

TYPE "B1" AND "B2"

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65 - 70	35	70
71 - 80	40	70
81 - 90	40	60
91 - 100	50	55
101 - 110	60	45

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

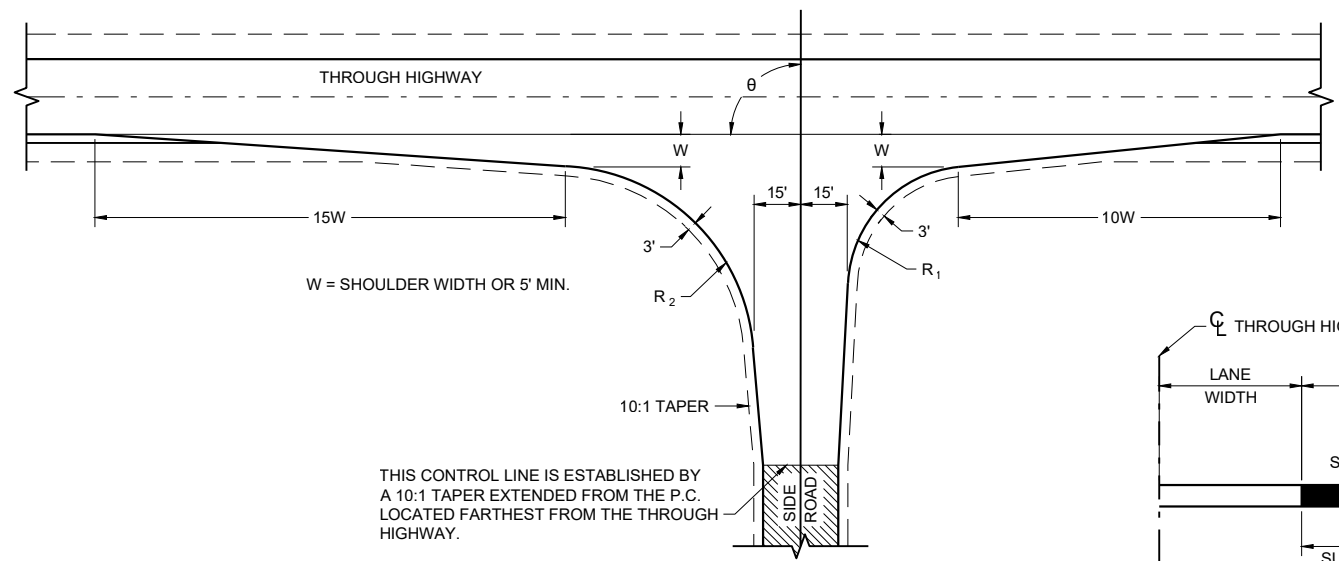
SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

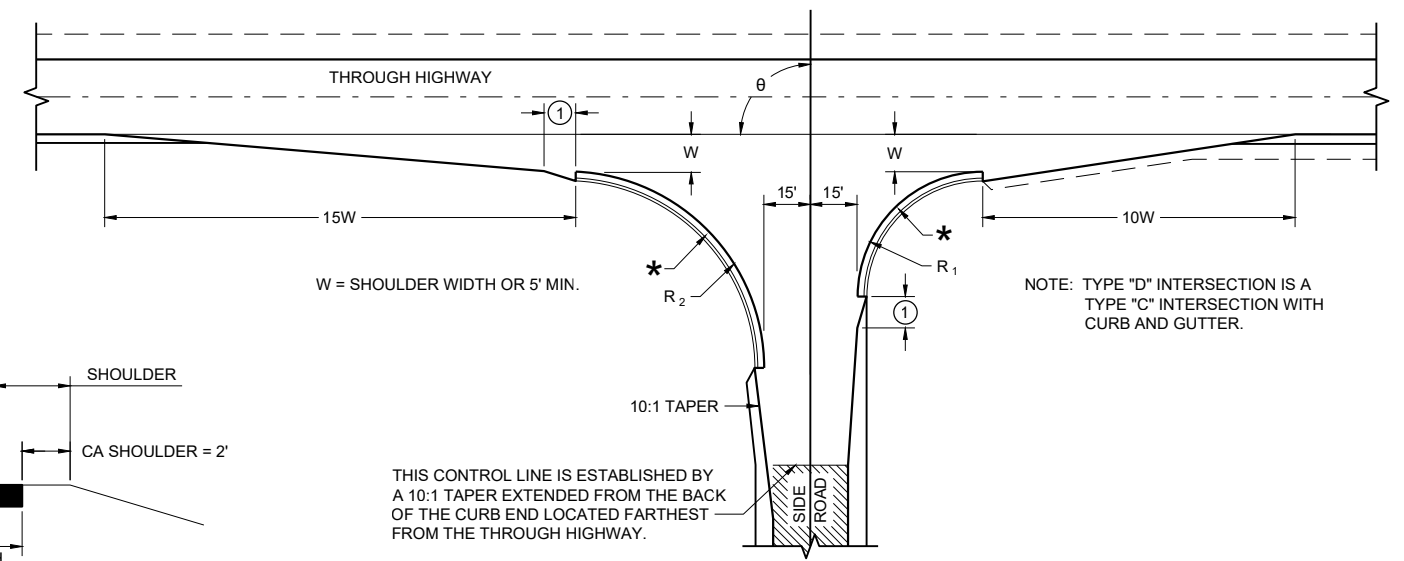
WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

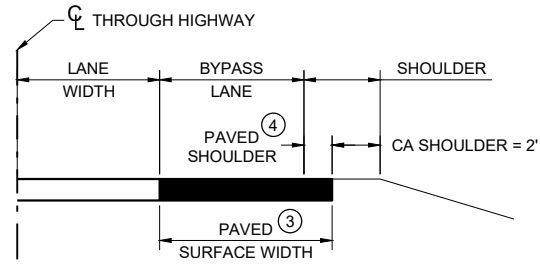
- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
- ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH
- PC CONCRETE = 13-FT PLUS PAVED SHOULDER WIDTH
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



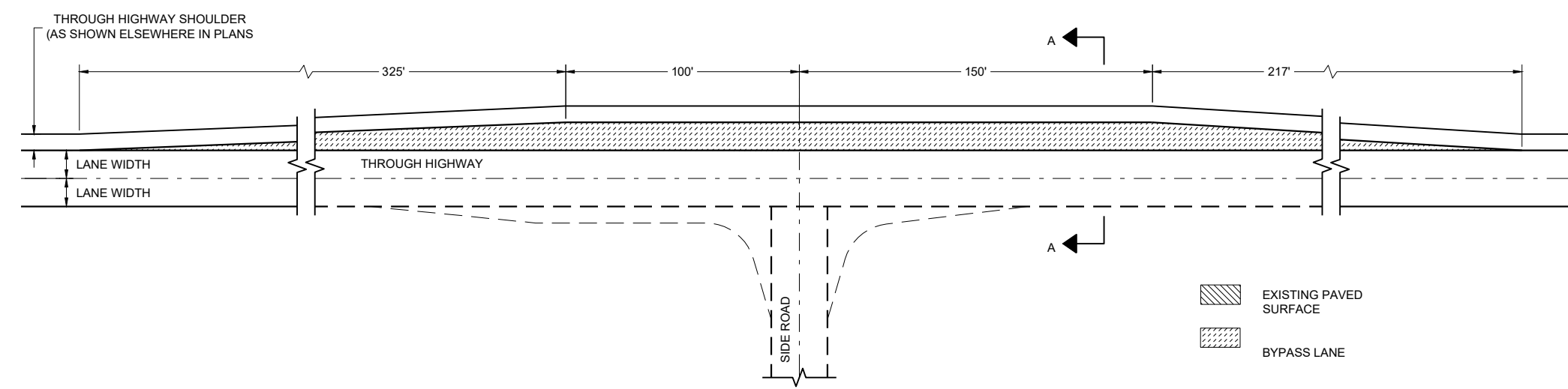
TYPE "C"



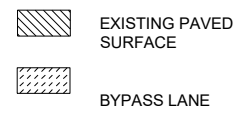
TYPE "D"



SECTION A - A
(SHOWING BYPASS LANE AND SHOULDER)

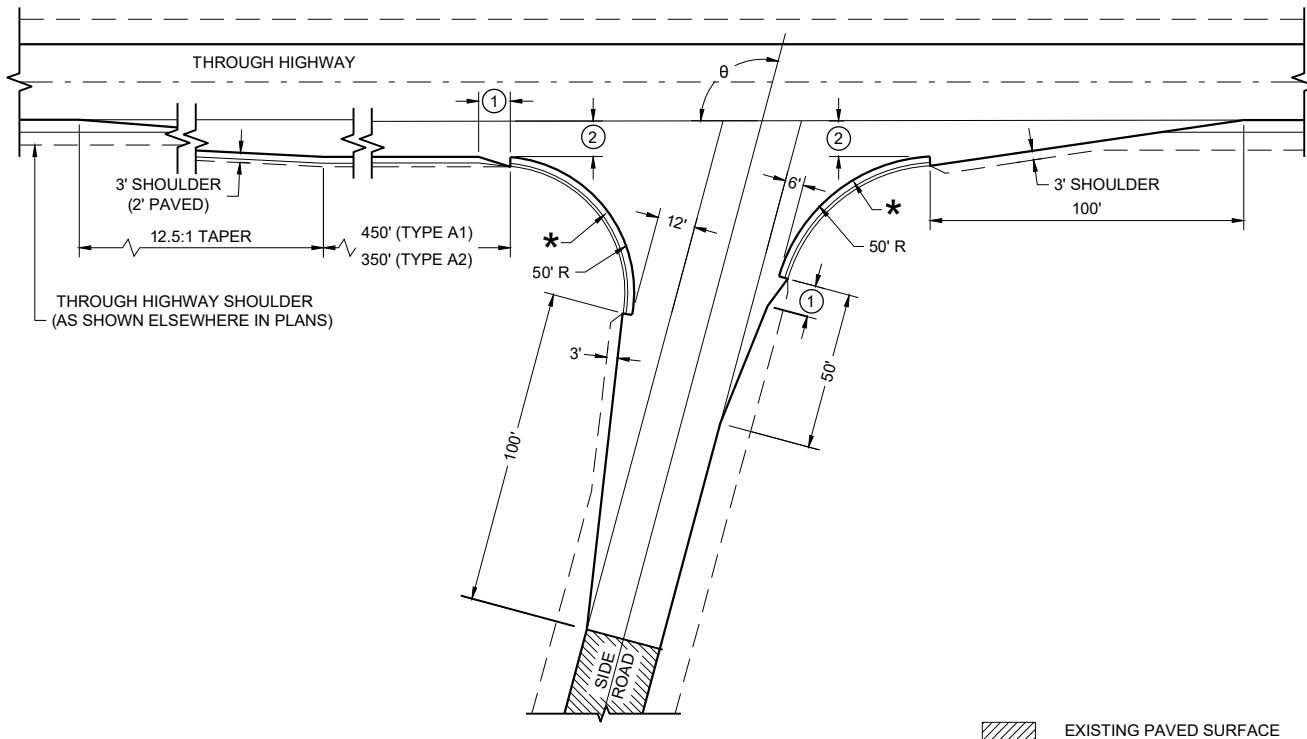


TEE INTERSECTION BYPASS LANE DETAIL



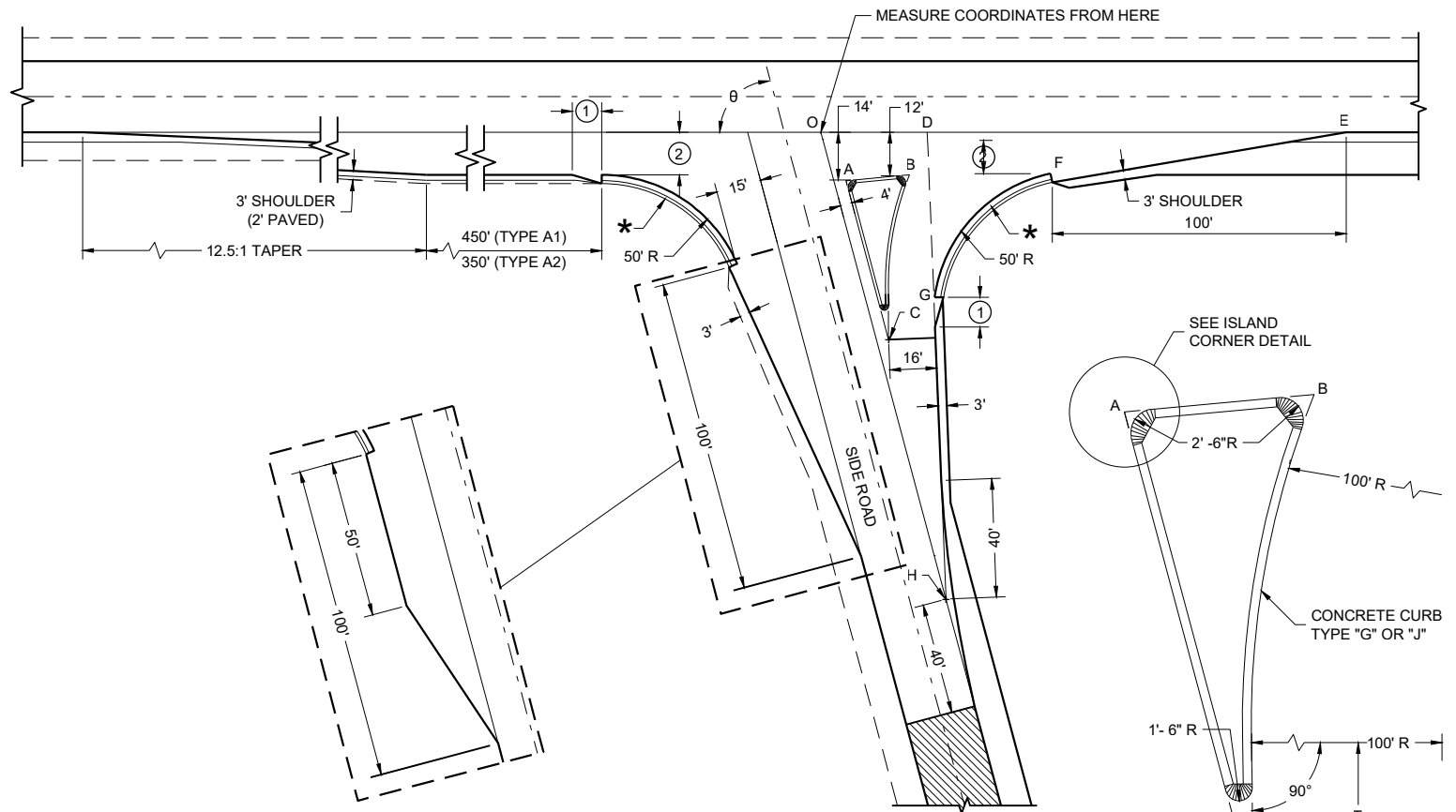
AT GRADE SIDE ROAD INTERSECTION TYPES "B1", "B2", "C", "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



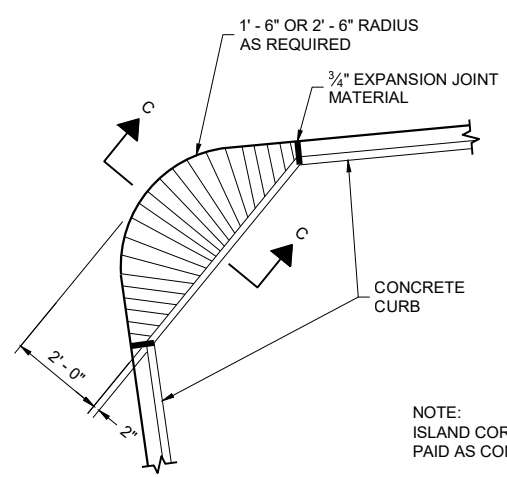
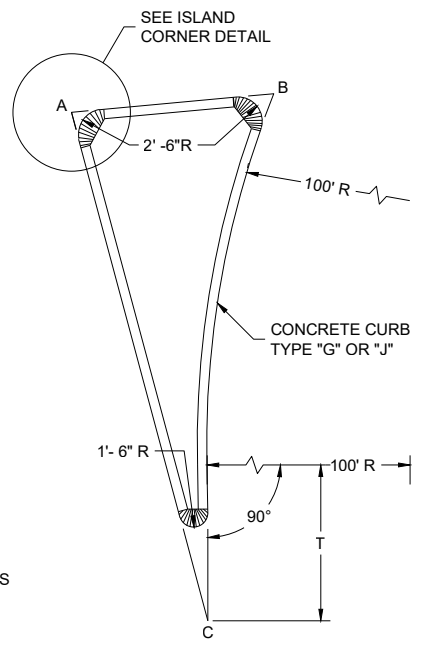
$\theta = \text{MORE THAN } 80^\circ$

EXISTING PAVED SURFACE



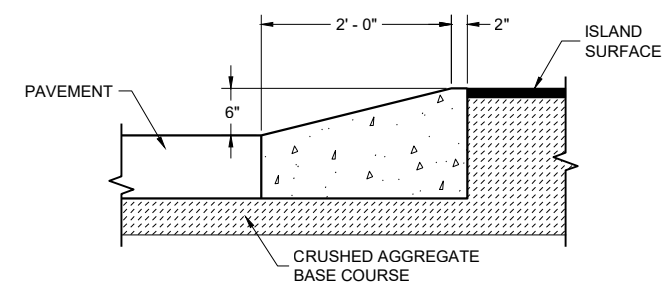
$\theta = \text{ACUTE ANGLES } 80^\circ \text{ OR LESS}$

SIDE ROAD WIDENING AND TAPER REQUIRED WHERE THE THROUGH HIGHWAY CARRIES TWO-WAY TRAFFIC
 $\theta = \text{ACUTE ANGLES } 70^\circ \text{ OR LESS}$



PLAN VIEW

NOTE: ISLAND CORNER WILL BE PAID AS CONCRETE CURB.



SECTION C - C

ISLAND CORNER DETAIL
(TO BE CONSTRUCTED AT ALL ISLAND CORNERS)

TABLE OF DIMENSIONS FOR VARIABLE SIDE ROAD INTERSECTION ANGLES
(INTERPOLATE VALUES FOR ANGLES NOT SHOWN)

ANGLE θ DEGREES	COORDINATES IN FEET (MEASURED FROM POINT 'O')									LENGTH IN FEET				
	A	B	C	D	E	F	G	H	X Y	AB	AC	T	OJ	OH
60	12.7	44.9	46.4	41.9	205.0	104.6	64.0	85.0		32.3	67.4	4.9	85.9	169.9
65	10.9	39.0	37.8	39.4	196.1	95.7	54.1	70.5		28.2	63.6	8.5	80.9	166.9
	-14.0	-12.0	-71.6	0.0	0.0	-12.0	-71.5	-151.3						
70	9.4	33.9	29.8	37.4	188.3	87.8	45.6	56.1		24.6	59.7	11.5	76.1	164.1
	-14.0	-12.0	-70.1	0.0	0.0	-12.0	-67.5	-154.2						
75	7.9	29.3	22.3	35.7	181.2	80.7	38.2	41.8		21.5	55.8	13.8	71.4	161.4
	-14.0	-12.0	-67.9	0.0	0.0	-12.0	-63.4	-155.9						
80	6.5	25.4	15.6	34.4	174.8	74.4	31.8	27.6		18.9	52.0	15.6	66.9	158.9
	-14.0	-12.0	-65.2	0.0	0.0	-12.0	-59.3	-156.5						

TYPE 'A1' AND 'A2' SIDE ROAD INTERSECTION DETAILS

AT GRADE SIDE ROAD INTERSECTIONS
TYPES "A1" AND "A2"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ John Jenkins
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

*At-Grade Side Road Intersection, Types B1, B2, C and D and Tee Intersection Bypass Lane***References:**[FDM 11-25-1](#)**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
205.9011.S	Grading and Shaping Intersection (location)	EACH
205.9016.S	Grading Shaping and Finishing Intersection (location; var. pavements).....	EACH
305.0110 - 0135	Base Aggregate Dense	TON or CY
465.0315	Asphaltic Flumes.....	SY
601.0413	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type G	LF
601.0415	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type J	LF
601.0555	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type A.....	LF
601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D.....	LF
602.3010	Concrete Surface Drains	CY

Standardized Special Provisions associated with this drawing:

<u>STSP NUMBER</u>	<u>TITLE</u>
205-010	Grading and Shaping Intersection (location)
205-015	Grading Shaping and Finishing Intersection (location)

Use these provisions if the work is not covered under standard grading bid items.

Other SDDs associated with this drawing:

SDD 8D1	Concrete Curb, Concrete Curb & Gutter and Ties
SDD 8D4	Concrete Surface Drains & Asphaltic Flumes
SDD 9A1	At-Grade Side Road Intersection sheet "b" is required.
SDD 13C16	Detail for Right Turn Lane/ Tee Intersection Bypass on a Concrete Road
SDD 13C35	Pavement Marking, Intersections

Design Notes:

See [FDM 11-25-1](#) for selection criteria for Types B1, B2, C and D Intersections and Tee Intersection Bypass Lane.

These intersection designs will accommodate the turning of the WB-50 design vehicle; however, the WB-50 vehicle turning right into or from the Type C intersection will encroach into the opposing traffic lane.

Special evaluation and modification of these intersection details may be warranted for major intersections on designated long truck routes to accommodate the WB-65 design vehicle.

Fullwidth turn lane lengths apply to both left turn lanes and right turn lanes for traffic entering the same side road leg of the intersection. Provide a longer turn lane based on needed storage to accommodate queuing Design Hour Traffic, or there is a high volume of truck turning movements.

The Type B1 and B2 design do not apply when the side road is on curved alignment at the intersection. For this situation extend the full width curbed cross-section 50 feet minimum into the curve. Provide special details.

Specify sod, topsoil or salvaged topsoil and seed & fertilize to a 3'-0" width in back of the curb & gutter sections.

If curb & gutter is built under a separate contract from the grading work, the designer must specify who is responsible for backfilling the two feet behind the curb & gutter.

Use SDD 13C16 in conjunction with this sheet if the roadway is PC concrete pavement.

Contact Person:

John Jenkins (608) 267-6975

*At-Grade Side Road Intersection, Type A1 and A2***References:**[FDM 11-25-1](#)**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
305.0110 - 305.0135	Base Aggregate Dense	TON or CY
205.9011.S	Grading & Shaping Intersection	LOCATION
205.9016.S	Grading Shaping & Finishing Intersection (location; var. pavement).....	EACH
465.0315	Asphaltic Flumes.....	SY
601.0413	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type G	LF
601.0415	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type J	LF
601.0555	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type A.....	LF
601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D.....	LF
602.3010	Concrete Surface Drains	CY

Standardized Special Provisions associated with this drawing:

<u>STSP NUMBER</u>	<u>TITLE</u>
205-010	Grading & Shaping Intersection (location)
205-015	Grading Shaping & Finishing Intersection (location)
Use these provisions if the work is not covered under standard grading bid items.	

Other SDDs associated with this drawing:

SDD 8D1	Concrete Curb, Concrete Curb & Gutter and Ties
SDD 8D4	Concrete Surface Drains & Asphaltic Flumes
SDD 9A1	At-Grade Side Road Intersections sheet "a"
SDD 13C16	Detail for Right Turn Lane/ Tee Intersection Bypass on a Concrete Road

Design Notes:

See [FDM 11-25-1](#) for selection criteria for Type A1 and A2 intersections.

Type A1 and A2 intersection design will accommodate a WB-65 design vehicle. There may be some encroachment onto the curb flag at some intersection angles.

Full-width turn lane lengths apply to both left turn lanes and right turn lanes for traffic entering the same side road leg of the intersection. Provide a longer turn lane based on needed storage to accommodate queuing Design Hour Traffic, or there is a high volume of truck turning movements.

The Type A1 and A2 intersection design does not apply when the side road is on curved alignment at the intersection. For this situation extend the full width curbed cross section 50 feet minimum into the curve. Provide special details.

Show island surface type and related details elsewhere in the plan.

Specify sod, topsoil or salvaged topsoil and seed & fertilize to a 3'-0" width at back of the curb & gutter sections.

If curb & gutter is built under a separate contract from the grading work, the designer must specify who is responsible for backfilling the two feet behind the curb & gutter.

SDD 9A1-a must be used in conjunction with this sheet.

Use SDD 13C16 in conjunction with this sheet if the roadway is PC concrete pavement.

Contact Person:

John Jenkins (608) 267-6975