DYNAMIC MESSAGE SIGNS
ITS-000-S(398)--25-00

SCOTT COUNTY

LETTING DATE 6-16-09

Iowa Department of Transportation

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE AND PRIMARY ROAD SYSTEM

SCOTT COUNTY

DYNAMIC MESSAGE SIGNS

One location on US 61 near Eldridge, One location on I-80 east of Utica Road in Davenport, and Two locations on I-74 in Bettendorf

SCALES: As Noted

The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2001, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions, shall apply to construction work on this project.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.

NO MILEAGE SUMMARY

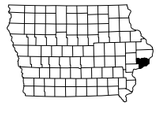
	TOTAL
	24
PROJECT IDENTIFICATION NUMBER	
09-00-000-010	
PROJECT NUMBER	
ITS-000-S(398)--25-00	

IOWA ONE CALL SM
1-800-292-8989
www.iowaonecall.com
811 Dial before you dig. Call (at least) two days before you dig.

For Standard Road Plans
Refer to Sheet No. C.01

For Project Location Map
Refer to Sheet No. A.02

INDEX OF SHEETS (105-3, 10-18-05)



INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.01	John M. Narigon	Primary Signature Block
V.1	James R. Hauber	Structural details

LICENSED PROFESSIONAL ENGINEER
John M. Narigon
11842
IOWA

I hereby certify that this plan was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature 04-06-09 Date

John M. Narigon
Printed or Typed Name

My license renewal date is December 31, 2009

Pages or sheets covered by this seal:
A.01,A.02,B.01-B.03,C.01-C.05,N.01-N.03,X.01-X.06

DESIGN TEAM NARIGON/VOGEL | ENGLISH | IOWA DOT * OFFICE OF TRAFFIC & SAFETY | SCOTT COUNTY | PROJECT NUMBER ITS-000-S(398)--25-00 | SHEET NUMBER A.01

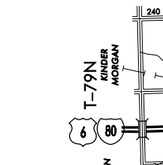
4/20/2009 jnarigo W:\Projects\0000001005\TrafEng\00-000S-398\00000398.a01

SITE #4 / DMS #404
US 61 NB
STA 587+00
MP 126.2
ROADSIDE DMS

SITE #1 / DMS #401
I-80 WB
STA 1083+75
MP 298.6
ROADSIDE DMS

SITE #2 / DMS #402
I-74 EB
STA 2251+75
MP 2.1
ROADSIDE DMS

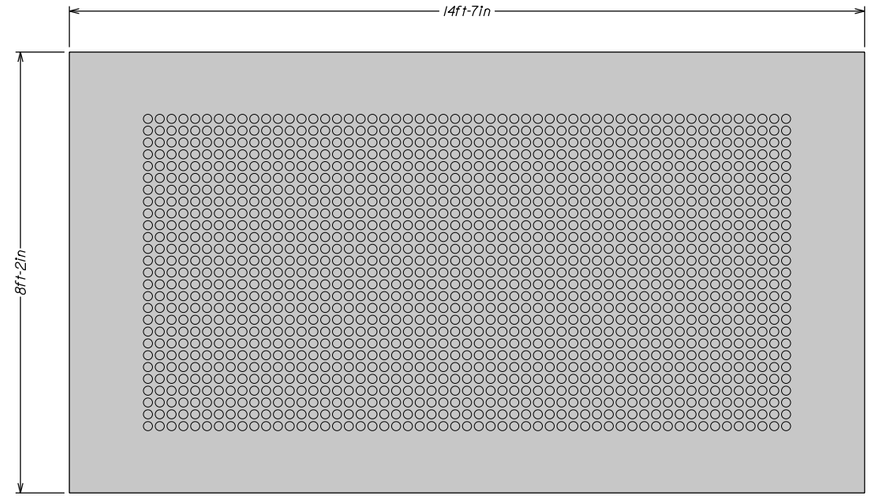
SITE #3 / DMS #403
I-74 EB
STA 2144+75
MP 4.1
ROADSIDE DMS
(IN MEDIAN)



DESIGN TEAM NARIGON/VOGEL	ENGLISH	IOWA DOT * OFFICE OF TRAFFIC & SAFETY	SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER A.02

4/20/2009 jnarigo W:\Projects\0000001005\TrafEng\00-000S-398\00000398.a01

DIMENSIONAL INFORMATION



Manufacturer: Skyline
Model Number: VMSLED-L-3-18F-27X55-I
Type: Full Matrix
Pixels: 55 x 27 (width x height)

Height: 8'2"
Width: 14'7"
Depth: 1'4"

TRANSPORTATION REQUIREMENTS

All material and equipment necessary to transport the sign to or from the storage site and/or installation site shall be furnished by the Contractor.

The sign shall be transported in the upright position. At no point in time shall the sign be laid on its side, front, or back.

To avoid damage to the sign during transport, consult the sign manufacturer to determine the correct method to secure the sign to the trailer.

Any damage incurred during transportation shall be the responsibility of the Contractor.

STORAGE REQUIREMENTS

All material and equipment necessary to store the sign at the designated site shall be furnished by the Contractor.

The sign shall be stored upright and level. At no point in time shall the sign be laid on its side, front, or back.

When the sign is not to be stored on concrete, extra blocking shall be used to account for settlement.

Remove shipping support legs from the DMS after installation on the support structure.

During transportation and storage, the DMS shall be secured at all times to prevent tipping. The DMS shall be secured with dead man anchors or other suitable methods. The DMS shall not be marred by the selected method. Tipping may be caused by any number of reasons, but high winds and other weather related events are the primary concern while the DMS is on the ground.

Any damage resulting from the failure to properly secure the DMS shall be the responsibility of the Contractor.

ATTACHMENT HARDWARE

All materials necessary to attach the DMS to the support structure will be furnished with the DMS.

LIFTING REQUIREMENTS

The following procedures shall be followed when lifting the sign for either removal or installation, including lifting the sign from the storage site to the trailer or the reverse, and from the trailer to the support structure or the reverse.

The crane and lifting bar shall be rated to lift a minimum of 2000 pounds.

Any damage incurred during lifting shall be the responsibility of the Contractor.

The information presented below is from the literature provided by the manufacturer. Consult the manufacturer for complete lifting requirements.

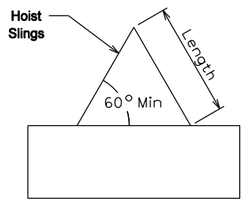
** Skyline Sign Lift Procedure **

When removing an existing sign, the pick angles or lifting brackets may need to be furnished by the Contractor. Consult Skyline for specific information about the pick angle or lifting bracket requirements.

1. When the sign arrives, it should remain secured at all times, either to the trailer or to the crane, until fully mounted on the sign support structure or until secured to the ground.

2. Remove the strapping blocks from the top of the sign to free the brackets to in order to attach the lifting sling.

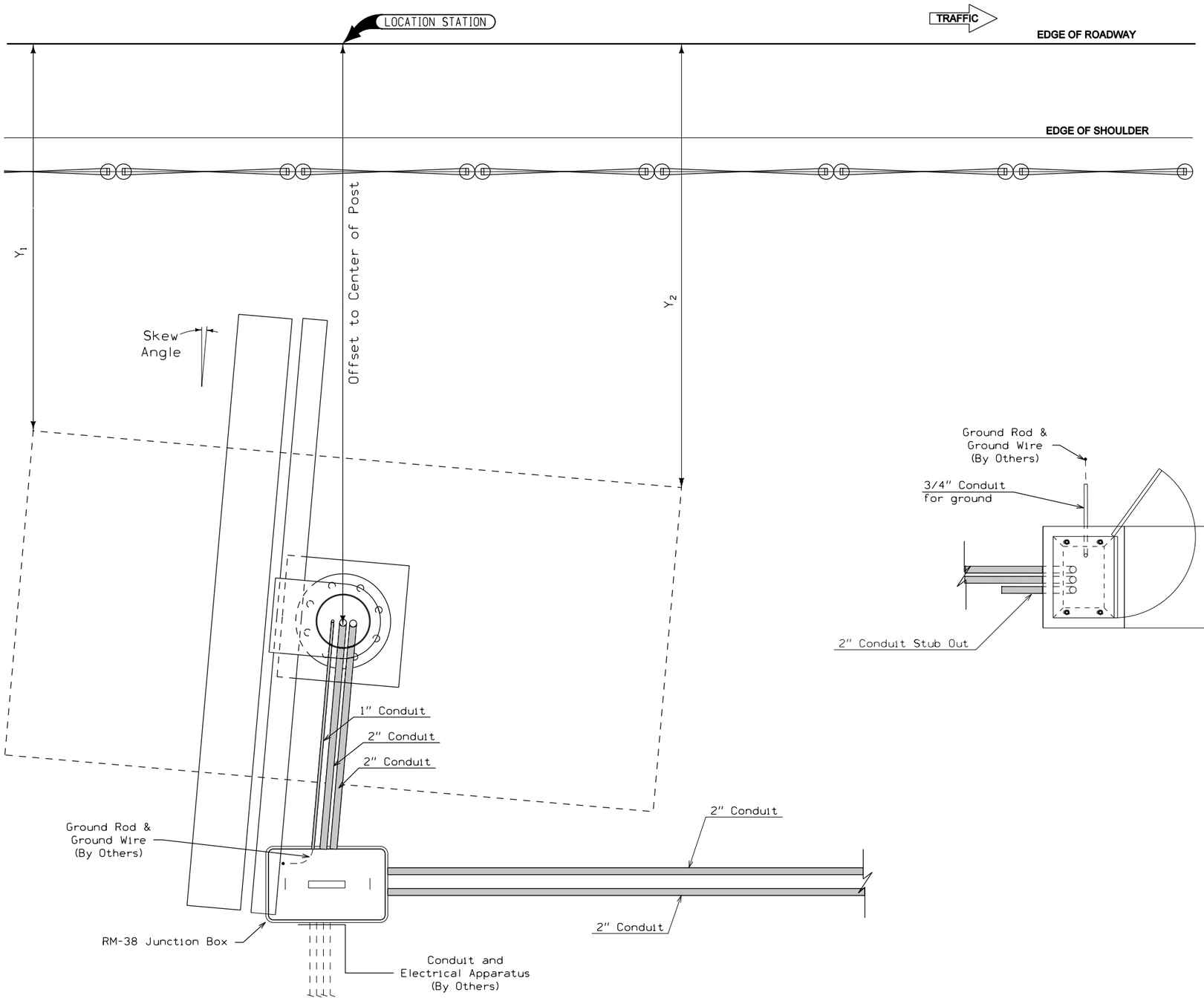
3. Secure the crane's lifting slings to the sign using the appropriate sling length. Attach the slings to the pick angles on the top of the sign using the appropriate spreader bars and/or clevises. Calculate the hoisting sling's length by measuring the distance between the pick angles and a minimum 60 inside angle with the sign.



4. Lift the sign into position.

5. If applicable, remove any shipping support legs from the underside of the DMS, and lifting support angles from the top of the DMS. Plug and seal all openings as per the manufacturer's requirements. Any damage incurred by improperly sealed openings shall be the responsibility of the Contractor.

DETAILS OF ROADSIDE DYNAMIC MESSAGE SIGN



PLAN VIEW

SITE INSTALLATION NOTES:

Contractor is to install the sign footing, sign support structure, DMS, the ground cabinet footing, ground cabinet, RM-38 junction box, and conduit between the handhole and each footing.

All wiring for communications, electrical service, and grounding will be completed by the DOT.

The DOT will furnish the ground cabinet to be installed.

The ground cabinet footing shall be located within 25 feet of the RM-38 junction box, beside or behind the DMS and oriented as indicated relative to traffic. In locations with a ditch, the footing shall not be located within the ditch bottom, but should be located beyond the top of the backslope, if possible. The Engineer shall approve the location and orientation prior to placement of the footing.

Install socket type bell ends on conduit protruding from the footing. Finished conduit (including bell end) is to protrude 5 to 6 inches from the top of footing.

Mark the locations of all conduit entering the sign support structure footing and the ground cabinet footing. Locate marks on the side the conduit enters, near the top, to ensure visibility after backfilling and shaping.

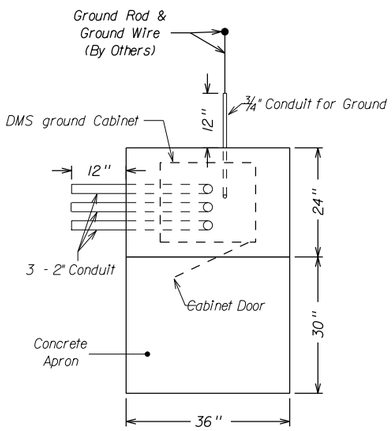
Install handhole and conduit as per sections 2523.01, 2523.09, 2523.10, 2523.11, and 2523.13.

Complete site restoration as per section 2523.18.

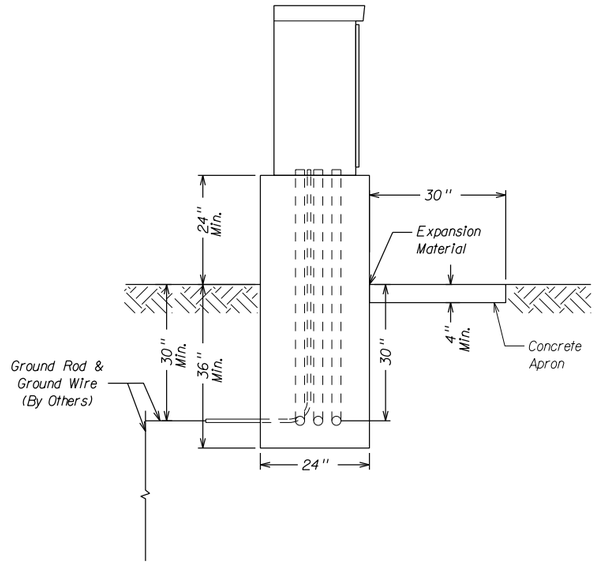
SITE INSTALLATION DETAILS FOR ROADSIDE DYNAMIC MESSAGE SIGN

DESIGN TEAM NARIGON/VOGEL	ENGLISH	IOWA DOT * OFFICE OF TRAFFIC & SAFETY	SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER B.02

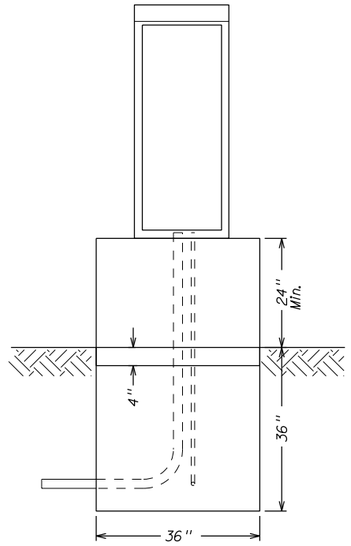
4/20/2009 jnarigo W:\Projects\0000001005\TrafEng\00-000S-398\00000398.B01



Top View



Side View



Front View

Center DMS Cabinet on footing and attach with pull out anchors. Refer to IM 453.09 for approved anchors.

Center conduits in the footing. Prior to pouring the footing, confirm that no conflicts exist between the conduit placement and the ground cabinet. Maintain at least 2" of clearance to the edge of the ground cabinet.

Cap all open ends of conduit before backfilling. For future reference, mark the locations of all conduit entering the footing on the side which the conduit enters. Locate marks near the top to ensure they remain visible after backfilling and shaping.

Install socket type bell ends on conduit protruding from the footing. Finished conduit (including bell end) is to protrude 5 to 6 inches from the top of footing.

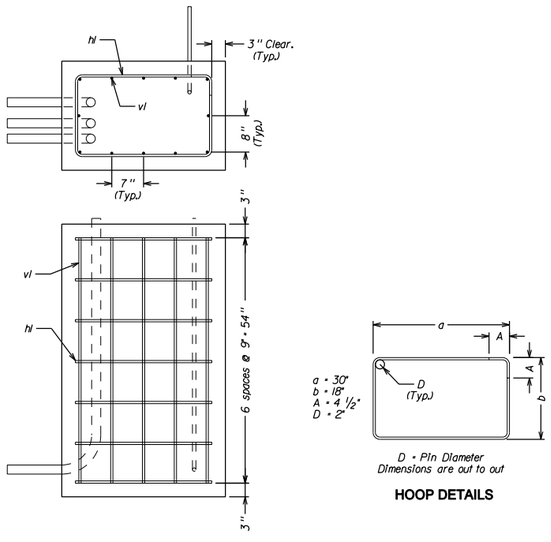
Use Class C Structural Concrete for the footing. Meet the requirements of section 2403 for placement of the concrete. The top of the footing is to be level, and the top edges rounded with an edger.

Provide forms of sufficient strength to prevent warping, bulging, or other deflections. Refer to Section 2403.07 E for additional requirements.

Epoxy coated reinforcement to meet the requirements of section 2404.

Conduit to meet the requirements of section 2323.10.

Excavation, backfilling, and site restoration to meet the requirements of sections 2523.09, 2523.13, and 2523.18, respectively.



HOOP DETAILS

Reinforcing Details

EPOXY COATED REINFORCEMENT QUANTITIES per footing				
BAR	QTY	SIZE	LENGTH	WEIGHT
v1	12	#4	54	36.1
h1	7	#4	105	40.9
Total Weight				77.0

CONCRETE QUANTITIES per footing location	
Footing	1.11 cu yd
Pad	0.09 cu yd

DMS GROUND CABINET FOOTING DETAILS

ESTIMATED PROJECT QUANTITIES

100-1A
07-15-97

Item No.	Item Code	Item	Unit	Total	As Built Quan.
1	2102-2625000	EMBANKMENT-IN-PLACE	CY	50	
2	2401-6745355	REMOVAL OF CONCRETE FOOTINGS OF HIGHWAY SIGNS	EACH	8	
3	2402-2720000	EXCAVATION, CLASS 20	CY	260	
4	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	46.0	
5	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	4480	
6	2505-6000111	HIGH TENSION CABLE GUARDRAIL	LF	560	
7	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR	EACH	4	
8	2505-6000131	HIGH TENSION CABLE GUARDRAIL, SPARE PARTS KIT	EACH	1	
9	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN	EACH	5	
10	2524-9081275	CONCRETE FOOTING FOR BREAKAWAY SIGN POST, 2'-8" DIA. X 7'-6"	EACH	4	
11	2524-9275222	WOOD POSTS FOR TYPE A OR B SIGNS, 4 IN. X 6 IN.	LF	40	
12	2524-9281210	STEEL BREAKAWAY SIGN POSTS FOR TYPE A OR B SIGNS, W 8 X 21	LF	69.1	
13	2528-8445110	TRAFFIC CONTROL	LS	1	
14	2533-4980005	MOBILIZATION	LS	1	
15	2599-9999005	ROADSIDE DMS, INSTALL	EACH	4	
16	2599-9999005	STEEL ROADSIDE DMS SUPPORT	EACH	4	

STANDARD ROAD PLANS

105-4
10-16-07

The following Standard Road Plans shall be considered applicable to construction work on this project.

Number	Date	Sheets	Title
RM-38	04-27-99	1	Junction Box (Fiber Reinforced Concrete)
SI-101	04-21-09	1	Locations - Type 'A' Signs
SI-102	04-21-09	2	Locations - Type 'B' Signs
SI-111	04-21-09	1	Support Structures - Wood Posts
SI-113	04-21-09	3	Support Structures - Steel Breakaway Posts
SI-119	04-21-09	2	Support Structures - Mounting Brackets
SI-131	04-21-09	1	Sign Installation - Type 'A' Signs
SI-132	04-21-09	2	Sign Installation - Type 'B' Signs
TC-1	10-17-06	1	Work not Affecting Traffic
TC-402	10-21-08	1	Shoulder Closure
TC-418	10-21-08	1	Lane Closure on Divided Highway

ESTIMATE REFERENCE INFORMATION

100-4A
10-29-02

Item No.	Item Code	Description
1	2102-2625000	EMBANKMENT-IN-PLACE Refer to Typical 7198. The Contractor shall furnish the material.
2	2401-6745355	REMOVAL OF CONCRETE FOOTINGS OF HIGHWAY SIGNS Refer to Tabulation REMOVAL and SIGN-NOTE. Concrete footings or parts of concrete footings removed shall become the property of the Contractor, and shall be removed in accordance with Article 1104.08. Where portions of the existing concrete footings lie wholly or partially within limits for a new structure (culvert, concrete footing, or other), the footing shall be removed as necessary to accommodate construction of the proposed structure. METHOD OF MEASUREMENT: The Engineer will count each concrete footing of highway sign removed. BASIS OF PAYMENT: For each concrete footing for concrete footing of highway sign removed, the Contractor shall be paid the contract unit price. This payment shall be full compensation for furnishing all material, equipment, and labor and for the performance of all work necessary for removal of the concrete footings from the project and for any backfilling made necessary by these operations.
3	2402-2720000	EXCAVATION, CLASS 20
4	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)
5	2404-7775005	REINFORCING STEEL, EPOXY COATED Refer to Tabulation 192-1 and the "V" sheets.
6	2505-6000111	HIGH TENSION CABLE GUARDRAIL
7	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR Refer to Tabulation 108-9A.
8	2505-6000131	HIGH TENSION CABLE GUARDRAIL,SPARE PART KIT Spare Part Kits shall be delivered to the Iowa DOT Maintenance Facility in Davenport.
9	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN Refer to Tabulations TYPE-B, 190-51, and REMOVAL. Includes 3 Type B signs and 2 Type A signs. The Contractor shall remove each sign and the hardware used to secure the sign to another sign, posts, or sign support structure. For signs mounted directly to posts, removal of the sign shall include removal of the posts. Posts may be either wood posts or steel breakaway sign posts. The removal of concrete footings for breakaway signs shall be paid for separately. Holes remaining from the removal of wood posts shall be backfilled with suitable material to the natural ground surface in accordance with Article 2402.09 of the Standard Specifications. All steel posts removed shall become the property of the Contractor. Unless otherwise noted, wood posts removed shall remain the property of the DOT. The Contractor shall deliver the wood posts to a DOT storage area within 50 miles, as designated by the Engineer. The Contractor shall furnish all necessary hardware to reinstall the sign. When the reinstallation is similar to the original installation, unless otherwise noted, the existing hardware may be used to reinstall the sign. Signs damaged by the Contractor's activities shall be replaced at the Contractor's expense. Replacement materials shall be new. The DOT will furnish all details necessary for fabrication of the replacement materials. METHOD OF MEASUREMENT: The Engineer will count the number of signs removed and reinstalled. BASIS OF PAYMENT: The Contractor will be paid the contract unit price per sign removed and reinstalled. This payment shall be full compensation for furnishing all material, equipment and labor and for the performance of all work necessary for removal and reinstallation.

ESTIMATE REFERENCE INFORMATION

100-4A
10-29-02

Item No.	Item Code	Description
10	2524-9081275	CONCRETE FOOTING FOR BREAKAWAY SIGN POST, 2'8" DIA. X 7' 6" Refer to Tabulations SIGNING NOTES and TYPE-B.
11	2524-9275222	WOOD POSTS FOR TYPE A OR B SIGNS, 4 IN. X 6 IN. Refer to Tabulations SIGNING NOTES and 190-51.
12	2524-9281210	STEEL BREAKAWAY SIGN POSTS FOR TYPE A OR B SIGN, W 8 X 21 Refer to Tabulations SIGNING NOTES AND TYPE-B.
13	2528-8445110	TRAFFIC CONTROL Refer to Tabulation 108-23.
14	2533-4980005	MOBILIZATION
15	2599-9999005	ROADSIDE DMS, INSTALL Refer to Tabulation 192-1 and "V" sheets. Work shall consist of furnishing all labor, equipment, and materials to construct and dynamic message sign (DMS), generally including, but not limited to: - attaching the DMS to the support structure - constructing the ground cabinet footing - installing an RM-38 junction box - installing the conduit between the sign support structure footing and the ground cabinet footing - installing the ground cabinet - transporting the DMS and associated appurtenances from storage area The Roadside DMS vendor is Skyline Products, Inc. of Colorado Springs, Colorado. The following items will be provided by the DOT: DMS, DMS-to-sign support structure attachment hardware, and ground cabinet. The Contractor shall assume full responsibility for the DOT furnished materials prior to accessing them. This assumption of responsibility shall be documented with an itemized invoice clearly identifying each item and shall be signed and dated by the Contractor and the Engineer. Lacking a signed invoice, the default date of assumption of responsibility for these materials shall be the date the contract between the DOT and the Contractor is signed. Upon the assumption of responsibility for any and all materials, the Contractor shall be wholly liable for safe handling, storage, and installation of the equipment. Any damaged equipment shall be replaced at the Contractor's expense, without additional compensation. Three of the signs and related equipment to be installed on this project are stored in the Iowa DOT Davenport Maintenance Facility. The other sign and related equipment is stored in the Iowa DOT Hamilton Avenue Maintenance Facility in Sioux City, IA. METHOD OF MEASUREMENT: The Engineer will count the number of Roadside DMS signs installed. BASIS OF PAYMENT: The Contractor shall be paid the contract unit price for each Roadside DMS sign installed. This payment shall be full compensation for furnishing all material, equipment (except as noted above) and labor and for the performance of all work necessary, including transport of all provided materials from their present location, to provide the DMS installation.
16	2599-9999005	STEEL ROADSIDE DMS SIGN SUPPORT This work shall consist of the fabrication and installation of steel sign supports. Refer to the V sheets for dimensions and details. This item shall be constructed as per Section 2423.

TABULATION OF SPECIAL EVENTS

102-15
10-29-02

Event	Location	Date
Quad City Air show		June 20-21, 2009
Forth of July events		July 3-5, 2009
John Deer Classic PGA Tournament		July 6-12, 2009
Bix events		July 24-25, 2009
Quad City Marathon		September 27, 2009

04-15-08 232-3A

EROSION CONTROL: (Rural Seeding)

Following completion of work in a disturbed area, the area shall be seeded, fertilized, and mulched as follows:

SEEDING:
3 lbs. of Fescue or Fawn per 1000 sq. ft.

FERTILIZER:
17 lbs. of 13-13-13 (or equivalent) commercial fertilizer per 1000 sq. ft.

MULCH:
70 lbs. of dry cereal straw per 1000 sq. ft. All mulch shall be consolidated into the soil with a mulch stabilizer.

The preparation of the seedbed and the furnishing and application of seed, fertilizer, and mulch shall be considered incidental to mobilization and no extra compensation will be allowed.

04-03-01 203-2

During construction of this project, the contractor will be required to coordinate his operations with those of other contractors working within the same area. Other work in progress during the same period of the time will include construction of the following projects:

Project	Type of Work
IMN-74-1(150)5--0E-82	Bridge Washing
IM-74-1(158)4--13-82	Bridge Replace/Grade & Pave
IMN-74-1(148)0--0E-82	PCC Patching
IMN-74-1(178)0--0E-82	Pavement Rehab
IMN-074-1(182)0--0E-82	Guardrail
ESIMX-74-1(183)5--1S-82	Bridge Painting
ESIMX-74-1(184)5--1S-82	Bridge Painting
IMN-80-8(235)278--0E-82	PCC Patching

TRAFFIC CONTROL PLAN

108-23
04-04-89

Traffic will be maintained on the project at all times.

Single lane closure per TC-418 will only be allowed from 7:00 PM to 6:00 AM beginning Monday at 7:00 PM ending Friday 6:00 AM and from 9:00 PM Sunday to 6:00 AM Monday. Night work will be allowed within this time frame.

Single lane closures outside of these time periods must have prior approval of the Engineer.

01-20-84 204-2

All holes resulting from operations of the contractor, including removal of guardrail posts, fence posts, utility poles, or foundation studies, shall be filled and consolidated to finished grade as directed by the engineer to prevent future settlement. The voids shall be filled as soon as practical - preferably the day created and not later than the following day. Any portion of the right-of-way or project limits (including borrow areas and operation sites) disturbed by any such operations shall be restored to an acceptable condition. This operation shall be considered incidental to other bid items in project.

SIGNING NOTES

SIGN-NOTE 09-25-02

GENERAL:

The exact location of installation for any item is subject to approval by the Engineer.

Before excavation, the Contractor shall check for the locations of utilities, drainage structures and other facilities in the construction area. Any damage to such facilities due to the Contractor's activities shall be repaired at his expense.

Allowable tolerances:

Copy:
Accumulation error of not greater than +/- 0.50" per line of copy, not greater than +/- 0.50" for spacing between lines of copy, and the margin between lines of copy and the inside edge of the sign border.

Letters: (The measurements will be made to the nearest 1/8".)

nominal height	variation in height	variation in width
4" thru 12"	-1/8" to +3/8"	-1/4" to +1/4"
over 12"	-1/8" to +3/8"	-3/8" to +3/8"

Sign Elevation:
The elevation difference between the bottom of the sign and the edge of the roadway shall vary by no more than 6 inches from that indicated in the construction documents.

Post Elevation:
The elevation difference between the top of the lowest and highest post shall be no more than 0.2 feet.

Type B signs can be separated into two categories:
Major Guide Signs, and
Minor Guide Signs

Major Guide Signs include the advance and exit direction guide signs for an interchange or intersection.

Minor Guide Signs include all other guide signs such as next exits signs, supplemental guide signs, logo signs, exit gore signs, post-interchange mileage signs, ramp destination signs, and ramp logo signs for an interchange; and destination signs along sideroads.

Type A signs are not separated into categories, but special consideration shall be given to regulatory signs.

Existing Type B signs shall remain in place until the new replacement signs are installed. If construction activities require the removal of a sign prior to installation of the replacement sign, the existing sign may be relocated to temporary posts, or a temporary plywood sign may be installed to replace the existing sign.

Existing non-regulatory Type A signs are NOT required to remain in place until installation of a replacement sign. Existing regulatory Type A signs, particularly Stop signs, shall not be removed until the replacement sign is installed. This guideline may not apply if the traffic control plans have sufficient temporary signing.

During the replacement or modification of signs, no more than one of the major guide sign for each direction of travel at an interchange shall be out of service at any one time. No major guide sign shall be out of service for more than 8 hours. Minor guide signs shall not be out of service for more than 24 hours.

Existing signs and posts shall be removed within 24 hours following the installation of a new replacement sign.

Locations the plans indicate a new sign and posts to be installed at the same station location and offset as an existing sign, the new posts will be installed at a minimum of either 5 ft ahead or behind the existing sign installation. Whenever posts for a replacement sign are erected directly in front of an existing sign, the replacement sign shall be installed and the existing sign installation shall be removed within 24 hours of the time that the new posts are erected.

SIGNING NOTES

SIGN-NOTE 09-25-02

Where signs are located behind guardrail, the near edge of the sign shall be a minimum of 3 ft behind the guardrail posts. The Engineer may approve reducing this distance to a minimum of 1 ft where field conditions warrant.

Unless otherwise noted, auxiliary panels such as exit number panels shall remain or be reattached to the sign using the existing mounting hardware. Also, when replacing an existing logo sign with a new logo sign, the business logo panel(s) will be removed from the existing sign and attached to the new sign as directed by the Engineer. Care should be taken to prevent damage to the auxiliary or logo panels when removing and reattaching them. This work shall be included in the price bid for Type B signs.

In the location columns of Tabulation TYPE-B, the following symbols are used:
(R) = Ramp
(X) = Crossroad/Intersecting Road at Interchange
(M) = Metric Station Number
(L) = Left Side of Roadway

The following notes shall apply to the corresponding sign installations shown on the plan sheets and listed in the tabulations.

IB INSTALL NEW TYPE B SIGN
IA INSTALL NEW TYPE A SIGN

The Contractor shall install new signs at the locations identified in the plans.

For installation of new signs on existing posts:

- if the new sign is taller than the existing sign, the Contractor shall furnish the necessary hardware to extend the sign above the posts. Refer to Standard Road Plan RD-31.

- if the new sign is shorter that the existing sign,

for wood posts, the Contractor shall install the sign at the proper height and cut off the excess post length.

for steel posts, the Contractor shall install the sign at the top of the posts.

For installation of new signs on an existing sign support structure, refer to note (L).

All costs incurred for mounting hardware, extension of signs above existing posts, and cutting off wood posts shall be included in the price bid for Type A or Type B signs.

MS MODIFY EXISTING SIGN ASSEMBLY

The Contractor shall modify the copy on the existing sign as shown in the plan.

Existing copy which is removed shall delivered to a DOT storage area within 50 mi, as designated by the Engineer.

The Contractor shall install the new copy as needed to make the sign modifications.

All costs for copy removal, delivery to a DOT storage area, and installation of new copy shall be included in the price bid for sign modification.

SIGNING NOTES

SIGN-NOTE 09-25-02

MB INSTALL SPECIAL MOUNTING BRACKET

Special mounting brackets shall be installed at the locations identified in the plans. Refer to the tabulations TYPE-A, MILEPOST, and/or MNT-BRK details.

PW INSTALL NEW WOOD POSTS
PB INSTALL NEW BREAKAWAY STEEL POSTS AND FOOTINGS

New wood posts or breakaway steel posts and footings shall be installed at the locations indicated in the plans. Refer to tabulations TYPE-A and TYPE-B for post size and footing information.

If note (RR) accompanies either (PW) or (PB), an existing sign will be installed on the new posts.

RR REMOVE AND REINSTALL EXISTING SIGN:

Existing major Type B guide signs on posts shall not be removed until the new posts are installed. The sign shall be removed and promptly installed at the new location.

Existing major Type B guide signs on overhead support structures, minor Type B guide signs, plywood signs, and Type A signs may be removed and stored. The Contractor may remove the signs and transport them to a DOT storage area within 50 mi, as designated by the Engineer. The Contractor shall transport the signs back to the job site when ready for installation at the new location.

Signs damaged by the Contractor's activities shall be replaced at the Contractor's cost.

All costs for the sign removal, delivery to the DOT storage area (if applicable), and reinstallation shall be included in the price bid for remove and reinstall existing sign.

REMOVAL OF SIGNS
RA REMOVE EXISTING TYPE A SIGN ASSEMBLY
RB REMOVE EXISTING TYPE B SIGN ASSEMBLY

A Type A Sign Assembly consists of
- one or more signs,
- installed on one or more wood or steel posts,
- either directly mounted to the post, or mounted to the post with special sign mounting brackets.

A Type B Sign Assembly consists of
- the main sign,
- all auxiliary signs and brackets, and
- the wood or steel posts.

Unless stated otherwise in the plans, all posts shall be removed with the signs and brackets.

The Contractor shall remove each sign assembly identified in the plans. Steel posts removed shall become the property of the Contractor. All other materials removed shall remain the property of the DOT.

Each sign assembly removed shall be disassembled before delivery to the DOT. For Type A sign assemblies, the Contractor shall unbolt all signs, special mounting brackets,and posts from each other. For Type B sign assemblies, the Contractor shall unbolt all extruded aluminum panels, brackets, and posts from each other. Care should be taken not to damage the disassembled materials.

Holes remaining from the removal of wood posts shall be backfilled and restored to the normal surrounding conditions.

The Contractor shall deliver the removed signs, special sign mounting brackets, extruded aluminum panels, and wood posts to a DOT storage area within 50 mi, as designated by the Engineer.

SIGNING NOTES

SIGN-NOTE 09-25-02

The concrete footings for steel posts are not considered part of the sign assembly.

All costs for the sign assembly removal and disassembly, post removal (if applicable), restoration of the surrounding area, and delivery to the DOT storage area shall be included in the price bid for removal of sign.

RF REMOVE EXISTING CONCRETE FOOTING FOR STEEL POST

Existing concrete footings shall be removed to a depth of 1 ft below ground. The remaining holes shall be backfilled and restored to the normal surrounding conditions.

RS REMOVE EXISTING TYPE B SIGN SUPPORT STRUCTURE

The following are considered Type B Sign Support Structures:

- overhead sign truss and footings,
- cantilevered sign truss and footing, or
- bridge mounted brackets.

For removal purposes, wood and steel posts are not considered Type B Sign Support Structures.

Unless otherwise directed in the plans, the existing overhead trusses, cantilevered trusses, and bridge brackets, which are removed, shall become the property of the Contractor.If stated in the plan, the Contractor shall deliver the overhead trusses, cantilevered trusses, and bridge brackets to a DOT storage area within 50 mi, as designated by the Engineer.

All costs for the sign support structure removal, delivery to the DOT storage area (if applicable), and restoration of the surrounding conditions shall be included in the price bid for removal of sign support structure and footing.

L MODIFY SIGN SUPPORT ANGLES NEEDED TO INSTALL SIGNS ON EXISTING SIGN SUPPORT STRUCTURES

Refer to the sign support structure details for information on the required angle brackets.

Provided all specifications are met, the existing sign support angles may be reused. Existing sign support angles to be reused shall only be installed on the sign support structure from which they were removed.

Any sign support angles removed and not reused shall become the property of the Contractor.

When reusing the existing sign support angles with a shorter replacement sign, the sign support angles may need to be trimmed. Refer to the sign support structure details to determine if and where to trim the sign support angles.

Existing fasteners shall not be reused. New stainless steel bolts and nuts shall be used to install the existing or new sign support angles to the sign support structure.

Payment will not be made for the removal of existing sign support angles. This work shall be included in the price bid for removal of the sign.

Payment will not be made for reinstallation, and/or modification of existing sign support angles; furnishing and installation of new sign support angles (if required); and furnishing and installation of new fasteners. This work shall be included in the price bid for Type B signs.

TABULATION OF MATERIALS FOR STEEL ROADSIDE DMS SIGN SUPPORT

Refer to Site Installation Details on Sheet B.02 and "V" Sheets.

192-1
03-17-09

DMS NUMBER	LOCATION				HORIZONTAL OFFSET TO CENTER OF POST (Ft)	SKEW ANGLE (Degrees)	OFFSETS TO NEAR CORNERS OF FOOTING		LENGTH OF POST (Ft)	FOUNDATION QUANTITIES		
	ROUTE	STATION	MILEPOST	DIR OF TRAVEL			Y_1 (Ft)	Y_2 (Ft)		EXCAVATION (CLASS 20) (Cu Yd)	REINFORCING - EPOXY- COATED STEEL (Lb)	STRUCTURAL CONCRETE (Cu Yd)
401	I-80	1083+75	298.6	WB	31	7	26.05	28.00	17	70	1120	11.5
402	I-74	2251+75	2.1	EB	35	7	30.05	32.00	19	60	1120	11.5
403	I-74	2144+75	4.1	EB	25	5	20.32	21.71	16	50	1120	11.5
404	US 61	587+00	126.2	NB	38	6	33.19	34.86	15	80	1120	11.5
TOTALS									68	260	4480	46.0

(1) Lane(s) to which the installation is adjacent.

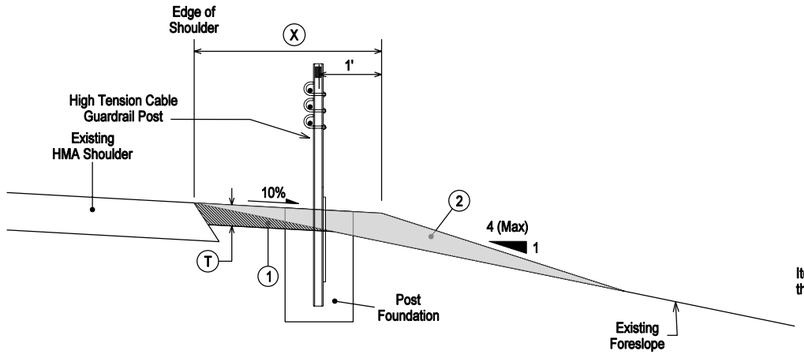
HIGH TENSION CABLE GUARDRAIL

Refer to Standard Road Plan RE-88.

108-9A
12-02-06

Location					Dimensions			Protection Length	End Anchor	Remarks
No.	(1) Direction of Traffic	Station	Side	Offset D_0 Ft.	C_A Ft.	C_0 Ft.	C_T Ft.	$(C_A+C_0+C_T)$ Ft.	No.	
401	WB	1086+52	outside	2	277	3	0	280	2	
402	EB	2248+98	outside	2	277	3	0	280	2	
							Total	560	4	

7198
06-16-09



(1) Remove existing fillet.
(2) New embankment.

Items (1) and (2) shall be included in the price bid for Embankment in Place.

Location						X	T	Quantities
No.	Road Identification	Station To Station		Dir.	Side	Feet	Inch	Embankment in Place CY
401	I-80	1087+27	1082+97	WB	RT	3	6	50
						TOTAL		50

TYPICAL SECTION GRADING FOR HIGH TENSION CABLE GUARDRAIL

TABULATION OF MATERIALS FOR TYPE 'B' SIGNS

TYPE-B
08-22-06

Refer to Standard Road Plans SI-102, SI-113, and SI-132.

NO.	SIGN NUMBER RTE.	CO.	EXIT NO.	ROAD ID M,R,S	SEQ. NO.	DIR OF TRAVEL	SIGN LOCATION M.P.	SIGN LOCATION STATION	FAB INFO	SIGN WIDTH (ft)	SIGN HEIGHT (ft)	AREA (SQ. ft)	WOOD POSTS 4X6 L (ft)	WOOD POSTS 4X6 M (ft)	WOOD POSTS 4X6 R (ft)	STEEL BREAKAWAY POSTS W8x21 L (ft)	W8x21 M (ft)	W8x21 R (ft)	FOOTING 2'8"x7'6" (each)	W12x26 L (ft)	W12x26 M_1 (ft)	W12x26 M_2 (ft)	W12x26 R (ft)	FOOTING 2'8"x9' (each)	INSTALLATION TYPE	INSTALLATION DIM "X" (ft)	INSTALLATION DIM "Y" (ft)	SEE SIGNING NOTES	REMARKS
	61	82	127	M	007	N		578+50	reinstall	11.5	9.5	109.25				19.8	0	20.3	2						2	30	7	IB/PB	
	61	82	127	M	007A	N		578+50	reinstall	8.5	2	17																IB	
	61	82	127	M	004	N		594+00	reinstall	8	4	32				14.2	0	14.8	2						2	30	7	IB/PB	
															TOTALS	34.0	0	35.1	4										

* DIMENSIONS SHOWN ARE FOR ESTIMATING PURPOSES ONLY. THE CONTRACTOR WILL VERIFY ALL DIMENSIONS IN THE FIELD BEFORE DETAILING SHOP DRAWINGS.

TABULATION OF MATERIALS FOR TYPE 'A' SIGNS

190-51
09-15-06

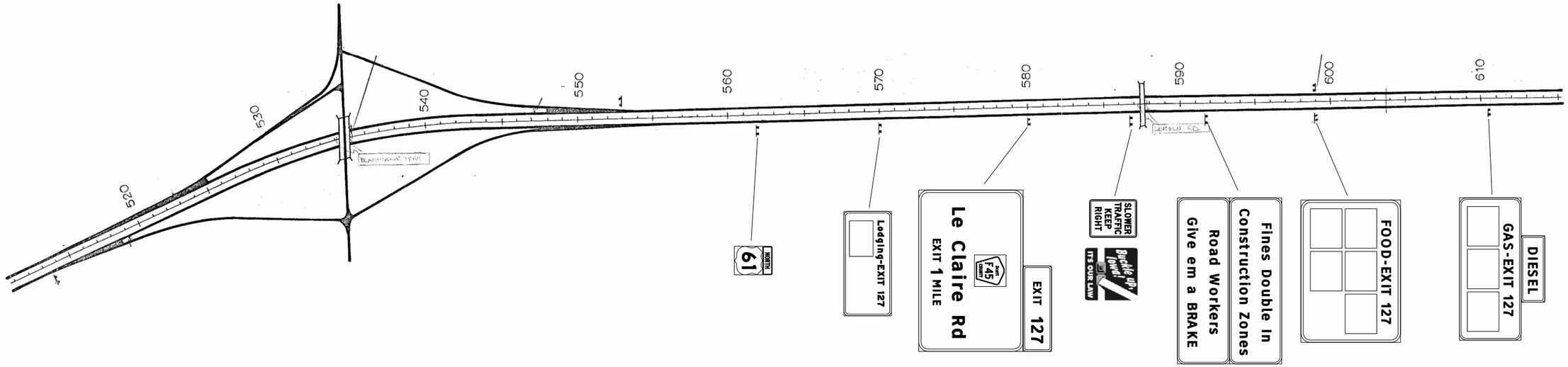
Refer to Standard Road Plans SI-101, SI-111, and SI-119.

TYPE A SIGNING TYPICALS	SIGN NUMBER	DIR. OF TRAV.	SIGN LOCATION MILEPOST	SIGN LOCATION STATION	WOOD POSTS REQUIRED NO. OF POSTS	4 X 6 LEG 1 (ft)	4 X 6 LEG 2 (ft)	ONE POST BRACKET	TWO POST BRACKET	AUXILIARY BRACKET	H BRACKET	F BRACKET	F1 BRACKET	CROSSOVER DELINEATORS & OBJECT MARKERS OM2-3YH	CROSSOVER DELINEATORS & OBJECT MARKERS DOUBLE YELLOW	INSTALLATION TYPE	INSTALLATION DIM "X" (ft)	SEE SIGNING NOTES	REMARKS
	R4-3B	N		574+00	1	20										1	20	IA/PW	
	R16-9A	N		574+00	1	20										1	20	IA/PW	

TABULATION OF EXISTING SIGNS TO BE REMOVED

REMOVAL
08-24-06

SIGN NUMBER OR DESCRIPTION	LOCATION STATION (approximate)	DIR OF TRAVEL	TYPE "A" SIGN ASSEMBLY (each) (RA)	TYPE "B" SIGN ASSEMBLY (each) (RB)	REMOVE & REINSTALL EXISTING SIGNS TYPE "A" (each) (RR)	REMOVE & REINSTALL EXISTING SIGNS TYPE "B" (each) (RR)	CONCRETE FOOTING (each) (RF)	SUPPORT STRUCTURE & FOOTING (each) (RS)	APPLICABLE SIGNING NOTES	REMARKS
Site #4										
61-82-127 M007	580+00	N				1	2			reinstall at 578+50
61-82-127 M007A	580+00	N				1				reinstall at 578+50
61-82-127 M004	591+00	N				1				reinstall at 594+00
R4-3B	587+00	N			1					reinstall at 574+00
R16-9A	587+00	N			1					reinstall at 574+00
Site #1	1084+00	W					3			Previous DMS location
Site #2	2252+00	W					3			Previous DMS location

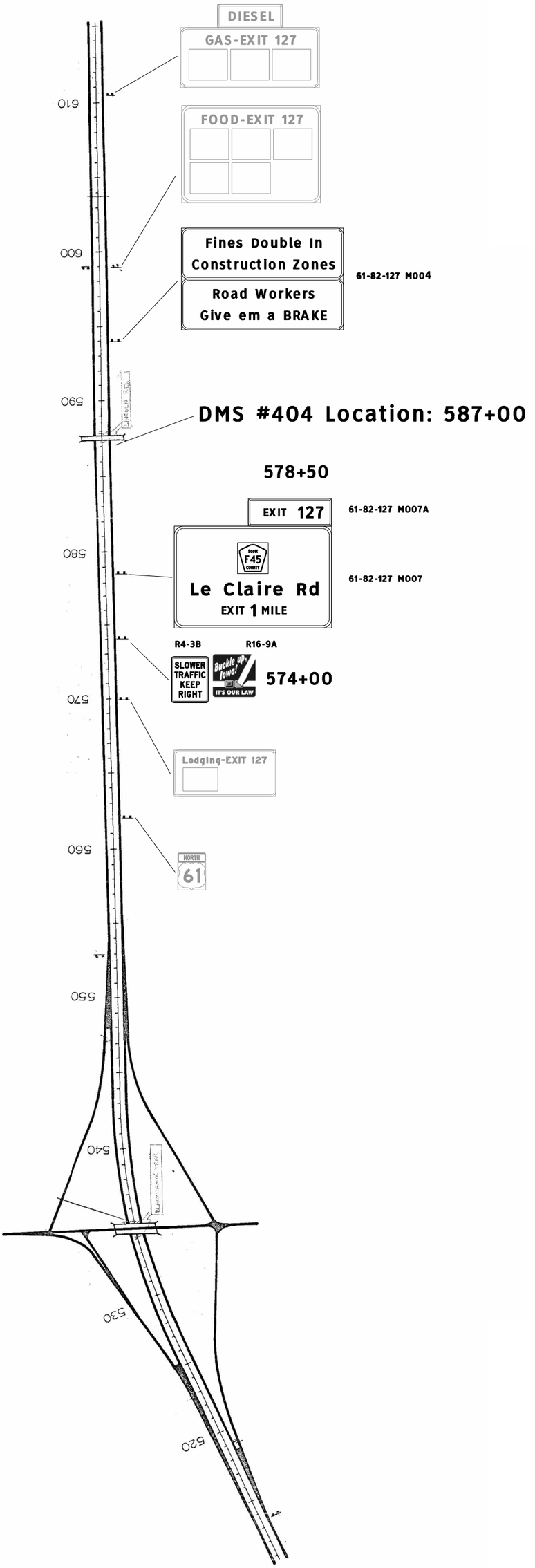


SITE #4
EXISTING SIGN LAYOUT
US 61

DESIGN TEAM NARIGON/VOGEL	ENGLISH	IOWA DOT * OFFICE OF TRAFFIC & SAFETY	SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER N.01

4/20/2009 jnarigo W:\Projects\0000001005\TrafEng\00-000S-398\00000398.N01

SITE #4
PROPOSED SIGN LAYOUT
US 61

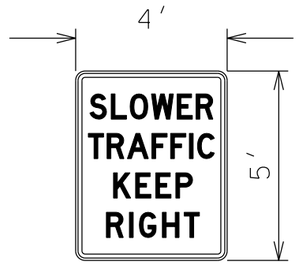


DESIGN TEAM	ENGLISH	IOWA DOT * OFFICE OF TRAFFIC & SAFETY		
NARIGON/VOGEL	W:\Projects\0000001005\TrafEng\00-0005-398\0000398.N01			
jnarigo				
4/20/2009				

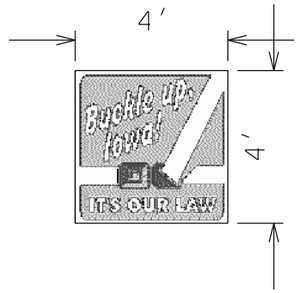
SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER N.02

61-82-127 M007A

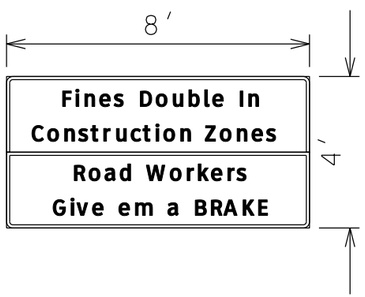
61-82-127 M007



R4-3B



R16-9A



61-82-127 M004

DESIGN TEAM NARIGON/VOGEL	ENGLISH	IOWA DOT * OFFICE OF TRAFFIC & SAFETY	SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER N.03

4/20/2009 jnarigo W:\Projects\0000001005\TrafEng\00-000S-398\00000398.N01

ANCHOR BOLT NOTES:

PROCEDURE FOR TIGHTENING ANCHOR BOLT NUTS ON STEEL ROADSIDE D.M.S. SUPPORT.

1) THIS WORK SHALL BE PERFORMED ONLY ON DAYS WITH WINDS LESS THAN 15 MPH. ALL TIGHTENING OF THE NUTS IS TO BE DONE IN THE PRESENCE OF THE INSPECTOR. ONCE THE TIGHTENING PROCEDURE IS STARTED IT MUST BE COMPLETED ON ALL OF THE BASE PLATE NUTS WITHOUT PAUSE OR DELAY.

2) PROPERLY SIZED WRENCHES DESIGNED FOR TIGHTENING NUTS AND/OR BOLTS SHALL BE USED TO AVOID ROUNDING OR OTHER DAMAGE TO THE NUTS. ADJUSTABLE END OR PIPE WRENCHES MAY NOT BE USED.

3) BASE PLATE, ANCHOR RODS AND NUTS ARE TO BE FREE OF ANY DIRT OR DEBRIS.

4) APPLY STICK WAX OR BEES WAX TO THE THREADS AND BEARING SURFACES OF THE ANCHOR BOLT, NUTS, AND WASHERS.

5) TIGHTEN TOP NUTS SO THEY FULLY CONTACT THE BASE PLATE. TIGHTEN LEVELING NUTS TO SNUG TIGHT CONDITION. SNUG TIGHT IS DEFINED AS THE FULL EFFORT OF ONE PERSON ON A WRENCH WITH A LENGTH EQUAL TO 14 TIMES THE BOLT DIAMETER BUT NOT LESS THAN 18 INCHES. APPLY THE FULL EFFORT AS CLOSE TO THE END OF THE WRENCH AS POSSIBLE. PULL FIRMLY BY LEANING BACK AND USING ENTIRE BODY WEIGHT ON THE END OF THE WRENCH UNTIL THE NUT STOPS ROTATING. USE A MINIMUM OF TWO SEPARATE PASSES OF TIGHTENING. SEQUENCE THE TIGHTENING IN EACH PASS SO THAT THE NUT ON THE OPPOSITE SIDE, TO THE EXTENT POSSIBLE, WILL BE SUBSEQUENTLY TIGHTENED UNTIL ALL OF THE NUTS IN THAT PASS HAVE BEEN TIGHTENED.

6) TIGHTEN TOP NUTS TO SNUG TIGHT AS DESCRIBED FOR THE LEVELING NUTS.

7) MATCH-MARK THE TOP NUTS AND BASE PLATE USING PAINT, CRAYON, OR OTHER APPROVED MEANS TO PROVIDE A REFERENCE FOR DETERMINING THE RELATIVE ROTATION OF THE NUT AND BASE PLATE DURING TIGHTENING. USING A STRIKING OR HYDRAULIC WRENCH, FURTHER TIGHTEN THE TOP NUTS IN TWO PASSES AS LISTED IN THE FOLLOWING TABLE. USE A SEQUENCE OF TIGHTENING IN EACH PASS SO THAT THE NUT ON THE OPPOSITE SIDE, TO THE EXTENT POSSIBLE, WILL BE SUBSEQUENTLY TIGHTENED UNTIL ALL NUTS IN THAT PASS HAVE BEEN TURNED. DO NOT ROTATE THE LEVELING NUT DURING THE TOP NUT TIGHTENING.

ANCHOR BOLT SIZE	FIRST PASS	SECOND PASS	TOTAL ROTATION
LESS THAN OR EQUAL TO $1\frac{1}{2}\Phi$"	1/6 TURN	1/6 TURN	1/3 TURN

8) LUBRICATE, PLACE AND TIGHTEN THE JAM NUTS TO SNUG TIGHT.

DESIGN STRESSES:

DESIGN STRESSES FOR MATERIALS ARE IN ACCORDANCE WITH A.A.S.H.T.O STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, SERIES OF 2001 WITH CURRENT INTERIMS.

SPECIFICATIONS:

DESIGN: A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, SERIES OF 2001 WITH CURRENT INTERIMS.
CONSTRUCTION: IOWA D.O.T. STANDARD SPECIFICATIONS, SERIES 2001 PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

STAINLESS STEEL BOLTING NOTES:

1) UNLESS OTHERWISE NOTED ON THE PLAN, ALL STAINLESS STEEL BOLTS AND U-BOLTS SHALL BE FURNISHED WITH STAINLESS STEEL REGULAR HEXAGONAL NUTS, JAM NUTS AND WASHERS UNDER BOTH HEADS AND NUTS.

2) IN CASE STAINLESS STEEL LOCK WASHERS ARE USED IN LIEU OF JAM NUTS, THE REGULAR WASHERS UNDER NUTS ARE TO BE OMITTED.

3) STAINLESS STEEL BOLTS SHALL COMPLY WITH ASTM A320 OR F593 AS PER STANDARD SPECIFICATIONS. STAINLESS STEEL PARTS SHALL COMPLY WITH ASTM A240, 300 SERIES.

STEEL NOTES:

ALL STEEL SHAPES, BARS, AND PLATES SHALL COMPLY WITH ASTM A36 EXCEPT MINOR PARTS APPROVED BY THE ENGINEER MAY COMPLY WITH ASTM A575 GRADE M1020. THE GALVANIZED METAL BAR GRATING INCLUDING BEARING BAR, CROSS BARS AND BANDING BARS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A1011 TYPE 2. ALL STEEL PIPE SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A53 GRADE B, TYPE E OR S OR API 5L GRADE B. ALL ROUND HSS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A 500 GRADE B.

ALL STEEL SECTIONS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. PROVIDE VENT HOLES FOR GALVANIZING.

ALL ANCHOR BOLT MATERIAL SHALL COMPLY WITH THE REQUIREMENTS OF IOWA DOT MATERIALS IM 453.08.

STEEL WELDING SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE AWS SPECIFICATIONS D1.1, STRUCTURAL WELDING CODE-STEEL.

ULTRASONIC TESTING SHALL BE PREFORMED ON THE POST TO BASE PLATE WELDS.

THE $\frac{3}{4}\Phi$ A325 GALVANIZED BOLTS SHALL BE TENSIONED BY TURN OF THE NUT METHOD.

GENERAL NOTES:

ALL D.M.S. SUPPORTS ARE DESIGNED FOR 40.2 lb/ft^2 WIND PRESSURE ON MEMBERS AND SIGN PANELS.

ALL PIPES, SHAPES, AND PLATES SHALL BE STRUCTURAL STEEL COMPLYING WITH THE ASTM SPECIFICATIONS NOTED.

SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL.

CLEAR DISTANCE FROM FACE OF CONCRETE TO THE NEAREST REINFORCING BAR SHALL BE 2" UNLESS OTHERWISE SHOWN.

THE ANCHOR BOLT ASSEMBLY SHALL BE CENTERED AT THE CENTER OF SHAFT AND SECURELY WIRED IN PLACE BEFORE CONCRETE IS PLACED.

THE FOOTING SHALL BE BACKFILLED PRIOR TO ERECTING SIGN SUPPORT.

DESIGN ALLOWABLE SOIL BEARING IS 1.0 TONS PER SQ. FT.

ALL REINFORCING TO BE GRADE 60.

ALL CONCRETE TO BE CLASS "C" STRUCTURAL CONCRETE.

KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL.

FOUNDATIONS AND ANCHOR BOLTS:

1) THE ELEVATION AT THE OF THE TOP OF THE FOUNDATION SHALL BE WITHIN 1 INCH OF PLAN ELEVATION.

2) ANCHOR BOLT GROUPS SHALL BE LOCATED ACCURATELY BY TEMPLATE OR OTHER POSITIVE MEANS, WITH CENTERS OF ADJACENT ANCHOR BOLT GROUPS WITHIN $\frac{3}{16}$ INCH OF THE CORRECT DISTANCE APART.

3) ANCHOR BOLTS SHALL BE PLUMB WITHIN $\frac{1}{4}$ INCH PER FOOT FROM VERTICAL.

4) ANCHOR BOLTS SHALL PROJECT ABOVE TOP OF FOUNDATION WITHIN $\frac{1}{4}$ INCH OF THE PLAN DIMENSION.

5) WELDING OR BENDING OF ANCHOR BOLTS SHALL NOT BE ALLOWED. THE CONTRACTOR SHALL OBTAIN A TEMPLATE FROM THE MANUFACTURER / FABRICATOR FOR PROPER PLACEMENT OF THE ANCHOR BOLTS.

COMPLETED STEEL STRUCTURE:

1) THE SUPPORT COLUMN SHALL BE PLUMB WITHIN $\frac{1}{16}$ INCH PER FOOT OF VERTICAL IN TWO PERPENDICULAR DIRECTIONS.

2) HORIZONTAL LINE BETWEEN CHORDS SHALL BE LEVEL WITHIN $\frac{1}{16}$ INCH PER FOOT OF HORIZONTAL.

STRUCTURAL DESIGN

LICENSED PROFESSIONAL ENGINEER
James R. Hauber
18418
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

James Hauber 4-1-09
Signature Date

James R. Hauber
Printed or Typed Name

My license renewal date is December 31, 2010

Pages or sheets covered by this seal: V.1 THRU V.5

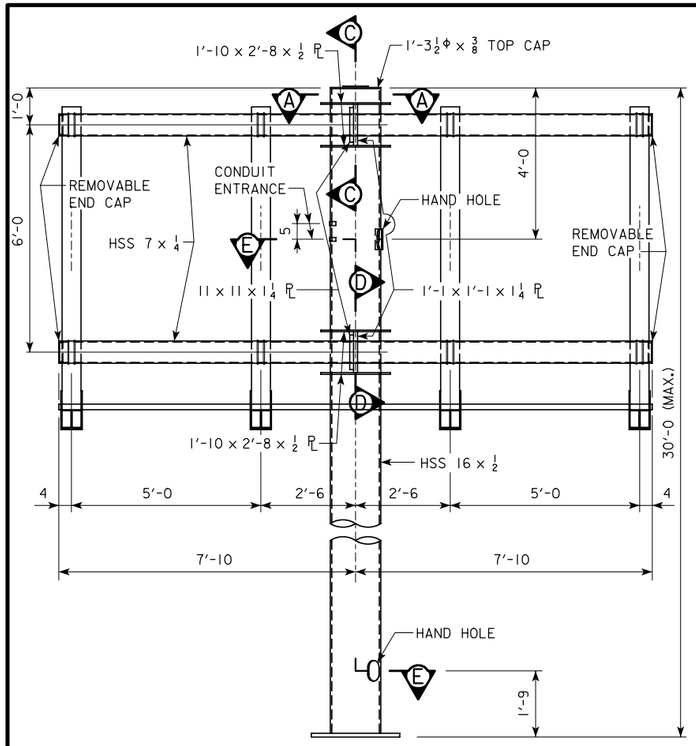
DESIGN FOR
STEEL ROADSIDE D.M.S. SUPPORT
GENERAL NOTES

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

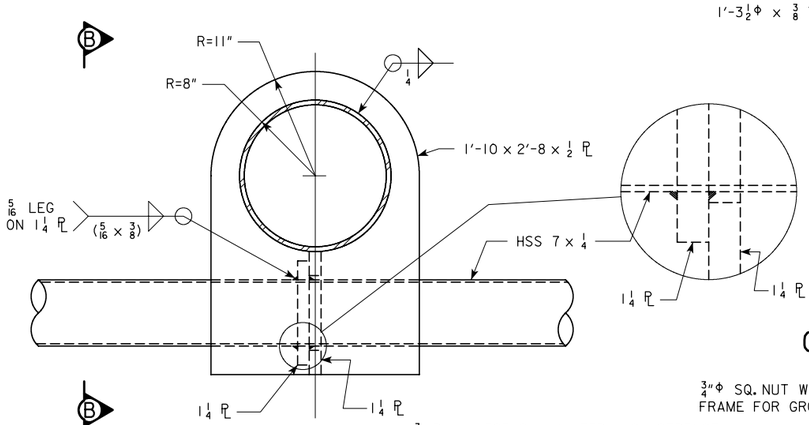
DESIGN TEAM JRH/DAW/HLA	ROADSIDE DMS SUPPORT		SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER V.1

CANTILEVERSIGNTRUSS.DGN - 5257 - THIS SHEET ISSUED ??.

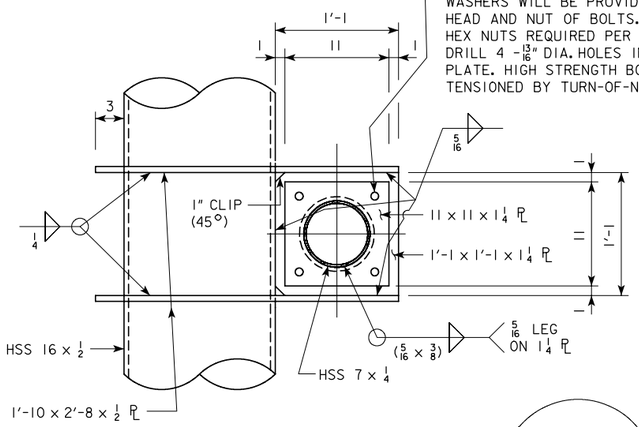
02-APR-2009 14:11 dwrigh2 W:\Projects\0000001009\BRFinal\00000S398.brg 000000S001 \\ntpprtsvr2\BrgPDF



ELEVATION



SECTION A-A



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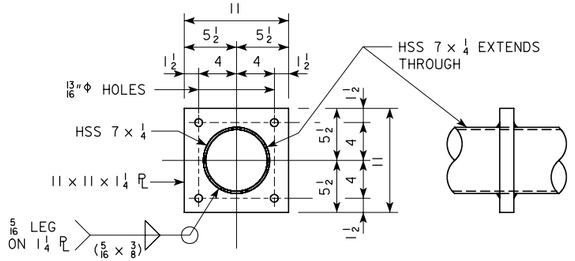

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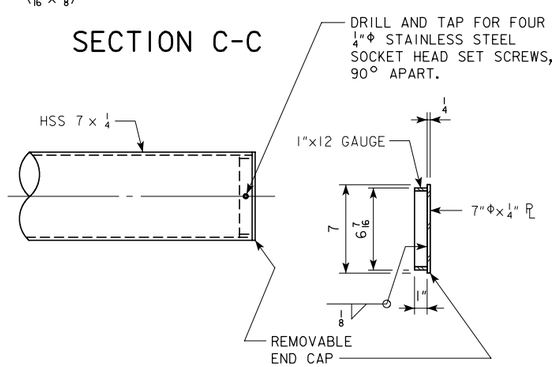

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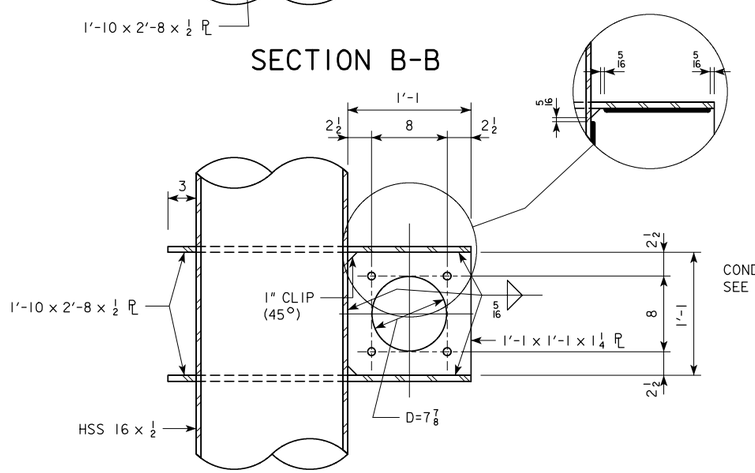
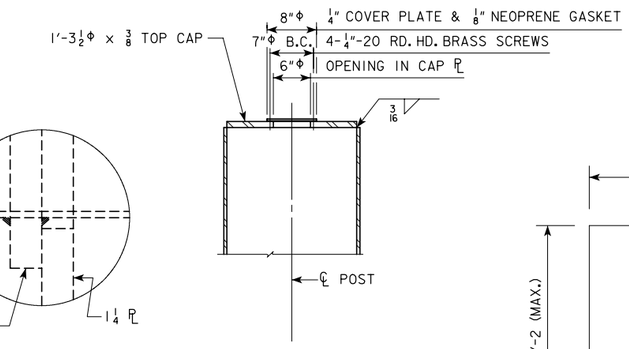
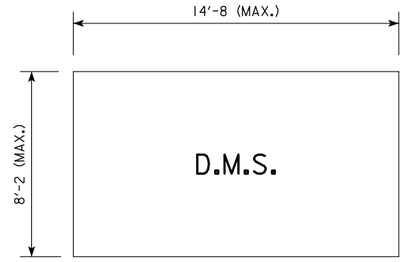


SECTION D-D
(HSS 7 x ¼ NOT SHOWN)



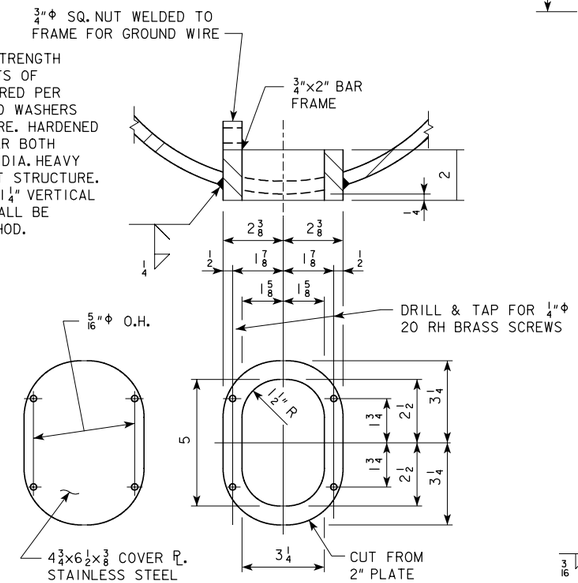
COVER PLATE DETAIL



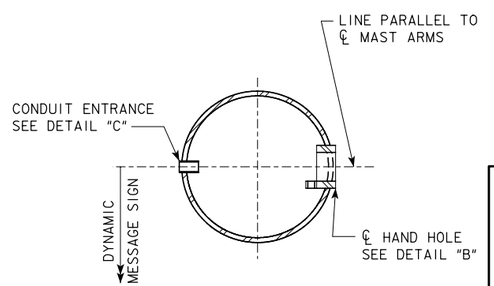
D.M.S. LIMITS FOR SIGN SUPPORT DESIGN.

1700 LBS. MAX.
1'-4 MAX. DEPTH

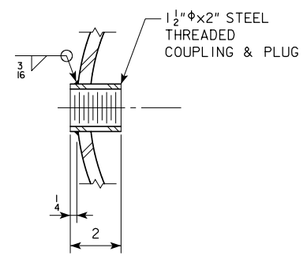
¾" DIA. A-325 GALVANIZED HIGH STRENGTH BOLTS, MEETING THE REQUIREMENTS OF ARTICLE 2408.39. 8 BOLTS REQUIRED PER SUPPORT STRUCTURE, 16 HARDENED WASHERS REQUIRED PER SUPPORT STRUCTURE. HARDENED WASHERS WILL BE PROVIDED UNDER BOTH HEAD AND NUT OF BOLTS. 8 - ¾" DIA. HEAVY HEX NUTS REQUIRED PER SUPPORT STRUCTURE. DRILL 4 - 15/16" DIA. HOLES IN EACH 1¼" VERTICAL PLATE. HIGH STRENGTH BOLTS SHALL BE TENSIONED BY TURN-OF-NUT METHOD.



DETAIL "B"



SECTION E-E



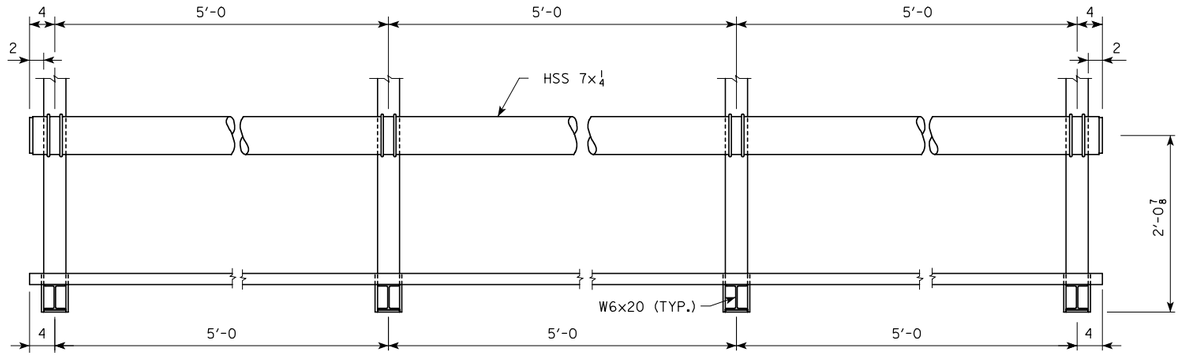
DETAIL "C"

DESIGN FOR

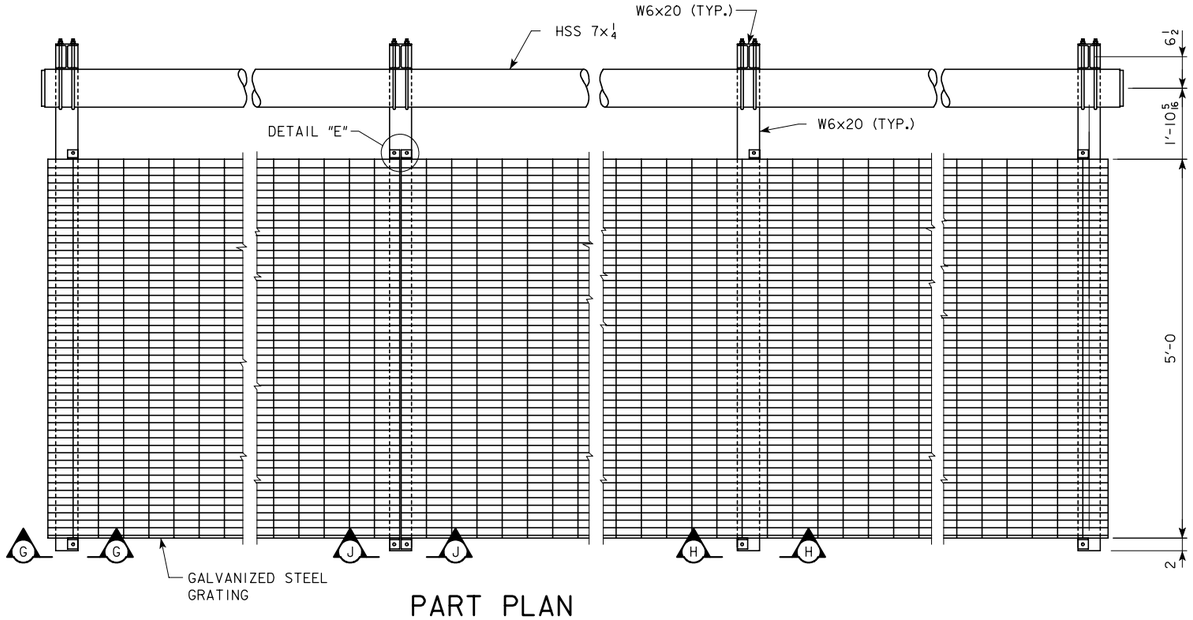
STEEL ROADSIDE D.M.S. SUPPORT

SIGN SUPPORT DETAILS

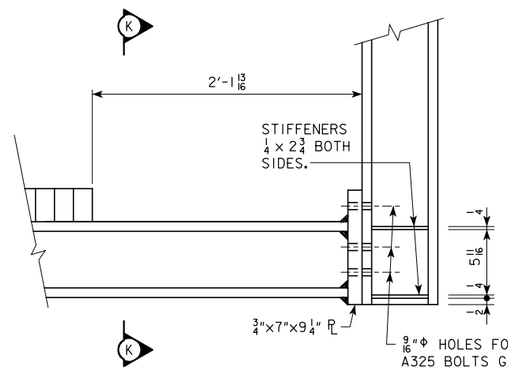
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION



PART ELEVATION



PART PLAN



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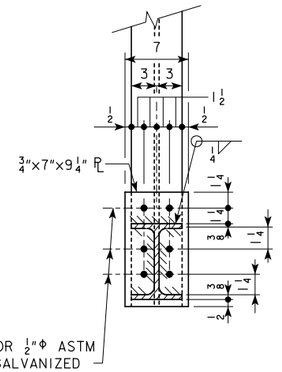
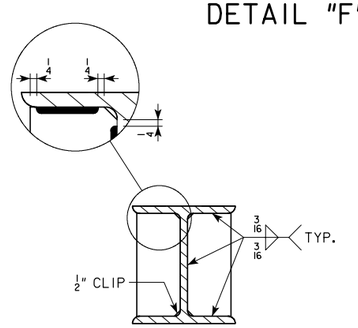
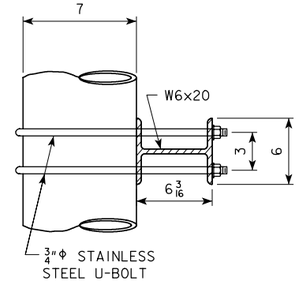


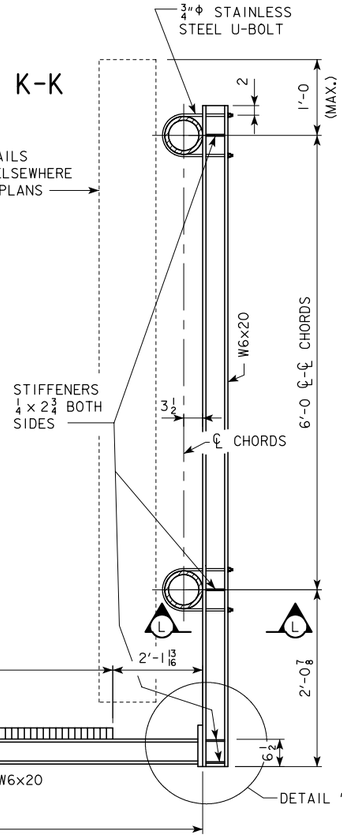
SECTION K-K



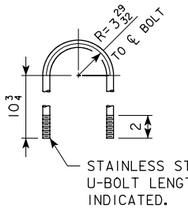
TYPICAL STIFFENER DETAIL



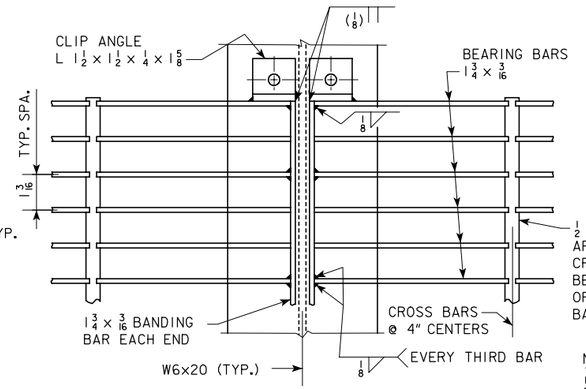
SECTION L-L



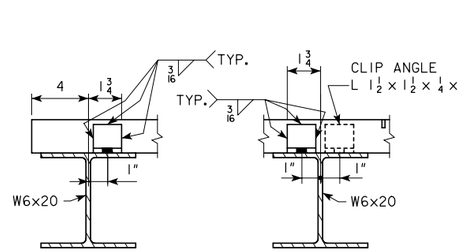
TYPICAL WORK PLATFORM SECTION



STAINLESS STEEL U-BOLT DETAIL

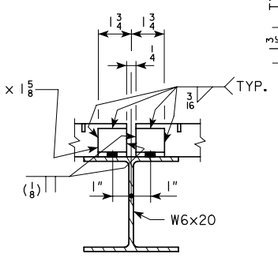


DETAIL "E"



SECTION G-G

SECTION H-H



SECTION J-J

NOTE:
7/16"Φ HOLE IN CLIP ANGLE AND 7/16"Φ HOLE IN W6×20 FOR ⅜"Φ STAINLESS STEEL BOLT. ADJUST CLIP SO GRATING BEARS ON BEAM.

DESIGN FOR

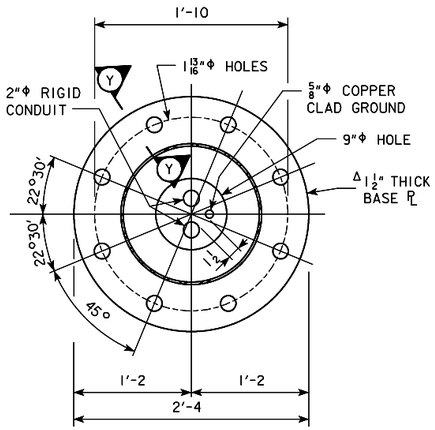
STEEL ROADSIDE D.M.S. SUPPORT

WORK PLATFORM DETAILS

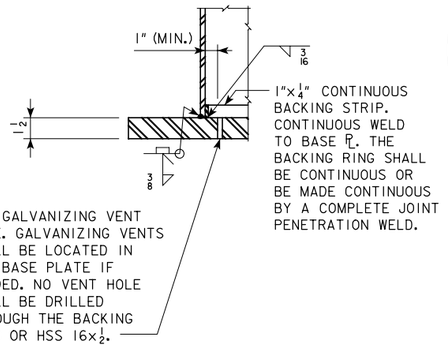
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN TEAM JRH/DAW/HLA	SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER V.3

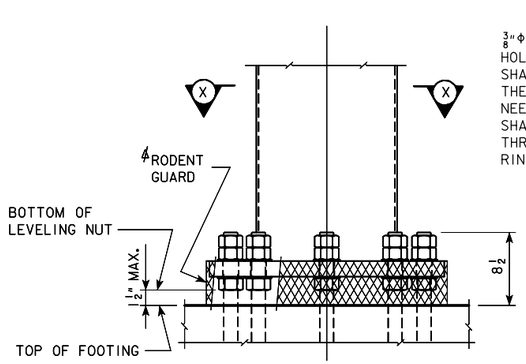
02-APR-2009 14:11 dwrigh2 W:\Projects\0000001009\BRFinal\00000S398.brg 000000S003 \\ntpprtsvr2\BrgPDF



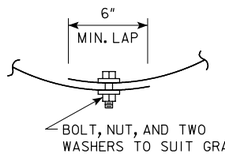
SECTION X-X



SECTION Y-Y



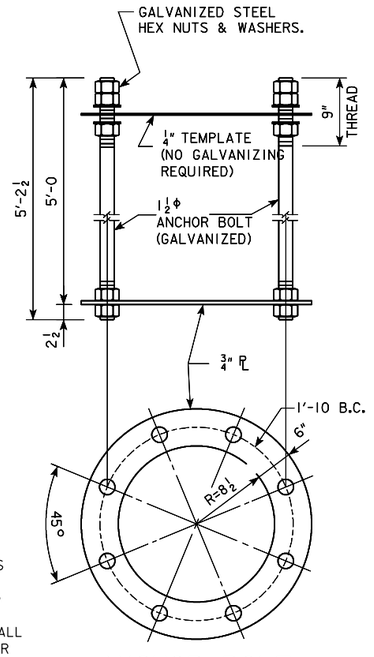
POST BASE DETAIL



RODENT GUARD CLOSURE DETAIL

A RODENT GUARD SHALL BE PLACED BETWEEN THE CONCRETE FOOTING AND THE BASE PLATE, SEE MATERIALS I.M. 443.01.

AS AN ALTERNATE STAINLESS STEEL STANDARD GRADE WIRE CLOTH, 1/4" MAXIMUM OPENING WITH A MINIMUM WIRE DIAMETER OF AWG. NO. 16 WITH A MINIMUM 2" LAP. SECURE TO BASE PLATE AFTER ERECTION WITH 3/4" STAINLESS STEEL BANDING.



ANCHOR BOLT ASSEMBLY

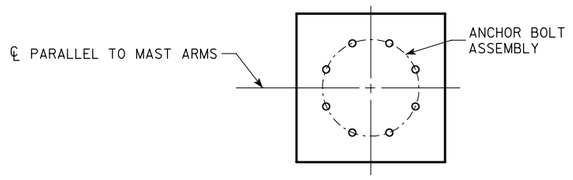
(ALL ANCHOR BOLT MATERIAL SHALL COMPLY WITH THE REQUIREMENTS OF IOWA DOT MATERIALS I.M. 453.08.)

DESIGN FOR

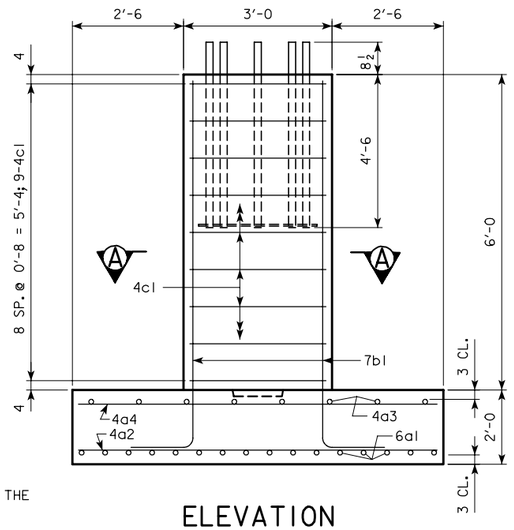
STEEL ROADSIDE D.M.S. SUPPORT

SIGN SUPPORT DETAILS

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

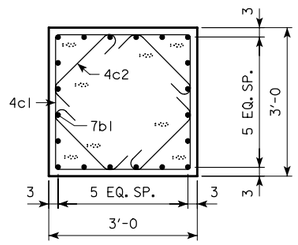


TOP VIEW

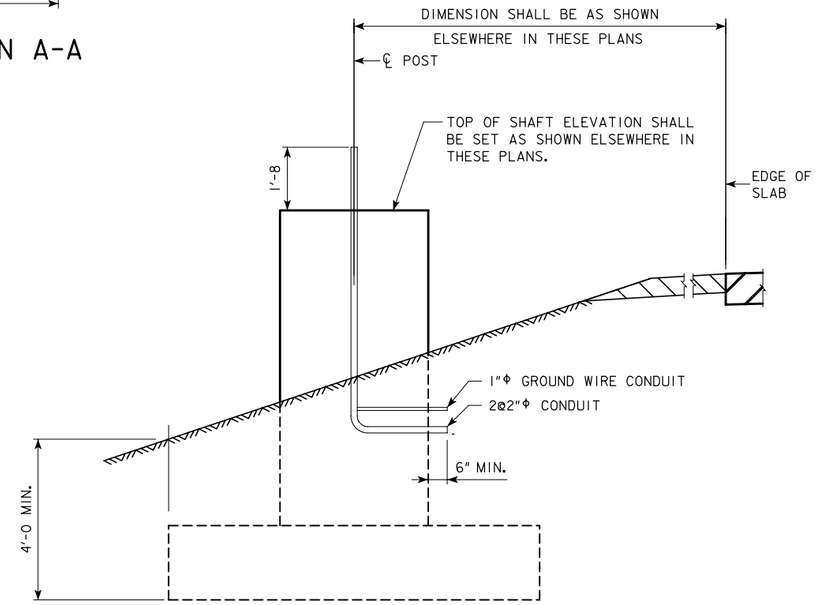


ELEVATION

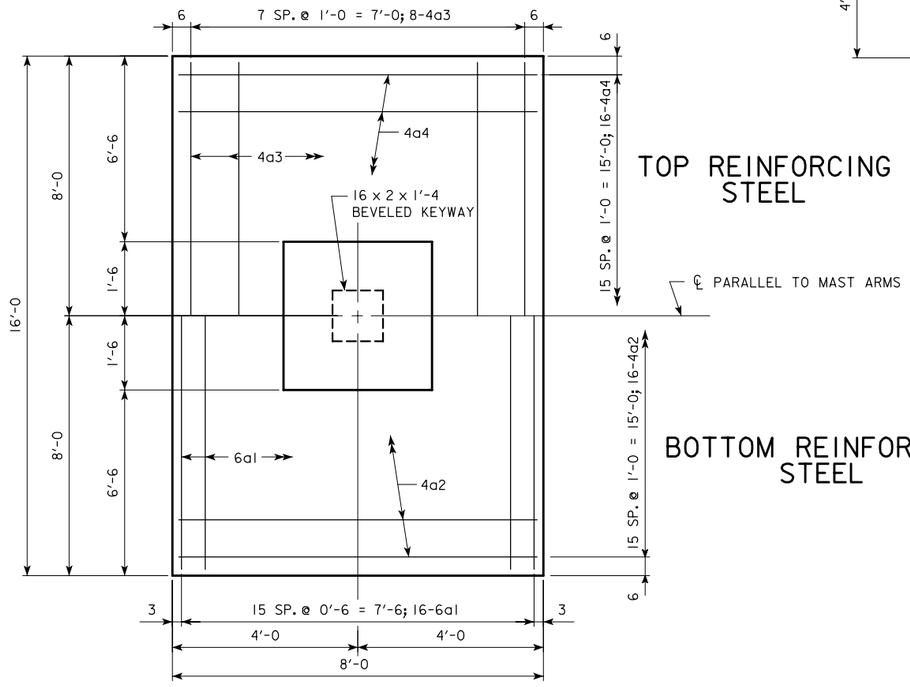
THE JOINT BETWEEN THE SHAFT AND FOOTING SHALL BE ROUGH.



SECTION A-A



ELEVATION - TOP OF SHAFT AND BACKFILL



TOP REINFORCING STEEL

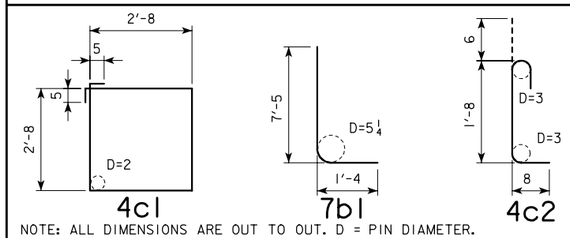
BOTTOM REINFORCING STEEL

FOOTING PLAN

EPOXY-COATED REINFORCING BAR LIST

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a1	FOOTING BOTT., LONGIT.	—	16	15'-8	377
4a2	FOOTING BOTT., TRANSV.	—	16	7'-8	82
4a3	FOOTING TOP, LONGIT.	—	8	15'-8	84
4a4	FOOTING TOP, TRANSV.	—	16	7'-8	82
7b1	FOOTING TO SHAFT DOWEL	L	20	8'-9	358
4c1	SHAFT HOOPS	□	9	11'-6	69
4c2	SHAFT TIES	⊔	36	2'-10	68
	REINFORCING STEEL - EPOXY COATED TOTAL (LBS.)				1120

BENT BAR DETAILS



NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.

ESTIMATED CONCRETE QUANTITIES

SHAFT	2.0
FOOTING	9.5
TOTAL - CU. YDS.	11.5

FOOTING ESTIMATED QUANTITIES

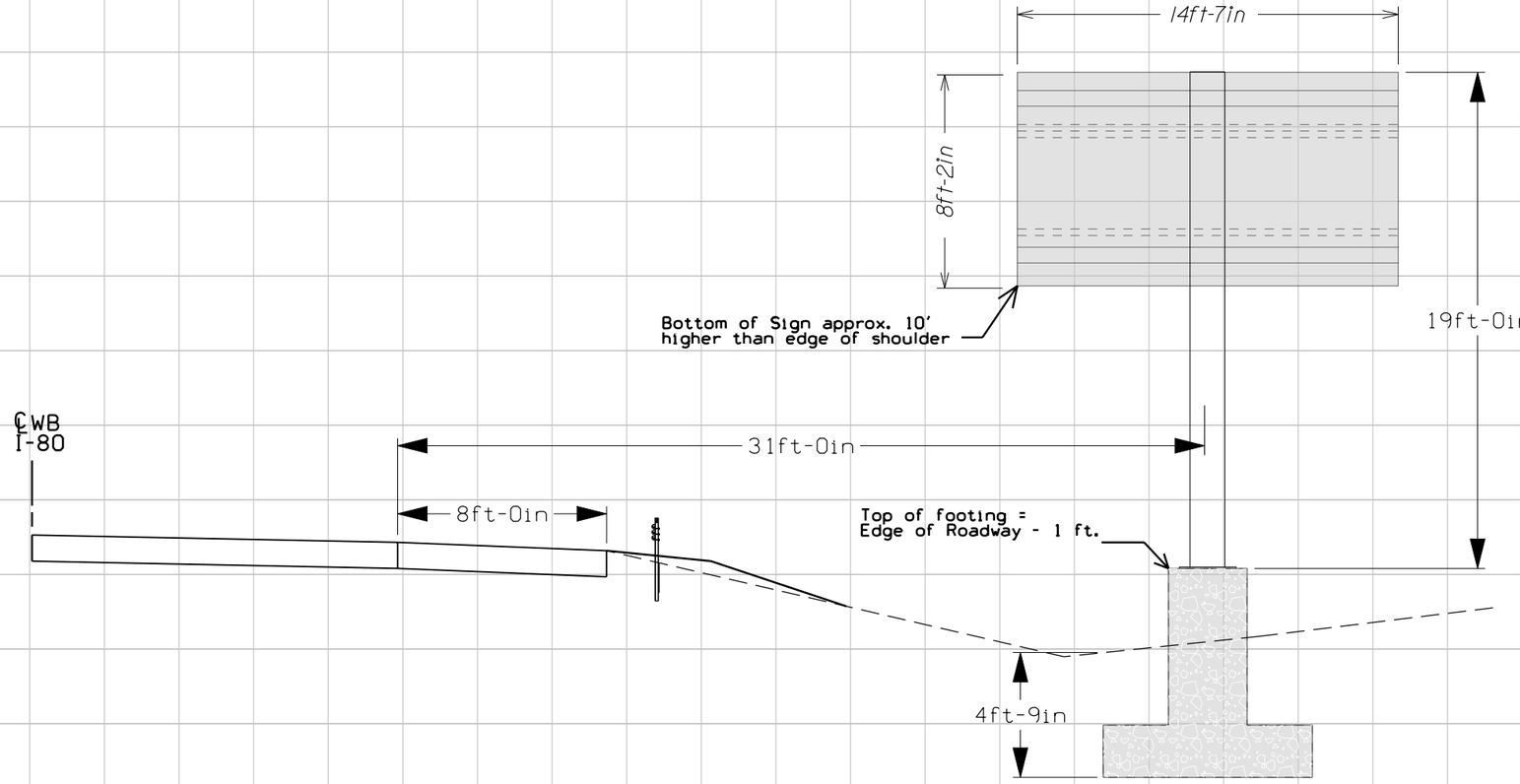
ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE	CU. YDS.	11.5
REINFORCING STEEL-EPOXY COATED	LBS.	1120

DESIGN FOR

STEEL ROADSIDE D.M.S. SUPPORT

FOOTING DETAILS

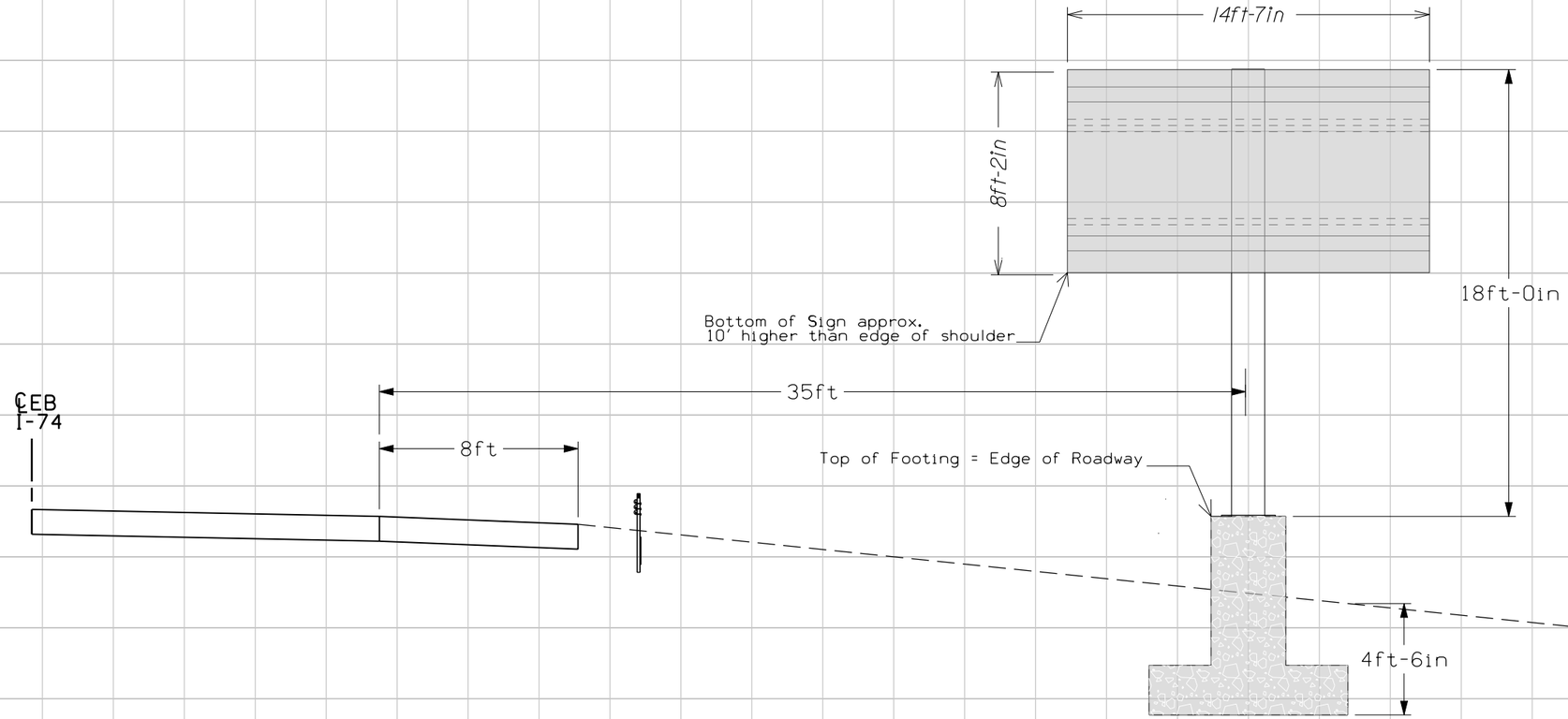
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION



CROSS SECTION @ STA 1083+75

shown in the direction of travel

SITE DETAILS
for SITE #1 / DMS #401
I-80 WB - SCOTT COUNTY



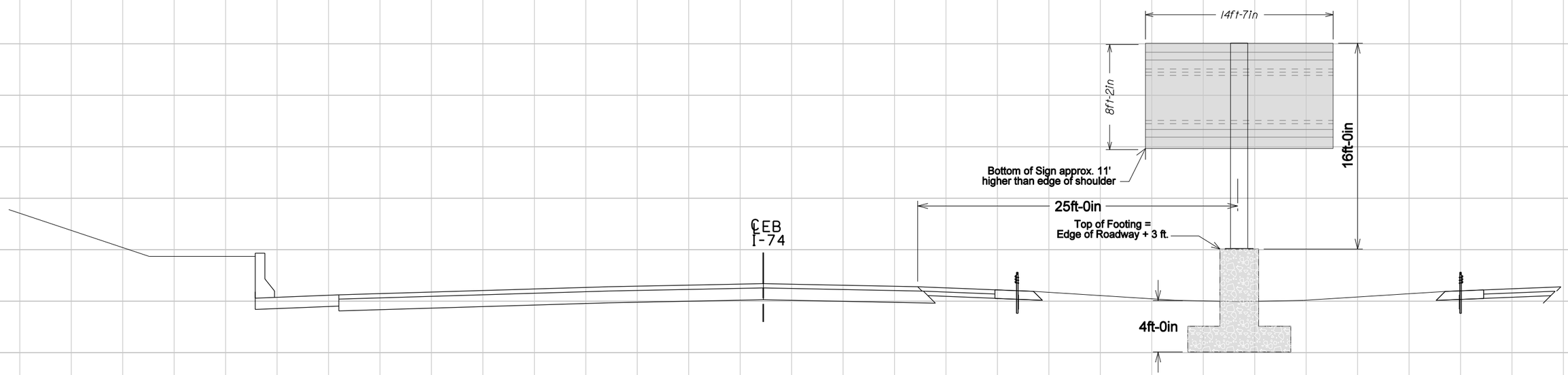
CROSS SECTION @ STA 2251+75

shown in the direction of travel

SITE DETAILS
for SITE #2 / DMS #402
I-74 EB - SCOTT COUNTY

DESIGN TEAM NARIGON/VOGEL	ENGLISH	IOWA DOT * OFFICE OF TRAFFIC & SAFETY	SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER X.02

4/20/2009 jnarigo W:\Projects\0000001005\TrafEng\00-000S-398\00000398.402



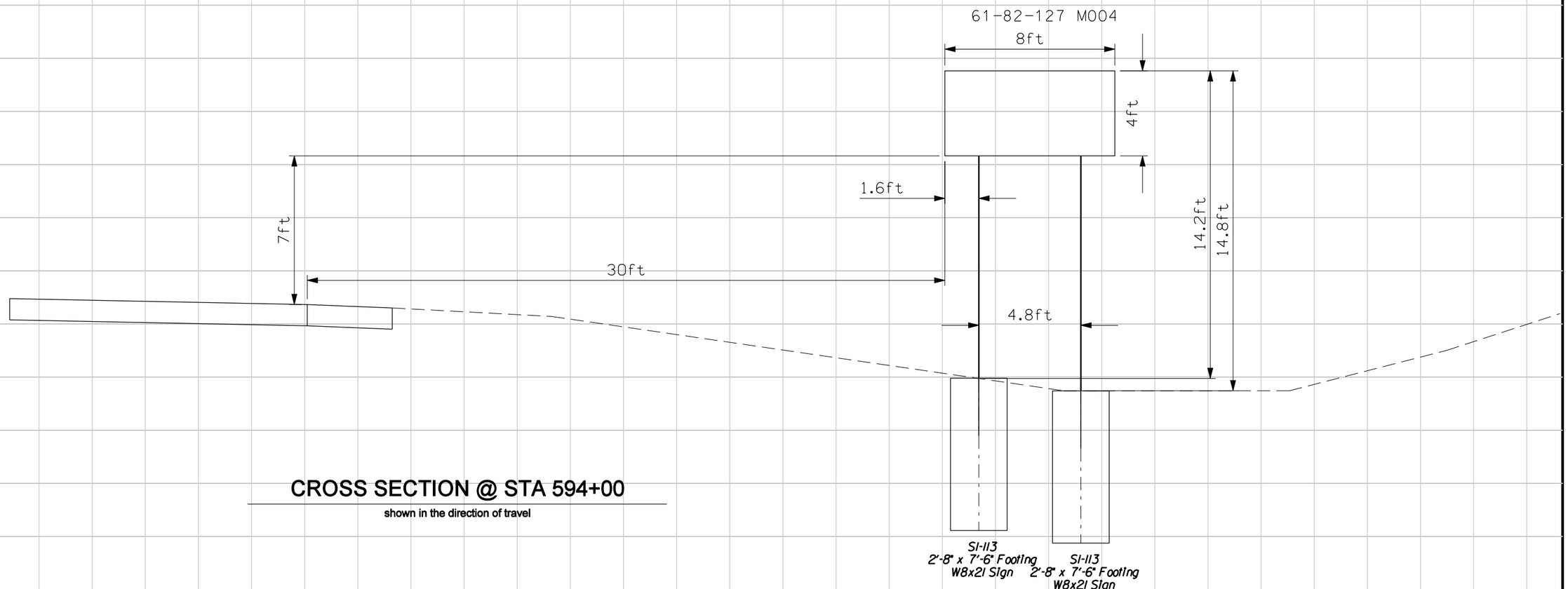
CROSS SECTION @ STA 2144+75

LOOKING NORTH

SITE DETAILS
for SITE #3 / DMS #403
I-74 EB - SCOTT COUNTY

DESIGN TEAM NARIGON/VOGEL	ENGLISH	IOWA DOT * OFFICE OF TRAFFIC & SAFETY	SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER X.03

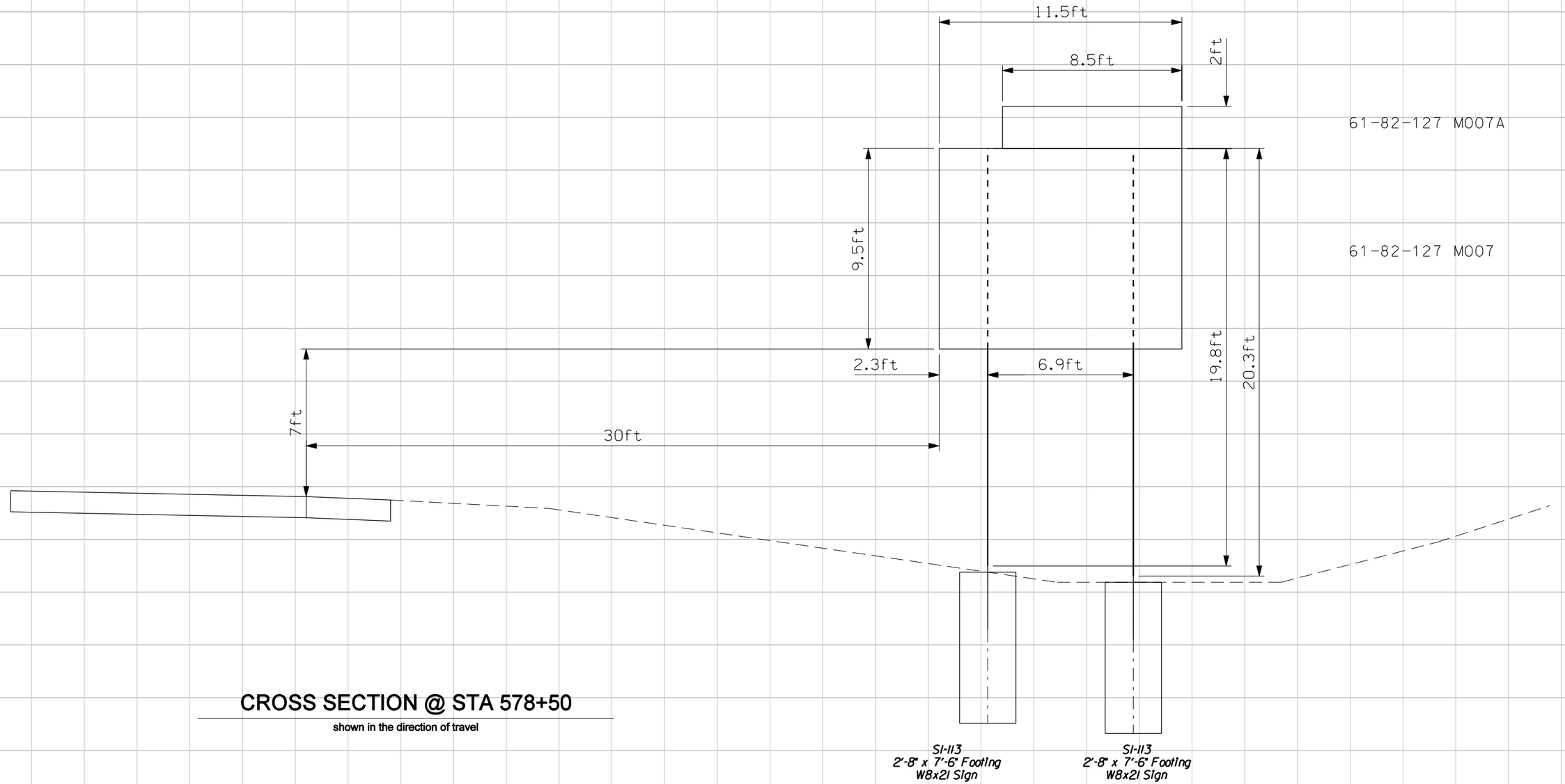
4/20/2009 jnarigo W:\Projects\0000001005\TrafEng\00-000S-398\00000398.403



CROSS SECTION @ STA 594+00

shown in the direction of travel

DESIGN TEAM NARIGON/VOGEL	ENGLISH	IOWA DOT * OFFICE OF TRAFFIC & SAFETY	SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER X.04

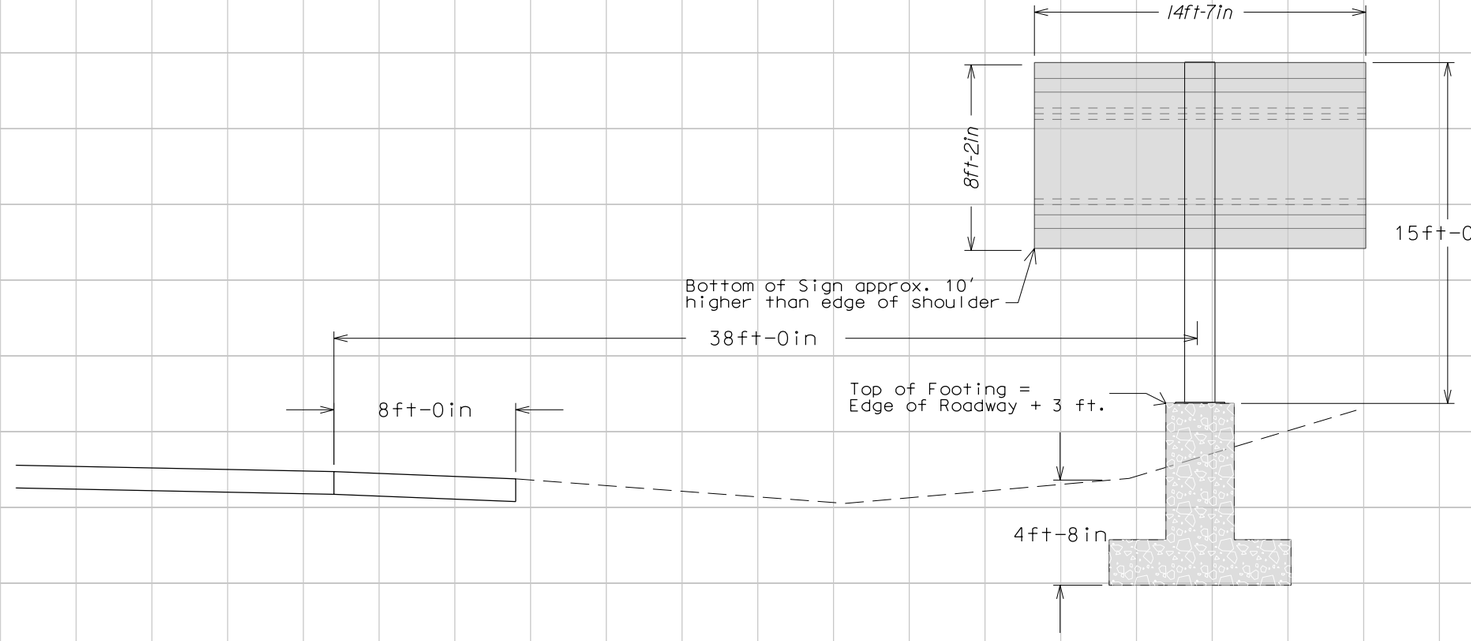


CROSS SECTION @ STA 578+50

shown in the direction of travel

DESIGN TEAM NARIGON/VOGEL	ENGLISH	IOWA DOT * OFFICE OF TRAFFIC & SAFETY	SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER X.05

4/20/2009 jnarigo W:\Projects\0000001005\TrafEng\00-000S-398\00000398_x04.sht



CROSS SECTION @ STA 587+00

shown in the direction of travel

SITE DETAILS
for SITE #4 / DMS #404
US 61 NB - SCOTT COUNTY

DESIGN TEAM NARIGON/VOGEL	ENGLISH	IOWA DOT * OFFICE OF TRAFFIC & SAFETY	SCOTT COUNTY	PROJECT NUMBER ITS-000-S(398)--25-00	SHEET NUMBER X.06

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