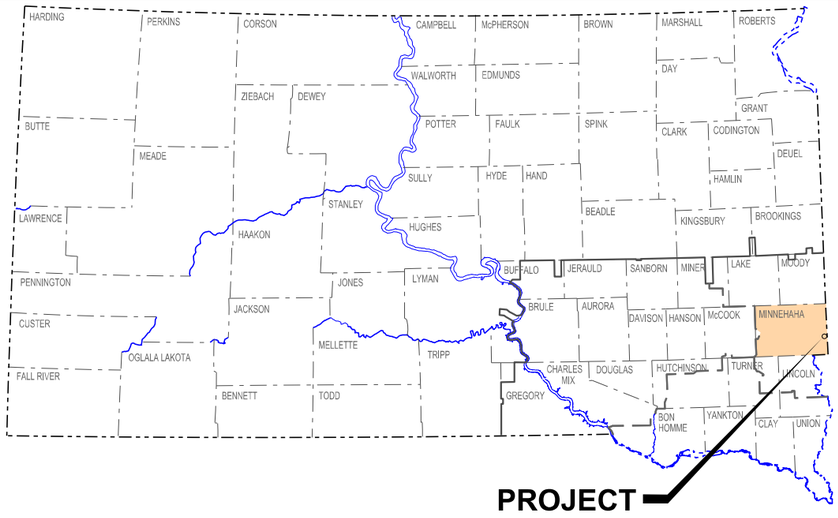


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT 090 W–271
INTERSTATE 90
MINNEHAHA COUNTY

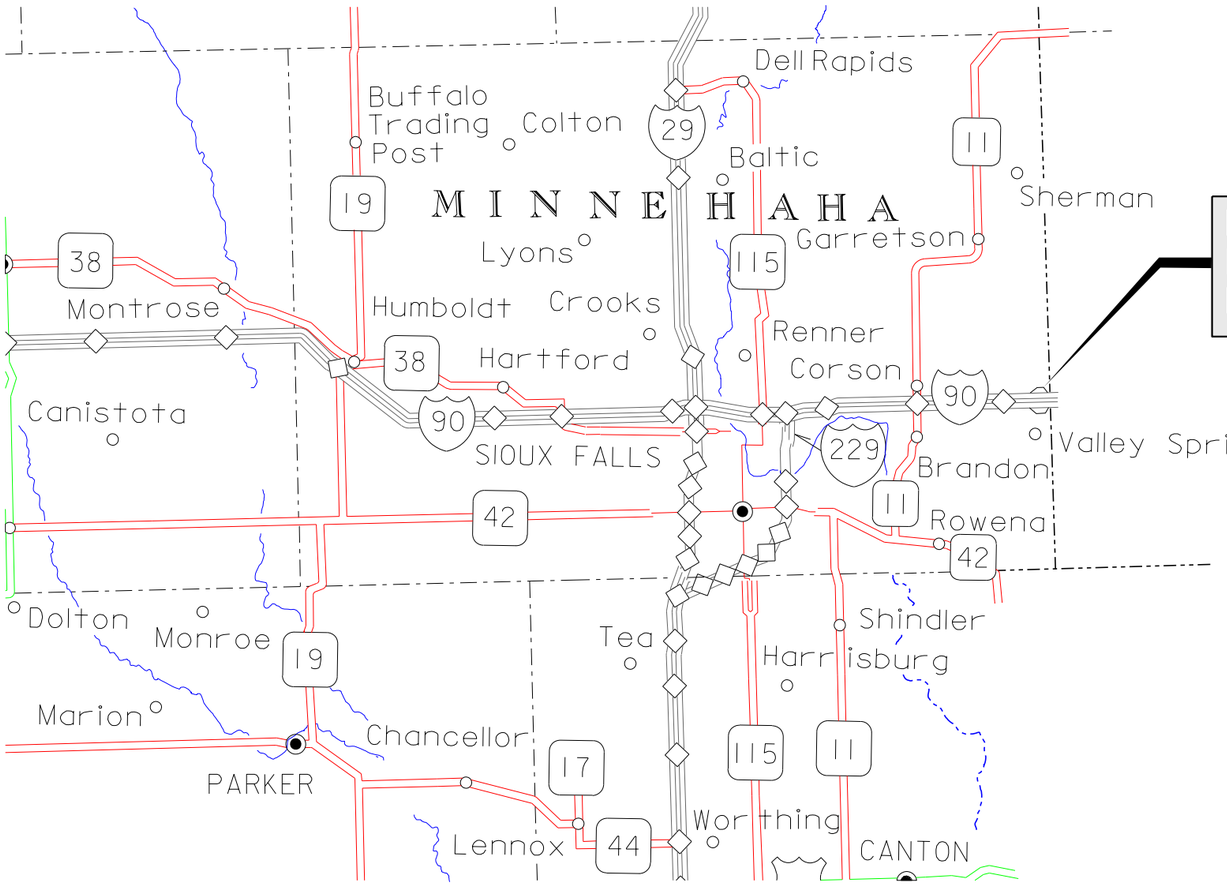
CONSTRUCT RAMP DETOUR &
SURFACE GORE AREA

PCN I6P1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090 W-271	1	16

Plotting Date: 04/04/2022

INDEX OF SHEETS



PROJECT
REST AREA/PORT OF ENTRY
MRM 412.00 + 0.300

STORM WATER PERMIT
(None required)

I90E ADT (2021) 7,880
I90W ADT (2021) 7,880

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E7510	Remove Pipe End Section for Reset	1	Each
120E0010	Unclassified Excavation	394	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
260E1010	Base Course	809.9	Ton
320E1200	Asphalt Concrete Composite	319.3	Ton
320E3000	Compaction Sample	4	Each
450E0143	24" RCP Class 3, Furnish	8	Ft
450E0150	24" RCP, Install	8	Ft
450E9001	Reset Pipe End Section	1	Each
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	98.0	SqFt
634E0110	Traffic Control Signs	320.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each
634E0330	Temporary Raised Pavement Markers	960	Ft
734E0010	Erosion Control	Lump Sum	LS

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090 W-271	3	16

ENVIRONMENTAL COMMITMENTS

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf >

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

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.

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

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

The waste disposal site(s) will 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 Environmental Office and the Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with 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 not to exceed the duration of the project. Prior to project completion, the waste will 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.

Cost 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) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

State Historic Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in 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 artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

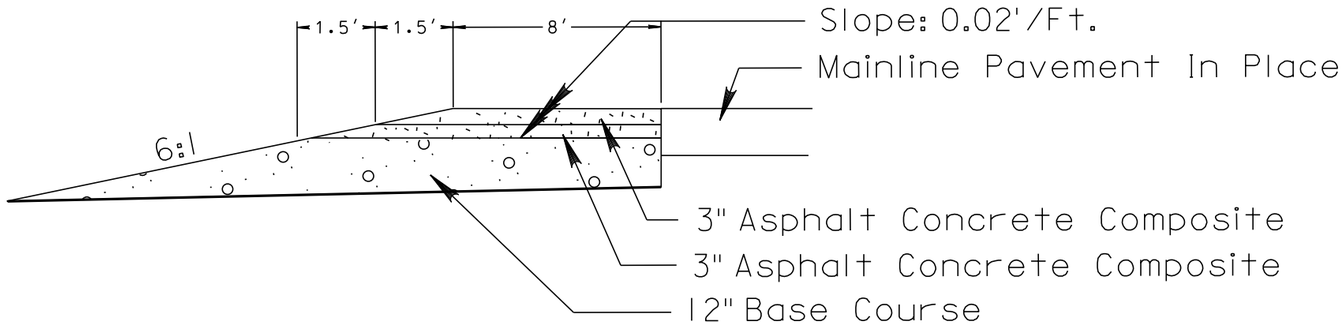
The Contractor is responsible for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090 W-271	4	16

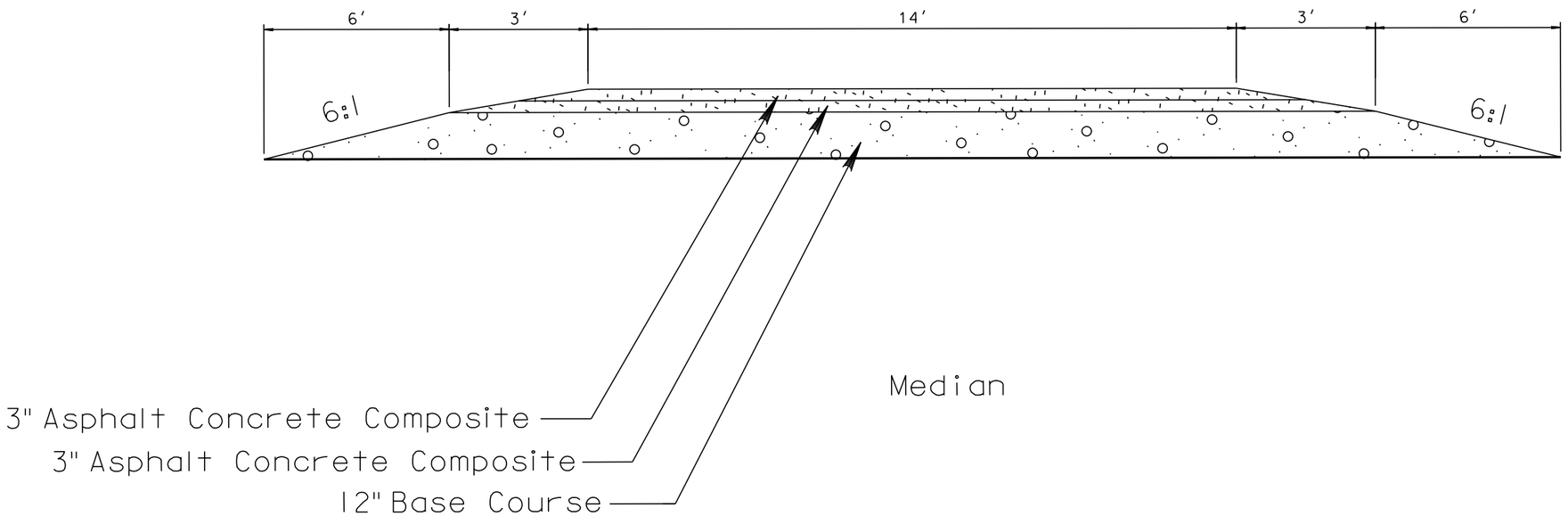
Plotting Date: 03/30/2022

RAMP DETOURS

RAMP DETOUR TYPICAL NEXT TO PCC PAVEMENT



RAMP DETOUR TYPICAL SECTION



SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work.

SPECIAL CONDITIONS

1. During all phases of construction, a minimum of width of 16' will be maintained for traffic.

2. Access to the Port of Entry and Rest Area must be maintained at all times.

COORDINATION OF WORK

The ramp detour is being constructed to be used as part of an upcoming Minnesota reconstruction project 6780-124 in 2022. The slip ramp will be used during the second phase of that project when both direction of traffic on placed on the east bound lanes. The Contractor will be responsible to coordinate work with the Contractor to which the Minnesota I-90 reconstruction project is awarded so schedules and traffic control do not conflict.

The Minnesota DOT contract for the upcoming reconstruction project is Robert Sneller (Robert.sneller@state.mn.us; 507-822-2285)

LANE CLOSURES

Interstate lane closures will be removed when work will not be occurring for a period of 3 or more calendar days. Activities that do not involve workers being present, such as curing time for concrete, constitute work. Lane closures will not be set up on a Friday if no work will be occurring on Saturday or Sunday. In these cases, the lane closure will be installed on Monday.

GENERAL TRAFFIC CONTROL

It is anticipated that work on the Minnesota DOT I90 reconstruction project will begin the middle to the end of May 2022. Quantities for signs and temporary raised pavement markers have been included for a lane closure, but when work begins on the Minnesota project it is anticipated the lane closure will conflict with the traffic control for that project. Once work begins on the Minnesota DOT I90 reconstruction project, any work remaining on the slip ramp will be required to be finished with a shoulder closure as so the lane closure does not conflict with other traffic control.

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

All temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports.

All construction operations will be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

At no time will a vertical drop-off of greater than 3 inches be left overnight adjacent to the traveled way. The Contractor will utilize embankment material to ensure a 3-inch vertical drop-off is not exceeded. The slope of the embankment material will not be steeper than a 4:1 within 30 feet of the traveled way.

Traffic will be maintained on the driving lanes. Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulder due to rerouted traffic or Contractor's equipment will be repaired at no expense to the Department.

A Type 3 Barricade will be installed at the end of a lane closure taper as detailed in these plans.

Construction vehicles will exit or enter the construction work zone at locations identified by the Engineer. At no time will construction vehicles utilize the maintenance crossovers or the Interstate median to exit or enter Interstate traffic.

WORK ZONE SPEED REDUCTION

The Department is required to obtain a speed reduction resolution prior to the installation of any SPEED LIMIT (R2-1) signs as shown in the plans. To provide adequate time for the resolution to be enacted, the Contractor will inform the Engineer a minimum of 3 weeks prior to the scheduled installation of any work zone speed reduction signs on the project. The information provided by the Contractor will include the anticipated date of sign installation, the newly reduced speed limit, the location of the work zone, and the anticipated completion date of work requiring the speed reduction.

TEMPORARY RAISED PAVEMENT MARKERS

Temporary raised pavement markers will be used for marking lane closure tapers.

Temporary raised pavement markers will be attached to the roadway surface with a flexible non-permanent bituminous adhesive capable of being removed from the roadway surface or with an adhesive approved by the Engineer.

Cost to furnish, install, replace if necessary, and remove the markers will be incidental to the contract unit price per foot for Temporary Raised Pavement Markers.

REMOVE AND REPLACE TOPSOIL

Topsoil will be salvaged and stockpiled prior to constructing the ramp detour. Limits of this work, depth of salvage, and stockpile location will be directed by the Engineer. Following completion of construction, topsoil will be spread evenly over the disturbed areas and inslopes of the ramp detour. Minor shaping may be required for proper drainage to the existing pipe under the current ramp.

The estimated amount of topsoil to be removed and replaced is 200 CuYd.

All costs associated with removing and replacing the topsoil along areas to be resurfaced will be incidental to the contract lump sum price for “Remove and Replace Topsoil”.

EROSION CONTROL

The estimated area requiring erosion control is 8750 square feet. All costs for the erosion control work for furnishing, placing, and maintaining erosion control including equipment, labor, silt fence, seeding, and mulching will be incidental to the contract lump sum price for “Erosion Control”.

The limits of erosion control work will be determined by the Engineer during construction.

Permanent Seeding

Type G Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk, Chief, Nebraska 54	3
Big Bluestem	Bison, Bonilla, Champ, Sunnyview, Rountree, Bonanza	3
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
	Total:	26

High Flow Silt Fence

The high flow silt fence fabric provided will be from the approved product list. The approved product list for high flow silt fence may be viewed at the following internet site:

http://apps.sd.gov/HC60ApprovedProducts/main.aspx

High flow silt fence will be placed at the locations noted in the table.

Table Of High Flow Silt Fence

Station	Location	Quantity (Ft)
953+55 – 104’ Lt	Pipe Inlet	10

Fiber Mulching

Fiber mulch will be applied in a separate operation following permanent seeding.

The Contractor will allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

The fiber mulch provided will be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

http://apps.sd.gov/HC60ApprovedProducts/main.aspx

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

WATER FOR COMPACTION

The cost of water for compaction of the granular material will be incidental to the various other contract items. A minimum of 4% moisture will be required at the time of compaction unless otherwise directed by the Engineer.

SURFACING THICKNESS DIMENSIONS

At those locations where material must be placed to achieve a required elevation, the depth/quantity may be varied to achieve the required elevation.

UNCLASSIFIED EXCAVATION

Payment will be based on plans quantity. Further measurements will not be made unless there is a change made in the limits of work. Excavated material will be considered waste to be disposed of by the Contractor.

Ramp Detour

An estimated 325 CuYd’s of unclassified excavation will be required to accommodate for construction of the ramp detour.

Surfacing Gore Area

From approximately station 921+95 to 924+35, 3” of existing gravel surfacing shall be removed & from approximately station 924+35 to 926+95, 9” of existing topsoil and fill material will be removed to accommodate surfacing material. An estimated 69 CuYd’s of unclassified excavation has been included in the estimate of quantities to accomplish this work.

ASPHALT CONCRETE COMPOSITE

Two random locations on each lift of asphalt will be selected by the engineer for density determination. The cutting and trimming of the cores to the appropriate lift thickness will be performed by the contractor as per SD 315. Density determination of the cores will be performed by the Engineer as per SD 315. The density of each lift of asphalt will be the average of the two cores. All costs associated with the compaction cores will be incidental to the contract unit price per each for Compaction Sample.

Asphalt Concrete Composite will include MC-70 Asphalt for Prime placed at the rate of 0.30 gallons per square yard. The Asphalt for Prime will be applied to the Base Course for the full width of the bottom layer of Asphalt Concrete Composite plus one foot additional on the outside shoulder.

Asphalt for tack SS-1h or CSS-1h will be applied prior to each lift of Asphalt Concrete Composite. Asphalt for tack will be applied at a rate of 0.06 gallons per square yard on new asphalt concrete pavement.

Sand for flush seal will not be required.

RAMP DETOURS

Ramp detours will be constructed according to the layouts provided in these plans.

The maximum horizontal degree of curve will be 6°45', the distance from where the inside edge of the ramp detour intersects the in-place ramp will be between 150 and 250 lineal feet from the gore area, and the vertical alignment will be constructed to provide adequate stopping sight distance. Any existing drainage impacted by the ramp detours will be addressed. All costs associated with the temporary modification of an existing drainage will be incidental to the various contract items needed to construct the ramp detours. The Engineer will have final approval of the horizontal and vertical alignment of the ramp detours.

NEW PERMANENT SIGNING

All signs will be manufactured in accordance with the sheeting manufacturer's recommendations utilizing a matched component system, including inks, electronic cuttable films, and protective overlay films.

All Flat Aluminum Signs, Nonremovable Copy High Intensity will have sheeting in conformance with the requirements of ASTM D4956 Type IV.

Signs shall be furnished and delivered to the Valley Springs / Port of Entry location for use on the upcoming Minnesota DOT I-90 project. Installation of the signing will not be required as part of the slip ramp project.

All costs associated with furnishing the new permanent signs will be incidental to the contract unit price per square foot for "Flat Aluminum Sign, Nonremovable Copy High Intensity".

DIGITALLY PRINTED SIGNS

Digitally printed signs will be allowed on this project. If the Contractor elects to provide digitally printed signs, such signs will adhere to the following specifications.

PROTECTIVE OVERLAY FILM

Permanent traffic signs printed with digital ink systems will be fabricated with a full sign protective overlay film designed to provide a smooth surface needed for retroreflectivity, and to protect the sign from fading and UV degradation. The overlaminate will comply with the retroreflective sheeting manufacturer's recommendations to ensure proper adhesion and transparency and will also meet the reflective film durability as identified in Table 1.

Table 1: Retroreflective Film Minimum Durability Requirements

ASTM D4956 Type	Full Sign Replacement Term (years)	Sheeting Replacement Term (years)
I	0	7
III	7	10
IV	7	10
VIII	7	10
IX	7	12
XI	7	12

FABRICATION

Retroreflective sheeting will be applied to a properly cleaned and prepared aluminum sign blank in accordance with the retroreflective sheeting manufacturer's recommendations. Sign legend will be applied using digital print technologies and systems in accordance with the retroreflective sheeting manufacturer's recommendations and the requirements of these plans.

Finished signs will be free of ragged edges and must be supplied clean and free of scratches, grease, oil, lubricants or other contaminants. Minor blemishes (dirt speck, dust, etc.) may settle on the fresh ink surface or become entrapped between the sheeting surface and transparent overlay film due to static charge within the sign shop environment. Any blemish must be minor and not interfere with the communication of the sign message to the motorist. The blemish must not be visible to the naked eye when viewed from 30 feet or greater.

After application of the retroreflective sheeting, sign blanks will be stacked and packaged face to face, back to back, and protected in accordance with the sheeting manufacturer's recommendations. Finished signs will be securely packaged to prevent damage during transit or storage according to the sheeting manufacturer's recommendations.

TRAFFIC SIGN PERFORMANCE WARRANTY PROVISIONS

Based on the ASTM Type of sheeting specified, traffic control signs will be warranted for the duration shown in Table 1. Full product terms and conditions are as established by each sheeting manufacturer and may contain certain limitations based on sheeting and ink colors, and geographic exposure of the sign. A copy of the warranty document with complete details of terms and conditions will be supplied if requested by the Engineer.

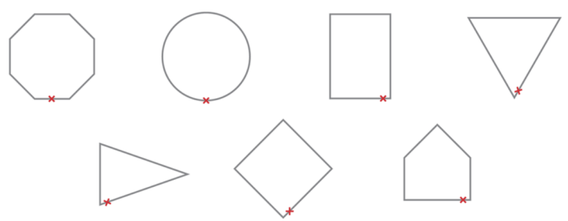
CERTIFIED DIGITAL SIGN FABRICATOR

Sign fabricators using digital imaging methods to produce regulated traffic signs must be certified by the reflective sheeting manufacturer whose materials are used to produce the delivered signs.

DATE TAGGING SIGNS WITH PERTINENT INFORMATION

All digitally printed signs are required to be date-tagged with the following 2 components:

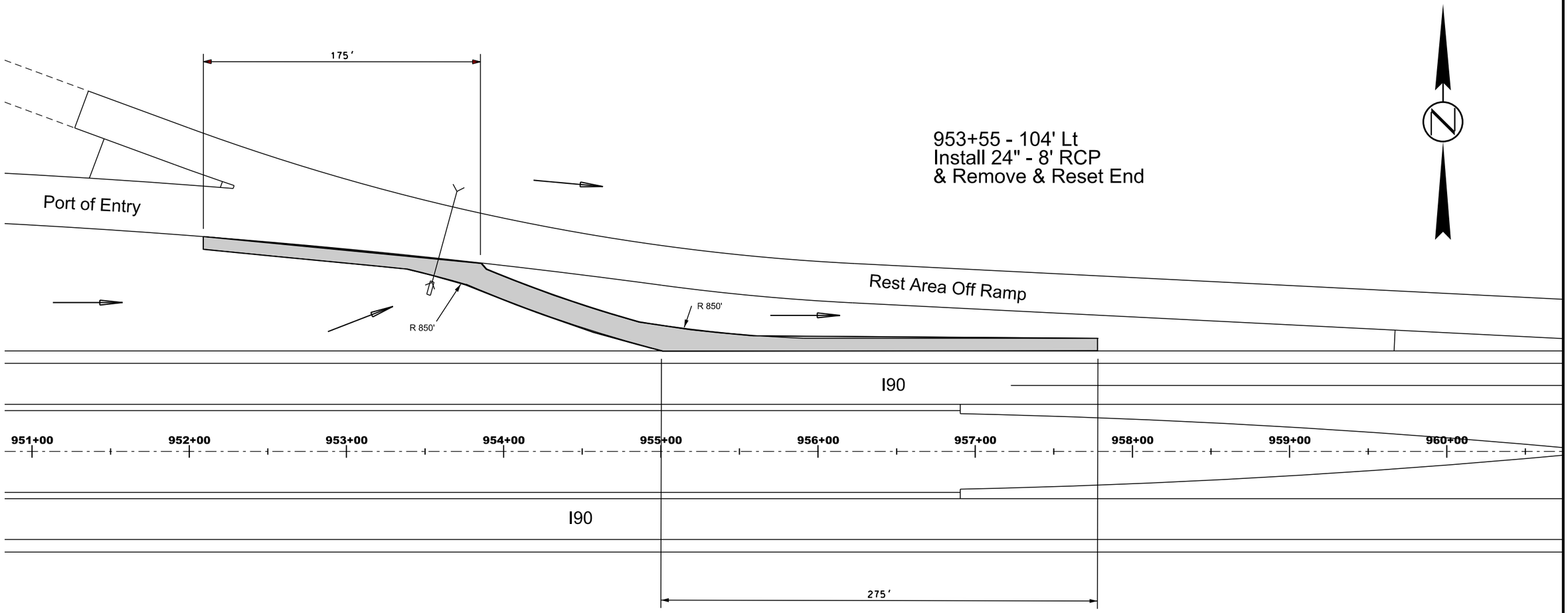
1. Date tags on the back of signs
   Tags will have the following information and be fabricated with material and printing system that are as durable as the warranted sign.
   - Name of Sign Fabricator
   - Date the sign was fabricated (month and year)
   - Process that was used for sign fabrication (digitally printed)
   - Supplier of sheeting that was used for fabricating the sign.
2. Border date
   The month and year (mm/yyyy) of sign fabrication will be printed in the border of the sign in 3/8" sans serif font. Border date will be printed with the same warranted printed system as the sign face. The date should be printed in the locations indicated below.



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090 W-271	8	16

Plotting Date: 03/23/2022

RAMP DETOUR



General Notes:

Station shown for the Ramp Detour is for reference only.

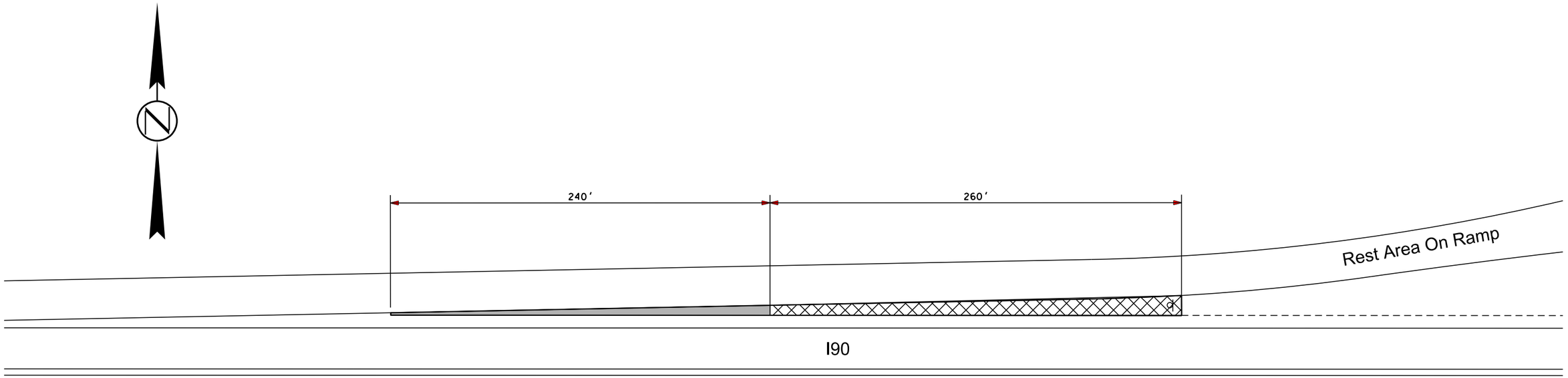
The Ramp Detour shall be constructed with a maximum horizontal degree of curve of 6 45' and the vertical alignment shall be adequate for stopping sight distance.

Surfacing for Ramp Detour:
6" Class E Asphalt Concrete (257.9 Tons)
12" Base Course (731.9 Tons)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090 W-271	9	16

Plotting Date: 03/30/2022

SURFACE GORE AREA



Surfacing for Fill Gore Area
3" Asphalt Concrete Composite (17.6 Tons)

Surfacing for Fill Gore Area - Grassed Locations
3" Asphalt Concrete Composite (43.8 Tons)
6" Base Course (78 Tons)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090 W-271	10	16

Plotting Date: 03/23/2022

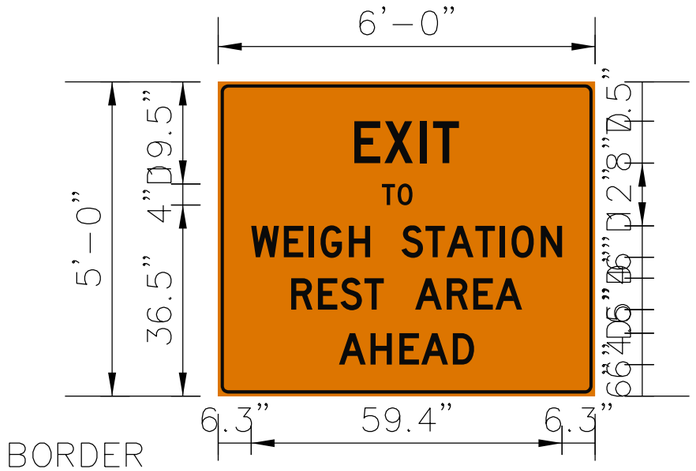
Itemized List for Traffic Control Signs

		EXPRESSWAY / INTERSTATE			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 45	2	36" x 48"	12.0	24.0
R2-1	SPEED LIMIT 65	2	36" x 48"	12.0	24.0
R2-1	SPEED LIMIT 80	1	36" x 48"	12.0	12.0
R2-6aP	FINES DOUBLE (plaque)	1	36" x 24"	6.0	6.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	1	48" x 48"	16.0	16.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	2	48" x 48"	16.0	32.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	1	48" x 48"	16.0	16.0
W21-5a	LEFT or RIGHT SHOULDER CLOSED	2	48" x 48"	16.0	32.0
W21-5b	LEFT or RIGHT SHOULDER CLOSED AHEAD	2	48" x 48"	16.0	32.0
E5-1	EXIT GORE	1	72" x 60"	30.0	30.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			**320.0**

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090 W-271	11	16

Plotting Date: 03/23/2022

Flat Aluminum Sign Detail -High Intensity Sheeting Type (IV)



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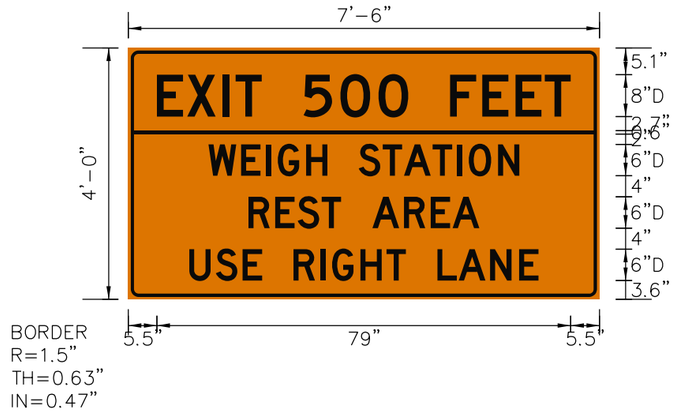
IN=0.47"



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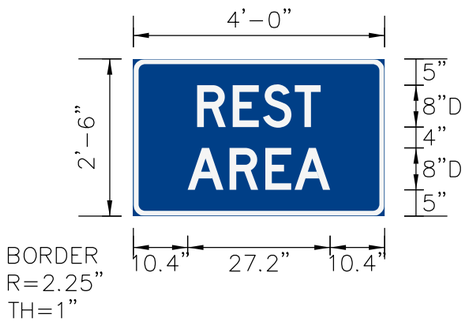

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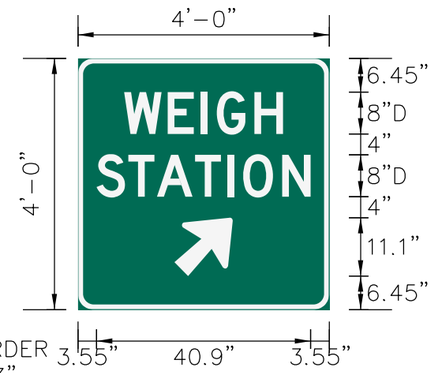

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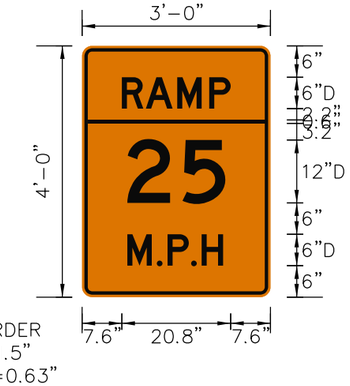
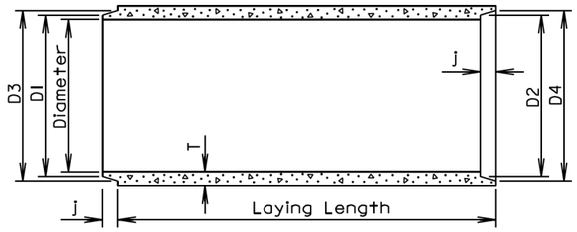


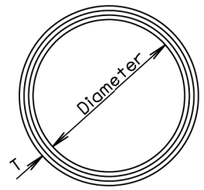
BORDER
R=1.5"
TH=0.63"
IN=0.47"

TOLERANCES IN DIMENSIONS

Diameter: ±1.5% for 24" Dia. or less and ±1% or 3/8" whichever is more for 27" Dia. or greater.
Diameters at joints: ± 3/16" for 30" Dia. or less and ± 1/4" for 36" or greater.
Length of joint (j): ± 1/4".
Wall thickness (T): not less than design T by more than 5% or 3/16", whichever is greater.
Laying length: shall not underrun by more than 1/2".



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

Construction of R.C.P. shall conform to the requirements of Section 990 of the Specifications.

Not more than 2 four-foot sections shall be permitted near the ends of any culvert. Four-foot lengths shall be used only to secure the required length of culvert.

Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	3 1/4	3	29 1/4	29 5/8	30 1/4	30 5/8
30	384	3 1/2	3 1/4	32 3/8	32 3/4	33 1/2	33 7/8
36	524	4	3 3/4	38 3/4	39 1/4	40	40 1/2
42	685	4 1/2	4	45 1/8	45 5/8	46 1/2	47
48	867	5	4 1/2	51 1/2	52	53	53 1/2
54	1070	5 1/2	4 1/2	57 7/8	58 3/8	59 3/8	59 7/8
60	1296	6	5	64 1/4	64 3/4	66	66 1/2
66	1542	6 1/2	5 1/2	70 5/8	71 1/8	72 1/2	73
72	1810	7	6	77	77 1/2	79	79 1/2
78	2098	7 1/2	6 1/2	83 3/8	83 7/8	85 5/8	86 1/8
84	2410	8	7	89 3/4	90 1/4	92 1/8	92 5/8
90	2740	8 1/2	7	95 3/4	96 1/4	98 1/8	98 5/8
96	2950	9	7	102 1/8	102 5/8	104 1/2	105
102	3075	9 1/2	7 1/2	109	109 1/2	111 1/2	112
108	3870	10	7 1/2	115 1/2	116	118	118 1/2

June 26, 2015

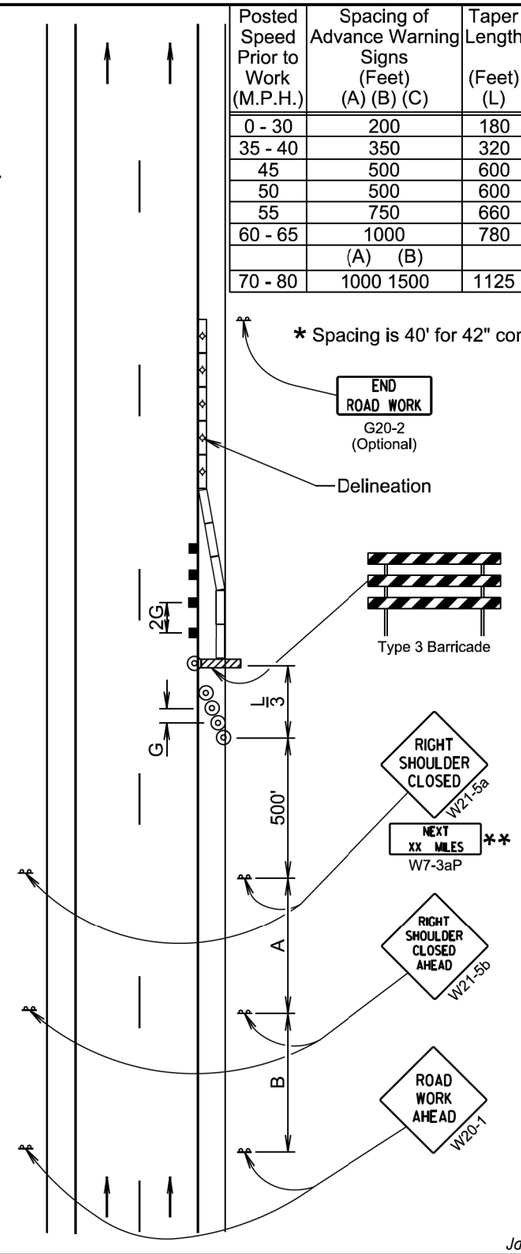
Published Date: 1st Qtr. 2022	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1

- ◎ Reflectorized Drum
- ■ Channelizing Device
- ▭ Movable Concrete Barrier
- ** For distances ½ mile or greater.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

This standard plate shows one method which may be used to close a shoulder of a roadway for a long term project. The Engineer will determine if the use of barriers is required. If barriers are required, the layout details will be included elsewhere in the plans.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50 *
55	750	660	50 *
60 - 65	1000	780	50 *
	(A) (B)		
70 - 80	1000 1500	1125	50 *



January 22, 2021

Published Date: 1st Qtr. 2022	SDDOT	SHOULDER CLOSED	PLATE NUMBER 634.61
			Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000
	(A) (B) (C)
70 - 80	1000 1500 2640

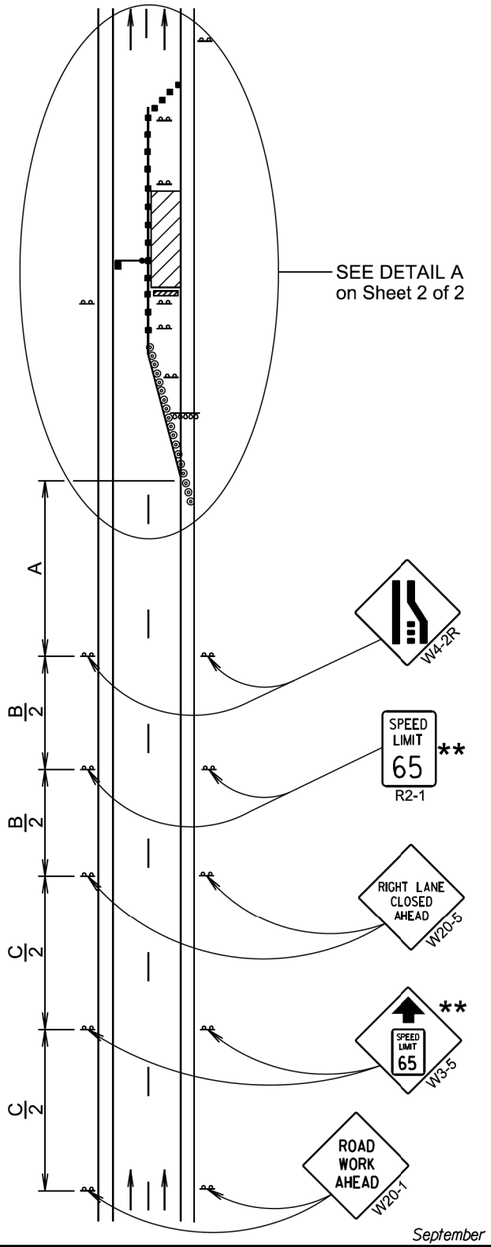
** Speed appropriate for location.

◎ Reflectorized Drum

▪ Channelizing Device

ROAD WORK AHEAD sign is only required in advance of the first lane closure.

High speed is defined as having a posted speed limit greater than 45 mph.



September 22, 2021

Published Date: 1st Qtr. 2022	SDDOT	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
			Sheet 1 of 2

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)	Taper Length (Feet) (L)
0 -30	25	180
35 - 40	25	320
45	25	600
50	50 *	600
55	50 *	660
60 - 65	50 *	780
70 - 80	50 *	960

* Spacing is 40' for 42" cones.

** Speed appropriate for location.

*** Use speed limit designated for the condition when workers are present in the work space. Signs will be covered or removed when workers are not present.

▪● Flagger (As Necessary)

◎ Reflectorized Drum

▪ Channelizing Device

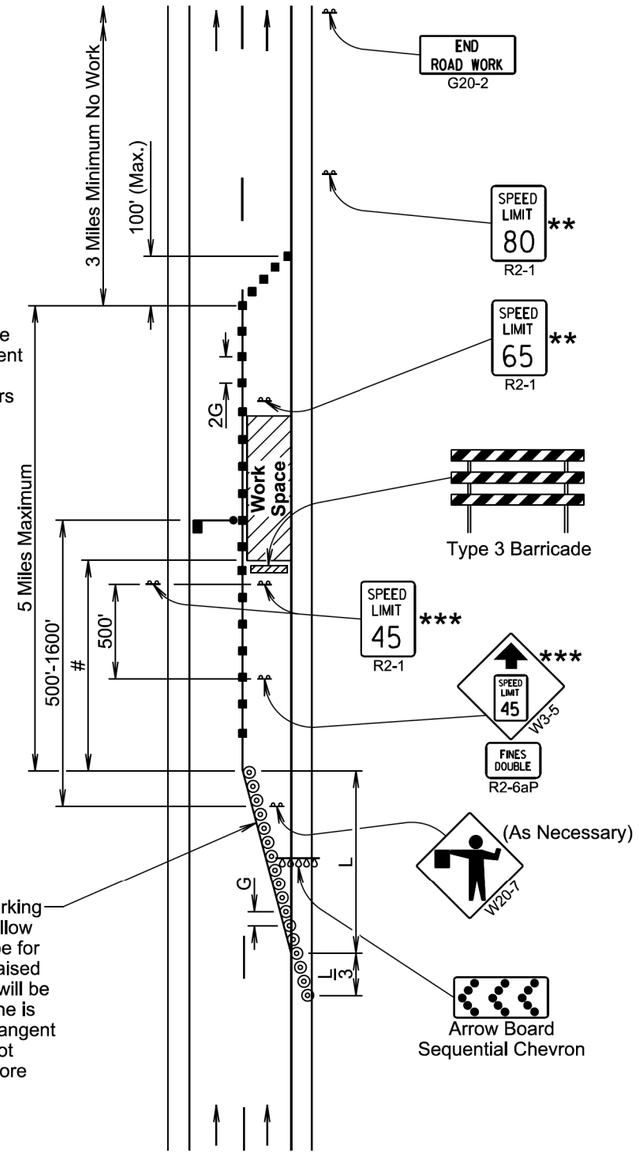
The Work Space will be a minimum of 500' from the end of the taper.

The FLAGGER sign will be used whenever there is a Flagger present.

The channelizing devices will be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

4" white temporary pavement marking tape for right lane closures, 4" yellow temporary pavement marking tape for left lane closures, or temporary raised pavement markers at 5' spacing will be installed in the taper when the lane is closed overnight, and along the tangent section where the skip lines do not exist and the lane is closed for more than 3 days.



DETAIL A

September 22, 2021

Published Date: 1st Qtr. 2022	SDDOT	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
			Sheet 2 of 2

PLOT SCALE - 1:0.0886059

PLOT NAME - 12

FILE - ...\MINNI6P1\DGN\STDPLATES.DGN

PLOTTED FROM - TRSF12103

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 80	1000 1500 2640	1125

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 45	25
50	50 *
55	50 *
60 - 80	50 *

* Spacing is 40' for 42" cones.

◎ Reflectorized Drum

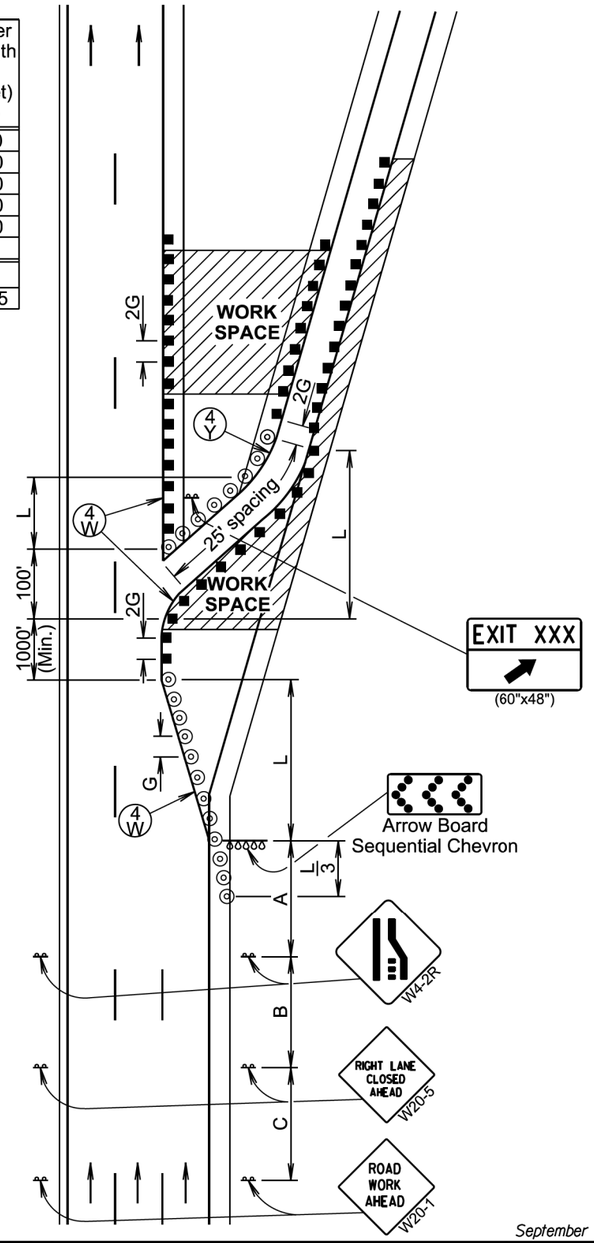
■ Channelizing Device

(4W) 4" White Temporary Pavement Marking

(4Y) 4" Yellow Temporary Pavement Marking

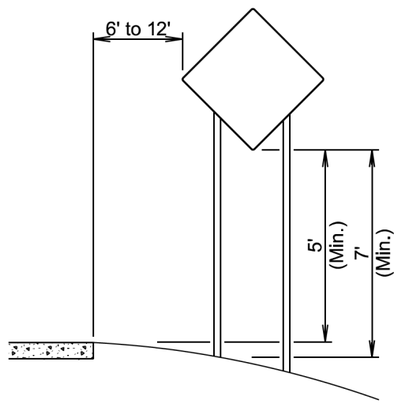
The channelizing devices will be drums or 42" cones if traffic control must remain overnight.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

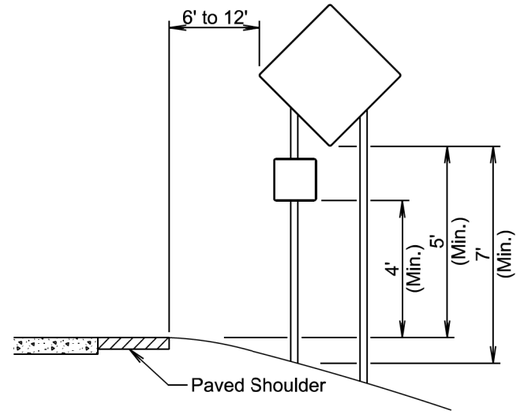


September 22, 2021

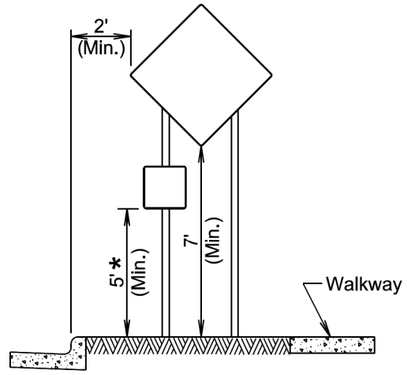
Published Date: 1st Qtr. 2022	SDDOT	WORK IN VICINITY OF EXIT RAMP	PLATE NUMBER 634.68
			Sheet 1 of 1



RURAL DISTRICT

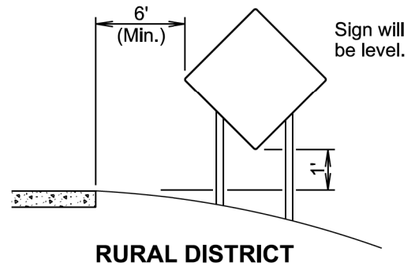


RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

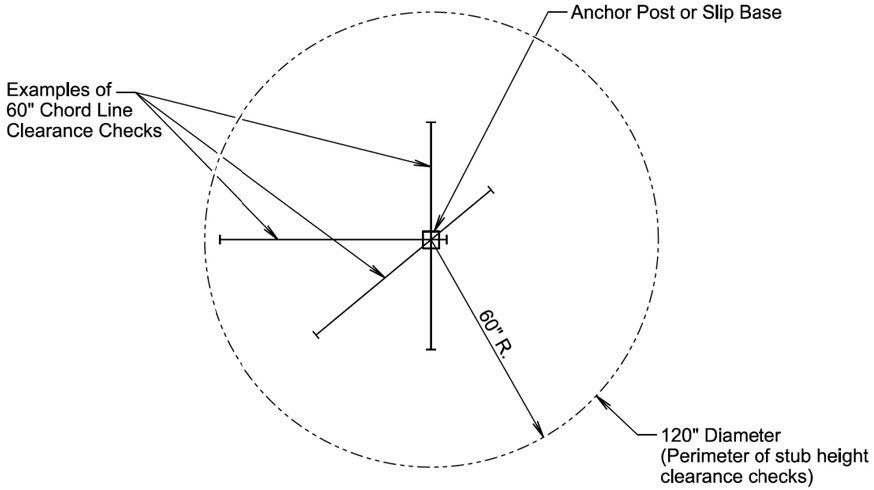
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.



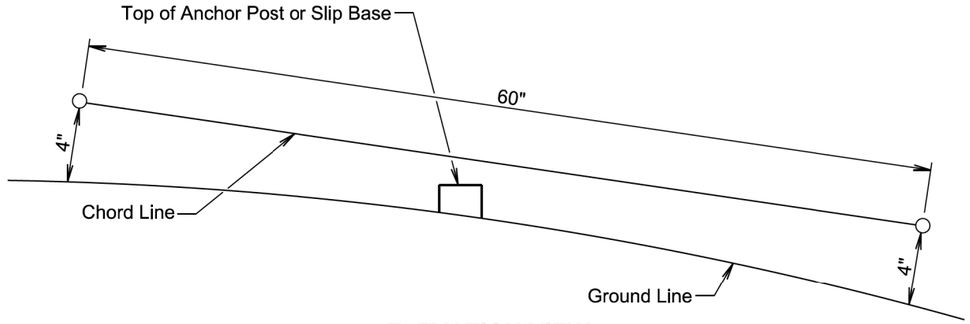
RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

January 22, 2021

Published Date: 1st Qtr. 2022	SDDOT	CRASHWORTHY 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 WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

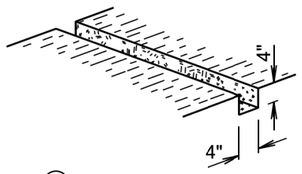
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

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

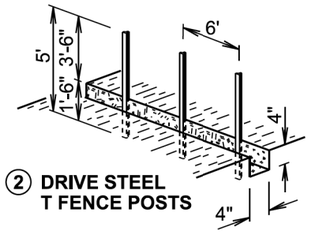
January 22, 2021

Published Date: 1st Qtr. 2022	SDDOT	***BREAKAWAY SUPPORT STUB CLEARANCE***	*PLATE NUMBER* 634.99
			Sheet 1 of 1

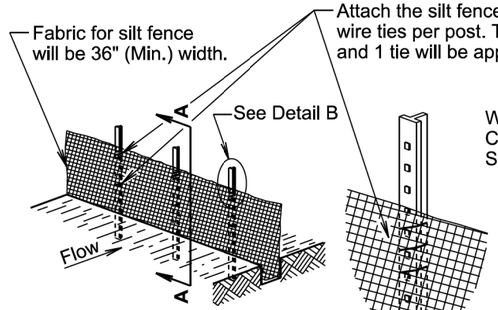
MANUAL HIGH FLOW SILT FENCE INSTALLATION



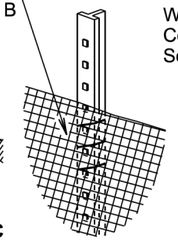
① EXCAVATE TRENCH



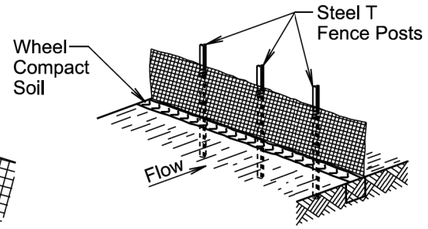
② DRIVE STEEL T FENCE POSTS



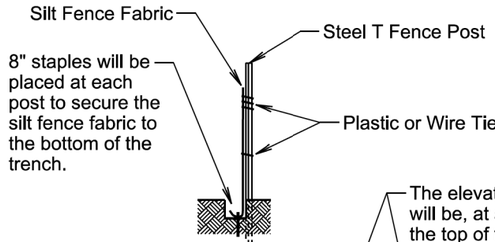
③ ATTACH SILT FENCE FABRIC



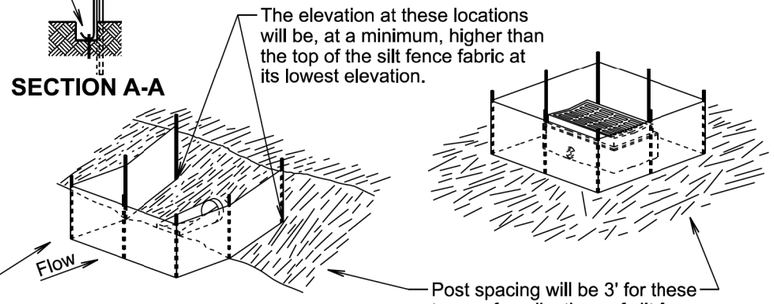
DETAIL B



④ BACKFILL TRENCH AND WHEEL COMPACT SOIL



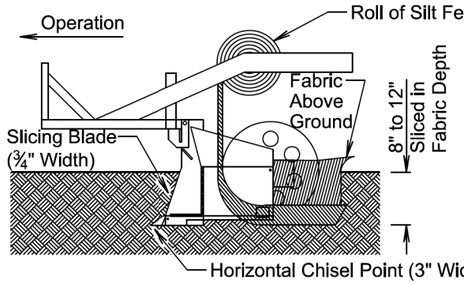
SECTION A-A



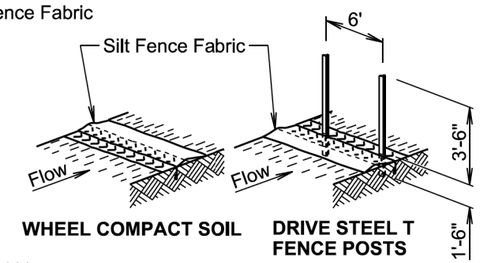
February 14, 2020

Published Date: 1st Qtr. 2022	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION

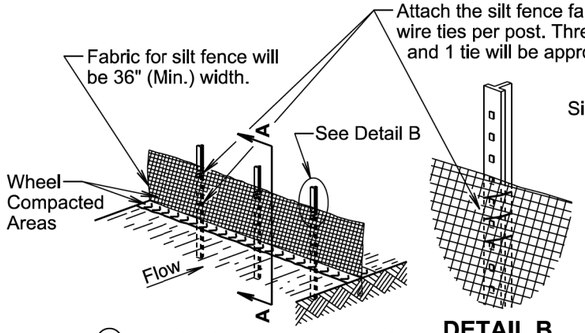


① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.



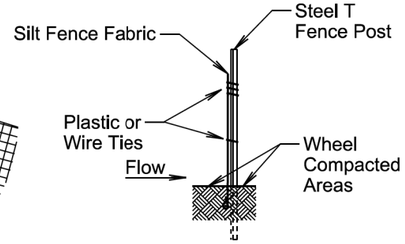
WHEEL COMPACT SOIL — DRIVE STEEL T FENCE POSTS

② WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.

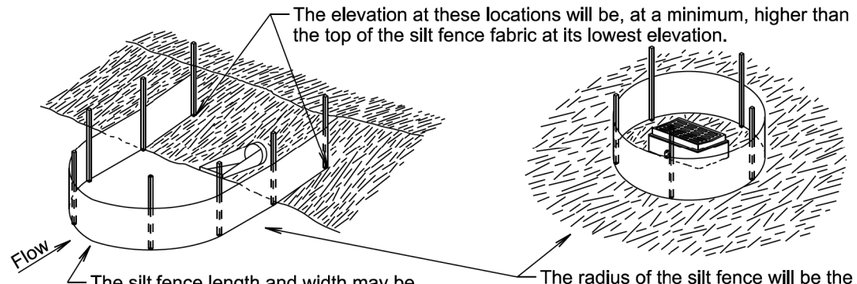


③ ATTACH SILT FENCE FABRIC

DETAIL B



SECTION A-A



GENERAL NOTE:

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end will be provided on top of the extra length of silt fence fabric to prevent underflow.

February 14, 2020

Published Date: 1st Qtr. 2022	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 2 of 2