



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

Design Memorandum No. 13-02 Technical Advisory

January 25, 2013

TO: All Design, Operations, and District Personnel, and Consultants

FROM: /s/ Elizabeth W. Phillips
Elizabeth W. Phillips
Manager, Office of Standards and Policy
Division of Bridges

SUBJECT: *INDOT CAD Standards Manual*

REVISES: *Indiana Design Manual Chapter 15*

EFFECTIVE: Stage 1 submission on or after March 31, 2013

The *INDOT CAD Standards Manual* is available for download at http://www.in.gov/indot/design_manual/. The *CAD Standards Manual* provides guidelines regarding the preparation and final appearance of road, bridge, and traffic plans. It is currently in use for in-house designed projects. INDOT is taking a moderate approach to implementing CAD standards for consultant-designed projects, beginning with standards for the “look and feel” of plans. These elements should be incorporated into plan submissions in accordance with the effective date shown above. This requirement applies to both INDOT and Local Public Agency (LPA) projects.

“Look and feel” elements are described primarily in Sections 4.6 and 4.7 of the *CAD Standards Manual* and are readily apparent in the PDF deliverable. A CAD standards style sheet is attached to illustrate the content of these sections. The drafting guidelines in Section 14-3.0 of the *Indiana Design Manual* are supplemented by the *CAD Standards Manual* and are still in effect.

Requirements for an electronic deliverable (.dgn, .dtm, etc.) and implementing the CAD standards associated with an electronic deliverable have not been determined. End-user needs will determine the schedule and extent of implementing these sections of the *CAD Standards Manual*; however, consultants are strongly encouraged to start implementation now. This direction should not be construed as a requirement to use a specific drafting platform.

The INDOT CAD Support website, <http://www.in.gov/indot/3084.htm>, has Microstation seed files, cell libraries, and other resource files available for download.

Questions regarding the CAD workspace and resource file downloads should be directed to indotcadsupport@indot.in.gov. Questions regarding the content of the *CAD Standards Manual* and plan presentation should be directed to ephillips@indot.in.gov.

Attachment

[P:\Structural Services\Design Memos\Signed\2013\13-02ta CAD Standards.doc]

ARCHIVED

TEXT STYLE	SIZE	GUIDELINES FOR USE
30 Point Text	0.30"	Use for selected text on title sheet of plans.
18 Point Text	0.18"	Use for detail and section titles, and table titles on detail sheets.
14 Point Text	0.14"	Use for selected text on title block, view subtitles, and column headings in tables.
12 Point Text	0.12"	Use for text callouts, dimensions, and notes. Minimum size for text placed on D-size plans other than text specified under 10 Point Text.
10 Point Text	0.10"	May be used for table data.

General Notes typically found on Index Sheet. Notes shown here are for style illustration purposes only.

GENERAL NOTES

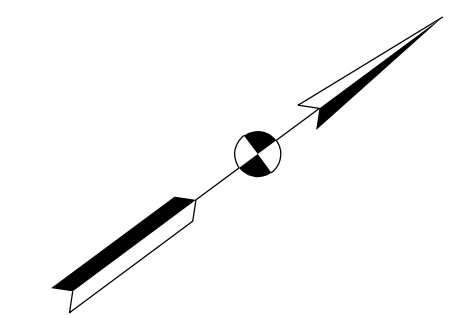
All earth shoulder, median areas, and cut and fill slopes shall be plain or mulch seeded except where sodding is specified.

The final cross sections of the grading contract will be the original cross sections of the paving contract. However, partial or complete cross sections shall be taken if necessary to determine the actual excavation quantities.

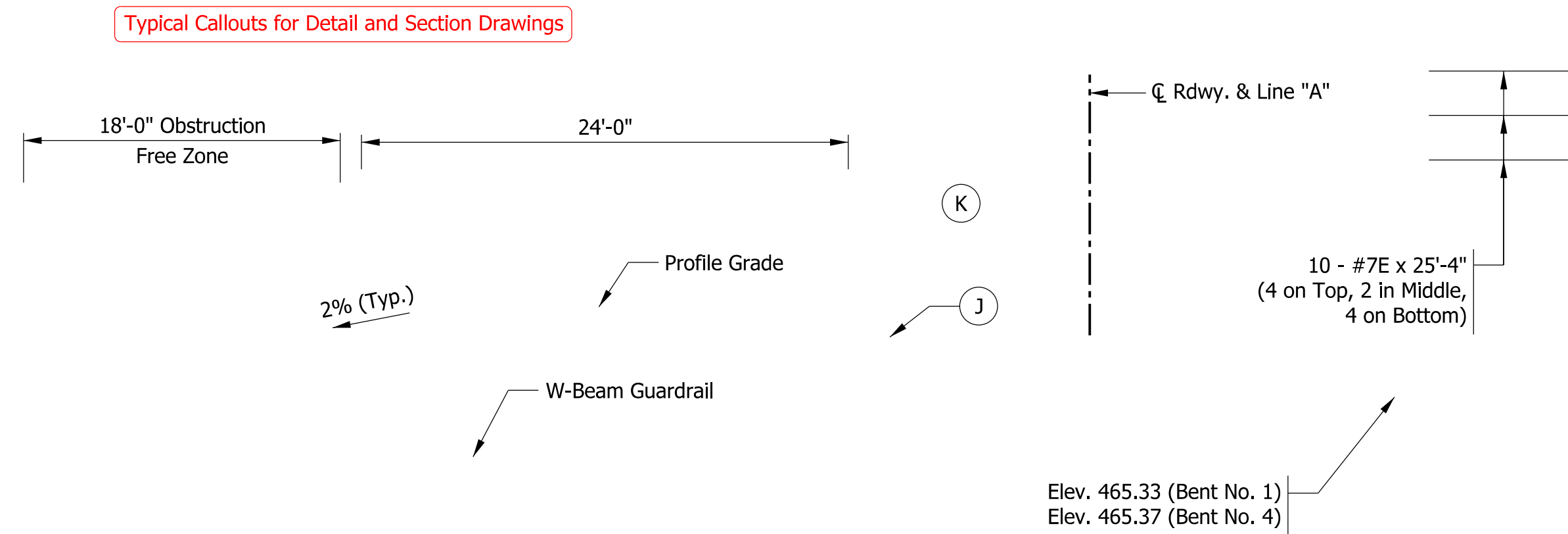
The paper relocation will be cross sectioned by the engineer before construction.

Existing asphalt pavement located outside the construction limits, between Sta. 46+14 and 49+42 shall be removed as directed.

The quantity of peat excavation shown on the plans has been estimated on the basis of theoretical cross sections by using treatment of existing fills, treatment by removal, or treatment by displacement, where each treatment applies.



NORTH ARROW
Typical length = ±2.5"
Must appear on each plan view



TYPICAL FULL-DEPTH SECTION
Sta. 1441+00.00 to Sta. 1445+60.28
Sta. 1447+39.72 to Sta. 1452+00.00

Detail, section titles:
Tahoma font
Height = 0.18"
All capital letters
Underlined

Detail, section subtitles:
Tahoma font
Height = 0.14"
Title case
Not underlined

GUARDRAIL END TREATMENT DETAIL
Scale: 1/16" = 1'-0"

Drawing scales must be standard scales listed in Table 4.5-1 of INDOT CAD Standards Manual.

Text callouts, dimensions, labels:
Tahoma font
Height = 0.12" (minimum, preferred)
Use Title Case or Sentence Case as appropriate (not all caps)
No slant/italics or bold font

Dimension lines, leaders:
Arrowhead terminators
Inline leaders
Lineweight is lighter than object lines

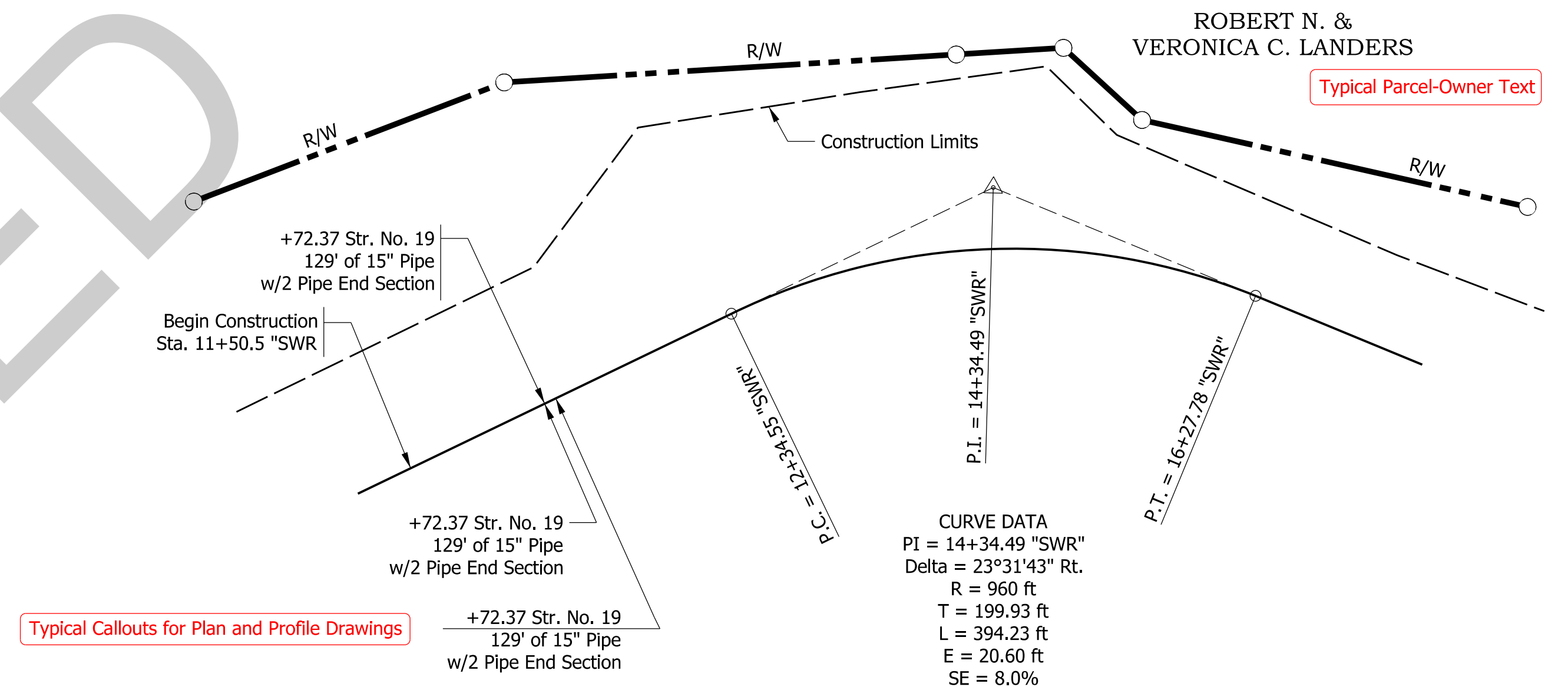
Sentence Case Examples:
In Sentence Case, the sentence begins with a capital letter and ends with a period. Begin proper nouns with a capital letter. All other words are shown in lower case text.

Title Case Examples:
Profile Grade
Construction Limits

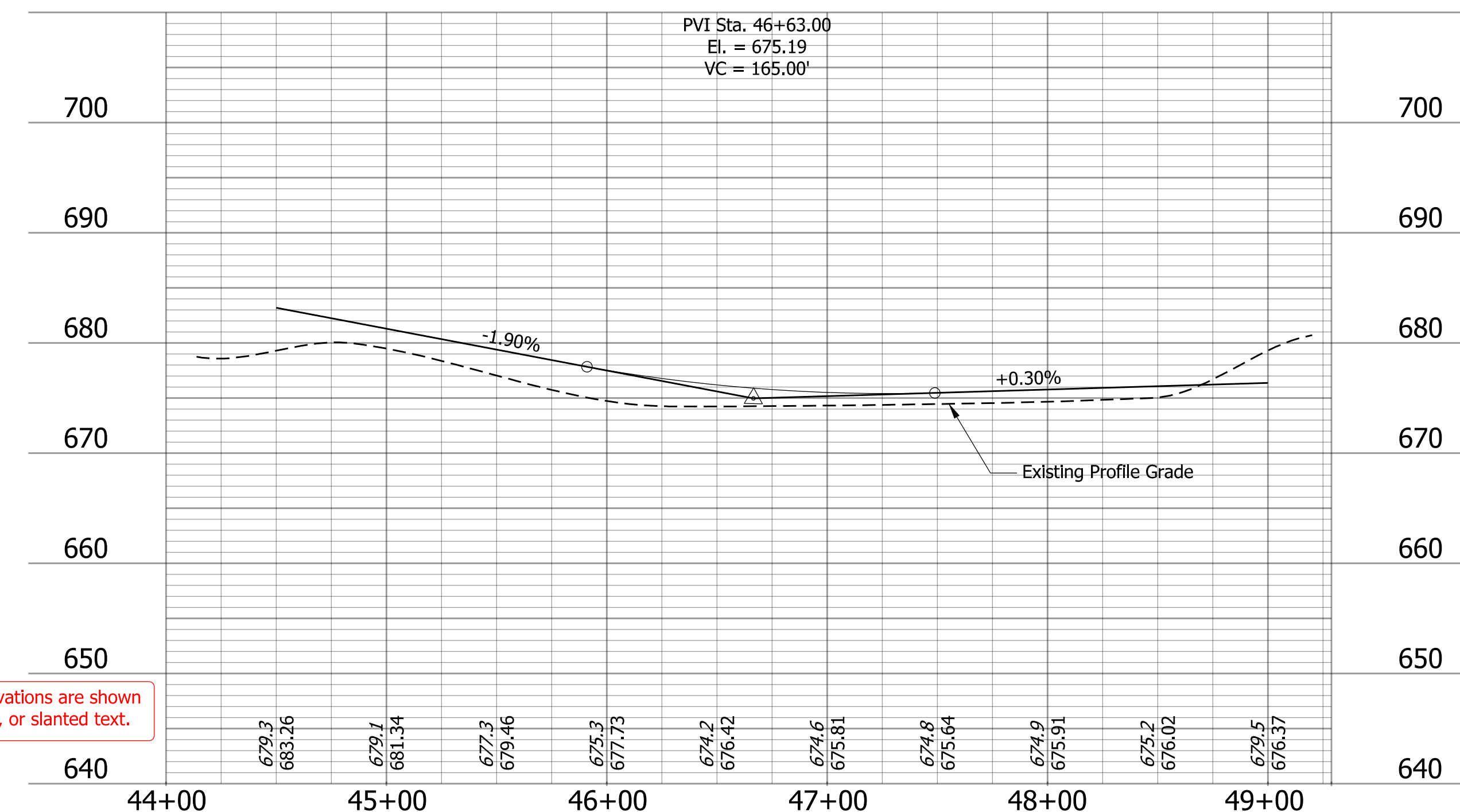
LEGEND:

- J Paved Shoulder
330 lbs/yd² HMA Surface, Type B on 7 in. of Compacted Aggregate, No. 53, Base
- K Mainline Full-Depth Pavement
165 lbs/yd² QC/QA HMA 2, 64 Surface 9.5 mm on 275 lbs/yd² QC/QA HMA 2, 64 Intermediate 19.0 mm on 660 lbs/yd² QC/QA HMA 2, 64 Base 25.0 mm on Subgrade Treatment Type IA

Legend symbols should match size and format of those used on the drawing.



Typical Callouts for Plan and Profile Drawings



Existing elevations are shown in italic text, or slanted text.

Typical Table

STRUCTURE NUMBER	LOCATION				PIPE TYPE	MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE AND TYPE	LENGTH				FLOW LINE				SERVICE LIFE	SITE DESIGNATION	PH	BACKFILL METHOD	STRUCTURE BACKFILL		REVETMENT RIPRAP										
	STATION	LEFT CROSS	RIGHT	SIZE			LFT	FT	COVER	UP STREAM	DOWN STREAM	YR	TYPE	CYS					TONS	TYPE		CYS	TONS								
																								IN.	FT	ELEV.	ELEV.	YR	TYPE	CYS	TONS
01	18+00.0		X	15	3	Inlet E-7	260.0	0.5	1013.410	1012.910	75	n/a	7	2	18.0																
02	40+61.3		X	15	3	Pipe	40.0	0.5	1024.600	1024.380	75	n/a	7	2	2.4																
03	41+83.7		X	15	3	Pipe	84.0	1.0	1026.063	1025.180	75	n/a	7	2	5.0																
04	62+00.0		X	21	2	Manhole, C-4	175.0	4.8	1029.000	1028.450	75	n/a	7	1	175.4																

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE	INDIANA DEPARTMENT OF TRANSPORTATION			HORIZONTAL SCALE	BRIDGE FILE	
DESIGNED: XXX	12/12	DRAWN: XXX				12/12	1" = 50'	DESIGNATION
CHECKED: XXX	12/12	CHECKED: XXX				12/12	1" = 10'	0000000
			CAD STANDARDS STYLE SHEET			SURVEY BOOK	SHEETS	
						---	# of ##	
						CONTRACT	PROJECT	
						R-00000	0000000	