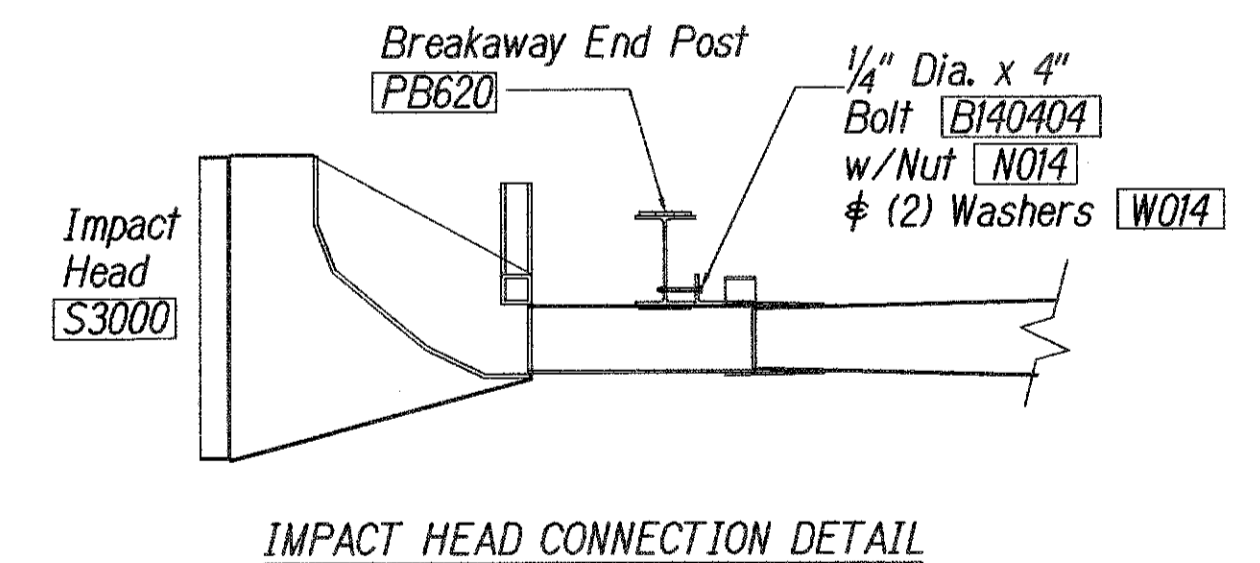
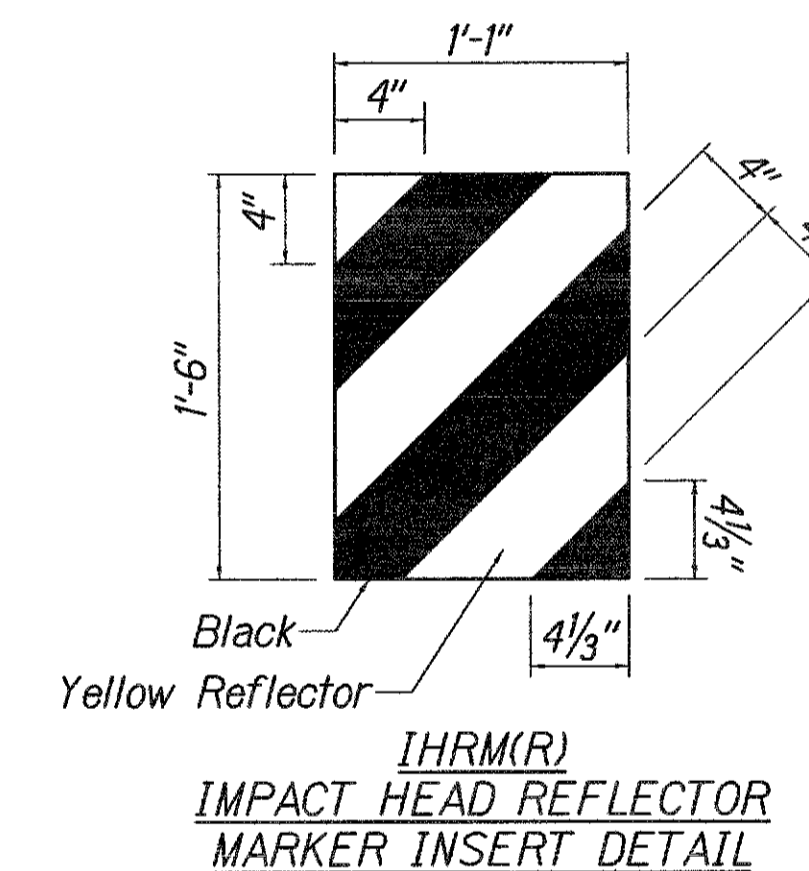
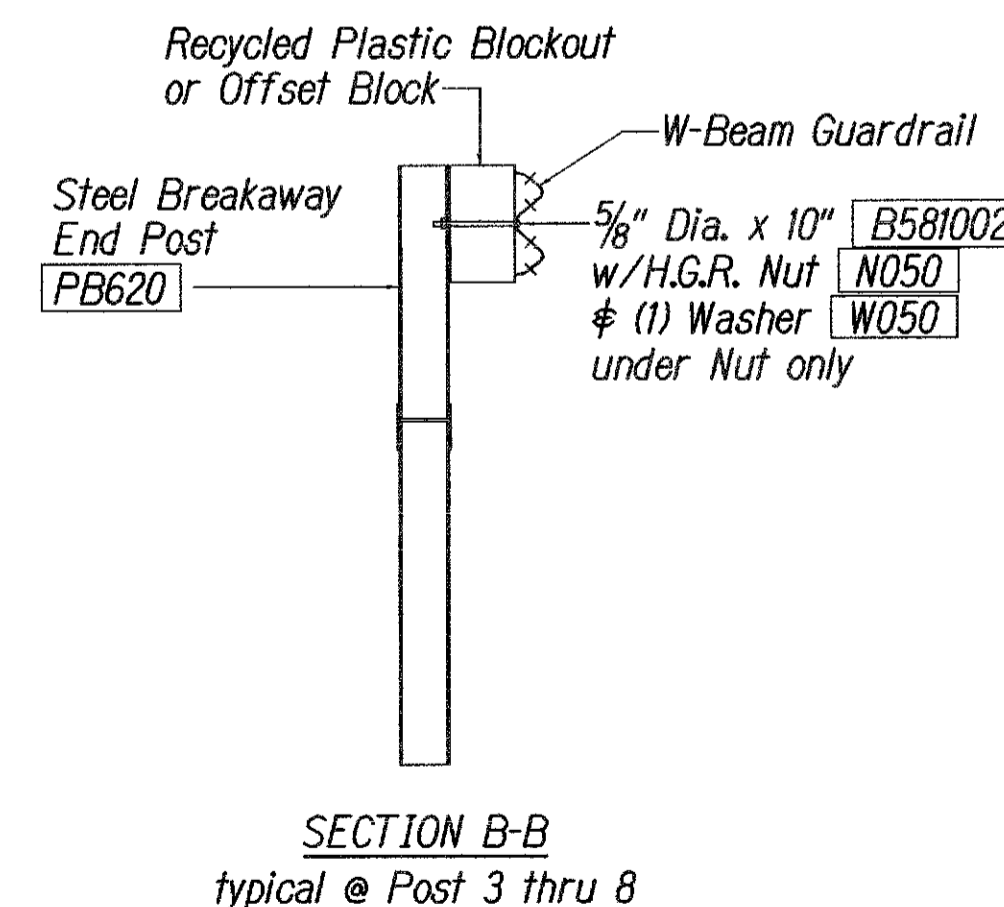
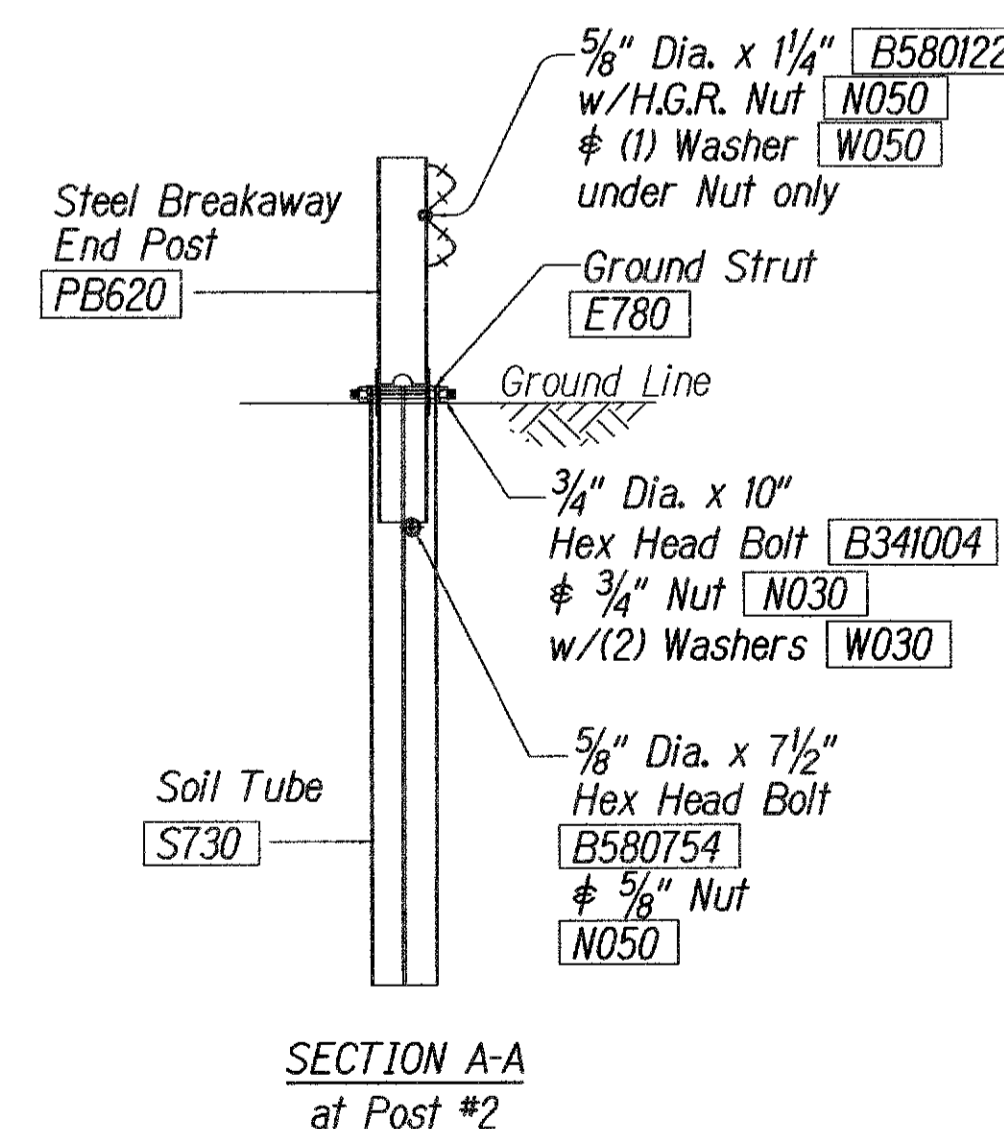
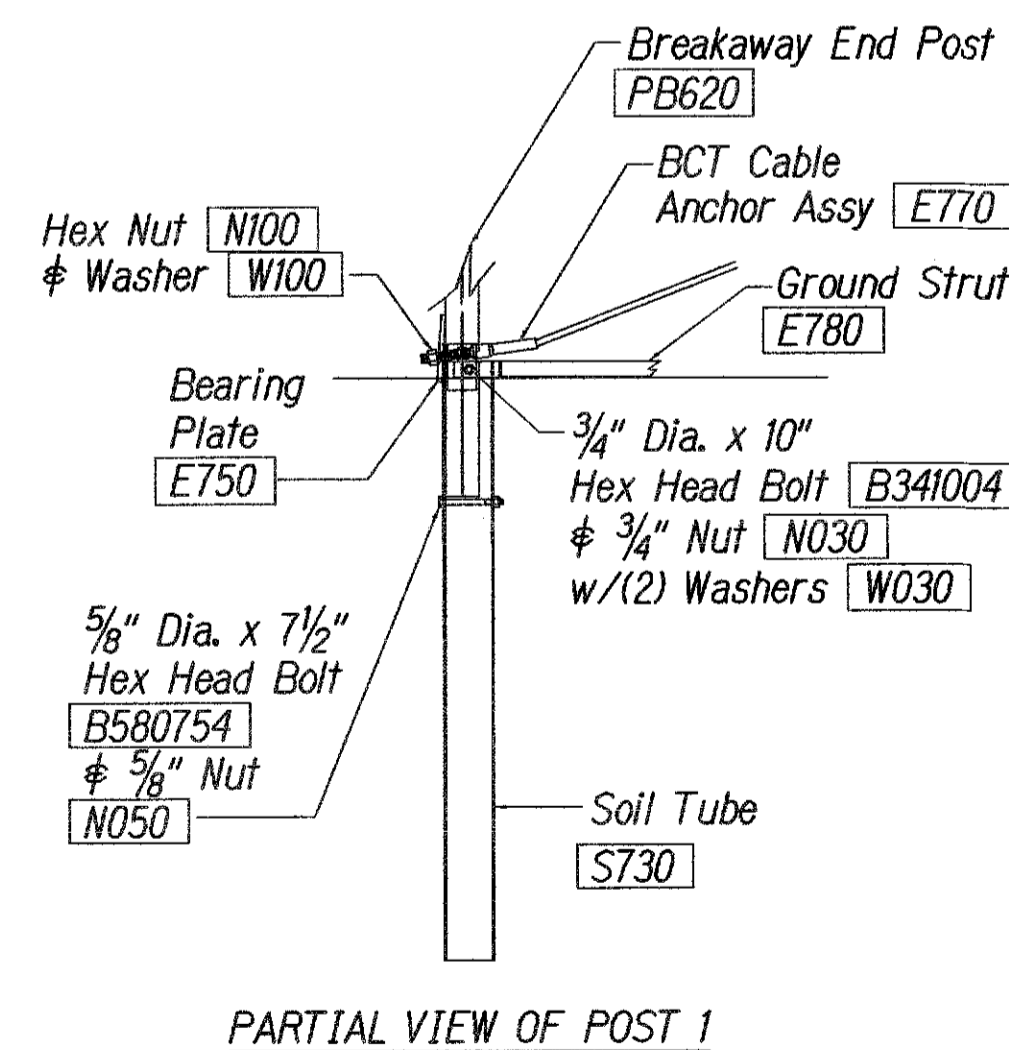
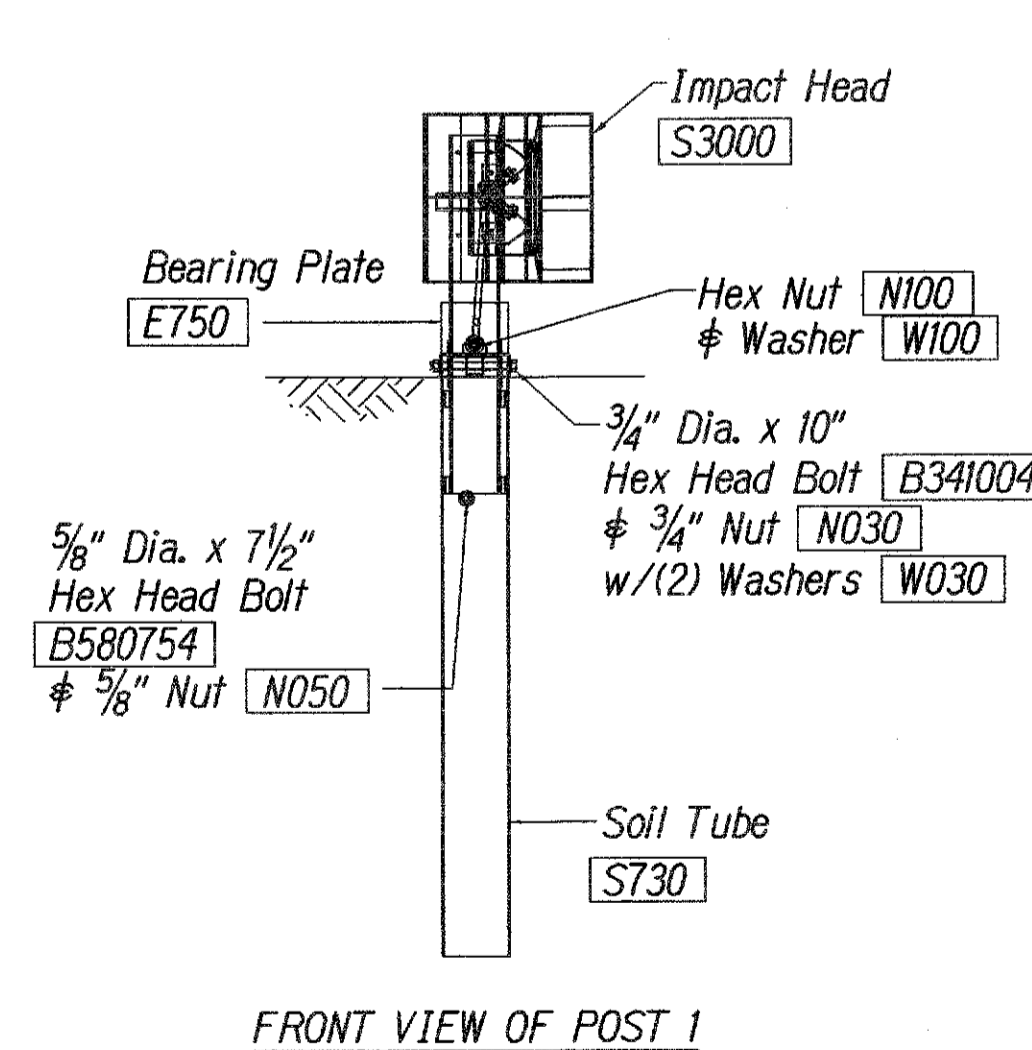
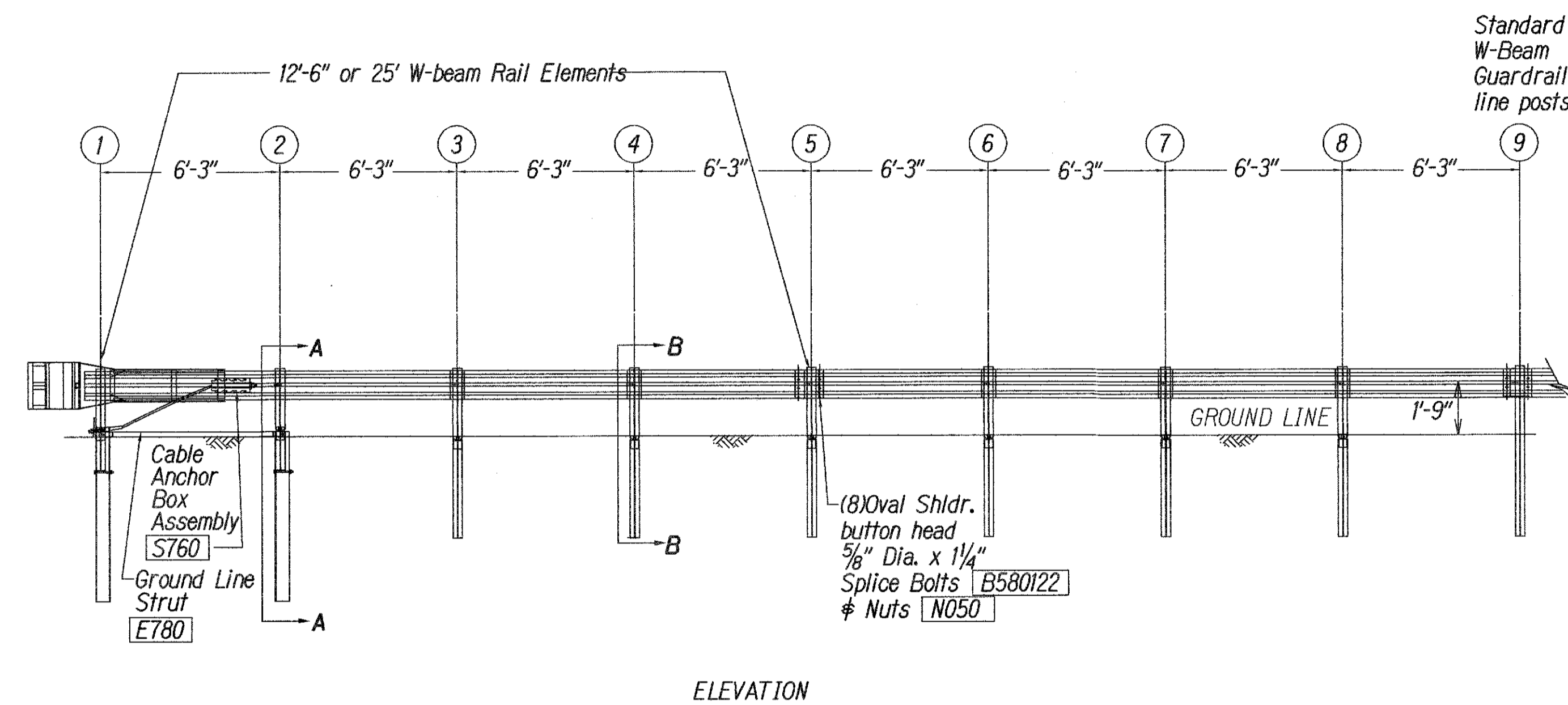
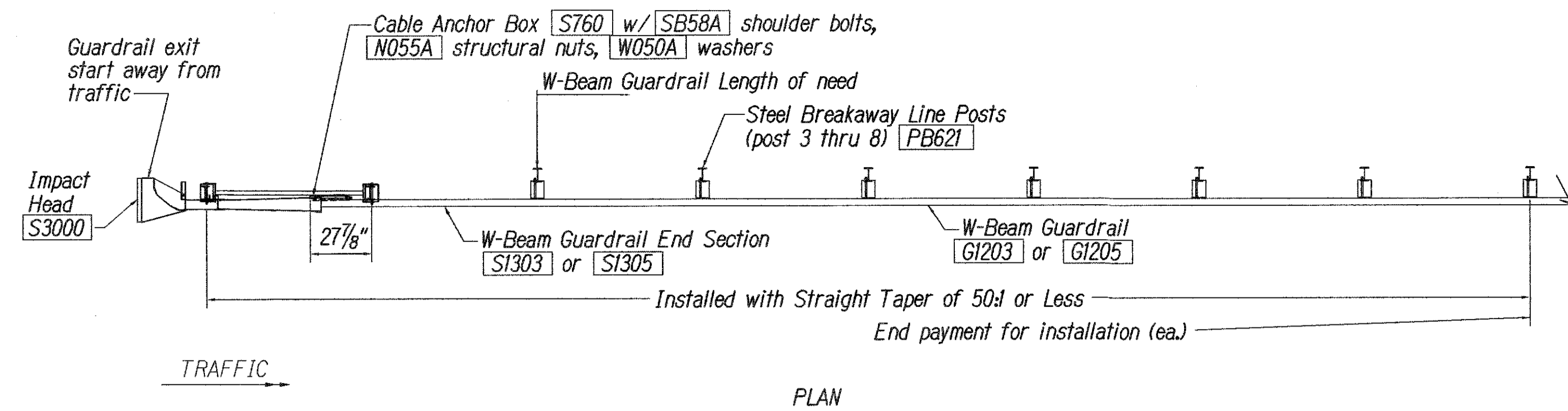
Foundation Tube Options For Posts 1 & 2  
 \*6'-0" Split Foundation Tubes S730  
 \*6'-0" Solid Foundation Tubes E731  
 \*5'-0" Foundation Tubes S735 W/Soil Plates SP600  
 \*4'-6" Foundation Tubes E735 W/Soil Plates SP600



This work was prepared by me or under my supervision.  
 4/30/2012  
 MITSUNAGA & ASSOCIATES, INC. EXP. DATE  
 NOTE: Contractor to check and verify dimensions of job before proceeding with work.

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**FLEAT-350**  
**FLARED ENERGY ABSORBING TERMINAL**  
 MAMALAHOA HIGHWAY RESURFACING  
 Makalei to Palani Road Junction  
 F.A. Project No. STP-0190(015)  
 Scale: As Noted Date: November 2011  
 SHEET No. C-14 OF 59 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0190(015)	2011	17	59

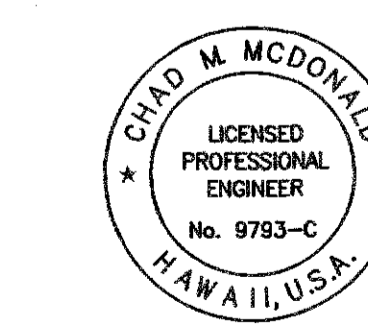


# GENERAL NOTES:

1. Breakaway steel posts are required with the Sequential Kinking Terminal.
2. All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
3. When the Sequential Kinking Terminal is selected as the end treatment for W-Beam Guardrail installation, the W-Beam Guardrail will be flared at a rate of 50:1 to prevent the impact head from encroaching on the shoulder. The flare is not required and may be decreased or eliminated for specific installations.
4. The soil tube shall not protrude more than 4" above ground (measured) along a 5' cord). Site grading may be necessary to meet this requirement.
5. The soil tubes may be driven with an approved driving head. They shall not be driven with the post in the tube. If the soil tubes are placed in drilled holes, the backfill material must be satisfactorily compacted to prevent settlement.
6. When rock is encountered during excavation, a 12" dia. post hole, 20" deep may be used if approved by the Engineer. Granular material will be placed in the bottom of the hole approx. 2 1/2" deep to provide drainage. The soil tubes will be field cut to length, placed in the hole and backfilled with adequately compacted material excavated from the hole.
7. The breakaway cable assembly must be taut. A locking device, (vice grips or channel lock pliers) should be used to prevent the cable from twisting when tightening nuts.
8. A special site evaluation should be considered prior to using the Sequential Kinking Terminal where there is less than 25' between the outlet side of the Sequential Kinking Terminal and any adjacent driving lane.
9. (R) or (L) indicates right or left Impact Head Reflector Marker (IHRM). Providing and installing of IHRM shall be considered incidental to end treatment.
10. The stripes for IHRM shall slope downward at an angle of 45° towards the side of the end treatment that traffic is to pass.

ITEM NO.	QTY.	BILL OF MATERIALS
S3000	1	IMPACT HEAD
S1303/S1305	1	W-BEAM GUARDRAIL END SECTION 12 GA. 12.5' or 25'
G1203/G1205	3/1	W-BEAM GUARDRAIL, 12 GA, 12.5' or 25'
S730	2	*FOUNDATION SOIL TUBE, 6" x 8" x 72"
E750	1	BEARING PLATE
S760	1	CABLE ANCHOR BOX
E770	1	BCT CABLE ANCHOR ASSEMBLY
E780	1	GROUND STRUT
PB620	2	STEEL BREAKAWAY END POSTS
PB621	6	STEEL BREAKAWAY LINE POSTS
	6	RECYCLED PLASTIC BLOCKOUTS OR OFFSET BLOCK
	1	IMPACT HEAD REFLECTOR MARKER - IHRM(R) OR (L)
HARDWARE		
B580122	17/33	5/8" Dia. x 1 1/4" SPLICE BOLTS, POST #2
B580754	2	5/8" Dia. x 7 1/2" HEX BOLTS
B341004	2	3/4" Dia. x 10" HEX BOLTS
B341002	6	5/8" Dia. x 10" H.G.R. BOLT (POST 2 ONLY)
B581802	6	5/8" Dia. x 18" H.G.R. BOLT (POST 3 THRU 8)
N050	26/42	5/8" Dia. H.G.R. NUT (SPLICE 17/33, SOIL TUBES 2, POST 2 THRU 8)
N030	2	3/4" Dia. HEX NUTS
W050	7	H.G.R. WASHER
W030	4	3/4" ID WASHER
N100	2	1" ANCHOR CABLE HEX NUT
W100	2	1" ANCHOR CABLE WASHER
B140404	2	1/4" x 4" HEX BOLT
N014	2	1/4" HEX NUT
W014	4	1/4" WASHER
SB58A	8	CABLE ANCHOR BOX SHOULDER BOLTS
N055A	8	1/2" A325 STRUCTURAL NUTS
W050A	16	1 1/16" OD x 9/16" ID A325 STR. WASHER

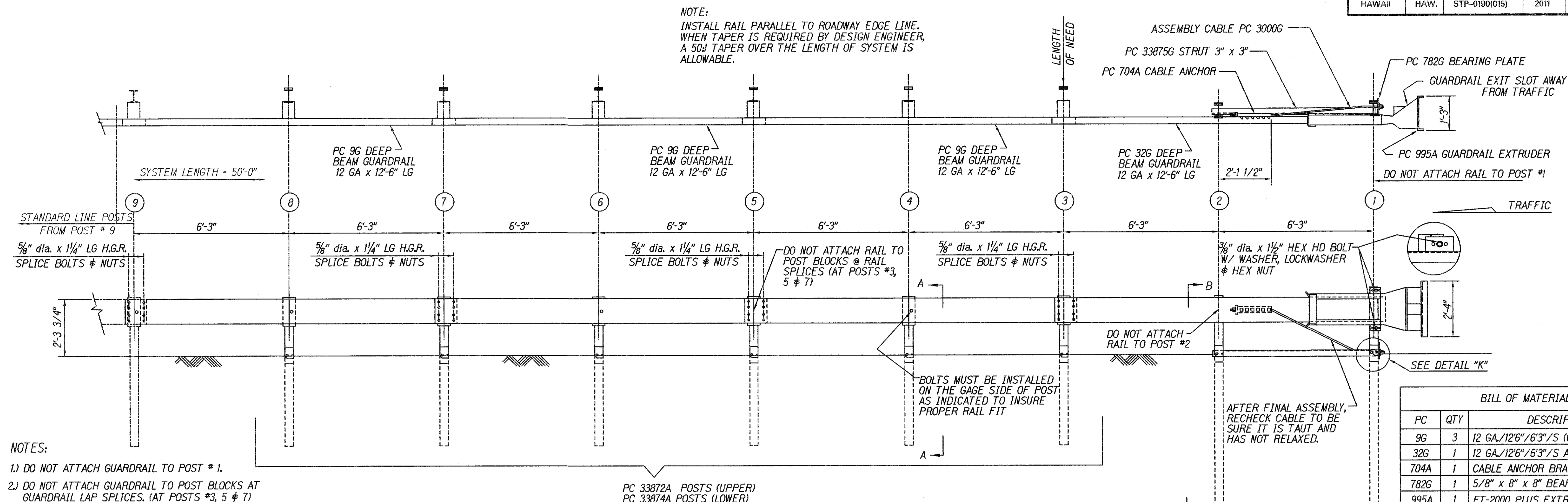
Foundation Tube Options For Posts 1 & 2  
\*6'-0" Split Foundation Tubes S730  
\*6'-0" Solid Foundation Tubes E731  
\*5'-0" Foundation Tubes S735 W/Soil Plates SP600  
\*4'-6" Foundation Tubes E735 W/Soil Plates SP600



This work was prepared by me or under my supervision  
Chad M. McDonald  
MITSUNAGA & ASSOCIATES, INC. EXP. DATE 4/30/2012  
NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SKT-350**  
**SEQUENTIAL KINKING TERMINAL**  
**MAMALAHOA HIGHWAY RESURFACING**  
**Makalei to Palani Road Junction**  
**F.A. Project No. STP-0190(015)**  
Scale: As Noted Date: November 2011  
SHEET No. C-15 OF 59 SHEETS

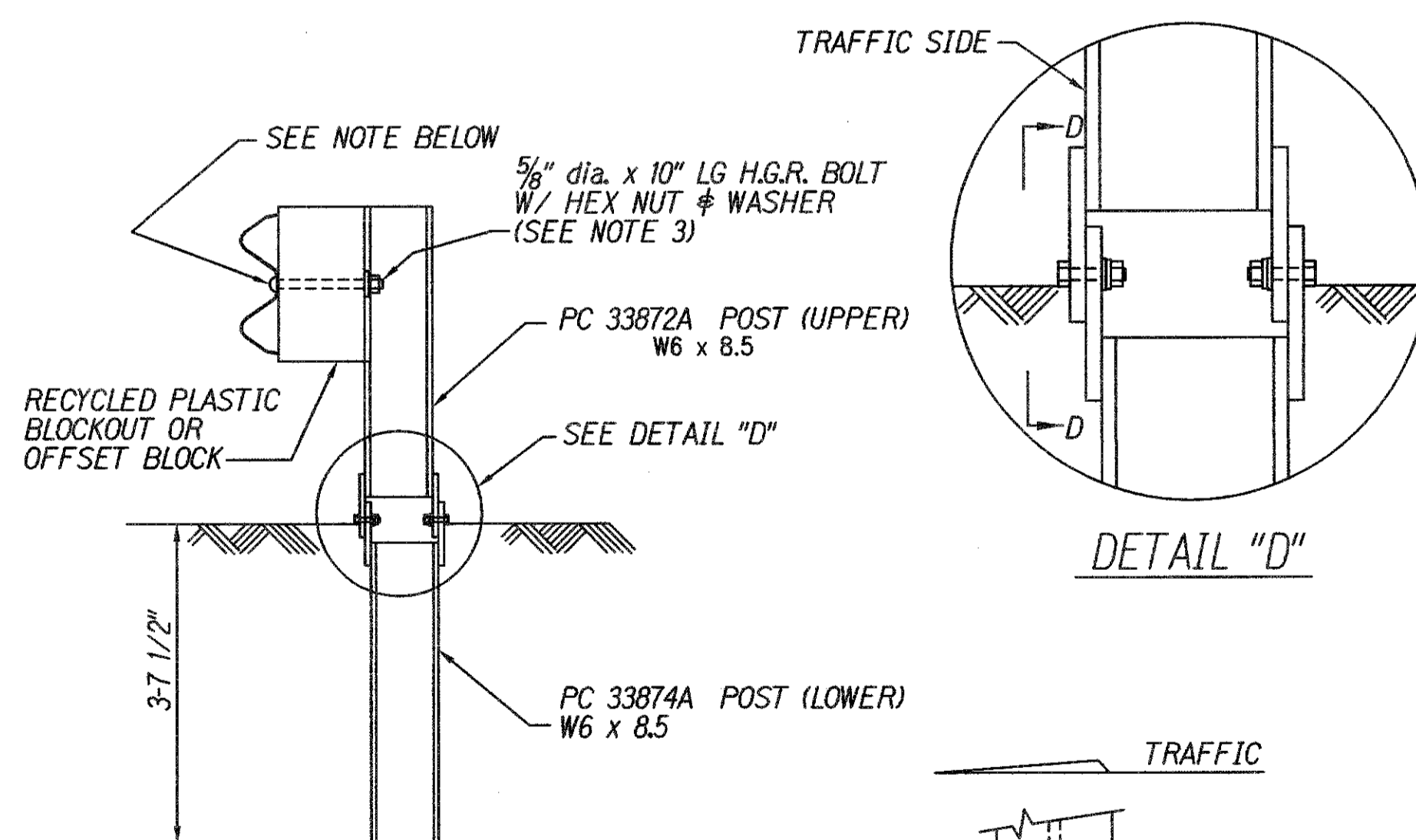
FED. ROAD DIST. NO.	STATE	FEDERAL PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0190(015)	2011	18	59



#### NOTES:

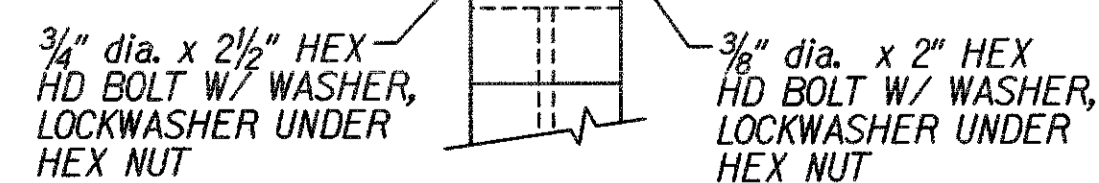
- DO NOT ATTACH GUARDRAIL TO POST #1.
- DO NOT ATTACH GUARDRAIL TO POST BLOCKS AT GUARDRAIL LAP SPLICES. (AT POSTS #3, 5 & 7)
- THE 5/8" FLAT WASHER IS USED UNDER THE NUT, BEHIND THE POST ONLY. NO WASHER IS USED AT THE RAIL.
- MANUFACTURER SUGGESTS CUSTOMER TO PROVIDE REFLECTORIZERIZATION OF TERMINAL.

BILL OF MATERIAL		
PC	QTY	DESCRIPTION
96	3	12 GA./12'6"/6'3"/S (GUARDRAIL)
32G	1	12 GA./12'6"/6'3"/S ANC (GUARDRAIL)
704A	1	CABLE ANCHOR BRACKET
782G	1	5/8" x 8" x 8" BEARING PLATE
995A	1	ET-2000 PLUS EXTRUDER
3000G	1	CABLE 3/4" x 6'6"
3300G	6	5/8" WASHER
3340G	38	5/8" HEX NUT
3360G	32	5/8" dia. x 1 1/4" SPLICE BOLT
3500G	6	5/8" dia. x 10" POST BOLT
3701G	19	3/4" WASHER
3704G	16	3/4" HEX NUT
3717G	15	3/4" dia. x 2 1/2" HEX HD BOLT
3718G	1	3/4" dia. x 3" HEX HD BOLT
3900G	2	1" WASHER
3910G	2	1" HEX NUT
5326B	6	RECYCLED PLASTIC BLOCKOUT OR OFFSET BLOCK
4254G	18	3/8" WASHER
4255G	2	3/8" FENDER WASHERS
4258G	16	3/8" LOCKWASHER
4261G	2	3/8" dia. x 1 1/2" HEX HD BOLT
4699G	16	3/4" LOCKWASHER
6321G	16	3/8" dia. x 2" HEX HD BOLT
6405G	18	3/8" HEX NUT
33871A	1	ET2000 HBA POST #1 TOP
33872A	7	ET2000 HBA POST #2-#8 TOP
33873A	2	ET2000 HBA POST #1-#2 BOTTOM
33874A	6	ET2000 HBA POST #3-#8 BOTTOM
33875G	1	6'-6" ANGLE STRUT ET HBA

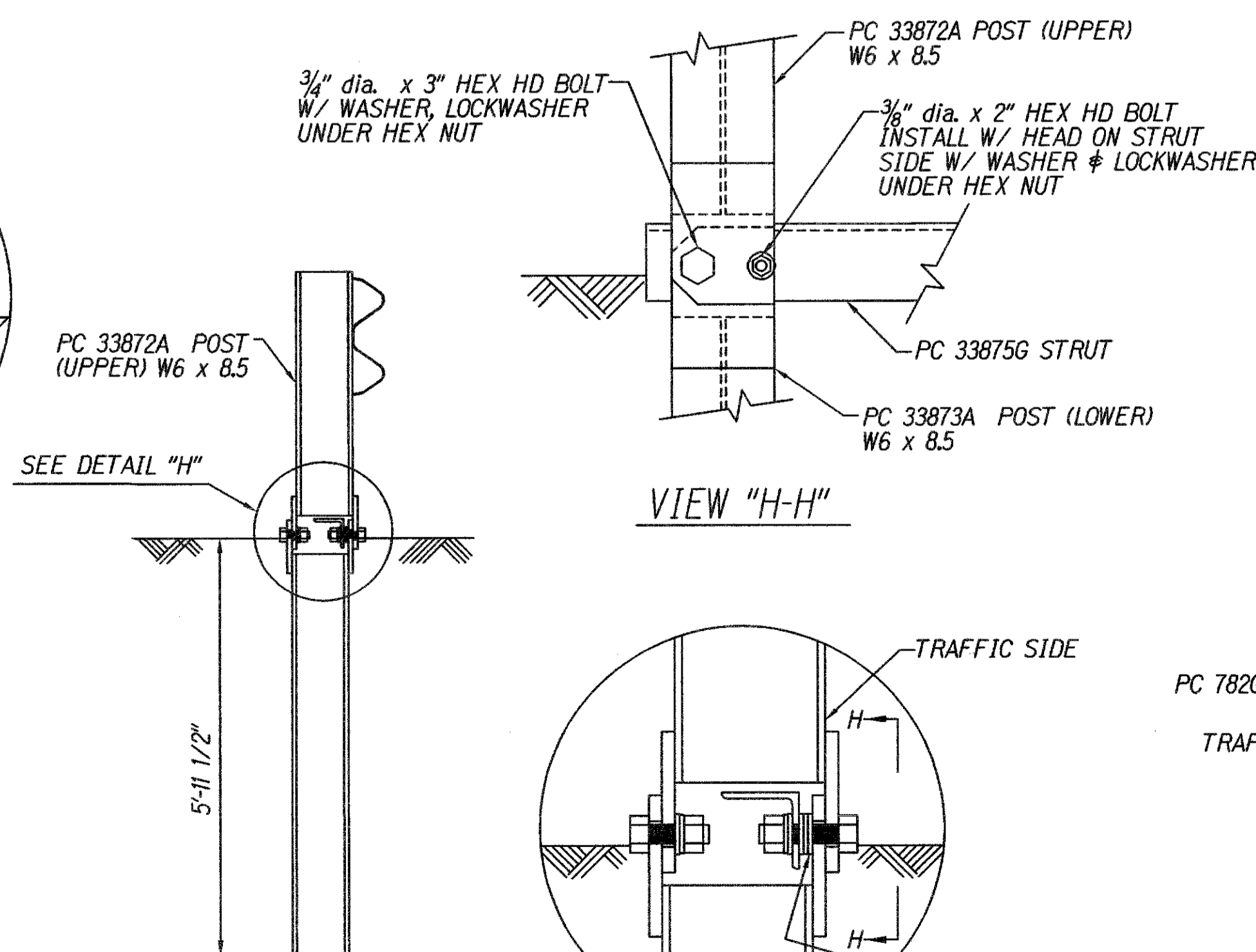


NOTE:  
SECTION "A-A" IS SIMILAR @ POST #3, 5 & 7.  
EXCEPT RAIL IS NOT ATTACHED.

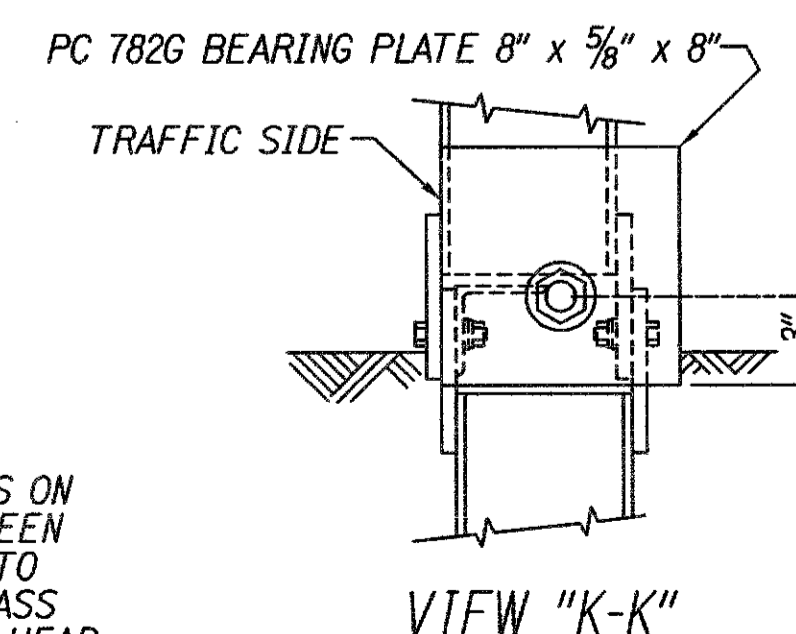
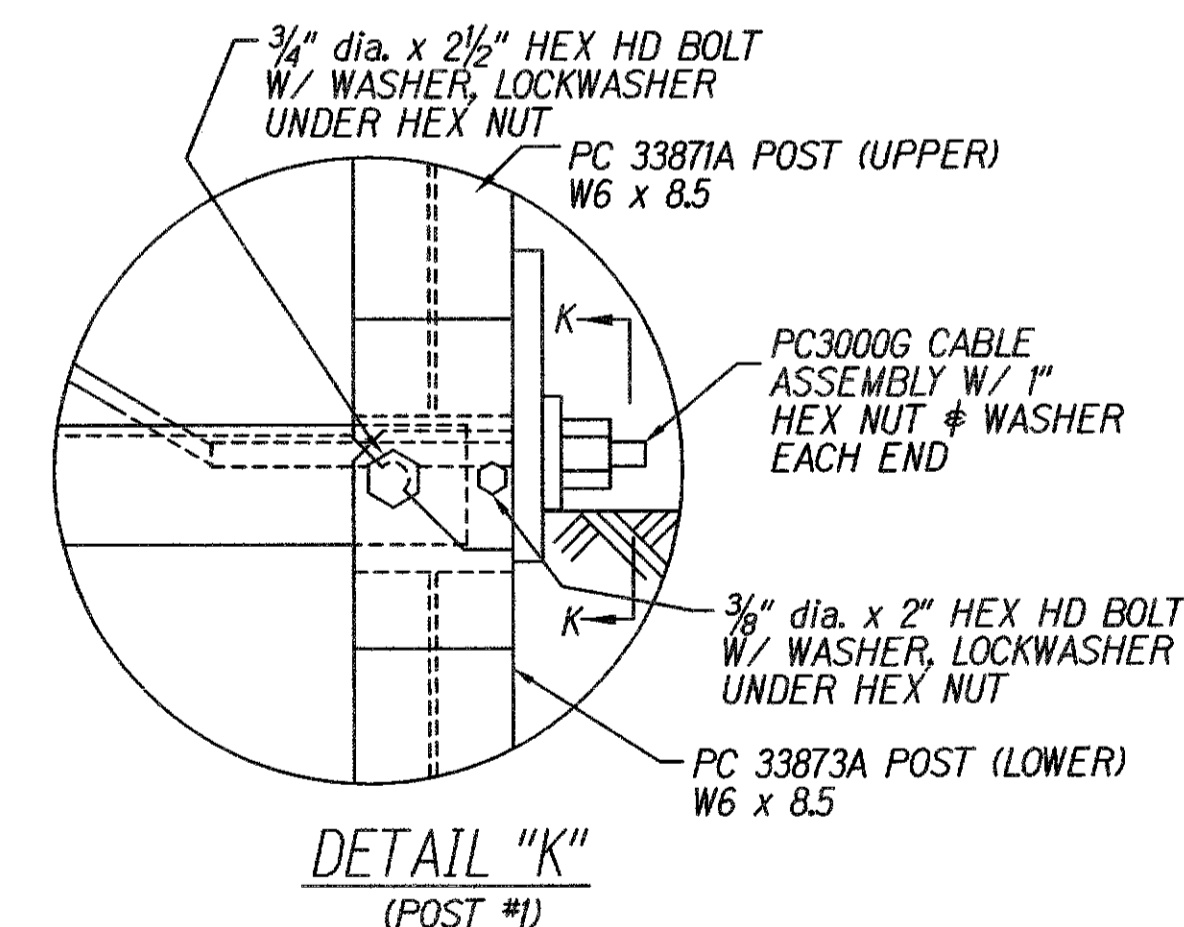
SECTION "A-A"  
(TYP @ POSTS #4, 6 & 8)



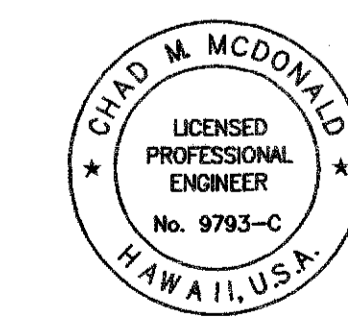
VIEW "D-D"



DETAIL "H"  
(POST #2)



STACK 2-3 WASHERS ON 3/4" dia. BOLT BETWEEN POST PL & STRUT TO ALLOW STRUT TO PASS OVER 3/4" dia. BOLT HEAD.



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

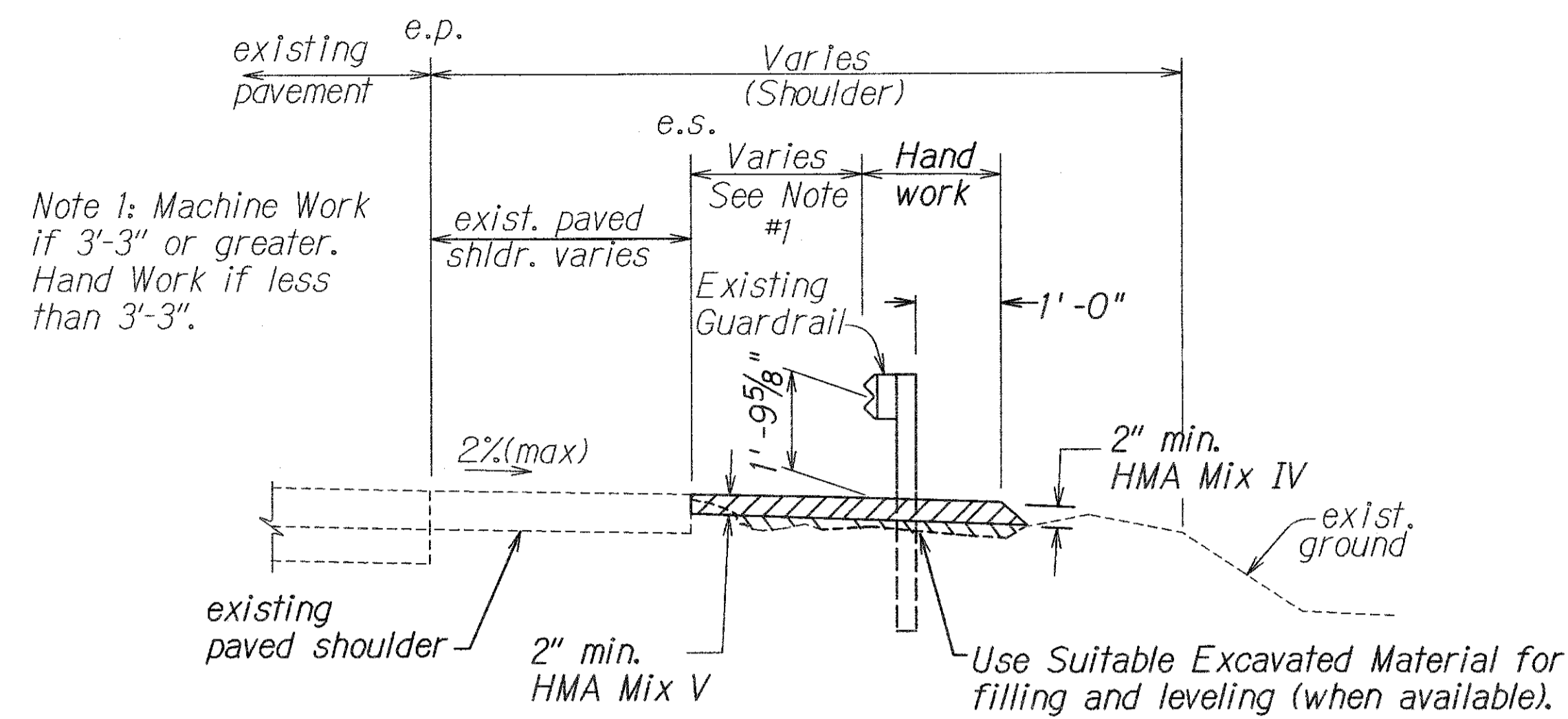
**ET-2000 PLUS**

**MAMALAHOA HIGHWAY RESURFACING**  
Makalei to Palani Road Junction  
F.A. Project No. STP-0190(015)

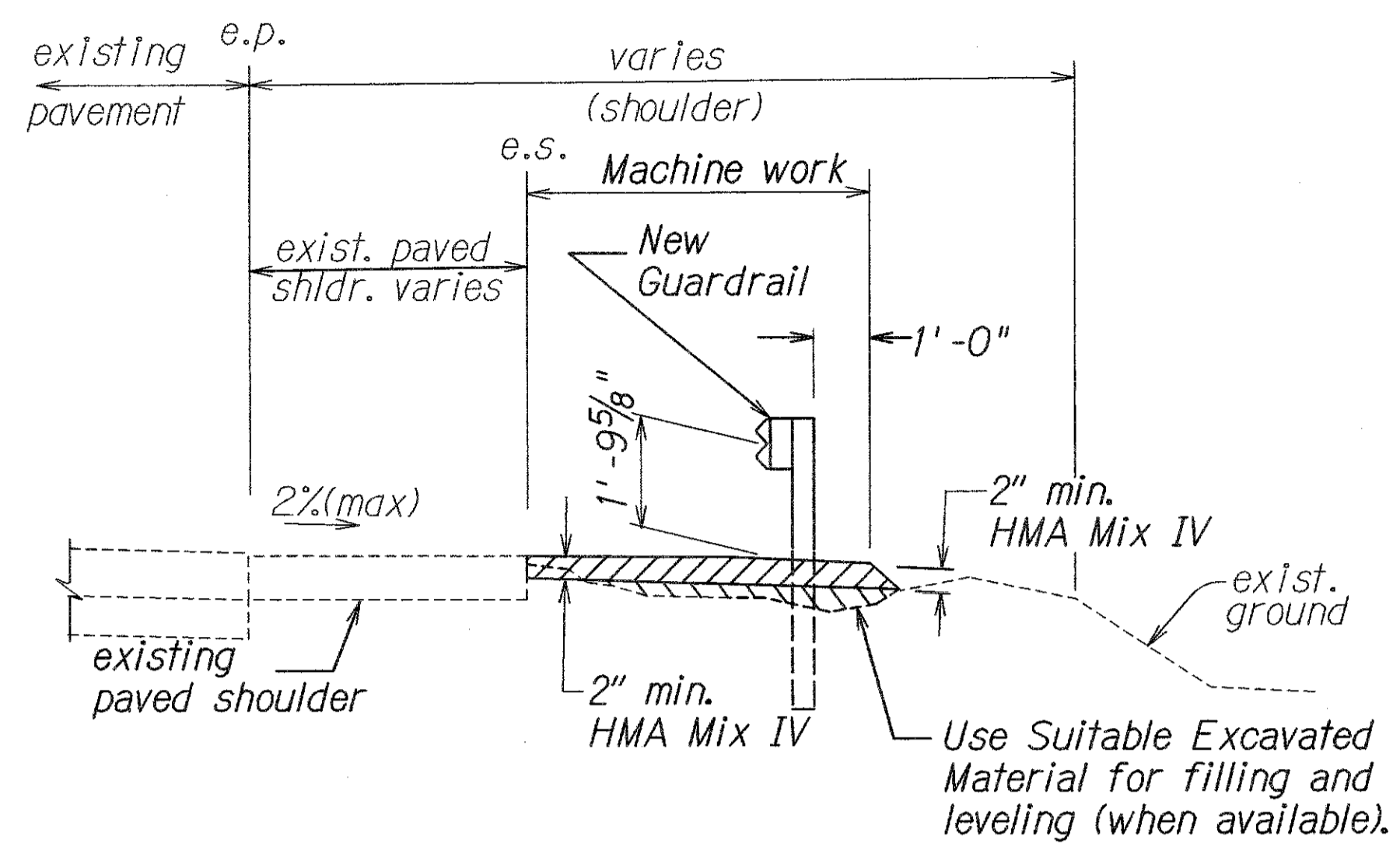
Scale: As Noted Date: November 2011

SHEET No. C-16 OF 59 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0190(015)	2011	19	59

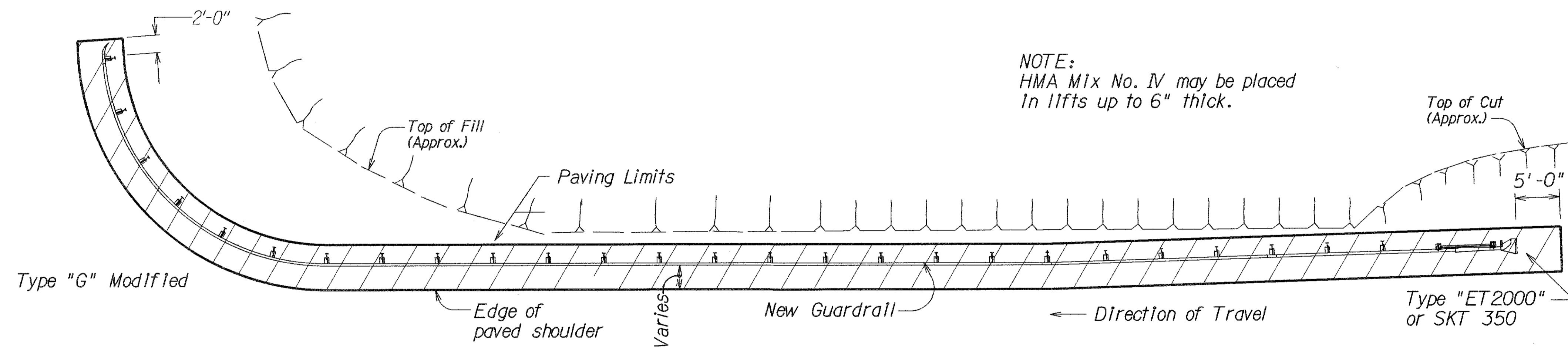


**TYPICAL PAVING UNDER EXISTING GUARDRAIL**  
Not To Scale

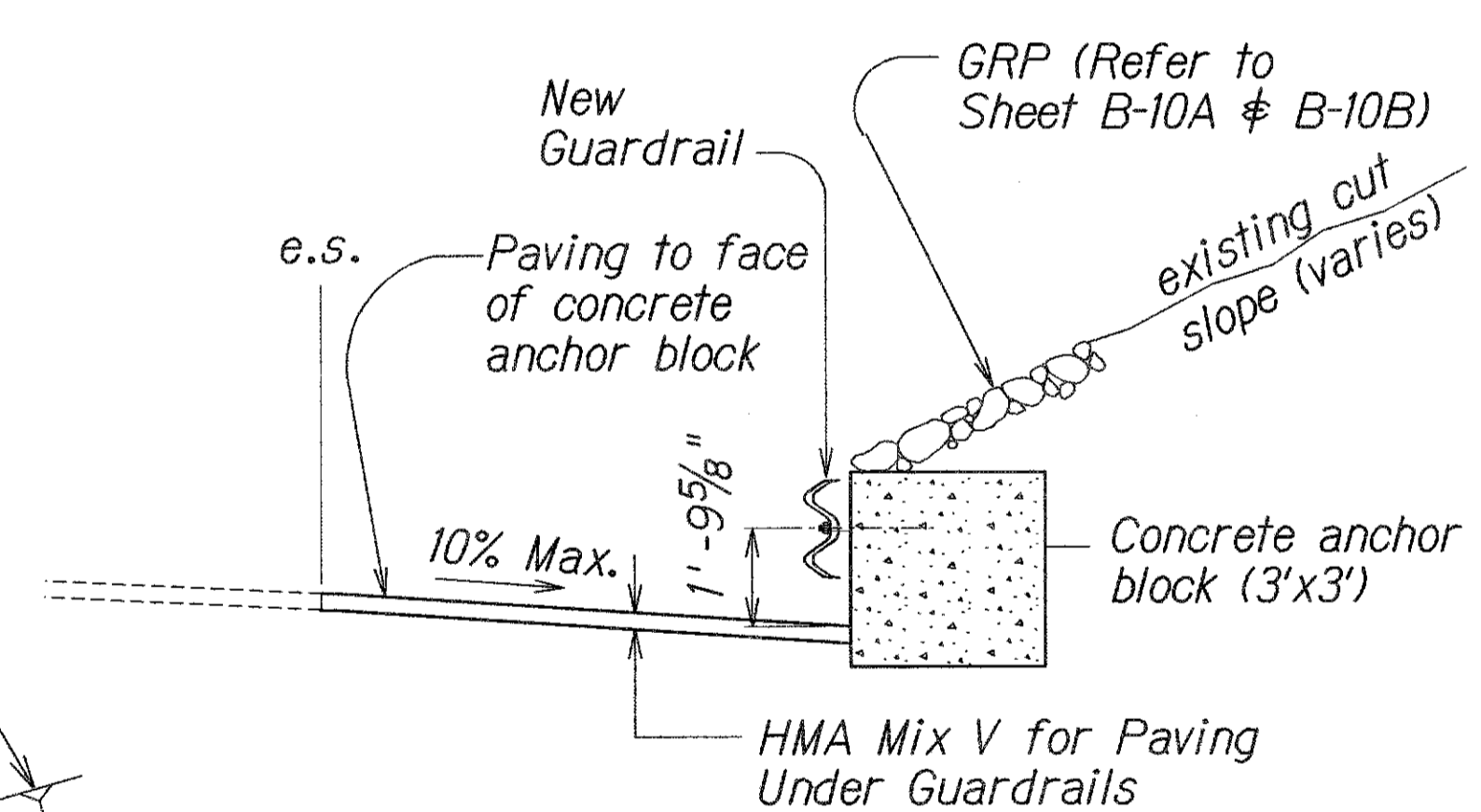


**TYPICAL PAVING UNDER NEW GUARDRAIL**  
Not To Scale

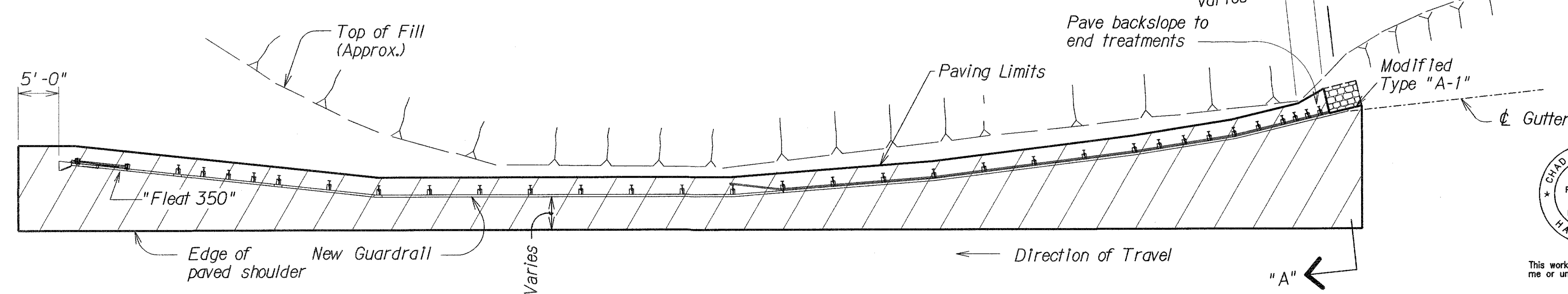
- NOTES:**
1. Pay limits for HMA Mix IV, Handwork, and HMA Mix IV, Machine work, are as shown.
  2. HMA Mix IV, Handwork shall be paid for under Item No. 401.0501 - HMA, Mix No. IV, Hand Paving under Guardrails. HMA Mix IV, Machine Work shall be paid for under Item No. 401.0502 - HMA Pavement, Mix No. IV, Machine Paving Under Guardrails.
  3. Excavating, placing, leveling, and compacting of suitable excavated material shall not be paid for separately, but shall be considered incidental to various contract items in Section 401 - HMA Pavement.
  4. Compaction requirements of Cold Planed material shall be in accordance with Section 203 - Excavation and Embankment.
  5. Maintain longitudinal drainage as shown on the plans or as directed by the Engineer.
  6. Contractor's attention is called to the increase in the asphalt content and compaction requirements in Section 401 - HMA Pavement, Paragraph 401.05-(E)-(3) of the Special Provisions.



**PLAN - PAVING UNDER GUARDRAIL**  
Not To Scale

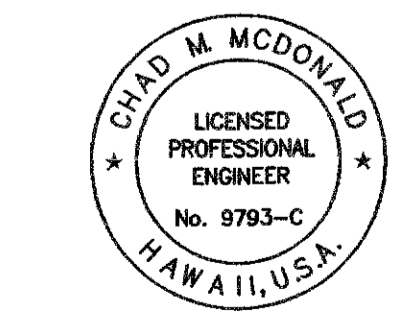


**SECTION "A-A"**  
Not To Scale



**PLAN - PAVING UNDER GUARDRAIL**  
Not To Scale

REVIEW PLOTTED BY: MTS/MBB # A5502/0165 DATE: Aug. 2011  
 DESIGNED BY: MTS/MBB # A5502/0165  
 CHECKED BY: MTS/MBB # A5502/0165  
 ORIGINAL PLAN NOTE BOOK



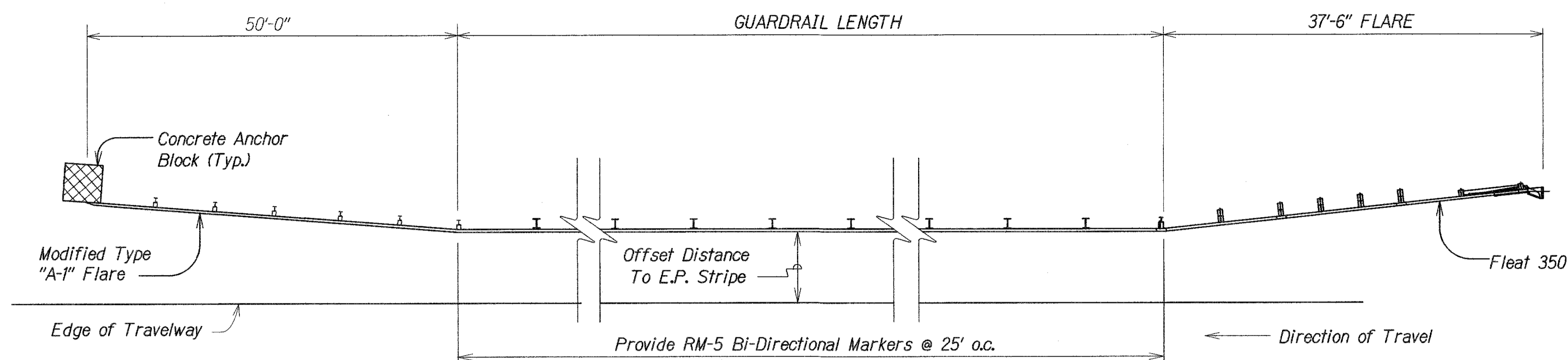
This work was prepared by me or under my supervision  
 Chad M. McDonald  
 MITSUNAGA & ASSOCIATES, INC. EXP. DATE: 4/30/2012  
 NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**TYPICAL GUARDRAIL PAVING DETAILS**  
**FULL PAVING UNDER GUARDRAIL**  
 MAMALAHOA HIGHWAY RESURFACING  
 Makalei to Palani Road Junction  
 F.A. Project No. STP-0190(015)  
 Scale: As Noted Date: November 2011  
 SHEET No. C-17 OF 59 SHEETS

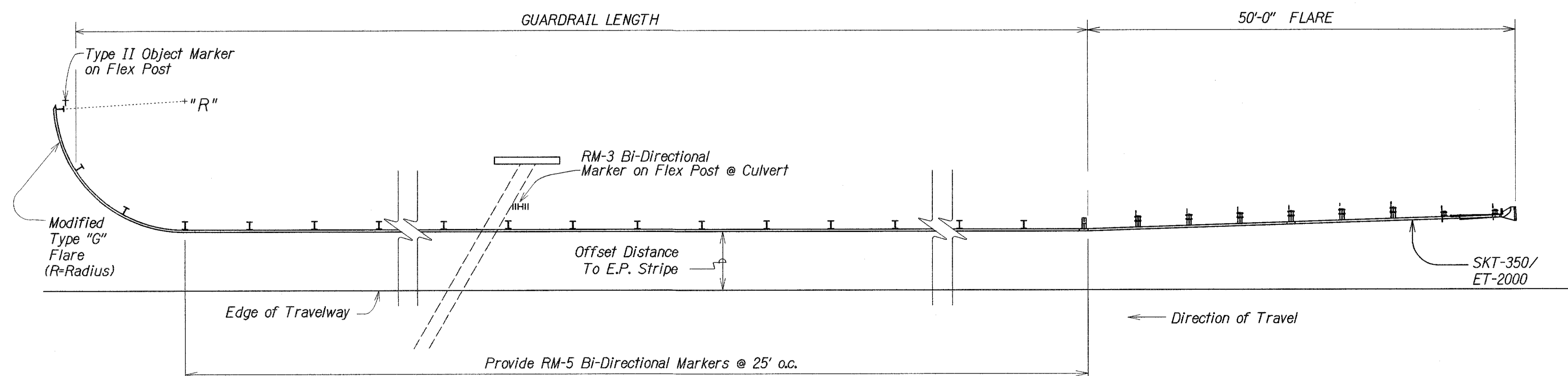
FED. ROAD DIST. NO.	STATE	FEDERAL PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0190(015)	2011	20	59

# NOTES:

1. All reflector markers located behind guardrail and other locations shall be installed with flexible delineator posts.
2. Exact location of Reflector Markers shall be determined in the field by the Engineer.
3. Color of flexible delineator posts shall be white except for RM-3, RM-3 bidirectional, and RM-3/RM-2 combinations shall be yellow posts.
4. RM-5 Bi-Directional Reflectors shall be red/white in color.



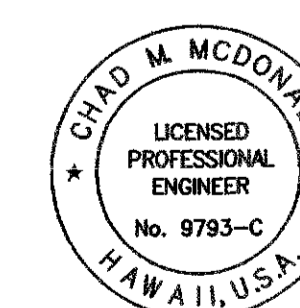
TYPICAL @ "MODIFIED A" & "FLEAT 350" END TREATMENT



TYPICAL @ MODIFIED "G" & "SKT-350"/"ET-2000" END TREATMENT

## TYPICAL GUARDRAIL REFLECTOR MARKER INSTALLATION

Not To Scale



This work was prepared by me or under my supervision

Chad M. McDonald  
MITSUNAGA & ASSOCIATES, INC. EXP. DATE: 4/30/2012

NOTE: Contractor to check and verify dimensions of job before proceeding with work.

## STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION GUARDRAIL REFLECTOR MARKER DETAIL

MAMALAHOA HIGHWAY RESURFACING  
Makalei to Palani Road Junction  
F.A. Project No. STP-0190(015)

Scale: As Noted Date: November 2011

SHEET No. C-18 OF 59 SHEETS

DATE	Aug. 2011
DESIGNED BY	Mitsunaga & Associates
CHECKED BY	Mitsunaga & Associates
NOTED BY	Mitsunaga & Associates
ORIGINAL PLAN	NOTE BOOK