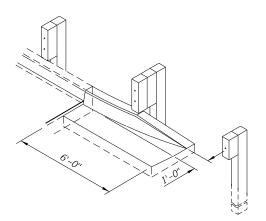
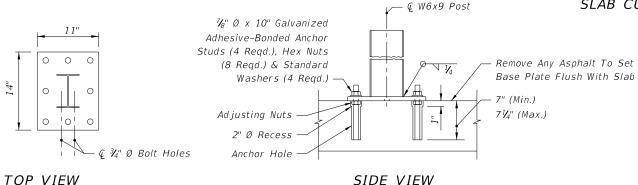
DESCRIPTION:

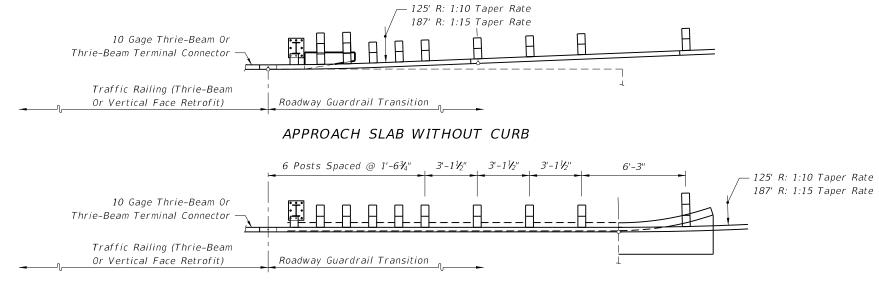


CURB TYPE F FLARE WHEN END OF EXISTING APPROACH SLAB CURB EXPOSED



### SPECIAL STEEL POST FOR ROADWAY THRIE-BEAM TRANSITIONS TO BRIDGE TRAFFIC RAILING RETROFITS

**PICTORIAL** 



## APPROACH SLAB WITH CURB

Longitudinal Location Of Transition Blocks And Curb End Flares Will Vary With Scheme Type

#### PARTIAL PLAN VIEWS

## GUARDRAIL TRANSITION ALIGNMENTS FOR BRIDGE THRIE-BEAM AND VERTICAL FACE TRAFFIC RAILING RETROFIT

# 2013

1. This index provides thrie-beam transition and connection details for approach end guardrail on existing bridges, and anchorage details for trailing end traffic railing retrofits and safety shapes on existing bridges. Sheets 1 through 23 apply to bridges with retrofitted traffic railings, (Sheet 23 shows the trailing end quardrail connections). Sheet 24 applies to bridges with safety shaped traffic railing.

GENERAL NOTES

- 2. The schemes identified by Arabic numerals in this index are complementary to the bridge traffic railing barrier retrofit schemes with like numeral identification in Index Nos. 470, 471 through 476, 480 through 483. The schemes in this index identified by Roman numerals are complementary to bridge safety shaped traffic railing barrier where determined to be in accordance with applications of criteria specified in the Structures Manual.
- 3. For guardrail applications and details of related hardware and accessories that are not provided on this index, refer to Index No. 400.

#### NOTES FOR GUARDRAIL TRANSITIONS CONNECTING TO TRAFFIC RAILING RETROFITS ON EXISTING BRIDGES

- 1. The transition detail shown on this sheet shows (a) the standard post spacings within the typical thrie-beam approach transitions connecting to existing bridges with retrofit traffic railings, and (b) depict the typical alignments of the approach transitions.
- 2. The curb and gutter flare shown on this sheet is typical of flares that are to be constructed when approach slab curbs extend to the beginning of the slab, and where other treatment to curb blunt ends are not in place.
- 3. The special steel post for roadway thrie-beam transitions detailed on this sheet is specific to all transition applications on this index that require one or more steel posts.

The special steel post and base plate assembly shall be fabricated using ASTM A36 or ASTM A709 Grade 36 steel. Welding shall conform to ANSI/AASHTO/AWS D1.5. The assembly shall be hot-dip zinc coated in accordance with Section 536 of the Specifications.

Anchor studs shall be fully threaded rods in accordance with ASTM F1554 Grade 36 or ASTM A193 Grade B7. All nuts shall be heavy hex in accordance with ASTM A563 or ASTM A19

4. Anchor studs and nuts shall be hot-dip zinc coated in accordance with the Specifications. After the nuts have been snug tightened, the anchor stud threads shall be single punch distorted immediately above the top nuts to prevent loosening of the nuts. Distorted threads shall be coated with a galvanizing compound in accordance with the Specifications.

Adhesive bonding material systems for anchors shall comply with Specification Section 937 and be installed in accordance with Specification Section 416.4. Nested beam extensions and points for terminal connector attachments will vary for traffic railing barrier vertical face retrofits. The plan views for the vertical face retrofit barriers show the primary configurations for each particular scheme. The associated pictorial views show the variations.

- 5. For installing thrie-beam terminal connector to traffic railing vertical face retrofits, see notations on Sheets 12 through 15 and the flag notation on Sheet 23.
- 6. Payment for connections to traffic railing vertical face retrofits are to be made under the contract unit price for Bridge Anchorage Assembly, EA., and shall be full compensation for bolt hole construction, terminal connector, terminal connector plate and bolts, nuts and washers.

#### DESIGN NOTES FOR GUARDRAIL TRANSITIONS CONNECTING TO TRAFFIC RAILING RETROFITS ON EXISTING BRIDGES

1. For selection of an appropriate transition scheme, see the Structures Manual for instructions to the Structures and Roadway engineers.

SHEET

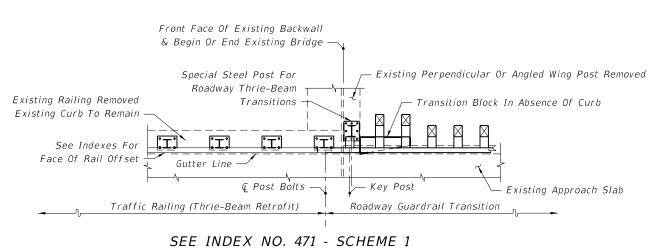
NO.

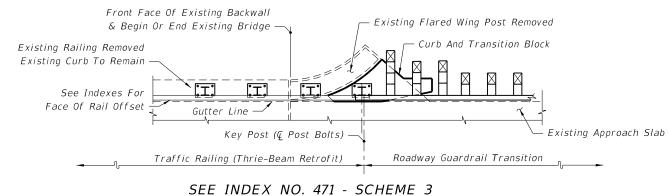
REVISION

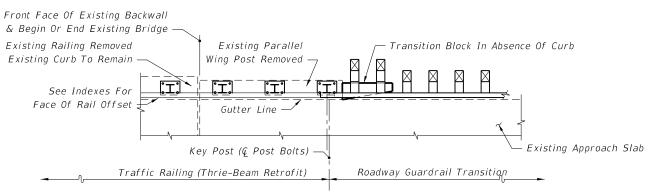
07/01/07

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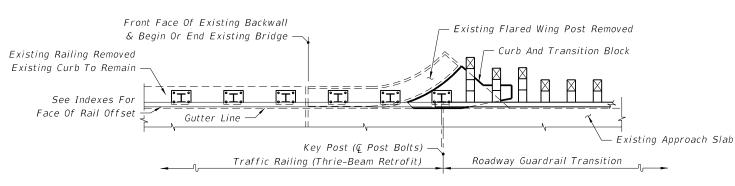








SEE INDEX NO. 471 - SCHEME 2



SEE INDEX NO. 471 - SCHEME 3

## PARTIAL PLAN VIEWS OF GUARDRAIL APPROACH TRANSITIONS AND CONNECTIONS FOR BRIDGE TRAFFIC RAILING (THRIE-BEAM RETROFIT)

2013

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07/01/07



Existing Perpendicular Or Angled Wing Post

Tra<u>n</u>sition Block In Absence Of Curb

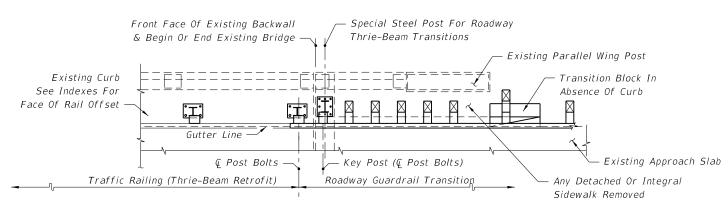
└─ Existing Approach Slab

Special Steel Post For Roadway

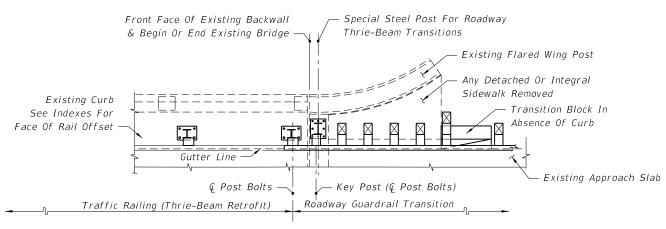
Thrie-Beam Transitions

— Key Post (ℚ Post Bolts)

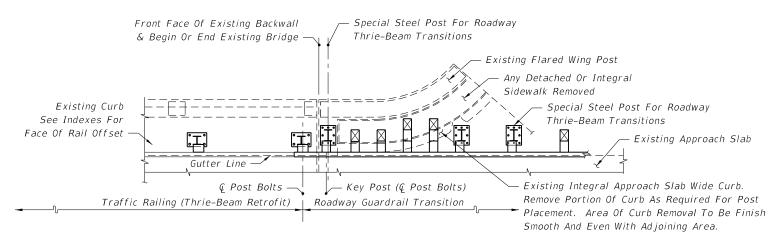
Roadway Guardrail Transition



#### SEE INDEX NOS. 472 & 475 - SCHEME 2



SEE INDEX NOS. 472 & 475 - SCHEME 2



SEE INDEX NOS. 472 & 475 - SCHEME 2

## PARTIAL PLAN VIEWS OF GUARDRAIL APPROACH TRANSITIONS AND CONNECTIONS FOR BRIDGE TRAFFIC RAILING (THRIE-BEAM RETROFIT)

Existing Curb

See Indexes For

Face Of Rail Offset

Front Face Of Existing Backwall

& Begin Or End Existing Bridge

II.

Traffic Railing (Thrie-Beam Retrofit)

Gutter Line -

€ Post Bolts

SEE INDEX NOS. 472 & 475 - SCHEME 1

PARTIAL PLAN VIEWS OF GUARDRAIL APPROACH TRANSITIONS AND CONNECTIONS

LAST REVISION 07/01/07

DESCRIPTION:



Existing Flared Wing Post

Roadway Guardrail Transition

- Existing Flared Wing Post

Key Post (@ Post Bolts)

Roadway Guardrail Transition

End of Existing Approach Slab Flare

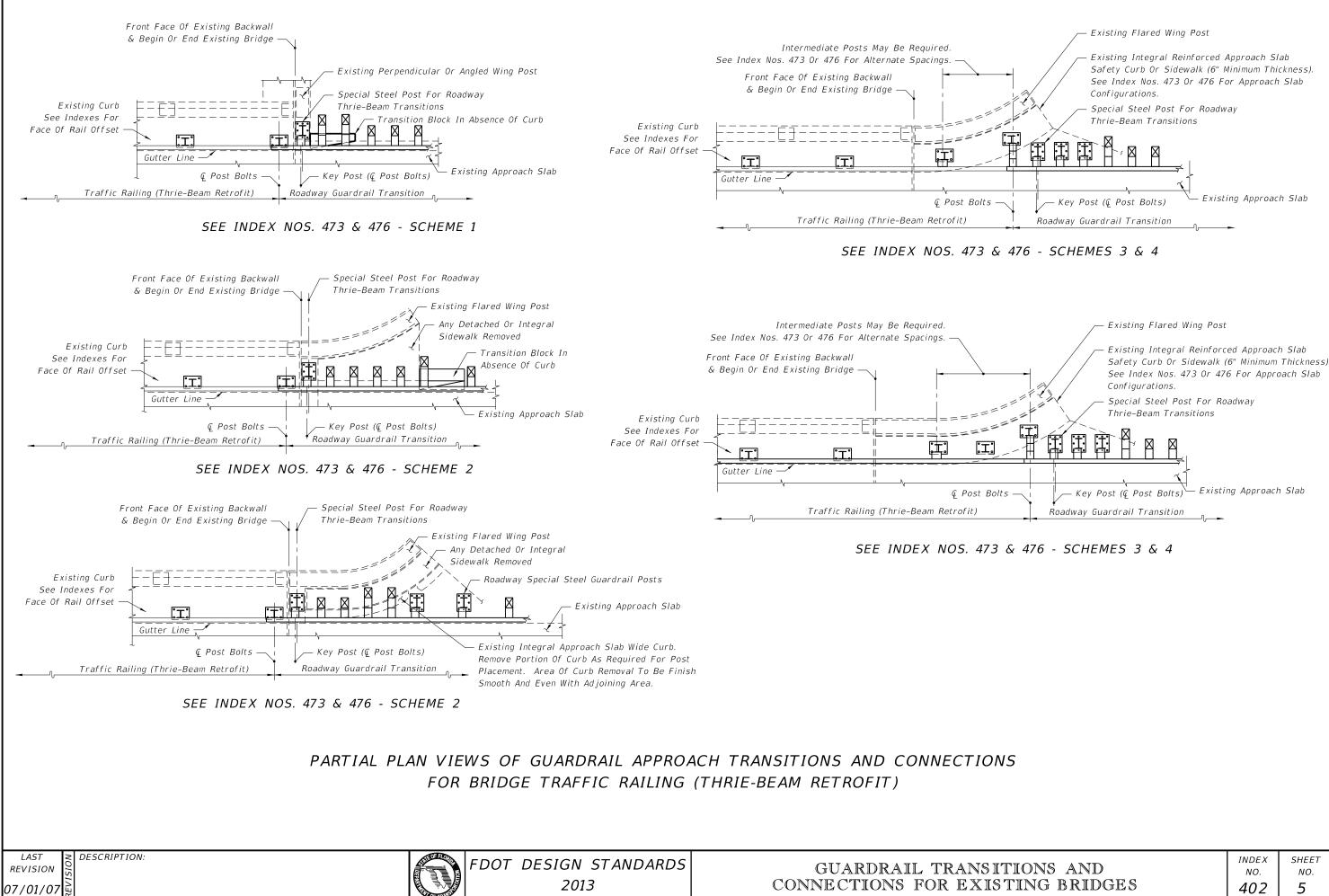
Transition Block In Absence Of Curb

Existing Approach Slab

- Key Post (& Post Bolts)

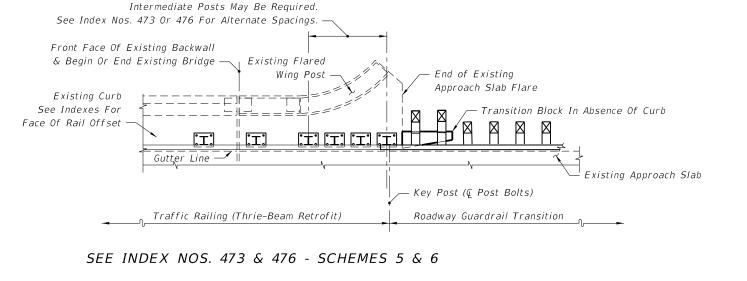
- Transition Block In Absence Of Curb

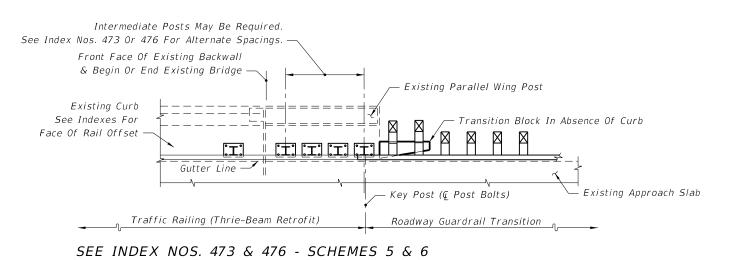
Existing Approach Slab





DESCRIPTION:





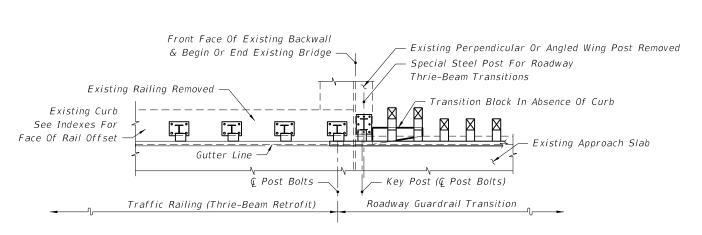
PARTIAL PLAN VIEWS OF GUARDRAIL APPROACH TRANSITIONS AND CONNECTIONS FOR BRIDGE TRAFFIC RAILING (THRIE-BEAM RETROFIT)

> FDOT DESIGN STANDARDS 2013

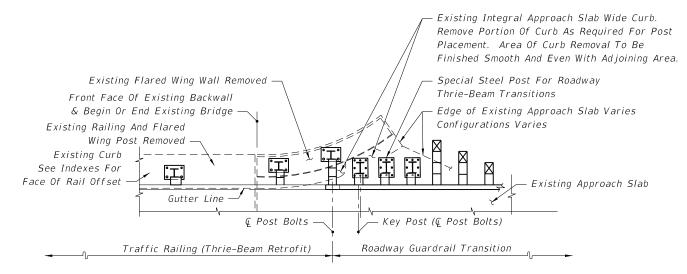
REVISION

07/01/07

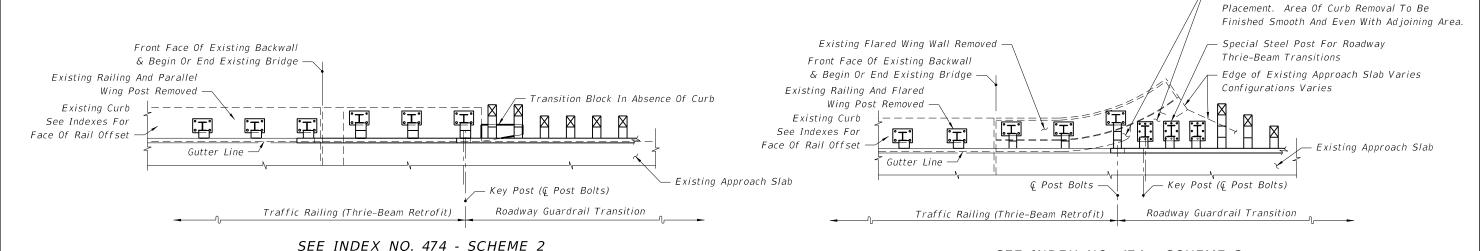




SEE INDEX NO. 474 - SCHEME 1



SEE INDEX NO. 474 - SCHEME 3



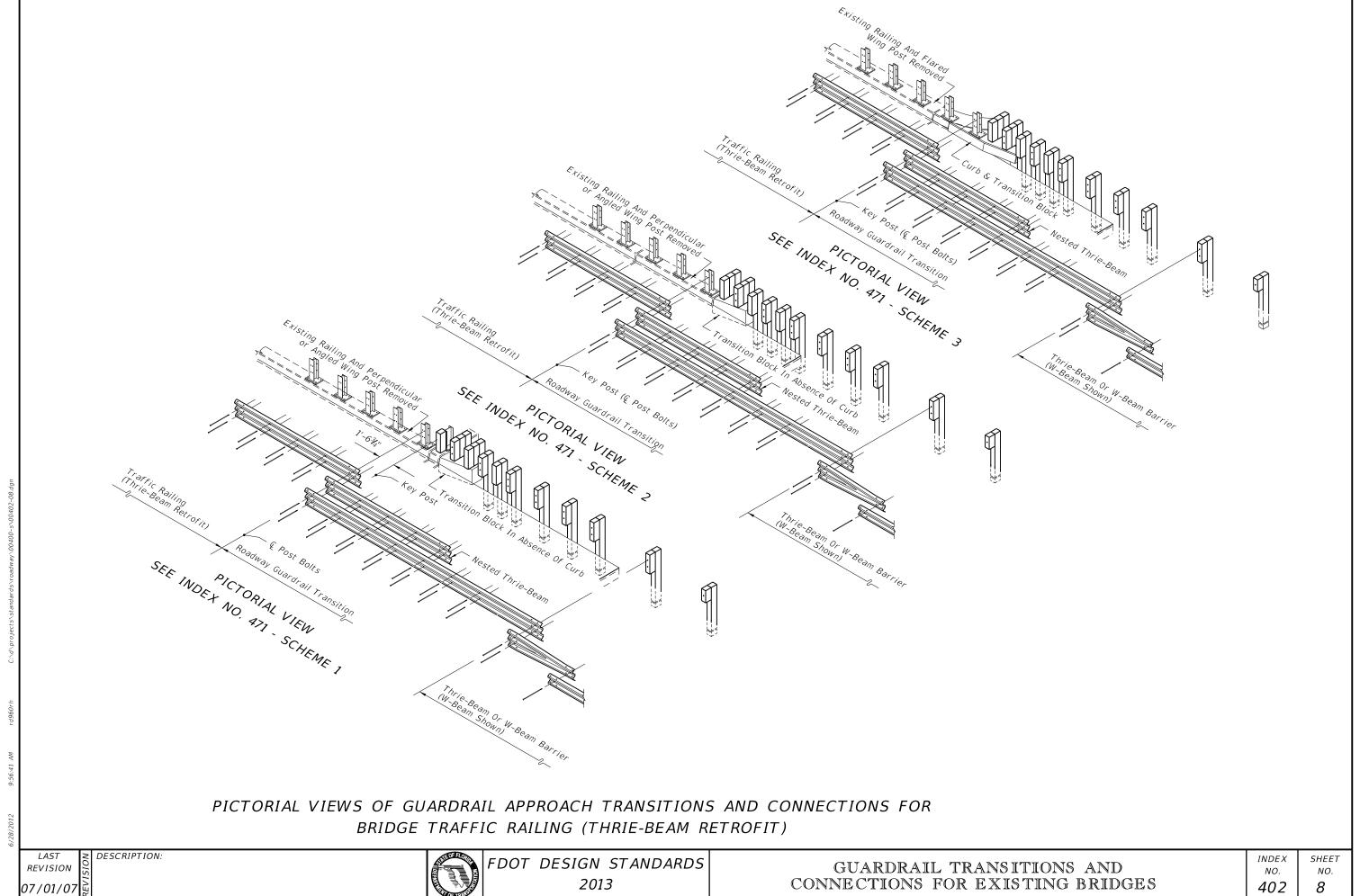
SEE INDEX NO. 474 - SCHEME 3

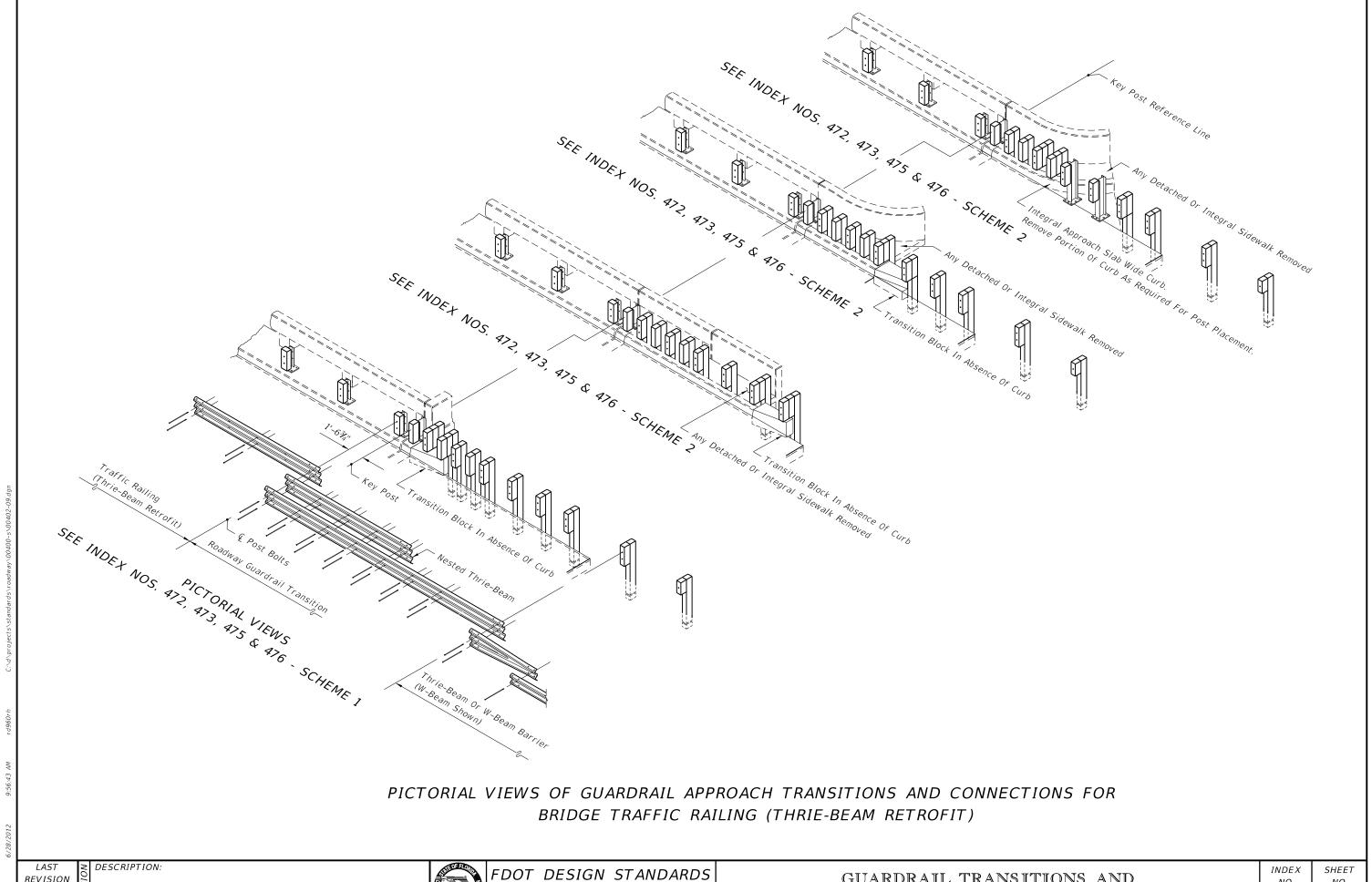
GUARDRAIL TRANSITIONS AND

CONNECTIONS FOR EXISTING BRIDGES

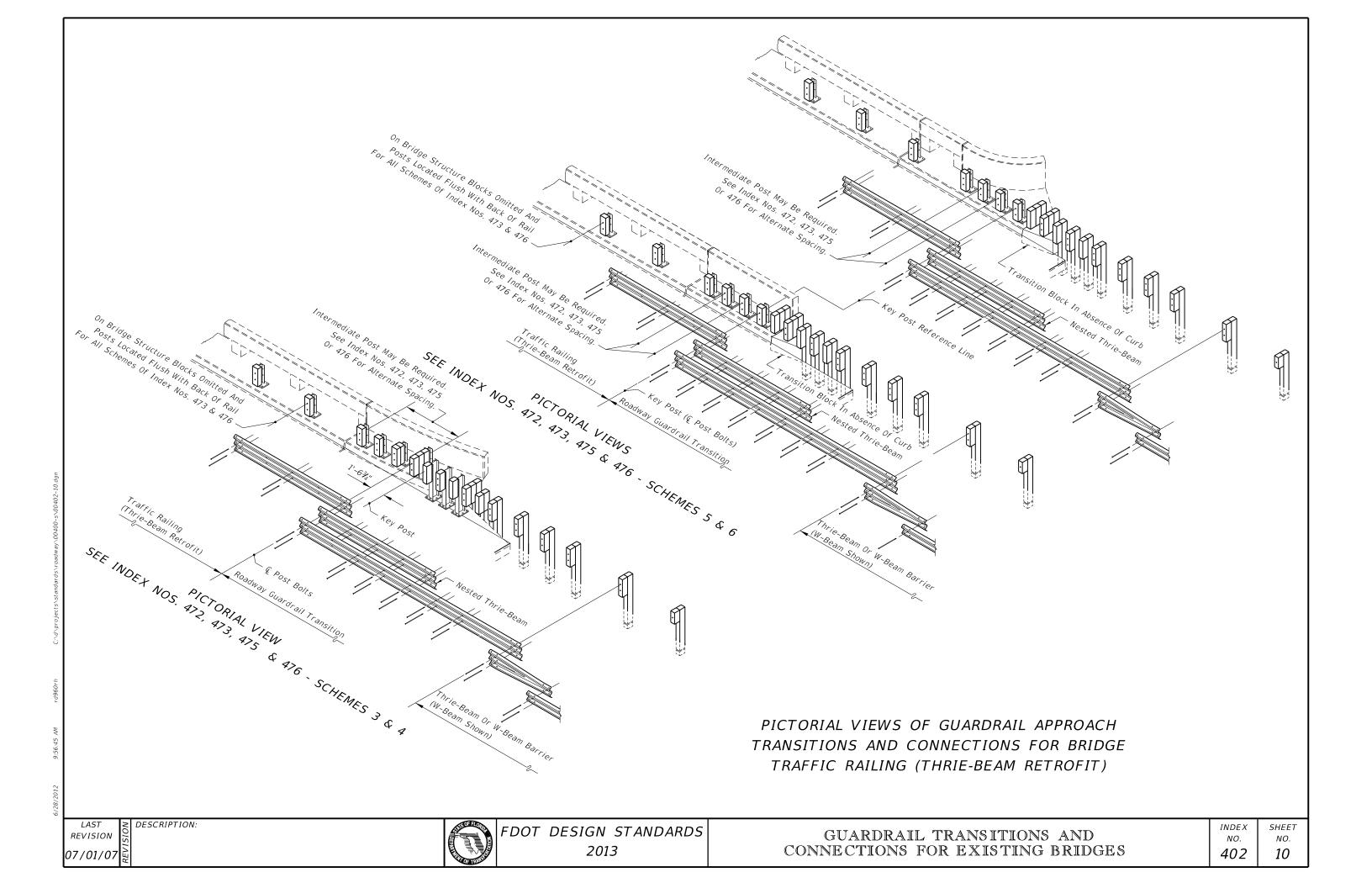
# PARTIAL PLAN VIEWS OF GUARDRAIL APPROACH TRANSITIONS AND CONNECTIONS FOR BRIDGE TRAFFIC RAILING (THRIE-BEAM RETROFIT)

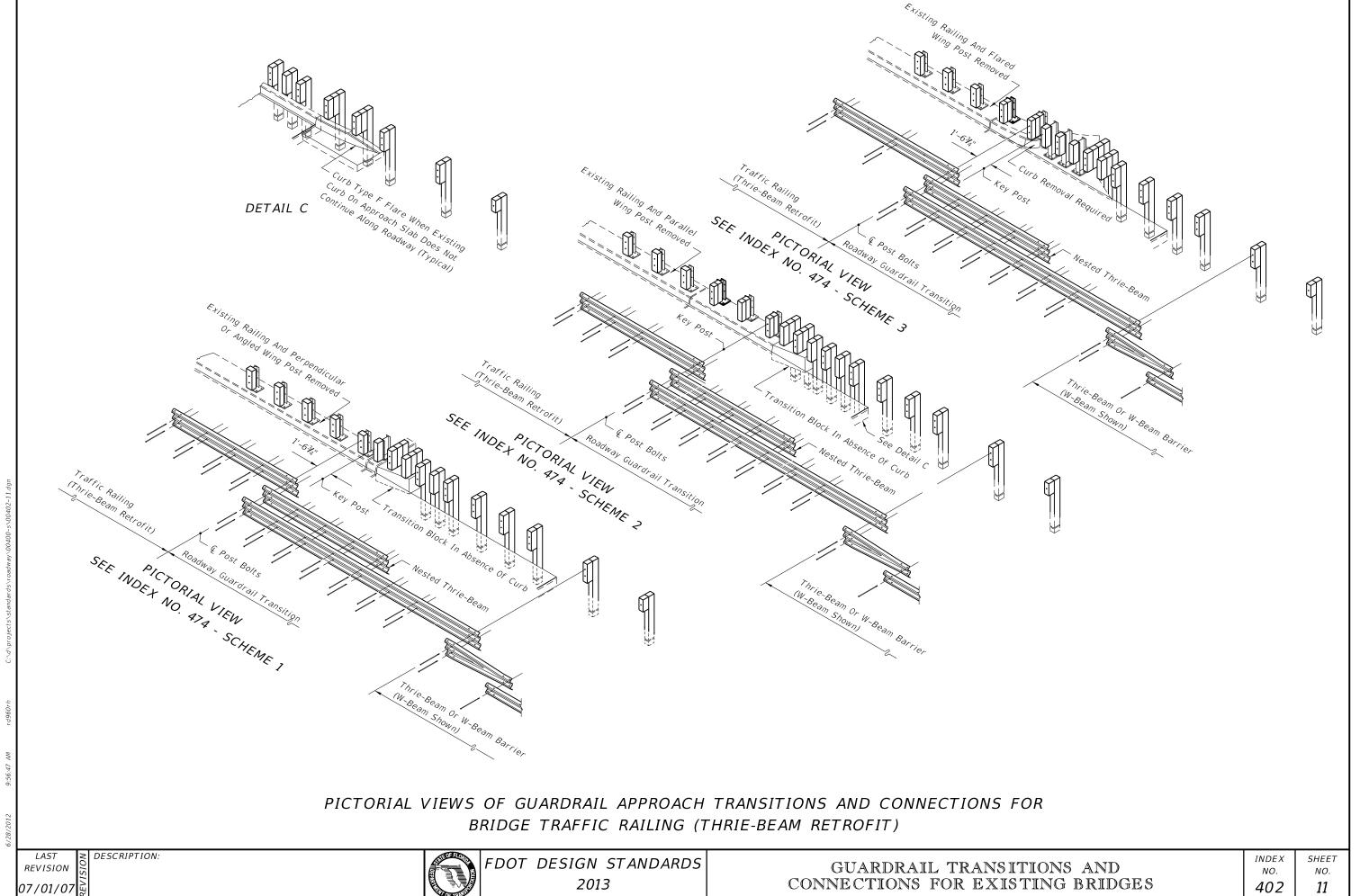
Existing Integral Approach Slab Wide Curb. Remove Portion Of Curb As Required For Post





REVISION 07/01/07





07/01/07

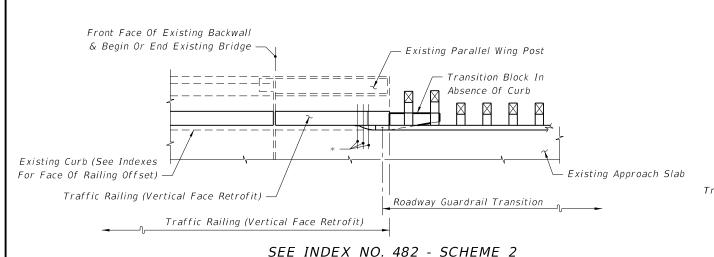
402

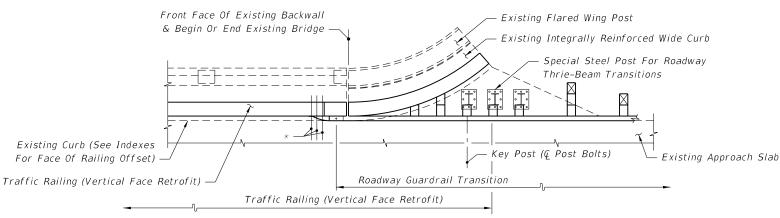
12

REVISION

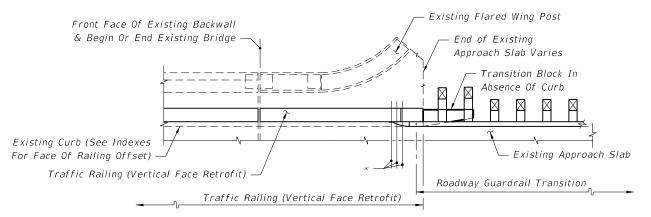
07/01/07

DESCRIPTION:

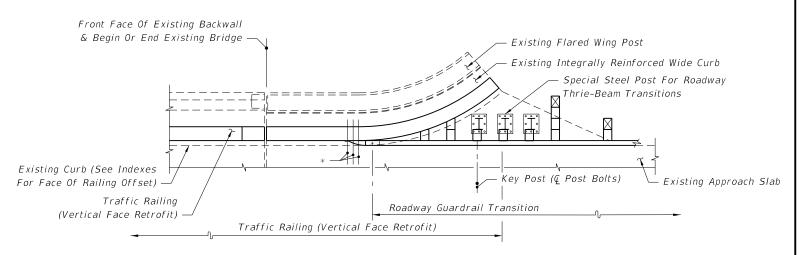




SEE INDEX NO. 482- SCHEME 3



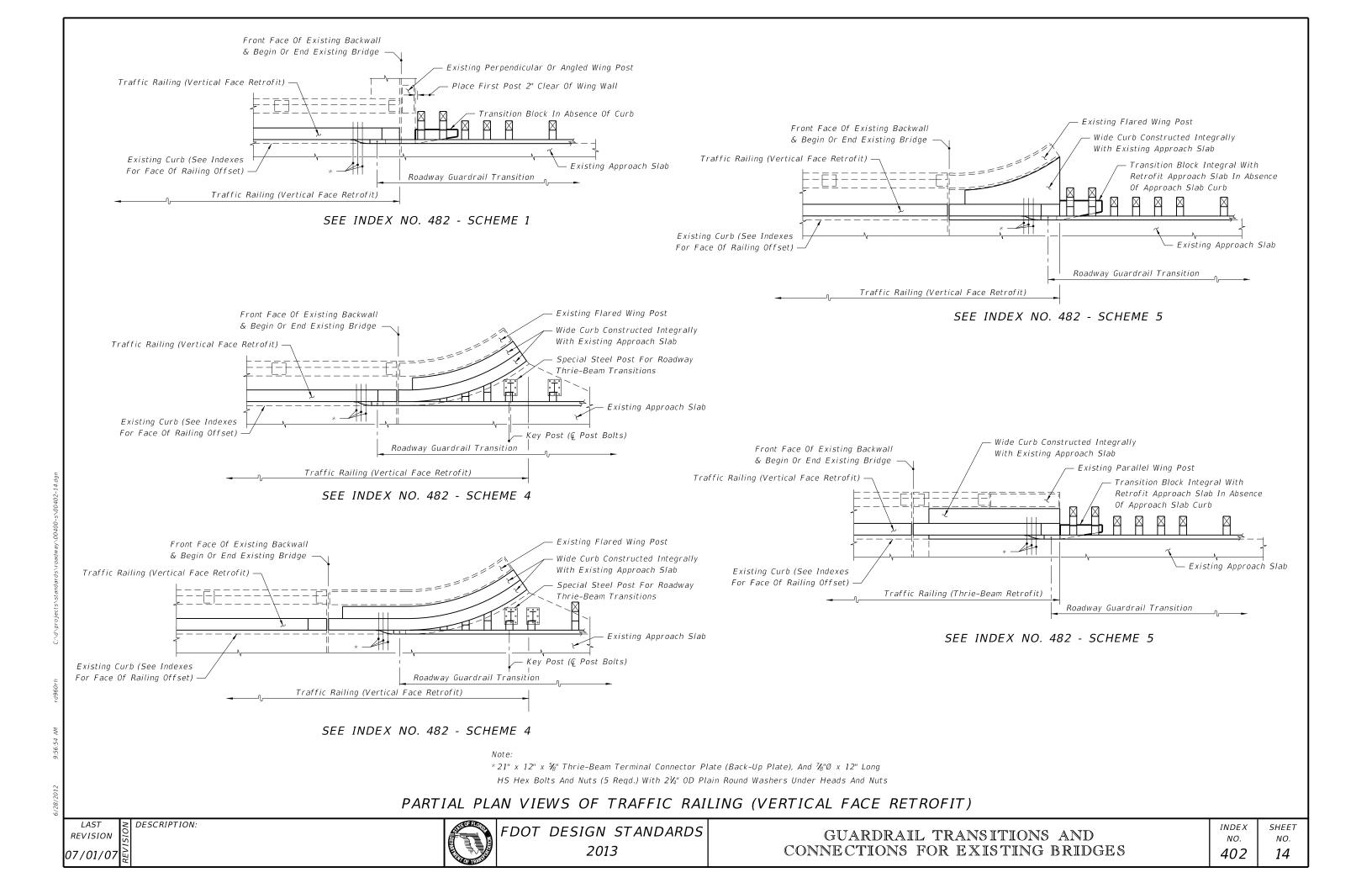
SEE INDEX NO. 482 - SCHEME 2



SEE INDEX NO. 482- SCHEME 3

\*21" x 12" x  $lac{N_0}{8}$ " Thrie-Beam Terminal Connector Plate (Back-Up Plate), And  $rac{N_0}{6}$ " $\emptyset$  x 12" Long HS Hex Bolts And Nuts (5 Reqd.) With  $2 {\cal V}_4$ " OD Plain Round Washers Under Heads And Nuts

## PARTIAL PLAN VIEWS OF TRAFFIC RAILING (VERTICAL FACE RETROFIT)



Front Face Of Existing Backwall

Existing Railing Removed

Traffic Railing (Vertical

Face Retrofit) Constructed

Existing Curb (See Indexes For Face Of Railing Offset)

Front Face Of Existing Backwall

& Begin Or End Existing Bridge

Existing Railing Removed

Traffic Railing (Vertical

Face Retrofit) Constructed

Existing Curb (See Indexes

For Face Of Railing Offset)

& Begin Or End Existing Bridge -

Traffic Railing (Vertical Face Retrofit)

Traffic Railing (Vertical Face Retrofit)

Roadway Guardrail Transition

- Existing Parallel Wing Post Removed and Traffic

Transition Block In Absence Of Curb

Existing Approach Slab

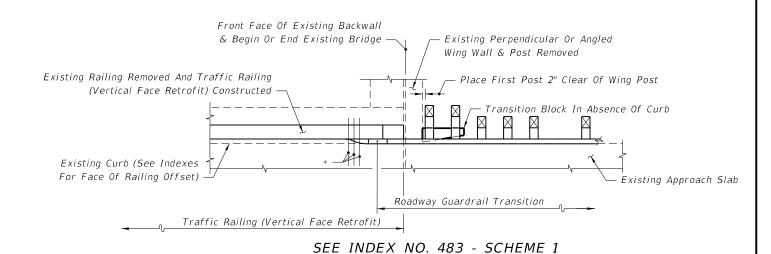
Railing (Vertical Face Retrofit) Constructed

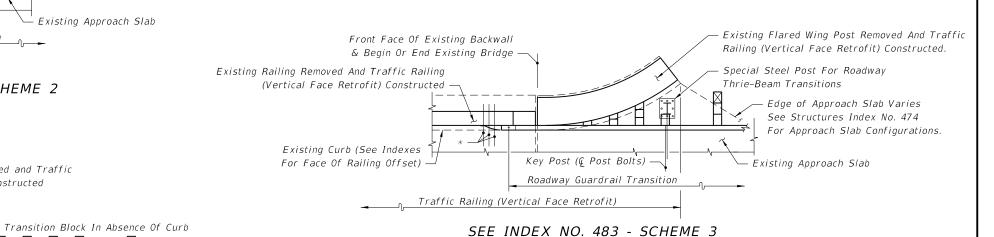
Roadway Guardrail Transition

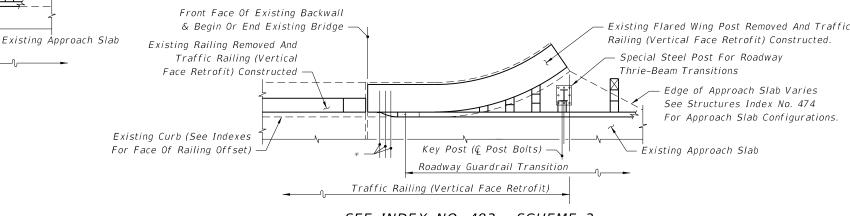
SEE INDEX NO. 483 - SCHEME 2

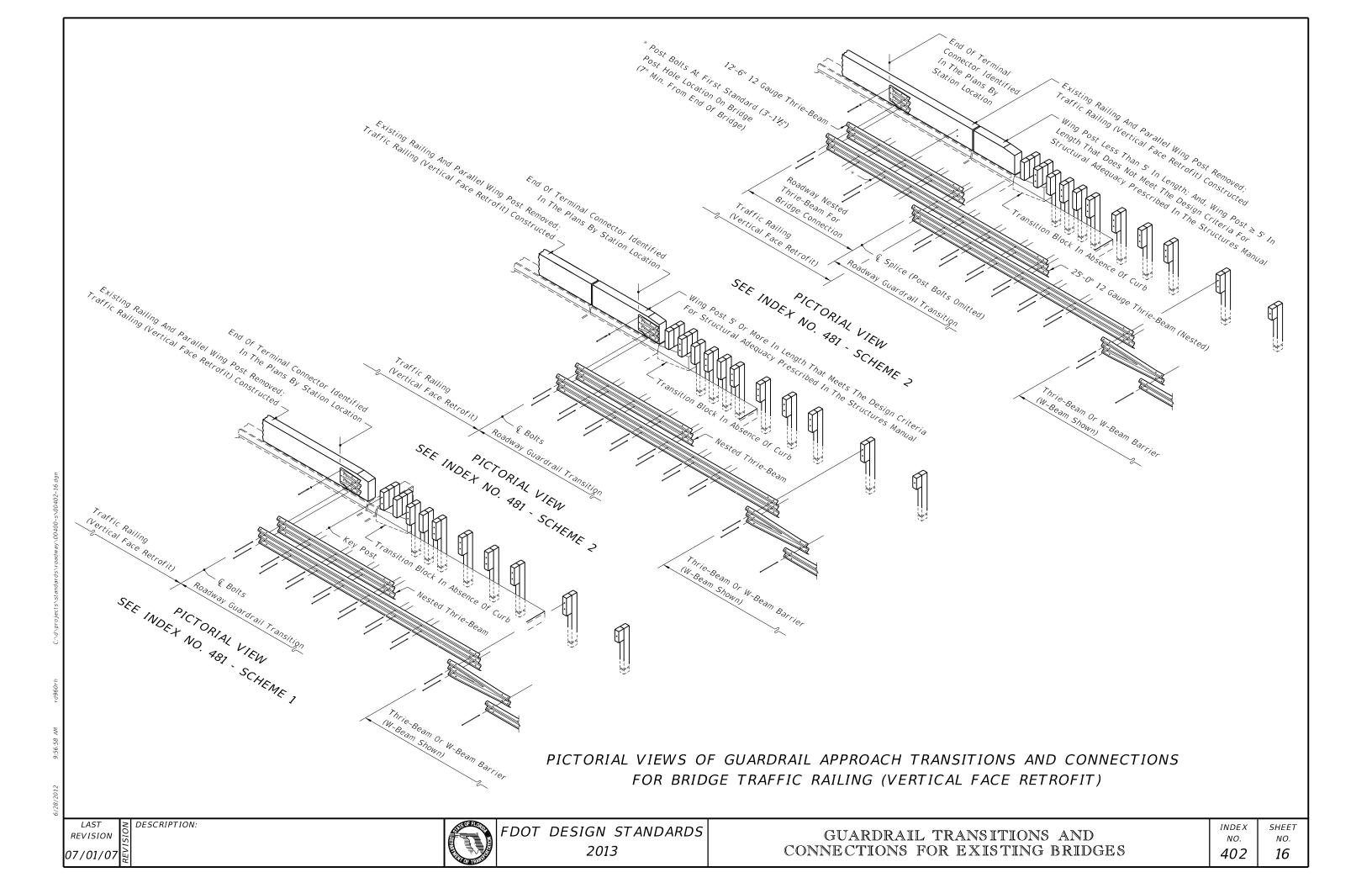
Existing Parallel Wing Post Removed and Traffic

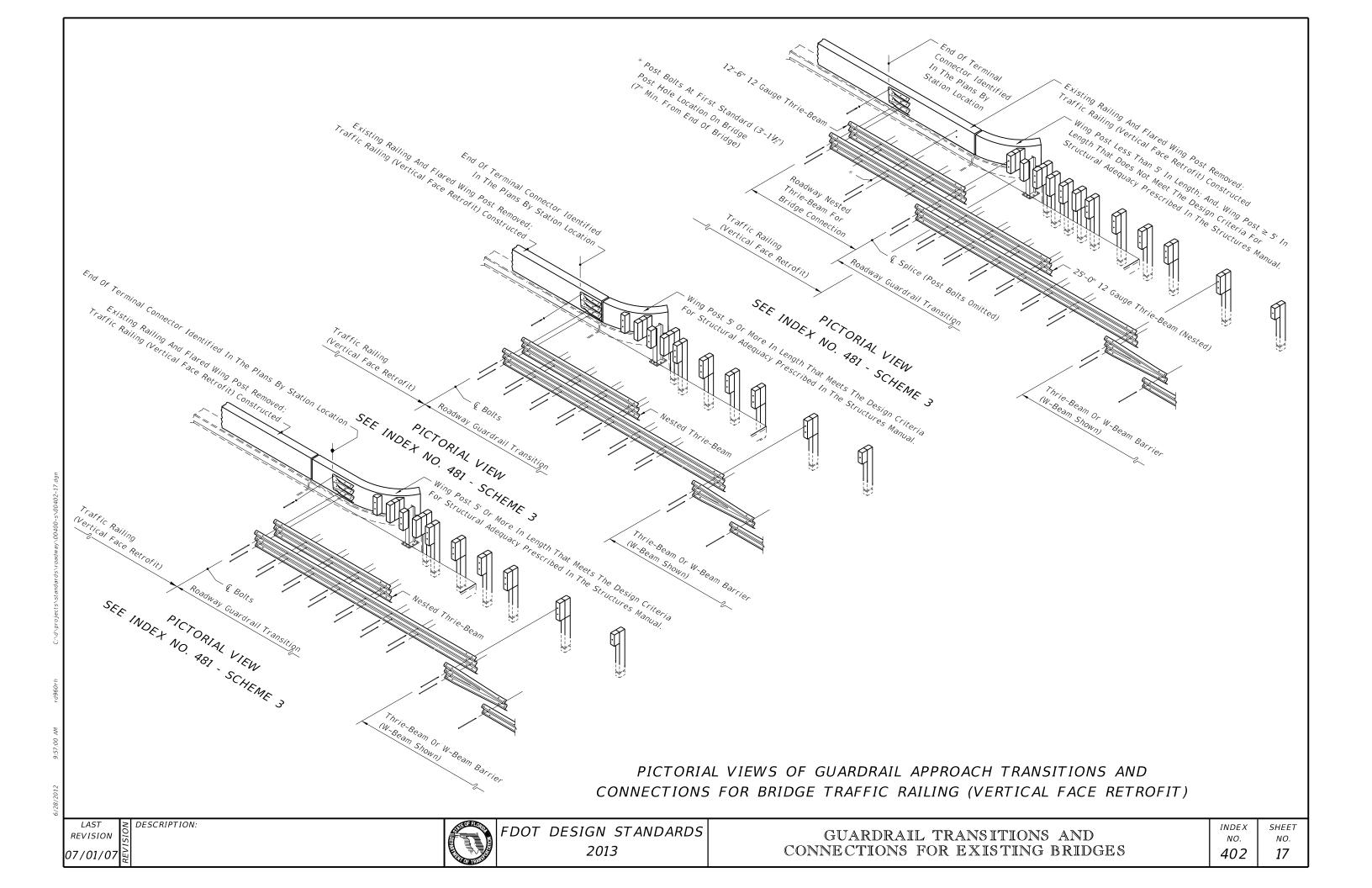
Railing (Vertical Face Retrofit) Constructed

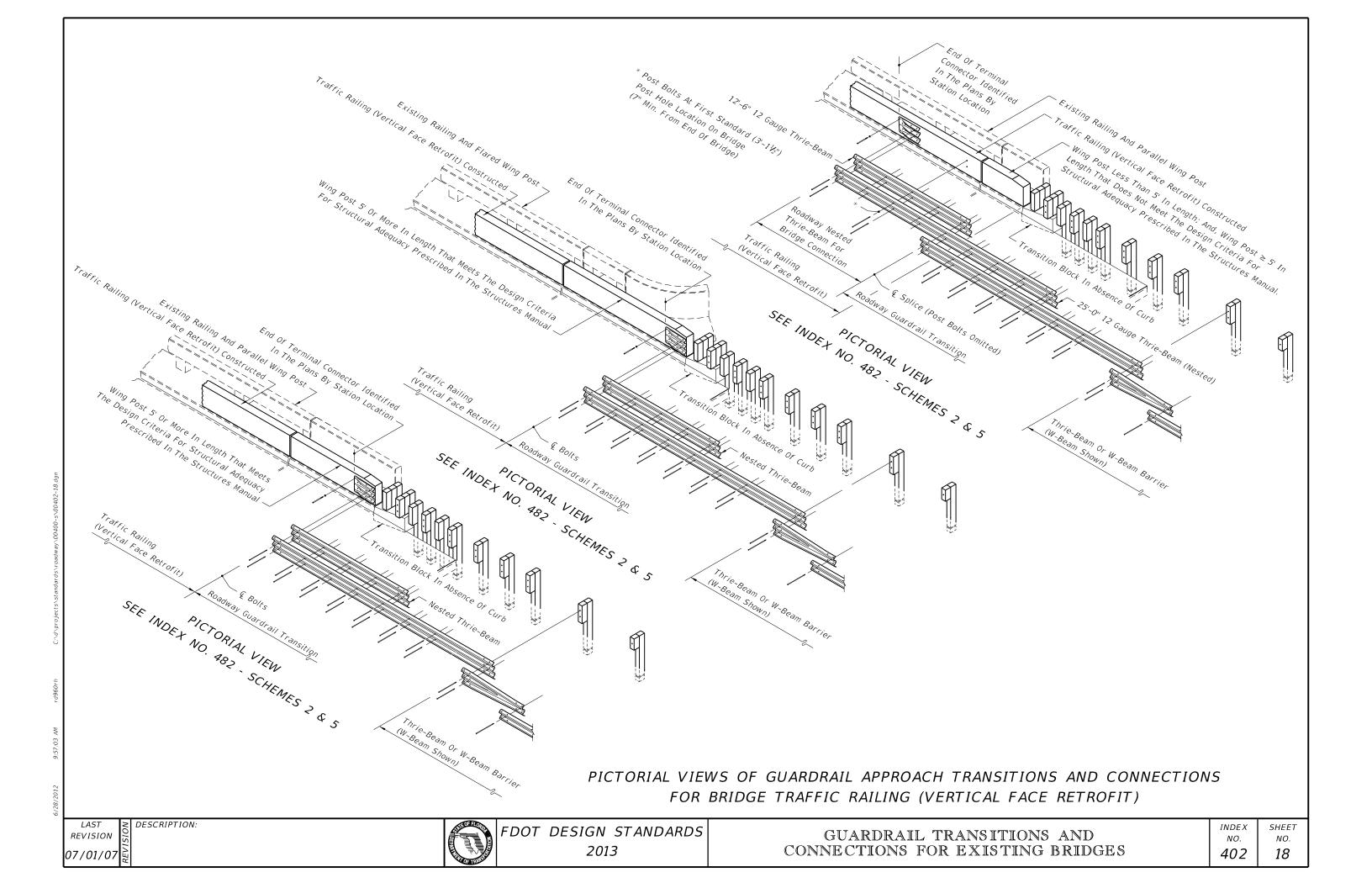


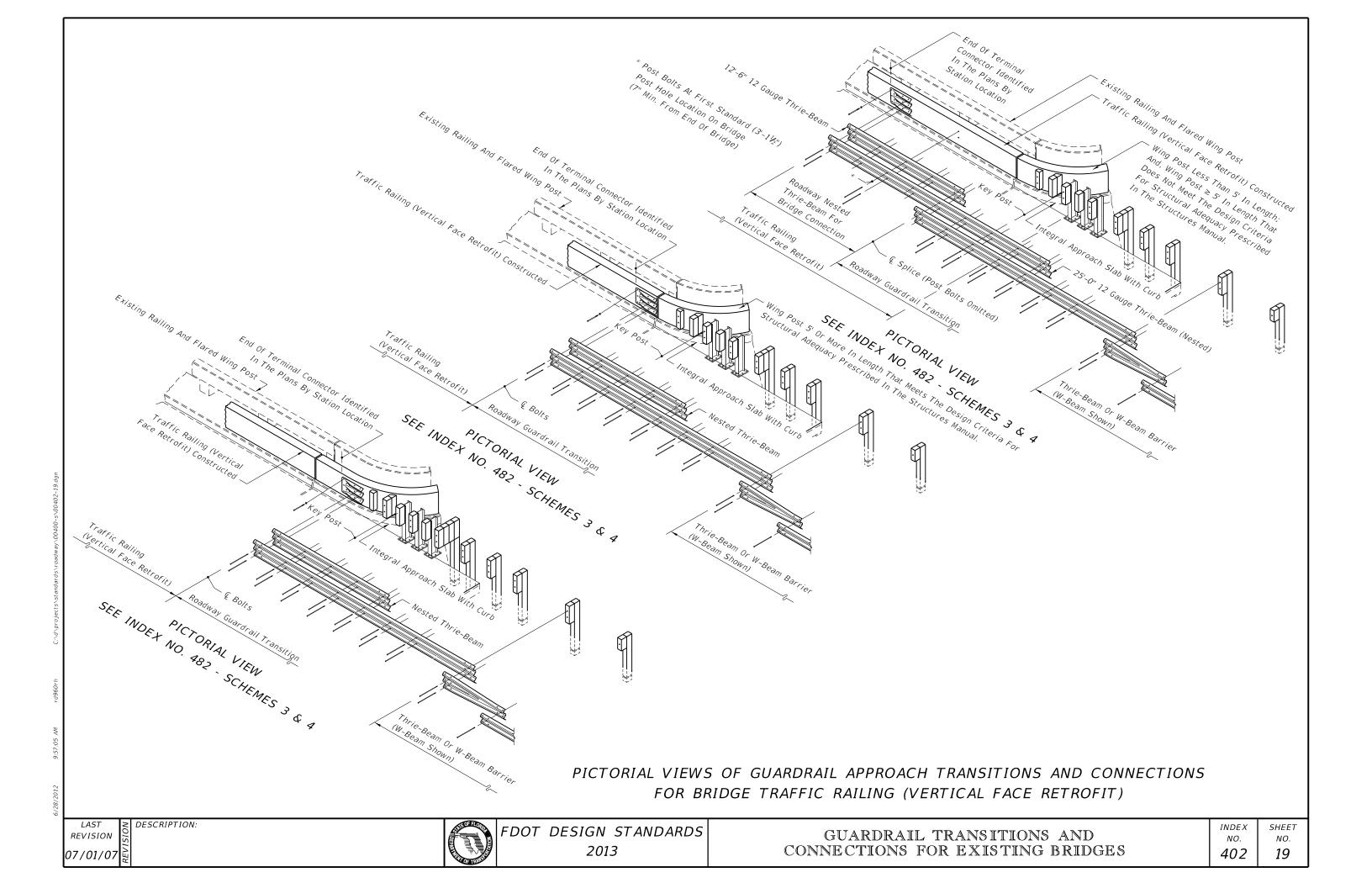










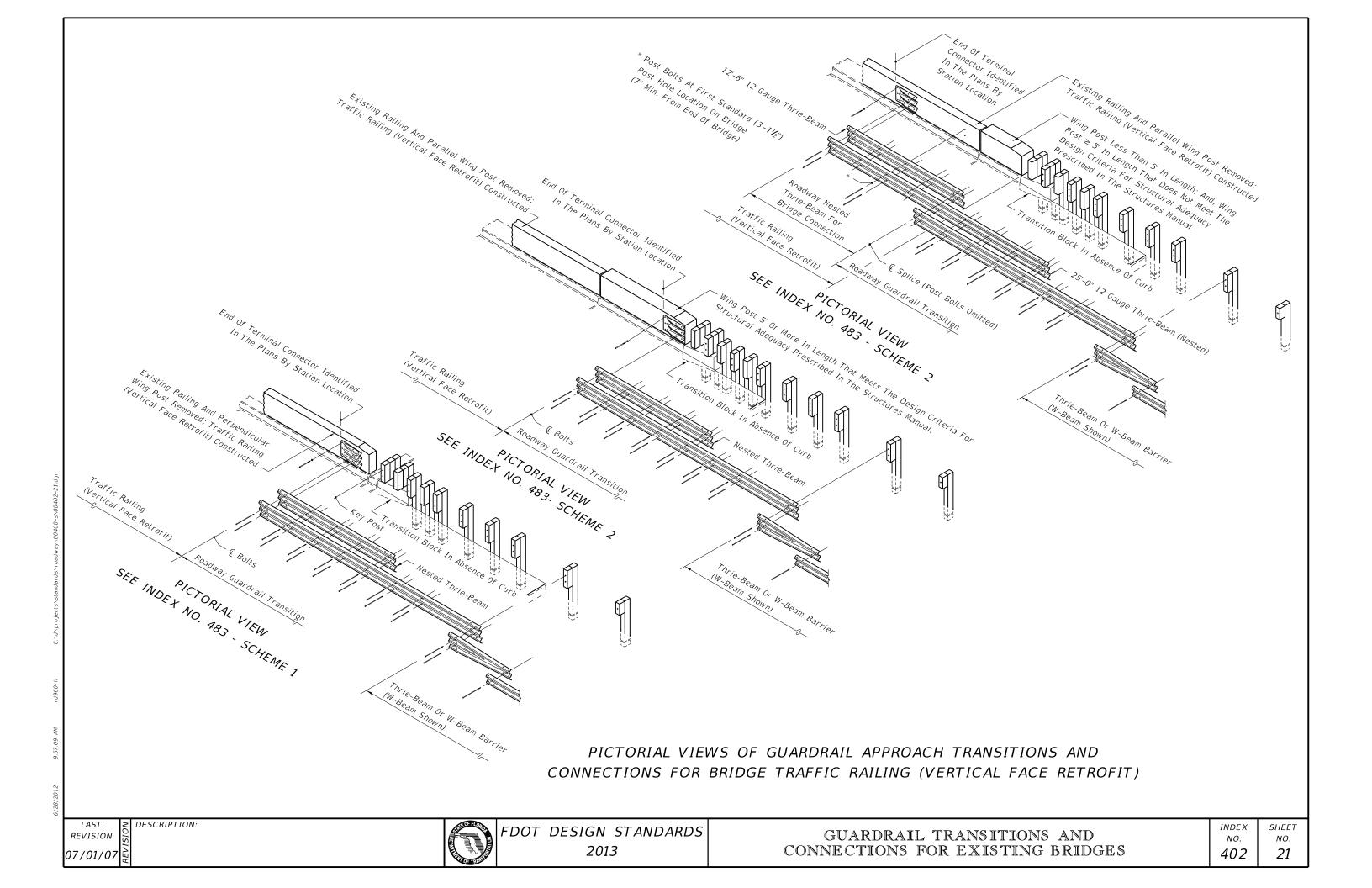


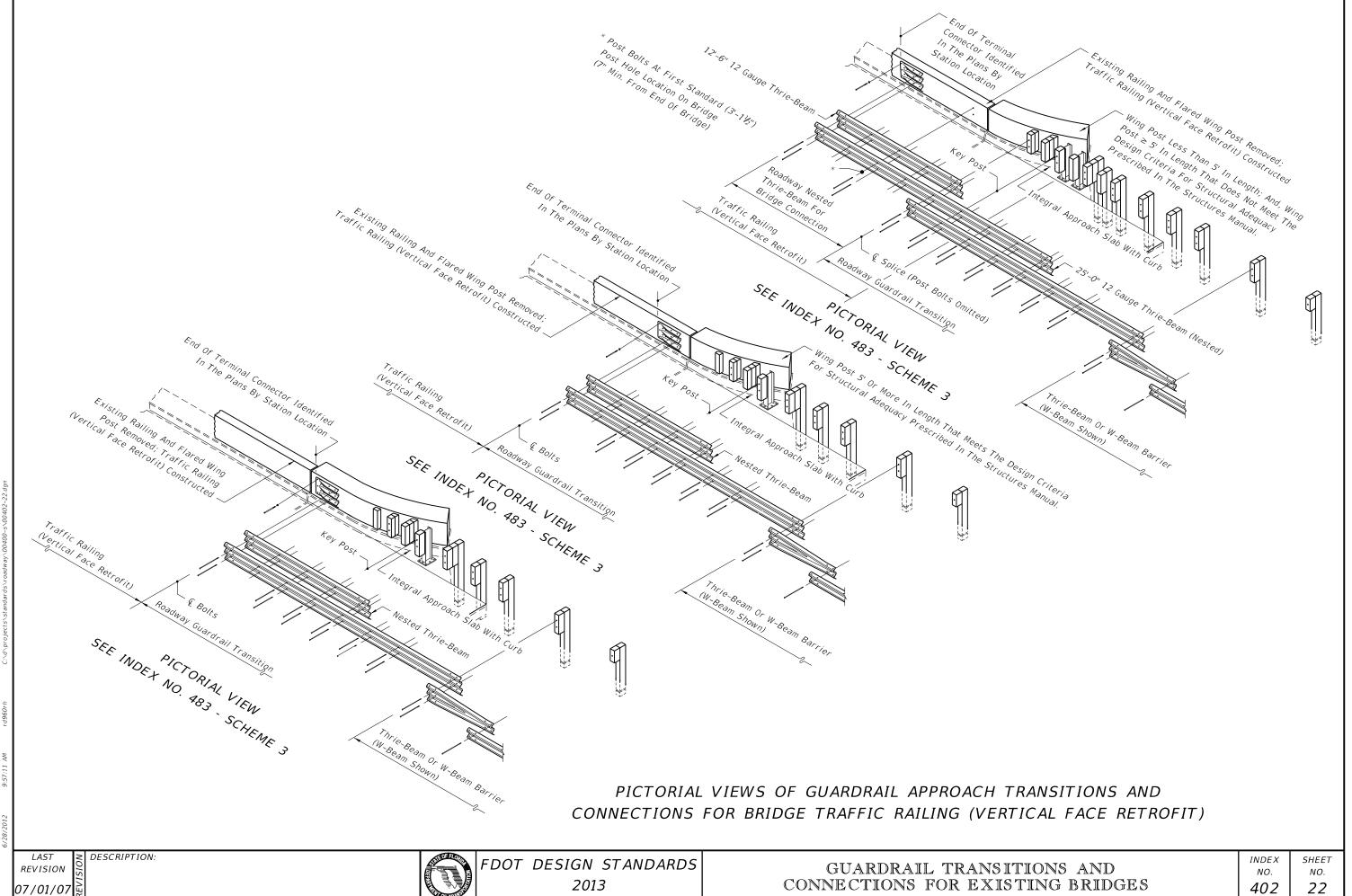
PICTORIAL VIEWS OF GUARDRAIL APPROACH TRANSITIONS AND CONNECTIONS FOR BRIDGE TRAFFIC RAILING (VERTICAL FACE RETROFIT)

REVISION 07/01/07

DESCRIPTION:





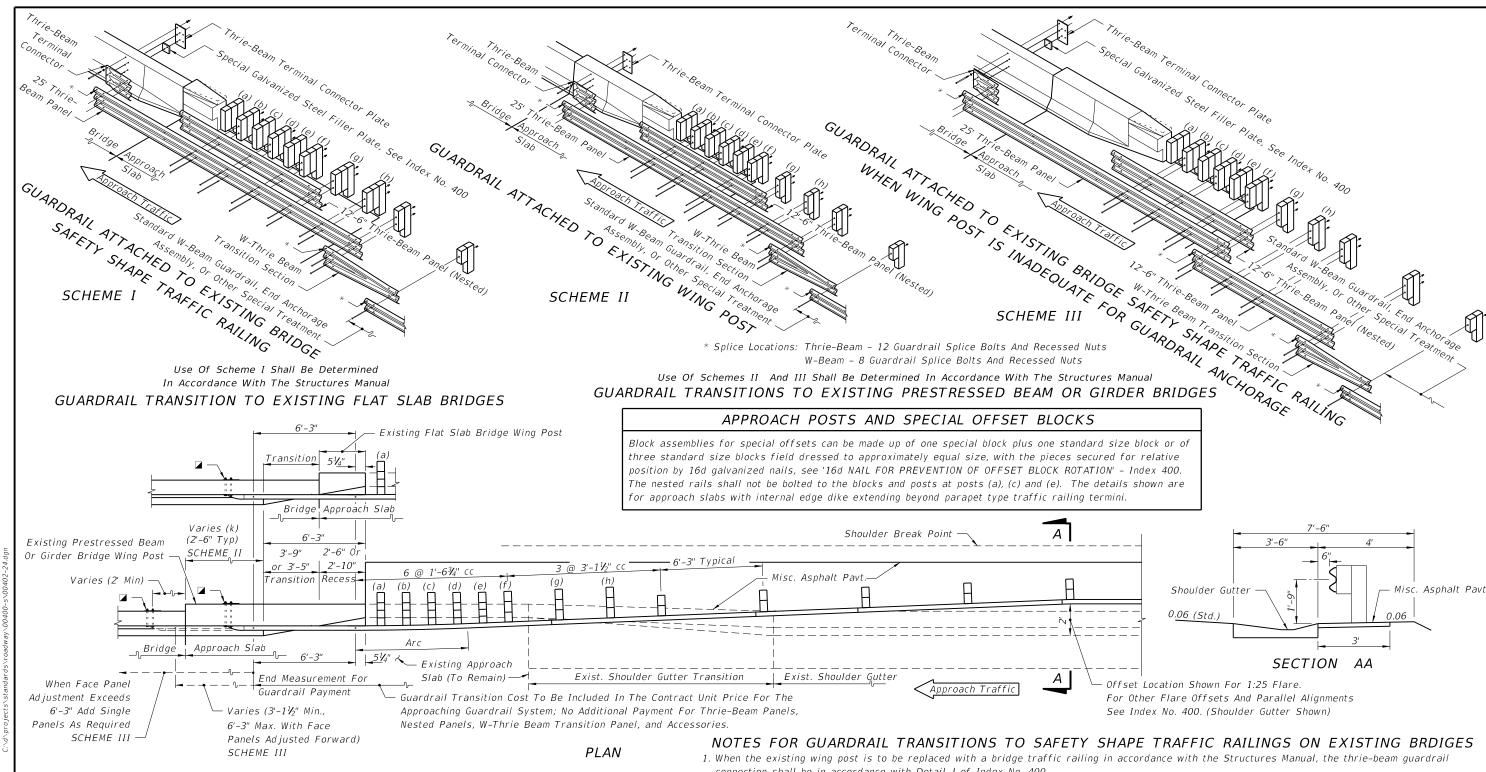


TRAILING END GUARDRAIL AND ANCHORAGE FOR BRIDGE TRAFFIC RAILING (THRIE BEAM RETROFITS)

LAST REVISION 07/01/07

DESCRIPTION:





☑ 21"x12"x⅓" Thrie-Beam Terminal Connector Plate (Back-Up Plate), And ⅙"∅ x 18" Long [15" Long With 3½" Min. Thread Length For Bridge Safety Shape Railing] HS Hex Bolts And Nuts (5 Regd.) With 2½" OD Plain Round Washers Under Heads And Nuts. [When Attaching Guardrail To Existing Wing Posts Or Bridge Rails, Care Should Be Exercised To Avoid Damaging Conduits And Their Utilities That May Be Routed Through Wing Posts Or Bridge Rails. When Conduits And Their Utilities Are Encountered, At Least Five 1/2" HS Hex Bolts Shall Be Installed In Any Of The Seven Holes Provided In The Thrie-Beam Terminal Connector.]

- connection shall be in accordance with Detail J of Index No. 400.
- 2. When the guardrail attachment overlays the Bridge Number, Bridge Name or Date on the traffic railing, provide an aluminum sign panel with the obscured information. Attach the sign panel to the face of the traffic railing adjacent to the Thrie-Beam Terminal Connector with 1/4"0 x 1" long concrete screws or expansion anchors at each corner, as approved by the Engineer. The sign panel shall be a minimum  $y_{16}$ " thick and meet the requirements of Specification Section 700 with a white background and 3" tall black letters and sized appropriately to contain the information required. The cost of the sign panel shall be included in the cost of the Guardrail Bridge Anchorage Assembly.
- 3. When retrofitting thrie-beam quardrail to existing wing posts or existing bridge safety shape traffic railing, attachment construction to be paid for under the contract unit price for Guardrail Bridge Anchorage Assembly, EA., and shall be full compensation for bolt hole construction, terminal connector, terminal connector plate(s) and bolts, nuts and washers.

GUARDRAIL APPROACH TRANSITIONS AND CONNECTIONS FOR EXISTING FLAT SLAB, PRESTRESSED BEAM AND GIRDER BRIDGES WITH SAFETY SHAPE TRAFFIC RAILING EXTENDING LESS THAN FULL APPROACH SLAB LENGTH

LAST REVISION 01/01/10

DESCRIPTION.



FDOT DESIGN STANDARDS 2013

GUARDRAIL TRANSITIONS AND CONNECTIONS FOR EXISTING BRIDGES *INDEX* SHEET NO. NO. 402 24