

PLOT SCALE - 200,000,000:1

PLOTTED FROM - TRRC12508

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

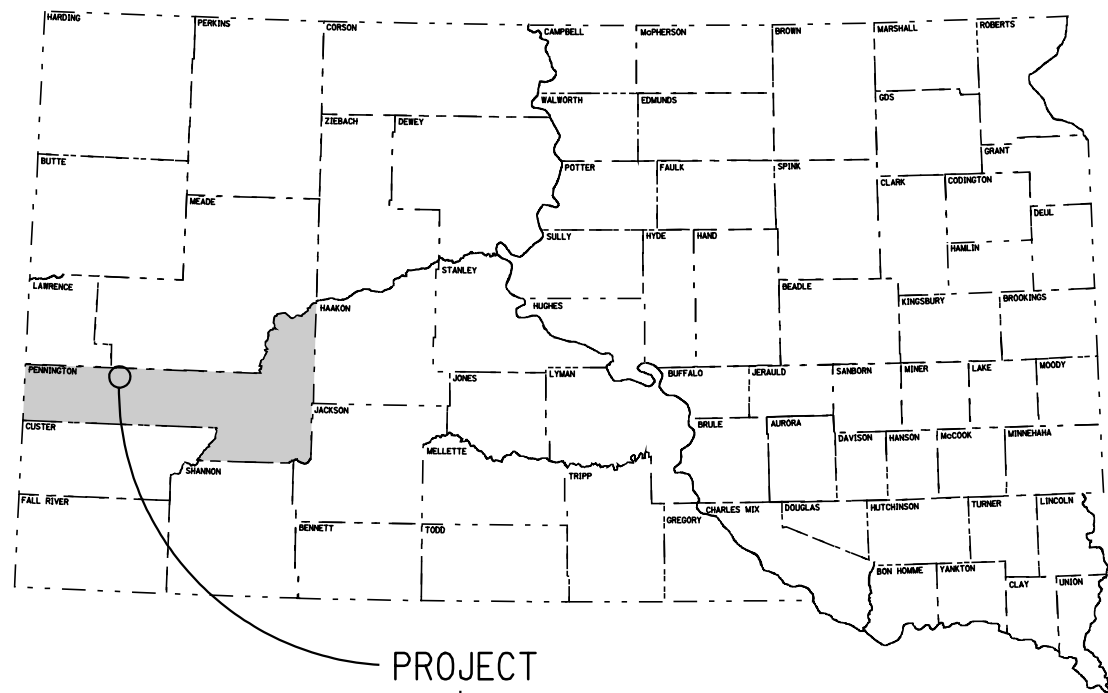
PLANS FOR PROPOSED
**PROJECT 044E-452,
044W-452, & 044-452**
SD HIGHWAY 44
PENNINGTON COUNTY

Mill & Asphalt Resurfacing
Adjacent to Bridge Approaches

PCN 124F, I24G, & I23Z

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|-----------------------|-----------|-------|--------------|
| | 044 E-452 | 1 | 12 |
| | 044 W-452 | | |
| | 044-452 | | |

Plotting Date: 09-MAY-2011



INDEX OF SHEETS

| | |
|-------------------|------------------------|
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PROJECT

MRM 39.79 & MRM 40.42

PCN I23Z

PCN I24F (Eastbound) & I24G (Westbound)



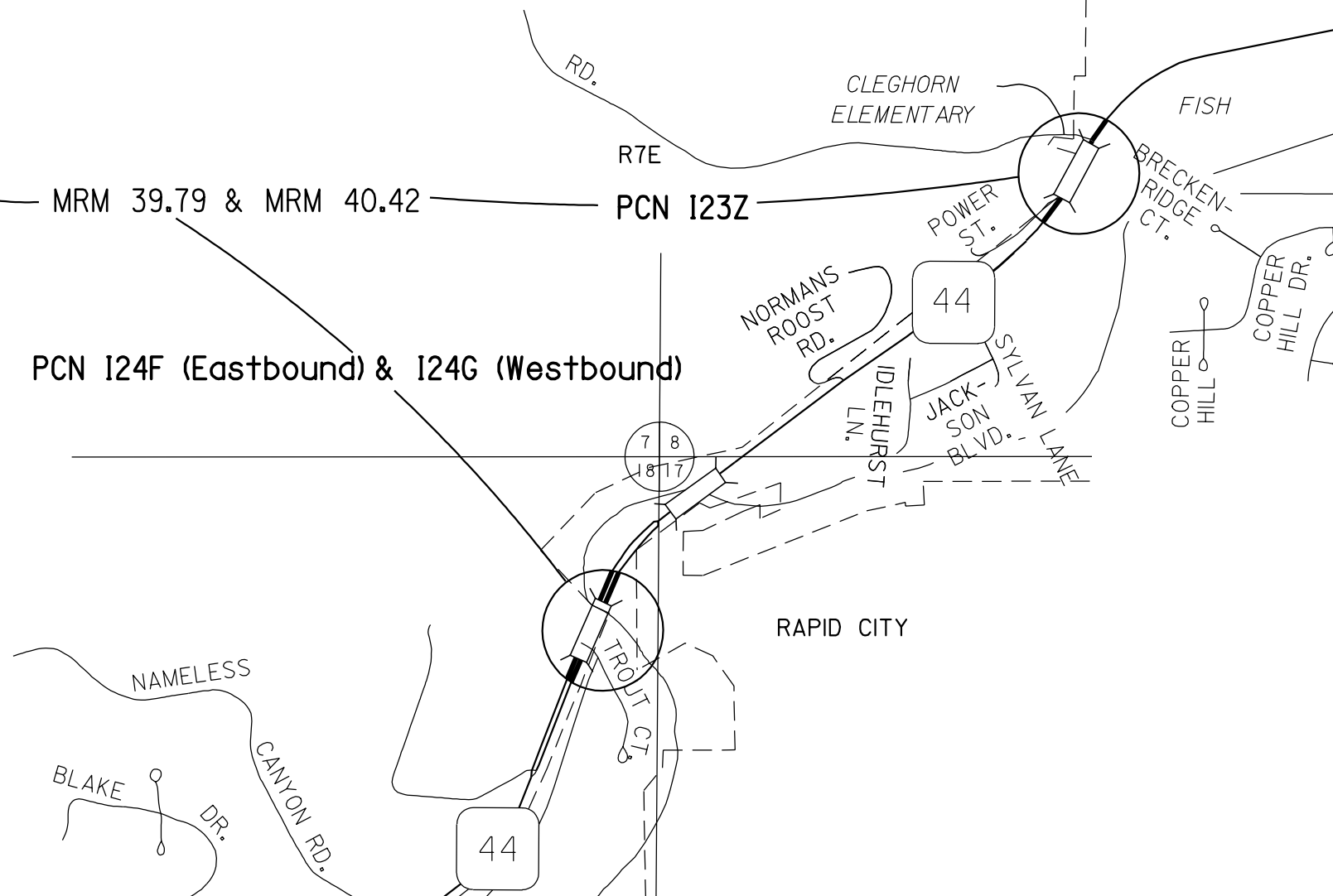
TIN

TIS

STORM WATER PERMIT
No Storm Water Permit Required

DESIGN DESIGNATION

| | |
|------------|--------|
| ADT (2010) | 3820 |
| ADT (2030) | 4595 |
| DHV | 695 |
| D | 50% |
| T DHV | 2.1% |
| T ADT | 4.5% |
| V | 45 mph |



FILE - U:\REGION\RC\PR\2011\RC\M\INT\PLANS\044-452 MILL & RESURFACE BRIDGE\OFF\PROJECT\TITLE.DWG

ESTIMATE OF QUANTITIES

PCN I24F Highway 44 Eastbound

| Bid Item Number | Item | Quantity | Unit |
|-----------------|------------------------------------|----------|------|
| 009E0010 | Mobilization | Lump Sum | LS |
| 320E1200 | Asphalt Concrete Composite | 39.0 | Ton |
| 332E0010 | Cold Milling Asphalt Concrete | 347 | SqYd |
| 633E1400 | Pavement Marking Paint, 4" White | 151 | Ft |
| 633E1405 | Pavement Marking Paint, 4" Yellow | 117 | Ft |
| 634E0010 | Flagging | 5 | Hour |
| 634E0100 | Traffic Control | 306 | Unit |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 634E0420 | Type C Advance Warning Arrow Panel | 1 | Each |
| 634E0640 | Temporary Pavement Marking | 120 | Ft |

PCN I24G Highway 44 Westbound

| Bid Item Number | Item | Quantity | Unit |
|-----------------|------------------------------------|----------|------|
| 009E0010 | Mobilization | Lump Sum | LS |
| 320E1200 | Asphalt Concrete Composite | 44.0 | Ton |
| 332E0010 | Cold Milling Asphalt Concrete | 403 | SqYd |
| 633E1400 | Pavement Marking Paint, 4" White | 146 | Ft |
| 633E1405 | Pavement Marking Paint, 4" Yellow | 114 | Ft |
| 634E0010 | Flagging | 5 | Hour |
| 634E0100 | Traffic Control | 306 | Unit |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 634E0420 | Type C Advance Warning Arrow Panel | 1 | Each |
| 634E0640 | Temporary Pavement Marking | 120 | Ft |

PCN I23Z

| Bid Item Number | Item | Quantity | Unit |
|-----------------|------------------------------------|----------|------|
| 009E0010 | Mobilization | Lump Sum | LS |
| 320E1200 | Asphalt Concrete Composite | 32.0 | Ton |
| 332E0010 | Cold Milling Asphalt Concrete | 288 | SqYd |
| 633E1400 | Pavement Marking Paint, 4" White | 125 | Ft |
| 633E1405 | Pavement Marking Paint, 4" Yellow | 100 | Ft |
| 634E0010 | Flagging | 5 | Hour |
| 634E0100 | Traffic Control | 306 | Unit |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 634E0420 | Type C Advance Warning Arrow Panel | 1 | Each |
| 634E0640 | Temporary Pavement Marking | 120 | Ft |

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

The Contractor shall sequence his work such that no elevation differentials exist between lane lines in the same direction.

All Contractors' vehicles or equipment entering or leaving a closed work area shall display a flashing amber light.

GENERAL MAINTENANCE OF TRAFFIC (CONTINUED)

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 inactivity. All costs to do this work shall be incidental to Traffic Control, Miscellaneous.

Construction signing that remains in the same location for more than 3 days shall be fixed location, breakaway supports, unless approved by the Engineer.

A temporary ramp with a minimum slope of 50:1 shall be used to transition traffic from one elevation to another when the vertical difference exceeds one-half inch."

The Contractor or designated traffic control subcontractor shall make night (after dark) inspections at the initial set up of traffic control and every week thereafter to ensure the adequacy, legibility and reflectivity of each sign and device. A written summary of each inspection shall be given to the Engineer within 24 hours after completion of the inspection. The cost for the nighttime inspection work shall be incidental to the related contract items.

At the end of each days work, all traffic control devices shall be pulled off the roadway and taken down and traffic shall be opened to two lanes. Applicable signing shall remain in place, e. g. "Road Work Ahead, Bump, Grooved Pavement, etc."

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.

Traffic control shall be in accordance with MUTCD Standards, the Standard Specifications and the layouts contained in these plans.

The Contractor shall at all times, keep the portion of the project being used by public traffic in a condition that will adequately and safely accommodate traffic.

Storage of vehicles, materials, and equipment shall be not closer than 30' from the edge of the driving lane. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators, and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

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 Tom Lehmkuhl, DOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). 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

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.
3. 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.
4. 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.
5. 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.

| Table of Quantities | | | | | | |
|--|--------------|------------------------------------|---------------------------------|-------------------------------|------------------------------------|-------------------------------------|
| Project | | Cold Milling Asphalt Concrete SqYd | Asphalt Concrete Composite Tons | Temporary Pavement Marking Ft | Pavement Marking Paint 4" white Ft | Pavement Marking Paint 4" yellow Ft |
| Eastbound STR. NO. 52-369-321 | i24f | | | | | |
| | on | 185 | 21 | | | |
| | off | 163 | 18 | | | |
| | Total | 348 | 39 | 120 | 151 | 117 |
| Westbound STR. NO. 52-369-321 | i24g | | | | | |
| | on | 175 | 19 | | | |
| | off | 228 | 25 | | | |
| | Total | 403 | 44 | 120 | 146 | 114 |
| Eastbound STR. NO. 52-374-318 | i23z | | | | | |
| | on | 144 | 16 | | | |
| | off | 144 | 16 | | | |
| | Total | 288 | 32 | 120 | 125 | 100 |

COLD MILLING ASPHALT CONCRETE

Areas shown in these plans for cold milling are approximate and may be adjusted by the Engineer.

Cold Milling depths will vary to meet the straightedge requirements of the Standard Specifications.

The cold milling at MRM 39.79, westbound on end shall use a fixed stringline for grade control to achieve the profile elevations provided in these plans.

Millings shall be placed as directed by the Engineer at the start and stop of milled sections to create a ramp, if the milled surface is exposed overnight.

Placement of asphalt concrete resurfacing shall follow the beginning of Cold Milling Asphalt Concrete within 7 calendar days. Failure to begin asphalt concrete resurfacing within 7 calendar days will result in a penalty of \$200 per calendar day.

All excess millings not needed on this project shall become the property of the Contractor.

ASPHALT CONCRETE COMPOSITE

The quantities for Asphalt Concrete Composite shown are approximate and may be adjusted by the Engineer.

Each end of the Asphalt Resurfacing will be checked with a straightedge in accordance with the Standard Specifications.

Mineral aggregate for the Asphalt Concrete Composite shall conform to the requirements of the Standard Specifications for Class E, Type 1.

All other requirements in the Standard Specifications for Asphalt Concrete Composite shall apply.

The asphalt binder used in the mixture shall be PG 58-28, PG 64-28, or PG 64-34 Asphalt Binder.

SS-1h or CSS-1h Emulsified Asphalt for Tack and Flush Seal shall be applied at the rate of 0.05 gallons per square yard.

Sand for Flush Seal applied at the rate of 8 pounds per square yard.

TEMPORARY PAVEMENT MARKING

Temporary pavement marking paint shall be used on cold milled surfaces for centerline delineation and lane line as directed by the Engineer. The Contractor shall conduct his milling and paving operations such that the surfaces only need to be temporarily painted once. Temporary pavement marking paint shall consist of 4' long skips, one line with an overall cycle length of 40', the entire length of the project. Paint shall not be used for Temporary Pavement Marking on the top lift of asphalt concrete. The bid item for Temporary Pavement Marking (Feet) shall be used to pay for painting the temporary pavement marking.

Temporary Road Markers (Tabs) with covers shall be used on the top lift of asphalt surfacing. Dashes shall occur with an overall cycle length of 40'. Two temporary road markers in one line at a 4' spacing shall designate each dash. It will be required to mark solid lines with tabs at 5 foot spacing. The visibility and maintenance of tabs shall be required at all times by the Contractor. The bid item for Temporary Road Markers (Mile) shall be full compensation to furnish, install, remove covers, maintain tabs until completion of permanent paint, removal, and discarding of tabs.

PERMANENT PAVEMENT MARKING

All pavement markings shall be water borne paint as defined in Section 980 of the Standard Specifications.

Striper, advance, and trailing warning vehicles shall be equipped with flashing amber lights or an advance warning arrow panel.

INVENTORY OF TRAFFIC CONTROL DEVICES

PCN I24F

| SIGN CODE | SIGN SIZE | DESCRIPTION | NUMBER REQUIRED | UNITS PER SIGN | UNITS |
|--------------------|-----------|---|-----------------|----------------|------------|
| G20-2 | 36" x 18" | END ROAD WORK | 2 | 17 | 34 |
| W4-2 | 48" x 48" | LEFT OR RIGHT LANE ENDS (SYMBOL) | 2 | 34 | 68 |
| W8-1 | 36" x 36" | BUMP | 1 | 27 | 27 |
| W8-11 | 48" x 48" | UNEVEN LANES | 1 | 34 | 34 |
| W8-15 | 48" x 48" | GROOVED PAVEMENT | 1 | 34 | 34 |
| W8-15P | 24" x 18" | MOTORCYCLE PLAQUE | 1 | 7 | 7 |
| W20-1 | 48" x 48" | ROAD WORK ##### FT. OR AHEAD | 2 | 34 | 68 |
| W20-5 | 48" x 48" | LT. OR RT. LANE CLOSED ##### FT. OR AHEAD | 1 | 34 | 34 |
| TOTAL UNITS | | | | | 306 |

PCN I24G

| SIGN CODE | SIGN SIZE | DESCRIPTION | NUMBER REQUIRED | UNITS PER SIGN | UNITS |
|--------------------|-----------|---|-----------------|----------------|------------|
| G20-2 | 36" x 18" | END ROAD WORK | 2 | 17 | 34 |
| W4-2 | 48" x 48" | LEFT OR RIGHT LANE ENDS (SYMBOL) | 2 | 34 | 68 |
| W8-1 | 36" x 36" | BUMP | 1 | 27 | 27 |
| W8-11 | 48" x 48" | UNEVEN LANES | 1 | 34 | 34 |
| W8-15 | 48" x 48" | GROOVED PAVEMENT | 1 | 34 | 34 |
| W8-15P | 24" x 18" | MOTORCYCLE PLAQUE | 1 | 7 | 7 |
| W20-1 | 48" x 48" | ROAD WORK ##### FT. OR AHEAD | 2 | 34 | 68 |
| W20-5 | 48" x 48" | LT. OR RT. LANE CLOSED ##### FT. OR AHEAD | 1 | 34 | 34 |
| TOTAL UNITS | | | | | 306 |

PCN I23Z

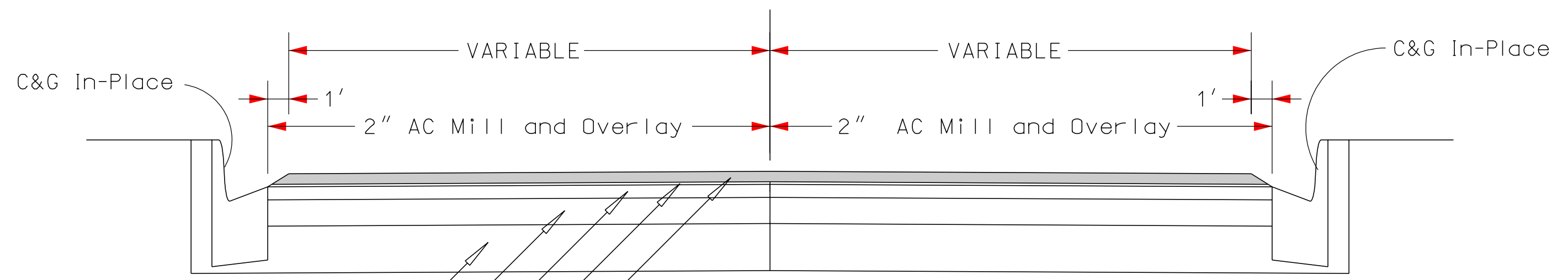
| SIGN CODE | SIGN SIZE | DESCRIPTION | NUMBER REQUIRED | UNITS PER SIGN | UNITS |
|--------------------|-----------|---|-----------------|----------------|------------|
| G20-2 | 36" x 18" | END ROAD WORK | 2 | 17 | 34 |
| W4-2 | 48" x 48" | LEFT OR RIGHT LANE ENDS (SYMBOL) | 2 | 34 | 68 |
| W8-1 | 36" x 36" | BUMP | 1 | 27 | 27 |
| W8-11 | 48" x 48" | UNEVEN LANES | 1 | 34 | 34 |
| W8-15 | 48" x 48" | GROOVED PAVEMENT | 1 | 34 | 34 |
| W8-15P | 24" x 18" | MOTORCYCLE PLAQUE | 1 | 7 | 7 |
| W20-1 | 48" x 48" | ROAD WORK ##### FT. OR AHEAD | 2 | 34 | 68 |
| W20-5 | 48" x 48" | LT. OR RT. LANE CLOSED ##### FT. OR AHEAD | 1 | 34 | 34 |
| TOTAL UNITS | | | | | 306 |

IN-PLACE TYPICAL SECTION

| | | | |
|-----------------------------|-----------|-------|--------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL |
| | 044 E-452 | NO. | SHEETS |
| | 044 W-452 | 5 | 12 |
| Plotting Date: 09-MAY-2011 | | | |

PLOT SCALE - 10:125000:1.000000

SD HIGHWAY 44



- 2.0" Asphalt Concrete Composite
- 0.5" Asphalt Concrete Class E
- 2.5" Asphalt Concrete In-Place
- 5.0" Base Course In-Place
- 6.0" to 12.0" Sub-Base In-Place

PLOTTED FROM - ITRC12508

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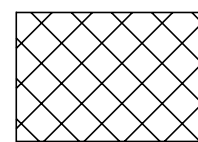
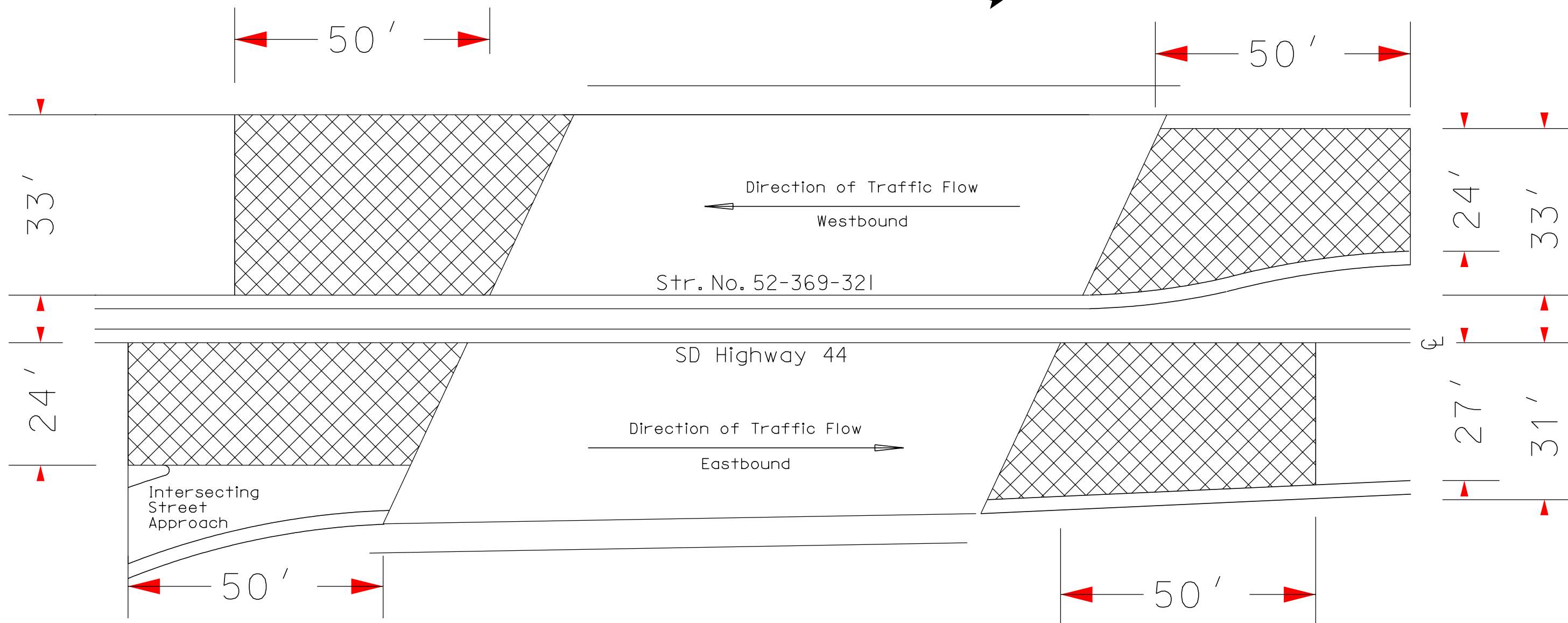
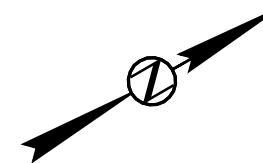
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MILLING AREAS

STR, NO. 5 2-369-321
 PCN I24F - Eastbound
 PCN I24G - Westbound
 MRM 39.79

| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|-----------------------|-----------|-----------|--------------|
| | 044 E-452 | 6 | 12 |
| | 044 W-452 | | |
| | 044-452 | | |

Plotting Date: 09-MAY-2011



2" Mill and overlay areas

PLOTTED FROM - TRRC12608

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MILLING AREAS

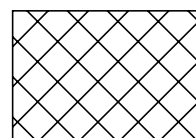
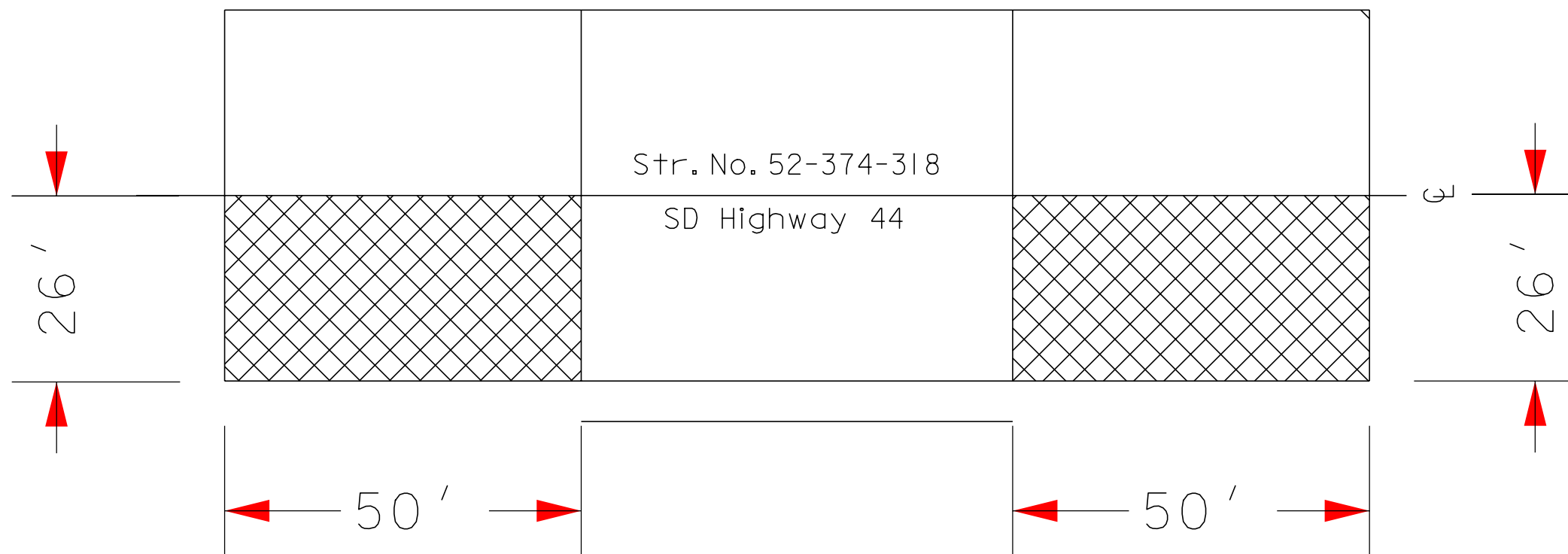
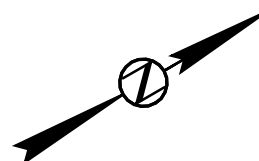
STR, NO. 52-374-318

PCN 123Z

MRM 40.42

| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|-----------------------|-----------|-----------|--------------|
| | 044 E-452 | | |
| | 044 W-452 | 7 | 12 |
| | 044-452 | | |

Plotting Date: 09-MAY-2011



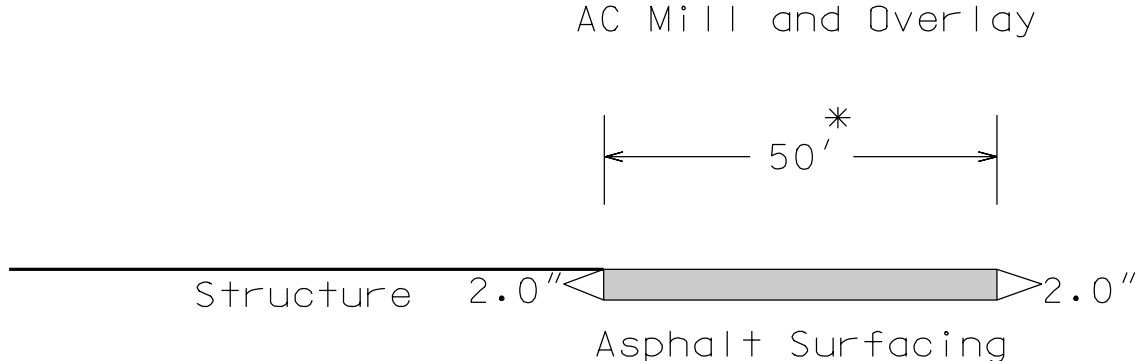
2" Mill and overlay areas

COLD MILLING ASPHALT CONCRETE BUMP REPAIR AT BRIDGE ENDS

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|-----------------------|-----------|-------|--------------|
| | 044 E-452 | | |
| | 044 W-452 | 8 | 12 |
| | 044-452 | | |

Plotting Date: 09-MAY-2011

* For estimating purposes.
The Engineer shall determine the exact limits of mill and overlay to provide a smooth transition to the bridge deck.



Milling depth shall vary so that only 2" of asphalt concrete overlay is placed.

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

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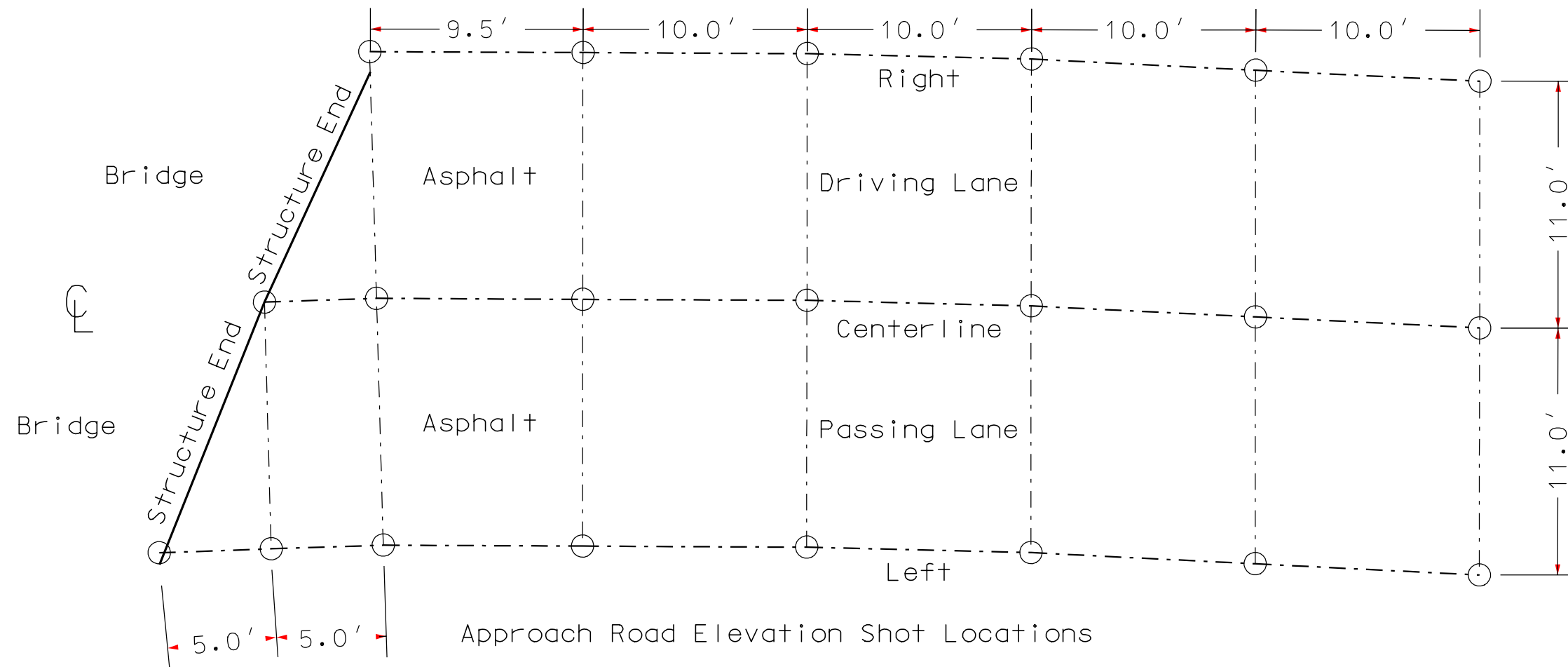
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|-----------------------------|-----------|-------|--------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL |
| | 044 E-452 | NO. | SHEETS |
| | 044 W-452 | 9 | 12 |
| | 044-452 | | |

Plotting Date: 09-MAY-2011

Highway 44 Westbound As-Surveyed
 Direction of Traffic Flow

PCN I24G
 Plan View
 Westbound-On
 Structure No. 52-369-321
 As Surveyed

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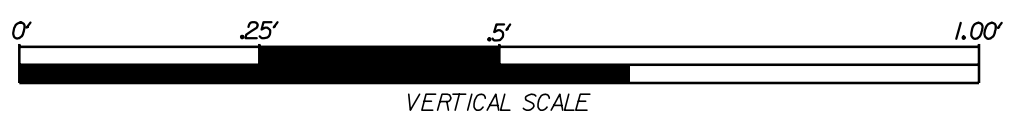
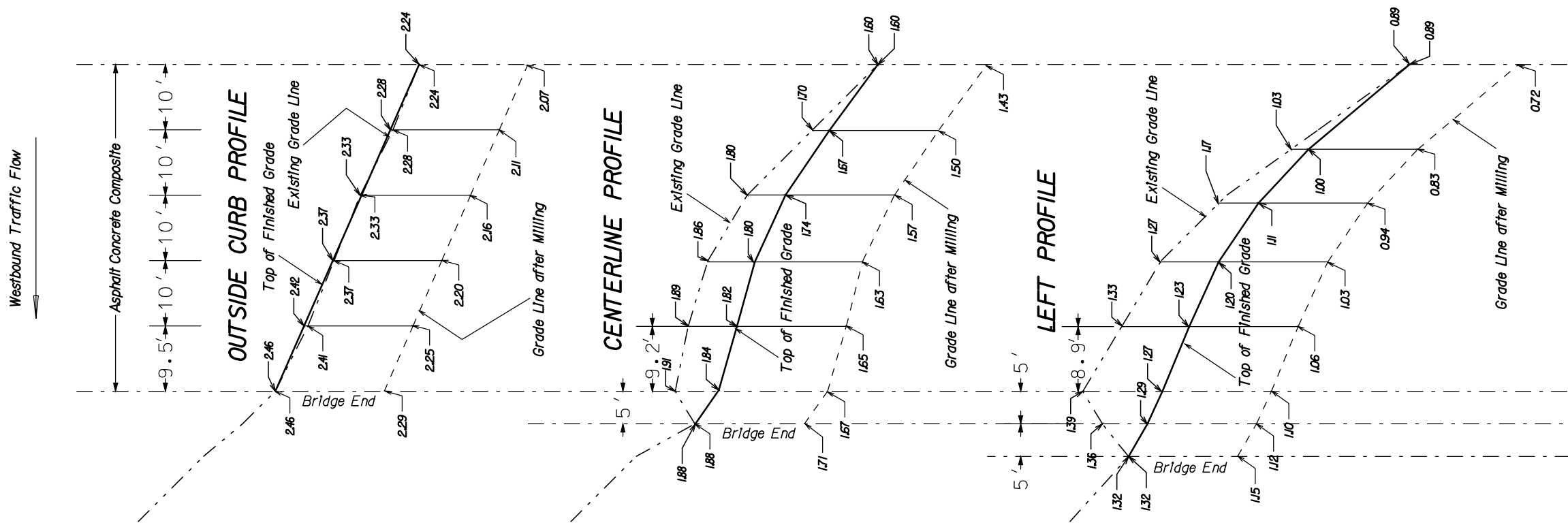
PLOTTED FROM - TRRC12508

PROFILES FOR WESTBOUND-ON END ASPHALT CONCRETE COMPOSITE CONCRETE MILLING AND OVERLAY

STR. NO. 52-369-321
25 SKEW L.H.F.
ADD 3420.0 FT TO ALL ELEVATIONS

| | | | |
|-----------------------------|----------------------|-----------|--------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
| | 044 F-452 | 10 | 12 |
| | 044 W-452 044-452 | | |

Plotting Date: 09-MAY-2011



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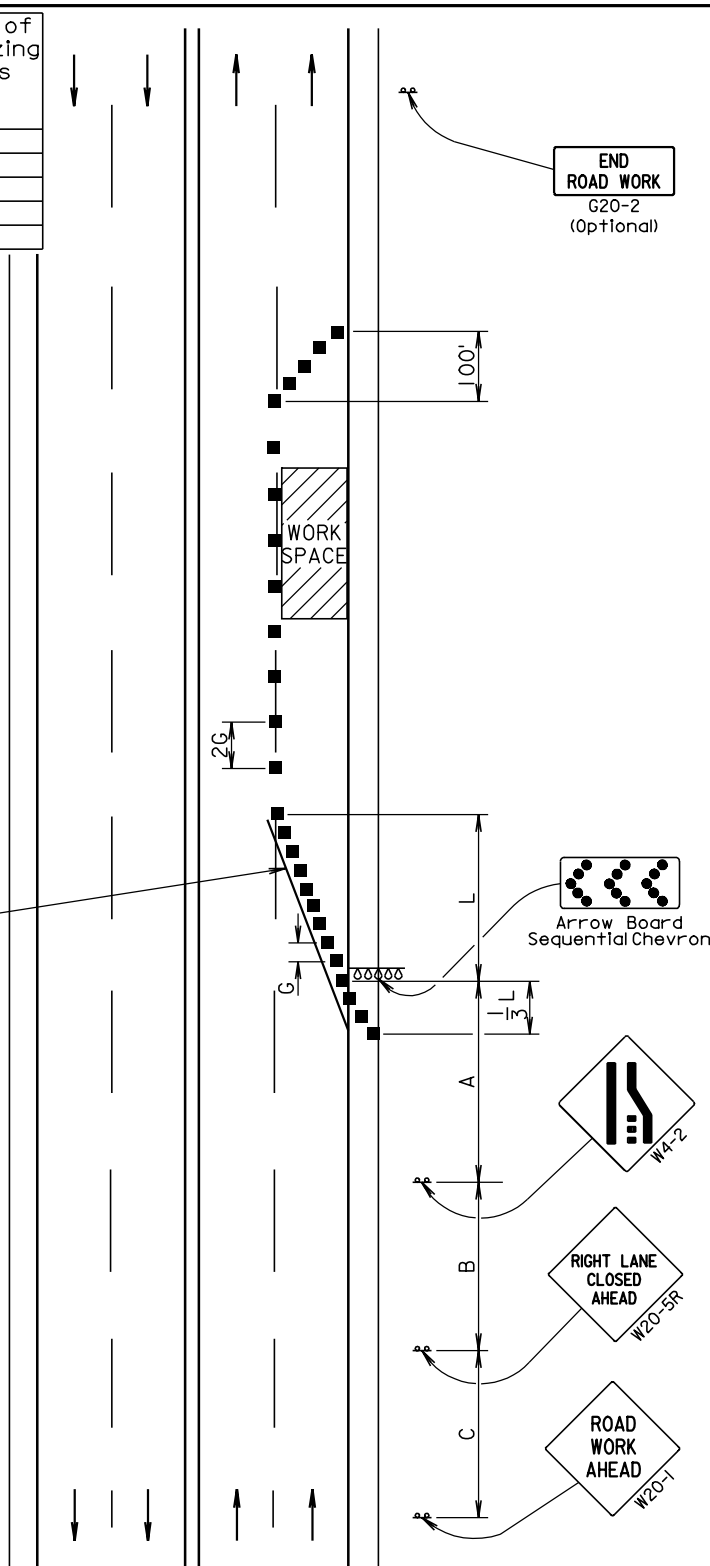
| Posted Speed Prior to Work (M.P.H.) | Spacing of Advance Signs (Feet) | | | Taper Length (Feet) (L) | Spacing of Channelizing Devices (Feet) (G) |
|--|--|-----|-----|----------------------------------|--|
| | (A) | (B) | (C) | | |
| 0 - 30 | 200 | | | 180 | 25 |
| 35 - 40 | 350 | | | 320 | 25 |
| 45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

■ Channelizing Device

The channelizing devices shall be drums or 42" cones if traffic control must remain overnight or longer. During daylight hours, 42" cones may be used in lieu of drums along the centerline.

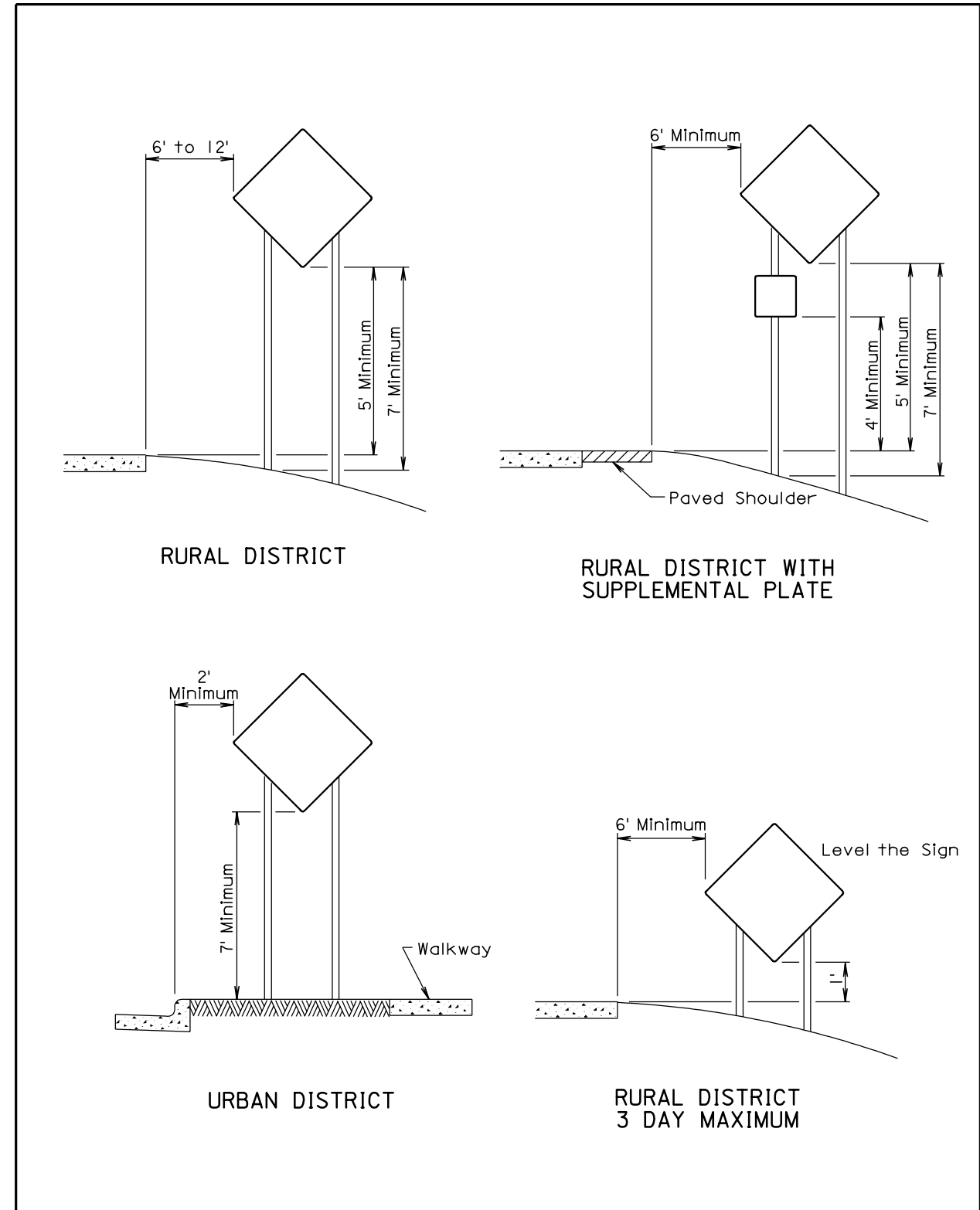
Longitudinal dimensions may be adjusted to fit project conditions such as horizontal curves, vertical curves, and other site restrictions.

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



February 14, 2011

| | |
|--|---|
| <p>SDDOT</p> <p>GUIDES FOR TRAFFIC CONTROL DEVICES 4-LANE UNDIVIDED, RIGHT LANE CLOSED</p> <p><i>Published Date: 2nd Qtr. 2011</i></p> | <p>PLATE NUMBER 634.47</p> <p>Sheet 1 of 1</p> |
|--|---|

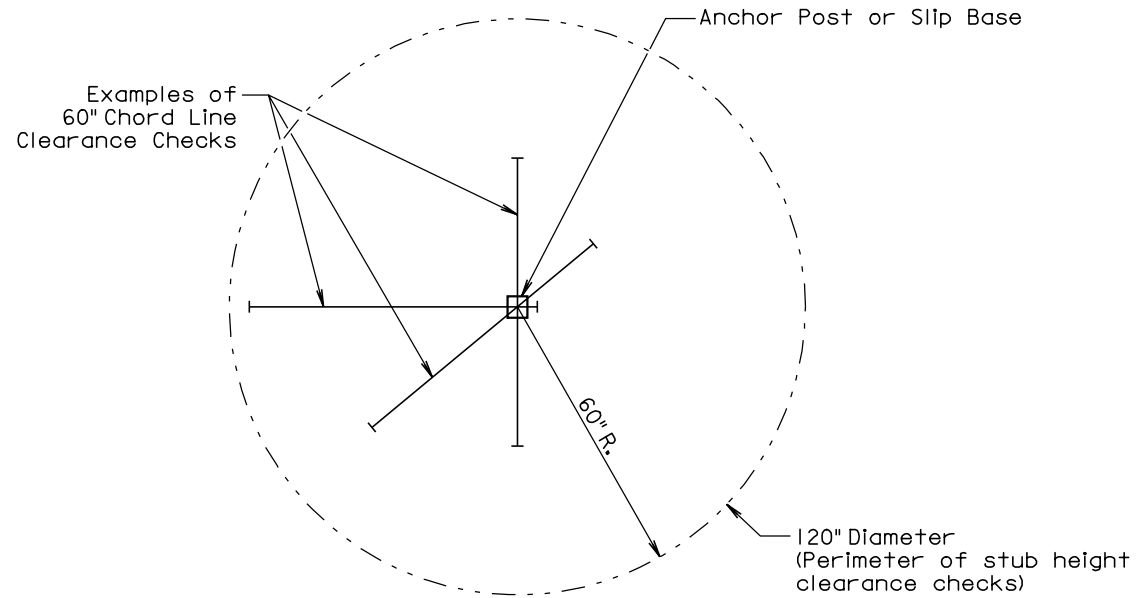


February 14, 2011

| | |
|--|---|
| <p>SDDOT</p> <p>CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)</p> <p><i>Published Date: 2nd Qtr. 2011</i></p> | <p>PLATE NUMBER 634.85</p> <p>Sheet 1 of 1</p> |
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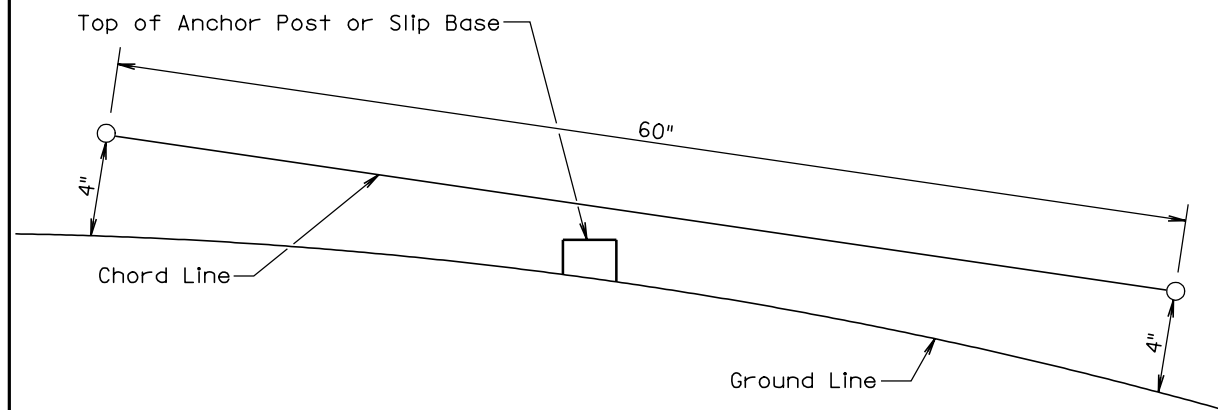
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|-----------------------------|----------------------|-------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
| | 044 E-452 | 12 | 12 |
| | 044 W-452 044-452 | | |

Plotting Date: 09-MAY-2011



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

| | | |
|----------------------------------|---|-------------------------------|
| S D D O T | BREAKAWAY SUPPORT STUB CLEARANCE | PLATE NUMBER 634.99 |
| | <i>Published Date: 2nd Qtr. 2011</i> | Sheet 1 of 1 |