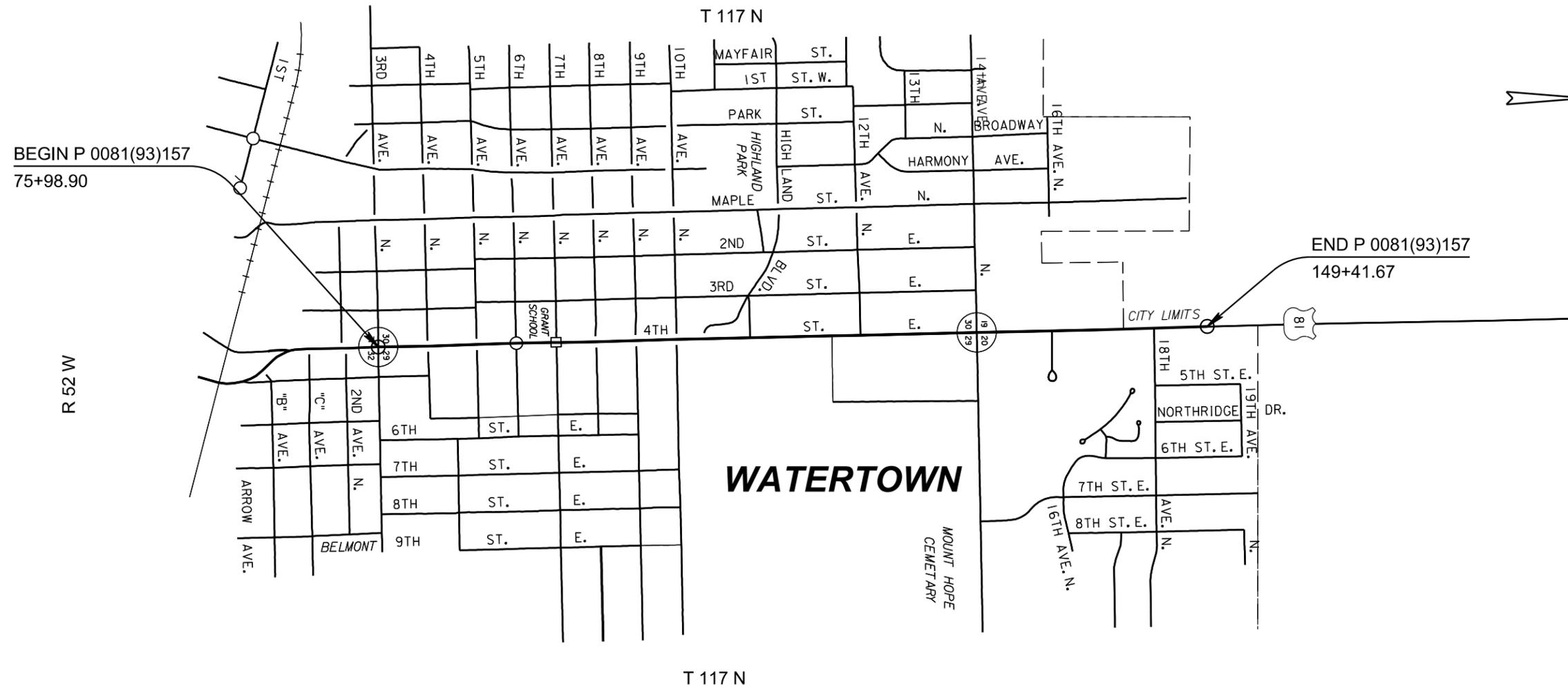


# Section C: Traffic Control

STATE OF SOUTH DAKOTA	PROJECT P 0081(93)157	SHEET C1	TOTAL SHEETS C30
Plotting Date: 02/27/2015			

## INDEX OF SHEETS

- C1: General Layout with Index
- C2 to C5: Estimate with General Notes & Tables
- C6: Project Overview Map
- C7: Road and Street Closure Signing
- C8 to C12: Local Detour Route
- C13 to C20: Traffic Control Details
- C21 to C22: Alternate Route Signing
- C23 to C24: Overwidth Signing
- C25: Typical Traffic Control Layout
- C26: Traffic Control Widening Detail
- C27: Pedestrian Detour Signing
- C28 to C30: Standard Plates



Plot Scale - 1:200

Plotted From - trwa1nt14

Plot Name -

File - ...I.design\Section Cltiffec.dgn

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**SECTION C ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0010	Flagging	100.0	Hour
634E0110	Traffic Control Signs	1,200	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0265	Type 3 Barricade, 6' Double Sided	37	Each
634E0285	Type 3 Barricade, 8' Double Sided	54	Each
634E0330	Temporary Raised Pavement Markers	1,920	Ft
634E0380	Tubular Marker	96	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	1,560	Ft
634E0640	Temporary Pavement Marking	2,060	Ft
634E1002	Detour Signing	1,369.6	SqFt
634E1220	Solar Powered Portable Changeable Message Sign	2	Each
634E2010	Temporary Pedestrian Facility(s)	Lump Sum	LS
634E2020	Temporary Curb Ramp	10	Each

**SEQUENCE OF OPERATIONS**

Work shall consist of pavement removal, grading, storm sewer, PCC paving, asphalt cold milling, asphalt concrete resurfacing, traffic signals, roadway lighting, pavement markings, traffic signs, and erosion control.

US 81 traffic will be detoured off the project during Phase 1 of the project and will be maintained head to head on Phase 2 of the project.

Work shall progress in phases.

Traffic Control devices shall be appropriately installed prior to any construction activity in any of the Phases.

Refer to Proposal for Special Provision for Contract Time and Block Rental.

Details in the plans are based on the below requirements for construction of the project. Details depict an anticipated order of construction. Alternatives to the details shown shall be proposed by the Contractor prior to the preconstruction meeting for review by the Area Engineer.

The work shall proceed in the following order:

Phase 1: Phase 1 shall consist of work from approximately Sta. 76+00 north to Sta. 102+00. Phase 1 shall consist of removing and replacing storm sewer, concrete surfacing, curb and gutter, sidewalk, traffic signals, roadway lighting, and restoration work behind the sidewalk. Work in this phase shall also include tying the new storm sewer into the existing storm sewer system in all directions to maintain drainage on the project at all times.

During Phase 1 construction, the roadway will be completely closed to traffic, and through traffic will be detoured as noted on both the Local and Truck Traffic Detour Route Signing details.

During 3<sup>rd</sup> Ave. N. construction, the Phase 1A Traffic Detour shall be in place. The Phase 1B Traffic Detour Route shall be used during all other work in Phase 1.

The Contractor shall not be allowed to close 10th Ave. N. and 9th Ave. N. at the same time in order to maintain continuous access to Prairie Lakes Hospital.

Access shall be maintained to the homeowners on the right and left side of the roadway, to the maximum extent possible during construction. All arrangements for maintaining access, shall be completed by the Contractor.

Refer to Special Provision for Contract Time and Block Rental for information on time constraints for work on Phase 1.

Phase 2: Phase 2 shall consist of work from Sta. 102+00 to approximately Sta.149+41.

During Phase 2 construction, the roadway will be open to traffic, and through traffic will be maintained head to head as noted on details throughout the plans. The Contractor shall complete all work in the NB Lanes first while maintaining head to head traffic in the existing SB Lanes and then transfer traffic to the newly constructed NB Lanes while completing all work in the SB Lanes.

Widening of the SB lanes will be required prior to beginning Phase 2 work north of 14<sup>th</sup> Ave. N.. Head to head traffic will be maintained in temporary SB lanes until the NB lanes are completed. Details of the required work to widen the roadway for the SB lanes are located in the plans.

Refer to Special Provision for Contract Time for specific information on time constraints for work on Phase 2.

The Contractor will be required to keep 14<sup>th</sup> Ave. N. and 16<sup>th</sup> Ave. N. open for two-way traffic in all directions. To accommodate this, it is anticipated 14<sup>th</sup> Ave. N. and 16<sup>th</sup> Ave. N. will require either a concrete blockout or temporary widening with granular material depending on the Contractors operations. The method for maintaining two-way traffic at these locations shall be approved by the Engineer. If used, all widening must be contained within the Right of Way or Easement for the project.

Access shall be maintained at all times to intersections, homes and businesses located along Phase 2. Concrete blockouts will be required at locations where access cannot be maintained in any other way. Businesses with multiple accesses may be accommodated by closing one access at a time. The Contractor shall maintain communication with each landowner and handle all arrangements to accommodate reasonable access.

Restoration work behind sidewalk shall include shaping and placement of permanent seed and/or sod (if seasonal limits allow). Restoration work is required to be completed prior to moving on to any subsequent phase of the project.

All permanent pavement markings, traffic signal, roadway lighting, and permanent signing shall be installed prior to reopening portions of US 81 to normal traffic.

Access shall be maintained to Prairie Lakes Hospital at all times. The hospital is located west of 10<sup>th</sup> Ave. N. intersection at approximately Sta. 102+50. The Contractor shall not be allowed to close 10th Ave. N. and 9th Ave. N. at the same time in order to maintain continuous access to Prairie Lakes Hospital.

The Contractor will be required to maintain storm and sanitary drainage throughout the duration of the project. The Contractor shall ensure adequate drainage at various storm water tie in points along the project prior to nightfall.

The project will be open full width throughout its length for all traffic and turning movements prior to winter. Should there be any un-surfaced areas either on the project proper, street approaches or accesses which are started and not completed by that time, the Contractor shall be responsible at his expense for providing at least 6 inches of Base Course and 4 inches of asphalt concrete for winter use and for its removal in the spring when the project work is completed.

**TRAFFIC CONTROL**

Traffic shall be maintained in accordance with the Manual on Uniform Traffic Control Devices and as follows:

1. The Contractor shall notify the Aberdeen Region Traffic Engineer (605-626-7879) a minimum of 1 week prior to opening any phase of the project to traffic in order to verify the installation of permanent signing by the Contractor.
2. The Contractor shall keep all businesses and residents informed of the progression and prosecution of work in areas which have a direct effect on their access.
3. A night inspection of traffic control signing shall be done by the Contractor's designated employee responsible for traffic control after the signs are revised for each phase of construction. The Contractor shall submit additional log information for this inspection to the Engineer.
4. Construction operations will be allowed during daylight hours only.

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**TRAFFIC CONTROL (Continued)**

5. The Contractor shall conduct weekly meetings at a designated place on or adjacent to the project. Meetings shall be open to the public. Public announcements shall be made so all affected parties are aware of this meeting. The Contractor shall be responsible for the public announcements however, the Engineer shall approve the public announcements prior to submitting to the media. The meetings must be conducted by the Contractor's Superintendent or management person. The purpose of these meetings shall be to:

- Present the work schedule for at least the following week
- Coordinate work activities with subcontractors, city and utility companies
- Coordinate traffic control
- Coordinate public and private access
- Inform businesses, residents, and public of project status

All costs related to weekly meetings and public announcements shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

6. The Contractor shall provide the City Police Department, City Fire Department, Ambulance Service, County Sheriff's Office, and the Prairie Lakes Hospital Emergency Department a detailed map showing roadway segment construction work limits and the most appropriate routing for emergency vehicles. Updated maps shall be provided to the departments 24 hours prior to any changes in work limits. Changes in work limits will not be allowed until the 24 hour advance notice requirement has been satisfied.

7. Orange plastic safety fence shall be provided to enclose any areas that are unsafe for pedestrian traffic including the last 50' of pipe excavation that is allowed to be open overnight, during undercutting operations, and when sidewalk has been removed. All related costs to furnish, place and maintain the plastic safety fence shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

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

9. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted.

10. All traffic control devices used on this project shall be new or in like-new condition, as approved by the Engineer.

11. Drums and/or Type 2 Barricades shall be maintained to a minimum height of 3' above the surface which is being used to maintain traffic.

12. Locations of signs on traffic control layouts are diagrammatic. 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. The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas, and one foot above the pavement in rural areas. Portable sign supports may be used

as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, breakaway supports.

13. KEEP RIGHT symbol signs shall be placed at intersections as appropriate, and as directed by the Engineer. KEEP RIGHT signs have been included in the Traffic Control Devices Inventory.

**PEDESTRIAN TRAFFIC CONTROL**

The existing sidewalks cannot be closed without placing the pedestrian detour route in service. When crosswalks, sidewalks or other pedestrian facilities are blocked, closed or relocated, temporary facilities shall include accessibility features.

The Contractor shall adhere to the requirements of the Americans with Disabilities Act (ADA) during construction. Tape, rope, or plastic chain strung between devices is 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.

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

The Contractor will be required to keep 3<sup>rd</sup> Ave. N., 5<sup>th</sup> Ave. N., 7<sup>th</sup> Ave. N. and 14<sup>th</sup> Ave. N. open to pedestrian cross traffic (east - west) at all times. This requirement will be waived for concrete paving, when the intersection may be closed to pedestrian traffic for as little time as possible not to exceed a period of 12 hours.

A temporary pedestrian facility with handrail shall be provided by the Contractor for pedestrian cross traffic at 5<sup>th</sup> Ave. N., 7<sup>th</sup> Ave. N. and 14<sup>th</sup> Ave. N. crossing. The temporary pedestrian facility shall be a hard surface utilized and constructed as shown on the Pedestrian Detour Route Layouts.

The cost for the temporary pedestrian facility shall be incidental to the contract lump sum price for "Temporary Pedestrian Facility(s)".

A temporary pedestrian ramp shall be provided by the Contractor in all cases where an alternate route cannot be found, and the intersection will carry pedestrian traffic. A suitable ramp would be one made out of wood that is at least 4' wide and no greater than a 12:1 slope. The ramp should be sufficiently sturdy and unyielding.

The cost of the temporary pedestrian ramps shall be incidental to the contract unit price per each for "Temporary Curb Ramp."

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. Orange plastic safety fence shall be used to protect these holes whenever unattended.

Where orange plastic safety fence is along a pedestrian route, a continuously detectable edging should be provided. This edging should protrude at least 6 inches above the surface of the sidewalk or pathway, with the bottom of the edging a maximum of 2.5 inches above the surface. Examples of detectable edging for pedestrians at given in Section 6F.74 of the MUTCD.

The Contractor shall accommodate pedestrian traffic, including those with disabilities. Bicycle traffic shall also be accommodated. If differing from the plans, 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 affected locations. This plan should be in conformance with the details contained in these plans for pedestrian accommodation. The plan must be submitted at least 1 week prior to the Preconstruction Meeting.

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.

The Contractor shall maintain the existing sidewalk that is used for the pedestrian detour. Maintenance of this detour will include the sweeping of the sidewalk to remove any debris or granular material that may be on the walking surface.

**CITY STREETS**

For Phase 1A, local through traffic shall utilize 3<sup>rd</sup> Avenue N, 3<sup>rd</sup> Street E and 4<sup>th</sup> Avenue N as a local detour. Parking will be prohibited on these routes while they are being used as a detour.

For Phase 1B, local through traffic shall utilize 3<sup>rd</sup> Avenue N, Maple Street, and 10<sup>th</sup> Avenue N as a local detour. Parking will be prohibited on these routes while they are being used as a detour.

The Contractor shall install No Parking signs along the local detour route. Some of the No Parking signs may be installed at the same location as where other signing that limits parking are removed. The No Parking signs shall be removed once the detour is not being used.

14 No Parking signs and 4 Stop signs have been included in the Itemized List for Traffic Control to manage traffic and parking along the detour routes.

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**DETOUR SIGNING**

The Contractor shall furnish the Detour Route signs shown on the Traffic Control - Detour layout sheet in the plans. The cost of furnishing signing items (signs, posts, and mounting hardware), installing, maintaining, covering and removing signing (detour route, warning and regulatory) shall be incidental to the contract unit price per square foot for "Detour Signing".

The Contractor shall be responsible for removing conflicting street signing along the routes used as detours. The Contractor shall remove any conflicting signing identified by the Engineer. The Contractor shall provide an inventory of signing removed to the Engineer and the City.

Removing, relocating, salvaging, and resetting street signing shall be the responsibility of the Contractor. The cost of this work shall be incidental to the various contract items unless otherwise specified in the plans. Any signs damaged or lost shall be replaced by the Contractor at no cost to the State or the city. Covering of signs shall not be an option. The Contractor shall be responsible for returning the removed signing to its original location and configuration.

The Contractor shall work closely with the Engineer to determine the appropriate time to install and remove the various signing. Due to developing and changing traffic patterns over the duration of the project, the Contractor can expect to relocate some of the detour signing. Should detour signing need to be relocated, an additional 50 percent of the designated sign rate will be paid. Additional payment will not be made for any traffic control device turned away, covered up, taken temporarily out of service, and returned to use.

In the event that the project is not completed in the 2016 construction season, detour route, warning and regulatory signing shall be removed after work has been suspended. The Contractor shall put back up the signs when work resumes in the spring of 2017. All costs associated with this work shall be incidental to the various contract items included in the proposal.

**REMOVAL OF CONFLICTING PAVEMENT MARKINGS**

Existing pavement markings which conflict with the desired traffic patterns detailed in traffic control layouts in the plans shall be removed by the Contractor unless otherwise shown. The cost of pavement marking removal shall be incidental to the contract unit price per foot for "Remove Pavement Marking, 4" or Equivalent".

**TEMPORARY RAISED PAVEMENT MARKERS**

The contract unit price per foot for "Temporary Raised Pavement Markers" shall include all costs for furnishing, installing, maintaining (includes replacement if necessary) and removing the markers.

**TUBULAR MARKER**

The Engineer shall inspect and approve tubular markers for use prior to the markers being installed on the project. Tubular markers shall be in reasonable close conformance with the following specifications.

Tubular markers shall be a minimum of 28 inches in height and yield on vehicular impact.

Markers may be of a non-tubular design if approved by the Engineer.

**SIGN INSTALLATION**

The Contractor is advised that sidewalk exists along the project and detour route 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 Watertown or the SDDOT.

**ASPHALT CONCRETE COMPOSITE**

Included in the Section F – Surfacing Plans Estimate of Quantities are 400 tons of Asphalt Concrete Composite for maintaining traffic to businesses, for repair of the detours, and filling gaps due to necessary blockouts for maintaining traffic on US 81.

**GRAVEL CUSHION, SALVAGED**

Included in the Section F – Surfacing Plans Estimate of Quantities are 750 tons of Gravel Cushion or Gravel Cushion, Salvaged for widening at 14<sup>th</sup> Ave. N. and for maintaining traffic to business, residences and at other locations designated by the Engineer.

**SOLAR POWERED PORTABLE CHANGEABLE MESSAGE SIGN**

Solar Powered Portable Changeable Message Signs shall be utilized on this project to advise the traveling public of project conditions. The Contractor shall position and maintain two message signs as directed by the Engineer. The message signs shall be located beyond the edge of the roadway such as on an approach or in the ditch.

**TEMPORARY PAVEMENT MARKINGS**

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

Temporary Flexible Vertical Markers shall be used to mark applicable lane lines. Paint will not be allowed for Temporary Pavement Marking on the final surfacing wear course.

Temporary Flexible Vertical Markers (tabs) shall be used as detailed in the Specifications. Covers on the tabs shall be sufficiently secured to prevent traffic from dislodging the cover. If used, the Contractor shall remove and properly dispose of the covers and 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.

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

**TEMPORARY PAVEMENT MARKING TABLE**

	Centerline RPM (Yellow) (Ft)	Centerline Tubular Marker (Each)	Pavement Marking Removal (Ft)	4" Temp. Marking (White) (Ft)	4" Temp. Marking (Yellow) (Ft)
Hwy. 81 Phase 1	0	0	360	0	0
Hwy. 81 Phase 2	1920	96	1200	1880	180
Totals	1920	96	1560	1880	180

**ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS**

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	4	30" x 30"	6	24
R4-7	KEEP RIGHT (symbol)	48	24" x 30"	5	240
R9-9	SIDEWALK CLOSED	10	24" x 12"	2	20
R9-11	SIDEWALK CLOSED AHEAD with ARROW (L or R) CROSS HERE	6	24" x 18"	3	18
R11-2	ROAD CLOSED	14	48" x 30"	10	140
R11-4	ROAD CLOSED TO THRU TRAFFIC	13	60" x 30"	13	169
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16	32
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16	32
W8-1	BUMP	2	48" x 48"	16	32
W8-6	TRUCK CROSSING	2	48" x 48"	16	32
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6	12
W20-1	ROAD WORK AHEAD	10	48" x 48"	16	160
W20-2	DETOUR AHEAD	3	48" x 48"	16	48
W20-3	ROAD CLOSED AHEAD	3	48" x 48"	16	48
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
W21-5	SHOULDER WORK	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
M4-9b	PED (Symbol) DETOUR with ARROW (L or R)	9	24" x 30"	5	45
		<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>			<b>1200</b>

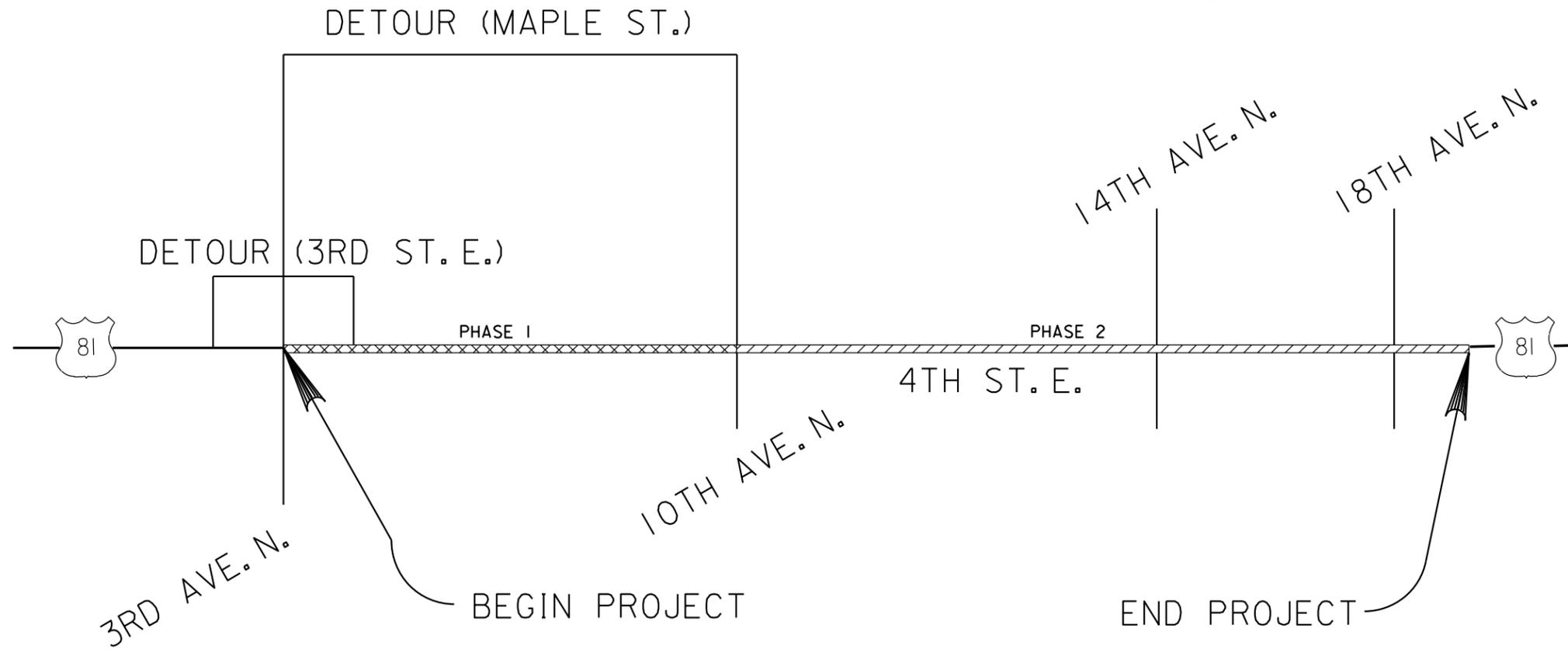
**DETOUR SIGNING TABLE**

Sign Code	Quantity	Width	Height	Sign Description	Color		Sq Ft per sign	Total Sq. Ft.
		Inches	Inches		Background	Legend/Border		
M1-4	19	24	24	US 81 Route Marker	White	Black	4.0	76.0
M4-8	18	24	12	Detour	Orange	Black	2.0	36.0
M5-1L	4	21	15	Advanced Turn Arrow (Up/Left)	White	Black	2.2	8.8
M5-1R	4	21	15	Advanced Turn Arrow (Up/Right)	White	Black	2.2	8.8
M6-1	8	21	15	Directional Arrow (Left/Right)	White	Black	2.2	17.6
M6-4	1	21	15	Directional Arrow (Left&Right)	White	Black	2.2	2.2
	5	150	102	Width Restriction 10 Ft. Maximum 81 from 212 North in Watertown Use Alternate Route	Orange / White	Black	106.3	531.5
	2	108	36	No Vehicles Over 10 Ft. Wide	White	Black	47.5	237.5
	4	114	78	81 From 212 North Thru Watertown Closed to Trucks Use Alt. Route	Orange	Black	61.8	247.2
	2	144	102	81 From 212 North Thru Watertown Closed to Trucks Use Alt. Route	Orange	Black	102.0	204.0
							<b>TOTAL</b>	<b>1369.6</b>

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# PROJECT OVERVIEW MAP

## WATERTOWN



-  PHASE 1 (PHASE CLOSED TO TRAFFIC)
-  PHASE 2 (COMPLETED UNDER TRAFFIC)

# ROAD AND STREET CLOSURE SIGNING FOR PHASES 1 AND 2

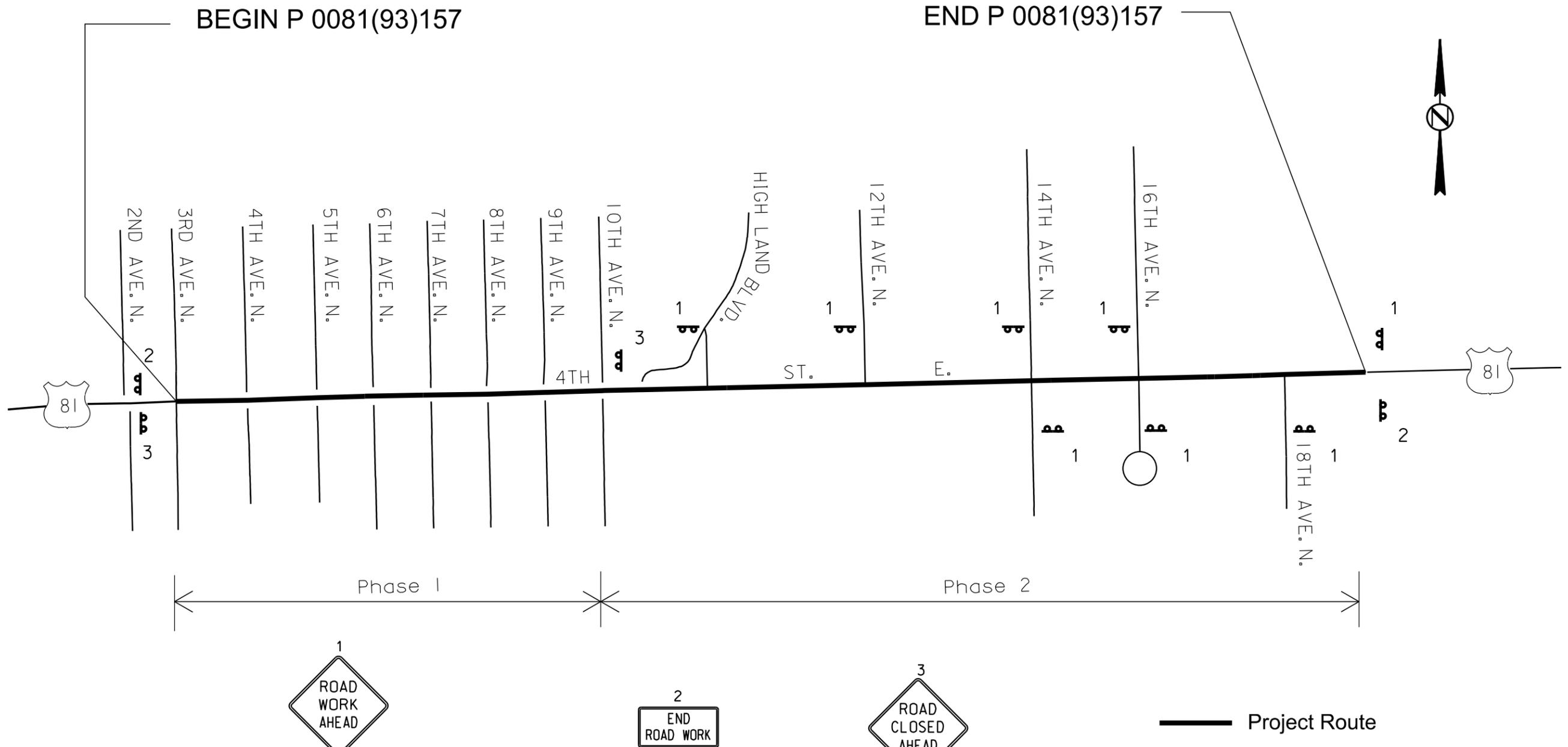
## FIXED LOCATION, GROUND MOUNTED, BREAKAWAY SUPPORTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C7	C30
Plotting Date: 08/28/2015			

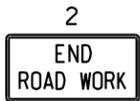
PLOT SCALE - 1:1605

PLOT NAME - 1

FILE - ... \SECTION C\TRAFFIC DESIGN.DGN



Road Work Ahead signs shall not be installed on intersecting city streets until work encompasses the intersection, or as directed by the Engineer.



**—** Project Route

PLOTTED FROM - TRVAINT14

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C8	C30
Plotting Date: 08/21/2015			

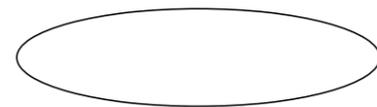
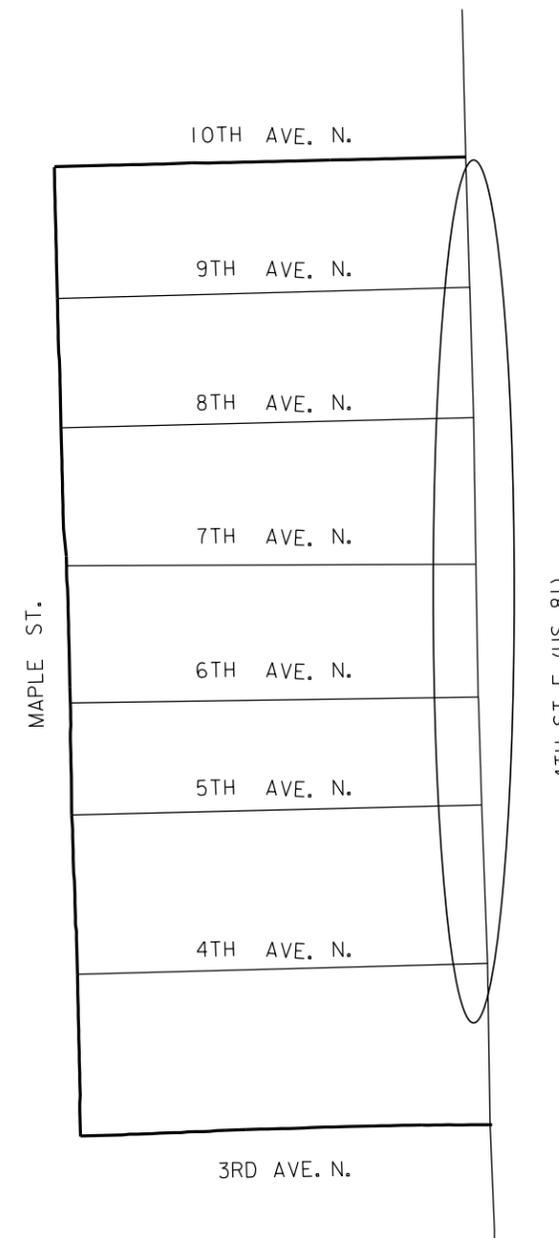
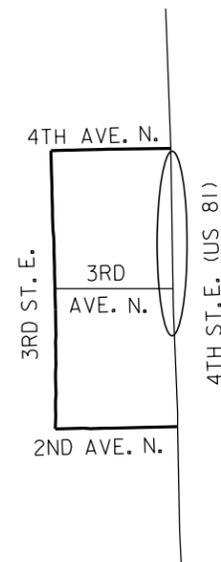
# LOCAL DETOUR BASED UPON CONSTRUCTION PHASE

Detour Route for when  
work is in Phase 1A

Sta. 76+00 to 80+00

Detour Route for when  
work is in Phase 1B

Sta. 80+00 to 102+00

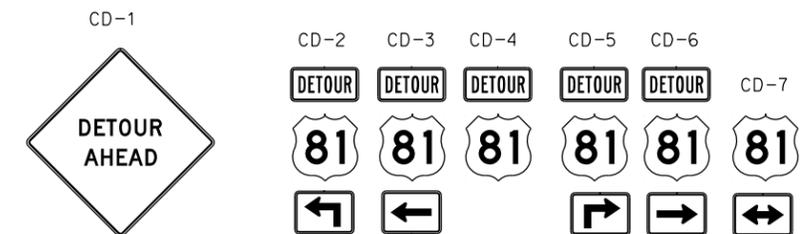
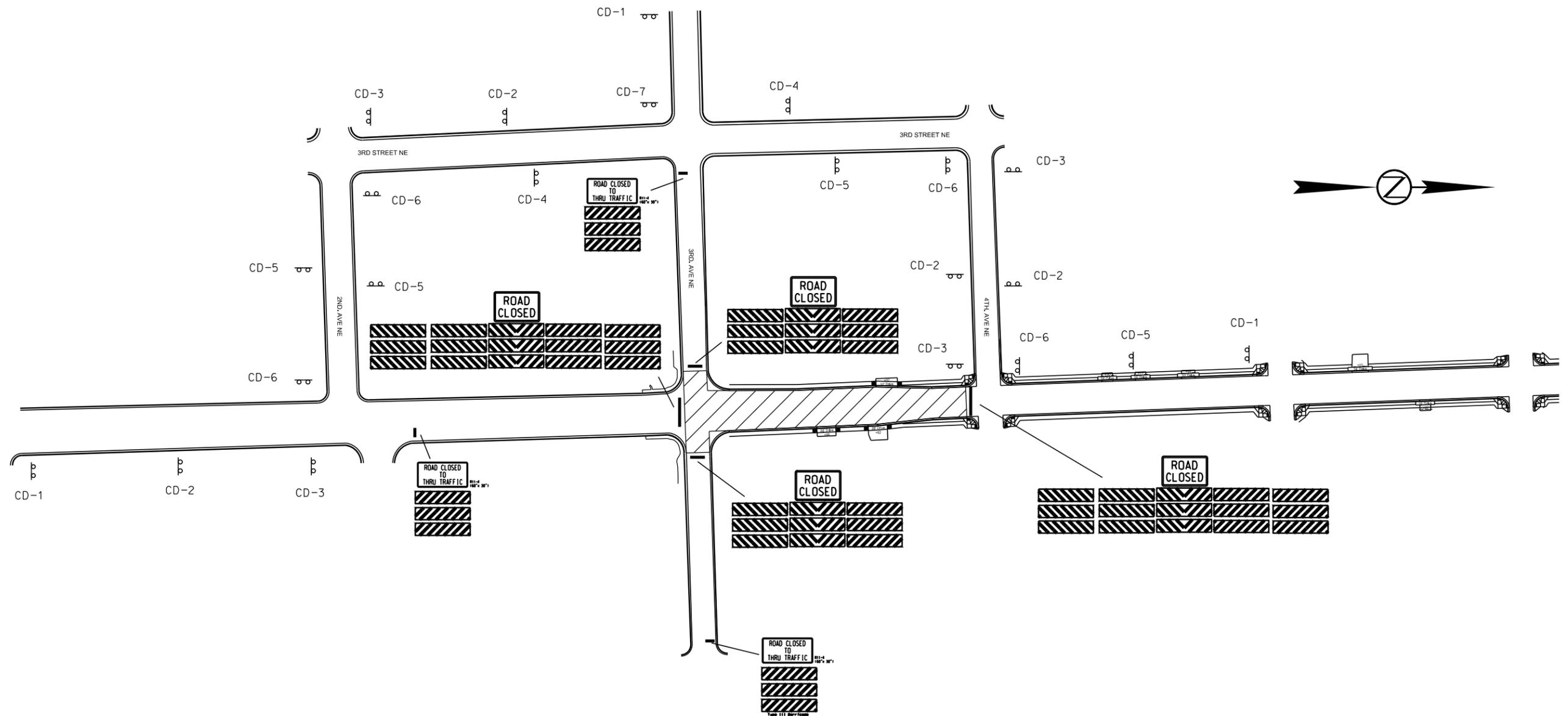


CONSTRUCTION AREA



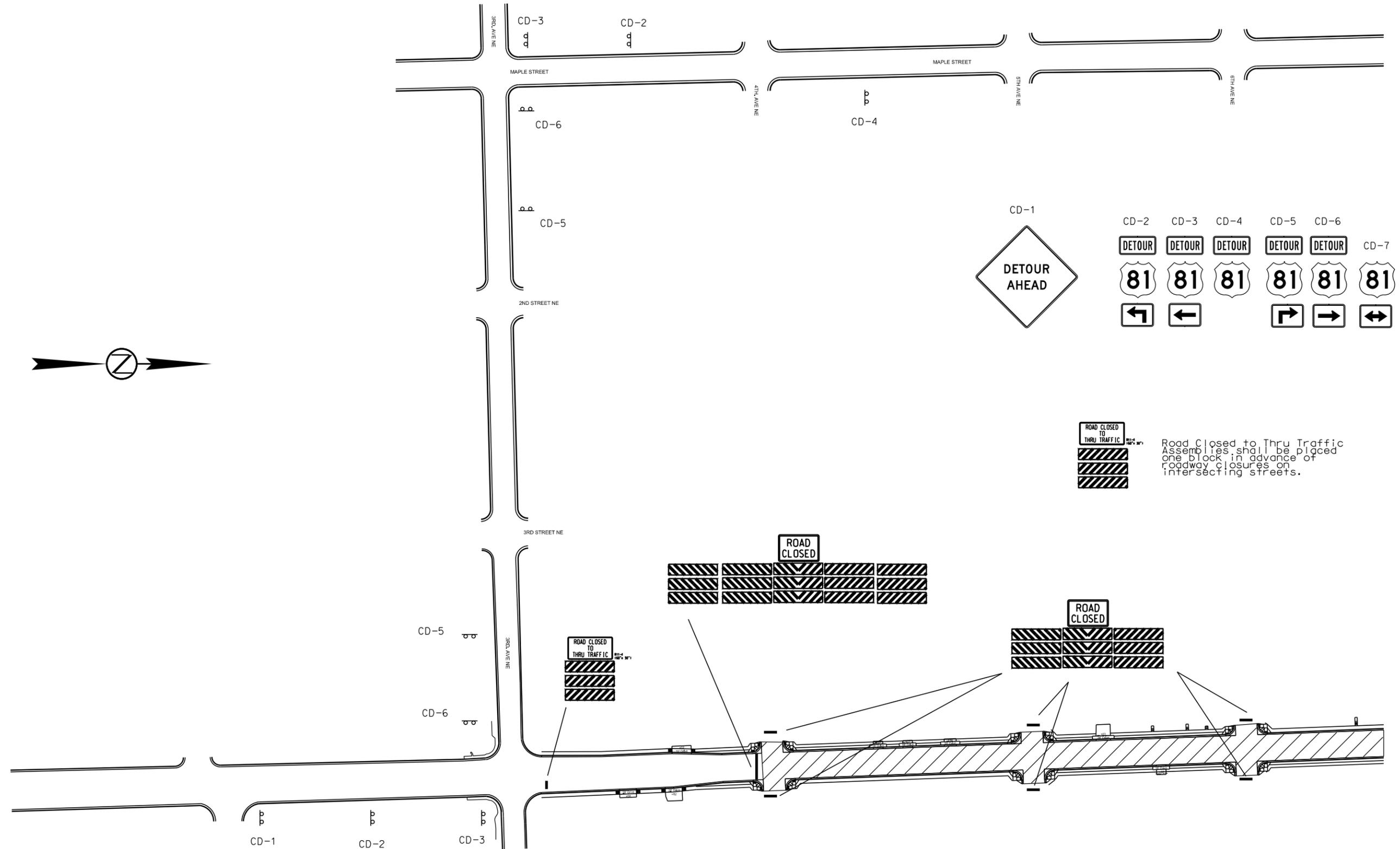
# Local Detour Signing Layout - Phase 1A

 3rd Ave. N. Work Area  
Sta. 76+00 to 80+00



# Local Detour Signing Layout - Phase 1B

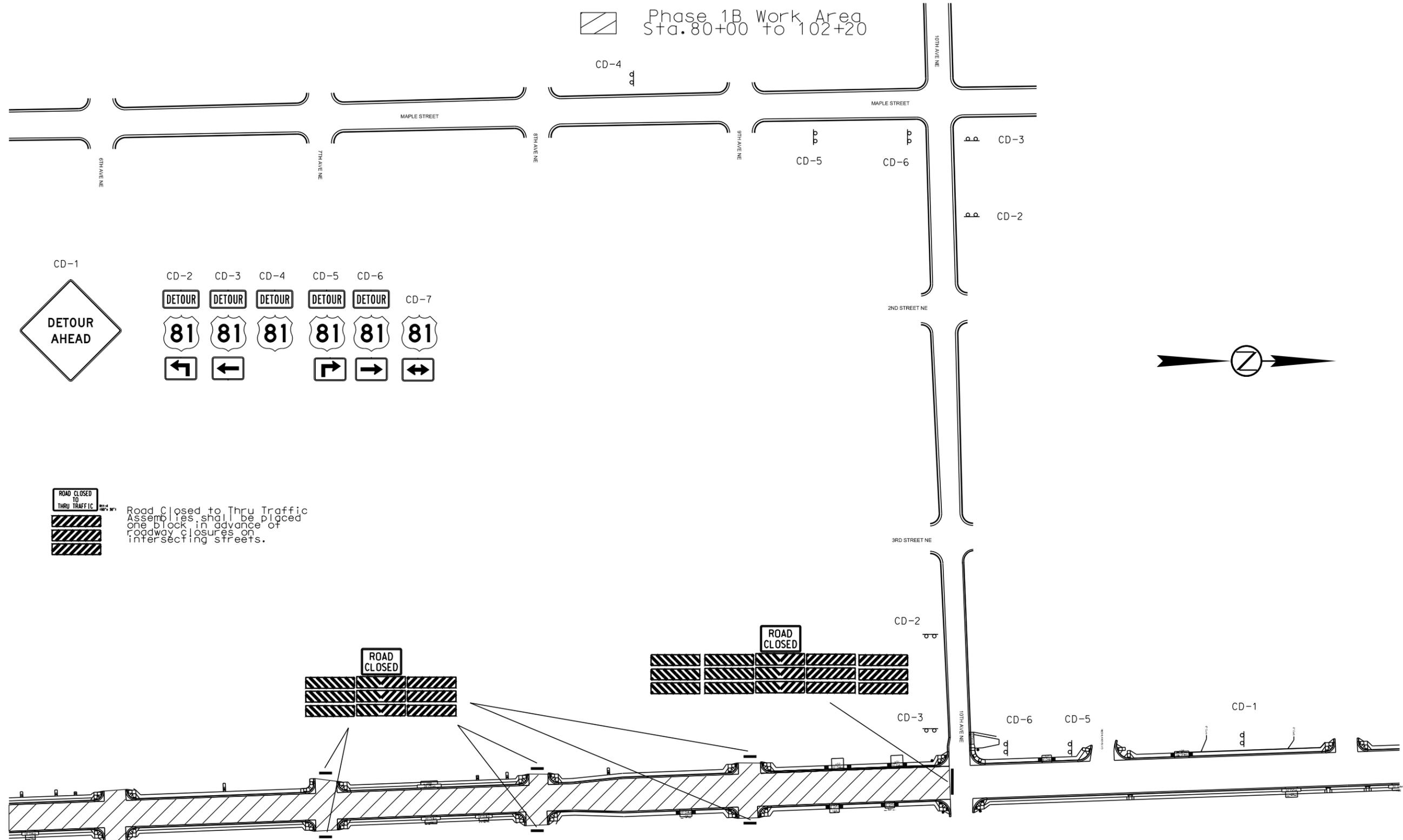
Phase 1B Work Area  
Sta. 80+00 to 102+20



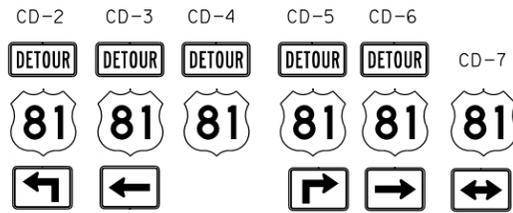
**ROAD CLOSED TO THRU TRAFFIC**  
  
 Road Closed to Thru Traffic Assemblies shall be placed one block in advance of roadway closures on intersecting streets.

# Local Detour Signing Layout - Phase 1B

Phase 1B Work Area  
Sta. 80+00 to 102+20



CD-1



Road Closed to Thru Traffic  
Assemblies shall be placed  
one block in advance of  
roadway closures on  
intersecting streets.



ROAD  
CLOSED



CD-2

CD-3

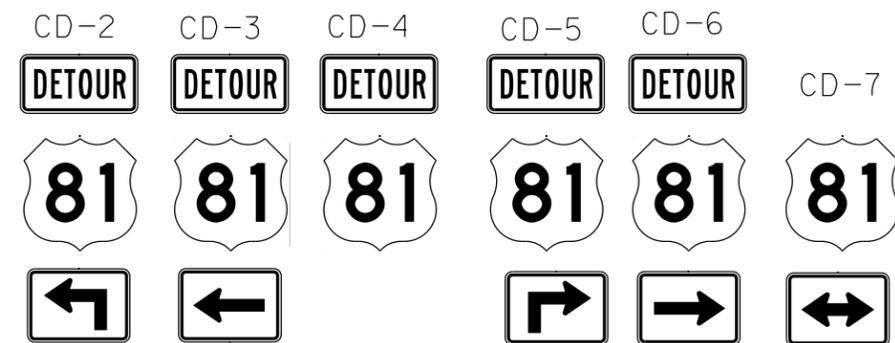
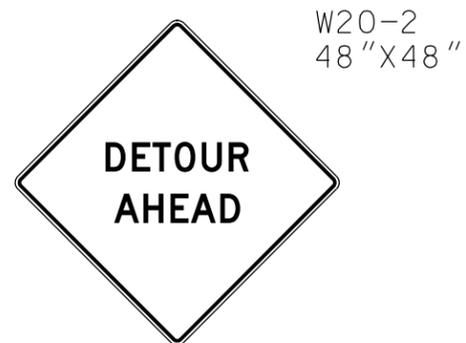
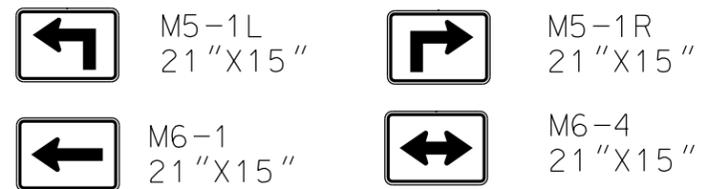
CD-6

CD-5

CD-1

# DETOUR ROUTE SIGNING

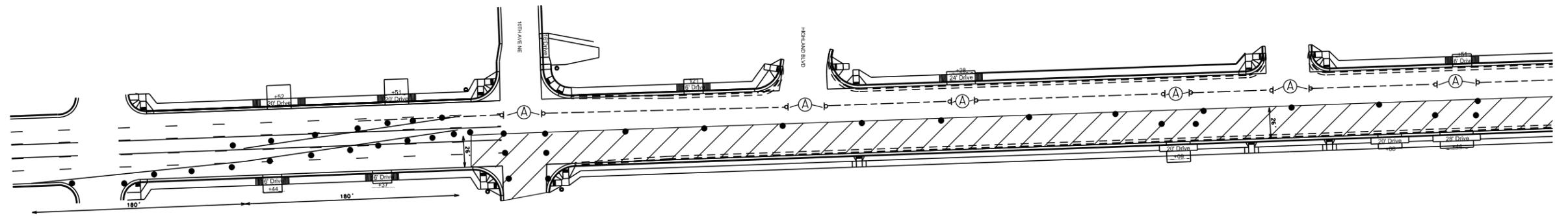
US 81



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C13	C30

# Traffic Control Details

## US 81 (Phase 2A - Northbound)



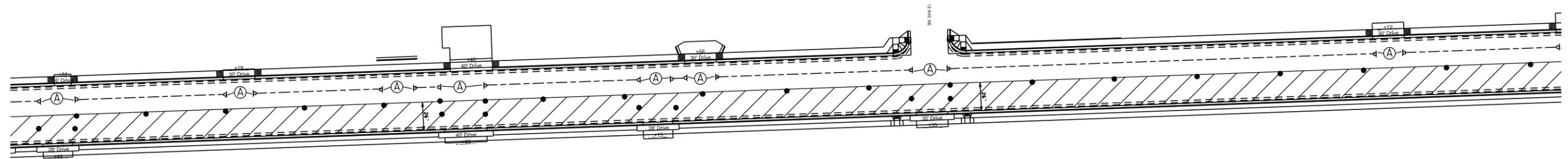
-  Work Area
-  Centerline Pavement Marking as per Typical Traffic Control Signing Detail
-  Channelizing Device - Drums or Type 2 Barricade
-  



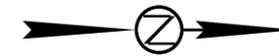
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C14	C30

# Traffic Control Details

## US 81 (Phase 2A - Northbound)



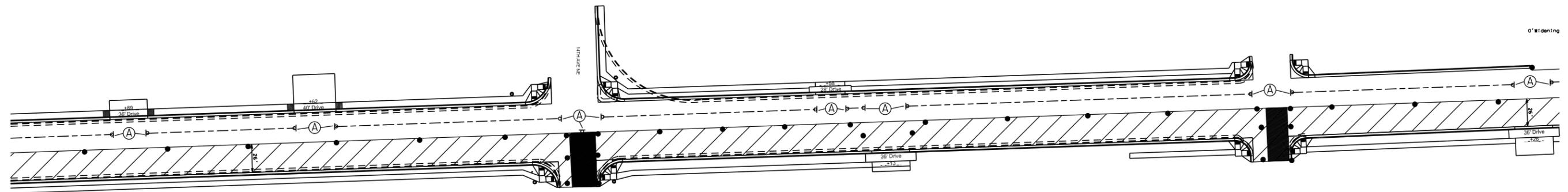
-  Work Area
-  Centerline Pavement Marking as per Typical Traffic Control Signing Detail
-  Channelizing Device - Drums or Type 2 Barricade
-  



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C15	C30

# Traffic Control Details

## US 81 (Phase 2A - Northbound)



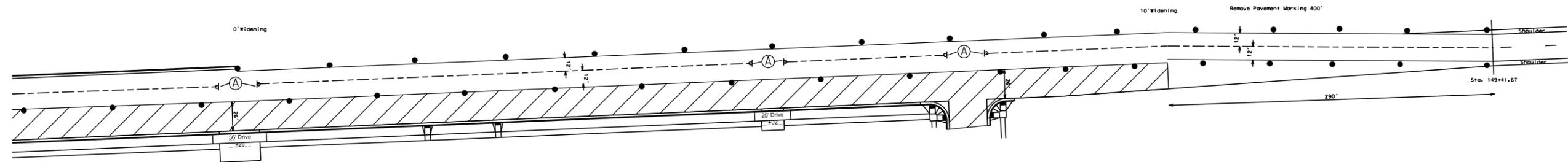
-  Required Pavement Blockout
-  Work Area
-  Centerline Pavement Marking as per Typical Traffic Control Signing Detail
-  Channelizing Device - Drums or Type 2 Barricade
-  



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C16	C30

# Traffic Control Details

## US 81 (Phase 2A - Northbound)



-  Required Pavement Blockout
-  Work Area
-  Centerline Pavement Marking as per Typical Traffic Control Signing Detail
-  Channelizing Device - Drums or Type 2 Barricade
-  

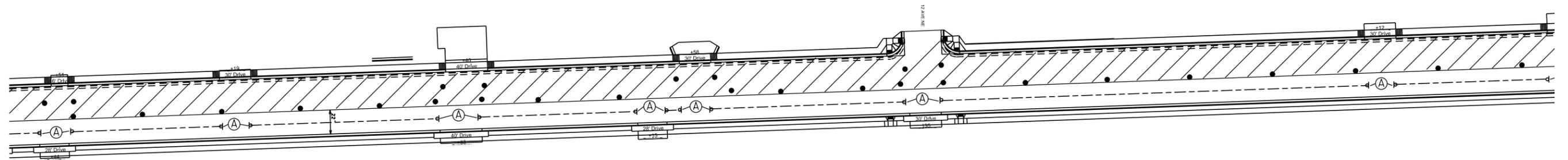




STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C18	C30

# Traffic Control Details

## US 81 (Phase 2B - Southbound)



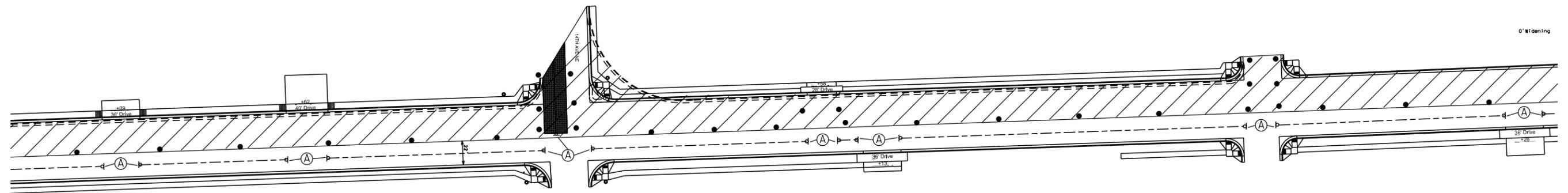
-  Work Area
-  Centerline Pavement Marking as per Typical Traffic Control Signing Detail
-  Channelizing Device - Drums or Type 2 Barricade
-  



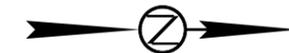
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C19	C30

# Traffic Control Details

## US 81 (Phase 2B - Southbound)



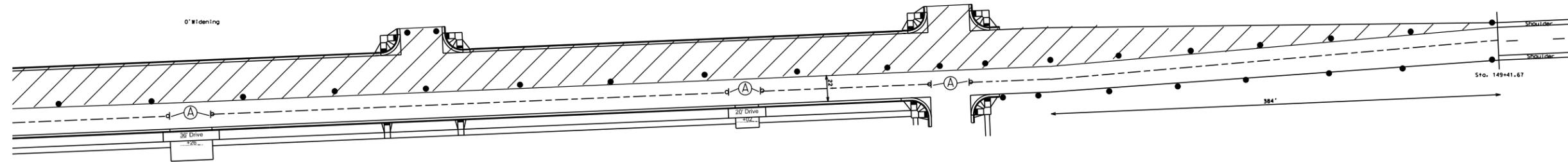
-  Required Pavement Blockout
-  Work Area
-  Centerline Pavement Marking as per Typical Traffic Control Signing Detail
-  Channelizing Device - Drums or Type 2 Barricade
-  



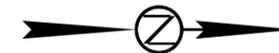
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C20	C30

# Traffic Control Details

## US 81 (Phase 2B - Southbound)

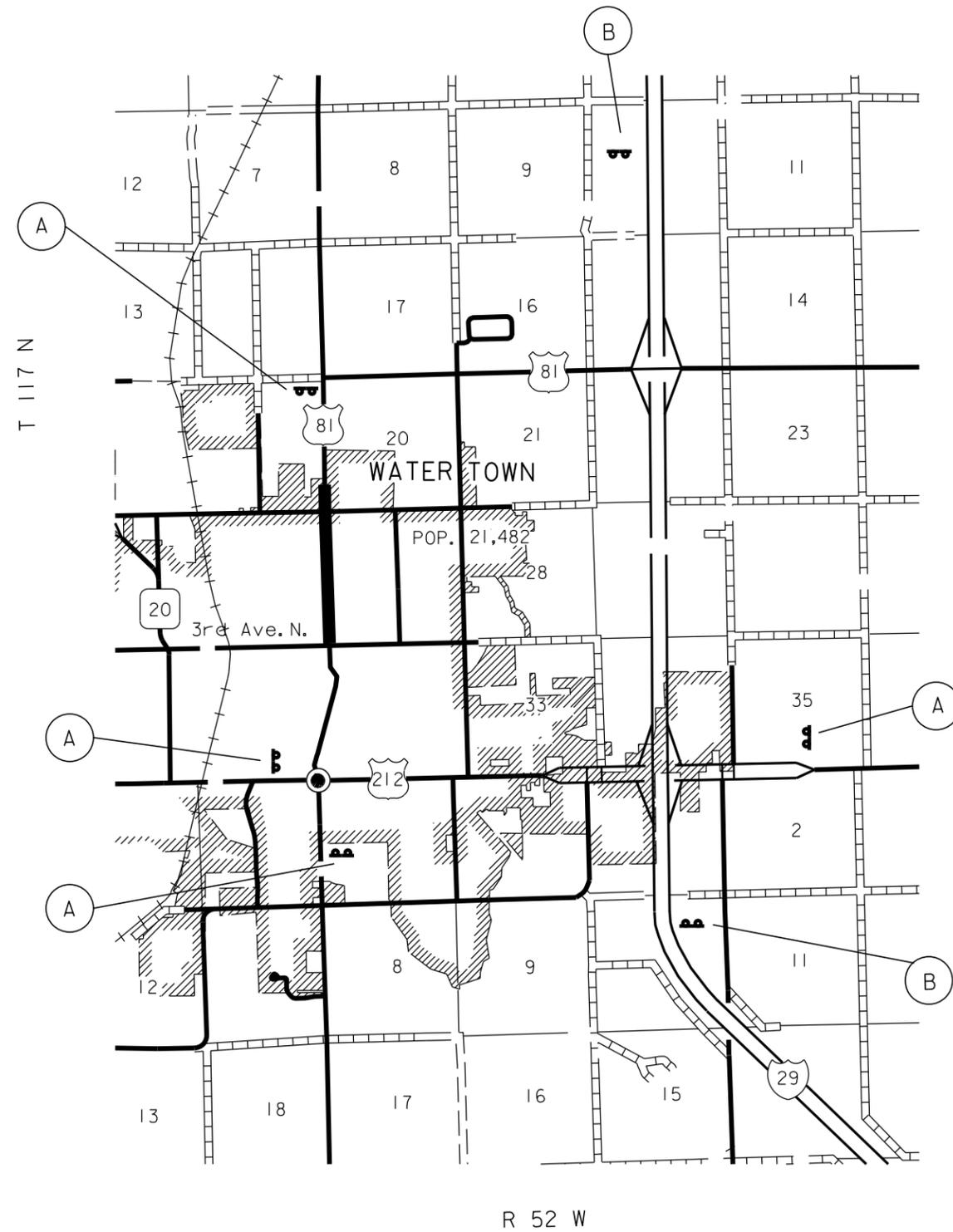


-  Work Area
-  Centerline Pavement Marking as per Typical Traffic Control Signing Detail
-  Channelizing Device - Drums or Type 2 Barricade
-  



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C21	C30

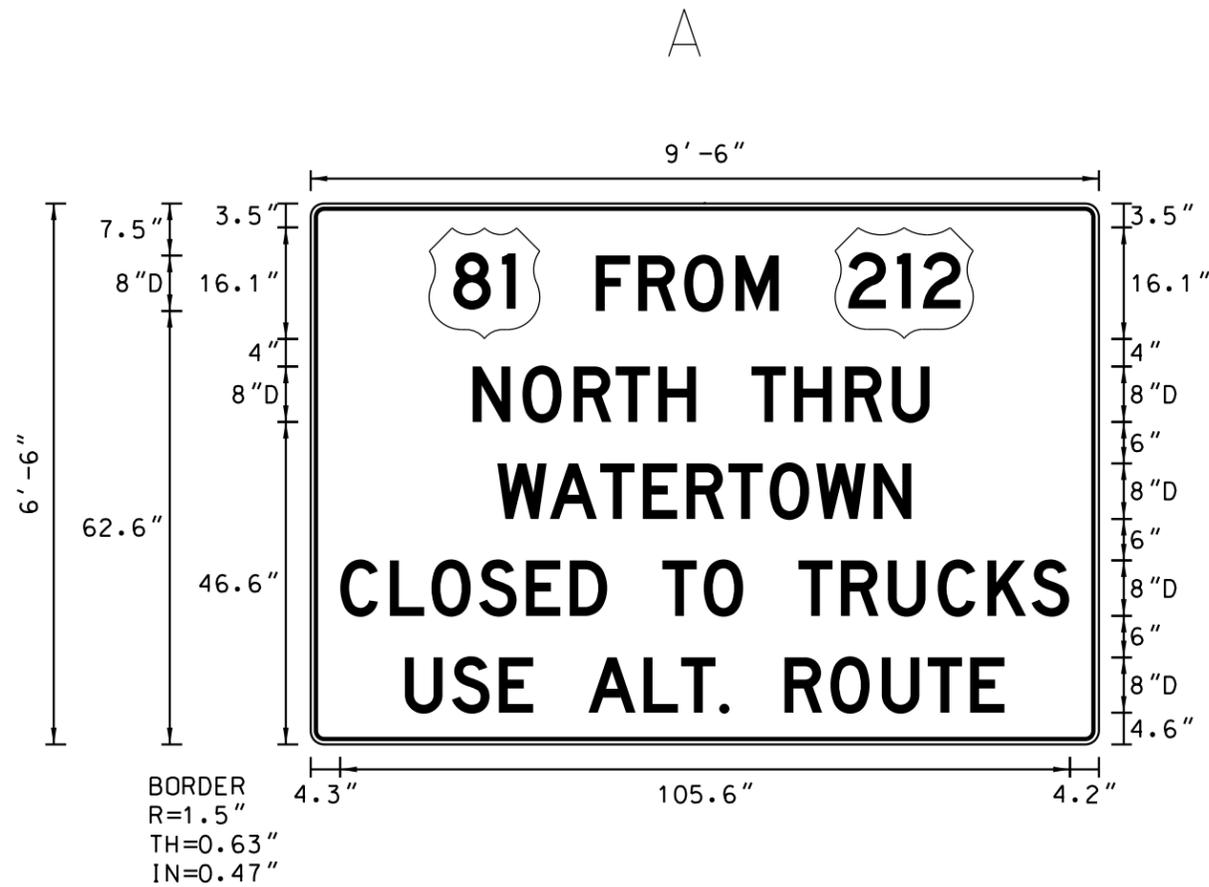
# Alternate Route Signing



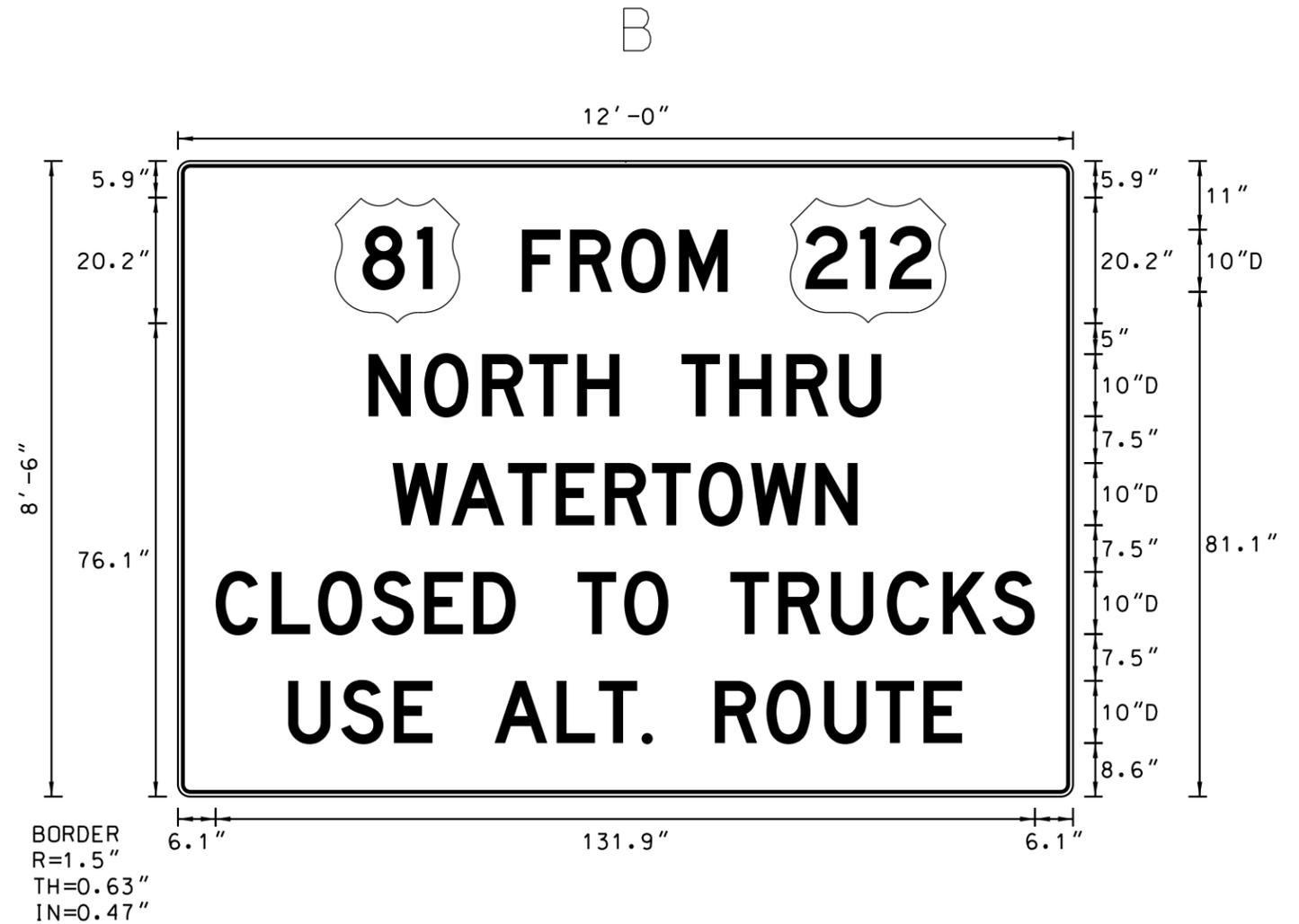
# ALTERNATE ROUTE SIGNS

PLOT SCALE - 1:2.205

PLOT NAME - 1



Background - Orange  
 Legend and Border - Black  
 Shield as per Standard Highway Sign Catalog



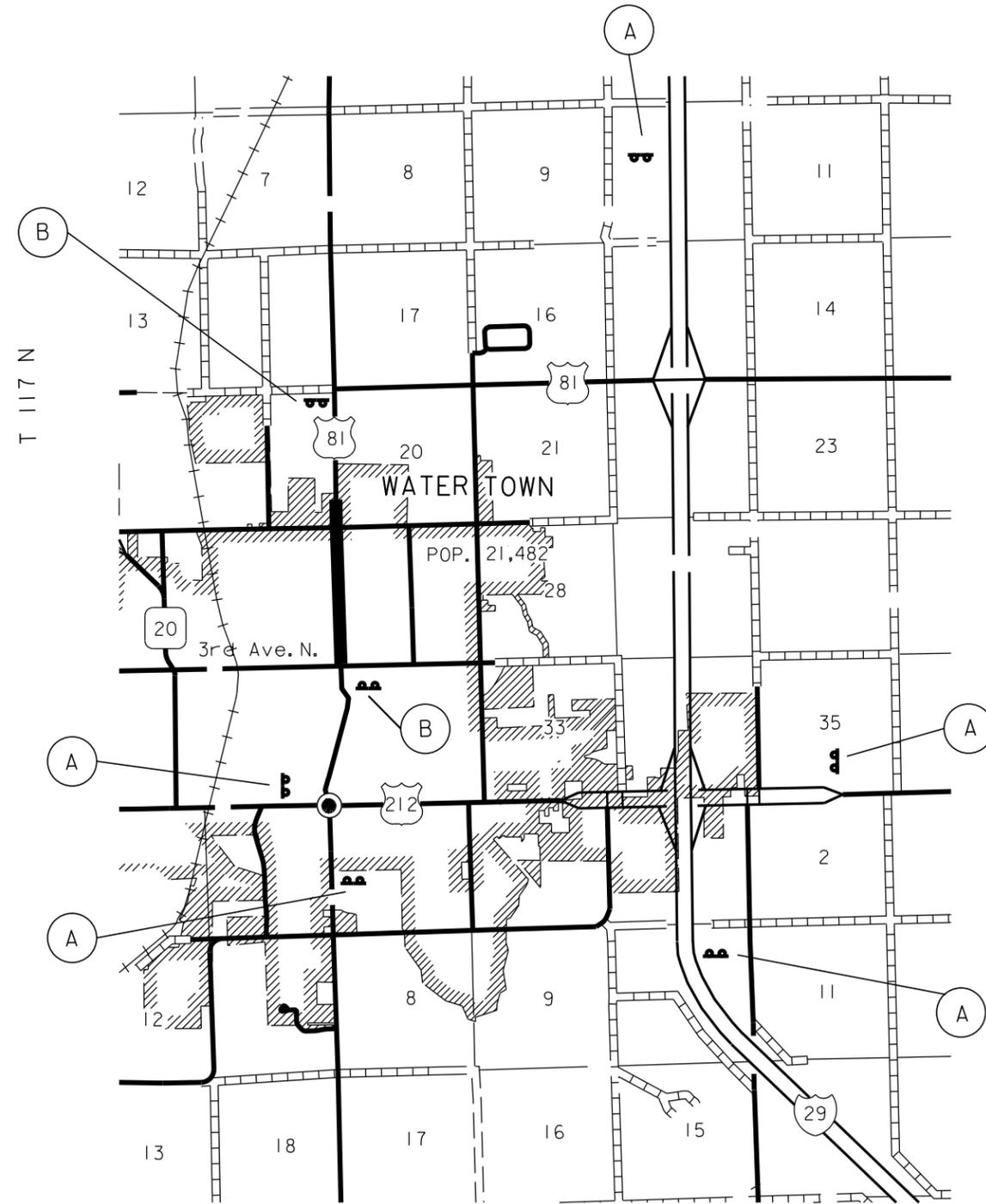
Background - Orange  
 Legend and Border - Black  
 Shield as per Standard Highway Sign Catalog

PLOTTED FROM - TRVAINT14

FILE - ... \TRAFFIC CONTROL SIGNING.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C23	C30

# Overwidth Sign Locations

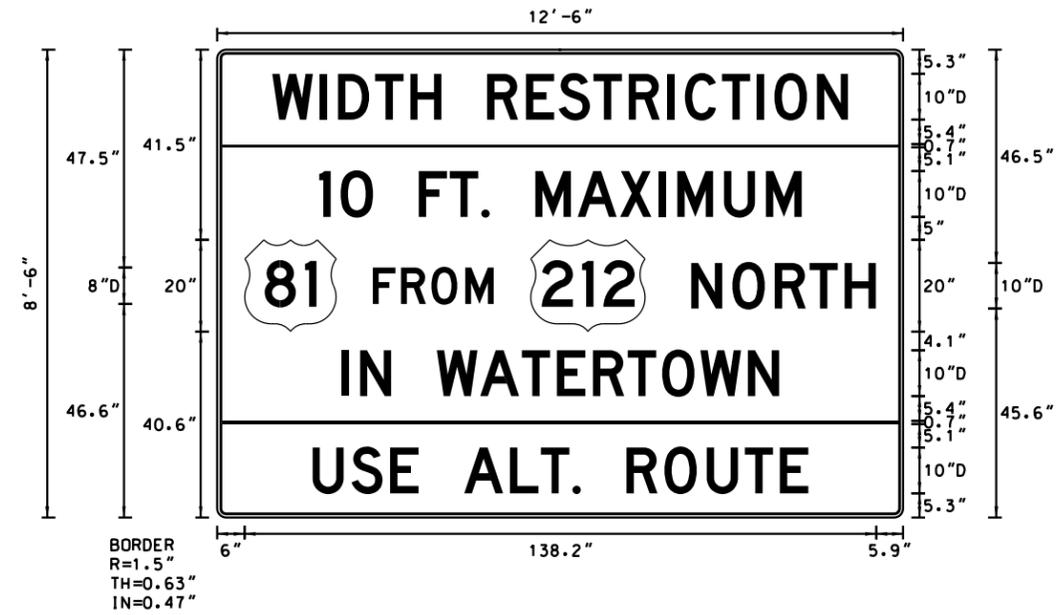


# OVER WIDTH SIGN DETAIL

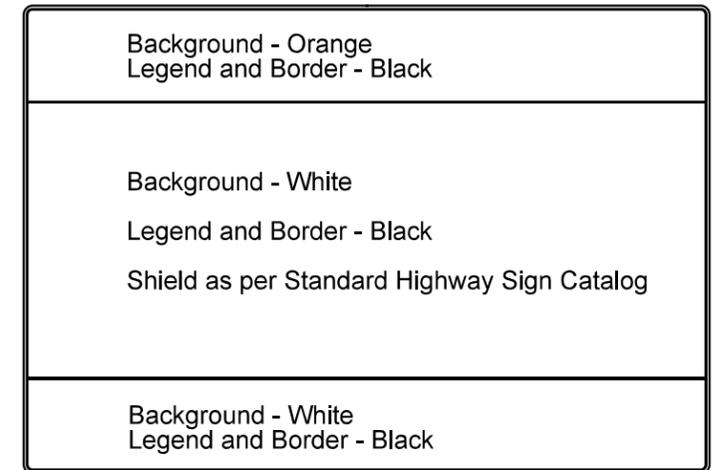
PLOT SCALE - 1:3.33333

PLOT NAME - 1

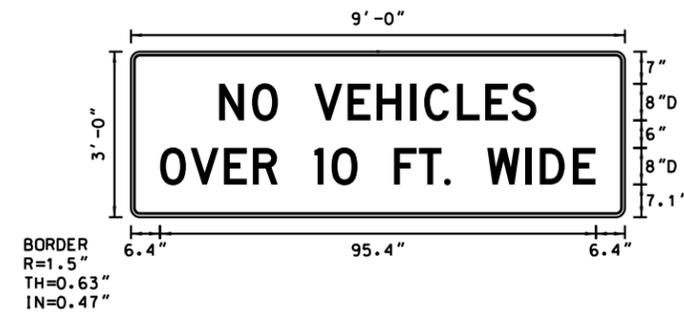
A



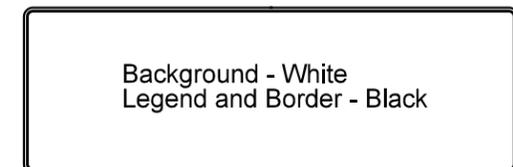
## Typical Layout - Sign A



B



## Typical Layout - Sign B



PLOTTED FROM - TRVAINT14

FILE - ... \TRAFFIC CONTROL SIGNING.DGN

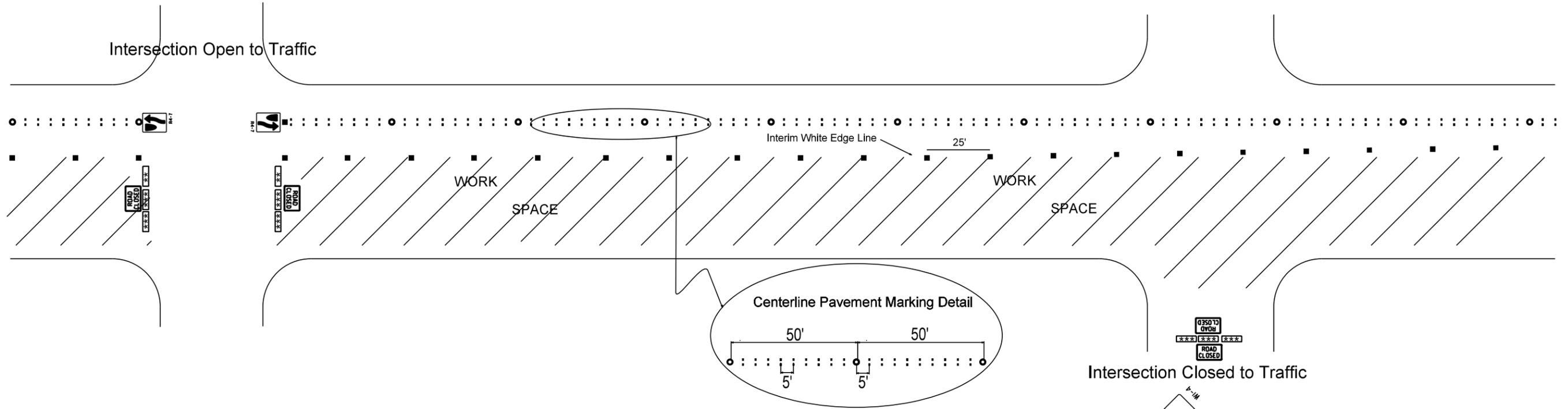
# Typical Traffic Control Signing

See Standard Plate 634.46 for spacing of signs

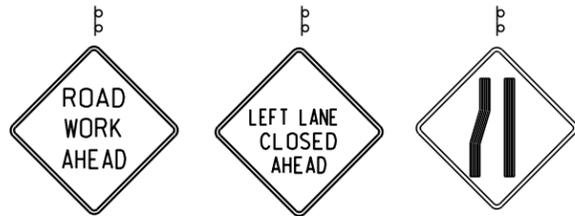
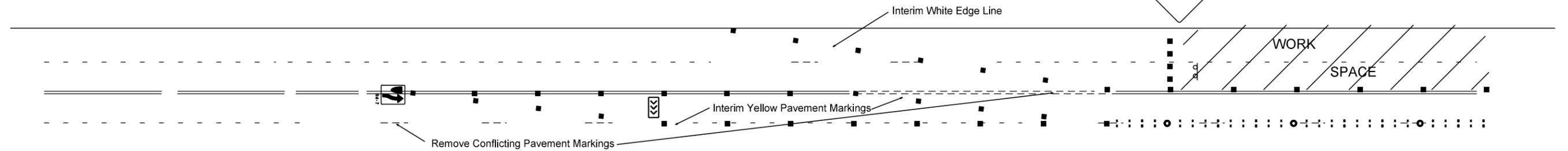
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C25	C30
Plotting Date: 08/28/2015			



Intersection Open to Traffic



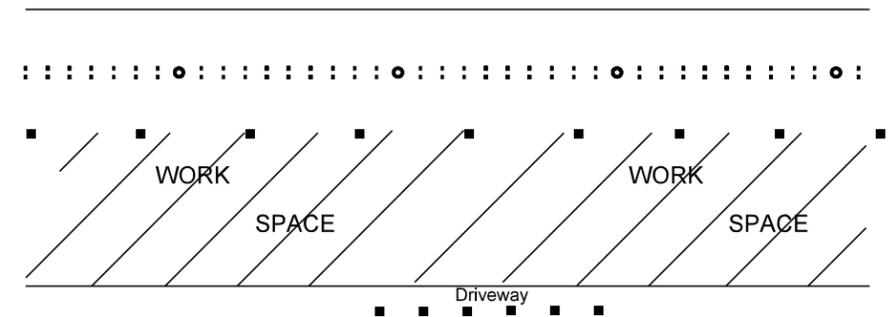
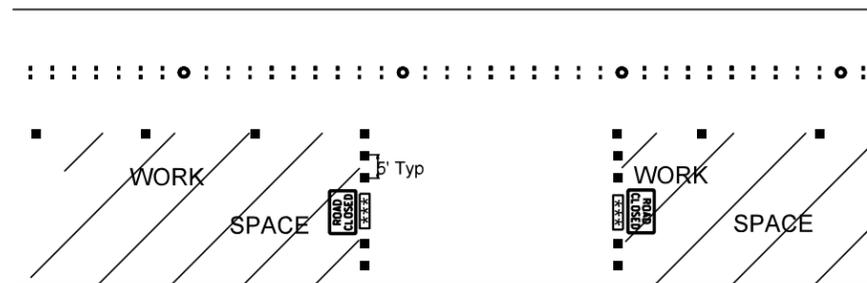
Typical Traffic Control Layout for Taper



Maintained Business/Residential Entrance

Closed Business/Residential Entrance

- - Channelizing Device - Drums or Type 2 Barricades
- - Tubular Markers
- ⋮ - Temporary Raised Pavement Markers
- Ⓧ - Construction Sign
- ⏏ - Type C Advance Warning Arrow Board
- \*\*\* - Double Sided Type 3 Barricade

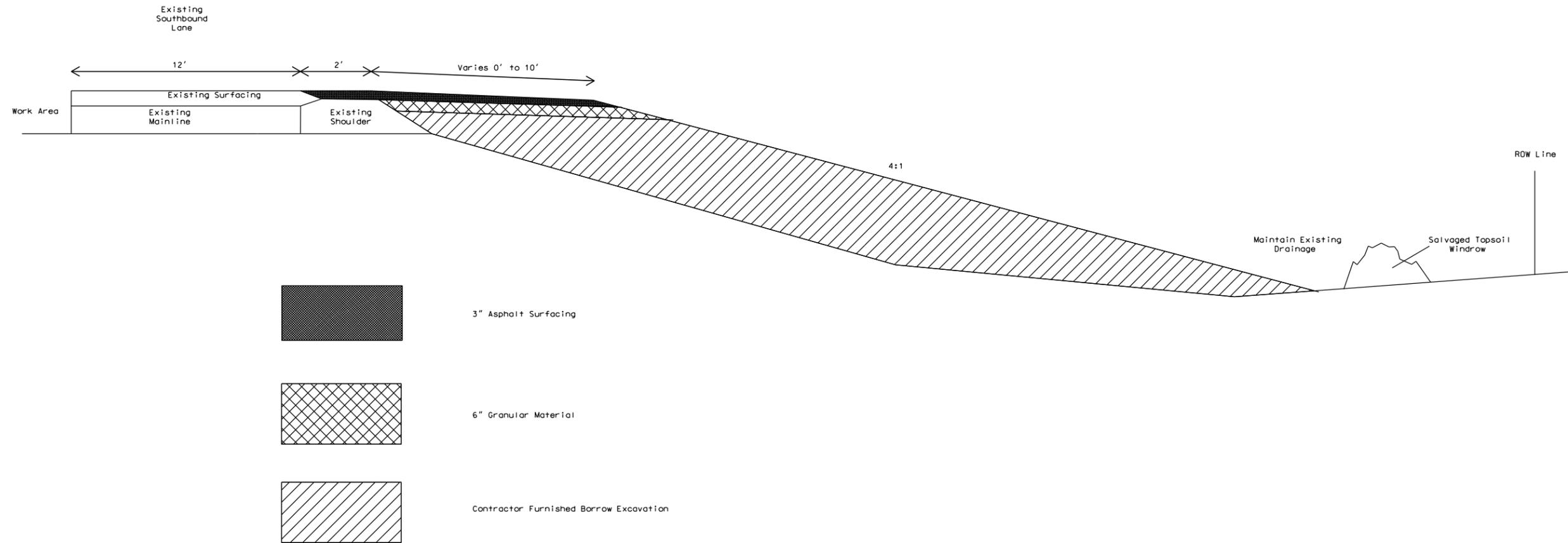


STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0081(93)157	C26	C30

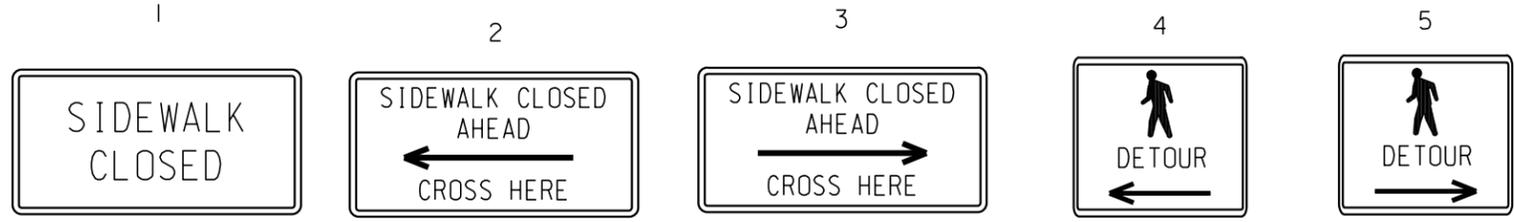
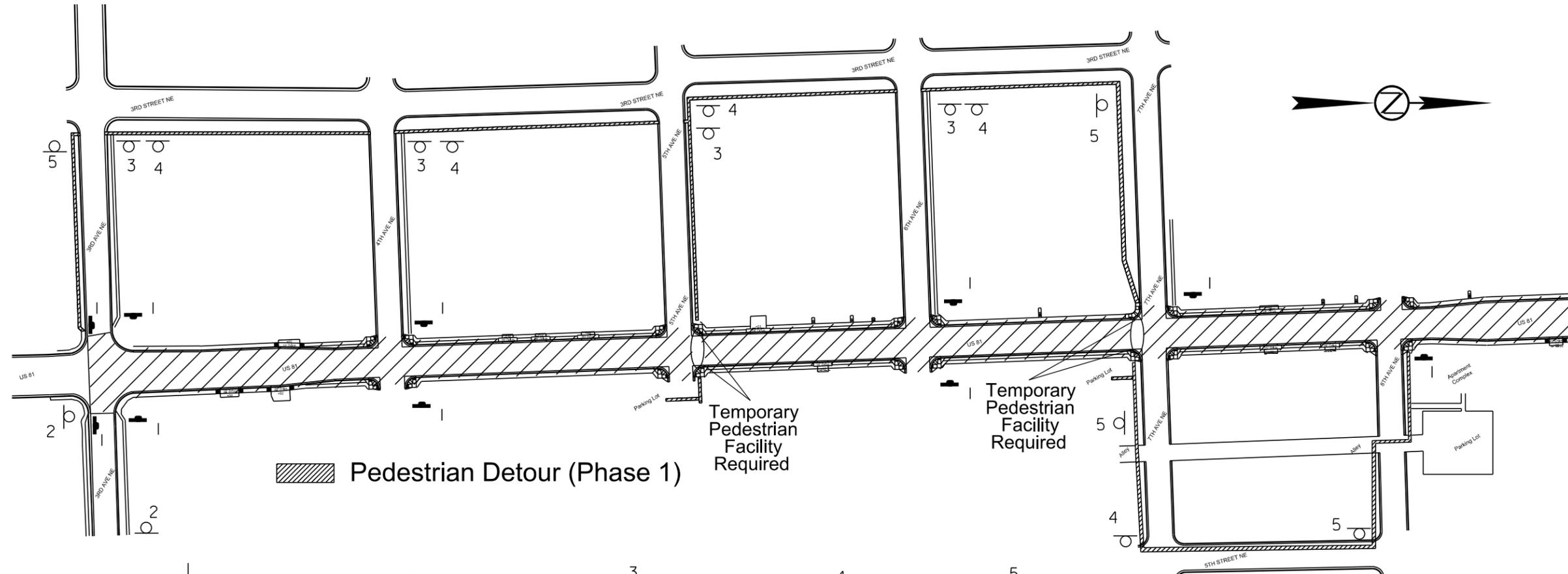
# Traffic Control Details

## Widening Details

Sta. 138+15 to 149+41 Lt.



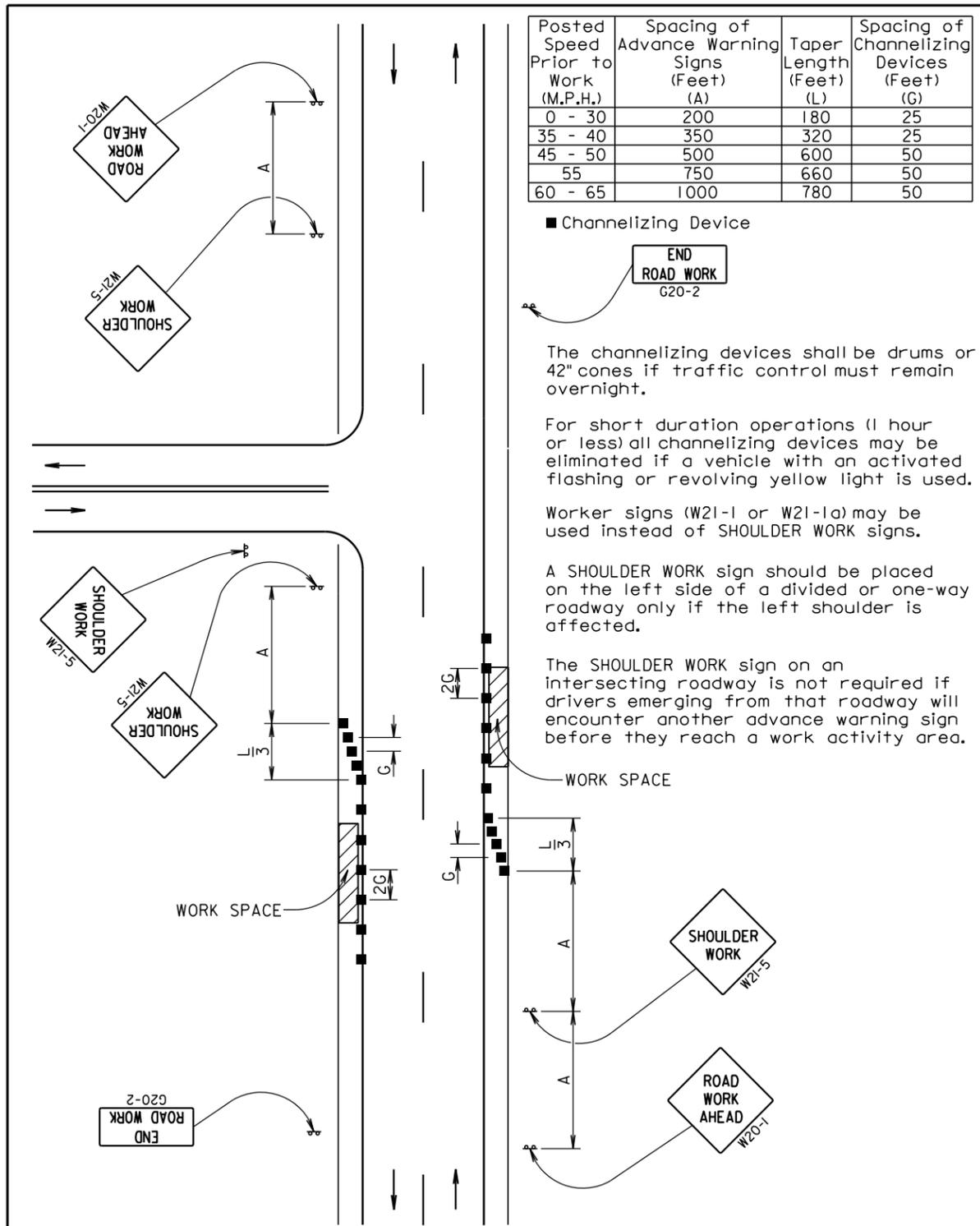
# Pedestrian Detour Route for Phase 1



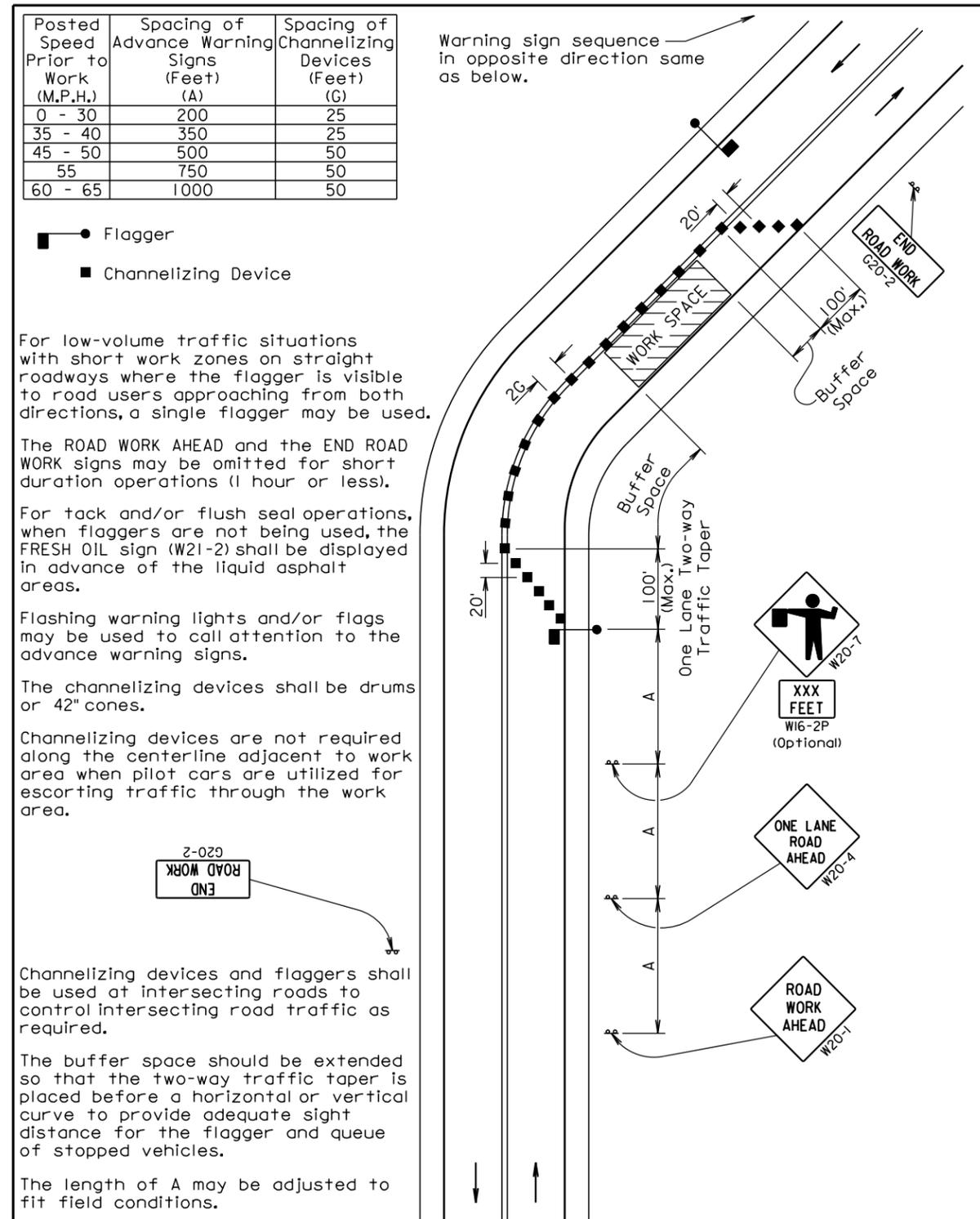
Estimated Phase I Sign Quantities					
Sign #	1	2	3	4	5
Quantity	10	2	4	5	4

The Contractor shall construct temporary curb ramps along the Pedestrian Detour Path at intersections where a curb cut does not presently exist.

Temporary Curb Ramps and Temporary Pedestrian Facility shall provide for a smooth, continuous hard surface. The ramp should be sufficiently sturdy and unyielding and at least 4 ft. wide with no greater than a 12ft to 1ft slope. The Temporary Pedestrian Facility shall be a minimum of 4 ft. wide, the cross slope shall not exceed 2%, the counter slope shall not exceed 5%, and if the temporary surface is elevated 6" or more, handrail shall be provided.

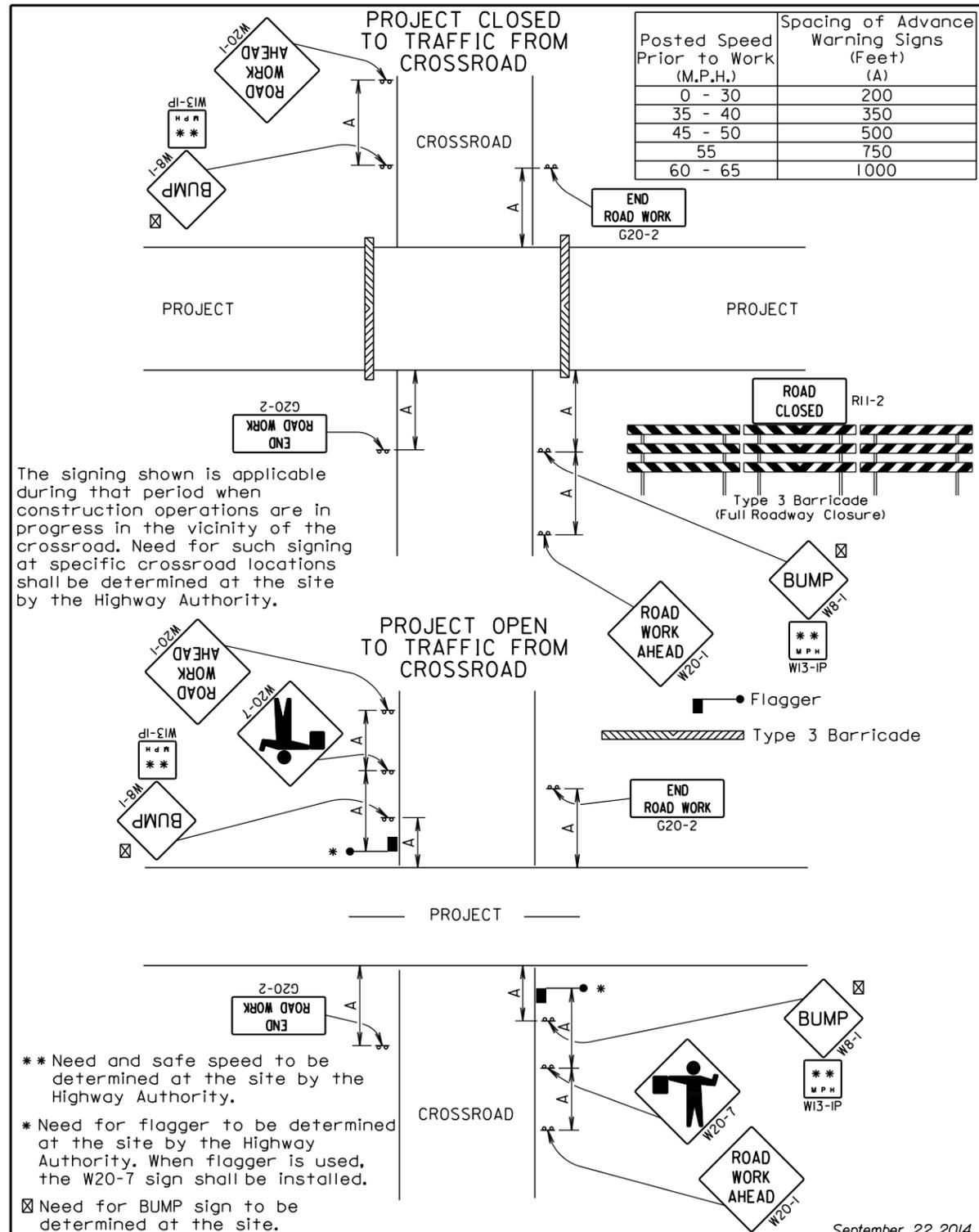


September 22, 2014



September 22, 2014

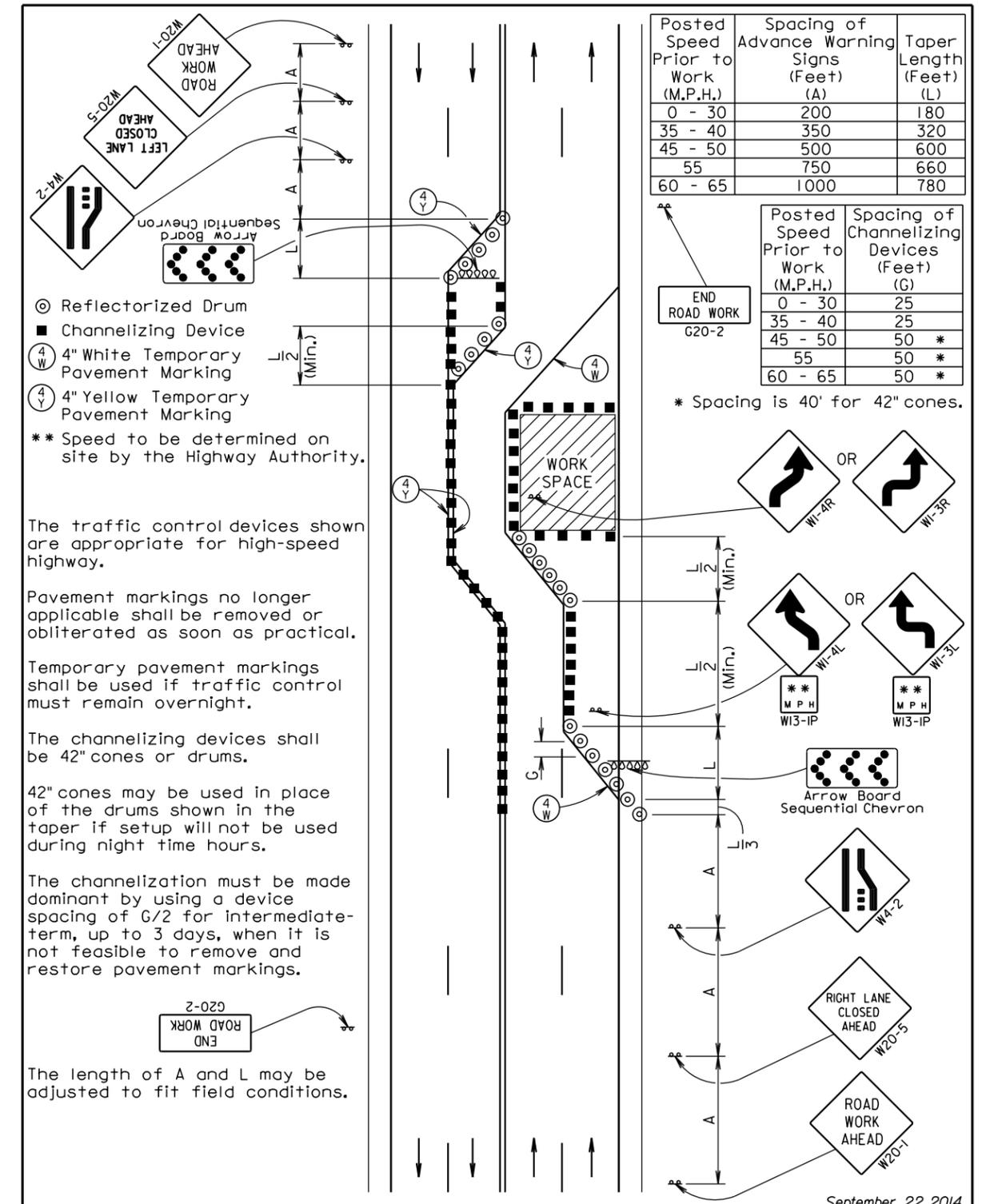
PLOTTED FROM - TRVAINT14



The signing shown is applicable during that period when construction operations are in progress in the vicinity of the crossroad. Need for such signing at specific crossroad locations shall be determined at the site by the Highway Authority.

\*\* Need and safe speed to be determined at the site by the Highway Authority.  
 \* Need for flagger to be determined at the site by the Highway Authority. When flagger is used, the W20-7 sign shall be installed.  
 ☒ Need for BUMP sign to be determined at the site.

September 22, 2014



- ⊙ Reflectorized Drum
  - Channelizing Device
  - ④ 4" White Temporary Pavement Marking
  - ④ 4" Yellow Temporary Pavement Marking
- \*\* Speed to be determined on site by the Highway Authority.

The traffic control devices shown are appropriate for high-speed highway.

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.

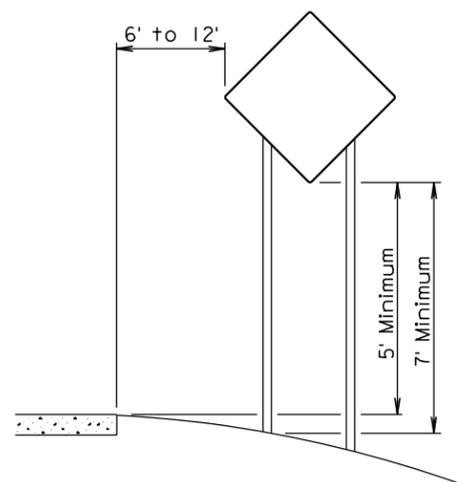
42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

The channelization must be made dominant by using a device spacing of G/2 for intermediate-term, up to 3 days, when it is not feasible to remove and restore pavement markings.

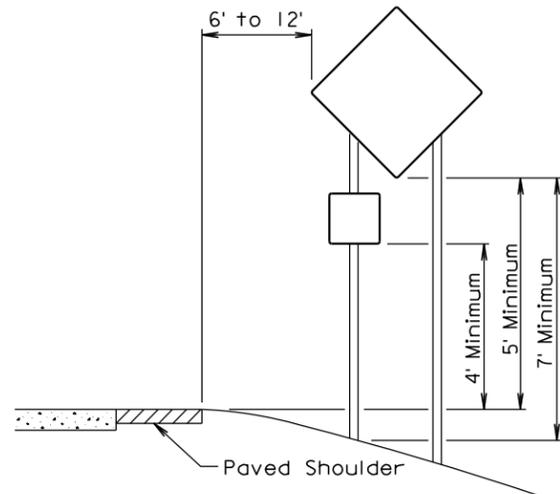
The length of A and L may be adjusted to fit field conditions.

September 22, 2014

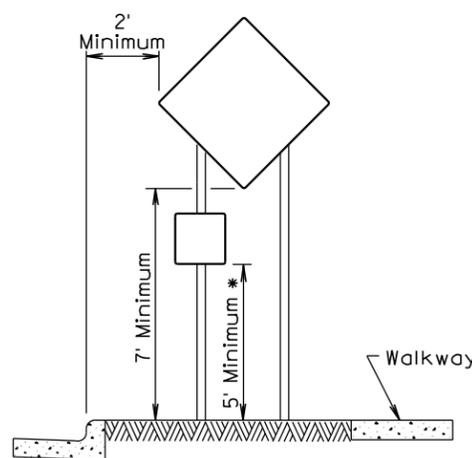
PLOTTED FROM - TRVAINT14



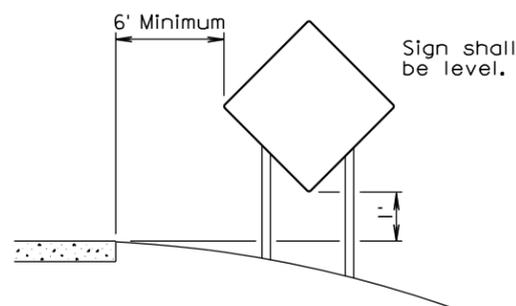
RURAL DISTRICT



RURAL DISTRICT WITH  
SUPPLEMENTAL PLATE



URBAN DISTRICT



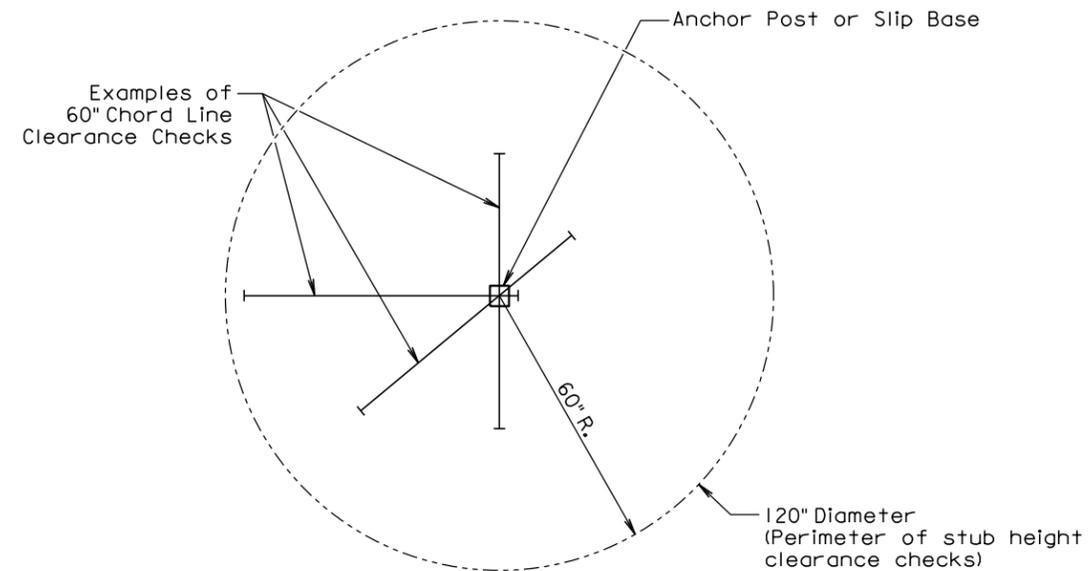
RURAL DISTRICT  
3 DAY MAXIMUM

(Not applicable to regulatory signs)

\* 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.

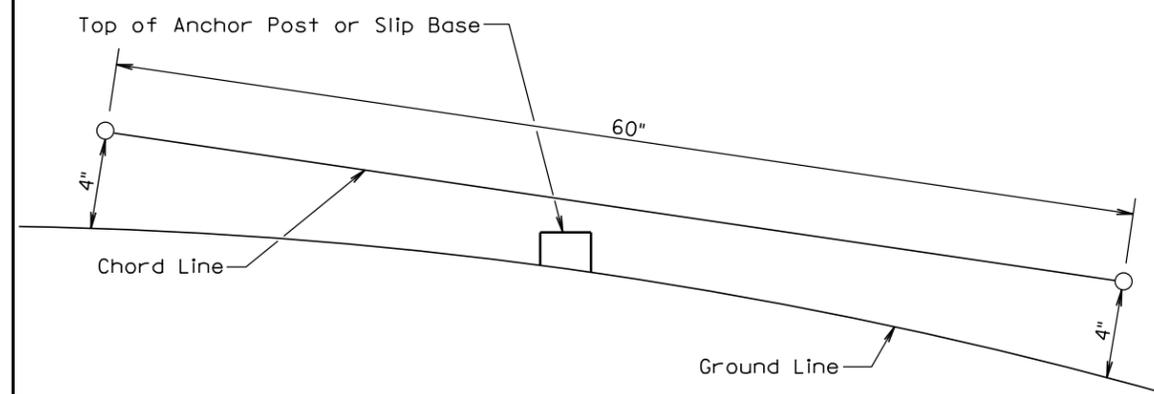
September 22, 2014

Published Date: 3rd Qtr. 2015	S D D O T	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: 3rd Qtr. 2015	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1