

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

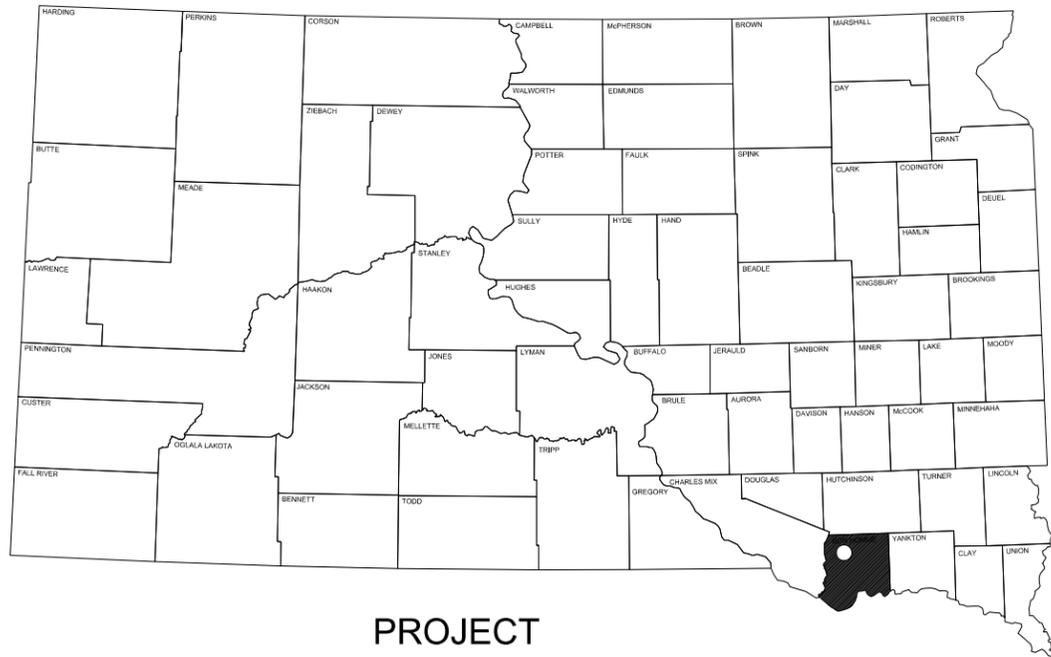
PROJECT PH 0037(145)30
S.D. HIGHWAY 37
BON HOMME COUNTY

RURAL INTERSECTION CONFLICT WARNING SYSTEM
PCN 053V

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0037(145)30	1	32
Plotting Date: 9/21/2016 Revised Date: 10/6/2016			

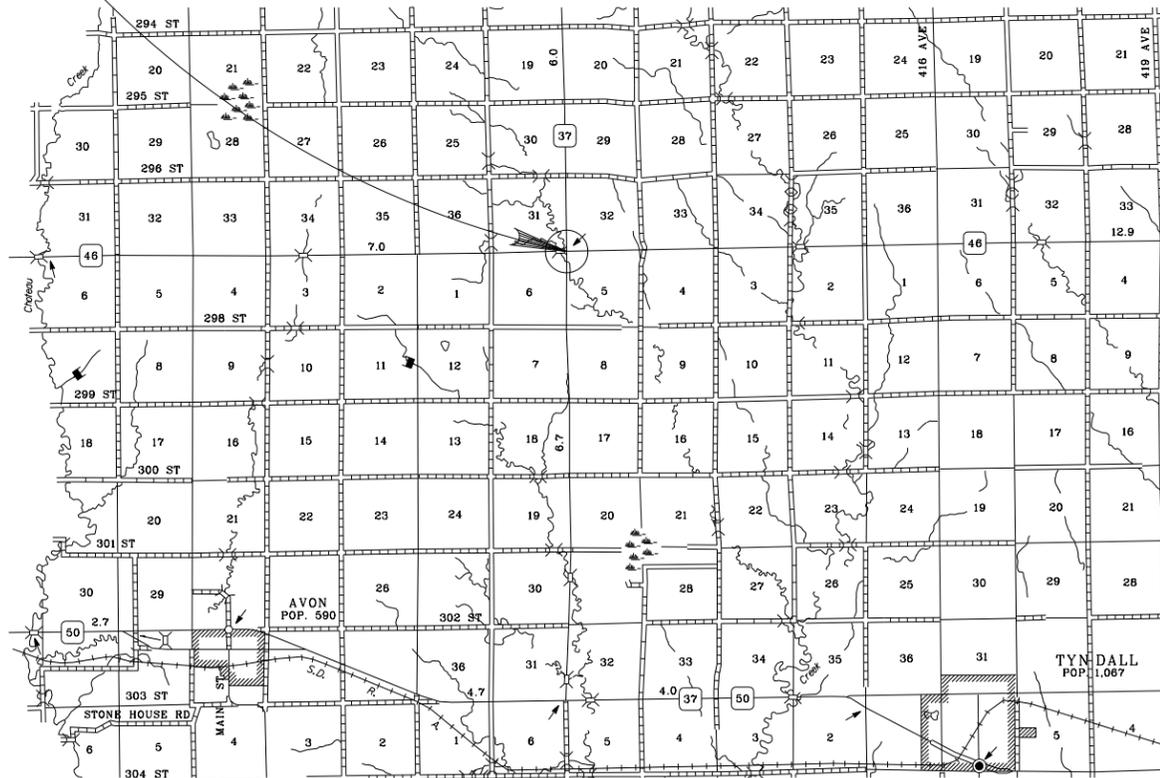
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PROJECT

PH 0037 (145) 30



GROSS LENGTH	2,630 FEET	0.50 MILES
LENGTH OF EXCEPTIONS	0 FEET	0 MILES
NET LENGTH	2,630 FEET	0.50 MILES

STORM WATER PERMIT
NONE REQUIRED

3

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	PH 0037(145)30	2	32
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ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E1520	Remove Signal Equipment	Lump Sum	LS
110E5020	Salvage Traffic Sign	28	Each
250E0010	Incidental Work	Lump Sum	LS
632E0010	1.25" Diameter Breakaway Support Concrete Footing	80.0	Ft
632E1320	2.0" x 2.0" Perforated Tube Post	209.4	Ft
632E1340	2.5" x 2.5" Perforated Tube Post	403.1	Ft
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	303.5	SqFt
632E3205	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity	125.8	SqFt
634E0010	Flagging	20	Hour
634E0110	Traffic Control Signs	210.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
635E4010	1 Section Vehicle Signal Head	6	Each
635E5302	Type 2 Electrical Junction Box	16	Each
635E5400	Electrical Service Cabinet	1	Each
635E5430	Traffic Signal Controller	1	Each
635E5535	Sawed-In, Preformed Detector Loop	10	Each
635E5580	LED Blankout Sign	2	Each
635E8120	2" Rigid Conduit, Schedule 40	2215	Ft
635E8130	3" Rigid Conduit, Schedule 40	45	Ft
635E8220	2" Rigid Conduit, Schedule 80	660	Ft
635E9020	1/C #10 AWG Copper Wire	30	Ft
635E9502	2/C #14 AWG Copper Tray Cable, K2	5470	Ft
635E9503	3/C #14 AWG Copper Tray Cable, K2	1645	Ft
635E9505	5/C #14 AWG Copper Tray Cable, K2	395	Ft

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

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 B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red

crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pit, or staging site associated with the project, cease construction activities in the affected area until the Whooping Crane departs and contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

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 public 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 public 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 public 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.

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 department designated sources and designated option material sources, stockpile sites, storage areas, and waste 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: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

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.

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.

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SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas 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.

SUPPLYING AS BUILT PLANS

If the system is constructed differently than what is stated in the plans, the Contractor shall supply as built plans to the Engineer and a copy shall be sent to the Traffic Design Engineer. The as built plans may include conduit layouts, wiring diagrams, or other drawings depicting the changes from the original plans.

SHOP DRAWING AND CATALOG CUTS SUBMITTALS

The Contractor shall submit shop drawings and catalog cuts in accordance with Section 985 of the Specifications.

Adobe PDF submittals shall be sent to the following email addresses:

John.Less@state.sd.us

ON-SITE INSPECTION

An on-site inspection of the system shall be conducted before acceptance of the project, once the system is complete and operational. The on-site inspection shall be conducted by the Project Engineer or Region Traffic Engineer with the Contractor, and the Traffic Design Engineer present.

REMOVE SIGNAL EQUIPMENT

Existing signal equipment, including but not limited to; wood poles, guy wires, disconnect switches, flasher cabinets, cables, conduit risers, overhead wires, flashers, and all associated equipment, shall be removed by the Contractor.

The Contractor shall notify the Project Engineer at least 14 days prior to removing the existing signal equipment.

The removed materials shall become property of the Contractor and shall be disposed of off Department right-of-way.

INCIDENTAL WORK

Incidental work includes, but is not limited to, the restoration of all disturbed areas to the satisfaction of the Engineer.

SIGNAL BACKPLATES

Signal backplates shall extend not less than 5 inches from the edge of the signal head at the top, bottom, and sides. The bottom of the backplate on vehicle signal faces mounted directly above pedestrian signal indications shall

be sized to permit the separate adjustment of the vehicle and pedestrian signal indication and may be less than 4 inches.

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 if project changes are necessary to avoid utility impacts.

TRAFFIC SIGNAL METER SOCKETS

The meter sockets provided for traffic signals by the Contractor shall be a 200 amp, positive by-pass.

TRAFFIC SIGNAL CONTROLLER

The provision of a USB port on the traffic signal controller is optional.

The Contractor is responsible for programming controllers with the signal timings provided in the project "System Requirements" and "Concept of Operations" documents. Copies of the documents are available by contacting John Less (john.less@state.sd.us).

All costs for constructing the concrete pad and footing, materials, labor, and furnishing and installing the controller cabinet shall be incidental to the contract unit price per each for "Traffic Signal Controller".

MULTICONDUCTOR CONTROL CABLE FOR SIGNAL CIRCUITS

The cable furnished for signal circuits shall be furnished with the number and size of the conductors shown in the plans and shall meet the specifications for either of the two types specified below.

1. General Purpose Control Cable with stranded copper conductors, ICEA S-61-402, PE-PV Insulated (20-10), 600 volts.
2. General Purpose Control Cable with standard copper conductors, Aerial and Duct, IMSA 20-1, 600 volts.

The conductor jackets for the above cables shall be color coded in accordance with ICEA S-73-532 Table E2.

DETECTOR WIRE LOOP SPLICING

Detector loop wire splices shall be made using wire nuts over soldered connections, and sealed in 3M Scotchcast 350G-N connector sealing packs or an approved equal.

TABLE OF CONDUIT AND CABLE QUANTITIES

Location to Location		Linear Distance	Rigid Conduit			Copper Wire	Copper Tray Cable, K2		
			Schedule 40		Schedule 80	#10 AWG	#14 AWG		
			2"	3"	2"	1/C	2/C	3/C	5/C
		Ft	Ft	Ft	Ft	Ft	Ft	Ft	
SD HWY 37 & SD HWY 46									
SERVICE CABINET	CONTROLLER	10	10			30			
CONTROLLER	JB12	45		45			360	90	90
JB12	F-8A/F-8B	20	20						20
JB12	JB11	80		80			160		
JB11	JB10	395	395				395		
JB12	JB4	190		190			760	190	190
JB4	JB3	245	245				245		
JB3	JB2	65		65			65		
JB2	JB1	85	85				85		
JB4	JB5	70		70			140	70	70
JB5	F-4A/F-4B	25	25						25
JB5	JB6	315	315				630	315	
JB6	JB7	315	315				630	315	
JB7	F-2	30	30					30	
JB7	JB8	65		65			130		
JB8	JB9	135	135				270		
JB12	JB13	500	500				1000	500	
JB13	JB14	105		105			210	105	
JB14	F-6	30	30					30	
JB14	JB15	110	110				220		
JB15	JB16	85		85			170		
Total:			2,215	45	660	30	5,470	1,645	395

Plot Scale - 1:100

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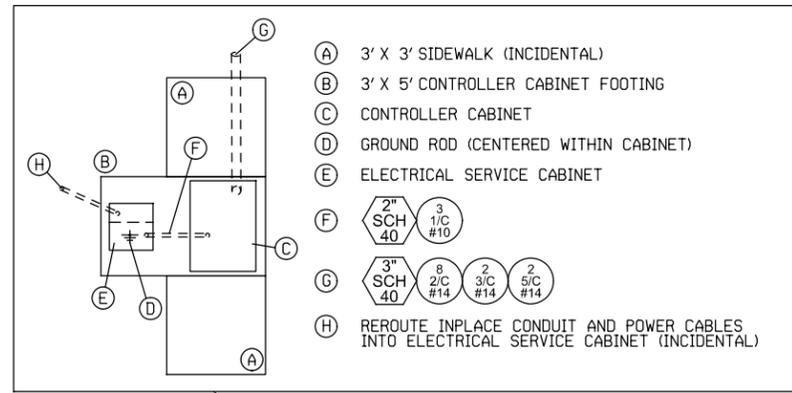
EXISTING TOPOGRAPHY SYMBOLOLOGY AND LEGEND

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0037(145)30	5	32
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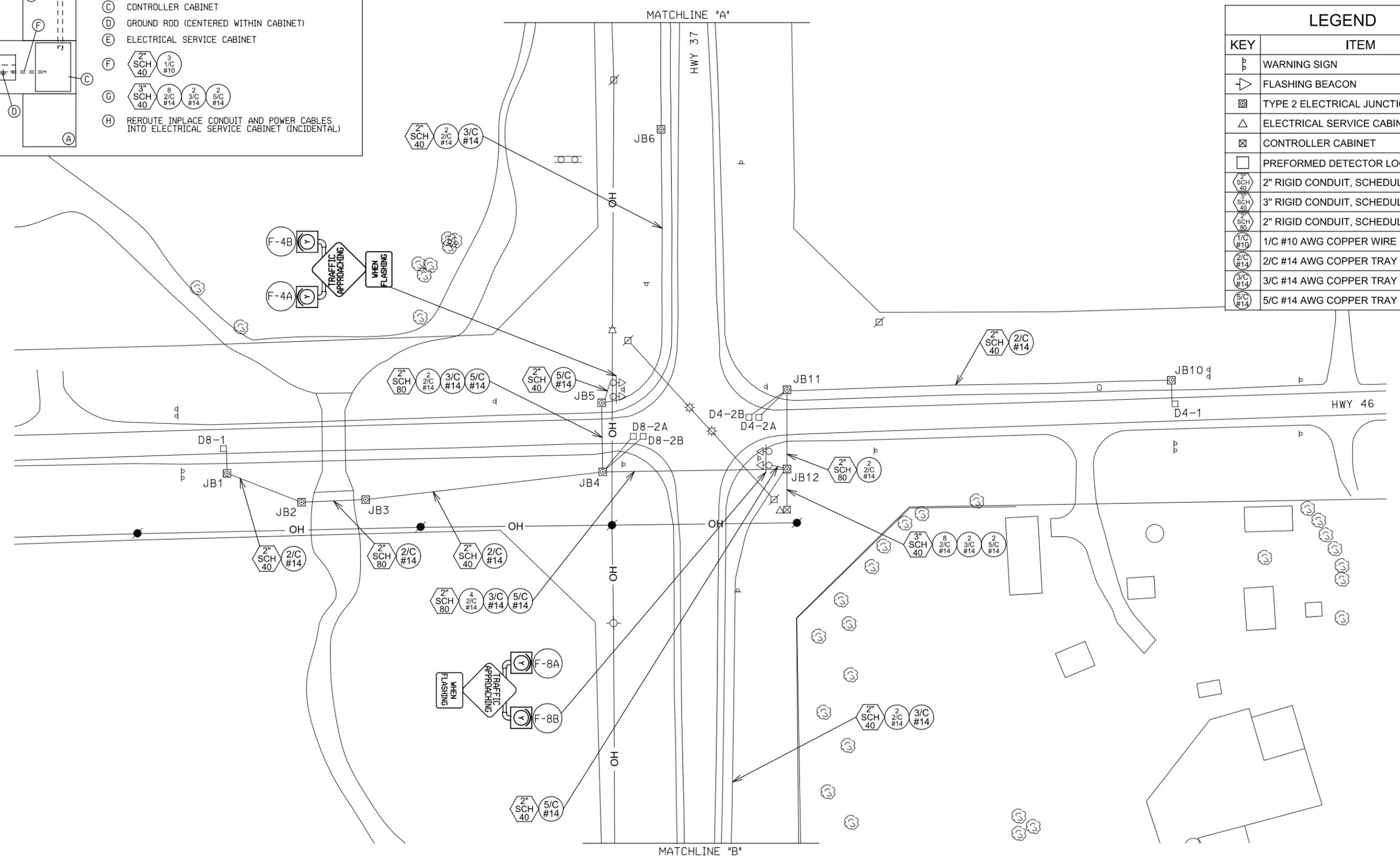
Plot Scale - 1:200

Anchor		Hedge		Shrub Tree	
Antenna		Highway R.O.W. Marker		Sidewalk	
Approach		Interstate Close Gate		Sign Face	
Assumed Corner		Iron Pin		Sign Post	
Azimuth Marker		Irrigation Ditch		Slough Or Marsh	
BBQ Grill/ Fireplace		Lake Edge		Spring	
Bearing Tree		Lawn Sprinkler		Stream Gauge	
Bench Mark		Mailbox		Street Marker	
Box Culvert		Manhole Electric		Subsurface Utility Exploration Test Hole	
Bridge		Manhole Gas		Telephone Fiber Optics	
Brush		Manhole Misc		Telephone Junction Box	
Buildings		Manhole Sanitary Sewer		Telephone Pole	
Bulk Tank		Manhole Storm Sewer		Television Cable Jct Box	
Cattle Guard		Manhole Telephone		Television Tower	
Cemetery		Manhole Water		Test Wells/Bore Holes	
Centerline		Merry-Go-Round		Traffic Signal	
Cistern		Microwave Radio Tower		Trash Barrel	
Clothes Line		Misc. Line		Tree Belt	
Commercial Sign Double Face		Misc. Property Corner		Tree Coniferous	
Commercial Sign One Post		Misc. Post		Tree Deciduous	
Commercial Sign Overhead		Overhang Or Encroachment		Tree Stumps	
Commercial Sign Two Post		Overhead Utility Line		Triangulation Station	
Concrete Symbol		Parking Meter		Underground Electric Line	
Creek Edge		Pipe With End Section		Underground Gas Line	
Curb/Gutter		Pipe With Headwall		Underground High Pressure Gas Line	
Curb		Pipe Without End Section		Underground Sanitary Sewer	
Dam Grade/Dike/Levee		Playground Slide		Underground Storm Sewer	
Deck Edge		Playground Swing		Underground Tank	
Ditch Block		Power And Light Pole		Underground Telephone Line	
Doorway Threshold		Power And Telephone Pole		Underground Television Cable	
Drainage Profile		Power Meter		Underground Water Line	
Drop Inlet		Power Pole		Warning Sign One Post	
Edge Of Asphalt		Power Pole And Transformer		Warning Sign Two Post	
Edge Of Concrete		Power Tower Structure		Water Fountain	
Edge Of Gravel		Propane Tank		Water Hydrant	
Edge Of Other		Property Pipe		Water Meter	
Edge Of Shoulder		Property Pipe With Cap		Water Tower	
Elec. Trans./Power Jct. Box		Property Stone		Water Valve	
Fence Barbwire		Public Telephone		Water Well	
Fence Chainlink		Railroad Crossing Signal		Weir Rock	
Fence Electric		Railroad Milepost Marker		Windmill	
Fence Misc.		Railroad Profile		Wingwall	
Fence Rock		Railroad R.O.W. Marker		Witness Corner	
Fence Snow		Railroad Signs			
Fence Wood		Railroad Switch		State and National Line	
Fence Woven		Railroad Track		County Line	
Fire Hydrant		Railroad Trestle		Section Line	
Flag Pole		Rebar		Quarter Line	
Flower Bed		Rebar With Cap		Sixteenth Line	
Gas Valve Or Meter		Reference Mark		Property Line	
Gas Pump Island		Regulatory Sign One Post		Construction Line	
Grain Bin		Regulatory Sign Two Post		R. O. W. Line	
Guardrail		Retaining Wall		New R. O. W. Line	
Guide Sign One Post		Riprap		Cut and Fill Limits	
Guide Sign Two Post		River Edge		Control of Access	
Gutter		Rock And Wire Baskets		New Control of Access	
Guy Pole		Rockpiles		Proposed ROW (After Property Disposal)	
Haystack		Satellite Dish			
		Septic Tank			

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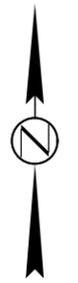


LEGEND	
KEY	ITEM
	WARNING SIGN
	FLASHING BEACON
	TYPE 2 ELECTRICAL JUNCTION BOX
	ELECTRICAL SERVICE CABINET
	CONTROLLER CABINET
	PREFORMED DETECTOR LOOP
	2" RIGID CONDUIT, SCHEDULE 40
	3" RIGID CONDUIT, SCHEDULE 40
	2" RIGID CONDUIT, SCHEDULE 80
	1/C #10 AWG COPPER WIRE
	2/C #14 AWG COPPER TRAY CABLE, K2
	3/C #14 AWG COPPER TRAY CABLE, K2
	5/C #14 AWG COPPER TRAY CABLE, K2



GENERAL NOTE

- SEE SHEET 24 FOR PERMANENT SIGNING LAYOUT.
- INSTALL DETECTOR D4-1 483' FROM INTERSECTION.
- INSTALL DETECTOR D8-1 483' FROM INTERSECTION.



Plot Scale - 1:100

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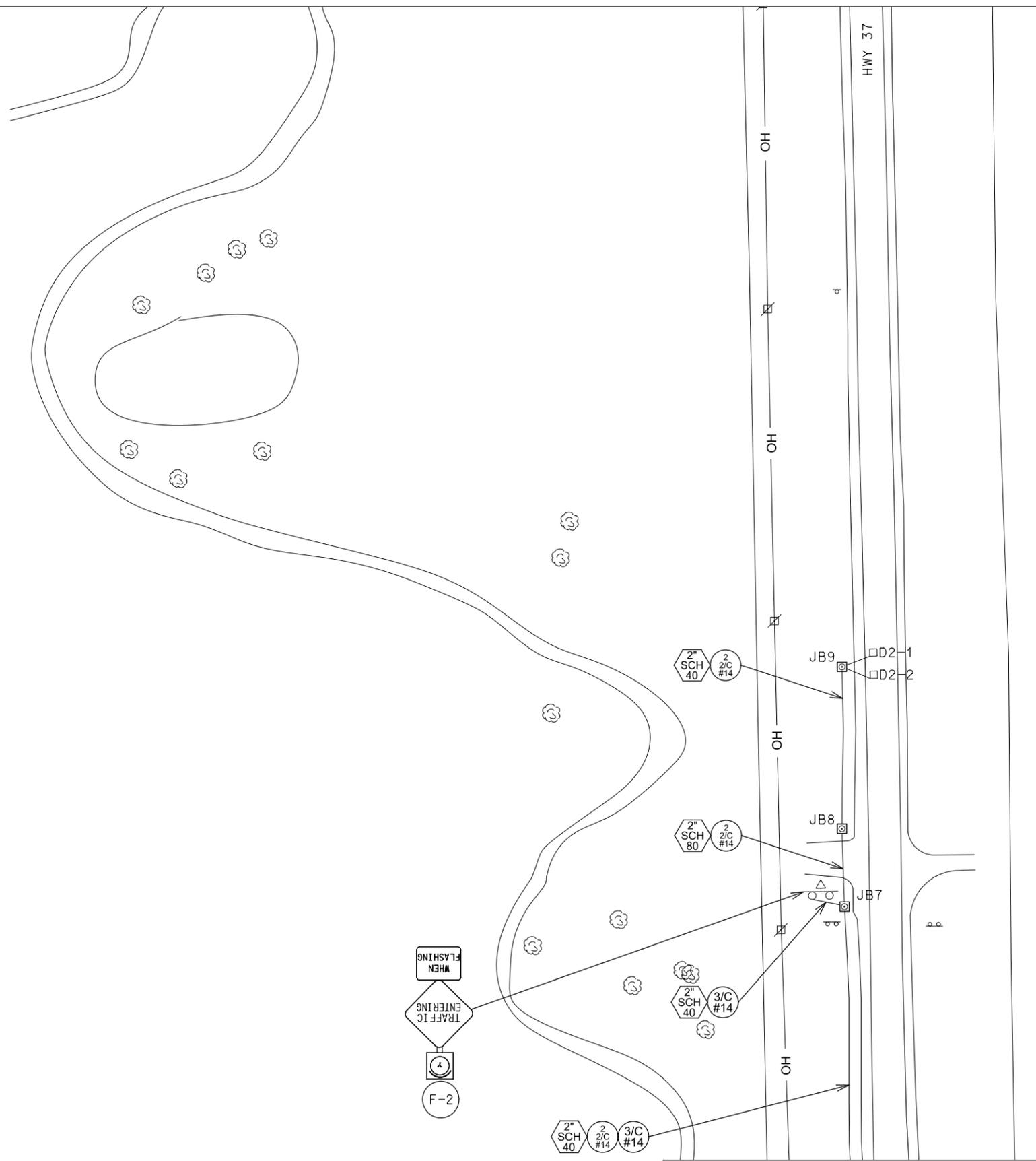
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0037(145)30	7	32

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LEGEND	
KEY	ITEM
	WARNING SIGN
	FLASHING BEACON
	TYPE 2 ELECTRICAL JUNCTION BOX
	ELECTRICAL SERVICE CABINET
	CONTROLLER CABINET
	PREFORMED DETECTOR LOOP
	2" RIGID CONDUIT, SCHEDULE 40
	3" RIGID CONDUIT, SCHEDULE 40
	2" RIGID CONDUIT, SCHEDULE 80
	1/C #10 AWG COPPER WIRE
	2/C #14 AWG COPPER TRAY CABLE, K2
	3/C #14 AWG COPPER TRAY CABLE, K2
	5/C #14 AWG COPPER TRAY CABLE, K2



GENERAL NOTE

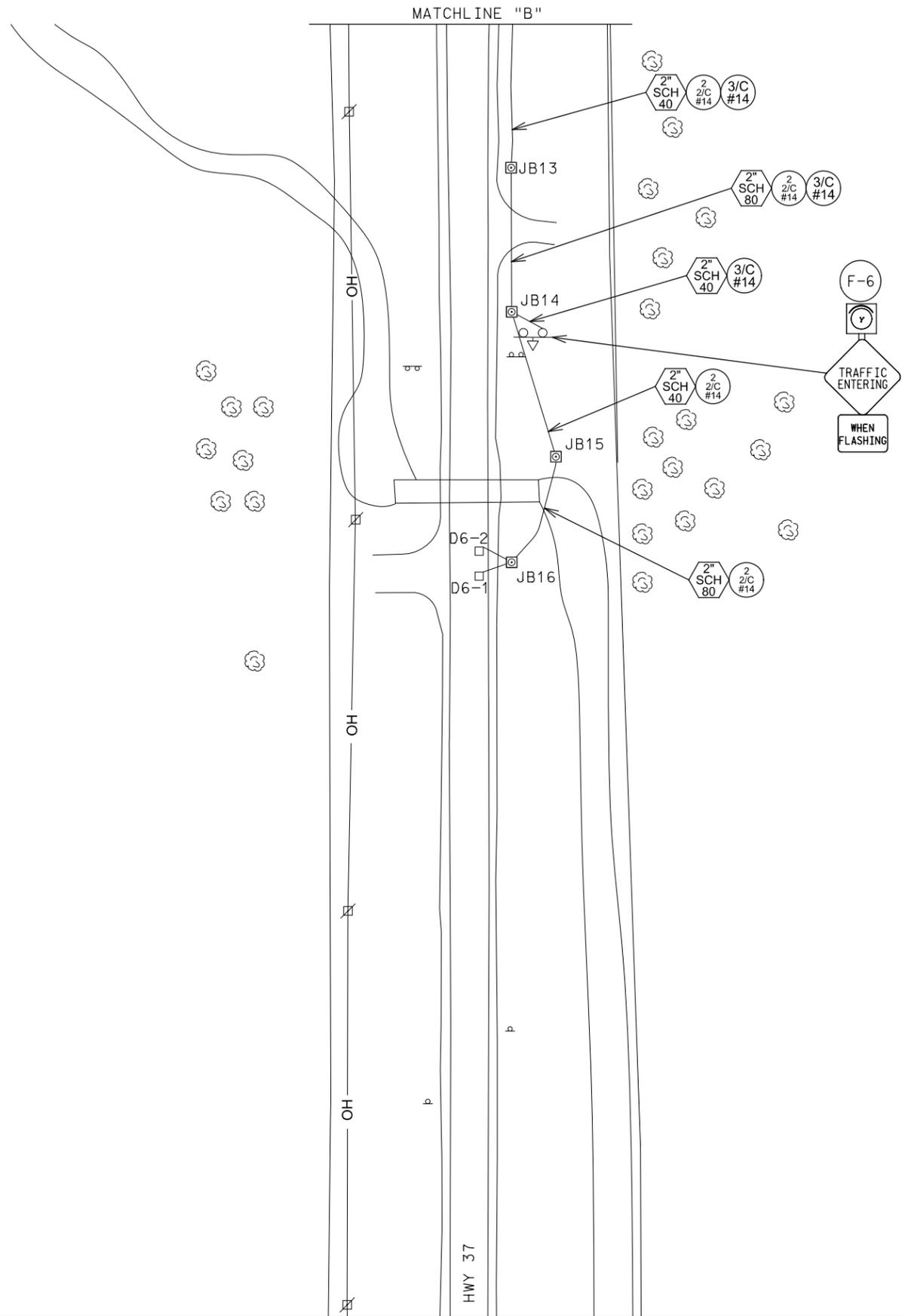
1. SEE SHEET 24 FOR PERMANENT SIGNING LAYOUT.
2. INSTALL DETECTOR D2-1 820' FROM INTERSECTION.
3. INSTALL DETECTOR D2-2 802' FROM INTERSECTION.



LEGEND	
KEY	ITEM
	WARNING SIGN
	FLASHING BEACON
	TYPE 2 ELECTRICAL JUNCTION BOX
	ELECTRICAL SERVICE CABINET
	CONTROLLER CABINET
	PREFORMED DETECTOR LOOP
	2" RIGID CONDUIT, SCHEDULE 40
	3" RIGID CONDUIT, SCHEDULE 40
	2" RIGID CONDUIT, SCHEDULE 80
	1/C #10 AWG COPPER WIRE
	2/C #14 AWG COPPER TRAY CABLE, K2
	3/C #14 AWG COPPER TRAY CABLE, K2
	5/C #14 AWG COPPER TRAY CABLE, K2

Plot Scale - 1:100

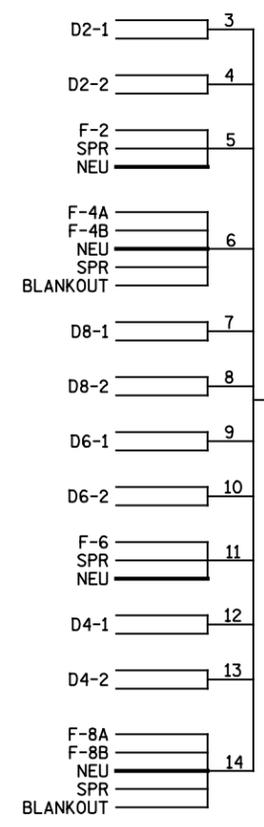
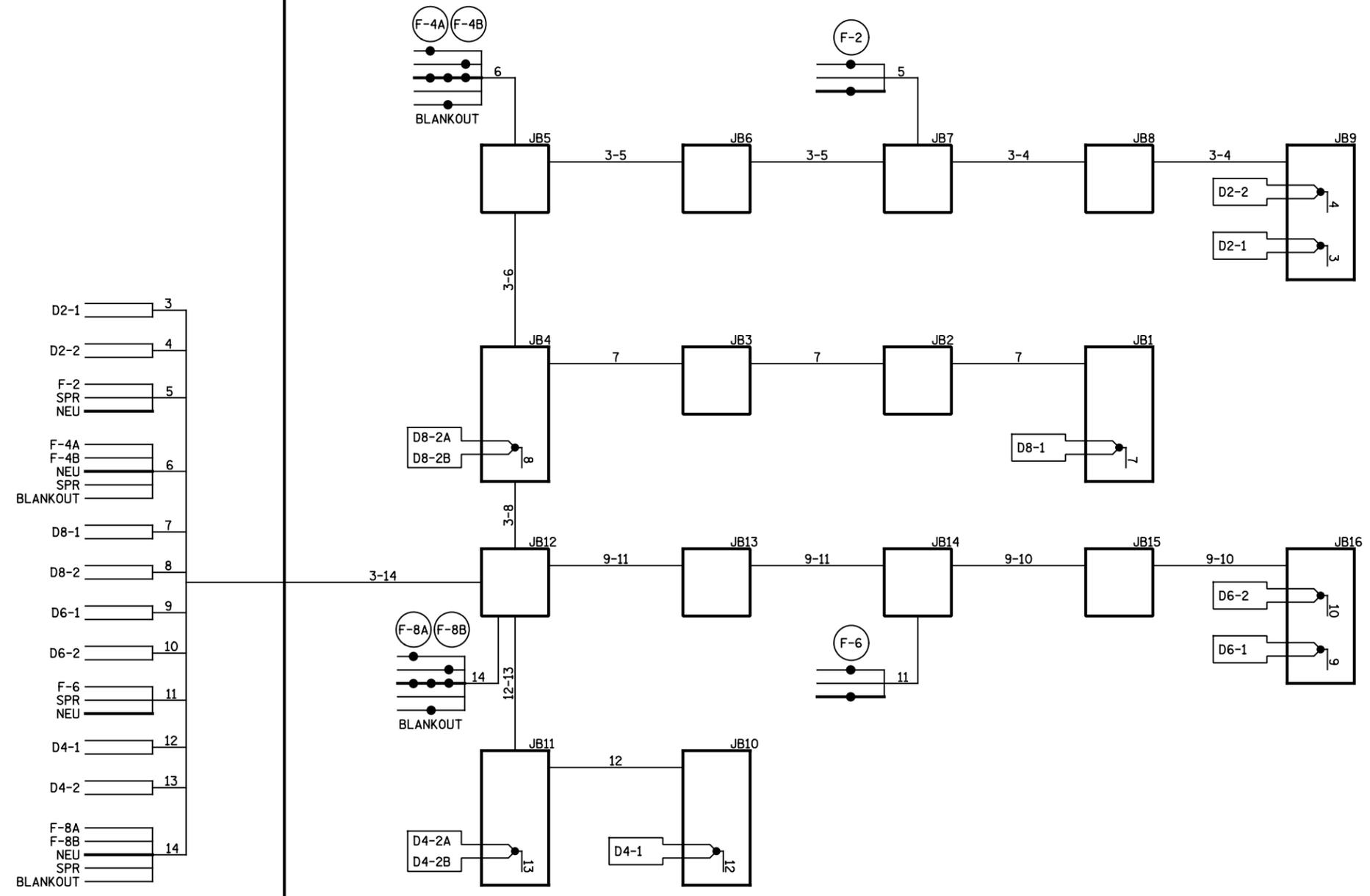
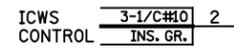
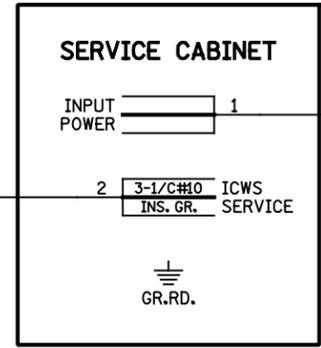
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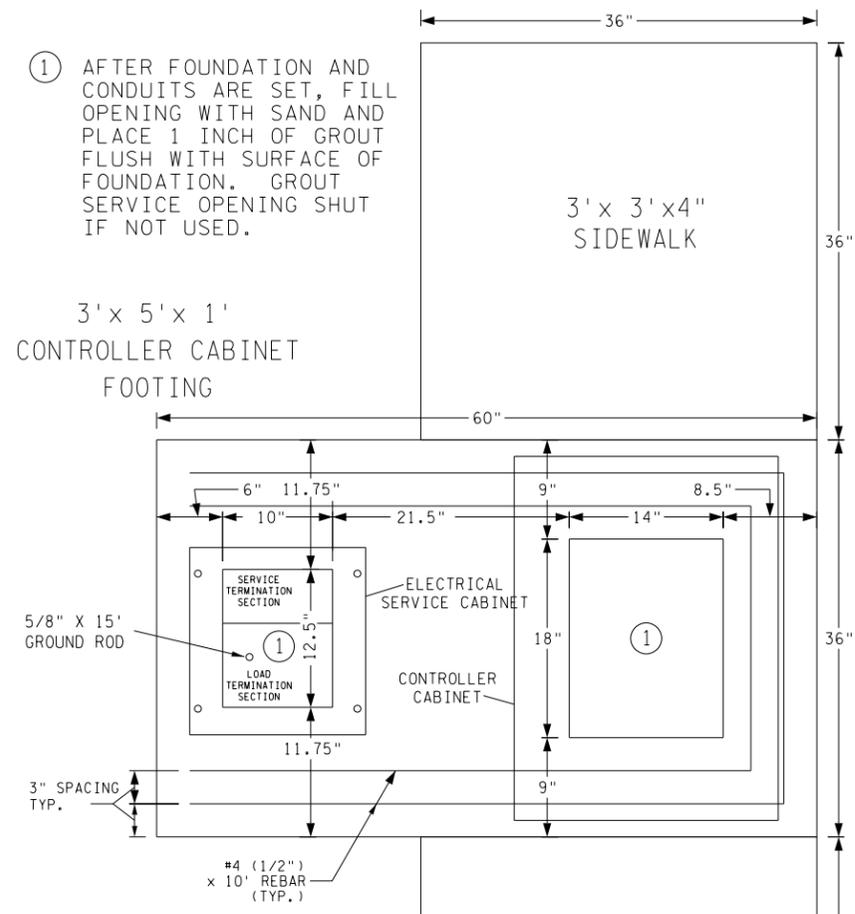


- GENERAL NOTE
- SEE SHEET 24 FOR PERMANENT SIGNING LAYOUT.
 - INSTALL DETECTOR D6-1 820' FROM INTERSECTION.
 - INSTALL DETECTOR D6-2 802' FROM INTERSECTION.

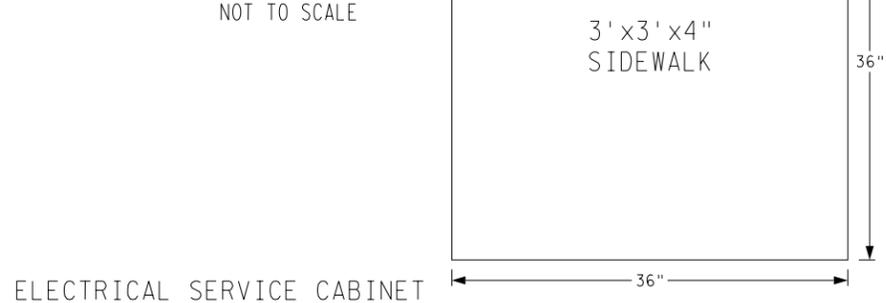


CONTROL CABINET

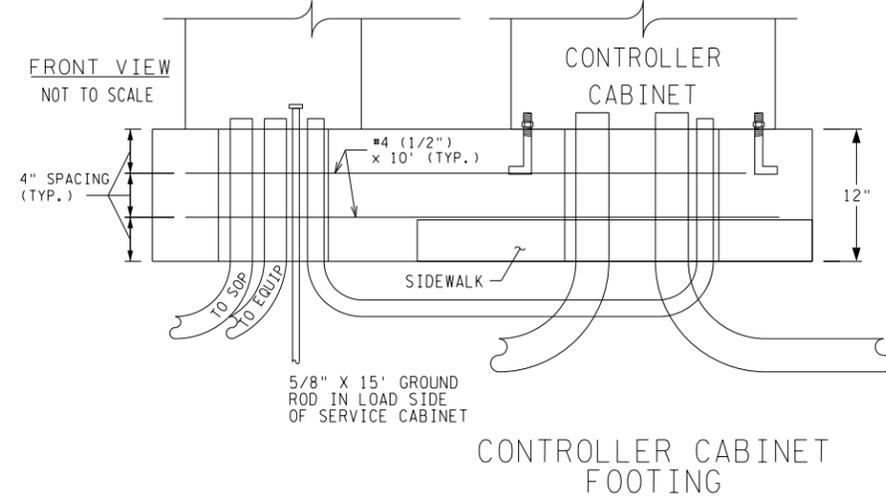




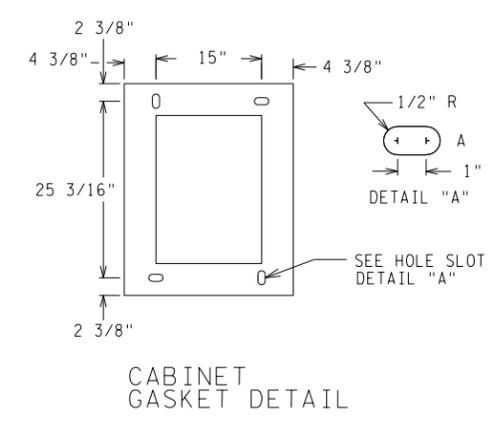
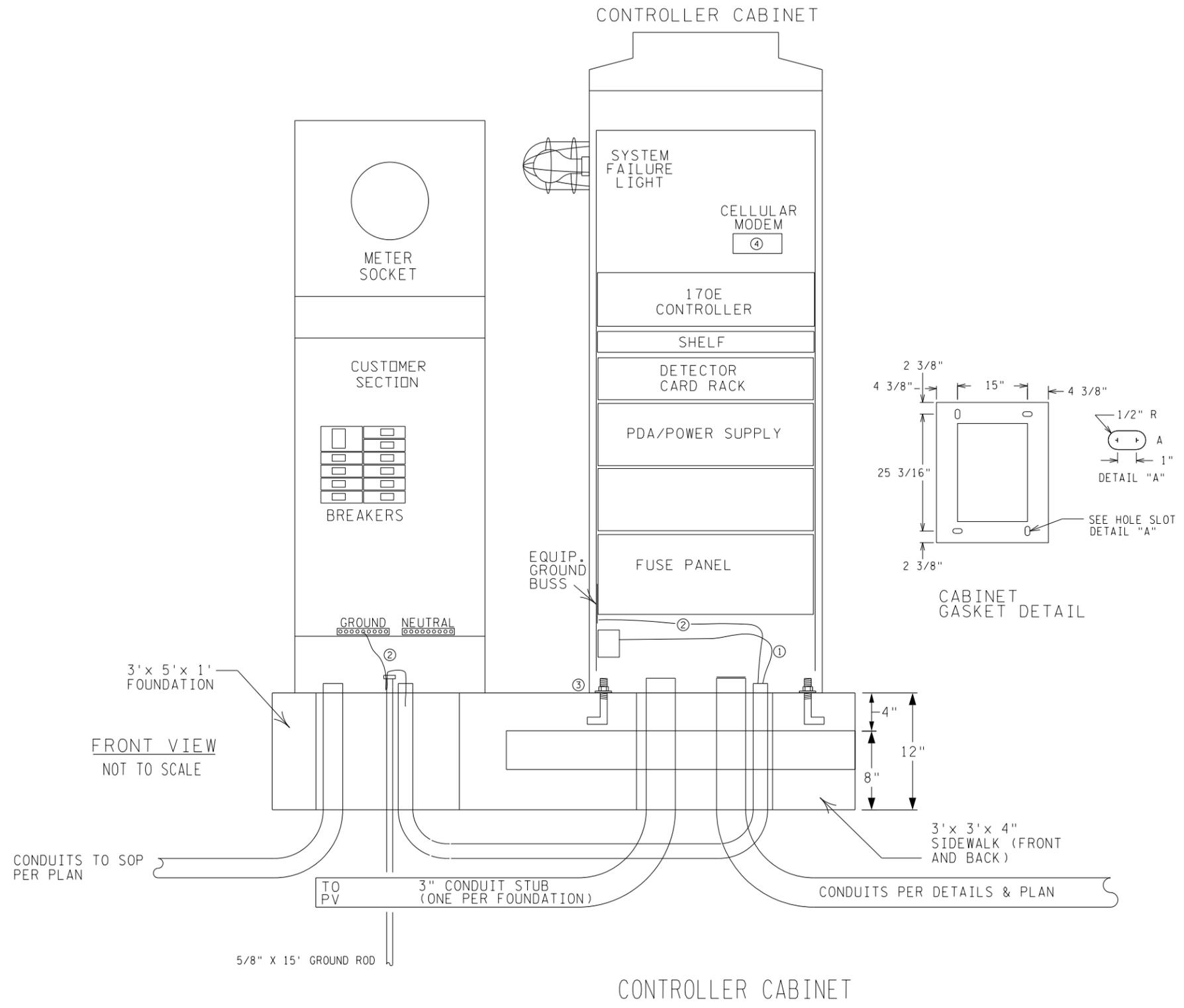
TOP VIEW
NOT TO SCALE



FRONT VIEW
NOT TO SCALE



- ① F&I CABLEs - PER PLANS
- ② F&I 1-1/C NO6 BARE GROUND WIRE-COAT CONNECTION WITH ANTI-OXIDIZING AGENT
- ③ NEOPRENE GASKET
- ④ CELLULAR MODEM

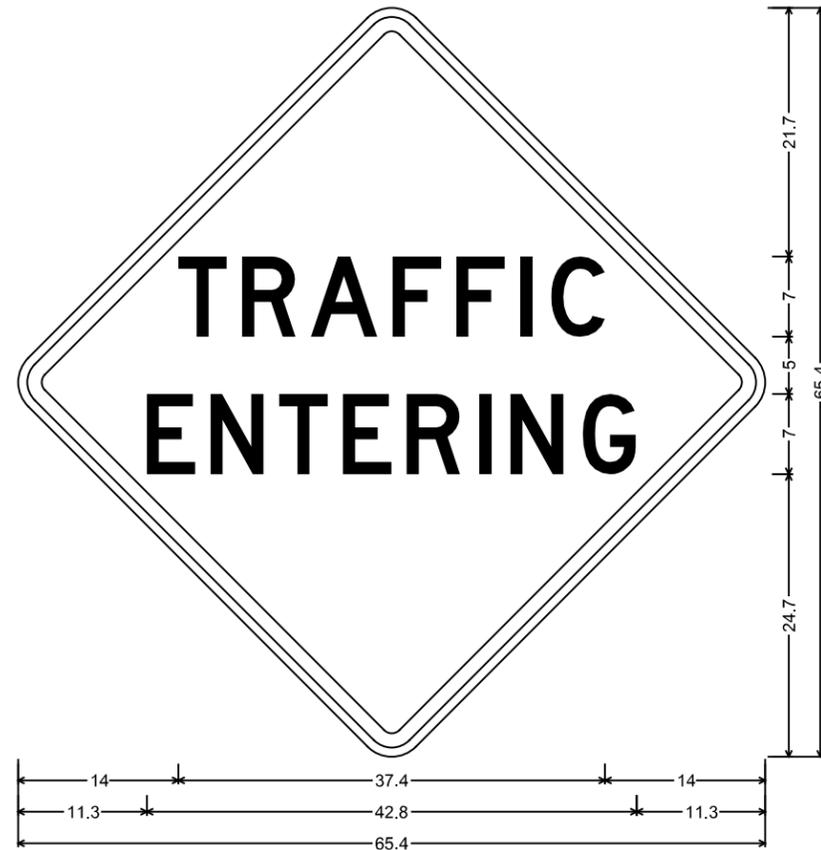


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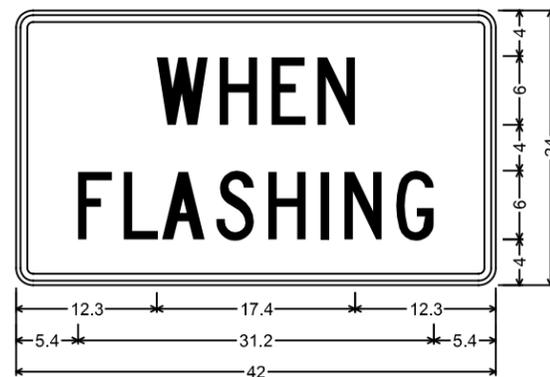
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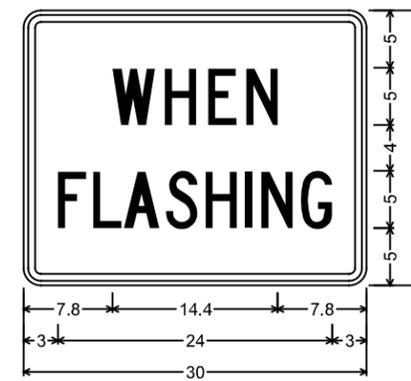
TRAFFIC ENTERING 48X48;
 48.0" across sides 3.0" Radius, 1.3" Border, 0.8" Indent, Black on Yellow;
 [TRAFFIC] D; [ENTERING] D;



LED BLANKOUT SIGN - FOR REFERENCE ONLY



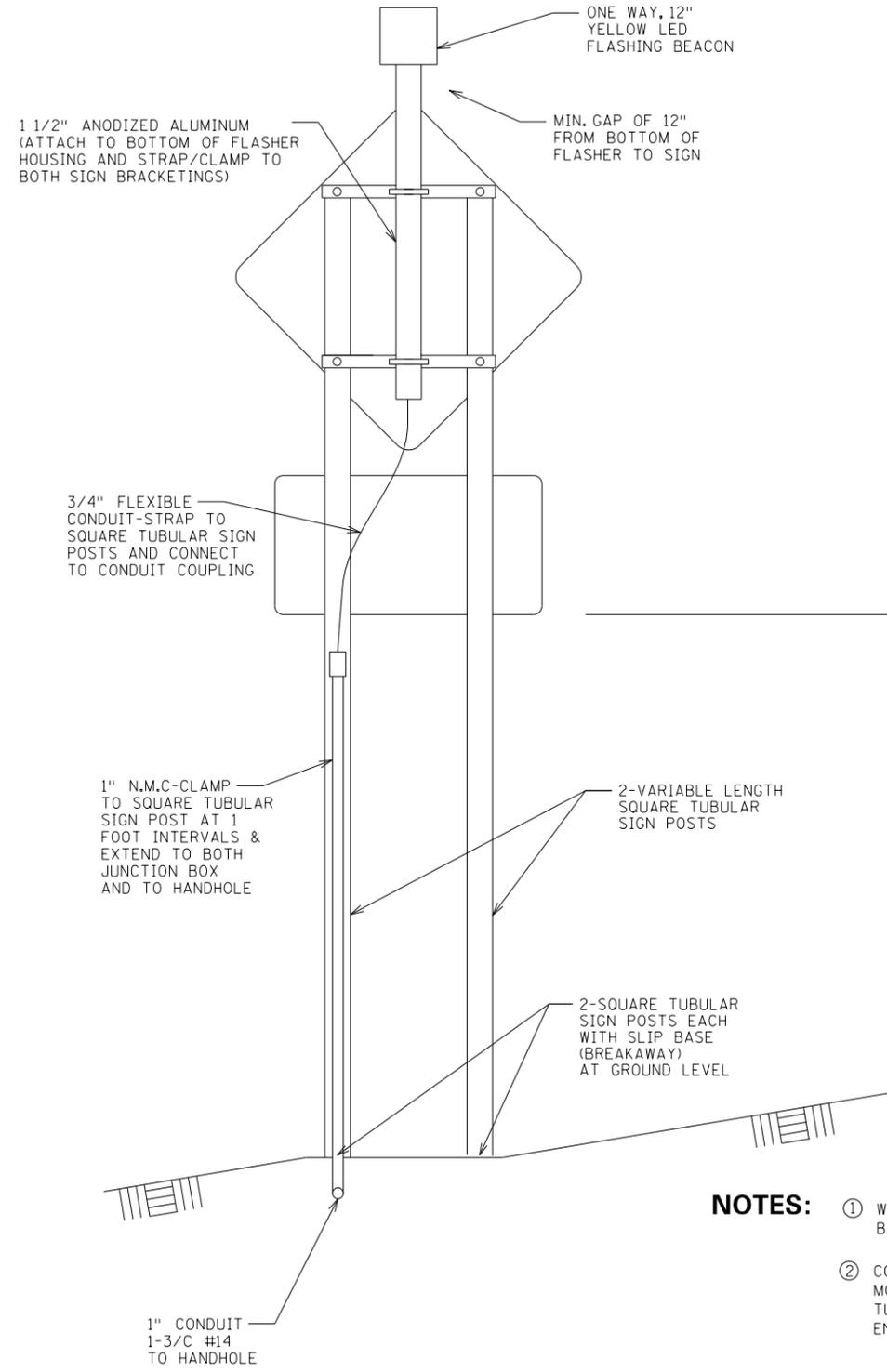
WHEN FLASHING;
 1.5" Radius, 0.6" Border, 0.4" Indent, Black on Yellow;
 [WHEN] C; [FLASHING] C;



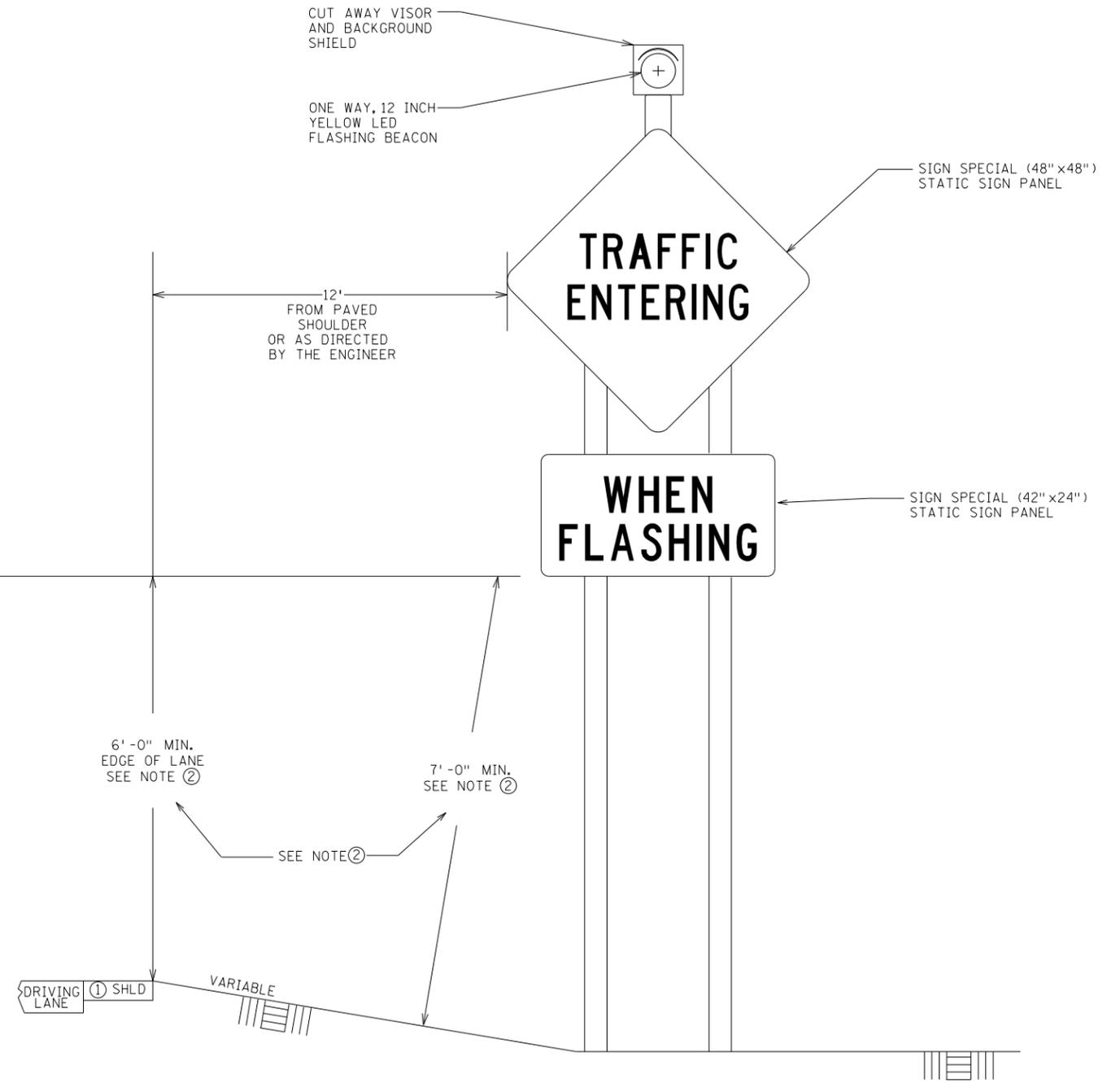
WHEN FLASHING;
 1.5" Radius, 0.6" Border, 0.4" Indent, Black on Yellow;
 [WHEN] C;
 [FLASHING] C specified length;

File - ...CAD_BIM\Plan\8743_sp01.dgn

BACK VIEW

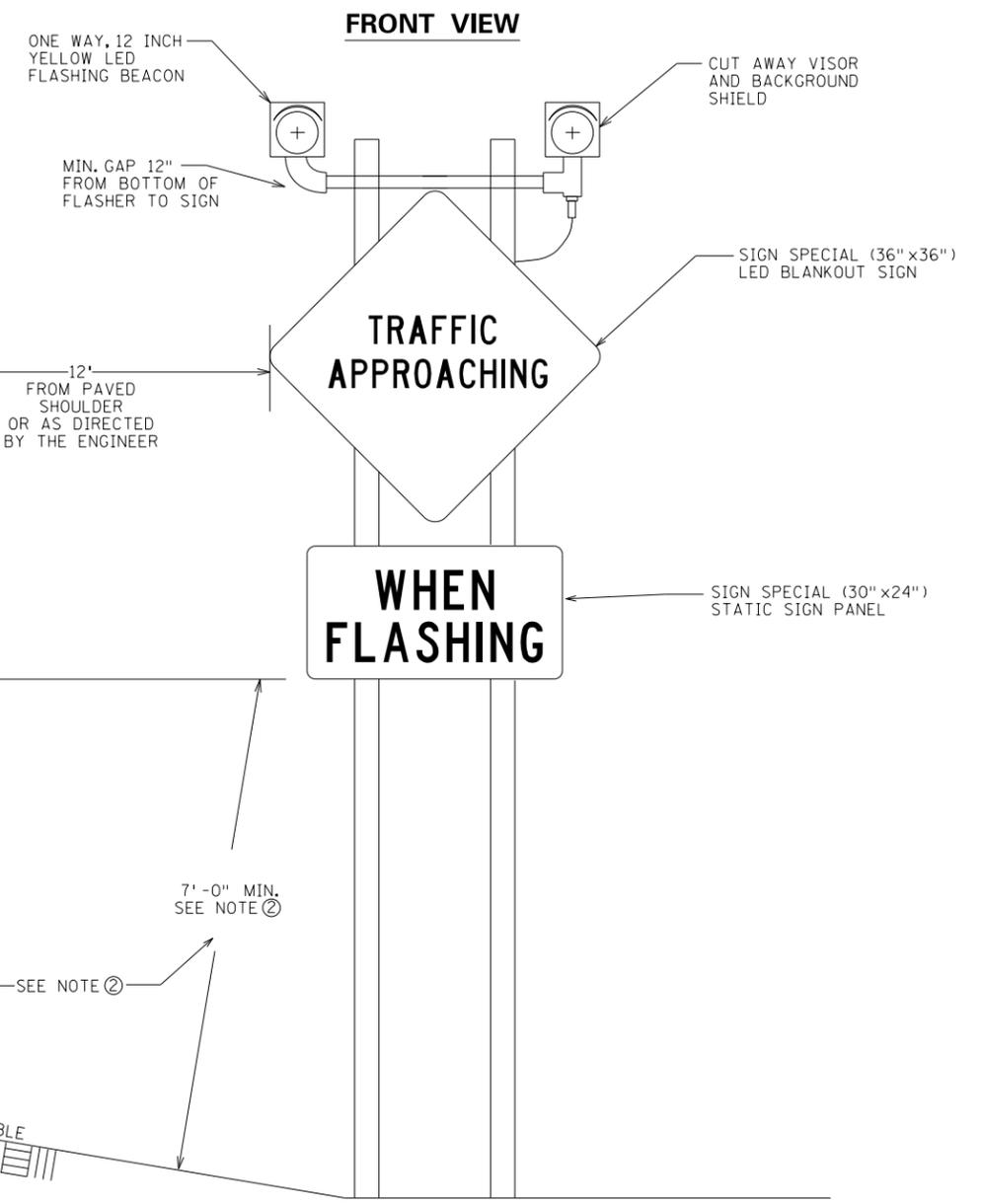
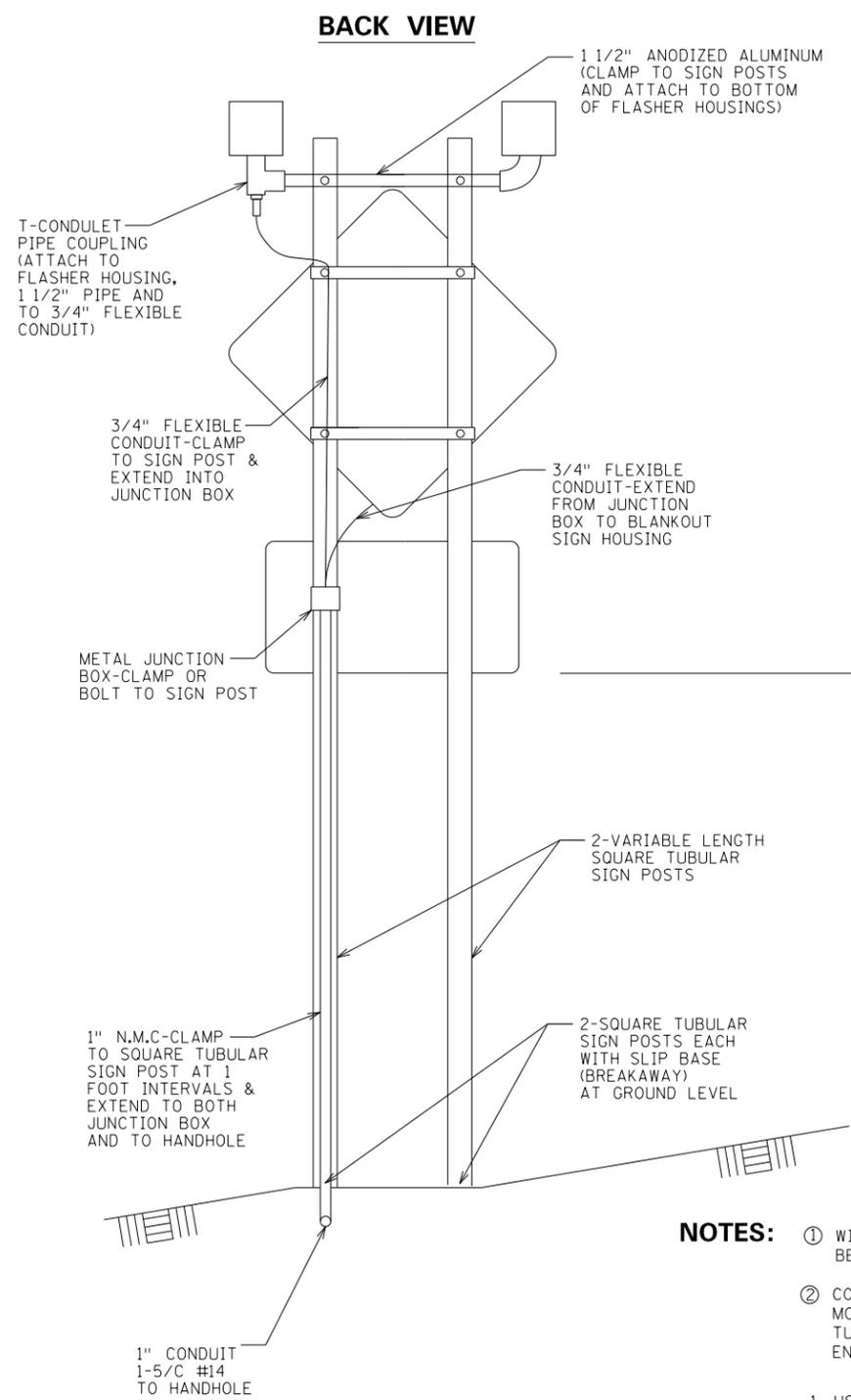


FRONT VIEW



NOTES:

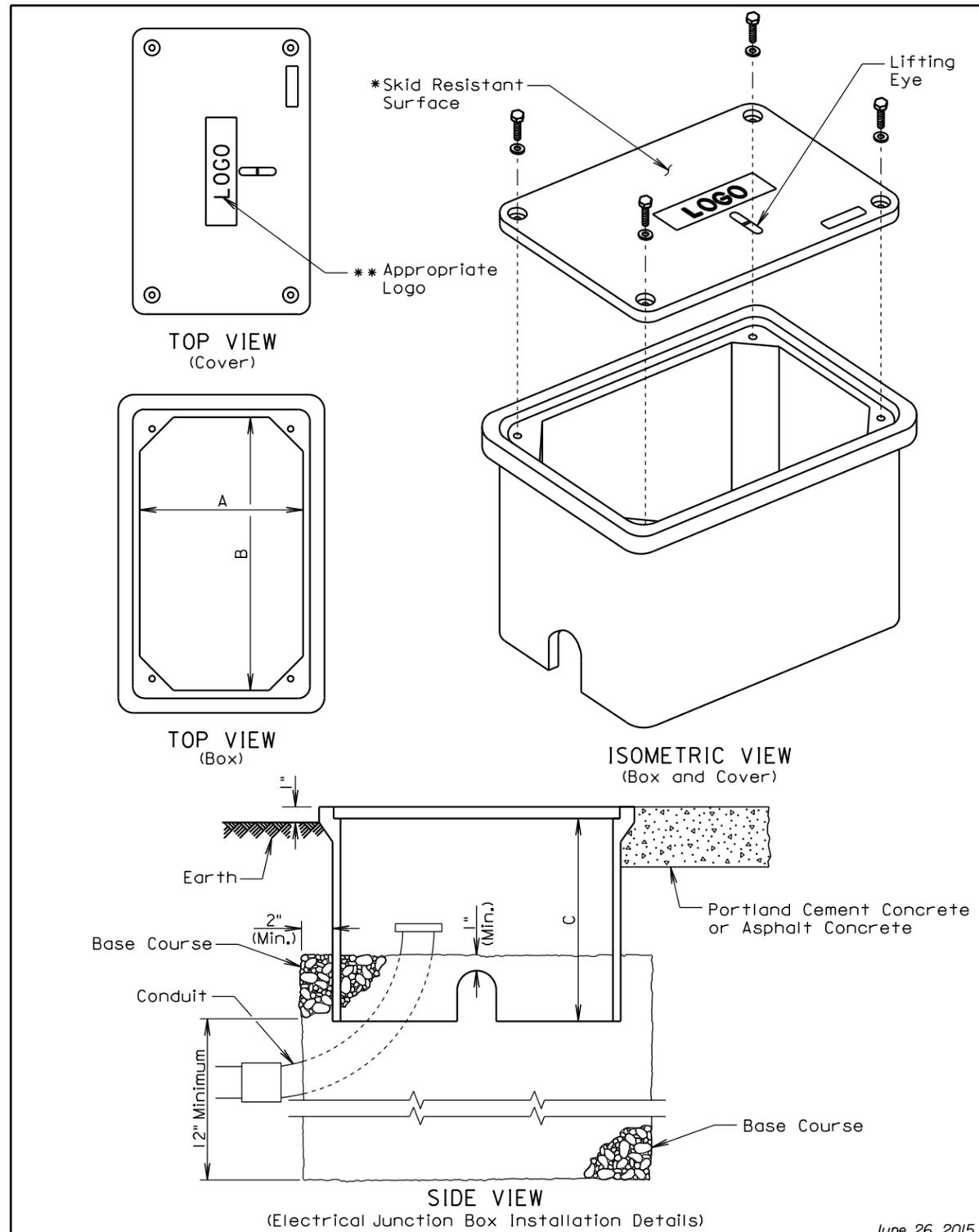
- ① WITHOUT PAVED SHOULDER, EDGE OF SIGN SHALL BE 12' - 0" FROM EDGE OF DRIVING LANE.
 - ② CONTRACTOR SHALL MEET BOTH MINIMUM REQUIRED MOUNTING HEIGHTS WITH THE SHORTEST SQUARE TUBE POSTS POSSIBLE OR AS DIRECTED BY THE ENGINEER.
1. USE STAINLESS STEEL 5/16 INCH BOLTS, WASHERS, AND NYLON INSERT LOCK NUTS.
 2. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.



- NOTES:**
- ① WITHOUT PAVED SHOULDER, EDGE OF SIGN SHALL BE 12' - 0" FROM EDGE OF DRIVING LANE.
 - ② CONTRACTOR SHALL MEET BOTH MINIMUM REQUIRED MOUNTING HEIGHTS WITH THE SHORTEST SQUARE TUBE POSTS POSSIBLE OR AS DIRECTED BY THE ENGINEER.
1. USE STAINLESS STEEL 5/16 INCH BOLTS, WASHERS, AND NYLON INSERT LOCK NUTS.
 2. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.

Plot Scale - 1:100
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Plot Scale - 1:100



June 26, 2015

<i>Published Date: 3rd Qtr. 2016</i>	S D D O T	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 1 of 2

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.

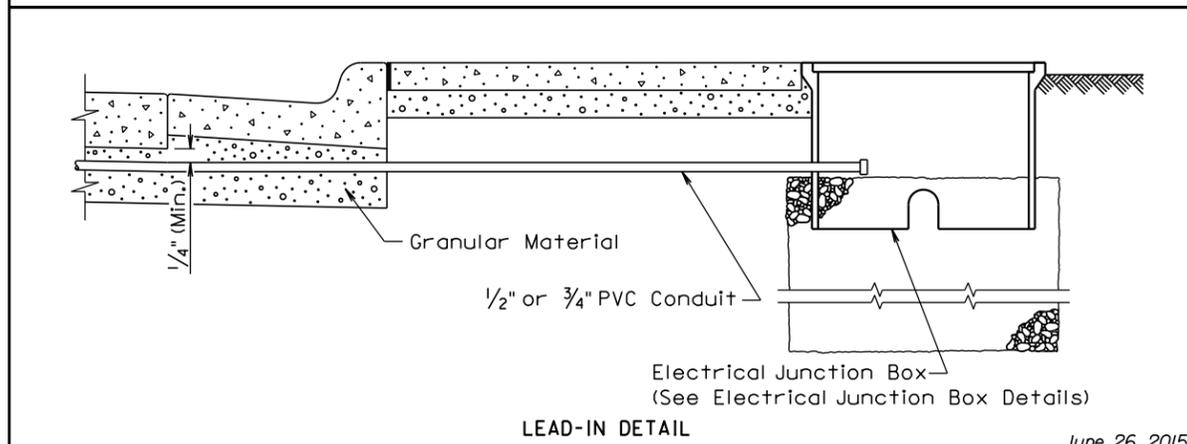
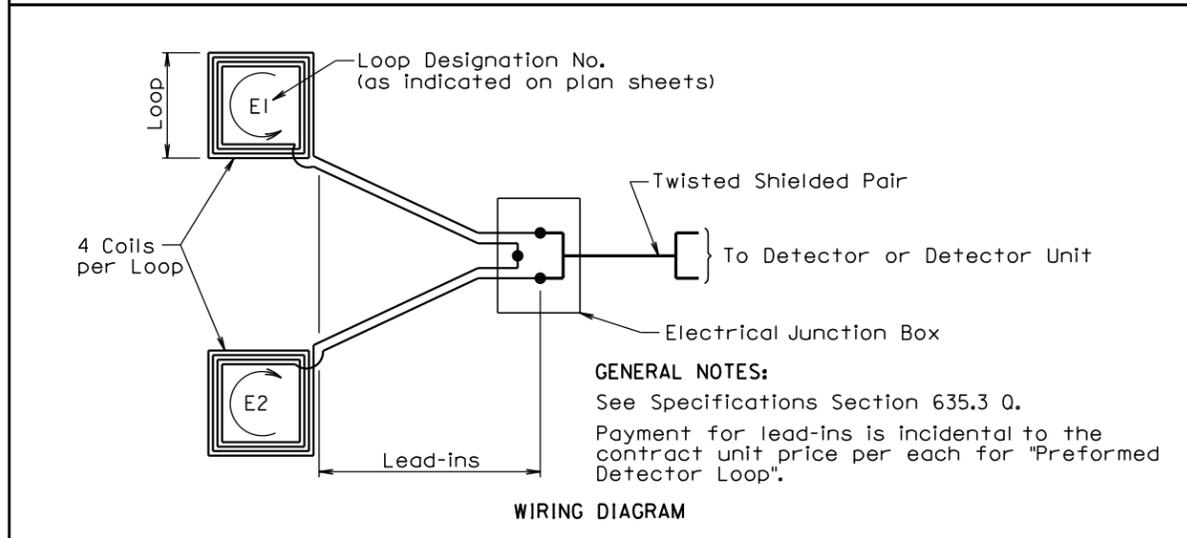
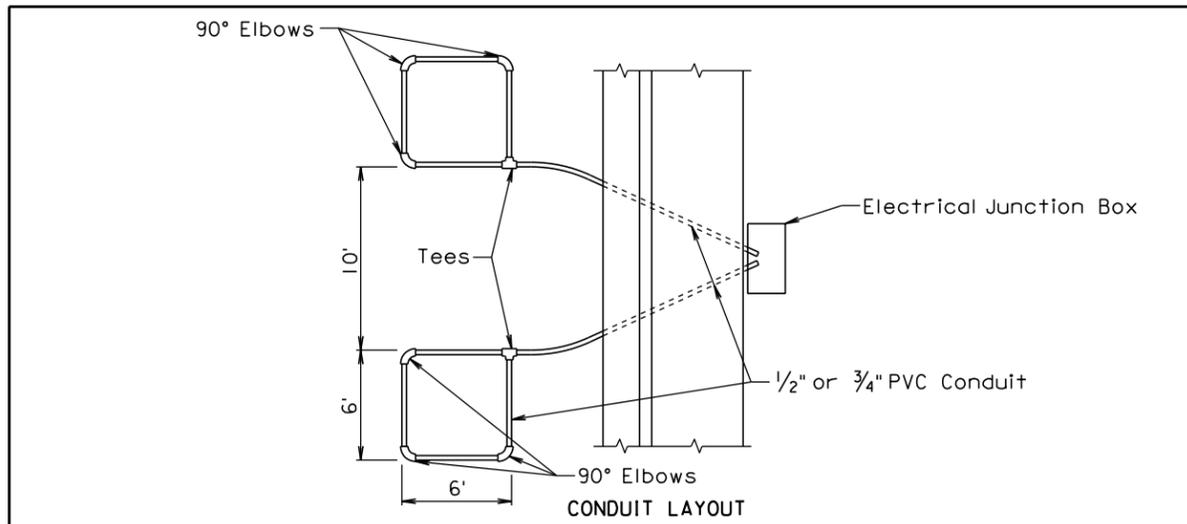
The electrical junction boxes shall be UL listed.

June 26, 2015

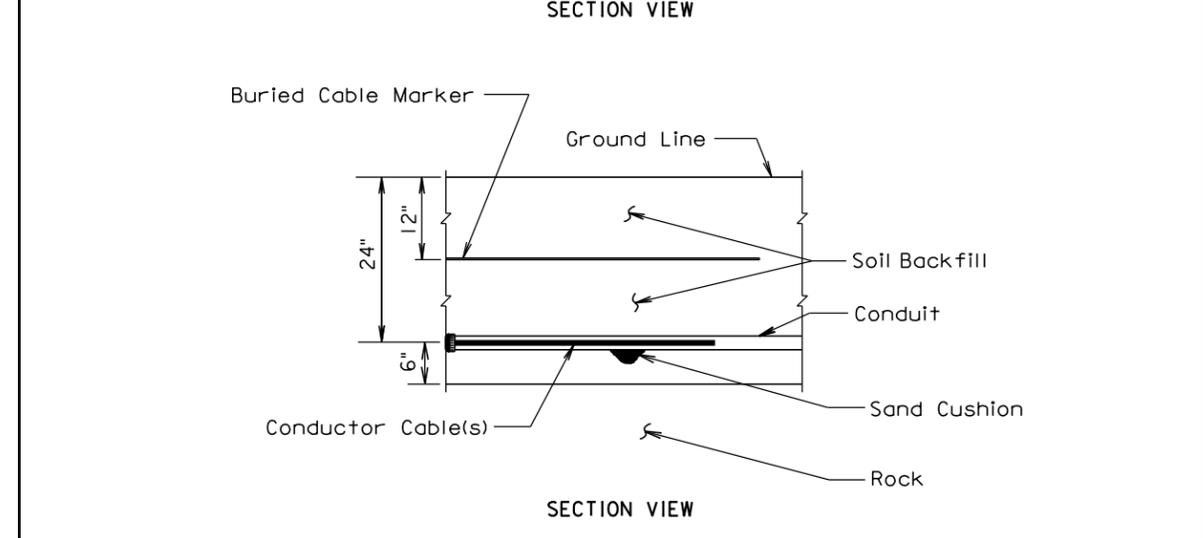
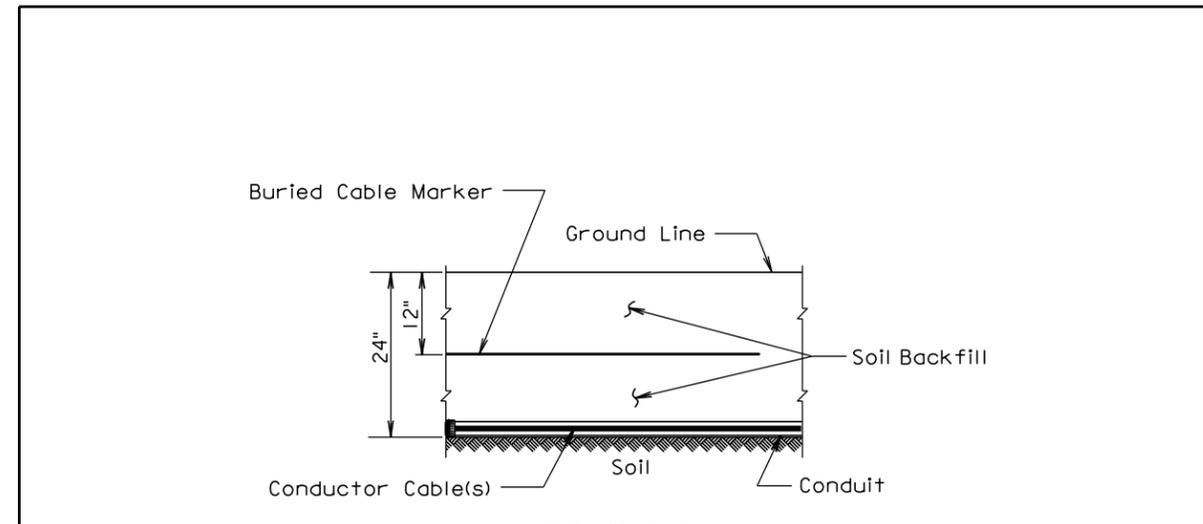
<i>Published Date: 3rd Qtr. 2016</i>	S D D O T	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 2 of 2

File - ...CAD_BIM\Plan\8743_dta01.dgn

Plot Scale - 1:100



Published Date: 3rd Qtr. 2016	S D D O T	PREFORMED DETECTOR LOOP	PLATE NUMBER 635.70	June 26, 2015
			Sheet 1 of 1	



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.

Published Date: 3rd Qtr. 2016	S D D O T	CONDUIT INSTALLATION	PLATE NUMBER 635.76	March 31, 2000
			Sheet 1 of 1	

File - ...CAD_BIM\Plan\8743_deto02.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0037(145)30	18	32
Plotting Date: 9/21/2016			

SCOPE OF PERMANENT WORK

The permanent sign work includes, but is not limited to, the following:

1. Items to be removed and salvaged by the Contractor:
 - a. Existing permanent signs, supports, and hardware
2. Items to be furnished and installed by the Contractor:
 - a. Breakaway perforated tube post supports
 - b. Flat sheet aluminum signs as listed in the SIGN INSTALLATION TABLE and attaching hardware

SALVAGE TRAFFIC SIGN

The Contractor shall neatly stockpile salvaged signs, posts, and related hardware [nuts, bolts, and miscellaneous mounting hardware] at the Mitchell Department of Transportation Maintenance Yard, 1300 South Ohlman, Mitchell, SD. Stockpiling of salvaged state material shall be coordinated with the Project Engineer.

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

Signs, reusable posts, and hardware damaged or lost 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.

Cost for salvaging and delivering salvaged materials shall be incidental to the contract unit price per each for Salvage Traffic Sign.

FURNISH AND INSTALL TRAFFIC SIGNS

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

Flat aluminum signs should be 0.100" flat sheet aluminum.

SIGN LEGEND, BORDER AND BACKGROUND

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

All sign legend, border and background sheeting material shall meet or exceed standards for ASTM D4956 classified Type IV high intensity sheeting or Type XI super/very high intensity sheeting, as indicated in the plans.

Sheeting material on warning signs designated Type XI shall be fluorescent yellow in color and meet or exceed standards for ASTM D4956 classified Type XI super/very high intensity sheeting.

All auxiliary signs used with South Dakota state route markers shall have green borders with black legend or symbol on a high intensity white background.

SIGN POSTS

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

Supports shall be cut to provide the proper sign height.

Perforated tube posts shall be fabricated from 12 gauge galvanized steel unless otherwise specified in the plans.

Breakaway anchor perforated tube post lengths listed in the Post Size/Quantity columns of the Sign Installation table include 0.75' (9")/post minimum typical subgrade length. The actual subgrade length shall be as required by the manufacturer of the perforated tube post system.

Post anchors shall be 48" long. Two-piece anchor post systems are required for 2" perforated tube post anchor stub posts. Heavy duty 7 gauge galvanized steel anchor stub posts that do not require stiffener sleeves are required for 2 1/2" perforated tube post non slip base post installations.

All breakaway sign supports shall comply with NCHRP 350 or MASH crash-worthy requirements.

Some posts require a post inside a post; this is called telescoping. Telescoping, where required, shall extend from the base to a minimum of the bottom of the sign.

All sign support bases shall conform to Plate number 634.99.

DATE DECAL

Each date decal is 2" X 2" having black numerals on a white background (as typified below).



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.

SIGN REMOVAL TABLE

SIGN DATA			
STATION	DESCRIPTION	SIGN SIZE (FT)	SALVAGE TRAFFIC SIGN *
SD46			110E5020
565+11 R	STOP AHEAD	4.00X 1.00	1{W}
570+81 R	JCT 37	1.75X 1.25 2.00X 2.00	1{W}
573+61 L	NO PASSING ZONE	4X4 X3	1{W}
575+86 R	↑ TO 81 ← Parkston TO 50 →	7.00X 4.00	1{2W}
575+86 L	JCT 50 8 Wagner 16	7.00X 3.00	1{2W}
579+61 L	WEST 46	2.00X 1.00 2.00X 2.00	1{W}
580+46 R	46 37 ↑ ↔	2.00X 2.00 1.75X 1.25 2.00X 2.00 1.75X 1.25	1{W}
580+36 R	STOP	4.00 4.00	1{W}
581+81 L	STOP	4.00 4.00	1{W}
581+76 L	46 37 ↑ ↔	2.00X 2.00 1.75X 1.25 2.00X 2.00 1.75X 1.25	1{W}
582+91 R	EAST 46	2.00X 1.00 2.00X 2.00	1{W}
586+11 R	JCT 25 13 JCT 81 29	7.00X 3.00	1{2W}
586+23 L	↑ Wagner ← TO 50 Parkston →	7.00X 4.00	1{2W}
587+31 L	NO PASSING ZONE	4X4 X3	1{W}
588+61 R	NO PASSING ZONE	4X4 X3	1{W}
COLUMN TOTAL			15

SIGN DATA			
STATION	DESCRIPTION	SIGN SIZE (FT)	SALVAGE TRAFFIC SIGN *
SD46			110E5020
591+26 L	JCT 37	1.75X 1.25 2.00X 2.00	1{W}
596+96 R	STOP AHEAD	4.00X 1.00	1{W}
SD37			
302+15 L	NO PASSING ZONE	4X4 X3	1{W}
302+85 R	JCT 46	1.75X 1.25 2.00X 2.00	1{W}
307+85 L	JCT 50 6	6.00X 2.00	1{2W}
307+85 R	↑ Parkston ← Wagner TO 81 →	8.00X 4.00	1{2W}
312+70 R	37 46 ↑ ↔	2.00X 2.00 1.75X 1.25 2.00X 2.00 1.75X 1.25	1{W}
312+70 L	SOUTH 37	2.00X 1.00 2.00X 2.00	1{W}
315+95 L	37 46 ↑ ↔	2.00X 2.00 1.75X 1.25 2.00X 2.00 1.75X 1.25	1{W}
317+10 R	NORTH 37	2.00X 1.00 2.00X 2.00	1{W}
320+30 L	↑ TO 50 ← TO 81 Wagner →	6.00X 4.00	1{2W}
320+45 R	Tripp 10 Parkston 22 Mitchell 43	7.00X 4.00	1{2W}
325+30 L	JCT 46	1.75X 1.25 2.00X 2.00	1{W}
COLUMN TOTAL			13
PROJECT TOTAL			28

* -Number and type- [{W}]ood {2W}-Two wood]- of support(s)

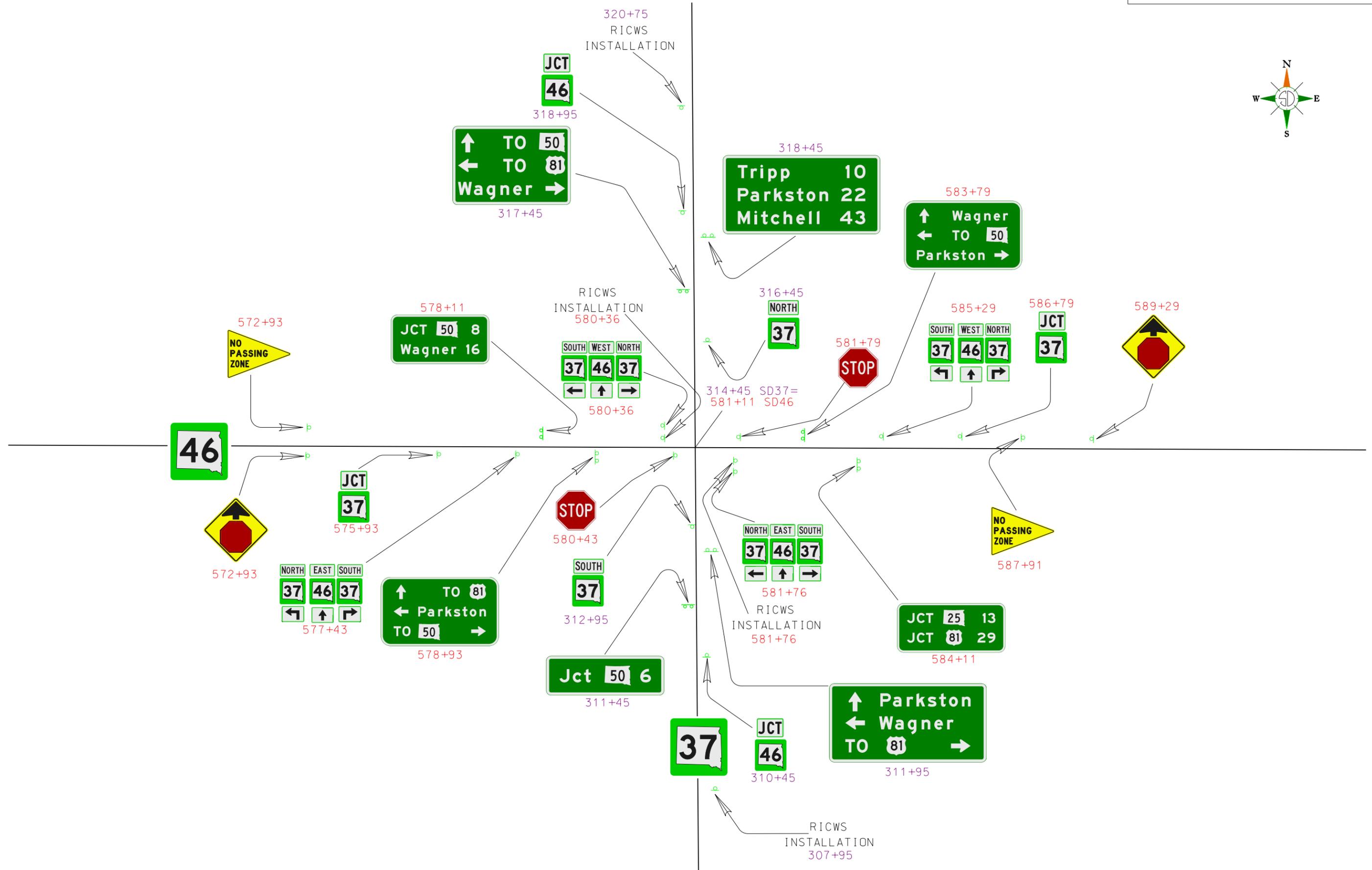
PERMANENT SIGNING LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0037(145)30	20	32
Plotting Date: 9/21/2016 Revised Date: 10/6/2016			



Plot Scale - 1:100

File - ...Plan18743_sign_layout.dgn



SIGN INSTALLATION TABLE

SIGN DATA							POST DATA					FOOTING DATA						
STATION	DESCRIPTION	SIGN CODE	SIGN SIZE (Ft)	SIGN AREA (SqFt)		OFFSET* (R)IGHT/ (L)EFT	SIGN FACES	COMMENTS	POST LENGTHS Δ		BREAK-AWAY #	SIZE/QUANTITY (Ft)			FOOTINGS (Ft)		FOOTING LENGTHS	
				Type IV	TYPE XI				INSIDE	OUTSIDE		2.0"x2.0" TUBE	2.5"x2.5" TUBE	BREAKAWAY				
													1.25' DIA.			INSIDE	OUTSIDE	
SD 46				632E3203	632E3205							632E1320	632E1340	632E0010				
NOTE: SD37 STATION 314+45=SD46 STATION 581+11																		
572+93 R	STOP AHEAD	W3-1	4.00X 4.00		16.0	16.0' R	WEST	TELESCOPING REQUIRED.	15.7'		S			15.7	4.0			4.0
572+93 L	NO PASSING ZONE	W14-3	4X4X 3		5.6	16.0' L	WEST		13.0'		A	13.0						
575+93 R		M2-1 M1-5	1.75X 1.25 2.00X 2.00	2.2 4.0		16.0' R	WEST		13.2'		A	13.2						
577+43 R		M3-1 M1-5 M5-1 M3-2 M1-5 M6-3 M3-1 M1-5 M5-1	2.00X 1.00 2.00X 2.00 1.75X 1.25 2.00X 1.00 2.00X 2.00 1.75X 1.25 2.00X 1.00 2.00X 2.00 1.75X 1.25	2.0 4.0 2.2 2.0 4.0 2.2 2.0 4.0 2.2		16.0' R	WEST		12.6'	13.5'	A	26.1						
578+11 L		D2-2	5.00X 2.50	12.5		16.0' L	EAST		12.4'	13.2'	S			25.6	8.0		4.0	4.0
578+93 R		D1-3	6.00X 3.50	21.0		16.0' R	WEST		13.4'	14.3'	S			27.7	8.0		4.0	4.0
580+36 L	TRAFFIC APPROACHING WHEN FLASHING	SPECIAL	n/a 2.50X 2.00		n/a 5.0	12.0' L	EAST		16.0'	16.0'	S			32.0				
580+36 L		M3-3 M1-5 M6-1 M3-4 M1-5 M6-3 M3-1 M1-5 M6-1	2.00X 1.00 2.00X 2.00 1.75X 1.25 2.00X 1.00 2.00X 2.00 1.75X 1.25 2.00X 1.00 2.00X 2.00 1.75X 1.25	2.0 4.0 2.2 2.0 4.0 2.2 2.0 4.0 2.2		18.0' L	EAST		12.6'	13.5'	A	26.1						
580+43 R	STOP	R1-1	4.00X 4.00		13.3	12.0' R	WEST	TELESCOPING REQUIRED.	12.8'		S			12.8	4.0			4.0
TOTALS THIS SHEET				88.9	39.9						78.4	113.8	24.0					

* - Distance from edge of shoulder or back of curb to edge of Sign.
 # - (S)lip Base, (A)nchor Stub Post, or (D)irect Drive

Δ -Plan post lengths are estimates. The post lengths shall be field verified by the Contractor.

Plot Scale - 1:100
File - ...|Plan\8743_sign_install\01.dgn

SIGN INSTALLATION TABLE

SIGN DATA							POST DATA					FOOTING DATA						
STATION	DESCRIPTION	SIGN CODE	SIGN SIZE (Ft)	SIGN AREA (SqFt)		OFFSET* (R)IGHT/ (L)EFT	SIGN FACES	COMMENTS	POST LENGTHS X		BREAK-AWAY #	SIZE/QUANTITY (Ft)			FOOTINGS (Ft)		FOOTING LENGTHS	
				Type IV	Type XI				INSIDE	OUTSIDE		2.0"x2.0" TUBE	2.5"x2.5" TUBE	BREAKAWAY 1.25' DIA.	INSIDE	OUTSIDE		
SD 46				632E3203	632E3205								632E1320	632E1340	632E0010			
581+76 R	TRAFFIC APPROACHING WHEN FLASHING	SPECIAL	n/a 2.50 x 2.00		n/a 5.0	12.0' R	WEST		16.0'	16.0'	S			32.0				
581+76 R		M3-1	2.00X 1.00	2.0		18.0' R	WEST		12.6'	13.5'	A	26.1						
		M1-5	2.00X 2.00	4.0														
		M6-1	1.75X 1.25	2.2														
		M3-2	2.00X 1.00	2.0														
		M1-5	2.00X 2.00	4.0														
		M6-3	1.75X 1.25	2.2														
		M3-3	2.00X 1.00	2.0														
		M6-1	1.75X 1.25	2.2														
581+79 L	STOP	R1-1	4.00X 4.00		13.3	12.0' L	EAST	TELESCOPING REQUIRED.	12.8'		S			12.8	4.0		4.0	
583+79 L		D1-3	6.00X 3.50	21.0		16.0' L	EAST		13.4'	14.3'	S			27.7	8.0	4.0	4.0	
584+11 R		D2-2	5.50X 2.50	13.8		16.0' R	WEST		12.4'	13.2'	S			25.6	8.0	4.0	4.0	
585+29 L		M3-3	2.00X 1.00	2.0		16.0' L	EAST		12.6'	13.5'	A	26.1						
		M1-5	2.00X 2.00	4.0														
		M5-1	1.75X 1.25	2.2														
		M3-4	2.00X 1.00	2.0														
		M1-5	2.00X 2.00	4.0														
		M6-3	1.75X 1.25	2.2														
		M3-1	2.00X 1.00	2.0														
		M5-1	1.75X 1.25	2.2														
586+79 L		M2-1	1.75X 1.25	2.2		16.0' L	EAST		13.3'		A	13.3						
		M1-5	2.00X 2.00	4.0														
587+91 L	NO PASSING ZONE	W14-3	4X4X 3		5.6	16.0' L	WEST	INSTALL AT EXISTING STATION.	13.0'		A	13.0						
589+29 L	STOP AHEAD	W3-1	4.00X 4.00		16.0	16.0' L	EAST	TELESCOPING REQUIRED.	15.7'		S			15.7	4.0		4.0	
TOTALS THIS SHEET				90.2	39.9							78.5		113.8	24.0			

* - Distance from edge of shoulder or back of curb to edge of Sign.

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

X -Plan post lengths are estimates. The post lengths shall be field verified by the Contractor.

SIGN INSTALLATION TABLE

SIGN DATA							POST DATA					FOOTING DATA						
STATION	DESCRIPTION	SIGN CODE	SIGN SIZE (Ft)	SIGN AREA (SqFt)		OFFSET* (R)IGHT/ (L)EFT	SIGN FACES	COMMENTS	POST LENGTHS X		BREAK-AWAY #	SIZE/QUANTITY (Ft)			FOOTINGS (Ft)		FOOTING LENGTHS	
				Type IV	TYPE XI				INSIDE	OUTSIDE		2.0"x2.0" TUBE	2.5"x2.5" TUBE	BREAKAWAY		INSIDE	OUTSIDE	
				632E3203	632E3205									1.25' DIA.	632E0010			
SD37																		
307+95 R	TRAFFIC ENTERING WHEN FLASHING	SPECIAL	4.00 X 4.00 3.50 X 2.00		16.0 7.0	16.0' R	SOUTH		16.0'	16.0'	S			32.0				
310+45 R		M2-1 M1-5	1.75X 1.25 2.00X 2.00	2.2 4.0		16.0' R	SOUTH		13.3'		A	13.3						
311+45 L		D1-1	6.00X 2.00	12.0		16.0' L	NORTH		11.9'	12.8'	S			24.7	8.0	4.0	4.0	
311+95 R		D1-3	7.00X 4.00	28.0		16.0' R	SOUTH		13.9'	15.0'	S			28.9	8.0	4.0	4.0	
312+95 L		M3-3 M1-5	2.00X 1.00 2.00X 2.00	2.0 4.0		22.0' L	NORTH		13.0'		A	13.0						
316+45 R		M3-1 M1-5	2.00X 1.00 2.00X 2.00	2.0 4.0		16.0' R	SOUTH		13.0'		A	13.0						
317+45 L		D1-3	7.00X 4.00	28.0		19.0' L	NORTH		13.9'	15.0'	S			28.9	8.0	4.0	4.0	
318+45 R		D2-3	8.00X 4.00	32.0		16.0' R	SOUTH		13.9'	15.1'	S			29.0	8.0	4.0	4.0	
318+95 L		M2-1 M1-5	1.75X 1.25 2.00X 2.00	2.2 4.0		16.0' L	NORTH		13.2'		A	13.2						
320+75 L	TRAFFIC ENTERING WHEN FLASHING	SPECIAL	4.00 X 4.00 3.50 X 2.00		16.0 7.0	16.0' L	NORTH		16.0'	16.0'	S			32.0				
TOTALS THIS SHEET				124.4	46.0							52.5		175.5	32.0			
PROJECT TOTALS				303.5	125.8							209.4		403.1	80.0			

* - Distance from edge of shoulder or back of curb to edge of Sign.

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

X - Plan post lengths are estimates. The post lengths shall be field verified by the Contractor.

FLAT ALUMINUM SIGNS WITH NONREMOVABLE COPY-HIGH INTENSITY

STATE OF SOUTH DAKOTA	PROJECT PH 0037(145)30	SHEET 24	TOTAL SHEETS 32
Plotting Date: 9/21/2016			



SYMBOL	X	Y	WID	HT
ARUP	11	32	8	12
M1-5 STG	59	32	16	12
ARUP, 90°	9	20	8	12
M1-4 STG	61	18	12	12
ARUP, 270°	63	6	8	12

SIGN CODE	D1-3
SIGN SIZE	84" X 48"
BORDER WIDTH	1.75"
CORNER RADIUS	6.0"
LEGEND	8"EM
BACKGROUND	TYPE: HIGH INTENSITY COLOR: GREEN
LEGEND/BORDER	TYPE: HIGH INTENSITY COLOR: WHITE



SYMBOL	X	Y	WID	HT
ARUP	11.8	31	8	12
ARUP, 90°	9.8	20	8	12
ARUP, 270°	74.3	6	8	12
M1-4 STG	34.9	4	12	12

SIGN CODE	D1-3
SIGN SIZE	84" X 48"
BORDER WIDTH	1.75"
CORNER RADIUS	6.0"
LEGEND	8"EM
BACKGROUND	TYPE: HIGH INTENSITY COLOR: GREEN
LEGEND/BORDER	TYPE: HIGH INTENSITY COLOR: WHITE



SIGN CODE	D2-3
WIDTH X HEIGHT	8'-0" X 4'-0"
BORDER WIDTH	1.75"
CORNER RADIUS	5.0"
LEGEND	8"EM
BACKGROUND	TYPE: HIGH INTENSITY COLOR: GREEN
LEGEND/BORDER	TYPE: HIGH INTENSITY COLOR: WHITE



SYMBOL	X	Y	WID	HT
M1-5 STG	35.6	6	18	12

SIGN CODE	D2-1
WIDTH X HEIGHT	6'-0" X 2'-0"
BORDER WIDTH	1.75"
CORNER RADIUS	3.0"
LEGEND	8"EM
BACKGROUND	TYPE: HIGH INTENSITY COLOR: GREEN
LEGEND/BORDER	TYPE: HIGH INTENSITY COLOR: WHITE

FLAT ALUMINUM SIGNS WITH NONREMOVABLE COPY-HIGH INTENSITY



SYMBOL	X	Y	WID	HT
ARUP	9.3	28.5	6	9
ARUP, 90°	7.8	18	6	9
M1-5 STG	50.2	16	13.3	10
ARUP, 270°	55.2	6	6	9

SIGN CODE	D1-3
SIGN SIZE	72" X 42"
BORDER WIDTH	1.25"
CORNER RADIUS	6.0"
LEGEND	6"EM
BACKGROUND	TYPE: HIGH INTENSITY COLOR: GREEN
LEGEND/BORDER	TYPE: HIGH INTENSITY COLOR: WHITE



SYMBOL	X	Y	WID	HT
ARUP	9.3	28.5	6	9
M1-4 STG	39.2	28	10	10
ARUP, 90°	7.8	18	6	9
ARUP, 270°	55.2	6	6	9
M1-5 STG	22.8	3.5	13.3	10

SIGN CODE	D1-3
SIGN SIZE	72" X 42"
BORDER WIDTH	.25"
CORNER RADIUS	6.0"
LEGEND	6"EM
BACKGROUND	TYPE: HIGH INTENSITY COLOR: GREEN
LEGEND/BORDER	TYPE: HIGH INTENSITY COLOR: WHITE



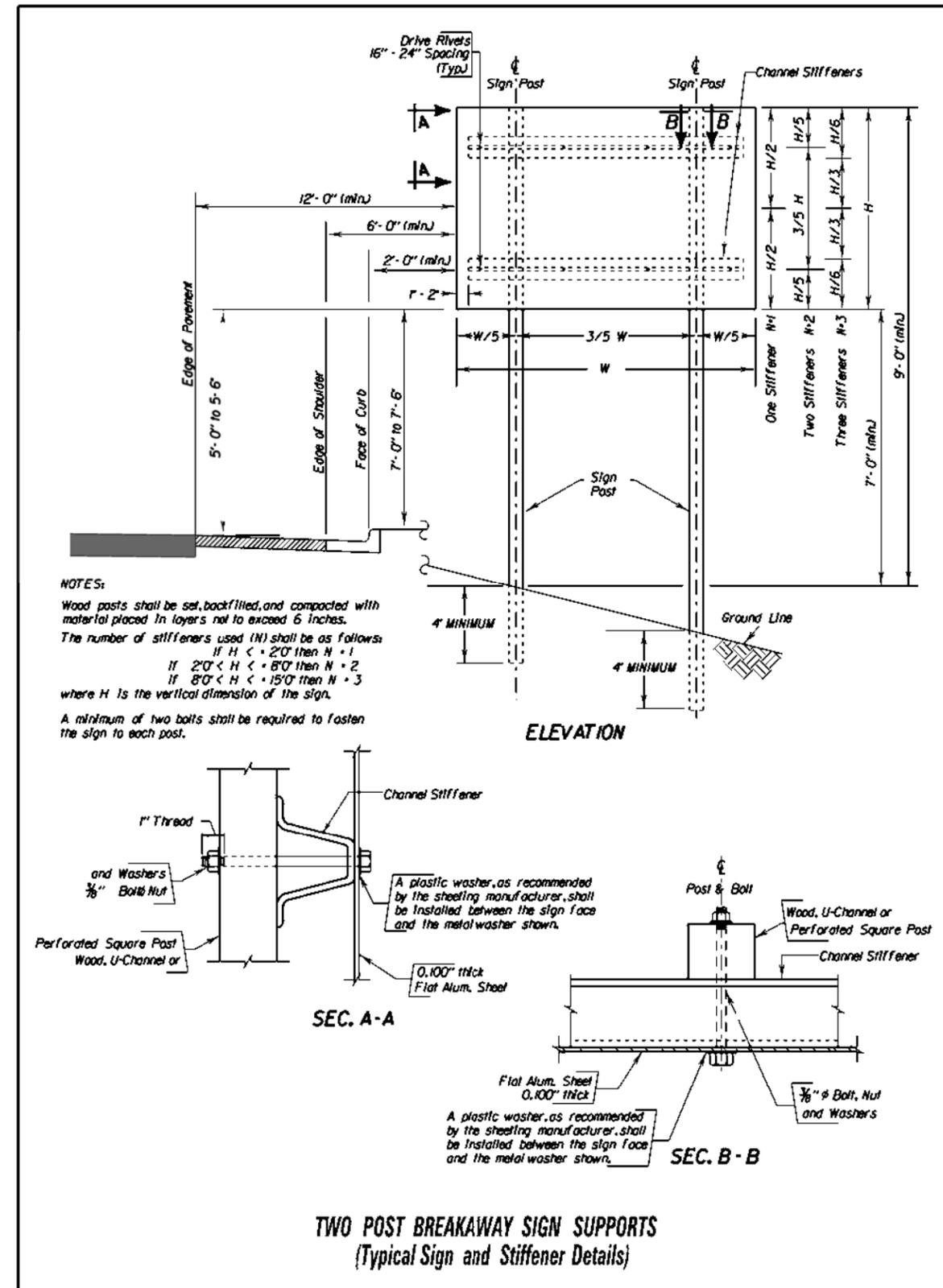
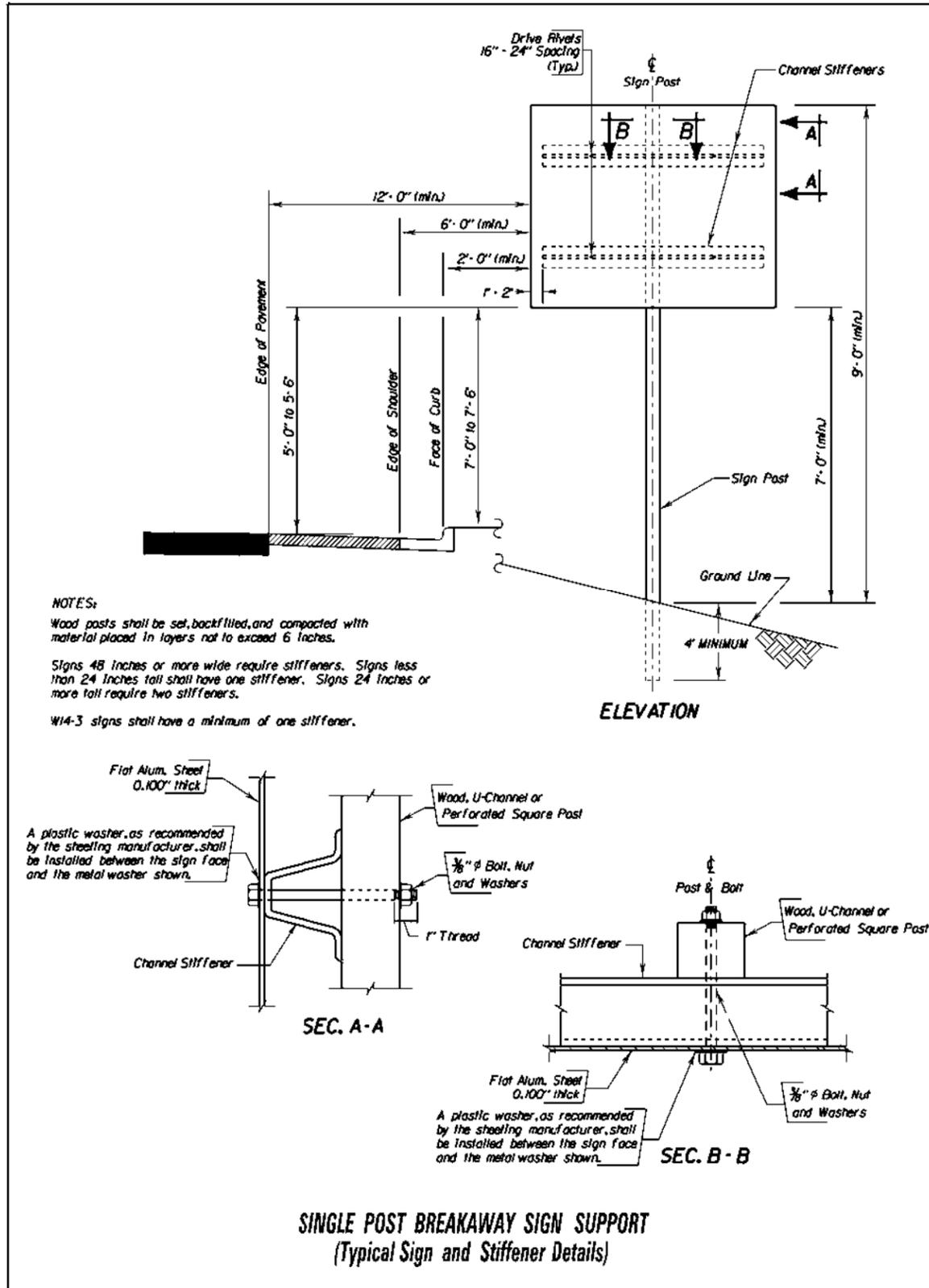
SYMBOL	X	Y	WID	HT
M1-5 STG	27.7	16	13.3	10

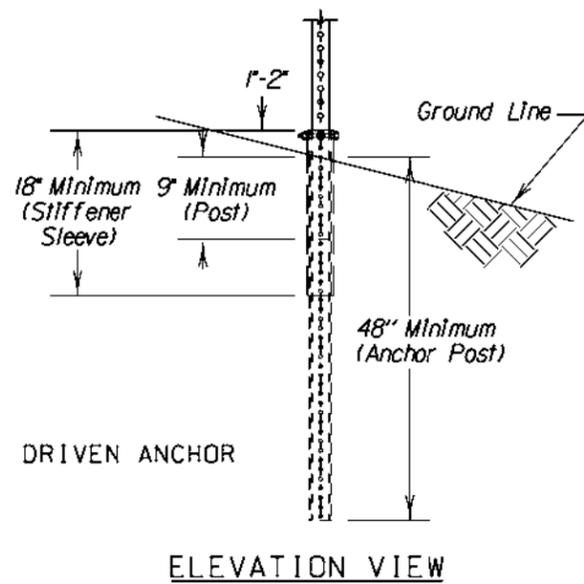
SIGN CODE	D2-2
SIGN SIZE	60" X 30"
BORDER WIDTH	1.25"
CORNER RADIUS	4.0"
LEGEND	6"EM
BACKGROUND	TYPE: HIGH INTENSITY COLOR: GREEN
LEGEND/BORDER	TYPE: HIGH INTENSITY COLOR: WHITE



SYMBOL	X	Y	WID	HT
M1-5 STG	28	16	13.3	10
M1-4 STG	29.7	4	10	10

SIGN CODE	D2-2
SIGN SIZE	66" X 30"
BORDER WIDTH	1.25"
CORNER RADIUS	4.0"
LEGEND	6"EM
BACKGROUND	TYPE: HIGH INTENSITY COLOR: GREEN
LEGEND/BORDER	TYPE: HIGH INTENSITY COLOR: WHITE

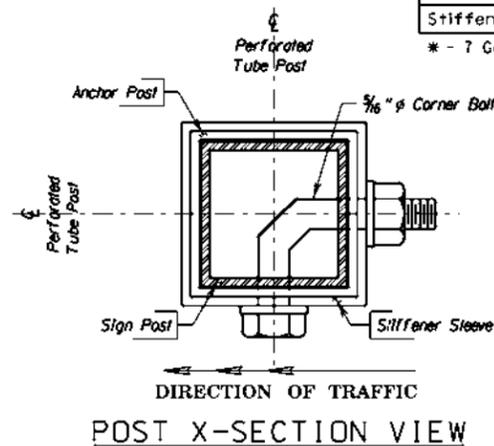




ELEVATION VIEW

POST SIZES		
Sign Post	2"	2 1/4"
Anchor Post	2 1/4"	2 1/2"
Stiffener Sleeve	2 1/2"	* 3"

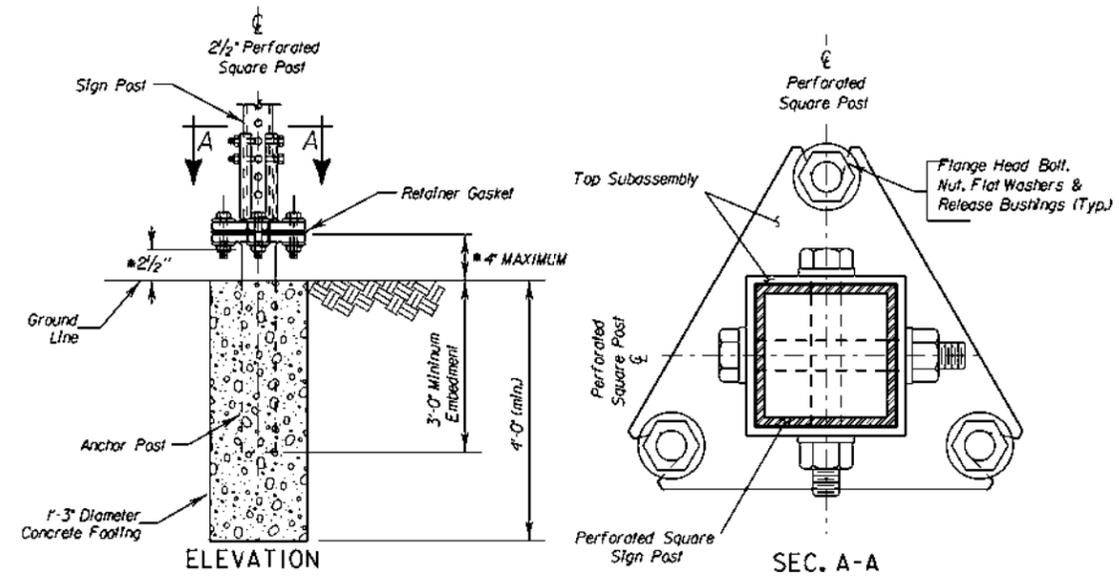
* - 7 Gauge Steel



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)**



ELEVATION

SEC. A-A

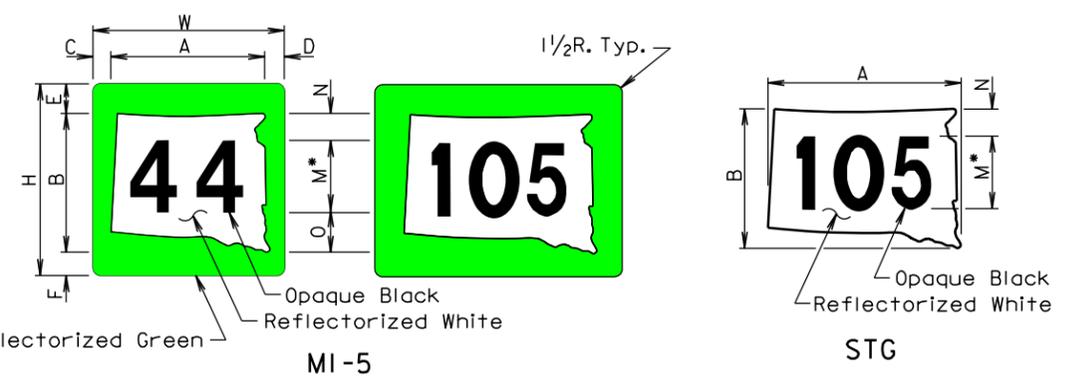
* - Dimensions shown may vary by Manufacturer. The Contractor shall use Manufacturer recommended assembly parts and procedures. Sign installations must meet NCHRP 350 or MASH breakaway requirements and be FHWA approved.

GENERAL NOTES-

1. Design Specification: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals, 4th Edition, with 2002, 2003, and 2004 Interims.
2. The manufacturer shall provide certification that the posts and hardware furnished have essentially the same chemistry, mechanical properties and geometry as those used in the FHWA tests and will meet the FHWA change in velocity requirements.
3. The manufacturer shall provide certification that the breakaway system furnished will develop the full shear and bending yield strength of the sign post section being spliced.
4. All posts shall be galvanized in accordance with ASTM A653, Des. G-90.
5. All hardware shall be galvanized in accordance with ASTM A153.

**SINGLE PERFORATED TUBE POST BREAKAWAY SUPPORT WITH SLIPBASE
AND CONCRETE FOOTING
(Typical)**

Plot Scale - 1:100

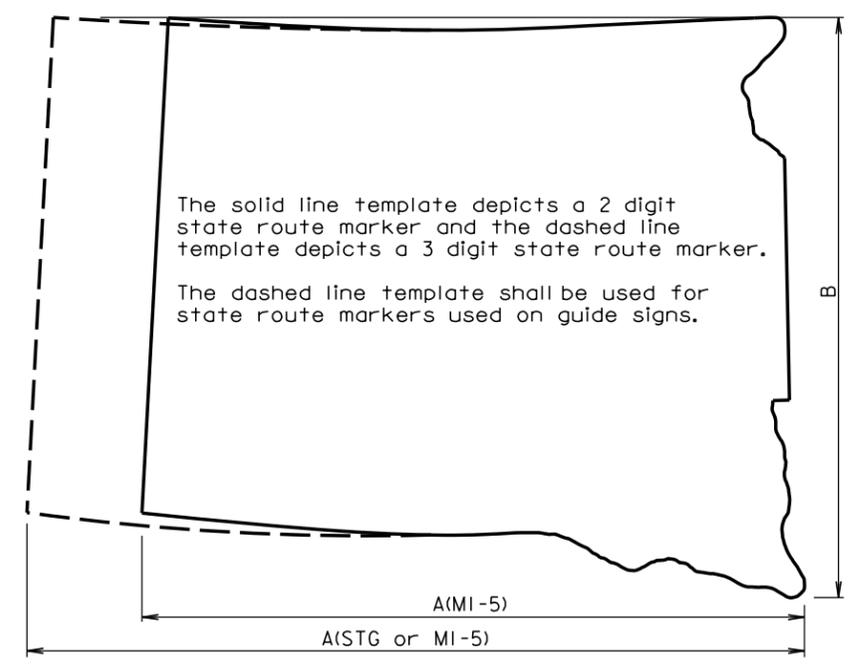


SIGN CODE	WxH	A	B	C	D	E	F	M*	N	O
MI-5	24x24	20 1/2	18	2	1 1/2	3 1/2	2 1/2	12D	2	4
MI-5**	30x24	24	18	2 1/4	1 3/4	3 1/2	2 1/2	12D	2	4
MI-5	30x30	25 5/8	22 1/2	2 1/2	1 7/8	4 3/8	3 1/8	15D	2 1/2	5
MI-5	36x36	30 3/4	27	3	2 1/4	5 1/4	3 3/4	18D	3	6

SIGN CODE	AxB	M*	N
STG-24	24x18	10D	4
STG-32	32x24	12D	4 3/4
STG-48	48x36	18D	7
STG-64	64x48	24D	9 1/2

*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:

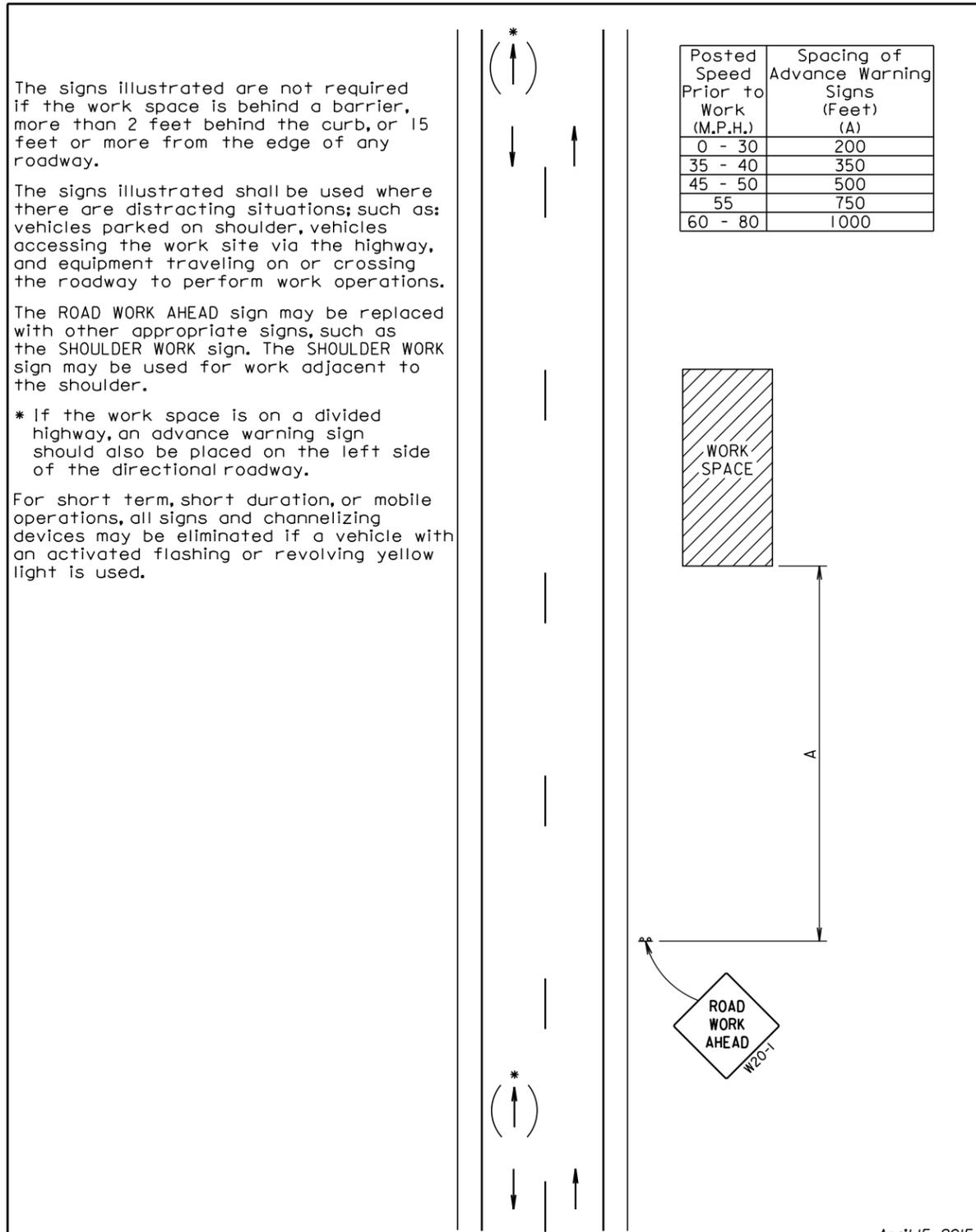
The unit for all dimensions shown is inches.
 Numerals shall be "D" series font for all state route markers except as noted above.

December 23, 2003

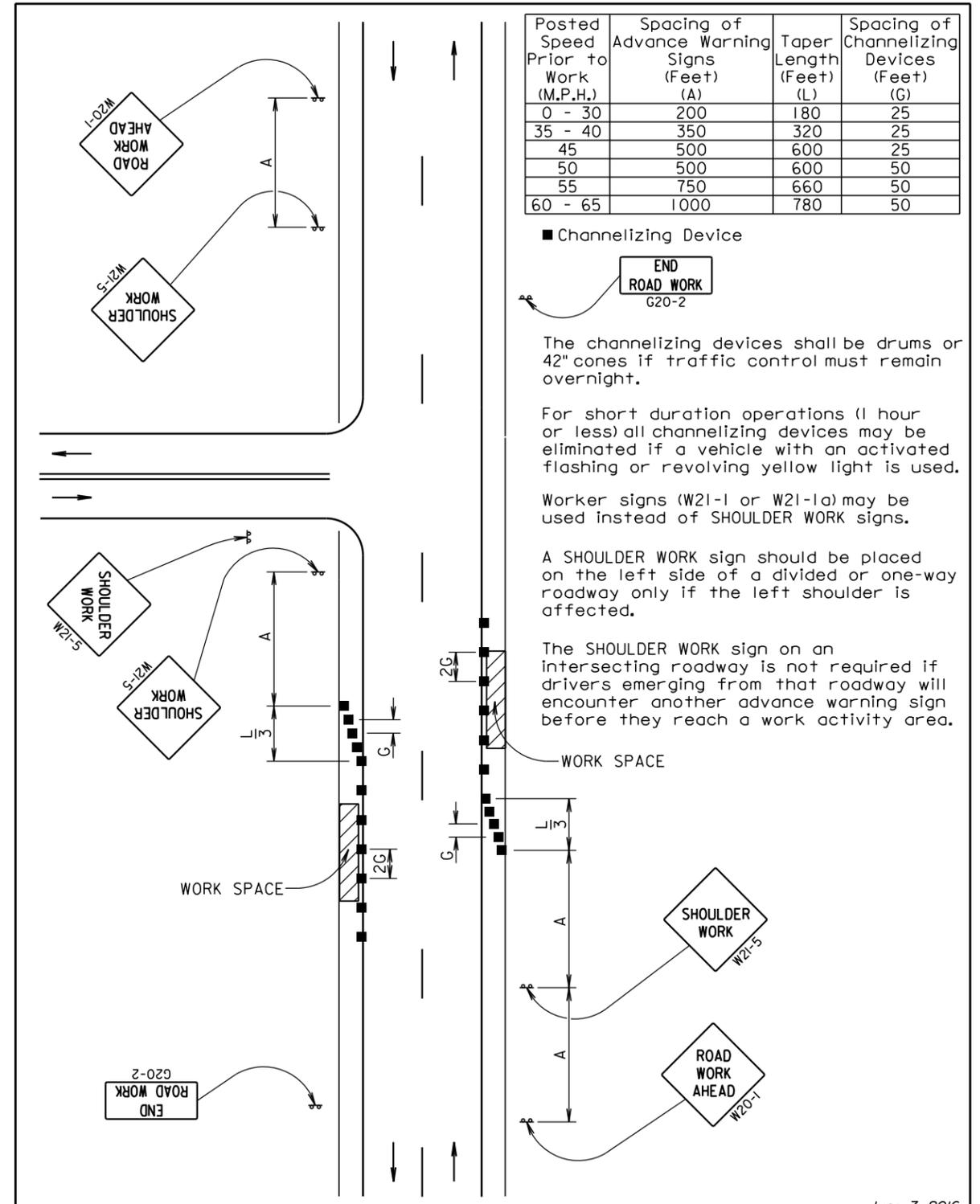
Published Date: 3rd Qtr. 2016	S D D O T	STATE ROUTE MARKERS	PLATE NUMBER 632.20
			Sheet 1 of 1

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	4	48" x 48"	16.0	64.0
G20-2	END ROAD WORK	4	36" x 18"	4.5	18.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			210.0



April 15, 2015



June 3, 2016

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

- Flagger
- Channelizing Device

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

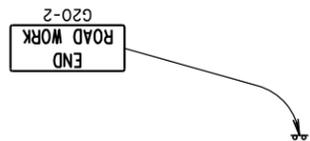
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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

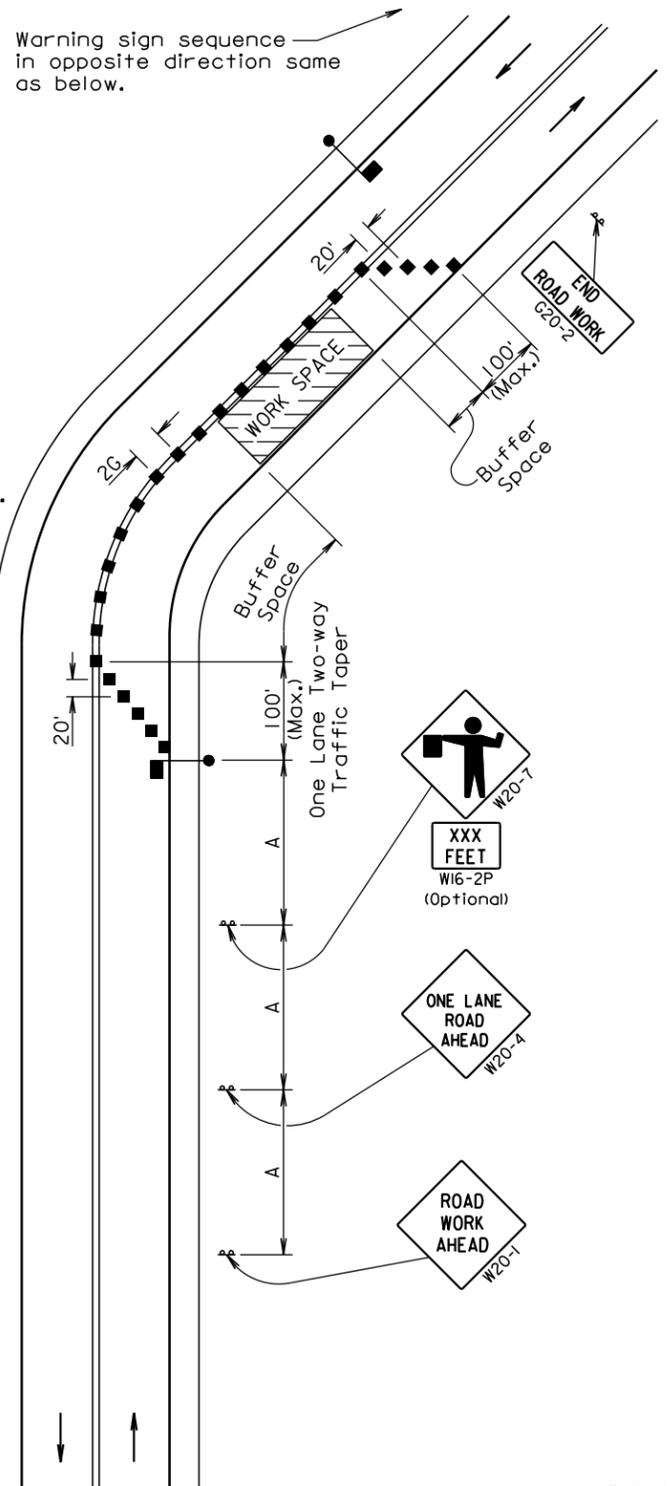
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



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.

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



June 3, 2016

Published Date: 3rd Qtr. 2016

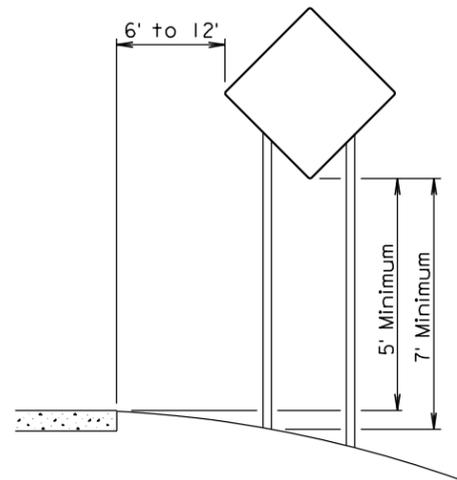
**S
D
D
T**

**GUIDES FOR TRAFFIC CONTROL DEVICES
LANE CLOSURE WITH FLAGGER PROVIDED**

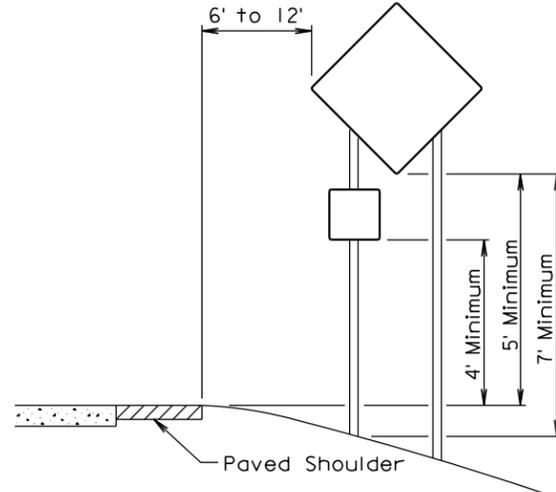
PLATE NUMBER
634.23

Sheet 1 of 1

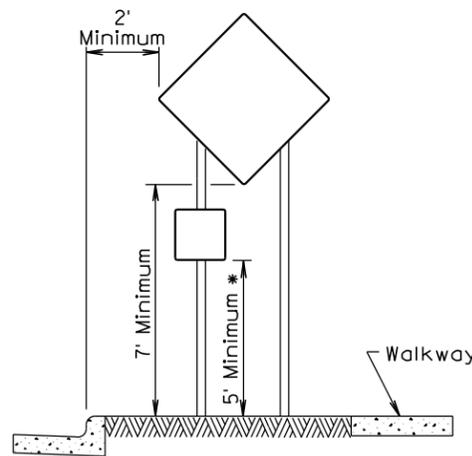
Plot Scale - 1:100



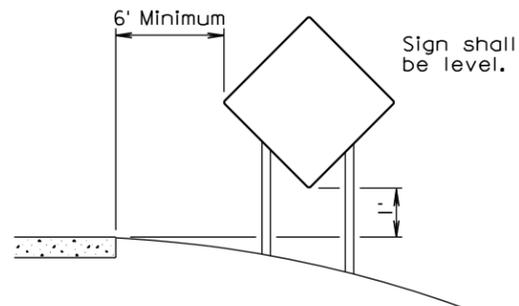
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT

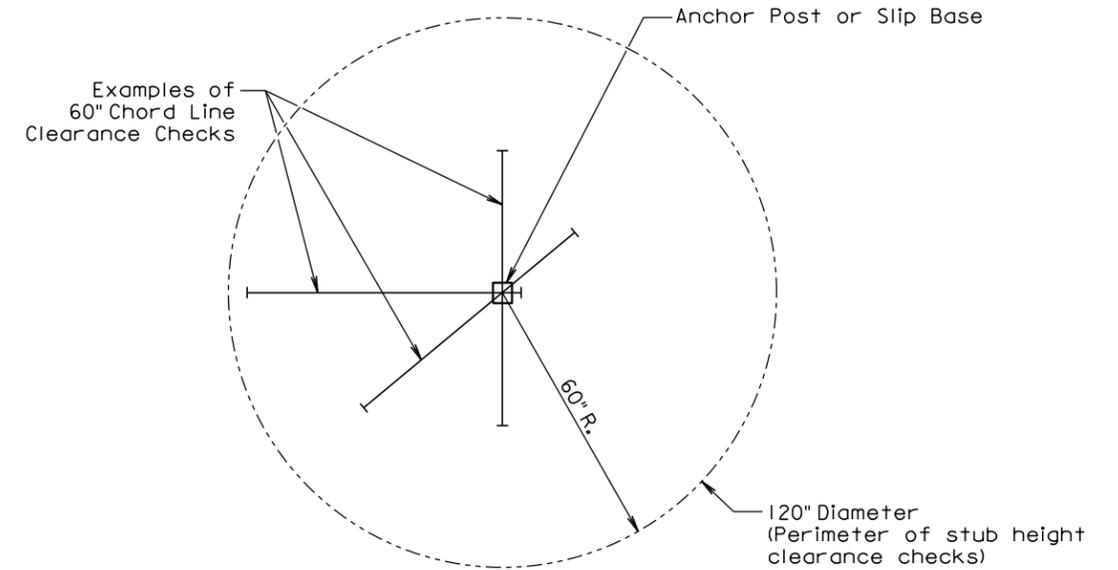


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

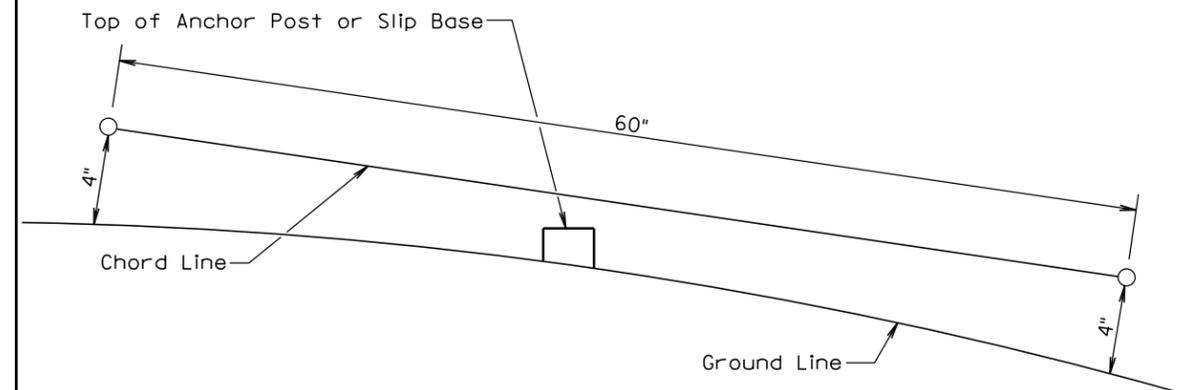
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

September 22, 2014

Published Date: 3rd Qtr. 2016	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

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

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

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

July 1, 2005

Published Date: 3rd Qtr. 2016	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

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