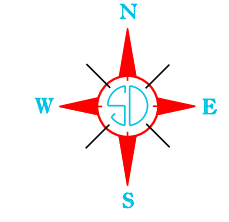


STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	090E-39I	1	7

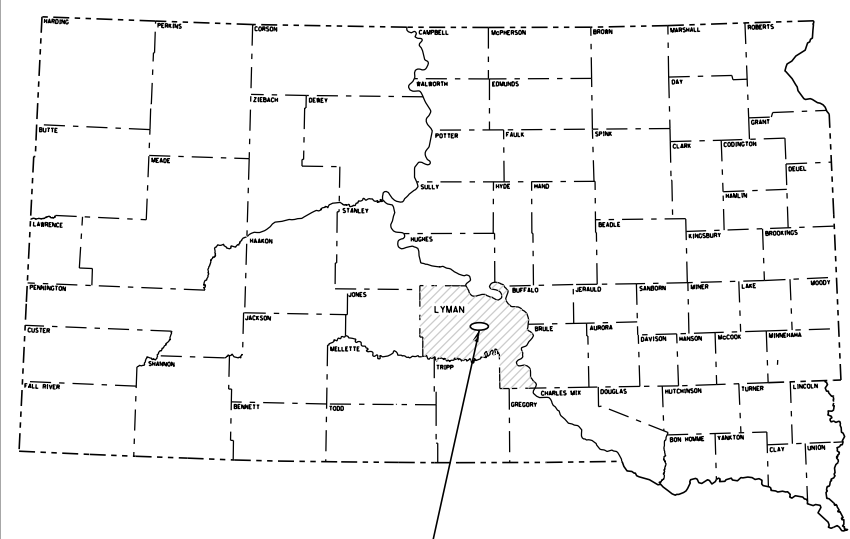


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT 090E-391
INTERSTATE 90
LYMAN COUNTY

INDEX OF SHEETS

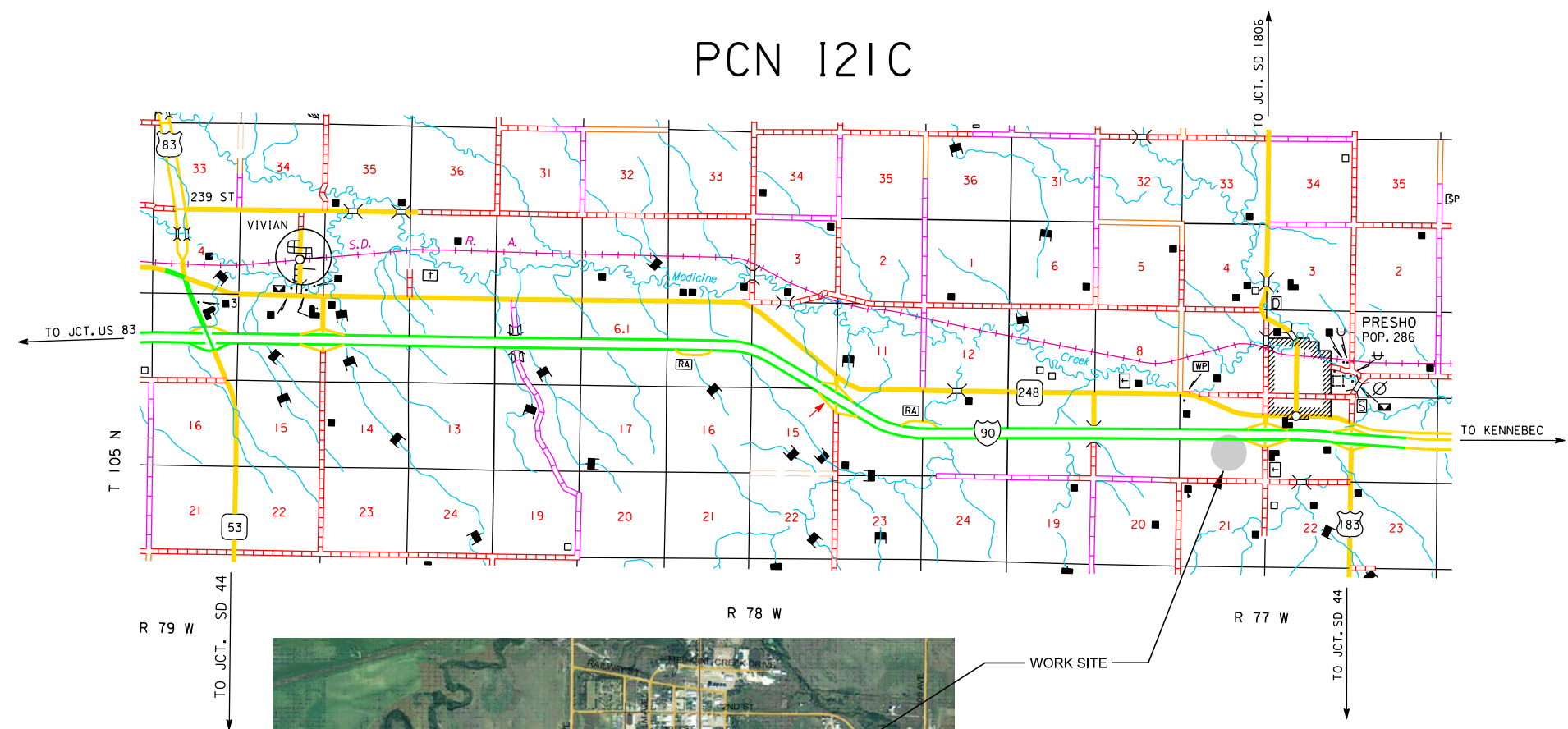
Sheet No. 1	General Layout and Index
Sheet Nos. 2-3	Estimate of Quantities & Plan Notes
Sheet Nos. 4-5	Sign Construction Details
Sheet Nos. 6-7	Standard Plates



PROJECT

EXIT 225 SIGN SUPPORT STRUCTURE REPLACEMENT

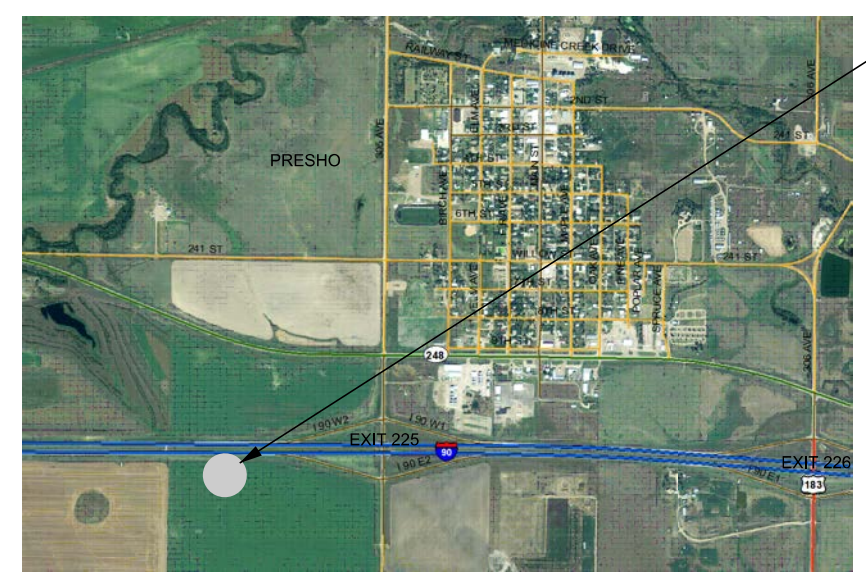
PCN 121C



DESIGN DESIGNATION

ADT (2011)	3090
ADT (2031)	3569
DHV	571
D	51%
T DHV	11.9%
T ADT	26.2%
V	75 MPH

STORM WATER PERMIT
None Required



ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E5020	Salvage Traffic Sign	1	Each
250E0010	Incidental Work	Lump Sum	LS
632E0058	2.25' Diameter Fixed Support Concrete Footing	10.0	Ft
632E1235	W6x20 Steel Post	46.0	Ft
634E0100	Traffic Control	221	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each

SPECIFICATIONS

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

SCOPE OF WORK

Work shall consist of constructing a new sign support structure that includes the required footings, posts, and stiffeners prior to removing the existing damaged sign support structure located at MRM 225 near the eastbound off-ramp to Presho.

The location for the new sign support structure shall be no more than 10 feet ahead or back of the existing sign location. The permanent location and position of the new sign support structure shall be verified in the field by the Engineer prior to construction and installation.

DOT personnel will be responsible for installing the salvaged sign panel(s) at the new sign location.

Any damage to the roadway shoulders and/or ditches due to the Contractor's operations shall be restored to the satisfaction of the Engineer, at the Contractor's expense, before final acceptance of the project is considered.

SEQUENCE OF OPERATIONS

The Contractor will be responsible for maintaining all existing traffic control signing for the safety of the traveling public.

Work will be allowed only during daylight hours.

The Contractor shall have all work completed at the new site for the sign support structure prior to removal of the existing sign support structure.

The Contractor shall notify Clark Guthrie at (605) 773-3464 at least two days prior to beginning the removal of the existing sign panel(s).

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 Engineer to determine modifications that will be necessary to avoid utility impacts.

SALVAGE TRAFFIC SIGN PANEL(S)

The Contractor shall remove and salvage the existing extruded aluminum sign panel(s) and all attaching hardware that holds the sign panel(s) onto the sign support structure. All attaching hardware shall be sorted and placed in separate containers (1-gallon and/or 5-gallon pails) at the time of removal. After removal the Contractor shall deliver the salvaged items to the Presho Maintenance Yard (NW1/4 SEC15 T105N R77W) that lies on the north side of I-90 and south of SD Hwy 16 in Presho. The Contractor shall notify the Engineer two days prior to time of delivery to the Maintenance Yard so correct placement for storage and inventory of materials can be made upon receipt.

Any additional damage done to the salvaged sign panel(s) and/or accompanying hardware by the Contractor's operations shall be repaired and/or replaced by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.

The cost for labor and equipment necessary to remove, salvage, and deliver signs/hardware to the Presho Maintenance Yard shall be incidental to the contract unit price per each for "Salvage Traffic Sign".

REMOVE SIGN SUPPORT STRUCTURE

The Contractor shall remove posts, bases, footings, and all other hardware that is not required to be salvaged and delivered to the Presho Maintenance Yard. The footings shall be removed, at a minimum, of 1 foot below the existing groundline. The Contractor shall fill the void from the removal of the footing with soil to match the adjacent groundline.

All removed items not to be salvaged, as specified, shall become the property of the Contractor for their disposal.

The cost for labor and equipment necessary to furnish and place soil, remove posts, bases, footings, and all other hardware for disposal shall be incidental to the contract lump sum price for "Incidental Work".

INSTALL SIGN SUPPORT STRUCTURE

The Contractor shall furnish all posts, stiffeners, bases, hardware, and labor for installation of the sign support structure in the size, type, and quantity as required per details and/or to the direction of the Engineer.

All costs associated with furnishing and installing the posts, stiffeners, bases, and all hardware necessary to construct the sign support structure shall be incidental to the contract unit price per foot for "W6x20 Steel Post".

Prior to ordering sign posts, the Contractor shall verify post lengths.

Refer to fixed post details regarding posts, hardware, bases, and footings. Measurement of post length for payment will be for above ground post length as field measured. The sign post contract item shall include post bases and all hardware. The lengths of the posts in the table are approximate lengths only. The Contractor shall verify the post length. The Contractor is urged to order posts after site verification of post length.

The length of the post shall not exceed the minimum length needed by more than 0.5 feet. Any portion that extends above the sign shall be cut off. No separate payment will be made for cutting the post or for that length cut off. All posts shall be accompanied by Certificates of Compliance and shall meet all safety standards as set forth in the current edition of the "Manual on Uniform Traffic Control Devices".

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	090E-391	2	7

WASTE DISPOSAL SITE

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

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

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	090E-391	3	7

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.**

GENERAL MAINTENANCE OF TRAFFIC

All applicable traffic control devices shall be in place prior to the start of work or mobilization of equipment within the traveled way.

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

Erect only those signs that are applicable to the work in progress. When the Contractor is working at specific work spaces within the project, only those traffic control devices applicable to that operation should be displayed.

All non-fixed location signs may be mounted on portable supports. The portable supports shall be constructed to yield upon impact to minimize hazards to motorists, and shall be of proper height.

The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP Report 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

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 meet the minimum mounting heights of 5 foot for rural areas and 7 foot for urban areas.

Traffic approaching the ramp must be adequately accommodated at all times.

GENERAL MAINTENANCE OF TRAFFIC (Continued)

The cost for additional signs shall be paid for at the contract unit price per unit for "Traffic Control". Additional Flagger hours shall be paid for at the contract unit price per hour for "Flagging". The cost of additional channeling devices shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous"

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. 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, 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.

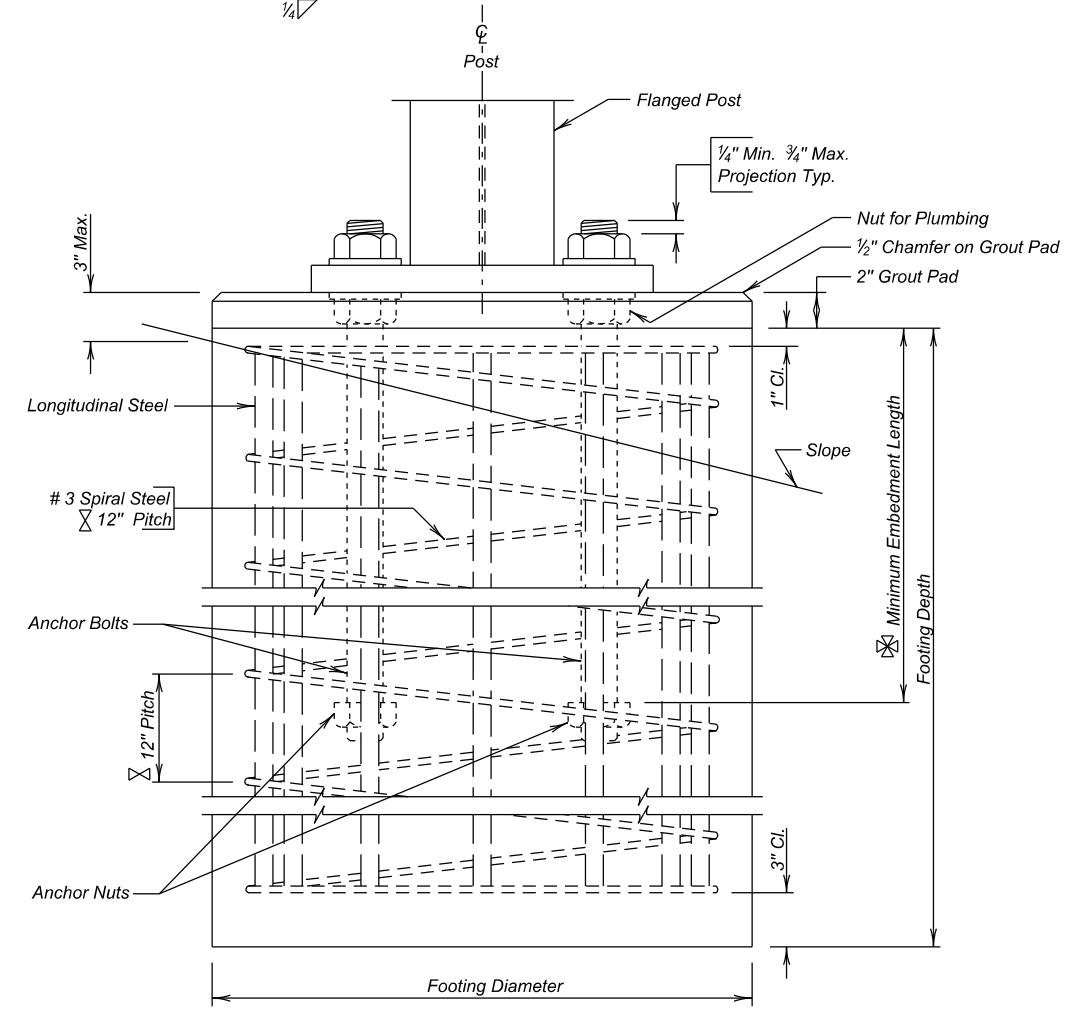
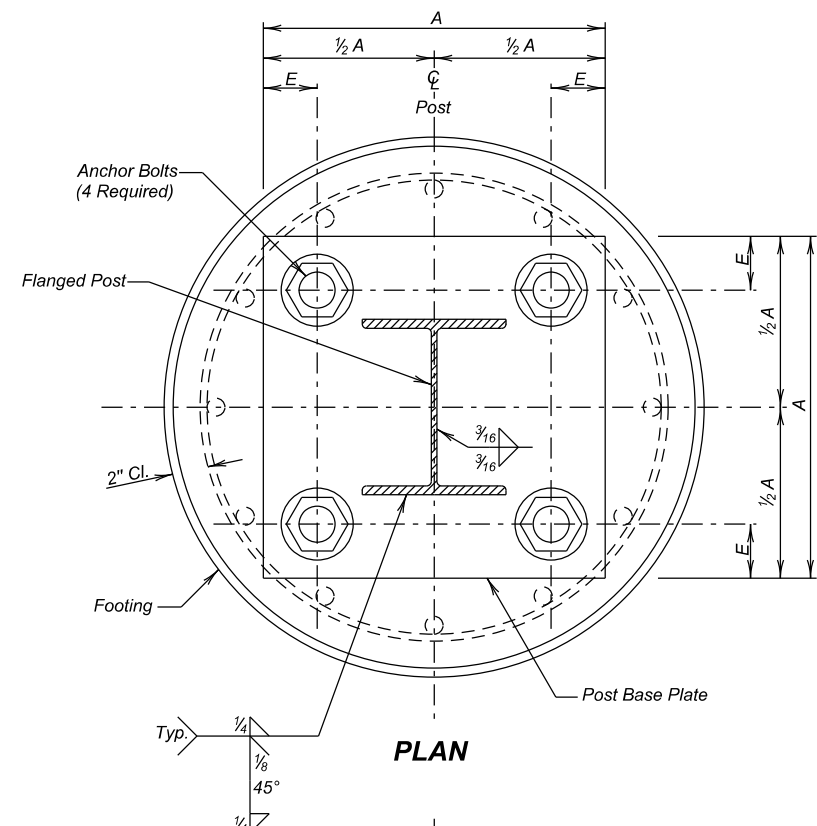
Highway equipment working within traffic or adjacent to traffic shall, at all times, display a flashing or revolving amber light to warn the traveling public. The Contractor shall maintain the driving surface on the project to eliminate hazards to the traveling public. The driving surface is defined as both the Driving and Passing Lane along with both outside shoulders on the project.

Non-applicable signs and/or devices shall be removed from view by the Contractor and stored a minimum of 30 feet from the driving lanes.

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.

SIGN TABULATION

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	1	17	17
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68
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	2	34	68
TOTAL UNITS				221	



SITE LOCATION	POST SIZE	FOOTING DIMENSIONS		POST BASE PLATE DIMENSIONS			ANCHOR BOLT SIZE		LONGITUDINAL STEEL QUANTITIES			# SPIRAL STEEL QUANTITIES		
		DIA.	DEPTH	"A"	"E"	THICK.	DIA.	LENGTH	MINIMUM EMBEDMENT	NO.	SIZE	LENGTH	DIA.	LENGTH
I-90 Eastbound at Exit 225 near Presho off-ramp	W6x20	2.25	5'	15"	2.50'	1"	1.25"	39"	25"	8	*8	4.6667'	1.9167'	45'

NOTE: The above is a Site Specific data entry table and the inserted information is the responsibility of the Region Traffic Engineer.

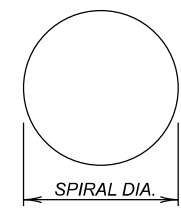
⊗ # Spirals - Use 12" pitch and 1 1/2 extra turns at each end. Use 1 1/2 turns for lap at splice as required, or weld as approved by the Office of Bridge Design. Spirals may be smooth bars, Bar length shown does not include Splices.

⊗ See Footing Detail

Dimensions are out to out of bars.

NOTES-

- Design Specification: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 2001 Edition with 2003 Interims.
- Concrete Footings shall be Class M6 - $f_c = 4000$ p.s.i.
- Structural Steel shall conform to ASTM A36.
- All Reinforcing Steel, except spirals, shall conform to ASTM A615, Grade 60.
- Spiral Reinforcing Steel may be fabricated from cold drawn wire ASTM A82, or hot rolled plain or deformed bars conforming to the strength requirements of ASTM A615, Grade 60.
- All Anchor Bolts shall conform to ASTM A307 having a minimum yield stress of 36000 p.s.i. Anchor Bolts shall be cleaned to remove any oil from the threading process before galvanizing.
- Anchor Bolts shall have 7" thread length on both ends.
- All nuts shall conform to ASTM A563, DH. All nuts shall be heavy hex. All washers shall conform to ASTM F436.
- All structural steel including the Steel Posts shall be galvanized according to ASTM A123. The Nuts, Washers and 10" of one end of the Anchor Bolts shall be galvanized according to ASTM A153.
- All Bolt Holes shall be drilled. All plate cuts shall preferably be Saw Cuts, however, Flame Cutting will be permitted providing all edges are ground smooth (metal projecting beyond the plane of the plate face will NOT be allowed).
- All welding and weld inspection shall be in accordance with the latest edition of AWS D1.1 Structural Welding Code.

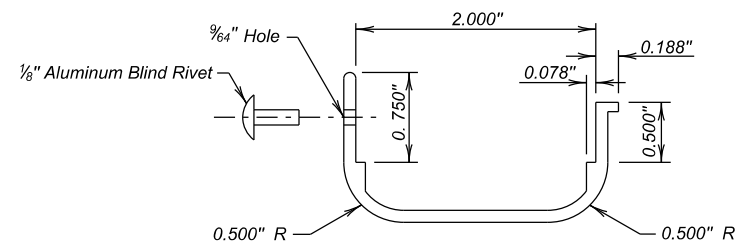


SHOP PLANS-

The fabricator shall initially submit two (2) copies of the shop plans to the Office of Bridge Design for review. One reviewed copy will be sent back to the fabricator who will then make changes, if any, and then send the Office of Bridge Design six (6) final approved copies for distribution.

ERECTION DETAILS FOR FIXED SIGN SUPPORTS
 S. D. DEPT. OF TRANSPORTATION
 DECEMBER 1994

DESIGNED BY	DRAWN BY	CHECKED BY	DATED	BY
RH/DM	RH/TB	RH/DM		Kevin N. Goeden
CNTYPCNX	PCNXDSPG	BSTDFSSA		BRIDGE ENGINEER

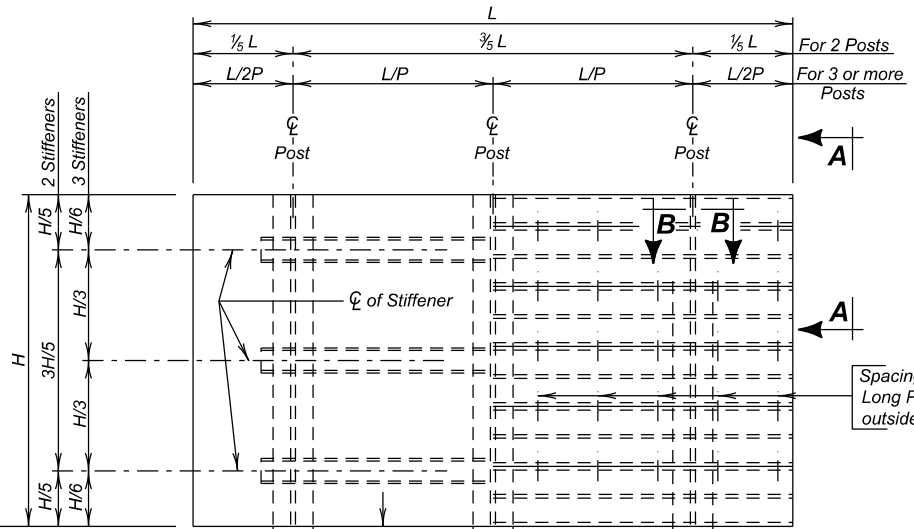


SIDE TRIM MOLDING

Side Trim Molding is required on all vertical edges of extruded panels. They shall be fastened at a minimum of one (1) rivet per panel.

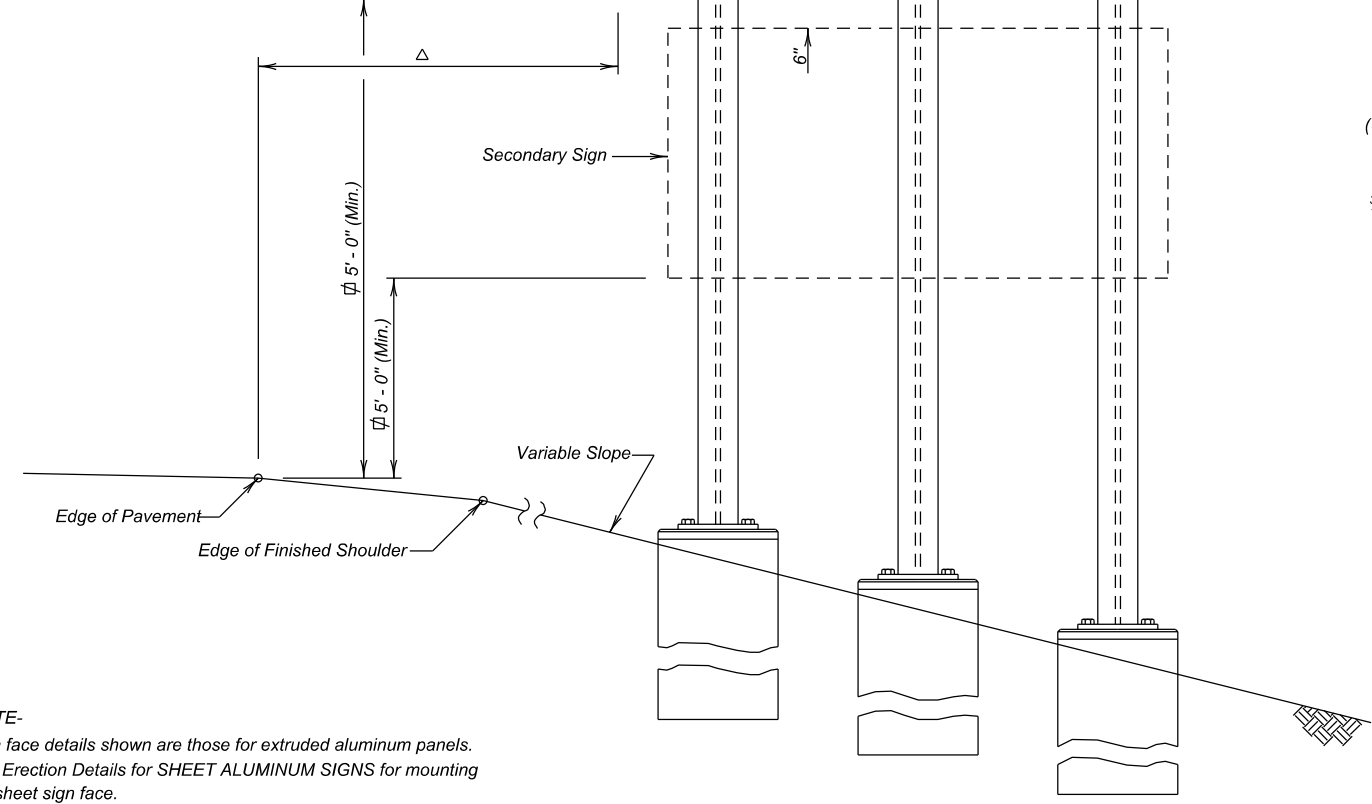
NOTE- P = Number of Posts to be used
H = Vertical dimension of sign
L = Horizontal dimension of Main Sign

NOTE- 2 stiffeners are required when H is 8'-0" or less.
3 stiffeners are required when H is more than 8'-0".



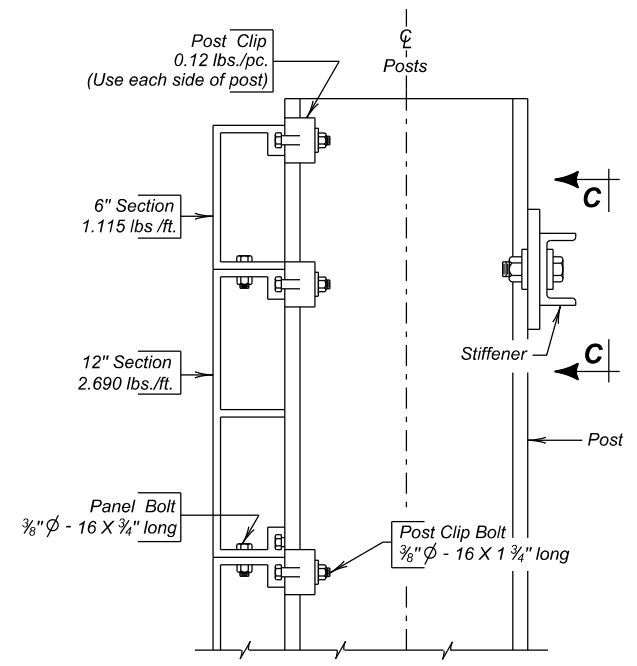
△ Clear distance as recommended by latest edition of AASHTO ROADSIDE DESIGN GUIDE.

∅ Mounting height as recommended by latest edition of MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

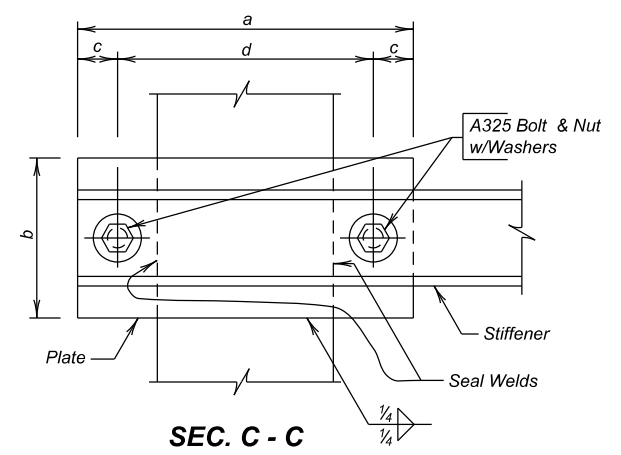


ELEVATION

NOTE- Sign face details shown are those for extruded aluminum panels. See Erection Details for SHEET ALUMINUM SIGNS for mounting flat sheet sign face.

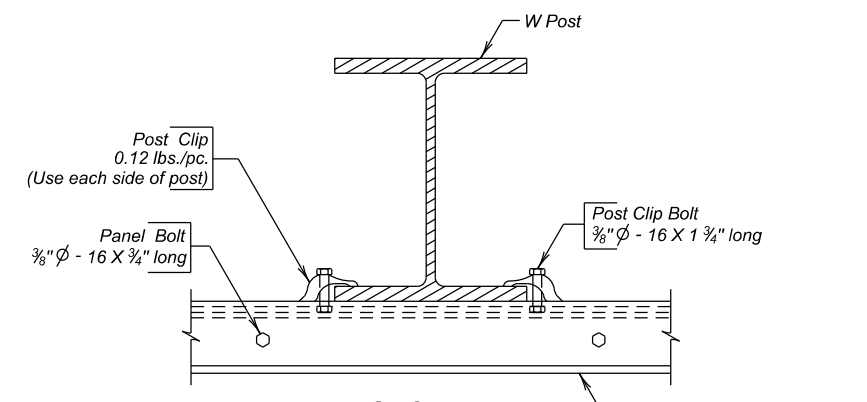


SEC. A - A

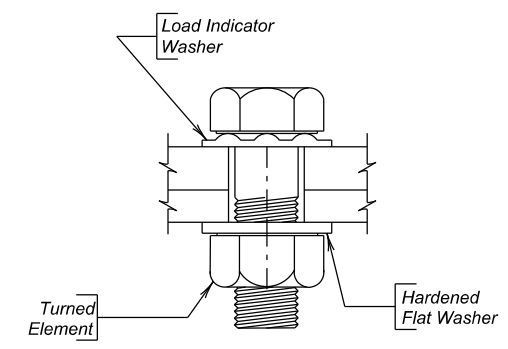


SEC. C - C

Spacing for 3/8" - φ 16 X 3/4" Long Panel Bolts (3" or 6" from outside edges and 1'-0" apart.)



SEC. B - B
(Stiffener not shown)



LOAD INDICATOR WASHER DETAIL

STIFFENER DATA							
Post	Stiffener	a	b	c	d	Bolt (A325)	Plate Thk.
S3X5.7 thru W8X21	C3X5	10 1/2"	5"	1 1/4"	8"	5/8" φ	5/16"
W8X24 thru W10x45	C5X6.7	13 1/2"	6"	1 1/2"	10 1/2"	7/8" φ	3/8"

STIFFENER BOLTING PROCEDURE-

1. High strength bolts shall be tightened so as to obtain a minimum residual tension by the use of load indicator washers.
2. High strength bolts may be tightened by the "Turn of the Nut" method as provided in Section 11.5.6.4.4 of the AASHTO Standard Specifications for Highway Bridges in lieu of #1 above.

ERECTION DETAILS
FOR
FIXED SIGN SUPPORTS
S. D. DEPT. OF TRANSPORTATION
DECEMBER 1994

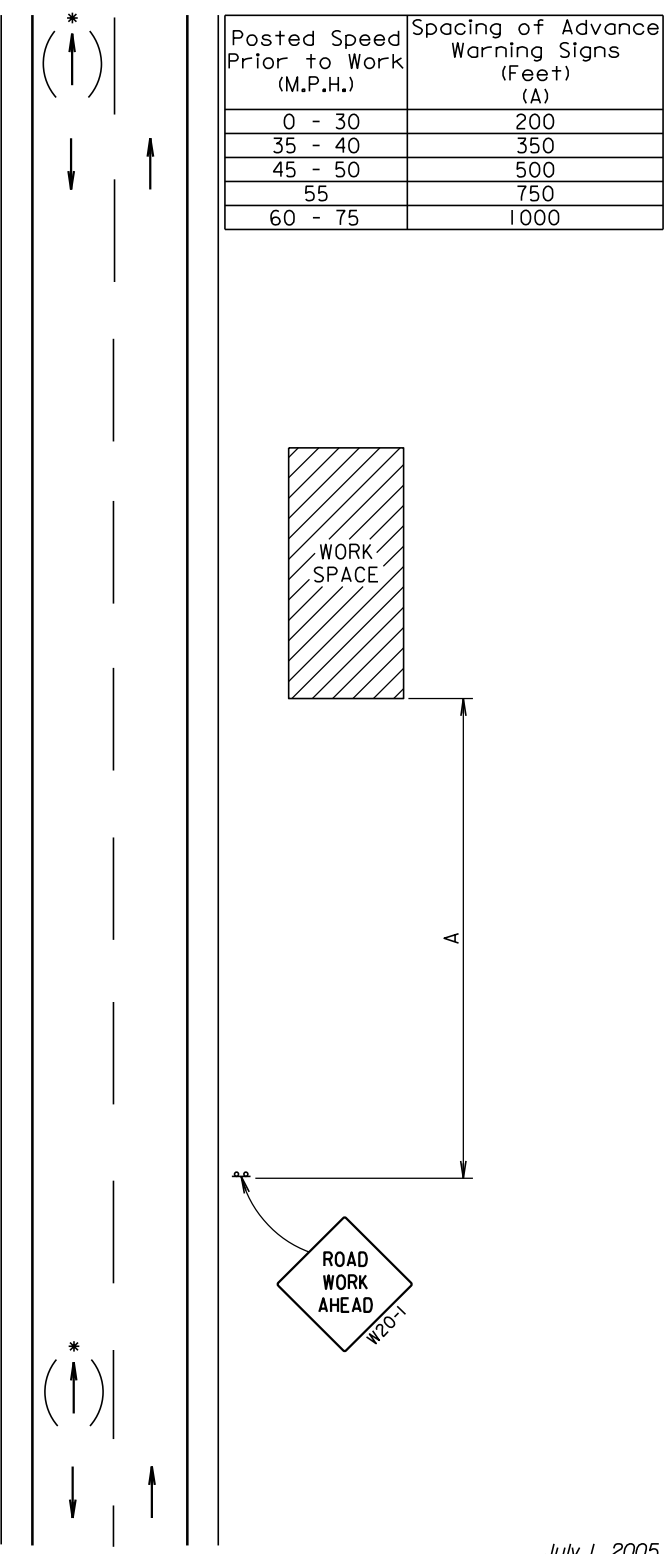
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

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.

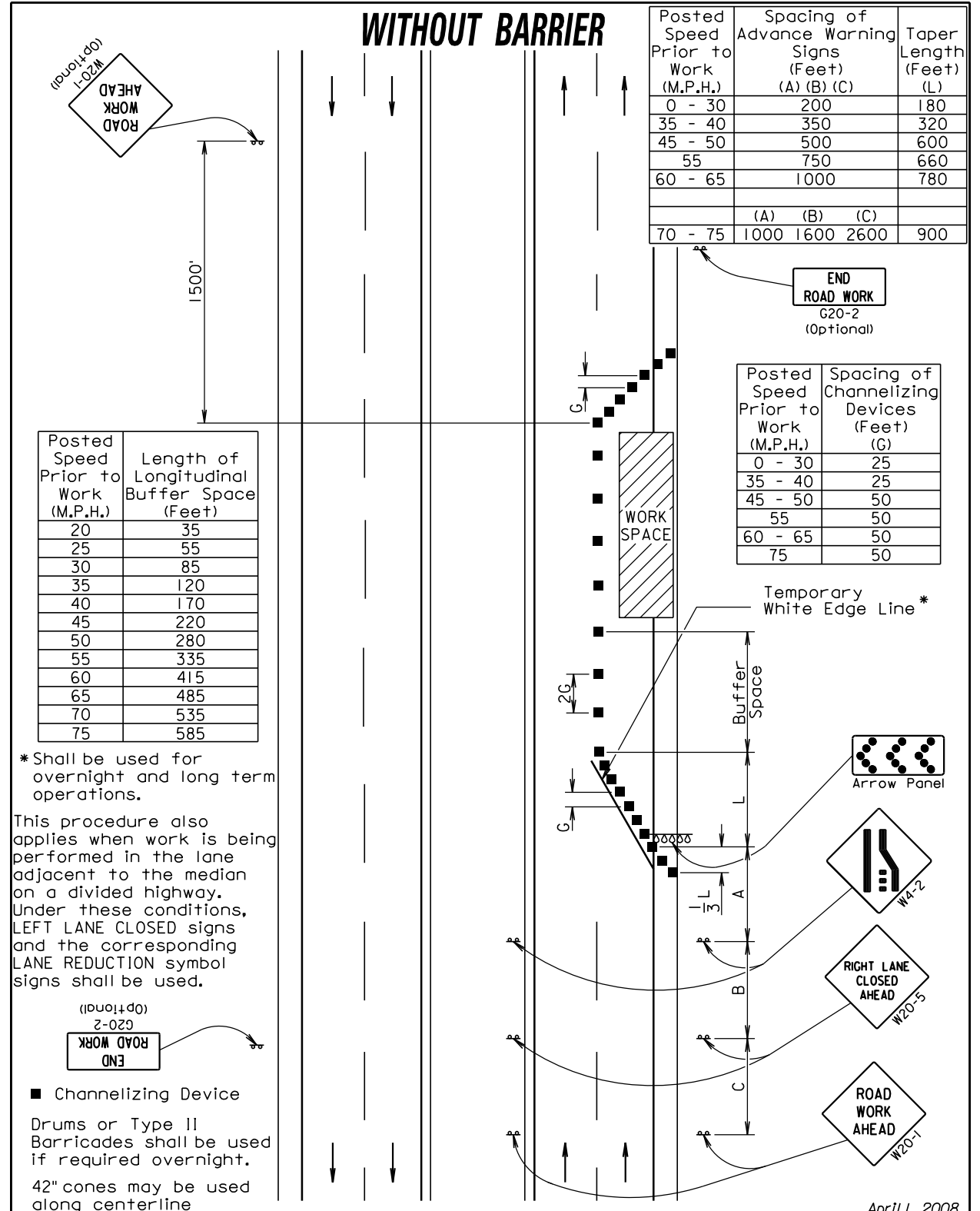
The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* 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.



July 1, 2005

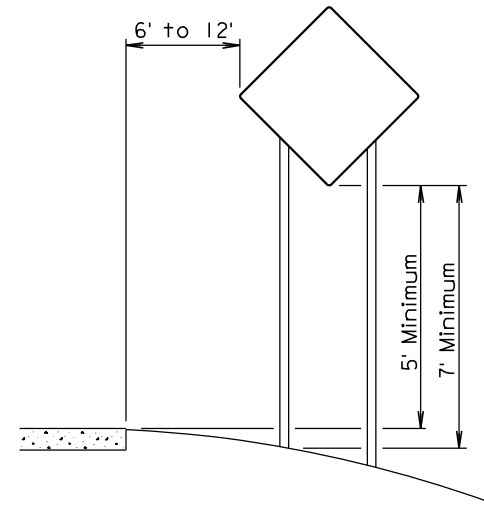


* Shall be used for overnight and long term operations.

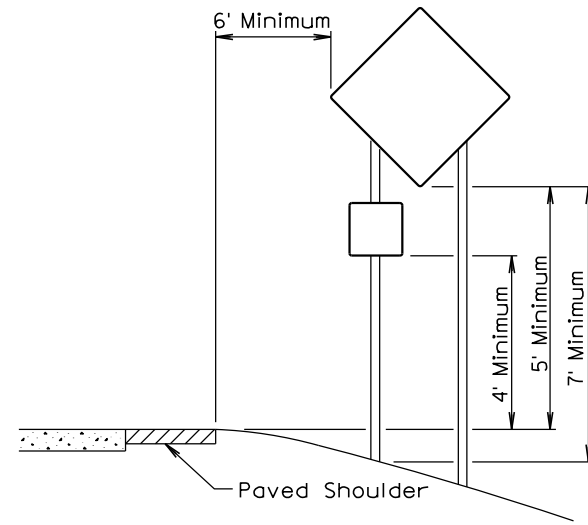
This procedure also applies when work is being performed in the lane adjacent to the median on a divided highway. Under these conditions, LEFT LANE CLOSED signs and the corresponding LANE REDUCTION symbol signs shall be used.

■ Channelizing Device
Drums or Type II Barricades shall be used if required overnight.
42" cones may be used along centerline

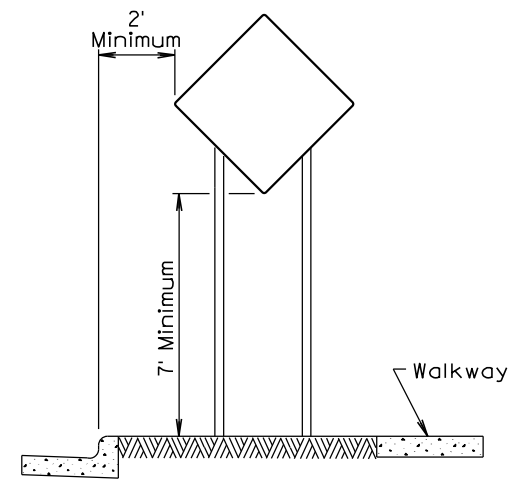
April 1, 2008



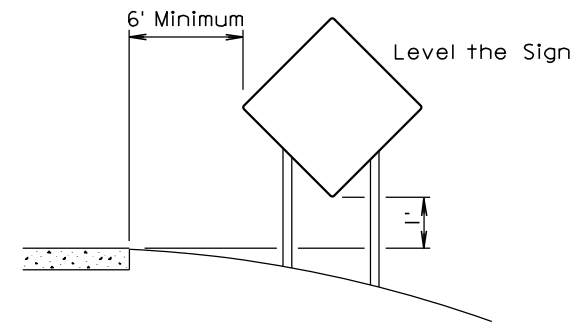
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT



RURAL DISTRICT
3 DAY MAXIMUM

February 14, 2011

Published Date: 2nd Qtr. 2012

**S
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T**

CRASHWORTHY SIGN SUPPORTS
(Typical Construction Signing)

PLATE NUMBER
634.85

Sheet 1 of 1