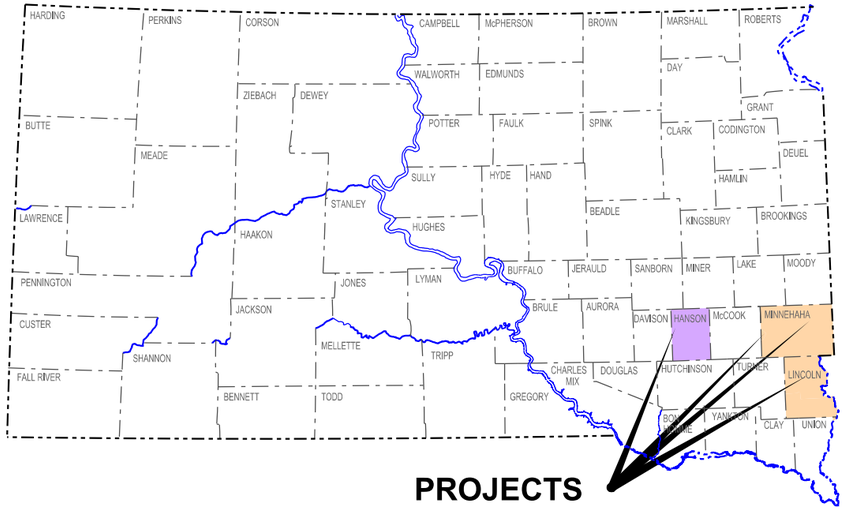
PLOT SCALE - 1:1.00000



PROJECTS

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT PH 0020(136)
SD HIGHWAYS 38, 38P, & 115
HANSON, LINCOLN & MINNEHAHA COUNTIES

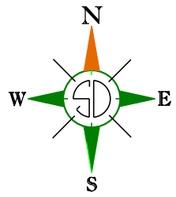
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(136)	1	20

Plotting Date: 08/07/2014

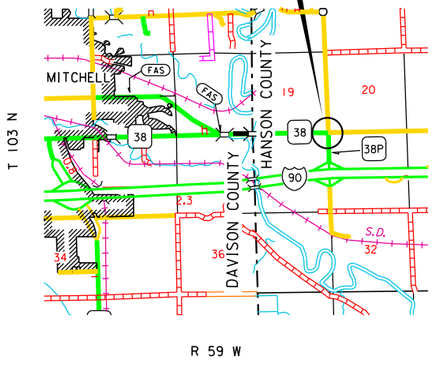
INDEX OF SHEETS

SIGNING UPGRADES

PCN 04GF

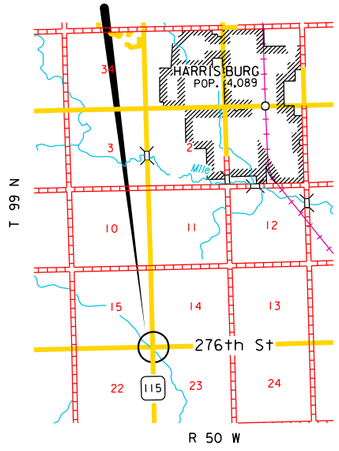


PROJECT



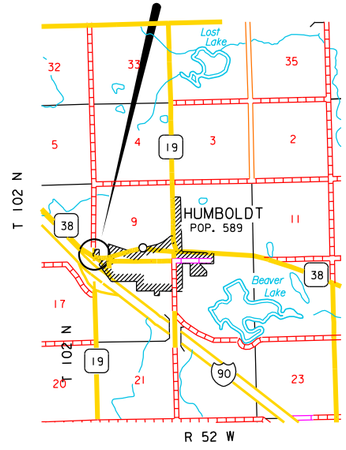
HANSON COUNTY

PROJECT



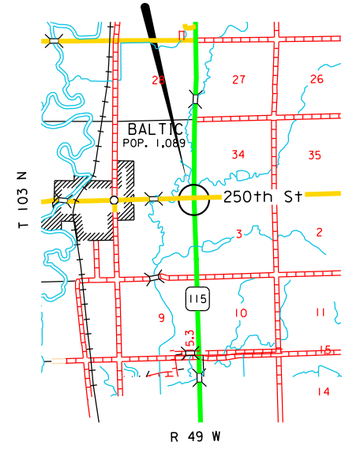
LINCOLN COUNTY

PROJECT



MINNEHAHA COUNTY

PROJECT



MINNEHAHA COUNTY

PLOTTED FROM - TRM11NT17

PLOT NAME - 1

FILE - ...\REGM04GF\04GF CONTAINER.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(136)	2	20

ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E5020	Salvage Traffic Sign	11	Each
110E5110	Salvage Signal Equipment	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
632E1320	2.0"x2.0" Perforated Tube Post	34.2	Ft
632E1340	2.5"x2.5" Perforated Tube Post	90.5	Ft
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	7.0	SqFt
632E3205	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity	119.5	SqFt
633E0040	Cold Applied Plastic Pavement Marking, Arrow	2	Each
633E1300	Pavement Marking Paint, White	4.0	Gal
633E5025	Grooving for Cold Applied Plastic Pavement Marking, Arrow	2	Each
633E5115	Grooving for Durable Pavement Marking, 24"	75	Ft
634E0010	Flagging	8	Hour
634E0100	Traffic Control	306	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0930	Intersection Control Beacon	4	Each
635E5301	Type 1 Electrical Junction Box	5	Each
635E5400	Electrical Service Cabinet	1	Each
635E5410	Controller Cabinet	1	Each
635E5960	Solar Powered Flashing Beacon	2	Each
635E8015	1.5" Rigid Galvanized Steel Conduit	52	Ft
635E8215	1.5" Rigid Conduit, Schedule 80	270	Ft
635E9120	1/C #10 AWG Direct Burial Copper Wire	1,823	Ft
735E4000	Tree Trimming	10	Each

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and Special Provisions as included in the Proposal. The current edition of the Federal Manual on Uniform Traffic Control Devices, FHWA Standard Highway Signs Manual, and FHWA Standard Alphabets for Highway Signs.

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

COMMITMENT H: WASTE DISPOSAL SITE (CONTINUED)

Action Taken/Required:

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all designated option borrow sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: staging areas, borrow sites, waste disposal sites, and all material processing sites.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

Action Taken/Required:

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES (CONTINUED)

Action Taken/Required:

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

POWER SOURCE

SD 115 at 250TH

XCEL Energy
500 W Russell St
Sioux Falls, SD 57104-1419

(605) 296-3309

SCOPE OF WORK

This project includes, but is not limited to, the following at:

SD 38 and SD 38P (Riverside Road)

1. Remove and salvage existing stop signs, supports and miscellaneous hardware and replace with new stop signs, square steel perforated tube supports, and hardware . The salvaged signs, posts and miscellaneous hardware shall be neatly stockpiled at the SDDOT Maintenance Yard, 1300 S. Ohlman in Mitchell. The Contractor shall coordinate sign salvage activities with the Engineer.
2. Install grooved paint pavement marking stop lines as detailed.
3. Install grooved cold applied plastic pavement marking arrows in the northbound right lane as detailed.

SD 38 at SD 19 (West Junction)

1. Remove and salvage existing intersection warning signs, supports and hardware. Replace with new intersection warning signs and supports as detailed.
2. Install yellow LED solar powered flashing warning sign beacons 1' above the intersection warning signs.

State Highway 115 and 276th Street

1. Move signs laterally or longitudinally as detailed.
2. Trim trees from overhanging the highway right of way in the southeast quadrant of the intersection.
3. Remove and salvage existing stop signs, supports and miscellaneous hardware and replace with new stop signs, square steel perforated tube supports, and hardware as detailed. The salvaged signs, posts and miscellaneous hardware shall be neatly stockpiled at the Sioux Falls Department of Transportation Maintenance Complex, 5316 W. 60th St. N., Sioux Falls, SD. The Contractor shall coordinate sign salvage activities with the Engineer.

State Highway 115 and 250th Street (Baltic Corner)

1. Remove and salvage existing intersection warning signs, supports and hardware. Replace with new intersection warning signs and supports as detailed. The new intersection warning signs to be located 750'-800' in advance of the intersection.

SCOPE OF WORK (CONTINUED)

State Highway 115 and 250th Street (Baltic Corner)

2. Install yellow LED flashing 120 volt warning sign beacons 1' above the intersection warning signs with conduit, conductor and frangible coupler as detailed.
3. Remove existing stop signs, supports and miscellaneous hardware. Replace with new stop signs, supports and hardware as detailed.
4. Install red LED flashing 120 volt stop sign beacons 1' above the stop signs with conduit, conductor and frangible coupler on 250th Street as detailed.
5. The salvaged signs, posts and miscellaneous hardware shall be neatly stockpiled at the Sioux Falls Department of Transportation Maintenance Complex, 5316 W. 60th St. N., Sioux Falls, SD. The Contractor shall coordinate sign salvage activities with the Engineer.
6. Remove and salvage existing span wire poles, span wire, overhead four-way intersection control beacons, and conductor.
7. Trench 1/C #10 AWG Direct Burial Copper Wire to connect the flashing beacon to the power sources indicated in the plan details. Conductor shall be installed in schedule 80 rigid conduit bored beneath all road crossings.
8. Make conductor connections to electrical cabinet existing in the northwest quadrant of the intersection. The Contractor shall coordinate work activities with the local power company.
9. Install all miscellaneous clamps, hubs, lock nuts, connectors, adapters, ground rods, etc. as necessary to complete the installations.
10. Cost for salvaging the poles, span wire, overhead four-way intersection control beacons, and conductor from the source to the beacons shall be included in the contract Lump Sum price for Salvage Signal Equipment.
11. The Contractor shall neatly stockpile salvaged signal and related hardware [nuts, bolts, and miscellaneous mounting hardware] at the Sioux Falls Department of Transportation Maintenance Complex, 5316 W. 60th St. N., Sioux Falls, SD. Stockpiling of salvaged state material shall be coordinated with the Engineer and Mr. Ken Bennett (605.367.4970X2501).

INCIDENTAL WORK

1. Seeding or sodding, as directed by the Engineer.
2. Restoration of disturbed areas to the satisfaction of the Engineer.

GENERAL MAINTENANCE OF TRAFFIC

Stop signs shall be maintained either on permanent or temporary supports during the time when permanent stop signs are being replaced.

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

GENERAL MAINTENANCE OF TRAFFIC (CONTINUED)

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

Work activities during non-daylight hours are subject to prior approval.

SALVAGE TRAFFIC SIGN

All bolts, nuts, and washers shall be placed in individual five-gallon pails.

Signs, reusable posts, and hardware damaged or lost due to carelessness shall be replaced in kind at the Contractor's expense.

Signs shall be separated from supports prior to stockpiling. Salvaged signs shall be neatly stockpiled without damaging them.

FURNISH AND INSTALL TRAFFIC SIGNS

The signs listed on the Work Table in the plans as new installations shall be provided for the locations specified.

All flat aluminum signs shall be 0.100" flat sheet aluminum.

TRENCHING/PLOWING

Trenching or plowing will be completed through grass or gravel covered soil. Trenching or plowing will not be allowed through the roadway, shoulders, or curb and gutter.

1.5" RIGID CONDUIT SCHEDULE 80

The Contractor shall bore the rigid conduit beneath asphalt concrete roadways, shoulders, and curb and gutter.

Cost for boring shall be incidental to the contract unit price per Foot for 1 1/2" Rigid Conduit, Schedule 80.

SIGN LEGEND, BORDER AND BACKGROUND

All signs are to be installed in accordance with Sections 632 and 982 of the Specifications.

All sign sheeting shall conform to AASHTO DESIGNATION:M 268.

All sign legend, border and background sheeting material shall meet or exceed standards for ASTM D 4956 classified Type IV high intensity prismatic sheeting or Type XI very high intensity microprismatic sheeting, as indicated in the plans. Type XI sheeting shall be fluorescent.

The plan post lengths shall be field verified by the Contractor.

Posts shall be cut to provide the proper sign height where necessary.

Perforated tube posts shall be fabricated from galvanized steel at the specified gauges.

SIGN LEGEND, BORDER AND BACKGROUND (CONTINUED)

Heavy duty 7 gauge galvanized steel anchor stub posts that do not require stiffener sleeves are required for 2 ½" perforated tube post non slip base post installations.

Winged anchors are required for anchors supporting signs greater than seven square feet in total area. Post anchors shall be 48" long.

All breakaway sign supports shall comply with FHWA NCHRP 350 or Manual for Assessing Safety Hardware (MASH) crash-worthy requirements.

All sign support bases shall conform to Plate number 634.99.

DATE DECAL

The Contractor shall affix a date decal to each new sign installed. Each decal is an approximate 2" X 2" self-adhesive sticker having black numerals on a white background with removable paper backing. The date decal displays the last two digits of the year the sign was manufactured (as illustrated).

One decal shall be placed in the extreme lower left corner of the back of flat aluminum signs.

Sign supports or other obstructions shall not block the view of the date decal upon completion of the sign installation.

Cost for furnishing and installing of date decals on new signs shall be incidental to the contract unit price for the various signing bid items.

STOP SIGN AND WARNING SIGN BEACONS

Warning beacons shall be flashing 12 inch round yellow light emitting diode (LED) signal modules, and Stop Beacons shall be 12 inch round red LED signal modules. Both Stop and Warning Beacons shall be compliant with the requirements for design, illumination, and color of signal sections required by Chapter 4L., Flashing Beacons, of the 2009 Manual on Uniform Traffic Control Devices.

Beacons shall flash 24 hours per day 7 days per week. Solar powered beacons shall be designed for continuous 24 hour year-round operation with a minimum of 0.94 sun hours per day.

Solar powered beacons shall be carmanah® Model R247-E or Engineer approved equal.

Solar Powered Flashing Beacons shall consist of 12 volt solar photovoltaic cell(s); a battery (batteries), and a 1 section vehicle signal head in a single unit with a top mount for the specified support. The assembly shall be pre-wired.

Solar Powered Flashing Beacons shall operate using a solar-charged battery (batteries) with quick connect terminals that is replaceable, sealed, recyclable, and designed to be maintenance-free for a minimum of 5 years.

The 12 volt solar photovoltaic cell shall be self-regulating with blocking diodes designed for direct battery connection.

STOP SIGN AND WARNING SIGN BEACONS (CONTINUED)

The 1 section vehicle signal heads shall be fabricated from ultraviolet stabilized polycarbonate with a yellow body with a black door and black tunnel visor.

The solar powered beacon shall have automatic adjustable brightness with night dimming capability.

Cost to furnish and install the solar powered flashing beacons shall be incidental to the contract unit price per each for Solar Powered Flashing Beacon. The unit price per Each shall include, but is not limited to, the beacon, solar panel, mounting brackets and any accessories required for complete operations.

Cost to furnish and install the 120V Stop and Warning Beacons shall be incidental to the contract unit price per each for Intersection Control Beacon. The unit price per Each shall include, but is not limited to, the beacon, mounting brackets and any accessories required for complete operations.

PERMANENT PAVEMENT MARKING PAINT (Waterborne)

Stop lines are to be installed at the intersection of SD 38 and SD 38P as detailed. The stop lines are to be grooved pavement marking paint (waterborne). No liquid durable pavement marking is intended to be used.

The stop line for the southbound approach on the north side of the intersection is estimated to be 15' in length x 24" wide. The stop line for northbound approach on the south side of the intersection is estimated to be 60' in length x 24" wide.

The pavement marking shall be applied at the rate to achieve a minimum wet thickness of 15 mils. Pavement markings applied at a wet thickness less than 15 mils will not be accepted.

Glass beads shall be applied to achieve adequate coverage necessary to obtain retro-reflectivity to the satisfaction of the Engineer.

Glass beads shall be applied immediately after the placement of the marking.

GROOVING FOR PAVEMENT MARKING PAINT, WHITE

The grooving shall be completed within the following tolerances:

Depth of groove	Sum of pavement marking thickness + 15 mils (Including reflective media)	5 mils
Width of groove	25" to 26"	1/8"

*Additional length may be required as specified in the plans.

The equipment shall be capable of:

- grooving the total width of the groove in one pass or uniform depths with multiple passes
- grooving without causing damage to the pavement joints or joint sealant material
- providing uniform alignment and depth

If damage to joints, joint sealant material, backer rod, etc. occurs, the grooving operation shall be stopped and modifications shall be made to the grooving operation to prevent further damage. The Contractor may be required to use specially prepared circular diamond blade cutting heads to prevent damage at the joints. Damage caused to joints, the joint sealant material, backer rod, etc shall be repaired or replaced by the Contractor, as directed by the Engineer. No additional payment will be made for the repair work or any reapplication of the pavement marking in the area of the repair.

The bottom of the groove shall be uniform and free of loose material. The groove shall be flat and of uniform depth for the entire width of the groove.

GROOVING FOR PAVEMENT MARKING PAINT, WHITE (CONTINUED)

Seasonal Limitations: Pavement markings shall only be placed between May 1 and October 15 (inclusive) or as recommended by the manufacturer.

Application: Pavement markings shall be placed in accordance with the details shown in the plans. Markings shall not be applied when the wind or other conditions cause a film of dust to be deposited on the pavement surface before the material can be applied.

The Contractor shall ensure a clean, dry pavement surface free of deleterious material. Cost for this work shall be included in the contract unit price per foot for Grooving for Durable Pavement Marking.

The material application shall be immediately preceded by a minimum of 80 psi air blast. Placement of marking materials shall be only on clean, dry pavement with air and pavement temperatures at least 50 F (10 C) and rising.

Tracking of applied pavement marking will not be allowed. The "no-tracking" shall be determined by a line showing no visual deposition of the material to the pavement surface when viewed from a distance of 50-feet (15m) after being driven over.

Application Tolerances:

The minimum width of the stripe shall be its nominal width as required in the plans with 1/2" (12 mm) greater than nominal width allowed provided the variation is gradual and does not detract from the general appearance.

The stripe shall have the same general appearance and width in both daytime and nighttime conditions (no shadowing or shading).

Any markings that are outside of these tolerances will be removed and replaced by the Contractor at no cost to the Department. Removal shall be performed utilizing equipment that is not detrimental to the final surface, as required by the Engineer. Establishment of application tolerances shall not relieve the Contractor of the responsibility to comply as closely as practicable with plan dimensions.

Cost to groove stop lines in PCC pavement shall be included in the contract unit price per foot for Grooving for Durable Pavement Marking. Payment will be full compensation for equipment, labor, materials, and all incidentals required.

BEACON AIMING

All flashing beacons shall be aimed to be visible to approaching traffic for a minimum distance of 1/4 mile.

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25; the Contractor shall contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

FLASHER CONTROLLER CABINET

The flasher controller cabinet shall contain a new flasher(s) capable of flashing the two LED Stop Sign beacons on one circuit and the two Warning Sign beacons on a separate circuit at the intersection.

The flasher(s) shall be a solid state flasher(s).

The flasher controller cabinet shall be Pelco SE-1014 Flasher Controller Cabinet Assembly without Time Clock or equivalent. The flasher controller cabinet shall be mounted on the galvanized steel utility pole.

Cost to furnish and install the flasher controller cabinet shall be incidental to the contract unit price per each for Controller Cabinet. Payment will be full compensation for cabinet, flasher(s), mounting hardware, and all incidentals required.

FINAL ACCEPTANCE

A final inspection will be conducted by the Engineer and Region Traffic Engineer to ensure the signs and flashing beacons are installed as per plan and specifications. All contract items shall be satisfactorily installed prior to final acceptance.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(136)	6	20

WORK TABLE

SIGN DATA									POST DATA					PAINT		BEACON DATA									
LOCATION	SIGN DESCRIPTION	SIGN CODE	WIDTH X HEIGHT	AREA (Sq Ft)	AREA (Sq Ft)	OFFSET '(R)IGHT/(L)EFT	SIGN FACES	Salvage Traffic Sign	BREAK-AWAY	2.0"X2.0" TUBE POST	2.5"X2.5" TUBE POST (12 Ga) *(10 Ga)*	Cold Applied Plastic Pavement Marking, Arrow	Grooving for Cold Applied Plastic Pavement Marking, Arrow	Pavement Marking Paint, White	Grooving for Durable Pavement Marking, 24"	Salvage Signal Equipment	Intersection Control Beacon	Type 1 Electrical Junction Box	Electrical Service Cabinet	Controller Cabinet	Solar Powered Flashing Beacon	1.5" Rigid Galvanized Steel Conduit	1.5" Rigid Conduit, Schedule 80	1/C #10 AWG Direct Burial Copper Wire	Tree Trimming
			{Ft}	TYPE IV	TYPE XI			QUANTITY {Each}	#	QUANTITY ⧗ {Ft}	SIZE/ QUANTITY ⧗ {Ft}	QUANTITY {Each}	QUANTITY {Each}	QUANTITY {Gal}	QUANTITY {Ft}	QUANTITY {LS}	QUANTITY {Each}	QUANTITY {Each}	QUANTITY {Each}	QUANTITY {Each}	QUANTITY {Each}	QUANTITY {Ft}	QUANTITY {Ft}	QUANTITY {Ft}	QUANTITY {Each}
				632E3203	632E3205			110E5020		632E1320	632E1340	633E0040	633E5025	633E1300	633E5115	110E5110	634E0930	635E5301	635E5400	635E5410	635E5960	635E8015	635E8215	635E9120	735E4000
SD38 AT 38P	STOP	R1-1	3.00X 3.00		7.2	6' R	NORTH	1	S		8.0	2 (Rt)	2	4.0	75										
	STOP	R1-1	4.00X 4.00		13.3	6' R	SOUTH	1	S		9.0														
	STOP AT LINE	SPECIAL	3.00X 3.00																						
SD38 at SD19 WEST JUNCTION	CROSSROAD	W2-1	3.00X 3.00		9.0	6' R	WEST	1	S		*12.8*										1				
	ADVISORY SPEED	W13-1	2.00X 2.00		4.0		WEST																		
	CROSSROAD	W2-1	3.00X 3.00		9.0	6' R	EAST	1	S		*12.8*										1				
	ADVISORY SPEED	W13-1	2.00X 2.00		4.0		EAST																		
SD115 at 250th St	STOP	R1-1	4.00X 4.00		13.3	6' R	EAST	1	S		*11.5*					LS	1	5	1	1		13	108	123	
	STOP	R1-1	4.00X 4.00		13.3	6' R	WEST	1	S		*12.0*						1					13	77	90	
	CROSSROAD	W2-1	4.00X 4.00		16.0	6' R	NORTH	1	S		*12.2*						1					13	0	805	
	CROSSROAD	W2-1	4.00X 4.00		16.0	6' R	SOUTH	1	S		*12.2*						1					13	85	805	
SD115 at 276th St	STOP	R1-1	3.00X 3.00		7.2	12' R	EAST	1	A	11.9															10
	STOP	R1-1	3.00X 3.00		7.2	12' R	WEST	1	A	11.9															
	NORTH	M3-1	2.00X 1.00	2.0		16' R	SOUTH	1	A	10.4															
	SD115	M1-5	2.50X 2.00	5.0																					
TOTALS				**7.0**	**119.5**			**11**		**34.2**	**90.5**	**2**	**2**	**4.0**	**75**	**LS**	**4**	**5**	**1**	**1**	**2**	**52**	**270**	**1823**	**10**

***** - Distance from edge of Shoulder, or back of curb, to Edge of Sign.

- (S)lip Base, (A)nchor Stub Post, (D)irect Drive, or (W)ood Post.

⧗ -Post lengths are estimates. The plan post lengths shall be field verified by the Contractor.

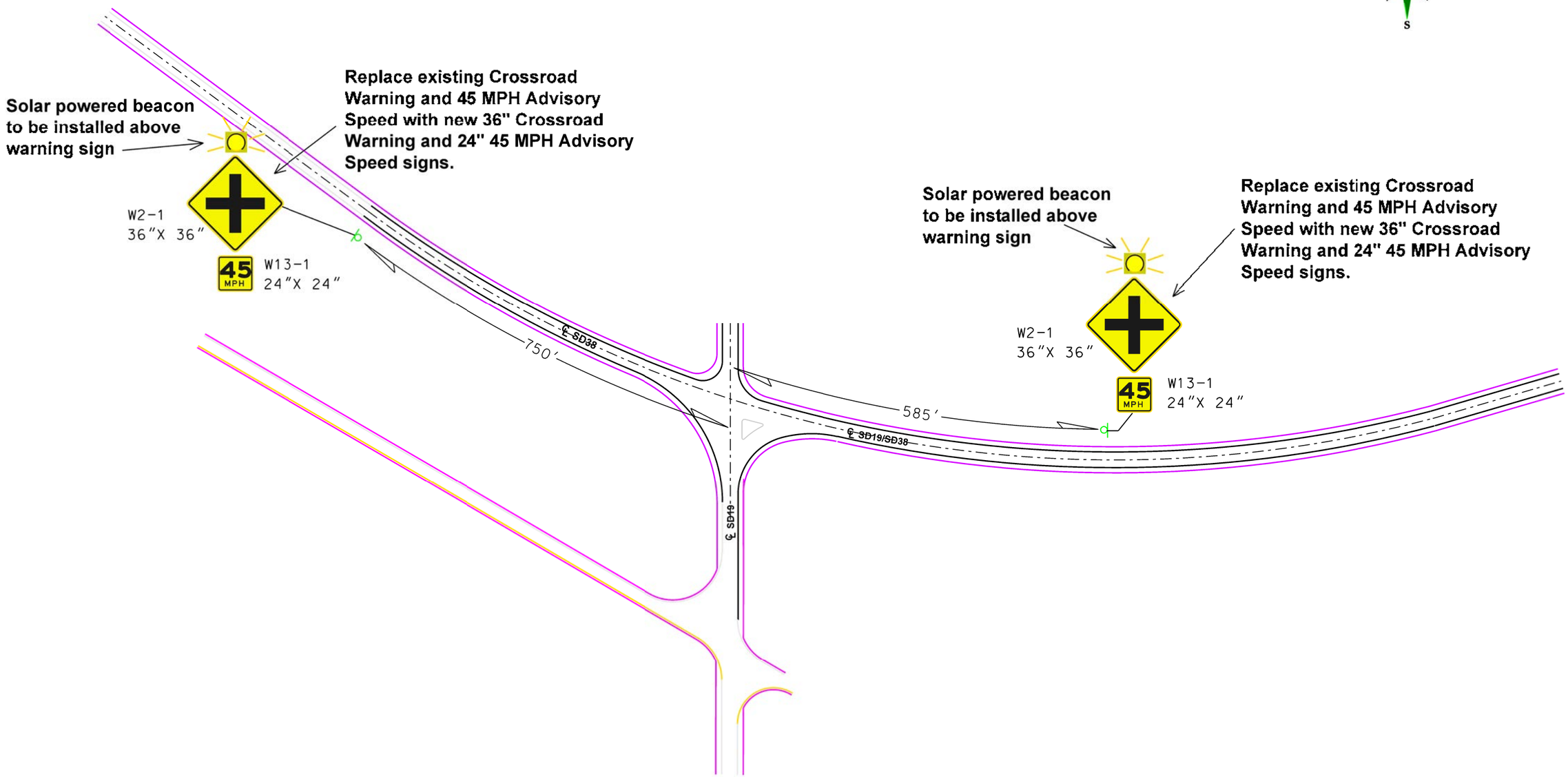
ITEMIZED LIST FOR TRAFFIC CONTROL

		CONVENTIONAL ROAD			
SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
W20-1	ROAD WORK AHEAD	4	48" x 48"	34	136
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-2	END ROAD WORK	2	36" x 18"	17	34
				TOTAL UNITS	**306**

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(136)	7	20

Plotting Date: 08/07/2014

SD 38 & SD 19



PLOT SCALE - 1:160
PLOT NAME - 2
FILE - ...\PRJVREGM04GF\38 AT 19.DGN
PLOTTED FROM - TRM1INT17

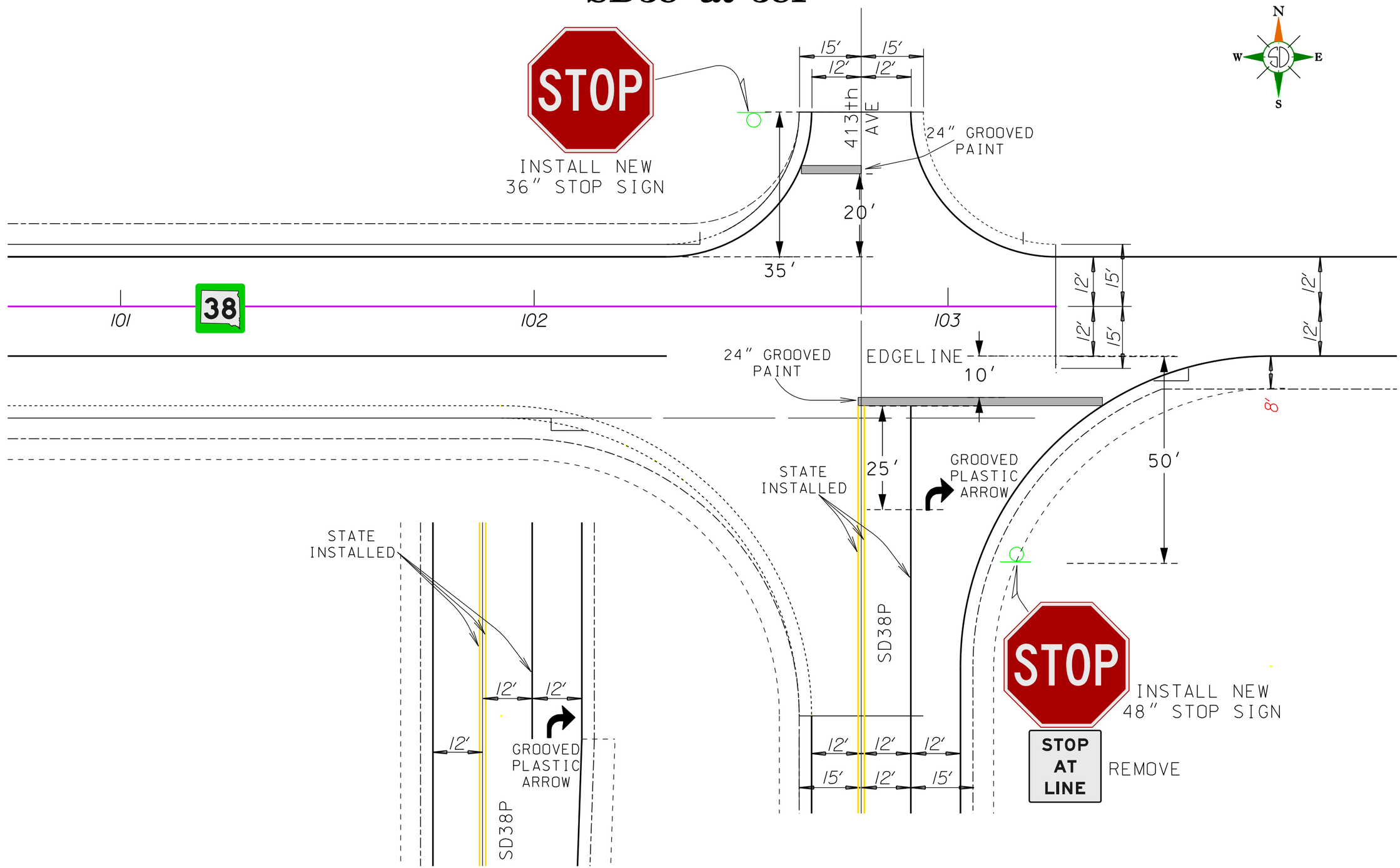
PLOT SCALE - 1:22.9032

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(136)	8	20

Plotting Date: 08/07/2014

SIGNING LAYOUT

SD38 at 38P



PLOTTED FROM - TRM1INT17

PLOT NAME - 3

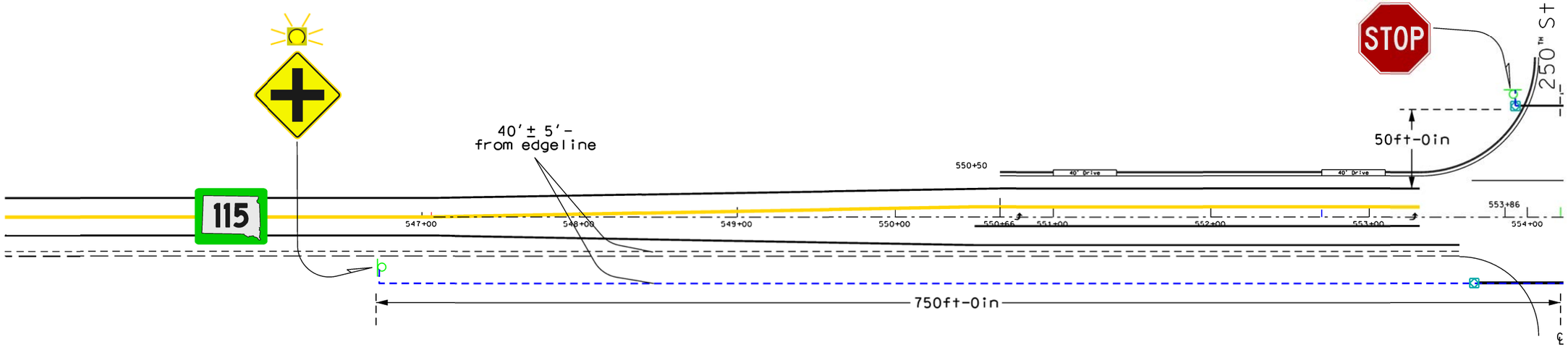
FILE - ...\REGM04GF\04GF CONTAINER.DGN

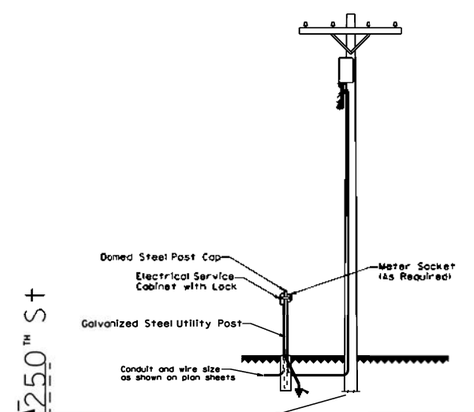
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(136)	9	20

Plotting Date: 08/07/2014

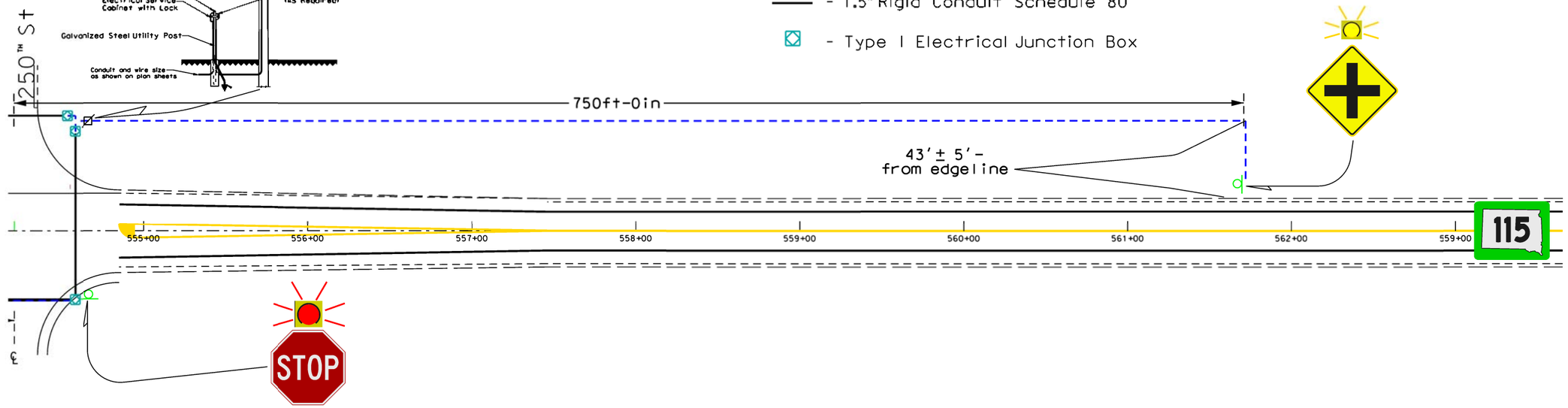
SIGNING LAYOUT

SD115 at 250TH St





KEY:
- 1/#10 AWG Direct Burial Copper Wire
- 1.5" Rigid Conduit Schedule 80
- Type 1 Electrical Junction Box



PLOT SCALE - 1:69.4037

PLOTTED FROM - TRMINT17

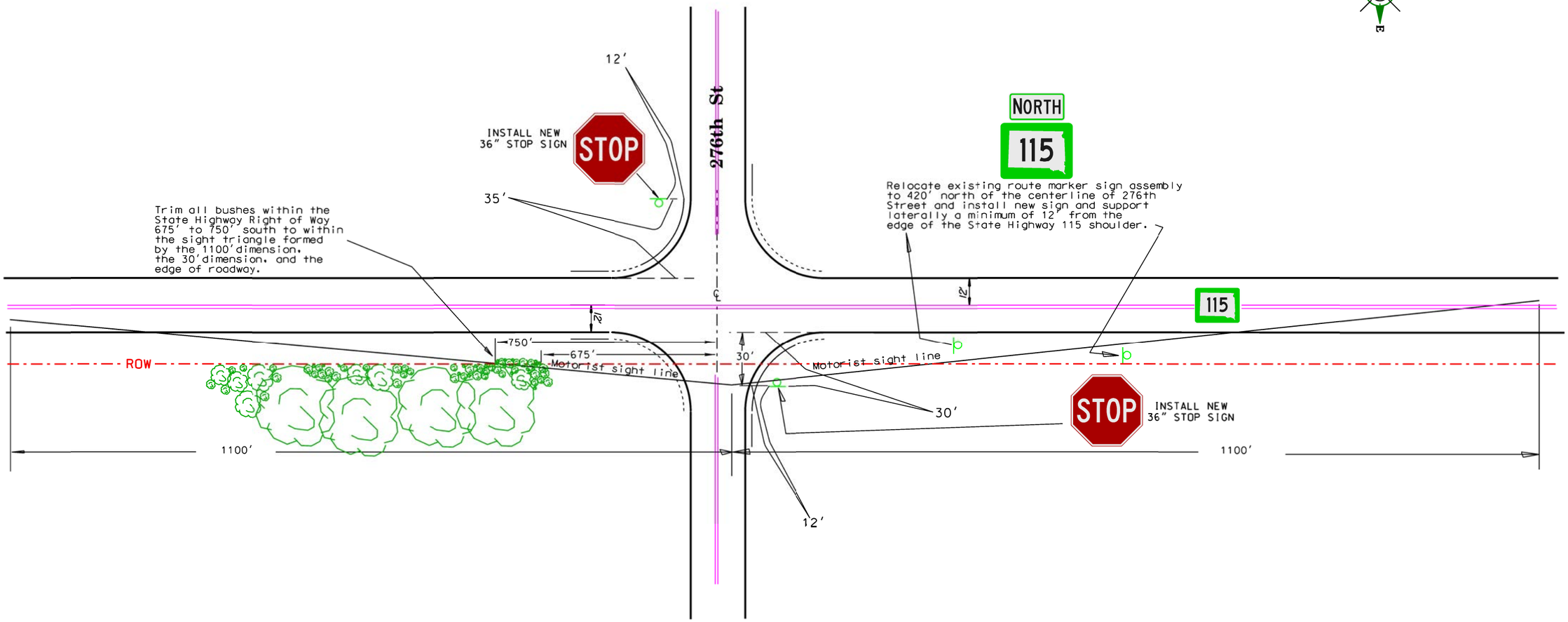
PLOT NAME - 4

FILE - ...\REGM04GF\04GF CONTAINER.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(136)	10	20

Plotting Date: 08/07/2014

State Highway 115 at 276th Street



PLOT SCALE - 1:1.23871E-006

PLOTTED FROM - IRMIINT17

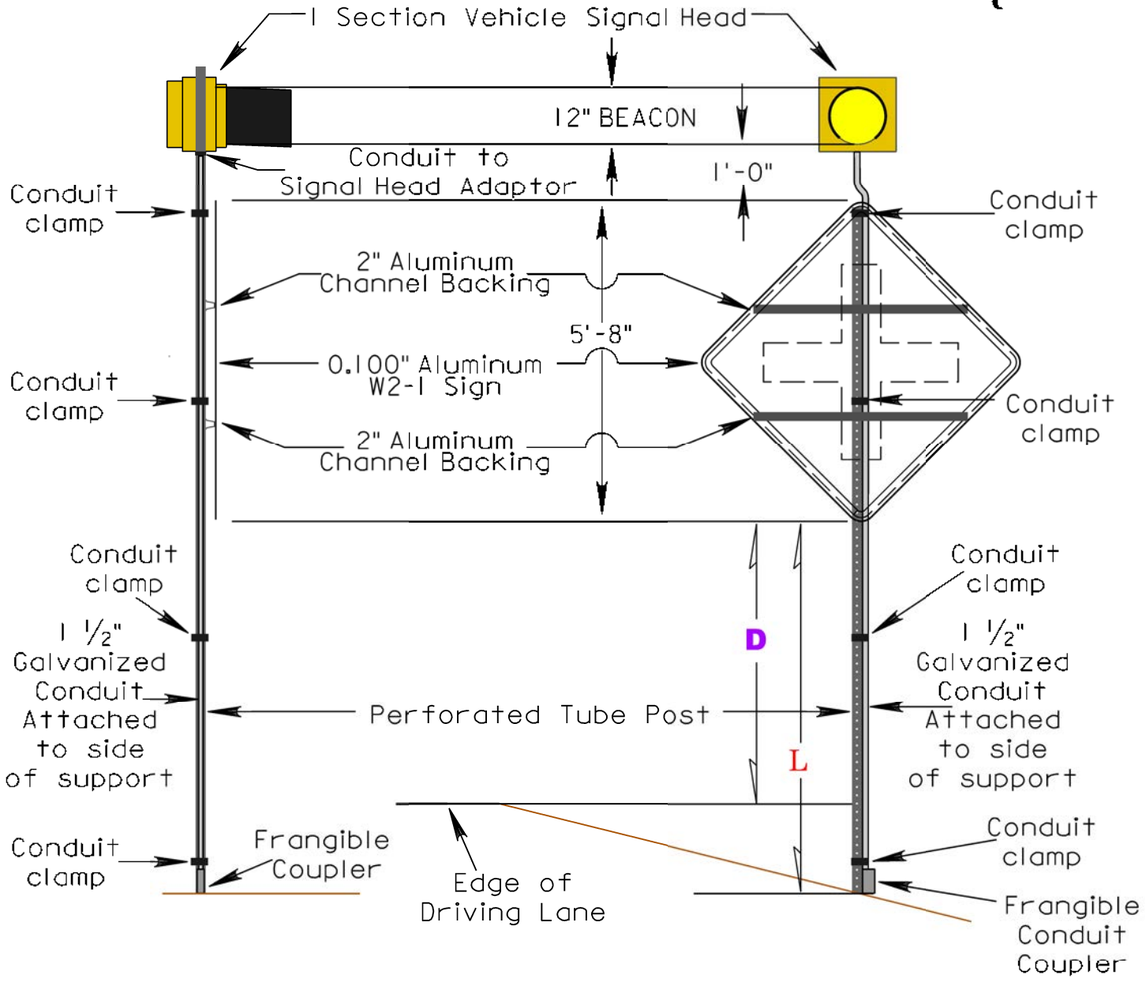
PLOT NAME - S

FILE - ...\SD 115 AT 267TH STREET DETAIL.DGN

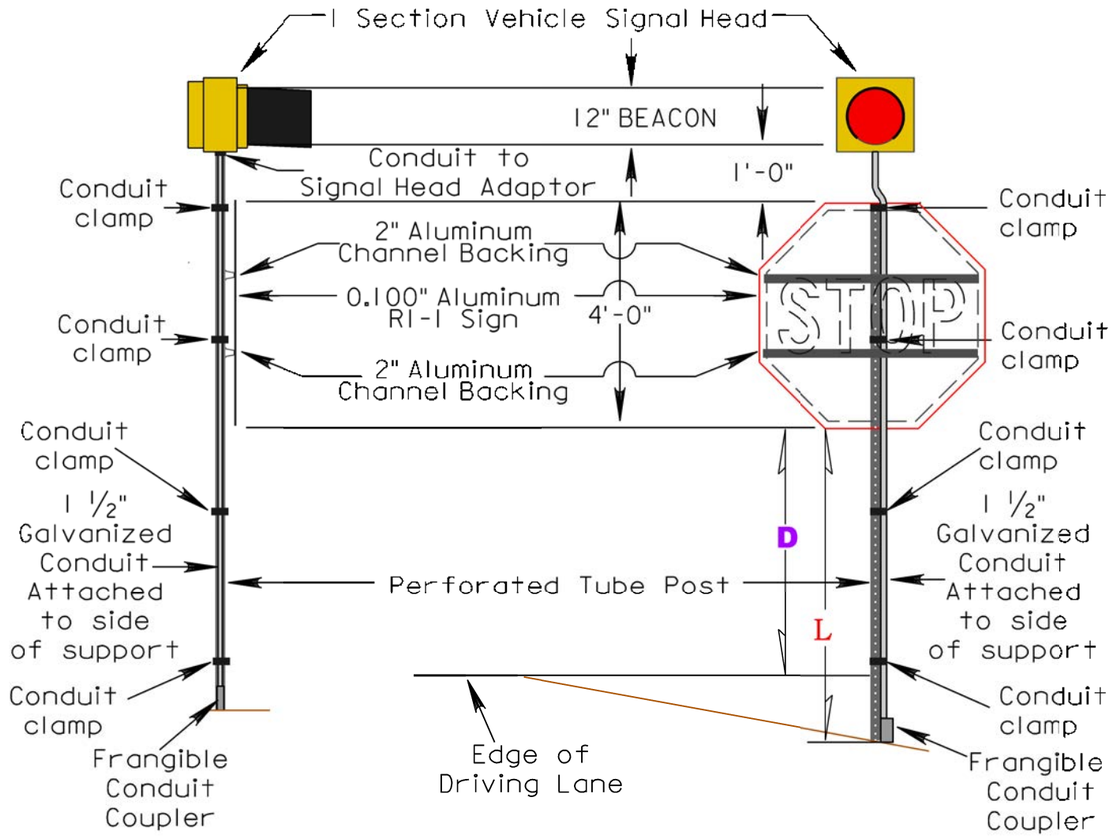
SIGN AND BEACON INSTALLATIONS

SD 115 AT 250TH STREET

{TYPICAL}



D
5'-0" to 5'-6" RURAL
EDGELINE TO BOTTOM OF SIGN
-POST LENGTH (**L**) VARIES WITH INSLOPE



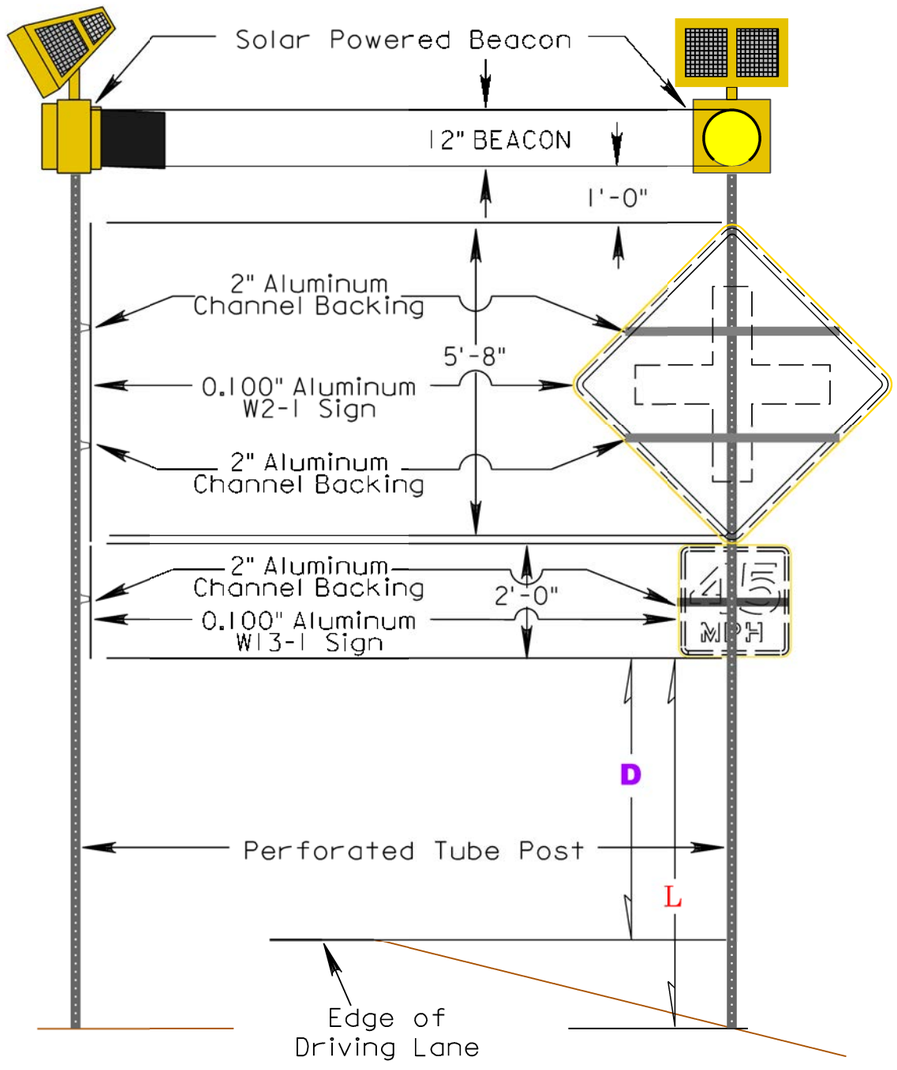
D
5'-0" to 5'-6" RURAL
EDGELINE TO BOTTOM OF SIGN
POST LENGTH (**L**) VARIES WITH INSLOPE-
7'-0" to 7'-6" IN CURB AND GUTTER SECTION

PLOT SCALE - 1:2.67825
PLOTTED FROM - TRMINI17
PLOT NAME - G
FILE - ...\REGM04GF\04GF CONTAINER.DGN

SIGN AND BEACON INSTALLATION

WARNING SIGN WITH SOLAR POWERED BEACON

{TYPICAL}



D - 4'-0" to 4'-6" RURAL
EDGELINE TO BOTTOM OF SIGN WITH W13-1
-POST LENGTH (**L**) VARIES WITH INSLOPE

PLOT SCALE - 1:2.67825
PLOTTED FROM - TRM1INT17
PLOT NAME - ?
FILE - ...\REGM04GF\04GF CONTAINER.DGN

PLOT SCALE - 1:202.954

PLOTTED FROM - TRM1INT17

PLOT NAME - 8

FILE - ...\REGM04GF\04GF CONTAINER.DGN

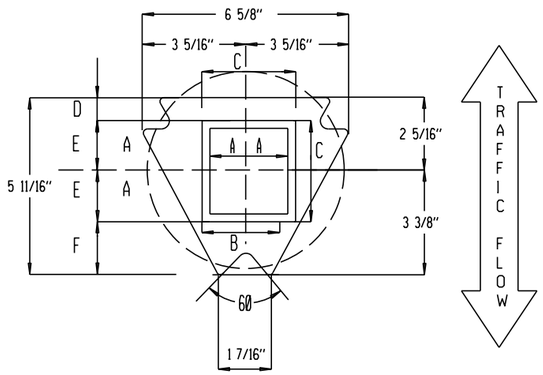
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(136)	13	20

Plotting Date: 08/07/2014

Typical Perforated Tube Support Slip Base with 48" Winged Unibase

("Redi-Torque" shown-Engineer may approve equal)

TOP POST RECEIVER

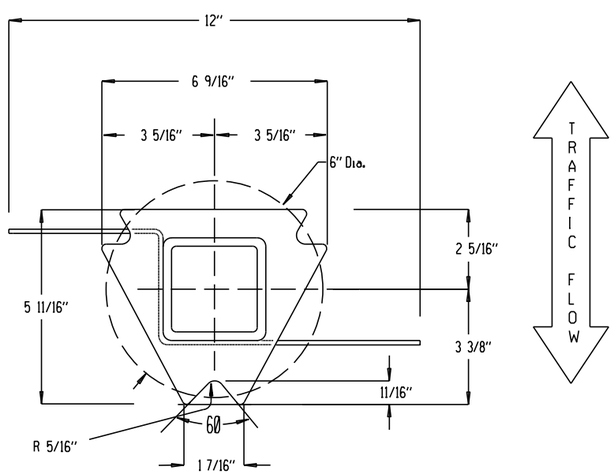


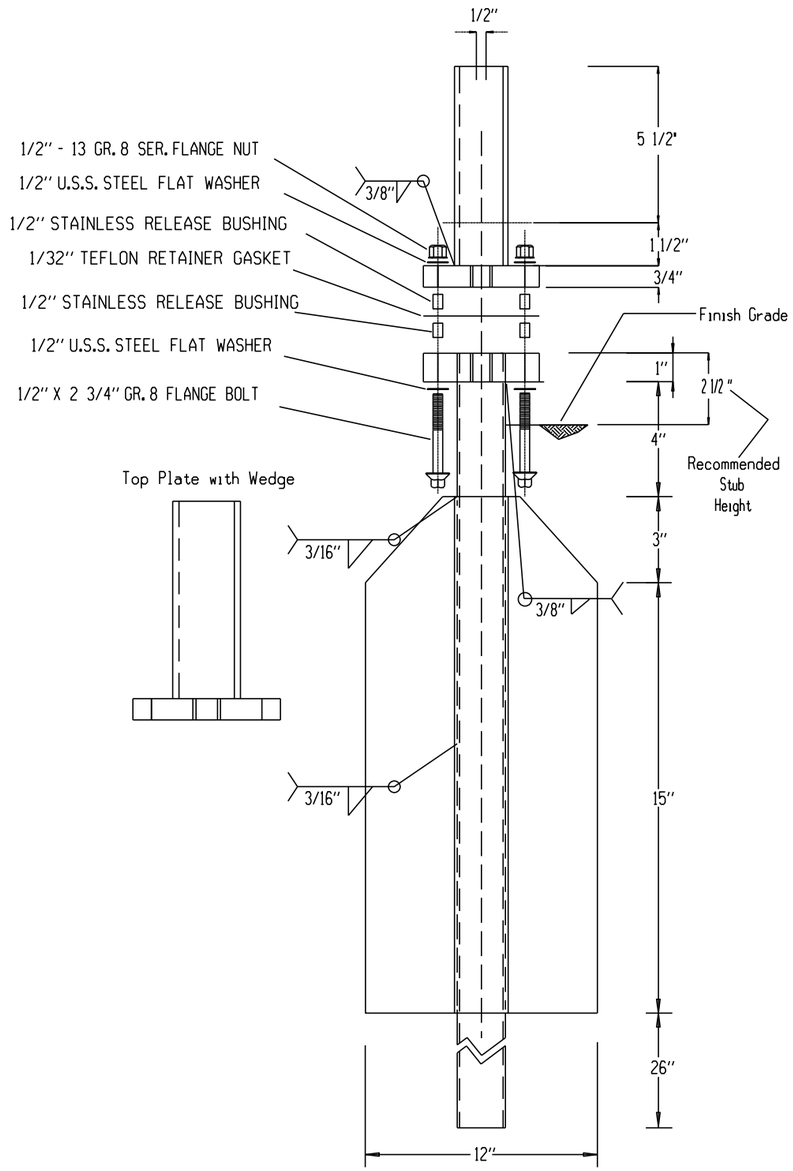
MATERIALS: Angle Receiver - 2 1/2" x 2 1/2" x 3/8" - ASTM A36
Structural Angle Plate - ASTM A572 Grade 50

TOP POST RECEIVER DATA TABLE

SQUARE POST SIZES	A	B	C	D	E	F
2 3/16" X 10 GA. SQUARE POST	1 9/64"	2 1/2"	3 1/32"	25/32"	1 33/64"	1 7/8"
2 1/2" X 10 GA. SQUARE POST	1 9/32"	2 1/2"	3 5/16"	5/8"	1 21/32"	1 3/4"

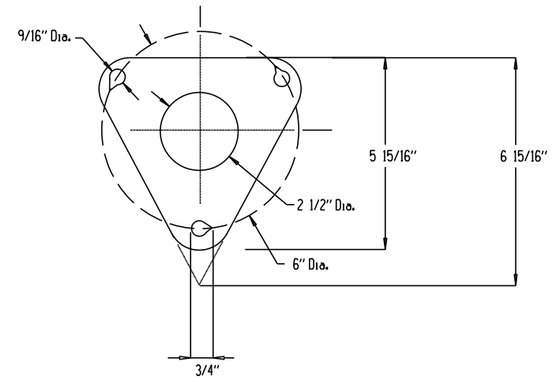
BOTTOM UNIBASE SOIL STUB





BOLT RETAINER FOR BASE CONNECTION

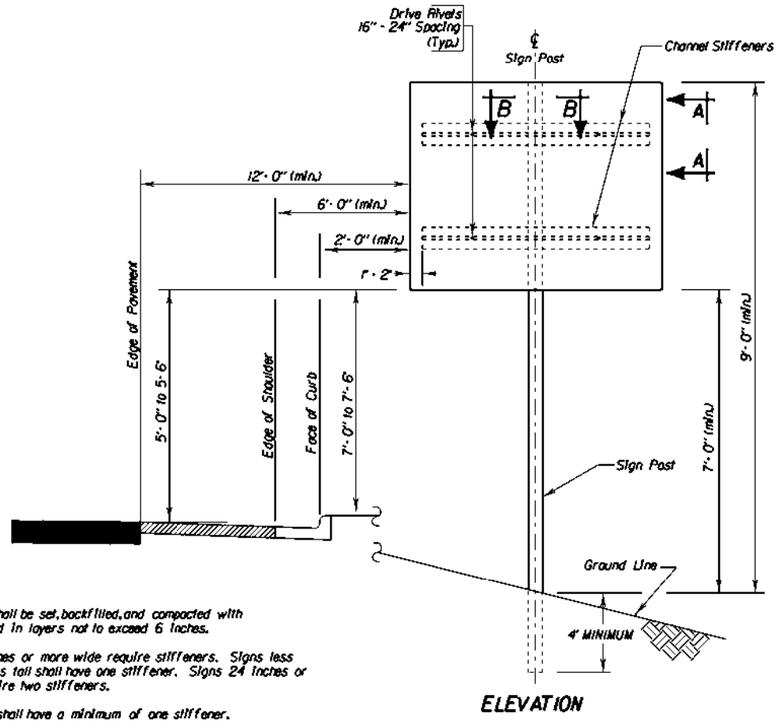
Materials: 1/32" Reprocessed Teflon
See Note 3



NOTES FOR INSTALLATION PROCEDURES

1. Install bottom Unibase soil anchor stub plumb and squared up with road, with point of plate facing oncoming traffic.
2. Depth of embedment to leave 2 1/2" from grade to top of anchor plate.
3. Place teflon retainer gasket on top of bottom plate (make sure notches in holes are pointing counter-clockwise).
4. Place top post receiver onto retainer gasket, properly indexed so that angle receivers are squared up with road.
5. Slide 1 each 1/2" flat washer onto 1 each inverted 1/2" - 13 Gr. 8 flange bolt, followed by 1 each stainless steel release bushing.
6. Insert above bolt with washer and bushing up thru notched points of the top and bottom plates, passing thru hole in gasket.
7. Slide second bushing down onto above bolt until it rests on top of gasket, followed by second washer.
8. Complete by threading 1/2" - 13 Gr. 8 Ser. flange nut snugly down against top of washer.
9. Repeat steps 5, 6, 7 & 8 at the two remaining notched triangle points.
10. Insert sign post into angle receivers on top half until post(s) bottom out.
    - *Note: where higher windload is desired, insert the next size smaller square post inside bottom of main upright post (minimum of 48", not to exceed beyond bottom edge of sign)
11. Secure posts into receivers using Wedge.
12. After all sub-assembly hardware is tightened, tighten the 3 each ready torque nuts in a circular pattern until all bolt assemblies reach the required torque.
    - *Note: On multi-leg installations, be sure that all anchors are squared and lined up with each other.

PLOT SCALE - 1.206.452



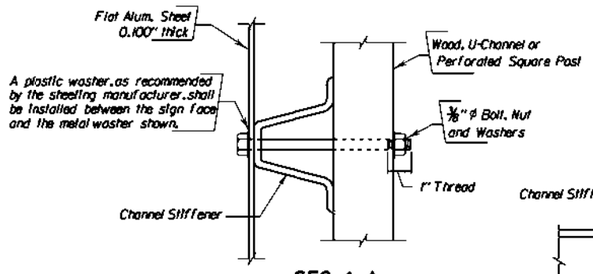
NOTES:

Wood posts shall be set, backfilled, and compacted with material placed in layers not to exceed 6 inches.

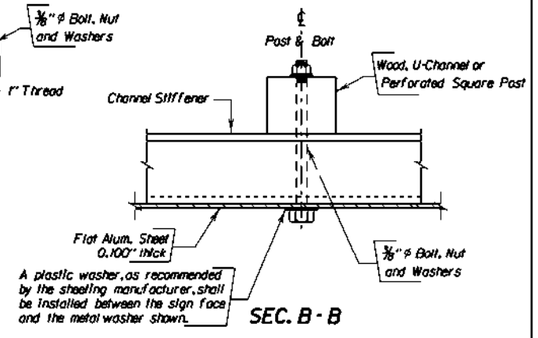
Signs 48 inches or more wide require stiffeners. Signs less than 24 inches tall shall have one stiffener. Signs 24 inches or more tall require two stiffeners.

W14-3 signs shall have a minimum of one stiffener.

ELEVATION

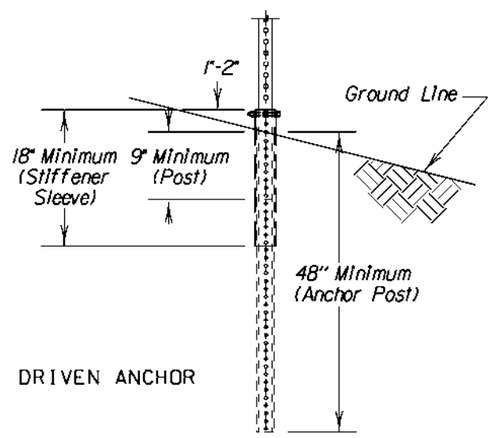


SEC. A-A



SEC. B-B

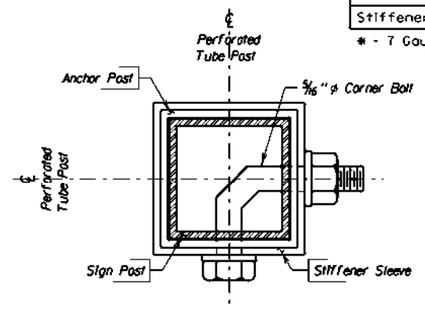
SINGLE POST BREAKAWAY SIGN SUPPORT
(Typical Sign and Stiffener Details)



ELEVATION VIEW

POST SIZES		
Sign Post	2"	2¼"
Anchor Post	2¼"	2½"
Stiffener Sleeve	2½"	*3"

* - 7 Gauge Steel

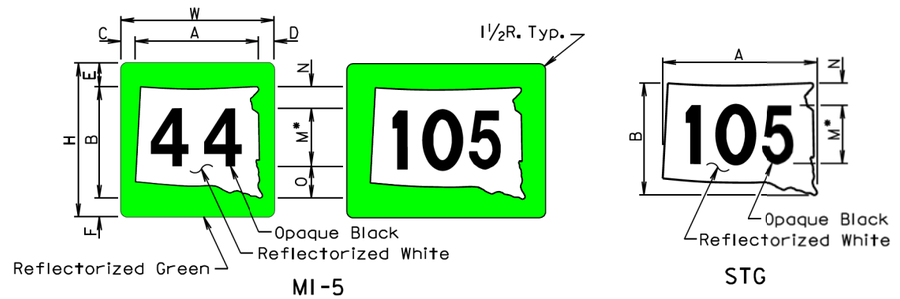


POST X-SECTION VIEW

NOTE:
Perforated tube post with breakaway anchor base shall be galvanized 12 gauge steel unless otherwise specified in the plans. Sign installations must meet or exceed NCHRP 350 or MASH breakaway requirements and be FHWA approved.

PERFORATED TUBE POST
BREAKAWAY TWO-PIECE ANCHOR BASE DETAILS
(Typical)

PLOTTED FROM - TRMIINT17
PLOT NAME - B
FILE - ....\REGM04GF\04GF CONTAINER.DGN



MI-5

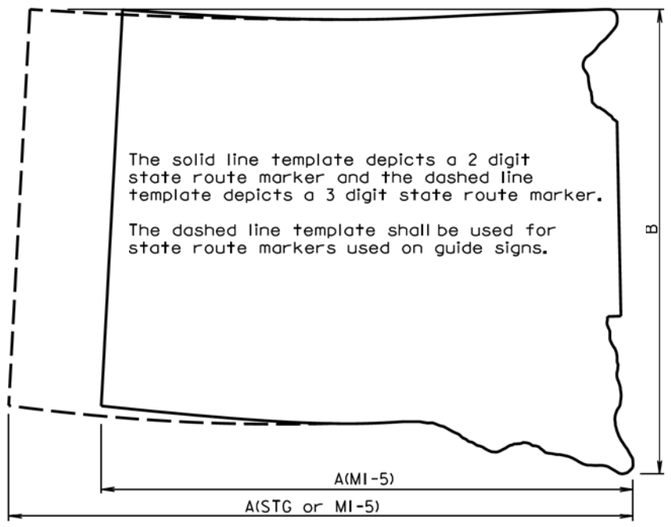
STG

SIGN CODE	WxH	A	B	C	D	E	F	M*	N	O
MI-5	24x24	20½	18	2	1½	3½	2½	12D	2	4
MI-5**	30x24	24	18	2¼	1¾	3½	2½	12D	2	4
MI-5	30x30	25⅝	22½	2½	1⅞	4⅜	3⅛	15D	2½	5
MI-5	36x36	30¾	27	3	2¼	5¼	3¾	18D	3	6

SIGN CODE	AxB	M*	N
STG-24	24x18	10D	4
STG-32	32x24	12D	4¾
STG-48	48x36	18D	7
STG-64	64x48	24D	9½

*In the few cases where there is not enough space for the numerals, the standard "D" series font may be replaced with "C" series font if approved by the Engineer.

**3 Digits



TEMPLATE FOR STATE ROUTE MARKER

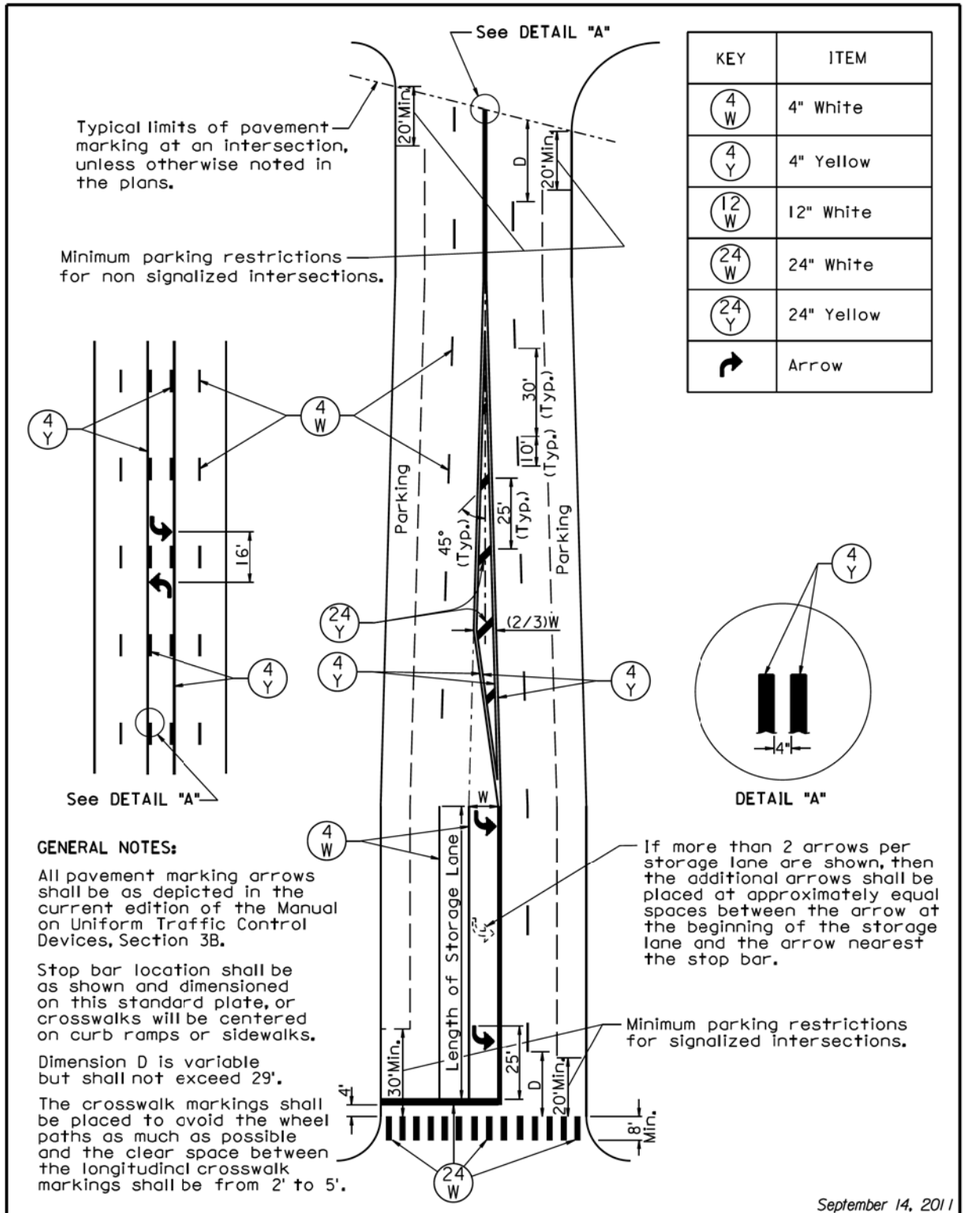
GENERAL NOTES:

The unit for all dimensions shown is inches.

Numerals shall be "D" series font for all state route markers except as noted above.

December 23, 2003

Published Date: 3rd Qtr. 2014	SDDOT	STATE ROUTE MARKERS	PLATE NUMBER 632.20 Sheet 1 of 1



KEY	ITEM
4 W	4" White
4 Y	4" Yellow
12 W	12" White
24 W	24" White
24 Y	24" Yellow
	Arrow

September 14, 2011

Published Date: 3rd Qtr. 2014	SDDOT	PAVEMENT MARKINGS FOR ADJACENT INTERSECTIONS AND CENTER TURN LANE	PLATE NUMBER 633.01 Sheet 1 of 1

PLOT SCALE - 1:206.452
PLOT NAME - 9
FILE - ...\REGM04GF\04GF CONTAINER.DGN
PLOTTED FROM - TRM1INT17

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

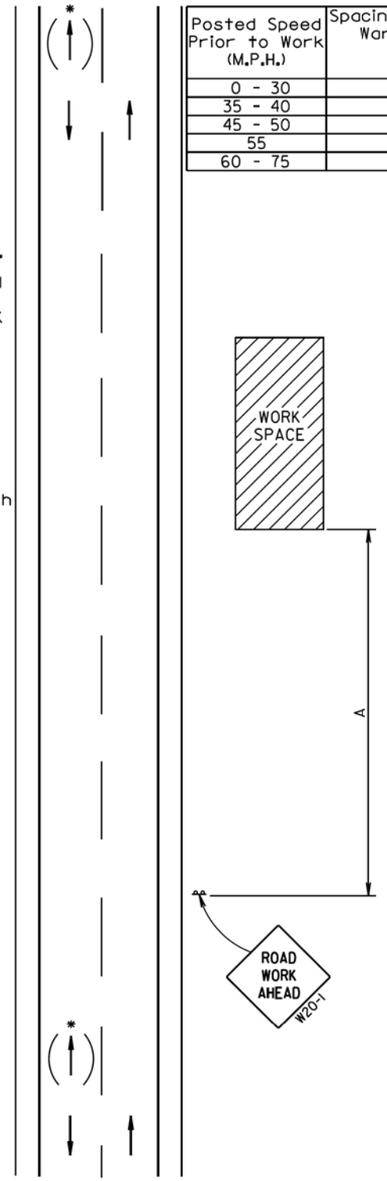
The signs illustrated shall be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

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

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

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

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



July 1, 2005

Published Date: 3rd Qtr. 2014	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES WORK BEYOND THE SHOULDER	PLATE NUMBER 634.01 Sheet 1 of 1

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

Flagger

Channelizing Device

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

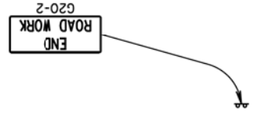
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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

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

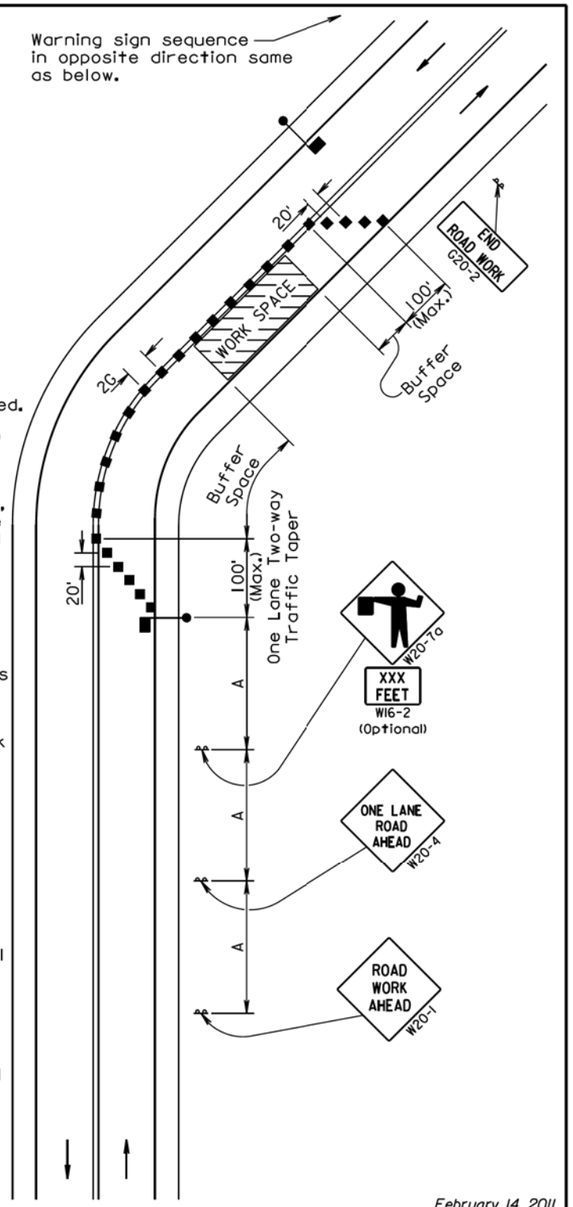
The channelizing devices shall be drums or 42" cones.

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



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

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

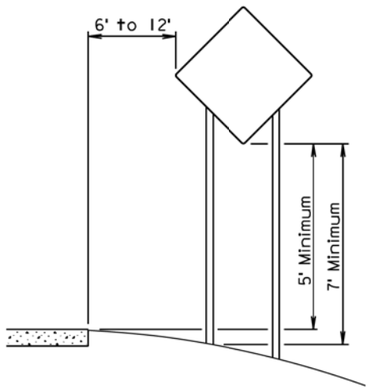


February 14, 2011

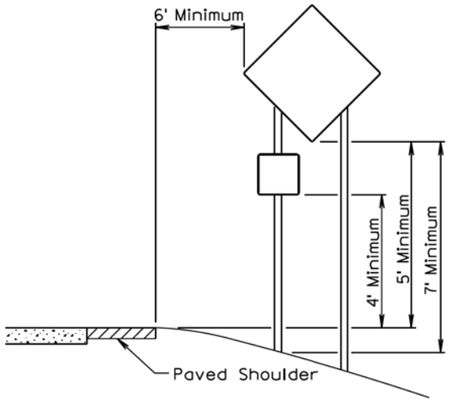
Published Date: 3rd Qtr. 2014	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23 Sheet 1 of 1

PLOT SCALE - 1:206.452
PLOT NAME - 10
FILE - ...\REGM04GF\04GF CONTAINER.DGN
PLOTTED FROM - TRM1INT17

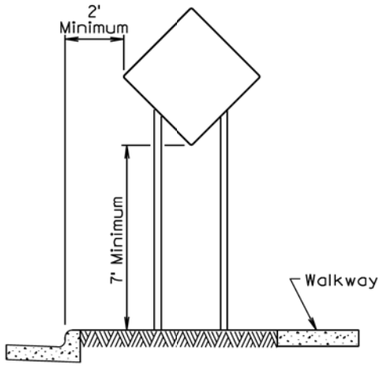
PLOT SCALE - 1:206.452



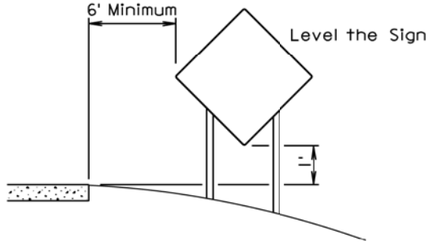
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



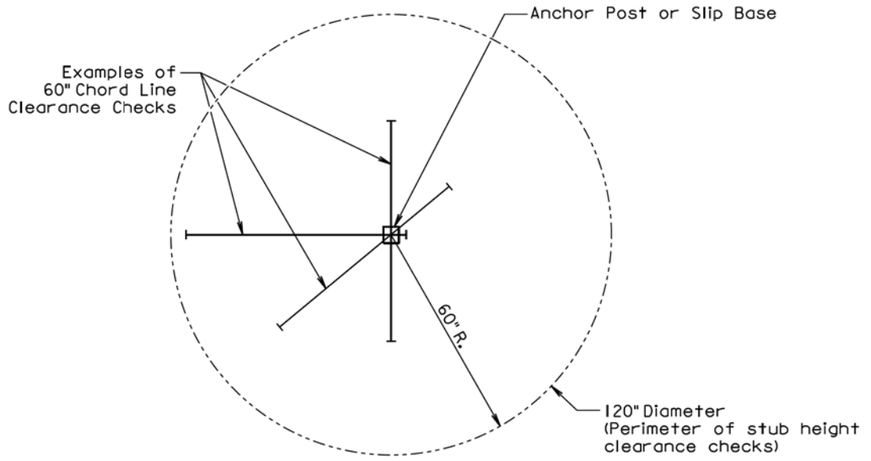
URBAN DISTRICT



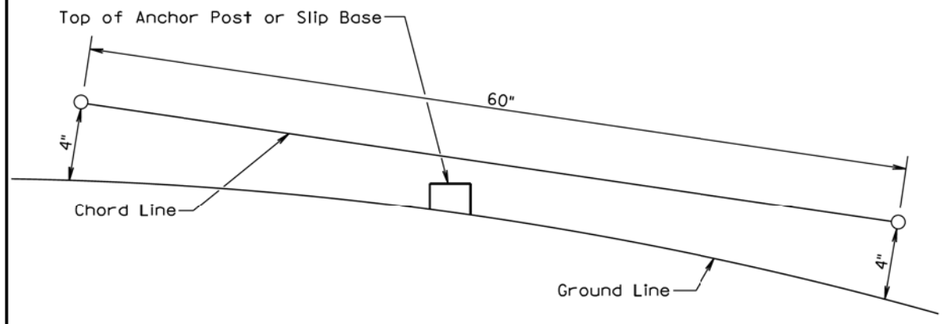
RURAL DISTRICT
3 DAY MAXIMUM

February 14, 2011

Published Date: 3rd Qtr. 2014	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

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

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

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

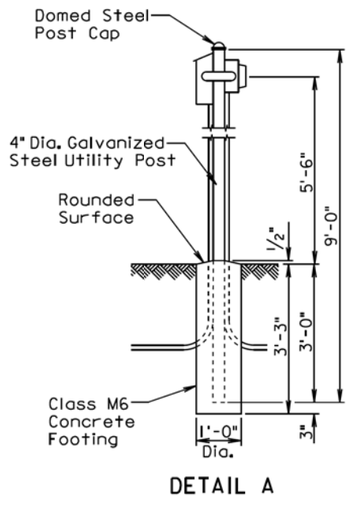
Published Date: 3rd Qtr. 2014	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

PLOTTED FROM - TRM11NT17

PLOT NAME - 11

FILE - ...\REGM04GF\04GF CONTAINER.DGN

PLOT SCALE - 1:206.452



DETAIL A

ELEVATION

GENERAL NOTES:

The concrete for the post footing shall be class M6 concrete.

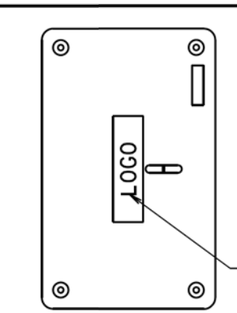
The 4" diameter galvanized steel utility post shall be 9' long and shall be in conformance with AASHTO Standard Specifications M181. The post shall be Type 1 and either Grade 1 or Grade 2. The domed steel post cap shall be in conformance with AASHTO Standard Specifications M181 and shall be Type 1.

The Contractor shall contact and coordinate his/her work with the Utility Companies regarding hookup requirements, fees, materials, and equipment necessary.

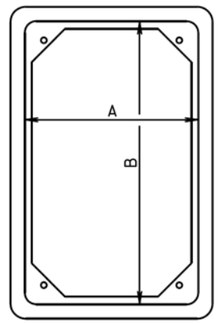
All costs for furnishing and installing all materials from the electrical service cabinet to the transformer including labor, equipment, hookup fees, all items within the cabinet, post, concrete footing, post cap, meter socket if required, conduit, and incidentals shall be incidental to the contract unit price per each for "Electrical Service Cabinet".

June 26, 2006

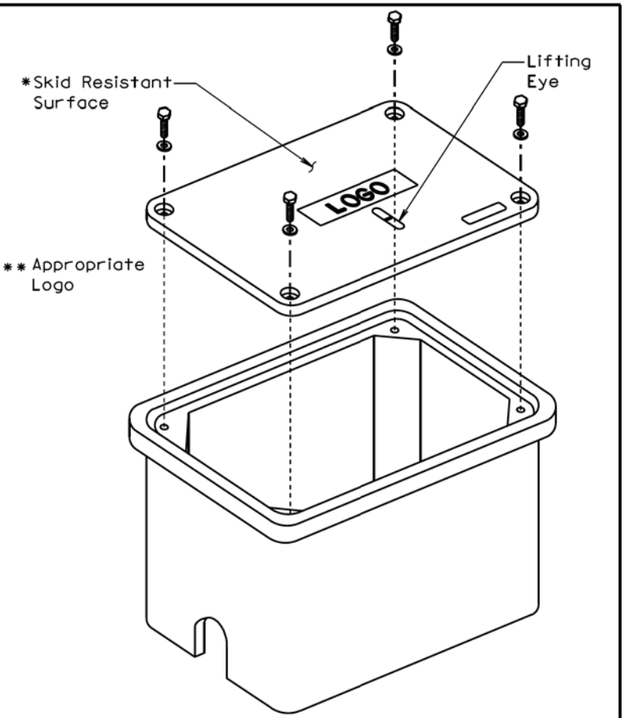
Published Date: 3rd Qtr. 2014	SDDOT	GALVANIZED STEEL UTILITY POST WITH OVERHEAD UTILITY POLE	PLATE NUMBER 635.35
			Sheet 1 of 1



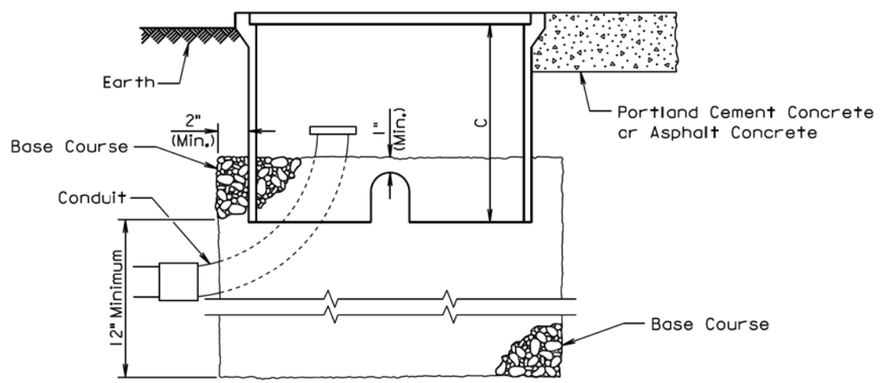
TOP VIEW
(Cover)



TOP VIEW
(Box)



ISOMETRIC VIEW
(Box and Cover)



SIDE VIEW
(Electrical Junction Box Installation Details)

June 26, 2012

Published Date: 3rd Qtr. 2014	SDDOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 1 of 2

PLOTTED FROM - TRMINI17
PLOT NAME - 12
FILE - ...\REGM04GF\04GF CONTAINER.DGN

PLOT SCALE - 1:206.452

ELECTRICAL JUNCTION BOX

TYPE	DESCRIPTION	DIMENSIONS A	B	C
1	Open Bottom with Gasket	11"-15"	18"-21"	18" (Min.)
2	Open Bottom with Gasket	13"-18"	23"-28"	18" (Min.)
3	Open Bottom with Gasket	17"-22"	24"-30"	18" (Min.)
4	Open Bottom with Gasket	28"-33"	36"-48"	24" (Min.)

GENERAL NOTES:

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

The cover shall have a lifting eye.

*The surface of the cover shall have a minimum wet and dry coefficient of friction value of 0.5 as determined by ASTM F 609.

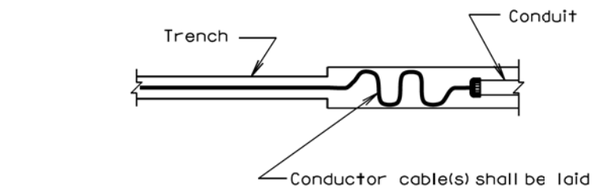
**The cover of the junction box shall have the appropriate logo in one inch size letters and shall be recessed. When the junction box contains cables or wires for a traffic signal then the logo shall be "Signal". When the junction box contains lighting conductors then the logo shall be "Lighting".

The electrical junction boxes shall 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 the electrical junction boxes shall be Tier 8 of ANSI/SCTE 77 2007.

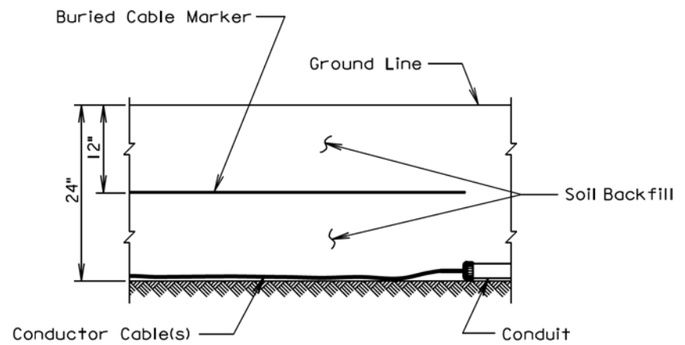
The electrical junction boxes shall be UL listed.

June 26, 2012

Published Date: 3rd Qtr. 2014	SDDOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 2 of 2



PLAN VIEW



SECTION VIEW

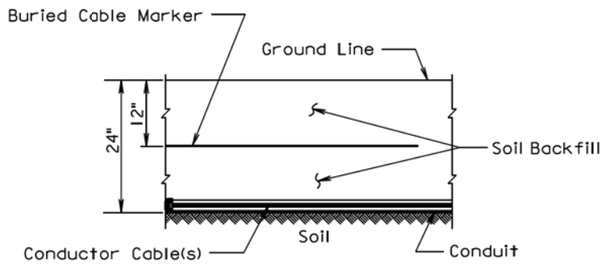
GENERAL NOTE:

The Buried Cable Marker shall be plastic, approximately 6" wide, and shall be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker shall 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 shall be printed in a contrasting color on the cable marker. The Buried Cable Marker shall be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker shall be incidental to the contract unit price per Foot for the bid item used for the electrical conductor.

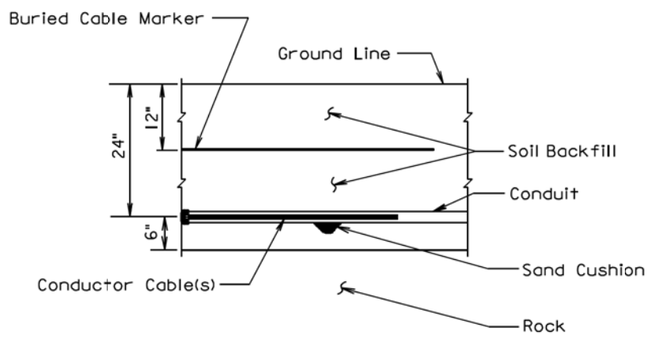
March 31, 2000

Published Date: 3rd Qtr. 2014	SDDOT	DIRECT BURIAL INSTALLATION OF CONDUCTOR CABLE(S)	PLATE NUMBER 635.75
			Sheet 1 of 1

PLOTTED FROM - TRMIINT17
PLOT NAME - 13
FILE - ...\REGM04GF\04GF CONTAINER.DGN



SECTION VIEW



SECTION VIEW

GENERAL NOTE:

The Buried Cable Marker shall be plastic, approximately 6" wide, and shall be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker shall 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 shall be printed in a contrasting color on the cable marker. The Buried Cable Marker shall be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker shall be incidental to the contract unit price per Foot for the bid item used for the electrical conductor.

March 31, 2000

Published Date: 3rd Qtr. 2014	**SDDOT**	***CONDUIT INSTALLATION***	*PLATE NUMBER* 635.76
			Sheet 1 of 1

PLOT SCALE - 1:206.452
PLOT NAME - 14
FILE - ...\REGM04GF\04GF CONTAINER.DGN
PLOTTED FROM - TRM1INT17