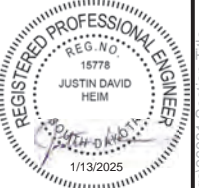


SECTION S: PERMANENT SIGNING PLANS

FOR BIDDING PURPOSES ONLY

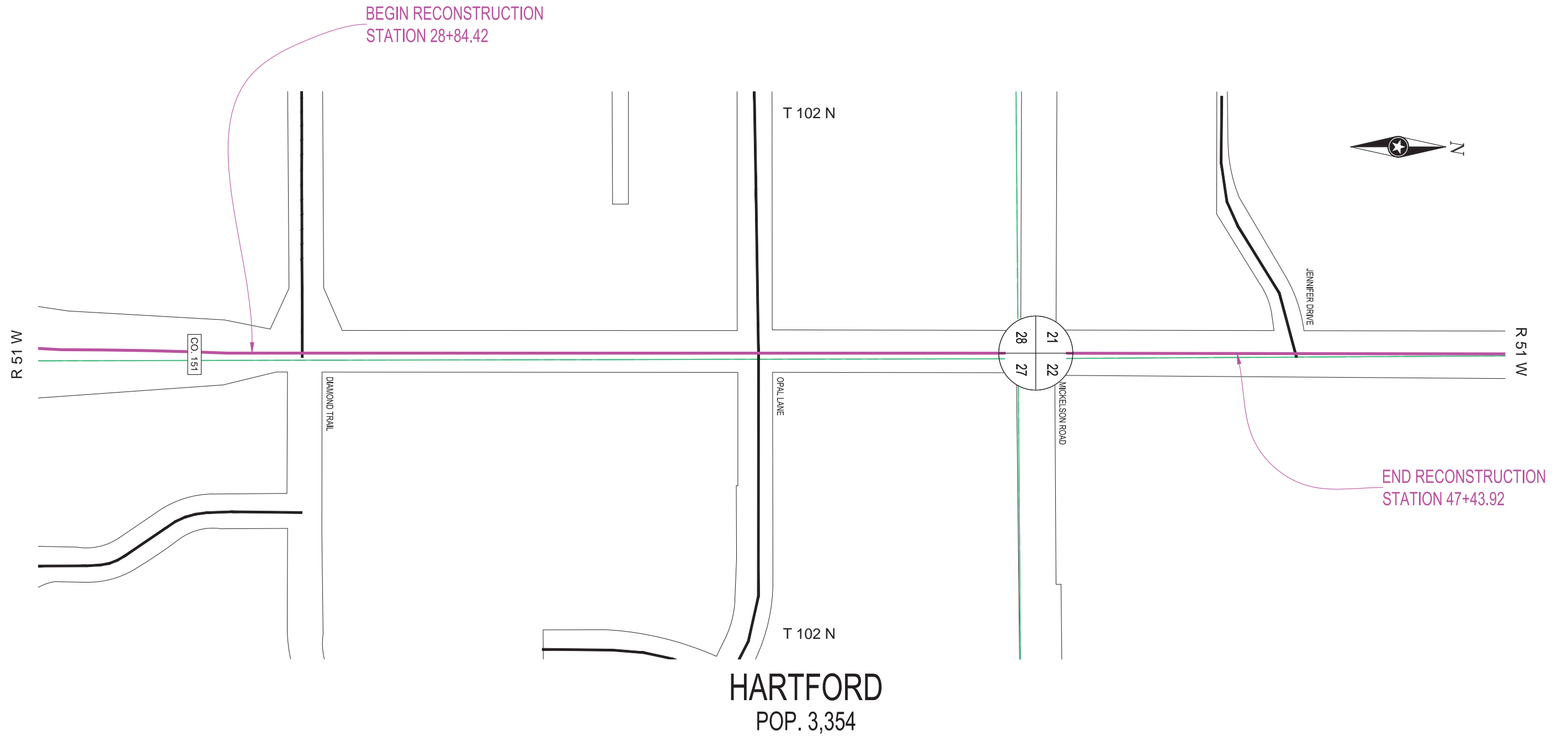
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 6353(00)	S1	S10

Plotting Date: 1/7/2025



INDEX OF SHEETS

- S1 Section Title Sheet
- S2-S3 Estimated Quantities and Notes
- S4 Permanent Signing Table
- S5-S7 Permanent Signing Plan
- S8-S10 Standard Plates





SECTION S – ESTIMATE OF QUANTITIES

SBI NBR	SBI DESC	ITEM QTY	UNITS
110E0130	Remove Traffic Sign	18	Each
110E7150	Remove Sign for Reset	3	Each
632E1320	2.0"x2.0" Perforated Tube Post	176.7	Ft
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	187.5	SqFt
632E3500	Reset Sign	3	Each

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 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 resetting the existing signs will be incidental to the contract unit price per each for "Reset Sign" and includes any and all nuts, bolts, fasteners, etc. required to install the salvaged sign on a new post. All quantities for Reset Sign will be per assembly at the contract unit price per each.

New sign posts that salvaged signs are affixed to will be measured and paid per the "2.0"x2.0" Perforated Tube Post" bid item.

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".

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 retro reflectivity, 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.

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.

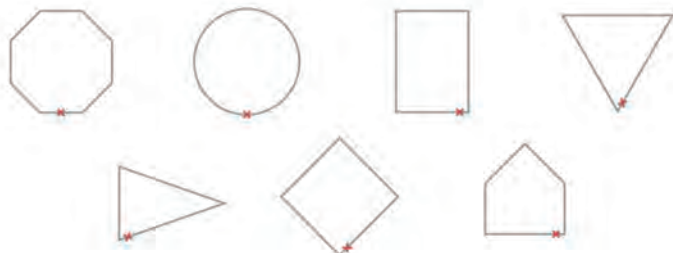
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 6353(00)	S3	S10

Plotting Date: 1/7/2025



DIGITALLY PRINTED SIGNS, continued



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.

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".

TABLE OF PERMANENT SIGNING

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT P 6353(00)	SHEET S4	TOTAL SHEETS S10
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Plotting Date: 1/7/2025



EXISTING STATION	NEW STATION	SIGN						POST			DESCRIPTION
		WIDTH (IN)	HEIGHT (IN)	NUMBER	TRAFFIC DIRECTION	NEW SIGN	SIGN AREA (SF)	NEW POST	LENGTH (FT)	SIZE (INxIN)	
25+85 32' R	26+10 24' R			SALVAGED	NORTHBOUND	NO		YES (X2)	16	2x2	REMOVE HARTFORD POPULATION SIGN FOR RESET AND RESET ON NEW POSTS
		30	30	R1-1	EASTBOUND	YES	6.25				INSTALL NEW STOP SIGN ON NEW POST
	29+05 24' R	48	9	D3-1	NORTH/SOUTHBOUND	YES	6	YES	11.33	2x2	INSTALL NEW 'DIAMOND TRL' STREET SIGN, ONE FACING EACH DIRECTION
		48	9	D3-1	EAST/WESTBOUND	YES	6				INSTALL NEW 'WESTERN AVE' STREET SIGN, ONE FACING EACH DIRECTION
29+08 32' R	29+05 24' R			SALVAGED	NORTHBOUND	NO		YES	7	2x2	REMOVE WESTERN MEADOWS IND. PARK SIGN FOR RESET AND RESET ON NEW POST
		30	30	R1-1	WESTBOUND	YES	6.25				INSTALL NEW STOP SIGN ON NEW POST
	30+05 45' R	48	9	D3-1	NORTH/SOUTHBOUND	YES	6	YES	11.33	2x2	INSTALL NEW 'DIAMOND TRL' STREET SIGN, ONE FACING EACH DIRECTION
		48	9	D3-1	EAST/WESTBOUND	YES	6				INSTALL NEW 'WESTERN AVE' STREET SIGN, ONE FACING EACH DIRECTION
	30+95 41' L	30	30	R3-7	SOUTHBOUND	YES	6.25	YES	9.5	2x2	INSTALL NEW RIGHT LANE MUST TURN RIGHT SIGN ON NEW POST
31+38 22' L	31+39 42' L			SALVAGED	SOUTHBOUND	NO		YES	7	2x2	REMOVE WESTERN MEADOWS IND. PARK SIGN FOR RESET AND RESET ON NEW POST
	37+27 36' R	30	30	R3-7	NORTHBOUND	YES	6.25	YES	9.5	2x2	INSTALL NEW RIGHT LANE MUST TURN RIGHT SIGN ON NEW POST
	37+82 36' R	36	36	R1-5b	NORTHBOUND	YES	9	YES	10	2x2	INSTALL NEW STOP HERE FOR PEDS SIGN ON NEW POST
	38+05 44' L	30	30	R1-1	EASTBOUND	YES	6.25				INSTALL NEW STOP SIGN ON NEW POST
		48	9	D3-1	NORTH/SOUTHBOUND	YES	6	YES	11.33	2x2	INSTALL NEW 'OPAL LN' STREET SIGN, ONE FACING EACH DIRECTION
		48	9	D3-1	EAST/WESTBOUND	YES	6				INSTALL NEW 'WESTERN AVE' STREET SIGN, ONE FACING EACH DIRECTION
	38+54 54' R	30	30	R1-1	WESTBOUND	YES	6.25				INSTALL NEW STOP SIGN ON NEW POST
		48	9	D3-1	NORTH/SOUTHBOUND	YES	6	YES	11.33	2x2	INSTALL NEW 'OPAL LN' STREET SIGN, ONE FACING EACH DIRECTION
		48	9	D3-1	EAST/WESTBOUND	YES	6				INSTALL NEW 'WESTERN AVE' STREET SIGN, ONE FACING EACH DIRECTION
	38+75 41' L	36	36	W11-2	SOUTHBOUND	YES	9	NO			INSTALL NEW PEDESTRIAN SIGN ON RRFB POST
		24	12	W16-7P(L)		YES	2	NO			INSTALL NEW PEDESTRIAN ARROW SIGN ON RRFB POST
	38+76 25' R	36	36	W11-2	NORTHBOUND	YES	9	NO			INSTALL NEW PEDESTRIAN SIGN ON RRFB POST
		24	12	W16-7P(L)		YES	2	NO			INSTALL NEW PEDESTRIAN ARROW SIGN ON RRFB POST
	39+15 42' L	36	36	R1-5b	SOUTHBOUND	YES	9	YES	10	2x2	INSTALL NEW STOP HERE FOR PEDS SIGN ON NEW POST
	39+45 41' L	30	30	R3-7	SOUTHBOUND	YES	6.25	YES	9.5	2x2	INSTALL NEW RIGHT LANE MUST TURN RIGHT SIGN ON NEW POST
	42+54 36' R	30	30	R3-7	NORTHBOUND	YES	6.25	YES	9.5	2x2	INSTALL NEW RIGHT LANE MUST TURN RIGHT SIGN ON NEW POST
	43+38 43' L	30	30	R1-1	EASTBOUND	YES	6.25				INSTALL NEW STOP SIGN ON NEW POST
		48	9	D3-1	NORTH/SOUTHBOUND	YES	6	YES	11.33	2x2	INSTALL NEW 'MICKELSON RD' STREET SIGN, ONE FACING EACH DIRECTION
		48	9	D3-1	EAST/WESTBOUND	YES	6				INSTALL NEW 'WESTERN AVE' STREET SIGN, ONE FACING EACH DIRECTION
	43++88 54' R	30	30	R1-1	WESTBOUND	YES	6.25				INSTALL NEW STOP SIGN ON NEW POST
		48	9	D3-1	NORTH/SOUTHBOUND	YES	6	YES	11.33	2x2	INSTALL NEW 'MICKELSON RD' STREET SIGN, ONE FACING EACH DIRECTION
		48	9	D3-1	EAST/WESTBOUND	YES	6				INSTALL NEW 'WESTERN AVE' STREET SIGN, ONE FACING EACH DIRECTION
	45+06 24' R	24	30	R2-1	NORTHBOUND	YES	5	YES	11.17	2x2	INSTALL NEW SPEED LIMIT AND TRUCK ROUTE SIGNS ON NEW POST
		24	18	R14-1		YES	3				
	45+83 24' L	24	30	R2-1	SOUTHBOUND	YES	5	YES	9.5	2x2	INSTALL NEW SPEED LIMIT SIGN ON NEW POST
						TOTALS	187.5		176.7		

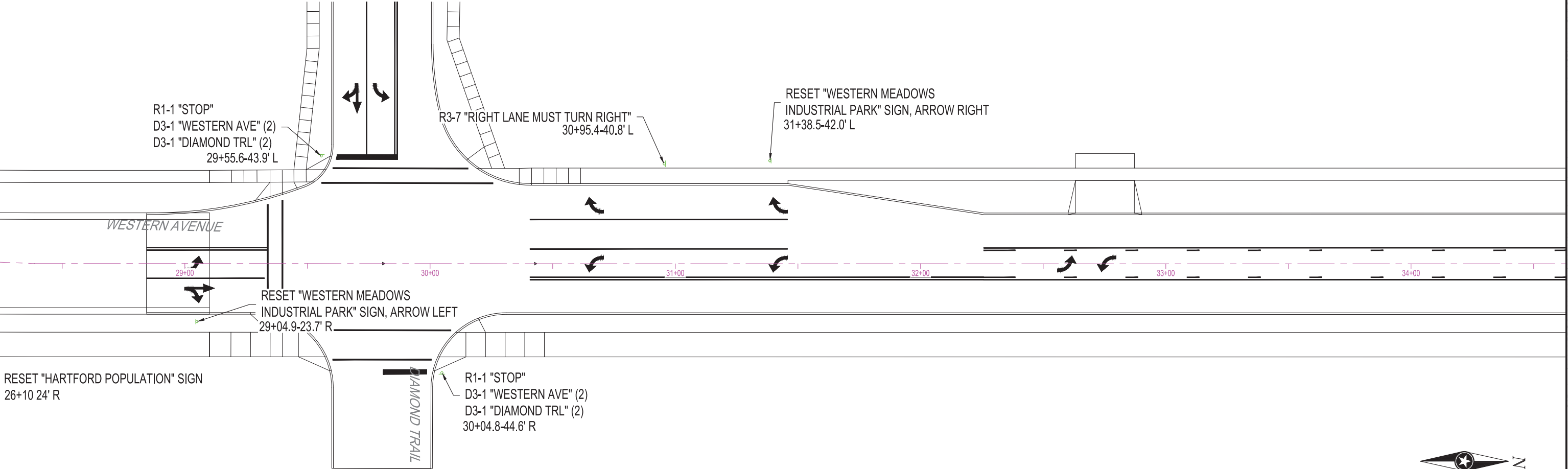
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STATE OF SOUTH DAKOTA	PROJECT P 6353(00)	SHEET S5	TOTAL SHEETS S10
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Plotting Date: 1/7/2025



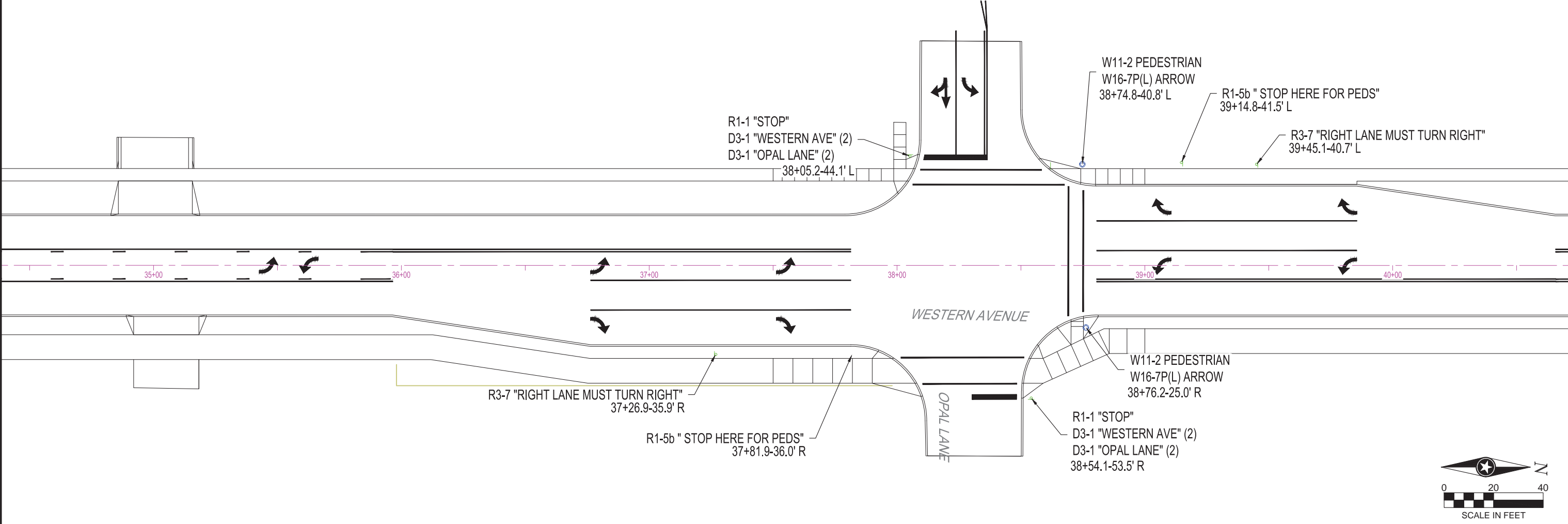
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STATE OF SOUTH DAKOTA	PROJECT P 6353(00)	SHEET S6	TOTAL SHEETS S10
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Plotting Date: 1/7/2025



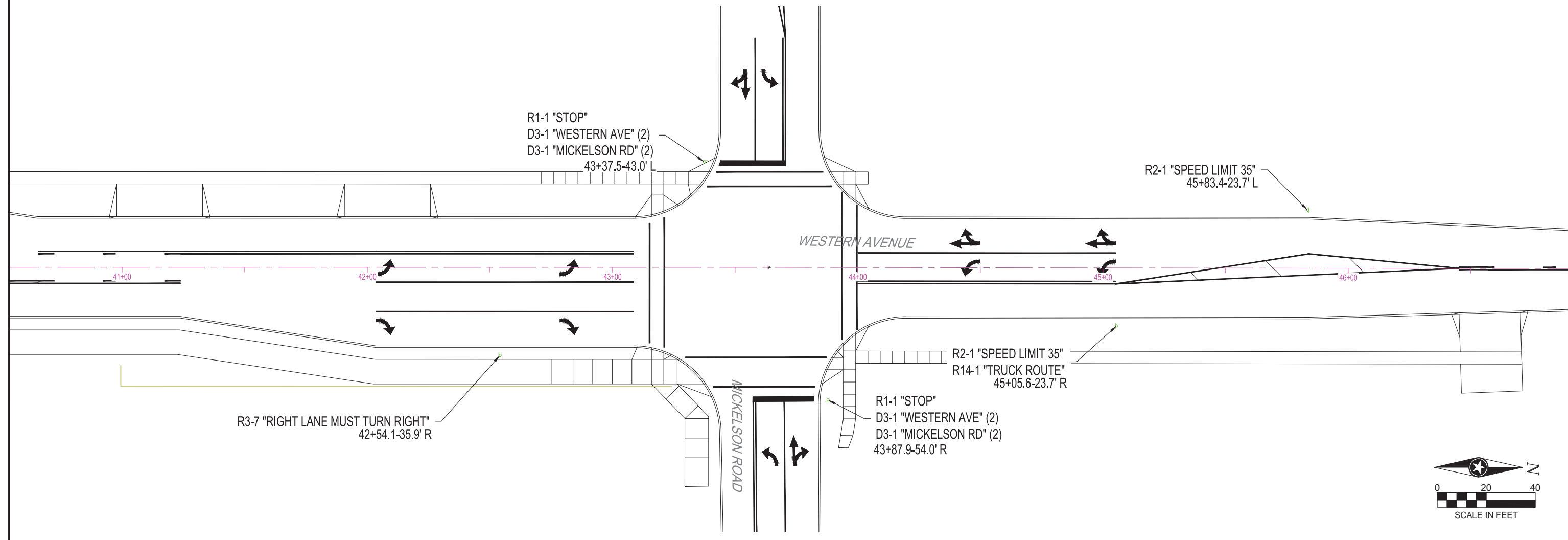
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FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 6353(00)	S7	S10

Plotting Date: 1/7/2025



Plotted From: Michael Redenbaugh

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<p>Perforated Tube Post (Telespar Post)</p>	<p>Notes</p> <p>Bolts and washers used for mounting traffic signs shall be stainless steel. Flat washers shall be Mil. Spec. MS813</p> <p>Nuts used for mounting traffic signs shall be a Nyloc (self-locking) type.</p> <p>Signs shall be mounted using a plastic / nylon washer placed between the sign face and the metallic flat washer.</p> <p>Lag screws used to mount traffic signs to wooden power poles shall be galvanized or stainless steel.</p> <p>All hardware required for mounting the signs shall be incidental to the cost of installing the signs</p>		
<p>Flanged Channel Post (U-Post)</p>	<p>Sign Saver Plate 3"x3" punched ribbed aluminum</p> <p>To be used when mounting signs on channel post</p> <p>Sign Mounting on Wooden Power Pole</p>		
<p>Stainless Steel Band Mounting System</p> <p>To be used when mounting signs on metallic and fiberglass poles</p> <p>Detail A</p> <p>Bandit DO-21 or equivalent.</p> <p>Page 1 of 2 Revised: November 2013</p>			
	<p>Sign Mount Specifications</p>	<p>Specification Reference No. 632</p>	<p>Plate Number 632.20</p>

9" Street Name Sign
(All letters in white color)

Primary:
6 Inch upper case and 4 1/2 inch lower case (to be put on by supplier and centered in space with no more than 80% compression)

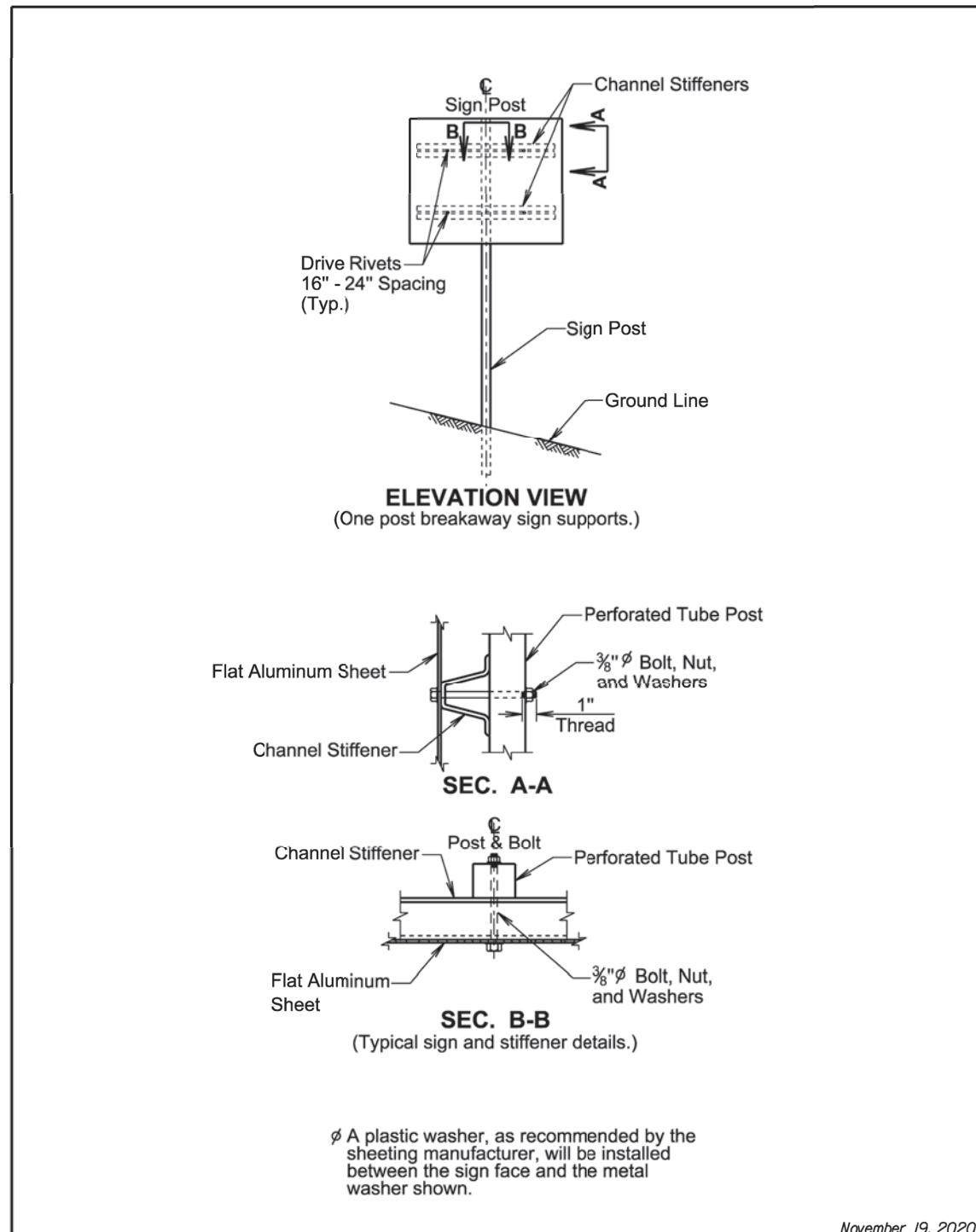
Suffix 1:
3 Inch capital letters (to be put on by supplier)

Block Number Area:
To be put on by supplier/contractor

Letter Font:
Gerber : Helvetica med comp acct ak rev b (gothic hwy font)

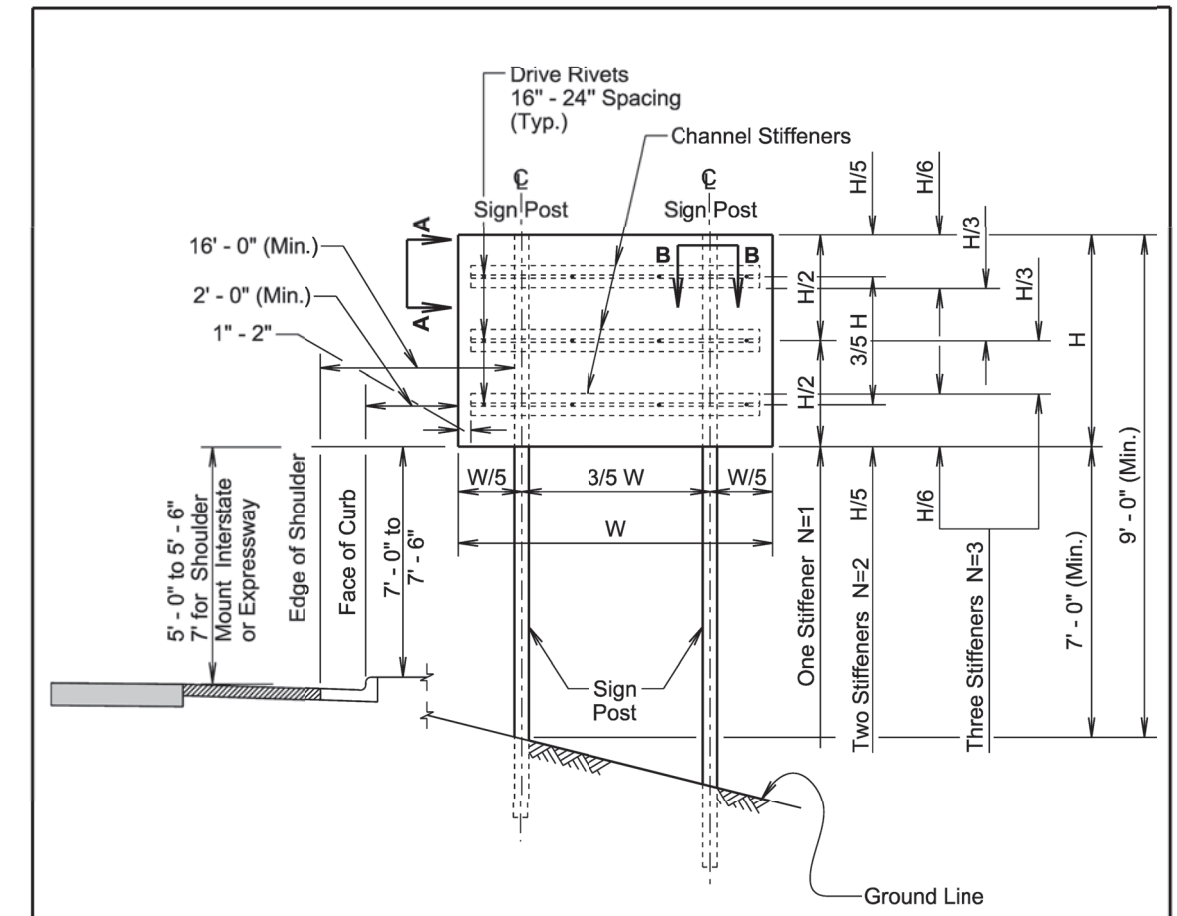
Revised: November 2013

	<p>9" Street Name Sign</p>	<p>Specification Reference No. 632</p>	<p>Plate Number 632.30</p>
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November 19, 2020

Published Date: 2024	S D D O T	SIGN STIFFENER DETAILS	PLATE NUMBER 632.60
			Sheet 1 of 2



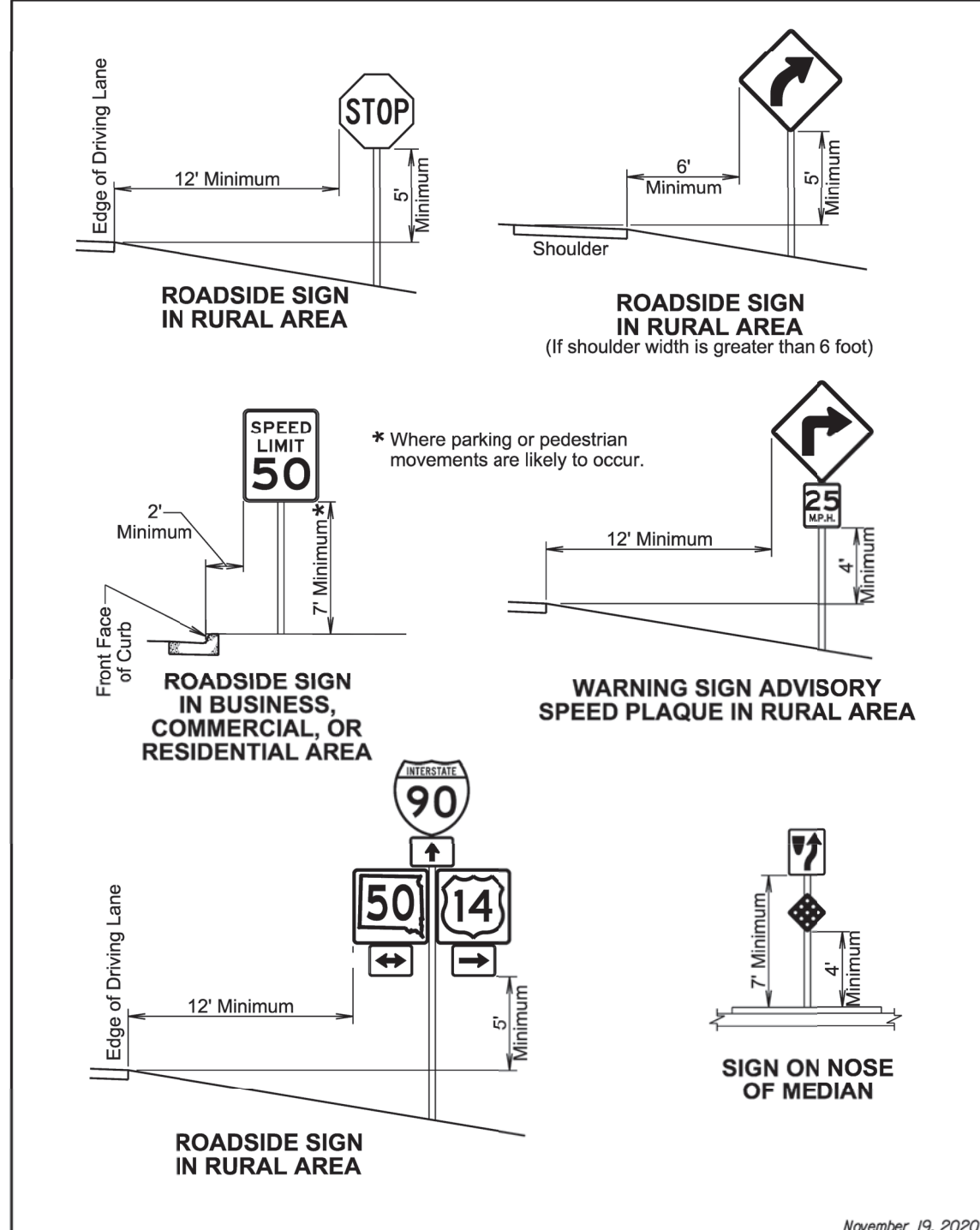
GENERAL NOTES:

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: 2024	S D D O T	SIGN STIFFENER DETAILS	PLATE NUMBER 632.60
			Sheet 2 of 2



November 19, 2020

Published Date: 2024	S D D O T	OFFSETS FOR SIGN INSTALLATION	PLATE NUMBER 632.90
			Sheet 1 of 1