

SECTION S: PERMANENT SIGNING PLANS

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S1	S112

Plotting Date: 5/16/2025

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END EM 0292(88)73

Station 106+06.35
located 1103.12 feet south and
1959.66 feet west of the northeast
corner of Section 18 -Township 100 North -
Range 50 West of the 5th P.M.
MRM (029 N) 75.17+0.032

Sta. 0+01.50 to Sta. 6+65.00
M.S.E. Large Panel Retaining Wall

Sta. 60+35.34 to Sta. 63+50.03
Str. No. 42-065-016
312'-11 3/8" Steel Girder Bridge
Concrete Barrier Curb and Gutter

BEGIN EM 0292(88)73

85TH STREET
Station 299+35.00
located 20.50 feet south and
499.13 feet east of the northwest
corner of Section 19 - Township 100 North -
Range 50 West of the 5th P.M.

Sta. 318+79.74 to Sta. 321+55.24
Str. No. 42-065-020
276'-6" Steel Girder Bridge
Concrete Barrier Curb and Gutter

BEGIN EM 0292(88)73

Station 30+27.82
located 2117.41 feet north and
2376.09 feet east of the southwest
corner of Section 19 - Township 100 North -
Range 50 West of the 5th P.M.
MRM (029 N) 73.38+0.364

END IM 2292(104)0

I-229 RAMP C LOUISE AVENUE
Station 43+87.81
located 1411.81 feet north and
4960.21 feet east of the southwest
corner of Section 8 -Township 100 North -
Range 50 West of the 5th P.M.
MRM (229 N1) 00.92+0.000

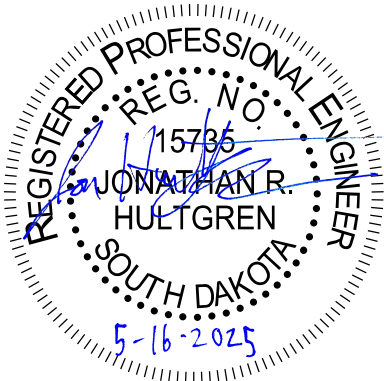
BEGIN IM 2292(104)0

I-229 RAMP B
Station 19+34.15
located 1115.22 feet south and
1906.32 feet west of the northeast
corner of Section 18 -Township 100 North -
Range 50 West of the 5th P.M.
MRM (229 N) 00.00+00.032

END EM 0292(88)73

85TH STREET
Station 339+30.00
located 33.11 feet south and
600.68 feet west of the northwest
corner of Section 20 - Township 100 North -
Range 50 West of the 5th P.M.

Sta. 324+45.77
Str. No. 42-066-020
11'x10' Box Culvert



SECTION S – ESTIMATE OF QUANTITIES

PCN 06JQ

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E0100	Remove Concrete Footing(s)	Lump Sum	LS
110E0130	Remove Traffic Sign	9	Each
110E0135	Remove Delineator	31	Each
110E0140	Remove Extruded Panel Sign	19	Each
110E5000	Salvage Sign Bridge	3	Each
110E7150	Remove Sign for Reset	10	Each
632E0014	1.75' Diameter Breakaway Support Concrete Footing	52.0	Ft
632E0072	4' Diameter Fixed Support Concrete Footing	323.0	Ft
632E1230	W6x15 Steel Post	143.3	Ft
632E1235	W6x20 Steel Post	45.7	Ft
632E1320	2.0"x2.0" Perforated Tube Post	1,029.1	Ft
632E1340	2.5"x2.5" Perforated Tube Post	64.0	Ft
632E2000	4"x4" Amber Delineator with 1.12 Lb/Ft Post	12	Each
632E2004	4"x8" Amber Delineator with 1.12 Lb/Ft Post	5	Each
632E2008	4" Tubular Amber Delineator with 1.12 Lb/Ft Post	9	Each
632E2020	4"x4" White Delineator with 1.12 Lb/Ft Post	6	Each
632E2024	4"x8" White Delineator with 1.12 Lb/Ft Post	105	Each
632E2028	4" Tubular White Delineator with 1.12 Lb/Ft Post	16	Each
632E2220	Guardrail Delineator	302	Each
632E2510	Type 2 Object Marker Back to Back	54	Each
632E2520	Type 2 Object Marker	20	Each
632E3115	Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity	4,963.7	SqFt
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	440.6	SqFt
632E3205	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity	618.2	SqFt
632E3500	Reset Sign	10	Each
632E5010	Double Beam Sign Bridge	8	Each
632E5020	Overhead Cantilever Sign Support	2	Each
632E5055	Mast Arm Sign Support	2	Each
635E5302	Type 2 Electrical Junction Box	2	Each
635E6200	Miscellaneous, Electrical	Lump Sum	LS
635E8120	2" Rigid Conduit, Schedule 40	290	Ft
635E8220	2" Rigid Conduit, Schedule 80	90	Ft
635E9020	1/C #10 AWG Copper Wire	1,220	Ft
900E2030	Miscellaneous Work	1	Site

PCN 07D0

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E0100	Remove Concrete Footing(s)	Lump Sum	LS
110E0135	Remove Delineator	44	Each
110E0140	Remove Extruded Panel Sign	3	Each
110E7150	Remove Sign for Reset	1	Each
632E0072	4' Diameter Fixed Support Concrete Footing	24.0	Ft
632E1320	2.0"x2.0" Perforated Tube Post	12.4	Ft
632E2004	4"x8" Amber Delineator with 1.12 Lb/Ft Post	6	Each
632E2020	4"x4" White Delineator with 1.12 Lb/Ft Post	6	Each
632E2024	4"x8" White Delineator with 1.12 Lb/Ft Post	37	Each
632E2220	Guardrail Delineator	8	Each
632E2510	Type 2 Object Marker Back to Back	6	Each
632E2520	Type 2 Object Marker	2	Each
632E3115	Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity	405.6	SqFt
632E3205	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity	12.6	SqFt
632E3500	Reset Sign	1	Each
632E5020	Overhead Cantilever Sign Support	1	Each

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 Plotting Date: 7/2/2025	PROJECT	SHEET	TOTAL SHEETS
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Revised Date: 7/2/2025		Initials: NBG	

GENERAL PERMANENT SIGNING

New sign installations will be staked in the field by the Contractor and checked by the Engineer. The Contractor will give the Engineer a minimum of one week to check staked locations prior to signpost installation. Lateral offset of signs will be as shown in the plans or as directed by the Engineer.

The Contractor will be responsible for contacting South Dakota One Call to locate the utilities at the staked sign installation locations.

When signs are mounted in an assembly, they will be 1-2 inches apart vertically and horizontally.

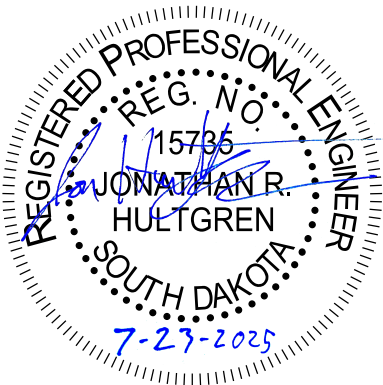
The height of the post must not exceed the minimum height needed by more than 0.5 feet. Any portion that extends above the sign will be cut off. No separate payment will be made for cutting the post or for that length cut off.

Aluminum U-Channel stiffeners will be used on all signs 36 inches or greater in width and will conform to ASTM B221 Alloy 6063-T6 or 6061-T6. The U-Channel will be 2 inches in width and free of holes. The U-Channel stiffeners will also be used to connect various signs together so that an entire sign assembly can be erected on a single installation. Stiffeners may be fastened to signs by use of 1/4-inch diameter drive rivets.

The Contractor will use 3/8-inch diameter rust proof machine sign bolts, flat metal washers, neoprene washers (against the sign sheeting), lock washers, and nuts to fasten the sign to the channel aluminum and posts. A minimum of two bolts will extend through each post.

Prior to ordering signs, the Contractor will verify dimensions, background, border, and legend of the signs.

Prior to use, the Contractor will provide documentation for the sign support devices showing they meet the applicable NCHRP 350 or MASH requirements.



REMOVE TRAFFIC SIGN

Existing signs that are shown as being removed in the Permanent Signing Table will become the property of the Contractor. Existing signposts and bases will be removed in their entirety. All existing signs, posts, and/or hardware removed will not be reused. Holes remaining from the removal of wood posts will be backfilled and compacted with material placed in layers not to exceed 6 inches in depth.

All costs associated with the removal of existing signs, posts, hardware, and backfilled holes will be incidental to the contract unit price per each for "Remove Traffic Sign". Quantities will be per assembly at the contract unit price per each.

REMOVE SIGN FOR RESET AND RESET SIGN

Signs that are scheduled for reset will be dismantled and reassembled to the extent needed by the Contractor to properly reset the sign. Signs will be handled with care so that the existing signs, posts, and bases are not damaged during the relocation process. The Contractor will replace and pay for any reset signs damaged in their care. The Contractor will remove and dispose of any existing posts for all reset signs that require use of new posts as shown in the Table of Permanent Signing.

All costs for removing, dismantling, and disposing of any existing posts will be incidental to the contract unit price per each for "Remove Sign for Reset". All costs for resetting the existing signs will be incidental to the contract unit price per each for "Reset Sign". All quantities for Remove Sign for Reset and Reset Sign will be per assembly at the contract unit price per each.

REMOVE CONCRETE FOOTING

Concrete footings that are to be removed will be removed by the Contractor to a minimum of 2' below the ground surface. Restoration of the disturbed area will be to the satisfaction of the Engineer.

All costs for removing the concrete footings will be incidental to the contract lump sum price for "Remove Concrete Footing(s)".

NEW PERMANENT SIGNING

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

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

All costs associated with furnishing and installing the new permanent signs, and with furnishing and installing stiffeners and hardware will be incidental to the contract unit price per square foot for "Flat Aluminum Sign, Nonremovable Copy High Intensity" or "Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity".

SQUARE TUBE ANCHOR SLEEVE

The Contractor will furnish and install new 2.5" x 2.5" x 18", 12 Gauge square tube anchor sleeve or equivalent components as approved by the Engineer for 2.0" x 2.0" perforated tube posts. A 2.25" x 2.25" x 4', 12 Gauge perforated tube post will be used as the anchor post for installation with the square tube anchor sleeve.

WINGED SLIP BASE ANCHOR

The Contractor will furnish and install new winged slip base anchors for 2.5" x 2.5" perforated tube posts as required in the Permanent Signing Table. Winged slip base anchors will be installed using the direct drive method. Winged slip base anchors will consist of a slip base (upper), a 48-inch long winged anchor (lower), and a hardware kit.

DIGITALLY PRINTED SIGNS

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

PROTECTIVE OVERLAY FILM

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

Table 1: Retroreflective Film Minimum Durability Requirements

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

FABRICATION

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

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

FOR BIDDING PURPOSES ONLY

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

TRAFFIC SIGN PERFORMANCE WARRANTY PROVISIONS

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

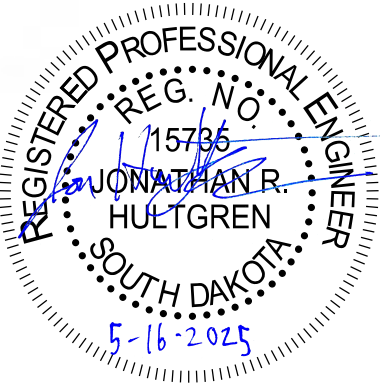
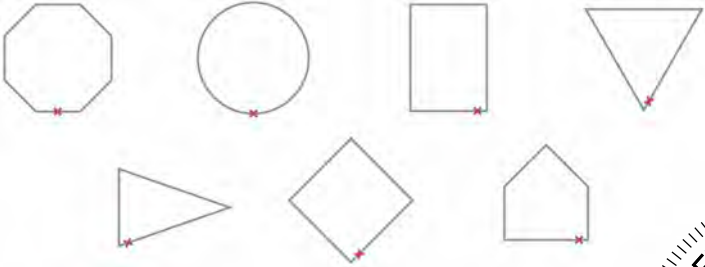
CERTIFIED DIGITAL SIGN FABRICATOR

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

DATE TAGGING SIGNS WITH PERTINENT INFORMATION

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

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



OVERHEAD AND POLE MOUNTED SIGNS

The Contractor will install the new overhead signs with new connection hardware and mast arm mounting hardware.

Signs that are mounted on luminaire, utility, sign-bridge columns, and signal poles and on signal mast arms will be attached with high strength stainless steel bands or galvanized pole clamps. Signs will be attached as recommended by the manufacturer. All sign mounting hardware will be stainless steel or galvanized steel.

Pole mounted signs will be mounted a minimum of 7 ft above the ground. Mounting heights are measured to the bottom of the signs.

All costs for pole and mast arm sign mounting hardware will be incidental to the contract unit price per square foot for “Flat Aluminum Sign, Nonremovable Copy High Intensity” or “Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity”.

CONCRETE FOOTINGS

Extreme care should be used to make certain that the footings are constructed in accordance with the plan sheets, and the finished ground line at all footings are per the details shown on the plan sheets.

Disturbed areas outside the grading project limits will be seeded to the satisfaction of the Engineer. The cost of seeding outside the grading project limits will be incidental to the contract unit price per foot for the various Concrete Footing items.

LOGO SIGNS

The Contractor will remove and reset the existing logos to match the existing signs.

All costs associated with removing and resetting existing logos will be incidental to the contract unit price per square foot for “Extruded Aluminum Sign, Nonremovable Copy High Intensity”.

MILEAGE REFERENCE MARKERS

Mileage Reference Markers (MRMs) are not to be disturbed. If an MRM is attached to a sign listed for replacement it will be salvaged and reattached to the new sign in the same location. Payment for this work will be incidental to the various signing contract items.

SIGNPOST INSTALLATION IN CONCRETE

On concrete surfaces, a core will be drilled out (for installation in existing concrete) or a block out will be used (for installation in new concrete) for sign installation. The core or block out diameter will be sized accordingly depending on post size. Concrete surrounding the core or block out must not be cracked or damaged.

All costs associated with installation in concrete will be incidental to the sign installation.

REMOVE DYNAMIC MESSAGE SIGN (DMS)

The Contractor will be responsible for disconnecting, removing, and securely transporting the existing Dynamic Message Sign (DMS) on southbound I-29 south of 85th Street along Ramp C (I-29 Sta. 55+11 - 110’ Lt.). A photo of this existing sign is shown below.

The Contractor will haul and unload the DMS at the DOT Sioux Falls Yard at 5316 W 60th Street N, Sioux Falls, SD. The yard is approximately 11.5 miles N of the existing DMS location. The Contractor will contact Harry Johnston of DOT Sioux Falls Area office at #(605) 367-5680 at least 48 hours in advance of delivery of the DMS to the DOT Sioux Falls Yard.

Prior to removal of the DMS, the Contractor will be responsible for coordinating with the electric, communication, and any additional utilities connected to the DMS to ensure the connections are no longer active.

The Contractor will be responsible for removing and transporting the DMS without damage to its structural or electronic components.

The DMS will be stored on blocks or pallets to provide separation from the ground. The Contractor will be required to stake down and secure the DMS at the storage location such that the DMS cannot be damaged or moved by wind gusts. The Contractor will be required to provide a plan for staking and securing the DMS for approval by the Engineer. Any costs for the blocks or pallets, staking, and securing of the DMS will be incidental to the contract unit price per site for “Miscellaneous Work”.

All costs for coordination, disconnecting, removal of the existing footing, removal of the DMS, and hauling of the DMS, blocks/pallets, and unloading of the DMS will be incidental to the contract unit price per site for “Miscellaneous Work”.



FOR BIDDING PURPOSES ONLY

	PROJECT	SHEET	TOTAL SHEETS
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		Initials:	NBG

REMOVE FOR RESET AND RESET ADVANCE INTERSTATE CLOSURE SIGNS

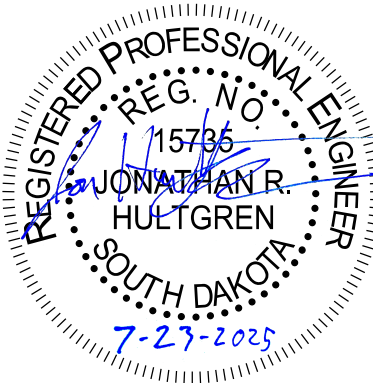
The Contractor will be responsible for disconnecting, removing, and resetting the existing Advance Interstate Closure signs on southbound I-29 south of 85th Street along Ramp C (I-29 Sta. 50±80 Med. & Lt.).

Prior to removal of the signs, the Contractor will be responsible for coordinating with the electric, communication, and any additional utilities connected to the signs to ensure the connections are no longer active.

The Contractor will be responsible for removing the existing electrical junction boxes at the locations specified in the plans. All costs for coordination, disconnecting, removing, and disposing of the existing electrical junction boxes will be incidental to the contract lump sum price for “Miscellaneous, Electrical”.

The Contractor will be responsible for removing and resetting the signs at the locations specified in these plans without damage to their structural or electronic components.

All costs for coordination, disconnecting, removing, dismantling, and disposing of any existing posts will be incidental to the contract unit price per each for “Remove Sign for Reset”. All costs for resetting the existing signs will be incidental to the contract unit price per each for “Reset Sign”. All quantities for Remove Sign for Reset and Reset Sign will be per assembly at the contract unit price per each.



SALVAGE SIGN BRIDGE

The existing sign bridges at the following locations will be removed and salvaged as designated in the plans:

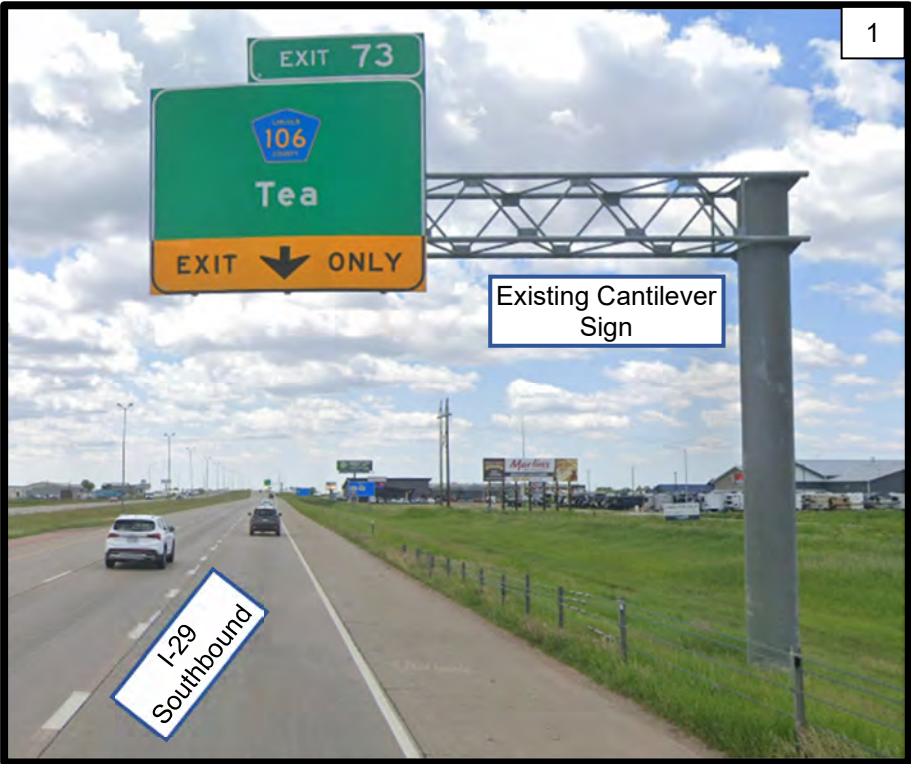
- 1. SB I-29 Sta. 41+75 Lt
- 2. NB I-29 Sta. 52+69 Rt
- 3. SB I-29 Sta. 158+25 Lt

Photos of these sign bridges are shown below.

The sign bridges listed for salvage will have the existing signs, hardware, and structural components dismantled and delivered to the Sioux Falls Maintenance Yard. The Contractor will notify the Engineer two days prior to time of delivery to the Maintenance Yard so correct placement for storage and inventory of materials can be made upon receipt. All bolts, nuts, and washers will be placed in sealed individual 5-gallon pails. All sign bridges listed for salvage will be handled with care so that the signs, hardware, and structural components are not damaged during removal or transport. The Contractor will replace and pay for any salvaged sign bridges damaged in their care.

All costs for removal and salvaging of the existing sign bridges will be included in the contract unit price per each for "Salvage Sign Bridge".

All costs for removal of the pole footing(s) will be incidental to the contract lump sum price for "Remove Concrete Footing(s)". The footing will be removed by the Contractor to a minimum of 2' below the ground surface. Restoration of the disturbed area will be to the satisfaction of the Engineer.



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SD DOT	PROJECT	SHEET	TOTAL SHEETS
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		Initials:	NBG

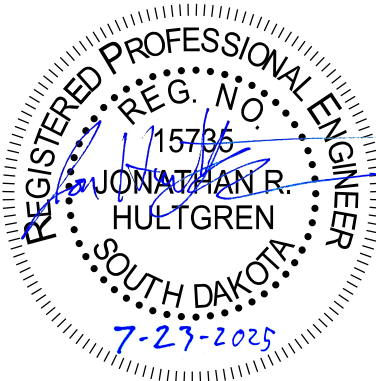


TABLE OF REMOVE AND INSTALL SIGN STRUCTURES

FOR BIDDING PURPOSES ONLY



Plotting Date: 7/2/2025

PROJECT

EM 0292(88)73
IM 2292(104)0

SHEET

S6

TOTAL SHEETS

S112

Revised Date: 6/26/2025

Initials: NBG

Station	Offset	Salvage Sign Bridge (Each)	Remove Concrete Footing(s) (Each)**	Double Beam Sign Bridge (Each)	Cantilever Sign Support (Each)	Mast Arm Sign Support (Each)
EM 0292(88)73 - PCN 06JQ						
I-29 NORTHBOUND						
34+00	Overhead				1	
47+32	Overhead				1	
52+69	Overhead	1	2			
61+75	Overhead			1		
87+20	Overhead			1		
I-29 SOUTHBOUND						
41+75	Overhead	1	1			
99+75	Overhead			1		
158+00	Overhead			1		
158+25	Overhead	1	2			
RAMP B						
31+45	Overhead					1
RAMP D						
45+82	Overhead					1
85TH STREET EASTBOUND						
314+50	Overhead			1		
85TH STREET WESTBOUND						
426+00	Overhead			1		
I-229 RAMP C						
26+86	Overhead			1		
61+62	Overhead			1		
78+60	Overhead					
EM 0292(88)73 - PCN 06JQ Total		3	5	8	2	2
IM 2292(104)0 - PCN 07D0						
I-229 NORTHBOUND						
179+84	Overhead				1	
IM 2292(104)0 - PCN 07D0 Total		0	0	0	1	0

** Incidental to the contract lump sum price "Remove Concrete Footing(s)".

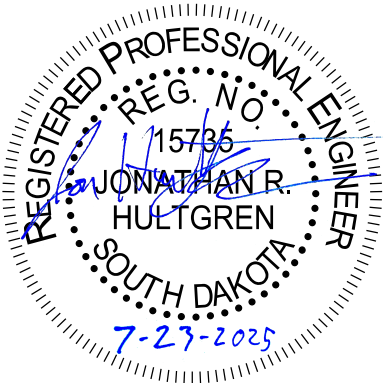
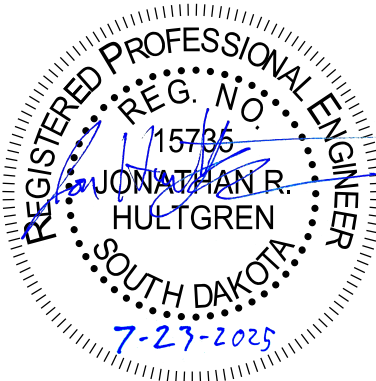


TABLE OF GUARDRAIL DELINEATION

ALIGNMENT	STATION	TYPE 2 OBJECT MARKER	END TERMINAL OBJECT MARKER	GUARDRAIL DELINEATOR	SINGLE / DOUBLE SIDED
		632E2520		632E2220	
EM 0292(88)73 - PCN 06JQ					
I-29 NBL	44+93 to 47+59 R	1	2	6	Single Sided
I-29 NBL	59+61 to 62+14 R	1	2	6	Single Sided
I-29 NBL	59+54 to 63+58 Median	1	2	9	Single Sided
I-29 NBL	76+46 to 79+71 R	2		11	Single Sided
I-29 NBL	84+88 to 87+46 R	1	2	6	Single Sided
I-29 NBL	85+31 to 87+60 Median	1	2	5	Single Sided
I-29 SBL	30+24 to 41+78 Median	2		37	Single Sided
I-29 SBL	39+42 to 42+67 L	2		11	Single Sided
I-29 SBL	45+28 to 66+95 Median	2		69	Single Sided
I-29 SBL	71+36 to 106+22 Median	2		111	Single Sided
I-29 SBL	99+48 to 101+89 L	1	2	5	Single Sided
I-29 RAMP D	63+97 to 66+62 L		1	6	Single Sided
I-229 RAMP C	26+59 to 29+11 L	1	2	6	Single Sided
I-229 RAMP C	26+59 to 29+76 R	1	2	7	Single Sided
I-229 RAMP C	62+34 to 64+50 Median	2		7	Single Sided
EM 0292(88)73 - PCN 06JQ Totals		20	17	302	
IM 2292(104)0 - PCN 07D0					
I-229 NBL	178+00 to 180+42 R	2		8	Single Sided
IM 2292(104)0 - PCN 07D0 Totals		2		8	

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SHEET
S8

TOTAL SHEETS	
S112	

Revised Date: 07/02/2025 NBG

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FOR BIDDING PURPOSES ONLY

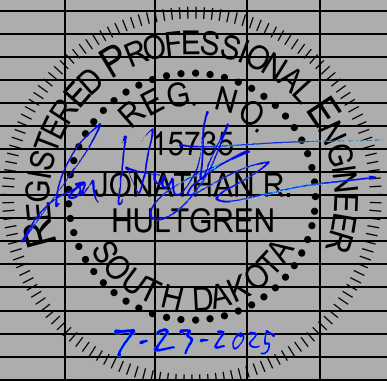


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S9	S112

Plotting Date: 07/02/2025 Revised Date: 07/02/2025 NBG

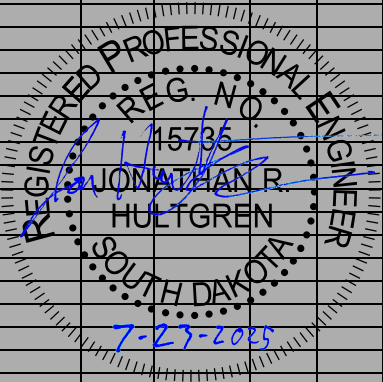
Permanent Sign Installation Table																														
Alignment		Sign and Delineator Install Data														Sign and Delineator Remove/Reset Data					Post Data						Footing Data			
Station	Offset	Sign Description	Sign Code	Sign Width (in)	Sign Height (in)	Sign Area HI (IV) (SqFt)	Sign Area VHI (XI) (SqFt)	Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity (XI) (SqFt)	Type 2 Object Marker Back to Back (Each)	4"x4" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x4" White Delineator with 1.12 Lb/Ft Post (Each)	4"x8" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x8" White Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular Amber Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular White Delineator with 1.12 Lb/Ft Post (Each)	Remove Traffic Sign (Each)	Remove Extruded Panel Sign (Each)	Remove Sign for Reset (Each)	Reset Sign (Each)	Remove Delineator (Each)	use Street Light (SL), use Signal Pole (SP), use Mast Arm (MA), use 1 Post (1P), use 2 Posts (2P), or use 3 Posts (3P)	(F)ixed Base, Breakaway (S)lip Base, (A)nchor Stub Post, or (D)irect Drive	2.0"x2.0" Perforated Tube Post Height (Ft)	2.5"x2.5" Perforated Tube Post Height (Ft)	Post Sizes and Quantities (Ft)		Remove Concrete Footing(s)* (Each)	1' - 9" Dia. Break-away (Ft)	4' - 0" Dia. Fixed (Ft)	
																										W6x15	W6x20			
EM 0292(88)73 - PCN 06JQ																														
I-29 SBL																														
28+75	L	Exit 73 6 Gas logo Sign (existing)	Existing	228	132												1													
		Exit 73 2 Food 4 Gas Logo Sign (proposed)	Special	228	132			209.0																						
35+00	L	4"x4" White Delineator (existing)	Existing																		1									
35+00	L	4"x4" White Delineator (proposed)	Special								1												D							
35+25	L	Exit 73 6 Food Logo Sign (existing)	Existing	228	132												1													
		Exit 73 2 Lodging 4 Food Logo Sign (proposed)	Special	228	132			209.0																						
35+75	L	Right Lane Exit Only Ahead (proposed)	W9-7	132	72			66.0														2P	S				39.7			10.0
40+60	L	4"x4" White Delineator (existing)	Existing																		1									
40+60	L	4"x4" White Delineator (proposed)	Special								1												D							
41+75	L	County 106 Tea Exit Only Arrow (existing)	Existing	180	138														1										1	
		Exit 73 (existing)	Existing	114	30																									
41+76		County 106 Tea Exit Only Arrow (existing)	Existing	180	138															1			2P	S				45.7		12.0
		Exit 73 (existing)	Existing	114	30																									
		Right Lane Only (proposed)	Special	180	36			45.0																						
43+47	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1														D							
44+42	L	Type 2 Object Marker, Yellow (existing)	Existing																		1									
44+42	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1														D							
45+05	L	Emergency Parking Only (existing)	Existing	48	36																	1P	A	13.0						
45+56	L	Mile 74 (D10-2) (existing)	Existing	12	36																1	1	1P	A	13.0					
46+50	L	4"x8" White Delineator (existing)	Existing																											
46+50	L	4"x8" White Delineator (proposed)	Special										1										D							
46+85	L	I-29 Closed When Flashing 1/2 Mile Ahead (existing)	Existing	108	78															1			2P	S				33.5		10.0
46+85	Median	I-29 Closed When Flashing 1/2 Mile Ahead (existing)	Existing	108	78																									10.0
50+79	L	I-29 Closed When Flashing 1/2 Mile Ahead (existing)	Existing	108	78																1								2	
50+81	Median	I-29 Closed When Flashing 1/2 Mile Ahead (existing)	Existing	108	78																1								2	
61+70	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1															D						
61+85	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1															D						
64+18	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1															D						
64+48	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1															D						
69+21	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1															D						
90+23	L	Type 2 Object Marker, Yellow (existing)	Existing																											
90+30	L	Type 2 Object Marker, Yellow (existing)	Existing																			1								
93+07	L	4"x8" White Delineator (proposed)	Special										1										D							
93+32	L	4"x8" White Delineator (proposed)	Special										1										D							
93+57	L	4"x8" White Delineator (proposed)	Special										1										D							
93+82	L	4"x8" White Delineator (proposed)	Special										1										D							
93+87	L	Exit 74 R 60 Deg (proposed)	E5-1A	78	60			32.5															S		32.0					
94+45	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V	8	24		1.3																D	10.0						
96+47	L	Mile 75 (D10-2) (existing)	Existing														1													
96+55	L	4"x4" White Delineator (existing)	Existing																											
99+75	L	I-29 South Sioux City Lane Arrows (proposed)	Special	222	120			185.0															MA							34.0
		85th St R 60 Deg Arrow (Proposed)	Special	168	78			91.0															MA							
		Exit 74 (proposed)	Special	114	30			23.8															MA							
100+66	L	4"x8" White Delineator (proposed)	Special										1										D							
101+66	L	4"x8" White Delineator (proposed)	Special										1										D							
102+66	L	4"x8" White Delineator (proposed)	Special										1										D							
103+66	L	4"x8" White Delineator (proposed)	Special										1										D							
115+11	L	South I-29 Lane Arrows (existing)	Existing														1													
		I-229 North Exit Only Arrow (existing)	Existing														1													
		Exit 75 (existing)	Existing																											
		I-29 South Sioux City Lane Arrow (proposed)	Special	168	126			147.0															MA							
		85th St 1/4 Mile (proposed)	Special	132	78			71.5															MA							
		Exit 74 (proposed)	Special	114	30			23.8															MA							
		I-229 North Exit Only Arrow R 60 Deg (proposed)	Special	174	102			123.3															MA							
		Exit 75 (proposed)	Special	114	30			23.8															MA							
158+00	L	I-29 South Sioux City Lane Arrow (proposed)	Special	168	126			147.0															MA							38.0
		85th St 1 1/4 Mile (proposed)	Special	132	78			71.5															MA							
		Exit 74 (proposed)	Special	114	30			23.8																						

* The Remove Concrete Footing per each quantity shown in this table is for informational purposes only. All costs for removal of the concrete footings will be incidental to the contract lump sum price for "Remove Concrete Footing(s)".



Permanent Sign Installation Table																														
Alignment		Sign and Delineator Install Data														Sign and Delineator Remove/Reset Data					Post Data					Footing Data				
Station	Offset	Sign Description	Sign Code	Sign Width (in)	Sign Height (in)	Sign Area HI (IV) (SqFt)	Sign Area VHI (XI) (SqFt)	Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity (XI) (SqFt)	Type 2 Object Marker Back to Back (Each)	4"x4" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x4" White Delineator with 1.12 Lb/Ft Post (Each)	4"x8" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x8" White Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular Amber Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular White Delineator with 1.12 Lb/Ft Post (Each)	Remove Traffic Sign (Each)	Remove Extruded Panel Sign (Each)	Remove Sign for Reset (Each)	Reset Sign (Each)	Remove Delineator (Each)	use Street Light (SL), use Signal Pole (SP), use Mast Arm (MA), use 1 Post (1P), use 2 Posts (2P), or use 3 Posts (3P)	(F)ixed Base, Breakaway (S)lip Base, (A)nchor Stub Post, or (D)irect Drive	2.0"x2.0" Perforated Tube Post Height (Ft)	2.5"x2.5" Perforated Tube Post Height (Ft)	Post Sizes and Quantities (Ft)		Remove Concrete Footing(s)* (Each)	1' - 9" Dia. Break-away (Ft)	4' - 0" Dia. Fixed (Ft)	
																										W6x15	W6x20			
EM 0292(88)73 - PCN 06JQ																														
85TH STREET EBL																														
302+60	R	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1													D								
303+74	Median	Left Lane Must Turn Left (proposed)	R3-7L	36	36	9.0															1P	A	10.4							
303+74	R	Right Lane Must Turn Right (proposed)	R3-7R	36	36	9.0															1P	A	10.4							
305+80	Median	Do Not Enter (proposed)	R5-1	36	36		9.0														1P	A	10.4							
306+25	Median	Yield (proposed)	R1-2	36	36		3.9														1P	A	10.4							
		4" Tubular White Delineator (proposed)	Special	4											1															
306+50	Median	One Way Left (proposed)	R6-1L	54	18	6.8															2P	A	20.8							
		Keep Right (proposed)	R4-7R	24	30	5.0																								
306+78	R	One Way Right (proposed)	R6-1R	54	18	6.8															2P	A	21.8							
		Stop (proposed)	R1-1	36	36		7.5																							
		4" Tubular White Delineator (proposed)	Special	4											1															
307+00	Median	One Way Right (proposed)	R6-1R	54	18	6.8															2P	A	21.8							
		Do Not Enter (proposed)	R5-1	36	36		9.0																							
311+07	R	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1													D								
314+50	L/R	Reverse Curve 3 Lanes (proposed)	W24-1bL	36	36		9.0														MA									32.0
		Advisory Speed 25 MPH (proposed)	W13-1P	24	24		4.0														MA									
		I-29 North Fargo Lane Arrow (proposed)	Special	144	126			126.0													MA									
		I-29 South Sioux City Right Arrow (proposed)	Special	168	126			147.0																						
		Reverse Curve 3 Lanes (proposed)	W24-1bL	36	36		9.0														MA									
		Advisory Speed 25 MPH (proposed)	W13-1P	24	24		4.0														MA									
315+02	L	Road Closed Ahead (existing)	Existing													1														
315+93	Median	Do Not Enter (proposed)	R5-1	36	36		9.0														1P	A	10.4							
316+02	R	4" Tubular White Delineator (proposed)	Special	4											1							D								
316+07	R	Center Object Marker (proposed)	OM3-C	12	36		3.0														1P	A	10.4							
316+16	R	Cardinal Direction South (proposed)	M3-3	36	18	4.5															2P	A	25.3							
		I-29 Route Sign (proposed)	M1-1	36	36	9.0																								
		Right Arrow (proposed)	M6-1	30	21	4.4																								
316+31	Median	No U-Turn (proposed)	R3-4	36	36		9.0														SL									
316+35	L	4" Tubular Amber Delineator (proposed)	Special	4										1								D								
317+06	R	4" Tubular Amber Delineator (proposed)	Special	4										1								D								
317+07	R	Do Not Enter (proposed)	R5-1	36	36		9.0														1P	A	10.4							
317+65	L	No Left Turn (proposed)	R3-2L	36	36		9.0														MA									
		No U-Turn (proposed)	R3-4	36	36		9.0														MA									
317+65	R	No Right Turn (proposed)	R3-2R	36	36		9.0														MA									
317+79	R	Keep Left (proposed)	R4-7L	24	30	5.0															SP									
317+85	L	4" Tubular Amber Delineator (proposed)	Special	4										1								D								
318+33	R	One Way Left (proposed)	R6-1L	54	18	6.8															2P	A	17.8							
318+40	L	85th St XXXW (proposed)	Special	48	18		6.0														MA									
		Left Turn Only (proposed)	R3-5L	30	36		7.5														MA									
		No Turn on Red (proposed)	R10-11a	36	48		12.0														MA									
318+68	R	End of Roadway Object Marker (OM4-3) (existing)	Existing													3														
318+84	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1													D								
321+51	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1													D								
322+10	R	Do Not Enter (proposed)	R5-1	36	36		9.0														1P	A	10.4							
322+41	L	4" Tubular Amber Delineator (proposed)	Special	4										1								D								
322+53	L	Cardinal Direction North (proposed)	M3-1	36	18	4.5															2P	A	25.3							
		I-29 Route Sign (proposed)	M1-1	36	36	9.0																								
		Up Left Arrow (proposed)	M6-2L	30	21	4.4																								
322+61	L	Cardinal Direction East (proposed)	M3-2	36	18	4.5															2P	A	22.3							
		85th Street (proposed)	Special	66	18	8.3																								
		Up Right Arrow (proposed)	M6-2R	30	21	4.4																								
322+63	R	4" Tubular White Delineator (proposed)	Special	4											1							D								
323+16	L	4" Tubular Amber Delineator (proposed)	Special	4										1																

* The Remove Concrete Footing per each quantity shown in this table is for informational purposes only. All costs for removal of the concrete footings will be incidental to the contract lump sum price for "Remove Concrete Footing(s)".





SHEET

S11

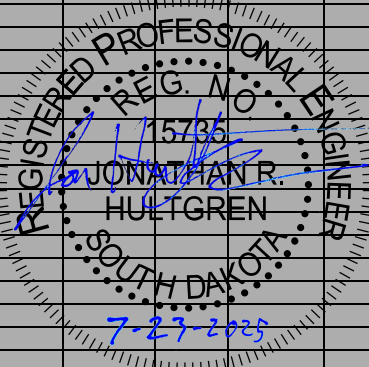
Plotting Date: 07/02/2025

Revised Date: 07/02/2025 NBG

Plotted From - ngjersvik File - c:\bms\seh-pw-01\ngjersvik\dms05720\Table of Permanent Signing Quantities.pdf

Permanent Sign Installation Table																														
Alignment		Sign and Delineator Install Data														Sign and Delineator Remove/Reset Data					Post Data					Footing Data				
								Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity (XI) (SqFt)	Type 2 Object Marker Back to Back (Each)	4"x4" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x4" White Delineator with 1.12 Lb/Ft Post (Each)	4"x8" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x8" White Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular Amber Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular White Delineator with 1.12 Lb/Ft Post (Each)	Remove Traffic Sign (Each)	Remove Extruded Panel Sign (Each)	Remove Sign for Reset (Each)	Reset Sign (Each)	Remove Delineator (Each)	use Street Light (SL), use Signal Pole (SP), use Mast Arm (MA), use 1 Post (1P), use 2 Posts (2P), or use 3 Posts (3P)	(F)ixed Base, Breakaway (S)lip Base, (A)nchor Stub Post, or (D)irect Drive	2.0"x2.0" Perforated Tube Post Height (Ft)	2.5"x2.5" Perforated Tube Post Height (Ft)	Post Sizes and Quantities (Ft)		Remove Concrete Footing(s)* (Each)	1' - 9" Dia. Break-away (Ft)	4' - 0" Dia. Fixed (Ft)	
Station	Offset	Sign Description	Sign Code	Sign Width (in)	Sign Height (in)	Sign Area HI (IV) (SqFt)	Sign Area VHI (XI) (SqFt)																			W6x15	W6x20			
EM 0292(88)73 - PCN 06JQ																														
85TH STREET WBL																														
399+45	L	Object Marker Right (proposed)	OM3-R	12	36		3.0														1P	A	10.4							
401+50	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1														D							
402+70	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1														D							
402+89	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1														D							
405+52	Median	One Way Right (proposed)	R6-1R	54	18	6.8															2P	A	21.8							
		Do Not Enter (proposed)	R5-1	36	36		9.0																							
405+81	L	One Way Right (proposed)	R6-1R	54	18	6.8															2P	A	21.8							
		Stop (proposed)	R1-1	36	36		7.5																							
		4" Tubular White Delineator (proposed)	Special	4											1															
406+03	L	One Way Left (proposed)	R6-1L	54	18	6.8															2P	A	20.8							
		Keep Right (proposed)	R4-7R	24	30	5.0																								
406+25	Median	Yield (proposed)	R1-2	36	36		3.9														1P	A	10.4							
		4" Tubular White Delineator (proposed)	Special	4											1															
406+78	Median	Do Not Enter (proposed)	R5-1	36	36		9.0														1P	A	10.4							
408+78	Median	Left Lane Must Turn Left (proposed)	R3-7L	36	36	9.0															1P	A	10.4							
408+78	L	Right Lane Must Turn Right (proposed)	R3-7R	36	36	9.0															1P	A	10.4							
411+97	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1														D							
412+09	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1														D							
414+00	L	Speed Limit 40 MPH (proposed)	R2-1	30	36	7.5															1P	A	10.4							
415+73	Median	One Way Right (proposed)	R6-1R	54	18	6.8															2P	A	17.8							
415+83	L	85th St XXXW (proposed)	Special	48	18		6.0														MA									
		No Turn on Red (proposed)	R10-11a	36	48		12.0														MA									
		Right Turn Only (proposed)	R3-5R	30	36		7.5														MA									
		Right Turn Only (proposed)	R3-5R	30	36		7.5														MA									
416+25	Median	Keep Right (proposed)	R4-7L	24	30	5.0															SP									
416+39	L	4" Tubular White Delineator (proposed)	Special	4											1						D									
416+49	L	No Right Turn or U-Turn (proposed)	R3-18R	36	36		9.0														MA									
		No Left Turn (proposed)	R3-2	36	36		9.0														MA									
417+21	R	Do Not Enter (proposed)	R5-1	36	36		9.0														1P	A	10.4							
417+86	R	Cardinal Direction West (proposed)	M3-4	36	18	4.5															2P	A	22.3							
		85th Street (proposed)	Special	66	18	8.3																								
		Up Right Arrow (proposed)	M6-2R	30	21	4.4																								
417+88	R	Cardinal Direction South (proposed)	M3-3	36	18	4.5															2P	A	19.1							
		I-29 Route Sign (proposed)	M1-1	36	36	9.0																								
		Up Left Arrow (proposed)	M6-2L	30	21	4.4																								
417+91	R	4" Tubular Amber Delineator (proposed)	Special	4											1								D							
418+09	Median	Do Not Enter (proposed)	R5-1	36	36		9.0														1P	A	10.4							
418+82	R	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1														D							
421+49	R	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1														D							
421+82	Median	One Way Left (proposed)	R6-1L	54	18	6.8															2P	A	17.8							
422+18	R	Do Not Enter (proposed)	R5-1	36	36		9.0														SP									
		85th St XXXW (proposed)	Special	48	18		6.0														MA									
		Left Turn Only (proposed)	R3-5L	30	36		7.5														MA									
		No Turn on Red (proposed)	R10-11a	36	48		12.0														MA									
422+53	R	Do Not Enter (proposed)	R5-1	36	36		9.0														1P	A	10.4							
		4" Tubular White Delineator (proposed)	Special	4											1															
422+55	Median	Keep Left (proposed)	R4-7R	24	30	5.0															SP									
422+64	R	No Left Turn or U-Turn (proposed)	R3-18L	36	36		9.0														MA									
		No Right Turn (proposed)	R3-2R	36	36		9.0														MA									
424+07	L	Cardinal Direction North (proposed)	M3-1	36	18	4.5															SP									
		I-29 Route Sign (proposed)	M1-1	36	36	9.0																								
		Right Arrow (proposed)	M6-1	30	21	4.4																								

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SHEET

S13

TOTAL SHEETS	
S112	

Plotting Date: 07/02/2025

Revised Date: 07/02/2025 NBG

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 15735
JONATHAN R. HULTGREN
SOUTH DAKOTA
7-23-2025

Plotted From - ngjersvik File - c:\bms\seh-pw-01\ngjersvik\dms05720\Table of Permanent Signing Quantities.pdf

FOR BIDDING PURPOSES ONLY

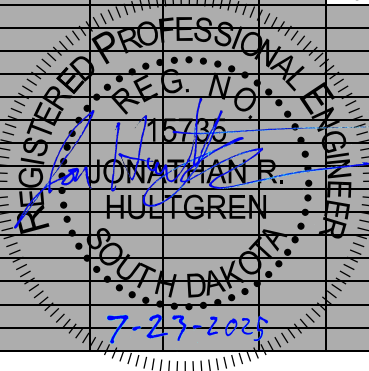


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S14	S112

Plotting Date: 07/02/2025 Revised Date: 07/02/2025 NBG

Permanent Sign Installation Table																														
Alignment		Sign and Delineator Install Data														Sign and Delineator Remove/Reset Data						Post Data					Footing Data			
Station	Offset	Sign Description	Sign Code	Sign Width (in)	Sign Height (in)	Sign Area HI (IV) (SqFt)	Sign Area VHI (XI) (SqFt)	Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity (XI) (SqFt)	Type 2 Object Marker Back to Back (Each)	4"x4" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x4" White Delineator with 1.12 Lb/Ft Post (Each)	4"x8" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x8" White Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular Amber Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular White Delineator with 1.12 Lb/Ft Post (Each)	Remove Traffic Sign (Each)	Remove Extruded Panel Sign (Each)	Remove Sign for Reset (Each)	Reset Sign (Each)	Remove Delineator (Each)	use Street Light (SL), use Signal Pole (SP), use Mast Arm (MA), use 1 Post (1P), use 2 Posts (2P), or use 3 Posts (3P)	(F)ixed Base, Breakaway (S)lip Base, (A)nchor Stub Post, or (D)irect Drive	2.0"x2.0" Perforated Tube Post Height (Ft)	2.5"x2.5" Perforated Tube Post Height (Ft)	Post Sizes and Quantities (Ft)		Remove Concrete Footing(s)* (Each)	1' - 9" Dia. Break-away (Ft)	4' - 0" Dia. Fixed (Ft)	
																										W6x15	W6x20			
EM 0292(88)73 - PCN 06JQ																														
I-29 NORTHBOUND ON-RAMP (RAMP A)																														
11+45	R	4" Tubular White Delineator (proposed)	Special	4											1						D									
12+66	R	4"x8" White Delineator (proposed)	Special										1								D									
13+66	R	4"x8" White Delineator (proposed)	Special										1								D									
14+66	R	4"x8" White Delineator (proposed)	Special										1								D									
14+80	R	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1												D									
15+60	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1												D									
15+66	R	4"x8" White Delineator (proposed)	Special										1								D									
16+66	R	4"x8" White Delineator (proposed)	Special										1								D									
17+37	R	Lane Ends Right (proposed)	W4-2	48	48		16.0														SL									
17+66	R	4"x8" White Delineator (proposed)	Special										1								D									
18+66	R	4"x8" White Delineator (proposed)	Special										1								D									
19+66	R	4"x8" White Delineator (proposed)	Special										1								D									
20+66	L	4"x4" Amber Delineator (proposed)	Special							1											D									
20+66	R	4"x8" White Delineator (proposed)	Special										1								D									
21+66	L	4"x4" Amber Delineator (proposed)	Special							1											D									
21+66	R	4"x8" White Delineator (proposed)	Special										1								D									
22+66	L	4"x4" Amber Delineator (proposed)	Special							1											D									
22+66	R	4"x8" White Delineator (proposed)	Special										1								D									
23+66	L	4"x4" Amber Delineator (proposed)	Special							1											D									
23+66	R	4"x8" White Delineator (proposed)	Special										1								D									
25+41	R	4"x8" White Delineator (existing)	Existing																	1										
25+41	R	4"x8" White Delineator (proposed)	Special										1								D									
I-29 NORTHBOUND ON-RAMP (RAMP E)																														
2+31	R	Yield Here to Pedestrians Left (proposed)	R1-5L	36	36	9.0															SP									
3+10	R	Yield (proposed)	R1-2	36	36		3.9														1P	A	10.4							
3+42	R	4"x8" White Delineator (proposed)	Special										1								D									
I-29 NORTHBOUND OFF-RAMP (RAMP B)																														
20+00	R	4"x8" White Delineator (proposed)	Special										1								D									
21+00	R	4"x8" White Delineator (proposed)	Special										1								D									
22+00	R	4"x8" White Delineator (proposed)	Special										1								D									
23+10	L	4"x8" Amber Delineator (proposed)	Special									1									D									
23+35	L	4"x8" Amber Delineator (proposed)	Special									1									D									
23+60	L	4"x8" Amber Delineator (proposed)	Special									1									D									
23+85	L	4"x8" Amber Delineator (proposed)	Special									1									D									
24+00	R	4"x8" White Delineator (proposed)	Special										1								D									
24+10	L	4"x8" Amber Delineator (proposed)	Special									1									D									
25+00	R	4"x8" White Delineator (proposed)	Special										1								D									
26+00	R	4"x8" White Delineator (proposed)	Special										1								D									
28+00	R	4"x8" White Delineator (proposed)	Special										1								D									
28+00	R	4"x8" White Delineator (proposed)	Special										1								D									
29+00	R	4"x8" White Delineator (proposed)	Special										1								D									
30+00	R	4"x8" White Delineator (proposed)	Special										1								D									
31+45	L	Left Turn Only (proposed)	R3-5L	30	36		7.5														MA									16.0
	R	Right Turn Only (proposed)	R3-5R	30	36		7.5														MA									
31+97	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1												D									
32+00	R	4"x8" White Delineator (proposed)	Special										1								D									
33+00	R	4"x8" White Delineator (proposed)	Special										1								D									
33+66	L	Wrong Way (proposed)	R5-1a	42	30		8.8														1P	A	9.9							
33+66	R	Wrong Way (proposed)	R5-1a	42	30		8.8														1P	A	9.9							
34+00	R	4"x8" White Delineator (proposed)	Special										1								D									
34+62	R	4" Tubular White Delineator (proposed)	Special	4											1						D									
34+68	L	Type 2 Object Marker, Yellow (proposed)	OM2-2V							1											D									
34+75	R	Cardinal Direction East (proposed)	M3-2	36	18	4.5															2P	A	22.3							
		85th Street (proposed)	Special	66	18	8.3																								
		Up Right Arrow (proposed)	M6-2R	30	21	4.4																								
34+77	R	Cardinal Direction West (proposed)	M3-4	36	18	4.5															2P	A	22.3							
		85th Street (proposed)	Special	66	18	8.3																								
		Up Left Arrow (proposed)	M6-2L	30	21	4.4																								
I-29 NORTHBOUND OFF-RAMP (RAMP F)																														
3+29	L	Do Not Enter (proposed)	R5-1	36	36		9.0														1P	A	10.4							
		Stop Here on Red Right (proposed)	R10-6R	24	36																									
3+29	R	Do Not Enter (proposed)	R5-1	36	36		9.0														1P	A	10.4							
		Stop Here on Red Left (proposed)	R10-6L	24	36																									
3+65	R	Do Not Enter (proposed)	R5-1	36	36		9.0																							

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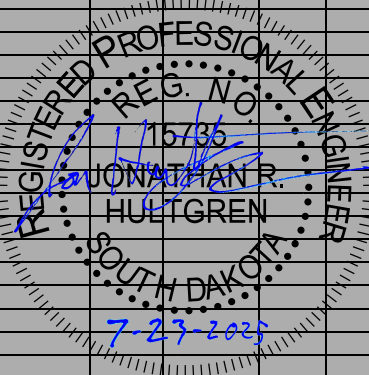


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S15	S112

Plotting Date: 07/02/2025 Revised Date: 07/02/2025 NBG

Permanent Sign Installation Table																														
Alignment		Sign and Delineator Install Data														Sign and Delineator Remove/Reset Data						Post Data						Footing Data		
								Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity (XI) (SqFt)	Type 2 Object Marker Back to Back (Each)	4"x4" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x4" White Delineator with 1.12 Lb/Ft Post (Each)	4"x8" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x8" White Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular Amber Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular White Delineator with 1.12 Lb/Ft Post (Each)	Remove Traffic Sign (Each)	Remove Extruded Panel Sign (Each)	Remove Sign for Reset (Each)	Reset Sign (Each)	Remove Delineator (Each)	use Street Light (SL), use Signal Pole (SP), use Mast Arm (MA), use 1 Post (1P), use 2 Posts (2P), or use 3 Posts (3P)	(F)ixed Base, Breakaway (S)lip Base, (A)nchor Stub Post, or (D)irect Drive	2.0"x2.0" Perforated Tube Post Height (Ft)	2.5"x2.5" Perforated Tube Post Height (Ft)	Post Sizes and Quantities (Ft)		Remove Concrete Footing(s)* (Each)	1' - 9" Dia. Break-away (Ft)	4' - 0" Dia. Fixed (Ft)	
Station	Offset	Sign Description	Sign Code	Sign Width (in)	Sign Height (in)	Sign Area HI (IV) (SqFt)	Sign Area VHI (XI) (SqFt)																			W6x15	W6x20			
EM 0292(88)73 - PCN 06JQ																														
I-29 SOUTHBOUND ON-RAMP (RAMP C)																														
30+00	L	4"x8" White Delineator (proposed)	Special										1									D								
31+00	L	4"x8" White Delineator (proposed)	Special										1									D								
32+00	L	4"x8" White Delineator (proposed)	Special										1									D								
33+00	L	4"x8" White Delineator (proposed)	Special										1									D								
33+00	R	4"x4" Amber Delineator (proposed)	Special							1												D								
34+00	L	4"x8" White Delineator (proposed)	Special										1									D								
34+00	R	4"x4" Amber Delineator (proposed)	Special							1												D								
35+00	L	4"x8" White Delineator (proposed)	Special										1									D								
35+00	R	4"x4" Amber Delineator (proposed)	Special							1												D								
36+00	L	4"x8" White Delineator (proposed)	Special										1									D								
36+00	R	4"x4" Amber Delineator (proposed)	Special							1												D								
37+00	L	4"x8" White Delineator (proposed)	Special										1									D								
38+00	L	4"x8" White Delineator (proposed)	Special										1									D								
39+00	L	4"x8" White Delineator (proposed)	Special										1									D								
40+00	L	4"x8" White Delineator (proposed)	Special										1									D								
41+00	L	4"x8" White Delineator (proposed)	Special										1									D								
42+00	L	4"x8" White Delineator (proposed)	Special										1									D								
43+00	L	4"x8" White Delineator (proposed)	Special										1									D								
43+60	R	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1													D								
I-29 SOUTHBOUND ON-RAMP (RAMP G)																														
4+30	L	Yield Here to Pedestrians Right (proposed)	R1-5R	36	36	9.0																SP								
5+14	R	Yield (proposed)	R1-2	36	36		3.9															1P	A	10.4						
I-29 SOUTHBOUND OFF-RAMP (RAMP D)																														
40+20	L	Do Not Enter (proposed)	R5-1	36	36		9.0															1P	A	10.4						
40+20	R	Do Not Enter (proposed)	R5-1	36	36		9.0															1P	A	10.4						
41+09	L	Cardinal Direction East (proposed)	M3-2	36	18	4.5																2P	A	22.3						
		85th Street (proposed)	Special	66	18	8.3																								
		Up Left Arrow (proposed)	M6-2L	30	21	4.4																								
41+10	L	Cardinal Direction West (proposed)	M3-4	36	18	4.5																2P	A	22.3						
		85th Street (proposed)	Special	66	18	8.3																								
		Up Right Arrow (proposed)	M6-2R	30	21	4.4																								
41+25	L	4" Tubular White Delineator (proposed)	Special	4											1							D								
42+00	L	4"x8" White Delineator (proposed)	Special										1									D								
42+66	L	Wrong Way (proposed)	R5-1a	42	30		8.8															1P	A	9.9						
42+66	R	Wrong Way (proposed)	R5-1a	42	30		8.8															1P	A	9.9						
43+00	L	4"x8" White Delineator (proposed)	Special										1									D								
44+00	L	4"x8" White Delineator (proposed)	Special										1									D								
45+00	L	4"x8" White Delineator (proposed)	Special										1									D								
45+82	L	Right Turn Only (proposed)	R3-5R	30	36		7.5															MA								16.0
	L	Right Turn Only (proposed)	R3-5R	30	36		7.5															MA								
	R	Left Turn Only (proposed)	R3-5L	30	36		7.5															MA								
46+00	L	4"x8" White Delineator (proposed)	Special										1									D								
46+03	R	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1													D								
47+00	L	4"x8" White Delineator (proposed)	Special										1									D								
47+45	R	Type 2 Object Marker, Yellow (proposed)	OM2-2V						1													D								
48+00	L	4"x8" White Delineator (proposed)	Special										1									D								
49+00	L	4"x8" White Delineator (proposed)	Special										1									D								
50+00	L	4"x8" White Delineator (proposed)	Special										1									D								
51+00	L	4"x8" White Delineator (proposed)	Special										1									D								
52+00	L	4"x8" White Delineator (proposed)	Special										1									D								
53+00	L	4"x8" White Delineator (proposed)	Special										1									D								
54+00	L	4"x8" White Delineator (proposed)	Special										1									D								
55+00	L	4"x8" White Delineator (proposed)	Special										1									D								
56+00	L	4"x8" White Delineator (proposed)	Special										1									D								
57+00	L	4"x8" White Delineator (proposed)	Special										1									D								
58+00	L	4"x8" White Delineator (proposed)	Special										1									D								
59+00	L	4"x8" White Delineator (proposed)	Special										1									D								
60+00	L	4"x8" White Delineator (proposed)	Special										1									D					</			

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SHEET	
S16	

Revised Date: 07/02/2025 NBG

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SHEET

S17

TOTAL
SHEETS

S112

Revised Date: 07/02/2025 NBG

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SHEET	
S18	

Revised Date: 07/02/2025 NBG

REGISTERED PROFESSIONAL ENGINEER
 REG. NO. 15736
 JONATHAN R. HULTGREN
 SOUTH DAKOTA
 COMMISSION EXPIRES 7-27-2025

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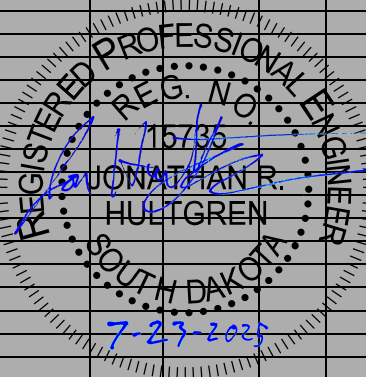


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S19	S112

Plotting Date: 07/02/2025 Revised Date: 07/02/2025 NBG

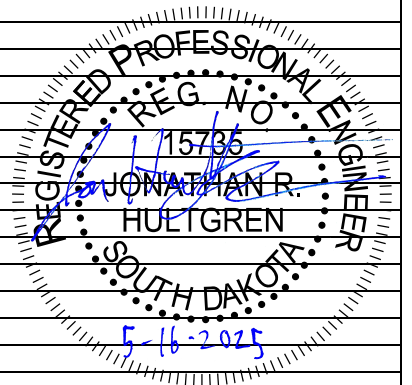
Permanent Sign Installation Table																														
Alignment		Sign and Delineator Install Data														Sign and Delineator Remove/Reset Data					Post Data						Footing Data			
Station	Offset	Sign Description	Sign Code	Sign Width (in)	Sign Height (in)	Sign Area HI (IV) (SqFt)	Sign Area VHI (XI) (SqFt)	Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity (XI) (SqFt)	Type 2 Object Marker Back to Back (Each)	4"x4" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x4" White Delineator with 1.12 Lb/Ft Post (Each)	4"x8" Amber Delineator with 1.12 Lb/Ft Post (Each)	4"x8" White Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular Amber Delineator with 1.12 Lb/Ft Post (Each)	4" Tubular White Delineator with 1.12 Lb/Ft Post (Each)	Remove Traffic Sign (Each)	Remove Extruded Panel Sign (Each)	Remove Sign for Reset (Each)	Reset Sign (Each)	Remove Delineator (Each)	use Street Light (SL), use Signal Pole (SP), use Mast Arm (MA), use 1 Post (1P), use 2 Posts (2P), or use 3 Posts (3P)	(F)ixed Base, Breakaway (S)lip Base, (A)nchor Stub Post, or (D)irect Drive	2.0"x2.0" Perforated Tube Post Height (Ft)	2.5"x2.5" Perforated Tube Post Height (Ft)	Post Sizes and Quantities (Ft)		Remove Concrete Footing(s)* (Each)	1' - 9" Dia. Break-away (Ft)	4' - 0" Dia. Fixed (Ft)	
																										W6x15	W6x20			
IM 2292(104)0 - PCN 07D0																														
I-229 NBL																														
152+90	R	4"x4" White Delineator (existing)	Existing																	1										
152+90	R	4"x4" White Delineator (proposed)	Special								1												D							
153+56	L/R	Louise Avenue 1/2 Mile (existing)	Existing														1													
		Exit 1C (existing)	Existing																											
		Hospital (D9-2) (existing)	Existing	30	30																									
		I-229 North Lane Arrows (proposed)	Special	216	96																									
		Louise Avenue 1/2 Mile Exit Arrow Only (proposed)	Special	228	114			180.5														MA								
		Exit 1 (proposed)	Special	114	30			23.8														MA								
		Hospital (proposed)	D9-2	30	30		6.3															MA								
156+54	R	4"x4" White Delineator (existing)	Existing																	1										
156+54	R	4"x4" White Delineator (proposed)	Special								1												D							
160+22	R	4"x4" White Delineator (existing)	Existing																	1										
160+22	R	4"x4" White Delineator (proposed)	Special								1												D							
165+49	R	4"x4" White Delineator (existing)	Existing																	1										
165+49	R	4"x4" White Delineator (proposed)	Special								1												D							
169+73	R	Speed Limit 65 MPH (R2-1) (existing)	Existing	36	48													1	1			1P	A	12.4						
170+90	R	4"x4" White Delineator (existing)	Existing																	1										
170+90	R	4"x4" White Delineator (proposed)	Special								1												D							
176+20	R	4"x4" White Delineator (existing)	Existing																	1										
176+20	R	4"x4" White Delineator (proposed)	Special								1												D							
179+48	R	Louise Avenue R 60 Deg Arrow (existing)	Existing														1											2		
		Exit 1C (existing)	Existing																											
		Hospital (D9-2) (existing)	Existing																											
179+84	R	Louise Avenue Exit Only R 60 Deg Arrow (proposed)	Special	174	120			145.0														MA								24.0
		Exit 1 (proposed)	Special	114	30			23.8														MA								
		Hospital (proposed)	D9-2	30	30		6.3															MA								
181+11	R	4"x8" White Delineator (existing)	Existing																	1										
181+11	R	4"x8" White Delineator (proposed)	Special										1										D							
182+91	R	4"x8" White Delineator (existing)	Existing																	1										
182+91	R	4"x8" White Delineator (proposed)	Special										1										D							
187+38	R	Exit 1C R 60 Deg (existing)	Existing														1													
		Exit 1 R 60 Deg (proposed)	E5-1a	78	60			32.5																						
I-229 NORTHBOUND OFF RAMP (I-229 RAMP C LOUISE)																														
22+55	R	4"x8" White Delineator (existing)	Existing																	1										
22+55	R	4"x8" White Delineator (proposed)	Special										1										D							
25+30	R	4"x8" White Delineator (existing)	Existing																	1										
25+30	R	4"x8" White Delineator (proposed)	Special										1										D							
28+34	R	4"x8" White Delineator (existing)	Existing																	1										
28+34	R	4"x8" White Delineator (proposed)	Special										1										D							
31+38	L	4"x8" Amber Delineator (existing)	Existing																											
31+38	L	4"x8" Amber Delineator (proposed)	Special									1											D							
31+38	R	4"x8" White Delineator (existing)	Existing																	1										
31+38	R	4"x8" White Delineator (proposed)	Special										1										D							
34+15	L	4"x8" Amber Delineator (existing)	Existing																											
34+15	L	4"x8" Amber Delineator (proposed)	Special									1											D							
34+15	R	4"x8" White Delineator (existing)	Existing																	1										
34+15	R	4"x8" White Delineator (proposed)	Special										1										D							
36+80	L	4"x8" Amber Delineator (existing)	Existing																											
36+80	L	4"x8" Amber Delineator (proposed)	Special									1											D							
36+80	R	4"x8" White Delineator (existing)	Existing																	1										
36+80	R	4"x8" White Delineator (proposed)	Special										1										D							
39+34	R	4"x8" White Delineator (existing)	Existing																	1										
39+34	R	4"x8" White Delineator (proposed)	Special										1										D							
39+40	L	4"x8" Amber Delineator (existing)	Existing																											
39+40	L	4"x8" Amber Delineator (proposed)	Special									1											D							
40+64	R	4"x8" White Delineator (existing)	Existing																	1										
40+64	R	4"x8" White Delineator (proposed)	Special																											

* The Remove Concrete Footing per each quantity shown in this table is for informational purposes only. All costs for removal of the concrete footings will be incidental to the contract lump sum price for "Remove Concrete Footing(s)".

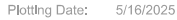




PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S20	S112

[illegible]

FOR BIDDING PURPOSES ONLY



PROJECT
EM 0292(88)73
IM 2292(104)0

SHEET	TOTAL SHEETS
S21	S112

1. All cable quantities shown include 6.5' of slack/coil in each junction box, unless otherwise noted.

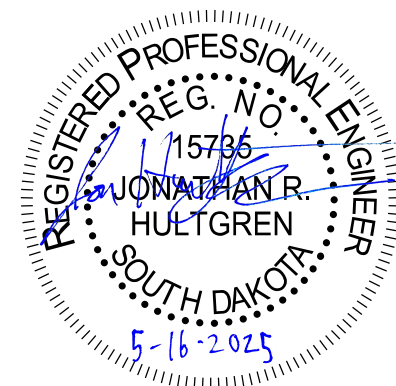
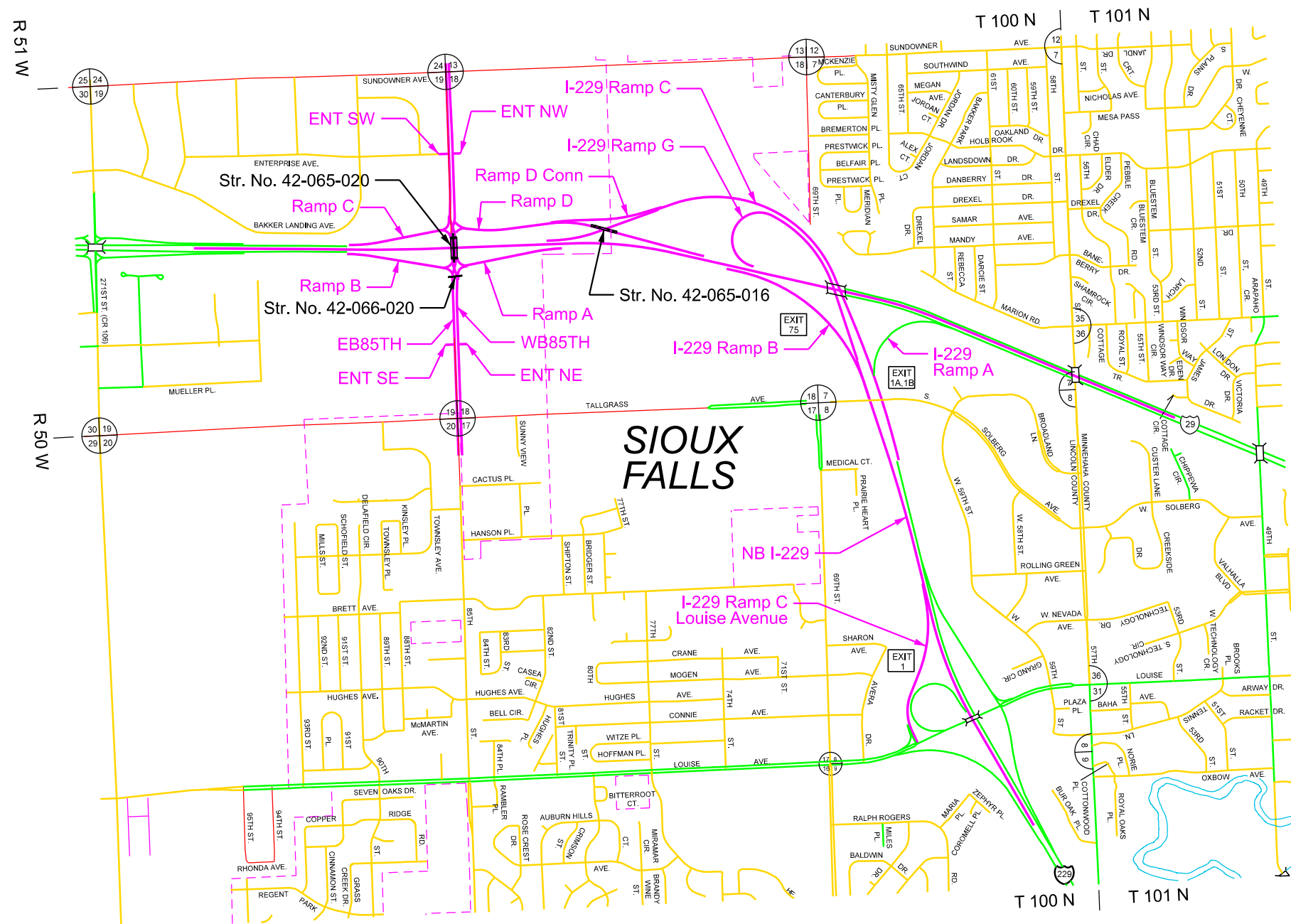
OVERALL LAYOUT

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S22	S112

Plotting Date: 5/16/2025
Plot Scale: 1" = 2000'



PERMANENT SIGNING

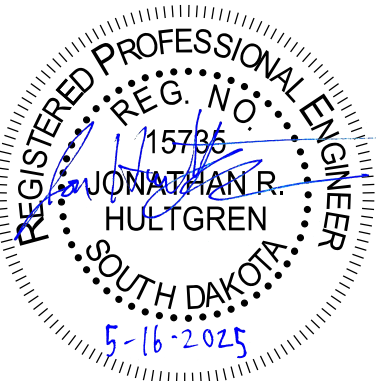
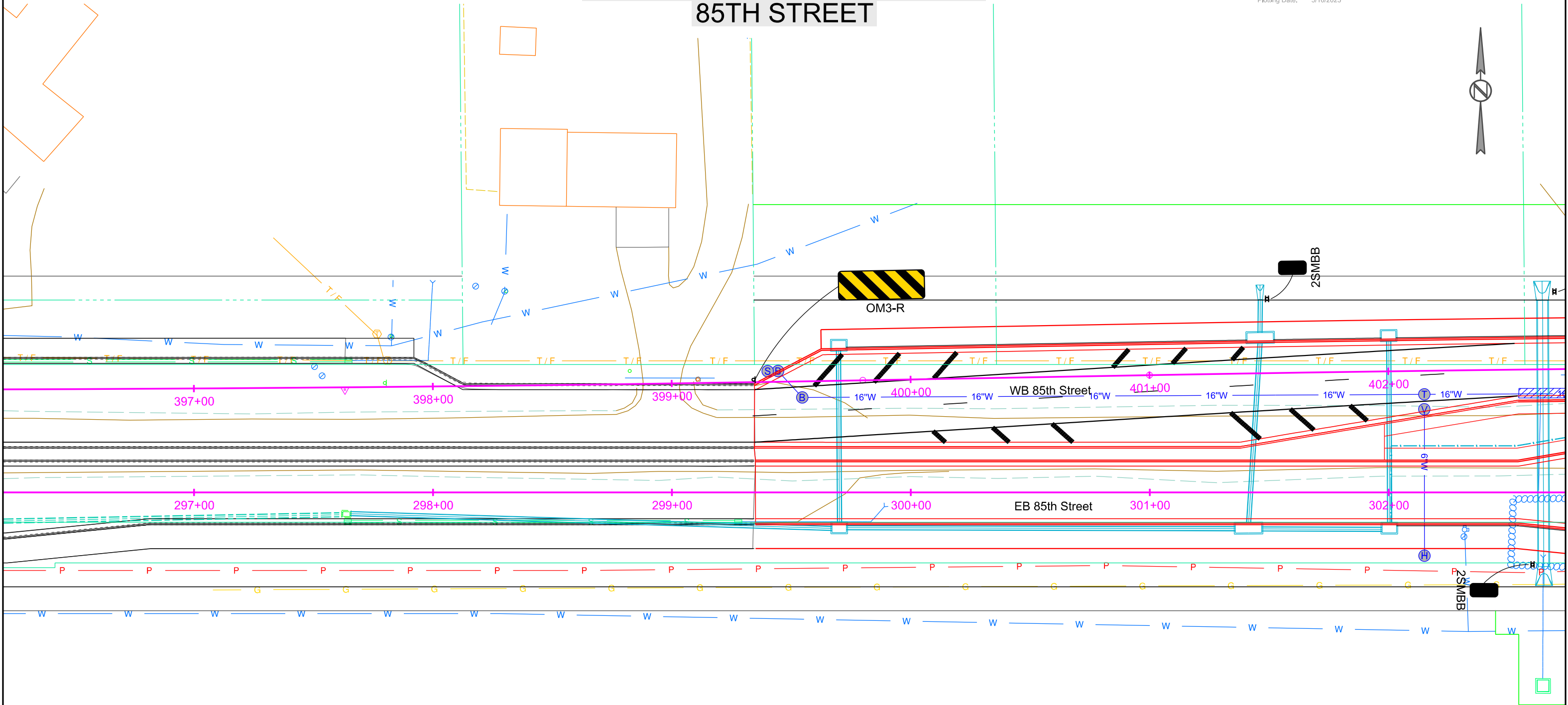
85TH STREET

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S23	S112



PERMANENT SIGNING

85TH STREET

FOR BIDDING PURPOSES ONLY

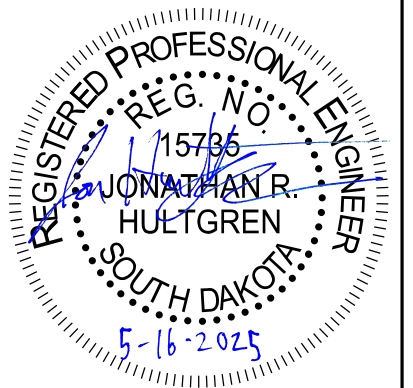
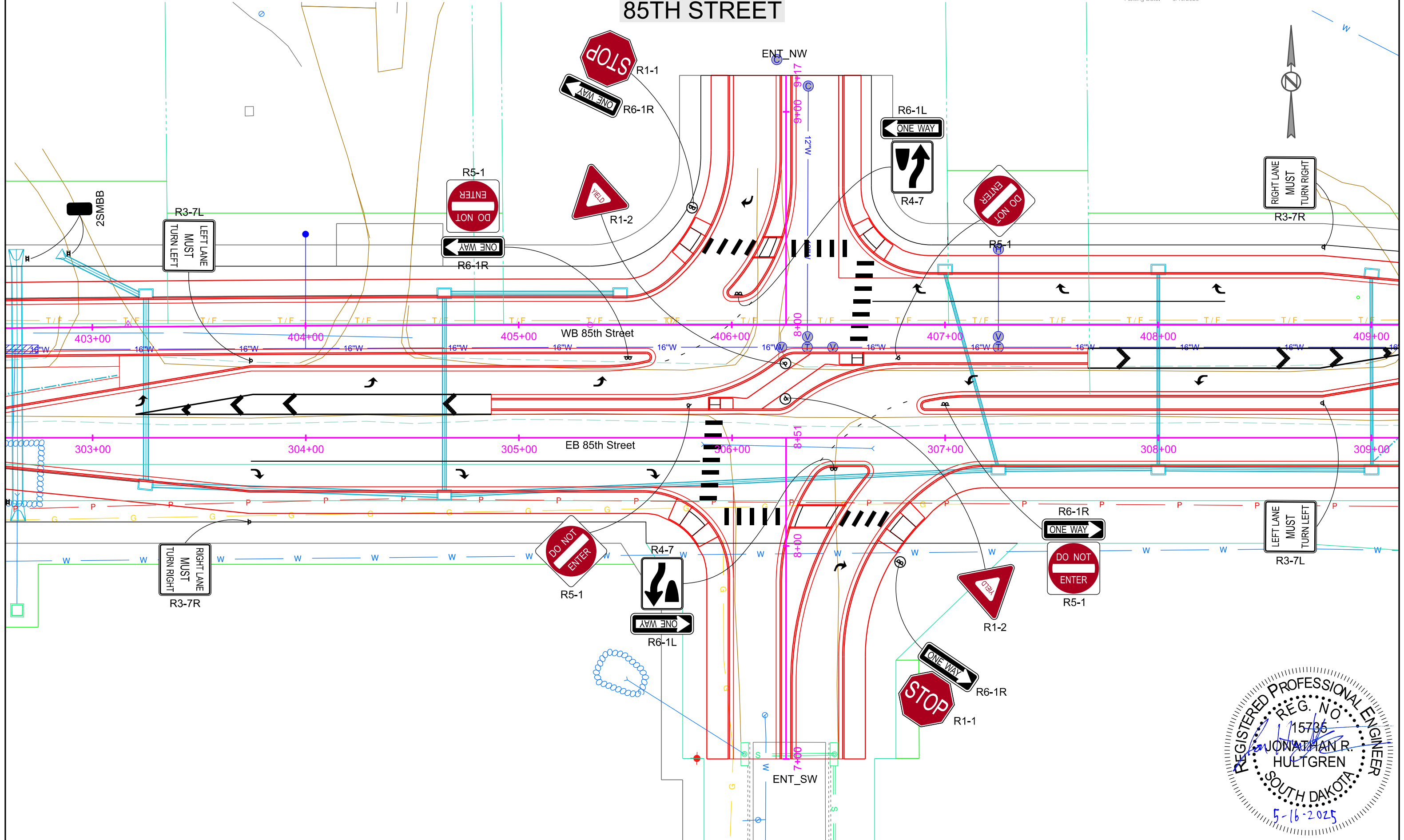


PROJECT
EM 0292(88)73
IM 2292(104)0

SHEET
S24

TOTAL
SHEETS
S112

Plotting Date: 5/16/2025



PERMANENT SIGNING

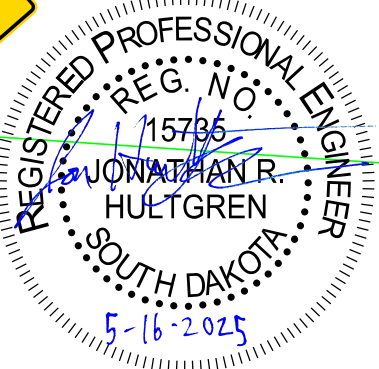
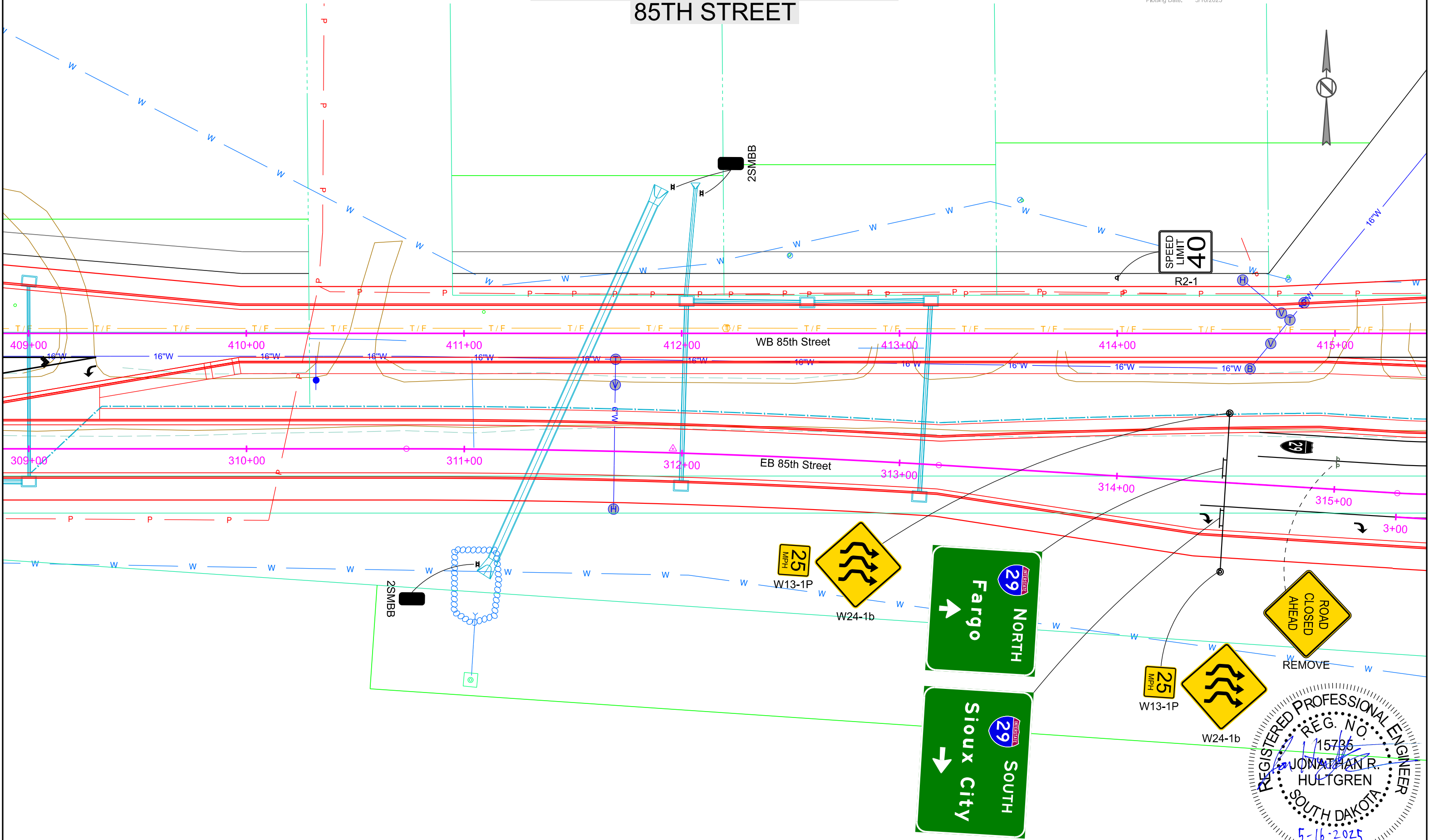
85TH STREET

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S25	S112

Plotting Date: 5/16/2025



PERMANENT SIGNING

85TH STREET

FOR BIDDING PURPOSES ONLY

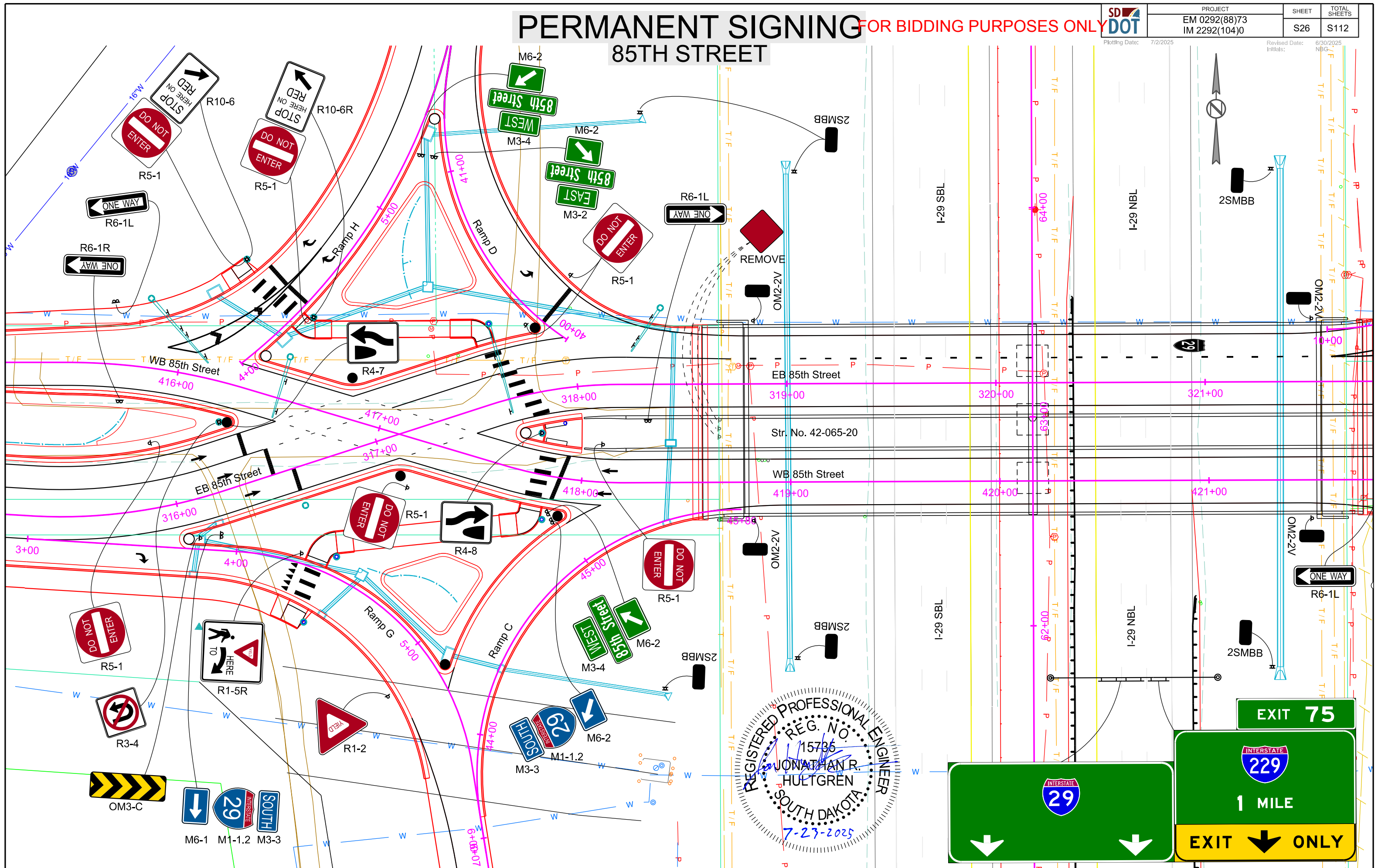


PROJECT
EM 0292(88)73
IM 2292(104)0

SHEET
S26
TOTAL SHEETS
S112

Plotting Date: 7/2/2025

Revised Date: 6/30/2025
Initials: NBO



EXIT 75

1 MILE

EXIT ONLY

PERMANENT SIGNING

85TH STREET

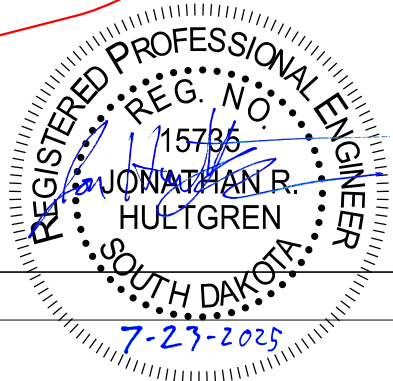
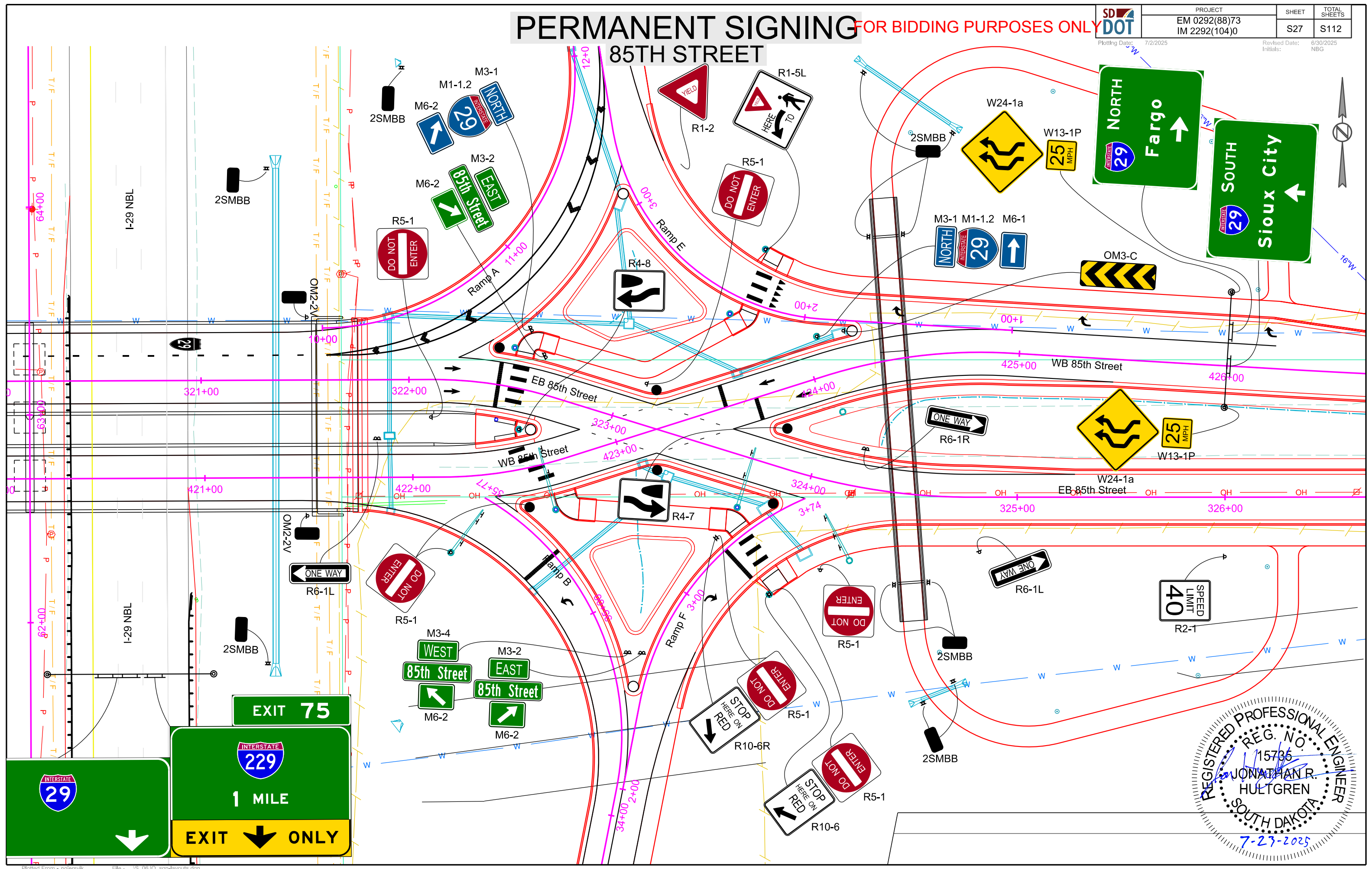
FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S27	S112

Plotting Date: 7/2/2025

Revised Date: 6/30/2025
Initials: NBG



PERMANENT SIGNING

FOR BIDDING PURPOSES ONLY

85TH STREET

OVERALL VIEW @ I-29 INTERCHANGE



PROJECT
EM 0292(88)73
IM 2292(104)0

SHEET
S28

TOTAL
SHEETS
S112

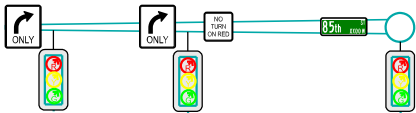
Plotting Date: 7/21/2025

Revised Date: 7/21/2025
Initials: NRG

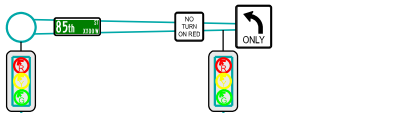


WEST RAMPS SIGNAL POLE MAST ARM SIGNS

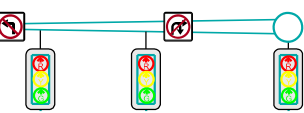
RAMP H MAST ARM



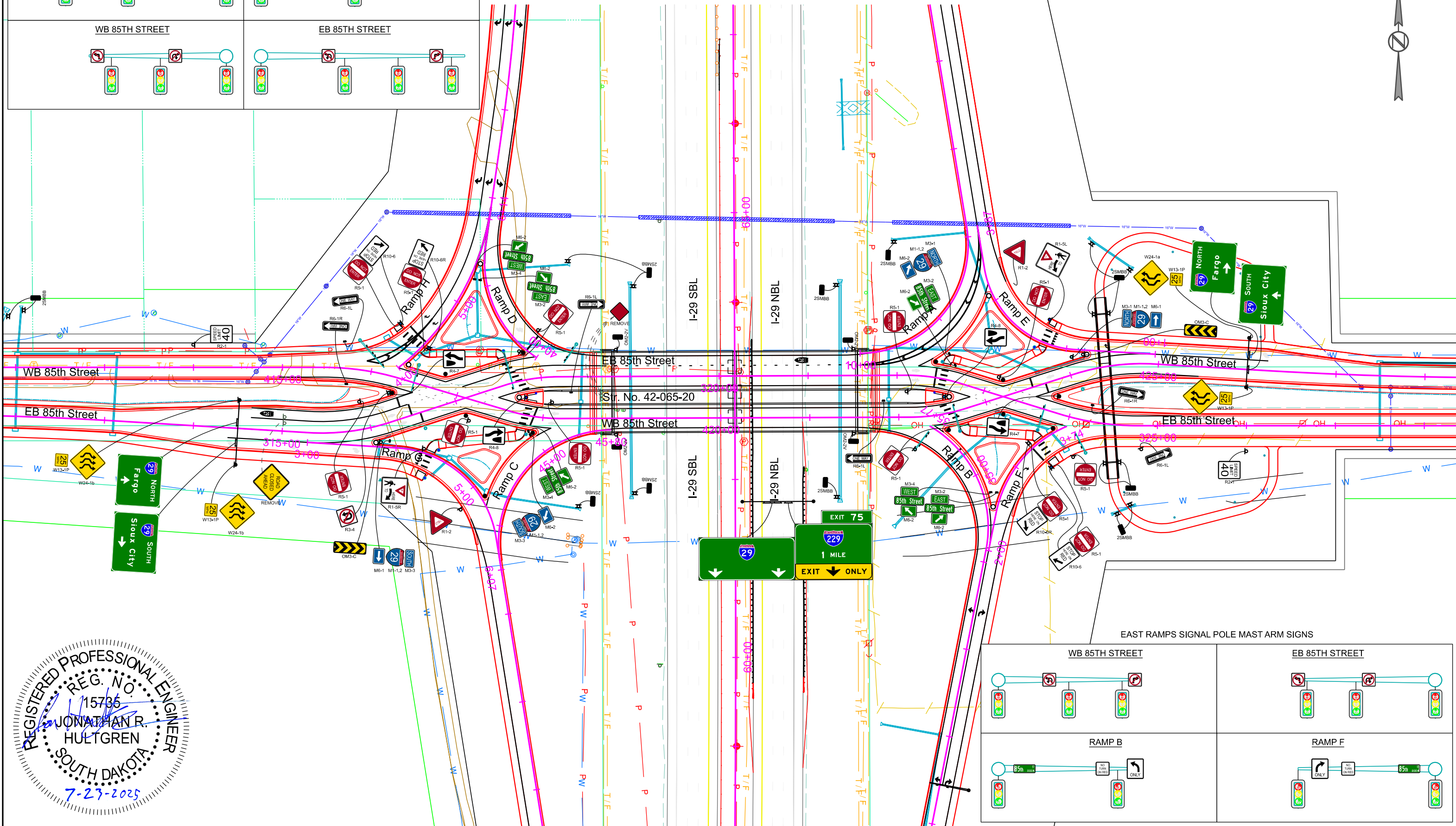
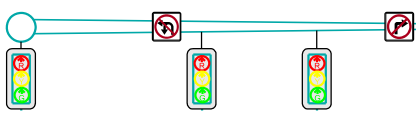
RAMP D MAST ARM



WB 85TH STREET

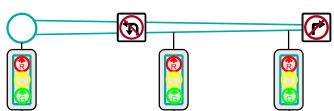


EB 85TH STREET

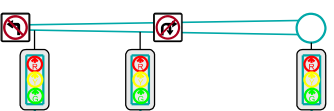


EAST RAMPS SIGNAL POLE MAST ARM SIGNS

WB 85TH STREET



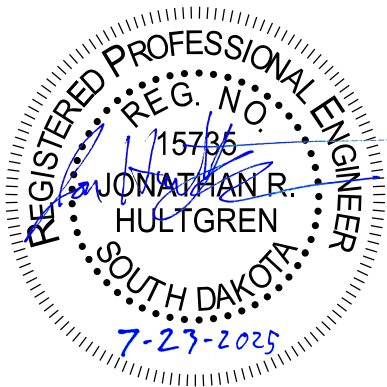
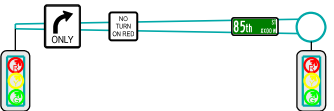
EB 85TH STREET



RAMP B



RAMP F



PERMANENT SIGNING

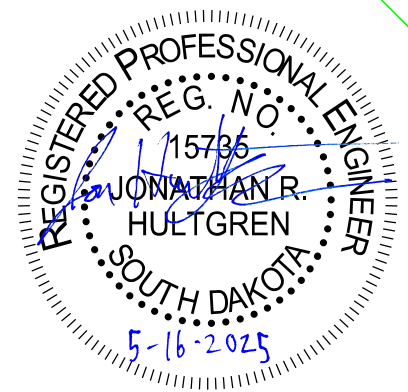
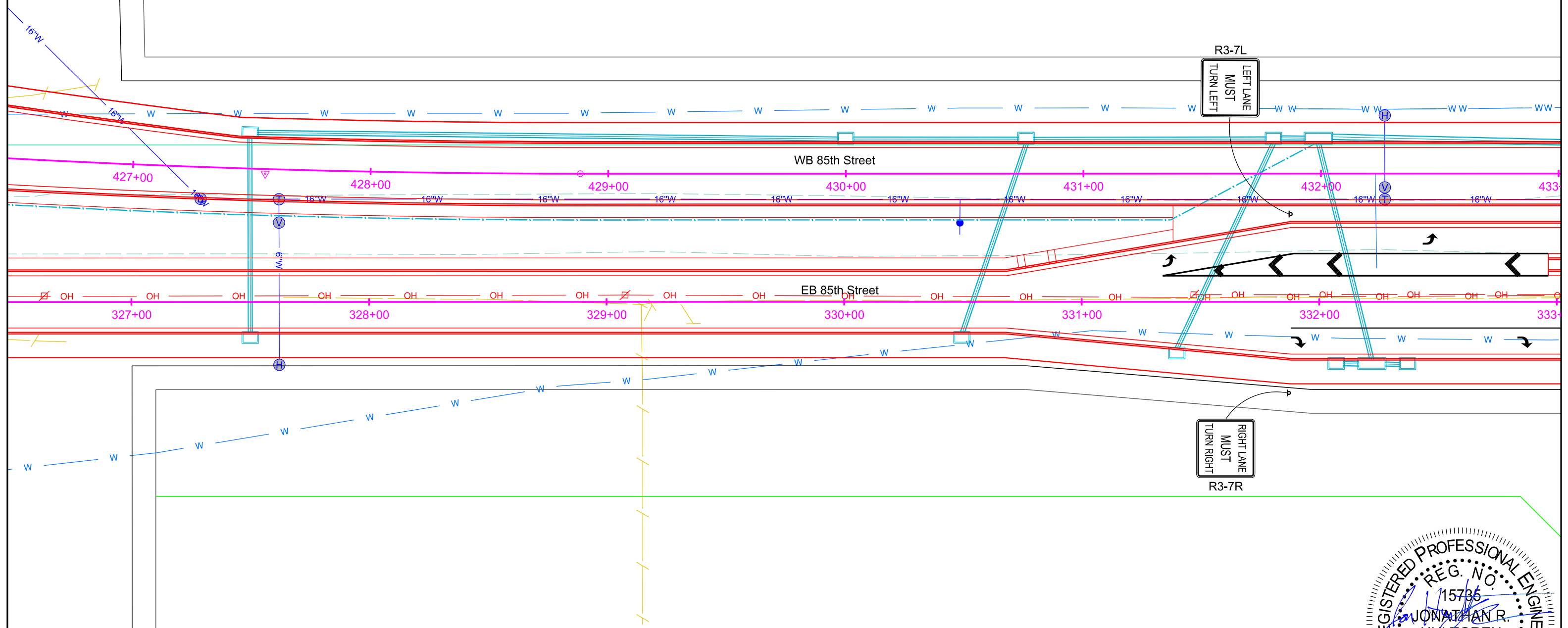
85TH STREET

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S29	S112

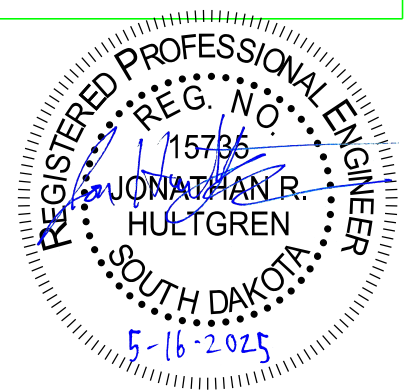
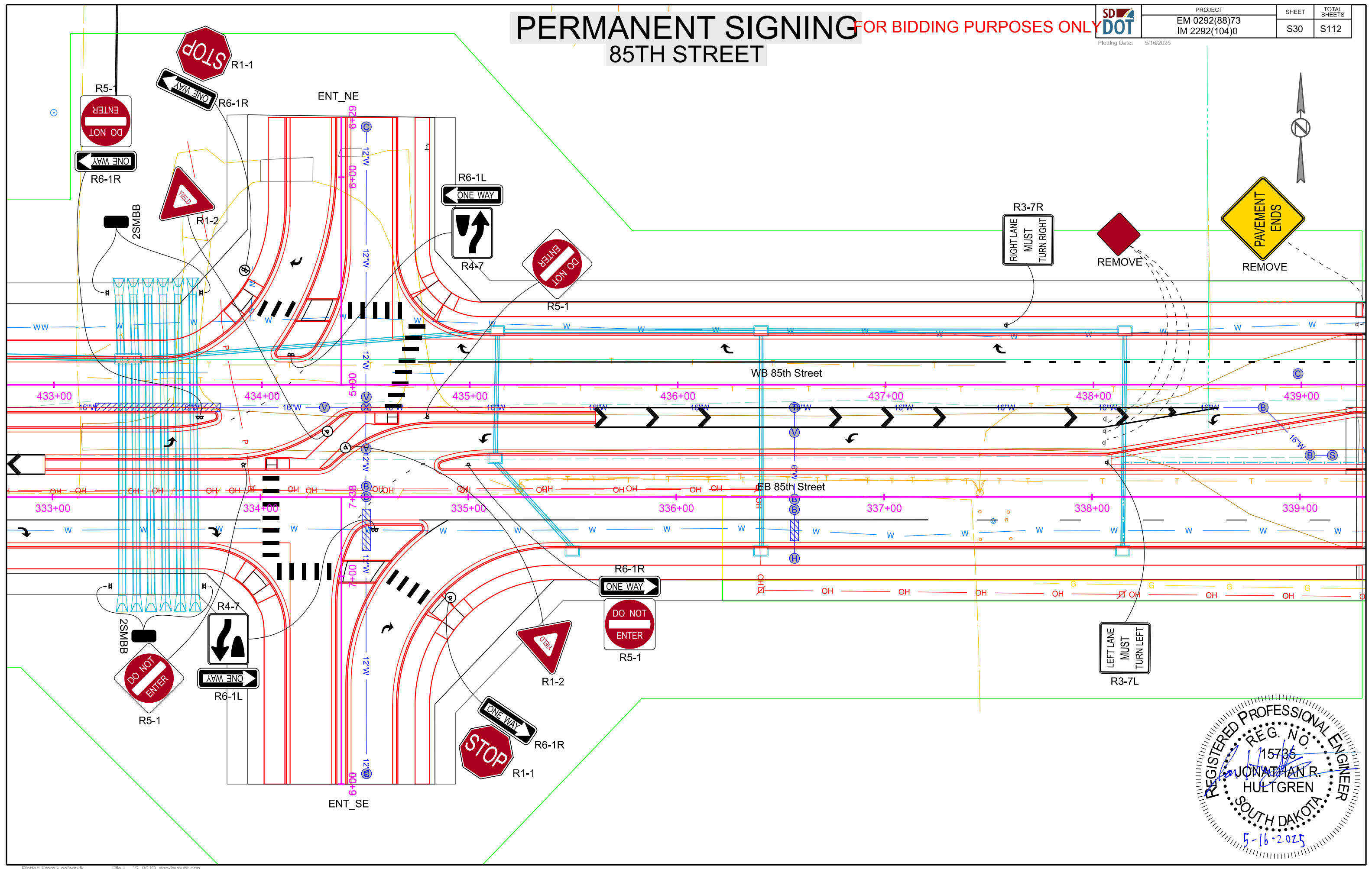


PERMANENT SIGNING 85TH STREET

FOR BIDDING PURPOSES ONLY

SD DOT	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73	S30	S112
	IM 2292(104)0		

Plotting Date: 5/16/2025



PERMANENT SIGNING

FOR BIDDING PURPOSES ONLY



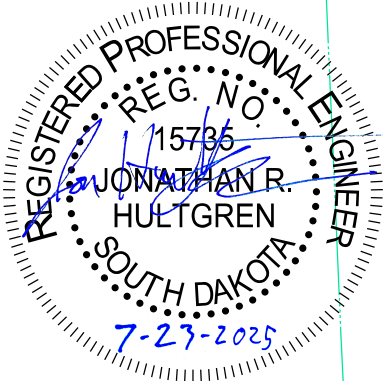
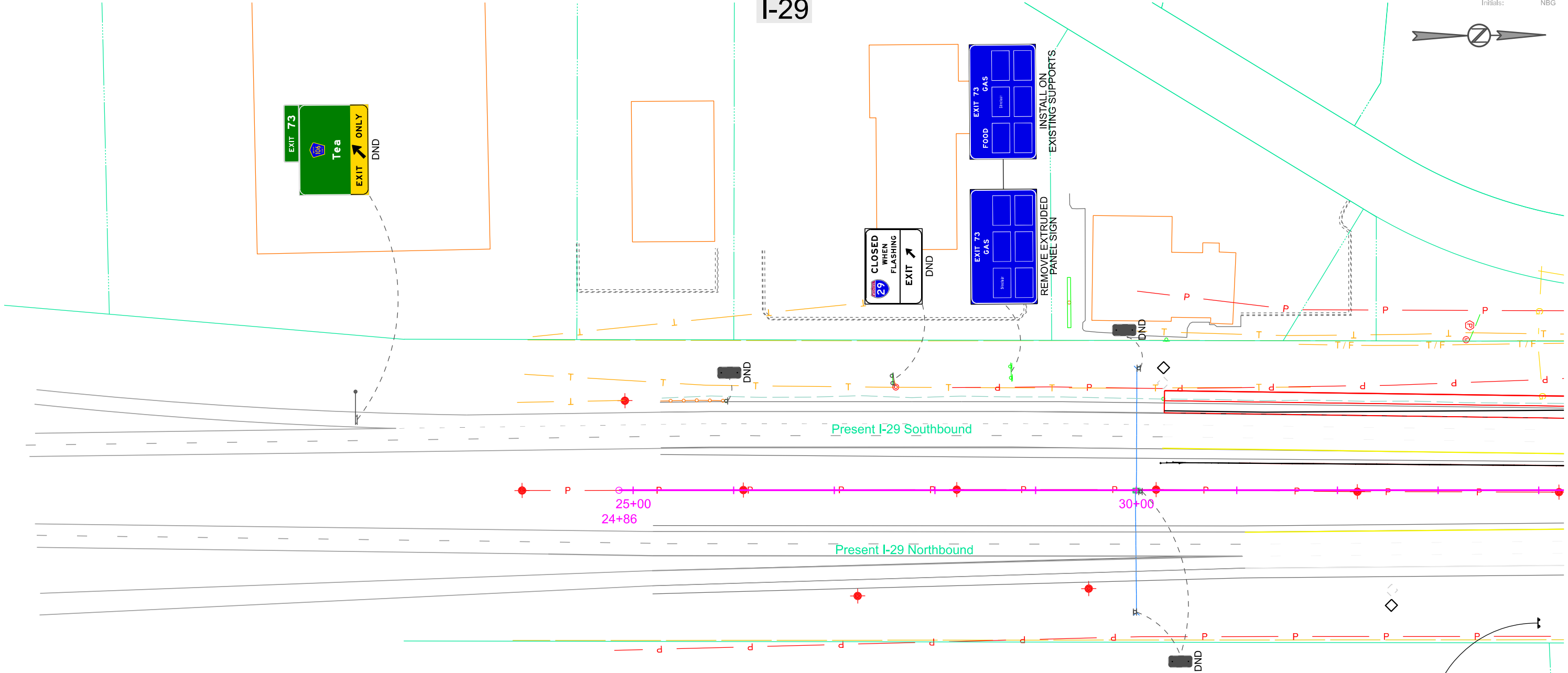
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S31	S112

Plotting Date: 7/2/2025

Revised Date: 6/30/2025
Initials: NBG



I-29



PERMANENT SIGNING

FOR BIDDING PURPOSES ONLY

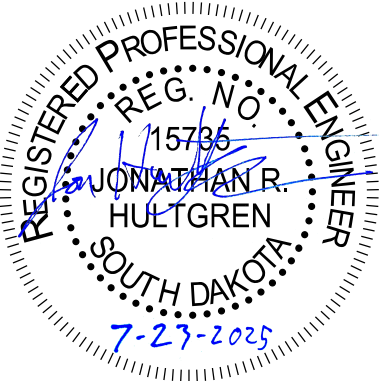
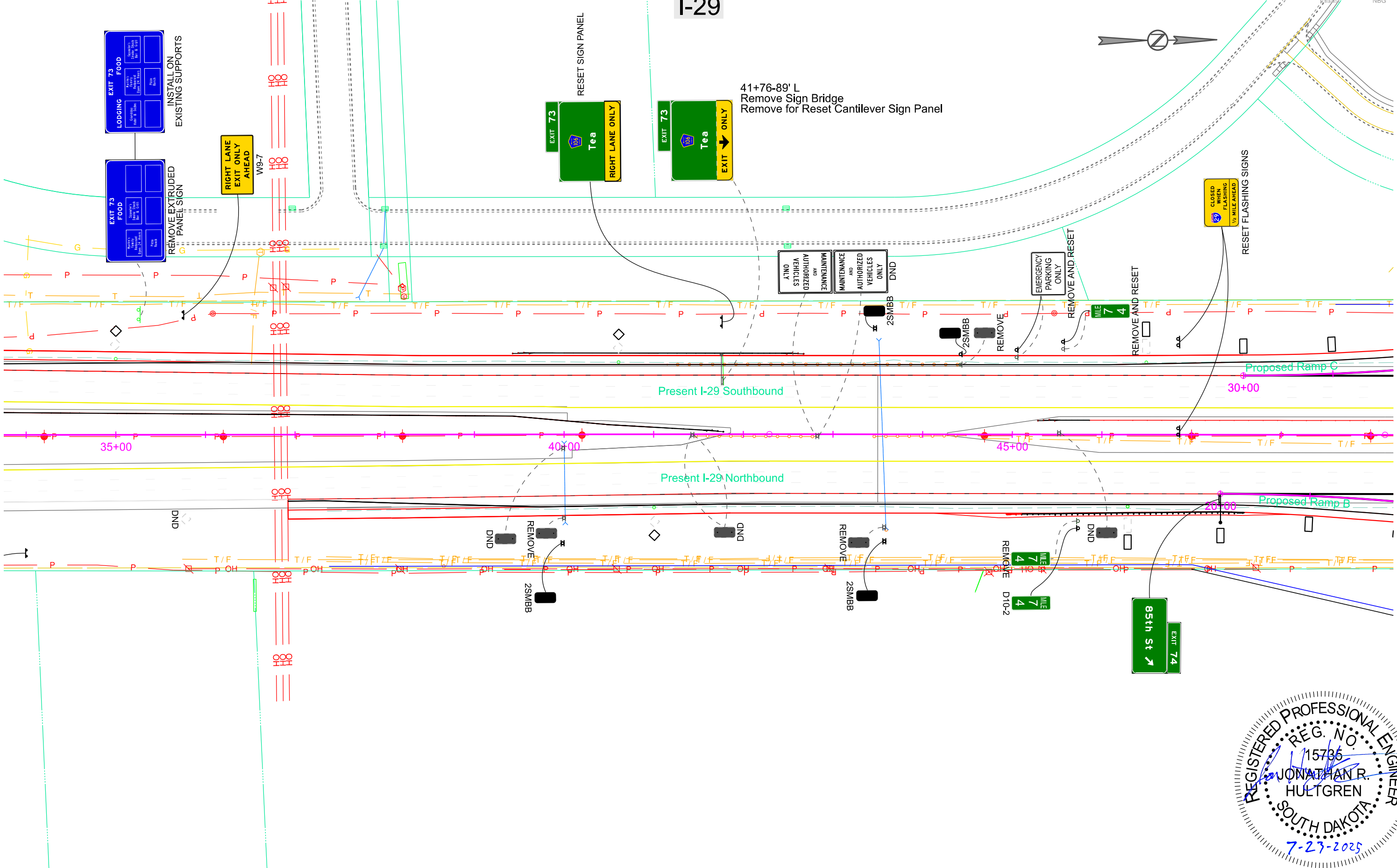


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S32	S112

Plotting Date: 7/2/2025

Revised Date: 6/30/2025
Initials: NBG

I-29



PERMANENT SIGNING

FOR BIDDING PURPOSES ONLY



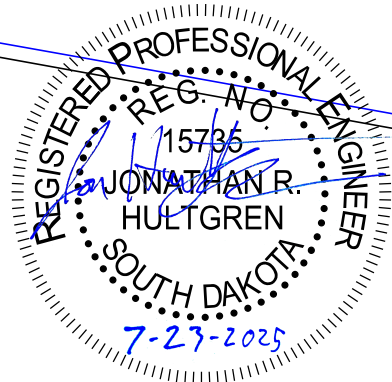
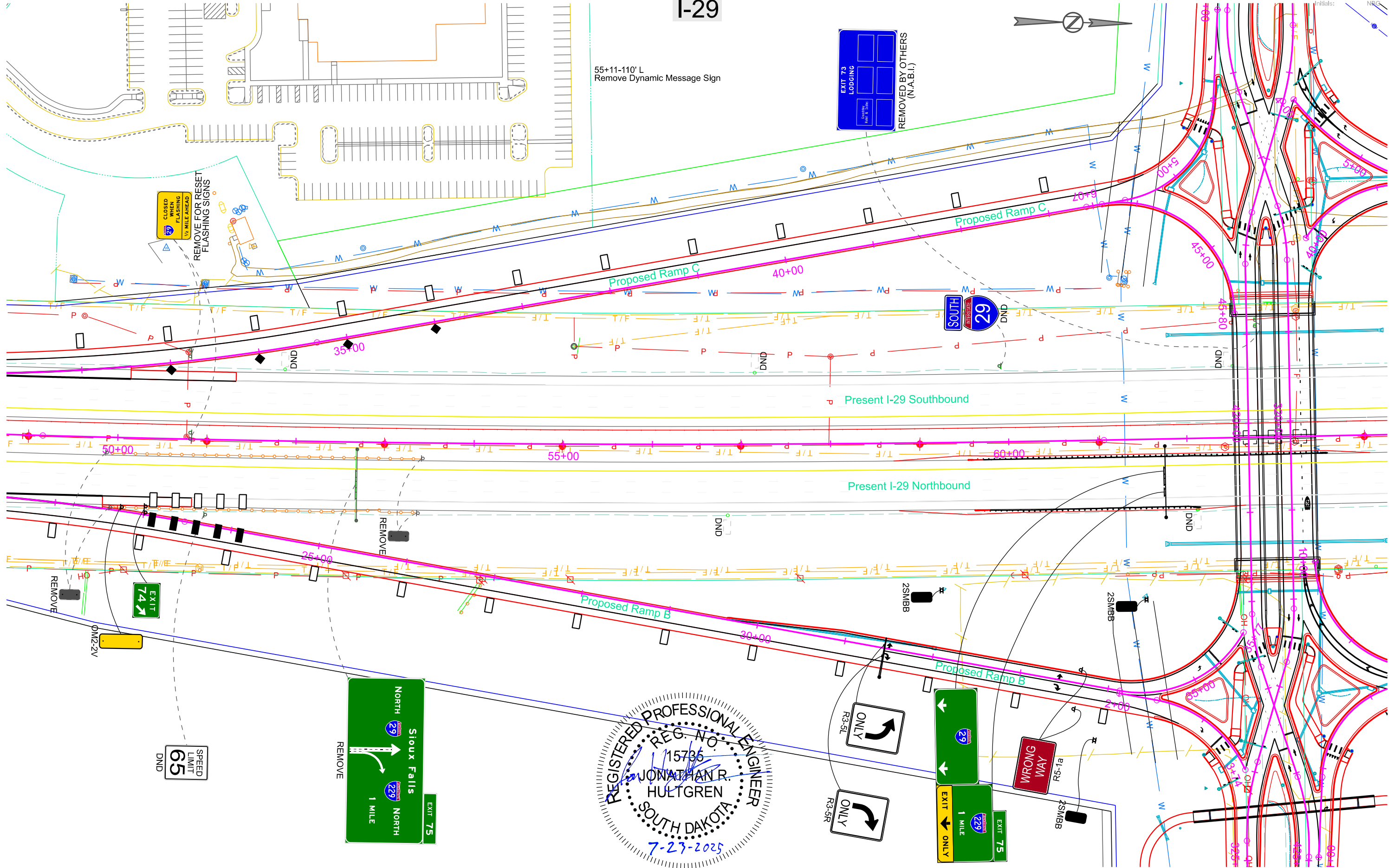
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S33	S112

Plotting Date: 7/2/2025
Revised Date: 6/30/2025
Initials: NRG

I-29

55+11-110' L
Remove Dynamic Message Sign

EXIT 73
LODGING
REMOVED BY OTHERS
(N.A.B.I.)



PERMANENT SIGNING

FOR BIDDING PURPOSES ONLY



PROJECT
EM 0292(88)73
IM 2292(104)0

SHEET
S34

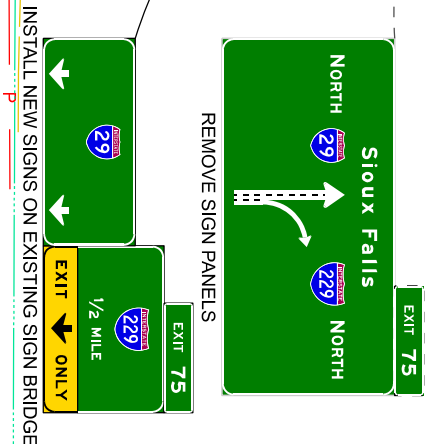
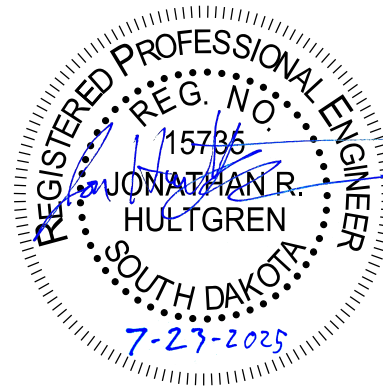
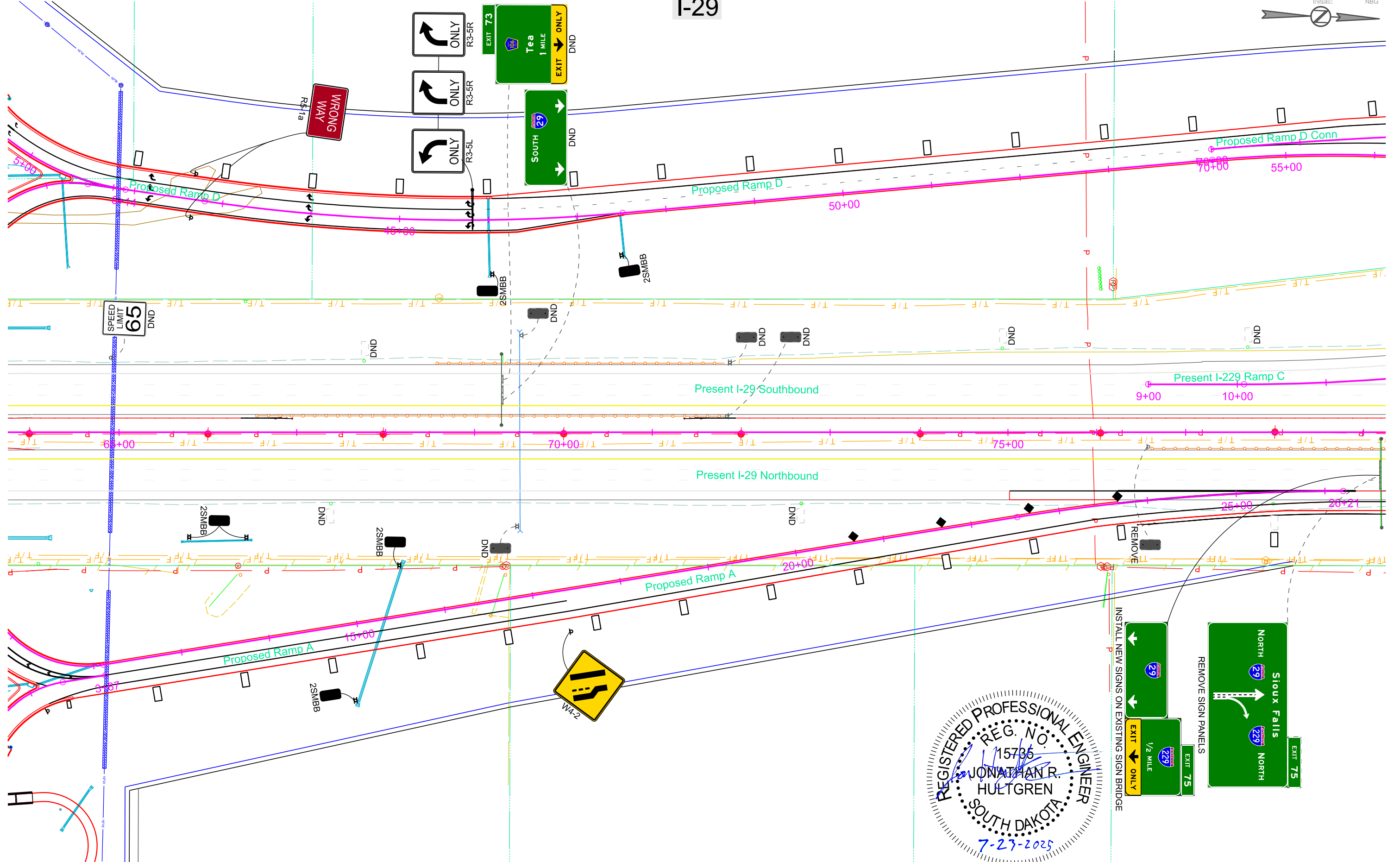
TOTAL SHEETS
S112

Plotting Date: 7/2/2025

Revised Date: 6/30/2025
Initials: NBG



I-29



PERMANENT SIGNING

FOR BIDDING PURPOSES ONLY



PROJECT
EM 0292(88)73
IM 2292(104)0

SHEET
S35

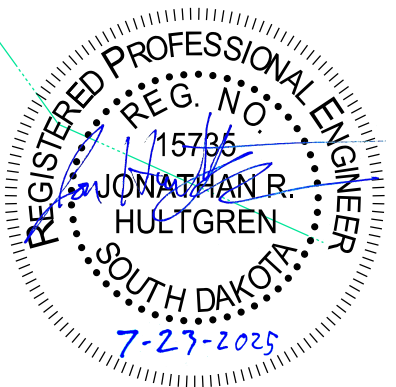
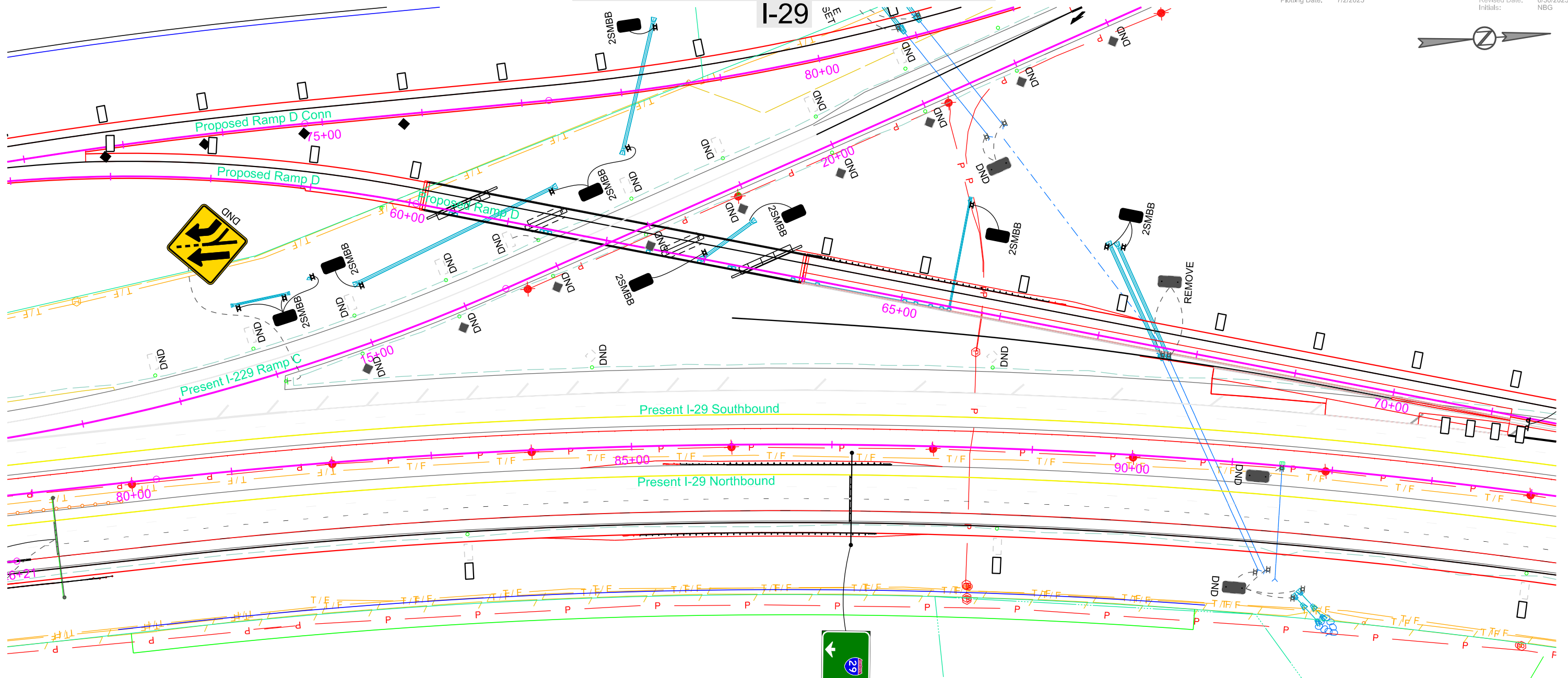
TOTAL
SHEETS
S112

Plotting Date: 7/2/2025

Revised Date: 6/30/2025
Initials: NBG



I-29



PERMANENT SIGNING

FOR BIDDING PURPOSES ONLY

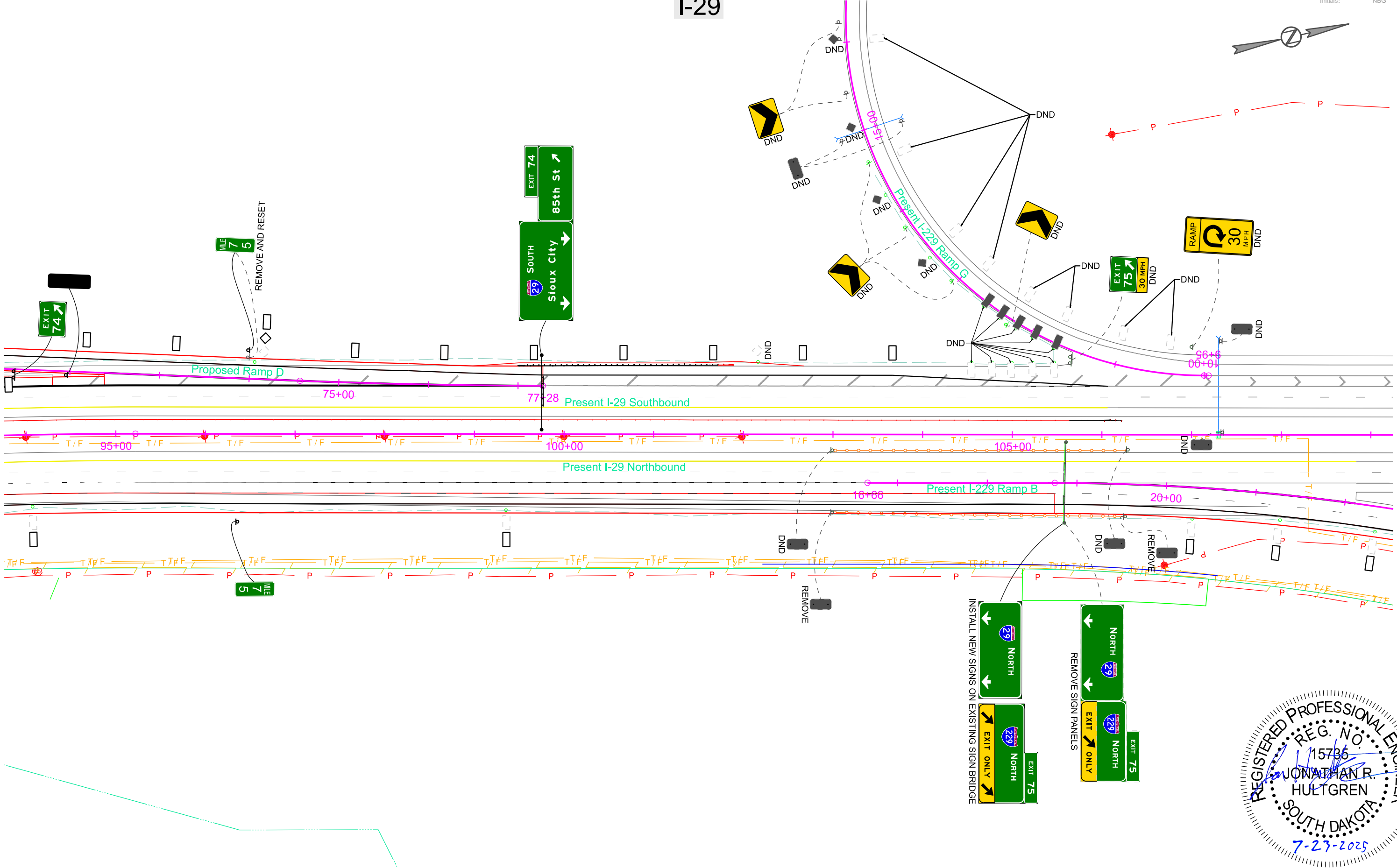
I-29



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S36	S112

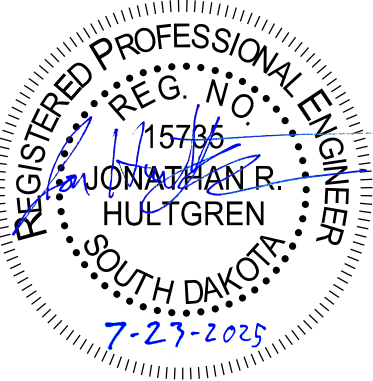
Plotting Date: 7/2/2025

Revised Date: 6/30/2025
Initials: NBG



INSTALL NEW SIGNS ON EXISTING SIGN BRIDGE

REMOVE SIGN PANELS



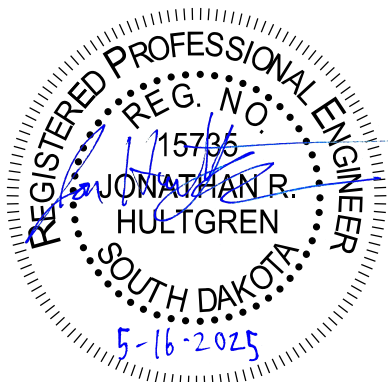
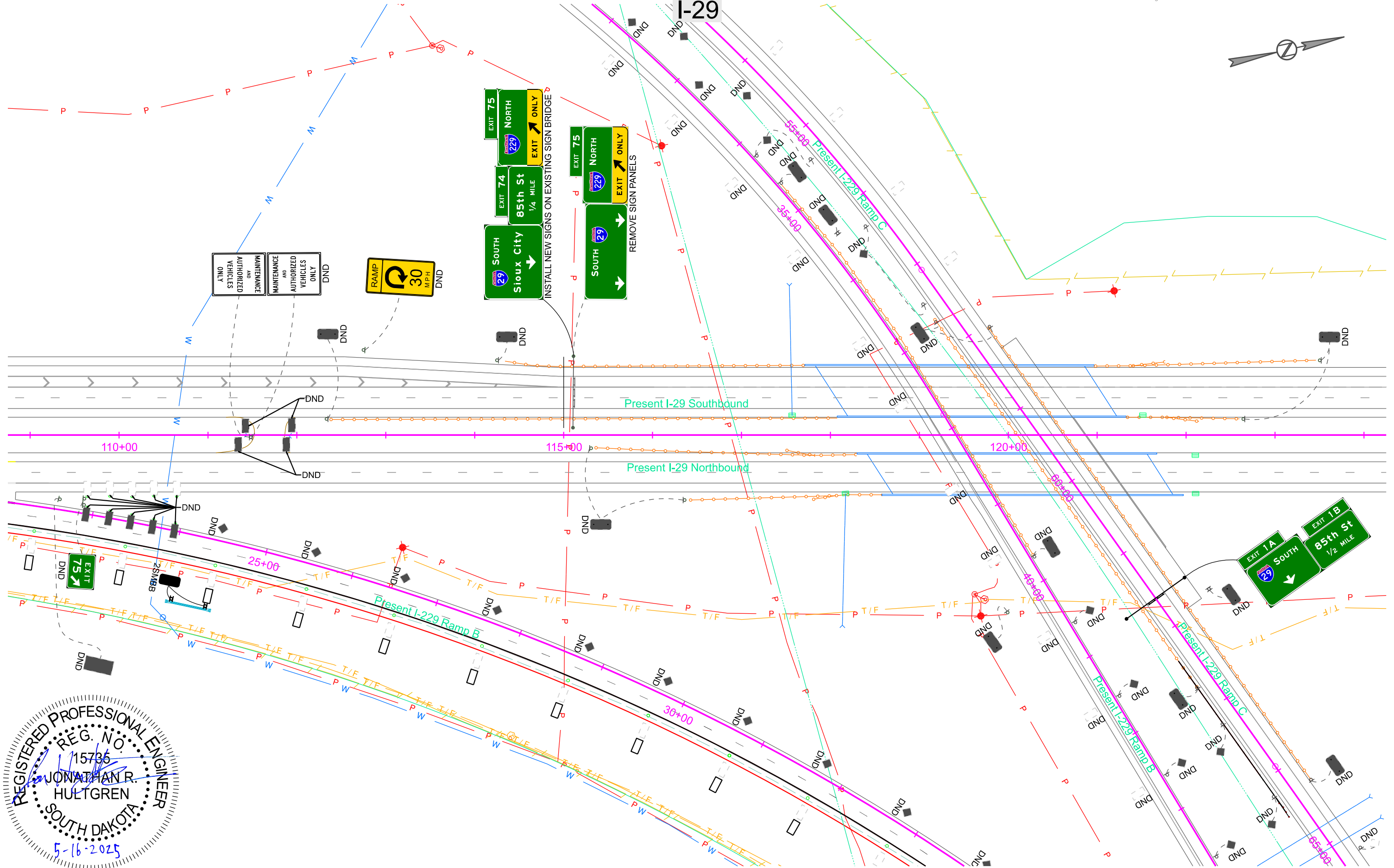
PERMANENT SIGNING

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S37	S112



PERMANENT SIGNING

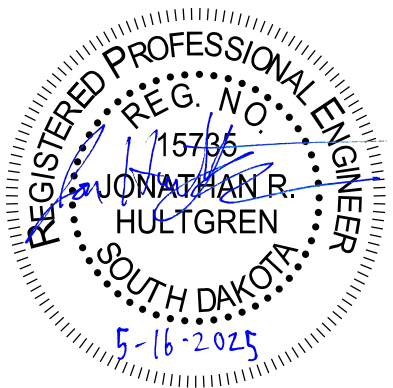
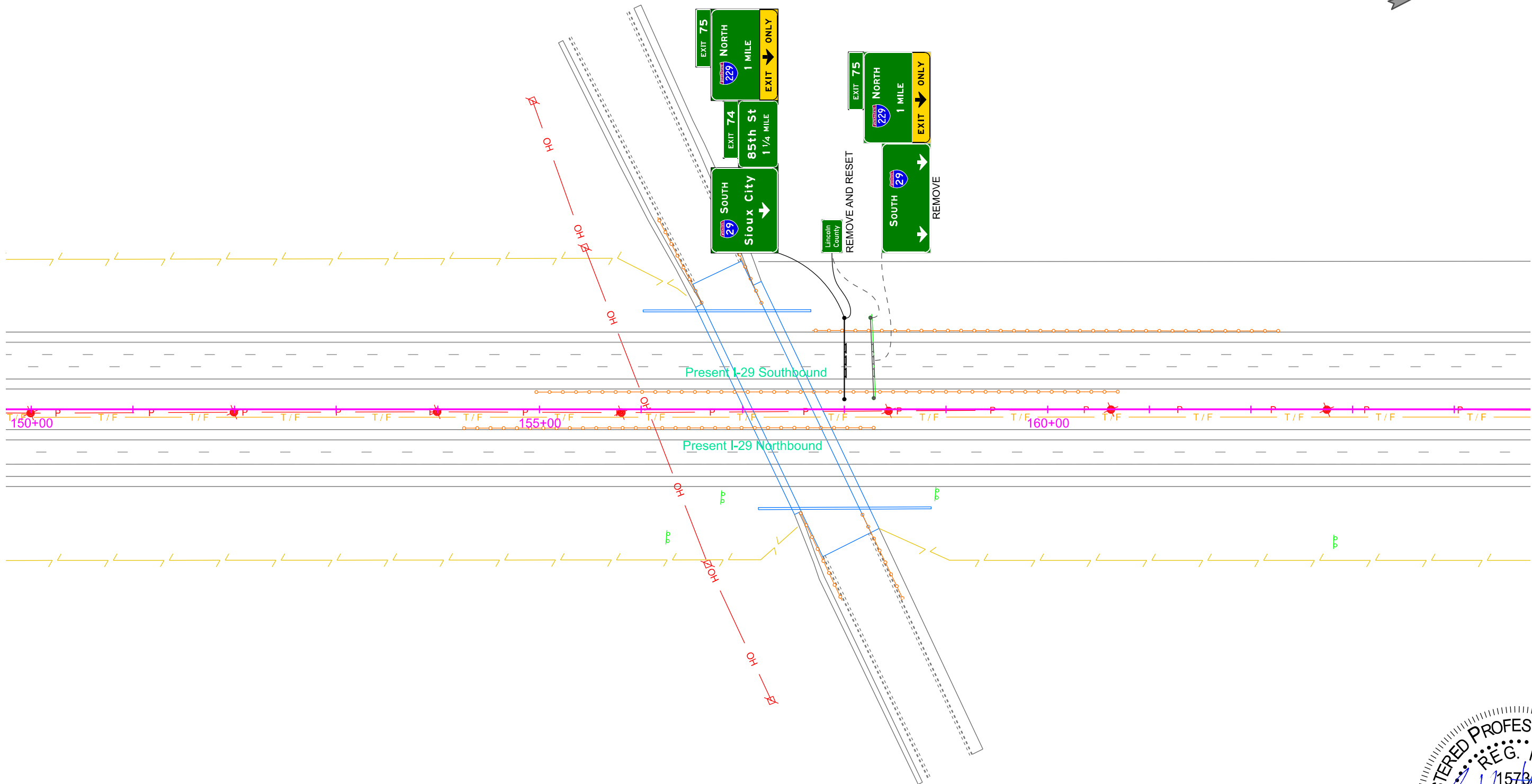
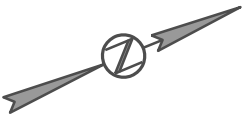
I-29

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S38	S112

Plotting Date: 5/16/2025



PERMANENT SIGNING

I-229 RAMP C

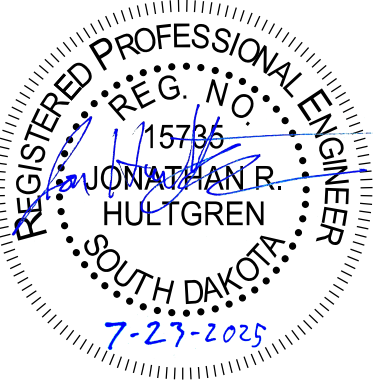
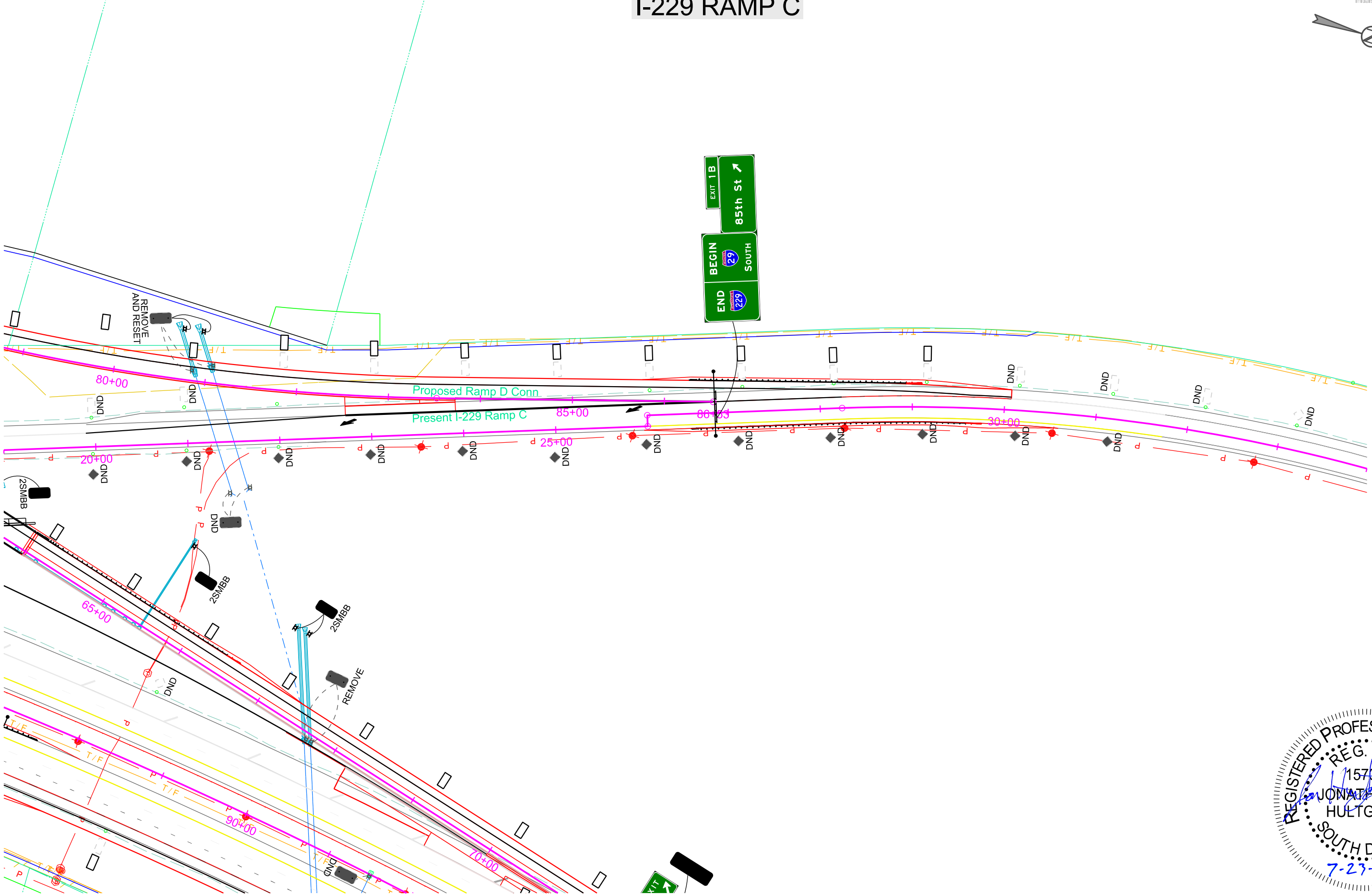
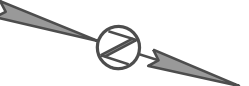
FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S39	S112

Plotting Date: 7/2/2025

Revised Date: 6/30/2025
Initials: NBG



PERMANENT SIGNING

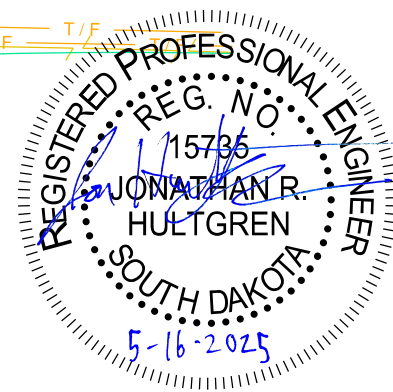
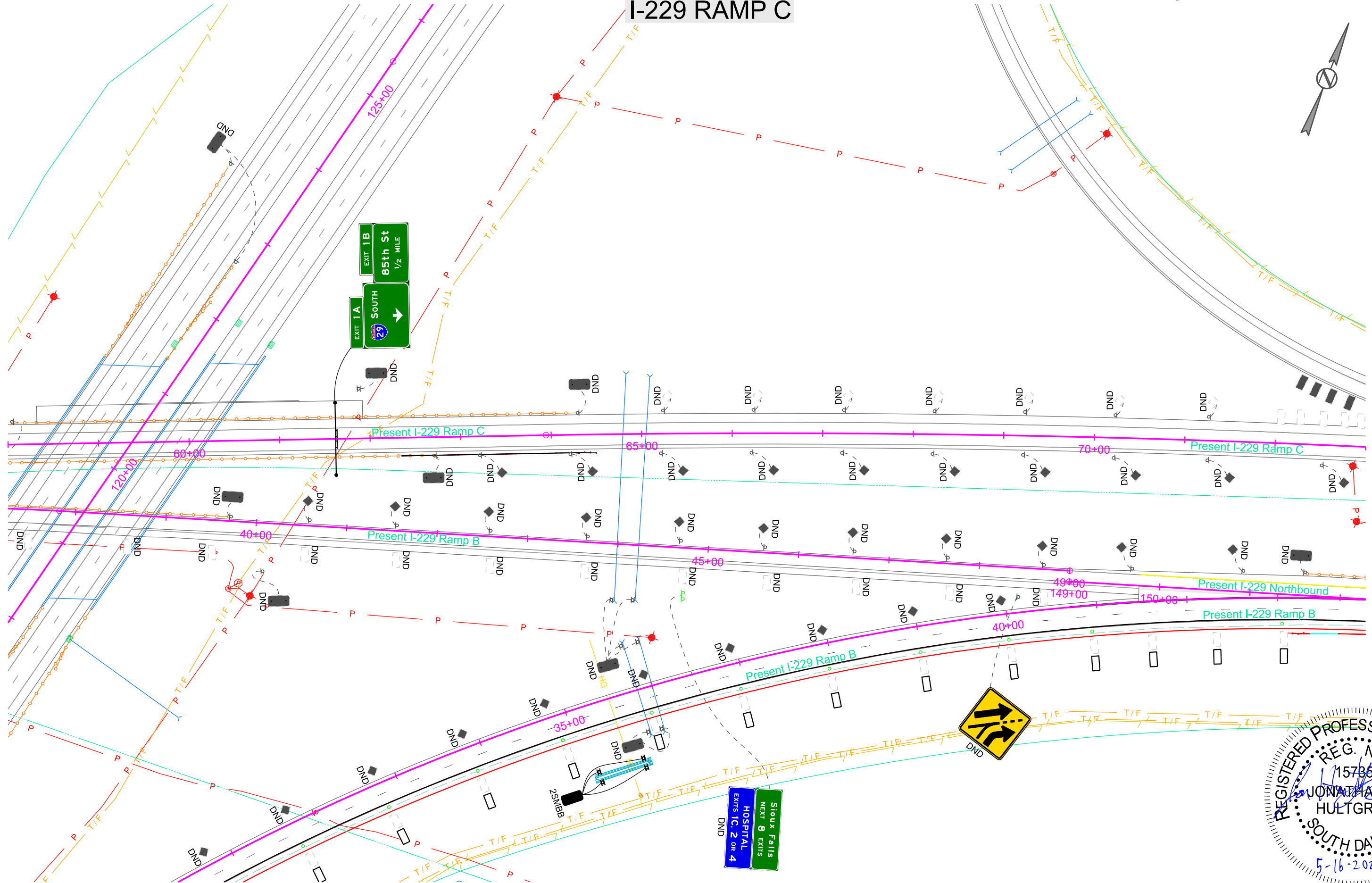
I-229 RAMP C

FOR BIDDING PURPOSES ONLY



PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S40	S112

Plotting Date: 5/16/2025



PERMANENT SIGNING

FOR BIDDING PURPOSES ONLY

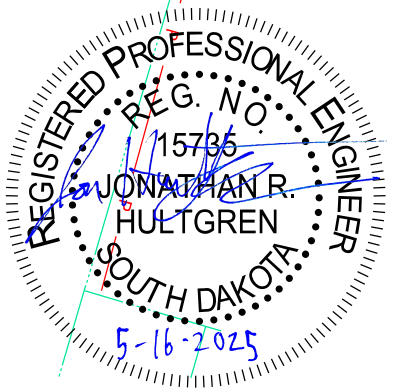
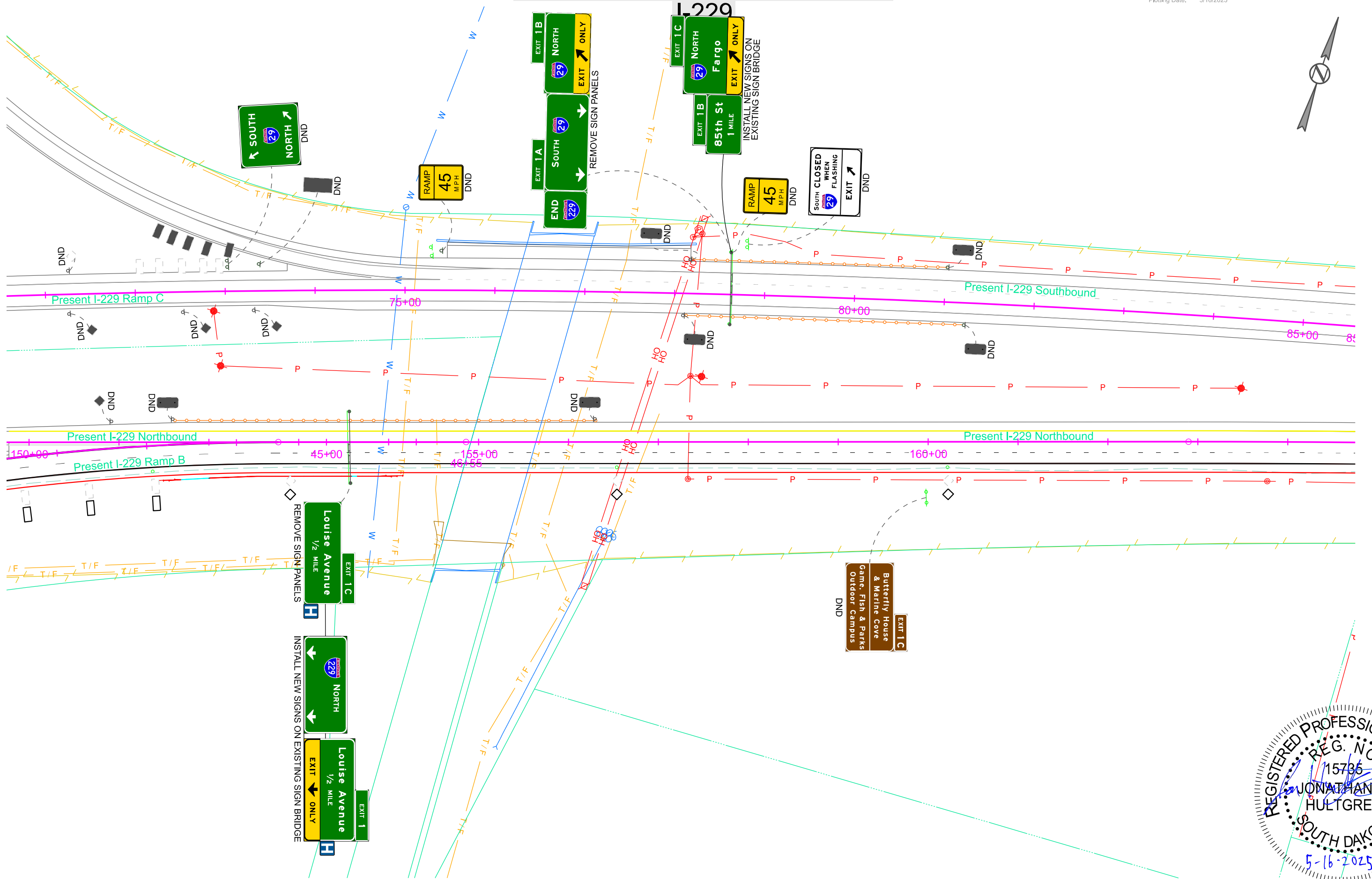


PROJECT
EM 0292(88)73
IM 2292(104)0

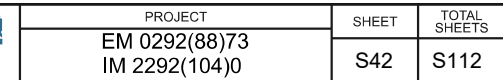
SHEET
S41

TOTAL
SHEETS
S112

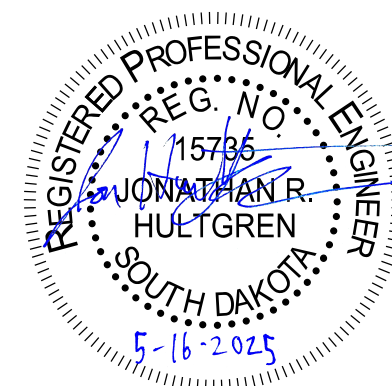
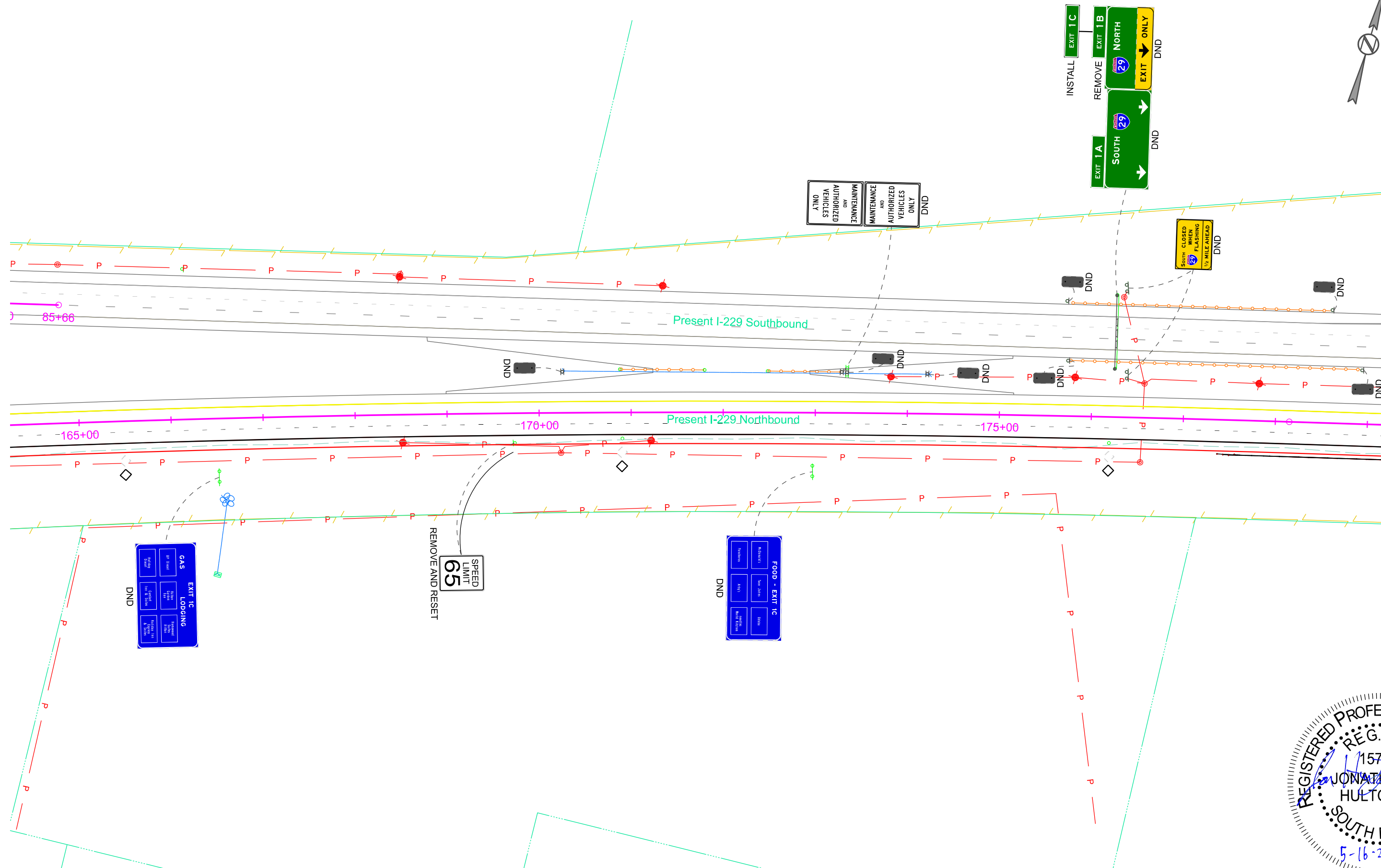
Plotting Date: 5/16/2025



FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

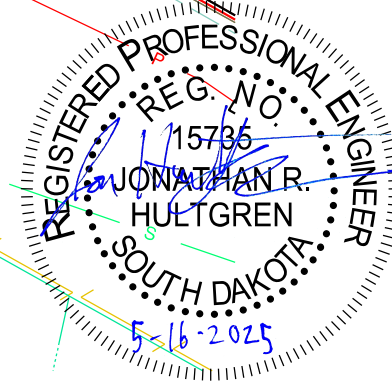


FOR BIDDING PURPOSES ONLY



PROJECT
M 0292(88)73
I 2292(104)0

SHEET	TOTAL SHEET
S43	S112



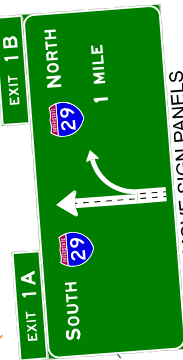
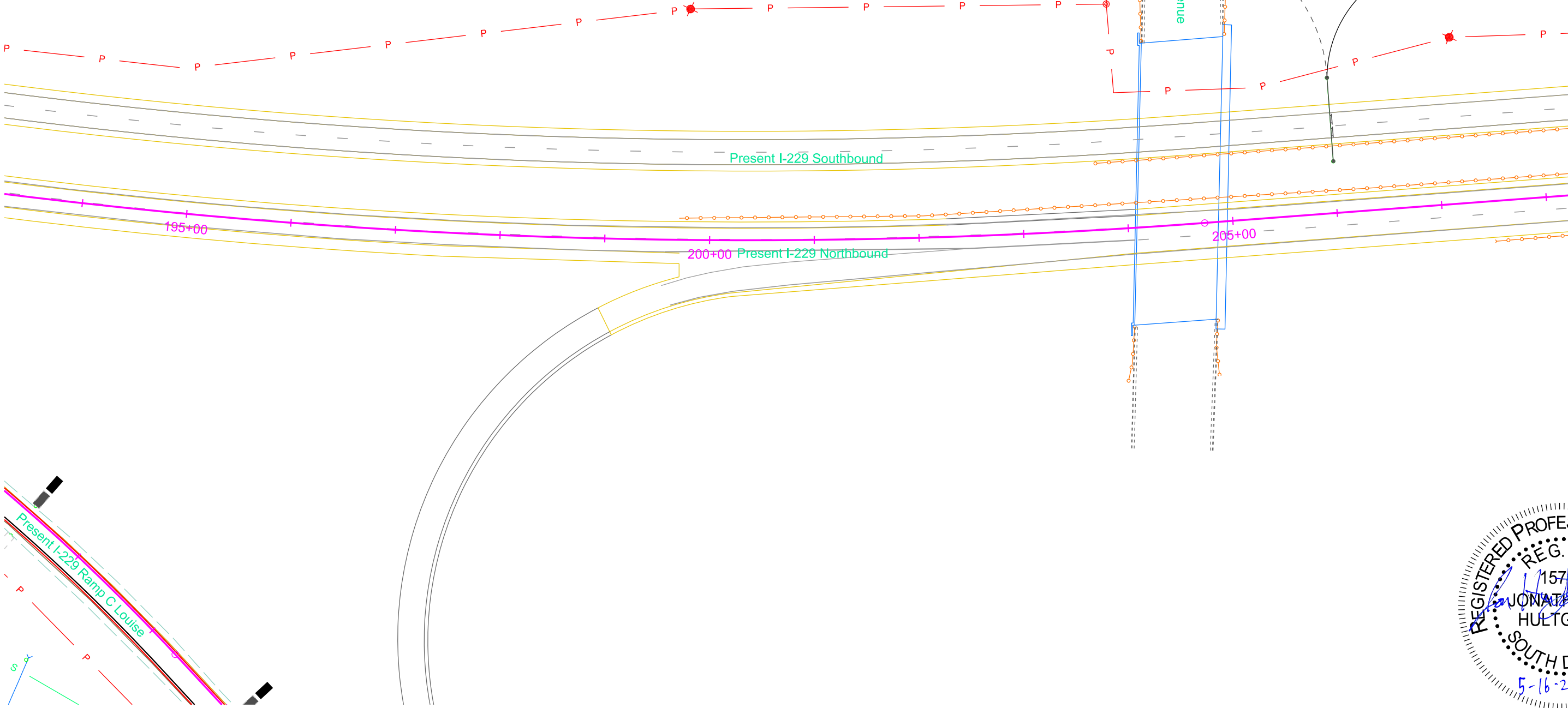
PERMANENT SIGNING I-229

FOR BIDDING PURPOSES ONLY



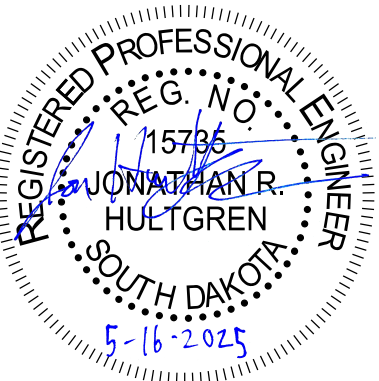
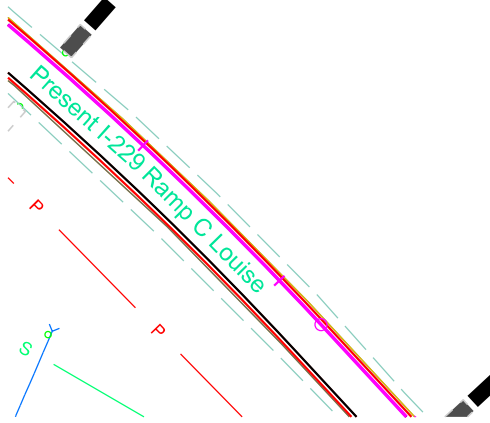
Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S44	S112



REMOVE SIGN PANELS

INSTALL NEW SIGNS ON EXISTING SIGN BRIDGE



PERMANENT SIGNING

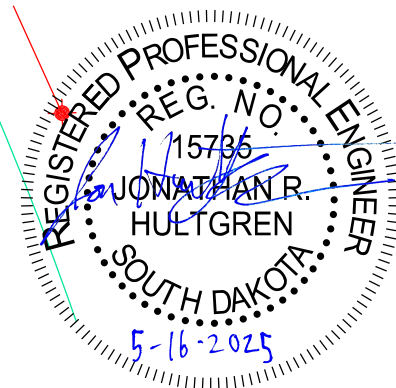
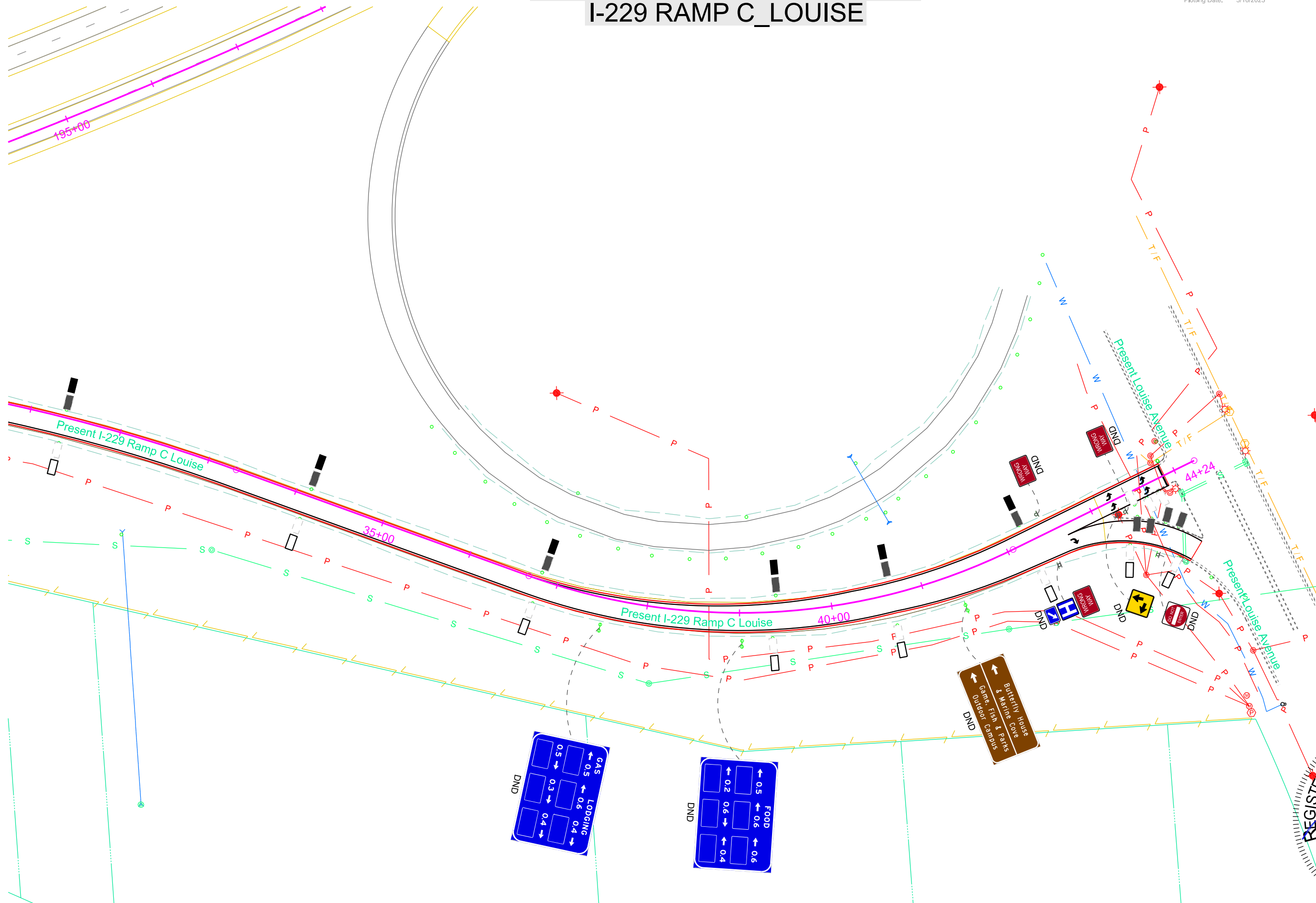
I-229 RAMP C LOUISE

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S45	S112



PERMANENT SIGNING DETAILS



FOR BIDDING PURPOSES ONLY

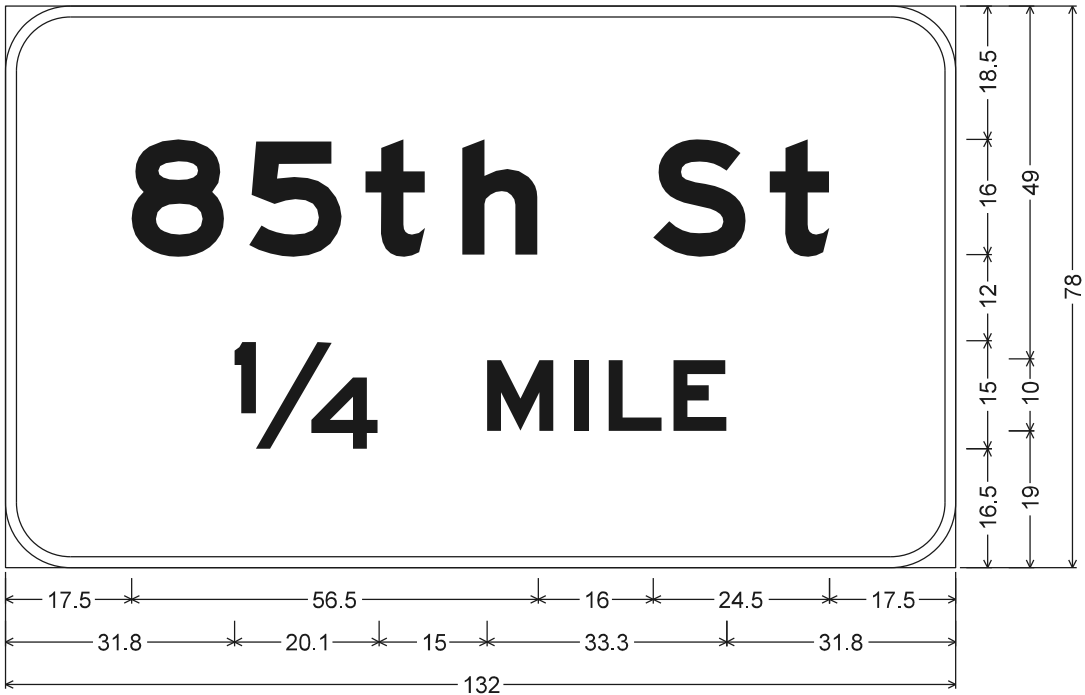
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S46	S112

Plotting Date: 5/16/2025



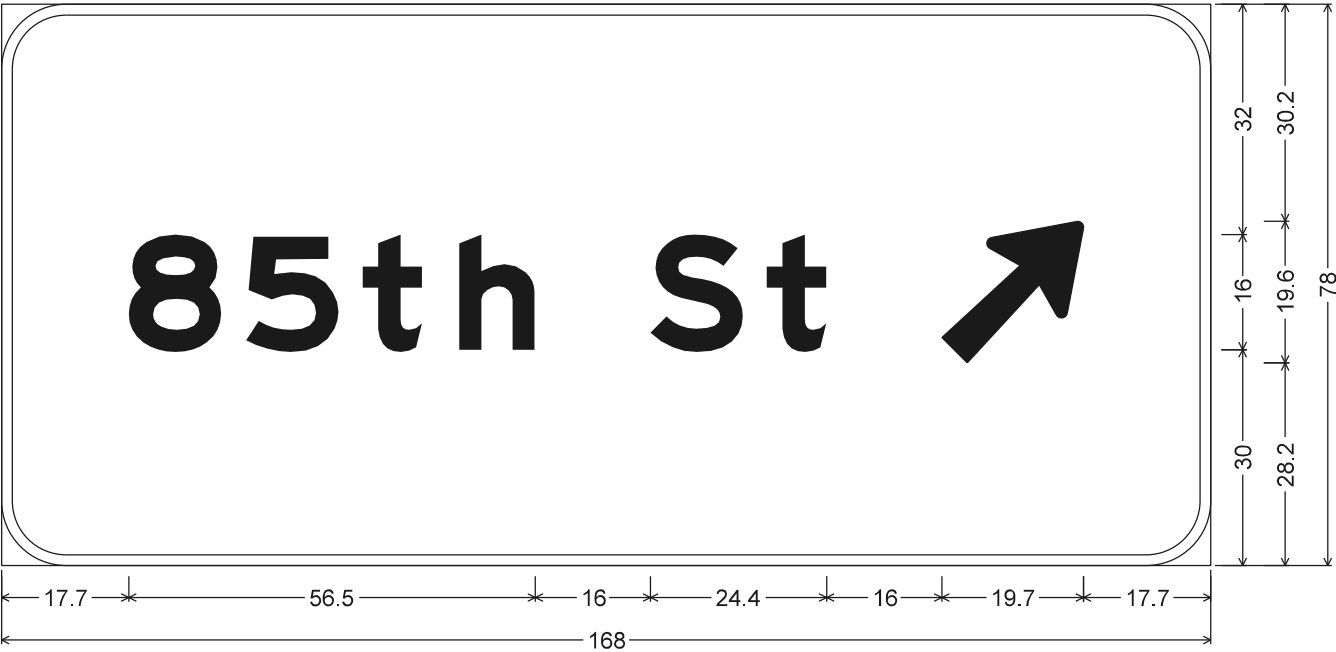
E1-5P_114x30;
3.0" Radius, 1.5" Border, White on, Green;
"EXIT", E 2K; "74", E Mod 2K;
Table of letter and object lefts

E	X	I	T	7	4
20.2	29.1	39.8	43.3	65.8	79.9



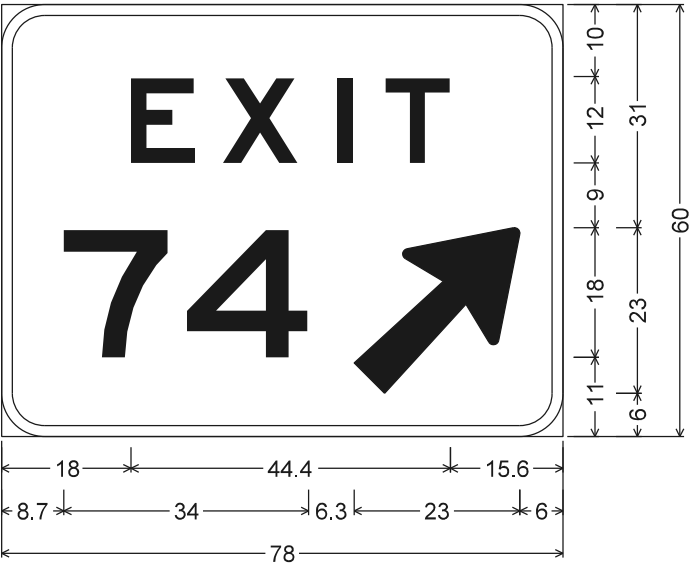
9.0" Radius, 1.5" Border, White on, Green;
"85th St", E Mod 2K; "1/4 MILE", E Mod 2K;
Table of letter and object lefts

8	5	t	h	S	t
17.5	33.8	50.0	63.4	90.0	106.2
1/4	M	I	L	E	
31.8	66.9	79.0	83.8	92.8	



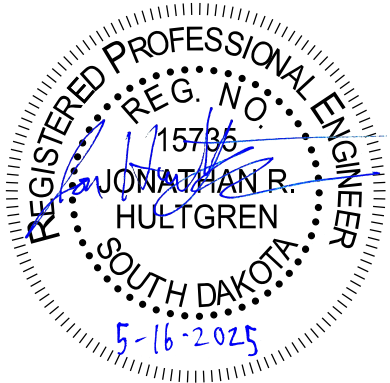
9.0" Radius, 1.5" Border, White on, Green;
"85th St", E Mod 2K; Arrow 80 - 25.0" 45';
Table of letter and object lefts

8	5	t	h	S	t	↗
17.7	34.0	50.2	63.6	90.2	106.3	130.6



E5-1a_78x60;
6.0" Radius, 1.5" Border, White on, Green;
"EXIT", E 2K 225% spacing; "74", E 2K;
Arrow Custom - 29.3" 45';
Table of letter and object lefts

E	X	I	T
18.0	30.8	46.6	53.4
7	4	↗	
8.7	25.8	49.0	



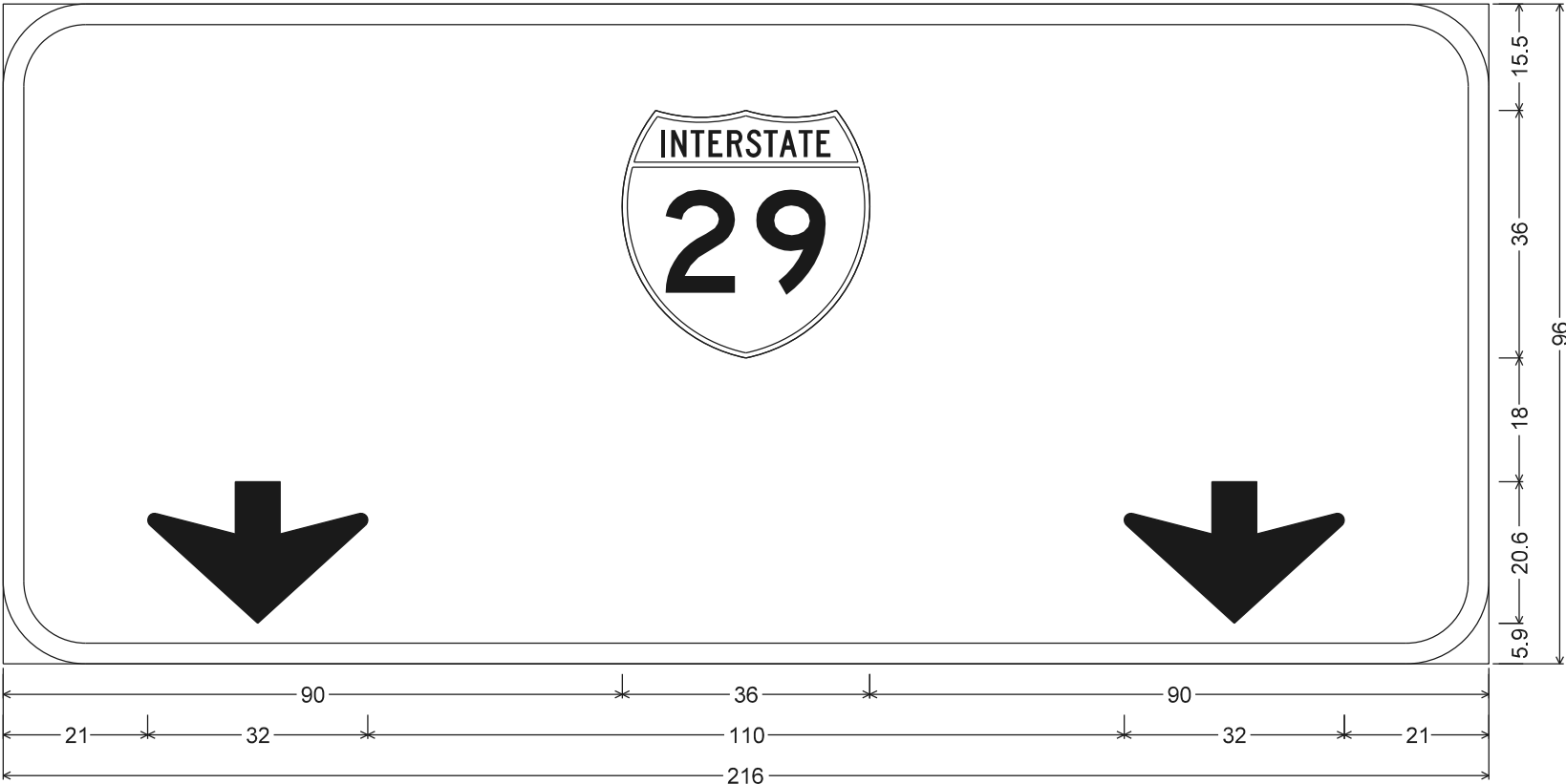
PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY

SD DOT	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	S47	S112

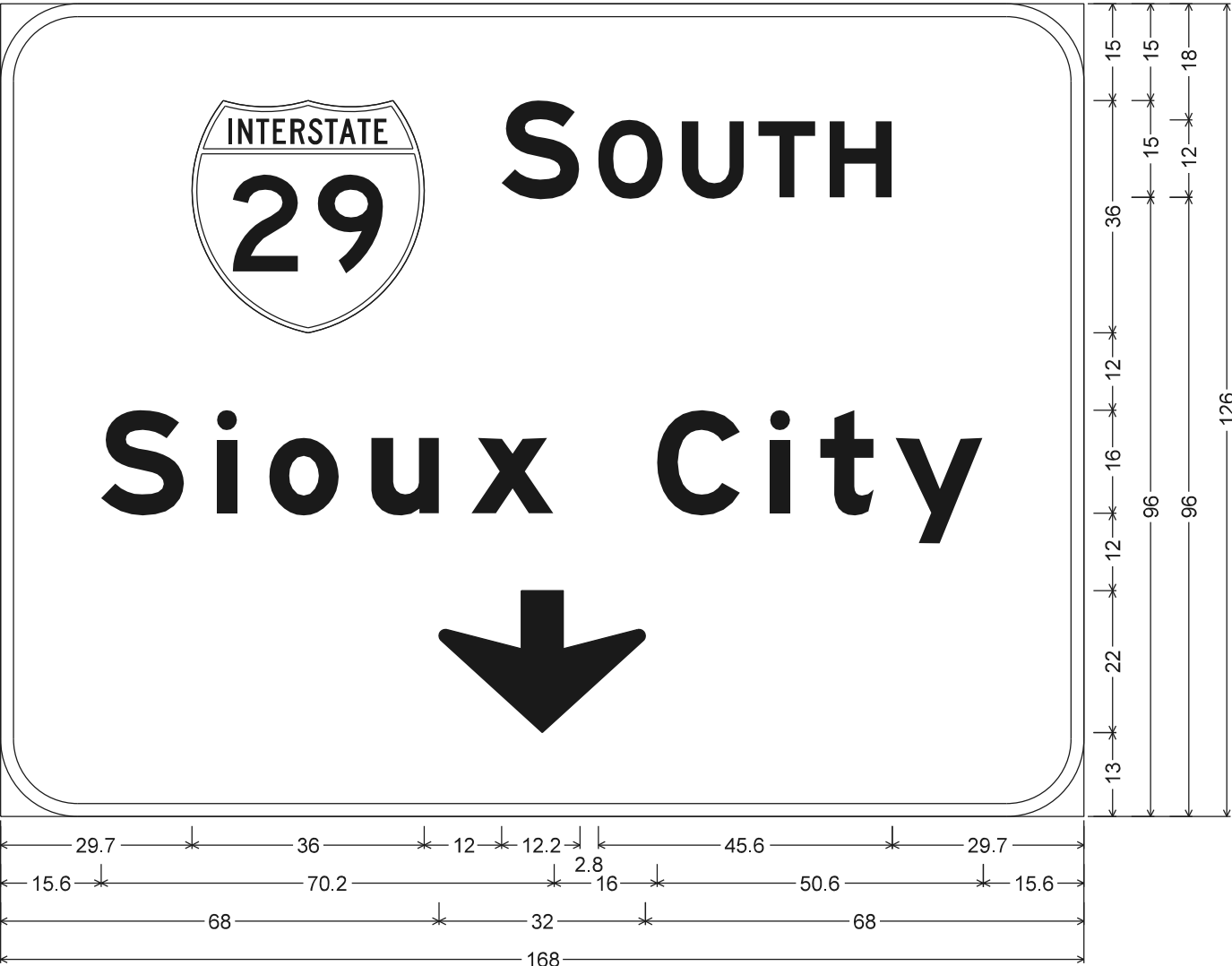
Plotting Date: 7/2/2025

Revised Date: 6/18/2025
Initials: NBS



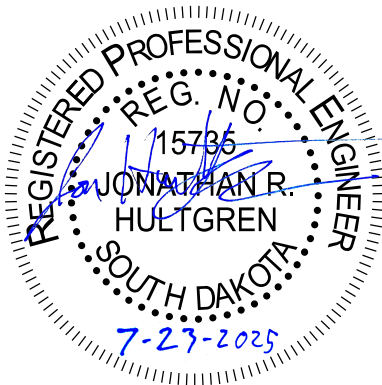
12.0" Radius, 3.0" Border, White on, Green;
Down Arrow Custom - 20.6" 270'; Down Arrow Custom - 20.6" 270';
Table of letter and object lefts

		
90.0		
		
21.0	163.0	



12.0" Radius, 2.0" Border, White on, Green;
"SOUTH", E Mod 2K; "Sioux City", E Mod 2K; Down Arrow 22.0" 270';
Table of letter and object lefts

	S	O	U	T	H			
29.7	77.7	92.7	105.7	117.5	128.6			
S	i	o	u	x	C	i	t	y
15.6	33.5	41.7	57.5	73.0	101.8	119.3	127.1	138.8
								
68.0								



PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY

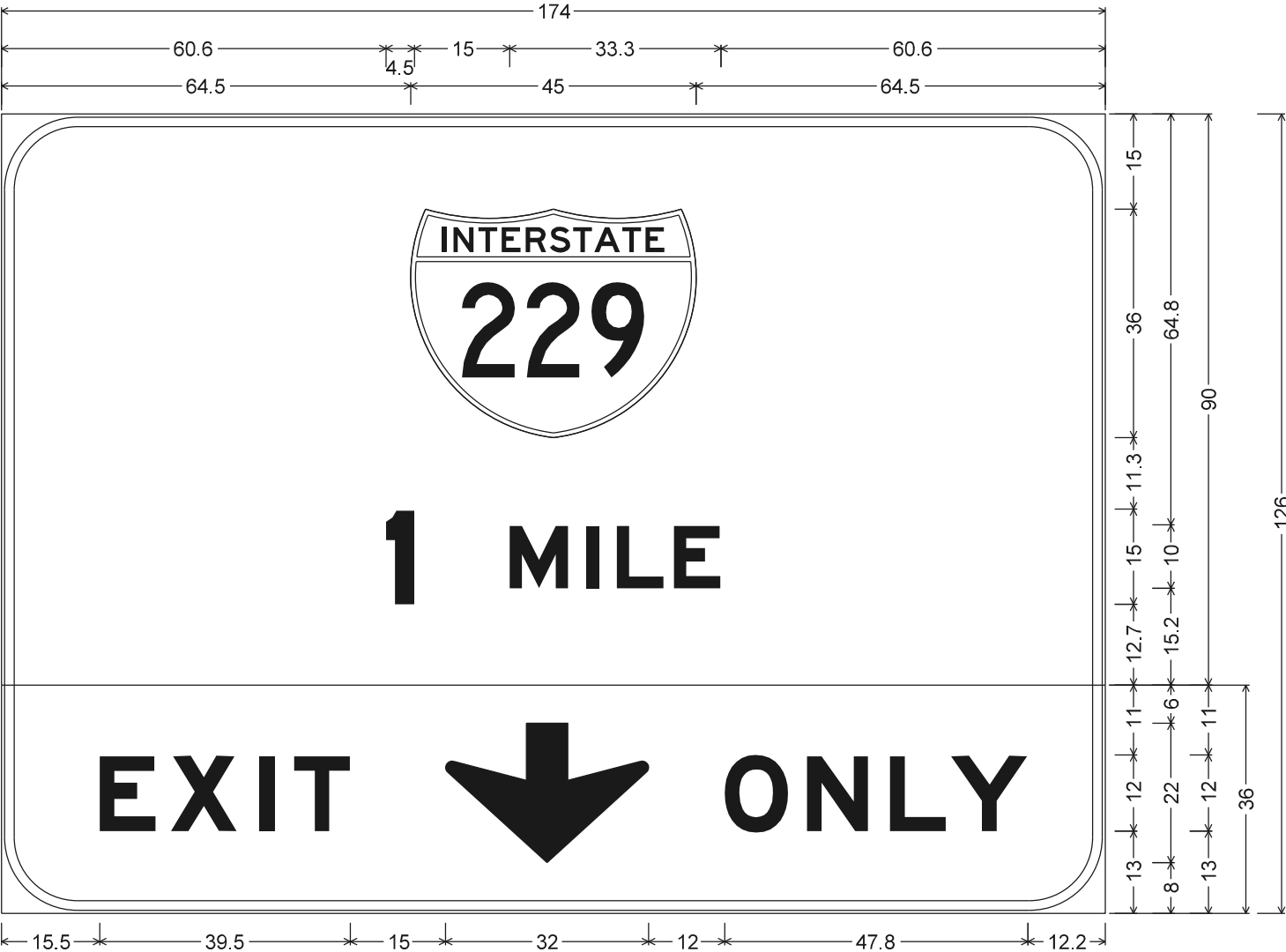
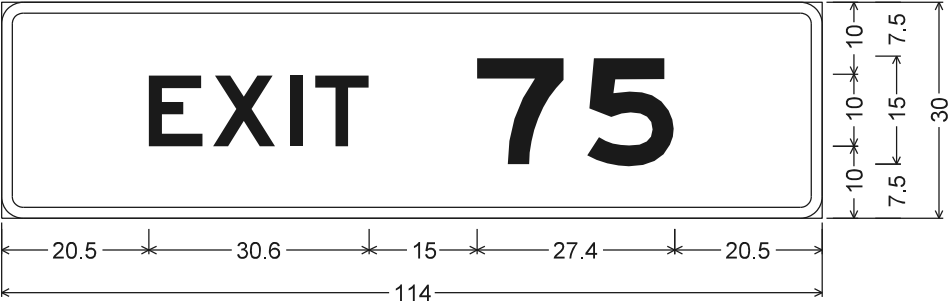


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S48	S112

Plotting Date: 5/16/2025

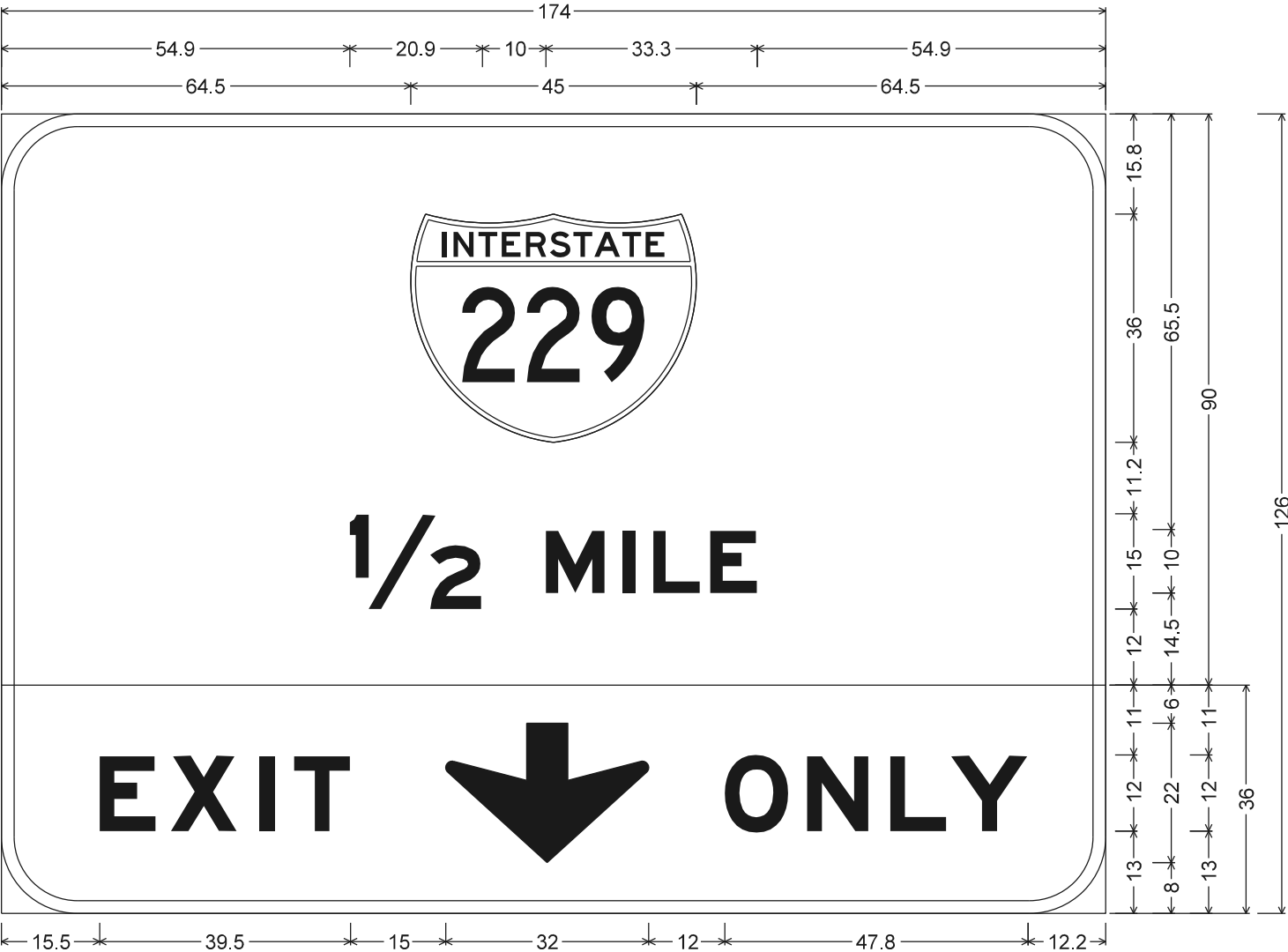
E1-5P_114x30;
3.0" Radius, 1.5" Border, White on, Green;
"EXIT", E 2K; "75", E Mod 2K;
Table of letter and object lefts

E	X	I	T	7	5
20.5	29.4	40.1	43.6	66.1	81.4



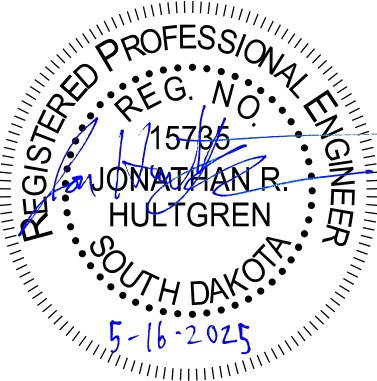
12.0" Radius, 1.5" Border, 0.5" Indent, White on, Green;
"1", E Mod 2K; "MILE", E Mod 2K;
E11-1_174x36;
12.0" Radius, 1.5" Border, 0.5" Indent, Black on, Yellow;
"EXIT", E Mod 2K specified length; Down Arrow 22.0" 270"; "ONLY", E Mod 2K specified length;
Table of letter and object lefts

64.5					
I	M	I	L	E	
60.6	80.1	92.2	97.0	106.0	
E	X	I	T	↓	O
15.5	26.7	40.7	46.1	70.0	114.0
N	L	Y			
127.0	140.1	149.7			



12.0" Radius, 2.0" Border, White on, Green;
"1/2", E Mod 2K; "MILE", E Mod 2K;
E11-1_174x36;
12.0" Radius, 2.0" Border, Black on, Yellow;
"EXIT", E Mod 2K specified length; Down Arrow 22.0" 270"; "ONLY", E Mod 2K specified length;
Table of letter and object lefts

64.5					
1/2	M	I	L	E	
54.9	85.8	97.9	102.7	111.7	
E	X	I	T	↓	O
15.5	26.7	40.7	46.1	70.0	114.0
N	L	Y			
127.0	140.1	149.7			



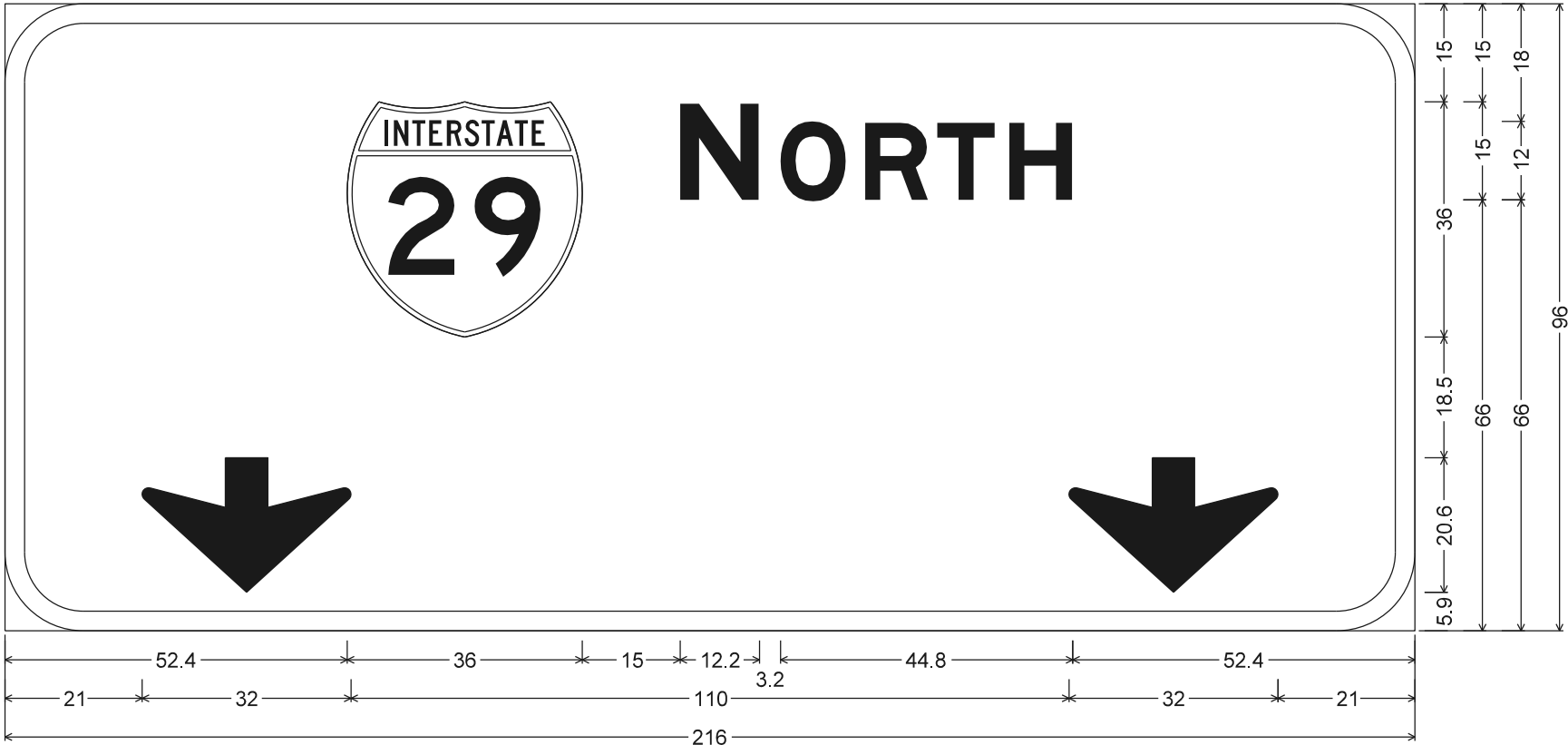
PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY



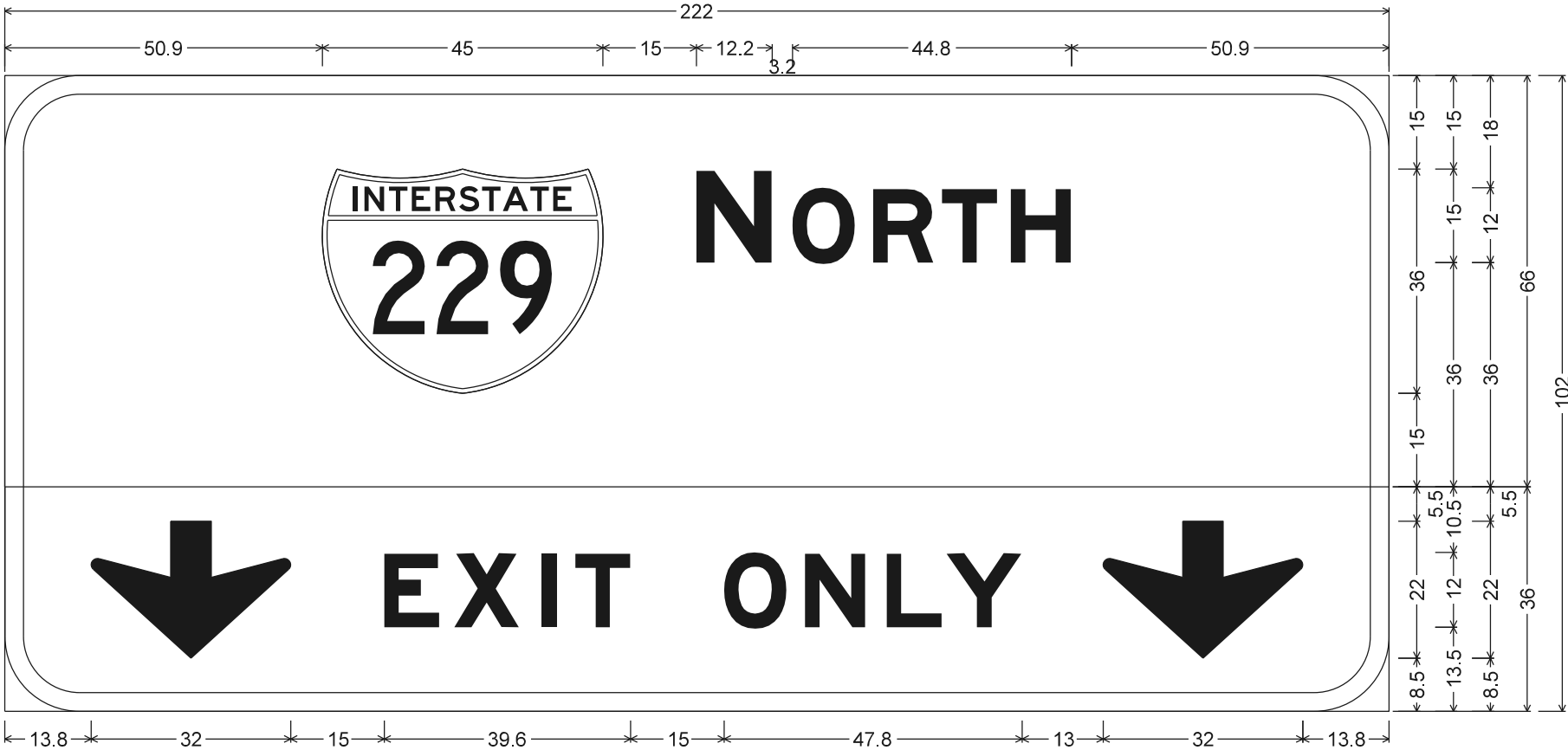
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S49	S112

Plotting Date: 5/16/2025



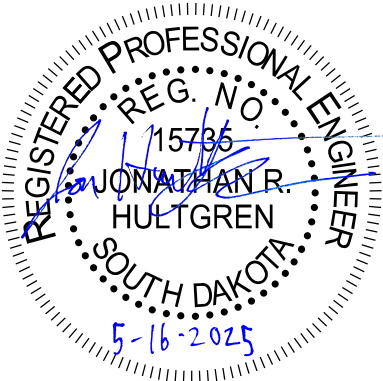
12.0" Radius, 3.0" Border, White on, Green;
"NORTH", E Mod 2K; Down Arrow Custom - 20.6" 270'; Down Arrow Custom - 20.6" 270';
Table of letter and object lefts

	N	O	R	T	H
52.4	103.4	118.8	131.8	142.8	153.9
					
21.0	163.0				



12.0" Radius, 3.0" Border, White on, Green;
"NORTH", E Mod 2K;
E11-1f_222x36;
12.0" Radius, 3.0" Border, 0.0" Indent, Black on, Yellow;
Down Arrow 22.0" 270'; "EXIT", E Mod 2K specified length; "ONLY",
E Mod 2K specified length; Down Arrow 22.0" 270';
Table of letter and object lefts

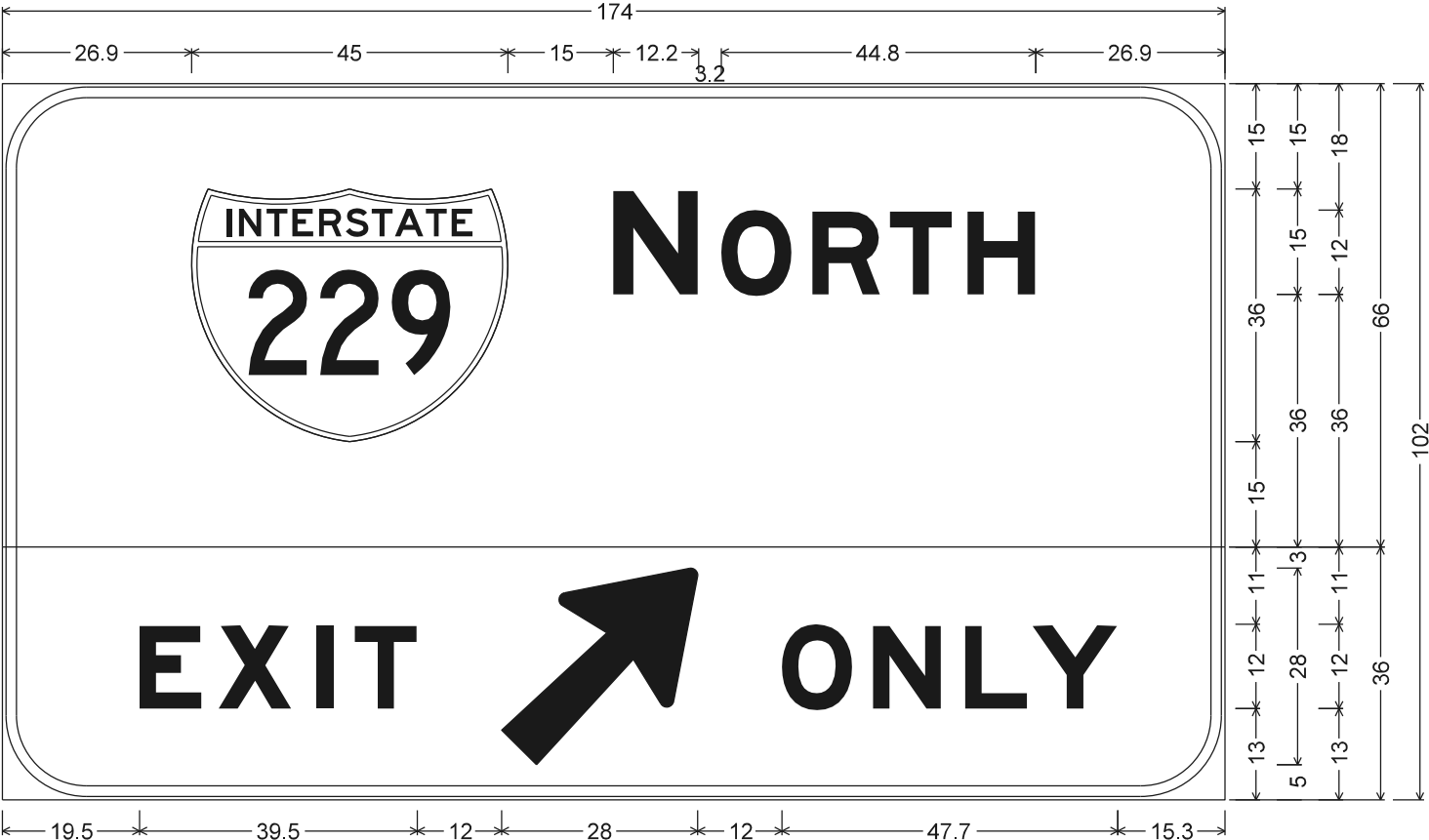
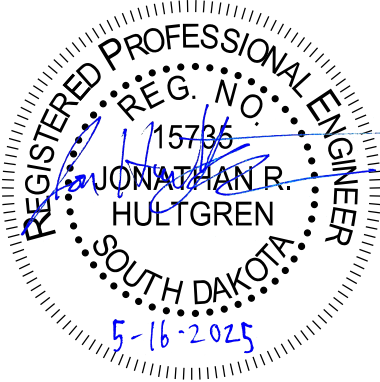
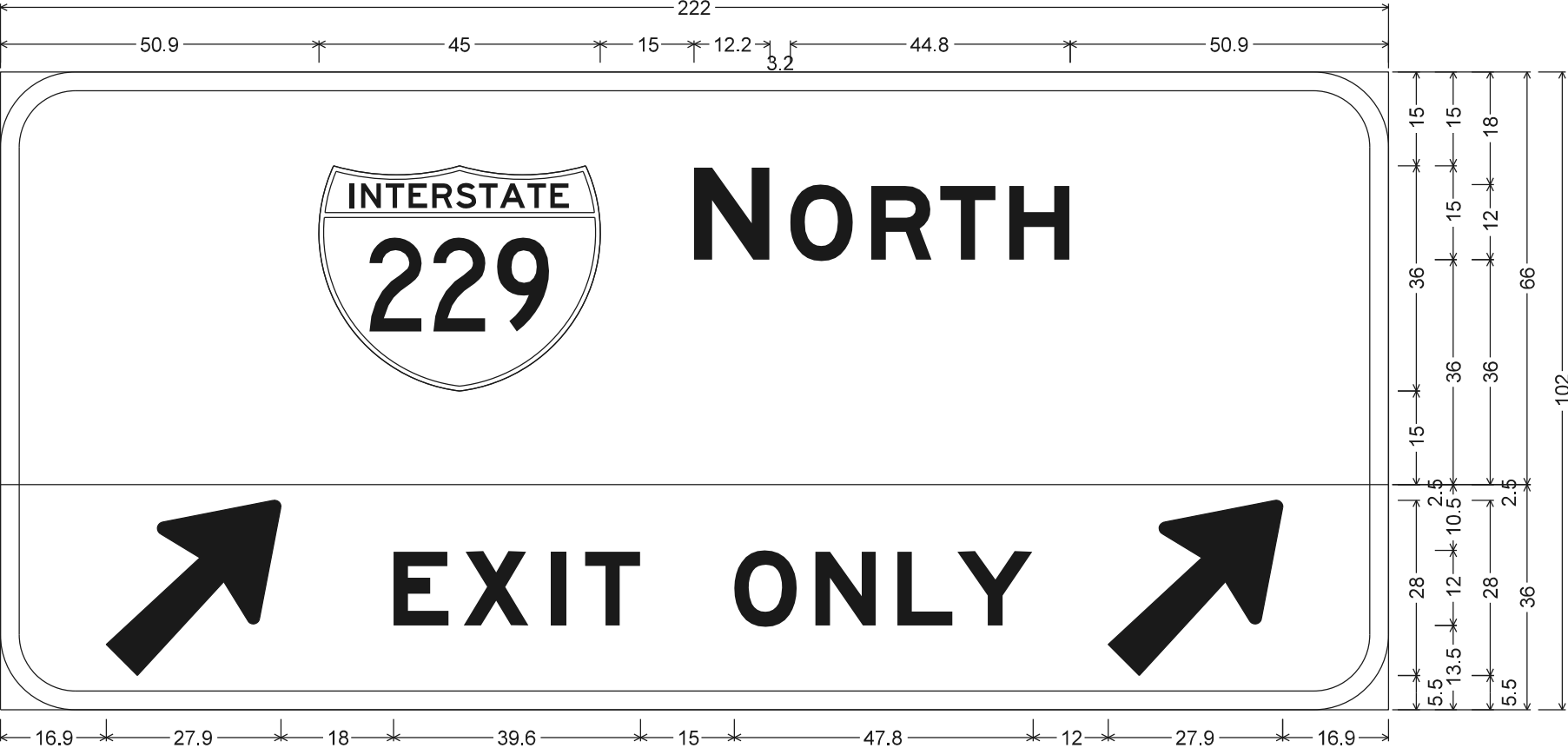
	N	O	R	T	H					
50.9	110.9	126.3	139.3	150.3	161.4					
	E	X	I	T	O	N	L	Y		
13.8	60.8	72.1	86.1	91.5	115.4	128.3	141.4	151.0	176.2	



PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY

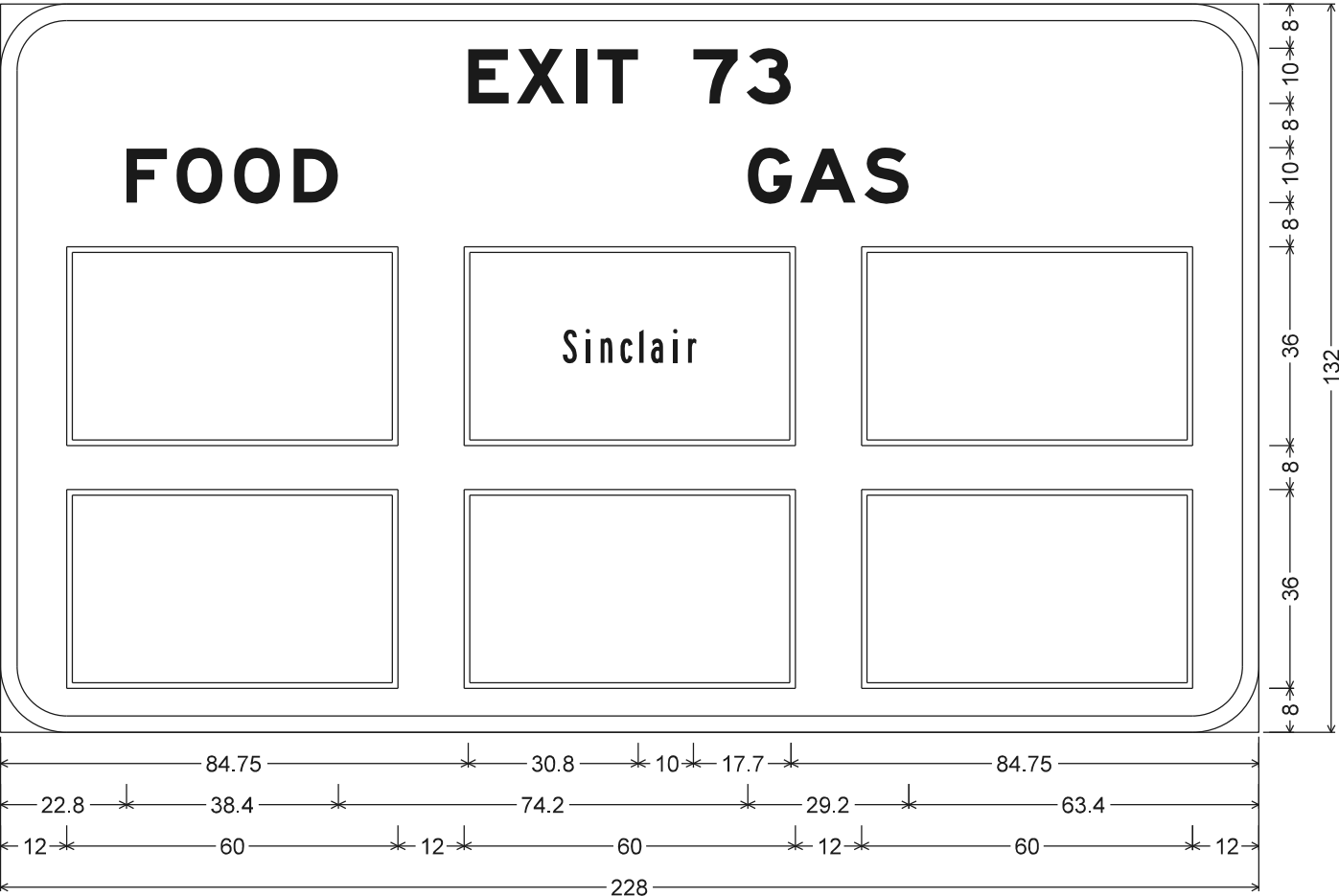
 Plotting Date: 5/16/2025	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	S50	S112



PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY

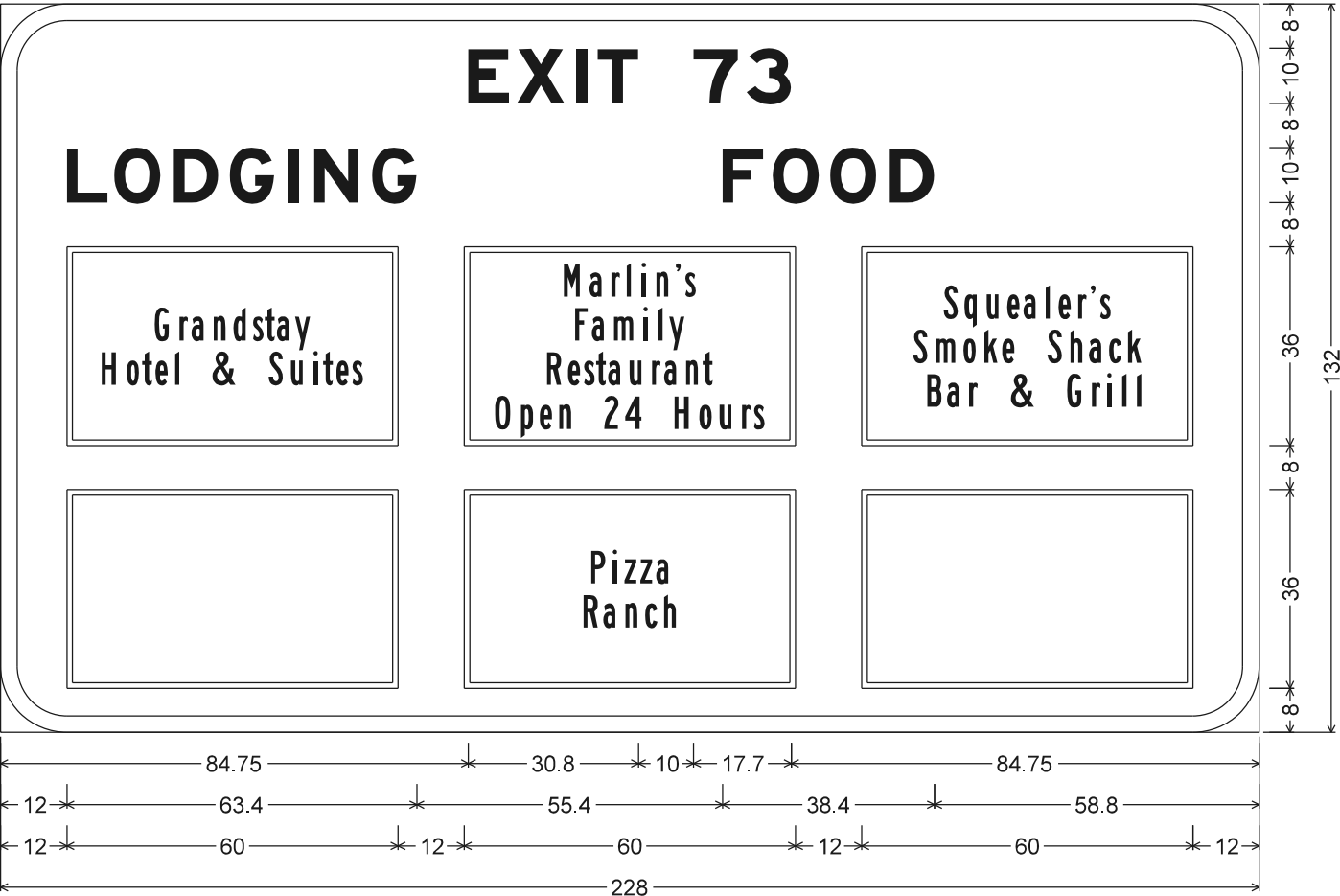
	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	S51	S112
Plotting Date: 5/16/2025			



12.00" Radius, 3.00" Border, White on, Blue;
"EXIT 73", E Mod 2K; "FOOD", E Mod 2K;
"GAS", E Mod 2K;

Table of letter and object lefts

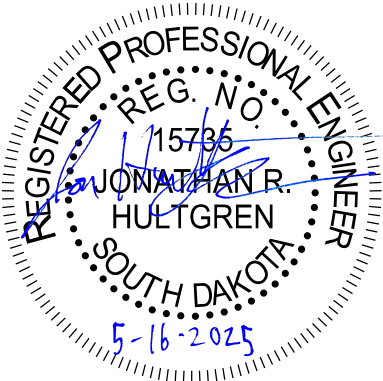
E 84.75	X 93.55	I 104.35	T 108.15	7 125.55	3 135.15	
F 22.80	O 31.90	O 42.30	D 53.10	G 135.40	A 144.90	S 156.50
 12.00	 84.00	 156.00				
 12.00	 84.00	 156.00				



12.00" Radius, 3.00" Border, White on, Blue;
"EXIT 73", E Mod 2K; "LODGING", E Mod 2K;
"FOOD", E Mod 2K;

Table of letter and object lefts

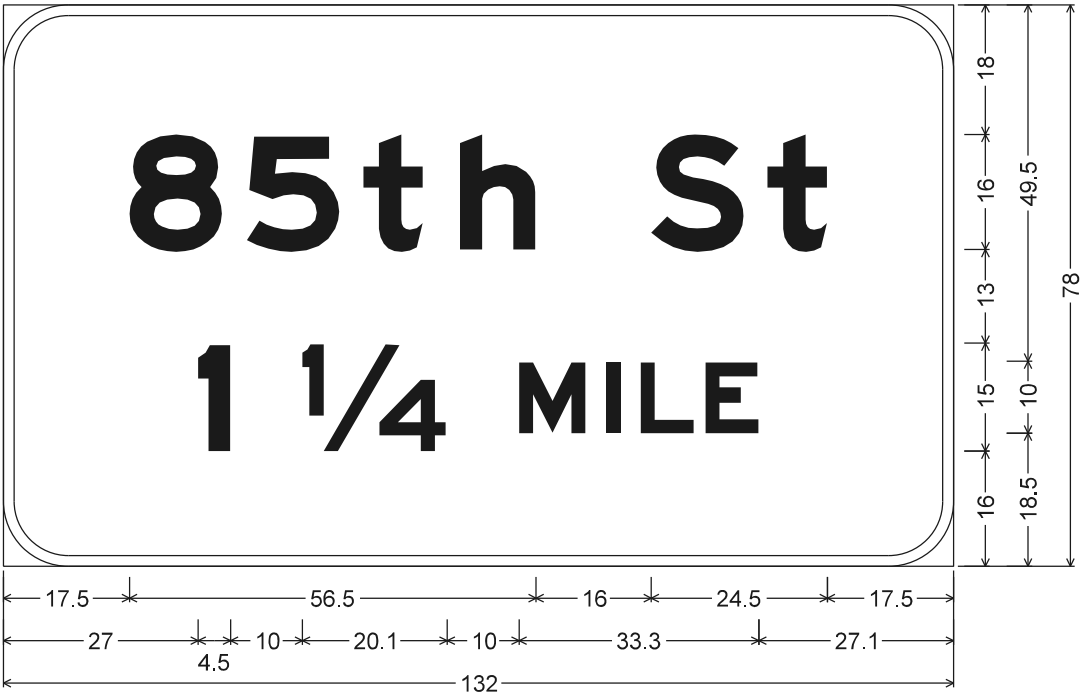
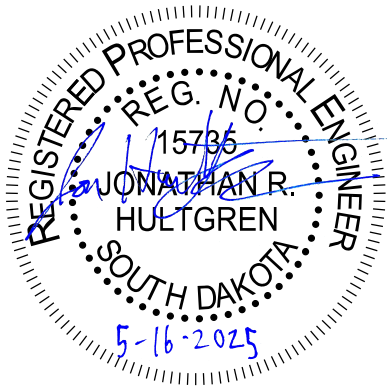
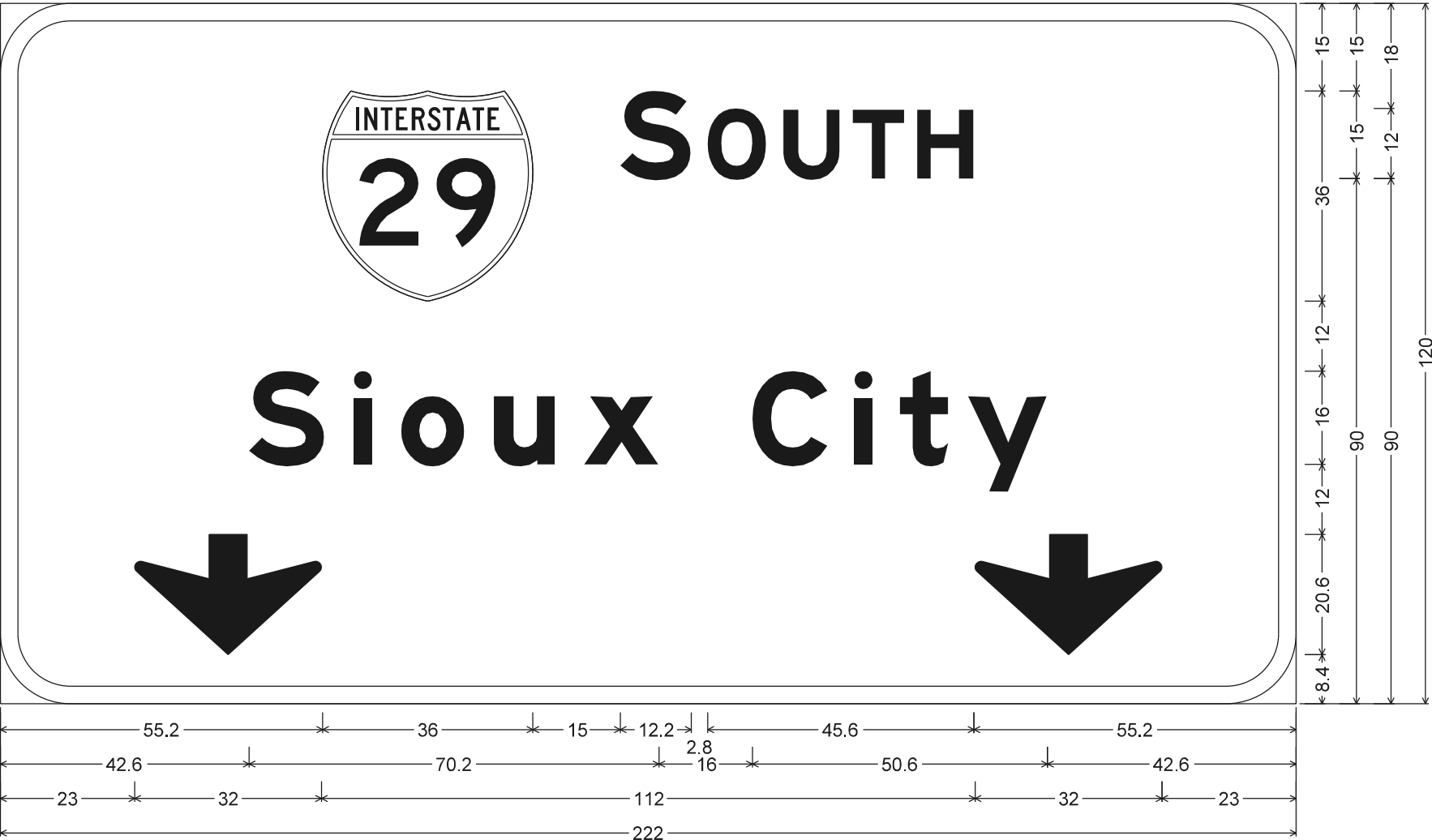
E 84.75	X 93.55	I 104.35	T 108.15	7 125.55	3 135.15					
L 12.00	O 20.60	D 31.40	G 41.50	I 52.00	N 56.80	G 67.30	F 130.80	O 139.90	O 150.30	D 161.10
 12.00	 84.00	 156.00								
 12.00	 84.00	 156.00								



PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY

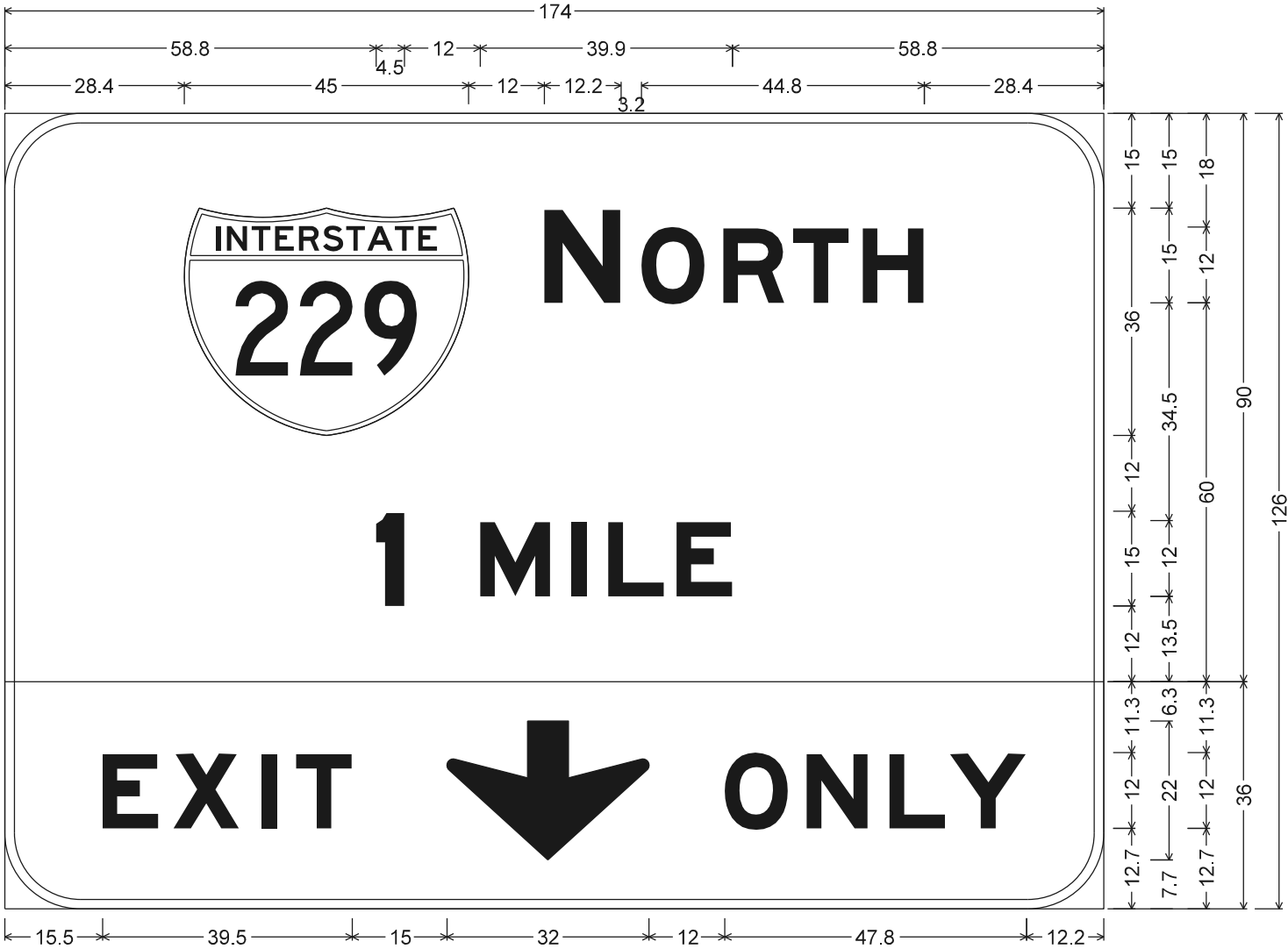
SD DOT	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	S52	S112
Plotting Date: 5/16/2025			



PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY

 Plotting Date: 7/2/2025	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	S53	S112
Revised Date: 6/26/2025 Initials: NBG			



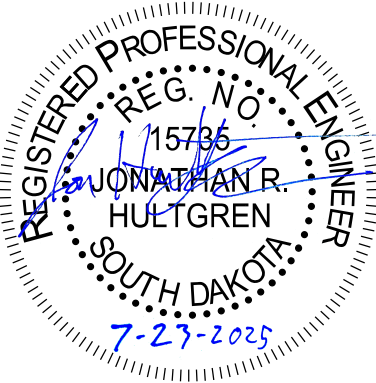
12.0" Radius, 1.5" Border, White on, Green;
"NORTH", E Mod 2K; "1 MILE", E Mod 2K;
E11-1_174x36;
12.0" Radius, 1.5" Border, Black on, Yellow;
"EXIT", E Mod 2K specified length; Down Arrow 22.0" 270'; "ONLY", E Mod 2K specified length;
Table of letter and object lefts

	N	O	R	T	H
28.4	85.4	100.8	113.8	124.8	135.9
I	M	I	L	E	
58.8	75.3	89.8	95.6	106.4	
E	X	I	T	↓	O
15.5	26.7	40.7	46.1	70.0	114.0
N	L	Y			
127.0	140.1	149.7			



PROPOSED SIGN PANEL OVERLAY
12.0" Radius, 2.0" Border, Black on, Yellow;
"RIGHT", E Mod 2K 80% spacing; "LANE", E Mod 2K 80% spacing; "ONLY", E Mod 2K specified length;
Table of letter and object lefts

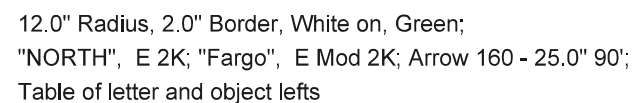
R	I	G	H	T	L	A	N	E	O	N	L	Y
9.4	21.2	25.9	37.9	49.3	68.2	77.7	91.5	103.9	122.8	135.8	148.9	158.5



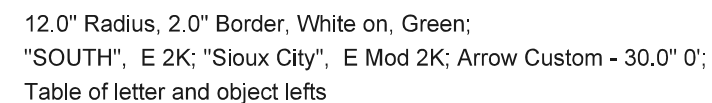
TAILS FOR BIDDING PURPOSES ONLY



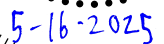
5/16/2025



↑
60.9



→
69.0



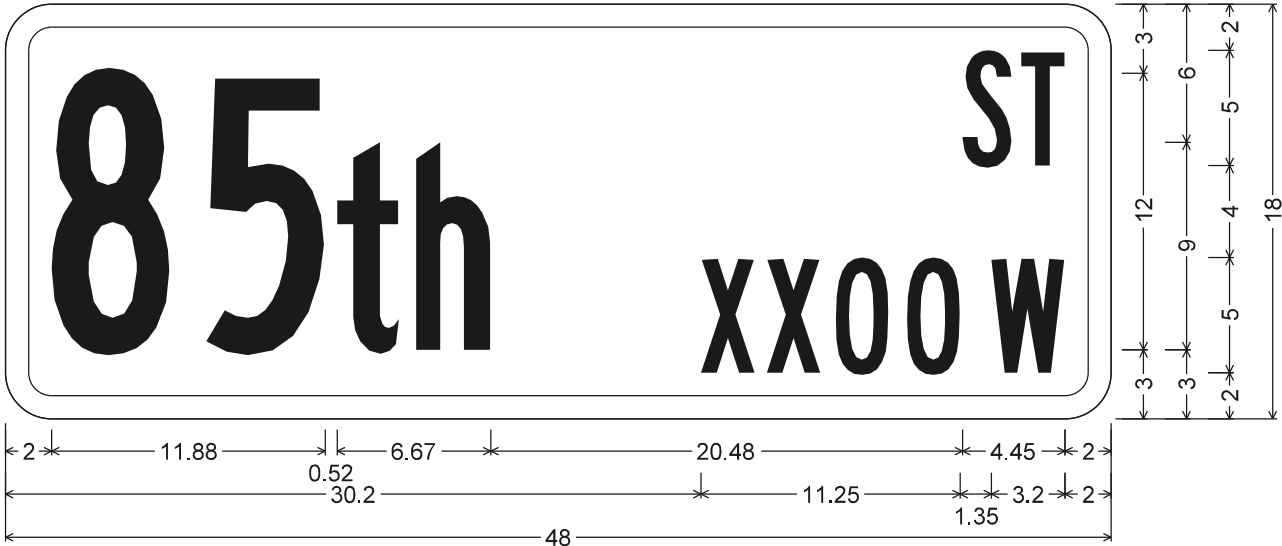
PERMANENT SIGNING DETAILS



FOR BIDDING PURPOSES ONLY

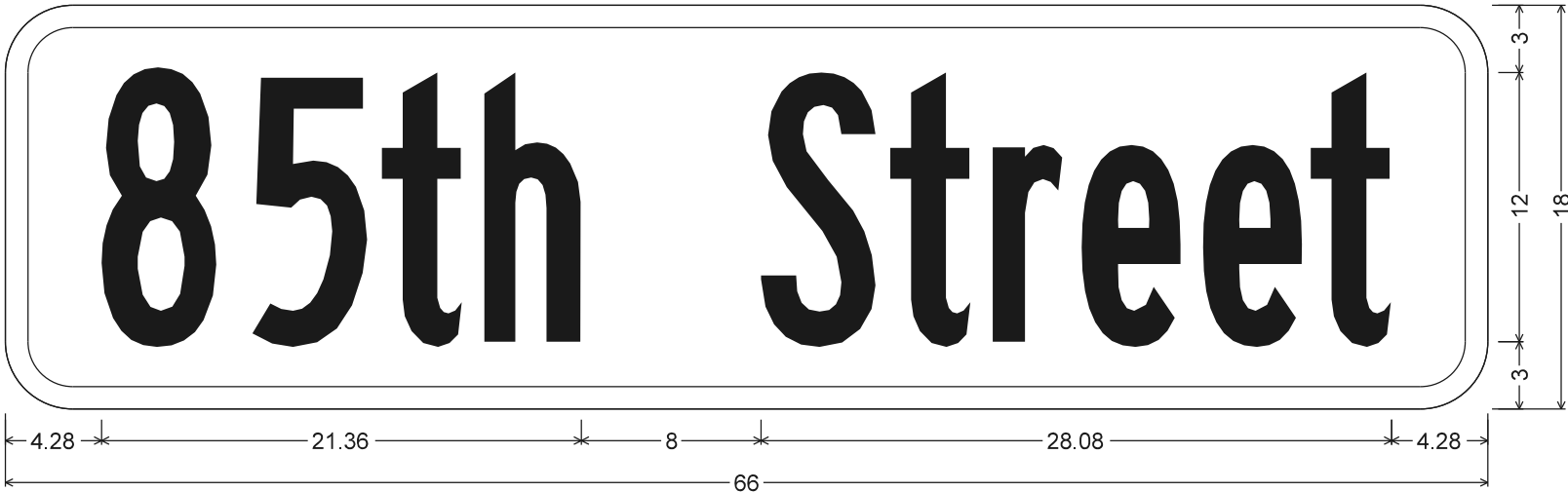
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S55	S112

Plotting Date: 5/16/2025



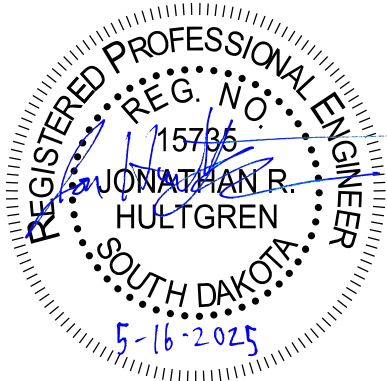
2.00" Radius, 1.00" Border, White on, Green;
"85th", B 2K; "ST", B 2K; "XX00 W", B 2K;
Table of letter and object lefts

8	5	t	h	S	T
2.00	8.72	14.40	17.83	41.55	44.10
X	X	0	0	W	
30.20	33.05	36.05	39.15	42.80	



3.00" Radius, 1.00" Border, White on, Green;
"85th Street", B 2K;
Table of letter and object lefts

8	5	t	h	S	t	r	e	e	t
4.28	11.00	16.76	21.32	33.64	39.40	43.96	47.92	53.32	58.12



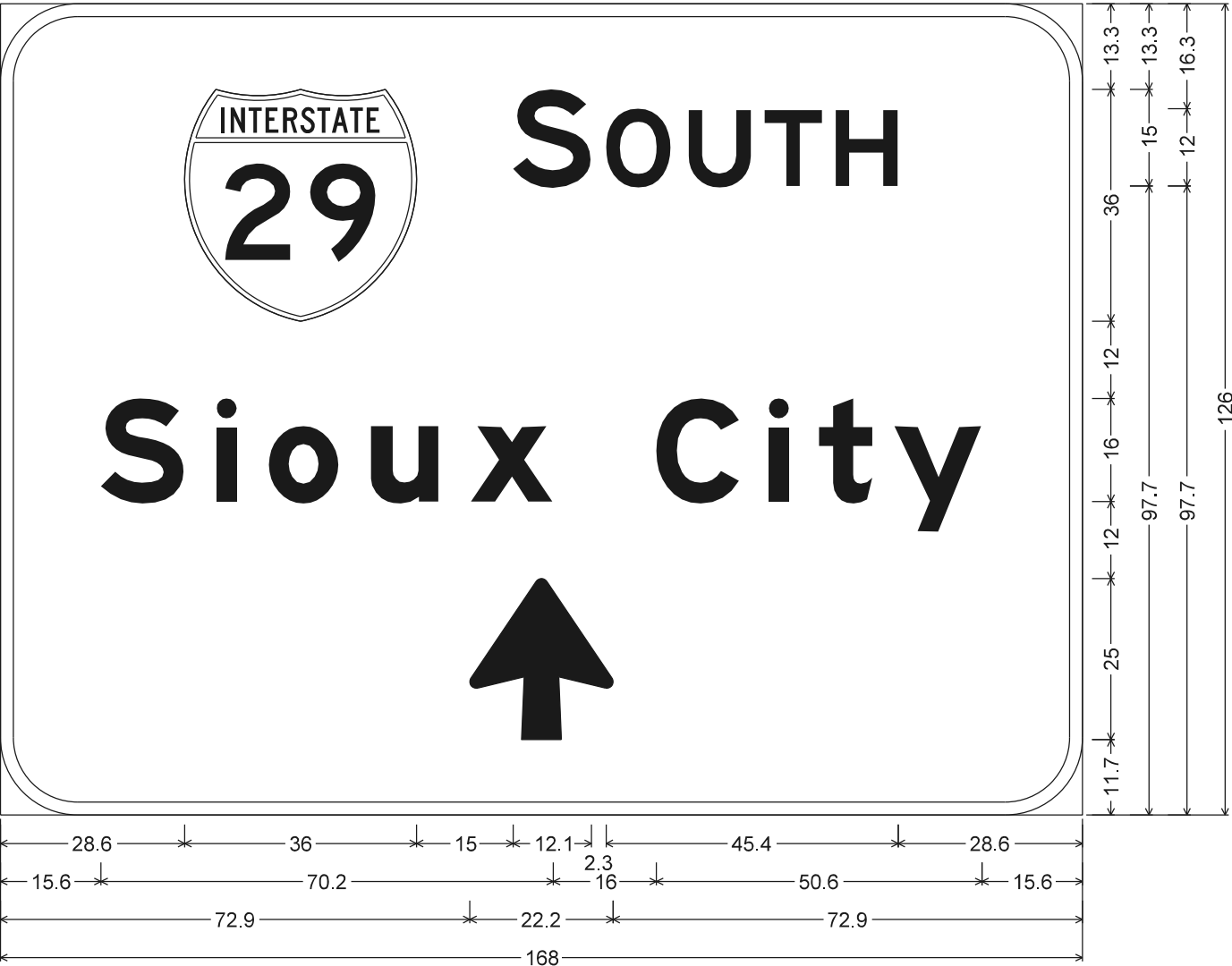
PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S56	S112



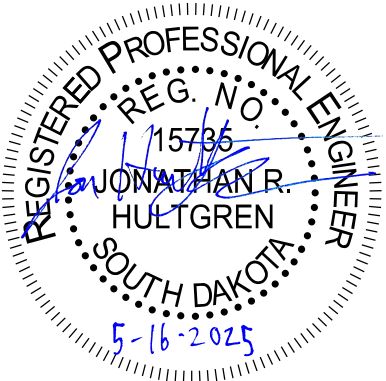
12.0" Radius, 2.0" Border, White on, Green;
"SOUTH", E 2K; "Sioux City", E Mod 2K; Arrow 160 - 25.0" 90';
Table of letter and object lefts

29	S	O	U	T	H			
28.6	79.6	94.0	106.9	118.6	129.7			
S	i	o	u	x	C	i	t	y
15.6	33.5	41.7	57.5	73.0	101.8	119.3	127.1	138.8
↑								
72.9								



12.0" Radius, 2.0" Border, White on, Green;
"NORTH", E 2K; "Fargo", E Mod 2K; Arrow Custom - 30.0" 0';
Table of letter and object lefts

29	N	O	R	T	H
16.6	67.6	82.8	95.6	106.7	117.7
F	a	r	g	o	
37.8	52.5	69.4	79.8	95.4	
➡					
57.0					



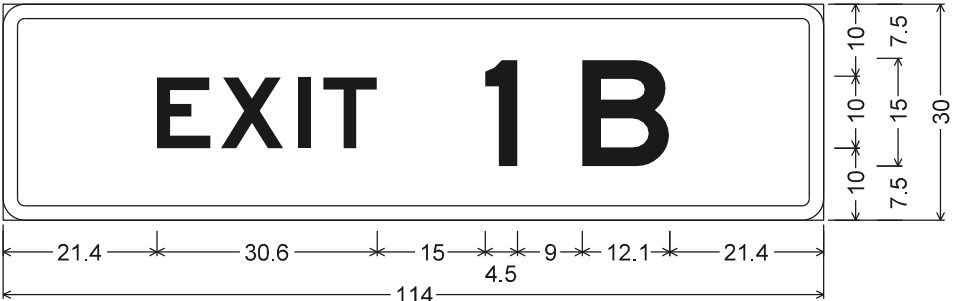
PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY



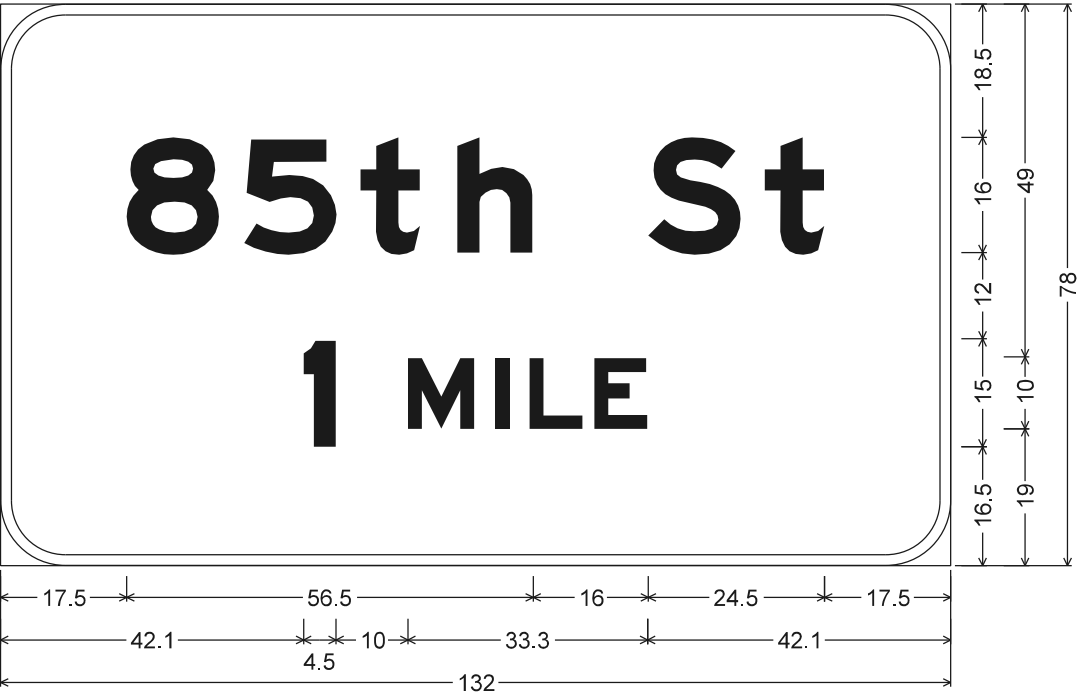
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S57	S112

Plotting Date: 5/16/2025



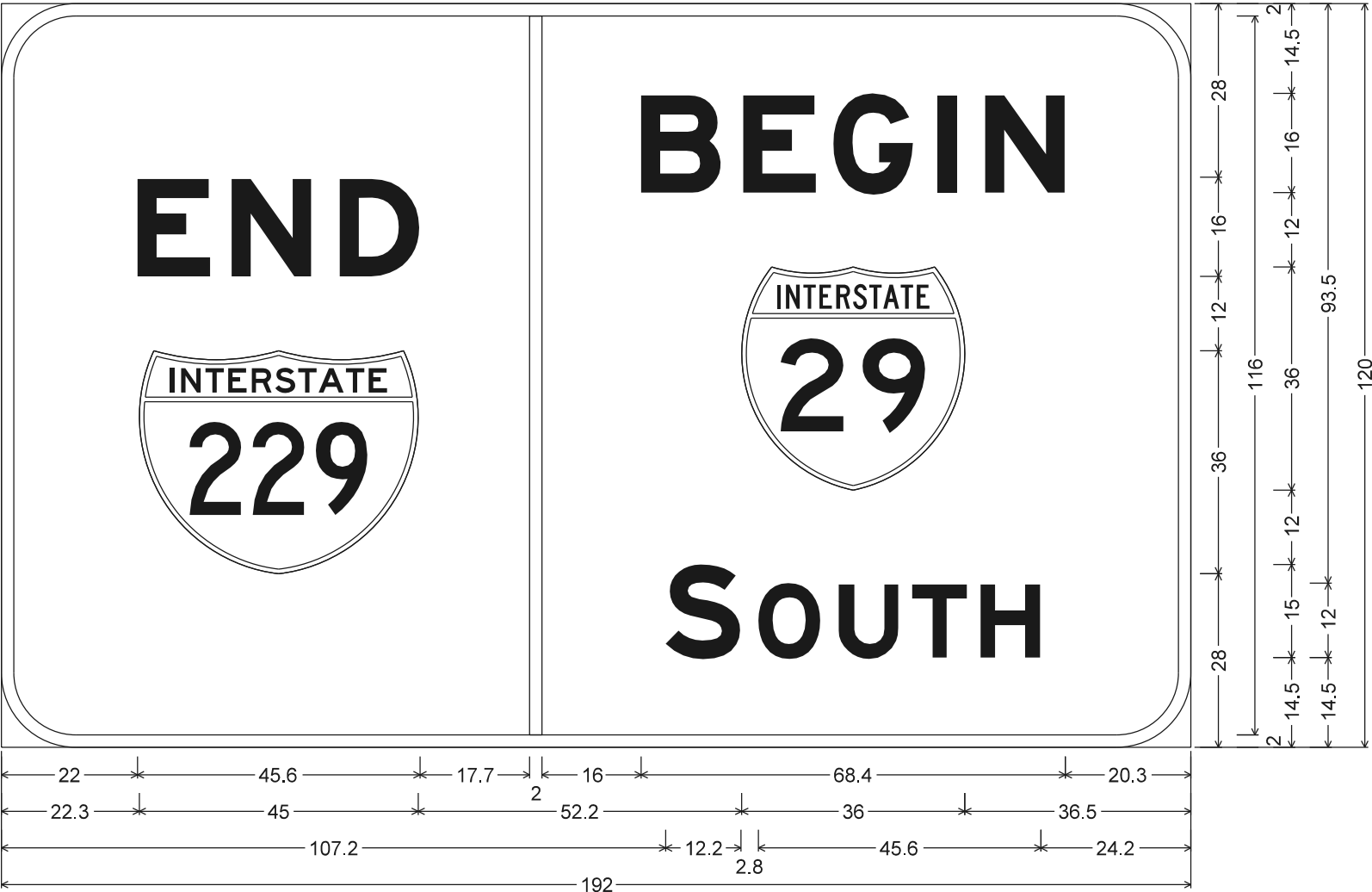
E1-5P(3)_138x30;
3.0" Radius, 2.0" Border, White on, Green;
"EXIT", E 2K; "1", E 2K; "B", E 2K;
Table of letter and object lefts

E	X	I	T	1	B
21.4	30.3	41.0	44.5	67.0	80.5



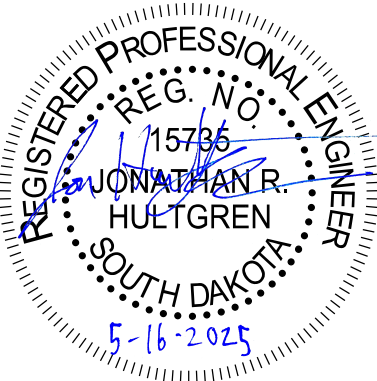
9.0" Radius, 1.5" Border, 0.0" Indent, White on, Green;
"85th St", E Mod 2K; "1 MILE", E Mod 2K;
Table of letter and object lefts

8	5	t	h	S	t
17.5	33.8	50.0	63.4	90.0	106.2
1	M	I	L	E	
42.1	56.6	68.7	73.5	82.5	



12.0" Radius, 2.0" Border, 0.0" Indent, White on, Green;
"END", E Mod 2K; "BEGIN", E Mod 2K; "SOUTH", E Mod 2K;
Table of letter and object lefts

E	N	D	I	B	E	G	I	N
22.0	37.2	54.6	85.3	103.3	119.7	134.3	151.1	158.8
229	29							
22.3	119.5							
S	O	U	T	H				
107.2	122.2	135.1	147.0	158.1				



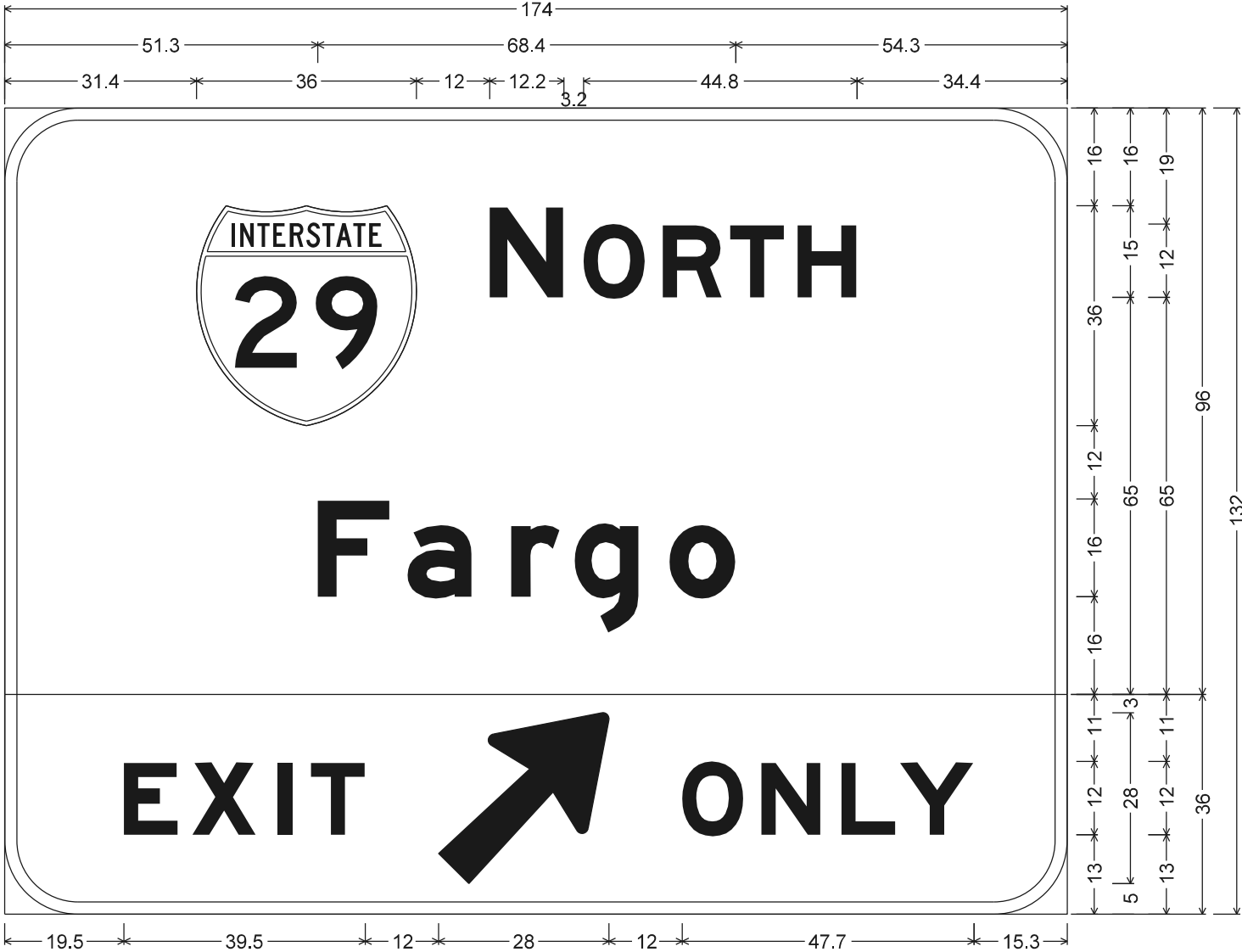
PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY



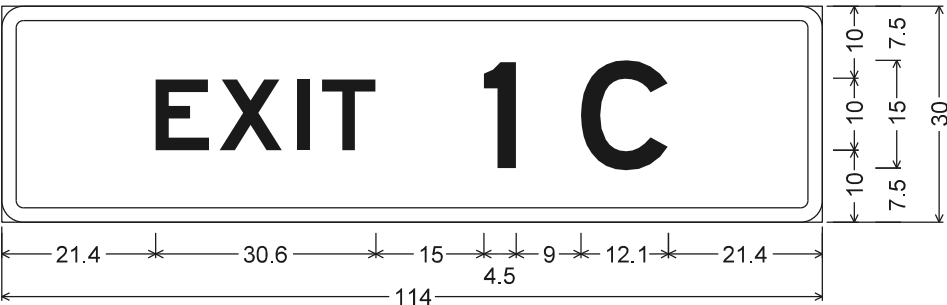
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S58	S112

Plotting Date: 5/16/2025



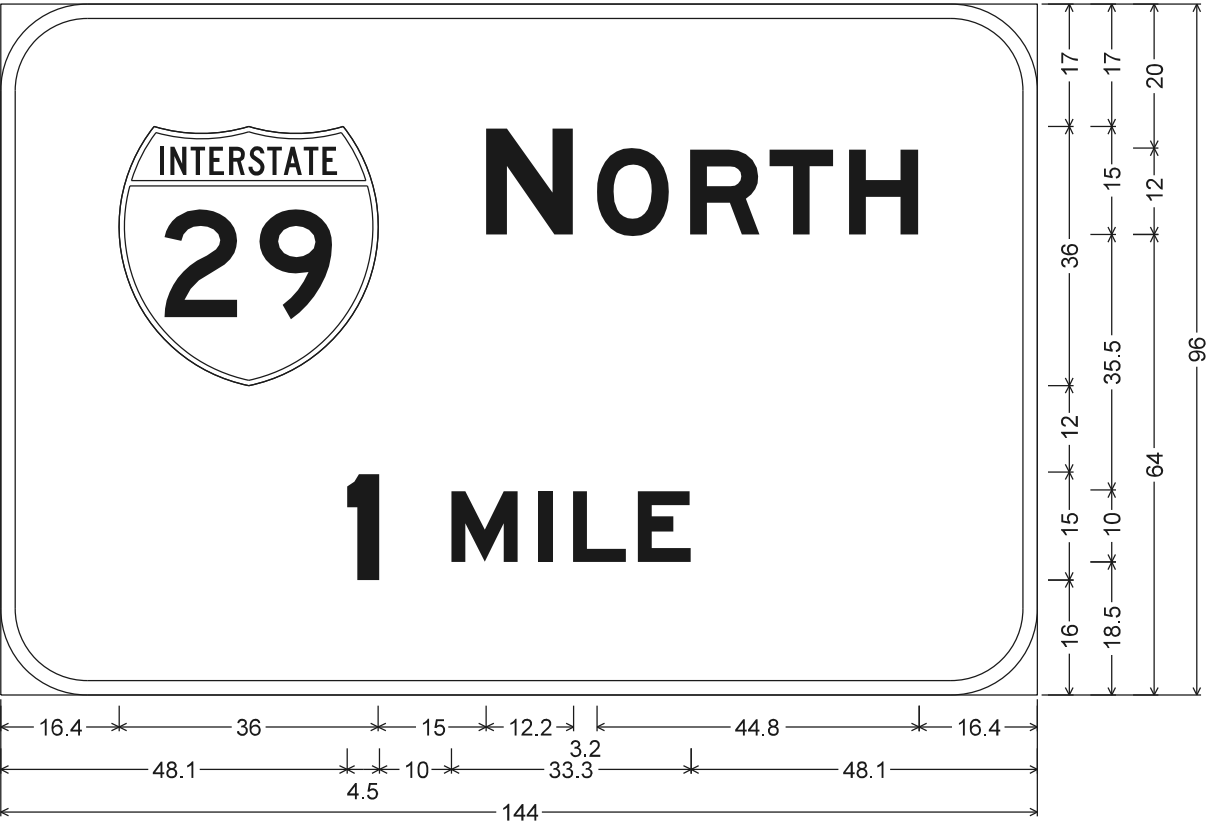
12.0" Radius, 2.0" Border, 0.0" Indent, White on, Green;
"NORTH", E Mod 2K; "Fargo", E Mod 2K;
E11-1d_174x36;
12.0" Radius, 2.0" Border, 0.0" Indent, Black on, Yellow;
"EXIT", E Mod 2K specified length; Arrow Custom - 35.6" 45"; "ONLY", E Mod 2K specified length;
Table of letter and object lefts

	N	O	R	T	H			
31.4	79.4	94.8	107.8	118.8	129.9			
F	a	r	g	o				
51.3	66.0	82.9	93.3	108.9				
E	X	I	T		O	N	L	Y
19.5	30.8	44.7	50.2	71.0	111.0	123.9	137.0	146.6



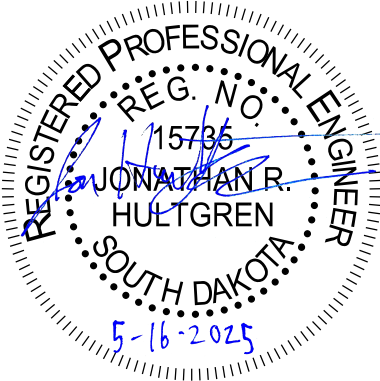
E1-5P(3)_138x30;
3.0" Radius, 2.0" Border, White on, Green;
"EXIT", E 2K; "1", E 2K; "C", E 2K;
Table of letter and object lefts

E	X	I	T	1	C
21.4	30.3	41.0	44.5	67.0	80.5



12.0" Radius, 2.0" Border, White on, Green;
"NORTH", E Mod 2K; "1 MILE", E Mod 2K;
Table of letter and object lefts

	N	O	R	T	H
16.4	67.4	82.8	95.8	106.8	117.9
1	M	I	L	E	
48.1	62.6	74.7	79.5	88.5	



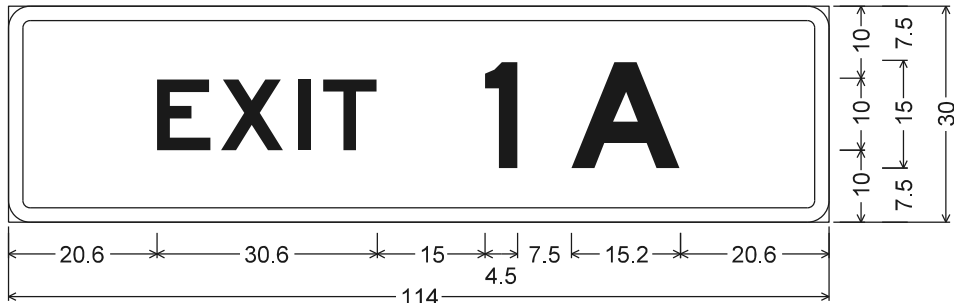
PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY



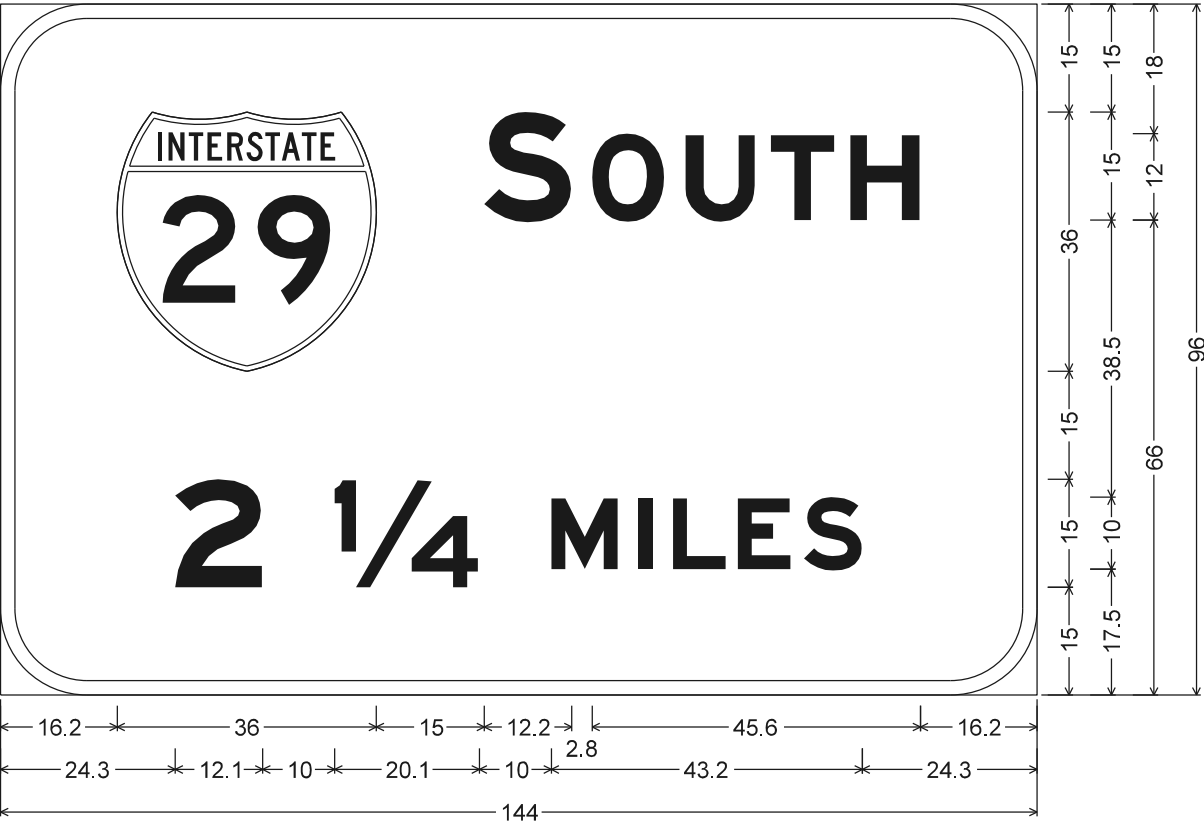
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S59	S112

Plotting Date: 5/16/2025



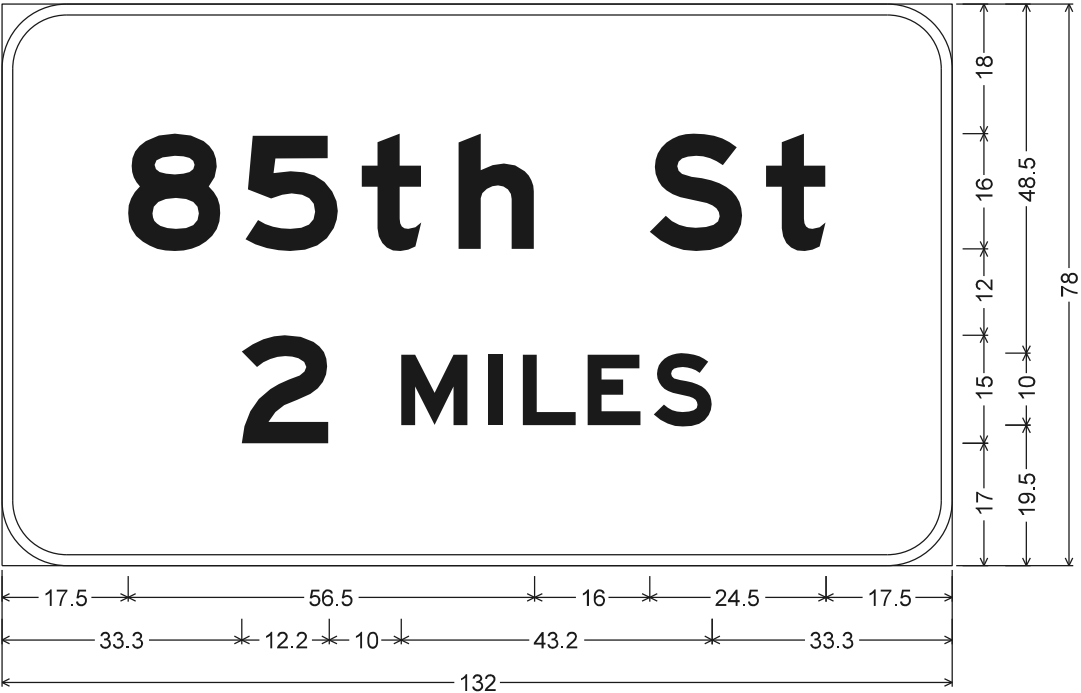
E1-5P(3)_138x30;
3.0" Radius, 2.0" Border, White on, Green;
"EXIT", E 2K; "1", E 2K; "A", E Mod 2K;
Table of letter and object lefts

E	X	I	T	1	A
20.6	29.5	40.2	43.7	66.2	78.2



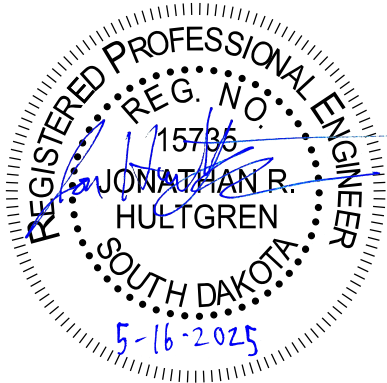
12.0" Radius, 2.0" Border, White on, Green;
"SOUTH", E Mod 2K; "2", E Mod 2K; "1/4", E Mod 2K; "MILES", E Mod 2K;
Table of letter and object lefts

29	S	O	U	T	H	
16.2	67.2	82.2	95.2	107.0	118.1	
2	1/4	M	I	L	E	S
24.3	46.4	76.5	88.6	93.4	102.4	111.6



9.0" Radius, 1.5" Border, White on, Green;
"85th St", E Mod 2K; "2 MILES", E Mod 2K;
Table of letter and object lefts

8	5	t	h	S	t
17.5	33.8	50.0	63.4	90.0	106.2
2	M	I	L	E	S
33.3	55.5	67.6	72.4	81.4	90.6



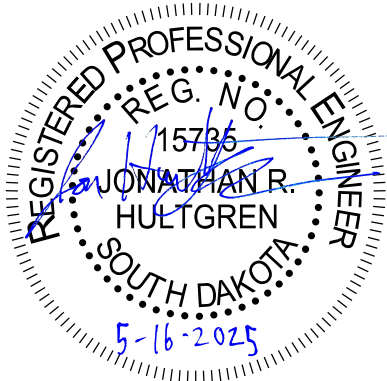
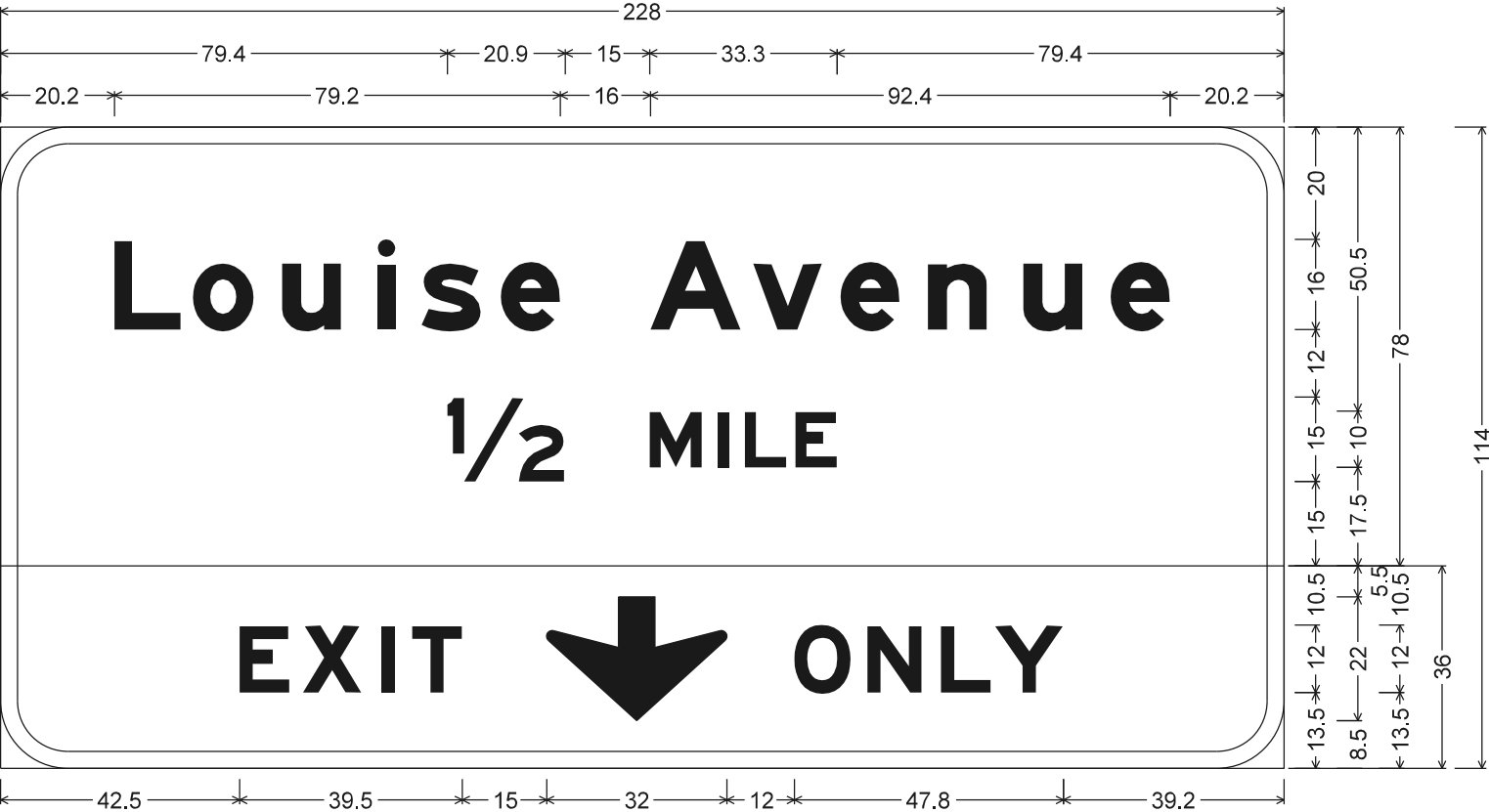
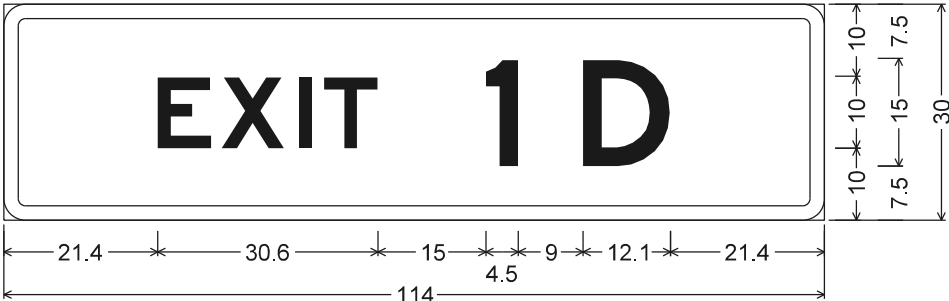
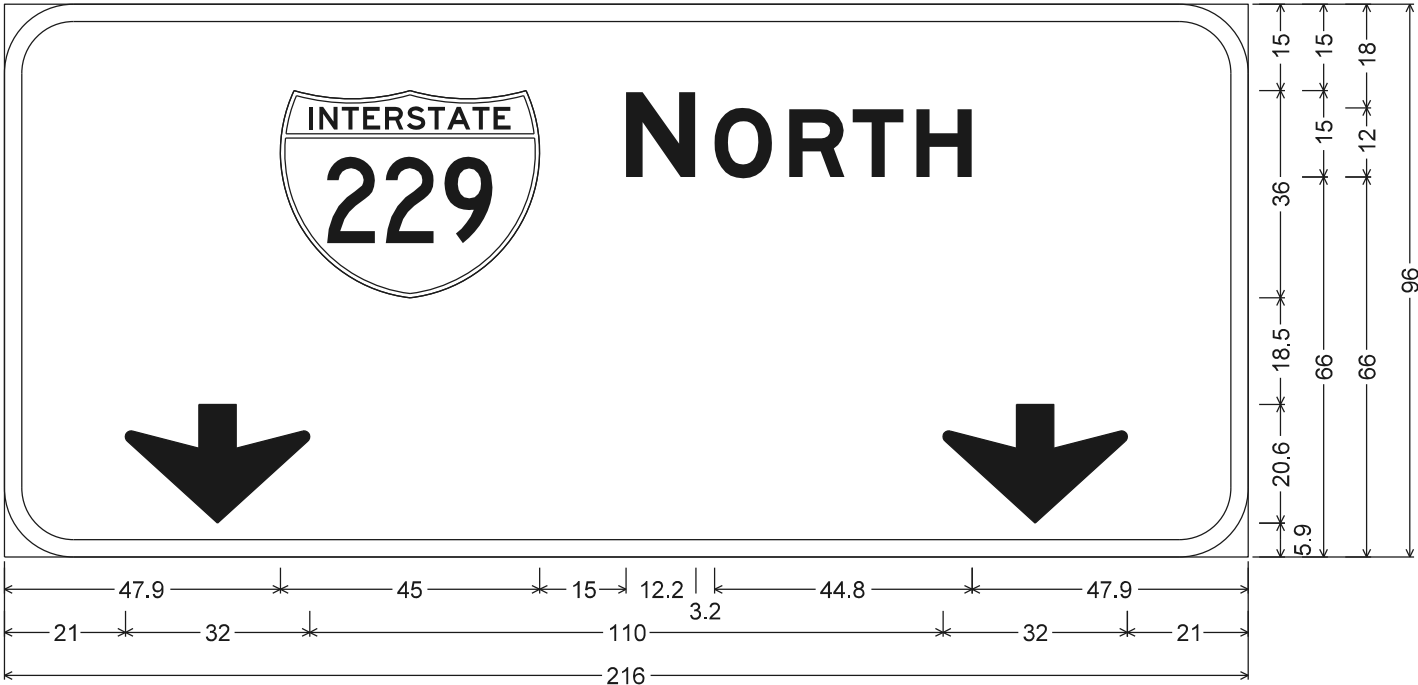
PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S60	S112



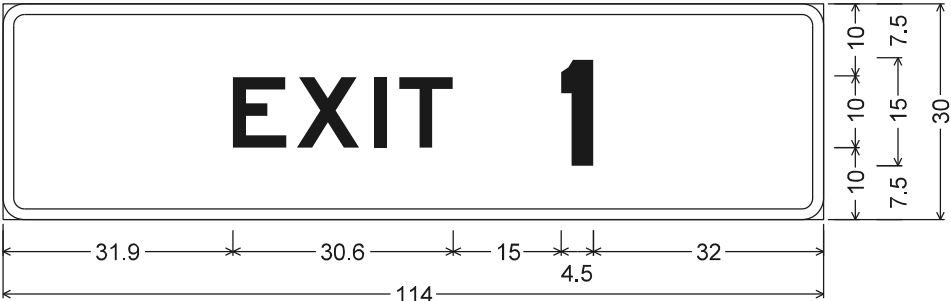
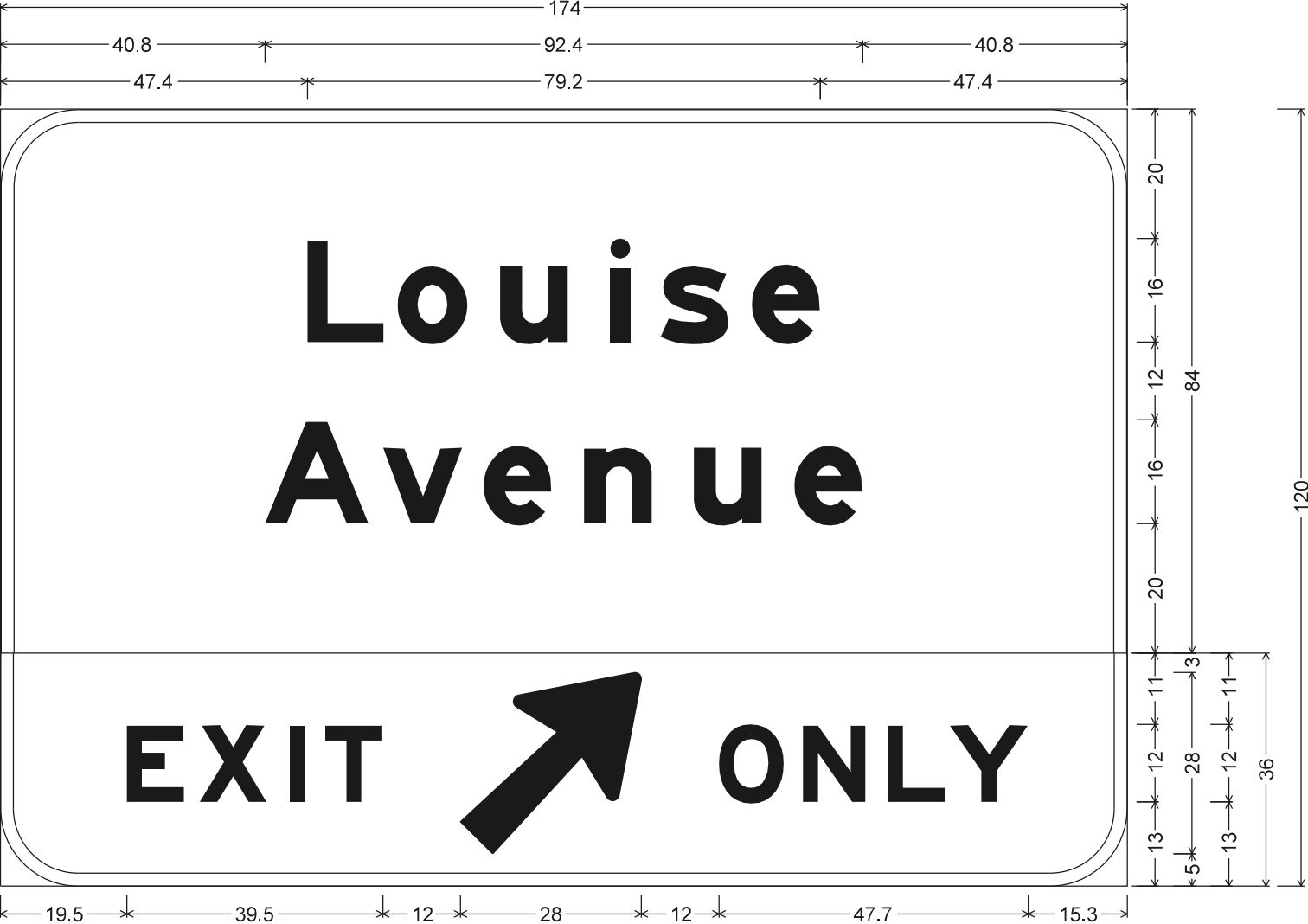
PERMANENT SIGNING DETAILS



FOR BIDDING PURPOSES ONLY

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S61	S112

Plotting Date: 5/16/2025



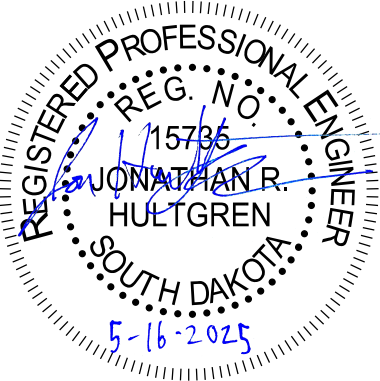
E1-5P_114x30;
3.0" Radius, 1.5" Border, White on, Green;
"EXIT", E 2K; "1", E Mod 2K;
Table of letter and object lefts

E	X	I	T	1
31.9	40.8	51.5	55.0	77.5

12.0" Radius, 2.0" Border, 0.1" Indent, White on, Green;
"Louise", E Mod 2K; "Avenue", E Mod 2K;

E11-1d_174x36;
12.0" Radius, 2.0" Border, 0.0" Indent, Black on, Yellow;
"EXIT", E Mod 2K specified length; Arrow Custom - 35.6" 45"; "ONLY", E Mod 2K specified length;
Table of letter and object lefts

L	o	u	i	s	e			
47.4	61.3	77.2	94.1	102.0	116.0			
A	v	e	n	u	e			
40.8	59.1	74.6	90.1	107.1	122.6			
E	X	I	T	↗	O	N	L	Y
19.5	30.8	44.7	50.2	71.0	111.0	123.9	137.0	146.6



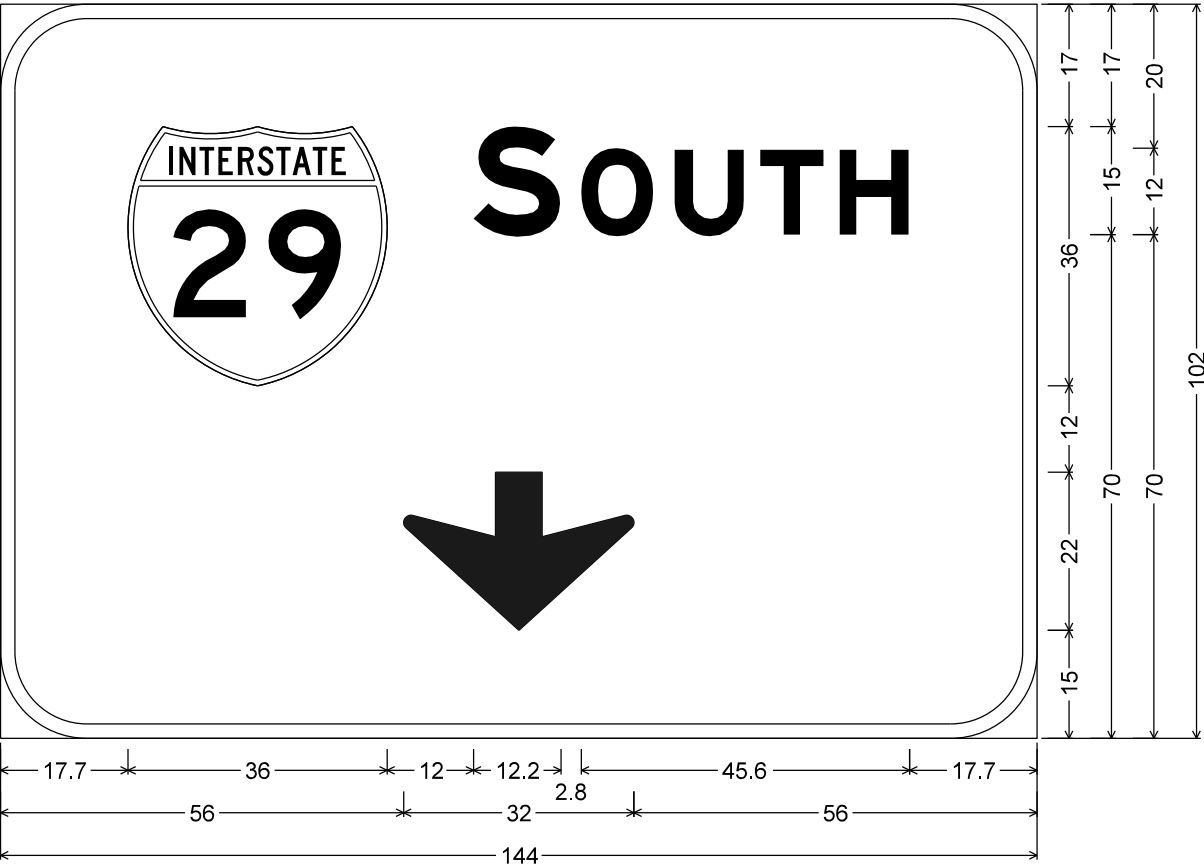
PERMANENT SIGNING DETAILS

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S62	S112

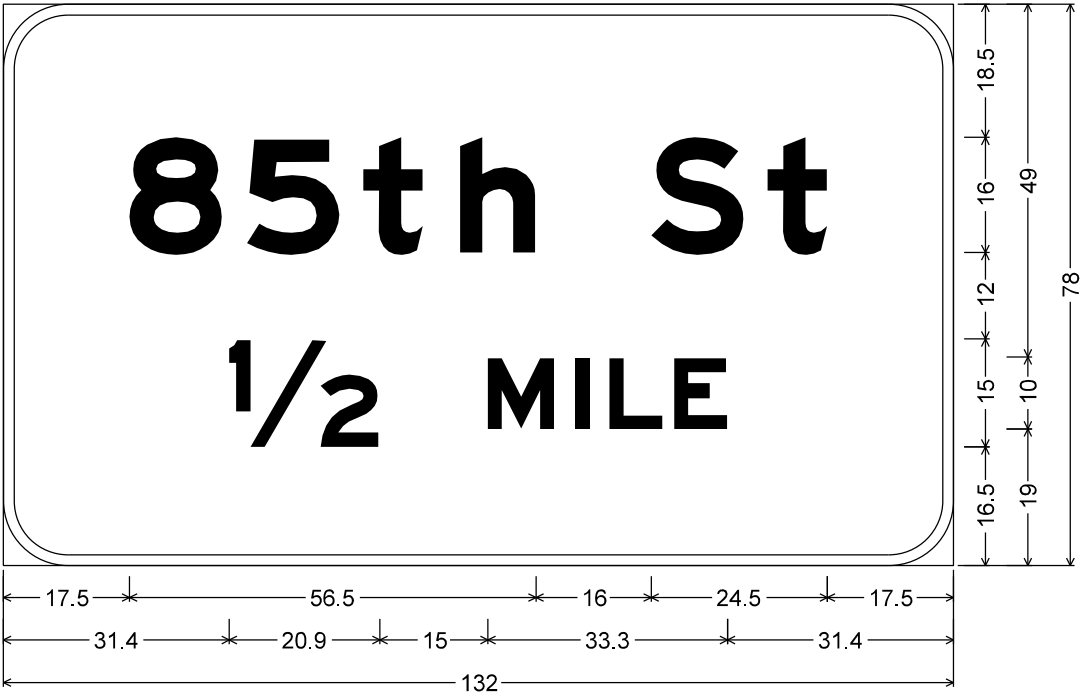


12.0" Radius, 2.0" Border, 0.0" Indent, White on, Green;
"SOUTH", E Mod 2K; Down Arrow 22.0" 270';

Table of letter and object lefts

	S	O	U	T	H
17.7	65.7	80.7	93.7	105.5	116.6

56.0



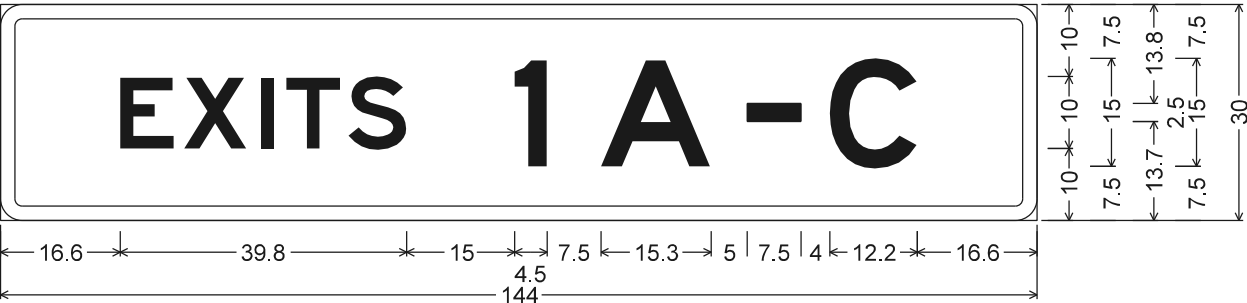
9.0" Radius, 1.5" Border, 0.0" Indent, White on, Green;

"85th St", E Mod 2K; "1/2 MILE", E Mod 2K;

Table of letter and object lefts

8	5	t	h	S	t
17.5	33.8	50.0	63.4	90.0	106.2

1/2	M	I	L	E
31.4	67.3	79.4	84.2	93.2

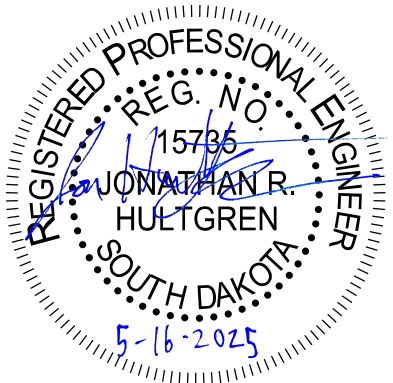


3.0" Radius, 2.0" Border, White on, Green;

"EXITS", E 2K; "1", E 2K; "A", E 2K; "C", E 2K;

Table of letter and object lefts

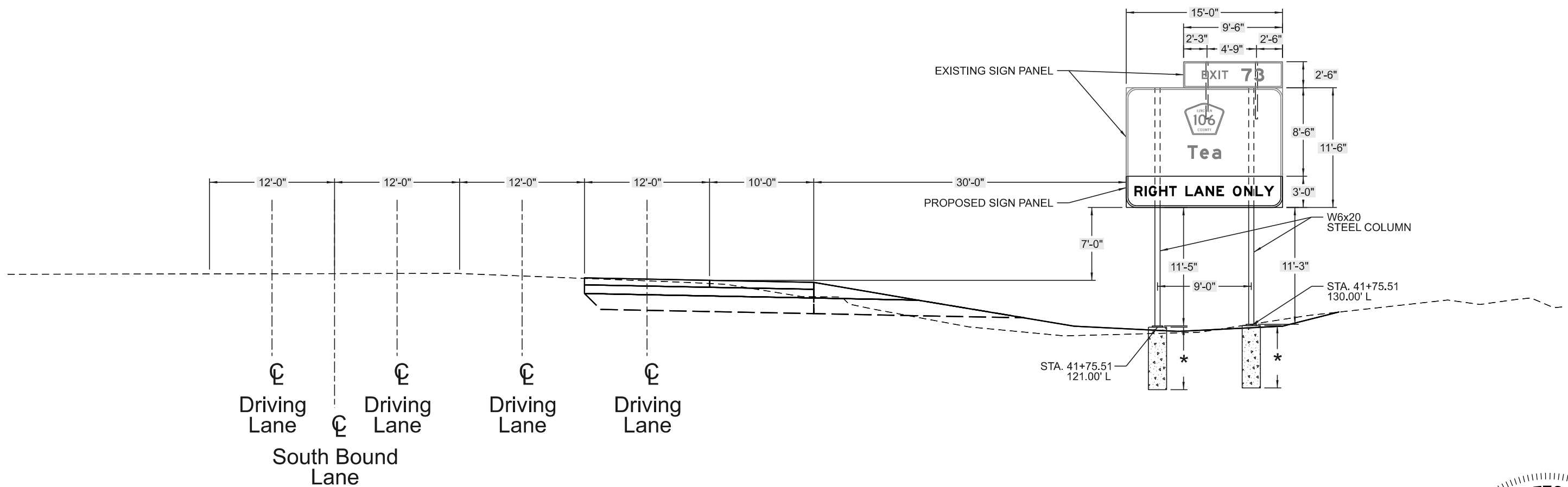
E	X	I	T	S	1	A		C
16.6	25.5	36.2	39.7	48.3	71.4	83.4	103.7	115.2



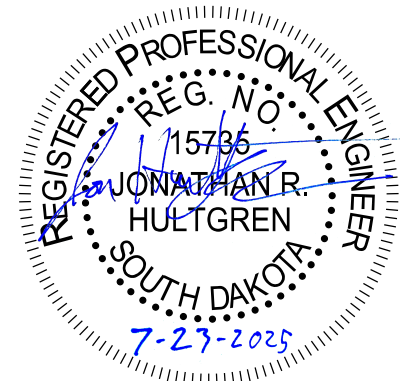
SPECIAL SIGN SUPPORT DETAILS
BREAKAWAY SIGN SUPPORTS
I-29 Southbound - Sta. 41+75.51
(LOOKING SOUTH)

FOR BIDDING PURPOSES ONLY

SD DOT	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	S63	S112
Plotting Date:	7/2/2025	Revised Date:	6/26/2025
		Initials:	NBG



* - See Sheets S85 & S87 for breakaway sign support footing notes, details and tables.



OVERHEAD SIGN SUPPORTS

CANTILEVER SIGN SUPPORT

I-29 Northbound - Sta. 47+32.28

(LOOKING NORTH)

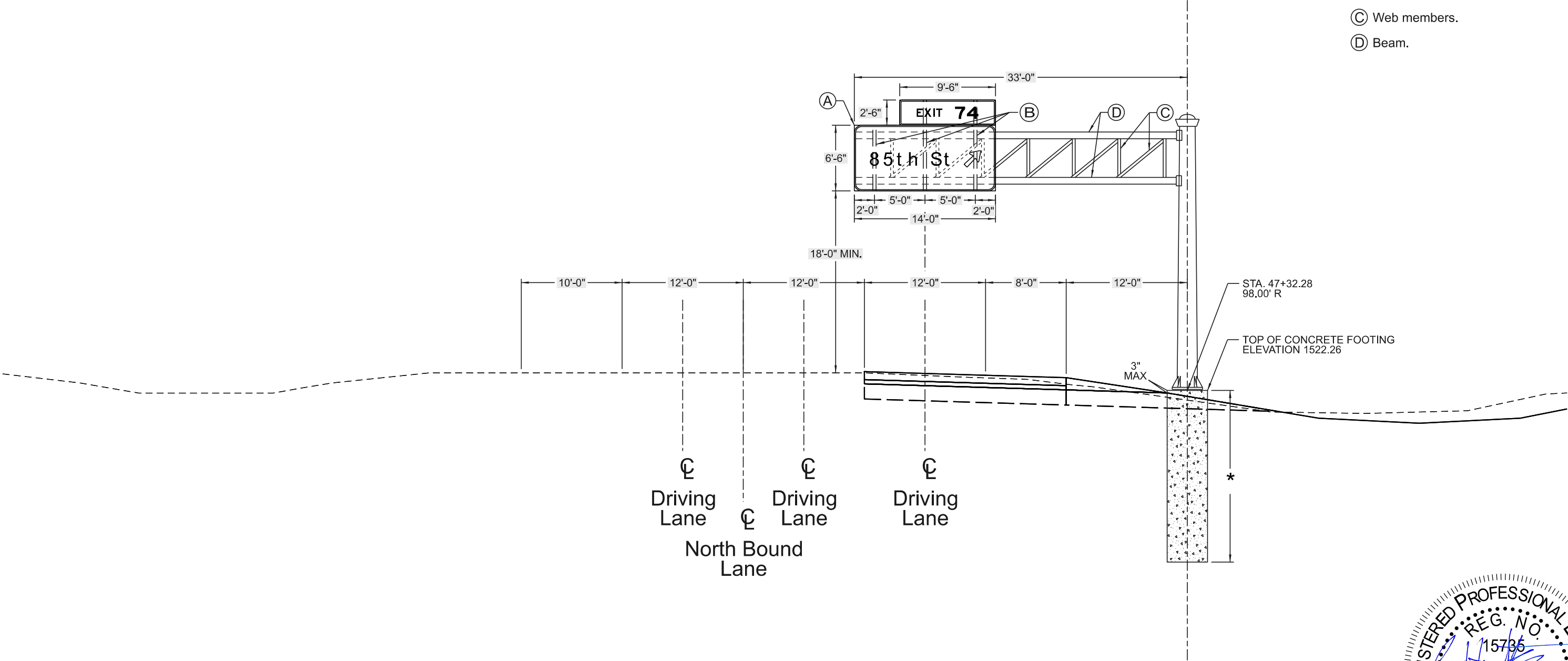
FOR BIDDING PURPOSES ONLY



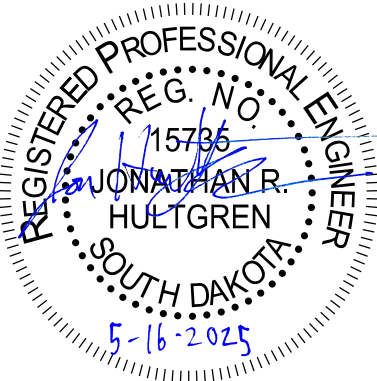
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S64	S112

Plotting Date: 5/16/2025

- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.



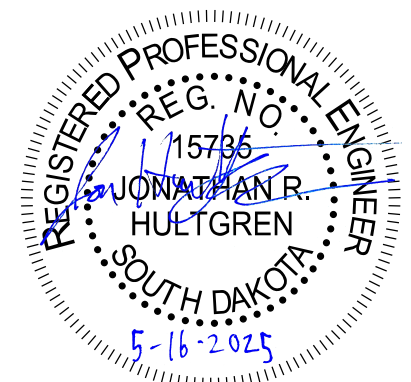
* - See Sheet S90 for footing notes, details and tables.



PORTS FOR BIDDING PURPOSES ONLY



- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.

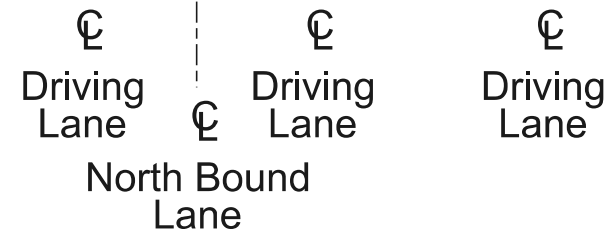


Plotted From - ngjersvik File - ...S 06JQ sgn-supports.dgn

PORTS FOR BIDDING PURPOSES ONLY

5/16/2025

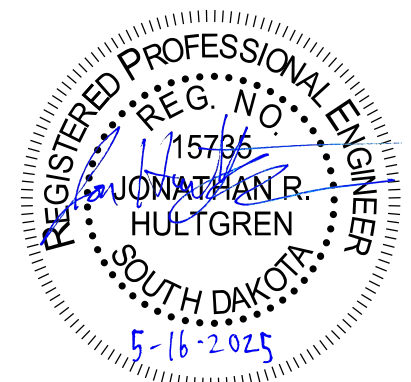
- Ⓓ Beam.



PORTS FOR BIDDING PURPOSES ONLY



- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.



Plotted From - ngjersvik File - ...\\S_06JQ_sgn-supports.dgn

FOR BIDDING PURPOSES ONLY



- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.



OVERHEAD SIGN SUPPORTS

EXISTING SIGN BRIDGE

I-29 Northbound - Sta. 105+60

(LOOKING NORTH)

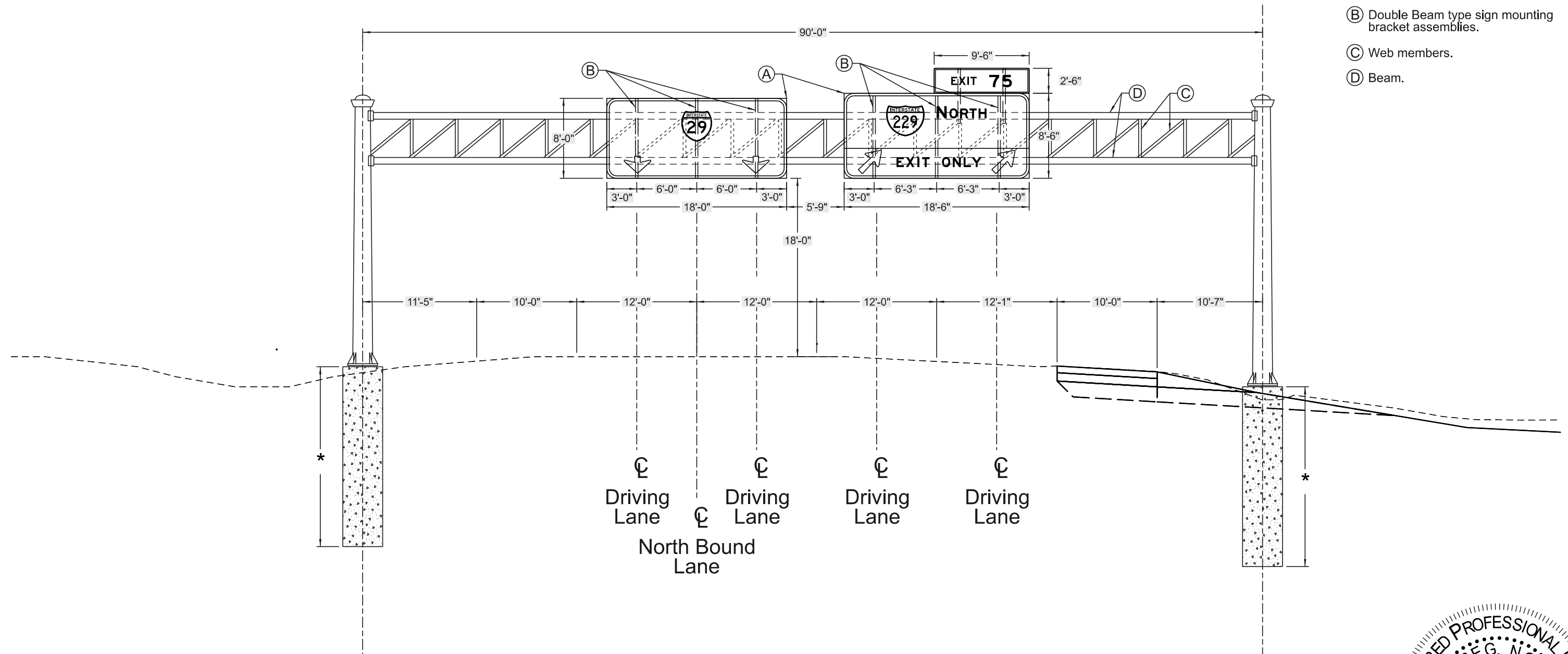
FOR BIDDING PURPOSES ONLY



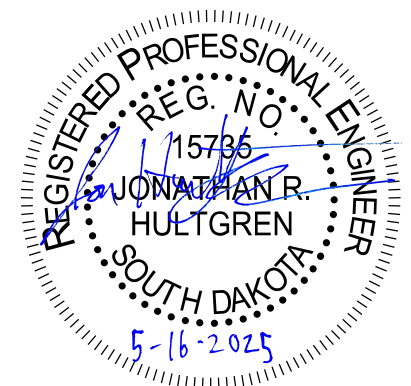
Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S69	S112

- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.



* - See Sheet S90 for footing notes, details and tables.



OVERHEAD SIGN SUPPORTS

EXISTING SIGN BRIDGE

I-29 Southbound - Sta. 115+10

(LOOKING SOUTH)

FOR BIDDING PURPOSES ONLY



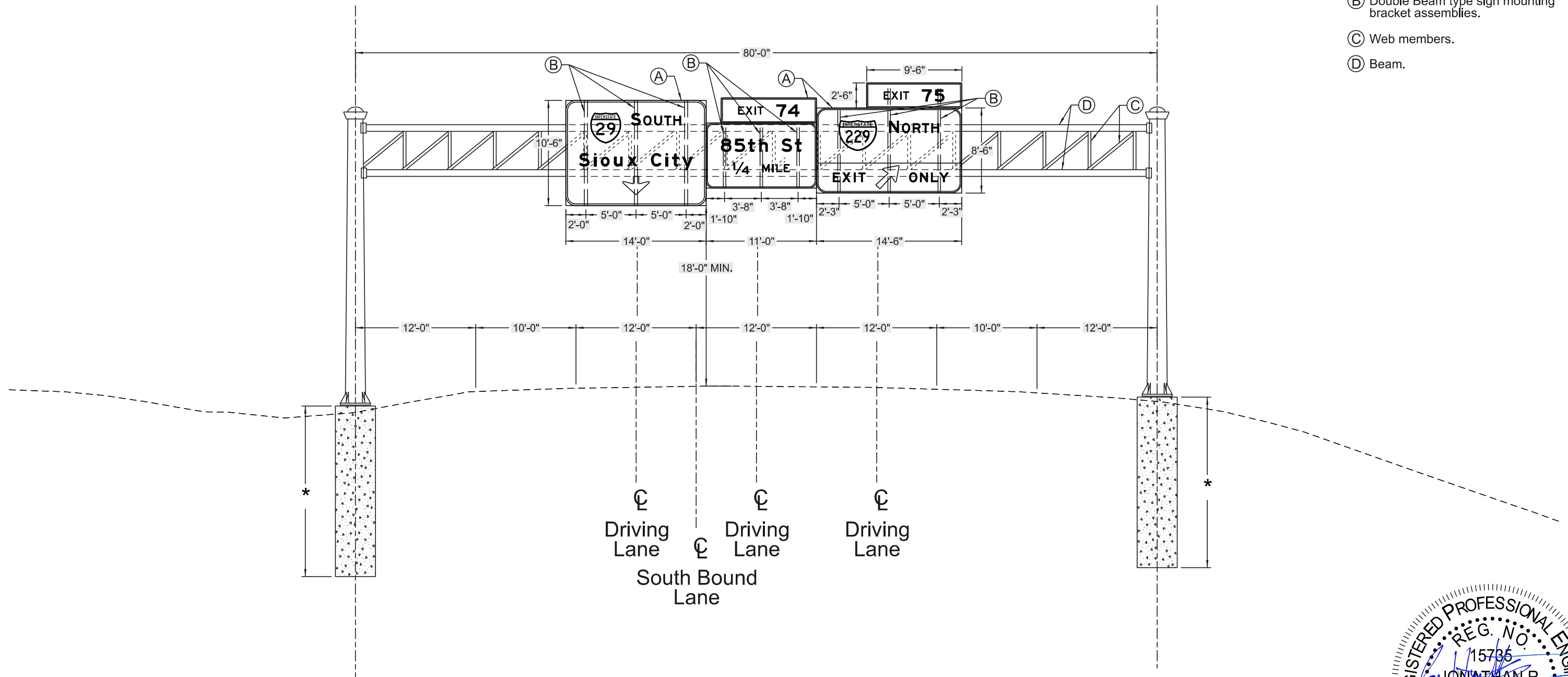
Plotting Date: 7/2/2025

PROJECT
EM 0292(88)73 IM 2292(104)0

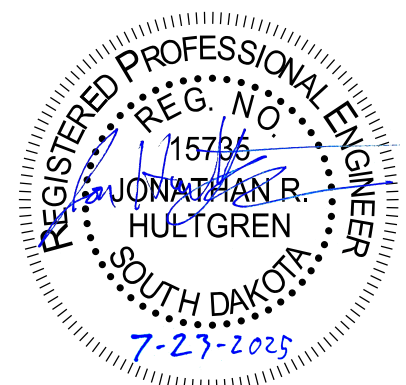
SHEET	TOTAL SHEETS
S70	S112

Revised Date: 6/26/2025
Initials: NBG

- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.



* - See Sheet S90 for footing notes, details and tables.



OVERHEAD SIGN SUPPORTS

DOUBLE BEAM SIGN BRIDGE

I-29 Southbound - Sta. 158+00

(LOOKING SOUTH)

FOR BIDDING PURPOSES ONLY



Plotting Date:

7/2/2025

PROJECT

EM 0292(88)73
IM 2292(104)0

SHEET

S71

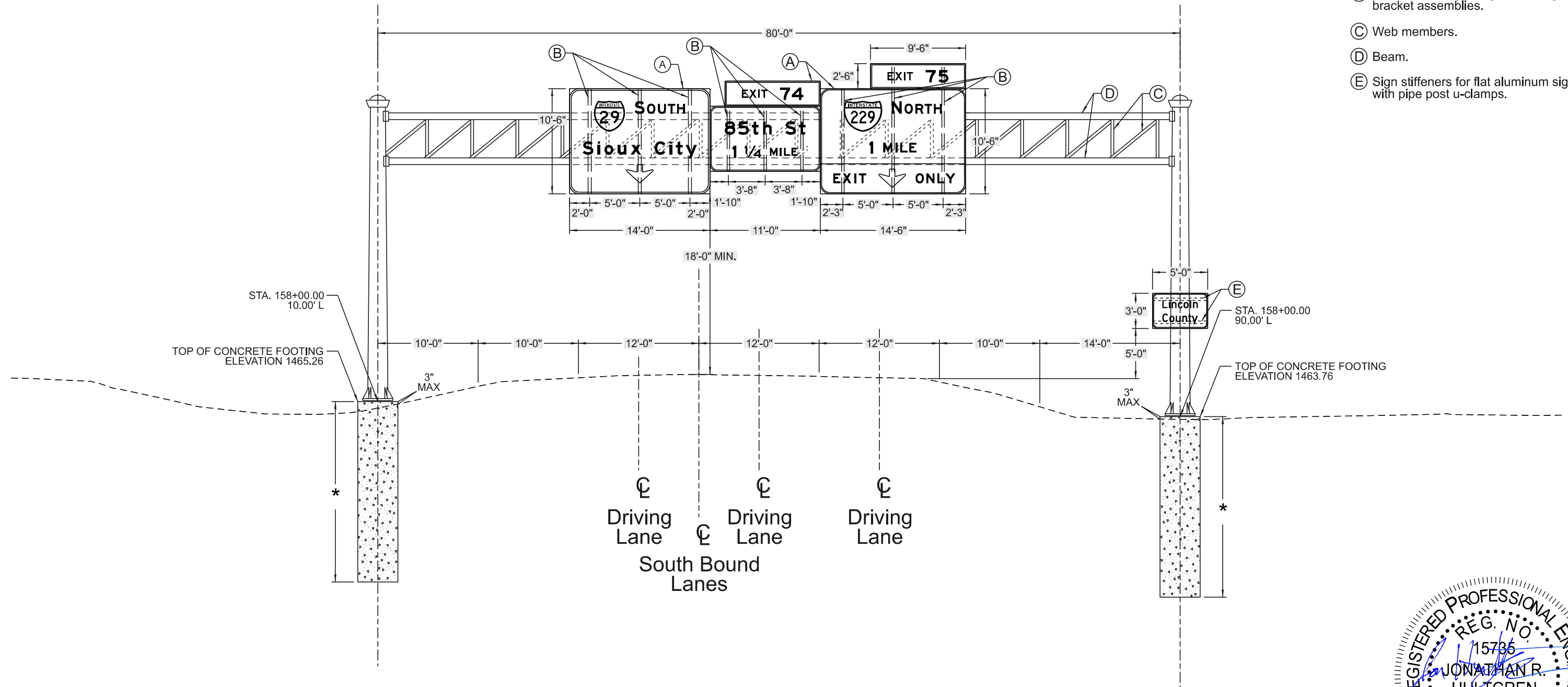
TOTAL SHEETS

S112

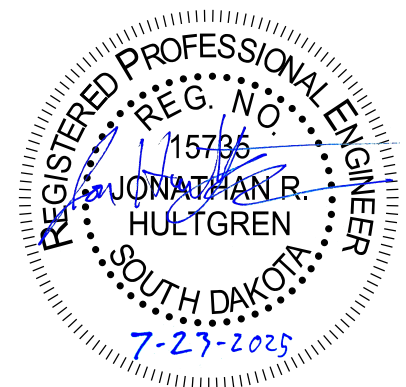
Revised Date:
Initials:

6/26/2025
NBG

- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.
- (E) Sign stiffeners for flat aluminum signs with pipe post u-clamps.



* - See Sheet S90 for footing notes, details and tables.



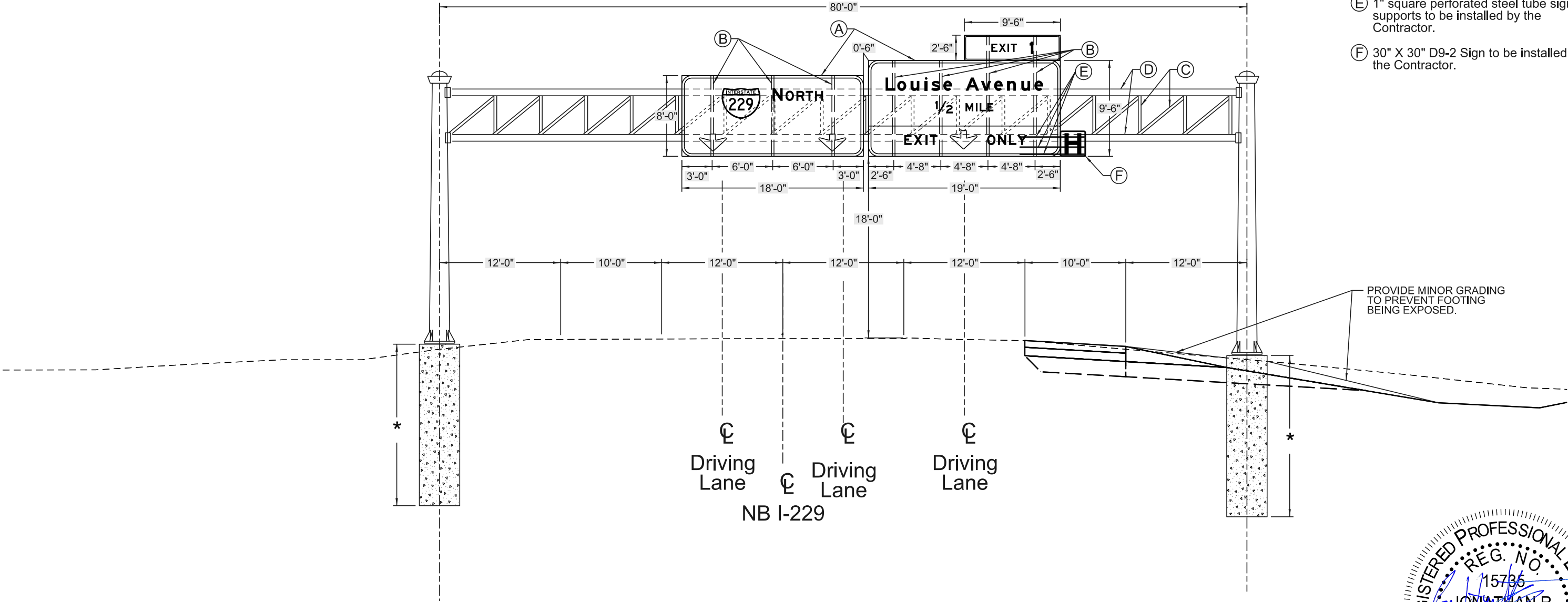
OVERHEAD SIGN SUPPORTS
EXISTING SIGN BRIDGE
I-229 Northbound - Sta. 153+56
(LOOKING EAST)

FOR BIDDING PURPOSES ONLY

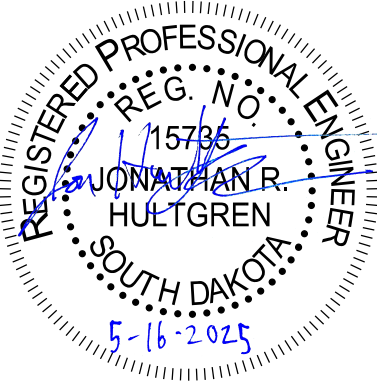
SD DOT	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	S72	S112

Plotting Date: 5/16/2025

- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.
- (E) 1" square perforated steel tube sign supports to be installed by the Contractor.
- (F) 30" X 30" D9-2 Sign to be installed by the Contractor.



* - See Sheet S90 for footing notes, details and tables.



OVERHEAD SIGN SUPPORTS

CANTILEVER SIGN SUPPORT

I-229 Northbound - Sta. 179+84

(LOOKING EAST)

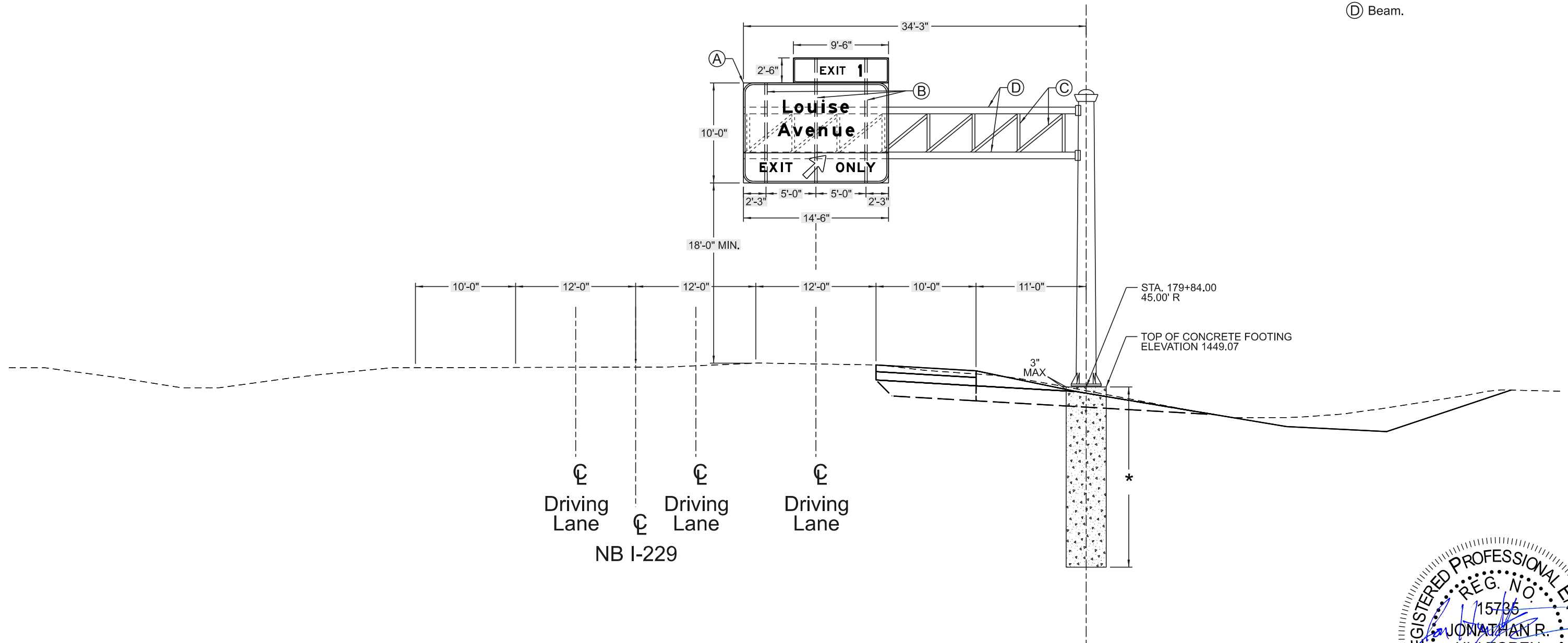
FOR BIDDING PURPOSES ONLY



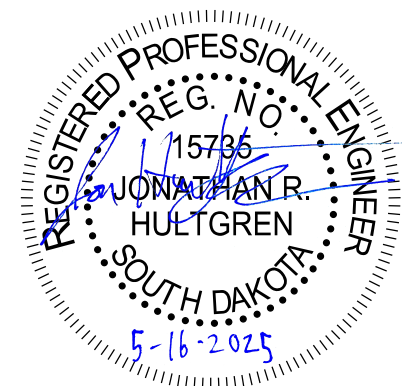
Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S73	S112

- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.



* - See Sheet S90 for footing notes, details and tables.

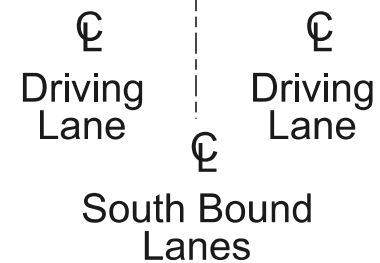


FOR BIDDING PURPOSES ONLY



te: 5/16/2025

- ② Double Beam type sign mounting bracket assemblies.



OVERHEAD SIGN SUPPORTS

DOUBLE BEAM SIGN BRIDGE

I-229 Ramp C - Sta. 26+85.54

(LOOKING SOUTH)

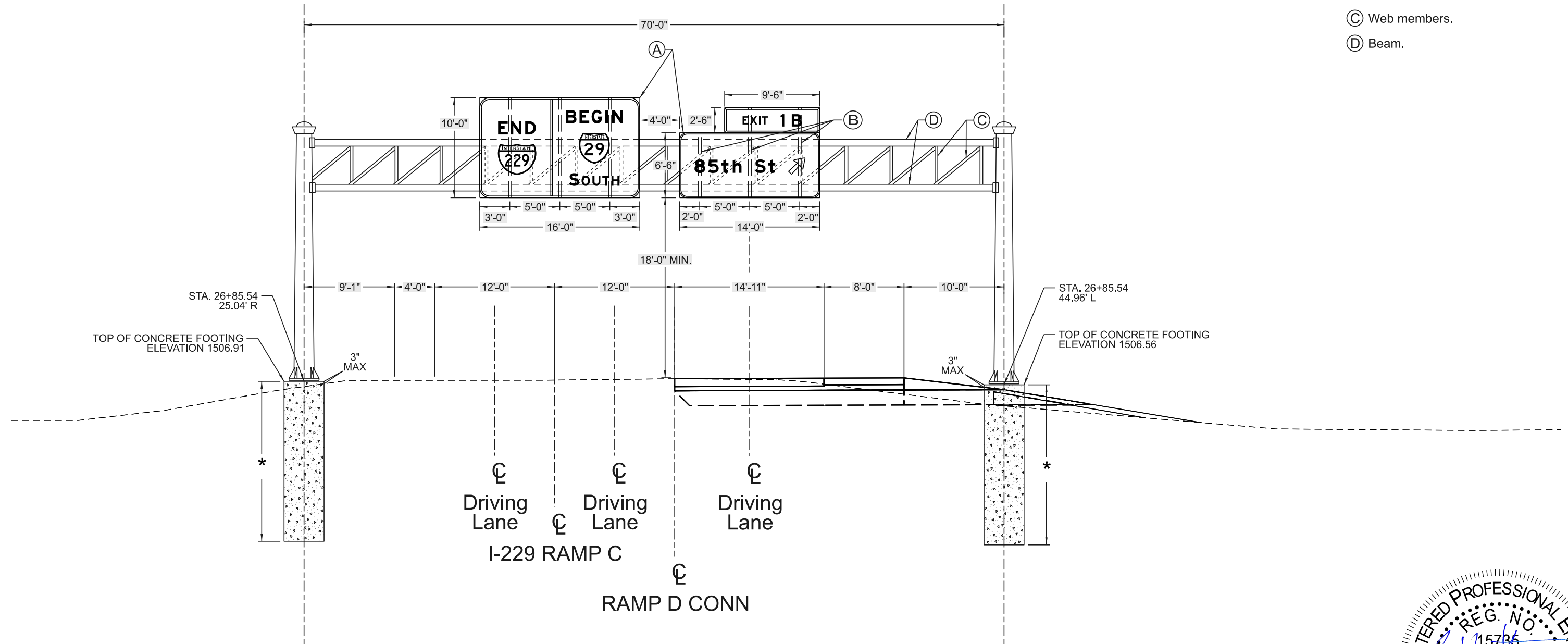
FOR BIDDING PURPOSES ONLY



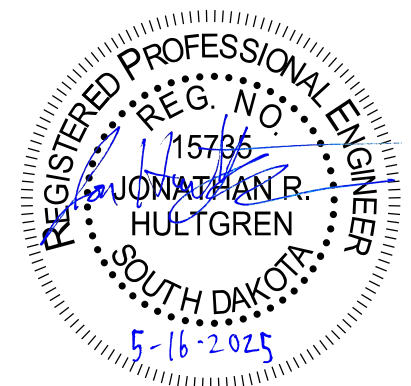
Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S75	S112

- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.



* - See Sheet S90 for footing notes, details and tables.



OVERHEAD SIGN SUPPORTS

EXISTING SIGN BRIDGE

I-229 Ramp C - Sta. 78+60

(LOOKING WEST)

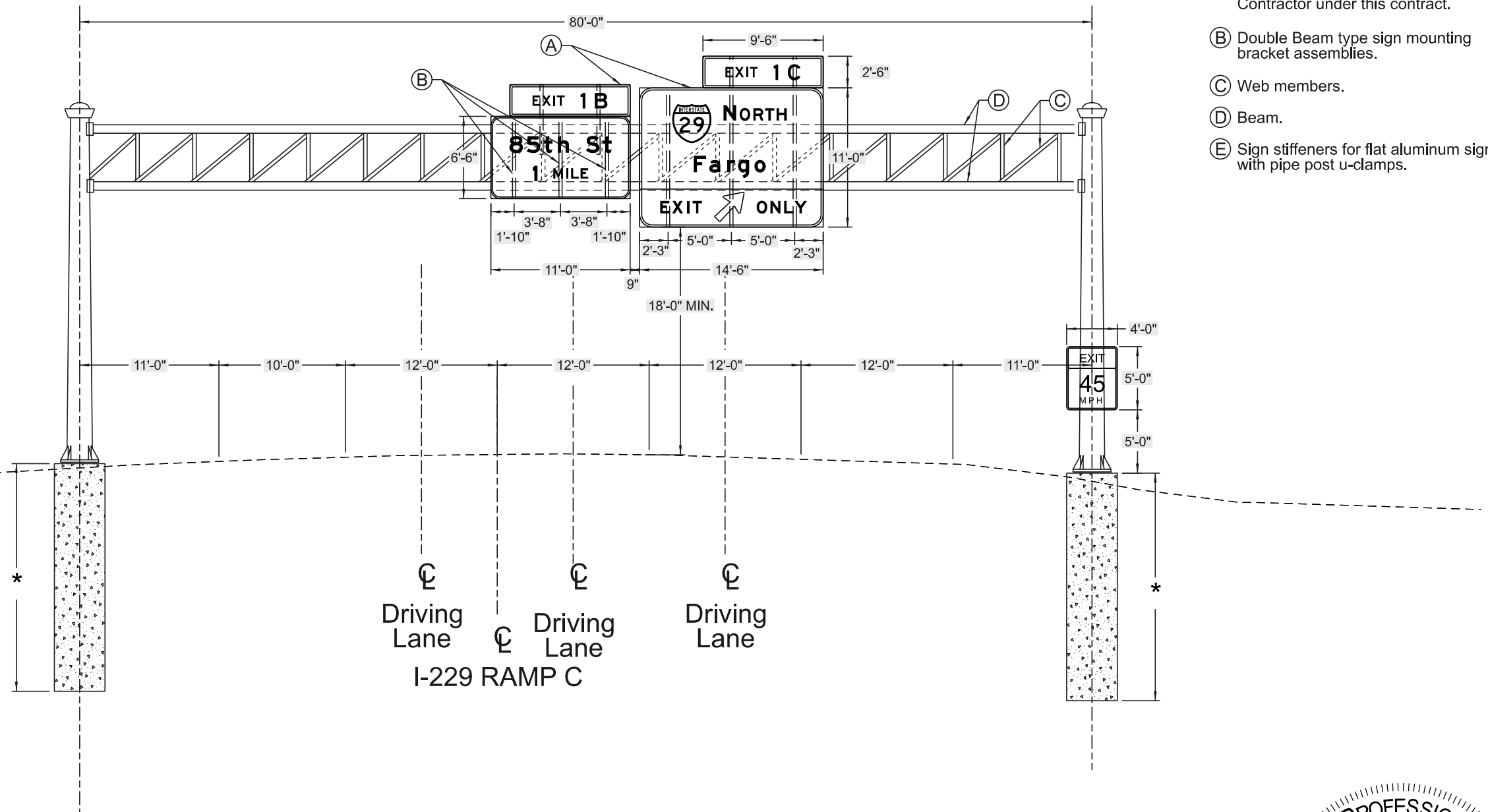
FOR BIDDING PURPOSES ONLY



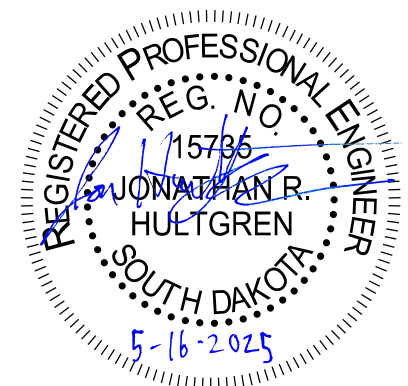
Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S77	S112

- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.
- (E) Sign stiffeners for flat aluminum signs with pipe post u-clamps.



* - See Sheet S90 for footing notes, details and tables.



OVERHEAD SIGN SUPPORTS

DOUBLE BEAM SIGN BRIDGE

85th Street Eastbound - Sta. 314+50 (LOOKING EAST)

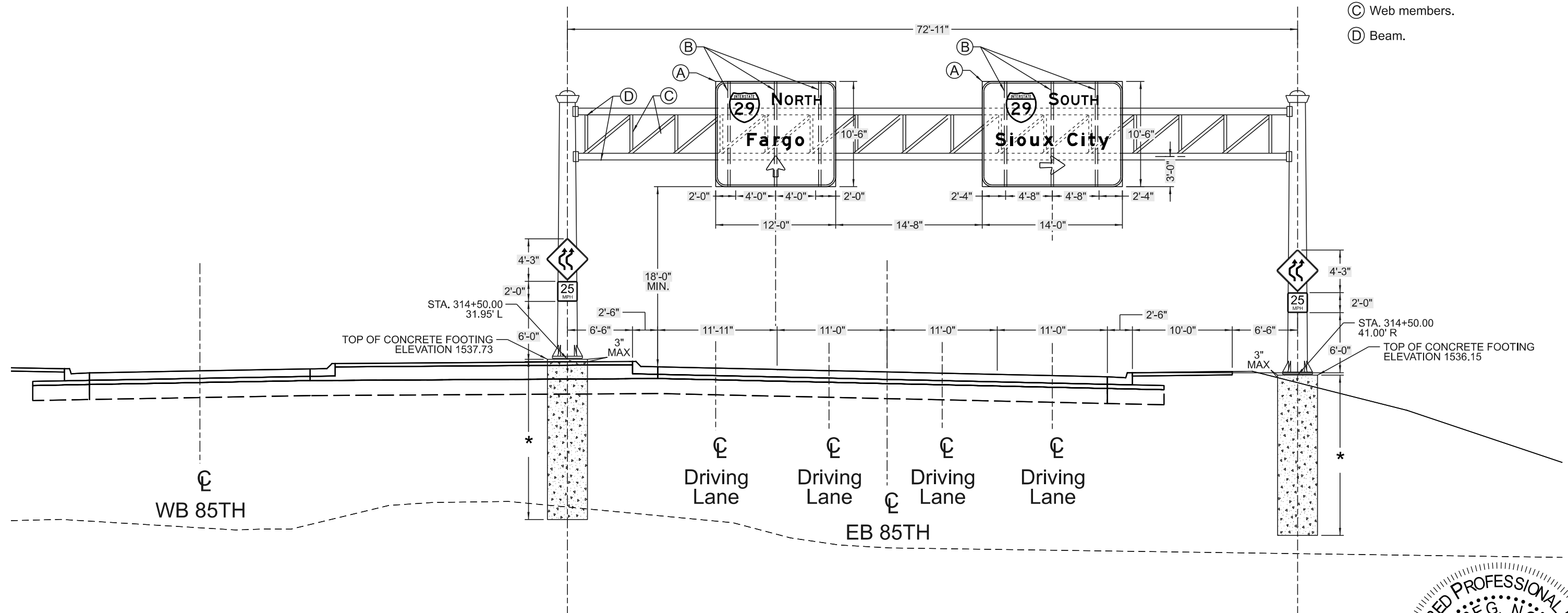
FOR BIDDING PURPOSES ONLY



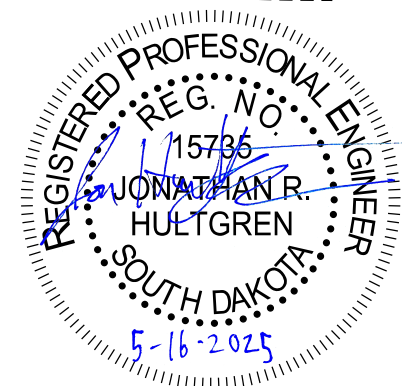
Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S78	S112

- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.



* - See Sheet S90 for footing notes, details and tables.



OVERHEAD SIGN SUPPORTS

DOUBLE BEAM SIGN BRIDGE

85th Street Westbound - Sta. 426+00 (LOOKING WEST)

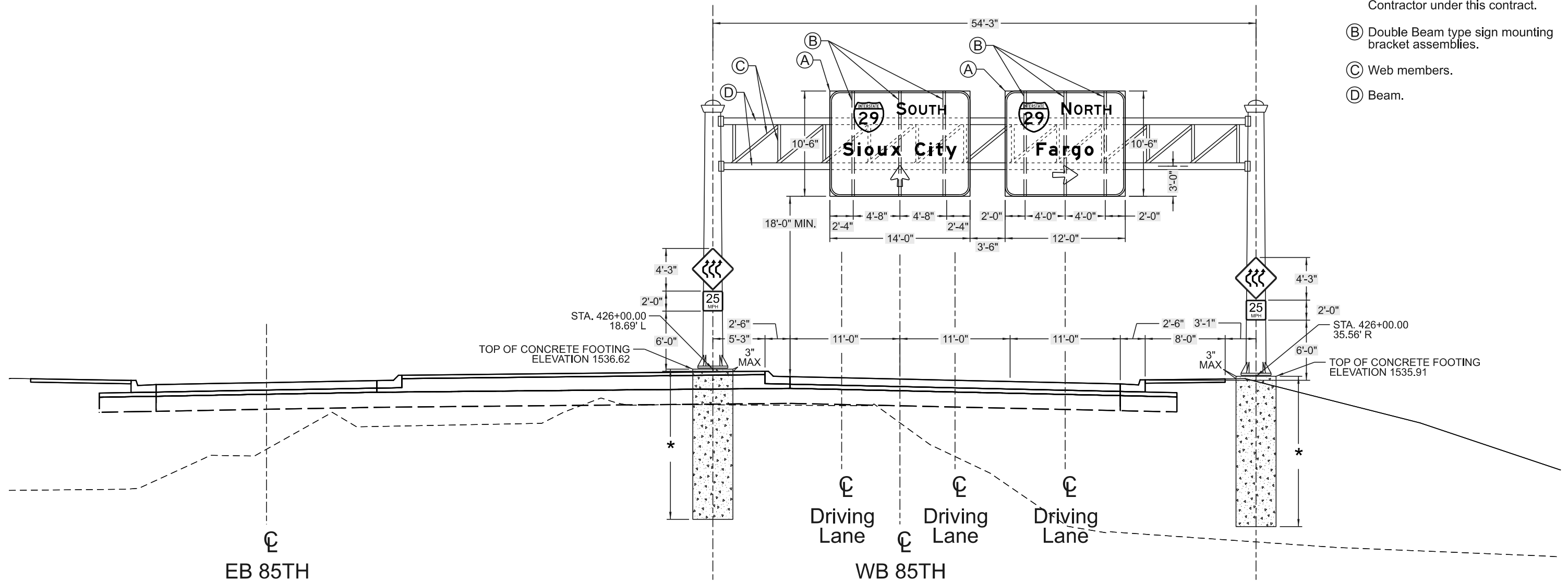
FOR BIDDING PURPOSES ONLY



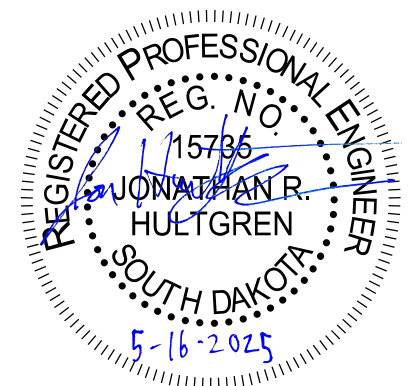
Plotting Date: 5/16/2025

PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S79	S112

- (A) Signs to be installed on double beam type bracket assemblies by the Contractor under this contract.
- (B) Double Beam type sign mounting bracket assemblies.
- (C) Web members.
- (D) Beam.



* - See Sheet S90 for footing notes, details and tables.



OVERHEAD SIGN SUPPORTS

MAST ARM SIGN SUPPORT

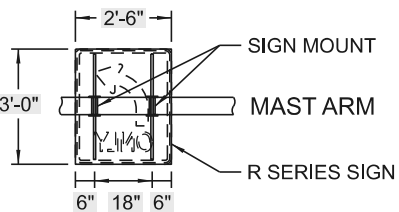
I-29 Ramp B - Sta. 31+45 (LOOKING NORTH)

FOR BIDDING PURPOSES ONLY

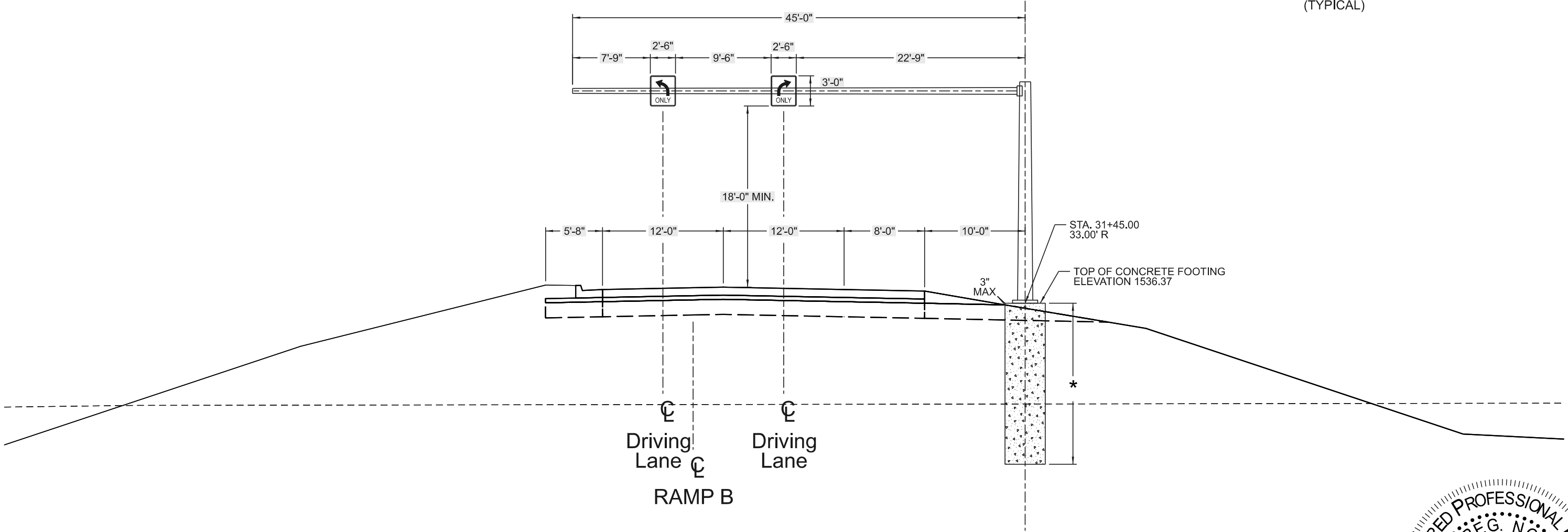


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S80	S112

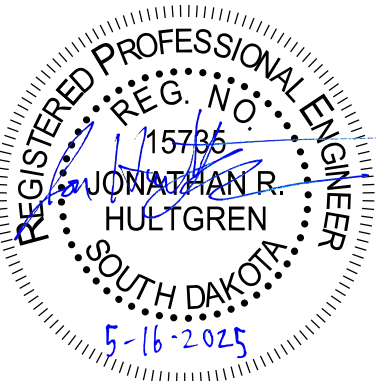
Plotting Date: 5/16/2025



VERTICAL SIGN STIFFENERS **
(TYPICAL)



* - See Sheet S90 for footing notes, details and tables.
** - Astro-brac (or equivalent) formed tube sign mounting brackets.



OVERHEAD SIGN SUPPORTS

MAST ARM SIGN SUPPORT

I-29 Ramp D - Sta. 45+82

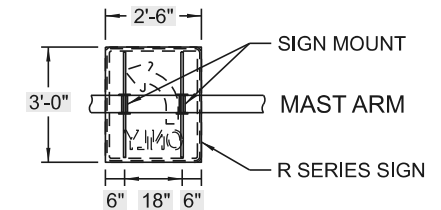
(LOOKING SOUTH)

FOR BIDDING PURPOSES ONLY

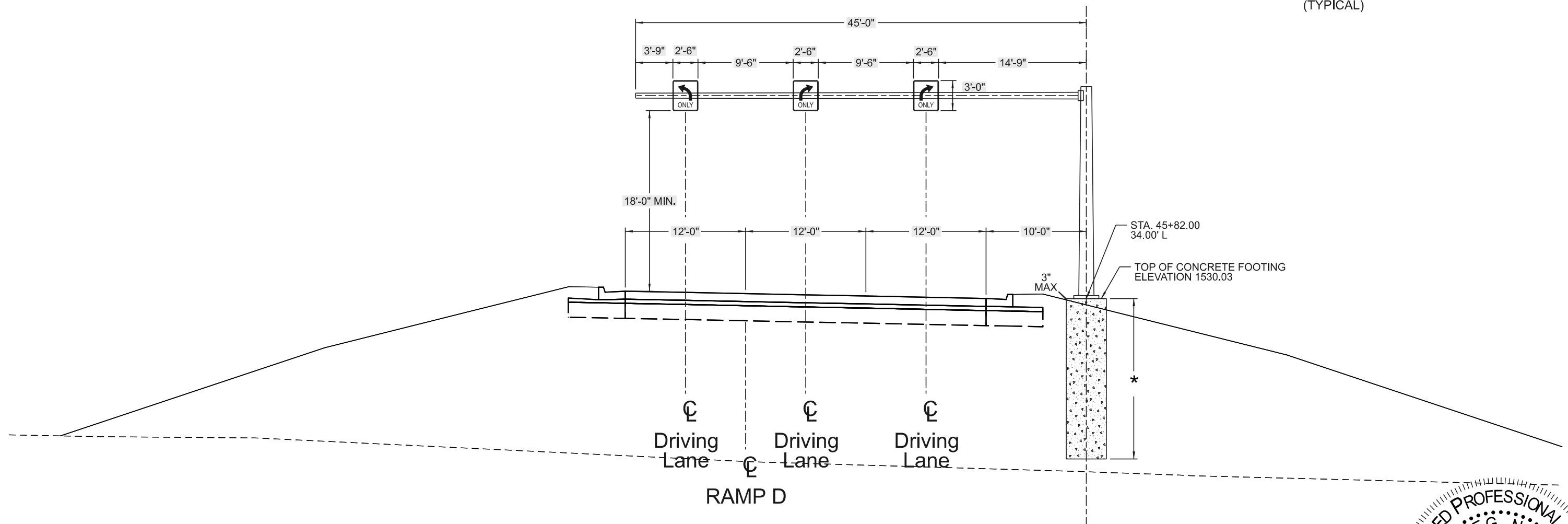


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S81	S112

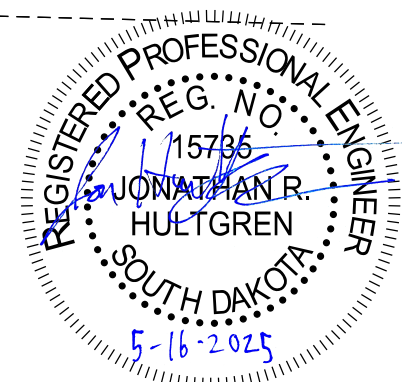
Plotting Date: 5/16/2025



VERTICAL SIGN STIFFENERS **
(TYPICAL)



- * - See Sheet S90 for footing notes, details and tables.
- ** - Astro-brac (or equivalent) formed tube sign mounting brackets.



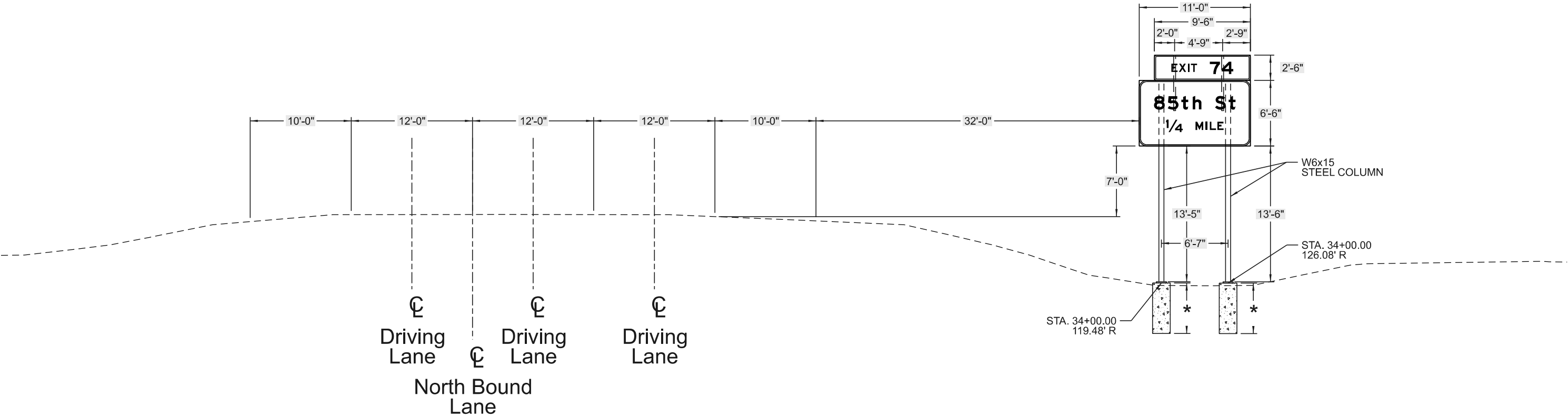
SPECIAL SIGN SUPPORT DETAILS
BREAKAWAY SIGN SUPPORTS
I-29 Northbound - Sta. 34+00
(LOOKING NORTH)

FOR BIDDING PURPOSES ONLY

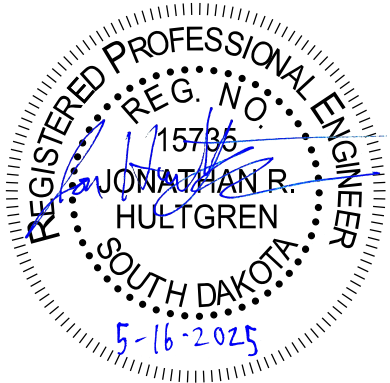


PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S82	S112

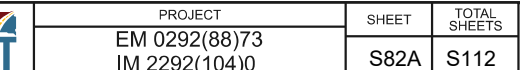
Plotting Date: 5/16/2025



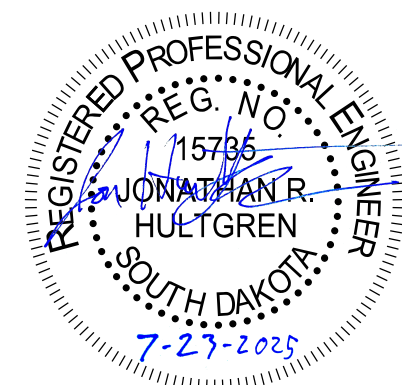
* - See Sheets S85 & S87 for breakaway sign support footing notes, details and tables.



FOR BIDDING PURPOSES ONLY



Revised Date: 6/26/2025
Initials: NBG

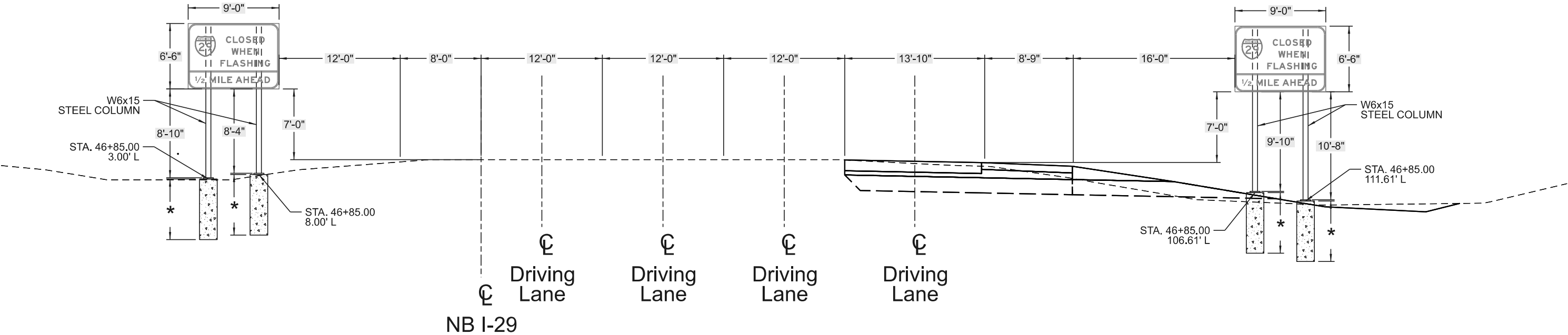


Plotted From - ngiersvik File - ...S 06JQ sgn-supports-special.dgn

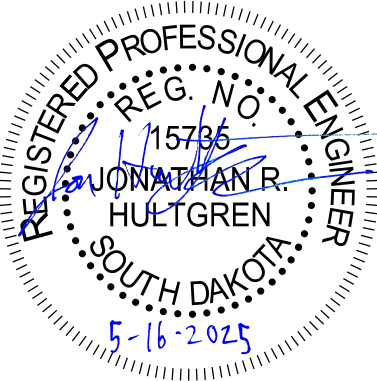
SPECIAL SIGN SUPPORT DETAILS
ADVANCE INTERSTATE CLOSURE SIGNING
I-29 Southbound - Sta. 46+85
(LOOKING SOUTH)

FOR BIDDING PURPOSES ONLY

SD DOT	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	S83	S112
Plotting Date: 5/16/2025			

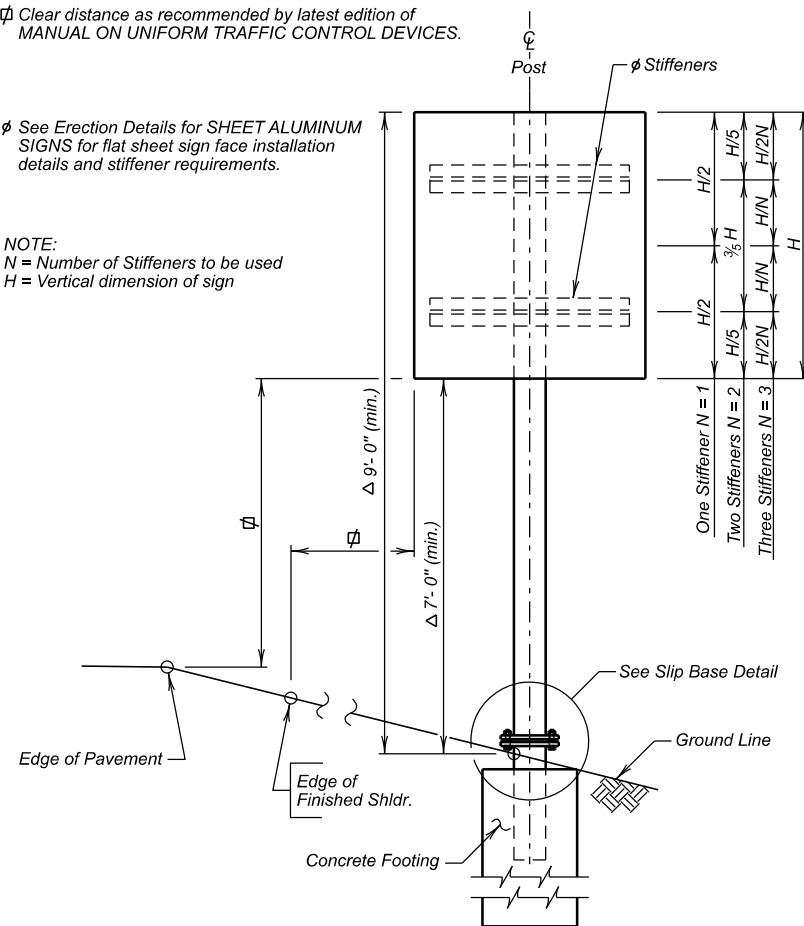
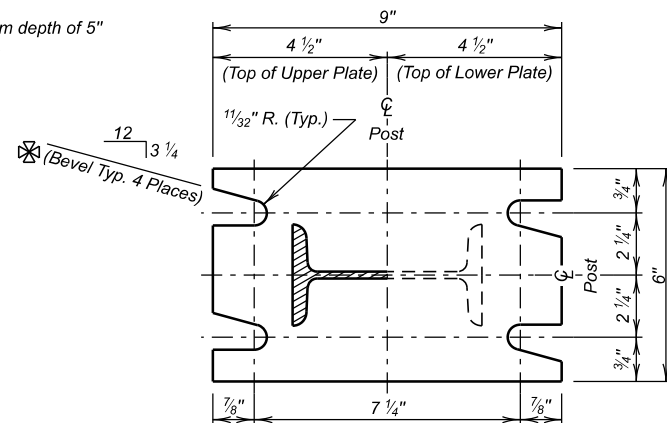


* - See Sheets S85 & S87 for breakaway sign support footing notes, details and tables.

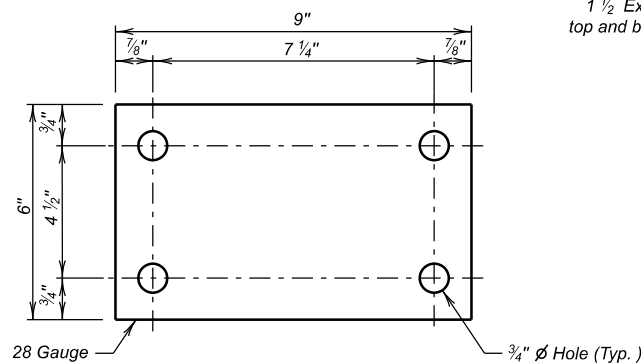


NOTE:
 N = Number of Stiffeners to be used
 H = Vertical dimension of sign

★ **NOTE:**
Flanged Posts will have a maximum depth of 5"
and a maximum flange width of 4".

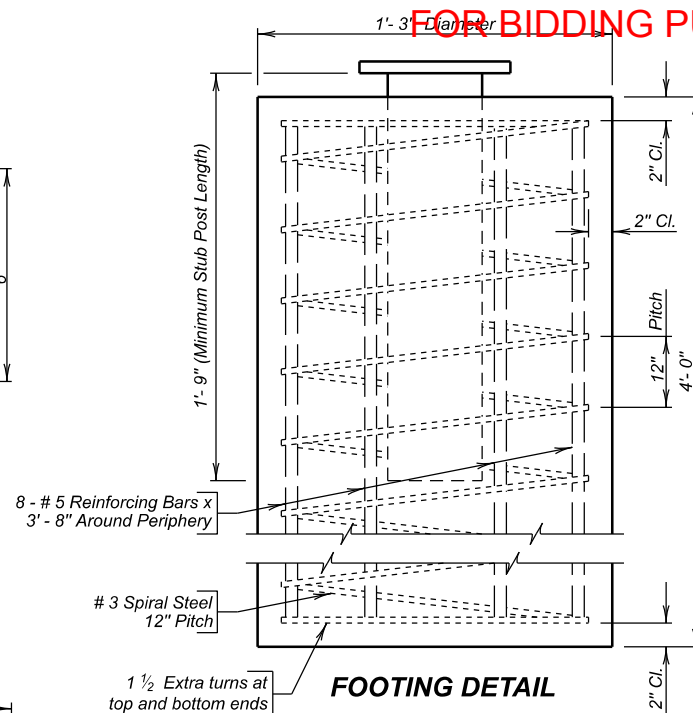
**ELEVATION**

SEC. C - C
★ (Flanged Post)



**GALVANIZED SHEET
METAL DIAPHRAGM**

NOTE:
Diaphragm need not be regalvanized after cutting to size and drilling of holes.



✦ NOTE:
Above Bevel is for sign on right shoulder. Plate Bevels are opposite hand for sign on left shoulder.

NOTES

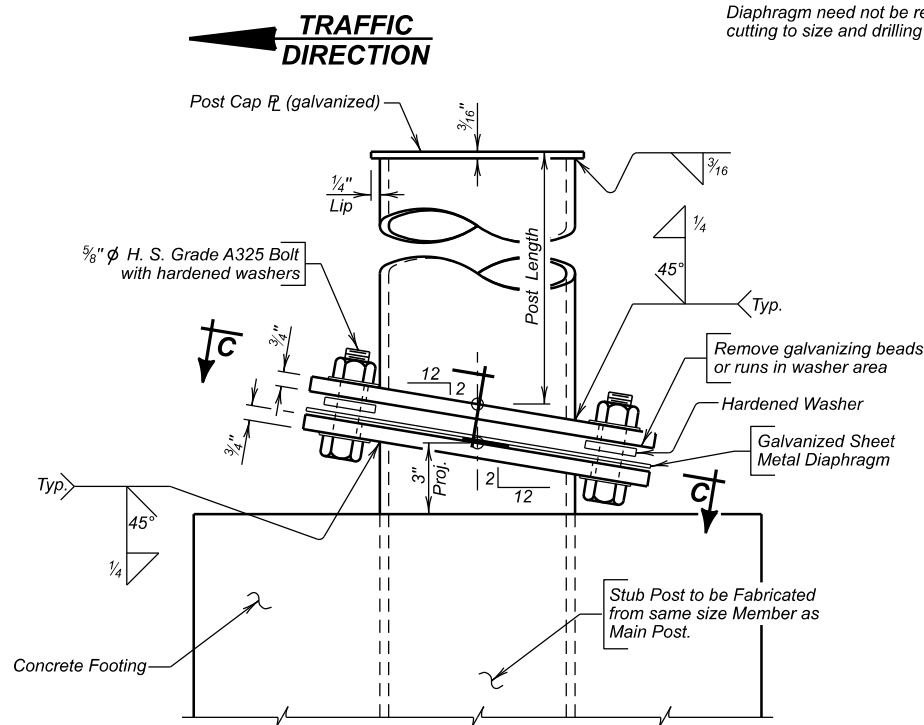
1. *Design Specification: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 2013 Edition with Interims through 2022.*
2. *Concrete Footings will be Class M6 - $f_c = 4000$ p. s. i.*
3. *Structural Steel, will conform to ASTM A36.*
4. *All Reinforcing Steel, except spirals, will conform to ASTM 615 Grade 60.*
5. *Spiral Reinforcing Steel may be fabricated from cold drawn wire ASTM A82, or hot rolled plain or deformed bars conforming to the strength requirements of ASTM A615, Grade 60.*
6. *All Bolts and Nuts will conform to ASTM F3125 Grade A325. Washers will conform to ASTM F436. All hardware will be galvanized in accordance with ASTM F2329.*
7. *All steel including Posts and Post Stubs will be galvanized in accordance with ASTM A123.*
8. *All Bolt Holes will be drilled. All plate cuts will preferably be saw cuts. However, Flame Cutting will be permitted providing all edges are ground smooth (metal projecting beyond the plane of the plate face will NOT be allowed).*
9. *All welding and weld inspection will be in accordance with the latest edition of AWS D 1.5 Structural Welding Code.*

PROCEDURE FOR ASSEMBLING SLIP BASE

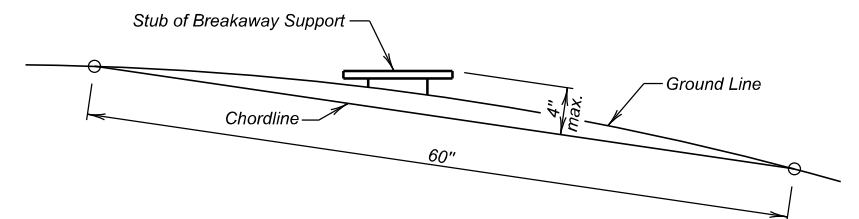
1. Place galvanized Sheet Metal Diaphragms on top of the lower slip plate.
2. Connect main post to Stub Post with clean unlubricated bolts and nuts with one Hardened Washer on each bolt between slip plates.
3. Plumb post by adding shims between slip plates.
4. Tighten bolts to a practical maximum, using a 12" - 15" wrench in order to bed surfaces and clean threads. DO NOT TIGHTEN TO PROOF LOAD.
5. Loosen all bolts and retighten in increments, using a systematic order, until each bolt has been tightened to a torque not exceeding 345 in-lb. DO NOT OVERTIGHTEN. Check torque on each bolt after entire sign has been erected.

SHOP PLANS

The fabricator will submit shop plans in accordance with the Specifications or in Adobe PDF format. Shop plan submittals will be sent to the Office of Bridge Design. Include design and check design, if applicable, with initial submittal.



SLIP BASE DETAIL
(Flanged Post)



BREAKAWAY SUPPORT STUB CLEARANCE DIAGRAM

NOTE:
The stub post and lower slip plate will NOT extend more than 4" max.
above the chordline within a 60" chord.

ERECTION DETAILS
FOR
SINGLE POST BREAKAWAY SIGN SUPPORTS
(FLANGED AND PIPE POSTS)

S. D. DEPT. OF TRANSPORTATION

DECEMBER 2016

1 OF 1

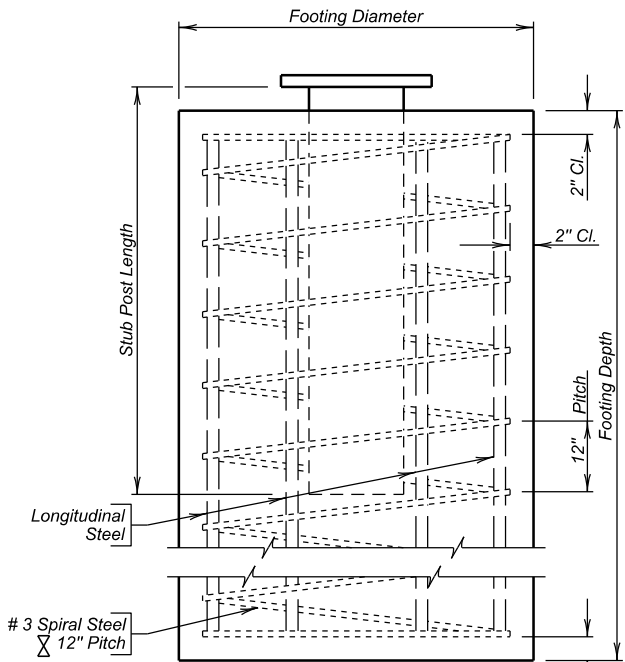
DESIGNED BY RH/DM 11NC0610	DRAWN BY RH/TB/MDG 0610WA01	CHECKED BY RH/DM/PW BSTDRS1	 BRIDGE ENGINEER
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FOR BIDDING PURPOSES ONLY

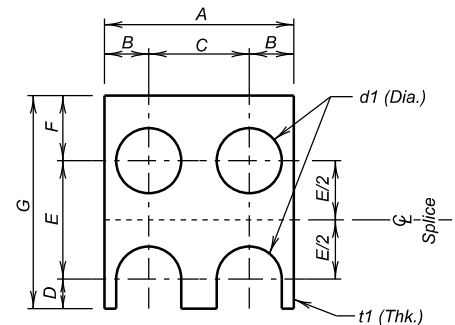
SITE LOCATION	POST SIZE	FOOTING DIMENSIONS		STUB POST LENGTH	LONGITUDINAL STEEL QUANTITIES			# SPIRAL STEEL QUANTITIES	
		DIA.	DEPTH		NO.	SIZE	LENGTH	DIA.	LENGTH
34+00 Rt	W 6 x 15	1' - 9"	5' - 0"	2' - 0"	8	#6 Bars	4' - 8"	1' - 5"	33' - 3"
35+75 Lt	W 6 x 15	1' - 9"	5' - 0"	2' - 0"	8	#6 Bars	4' - 8"	1' - 5"	33' - 3"
41+76 Lt	W 6 x 20	1' - 9"	6' - 0"	2' - 3"	8	#6 Bars	5' - 8"	1' - 5"	37' - 9"
46+85 Lt	W 6 x 15	1' - 9"	5' - 0"	2' - 0"	8	#6 Bars	4' - 8"	1' - 5"	33' - 3"

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

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

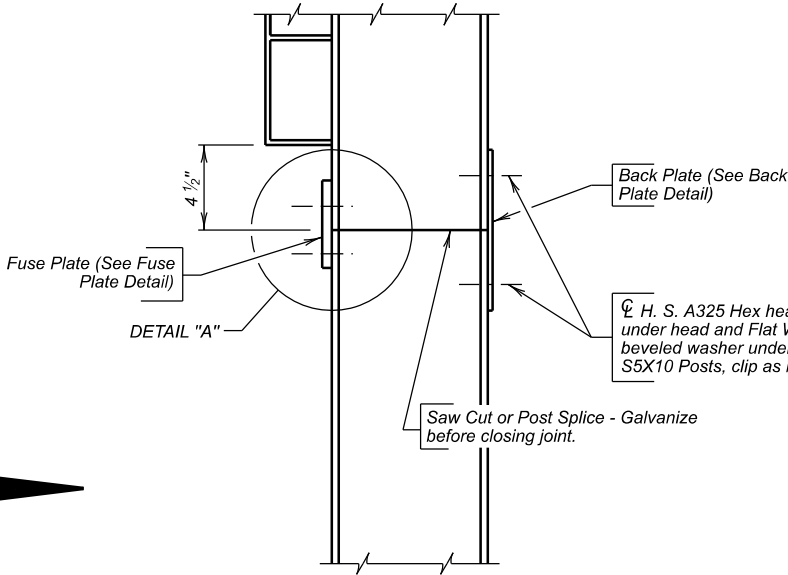


FOOTING DETAIL

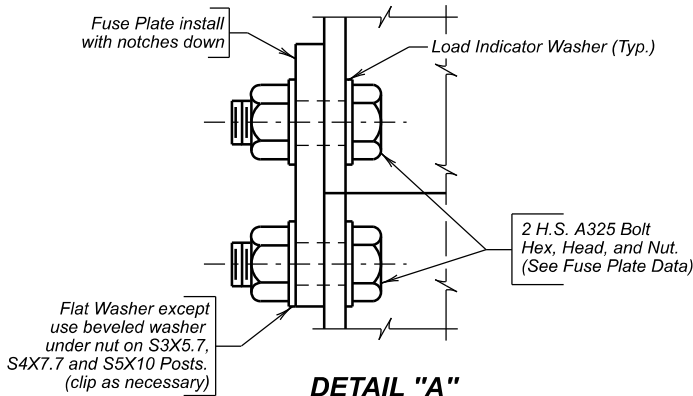


FUSE PLATE DETAIL

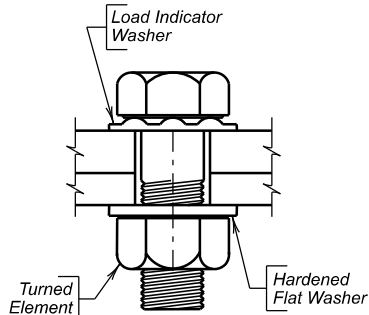
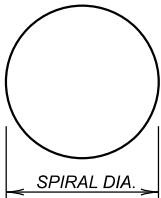
TABLE 1 - FUSE PLATE DATA										
Post Size	A	B	C	D	E	F	G	d1	t1	Bolt Size
S3X5.7	2 5/8"	9/16"	1 1/2"	1/2"	1 1/2"	1 1/8"	3 1/8"	5/8" Ø	1/4"	1/2" Ø
S4X7.7	2 5/8"	9/16"	1 1/2"	1/2"	1 1/2"	1 1/8"	3 1/8"	5/8" Ø	1/4"	1/2" Ø
S5X10	3"	1 1/16"	1 5/8"	5/8"	2 1/4"	1 1/8"	4"	3/4" Ø	3/8"	5/8" Ø
W6X12	4"	1 5/16"	2 1/8"	5/8"	2 1/2"	1 3/8"	4 1/2"	3/4" Ø	3/8"	5/8" Ø
W6X15	6"	1 3/8"	3 1/4"	5/8"	2 1/2"	1 3/8"	4 1/2"	3/4" Ø	3/8"	5/8" Ø
W6X20	6"	1 3/8"	3 1/4"	5/8"	2 1/2"	1 3/8"	4 1/2"	3/4" Ø	3/8"	5/8" Ø
W8X18	5 1/4"	1 5/16"	2 5/8"	3/4"	2 1/2"	1 3/8"	4 5/8"	7/8" Ø	1/2"	3/4" Ø
W8X21	5 1/4"	1 5/16"	2 5/8"	3/4"	2 1/2"	1 3/8"	4 5/8"	7/8" Ø	1/2"	3/4" Ø
W8X24	6 1/2"	1 1/2"	3 1/2"	7/8"	3"	1 5/8"	5 1/2"	1" Ø	9/16"	7/8" Ø
W8X28	6 1/2"	1 5/16"	3 3/8"	7/8"	3"	1 3/4"	5 5/8"	1" Ø	1/2"	7/8" Ø
W8X31	8"	1 3/8"	4 3/4"	1"	3 1/2"	2"	6 1/2"	1 1/8" Ø	5/8"	1" Ø
W10X33	8"	1 7/8"	4 1/4"	1 1/8"	4 1/2"	2 1/4"	7 7/8"	1 1/4" Ø	3/4"	1 1/8" Ø



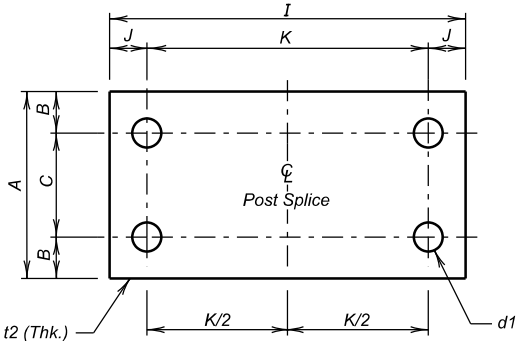
FUSE & BACK PLATE INSTALLATION



DETAIL "A"



LOAD INDICATOR WASHER DETAIL



BACK PLATE DETAIL

TABLE 5 - BACK PLATE DATA										
Post Size	A	B	C	J	K	I	d1	t2	Bolt Size	
S3X5.7	2 5⁄8"	9⁄16"	1 1⁄2"	1 1⁄4"	4 1⁄2"	7"	5⁄8" Ø	1⁄4"	1⁄2" Ø	
S4X7.7	2 5⁄8"	9⁄16"	1 1⁄2"	1 1⁄4"	4 1⁄2"	7"	5⁄8" Ø	1⁄4"	1⁄2" Ø	
S5X10	3"	1 1⁄16"	1 5⁄8"	1 1⁄4"	4 3⁄4"	7 1⁄4"	3⁄4" Ø	1⁄4"	5⁄8" Ø	
W6X12	4"	1 5⁄16"	2 1⁄8"	1 1⁄4"	4 3⁄4"	7 1⁄4"	3⁄4" Ø	1⁄4"	5⁄8" Ø	
W6X15	6"	1 3⁄8"	3 1⁄4"	1 1⁄4"	5 1⁄4"	7 3⁄4"	3⁄4" Ø	1⁄4"	5⁄8" Ø	
W6X20	6"	1 3⁄8"	3 1⁄4"	1 1⁄4"	5 1⁄4"	7 3⁄4"	3⁄4" Ø	1⁄4"	5⁄8" Ø	
W8X18	5 1⁄4"	1 9⁄16"	2 5⁄8"	1 3⁄8"	5 3⁄4"	8 1⁄2"	7⁄8" Ø	1⁄4"	3⁄4" Ø	
W8X21	5 1⁄4"	1 9⁄16"	2 5⁄8"	1 3⁄8"	5 3⁄4"	8 1⁄2"	7⁄8" Ø	1⁄4"	3⁄4" Ø	
W8X24	6 1⁄2"	1 1⁄2"	3 1⁄2"	1 5⁄8"	6"	9 1⁄4"	1" Ø	5⁄16"	7⁄8" Ø	
W8X28	6 1⁄2"	1 9⁄16"	3 3⁄8"	1 3⁄4"	6"	9 1⁄2"	1" Ø	3⁄8"	7⁄8" Ø	
W8X31	8"	1 5⁄8"	4 3⁄4"	2"	6 1⁄2"	10 1⁄2"	1 1⁄8" Ø	3⁄8"	1" Ø	
W10X33	8"	1 7⁄8"	4 1⁄4"	2 1⁄2"	7"	1'- 0"	1 1⁄4" Ø	7⁄16"	1 1⁄8" Ø	

NOTES

- Design Specification: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 2013 Edition with Interims through 2022.
- Concrete Footings will be Class M6 - fc = 4000 p. s. i.
- Structural Steel will conform to ASTM A36.
- All Reinforcing Steel, except spirals, will conform to ASTM 615 Grade 60.
- Spiral Reinforcing Steel may be fabricated from cold drawn wire ASTM A1064, or hot rolled plain or deformed bars conforming to the strength requirements of ASTM A615, Grade 60.
- All Bolts and Nuts will conform to ASTM A325 except that 1/2" diameter bolts may conform to either ASTM A325 or ASTM A449. Washers will conform to ASTM F436. All hardware will be galvanized in accordance with ASTM F2329.
- All structural steel including Posts and Post Stubs will be galvanized in accordance with ASTM A123.
- All Bolt Holes will be drilled. All plate cuts will preferably be saw cuts. However, Flame Cutting will be permitted providing all edges are ground smooth (metal projecting beyond the plane of the plate face will NOT be allowed).
- All welding and weld inspection will be in accordance with the latest edition of AWS D 1.5 Structural Welding Code.

PROCEDURE FOR ASSEMBLING SLIP BASE

- Place galvanized Sheet Metal Diaphragms on top of the lower slip plate.
- Connect main post to Stub Post with clean unlubricated bolts and nuts with one Hardened Washer on each bolt between slip plates.
- Plumb post by adding shims between slip plates.
- Tighten bolts to a practical maximum, using a 12" - 15" wrench in order to bed surfaces and clean threads. DO NOT TIGHTEN TO PROOF LOAD.
- Loosen all bolts and retighten in increments, using a systematic order, until each bolt has been tightened to the specified torque corresponding to the post size used (See Slip Base Plate Data). Tighten bolts only to the torque specified. DO NOT OVERTIGHTEN. Check torque on each bolt after entire sign has been erected.

ASSEMBLY OF FRICTION FUSE PLATES, BACK PLATES AND STIFFENERS

High strength bolts will be tightened so as to obtain a residual tension by the use of load indicator washers.

SHOP PLANS

The fabricator will submit shop plans in accordance with the Specifications or in Adobe PDF format. Shop plan submittals will be sent to the Office of Bridge Design. Include design and check design, if applicable, with initial submittal.

ERECTION DETAILS
FOR
TWO-POST ONE-DIRECTION
BREAKAWAY SIGN SUPPORTS

S. D. DEPT. OF TRANSPORTATION

DECEMBER 2016

1 OF 2

Δ Mounting height as recommended by latest edition of AASHTO ROADSIDE DESIGN GUIDE.

∅ Clear distance as recommended by latest edition of MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

NOTE:
N = Number of Stiffeners to be used
H = Vertical dimension of sign
L = Horizontal dimension of Main Sign

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

FOR BIDDING PURPOSES ONLY

Plotting Date: 5/16/2025

STIFFENER DATA							
Post	Stiffener	a	b	c	d	Bolt (A325)	Plate Thk.
S3X5.7 thru W8X21	C3X5	10 1/2"	5"	1 1/4"	8"	5/8" ∅	5/16"
W8X24 thru W10X45	C5X6.7	13 1/2"	6"	1 1/2"	10 1/2"	7/8" ∅	3/8"

STIFFENER NOTES

- Stiffeners must always be used on Two Post Breakaway signs regardless of type of sign face employed.
- Number of stiffeners used, N, will be as follows:
if $H \leq 2' - 0"$ then $N = 1$
if $2' - 0" < H \leq 8' - 0"$ then $N = 2$
if $8' - 0" < H \leq 15' - 0"$ then $N = 3$

SIDE TRIM MOLDING

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

BREAKAWAY SUPPORT STUB CLEARANCE DIAGRAM

NOTE:
The post stub and lower slip plate will NOT extend more than 4" max. above the chordline within 60" chord.

TABLE 3 - SHEET METAL DIAPHRAGM DATA

Post Size	M	N	O	P	Q	R	V
S3X5.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	5/8"
S4X7.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	5/8"
S5X10	7/8"	7 1/4"	9"	3/4"	2"	3 1/2"	3/4"
W6X12	7/8"	8 1/4"	10"	7/8"	2 3/4"	4 1/2"	3/4"
W6X15	1 1/8"	8 1/2"	10 3/4"	1 1/4"	4"	6 1/2"	7/8"
W6X20	1 1/8"	10"	1' - 0 1/4"	1 1/4"	4"	6 1/2"	7/8"
W8X18	1 1/8"	10 1/2"	1' - 0 3/4"	1 1/4"	3 1/2"	6"	7/8"
W8X21	1 1/4"	11 1/4"	1' - 1 3/4"	1 1/4"	3 1/2"	6"	1"
W8X24	1 1/2"	11"	1' - 2"	1 5/8"	4 1/4"	7 1/2"	1"
W8X28	1 5/8"	11 1/4"	1' - 2 1/2"	1 5/8"	4 1/4"	7 1/2"	1 1/8"
W8X31	1 3/4"	11 1/4"	1' - 2 3/4"	1 7/8"	5 1/4"	9"	1 1/8"
W10X33	1 3/4"	1' - 2"	1' - 5 1/2"	1 7/8"	5 1/4"	9"	1 1/8"

TABLE 4 - SLIP BASE PLATE DATA

Post Size	M	N	O	P	Q	R	S	T	U	t3	Bolt Size	Bolt Torque
S3X5.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	9/32"	3 3/4"	3 3/4"	5/8"	1/2" ∅	142" - #
S4X7.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	9/32"	3 3/4"	3 3/4"	5/8"	1/2" ∅	142" - #
S5X10	7/8"	7 1/4"	9"	3/4"	2"	3 1/2"	11/32"	4 1/2"	4 1/2"	7/8"	5/8" ∅	345" - #
W6X12	7/8"	8 1/4"	10"	7/8"	2 3/4"	4 1/2"	11/32"	5"	5"	7/8"	5/8" ∅	345" - #
W6X15	1 1/8"	8 1/2"	10 3/4"	1 1/4"	4"	6 1/2"	13/32"	5 3/8"	5 3/8"	1"	3/4" ∅	554" - #
W6X20	1 1/8"	10"	1' - 0 1/4"	1 1/4"	4"	6 1/2"	13/32"	6 1/8"	6 1/8"	1"	3/4" ∅	554" - #
W8X18	1 1/8"	10 1/2"	1' - 0 3/4"	1 1/4"	3 1/2"	6"	13/32"	6 3/8"	6 3/8"	1"	3/4" ∅	554" - #
W8X21	1 1/4"	11 1/4"	1' - 1 3/4"	1 1/4"	3 1/2"	6"	15/32"	6 7/8"	6 7/8"	1"	7/8" ∅	645" - #
W8X24	1 1/2"	11"	1' - 2"	1 5/8"	4 1/4"	7 1/2"	15/32"	7"	7"	1"	7/8" ∅	645" - #
W8X28	1 5/8"	11 1/4"	1' - 2 1/2"	1 5/8"	4 1/4"	7 1/2"	17/32"	7 1/4"	7 1/4"	1 1/8"	1" ∅	735" - #
W8X31	1 3/4"	11 1/4"	1' - 2 3/4"	1 7/8"	5 1/4"	9"	17/32"	7 3/8"	7 3/8"	1 1/8"	1" ∅	735" - #
W10X33	1 3/4"	1' - 2"	1' - 5 1/2"	1 7/8"	5 1/4"	9"	17/32"	8 3/4"	8 3/4"	1 1/4"	1" ∅	735" - #

NOTE:
Diaphragm need not be regalvanized after cutting to size and drilling of holes.

ERECTION DETAILS
FOR
TWO-POST ONE-DIRECTION
BREAKAWAY SIGN SUPPORTS
S. D. DEPT. OF TRANSPORTATION
DECEMBER 2016

FOR BIDDING PURPOSES ONLY



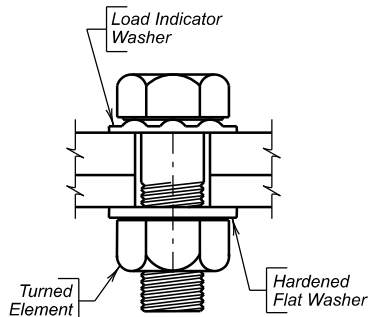
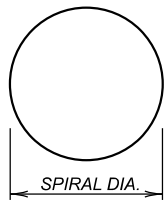
PROJECT	SHEET	TOTAL SHEETS
EM 0292(88)73 IM 2292(104)0	S87	S112

Plotting Date: 5/16/2025

SITE LOCATION	POST SIZE	FOOTING DIMENSIONS		STUB POST LENGTH	LONGITUDINAL STEEL QUANTITIES			# SPIRAL STEEL QUANTITIES	
		DIA.	DEPTH		NO.	SIZE	LENGTH	DIA.	LENGTH
46+85 Median	W 6 x 15	1' - 9"	5' - 0"	2' - 0"	8	#6 Bars	4' - 8"	1' - 5"	33' - 3"

⚠ # Spirals - Use 12" pitch and 1 ½ extra turns at each end. Use 1 ½ turns for lap at splice as required, or weld as approved by the Office of Bridge Design. Spirals may be smooth bars, Bar length shown does not include Splices. Dimensions are out to out of bars.

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



LOAD INDICATOR WASHER DETAIL

NOTES

- Design Specification: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 2013 Edition with Interims through 2022.
- Concrete Footings will be Class M6 - $f_c = 4000$ p. s. i.
- Structural Steel will conform to ASTM A36.
- All Reinforcing Steel, except spirals, will conform to ASTM 615 Grade 60.
- Spiral Reinforcing Steel may be fabricated from cold drawn wire ASTM A1064, or hot rolled plain or deformed bars conforming to the strength requirements of ASTM A615, Grade 60.
- All Bolts and Nuts will conform to ASTM A325 except that ½" diameter bolts may conform to either ASTM A325 or ASTM A449. Washers will conform to ASTM F436. All hardware will be galvanized in accordance with ASTM F2329.
- All structural steel including Posts and Post Stubs will be galvanized in accordance with ASTM A123.
- All Bolt Holes will be drilled. All plate cuts will preferably be saw cuts. However, Flame Cutting will be permitted providing all edges are ground smooth (metal projecting beyond the plane of the plate face will NOT be allowed).
- All welding and weld inspection will be in accordance with the latest edition of AWS D 1.5 Structural Welding Code.

PROCEDURE FOR ASSEMBLING SLIP BASE

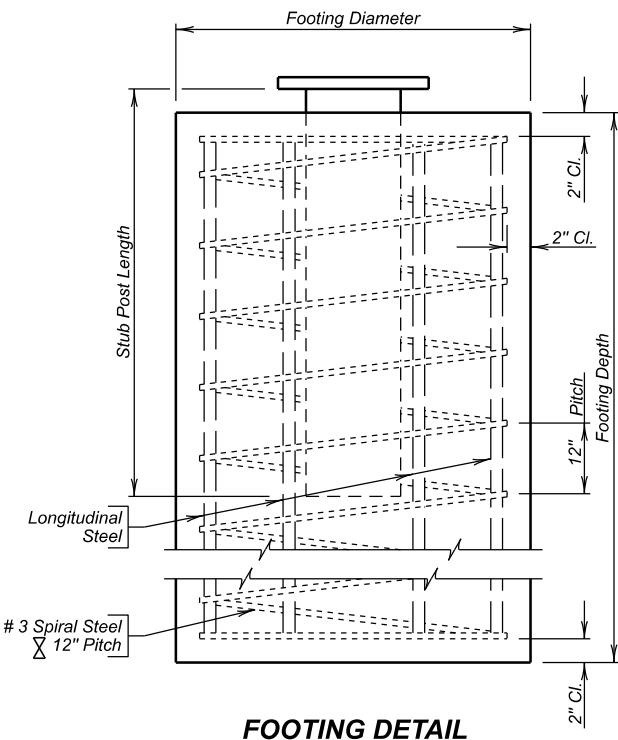
- Place galvanized Sheet Metal Diaphragms on top of the lower slip plate.
- Connect main post to Stub Post with clean unlubricated bolts and nuts with one Hardened Washer on each bolt between slip plates.
- Plumb post by adding shims between slip plates.
- Tighten bolts to a practical maximum, using a 12" - 15" wrench in order to bed surfaces and clean threads. DO NOT TIGHTEN TO PROOF LOAD.
- Loosen all bolts and retighten in increments, using a systematic order, until each bolt has been tightened to the specified torque corresponding to the post size used (See Slip Base Plate Data). Tighten bolts only to the torque specified. DO NOT OVERTIGHTEN. Check torque on each bolt after entire sign has been erected.

ASSEMBLY OF FRICTION FUSE PLATES, BACK PLATES AND STIFFENERS

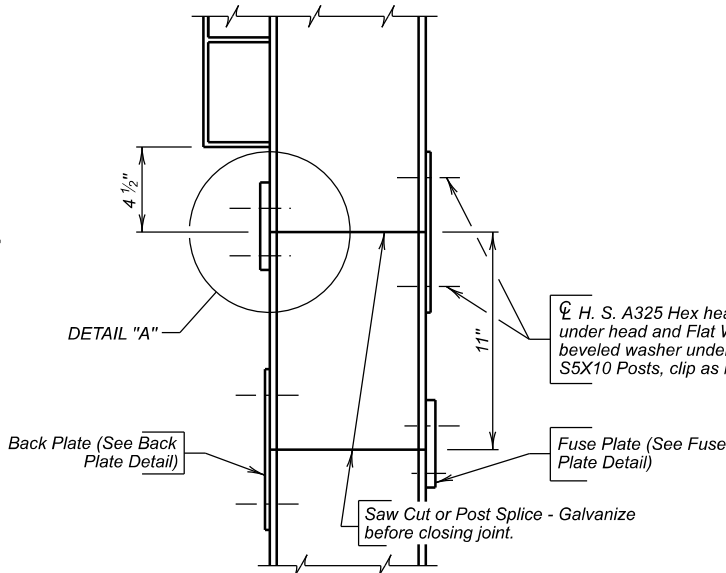
High strength bolts will be tightened so as to obtain a residual tension by the use of load indicator washers.

SHOP PLANS

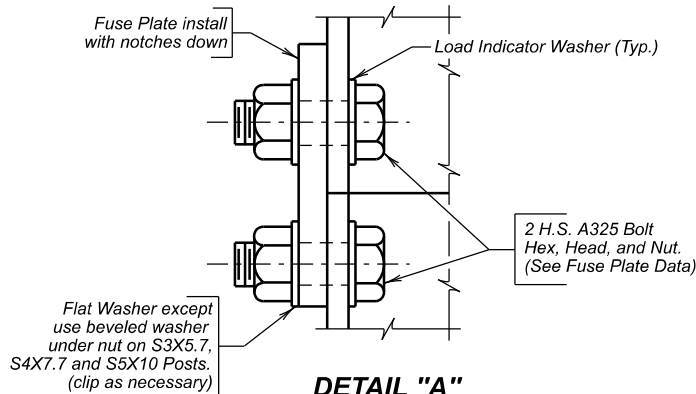
The fabricator will submit shop plans in accordance with the Specifications or in Adobe PDF format. Shop plan submittals will be sent to the Office of Bridge Design. Include design and check design, if applicable, with initial submittal.



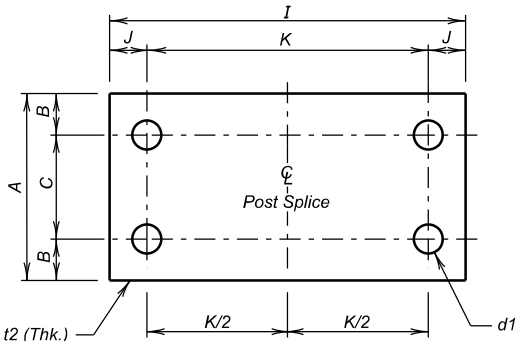
FOOTING DETAIL



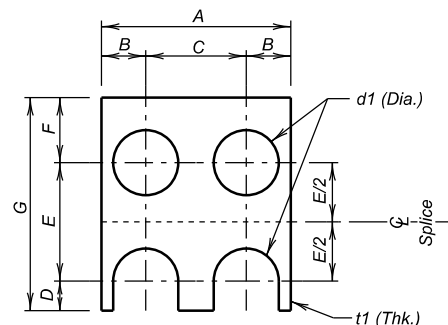
FUSE & BACK PLATE INSTALLATION



DETAIL "A"



BACK PLATE DETAIL



FUSE PLATE DETAIL

TABLE 1 - FUSE PLATE DATA

Post Size	A	B	C	D	E	F	G	d1	t1	Bolt Size
S3X5.7	2 5/8"	9/16"	1 1/2"	1/2"	1 1/2"	1 1/8"	3 1/8"	5/8" ⌀	1/4"	1/2" ⌀
S4X7.7	2 5/8"	9/16"	1 1/2"	1/2"	1 1/2"	1 1/8"	3 1/8"	5/8" ⌀	1/4"	1/2" ⌀
S5X10	3"	1 1/16"	1 5/8"	5/8"	2 1/4"	1 1/8"	4"	3/4" ⌀	3/8"	5/8" ⌀
W6X12	4"	1 5/16"	2 1/8"	5/8"	2 1/2"	1 3/8"	4 1/2"	3/4" ⌀	3/8"	5/8" ⌀
W6X15	6"	1 3/8"	3 1/4"	5/8"	2 1/2"	1 3/8"	4 1/2"	3/4" ⌀	3/8"	5/8" ⌀
W6X20	6"	1 3/8"	3 1/4"	5/8"	2 1/2"	1 3/8"	4 1/2"	3/4" ⌀	3/8"	5/8" ⌀
W8X18	5 1/4"	1 5/16"	2 5/8"	3/4"	2 1/2"	1 3/8"	4 5/8"	7/8" ⌀	1/2"	3/4" ⌀
W8X21	5 1/4"	1 5/16"	2 5/8"	3/4"	2 1/2"	1 3/8"	4 5/8"	7/8" ⌀	1/2"	3/4" ⌀
W8X24	6 1/2"	1 1/2"	3 1/2"	7/8"	3"	1 5/8"	5 1/2"	1" ⌀	9/16"	7/8" ⌀
W8X28	6 1/2"	1 5/16"	3 3/8"	7/8"	3"	1 3/4"	5 5/8"	1" ⌀	1/2"	7/8" ⌀
W8X31	8"	1 3/8"	4 3/4"	1"	3 1/2"	2"	6 1/2"	1 1/8" ⌀	5/8"	1" ⌀
W10X33	8"	1 7/8"	4 1/4"	1 1/8"	4 1/2"	2 1/4"	7 7/8"	1 1/4" ⌀	3/4"	1 1/8" ⌀

TABLE 5 - BACK PLATE DATA

Post Size	A	B	C	J	K	I	d1	t2	Bolt Size
S3X5.7	2 5/8"	9/16"	1 1/2"	1 1/4"	4 1/2"	7"	5/8" ⌀	1/4"	1/2" ⌀
S4X7.7	2 5/8"	9/16"	1 1/2"	1 1/4"	4 1/2"	7"	5/8" ⌀	1/4"	1/2" ⌀
S5X10	3"	1 1/16"	1 5/8"	1 1/4"	4 3/4"	7 1/4"	3/4" ⌀	1/4"	5/8" ⌀
W6X12	4"	1 5/16"	2 1/8"	1 1/4"	4 3/4"	7 1/4"	3/4" ⌀	1/4"	5/8" ⌀
W6X15	6"	1 3/8"	3 1/4"	1 1/4"	5 1/4"	7 3/4"	3/4" ⌀	1/4"	5/8" ⌀
W6X20	6"	1 3/8"	3 1/4"	1 1/4"	5 1/4"	7 3/4"	3/4" ⌀	1/4"	5/8" ⌀
W8X18	5 1/4"	1 5/16"	2 5/8"	1 3/8"	5 3/4"	8 1/2"	7/8" ⌀	1/4"	3/4" ⌀
W8X21	5 1/4"	1 5/16"	2 5/8"	1 3/8"	5 3/4"	8 1/2"	7/8" ⌀	1/4"	3/4" ⌀
W8X24	6 1/2"	1 1/2"	3 1/2"	1 5/8"	6"	9 1/4"	1" ⌀	5/16"	7/8" ⌀
W8X28	6 1/2"	1 5/16"	3 3/8"	1 3/4"	6"	9 1/2"	1" ⌀	3/8"	7/8" ⌀
W8X31	8"	1 3/8"	4 3/4"	2"	6 1/2"	10 1/2"	1 1/8" ⌀	3/8"	1" ⌀
W10X33	8"	1 7/8"	4 1/4"	2 1/2"	7"	1' - 0"	1 1/4" ⌀	7/16"	1 1/8" ⌀

ERECTION DETAILS

FOR

TWO-POST TWO-DIRECTION BREAKAWAY SIGN SUPPORTS

S. D. DEPT. OF TRANSPORTATION

DECEMBER 2016

1 OF 2

DESIGNED BY RH/DM LINC06JQ	DRAWN BY RH/TB/MDG 06JQWA01	CHECKED BY RH/DM/PW BSTDBS2C	 BRIDGE ENGINEER
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Δ Mounting height as recommended by latest edition of AASHTO ROADSIDE DESIGN GUIDE.

∅ Clear distance as recommended by latest edition of MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

NOTE:
N = Number of Stiffeners to be used
H = Vertical dimension of sign
L = Horizontal dimension of Main Sign

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

FOR BIDDING PURPOSES ONLY

Plotting Date: 5/16/2025

STIFFENER DATA							
Post	Stiffener	a	b	c	d	Bolt (A325)	Plate Thk.
S3X5.7 thru W8X21	C3X5	10 1/2"	5"	1 1/4"	8"	5/8" ∅	5/16"
W8X24 thru W10X45	C5X6.7	13 1/2"	6"	1 1/2"	10 1/2"	7/8" ∅	3/8"

STIFFENER NOTES

- Stiffeners must always be used on Two Post Breakaway signs regardless of type of sign face employed.
- Number of stiffeners used, N, will be as follows:
if $H \leq 2' - 0"$ then $N = 1$
if $2' - 0" < H \leq 8' - 0"$ then $N = 2$
if $8' - 0" < H \leq 15' - 0"$ then $N = 3$

SIDE TRIM MOLDING

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

BREAKAWAY SUPPORT STUB CLEARANCE DIAGRAM

NOTE:
The post stub and lower slip plate will NOT extend more than 4" max. above the chordline within 60" chord.

ELEVATION

SEC. C - C

GALVANIZED SHEET METAL DIAPHRAGM

TABLE 3 - SHEET METAL DIAPHRAGM DATA

Post Size	M	N	O	P	Q	R	V
S3X5.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	5/8"
S4X7.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	5/8"
S5X10	7/8"	7 1/4"	9"	3/4"	2"	3 1/2"	3/4"
W6X12	7/8"	8 1/4"	10"	7/8"	2 3/4"	4 1/2"	3/4"
W6X15	1 1/8"	8 1/2"	10 3/4"	1 1/4"	4"	6 1/2"	7/8"
W6X20	1 1/8"	10"	1' - 0 1/4"	1 1/4"	4"	6 1/2"	7/8"
W8X18	1 1/8"	10 1/2"	1' - 0 3/4"	1 1/4"	3 1/2"	6"	7/8"
W8X21	1 1/4"	11 1/4"	1' - 1 3/4"	1 1/4"	3 1/2"	6"	1"
W8X24	1 1/2"	11"	1' - 2"	1 5/8"	4 1/4"	7 1/2"	1"
W8X28	1 5/8"	11 1/4"	1' - 2 1/2"	1 5/8"	4 1/4"	7 1/2"	1 1/8"
W8X31	1 3/4"	11 1/4"	1' - 2 3/4"	1 7/8"	5 1/4"	9"	1 1/8"
W10X33	1 3/4"	1' - 2"	1' - 5 1/2"	1 7/8"	5 1/4"	9"	1 1/8"

TABLE 4 - SLIP BASE PLATE DATA

Post Size	M	N	O	P	Q	R	S	T	U	t3	Bolt Size	Bolt Torque
S3X5.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	9/32"	3 3/4"	3 3/4"	5/8"	1/2" ∅	142" - #
S4X7.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	9/32"	3 3/4"	3 3/4"	5/8"	1/2" ∅	142" - #
S5X10	7/8"	7 1/4"	9"	3/4"	2"	3 1/2"	11/32"	4 1/2"	4 1/2"	7/8"	5/8" ∅	345" - #
W6X12	7/8"	8 1/4"	10"	7/8"	2 3/4"	4 1/2"	11/32"	5"	5"	7/8"	5/8" ∅	345" - #
W6X15	1 1/8"	8 1/2"	10 3/4"	1 1/4"	4"	6 1/2"	13/32"	5 3/8"	5 3/8"	1"	3/4" ∅	554" - #
W6X20	1 1/8"	10"	1' - 0 1/4"	1 1/4"	4"	6 1/2"	13/32"	6 1/8"	6 1/8"	1"	3/4" ∅	554" - #
W8X18	1 1/8"	10 1/2"	1' - 0 3/4"	1 1/4"	3 1/2"	6"	13/32"	6 3/8"	6 3/8"	1"	3/4" ∅	554" - #
W8X21	1 1/4"	11 1/4"	1' - 1 3/4"	1 1/4"	3 1/2"	6"	15/32"	6 7/8"	6 7/8"	1"	7/8" ∅	645" - #
W8X24	1 1/2"	11"	1' - 2"	1 5/8"	4 1/4"	7 1/2"	15/32"	7"	7"	1"	7/8" ∅	645" - #
W8X28	1 5/8"	11 1/4"	1' - 2 1/2"	1 5/8"	4 1/4"	7 1/2"	17/32"	7 1/4"	7 1/4"	1 1/8"	1" ∅	735" - #
W8X31	1 3/4"	11 1/4"	1' - 2 3/4"	1 7/8"	5 1/4"	9"	17/32"	7 3/8"	7 3/8"	1 1/8"	1" ∅	735" - #
W10X33	1 3/4"	1' - 2"	1' - 5 1/2"	1 7/8"	5 1/4"	9"	17/32"	8 3/4"	8 3/4"	1 1/4"	1" ∅	735" - #

ERECTION DETAILS

FOR

TWO-POST TWO-DIRECTION BREAKAWAY SIGN SUPPORTS

S. D. DEPT. OF TRANSPORTATION

DECEMBER 2016

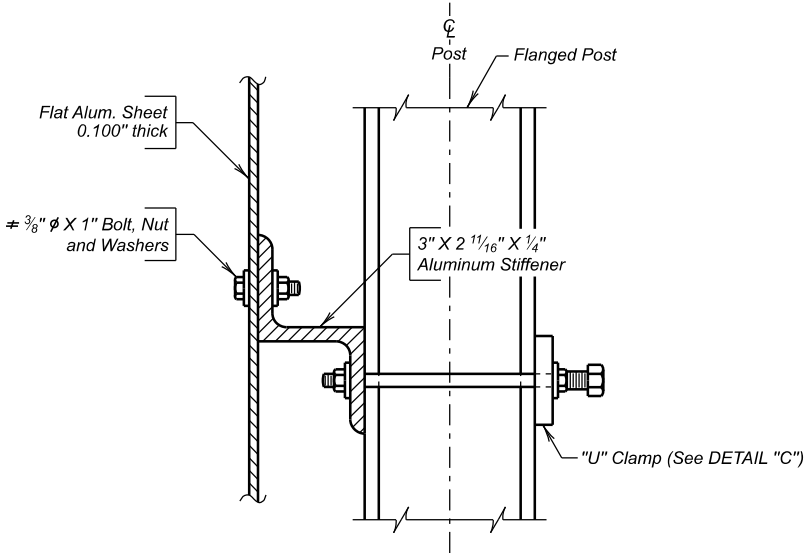
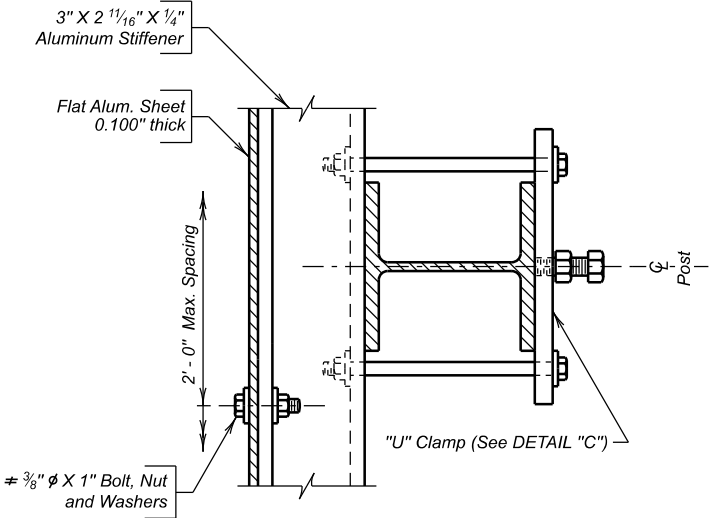
DESIGNED BY
RH/DM
LINC06JQ

DRAWN BY
TB/MDG
06JQWA01

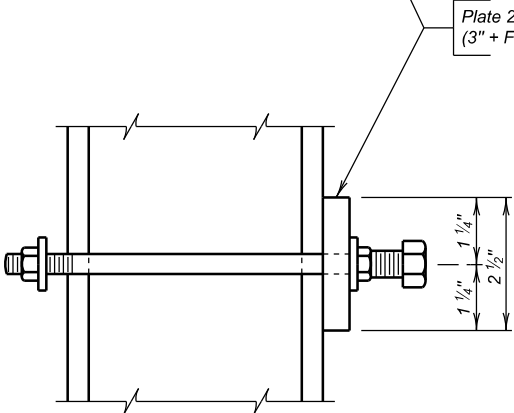
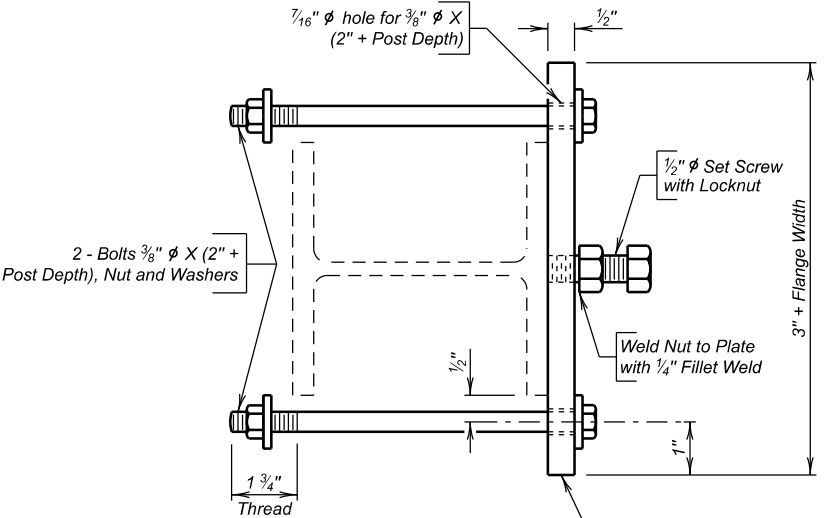
CHECKED BY
RH/DM/PW
BSTDBS2D

Steve A. Johnson
BRIDGE ENGINEER

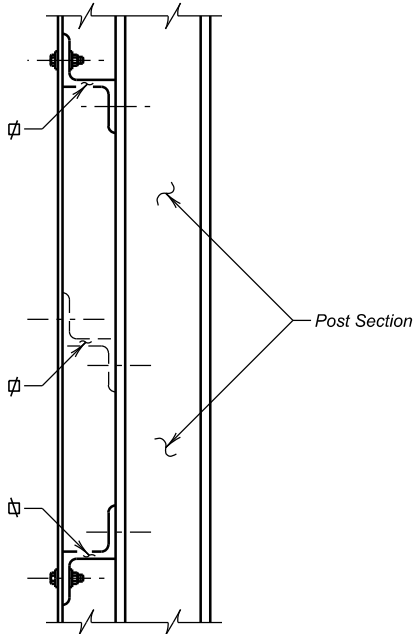
≠ A plastic washer, as recommended by the sheeting manufacturer, will be installed between the sign face and the metal washer shown.



DETAILS FOR MOUNTING SHEET
ALUMINUM SIGNS ON STEEL FLANGED POSTS



DETAIL "C"



POSITIONING OF TOP AND
BOTTOM STIFFENERS

STIFFENER NOTES

- Stiffeners must always be used on multiple post breakaway signs regardless of type of sign face employed.
- Number of stiffeners used, N, will be as follows:
if $H \leq 2' - 0''$ then $N = 1$
if $2' - 0'' < H \leq 8' - 0''$ then $N = 2$
if $8' - 0'' < H \leq 15' - 0''$ then $N = 3$
where H equals the vertical dimension of the sign panel of sign cluster.
- All stiffener Bolts and Nuts will conform to ASTM A307. Washers will conform to ASTM F436. All hardware will be galvanized in accordance with ASTM F2329.

ERECTION DETAILS
FOR
SHEET ALUMINUM SIGNS
(ON FLANGED AND PIPE POSTS)
S. D. DEPT. OF TRANSPORTATION
MARCH 2022

SPECIFICATIONS-

1. Design Specifications: AASHTO Standard Specifications for Highway Bridges, 2012 Edition and AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals, 2013 Edition with 2015 through 2022 Interims.
2. Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 2015 Edition and required Provisions, Supplemental Specifications and Special Provisions as included in the Proposal.

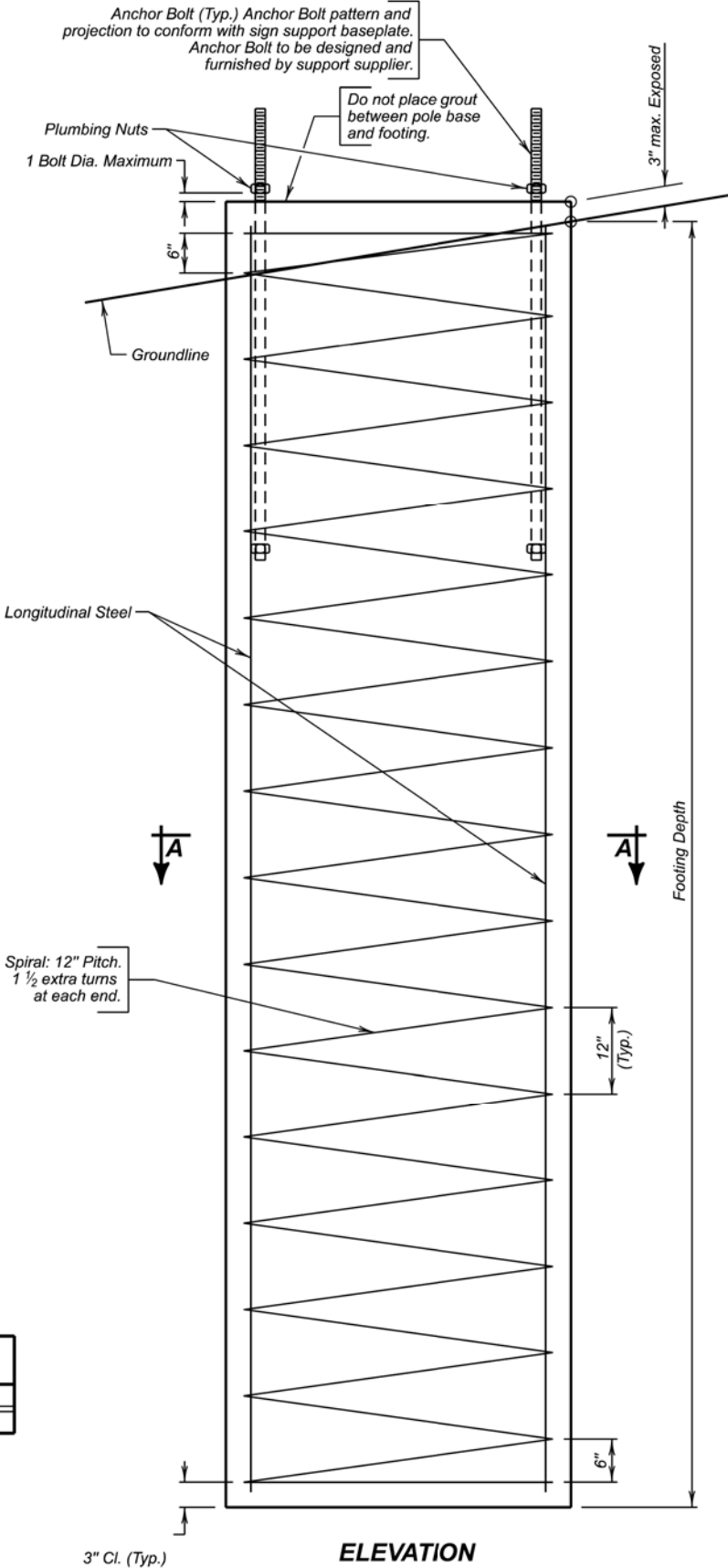
GENERAL NOTES-

1. The Sign Footings will be drilled shafts constructed in conformance with the Special Provision for Cylindrical Concrete Footings.
2. All exposed edges will be chamfered 3/4".
3. All reinforcing steel will conform to ASTM A615 Grade 60.
4. All concrete will be Class A45, Drilled Shaft. See Special Provision.
5. Design Material Strengths: Concrete $f'c = 4500$ psi
Reinforcing Steel $fy = 60000$ psi
6. Footing locations that contain sand and/or gravel or have high water tables are potential candidates for caving soils. If caving soils are encountered during excavation it may be necessary to use temporary casings to complete the excavation and concrete placement. The Contractor will be prepared to utilize the Temporary Casing Construction Method.
7. Subsurface soils at the sign bridge and cantilever sign footing locations consist of the following:

Location	Subsurface Soils	Groundwater Depth (November 2023)
I 29 Station 34+00	0' - 27' Brown silt clay	21.4'
I 29 Station 41+75	0' - 27' Brown sand clay	4.5'
I 29 Station 47+32	0' - 13' Brown silt clay 13' - 26' Brown sand clay	3.5'
I 29 Station 61+75	0' - 27' Brown sand clay	4.0'
I 29 Station 84+00	0' - 27' Brown sand clay	3.6'
I 29 Station 92+28	0' - 8' Brown silt clay 8' - 16' Brown sand clay 16' - 26' Brown clay sand	8.6'
I 29 Station 99+75	0' - 27' Brown sand clay	6.3'
I 29 Station 121+36	0' - 27' Brown sand clay	8.0'
I 29 Station 121+98	0' - 27' Brown sand clay	8.0'

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
4' Diameter Fixed Support Concrete Footing	Ft.	347.0

1. 161.1 Cu. Yds. Class A45, Drilled Shaft in Sign Footings.
2. 24240 Lbs. Re-Steel in Sign Footings (including 1011 lbs. for spacer bars.).
3. 158.8 Cu. Yds. Drilled Shaft Excavation for Sign Footings.
- Items 1 thru 3 are approximate quantities contained in the above bid item and are for information only.

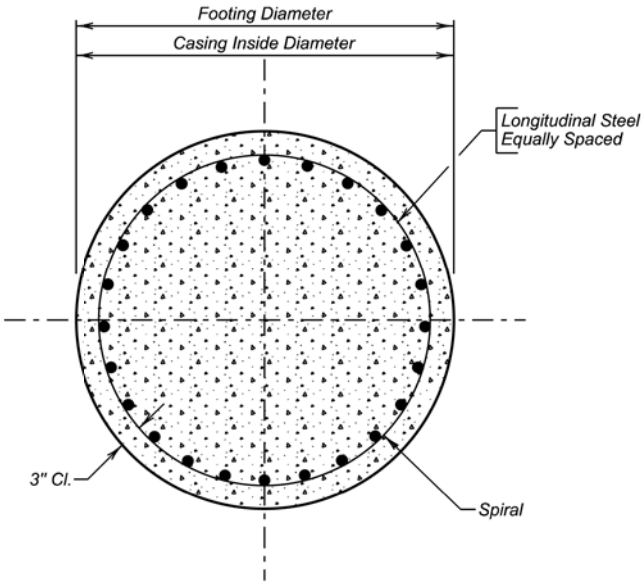


* Spiral: 12" Pitch.
1 1/2 extra turns
at each end.

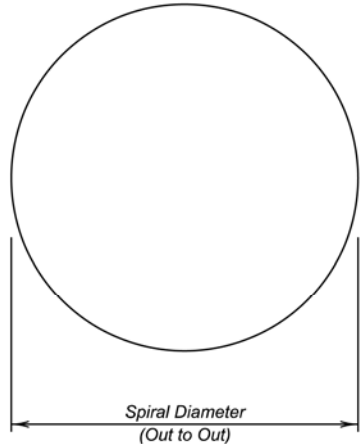
3" Cl. (Typ.)

ELEVATION

SIGN NUMBER	SITE LOCATION	SUPPORT DESCRIPTION	FOOTING DIMENSIONS		LONGITUDINAL STEEL			Ø SPIRAL STEEL			CONCRETE QUANTITY
			DIA.	DEPTH	NO.	SIZE	LENGTH	DIA.	SIZE	LENGTH	CU. YD.
CS-3	I-29N Sta. 47 + 32.28 - 98.00R	Cantilever Support	4' - 0"	17' - 0"	24	#8	16' - 6"	3' - 6"	#3	213' - 6"	7.9
CS-5	Ramp B Sta. 31 + 45.00 - 33.00R	Mast Arm Support	4' - 0"	16' - 0"	24	#8	15' - 6"	3' - 6"	#3	202' - 6"	7.4
CS-6	Ramp D Sta. 45 + 82.00 - 34.00L	Mast Arm Support	4' - 0"	16' - 0"	24	#8	15' - 6"	3' - 6"	#3	202' - 6"	7.4
CS-7	I-229E Sta. 179 + 84.00 - 45.00R	Cantilever Support	4' - 0"	24' - 0"	24	#8	23' - 6"	3' - 6"	#3	290' - 0"	11.2
SB-1	I-29N Sta. 61 + 75.04 - 8.00R	Sign Bridge - Left	4' - 0"	18' - 0"	24	#8	17' - 6"	3' - 6"	#3	224' - 6"	8.4
SB-1	I-29N Sta. 61 + 75.04 - 88.00R	Sign Bridge - Right	4' - 0"	18' - 0"	24	#8	17' - 6"	3' - 6"	#3	224' - 6"	8.4
SB-2	I-29N Sta. 87 + 20.00 - 8.00R	Sign Bridge - Left	4' - 0"	19' - 0"	24	#8	18' - 6"	3' - 6"	#3	235' - 6"	8.8
SB-2	I-29N Sta. 87 + 20.00 - 100.00R	Sign Bridge - Right	4' - 0"	19' - 0"	24	#8	18' - 6"	3' - 6"	#3	235' - 6"	8.8
SB-3	I-29S Sta. 99 + 75.00 - 8.11L	Sign Bridge - Left	4' - 0"	17' - 0"	24	#8	16' - 6"	3' - 6"	#3	213' - 6"	7.9
SB-3	I-29S Sta. 99 + 75.00 - 88.11L	Sign Bridge - Right	4' - 0"	17' - 0"	24	#8	16' - 6"	3' - 6"	#3	213' - 6"	7.9
SB-6	I-29S Sta. 158 + 00.00 - 10.00L	Sign Bridge - Left	4' - 0"	19' - 0"	24	#8	18' - 6"	3' - 6"	#3	235' - 6"	8.8
SB-6	I-29S Sta. 158 + 00.00 - 90.00L	Sign Bridge - Right	4' - 0"	19' - 0"	24	#8	18' - 6"	3' - 6"	#3	235' - 6"	8.8
SB-10	Ramp C Sta. 61 + 62.00 - 40.00R	Sign Bridge - Left	4' - 0"	17' - 0"	24	#8	16' - 6"	3' - 6"	#3	213' - 6"	7.9
SB-10	Ramp C Sta. 61 + 62.00 - 40.00L	Sign Bridge - Right	4' - 0"	17' - 0"	24	#8	16' - 6"	3' - 6"	#3	213' - 6"	7.9
SB-12	85th St Sta. 314 + 50.00 - 30.47L	Sign Bridge - Left	4' - 0"	16' - 0"	24	#8	15' - 6"	3' - 6"	#3	202' - 6"	7.4
SB-12	85th St Sta. 314 + 50.00 - 39.80R	Sign Bridge - Right	4' - 0"	16' - 0"	24	#8	15' - 6"	3' - 6"	#3	202' - 6"	7.4
SB-13	85th St Sta. 426 + 00.00 - 18.69L	Sign Bridge - Left	4' - 0"	15' - 0"	24	#8	14' - 6"	3' - 6"	#3	191' - 6"	7.0
SB-13	85th St Sta. 426 + 00.00 - 35.56R	Sign Bridge - Right	4' - 0"	15' - 0"	24	#8	14' - 6"	3' - 6"	#3	191' - 6"	7.0
SB-14	Ramp C Sta. 26 + 85.54 - 44.96L	Sign Bridge - Left	4' - 0"	16' - 0"	24	#8	15' - 6"	3' - 6"	#3	202' - 6"	7.4
SB-14	Ramp C Sta. 26 + 85.54 - 25.04R	Sign Bridge - Right	4' - 0"	16' - 0"	24	#8	15' - 6"	3' - 6"	#3	202' - 6"	7.4



SECTION A-A
(anchor bolts not shown)



DETAILS
FOR
SIGN FOOTINGS

EM 0292(88)73

PCN 06JQ

LINCOLN COUNTY

S. D. DEPT. OF TRANSPORTATION

OCTOBER 2024

1 OF 1

* Circular Ties may be used in lieu of Spiral Ties. The ties will be spaced 12" apart except for the top and bottom two which will be spaced 6" apart. The ties will be lapped 20" which will be staggered around the cage.

Ø Spirals - Use a 12" pitch and 1 1/2 extra turns at each end. Use 1 1/2 turns for lap at splice as required, or weld as approved by the Office of Bridge Design. Use 4 vertical spacer bars per footing. Spirals may be smooth bars. Bar length shown does not include splices.

PLANS BY:
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

DESIGNED BY AU LINC06JQ	CK. DES. BY AH 06JQWA01	DRAFTED BY CRW / AU	Steve A. Johnson BRIDGE ENGINEER
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ERECTION DETAILS FOR INTERSTATE HIGHWAY SIGNS

ADVANCE AND EXIT INTERSTATE CLOSURE SIGNING (TYPICAL)

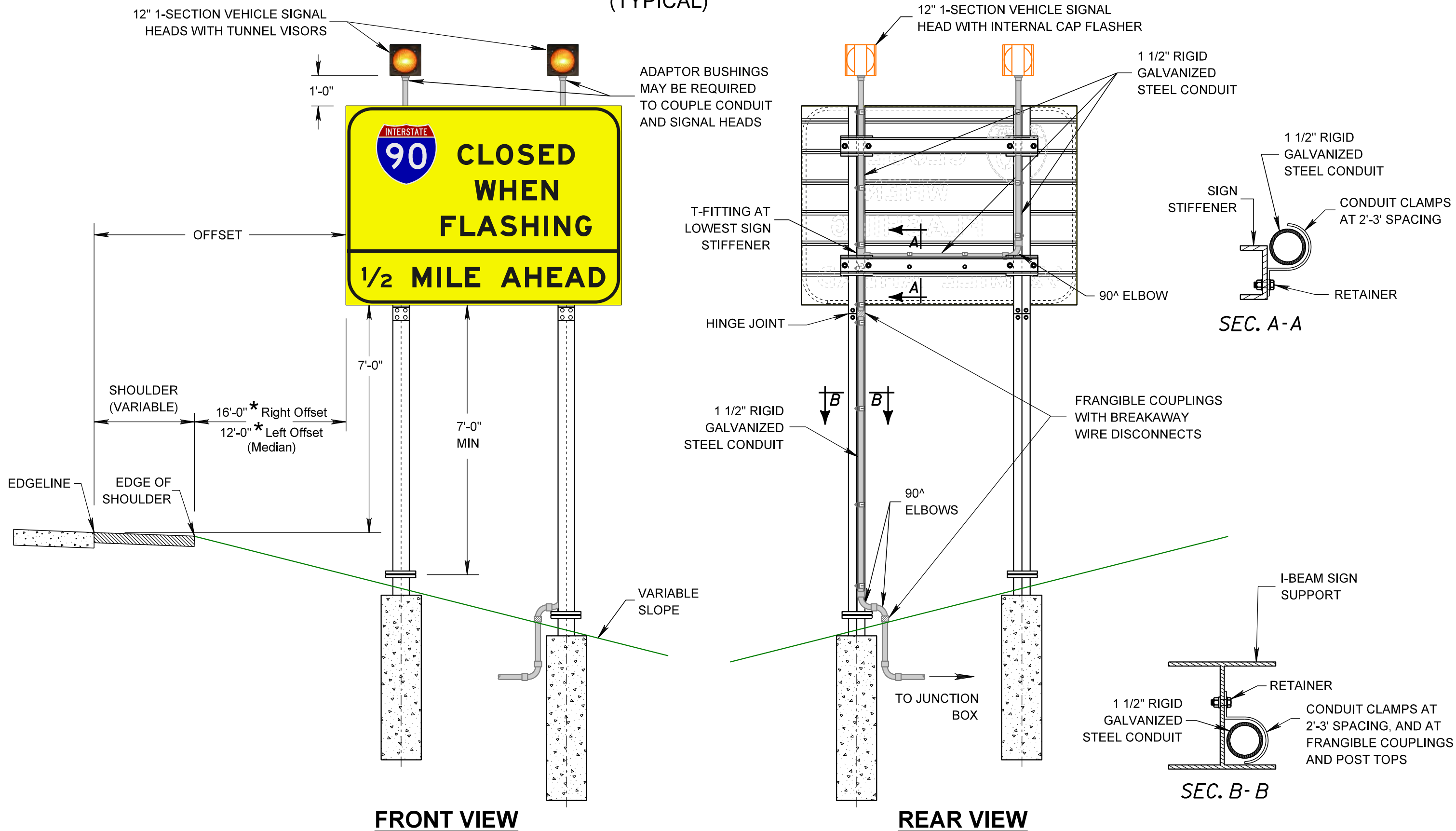
FOR BIDDING PURPOSES ONLY



PROJECT
EM 0292(88)73
IM 2292(104)0

SHEET
S91
TOTAL
SHEETS
S112

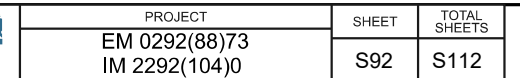
Plotting Date: 5/16/2025



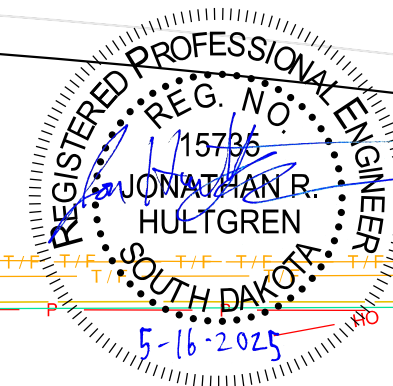
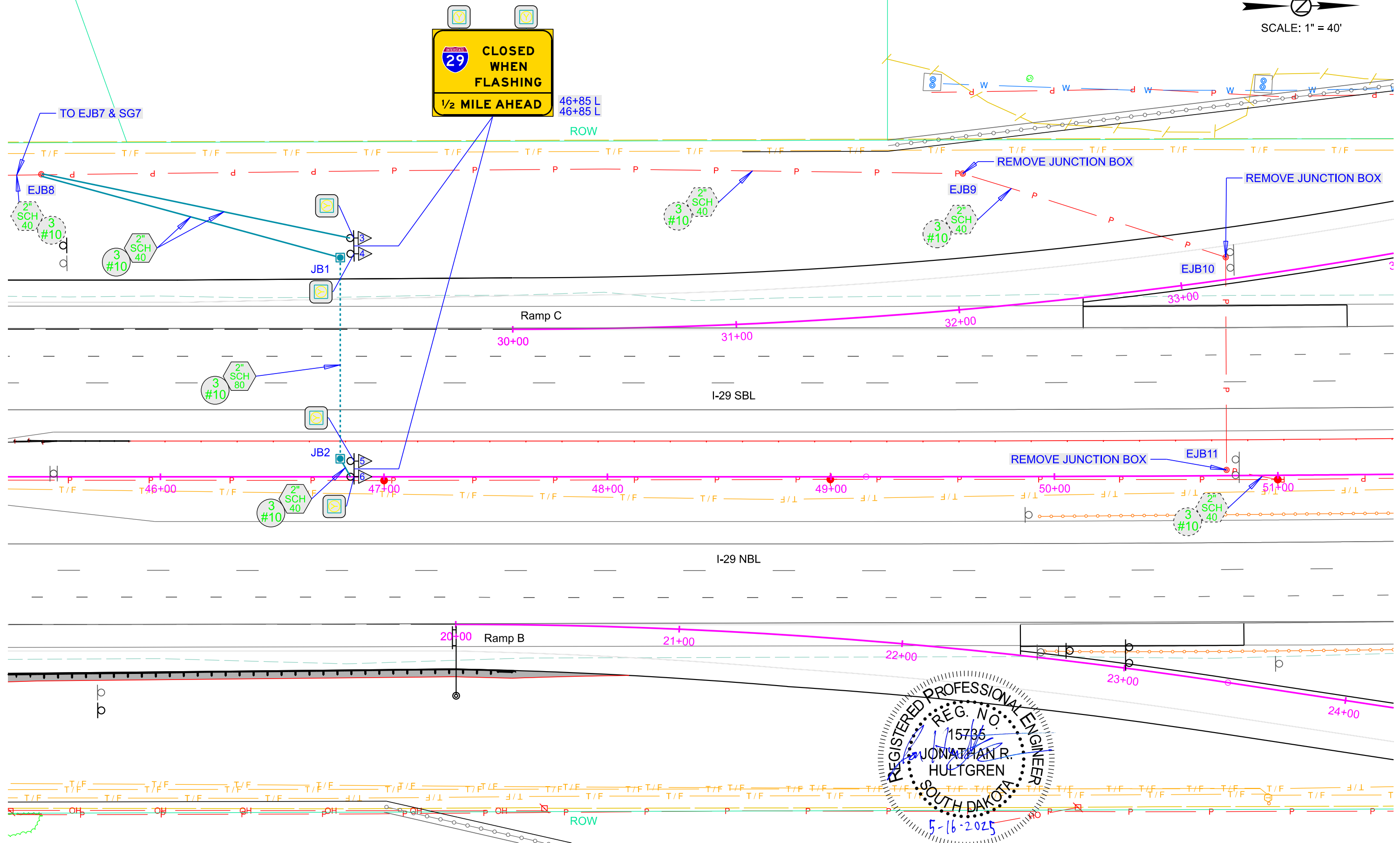
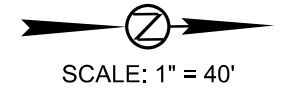
* - Unless another offset is specified in the plans.

(REAR I-BEAM FLANGES NOT SHOWN)

FOR BIDDING PURPOSES ONLY



Plotting Date: 5/16/2025



ROAD CLOSURE GATE WIRING DIAGRAMS

FOR BIDDING PURPOSES ONLY



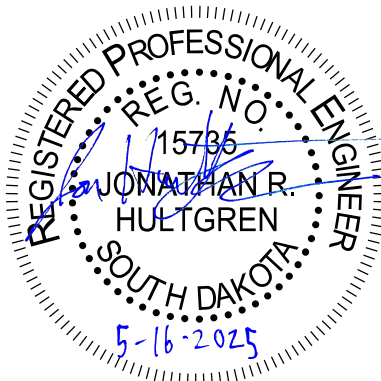
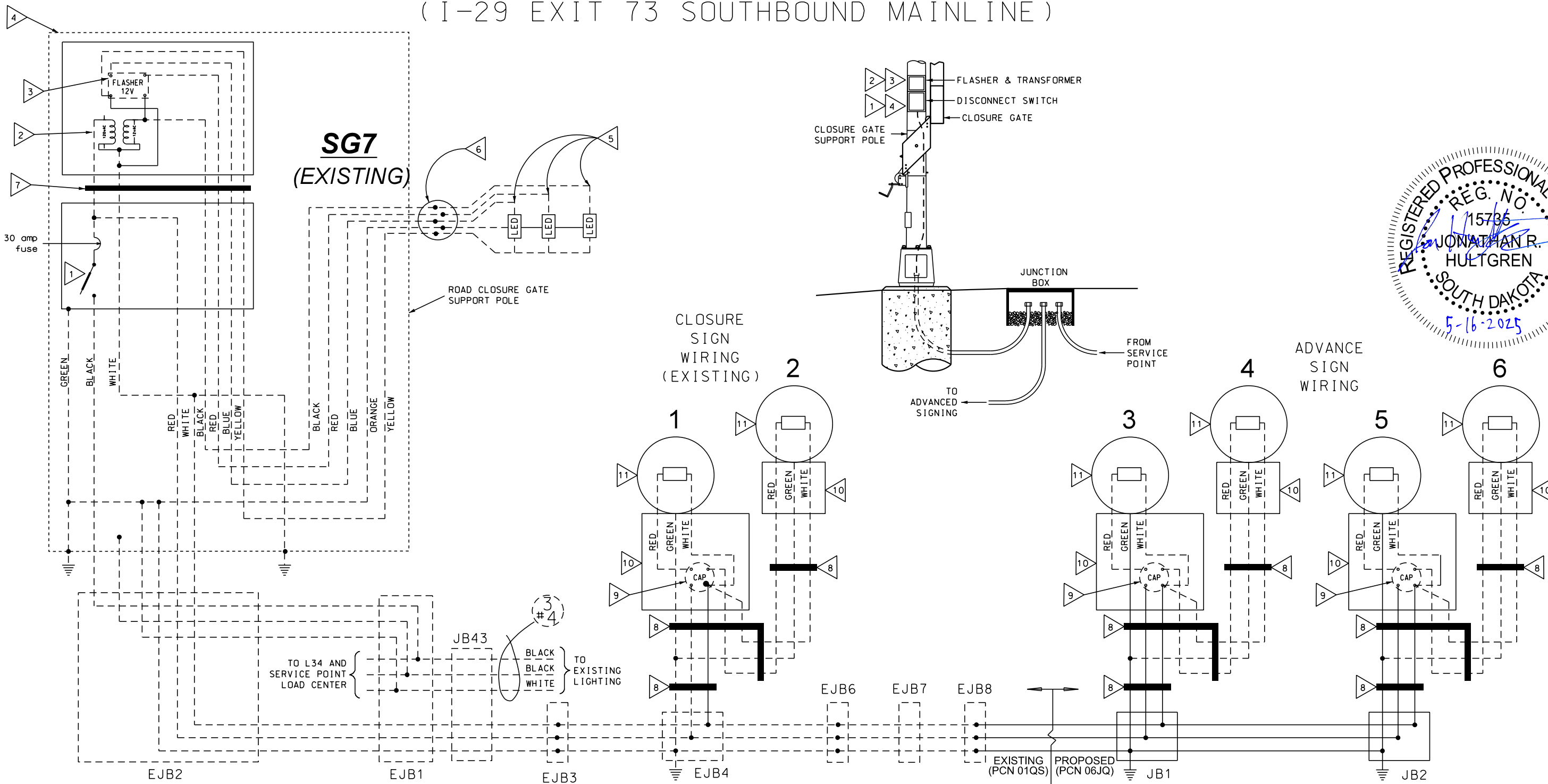
PROJECT
EM 0292(88)73
IM 2292(104)0

SHEET
S93

TOTAL
SHEETS
S112

Plotting Date: 5/16/2025

(I-29 EXIT 73 SOUTHBOUND MAINLINE)



LEGEND:

- FUSE: 8 amp. Non-Time Delay or 3 1/2 amp. Dual Element

— Proposed Wiring (PCN 06JQ)
--- Existing Wiring (PCN 01QS)

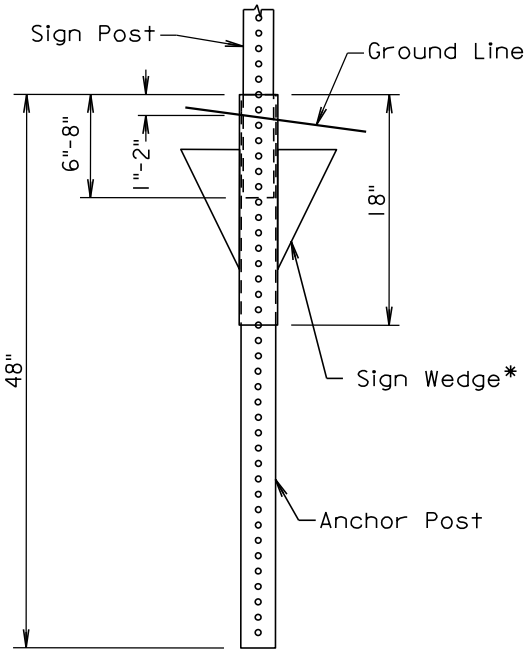
NOTE:

All circuits shall be bonded in accordance with the NATIONAL ELECTRICAL CODE. Quantities for bonding conductors are not included in these plans.

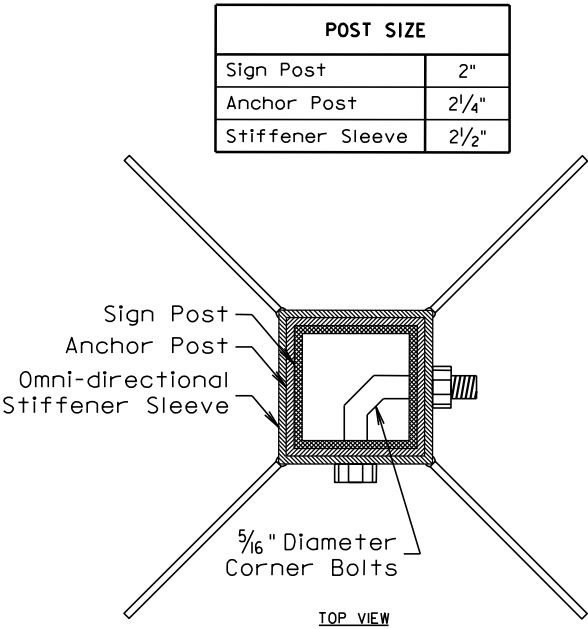
- 30 AMP SAFETY SWITCH IN A NEMA 3R LOCKABLE ENCLOSURE. DPST FOR ROAD CLOSURE DROP GATE APPLICATIONS.
- 120/240 VOLT PRIMARY, 12/24 VOLT SECONDARY TRANSFORMER, BUCK AND BOOST, MOUNTED IN LOCKABLE NEMA 3R ENCLOSURE.
- CUBE FLASHER MODEL 12DC10DF AS MANUFACTURED BY TSC (or equal) IN LOCKABLE NEMA 3R ENCLOSURE.
- THE NEMA 3R ENCLOSURES SHALL BE MOUNTED TO THE GATE CLOSURE SUPPORT POLE. THE DISCONNECT SWITCH SHALL BE MOUNTED AT A HEIGHT OF 5 FEET.
- LAMP ASSEMBLIES MANUFACTURED BY AURORA, PART NO. A30-944 (or equal) 12VAC LED GATE LIGHTS. 3 LAMP ASSEMBLIES SHALL BE MOUNTED ON EACH GATE.

- THE CONTRACTOR SHALL INSTALL 2 CONDUCTOR NO. 14 AWG, "SO" CORD. CONNECTION OF THE "SO" CORD SHALL BE MADE IN A JUNCTION BOX MOUNTED ON THE GATE POST. THE JUNCTION BOX SHALL BE Banded TO THE POST AND SHALL BE RAIN TIGHT AND WEATHERPROOF.
- 2" RIGID STEEL CONDUIT WITH CONDUCTORS, CONNECTING NEMA 3R ENCLOSURES.
- 1 1/2" RIGID STEEL CONDUIT WITH #10 AWG CONDUCTORS.
- CAP FLASHER MODEL CF-2F AS MANUFACTURED BY TSC (or equal) IN VEHICLE SIGNAL HEAD HOUSING.
- VEHICLE SIGNAL HEAD HOUSING WITH TUNNEL VISOR, 12 inch.
- SDDOT APPROVED 12 inch LED SIGNAL MODULE INDICATION IN VEHICLE SIGNAL HEAD HOUSING.

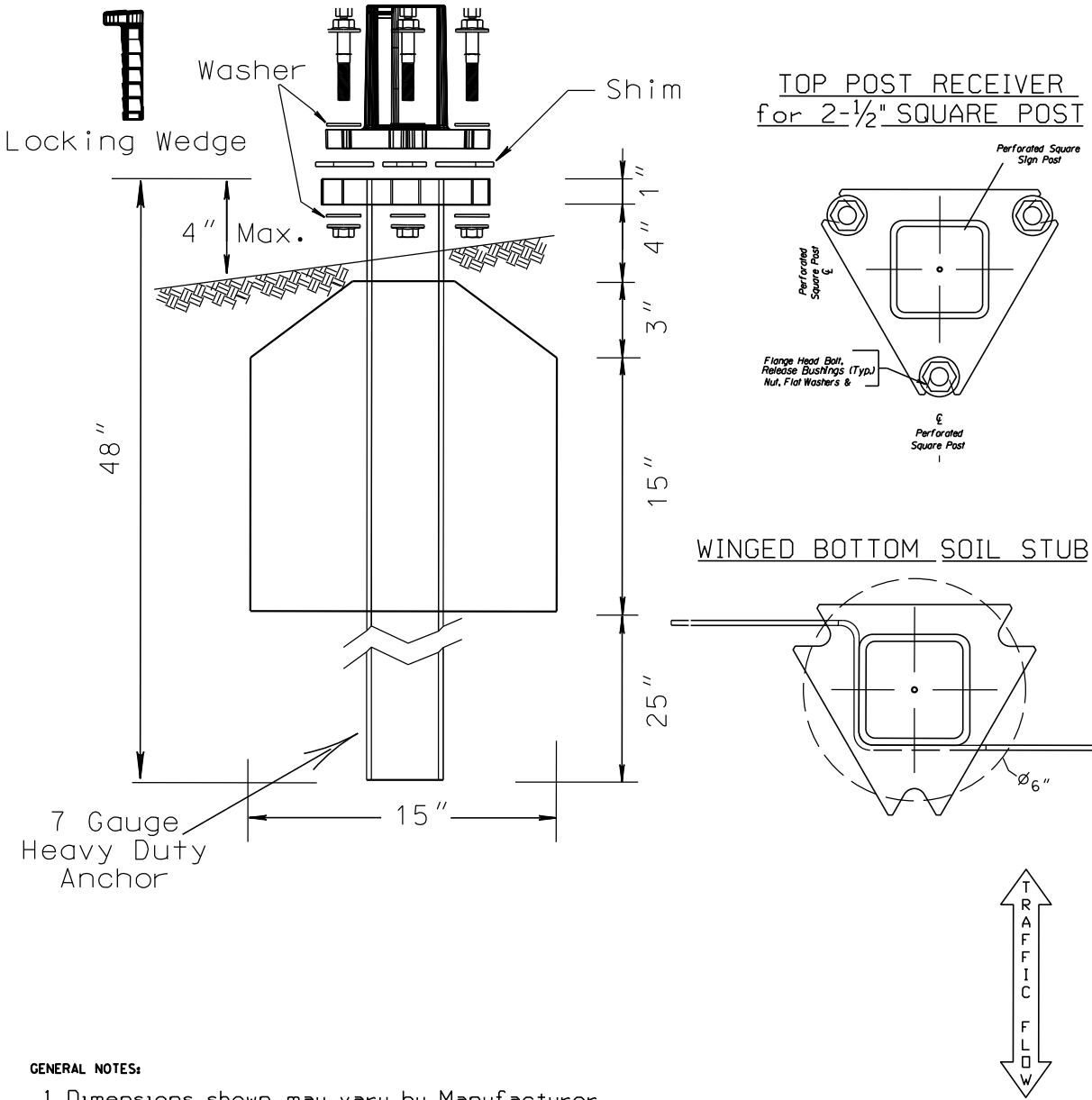
2" SQUARE STEEL PERFORATED TUBE POST
WINGED SLEEVE ANCHOR BASE DETAILS
(Typical)



* - 18" Multi-directional Sleeve w/4 Blades, or Equivalent.
Manufacturer Recommended Dimensions and Installation.

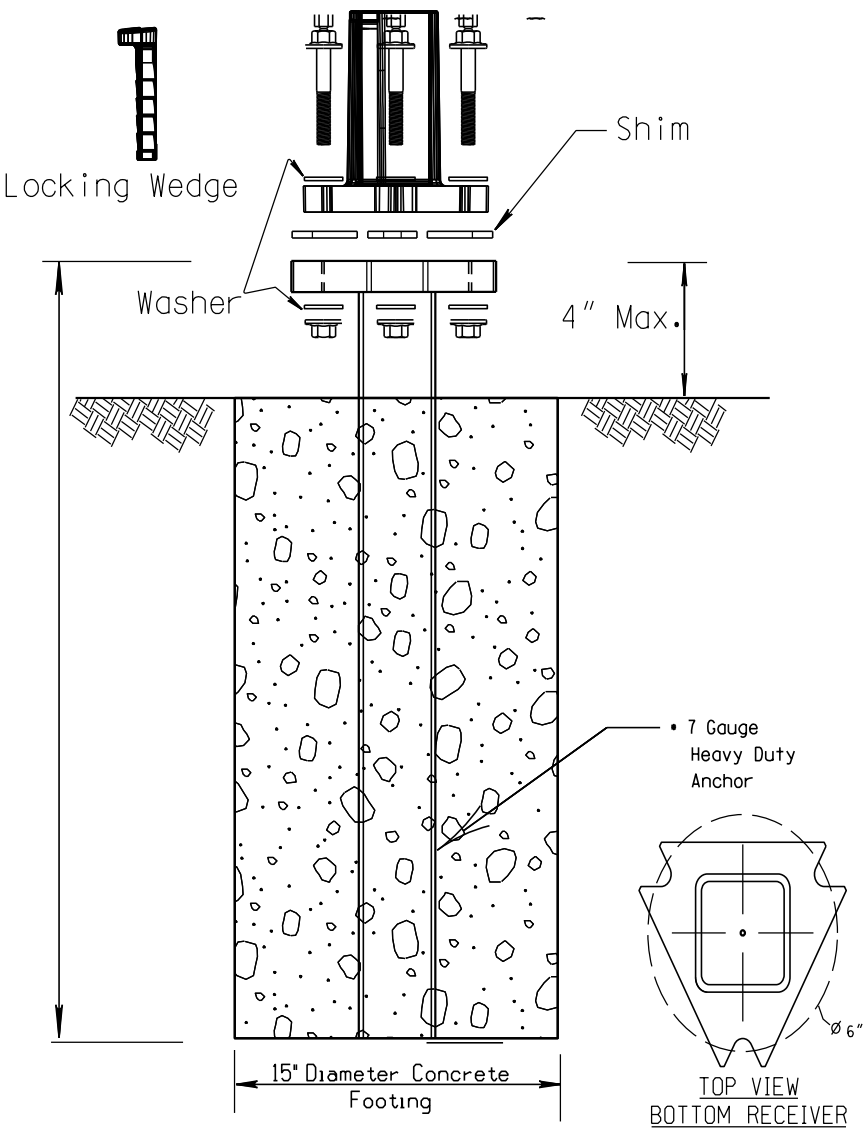


2 1/2" SQUARE STEEL PERFORATED TUBE POST
WINGED BREAKAWAY ANCHOR DETAILS
FOR SOIL INSTALLATIONS
(Typical)



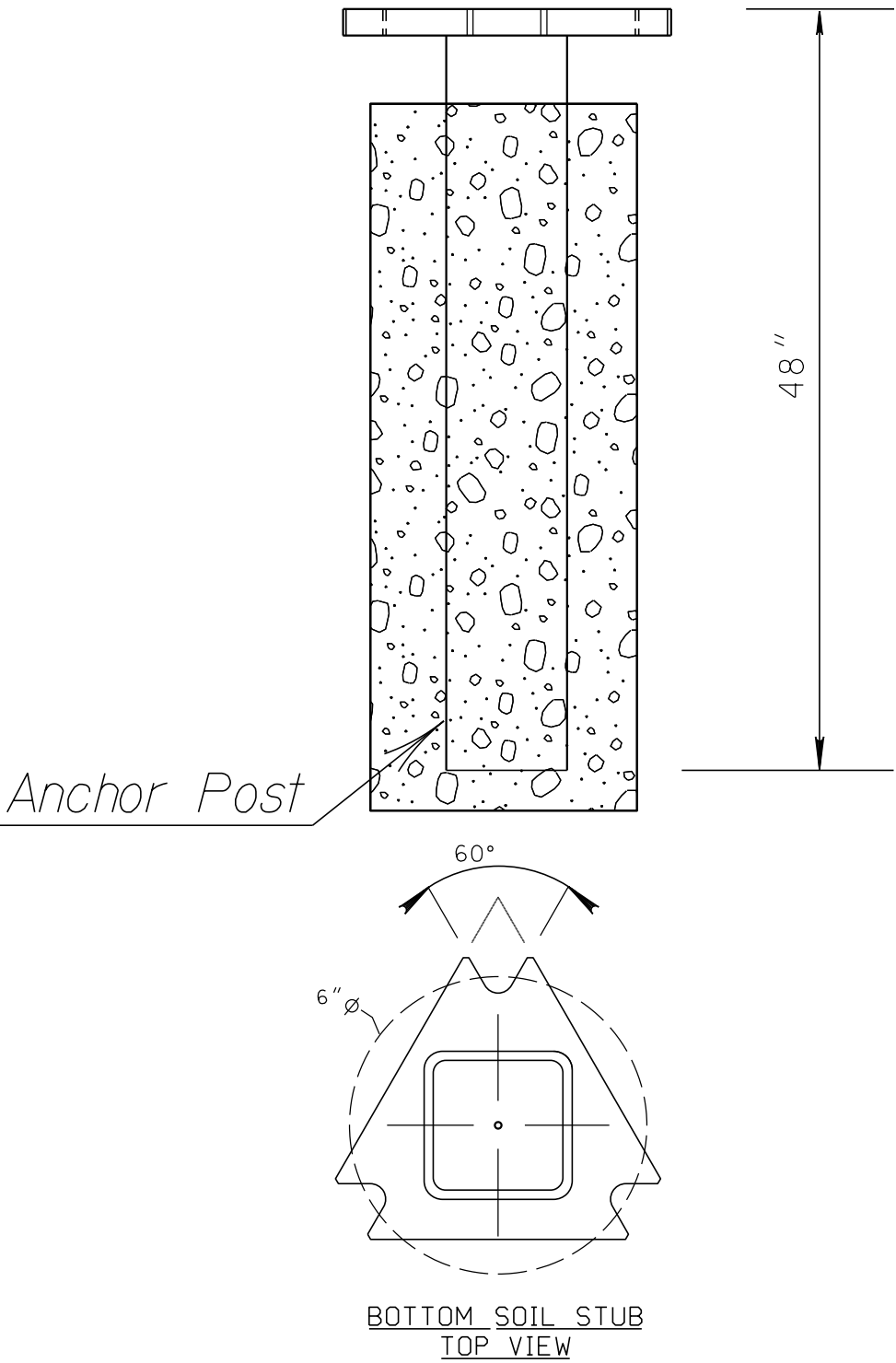
- GENERAL NOTES:
1. Dimensions shown may vary by Manufacturer.
 2. The Contractor will use Manufacturer recommended assembly parts and procedures.
 3. Sign installations must meet NCHRP350 or MASH crashworthy criteria.

SLIP BASE BOTTOM ANCHOR 7 GUAGE
FOR 2 1/2" PERFORATED TUBE POST – CONCRETE
(Typical)

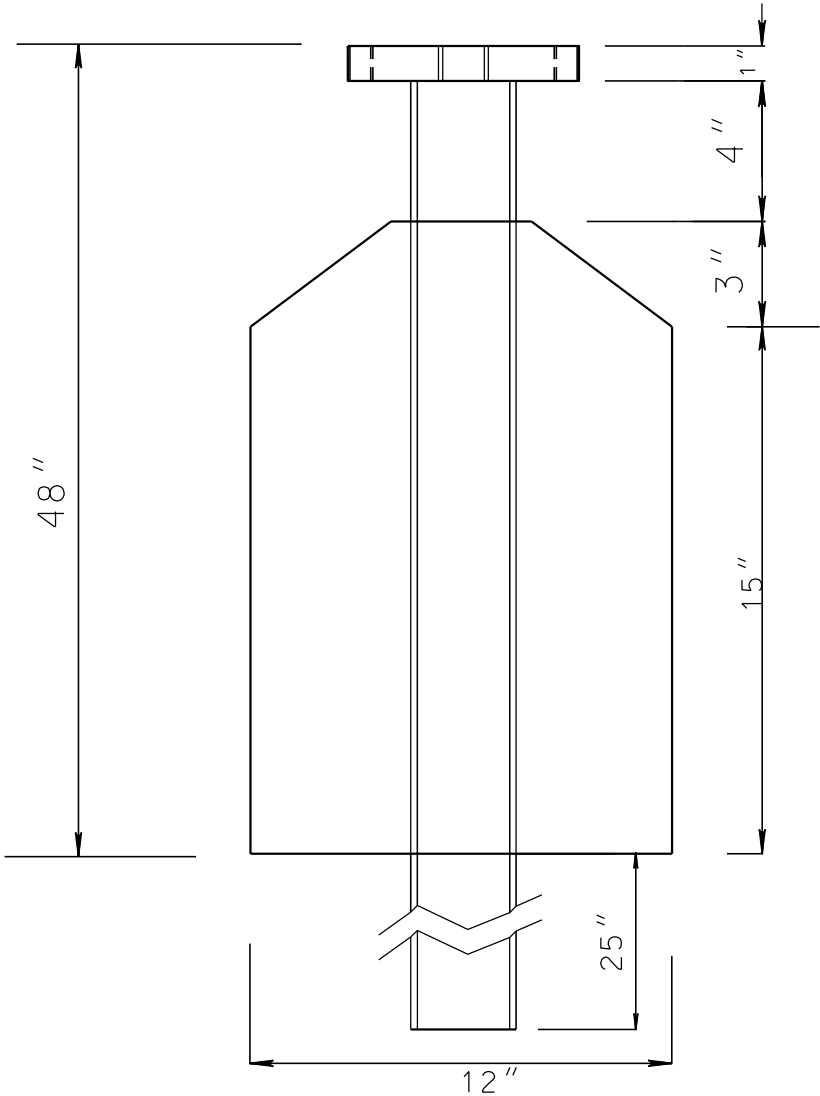


- GENERAL NOTES:**
1. Dimensions shown may vary by Manufacturer.
 2. The Contractor will use Manufacturer recommended assembly parts and procedures.
 3. Sign installations must meet NCHRP350 or MASH crashworthy criteria.

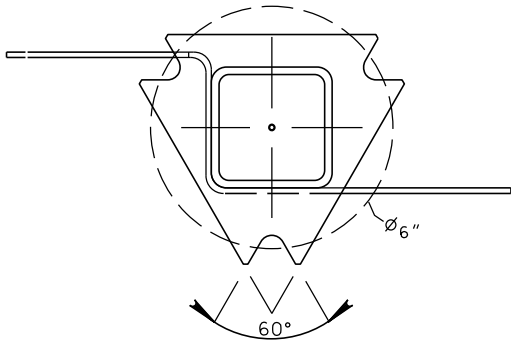
SLIP BASE BOTTOM ANCHOR 7 GUAGE
FOR 2 1/2" PERFORATED TUBE POST – CONCRETE
(Typical)



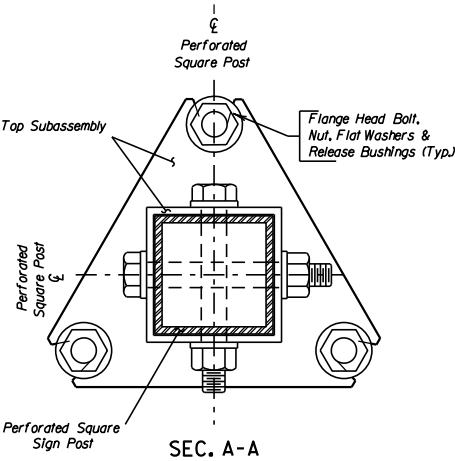
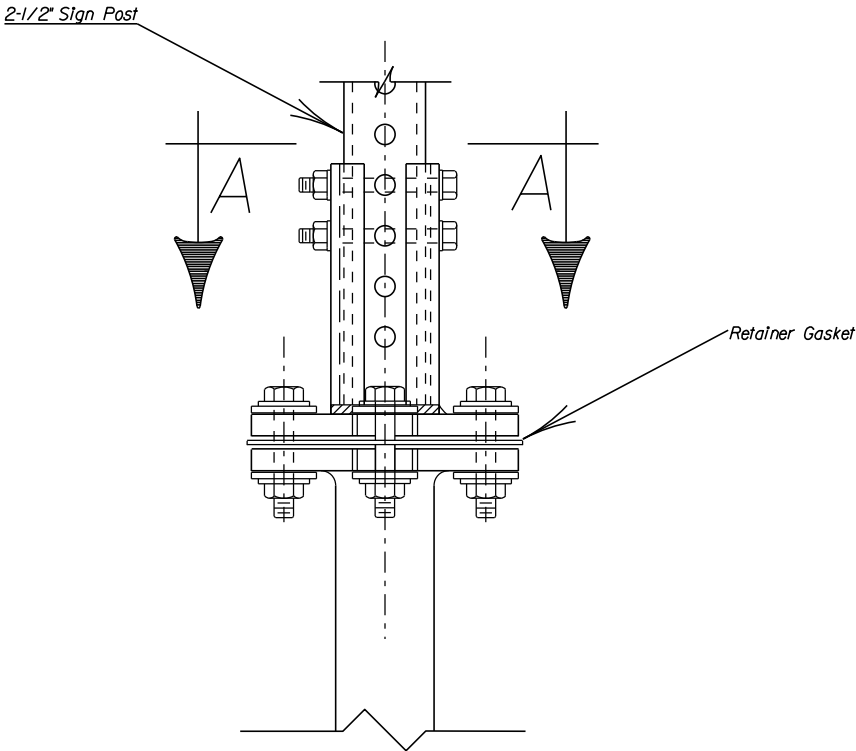
SLIP BASE BOTTOM WINGED ANCHOR
FOR 2 1/2" PERFORATED TUBE POST - SOIL
(Typical)

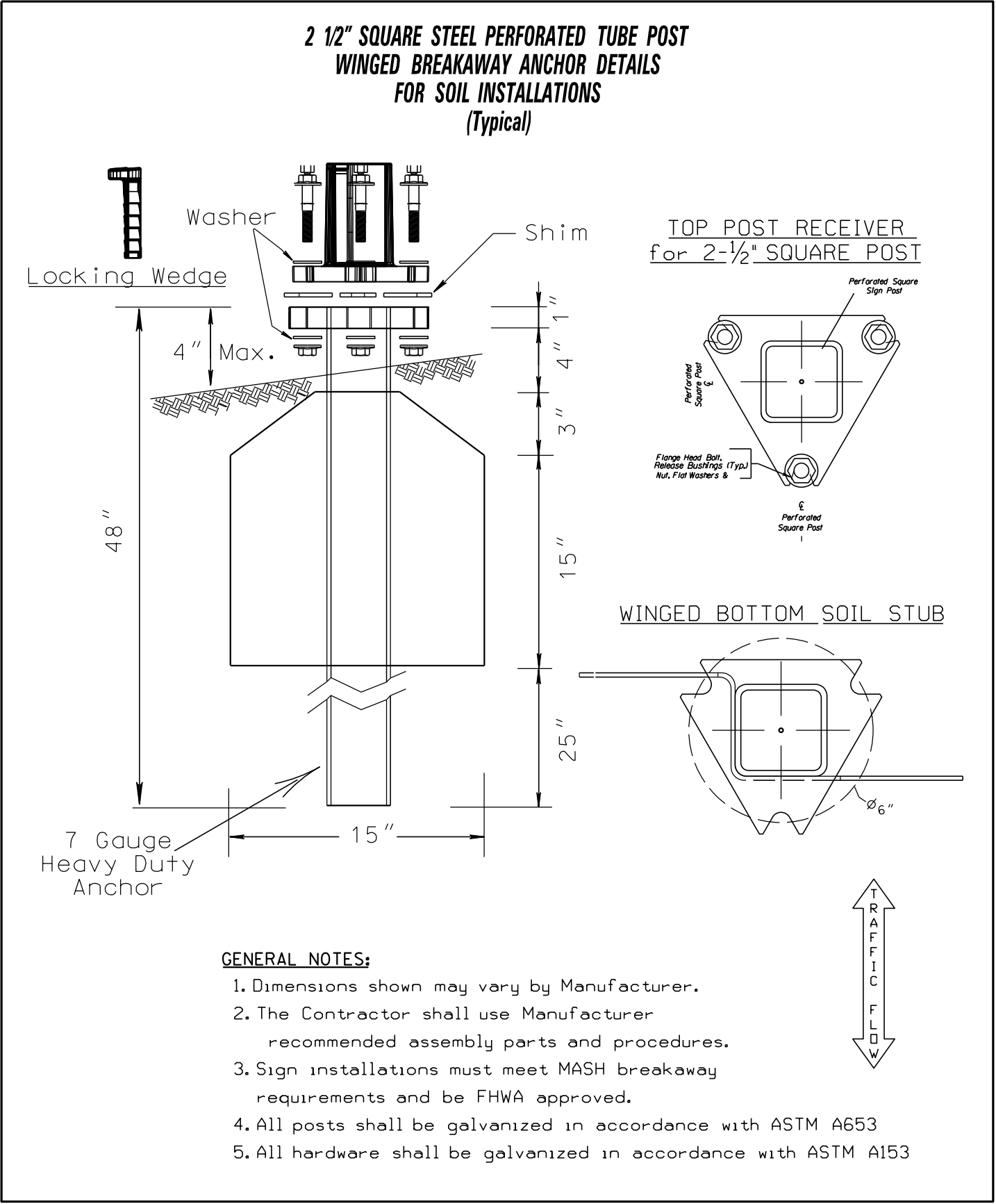


WINGED BOTTOM SOIL STUB

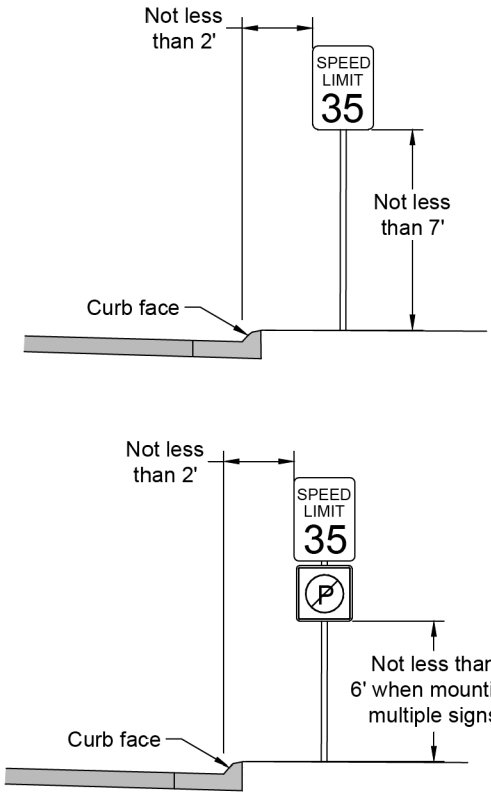


BREAKAWAY SLIP BASE DETAILS
FOR 2 1/2" SQUARE STEEL PERFORATED TUBE
POST CONCRETE FOOTING INSTALLATIONS
(Typical)

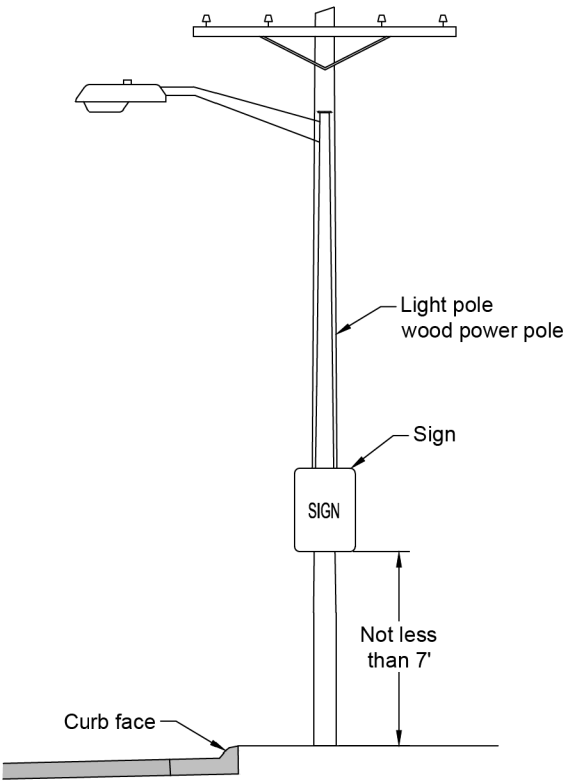




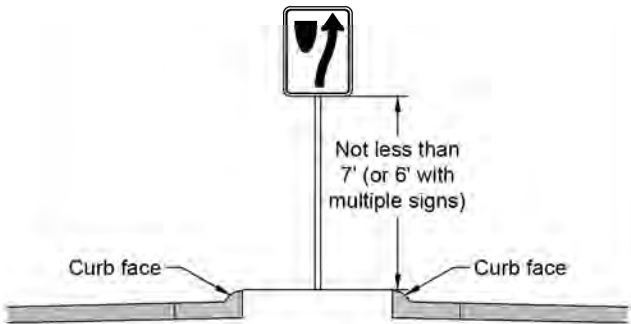
Roadside Signs



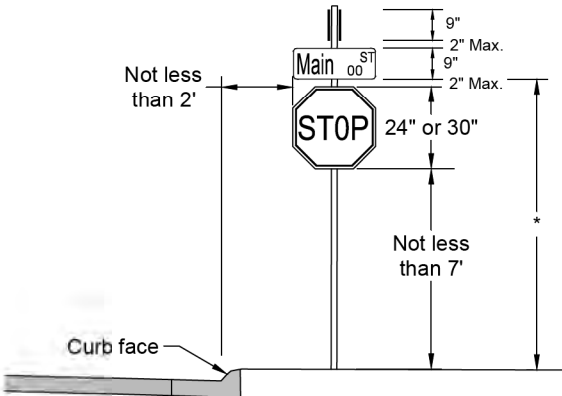
Street Light/Wooden Power Pole Mount



Median Signs



Stop/Street Name Signs



Note: All R7 & R8 series signs with arrows shall be installed at a 45 degree angle to the street.

Revised: November 2017



Heights and Lateral Locations
of Signs for Typical Urban
Installation

Specification
Reference
No. 632

Plate
Number
632.10

Perforated Tube Post
(Telespar Post)

Top of anchor & 2" min. stiffener sleeve 3" max.

12 Ga. 2" sign post

Bolt

Ground surface

4" Min. 5" Max.

Stiffener Sleeve
12 Ga. 18" x 2-1/2"

Anchor
12 Ga. 42" x 2-1/4"

Notes

Bolts and washers used for mounting traffic signs shall be stainless steel. Flat washers shall be Mil.Spec. MS813

Nuts used for mounting traffic signs shall be a Nyloc (self-locking) type.

Signs shall be mounted using a plastic / nylon washer placed between the sign face and the metallic flat washer.

Lag screws used to mount traffic signs to wooden power poles shall be galvanized or stainless steel.

All hardware required for mounting the signs shall be incidental to the cost of installing the signs

Flanged Channel Post
(U-Post)

Traffic flow

Space bar is 5" long

5"

Top post

2#/Ft. channel post

Ground surface

NCHRP Compliant lap splice kit

3#/Ft. channel post base 42" length

Sign Saver Plate
3"x3" punched ribbed aluminum

To be used when mounting signs on channel post

Sign Mounting on
Wooden Power Pole

Wooden pole

SPEED LIMIT
20

5/16" x 3" lag screw

Stainless Steel Band Mounting System

To be used when mounting signs on metallic and fiberglass poles

Stainless steel sign bracket (See detail A)

Sign

Luminaire light pole

3/4" Stainless steel bandit, 15699 or equivalent

3/4" Stainless steel bandit, std. bending C-16189 or equivalent

Bandit DO-21 or equivalent.

Detail A

Page 1 of 2

Revised: November 2013

CITY OF SIOUX FALLS
PUBLIC WORKS
Providing a Better Quality of Life for You!

Sign Mount Specifications

Specification Reference
No. 632

Plate Number
632.20

Mast Arm Sign Mountings
Astro Sign-Brac Band Mount

1

2

3

ITEMDESCRIPTIONPART NO.

1ASTRO SIGN-BRAC, Stellar Series Band Mount for Overhead Street Name SignsAS-0128

2CLAMP KIT, Stellar Series Band MountAS-3004

3SIGN CLAMP, 4" w/ AB-5010 Hardware KitAB-0502

Notes:

1. All assemblies are supplied standard with stainless fasteners and natural aluminum alodine coating. Stainless upgrade to include stainless steel clamp screws.

2. Suggested maximum sign face of 16 sq. ft. per bracket.

3. Please specify options when ordering.

SIGNS 1'-6" to 3'-0" LONG

SIGN LENGTH	TUBE LENGTH	CTC A
1'-6"	16"	12"
2'-0"	22"	18"
2'-6"	28"	24"
3'-0"	34"	30"

Maximum sign height: 48"

SIGNS 3'-6" to 8'-0" LONG

SIGN LENGTH	TUBE LENGTH	CTC A	B
3'-6"	40"	36"	12"
4'-0"	46"	42"	14"
4'-6"	52"	48"	16"
5'-0"	58"	54"	18"
5'-6"	64"	60"	20"
6'-0"	70"	66"	22"
6'-6"	76"	72"	24"
7'-0"	82"	78"	26"
7'-6"	88"	84"	28"
8'-0"	94"	90"	30"

Maximum sign height: 24"

SIGNS 8' to 10' LONG

SIGN LENGTH	TUBE LENGTH	CTC A	B	C
8'-6"	100"	96"	19"	20"
9'-0"	106"	102"	20"	22"
9'-6"	112"	108"	21"	24"
10'-0"	118"	114"	22"	26"

Maximum sign height: 16"

OPTIONS

CTC DIMENSIONS (see charts)

BAND LENGTH:
29", 36", 42", 48", or 56"

STAINLESS UPGRADE

PAINT

3"

A = CTC

3"

Tube Length

Sign Length

3"

B

B

B

A = CTC

Tube Length

Sign Length

3"

B

B

C

B

B

A = CTC

Tube Length

Sign Length

Page 2 of 2

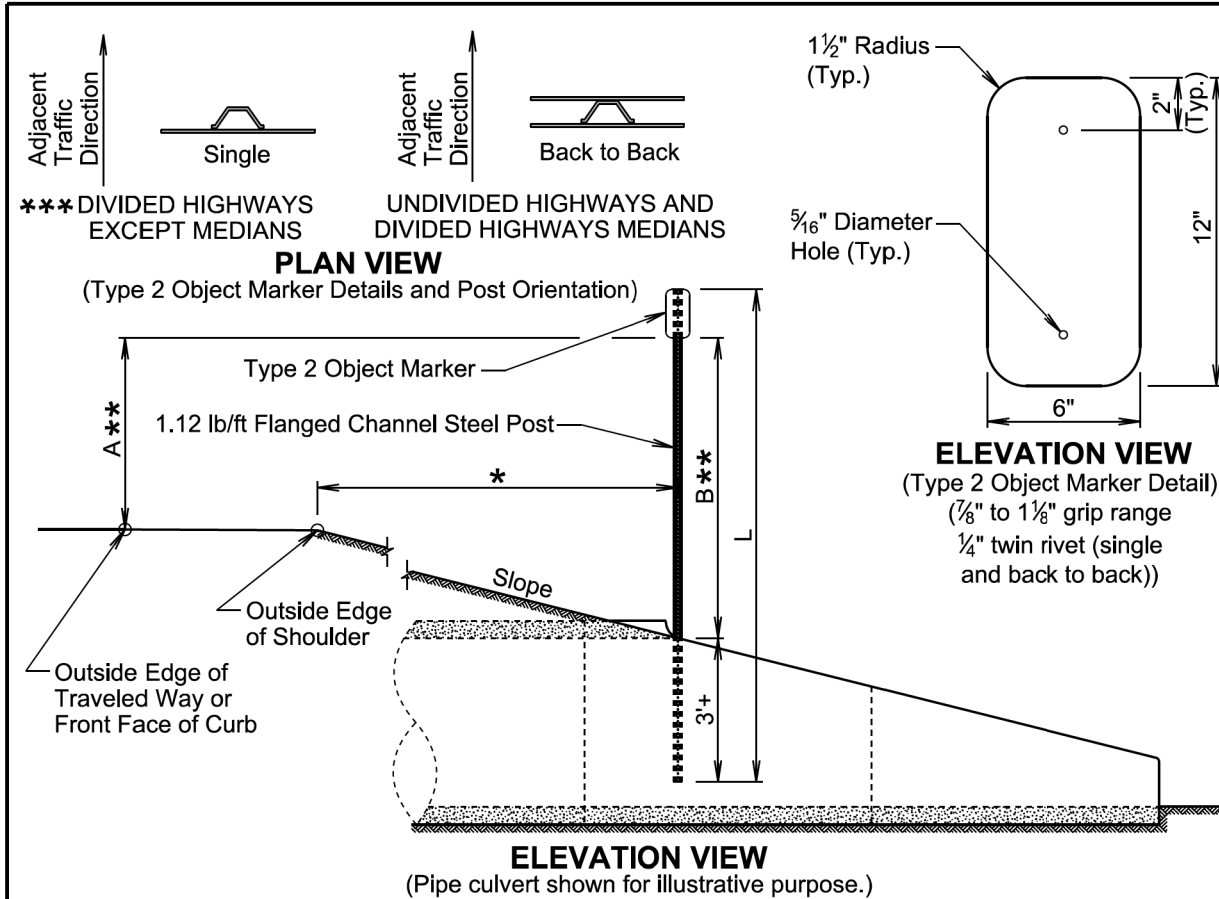
Revised: July 2008

CITY OF SIOUX FALLS
PUBLIC WORKS
Providing a Better Quality of Life for You!

Sign Mount Specifications

Specification Reference
No. 632

Plate Number
632.20



TYPE 2 OBJECT MARKER POST LENGTHS										
OFFSET (*)		1'	2'	3'	4'	5'	6'	7'	8'	Greater Than 8
		POST LENGTH (L)								
SLOPE	3:1	8'-6"	8'-9"	9'-3"	9'-6"	9'-9"	10'-3"	10'-6"	10'-9"	8'-0"
	4:1	8'-6"	8'-9"	9'-0"	9'-3"	9'-9"	9'-9"	10'-0"	10'-3"	8'-0"
	5:1	8'-3"	8'-6"	8'-9"	9'-0"	9'-3"	9'-3"	9'-6"	9'-9"	8'-0"
	6:1	8'-3"	8'-6"	8'-9"	8'-9"	9'-0"	9'-3"	9'-3"	9'-6"	8'-0"

GENERAL NOTES:

*** The type 2 object marker may be installed back to back when specified in the plans.

Post Length L was calculated based on a shoulder width of 6 feet at a crosslope of 4 percent and L was rounded up to the nearest 3 inches.

**** Dimension A is 4 feet when the Offset * is 8 feet and less. Dimension B is 4 feet when Offset * is greater than 8 feet.**

The type 2 object marker and the 1.12 lb/ft flanged channel steel post will be in conformance with Specifications Section 982.2 J.

Payment for the type 2 object marker will be in conformance with Specification Section 632.5 B.

December 23, 2019

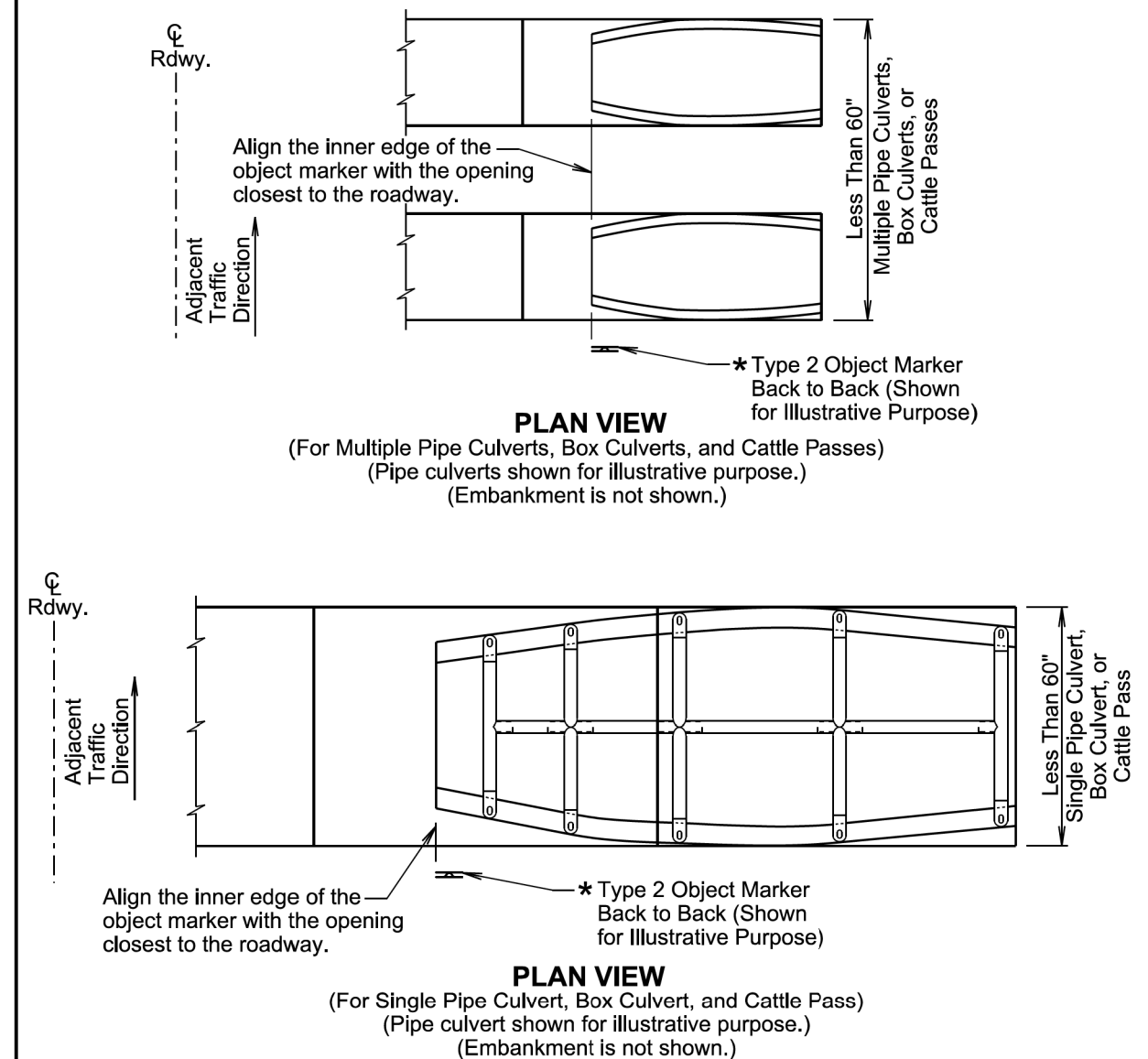
Published Date: 2026

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TYPE 2 OBJECT MARKER (DIRECT DRIVE)

PLATE NUMBER
632.01

Sheet 1 of 1



GENERAL NOTES:

This standard plate will be used in conjunction with standard plate 632.01.

* The type 2 object markers will be installed at the locations shown above. The type 2 object markers, single faced or back to back, will be as specified in the plans.

December 23, 2019

Published Date: 2026

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**TYPE 2 OBJECT MARKER AT PIPE
CULVERTS, BOX CULVERTS, AND CATTLE PASSES
(Less than 60" Overall Width)**

PLATE NUMBER
632.03

Sheet 1 of 1

* Type 2 Object Marker Back to Back (Shown for Illustrative Purpose)

* Type 2 Object Marker Back to Back (Shown for Illustrative Purpose)

PLAN VIEW
(For Multiple Pipe Culverts, Box Culverts, and Cattle Passes)
(Pipe culverts shown for illustrative purpose.)
(Embankment is not shown.)

PLAN VIEW
(For Single Pipe Culvert, Box Culvert, and Cattle Pass)
(Box culvert shown for illustrative purpose.)
(Embankment is not shown.)

GENERAL NOTES:

This standard plate will be used in conjunction with standard plate 632.01.

* The type 2 object markers will be installed at the locations shown above. The type 2 object markers, single faced or back to back, will be as specified in the plans.

December 23, 2019

Published Date: 2026	SD DOT	TYPE 2 OBJECT MARKER AT PIPE CULVERTS, BOX CULVERTS, AND CATTLE PASSES (60" and Greater Overall Width)	PLATE NUMBER 632.04
			Sheet 1 of 1

PLAN VIEW
(Examples of stub height clearance checks)

ELEVATION VIEW

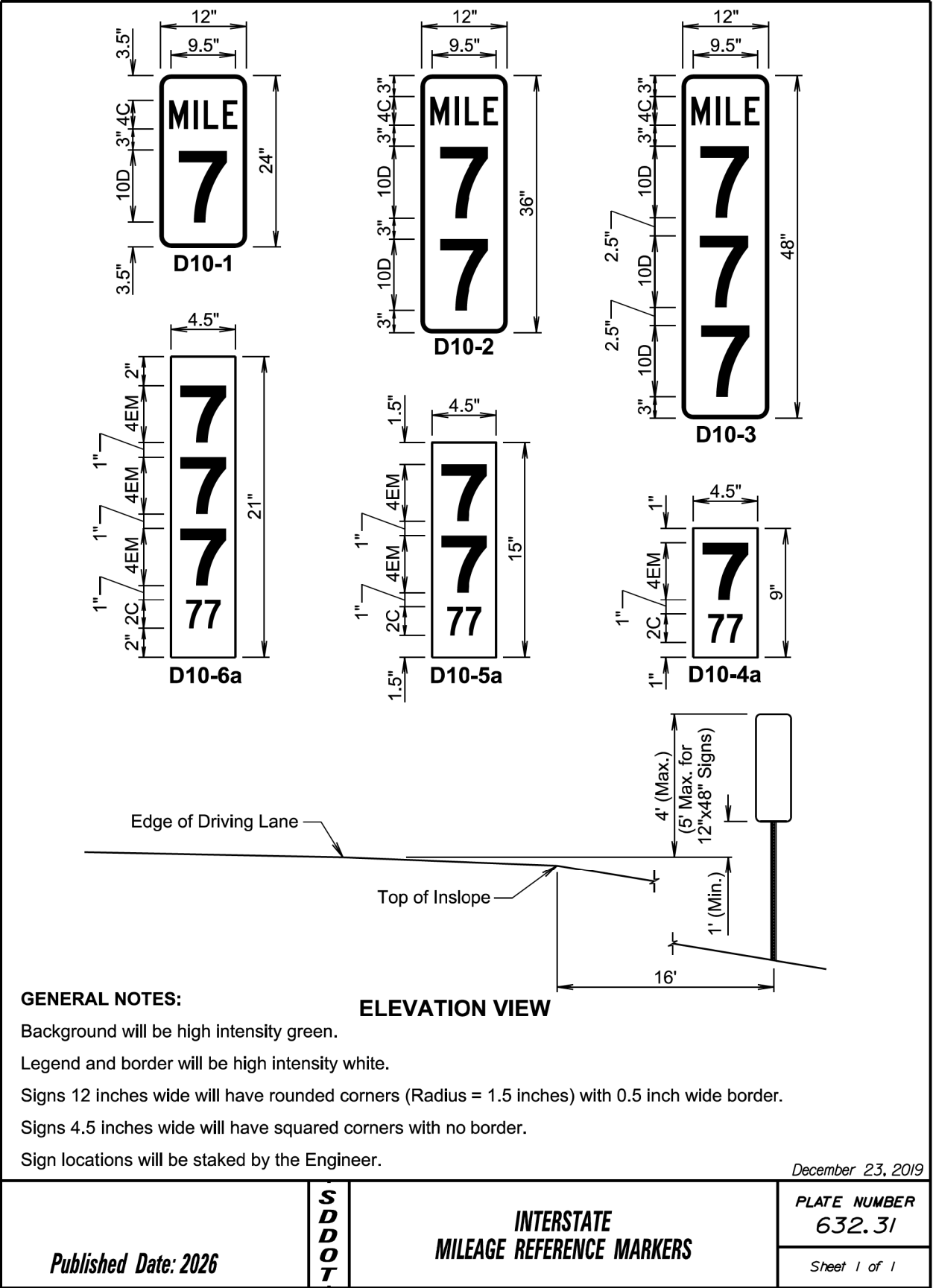
GENERAL NOTES:

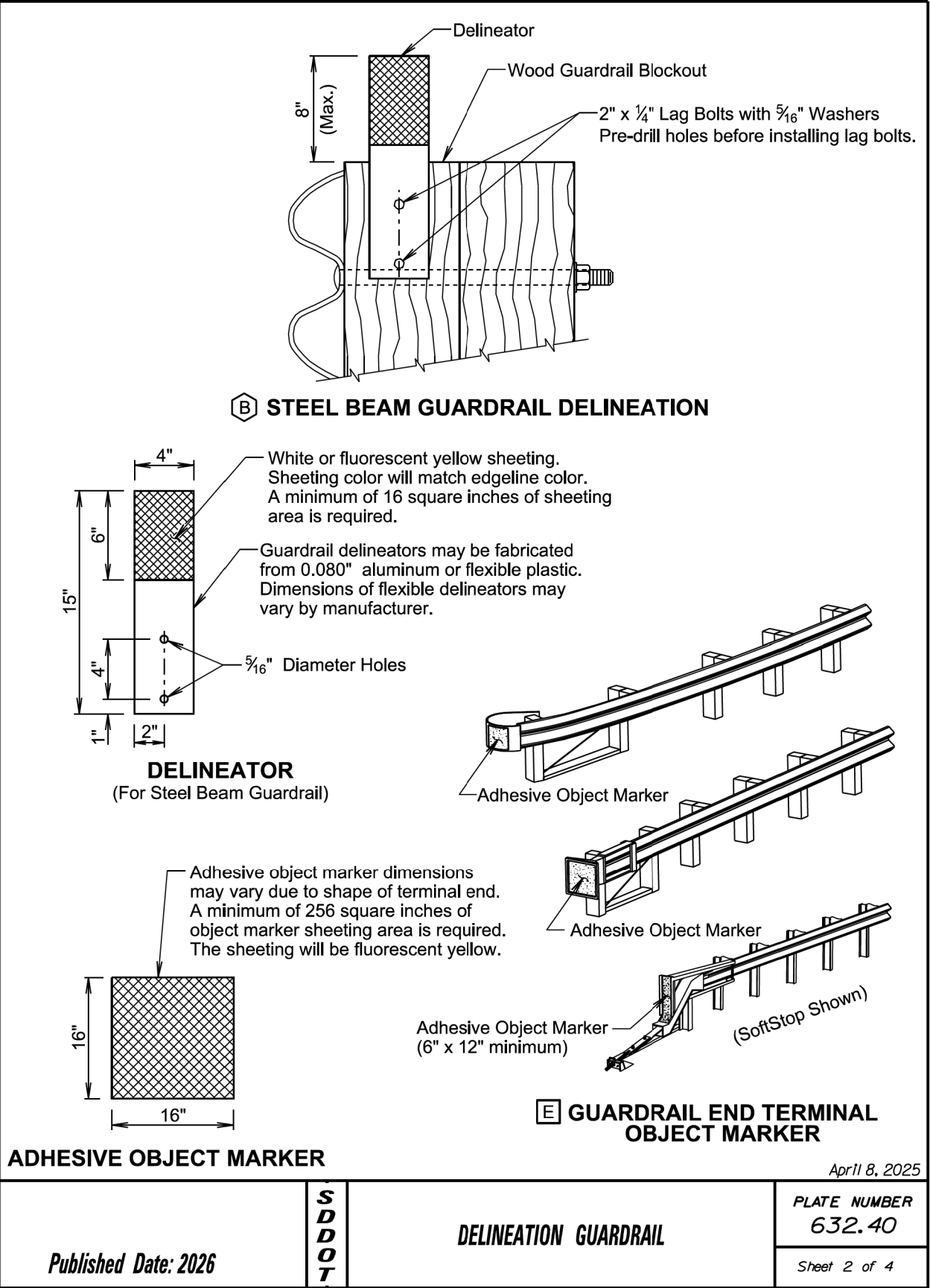
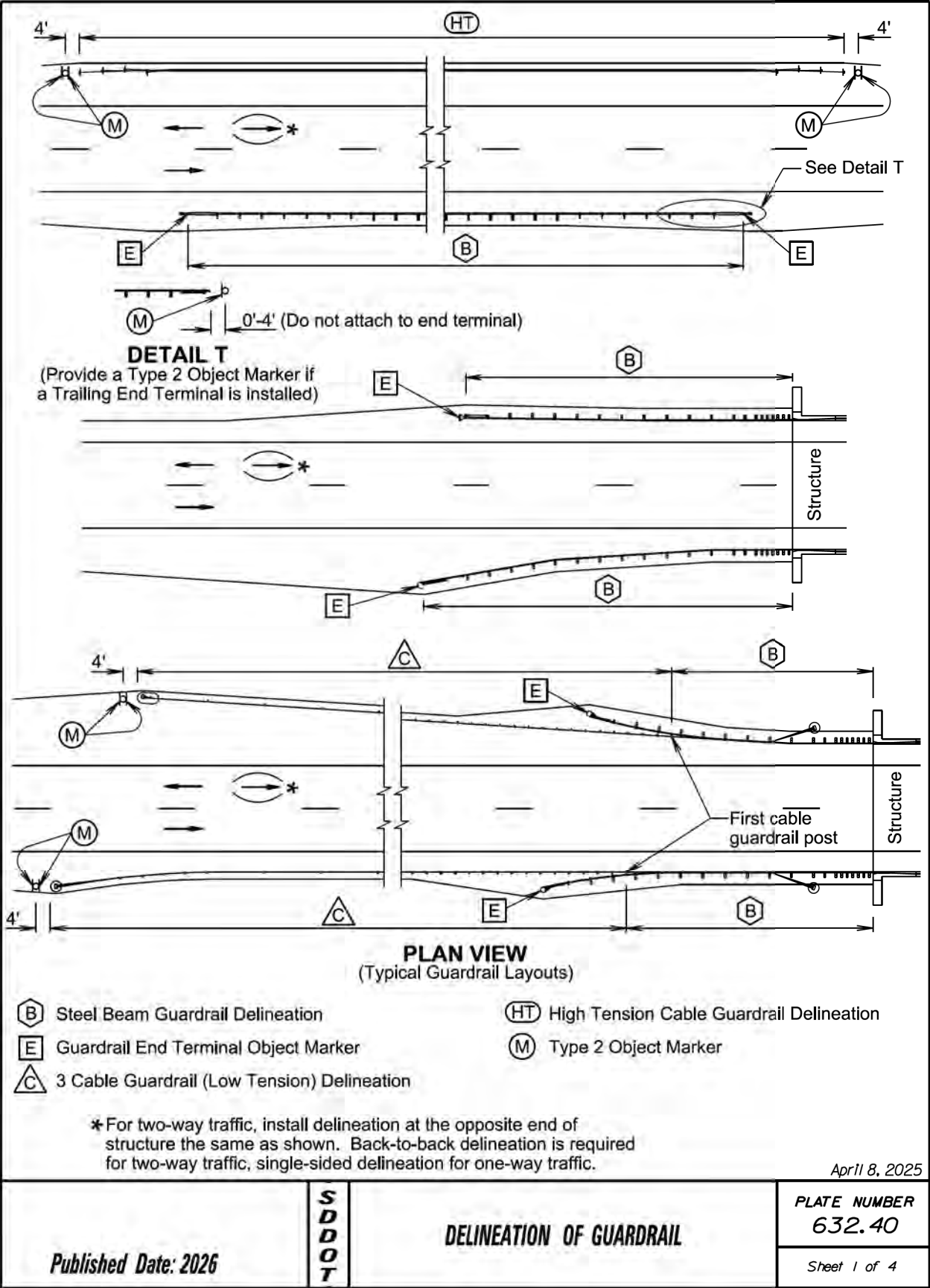
The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

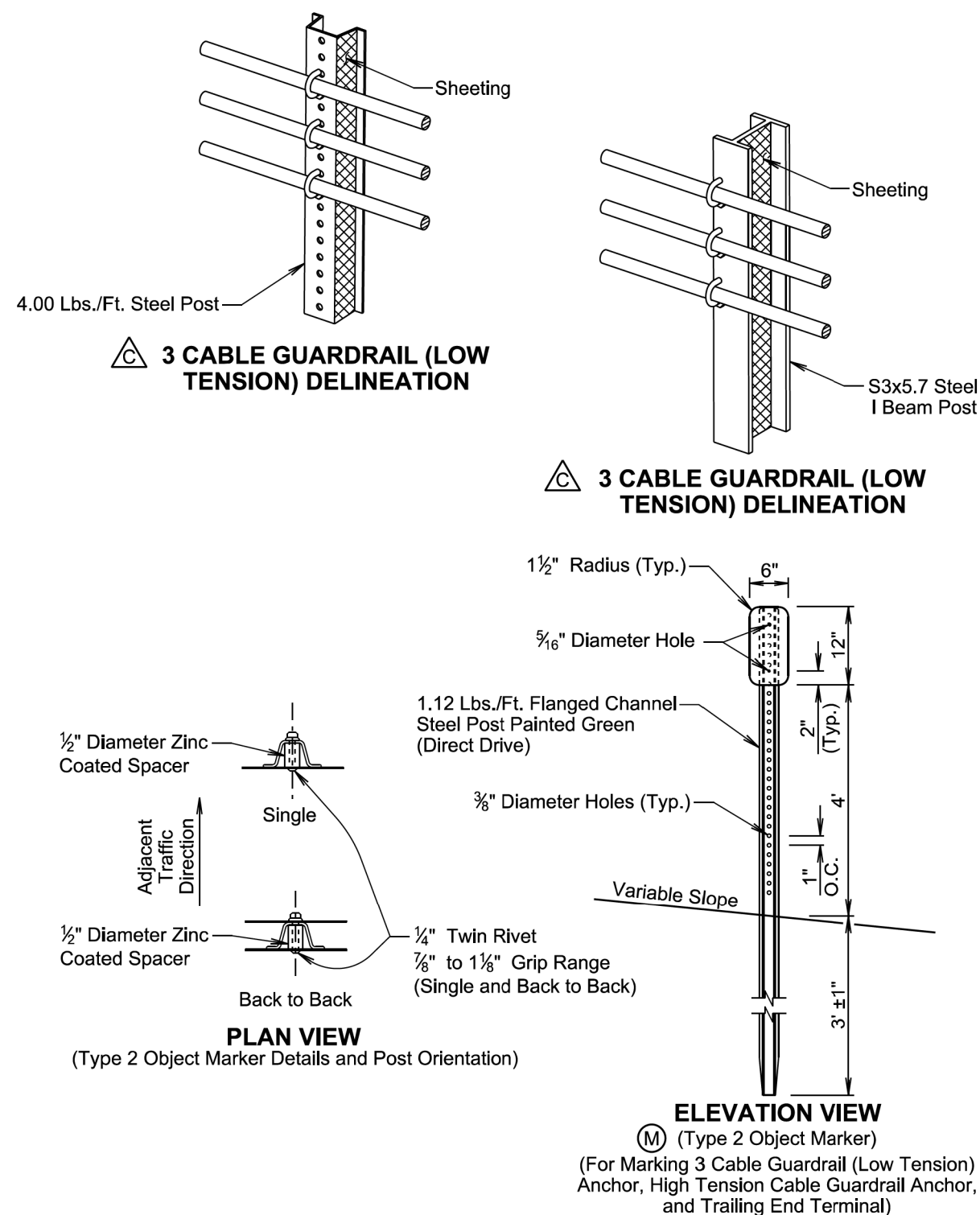
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

January 22, 2021

Published Date: 2026	SD DOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 632.18
			Sheet 1 of 1







April 8, 2025

April 8, 2025

Published Date: 2026

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DELINEATION OF GUARDRAIL

PLATE NUMBER
632.40

Sheet 3 of 4

GENERAL NOTES:

The delineation of high tension cable guardrail will be reflective sheeting placed back to back on every third post cap or cable spacer. Maximum spacing of delineation will not exceed 35 feet. The sheeting will be type XI in conformance with ASTM D4956. The color of the reflective sheeting will be the same as the nearest pavement marking.

The delineators for steel beam guardrail and sheeting on 3 cable guardrail (low tension) posts will be covered with a minimum of 16 square inches of reflective sheeting. The reflective sheeting will be type XI in conformance with ASTM D4956. Along two-way roadways the sheeting will be on both sides of the delineators and guardrail posts and will be white in color. For one-way roadways the sheeting will only be required on the side facing traffic and the color will be the same as the nearest pavement marking, yellow on the left side of the roadway and white on the right side.

When steel beam guardrail is attached to a bridge the first delineator will be attached to the post nearest the bridge.

At bridges with guardrail less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object marker. The spacing between the delineators will be approximately one third of the length of the guardrail.

At bridges with guardrail 200 feet and greater in length, including bridges that have steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

Steel beam guardrail that is not attached to a bridge and is less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object markers. The spacing between the delineators will be approximately one third of the length of the guardrail.

Steel beam guardrail that is not attached to a bridge and is 200 feet and greater in length, including steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

All costs for furnishing and installing single or back to back guardrail delineation on 3 cable guardrail and steel beam guardrail will be included in the contract unit price per each for "Guardrail Delineator".

All costs for furnishing and installing the reflective sheeting on the cable spacers or post caps for the high tension cable guardrail will be incidental to the respective high tension cable guardrail contract item.

An adhesive object marker will be placed on the end of the W beam guardrail or MGS end terminal. The adhesive object marker dimensions may vary due to the shape of the terminal end. A minimum of 256 square inches of object marker reflective sheeting area is required on end terminals with sufficient surface area. Other end terminals (SoftStop) will require an adhesive object marker with a minimum size of 6" x 12". The reflective sheeting will be fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the adhesive object marker will be incidental to various contract items.

A type 2 object marker will be placed such that the edges of the type 2 object marker and the 3 cable guardrail (low tension) anchor, high tension cable guardrail anchor, or the trailing end terminal that are nearest to the roadway will be installed in line with the same lateral offset from the traveled way at the location as noted on sheet 1 of this standard plate. The type 2 object marker (6" x 12") will have fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the type 2 object marker including the steel post, 6" x 12" reflective panel, and hardware will be included in the contract unit price per each for "Type 2 Object Marker" for single-sided and "Type 2 Object Marker Back to Back" for back to back type 2 object markers.

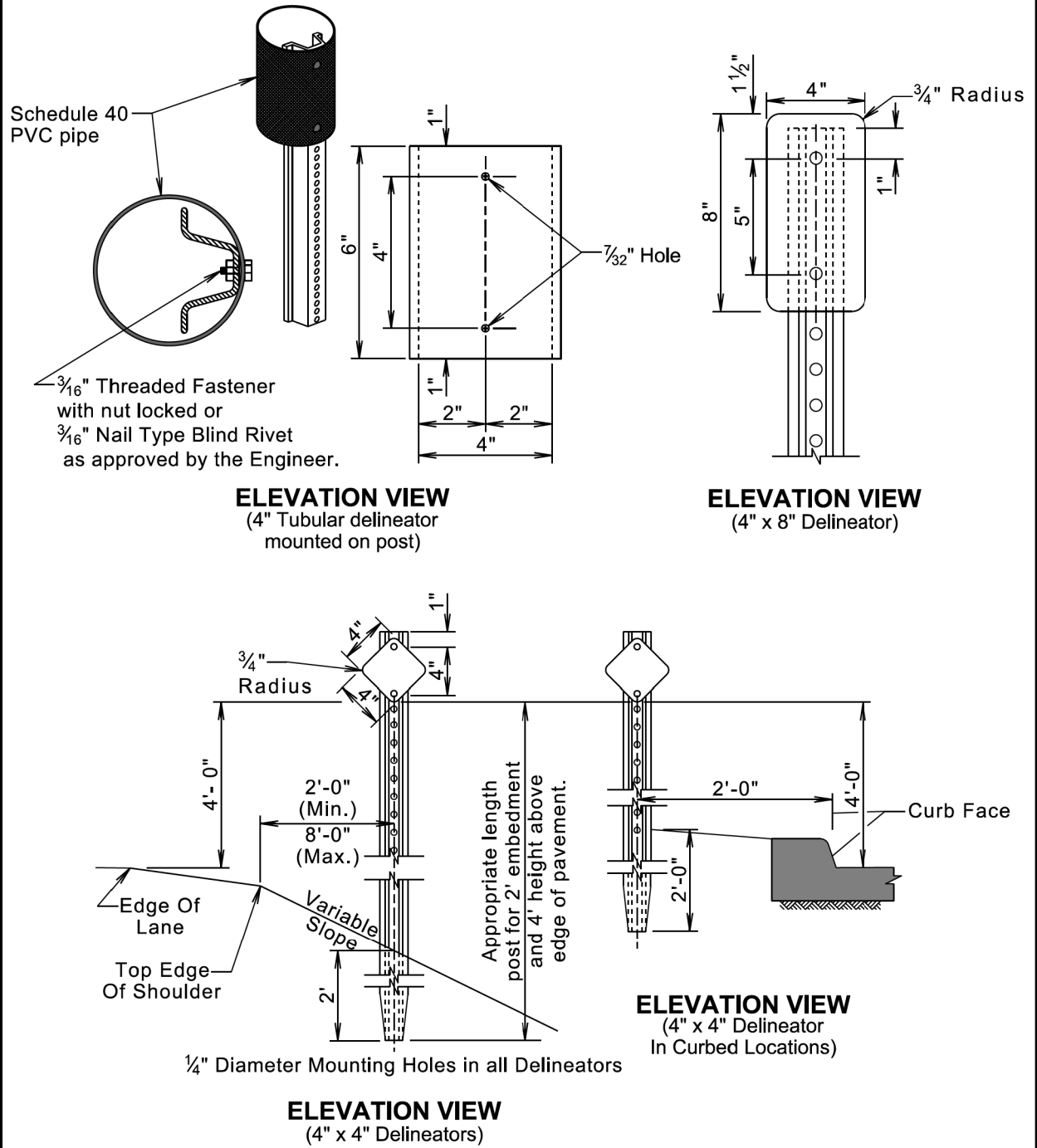
Published Date: 2026

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DELINEATION OF GUARDRAIL

PLATE NUMBER
632.40

Sheet 4 of 4

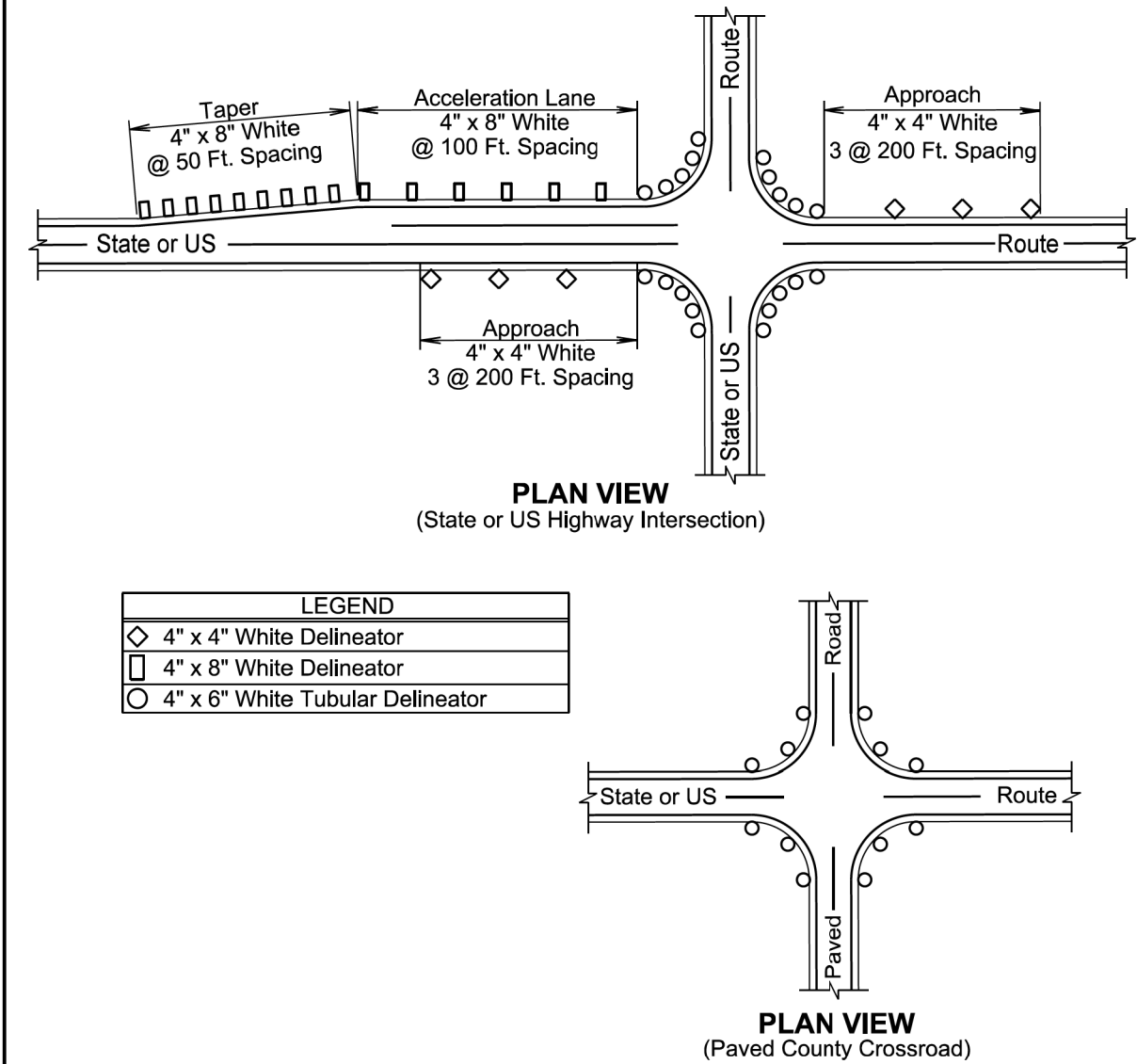


GENERAL NOTES:

Back-to-back delineation is required for two-way traffic, single-sided delineation for one-way traffic.

March 31, 2024

Published Date: 2026	SD DOT	DELINEATOR INSTALLATION DETAIL	PLATE NUMBER 632.42
			Sheet 1 of 1



GENERAL NOTES:

At all intersections with State or US highways and paved county roads:

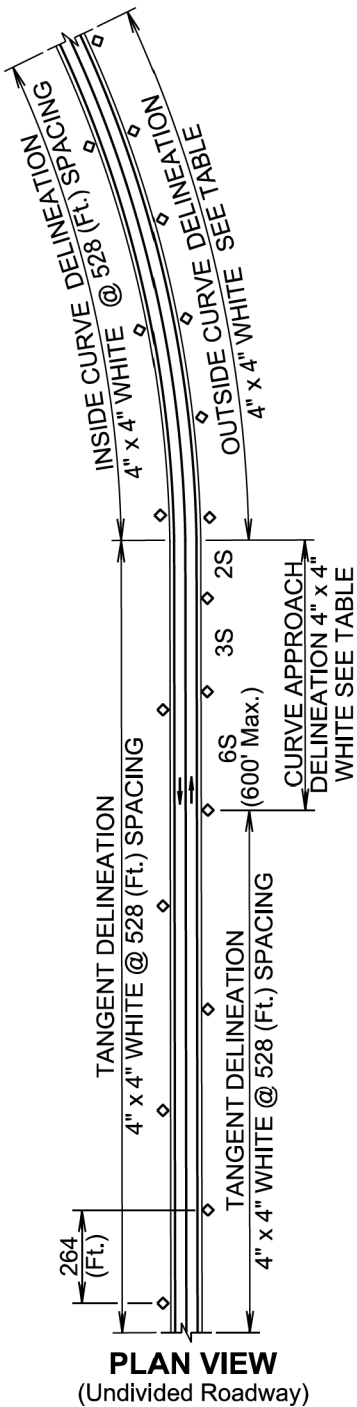
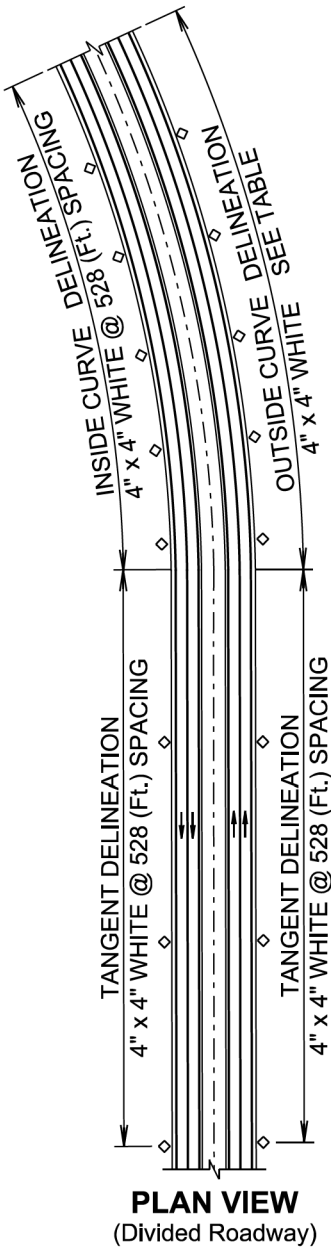
For radii greater than 100 feet, place 5 tubular white delineators on equally spaced posts around the turning radius.

For radii greater than 50 feet up to 100 feet, place 4 tubular white delineators on equally spaced posts around the turning radius.

For radii of 50 feet or less, place 3 tubular white delineators on equally spaced posts around the turning radius.

November 19, 2020

Published Date: 2026	SD DOT	DELINEATOR AT INTERSECTIONS	PLATE NUMBER 632.44
			Sheet 1 of 1



GENERAL NOTES:

Delineators will be located from 2 to 8 feet outside of the outer edge of shoulder. When a roadside barrier or other obstruction intrudes into the space between the pavement edge and the extension of the line of delineators, the delineators should be in line with the barrier or in line with the innermost edge of the obstruction.

When normal spacing is interrupted by driveways, crossroads, or approaches, delineators falling within such areas may be moved in either direction a distance not exceeding one-quarter of the standard spacing. Delineators still falling within such areas should be eliminated.

The spacing for specific radii may be interpolated from the table. The minimum spacing should be 20 feet. The spacing on curves should not exceed 300 feet. In advance of or beyond a curve, and proceeding away from the end of the curve, the spacing of the first delineator is 2S, the second 3S, and the third 6S, but not to exceed 300 feet. S refers to the delineator spacing for specific radii computed from the formula $S = 3\sqrt{R - 50}$. The distances for S shown in the table were rounded to the nearest 5 feet.

Curve approach delineation is not required if curve delineation spacing exceeds 100 ft.

Back-to-back delineation is required for two-way traffic, single-sided delineation for one-way traffic.

DELINEATOR SPACING OUTSIDE CURVE				
Radius of Curve (Ft.)	Curve Delineator Spacing (Ft.)	Curve Approach Spacing (Ft.)		
		A	B	C
50	20	40	65	125
115	25	50	75	150
150	30	60	90	180
180	35	70	110	215
250	40	85	125	250
300	45	95	140	285
400	55	110	170	300
500	65	125	190	300
600	70	140	210	300
700	75	150	230	300
800	80	165	245	300
900	85	175	260	300
1000	90	185	275	300

Published Date: 2026

SD
DOT

DELINEATOR INSTALLATION SPACING

PLATE NUMBER
632.46

Sheet 1 of 2

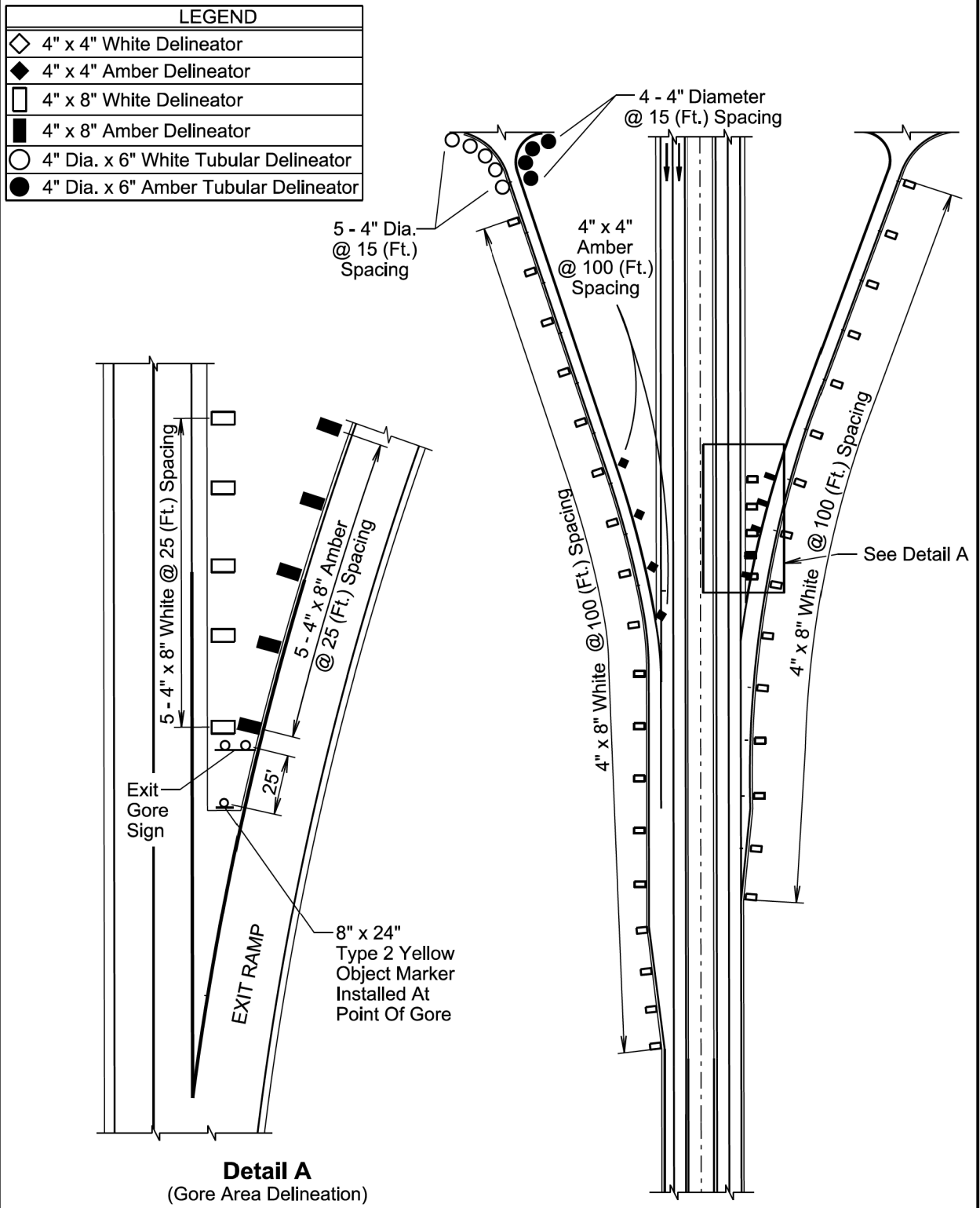
Published Date: 2026

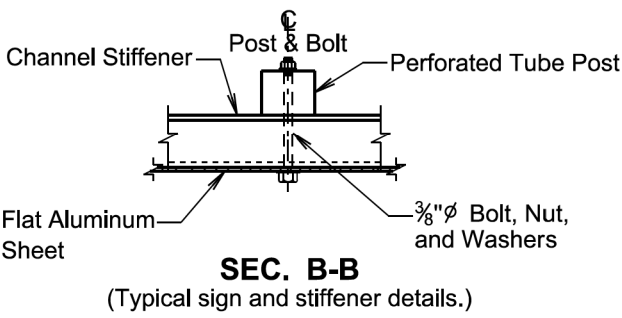
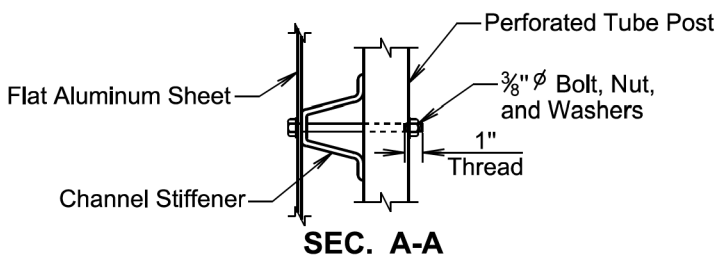
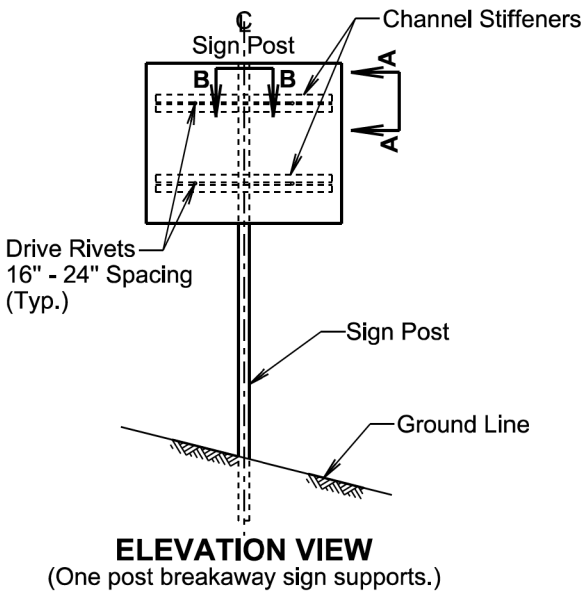
SD
DOT

DELINEATOR INSTALLATION SPACING

PLATE NUMBER
632.46

Sheet 2 of 2

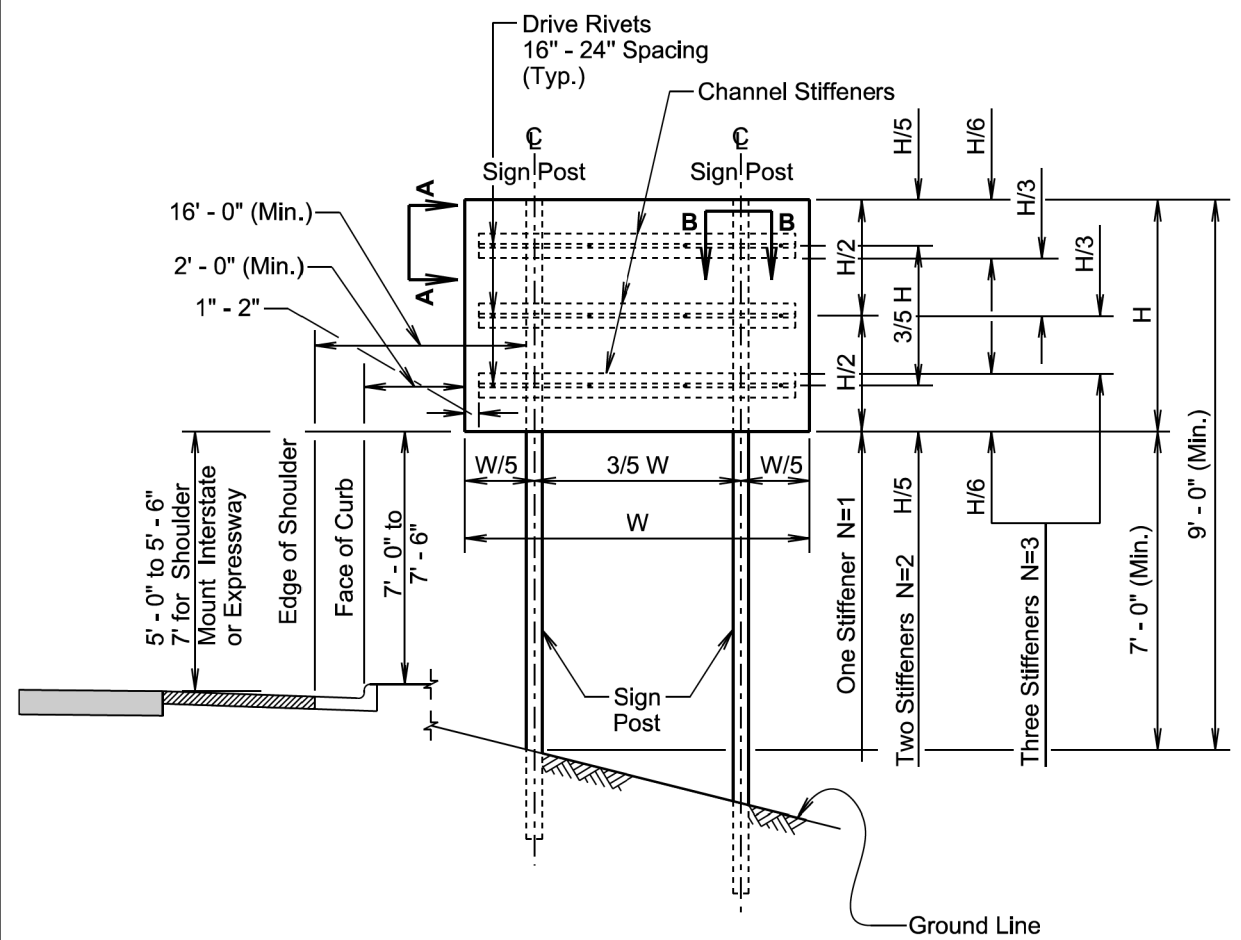




Ø A plastic washer, as recommended by the sheeting manufacturer, will be installed between the sign face and the metal washer shown.

November 19, 2020

Published Date: 2026	SD DOT	SIGN STIFFENER DETAILS	PLATE NUMBER 632.60
			Sheet 1 of 2



TWO POST BREAKAWAY SIGN SUPPORTS

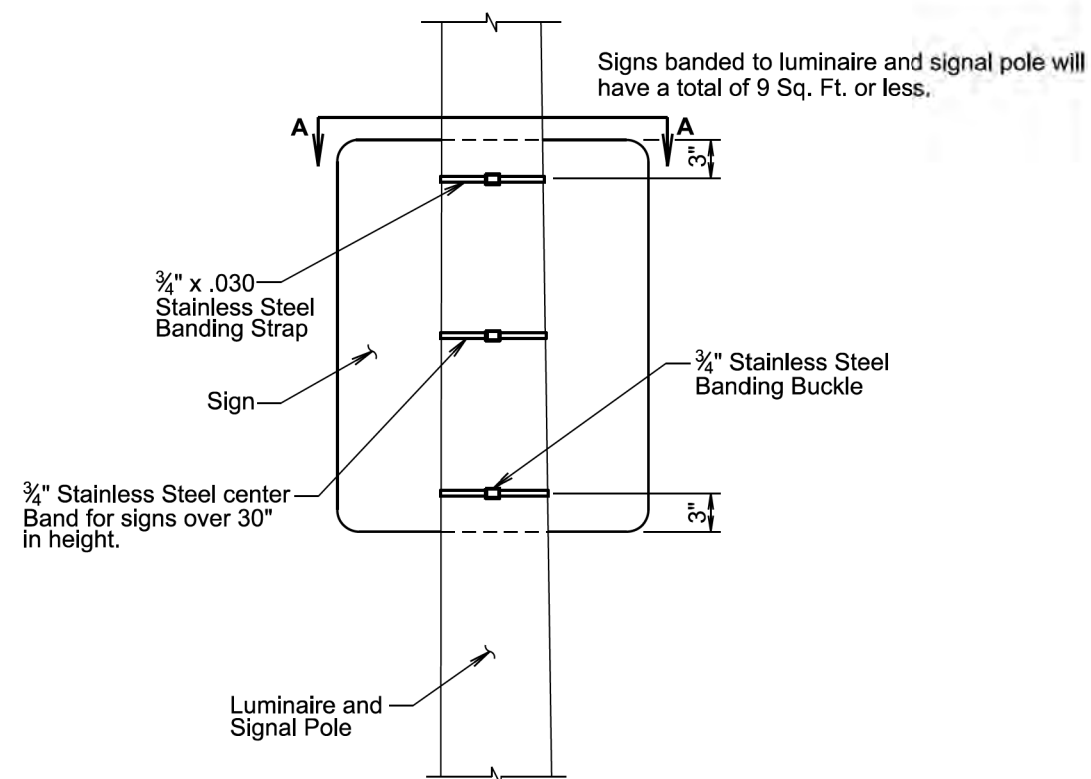
GENERAL NOTES:

The number of stiffeners used (N) will be as follows:
If $H \leq 2' - 0''$ then $N = 1$
if $2' - 0'' < H \leq 8' - 0''$ then $N = 2$
if $8' - 0'' < H \leq 15' - 0''$ then $N = 3$
where H is the vertical dimension of the sign.

A minimum of two bolts will be required to fasten the sign to each post.

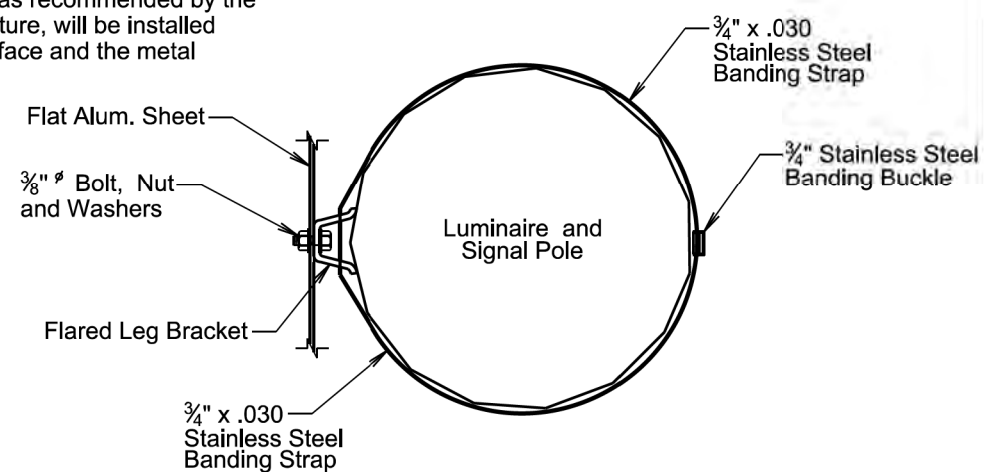
November 19, 2020

Published Date: 2026	SD DOT	SIGN STIFFENER DETAILS	PLATE NUMBER 632.60
			Sheet 2 of 2



Back View

Ø A plastic washer, as recommended by the sheeting manufacture, will be installed between the sign face and the metal washer shown.



View A - A

November 19, 2020

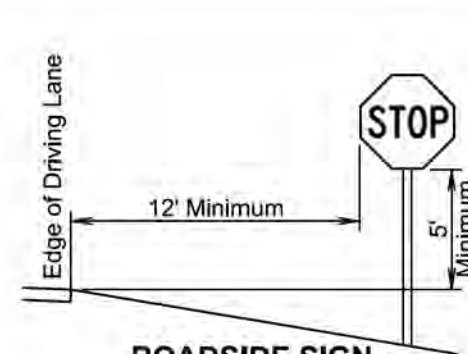
Published Date: 2026

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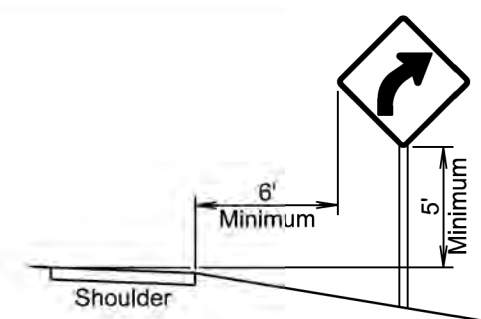
**BANDING SIGN TO
LUMINAIRE AND SIGNAL POLE**

PLATE NUMBER
632.80

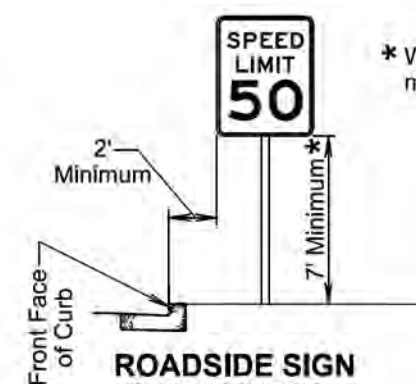
Sheet 1 of 1



ROADSIDE SIGN IN RURAL AREA

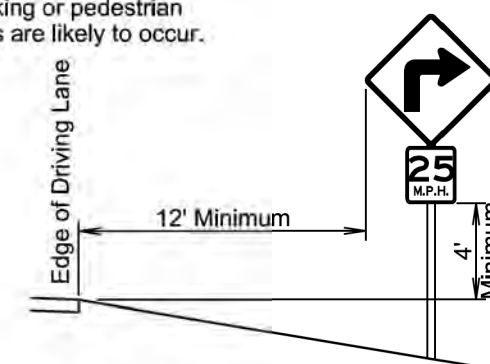


**ROADSIDE SIGN
IN RURAL AREA**
(If shoulder width is greater than 6 foot)

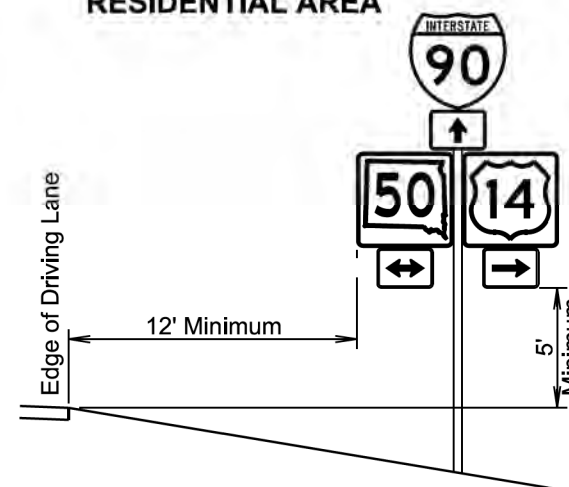


**ROADSIDE SIGN
IN BUSINESS,
COMMERCIAL, OR
RESIDENTIAL AREA**

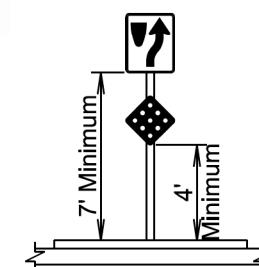
* Where parking or pedestrian movements are likely to occur.



**WARNING SIGN ADVISORY
SPEED PLAQUE IN RURAL AREA**



ROADSIDE SIGN IN RURAL AREA



SIGN ON NOSE OF MEDIAN

April 8, 2025

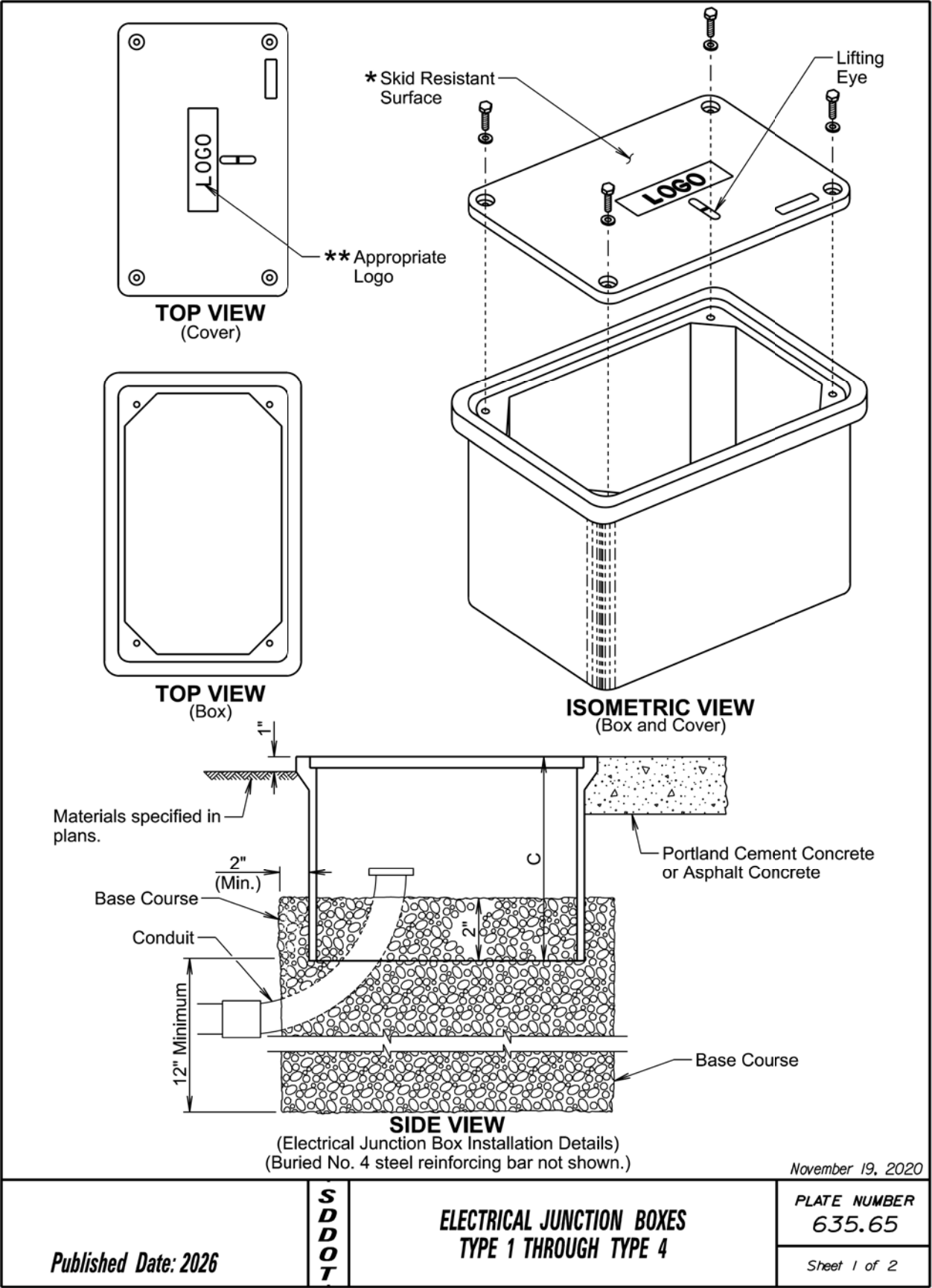
Published Date: 2026

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OFFSETS FOR SIGN INSTALLATION

PLATE NUMBER
632.90

Sheet 1 of 1



ELECTRICAL JUNCTION BOX			
TYPE	DESCRIPTION	APPROXIMATE COVER SIZE	MINIMUM DEPTH (C)
1	Open Bottom with Gasket	11"x18"	18"
2	Open Bottom with Gasket	13"x24"	18"
3	Open Bottom with Gasket	17"x30"	18"
3A	Open Bottom with Gasket	24"x36"***	24"
4	Open Bottom with Gasket	30"x48"***	24"

GENERAL NOTES:

The cover will be gasketed with a minimum of two stainless steel bolts and washers.

The cover will have a lifting eye.

* The surface of the cover will have a minimum wet and dry coefficient of friction value of 0.5 as determined by ASTM F609.

** The cover of the junction box will have the appropriate logo in one inch size letters and will be recessed. When the junction box contains cables or wires for a traffic signal then the logo will be "Signal". When the junction box contains lighting conductors then the logo will be "Lighting".

*** Two piece covers will be used for Type 3A and Type 4 junction boxes.

The electrical junction boxes will comply with the American National Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) 77 2007 Specification for Underground Enclosure Integrity. The loading requirement for all electrical junction boxes and covers will be Tier 22 of ANSI/SCTE 77 2007.

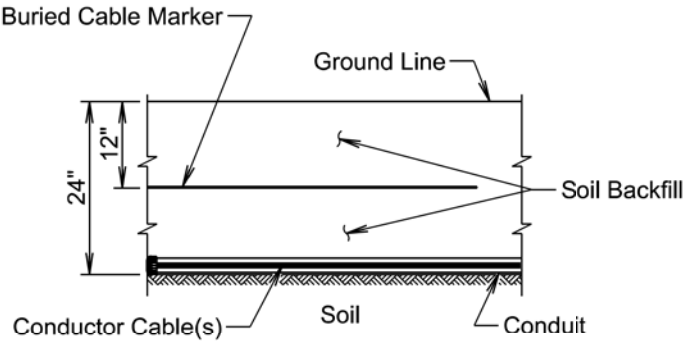
The electrical junction boxes will be UL listed.

For junction boxes located outside of pavement, a No. 4 steel reinforcing bar with a minimum length of 18" will be buried adjacent to the long side of the junction box. All costs associated with furnishing and placing the steel reinforcing bar will be incidental to the contract unit price per each for "Type _ Electrical Junction Box".

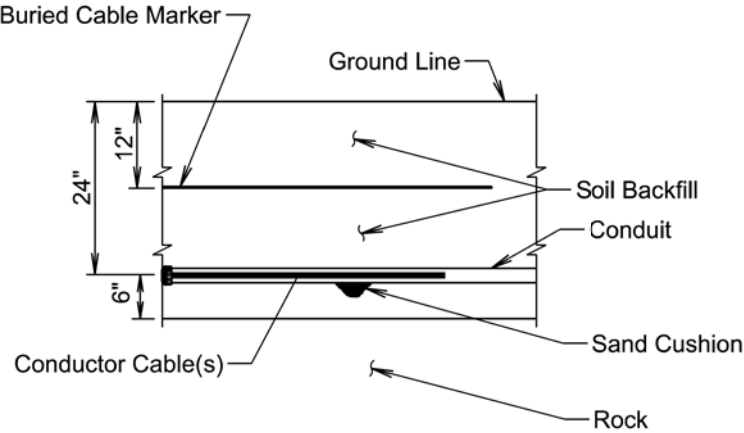
November 19, 2020

Published Date: 2026	SD DOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 2 of 2

	PROJECT	SHEET	TOTAL SHEETS
	EM 0292(88)73 IM 2292(104)0	S112	S112
Plotting Date: 7/1/2025	Revised Date: 06/16/2025		Initials: JJB



SECTION VIEW



SECTION VIEW

GENERAL NOTE:

The Buried Cable Marker will be plastic, approximately 6" wide, and will be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker will have a life expectancy approximately equal to that of the conductor(s) beneath it. A phrase indicating the presence of a buried electric circuit below will be printed in a contrasting color on the cable marker. The Buried Cable Marker will be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker will be incidental to the contract unit price per foot for the bid item used for the electrical conductor.

November 19, 2022

<i>Published Date: 2026</i>		<i>CONDUIT INSTALLATION</i>	PLATE NUMBER 635.76
			Sheet 1 of 1