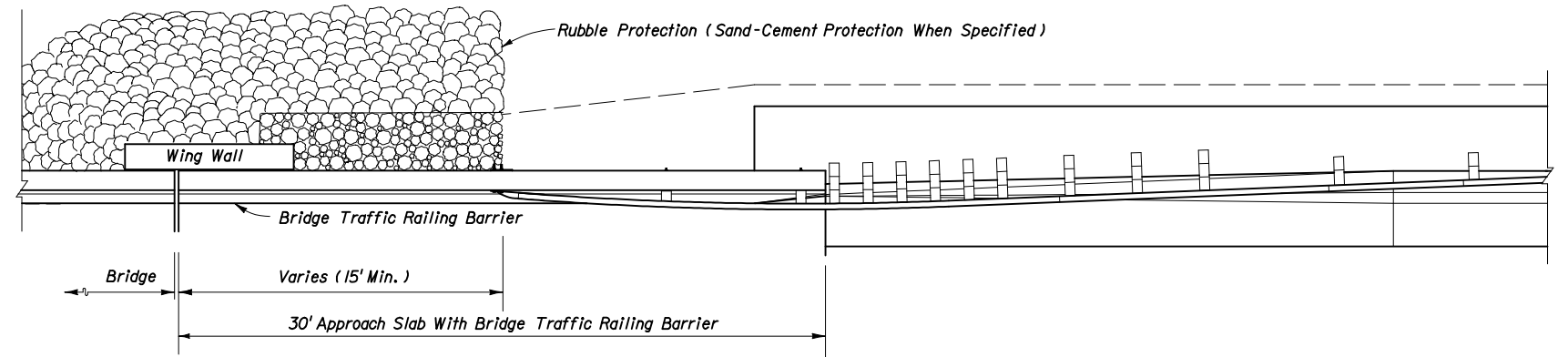
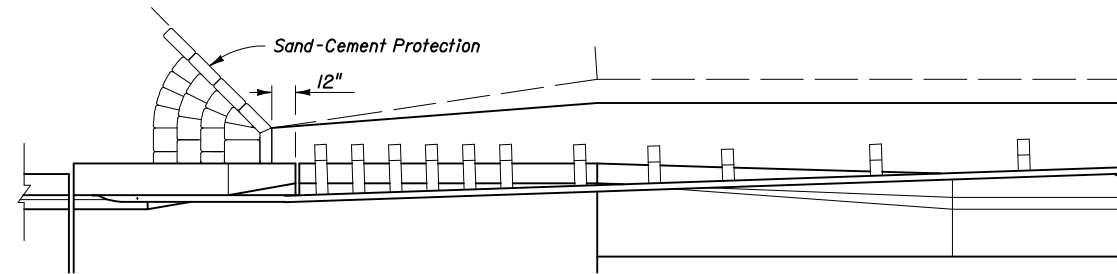


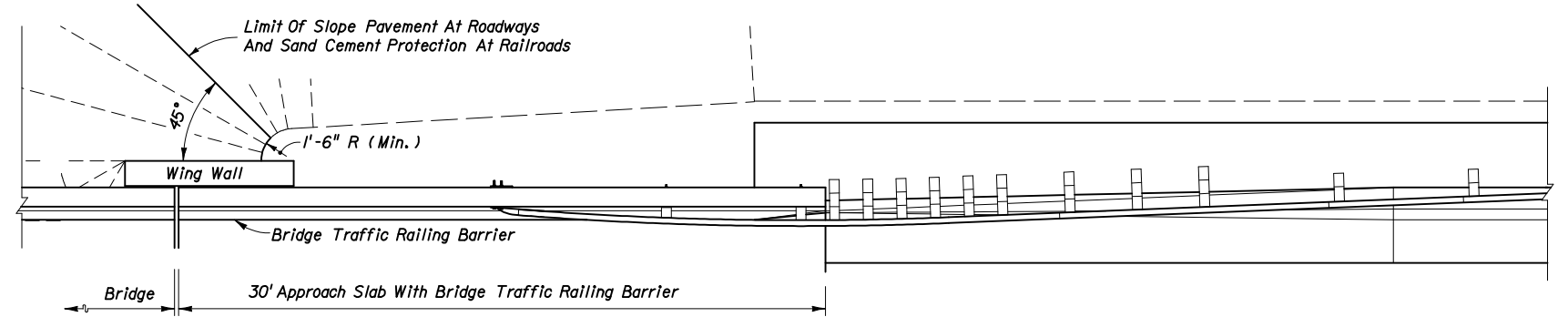
BRIDGES OVER STREAMS



BRIDGES OVER STREAMS



BRIDGES OVER RAILROADS



BRIDGES OVER ROADWAYS OR RAILROADS

For Additional Information See Index No. 402

SKETCHES - BRIDGES WITH SAFETY SHAPE TRAFFIC RAILING BARRIER EXTENDING LESS THAN FULL APPROACH SLAB LENGTH

For Additional Guardrail Information See Sheet 12

SKETCHES - BRIDGES WITH SAFETY SHAPE TRAFFIC RAILING BARRIER EXTENDING FULL APPROACH SLAB LENGTH

SKETCH NOTES

1. These sketches are for showing shoulder interface between roadways and bridges where crossings are normal to other roadways, railroads and streams. For site specific applications and details see the plans and the FDOT Structures Design Office "Detailing Manual" and "Design Guidelines".
2. Shoulder treatments shown in these sketches are for locations with shoulder gutter; shoulder hinge location will vary for facilities without shoulder gutter.

SHOULDER INTERFACE BETWEEN ROADWAYS AND BRIDGES



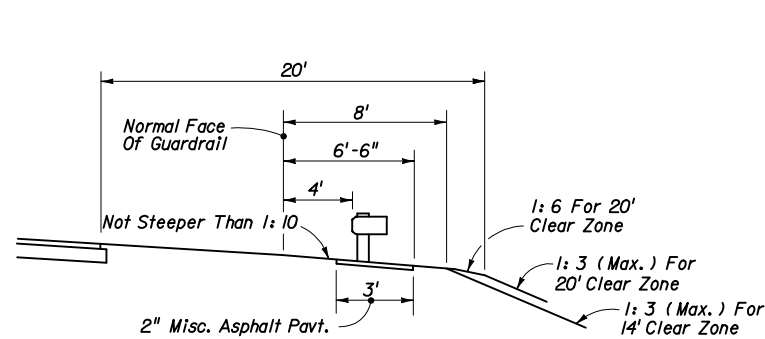
2006 FDOT Design Standards

GUARDRAIL

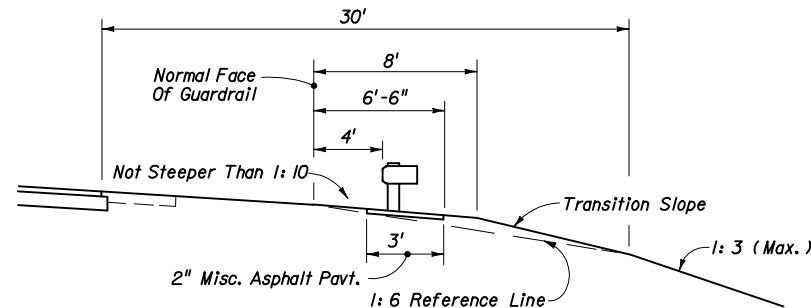
Last Revision
04

Sheet No.
13 of 23

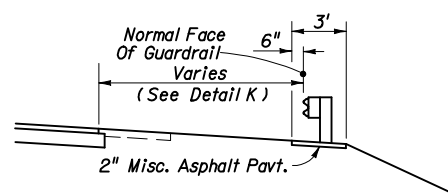
Index No.
400



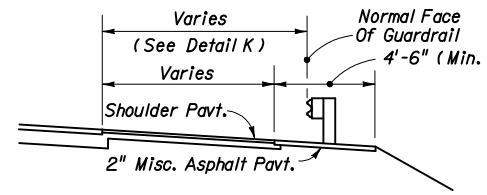
SECTION AA (EXAMPLE FOR 20' CLEAR ZONE)



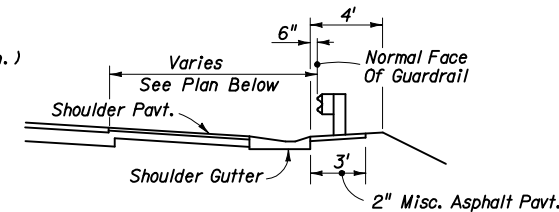
SECTION AA (EXAMPLE FOR 30' CLEAR ZONE)



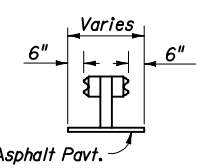
SHOULDER WITH OR WITHOUT 5' PAVEMENT



PAVED SHOULDERS

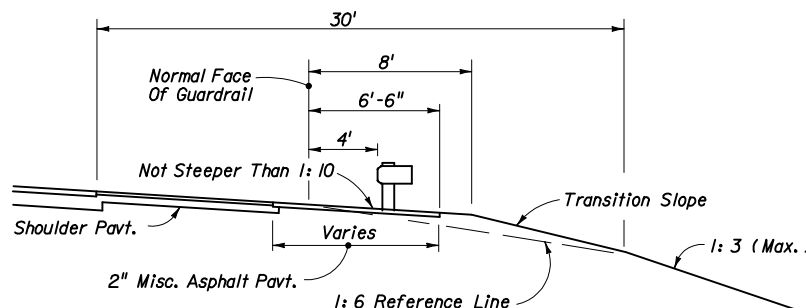


SHOULDER GUTTER

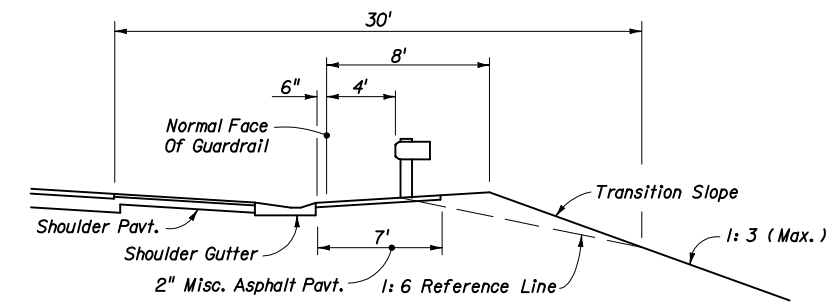


DOUBLE FACE RAIL

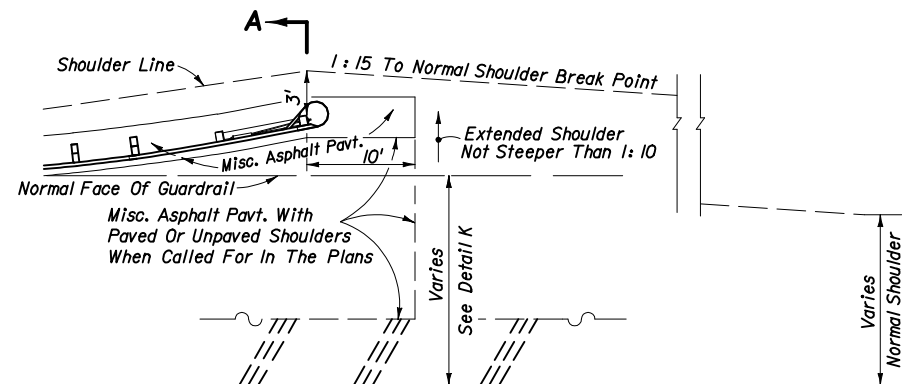
MISCELLANEOUS PAVING FOR STANDARD GUARDRAIL SECTIONS



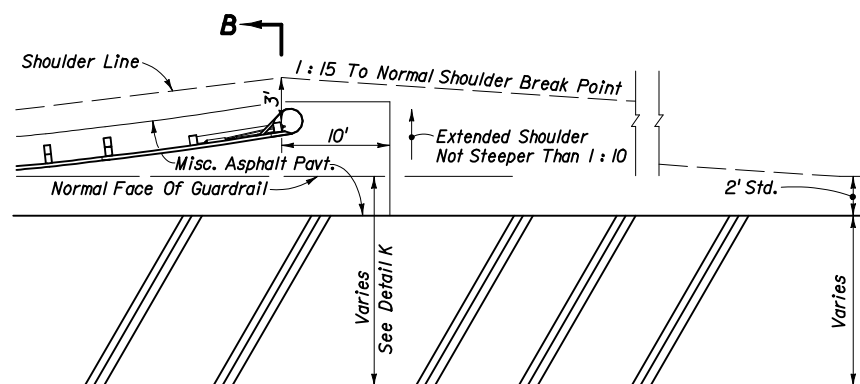
SECTION BB (EXAMPLE FOR 30' CLEAR ZONE)



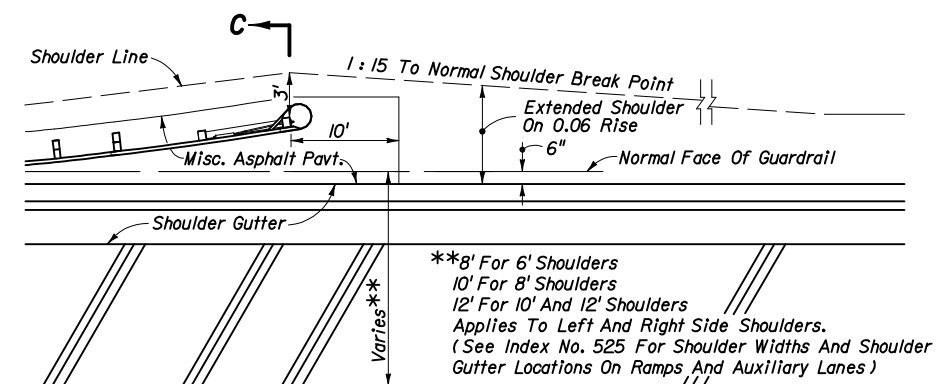
SECTION CC (EXAMPLE FOR 30' CLEAR ZONE)



SHOULDER WITH OR WITHOUT 5' PAVEMENT

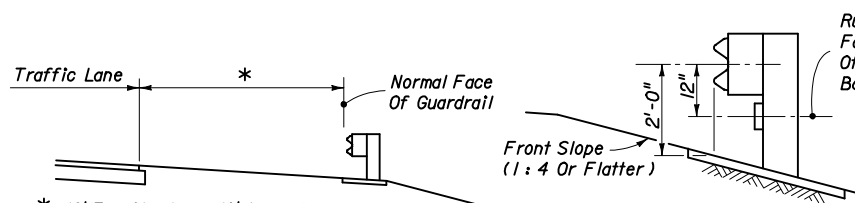


PAVED SHOULDERS



SHOULDER GUTTER

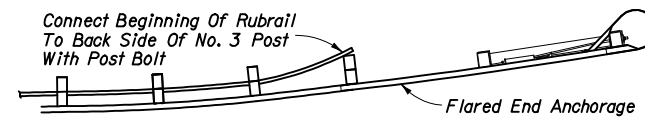
SHOULDERS, SLOPES AND MISCELLANEOUS PAVING FOR FLARED END ANCHORAGE ASSEMBLIES



* 12' For Shoulders 10' And Wider;
8' For Median Shoulders 8' Or Less In Width; and,
Shoulder Width Plus 2' For All Others Shoulders.

STANDARD LOCATIONS

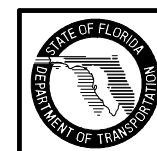
Rubrail (C6 x 8.2, Plates And Fastners or Bent Plate And Fastners In Accordance With Standards RLR01 And RERO1 Of AASHTO-AGC-ARTBA "A Guide To Standardized Highway Barrier Hardware")



LOCATIONS ON FRONT SLOPES

GUARDRAIL LOCATION-DETAIL K

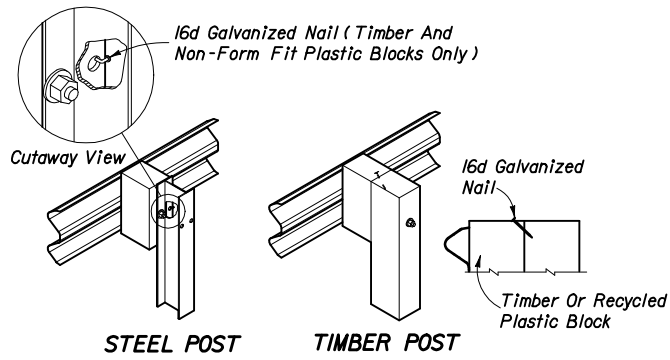
LATERAL PLACEMENT ON FRONT SLOPES (FROM EDGE OF TRAFFIC LANE)			
SLOPE	NOT RECOMMENDED	ACCEPTABLE WITH RUBRAIL	Notes:
4:1	14' to 27'	28' to 45'	For shoulders less than 12' in width the tabulated values will be reduced by the difference between 12' and the shoulder width. Placement of guardrail on front slopes steeper than 4:1 not recommended. Cost of rubrail to be included in the contract unit price for guardrail.
5:1	15' to 25'	26' to 45'	
6:1	17' to 22'	23' to 45'	
7:1	21' to 24'	25' to 45'	
8:1	Acceptable to 25'	26' to 45'	
9:1	Acceptable to 26'	27' to 45'	
10:1	Acceptable to 27'	28' to 45'	



2006 FDOT Design Standards

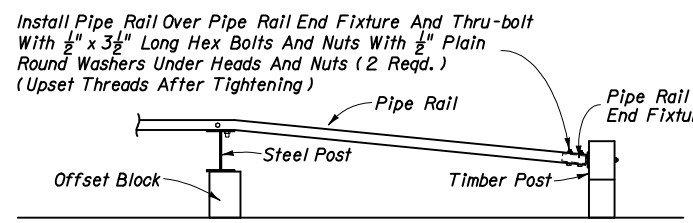
GUARDRAIL

Last Revision 07/01/05
Sheet No. 14 of 23
Index No. 400



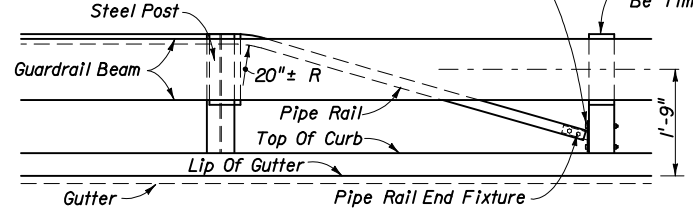
16d NAIL FOR PREVENTION OF OFFSET BLOCK ROTATION

Install Pipe Rail Over Pipe Rail End Fixture And Thru-bolt With $\frac{1}{2}$ " x $3\frac{1}{2}$ " Long Hex Bolts And Nuts With $\frac{1}{2}$ " Plain Round Washers Under Heads And Nuts (2 Reqd.) (Upset Threads After Tightening)

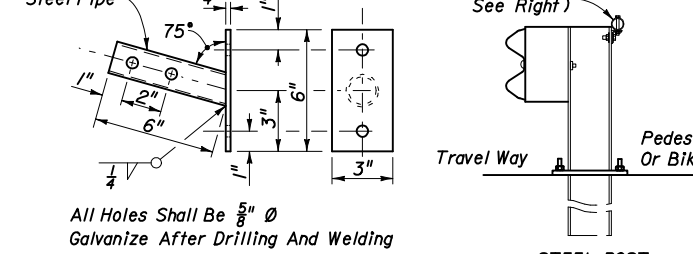


PLAN

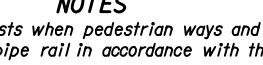
Attach Pipe Rail End Fixture To Post With $\frac{1}{2}$ " x 7" Long Hex Bolts And Nuts With $\frac{1}{2}$ " Plain Round Washers Under Heads And Nuts (2 Reqd.) (Upset Threads After Tightening)



ELEVATION



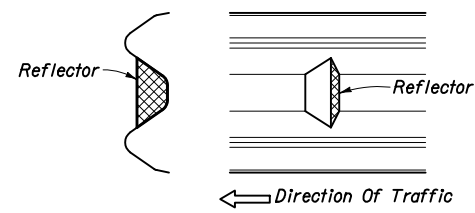
PIPE RAIL END FIXTURE



STEEL POST SECTION

- NOTES**
- Pipe Rail required on steel guardrail posts when pedestrian ways and bikeways are located 4' or less from back of the posts. Begin and end the pipe rail in accordance with this detail.
 - When guardrails with timber posts are located with the back of posts 4' or less from the near edge of the pedestrian way or bikeway, the bolt ends will require one of the following treatments:
 - Trimming back flush with the face of nut and metalizing or
 - Use of post bolts 15" in length with the washers and nuts counter sunk into sinks 1" to $1\frac{1}{2}$ " deep or
 - Use of post bolts 15" in length with sleeve nuts and washers.
 - The cost for Pipe Rail, mounting components and installation shall be included in the contract unit price for guardrail. Bolt end treatment for timber post shall be included in the contract unit price for guardrail.

**FOR LOCATIONS USED BY PEDESTRIANS OR CYCLISTS
PEDESTRIAN SAFETY TREATMENTS**

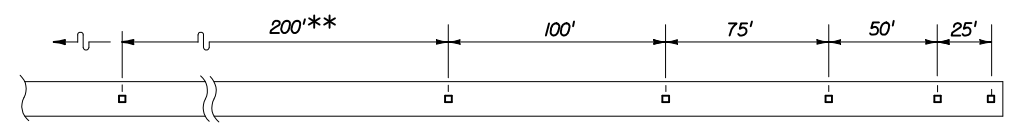


REFLECTOR MOUNTING

Reflectors shall be centered in the channel of W-beam and in the top channel of thrie-beam.

REFLECTOR NOTES

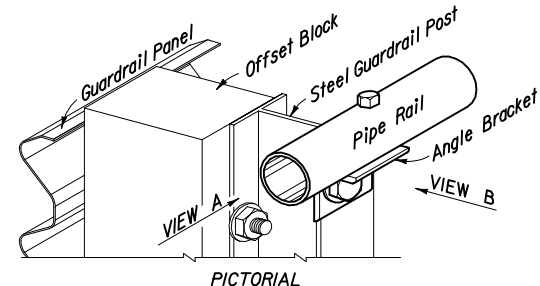
- Reflectors shall conform to Section 993 of the Standard Specifications.
- Reflector color (white or yellow) shall conform to the color of the near lane edgeline.
- Face of rail bolt, screw, rivet or bracket mounted reflectors shall not be used in lieu of adhesive mounted reflectors.
- Post mounted reflectors approved on the 'Qualified Products List' may be used by FDOT Maintenance to replace damaged or missing reflector in a continuous run of existing post mounted reflectors. Adhesive and post mounted reflectors shall not be intermixed in a continuous run of guardrail.
- The cost for reflectors shall be included in the contract unit price for Guardrail.



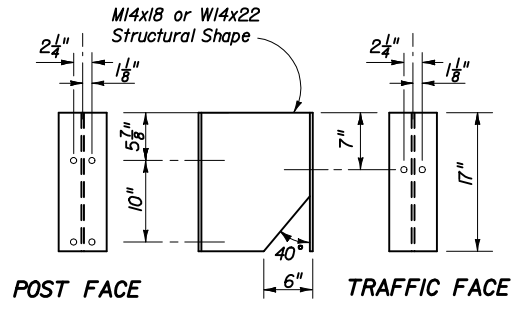
Note: Adjustment in spacing may be required to fit exact guardrail lengths as directed by the Engineer. For minimum installations (length 62.5') provide one reflector at each end and at approximate center.

**For curves greater than 2° the spacing shall be reduced to 100' through the curve.

**REFLECTOR SPACING
ADHESIVE REFLECTORS-DETAIL M**

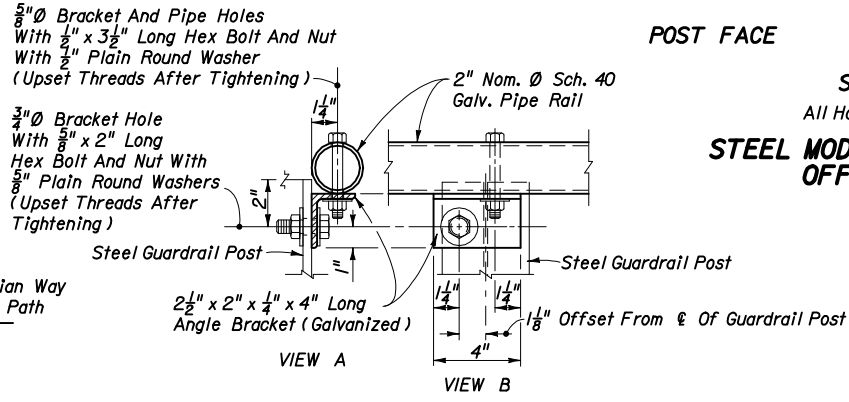


PICTORIAL

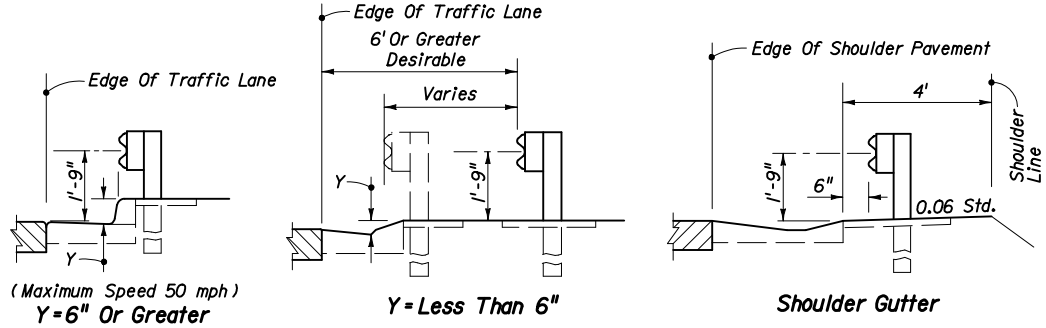


SIDE VIEW

**STEEL MODIFIED THRIE-BEAM
OFFSET BLOCK**



PIPE RAIL MOUNTING



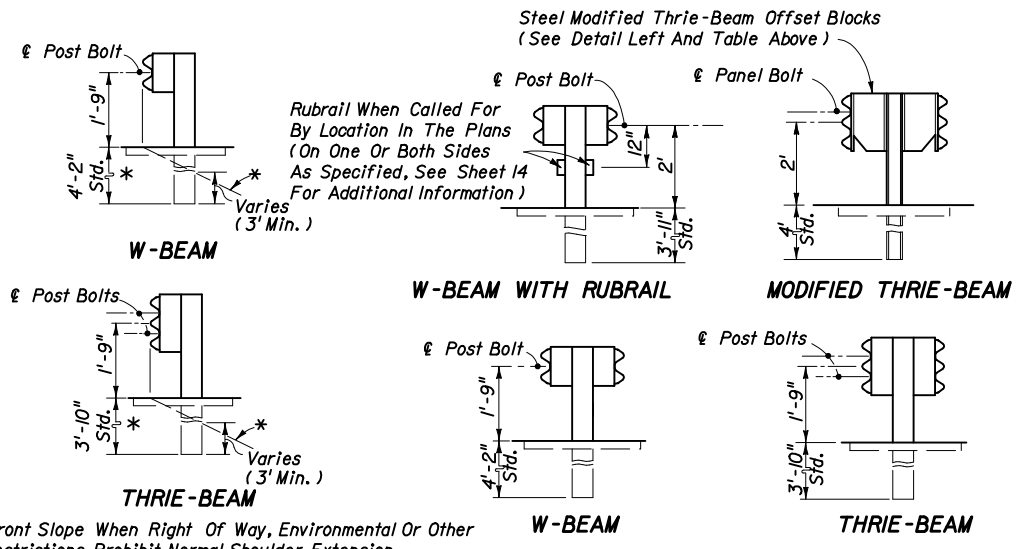
LOCATION AT CURB & GUTTER SECTIONS-DETAIL L

POSTS	OFFSET BLOCKS	REMARKS
Timber	Timber 6" x 8" x 14" (Nominal) For W-Beam And 6" x 8" x 22" (Nominal) For Thrie-Beam Recycled Plastic (See Notes)	Post bolt hole in timber and plastic blocks to be centered ($\pm\frac{1}{4}$ "). All timber offset blocks shall be dressed on all four sides (S4S). One 16d galvanized nail per block is to be used to prevent rotation of block (see detail left).
Steel W6x8.5, W6 x 9 Or 6" C	Timber 6" x 8" x 14" (Nominal) For W-Beam And 6" x 8" x 22" (Nominal) For Thrie-Beam Recycled Plastic (See Notes)	Same as above for timber and plastic blocks except that form fit plastic block holes align with holes in steel posts and do not require nails.
Steel W6x8.5, W6 x 9 Or 6" C	W14 x 22 x 17" (M14 x 18 x 17") (Steel Modified Thrie-Beam)	$\frac{5}{8}$ " ϕ x $1\frac{1}{2}$ " long hex head bolts with full length thread and nuts (2 Reqd.) and $\frac{3}{8}$ " plain round washers (4 Reqd.) for mounting steel block to post. Bolts are to be installed in opposite holes, top and bottom.

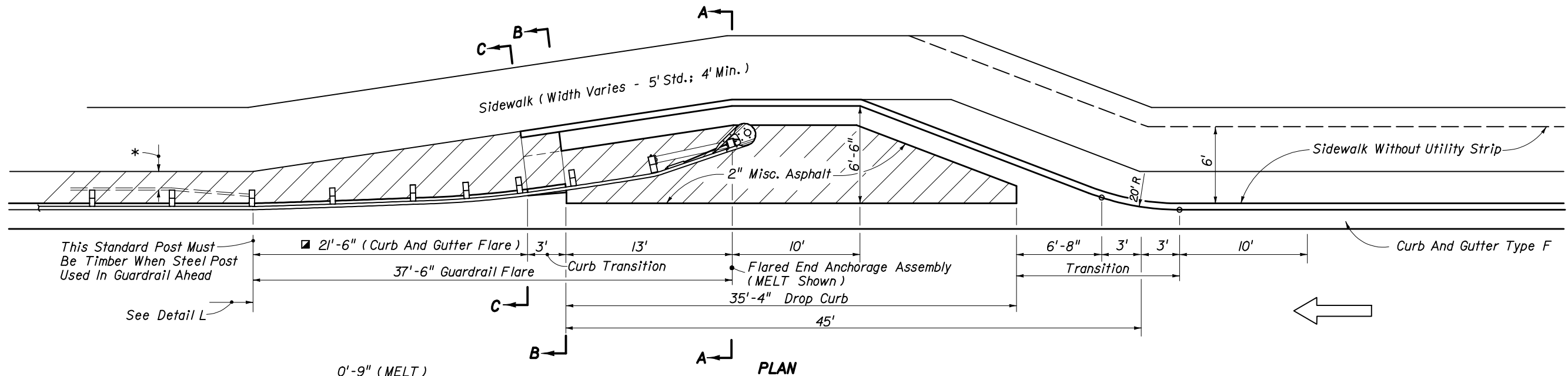
Notes: 1. Timber and recycled plastic offset blocks of identical size and shape can be intermixed within a run of rail.

2. Recycled plastic offset blocks shall meet the passing evaluation criteria for Test Level 3 of NCHRP 350. The blocks shall be tested as a component in a semi-rigid guardrail test article under full scale crash test conditions. The blocks shall be in conformance with Sections 536 and 972 of the Specifications and be included on the Qualified Products List. W-Beam blocks shall be 14" in height and thrie-beam blocks shall be 22" in height. The blocks shall be capable of providing a 7 $\frac{1}{2}$ " (Min.) offset.

PERMISSIBLE POST AND OFFSET BLOCK COMBINATIONS



MOUNTING HEIGHTS ON SHOULDERS AND IN MEDIANS

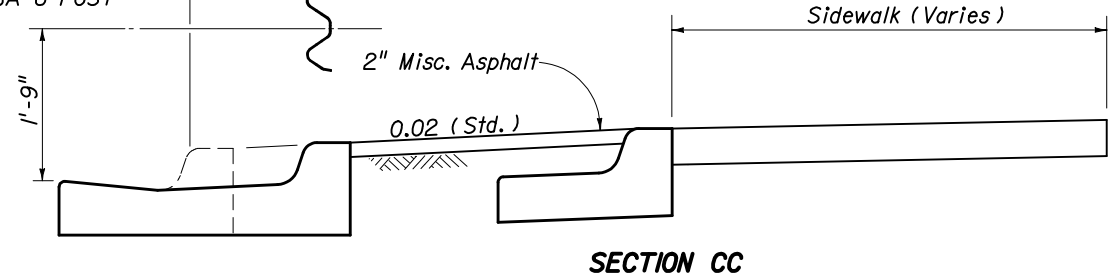


*Safety pipe rail is required when the back of steel guardrail posts are 4' or less from the near edge of a pedestrian way or bikeway and post bolt treatment is required when the back of timber posts are 4' or less from the near edge of a pedestrian way or bikeway; see 'PEDESTRIAN SAFETY TREATMENTS'.

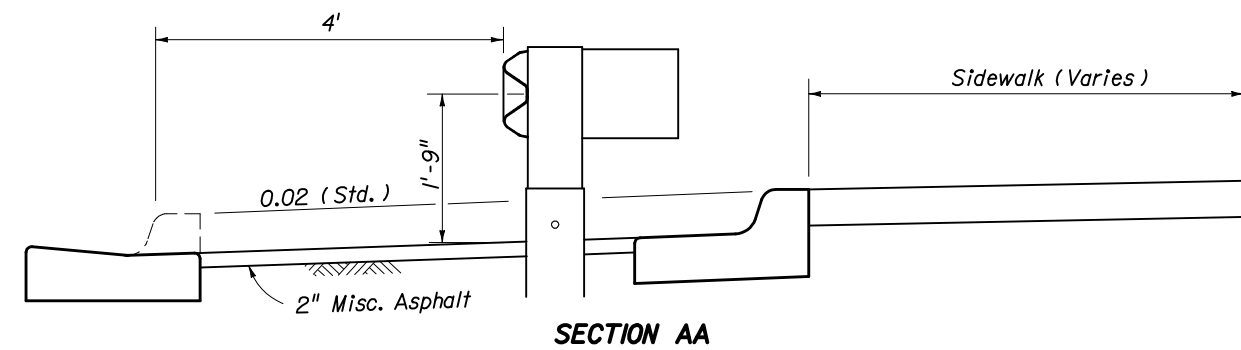
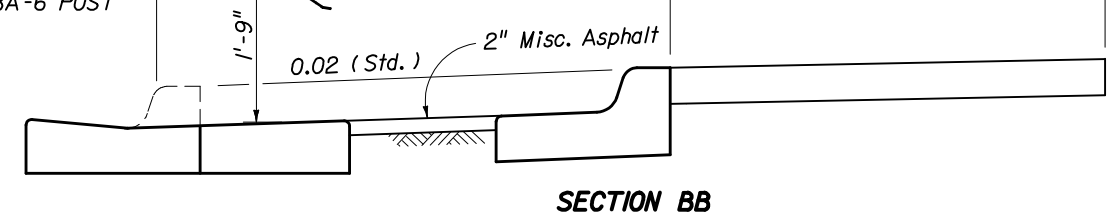
Curb flare shall follow guardrail flare, see elsewhere in this Index for additional guardrail flare information.

Note: For Proprietary End Treatments See the Qualified Products List.

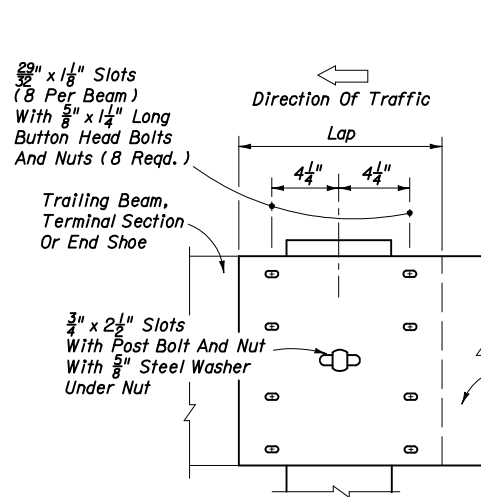
- 0'-9" (MELT)
- 1'-3 1/2" (SRT-350 & REGENT)
- 2'-3 1/2" (FLEAT-350)
- 2'-3 1/2" SRT/HBA-6 POST



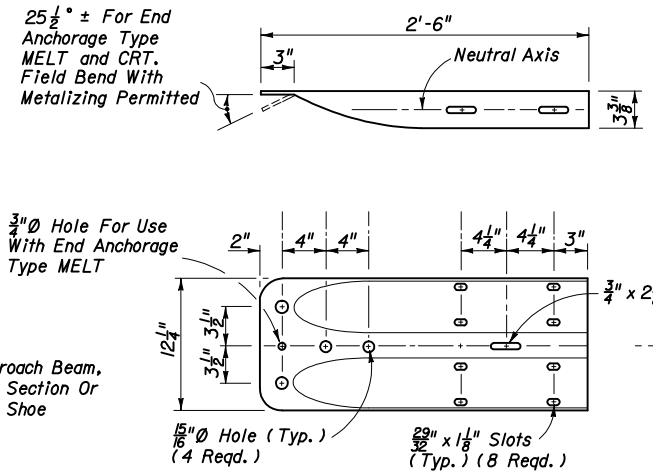
- 1'-1" (MELT)
- 1'-8 1/2" (SRT-350 & REGENT)
- 1'-7" (FLEAT-350)
- 1'-7" SRT/HBA-6 POST



**APPROACH TREATMENT FOR CURB AND GUTTER
DETAIL Q**

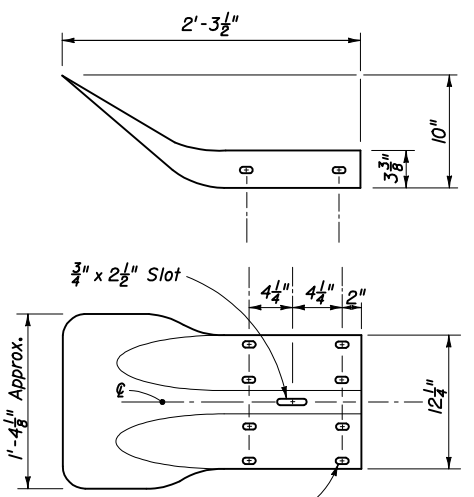


W-BEAM RAIL SPLICE

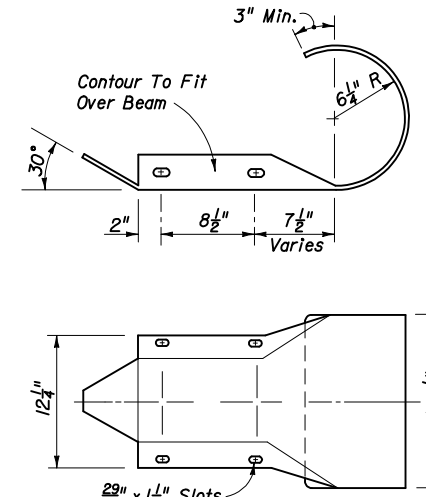


SPECIAL END SHOE

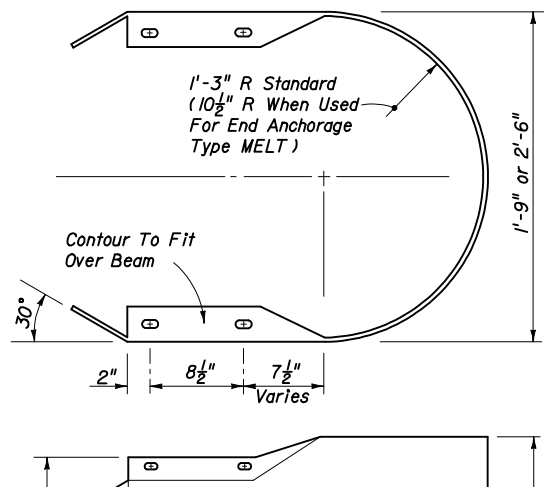
Note: 5/8" Steel washer required with splice bolts



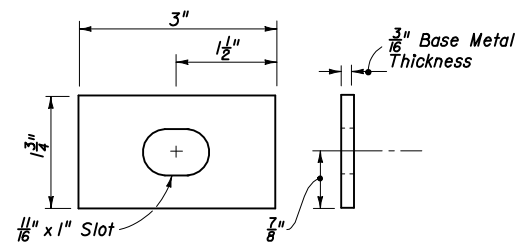
FLARED END SECTION



ROUNDED END SECTION

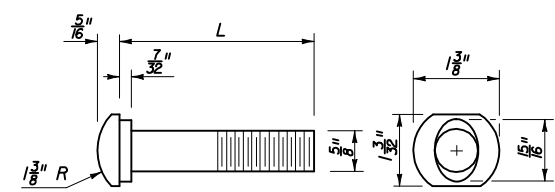


BUFFER END SECTION

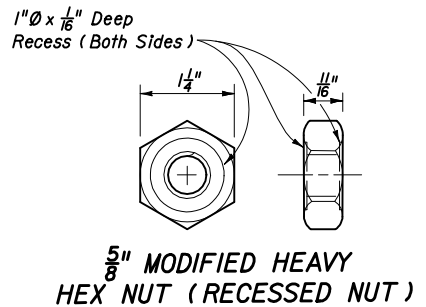


(RECTANGULAR PLATE WASHER) BEAM WASHER

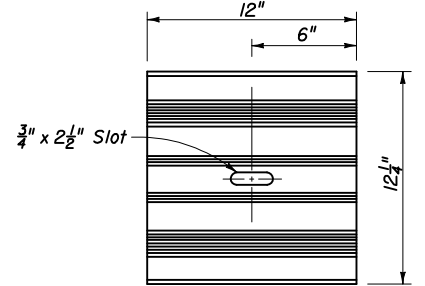
Note: For beam washer requirements on end terminals, see individual end anchorage assembly details. Washers are to be used where necessary to accomplish alignment or where the posts bolt head shows tendency to pull through the rail slot. Washers installed on guardrail, between end anchorages, prior to July 1, 1990 may remain in place until the guardrail is relocated or until repairs require removal and reinstallation of a post bolt.



5/8" OVAL SHOULDER BUTTON HEAD BOLT

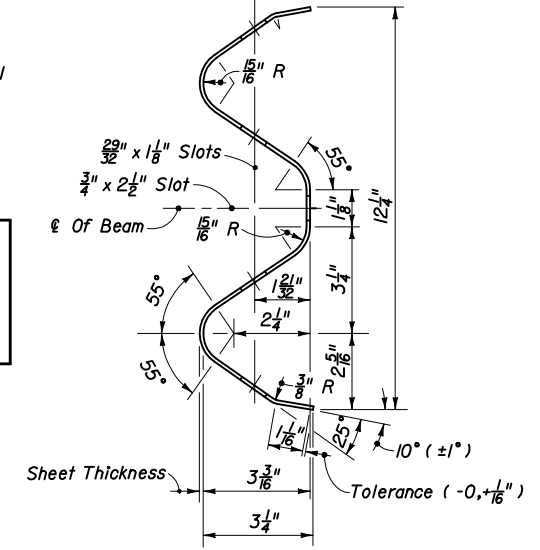


5/8" MODIFIED HEAVY HEX NUT (RECESSED NUT)



W-BEAM BACK-UP PLATE

Note: For application information see individual end anchorage assembly details.



W-BEAM

L (In.)	THREAD LENGTH (Min.) (In.)	APPLICATION
1 1/4"	Full Length	Rail Splice Bolt
10"	4"	Single Or Double Faced Guardrail Post Bolt - Timber Or Recycled Plastic Offset Blocks) On Steel Post As An Option, A Single 25"* Long Post Bolt May Be Used
18"	4"	Post Bolt - Single Faced Guardrail Timber Posts
25"*	4"	Post Bolt - Double Faced Guardrail Timber Posts Double Faced Guardrail Steel Posts

Special bolts having lengths of 10" or greater shall have a thread length of not less than 4".

For applications where special bolts having lengths greater than 25" are required, the Contractor may use a 5/8" threaded rod (field cut to length). A hex nut and beam washer shall be used at the guardrail face with no more than 3/4" of the threaded rod projecting beyond the top of the nut. The projecting thread on both ends shall be distorted to secure the nuts, and both ends of the threaded rod metalized with organic zinc-rich coating.

* Use of the 25" AASHTO-AGC-ARTBA standard length post bolt on double faced guardrail that results in the bolt projecting more than 3/4" beyond the face of the nut after pull-up shall be trimmed to 3/4" reveal and metalized with organic zinc-rich coating.

HS Hex bolts for THRIE-BEAM TERMINAL CONNECTORS shall conform to the requirements of ASTM A449 (Type 1) with heavy hex nuts and washers. All other hex bolts shall conform to the requirements of ASTM A563. Bolts, nuts and washers shall be hot dip galvanized. Heavy hex nut may be used in lieu of hex nuts and hex nuts used for jam nuts.

HEX BOLTS AND NUTS

POST SPACING (Ft.)	OFFSETS (Ft.) Measured From Face Of Guardrail To Front Of Above Ground Rigid Hazard			
	SINGLE BEAM	NESTED BEAMS		
	W-Beam	Thrie-Beam	W-Beam	Thrie-Beam
6'-3"	4'	3'-3"	N/A	N/A
3'-1 1/2"	3'	2'-8"	2'-8"	2'-4"
1'-6 3/4"	N/A	N/A	2'-4"	2'

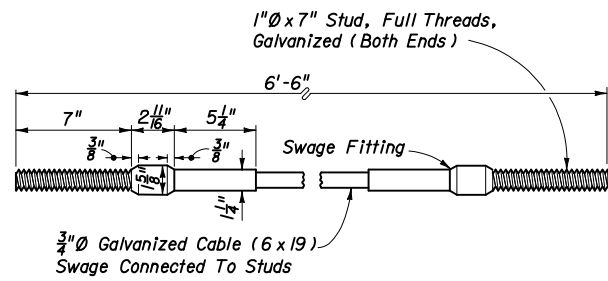
Note: The values shown should be utilized unless changes are supported by imperial validation. Those desiring to develop offset values from the simulated deflection values shown in Table 5.4 of the AASHTO Roadside Design Guide are cautioned to proceed only if back-ground in the table development is understood.

MINIMUM OFFSET FOR SINGLE FACED GUARDRAIL (Ft.)

5/8" STEEL WASHER

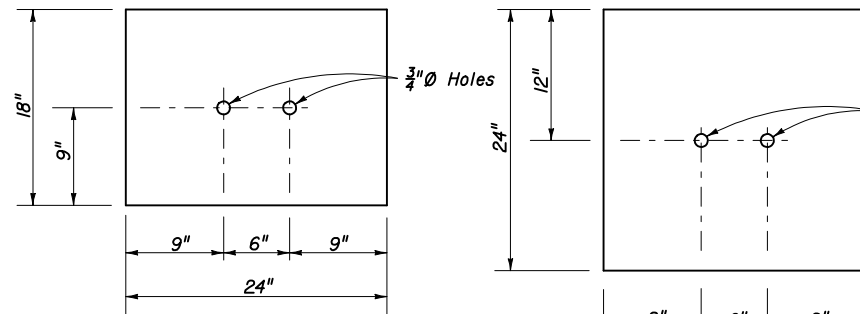
Note: The round washer is not intended for use under the recess nut for the beam to beam rail splice. The washer is required under the recess nut for connecting the beam to the special end shoe; under the post bolt nut for connecting the beam to the timber post and offset blocks; for connecting the beam to steel posts with timber offset blocks; under the hex bolt head for securing the beam anchor plate to the beam; and, for general guardrail connections by 5/8" hex bolts and nuts. For supplemental information see BEAM ANCHOR PLATE, PERMISSIBLE POST AND OFFSET BLOCK COMBINATIONS, individual end anchorage assembly details, SPECIAL STEEL GUARDRAIL POSTS, SPECIAL END SHOE, W-BEAM RAIL SPLICE, THRIE-BEAM RAIL SPLICE, and THRIE-BEAM TERMINAL CONNECTOR details.



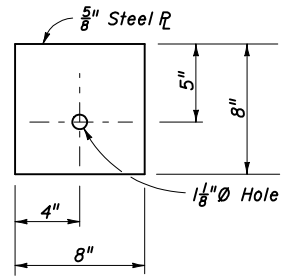


Note: Cable assemblies shall be in accordance with the specifications of AASHTO-AGC-ARTBA 'A Guide To Standardized Highway Barrier Hardware' Cable Anchor Assembly FCA01. An additional cable assembly 9' in length with a swaged fitting on one (1) end is required for each end anchorage assembly Type CRT.

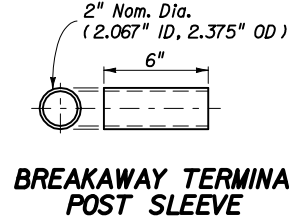
CABLE ASSEMBLY



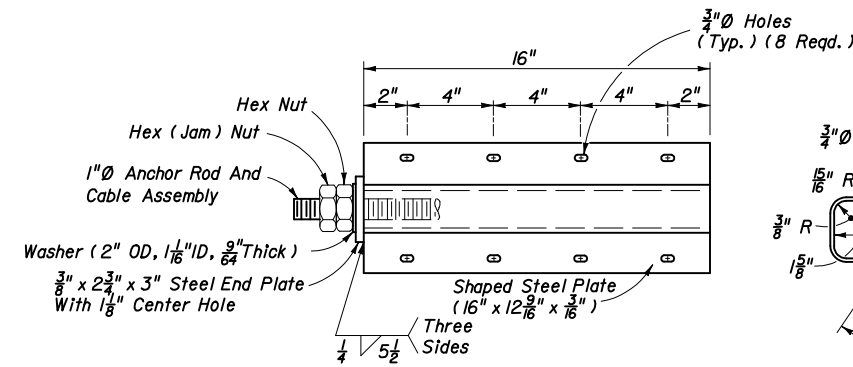
SOIL PLATES
1/4" Steel Pl., Galvanized



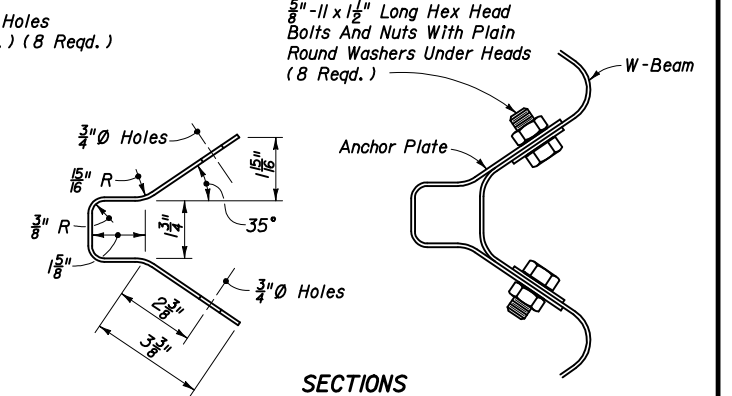
BEARING PLATE



BREAKAWAY TERMINAL POST SLEEVE

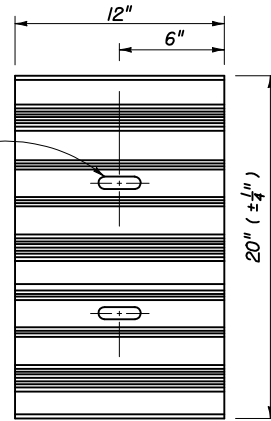


BACK VIEW



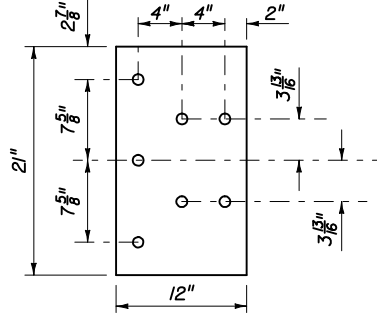
SECTIONS

BEAM ANCHOR PLATE



Back-up plate required behind rail elements at intermediate (non-splice) posts when steel offset block used.

THRI-BEAM BACK-UP PLATE

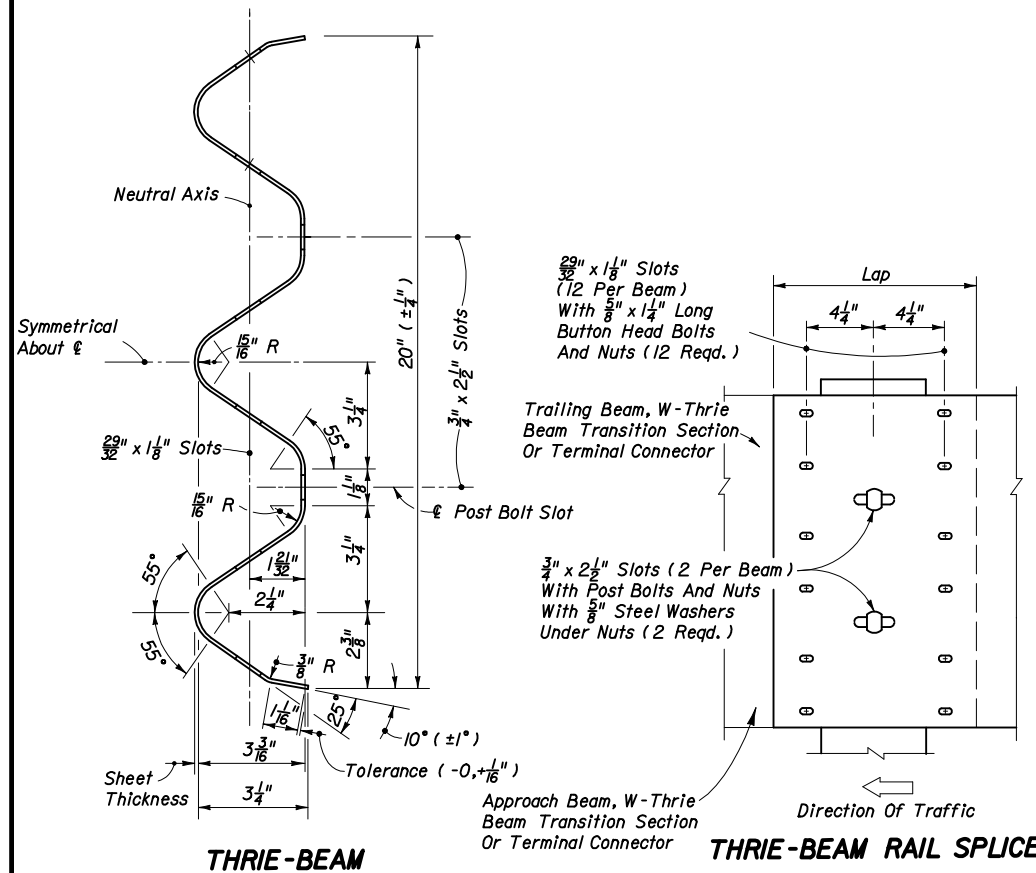


5/8" Plate For Bridge Traffic Railing Barrier
1/4" Plate For Barrier Walls
THRI-BEAM TERMINAL CONNECTOR

1/4" Plate For All Applications
SPECIAL END SHOE

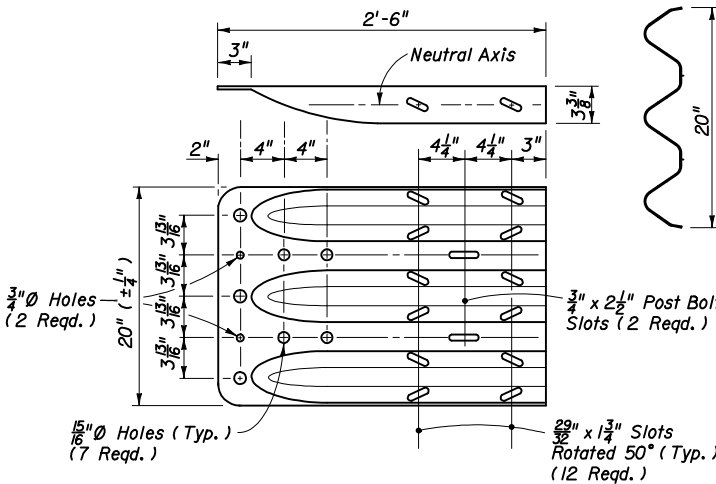
1/4" Plate
See Detail J For Application
FILLER PLATE

GALVANIZED STEEL BACK-UP PLATES FOR CONNECTING SPECIAL END SHOES AND TERMINAL CONNECTORS TO CONCRETE BRIDGE TRAFFIC RAILING BARRIERS AND CONCRETE BARRIER WALLS

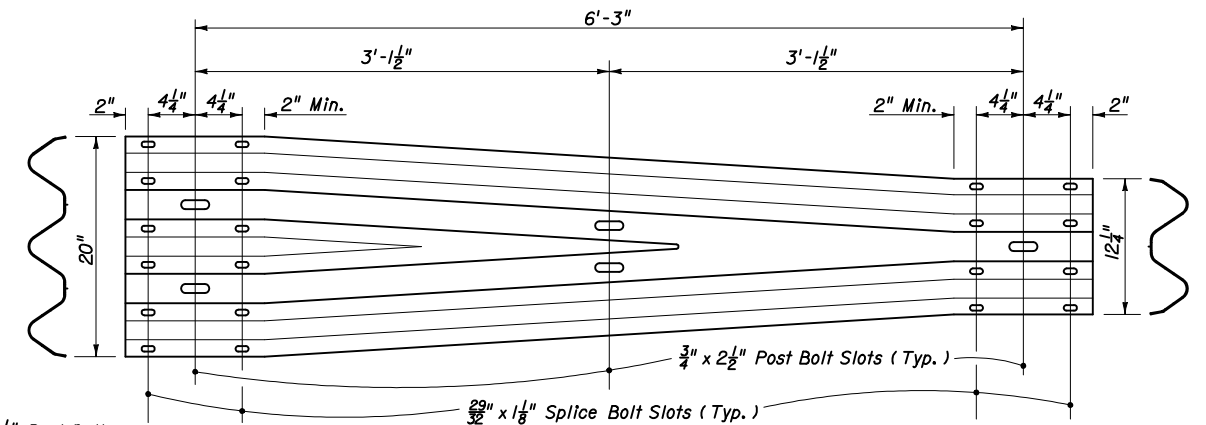


THRI-BEAM

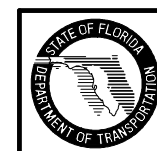
THRI-BEAM RAIL SPLICE



Note: 5/8" steel washer required with splice bolts
THRI-BEAM TERMINAL CONNECTOR



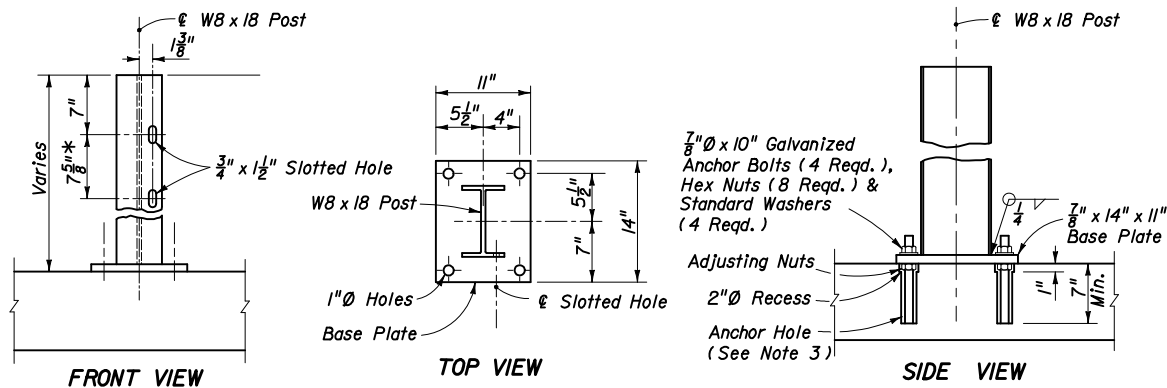
W-THRI BEAM TRANSITION SECTION



2006 FDOT Design Standards

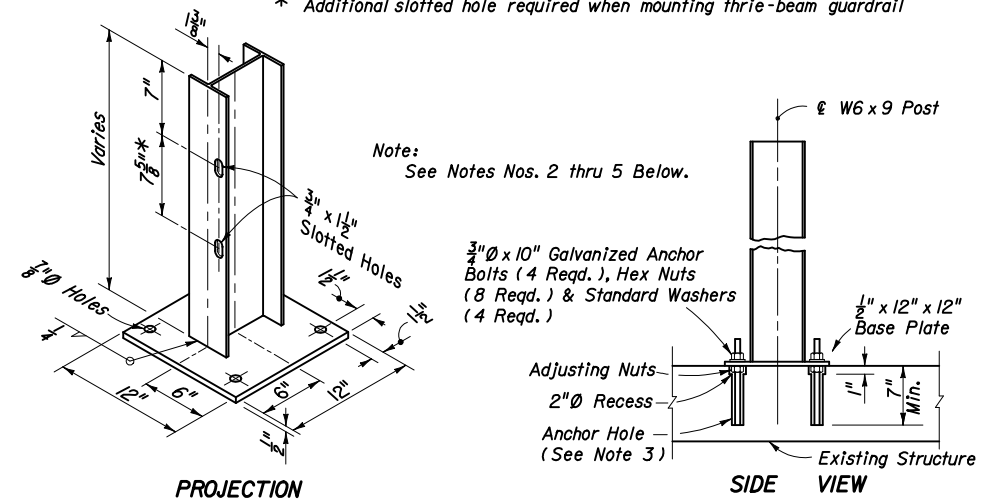
GUARDRAIL

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FOR REPLACEMENT OF EXISTING W8 x 18 GUARDRAIL POSTS ON APPROACH SLABS AND BRIDGES

* Additional slotted hole required when mounting thrie-beam guardrail

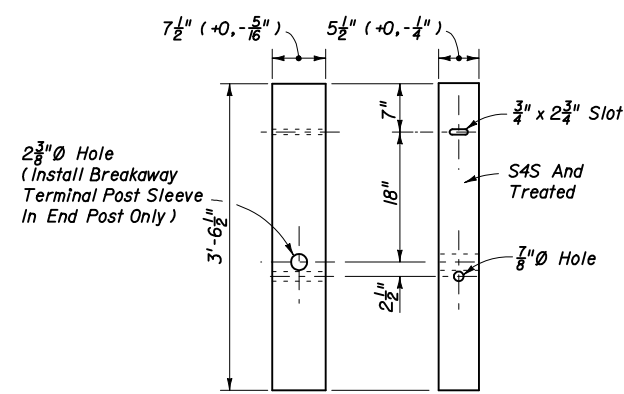


FOR CONSTRUCTION OF GUARDRAIL WHERE CULVERT, PIER FOOTING OR OTHER STRUCTURE PRECLUDES DRIVEN POST INSTALLATION

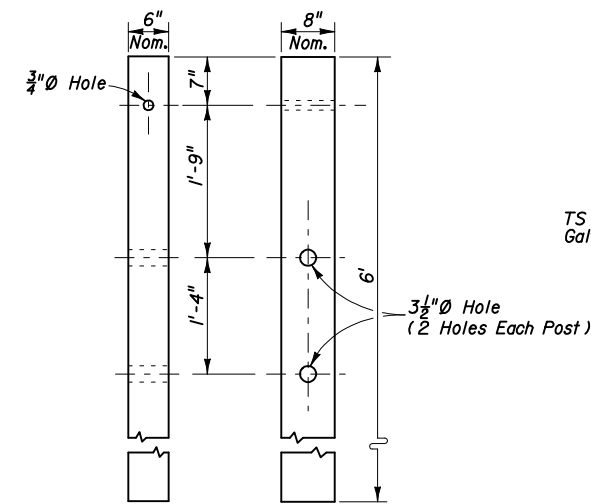
NOTES: (SPECIAL STEEL POST)

- See Index No. 402 for special steel posts required for construction and repair of guardrail transitions to bridge traffic railing barrier retrofits on existing bridges. See Structures Index Nos. 470 through 476 for steel posts required to construct traffic railing barrier retrofits on existing bridges.
- Either anchor bolts, concrete wedge anchors or approved Adhesive-Bonded Anchors for Structural Applications may be used.
Anchor bolts, wedge anchors and adhesive anchors shall have a minimum tensile strength of 60,000 psi and galvanized in accordance with ASTM A153 (stainless steel components may be substituted but components plated in accordance with ASTM B-633 are not acceptable). Adhesive anchor rods shall be equal in diameter to that detailed for anchor bolts. Wedge anchors are to be installed in accordance with the manufacturer's recommendations, assuming 3,000 psi compressive strength for concrete. Wedge anchors shall also meet the following requirements: (a) tensile load each anchor: approach slabs 14,000 lbs.; other structures 8,000 lbs. (b) shear load each anchor: approach slabs 15,000 lbs.; other structures 7,800 lbs.
- Posts are to be plumbed by adjusting nuts or mortar seating. Posts installed using anchor bolts and adhesive anchors are to be set with adjusting nuts as detailed, unless the Engineer approves the use of mortar seating in lieu of adjusting nuts. Posts installed using wedge anchors are to be set with mortar seating. Base plates shall be grouted with neat finish.
- Adhesive-Bonded Anchors for Structural Applications shall comply with Section 937 and be installed in accordance with Section 416. Drilled hole diameter shall be in accordance with the manufacturer's instructions.
- Anchor holes and recesses shall be drilled; wedge anchor holes are to be drilled in accordance with the manufacturer's specifications. Encountered reinforcing steel shall be drilled through. Holes shall be thoroughly cleaned when setting bolts and anchors and dry when setting wedge anchors.
- Steel post and base units shall be galvanized in accordance with ASTM A123. Any damaged galvanized areas are to be metalized in accordance with Section 562 of the Standard Specifications.

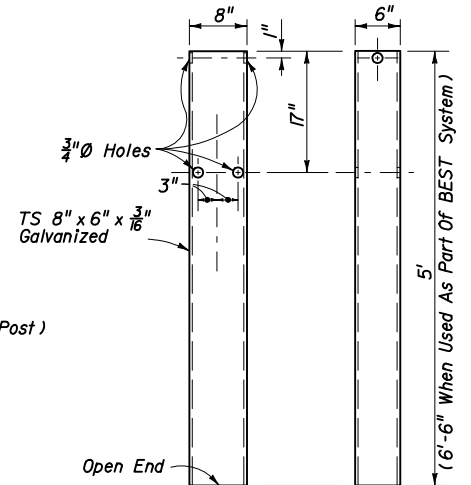
SPECIAL STEEL GUARDRAIL POSTS



SHORT TIMBER BREAKAWAY POST

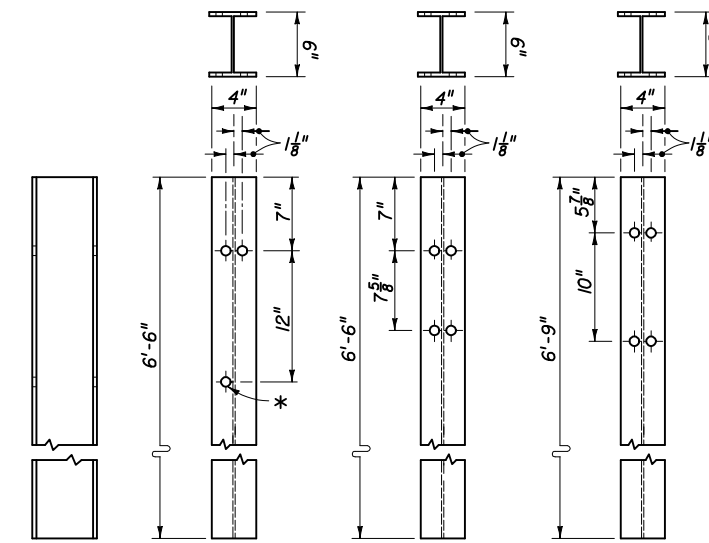


CRT TIMBER POST



STEEL TUBE

SPECIAL TIMBER GUARDRAIL POSTS



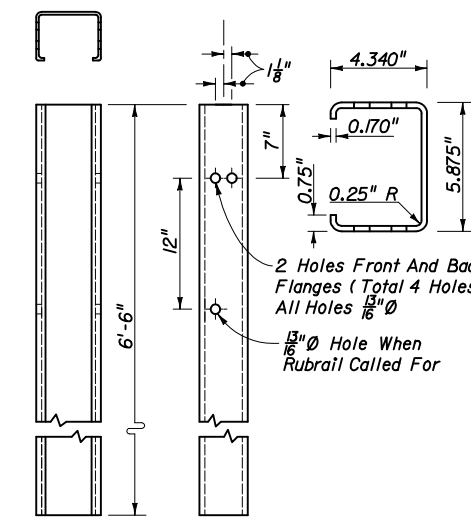
W-BEAM
THRIE-BEAM WITH STANDARD OFFSET BLOCKS
THRIE-BEAM WITH STEEL MODIFIED THRIE-BEAM OFFSET BLOCKS

All Holes Shall Be 5/16 inch Diameter Front And Back Flanges

Note: W6 x 8.5 or W6 x 9 steel posts may be either rolled or welded structural shapes conforming to or exceeding the design properties of ASTM A6/AGM. Welding shall be in accordance with the requirements of ASTM A769/A769M. Posts shall be cut to length and the ends seal welded between web and flange before galvanizing. Posts to be galvanized in accordance with ASTM A123.

W6 x 8.5 OR W6 x 9 STEEL POST

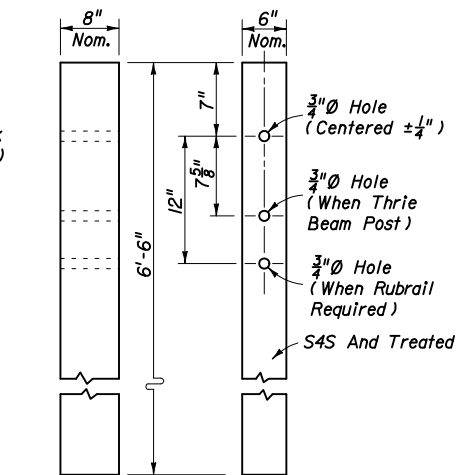
STANDARD TIMBER AND STEEL GUARDRAIL POSTS



6"-C STEEL POST

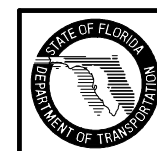
Note: 6"-C steel posts are to face the same direction in any continuous run of guardrail. Posts to be galvanized in accordance with ASTM A123.

6"-C STEEL POST



TIMBER POST

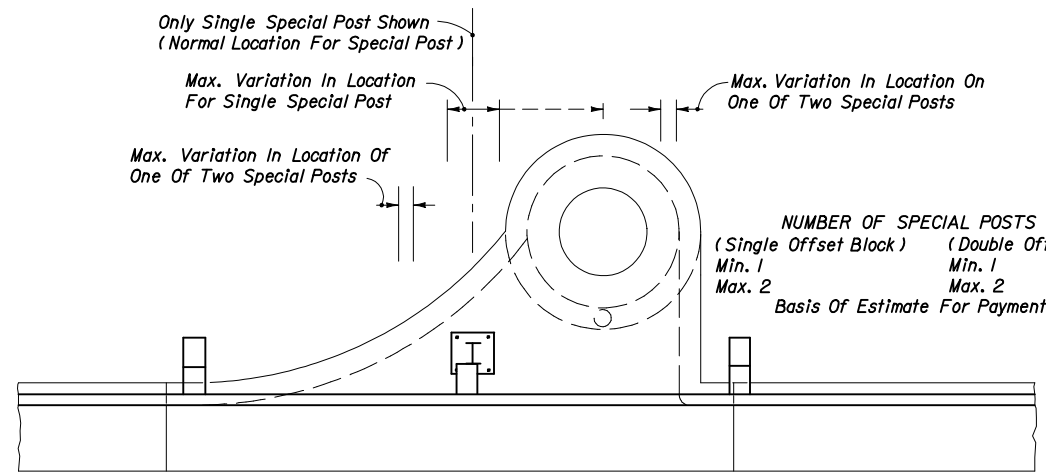
GUARDRAIL POSTS



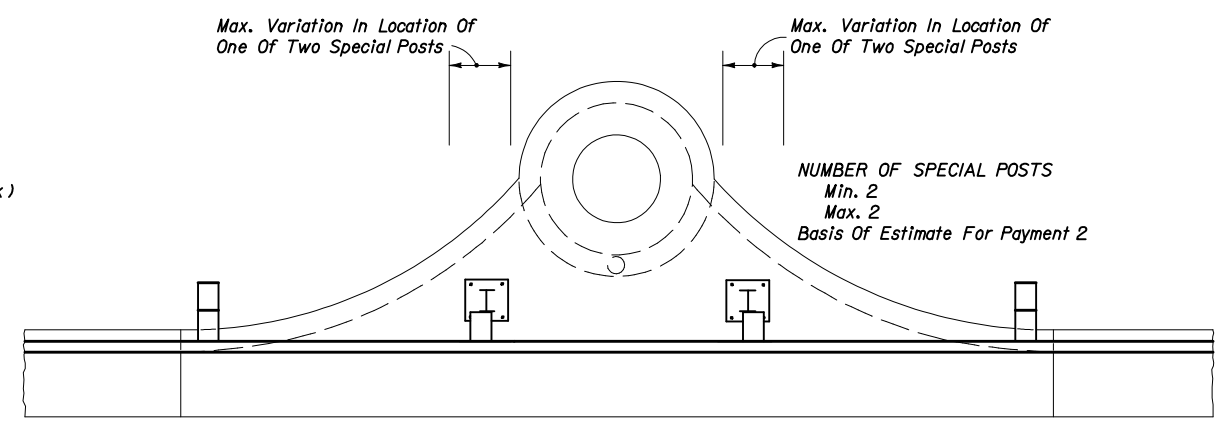
2006 FDOT Design Standards

GUARDRAIL

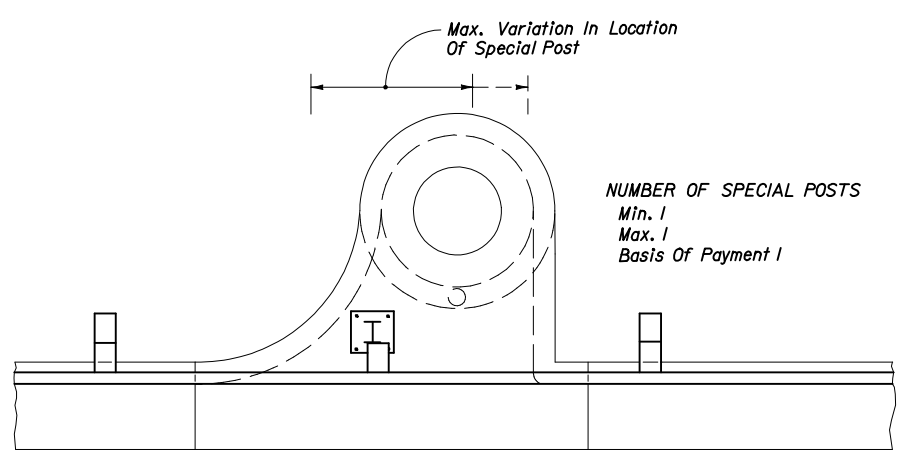
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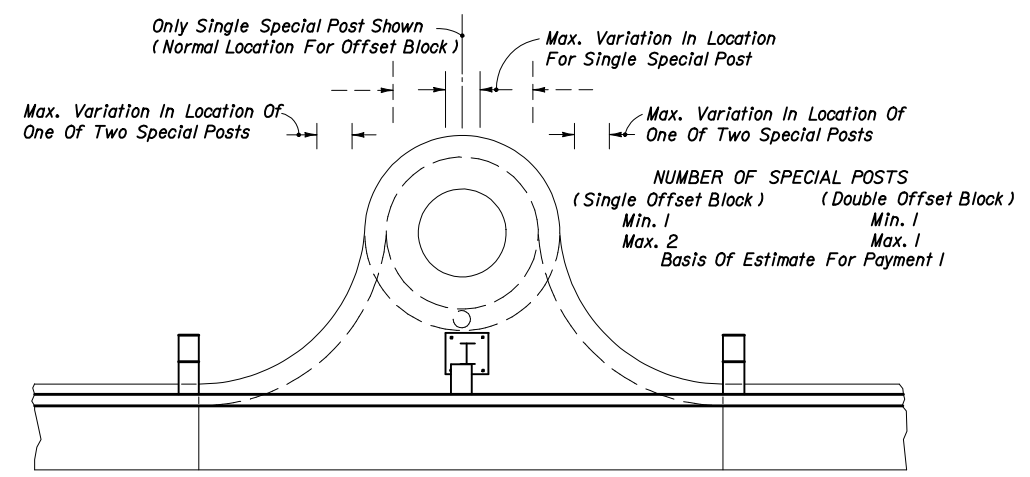
CURB INLET TYPE 1



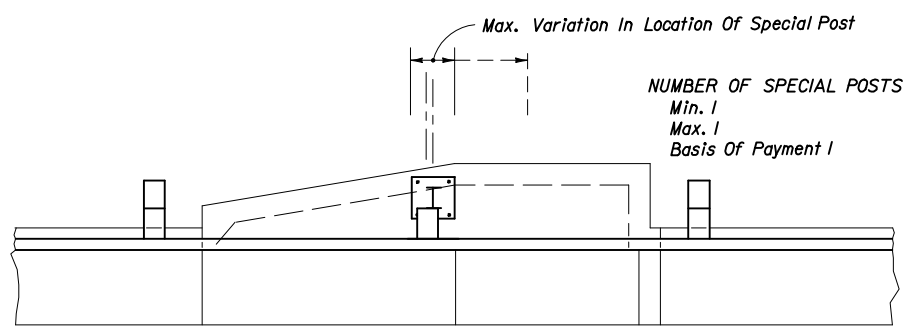
CURB INLET TYPE 2



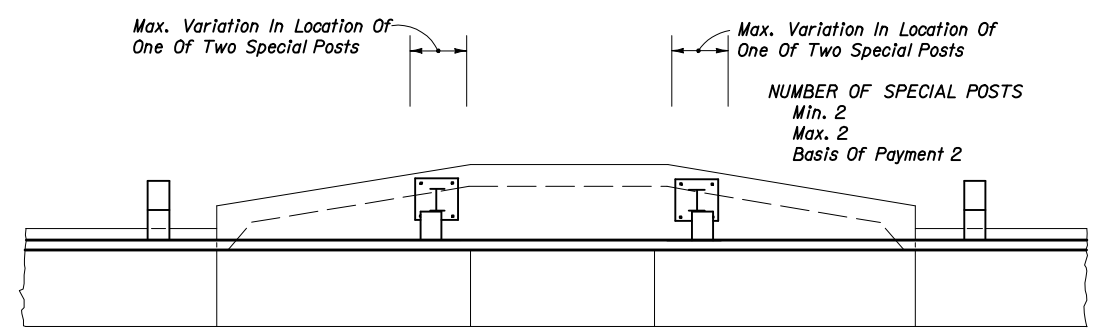
CURB INLET TYPE 3



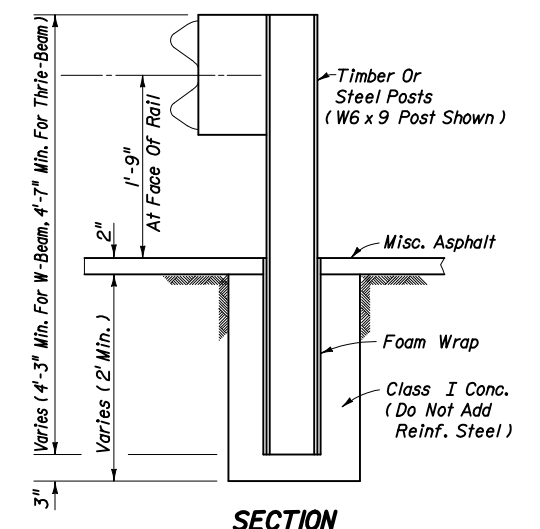
CURB INLET TYPE 4



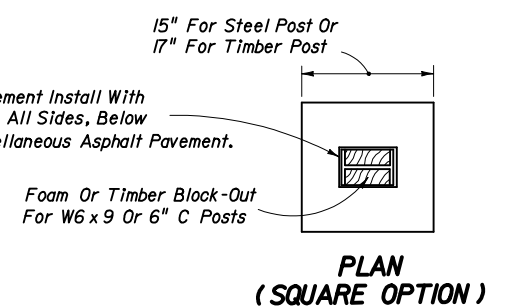
CURB INLET TYPE 5



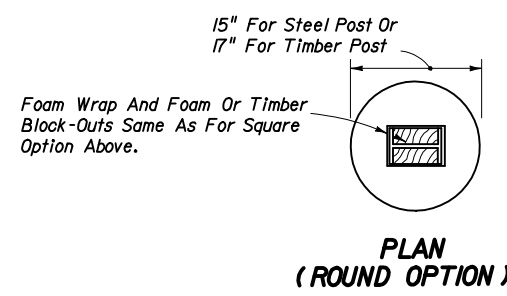
CURB INLET TYPE 6



SECTION



PLAN (SQUARE OPTION)



PLAN (ROUND OPTION)

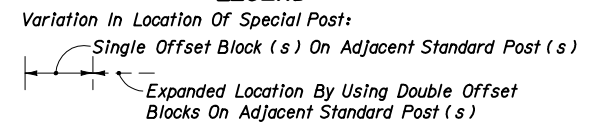
Note: For line post applications only, i.e., not to be used with breakaway post applications nor be used to modify End Anchorage Assemblies Type II.

TO BE USED PRINCIPALLY OVER SHALLOW UTILITIES ENCASED GUARDRAIL POST

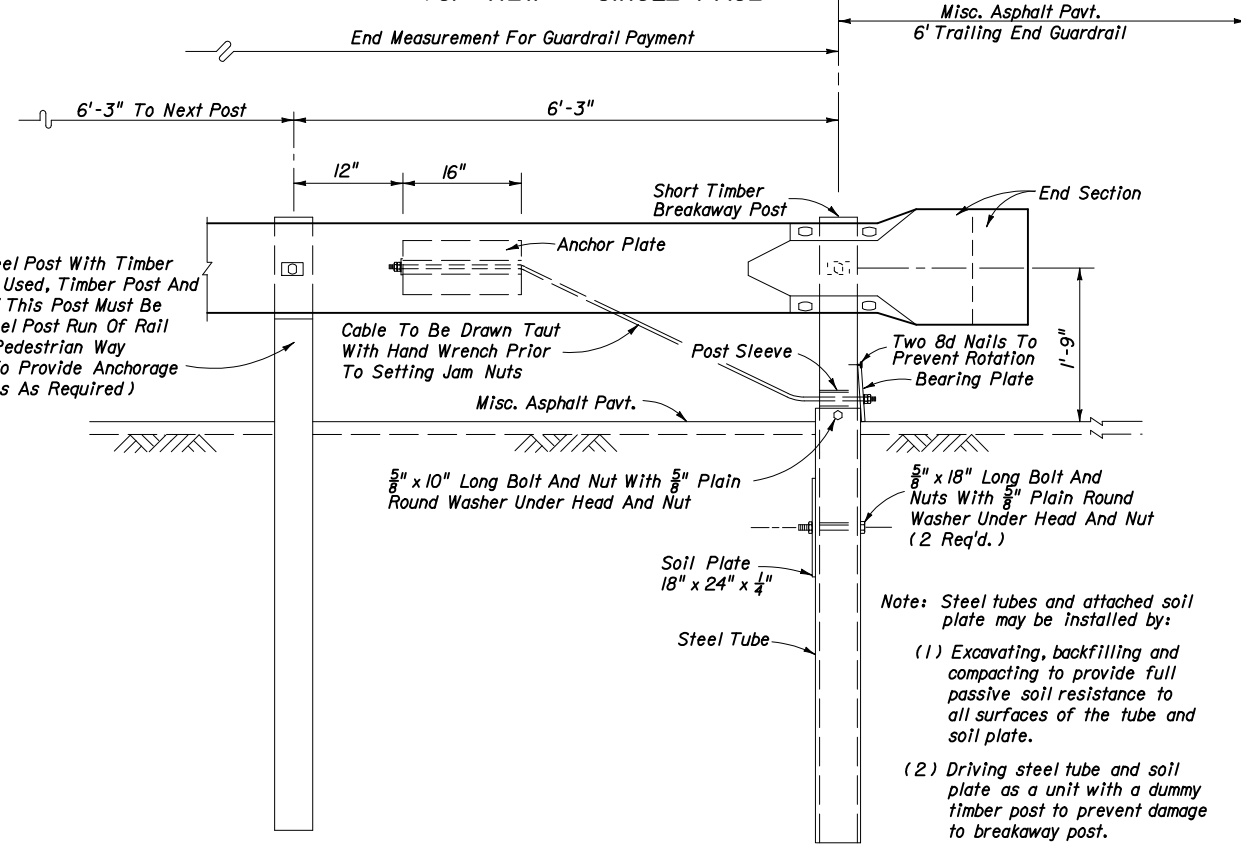
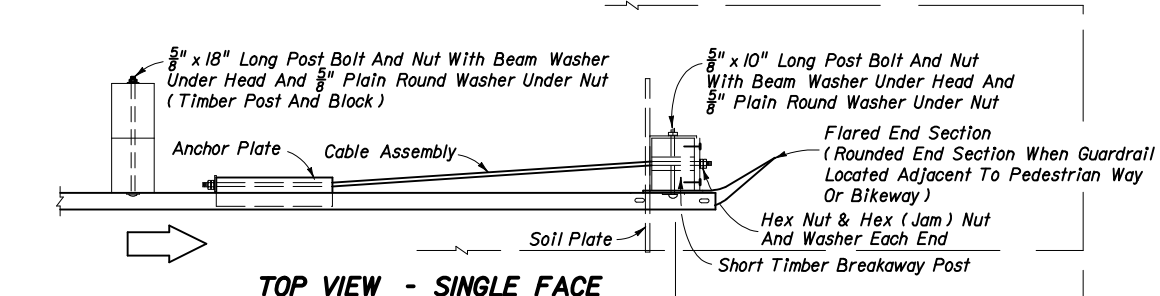
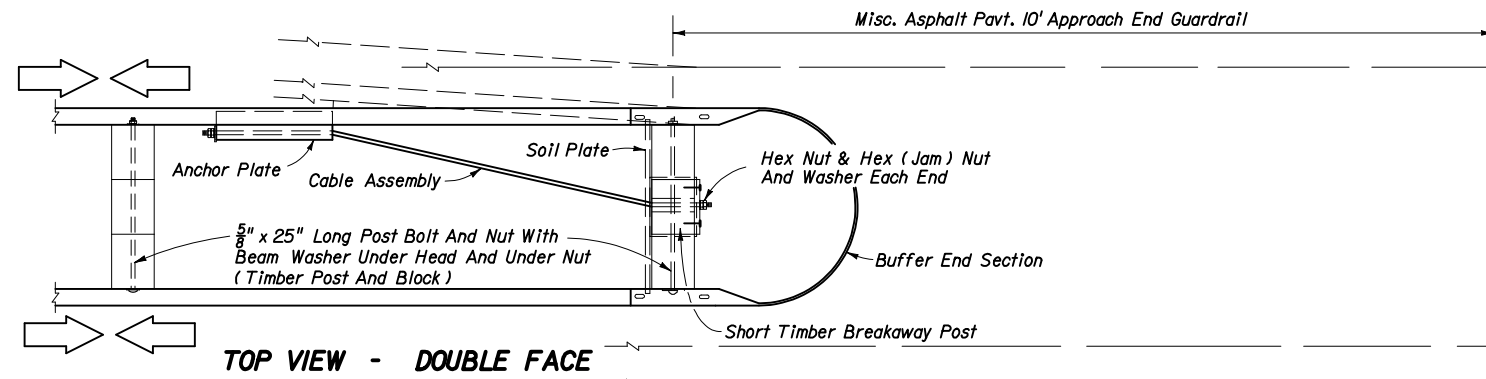
- Notes:**
- The locations shown for special posts mounted on inlets are to be used as guidelines for positioning the posts and for estimating the number of required posts.
 - Special posts and their anchorages mounted on curb inlets shall be in accordance with special steel guardrail posts Sheet 19, and paid for under the contract unit price for Special Guardrail Post, EA.

- Variations shown for the locations of special posts mounted on inlets are established from standard post spacing (6'-3"); clearance of standard posts from inlets (4" min.); use of single and double offset blocks on standard posts adjacent to the inlets; optional flange mountings; and, concrete anchor edge distances (2" for grouted and 3/4" for expansion anchors). The number of posts and their locations may vary by reducing post spacing and adjusting the length of rail panel (s).
- Encased guardrail posts shall conform in section to standard timber and steel posts, and be paid for under the contract unit price for Special Guardrail Post, EA. Payment shall include cost of foam wrap and concrete encasement.

LEGEND



SPECIAL POST LOCATIONS ON CURB INLETS

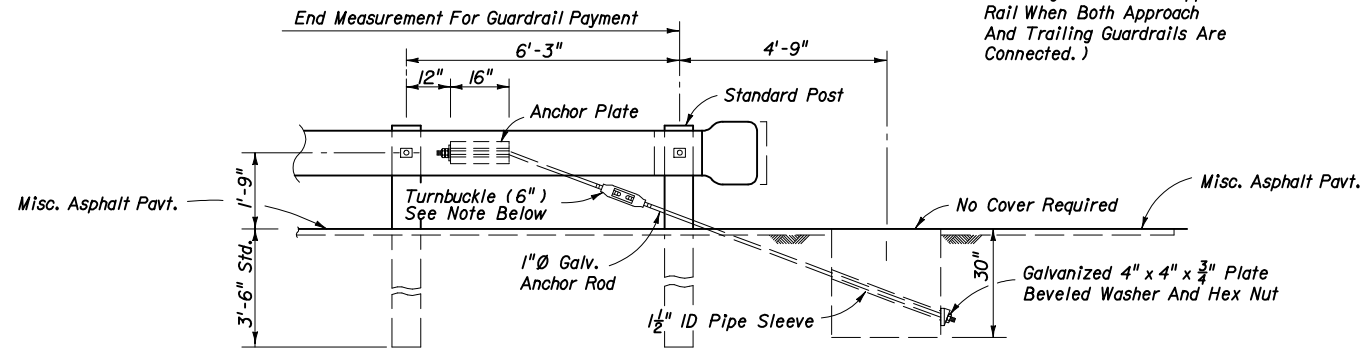
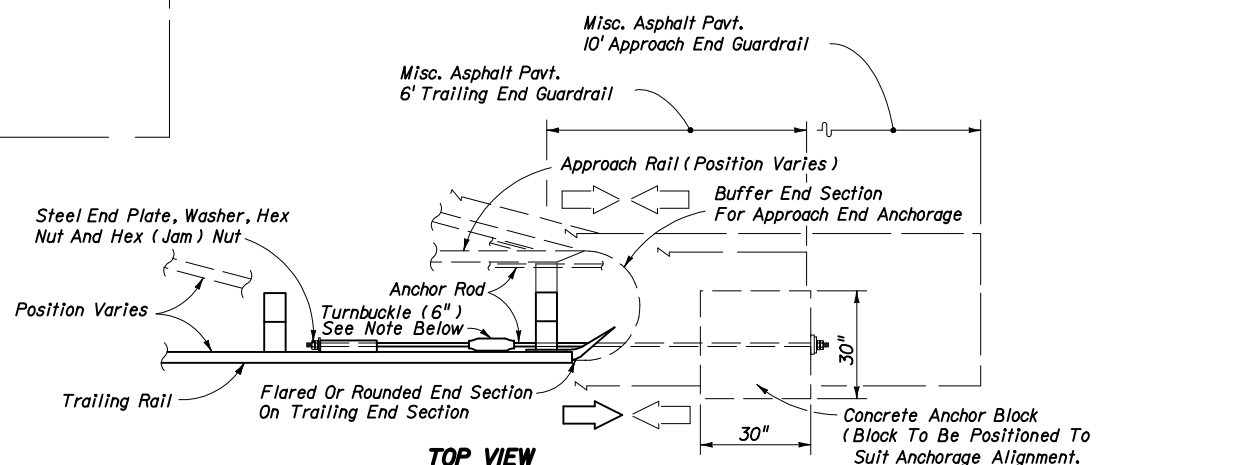


Timber Or Steel Post With Timber Block May Be Used, Timber Post And Block Shown (This Post Must Be Timber In Steel Post Run Of Rail Adjacent To Pedestrian Way Or Bikeway, To Provide Anchorage For Pipe Rails As Required)

Note: Steel tubes and attached soil plate may be installed by:
 (1) Excavating, backfilling and compacting to provide full passive soil resistance to all surfaces of the tube and soil plate.
 (2) Driving steel tube and soil plate as a unit with a dummy timber post to prevent damage to breakaway post.

The payment for the items of End Anchorage Assembly Type II shall be full compensation for furnishing and installing either the Round or the Buffer End Section, the Beam Anchor Plate, Cable Assembly, Pipe Sleeve, Soil Plate, Steel Tube, Bearing Plate, Short Timber Breakaway Post, Offset Blocks and the necessary hardware.

CABLE ANCHOR OPTION



Turnbuckle to be used only for guardrail that is reset vertically. The existing anchor rod (1\"/>

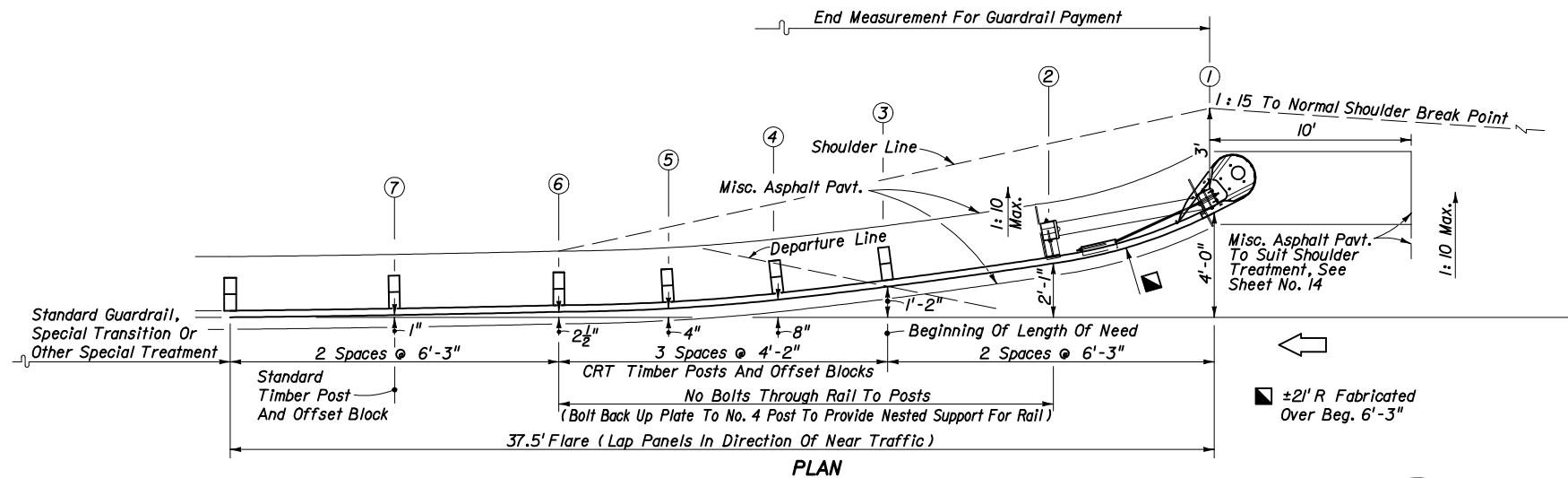
The payment for the items of End Anchorage Assembly Type II shall be full compensation for furnishing and installing the Beam Anchor Plate, Anchor Rod, Pipe Sleeve, Anchor Block, either Flared, Rounded or Buffer End Section, and the necessary hardware.

CONCRETE ANCHOR BLOCK OPTION

TYPE II NOTES

1. Unless specified in the plans, the contractor can supply either the cable anchor option or the concrete anchor block option.
2. Type II end anchorage assemblies are approved for all speeds and are intended for use as:
 - (a) trailing end anchorages for single face free standing guardrail systems;
 - (b) approach end anchorages for single face free standing guardrail systems when end anchorage is located outside of the clear zone; and,
 - (c) both approach and trailing ends of double face guardrail systems.
 Crash cushions shall be constructed at or in lieu of approach Type II end anchorages located inside the clear zone.
3. These end anchors are to be paid for under the contract unit price for Guardrail, End Anchorage Assembly (Type II), EA as called for in the plans or by permit.

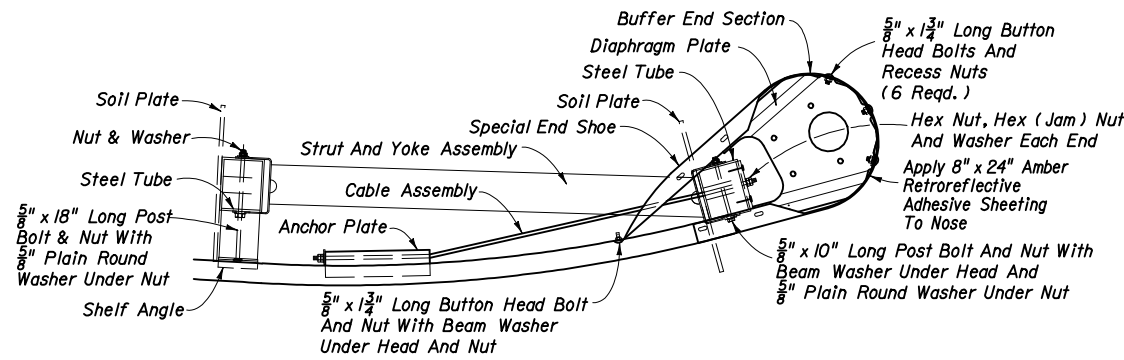
END ANCHORAGE ASSEMBLY TYPE II



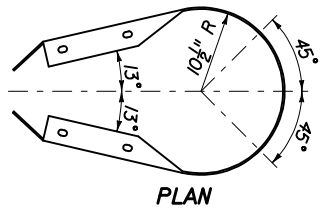
MODIFIED ECCENTRIC LOADER TERMINAL (MELT)

MODIFIED ECCENTRIC LOADER TERMINAL NOTES

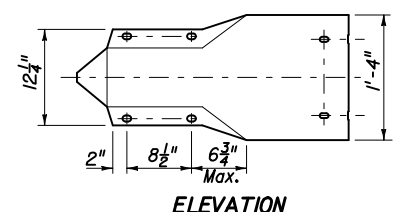
1. The MELT is applicable for design speeds up to 45 mph. The MELT is intended for use as an approach end guardrail anchorage for shoulder guardrail. Its alignment is a flare from the normal guardrail alignment with an effective length of 37.5' including three standard W-beam panel outside of any standard guardrail, guardrail transitions or other special treatments.
2. This standard drawing is produced by the Florida Department Of Transportation solely for use by the Department and its assignees. This standard drawing provides the general graphics and information necessary to field identify component parts of the MELT and their incorporation into a whole system.
3. This standard drawing is sufficient for plan details for the MELT when installed in connection with shoulder guardrail and precludes the requirement for shop drawing submittals unless the plans otherwise call for such submittals. The MELT shall be assembled in accordance with the distributor's detailed drawings, procedures and specifications.
4. The first two post must be short timber breakaway posts with steel foundation tubes and soil plates, post Nos. 3 thru 6 must be CRT timber posts and post No. 7 must be a standard timber post.
5. The MELT can not be used in medians where horizontal clearance requires the use of a backrail.
6. See the General Notes for galvanizing requirements of metallic components.
7. If the plans call for the MELT at a specific location, substitutions with other end anchorage assemblies will not be permitted unless approved by the Engineer. If the plans call for end anchorage assembly 'flared' at a specific location, the contractor has the option to construct any FDOT approved flared assembly that meet the applications for that location. Where a flared end anchorage is called for in the plans, any approved substitution with a parallel end anchorage will not be eligible for VECP consideration.
8. The MELT shall be paid for under the contract unit price for Guardrail, End Anchorage Assembly (Flared), EA and shall be full compensation for furnishing and installing all components in accordance with the plans; the distributor's detailed drawings, procedures and specifications and this Index.



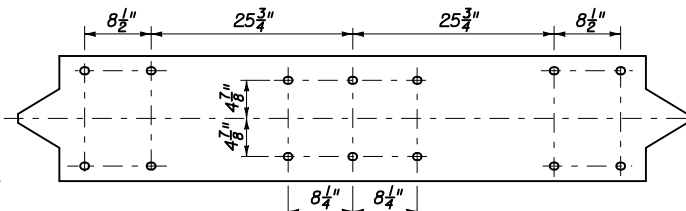
TOP VIEW



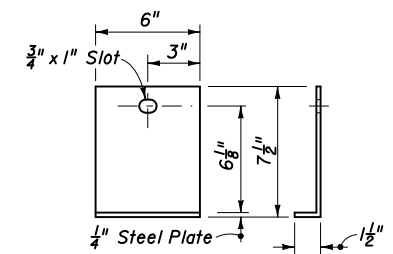
PLAN



ELEVATION

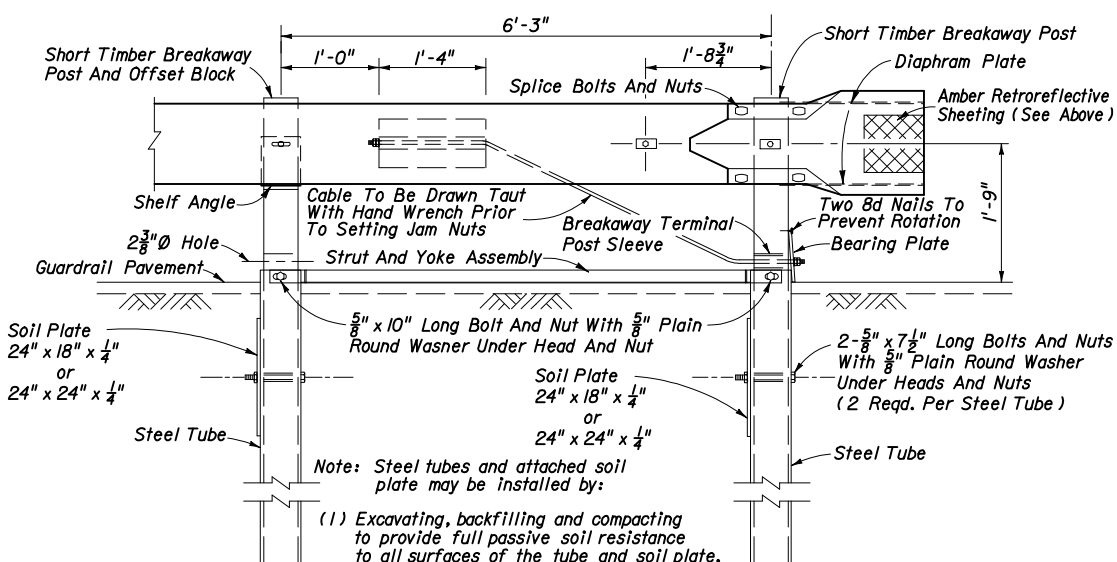


FLAT PLATE LAYOUT

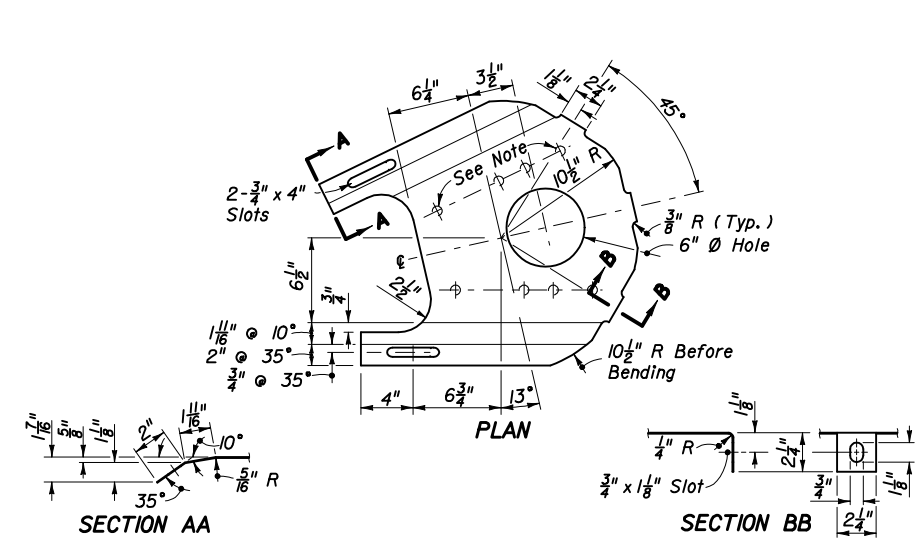


SHELF ANGLE

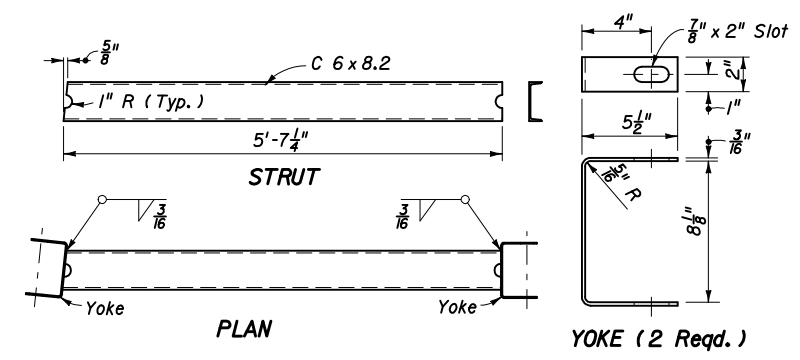
BUFFERED END SECTION



FRONT VIEW



DIAPHRAGM PLATE (2 Req'd.)

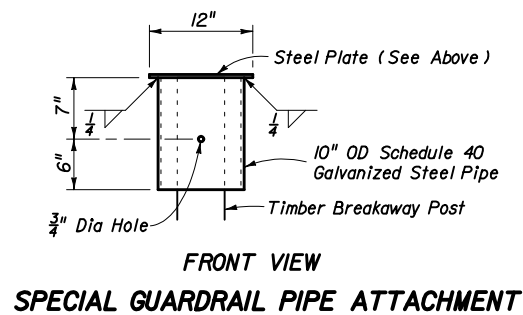
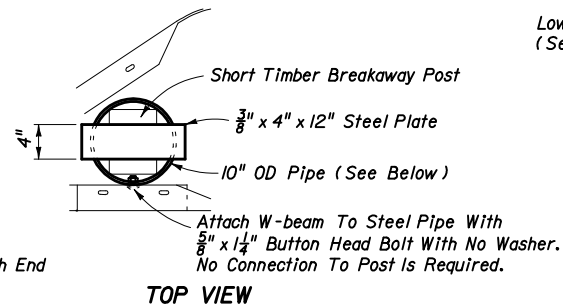
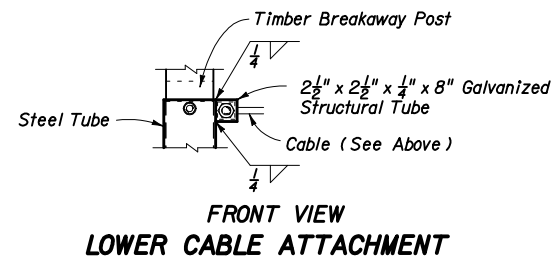
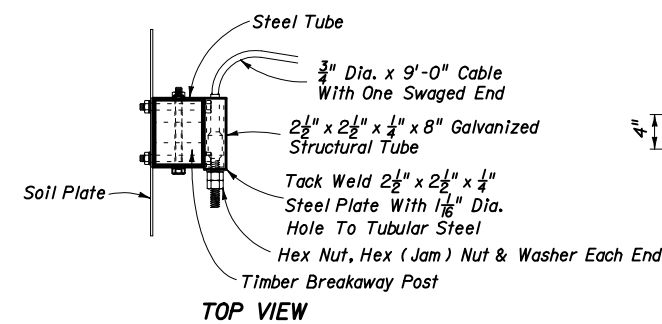


STEEL STRUT AND YOKE ASSEMBLY

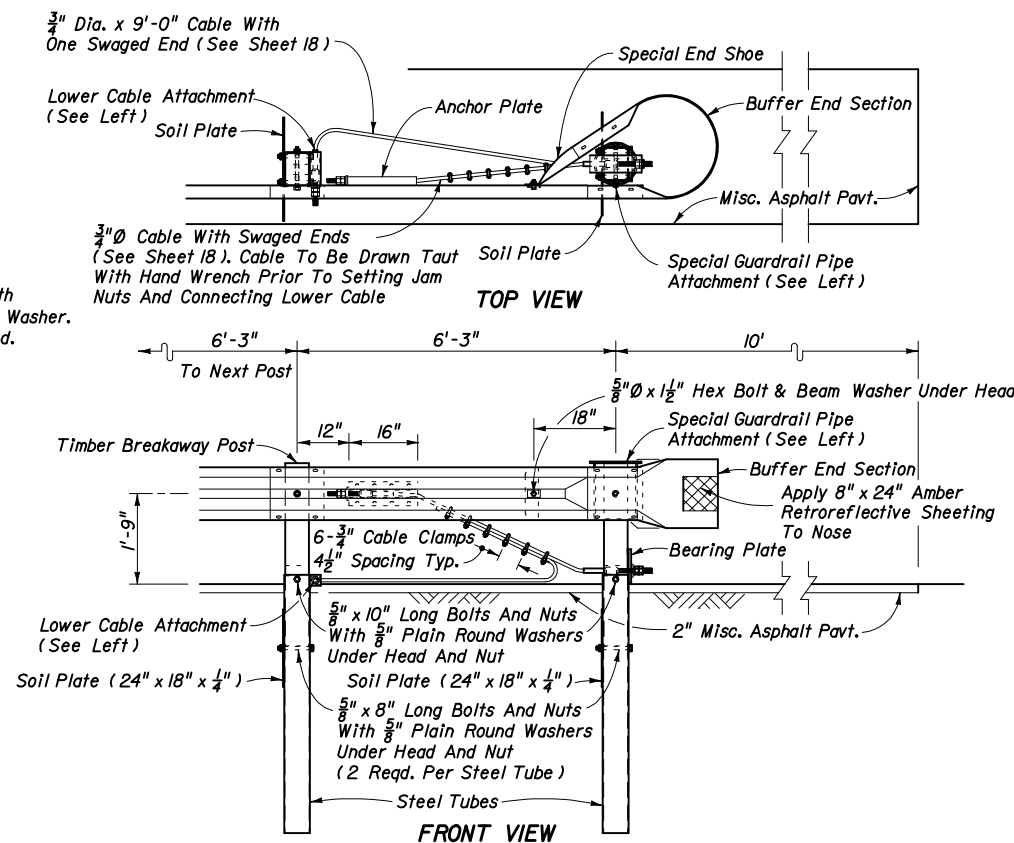
- Note: Steel tubes and attached soil plate may be installed by:
- (1) Excavating, backfilling and compacting to provide full passive soil resistance to all surfaces of the tube and soil plate.
 - (2) Driving steel tube and soil plate as a unit with a dummy timber post to prevent damage to breakaway post.

Note: Bolt holes are not required, but, diaphragms with either manufacturer produced two or three hole in line patterns are acceptable.

END ANCHORAGE ASSEMBLY TYPE MELT



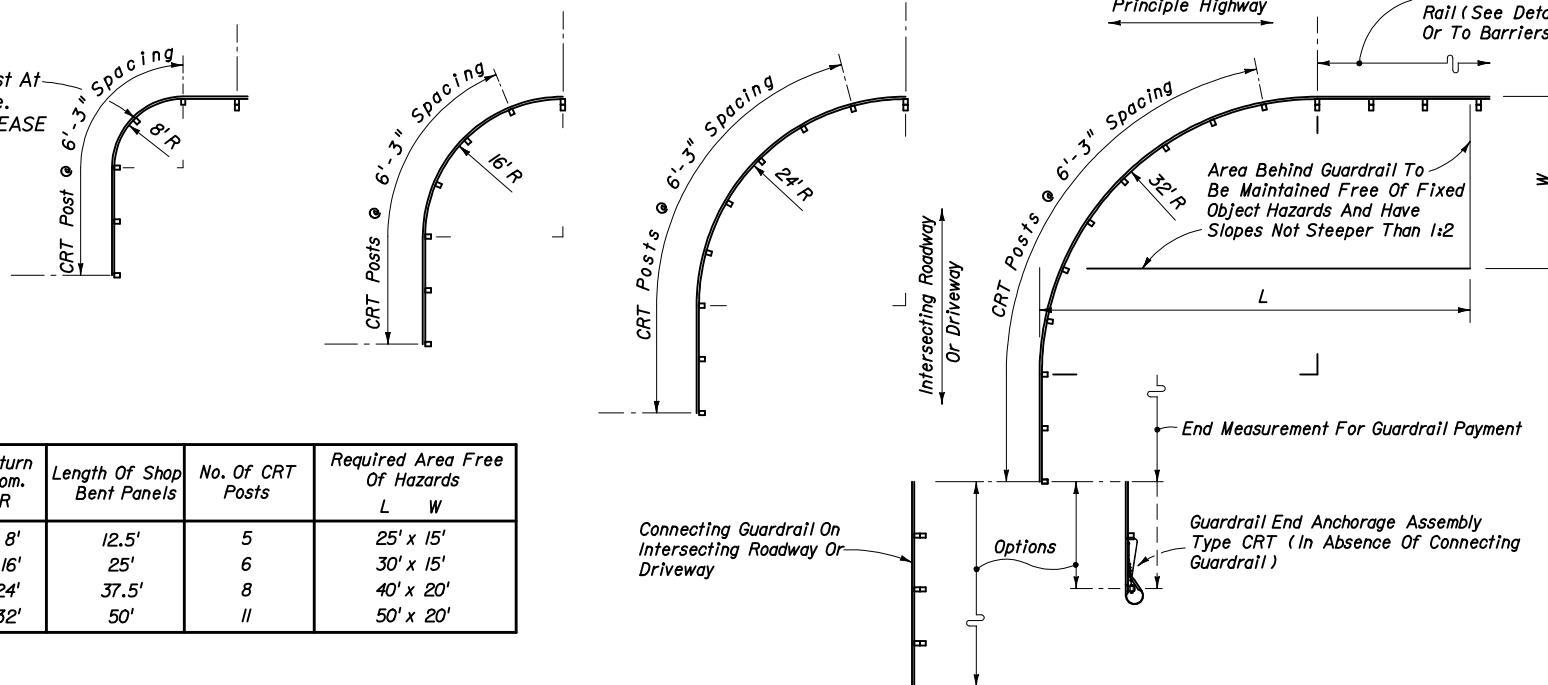
GUARDRAIL END ANCHORAGE ASSEMBLY TYPE CRT



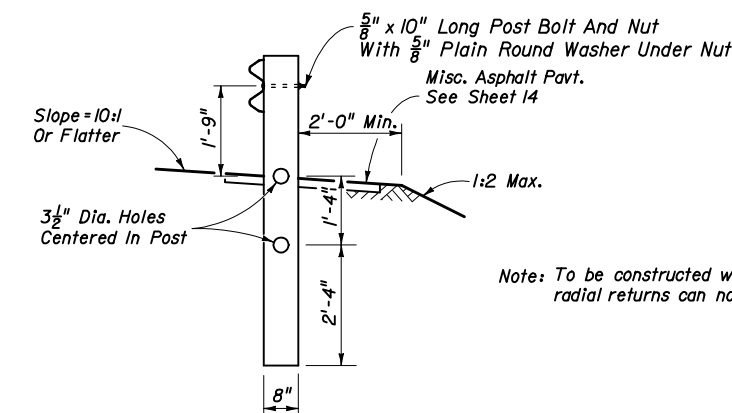
CONTROLLED RELEASE RETURN NOTES

- Controlled release returns are intended for use (a) in openings in continuous guardrail for driveway and side road access when flares and transitions or standard radial returns can not be applied (Sheet 11); and, (b) for shielding the ends of bridge traffic rails and barrier walls where the driveway and side road access is in close proximity to the structure and space does not permit the proper use of approved flared and parallel types of Guardrail End Anchorage Assemblies.
- Controlled release returns are not intended as a substitute or replacement for the appropriate use of approved vehicle impact attenuators.
- Controlled release returns with either 8', 16' or 24' radii are designed for highway speeds of 60 mph or less; the 32' radius return is to be used only for highway speeds of 45 mph or less.
- The controlled release returns shown are designed as full returns based on an intersection angle of 90°. The return can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.
- The Guardrail End Anchorage Assembly Type CRT is to be used only for the controlled release returns with 8', 16', 24' and 32' radii as shown; the assembly is not to be used in any tangent rail or flared rail applications. Other types of end anchorage assemblies are not to be used in the controlled release returns.
- The area immediately behind the control release return shall have slopes not steeper than 1:2 and be maintained free of fixed objects in accordance with the area limits tabulated in the plan below.
- The surface approaching the controlled release return shall have a transverse slope not exceeding 1:10. The effective width of the transverse surface is to be based on standard vehicle departure, return radii and preceding shielding; the width (beyond shoulder) shall be not greater than the corresponding 15' and 20' 'W' values tabulated below.
- The curved guardrail portion of the controlled release return shall be full section shop bent panels (12.5' or 25' panels).
- Washers are not to be used between the guardrail beam and the head of the button head post bolts at any controlled release terminal (CRT) post or at any Guardrail End Anchorage Assembly Type CRT breakaway timber post.
- The guardrail beam of the 8' radius return is not bolted to the center control release post.
- See the General Notes for galvanizing requirements of metallic components.
- Controlled release return systems shall be paid for under the contract unit prices for Guardrail (Roadway), LF, Guardrail (Shop-bent Panels), LF, and Guardrail, End Anchorage Assembly (Type CRT), EA as called for in the plans or by permit and shall be full compensation for furnishing and installing all components in accordance with the plans and with this index. CRT posts are included in the cost for guardrail.

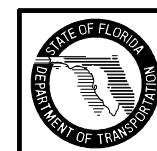
Do NOT Bolt Rail To Post At The Center Of The Nose. (See 'CONTROLLED RELEASE RETURN NOTES' No. 10)



Return Nom. R	Length Of Shop Bent Panels	No. Of CRT Posts	Required Area Free Of Hazards L W
8'	12.5'	5	25' x 15'
16'	25'	6	30' x 15'
24'	37.5'	8	40' x 20'
32'	50'	11	50' x 20'



CONTROLLED RELEASE RETURN FOR SIDE ROAD AND DRIVEWAY ACCESS



2006 FDOT Design Standards

GUARDRAIL

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