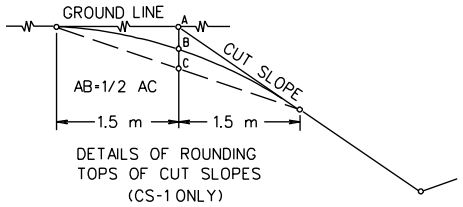
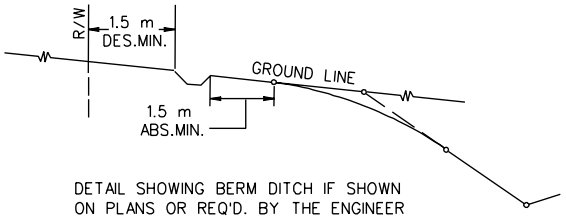
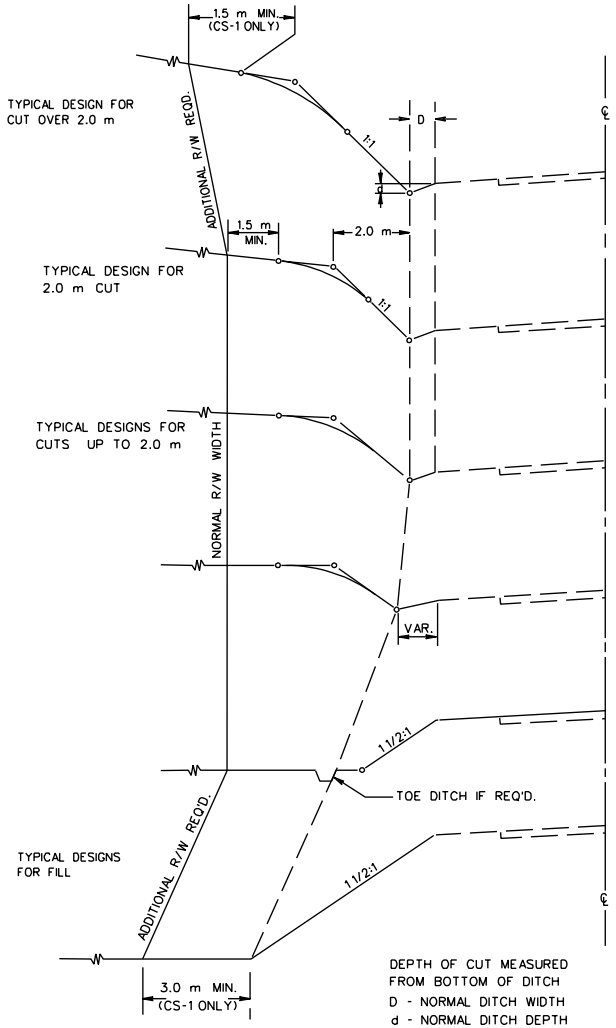
CS-1,1A



DETAILS OF ROUNDING
TOPS OF CUT SLOPES
(CS-1 ONLY)



DETAIL SHOWING BERM DITCH IF SHOWN
ON PLANS OR REQ'D. BY THE ENGINEER



DEPTH OF CUT MEASURED
FROM BOTTOM OF DITCH
D - NORMAL DITCH WIDTH
d - NORMAL DITCH DEPTH

NOTES

SLOPE ROUNDING (STD. CS-1)TO BE AS DETAILED ABOVE, UNLESS SPECIFICALLY EXCEPTED ON PROJECT TYPICAL SECTION(S).

SEE STANDARD PLAN CS-2A FOR SUGGESTED METHODS OF FINISHING SLOPES TO FIT VARIOUS CONDITIONS.

SEE STANDARD PLAN CS-2 FOR SUGGESTED METHOD OF TRANSITIONING FROM CUT TO FILL.

ALL SLOPES SHALL BE FINISHED IN ACCORDANCE WITH THIS PLAN AND NOTES HEREON. EXCEPTIONS: LACK OF RIGHT OF WAY, ROCK OUT-CROP, OR WHERE DESIRABLE TO SAVE TREES, SHRUBBERY, ETC., AS MAY BE DIRECTED BY THE ENGINEER. SHOULD THIS RESULT IN SURPLUS EXCAVATION MATERIAL, SUCH SURPLUS SHALL BE USED AS DIRECTED BY THE ENGINEER, IN LIEU OF BORROW, TO WIDEN FILLS, OR GRADE WITHIN THE RIGHT OF WAY. SHOULD IT RESULT IN INSUFFICIENT EXCAVATION MATERIAL, SUCH MATERIAL SHALL BE OBTAINED AS DIRECTED BY THE ENGINEER.

WHEN FOUND EXPEDIENT, STANDARD DITCH WIDTH AND DEPTH MAY BE INCREASED; THE DISTANCE BETWEEN BOTTOM OF DITCH AND MINIMUM RIGHT OF WAY LINE TO REMAIN AS SHOWN FOR STANDARD DITCH.

IN SHALLOW CUTS, WHERE POSSIBLE, KEEP THE CUT SLOPE AT LEAST AS STEEP AS THE DITCH SLOPE BY WIDENING THE DITCH, HOLDING THE STANDARD DEPTH.

STD. CS-1: AS DETAILED HEREON WITH CUT SLOPE ROUNDING.

STD. CS-1A: AS DETAILED HEREON EXCEPT THAT CUT SLOPE ROUNDING IS TO BE ELIMINATED.

TYPICAL METHOD OF GRADING SIDE SLOPES

SPECIFICATION REFERENCE

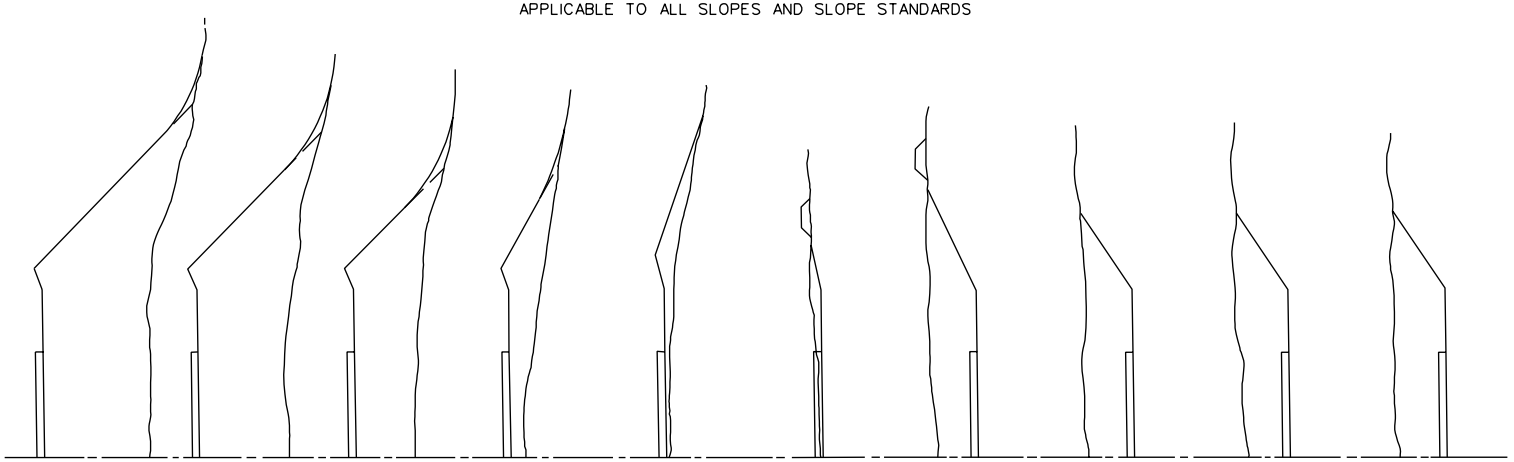
303

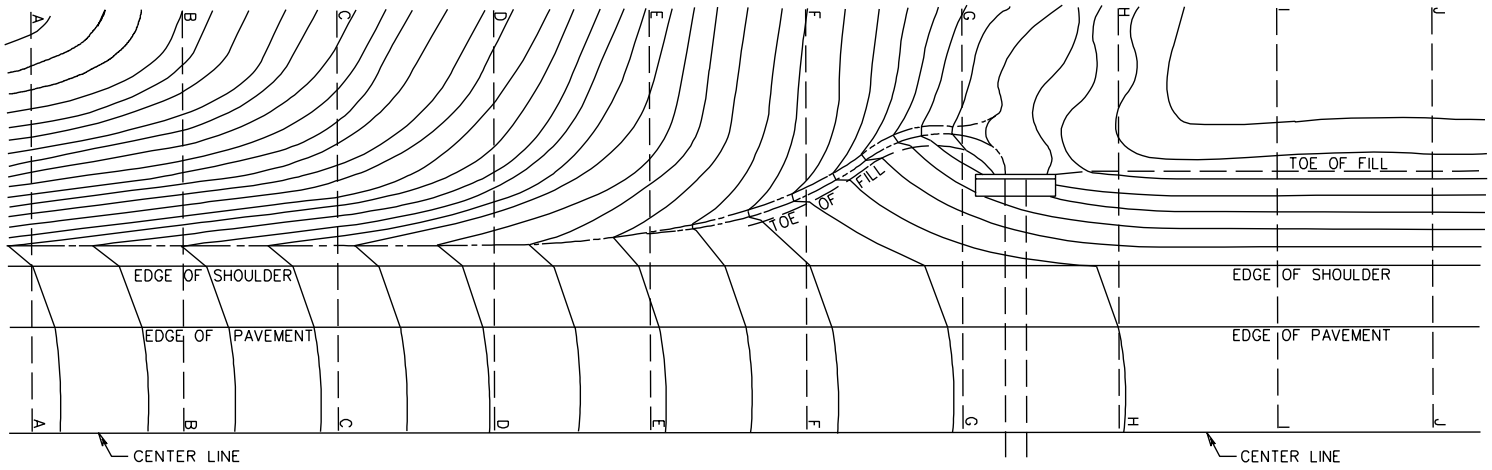
701.00 | UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SUGGESTIONS FOR GRADING SIDE SLOPES AND ROADWAYS TO FIT VARIOUS CONDITIONS

APPLICABLE TO ALL SLOPES AND SLOPE STANDARDS





SPECIFICATION REFERENCE
303

SUGGESTED DRAINAGE TREATMENT AT BEGINNING OF FILLS

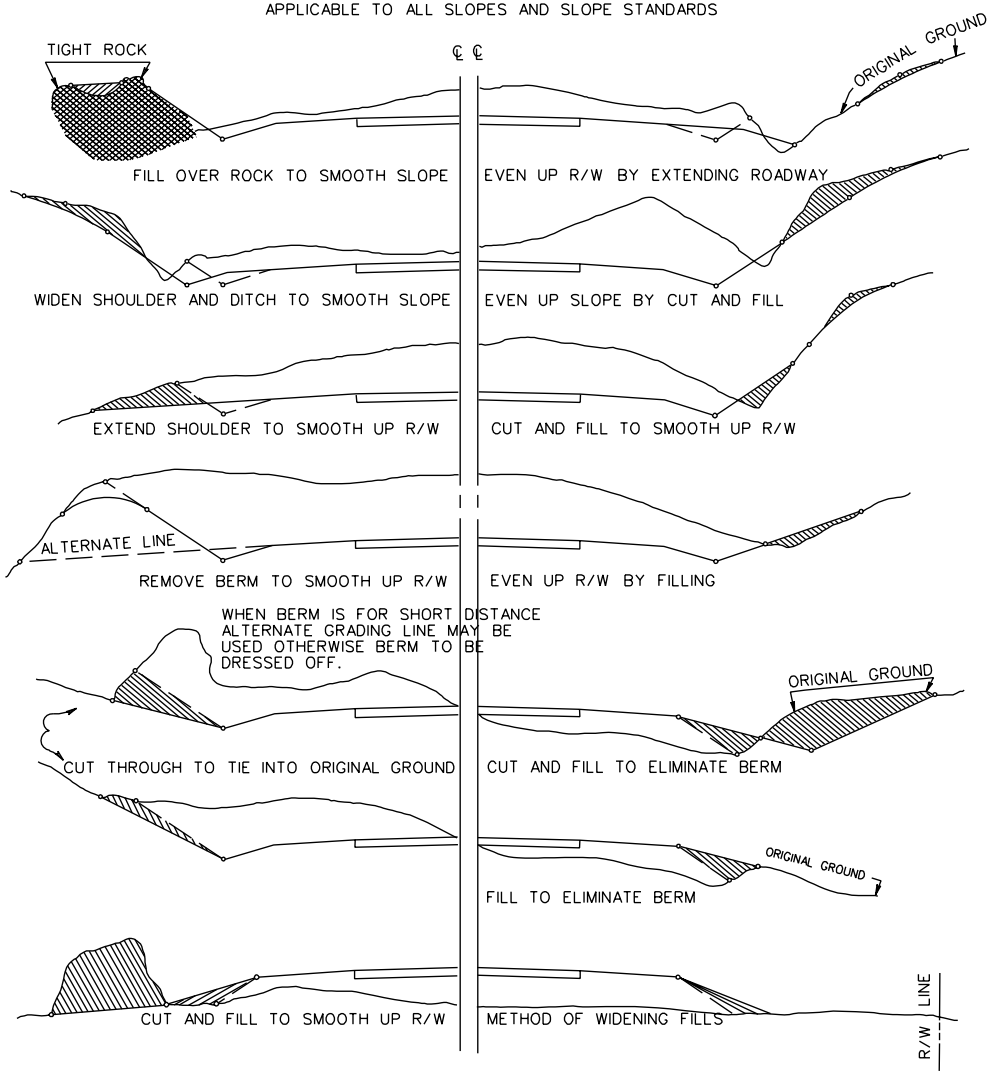
VIRGINIA DEPARTMENT OF TRANSPORTATION

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

CS-2A

SUGGESTIONS FOR GRADING SIDE SLOPES AND ROADWAYS TO FIT VARIOUS CONDITIONS

APPLICABLE TO ALL SLOPES AND SLOPE STANDARDS



TYPICAL METHODS OF GRADING SIDE SLOPES

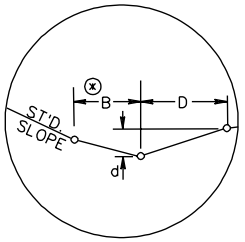
SPECIFICATION REFERENCE

303

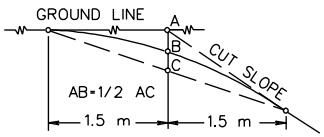
701.02

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

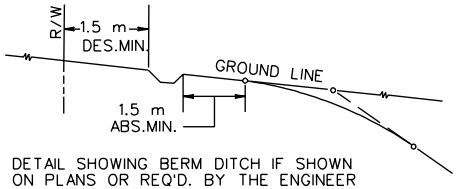
VIRGINIA DEPARTMENT OF TRANSPORTATION



DETAIL A



DETAILS OF ROUNDING TOPS OF CUT SLOPES



DETAIL SHOWING BERM DITCH IF SHOWN ON PLANS OR REQ'D. BY THE ENGINEER

NOTES

SLOPE ROUNDING TO BE IN ACCORDANCE WITH ABOVE DETAIL UNLESS SPECIFICALLY EXCEPTED ON PROJECT TYPICAL SECTION(S).

SEE STANDARD PLAN CS-2A FOR SUGGESTED METHODS OF FINISHING SLOPES TO FIT VARIOUS CONDITIONS.

SEE STANDARD PLAN CS-2 FOR SUGGESTED METHOD OF TRANSITIONING FROM CUT TO FILL.

ALL SLOPES SHALL BE FINISHED IN ACCORDANCE WITH THIS PLAN AND NOTES HEREON. EXCEPTIONS: LACK OF RIGHT OF WAY, ROCK OUT-CROP, OR WHERE DESIRABLE TO SAVE TREES, SHRUBBERY, ETC., AS MAY BE DIRECTED BY THE ENGINEER. SHOULD THIS RESULT IN SURPLUS EXCAVATION MATERIAL, SUCH SURPLUS SHALL BE USED AS DIRECTED BY THE ENGINEER, IN LIEU OF BORROW, TO WIDEN FILLS, OR GRADE WITHIN THE RIGHT OF WAY. SHOULD IT RESULT IN INSUFFICIENT EXCAVATION MATERIAL, SUCH MATERIAL SHALL BE OBTAINED AS DIRECTED BY THE ENGINEER.

WHEN FOUND EXPEDIENT, STANDARD DITCH WIDTH AND DEPTH MAY BE INCREASED; THE DISTANCE BETWEEN BOTTOM OF DITCH AND MINIMUM RIGHT OF WAY LINE TO REMAIN AS SHOWN FOR STANDARD DITCH.

IN SHALLOW CUTS, WHERE POSSIBLE, KEEP THE CUT SLOPE AT LEAST AS STEEP AS THE DITCH SLOPE BY WIDENING THE DITCH, HOLDING THE STANDARD DEPTH.

IN CUTS UP TO 120 m IN LENGTH 1 1/2:1 SLOPES MAY BE CARRIED THROUGH REGARDLESS OF DEPTH, PROVIDED RIGHT OF WAY IS AVAILABLE.

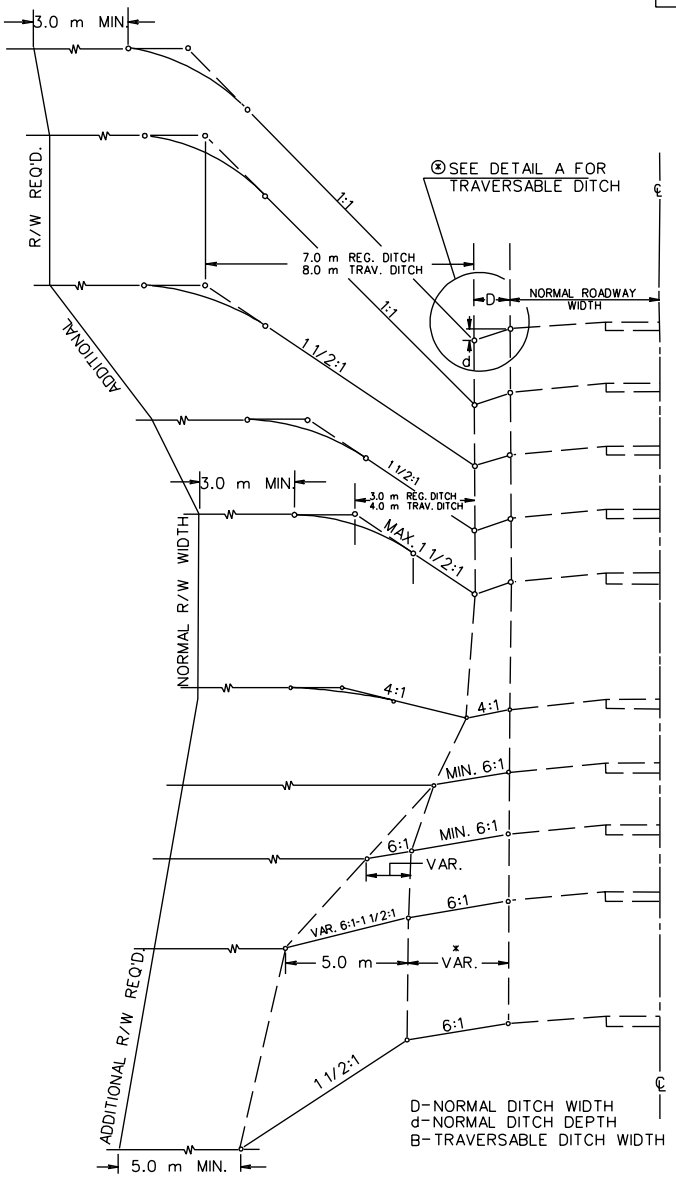
MAXIMUM SLOPE RATE SHALL NOT BE CHANGED MORE THAN TWICE IN A CUT.

IF METHOD SHOWN FOR TRANSITIONING FROM 1 1/2:1 TO 1:1 SLOPES AND VICE VERSA PRODUCES TRANSITONS TOO SHORT, THEY SHALL BE INCREASED TO 30 m IN LENGTH.

WHEN RECOVERABLE AREAS ARE NOT INDICATED ON THE TYPICAL SECTION, THE FILL SLOPE IS TO BE APPLIED TO THE NORMAL SHOULDER WIDTH BREAK POINT.

⊗ SEE TYPICAL SECTION FOR DITCH WIDTH

x SEE TYPICAL SECTION FOR RECOVERABLE AREA WIDTH TO BE USED WITH NORMAL FILL SHOULDER WIDTH



SPECIFICATION REFERENCE
303

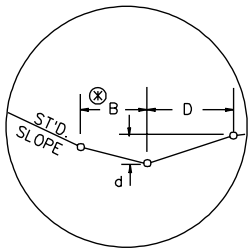
TYPICAL METHODS OF GRADING SIDE SLOPES

VIRGINIA DEPARTMENT OF TRANSPORTATION

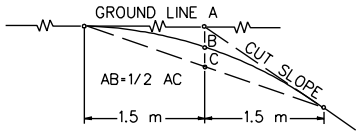
UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

701.03

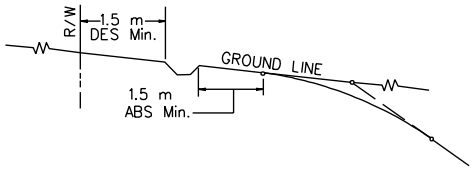
CS-3A



DETAIL A



DETAILS OF ROUNDING TOPS OF CUT SLOPES



DETAIL SHOWING BERM DITCH IF SHOWN ON PLANS OR REQ'D BY THE ENGINEER

NOTES

SLOPE ROUNDING TO BE IN ACCORDANCE WITH ABOVE DETAIL UNLESS SPECIFICALLY EXCEPTED ON PROJECT TYPICAL SECTION(S).

SEE STANDARD PLAN CS-2A FOR SUGGESTED METHODS OF FINISHING SLOPES TO FIT VARIOUS CONDITIONS.

SEE STANDARD PLAN CS-2 FOR SUGGESTED METHOD OF TRANSITIONING FROM CUT TO FILL.

ALL SLOPES SHALL BE FINISHED IN ACCORDANCE WITH THIS PLAN AND NOTES HEREON. EXCEPTIONS: LACK OF RIGHT OF WAY, ROCK OUT-CROP, OR WHERE DESIRABLE TO SAVE TREES, SHRUBBERY, ETC., AS MAY BE DIRECTED BY THE ENGINEER. SHOULD THIS RESULT IN SURPLUS EXCAVATION MATERIAL, SUCH SURPLUS SHALL BE USED AS DIRECTED BY THE ENGINEER, IN LIEU OF BORROW, TO WIDEN FILLS, OR GRADE WITHIN THE RIGHT OF WAY. SHOULD IT RESULT IN INSUFFICIENT EXCAVATION MATERIAL, SUCH MATERIAL SHALL BE OBTAINED AS DIRECTED BY THE ENGINEER.

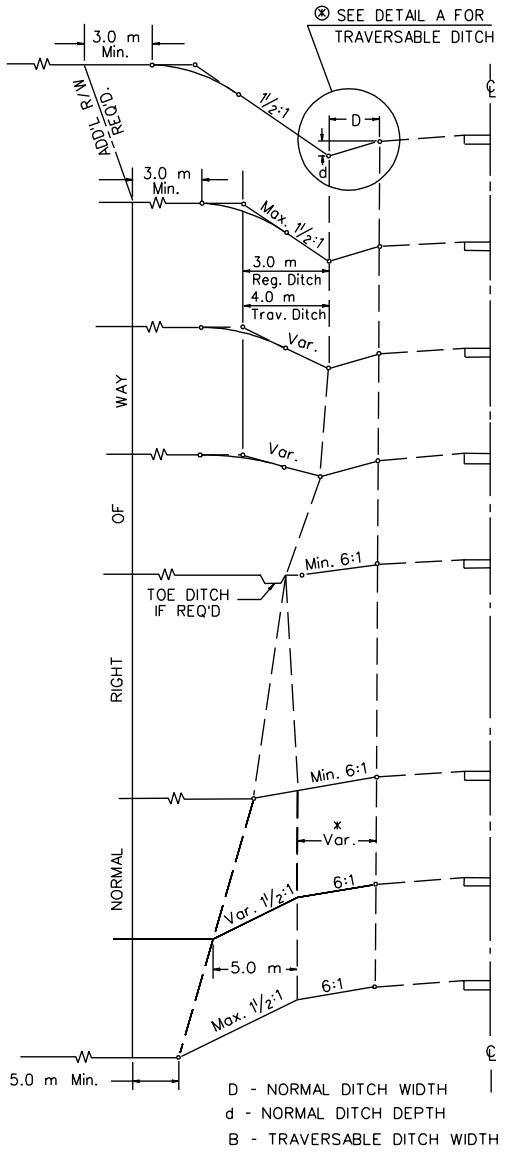
WHEN FOUND EXPEDIENT, STANDARD DITCH WIDTH AND DEPTH MAY BE INCREASED; THE DISTANCE BETWEEN BOTTOM OF DITCH AND MINIMUM RIGHT OF WAY LINE TO REMAIN AS SHOWN FOR STANDARD DITCH.

IN SHALLOW CUTS, WHERE POSSIBLE, KEEP THE CUT SLOPE AT LEAST AS STEEP AS THE DITCH SLOPE BY WIDENING THE DITCH, HOLDING THE STANDARD DEPTH.

WHEN RECOVERABLE AREAS ARE NOT INDICATED ON THE TYPICAL SECTION, THE FILL SLOPE IS TO BE APPLIED TO THE NORMAL SHOULDER WIDTH BREAK POINT.

⊛ SEE TYPICAL SECTION FOR TRAVERSABLE DITCH WIDTH AND SLOPE.

* SEE TYPICAL SECTION FOR RECOVERABLE AREA WIDTH TO BE USED WITH NORMAL FILL SHOULDER WIDTH



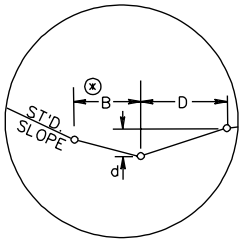
TYPICAL METHODS OF GRADING SIDE SLOPES

SPECIFICATION REFERENCE

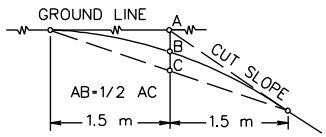
303

701.04 | UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

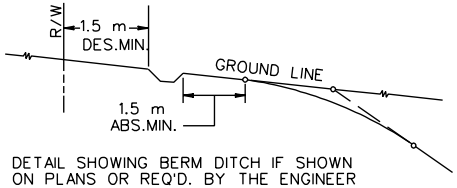
VIRGINIA DEPARTMENT OF TRANSPORTATION



DETAIL A



DETAILS OF ROUNDING TOPS OF CUT SLOPES



DETAIL SHOWING BERM DITCH IF SHOWN ON PLANS OR REQ'D. BY THE ENGINEER

NOTES

SLOPE ROUNDING TO BE IN ACCORDANCE WITH ABOVE DETAIL UNLESS SPECIFICALLY EXCEPTED ON PROJECT TYPICAL SECTION(S).

SEE STANDARD PLAN CS-2A FOR SUGGESTED METHODS OF FINISHING SLOPES TO FIT VARIOUS CONDITIONS.

SEE STANDARD PLAN CS-2 FOR SUGGESTED METHOD OF TRANSITIONING FROM CUT TO FILL.

ALL SLOPES SHALL BE FINISHED IN ACCORDANCE WITH THIS PLAN AND NOTES HEREON. EXCEPTIONS: LACK OF RIGHT OF WAY, ROCK OUT-CROP, OR WHERE DESIRABLE TO SAVE TREES, SHRUBBERY, ETC., AS MAY BE DIRECTED BY THE ENGINEER. SHOULD THIS RESULT IN SURPLUS EXCAVATION MATERIAL, SUCH SURPLUS SHALL BE USED AS DIRECTED BY THE ENGINEER, IN LIEU OF BORROW, TO WIDEN FILLS, OR GRADE WITHIN THE RIGHT OF WAY. SHOULD IT RESULT IN INSUFFICIENT EXCAVATION MATERIAL, SUCH MATERIAL SHALL BE OBTAINED AS DIRECTED BY THE ENGINEER.

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IN CUTS UP TO 120 m IN LENGTH 1 1/2:1 SLOPES MAY BE CARRIED THROUGH REGARDLESS OF DEPTH, PROVIDED RIGHT OF WAY IS AVAILABLE.

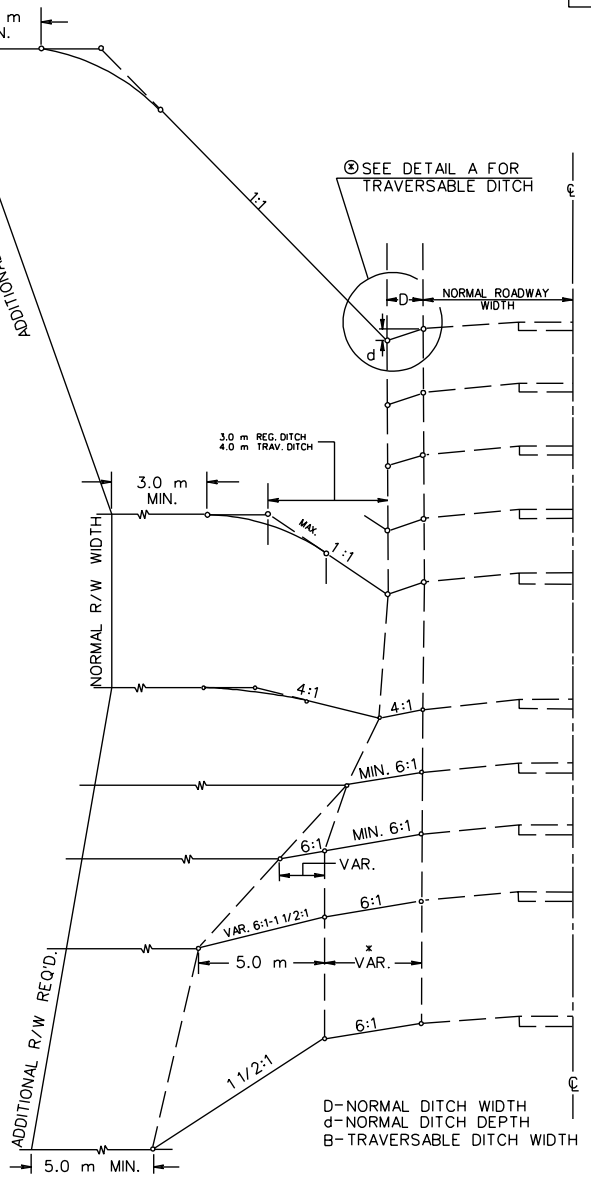
MAXIMUM SLOPE RATE SHALL NOT BE CHANGED MORE THAN TWICE IN A CUT.

IF METHOD SHOWN FOR TRANSITIONING FROM 1 1/2:1 TO 1:1 SLOPES AND VICE VERSA PRODUCES TRANSITONS TOO SHORT, THEY SHALL BE INCREASED TO 30 m IN LENGTH.

WHEN RECOVERABLE AREAS ARE NOT INDICATED ON THE TYPICAL SECTION, THE FILL SLOPE IS TO BE APPLIED TO THE NORMAL SHOULDER WIDTH BREAK POINT.

⊗ SEE TYPICAL SECTION FOR DITCH WIDTH

x SEE TYPICAL SECTION FOR RECOVERABLE AREA WIDTH TO BE USED WITH NORMAL FILL SHOULDER WIDTH

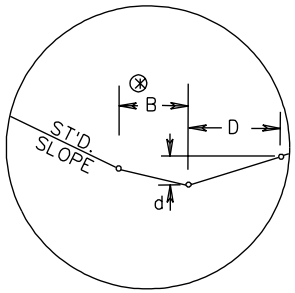


SPECIFICATION REFERENCE
303

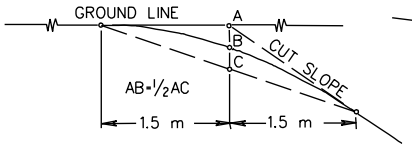
TYPICAL METHODS OF GRADING SIDE SLOPES

VIRGINIA DEPARTMENT OF TRANSPORTATION

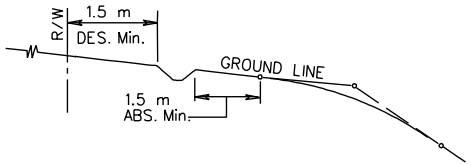
UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS



DETAIL A



DETAILS OF ROUNDING TOPS OF CUT SLOPES



DETAIL SHOWING BERM DITCH IF SHOWN ON PLANS OR REQ'D. BY THE ENGINEER

NOTES

SLOPE ROUNDING TO BE IN ACCORDANCE WITH ABOVE DETAIL UNLESS SPECIFICALLY EXCEPTED ON PROJECT TYPICAL SECTION(S).

SEE STANDARD PLAN CS-2A FOR SUGGESTED METHODS OF FINISHING SLOPES TO FIT VARIOUS CONDITIONS.

SEE STANDARD PLAN CS-2 FOR SUGGESTED METHOD OF TRANSITIONING FROM CUT TO FILL.

ALL SLOPES SHALL BE FINISHED IN ACCORDANCE WITH THIS PLAN AND NOTES HEREON. EXCEPTIONS: LACK OF RIGHT OF WAY, ROCK OUT-CROP, OR WHERE DESIRABLE TO SAVE TREES, SHRUBBERY, ETC., AS MAY BE DIRECTED BY THE ENGINEER. SHOULD THIS RESULT IN SURPLUS EXCAVATION MATERIAL, SUCH SURPLUS SHALL BE USED AS DIRECTED BY THE ENGINEER, IN LIEU OF BORROW, TO WIDEN FILLS, OR GRADE WITHIN THE RIGHT OF WAY. SHOULD IT RESULT IN INSUFFICIENT EXCAVATION MATERIAL, SUCH MATERIAL SHALL BE OBTAINED AS DIRECTED BY THE ENGINEER.

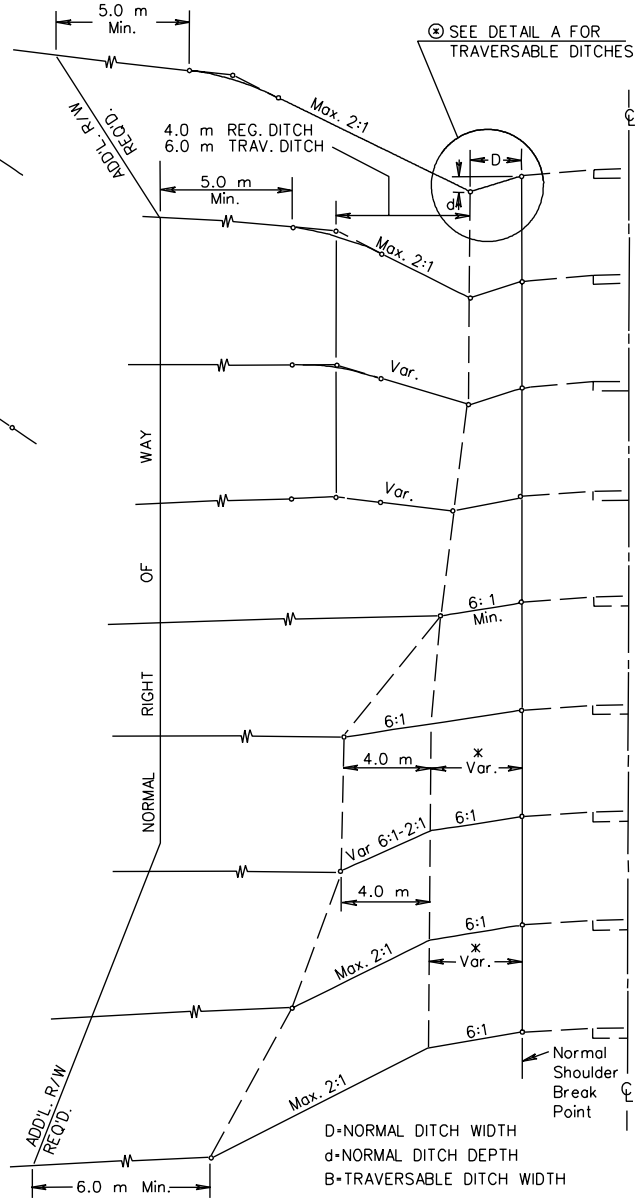
WHEN FOUND EXPEDIENT, STANDARD DITCH WIDTH AND DEPTH MAY BE INCREASED; THE DISTANCE BETWEEN BOTTOM OF DITCH AND MINIMUM RIGHT OF WAY LINE TO REMAIN AS SHOWN FOR STANDARD DITCH.

IN SHALLOW CUTS, WHERE POSSIBLE, KEEP THE CUT SLOPE AT LEAST AS STEEP AS THE DITCH SLOPE BY WIDENING THE DITCH, HOLDING THE STANDARD DEPTH.

WHEN RECOVERABLE AREAS ARE NOT INDICATED ON THE TYPICAL SECTION, THE FILL SLOPE IS TO BE APPLIED TO THE NORMAL SHOULDER WIDTH BREAK POINT.

⊛ SEE TYPICAL SECTION FOR TRAVERSABLE DITCH WIDTH AND SLOPE.

* SEE TYPICAL SECTION FOR RECOVERABLE AREA WIDTH TO BE USED WITH NORMAL FILL SHOULDER WIDTH



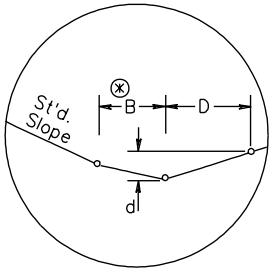
SPECIFICATION REFERENCE
303

TYPICAL METHODS OF GRADING SIDE SLOPES

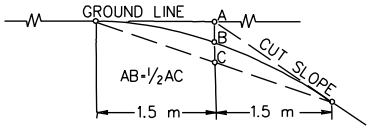
VIRGINIA DEPARTMENT OF TRANSPORTATION

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

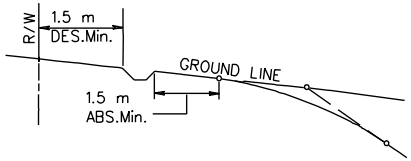
CS-4A



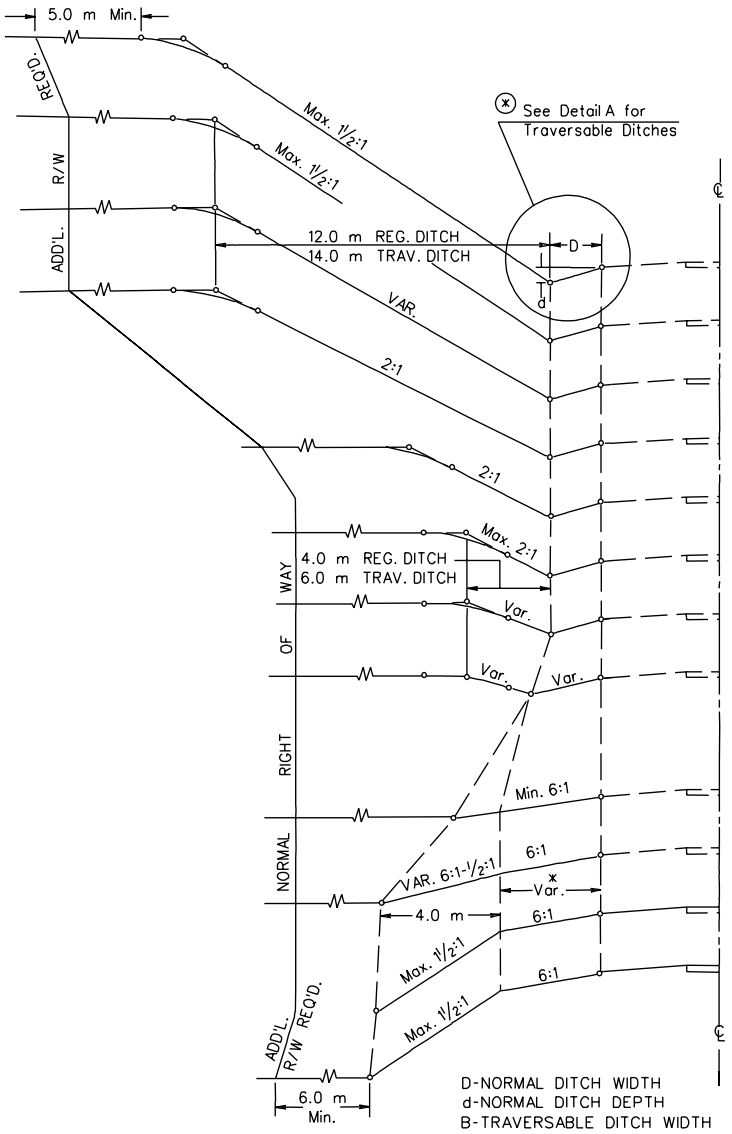
DETAIL A



DETAILS OF ROUNDING TOPS OF CUT SLOPES



DETAIL SHOWING BERM DITCH IF SHOWN ON PLANS OR REQ'D. BY THE ENGINEER



NOTES

SLOPE ROUNDING TO BE IN ACCORDANCE WITH ABOVE DETAIL UNLESS SPECIFICALLY EXCEPTED ON PROJECT TYPICAL SECTION(S).

SEE STANDARD PLAN CS-2A FOR SUGGESTED METHODS OF FINISHING SLOPES TO FIT VARIOUS CONDITIONS.

SEE STANDARD PLAN CS-2 FOR SUGGESTED METHOD OF TRANSITIONING FROM CUT TO FILL.

ALL SLOPES SHALL BE FINISHED IN ACCORDANCE WITH THIS PLAN AND NOTES HEREON. EXCEPTIONS: LACK OF RIGHT OF WAY, ROCK OUT-CROP, OR WHERE DESIRABLE TO SAVE TREES, SHRUBBERY, ETC., AS MAY BE DIRECTED BY THE ENGINEER. SHOULD THIS RESULT IN SURPLUS EXCAVATION MATERIAL, SUCH SURPLUS SHALL BE USED AS DIRECTED BY THE ENGINEER, IN LIEU OF BORROW, TO WIDEN FILLS, OR GRADE WITHIN THE RIGHT OF WAY. SHOULD IT RESULT IN INSUFFICIENT EXCAVATION MATERIAL, SUCH MATERIAL SHALL BE OBTAINED AS DIRECTED BY THE ENGINEER.

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IN SHALLOW CUTS, WHERE POSSIBLE, KEEP THE CUT SLOPE AT LEAST AS STEEP AS THE DITCH SLOPE BY WIDENING THE DITCH, HOLDING THE STANDARD DEPTH.

IN CUTS UP TO 120 m IN LENGTH 1 1/2:1 SLOPES MAY BE CARRIED THROUGH REGARDLESS OF DEPTH, PROVIDED RIGHT OF WAY IS AVAILABLE.

MAXIMUM SLOPE RATE SHALL NOT BE CHANGED MORE THAN TWICE IN A CUT.

IF METHOD SHOWN FOR TRANSITIONING FROM 2:1 TO 1 1/2:1 SLOPES AND VICE VERSA PRODUCES TRANSITIONS TOO SHORT, THEY SHALL BE INCREASED TO 30 m IN LENGTH.

* SEE TYPICAL SECTION FOR RECOVERABLE AREA WIDTH WHEN RECOVERABLE AREAS ARE NOT INDICATED ON THE TYPICAL SECTION, THE FILL SLOPE IS TO BE APPLIED TO THE NORMAL SHOULDER WIDTH BREAK POINT.

Ⓚ SEE TYPICAL SECTION FOR TRAVERSABLE DITCH WIDTH AND SLOPE.

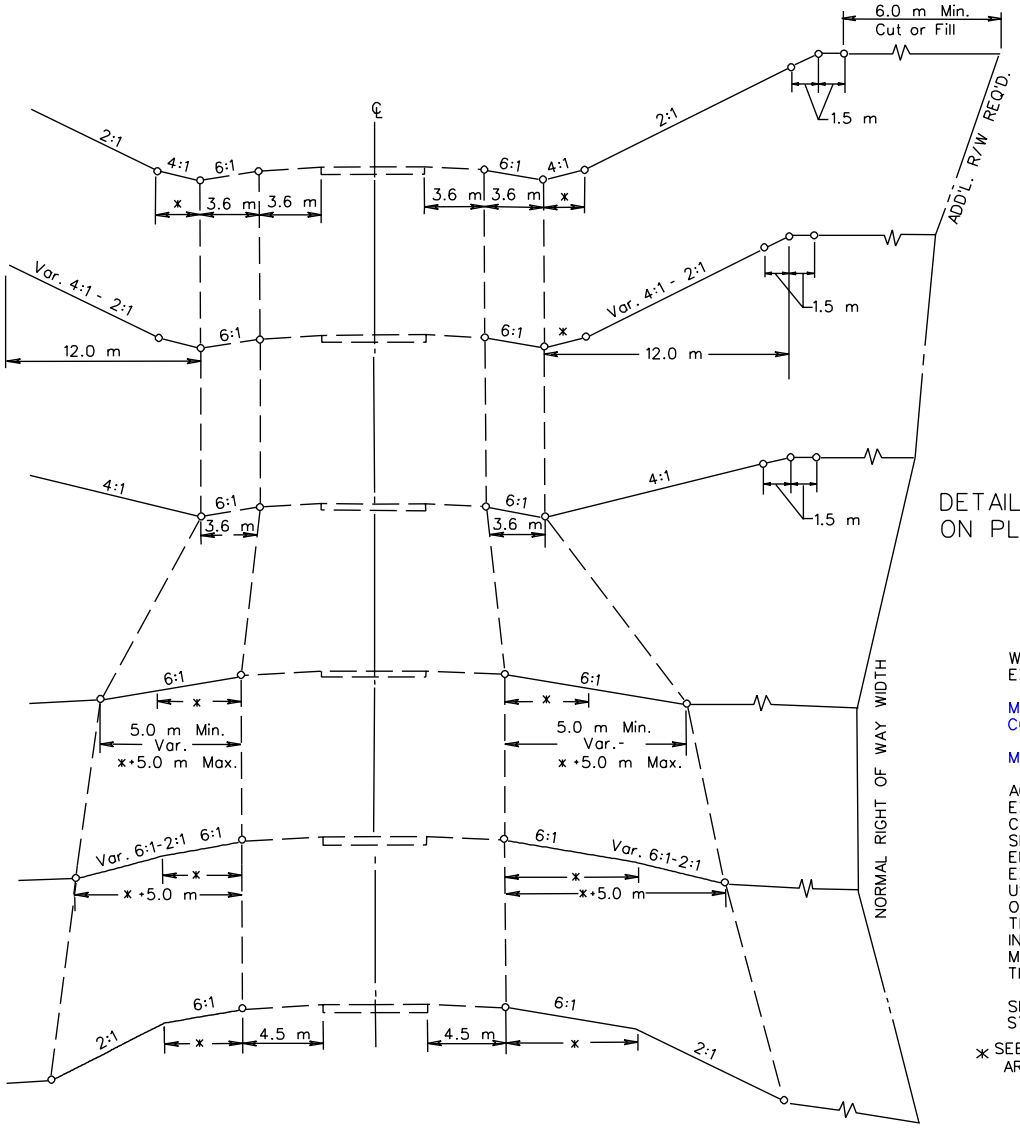
TYPICAL METHODS OF GRADING SIDE SLOPES

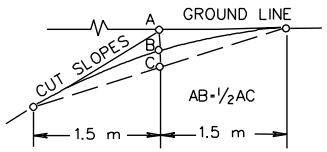
SPECIFICATION REFERENCE

303

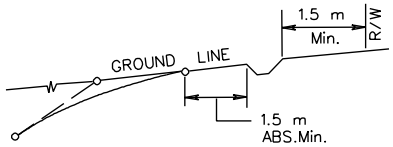
701.07 | UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

VIRGINIA DEPARTMENT OF TRANSPORTATION





DETAIL OF ROUNDING TOPS OF CUT SLOPES



DETAIL SHOWIING BERM DITCH IF SHOWN ON PLANS OR REQ'D. BY THE ENGINEER

NOTES

SLOPE ROUNDING TO BE IN ACCORDANCE WITH ABOVE DETAIL UNLESS SPECIFICALLY EXCEPTED ON PROJECT TYPICAL SECTION(S).

SEE STANDARD PLAN CS-2A FOR SUGGESTED METHODS OF FINISHING SLOPES TO FIT VARIOUS CONDITIONS.

SEE STANDARD PLAN CS-2 FOR SUGGESTED METHOD OF TRANSITIONING FROM CUT TO FILL.

ALL SLOPES SHALL BE FINISHED IN ACCORDANCE WITH THIS PLAN AND NOTES HEREON. EXCEPTIONS: LACK OF RIGHT OF WAY, ROCK OUT-CROP, OR WHERE DESIRABLE TO SAVE TREES, SHRUBBERY, ETC., AS MAY BE DIRECTED BY THE ENGINEER. SHOULD THIS RESULT IN SURPLUS EXCAVATION MATERIAL, SUCH SURPLUS SHALL BE USED AS DIRECTED BY THE ENGINEER, IN LIEU OF BORROW, TO WIDEN FILLS, OR GRADE WITHIN THE RIGHT OF WAY. SHOULD IT RESULT IN INSUFFICIENT EXCAVATION MATERIAL, SUCH MATERIAL SHALL BE OBTAINED AS DIRECTED BY THE ENGINEER.

NORMAL GUARDRAIL OFFSET TO BE AS SHOWN FOR DETAILS OF TRANSITIONING SEE ST'D. GR-INS.

* SEE TYPICAL SECTION FOR RECOVERABLE AREA WIDTH.

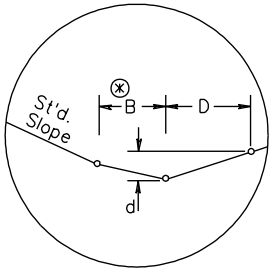
SPECIFICATION REFERENCE
303

TYPICAL METHODS OF GRADING SIDE SLOPES

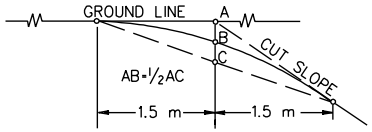
VIRGINIA DEPARTMENT OF TRANSPORTATION

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

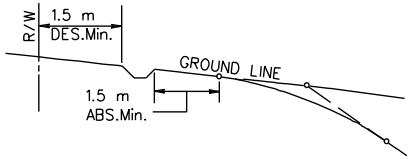
CS-4C



DETAIL A



DETAILS OF ROUNDING TOPS OF CUT SLOPES



DETAIL SHOWING BERM DITCH IF SHOWN ON PLANS OR REQ'D. BY THE ENGINEER

NOTES

SLOPE ROUNDING TO BE IN ACCORDANCE WITH ABOVE DETAIL UNLESS SPECIFICALLY EXCEPTED ON PROJECT TYPICAL SECTION(S).

SEE STANDARD PLAN CS-2A FOR SUGGESTED METHODS OF FINISHING SLOPES TO FIT VARIOUS CONDITIONS.

SEE STANDARD PLAN CS-2 FOR SUGGESTED METHOD OF TRANSITIONING FROM CUT TO FILL.

ALL SLOPES SHALL BE FINISHED IN ACCORDANCE WITH THIS PLAN AND NOTES HEREON. EXCEPTIONS: LACK OF RIGHT OF WAY, ROCK OUT-CROP, OR WHERE DESIRABLE TO SAVE TREES, SHRUBBERY, ETC., AS MAY BE DIRECTED BY THE ENGINEER. SHOULD THIS RESULT IN SURPLUS EXCAVATION MATERIAL, SUCH SURPLUS SHALL BE USED AS DIRECTED BY THE ENGINEER, IN LIEU OF BORROW, TO WIDEN FILLS, OR GRADE WITHIN THE RIGHT OF WAY. SHOULD IT RESULT IN INSUFFICIENT EXCAVATION MATERIAL, SUCH MATERIAL SHALL BE OBTAINED AS DIRECTED BY THE ENGINEER.

WHEN FOUND EXPEDIENT, STANDARD DITCH WIDTH AND DEPTH MAY BE INCREASED; THE DISTANCE BETWEEN BOTTOM OF DITCH AND MINIMUM RIGHT OF WAY LINE TO REMAIN AS SHOWN FOR STANDARD DITCH.

IN SHALLOW CUTS, WHERE POSSIBLE, KEEP THE CUT SLOPE AT LEAST AS STEEP AS THE DITCH SLOPE BY WIDENING THE DITCH, HOLDING THE STANDARD DEPTH.

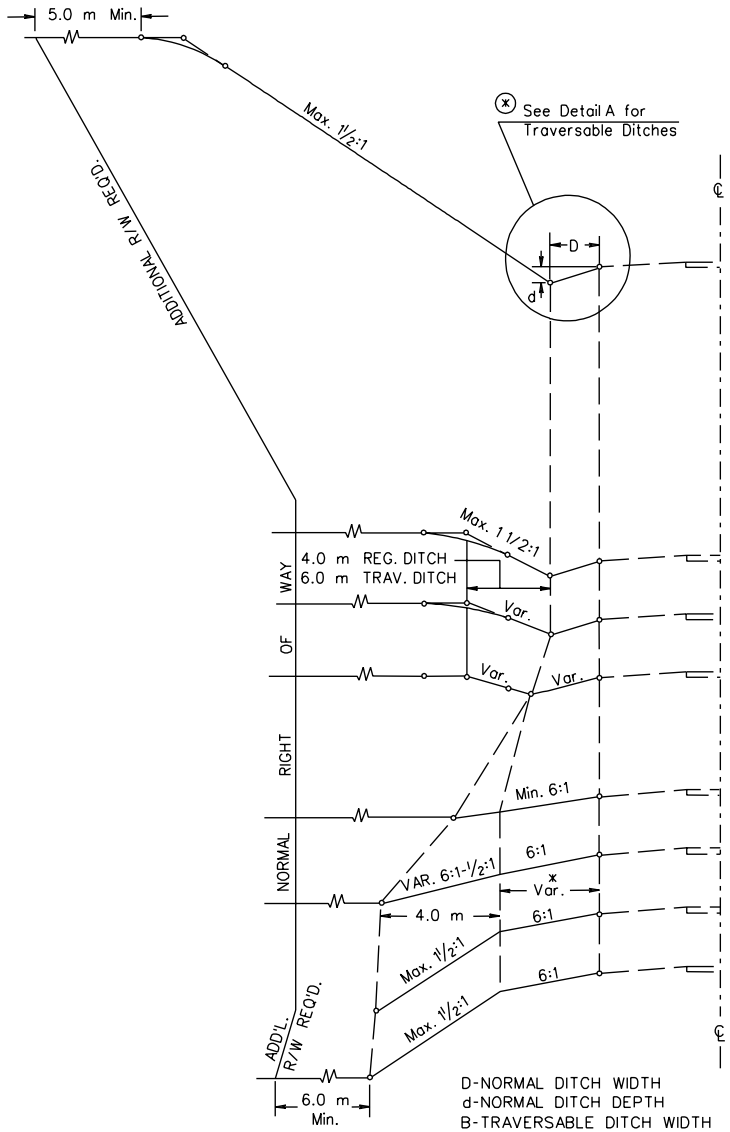
IN CUTS UP TO 120 m IN LENGTH 1 1/2:1 SLOPES MAY BE CARRIED THROUGH REGARDLESS OF DEPTH, PROVIDED RIGHT OF WAY IS AVAILABLE.

MAXIMUM SLOPE RATE SHALL NOT BE CHANGED MORE THAN TWICE IN A CUT.

IF METHOD SHOWN FOR TRANSITIONING FROM 2:1 TO 1 1/2:1 SLOPES AND VICE VERSA PRODUCES TRANSITIONS TOO SHORT, THEY SHALL BE INCREASED TO 30 m IN LENGTH.

* SEE TYPICAL SECTION FOR RECOVERABLE AREA WIDTH WHEN RECOVERABLE AREAS ARE NOT INDICATED ON THE TYPICAL SECTION, THE FILL SLOPE IS TO BE APPLIED TO THE NORMAL SHOULDER WIDTH BREAK POINT.

Ⓐ SEE TYPICAL SECTION FOR TRAVERSABLE DITCH WIDTH AND SLOPE.



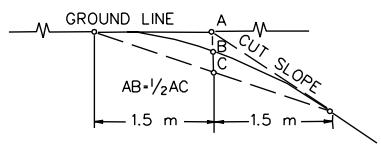
TYPICAL METHODS OF GRADING SIDE SLOPES

SPECIFICATION REFERENCE

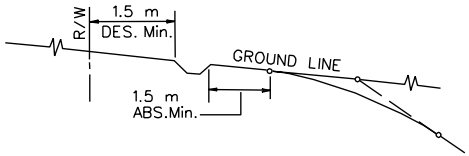
303

701.09 | UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

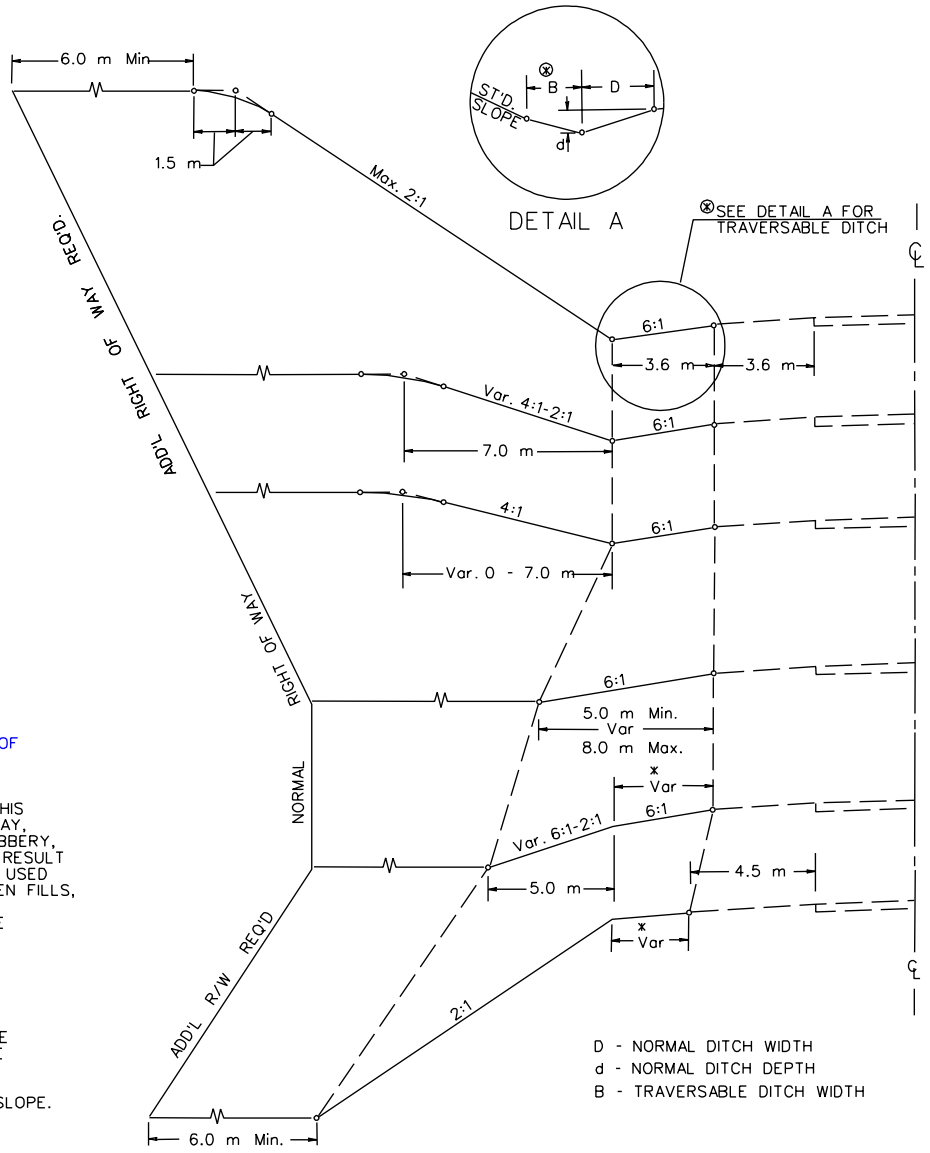
VIRGINIA DEPARTMENT OF TRANSPORTATION



DETAILS OF ROUNDING TOPS OF CUT SLOPES



DETAIL SHOWING BERM DITCH IF SHOWN ON PLANS OR REQ'D. BY THE ENGINEER



NOTES

SLOPE ROUNDING TO BE AS DETAILED ABOVE, UNLESS SPECIFICALLY EXCEPTED ON PROJECT TYPICAL SECTION(S).

SEE STANDARD PLAN CS-2A FOR SUGGESTED METHODS OF FINISHING SLOPES TO FIT VARIOUS CONDITIONS.

SEE STANDARD PLAN CS-2 FOR SUGGESTED METHOD OF TRANSITIONING FROM CUT TO FILL.

ALL SLOPES SHALL BE FINISHED IN ACCORDANCE WITH THIS PLAN AND NOTES HEREON EXCEPTIONS: LACK OF RIGHT OF WAY, ROCK OUT-CROP, OR WHERE DESIRABLE TO SAVE TREES, SHRUBBERY, ETC, AS MAY BE DIRECTED BY THE ENGINEER. SHOULD THIS RESULT IN SURPLUS EXCAVATION MATERIAL, SUCH SURPLUS SHALL BE USED AS DIRECTED BY THE ENGINEER, IN LIEU OF BORROW, TO WIDEN FILLS, OR GRADE WITHIN THE RIGHT OF WAY. SHOULD IT RESULT IN INSUFFICIENT EXCAVATION MATERIAL, SUCH MATERIAL SHALL BE OBTAINED AS DIRECTED BY THE ENGINEER.

SEE STANDARD PLAN GS-13 FOR GRADED MEDIAN

* SEE TYPICAL SECTION FOR RECOVERABLE AREA WIDTH TO BE USED WITH NORMAL FILL SHOULDER WIDTH

WHEN RECOVERABLE AREAS ARE NOT INDICATED ON THE TYPICAL SECTION, THE FILL SLOPE IS TO BE APPLIED TO THE NORMAL SHOULDER WIDTH BREAK POINT

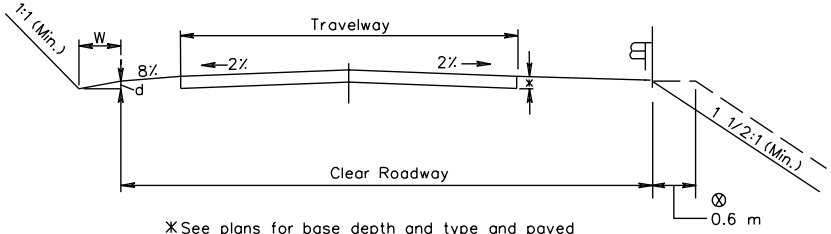
⊗ SEE TYPICAL SECTION FOR TRAVERSABLE DITCH WIDTH AND SLOPE.

SPECIFICATION REFERENCE
303

TYPICAL METHODS OF GRADING SIDE SLOPES

VIRGINIA DEPARTMENT OF TRANSPORTATION

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS



✳See plans for base depth and type and paved surface treatment where required.

TYPICAL SECTION

⊗ For Guardrail:
Add 0.6 m to 1.2 m Shoulders
Add 0.9 m to all other Shoulders
Bridge Width=Approach Roadway Width
(Clear Roadway)

WIDTHS FOR TWO WAY TRAFFIC
(Lesser width may be used for one-way)

Type	Current ADT	✳ Travelway Width	Surface		Min. ⊗ Roadway Shoulder To Shoulder	Ditch Width (W)	Ditch Depth (d)	Pay Item
			Unpaved	Paved				
A	0-250	5.4 m	✓		6.6 m	1.2 m	0.4 m	m
B	251-750	6.0 m	✓		7.2 m Abs. 8.4 m Des.	1.2 m	0.4 m	m
C	751-2000	6.0 m		✓	8.4 m Abs. 9.6 m Des.	1.2 m	0.4 m	✳✳
D	2001-5500	6.6 m		✓	11.4 m	1.2 m	0.4 m	✳✳
E	5501-15,000	7.2 m		✓	12.0 m	1.2 m	0.4 m	✳✳
F	15,000-Above	7.2 m		✓	12.0 m	1.8 m	0.45 m	✳✳

✳ Curves to be widened in accordance with St'd. TC-5R (M).

✳✳ Paid for by individual quantities.

GEOMETRICS

Design Speed Km/h		30	50	60	80	100	110
Min. Radius (Meters)		30	80	125	230	395	500
Max. % Grade		16%	14%	12%	10%	9%	6%
Stopping Sight Distance	Des.	30 m	70 m	90 m	140 m	210 m	250 m
	Min.		60 m	80 m	120 m	160 m	190 m
(Max.) Super-Elevation (m/m)		8%	8%	8%	8%	8%	8%

If Geometrics and Widths shown in these charts are greater than the finished contract design, approval may be granted by the Department for lesser values.

SPECIFICATION REFERENCE
510

MINIMUM DESIGN CRITERIA FOR TEMPORARY DETOURS (MAINTENANCE OF TRAFFIC)

VIRGINIA DEPARTMENT OF TRANSPORTATION

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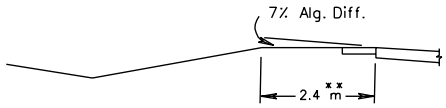
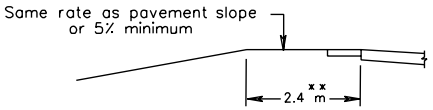
GS-11

GRADED MEDIAN SHOULDERS



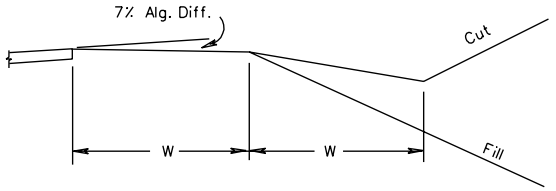
** Where mainline is 6 or more lanes graded shoulder width is to be the same as that shown for fill shoulder for independent grading.

High Side - Superelevated

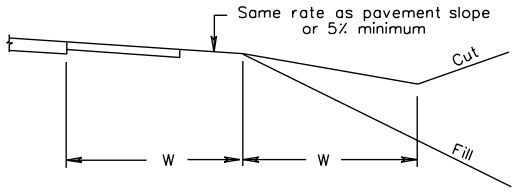


Low Side - Superelevated

OUTSIDE SHOULDERS



High Side - Superelevated



Low Side - Superelevated

Note: For width of shoulders and ditches (W) see Geometric Design Standards

STANDARD SHOULDER DESIGN FOR ALL SYSTEMS EXCEPT LOCAL ROADS AND STREETS

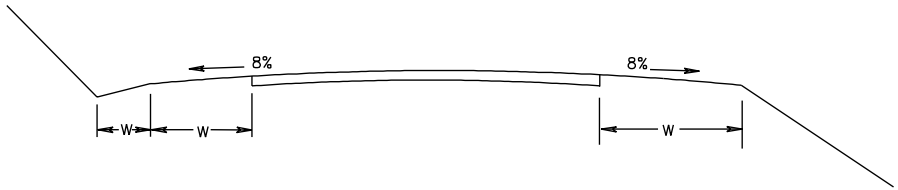
SPECIFICATION REFERENCE

702.01

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

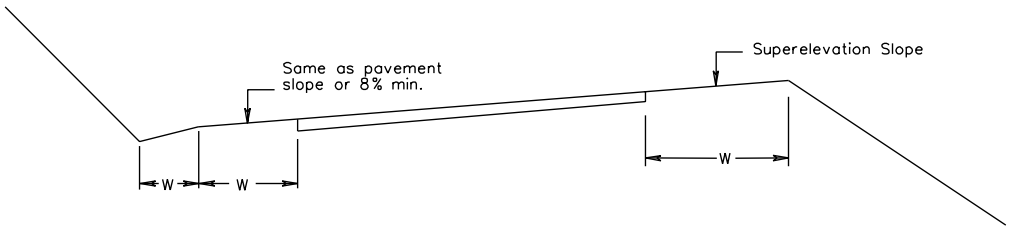
VIRGINIA DEPARTMENT OF TRANSPORTATION

TANGENT SECTION



For widths of shoulders and ditches (W)
see Geometric Design Standards.

SUPERELEVATED SECTION



For widths of shoulders and ditches (W)
see Geometric Design Standards.

STANDARD SHOULDER DESIGNS FOR LOCAL ROADS & STREETS

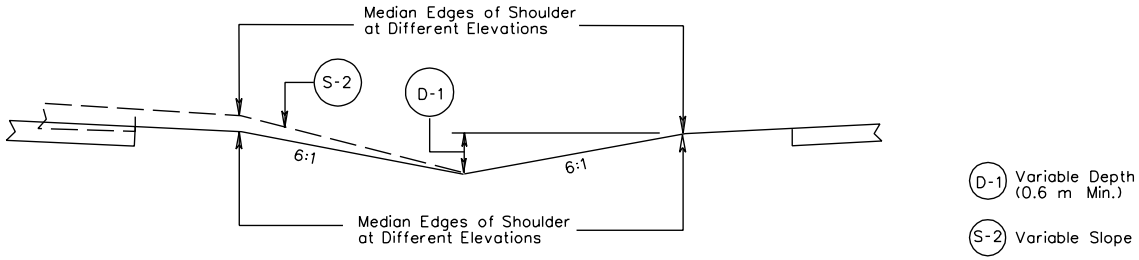
VIRGINIA DEPARTMENT OF TRANSPORTATION

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

GS-13

MEDIAN EDGES OF SHOULDER AT SAME OR APPROXIMATELY SAME ELEVATION

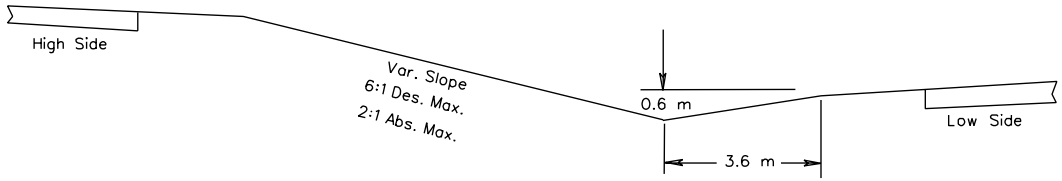
(Grading To Center Of Median)



Hold a 6:1 slope from the edges of median shoulders (from the lower median shoulder if at different elevations) to the center of median.

MEDIAN EDGES OF SHOULDER AT DIFFERENT ELEVATIONS

(Grading From High Shoulder To Ditch Adjacent To Lower Roadway)



Hold a 0.6 m ditch depth, 3.6 m wide, adjacent to lower shoulder.

STANDARD GRADED MEDIAN DESIGNS

SPECIFICATION REFERENCE

702.03

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

VIRGINIA DEPARTMENT OF TRANSPORTATION