103

01-18-2019 LETTING ITEM 103

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
___	D-2 OVD SIN STR REPL 18-32	VARIOUS	38 *	1
	ILLINOIS	CONTRACT NO. 46470		

* 38 + 2 = 40 TOTAL SHEETS

INDEX OF SHEETS

STATE STANDARDS

630001–12 STEEL PLATE BEAM GUARDRAIL
630101–10 STRONG POST GUARDRAIL ATTACHED TO CULVERT
630301–09 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631011–10 TRAFFIC BARRIER TERMINAL, TYPE 2
701006–05 OFF–RD OPERATIONS, 2L, 2W, 15'(4.5m) TO 24"(600mm)FROM PAVEMENT EDGE
701101–05 OFF–RD OPERATIONS, MULTILANE, 15'(4.5m) TO 24"(600mm)FROM PAVEMENT EDGE
701106–02 OFF–RD OPERATIONS, MULTILANE, MORE THAN 15'(4.5m) AWAY
701400–09 APPROACH TO LANE CLOSURE, FREEWAY/EXPRESS
701401–12 LANE CLOSURE, FREEWAY/EXPRESSWAY
701406–12 LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY
701411–09 LANE CLOSURE, MULTILANE, AT ENTRANCE OR EXIT RAMP, FOR SPEEDS > 45 MPH
701421–08 LANE CLOSURE, MULTILANE, DAY OPERATIONS ONLY, FOR SPEEDS > 45 MPH TO 55 55 MPH
701422–10 LANE CLOSURE, MULTILANE, FOR SPPEDS > 45 MPH TO 55 MPH
701901–08 TRAFFIC CONTROL DEVICES
701456–05 PARTIAL EXIT RAMP CLOSURE FREEWAY / EXPRESSWAY

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1–800–892–0123
OR 811

PROJECT ENGINEER: MAHMOUD ETEMADI (815) 284–5393

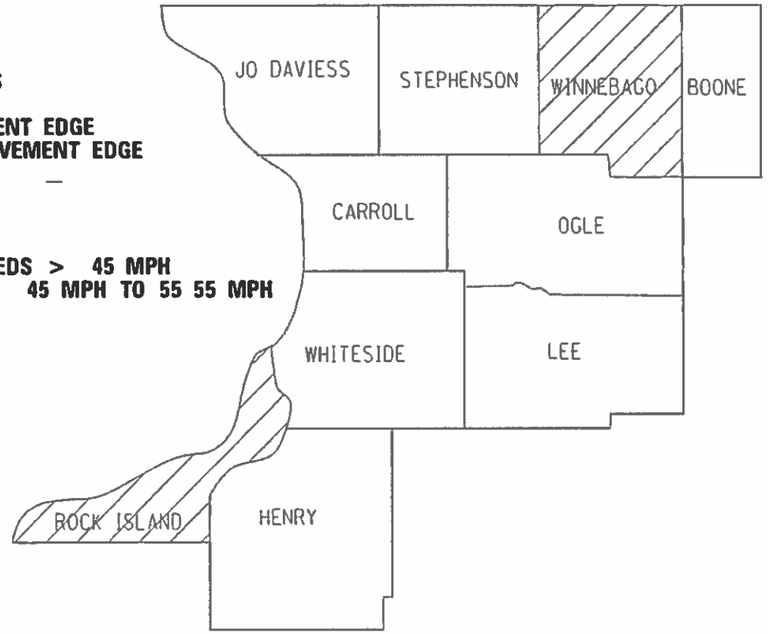
CONTRACT NO. 46470

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED HIGHWAY PLANS

VARIOUS ROUTES
SECTION: D–2 OVD SIN STR REPL 18–32
TYPE of IMPROVEMENT: SIGN STRUCTURE REPLACEMENT
VARIOUS

M–60–005–18



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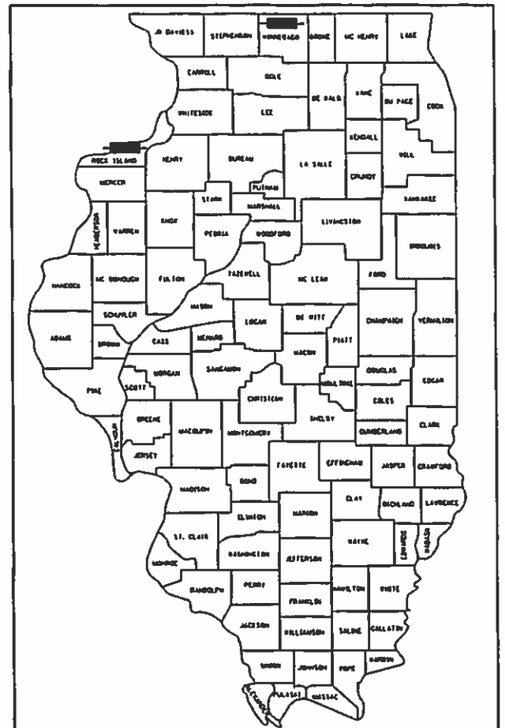

LOCATION OF SECTION INDICATED THUS: –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 9-24 2018
REGIONAL ENGINEER
Dec 7 2018
ENGINEER OF DESIGN AND ENVIRONMENT
Dec 7 2018
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

REV. 12/5/18 REV. 11/20/18

SUMMARY OF QUANTITIES

	CODE NUMBER	ITEM	UNIT	SN 002 2S101U020R009.9	SN 053 2S081SI088L000.0	SN 136 2S081SI280L011.3	SN 170 2S101S251R010.4	SN 172 2C101S251R010.6	100% State Funds TOTAL QUANTITY 0021
*	51604000	DRILLED SHAFT IN ROCK	CU YD	2					2
*	63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	468	447	314			1229
*	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	2	3	3			8
	63200310	GUARDRAIL REMOVAL	FOOT	200		140			340
	64300750	IMPACT ATTENUATORS (SEVER USE, NARROW), TEST LEVEL 2	EACH				2		2
	67100100	MOBILIZATION	L SUM	0.20	0.20	0.20	0.20	0.20	1
	70200100	NIGHTTIME WORK ZONE LIGHTING	L SUM	0.25	0.25	0.25	0.25		1
*	72000300	SIGN PANEL – TYPE 3	SQ FT	331	336	422	304	78	1471
*	72501000	TERMINAL MARKER – DIRECT APPLIED	EACH	3	2	2	2	1	10
	73300200	OVERHEAD SIGN STRUCTURE – SPAN, TYPE II–A (4'–6" X 5'–3")	FOOT	117	103.5	114	130		464.5
	73302170	OVERHEAD SIGN STRUCTURE – CANTILEVER, TYPE II–C–A (36" X 5'–6")	FOOT					28	28
*	73400200	DRILLED SHAFT CONCRETE FOUNDATIONS	CU YD	33	24.9	29.6	31.2	9	127.7
	73600100	REMOVE OVERHEAD SIGN STRUCTURE – SPAN	EACH	1	1	1	1		4
	73600200	REMOVE OVERHEAD SIGN STRUCTURE – CANTILEVER	EACH					1	1
	73700300	REMOVE CONCRETE FOUNDATION – OVERHEAD	EACH	1	1	1	1	1	5
*	78200005	GUARDRAIL REFLECTOR, TYPE A	EACH	2	2	2	2	1	9
*	X0325265	REMOVE ELECTRIC SERVICE	EACH	1	1	1	1	1	5
	X7010216	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	0.20	0.20	0.20	0.20	0.20	1
	X7010410	SPEED DISPLAY TRAILER	CAL MO	1	1	1	1		4
	70107025	CHANGEABLE MEASSAGE SIGN	CAL DA	7	7	7	7		28
	Z0013798	CONSTRUCTION LAYOUT	L SUM	0.20	0.20	0.20	0.20	0.20	1
	Z0048665	RAILROAD LIABILITY INSURANCE	L SUM				1		1

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DESIGNED - _____ | CHECKED - _____ | DATE - _____

REVISED - _____ | REVISED - _____ | REVISED - _____

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

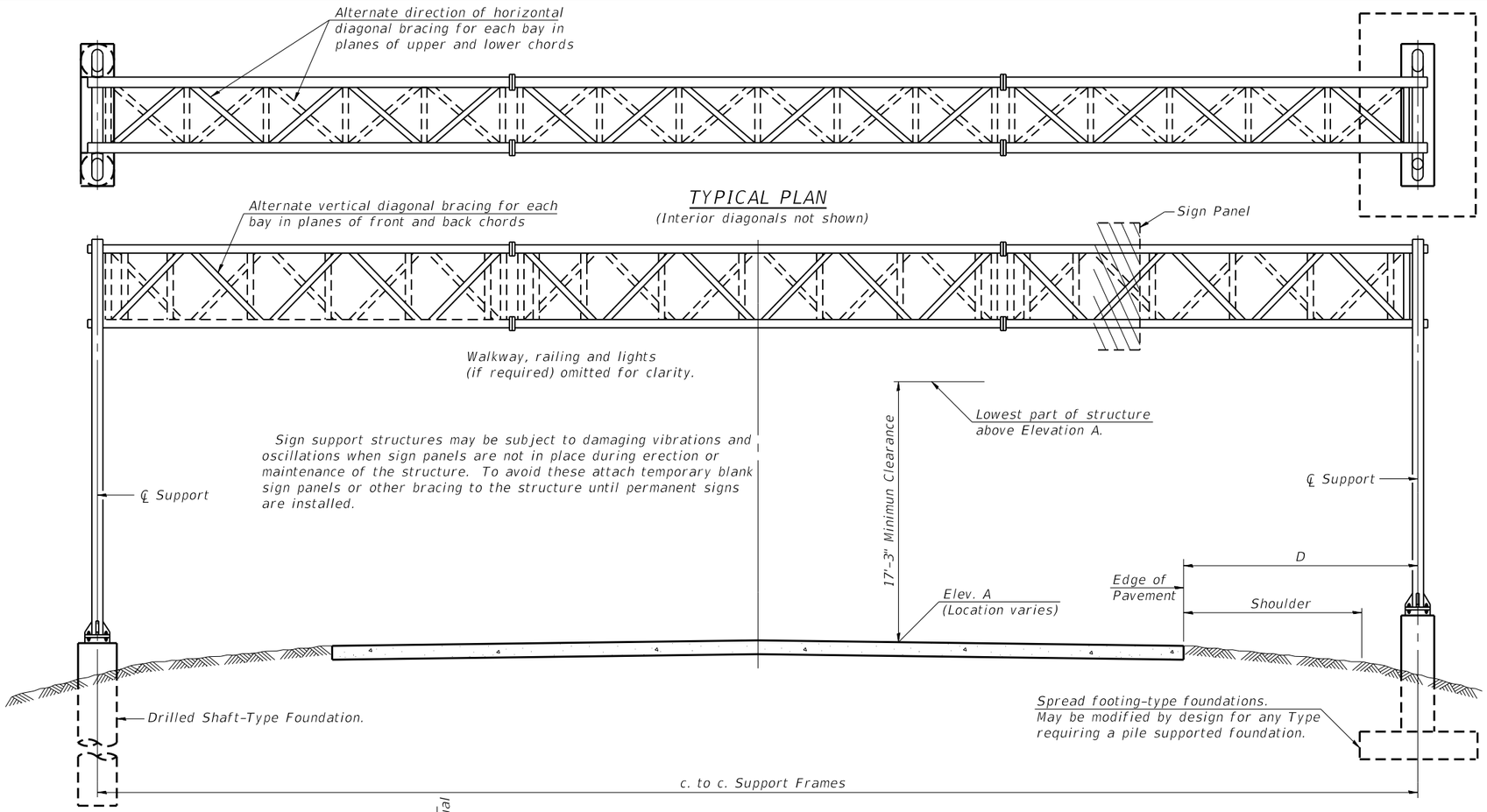
SUMMARY OF QUANTITIES

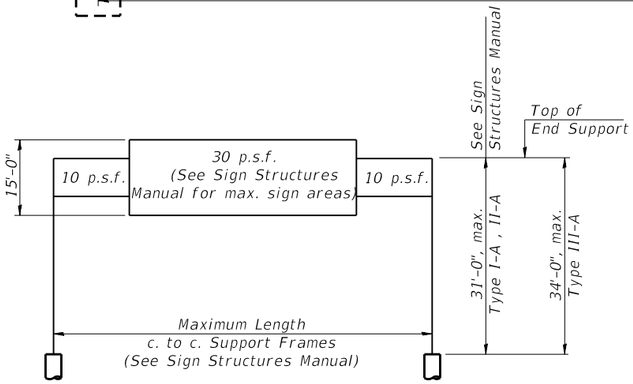
SCALE: _____ | SHEET __ OF __ SHEETS | STA. _____ | TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	2
	CONTRACT NO. 46470			
	ILLINOIS	FED. AID PROJECT		

*= SPECIALTY ITEM

REV. 11/28/18 REV. 11/20/18





DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards and Sign Manual Tables. Installations not within dimensional limits shown require special analysis for all components.

TYPICAL ELEVATION

*(Looking at Face of Signs**)*

Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

	Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total Sign Area
002	2S101U020R009.9	87+00	II-A	117	820.47	24	10	331.0
053	2S081SI088L000.0	98+00	II-A	103.5	579.90	25.4	9	335.5
136	2S081I280L011.3	118+50	II-A	114	569.00	32	11.5	422.0
170	2S101S251R010.4	87+00	II-A	130	716.54	13	7	303.5

**Looking upstation for structures with signs both sides.

* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
$f'c$ = 3,500 p.s.i.
fy = 60,000 p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specificiations.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B or A500 Grade B or C. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53. All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.
The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to ASTM F1554 Gr. 105.

CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Concrete Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

FOUNDATIONS: The contract unit price for Concrete Foundations and Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE SPAN TYPE I-A	Foot	
OVERHEAD SIGN STRUCTURE SPAN TYPE II-A	Foot	464.5
OVERHEAD SIGN STRUCTURE SPAN TYPE III-A	Foot	
OVERHEAD SIGN STRUCTURE WALKWAY TYPE A	Foot	
CONCRETE FOUNDATIONS	Cu. Yds.	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	118.7
ROCK EXCAVATION	Cu. Yds.	2.0

OS-A-1 2-17-2017

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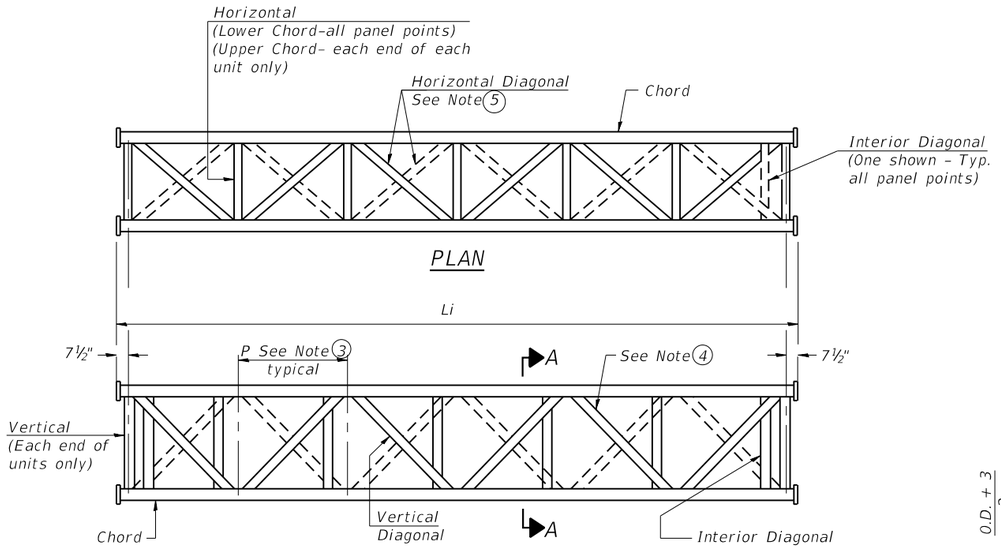
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES - GENERAL PLAN & ELEVATION - ALUMINUM TRUSS & STEEL SUPPORTS

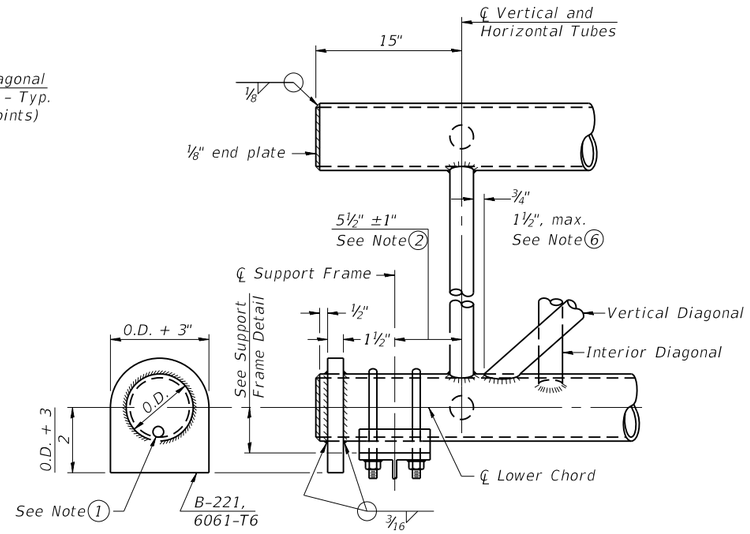
SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
___	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	3
		CONTRACT NO. 46470		
		ILLINOIS FED. AID PROJECT		

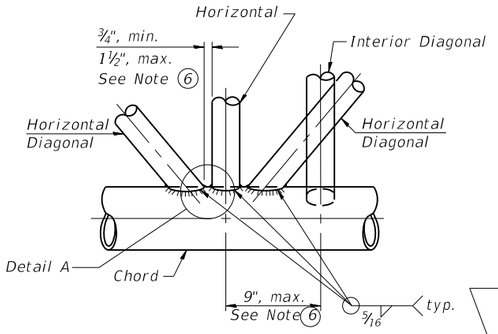


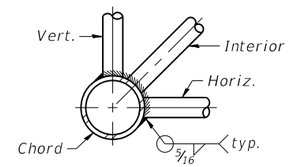
ELEVATION
TYPICAL INTERIOR UNIT

Even number of panels/interior unit required.

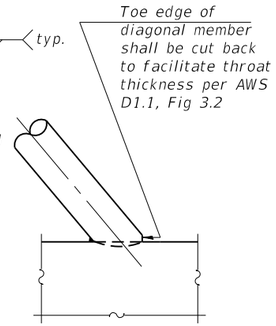


SUPPORT END DETAIL FOR EXTERIOR UNIT

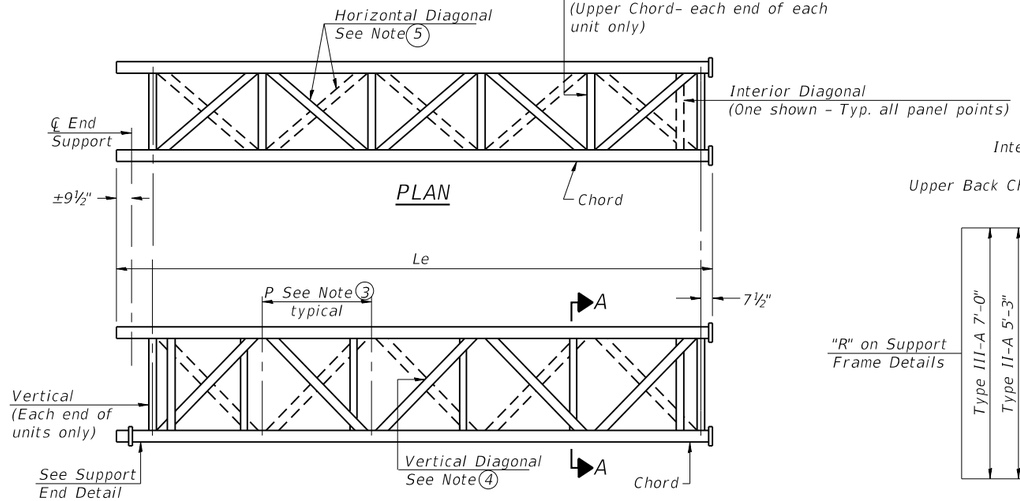




TYPICAL JOINT DETAILS

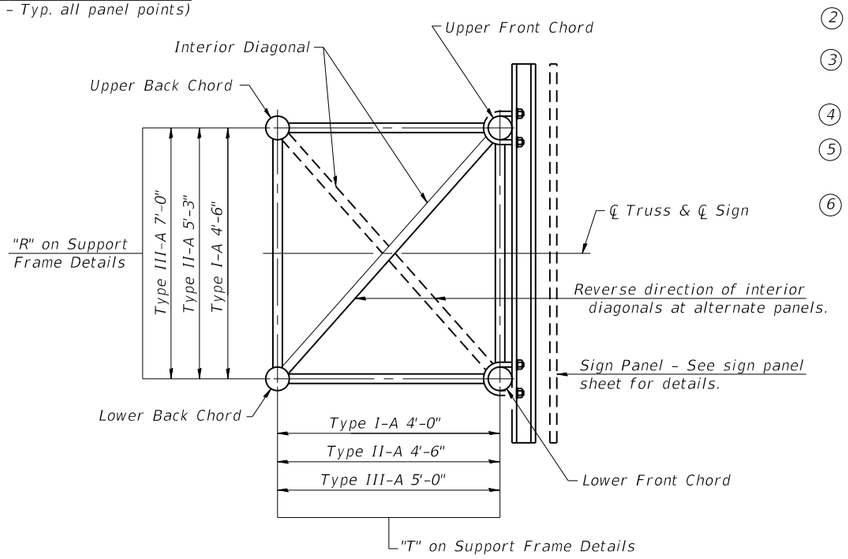


DETAIL A



ELEVATION
TYPICAL EXTERIOR UNIT

Even or odd number of panels/exterior units allowed.



SECTION A-A

(1) Contractor may alternatively use standard aluminum drive-fit cap to close end. ½" Ø drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)

(2) 5½" end dimension may vary by ±1" to provide uniform panel spacing (P).

(3) Panel spacing (P) shall be uniform for entire truss and between 4'-0" and 5'-0" for Type I-A or 4'-0" and 5'-6" for Types II-A and III-A.

(4) Vertical Diagonals in front and back face shall alternate.

(5) Hidden lines show wind bracing alternates direction between planes of top and bottom chords.

(6) All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a ¾" minimum to 1½" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.

OS-A-2 2-17-2017

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

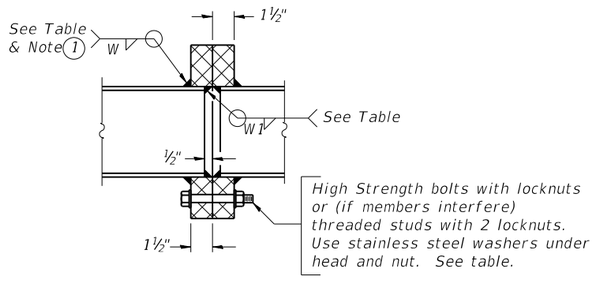
OVERHEAD SIGN STRUCTURES - ALUMINUM TRUSS
DETAILS FOR TRUSS TYPES I-A, II-A AND III-A

SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
____	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	4
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			

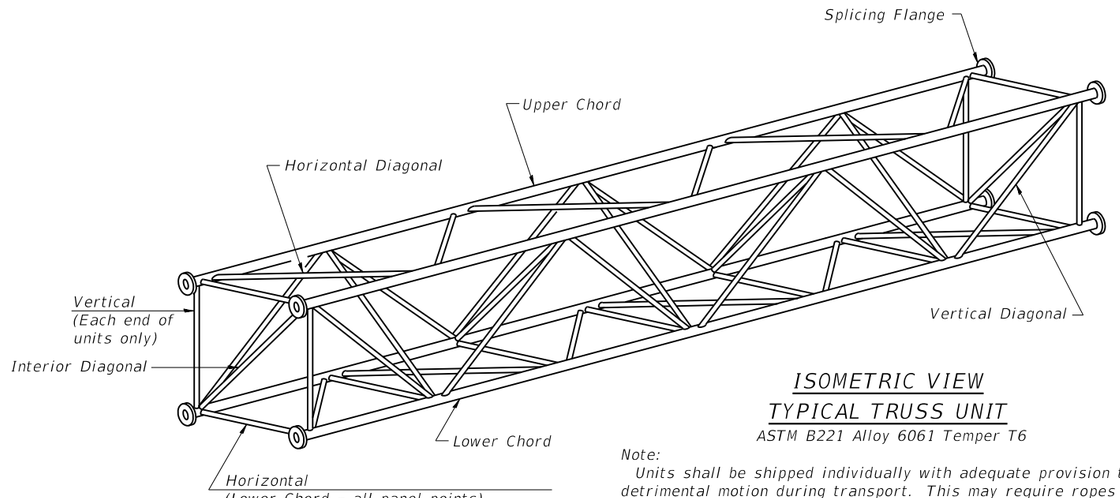
TRUSS UNIT TABLE

	Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit				Upper & Lower Chord		Verticals; Horizontals; Vertical,Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
																Bolts		Weld Sizes		A	B
				No. Panels per Unit	Unit Lgth.(Le)	Panel Lgth.(P)	No. Req'd.	No. Panels per Unit	Unit Lgth.(Li)	Panel Lgth.(P)	O.D.	Wall	O.D.	Wall		No./Splice	Dia.	W	W1		
002	2S101U020R009.9	87+00	II-A	8	39'-8 1/2"	4'-8 3/4"	1	8	39'-1"	4'-8 3/4"	7"	5/16"	3"	5/16"	4	6	1"	3/8"	1/4"	11 1/2"	15"
053	2S081S1088L000.0	98+00	II-A	7	37'-0 1/4"	5'-0 1/4"	1	6	31'-4 1/2"	5'-0 1/4"	6 1/2"	5/16"	3"	5/16"	3.5	6	1"	3/8"	1/4"	11"	14 1/2"
136	2S081I280L011.3	118+50	II-A	8	38'-8 1/2"	4'-7 1/4"	1	8	38'-1"	4'-7 1/4"	7"	5/16"	3"	5/16"	3.8	6	1"	3/8"	1/4"	11 1/2"	15"
170	2S101S251R010.4	87+00	II-A	6	33'-3"	5'-2 3/4"	2	6	32'-7 1/2"	5'-2 3/4"	7"	3/8"	3"	5/16"	4.75	8	1"	7/16"	5/16"	11 1/2"	15"



SECTION B-B

(1) Splicing Flanges shall be attached to each truss unit with the truss shop assembled to camber shown. Truss units shall be in proper alignment and flange surfaces shall be shop bolted into full contact before welding. Sufficient external welds or tacks shall be made to secure flanges until remaining welds are made after disassembly. Adjacent flanges shall be "match marked" to insure proper field assembly.

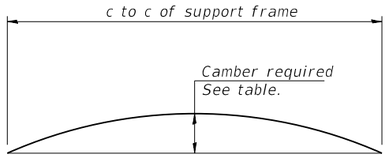


ISOMETRIC VIEW

TYPICAL TRUSS UNIT

ASTM B221 Alloy 6061 Temper T6

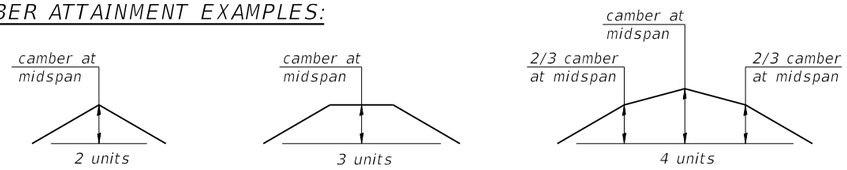
Note:
Units shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The Contractor is responsible for maintaining the configuration and protection of the units.



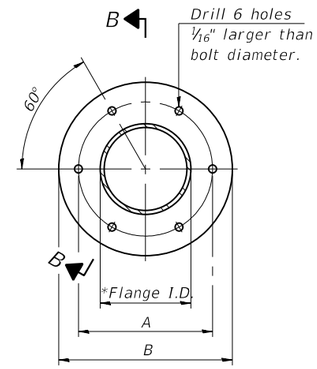
CAMBER DIAGRAM

Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

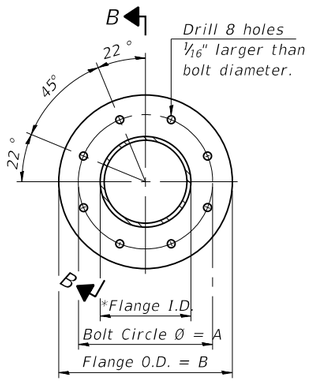
CAMBER ATTAINMENT EXAMPLES:



Camber shown is for fabrication only, measured with truss fully supported. (No-load condition)



TRUSS TYPES I-A, II-A, & III-A



TRUSS TYPES II-A & III-A

SPLICING FLANGES

ASTM B221, Alloy 6061-T6
or ASTM B209, Alloy 6061-T651
*To fit O.D. of Chord with maximum gap of 1/16".

0S4-A-2 2-17-2017

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	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -			___	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	5
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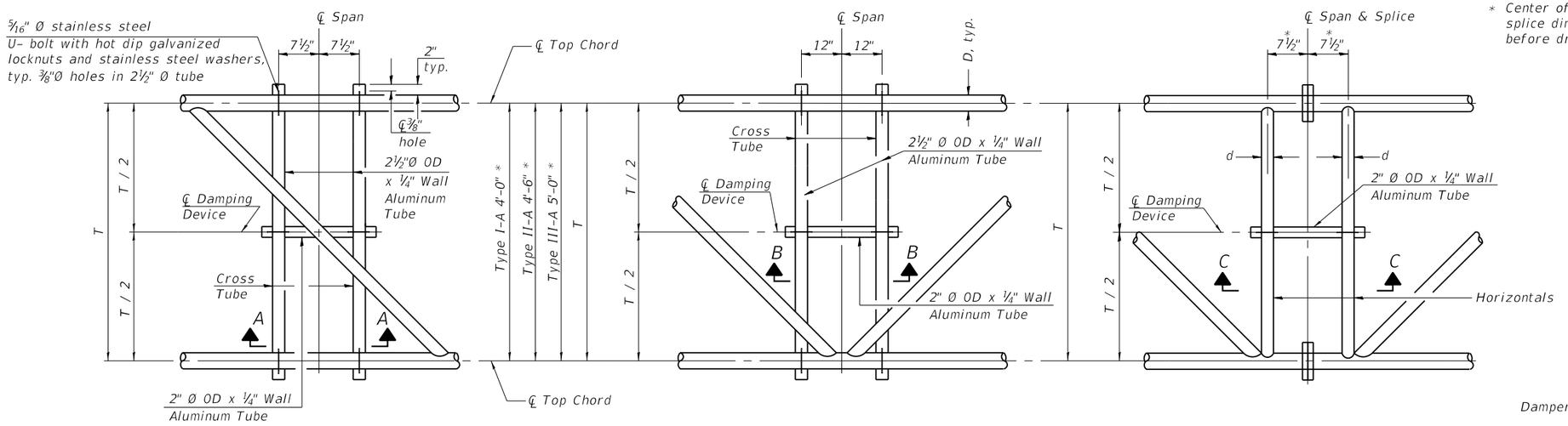
							ILLINOIS FED. AID PROJECT			

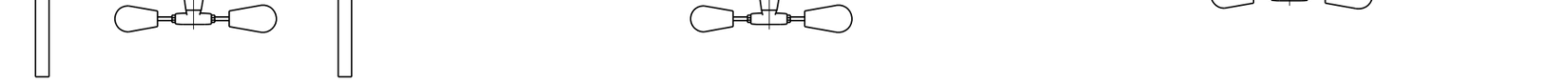


* Center of horizontal to center of splice dimension may vary. Verify before drilling holes in mounting tube.

PLAN DETAIL "A"
℄ Span between Panel Points

PLAN DETAIL "B"
℄ Span at Panel Point

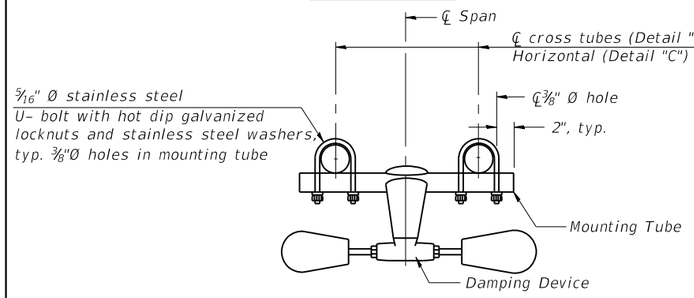
PLAN DETAIL "C"
℄ Span at ℄ Chord Splice



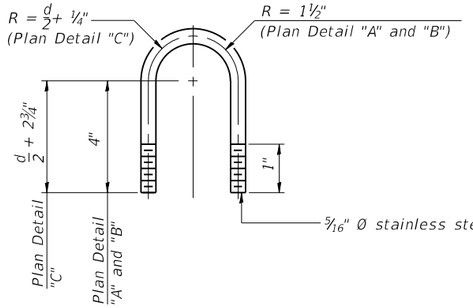
SECTION A-A

SECTION B-B

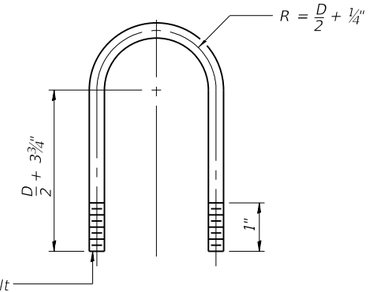
SECTION C-C



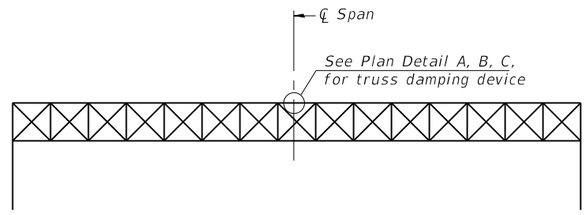
TRUSS DAMPING DEVICE CONNECTION DETAIL
(Typical)



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)



TOP CHORD TO CROSS TUBE U-BOLT DETAIL
(Typical - Detail "A" and "B")



ELEVATION
Aluminum Overhead Sign Truss

NOTES

Damper: One damper per truss. (31 lbs. minimum Stockbridge-Type Aluminum – 29" minimum between ends of weights) Cost included in Overhead Sign Structure...

Materials: Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in Overhead Sign Structure...

OS-A-D 2-17-2017

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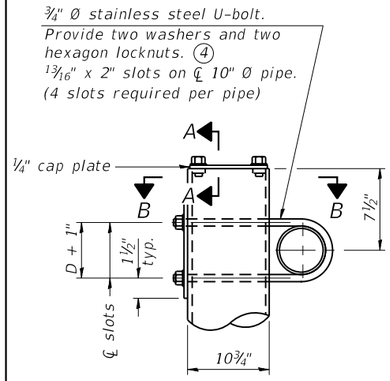
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

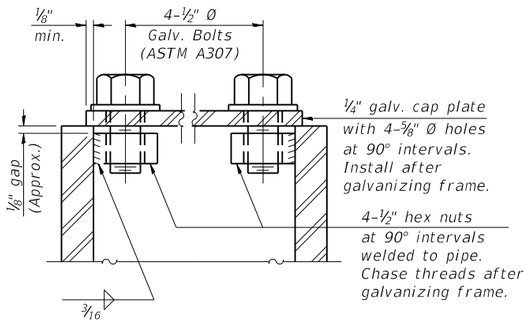
OVERHEAD SIGN STRUCTURE
DAMPING DEVICE

SCALE: _____ | SHEET ___ OF ___ SHEETS | STA. _____ | TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
____	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	6
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			

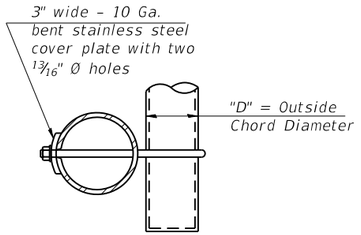


DETAIL A

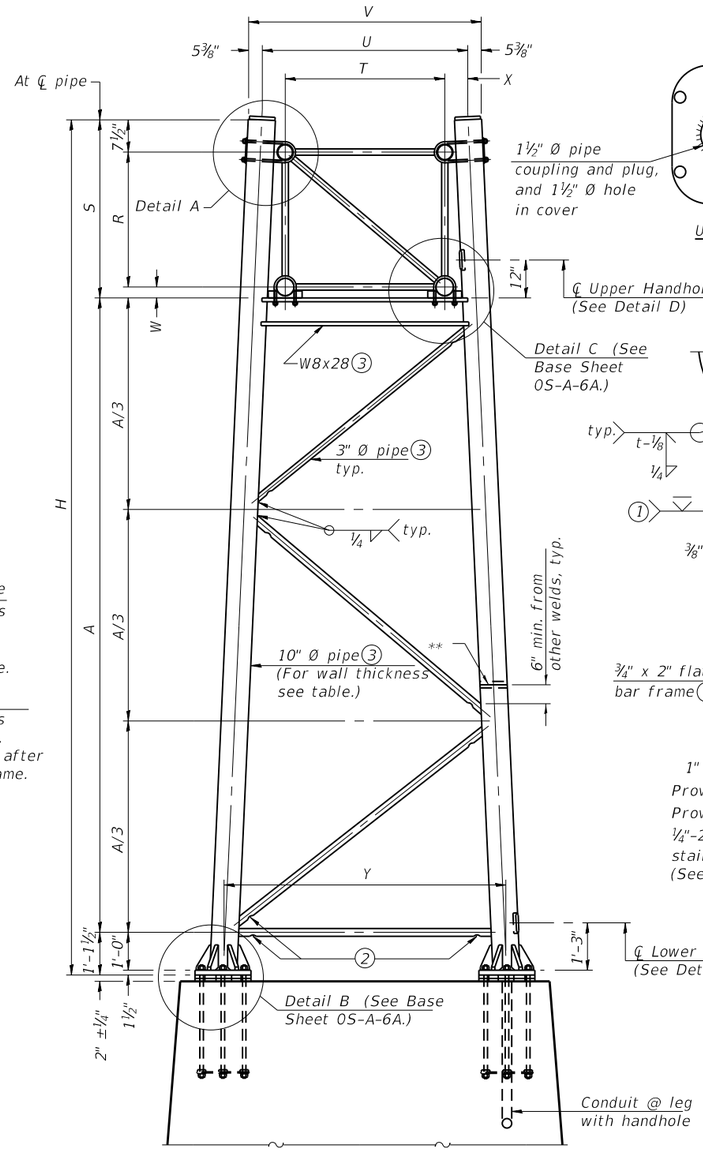


SECTION A-A

As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.

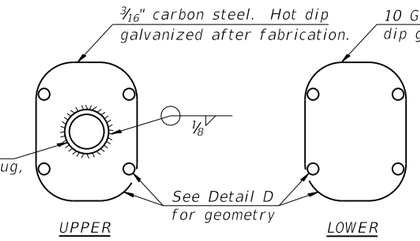


SECTION B-B

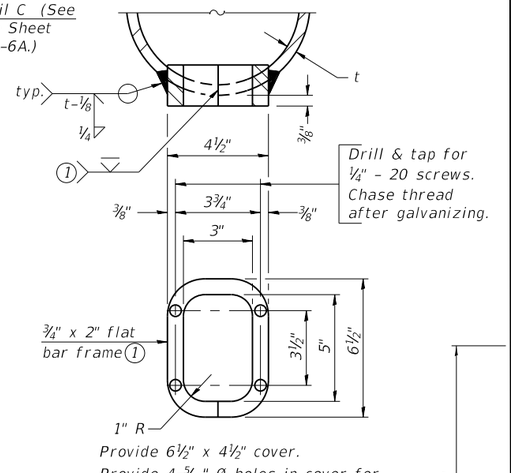


For Foundation Details, see base sheet 0S-F3 (Spread Footing) or 0S4-F3 (Drilled Shaft).

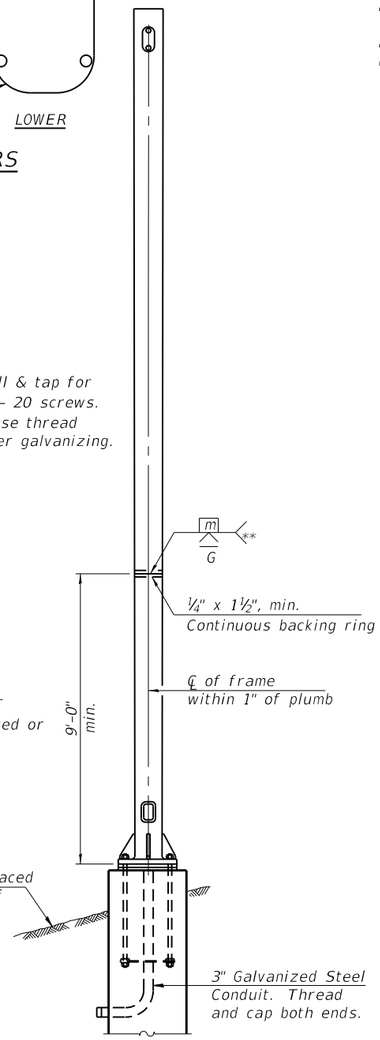
SIDE ELEVATION



HANDHOLE COVERS



DETAIL D



Support Design Loads: See Base Sheet 0S-A-1 for design and loading criteria.

Load combinations checked include deadload plus:
a) 100% wind normal to sign, 20% parallel to sign
b) 60% wind normal to sign, 30% parallel to sign

(1) In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500µ in or less.

(2) Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, typ.

(3) Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet 0S-A-1.

(4) See General Notes for fasteners.

(5) Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.

(6) "H" based on 15'-0" or actual sign height, whichever is greater.

Truss Type	Dimensions							
	R	S	T	U	V	W	X	Y
I-A	4'-6"	5'-5½"	4'-0"	5'-6"	6'-4¾"	4"	9"	8'-3"
II-A (5)	5'-3"	6'-3¼"	4'-6"	6'-1"	6'-11¾"	4¾"	9½"	8'-3"

10" Ø PIPE TRUSS SUPPORT FRAME

** One butt welded joint is allowed only on one post per support frame. If used, weld procedure must be pre-approved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.

END ELEVATION

Structure Number	Station	Support		Truss Type	Pipe Wall Thickness	H (6)	A
		Left	Right				
002	2S101U020R009.9	87+00	X		II-A	.50	32.04	24.65
002	2S101U020R009.9	87+00		X	II-A	.50	32.09	24.70
053	2S081S1088L000.0	98+00		X	II-A	.50	29.55	22.21
053	2S081S1088L000.0	98+00	X		II-A	.50	27.81	20.48
136	2S081I280L011.3	118+50		X	II-A	.50	30.19	22.79
136	2S081I280L011.3	118+50	X		II-A	.50	28.68	21.29
170	2S101S251R010.4	87+00	X		II-A	.50	26.37	18.98
170	2S101S251R010.4	87+00		X	II-A	.50	26.37	18.98

0S-A-6 2-17-2017

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME FOR ALUMINUM TRUSS

SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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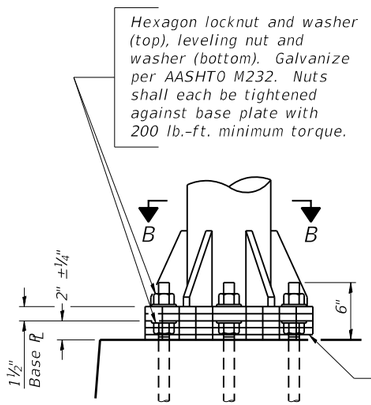
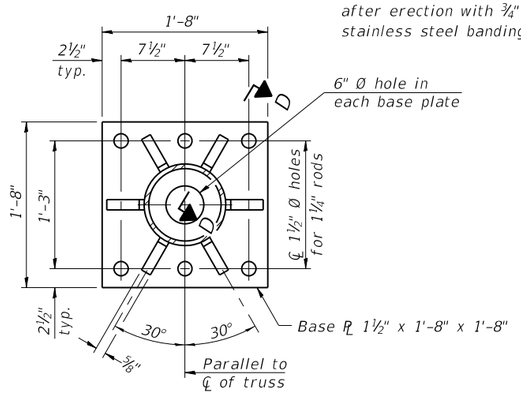
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			

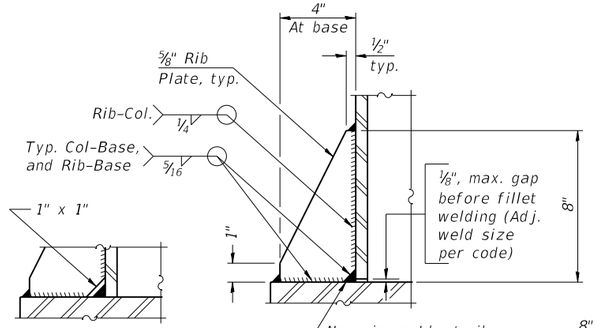


DETAIL B

Ribs shall be cut to fit slope of pipe.

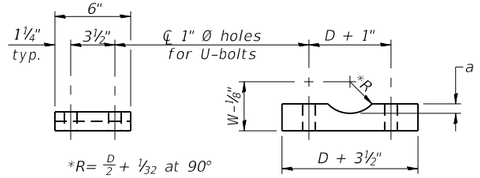


SECTION B-B



** Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib ¼" from snip.

SECTION D-D



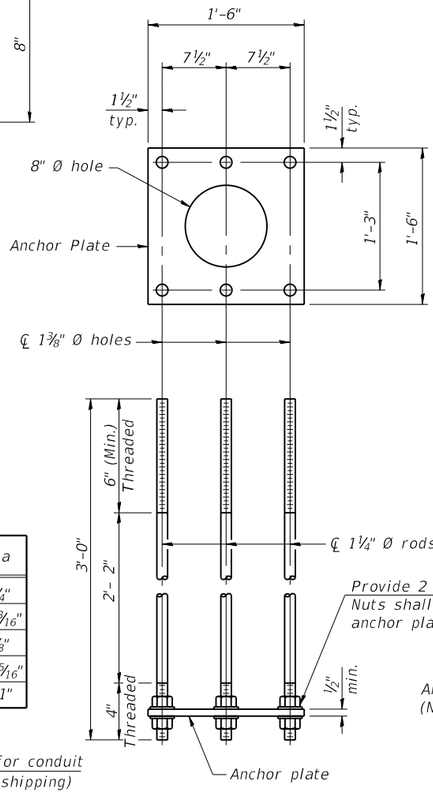
*R= $\frac{D}{2}$ + 1/32 at 90°

D = Outside Diameter of Chord.
For W, see Base Sheet 0S-A-6.

SADDLE SHIM DETAIL

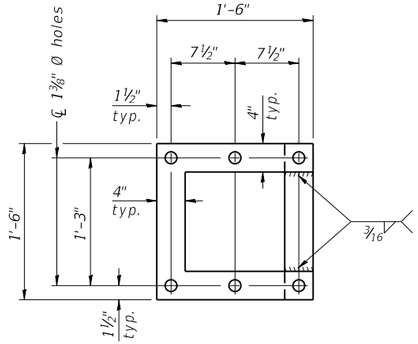
ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

Truss Chord Nominal Dia.	a
5"	¾"
5½"	13/16"
6"	⅞"
6½"	15/16"
7"	1"

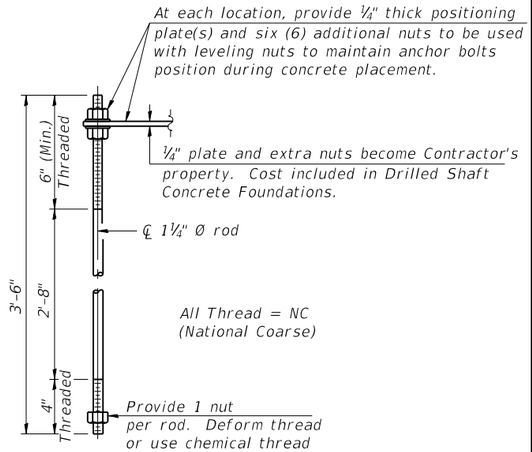


ANCHOR ROD DETAIL

Spread Footing Foundation



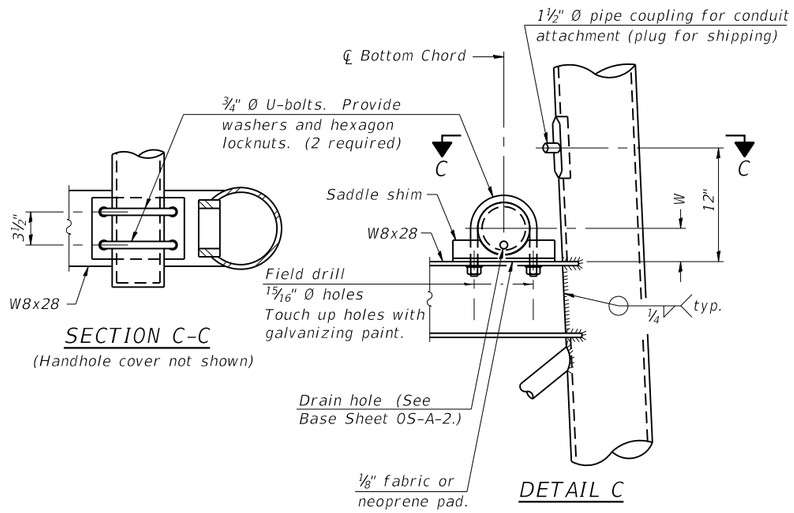
POSITIONING PLATE(S)



ANCHOR ROD DETAIL

Drilled Shaft Foundation

Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize upper 12" minimum per AASHTO M232. No welding shall be permitted on rods.



SECTION C-C

(Handhole cover not shown)

DETAIL C

10" Ø PIPE SUPPORT FRAME DETAILS

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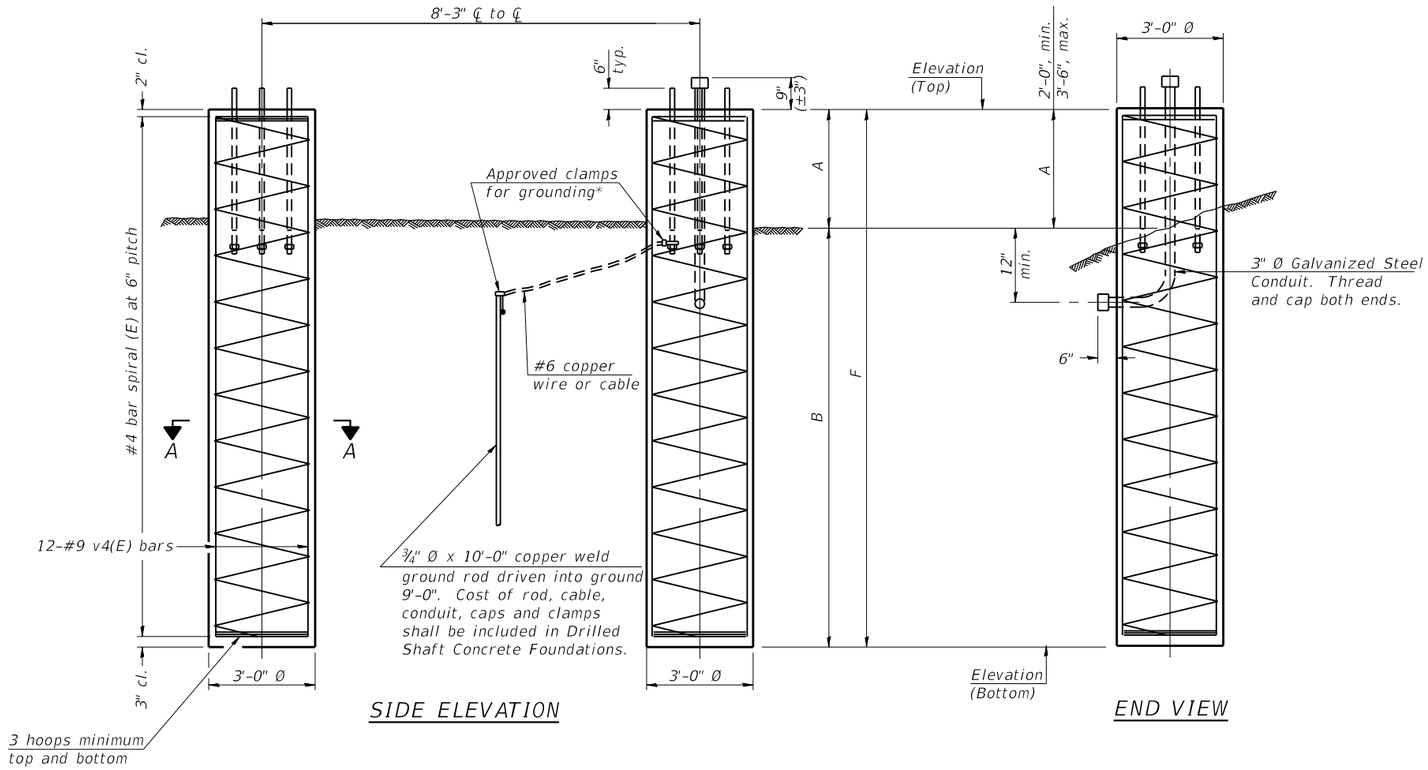
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS - ALUMINUM TRUSS

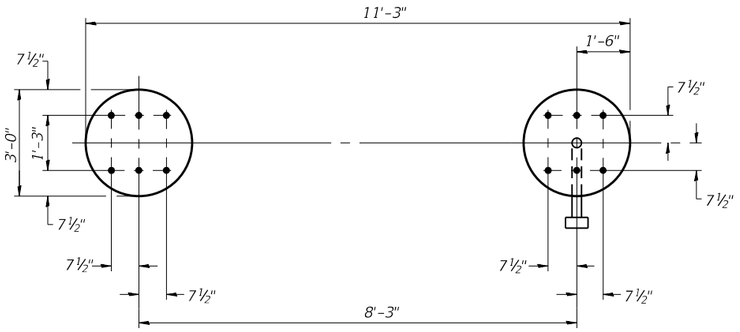
SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
___	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	8
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			



SIDE ELEVATION

END VIEW



PLAN

For anchor rod size and placement, see Support Frame Detail Sheet.

* Anchor rod shall be ground or filed to bright metal at clamp and cable connection location.

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
v4(E)	24	#9	F less 5"	——
#4 bar spiral (E) - see Side Elevation				

NOTES:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

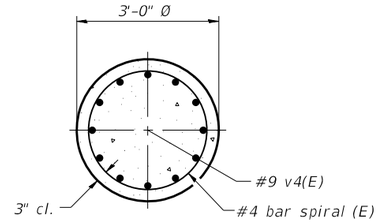
No sonotubes or decomposable forms shall be used below the lower conduit entrance.

Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Drilled Shaft Concrete Foundation.



SECTION A-A

DETAILS FOR 10" Ø SUPPORT FRAME TYPE I-A or II-A TRUSS

	Structure Number	Station	Left Foundation					Right Foundation					Class DS Concrete (Cu. Yds.)
			Elevation Top	Elevation Bottom	A	B	F	Elevation Top	Elevation Bottom	A	B	F	
002	2S101U020R009.9	87+00	816.26	784.76	3.5	28.0	31.50	816.21	784.71	3.5	28.0	31.50	*33.0
053	2S081S1088L000.0	98+00	579.92	556.92	2.5	20.5	23.00	578.18	553.68	4.0	20.5	24.50	24.9
136	2S081I280L011.3	118+50	568.15	540.65	2.5	25.0	27.50	566.65	537.65	4.0	25.0	29.00	29.6
170	2S101S251R010.4	87+00	718.00	688.00	3.0	27.0	30.00	718.00	688.50	2.5	27.0	29.50	31.2

* = +2 CU YD OF ROCK EXCAVATION

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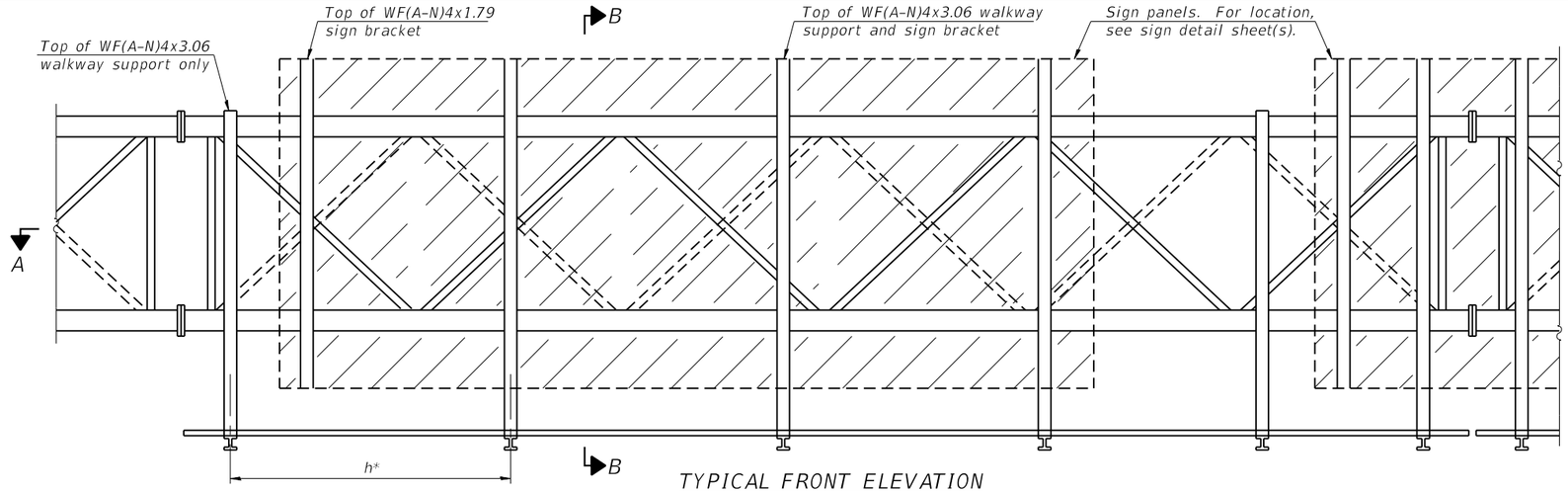
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
DRILLED SHAFT DETAILS

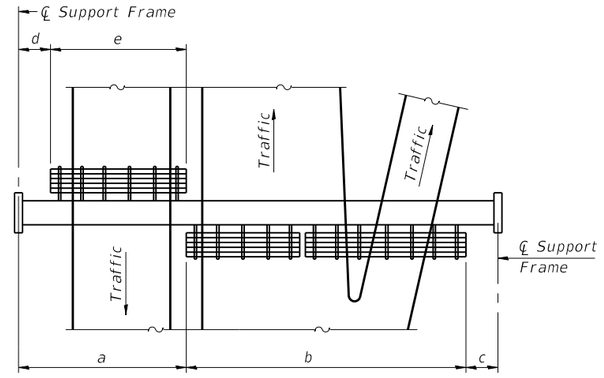
SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
____	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	9
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			



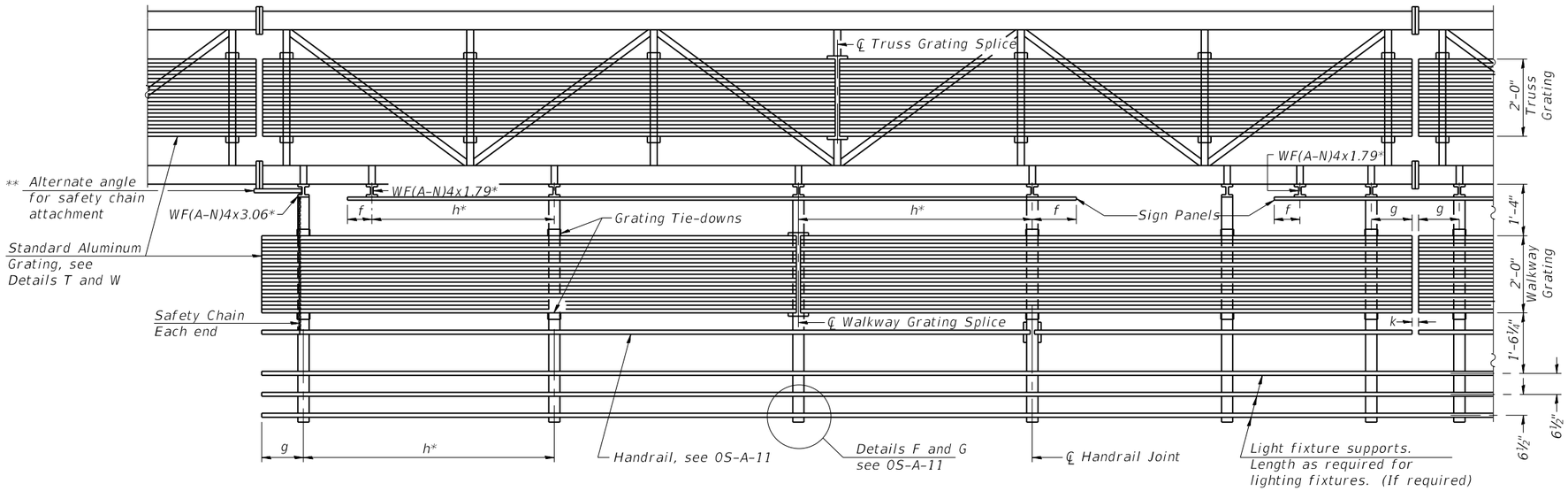
TYPICAL FRONT ELEVATION

With lights and handrail omitted for clarity.
For Section B-B, see Base Sheet 0S-A-10.



PLAN
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath truss varies)



SECTION A-A

Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints.
Place all sign and walkway brackets as close to panel points as practical.
Handrail joints, grating, and light support splices placed as needed.

BRACKET TABLE

WF(A-N)4x1.79 or WF(A-N)4x3.06 ASTM B308, Alloy 6061-T6		
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5
26'-0"	32'-0"	6

Notes:

* Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:

f = 12" maximum, 4" minimum (End of sign to ℄ of nearest bracket)
g = 12" maximum, 4" minimum (End of walkway grating to ℄ of nearest support bracket)
h = 6'-0" maximum (℄ to ℄ sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)
k = 2" maximum gap between adjacent walkway grating sections and handrail ends

** If walkway bracket at safety chain location is behind sign, add angle to bracket, see Alternate Safety Chain Attachment on Base Sheet 0S-A-11.

For Details T and W, Section B-B and Grating Splice Details see Base Sheet 0S-A-10.
For Handrail Details see Base Sheet 0S-A-11.

Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths

Truss grating to facilitate inspection shall run full length (center to center of support frames) ±12" on overhead trusses. Cost of truss grating is included in "Overhead Sign Structure".

Walkway and Truss Grating width dimensions are nominal and may vary ±½" based on available standard widths.

FOR ALL STRUCTURES, THE INSIDE WALKWAY SHALL BE INSTALLED, COST IS INCIDENTAL TO OVERHEAD SIGN STRUCTURE - SPAN, TYPE II-A 4'-6" X 5'-3" AND OVERHEAD SIGN STRUCTURE - CANTILEVER, TYPE II-C-A 36"X5'6"

0S-A-9 2-17-2017

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS

SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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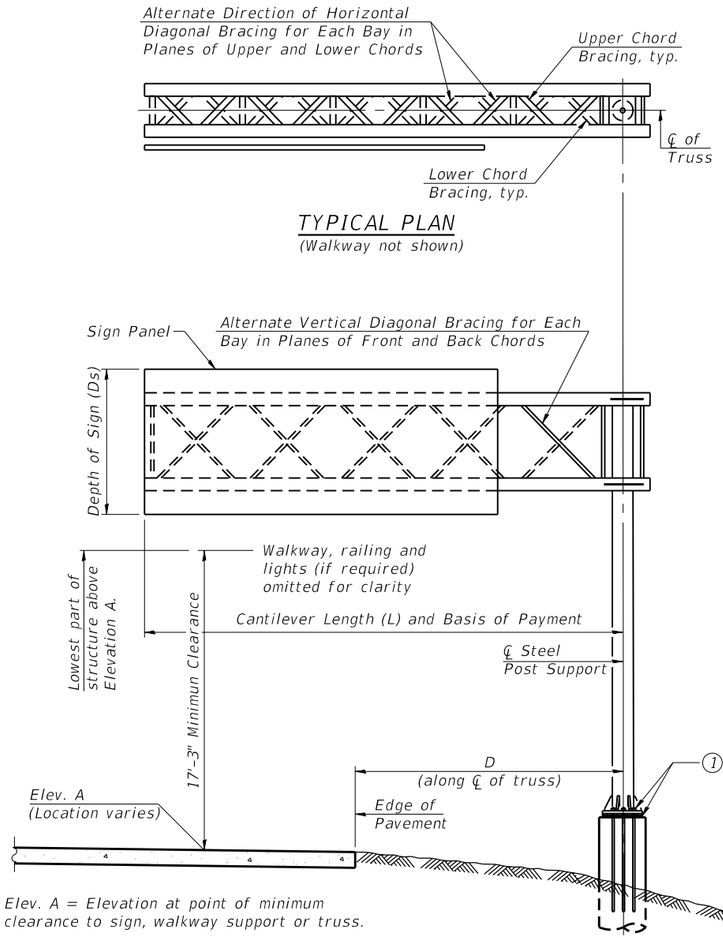
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			



TYPICAL PLAN

(Walkway not shown)

Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

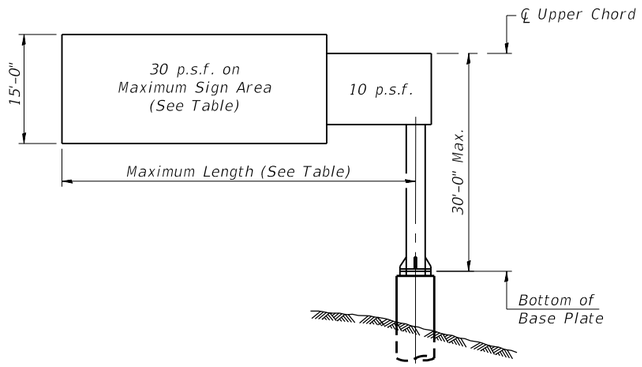
TYPICAL ELEVATION

Looking in Direction of Traffic

Sign support structures may be subject to damaging vibrations and oscillations when sign panels are not in place during erection or maintenance of the structure. To avoid these vibrations and oscillations, consideration should be given to attaching temporary blank sign panels to the structure.

Structure Number	Station	Design Truss Type	Cantilever Length (L)	Elev. A	Dim. D	Ds	Total Sign Area
2C101S251R010.6	156+50	II-C-A	28'	734'	14'	5'	77.5

Truss Type	Maximum Sign Area	Maximum Length
I-C-A	170 Sq. Ft.	25 Ft.
II-C-A	340 Sq. Ft.	30 Ft.
III-C-A	400 Sq. Ft.	40 Ft.



DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards Installations not within dimensional limits shown require special analysis for all components.

Note:
Trusses shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The contractor is responsible for maintaining the configuration and protection of the trusses.

(1) After adjustments to level truss and insure adequate vertical clearance, all top and leveling nuts shall be tightened against the base plate with a minimum torque of 200 lb.-ft. Stainless steel mesh shall then be placed around the perimeter of the base plate. Secure to base plate with stainless steel banding.

* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
f' = 3,500 p.s.i.
fy = 60,000 p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specificiations.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B or A500 Grade B or C. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.
All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.
The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to ASTM F1554 Gr. 105.

CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Concrete Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

FOUNDATIONS: The contract unit price for Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE I-C-A	Foot	
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE II-C-A	Foot	28'
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE III-C-A	Foot	
OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A	Foot	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	9.0

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES - GENERAL PLAN & ELEVATION
ALUMINUM TRUSS & STEEL POST

SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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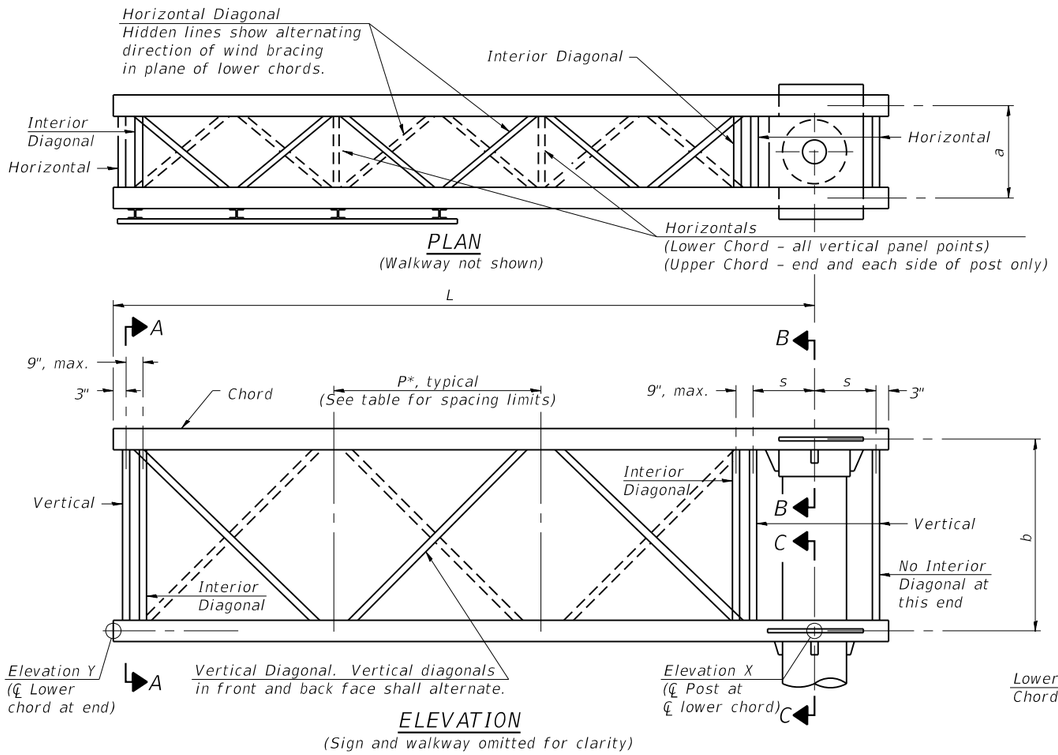
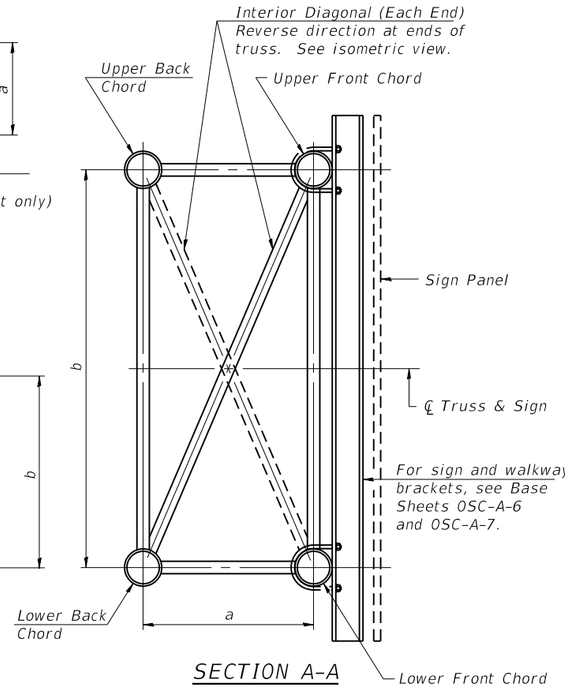
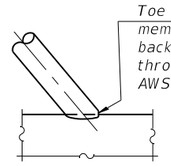
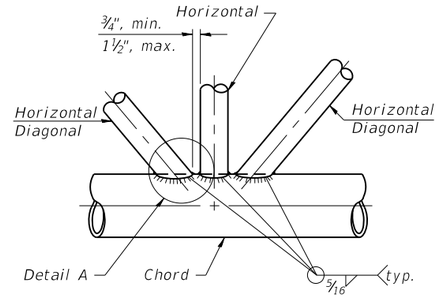
		CONTRACT NO. 46470		
	ILLINOIS	FED. AID PROJECT		



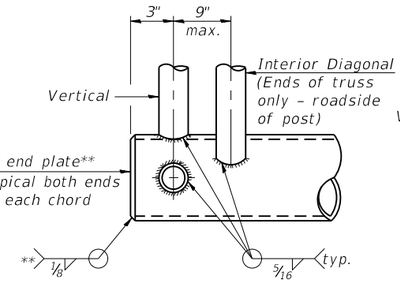




DETAIL A

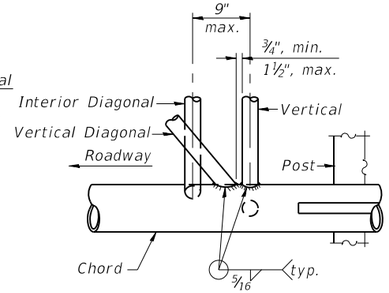


TRUSS INTERIOR JOINT DETAIL



CANTILEVER END JOINT DETAIL

** Contractor may alternatively use standard aluminum drive-fit cap to close ends. ½" Ø Drain hole in end plate / drive-fit cap.



POST END JOINT DETAIL

TYPICAL TRUSS UNIT

For Section B-B and Section C-C, see Base Sheet 0SC-A-3.

Note:
There are twice as many horizontal diagonals as there are vertical diagonals.

TRUSS UNIT TABLE

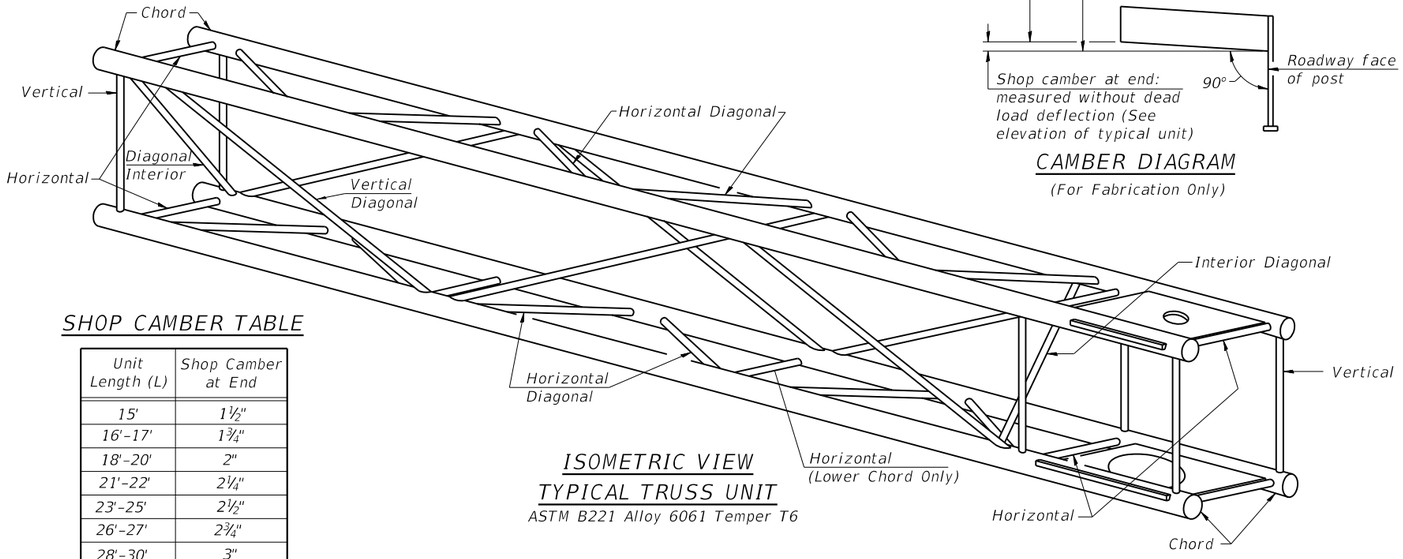
Truss Type	Dimension "a"	Dimension "b"	Dimension "s"	Limits for Panel Spacing (P)*	Up. & Low. Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals	
					O.D.	Wall	O.D.	Wall
I-C-A	24"	54"	16"	36" min. to 48" max.	5"	5/16"	2½"	5/16"
II-C-A	36"	66"	21"	42" min. to 54" max.	6½"	5/16"	3¼"	5/16"
III-C-A (35' Max.)	36"	84"	21"	48" min. to 66" max.	7"	⅜"	3½"	⅜"
III-C-A (>35' to 40')	36"	84"	21"	48" min. to 66" max.	8"	⅜"	3½"	⅜"

$$*P = \frac{L - s - 3"}{\#\ Panels}$$

	Structure Number	Station	Truss Type	Design Length (L)	Number of Panels Per Unit	Panel Length (P)*
172	2C101S251R010.6	156+50	II-C-A	28'	7	3'-8.5"

SHOP CAMBER TABLE

Unit Length (L)	Shop Camber at End
15'	1½"
16'-17'	1¾"
18'-20'	2"
21'-22'	2¼"
23'-25'	2½"
26'-27'	2¾"
28'-30'	3"
31'-32'	3¼"
33'-35'	3½"
36'-37'	4"
38'-40'	4½"



ISOMETRIC VIEW
TYPICAL TRUSS UNIT
ASTM B221 Alloy 6061 Temper T6

CAMBER DIAGRAM
(For Fabrication Only)

0SC-A-2 2-17-2017

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES – TRUSS DETAILS
ALUMINUM TRUSS & STEEL POST

SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 46470		
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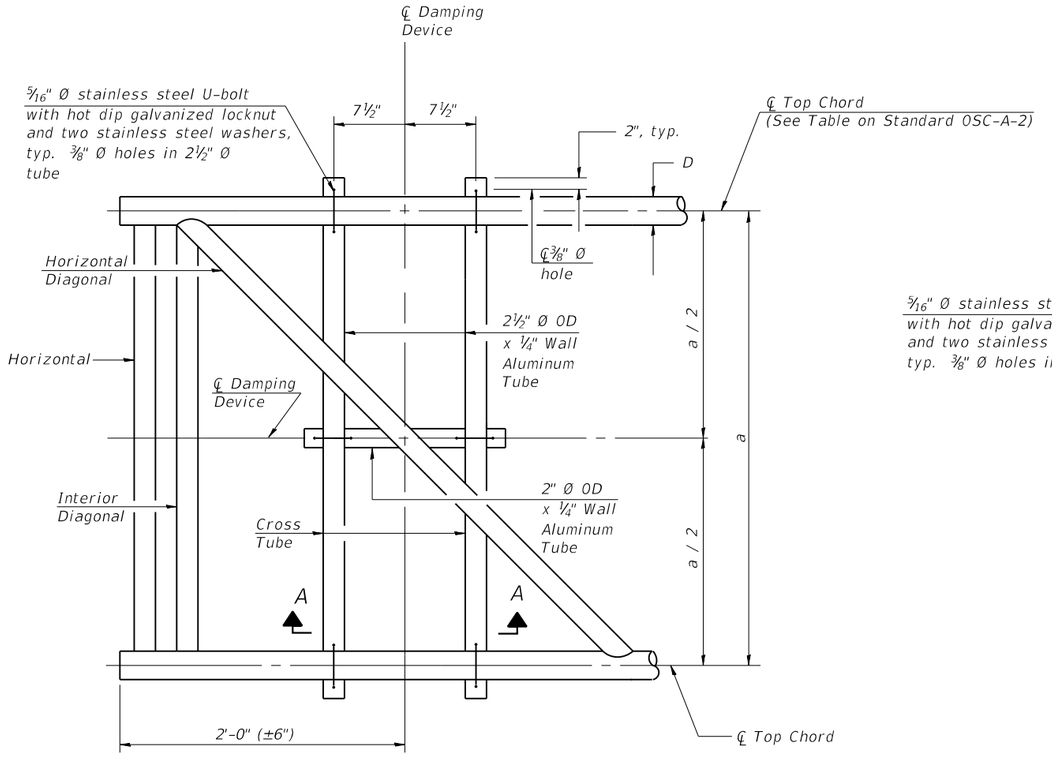
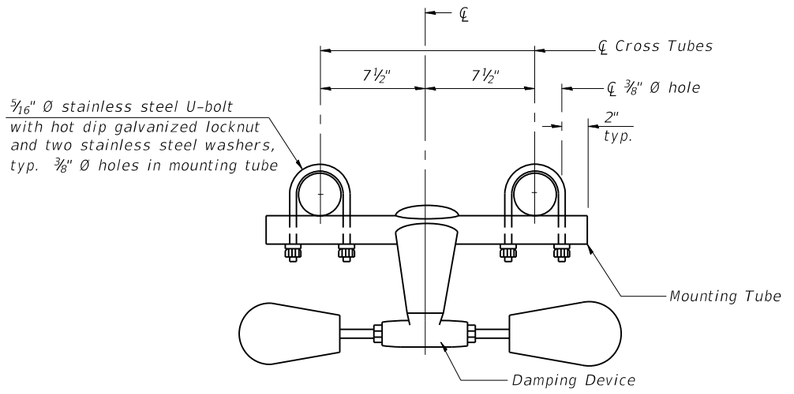
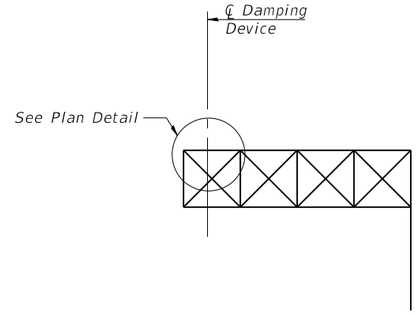


PLAN DETAIL



TRUSS DAMPING DEVICE CONNECTION DETAIL



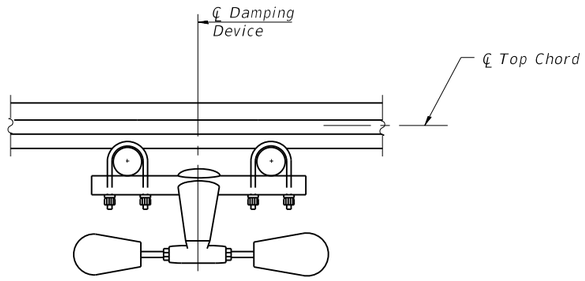
ELEVATION

Aluminum Cantilever Sign Structure

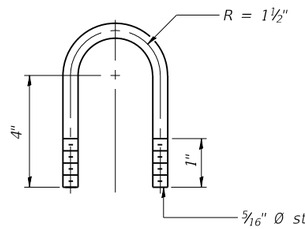
GENERAL NOTES

Damper: One damper per truss. (31 lbs. Stockbridge-Type Aluminum-29" minimum between ends of weights)

Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6

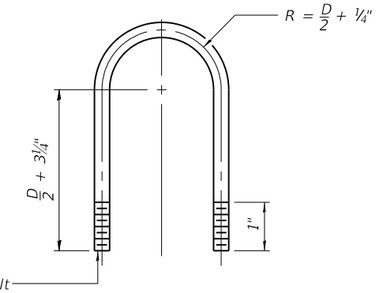


SECTION A-A



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL

(Typical)



TOP CHORD TO CROSS TUBE U-BOLT DETAIL

(Typical)

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CANTILEVER SIGN STRUCTURE
DAMPING DEVICE

SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 46470		
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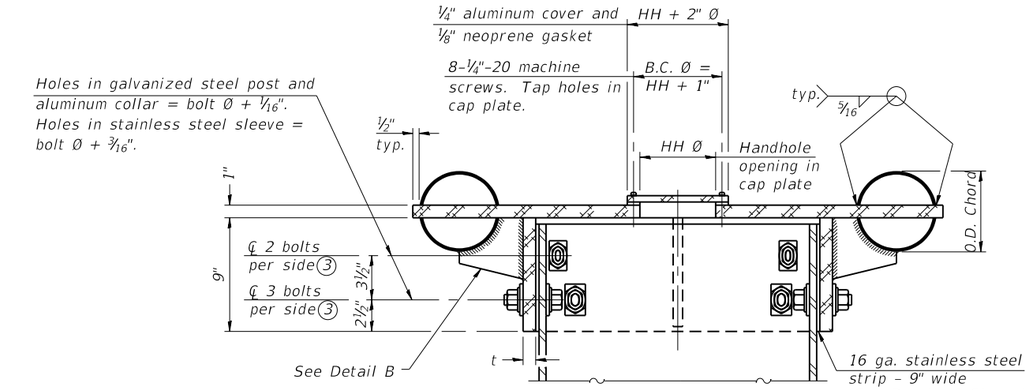
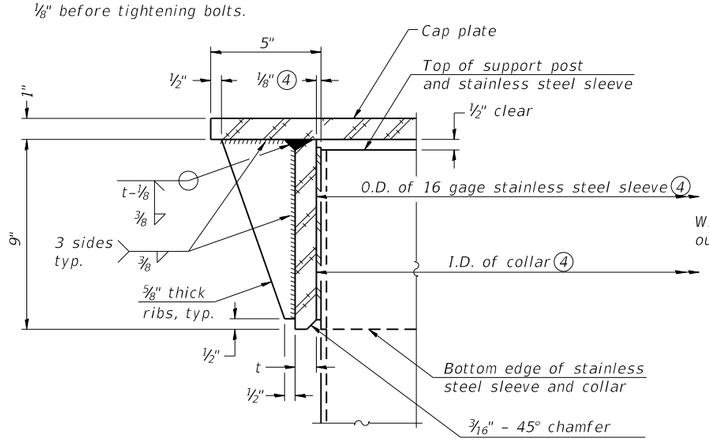


SECTION B-B

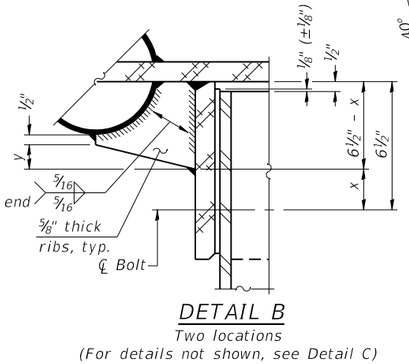
Bolts, washers (including contoured washers), and locknuts shall be stainless steel.

④ Collar I.D. shall be manufactured to correspond to O.D. of actual galvanized post and stainless steel sleeve plus ⅛" (±1/16"). Maximum gap between post and collar at any location equals ⅛" before tightening bolts.



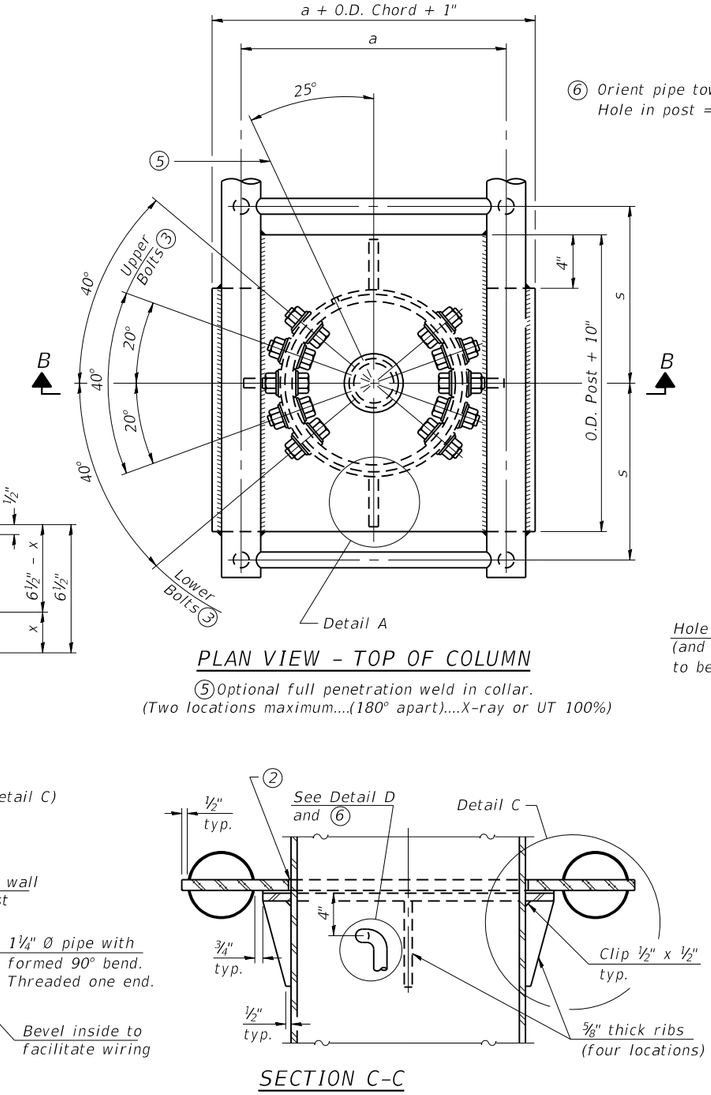
DETAIL A

(Two locations)



DETAIL B

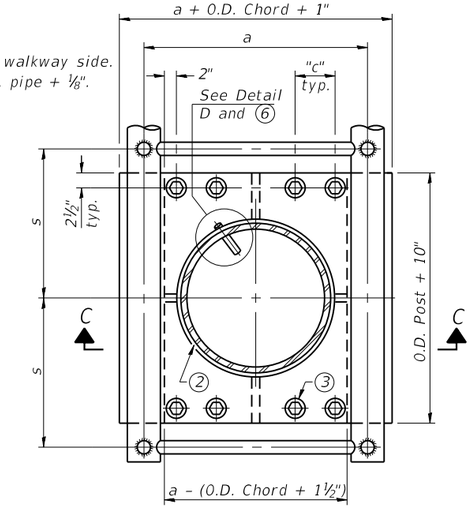
Two locations
(For details not shown, see Detail C)



PLAN VIEW - TOP OF COLUMN

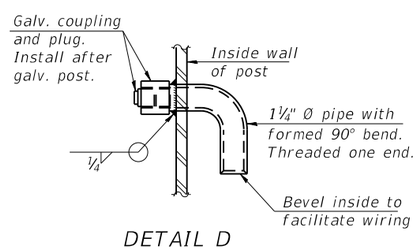
⑤ Optional full penetration weld in collar.
(Two locations maximum....(180° apart)....X-ray or UT 100%)

⑥ Orient pipe toward walkway side. Hole in post = O.D. pipe + ⅛".

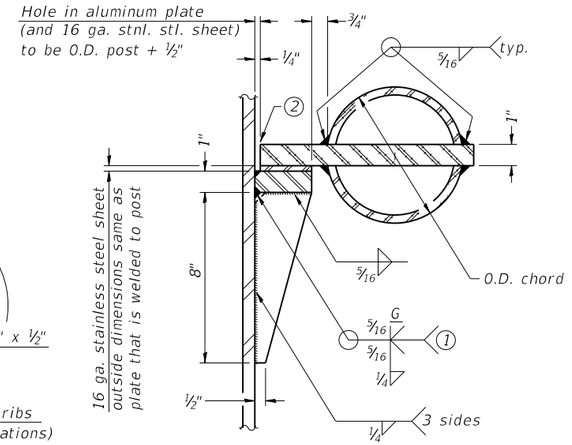


SECTION THRU POST ABOVE LOWER CHORDS

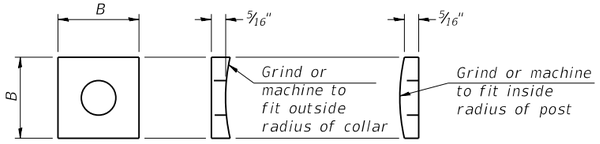
SECTION C-C



DETAIL D

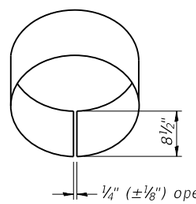


DETAIL C



CONTOURED WASHERS

Bolt Size	Contoured Washers	
	Hole Dia.	B
⅞"	1"	2½"
1"	1⅛"	3"
1¼"	1⅜"	3¼"



DETAIL OF STAINLESS STEEL SLEEVE

Weld to post after galvanizing.
(Prepare post surface to insure tight, uniform fit and allow welding.)
Welds to be 1½" long at 6" cts.
along top edge and at ¼" opening.

Truss Type	Post Size	Upper & Lower Connection Bolt Diameter ③	Lower Juncture Bolt Spacing Dimension "c" ③	Opening in Cap Plate "HH"	Collar Thickness (t)	Side Ribs	
						x	y
I-C-A	16" Ø (83#/')	⅞"	3¼"	8"	⅝"	1¾"	2¼"
II-C-A	24" Ø (125#/')	1"	3½"	12"	⅞"	2"	1¼"
III-C-A (35' max.)	24" Ø (125#/')	1¼"	3½"	12"	⅞"	2"	1"
III-C-A (>35' to 40')	24" Ø (171#/')	1¼"	3½"	12"	⅞"	2"	1"

① Grind top if required to fully seat aluminum plate and stainless steel sheet.

② After tightening lower connection bolts, fill gap with non-hardening, silicone caulk suitable for exterior exposure and acceptable to the Engineer. Cost is included in Overhead Sign Structure Cantilever.

③ Upper and lower connection bolts in collar and bolts at lower chord connection shall be high strength with matching locknuts. Connection bolts shall have 2 stainless steel flat washers each.

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STATE OF ILLINOIS
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CANTILEVER SIGN STRUCTURES - JUNCTURE DETAILS
ALUMINUM TRUSS & STEEL POST

SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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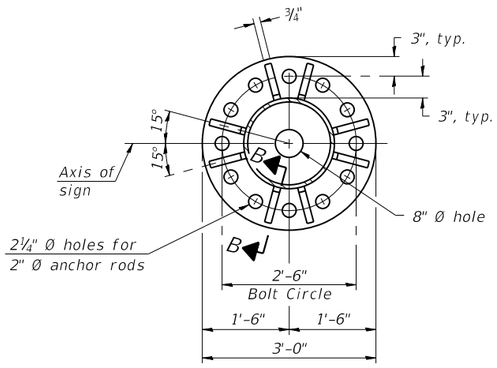
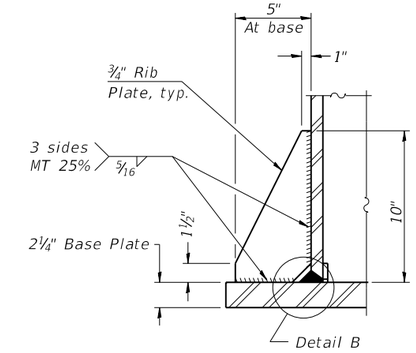
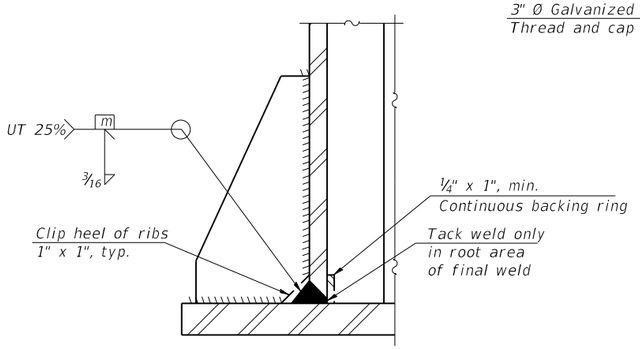
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			



SECTION A-A

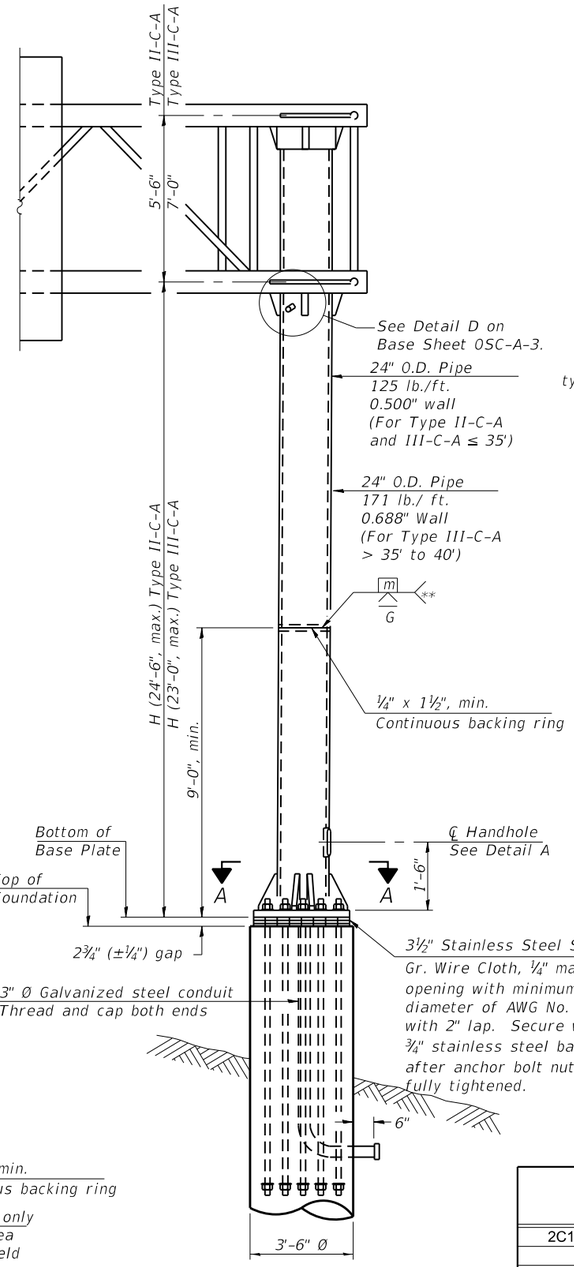


SECTION B-B



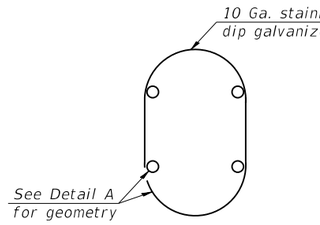
DETAIL B

(Typical rib)

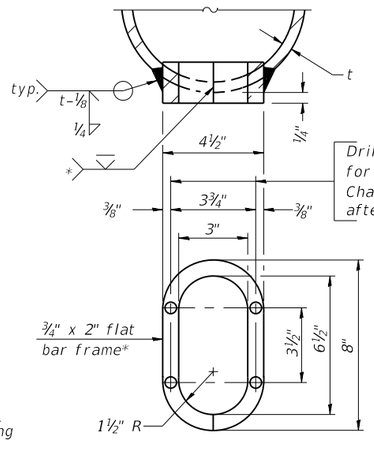


FRONT ELEVATION

For Foundation Details see Base Sheet 0SC-A-9.



HANDHOLE COVER

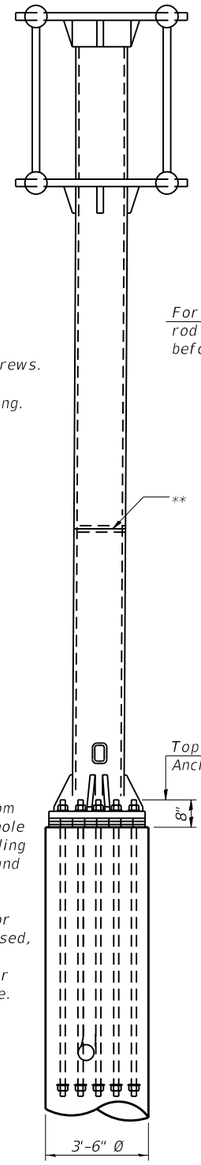


Provide 8" x 4½" cover. Outside corners = 2¼" radius. Provide 4-5/16" Ø holes in cover for ¼" - 20 round head hot dip galvanized or stainless steel machine screws. (See cover details.)

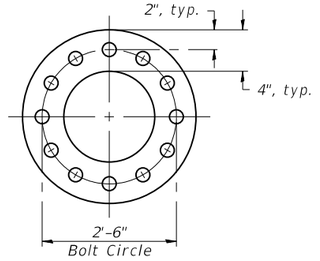
DETAIL A

* Bent bars may be butt welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500μ in or less.

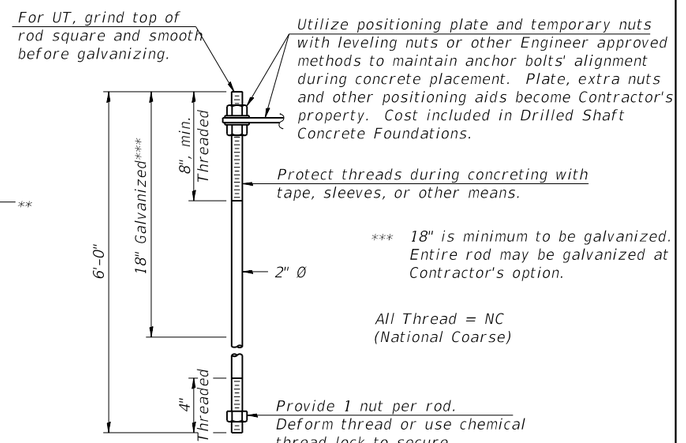
** Butt welded joint in post is only allowed for post heights (H) over 20 ft. in length. If used, weld procedure must be preapproved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.



SIDE ELEVATION



SUGGESTED POSITIONING PLATE



ANCHOR ROD DETAIL

Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize the upper 18" (minimum***) and associated AASHTO M291, Grade A, C or DH heavy hex nuts and hardened washers per AASHTO M232. No welding shall be permitted on rods. Provide a nut at bottom, a hexagon locknut and washer above base plate and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor rod shall be ultrasonically tested (UT) by a Level II or III inspector, qualified in accord with ANSI guidelines, to insure no rejectable flaws exist in the upper 18" (tension criteria). Cost of testing included in Drilled Shaft Concrete Foundations.

Structure Number	Station	H
2C101S251R010.6	156+50	22.02'

Note: "H" based on 15'-0" or actual sign height, whichever is greater.

0SC-A-5 2-17-2017

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		DATE -	REVISED -

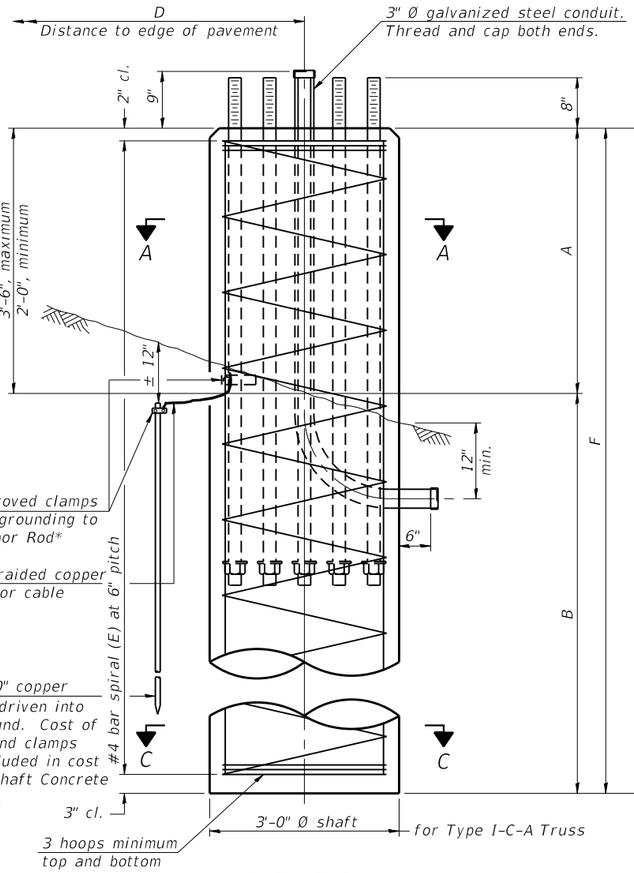
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES - TYPE II-C-A & III-C-A
TRUSS SUPPORT POST - ALUMINUM TRUSS & STEEL POST

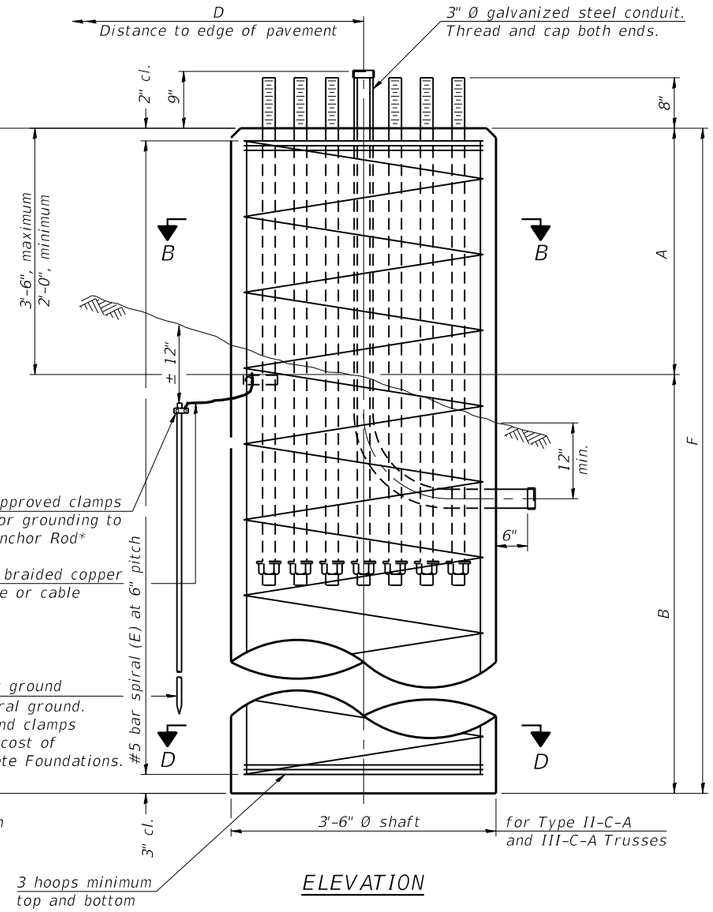
SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
____	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	15
		CONTRACT NO. 46470		
		ILLINOIS FED. AID PROJECT		

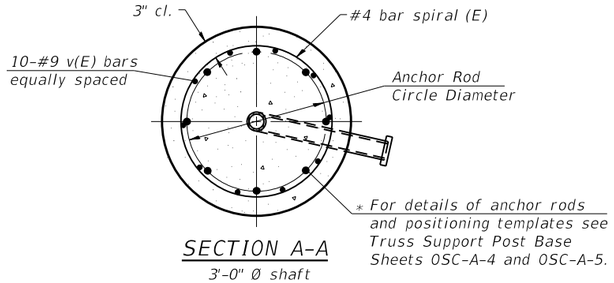
* Grind anchor rod to bright finish at ground clamp location before installing clamp.



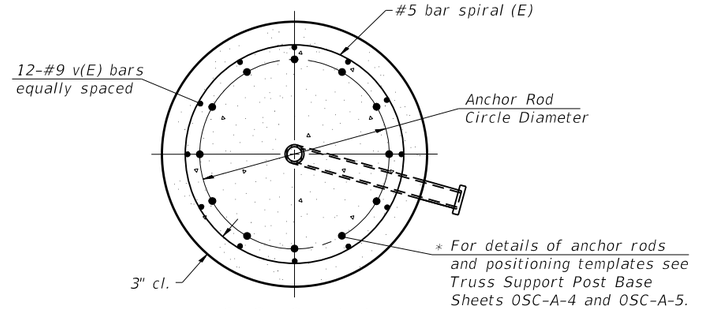
ELEVATION



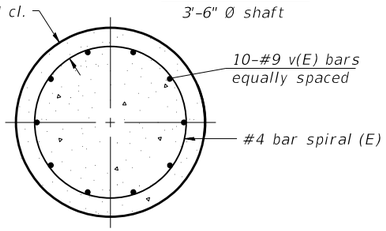
ELEVATION



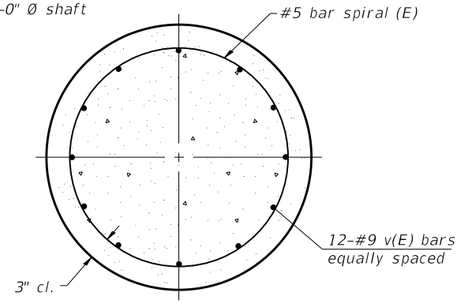
SECTION A-A
3'-0" Ø shaft



SECTION B-B
3'-6" Ø shaft



SECTION C-C
3'-0" Ø shaft



SECTION D-D
3'-6" Ø shaft

NOTES:

The foundation dimensions shown in the Foundation Design Table are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown in the Foundation Data Table will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

FOUNDATION DESIGN TABLE

Truss Type	Post Base Sheet	Maximum Cantilever Length (ft)	Maximum Total Sign Area (sq ft)	Shaft Diameter (in)	"B" Depth (ft)	Anchor Rods No.	Anchor Rods Diameter (in)	Anchor Rod Circle Diameter (in)
I-C-A	0SC-A-4	25	170	3.0	16.0	8	2	22
II-C-A	0SC-A-5	30	170	3.5	17.0	12	2	30
II-C-A	0SC-A-5	30	340	3.5	21.5	12	2	30
III-C-A	0SC-A-5	35	170	3.5	19.0	12	2	30
III-C-A	0SC-A-5	35	250	3.5	22.5	12	2	30
III-C-A	0SC-A-5	35	400	3.5	26.5	12	2	30
III-C-A	0SC-A-5	40	400	3.5	32.0	12	2	30

FOUNDATION DATA TABLE

Structure Number	Station	Truss Type	Shaft Diameter	Elevation Top	Elevation Bottom	Qu	A	B	F	Class DS Concrete Cubic Yards
2C101S251R010.6	156+50	II-C-A	3.5	733.75'	708.75		3.5'	21.5'	25'	9.0

0SC-A-9 2-17-2017

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		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = Nov-27-2018 01:14:36 PM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES - DRILLED SHAFT
ALUMINUM TRUSS & STEEL POST

SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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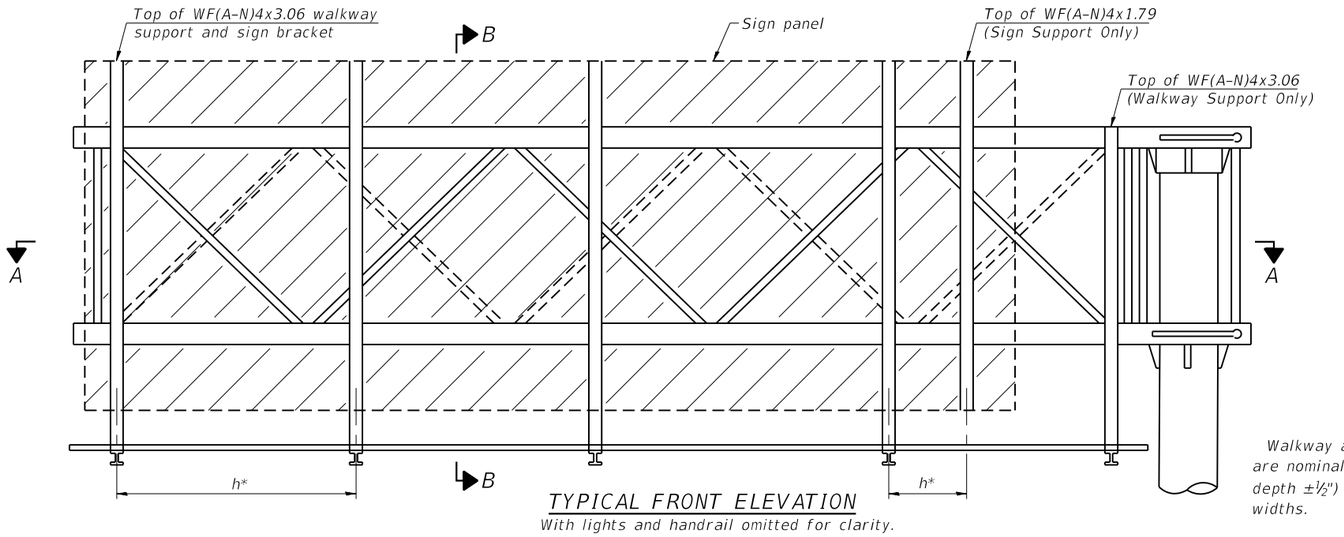
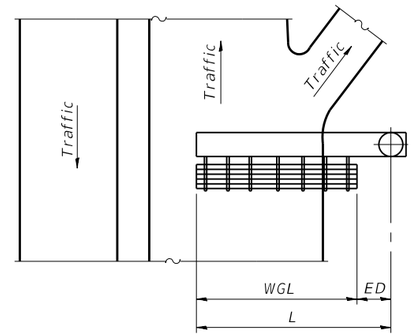
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			



TYPICAL FRONT ELEVATION

With lights and handrail omitted for clarity.

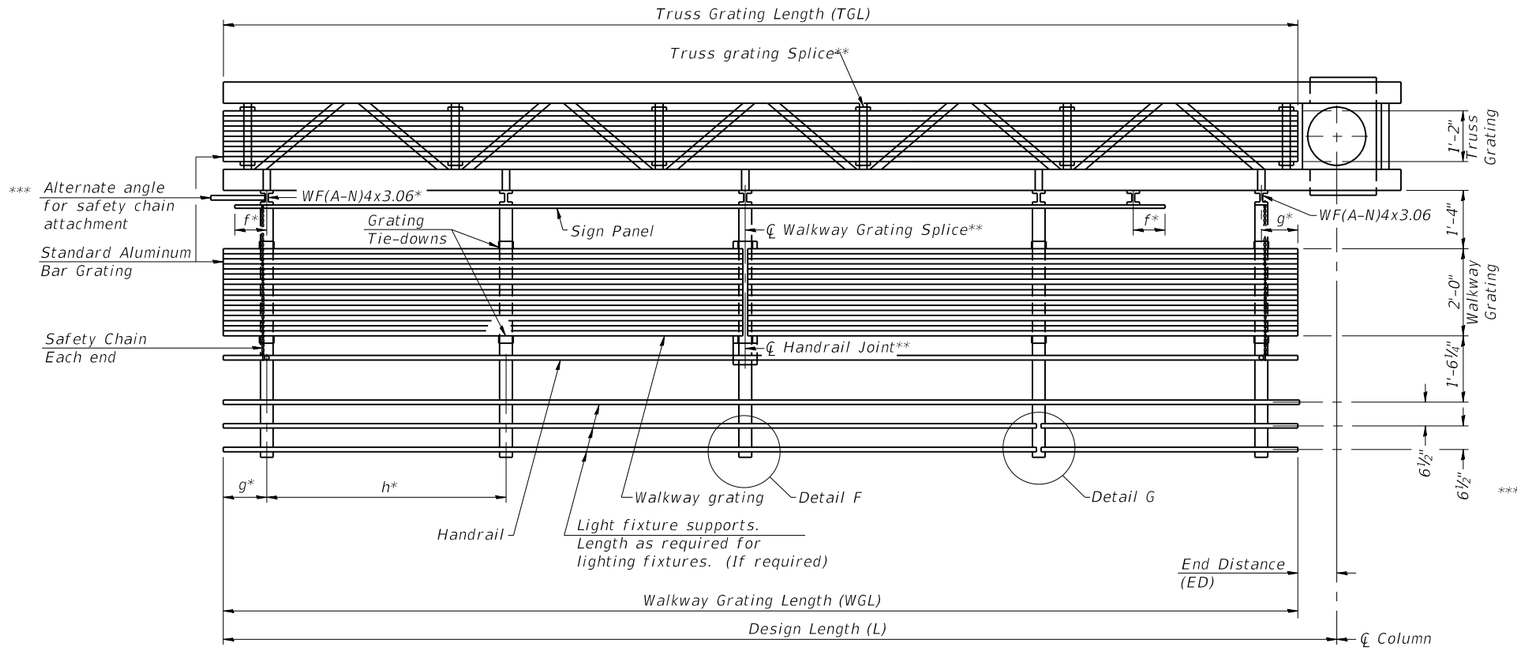
Walkway and truss grating dimensions are nominal and may vary (width ±½", depth ±½") based on available standard widths.



PLAN

WALKWAY AND HANDRAIL SKETCH

(Road plan beneath truss varies)



SECTION A-A

Truss grating to facilitate inspection shall run full length of cantilevers. Cost of truss grating is included in Overhead Sign Structure Cantilever.

** Handrail and walkway grating shall span a minimum of three brackets between splices.
Use and location of handrail joints or grating splices are optional, based on lengths needed and material availability.

$$TGL = L - \left(\frac{\text{Post O.D.}}{2} + 6" \right)$$

Structure Number	Station	WGL	ED	TGL

Notes:

* Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:

f = 12" maximum, 4" minimum (End of sign to ℄ of nearest bracket)
g = 12" maximum, 4" minimum (End of walkway to ℄ of nearest bracket)
h = 6'-0" maximum (℄ to ℄ sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)

*** If walkway bracket at safety chain location is behind sign, add angle to bracket. See alternate safety chain attachment on base sheet 0SC-A-8

For details of sign placement, sign/walkway brackets, truss and walkway gratings, grating splices and Section B-B, see Base Sheet 0SC-A-7.
For details of handrail, handrail joint, safety chain and Details F and G, see Base Sheet 0SC-A-8.

BRACKET TABLE

WF(A-N)4x1.79 or WF(A-N)4x3.06 ASTM B308, Alloy 6061-T6		
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5
26'-0"	32'-0"	6

FOR ALL STRUCTURES, THE INSIDE WALKWAY SHALL BE INSTALLED, COST IS INCIDENTAL TO OVERHEAD SIGN STRUCTURE - SPAN, TYPE II-A 4'-6" X 5'-3" AND OVERHEAD SIGN STRUCTURE - CANTILEVER, TYPE II-C-A 36"X5'6"

0SC-A-6 2-17-2017

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		DRAWN -	REVISED -
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Default	PLOT DATE = Nov-27-2018 01:14:46 PM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

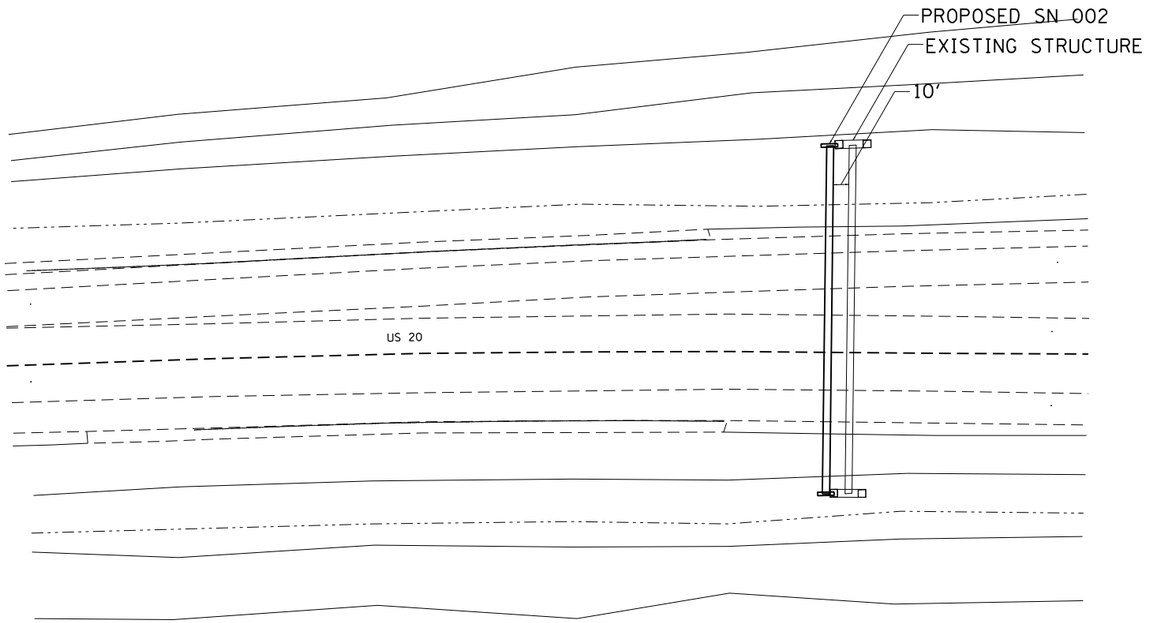
CANTILEVER SIGN STRUCTURES – ALUMINUM WALKWAY
DETAILS – ALUMINUM TRUSS & STEEL POST

SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
____	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	17
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			

PLAN VIEW
SN 002

N



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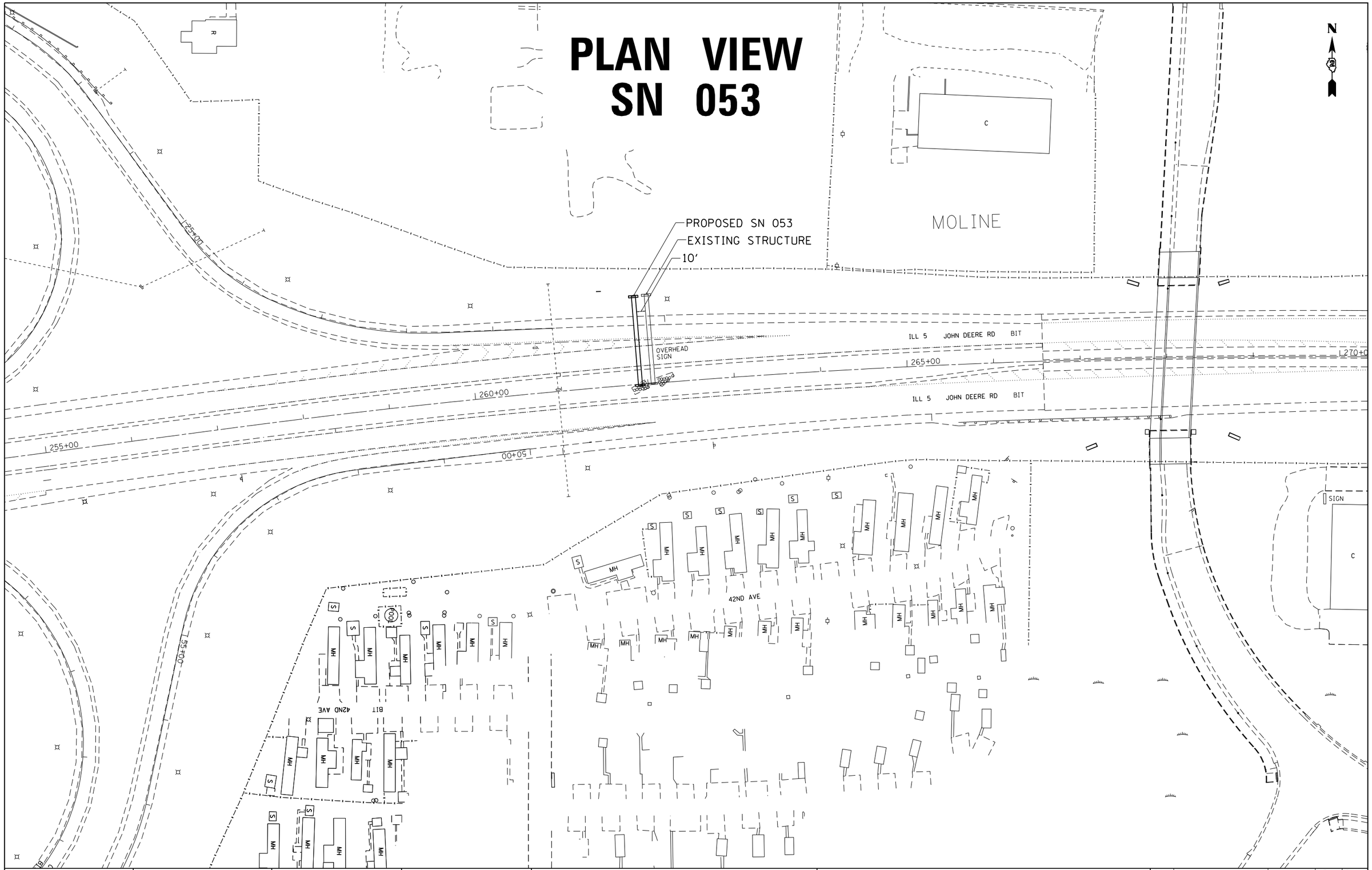
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN VIEW
SN 002

SCALE: ____ | SHEET _ OF _ SHEETS | STA. ____ | TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	18
	CONTRACT NO. 46470			
	ILLINOIS	FED. AID PROJECT		

PLAN VIEW
SN 053



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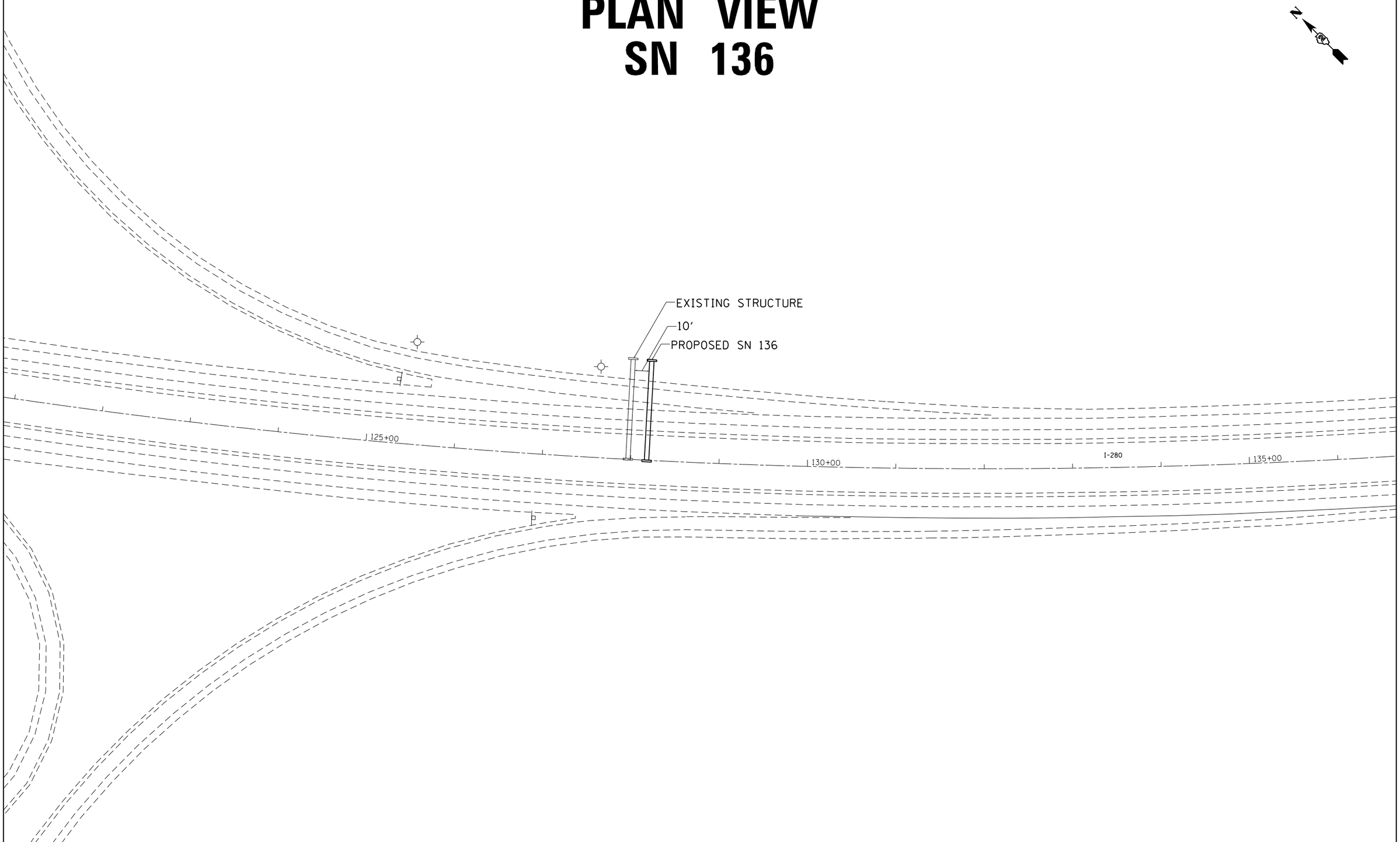
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN VIEW
SN 053

SCALE: ____ | SHEET __ OF __ SHEETS | STA. ____ | TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	19
	CONTRACT NO. 46470			
	ILLINOIS	FED. AID PROJECT		

PLAN VIEW
SN 136



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN VIEW
SN 136

SCALE: ____ | SHEET _ OF _ SHEETS | STA. ____ | TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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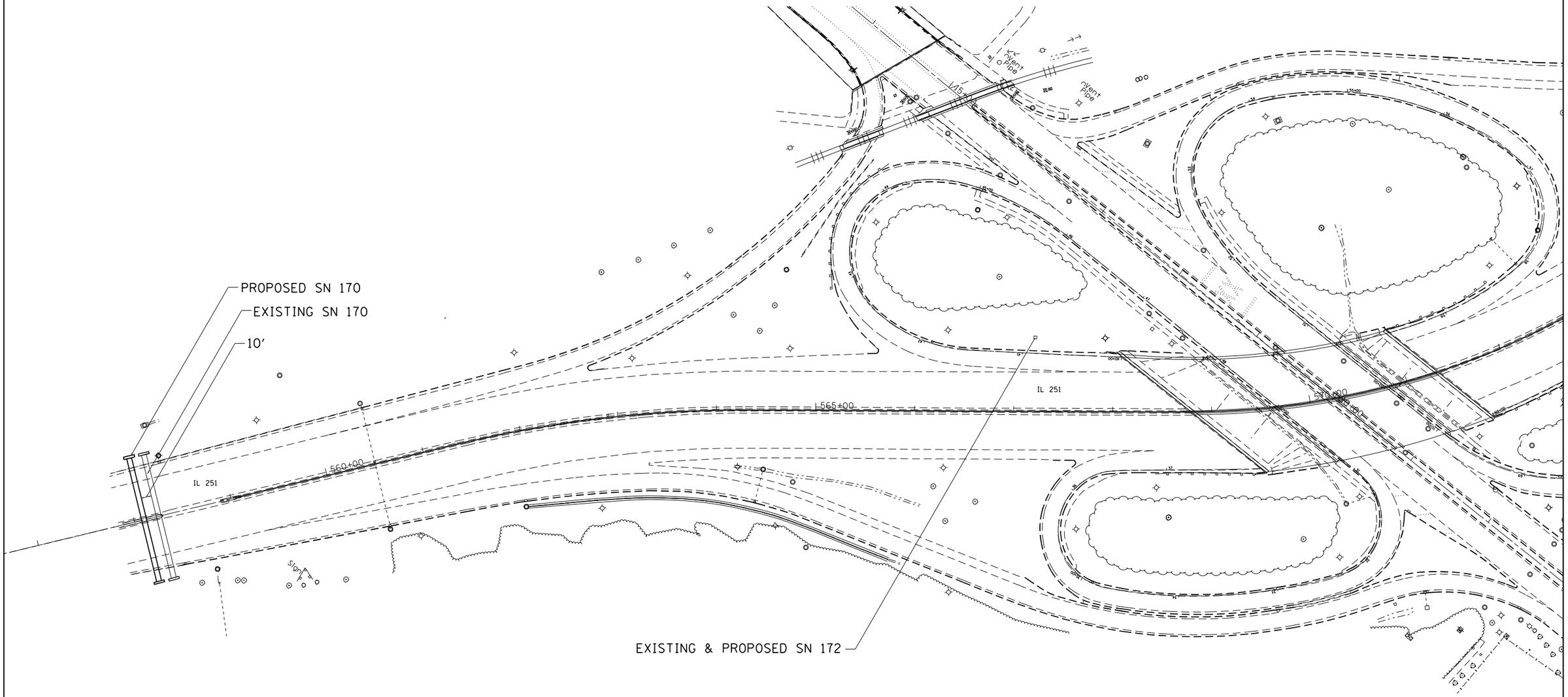
	CONTRACT NO. 46470			
	ILLINOIS	FED. AID PROJECT		

PLAN VIEW
SN 170 & SN 172



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		DRAWN -	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN VIEW
SN 170 & SN 172

SCALE: ____ | SHEET __ OF __ SHEETS | STA. ____ | TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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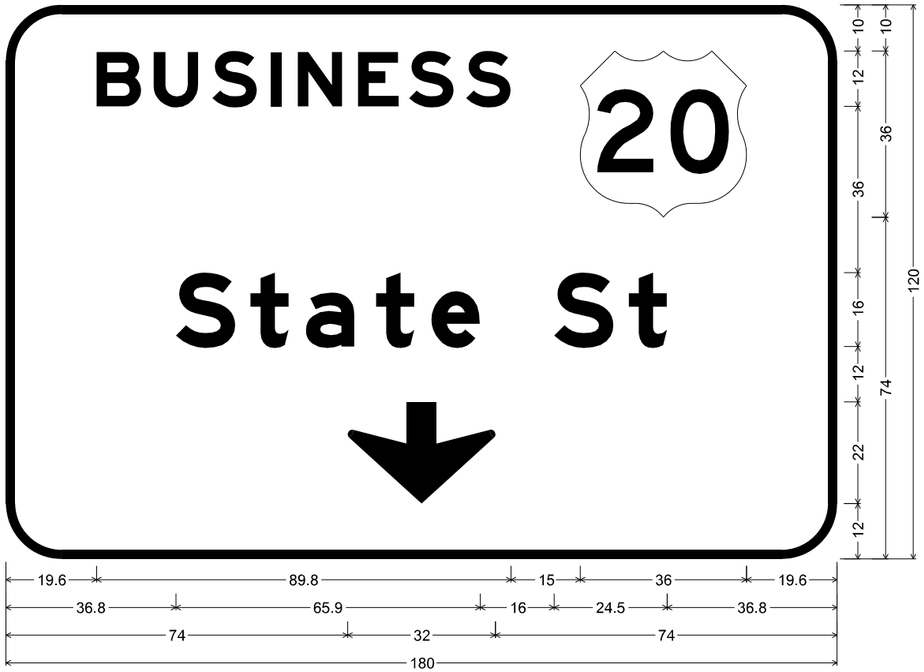
	CONTRACT NO. 46470			
	ILLINOIS	FED. AID PROJECT		

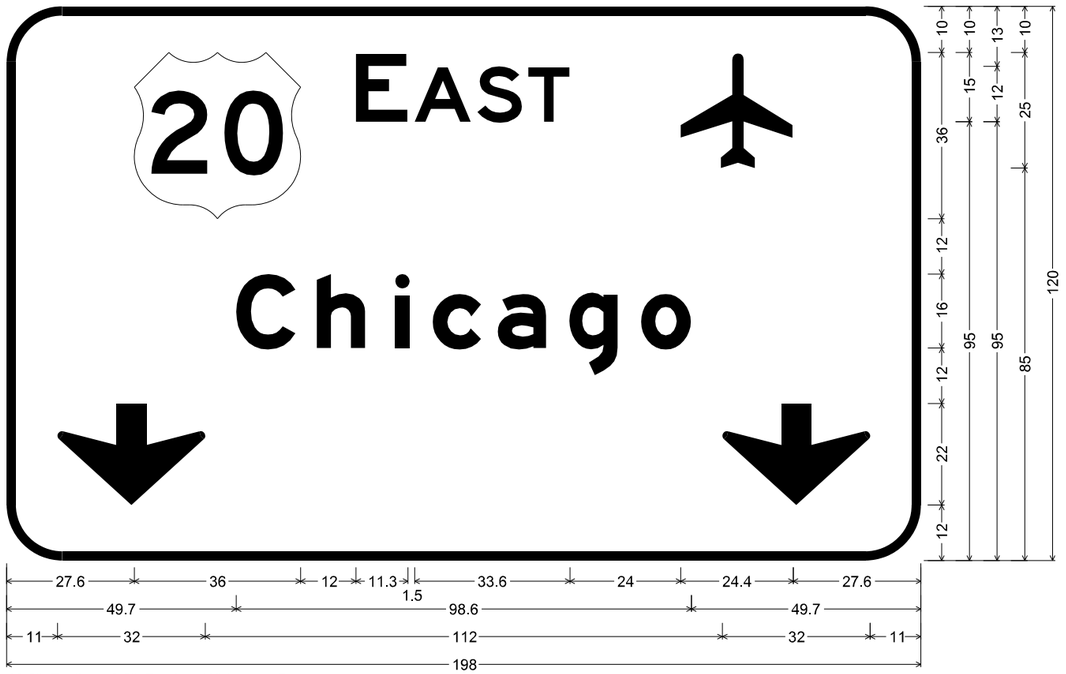


12.0" Radius, 2.0" Border, White on Green;
[BUSINESS] E Mod 2K; [State St] E Mod 2K; Down Arrow 22.0" 270°;
Table of letter and object lefts.

B	**U**	**S**	**I**	**N**	**E**	**S**	**S**	●
19.6	32.0	44.7	57.4	63.2	76.3	87.3	99.7	124.4

S	**t**	**a**	**t**	**e**	**S**	**t**
36.8	53.0	65.0	80.2	92.2	118.7	134.9

↓
74.0



12.0" Radius, 2.0" Border, White on Green;
[EAST] E 2K; Symbol RA010; [Chicago] E Mod 2K; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;
Table of letter and object lefts.

●	**E**	**A**	**S**	**T**	✈	
27.6	75.6	88.4	101.9	113.0	146.0	

C	**h**	**i**	**c**	**a**	**g**	**o**
49.7	67.2	84.1	92.3	106.4	121.9	137.4

↓	↓
11.0	155.0

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		DRAWN -	REVISED -
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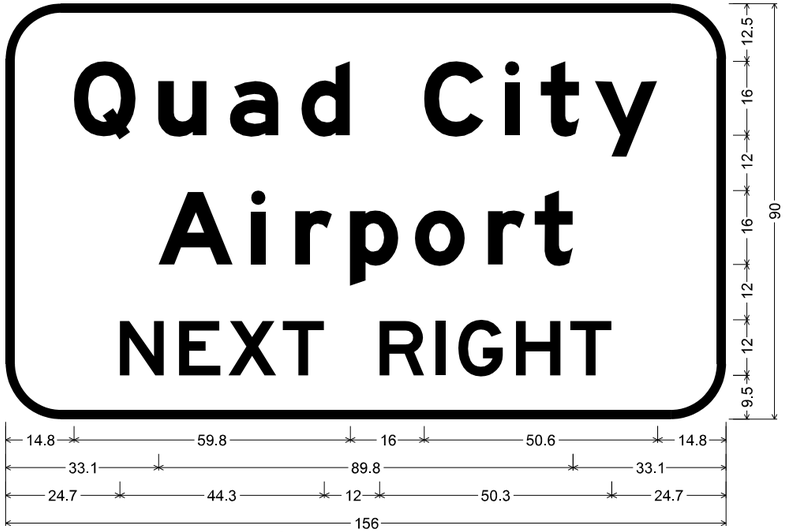
Default	PLOT DATE = Sep-25-2018 08:35:32 AM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGN STRUCTURE REPLACEMENT
SIGN PANEL REPORT – SN 002

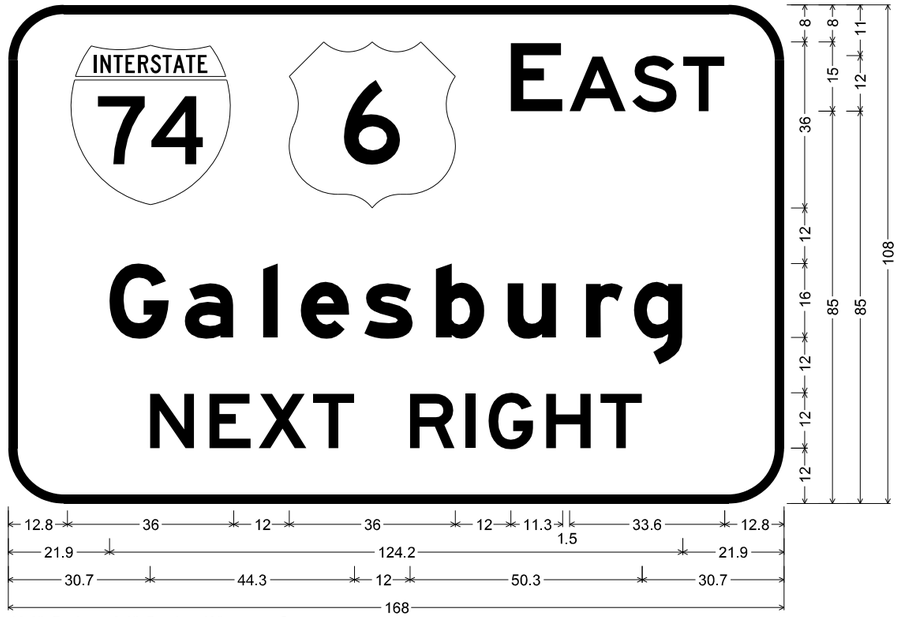
SCALE: _____ | SHEET ___ OF ___ SHEETS | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
___	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	22
			CONTRACT NO. 46470	
		ILLINOIS	FED. AID PROJECT	



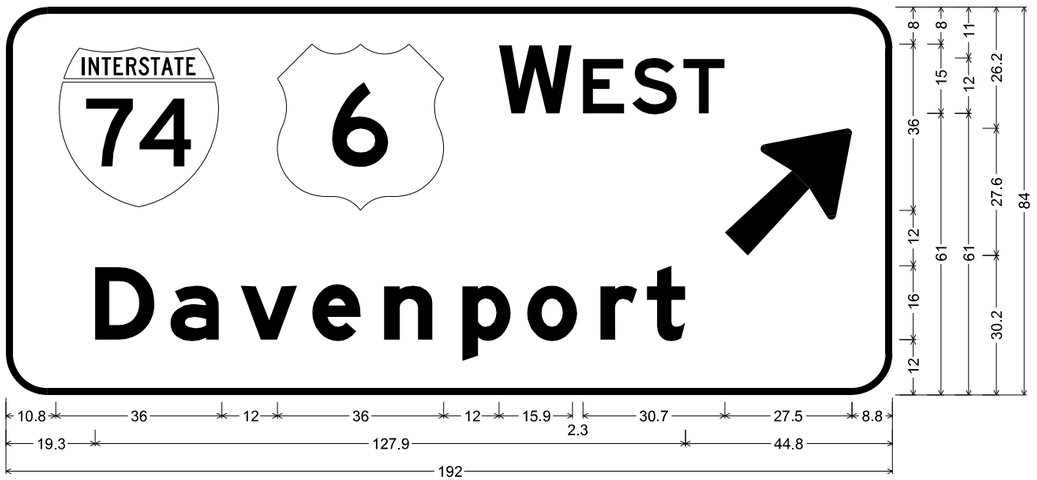
12.0" Radius, 2.0" Border, White on Green;
[Quad City] E Mod 2K; [Airport] E Mod 2K; [NEXT RIGHT] E 2K;
Table of letter and object lefts.

Q 14.8	**u** 33.0	**a** 48.6	**d** 64.1	**C** 90.6	**i** 108.1	**t** 115.9	**y** 127.6
A 33.1	**i** 53.1	**r** 62.7	**p** 74.6	**o** 88.6	**r** 104.5	**t** 114.6	
N 24.7	**E** 37.6	**X** 48.2	**T** 60.0	**R** 81.0	**I** 93.1	**G** 98.0	**H** 110.5	**T** 122.3



12.0" Radius, 2.0" Border, White on Green;
[EAST] E 2K; [Galesburg] E Mod 2K; [NEXT RIGHT] E 2K;
Table of letter and object lefts.

● 12.8	● 60.8	**E** 108.8	**A** 121.6	**S** 135.1	**T** 146.2
G 21.9	**a** 38.2	**l** 55.2	**e** 63.4	**s** 77.1	**b** 92.6	**u** 108.2	**r** 125.1	**g** 135.5
N 30.7	**E** 43.6	**X** 54.2	**T** 66.0	**R** 87.0	**I** 99.1	**G** 104.0	**H** 116.5	**T** 128.3

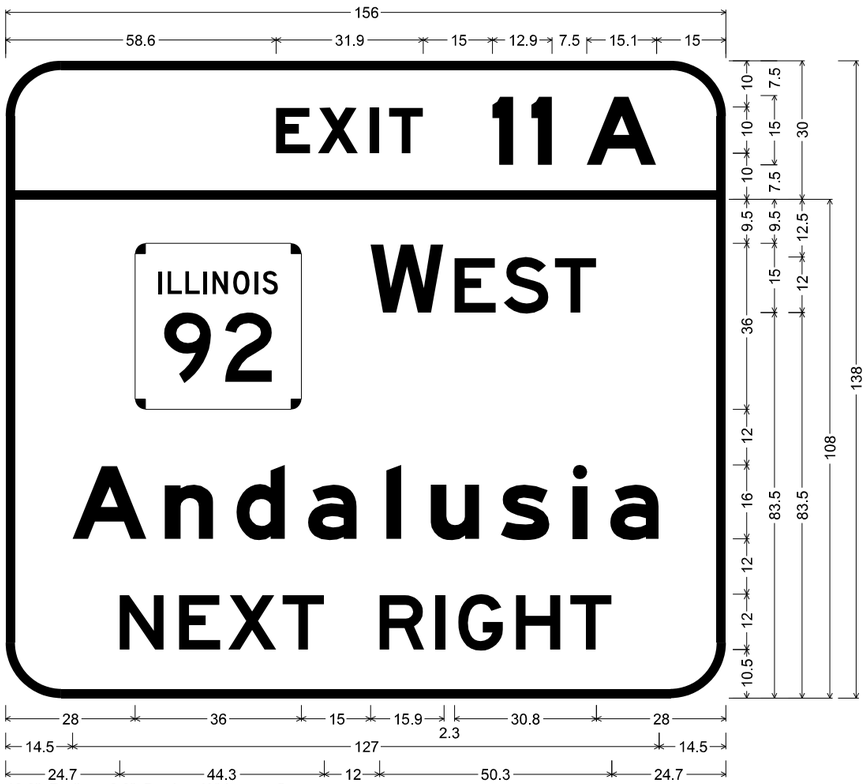


9.0" Radius, 1.5" Border, White on Green;
[WEST] E 2K; [Davenport] E Mod 2K; Arrow 160 - 35.0" 45°;
Table of letter and object lefts.

● 10.8	● 58.8	**W** 106.8	**E** 125.0	**S** 135.7	**T** 146.7	↗ 155.7	
D 19.3	**a** 35.6	**v** 50.8	**e** 66.4	**n** 81.9	**p** 98.8	**o** 112.9	**r** 128.8	**t** 138.8

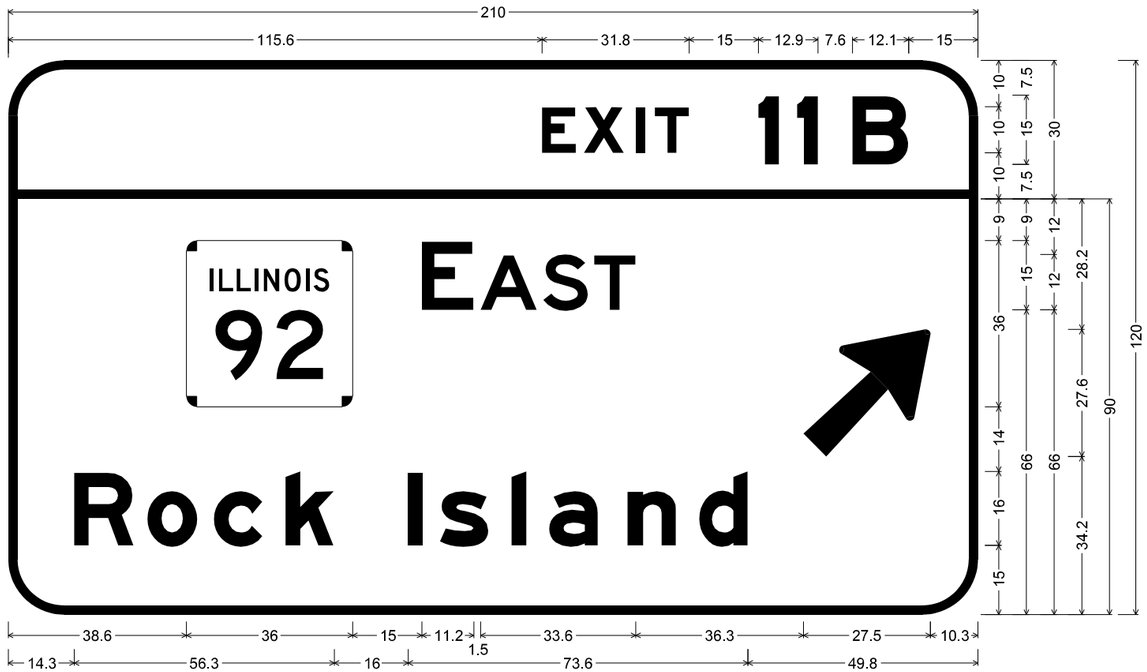
FILE NAME = pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 2\Projects\Operations\Bridge Section\Winnebago\Contract 46470 2018 17-2\Design Files\46470-sht-cover.dgn	USER NAME = dossdd	DESIGNED -	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**SIGN STRUCTURE REPLACEMENT SIGN PANEL REPORT – SN 053**
	PLOT SCALE = 100.0000 ' / in.	DRAWN -	REVISED -		SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____
Default	PLOT DATE = Sep-25-2018 08:35:39 AM	CHECKED -	REVISED -		
		DATE -	REVISED -		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
____	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	23
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			



12.0" Radius, 2.0" Border, White on Green;
[EXIT] E Mod 2K 120% spacing; [11 A] E Mod 2K;
12.0" Radius, 2.0" Border, White on Green;
[WEST] E 2K; [Andalusia] E Mod 2K; [NEXT RIGHT] E 2K;
Table of letter and object lefts.

E 58.6	**X** 67.7	**I** 78.9	**T** 83.1	**1** 105.5	**1** 113.9	**A** 125.8	
■ 28.0	**W** 79.0	**E** 97.2	**S** 107.9	**T** 119.0			
A 14.5	**n** 34.5	**d** 50.0	**a** 65.5	**l** 82.5	**u** 92.1	**s** 107.3	**i** 122.8	**a** 131.0
N 24.7	**E** 37.6	**X** 48.2	**T** 60.0	**R** 81.0	**I** 93.1	**G** 98.0	**H** 110.5	**T** 122.3

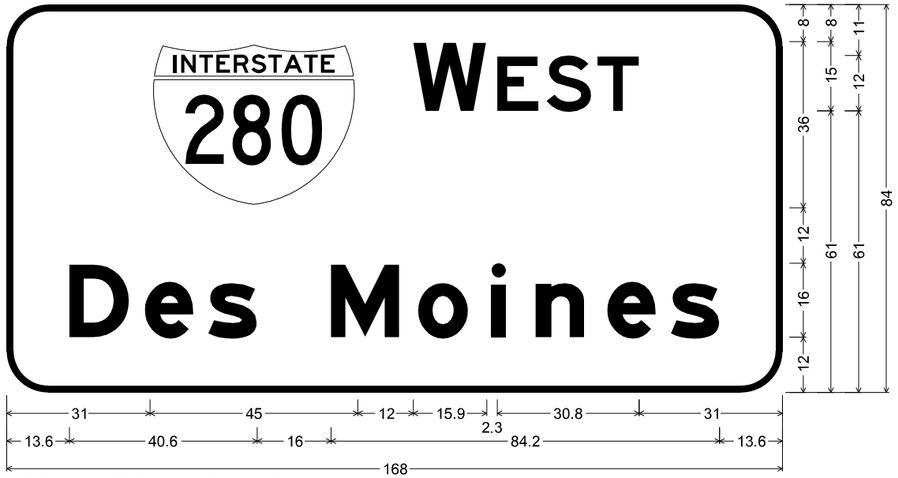


12.0" Radius, 2.0" Border, White on Green;
[EXIT] E Mod 2K 120% spacing; [11 B] E Mod 2K;
12.0" Radius, 2.0" Border, White on Green;
[EAST] E 2K; [Rock Island] E Mod 2K; Arrow 160 - 35.0" 45°;
Table of letter and object lefts.

E 115.6	**X** 124.7	**I** 135.9	**T** 140.0	**1** 162.4	**1** 170.8	**B** 182.9	
■ 38.6	**E** 89.6	**A** 102.3	**S** 115.9	**T** 126.9	↗ 172.2		
R 14.3	**o** 30.1	**c** 44.5	**k** 60.0	**l** 86.6	**s** 93.5	**l** 109.0	**a** 117.2	**n** 134.1	**d** 149.6

FILE NAME = pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 2\Projects\Operations\Bridge Section\Winnebago\Contract 72H17-2\Design Files\46470-sht-cover.dgn	USER NAME = dossdd	DESIGNED -	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**SIGN STRUCTURE REPLACEMENT**
		DRAWN -	REVISED -		**SIGN PANEL REPORT – SN 136**
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -		SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____
Default	PLOT DATE = Sep-25-2018 08:35:48 AM	DATE -	REVISED -		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
____	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	24
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			



9.0" Radius, 1.5" Border, White on Green;
[WEST] E 2K; [Des Moines] E Mod 2K;
Table of letter and object lefts.

● 31.0	**W** 88.0	**E** 106.2	**S** 116.9	**T** 128.0

D 13.6	**e** 29.9	**s** 43.7	**M** 70.2	**o** 89.1	**i** 105.0	**n** 114.6	**e** 130.1	**s** 143.8

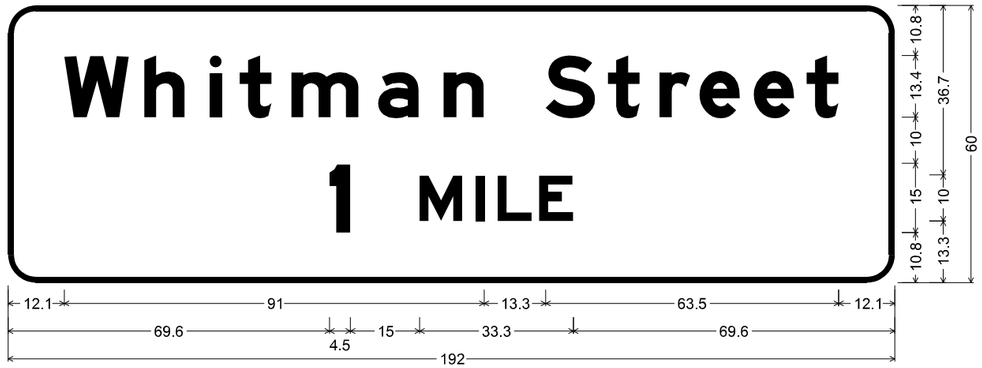
FILE NAME = pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 2\Projects\Operations\Bridge-Section\Winnebago\Contract No. D2OVD20417-2\Design Files\46470-sht-cover.dgn	USER NAME = dossdd	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = Sep-25-2018 08:35:55 AM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGN STRUCTURE REPLACEMENT
SIGN PANEL REPORT – SN 136

SCALE: _____ | SHEET ___ OF ___ SHEETS | STA. _____ | TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
____	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	25
			CONTRACT NO. 46470	
		ILLINOIS	FED. AID PROJECT	



6.0" Radius, 1.3" Border, White on Green;
[Whitman Street] E Mod 2K; [1 MILE] E Mod 2K;
Table of letter and object lefts.

W 12.1	**h** 29.5	**i** 43.6	**t** 50.1	**m** 61.3	**a** 80.1	**n** 94.3	**S** 116.4	**t** 129.9	**r** 141.1	**e** 149.7	**e** 161.5	**t** 172.9

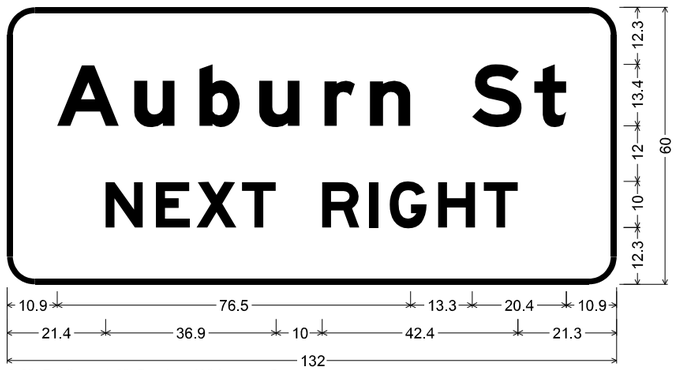
1 69.6	**M** 89.1	**I** 101.2	**L** 106.0	**E** 115.0

9.0" Radius, 1.5" Border, White on Green;
[Forest Hills] E Mod 2K; [Road] E Mod 2K; [½ MILE] E Mod 2K;
Table of letter and object lefts.

F 16.0	**o** 28.3	**r** 41.5	**e** 50.1	**s** 61.6	**t** 73.1	**H** 93.3	**i** 108.7	**l** 116.7	**l** 124.7	**s** 131.2

R 54.5	**o** 67.7	**a** 79.7	**d** 92.7

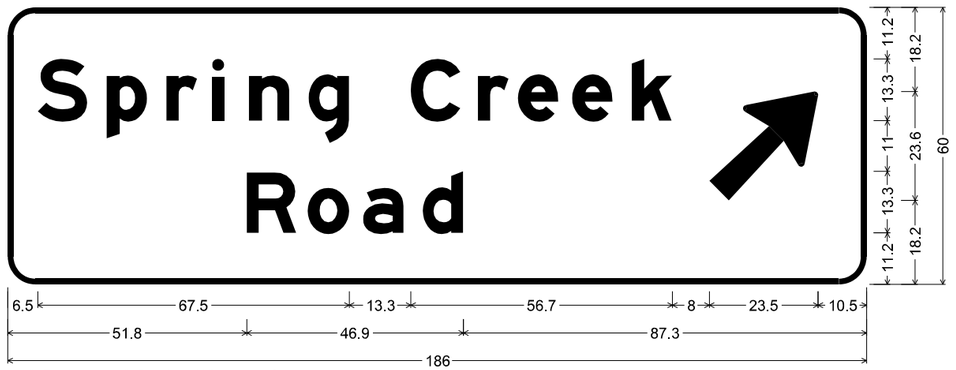
½ 43.4	**M** 79.3	**I** 91.4	**L** 96.2	**E** 105.2



6.0" Radius, 1.3" Border, White on Green;
[Auburn St] E Mod 2K; [NEXT RIGHT] E Mod 2K;
Table of letter and object lefts.

A 10.9	**u** 27.5	**b** 41.7	**u** 54.6	**r** 68.7	**n** 78.6	**S** 100.7	**t** 114.2	

N 21.4	**E** 32.3	**X** 41.1	**T** 50.9	**R** 68.3	**I** 78.4	**G** 82.9	**H** 93.4	**T** 103.3



6.0" Radius, 1.3" Border, White on Green;
[Spring Creek] E Mod 2K; [Road] E Mod 2K; Arrow 133 - 30.0" 45°;
Table of letter and object lefts.

S 6.5	**p** 21.4	**r** 34.4	**i** 44.2	**n** 52.2	**g** 65.2	**C** 87.3	**r** 101.8	**e** 110.5	**e** 122.2	**k** 135.2	↗ 152.0

R 51.8	**o** 65.0	**a** 77.0	**d** 89.9

FILE NAME = pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 2\Projects\Operations\Bridge Section\Winnebago\Contract 46470-2017-2\Design Files\46470-sht-cover.dgn	USER NAME = dossdd	DESIGNED -	REVISED -	
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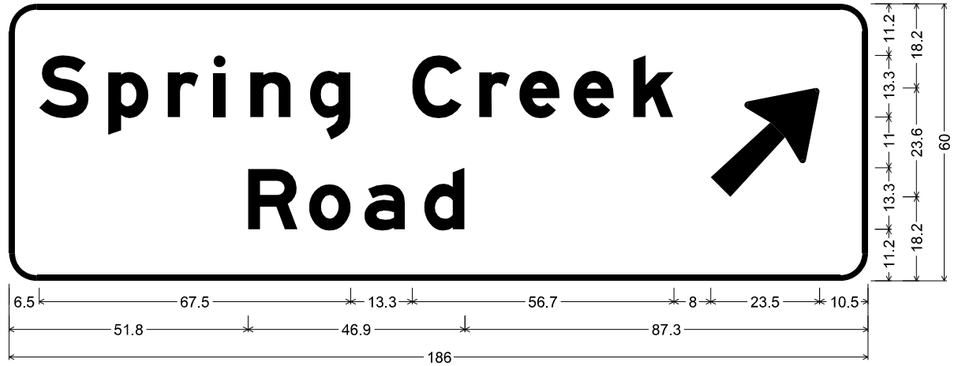
Default	PLOT DATE = Sep-25-2018 08:36:05 AM	DRAWN - DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGN STRUCTURE REPLACEMENT
SIGN PANEL REPORT – SN 170

SCALE: _____ SHEET ___ OF ___ SHEETS STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
____	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	26
			CONTRACT NO. 46470	
	ILLINOIS	FED. AID PROJECT		



6.0" Radius, 1.3" Border, White on Green;
[Spring Creek] E Mod 2K; [Road] E Mod 2K; Arrow 133 - 30.0" 45°;
Table of letter and object lefts.

S	**p**	**r**	**i**	**n**	**g**	**C**	**r**	**e**	**e**	**k**	↗
6.5	21.4	34.4	44.2	52.2	65.2	87.3	101.8	110.5	122.2	135.2	152.0

R	**o**	**a**	**d**
51.8	65.0	77.0	89.9

FILE NAME = pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 2\Projects\Operations\Bridge Section\Winnebago\Contract 46470 FY 2018 17-2\Design Files\46470-sht-cover.dgn	USER NAME = dossdd	DESIGNED -	REVISED -
		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = Sep-25-2018 08:36:13 AM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGN STRUCTURE REPLACEMENT
SIGN PANEL REPORT – SN 172

SCALE: _____ | SHEET ___ OF ___ SHEETS | STA. _____ | TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
___	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	27
		CONTRACT NO. 46470		
	ILLINOIS	FED. AID PROJECT		

BORING LOGS

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Page 1 of 1

Date 3/16/15

ROUTE US 20 Bypass DESCRIPTION P92-US20BYP-15 Sign Truss, US 20 EB @ Ramp to US Business 20 EB LOGGED BY W. Garza

SECTION LOCATION Winnebago Twp. - 3SE, SEC. , TWP. 26N, RNG. 1E

COUNTY Winnebago DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME-45 Automatic

STRUCT. NO.
Station

Latitude
Longitude

Northing
Easting

BORING NO. B-1b
Station 14' E
Offset 79.00ft N CL EB
Ground Surface Elev. 92.80 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 83.3 ft
Upon Completion 84.8 ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				-89.204888 42.280717
		0.5 P	25.0	MEDIUM brown SILTY CLAY LOAM
90.80				
	1 2 4	1.0 B	30.0	MEDIUM/STIFF tan SILTY CLAY LOAM
89.30				
-5	1 1 3	0.3 B	32.0	SOFT tan SILTY CLAY LOAM
86.30				
	1 2 2			VERY LOOSE tan moist dirty SAND
83.80				
-10	3 2 3	0.5 P	12.0	MEDIUM tan SANDY LOAM
81.80				
	1 3 5	1.1 P	12.0	STIFF tan SANDY LOAM with GRAVEL
79.30				
-15	2 3 9		12.0	MEDIUM tan dirty SAND
76.30				
	40 24 27			VERY DENSE tan SANDY GRAVEL
74.30				
-20	15			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	6 21			MEDIUM tan clean medium coarse SAND Hard wash prohibited sampling. Augered 5' through hard, rock-like resistance to end of boring (continued)
68.30				
-25				End of Boring
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Page 1 of 1

Date 3/17/15

ROUTE US 20 Bypass DESCRIPTION P92-US20BYP-15 Sign Truss, US 20 EB @ Ramp to US Business 20 EB LOGGED BY W. Garza

SECTION LOCATION Winnebago Twp. - 3SE, SEC. , TWP. 26N, RNG. 1E

COUNTY Winnebago DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME-45 Automatic

STRUCT. NO.
Station

Latitude
Longitude

Northing
Easting

BORING NO. B-2b
Station 1' W
Offset 61.00ft S CL
Ground Surface Elev. 91.80 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 77.3 ft
Upon Completion Wash ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				-89.204959 42.280409
		0.5 P	23.0	MEDIUM brown SILTY CLAY LOAM
89.80				
	3 3 4	0.8 B	28.0	MEDIUM brown SILTY CLAY LOAM
88.30				
-5	2 3 5	1.4 B	24.0	STIFF tan SILTY CLAY LOAM
85.80				
	2 3 3	0.8 P	24.0	MEDIUM tan SILTY CLAY LOAM TILL
83.30				
-10	2 3 2	0.1 P	12.0	VERY SOFT tan SANDY LOAM with SAND lens
80.80				
	2 3 5	0.3 P	11.0	SOFT tan SANDY LOAM
77.80				
-15	3 10 17			MEDIUM tan dirty SANDY GRAVEL
75.80				
	13 18 25			DENSE tan wet SANDY GRAVEL
73.30				
-20	18			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	40 31			Wash VERY DENSE tan weathered LIMESTONE with GRAVEL (continued)
70.80				
	29 100/9"			Wash VERY DENSE tan weathered LIMESTONE
68.30				
-25	100/2"			VERY DENSE tan weathered LIMESTONE
65.80				
				End of Boring
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

FILE NAME = pw:\\IL084EBIDINTEGJIllinois.gov:PWIDOT\Documents\IDOT Offices\District 2\Projects\Operations\Bridge Section\Winnebago\DRAWN\46470\SLT200117-2\Design Files\46470-sht-cover.dgn	USER NAME = dossdd	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = Sep-25-2018 08:36:20 AM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
SN 002

SCALE: ____ SHEET __ OF __ SHEETS STA. ____ TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	28
		CONTRACT NO. 46470		
	ILLINOIS	FED. AID PROJECT		

BORING LOGS

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Page 1 of 1

Date 3/18/15

ROUTE John Deere Road DESCRIPTION P92-174Sign Truss-15 Sign Truss, John Deere Road at Ramp to I-74 WB, 1/4 m. E. of I-74 LOGGED BY W. Garza

SECTION _____ LOCATION S. Moline Twp. - 16NE, SEC. , TWP. 17N, RNG. 1W

COUNTY Rock Island DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME-45 Automatic

STRUCT. NO. 053
Station _____

Latitude _____
Longitude _____

Northing _____
Easting _____

BORING NO. B-1
Station 10' W
Offset 50.00ft N CL
Ground Surface Elev. 99.00 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 77.0 ft ▼
Upon Completion 75.5 ft ▽
After _____ Hrs. _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				-90.490364 41.472059 Dirty shoulder rock
97.00				
	5 5 9	3.6 P	16.0	VERY STIFF gray SILTY CLAY LOAM
95.50				
-5	4 6 8	2.8 S	17.0	VERY STIFF gray SILTY CLAY
92.50				
	2 5 8	1.7 B	17.0	STIFF gray SILTY CLAY TILL
90.50				
-10	3 5 6	1.5 B	21.0	STIFF gray SILTY CLAY
88.00				
	2 3 6	0.9 B	19.0	MEDIUM dark gray SILTY CLAY TILL
85.00				
-15	2 2 3	0.4 B	26.0	SOFT dark gray LOAM
83.00				
	0 0 3	0.3 B	53.0	SOFT gray CLAY LOAM with 8% ORGANICS
80.50				
-20	0			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	1 2	1.2 B	102.0	STIFF olive-green SILTY CLAY with 23RGANICS (continued)
77.50 ▼				
	0 28 100/6"			VERY DENSE light gray weathered SHALE
75.50 ▽				
-25	100/2"			VERY DENSE gray SHALE
73.00				
				End of Boring
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Page 1 of 1

Date 3/26/15

ROUTE John Deere Road DESCRIPTION P92-174Sign Truss-15 Sign Truss, John Deere Road at Ramp to I-74 WB, 1/4 m. E. of I-74 LOGGED BY W. Garza

SECTION _____ LOCATION S. Moline Twp. - 16NE, SEC. , TWP. 17N, RNG. 1W

COUNTY Rock Island DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME-45 Automatic

STRUCT. NO. 053
Station _____

Latitude _____
Longitude _____

Northing _____
Easting _____

BORING NO. B-2
Station 12' W
Offset 17.00ft S CL
Ground Surface Elev. 100.10 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 78.1 ft ▼
Upon Completion 80.1 ft ▽
After _____ Hrs. _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
		0.5 P	13.0	-90.490336 41.471869 MEDIUM brown LOAM
98.10				
	5 7 7	1.8 P	21.0	STIFF light gray SILTY LOAM
96.60				
-5	3 3 6	0.9 P	21.0	MEDIUM light gray/tan SILTY CLAY
94.10				
	5 6 8	1.8 B	19.0	STIFF gray SILTY CLAY
91.60				
-10	1 6 8	2.1 B	19.0	VERY STIFF gray SILTY CLAY
89.10				
	3 4 6	1.2 B	40.0	STIFF dark gray SILTY CLAY LOAM with 11RGANICS
86.60				
-15	2 2 4	1.2 B	27.0	STIFF gray SILTY CLAY
84.10				
	0 2 3	0.7 B	34.0	MEDIUM gray SILTY CLAY
81.60				
▽-20	0			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	0 2 3	0.9 B	48.0	MEDIUM gray SILTY CLAY with 12RGANICS (continued)
78.60 ▼				
	0 5 5			LOOSE light gray clean medium coarse SAND
76.10				
-25	10 100/8"			VERY DENSE light gray weathered SHALE
74.10				
				End of Boring
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

FILE NAME = pw:\\IL084EBIDINTEG.Illinois.gov:PWIDOT\Documents\IDOT Offices\District 2\Projects\Operations\Bridge Section\Winnebago\D0046470\SLT200117-2\Design Files\46470-sht-cover.dgn	USER NAME = dossdd	DESIGNED - ____	REVISED - ____
		DRAWN - ____	REVISED - ____
Default	PLOT SCALE = 100.0000 ' / in.	CHECKED - ____	REVISED - ____
	PLOT DATE = Sep-25-2018 08:36:27 AM	DATE - ____	REVISED - ____

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
SN 053

SCALE: ____ | SHEET _ OF _ SHEETS | STA. ____ | TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	29
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			

BORING LOGS

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Page 1 of 1

Date 3/3/17

ROUTE FAI 280 DESCRIPTION C60-013-18 Sign Truss on I-280 WB at Ramp to IL 92 EB LOGGED BY Wally Garza

SECTION 81-1-1 LOCATION Blackhawk (West Part) - SE 16, SEC. , TWP. 17N, RNG. 2W

COUNTY Winnebago DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME-45

STRUCT. NO. 081-0136
Station 118+50

Latitude 41° 27' 39.48"
Longitude -90° 36' 39.57"

Northing 1,746,426.8176
Easting 2,174,800.6148

BORING NO. B-1c
Station 117+95
Offset 69.00ft Rt WB CL
Ground Surface Elev. 93.60 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 79.1 ft ▼
Upon Completion ____ ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
MEDIUM brown SANDY LOAM			
91.60		0.6 P	18.0
MEDIUM dark brown SILTY CLAY LOAM	3 6 5	0.8 P	30.0
90.10			
SOFT brown SANDY LOAM	1 2 3	0.4 B	21.0
-5			
87.10			
MEDIUM tan moist medium SAND	4 6 7		
85.10			
MEDIUM brown dirty SAND	1 5 8		
-10			
82.60			
MEDIUM brown medium SAND	7 11 13		
80.10			
VERY LOOSE brown medium SAND	1 1 2		
-15			
77.60			
LOOSE tan fine SAND	1 2 6		
75.10			
MEDIUM tan medium SAND	1		
-20			
MEDIUM tan medium SAND (continued)	6 6		
72.60			
70.10			
LOOSE tan medium SAND with medium GRAVEL	2 3 5		
-25			
67.60			
Augered to 29.5'			
64.10			
End of Boring			
-30			
-35			
-40			

Northing and Easting were calculated using the ILHP-WF coordinate system

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Page 1 of 1

Date 3/8/17

ROUTE FAI 280 DESCRIPTION C60-013-18 Sign Truss on I-280 WB at Ramp to IL 92 EB LOGGED BY Wally Garza

SECTION 81-1-1 LOCATION Blackhawk (West Part) - SE 16, SEC. , TWP. 17N, RNG. 2W

COUNTY Winnebago DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME-45

STRUCT. NO. 081-0136
Station 118+50

Latitude 41° 27' 39.24"
Longitude -90° 36' 43.29"

Northing 1,746,403.4947
Easting 2,174,517.9040

BORING NO. B-2c
Station 118+68
Offset 32.00ft Lt WB CL
Ground Surface Elev. 98.80 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 79.3 ft ▼
Upon Completion Wash ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
MEDIUM brown SILTY CLAY LOAM			
96.80		0.5 P	15.0
MEDIUM tan dry fine SAND	6 8 12		
94.80			
VERY STIFF brown SANDY LOAM with SAND lens	4 6 9	0.2 P	11.0
-5			
92.80			
MEDIUM black SANDY LOAM	3 2 3	0.8 P	21.0
90.30			
LOOSE tan/brown dirty moist SAND	0 1 3		15.0
-10			
87.30			
MEDIUM tan SAND with medium GRAVEL	3 7 13		
85.30			
MEDIUM brown medium SAND	7 9 6		
-15			
82.80			
MEDIUM brown medium SAND	6 6 8		
80.30			
MEDIUM tan fine SAND	3		
-20			
MEDIUM tan fine SAND (continued)	4 7		
77.80			
Wash	2		
MEDIUM tan fine SAND	5 9		
75.30			
MEDIUM tan fine SAND	7 10 9		
-25			
72.80			
Wash	1		
LOOSE tan fine SAND	2 5		
70.30			
	3 4 10		
-30			
67.80			
End of Boring			
-35			
-40			

Northing and Easting were calculated using the ILHP-WF coordinate system

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
SN 136

SCALE: ____ SHEET __ OF __ SHEETS STA. ____ TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	30
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			

BORING LOGS

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Page 1 of 1

Date 2/17/16

ROUTE FA 509 DESCRIPTION C60-013-18 Sign Truss, .1 m. N. of Whitman Road LOGGED BY Wally Garza

SECTION 1-HBY LOCATION Rockford Twp. - SE 13, SEC. , TWP. 44N, RNG. 1E

COUNTY Winnebago DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME-45

STRUCT. NO. 101-0170
Station 147+50 West Side

Latitude 42° 17' 11.23"
Longitude -89° 03' 51.96"

Northing 2,048,838.6120
Easting 2,594,829.2224

BORING NO. B-2a
Station 11' South
Offset 62.00ft W CL
Ground Surface Elev. 99.00 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 84.5 ft
Upon Completion Wash ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				MEDIUM brown LOAM
97.00				
	2			MEDIUM brown SANDY LOAM
	4	0.8	11.0	
95.50	6	P		
				STIFF tan SANDY LOAM
-5	5			
	7	1.1	11.0	
93.00	8	P		
				MEDIUM/STIFF tan SANDY CLAY LOAM
	2			
	4	1.0	24.0	
90.00	8	P		
				MEDIUM tan SANDY GRAVEL
-10	6			
	7			
88.00	12			
				MEDIUM tan moist SANDY GRAVEL
	4			
	8			
85.50	5			
				DENSE tan medium SANDY GRAVEL
-15	6			
	16			
83.00	17			
				MEDIUM tan SANDY GRAVEL
	9			
	11			
80.50	16			
				MEDIUM tan SANDY GRAVEL
-20	7			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				MEDIUM tan SANDY GRAVEL (continued)
78.00	11			
	15			
				Wash
	10			DENSE tan medium SAND
	17			
75.50	21			
				DENSE tan SANDY GRAVEL
-25	12			
	13			
73.00	22			
				Wash DENSE tan SANDY GRAVEL
	30			
	28			
70.50	20			
				Wash VERY DENSE tan SANDY GRAVEL
-30	24			
	25			
68.00	26			
				End of Boring
-35				
-40				

Northing and Easting were calculated using the ILHP-WF coordinate system

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Page 1 of 1

Date 2/16/17

ROUTE FA 509 DESCRIPTION C60-013-18 Sign Truss, .1 m. N. of Whitman Road LOGGED BY Wally Garza

SECTION 1-HBY LOCATION Rockford Twp. - SE 13, SEC. , TWP. 44N, RNG. 1E

COUNTY Winnebago DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME-45

STRUCT. NO. 101-0171
Station 147+50 East Side

Latitude 42° 17' 10.80"
Longitude -89° 03' 50.29"

Northing 2,048,796.8651
Easting 2,594,954.7949

BORING NO. B-1a
Station 17.5' N
Offset 68.00ft E CL
Ground Surface Elev. 100.70 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 83.7 ft
Upon Completion Wash ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				LOOSE light brown dirty fine SAND
			8.0	
98.70				
	2			LOOSE tan fine SAND
	2			
97.20	4			
	6			MEDIUM tan fine SAND
-5	5			
	5			
94.70				
	4			MEDIUM tan fine SAND
	4			
92.20	7			
	6			DENSE tan dry SANDY GRAVEL
-10	15			
	23			
89.70				
	14			VERY DENSE tan moist SANDY GRAVEL
	27			
87.20	33			
	16			DENSE tan SANDY GRAVEL
-15	16			
	22			
84.70				
	16			DENSE tan SANDY GRAVEL
	18			
82.20	25			
	10			MEDIUM tan SANDY GRAVEL
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
	11			MEDIUM tan SANDY GRAVEL (continued)
79.70	15			
				Wash
77.20				
	11			MEDIUM tan SANDY GRAVEL
-25	11			
	15			
74.70				
	4			Wash MEDIUM tan fine SAND
-30	6			
	9			
69.70				
				End of Boring
-35				
-40				

Northing and Easting were calculated using the ILHP-WF coordinate system

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

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Default	PLOT DATE = Sep-25-2018 08:36:45 AM	DATE - ____	REVISED - ____

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
SN 170 & 171

SCALE: ____ SHEET _ OF _ SHEETS STA. ____ TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	31
		CONTRACT NO. 46470		
	ILLINOIS FED. AID PROJECT			

BORING LOGS

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Page 1 of 1

Date 2/21/17

ROUTE FA 509 DESCRIPTION C60-013-18 Cantilever Sign Truss, IL 251 SB at ramp to Spring Creek Road EB LOGGED BY Wally Garza

SECTION 1-HBY LOCATION Rockford Twp. - NE 13, SEC. , TWP. 44N, RNG. 1E

COUNTY Winnebago DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME-45

STRUCT. NO. 101-0172
Station 156+50

Latitude 42° 17' 17.97" Northing 2,049,529.4038
Longitude -89° 03' 43.50" Easting 2,595,455.9734

BORING NO. B-1b
Station 15' N
Offset 66.50ft W CL
Ground Surface Elev. 98.50 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter None ft
Upon Completion Dry ft
After ____ Hrs. ____ ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
MEDIUM brown SILTY CLAY LOAM			0.6 P	23.0
	96.50			
SOFT tan SANDY LOAM		2 1 2	0.4 P	15.0
	95.00			
MEDIUM gray SANDY LOAM	-5	1 1 5	0.5 P	13.0
	92.50			
MEDIUM/STIFF light gray SANDY LOAM		4 4 6	1.0 B	10.0
	90.00			
MEDIUM dark brown SANDY LOAM	-10	4 8 62	0.8 B	12.0
	87.00			
MEDIUM tan medium SAND & GRAVEL		3 5 13		
	85.00			
DENSE tan dry SANDY GRAVEL	-15	7 17 28		
	82.50			
DENSE tan dry SANDY GRAVEL		14 24 24		
	80.00			
DENSE tan SANDY GRAVEL	-20	8		
DENSE tan SANDY GRAVEL (continued)		22 25		
	77.50			
DENSE tan dry fine SAND		9 13 18		
	75.00			
VERY DENSE tan dry SANDY GRAVEL	-25	13 25 32		
	72.50			
VERY DENSE tan SANDY GRAVEL		16 26 28		
	70.00			
VERY DENSE tan moist SANDY GRAVEL	-30	28 27 32		
	67.50			
End of Boring	-40			

Northing and Easting were calculated using the ILHP-WF coordinate system

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

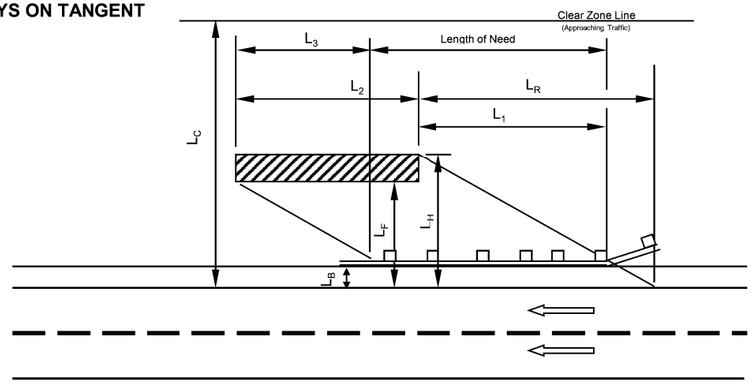
BORING LOGS
SN 172

SCALE: ____ SHEET _ OF _ SHEETS STA. ____ TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	32
		CONTRACT NO. 46470		
	ILLINOIS	FED. AID PROJECT		

SN 002 NORTH FOUNDATION GUARDRAIL CALCULATIONS

ONE-WAY ROADWAYS ON TANGENT



L_B=Distance to barrier
L_C=Clear zone
L_H=Distance to back of hazard
L_F=Distance to front of hazard
L_R=Runout length
L_1=Length needed for approach end
L_2=Length of hazard
L_3=Length to be omitted from length of need

Design Speed (mph) =	65
Traffic Volume (ADT) =	13000
Lane Width (ft) =	12

L_B (ft) =	5	
L_C (ft) =	34	See BDE Figure 38-3A, See BDE Figure 38-3D for CZ Curve Adjustment
L_H (ft) =	36	Must Insert Number, If Infinity, Insert Number > 30
L_F (ft) =	31	
L_R (ft) =	300	See BDE Figure 38-6C
L_2 (ft) =	8.25	
L_1 (ft) =	255.9	
L_3 (ft) =	61.5	

NOTE: This tool was created to be an aide, please insure that you have reviewed Chapter 38 (Roadside Safety) of the BDE Manual, Applicable Standards, and other IDOT Documents relating to Roadside Safety Design

See Chapter 49 for 3R values for Clear Zones

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

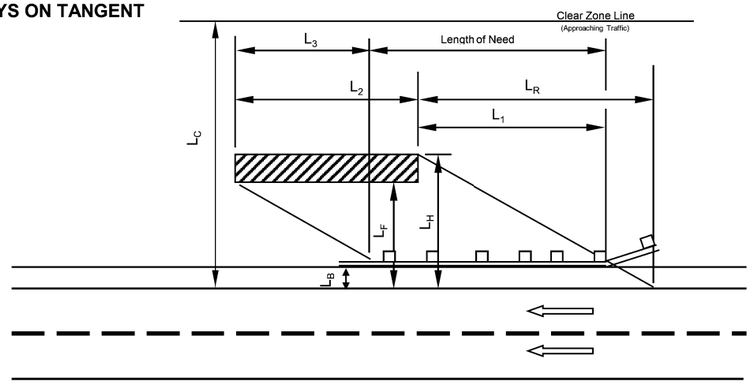
SN 002 NORTH FOUNDATION GUARDRAIL CALCULATIONS

SCALE: ____ | SHEET _ OF _ SHEETS | STA. ____ | TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	33
	CONTRACT NO. 46470			
	ILLINOIS	FED. AID PROJECT		

SN 002 SOUTH FOUNDATION GUARDRAIL CALCULATIONS

ONE-WAY ROADWAYS ON TANGENT



L_B=Distance to barrier
L_C=Clear zone
L_H=Distance to back of hazard
L_F=Distance to front of hazard
L_R=Runout length
L_1=Length needed for approach end
L_2=Length of hazard
L_3=Length to be omitted from length of need

Design Speed (mph) =	65
Traffic Volume (ADT) =	13000
Lane Width (ft) =	12

L_B (ft) =	10	
L_C (ft) =	34	See BDE Figure 38-3A, See BDE Figure 38-3D for CZ Curve Adjustment
L_H (ft) =	36	Must Insert Number, If Infinity, Insert Number > 30
L_F (ft) =	33	
L_R (ft) =	300	See BDE Figure 38-6C
L_2 (ft) =	8.25	
L_1 (ft) =	211.8	
L_3 (ft) =	54.4	

NOTE: This tool was created to be an aide, please insure that you have reviewed Chapter 38 (Roadside Safety) of the BDE Manual, Applicable Standards, and other IDOT Documents relating to Roadside Safety Design

See Chapter 49 for 3R values for Clear Zones

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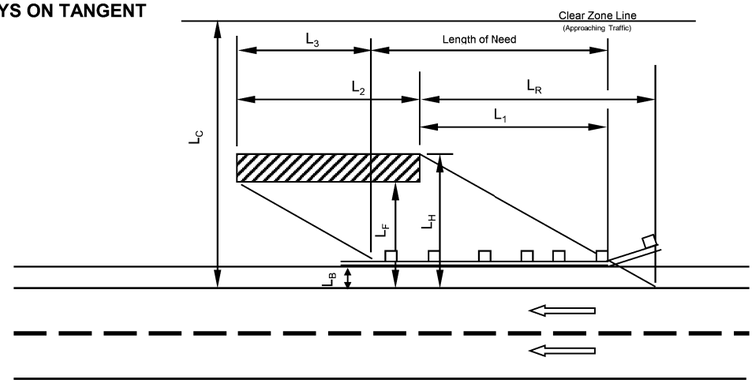
							ILLINOIS	FED. AID PROJECT		

SN 053 NORTH FOUNDATION GUARDRAIL CALCULATIONS

ONE-WAY ROADWAYS ON TANGENT



L_B=Distance to barrier
L_C=Clear zone
L_H=Distance to back of hazard
L_F=Distance to front of hazard
L_R=Runout length
L_1=Length needed for approach end
L_2=Length of hazard
L_3=Length to be omitted from length of need

Design Speed (mph) =	65
Traffic Volume (ADT) =	40600
Lane Width (ft) =	12

L_B (ft) =	10	
L_C (ft) =	34	See BDE Figure 38-3A, See BDE Figure 38-3D for CZ Curve Adjustment
L_H (ft) =	32	Must Insert Number, If Infinity, Insert Number > 30
L_F (ft) =	29	
L_R (ft) =	300	See BDE Figure 38-6C
L_2 (ft) =	8.25	
L_1 (ft) =	206.3	
L_3 (ft) =	45.0	

NOTE: This tool was created to be an aide, please insure that you have reviewed Chapter 38 (Roadside Safety) of the BDE Manual, Applicable Standards, and other IDOT Documents relating to Roadside Safety Design

See Chapter 49 for 3R values for Clear Zones

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

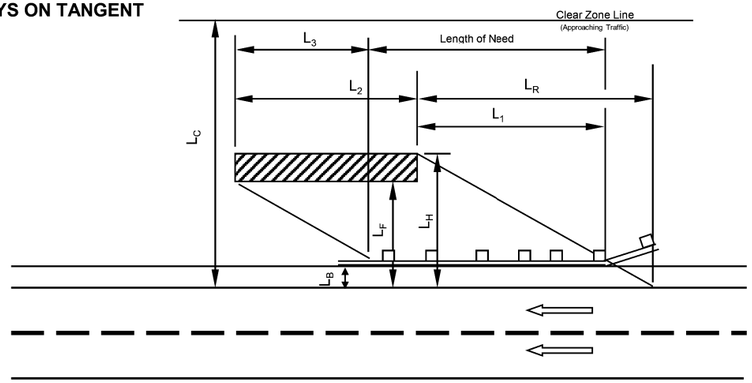
SN 053 NORTH FOUNDATION GUARDRAIL CALCULATIONS

SCALE: ____ | SHEET _ OF _ SHEETS | STA. ____ | TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	35
	CONTRACT NO. 46470			
	ILLINOIS	FED. AID PROJECT		

SN 053 SOUTH FOUNDATION
GUARDRAIL CALCULATIONS

ONE-WAY ROADWAYS ON TANGENT



L_B=Distance to barrier
L_C=Clear zone
L_H=Distance to back of hazard
L_F=Distance to front of hazard
L_R=Runout length
L_1=Length needed for approach end
L_2=Length of hazard
L_3=Length to be omitted from length of need

Design Speed (mph) =	65
Traffic Volume (ADT) =	40600
Lane Width (ft) =	12

L_B (ft) =	8	
L_C (ft) =	34	See BDE Figure 38-3A, See BDE Figure 38-3D for CZ Curve Adjustment
L_H (ft) =	16	Must Insert Number, If Infinity, Insert Number > 30
L_F (ft) =	13	
L_R (ft) =	300	See BDE Figure 38-6C
L_2 (ft) =	8.25	
L_1 (ft) =	150.0	
L_3 (ft) =	11.8	

NOTE: This tool was created to be an aide, please insure that you have reviewed Chapter 38 (Roadside Safety) of the BDE Manual, Applicable Standards, and other IDOT Documents relating to Roadside Safety Design

See Chapter 49 for 3R values for Clear Zones

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						__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	36
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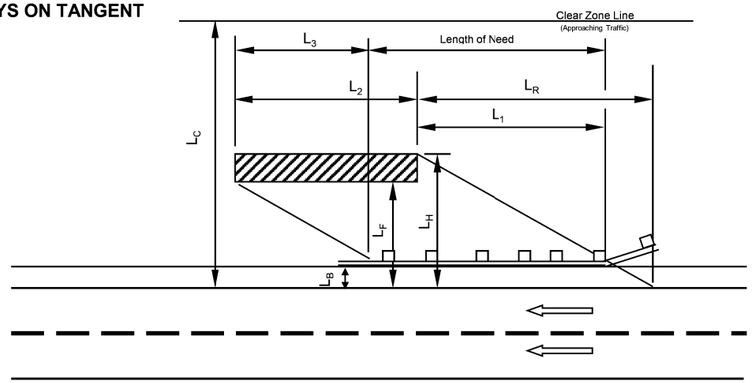
SN 053 SOUTH FOUNDATION (JOHN DEERE RD EB)
GUARDRAIL CALCULATIONS

ONE-WAY ROADWAYS ON TANGENT



L_B=Distance to barrier
L_C=Clear zone
L_H=Distance to back of hazard
L_F=Distance to front of hazard
L_R=Runout length
L_1=Length needed for approach end
L_2=Length of hazard
L_3=Length to be omitted from length of need

Design Speed (mph) =	65
Traffic Volume (ADT) =	40600
Lane Width (ft) =	12

L_B (ft) =	16	
L_C (ft) =	34	See BDE Figure 38-3A, See BDE Figure 38-3D for CZ Curve Adjustment
L_H (ft) =	23	Must Insert Number, If Infinity, Insert Number > 30
L_F (ft) =	21	
L_R (ft) =	300	See BDE Figure 38-6C
L_2 (ft) =	8.25	
L_1 (ft) =	91.3	
L_3 (ft) =	11.8	

NOTE: This tool was created to be an aide, please insure that you have reviewed Chapter 38 (Roadside Safety) of the BDE Manual, Applicable Standards, and other IDOT Documents relating to Roadside Safety Design

See Chapter 49 for 3R values for Clear Zones

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

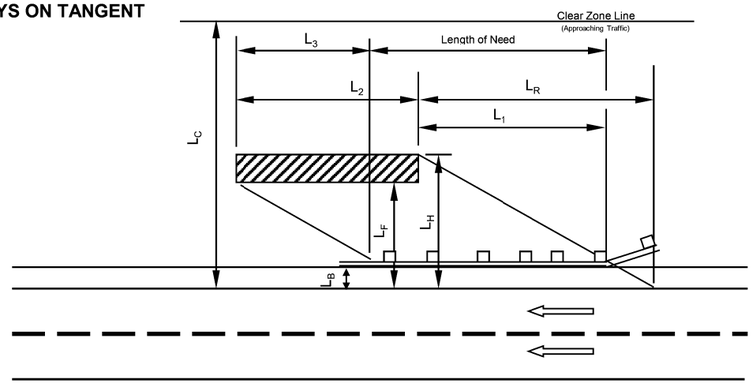
SN 053 SOUTH FOUNDATION (JOHN DEERE RD EB)
GUARDRAIL CALCULATIONS

SCALE: ____ SHEET _ OF _ SHEETS STA. ____ TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	37
	CONTRACT NO. 46470			
	ILLINOIS FED. AID PROJECT			

SN 136 NORTH FOUNDATION GUARDRAIL CALCULATIONS

ONE-WAY ROADWAYS ON TANGENT



L_B=Distance to barrier
L_C=Clear zone
L_H=Distance to back of hazard
L_F=Distance to front of hazard
L_R=Runout length
L_1=Length needed for approach end
L_2=Length of hazard
L_3=Length to be omitted from length of need

Design Speed (mph) =	65
Traffic Volume (ADT) =	24500
Lane Width (ft) =	15

L_B (ft) =	8	
L_C (ft) =	34	See BDE Figure 38-3A, See BDE Figure 38-3D for CZ Curve Adjustment
L_H (ft) =	41	Must Insert Number, If Infinity, Insert Number > 30
L_F (ft) =	38	
L_R (ft) =	300	See BDE Figure 38-6C
L_2 (ft) =	8.25	
L_1 (ft) =	229.4	
L_3 (ft) =	71.0	

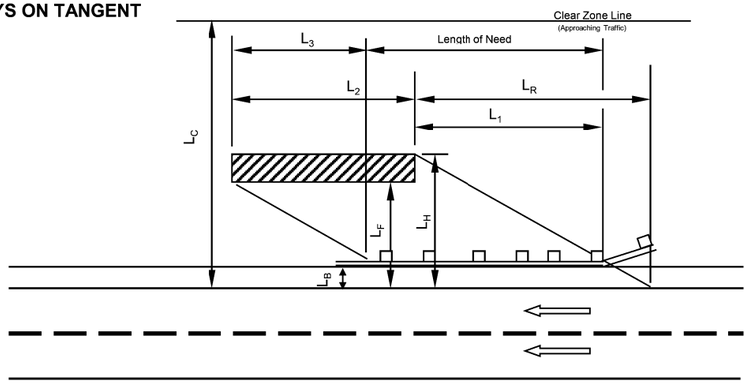
NOTE: This tool was created to be an aide, please insure that you have reviewed Chapter 38 (Roadside Safety) of the BDE Manual, Applicable Standards, and other IDOT Documents relating to Roadside Safety Design

See Chapter 49 for 3R values for Clear Zones

FILE NAME = pw:\\IL084EBIDINTEG.Illinois.gov:PWIDOT\Documents\IDOT Offices\District 2\Projects\Operations\Bridge Section\Winnebago\DRAWN\46470\SLT200117-2\Design Files\46470-sht-cover.dgn	USER NAME = dossdd	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SN 136 NORTH FOUNDATION GUARDRAIL CALCULATIONS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	38
Default	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -			CONTRACT NO. 46470				
	PLOT DATE = Sep-25-2018 08:40:07 AM	DATE -	REVISED -		SCALE: ____ SHEET _ OF _ SHEETS STA. ____ TO STA. ____	ILLINOIS	FED. AID PROJECT			

SN 136 SOUTH FOUNDATION (I–280 EB)
GUARDRAIL CALCULATIONS

ONE-WAY ROADWAYS ON TANGENT



L_B=Distance to barrier
L_C=Clear zone
L_H=Distance to back of hazard
L_F=Distance to front of hazard
L_R=Runout length
L_1=Length needed for approach end
L_2=Length of hazard
L_3=Length to be omitted from length of need

Design Speed (mph) =	65
Traffic Volume (ADT) =	24500
Lane Width (ft) =	12

L_B (ft) =	27	
L_C (ft) =	34	See BDE Figure 38-3A, See BDE Figure 38-3D for CZ Curve Adjustment
L_H (ft) =	32	Must Insert Number, If Infinity, Insert Number > 30
L_F (ft) =	29	
L_R (ft) =	300	See BDE Figure 38-6C
L_2 (ft) =	8.25	
L_1 (ft) =	46.9	
L_3 (ft) =	4.7	

NOTE: This tool was created to be an aide, please insure that you have reviewed Chapter 38 (Roadside Safety) of the BDE Manual, Applicable Standards, and other IDOT Documents relating to Roadside Safety Design

See Chapter 49 for 3R values for Clear Zones

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		DRAWN - ____	REVISED - ____			__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	39
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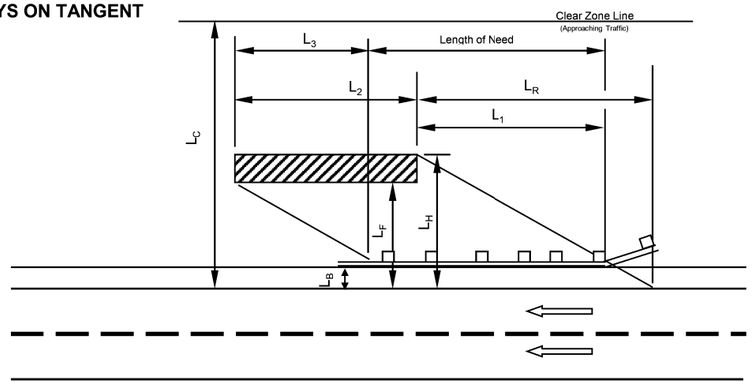
Default	PLOT DATE = Sep-25-2018 08:40:38 AM	DATE - ____	REVISED - ____		SCALE: ____ SHEET _ OF _ SHEETS STA. ____ TO STA. ____			ILLINOIS FED. AID PROJECT		

SN 136 SOUTH FOUNDATION (I–280 WB)
GUARDRAIL CALCULATIONS

ONE-WAY ROADWAYS ON TANGENT



L_B=Distance to barrier
L_C=Clear zone
L_H=Distance to back of hazard
L_F=Distance to front of hazard
L_R=Runout length
L_1=Length needed for approach end
L_2=Length of hazard
L_3=Length to be omitted from length of need

Design Speed (mph) =	65
Traffic Volume (ADT) =	24500
Lane Width (ft) =	15

L_B (ft) =	28	
L_C (ft) =	34	See BDE Figure 38-3A, See BDE Figure 38-3D for CZ Curve Adjustment
L_H (ft) =	32	Must Insert Number, If Infinity, Insert Number > 30
L_F (ft) =	29	
L_R (ft) =	300	See BDE Figure 38-6C
L_2 (ft) =	8.25	
L_1 (ft) =	37.5	
L_3 (ft) =	2.4	

NOTE: This tool was created to be an aide, please insure that you have reviewed Chapter 38 (Roadside Safety) of the BDE Manual, Applicable Standards, and other IDOT Documents relating to Roadside Safety Design

See Chapter 49 for 3R values for Clear Zones

FILE NAME = pw:\\IL084EBIDINTEG.Illinois.gov:PWIDOT\Documents\IDOT Offices\District 2\Projects\Operations\Bridge Section\Winnebago\DRAWN\46470\SLT200117-2\Design Files\46470-sht-coversheet.dgn	USER NAME = dossdd	DESIGNED - ____	REVISED - ____	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SN 136 SOUTH FOUNDATION (I-280 WB) GUARDRAIL CALCULATIONS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ____	REVISED - ____			__	D-2 OVD SIN STR REPL 18-32	VARIOUS	40	40
Default	PLOT SCALE = 100.0000 ' / in.	CHECKED - ____	REVISED - ____		SCALE: ____ SHEET _ OF _ SHEETS STA. ____ TO STA. ____	CONTRACT NO. 46470				
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