STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0212(156)306 NH 0281(99)152	C1	C16

Plotting Date: 07/08/2015

SECTION C: TRAFFIC CONTROL PLANS

INDEX OF SHEETS

C1	General Layout with Index
C2-C4	Estimate of Quantities
C5	Itemized List of Traffic Control
C6-C7	Fixed Support Sign Layouts
C8	City Street Closure Detail
C9-C10	Pedestrain Access Route Details
C11-C16	Standard Plates

Equation (US 212)
Sta. a 4+55.40 Bk
Sta. b 0+00.0 Ah
(East of Main St)

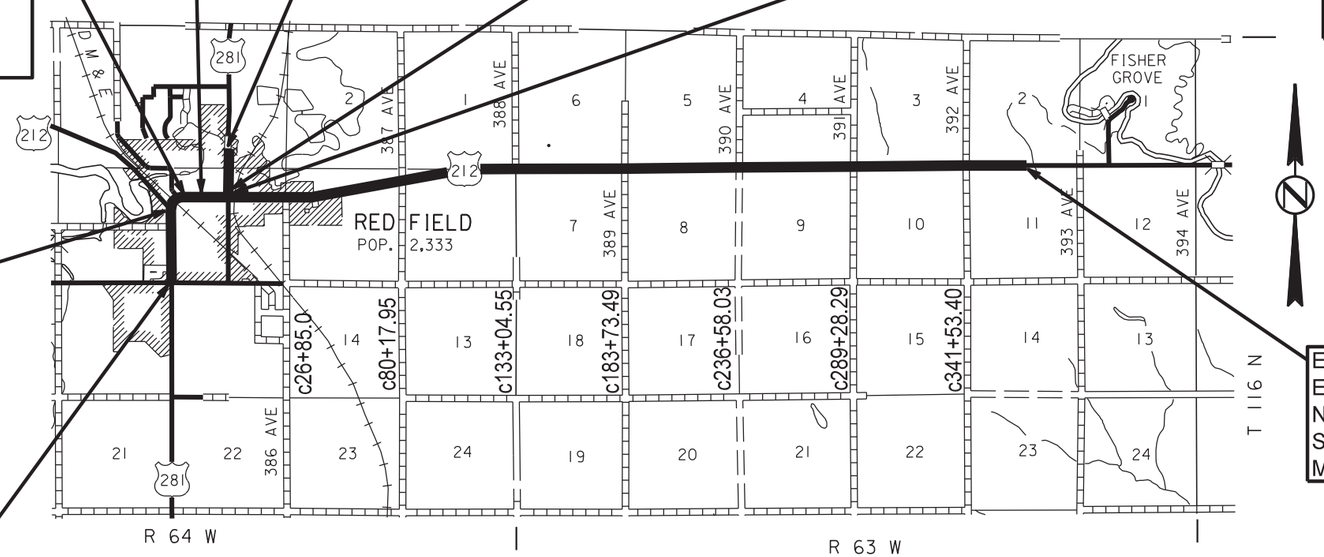
End Project
End Resurfacing
NH 0281(99)152, PCN 03HS
Sta. 368+66.16
MRM 153.90 +0.508

Begin Resurfacing
NH 0281(99)152,
PCN 03HS
Sta. 395+47.60

End Exception
NH 0281(99)152, PCN 03HS
Sta. 395+77.4 (Reverse Sta)
MRM 153.89 +0.000 (US281)

Equation(US 212)
Sta. b12+50.0Bk (US212) =
Sta. c 0+00 Ah (US212)
Sta. 395+77.40 Ah (US281)

Begin Resurfacing
NH 0212(156)306, PCN 023T
Sta. a -2+49.73
Equation (US 212)
Sta. 57+19.76 Bk
Sta. a -2+49.73 Ah
(East of 2nd St W.)



Begin Exception
NH 0281(99)152, PCN 03HS
Sta. 48+43.45

Begin Project (ADA Upgrades)
NH 0212(156)360, PCN 023T
Sta. 48+43.45
MRM 153.38 +0.000 (US 281)
MRM 306.46 +0.000 (US 212)
(Jct US212 & US281)

Begin Project (ADA Upgrades)
NH 0281(99)152, PCN 03HS
Sta. 13+26.31
MRM 152.00 +0.740
(16th Ave)

End Project
End Resurfacing
NH 0212(156)306, PCN 023T
Sta. c 368+03.92
MRM 313.00 +0.896

PLOT SCALE - 1:7000
PLOT NAME - 1
FILE - ...\SECTION C TITLE SHEET.DGN
PLOTTED FROM - TRAB17982

SECTION C - ESTIMATE OF QUANTITIES NH 0212(156)306, PCN 023T

Bid Item Number	Item	Quantity	Unit
634E0010	Flagging	400.0	Hour
634E0020	Pilot Car	175.0	Hour
634E0110	Traffic Control Signs	1,210	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0265	Type 3 Barricade, 6' Double Sided	4	Each
634E0285	Type 3 Barricade, 8' Double Sided	16	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0600	4" Temporary Pavement Marking Tape Type I	1,040	Ft
634E0630	Temporary Pavement Marking	29.4	Mile
634E2000	Longitudinal Pedestrian Barricade	80	Ft
634E2020	Temporary Curb Ramp	20	Each

SECTION C - ESTIMATE OF QUANTITIES NH 0281(99)152, PCN 03HS

Bid Item Number	Item	Quantity	Unit
634E0010	Flagging	25.0	Hour
634E0110	Traffic Control Signs	653	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0285	Type 3 Barricade, 8' Double Sided	6	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0600	4" Temporary Pavement Marking Tape Type I	2,120	Ft
634E0630	Temporary Pavement Marking	2.0	Mile
634E2000	Longitudinal Pedestrian Barricade	60	Ft
634E2020	Temporary Curb Ramp	5	Each

SCOPE OF WORK

Work on this project involves ADA Curb Ramp work within the city of Redfield, roadway luminaires, traffic signal replacement, cold milling asphalt concrete, asphalt concrete resurfacing, permanent sign replacement and pavement markings.

COORDINATION OF WORK

The bridge on US 212 located 0.3 miles west of the west US212 & US 281 junction in Redfield is scheduled for replacement during the 2016 construction season. Cars will be detoured on city streets. Truck traffic will be detoured onto SD 26 between SD45 and US281. The bridge replacement project is NH 0212(160)306, PCN 03A6.

RAILROAD CROSSING

The Contractor shall coordinate his work with the Railroad Company regarding any work to be done adjacent to the railroad tracks. See Special Provision for Working on Railroad Company Right of Way.

SEQUENCE OF OPERATIONS

The following Sequence of Operations shall be adhered to. Any changes must be approved in writing by the Area Engineer prior to changes being made.

1. Install fixed location signing prior to start of work.
2. Complete ADA Curb Ramp upgrade, sidewalk and Curb & Gutter replacement along with necessary electrical and footings for poles.
3. Complete Erosion Control.
4. Complete cold milling operations.
5. Excavate digouts and complete backfill operations.
6. Place Blade Laid material.
7. Complete All Asphalt Concrete Strengthening and Leveling.
8. Complete gravel placement operations on rural approaches and intersecting roads.
9. Knockdown gravel to allow access on approaches and intersecting roads.
10. Complete asphalt paving operations.
11. Final shape gravel on approaches and intersecting roads.
12. Grind Rumble Strips.
13. Place Flush Seal If Required.
14. Install Permanent Pavement Markings.
15. Install New Permanent Signing.
16. Refurbish Mailboxes.
17. Remove Fixed Location Project Signing.
18. Mow Project Inslopes and complete any remaining project cleanup.

Installation of luminaire poles and traffic signal poles may be done at any time within the above sequence, subject to any restrictions placed by the Special Provision for Contract Time.

For curb ramp ADA upgrades, the maximum length of a lane closure shall be 3/4 mile. The suggested work zones are as follows:

US 281 from 16th Ave thru 10th Ave.
US 281 from 10th Ave thru the East US212/US281 Jct
East US212/US281 Jct thru 9th Street East
US 281 from East US212/US281 Jct northerly to 4th Ave

To facilitate installation of Fillets and adjoining Valley Gutter through the intersections of 5th Street East to 9th Street East, these intersections may be closed to traffic to allow construction. All other intersections shall remain open to traffic at all times. 5th St. East and 6th St. East shall not be closed simultaneously.

There shall be no open holes in the sidewalk over the weekend or Holidays.

TRAFFIC CONTROL

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.

The Contractor shall be responsible for maintaining Stop signs at the intersections and any other signing that may be impacted by the project. This may require the use of temporary supports for the signs. All costs associated with this work shall be considered incidental.

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.

Work zones for the various construction operations that utilize a pilot car shall not exceed 3 miles in length.

“Grooved Pavement” signs shall be placed as indicated on the detail drawings until all cold milled areas are covered with asphalt concrete. Attached to each sign shall be a “Next xx Miles” and a “Motorcycle Plaque” sign. These signs are included in the Itemized List for Traffic Control Signs table.

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, ground mounted, breakaway supports.

Traffic Control quantities, 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.

4 Stop signs and All Way plaques have been included in the Itemized List for Traffic Control Signs. These Stop signs and plaques are for use at Main Street intersection during the time frame between when the existing traffic signal is deactivated until the new traffic signal is operational.

An advisory Speed Plate displaying 30 M.P.H. shall be attached to all “Bump” signs used on the project. Speed plates are included in the Traffic Control Devices Inventory sheet in these plans.

No Parking Signs have been included in the Itemized List for Traffic Control Signs for use in areas where parking needs to be eliminated to facilitate construction.

When a lane is closed to traffic, a minimum of 4 channelizing devices shall be placed at the beginning of each intersecting street indicating which lane is closed to traffic. Channelizing devices shall also be placed at driveways to indicate which lane is closed to traffic.

PEDESTRIAN ACCESS ROUTE

A Temporary Pedestrian Access Route (TPAR) shall be provided when crosswalks, sidewalks, or other pedestrian facilities are blocked, closed, or relocated. A TPAR may consist of a combination of existing and/or temporary pedestrian facilities. The TPAR shall be kept free of any obstructions and hazards, such as holes, debris, mud, snow, construction equipment, traffic control signing, stored materials, etc.

The Contractor shall adhere to the requirements of the Americans with Disabilities Act (ADA) during construction. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG), and should not be used as a control for pedestrian movements.

In order to maintain pedestrian traffic the number of quadrants of the intersection that may be closed to pedestrian traffic shall be limited. The sidewalk shall remain open on at least one side of the street at all times. The Contractor will be limited to working on one side of US 212 or US281 at a time to allow for pedestrian traffic during ADA construction.

The suggested phasing for completion of the ADA Curb Ramps is to complete 1 curb ramp at a time at each intersection and to work on the same corner of each intersection through the route. (i.e. Work on all southeast corners of the intersections, them all southwest intersection corners, etc.)

On US 281 from Sta. 13+26 (16th Ave) to Sta. 30+75 (13th Ave) due to the lack of any nearby sidewalks, pedestrian traffic shall be maintained with the use of Temporary Curb Ramps. Refer to the Pedestrian Access Detail When Shoulder of Parking Lane is Provided.

On US 281, from the East junction of US 212/US281 northerly, due to the lack of continuous sidewalks on both sides of US 281 in this location, pedestrian traffic shall be maintained with the use of Temporary Curb Ramps. Refer to the Pedestrian Access Detail When Outside Driving Lane is Closed to Traffic.

Due to the condition of pedestrian railroad crossings on city streets and detour length, pedestrian traffic shall be maintained across the Railroad Crossing on US 212 located in the vicinity of Sta. 50+92 to 51+70 and Sta. c3+06 to c3+36.

A smooth, continuous hard surface should be provided throughout the entire length of the TPAR. There should be no curbs or abrupt changes in grade or terrain that could cause tripping or be a barrier to wheelchair use.

A temporary curb ramp shall be provided by the Contractor in all cases where an alternate route cannot be found, and the intersection will carry pedestrian traffic.

Between the cold milling operation and resurfacing with new asphalt at intersections in Redfield, cold milled material shall be placed in front of the curb ramps to form a temporary ramp from the cold milled surface to the curb ramp. The temporary ramp shall be a minimum of 3' wide with a slope no greater than 12:1. The ramp shall be smooth with no steep edge drop offs. All costs associated with placing the cold millings for a temporary ramp and removing those millings shall be incidental to the contract unit price per square yard for COLD MILLING ASPHALT CONCRETE.

The Contractor shall adequately sign and barricade the sidewalk for pedestrian traffic. The Contractor must not leave un-barricaded holes open either overnight or over the weekend.

The Contractor shall accommodate pedestrian traffic, including those with disabilities. Bicycle traffic shall also be accommodated. The Contractor shall submit a detailed plan to the Engineer on how pedestrian and bicycle traffic will be accommodated during the various phases of the work at the effected locations. This plan should be in conformance with the details contained in these plans for pedestrian accommodation. The plan may be submitted at the Preconstruction Meeting.

The plan shall be submitted no later than two weeks prior to the start of work. Some options for consideration to accommodate the pedestrian traffic include:

1. The use of various approved traffic control devices to maintain the pedestrians through or past the immediate work area,
2. The detour of pedestrians and bicycles to the opposite side of the street, alternate routes(s) or around a City block,
3. Manned crossing assistance (crossing guards) combined with an accessible path,

Detectable edging for individuals with visual disabilities shall be utilized as indicated in section 6F.74 of the MUTCD. All related costs to furnish, place and maintain the plastic safety fence and detectable edging shall be incidental to the contract lump sum price for TRAFFIC CONTROL MISCELLANEOUS.

TEMPORARY CURB RAMP

Temporary curb ramps should be firm, stable, and have a non-slip surface. They shall not warp or buckle, and should be made of materials strong enough to support the weight of pedestrians as well as motorized scooters and wheelchairs. Temporary curb ramps shall also be color contrasting and contain marked edges so they are noticeable by pedestrians who have visual impairments. Lateral joints or gaps between surfaces shall be a maximum offs 0.5 inches in width.

Temporary curb ramps shall be the full width of the temporary pedestrian access route, with a recommended width of 60" and a minimum width of 48". Temporary curb ramps shall have a maximum slope of 1:12, and have free draining surfaces with a maximum cross slope of 2 percent. Handrails on curb ramps are not required unless the curb ramp has a rise exceeding 6" and a length exceeding 72".

All costs shall be incidental to the contract unit price per each for TEMPORARY CURB RAMP.

LONGITUDINAL PEDESTRIAN BARRICADE

Barricade rail supports may not project into pedestrian routes more than 4 inches from the support. To prevent any tripping hazard to pedestrians, ballast shall be located behind or internal to the device.

When Longitudinal Pedestrian Barricades are combined in a series, the gap between devices should not exceed one inch. Joints between channelizing devices should be closed and flush to prevent canes or small wheels from being trapped, to reduce the risk of tripping and to facilitate safe hand trailing. When used as a sidewalk closure mechanism, channelizing devices must run the entire width of the sidewalk without gaps. Channelizing devices should provide a color contrasting pattern for pedestrians with low vision. Black should not be used to color any base on a device.

Pedestrian channelizing devices shall have continuous bottom and top surfaces. The lower edge of the bottom portion shall be no higher than 2 inches above the walkway. The top edge of the bottom portion shall measure at least 8 inches above the walkway. The top of the top portion shall be no lower than 32 inches above the walkway. The top surface shall be smooth to optimize hand-trailing. Both upper and lower surfaces shall share a common vertical plane.

A continuous wall may be used as a pedestrian channelizing device. When used, a continuous wall should have a lower edge no more than 2 inches above the walkway, should extend a minimum of 32 inches above the walkway, should have a common vertical face and should have alternating, contrasting sheeting positioned 32 inches above the walkway.

All costs shall be incidental to the contract unit price per foot for LONGITUDINAL PEDESTRIAN BARRICADE.

SIGN INSTALLATION

The Contractor is advised that sidewalk exists along the project where some of the signing is to be installed. In some cases the sidewalk is immediately behind the curb and gutter. The method of supporting the signs shall take this into account so that the sidewalk remains usable by pedestrians in accordance with the American's with Disability Act. Any damage to the sidewalk due to sign installation shall be repaired as directed by the Engineer, at no cost to the City of Redfield or the SDDOT.

4" TEMPORARY PAVEMENT MARKING TAPE TYPE I

4" Temporary Pavement Marking Tape Type I has been included in the Estimate of Quantities for lane tapers as indicated on Standard Plate 634.47 and 634.48.

The Contractor may substitute Temporary Raised Pavement Markers for the 4" Temporary Pavement Marking Tape Type I. The Temporary Road Markers shall be installed at a spacing of 5 feet. Temporary Road Markers shall be paid for as 4" Temporary Pavement Marking Tape Type I.

Quantities are based upon the following:

US 212

Location	Quantity (Ft)	Comments
US 212 EB Outside Lane	180	Taper located near East US212/US281 Jct for curb ramp phase of project.
US 212 WB Outside Lane	180	Taper located near East US212/US281 Jct for curb ramp phase of project.
US 212 EB Inside Lane	180	Taper located between West Junction of US212/US281 and start of resurfacing for resurfacing phase of project.
US212 WB Outside Lane	180	Taper located between West Junction of US212/US281 and start of resurfacing for resurfacing phase of project.
US 212 WB Inside Lane	320	Taper located East side of Redfield for resurfacing phase of project.

US 281

Location	Quantity (Ft)	Comments
US 281 NB Outside Lane	320	Taper located South of the West US281/US212 Junction for curb ramp phase of project.
US 281 SB Outside Lane	600	Taper located North of bridge at north end of project for curb ramp phase of project and pedestrian detour.
US 281 SB Inside Lane	600	Taper located North of bridge at north end of project for resurfacing phase of project.
US 281 SB Outside Lane	600	Taper located North of bridge at north end of project for resurfacing phase of project.

TEMPORARY AND PERMANENT PAVEMENT MARKINGS

Maintaining size, shape, and dimension of existing pavement markings shall be the responsibility of the Contractor for both temporary and permanent pavement marking applications.

Paint will not be allowed for Temporary Pavement Marking on the Asphalt Concrete wear course or after application of the Flush Seal. Temporary Flexible Vertical Markers (Tabs) shall be used to mark dashed centerline, No Passing Zones and applicable lane lines.

TEMPORARY PAVEMENT MARKINGS

The Contractor should review Section M plans to determine the extent of temporary pavement markings required within the city of Redfield on US 212 and US 281. On US 281, the pavement markings shown for a 4 lane roadway are consistent for the entire length of the resurfacing project from Sta. 395+77.4 to Sta. 363+66.16.

On the US 212 rural portion of the project there are 3 No Passing Zones for a total length of 0.41 miles.

Quantities of Temporary Pavement Markings consist of:

- One pass on top of the Cold Milled Asphalt Concrete surface.
- One pass on top of the Blade Laid surface.
- One pass on top of the Class Q3R Asphalt Concrete.
- One pass on top of the Flush Seal.

If a Flush Seal is eliminated, the application of the Temporary Pavement Marking on top of the Flush Seal will be eliminated. No adjustment in the contract unit price for Temporary Pavement Marking will be made because of a variation in quantities.

Temporary Flexible Vertical Markers (Tabs) may be used as detailed in the Specifications. Covers on the tabs shall be sufficiently secured to prevent traffic from dislodging the cover and when removed the covers shall be properly disposed. If used, the contractor shall remove and properly dispose of the tabs after Permanent Pavement Marking is applied. Method of removal shall be nondestructive to the road surface and shall be accomplished within one week of completion of the Permanent Pavement Marking.

Any tabs with covers removed before the flush seal shall be replaced prior to Flush Seal application.

Cost for furnishing, applying, removing and disposing of the Temporary Flexible Vertical Markers (Tabs) shall be included in the contract unit price per mile for TEMPORARY PAVEMENT MARKING.

Flagger symbol signs (W20-7) and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights shall be positioned on the roadway shoulder in advance of workers for both directions of traffic during the installation of Temporary Flexible Vertical Markers (Tabs). The traffic control device used shall be moved to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1), a Workers symbol sign (W21-1) or a BE PREPARED TO STOP (W3-4) warning sign shall be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work shall be approved by the Engineer.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

NH 0212(156)306, PCN 023T

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	4	30" x 30"	6	24
R1-3P	ALL WAY (plaque)	4	18" x 6"	1	4
R8-3	NO PARKING (symbol)	10	24" x 24"	4	40
R9-9	SIDEWALK CLOSED	15	24" x 12"	2	30
R9-10	SIDEWALK CLOSED with ARROW (L or R) USE OTHER SIDE	10	24" x 12"	2	20
R9-11	SIDEWALK CLOSED AHEAD with ARROW (L or R) CROSS HERE	10	24" x 18"	3	30
R9-11a	SIDEWALK CLOSED with ARROW (L or R) CROSS HERE	10	24" x 12"	2	20
R11-2	ROAD CLOSED	8	48" x 30"	10	80
R11-4	ROAD CLOSED TO THRU TRAFFIC	4	60" x 30"	13	52
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16	32
W7-3aP	NEXT __ MILES (plaque)	3	36" x 30"	8	24
W8-1	BUMP	6	48" x 48"	16	96
W8-11	UNEVEN LANES	4	48" x 48"	16	64
W8-15	GROOVED PAVEMENT	3	48" x 48"	16	48
W8-15P	MOTORCYCLE (plaque)	3	24" x 18"	3	9
W13-1P	ADVISORY SPEED (plaque)	6	30" x 30"	6	36
W20-1	ROAD WORK AHEAD	22	48" x 48"	16	352
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16	32
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	4	48" x 48"	16	64
W21-2	FRESH OIL	2	48" x 48"	16	32
W21-5	SHOULDER WORK	4	48" x 48"	16	64
G20-1	ROAD WORK NEXT __ MILES	3	36" x 18"	5	15
G20-2	END ROAD WORK	2	36" x 18"	5	10
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			1210

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 6' Double Sided	4 Each
Type 3 Barricade, 8' Double Sided	16 Each

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Arrow Board	2 Each

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

NH 0281(99)152, PCN 03HS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R9-9	SIDEWALK CLOSED	10	24" x 12"	2	20
R9-10	SIDEWALK CLOSED with ARROW (L or R) USE OTHER SIDE	2	24" x 12"	2	4
R9-11	SIDEWALK CLOSED AHEAD with ARROW (L or R) CROSS HERE	2	24" x 18"	3	6
R9-11a	SIDEWALK CLOSED with ARROW (L or R) CROSS HERE	2	24" x 12"	2	4
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16	32
W7-3aP	NEXT __ MILES (plaque)	1	36" x 30"	8	8
W8-1	BUMP	2	48" x 48"	16	32
W8-11	UNEVEN LANES	2	48" x 48"	16	32
W8-15	GROOVED PAVEMENT	1	48" x 48"	16	16
W8-15P	MOTORCYCLE (plaque)	1	24" x 18"	3	3
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6	12
W20-1	ROAD WORK AHEAD	21	48" x 48"	16	336
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16	32
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
W21-2	FRESH OIL	2	48" x 48"	16	32
G20-1	ROAD WORK NEXT __ MILES	2	36" x 18"	5	10
G20-2	END ROAD WORK	2	36" x 18"	5	10
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			653

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 8' Double Sided	6 Each

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Arrow Board	2 Each

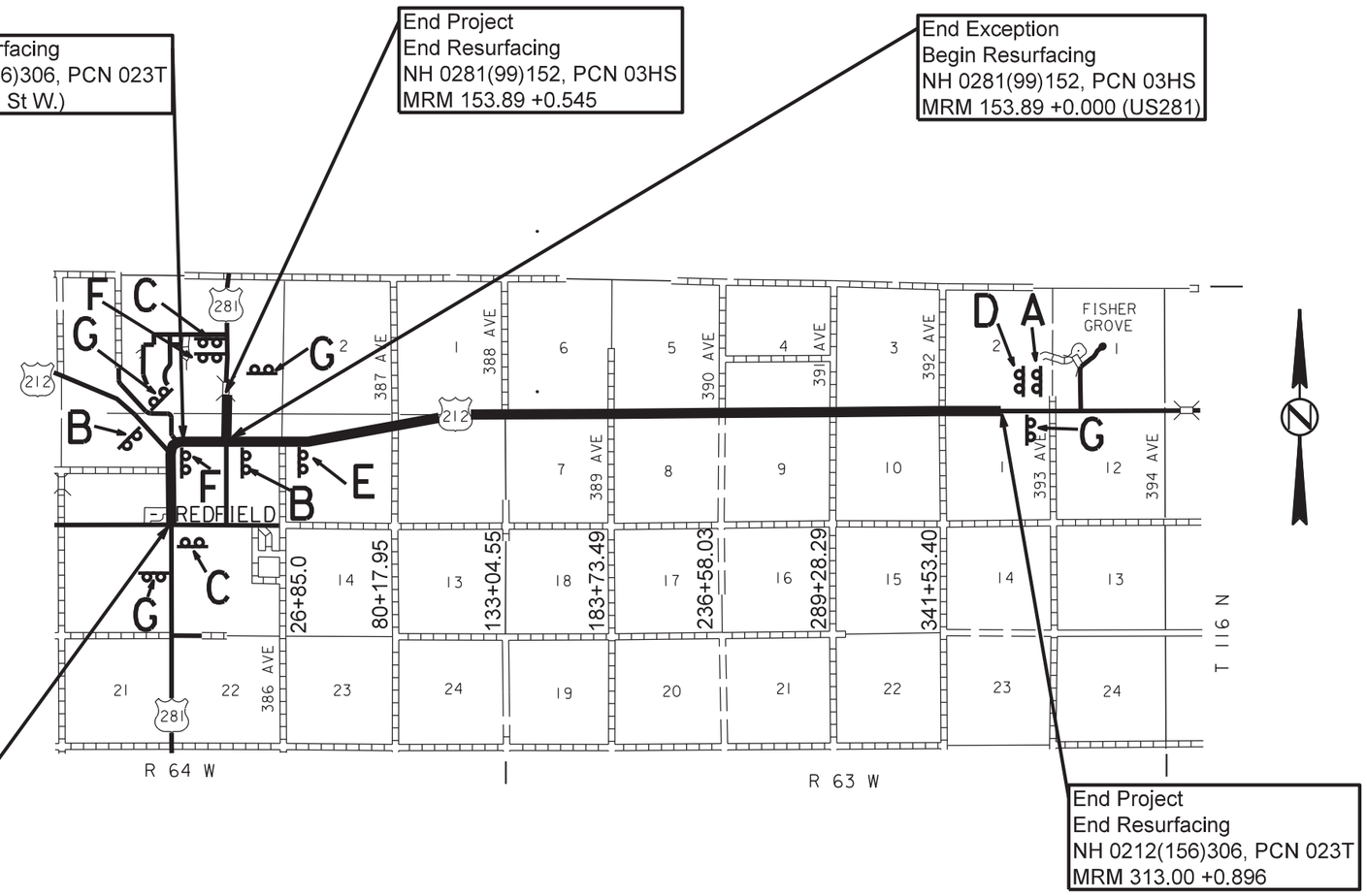
PLOTTED FROM - TRAB17982

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0212(156)306 NH 0281(99)152	C6	C16

Plotting Date: 07/08/2015

FIXED LOCATION GROUND MOUNTED BREAKAWAY SUPPORT SIGNS

W20-1 ROAD WORK AHEAD signs along rural us 212 shall be mounted on portable supports, and shall be placed on intersecting roadways as directed by the Engineer. ROAD WORK AHEAD signs shall be moved as necessary to keep current with the work activities.



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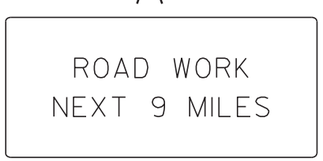

G20-1

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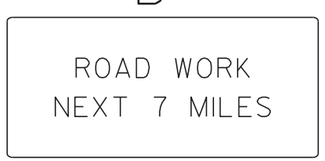

G20-1

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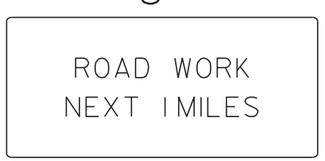


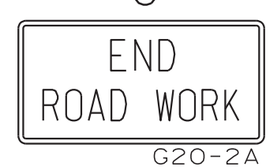
G20-1

D

E

F

G



G20-2A

EXACT LOCATION OF SIGNS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

* GROOVED PAVEMENT signs shall only be visible when the condition exists. Signs shall be covered or removed when the grooved road condition is not present.

PLOT SCALE - 1:7000

PLOT NAME - 2

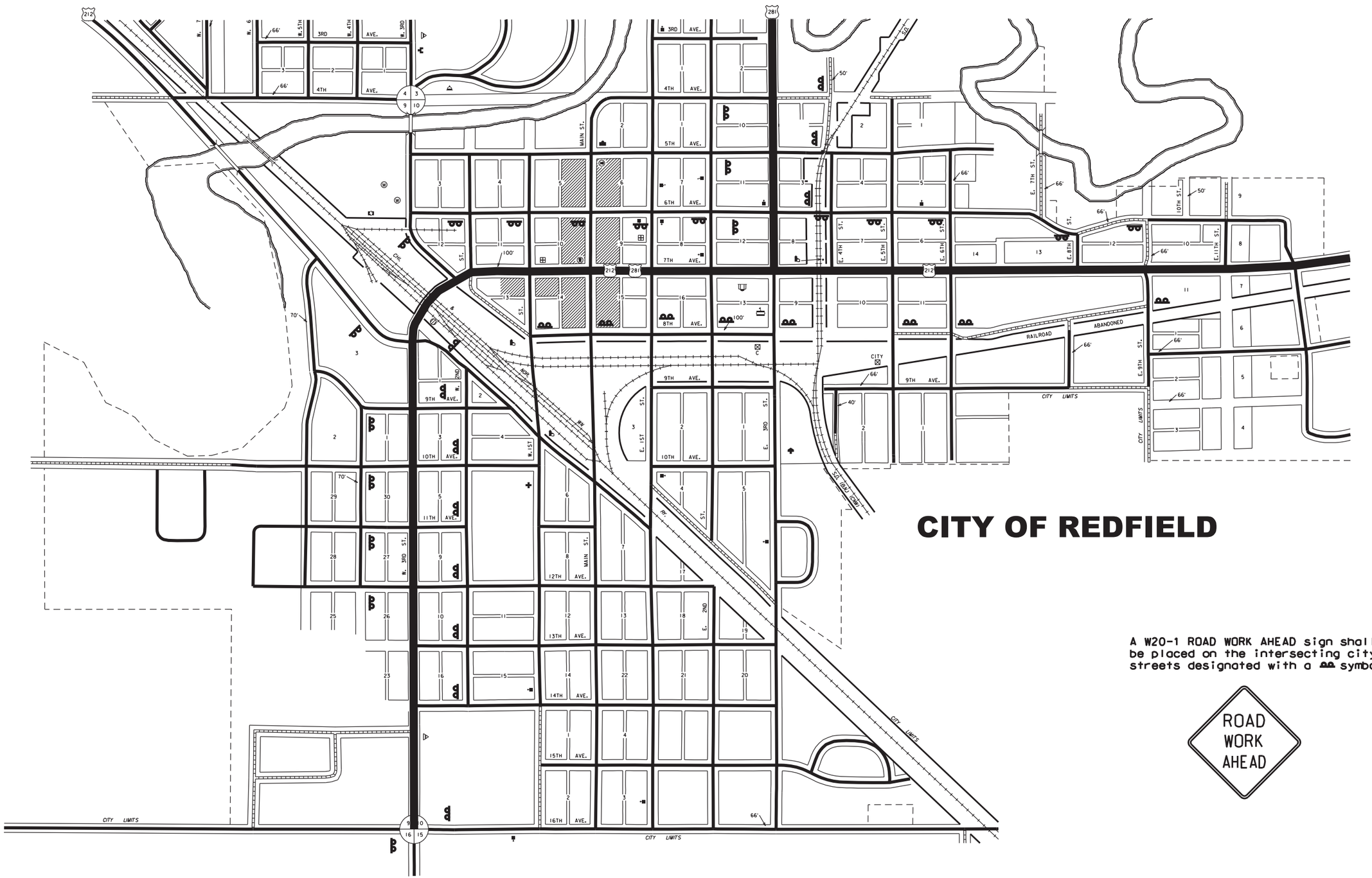
FILE - ...\023T_FIXED SUPPORT SIGNS.DGN

PLOTTED FROM - TRAB17892

FIXED LOCATION GROUND MOUNTED BREAKAWAY SUPPORT SIGNS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0212(156)306 NH 0281(99)152	C7	C16

Plotting Date: 07/08/2015



A W20-1 ROAD WORK AHEAD sign shall be placed on the intersecting city streets designated with a symbol.

PLOT SCALE - 1:7000

PLOTTED FROM - TRAB17882

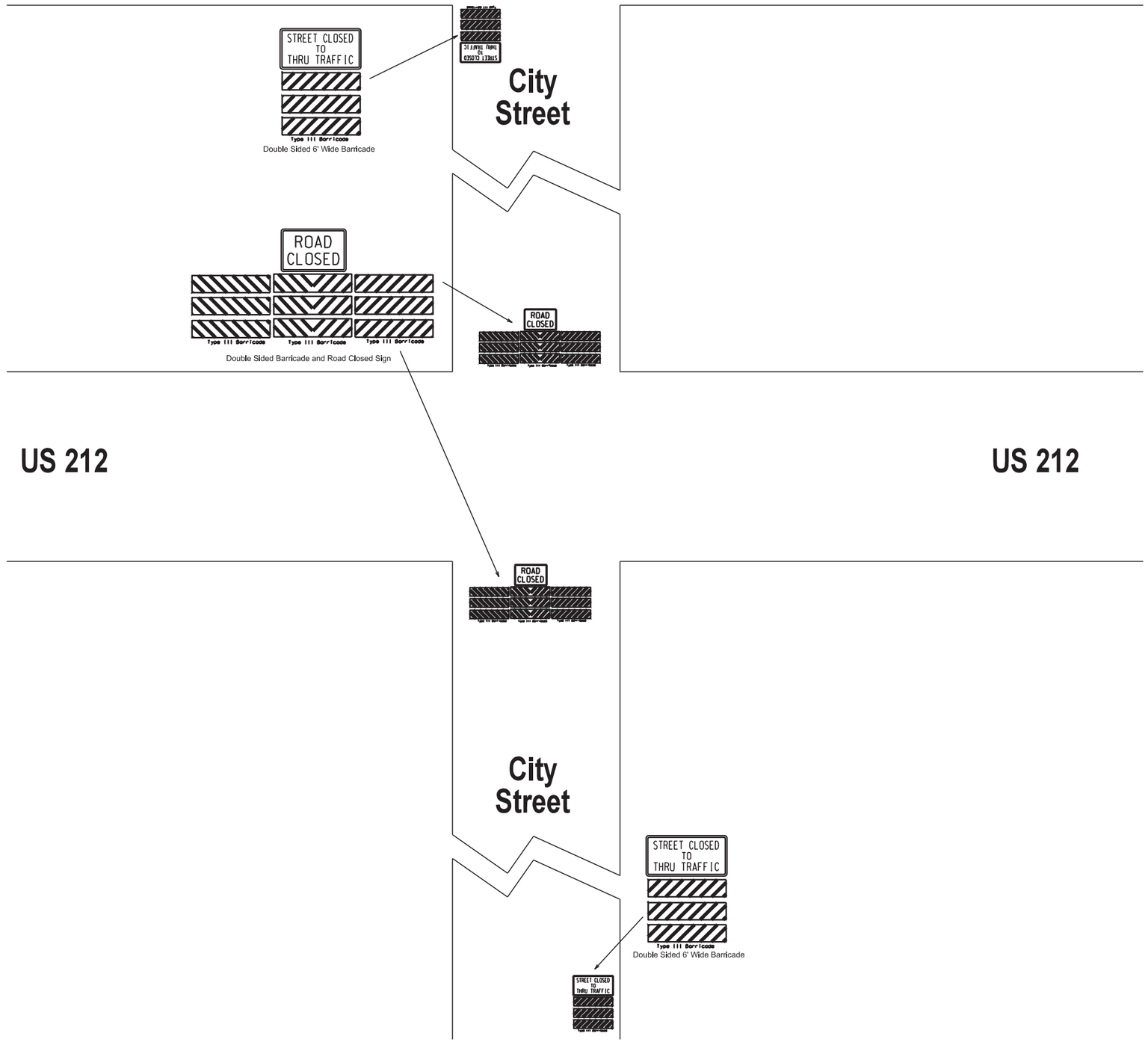
PLOT NAME - 3

FILE - ...\023T_FIXED SUPPORT SIGNS.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0212(156)306 NH 0281(99)152	C8	C16

Plotting Date: 07/08/2015

TRAFFIC CONTROL AT CITY STREETS
(WHERE CITY STREET CAN BE CLOSED TO TRAFFIC)



PLOT SCALE - 1:7000

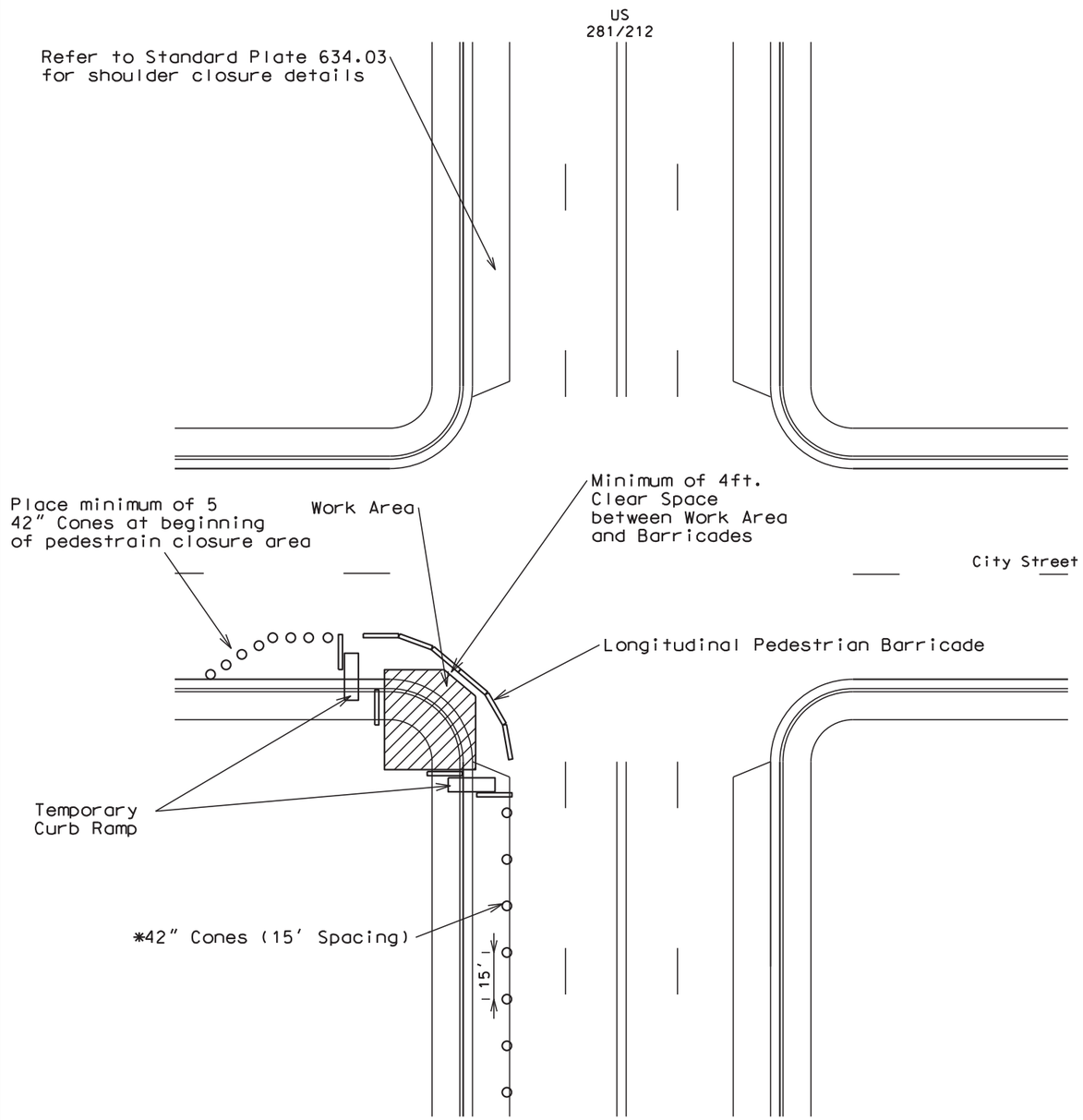
PLOTTED FROM - TRAB17882

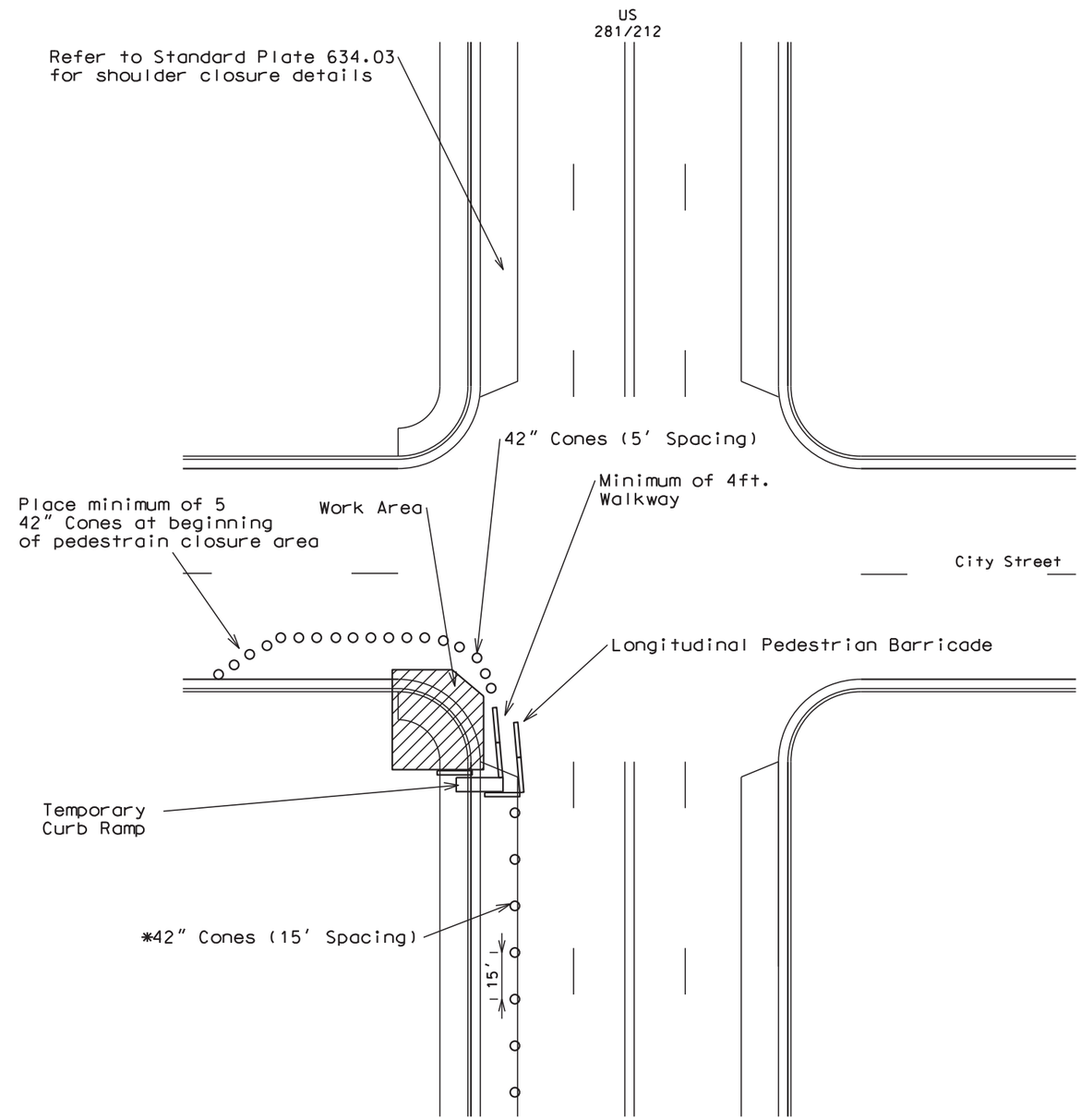
PLOT NAME - 4

FILE - ...\023T_FIXED SUPPORT SIGNS.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0212(156)303 NH 0281(99)152	C9	C16

PEDESTRIAN ACCESS ROUTE DETAIL
WHEN SHOULDER OR PARKING LANE IS PROVIDED



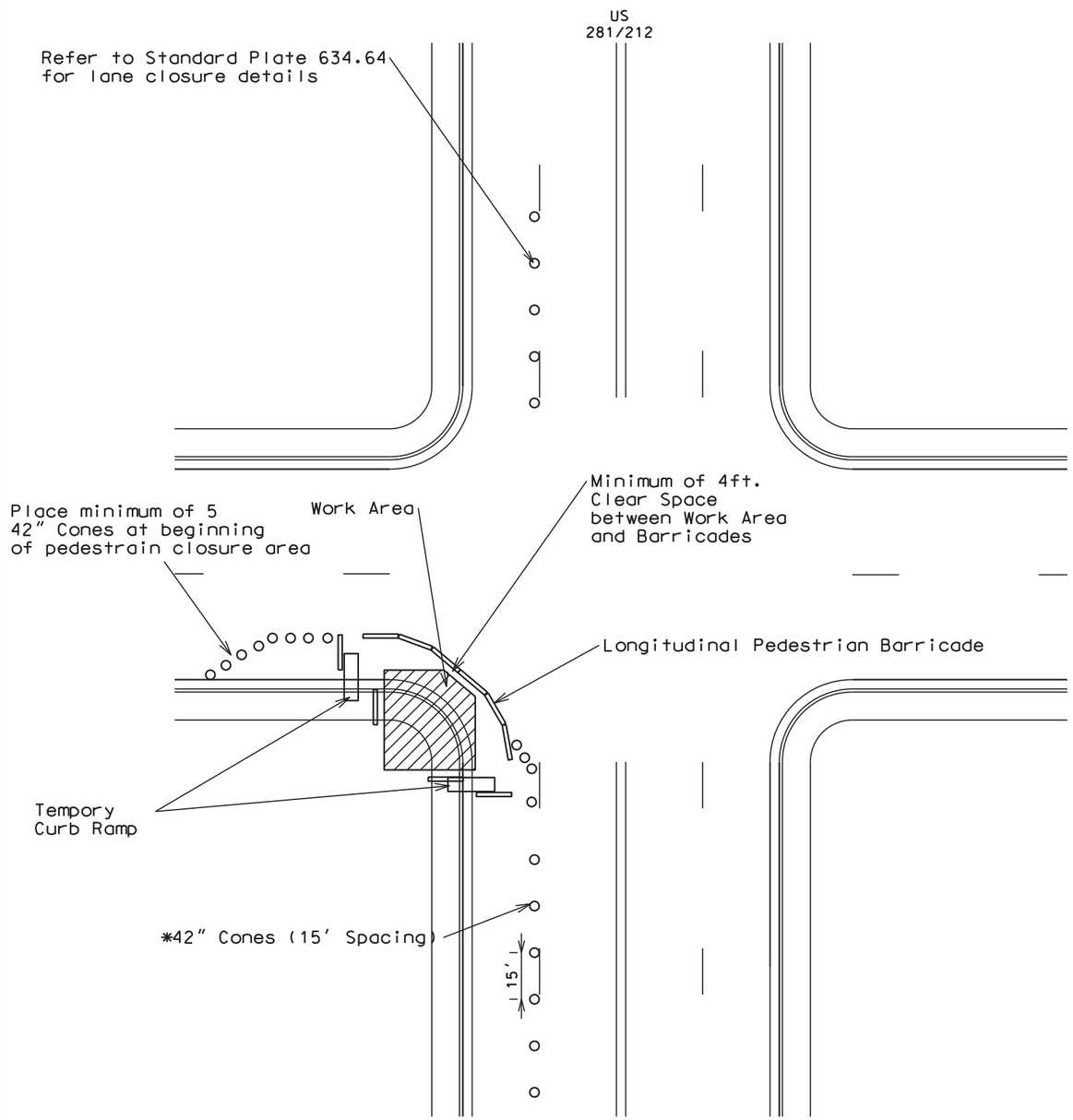


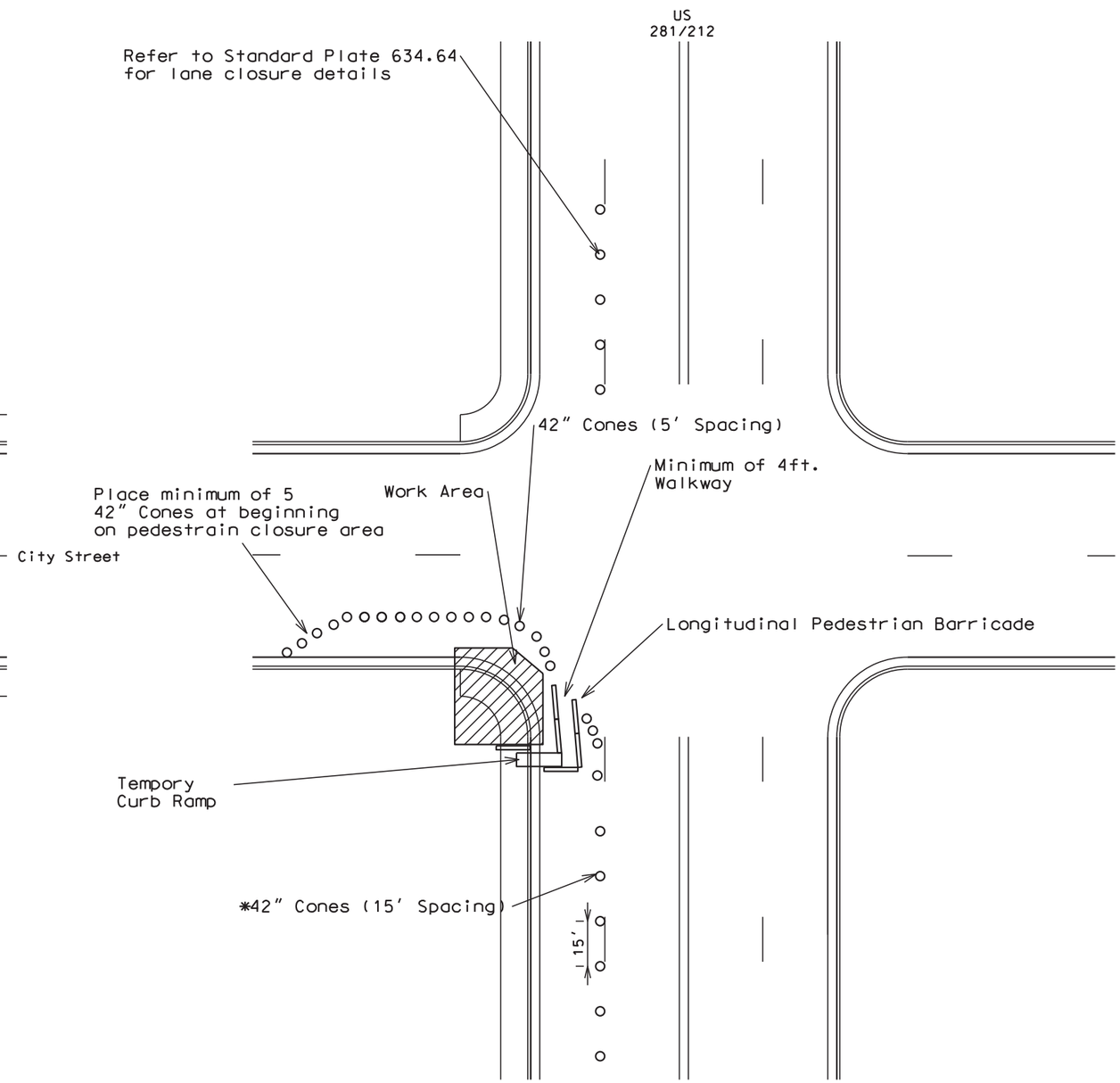
* Continue 42" Cones (15' spacing) through the block if additional curb ramp work will be encountered.

PLOTTED FROM - TRAB17892

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0212(156)303 NH 0281(99)152	C10	C16

PEDESTRIAN ACCESS ROUTE DETAIL
WHEN OUTSIDE DRIVING LANE IS CLOSED TO TRAFFIC





* Continue 42" Cones (15' spacing) through the block if additional curb ramp work will be encountered.

PLOTTED FROM - TRAB17882

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

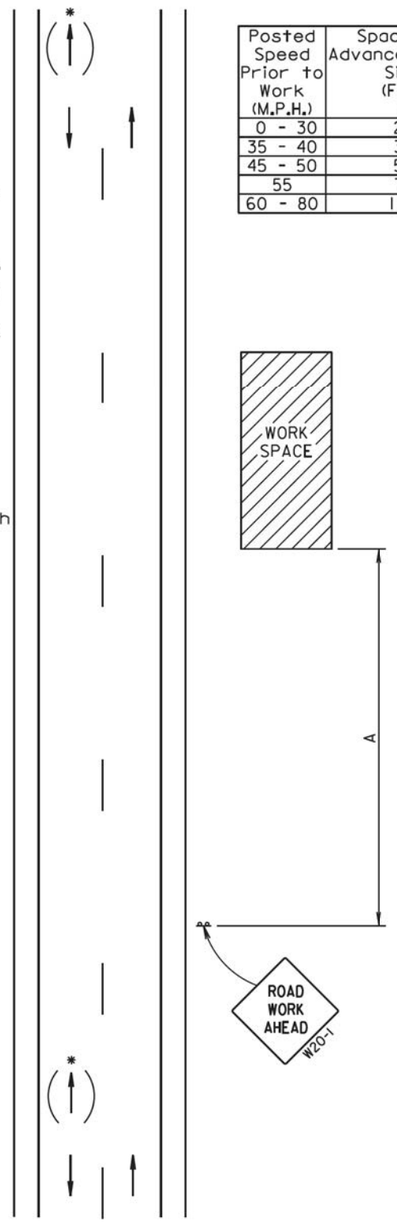
The signs illustrated shall be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

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

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

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

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



April 15, 2015

Published Date: 2nd Qtr. 2015

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK BEYOND THE SHOULDER

PLATE NUMBER 634.01

Sheet 1 Of 1

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

■ Channelizing Device

END ROAD WORK G20-2

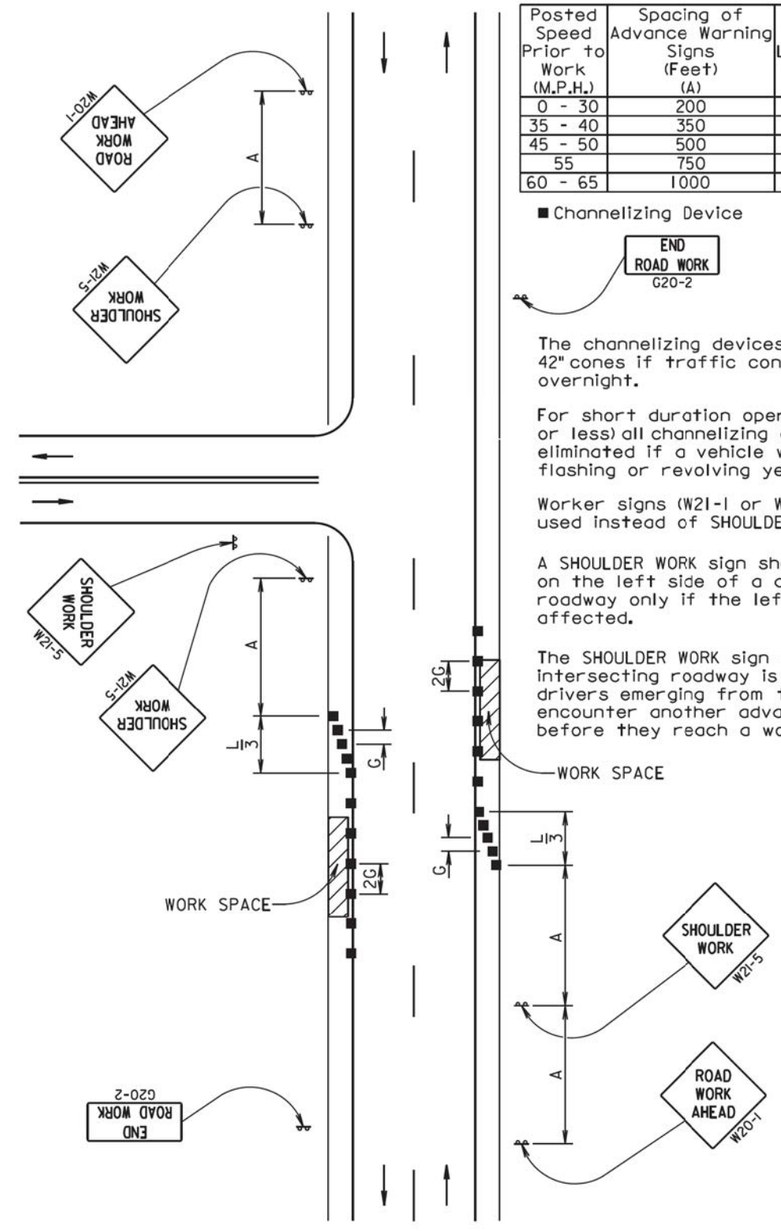
The channelizing devices shall be drums or 42" cones if traffic control must remain overnight.

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

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

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

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



September 22, 2014

Published Date: 2nd Qtr. 2015

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK ON SHOULDERS

PLATE NUMBER 634.03

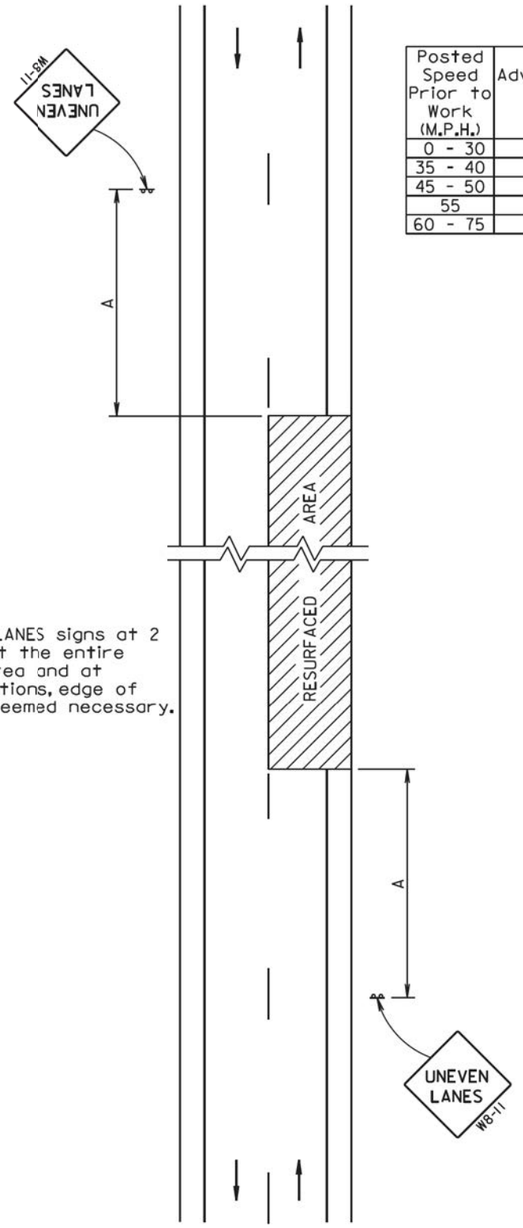
Sheet 1 of 1

PLOT SCALE - 1:200

PLOTTED FROM - TRAB17982

PLOT NAME - 1

FILE - ...\SECTIONC\63401_&_63403.DGN



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

Install additional UNEVEN LANES signs at 2 mile intervals throughout the entire length of the uneven area and at affected major intersections, edge of towns, and other sites deemed necessary.

April 15, 2015

Published Date: 2nd Qtr. 2015

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES UNEVEN ROAD SURFACE

PLATE NUMBER 634.22

Sheet 1 of 1

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

Flagger

Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

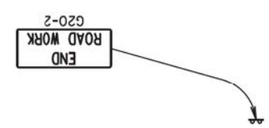
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices shall be drums or 42" cones.

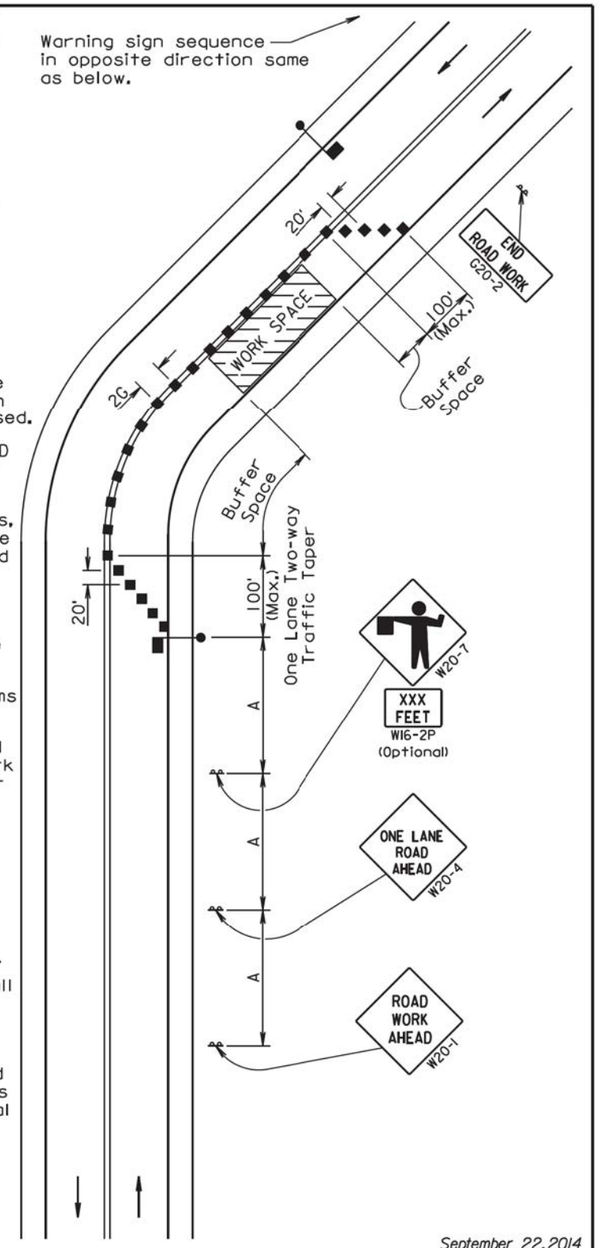
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.



September 22, 2014

Published Date: 2nd Qtr. 2015

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED

PLATE NUMBER 634.23

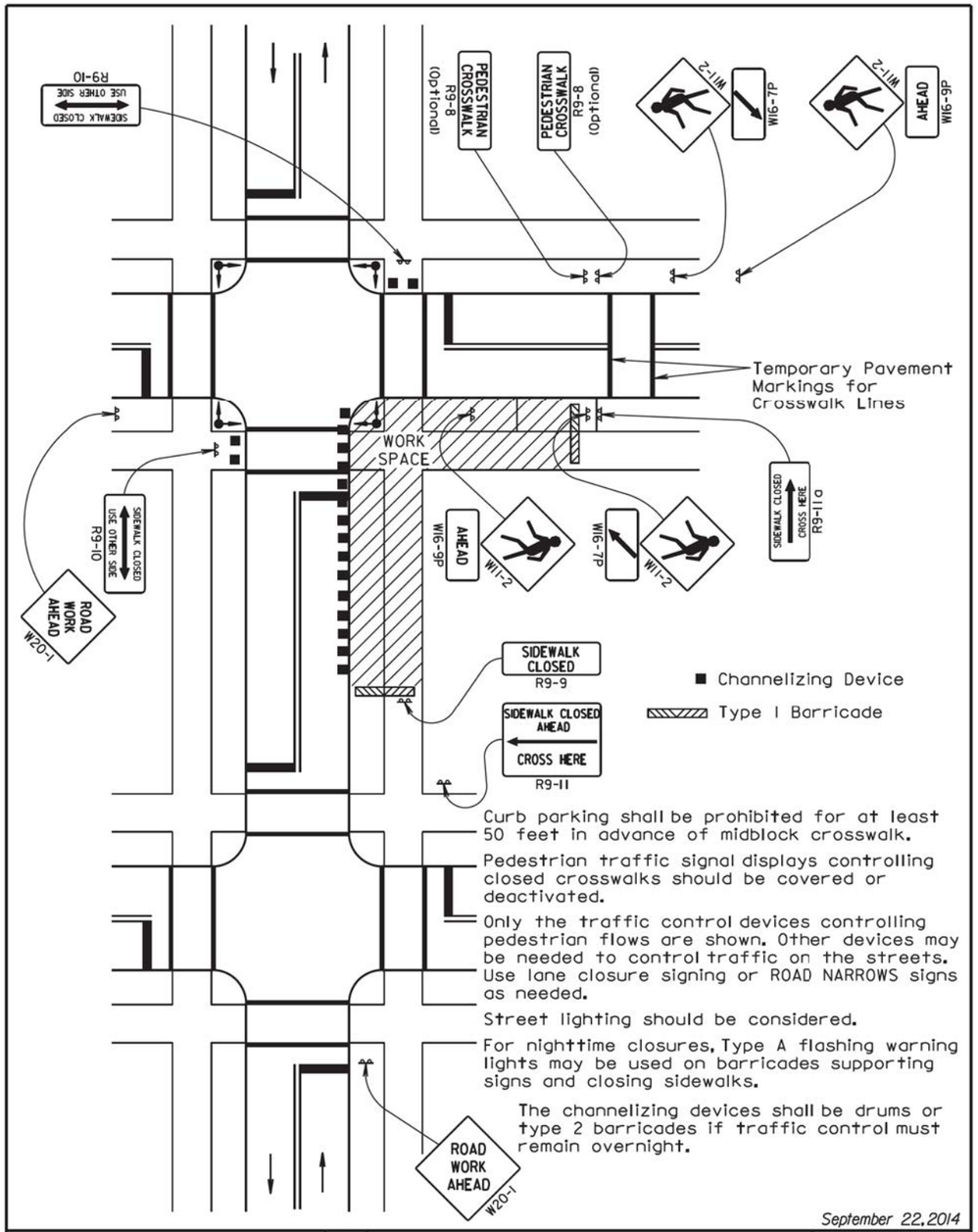
Sheet 1 of 1

PLOT SCALE - 1:200

PLOTTED FROM - TRAB17882

PLOT NAME - 2

FILE - ...\SECTIONC\63422_&_63423.DGN



Curb parking shall be prohibited for at least 50 feet in advance of midblock crosswalk.

Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.

Only the traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets. Use lane closure signing or ROAD NARROWS signs as needed.

Street lighting should be considered.

For nighttime closures, Type A flashing warning lights may be used on barricades supporting signs and closing sidewalks.

The channelizing devices shall be drums or type 2 barricades if traffic control must remain overnight.

September 22, 2014

Published Date: 2nd Qtr. 2015	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES SIDEWALK CLOSURES AND PEDESTRIAN DETOURS	PLATE NUMBER 634.33 Sheet 1 of 1

Only the traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets. Use lane closure signing or ROAD NARROWS signs, as needed.

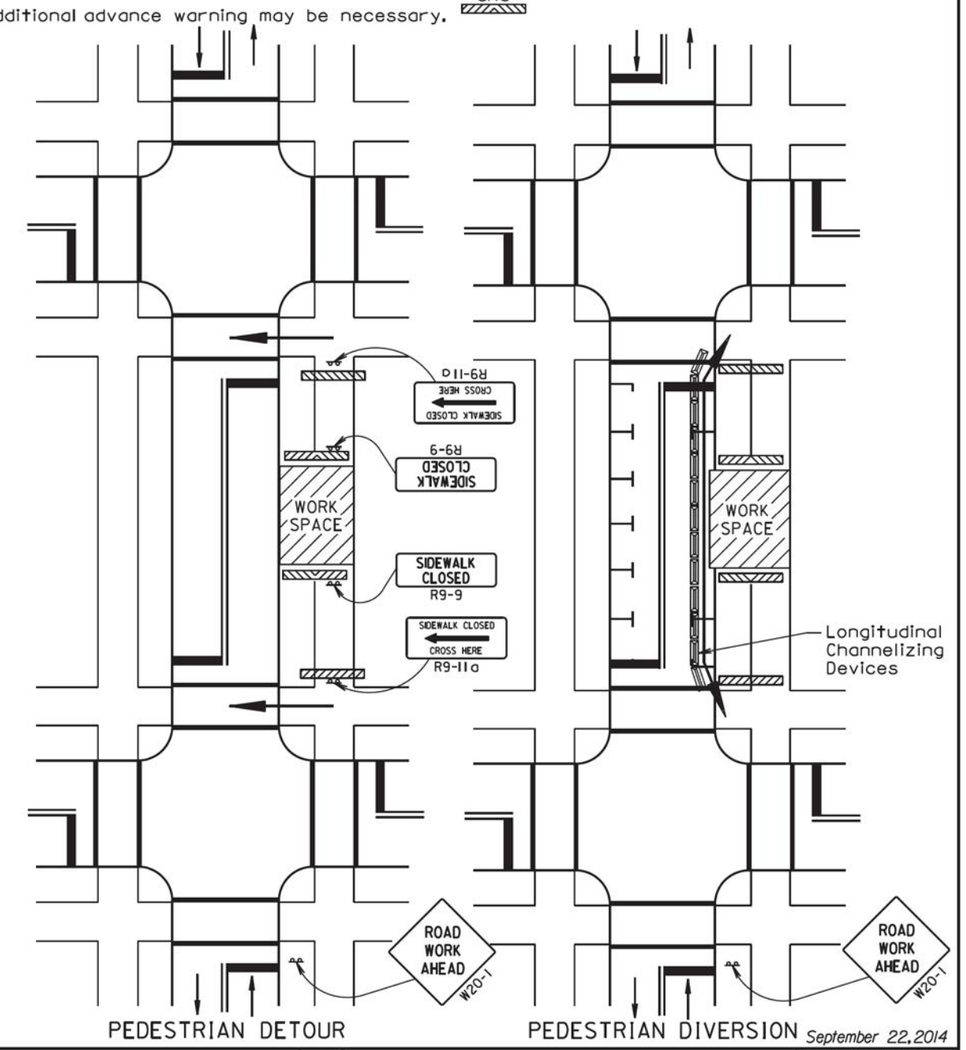
Signs may be placed along a temporary diversion to guide or direct pedestrians. Examples include KEEP RIGHT and KEEP LEFT signs.

Additional advance warning may be necessary.

For nighttime closures, Type A flashing warning lights may be used on barricades supporting signs and closing sidewalks. Type C steady-burn lights may be used on channelizing devices separating the temporary pedestrian diversion from vehicular traffic.

Street lighting should be considered.

Type I Barricade and



September 22, 2014

Published Date: 2nd Qtr. 2015	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES PEDESTRIAN DETOUR AND PEDESTRIAN DIVERSION	PLATE NUMBER 634.34 Sheet 1 of 1

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

* Spacing is 40' for 42" cones.

◎ Reflectorized Drum

■ Channelizing Device

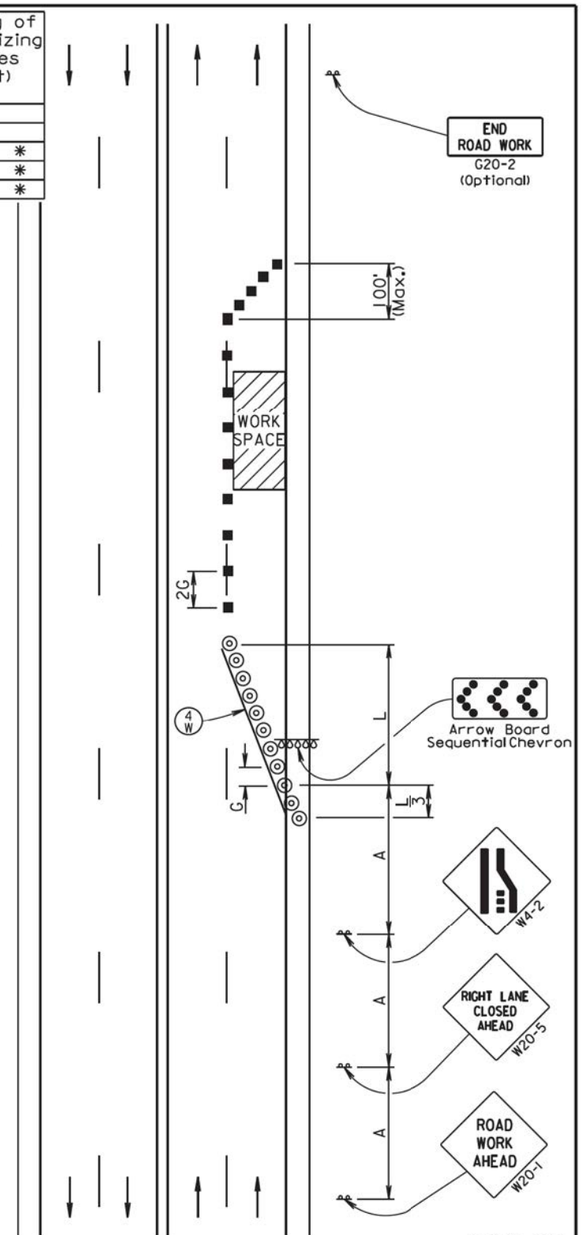
(4 W) 4" White Temporary Pavement Marking

The channelizing devices shall 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.

Temporary pavement markings shall be used if traffic control must remain overnight.

The length of A and L may be adjusted to fit field conditions.



April 15, 2015

Published Date: 2nd Qtr. 2015

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
4-LANE UNDIVIDED, RIGHT LANE CLOSED

PLATE NUMBER 634.47

Sheet 1 of 1

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

* Spacing is 40' for 42" cones.

◎ Reflectorized Drum

■ Channelizing Device

(4 Y) 4" Yellow Temporary Pavement Marking

Pavement markings no longer applicable shall be removed or obliterated as soon as practical.

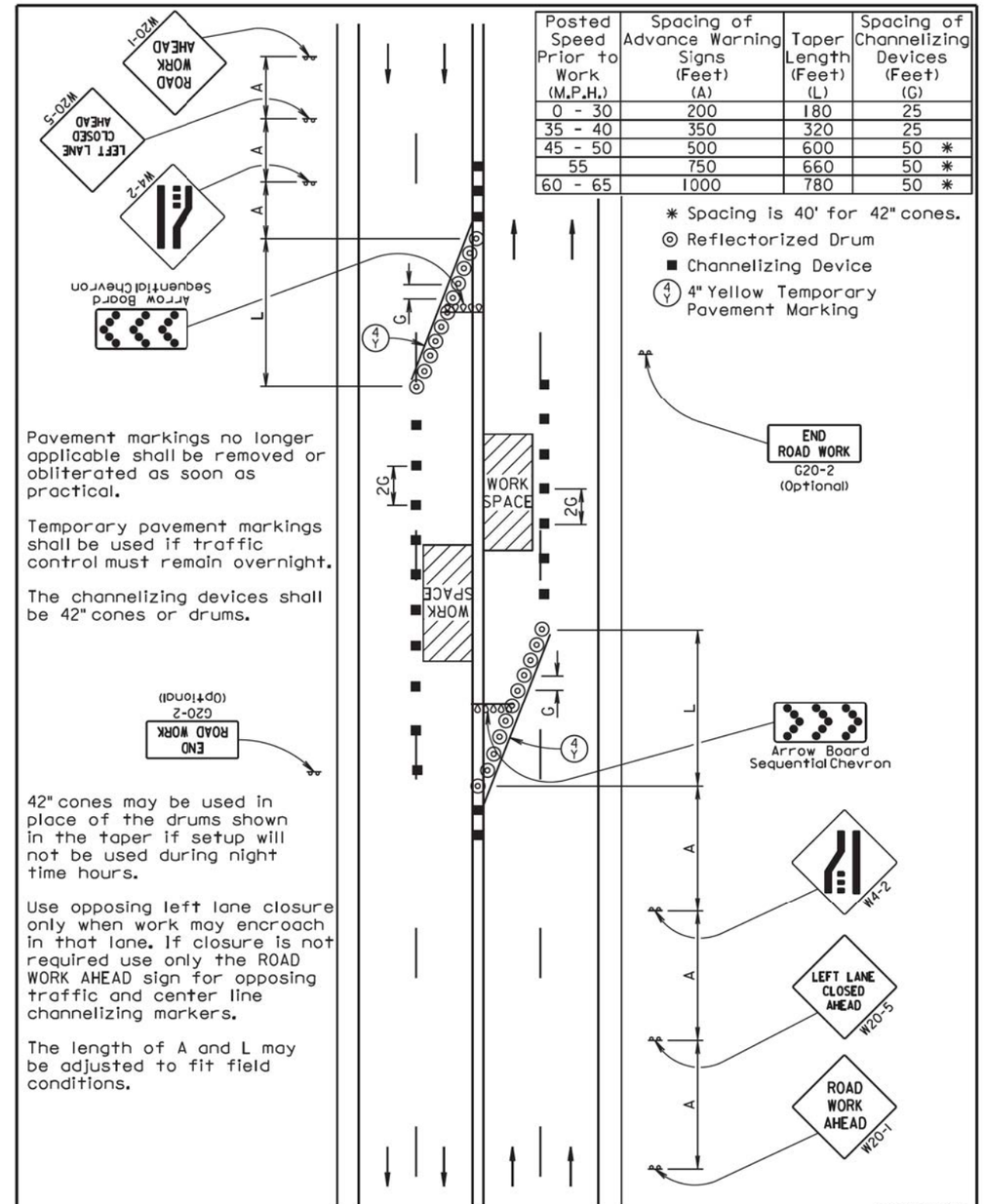
Temporary pavement markings shall be used if traffic control must remain overnight.

The channelizing devices shall 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.

Use opposing left lane closure only when work may encroach in that lane. If closure is not required use only the ROAD WORK AHEAD sign for opposing traffic and center line channelizing markers.

The length of A and L may be adjusted to fit field conditions.



April 15, 2015

Published Date: 2nd Qtr. 2015

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
4-LANE UNDIVIDED, LEFT LANE CLOSED

PLATE NUMBER 634.48

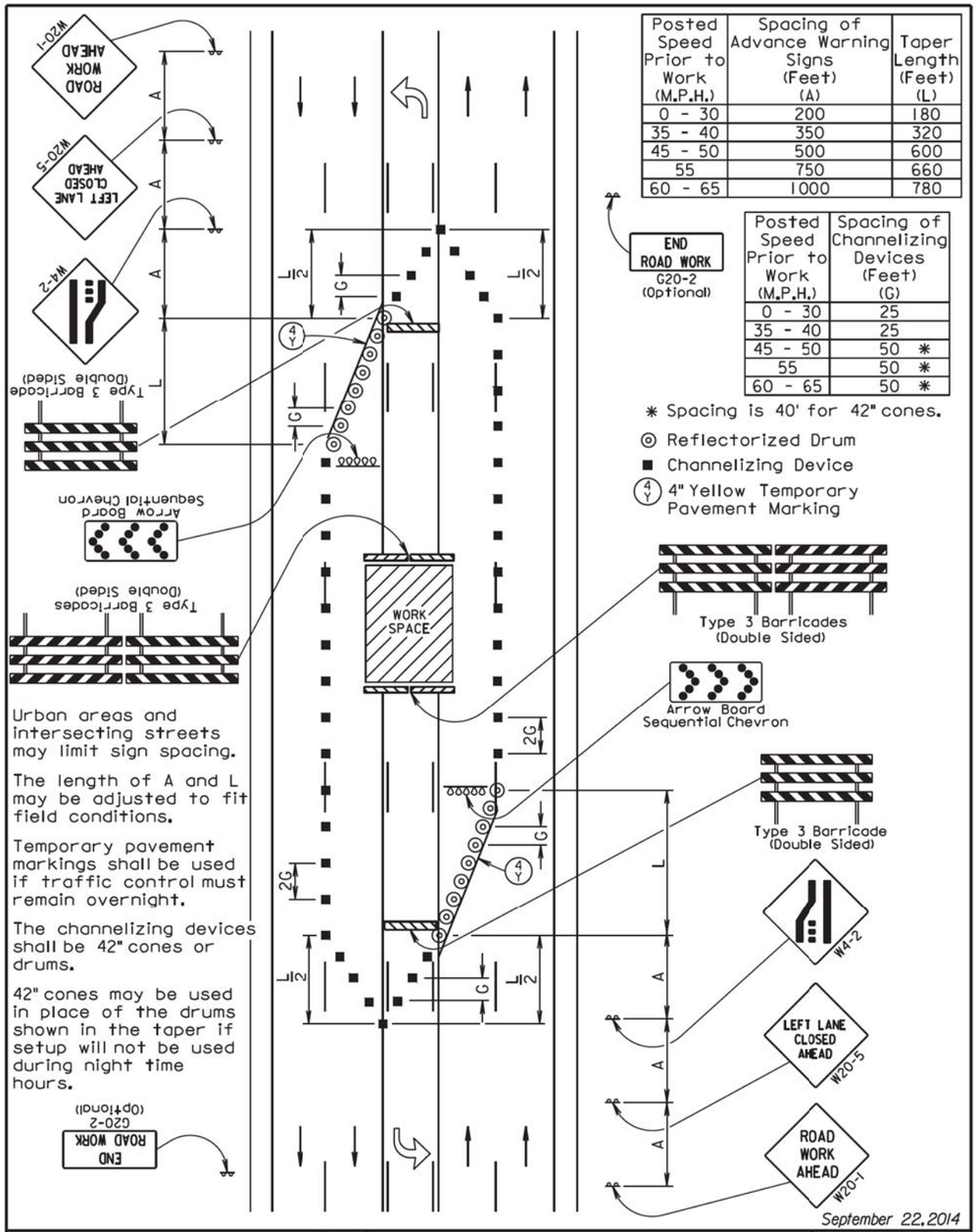
Sheet 1 of 1

PLOT SCALE - 1:200

PLOTTED FROM - TRAB17982

PLOT NAME - 4

FILE - ...\SECTIONC\63447_&_63448.DGN



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

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 40	25
45 - 50	50 ✱
55	50 ✱
60 - 65	50 ✱

✱ Spacing is 40' for 42" cones.

◎ Reflectorized Drum

■ Channelizing Device

(4 Y) 4" Yellow Temporary Pavement Marking

Urban areas and intersecting streets may limit sign spacing.

The length of A and L may be adjusted to fit field conditions.

Temporary pavement markings shall be used if traffic control must remain overnight.

The channelizing devices shall 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.

September 22, 2014

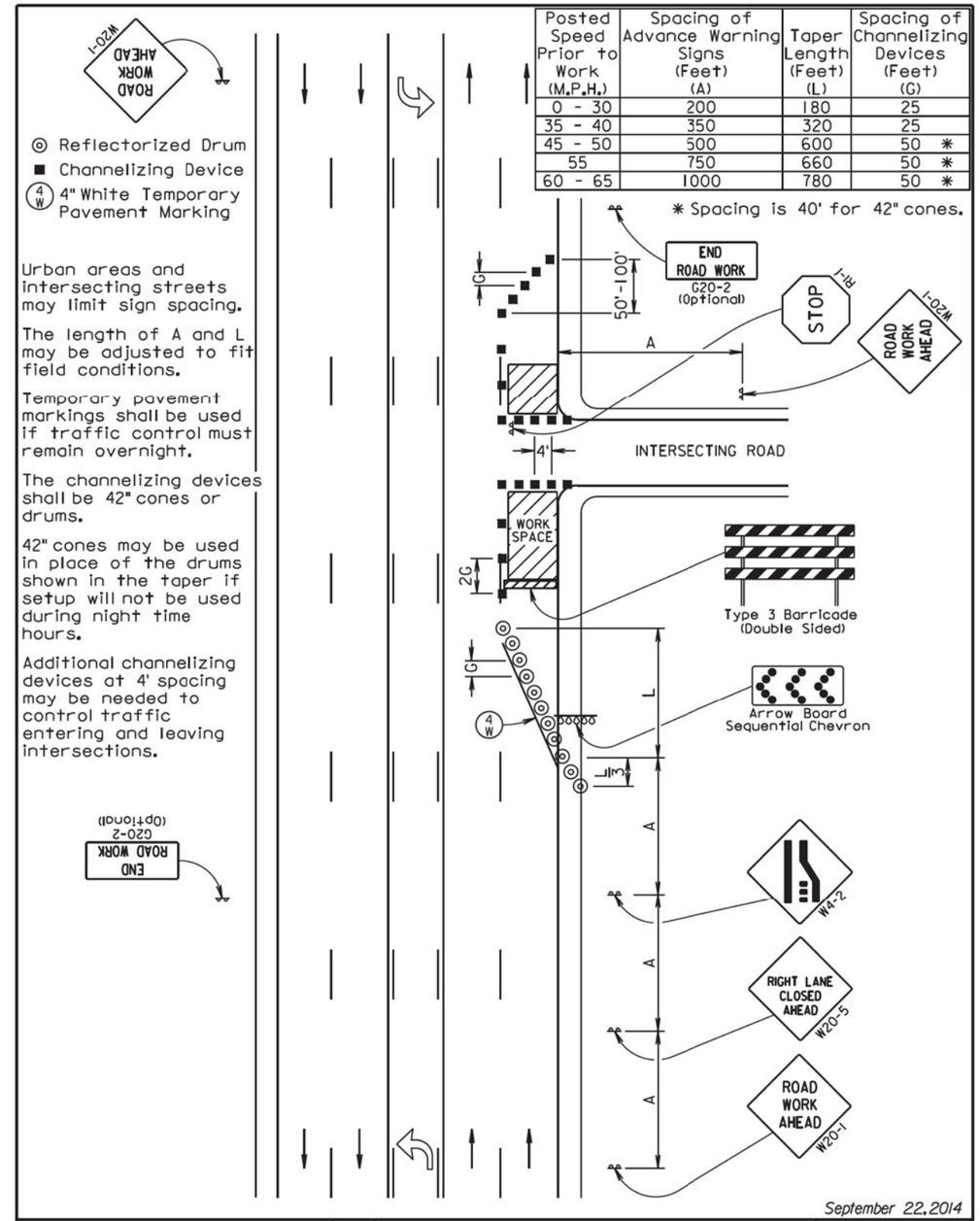
Published Date: 2nd Qtr. 2015

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
5-LANE, CENTER 3 LANES CLOSED

PLATE NUMBER 634.57

Sheet 1 of 1



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

✱ Spacing is 40' for 42" cones.

◎ Reflectorized Drum

■ Channelizing Device

(4 W) 4" White Temporary Pavement Marking

Urban areas and intersecting streets may limit sign spacing.

The length of A and L may be adjusted to fit field conditions.

Temporary pavement markings shall be used if traffic control must remain overnight.

The channelizing devices shall 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.

Additional channelizing devices at 4' spacing may be needed to control traffic entering and leaving intersections.

September 22, 2014

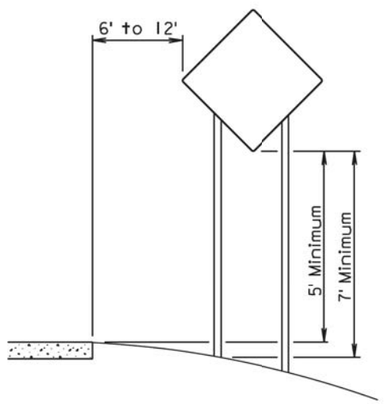
Published Date: 2nd Qtr. 2015

SDDOT

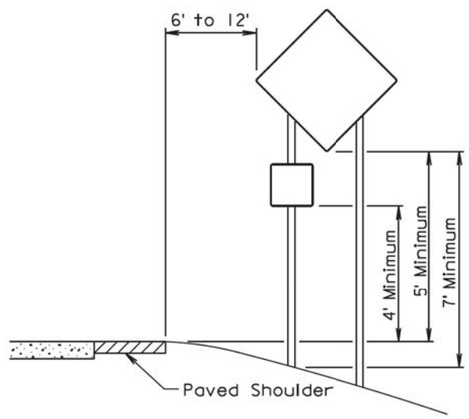
GUIDES FOR TRAFFIC CONTROL DEVICES
5-LANE, OUTSIDE LANE CLOSED

PLATE NUMBER 634.60

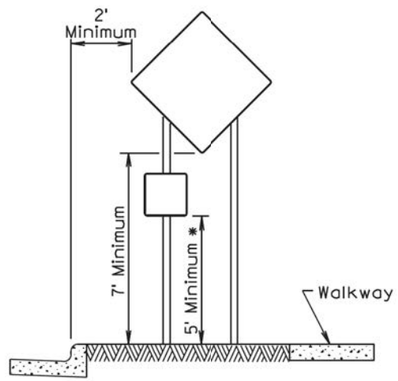
Sheet 1 of 1



RURAL DISTRICT

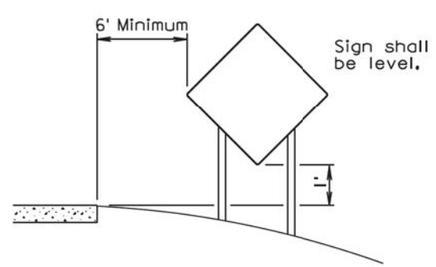


RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

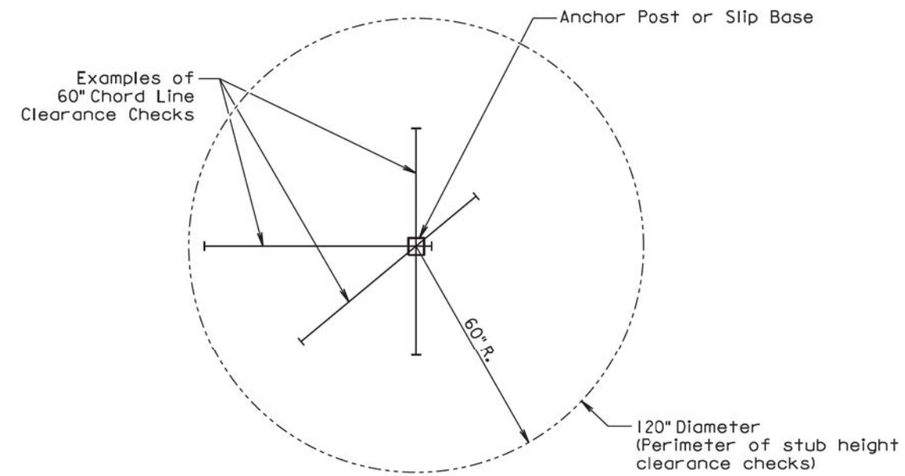
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.



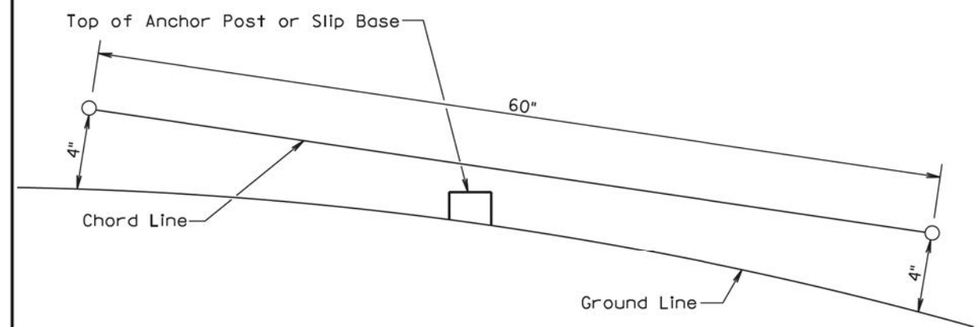
RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

September 22, 2014

Published Date: 2nd Qtr. 2015	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 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

Published Date: 2nd Qtr. 2015	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99 Sheet 1 of 1

PLOT SCALE - 1:200
PLOT NAME - 6
FILE - ...\SECTIONC\63485_&_63499.DGN
PLOTTED FROM - TRAB17892