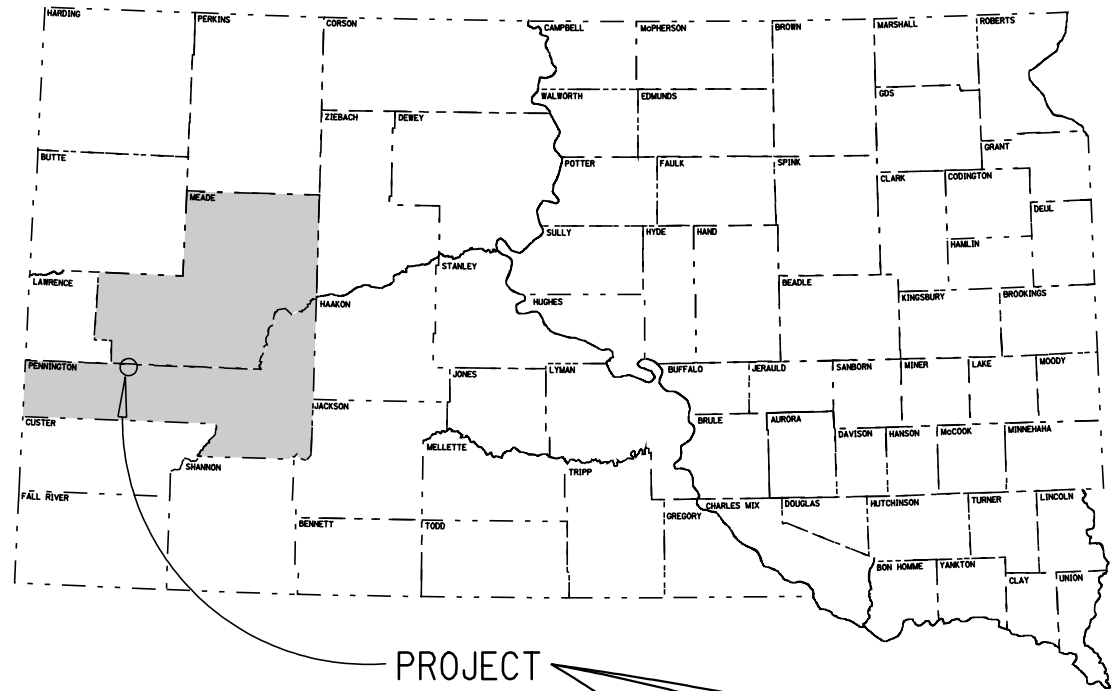


PLOT SCALE - 200,000,000:1,000,000

PLOTTED FROM - TRRC12608



STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
**PROJECTS NO.
090EF-452, 044-452,
016EB-452, & 016WB-452
I-90 SERVICE ROAD,
SD HIGHWAY 44,
& US HIGHWAY 16B
MEADE &
PENNINGTON COUNTIES**

ADA DETECTABLE WARNING REPAIR
PCN I24A, I23U, I24B, & I24C

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090EF-452, 044-452		
	016WB-452 016EB-452		
		1	24

Plotting Date: 24-FEB-2011

INDEX OF SHEETS

Sheet No.	1:	Title and Index
Sheets No.	2 - 6:	Estimate, Notes & Tables
Sheets No.	7 - 14:	Plan Sheets
Sheets No.	15 - 18:	Traffic Control
Sheets No.	19 - 24:	Standard Plates



STORM WATER PERMIT
No Storm Water Permit Required

PCN I23U
DESIGN DESIGNATION

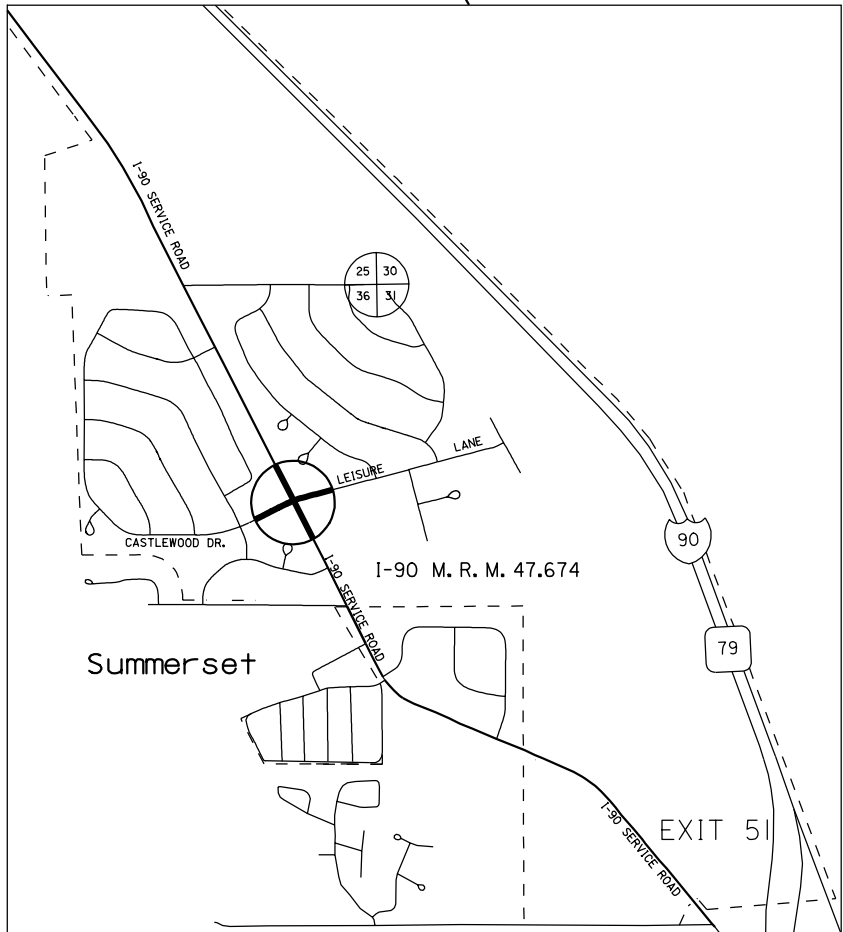
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ADT (2030)	15350
DHV	1630
D	50%
T DHV	2.0%
T ADT	4.3%
V	40 MPH

PCN I24B
DESIGN DESIGNATION

ADT (2010)	7530
ADT (2030)	9535
DHV	1010
D	50%
T DHV	5.7%
T ADT	12.6%
V	40 MPH

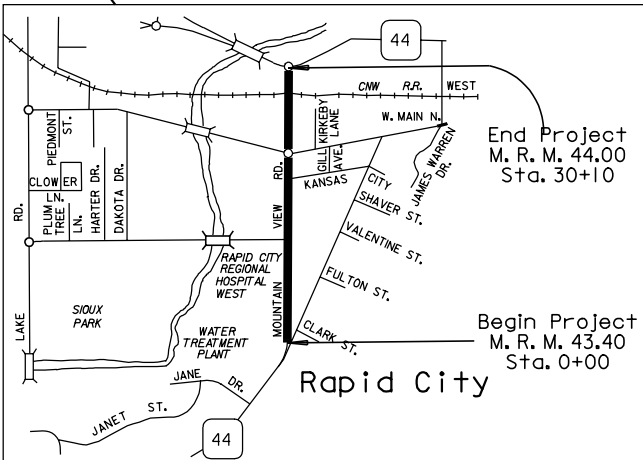
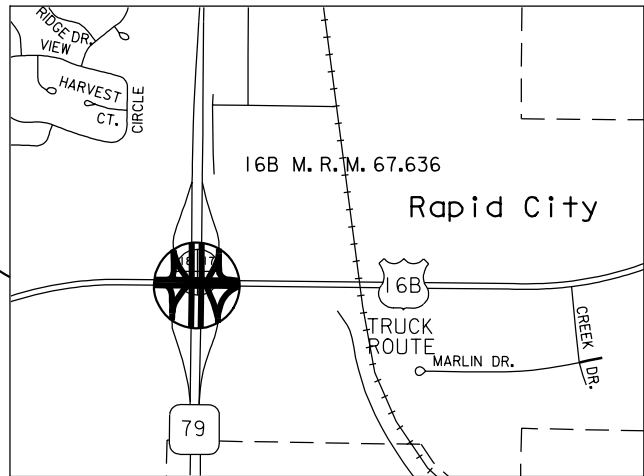
PCN I24C
DESIGN DESIGNATION

ADT (2010)	7530
ADT (2030)	9535
DHV	1010
D	50%
T DHV	5.7%
T ADT	12.6%
V	40 MPH



016EB-452 PCN I24B
016WB-452 PCN I24C

044-452
PCN I23U



ESTIMATE OF QUANTITIES

PCN I24A

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1140	Remove Concrete Sidewalk	11.2	SqYd
380E6110	Insert Steel Bar in PCC Pavement	24	Each
634E0010	Flagging	10	Hour
634E0100	Traffic Control	512	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	2	Each
651E0040	4" Concrete Sidewalk	100	SqFt
651E7000	Type 1 Detectable Warnings	40	SqFt

PCN I23U

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1140	Remove Concrete Sidewalk	95.2	SqYd
380E6110	Insert Steel Bar in PCC Pavement	196	Each
634E0010	Flagging	10	Hour
634E0100	Traffic Control	1,032	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	2	Each
651E0040	4" Concrete Sidewalk	853	SqFt
651E7000	Type 1 Detectable Warnings	304	SqFt

PCN I24B

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1140	Remove Concrete Sidewalk	16.8	SqYd
380E6110	Insert Steel Bar in PCC Pavement	36	Each
634E0010	Flagging	5	Hour
634E0100	Traffic Control	567	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
651E0040	4" Concrete Sidewalk	150	SqFt
651E7000	Type 1 Detectable Warnings	60	SqFt

I24C

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1140	Remove Concrete Sidewalk	16.8	SqYd
380E6110	Insert Steel Bar in PCC Pavement	36	Each
634E0010	Flagging	5	Hour
634E0100	Traffic Control	567	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
651E0040	4" Concrete Sidewalk	150	SqFt
651E7000	Type 1 Detectable Warnings	60	SqFt

SPECIFICATIONS

Standard Specifications for Roads & Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

GENERAL MAINTENANCE OF TRAFFIC

- Traffic control shall be in accordance with MUTCD Standards, the Standard Specifications and the layouts contained in these plans.
- All Contractors' vehicles or equipment entering or leaving a closed work area shall display a flashing amber light.
- The Contractor shall at all times, keep the project in a condition that will adequately and safely accommodate traffic and pedestrians.
- One side of the roadway shall remain open to pedestrians at all times.
- The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.
- Non-applicable signing will be covered or removed and reset during periods of in-activity. All costs to do this work shall be incidental to Traffic Control, Miscellaneous.
- The quantity of signs paid for will be for the most installations per sign in place at any one time regardless of the number of set-ups at this project site.
- The Contractor shall be required to have a person available 24 hour/day, 7 days/week to maintain traffic control devices. The name and cellular telephone number of this individual shall be given to the Engineer at the preconstruction meeting.
- Work activities shall only be during daylight hours. Daylight hours are considered to be ½ hour before sunrise until ½ hour after sunset.
- The Contractor shall coordinate his operations such that during non-working hours the roadway shall be open to normal traffic for the entire width of the road. Lane closures shall be removed prior to nightfall.
- During removal and construction of sidewalks/ADA panels, orange construction fence shall be placed around the work zone perimeter to keep pedestrians from entering work areas.
- All work activities shall be conducted so that pedestrian access is maintained at all times. At street crossing locations, pedestrian traffic shall be detoured to the next available crossing during panel replacement activities. It is the Contractor's responsibility to provide temporary ADA-compliant access at all times

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	090EF-452, 044-452. 016EB-452, 016WB-452	2	24

INVENTORY OF TRAFFIC CONTROL DEVICES

PCN I24A

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
R9-9	24" x 12"	SIDEWALK CLOSED	4	4	16
R9-10	24" x 12"	SIDEWALK CLOSED, USE OTHER SIDE	4	4	16
R9-11	24" x 12"	SIDEWALK CLOSED AHEAD, CROSS HERE	4	4	16
W16-7P	30" x 18"	SUPPLEMENTAL DIAGONAL ARROW	4	15	60
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	2	34	68
W21-5	48" x 48"	SHOULDER WORK	2	34	68
W11-2	48" x 48"	PEDESTRIAN	4	34	136
W16-9P	30" x 18"	AHEAD	2	15	30
TOTAL UNITS					512

PCN I23U

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	8	17	136
R9-9	24" x 12"	SIDEWALK CLOSED	4	4	16
R9-10	24" x 12"	SIDEWALK CLOSED, USE OTHER SIDE	4	4	16
R9-11	24" x 12"	SIDEWALK CLOSED AHEAD, CROSS HERE	4	4	16
W4-1	48" x 48"	MERGE (SYMBOL)	1	34	34
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	1	34	34
W16-7P	30" x 18"	SUPPLEMENTAL DIAGONAL ARROW	4	15	60
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	8	34	272
W20-5	48" x 48"	LT. OR RT. LANE CLOSED ##### FT. OR AHEAD	1	34	34
W20-7a	48" x 48"	FLAGGER	2	34	68
W21-5	48" x 48"	SHOULDER WORK	2	34	68
W11-2	48" x 48"	PEDESTRIAN	4	34	136
W16-9P	30" x 18"	AHEAD	2	15	30
*****	*****	TYPE III BARRICADE - 8 FT. DOUBLE SIDED	2	56	112
TOTAL UNITS					1032

PCN I24B

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	4	17	68
R9-9	24" x 12"	SIDEWALK CLOSED	2	4	8
R9-10	24" x 12"	SIDEWALK CLOSED, USE OTHER SIDE	2	4	8
R9-11	24" x 12"	SIDEWALK CLOSED AHEAD, CROSS HERE	2	4	8
W4-1	48" x 48"	MERGE (SYMBOL)	1	34	34
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	1	34	34
W16-7P	30" x 18"	SUPPLEMENTAL DIAGONAL ARROW	2	15	30
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	4	34	136
W20-5	48" x 48"	LT. OR RT. LANE CLOSED ##### FT. OR AHEAD	1	34	34
W20-7a	48" x 48"	FLAGGER	1	34	34
W21-5	48" x 48"	SHOULDER WORK	1	34	34
W11-2	48" x 48"	PEDESTRIAN	2	34	68
W16-9P	30" x 18"	AHEAD	1	15	15
*****	*****	TYPE III BARRICADE - 8 FT. DOUBLE SIDED	1	56	56
TOTAL UNITS					567

INVENTORY OF TRAFFIC CONTROL DEVICES (CONTINUED)

PCN I24C

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	4	17	68
R9-9	24" x 12"	SIDEWALK CLOSED	2	4	8
R9-10	24" x 12"	SIDEWALK CLOSED, USE OTHER SIDE	2	4	8
R9-11	24" x 12"	SIDEWALK CLOSED AHEAD, CROSS HERE	2	4	8
W4-1	48" x 48"	MERGE (SYMBOL)	1	34	34
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	1	34	34
W16-7P	30" x 18"	SUPPLEMENTAL DIAGONAL ARROW	2	15	30
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	4	34	136
W20-5	48" x 48"	LT. OR RT. LANE CLOSED ##### FT. OR AHEAD	1	34	34
W20-7a	48" x 48"	FLAGGER	1	34	34
W21-5	48" x 48"	SHOULDER WORK	1	34	34
W11-2	48" x 48"	PEDESTRIAN	2	34	68
W16-9P	30" x 18"	AHEAD	1	15	15
*****	*****	TYPE III BARRICADE - 8 FT. DOUBLE SIDED	1	56	56
TOTAL UNITS					567

UTILITIES

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the contractor shall contact the project engineer to determine modifications that will be necessary to avoid utility impacts.

HISTORICAL PRESERVATION OFFICE CLEARANCES

To obtain State Historical Preservation Office (SHPO) clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. In lieu of a cultural resources survey, the Contractor could request a records search from Jim Donohue, State Archaeological Research Center (SARC). Provide SARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that no artifacts have been found on the site. The Contractor shall arrange and pay for the cultural resource survey and/or records search.

If any earth disturbing activities occur within the current geographical or historic boundaries of any South Dakota reservation, the Contractor shall obtain Tribal Historical Preservation Office (THPO) clearance. If no THPO exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO or THPO responses, the Contractor should submit a records search or cultural resources survey report to the DOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3268). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO/THPO approval. The Contractor is responsible for obtaining all required permits and clearances for staging areas, borrow sites, waste disposal sites, and all material processing sites. The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

WASTE DISPOSAL SITE

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

Construction/demolition debris may not be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction/demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction/demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

SAWING

The existing surface shall be sawed full depth to a true line with a vertical face where new concrete is to be placed against existing concrete.

All costs associated with this work shall be shall be incidental to the various contract items.

STATE OF
SOUTH
DAKOTA

PROJECT
090EF-452, 044-452.
016EB-452, 016WB-452

SHEET
NO.
3

TOTAL
SHEETS
24

TABLE OF SIDEWALK REMOVAL

I-90 SERVICE ROAD - PCN I24A

Station	Offset	L/R	L x W	Quantity (SqYd)
215+30.0	34.0	L	5' x 5'	2.8
215+82.0	34.0	L	5' x 5'	2.8
215+22.0	34.0	R	5' x 5'	2.8
215+73.0	34.0	R	5' x 5'	2.8
Total:				11.2

HIGHWAY 44 - PCN I23U

Station	Offset	L/R	L x W	Quantity (SqYd)
5+27.5	46.3	L	7'11" x 5'	4.4
5+94.0	46,3	L	7'11" x 5'	4.4
7+14.5	39.7	L	7'11" x 5'	4.4
7+14.5	7.1	L	2' 6" x 5'	1.4
7+14.5	5.4	L	2' 6" x 5'	1.4
11+03.0	44.7	L	7'11" x 5'	4.4
11+11.5	54.5	L	7'11" x 5'	4.4
11+75.9	54.5	L	7' 2" x 5'	4.1
11+84.0	55.8	L	3' 5" x 5'	1.9
12+11.5	77.7	L	5' x 5'	2.8
20+08.5	44,5	L	5' x 5'	2.8
21+17.0	61.5	L	5' x 5'	2.8
26+43.7	46.2	L	5' x 5'	2.8
26+65.8	46.2	L	5' x 5'	2.8
29+01.3	75.3	L	5' x 5'	2.8
29+17.3	41.4	L	5' x 5'	2.8
29+19.0	57.9	L	5' x 5'	2.8
7+14.5	27.7	R	5' x 5'	2.8
11+03.0	27.7	R	5' x 5'	2.8
18+54.7	44.5	R	7'11" x 5'	4.4
18+84.9	56.5	R	7'11" x 5'	4.4
19+89.6	47.1	R	5' x 5'	2.8
21+05.0	36.2	R	5' x 5'	2.8
26+46.0	49.6	R	6' x 6'	4.0
26+62.7	49.6	R	6' x 6'	4.0
29+09.3	104.3	R	5' x 5'	2.8
29+13.2	61.1	R	5' x 5'	2.8
29+17.0	44.1	R	5' x 5'	2.8
29+31.3	54.0	R	5' x 5'	2.8
30+09.7	50.8	R	5' x 5'	2.8
Total:				95.2

TABLE OF SIDEWALK REMOVAL ((CONTINUED))

US 16B EASTBOUND - PCN I24B

Station	Offset	L/R	L x W	Quantity (SqYd)
181+45.0	73.0	R	5' x 5'	2.8
182+28.0	73.0	R	5' x 5'	2.8
182+64.0	73.0	R	5' x 5'	2.8
0+78.0	73.0	R	5' x 5'	2.8
1+34.0	73.0	R	5' x 5'	2.8
2+09.0	73.0	R	5' x 5'	2.8
Total:				16.8

US 16B WESTBOUND - PCN I24C

Station	Offset	L/R	L x W	Quantity (SqYd)
181+45.0	73.0	L	5' x 5'	2.8
182+28.0	73.0	L	5' x 5'	2.8
182+64.0	73.0	L	5' x 5'	2.8
0+78.0	73.0	L	5' x 5'	2.8
1+34.0	73.0	L	5' x 5'	2.8
2+09.0	73.0	L	5' x 5'	2.8
Total:				16.8

STEEL BAR INSERTION

Locations and quantities of concrete repair are subject to change in the field at the discretion of the Engineer. The Contractor will be responsible for ordering the actual quantity of steel bars necessary to complete the work.

The Contractor shall insert the steel bars (No. 4 x 12" epoxy coated deformed tie bars) into drilled holes in the existing concrete sidewalk pavement. An epoxy resin adhesive must be used to anchor the steel bar in the drilled hole. The bars shall be drilled in 6 inches deep into adjacent sidewalk and aprons. Two bars per side shall be evenly spaced horizontally along each side of the sidewalk repair.

Steel bars shall be cut to the specified length by sawing and shall be free from burring or other deformations. Shearing will not be permitted.

Epoxy resin adhesive shall be of the type intended for horizontal applications, and shall conform to the requirements of ASTM C 881, Type IV, Grade 3 (equivalent to AASHTO M235, Type IV, Grade 3).

The diameter of the drilled holes in the existing concrete pavement for the steel bars shall not be less than 1/8 inch nor more than 3/8 inch greater than the overall diameter of the steel bar. Holes drilled into the existing concrete sidewalk pavement shall be located at mid-depth of the slab and true and normal. The drilled holes shall be blown out with compressed air using a device that will reach to the back of the hole to ensure that all debris or loose material has been removed prior to epoxy injection.

STEEL BAR INSERTION (CONTINUED)

A rigid frame or mechanical device will be required to guide the drill to ensure proper horizontal and vertical alignment of the steel bars in the drilled holes.

Mix the epoxy resin as recommended by the manufacturer and apply by an injection method approved by the Engineer. If an epoxy pump is utilized, it shall be capable of metering the components at the manufacturer's designated rate and be equipped with an automatic shut-off. The pump shall shut off when any of the components are not being metered at the designated rate.

Fill the drilled holes 1/3 to 1/2 full of epoxy, or as recommended by the manufacturer, prior to insertion of the steel bar. Care shall be taken to prevent epoxy from running out of the horizontal holes prior to steel bar insertion. Rotate the steel bar during insertion to eliminate voids and ensure complete bonding of the bar. Insertion by the dipping method will not be allowed.

Cost for the epoxy resin adhesive, steel bars, drilling of holes, inserting the steel bars into the drilled holes and all other items incidental to the insertion of the steel bars shall be included in the contract unit price per each for Insert Steel Bar In PCC Pavement.

TABLE OF STEEL BAR INSERTION

I-90 SERVICE ROAD - PCN I24A

Station	Offset	L/R	QUANTITY OF BARS No. 4
215+30.0	34.0	L	6
215+82.0	34.0	L	6
215+22.0	34.0	R	6
215+73.0	34.0	R	6
Totals:			24

TABLE OF STEEL BAR INSERTION (CONTINUED)

HIGHWAY 44 - PCN I23U

Station	Offset	L/R	QUANTITY OF BARS No. 4
5+27.5	46.3	L	8
5+94.0	46.3	L	8
7+14.5	39.7	L	8
7+14.5	7.1	L	6
7+14.5	5.4	L	6
11+03.0	44.7	L	8
11+11.5	54.5	L	8
11+75.9	54.5	L	8
11+84.0	55.8	L	6
12+11.5	77.7	L	6
20+08.5	44.5	L	6
21+17.0	61.5	L	6
26+43.7	46.2	L	6
26+65.8	46.2	L	6
29+01.3	75.3	L	6
29+17.3	41.4	L	6
29+19.0	57.9	L	6
7+14.5	27.7	R	6
11+03.0	27.7	R	6
18+54.7	44.5	R	8
18+84.9	56.5	R	8
19+89.6	47.1	R	6
21+05.0	36.2	R	6
26+46.0	49.6	R	6
26+62.7	49.6	R	6
29+09.3	104.3	R	6
29+13.2	61.1	R	6
29+17.0	44.1	R	6
29+31.3	54.0	R	6
30+09.7	50.8	R	6
Totals:			196

US 16B EASTBOUND - PCN I24B

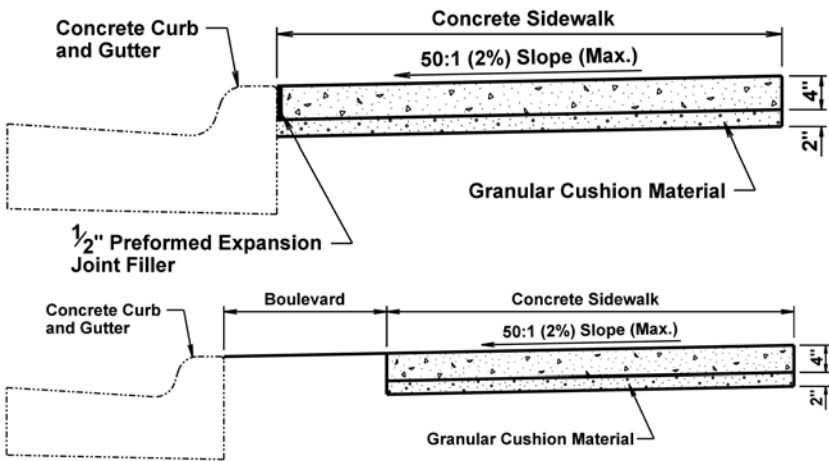
Station	Offset	L/R	QUANTITY OF BARS No. 4
181+45.0	73.0	R	6
182+28.0	73.0	R	6
182+64.0	73.0	R	6
0+78.0	73.0	R	6
1+34.0	73.0	R	6
2+09.0	73.0	R	6
Totals:			36

TABLE OF STEEL BAR INSERTION (CONTINUED)

US 16B WESTBOUND - PCN I24C

Station	Offset	L/R	QUANTITY OF BARS No. 4
181+45.0	73.0	L	6
182+28.0	73.0	L	6
182+64.0	73.0	L	6
0+78.0	73.0	L	6
1+34.0	73.0	L	6
2+09.0	73.0	L	6
Totals:			36

CONCRETE SIDEWALK



The concrete sidewalk shall be constructed in accordance with Section 651 of the Standard Specifications. The sidewalk details shown above are typical of this project; however, the sidewalk widths, boulevard widths, and other special details are shown on the Curb and Gutter Layout sheets.

Any ramps that are not constructed according to Section 651 of the Standard Specifications will be removed and replaced at the contractor's expense.

TABLE OF SIDEWALK

I-90 SERVICE ROAD - PCN I24A

Station	Offset	L/R	Quantity (SqFt)
215+30.0	34.0	L	25.0
215+82.0	34.0	L	25.0
215+22.0	34.0	R	25.0
215+73.0	34.0	R	25.0
Total:			100.0

HIGHWAY 44 - PCN I23U

Station	Offset	L/R	Quantity (SqFt)
5+27.5	46.3	L	39.6
5+94.0	46.3	L	39.6
7+14.5	39.7	L	39.6
7+14.5	7.1	L	12.6
7+14.5	5.4	L	12.6
11+03.0	44.7	L	39.6
11+11.5	54.5	L	39.6
11+75.9	54.5	L	36.9
11+84.0	55.8	L	17.1
12+11.5	77.7	L	25.0
20+08.5	44.5	L	25.0
21+17.0	61.5	L	25.0
26+43.7	46.2	L	25.0
26+65.8	46.2	L	25.0
29+01.3	75.3	L	25.0
29+17.3	41.4	L	25.0
29+19.0	57.9	L	25.0
7+14.5	27.7	R	25.0
11+03.0	27.7	R	25.0
18+54.7	44.5	R	39.6
18+84.9	56.5	R	39.6
19+89.6	47.1	R	25.0
21+05.0	36.2	R	25.0
26+46.0	49.6	R	36.0
26+62.7	49.6	R	36.0
29+09.3	104.3	R	25.0
29+13.2	61.1	R	25.0
29+17.0	44.1	R	25.0
29+31.3	54.0	R	25.0
30+09.7	50.8	R	25.0

Total: 853.4

US 16B EASTBOUND - PCN I24B

Station	Offset	L/R	Quantity (SqFt)
181+45.0	73.0	R	25.0
182+28.0	73.0	R	25.0
182+64.0	73.0	R	25.0
0+78.0	73.0	R	25.0
1+34.0	73.0	R	25.0
2+09.0	73.0	R	25.0

Total: 150.0

TABLE OF SIDEWALK (CONTINUED)

US 16B WESTBOUND - PCN I24C

Station	Offset	L/R	Quantity (SqFt)
181+45.0	73.0	L	25.0
182+28.0	73.0	L	25.0
182+64.0	73.0	L	25.0
0+78.0	73.0	L	25.0
1+34.0	73.0	L	25.0
2+09.0	73.0	L	25.0

Total: 150.0

TYPE 1 DETECTABLE WARNING PANELS

Detectable warnings shall be in compliance with the Americans with Disability Act regulations.

The detectable warnings shall be installed according to the manufacturer's installation instructions.

A concrete thickness equal to the adjacent concrete sidewalk thickness and 2 inches of granular cushion material shall be placed below the Type 1 Detectable Warnings. When concrete is placed below the detectable warnings then the concrete thickness shall be transitioned at the rate of 1" per foot to match the adjacent concrete sidewalk thickness.

The detectable warnings shall be a brick red color for application in concrete curb ramps. Cast iron plates may be a natural patina (weathered steel).

The detectable warning panels shall be protected during placement to avoid any damage or concrete sticking to the top surface. Any damaged panels shall be replaced at the contractor's expense to remove and replace damaged panels.

The contractor is responsible for consolidating the concrete under the panels to avoid air pockets or voids underneath the panels after placement.

The Type 1 Detectable Warning shall be "Detectable Warning Tile Composite Replaceable Wet Set" by ADA Solutions, Inc. or an approved equal.

TYPE 1 DETECTABLE WARNING PANELS (CONTINUED)

Type 1 Detectable Warnings	
Product	Manufacturer
Detectable Warning Plate Cast Iron Plate	Neenah Foundry Company Neenah, WI 800-558-5075 http://www.neenahfoundry.com/
Detectable Warning Plate Cast Iron Plate	Deeter Foundry Lincoln, NE 800-234-7466 http://www.deeter.com/
Detectable Warning Plate Cast Iron Plate	East Jordan Iron Works, Inc. 301 Spring Street East Jordan, MI 49727 800-626-4653 http://www.ejiw.com
Detectable Warning Tile Composite Replaceable Wet-Set	ADA Solutions, Inc. North Billerica, MA 01862 800-372-0519 http://www.adatile.com
Access Tile Composite Replaceable Cast in Place	Access Products Inc. 241 Main Street, Suite 100 Buffalo, NY 14203 888-679-4022 http://www.accesstile.com/
Armorcast Detectable Warning Tile Composite Replaceable Wet-Set	Armorcast Products Company 13230 Saticoy Street North Hollywood, CA 91605 818-982-3600 http://www.armorcastprod.com/

TABLE OF TYPE 1 DETECTABLE WARNINGS

I-90 SERVICE ROAD - PCN I24A			
Station	Offset	L/R	Quantity (SqFt)
215+30.0	34.0	L	10
215+82.0	34.0	L	10
215+22.0	34.0	R	10
215+73.0	34.0	R	10
Total:			40
HIGHWAY 44 - PCN I23U			
Station	Offset	L/R	Quantity (SqFt)
5+27.5	46.3	L	10
5+94.0	46.3	L	10
7+14.5	39.7	L	10
7+14.5	7.1	L	10
7+14.5	5.4	L	10
11+03.0	44.7	L	10
11+11.5	54.5	L	10
11+75.9	54.5	L	10
11+84.0	55.8	L	10
12+11.5	77.7	L	10
20+08.5	44.5	L	10
21+17.0	61.5	L	10
26+43.7	46.2	L	10
26+65.8	46.2	L	10
29+01.3	75.3	L	10
29+17.3	41.4	L	10
29+19.0	57.9	L	10
7+14.5	27.7	R	10
11+03.0	27.7	R	10
18+54.7	44.5	R	10
18+84.9	56.5	R	10
19+89.6	47.1	R	10
21+05.0	36.2	R	10
26+46.0	49.6	R	12
26+62.7	49.6	R	12
29+09.3	104.3	R	10
29+13.2	61.1	R	10
29+17.0	44.1	R	10
29+31.3	54.0	R	10
30+09.7	50.8	R	10
Total:			304

TABLE OF TYPE 1 DETECTABLE WARNINGS (CONTINUED)

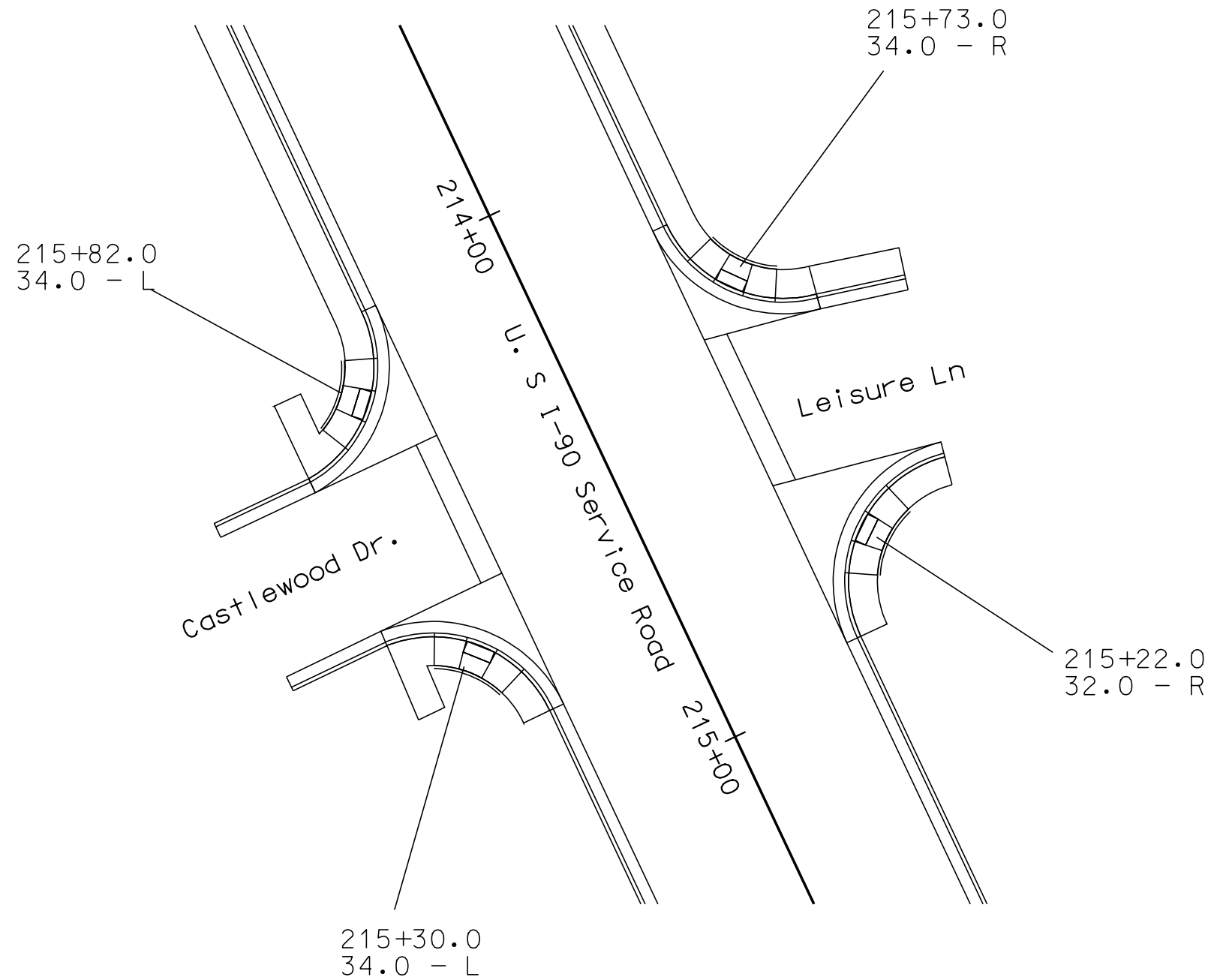
US 16B EASTBOUND - PCN I24B			
Station	Offset	L/R	Quantity (SqFt)
181+45.0	73.0	R	10
182+28.0	73.0	R	10
182+64.0	73.0	R	10
0+78.0	73.0	R	10
1+34.0	73.0	R	10
2+09.0	73.0	R	10
Total:			60
US 16B WESTBOUND - PCN I24C			
Station	Offset	L/R	Quantity (SqFt)
181+45.0	73.0	L	10
182+28.0	73.0	L	10
182+64.0	73.0	L	10
0+78.0	73.0	L	10
1+34.0	73.0	L	10
2+09.0	73.0	L	10
Total:			60

PLOT SCALE - 25.000000:1.000000

PLOTTED FROM - TRRC12608

DETECTABLE WARNING REPLACEMENT LOCATIONS

US I-90 Service Road I-90 MRM 47.674
PCN I24A



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	090EF-452, 044-452 016WB-452 016EB-452	7	24

Plotting Date: 24-FEB-2011

FILE - U:\REGIONRC\PRJ\2011RCREGMAINT\PLANS\044-452 REPAIR ADA PANELS\6556RCL0556MEGN I23UL07

PLOT SCALE - 40.000000:1.000000

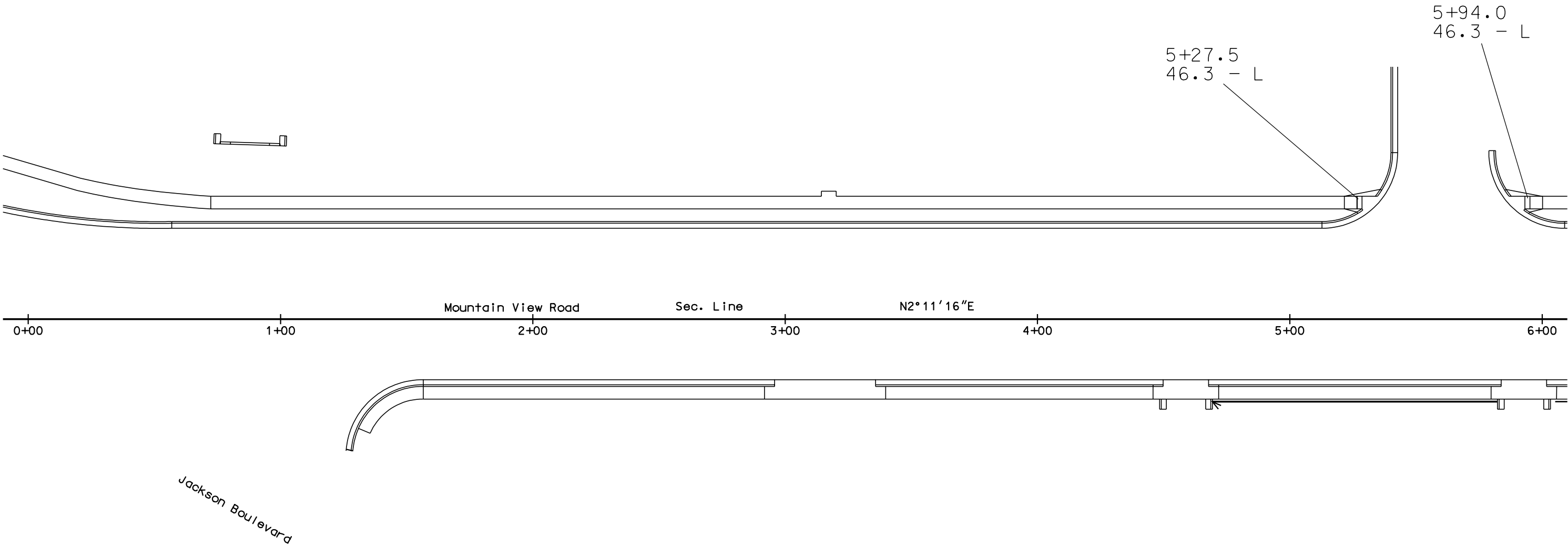
PLOTTED FROM - TRRC12608

DETECTABLE WARNING REPLACEMENT LOCATIONS

SD HIGHWAY 44
PCN I23U

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090EF-452, 044-452		
	016WB-452 016EB-452		

Plotting Date: 24-FEB-2011



PLOT SCALE - 40.000000:1.000000

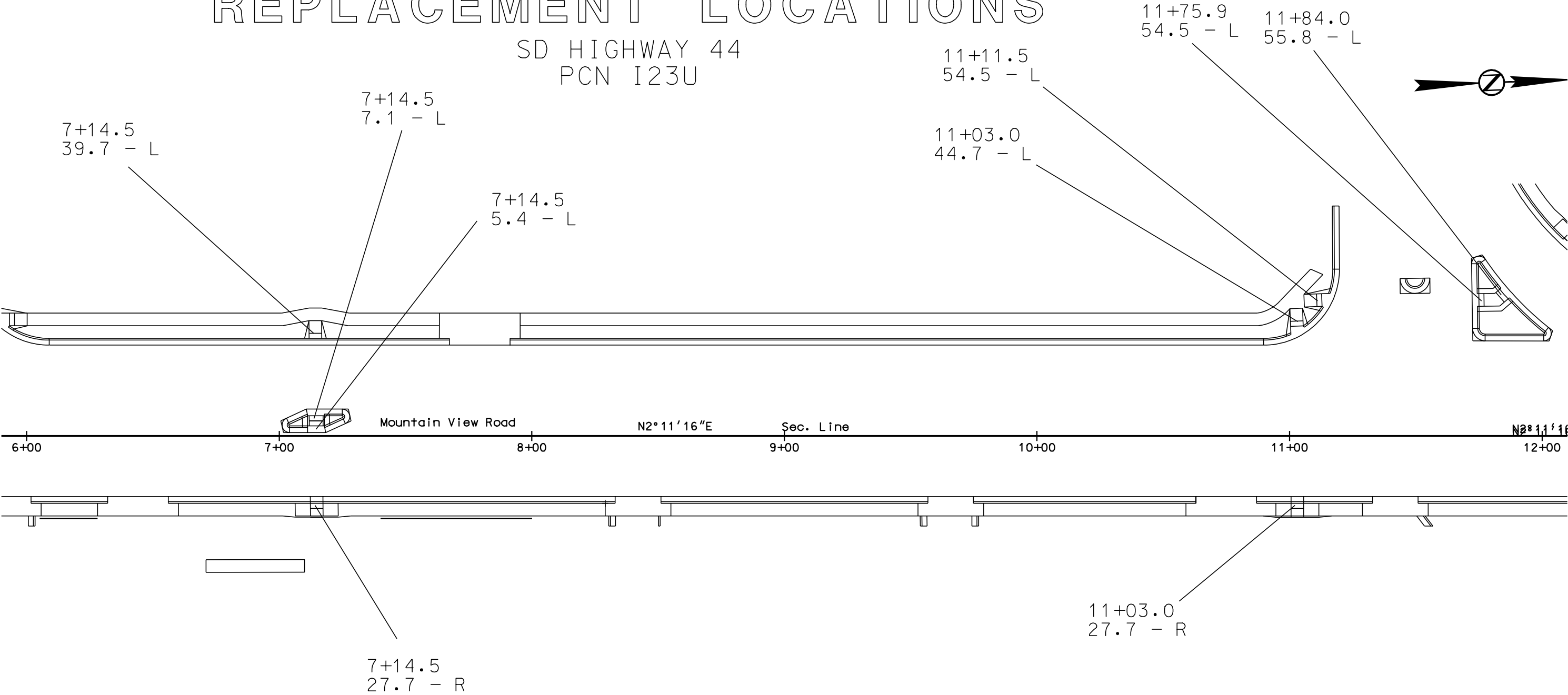
PLOTTED FROM - TRRC12608

DETECTABLE WARNING REPLACEMENT LOCATIONS

SD HIGHWAY 44
PCN I23U

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090EF-452, 044-452	9	24
	016WB-452 016EB-452		

Plotting Date: 24-FEB-2011



FILE - U:\REGION\RC\PR\2011\RC\GMAINT\PLANS\044-452 REPAIR ADA PANELS\PLAN\DOWNNAME - I23U\09

PLOT SCALE - 40.000000:1.000000

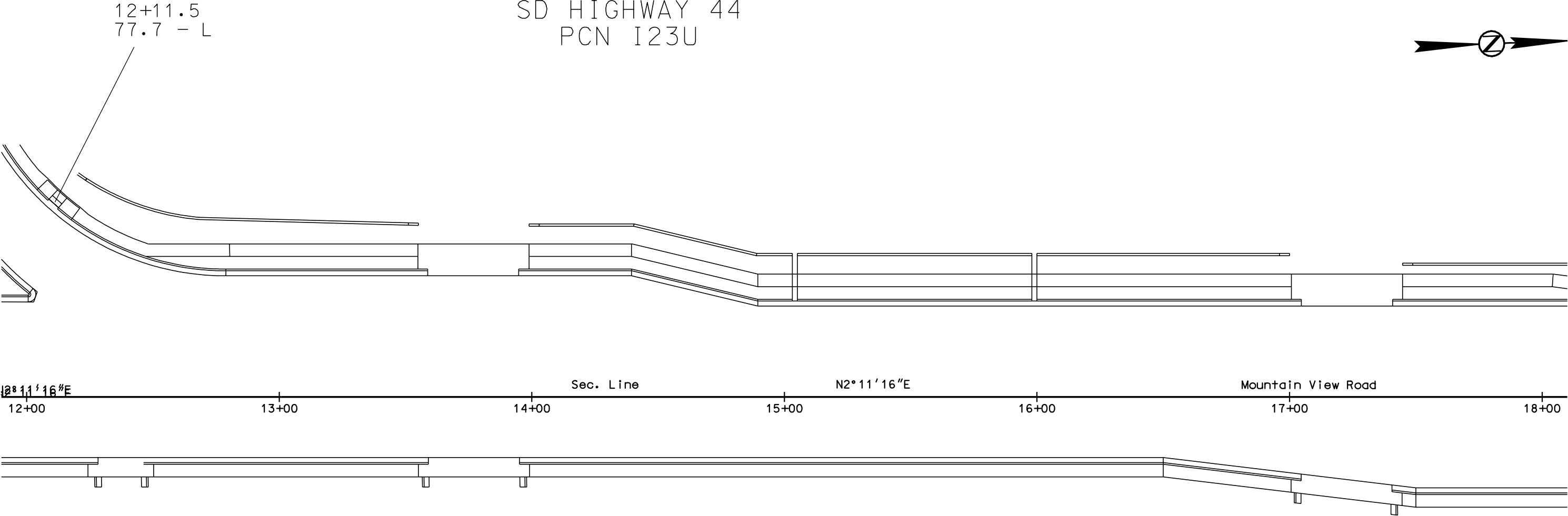
PLOTTED FROM - TRRC12608

DETECTABLE WARNING REPLACEMENT LOCATIONS

SD HIGHWAY 44
PCN I23U

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090EF-452, 044-452 016WB-452 016EB-452		
		10	24

Plotting Date: 24-FEB-2011



FILE - U:\REGION\RC\PR\2011\REGION\MAINT\PLANS\044-452 REPAIR ADA PANELS\PLAN\LDENNAME - I23U_10

PLOT SCALE - 40.00000:1.000000

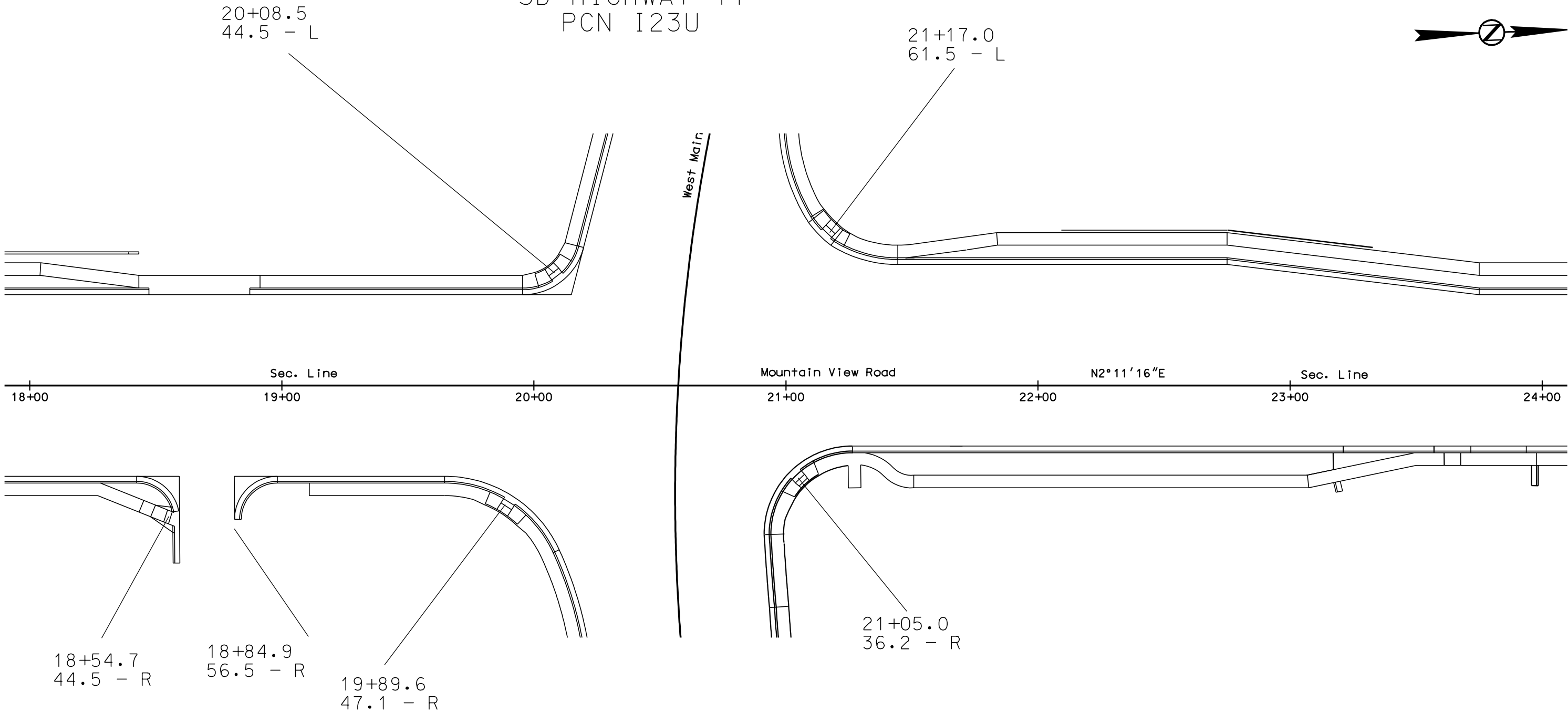
PLOTTED FROM - TRRC12608

DETECTABLE WARNING REPLACEMENT LOCATIONS

SD HIGHWAY 44
PCN I23U

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090EF-452, 044-452	11	24
	016WB-452 016EB-452		

Plotting Date: 24-FEB-2011



FILE - U:\REGION\RC\PR\2011\RC\GMAINT\PLANS\044-452 REPAIR ADA PANELS\PLAN\LOGNAME - I23U11

PLOT SCALE - 40.000000:1.000000

PLOTTED FROM - TRRC12608

DETECTABLE WARNING REPLACEMENT LOCATIONS

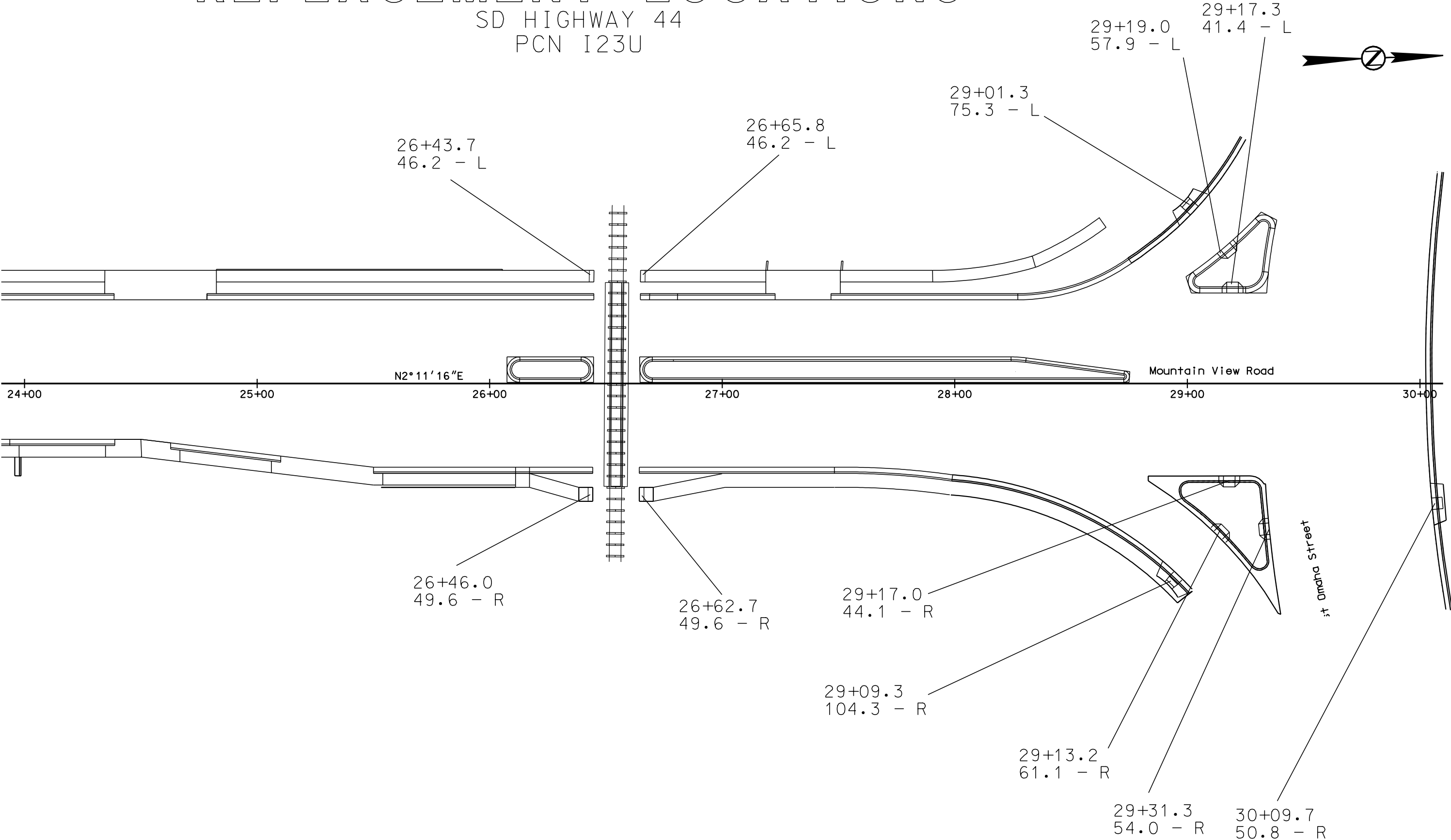
SD HIGHWAY 44
PCN I23U

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090EF-452, 044-452		
	016WB-452 016EB-452		

12

24

Plotting Date: 24-FEB-2011



PLOT SCALE - 40.000000:1.000000

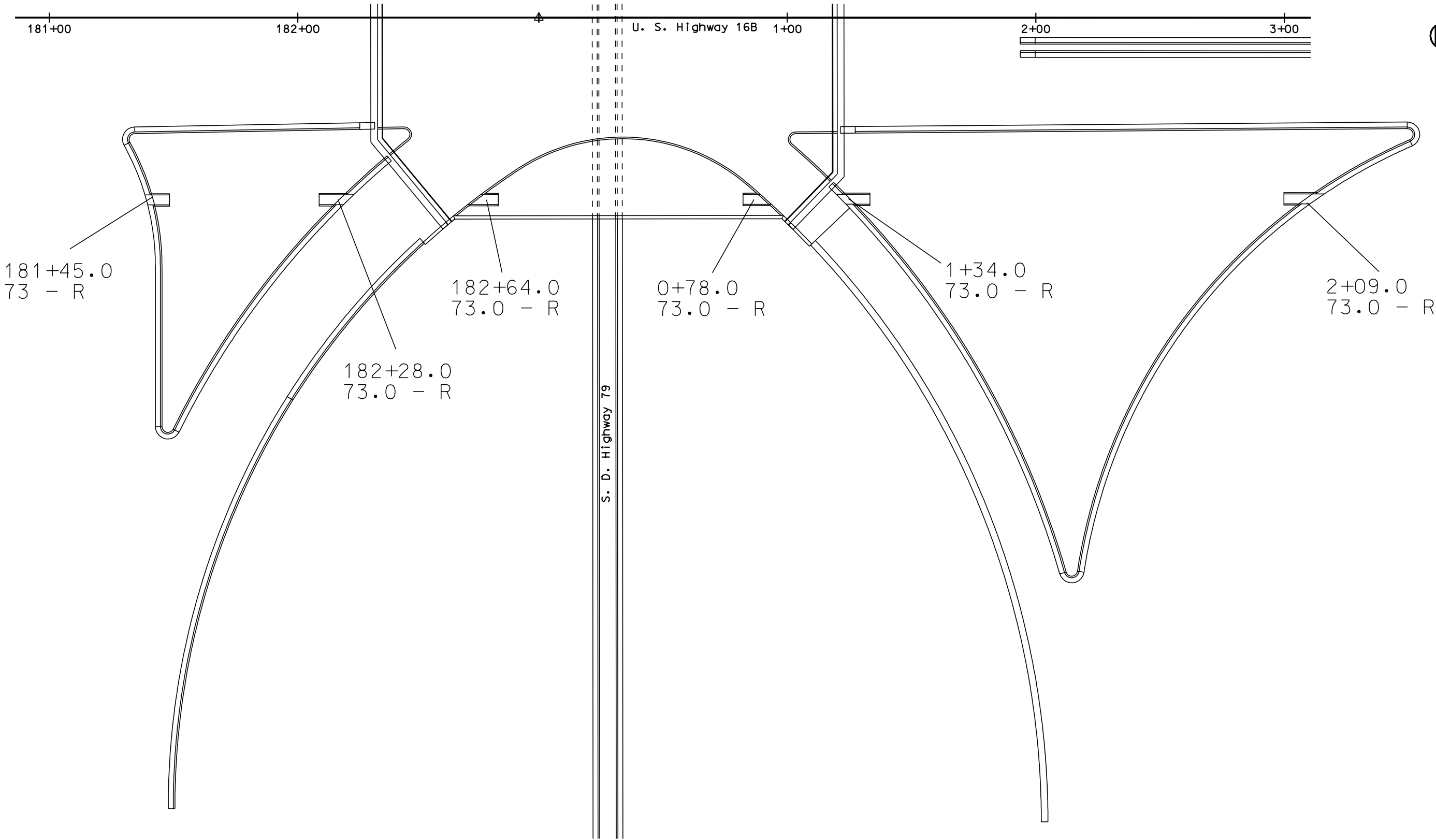
PLOTTED FROM - TRRC12608

DETECTABLE WARNING REPLACEMENT LOCATIONS

INTERSECTION HIGHWAYS S. D. 79 & U. S. 16B MRM 67.636
PCN I24B

STATE OF SOUTH DAKOTA	PROJECT	SHEET 13	TOTAL SHEETS 24
	090EF-452, 044-452		
	016WB-452 016EB-452		

Plotting Date: 24-FEB-2011



FILE - U:\REGION\RC\PR\2011\RC\REGMAINT\PLANS\044-452 REPAIR ADA PANELS\3151R181C16A.DGN

PLOT SCALE - 40.000000:1.000000

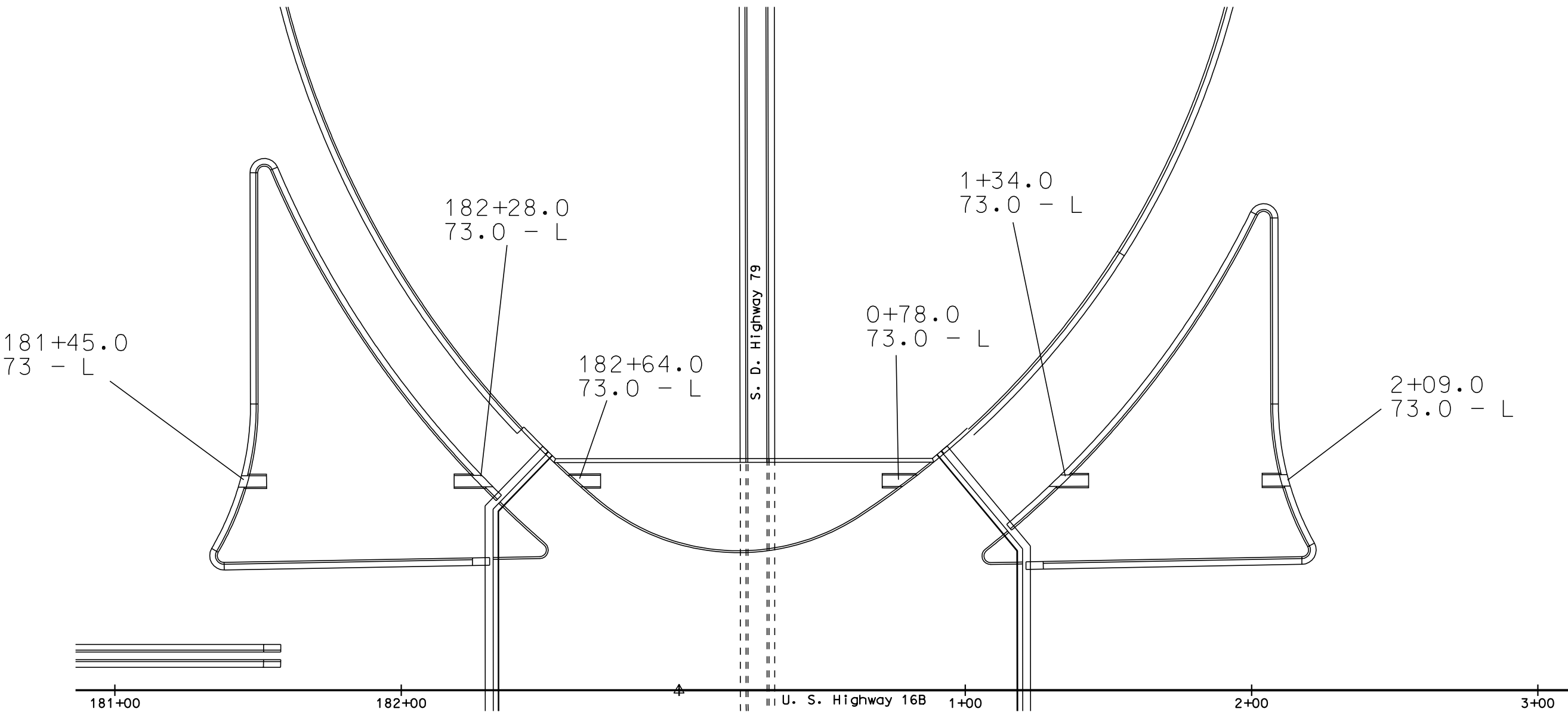
PLOTTED FROM - TRRC12608

DETECTABLE WARNING REPLACEMENT LOCATIONS

INTERSECTION HIGHWAYS S. D. 79 & U. S. 16B MRM 67.636
PCN 124C

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090EF-452, 044-452 016WB-452 016EB-452		
		14	24

Plotting Date: 24-FEB-2011



FILE - U:\REGIONRC\PR\2011\RCREGMAINT\PLANS\044-452 REPAIR ADA PANELS\3151R181CRAE.BGN\81C616B

Plotting Date: 24-FEB-2011

The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

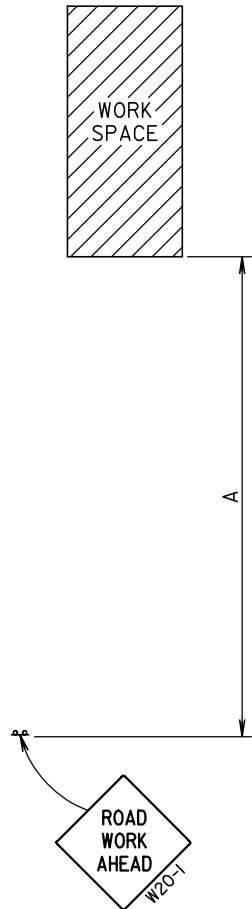
The signs illustrated shall be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 75	1000



July 1, 2005

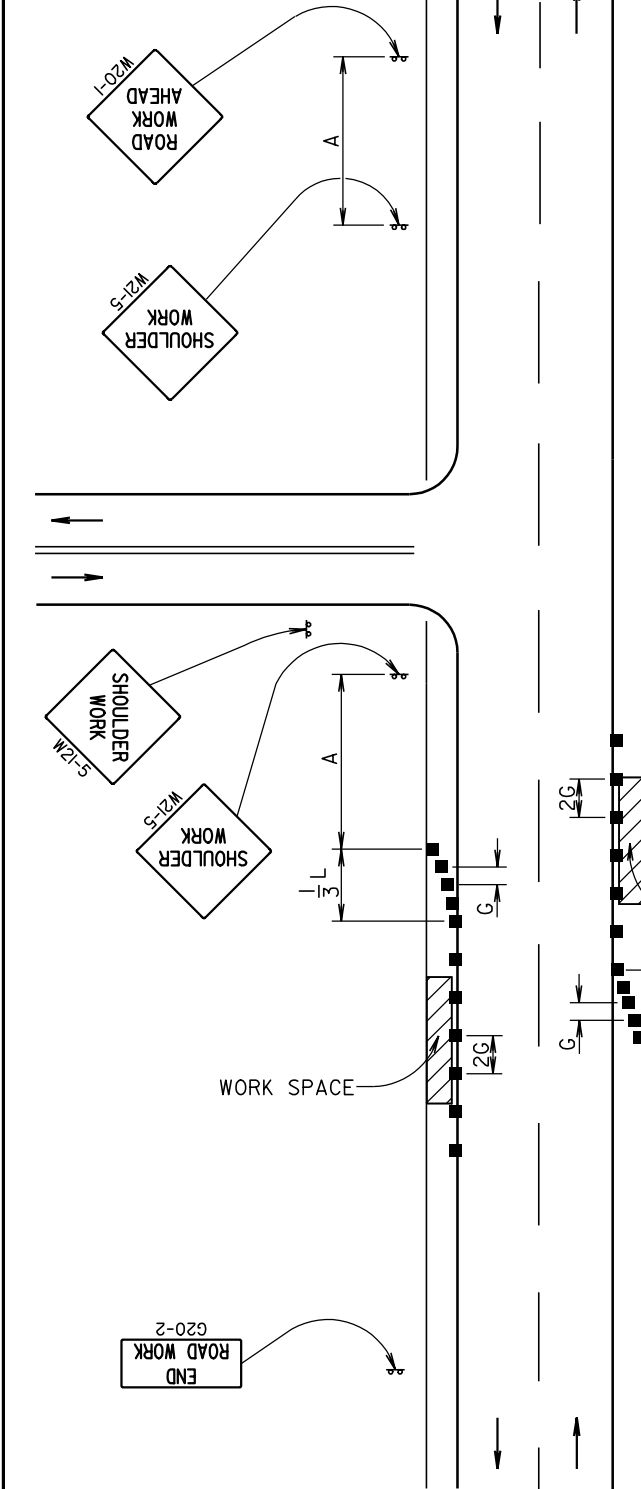
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GUIDES FOR TRAFFIC CONTROL DEVICES
WORK BEYOND THE SHOULDER

PLATE NUMBER
634.01

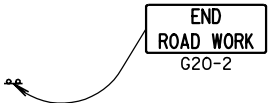
Sheet 1 of 1

Published Date: 1st Qtr. 2011



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

Channelizing Device



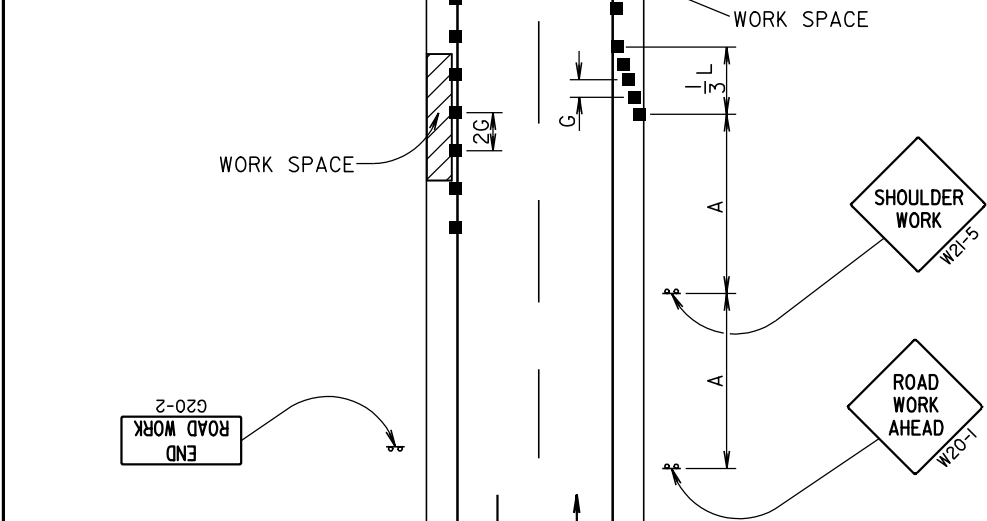
The channelizing devices shall be drums or type II barricades if traffic control must remain overnight or longer.

For short duration operations (1 hour or less) all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.



July 1, 2005

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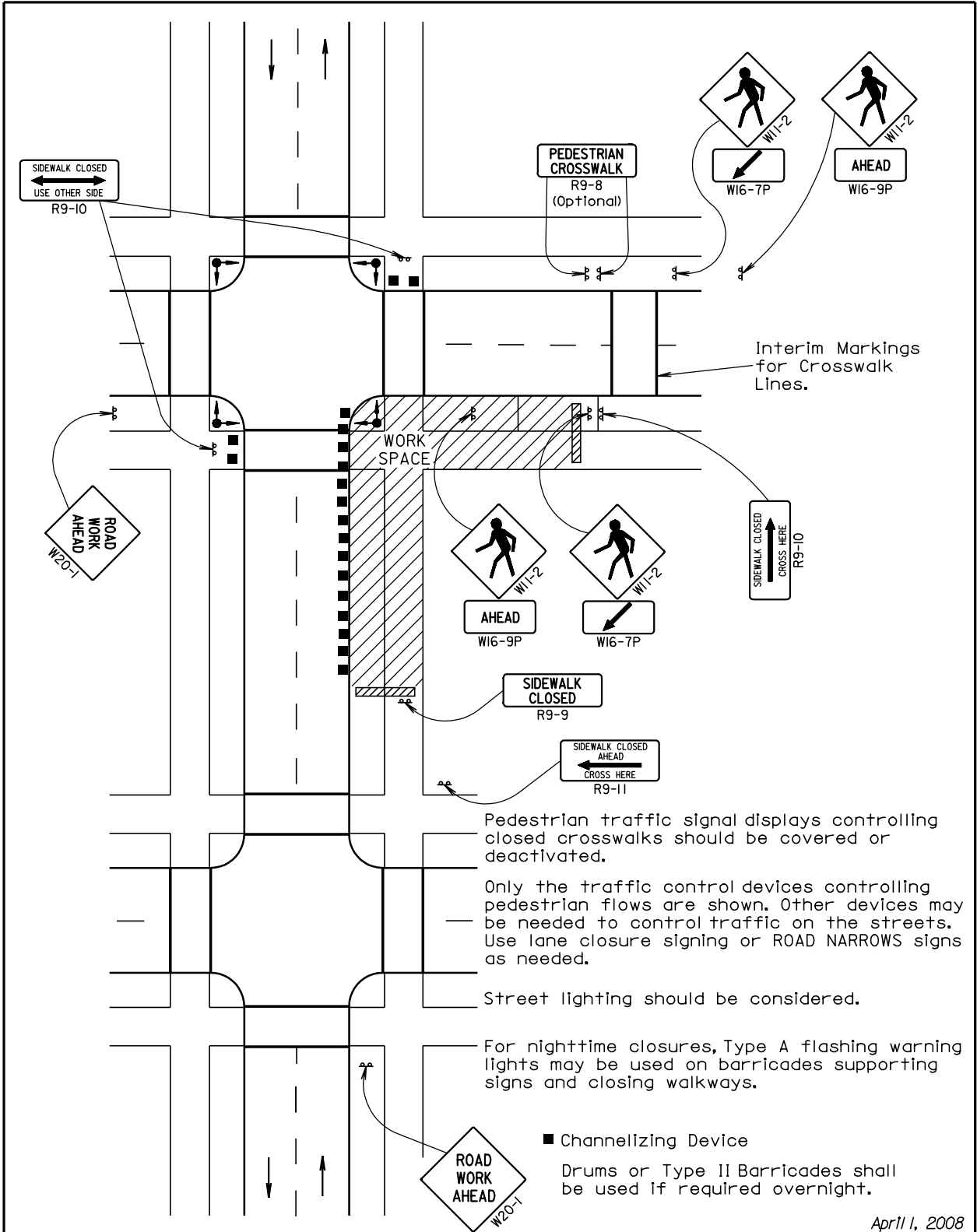
GUIDES FOR TRAFFIC CONTROL DEVICES
WORK ON SHOULDERS

PLATE NUMBER
634.03

Sheet 1 of 1

Published Date: 1st Qtr. 2011

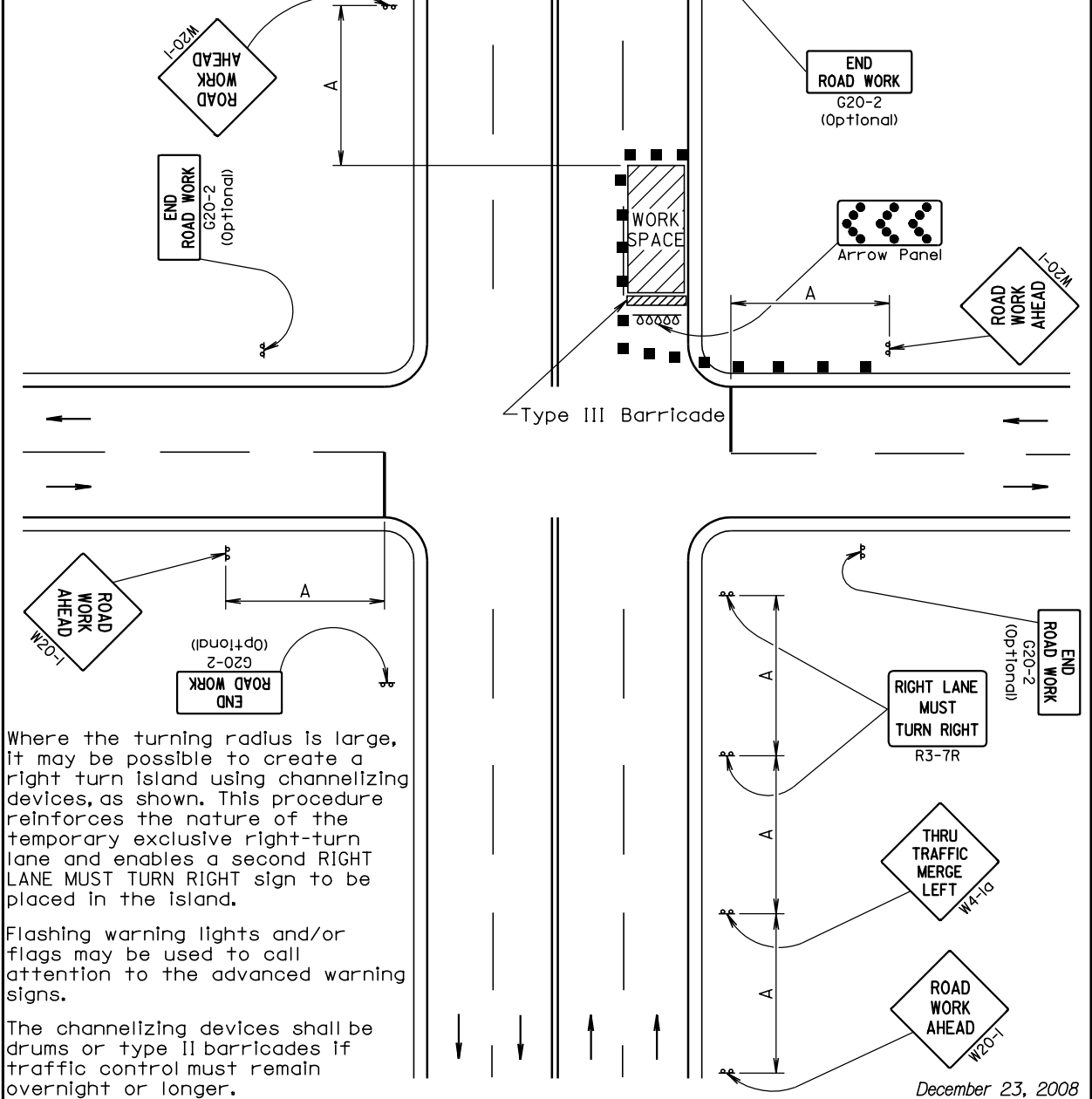
Plotting Date: 24-FEB-2011



April 1, 2008

For intersection approaches reduced to a single lane, left-turning movements may be prohibited to maintain capacity for through traffic.

The standard procedure is to close on near side of the intersection any lane that is not carried through the intersection. However, when this results in the closing of a right lane having significant right-turning movements, then the right lane may be restricted to right turns only, as shown.



December 23, 2008

Plotting Date: 24-FEB-2011

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)			Taper Length (Feet)	Spacing of Channelizing Devices (Feet)
(M.P.H.)	(A)	(B)	(C)	(L)	(G)
0 - 30	200			180	25
35 - 40	350			320	25
45 - 50	500			600	50
55	750			660	50
60 - 65	1000			780	50

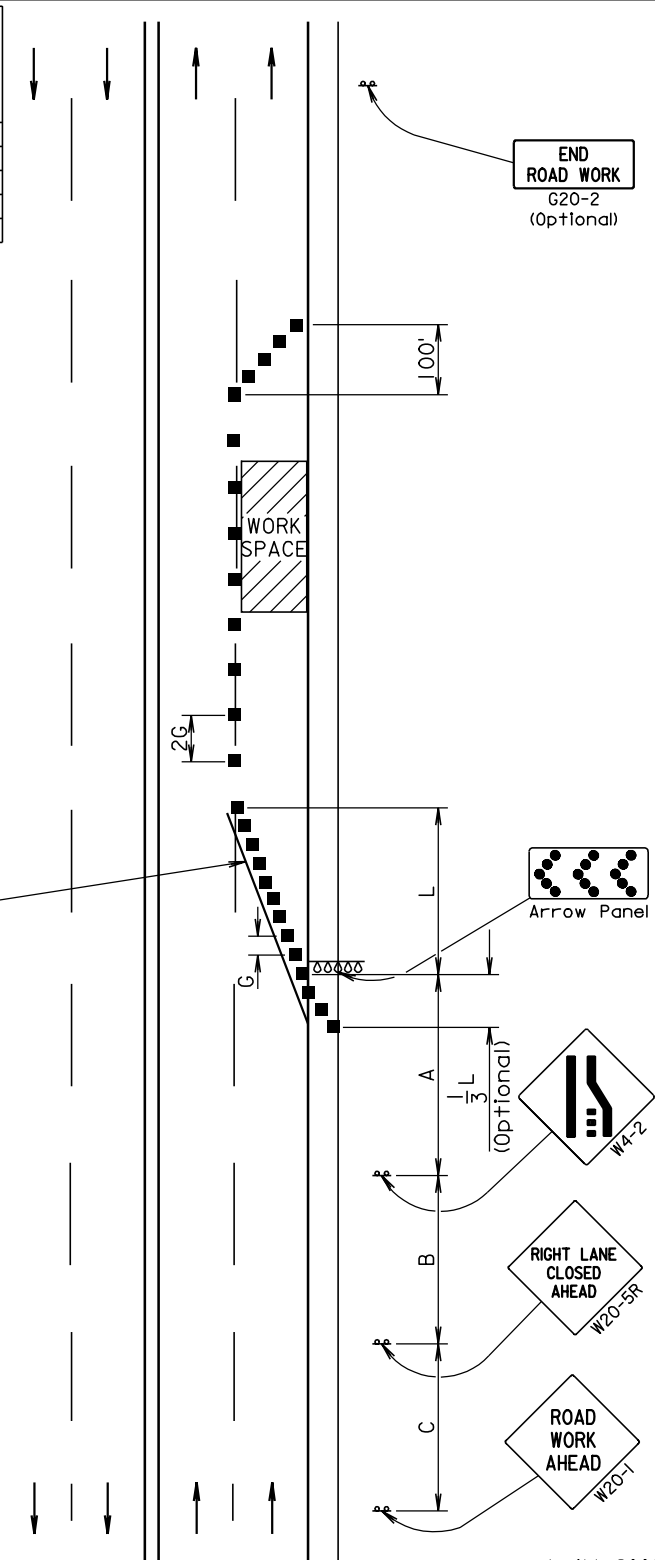
■ Channelizing Device

Drums or Type II Barricades shall be used if required overnight.

42" cones may be used along centerline

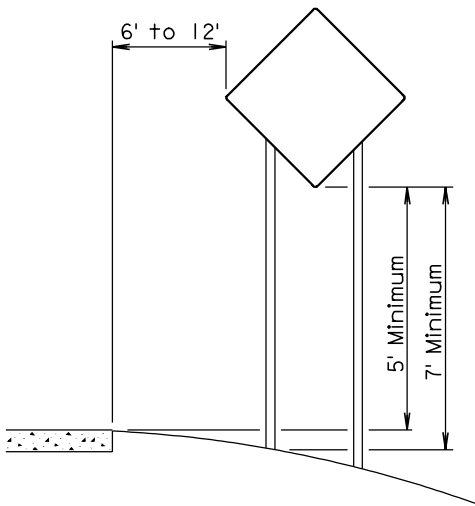
Longitudinal dimensions may be adjusted to fit project conditions such as horizontal curves, vertical curves, and other site restrictions.

Four inch white temporary pavement marking shall be used if traffic control must remain overnight or longer.

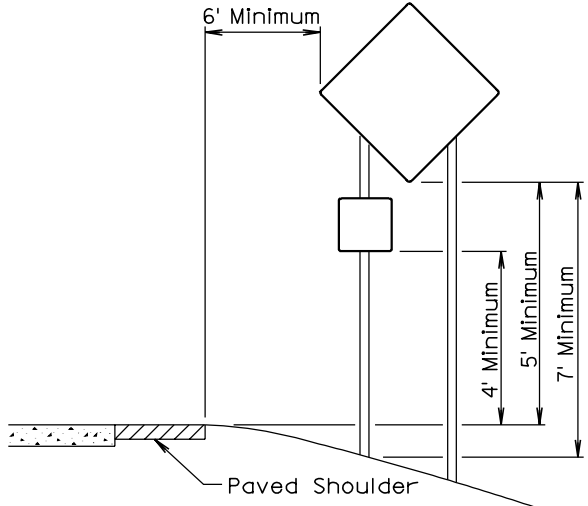


April 11, 2008

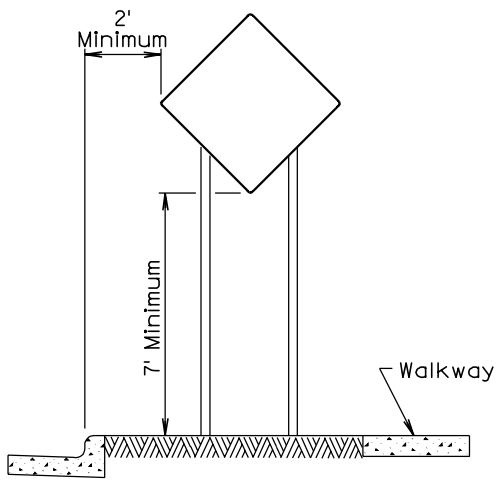
Published Date: 1st Qtr. 2011	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES 4-LANE UNDIVIDED, RIGHT LANE CLOSED	PLATE NUMBER 634.47
			Sheet 1 of 1



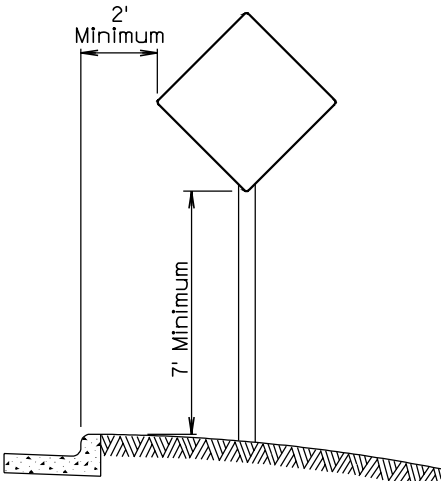
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



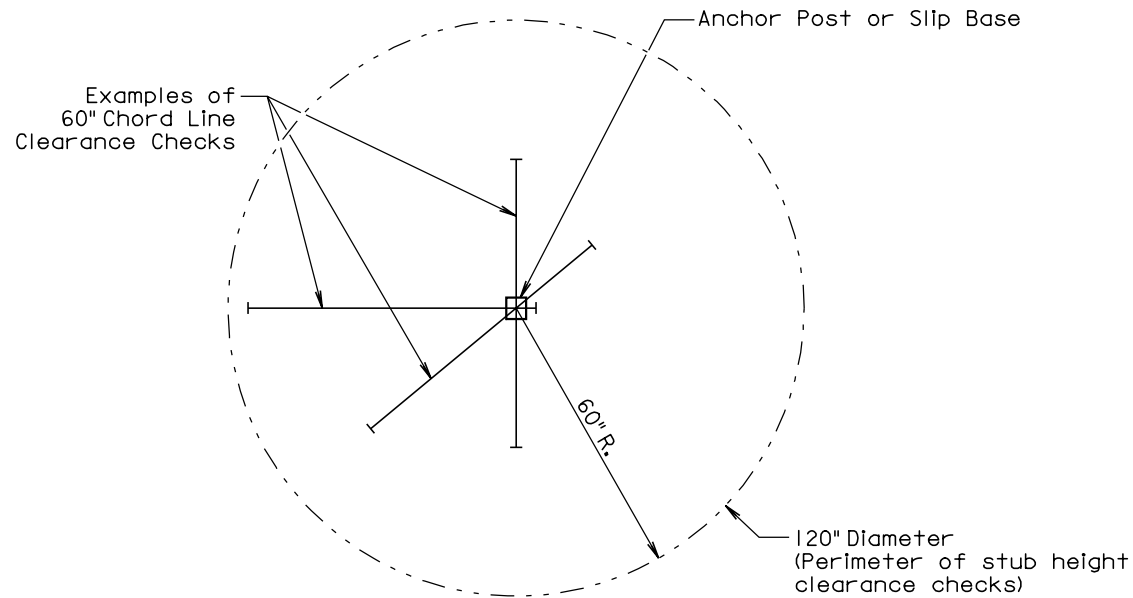
URBAN DISTRICT



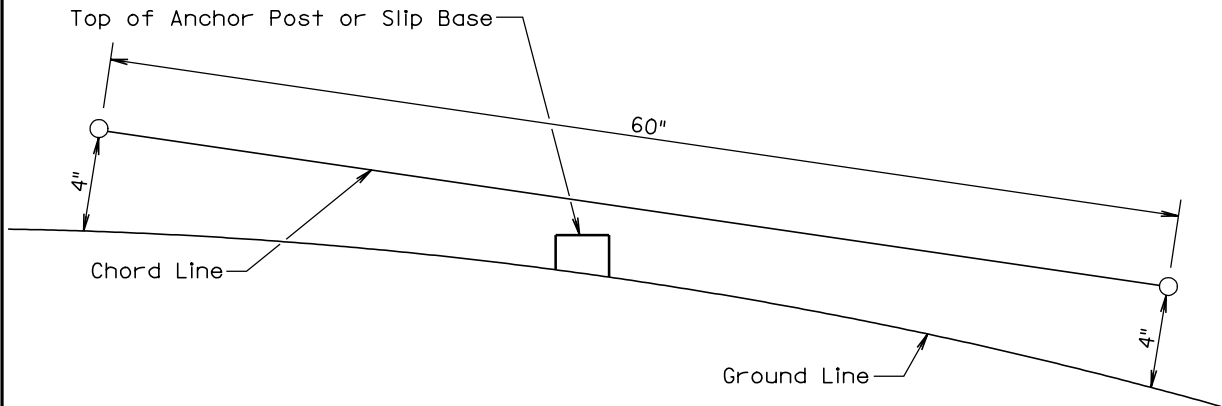
URBAN DISTRICT

December 23, 2003

Published Date: 1st Qtr. 2011	S D D O T	BREAKAWAY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

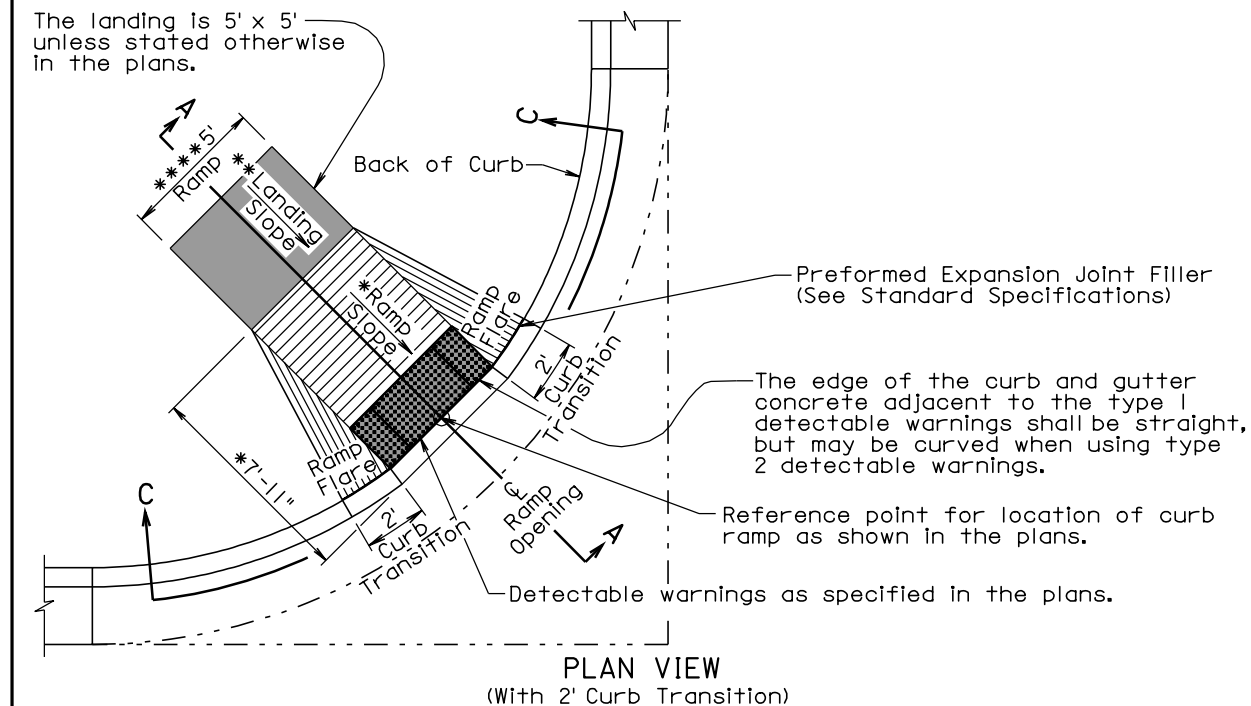
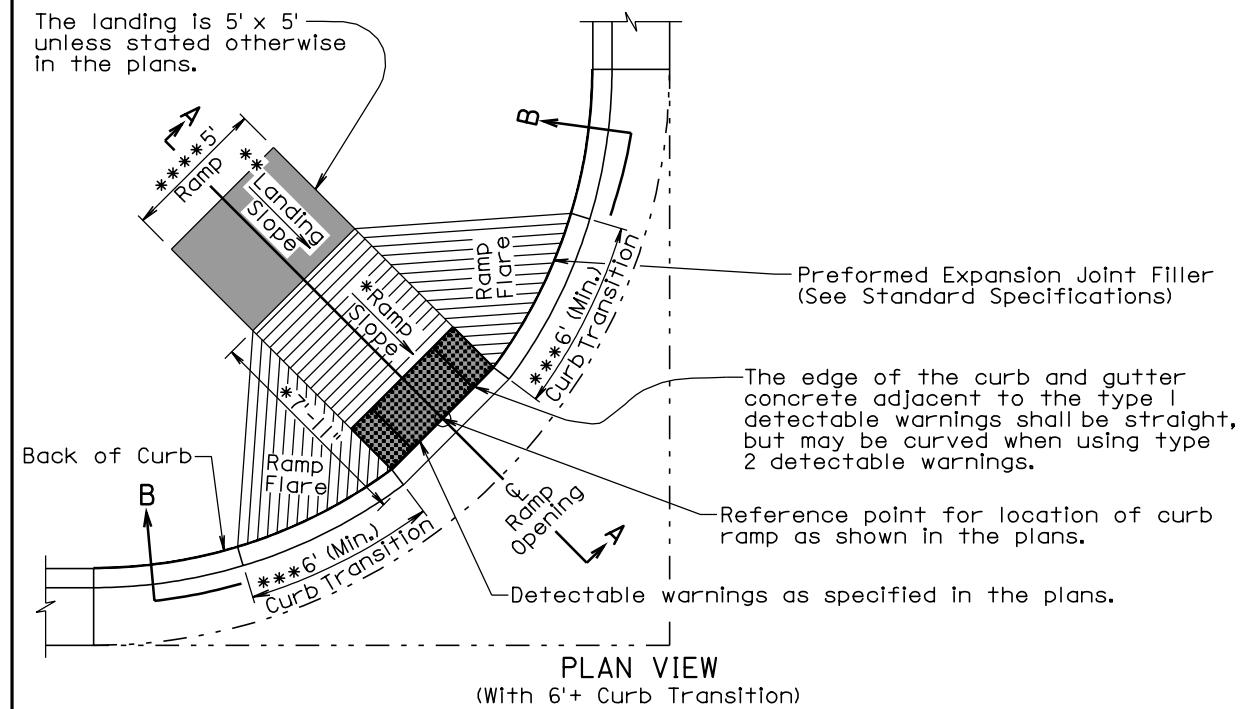
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

<i>Published Date: 1st Qtr. 2011</i>	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

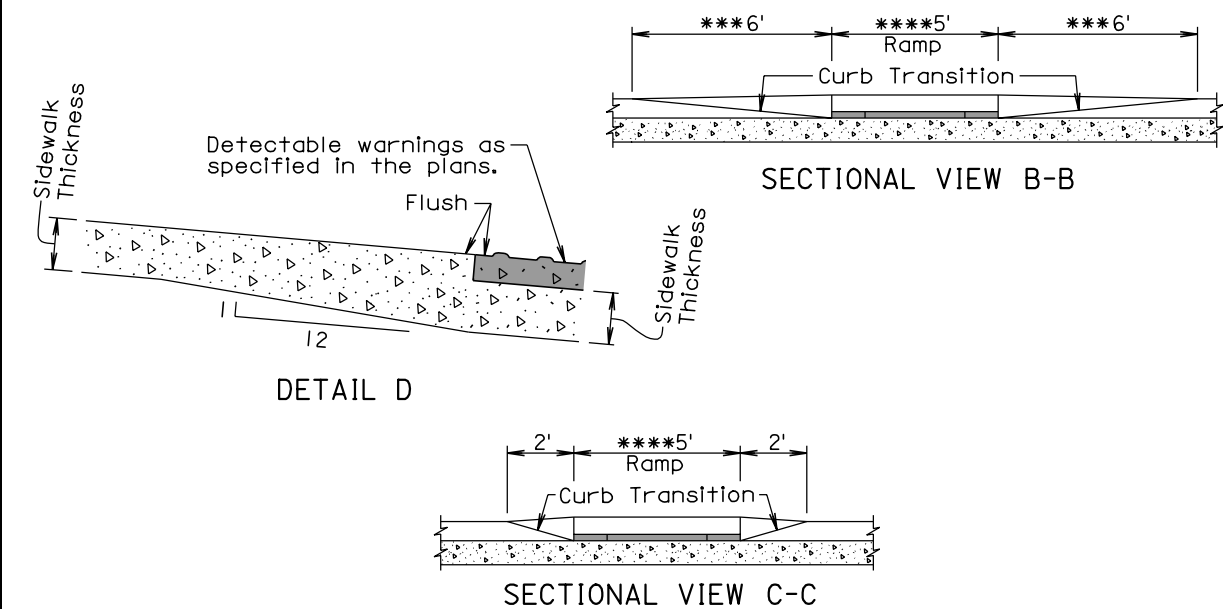
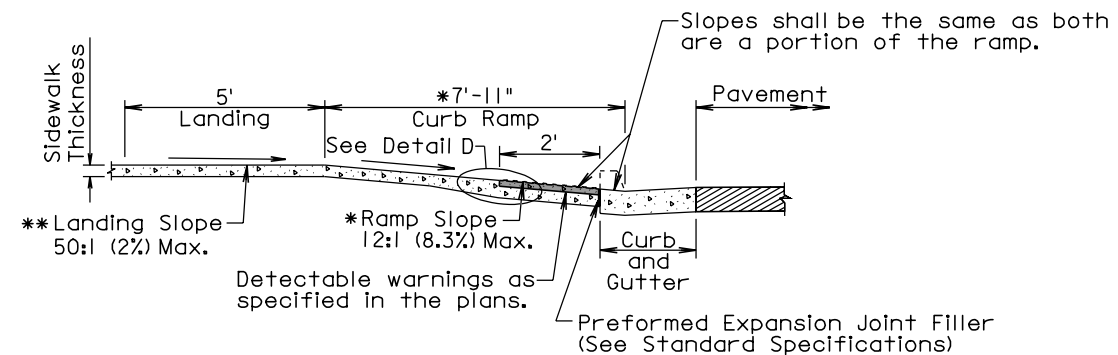
Plotting Date: 24-FEB-2011



September 14, 2009

Published Date: 1st Qtr. 2011	S D D O T	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 1 of 3

- The ramp slope shall be 12:1 (8.3%) maximum. The ramp length shall not exceed 15' unless stated otherwise in the plans. Ramp slopes are designed at 12:1 (8.3%) unless stated otherwise in the plans.
- * The cross slope of the ramp shall not be steeper than 50:1 (2%).
 - The 7'-11" dimension was computed based on a flat roadway profile, a continuous 2% theoretical slope from top of theoretical curb to the top of ramp, and a 6" high curb. The dimension shall be adjusted based on the curb type shown in the plans, the roadway geometrics, and the sidewalk geometrics.
 - ** The landing slope shall not be steeper than 50:1 (2%) in any direction of pedestrian travel.
 - *** The curb transition shall be a minimum of 6' long, a maximum of 10' long, and the curb transition slope shall not be steeper than 10:1 (10%) unless stated otherwise in the plans.
 - **** The ramp width is 5' unless stated otherwise in the plans.



September 14, 2009

Published Date: 1st Qtr. 2011	S D D O T	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER 651.01
			Sheet 2 of 3

GENERAL NOTES:

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

For illustrative purpose only, PCC fillet sections are shown in the drawings. The curb ramp depicted on this standard plate may be used with a PCC fillet section, with curved curb and gutter, or with straight curb and gutter.

For illustrative purpose only, the curb ramp location is shown at the center of a PCC fillet section. The curb ramp shall be placed at the location stated in the plans.

Sidewalk shall not be placed adjacent to the ramp flares when a 2' curb transition is used unless shown otherwise in the plans.

* Care shall be taken to ensure a uniform grade on the ramp, free of sags and short grade changes.

Surface texture of the ramp shall be obtained by coarse brooming transverse to the slope of the ramp.

The normal gutter line profile shall be maintained through the area of the ramp.

Joints shall be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking.

Care shall be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

There will be no separate payment for curb ramps. The curb ramp shall be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk bid item. The square foot area of the detectable warnings shall be included in the measured and paid for quantity of sidewalk.

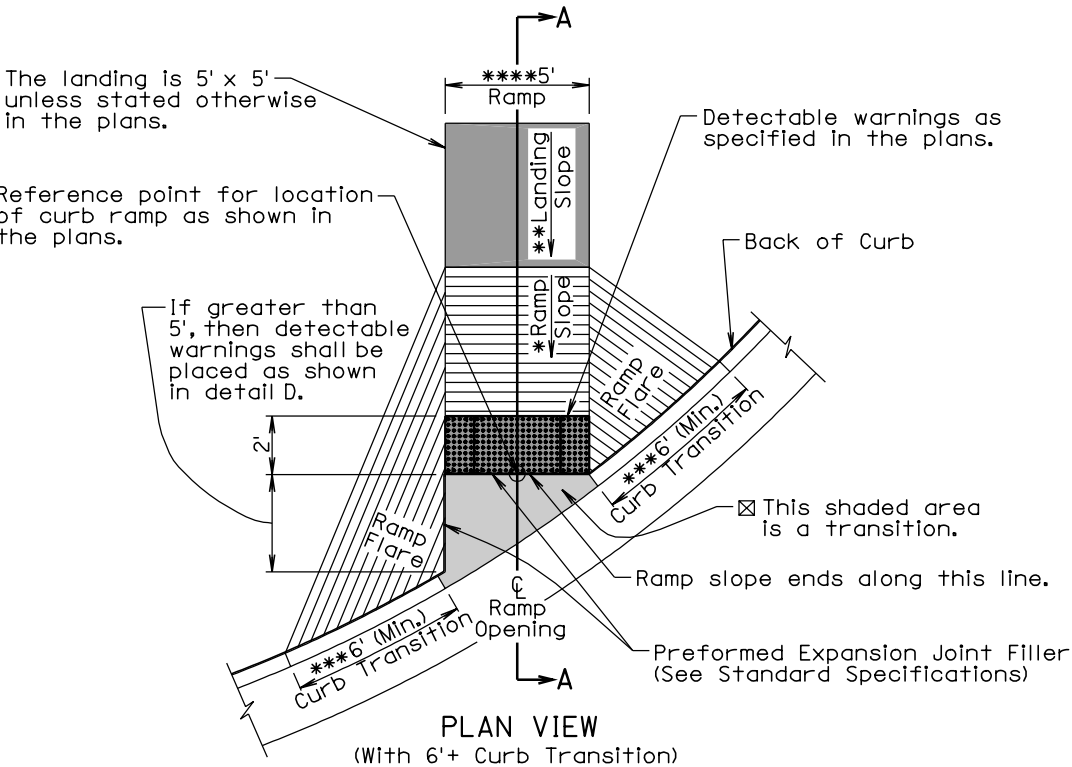
The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.

The type 1 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

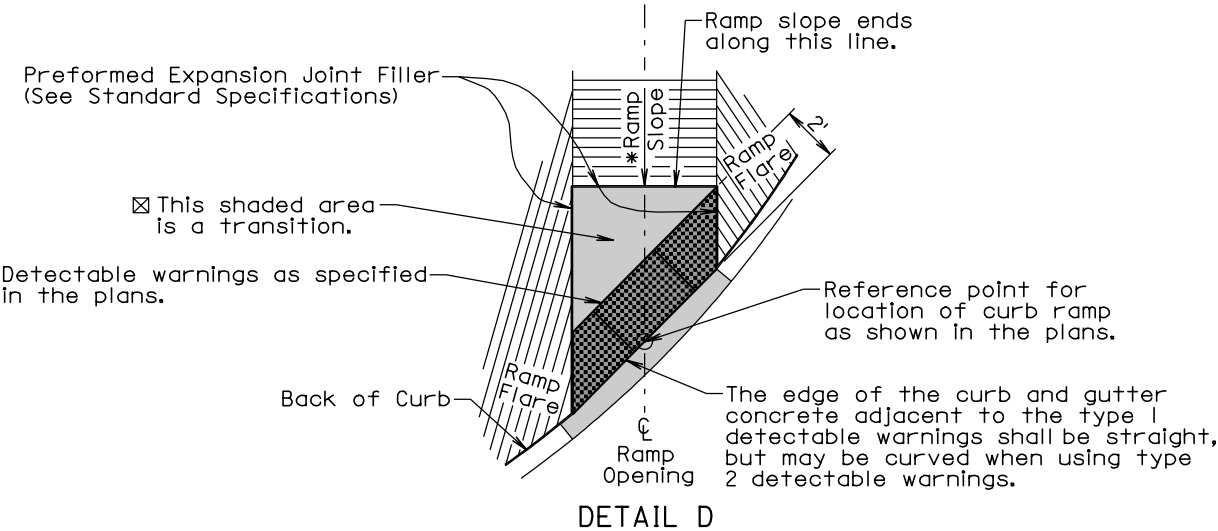
September 14, 2009

Published Date: 1st Qtr. 2011	S D D O T	TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)	PLATE NUMBER
			651.01
			Sheet 3 of 3



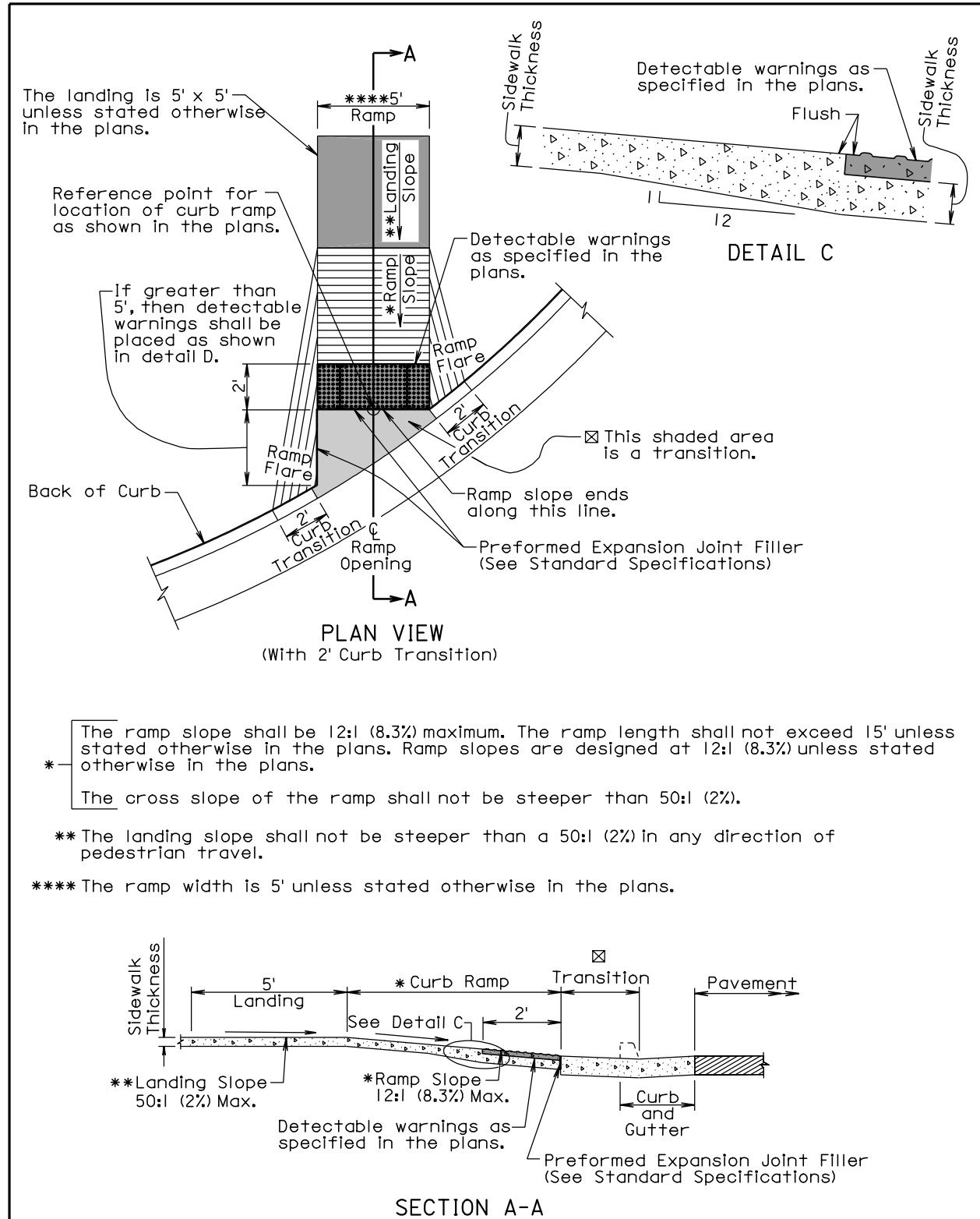
☒ The slope within the transition area shall not be steeper than a 20:1 (5%). The concrete within the transition shall be placed monolithic with the curb and gutter or fillet section concrete. The concrete thickness within the transition shall be the same as the curb and gutter or fillet section concrete thickness.

***The curb transition shall be a minimum of 6' long, a maximum of 10' long, and the curb transition slope shall not be steeper than a 10:1 (10%) unless stated otherwise in the plans.



June 26, 2009

Published Date: 1st Qtr. 2011	S D D O T	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER
			651.02
			Sheet 1 of 3



- * The ramp slope shall be 12:1 (8.3%) maximum. The ramp length shall not exceed 15' unless stated otherwise in the plans. Ramp slopes are designed at 12:1 (8.3%) unless stated otherwise in the plans.
- The cross slope of the ramp shall not be steeper than 50:1 (2%).
- **The landing slope shall not be steeper than a 50:1 (2%) in any direction of pedestrian travel.
- ***The ramp width is 5' unless stated otherwise in the plans.

June 26, 2009

Published Date: 1st Qtr. 2011	S D D O T	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER
			651.02
			Sheet 2 of 3

GENERAL NOTES:

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

The curb ramp depicted on this standard plate may be used with a PCC fillet section, with curved curb and gutter, or with straight curb and gutter. The curb ramp shall be placed at the location stated in the plans.

Sidewalk shall not be placed adjacent to the ramp flares when a 2' curb transition is used unless shown otherwise in the plans.

* Care shall be taken to ensure a uniform grade on the ramp, free of sags and short grade changes.

Surface texture of the ramp shall be obtained by coarse brooming transverse to the slope of the ramp.

The normal gutter line profile shall be maintained through the area of the ramp.

Joints shall be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking.

Care shall be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

There will be no separate payment for curb ramps. The curb ramp shall be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk bid item. The square foot area of the detectable warnings shall be included in the measured and paid for quantity of sidewalk.

The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.

All costs for furnishing and installing the transition area at the base of the ramp shall be incidental to the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used and shall be incidental to the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.

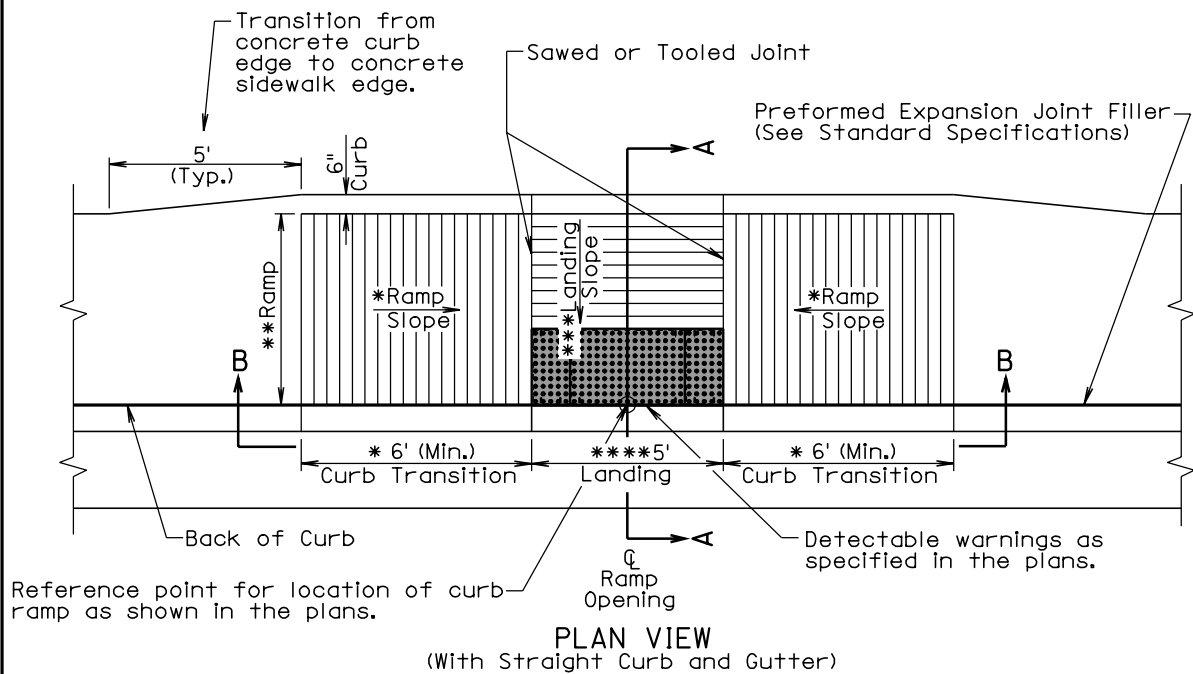
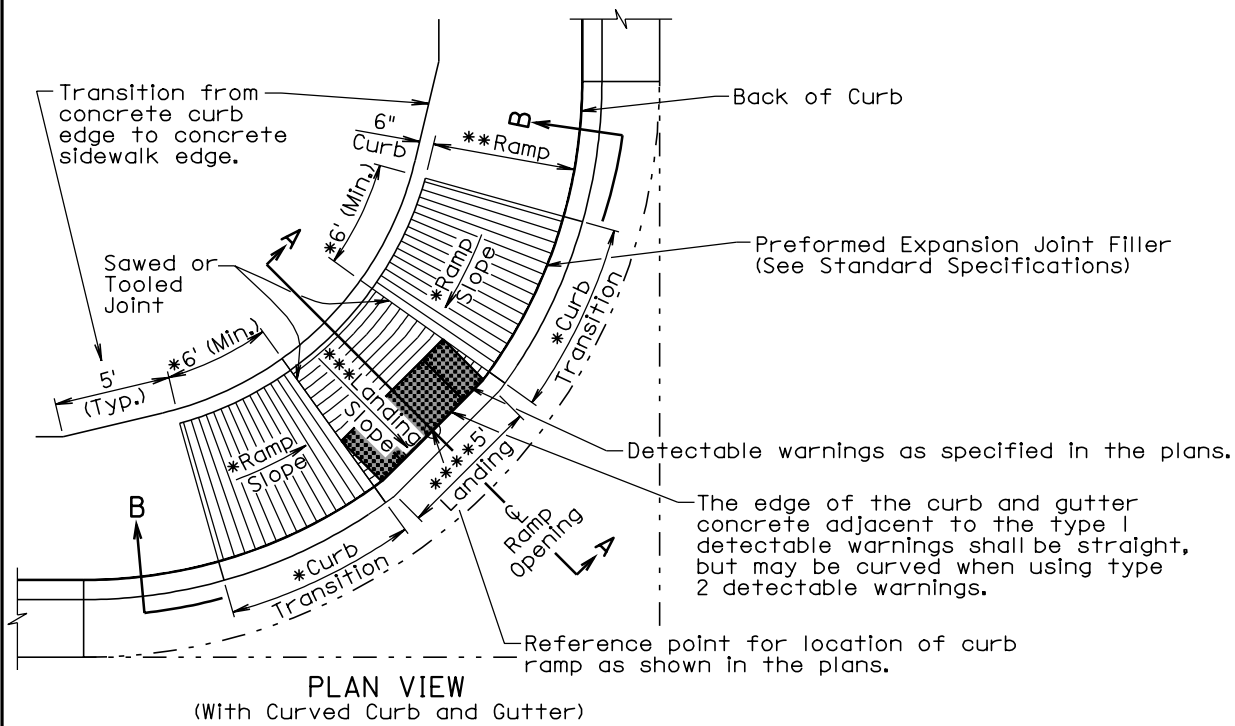
The type 1 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

June 26, 2009

Published Date: 1st Qtr. 2011	S D D O T	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER
			651.02
			Sheet 3 of 3

Plotting Date: 24-FEB-2011



December 23, 2010

Published Date: 1st Qtr. 2011	S D D O T	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 1 of 3

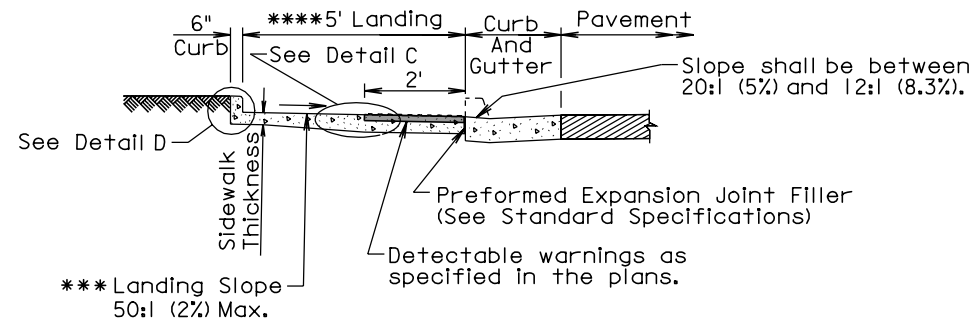
* The curb transition slope shall match the ramp slope. The ramp slope, at any location of the ramp, shall be 12:1 (8.3%) maximum. The ramp length shall not exceed 15' unless stated otherwise in the plans. Ramp slopes are designed at 12:1 (8.3%) unless stated otherwise in the plans. The minimum length of the curb transition shall be 6'.

** The ramp cross slope shall not be steeper than a 50:1 (2%) and the ramp width is 5' unless stated otherwise in the plans.

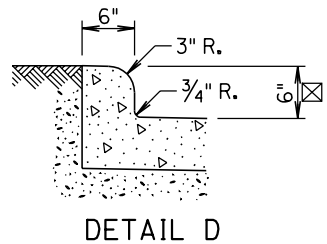
*** The landing slope shall not be steeper than a 50:1 (2%) in any direction of pedestrian travel.

**** The landing is 5' x 5' unless stated otherwise in the plans.

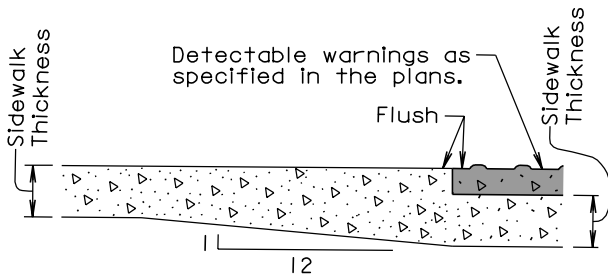
☒ The curb height shall be 6" unless stated otherwise in the plans.



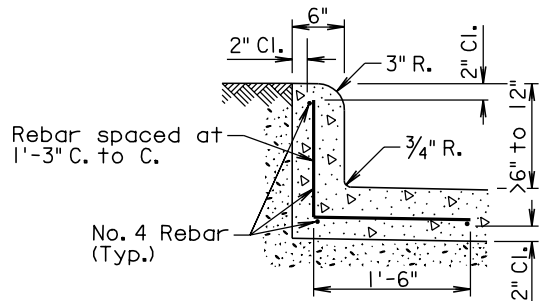
SECTION A-A



DETAIL D

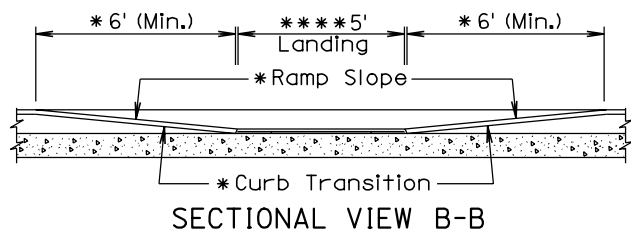


DETAIL C



DETAIL D

(Use this detail when the curb height is greater than 6" and less than 12")



SECTIONAL VIEW B-B

December 23, 2010

Published Date: 1st Qtr. 2011	S D D O T	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 2 of 3

GENERAL NOTES:

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

For illustrative purpose only, a PCC fillet section is shown in one of the drawings. The curb ramp depicted on this standard plate may be used with a PCC fillet section, with curved curb and gutter, or with straight curb and gutter.

The curb ramp shall be placed at the location stated in the plans.

Sidewalk adjacent to the curb ramp shall be as shown in the plans.

Care shall be taken to ensure a uniform grade on the ramp, free of sags and short grade changes.

Surface texture of the ramp shall be obtained by coarse brooming transverse to the slope of the ramp.

The normal gutter line profile shall be maintained through the area of the ramp.

Joints shall be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking (see plan view for joint location).

Care shall be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

When curb height is greater than 6" and less than 12", reinforcing steel is required in accordance with the detail on sheet 2 of 3. The reinforcing steel shall conform to ASTM A615, Grade 60. Cost for furnishing and installing the reinforcing steel shall be incidental to the contract unit price per square foot for the corresponding concrete sidewalk bid item.

There will be no separate payment for curb ramps. The curb ramp shall be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk bid item. The square foot area of the detectable warnings and the curb along the short radius shall be included in the measured and paid for quantity of sidewalk.

The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.

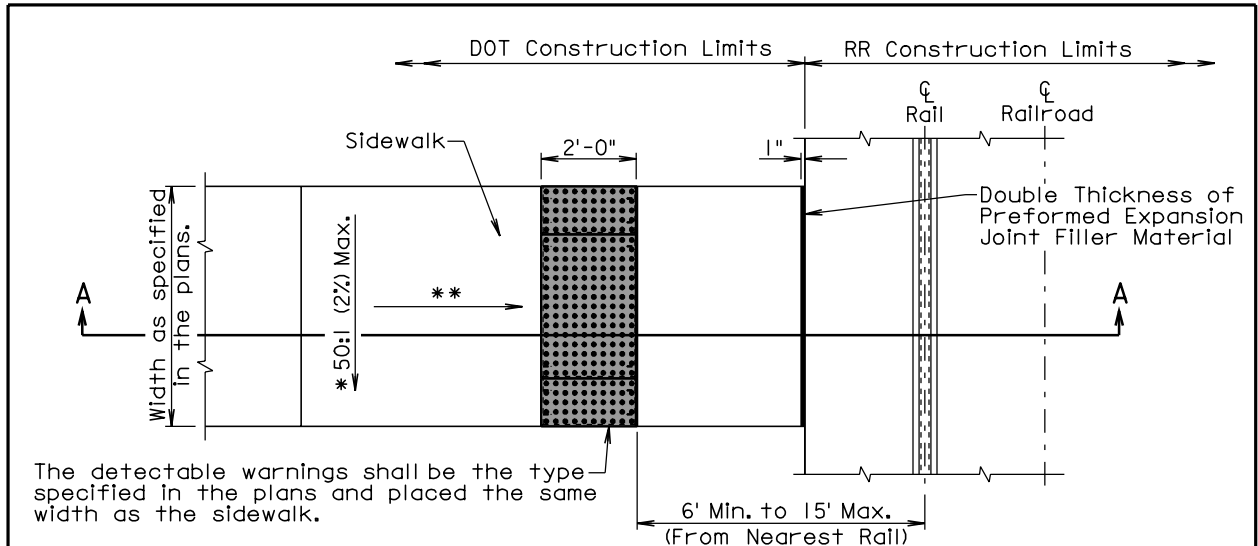
The type 1 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

December 23, 2010

<i>Published Date: 1st Qtr. 2011</i>	S D D O T	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 3 of 3

Plotting Date: 24-FEB-2011

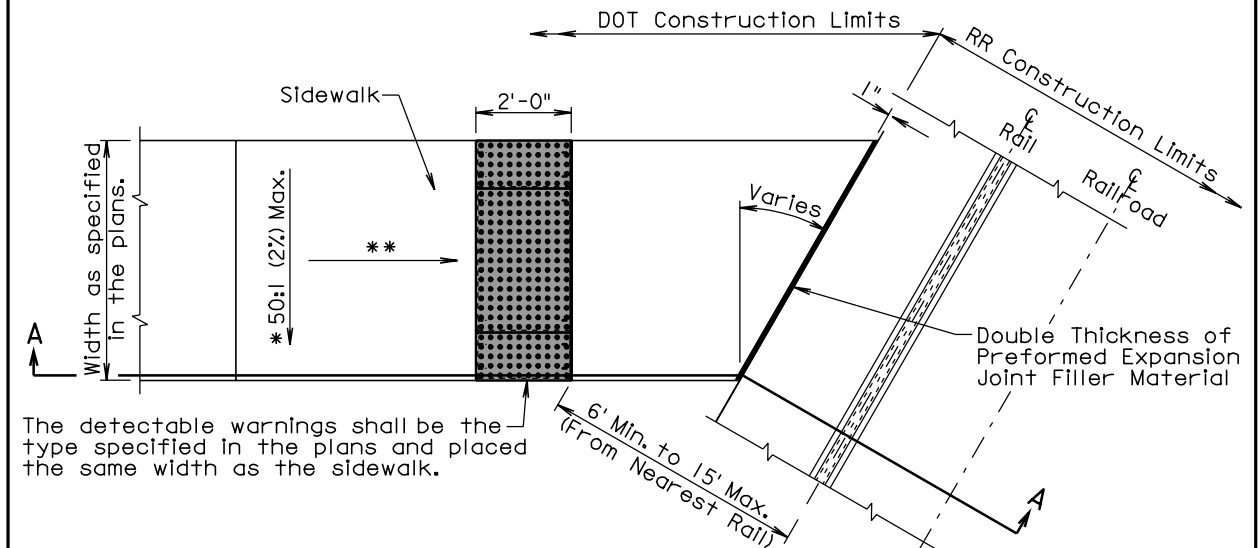


PLAN VIEW
(Railroad Crossing Not Skewed)

*The cross slope of the sidewalk shall not be steeper than a 50:1 (2%) unless stated otherwise in the plans.

**If the sidewalk is curbside, then the surface of the curbside sidewalk shall match the slope of the curb transition. The longitudinal slope of the sidewalk and curb transition, where the sidewalk transitions to the railroad crossing elevation, shall not be steeper than 20:1 (5%) unless stated otherwise in the plans.

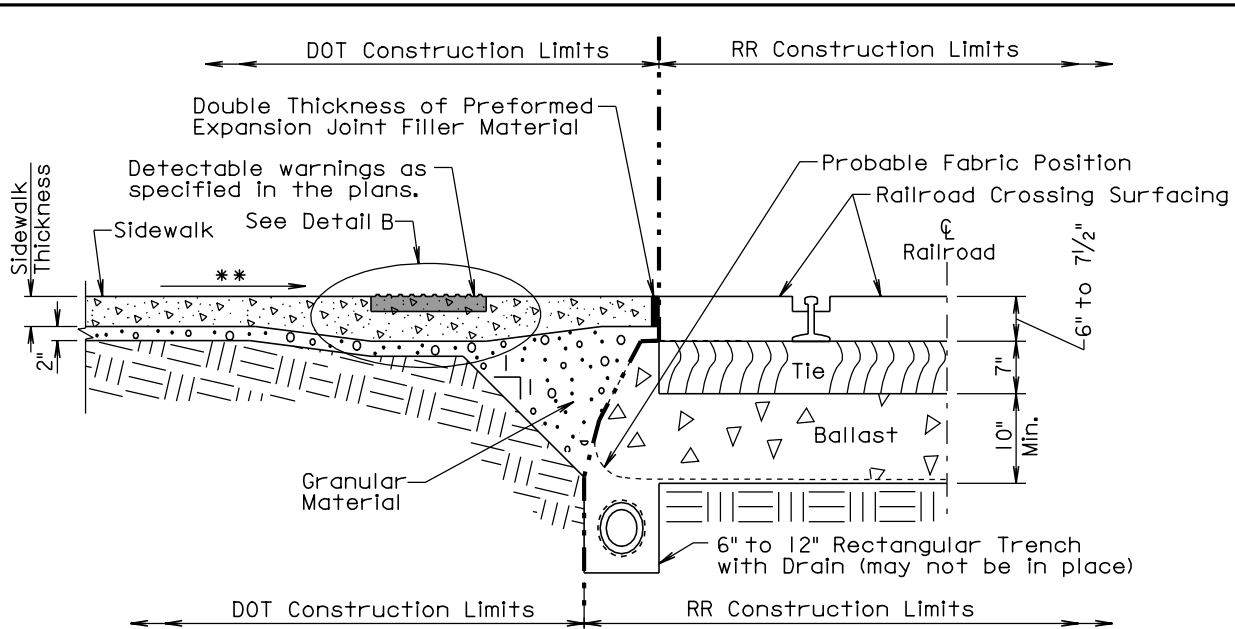
**If there is a boulevard sidewalk, then the curb and gutter transition shall be in accordance with standard plate 650.35. The longitudinal slope of the sidewalk, where the sidewalk transitions to the railroad crossing elevation, shall not be steeper than 20:1 (5%) unless stated otherwise in the plans.



PLAN VIEW
(Railroad Crossing Skewed)

June 26, 2009

Published Date: 1st Qtr. 2011	S D D O T	SIDEWALK AND DETECTABLE WARNINGS ADJACENT TO RAILROAD CROSSING	PLATE NUMBER 651.20
			Sheet 1 of 2



SECTION A-A

GENERAL NOTES:

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

Ballast material shall not be disturbed during construction work adjacent to the railroad crossing unless the adjacent work involves reconstruction or maintenance of the railroad crossing.

The sidewalk shall be placed at the location stated in the plans.

Care shall be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

If curb and gutter is required adjacent to the railroad crossing, the curb transition shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item.

The type 1 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

The square foot area of the detectable warnings shall be included in the measured and paid for quantity of sidewalk.

June 26, 2009

Published Date: 1st Qtr. 2011	S D D O T	SIDEWALK AND DETECTABLE WARNINGS ADJACENT TO RAILROAD CROSSING	PLATE NUMBER 651.20
			Sheet 2 of 2