

ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
★ Class M6 Concrete	Cu. Yd.	0.43	0.30H
Reinforcing Steel	Lb.	90.90	40.53H
Frame and Grate Assembly	Each	1	

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.
Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

★ Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.

Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

Maximum R.C.P. diameter shall not exceed 24 inches (24 inches for R. C. arch) on the 3-foot wide side and shall not exceed 36 inches (30 inches for R. C. arch) on the 4-foot wide side of the drop inlet.

The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS		
Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.05
24	3	0.09
30	3 1/2	0.14
36	4	0.20
18	2 1/2	0.05
24	3 1/2	0.09
30	4	0.14

December 16, 2015

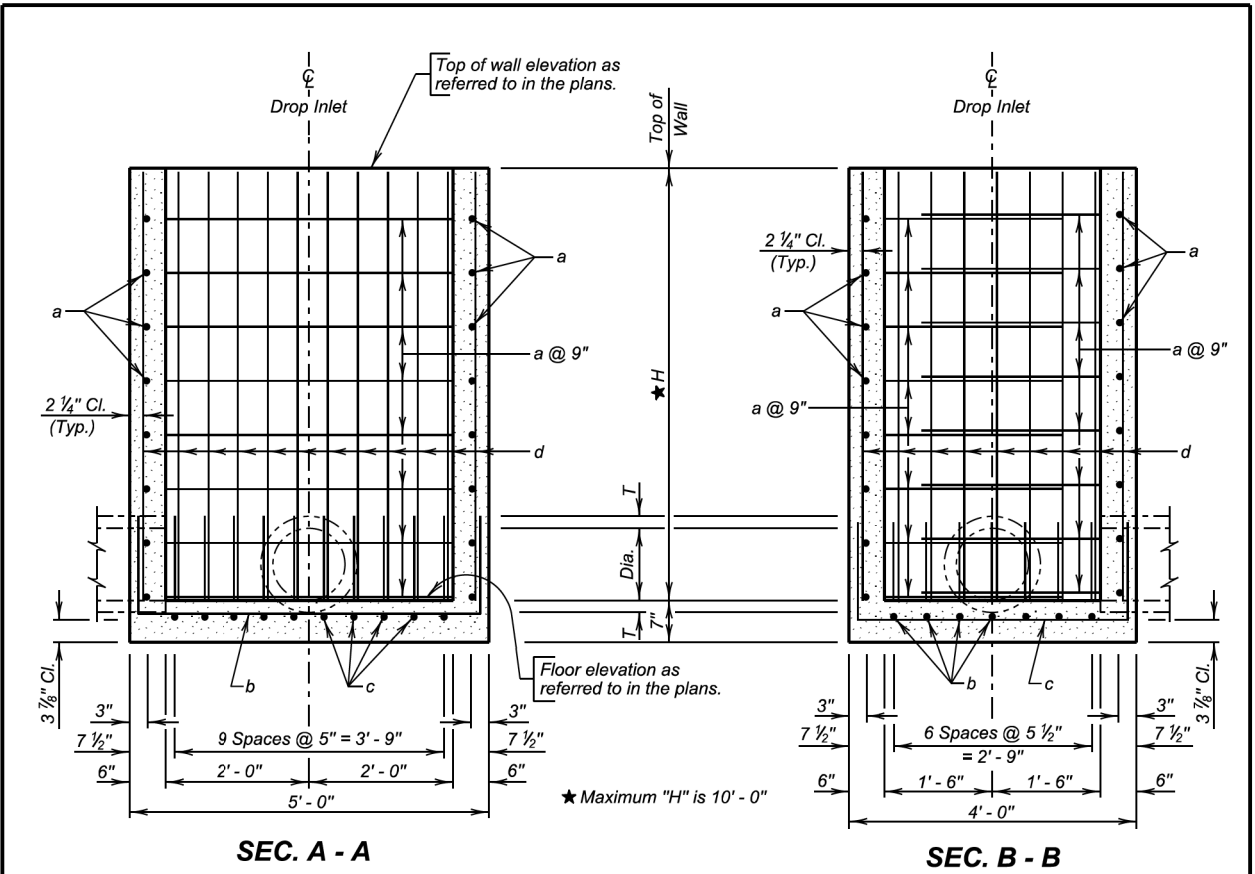
SD
DOT

3' X 4' TYPE C
REINFORCED CONCRETE DROP INLET

Published Date: 2nd Qtr. 2021

PLATE NUMBER
670.10

Sheet 1 of 2



REINFORCING SCHEDULE				
Mk.	No.	Size	Length	Type
a	2.67H	4	10' - 0"	17
b	7	5	7' - 3"	17
c	10	4	6' - 3"	17
d	34	4	H - 2"	Str.

NOTE:
All dimensions are out to out of bars.

Type 17

December 16, 2015

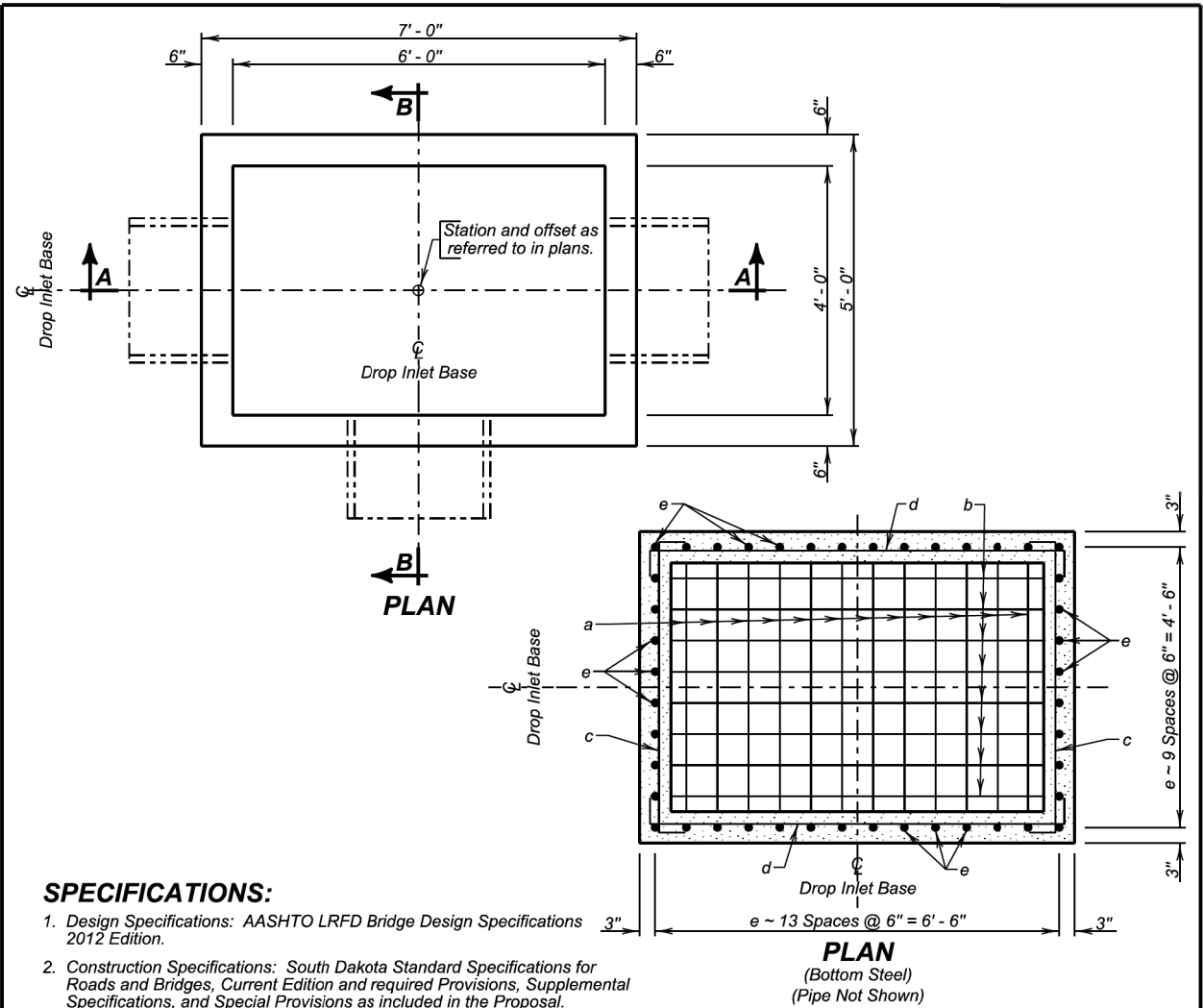
SD
DOT

3' X 4' TYPE C
REINFORCED CONCRETE DROP INLET

Published Date: 2nd Qtr. 2021

PLATE NUMBER
670.10

Sheet 2 of 2



SPECIFICATIONS:

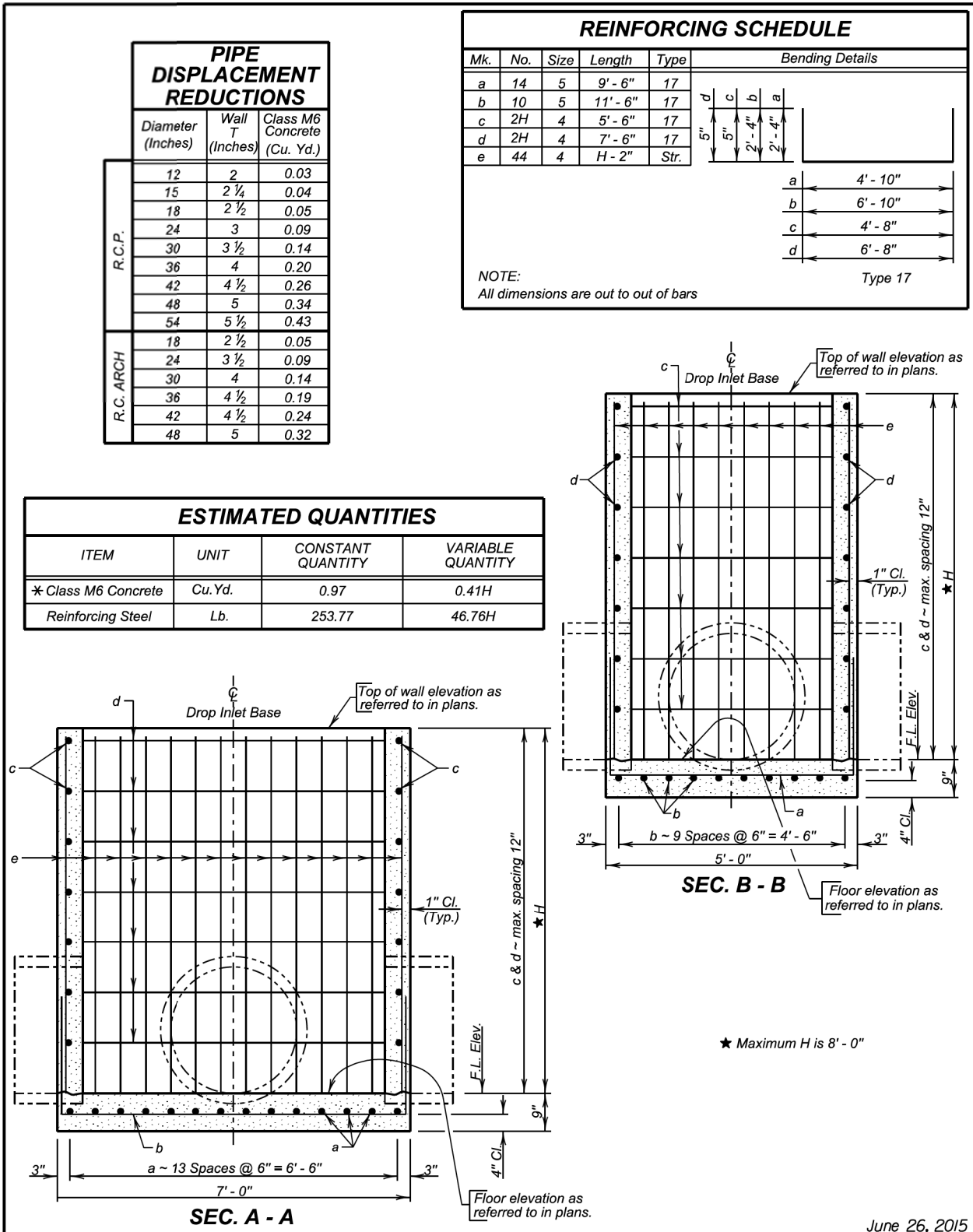
- Design Specifications: AASHTO LRFD Bridge Design Specifications 2012 Edition.
- Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

- Design Live Load: HL-93 loading. No construction loading in excess of legal load was considered.
- Base is intended for use with a Precast Concrete Type S Drop Inlet Lid, Standard Plate 670.38. Base may be precast. If precast base used, and details differ from that shown, the precast base must be on the current approved list. The current approved list is available through proper channels from the SDDOT Office of Bridge Design.
- To qualify for addition to the approved list, submit a checked design, by South Dakota Registered Professional Engineers and shop plans to the Office of Bridge Design for approval. Design shall be in accordance with the current edition of the AASHTO LRFD Bridge Design Specifications.
- * Reduce total quantities of concrete by the amount of concrete displaced by the pipe. The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.
- Inlets shown may be modified by the addition or omission of connecting pipes as shown on the layouts. Connecting pipes shall not enter the inlet through the corners.
- Maximum R.C.P. diameter shall not exceed 36 inches (30 inches for R.C. Arch) on the 4-foot wide side and shall not exceed 54 inches (48 inches for R.C. Arch) on the 6-foot wide side of the Drop Inlet.
- Reinforcing steel shall conform to ASTM A615 Grade 60. Cut and bend reinforcing steel as required to place pipe(s) through the inlet wall.
- Use 1 inch clear cover on all reinforcing steel unless otherwise noted.
- The dimension of H is in feet. Maximum H is 8 feet.

June 26, 2015

Published Date: 2nd Qtr. 2021	S D D O T	4' X 6' TYPE S DROP INLET BASE	PLATE NUMBER 670.30
		Sheet 1 of 2	



REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
a	14	5	9' - 6"	17	
b	10	5	11' - 6"	17	
c	2H	4	5' - 6"	17	
d	2H	4	7' - 6"	17	
e	44	4	H - 2"	Str.	

NOTE:
All dimensions are out to out of bars

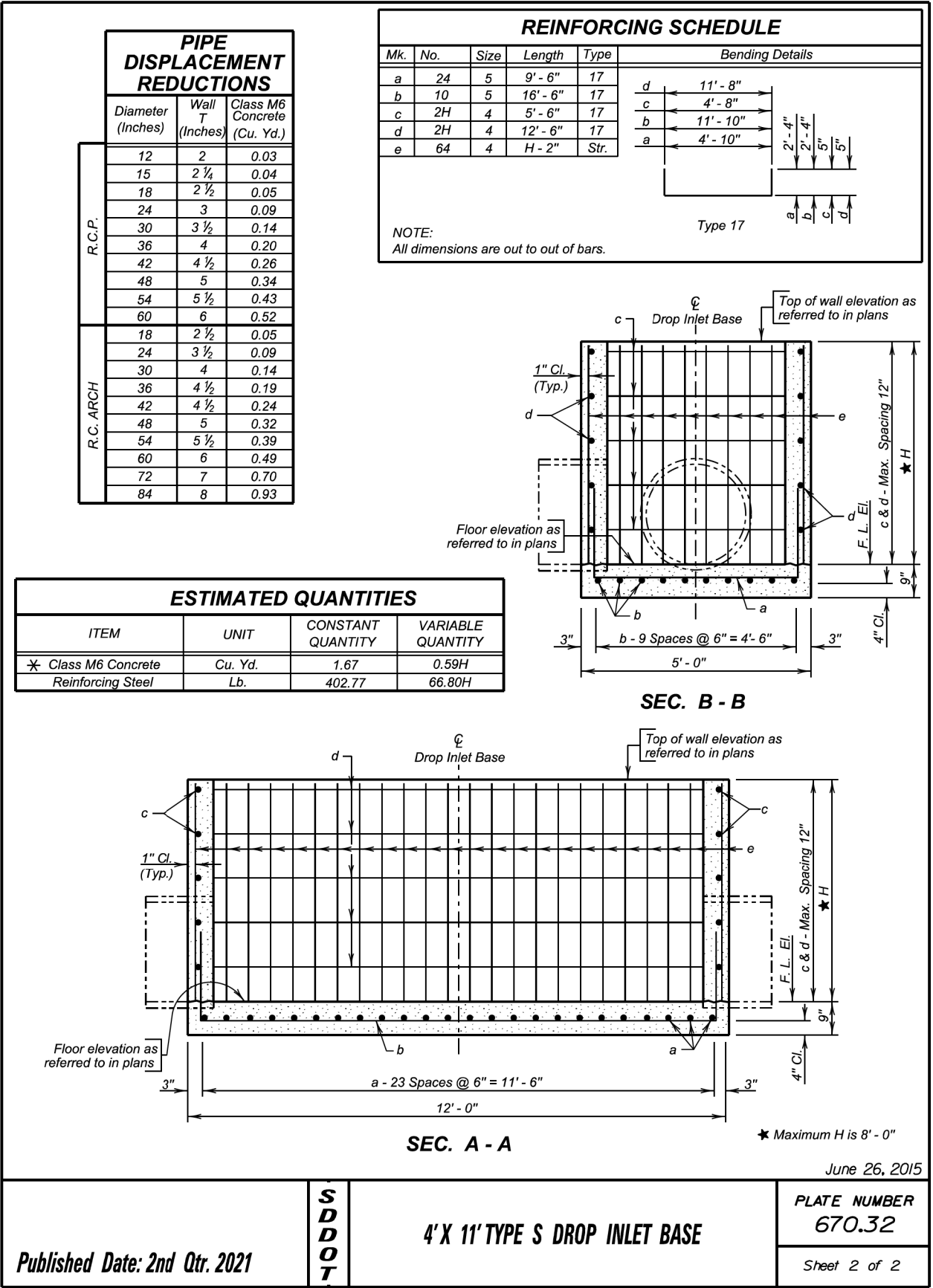
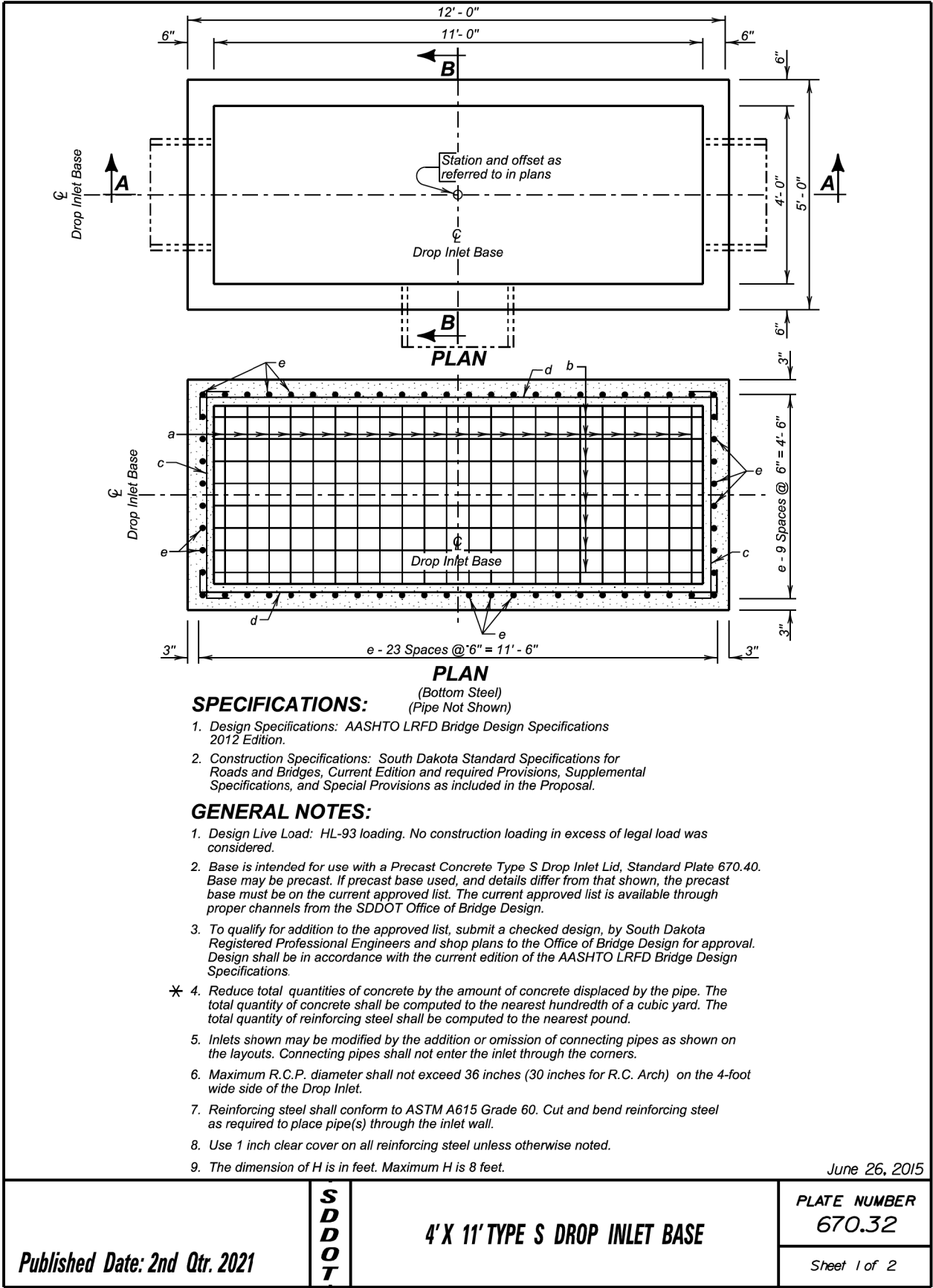
ESTIMATED QUANTITIES

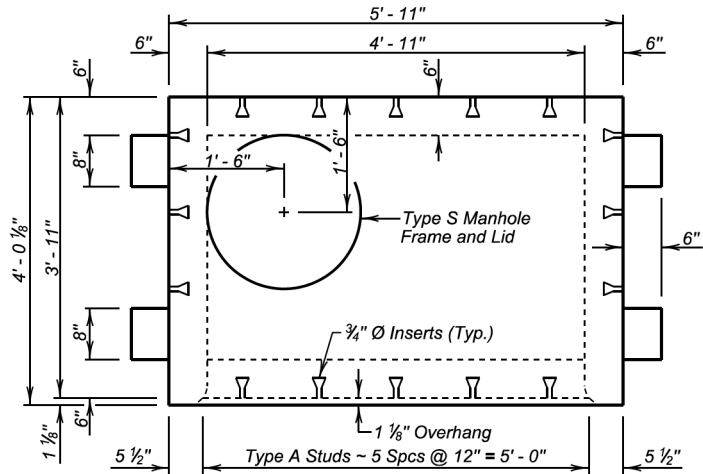
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
* Class M6 Concrete	Cu.Yd.	0.97	0.41H
Reinforcing Steel	Lb.	253.77	46.76H

SEC. A - A

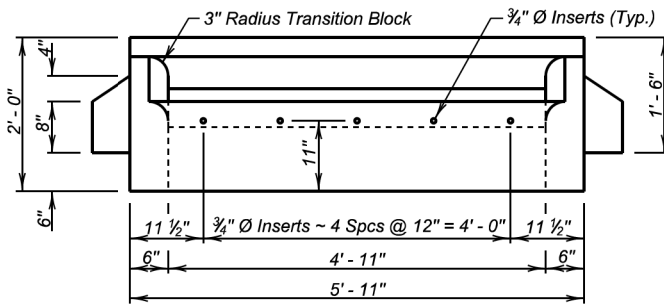
June 26, 2015

Published Date: 2nd Qtr. 2021	S D D O T	4' X 6' TYPE S DROP INLET BASE	PLATE NUMBER 670.30
		Sheet 2 of 2	

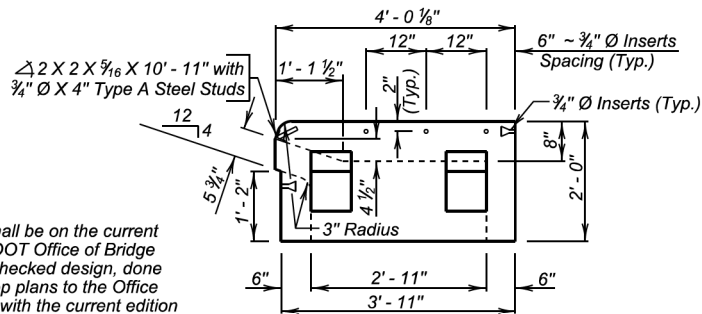




PLAN

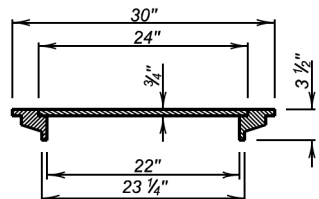


ELEVATION



SIDE VIEW

(With Sidewalk Inserts)



TYPICAL SECTION THROUGH
TYPE S MANHOLE
FRAME AND LID

(Weight 140 Lbs.)

December 23, 2012

GENERAL NOTES:

- The Precast Concrete Type S Drop Inlet Lid and the shims shall be on the current approved list available through proper channels from the SDDOT Office of Bridge Design. To qualify for addition to the approved list, submit a checked design, done by South Dakota Registered Professional Engineers, and shop plans to the Office of Bridge Design for approval. Design shall be in accordance with the current edition of the AASHTO LRFD Bridge Design Specifications.
- Design Live Load shall be HL - 93.
- Concrete mix shall be as per fabricators design, however, minimum compressive strength shall not be less than 4500 psi. Type II Cement is required.
- The Type S Manhole Frame and Lid shall conform to AASHTO M105, Class 30.
- Structural Steel shall conform to ASTM A36. The 3/4 inch diameter Headed Type A Steel Studs shall conform to Section 7 of the current edition of AWS D1. 1 Structural Steel Welding Code.
- The 3/4 inch diameter Concrete Inserts shall be galvanized or made of a corrosion resistant material. Provide 3/4 inch diameter x 1' - 6" long dowels conforming to ASTM A615, Gr. 60 threaded to fit Inserts with each lid.
- All costs associated with furnishing and installing the Precast Concrete Type S Drop Inlet Lid including the type S manhole frame and lid, shims, inserts, and dowels shall be included in the contract unit price per each for " 4' x 6' Precast Concrete Type S Drop Inlet Lid ".

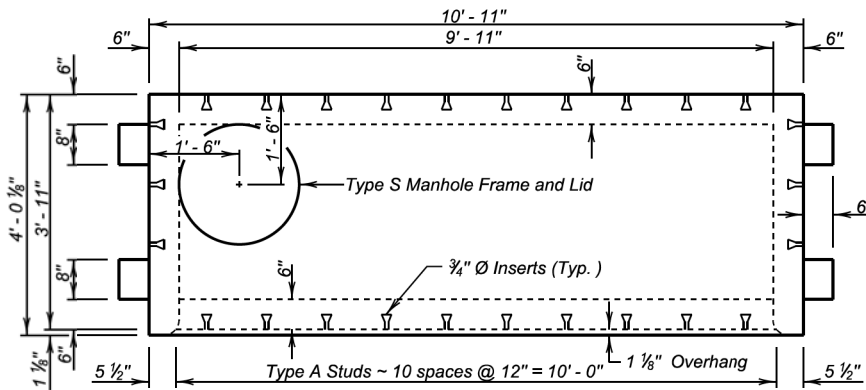
S
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4' X 6' PRECAST CONCRETE
TYPE S DROP INLET LID

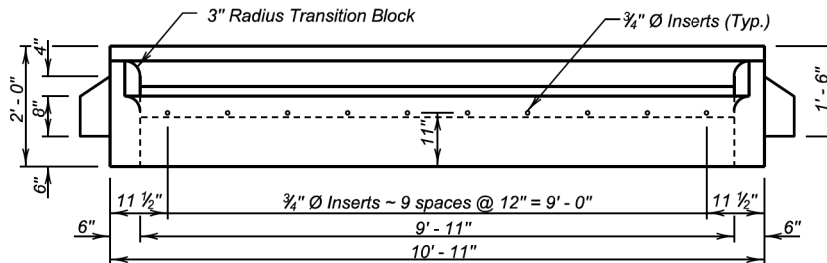
PLATE NUMBER
670.38

Sheet 1 of 1

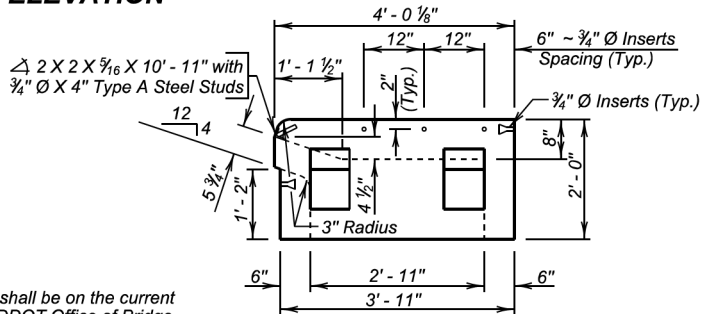
Published Date: 2nd Qtr. 2021



PLAN

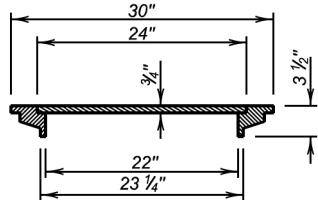


ELEVATION



SIDE VIEW

(With Sidewalk Inserts)



TYPICAL SECTION THROUGH
TYPE S MANHOLE
FRAME AND LID

(Weight 140 Lbs.)

December 23, 2012

GENERAL NOTES:

- The Precast Concrete Type S Drop Inlet Lid and the shims shall be on the current approved list available through proper channels from the SDDOT Office of Bridge Design. To qualify for addition to the approved list, submit a checked design, done by South Dakota Registered Professional Engineers, and shop plans to the Office of Bridge Design for approval. Design shall be in accordance with the current edition of the AASHTO LRFD Bridge Design Specifications.
- Design Live Load shall be HL - 93.
- Concrete mix shall be as per fabricators design, however, minimum compressive strength shall not be less than 4500 psi. Type II Cement is required.
- The Type S Manhole Frame and Lid shall conform to AASHTO M105, Class 30.
- Structural Steel shall conform to ASTM A36. The 3/4 inch diameter Headed Type A Steel Studs shall conform to Section 7 of the current edition of AWS D1. 1 Structural Steel Welding Code.
- The 3/4 inch diameter Concrete Inserts shall be galvanized or made of a corrosion resistant material. Provide 3/4 inch diameter x 1' - 6" long dowels conforming to ASTM A615, Gr. 60 threaded to fit inserts with each lid.
- All costs associated with furnishing and installing the Precast Concrete Type S Drop Inlet Lid including the type S manhole frame and lid, shims, inserts, and dowels shall be included in the contract unit price per each for " 4' x 11' Precast Concrete Type S Drop Inlet Lid ".

S
D
D
O
T

4' X 11' PRECAST CONCRETE
TYPE S DROP INLET LID

PLATE NUMBER
670.40

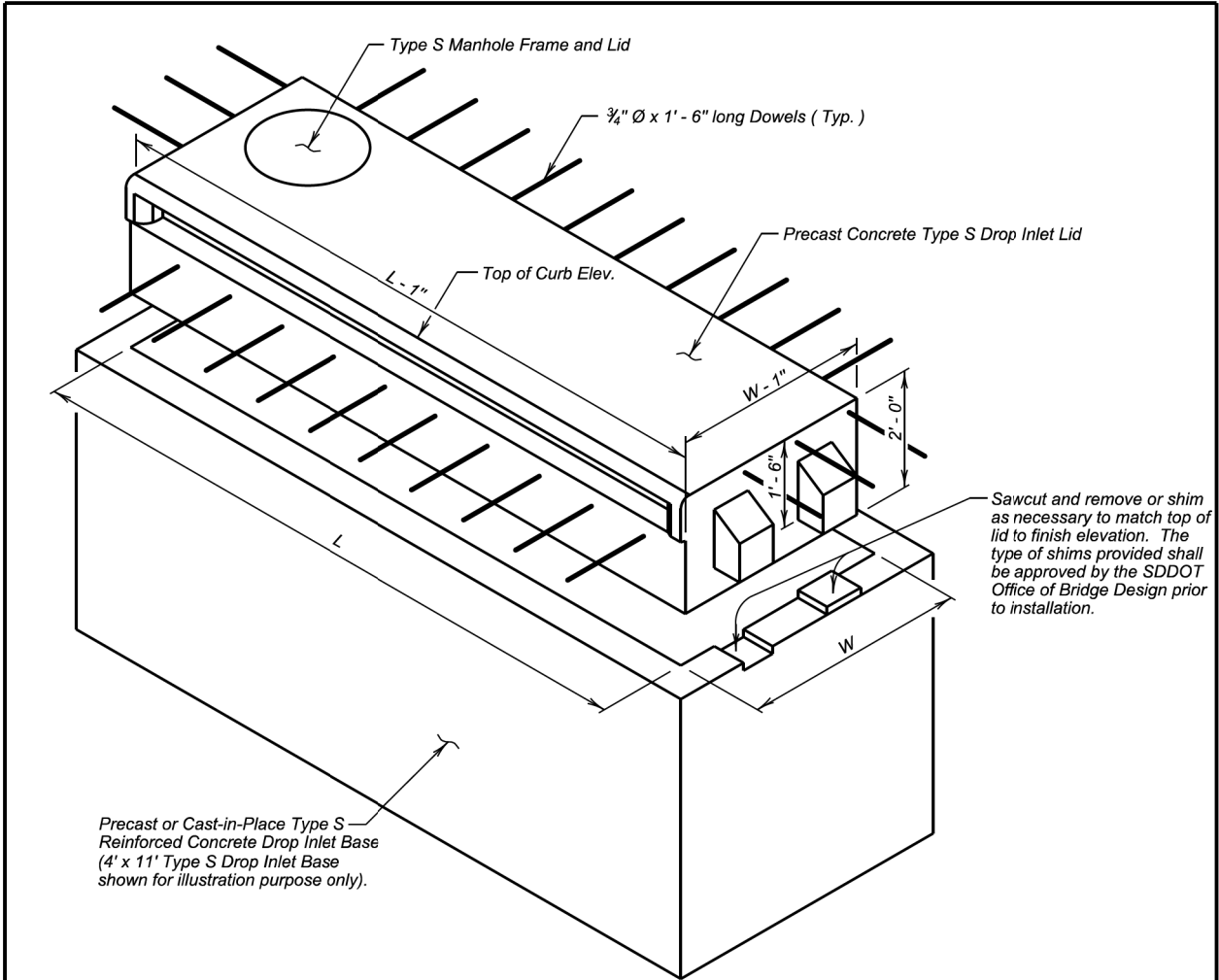
Sheet 1 of 1

Published Date: 2nd Qtr. 2021

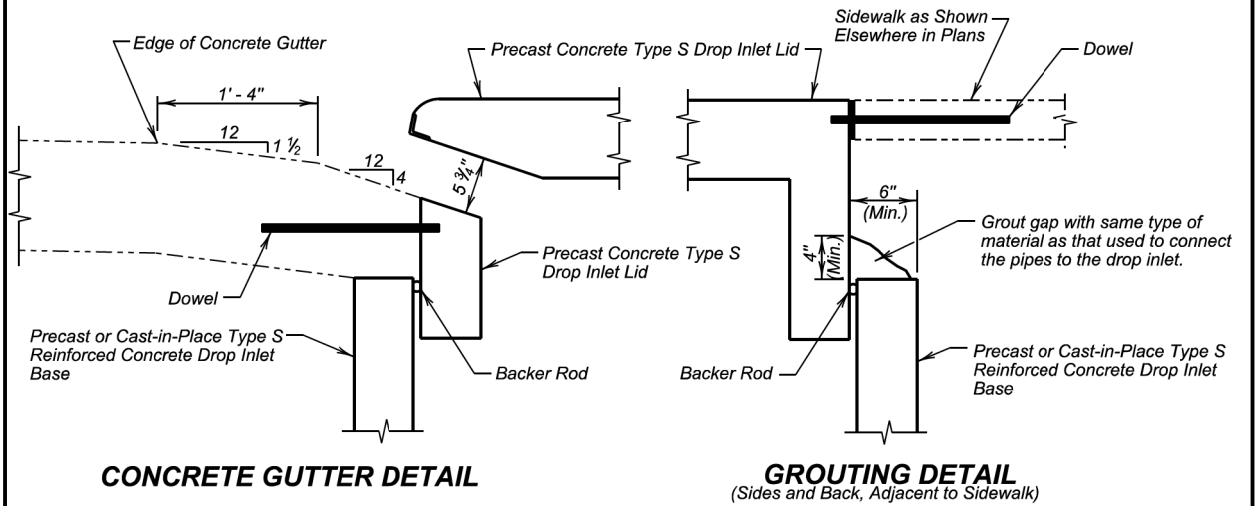
Plot Scale - 1/200

Plotted From - TRPR14341

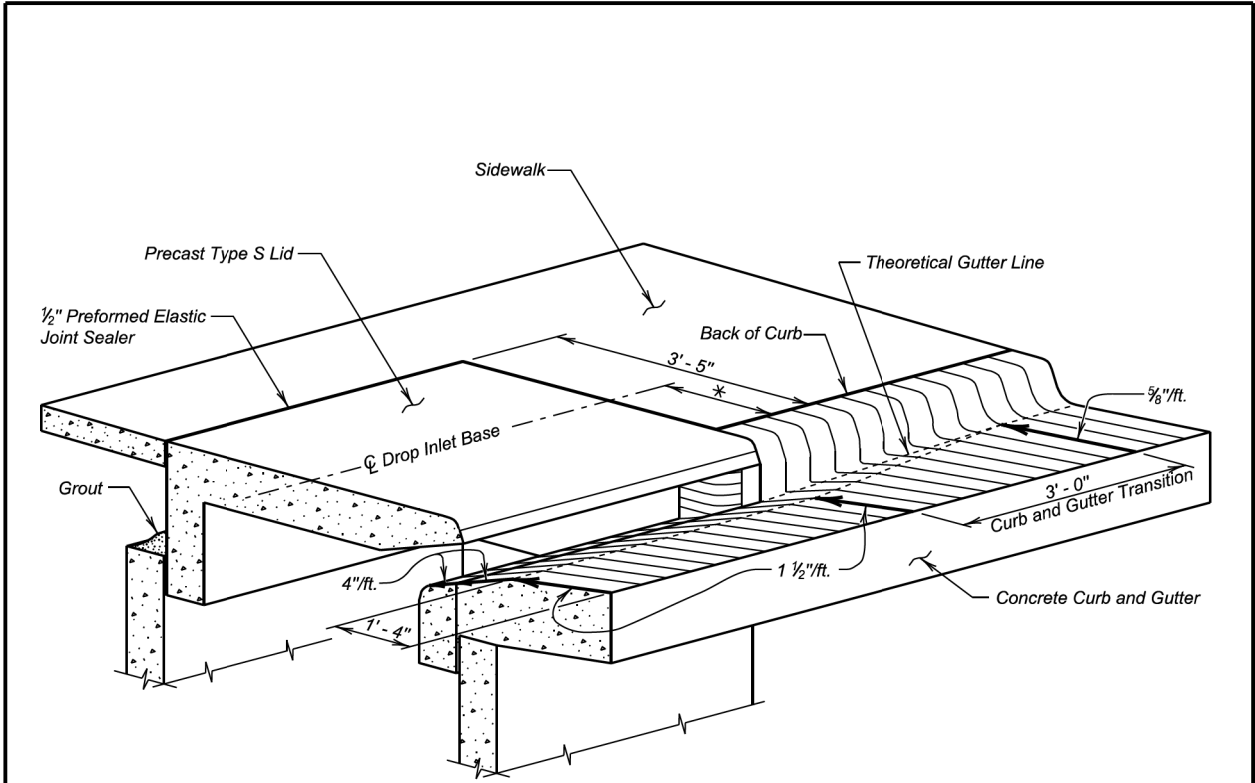
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253		
Plotting Date: 05/17/2021		B185	B196



TYPE S DROP INLET



				December 23, 2012
<i>Published Date: 2nd Qtr. 2021</i>	S D D O T	INSTALLATION DETAILS FOR PRECAST CONCRETE TYPE S DROP INLET LID	PLATE NUMBER 670.45	
			Sheet 1 of 2	



CURB AND GUTTER
TRANSITION DETAILS

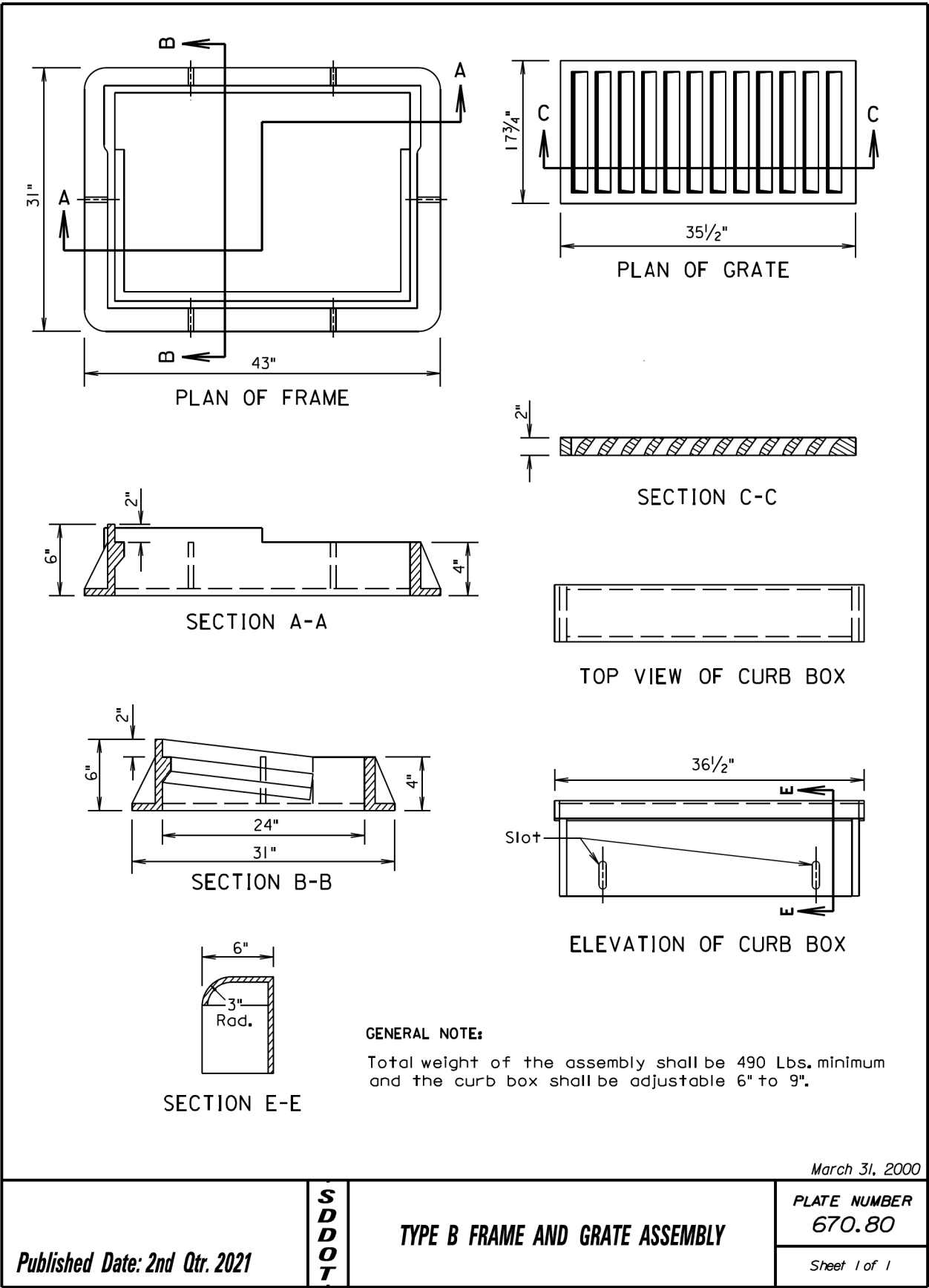
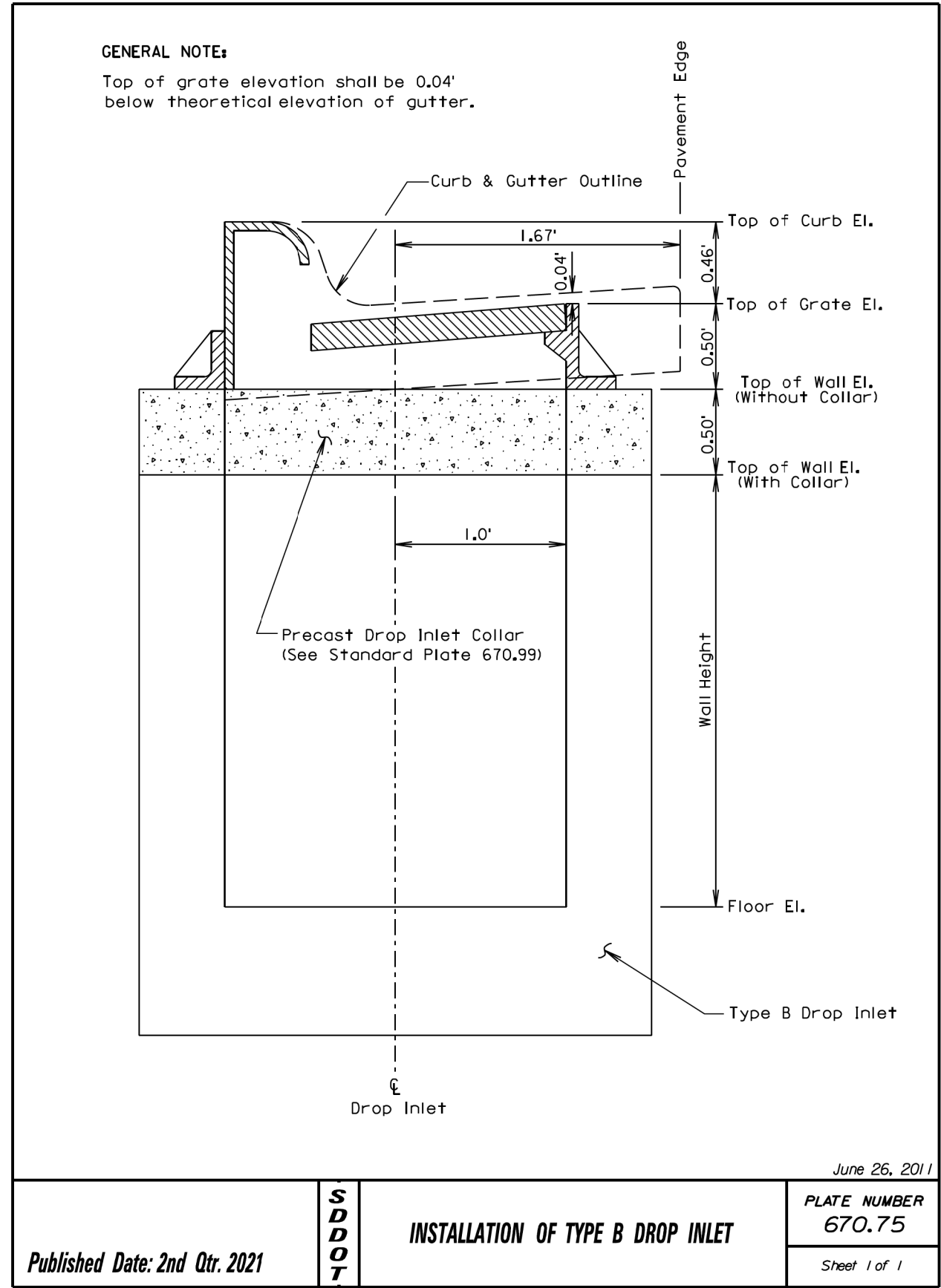
Drop Inlet Base Unit Size	* Distance
4' x 6'	1' - 5 1/2"
4' x 11'	1' - 5 1/2"
7' x 11'	2' - 11 1/2"

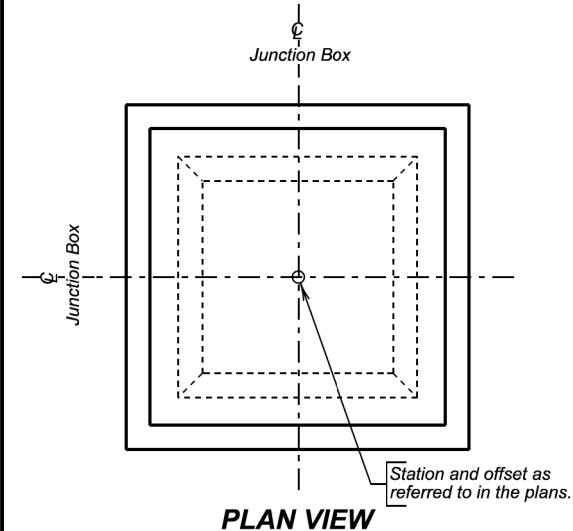
GENERAL NOTES:

- Dowels shall be used to anchor the precast concrete Type S drop inlet lid to the concrete gutter. See Standard Plate 670.38 or 670.40 as applicable. If there is sidewalk adjacent dowels shall be used to anchor the precast concrete Type S drop inlet lid to the sidewalk. If there is sidewalk adjacent to the drop inlet, the precast lid shall match the finish elevations and cross slopes of the sidewalk.
- The sidewalk shall be steel reinforced when the sidewalk adjoins the precast lid. Refer to Standard Plate 651.70 for reinforced concrete sidewalk details.

			December 23, 2012
<i>Published Date: 2nd Qtr. 2021</i>	S D D O T	INSTALLATION DETAILS FOR PRECAST CONCRETE TYPE S DROP INLET LID	PLATE NUMBER 670.45
			<i>Sheet 2 of 2</i>

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SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

The design of the junction box is based on a maximum fill over the junction box of 5 feet and minimum fill over the junction box of 2 feet.

Reinforcing steel shall conform to ASTM A615 Grade 60. Cut and bend reinforcing steel as required to place pipe(s) through junction box wall.

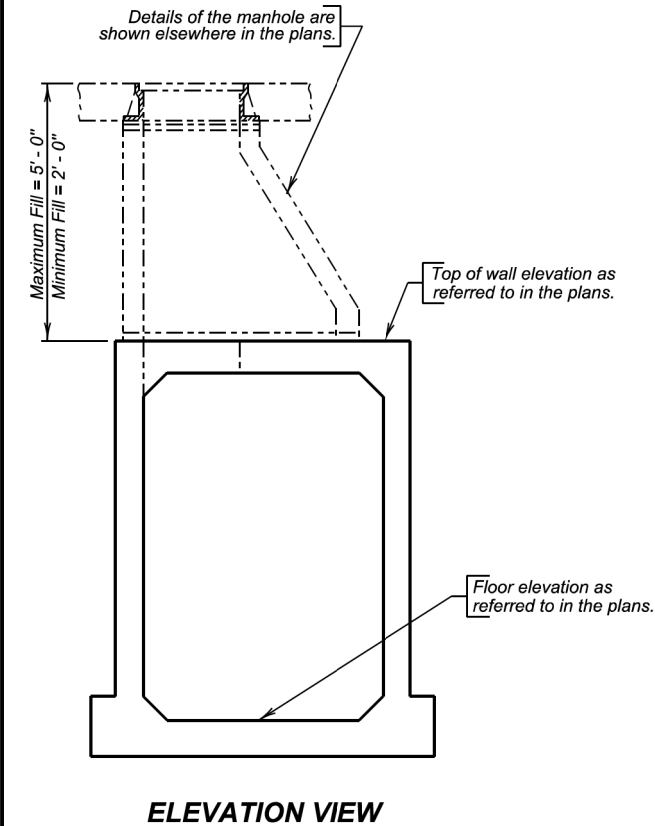
Junction box may be precast. If precast junction box details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

Use 1 inch clear cover on all reinforcing steel unless otherwise noted.

All exposed edges shall be chamfered 3/4 inch.

Junction box shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering junction box must fit between the inside face of walls and shall not enter through the corners.

The cost of furnishing and installing the manhole steps shall be incidental to the contract unit price per pound for "Reinforcing Steel".



PIPE DISPLACEMENT REDUCTIONS			
Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)	
12	2	0.03	R.C.P.
15	2 1/4	0.04	
18	2 1/2	0.06	
24	3	0.11	
30	3 1/2	0.16	
36	4	0.23	
42	4 1/2	0.31	
48	5	0.40	
54	5 1/2	0.50	
60	6	0.60	

ESTIMATED QUANTITIES		
ITEM	*Class M6 Concrete	Reinforcing Steel
UNIT	Cu. Yd.	Lb.
H = 4' - 0"	4.37	821
H = 4' - 6"	4.61	846
H = 5' - 0"	4.85	908
H = 5' - 6"	5.10	933
H = 6' - 0"	5.34	958
H = 6' - 6"	5.58	1020
H = 7' - 0"	5.82	1045
H = 7' - 6"	6.06	1071
H = 8' - 0"	6.30	1132

* Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). Quantity shown includes reduction for a 24-inch diameter manhole opening. The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard.

May 9, 2020

Published Date: 2nd Qtr. 2021

SD
DOT

5' X 5'
JUNCTION BOX

PLATE NUMBER
671.01

Sheet 1 of 3

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
▮ a1	1	6	9' - 0"	T3
▼ a2	4	—	—	—
h3	28	4	5' - 9"	17A
k3	48	4	8' - 6"	17
m1	18	5	6' - 9"	Str.
n1	18	5	5' - 9"	Str.
p1	52	4	5' - 0"	Str.
q1	8	4	3' - 6"	17A

Mk.	No.	Size	Length	Type
▮ a1	1	6	9' - 0"	T3
▼ a2	4	—	—	—
h4	28	4	6' - 3"	17A
k4	48	4	9' - 0"	17
m1	18	5	6' - 9"	Str.
n1	18	5	5' - 9"	Str.
p1	52	4	5' - 0"	Str.
q1	8	4	3' - 6"	17A

Mk.	No.	Size	Length	Type
▮ a1	1	6	9' - 0"	T3
▼ a2	5	—	—	—
h5	28	4	6' - 9"	17A
k5	48	4	9' - 6"	17
m1	18	5	6' - 9"	Str.
n1	18	5	5' - 9"	Str.
p1	52	4	5' - 0"	Str.
q1	8	4	3' - 6"	17A

Mk.	No.	Size	Length	Type
▮ a1	1	6	9' - 0"	T3
▼ a2	5	—	—	—
h6	28	4	7' - 3"	17A
k6	48	4	10' - 0"	17
m1	18	5	6' - 9"	Str.
n1	18	5	5' - 9"	Str.
p1	60	4	5' - 0"	Str.
q1	12	4	3' - 6"	17A

Mk.	No.	Size	Length	Type
▮ a1	1	6	9' - 0"	T3
▼ a2	6	—	—	—
h7	28	4	7' - 9"	17A
k7	48	4	10' - 6"	17
m1	18	5	6' - 9"	Str.
n1	18	5	5' - 9"	Str.
p1	60	4	5' - 0"	Str.
q1	12	4	3' - 6"	17A

Mk.	No.	Size	Length	Type
▮ a1	1	6	9' - 0"	T3
▼ a2	6	—	—	—
h8	28	4	8' - 3"	17A
k8	48	4	11' - 0"	17
m1	18	5	6' - 9"	Str.
n1	18	5	5' - 9"	Str.
p1	68	4	5' - 0"	Str.
q1	16	4	3' - 6"	17A

Mk.	No.	Size	Length	Type
▮ a1	1	6	9' - 0"	T3
▼ a2	7	—	—	—
h9	28	4	8' - 9"	17A
k9	48	4	11' - 6"	17
m1	18	5	6' - 9"	Str.
n1	18	5	5' - 9"	Str.
p1	68	4	5' - 0"	Str.
q1	16	4	3' - 6"	17A

Bending Details

LEGEND FOR PLACING RE-STEEL

T. B. S. - Top of Bottom Slab
B. B. S. - Bottom of Bottom Slab

Cast iron Manhole Steps (R - 1980 - C) from Neenah Foundry or equivalent.

▮ Locate in center of top slab with 3" clearance at manhole opening.

All dimensions are out to out of bars.

SEC. A - A

May 9, 2020

Published Date: 2nd Qtr. 2021

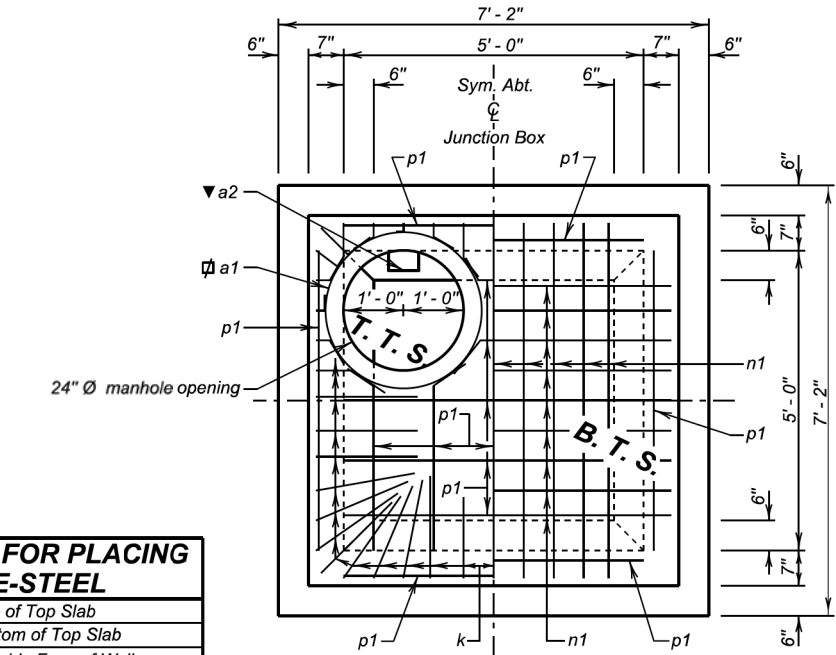
SD
DOT

5' X 5'
JUNCTION BOX

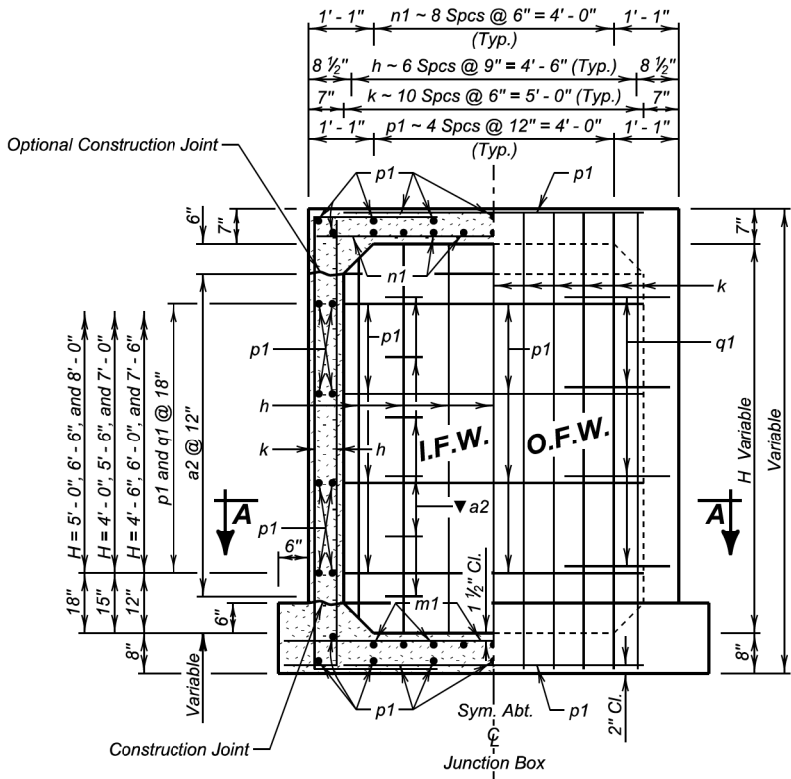
PLATE NUMBER
671.01

Sheet 2 of 3

LEGEND FOR PLACING RE-STEEL	
T. T. S. -	Top of Top Slab
B. T. S. -	Bottom of Top Slab
O. F. W. -	Outside Face of Wall
I. F. W. -	Inside Face of Wall



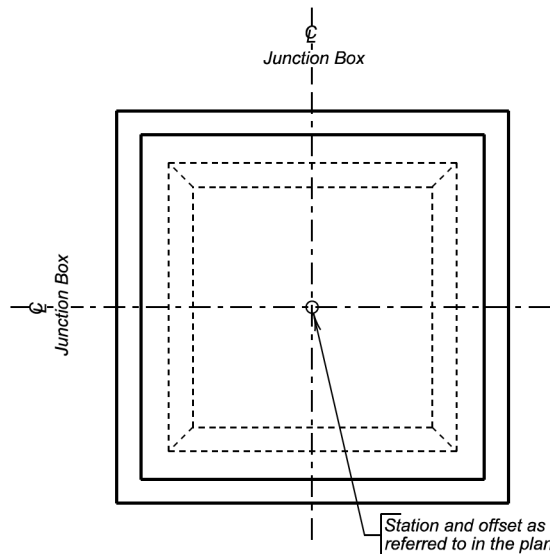
PLAN VIEW



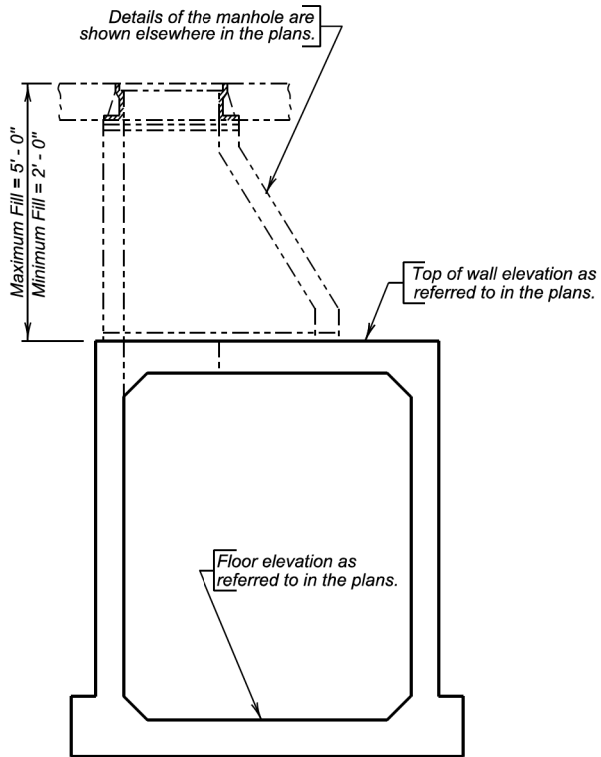
ELEVATION VIEW

May 9, 2020

Published Date: 2nd Qtr. 2021	S D D O T	5' X 5' JUNCTION BOX	PLATE NUMBER
			671.01
			Sheet 3 of 3



PLAN VIEW



ELEVATION VIEW

May 9, 2020

Published Date: 2nd Qtr. 2021	S D D O T	6' X 6' JUNCTION BOX	PLATE NUMBER
			671.02
			Sheet 1 of 3

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

The design of the junction box is based on a maximum fill over the junction box of 5 feet and minimum fill over the junction box of 2 feet.

Reinforcing steel shall conform to ASTM A615 Grade 60. Cut and bend reinforcing steel as required to place pipe(s) through junction box wall.

Junction box may be precast. If precast junction box details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

Use 1 inch clear cover on all reinforcing steel unless otherwise noted.

All exposed edges shall be chamfered 3/4 inch.

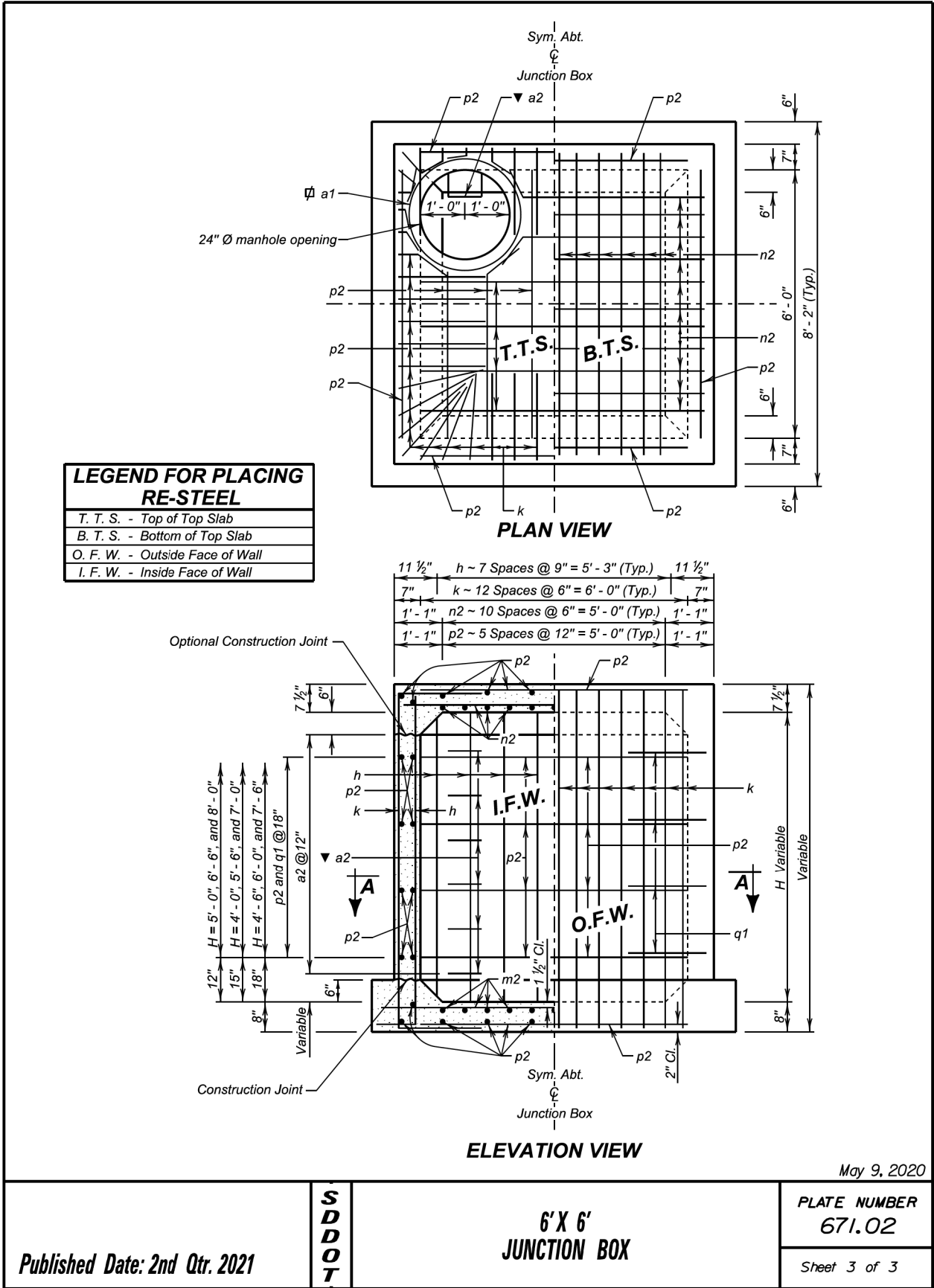
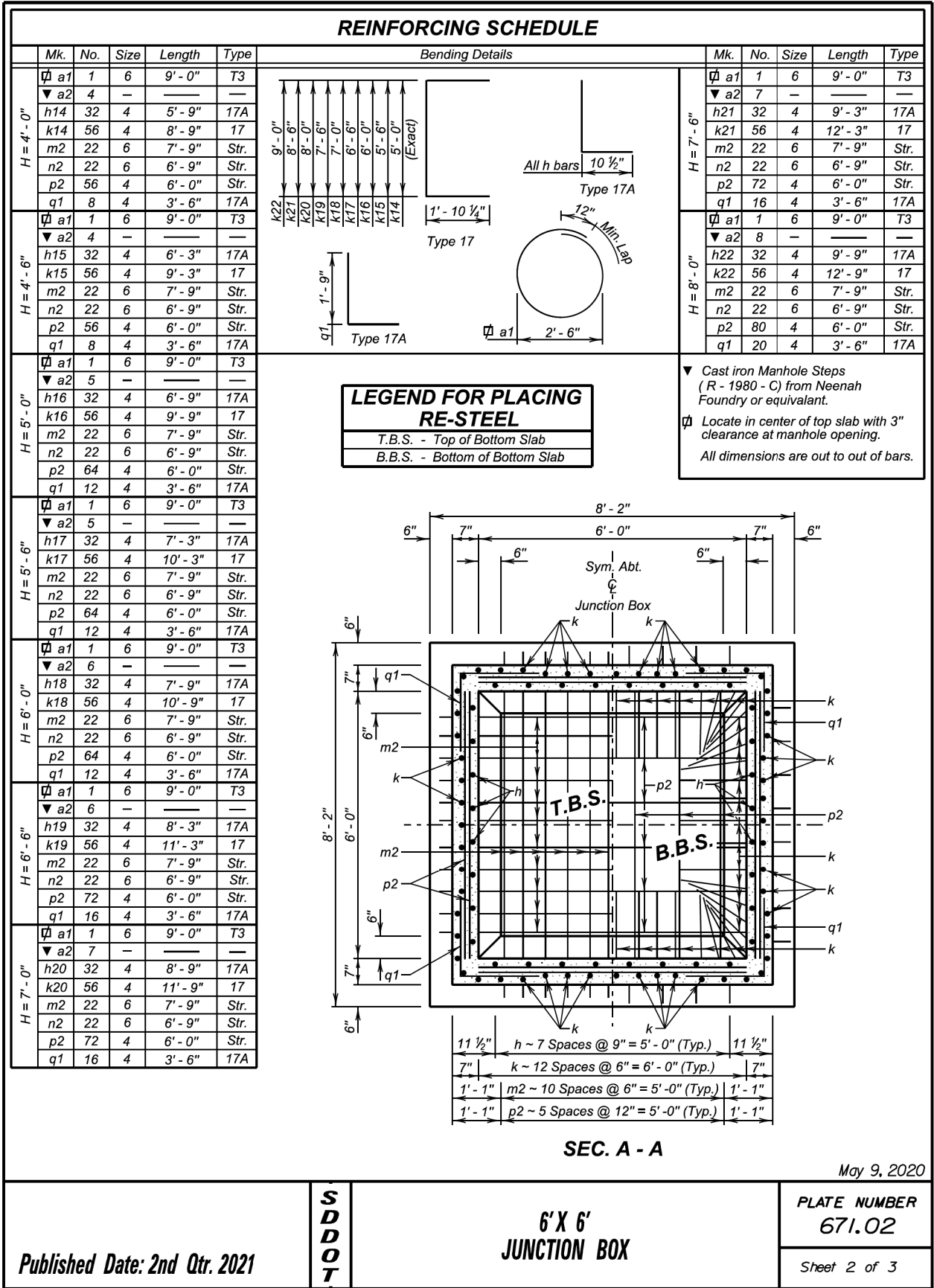
Junction box shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering junction box must fit between the inside face of walls and shall not enter through the corners.

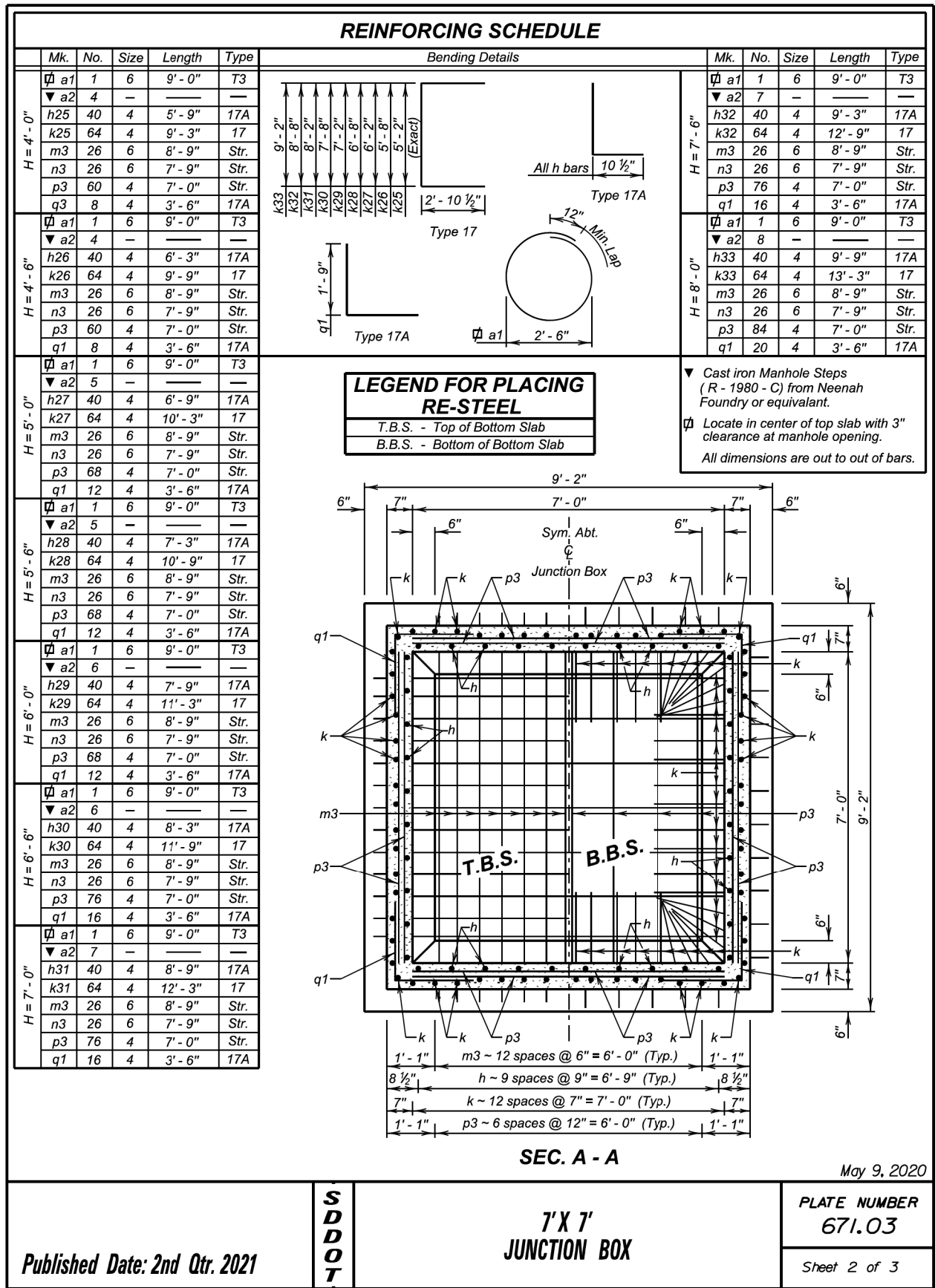
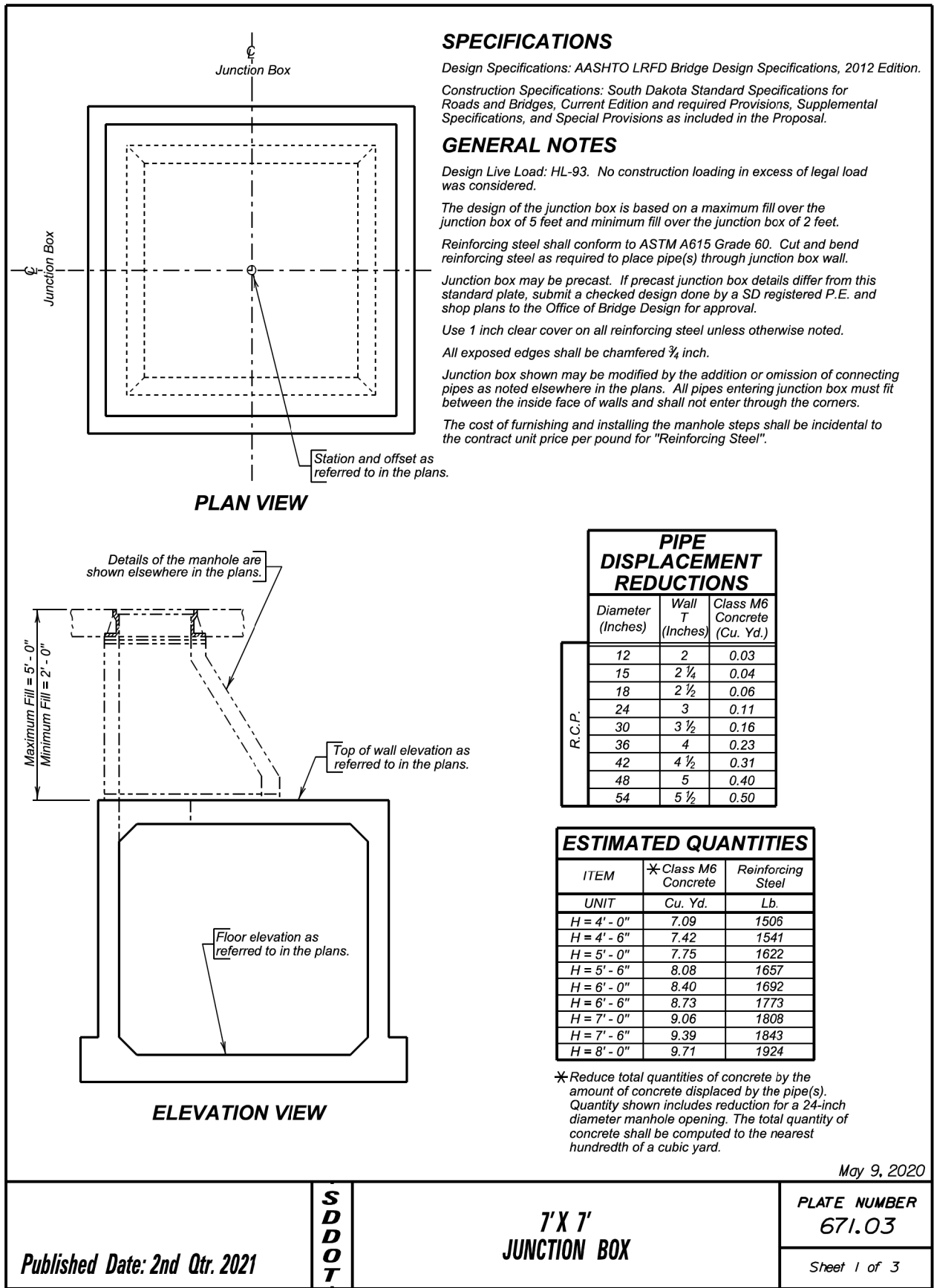
The cost of furnishing and installing the manhole steps shall be incidental to the contract unit price per pound for "Reinforcing Steel".

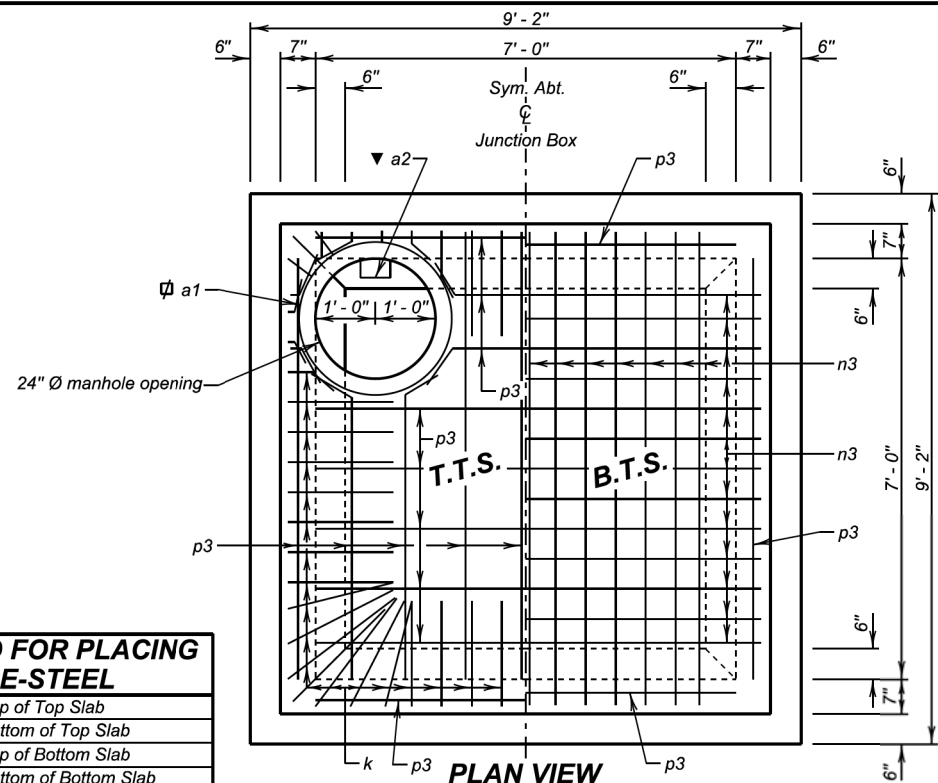
PIPE DISPLACEMENT REDUCTIONS		
Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.06
24	3	0.11
30	3 1/2	0.16
36	4	0.23
42	4 1/2	0.31
48	5	0.40
54	5 1/2	0.50

ESTIMATED QUANTITIES		
ITEM	* Class M6 Concrete	Reinforcing Steel
UNIT	Cu. Yd.	Lb.
H = 4' - 0"	5.53	1186
H = 4' - 6"	5.82	1215
H = 5' - 0"	6.10	1286
H = 5' - 6"	6.39	1316
H = 6' - 0"	6.67	1345
H = 6' - 6"	6.96	1416
H = 7' - 0"	7.24	1445
H = 7' - 6"	7.52	1475
H = 8' - 0"	7.81	1545

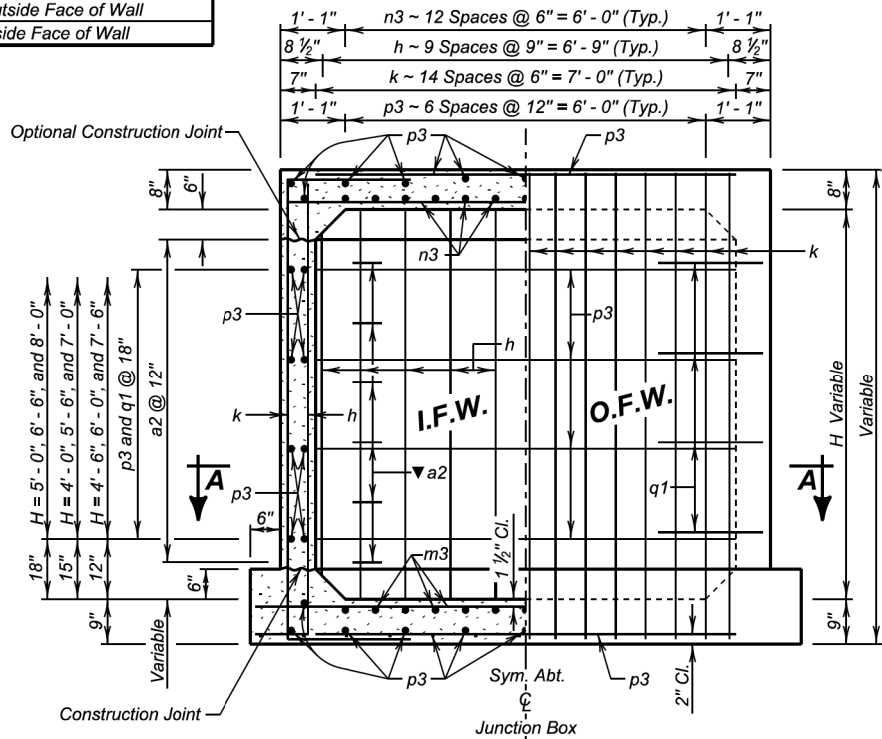
*Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). Quantity shown includes reduction for a 24-inch diameter manhole opening. The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard.







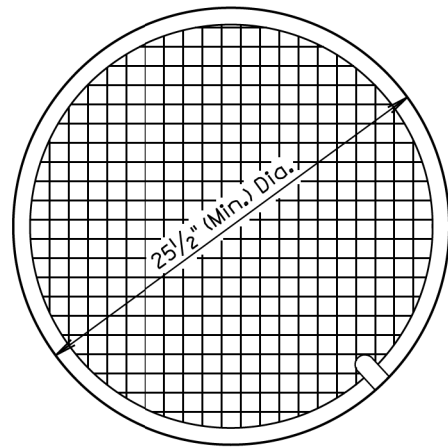
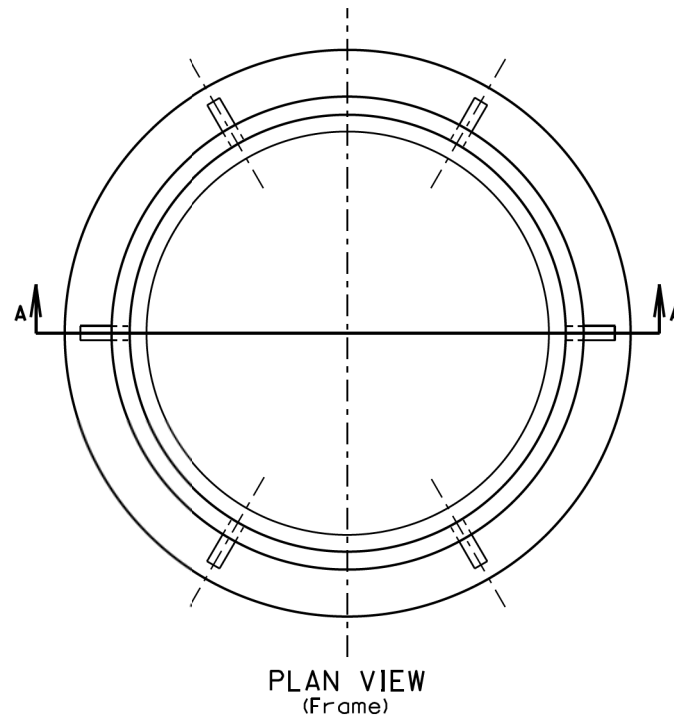
LEGEND FOR PLACING RE-STEEL	
T. T. S. -	Top of Top Slab
B. T. S. -	Bottom of Top Slab
T. B. S. -	Top of Bottom Slab
B. B. S. -	Bottom of Bottom Slab
O. F. W. -	Outside Face of Wall
I. F. W. -	Inside Face of Wall



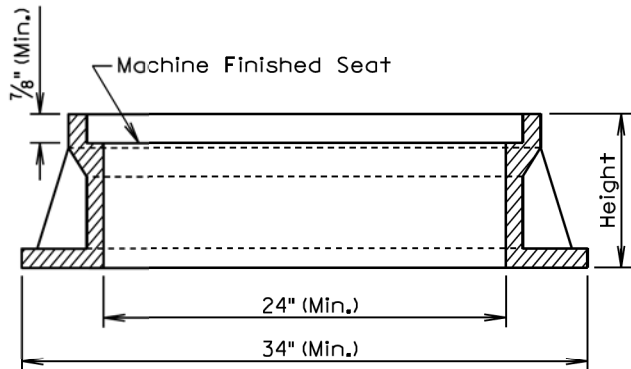
ELEVATION VIEW

May 9, 2020

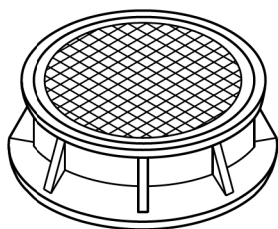
Published Date: 2nd Qtr. 2021	S D D O T	7' X 7' JUNCTION BOX	PLATE NUMBER
			671.03
			Sheet 3 of 3



PLAN VIEW (Lid)



SECTION A-A



ISOMETRIC VIEW

TYPE	HEIGHT (Inches)	MINIMUM WEIGHT (Lb.)
A7	7	400
A8	8	440
A9	9	470
A10	10	480

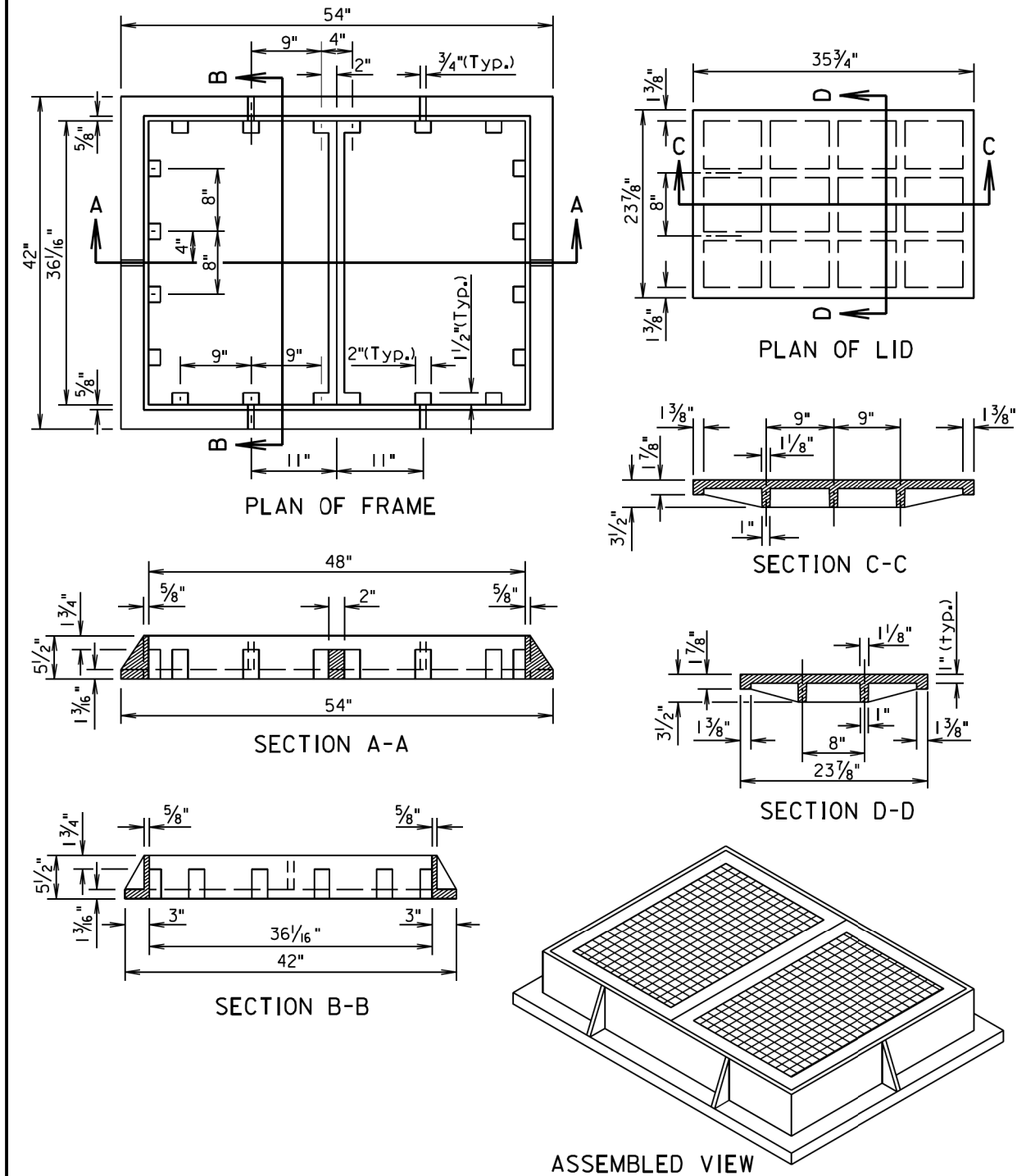
GENERAL NOTE:
Geometric pattern on top of lid other than that shown shall be approved by the Engineer.

June 26, 2016

Published Date: 2nd Qtr. 2021	S D D O T	TYPE A MANHOLE FRAME AND LID	PLATE NUMBER
			671.10
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253		

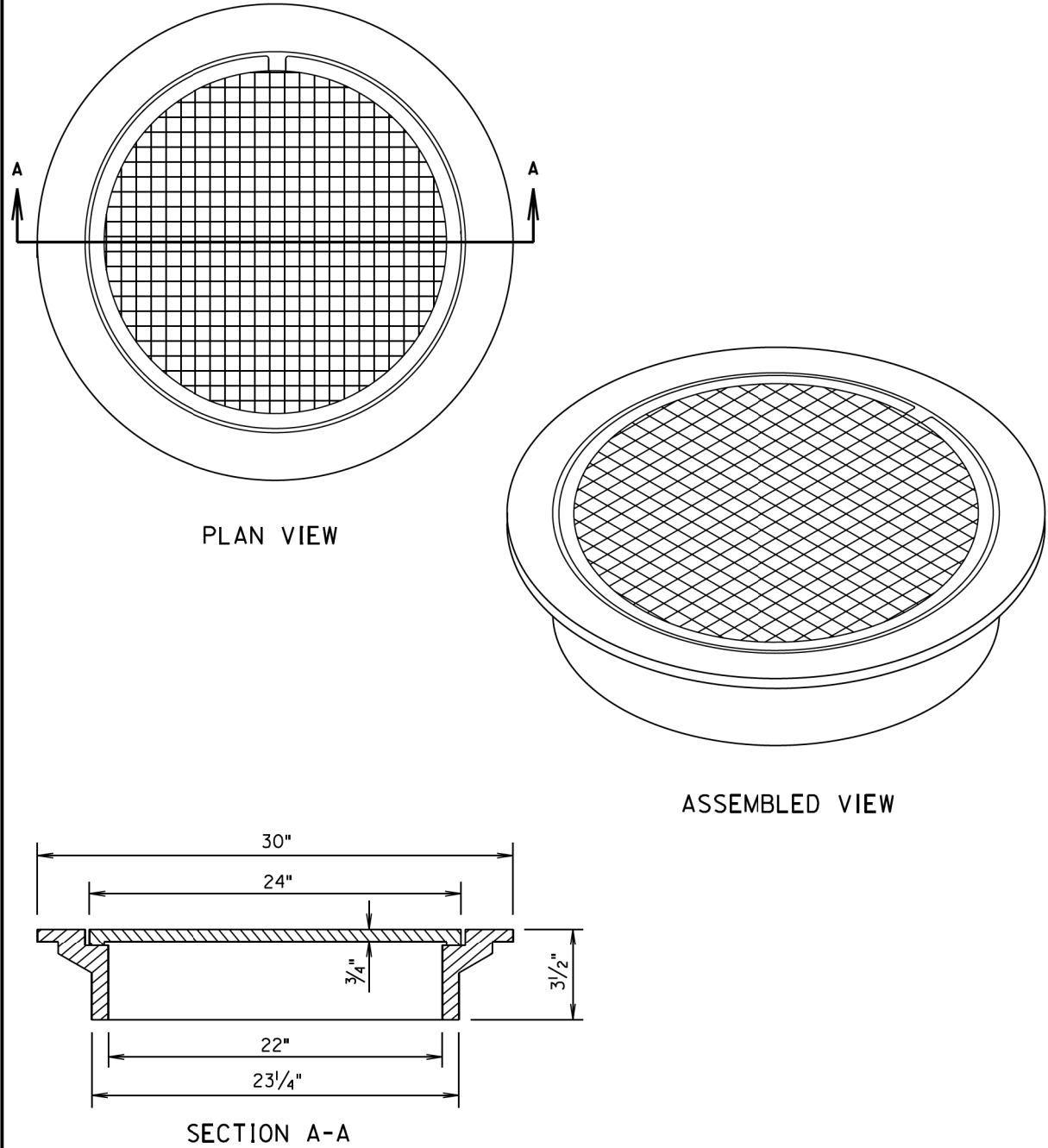
Plotting Date: 05/17/2021



GENERAL NOTE:
Total weight of the frame and lid shall be 1130 pounds minimum.

March 31, 2000

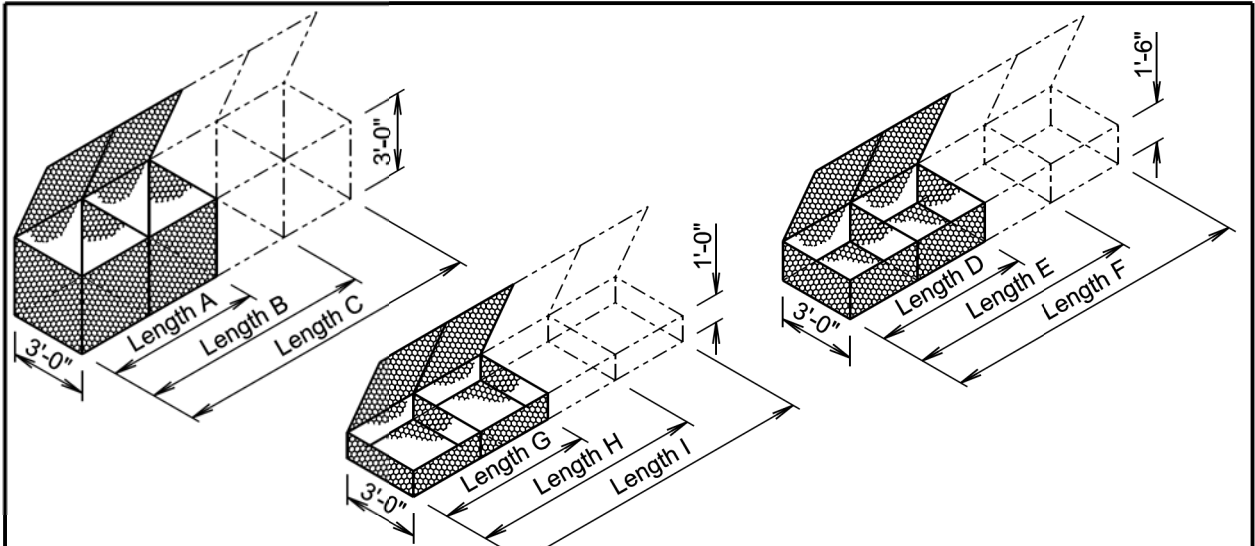
S D D O T	TYPE C MANHOLE FRAME AND LID	PLATE NUMBER 671.20
		Sheet 1 of 1
		Published Date: 2nd Qtr. 2021



GENERAL NOTE:
Total weight of the frame and lid shall be 140 Lbs. minimum.

March 31, 2000

S D D O T	TYPE S MANHOLE FRAME AND LID	PLATE NUMBER 671.30
		Sheet 1 of 1
		Published Date: 2nd Qtr. 2021



GABION DETAILS

STANDARD SIZES					
SIZE	LENGTH	WIDTH	HEIGHT	NUMBER OF CELLS	CAPACITY (Cu. Yd.)
A	6'-0"	3'-0"	3'-0"	2	2.0
B	9'-0"	3'-0"	3'-0"	3	3.0
C	12'-0"	3'-0"	3'-0"	4	4.0
D	6'-0"	3'-0"	1'-6"	2	1.0
E	9'-0"	3'-0"	1'-6"	3	1.5
F	12'-0"	3'-0"	1'-6"	4	2.0
G	6'-0"	3'-0"	1'-0"	2	0.7
H	9'-0"	3'-0"	1'-0"	3	1.0
I	12'-0"	3'-0"	1'-0"	4	1.3

GENERAL NOTES: Above dimensions subject to mill tolerances.

Lacing and internal connecting wire will be 0.0866 inch diameter steel wire ASTM A641, Class 3 soft temper measured after galvanizing and for PVC coated gabions will be 0.0866 inch diameter steel wire measured after galvanizing but before PVC coating.

The lacing procedure is as follows:

1. Cut a length of lacing wire approximately 1½ times the distance to be laced but not exceeding 5 feet.
2. Secure the wire terminal at the corner by looping and twisting.
3. Proceed lacing with alternating single and double loops at a spacing not to exceed 6 inches.
4. Securely fasten the other lacing wire terminal.

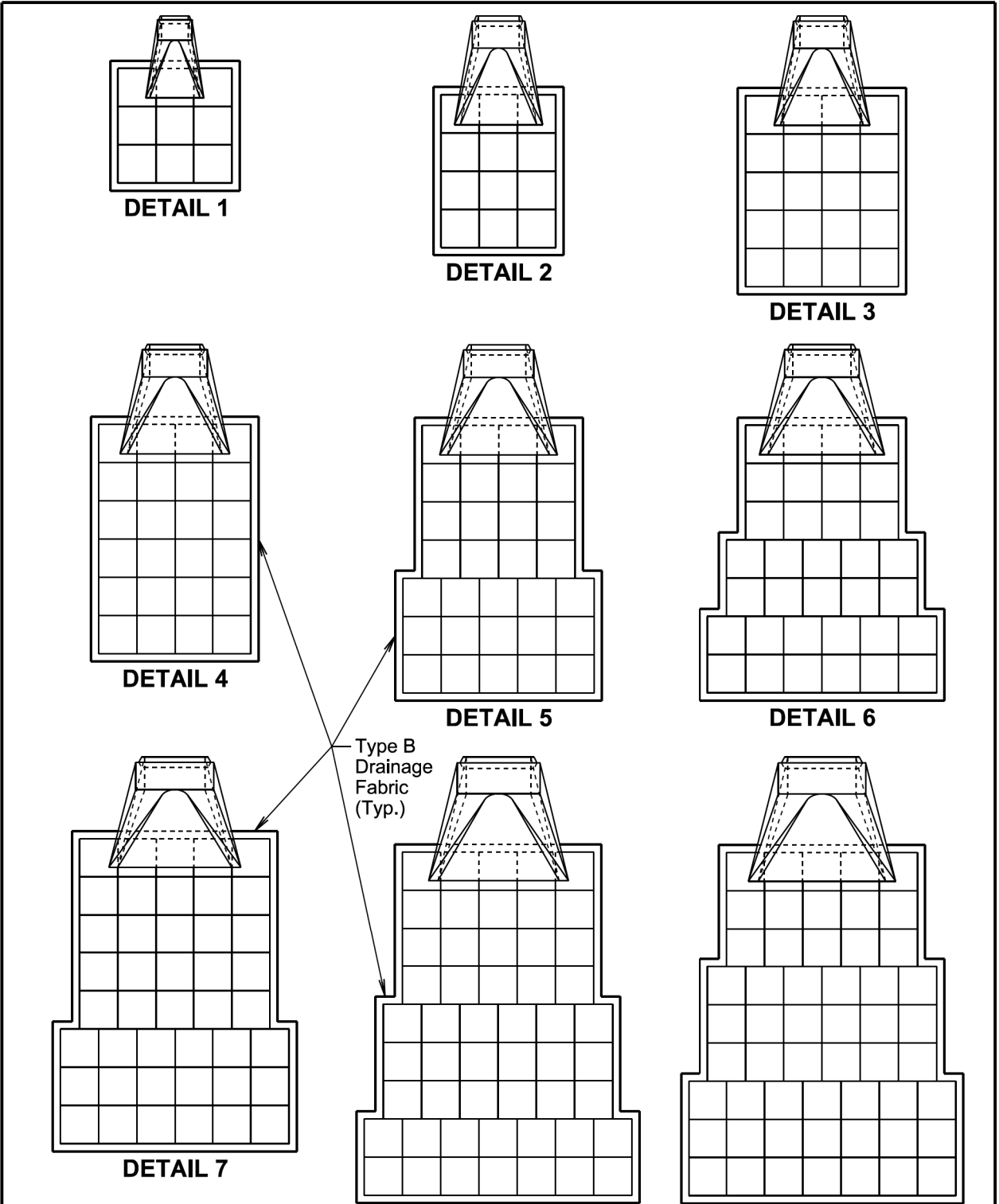
Wire lacing or interlocking type fasteners will be used for gabion assembly and final construction of gabion structures. Interlocking fasteners for galvanized gabions will be high tensile 0.120 inch diameter galvanized steel wire measured after galvanizing. The galvanizing will conform to ASTM A641-92, Class 3 coating. Fasteners will also be in accordance with ASTM A764, Class II, Type III.

Interlocking fasteners for PVC coated gabions will be high tensile 0.120 inch diameter stainless steel wire conforming to ASTM A313, Type 302, Class 1. The spacing of the interlocking fasteners during all phases of assembly and construction will not exceed 6 inches.

All fasteners will be placed where the mesh weaves around the selvage wire at the vertical and horizontal joints.

February 14, 2020

<i>Published Date: 2nd Qtr. 2021</i>	S D D O T	BANK AND CHANNEL PROTECTION GABIONS	PLATE NUMBER
			720.01
			Sheet 1 of 1



Type B
Drainage
Fabric
(Typ.)

February 14, 2020

<i>Published Date: 2nd Qtr. 2021</i>	S D D O T	BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS	PLATE NUMBER
			720.03
			Sheet 1 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253		
Plotting Date: 05/17/2021		B194	B196

* ESTIMATED QUANTITIES			
Detail	Pipe Diameter (Inches)	Gabion (Cu. Yd.)	Type B Drainage Fabric (Sq. Yd.)
RCP, RCP Arch, CMP, and CMP Arch	1 12, 18, and 24	4.5	15
	2 30 and 36	6.0	19
	3 42	10.0	29
	4 48 and 54	12.0	34
	5 60	15.5	43
	6 66	17.0	47
	7 72	21.5	57
	8 78	26.0	68
	9 84	27.0	70

GENERAL NOTES:

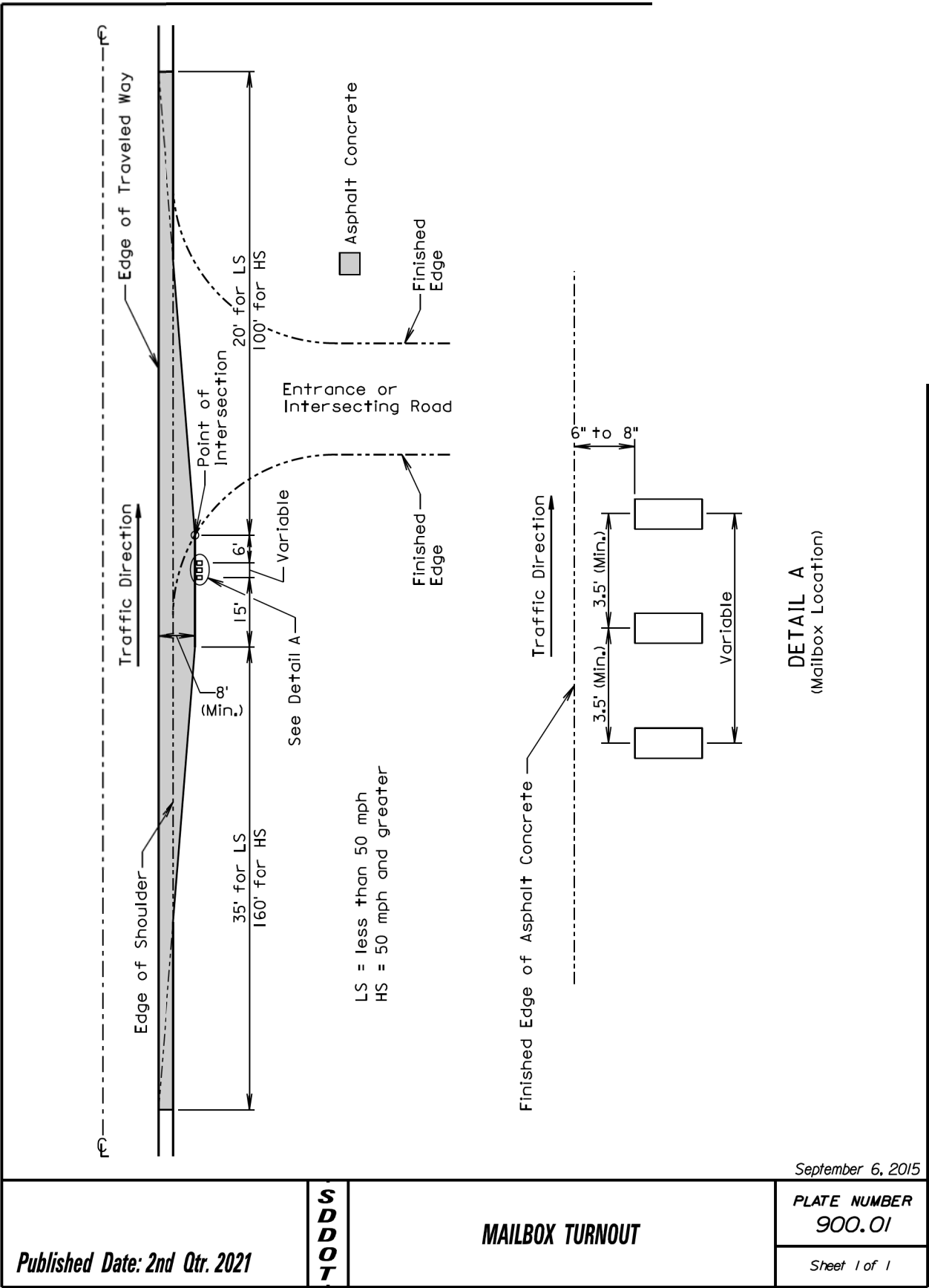
Gabions at outlets of CMP and RCP will be placed under the end section a distance of 2 feet from the outlet end. For CMP end section installations, the upper fabric of the gabions will be modified to accommodate the metal end section as approved by the Engineer.

* Gabion and type B drainage fabric quantities on this standard plate are based on standard gabion sizes D, E, and F as depicted on standard plate 720.01.

Type B drainage fabric will be placed under the gabions and around the exterior sides (perimeter) of the gabions as approved by the Engineer. The type B drainage fabric will be in conformance with Section 831 of the Specifications. Measurement and payment of the type B drainage fabric will be in conformance with Section 720 of the Specifications.

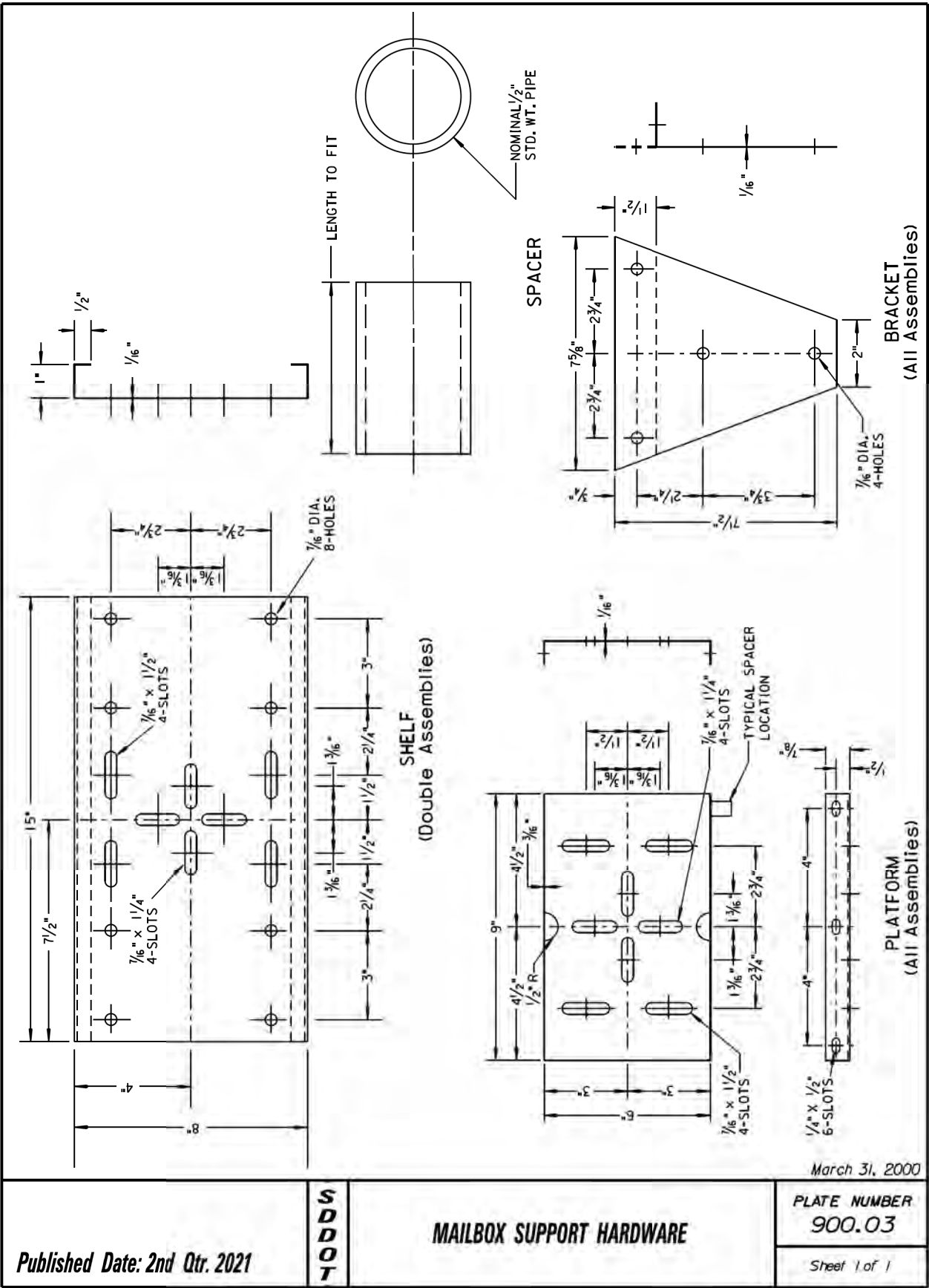
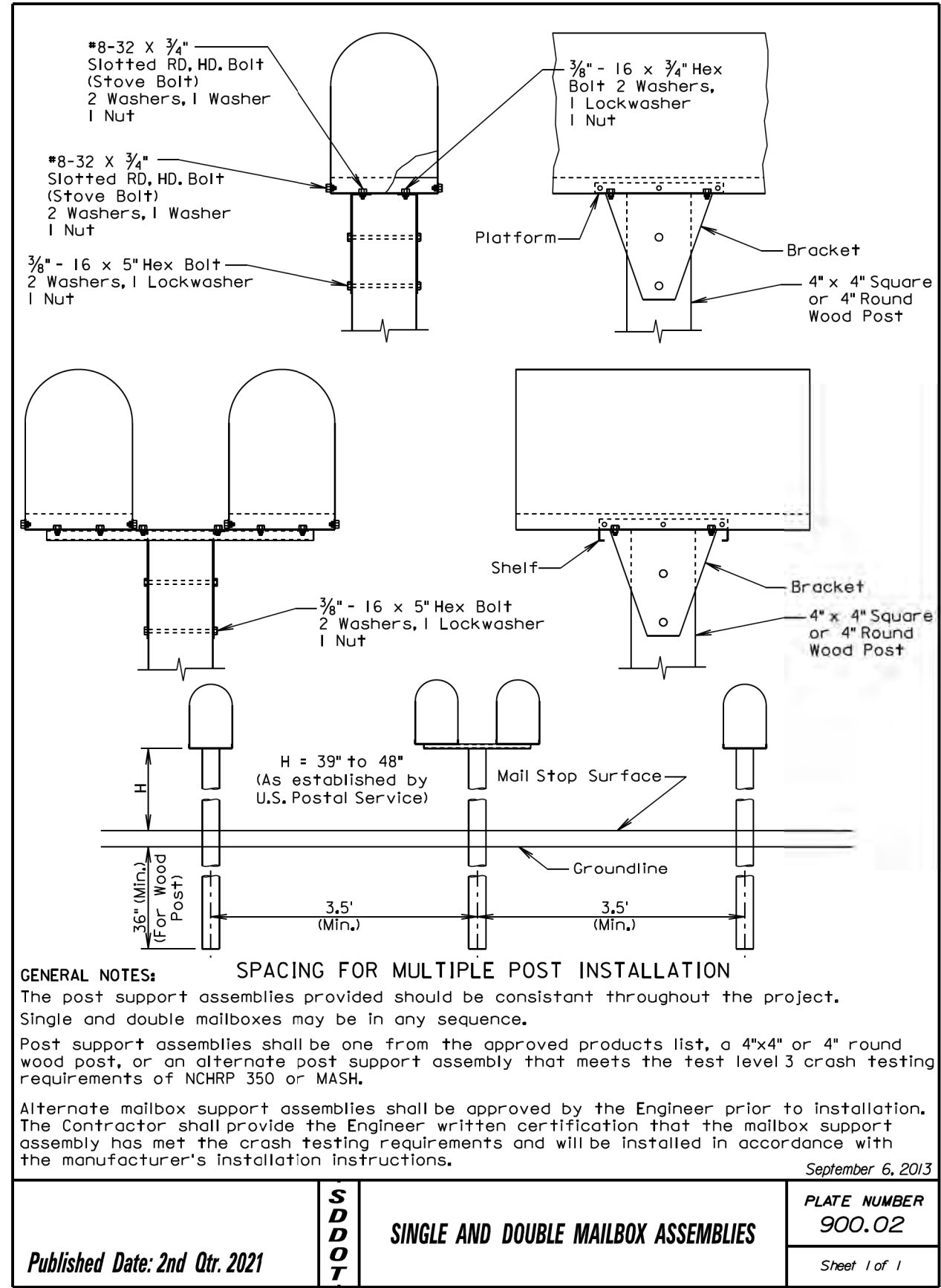
February 14, 2020

Published Date: 2nd Qtr. 2021	S D D O T	BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS	PLATE NUMBER 720.03
			Sheet 2 of 2



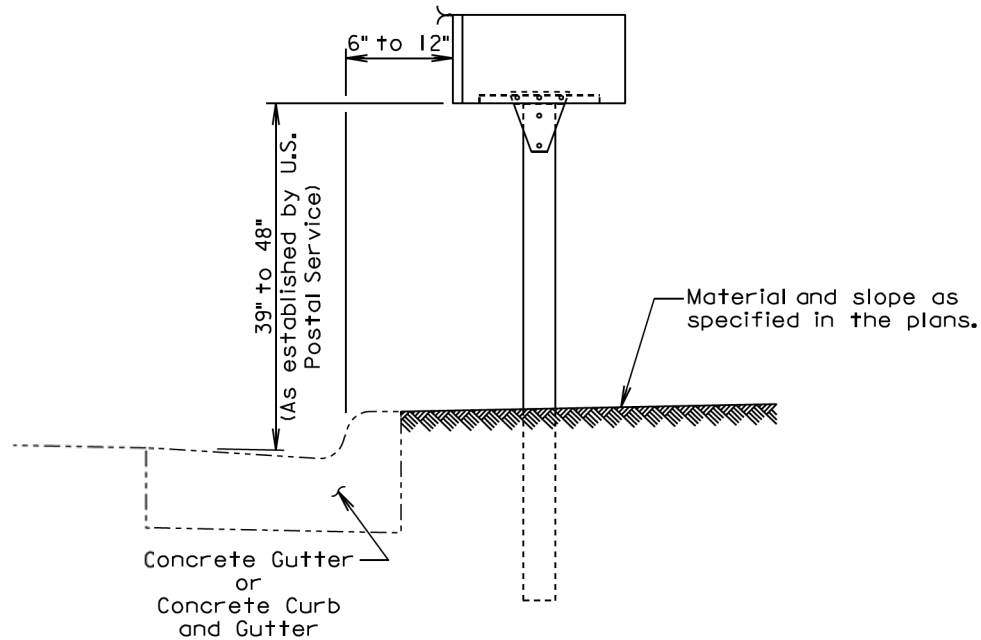
September 6, 2015

Published Date: 2nd Qtr. 2021	S D D O T	MAILBOX TURNOUT	PLATE NUMBER 900.01
			Sheet 1 of 1



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253	B196	B196

Plotting Date: 05/17/2021



ELEVATION VIEW

GENERAL NOTES:

The post support assemblies provided should be consistant throughout the project.

Post support assemblies shall be one from the approved products list, a 4"x4" or 4" round wood post, or an alternate post support assembly that meets the test level 3 crash testing requirements of NCHRP 350 or MASH.

Alternate mailbox support assemblies shall be approved by the Engineer prior to installation. The Contractor shall provide the Engineer written certification that the mailbox support assembly has met the crash testing requirements and will be installed in accordance with the manufacturer's installation instructions.

February 10, 2014

<i>Published Date: 2nd Qtr. 2021</i>	S D D O T	MAILBOX ADJACENT TO CONCRETE GUTTER OR CONCRETE CURB AND GUTTER	PLATE NUMBER 900.05
			Sheet 1 of 1

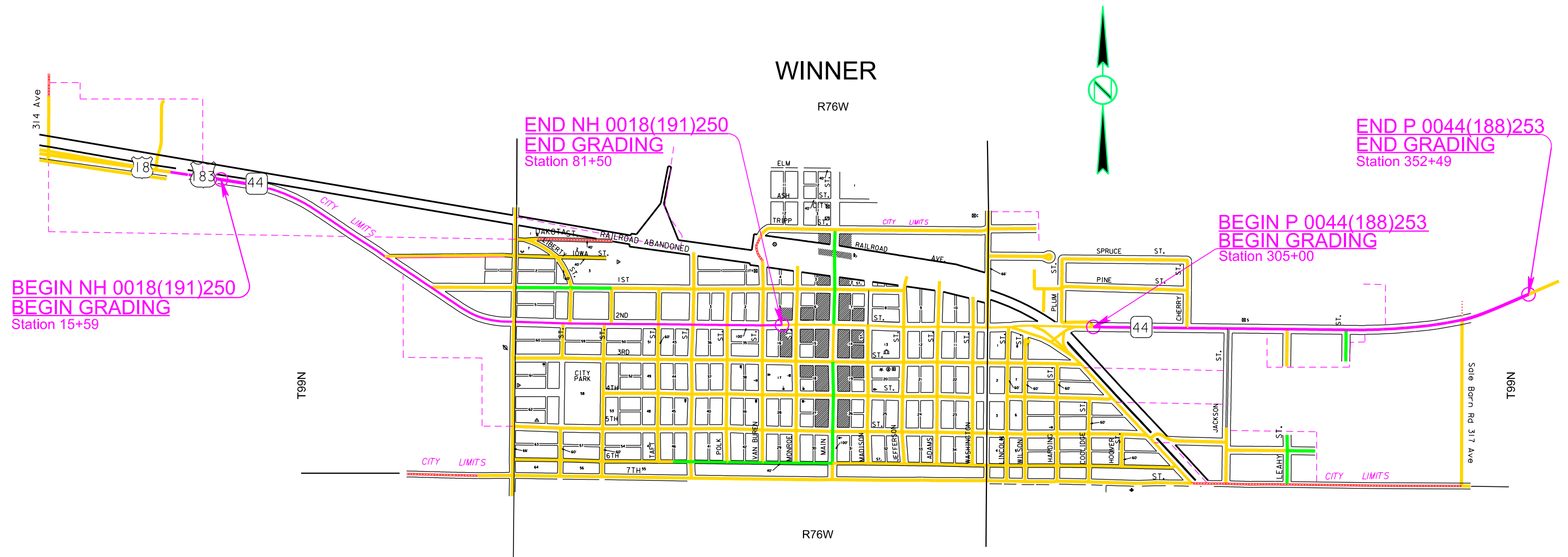
SECTION C: TRAFFIC CONTROL PLANS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253		
		C1	C24

Plotting Date: 06/02/2021

INDEX OF SHEETS

- | | |
|---------|--------------------------------------|
| C1 | General Layout with Index |
| C2-C8 | Estimate with General Notes & Tables |
| C9-C11 | Traffic Control Typical Layouts |
| C12 | Fixed Location Sign Layout |
| C13 | Highway Width Restriction Signing |
| C14 | Sign Tables |
| C15 | Special Signs |
| C16-C24 | Standard Plates |



SECTION C ESTIMATE OF QUANTITIES

NH 0018(191)250

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
632E3750	36" LED Blinker Stop Sign	2	Each
634E0010	Flagging	1,000.0	Hour
634E0110	Traffic Control Signs	2,039.1	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0135	Traffic Control Supervisor	Lump Sum	LS
634E0275	Type 3 Barricade	50	Each
634E0330	Temporary Raised Pavement Markers	8,280	Ft
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	26,640	Ft
634E0600	4" Temporary Pavement Marking Tape Type I	1,512	Ft
634E0640	Temporary Pavement Marking	13,320	Ft
634E1002	Detour and Restriction Signing	513.0	SqFt
634E1215	Contractor Furnished Portable Changeable Message Sign	2	Each
634E2000	Longitudinal Pedestrian Barricade	7,480	Ft
634E2015	Temporary Pedestrian Access Route	Lump Sum	LS
634E2020	Temporary Curb Ramp	6	Each
634E2025	Longitudinal Pedestrian Barrier	1,000	Ft
634E3000	Traffic Control Barrier	6,660	Ft
634E3030	Reset Traffic Control Barrier	6,660	Ft
900E1080	Orange Plastic Safety Fence	7,100	Ft
910E1200	Sweeper	20	Hour
910E1210	Truck with Operator, Street Sweeping	50	Hour

P 0044(188)253

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0010	Flagging	1,000.0	Hour
634E0020	Pilot Car	500.0	Hour
634E0110	Traffic Control Signs	712.8	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	10	Each
634E0330	Temporary Raised Pavement Markers	5,830	Ft
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	14,250	Ft
634E0600	4" Temporary Pavement Marking Tape Type I	360	Ft
634E0640	Temporary Pavement Marking	9,500	Ft
634E1215	Contractor Furnished Portable Changeable Message Sign	2	Each
634E2000	Longitudinal Pedestrian Barricade	600	Ft
634E2015	Temporary Pedestrian Access Route	Lump Sum	LS
634E2020	Temporary Curb Ramp	4	Each
634E2025	Longitudinal Pedestrian Barrier	440	Ft
634E3000	Traffic Control Barrier	4,750	Ft
634E3030	Reset Traffic Control Barrier	4,750	Ft
900E1080	Orange Plastic Safety Fence	3,100	Ft

SEQUENCE OF OPERATIONS

The plans have been organized to aid in the guidance and requirements as they pertain to the various conditions and traffic control setups required for the project. Though notes may appear under a specific heading, they are to be applied to the project as a whole as per installation, maintenance, payment, standard plates, etc. and where directed by the Engineer.

The Contractor may utilize the listed traffic control to best fit their planned sequence and operation. Sufficient traffic control devices have been allotted to be used for the safe movement of the traveling public.

Contractor requests to deviate from the sequence of operations will be submitted in writing to the Engineer for review. Approval of an alternate 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. An alternate sequence will be submitted for review a minimum of one week prior to potential implementation.

The Contractor should plan the traffic control as to minimize the impact on the traveling public and business accesses until work is planned in an area or phase.

GENERAL 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.

Portable sign supports will not be located on sidewalks, bicycle facilities, or other areas designated for pedestrian or bicycle traffic.

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.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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TRAFFIC CONTROL SUPERVISOR

The Contractor will review the Traffic Control Supervisor Special Provision for all requirements for this item. The intent is that this person will be a full-time traffic control supervisor.

TRAFFIC CONTROL, MISCELLANEOUS

The City of Winner has its annual Labor Day festivities on September 3-5, 2022. On Monday the 5th of September the City of Winner will have a Labor Day Parade that utilizes US 18 throughout a large segment of the project. The Contractor will make accommodations to facilitate this parade and adjust the traffic control as needed. Payment for this accommodation will be incidental to Traffic Control, Miscellaneous.

For this project, the Contractor must use social media to relay information to the public. The Contractor will create a public Facebook Group/Page or a Twitter account specifically for this project. The Contractor must advertise in the local newspaper the information necessary for the public to find the social media page. The first advertisement must occur the week prior to, the week of, and the week after the initial informational meeting. This advertisement must also include a phone number for those members of the public with no access to social media where they may call to ask questions and voice concerns. In addition to the local newspaper, the Contractor must also run an advertisement with the local radio station directing the public to the social media page. The radio advertisement must run for one week prior to the initial informational meeting at least twice daily between the hours of 6:00 AM and 10:00 PM. Radio Public Service Announcements (PSA's) should be submitted to the local radio station when significant changes to traffic will be occurring or as determined by the Engineer. Contractor will use the social media platform(s) to post weekly updates beginning one week prior to the start of work. In addition to weekly update posts, Contractor is encouraged to live stream the weekly public meetings. The name of the social media account(s) or group(s) will be descriptive to the project, such as "Winner Highway Construction 2022". Contractor will not use the project account(s) or group(s) to express personal or political beliefs and Contractor will not post offensive words or images. Engineer and Owner must be granted full access to social media including, but not limited to, moderator privileges on Facebook Groups, Twitter account passwords, or other means of access for various other social media types. Payment for this service will be incidental to Traffic Control, Miscellaneous.

1:200
Plot Scale -
TRW11NT28
-Plotted From -

TRAFFIC CONTROL PROJECT PHASES

The project will consist of 6 phases:

- Phase 1 – SD 44 Eastbound Lanes construction from 305+00 to 352+49
 - Phase 2 – SD 44 Westbound Lanes construction from 352+49 to 305+00
 - Phase 3 – SD 44 Center turn lane
 - Phase 4 – US 18 Westbound Lanes construction from 81+50 to 15+59
 - Phase 5 – US 18 Eastbound Lanes construction from 15+59 to 81+50
 - Phase 6 – US 18 Center turn lane
 - Phase 7 – Miscellaneous items
- Construction will be completed one-half roadway width at a time, with traffic being maintained at all times. The Contractor may remove the entire existing surface during each respective phase. Work on US 18 and SD 44 may take place simultaneously.
 - The following intersections must be kept open at all times: South County Road and Lamro Street. Closure time for all other streets intersecting the project must be kept to a minimum. Closures will not extend to consecutive intersections, unless approved by the Engineer.
 - The following intersections must have “ROAD CLOSED TO THRU TRAFFIC” signs mounted on Type 3 Barricades: 7th street at the junction of US18 and 7th street at the junction of South County Road.
 - Left turns will be prohibited at alleys and business entrances and as directed by the Engineer.
 - Mail service and emergency vehicle access must be maintained at all times.
 - Existing street lighting will be maintained as much as practical.
 - The Contractor will hold weekly meetings to discuss project progress as well as upcoming work. To permit public access to these meetings, the Contractor will utilize a live streaming service such as Facebook Live to conduct the meetings and take questions and give responses. The Contractor will invite local law enforcement and emergency services and DOT personnel to be physically present at the weekly meetings. Prior to the start of any work on the project, the Contractor will hold an initial meeting to discuss the project sequences, traffic control, goal, etc. Contractor is required to place an advertisement in the local newspaper three weeks before the initial meeting and for the duration of the project providing the necessary information for the public to access these meetings. The advertisement must include a telephone number where those without access to the internet may call to ask questions. The Contractor will be responsible for securing a time and location for these meetings.
 - Once work begins on the project, the Contactor will be responsible for maintaining the entire project. This will include, but is not limited to, all surface maintenance, drainage, sidewalks and traffic signs.
 - Businesses and residences must have an access at all times. The Contractor may pursue an agreement with individual landowners and business owners to work through their respective access areas in lieu of installing a block out. The Contractor must receive written approval from the landowner or business owner and provide a copy of the agreement to the Department.
 - Contractor will be required to share their schedule and coordinate with various contractors working for the City of Winner. Contractor will allow other contractors access onto the project site while the roadway surface is removed.

Detailed description of each phase:

Phase 1 Eastbound SD 44 Sta 305+00 to 352+49

- Install temporary traffic control
- Move two-way traffic onto Eastbound lanes from 305+00 to 352+49
- Remove surfacing
- City utility installation, Storm Sewer upgrades
- Grade roadway
- Install PCC pavement
- Install fillets, curb and gutter, ADA ramps and sidewalk
- Install lighting

Phase 2 Westbound SD 44 Sta 352+49 to 305+00

- Install temporary traffic control
- Move two-way traffic onto Westbound lanes from 352+49 to 305+00
- Remove surfacing
- City utility installation, Storm Sewer upgrades
- Grade roadway
- Install PCC pavement
- Install fillets, curb and gutter, ADA ramps and sidewalk
- Install lighting

Phase 3 SD 44 Center Turn Lane

- Install temporary traffic control
- Place one lane of traffic WB & EB in its respective lane to close off the center lane
- Complete PCCP in center turn lane
- Place permanent center turn lane paving markings

Phase 4 Westbound US 18 Sta 81+50 to 15+59

- Install temporary traffic control
- Move two-way traffic onto Eastbound lanes from 81+50 to 15+59
- Remove surfacing
- City utility installation, Storm Sewer upgrades
- Grade roadway
- Install PCC pavement
- Install fillets, curb and gutter, ADA ramps and sidewalk
- Install lighting
-

Phase 5 Eastbound US 18 Sta 15+59 to 81+50

- Install temporary traffic control
- Move two-way traffic onto Westbound lanes from 15+59 to 81+50
- Remove surfacing
- City utility installation, Storm Sewer upgrades
- Grade roadway
- Install PCC pavement
- Install fillets, curb and gutter, ADA ramps and sidewalk
- Install lighting

Phase 6 US 18 Center Turn Lane

- Install temporary traffic control
- Place one lane of traffic WB & EB in its respective outside lane to close off center 3 lanes
- Complete PCCP in center turn lane
- Place permanent center turn lane paving markings

Phase 7 Miscellaneous

These items are to be completed as per plan requirements or by the completion date of the project, as best fits in the contractor's schedule.

- Permanent Erosion & Sediment control
- Permanent Striping
- Permanent Signing
- Remove temporary traffic control
- Final Sweeping of the project
- Project Clean up

MAINTENANCE OF TRAFFIC

Existing stop signs that are temporarily removed must be reset prior to the end of each day's work. A stop sign on portable supports must be used whenever a permanent ground mounted stop sign is removed. Portable sign supports for stop signs may be used for a maximum of three (3) days. Temporary stop signs may be mounted on fixed supports for longer durations. Cost for this work will be included in the contract unit price per square foot for Traffic Control Signs.

Where phased construction of the intersections is indicated it should be understood that the paving sequence must correspond with the joint details shown on the pavement layout. Each phase may require two or more individual pours.

The Contractor will notify the Winner Police Department 842-3324, Tripp County Sheriff 842-3600, Winner Fire Department 842-2424, KWYR Radio 842-3333, and Winner Advocate 842-1481 prior to the closure of and upon reopening of any intersection.

The Contractor will provide the Department, Winner Police Department and Tripp County Sheriff a list of names and phone numbers of who to contact if issues arise or maintenance is needed on traffic control devices.

Work on SD 44 from STA. 352+49 to 336+00 will be controlled by flagger and pilot car during the day and will be completely open to traffic by the end of each working day.

The Contractor will construct the new sidewalk from STA. 305+00 to 336+00 prior to removing the old sidewalk. At locations where the old sidewalk must be removed in order to construct the new sidewalk and/or pipe need to be installed prior to the sidewalk, the Contractor will install a temporary sidewalk to carry pedestrians until the new sidewalk is complete.

Throughout the project, the Contractor must maintain local traffic and access to businesses and residences at all times. Adequate passage and ramping must be provided. The Contractor will keep businesses and residents informed of construction sequences in areas that have a direct effect on their access.

Construction signs will not obscure existing signs and be a minimum of 50' to 100' from any existing signs, or as directed by the Engineer.

Placement of temporary R1-1 STOP signs, as directed by the Engineer, will also be required where major business approaches enter the project. R1-1 STOP signs will be measured and paid for by the under the contract unit price per square foot for Traffic Control Signs.

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	NH 0018(191)250 P 0044(188)253		
Plotting Date: 06/02/2021		C3	C24

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253	C4	C24

Plotting Date: 06/02/2021

MAINTENANCE OF TRAFFIC (Continued)

Enough signs and barricades have been included in the Estimate of Quantities to pay the Contractor for the maximum number of each of these devices that will be required on the project at one time. The Contractor will be required to remove and reset individual traffic control devices during the differing phases of construction as detailed in these plans. Each traffic control device will only be paid for one time no matter how many times it is moved.

Additional standard signs, as ordered by the Engineer, must be available within 2 working days. Failure to provide signs within this time limit will result in Liquidated Damages being assessed in the amount of \$400.00 per Calendar Day. Payment for additional signs will be paid for at the contract unit price per square foot for Traffic Control Signs.

All fixed location signs and applicable traffic control devices must be installed or in place prior to the start of work or mobilization of equipment within the traveled way.

Non-applicable signing will be covered or removed during periods of in-activity. Improper covering will result in Liquidated Damages being assessed in the amount of \$400 per calendar day. All costs to do this work will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

The Contractor will be required to utilize block outs during the PCC paving in order to maintain access to intersecting side streets, businesses, and residences. The Contractor may pave through some of these locations by getting written permission from the adjacent owner of the access. The Contractor must provide a copy of the written agreement to the Engineer prior to closing off an access

OVERWIDTH RESTRICTION SIGNING

The Contractor will furnish and install the overwidth restriction signs as shown in these plans. Prior to installing the signs, the Contractor will mark the sign locations and review them with the Engineer. Overwidth restriction signs will be installed on fixed location, ground mounted, breakaway supports. It will be the responsibility of the Contractor to maintain and reinstall these signs during the project as required by the construction progress. Upon completion of the project, the Contractor will remove the overwidth restriction signs.

All costs for furnishing the signs, posts, and mounting hardware, and for installing, maintaining, covering, and removing the overwidth restriction signs will be incidental to the contract unit price per square foot for “Detour and Restriction Signing”.

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 or as directed by the Engineer. 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.

INCIDENTS

An incident is an emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic such as a crash, hazardous materials spill, or other event.

The Contractor will set up a meeting prior to start of work to plan and coordinate responses to an incident. The Contractor will invite the Department of Transportation, the South Dakota Highway Patrol, the Tripp County Sheriff and local emergency response entities to the meeting.

The Contractor will assist to maintain traffic as required by these plan notes and as agreed to at that meeting.

Emergency vehicle access through the project will be considered and discussed at the meeting.

The Contractor may be required to modify messages on portable changeable message signs or relocate portable changeable message signs, and to provide flaggers to direct or detour traffic on short notice. As such, the Contractor is directed to have a person on the project knowledgeable as to how to access into the changeable message sign’s hardware/software to change these messages on short notice. The Contractor should be prepared to relocate advance warning signs if determined to be necessary for a major traffic incident lasting more than two hours. Fixed location ground mounted signs may be covered and additional portable signs provided.

No additional payment will be made for the modification of portable changeable message sign messages or the relocation of portable changeable message signs. Cost for the relocation of an advance warning sign due to an incident will be 50% of the designated sign rate. Flaggers will be paid for at the contract unit price per hour for “Flagging”.

PRESS RELEASE ANNOUNCEMENTS

The Contractor will prepare a press release to be released 5 days prior to any phase change or any other major change that affects traffic flow. The Contractor will be responsible to keep law enforcement, emergency services, and the traveling public notified of changes in project access. The Contractor will provide the Engineer with pertinent information 7 days prior to any phase change or any other major change that affects traffic flow.

FLAGGING

Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

Additional flagger warning signs and flagger hours have been included in the Estimate of Quantities for use on intersecting roads. These flaggers will be used as directed by the Engineer and will be used primarily during daytime hours.

It is required that the flaggers and equipment operators be able to communicate with one another. If an emergency vehicle needs to pass through the project, the Contractor will be required to expedite traffic movement. All costs associated with this will be incidental to the contract unit price per hour for “Flagging”.

PROJECT SWEEPING

The driving lanes on the project will be swept as directed by the Engineer. Sweeping of the driving lanes will be paid per hour for “Sweeper”. In curb and gutter section, a pickup broom will be used to remove the debris from the road. Sweeping the curb and gutter areas will be paid by the hour for “Truck with Operator, Street Sweeping”. All costs associated with these bid items will be incidental to the contract unit price per hour for “Sweeper” and “Truck with Operator, Street Sweeping”.

CLOSING OF PARKING LANE

The Contractor will close the parking lanes in both eastbound and westbound (approximately Sta 53+00 to 81+50) directions including the transitions areas until Phase 3 work is complete. The Contractor will place a total of seventeen(17) No Parking Signs along with Seventeen (17) Type 3 Double Sided Barricades to close off both parking lanes along with channelizing devices at 25 foot spacing. Signs will be paid at the contract unit price per square foot for Traffic Control Signs. The barricades will be paid for at the contract unit price per each for Type 3 Barricade. Channelizing devices will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

INTERSECTIONS

US 18 & South County Road Intersection

This intersection will utilize 2 LED blinker Stop Signs for traffic on US 18 and 2 36” Stop Signs on South County Road to control the movement of traffic from all four legs of the intersection. Once all work at the intersection is complete, the US18 stop signs will be removed and the intersection restored as detailed in the plans. LED signs will remain the property of the Contractor when work is complete.

LED STOP SIGNS

Sign design will be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) and the Standard Highway Signs and Markings (SHSM) book. The signs requested are:

36” STOP (R1-1) sign, Quantity: 2

Sheet aluminum will meet the requirements of ASTM B209 for alloy 5052-H38 or alloy 6061-T6. The aluminum will be properly degreased and etched or treated with a light, tight, amorphous conversion coating conforming to ASTM B921 or ASTM B449. Sheet aluminum thickness will be 0.100 inches.

Sign sheeting will be in conformance with the requirements of ASTM D4956 Type XI.

LED lights will be embedded along the border of the sign. The LEDs will have a maximum diameter of ¼”. The LEDs will be red if used with STOP or YIELD signs. The LED lights will be wired in a manner that all LEDs continue to flash in the event of failure of an individual LED. The LEDs must be visible for at least 1,000 feet during daylight conditions.

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LED STOP SIGNS (Continued)

LEDs will have dimming capabilities and automatically adjust flash brightness to varying light conditions. LEDs will be rated to operate at least 100,000 hours. Solar panels and batteries will be sized to allow continuous system operation. The system must operate for 12 days without sunlight. Batteries must be installed in a NEMA 3R cabinet with a Master Lock No. 2 Laminated Brass Padlock mounted on a pole underneath the solar panel.

The signs must be able to be mounted on 2.5-inch perforated square tube steel posts.

SHOULDER DROP OFF SIGNS

Shoulder Drop-Off signs and Channelizing Devices must be used when a shoulder drop-off equals or exceeds 3 inches in height. Shoulder Drop-Off signs must be installed at affected intersections throughout the shoulder drop-off areas. Channelizing Devices must be placed and maintained at 25' intervals along the affected area. All costs associated with furnishing, installing, maintaining and removing the Channelizing Devices will be incidental to the contract lump sum price for Traffic Control, Miscellaneous. Payment for Shoulder Drop-Off signs will be based on the contract unit price per square foot for Traffic Control Signs.

TRANSITIONS

Lane transitions must begin with a glue down candlestick with mounted Keep Right symbol sign. Centerline of the transition must be marked with a double yellow pavement marking. Paint will be permitted on existing surfacing that will be removed during construction. New surfacing must be marked using temporary raised pavement markers.

The maximum number of transitions to be paid is 4 pairs (8 total transitions).

TRAFFIC CONTROL BARRIERS

Traffic control barriers will be placed longitudinally to separate traffic from the work during phases 1, 2, 4 & 5. The estimate includes enough barriers to complete the entire length of phases 1 & 4 simultaneously then reset for phases 2 & 5 simultaneously.

All costs to furnish and install the traffic control barriers for phases 1 & 4 will be incidental to the contract unit price per foot for "Traffic Control Barrier".

All costs to reset the traffic control barriers for all other subsequent phases will be incidental to the contract unit price per foot for "Reset Traffic Control Barrier".

Traffic Control Barriers must be 24 inches wide, water-filled traffic rated barriers. Alternate barrier types must be approved by the Engineer. Concrete barriers will not be permitted on the project. All costs for filling, emptying, moving, resetting, and relocating traffic control barriers will be incidental to the unit price per foot for "Traffic Control Barriers".

TEMPORARY ASPHALT AND BASE COURSE

The following contract items will be used as payment for the temporary asphalt and base course required for transitions from the new pavement to the existing pavement to allow for continued traffic flow and access to driveways during and between phases as stated in the plans.

All costs to furnish, install and remove the temporary asphalt will be incidental to the contract unit price per ton for "Temporary Asphalt". Temporary asphalt will meet the requirements for Asphalt Concrete Composite.

All costs to furnish, install, remove & relocate the base course will be incidental to the contract unit price per ton for "Base course". The Base course will be used in multiple phases on the entire project and will need to be salvaged and used several times. The base course may be allowed for reuse as gravel cushion beneath the proposed pavements. Temporary Base Course used for transitions will meet all base course specifications and will be compacted to the satisfaction of the Engineer. Base Course and Temporary Asphalt quantities are included in Section F of these plans.

Table of Temporary Asphalt and Base Course

ITEM	LOCATION	MATERIAL PCN 03TK		MATERIAL PCN 04F9	
		BASE COURSE (Ton)	TEMPORARY ASPHALT (Ton)	BASE COURSE (Ton)	TEMPORARY ASPHALT (Ton)
Phase 1				126	136
Phase 2				126	136
Phase 3				126	136
Phase 4		126	136		
Phase 5		126	136		
Phase 6		126	136		
Business and Residence Access	Variable	58	63		
Intersecting Streets	Variable	411	442		
Temporary Cross Walks	Variable	46	50		
TOTALS		893	963	378	408

Temporary cross walks – Locations will depend on the Contractor's sequence of operations and direction of the Engineer. Estimated 10 tons for each cross walk
Gravel Material – Reclaimed from previous phase may be used.
Business Access – Estimated 21 tons for each access 24' wide.
Intersecting Streets – Estimated 34 tons each at 40' wide.

TEMPORARY PAVEMENT MARKING

Temporary paint will not be permitted on new pavement.

On the existing pavement sections that will carry two-way traffic and will be later removed during construction, the Contractor will apply yellow paint for the double yellow line in the tangent sections. No paint will be allowed in the transitions on new PCC pavement sections or outside the project limits, as approved by the Engineer. Payment will be paid at the unit bid price for Temporary Pavement Marking per foot.

Approximately 11,410 feet of yellow and 11,410 feet of white temporary pavement marking paint will be required for centerline and edgeline for Phases 1 & 4. See the Table of Temporary Pavement Markings & Raised Pavement Markers for information.

Approximately 1,872 feet of white 4" Temporary Marking Tape, Type I will be needed for 26 stop bars (1,872 feet of 4 inch tape of 24" stop bar reduced to 4" equivalent) on the project.

The Contractor will be paid only once for tape placement. The Contractor is responsible for maintaining and cleaning the tape throughout the duration of the project and for removing all temporary pavement marking tape when it is no longer required. See the Table of Temporary Pavement Markings & Raised Pavement Markers for information.

SURFACE PREPARATION FOR TEMPORARY RAISED PAVEMENT MARKERS

New pavement surfacing will be cleaned and sufficiently prepared for optimum adhesion of Temporary Raised Pavement Markers. All costs to prepare the roadway surface will be incidental to the contract unit price per foot for "Temporary Raised Pavement Markers".

TEMPORARY RAISED PAVEMENT MARKERS

Temporary Raised Pavement Markers will be used on the two-way traffic mainline centerline, two-way mainline closure tapers, and detours. Raised pavement markers will not be used for the white temporary edge line in the two-way traffic section. Temporary raised pavement markers will be used on all new permanent surfacing sections of roadway and on existing surfacing, unless noted or as directed by the Engineer.

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.

Approximately 12,420 feet of yellow and 1,690 feet of white temporary raised pavement markers will be required. See the Table of Temporary Pavement Markings & Raised Pavement Markers for information.

Payment will be provided for Raised Pavement Markers used for the temporary pavement marking lines on centerline. Cost for furnishing, installing, maintaining (including cleaning and replacing, if necessary), removing markers and bituminous adhesive must be included in the contract unit price per foot for Temporary Raised Pavement Markers.

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Table of Temporary Pavement Markings & Raised Pavement Markers

PCN	LOCATION	LENGTH (4" equivalent where applicable")	ITEM	Pavement Marking Type		
				TEMPORARY RAISED PAVEMENT MARKERS	4" TEMPORARY PAVEMENT MARKING TAPE, TYPE 1	TEMPORARY PAVEMENT MARKING
04F9	Phase 1	4850	Yellow	100		4750
		5530	White	780		4750
04F9	Phase 2	4850	Yellow	4850		
		100	White	100		
04F9	Phase 3	0	Yellow			
		0	White			
03TK	Phase 4	7380	Yellow	7380		
		540	White	540		
03TK	Phase 5	6750	Yellow	90		6660
		6930	White	270		6660
03TK	Phase 6	0	Yellow			
		0	White			
03TK	Stop Bars	1080	Side Streets-15		1080	
03TK	Stop Bars	432	South County Rd - 6		432	
04F9	Stop Bars	360	Side Streets-5		360	
03TK TOTAL:				8280	1512	13320
04F9 TOTAL:				5830	360	9500

FIXED LOCATION SIGNING

The Contractor will install fixed location signing for the project prior to starting work as detailed in the fixed location tables below This will include removal of all sign bases and stubs. All costs for the installation, maintenance, removal and resetting of fixed location signing will be incidental to the contract unit price per square foot for Traffic Control Signs.

Fixed location signing that is to be installed on side streets will be located at the junction of the nearest open cross street or 300 feet from the state highway, whichever is closer. The Engineer may change locations as to best fit the field conditions.

Table of Project Limits Fixed Location Signing

SIGN; PCN 03TK	ROUTE	DIRECTION OF TRAVEL	LOCATION
Road Work Next 2 Miles	US 18	Eastbound	STA. 5+50
End Road Work*	US 18	Westbound	STA. 4+50
Road Work Next 2 Miles	US 18	Westbound	STA. 119+00
End Road Work*	US 18	Eastbound	STA. 120+00
SIGN; PCN 04F9	ROUTE	DIRECTION OF TRAVEL	LOCATION
Road Work Next 2 Miles	SD 44	Eastbound	STA. 362+50
End Road Work*	SD 44	Westbound	STA. 363+50

* End Road Work signs must be offset an additional 100' from the Road Work Next Miles signs.

Table of Side Street Fixed Location Signing

INTERSECTING STREET; PCN 03TK	NUMBER OF SIGNS*	INTERSECTING STREET; PCN 04F9	NUMBER OF SIGNS*
Iowa Street	1	Cherry Street	1
South County Road	4**	Jackson Street	1
West Park Street	1	Leahy Street	1
Liberty Avenue	1	317th Avenue	2
East Park Street	2		
Taft Street	2		
Lamro Street	2		
Polk Street	2		
Van Buren Street	2		
TOTAL =	15 + 2**	TOTAL =	5

*For sign types refer to the sheet "Traffic Control - Typical Layout for Intersections and Business Entrances."

**2 LED Blinker Stop Signs at this location

PEDESTRIAN TRAFFIC CONTROL

The existing sidewalks cannot be closed without supplying an alternate route. When crosswalks, sidewalks or other pedestrian facilities are blocked, closed or relocated, temporary facilities must include accessibility features.

The Contractor must provide facilities to cross the roadway at intervals not to exceed 900 ft as approved by the Engineer.

The Contractor will 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.

The Contractor will be limited to working on one side of US18 at a time to allow for pedestrian traffic during construction to use the opposite sidewalk. The Contractor will accommodate pedestrians across or around any utility tie-ins. Westbound mainline paving and adjacent pedestrian facilities must be complete prior to beginning work on eastbound phases.

The Contractor will 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 will accommodate pedestrian traffic, including those with disabilities. Bicycle traffic will also be accommodated. The Contractor will 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 may be submitted at the Preconstruction Meeting.

The plan must 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.

Unless otherwise stated in the plans, the cost for all other pedestrian traffic control will be incidental to the contract lump sum price for Traffic Control, Miscellaneous

TEMPORARY PEDESTRIAN ACCESS ROUTE

A Temporary Pedestrian Access Route (TPAR) will 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 will be kept free of any obstructions and hazards, such as holes, debris, mud, snow, construction equipment, traffic control signing, stored materials, etc.

The Contractor will notify the Engineer at least 72 hours prior to start of any construction operation that will necessitate a change in pedestrian access.

TEMPORARY PEDESTRIAN SIDEWALK

Temporary pedestrian sidewalk will be required on the north side of US 18 from STA. 15+59 to 52+00 and SD 44 from STA. 304+60 to 309+00. Temporary curb ramps to access the temporary pedestrian sidewalk will be incidental to the contract unit price per each for "temporary Curb Ramp. The Contractor may submit to the Department, at least two weeks before construction, an alternative proposal to create the temporary pedestrian access route. Any alternative proposal must be agreed upon, in writing, with the property owner and said agreement provided to the Department.

Temporary pedestrian sidewalk will be a smooth, continuous, non-slip, hard surface. There should be no curbs or abrupt changes in grade or terrain that could cause tripping or be a barrier to wheelchair use.

Temporary pedestrian sidewalk will have a minimum width of 48 inches, with 60 inches recommended. The Contractor will try to provide boulevard sidewalk, whenever possible, for temporary pedestrian sidewalk that is 48 inches wide. Temporary pedestrian sidewalk less than 60 inches wide will provide for a 60-inch x 60-inch passing space at intervals not to exceed 200 feet. Temporary pedestrian sidewalk will have a maximum cross slope of 2%. The maximum grade will be 5% where the temporary pedestrian sidewalk does not follow the grade of the road.

All costs associated with installing and maintaining a temporary pedestrian access route, including temporary pedestrian sidewalk, will be incidental to the contract lump sum price for "Temporary Pedestrian Access Route".

TEMPORARY CURB RAMP

Temporary curb ramps should be firm, stable, and have a non-slip surface. They will not warp or buckle, and should be made of materials strong enough to support a weight of 800 pounds. Temporary curb ramps will be yellow or color contrasting and contain marked edges, so they are noticeable by pedestrians who have visual impairments. Lateral joints or gaps between surfaces will be a maximum of 0.5 inches in width. Temporary curb ramps will include detectable warning panels.

Temporary curb ramps will be the same width as the pedestrian access route, with a recommended width of 60 inches and a minimum width of 48 inches. Temporary curb ramps will have a maximum slope of 8.3% and have free draining surfaces with a maximum cross slope of 2%. Handrails on temporary curb ramps are not required unless the curb ramp has a rise exceeding 6 inches and a length exceeding 72 inches.

The maximum number of temporary curb ramps required at one time is estimated to be 6. Contractor plans requiring more than 4 temporary curb ramps will require approval by the Owner. All costs for moving the temporary curb ramps will be incidental to the contract lump sum price for "Temporary Pedestrian Access Route".

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LONGITUDINAL PEDESTRIAN BARRICADE

Longitudinal pedestrian barricades should not be used to provide positive protection for pedestrians.

To prevent any tripping hazard to pedestrians, ballast will be located behind or internal to the device.

When longitudinal pedestrian barricades are combined in a series, the maximum gap between devices that do not interlock will be one inch. Joints between devices that do interlock will be closed and flush to prevent canes or small wheels from being trapped and to facilitate safe hand trailing. When used as a sidewalk closure mechanism, longitudinal pedestrian barricade must run the entire width of the sidewalk. Longitudinal pedestrian barricade should provide a color contrasting pattern. Black should not be used to color any base on a device. The devices should comply with the general color and stripe pattern requirements of Section 6F.68 of the MUTCD.

Longitudinal pedestrian barricade will have continuous bottom and top surfaces. The top surface will be smooth to allow safe hand trailing. Both upper and lower surfaces will share a common vertical plane.

All costs will be incidental to the contract unit price per foot for "Longitudinal Pedestrian Barricade". Payment will be for the maximum amount installed at one time.

LONGITUDINAL PEDESTRIAN BARRIER

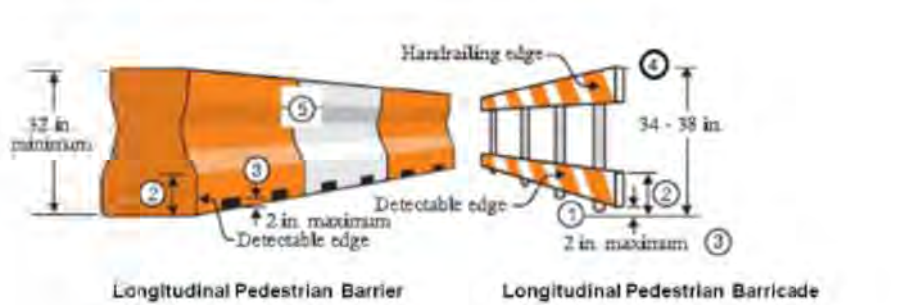
When exposed to vehicular traffic, longitudinal pedestrian barrier will be crashworthy, and the bottom and top surfaces of the traffic side of devices will have retroreflective sheeting or delineation for improved nighttime visibility.

When longitudinal pedestrian barriers are combined in a series, the maximum gap between devices that do not interlock will be one inch. Joints between devices that do interlock should be closed and flush to prevent canes or small wheels from being trapped and to facilitate safe hand trailing. Channelizing devices should provide a color contrasting pattern. Black should not be used to color any base on a device. The devices should comply with the general color and stripe pattern requirements of Chapter 6F of the MUTCD.

Longitudinal pedestrian barriers will have continuous bottom and top surfaces. The top surface will be smooth to allow safe hand trailing.

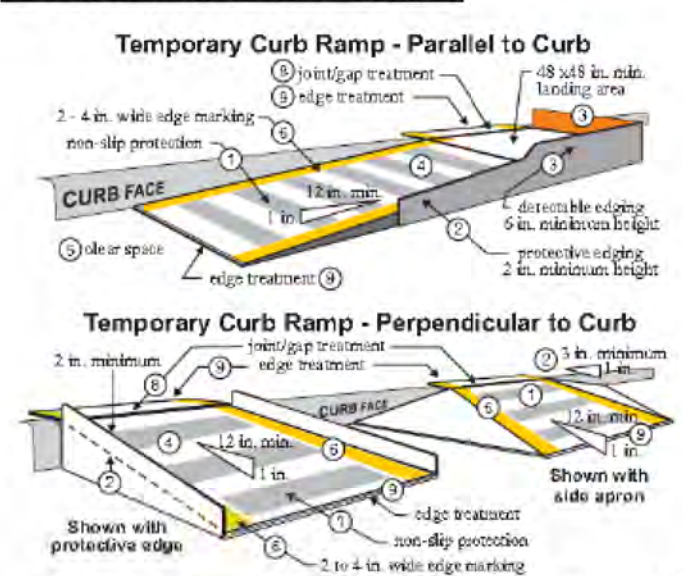
All costs will be incidental to the contract unit price per foot for "Longitudinal Pedestrian Barrier". Payment will be for the maximum amount installed at one time.

PEDESTRIAN CHANNELIZING DEVICE DETAILS



1. Barricade rail supports may not extend into the pedestrian walkway more than 4 inches from the face of the barricade.
2. The top edge of the bottom portion will be a minimum of 8 inches above the walkway.
3. Devices will not block water drainage from the walkway. A gap height or opening from the walkway surface up to a maximum of 2 inches in height is allowed for drainage purposes.
4. The top edge of the longitudinal pedestrian barricade is to be used as a guiderail to provide visual and tactile guidance to pedestrians along a designated route. The top surface should have a minimum width of 0.5 inches to allow the hand to feel the surface. The surface should be smooth and free of any sharp or abrasive elements to allow safe hand trailing.
5. Longitudinal pedestrian barrier used to provide positive protection from traffic to pedestrians should be crashworthy.
6. Pedestrian channelizing devices will be in good working order.
7. Barriers will be in a condition such that when filled with water perform as intended by design. Leaking barriers will be replaced immediately at no additional cost to the State.

TEMPORARY CURB RAMP DETAILS



1. Curb ramps will be 48-inch minimum width with a firm, stable, and non-slip surface.
2. Protective edging with a 2-inch minimum height will be installed when the curb ramp or landing platform has a vertical drop of 6 inches or greater or has a side apron slope steeper than 33:1 (33%). Protective edging should be considered when curb ramps or landing platforms have a vertical drop of 3 inches or more.
3. Detectable edging with 6 inches minimum height and contrasting color will be installed on all curb ramp landings where the walkway changes direction (turns).
4. Curb ramps and landings should have a 50:1 (2%) maximum cross slope.
5. A minimum clear space of 48 inch x 48 inch minimum will be provided above and below the curb ramp, with a 60 inch x 60 inch clear space preferred.
6. The curb ramp walkway edge will be marked with a contrasting color 2 to 4 inch wide marking. The marking is optional where color contrasting edging is used.
7. Water flow in the gutter system will have minimal restriction.
8. Lateral joints or gaps between surfaces will be less than 0.5 inches in width.
9. Changes between surface heights should not exceed 0.5 inches. Lateral edges between 0.25 inches and 0.5 inches in height, should be vertical up to 0.25 inches in height and beveled at 2:1 between 0.25 inches and 0.5 inches in height.

Plot Scale - 1:200

Plotted From - TRW11NT26

ORANGE SAFETY FENCE

The Contractor must have at their disposal 10,200 feet of Orange Safety Fence to use to protect working areas. It is estimated that up to 9,700 feet may be used to separate pedestrian facilities from the work, and 500 feet has been added for various other uses. The safety fence must be new. Safety fence will be paid for at the contract unit price per foot for “Orange Plastic Safety Fence.” The price per foot will include all costs for materials, labor, and equipment required to properly install, remove, and reinstall the fence as needed or as directed by the Engineer. Total payment for this item will not exceed the plans listed quantity.

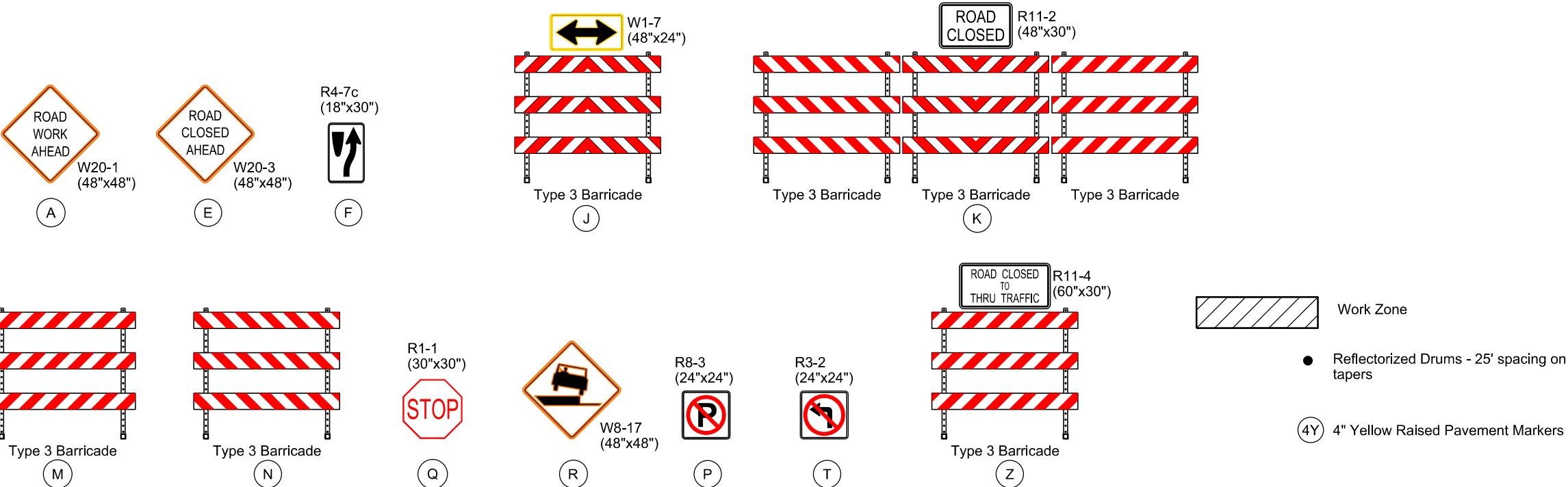
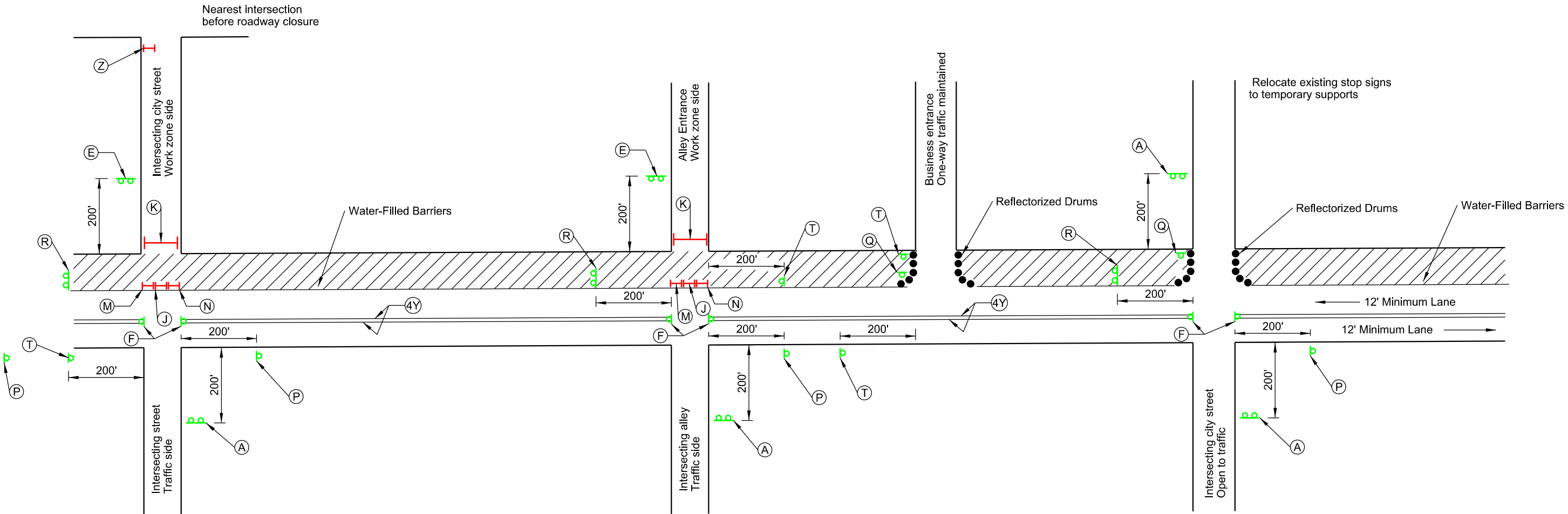
The safety fence may require portable supports in those areas where standard fence posts cannot be installed.

Safety fence will be placed not less than 2 feet from the traveled way of all current pedestrian shared use paths and sidewalks in the undisturbed boulevard or as directed by the Engineer. The safety fence is to provide a barrier to the public from entering sections of the work zone. The safety fence is not to be used as a pedestrian channeling device adjacent to current or temporary walk paths. Longitudinal Pedestrian Barriers will be utilized in those areas where pedestrian channelizing and walk path demarcation is required

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TRAFFIC CONTROL TYPICAL LAYOUT FOR INTERSECTIONS AND BUSINESS ENTRANCES



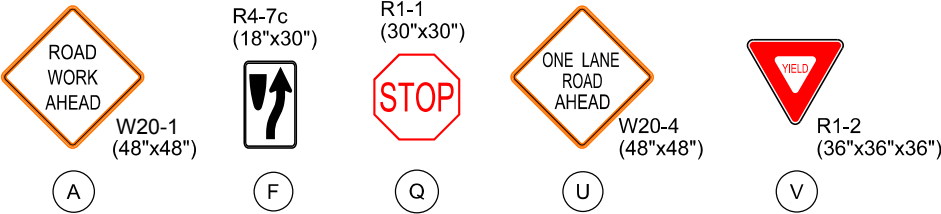
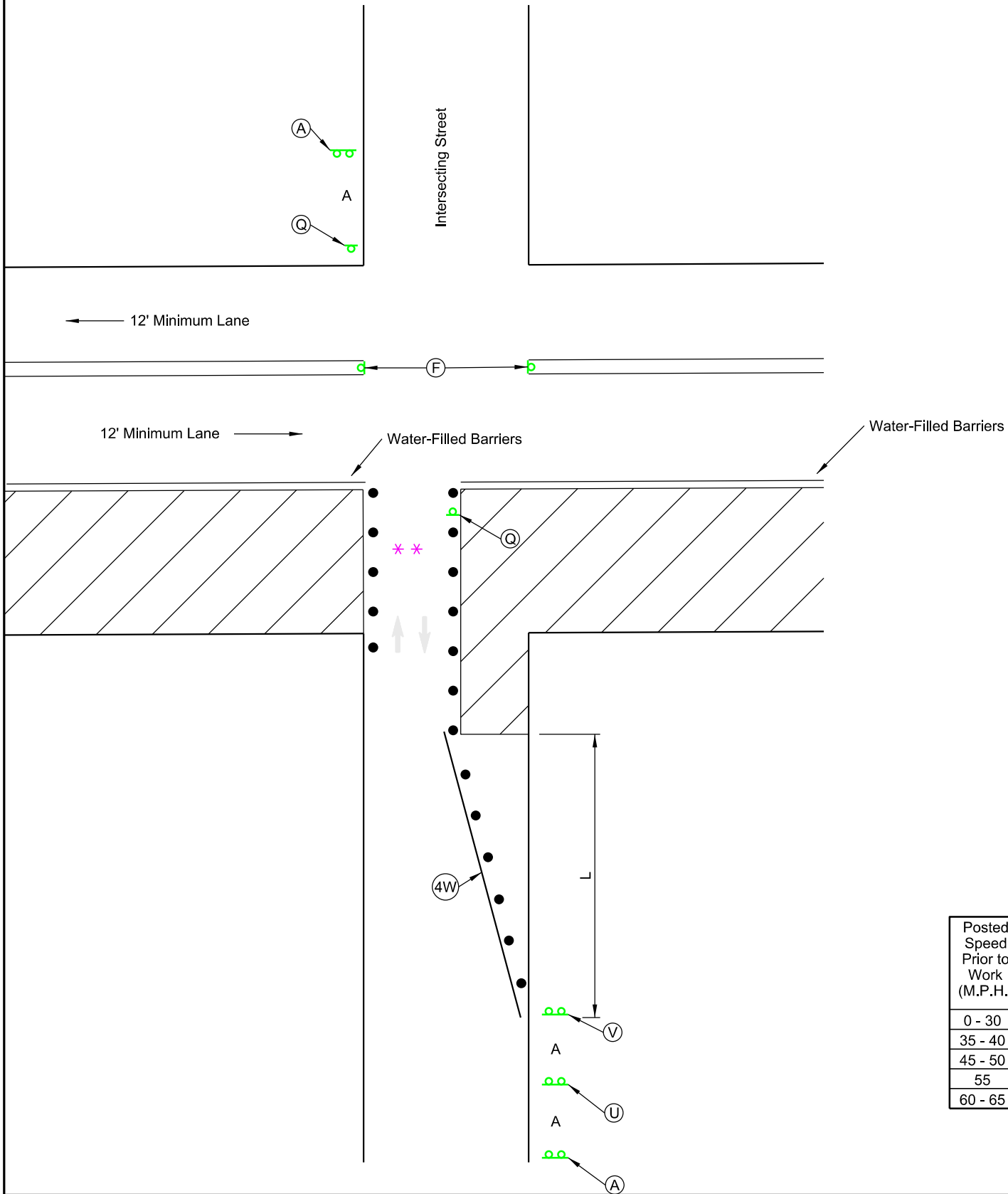
NOTES:

Unless otherwise specified, signs are to be placed 50'-100' from intersections or other signs.

Use W8-17 Shoulder Drop-Off Symbol adjacent to full depth concrete pavement removal areas. Install signs at 300'-400' spacing throughout the project when applicable.

Install R8-3 No Parking Symbol and R3-2 No Left Turn Signs at 300'-400' spacing throughout the project as Directed by the Engineer.

TRAFFIC CONTROL
INTERSECTION CONSTRUCTION
(TYPICAL)



- * * 12' Minimum Lane Width
- Work Zone
- Reflectorized Drums - 25' spacing on tapers
- (4Y) 4" Yellow Raised Pavement Markers
- (4W) 4" White Temporary Pavement Marking

NOTES:

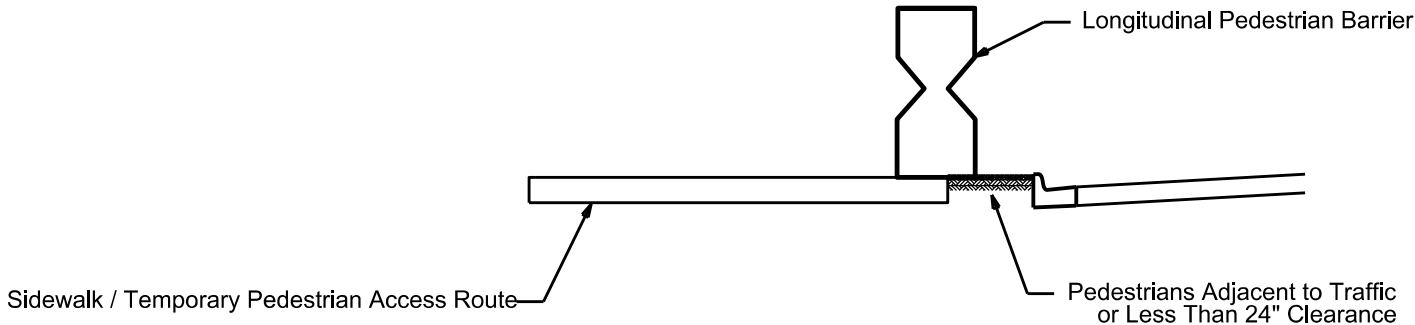
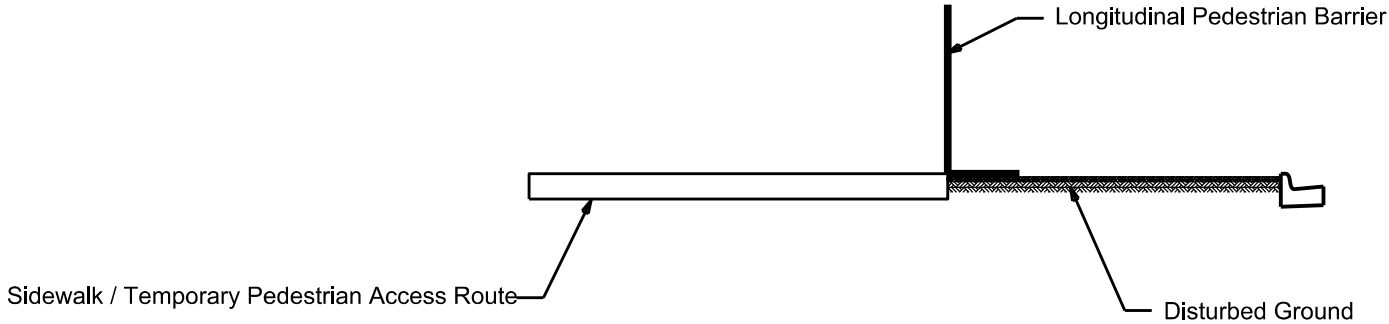
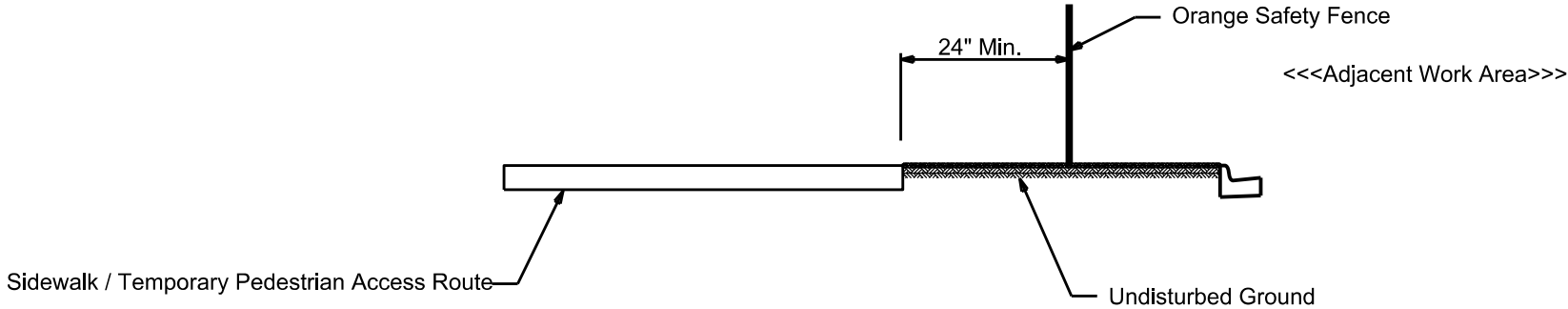
Remove existing pavement markings in all tapers and in other areas designated by the Engineer where they conflict with temporary traffic control plan. Payment for the removal of pavement marking will be paid at the contract unit price per foot for Remove Pavement Marking, 4" or Equivalent.

The Contractor will be required to maintain two way traffic at all times with a minimum of 12 ft. lanes.

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PEDESTRIAN SAFETY TYPICAL SECTIONS



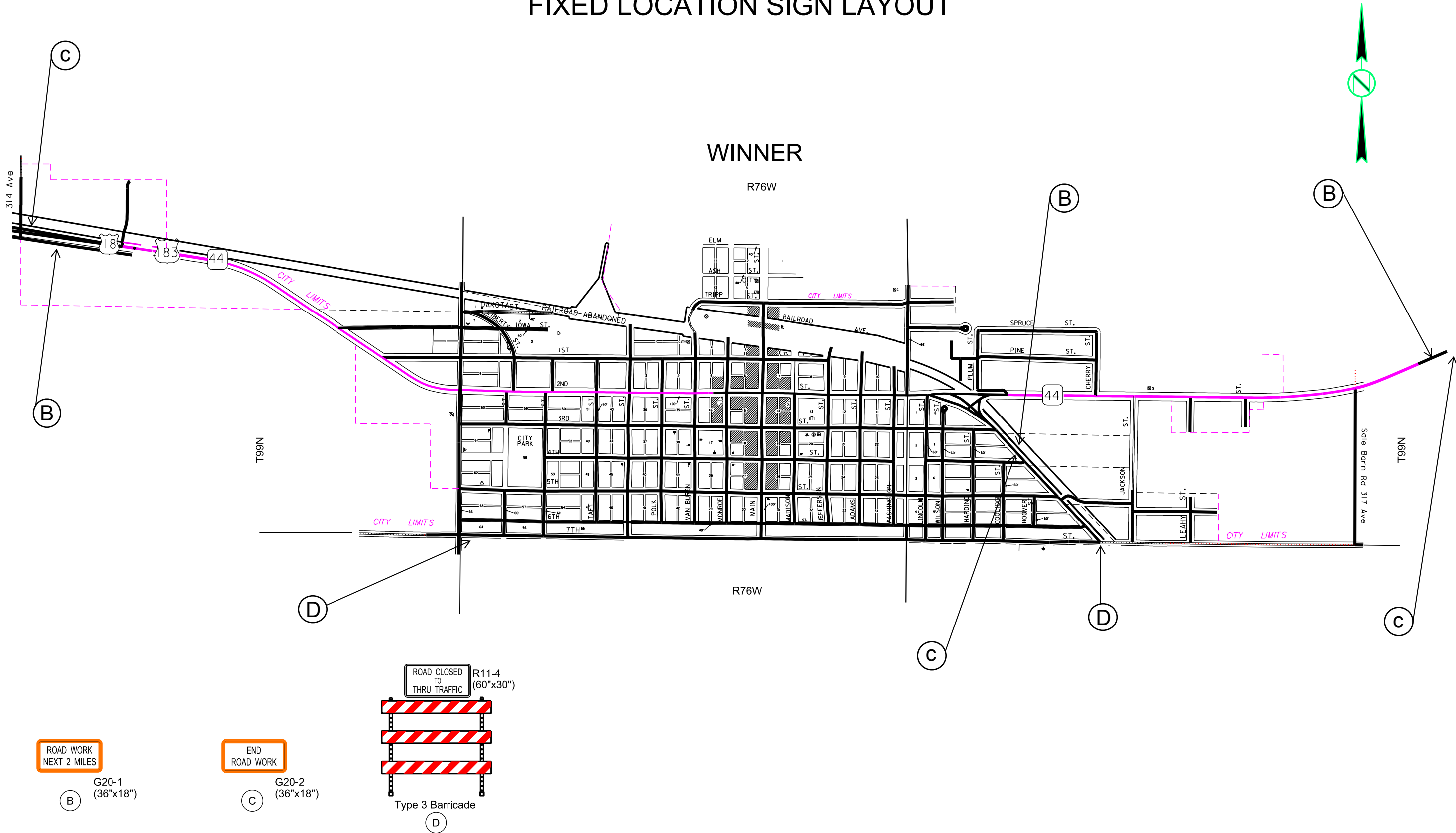
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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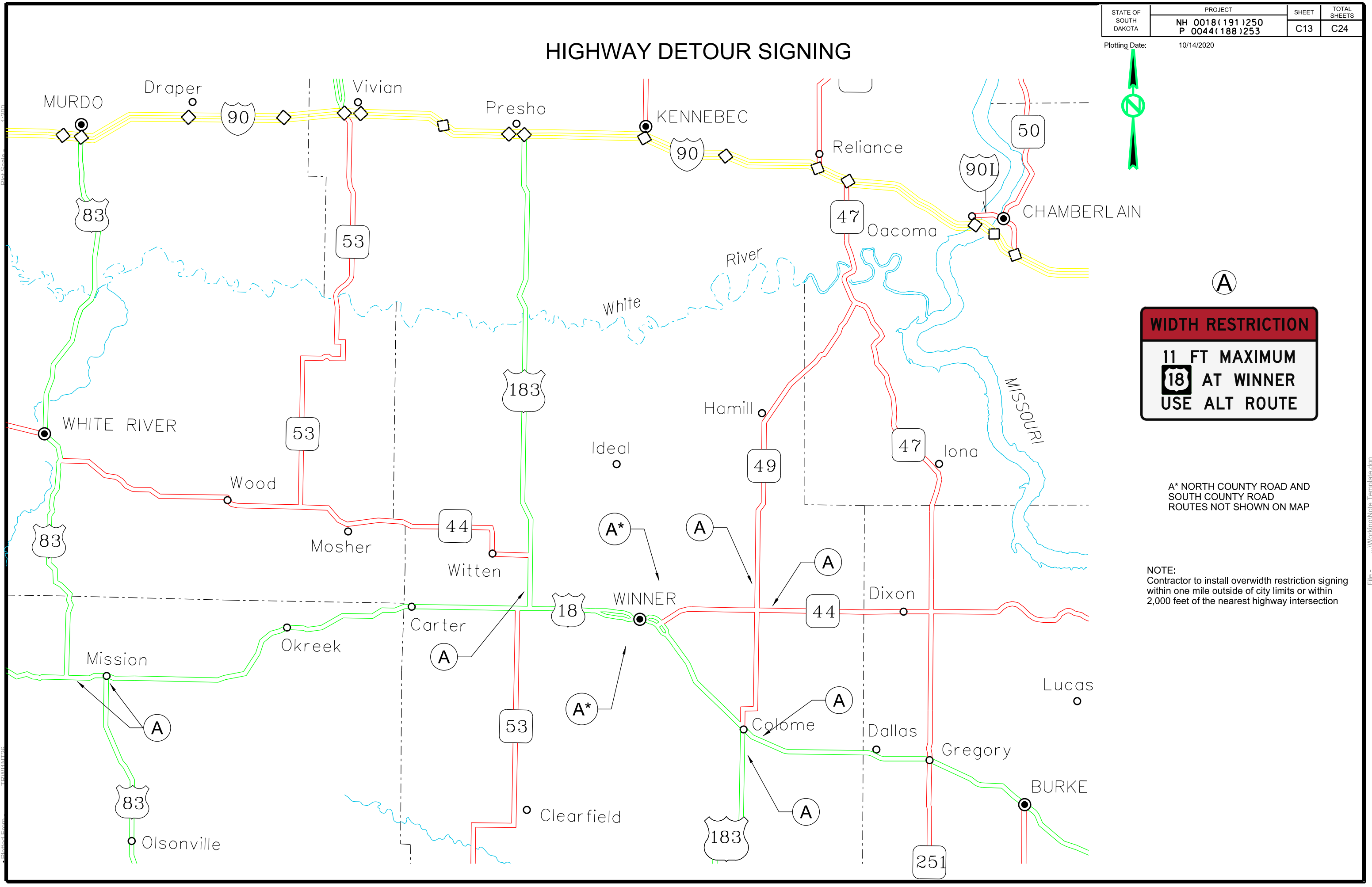
Plotting Date: 05/11/2021

FIXED LOCATION SIGN LAYOUT

Plot Scale - 1:200

Plotted From - TRW11NT26





Plot Scale - 1:200
Plotted From - TRW11NT26
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P 0044(188)253; PCN 04F9

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ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	20	30"	5.2	104.0
R1-2	YIELD	5	36"	3.9	19.5
R2-1	SPEED LIMIT 20	4	24" x 30"	5.0	20.0
R2-1	SPEED LIMIT 30	4	30" x 36"	7.5	30.0
R3-2	LEFT TURN PROHIBITION (symbol)	20	24" x 24"	4.0	80.0
R3-7L	LEFT LANE MUST TURN LEFT	2	30" x 30"	6.3	12.6
R4-7c	(Narrow) KEEP RIGHT (symbol)	54	18" x 30"	3.8	205.2
R8-3	NO PARKING (symbol)	17	24" x 24"	4.0	68.0
R9-8	PEDESTRIAN CROSSWALK	12	36" x 18"	4.5	54.0
R9-9	SIDEWALK CLOSED	12	24" x 12"	2.0	24.0
R9-10	SIDEWALK CLOSED (ARROW L or R) USE OTHER SIDE	4	24" x 12"	2.0	8.0
R9-11	SIDEWALK CLOSED AHEAD (ARROW L or R) CROSS HERE	6	24" x 18"	3.0	18.0
R9-11a	SIDEWALK CLOSED (ARROW L or R) CROSS HERE	6	24" x 12"	2.0	12.0
R11-2	ROAD CLOSED	10	48" x 30"	10.0	100.0
R11-4	ROAD CLOSED TO THRU TRAFFIC	5	60" x 30"	12.5	62.5
W1-4	REVERSE CURVE (L or R)	4	48" x 48"	16.0	64.0
W1-7	LARGE ARROW (two directions)	6	48" x 24"	8.0	48.0
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W8-17	SHOULDER DROP-OFF (symbol)	20	48" x 48"	16.0	320.0
W9-3	CENTER LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W11-2	PEDESTRIAN (symbol)	10	36" x 36"	9.0	90.0
W12-1	DOUBLE ARROW	2	30" x 30"	6.3	12.6
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W16-7P	DOWNWARD DIAGONAL ARROW (plaque)	2	24" x 12"	2.0	4.0
W16-9P	AHEAD (plaque)	2	30" x 18"	3.8	7.6
W20-1	ROAD WORK AHEAD	18	48" x 48"	16.0	288.0
W20-3	ROAD CLOSED AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	4	48" x 48"	16.0	64.0
G20-1	ROAD WORK NEXT _2_ MILES	3	36" x 18"	4.5	13.5
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT 2039.1			

ITEMIZED LIST FOR DETOUR AND RESTRICTION SIGNING

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
SPECIAL	OVERWIDTH VEHICLES	9	114" x 72"	57.0	513.0
		CONVENTIONAL ROAD DETOUR AND RESTRICTION SIGNING SQFT 513.0			

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	10	30"	5.2	52.0
R1-2	YIELD	2	36"	3.9	7.8
R2-1	SPEED LIMIT 20	4	24" x 30"	5.0	20.0
R2-1	SPEED LIMIT 30	4	30" x 36"	7.5	30.0
R4-7c	(Narrow) KEEP RIGHT (symbol)	6	18" x 30"	3.8	22.8
R9-9	SIDEWALK CLOSED	2	24" x 12"	2.0	4.0
R11-2	ROAD CLOSED	2	48" x 30"	10.0	20.0
R11-4	ROAD CLOSED TO THRU TRAFFIC	2	60" x 30"	12.5	25.0
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16.0	32.0
W1-7	LARGE ARROW (two directions)	1	48" x 24"	8.0	8.0
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W8-17	SHOULDER DROP-OFF (symbol)	6	48" x 48"	16.0	96.0
W9-3	CENTER LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W12-1	DOUBLE ARROW	2	30" x 30"	6.3	12.6
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W20-1	ROAD WORK AHEAD	6	48" x 48"	16.0	96.0
W20-3	ROAD CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD 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)	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	4	48" x 48"	16.0	64.0
G20-1	ROAD WORK NEXT _2_ MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT 712.8			

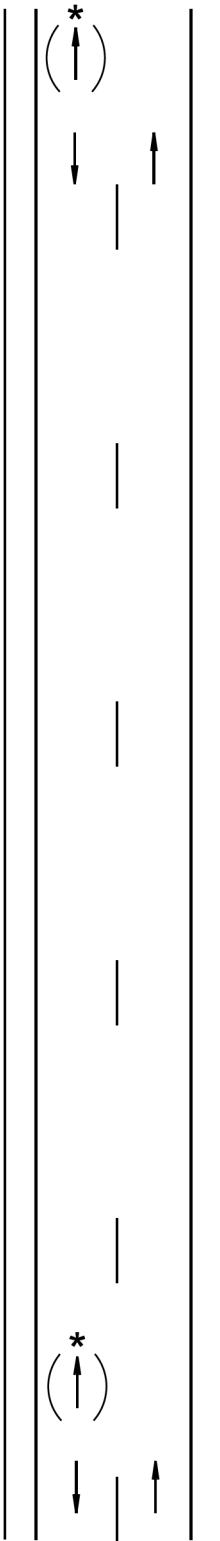
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated will 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.

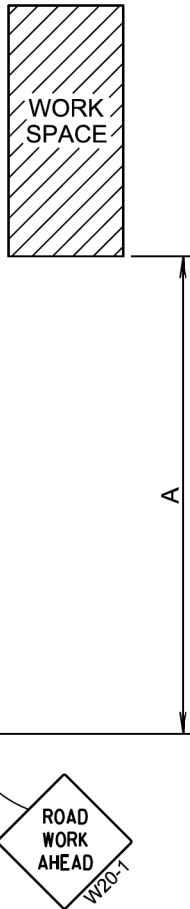
The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* 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.

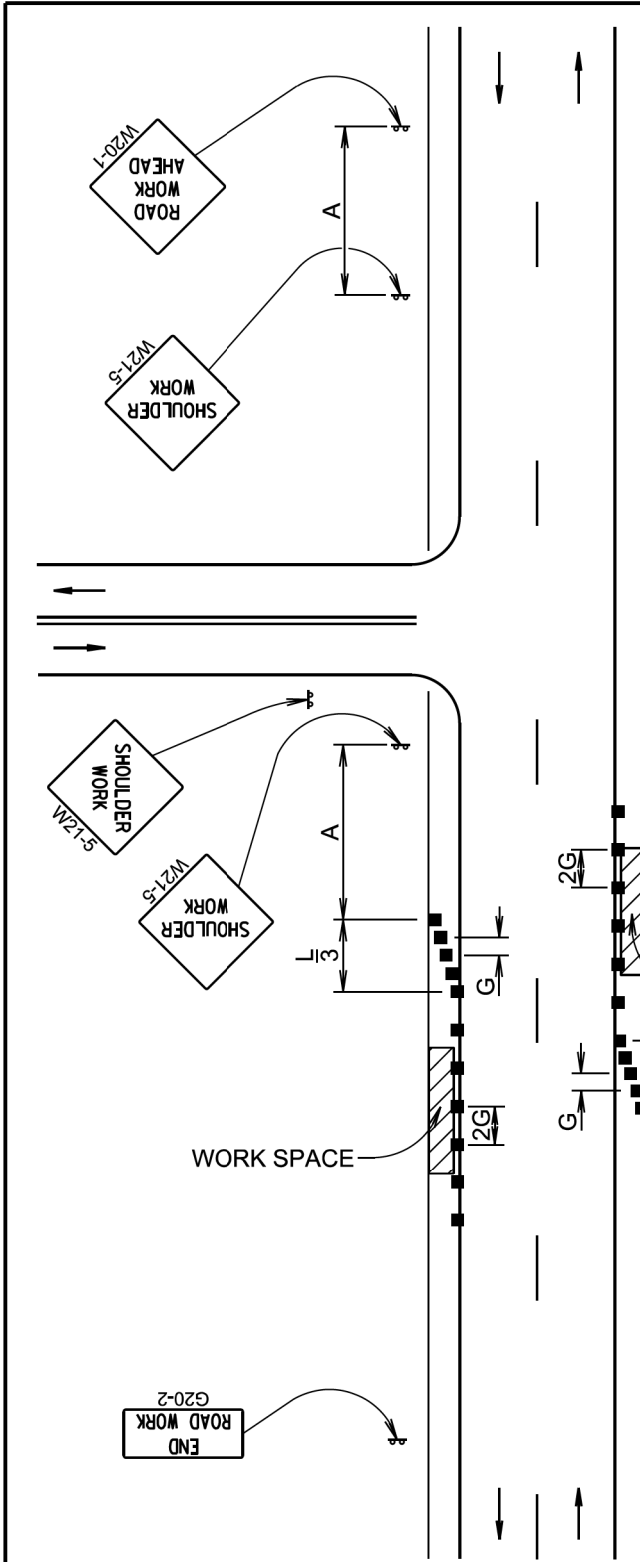


Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 80	1000



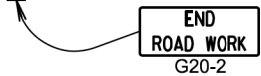
January 22, 2021

Published Date: 2nd Qtr. 2021	S D D O T	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	500	600	25
50	500	600	50
55	750	660	50
60 - 65	1000	780	50

Channelizing Device



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

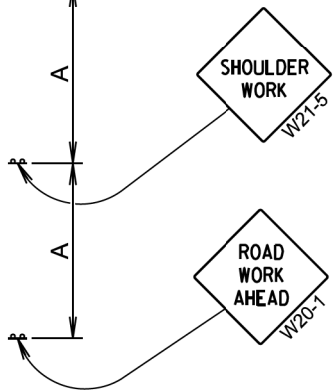
For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

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.

WORK SPACE



January 22, 2021

Published Date: 2nd Qtr. 2021	S D D O T	WORK ON SHOULDERS	PLATE NUMBER 634.03
			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	500	25
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.

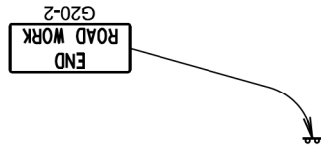
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) will 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 will 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.

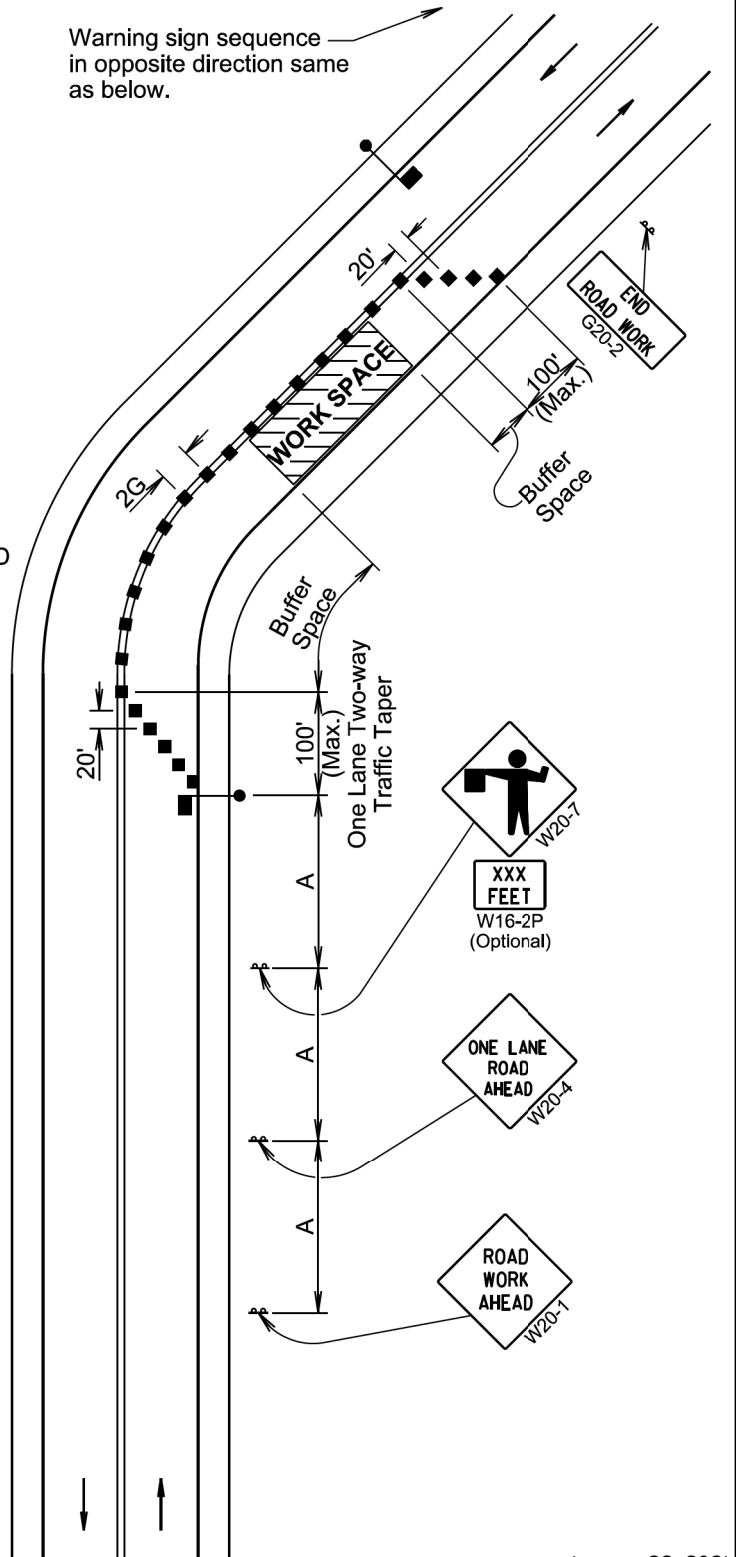


Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.

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.

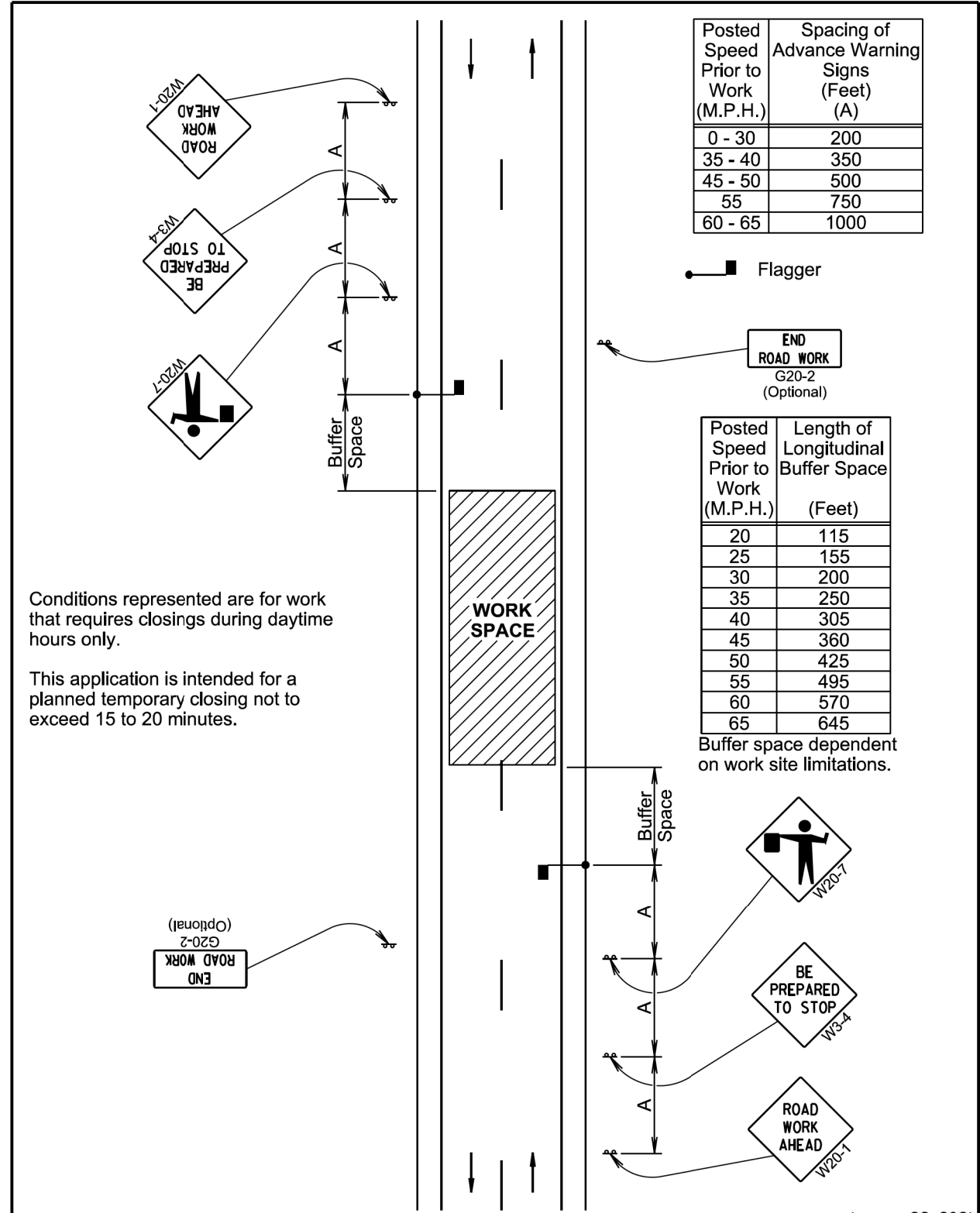
The length of A may be adjusted to fit field conditions.

Warning sign sequence in opposite direction same as below.



January 22, 2021

Published Date: 2nd Qtr. 2021	S D D O T	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER
			634.23
			Sheet 1 of 1



Conditions represented are for work that requires closings during daytime hours only.

This application is intended for a planned temporary closing not to exceed 15 to 20 minutes.

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 - 65	1000

- Flagger

END ROAD WORK G20-2 (Optional)

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

Buffer space dependent on work site limitations.

January 22, 2021

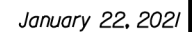
Published Date: 2nd Qtr. 2021	S D D O T	TEMPORARY ROAD WORK	PLATE NUMBER
			634.30
			Sheet 1 of 1



SDOT

PLATE NUMBER
634.33

Sheet 1 of 1



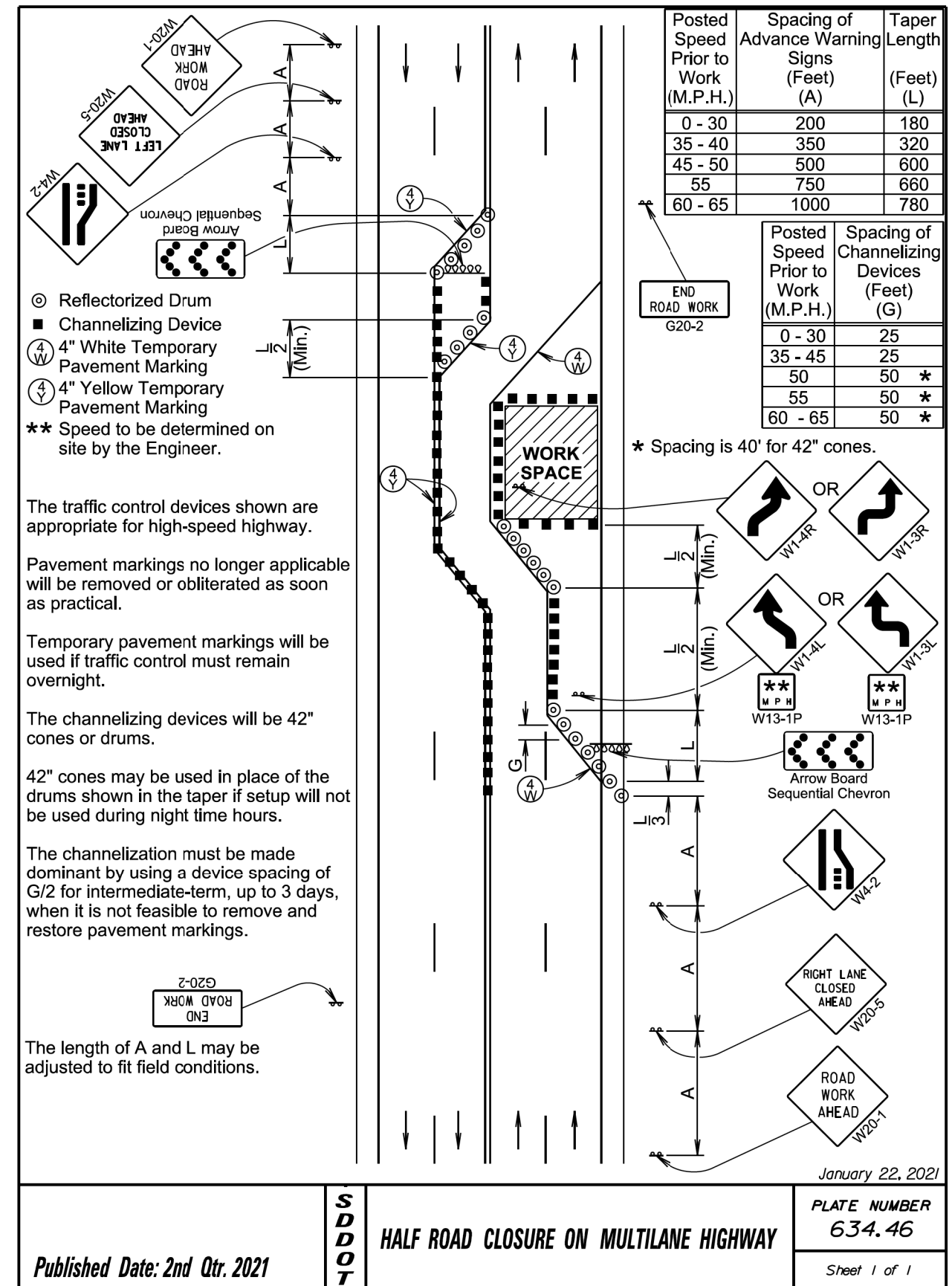
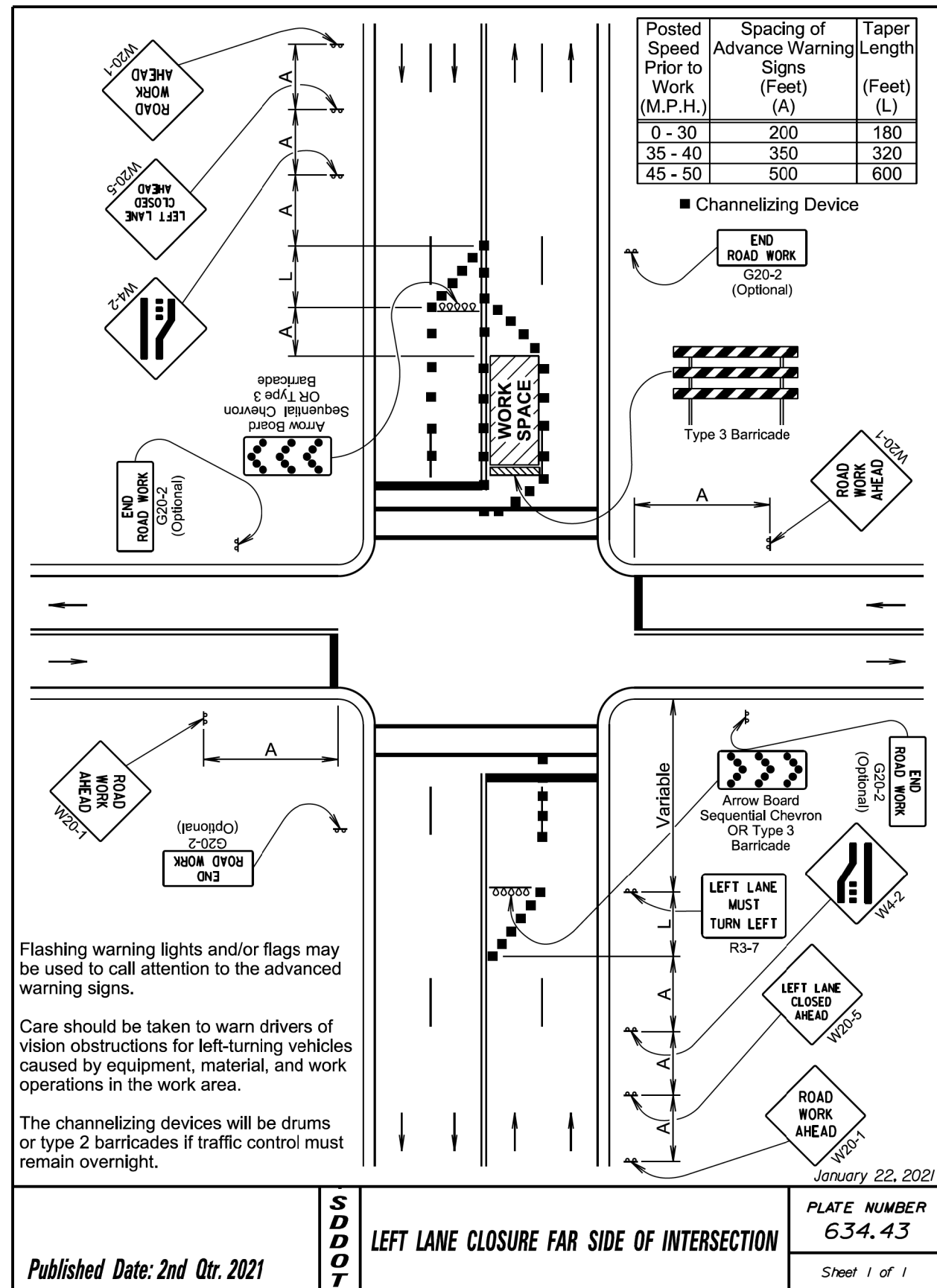
SDOT

PLATE NUMBER
634.41

Sheet 1 of 1

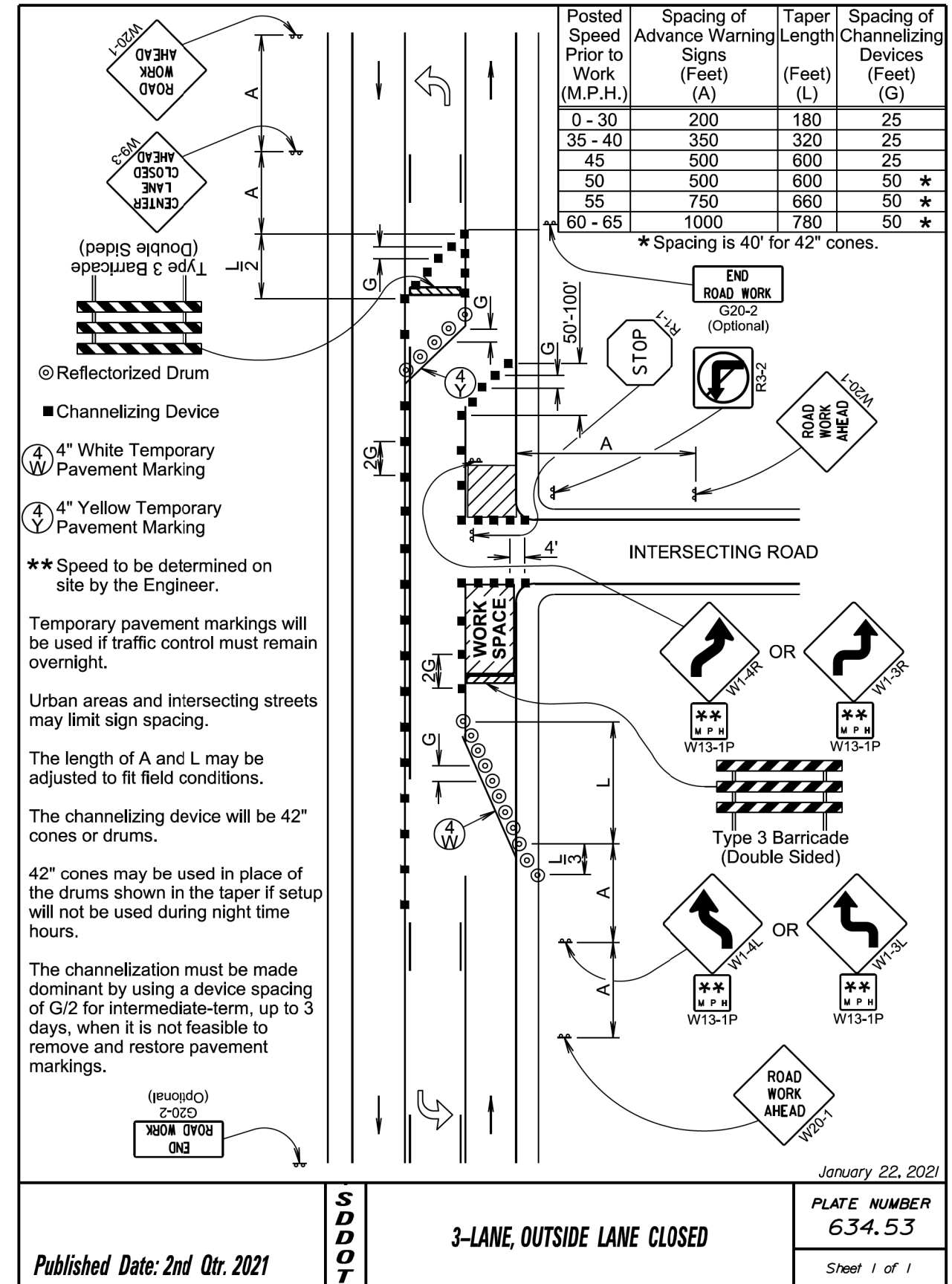
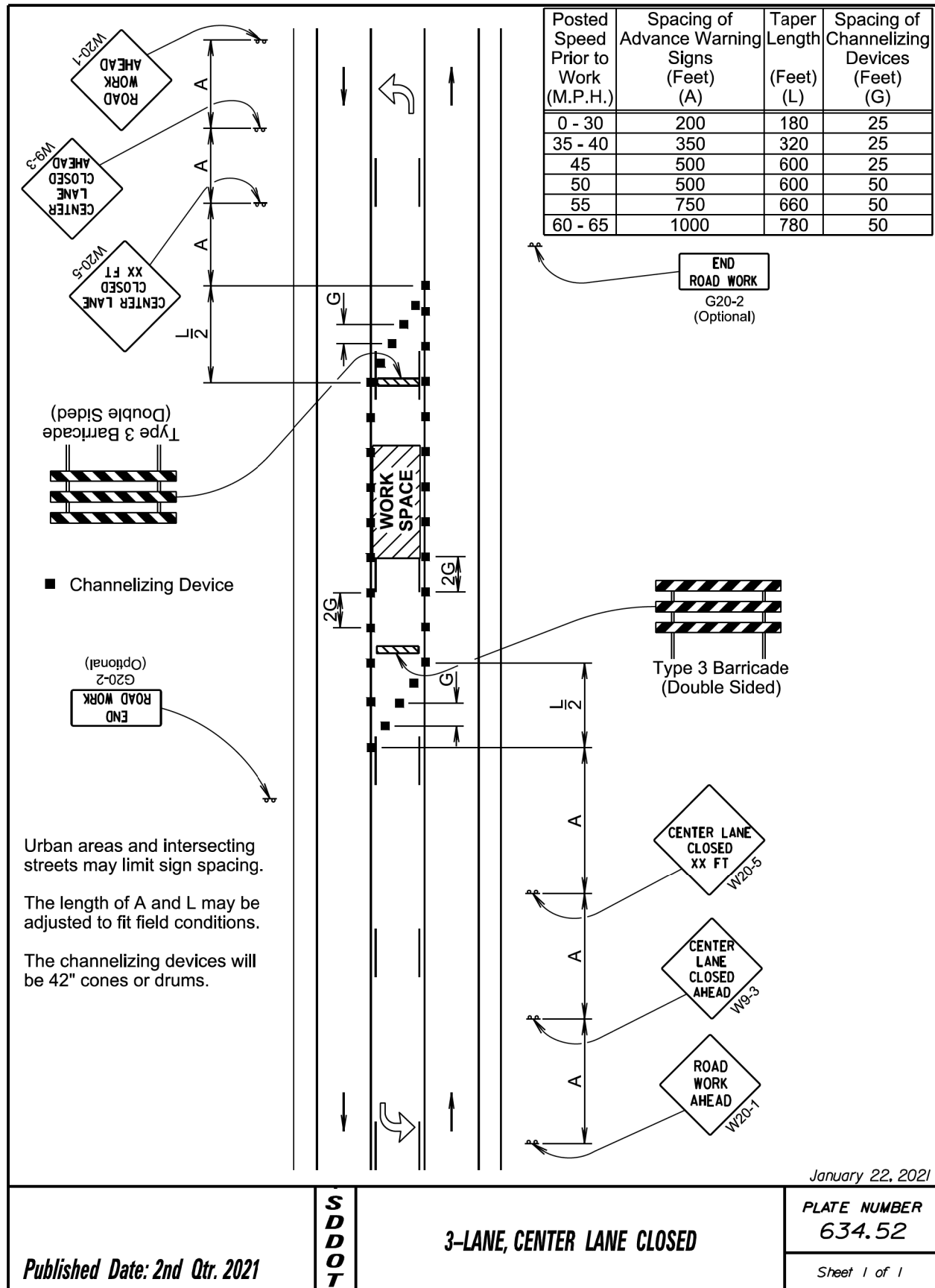
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253	C19	C24

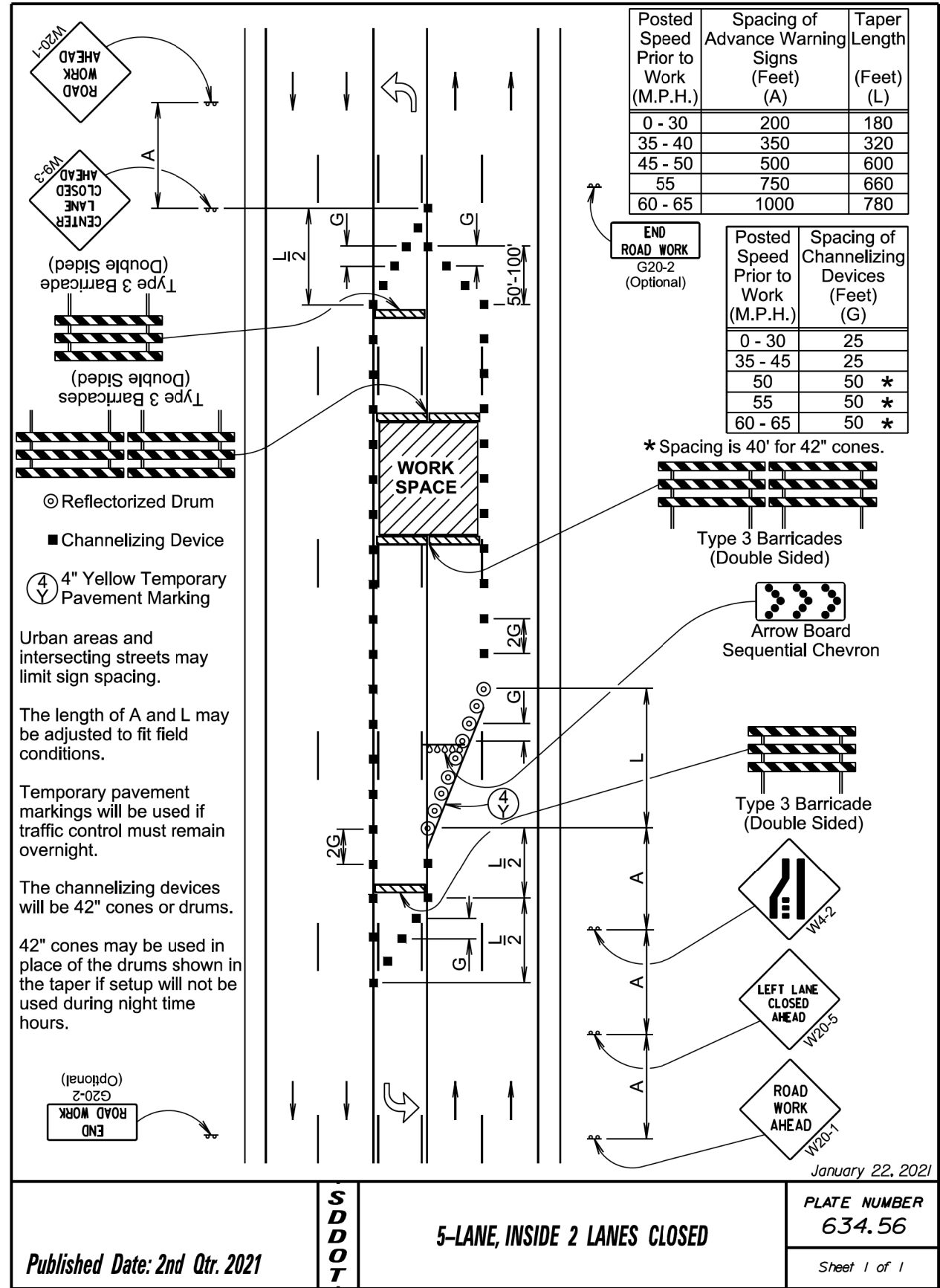
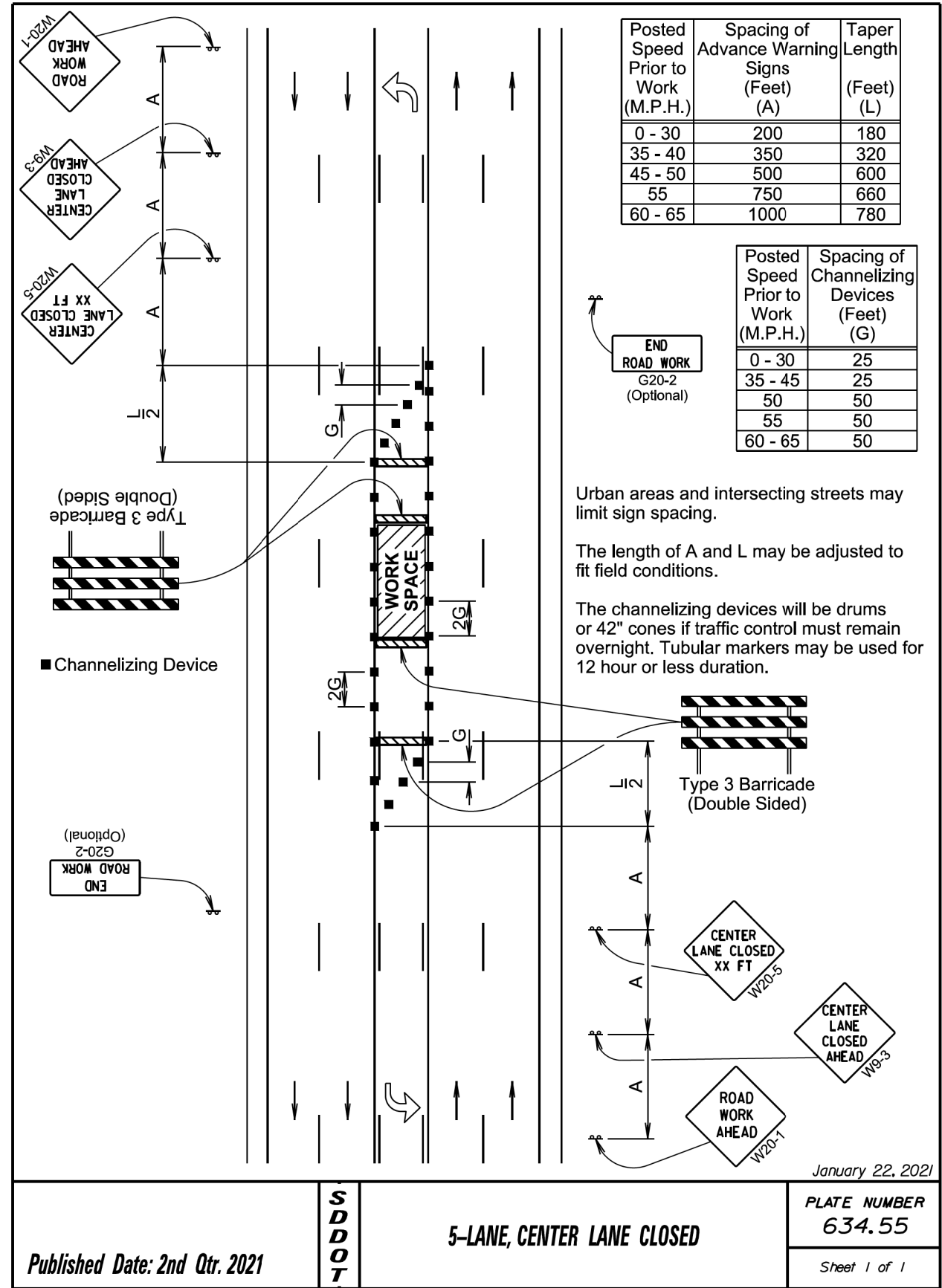
Plotting Date: 05/11/2021

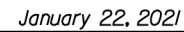
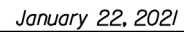


STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253	C20	C24

Plotting Date: 05/11/2021

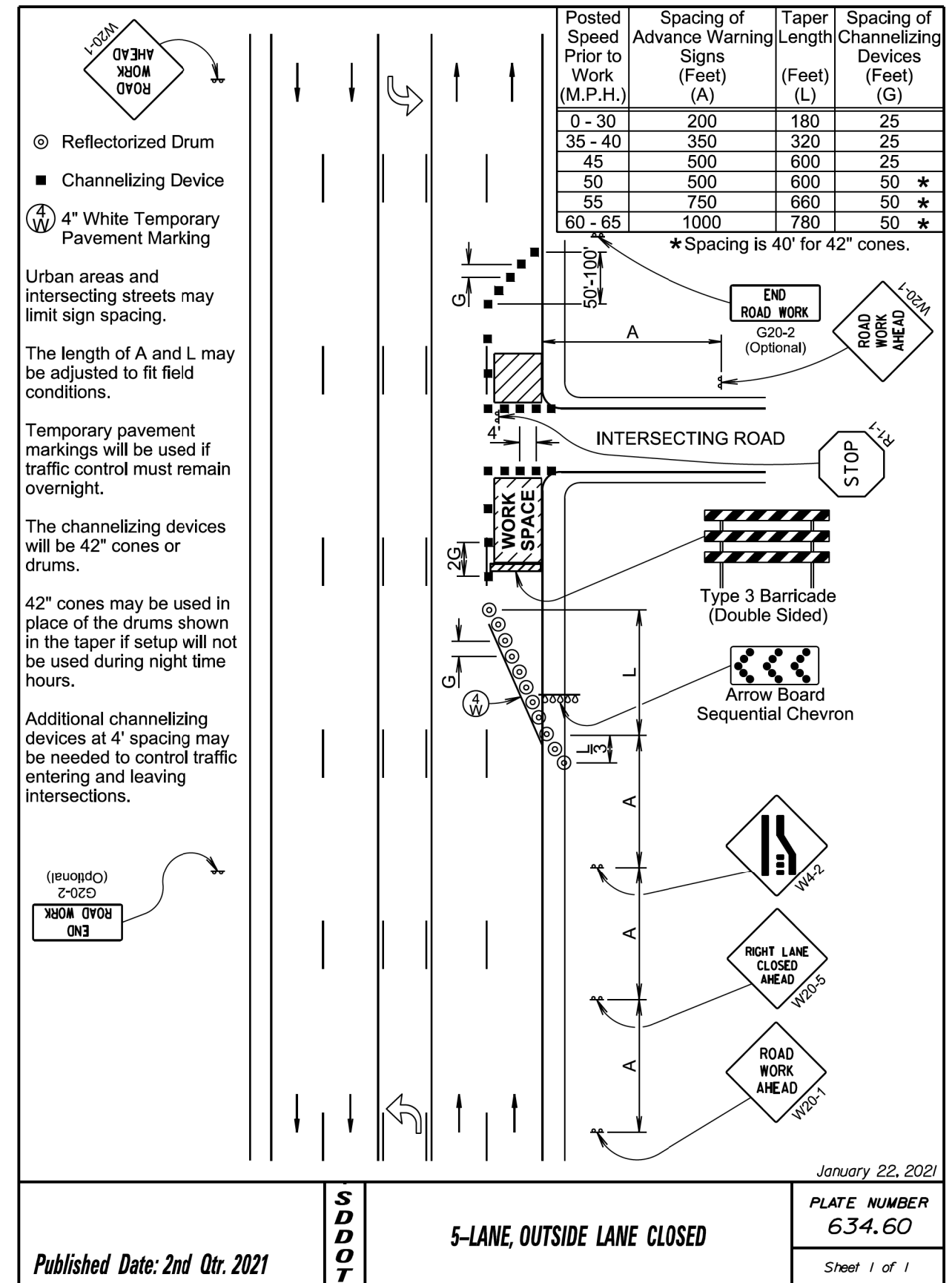
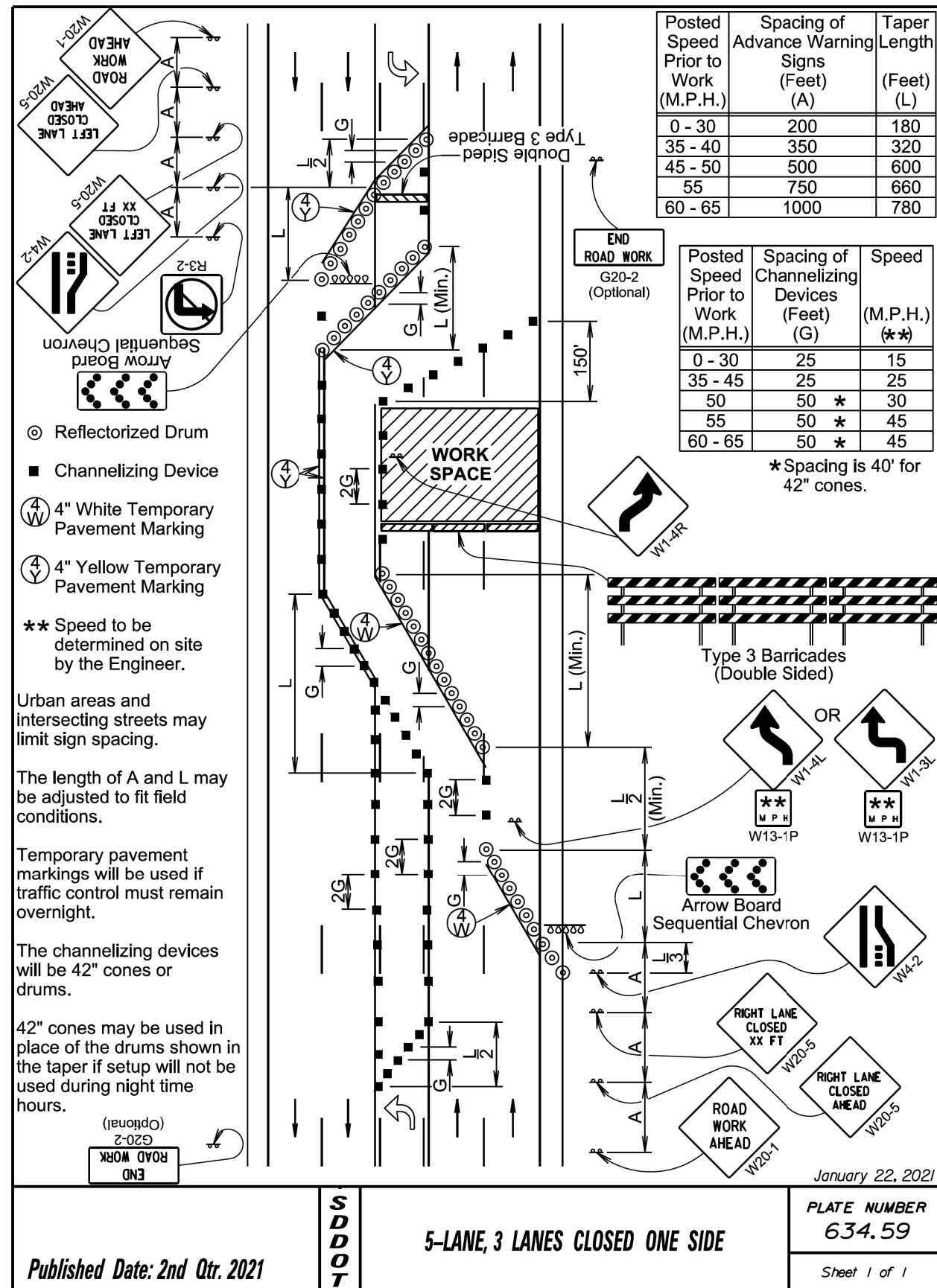


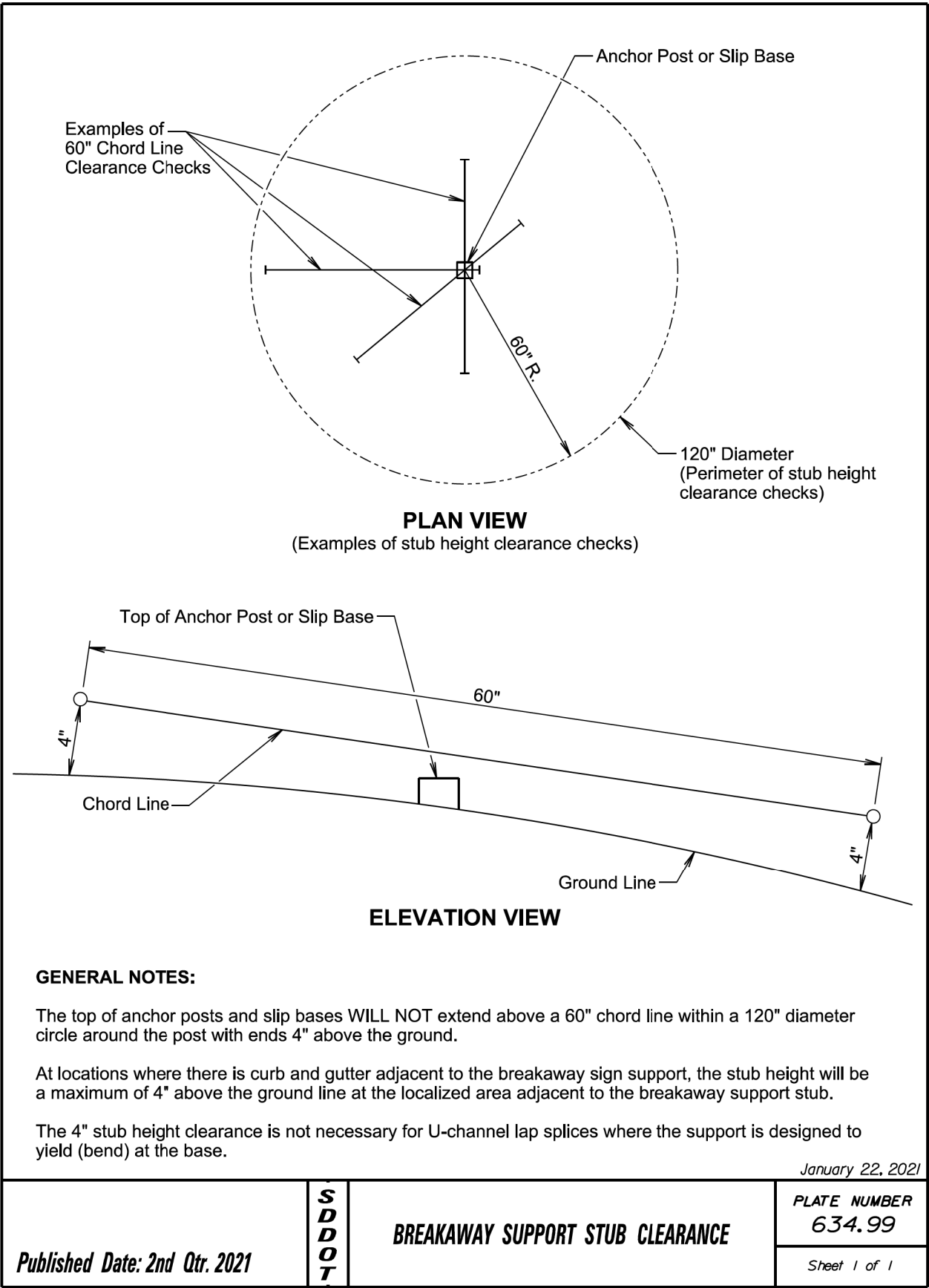
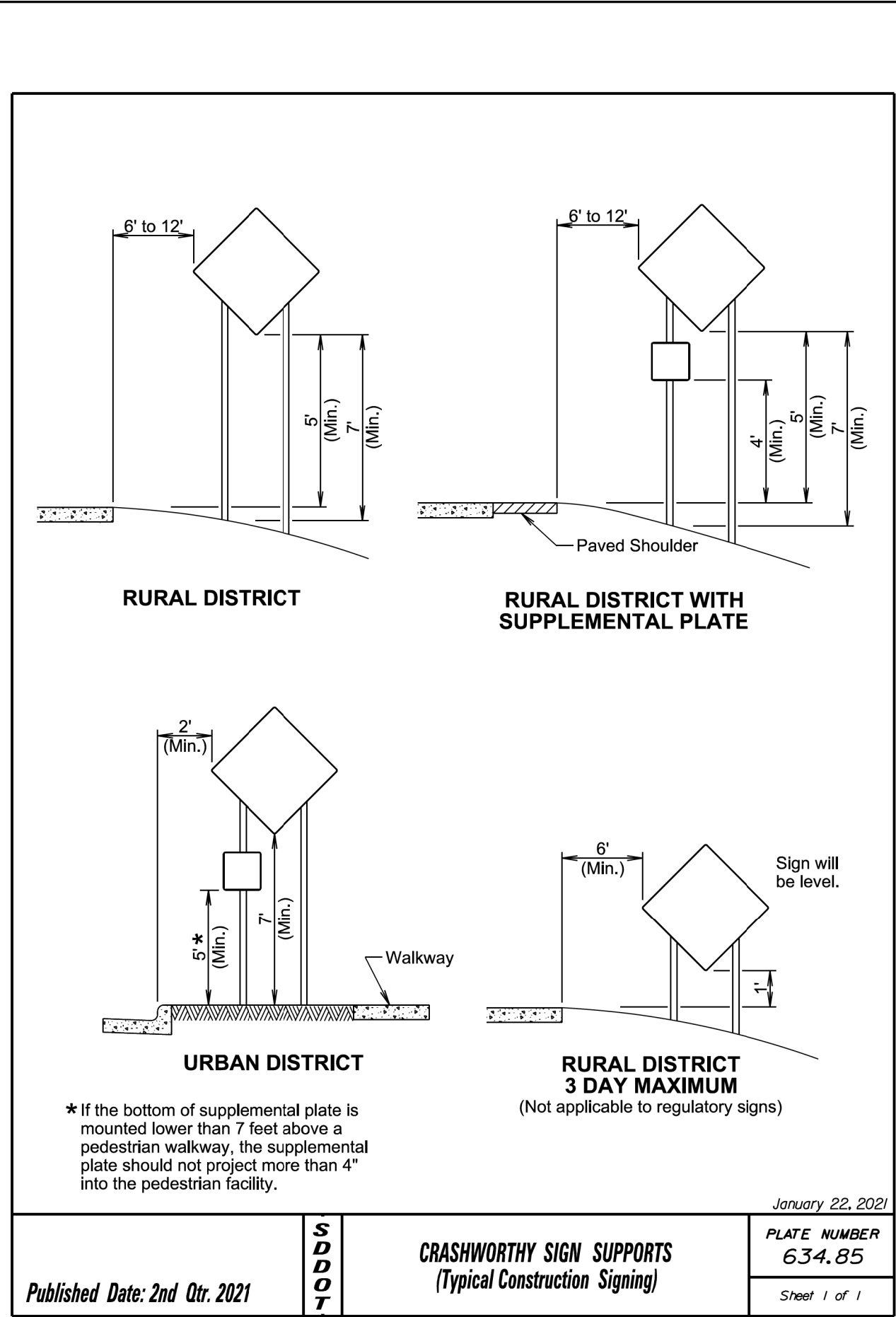




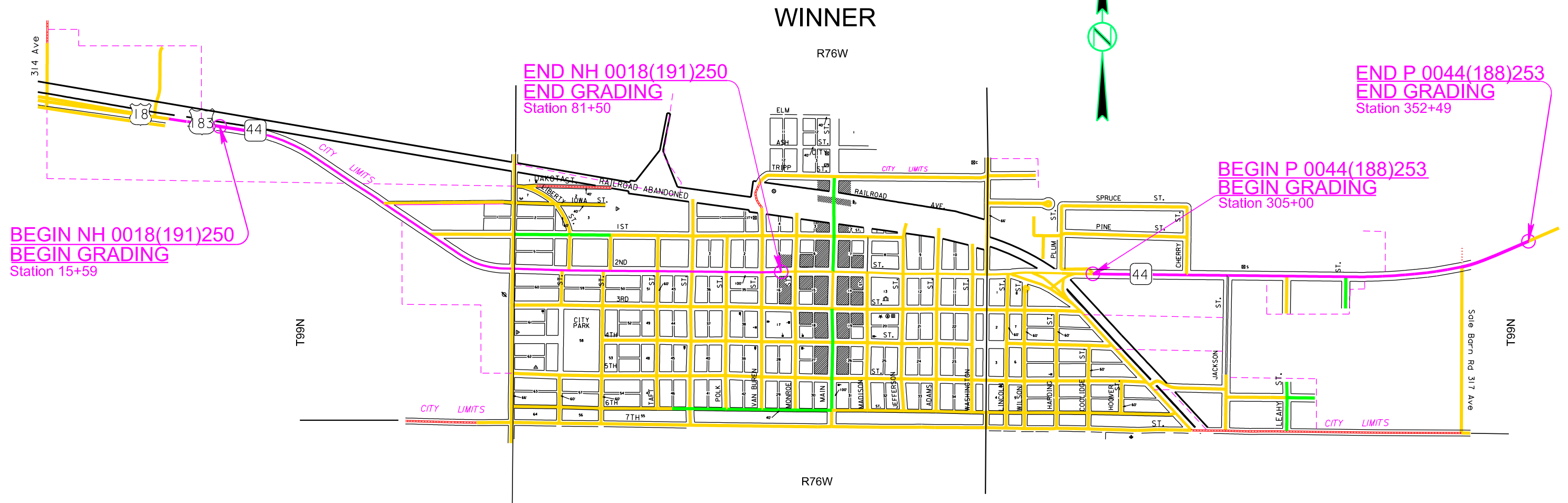
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253	C23	C24

Plotting Date: 05/11/2021





STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253		
		D1	D43



Plot Scale - 1:200

Plotted From - TRPR13525

SECTION D ESTIMATE OF QUANTITIES

NH 0018(191)250 – PCN 03TK

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1690	Remove Sediment	24.5	CuYd
110E1693	Remove Erosion Control Wattle	510	Ft
110E1695	Remove Sediment Filter Bag	3,676	Ft
110E1700	Remove Silt Fence	3,308	Ft
120E6300	Water for Vegetation	571.0	MGal
230E0010	Placing Topsoil	3,052	CuYd
730E0100	Cover Crop Seeding	1.0	Bu
730E0206	Type D Permanent Seed Mixture	2,000	Lb
731E0200	Fertilizing	4.90	Ton
732E0550	Fiber Reinforced Matrix	19,677	Lb
734E0154	12" Diameter Erosion Control Wattle	510	Ft
734E0165	Remove and Reset Erosion Control Wattle	125	Ft
734E0170	Temporary Sediment Barrier	853	Ft
734E0180	Sediment Filter Bag	3,676	Ft
734E0602	Low Flow Silt Fence	200	Ft
734E0604	High Flow Silt Fence	3,108	Ft
734E0610	Mucking Silt Fence	230	CuYd
734E0620	Repair Silt Fence	825	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	50	Each
734E0847	Sediment Control at Type S Reinforced Concrete Drop Inlet	574	Ft
734E5005	Dewatering	Lump Sum	LS
900E1320	Construction Entrance	2	Each

MULCHING (GRASS HAY OR STRAW)

Grass Hay or Straw Mulch to be applied at a rate of 2 Tons/Acre at all locations to be seeded with Type F Permanent Seed Mixture.

An additional 2 tons of Grass Hay or Straw Mulch has been added to the Estimate of Quantities for PCN 04F9 for temporary erosion control on areas determined by the Engineer during construction.

If the Contractor uses a no-till drill, mulch may be applied prior to seeding and the mulch can then be punched into the soil by the no-till drill. If the Contractor uses this process, the no-till drill seeding will be completed immediately following the mulch application and the mulch will be punched into the soil at a 3-inch depth.

COVER CROP SEEDING

Cover crop seeding may be used on this project as a temporary erosion control measure. The actual limits and use of cover crop seeding will be determined by the Engineer during construction.

P 0044(188)253 – PCN 04F9

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1690	Remove Sediment	0.3	CuYd
110E1695	Remove Sediment Filter Bag	24	Ft
110E1700	Remove Silt Fence	2,325	Ft
120E6300	Water for Vegetation	737.0	MGal
230E0010	Placing Topsoil	6,071	CuYd
730E0100	Cover Crop Seeding	4.0	Bu
730E0206	Type D Permanent Seed Mixture	2,580	Lb
730E0210	Type F Permanent Seed Mixture	80	Lb
731E0200	Fertilizing	8.70	Ton
732E0100	Mulching	8.5	Ton
732E0550	Fiber Reinforced Matrix	25,379	Lb
734E0103	Type 3 Erosion Control Blanket	450	SqYd
734E0132	Type 2 Turf Reinforcement Mat	1,085.0	SqYd
734E0170	Temporary Sediment Barrier	300	Ft
734E0180	Sediment Filter Bag	24	Ft
734E0510	Shaping for Erosion Control Blanket	500	Ft
734E0602	Low Flow Silt Fence	1,000	Ft
734E0604	High Flow Silt Fence	1,325	Ft
734E0610	Mucking Silt Fence	161	CuYd
734E0620	Repair Silt Fence	581	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	4	Each
900E1320	Construction Entrance	2	Each

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum will consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier will provide certification of the fungal species claimed and the live propagule count. The inoculum will include the following fungal species:

- 25% *Glomus intraradices*
- 25% *Glomus aggregatum or deserticola*
- 25% *Glomus mosseae*
- 25% *Glomus etunicatum*

All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed will be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

All seed will be inoculated by the seed supplier with a minimum of 20,000 live propagules of mycorrhizal fungi per 1,000 square feet. All costs of inoculating the seed will be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253	D2	D43

Plotting Date: 06/24/2021 Rev. 06/16/21 WS

The mycorrhizal inoculum will be as shown below or an approved equal:

Product	Manufacturer
MycoApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 www.mycorrhizae.com
AM 120 Multi Species Blend	Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 www.reforest.com

PLACING TOPSOIL

The thickness will be approximately 4 inches within the right-of-way and 6 inches on temporary easements. The topsoil thickness for the option borrow pits will be as stated on the option borrow pit sheets.

Any additional topsoil required will be at the contractor's expense.

The estimated amount of topsoil to be placed is as follows:

Station	to	Station	Topsoil (CuYd)
03TK			
13+00		19+00	479
19+00		25+00	754
25+00		31+00	852
31+00		37+00	697
37+00		43+00	93
43+00		49+00	47
49+00		55+00	11
55+00		61+00	58
61+00		67+00	20
67+00		73+00	21
73+00		79+00	11
79+00		85+00	9
Total:			3,052
04F9			
305+00		309+00	501
309+00		315+00	952
315+00		321+00	933
321+00		327+00	863
327+00		333+00	861
333+00		339+00	773
339+00		345+00	638
345+00		351+00	430
351+00		357+00	120
Total:			6,071

File - ...\\pjt\\p03TK\\Notes\\SectionD.dgn

PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways and temporary easements under cultivation.

Lawn and turf seed, such as the Type D Permanent Seed Mixture, will be tested within 12 months prior to planting, exclusive of the calendar month in which the test was completed.

Type D Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/1000 SqFt)
Kentucky Bluegrass	Avalanche, Appalachian, Wildhorse, Blue Bonnet, Action	1.4
Perennial Ryegrass	Turf Type Varieties	1.4
Creeping Red Fescue	Epic, Boreal, Chantilly	1.4
Chewings Fescue	Ambrose, K2, Zodiac, Shadow III	1.4
Alkali Grass	Fults, Fults II, Quill, Salty	1.4
Total:		7

Type F 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
Green Needlegrass	Lodorm, AC Mallard Ecovar	4
Sideoats Grama	Butte, Pierre	3
Blue Grama	Bad River	2
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		26

FERTILIZING

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer will be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer will have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer will also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The fertilizer will be applied on areas to be seeded with Type D Permanent Seed Mixture at an application rate of 34 pounds per 1,000 square feet.

The fertilizer will be applied on areas to be seeded with Type F Permanent Seed Mixture at a rate of 1,500 pounds per acre in accordance with the manufacturer's recommended method of application.

The all-natural slow release fertilizer will be as shown below or an approved equal:

Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 www.sustane.com
Perfect Blend	Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 www.perfect-blend.com

FIBER REINFORCED MATRIX

Fiber reinforced matrix to be applied at all locations to be seeded with Type D Permanent Seed Mixture.

Fiber reinforced matrix will be applied in a separate operation following permanent seeding at locations noted in the table and at locations determined by the Engineer during construction. The application rate is 3,000 pounds per acre.

An additional quantity of Fiber Reinforced Matrix has been added to the Estimate of Quantities for erosion control on areas determined by the Engineer during construction.

The contractor will use a Fiber Reinforced Matrix from the approved products list, or an approved equal. The approved product list for Fiber Reinforced Matrix may be viewed at the following internet site.

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

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WATER FOR VEGETATION

Water for vegetation consists of applying water to seeded areas to enhance germination and/or root growth. When watering, use the following guidelines:

Immediately after seeding:

- Keep the topsoil moist but not excessively wet until the seed has germinated.
- Water a minimum of 3 days a week for 2 weeks preferably watering 2 or 3 times a day in small quantities.
- Use fine spray and low pressure to avoid topsoil wash and to prevent uncovering buried seeds.

After emergence:

- Topsoil will be kept thoroughly moistened by sprinkling, as necessary, for 6 weeks. After the 6-week period, an inspection will be made to determine if grass is established enough to suspend watering. Continue watering until grass has been thoroughly established.
- Never apply water at a rate faster than the topsoil can absorb.
- Water during early morning hours or early evening hours.
- Do not water when rain is forecasted for the area.
- If rainfall occurs, suspend watering according to rainfall amount.

An estimated 18 Gallons of water per square yard of seeding area was used to compute the quantity for the bid item "Water for Vegetation".

All costs for furnishing and applying the water including hauling, materials, equipment, labor, and incidentals necessary will be paid for at the contract unit price per MGal for "Water for Vegetation".

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment will be installed at locations noted in the table and at locations determined by the Engineer during construction. Refer to Standard Plate 734.06 for details.

The estimated quantity of "Remove Sediment" at erosion control wattle installation will be computed by taking 0.25' width X 0.25' height X the total length of all erosion control wattles and converted to cubic yards. A short version is "Remove Sediment" CuYd = 0.0023 X the total length of all erosion control wattles.

The Contractor will provide certification that the erosion control wattles do not contain noxious weed seeds.

Erosion control wattles will remain on the project until vegetation has been established and then they will be removed in accordance with the Engineer.

An additional quantity of 12" Diameter Erosion Control Wattles has been added to the Estimate of Quantities for temporary erosion and sediment control in highway ditch channels and as an alternative to low flow or high flow silt fence at wetland areas adjacent to the highway.

The erosion control wattle provided will be from the approved product list. The approved product list for erosion control wattle may be viewed at the following internet site:

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

TABLE OF EROSION CONTROL WATTLE

Station	Diameter (Inch)	Location	Quantity (Ft)
03TK			
22+88	12	Protect creek	160
24+05 – 81’ L	12	Inlet end of pipe	50
29+65 – 71’ L	12	Inlet end of pipe	50
32+03 – 70’ L	12	Inlet end of pipe	50
		Additional Quantity:	200
		Total:	510

LOW FLOW SILT FENCE

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

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

Low flow silt fence will be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.04 for details.

An additional quantity of Low Flow Silt Fence has been added to the Estimate of Quantities for temporary sediment control.

TABLE OF LOW FLOW SILT FENCE

Station	Location	Quantity (Ft)
03TK		
22+88	Protect creek	160
	Additional Quantity:	40
	Total:	200
04F9		
305+00 to 306+35 L	Perimeter control	150
339+30 to 340+50 L	Perimeter control	130
343+50 to 344+50 L	Perimeter control	125
346+50 to 347+50 R	Perimeter control	110
347+00 to 348+00 L	Perimeter control	115
	Additional Quantity:	370
	Total:	1,000

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 and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.05 for details.

An additional quantity of high flow silt fence has been added to the Estimate of Quantities for temporary sediment control.

TABLE OF HIGH FLOW SILT FENCE

Station	Location	Quantity (Ft)
03TK		
25+20 – 52.21’ R	Inlet end of pipe	18
28+25 R	Inlet end of pipe	18
28+49 – 55.97’ R	Inlet end of pipe	18
33+00 – 57.54’ R	Inlet end of pipe	18
36+00 – 54.47’ R	Inlet end of pipe	18
36+76 – 62’ R	Inlet end of pipe	18
	Quantity from Inlet protection:	2,840
	Additional Quantity:	160
	Total:	3,108

04F9

305+70 R	Inlet end of pipe	75
307+43 – 76.5’ L	Inlet end of pipe	75
307+43 – 56.6’ R	Inlet end of pipe	75
309+00 – 66.3’ L	Inlet end of pipe	75
310+39 – 61.2’ R	Inlet end of pipe	75
311+12 – 104.17’ R	Inlet end of pipe	18
311+84 – 57.6’ L	Inlet end of pipe	75
311+84 – 61.0’ R	Inlet end of pipe	75
312+88 – 60.7’ R	Inlet end of pipe	75
315+08 – 60.2’ L	Inlet end of pipe	75
316+60 – 62.9’ R	Inlet end of pipe	75
318+90 – 61’ L	Inlet end of pipe	18
319+80 – 68.3’ R	Inlet end of pipe	75
321+92 – 58’ L	Inlet end of pipe	18
326+00 – 134.01’ L	Inlet end of pipe	18
326+16 – 57’ L	Inlet end of pipe	18
326+29 – 60.3’ R	Inlet end of pipe	18
328+56 – 132.48’ L	Inlet end of pipe	18
328+60 – 54’ L	Inlet end of pipe	18
328+92 – 56’ R	Inlet end of pipe	18
332+89 – 56’ R	Inlet end of pipe	18
338+68 – 59’ L	Inlet end of pipe	18
342+92 R	Inlet end of pipe	18
	Quantity from Inlet protection:	18
	Additional Quantity:	266
	Total:	1,325

EROSION CONTROL BLANKET

Erosion control blanket will be installed 8 feet wide at the locations noted in the table and at locations determined by the Engineer during construction.

The erosion control blanket provided will be from the approved product list. The approved product list for erosion control blanket may be viewed at the following internet site:

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

An additional quantity of Type 3 Erosion Control Blanket has been added to the Estimate of Quantities for temporary erosion control.

TABLE OF EROSION CONTROL BLANKET

Station	Location	Type	Quantity (SqYd)
04F9			
318+90 – 61’ L	Outlet end of pipe	3	35
320+05 – 104’ L	Outlet end of pipe	3	35
320+95 – 104’ L	Outlet end of pipe	3	35
321+92 – 58’ L	Outlet end of pipe	3	35
322+89 – 103.33’ L	Outlet end of pipe	3	35
323+95 – 104’ L	Outlet end of pipe	3	35
326+29 – 60.3’ R	Outlet end of pipe	3	35
328+92 – 56’ R	Outlet end of pipe	3	35
	Additional Quantity:	3	170
	Total Type 3 Erosion Control Blanket:		450

SHAPING FOR EROSION CONTROL BLANKET

The ditches will be shaped for the erosion control blanket as specified on Standard Plate 734.01.

TURF REINFORCEMENT MAT

Turf Reinforcement Mat will be installed at locations shown in the table at the widths specified, and at locations determined by the Engineer during construction. The Contractor will use a turf reinforcement mat from the approved products list. The approved product list for turf reinforcement mat may be viewed at the following internet site:

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

Turf Reinforcement Mat will be installed in accordance with the manufacturer's installation instructions.

TABLE OF TURF REINFORCEMENT MAT

Station	Location	Width (Ft)	Type	Quantity (SqYd)
04F9				
305+70 L	Outlet end of pipe	16	2	35
307+43 – 76.5' L	Outlet end of pipe	16	2	70
307+43 – 56.6' R	Outlet end of pipe	16	2	70
309+00 – 66.3' L	Outlet end of pipe	16	2	70
310+39 – 66.3' R	Outlet end of pipe	16	2	70
311+84 – 57.6' L	Outlet end of pipe	16	2	70
311+84 – 61.0' R	Outlet end of pipe	16	2	70
312+88 – 60.7' R	Outlet end of pipe	16	2	35
315+08 – 60.2' L	Outlet end of pipe	16	2	70
316+60 – 62.9' R	Outlet end of pipe	16	2	70
319+80 – 68.3' R	Outlet end of pipe	16	2	70
326+16 – 57' L	Outlet end of pipe	8	2	35
328+60 – 54' L	Outlet end of pipe	16	2	70
Additional Quantity:			2	280
Total Type 2 Turf Reinforcement Mat:				1,085

TEMPORARY SEDIMENT BARRIER

Temporary sediment barriers will be installed at locations noted in the table and at locations determined by the Engineer during construction.

Installation of the temporary sediment barrier will be in accordance with the manufacturer's installation instructions. It is the Contractor's responsibility to select product(s) best suited as perimeter control, slope interrupters, and ditch checks based on site conditions.

All costs for furnishing, installing, and maintaining the temporary sediment barrier including hauling, materials, equipment, labor, and incidentals necessary will be paid for at the contract unit price per foot for "Temporary Sediment Barrier".

An additional quantity of Temporary Sediment Barrier has been added to the Estimate of Quantities for both PCNs and is to be used at other areas requiring sediment control.

The temporary sediment barriers will be from the list below or an approved equal:

Product	Manufacturer
ProWattle Perimeter Guard	ERTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com
Compost Filter Sock 9" and 12"	Dioten Engineering, Inc. Rapid City, SD Phone: 1-605-430-7213 www.dioten.com/
SedimentSTOP Or SediMax-FR Filtration Rolls	North American Green Poseyville, IN Phone: 1-800-772-2040 https://nagreen.com/
Terra-Tubes	Profile Products LLC Buffalo Grove, IL Phone: 1-800-508-8681 www.profileproducts.com

TABLE OF TEMPORARY SEDIMENT BARRIER

Station	Location	Quantity (Ft)
03TK		
52+34 L	Across street	36
52+34 R	Across street	45
56+78 R	Across street	35
58+68 L	Across street	35
62+34 R	Across street	32
63+14 L	Across street	20
68+50 L	Across street	35
68+50 R	Across street	35
72+28 R	Across street	35
72+50 L	Across street	32
76+17 L	Across street	42
76+17 R	Across street	36
80+00 L	Across street	40
80+00 R	Across street	45
Additional Quantity:		350
Total:		853

SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES

This type of sediment control device should be used where there is pavement in the vicinity of the drop inlets and storm water or sediment could possibly enter the frame and grate. Sediment Control at Inlet with Frame and Grate will be installed prior to working in the vicinity of the drop inlets.

The Contractor will be responsible for maintaining and repairing the sediment control devices for the duration of the project for which sediment control measures are required. Maintenance will be scheduled to prevent storm water from backing up into the driving lane.

"Sediment Control at Inlet with Frame and Grate" will be paid for one time at each location, regardless of the number of times the sediment control devices are installed, inspected, cleaned, removed, repaired, or replaced. All costs associated with furnishing, installing, inspecting, maintaining, cleaning, sediment removal, and repairing Sediment Control at Inlet with Frame and Grate will be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

Sediment collection devices will be:

A commercial made sediment collection device from the "Sediment Control at Inlet with Frame and Grate" list or an approved equal. The device will be installed in reinforced concrete drop inlets in accordance with the manufacturer's recommendations.

<http://sddot.com/business/certification/products/Default.aspx>

Sediment Control at Inlet with Frame and Grate Approved List:	
Product	Manufacturer
InfraSafe Debris Collection Device with filter sock	Royal Environmental Systems, Inc. Stacy, MN Phone: 1-800-817-3240 www.royalenterprises.net
Dandy Curb Sack and Dandy Curb Bag for curb inlets. Dandy Bag, Dandy Sack, and Dandy Pop for median drains.	Dandy Products Inc. Powell, OH Phone: 1-800-591-2284 www.dandyproducts.com
Silt Trapper	Storm Water Solutions Lakeville, MN Phone: 1-952-461-4376 www.silttrapper.com
DIP Basket	Skyview Construction Co., LLC Summit, SD Phone: 1-605-520-0555
FLEXSTORM Inlet Filters	Inlet and Pipe Protection, Inc. Naperville, IL Phone: 1-866-287-8655 www.inletfilters.com

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(continued)

GR-8 Guard or Combo Guard	ERTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com
Sediment Catchers	Shaun Jensen Brookings, SD Phone: 1-605-690-4950
Grate FX, Slammer, or VertiPro	Enviroscape ECM, Ltd. Deshler, OH Phone: 1-419-278-2000 www.strawblanket.com
BX Inlet Sediment Boxes	BX Civil and Construction Dell Rapids, SD Phone: 1-605-428-5483 bx-cc.com
EZ-Flo and EZ-Catch	Flo-Water, LLC West Des Moines, IA Phone: 1-515-577-6763 www.flo-water.net
Basin Bag	Pro Drain Systems, Inc. Highland, MI Phone: 1-248-329-7001 www.prodrainsystems.com

TABLE OF SEDIMENT CONTROL AT INLETS W/ FRAMES AND GRATES

Station	Quantity (Each)
03TK	
12+88 – 26' R	1
13+05 – 26' R	1
44+33 – 28.12' L	1
44+33 – 50.50' L	1
44+66 – 50.50' L	1
52+62 – 62' R	1
53+10 – 28.50' L	1
57+57 – 62.50' R	1
57+57 – 73.50' R	1
57+85 – 64.55' R	1
57+91 – 64.55' R	1
57+91 – 73.55' R	1
58+04 – 28.50' L	1
58+13 – 37.27' R	1
59+60 – 28.50' L	1
61+74 – 37.17' R	1
62+15 – 62.00' R	1
62+15 – 75.00' R	1
62+49 – 62.00' R	1
62+49 – 75.00' R	1
62+66 – 28.50' L	1
62+66 – 37.17' L	1
65+21 – 28.50' L	1

67+36 – 28.50' L	1
67+98 – 37.17' L	1
68+36 – 71.00' R	1
68+36 – 62.00' R	1
68+69 – 62.00' R	1
68+69 – 71.00' R	1
69+49 – 28.50' L	1
69+49 – 37.17' L	1
71+74 – 28.50' L	1
72+10 – 62.00' R	1
72+10 – 73.00' R	1
72+43 – 29' L	1
72+44 – 62.00' R	1
75+53 – 28.50' L	1
76+00 – 63.70' R	1
76+00 – 72.70' R	1
76+35 – 62.00' R	1
76+35 – 71.00' R	1
76+73 – 28.50' L	1
78+65 – 28.50' L	1
78+65 – 37.17' L	1
79+89 – 63.00' R	1
79+89 – 72.00' R	1
80+25 – 63.00' R	1
80+25 – 72.00' R	1
80+56 – 70' R	1
80+62 – 28.50' L	1
Total:	50

04F9

320+05 – 104' L	1
320+95 – 104' L	1
322+89 – 103.33' L	1
323+95 – 104' L	1
Total:	4

INTERIM SEDIMENT CONTROL AT INLETS, MANHOLES, AND
JUNCTION BOXES AFTER SURFACING REMOVAL AND BEFORE
PLACEMENT OF SURFACING

Refer to Standard Plate 734.05 for details of installation of high flow silt fence at drop inlets, manholes, and junction boxes.

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>

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In addition, the Contractor will do the following for this installation:

- A space of at least 1' will be provided between the silt fence installation and the inlet. This space will be filled completely with a 2" depth of aggregate, 2" minus or smaller.
- The top elevation of the silt fence will be such that a 12" horizontal flap of silt fence will remain at the bottom.
- The base of the silt fence will conform to the natural ground profile but does not need to be trenched in at the bottom.
- The extra 12" of the silt fence material may be cut so that the material will lay flat upon the subgrade.
- Sediment filter bags will be placed on the 12" flap around the perimeter of the silt fence installation. The sediment filter bags will overlap 6" at the ends and be placed tightly together.
- The sediment filter bags will be filled with clean aggregate 2" minus or smaller.

Sediment Filter Bag

Product	Manufacturer
Snake Bag	Sacramento Bag Manufacturing Co. Sacramento, CA Phone: 1-800-287-2247 www.sacbag.com

The sediment filter bag will be the Snake Bag from Sacramento Bag Manufacturing Company or an approved equal.

All costs for furnishing and installing the sediment filter bags will be incidental to the contract unit price per foot for "Sediment Filter Bag."

All costs for removing the sediment filter bags will be incidental to the contract unit price per foot for "Remove Sediment Filter Bag".

Payment for high flow silt fence will be as stated in Section 734.5 of the Specifications.

All costs for furnishing, installing, and removing the 2" depth of aggregate will be incidental to other erosion and sediment control contract items.

All costs for removing and disposing of sediment collected by the sediment control device will be incidental to the contract unit price per cubic yard for "Remove Sediment".

The removed sediment will be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.

The Contractor and Engineer will inspect and maintain the sediment control device once every week and within 24 hours after every rainfall event greater than 1/2".

1:200
Plot Scale -
Plotted From -

TABLE OF INTERIM SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTION BOXES AFTER SURFACING REMOVAL AND BEFORE PLACEMENT OF SURFACING

Station	High Flow Silt Fence Quantity (Ft)	Sediment Filter Bag Quantity (Ft)	Remove Sediment Quantity (CuYd)
03TK			
16+00 – 28.34' R	32	44	0.25
18+97 – 28.12' R	42	52	0.25
23+20 – 28.12' R	42	52	0.25
25+20 – 28.12' R	32	44	0.25
28+49 – 28.12' R	42	52	0.25
33+00 – 28.12' R	32	44	0.25
36+00 – 28.12' R	32	44	0.25
38+15 – 28.12' L	32	44	0.25
38+15 – 28.12' R	32	44	0.25
41+04 – 28.12' L	32	44	0.25
41+04 – 28.12' R	32	44	0.25
43+19 – 28.12' L	40	52	0.25
43+19 – 28.12' R	40	52	0.25
44+30 – 74.00' L	32	44	0.25
44+30 – 28.12' L	28	36	0.25
44+33 – 50.50' L	18	24	0.25
44+66 – 50.50' L	18	24	0.25
44+68 – 74.00' L	32	44	0.25
45+10 – 28.12' L	40	52	0.25
45+10 – 28.12' R	40	52	0.25
46+39 – 28.12' L	40	52	0.25
46+39 – 28.12' R	40	52	0.25
48+58 – 28.12' L	40	52	0.25
48+97 – 29.64' R	40	52	0.25
50+99 – 34.12' L	32	44	0.25
51+08 – 34.12' R	42	52	0.25
53+10 – 28.50' L	28	36	0.25
53+10 – 39.62' L	42	52	0.25
53+10 – 39.62' R	42	52	0.25
57+14 – 39.62' R	42	52	0.25
57+57 – 62.50' R	22	28	0.25
57+57 – 73.50' R	18	24	0.25
57+85 – 64.55' R	22	28	0.25
57+91 – 64.55' R	18	24	0.25
57+91 – 73.55' R	18	24	0.25
58+04 – 28.50' L	28	36	0.25
58+04 – 39.62' L	42	52	0.25
58+13 – 37.27' R	22	28	0.25
58+67 – 39.62' R	42	52	0.25
59+60 – 28.50' L	28	36	0.25
59+60 – 39.62' L	42	52	0.25
59+60 – 39.62' R	42	52	0.25
61+74 – 37.17' R	22	28	0.25
62+15 – 62.00' R	22	28	0.25
62+15 – 75.00' R	18	24	0.25
62+49 – 62.00' R	18	24	0.25

62+49 – 75.00' R	18	24	0.25
62+66 – 28.50' L	28	36	0.25
62+66 – 37.17' L	18	24	0.25
63+24 – 39.62' R	42	52	0.25
65+12 – 39.62' R	42	52	0.25
65+21 – 28.50' L	28	36	0.25
65+21 – 39.62' L	32	44	0.25
66+36 – 39.62' R	42	52	0.25
67+36 – 28.50' L	28	36	0.25
67+36 – 39.62' L	42	52	0.25
67+36 – 39.62' R	42	52	0.25
67+98 – 37.17' L	18	24	0.25
68+36 – 62.00' R	22	28	0.25
68+36 – 71.00' R	18	24	0.25
68+69 – 62.00' R	18	24	0.25
68+69 – 71.00' R	18	24	0.25
69+49 – 28.50' L	28	36	0.25
69+49 – 37.17' L	18	24	0.25
69+49 - 39.62' R	42	52	0.25
70+52 – 39.62' R	32	44	0.25
71+74 – 28.50' L	28	36	0.25
71+74 – 39.62' L	42	52	0.25
71+74 – 39.62' R	42	52	0.25
72+10 – 62.00' R	18	24	0.25
72+10 – 73.00' R	18	24	0.25
72+44 – 62.00' R	18	24	0.25
72+78 – 39.62' R	32	44	0.25
75+53 – 28.50' L	32	44	0.25
75+53 – 39.62' L	42	52	0.25
75+53 – 39.62' R	42	52	0.25
76+00 – 63.70' R	18	24	0.25
76+00 – 72.70' R	18	24	0.25
76+35 – 62.00' R	18	24	0.25
76+35 – 71.00' R	18	24	0.25
76+73 – 28.50' L	32	44	0.25
76+73 – 39.62' L	42	52	0.25
76+73 – 39.62' R	42	52	0.25
78+30 – 39.63' R	42	52	0.25
78+65 – 28.50' L	32	44	0.25
78+65 – 37.17' L	18	24	0.25
79+89 – 63.00' R	18	24	0.25
79+89 – 72.00' R	18	24	0.25
80+25 – 63.00' R	18	24	0.25
80+25 – 72.00' R	18	24	0.25
80+62 – 28.50' L	32	44	0.25
80+62 – 39.62' L	42	52	0.25
80+62 – 39.62' R	42	52	0.25
Totals:	2,840	3,676	23.25
04F9			
322+89 – 103.33' L	18	24	0.25
Totals:	18	24	0.25

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SEDIMENT CONTROL AT TYPE S REINFORCED CONCRETE DROP INLETS

The sediment control device provided will be from the list shown below. Refer to Standard Plate 734.11 for details.

Product	Manufacturer
Dandy Curb	Dandy Products Inc. Powell, OH Phone: 1-800-591-2284 www.dandyproducts.com
Gutterbuddy	ACF Environmental Richmond, VA Phone: 1-800-448-3636 www.acfenvironmental.com
Curb Inlet Guard	ECTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com
EZ-ClipGuard	Flo-Water, LLC West Des Moines, IA Phone: 1-515-577-6763 www.flo-water.net
12" Compost Filter Sock	Dioten Engineering, Inc. Rapid City, SD Phone: 1-605-430-7213
12" Silt Sock	Aspen Ridge Lawn and Landscaping, LLC Rapid City, SD Phone: 1-605-716-4080 https://aspenridgelandscaping.com/
GeoCurve	GeoSolutions, Inc. Austin, TX Phone: 1-512-330-0796 www.geosolutionsinc.com
Smart Curb Filter	NoFlood, Inc. Fort Myers, FL Phone: 1-239-776-1671 noflood.com

TABLE OF SEDIMENT CONTROL AT TYPE S REINFORCED CONCRETE DROP INLETS

Station	Clear Opening Width (Ft)	Quantity* (Ft)
03TK		
16+00 – 28.34' R	6	8
18+97 – 28.12' R	11	13
23+20 – 28.12' R	11	13
25+20 – 28.12' R	6	8
28+49 – 28.12' R	11	13

(continued)		
33+00 – 28.12' R	6	8
36+00 – 28.12' R	6	8
38+15 – 28.12' L	11	13
38+15 – 28.12' R	11	13
41+04 – 28.12' L	11	13
41+04 – 28.12' R	11	13
43+19 – 28.12' L	11	13
43+19 – 28.12' R	11	13
44+30 – 74.00' L	6	8
44+68 – 74.00' L	6	8
45+10 – 28.12' L	11	13
45+10 – 28.12' R	11	13
46+39 – 28.12' L	11	13
46+39 – 28.12' R	11	13
48+58 – 28.12' L	11	13
48+97 – 29.64' R	11	13
50+99 – 34.12' L	6	8
51+08 – 34.12' R	11	13
53+10 – 39.62' L	11	13
53+10 – 39.62' R	11	13
57+14 – 39.62' R	11	13
58+04 – 39.62' L	11	13
58+67 – 39.62' R	11	13
59+60 – 39.62' L	11	13
59+60 – 39.62' R	11	13
63+24 - 39.62' R	11	13
65+12 – 39.62' R	11	13
65+21 – 39.62' L	6	8
66+36 – 39.62' R	11	13
67+36 – 39.62' L	11	13
67+36 – 39.62' R	11	13
69+49 – 39.62' R	11	13
70+52 – 39.62' R	6	8
71+74 – 39.62' L	11	13
71+74 – 39.62' R	11	13
72+78 – 39.62' R	6	8
75+53 – 39.62' L	11	13
75+53 – 39.62' R	11	13
76+73 – 39.62' L	11	13
76+73 – 39.62' R	11	13
78+30 – 39.62' R	11	13
80+62 – 39.62' L	11	13
80+62 – 39.62' R	11	13
Total:		574

* Quantity shown is the minimum length required and will be the basis of payment.

DEWATERING AND SEDIMENT COLLECTING

The Contactor has the option to treat sediment laden water trapped within the project limits or the Contractor may elect to transport sediment laden water off the project. Refer to the OPTIONS FOR DEWATERING AND SEDIMENT COLLECTING detail sheet for more information.

Water transported off the project limits will not be disposed of in an area where it can enter a waterway. The disposal site must be approved by the Engineer.

Dewatering and Sediment Collection is expected to be necessary on project **03TK** due to underground construction of storm sewers and other underground utilities. Dewatering and Sediment Collection will be paid as a Lump Sum bid item.

SDDOT CONSTRUCTION ENTRANCE

If the SDDOT Construction Entrance is utilized, then the Contractor will install the SDDOT Construction Entrance in accordance with these notes and the detail drawings.

Pit run material will be obtained from a granular source and will conform to the following gradation:

Sieve Size	Percent Passing
6"	100%
#4	0-60%
#200	0-20%

The pit run material will be compacted to the satisfaction of the Engineer.

The aggregate for the granular material will conform to the following gradation requirements:

Sieve Size	Percent Passing
3"	100%
2 1/2"	90-100%
1 1/2"	25-60%
3/4"	0-10%
1/2"	0-5%

The granular material will be placed in 6" maximum lifts.

It is anticipated that the granular material will need to be periodically removed and replaced as it becomes inundated with mud and sediment.

The Reinforcement Fabric (MSE) will be in conformance with Section 831 of the Specifications. The Reinforcement Fabric (MSE) will be on the Approved Products List for this material or will be certified by the supplier to meet this specification prior to installation.

The Reinforcement Fabric (MSE) should be kept as taut as possible prior to placing.

Equipment will not be allowed on the Reinforcement Fabric (MSE) until the first lift of granular material is in place.

All seams in the Reinforcement Fabric (MSE) will be overlapped at least 2' and shingled.

CONSTRUCTION ENTRANCE

The Contractor will install a Construction Entrance at locations where there is a potential for mud tracking and sediment flow from the construction site and work area onto a paved public roadway.

It is the Contractor's option to use the SDDOT Construction Entrance (See SDDOT Construction Entrance notes and details), a product from the list provided in these notes, or other products or processes as approved by the Engineer during construction.

If the Contractor elects to use one of the products listed in the table, then the Contractor will install the construction entrance product in accordance with the manufacturer's installation instructions or as directed by the Engineer.

The Contractor will maintain the construction entrance such that mud tracking and sediment flow will not enter the roadway or adjacent drainage areas. The construction entrance will be routinely inspected, and the Contractor will repair or replace material as deemed necessary by the Engineer.

All costs for furnishing, installing, maintaining, and removal of the construction entrance including equipment, labor, materials, and incidentals will be included in the contract unit price per each for "Construction Entrance".

The following table is a list of known construction entrance products available for use:

Product	Manufacturer
Grizzly Rumble Grate (10' width and 24' length required)	Trackout Control, LLC Tempe, AZ Phone: 1-800-761-0056 www.trackoutcontrol.com
Rumble Grid (12' width and 24' length including combination of grids and ramps required)	Pro-Tec Equipment, Inc. Charlotte, MI Phone: 1-800-292-1225 www.pro-tecequipment.com
Tracking Pad (12' width and 24' length (2 – 12'x12' pads) and 2 – 4'x4' turning flares)	Tracking Pads LLC Commerce City, CO Phone: 1-303-501-5640 www.trackingpads.com
FODS Trackout Control Mat (12' width and 5 mats to get a 35' length)	FODS, LLC Denver, CO Phone: 1-844-200-3637 getfods.com
DuraDeck and MegaDeck HD An adequate quantity is needed to prevent tires from becoming muddy (does not remove mud)	Signature Systems Group, LLC Flower Mound, TX Phone: 1-800-709-8151 www.duradeckmats.com

1:200
Plot Scale -
Plotted From -

STORMWATER POLLUTION PREVENTION PLAN CHECKLIST
*(The numbers left of the title headings are **reference numbers** to the **GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES** (Stormwater Permit))*

5.3 (2): STAFF TRAINING/SWPPP IMPLEMENTATION

To promote stormwater management awareness specific for this project, the Contractor's Erosion Control Supervisor should provide correspondence of how the SWPPP will be implemented. The Contractor's Erosion Control Supervisor is responsible for providing this information at the preconstruction meeting, and subsequently completing an attendance log, which should identify site-specific implementation of the SWPPP and the names of the personnel who attended the preconstruction meeting. Documentation of the preconstruction meeting will be filed with the SWPPP documents.

5.3 (3): DESCRIPTION OF CONSTRUCTION ACTIVITIES

- **5.3 (3a): Project Limits** (See Title Sheet)
- **5.3 (3a): Project Description** (See Title Sheet)
- **5.3 (4): Site Map(s)** (See Title Sheet and Plans)
- **Major Soil Disturbing Activities** (check all that apply)
 - ☒ Clearing and grubbing
 - ☒ Excavation/borrow
 - ☒ Grading and shaping
 - ☐ Filling
 - ☐ Other (describe):
- **5.3 (3b): Total Project Area** 42 Acres
- **5.3 (3b): Total Area to be Disturbed** 37 Acres
- **5.3 (3c): Maximum Area Disturbed at One Time** 37 Acres
- **5.3 (3d): Existing Vegetative Cover** 80%
- **5.3 (3d): Description of Vegetative Cover** Turf grass
- **5.3 (3e): Soil Properties:** Silty Clay
- **5.3 (3f): Name of Receiving Water Body/Bodies** Dog Ear Creek
- **5.3 (3g): Location of Construction Support Activity Areas**

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

- **Special sequencing requirements** (see Section C).
The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install stabilized construction entrance(s).	
Install perimeter protection where runoff may exit site.	
Install perimeter protection around stockpiles.	
Install channel and ditch bottom protection.	
Clearing and grubbing.	
Remove and stockpile topsoil.	
Stabilize disturbed areas.	
Install utilities, storm sewers, curb and gutter.	
Install inlet and culvert protection after completing storm drainage and other utility installations.	
Final grading.	
Final paving.	
Removal of protection devices.	
Reseed areas disturbed by removal activities.	

5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES
All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report. Include the technical reasoning for selecting each control. (check all that apply)

Perimeter Controls (See Detail Plan Sheets)	
Description	Estimated Start Date
<input type="checkbox"/> Natural Buffers (within 50 ft of Waters of State)	
<input checked="" type="checkbox"/> Silt Fence	
<input checked="" type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Temporary Berm / Windrow	
<input type="checkbox"/> Floating Silt Curtain	
<input checked="" type="checkbox"/> Stabilized Construction Entrances	
<input type="checkbox"/> Entrance/Exit Equipment Tire Wash	
<input type="checkbox"/> Other:	

Structural Erosion and Sediment Controls	
Description	Estimated Start Date
<input checked="" type="checkbox"/> Silt Fence	
<input type="checkbox"/> Temporary Berm/Windrow	
<input checked="" type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Temporary Sediment Barriers	
<input type="checkbox"/> Erosion Bales	
<input type="checkbox"/> Temporary Slope Drain	
<input checked="" type="checkbox"/> Turf Reinforcement Mat	
<input checked="" type="checkbox"/> Riprap	
<input type="checkbox"/> Gabions	
<input type="checkbox"/> Rock Check Dams	
<input type="checkbox"/> Sediment Traps/Basins	
<input checked="" type="checkbox"/> Culvert Inlet Protection	
<input type="checkbox"/> Transition Mats	
<input type="checkbox"/> Median/Area Drain Inlet Protection	
<input checked="" type="checkbox"/> Curb Inlet Protection	
<input type="checkbox"/> Interceptor Ditch	
<input checked="" type="checkbox"/> Concrete Washout Facility	
<input type="checkbox"/> Work Platform	
<input type="checkbox"/> Temporary Water Barrier	
<input type="checkbox"/> Temporary Water Crossing	
<input type="checkbox"/> Permanent Stormwater Ponds	
<input type="checkbox"/> Permanent Open Vegetated Swales	
<input type="checkbox"/> Natural Depressions to allow for Infiltration	
<input type="checkbox"/> Sequential Systems that combine several practices	
<input type="checkbox"/> Other:	

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Dust Controls	
Description	Estimated Start Date
<input type="checkbox"/> Tarps & Wind impervious fabrics	
<input type="checkbox"/> Watering	
<input type="checkbox"/> Stockpile location/orientation	
<input type="checkbox"/> Dust Control Chlorides	
<input type="checkbox"/> Other	

Dewatering BMPs	
Description	Estimated Start Date
<input type="checkbox"/> Sediment Basins	
<input type="checkbox"/> Dewatering bags	
<input type="checkbox"/> Weir tanks	
<input type="checkbox"/> Temporary Diversion Channel	
<input type="checkbox"/> Other:	

Stabilization Practices (See Detail Plan Sheets)
(Stabilization measures will begin the following work day whenever earth disturbing activity on any portion of the site has temporarily or permanently ceased. Temporary stabilization will be completed as soon as practicable but no later than 14 days after initiating soil stabilization activities **(3.18)**)

Description	Estimated Start Date
<input type="checkbox"/> Vegetation Buffer Strips	
<input checked="" type="checkbox"/> Temporary Seeding (Cover Crop Seeding)	
<input checked="" type="checkbox"/> Permanent Seeding	
<input type="checkbox"/> Sodding	
<input type="checkbox"/> Planting (Woody Vegetation for Soil Stabilization)	
<input checked="" type="checkbox"/> Mulching (Grass Hay or Straw)	
<input type="checkbox"/> Fiber Mulching (Wood Fiber Mulch)	
<input type="checkbox"/> Soil Stabilizer	
<input type="checkbox"/> Bonded Fiber Matrix	
<input checked="" type="checkbox"/> Fiber Reinforced Matrix	
<input checked="" type="checkbox"/> Erosion Control Blankets	
<input type="checkbox"/> Surface Roughening (e.g. tracking)	
<input type="checkbox"/> Other:	

Wetland Avoidance
Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes ☐ No ☒ If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 1/3 of the height of the silt fence.
- Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure’s capacity, and at the conclusion of the construction.
- Check dams will be inspected for stability. Sediment will be removed when depth reaches 1/2 the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The SDDOT Project Engineer and Contractor’s Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

Stormwater management will be handled by temporary controls outlined in “DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES” above, and any permanent controls needed to meet permanent stormwater management needs in the post construction period will be shown in the plans and noted as permanent.

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

- **Material Management**
 - Housekeeping
 - Only needed products will be stored on-site by the Contractor.
 - Except for bulk materials the contractor will store all materials under cover and/or in appropriate containers.
 - Products must be stored in original containers and labeled.
 - Material mixing will be conducted in accordance with the manufacturer’s recommendations.
 - When possible, all products will be completely used before properly disposing of the container off-site.
 - The manufacturer’s directions for disposal of materials and containers will be followed.
 - The Contractor’s site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
 - Dust generated will be controlled in an environmentally safe manner.
 - Hazardous Materials
 - Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.
 - Original labels and material safety data sheets will be retained in a safe place to relay important product information.
 - If surplus product must be disposed of, manufacturer’s label directions for disposal will be followed.

- Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
- Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any stormwater system or stormwater treatment system.
- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.

➤ **Spill Control Practices**

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer’s recommended methods for spill cleanup will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the Contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for cleanup purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The Contractor’s site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator.

➤ **Spill Response**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into stormwater runoff and conveyance systems. If the release has impacted on-site stormwater, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens stormwater or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The Contractor’s site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.

- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent’s designee will be responsible for completing the spill reporting form and for reporting the spill to SDDENR.
- Personnel with primary responsibility for spill response and cleanup will receive training by the Contractor’s site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

5.3 (8b): WASTE MANAGEMENT PROCEDURES

➤ **Waste Disposal**

- All liquid waste materials will be collected and stored in approved sealed containers. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal and notices stating proper practices will be posted. The Contractor is responsible for ensuring waste disposal procedures are followed.

➤ **Hazardous Waste**

- All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the Contractor will be responsible for seeing that these practices are followed.

➤ **Sanitary Waste**

- Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units which must be secured to prevent tipping and serviced in a timely manner by a licensed waste management Contractor or as required by any local regulations.

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