PC or PT

℄ Construction
= Profile Grade Line

Shoulder

W

Shoulder
Shoulder

W

Shoulder

Line F
Line E
Line D
Line C
Line B
Line A
Line A
Line B
Line C
Line D
Line E
Line F

A A' B C' C D

$\frac{x}{5}$ $\frac{x}{5}$

x x

m

L

TRANSITION DETAILS - TANGENT TO CURVE

℄ Construction
= Profile Grade Line

TS or ST

SC or CS

Shoulder

W

Shoulder
Shoulder

W

Shoulder

Line F
Line E
Line D
Line C
Line B
Line A
Line A
Line B
Line C
Line D
Line E
Line F

A A' B C' C D

$\frac{x}{5}$ $\frac{x}{5}$

x x

L ①

TRANSITION DETAILS - SPIRAL CURVE

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

When spiral curve transitions are not required:
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 centerline of construction.

Superelevations on this standard are shown for curves to the right. Curves to the left are a mirror image of what is shown.

Smooth curves should be established at the time of construction at sections A-F along the profile edges of lines A-F.

See Detail A for profile grade location.

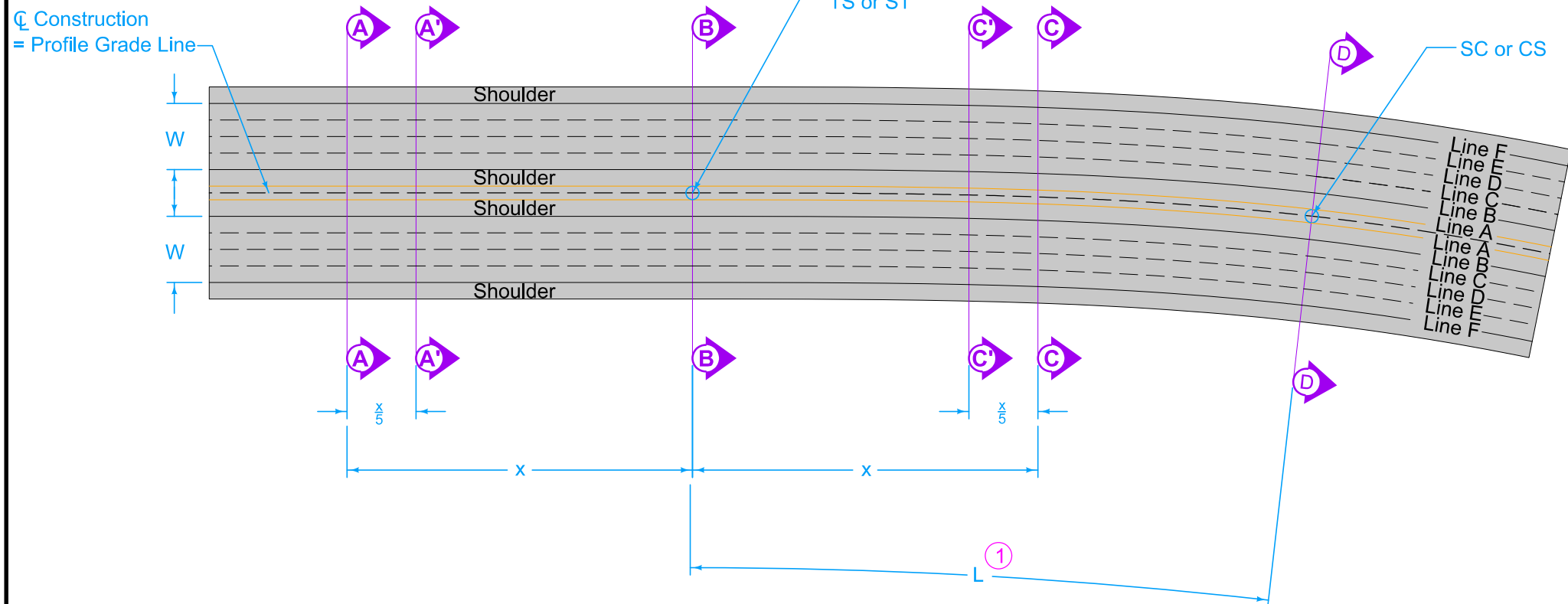m = 30% of Runoff Length (L)

W = 48'

g = Normal Cross Slope (2.5%)

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

e = Superelevation Rate

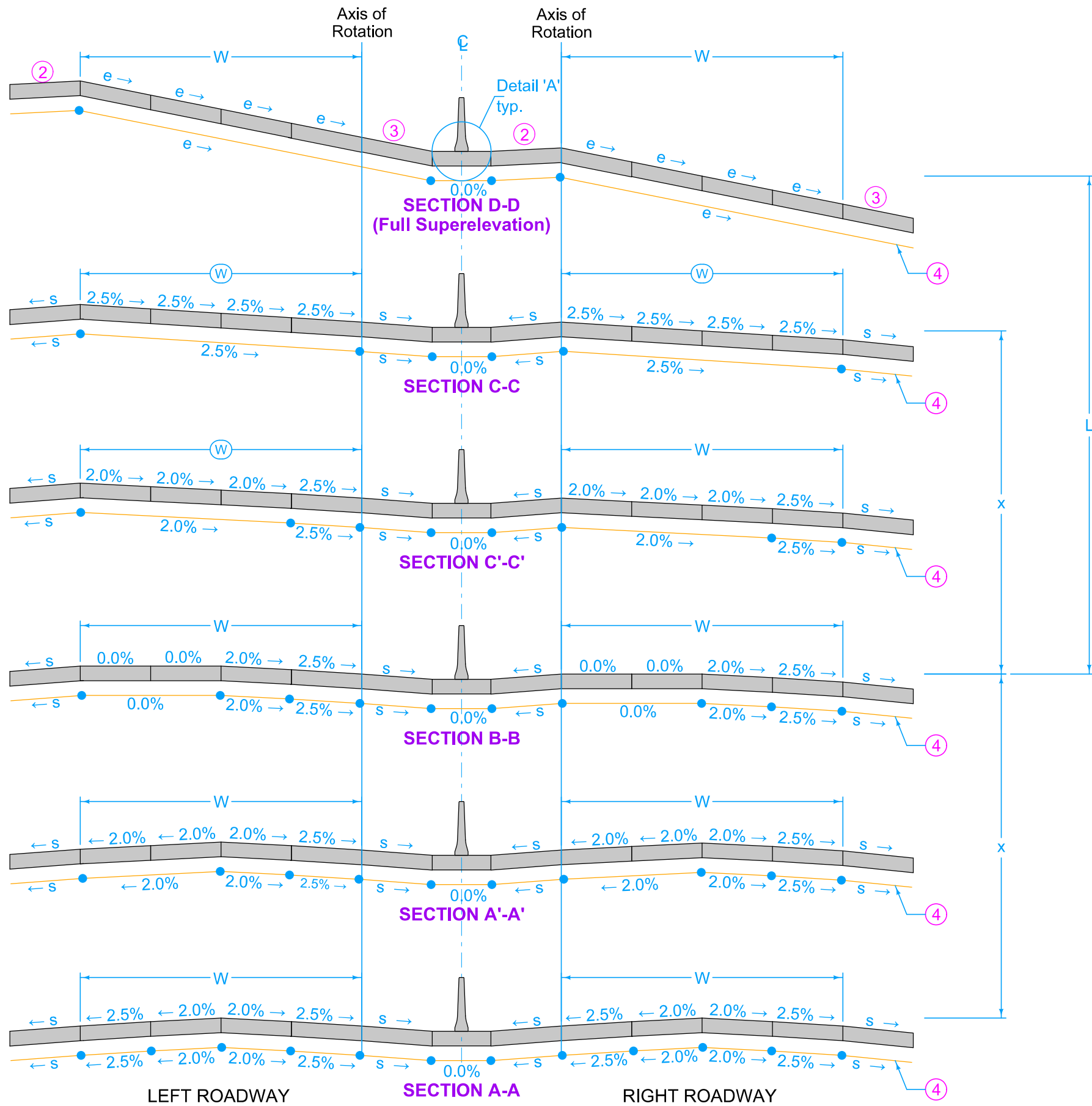x = Distance to Change Cross Slope from 0% to 2.5%

s = Normal Shoulder Slope
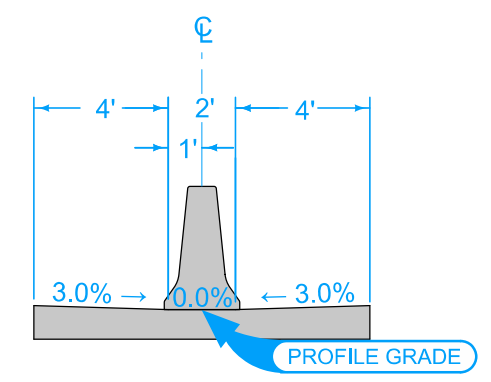
① Spiral curve length coincides with runoff length (L)

Possible Tabulation:
101-18

Axis of Rotation

Axis of Rotation

Detail 'A' typ.

② ③ ② ③

e → e → e → e → e → e → e → e → e →

0.0%

SECTION D-D (Full Superelevation)

W   W

④

W   W

← s 2.5% 2.5% → 2.5% → 2.5% → s ← s 2.5% → 2.5% → 2.5% → 2.5% s →

← s 2.5% → s ← s 2.5% → s →

0.0%

SECTION C-C

④

W   W

← s 2.0% → 2.0% → 2.0% → 2.5% s → ← s 2.0% → 2.0% → 2.0% → 2.5% s →

2.0% → 2.5% → s ← s 0.0% 2.0% → 2.5% → s

0.0%

SECTION C'-C'

④

W   W

← s 0.0% 0.0% 2.0% → 2.5% s → ← s 0.0% 0.0% 2.0% → 2.5% s →

← s 0.0% 2.0% → 2.5% s → ← s 0.0% 2.0% → 2.5% s →

0.0%

SECTION B-B

④

W   W

← s ← 2.0% ← 2.0% 2.0% → 2.5% s → ← s ← 2.0% ← 2.0% 2.0% → 2.5% s →

← s ← 2.0% 2.0% → 2.5% s → ← 2.0% 2.0% → 2.5% s →

0.0%

SECTION A'-A'

④

W   W

← s ← 2.5% ← 2.0% 2.0% → 2.5% s → ← s ← 2.5% ← 2.0% 2.0% → 2.5% s →

← s ← 2.5% ← 2.0% 2.0% → 2.5% s → ← s ← 2.5% ← 2.0% 2.0% → 2.5% s →

0.0%

SECTION A-A

LEFT ROADWAY   RIGHT ROADWAY

④

L

X

X

4'   2'   4'

1'

3.0% → 0.0% ← 3.0%

PROFILE GRADE

DETAIL A

IOWA | DOT

REVISION

3 | 04-15-25

STANDARD ROAD PLAN

PV-306

SHEET 2 of 4

REVISIONS: Corrected spelling

APPROVED BY DESIGN METHODS ENGINEER

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
CLOSED MEDIAN

Axis of Rotation

Axis of Rotation

Detail 'A' typ.

W

W

←s 0.7(e)→ 0.7(e)→ 2.0% 2.5%→ s→   ←s 0.7(e)→ 0.7(e)→ 2.0% 2.5%→ s→

←s 0.7(e)→ 2.0%→ 2.5%→ s→ 0.0% ←s   0.7(e)→ 2.0%→ 2.5%→ s→

CASE C
(e ≤ 2.8%)

W

W

←s 0.7(e)→ 0.7(e)→ 0.7(e)→ 2.5%→ s→   ←s 0.7(e)→ 0.7(e)→ 0.7(e)→ 2.5% s→

←s 0.7(e)→ 2.5%→ s→ 0.0% ←s   0.7(e)→ 2.5%→ s→

CASE B
(2.8% < e < 3.6%)

W

W

② 0.7(e)→ 0.7(e)→ 0.7(e)→ 0.7(e)→   ③ ② 0.7(e)→ 0.7(e)→ 0.7(e)→ 0.7(e)→ ③

0.7(e)→ 0.0%   0.7(e)→

CASE A
(e ≥ 3.6%)

LEFT ROADWAY   RIGHT ROADWAY

SECTION AT THE PC OR PT

Axis of Rotation

Axis of Rotation

W

W

②   ③ ②   ③

0.0%

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

W

W

←s s→ s→ s→   ←s s→ ③ s→ s→ s→ s→ ③

←s s→ s→ s→ s→ 0.0% ←s

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

LEFT ROADWAY   RIGHT ROADWAY

SECTION WHERE SHOULDER

SLOPE TRANSITION BEGINS

② High Side Shoulder: Maintain normal shoulder cross slope (s) until the cross slope break with the adjacent pavement reaches 8.0%, then slope the shoulder at the same rate as the adjacent pavement maintaining an 8% cross slope breakover.

③ 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.

④ Subgrade Surface: Subgrade surface cross slope parallel to pavement surface cross slope.

IOWA | DOT
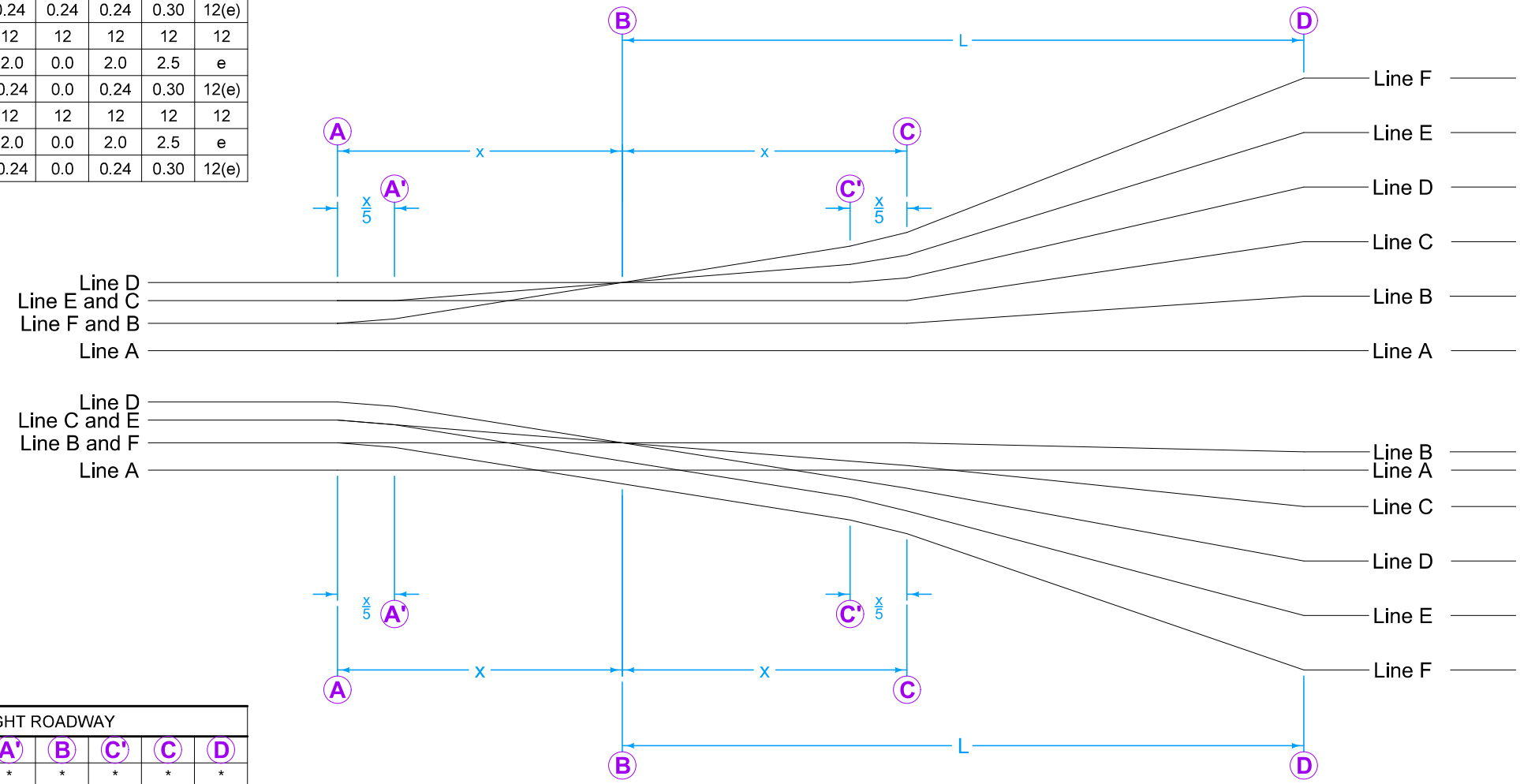
STANDARD ROAD PLAN

REVISION
3 | 04-15-25

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SHEET 3 of 4

REVISIONS: Corrected spelling

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SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
CLOSED MEDIAN

TABLE OF OFFSETS AND DROPS FOR LEFT ROADWAY

Location of Cross Sections		(A)	(A')	(B)	(C')	(C)	(D)
From Line A To Line B	Offset (Ft.)	*	*	*	*	*	*
	Slope (%)	s	s	s	s	s	(3)
	Drop (Ft.)						
From Line B To Line C	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	2.5	2.5	2.5	2.5	2.5	e
	Drop (Ft.)	0.30	0.30	0.30	0.30	0.30	12(e)
From Line C To Line D	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	2.0	2.0	2.0	2.0	2.5	e
	Drop (Ft.)	0.24	0.24	0.24	0.24	0.30	12(e)
From Line D To Line E	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-2.0	-2.0	0.0	2.0	2.5	e
	Drop (Ft.)	-0.24	-0.24	0.0	0.24	0.30	12(e)
From Line E To Line F	Drop (Ft.)	12	12	12	12	12	12
	Slope (%)	-2.5	-2.0	0.0	2.0	2.5	e
	Offset (Ft.)	-0.30	-0.24	0.0	0.24	0.30	12(e)

* Refer to plan details for shoulder width

TABLE OF OFFSETS AND DROPS FOR RIGHT ROADWAY

Location of Cross Sections		(A)	(A')	(B)	(C')	(C)	(D)
From Line A To Line B	Offset (Ft.)	*	*	*	*	*	*
	Slope (%)	s	s	s	s	s	(2)
	Drop (Ft.)						
From Line B To Line C	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	2.5	2.0	0.0	-2.0	-2.5	-e
	Drop (Ft.)	0.30	0.24	0.0	-0.24	-0.30	-12(e)
From Line C To Line D	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	2.0	2.0	0.0	-2.0	-2.5	-e
	Drop (Ft.)	0.24	0.24	0.0	-0.24	-0.30	-12(e)
From Line D To Line E	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-2.0	-2.0	-2.0	-2.0	-2.5	-e
	Drop (Ft.)	-0.24	-0.24	-0.24	-0.24	-0.30	-12(e)
From Line E To Line F	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-2.5	-2.5	-2.5	-2.5	-2.5	-e
	Drop (Ft.)	-0.30	-0.30	-0.30	-0.30	-0.30	-12(e)

* Refer to plan details for shoulder width

(2) High Side Shoulder: Maintain normal shoulder cross slope (s) until the cross slope break with the adjacent pavement reaches 8.0%, then slope the shoulder at the same rate as the adjacent pavement maintaining an 8% cross slope breakover.

(3) 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.

DIAGRAMMATIC PROFILES OF THE PAVEMENT EDGE LINES

IOWA DOT

STANDARD ROAD PLAN

PV-306

REVISION
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REVISIONS: Corrected spelling

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SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
CLOSED MEDIAN