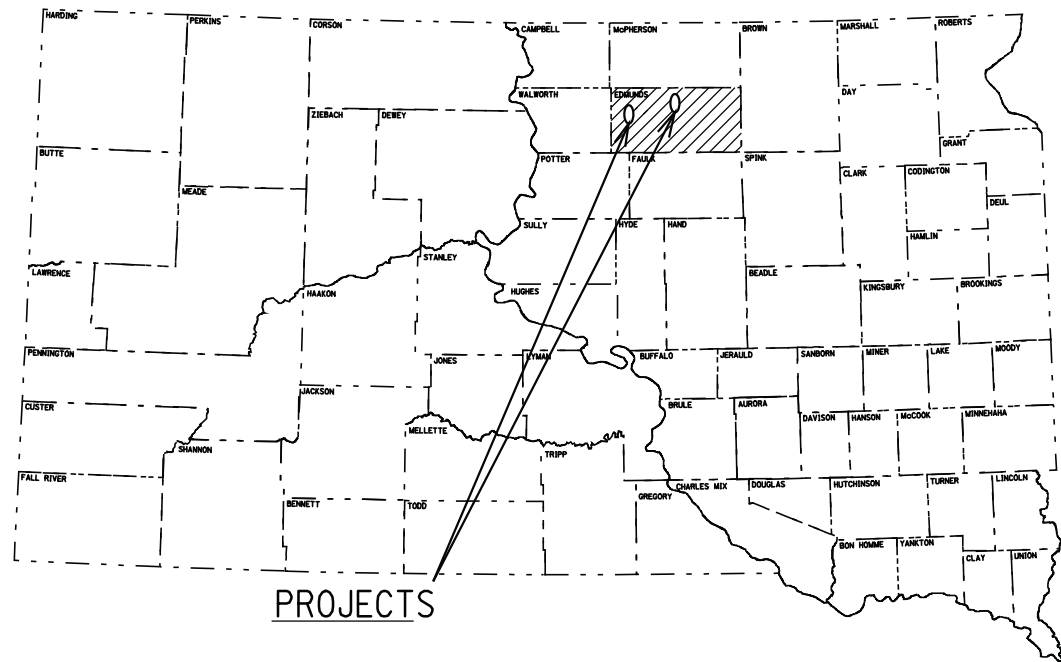


STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	247-152 & 253-152	1	11
Plotting Date:			



STATE OF SOUTH DAKOTA
 DEPARTMENT OF TRANSPORTATION
 PLANS FOR PROPOSED
PROJECT 247-152 & 253-152
SD HIGHWAY 247 & 253
EDMUNDS COUNTY

INDEX OF SHEETS

Sheet 1	Title Sheet
Sheets 2-5	Plan Notes and Quantities
Sheets 6-7	Typical Sections
Sheets 8-11	Traffic Control

PCN i2bd & i2bg
 INSLOPE REPAIR, GRADE RAISE
 ASPHALT CONCRETE PAVING

End Project PCN i2bg
 MRM 176.111 Lt

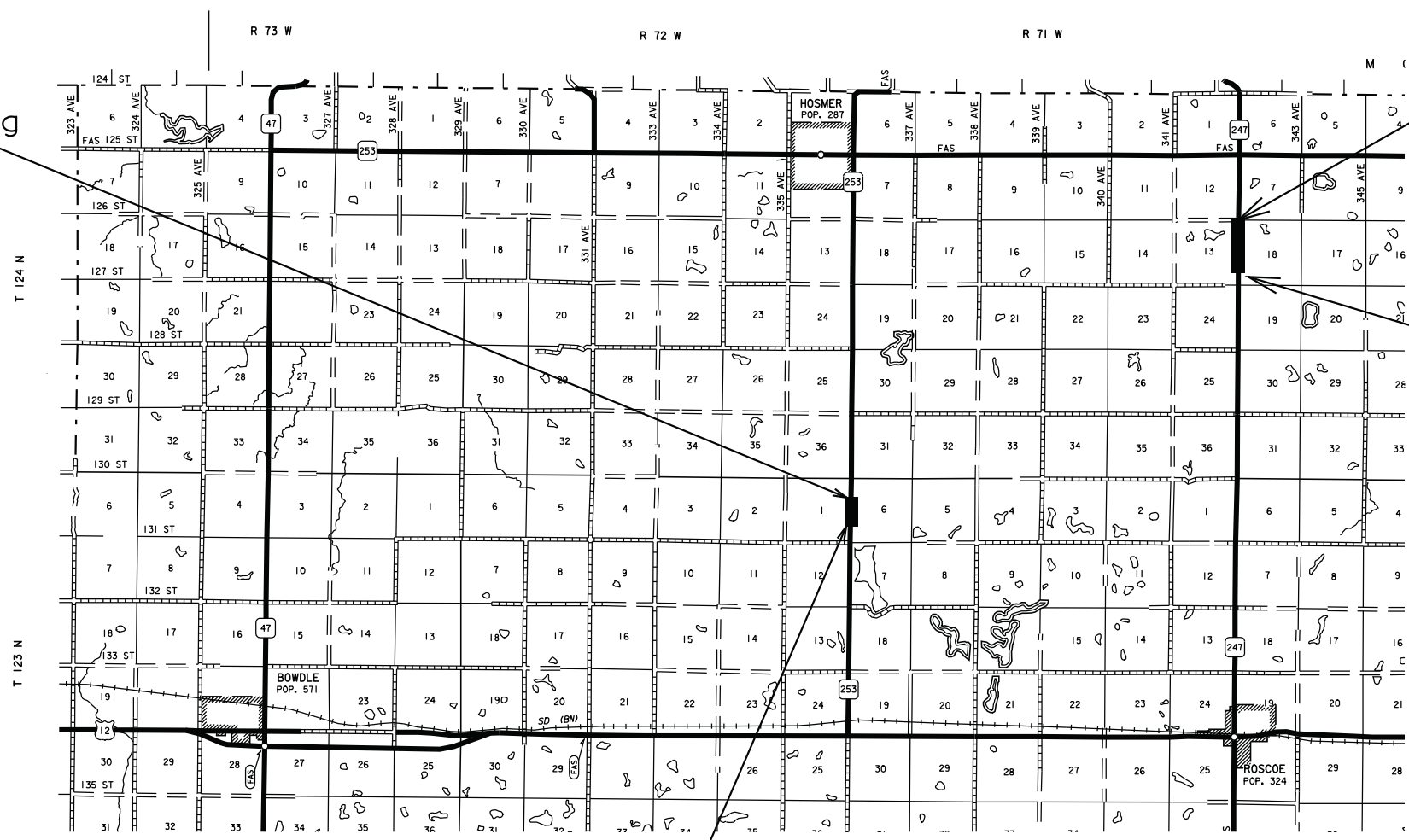
End Project PCN i2bd
 MRM 176.760 Lt

Begin Project PCN i2bd
 MRM 176.600 Lt

Begin Project PCN i2bg
 MRM 175.510 Lt

STORM WATER PERMIT
 (None Required)

SD 247 - 2010 ADT = 140
 SD 253 - 2010 ADT = 214



ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	247-152 PCN i2bd	253-152 PCN i2bg	TOTAL QUANTITY	UNIT
009E0010	Mobilization	LS	LS	Lump Sum	LS
120E9000	Pit Run Material	2,282	2,600	4,882	Ton
230E0100	Remove and Replace Topsoil	LS	LS	Lump Sum	LS
250E0020	Incidental Work, Grading	LS	LS	Lump Sum	LS
260E1010	Base Course	873	-	873	Ton
320E1200	Asphalt Concrete Composite	963.2	-	963.2	Ton
632E2510	Type 2 Object Marker Back to Back	32	10	42	Each
634E0010	Flagging	80	40	120	Hour
634E0100	Traffic Control	306	306	612	Unit
634E0120	Traffic Control, Miscellaneous	LS	LS	Lump Sum	LS
700E0210	Class B Riprap	1201	4513	5,714	Ton
730E0251	Special Permanent Seed Mixture 1	24	7	31	Lb
731E0100	Fertilizing	80	30	110	Lb
732E0100	Mulching	1.6	0.4	2	Ton
831E0110	Type B Drainage Fabric	1126	4231	5,357	Sq Yd
831E1011	Install Geogrid Reinforcement	1,878	-	1,878	Sq Yd

SPECIFICATIONS

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

Highway	Location	Begin MRM	End MRM	Length (Miles)	Length (Feet)	Width (Feet)	Depth (Feet)	Excavation (Cu Yds)	Pit Run Material (Tons)	Riprap (Tons)	Class of Stone	Drainage Fabric (Sq Yds)	Ledge Rock	Object Markers (Each)
SD247 - PCN i2bd	Left	176.600	176.760	0.16	845	12	2	751	2282	1201	B	1126	No	10
SD253 - PCN i2bg	Left	175.510	176.111	0.601	3173	12	2	2821	2600	4513	B	4231	No	32

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	247-152 & 253-152	3	11

SCOPE OF WORK

Work on this project involves repairing the inslope riprap protection that exists along SD 247 & 253.

SEQUENCE OF OPERATIONS

The following Sequence of Operations shall be used for this project. The Contractor may submit an alternate Sequence of Operations for consideration by the Area Engineer. An alternate Sequence of Operations shall be submitted to the Area Engineer a minimum of 2 weeks prior to the preconstruction meeting.

1. Install construction signing.
2. Remove topsoil from inslopes.
3. Grade raise SD 247
4. Shape area to receive fabric and riprap.
5. Install drainage fabric and riprap.
6. Repair shoulder/inslope above riprap.
7. Asphalt Concrete Paving SD 247
8. Install erosion control (seeding & mulch).
9. Project cleanup and removal of construction signing.

TRAFFIC CONTROL

The roadway shall be open to normal traffic flows during nighttime and other non-working hours.

Flagger(s) shall be required at any time that the Engineer determines that construction activities impose a hazard to the traveling public or construction crews. During peak traffic times, if traffic needs to be stopped, 2 sets of Flaggers may be required.

Channelizing Devices shall be placed on the top of the inslope at a maximum spacing of 100 ft in areas where inslope work is underway during non-working hours.

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost of this work shall be incidental to the various contract items unless otherwise specified in the plans. Delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Storage of vehicles and equipment shall be as near the right-of-way line as possible. 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.

Work activities during non-daylight hours are subject to prior approval.

Traffic approaching the project from intersecting roadways, streets, and approaches must be adequately accommodated. Major intersections or large commercial entrances may require additional signing, flaggers, and channelizing devices on a temporary basis until work activities pass these areas.

The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, breakaway supports.

All breakaway sign supports shall comply with FHWA NCHRP 350 or MASH crashworthy requirements. The Contractor shall provide post installation details at the preconstruction meeting for all breakaway sign support assemblies.

Traffic Control units, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

REMOVE AND REPLACE TOPSOIL

Prior to beginning excavation and shaping for the drainage fabric and riprap placement, a 6" depth of topsoil shall be removed from those areas above the present riprap line. The topsoil may be bladed up into a window at the top of the inslope. Following completion of riprap operations, topsoil shall be placed back on the inslopes in those areas above the riprap.

All costs associated with removing and replacing the topsoil along areas to be graded shall be incidental to the lump sum price for REMOVE AND REPLACE TOPSOIL.

INCIDENTAL WORK, GRADING

Excavation and shaping shall be required prior to placing the drainage fabric and riprap. The excavation required shall allow for the placement of the drainage fabric and riprap as shown on the Typical Riprap Section. Excavation and shaping shall allow for placement of a 2.0 ft thickness of riprap.

Excavated material shall become the property of the Contractor for his disposal.

All costs associated with excavation, shaping and disposal shall be incidental to the contract lump sum price for INCIDENTAL WORK, GRADING. The Contractor shall be responsible for visiting the project site and determining the amount of work required for this contract item.

DRAINAGE FABRIC AND RIPRAP

Riprap for use on this project shall be Class B conforming to Section 830 of the Standard Specifications.

The drainage fabric and riprap shall be placed as per Typical Section on the inslopes. Any in place fabric at the top of the existing riprap limits shall be

preserved and tucked under the new fabric installation. The limits of riprap placement may be adjusted in the field by the Engineer. Plans were prepared accounting for additional erosion to have taken place from the time the plans were prepared until construction activities are completed. TYPE B DRAINAGE FABRIC shall be measured and paid for based upon the slope distance of fabric placed and covered by riprap. The two foot vertical edges at the top and bottom and pinning shall be incidental to the contract unit price per square yard of TYPE B DRAINAGE FABRIC. Payment shall be full compensation for furnishing and placing the fabric and for all labor, equipment, materials and incidentals necessary to prepare the area for satisfactory placement of the drainage fabric.

Vehicles and equipment shall not be operated directly on the drainage fabric.

The quantity of Type B Drainage Fabric shown in the Estimate of Quantities is based upon widths of 12 ft.

CLASS B RIPRAP shall be measured and paid for by the ton in place as shown on the weigh ticket which shall accompany each load.

PIT RUN MATERIAL

The Pit Run Material shall conform to the following gradation.

- Passing 4 inch sieve – 100%**
- Passing 1 inch sieve – 40 – 85%**
- Passing No. 4 sieve – 10 – 50%**
- Passing No. 200 sieve – 0 – 20%**

Compaction of the Pit Run Material shall be by the ordinary compaction method.

A minimum of one Sieve analysis shall be accomplished per day or 2000 ton, whichever is less, for acceptance.

The contractor may propose an alternate gradation for the Pit Run Material, provided the material provides an unyielding and drivable surface. Any changes accepted by the department shall be done via CCO.

Once placed the Pit Run material shall provide an un-yielding surface, shall be shaped to accommodate roadway drainage and be finished to accommodate traffic running on the surface after completion.

All other standard specifications shall apply.

BASE COURSE

Aggregate for Base Course shall conform to the Standard Specifications, except that the density shall be ordinary compaction, to the satisfaction of the Engineer.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	247-152 & 253-152	4	11

INSTALL GEOGRID REINFORCEMENT

The Contractor shall install the state furnished goeGRID reinforcement on the SD 247 grade raise and inslope repair project. All costs associated with installation of the geogrid shall be incidental to the contract unit price per square yard of Install Geogrid Reinforcement. For excise tax purposes the state paid \$1.66/sq. yd.

ASPHALT CONCRETE COMPOSITE

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 a [PG 58-28](#) Asphalt Binder.

Asphalt Concrete Composite shall be paver laid in lifts not exceeding 2" in depth.

DRILLS

In addition to the drills specified in Section 730 of the Standard Specifications, other types of drills including no-till drills will be allowed as long as they have baffles, partitions, agitators, or augers which keep the seed distributed throughout the seed box and the seed is planted at a depth of 1/4" to 1/2".

FERTILIZING

A commercial fertilizer with a minimum guaranteed analysis of 18-46-0, 11-52-0 or an approved alternate fertilizer shall be applied to all areas designated for permanent seeding. The application rate of fertilizer shall be 100 pounds per acre.

MULCHING (GRASS HAY OR STRAW)

Bales with noxious weed contamination will be rejected and the Contractor will be required to remove the contaminated bales from the project.

Following seeding Grass Hay or Straw Mulch shall be blown on and punched in at the rate of 2 tons per acre on newly seeded areas.

PERMANENT SEEDING

The areas to be seeded comprise of all newly graded areas within the project limits except for the top of roadways and temporary easements under cultivation. The estimated area to seed is [1.1](#) acres.

All permanent seed shall be planted in the topsoil at a depth of 1/4" to 1/2".

All seed broadcast must be raked or dragged in (incorporated) within the top 1/4" to 1/2" of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

Special Permanent Seed Mixture 1 shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Intermediate Wheatgrass	Chief, Oahe, Slate	8
Western Wheatgrass	Flintlock, Rodan, Rosana	4
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Big Bluestem	Bison, Bonilla, Champ, Pawnee, Sunnyview	3
Oats or Spring Wheat: April through July; Winter Wheat: August through November		10
Total:		28

GENERAL NOTES

All waste and excess material generated from the various construction activities shall be removed from the ROW as determined by the Engineer.

WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the DOT Environmental Office.

The Contractor shall not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the DOT Environmental Office.

The DOT Environmental Office contact is the Environmental Project Scientist, 605-773-3268. The WATER SOURCE plan note does not relieve the Contractor of his/her responsibility to obtain the necessary permits from other agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE).

WORK AFFECTING WATERWAYS

A. WATER QUALITY

Surface Water Discharge

If construction dewatering is required, the Contractor is required to obtain a Surface Water Discharge Permit from the DENR. Contact the DENR Surface Water Program at 605-773-3351 to apply for a permit.

Storm Water

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

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:

- 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".
- 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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	247-152 & 253-152	5	11

WASTE DISPOSAL SITE (continued)

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.

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.

TYPE 2 OBJECT MARKERS

Type 2 Object Markers shall be installed on the both sides of the road at a spacing of **200** ft on SD 247 & 253 at the repair locations. All costs associated with furnishing and installation of posts, bases, hardware and signs shall be incidental to the contract unit price per each for TYPE 2 OBJECT MARKER BACK TO BACK as per Standard Plate 632.02.

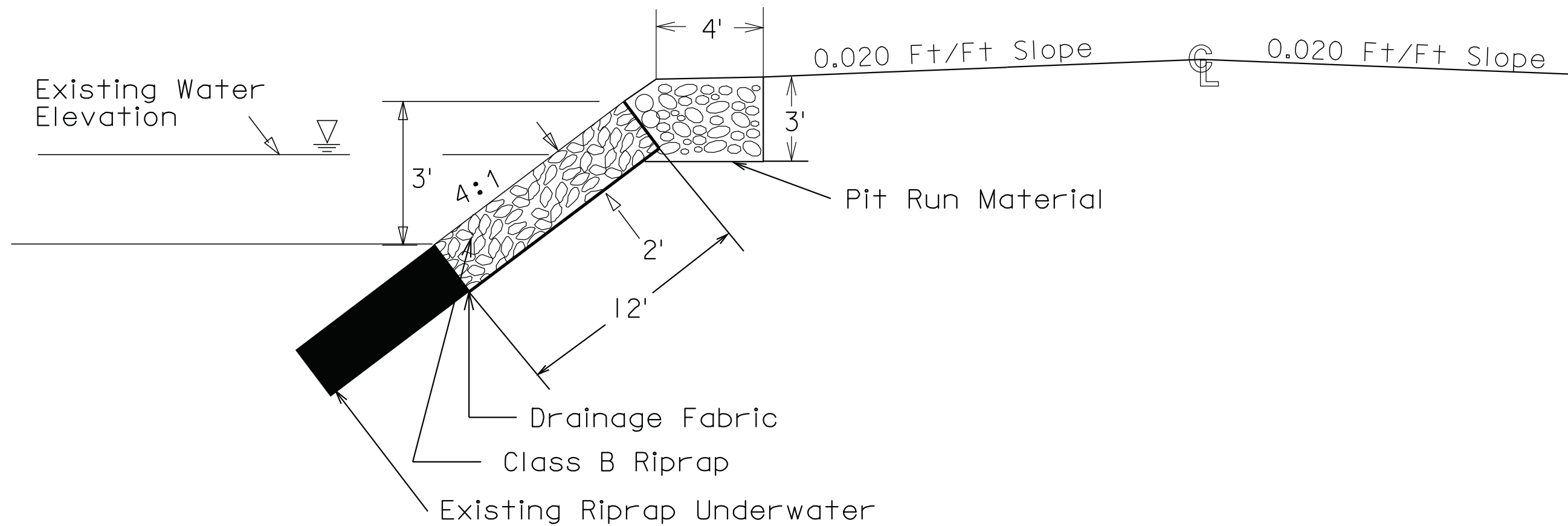
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	247-152 & 253-152	6	11
Plotting Date: 25-MAY-2011			

SD 247 & 253

TYPICAL RIPRAP SECTION

MRM - 176.600 to 176.760 Lt (SD 247)

MRM - 175.510 to 176.111 Lt (SD 253)

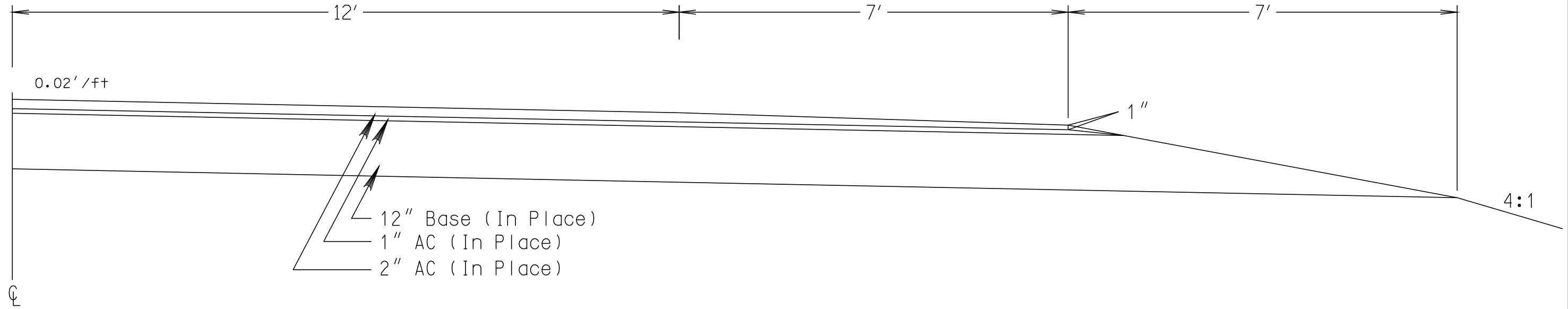


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	247-152 & 253-152	7	11
Plotting Date: 25-MAY-2011			

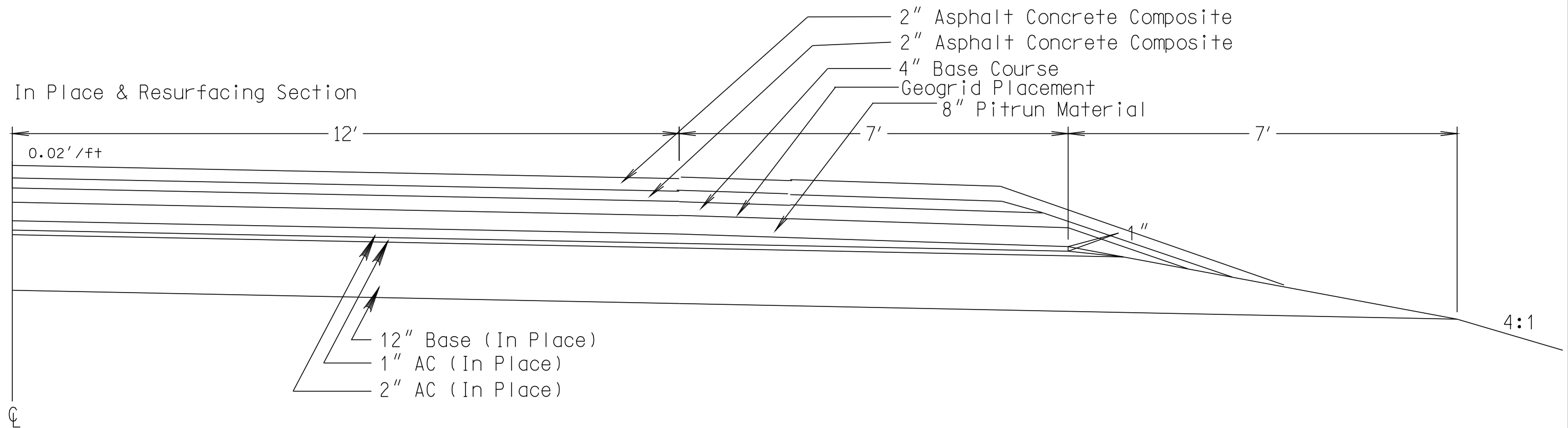
SD 247

TYPICAL SECTION

In Place Section



In Place & Resurfacing Section

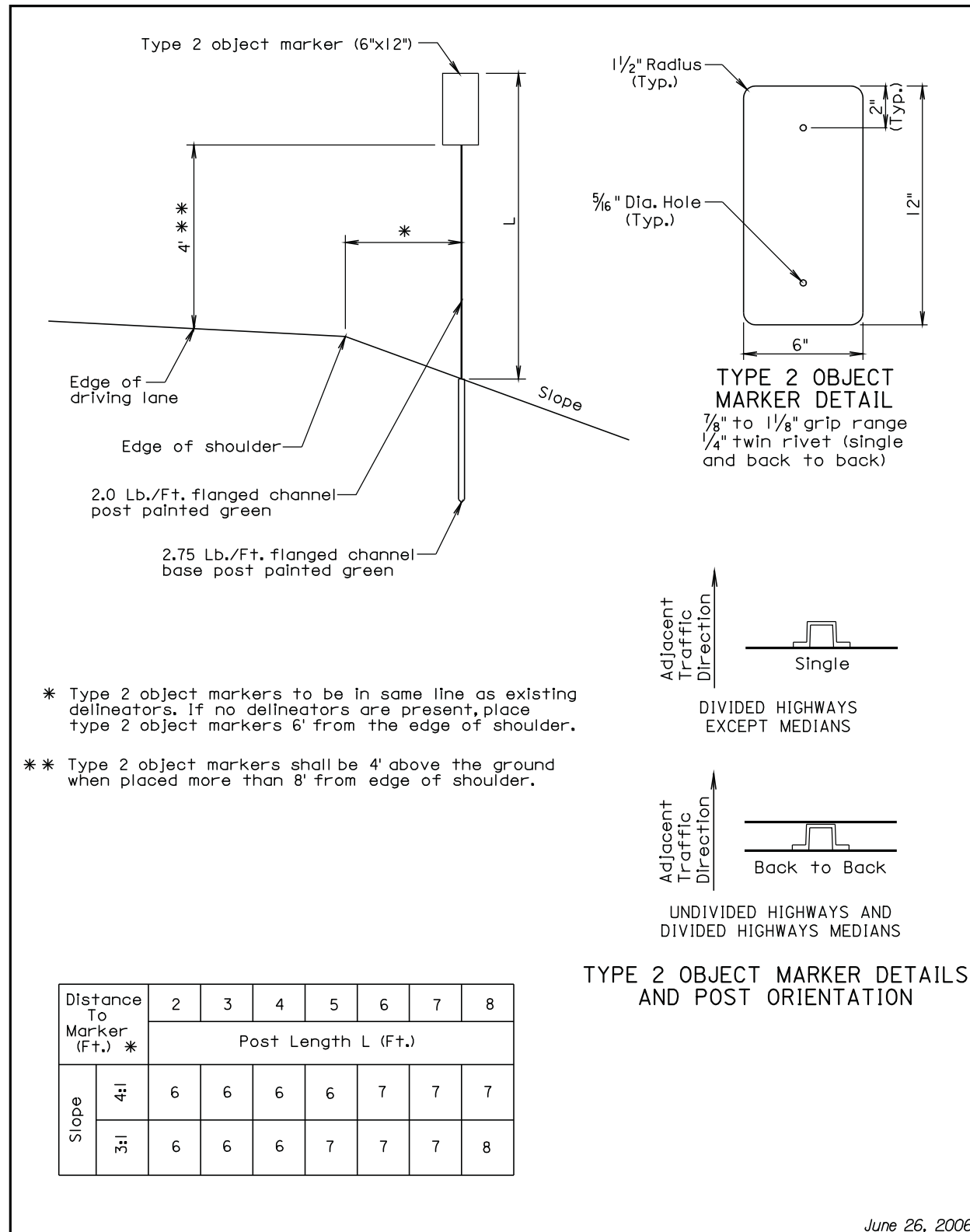


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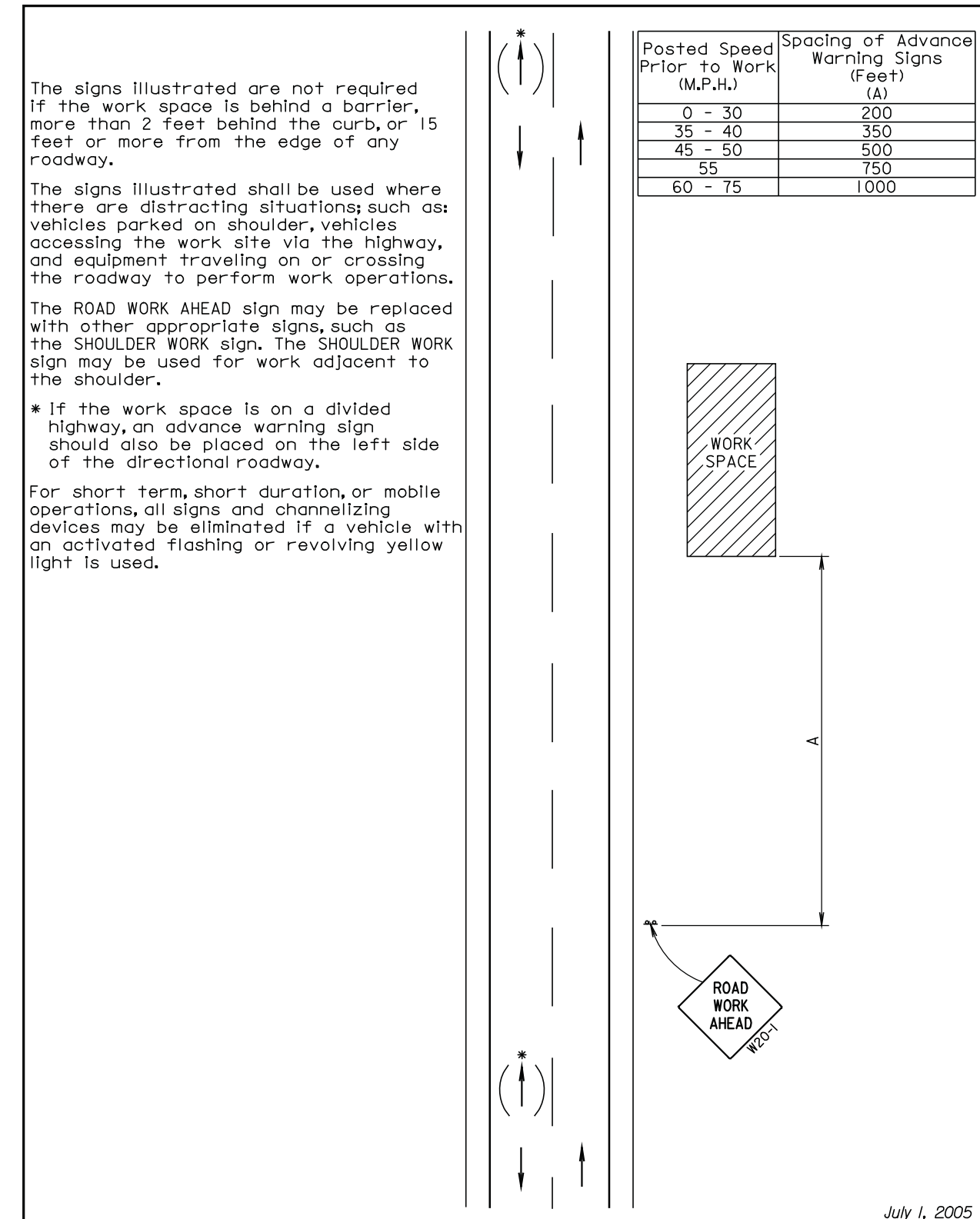
Plotting Date: 26-MAY-2011



- * Type 2 object markers to be in same line as existing delineators. If no delineators are present, place type 2 object markers 6' from the edge of shoulder.
- ** Type 2 object markers shall be 4' above the ground when placed more than 8' from edge of shoulder.

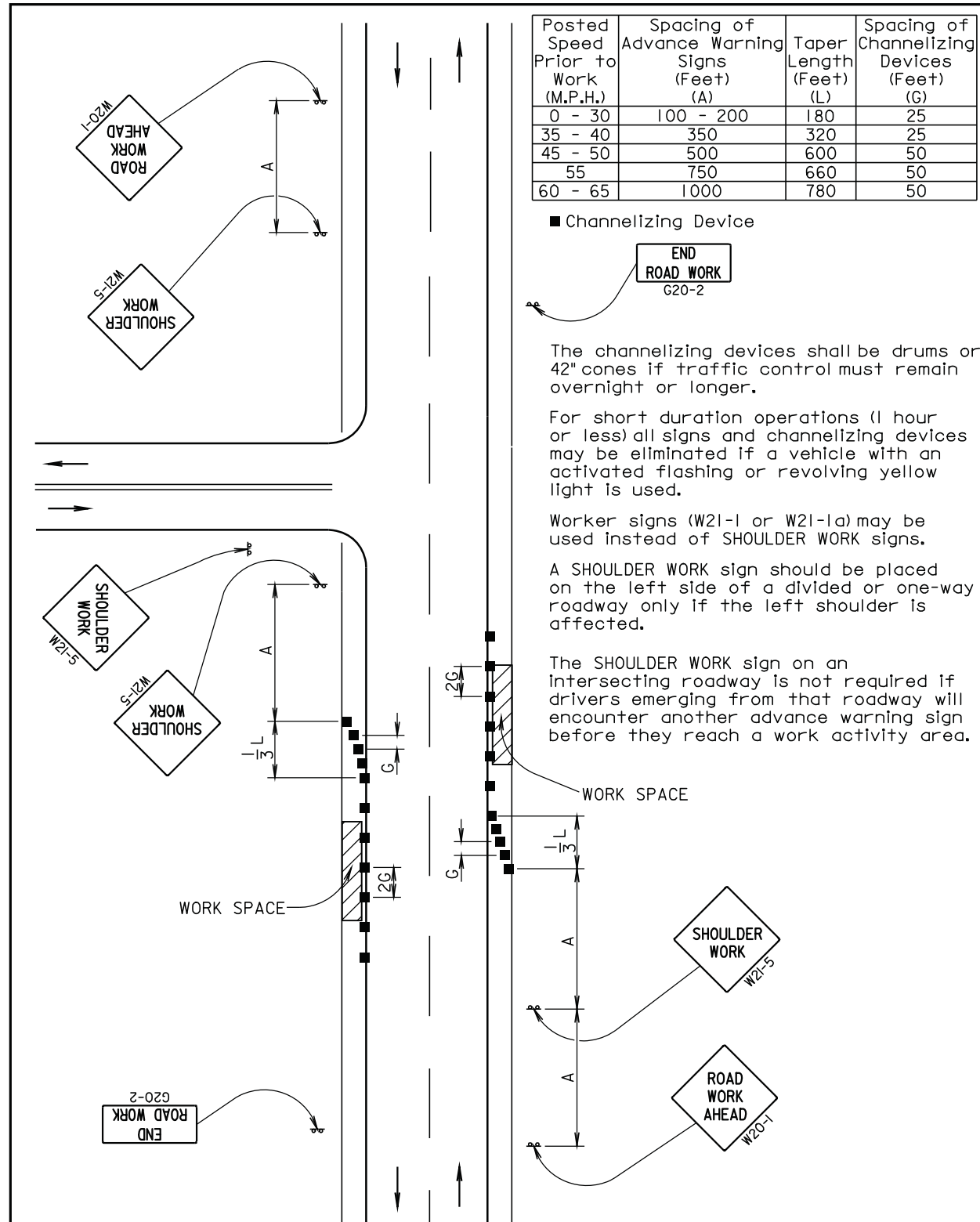
June 26, 2006

	TYPE 2 OBJECT MARKER (BREAKAWAY SIGN SUPPORT)	PLATE NUMBER 632.02
	Published Date: 2nd Qtr. 2011	Sheet 1 of 1

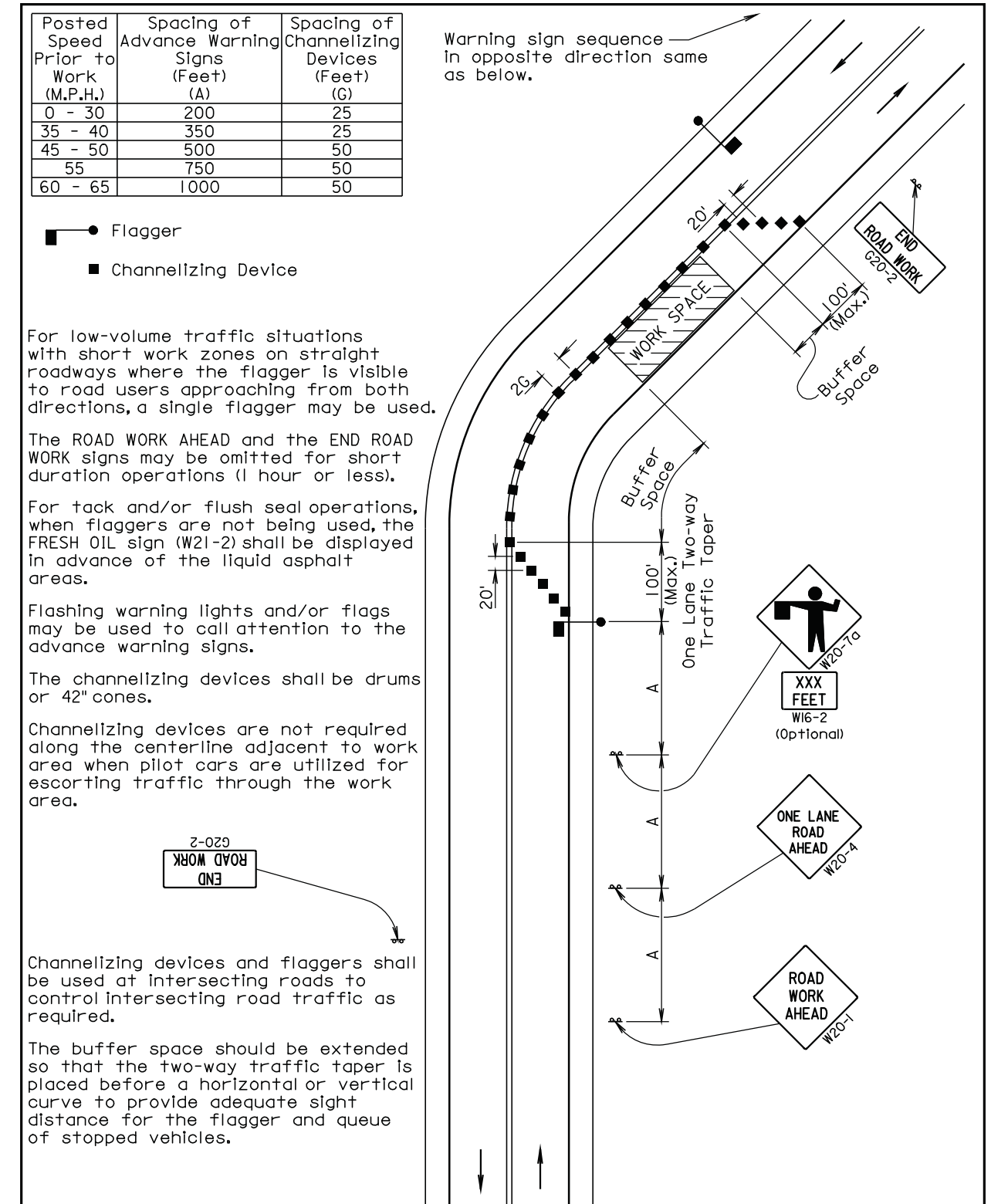


	GUIDES FOR TRAFFIC CONTROL DEVICES WORK BEYOND THE SHOULDER	PLATE NUMBER 634.01
	Published Date: 2nd Qtr. 2011	Sheet 1 of 1

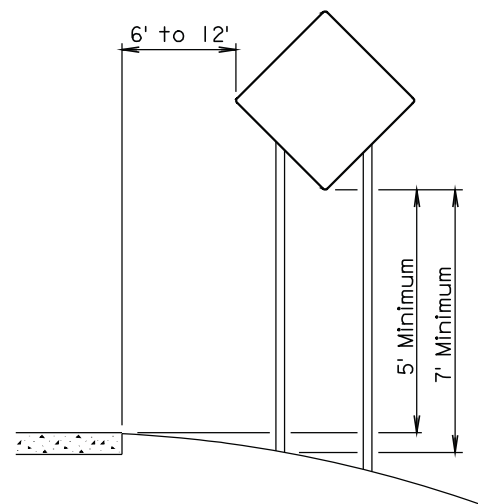
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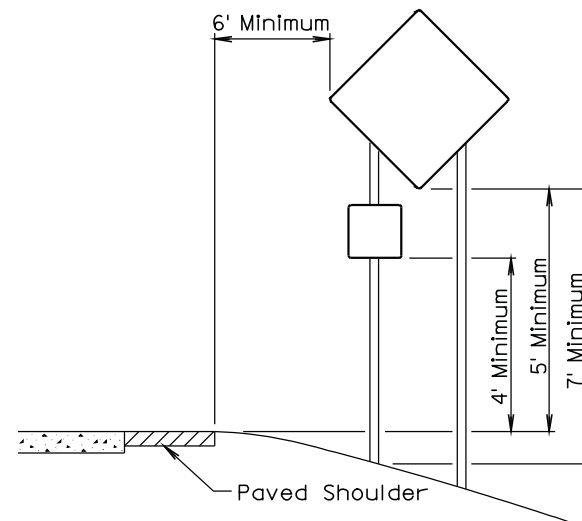
February 14, 2011



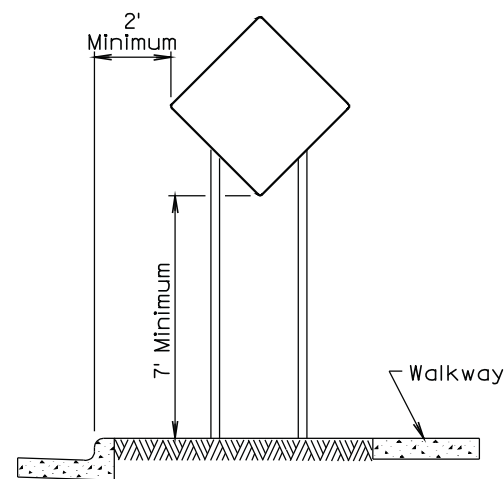
February 14, 2011



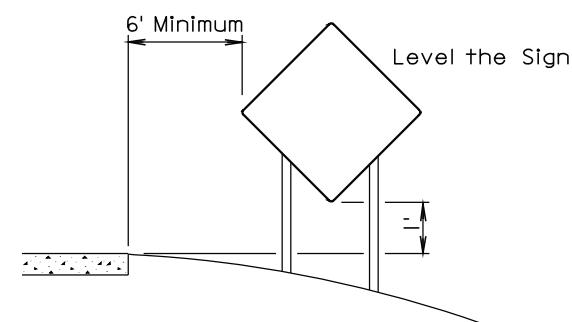
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT

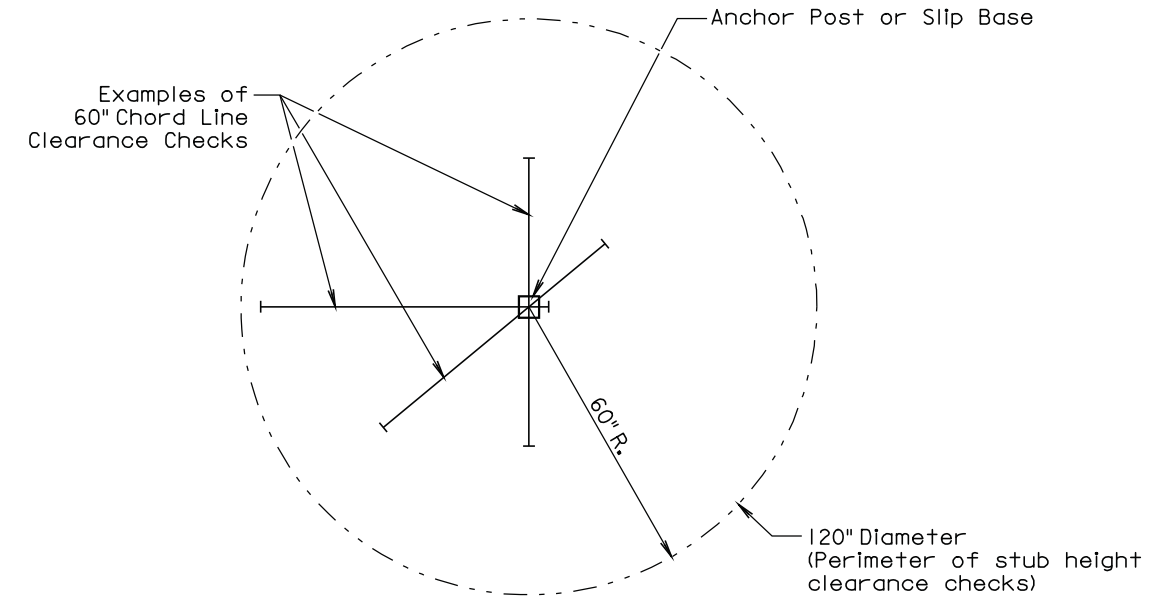


RURAL DISTRICT
3 DAY MAXIMUM

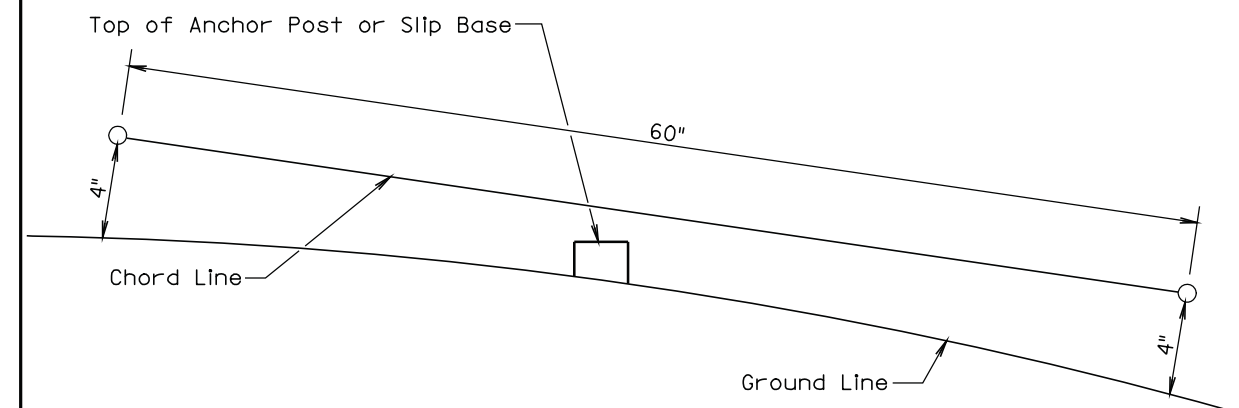
February 14, 2011

	CRASHWORTHY SIGN SUPPORTS <i>(Typical Construction Signing)</i>	PLATE NUMBER 634.85
		Sheet 1 of 1

Published Date: 2nd Qtr. 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

	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
		Sheet 1 of 1

Published Date: 2nd Qtr. 2011

ITEMIZED LIST FOR TRAFFIC CONTROL - 2 LANE ROADWAY

PCN i2bd

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	2	34	68
W20-4	48" x 48"	ONE LANE ROAD ##### 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
TOTAL UNITS					306

If a sign is required on a project and not listed in the above inventory, the units per sign will be determined as follows:

Signs 36" x 36" will be measured at 27 units each and signs 48" x 48" will be measured at 34 units each, otherwise:

If a sign measures less than 25" high and 25" wide the units per sign will be computed as sign size (sq ft) x 3.

If a sign measures between 23H" and 37H" the units per sign will be computed as sign size (sq ft) x 1.2 +15.

ITEMIZED LIST FOR TRAFFIC CONTROL - 2 LANE ROADWAY

PCN i2bg

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