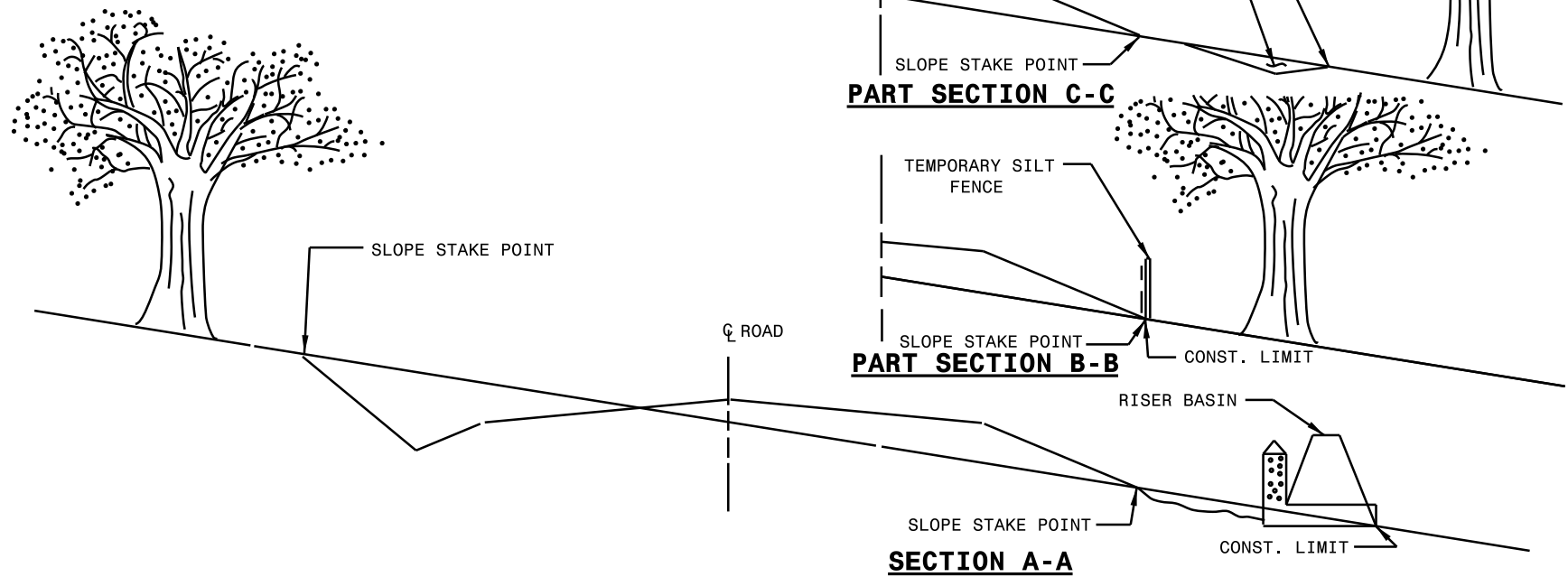
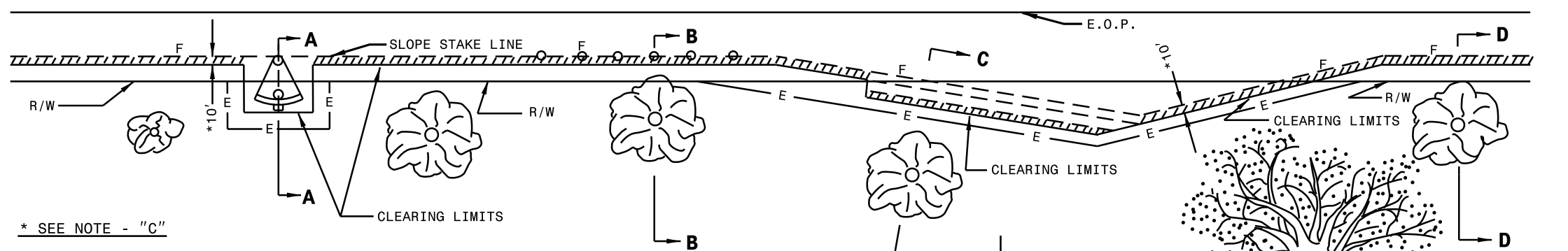
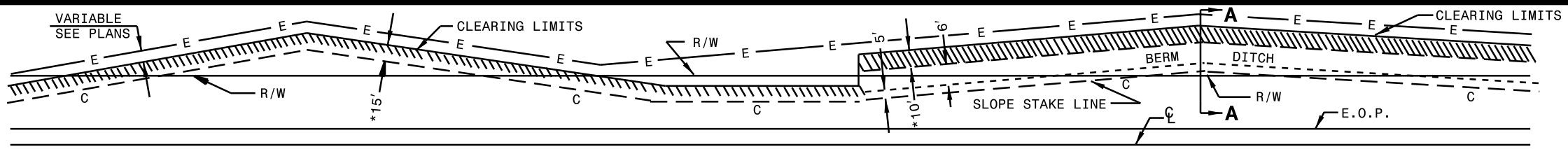


**GENERAL NOTES:**

1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.
3. FOR SECTIONS WITH WIDE MEDIANS WHERE TREES ARE TO REMAIN, CLEAR THE MEDIAN SIDE IN THE SAME MANNER AS ON THE OUTSIDE.

**CLEAR TO SLOPE STAKE LINE OR CONSTRUCTION LIMITS**





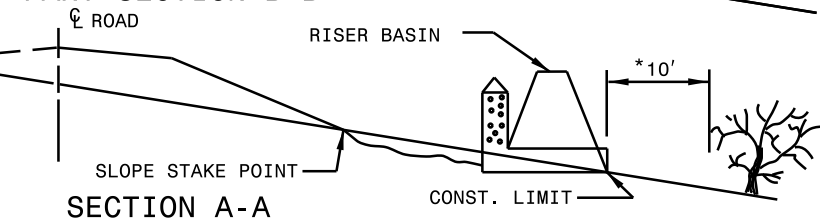
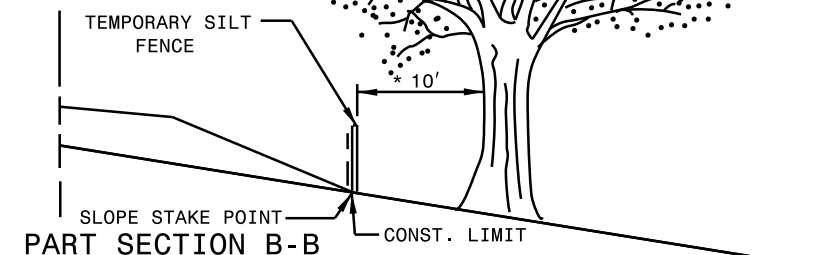
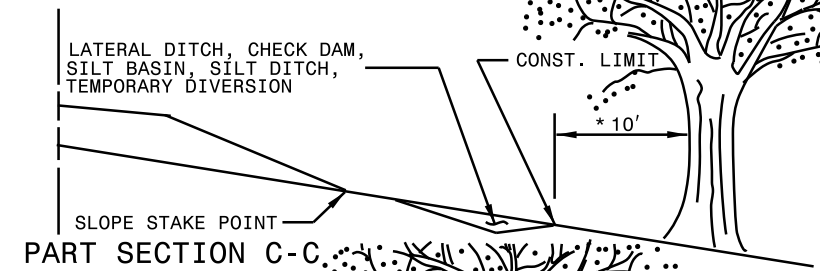
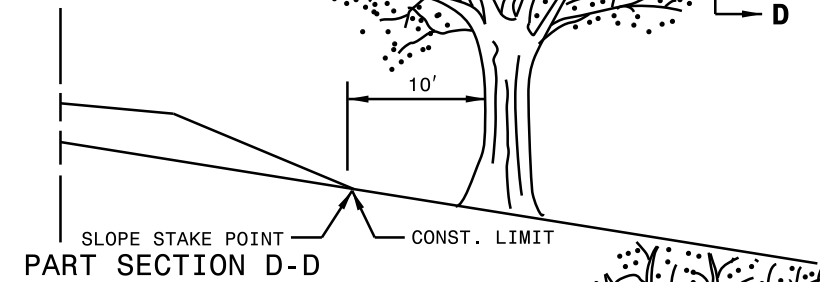
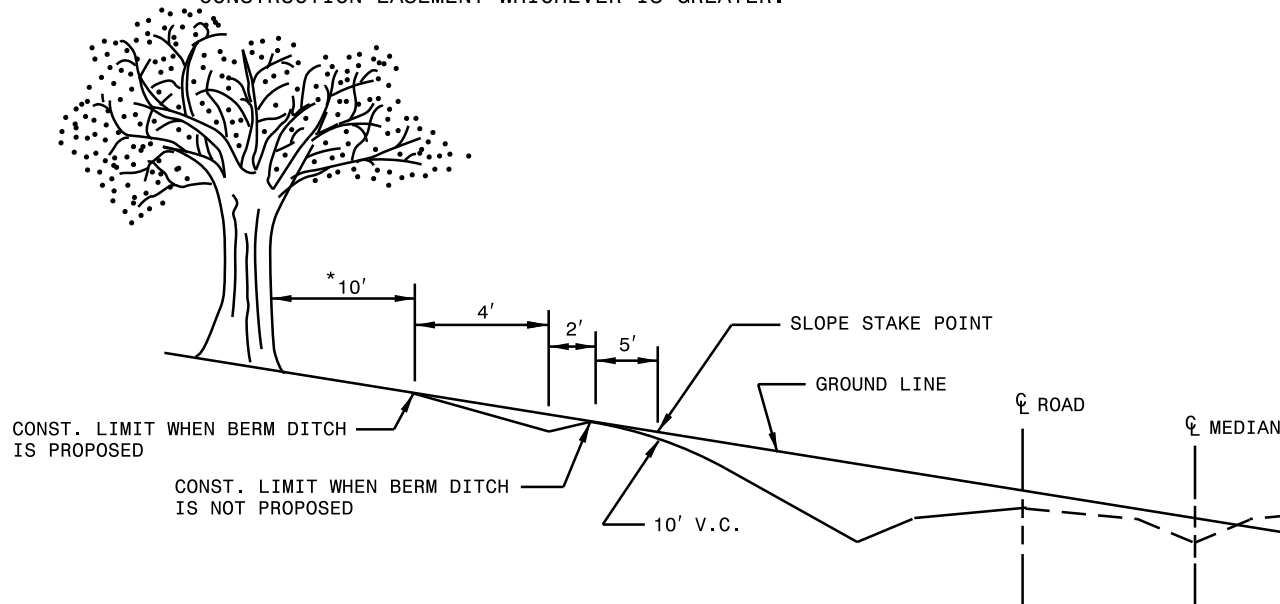
\* SEE NOTE - "C"

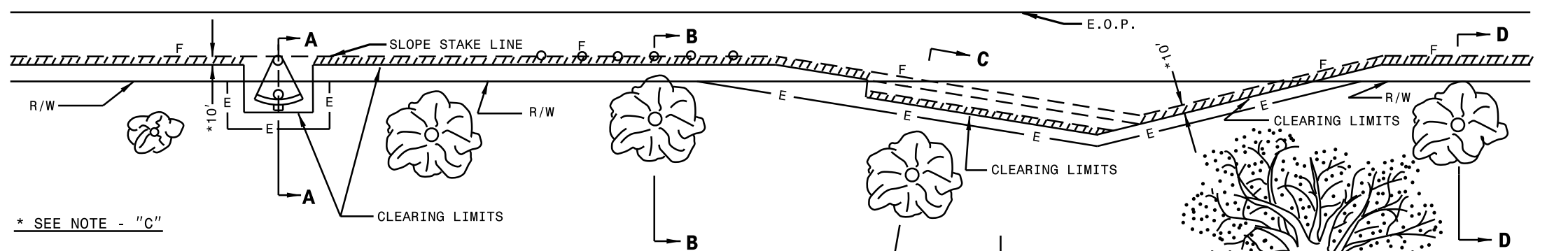
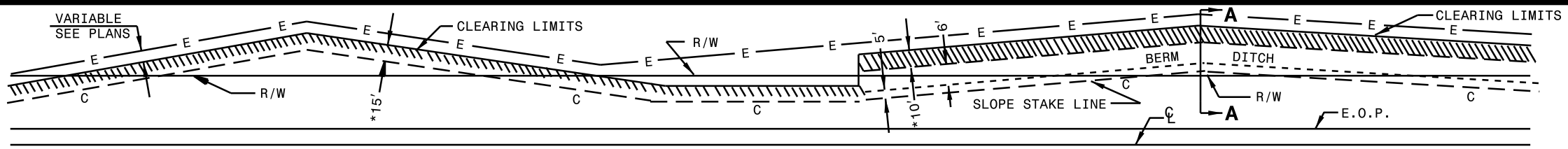
GENERAL NOTES:

1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.

**METHOD III CLEARING LIMITS**

- (A) CUTS -- CLEAR TO 10' BEYOND CONSTRUCTION LIMITS.
- (B) FILLS - CLEAR TO 10' BEYOND CONSTRUCTION LIMITS, UNLESS SPECIFIED OTHERWISE BY WETLAND PERMIT.
- (C) CUTS AND FILLS - WHEN THE CLEARING LIMITS (A AND B) EXCEED THE PROPOSED R/W OR PROPOSED CONSTRUCTION EASEMENTS, THEN CLEAR ONLY TO THE R/W OR CONSTRUCTION EASEMENT WHICHEVER IS GREATER.





\* SEE NOTE - "C"

GENERAL NOTES:

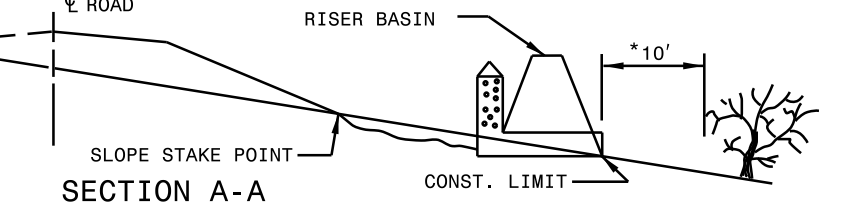
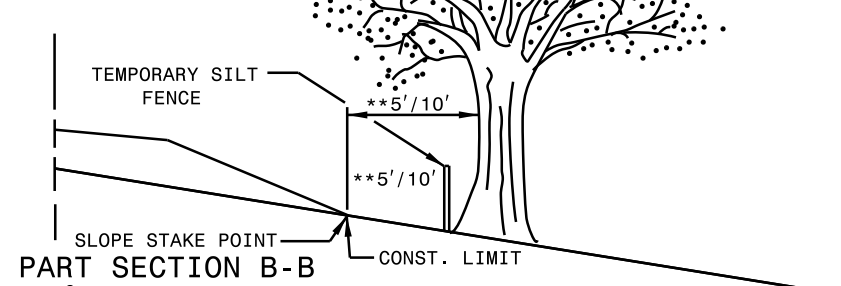
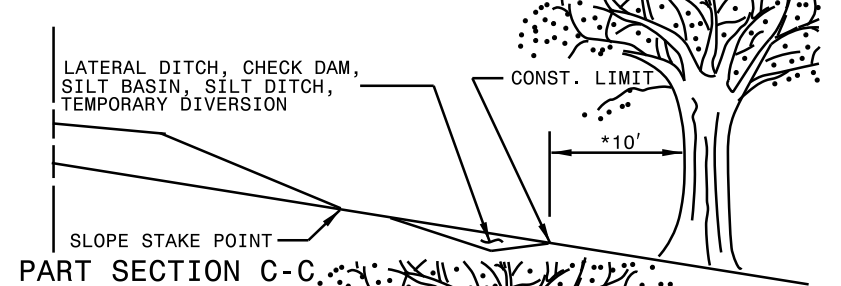
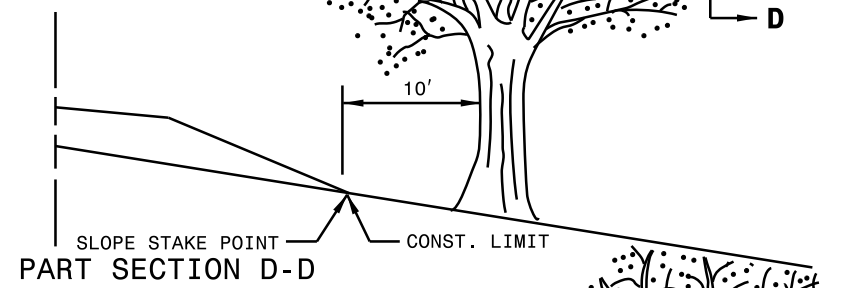
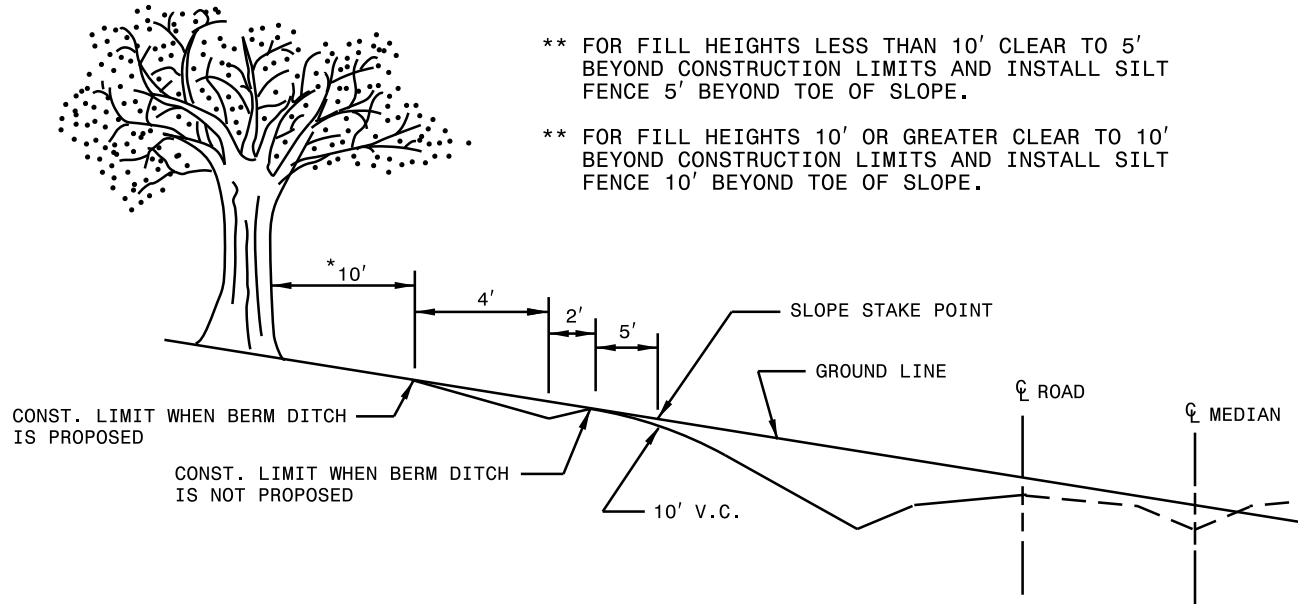
1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.

**METHOD III CLEARING LIMITS**

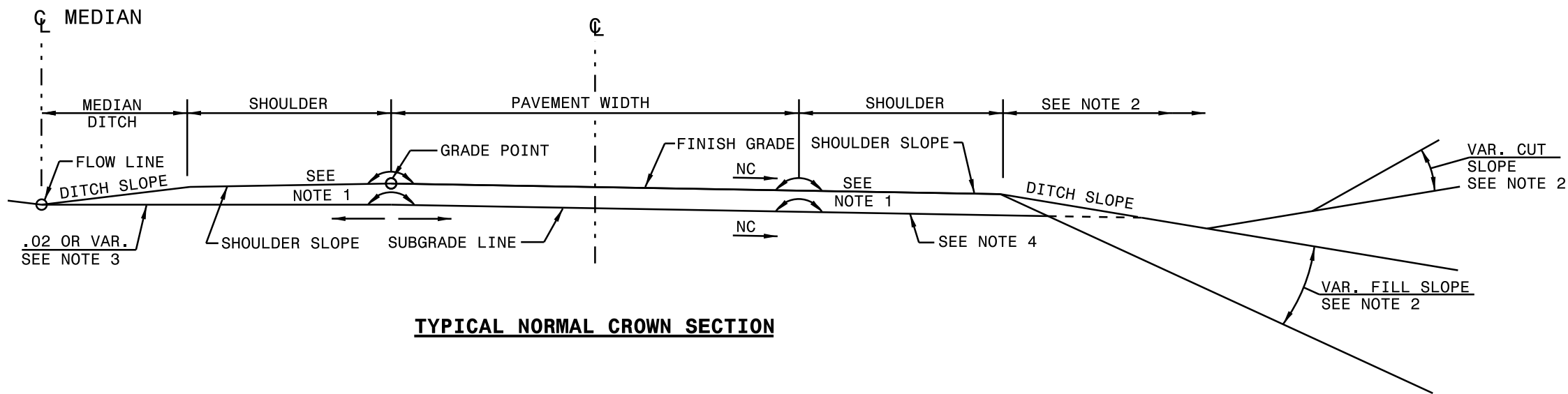
- (A) CUTS -- CLEAR TO CONSTRUCTION LIMITS.
- (B) FILLS - CLEAR TO 5'/10' \*\* BEYOND CONSTRUCTION LIMITS, UNLESS SPECIFIED OTHERWISE BY WETLAND PERMIT.
- (C) CUTS AND FILLS - WHEN THE CLEARING LIMITS (A OR B) EXCEED THE PROPOSED R/W OR PROPOSED CONSTRUCTION EASEMENTS, THEN CLEAR ONLY TO THE R/W OR CONSTRUCTION EASEMENT WHICHEVER IS GREATER.

\*\* FOR FILL HEIGHTS LESS THAN 10' CLEAR TO 5' BEYOND CONSTRUCTION LIMITS AND INSTALL SILT FENCE 5' BEYOND TOE OF SLOPE.

\*\* FOR FILL HEIGHTS 10' OR GREATER CLEAR TO 10' BEYOND CONSTRUCTION LIMITS AND INSTALL SILT FENCE 10' BEYOND TOE OF SLOPE.

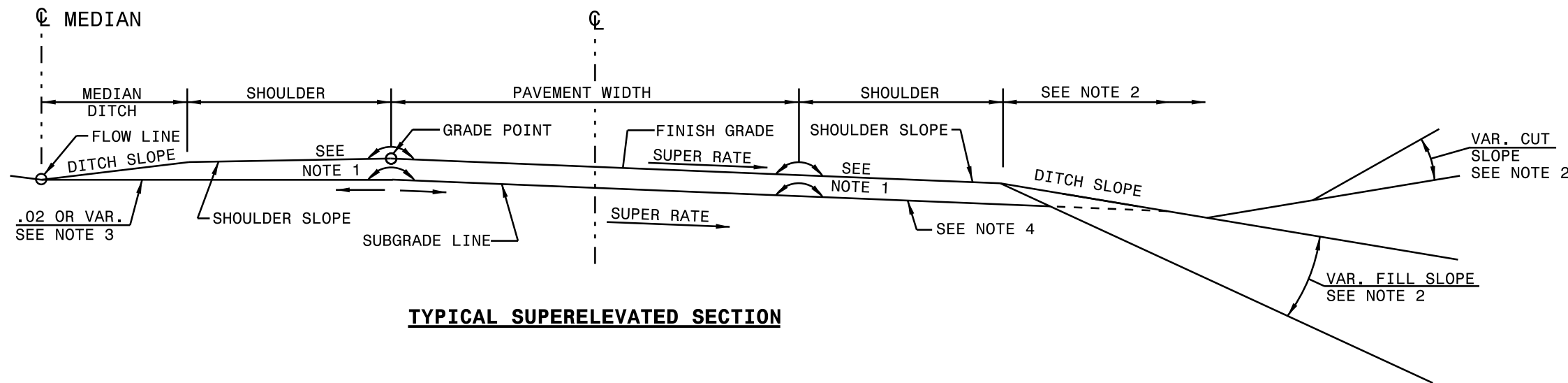


1-24

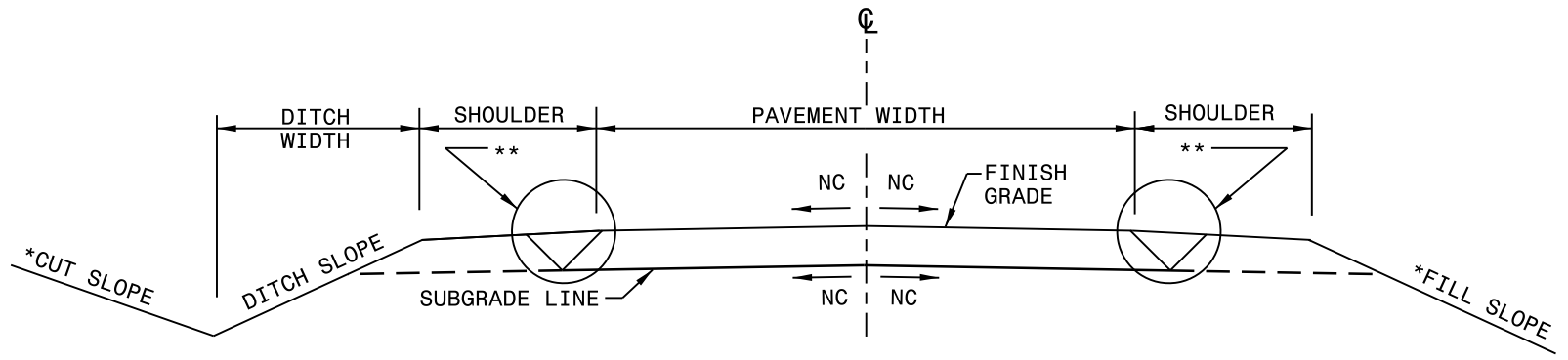


**TYPICAL NORMAL CROWN SECTION**

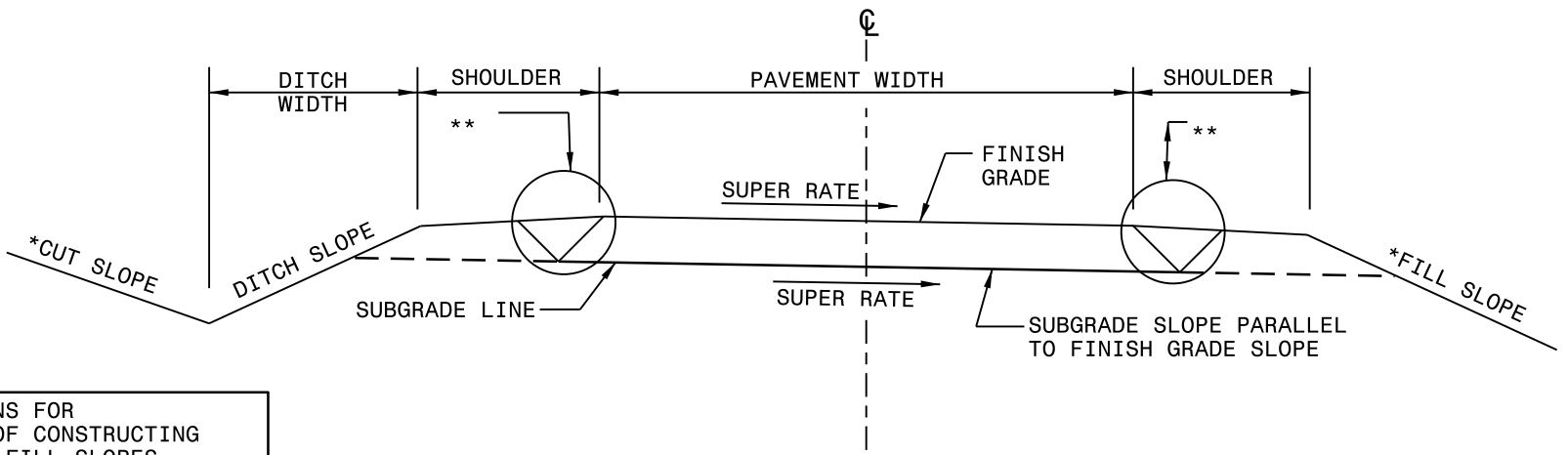
1. SEE TYPICAL SECTION FOR LATERAL LOCATION OF ROLLOVER.
2. SEE PLANS FOR METHOD OF CONSTRUCTING CUT AND FILL SLOPES.
3. SUBGRADE LINE WILL NOT UNDERCUT DITCH GRADE AT ANY POINT.
4. OUTSIDE SHOULDER SUBGRADES ARE THE SAME RATE OF SLOPE AS THE ADJACENT TRAVEL LANE SUBGRADES **UNLESS** CONSTRUCTED ON THE HIGH SIDE OF SUPERELEVATION OR CONSIST OF 10' AND WIDER FULL DEPTH PAVEMENT (SEE STDS. 560.01 AND 560.02).



**TYPICAL SUPERELEVATED SECTION**



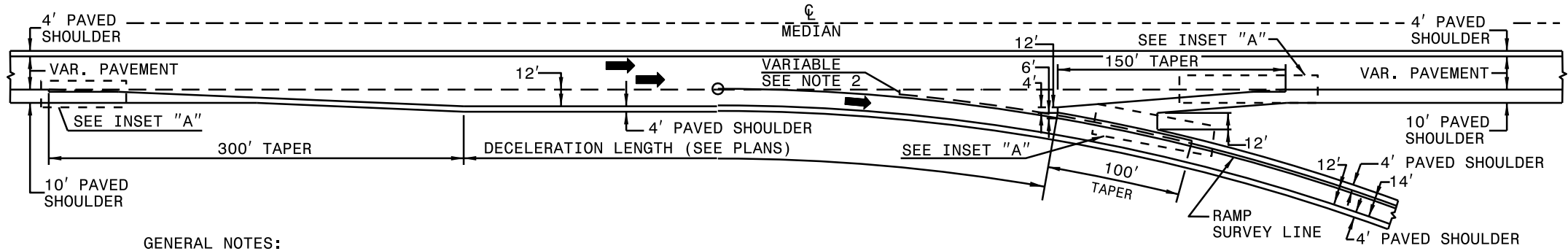
**TYPICAL NORMAL CROWN SECTION**



**TYPICAL SUPERELEVATED SECTION**

\*SEE PLANS FOR METHOD OF CONSTRUCTING CUT AND FILL SLOPES.

\*\* TRENCH OR GRADED SECTION. SEE PLANS.



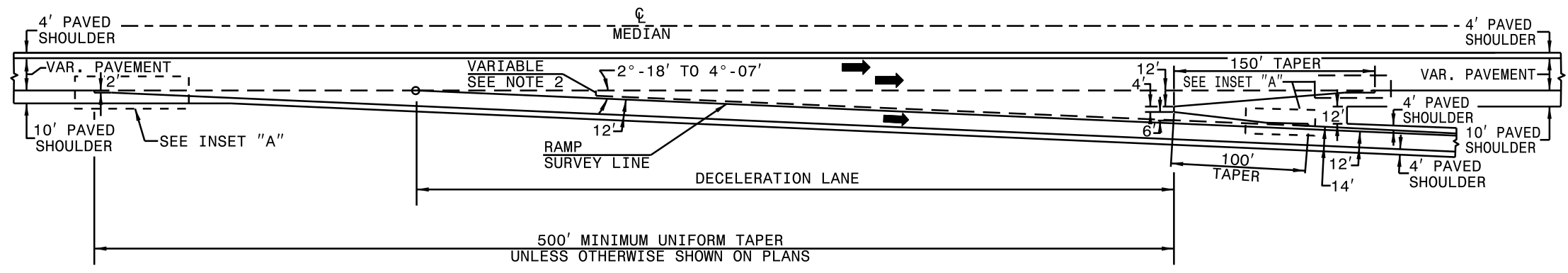
**GENERAL NOTES:**

IF PAVEMENT IS PORTLAND CEMENT CONCRETE:

1. THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINTS WILL BE LOCATED AS DENOTED BY THE DASHED LINES.
2. FORM THE TRANSVERSE CONSTRUCTION JOINT IN LINE WITH WITH THE NEAREST EXISTING TRANSVERSE CONTRACTION JOINT IN THE THROUGH LANE PAVEMENT. THE DISTANCE ALONG THIS CONSTRUCTION JOINT WILL BE NO LESS THAN TWO FEET AND NO GREATER THAN FOUR FEET.

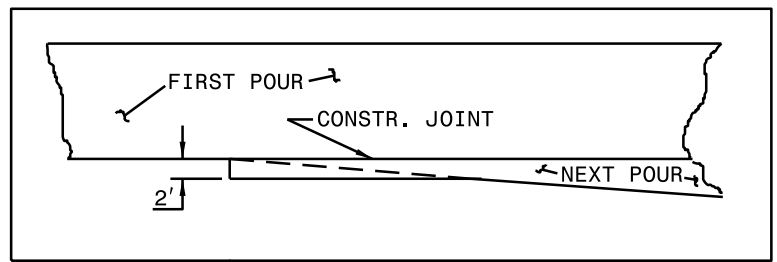
**PARALLEL EXIT**

FLEXIBLE OR RIGID PAVEMENT  
INTERSTATE



**ANGULAR EXIT**

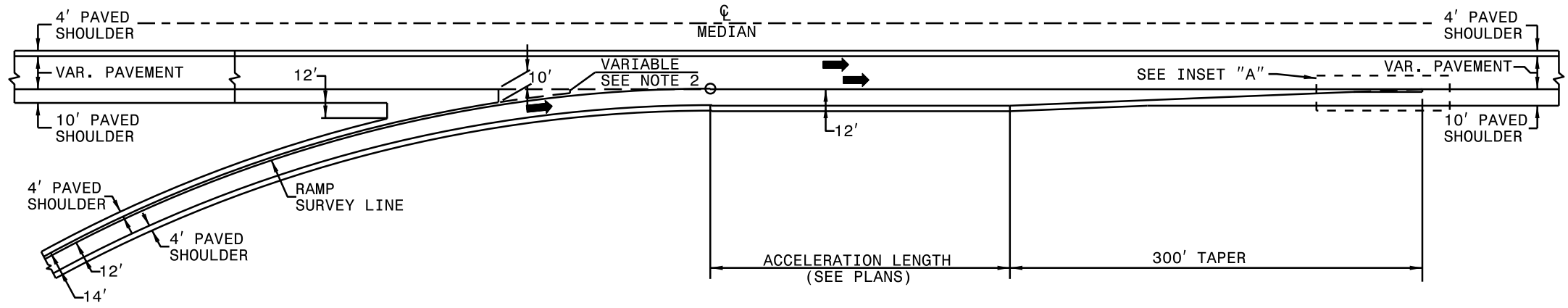
FLEXIBLE OR RIGID PAVEMENT  
INTERSTATE



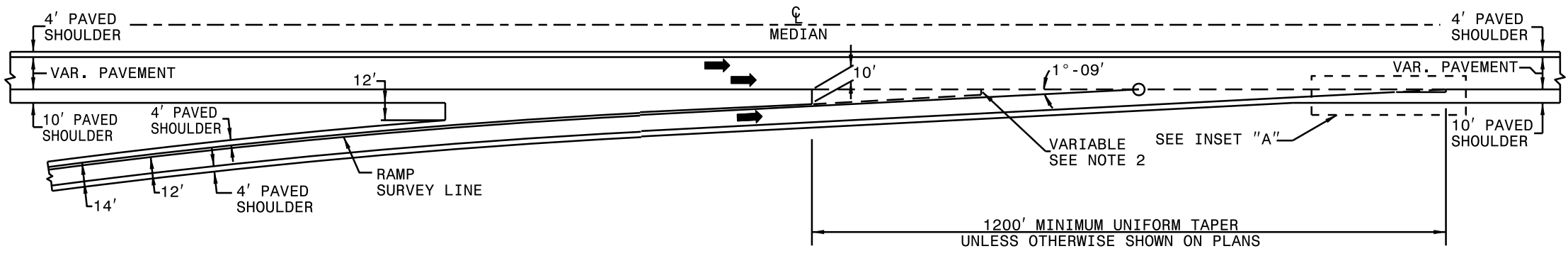
**INSET "A"**

DETAIL OF CONCRETE  
TAPER CONSTRUCTION

1-24



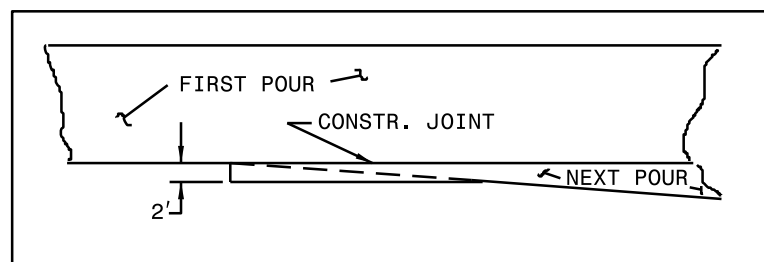
**PARALLEL ENTRANCE**  
FLEXIBLE OR RIGID PAVEMENT  
INTERSTATE



**ANGULAR ENTRANCE**  
FLEXIBLE OR RIGID PAVEMENT  
INTERSTATE

**GENERAL NOTES:**

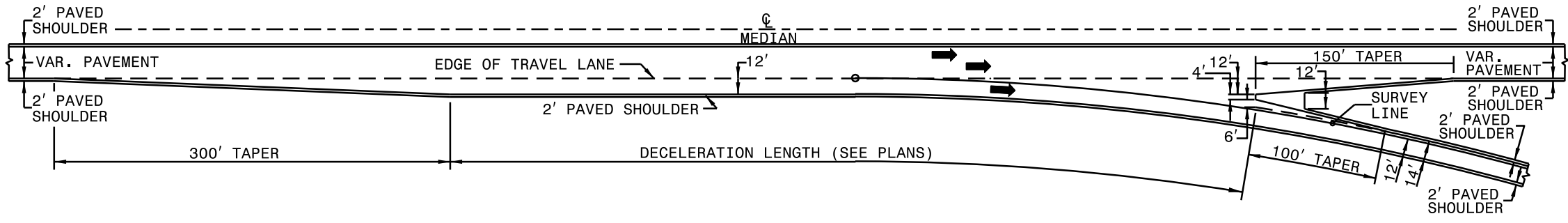
- IF PAVEMENT IS PORTLAND CEMENT CONCRETE:
1. THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINTS WILL BE LOCATED AS DENOTED BY THE DASHED LINES.
  2. FORM THE TRANSVERSE CONSTRUCTION JOINT IN LINE WITH THE NEAREST EXISTING TRANSVERSE CONTRACTION JOINT IN THE THROUGH LANE PAVEMENT. THE DISTANCE ALONG THIS CONSTRUCTION JOINT WILL BE NO LESS THAN TWO FEET AND NO GREATER THAN FOUR FEET.



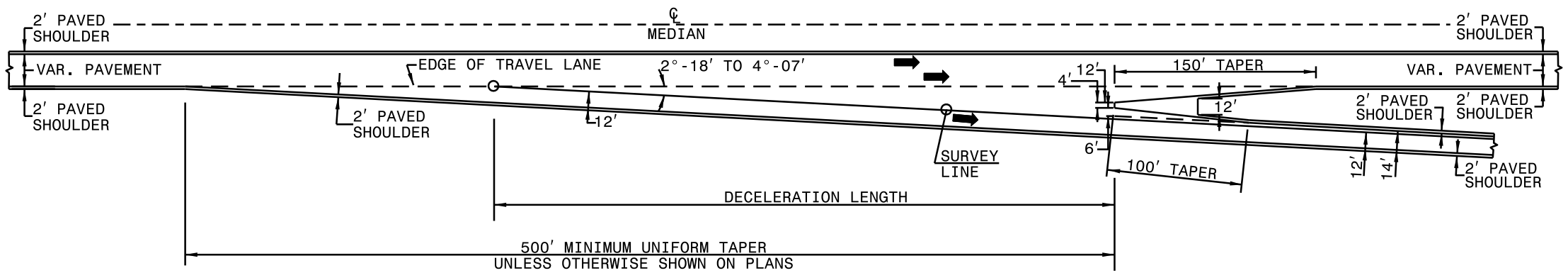
**INSET "A"**  
DETAIL OF CONCRETE  
TAPER CONSTRUCTION

1-24

ROADWAY STANDARD DRAWING FOR  
**DECELERATION AND ACCELERATION LANES**

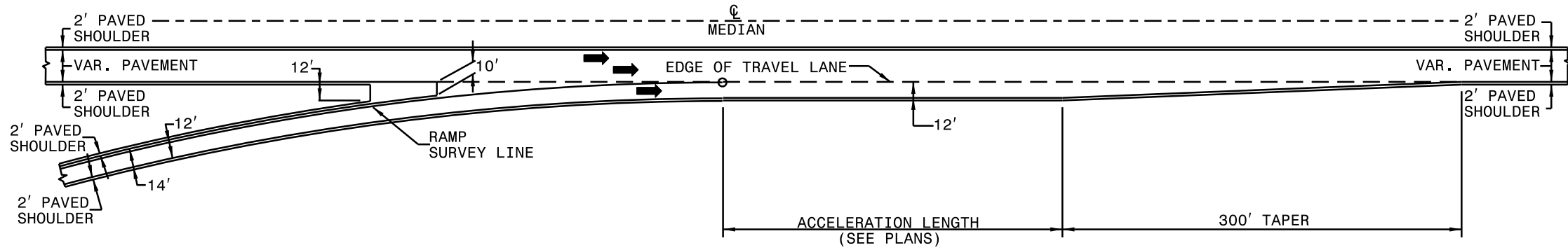


**PARALLEL EXIT**  
FLEXIBLE PAVEMENT  
NON-INTERSTATE

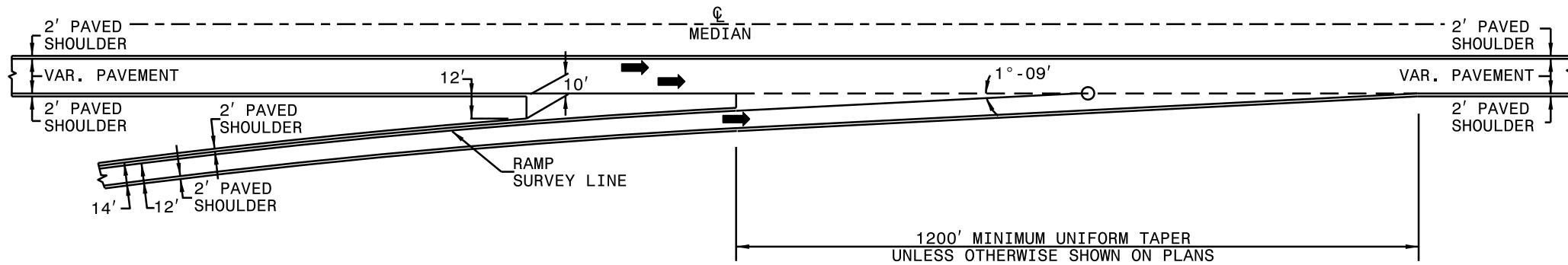


**ANGULAR EXIT**  
FLEXIBLE PAVEMENT  
NON-INTERSTATE



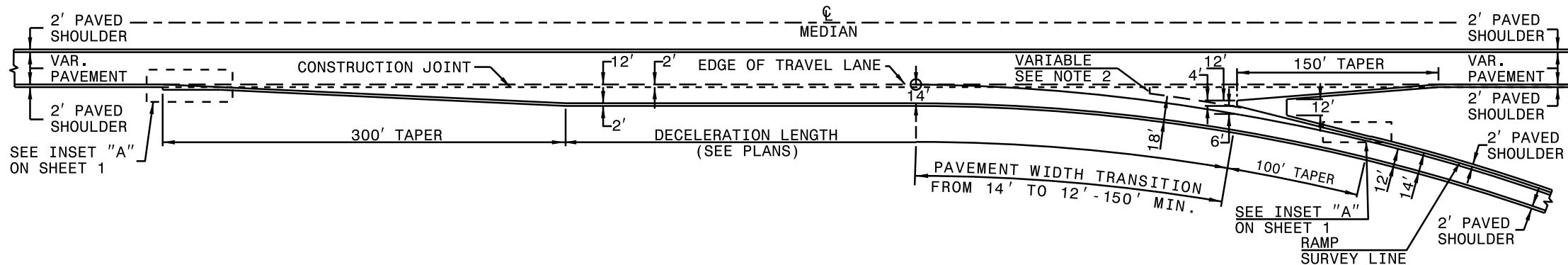


**PARALLEL ENTRANCE**  
 FLEXIBLE PAVEMENT  
 NON-INTERSTATE



**ANGULAR ENTRANCE**  
 FLEXIBLE PAVEMENT  
 NON-INTERSTATE

1-24



**PARALLEL EXIT**

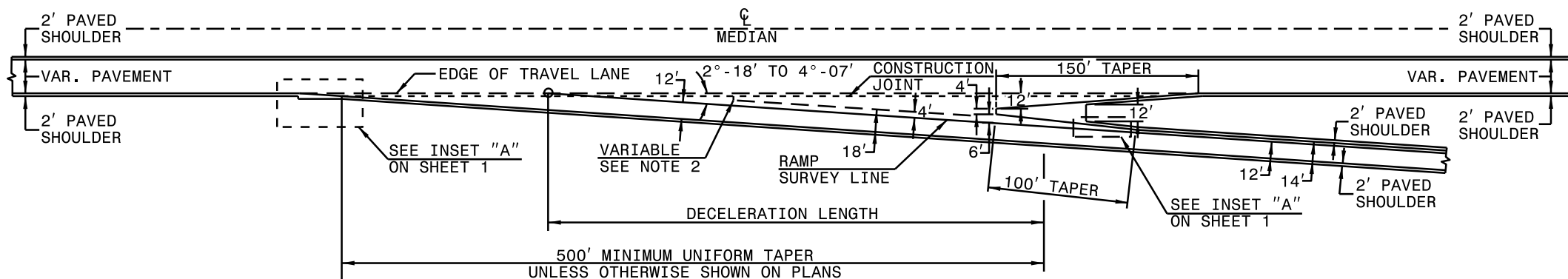
RIGID PAVEMENT

NON-INTERSTATE

GENERAL NOTES:

IF PAVEMENT IS PORTLAND CEMENT CONCRETE:

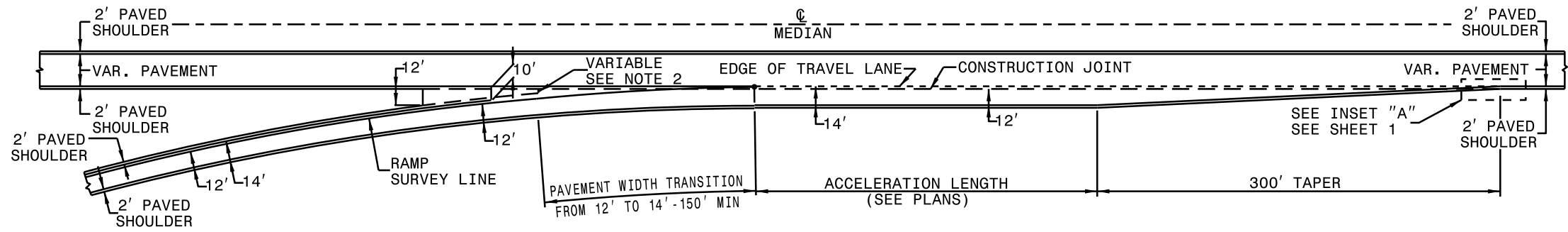
1. THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINTS WILL BE LOCATED AS DENOTED BY THE DASHED LINES.
2. FORM THE TRANSVERSE CONSTRUCTION JOINT IN LINE WITH THE NEAREST EXISTING TRANSVERSE CONTRACTION JOINT IN THE THROUGH LANE PAVEMENT. THE DISTANCE ALONG THIS CONSTRUCTION JOINT WILL BE NO LESS THAN TWO FEET AND NO GREATER THAN FOUR FEET.



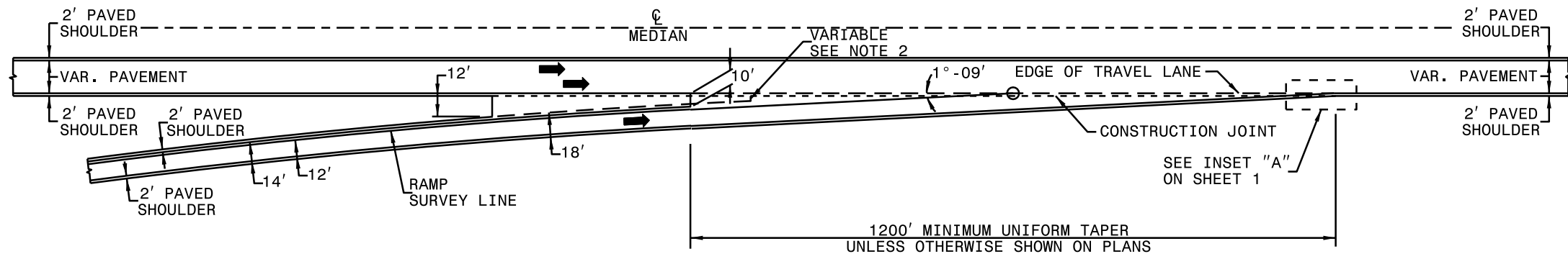
**ANGULAR EXIT**

RIGID PAVEMENT

NON-INTERSTATE



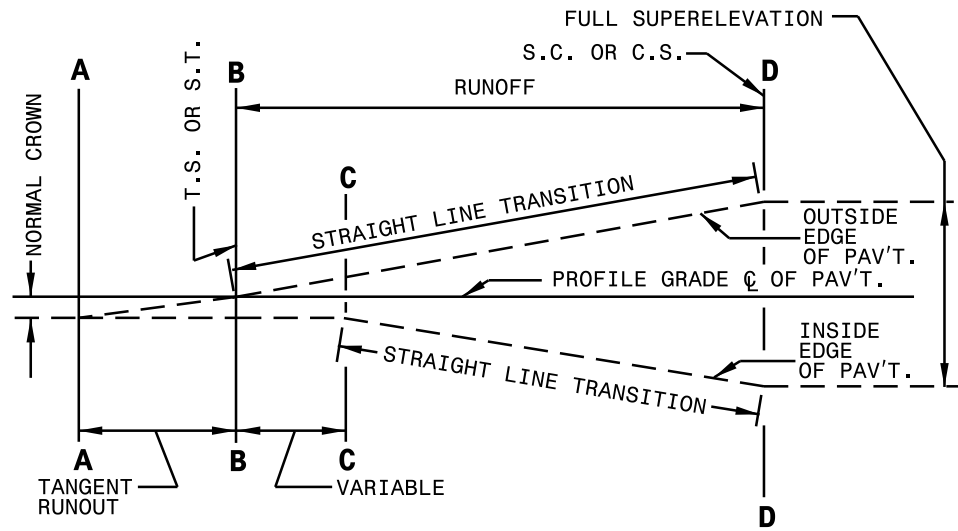
**PARALLEL ENTRANCE**  
RIGID PAVEMENT  
NON-INTERSTATE



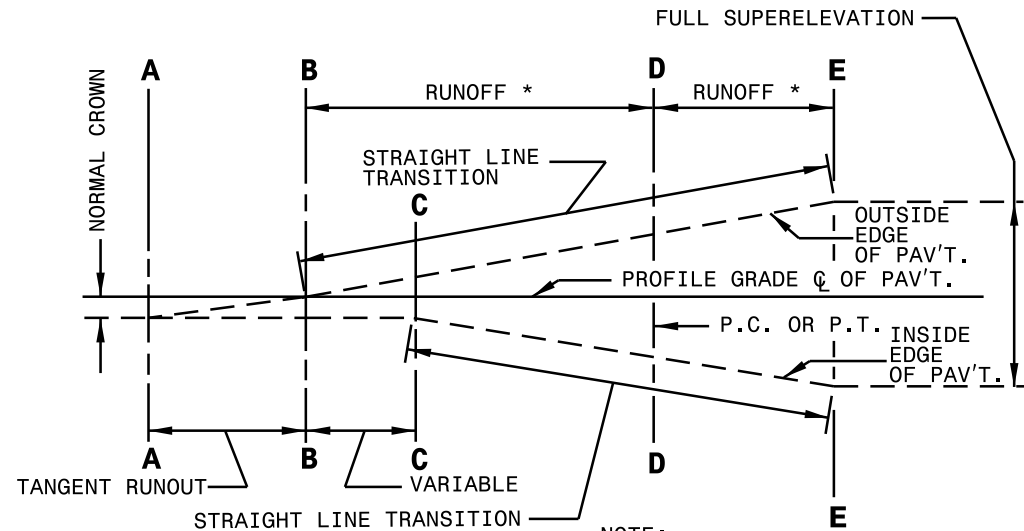
**ANGULAR ENTRANCE**  
RIGID PAVEMENT  
NON-INTERSTATE

**GENERAL NOTES:**

- IF PAVEMENT IS PORTLAND CEMENT CONCRETE:
1. THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINTS WILL BE LOCATED AS DENOTED BY THE DASHED LINES.
  2. FORM THE TRANSVERSE CONSTRUCTION JOINT IN LINE WITH THE NEAREST EXISTING TRANSVERSE CONTRACTION JOINT IN THE THROUGH LANE PAVEMENT. THE DISTANCE ALONG THIS CONSTRUCTION JOINT WILL BE NO LESS THAN TWO FEET AND NO GREATER THAN FOUR FEET.



NOTE:  
SHORT VERTICAL CURVES 100' OR LESS MAY BE INSERTED AT POINTS C & D WHEN DIRECTED DURING CONSTRUCTION.



NOTE:  
SHORT VERTICAL CURVES 100' OR LESS MAY BE INSERTED AT POINTS C & E WHEN DIRECTED DURING CONSTRUCTION.

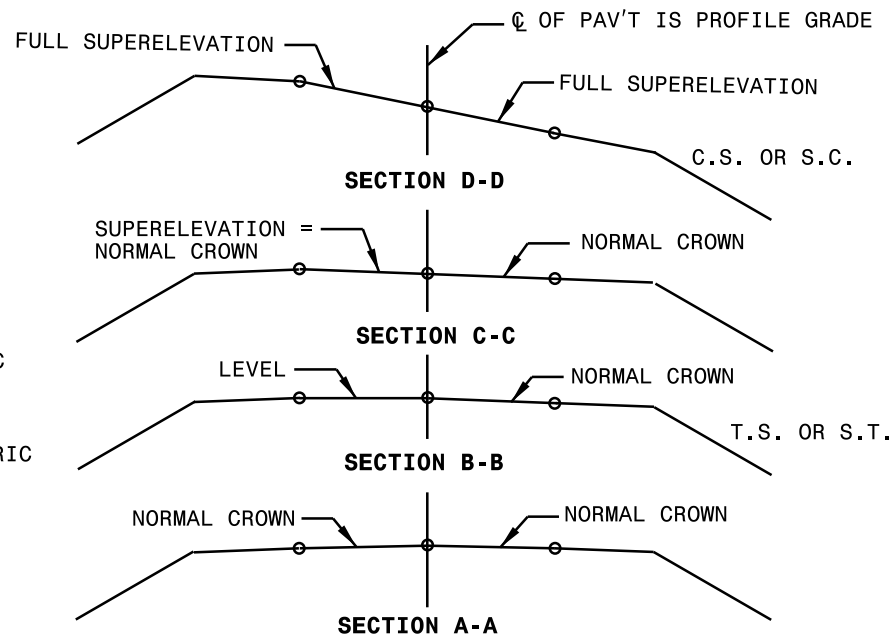
**GENERAL NOTES:**

SPECIAL CARE MUST BE USED TO PREVENT DITCH SUMPS WHICH MIGHT BE INDUCED BY SUPERELEVATION.

TANGENT RUNOFF DISTANCE WILL VARY WITH NORMAL CROWN OF PAVEMENT WITHIN TANGENT RUNOUT-DISTANCE.

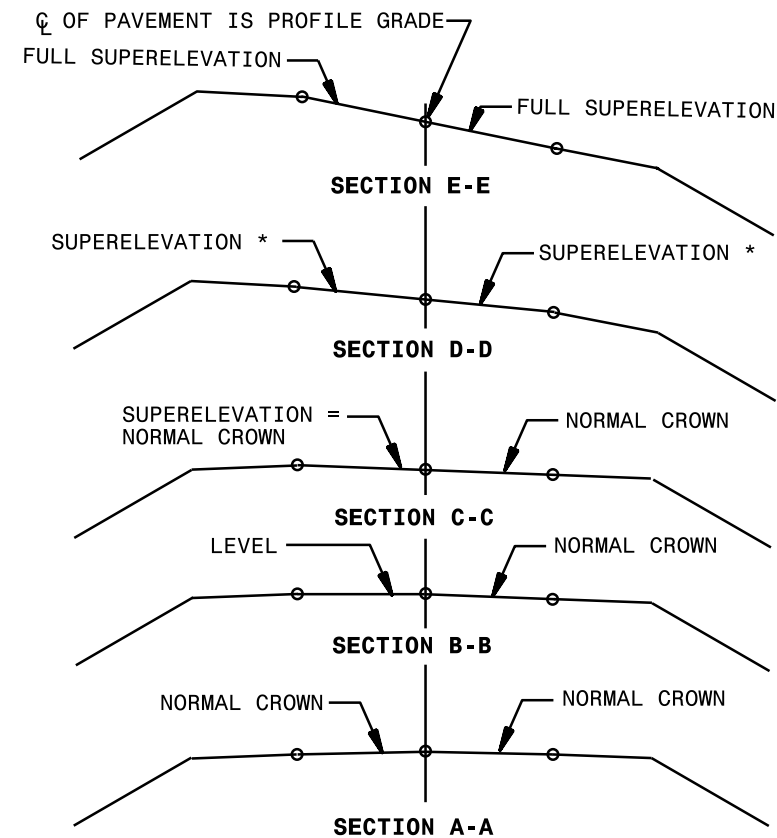
FULL SUPERELEVATION TO BE AS PROVIDED IN "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS".

\* DISTRIBUTION OF RUNOFF TO BE AS PROVIDED IN "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS".



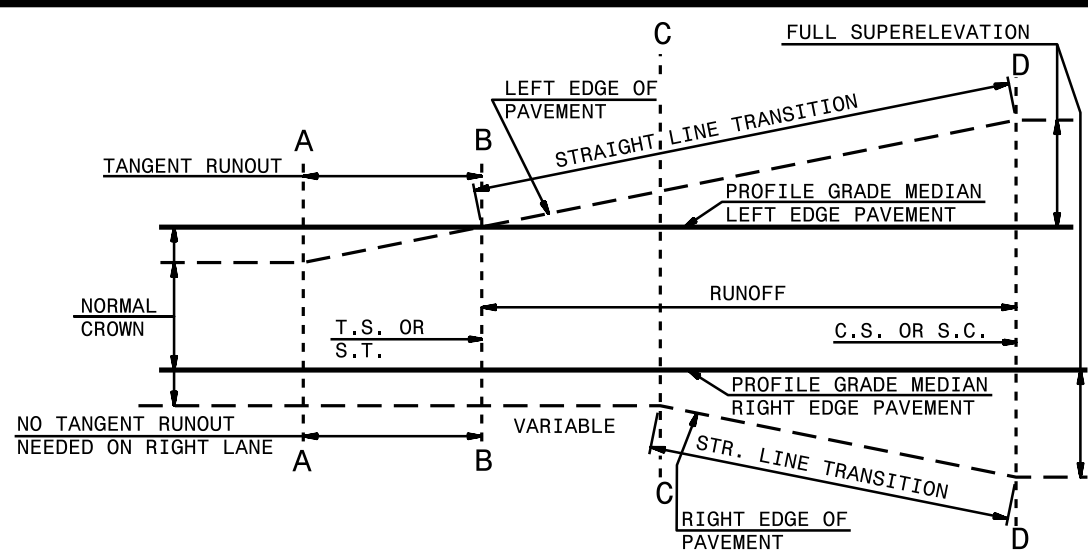
**FIGURE-1 SPIRAL CURVE**

2-LANE PAVEMENT PROFILE GRADE ON  $\mathcal{C}$  OF PAVEMENT. CROWN BOTH WAYS FROM  $\mathcal{C}$  ROTATE ABOUT  $\mathcal{C}$ .

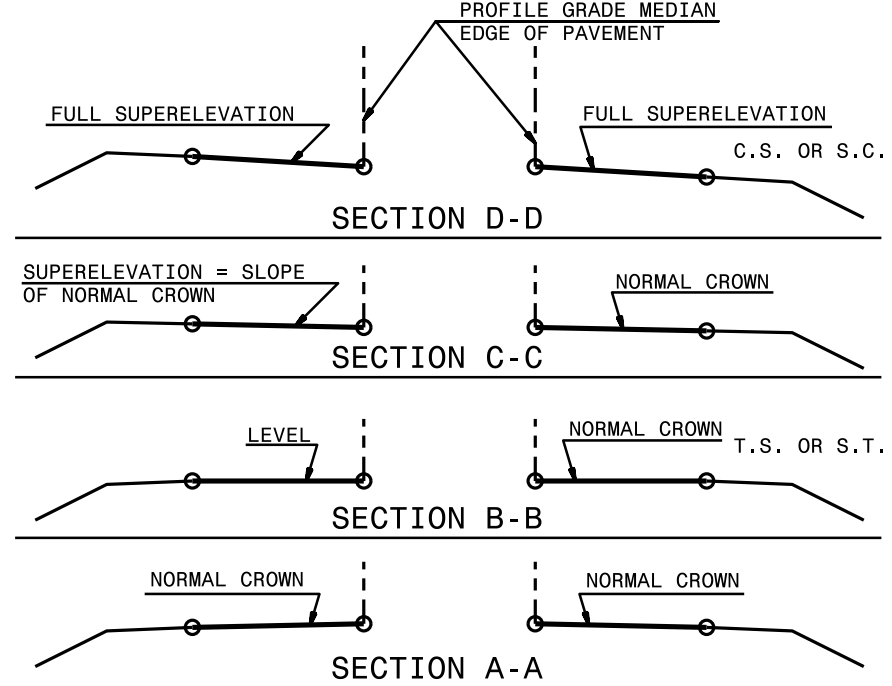


**FIGURE 2 - SIMPLE CURVE**

2-LANE PAVEMENT WITHOUT TRANSITION PROFILE GRADE ON  $\mathcal{C}$  PAVEMENT. SLOPE BOTH WAYS FROM  $\mathcal{C}$  ROTATE ABOUT  $\mathcal{C}$ .



SHORT VERTICAL CURVES 100' OR LESS MAY BE INSERTED AT POINTS C AND D WHEN DIRECTED ON CONSTRUCTION

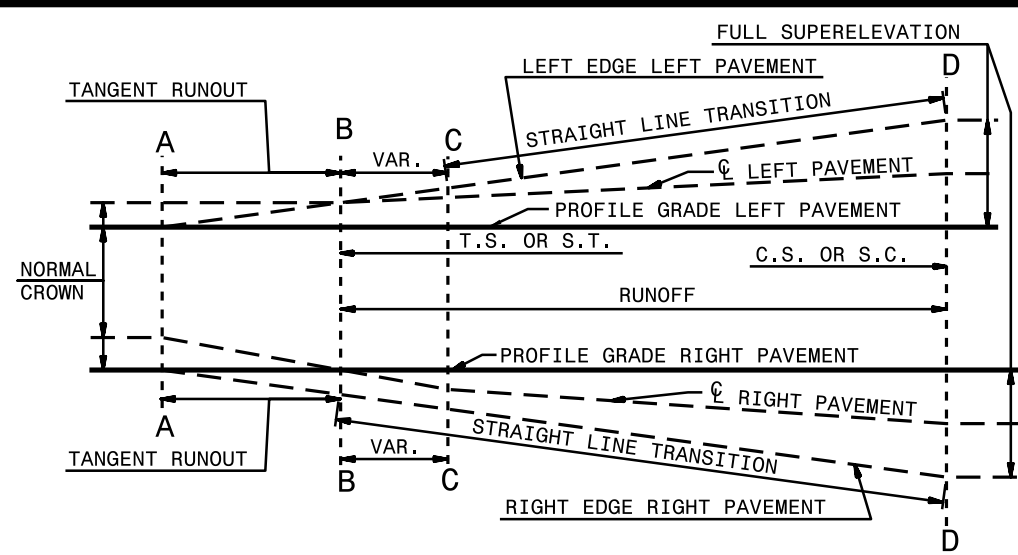


**FIGURE 1 SPIRAL CURVE**

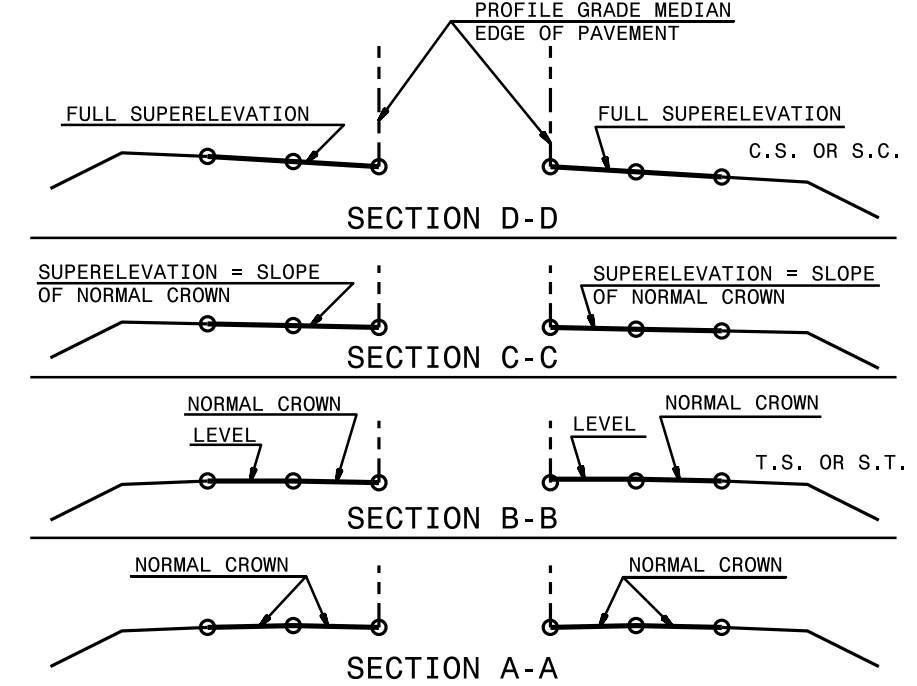
4 LANE PAVEMENT  
PROFILE GRADE ON MEDIAN EDGE OF PAVEMENT. SLOPE BOTH WAYS FROM MEDIAN, ROTATE ABOUT MEDIAN.

**GENERAL NOTES:**

- SUPERELEVATION TO BE AS PROVIDED IN ROADWAY DESIGN MANUAL.
- SPECIAL CARE MUST BE USED TO PREVENT DITCH SUMPS WHICH MIGHT BE INDUCED BY SUPERELEVATION.
- PROFILE GRADE WILL BE MEDIAN EDGE OF PAVEMENT ON BOTH TANGENTS AND CURVES.
- IN WIDE MEDIANS, WHERE INDIVIDUAL ALIGNMENT IS USED, PROFILE GRADE WILL REMAIN ON MEDIAN EDGE OF PAVEMENT.

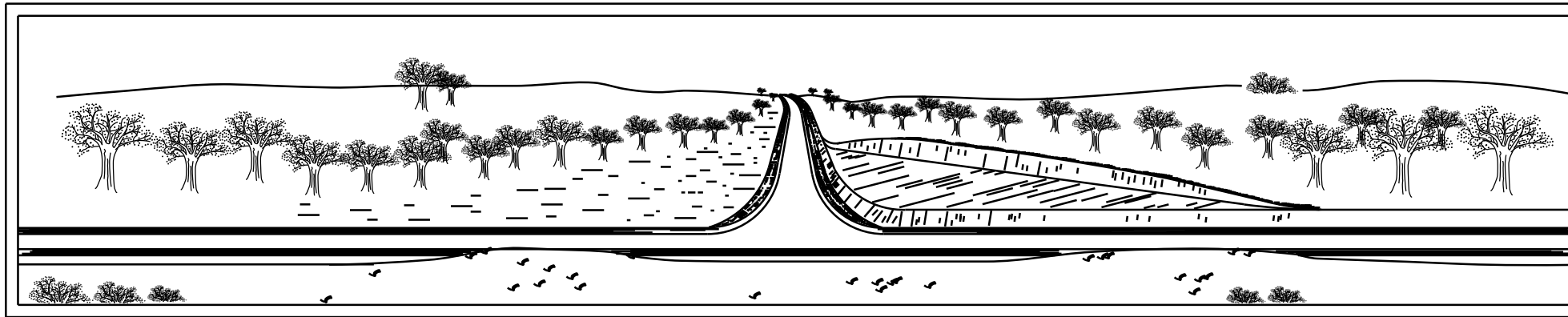


SHORT VERTICAL CURVES 100' OR LESS MAY BE INSERTED AT POINT D WHEN DIRECTED ON CONSTRUCTION



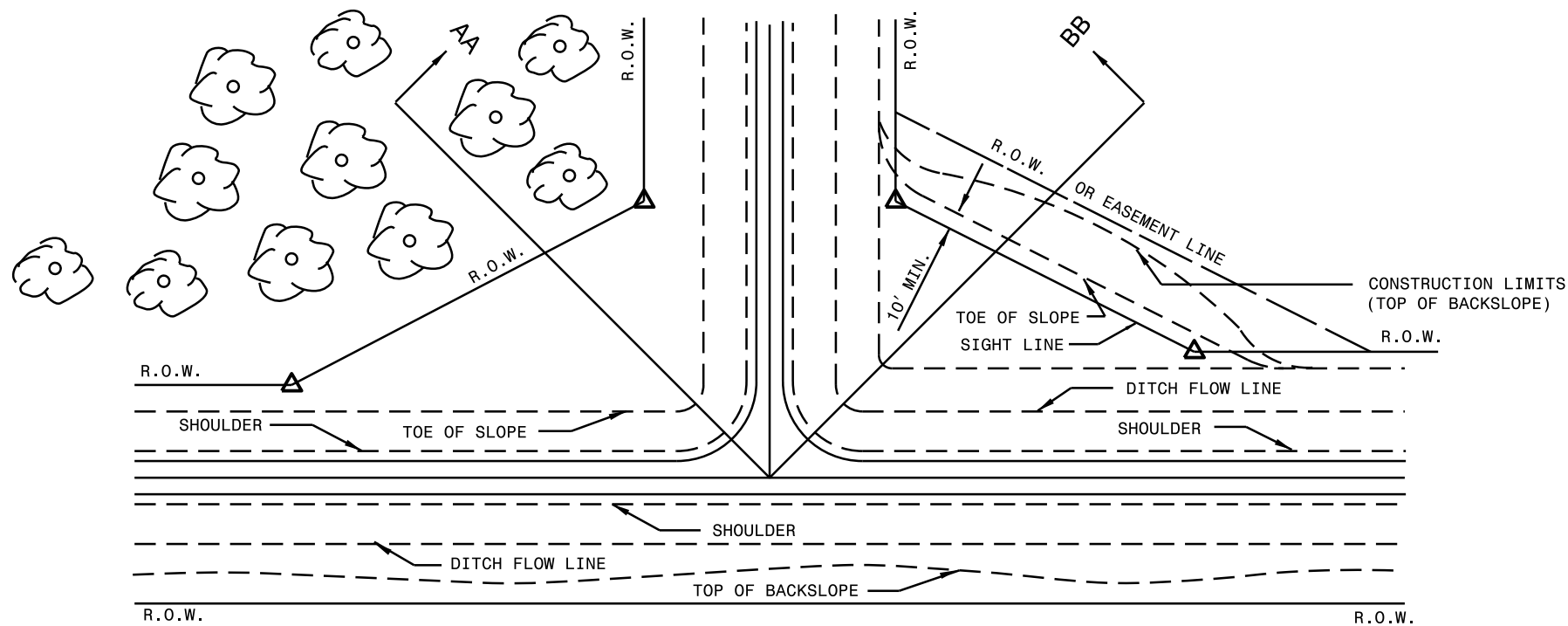
**FIGURE 2 SIMPLE CURVE OR SPIRAL CURVE**

4 LANE PAVEMENT  
PROFILE GRADE MEDIAN EDGE OF PAVEMENT. CROWNED ABOUT CENTER OF PAVEMENTS, ROTATE ABOUT MEDIAN EDGES



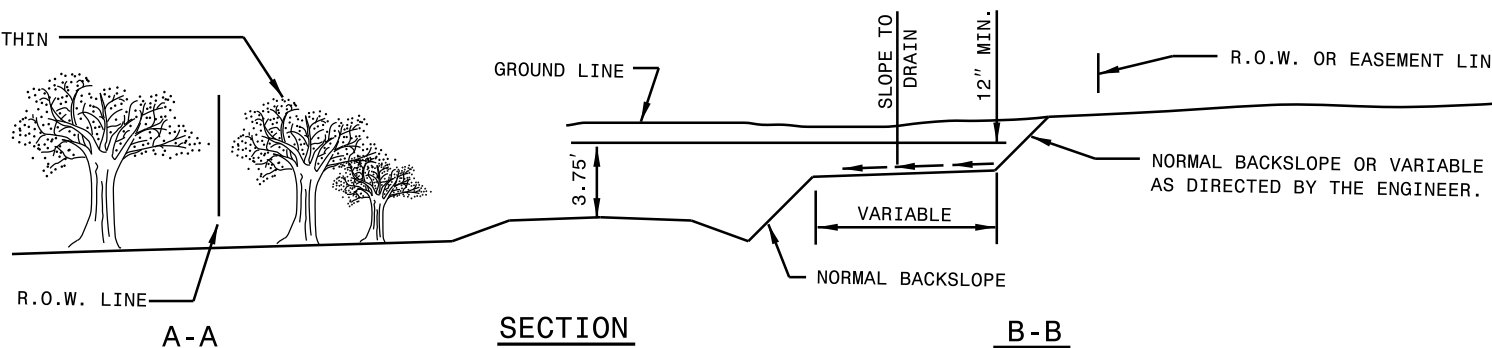
**PERSPECTIVE**

VIEW OF TYPICAL DAYLIGHTING AT INTERSECTION IN CUT AND FILL



**PLAN**

ALL TREES, BRUSH & OBSTRUCTIONS TO BE REMOVED WITHIN R.O.W. (SEE PERSPECTIVE)



**A-A**

**SECTION**

**B-B**

**GENERAL NOTES:**

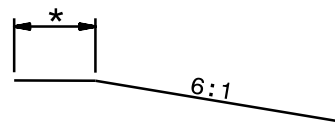
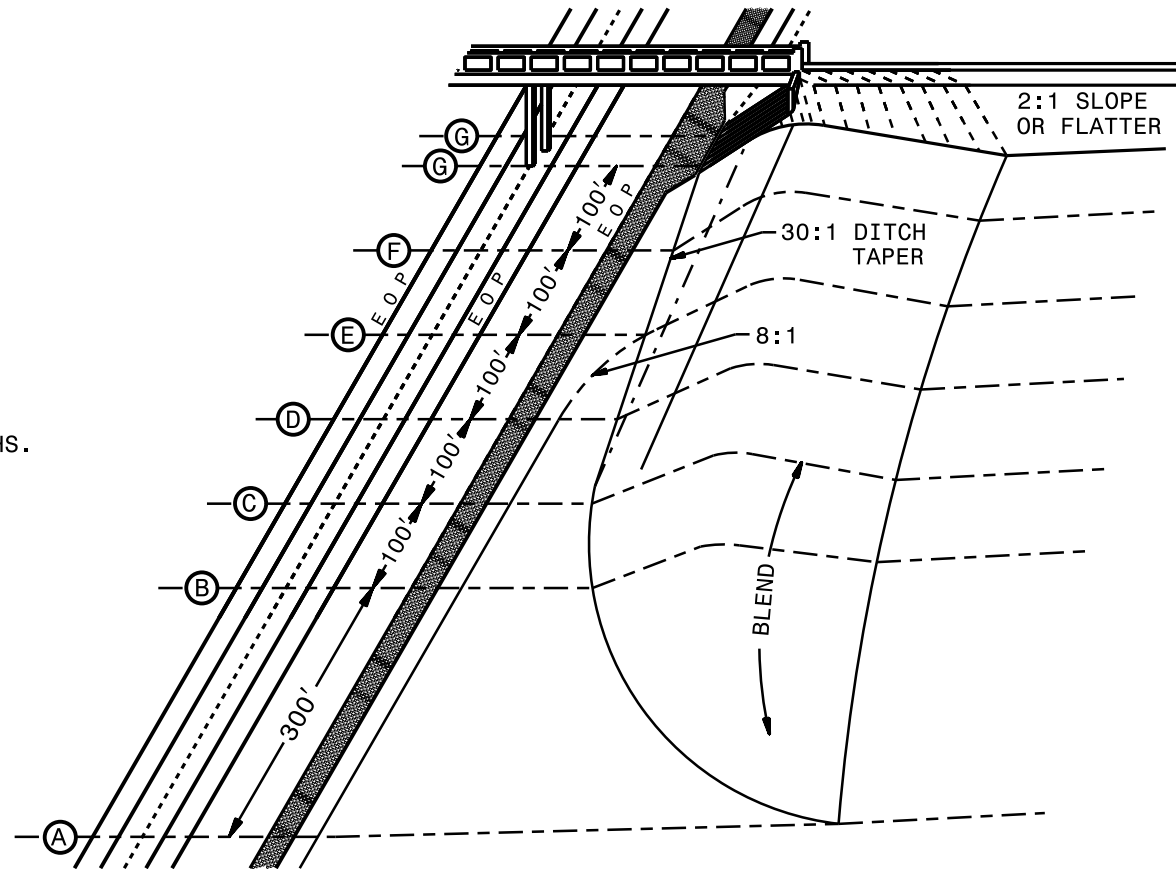
USE THIS GRADING GUIDE AT GRADE SEPARATIONS WITH FALSE CUT APPROACH.

IF STRUCTURE HAS OUTSIDE PIERS, ELIMINATE THE 6' VERTICAL CURVE.

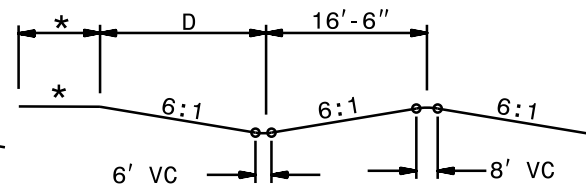
D - TYPICAL DITCH WIDTH

\* - SEE ROADWAY TYPICAL SECTIONS FOR NORMAL SHOULDER WIDTHS, SHOULDER SLOPES, AND DITCH WIDTHS.

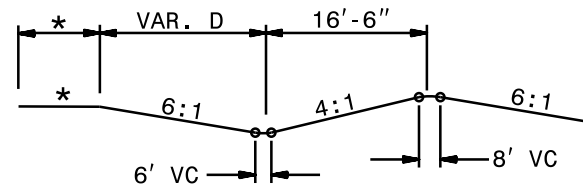
\*\* - SEE ROADWAY PLANS AND/OR STRUCTURE PLANS FOR VARIABLE OFFSET.



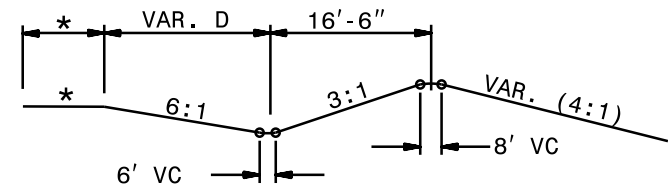
**SECTION A**



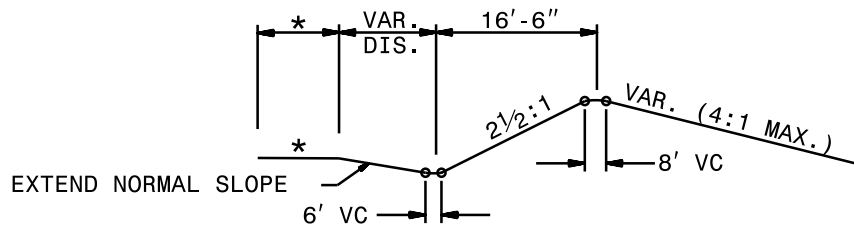
**SECTION B**



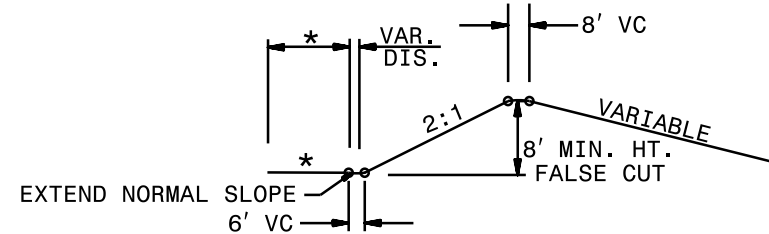
**SECTION C**



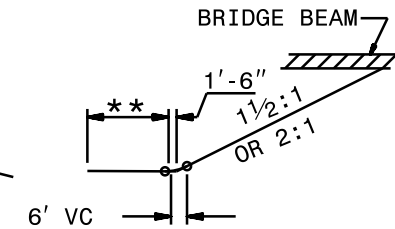
**SECTION D**



**SECTION E**





**SECTION F**

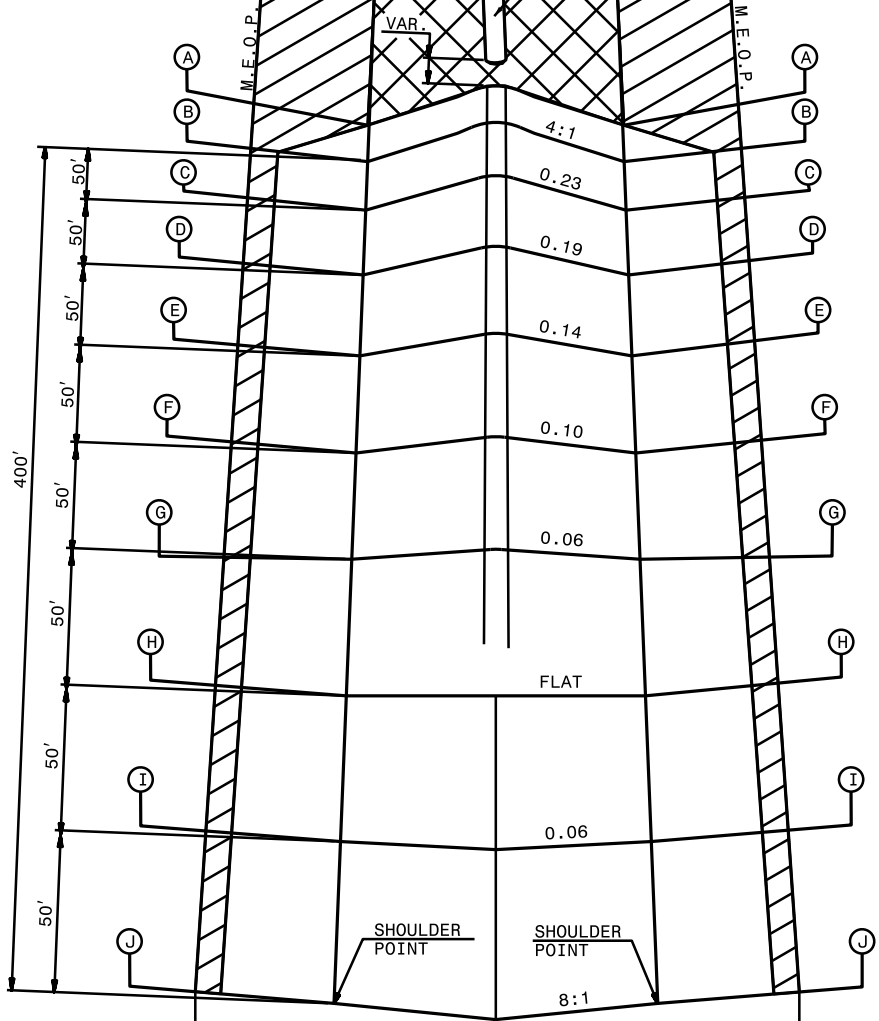
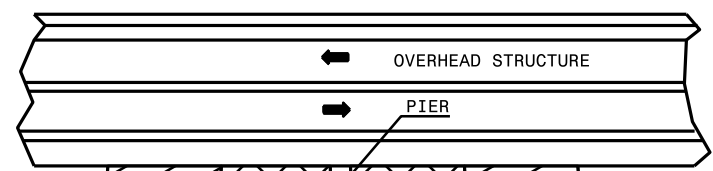


**SECTION G**

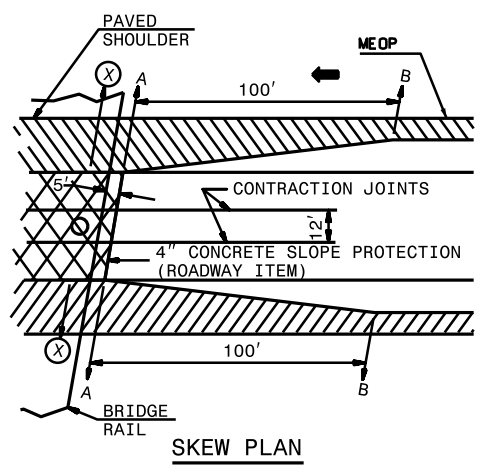
**LEGEND**

PAVED SHOULDER 

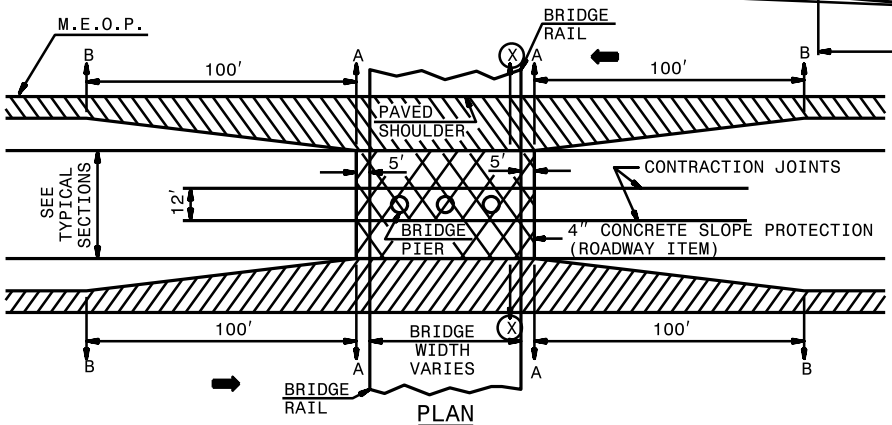
4" CONCRETE SLOPE PROTECTION (ROADWAY ITEM) 



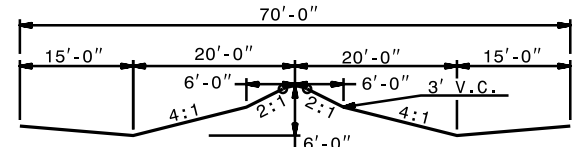
**PERSPECTIVE**



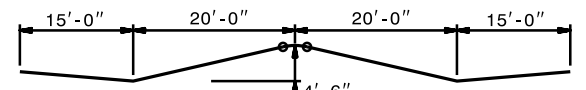
**SKEW PLAN**



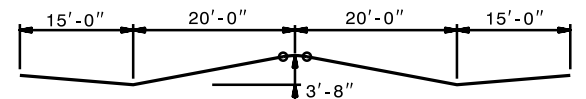
**PLAN**



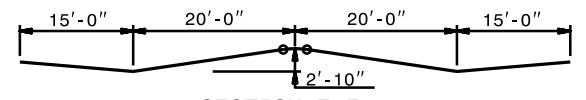
**SECTION A-A & B-B**



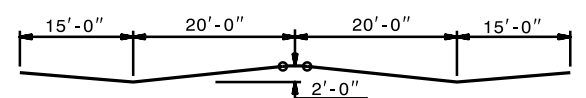
**SECTION C-C**



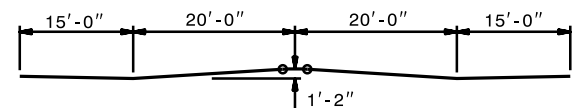
**SECTION D-D**



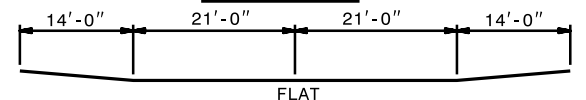
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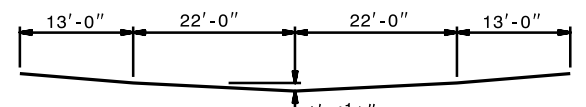
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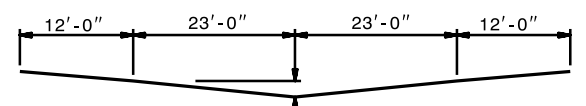
**SECTION G-G**



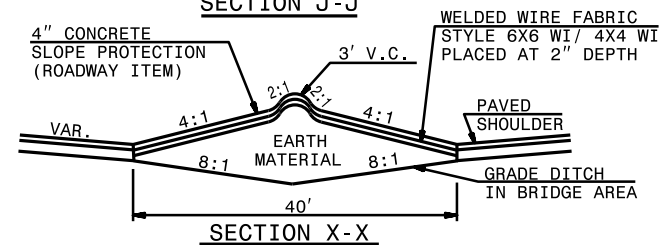
**SECTION H-H**



**SECTION I-I**



**SECTION J-J**



**SECTION X-X**



GENERAL NOTES:

1. GRADING

- A. IN CUTS - EXCAVATE THE MEDIAN BETWEEN SECTIONS A-A AND J-J AS SHOWN IN PERSPECTIVE VIEW. EXCAVATE BETWEEN SECTIONS A-A AND A-A TO THE GRADED DITCH SHAPE SHOWN ON SECTION X-X. AFTER COMPLETION OF THE MEDIAN BRIDGE PIERS, BACKFILL THE AREA BETWEEN SECTIONS A-A AND A-A TO THE SHAPE OF THE 4" CONCRETE SLOPE PROTECTION SHOWN ON SECTION X-X.
- B. IN FILLS - CONSTRUCT THE MEDIAN BETWEEN SECTIONS A-A AND A-A TO THE GRADED DITCH SHAPE SHOWN ON SECTION X-X. AFTER COMPLETION OF THE MEDIAN BRIDGE PIERS, CONSTRUCT THE AREA BETWEEN SECTIONS A-A AND A-A TO THE SHAPE OF THE 4" CONCRETE SLOPE PROTECTION SHOWN ON SECTION X-X. THE MEDIAN EARTH BERMS BETWEEN SECTIONS J-J AND A-A, AS SHOWN IN PERSPECTIVE VIEW, MAY BE CONSTRUCTED PRIOR TO COMPLETION OF THE MEDIAN BRIDGE PIERS.

2. CONCRETE SLOPE PROTECTION

PLACE THE 4" CONCRETE SLOPE PROTECTION IN ACCORDANCE WITH THESE DETAILS. PROPERLY SHAPE AND FIRMLY COMPACT EARTH MATERIAL BEFORE PLACING SLOPE PROTECTION REINFORCING AND CONCRETE. FINISH THE CONCRETE SURFACE WITH A WOODEN FLOAT.

TRANSVERSE JOINTS: FORM A GROOVED JOINT 1" DEEP WITH  $\frac{1}{8}$ " RADII AT APPROXIMATELY 10' INTERVALS. LOCATE A GROOVED JOINT OR A CONSTRUCTION JOINT SO AS TO INTERSECT THE EXPANSION JOINT MATERIAL PLACED AROUND EACH PIER. NO SEALING OF THESE JOINTS IS REQUIRED. WIRE MESH TO BE LAPPED 6" AT ALL CONSTRUCTION JOINTS. SPACE CONTRACTION JOINTS AT 25' INTERVALS.

1-24

ROADWAY STANDARD DRAWING FOR

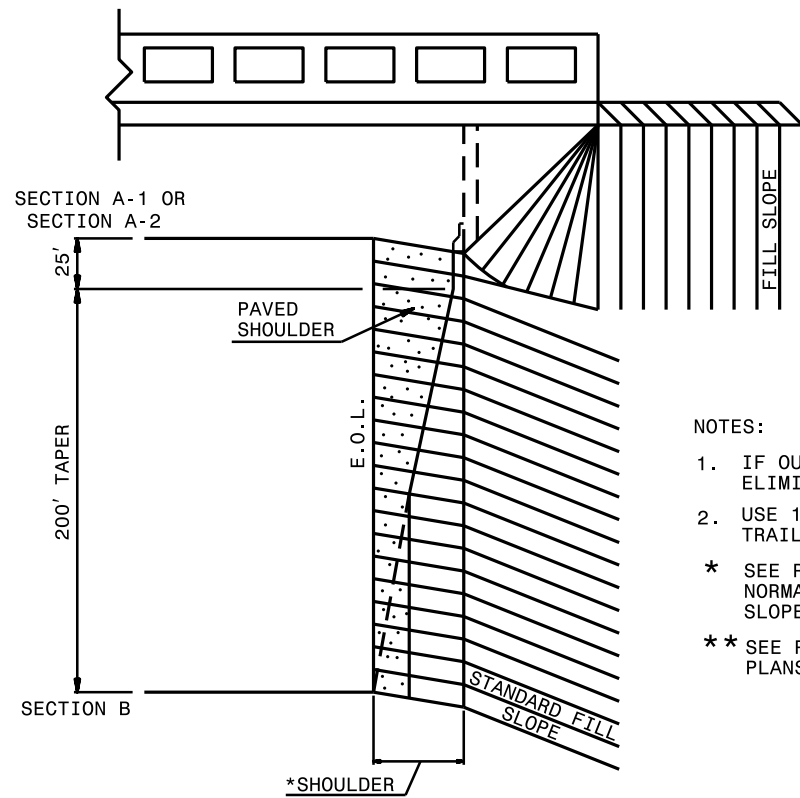
**EARTH BERM MEDIAN PIER PROTECTION**

STATE OF

NORTH CAROLINA

DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

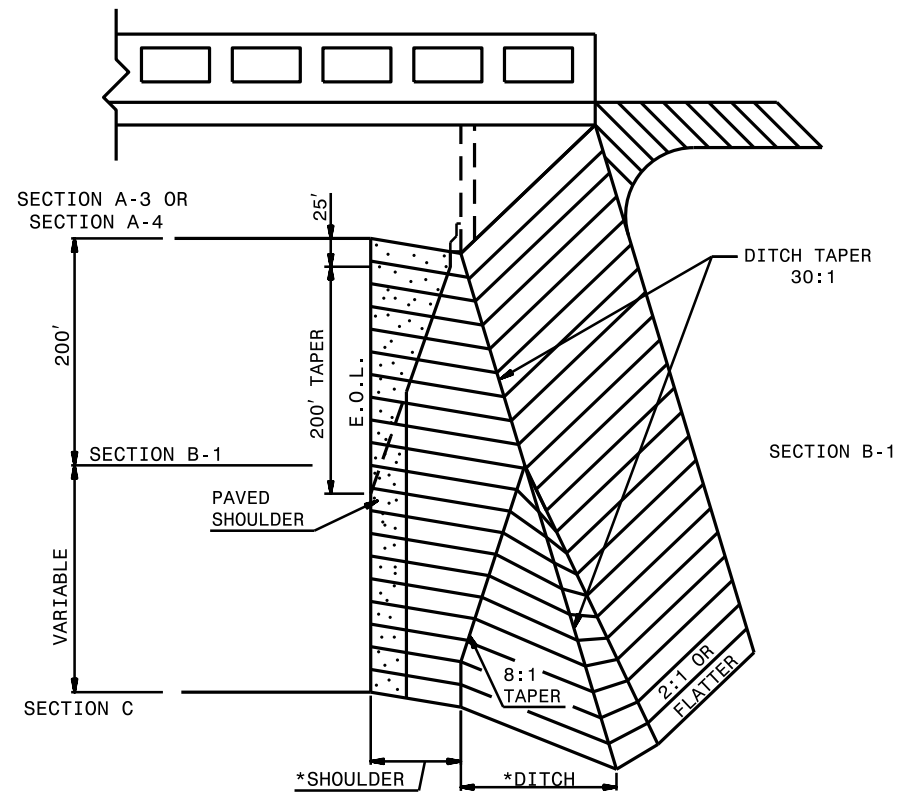
RALEIGH, N.C.



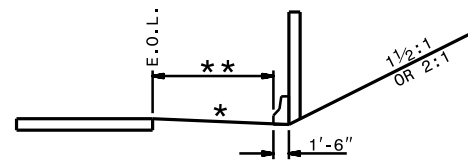
**FOR FILL APPROACHES**

**NOTES:**

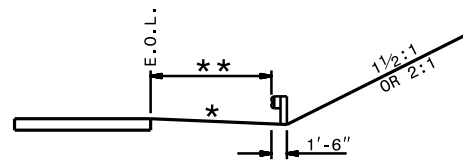
1. IF OUTSIDE PIER IS USED (A-3), ELIMINATE 6' VERTICAL CURVE ON B-1.
2. USE 100'-300' TRANSITION ON THE TRAILING SIDE OF CUT SECTION.
- \* SEE ROADWAY TYPICAL SECTIONS FOR NORMAL SHOULDER WIDTHS, SHOULDER SLOPES, AND DITCH WIDTHS.
- \*\* SEE ROADWAY PLANS AND/OR STRUCTURE PLANS FOR OFFSET.



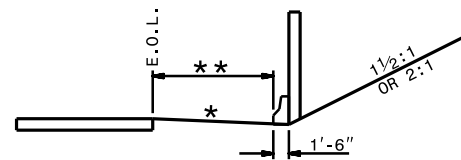
**FOR CUT APPROACHES**



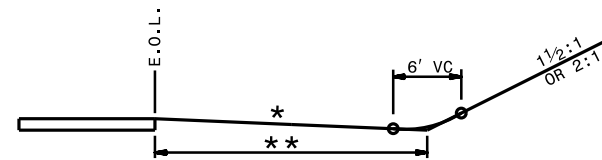
**SECTION A-1**



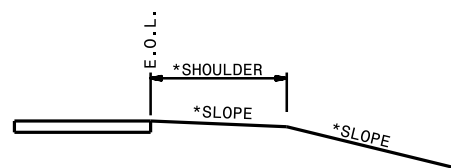
**SECTION A-2**



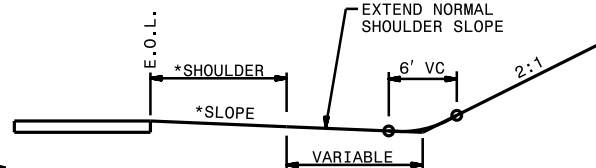
**SECTION A-3**



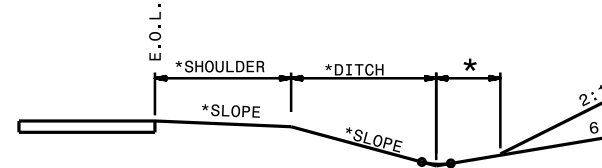
**SECTION A-4**



**SECTION B**

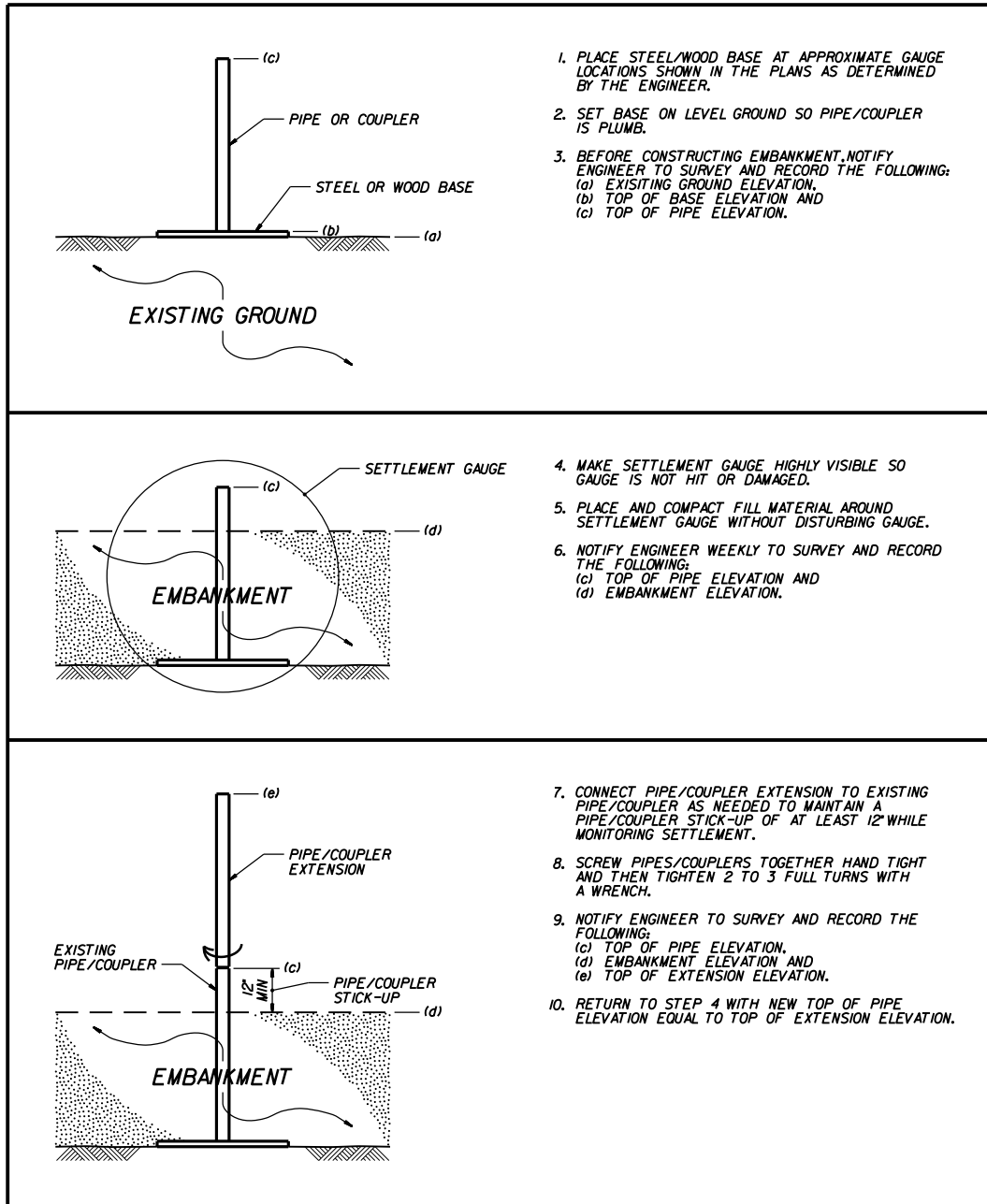


**SECTION B-1**



**SECTION C**

# EMBANKMENT MONITORING SEQUENCE

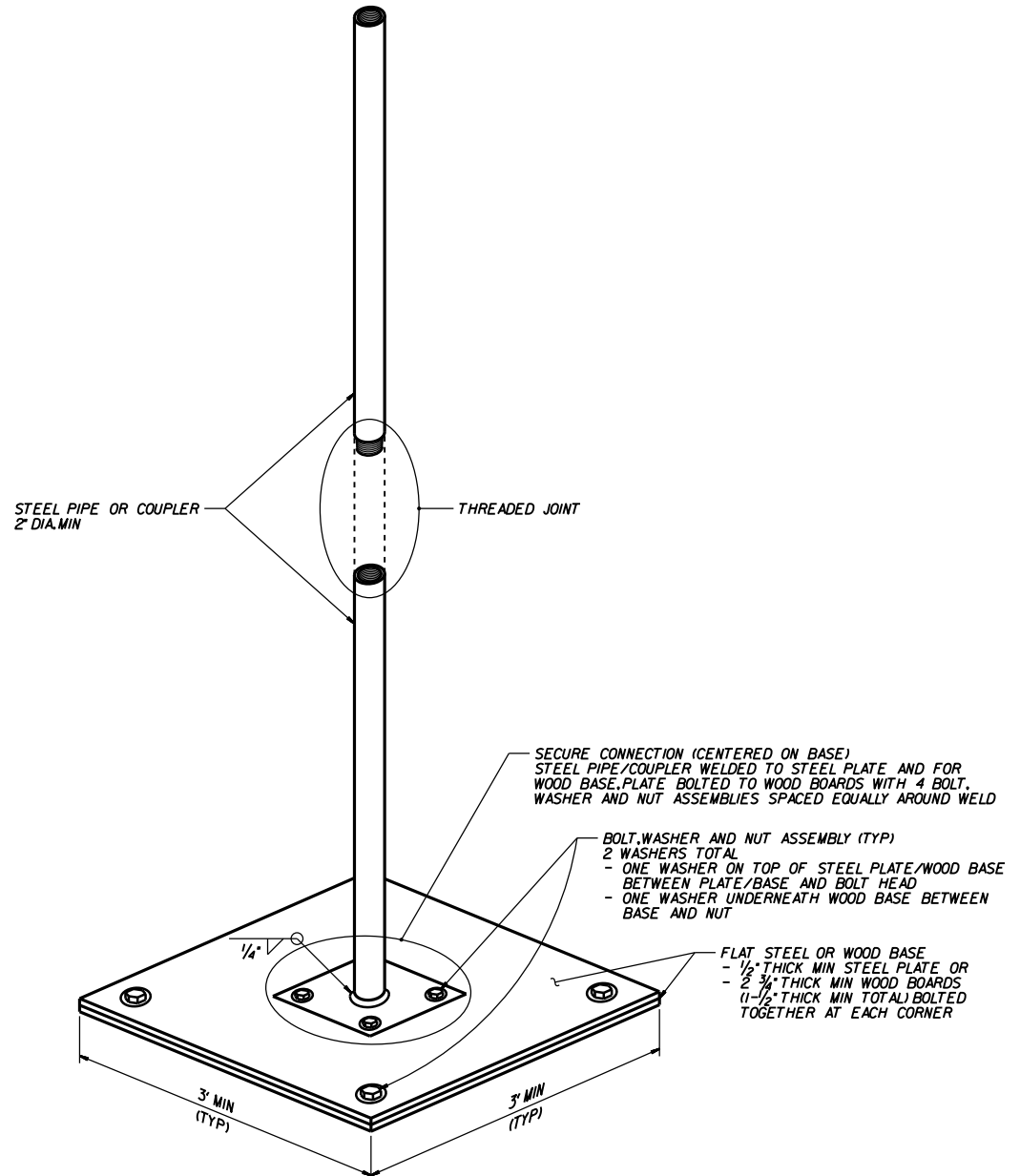


1. PLACE STEEL/WOOD BASE AT APPROXIMATE GAUGE LOCATIONS SHOWN IN THE PLANS AS DETERMINED BY THE ENGINEER.
2. SET BASE ON LEVEL GROUND SO PIPE/COUPLER IS PLUMB.
3. BEFORE CONSTRUCTING EMBANKMENT, NOTIFY ENGINEER TO SURVEY AND RECORD THE FOLLOWING:
  - (a) EXISTING GROUND ELEVATION.
  - (b) TOP OF BASE ELEVATION AND
  - (c) TOP OF PIPE ELEVATION.

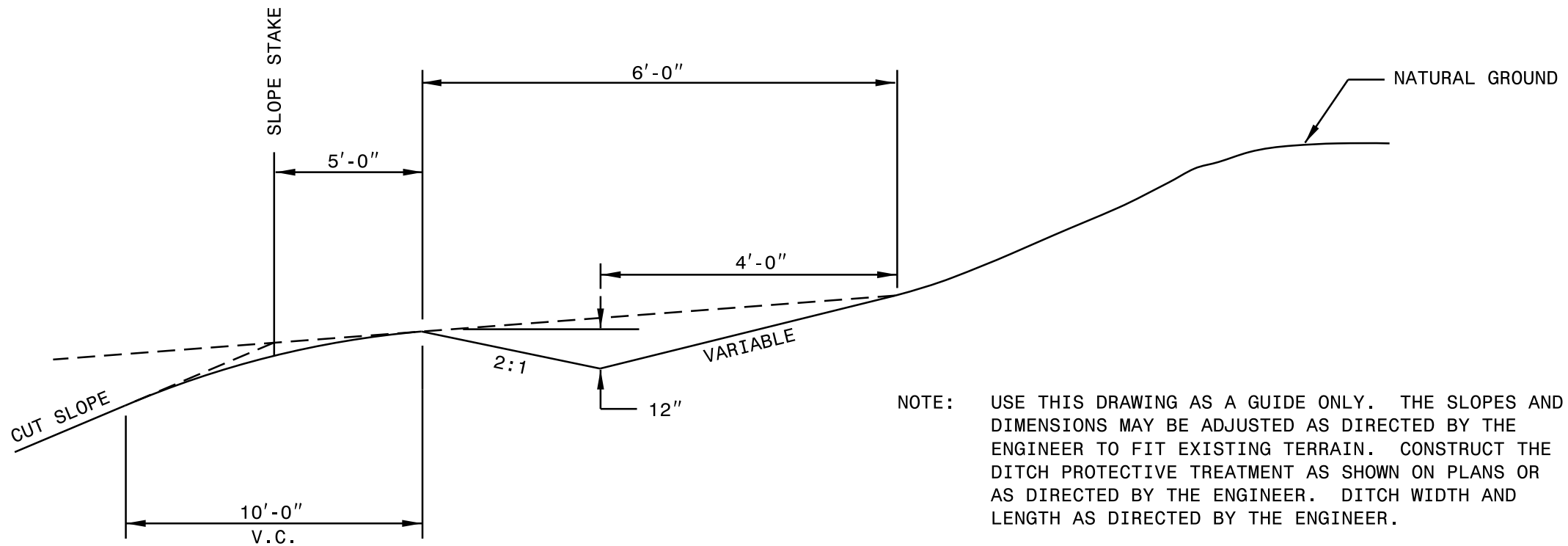
4. MAKE SETTLEMENT GAUGE HIGHLY VISIBLE SO GAUGE IS NOT HIT OR DAMAGED.
5. PLACE AND COMPACT FILL MATERIAL AROUND SETTLEMENT GAUGE WITHOUT DISTURBING GAUGE.
6. NOTIFY ENGINEER WEEKLY TO SURVEY AND RECORD THE FOLLOWING:
  - (c) TOP OF PIPE ELEVATION AND
  - (d) EMBANKMENT ELEVATION.

7. CONNECT PIPE/COUPLER EXTENSION TO EXISTING PIPE/COUPLER AS NEEDED TO MAINTAIN A PIPE/COUPLER STICK-UP OF AT LEAST 12" WHILE MONITORING SETTLEMENT.
8. SCREW PIPES/COUPLERS TOGETHER HAND TIGHT AND THEN TIGHTEN 2 TO 3 FULL TURNS WITH A WRENCH.
9. NOTIFY ENGINEER TO SURVEY AND RECORD THE FOLLOWING:
  - (c) TOP OF PIPE ELEVATION.
  - (d) EMBANKMENT ELEVATION AND
  - (e) TOP OF EXTENSION ELEVATION.
10. RETURN TO STEP 4 WITH NEW TOP OF PIPE ELEVATION EQUAL TO TOP OF EXTENSION ELEVATION.

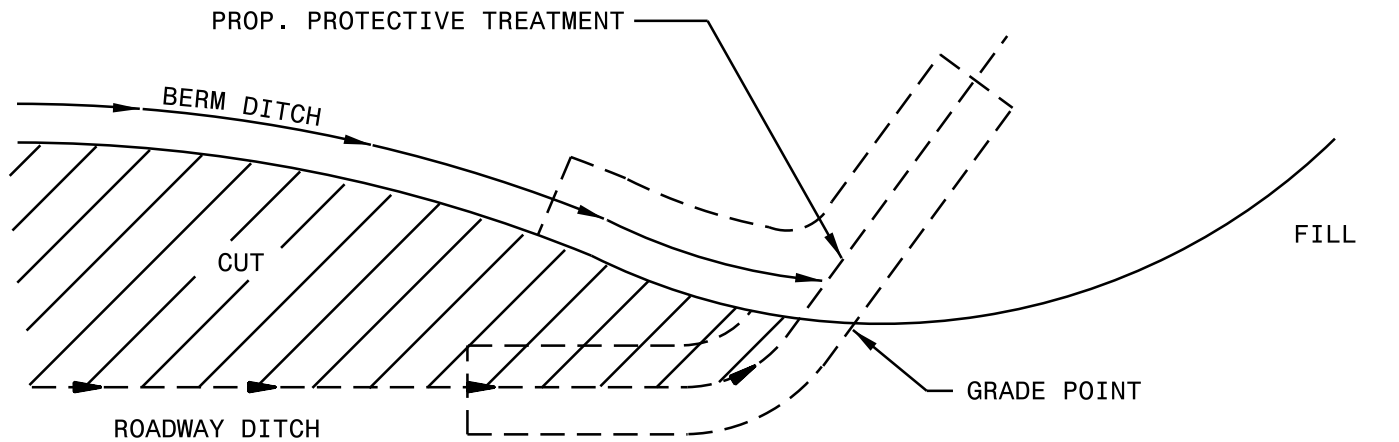
- NOTES:**
1. SEE ROADWAY SUMMARY SHEETS FOR APPROXIMATE SETTLEMENT GAUGE LOCATIONS.
  2. FOR EMBANKMENT MONITORING, SEE SECTION 235 OF THE STANDARD SPECIFICATIONS.
  3. WELD IN ACCORDANCE WITH THE AWS D11 STRUCTURAL WELDING CODE - STEEL.
  4. INSTALL SETTLEMENT GAUGES AFTER CLEARING AND GRUBBING GAUGE LOCATIONS AND BEFORE CONSTRUCTING EMBANKMENTS WITH EMBANKMENT MONITORING.



**SETTLEMENT GAUGE**



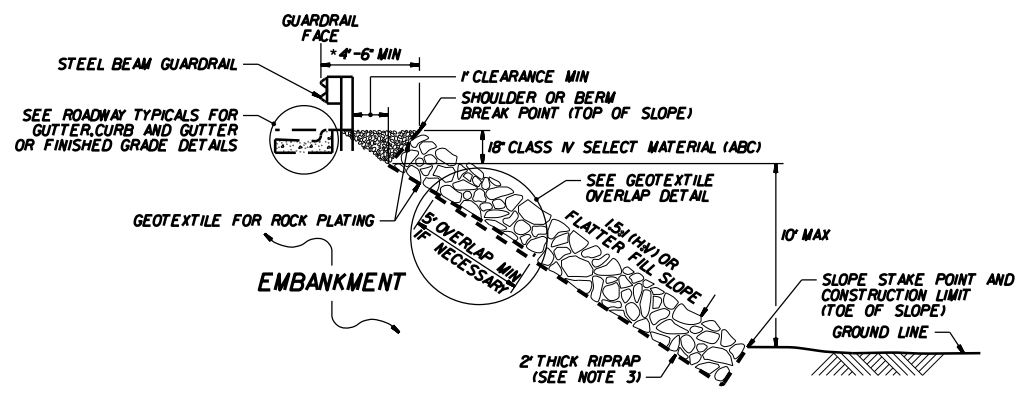
NOTE: USE THIS DRAWING AS A GUIDE ONLY. THE SLOPES AND DIMENSIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO FIT EXISTING TERRAIN. CONSTRUCT THE DITCH PROTECTIVE TREATMENT AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER. DITCH WIDTH AND LENGTH AS DIRECTED BY THE ENGINEER.



PLAN

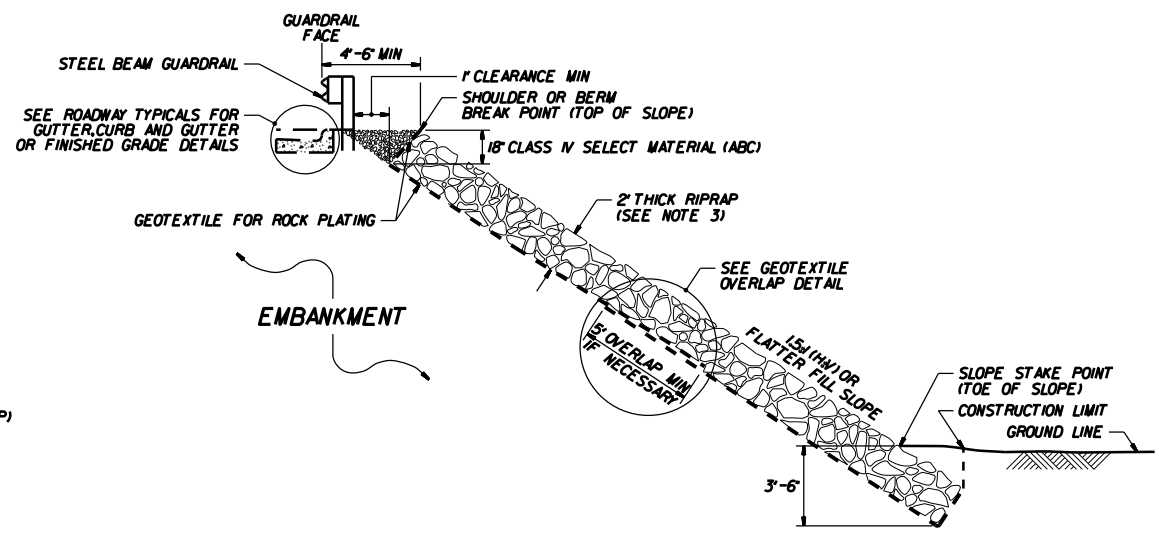
1-24

ROADWAY STANDARD DRAWING FOR  
**GUIDE FOR BERM DITCH CONSTRUCTION**

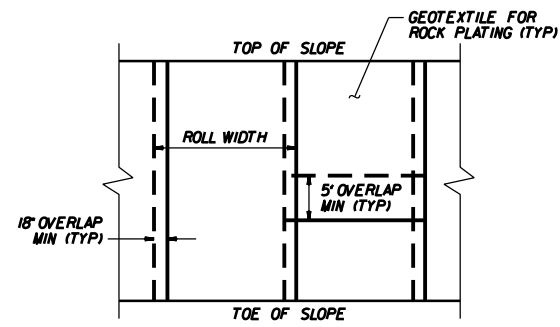


**ROCK PLATING DETAIL NO. 1 - TYPICAL SECTION**

\* 3'-6\"/>

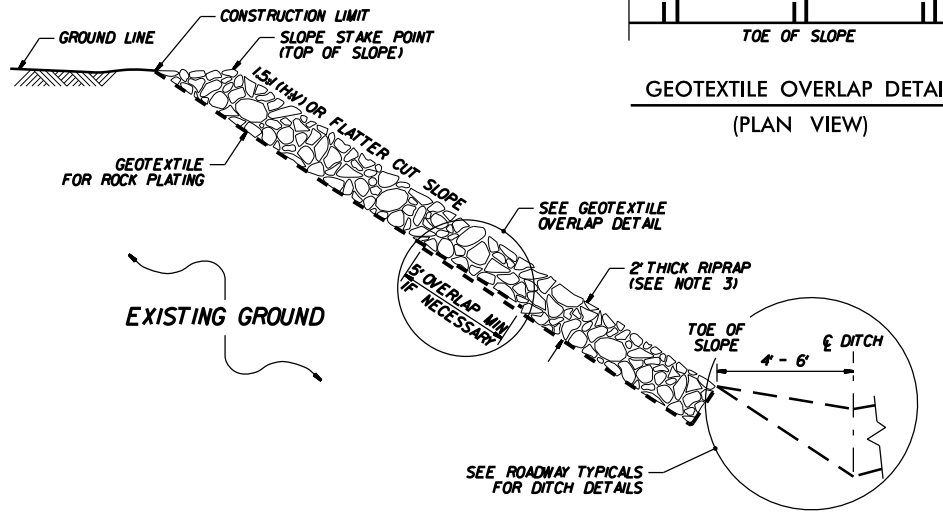


**ROCK PLATING DETAIL NO. 2 - TYPICAL SECTION**

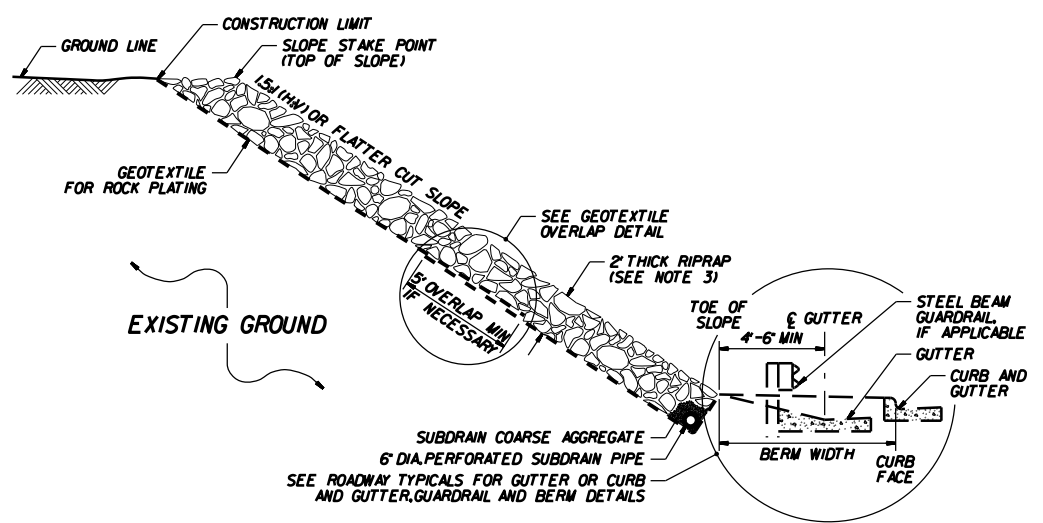


**GEOTEXTILE OVERLAP DETAIL**

(PLAN VIEW)



**ROCK PLATING DETAIL NO. 3 - TYPICAL SECTION**



**ROCK PLATING DETAIL NO. 4 - TYPICAL SECTION**

- NOTES:**
1. SEE ROADWAY PLANS AND SUMMARY SHEETS FOR ROCK PLATING LOCATIONS.
  2. FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.
  3. USE CLASS 1,2 OR B RIPRAP UNLESS REQUIRED OTHERWISE IN THE ROADWAY SUMMARY SHEETS.