



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

LYNDO TIPPETT  
SECRETARY

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Cathy Houser, PE  
Teresa Bruton, PE  
Chris Haire, PE

FROM: Jay A. Bennett, PE  
State Roadway Design Engineer

DATE: September 1, 2004

SUBJECT: Structure Recommendation Plans

This is a revision to the Structure Typical Sections in Structure Recommendation Plans. This revision adds a dimension for paved shoulders beneath the structure.

As you know, there has been some confusion with paved shoulder dimensions along median divided facilities as they pass beneath bridges. Roadway Standard Drawings 610.01, 610.02 and 610.03 appear to show the paved shoulder wider beneath the bridge when in fact it is narrower. In order to clarify, the paved shoulder will be dimensioned as shown in the attached examples. Also attached are the pertinent Roadway Standard Drawings.

If you have questions, please contact Dewayne Sykes or me.

JAB/dls

Attachments

cc: Art McMillan, PE  
Scott Blevins, PE  
Ron Allen, PE  
Dewayne Sykes, PE  
Greg Perfetti, PE  
Emily Lawton, PE  
Ron Hancock, PE  
Ellis Powell, PE  
Shannon Sweitzer, PE  
Cynthia Perry, PE

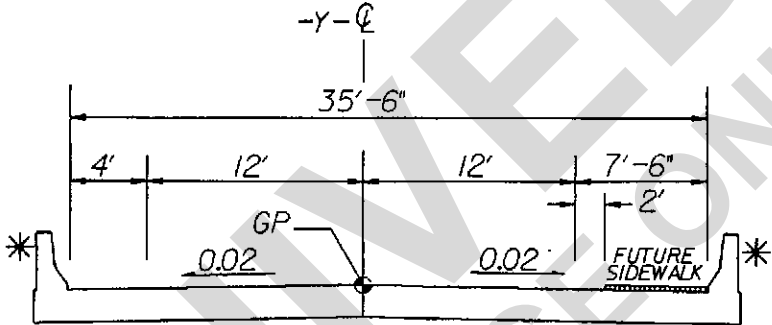
MAILING ADDRESS:  
NC DEPARTMENT OF TRANSPORTATION  
ROADWAY DESIGN UNIT  
1582 MAIL SERVICE CENTER  
RALEIGH NC 27699-1582

TELEPHONE: 919-250-4016  
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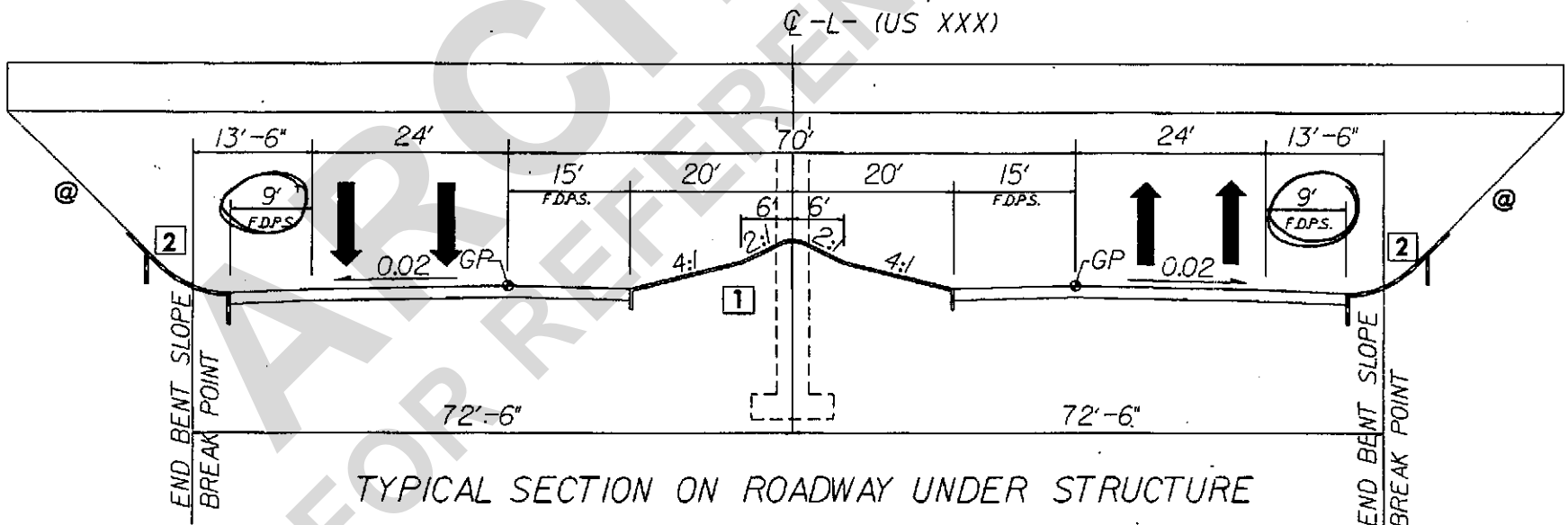
LOCATION:  
CENTURY CENTER COMPLEX  
BUILDING A  
1000 BIRCH RIDGE DRIVE  
RALEIGH NC

DESIGN DATA -Y-	
ADT 2005	= X,XXX
ADT 2025	= X,XXX
D	= XX%
DIV	= XX%
TTST	= XX%
DUAL	= XX%
Y	= XX mph
FUNC CLASS-COLLECTOR	
MINIMUM VERTICAL CLEARANCE = 17'	
* BRIDGE RAIL TO BE DETERMINED BY	
STRUCTURE DESIGN UNIT	
SLOPES DETERMINED BY	
@ GEOTECHNICAL ENGINEERING UNIT	
1	SEE STD. 225.08
2	SEE STD. 610.03

**-Y- STRUCTURE**  
SR XXXX (XXXX RD.)

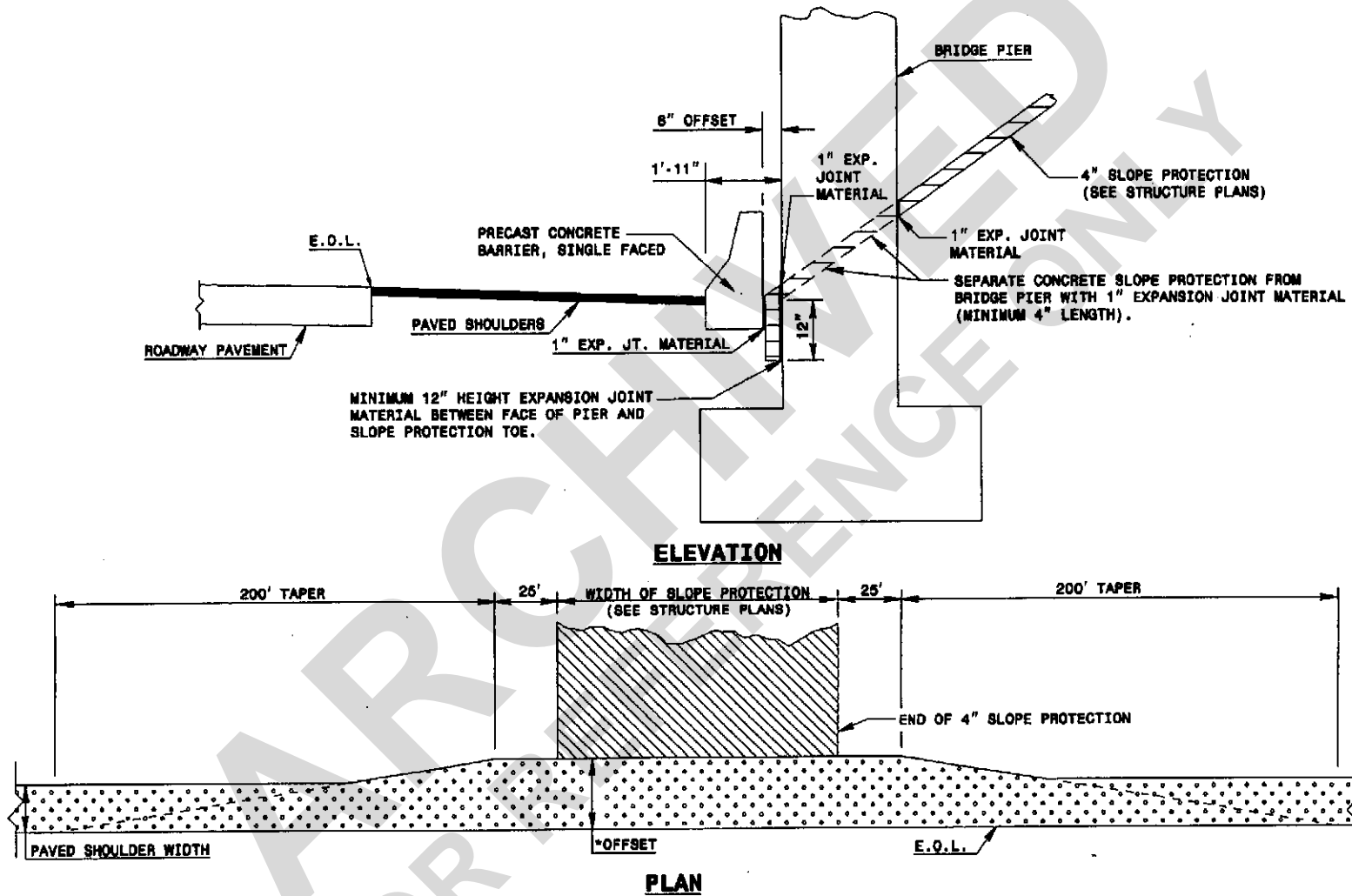


TYPICAL SECTION ON STRUCTURE

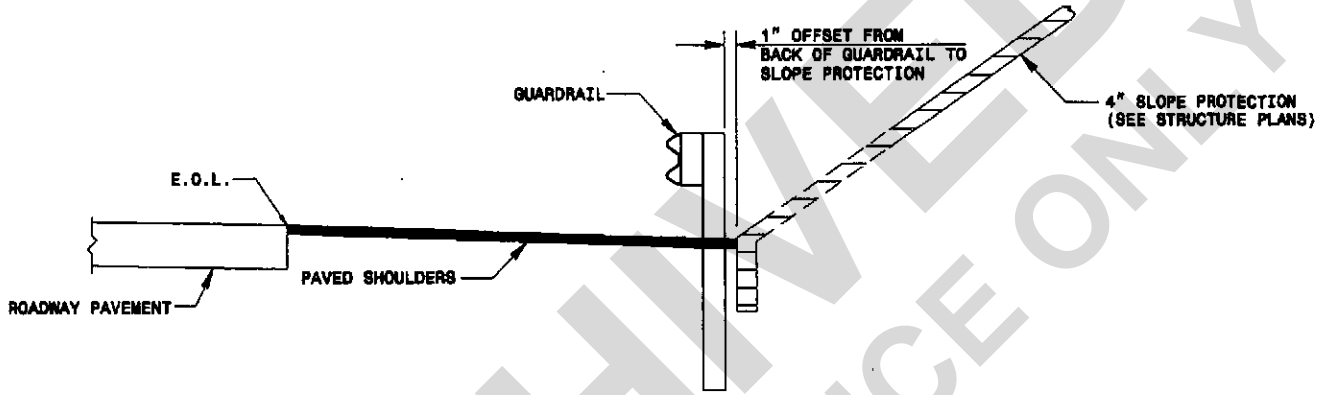


TYPICAL SECTION ON ROADWAY UNDER STRUCTURE

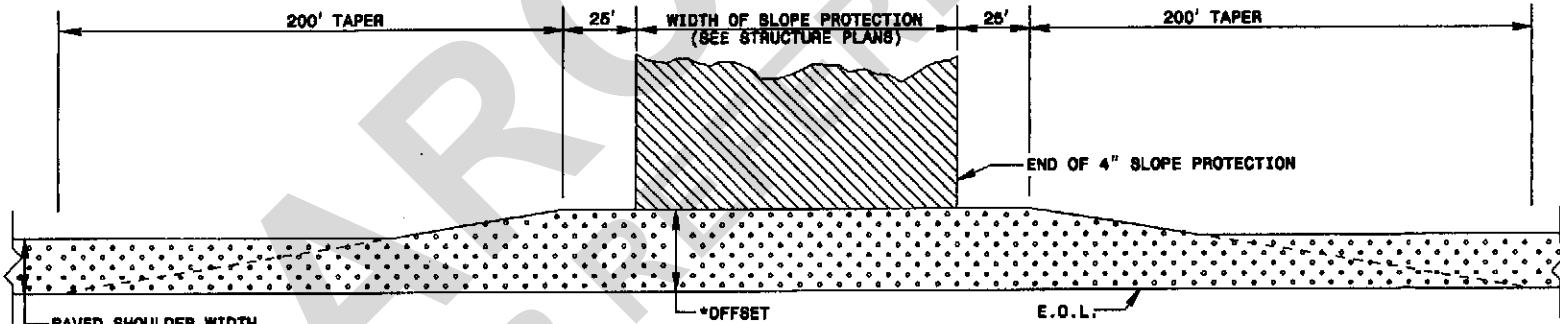




NOTES:  
 PAVE THE FULL WIDTH OF THE SHOULDER AS SHOWN WITH SHOULDER PAVEMENT MATERIAL AS SHOWN ON PLANS.  
 \*OFFSET BASED ON STRUCTURE POLICY (SEE STRUCTURE PLANS).  
 PROTECT SLOPE WITH REINFORCED CONCRETE PAVING. CONCRETE BLOCK PAVING WILL NOT BE PERMITTED.



ELEVATION



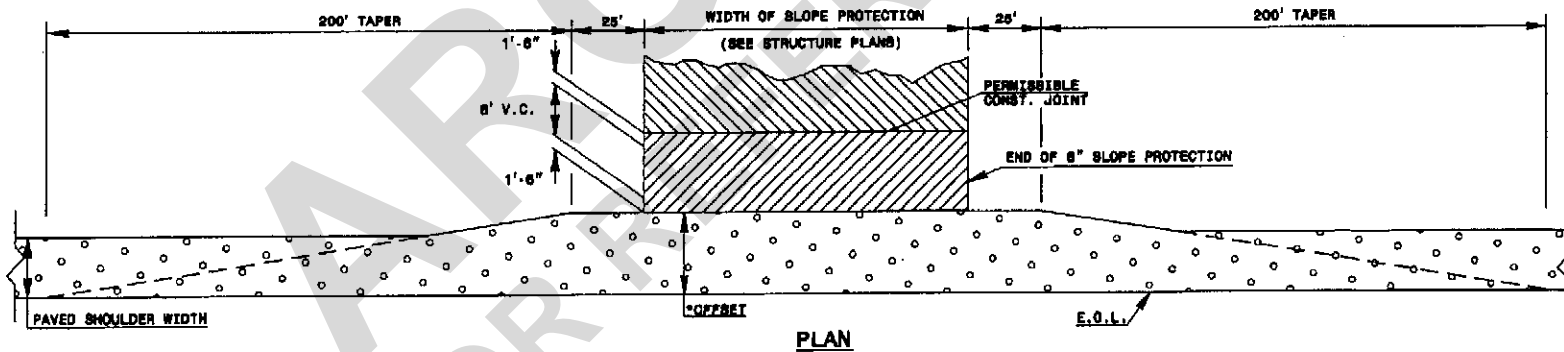
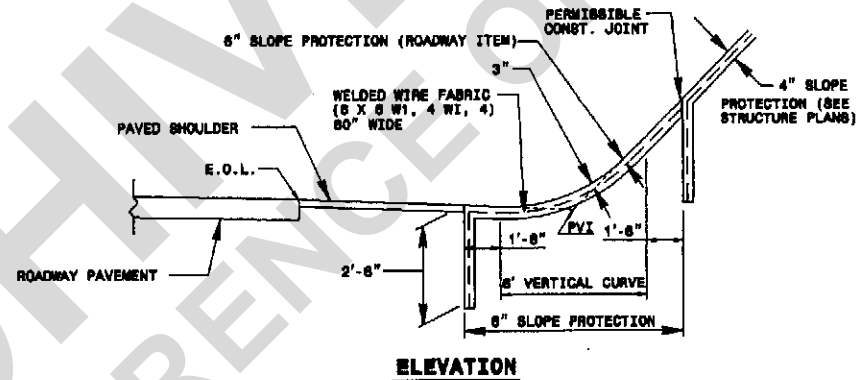
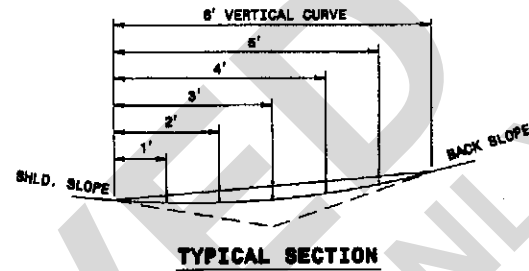
PLAN

NOTES:  
 PAVE THE FULL WIDTH OF THE SHOULDER AS SHOWN WITH SHOULDER PAVEMENT MATERIAL AS SHOWN ON PLANS.  
 \*OFFSET BASED ON STRUCTURE POLICY (SEE STRUCTURE PLANS).  
 PROTECT SLOPE WITH REINFORCED CONCRETE PAVING. CONCRETE BLOCK PAVING WILL NOT BE PERMITTED.

HORIZ. DIM.	1½:1 BACK SLOPE									
	SHOULDER SLOPE									
	.04	.03	.02	.01	.00	-.01	-.02	-.03	-.04	-.05
1'	0.26'	0.27'	0.27'	0.27'	0.28'	0.28'	0.28'	0.29'	0.30'	0.31'
2'	0.42'	0.42'	0.43'	0.44'	0.44'	0.45'	0.46'	0.46'	0.47'	0.48'
3'	0.47'	0.48'	0.48'	0.49'	0.50'	0.51'	0.52'	0.52'	0.53'	0.54'
4'	0.42'	0.42'	0.43'	0.44'	0.44'	0.45'	0.46'	0.46'	0.47'	0.48'
5'	0.26'	0.27'	0.27'	0.27'	0.28'	0.28'	0.28'	0.29'	0.30'	0.31'

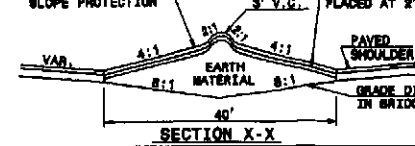
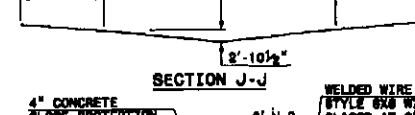
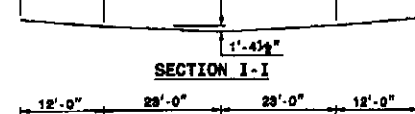
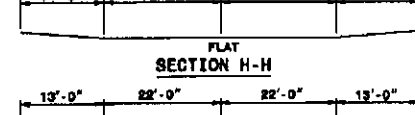
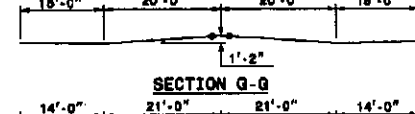
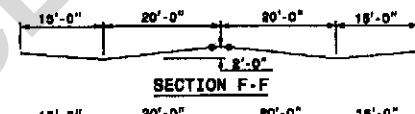
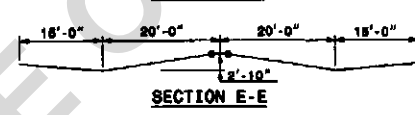
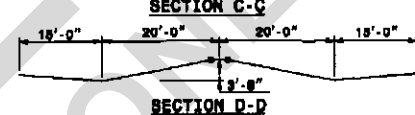
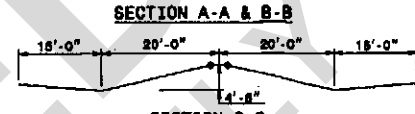
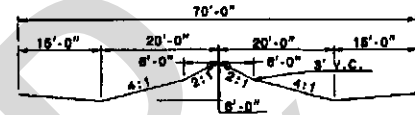
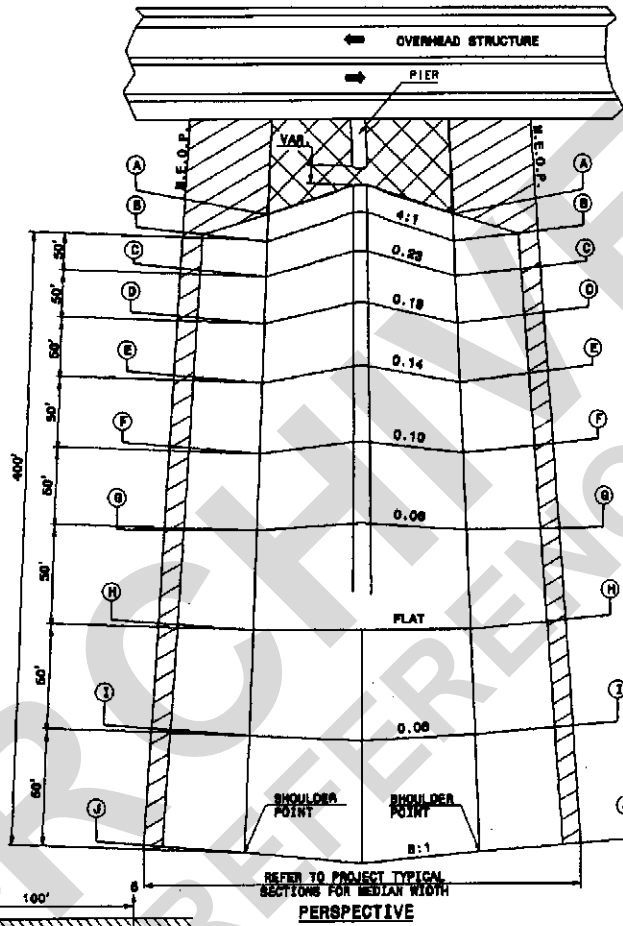
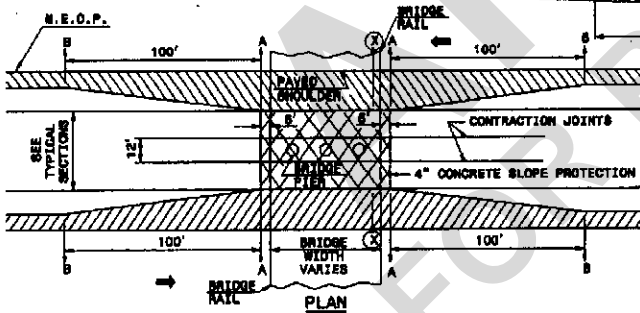
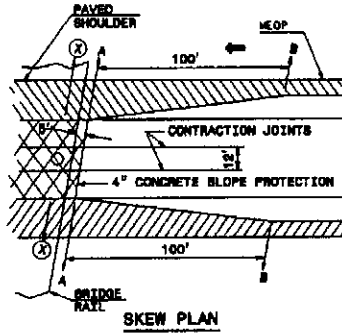
HORIZ. DIM.	2:1 BACK SLOPE									
	SHOULDER SLOPE									
	.04	.03	.02	.01	.00	-.01	-.02	-.03	-.04	-.05
1'	0.19'	0.20'	0.20'	0.20'	0.21'	0.21'	0.22'	0.22'	0.23'	0.23'
2'	0.31'	0.31'	0.32'	0.33'	0.33'	0.34'	0.35'	0.35'	0.36'	0.37'
3'	0.35'	0.35'	0.36'	0.37'	0.38'	0.38'	0.39'	0.40'	0.41'	0.41'
4'	0.31'	0.31'	0.32'	0.33'	0.33'	0.34'	0.35'	0.36'	0.36'	0.37'
5'	0.19'	0.20'	0.20'	0.20'	0.21'	0.21'	0.22'	0.22'	0.23'	0.23'

**VERTICAL CURVE OFFSET**  
(FOR 6' V.C. AT BRIDGES)



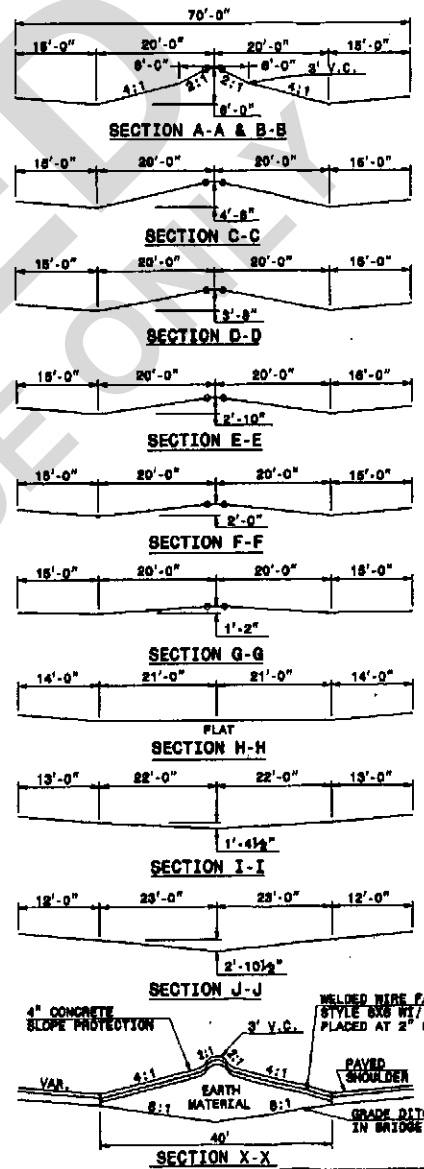
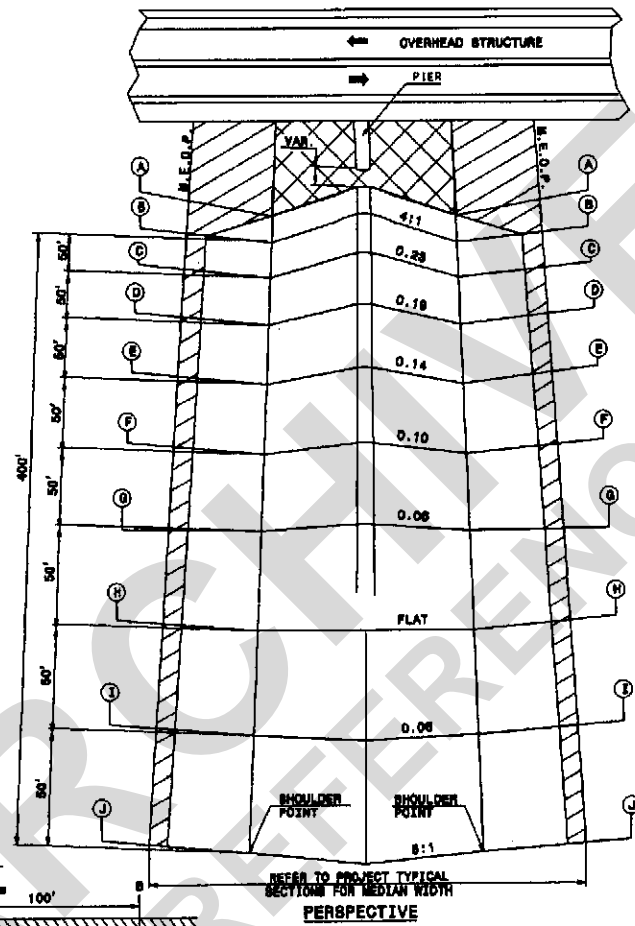
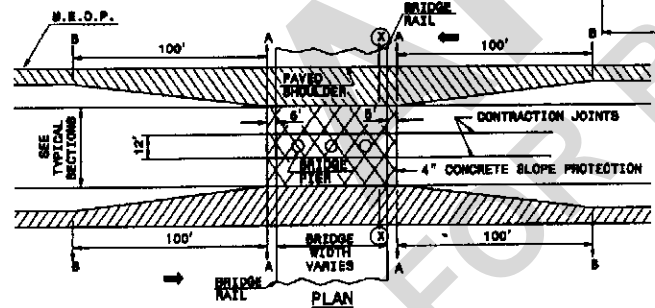
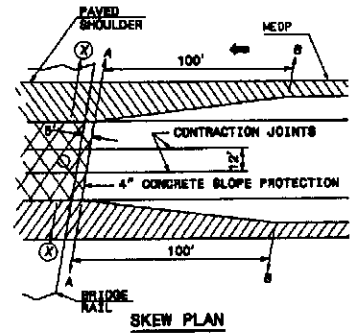
- NOTES:
- PAVE THE FULL WIDTH OF THE SHOULDER AS SHOWN WITH SHOULDER PAVEMENT MATERIAL AS SHOWN ON PLANS.
  - OFFSET BASED ON BRIDGE POLICY (SEE BRIDGE PLANS).
  - PROTECT SLOPE WITH REINFORCED CONCRETE PAVING. CONCRETE BLOCK PAVING WILL NOT BE PERMITTED.
  - OFFSETS FOR 6' V.C. DENOTES FINISHED GRADE OF SLOPE PROTECTION.

**LEGEND**  
PAVED SHOULDER  
4" CONCRETE SLOPE PROTECTION



ENGLISH STANDARD DRAWING FOR  
**EARTH BERM MEDIAN PIER PROTECTION**

**LEGEND**  
PAVED SHOULDER  
4" CONCRETE SLOPE PROTECTION



ENGLISH STANDARD DRAWING FOR  
**EARTH BERM MEDIAN PIER PROTECTION**