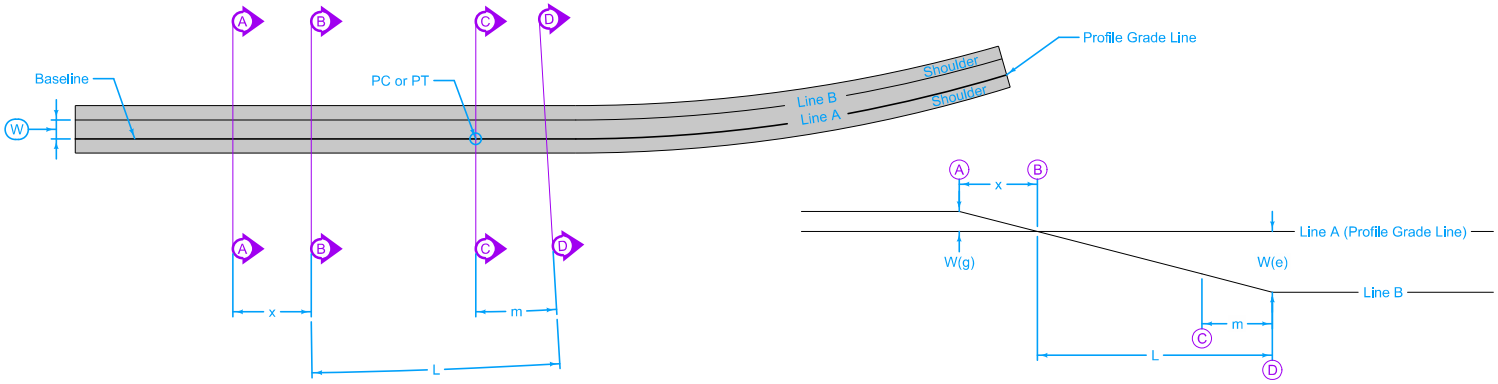
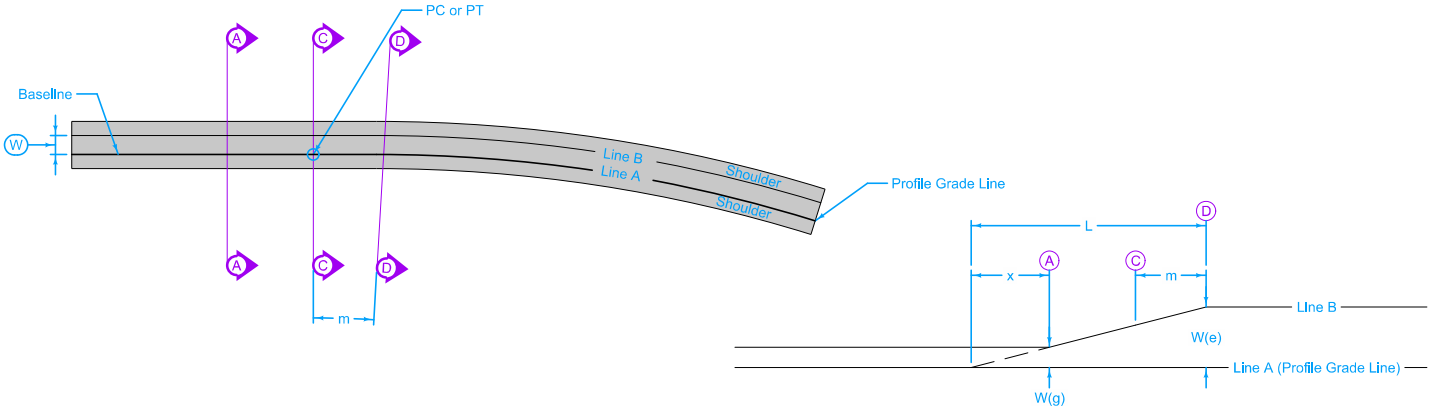


DIAGRAMMATIC PROFILES OF THE PAVEMENT EDGE LINES

CASE A
TRANSITION DETAILS - TANGENT TO CURVE
WHEN NORMAL CROSS SLOPE IS IN THE OPPOSITE DIRECTION AS SUPERELEVATION



DIAGRAMMATIC PROFILES OF THE PAVEMENT EDGE LINES

CASE B
TRANSITION DETAILS - TANGENT TO CURVE
WHEN NORMAL CROSS SLOPE IS IN THE SAME DIRECTION AS SUPERELEVATION

Refer to specific curve data contained in project plans for tangent runout length (x), runoff length (L) and full superelevation (e).

Place 70% of full superelevation at the P.C. and P.T.

Place 30% of the runoff length within the curve.

Unless otherwise specified, all lengths are measured along the baseline.

Smooth curves should be established at the time of construction at sections A-D along the profile edge of lines A and B.

Axis of rotation coincides with profile grade location.

m = 30% of Runoff Length (L)

Ⓦ = Pavement Width

g = Normal Cross Slope (2%)

L = Distance to Change Cross Slope from 0% to e

e = Superelevation Rate

x = Distance to Change Cross Slope from 0% to 2%

s = Normal Shoulder Slope

Possible Tabulation:
101-18

Iowa Department of Transportation

REVISION
1 | 04-19-11

STANDARD ROAD PLAN

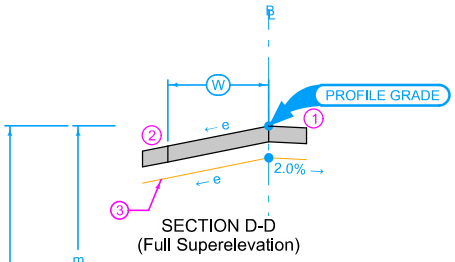
PV-303

SHEET 1 of 3

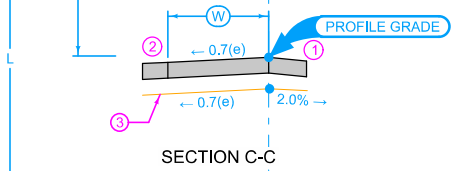
REVISIONS: Revised graphics. Added additional cross sections and notes.

Deanna Maifield
APPROVED BY DESIGN METHODS ENGINEER

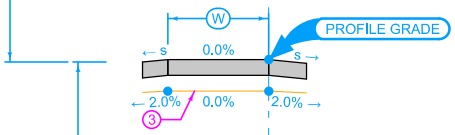
SUPERELEVATION DETAILS
RAMPS



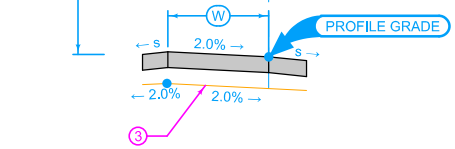
SECTION D-D
(Full Superelevation)



SECTION C-C



SECTION B-B



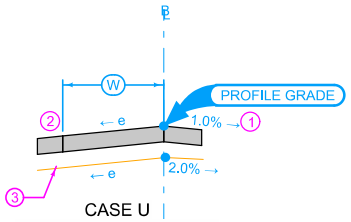
SECTION A-A
(Typical Section)

m

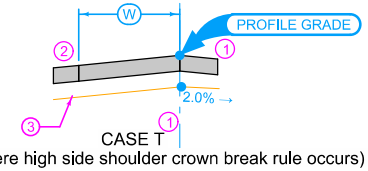
x

L

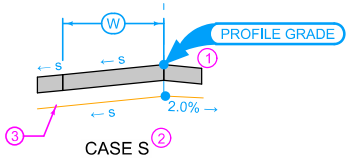
CASE A



CASE U
(Section where e ≥ 7.0%)



CASE T
(Section where high side shoulder crown break rule occurs)



CASE S
(Section where low side shoulder crown break rule occurs)

SECTION WHERE SHOULDER SLOPE TRANSITION BEGINS

1. High Side Shoulder: Maintain normal shoulder cross slope (s), until the cross slope break with the adjacent pavement reaches 8.0%. Maintain 8% breakover until superelevation rate reaches 7%. If superelevation rate exceeds 7.0%, maintain a 1% shoulder cross slope away from the adjacent pavement.
2. Low Side Shoulder: Maintain normal shoulder cross slope (s) until the adjacent pavement slope equals s, then slope the shoulder at the same cross slope as the adjacent pavement.
3. Subgrade Surface: Subgrade surface cross slope parallel to pavement surface cross slope.

Iowa Department of Transportation

REVISION
1 | 04-19-11

STANDARD ROAD PLAN

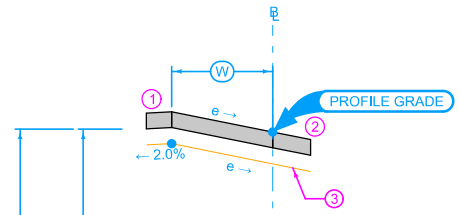
PV-303

SHEET 2 of 3

REVISIONS: Revised graphics. Added additional cross sections and notes.

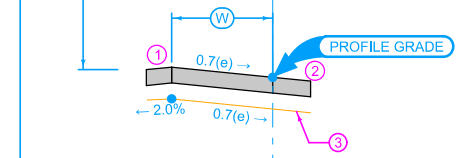
Deanna Maifield
APPROVED BY DESIGN METHODS ENGINEER

SUPERELEVATION DETAILS RAMPS



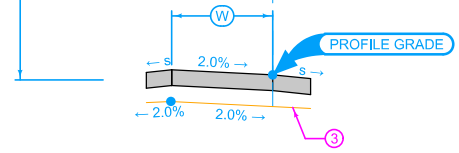
SECTION D-D
(Full Superelevation)

m

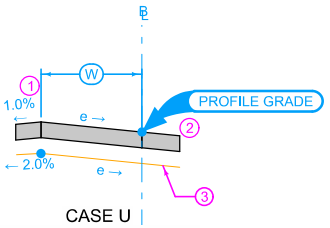


SECTION C-C

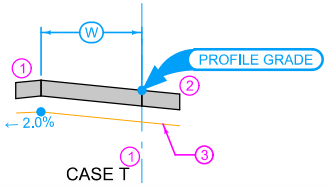
L - x



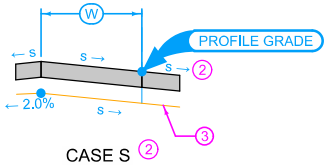
SECTION A-A
(Typical Section)



CASE U
(Section where e ≥ 7.0%)



CASE T
(Section where high side shoulder crown break rule occurs)



CASE S (2)
(Section where low side shoulder crown break rule occurs)

SECTION WHERE SHOULDER SLOPE TRANSITION BEGINS

CASE B

(1) High Side Shoulder: Maintain normal shoulder cross slope (s), until the cross slope break with the adjacent pavement reaches 8.0%. Maintain 8% breakover until superelevation rate reaches 7%. If superelevation rate exceeds 7.0%, maintain a 1% shoulder cross slope away from the adjacent pavement.

(2) Low Side Shoulder: Maintain normal shoulder cross slope (s) until the adjacent pavement slope equals s, then slope the shoulder at the same cross slope as the adjacent pavement.

(3) Subgrade Surface: Subgrade surface cross slope parallel to pavement surface cross slope.

Iowa Department of Transportation

REVISION
1 | 04-19-11

STANDARD ROAD PLAN

PV-303

SHEET 3 of 3

REVISIONS: Revised graphics. Added additional cross sections and notes.

Deanna Maifield
APPROVED BY DESIGN METHODS ENGINEER

SUPERELEVATION DETAILS RAMPS