

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
PROJECT 090 W-271
INTERSTATE 90
MINNEHAHA COUNTY

INSTALL VARIABLE MESSAGE SIGN SYSTEM
PCN I66P

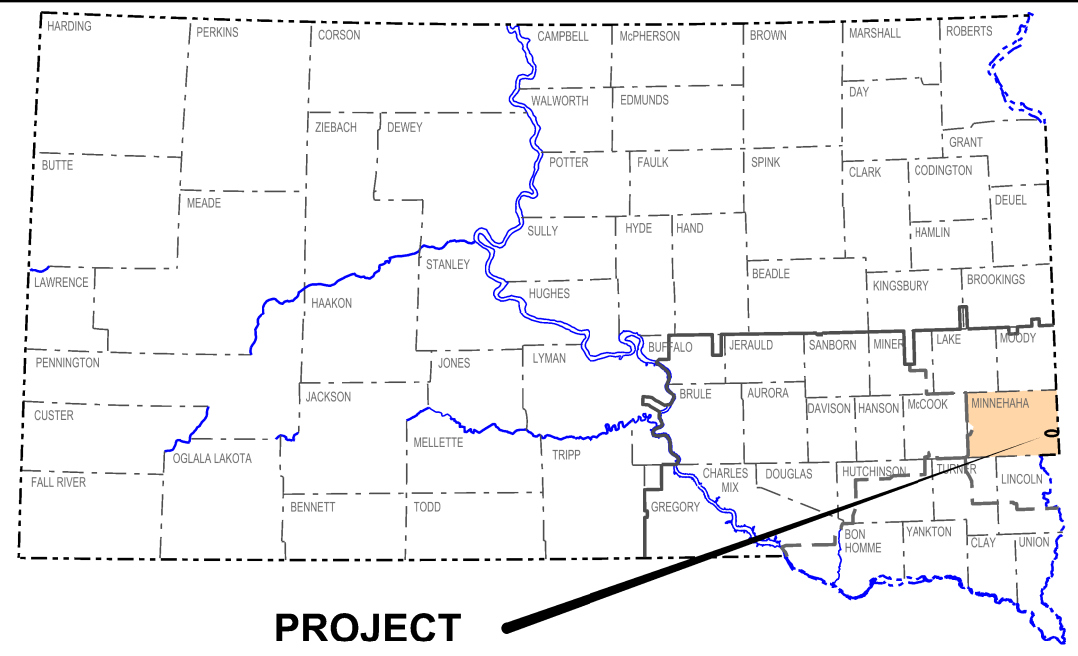
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|-----------------------|-----------|-------|--------------|
| | 090 W-271 | 1 | 10 |

Plotting Date: 08/18/2020

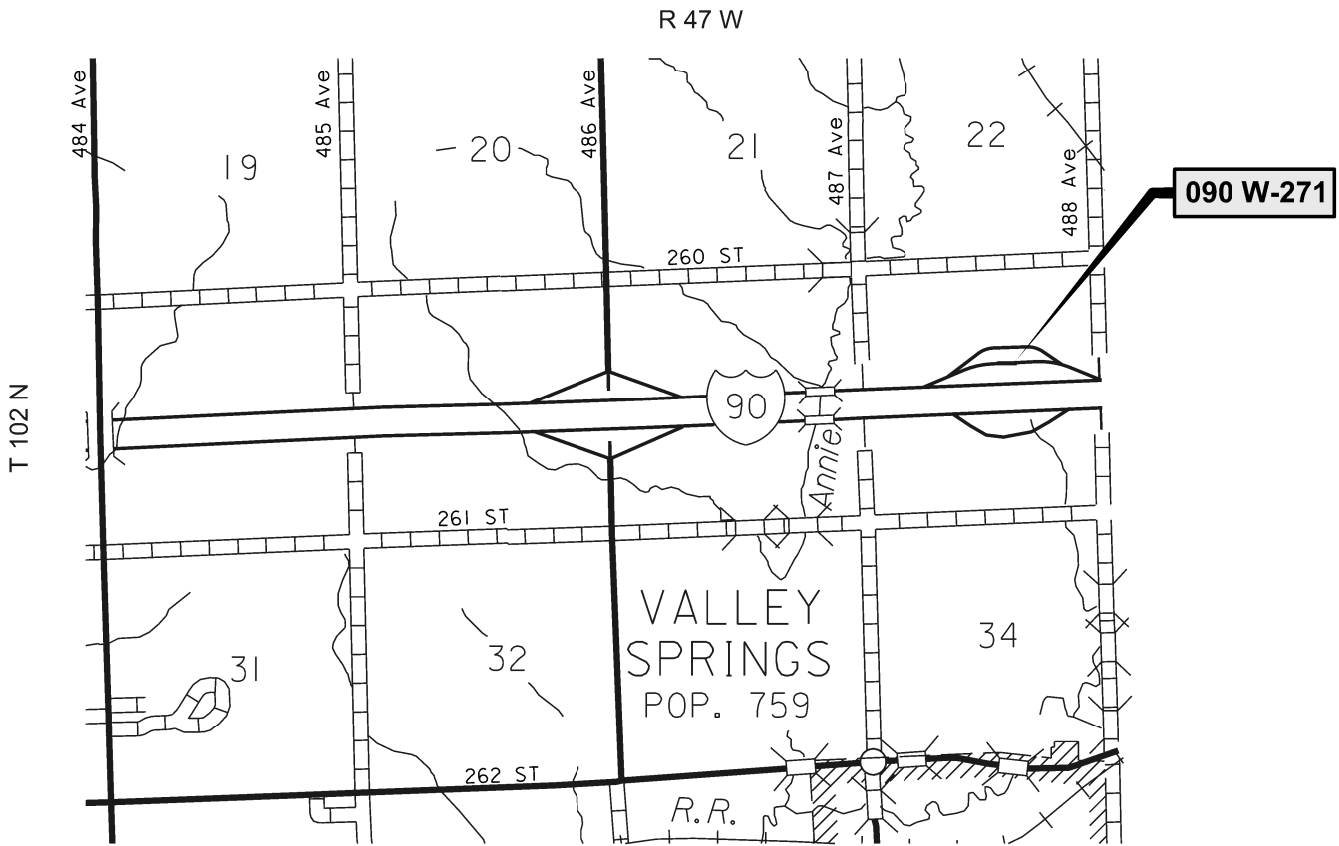
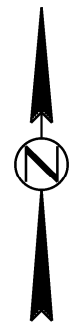
INDEX OF SHEETS

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PLOT SCALE - 1" = 7000'



PROJECT



STORM WATER PERMIT
(None required)

PLOTTED FROM - IRMLINT17

PLOT NAME - 1

FILE - ... \WIP\MINN06\HW\06\HW SIGNING.DGN

ESTIMATE OF QUANTITIES

| BID ITEM NUMBER | ITEM | QUANTITY | UNIT |
|-----------------|--|----------|------|
| 009E0010 | Mobilization | Lump Sum | LS |
| 632E0056 | 2' Diameter Fixed Support Concrete Footing | 10.0 | Ft |
| 632E1230 | W6x15 Steel Post | 20.8 | Ft |
| 632E4500 | Variable Message Sign System | 1 | Each |
| 635E5303 | Type 3 Electrical Junction Box | 2 | Each |
| 635E8110 | 1" Rigid Conduit, Schedule 40 | 90 | Ft |
| 635E8310 | 1" Innerduct, Schedule 40 | 90 | Ft |
| 635E9016 | 1/C #6 AWG Copper Wire | 525 | Ft |
| 635E9860 | Outdoor Rated Cat5 Cable | 175 | 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

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified 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.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Office at 605-773-3098 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species waters within South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment to prevent and control the introduction and spread of invasive species into the project vicinity.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of Aquatic Invasive Species in South Dakota can be accessed at: <http://sdleastwanted.com/maps/default.aspx>.

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 will 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) will be managed and reclaimed in accordance with the following from the General Permit for 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) will 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 Environmental Office and the Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with 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) will be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

State Historical Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities require a cultural resource review prior to scheduling the pre-construction meeting. 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 will arrange and pay for a record search and when necessary, a cultural resource survey. 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 if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view of 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 will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. 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.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office to determine an appropriate course of action.

The Contractor is responsible 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 will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

UTILITIES

The Contractor will contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It will 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 will contact the Project Engineer to determine if project changes are necessary to avoid utility impacts.

PROJECT OVERVIEW

This section outlines the basic items of work and equipment to be furnished by the Contractor under this contract. All labor, scheduling, general supervision and equipment necessary for installation is to be supplied by the Contractor.

COMMERCIAL VEHICLE IDENTIFICATION SYSTEM VENDOR

The Contractor will work with the vendor that provided the Valley Springs Port of Entry Electronic Screening System to supply the required components and technical assistance to install a Changeable Message Sign and integrate it with the Electronic Screening System:

International Road Dynamics (IRD)
702 43rd Street East
Saskatoon, SK Canada S7K3T9
Phone (306) 653-6600 Fax (306) 242-5599

International Road Dynamics will henceforth be "IRD" in these plans. IRD-supplied equipment under this contract is approximately as follows:

- One Changeable Message Sign with anti-fogging heaters included

IRD will provide technical instructions and assistance during installation. All equipment and materials supplied or installed by IRD will be paid for under this contract except where indicated otherwise.

SCOPE OF WORK

The Scope of Work includes, but is not limited to:

- Install footings and support structure for the Changeable Message Sign at the locations staked in the field.
- Mount the Changeable Message Sign to the support structure using hardware supplied by the sign manufacturer.
- Install junction boxes and one 1" Innerduct, Schedule 40 conduit for the communication cable and one 1" Rigid Conduit, Schedule 40 conduit from the two existing 2" conduit stubs near the Port of Entry building west staff door to the sign.
- Install power cables through the Rigid Conduit and communication cable through the innerduct from the Port of Entry Building DEMARC room to the sign.
- Terminate power and communication lines and install circuit protection. The circuit from which the power is to be drawn and the origin of the communication cable will be marked in the DEMARC room. {NOTE – Contact the Project Engineer or a representative of the General Contractor to view the original construction plan set to see Sheet ES101 for the location of the existing stub conduits and Sheet EP111 for the location of the DEMARC room.}
- Establish interface between the Electronic Screening System and the Changeable Message Sign and program the message set needed to support Port of Entry Operations.
- Test sign operation.

DESIGN/MANUFACTURE

All equipment furnished under this contract, including any equipment purchased from other manufacturers, will be new and of the latest design currently in production. Used equipment or discontinued models will not be accepted.

DELIVERY

The Contractor will coordinate equipment delivery dates and notify the Project Engineer 15 days prior to equipment delivery. The Contractor will supply two (2) sets of system schematic drawings to the SDDOT Office of Research for review and approval at least 15 days prior to equipment delivery. The Contractor will coordinate all material deliveries with IRD.

INSTALLATION

The Contractor will coordinate equipment installation dates and notify the Project Engineer 15 days prior to installation. The installation of all equipment will be the responsibility of the Contractor and will integrate directly with the Port of Entry equipment. The Contractor will install all material furnished by IRD in accordance to IRD specifications and installation instructions. The Project Engineer must be present to observe and inspect the installation. The Contractor will coordinate with the manufacturer to correct any defective equipment or other technical problems. If unforeseen technical problems develop with this installation, the Contractor will provide all engineering and manufacturer's technical assistance needed for proper installation.

STORAGE

Contractor may use an area designated by the Project Engineer within the Port of Entry to store new components. Any components stored there will be the responsibility of the Contractor and will not be monitored by Port of Entry personnel. The Contractor will coordinate storage with the SDHP Motor Carrier Services group at (605) 773-4578.

RISK OF DESTRUCTION OR DAMAGE

The Contractor will be responsible for any destruction or damage to equipment purchased or provided under this contract until the equipment has been installed as specified, inspected, and accepted by SDDOT.

INCIDENTAL WORK

Incidental work includes but is not limited to the following items: Contractor will pull all wiring and terminate all connections.

INFORMATION TO BE SUBMITTED

ITEMS TO BE SUBMITTED

Upon being awarded the project, the Contractor will submit the following information to the SDDOT Office of Research for approval:

- A technical description, system block diagram, equipment specifications, and an equipment list with model numbers and options of all equipment proposed to be furnished, including any equipment purchased from other manufacturers.
- A list of programmed messages for the Changeable Message Sign.
- A method by which replacement parts may be obtained. The equipment vendor must stock system replacement parts for a minimum of ten (10) years from which SDDOT may order.
- A warranty description, including the procedure and authorized warranty service station(s) used to obtain warranty service. The Contractor will warrant all equipment supplied, including equipment from other manufacturers, against defective materials and workmanship. The minimum warranty will be as follows:

"During the initial 730-day warranty period of the Valley Springs Port of Entry Electronic Screening System, all repairs, including factory labor and materials necessary to correct any failures will be made at the Contractor's sole cost."

If the Contractor's normal warranty exceeds the warranty terms specified in this section, the Contractor will provide a copy of the warranty in the bid proposal.

AS-BUILT ITEMS TO BE SUBMITTED

The Contractor will supply as-built plans to IRD to draft into existing drawings for future reference. The final as-built plans will be furnished to the SDDOT Office of Research. The as-built plans will include conduit layouts, wiring diagrams, or other drawings depicting the changes from the original plans.

A final electrical inspection will be conducted with the Electrical Engineer on record. The electrical inspection will be scheduled by the Contractor prior to final completion of project. The Contractor, the Project Engineer, and the Electrical Engineer will all be present for the electrical inspection. As-built electrical plans will be prepared based on all information obtained during the final electrical inspection.

ELECTRONIC EQUIPMENT

CHANGEABLE MESSAGE SIGN

The Contractor will install an IRD-supplied Changeable Message Sign at the location specified in the plans and in accordance with IRD installation instructions. Sign support locations will be staked in the field by the Contractor and checked by the Engineer. The Contractor will give the Engineer a minimum of one week to check staked locations prior to footing installation. An IRD representative will direct installation of the Changeable Message Sign.

The Changeable Message Sign will be a Daktronics Galaxy® GS6 19.8 MM:
Daktronics Part # GS6-32X120-19.8-RGB-SF, IRD Part # 115210

MESSAGE SET

The Contractor will program the following messages and train Motor Carrier Enforcement personnel to edit or remove messages:

FORWARD
STOP
BACK UP
PARKING A →
PARKING B →
INSP BAY →

POWER WIRING

All wiring will use copper conductors (aluminum conductors are not acceptable) and will be sized in accordance with the applicable sections of the current edition of the National Electrical Code and Section 10 of NEMA Standards Publication TS-1, latest revision. All wiring will be neat and firm.

COMMUNICATION CABLE

The communication cable will be outdoor-rated Cat5 Ethernet cable.

ENVIRONMENTAL

The system electronics will be designed to operate reliably in a temperature range of -40 °C to 70 °C / -40 °F to 158 °F. If necessary, temperature control devices will be installed to maintain the Changeable Message Sign at allowable operating temperatures.

CIRCUIT PROTECTION

The Contractor will provide protection against lightning, electrostatic discharge, and other transient high voltage surges as listed below. The surge protection equipment will meet all applicable surge test requirements of latest IEEE Test Standards and will operate under the specified environment conditions.

A. AC LINE PROTECTOR

An AC Line Protector Unit will be provided for the 120 volts, 60 Hz power source. The Protector Unit will include a thermal circuit breaker, and EMI/RFI noise suppression for diverting and clamping high voltage surges to limit the maximum voltage reaching the sensitive electronic equipment during a transient pulse. The unit will be approved by Underwriter Laboratories (UL).

The AC Line Protector will provide protection against transients that may enter electronic equipment through Line to Neutral paths (Differential Mode) or through Line or Neutral to Ground paths (Common Mode).

The AC Line Protector will be contained in a single enclosure with appropriate terminations for interconnecting cables to those assemblies requiring 120 volts, 60 Hz protected power.

B. DATA LINE PROTECTOR

A Data Line Protector Unit will be provided to protect the electronic equipment from the hazardous and damaging effects of over-voltage transients induced on the data line (internet service line). The unit will have a protection clamping time of less than 10 nanoseconds and a maximum clamping voltage of 150 volts peak and will protect in both the Common Mode and Differential Mode.

The Data Line Protector will be contained in a single enclosure with appropriate terminations for interconnecting cables to the internet service line and modem, and provisions for connecting a minimum No. 6 AWG copper ground wire to equipment ground.

C. GROUNDING

All bonding and grounding will be in accordance with the National Electrical Code and with the manufacturers' instructions. A grounding rod will be placed at the Changeable Message Sign. The ground rod will be ¾ inch diameter by 8 feet long. Connection of ground rods will be with No. 1/0 AWG copper wire bonded to the control cabinet.

SYSTEM ACCEPTANCE

The testing procedures to demonstrate compliance with the contract requirements must be carried out jointly by the Contractor, IRD, and SDDOT personnel at the site.

Acceptance of the system will consist of two parts. The first part follows installation and testing and is termed 'Installation Acceptance'. The second part follows a successful 30-day performance period and is termed 'Final Acceptance'. The SDDOT Office of Research will review all acceptance testing results prior to Installation Acceptance and Final Acceptance.

INSTALLATION ACCEPTANCE

The Contractor will test the system by verifying the Changeable Message Sign's ability to power on, power off, and display the operator-selected message chosen from the programmed message set.

FINAL ACCEPTANCE

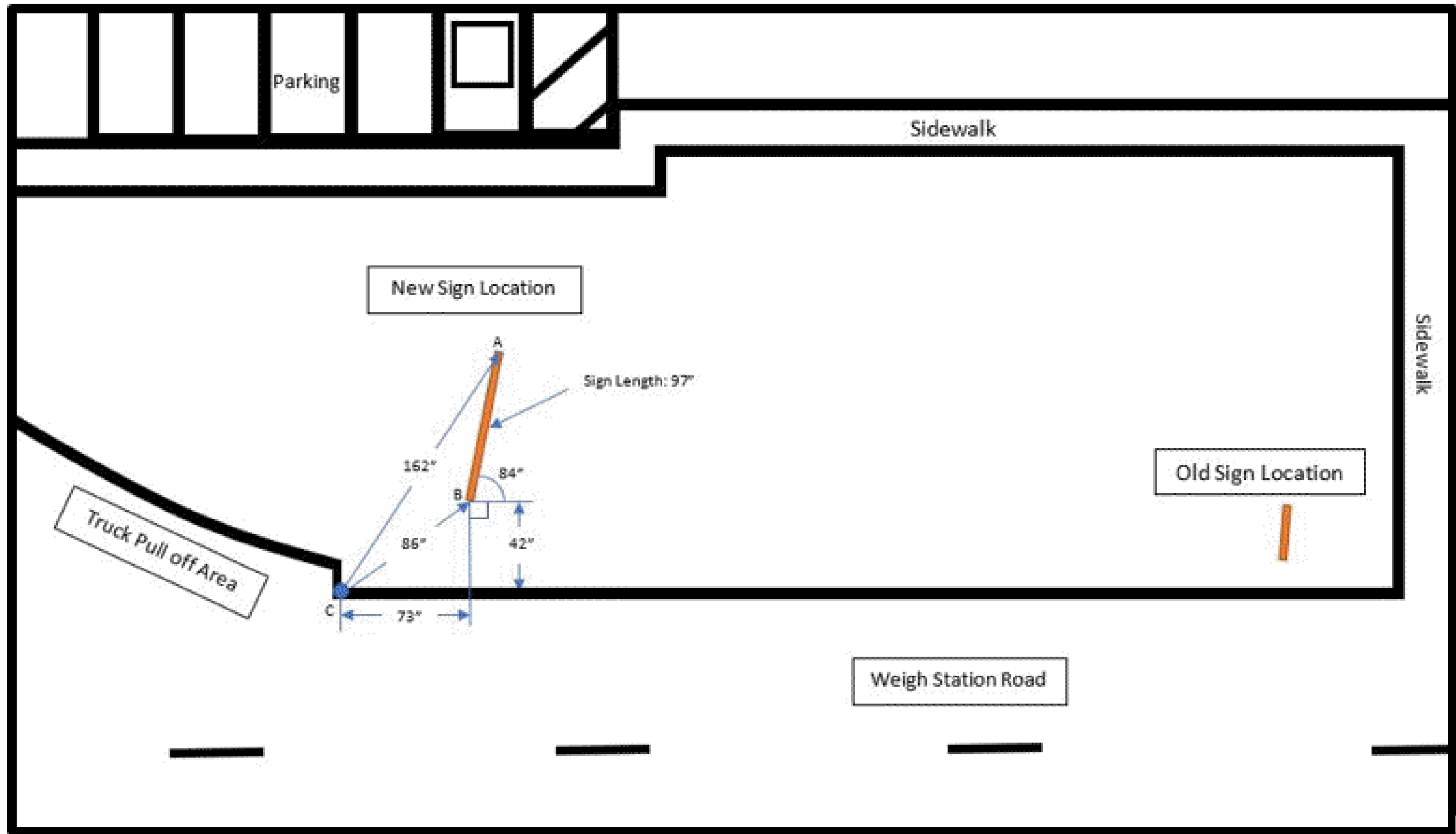
Upon INSTALLATION ACCEPTANCE and after the Contractor's notification to the SDDOT, the system will undergo a 30-day performance period constituting 30 consecutive days in which no remedial action or intervention is required by the Contractor, IRD, or SDDOT personnel.

Upon completion of 30 consecutive days of successful operation, beginning with the start of the most recent 30-day test period, the system will be considered accepted. SDDOT reserves the option to check the performance of the system at any time during the life of this contract. Major malfunctions will be taken into consideration of acceptance or rejection of the system.

VARIABLE MESSAGE SIGN LOCATION

| | | | |
|-----------------------|----------------------|------------|--------------------|
| STATE OF SOUTH DAKOTA | PROJECT 090 W-271 | SHEET 5 | TOTAL SHEETS 10 |
|-----------------------|----------------------|------------|--------------------|

Plotting Date: 08/25/2020



PLOT SCALE - 1:15.2172

PLOTTED FROM - TRMLINT17

PLOT NAME - 42

FILE - ... \WIP\MINN06\H\06\H SIGNING.DGN

| SITE LOCATION | POST SIZE | FOOTING DIMENSIONS | | POST BASE PLATE DIMENSIONS | | | ANCHOR BOLT SIZE | | | LONGITUDINAL STEEL QUANTITIES | | | # SPIRAL STEEL QUANTITIES | |
|---------------|-----------|--------------------|-------|----------------------------|-----|--------|------------------|--------|-------------------|-------------------------------|------|--------|---------------------------|--------|
| | | DIA. | DEPTH | "A" | "E" | THICK. | DIA. | LENGTH | MINIMUM EMBEDMENT | NO. | SIZE | LENGTH | DIA. | LENGTH |
| CMS1 | W6X15 | 2'-0" | 5'-0" | 13½" | 2¼" | 1/2" | ¾" | 30" | 17¼" | 8 | 7 | 4'-8" | 1'-8" | 39'-0" |

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

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

Dimensions are out to out of bars.

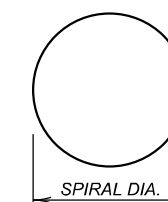
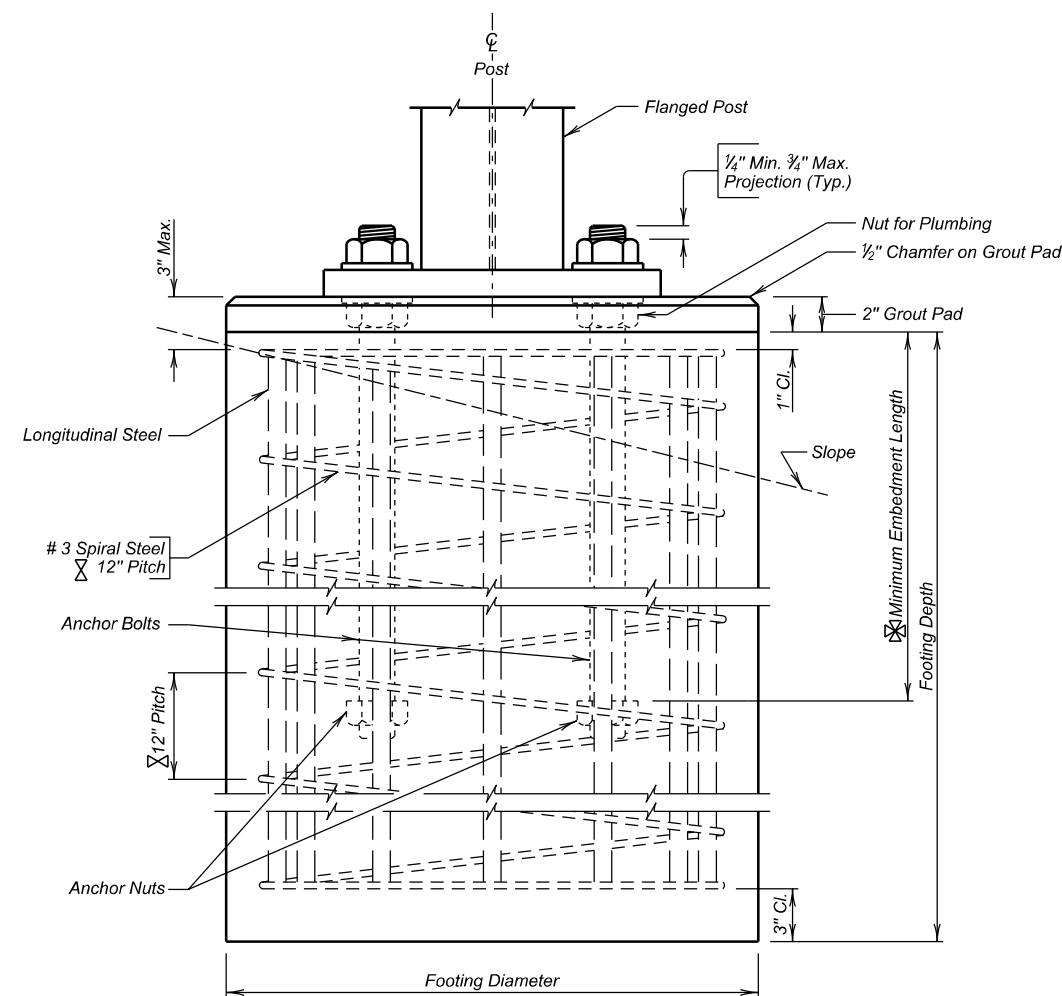
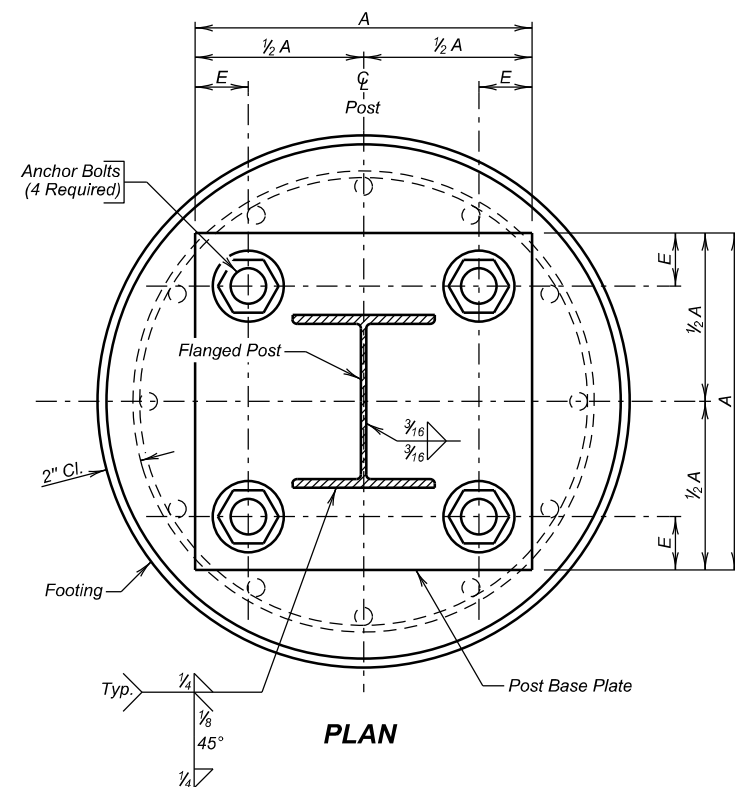
See Footing Detail

NOTES

- Design Specification: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 2001 Edition with 2003 Interims.
- Concrete Footings shall be Class M6 - $f_c = 4000$ p.s.i.
- Structural Steel shall conform to ASTM A36.
- All Reinforcing Steel, except spirals, shall conform to ASTM A615 Grade 60.
- Spiral Reinforcing Steel may be fabricated from cold drawn wire ASTM A1064, or hot rolled plain or deformed bars conforming to the strength requirements of ASTM A615, Grade 60.
- All Anchor Rods shall conform to ASTM F1554, Grade 36 having a minimum yield stress of 36000 p.s.i. Anchor Bolts shall be cleaned to remove any oil from the threading process before galvanizing.
- Anchor Rods shall have 7" thread length on both ends.
- All nuts shall conform to ASTM A563, DH. All nuts shall be heavy hex. All washers shall conform to ASTM F436.
- All structural steel including the Steel Posts shall be galvanized according to ASTM A123. The Nuts, Washers and 10" of one end of the Anchor Rods shall be galvanized according to ASTM F2329.
- All Rod Holes shall be drilled. All plate cuts shall preferably be Saw Cuts, however, Flame Cutting will be permitted providing all edges are ground smooth (metal projecting beyond the plane of the plate face will NOT be allowed).
- All welding and weld inspection shall be in accordance with the latest edition of AWS D 1.5 Structural Welding Code.

SHOP PLANS

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



ERECTION DETAILS

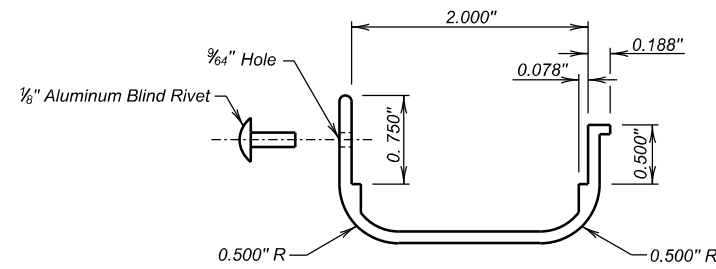
FOR

FIXED SIGN SUPPORTS

S. D. DEPT. OF TRANSPORTATION

DECEMBER 2016

1 OF 2

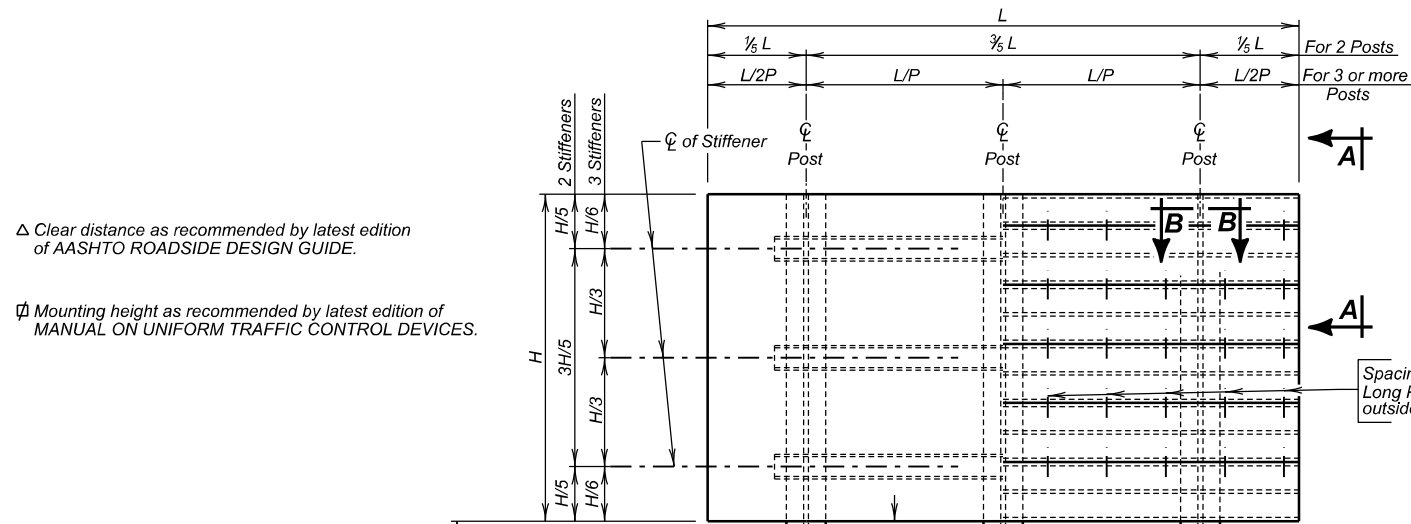


SIDE TRIM MOLDING

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

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

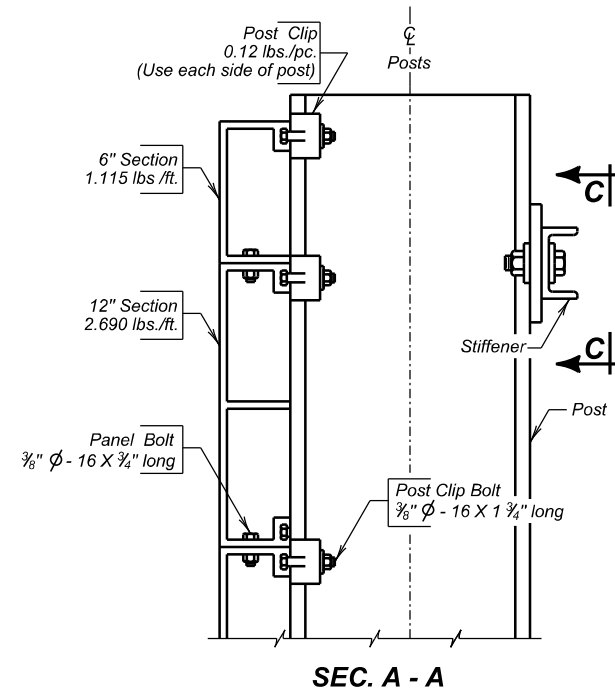
NOTE:
2 stiffeners are required when H is 8' - 0" or less
3 stiffeners are required when H is more than 8' - 0"



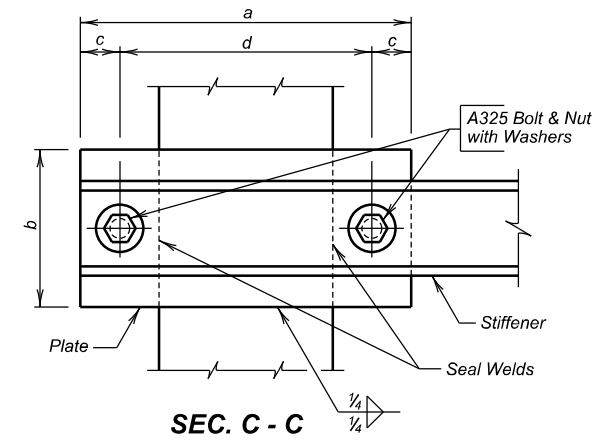
Δ Clear distance as recommended by latest edition of AASHTO ROADSIDE DESIGN GUIDE.

⌀ Mounting height as recommended by latest edition of MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

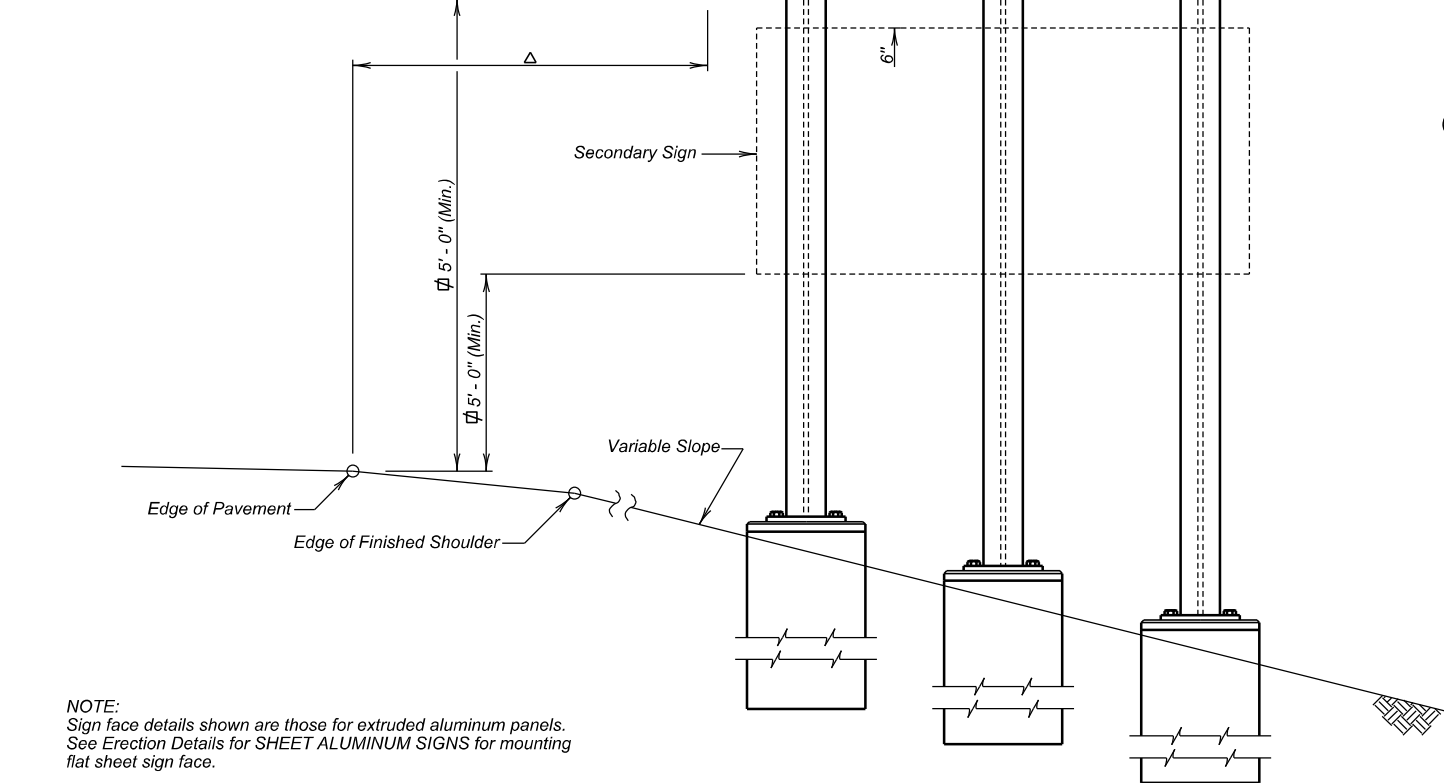
Spacing for 3/8" - ⌀ 16 X 3/4" Long Panel Bolts (3" or 6" from outside edges and 1'-0" apart.)



SEC. A - A

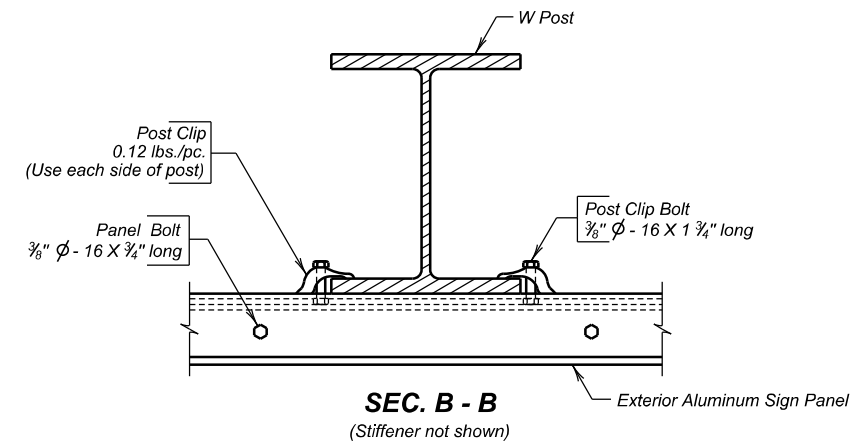


SEC. C - C



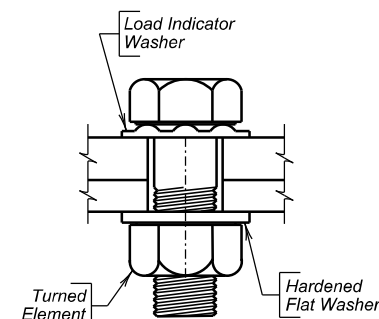
ELEVATION

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



SEC. B - B

(Stiffener not shown)



LOAD INDICATOR WASHER DETAIL

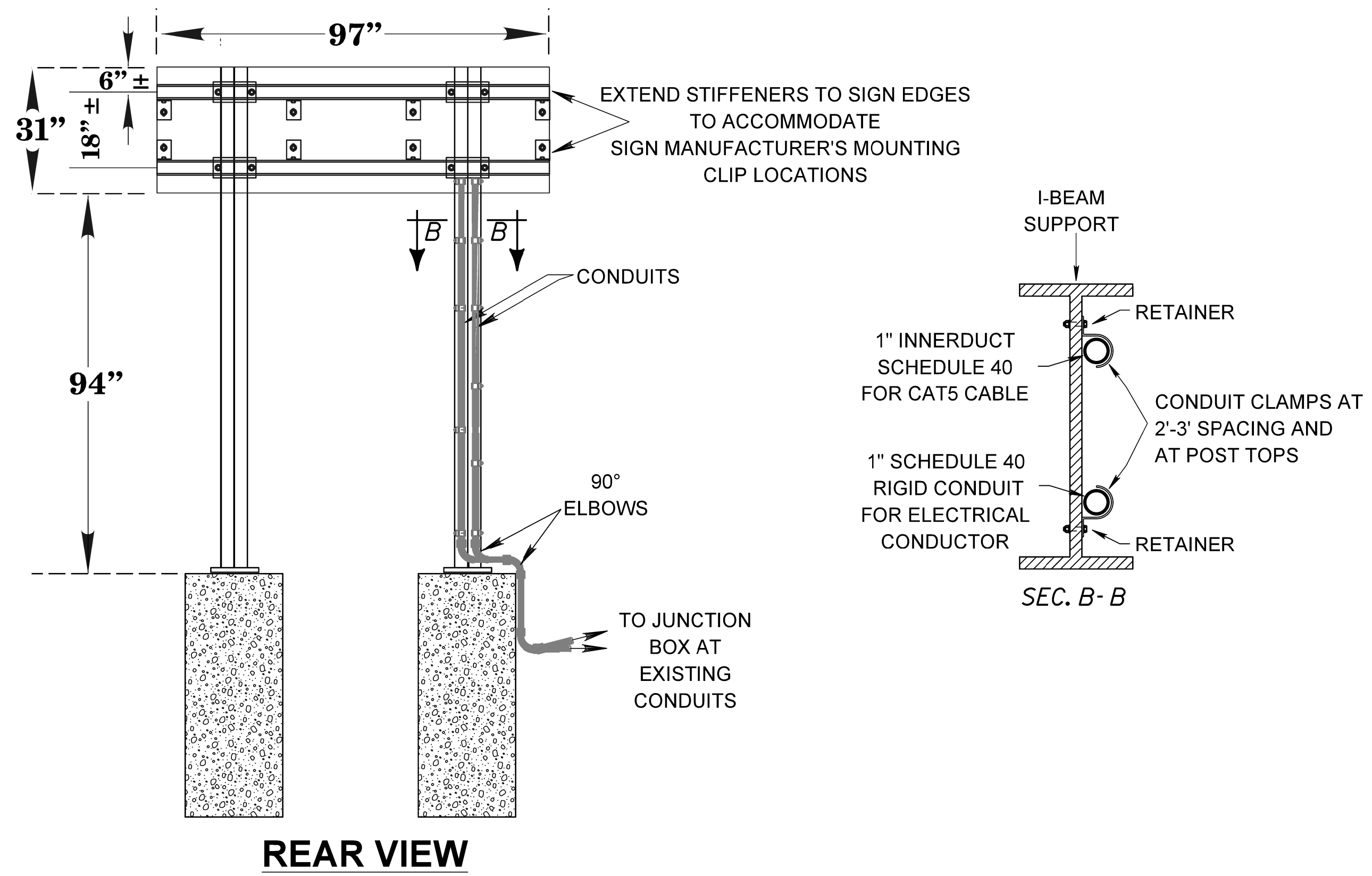
| STIFFENER DATA | | | | | | |
|-------------------|-----------|---------|----|--------|---------|------------------------|
| Post | Stiffener | a | b | c | d | Bolt (A325) Plate Thk. |
| S3X5.7 thru W8X21 | C3X5 | 10 1/2" | 5" | 1 1/4" | 8" | 3/8" ⌀ 3/16" |
| W8X24 thru W10X45 | C5X6.7 | 13 1/2" | 6"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

STIFFENER BOLTING PROCEDURE

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

ERECTION DETAILS
FOR
FIXED SIGN SUPPORTS
S. D. DEPT. OF TRANSPORTATION
DECEMBER 2016

ERECTION DETAILS FOR VARIABLE MESSAGE SIGN {TYPICAL}



PLOT SCALE - 1/2"=1'

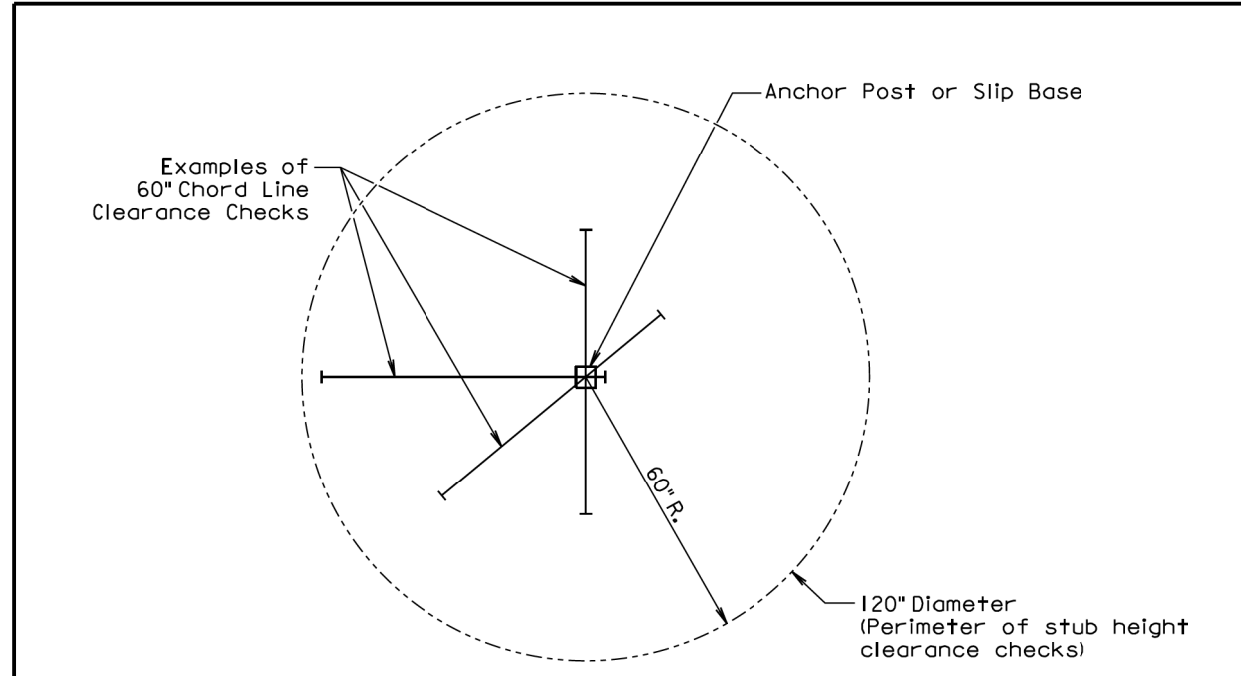
PLOTTED FROM - TRMLINT17

PLOT NAME - 3

FILE - ... \WIP\MINN06\H\06\H SIGNING.DGN

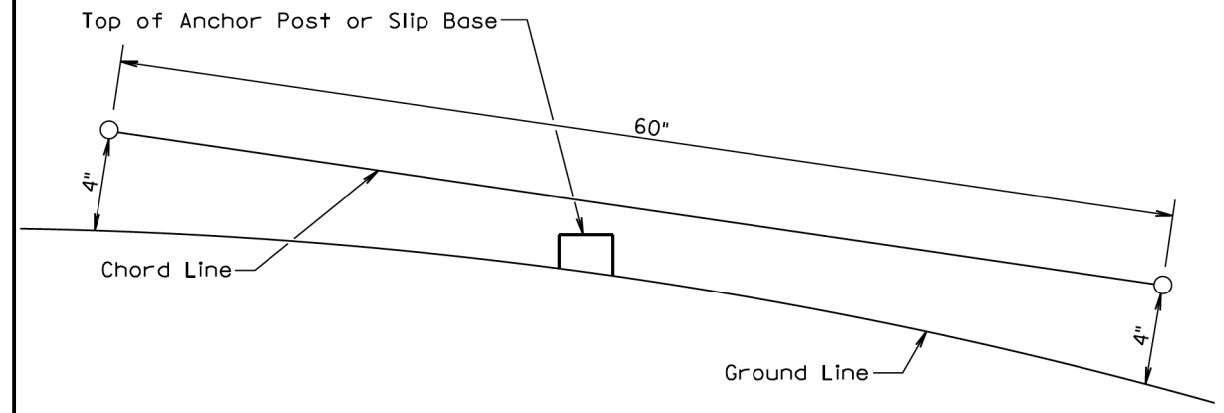
Plotting Date: 08/19/2020

PLOT SCALE - 1:202.896



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.

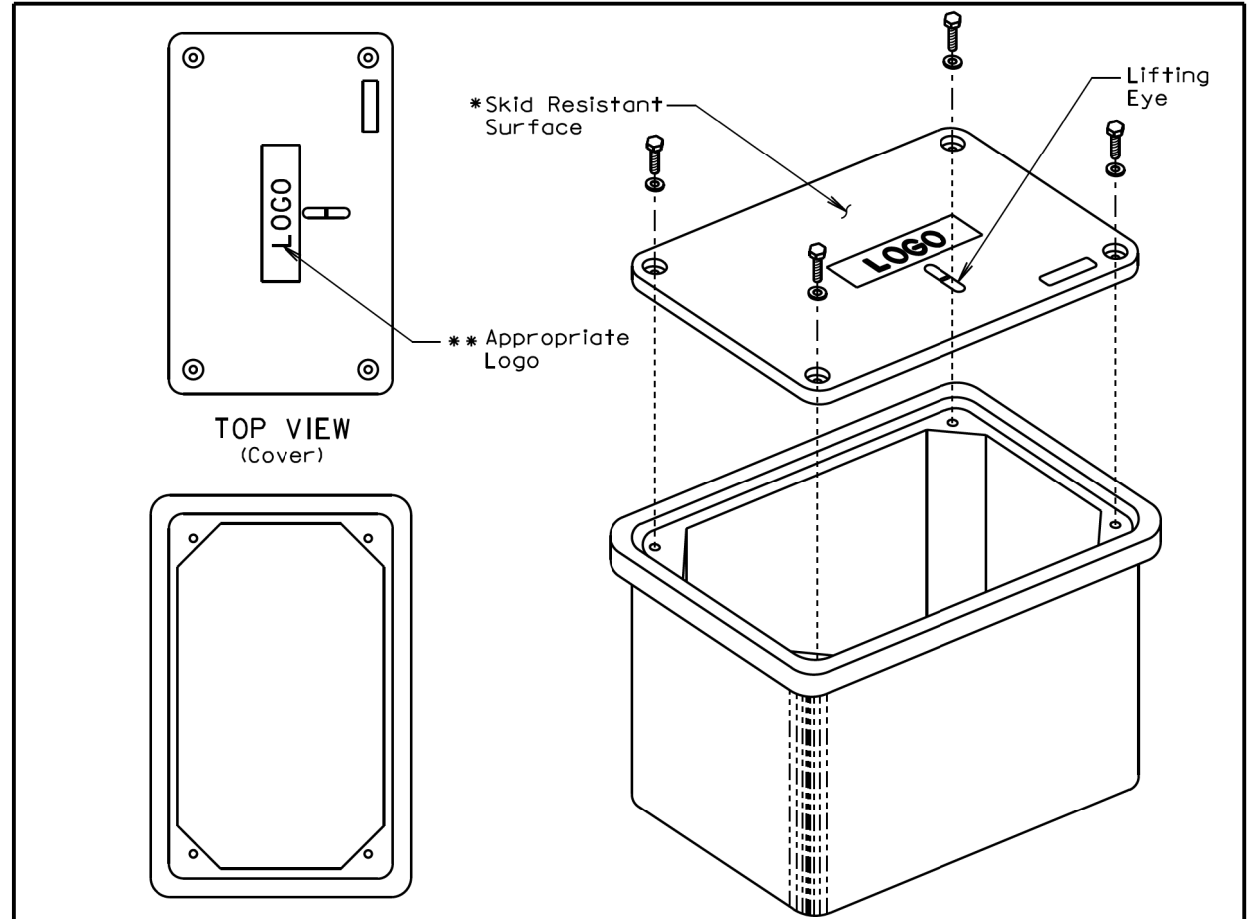
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

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

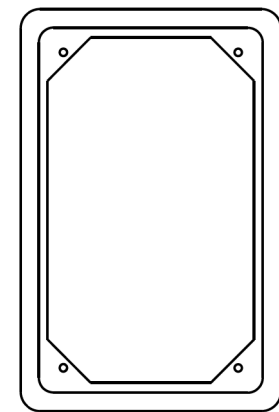
July 1, 2005

| | | | |
|--------------------------------------|----------------------------------|---|-------------------------------|
| <i>Published Date: 3rd Qtr. 2020</i> | S D D O T | BREAKAWAY SUPPORT STUB CLEARANCE | PLATE NUMBER 634.99 |
| | | | Sheet 1 of 1 |

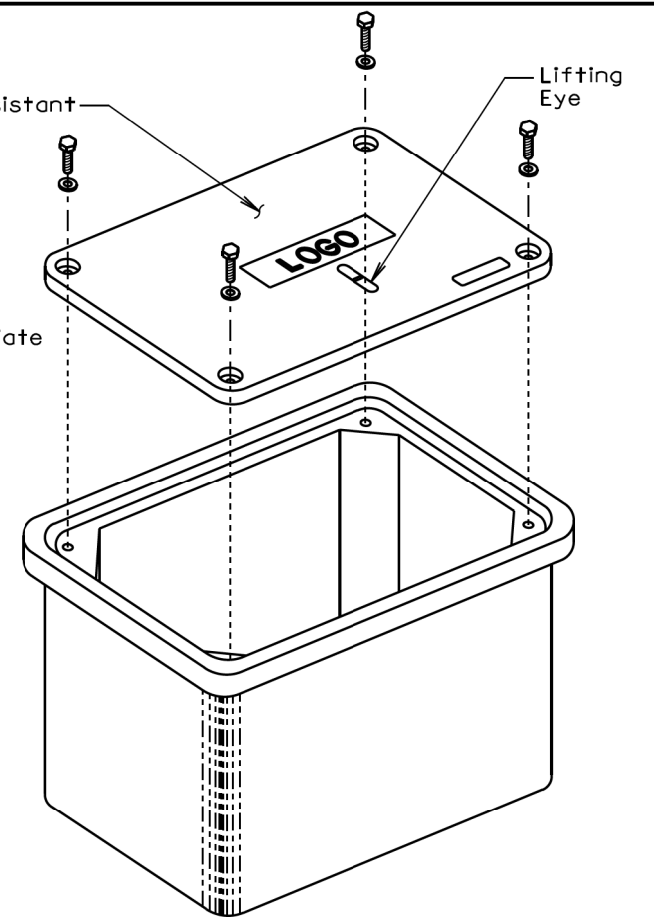
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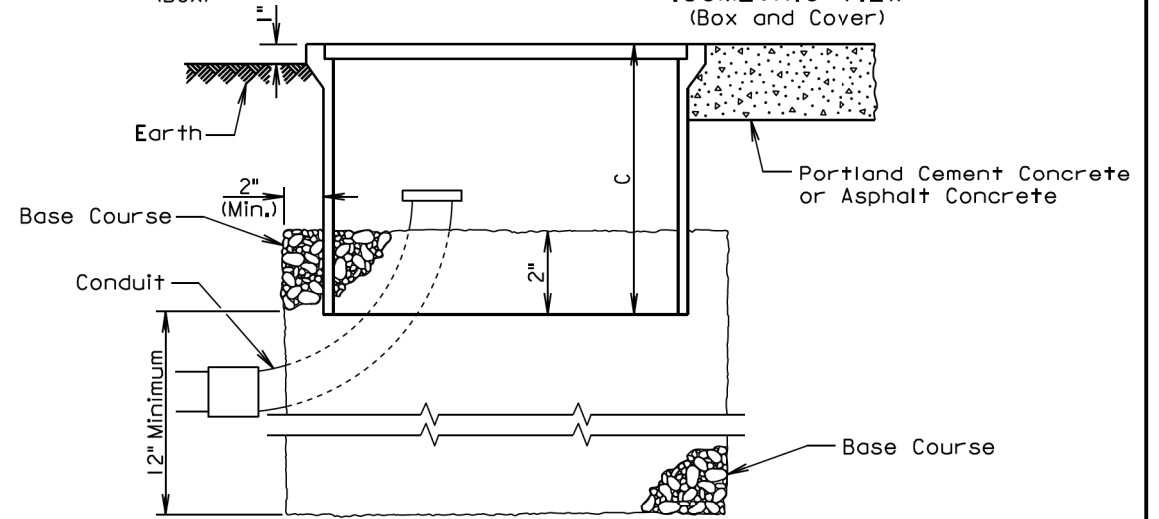
TOP VIEW (Cover)



TOP VIEW (Box)



ISOMETRIC VIEW (Box and Cover)



SIDE VIEW

(Electrical Junction Box Installation Details)
(Buried No. 4 steel reinforcing bar not shown.)

September 14, 2017

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| <i>Published Date: 3rd Qtr. 2020</i> | S D D O T | ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4 | PLATE NUMBER 635.65 |
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ELECTRICAL JUNCTION BOX

| TYPE | DESCRIPTION | APPROXIMATE COVER SIZE | MINIMUM DEPTH (C) |
|------|-------------------------|------------------------|-------------------|
| 1 | Open Bottom with Gasket | 11"x18" | 18" |
| 2 | Open Bottom with Gasket | 13"x24" | 18" |
| 3 | Open Bottom with Gasket | 17"x30" | 18" |
| 4 | Open Bottom with Gasket | 30"x48" | 24" |

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 F609.

**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".

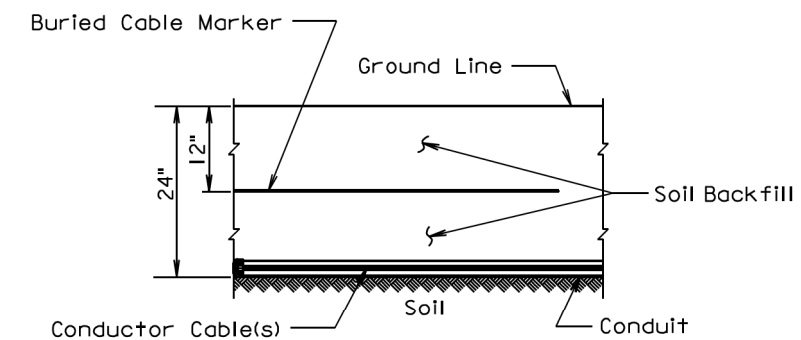
The electrical junction boxes shall comply with the American National Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) 77 2007 Specification for Underground Enclosure Integrity. The loading requirement for all the electrical junction boxes shall be Tier 8 of ANSI/SCTE 77 2007.

The electrical junction boxes shall be UL listed.

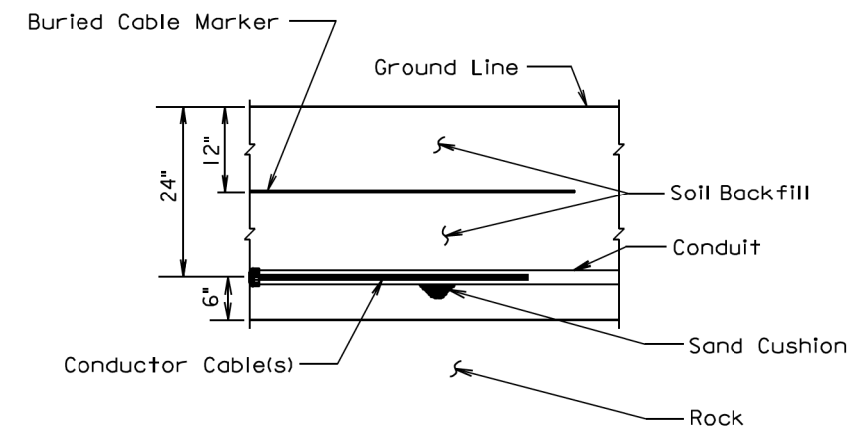
For junction boxes located outside of pavement, a No. 4 steel reinforcing bar with a minimum length of 18" shall be buried adjacent to the long side of the junction box. All costs associated with furnishing and placing the steel reinforcing bar shall be incidental to the contract unit price per each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

September 14, 2017

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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

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|--------------------------------------|----------------------------------|-----------------------------|-------------------------------|
| <i>Published Date: 3rd Qtr. 2020</i> | S D D O T | CONDUIT INSTALLATION | PLATE NUMBER 635.76 |
| | | | Sheet 1 of 1 |