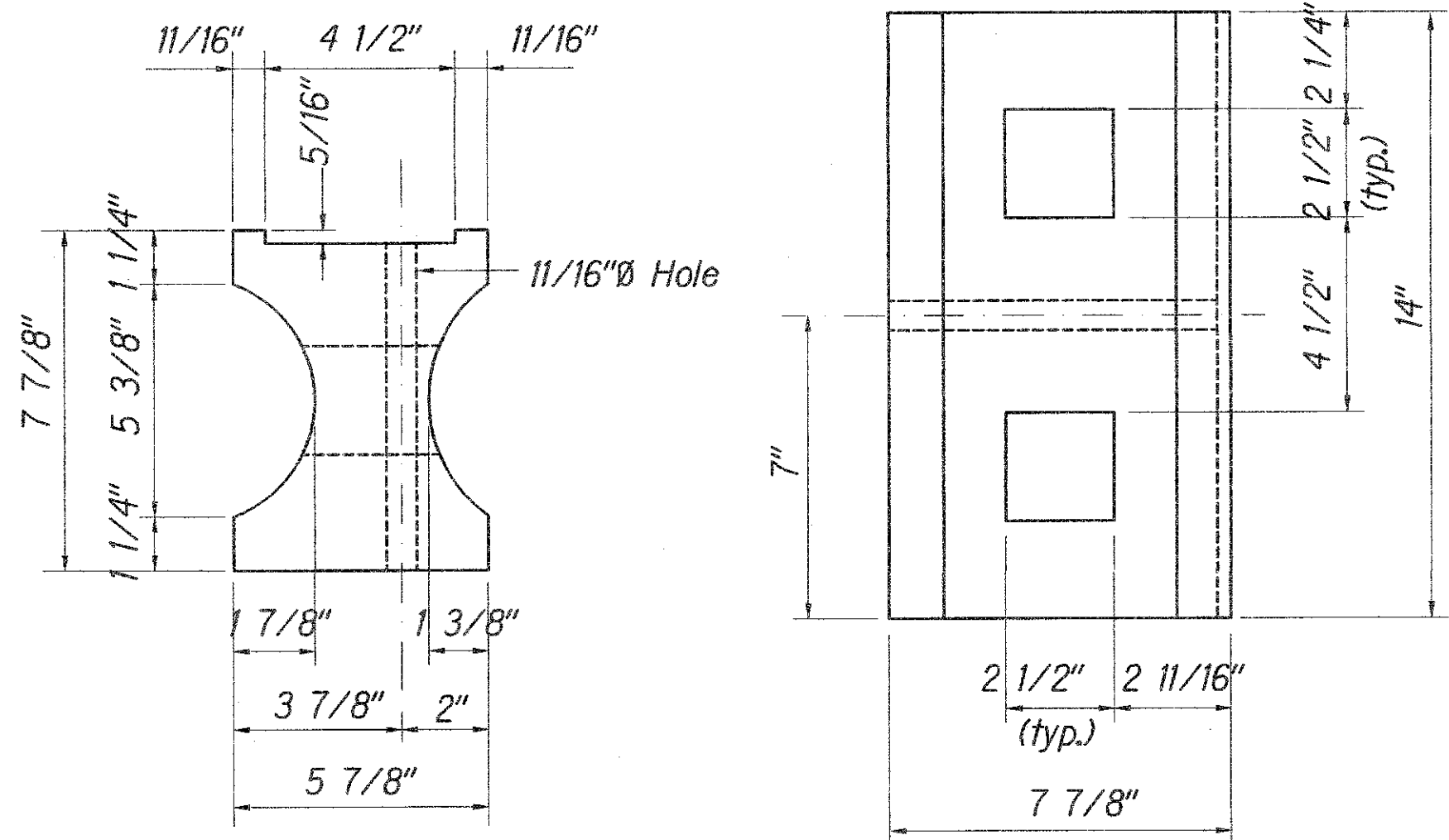
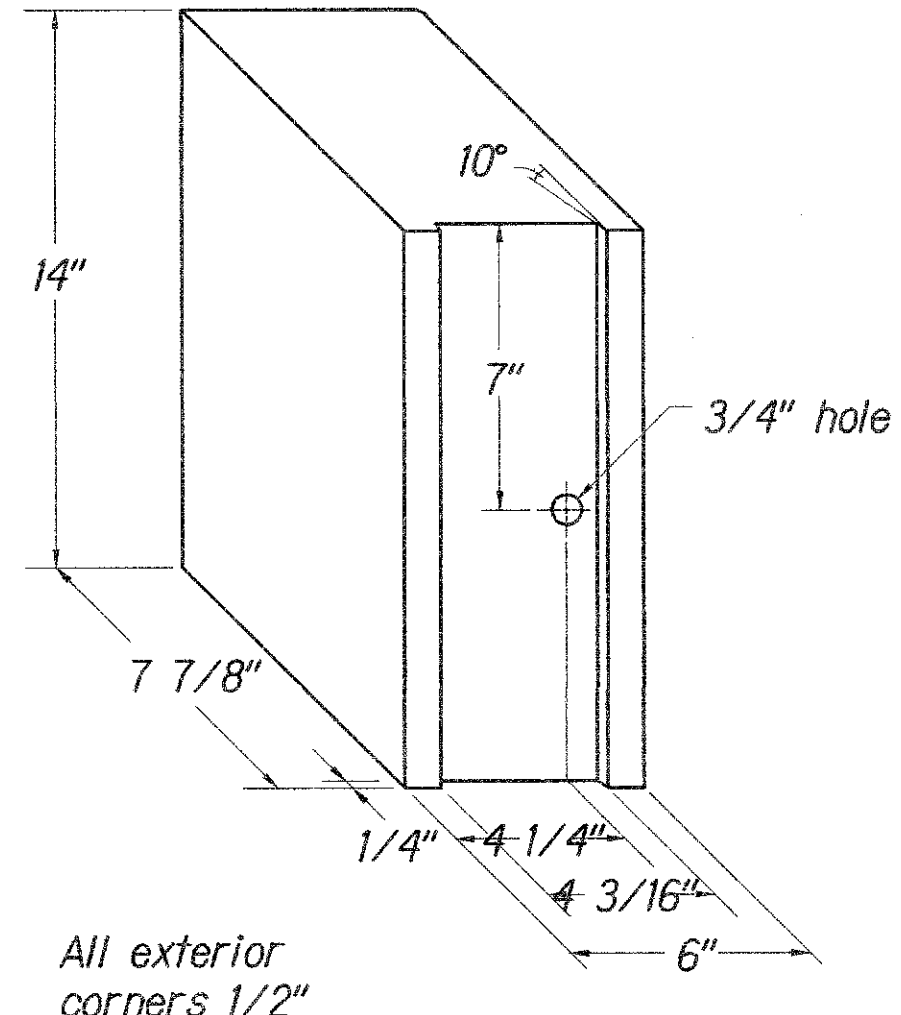
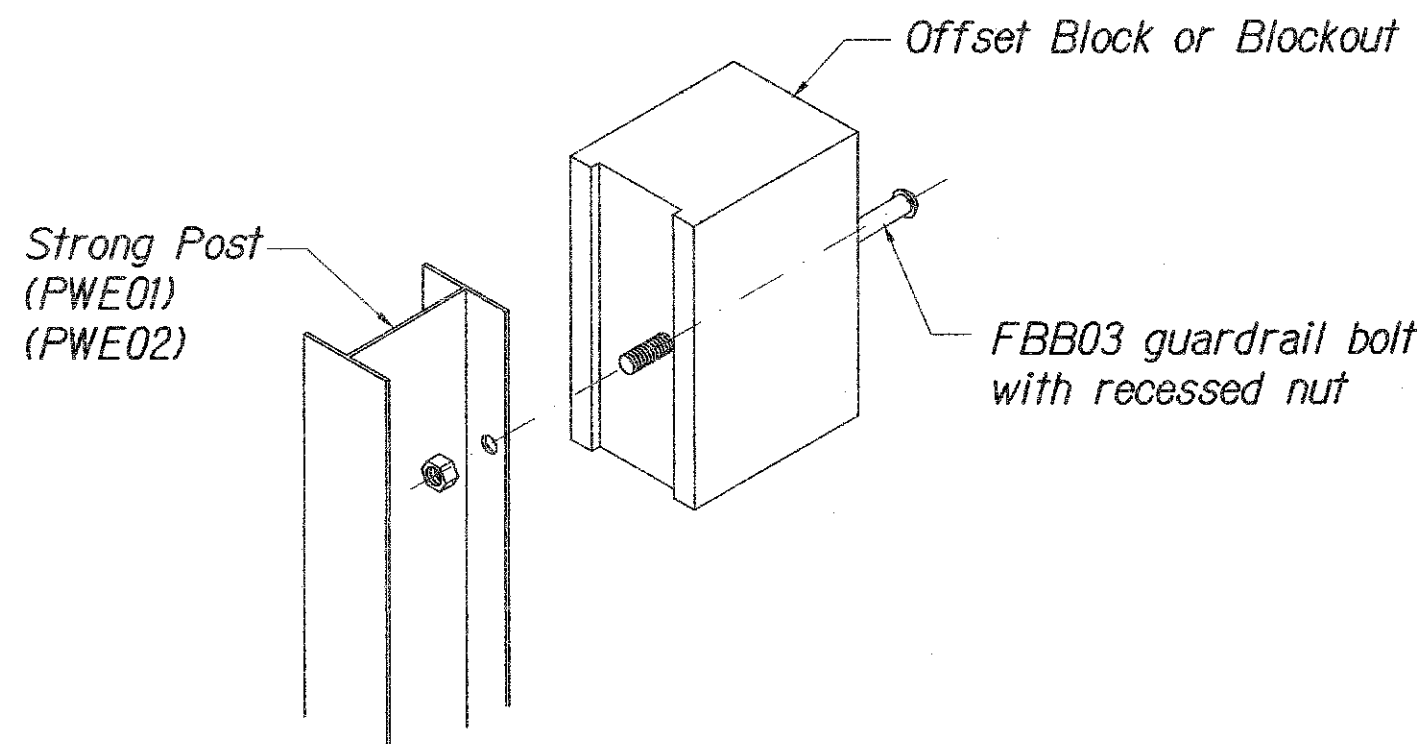




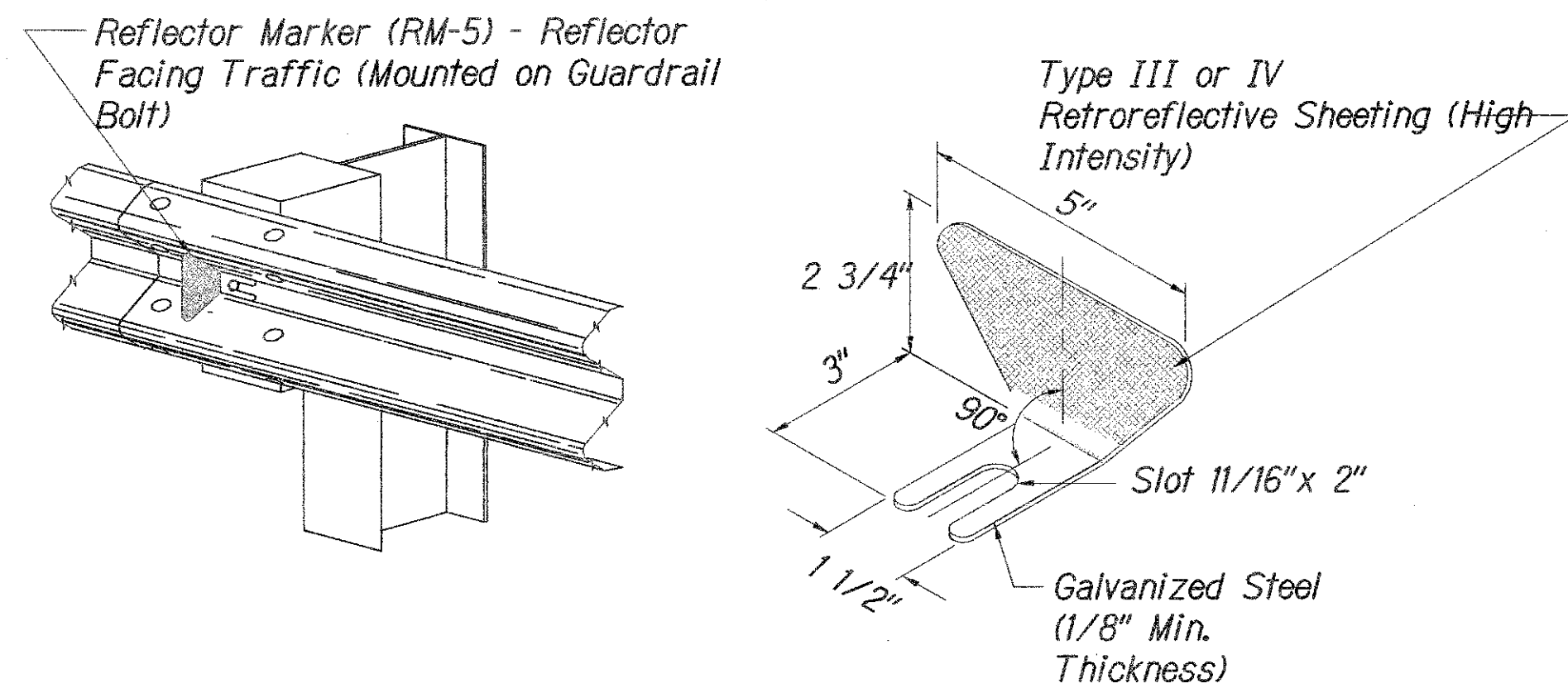
TOP
RECYCLED PLASTIC BLOCKOUT (TYPE I)
 N.T.S.



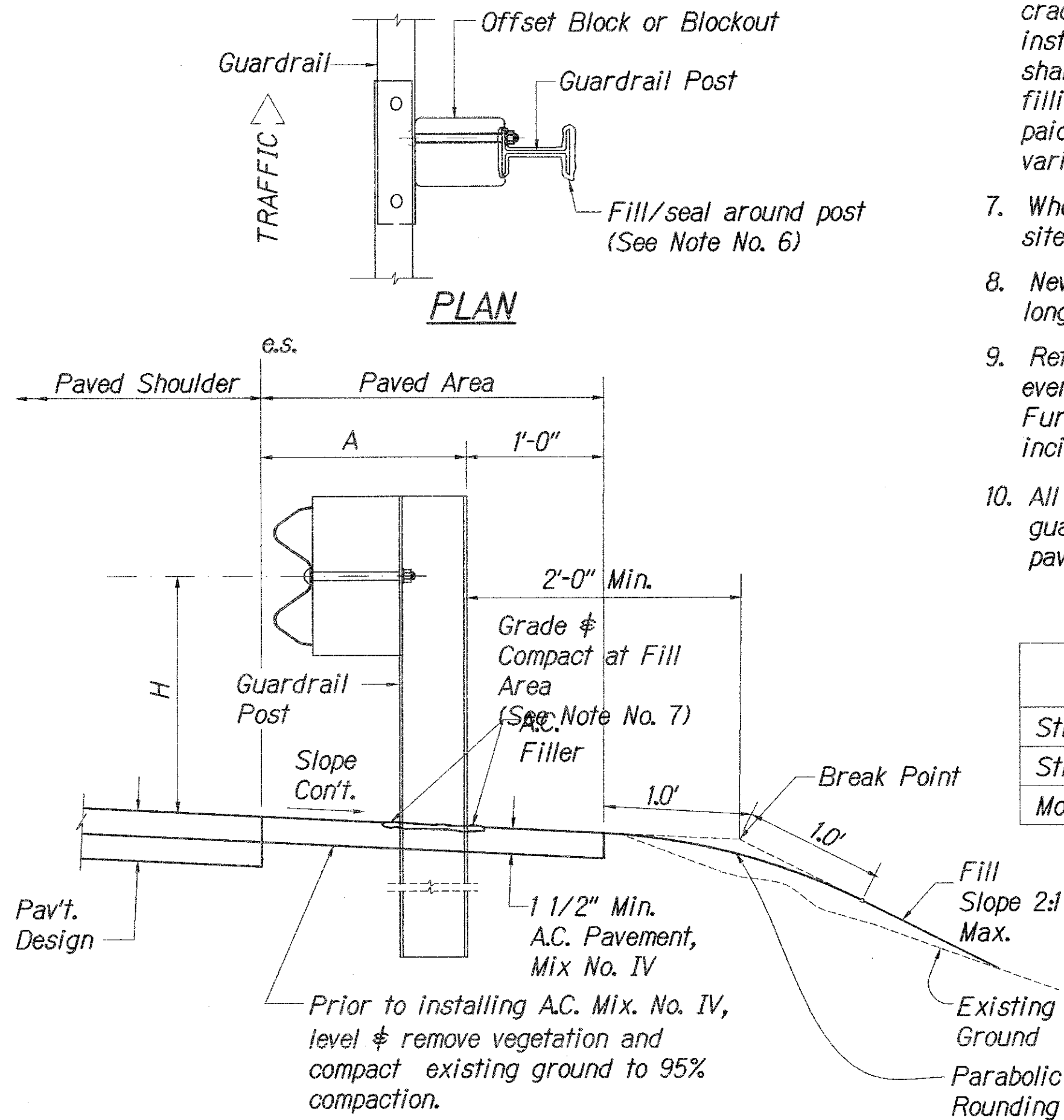
RECYCLED POLYETHYLENE
OFFSET BLOCK (TYPE II)
 N.T.S.



Exploded View
 (Rail and washer not shown)
STEEL POST AND BLOCK DETAIL
 N.T.S.



REFLECTOR MARKER (RM-5)
DETAIL AND TYPICAL INSTALLATION
 N.T.S.



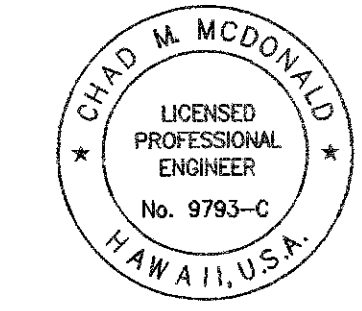
TYPICAL GUARDRAIL INSTALLATION
 N.T.S.

GENERAL NOTES

- All hardware, posts and fasteners shall be hot-dip zinc coated galvanized after fabrication. No punching, drilling or cutting will be permitted after galvanizing.
- Where conditions require, special post lengths in increments of 6 inches may be specified.
- 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 fasteners, posts and rail elements have been converted from metric units into their present form.
- The Recycled Plastic Block or Offset Block shall be approved by the State.
- All new guardrail systems (system consists of total length of guardrail including both end treatments) shall include the additional Paved Area.
- 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.
- When standards for the fill slope area cannot be met, a site specific, engineer approved design may be used.
- New A.C. pavement at guardrails shall extend 6 feet longitudinally beyond terminal ends.
- 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.
- All new guardrail systems (system consist of total length of guardrail including both end treatments) shall include the additional paved area.

GUARDRAIL TYPE	DIMENSION	
	H	A
Strong Post W-Beam	1'-9 5/8 "	1'-6"
Strong Post Rubrail (W-Beam)	2'-0"	1'-6"
Modified or Strong Post Thrie Beam	2'-0"	2'-0"

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



This work was prepared by me or under my supervision

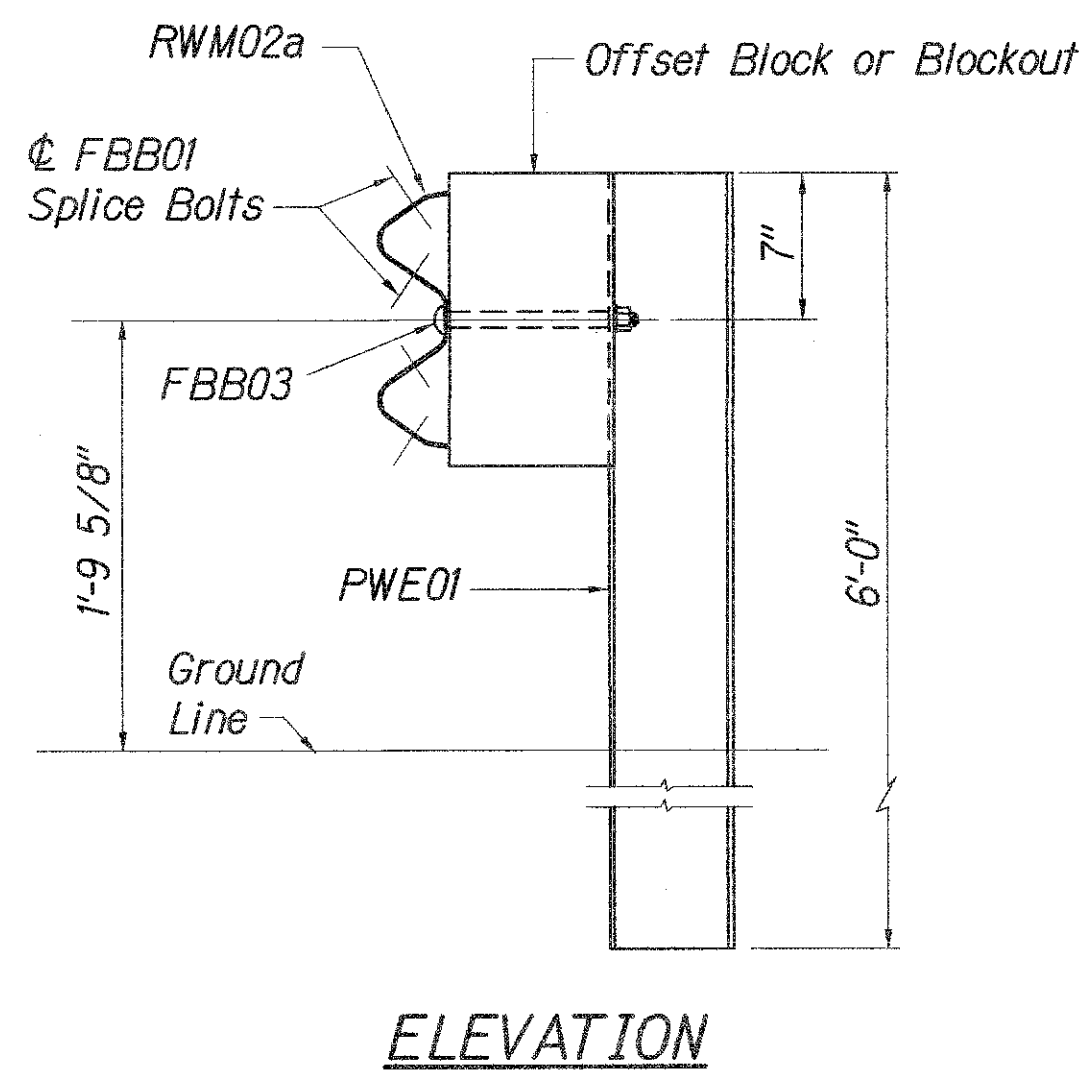
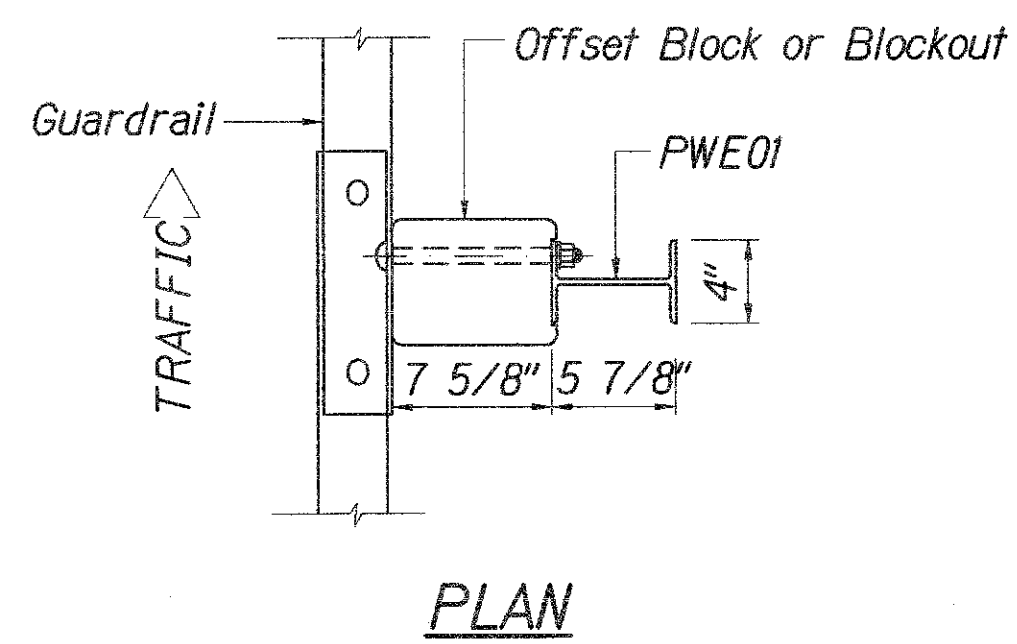
Chad M. McDonald
 4/30/2014
 MITSUNAGA & ASSOCIATES, INC. EXP. DATE

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

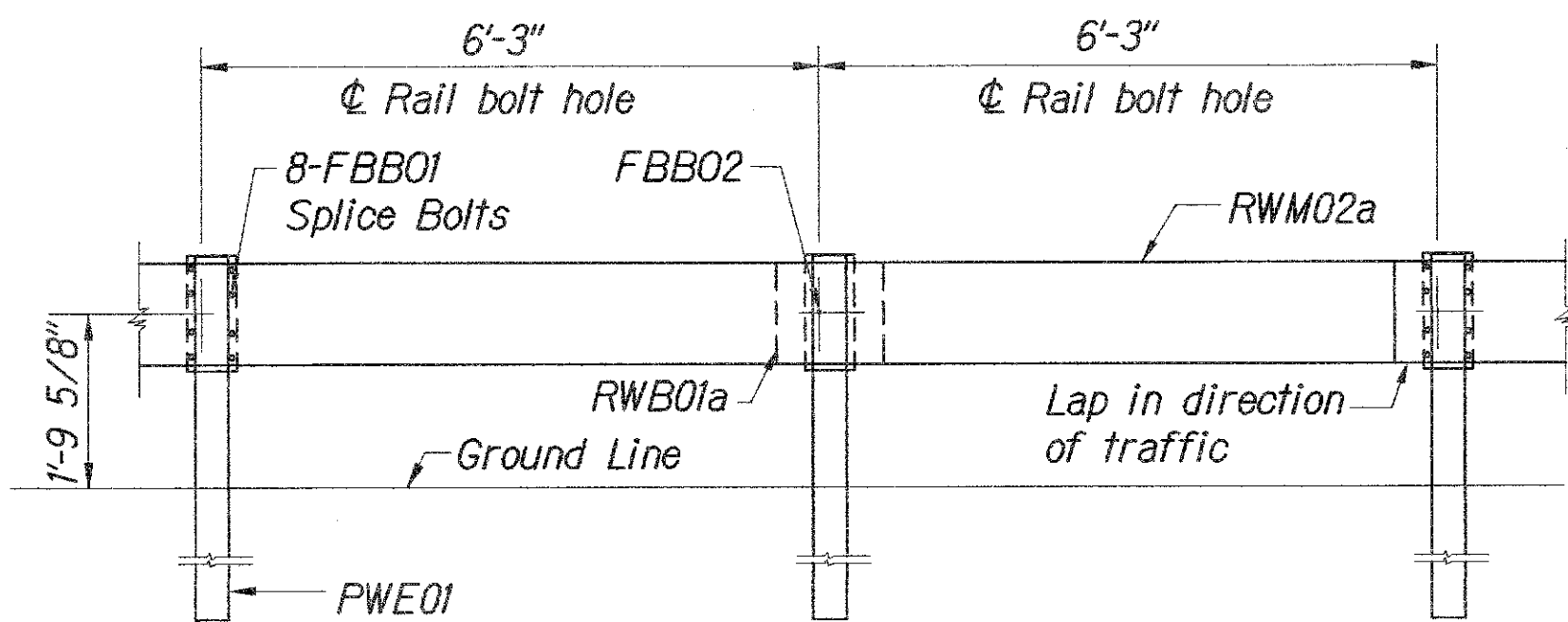
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS & NOTES

KAMEHAMEHA HIGHWAY
REPLACEMENT OF KOKOLOLIO STREAM BRIDGE
Federal Aid Project No. BR-083-1(50)
Scale: As Noted Date: August 2004

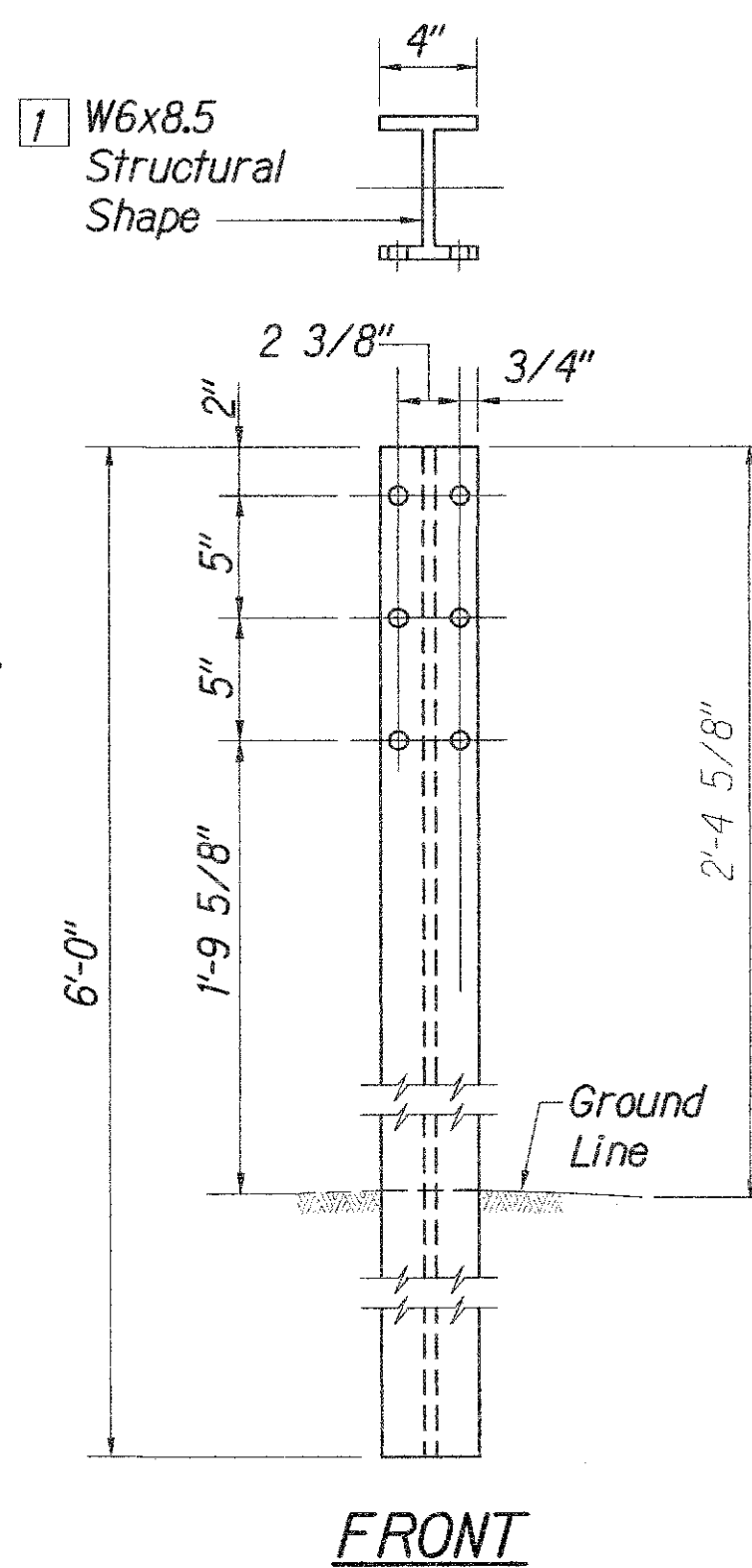


STRONG POST W-BEAM GUARDRAIL (SGR04a)
N.T.S.

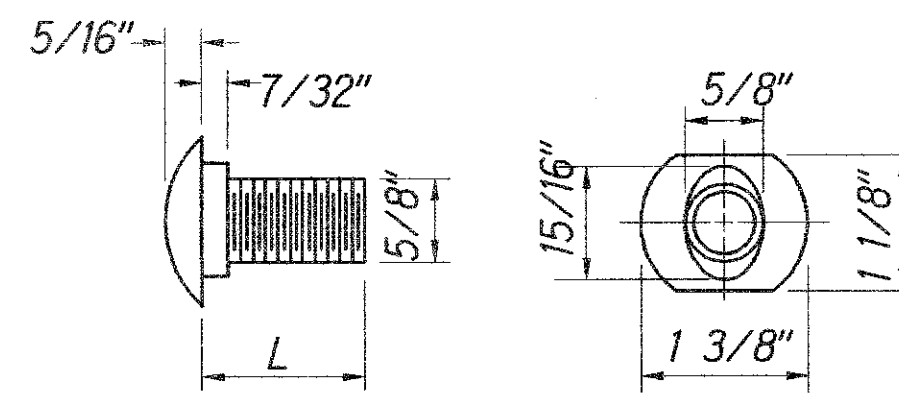
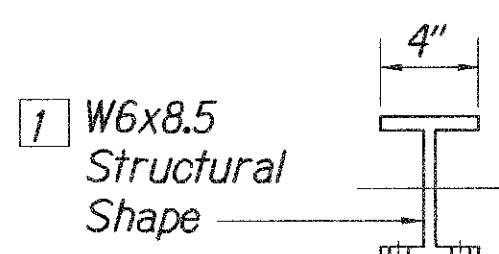


STRONG POST W-BEAM GUARDRAIL WITH RECYCLED OFFSET BLOCK OR PLASTIC BLOCKOUT
N.T.S.

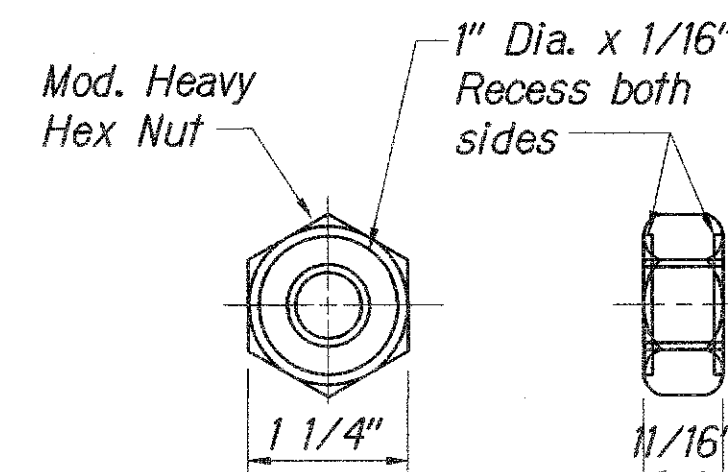
NOTE:
All Holes are
3/4" Dia.



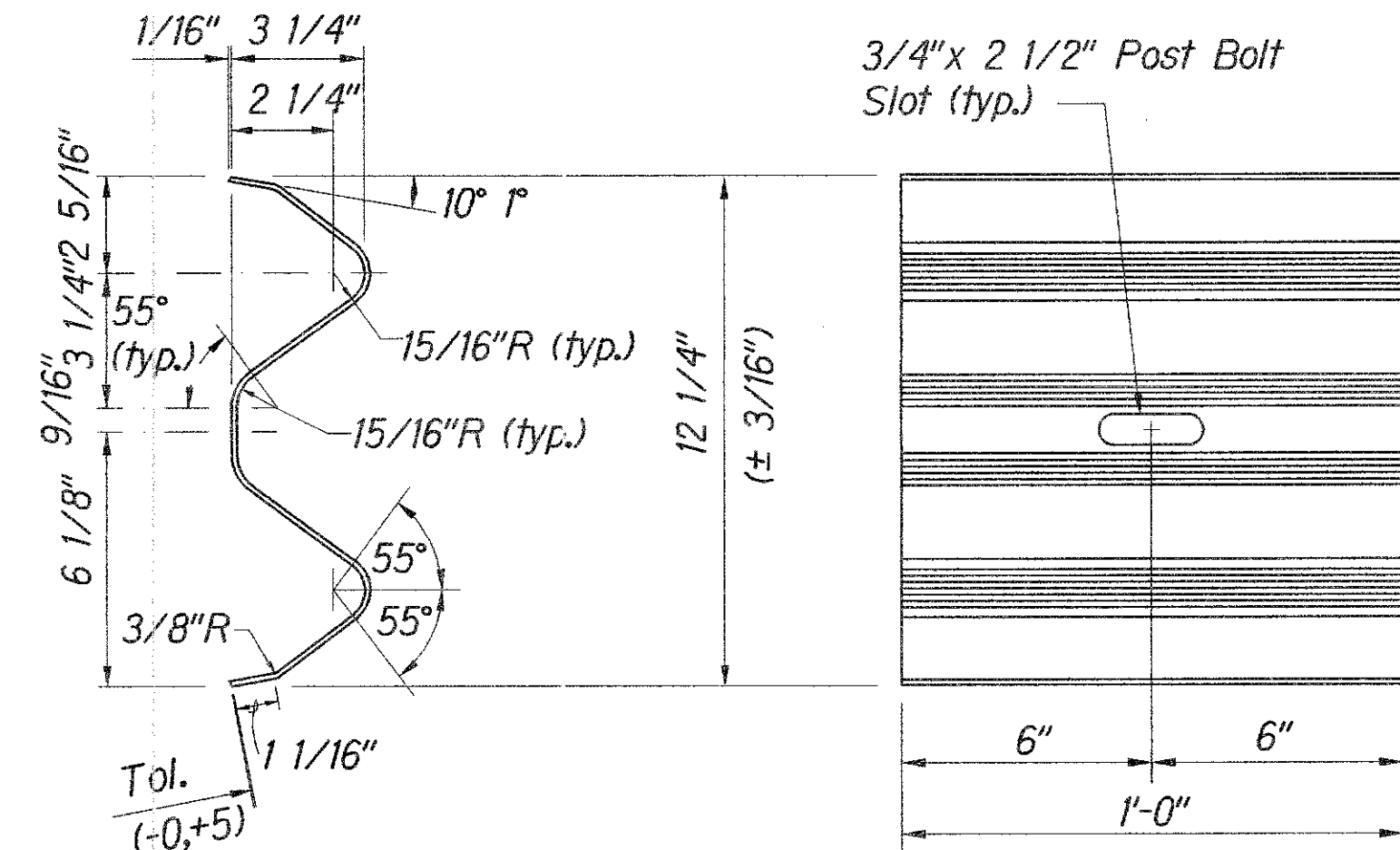
W-BEAM STRONG POST (PWE01)
N.T.S.



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

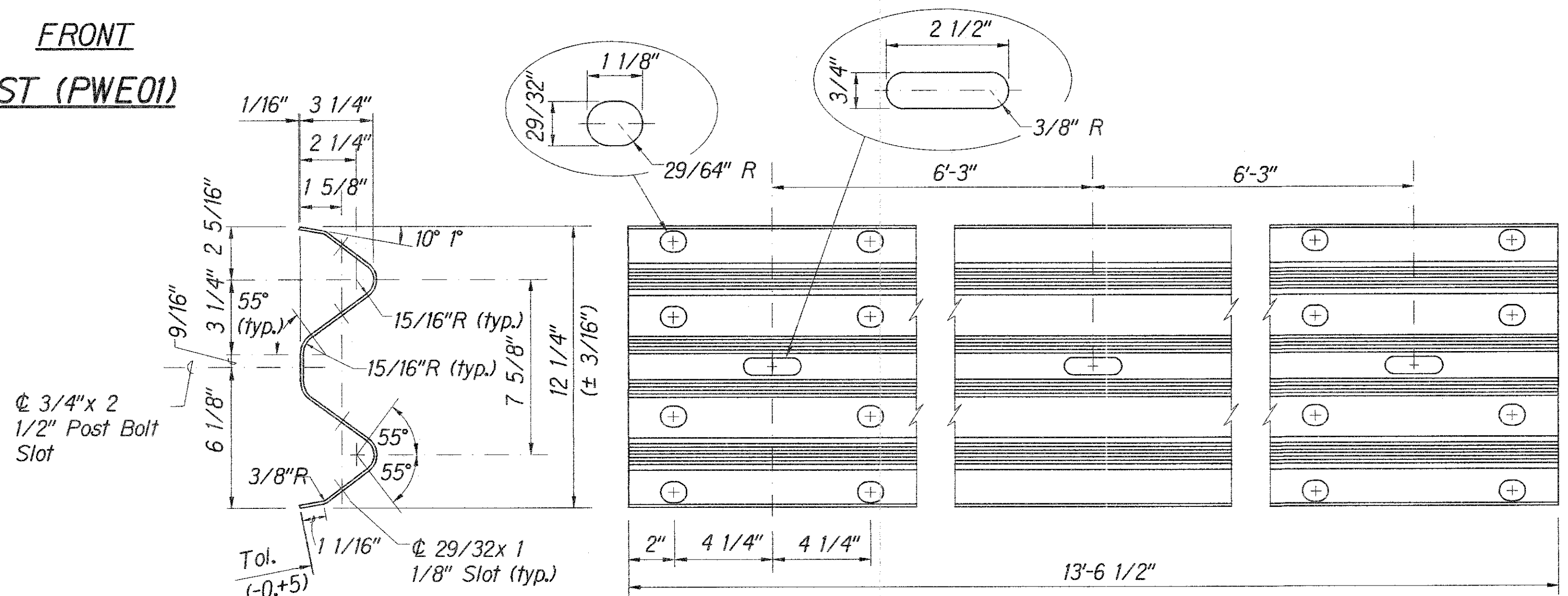


GUARDRAIL BOLTS AND RECESSED NUT
N.T.S.



DESIGNATOR	BASE METAL THICKNESS
RWB01a	12 Gauge

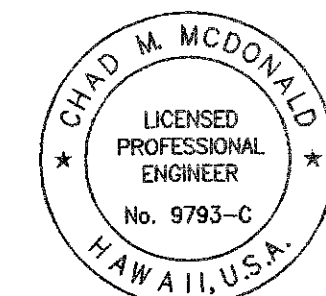
W-BEAM BACK-UP-PLATE (RWB01a)
N.T.S.



DESIGNATOR	BASE METAL THICKNESS
RWM02a	12 Gauge

2 SPACE W-BEAM GUARDRAIL (RWM02a)
N.T.S.

DATE	_____
SURVEY PLOTTED BY	_____
PLAN	_____
TRACED BY	_____
DESIGNED BY	_____
NOTED BY	_____
CHECKED BY	_____
NO.	_____



This work was prepared by
me or under my supervision

Chad W. McDonald
4/30/2014
MITSUNAGA & ASSOCIATES, INC. EXP. DATE

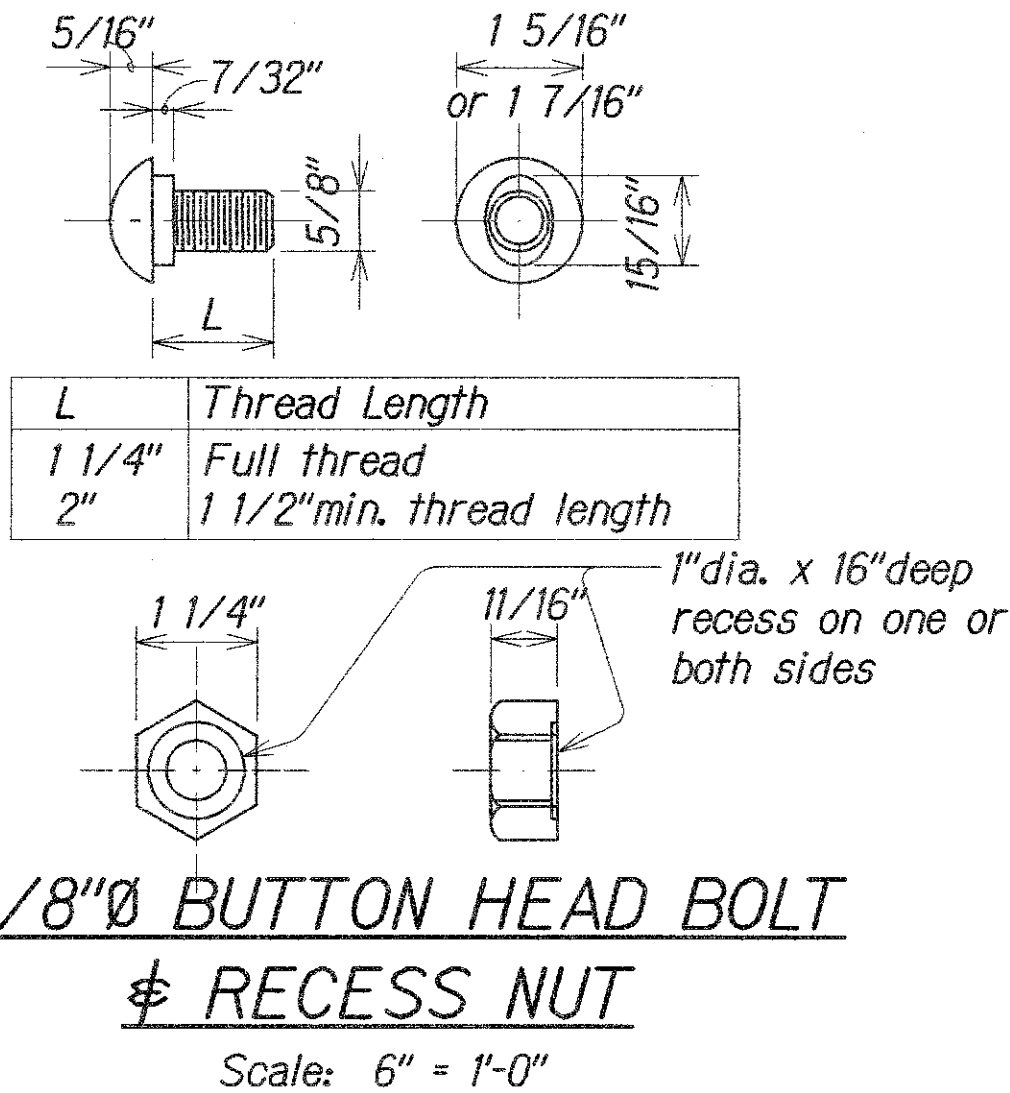
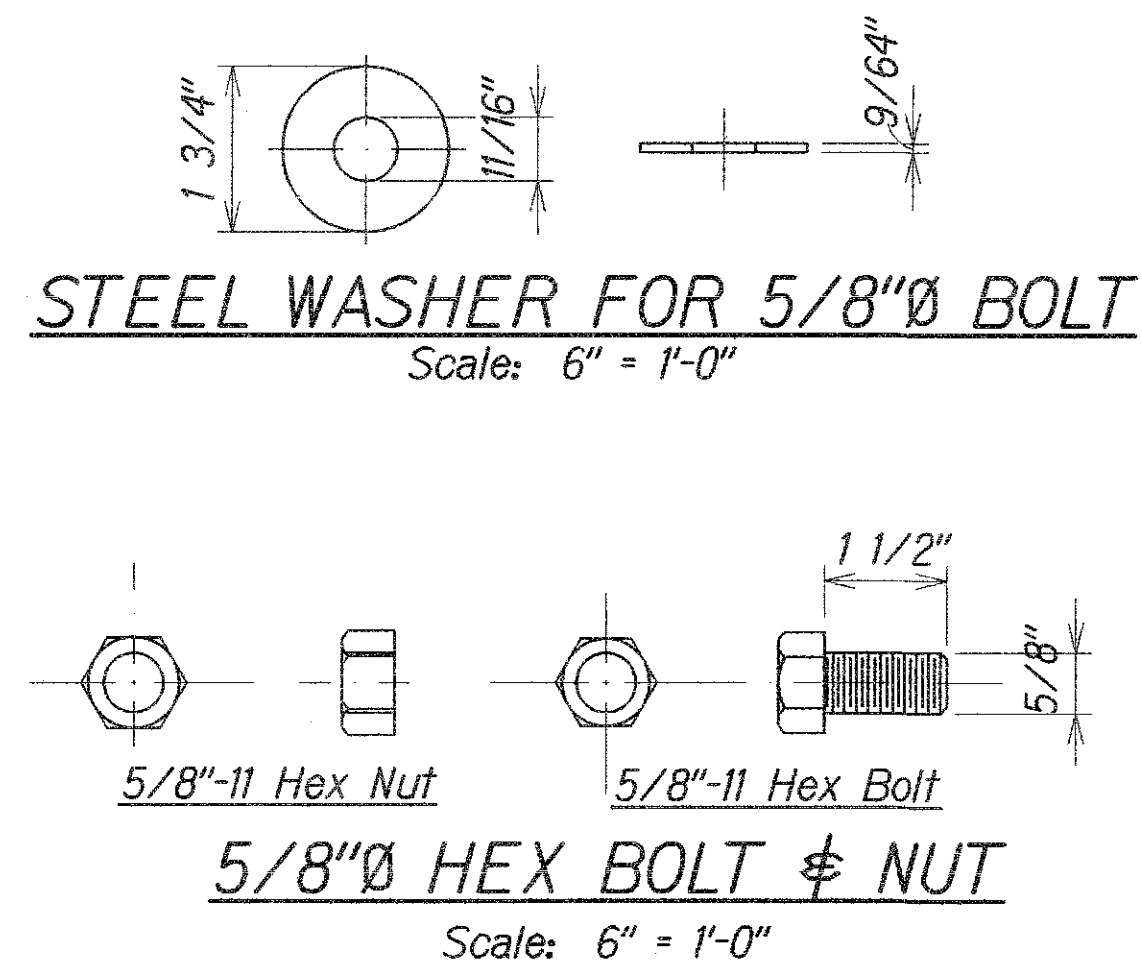
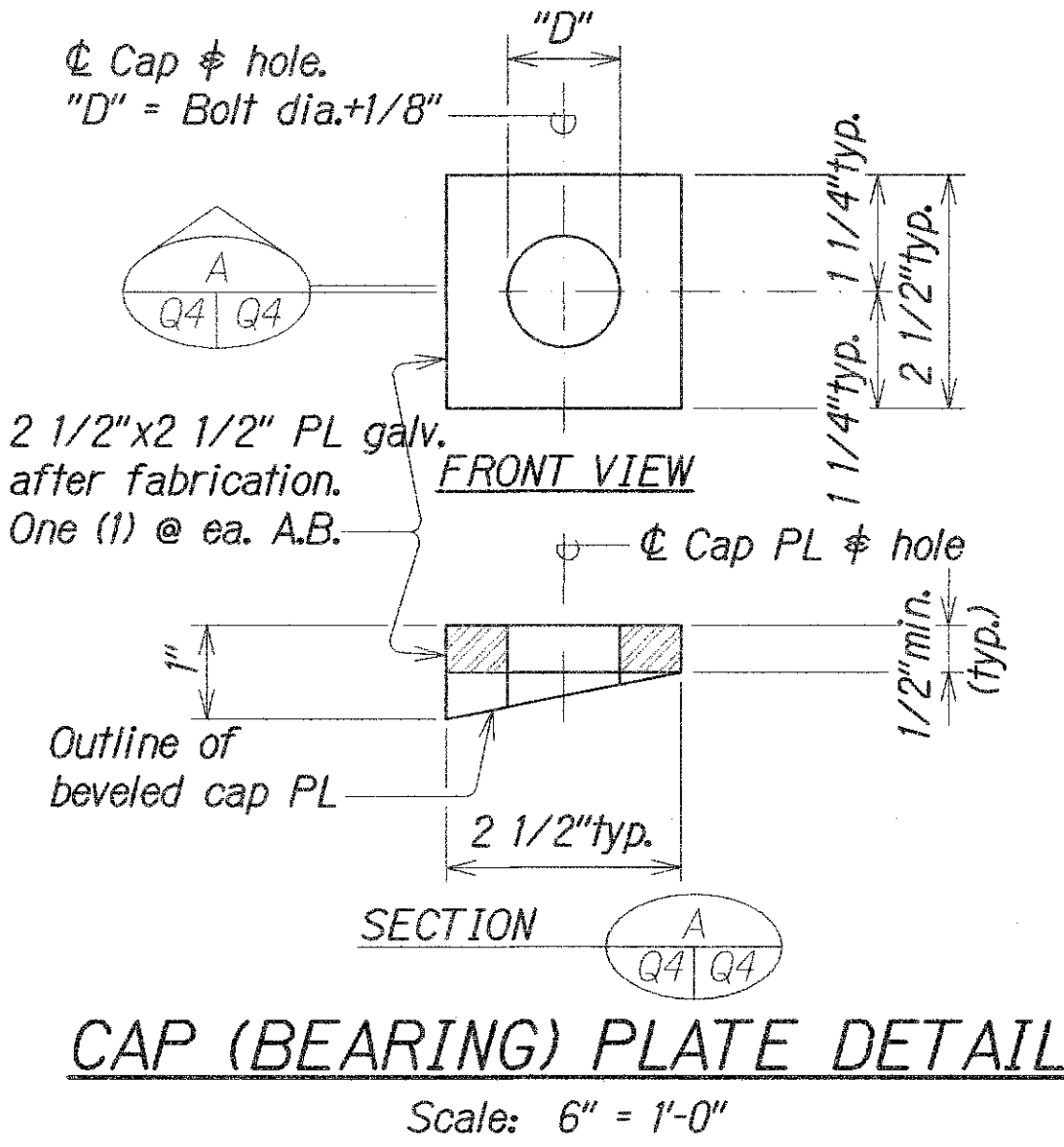
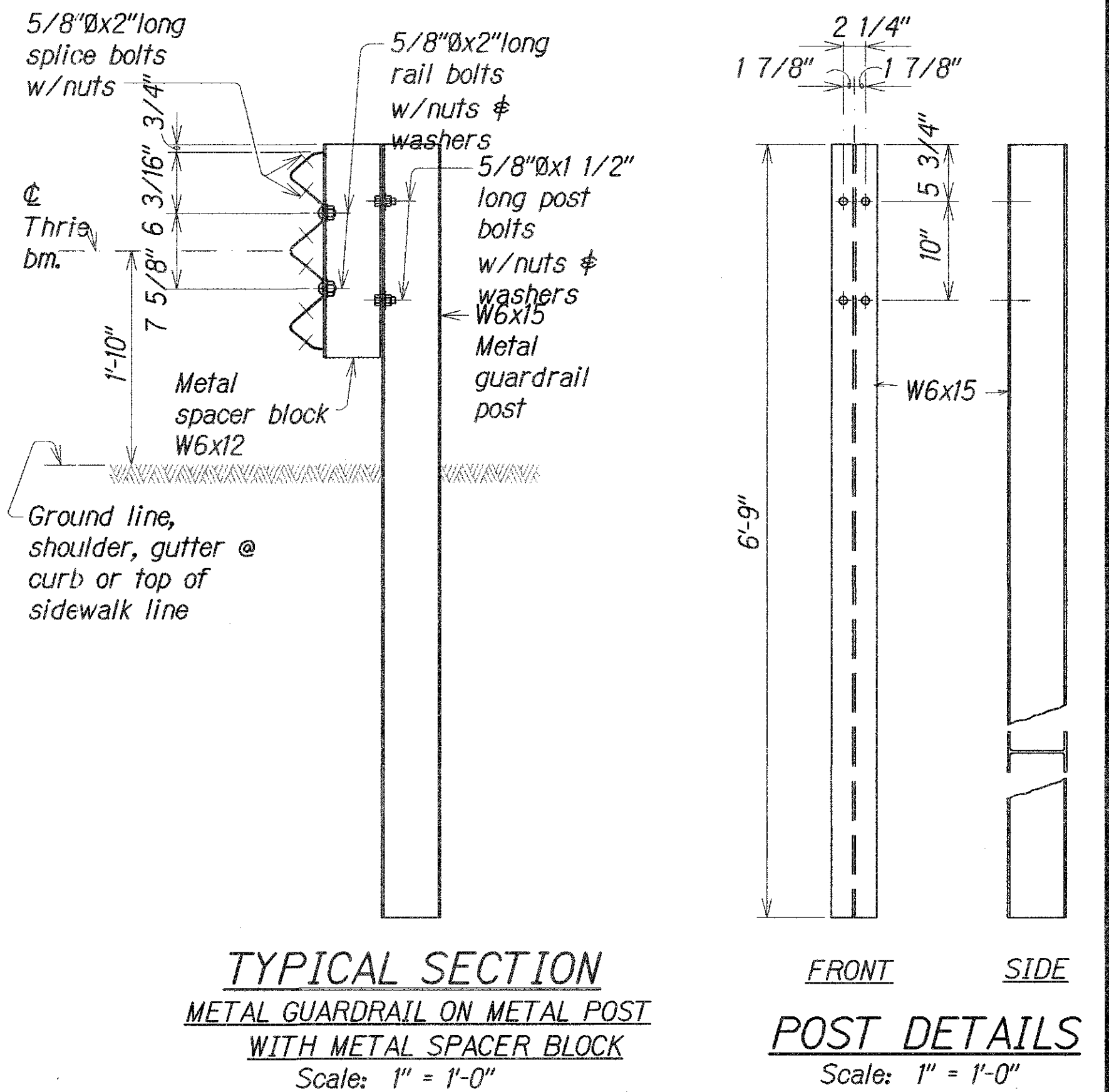
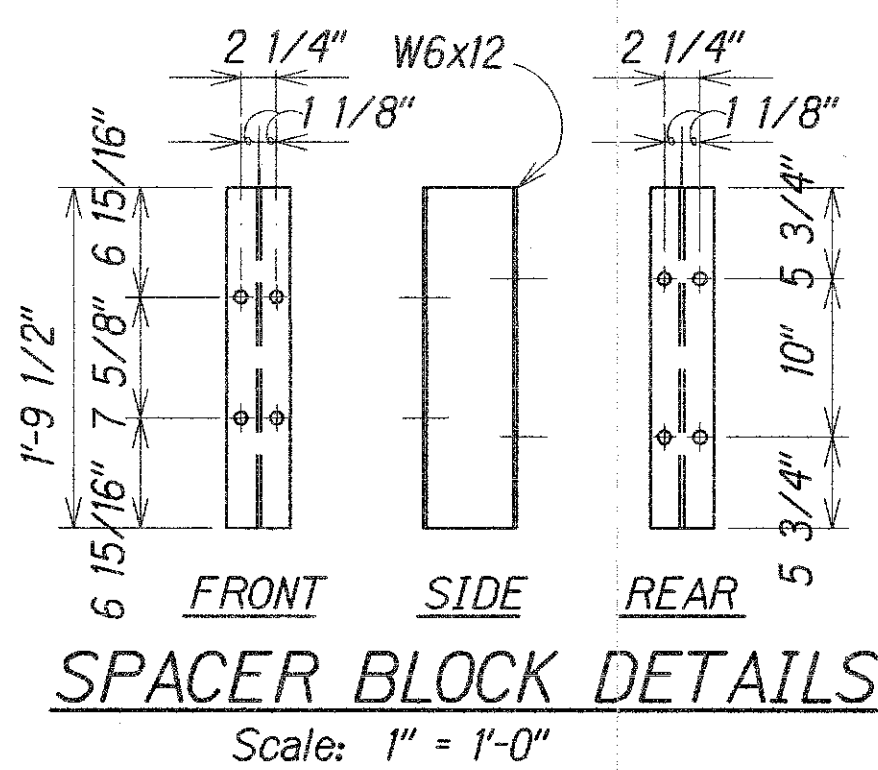
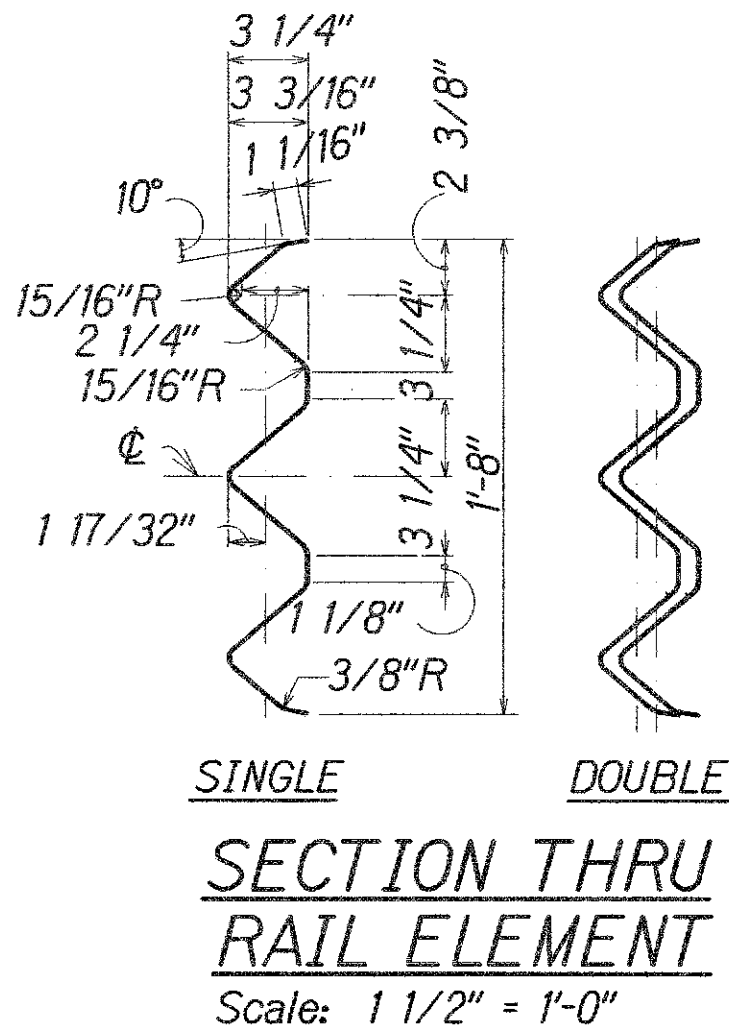
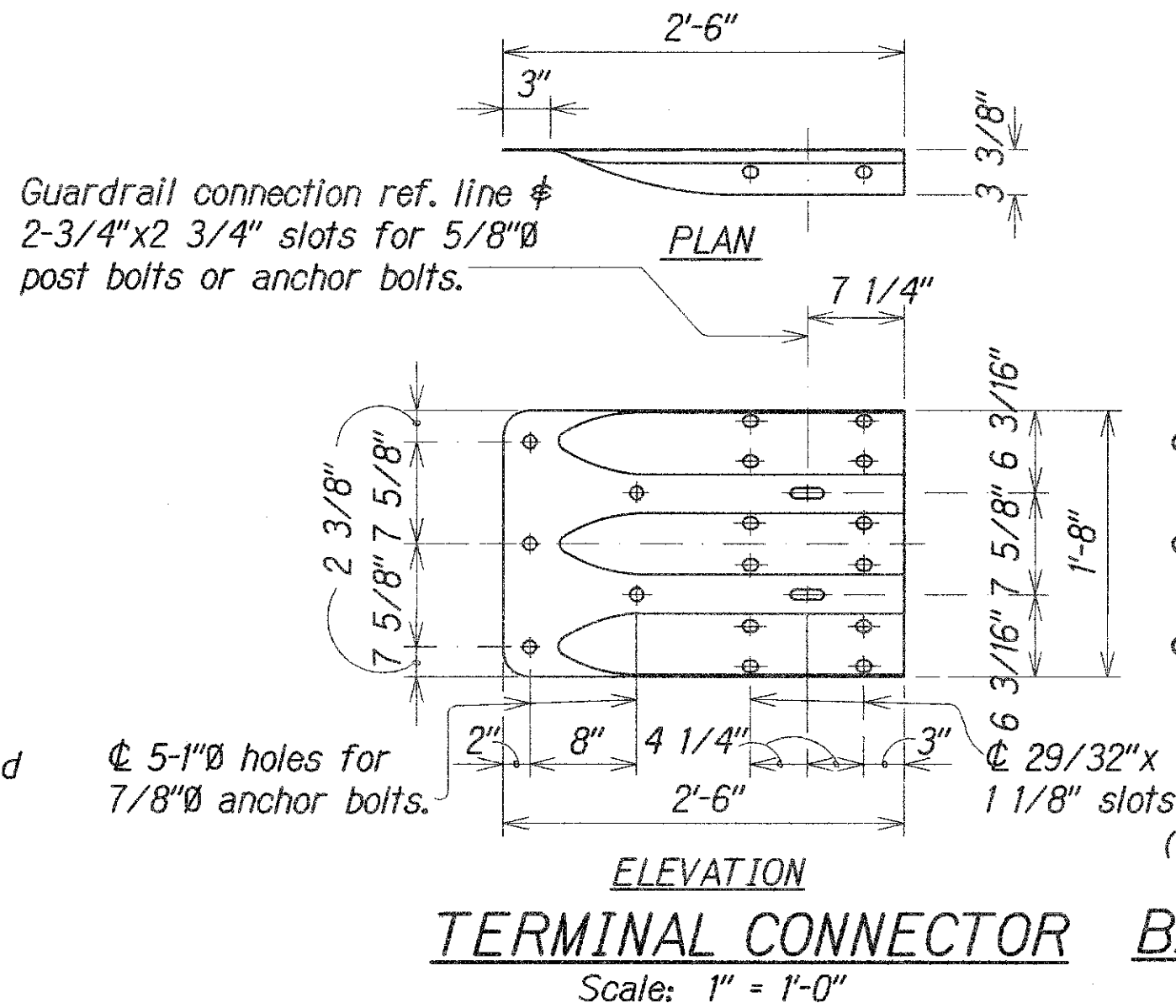
NOTE: Contractor to check and verify
dimensions at job before proceeding with work.

3/11/05	1 Note Revised
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STRONG POST W-BEAM GUARDRAIL	
KAMEHAMEHA HIGHWAY REPLACEMENT OF KOKOLOLIO STREAM BRIDGE Federal Aid Project No. BR-083-1(50) Scale: As Noted Date: August 2004	
SHEET No. C-33 OF 51 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	BR-083-1(50)	2005	36	81

NOTES:

- A. The work necessary to connect guardrail to concrete end post shall include all labor, materials, tools, equipment and incidentals necessary to complete the work and will not be paid for separately.
- B. Lap terminal connector and rail element in direction of traffic to prevent snagging.
- C. All anchor bolts shall be high strength bolts conforming to the requirements of ASTM 325 and Standard Specification, Section 713.04.
- D. Anchor bolt length shall be such that a snug fit of the elements and full thread engagement plus 1/4" (max) is attained.
- E. "Terminal Connector", "Transition Section" and thrie beam shall be fabricated from 10gauge steel conforming to the requirements of AASHTO M 180, Type II, Class B.
- F. "Terminal Connector" and standard spacer, including all anchor bolts, cap PL, nuts and washers, shall be hot-dip galvanized after fabrication.
- G. Cap PL shall be fabricated from ASTM A 36.
- H. First 25'-0" of guardrail adjoining "Terminal Connector" shall be galvanized steel and supports spaced as shown on the detail drawings. This section of rail shall be placed on tangent to end post or parallel to roadway, unless conditions at site renders it impossible to do so. Flare point to be determined in field.
- I. Double (nest 1st panel) thrie beam elements at all end post connections, except on highways with one-way traffic pattern, use single thrie beam elements at end post on trailing end only.
- J. Where double (nested) beam occur, 12" "Back-up Plate" not required.
- K. Heads of through anchor bolts shall be placed on the traffic side of the rail.
- L. All steel shapes, rails and plates shall conform to ASTM A 36 specifications.



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

METAL GUARDRAIL TYPE 3 THRIE BEAM AND APPURTENANCES DETAILS

CHAD M. MCDONALD
LICENSED PROFESSIONAL ENGINEER
No. 9793-C
HAWAII, U.S.A.

This work was prepared by me or under my supervision

Chad M. McDonald
4/30/2014
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

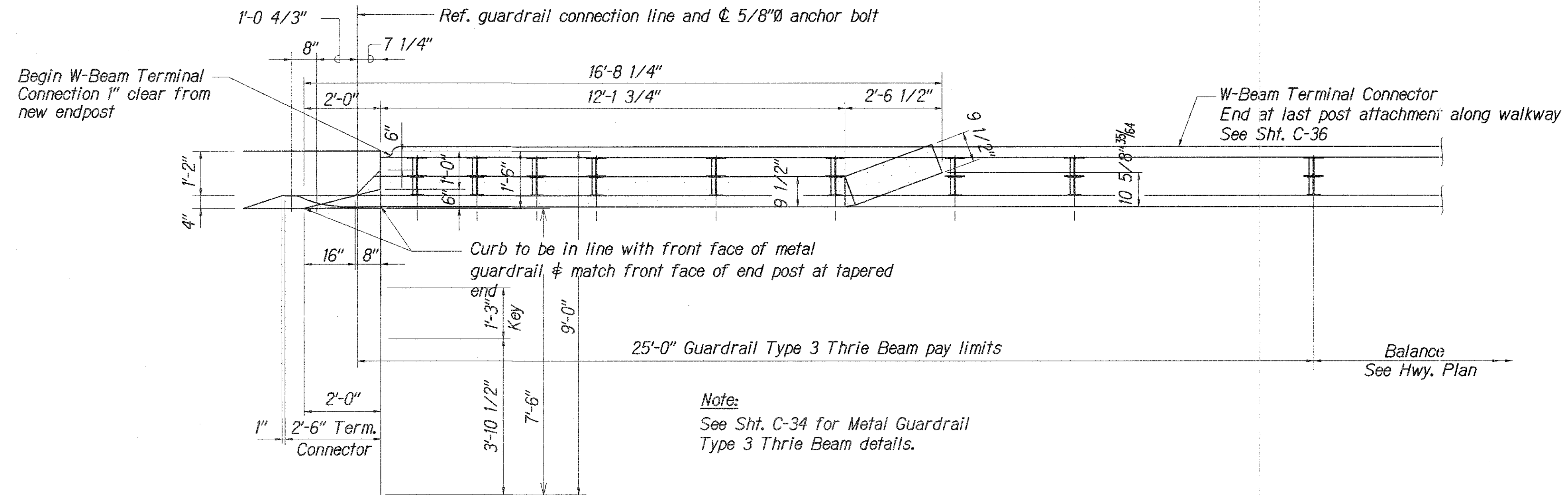
GUARDRAIL DETAILS AND APPURTENANCES DETAILS

KAMEHAMEHA HIGHWAY
REPLACEMENT OF KOKOLOLO STREAM BRIDGE
Federal Aid Project No. BR-083-1(50)

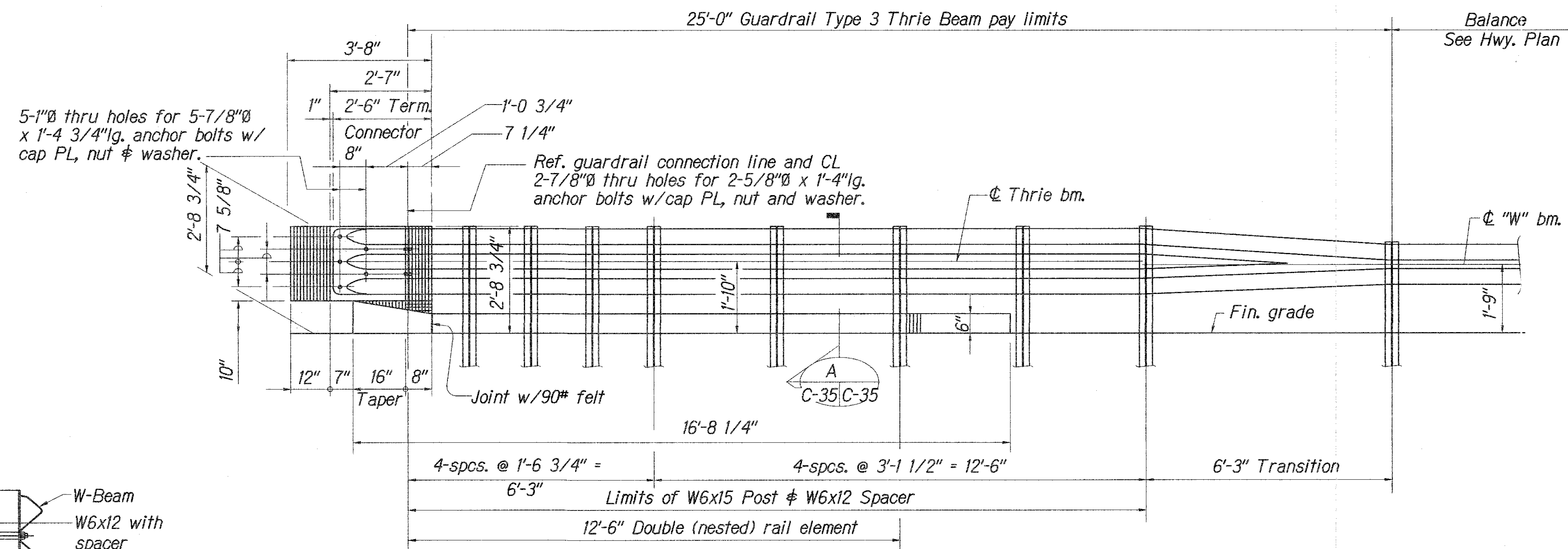
Scale: As Noted Date: August 2004

SHEET No. C-34 OF 51 SHEETS

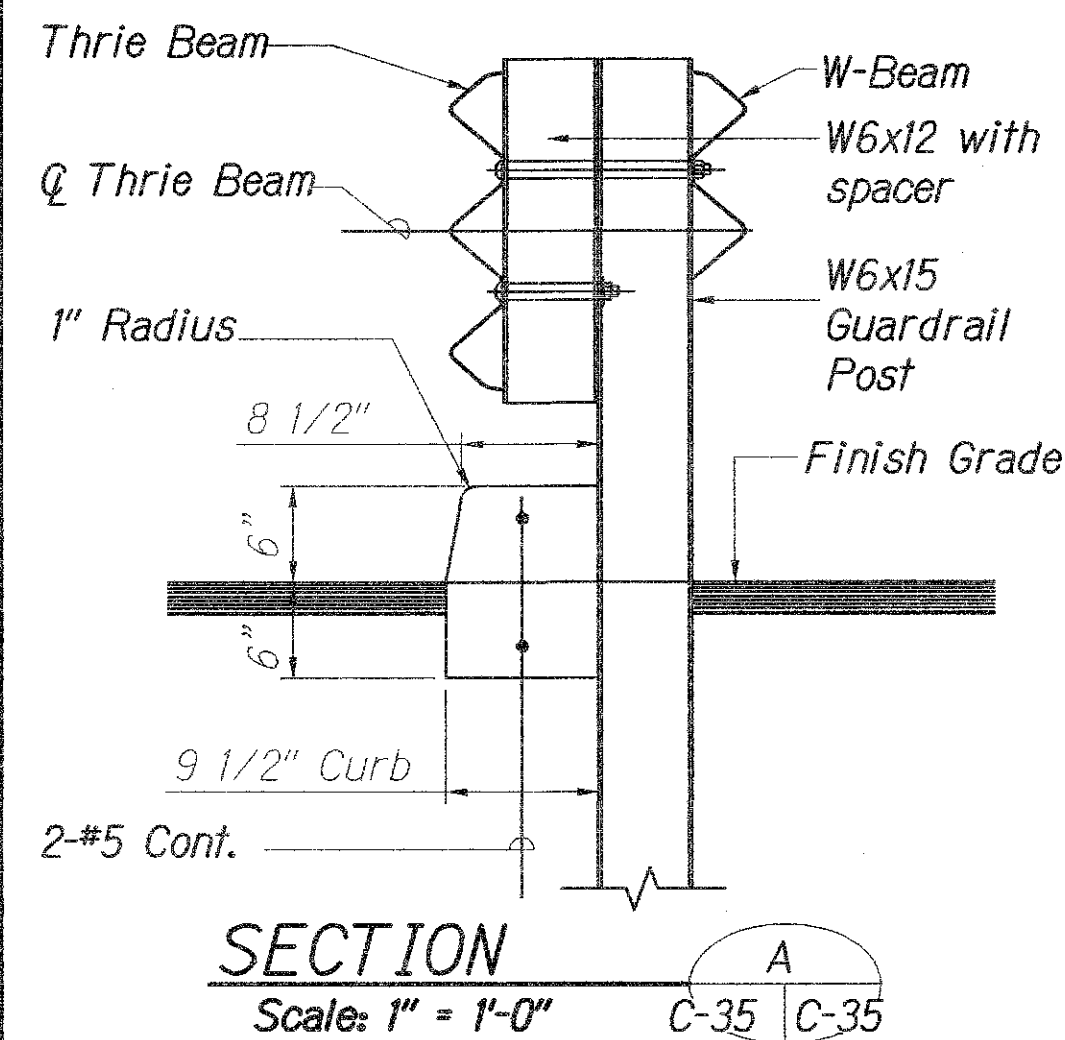
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	BR-083-1(50)	2005	37	81



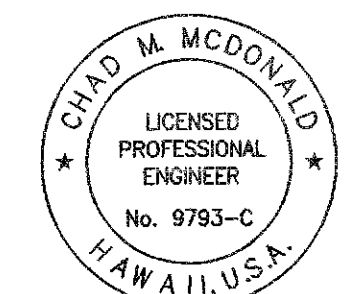
PLAN
Scale: 1/2" = 1'-0"



ELEVATION
Scale: 1/2" = 1'-0"



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



This work was prepared by me or under my supervision

Chad M. McDonald
4/30/2014
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

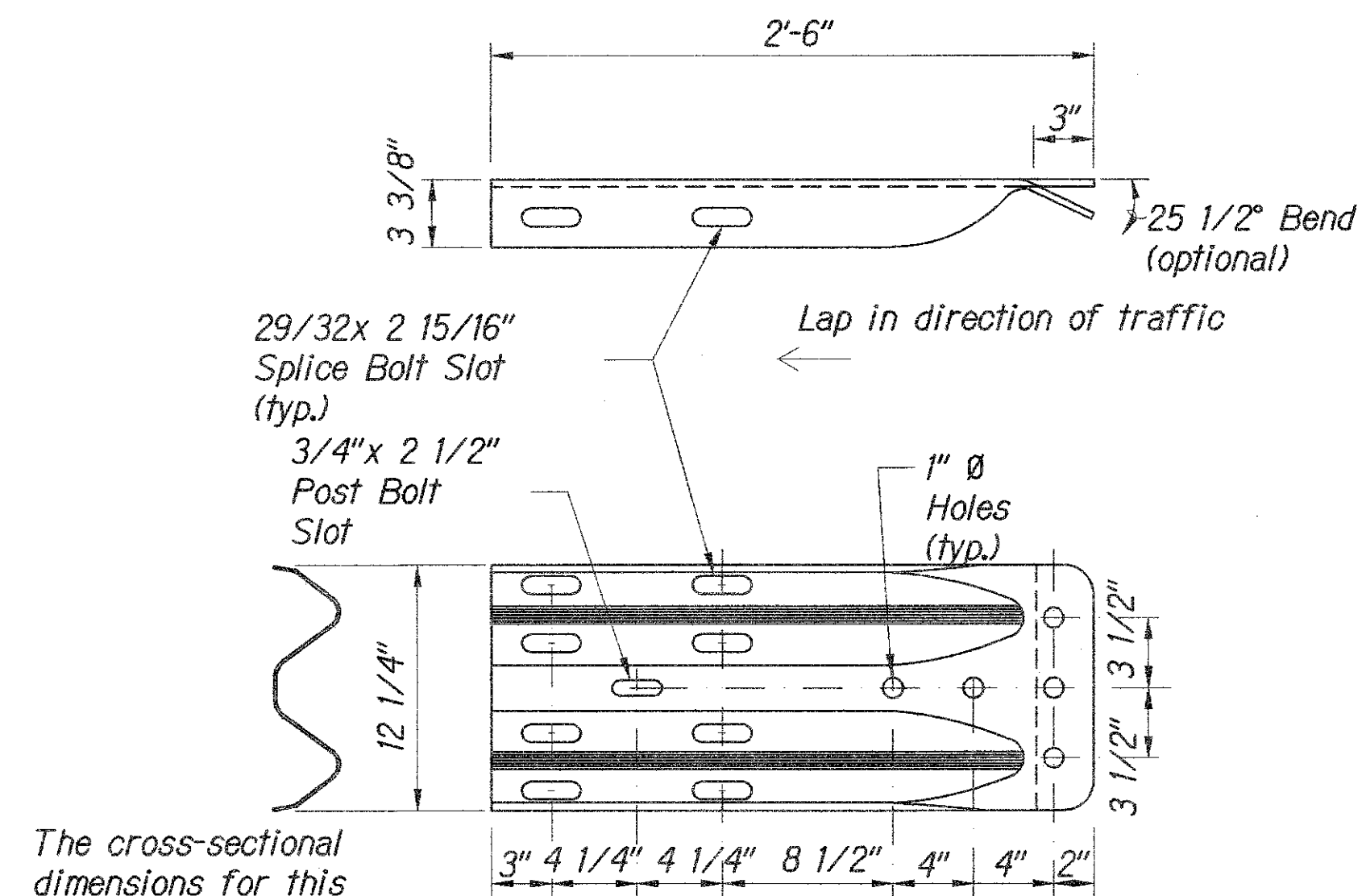
THRIE BEAM AND APPURTENANCES

KAMEHAMEHA HIGHWAY
REPLACEMENT OF KOKOLOLO STREAM BRIDGE
Federal Aid Project No. BR-083-1(50)

Scale: As Noted Date: August 2004

SHEET No. **C-35** OF **51** SHEETS

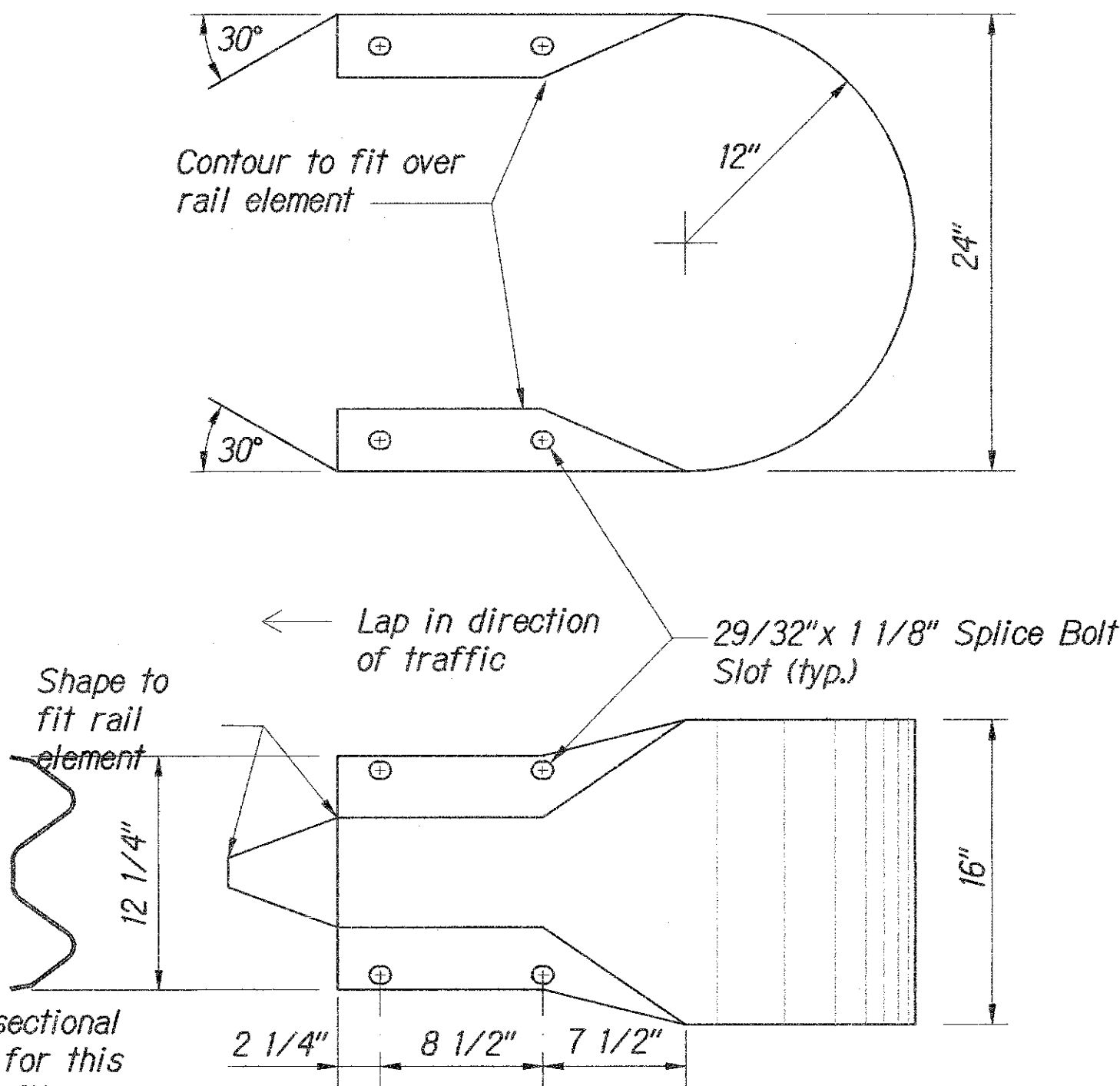
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	BR-083-1(50)	2005	38	81



The cross-sectional dimensions for this part are to fit over part RWM02a on the approach end and under part RWM02a on the trailing end.

DESIGNATOR	BASE METAL THICKNESS
RWE02b	10 Gauge

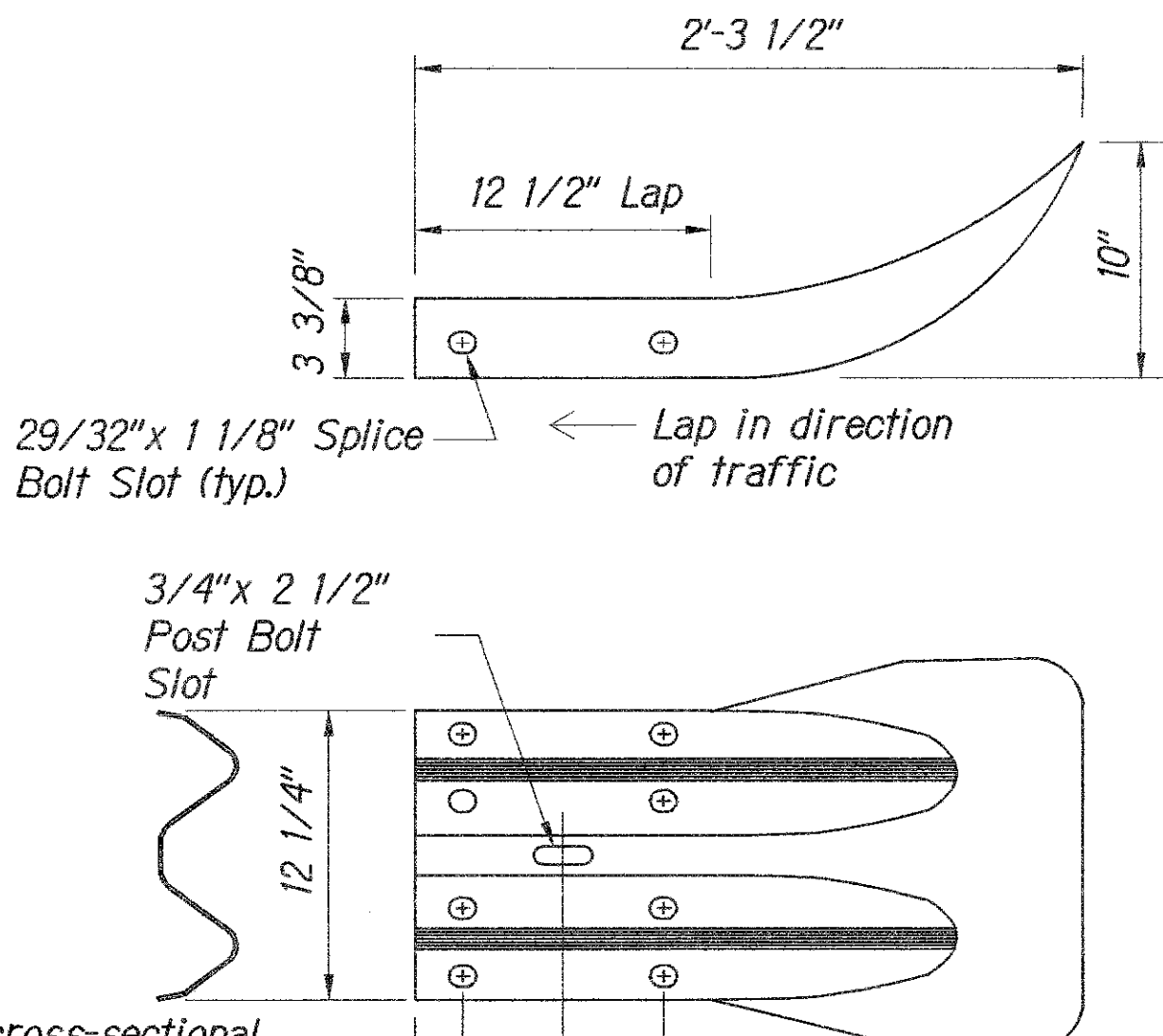
W-BEAM TERMINAL CONNECTOR (RWE02b)
N.T.S.



The cross-sectional dimensions for this part are to fit over part RWM02a

DESIGNATOR	BASE METAL THICKNESS
RWE06b	12 Gauge

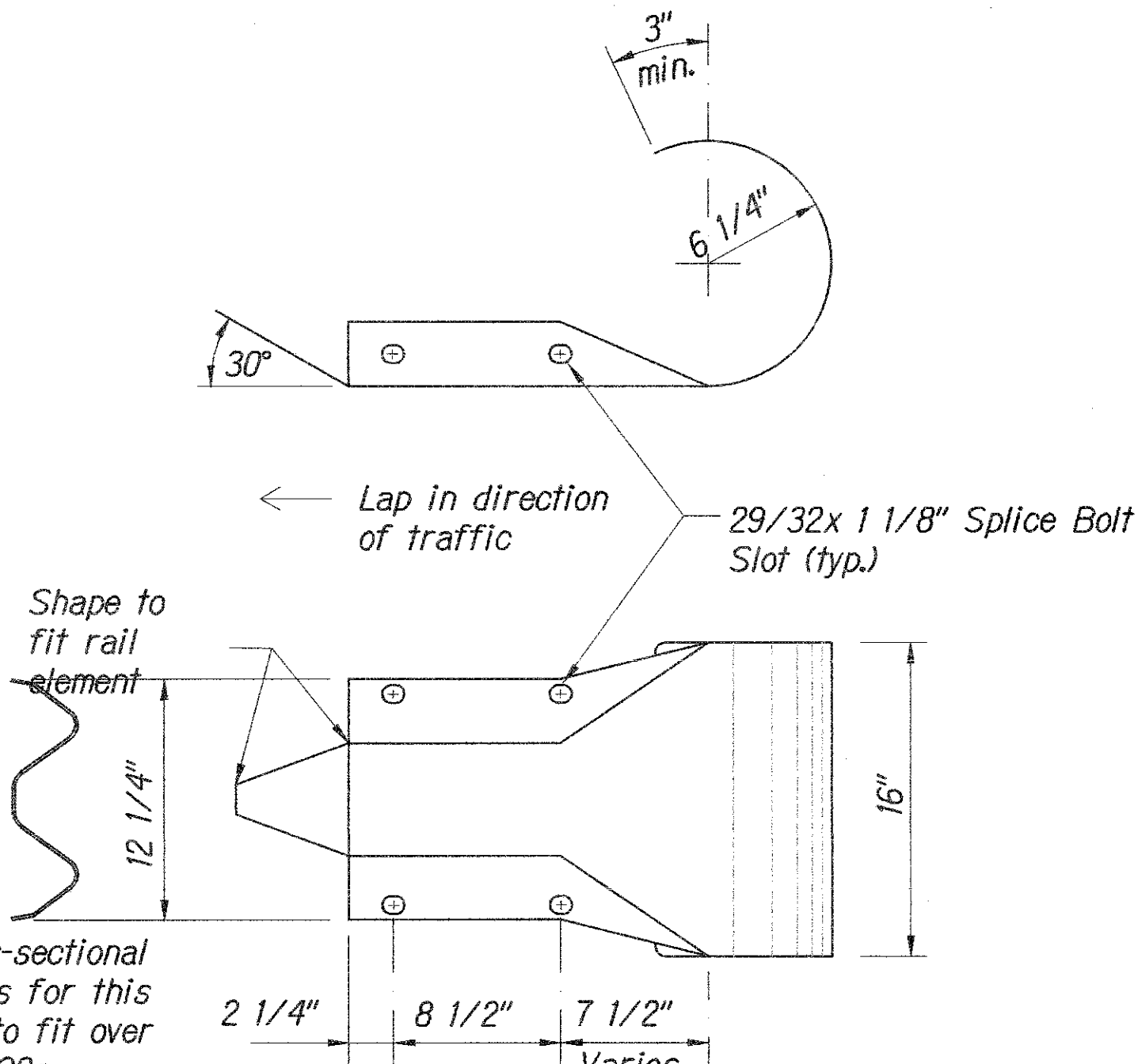
W-BEAM END SECTION (BUFFER RWE06a)
N.T.S.



The cross-sectional dimensions for this part are to fit over part RWM02a on the approach end and under part RWM02a on the trailing end.

DESIGNATOR	BASE METAL THICKNESS
RWE01a	12 Gauge

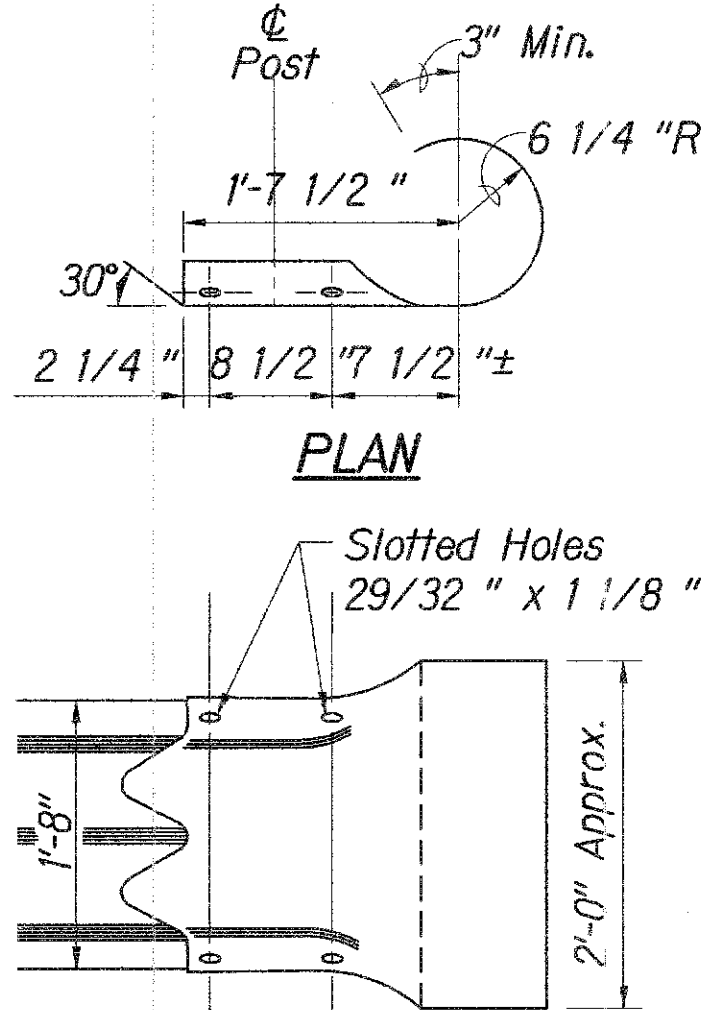
W-BEAM END SECTION (FLARED RWE01a)
N.T.S.



The cross-sectional dimensions for this part are to fit over part RWM02a

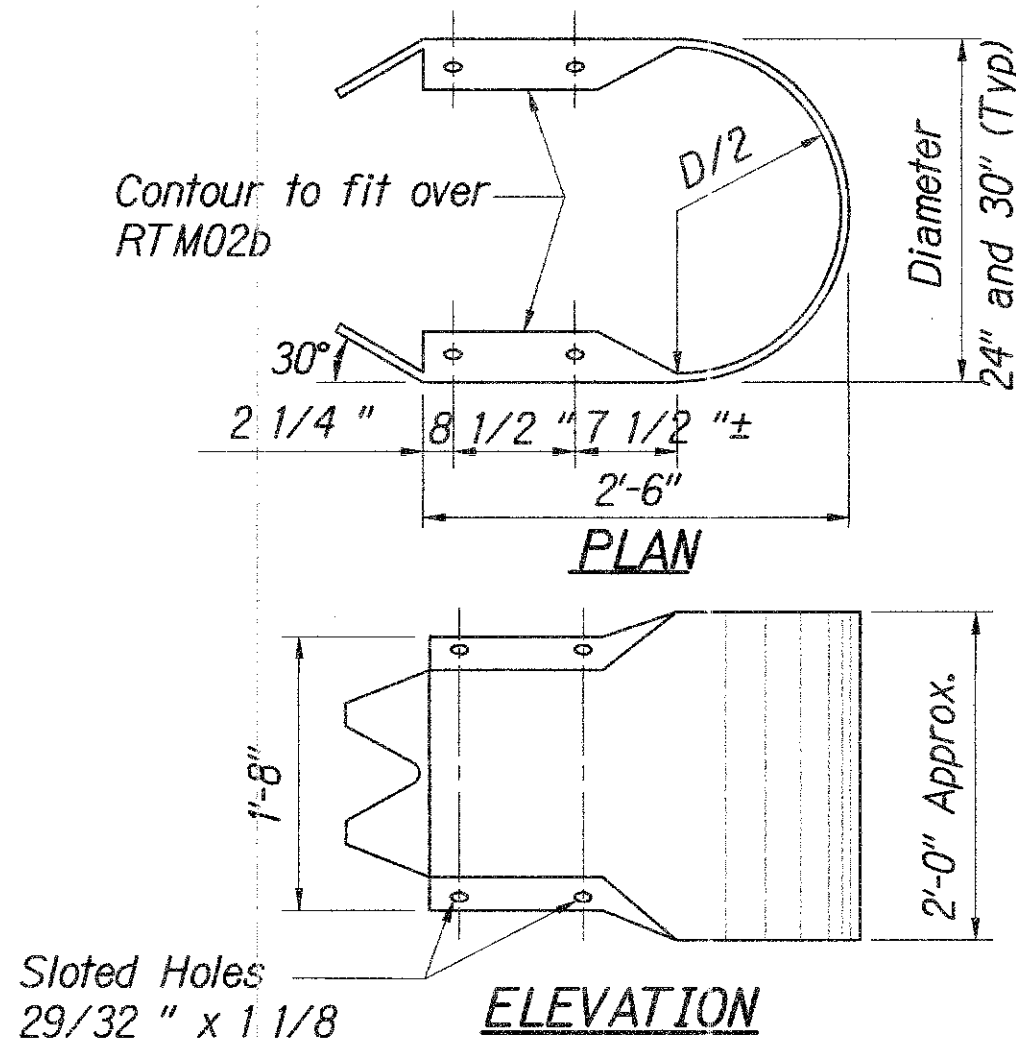
DESIGNATOR	BASE METAL THICKNESS
RWE03a	12 Gauge

W-BEAM END SECTION (ROUNDED RWE03a)
N.T.S.



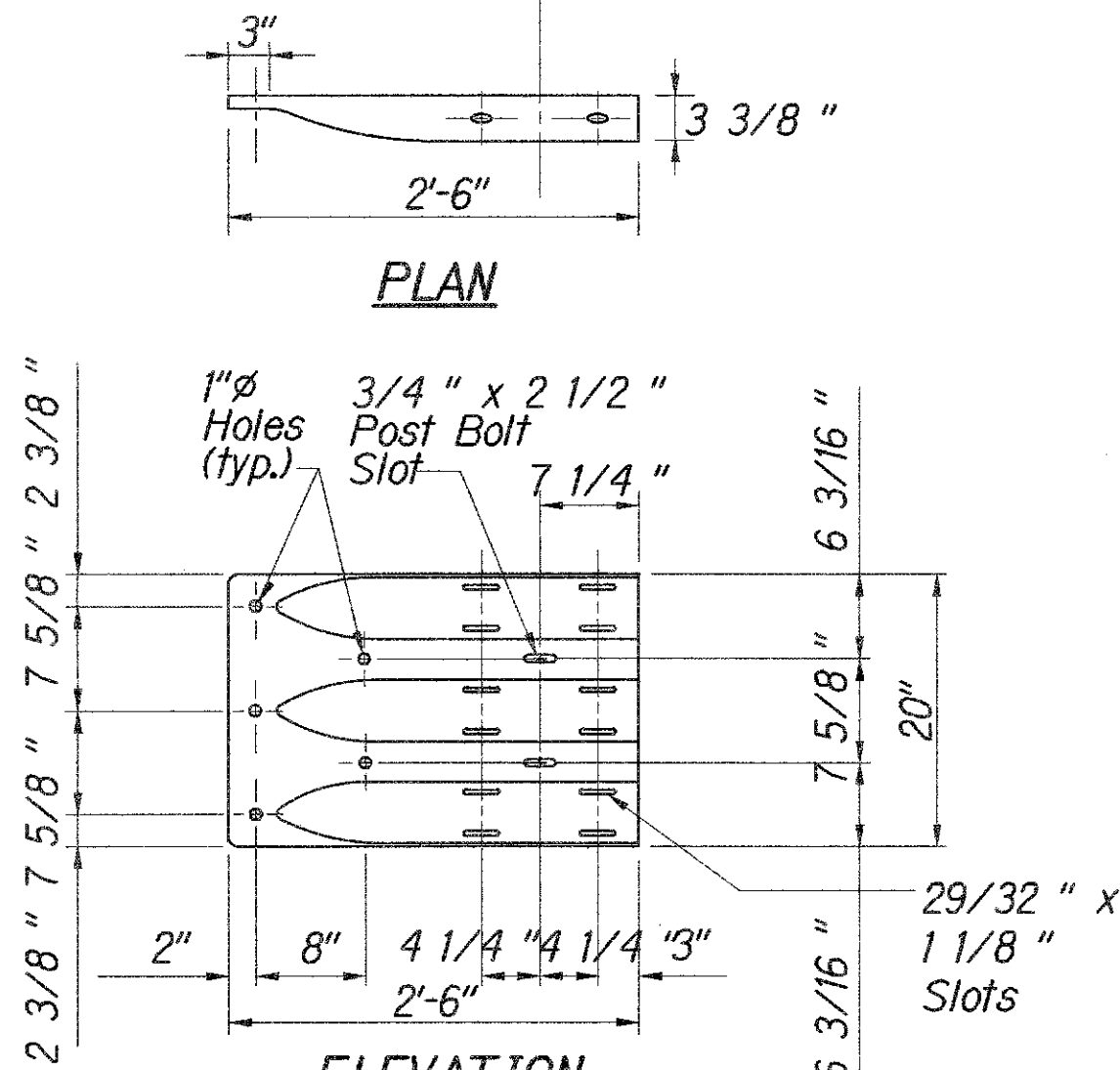
DESIGNATOR	BASE METAL THICKNESS
RTE02b	10 Gauge

THRIE-BEAM SECTION (ROUNDED) (RTE02b)
N.T.S.



DESIGNATOR	BASE METAL THICKNESS
RTE03b & RTE04b	10 Gauge

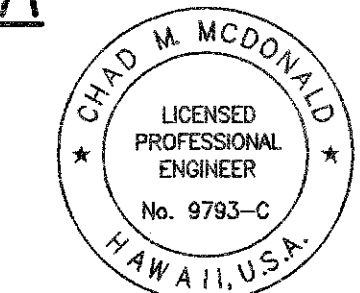
THRIE-BEAM END SECTION (BUFFER RTE03b or RTE04b)
N.T.S.



DESIGNATOR	BASE METAL THICKNESS
RTE01b	10 Gauge

THRIE-BEAM TERMINAL CONNECTOR (RTE01b)
N.T.S.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	



This work was prepared by me or under my supervision

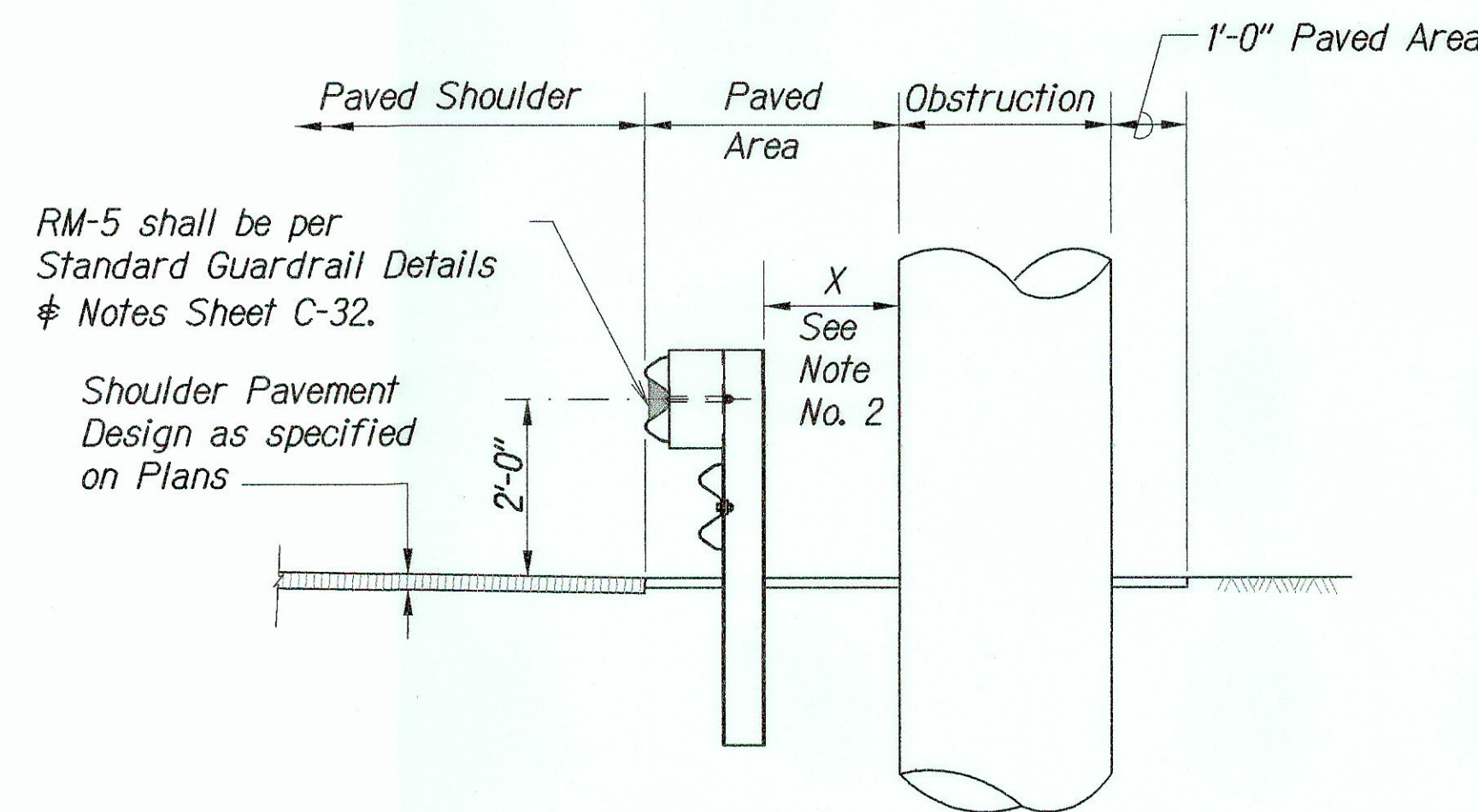
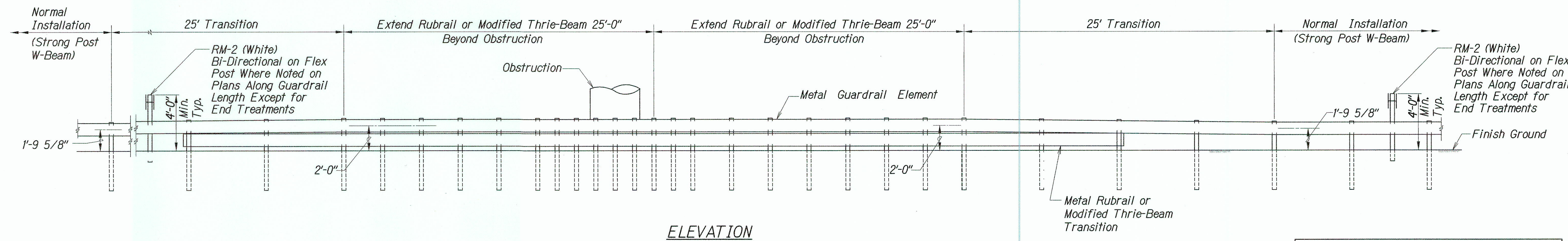
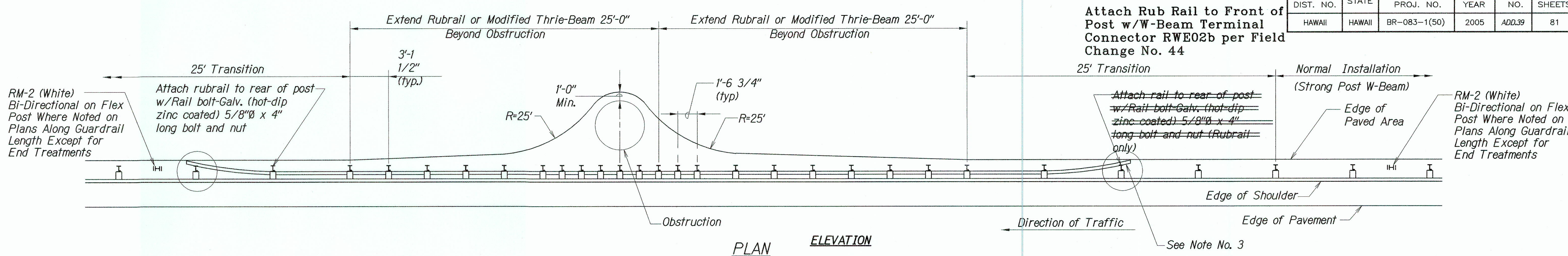
Chad M. McDonald
4/30/2014
MITSUNAGA & ASSOCIATES, INC. EXP. DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
GUARDRAIL TERMINAL CONNECTIONS AND END SECTIONS
KAMEHAMEHA HIGHWAY
REPLACEMENT OF KOKOLOLO STREAM BRIDGE
Federal Aid Project No. BR-083-1(50)
Scale: As Noted
Date: August 2004

SHEET No. **C-38** OF **51** SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	BR-083-1(50)	2005	ADD.39	81



TYPICAL SECTION AT OBSTRUCTION

DETAIL OF GUARDRAIL INSTALLATION AT OBSTRUCTION

NOTES:

- All Guardrail and Concrete Barrier Designs at Obstructions shall be approved by the Engineer.
- If $X < 2'-0"$, Concrete Barrier or special guardrail design;
 $2'-0" \leq X < 3'-0"$, Strong Post Rubrail or Strong Post Thrie-Beam with reduced post spacing;
 $3'-0" \leq X$, Strong Post W-Beam with 6'-3" post spacing (Normal Installation).
- If a pedestrian walkway or bicycle route is located behind the guardrail, the Engineer should install the Modified Thrie-Beam System. The Rubrail termini may become a hazard to pedestrians & bicyclists.
- All reflector markers located behind guardrail and other locations shall be installed with flexible delineator posts (white).
- Exact location of Reflector Markers shall be per sheets C-9, C-11 and C-13 unless otherwise determined in the field by the Engineer.
- RM-2 Bi-Directional shall be white in color at the locations noted on sheet C-13 unless otherwise determined in the field by the Engineer.
- RM-5 shall be per Standard Guardrail Details & Notes, Sheet C-32.
- The Guardrail Installation at Obstructions shown on this sheet shall be applied at the location of the existing utility pole at Station 1288+27 offset left. Please also refer to the Detail "Retaining Wall at Utility Pole" shown on Sheet 43. Payment of this item will be incidental to Item No. 606.3111 of the Proposal Schedule.

LEGEND FOR AS-BUILT POSTING	
	Squiggly line for as-built deletion
	Double line for as-built deletion
	Roadway Text for as-built posting

3/11/05	Added Note No. 8
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS
(AT OBSTRUCTION)

KAMEHAMEHA HIGHWAY
REPLACEMENT OF KOKOLOLO STREAM BRIDGE
Federal Aid Project No. BR-083-1(50)

Scale: As Noted Date: August 2004

SHEET No. **C-37** OF **51** SHEETS

CHAD M. MCDONALD
LICENSED PROFESSIONAL ENGINEER
No. 9793-C
HAWAII, U.S.A.

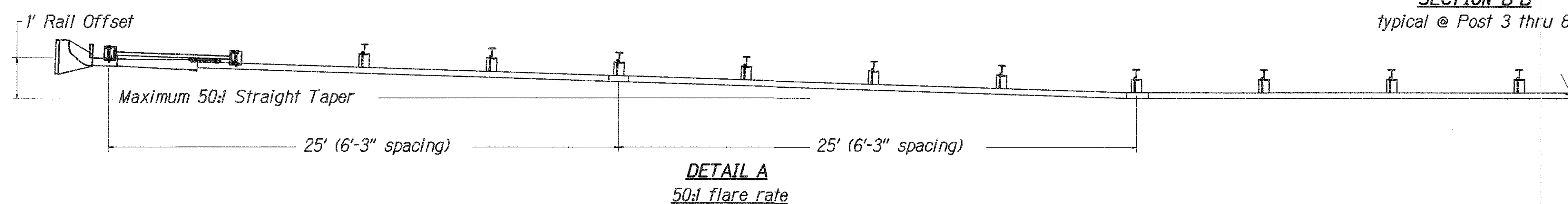
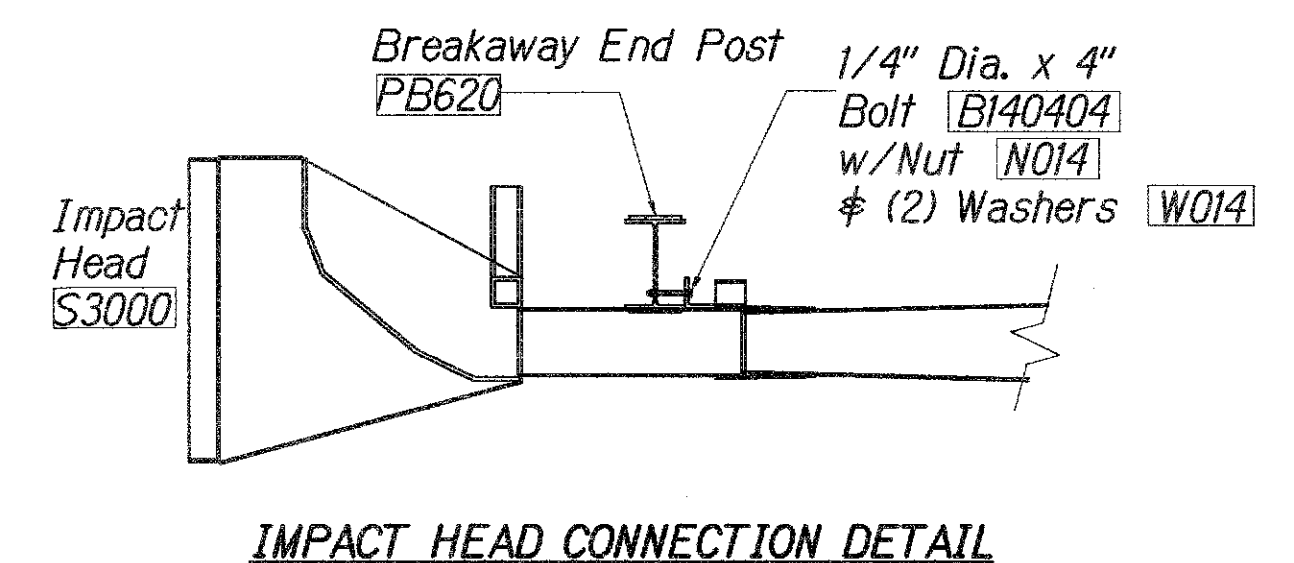
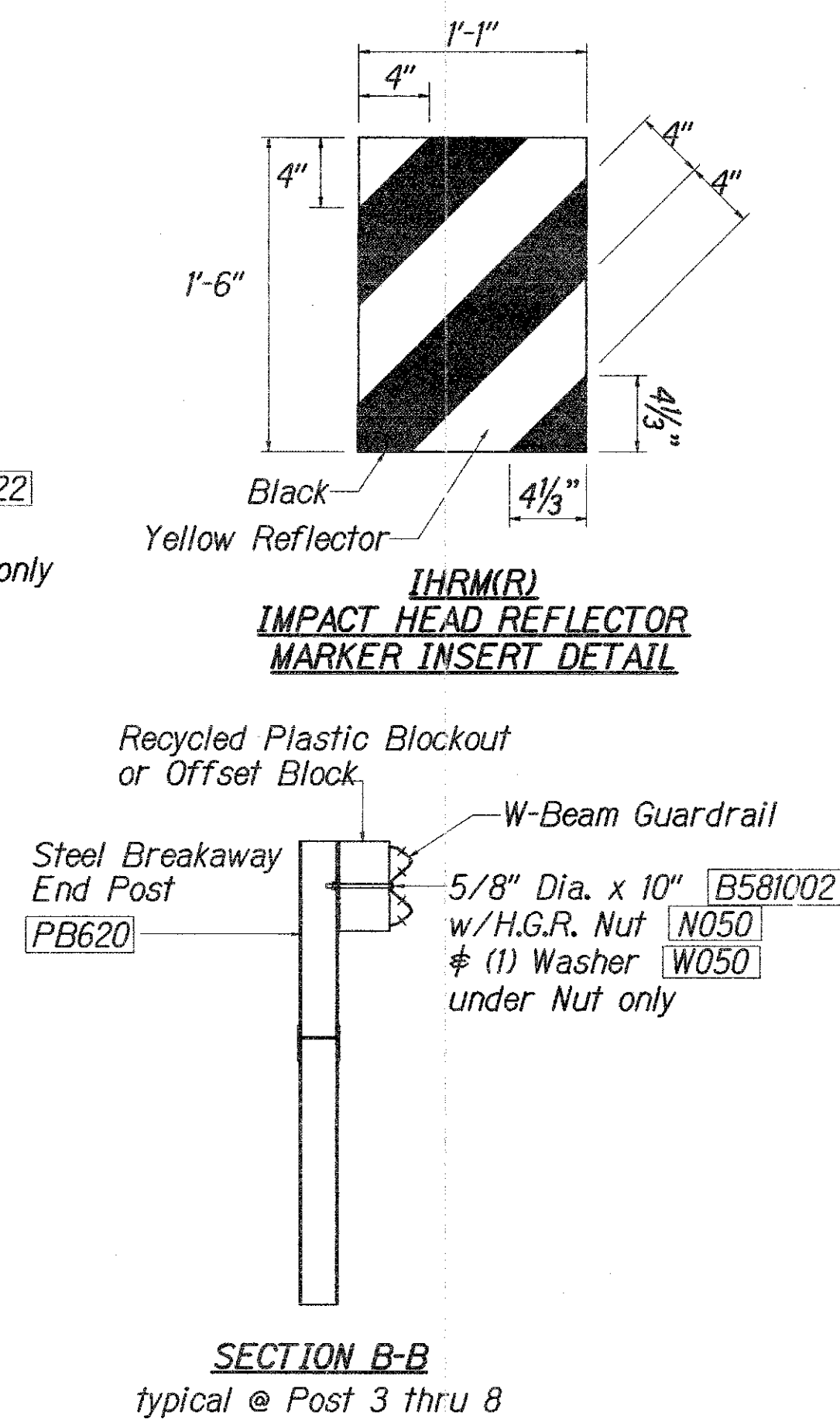
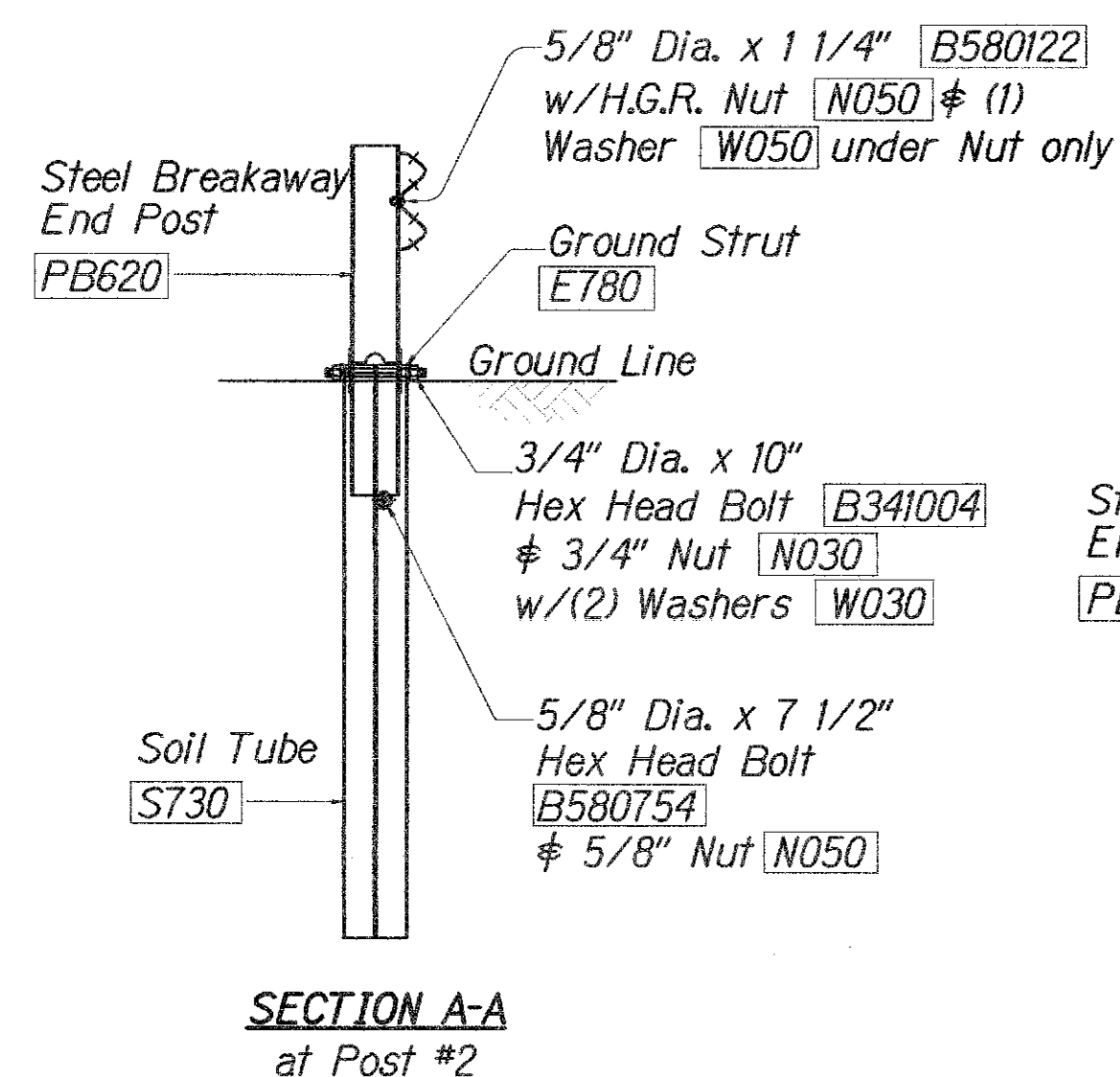
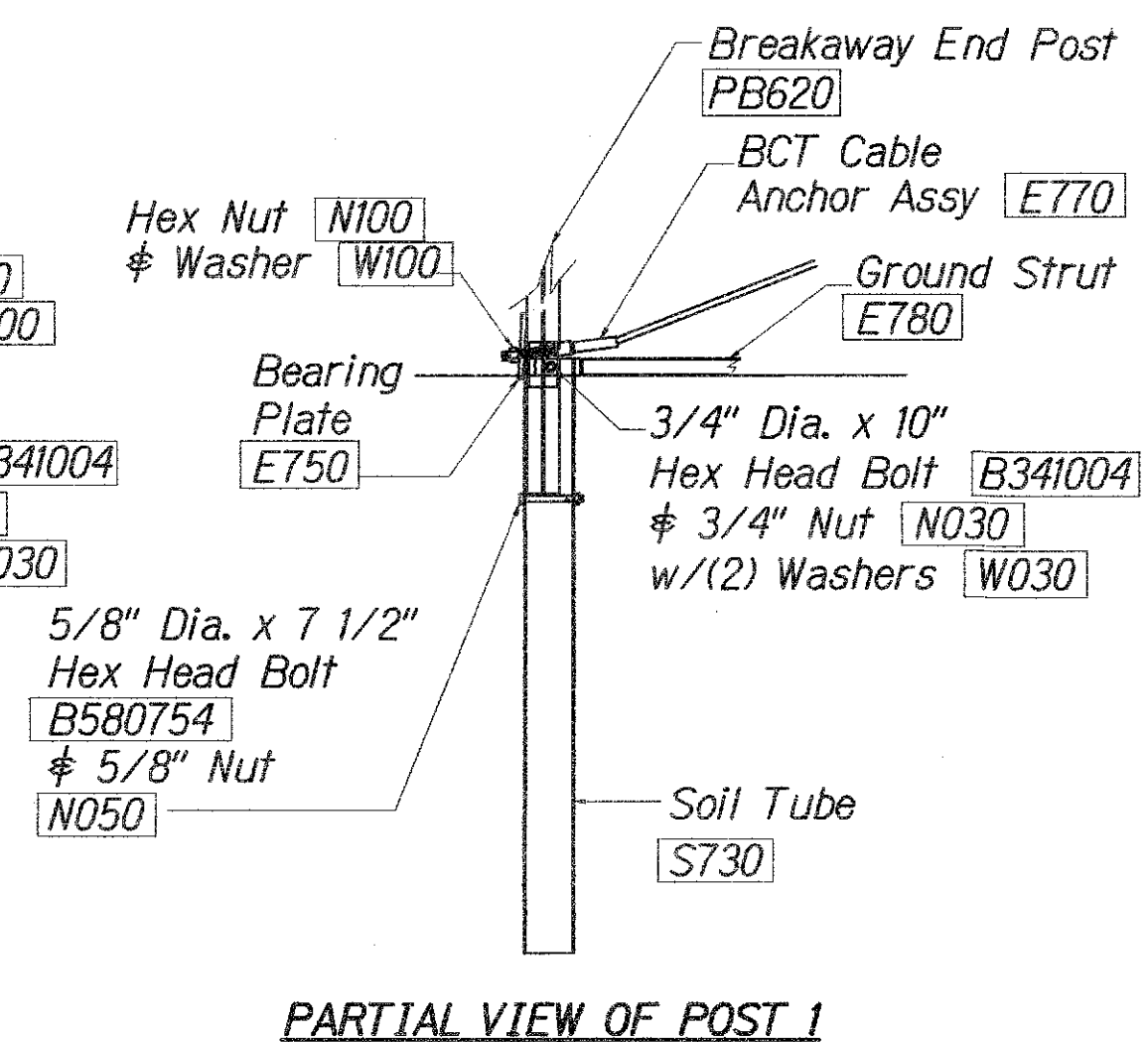
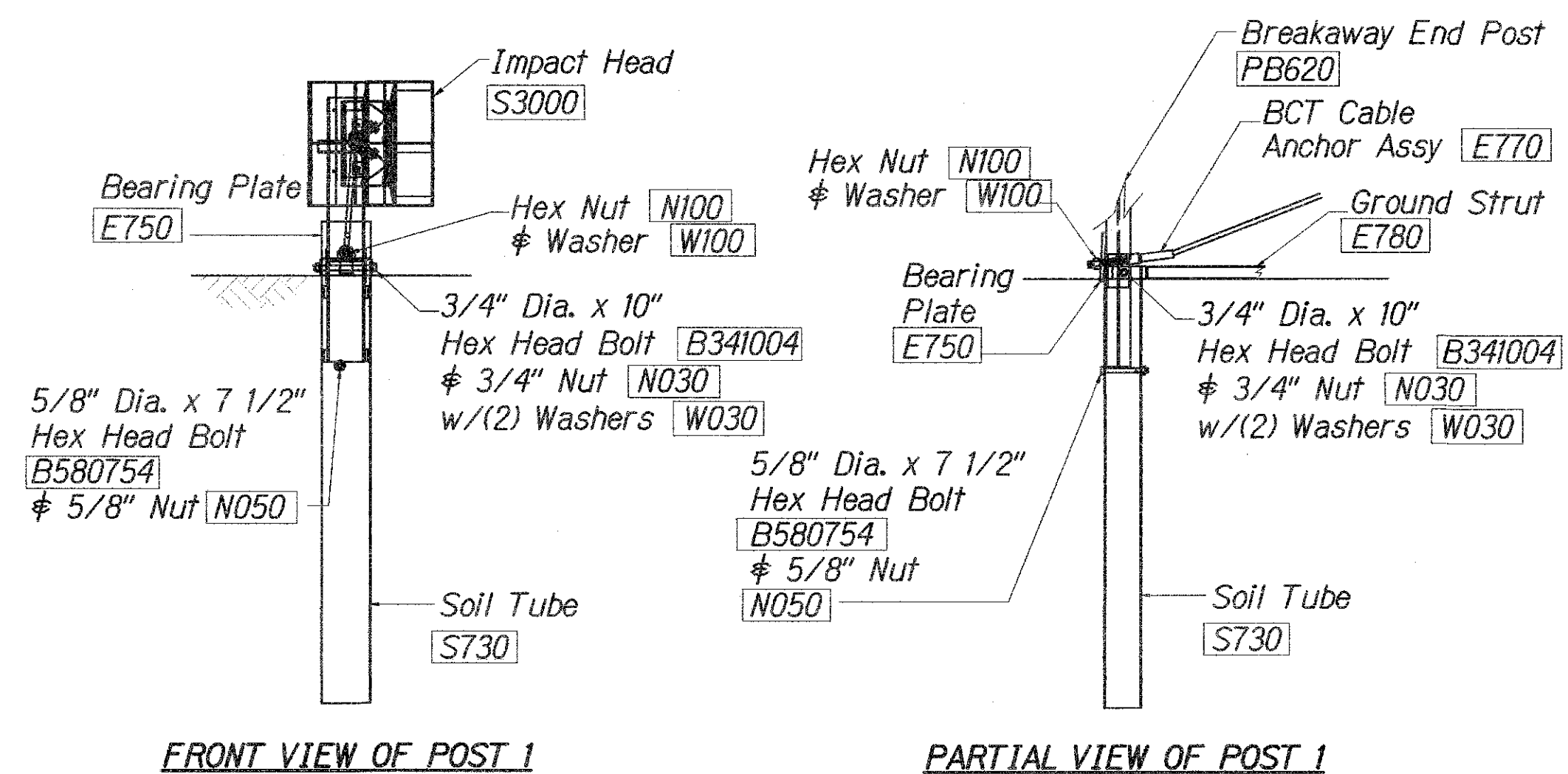
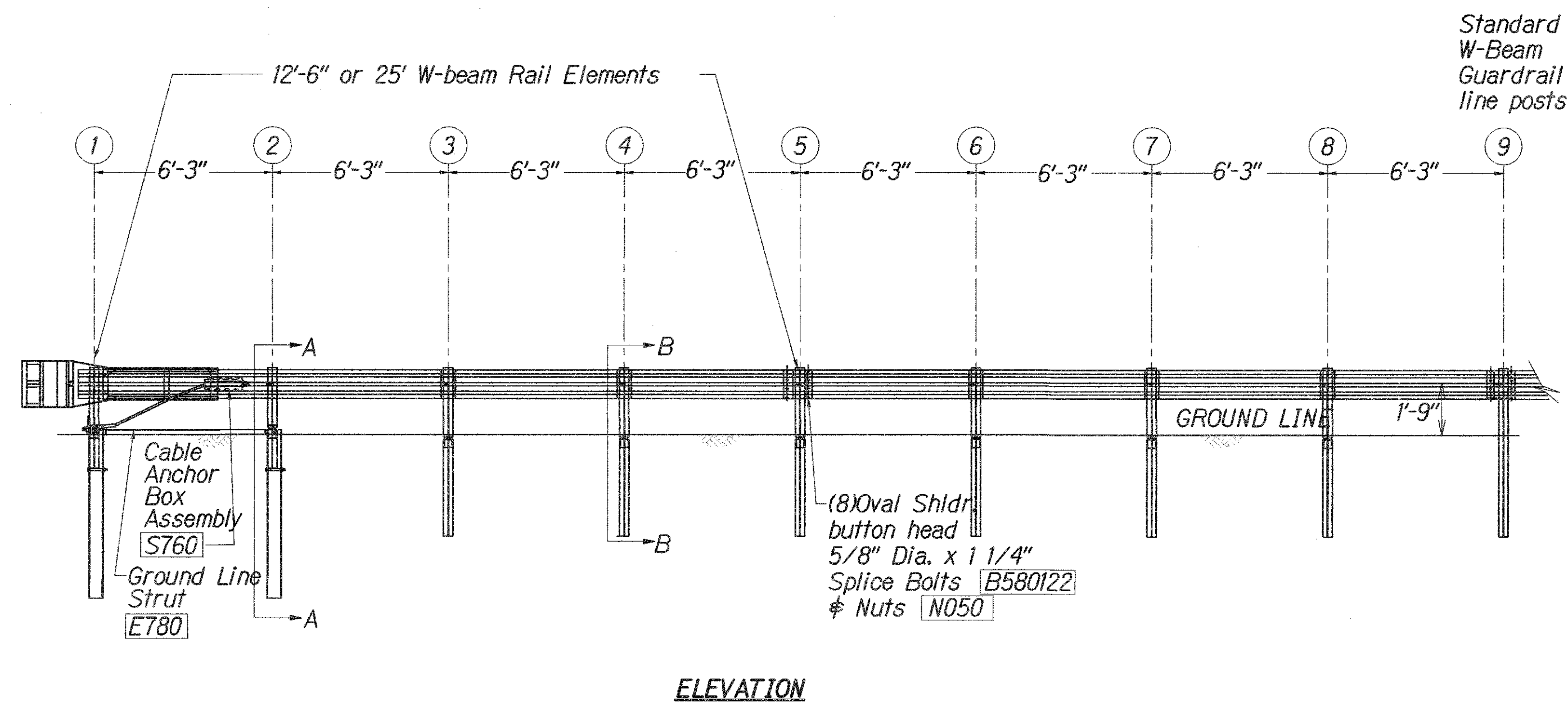
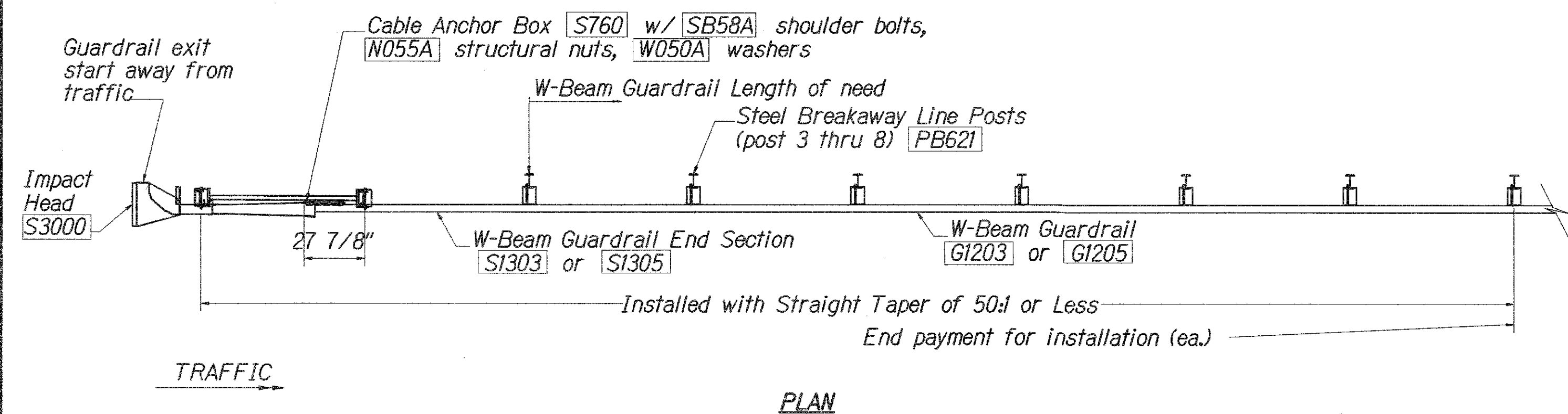
This work was prepared by me or under my supervision

Chad M. McDonald
4/30/2014
MITSUNAGA & ASSOCIATES, INC. EXP. DATE

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

ORIGINAL PLAN	DATE
DESIGNED BY	DATE
CHECKED BY	DATE
NOTED BY	DATE
NO.	

"AS-BUILT"



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" 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.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	BR-083-1(50)	2005	41	81

ITEM NO.	QTY.	BILL OF MATERIALS
S3000	1	IMPACT HEAD
SI303/SI305	1	W-BEAM GUARDRAIL END SECTION, 12 GA. 12.5' or 25'
GI203/GI205	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 - IHRMR) OR (L)
		HARDWARE
B580I22	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

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	20
	TRACED BY	21
	DESIGNED BY	22
	QUANTITIES BY	23
No.	CHECKED BY	24

CHAD M. McDONALD
★ LICENSED PROFESSIONAL ENGINEER ★
No. 9793-C
HAWAII, U.S.A.

This work was prepared
me or under my supervision

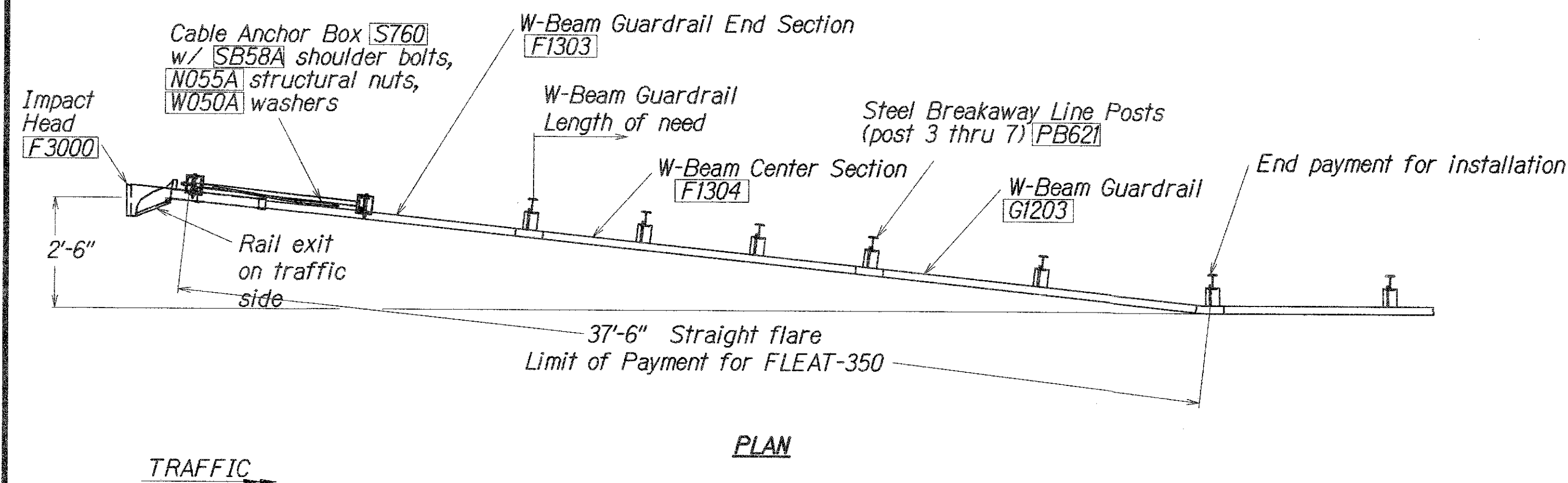
Chad M. McDonald
E

MITSUNAGA & ASSOCIATES, INC., E.C.

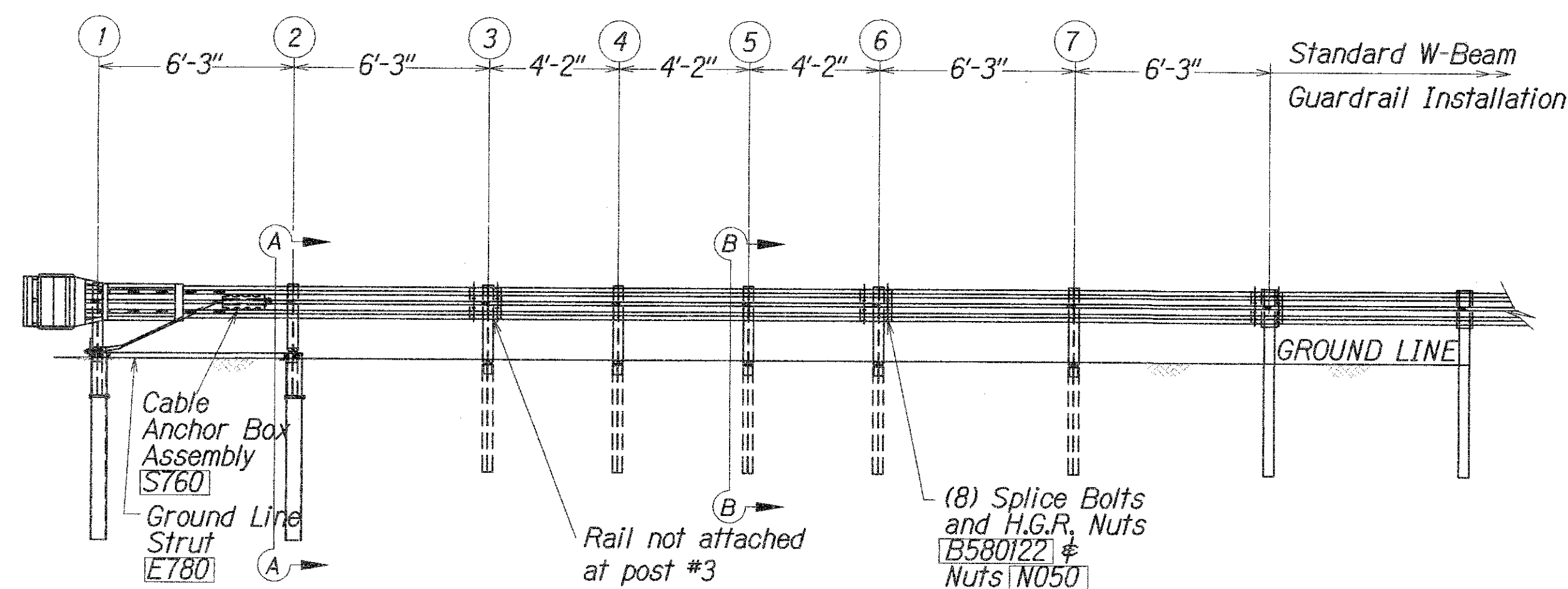
NOTE: Contractor to check and verify dimensions before proceeding with work.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SKT-350
SEQUENTIAL KINKING TERMINAL
KAMEHAMEHA HIGHWAY
REPLACEMENT OF KOKOLOLIO STREAM BRIDGE
Federal Aid Project No. BR-083-1(50)
Scale: As Noted Date: August 2004

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	BR-083-1(50)	2005	41a	81



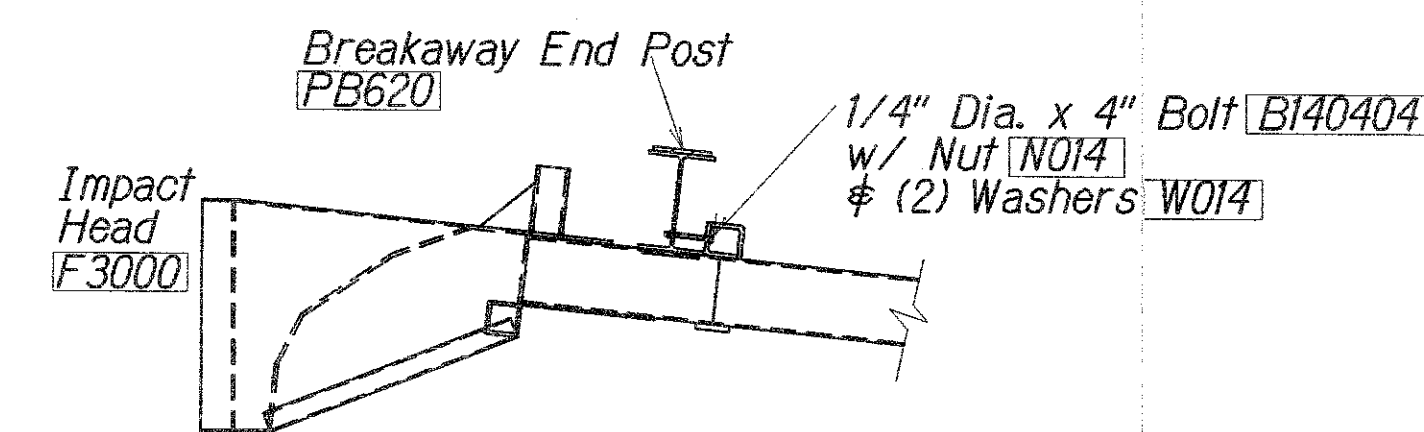
TRAFFIC



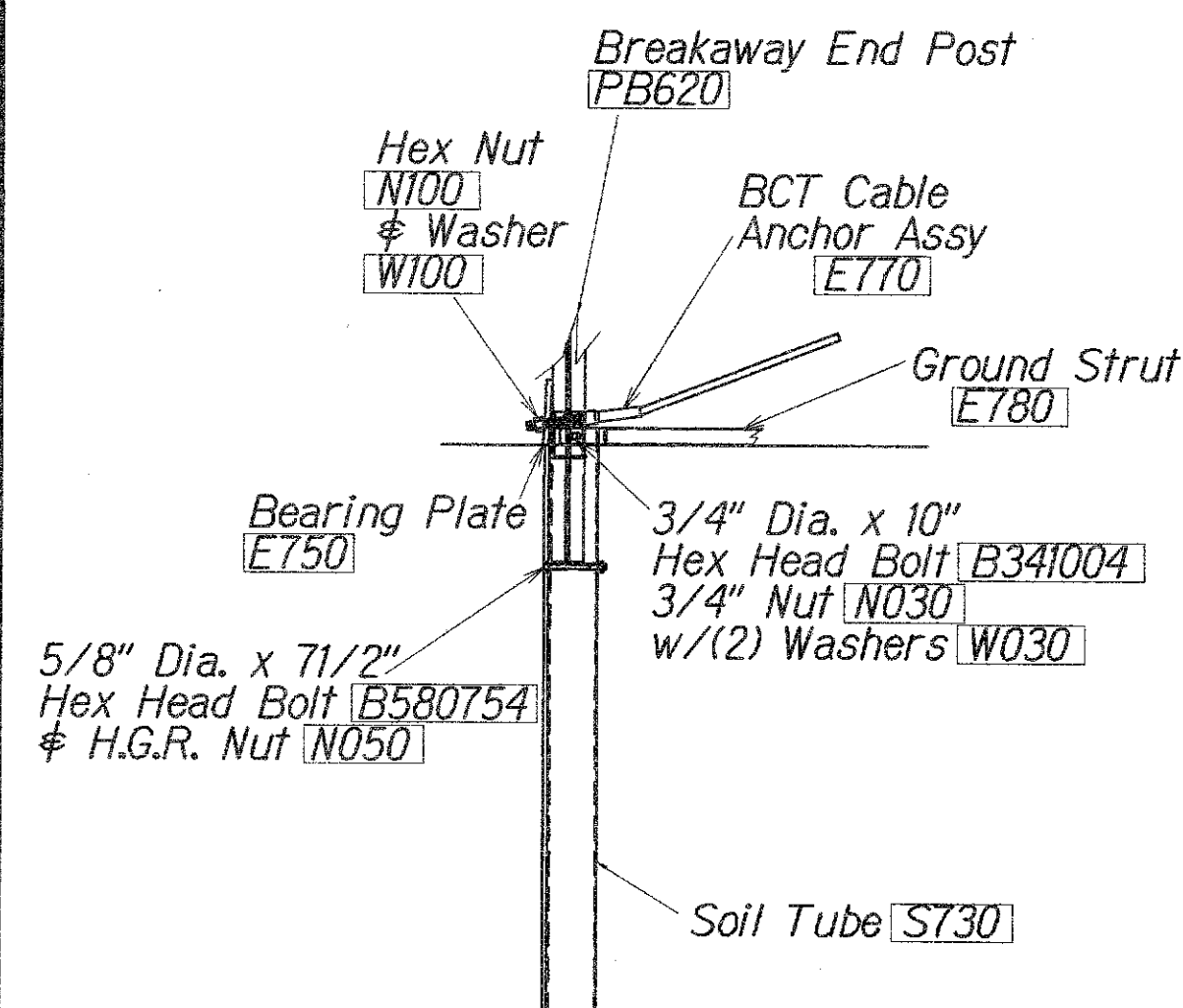
ELEVATION

GENERAL NOTES

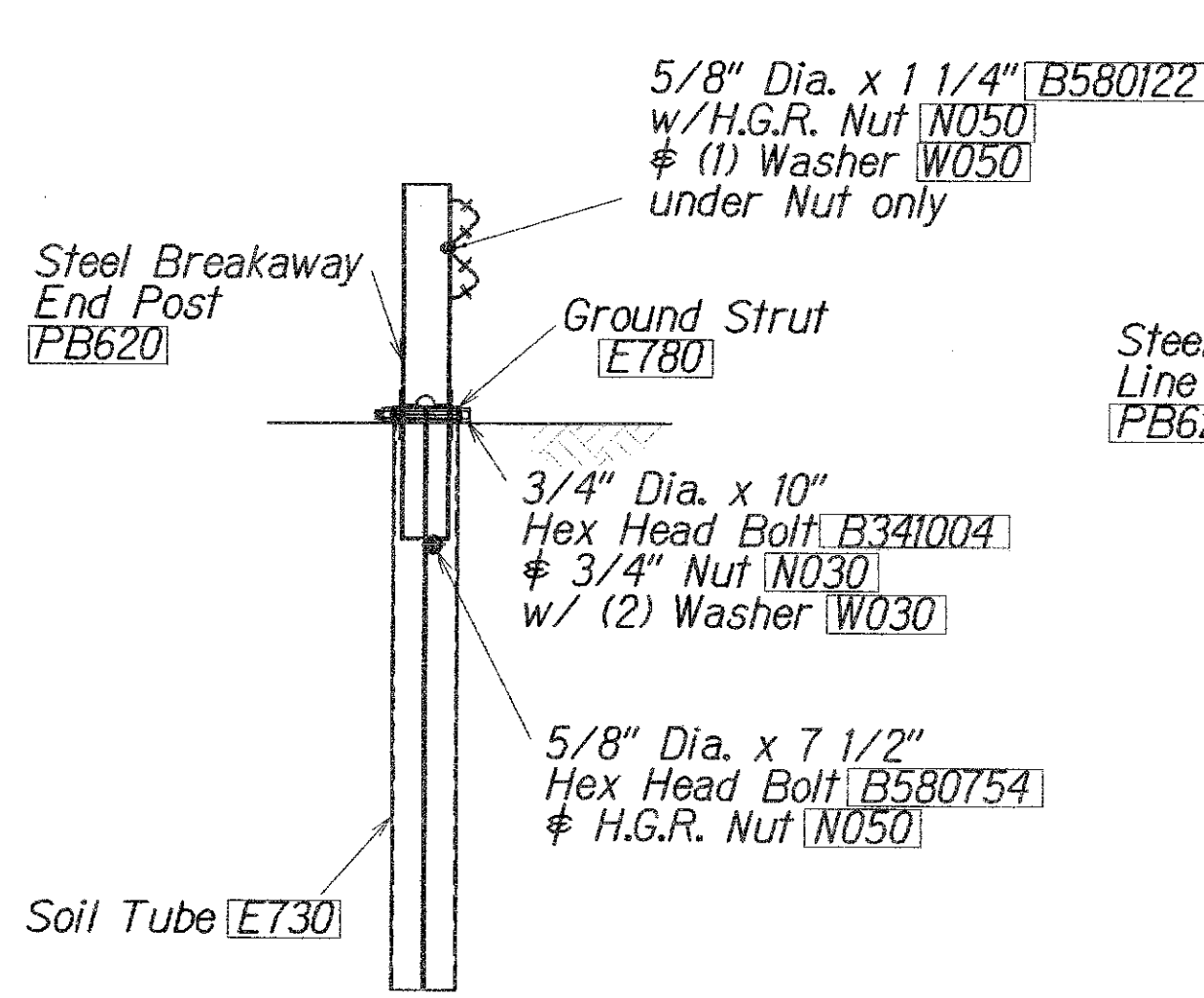
- Breakaway posts are required with the FLEAT Terminal.
- All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
- The soil tubes shall not protrude more than 4" above ground (measured along a 5' cord). Site grading may be necessary to meet this requirement.
- The soil tubes may be driven with an approved driving head. Soil tubes should not be driven with the post in the tube. If the tubes are placed in drilled holes, the backfill material must be satisfactorily compacted to prevent settlement.
- 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.
- 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.
- (R) or (L) indicates right or left Impact Head Reflector Marker (IHRM). Providing and installing of IHRM shall be considered incidental to end treatment.
- The stripes for IHRM shall slope downward at an angle of 45° towards the side of the end treatment that traffic is to pass.



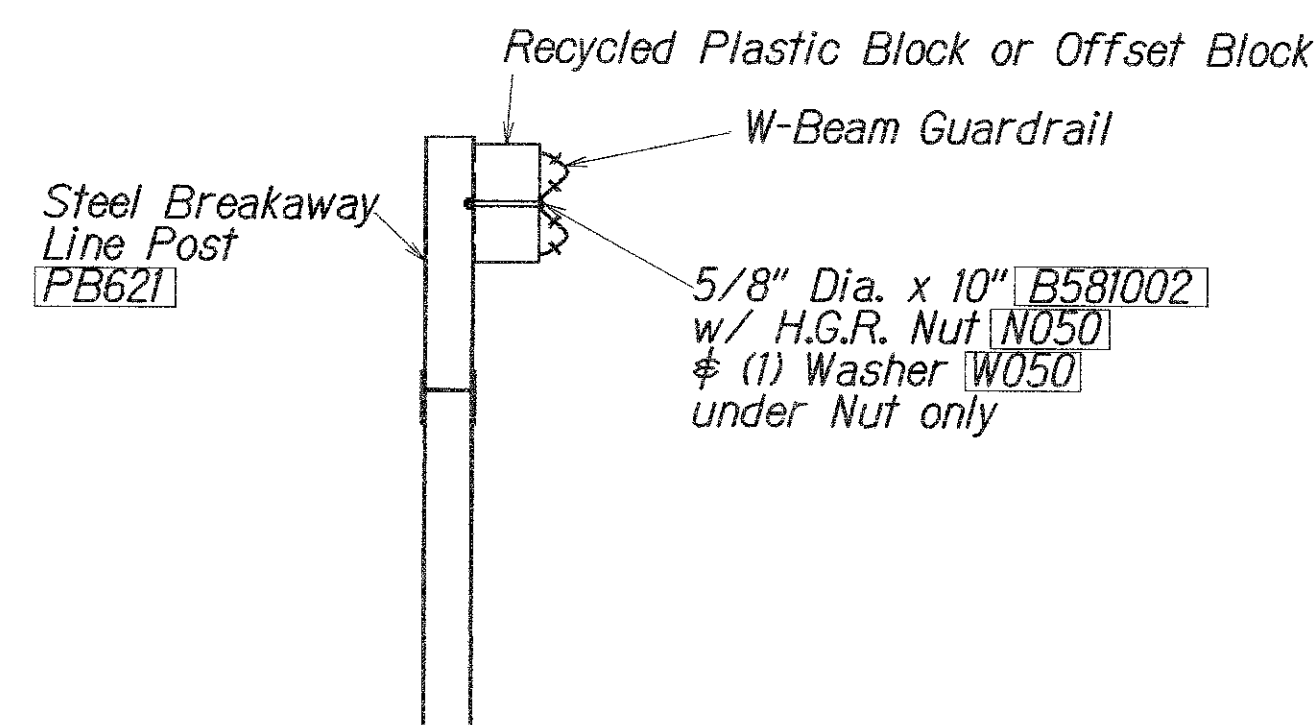
IMPACT HEAD CONNECTING DETAIL



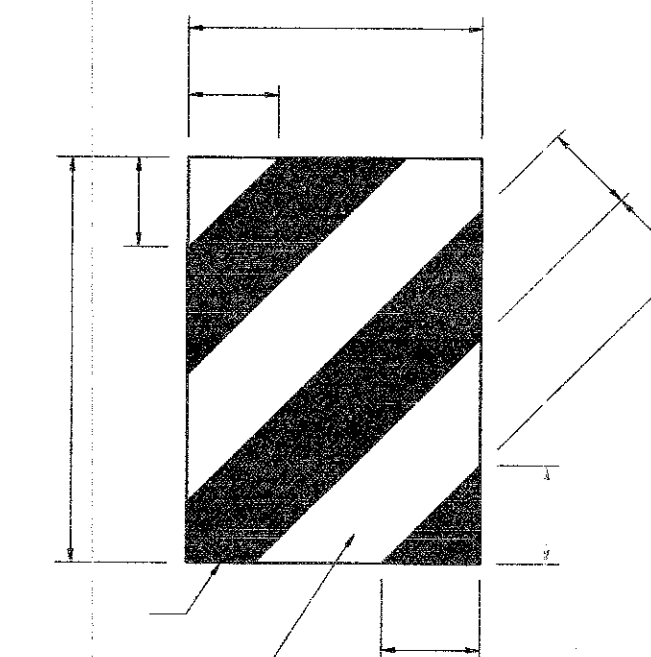
PARTIAL VIEW OF POST 1



SECTION A-A
(@ Post #2)



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

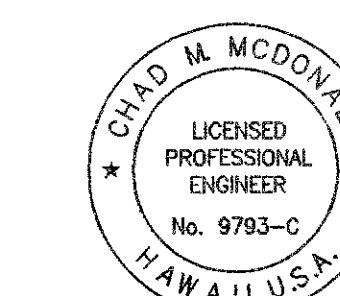


IHRM(R)
IMPACT HEAD REFLECTOR
MARKER INSERT
DETAIL

ITEM NO.	QTY	BILL OF MATERIALS
F3000	1	IMPACT HEAD
F1303	1	W-BEAM GUARDRAIL END SECTION, 12 GA.
F1304	1	W-BEAM GUARDRAIL CENTER SECTION, 12 GA.
G1203	1	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 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

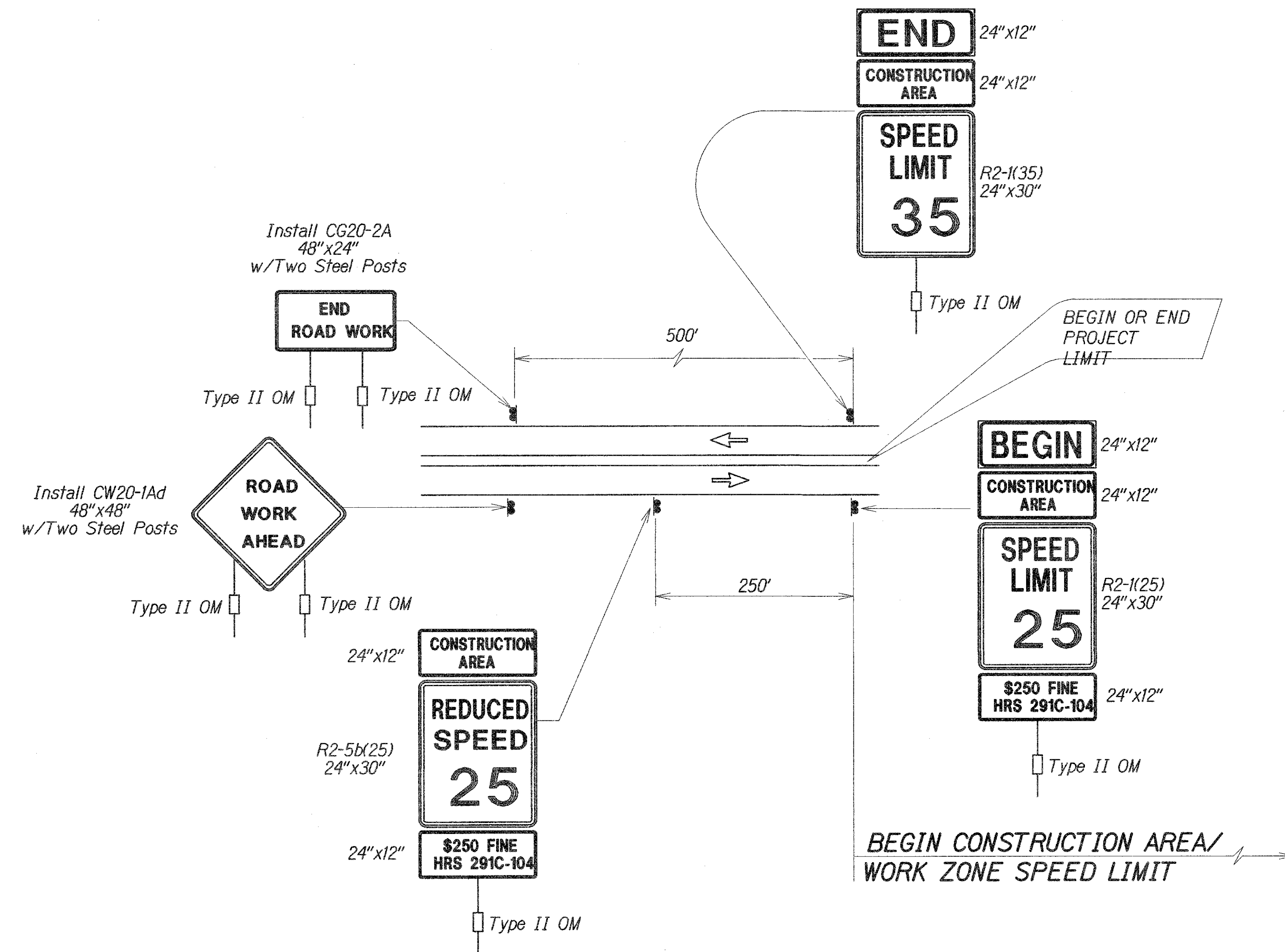


This work was prepared by me or under my supervision

Chad M. McDonald
4/30/2014
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
KAMEHAMEHA HIGHWAY
REPLACEMENT OF KOKOLOLO STREAM BRIDGE
Federal Aid Project No. BR-083-1(50)
Scale: As Noted Date: August 2004
SHEET No. C-39A OF 51 SHEETS

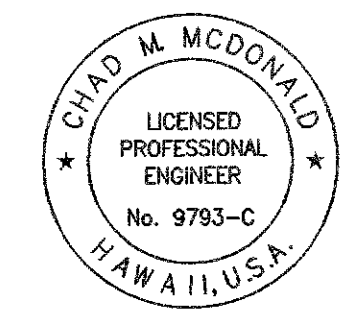
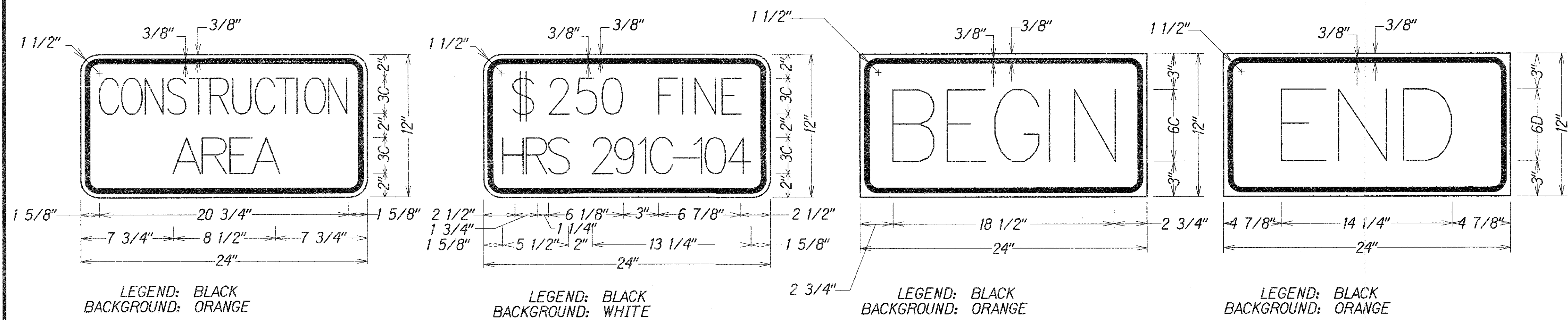
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	BR-083-1(50)	2005	42	81



Work Zone Note:

1. This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Special Provisions.
2. All existing regulatory speed limit signs with posts within the work zone/project limits shall be removed and replaced with work zone speed limit sign assemblies (R2-1(XX) and R2-5b(XX)) with "CONSTRUCTION AREA" and "\$250 FINE HRS 291C-104" Supplemental Signs.
3. Construction sign assemblies shall be installed on both the approaching and trailing ends of each work zone as shown on this plan.
4. Each construction warning sign shall have a minimum of two (2) Type II OM. Each work zone speed limit assembly shall have a minimum of one (1) Type II OM. Installation of each Type II OM shall be considered incidental to Items No. 621.7100, Construction Sign with Posts and 621.7120, Construction Sign with Two Posts.
5. Upon the completion of all physical work or as directed by the Engineer, all construction signs and work zone speed limit assemblies shall be removed. All speed limit signs and posts that were existing at the start of the project within the work zone/project limits shall be restored back to their original locations and configurations.
6. Placement of construction signs shall not obstruct the path of pedestrians and bicyclists.
7. The removal and restoration of existing regulatory speed limit signs shall be considered incidental to Item No. 621.7100, Construction Sign With Posts.
8. The installation, maintenance and removal of work zone speed limit sign assemblies shall be paid for separately under Item No. 621.7100, Construction Sign with Posts. All other attached signs shall be paid under Item No. 621.7000, Construction Signs.
9. The work zone speed limit signs shall be new and become the property of the State.

TYPICAL DETAIL FOR CONSTRUCTION SIGNS



This work was prepared by me or under my supervision
Chad M. McDonald
4/30/2014
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
WORK ZONE SIGNING PLAN,
NOTES AND DETAILS
KAMEHAMEHA HIGHWAY
REPLACEMENT OF KOKOLOLO STREAM BRIDGE
Federal Aid Project No. BR-083-1(50)
Scale: As Noted Date: August 2004
SHEET No. **C-40** OF **51** SHEETS

ORIGINAL PLAN	DATE
TRACED BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	