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CHAPTER 9

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* Indicates 11 x 17 sheet; all others are 8 ½ x 11.

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INTRODUCTION

It is the intent of this chapter to establish the specific requirements, practices and/or guidelines of the Structure and Bridge Division for the completion of the transverse section plan sheet. It also provides other sources of information along with cross references to other Manuals of the Structure and Bridge Division (Volume V - series) to assist in the preparation of the transverse section sheet.

The practices and specific requirements contained in this chapter have been established based on the Structure and Bridge Division's experience and recommendations.

This chapter in the manual contains specific requirements, practices and/or guidelines for the detailing of the transverse section, part sections and miscellaneous details required on the transverse section plan sheet. It is not the intent of these requirements and guidelines to supercede the requirements contained in Chapter 1 of this manual but to convey necessary information to the designer for the completing the transverse section plan sheet.

It is expected that the users of this chapter will adhere to the practices and requirements stated herein.

NOTE:

Due to various restrictions on placing files in this manual onto the Internet, portions of the drawings shown do not necessarily reflect the correct line weights, line types, fonts, arrowheads, etc. Wherever discrepancies occur, the written text shall take precedence over any of the drawn views.

GENERAL INFORMATION:

This section of the chapter establishes the practices and specific requirements necessary for the completion of the transverse section sheet for a bridge plan assembly.

A typical bridge project will normally have a single transverse section plan sheet which shall include the transverse section, part transverse section(s), drip detail, notes and other miscellaneous details as required. Space permitting, other required details pertaining to the transverse section may be shown on this sheet.

Transverse sections shall be drawn viewing the section looking in the direction of increasing stations. The transverse section detail may be generated for use on the sheet by using the "btran" program from the VDOT BRIDGE MDL task bar in MicroStation V8i. A cell library (trans1.cell) is also provided to allow designers to develop the transverse section and to add the other miscellaneous details required.

The decision to incorporate architectural treatment into a bridge project and the type of treatments shall be made during the preliminary design. Incorporating or removing architectural treatments from a project at a later stage could require re-design and plan changes including quantities. See Chapter 5 of this manual for requirements, details and information for architectural treatment. Including architectural treatment on parapets/railings will affect geometric items such as distance between face-to-face of curb/rail, out-to-out of deck, etc. Architectural treatment on parapets/rails will also affect substructure widths and quantities.

For location of the transverse section sheet in the bridge plan assembly, see File No. 01.02-4.

The practices for the completion of interior sheets contained in Chapter 4 of this manual shall be adhered to.

TRANSVERSE SECTION TRANSVERSE SECTION PLAN SHEET GENERAL INFORMATION

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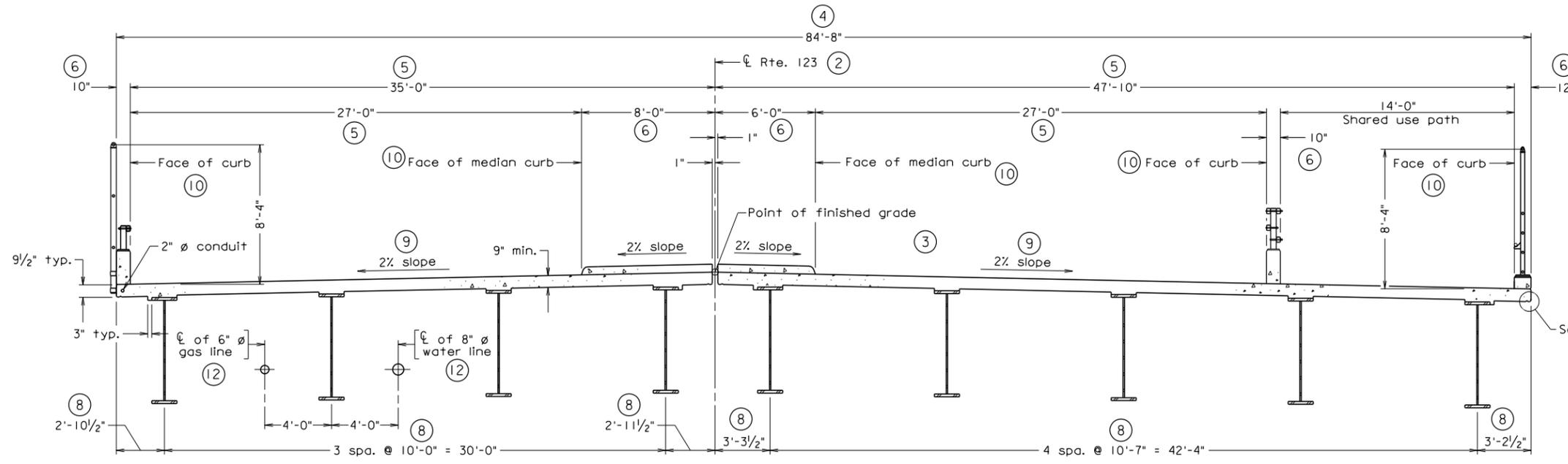
GENERAL INFORMATION:

This section of the chapter includes sample transverse section sheets with a check list for completing these sheets.

It is not the intent of the sample transverse section sheets and checklist contained in this section to show how to lay out the superstructure of a bridge. The transverse section sheets shown in this section are intended only to provide the designer with the necessary detail requirements for a complete transverse section plan sheet.

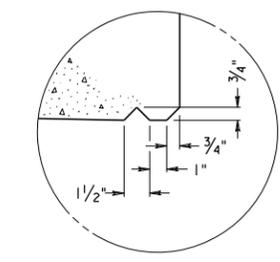
For location of the transverse section plan sheet in the bridge plan assembly, see File No. 01.02-4.

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ROUTE	PROJECT	ROUTE	PROJECT
VA.		123	0123-076-113, B678

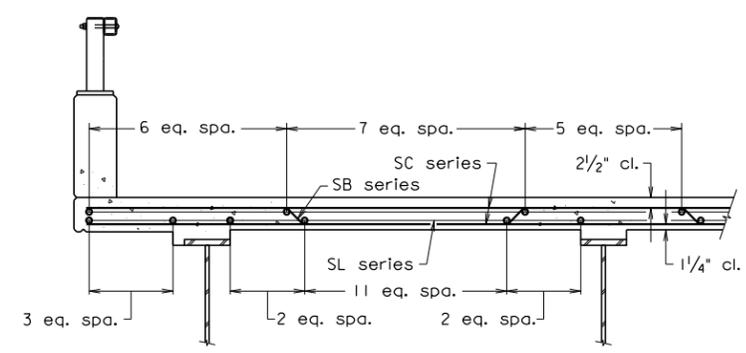


TRANSVERSE SECTION 1
Scale: 1/4" = 1'-0"

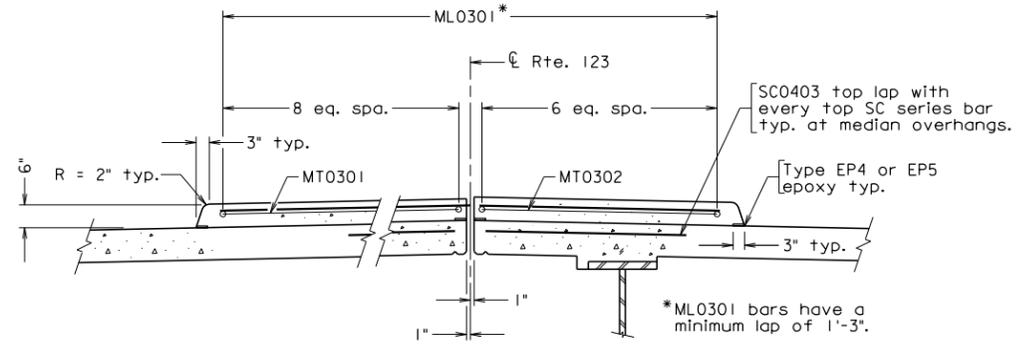
Notes: 21
For additional reinforcing steel details, see Deck Plan on sheet 15.
For details of parapet, see sheet 19. For details of median barrier, see sheet 21. For pedestrian fence details, see sheet 22.



DRIP DETAIL 14



PART SECTION 13
Shown for exterior overhang left of route centerline looking upstation. Other overhangs similar.



MEDIAN OVERHANG SECTION 15
For additional deck reinforcement details, see Part Section.

**TRANSVERSE SECTION
SAMPLE TRANSVERSE SECTION PLAN SHEET
SAMPLE TRANSVERSE SECTION SHEET - MEDIAN, UTILITIES AND SHARED USE PATH**

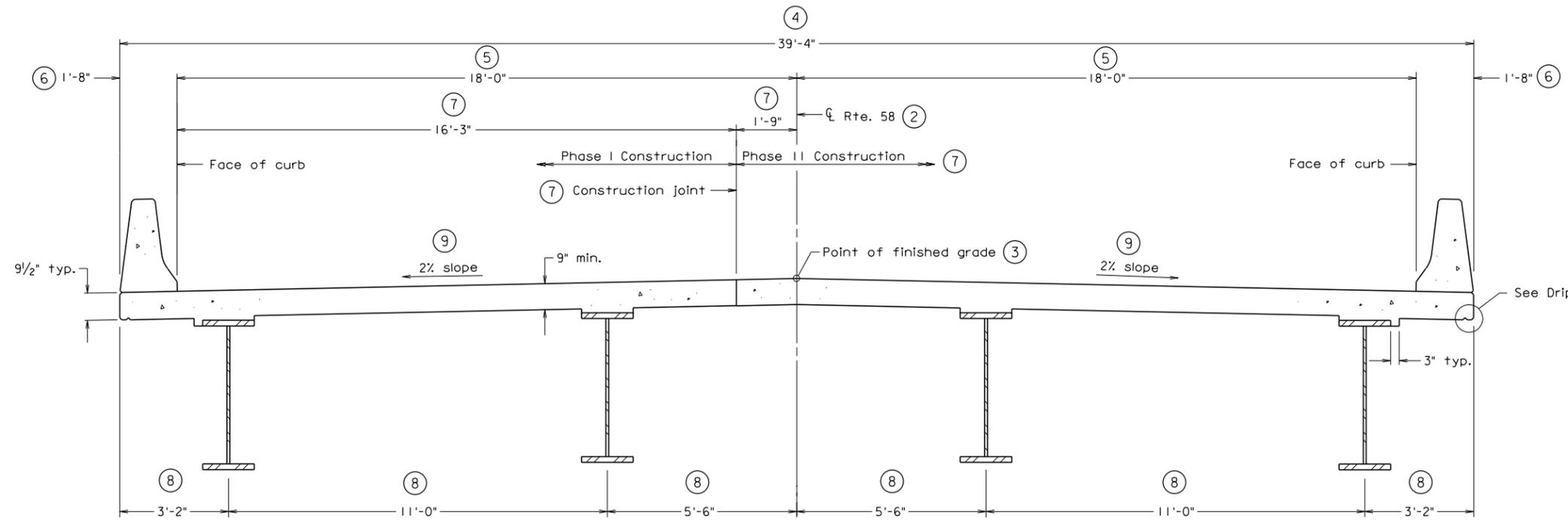
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22 TRANSVERSE SECTION		
No.	Description	Date
Designed: SB	Date	Plan
Drawn: SB	Aug. 2012	999
Checked: MH		
Revisions		

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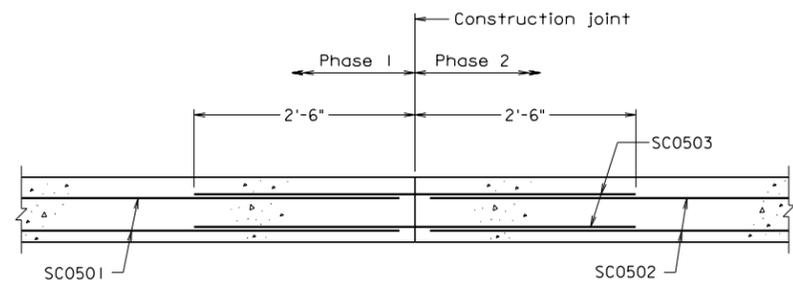
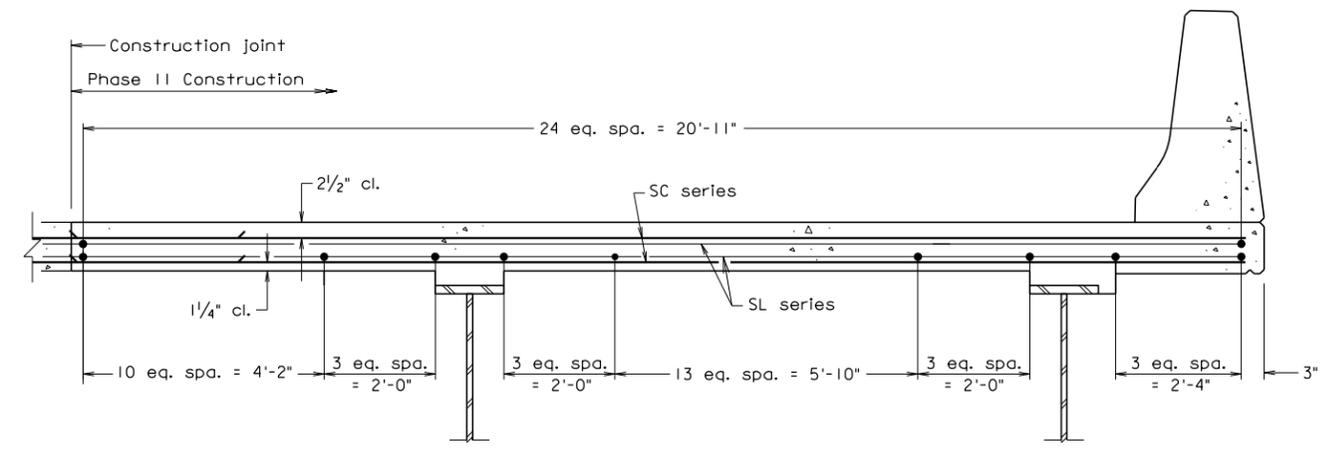
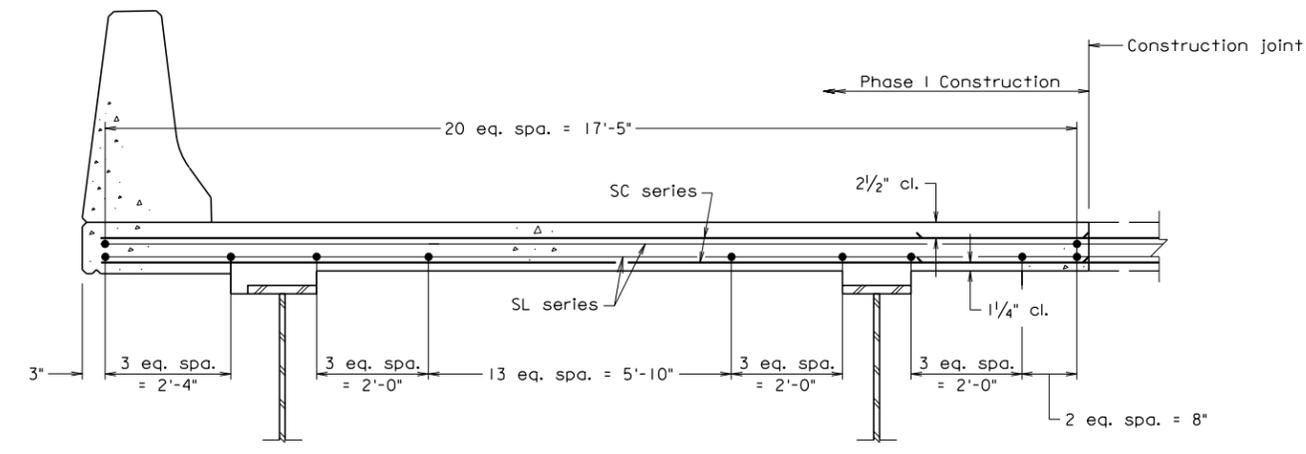
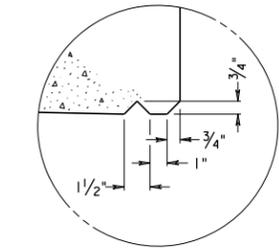
24 b99999014

STATE	FEDERAL AID	STATE	SHEET NO.
ROUTE	PROJECT	ROUTE	PROJECT
VA.		58	0058-044-103, B643

(23)



Note: (21)
 For additional reinforcing steel in top layer of deck slab at piers and other reinforcing steel details not shown, see Deck Plan on sheets 21 and 22.
 For parapet details, see sheet 23.



At the Contractor's option, and at no additional cost to the Department, a mechanical splice may be used in place of the lap splice. In this case, the SC0503 bars are replaced by couplers having 2'-6" leg lengths.

TRANSVERSE SECTION
 SAMPLE TRANSVERSE SECTION PLAN SHEET
 SAMPLE TRANSVERSE SECTION SHEET - PHASED CONSTRUCTION

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION STRUCTURE AND BRIDGE DIVISION			(22) TRANSVERSE SECTION		
VOL. V - PART 2 DATE: 12Sep2014 SHEET 5 of 10 FILE NO. 09.02-5					
No.	Description	Date	Designed: PEL	Date	Plan
			Drawn: MNL	Aug. 2012	999
Revisions			Checked: MNL		

(24) b99999014

(25)

VDOT S&B DIVISION
 RICHMOND, VA
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Scale: 1/2" = 1'-0" unless otherwise noted.

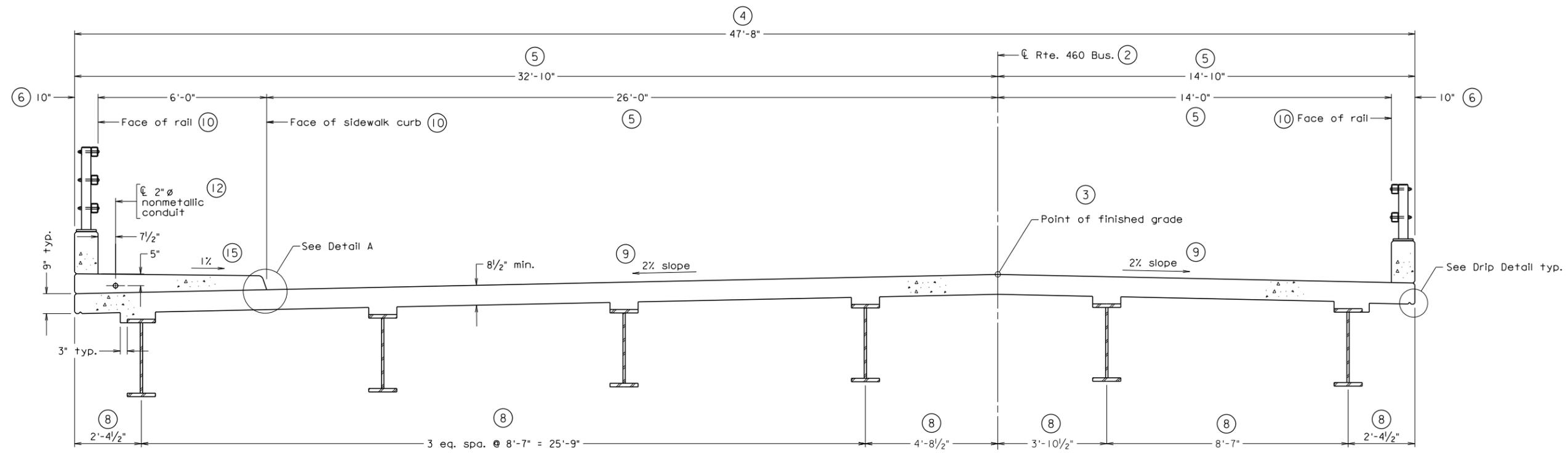
(17)

2012, Commonwealth of Virginia

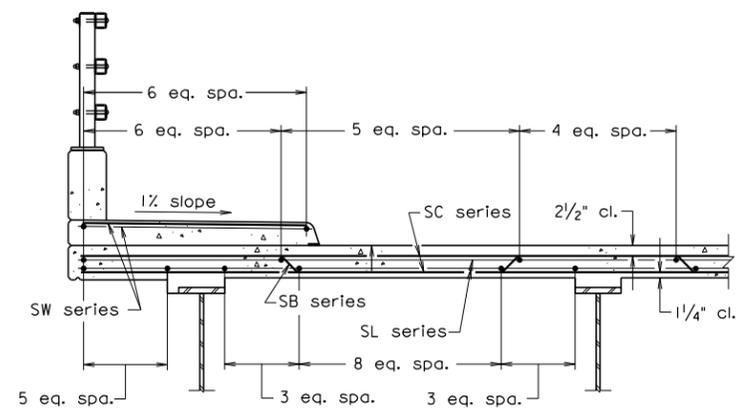
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ROUTE	PROJECT	ROUTE	PROJECT
VA.		460	0460-76-113, B675

23

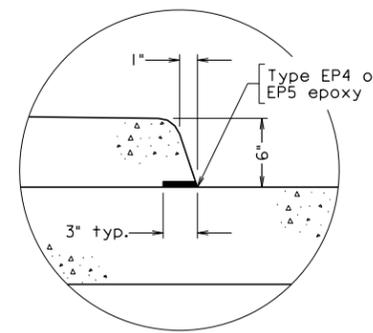
Notes: 21
 For deck slab and sidewalk reinforcement details, see sheet 23.
 For rail details, see sheet 24.



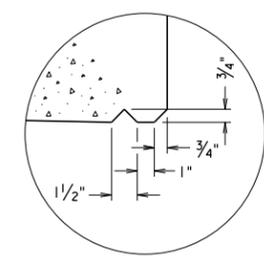
TRANSVERSE SECTION 1



PART SECTION 13 15
 Not to scale



DETAIL A 15



DRIP DETAIL 14
 Not to scale

TRANSVERSE SECTION
 SAMPLE TRANSVERSE SECTION PLAN SHEET
 SAMPLE TRANSVERSE SECTION SHEET - SIDEWALK

Scale: 1/2" = 1'-0" unless otherwise shown 17

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22 TRANSVERSE SECTION		
No.	Description	Date
Designed: SB	Date	Plan
Drawn: SB	Jun. 2012	999-
Checked: MB		

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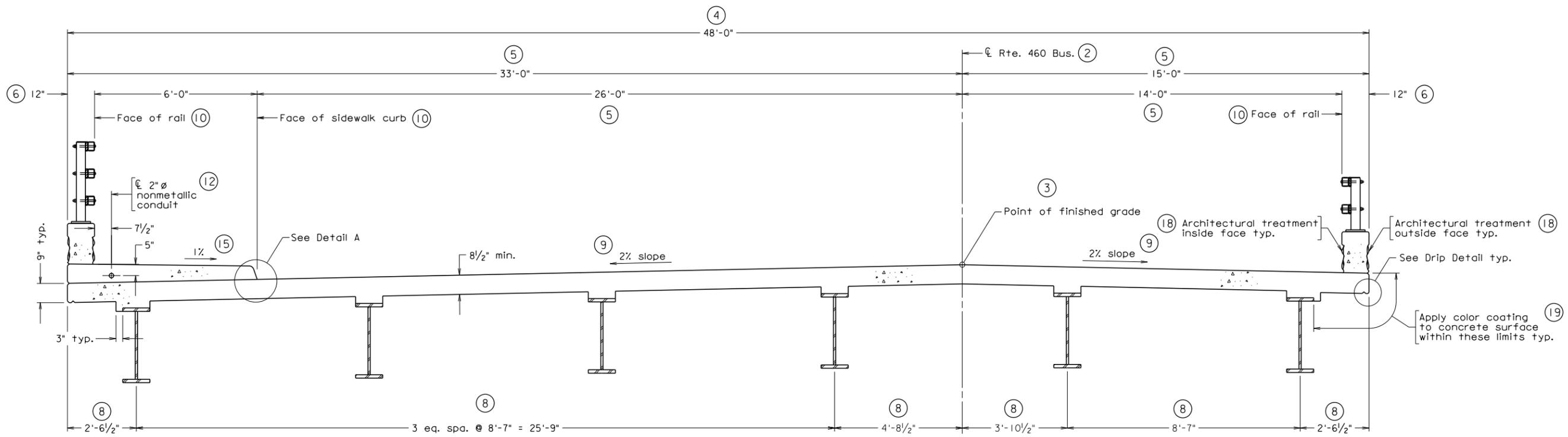
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 STRUCTURAL ENGINEER

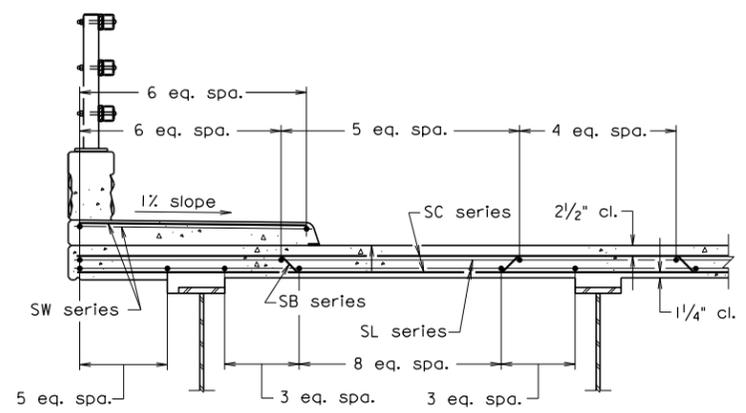
STATE	FEDERAL AID	STATE	SHEET NO.
ROUTE	PROJECT	ROUTE	PROJECT
VA.		460	0460-76-113, B675

23

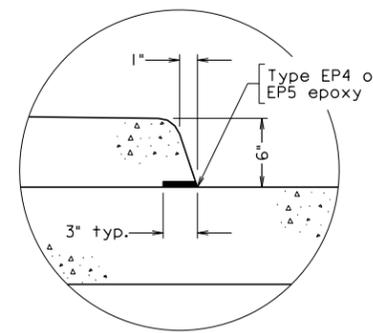
Notes: 21
 For deck slab and sidewalk reinforcement details, see sheet 23.
 For rail details, see sheet 24.



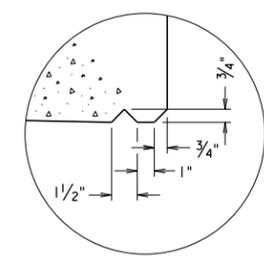
TRANSVERSE SECTION 1



PART SECTION 13 15
 Not to scale



DETAIL A 15



DRIP DETAIL 14
 Not to scale

TRANSVERSE SECTION
 SAMPLE TRANSVERSE SECTION PLAN SHEET
 SAMPLE TRANSVERSE SECTION SHEET - ARCHITECTURAL TREATMENT

Scale: 1/2" = 1'-0" unless otherwise shown 17

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22 TRANSVERSE SECTION		
No.	Description	Date
Designed: SB	Date	Plan
Drawn: SB	Jun. 2012	999-
Checked: MB		

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 STRUCTURAL ENGINEER

CHECK LIST FOR SAMPLE TRANSVERSE SECTION SHEET:

- ① Show complete TRANSVERSE SECTION.
- ② Show and label \mathcal{C} / \mathcal{E} of bridge. This designation shall match that shown on the road plans/title sheet for a bridge plan assembly. Do not include the word proposed.
- ③ Label the Point of finish grade.
- ④ Dimension distance from out-to-out of bridge.
- ⑤ Dimension distances from \mathcal{C} / \mathcal{E} of bridge to face of curb(s)/rail(s).
- ⑥ Dimension width of parapets and/or rails. If there are median barriers, raised medians, sidewalks and shared use paths, dimension widths. Where architectural treatment is used on the inside (traffic) and/or outside (non-traffic) face(s) of parapets/rails, the dimensioned width shall include the relief.
- ⑦ For bridges with phased construction, show and label the limits of phased construction. Show and label the construction joint. Dimension the distance from \mathcal{C} / \mathcal{E} to the construction joint. Dimension the distance from construction joint to face of curb/rail for Phase I construction.
- ⑧ Dimension location of the first beam/girder on each side of the bridge \mathcal{C} / \mathcal{E} . Show beam /girder spacings along with the width(s) of deck slab cantilevers.
- ⑨ Show the cross slope of the deck slab along with direction arrow(s).
- ⑩ Label the face of curb/rail. If there is a raised median, label as: Face of median curb; sidewalk curb as: Face of sidewalk curb; for all else as: Face of curb or Face of rail.
- ⑪ Show and label span/common chords for curved bridges using layout on span/common chords. Span chords are chords between the intersections of bridge \mathcal{C} / \mathcal{E} with the face of backwalls/ end of slabs and \mathcal{C} piers/bents. Common chords are chords between the intersections of bridge \mathcal{C} / \mathcal{E} with the face of backwalls/end of slabs at abutments. Dimension the distance from the bridge \mathcal{C} / \mathcal{E} to the span/common chord.
- ⑫ Show and label the \mathcal{C} of all utilities supported by the bridge. Provide the number, size of conduit(s)/pipe(s) and name of utility utilizing the conduit(s)/pipe(s). When water, gas or other similar systems are located on the bridge, the diameter of pipe should also be shown. Utilities shall preferably be located between an exterior beam/girder and the first interior beam/girder unless otherwise directed by the utility company. Gas lines shall be located between an exterior beam/girder and the first interior beam/girder.
- ⑬ Show PART SECTION at midspan complete with reinforcement details. For deck slabs continuous over pier(s)/bent(s) show an additional Part Section at pier/bent complete with reinforcement details. Provide number of equal spaces for SL bars.
- ⑭ Show DRIP DETAIL.

TRANSVERSE SECTION SAMPLE TRANSVERSE SECTION SHEET CHECK LIST

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- ⑮ Show sidewalk and raised median section details as needed. Show cross slope of sidewalks with direction of slope. Provide number of equal spaces for longitudinal reinforcing bars. Spacing of transverse reinforcing bars are normally shown on the DECK SLAB PLAN of the DECK PLAN sheet.
- ⑯ Show miscellaneous details pertaining to the transverse section as needed when space on the transverse section sheet allows.
- ⑰ Transverse section, part transverse section(s) and miscellaneous details shall be drawn to a scale of sufficient size so as to be legible when reduced to half-size.
- ⑱ Where architectural treatment is used on the face(s) of parapets/rails, identify the treated face(s).
- ⑲ Where architectural treatment is used on the outside (non-traffic) face of parapets/rails with color, identify any concrete surfaces on the deck to which color coating is to be applied.
- ⑳ For closure pour, show deck slab construction joint on a minimum of one beam/girder and placement of construction joints on both beams/girders is desirable where feasible. Determine location of construction joints during preliminary design.
- ㉑ Show Notes as required. Add appropriate sheet number(s). For instructions on completing the notes, see File No. 04.03.
- ㉒ For instructions on completing the title block, see File No. 04.04-2.
- ㉓ For instructions on completing the project block, see File No. 04.01.
- ㉔ For instructions on completing this portion of the sheet, see File No. 04.04-3.
- ㉕ For instructions on completing the block for sealing, signing and dating this sheet, see File Nos. 01.16-1 thru -7.

**TRANSVERSE SECTION
SAMPLE TRANSVERSE SECTION SHEET
CHECK LIST**

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