

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
180	D-3 OVD SIN STR REPL 15-06	BUREAU	28	1
ILLINOIS		CONTRACT NO. 46333		

1. COVER SHEET
2. GENERAL NOTES
- 3-4. SUMMARY OF QUANTITIES
5. TYPICAL SECTIONS
- 6-8. SCHEDULES
- 9-11. ROADWAY PLAN DETAILS
12. TYPICAL IMPACT ATTENUATOR LAYOUT & GRADING PLAN
- 13-28. OVERHEAD SIGN STRUCTURE - SPAN DETAIL SHEETS

**STANDARDS**

- |           |   |
|-----------|---|
| 000001-06 | STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS                                  |
| 001001-02 | AREAS OF REINFORCEMENT BARS   |
| 001006    | DECIMAL OF AN INCH AND OF A FOOT  |
| 630001-10 | STEEL PLATE BEAM GUARDRAIL  |
| 631011-09 | TRAFFIC BARRIER TERMINAL, TYPE 2  |
| 635011-02 | REFLECTOR MARKER AND MOUNTING DETAILS   |
| 643001-02 | SAND MODULE IMPACT ATTENUATORS  |
| 701101-04 | OFF-ROAD OPERATIONS MULTILANE, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE |
| 701106-02 | OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 m) AWAY                    |
| 701400-03 | APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY                                  |
| 701406-04 | LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY                         |
| 701428    | TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY                          |
| 701901-04 | TRAFFIC CONTROL DEVICES   |
| 720011-01 | METAL POSTS FOR SIGNS, MARKERS AND DELINEATORS                                |

**DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

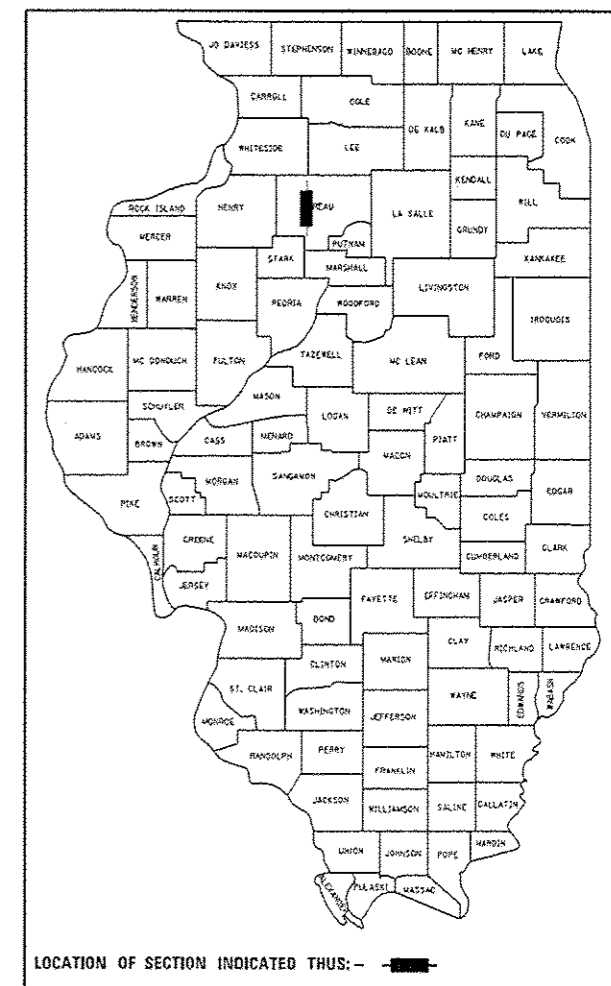
**PROPOSED  
HIGHWAY PLANS**

**FAI ROUTE 180 (I-180)  
SECTION D3 OVD SIN STR REPL 15-06**

**OVERHEAD SIGN TRUSS REMOVAL  
AND REPLACEMENT  
BUREAU COUNTY**

C-60-006-15

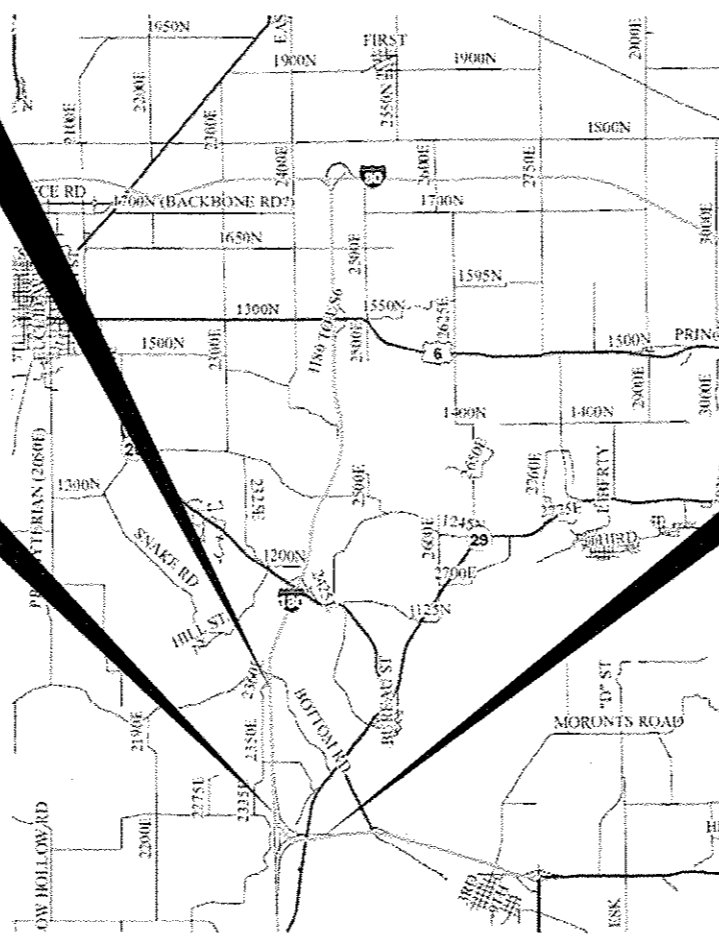
D-93-073-14



**LOCATION 1 & 1A**  
OVERHEAD SIGN STRUCTURE  
SN: 3S0061180R008.9  
(EXISTING STA. 570+60 SBL)  
(PROPOSED STA. 570+85 SBL)  
1.0 MILES NORTH OF THE RAMP TO (IL 29)

**LOCATION 2 & 2A**  
OVERHEAD SIGN STRUCTURE  
SN: 3S0061180R009.7  
(EXISTING STA. 611+00 SBL)  
(PROPOSED STA. 611+25 SBL)  
I-180 SB AT RAMP TO (IL 29)

**LOCATION 3 & 3A**  
OVERHEAD SIGN STRUCTURE  
SN: 3S0061180L011.3  
(EXISTING STA. 696+20 WBL)  
(PROPOSED STA. 695+95 WBL)  
I-180 WB 0.6 MILE EAST OF THE RAMP TO (IL 29)



POINT LOCATION(S)

RURAL INTERSTATE

FAI 180 (I-180) SB		FAI 180 (I-180) WB	
2013			
ADT	1900	ADT	150
P.V.	78.47%	P.V.	82.50%
S.L.U.	12.50%	S.L.U.	7.73%
M.U.	9.03%	M.U.	9.77%

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

PROJECT ENGINEER: JOE KANNEL, P.E.  
UNIT CHIEF: RON WOODSHANK  
DISTRICT NO. (815)-434-6131  
CONTRACT NO. 46333

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED October 7, 2014  
Amr Eldeir  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER  
ACT. Engr. of Ops.

Mar 20, 2015  
John D. Baranzelli, P.E.  
ENGINEER OF DESIGN AND ENVIRONMENT

Mar 20, 2015  
Omer Osman, P.E.  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

**PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS**

**GENERAL NOTES**

PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING PLANS ARE SUBJECT TO ROUTINE VARIATIONS. THE CONTRACTOR SHALL FIELD VERIFY EXISTING DIMENSIONS AND DETAILS AFFECTING NEW CONSTRUCTION AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY FURNISHED BASED UPON THE UNIT BID PRICE FOR THE WORK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS. THE "JULIE" NUMBER IS 1-800-892-0123. A MINIMUM OF FORTY-EIGHT (48) HOURS ADVANCE NOTICE IS REQUIRED.

THE LOCATION OF ALL UTILITIES AND PRIVATELY OWNED FACILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE INSTALLATION OF ANY COMPONENTS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING IDOT ELECTRICAL FACILITIES AT HIS/HER OWN EXPENSE IF REQUIRED. THE CONTRACTOR SHALL ALSO BE LIABLE FOR ANY DAMAGE TO IDOT FACILITIES RESULTING FROM INACCURATE LOCATING.

SEEDING WILL NOT BE PERMITTED AT ANY TIME WHEN THE GROUND IS FROZEN, WET, OR IN AN UNTILLABLE CONDITION. LOCATIONS TO BE SEEDED WILL BE DETERMINED BY THE ENGINEER.

ALL EXCAVATED MATERIAL, WHICH INCLUDES DIGGING OR GRADING OF ANY SOIL OR FILL MATERIAL, WITH THE EXCEPTION OF AGGREGATE FILLS, MUST BE INCORPORATED WITHIN THE IDOT RIGHT OF WAY DUE TO ENVIRONMENTAL DOCUMENTATION REQUIREMENTS.

ALL SURPLUS MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ARTICLE 202.03 OF THE STANDARD SPECIFICATION.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706 GR 60. SEE SPECIAL PROVISIONS.

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER SHOWN IN THE LIST OF STANDARDS OR THE COPY INCLUDED IN THESE PLANS.

**COMMITMENTS**

DATE: June 26 2014

PREPARED BY: [Signature]  
DISTRICT STUDIES & PLANS ENGINEER

EXAMINED BY: [Signature]  
DISTRICT CONSTRUCTION ENGINEER

[Signature]  
DISTRICT MATERIALS ENGINEER

[Signature]  
DISTRICT OPERATIONS ENGINEER

FILE NAME *	USER NAME * woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GENERAL NOTES</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		DRAWN - YOGESH PATEL	REVISED -			1-180	D-3 QVD SIN STR REPL 15-06	BUREAU	28	2	
		CHECKED - RON WOODSHANK	REVISED -			SCALE: _____	SHEET NO. 1 OF 1 SHEETS	STA. _____ TO STA. _____	CONTRACT NO. 46333		
		DATE - 6/4/2014	REVISED -			ILLINOIS					

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE
				100% STATE MINOR STRUCTURES 0040
20200100	EARTH EXCAVATION	CU YD	22	22
20400800	FURNISHED EXCAVATION	CU YD	480	480
31101200	SUBBASE GRANULAR MATERIAL, TYPE B 4"	SO YD	192	192
* 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	150	150
* 63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1	1
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	1	1
64300450	IMPACT ATTENUATORS (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2
64301090	ATTENUATOR BASE	SO YD	164	164
67100100	MOBILIZATION	L SUM	1	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1	1
70600350	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3	EACH	4	4
72000300	SIGN PANEL - TYPE 3	SO FT	852	852
73300100	OVERHEAD SIGN STRUCTURE - SPAN, TYPE I-A (4'-0" X 4'-6")	FOOT	180	180
73300200	OVERHEAD SIGN STRUCTURE - SPAN, TYPE II-A (4'-6" X 5'-3")	FOOT	108	108

114

\* Specialty Items

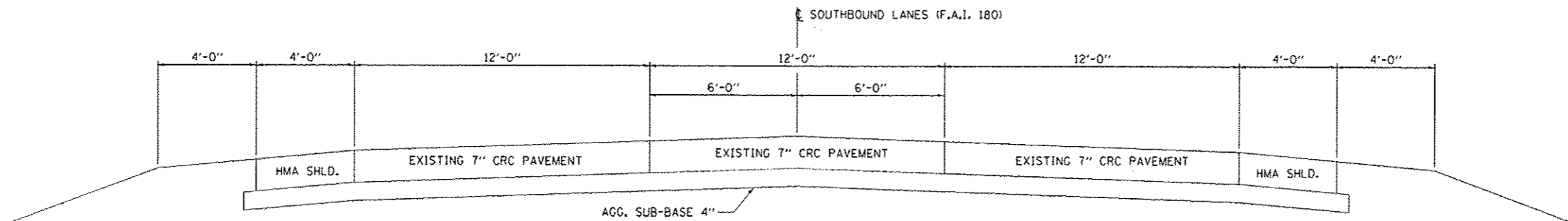
FILE NAME =	USER NAME = woodshankr	DESIGNED - YOGESH PATEL	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PROJECT =	CONTRACT =	DRAWN - YOGESH PATEL	REVISED -			1-180	0-3 OVD SIN STR REPL 15-06	BUREAU	28	3
PLOT SCALE = 241999.6750 "/ in.	PLOT DATE = 10/2/2014	CHECKED - RON WOODSHANK	REVISED -			SCALE: _____	SHEET NO. 1 OF 2 SHEETS	STA. _____ TO STA. _____	CONTRACT NO. 46333	
		DATE - 6/4/2014	REVISED -				ILLINOIS			

405 25 104

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE
				100% STATE MINOR STRUCTURES 0040
73301810	OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A	FOOT	138	138
73400200	DRILLED SHAFT CONCRETE FOUNDATIONS	CU YD	64	64
73600100	REMOVE OVERHEAD SIGN STRUCTURE - SPAN	EACH	3	3
73700300	REMOVE CONCRETE FOUNDATION - OVERHEAD	EACH	6	6
* 78200410	GUARDRAIL MARKERS, TYPE A	EACH	3	3
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	1	1
X0325265	REMOVE ELECTRIC SERVICE	EACH	3	3
X6431110	REMOVE ATTENUATOR BASE	EACH	4	4
X7010410	SPEED DISPLAY TRAILER	CAL MO	1	1
10 Z0030850	TEMPORARY INFORMATION SIGNING	SQ FT	21	21

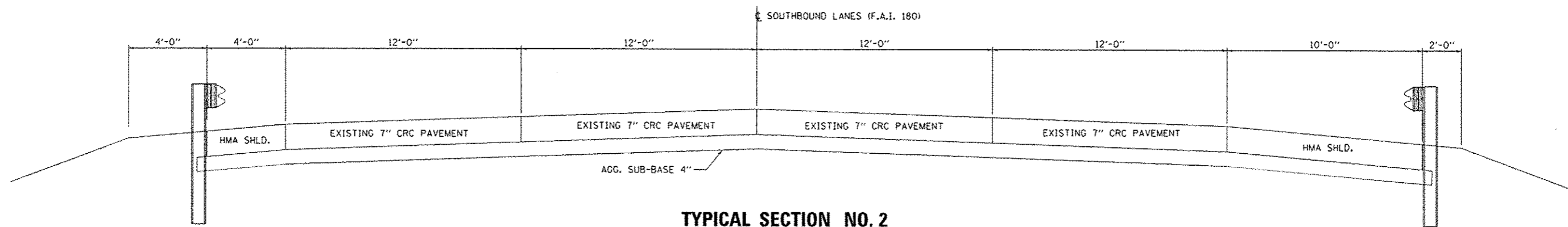
\*Specialty Items

FILE NAME :	USER NAME : woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONSISTENT WITH DRAWING	DRAWN - YOGESH PATEL	REVISED -	1-180			0-3 OVD SIN STR REPL 15-06	BUREAU	28	4	
PLOT SCALE = 249999.6750 ' / in.	CHECKED - RON WOODSHANK	REVISED -	SCALE: _____ SHEET NO. 2 OF 2 SHEETS STA. _____ TO STA. _____			ILLINOIS		CONTRACT NO. 46333		
PLOT DATE = 10/2/2014	DATE - 6/4/2014	REVISED -								



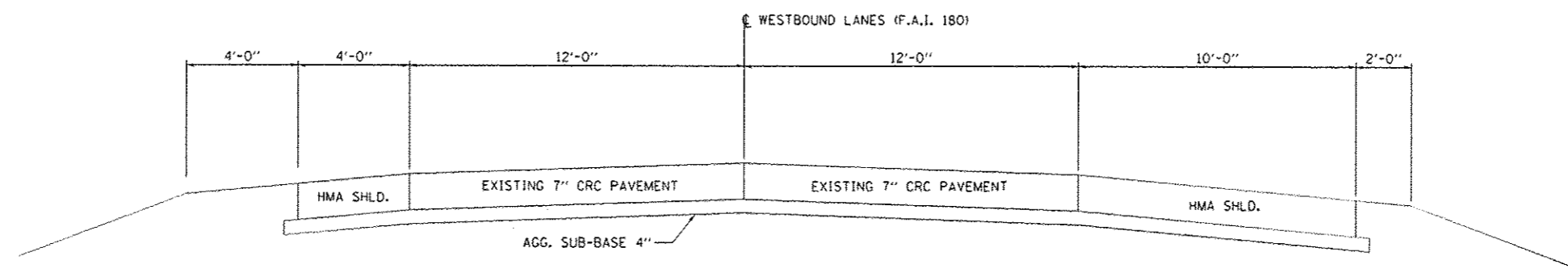
**TYPICAL SECTION NO. 1**

LOCATION 1 & 1A



**TYPICAL SECTION NO. 2**

LOCATION 2 & 2A



**TYPICAL SECTION NO. 3**

LOCATION 3 & 3A

FILE NAME -	USER NAME - woodshank1	DESIGNED - YOGESH PATEL	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TYPICAL SECTIONS</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		DRAWN - YOGESH PATEL	REVISED -			1-180	D-3 OVD SIN STR REPL 15-06	BUREAU	28	5	
	PLOT SCALE = 250000.0000 1" = 100'	CHECKED - RON WOODSHANK	REVISED -			SCALE: _____ SHEET NO. 1 OF 1 SHEETS STA. _____ TO STA. _____		CONTRACT NO. 46333			
	PLOT DATE = 6/26/2014	DATE - 6/4/2014	REVISED -			ILLINOIS					

LOCATION NO.	1	STATE I.D. NO.	3S006I180R008.9 (STA 570+60)				
COUNTY	BUREAU	ROUTE	FAI 180	M.P.	8.9	DIRECTION	SB
DESCRIPTION OF WORK				UNIT		QUANTITY	
REMOVE ATTENUATOR BASE				EACH		2	
IMPACT ATTENUATOR RELOCATE (NON-REDIRECTIVE) TL 3				EACH		2	
REMOVE OVERHEAD SIGN STRUCTURE - SPAN				EACH		1	
REMOVE CONCRETE FOUNDATION - OVERHEAD				EACH		2	
REMOVE ELECTRICAL SERVICE				EACH		1	

LOCATION NO.	1A	STATE I.D. NO.	3S006I180R008.9 (STA 570+85)				
COUNTY	BUREAU	ROUTE	FAI 180	M.P.	8.9	DIRECTION	SB
DESCRIPTION OF WORK				UNIT		QUANTITY	
DRILLED SHAFT CONCRETE FOUNDATIONS				CU YD		19.8	
OVERHEAD SIGN STRUCTURE-SPAN TYPE I-A				FOOT		96	
OVERHEAD SIGN STRUCTURE WALKWAY TYPE A				FOOT		46	
SIGN PANEL-TYPE 3				SQ FT		247	
EARTH EXCAVATION				CU YD		11	
FURNISHED EXCAVATION				CU YD		240	
ATTENUATOR BASE				SQ YD		82	
SUBBASE GRANULAR MATERIAL, TYPE B 4"				SQ YD		96	
IMPACT ATTENUATORS, (NON-REDIRECTIVE) TEST LEVEL 3				EACH		1	

FILE NAME -	USER NAME - woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SCHEDULES</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
c:\pwworkspace\woodshankr1\08290505	3146333-sh1-details.dgn	DRAWN - YOGESH PATEL	REVISED -			I-180	D-3 OVD SIN STR REPL 15-06	BUREAU	28	6	
	PLOT SCALE = 249999.6758 1/1 in.	CHECKED - RON WOODSHANK	REVISED -			CONTRACT NO. 46333					
	PLOT DATE = 10/2/2014	DATE - 6/4/2014	REVISED -			ILLINOIS					
				SCALE: _____		SHEET NO. 1 OF 3 SHEETS		STA. _____ TO STA. _____			

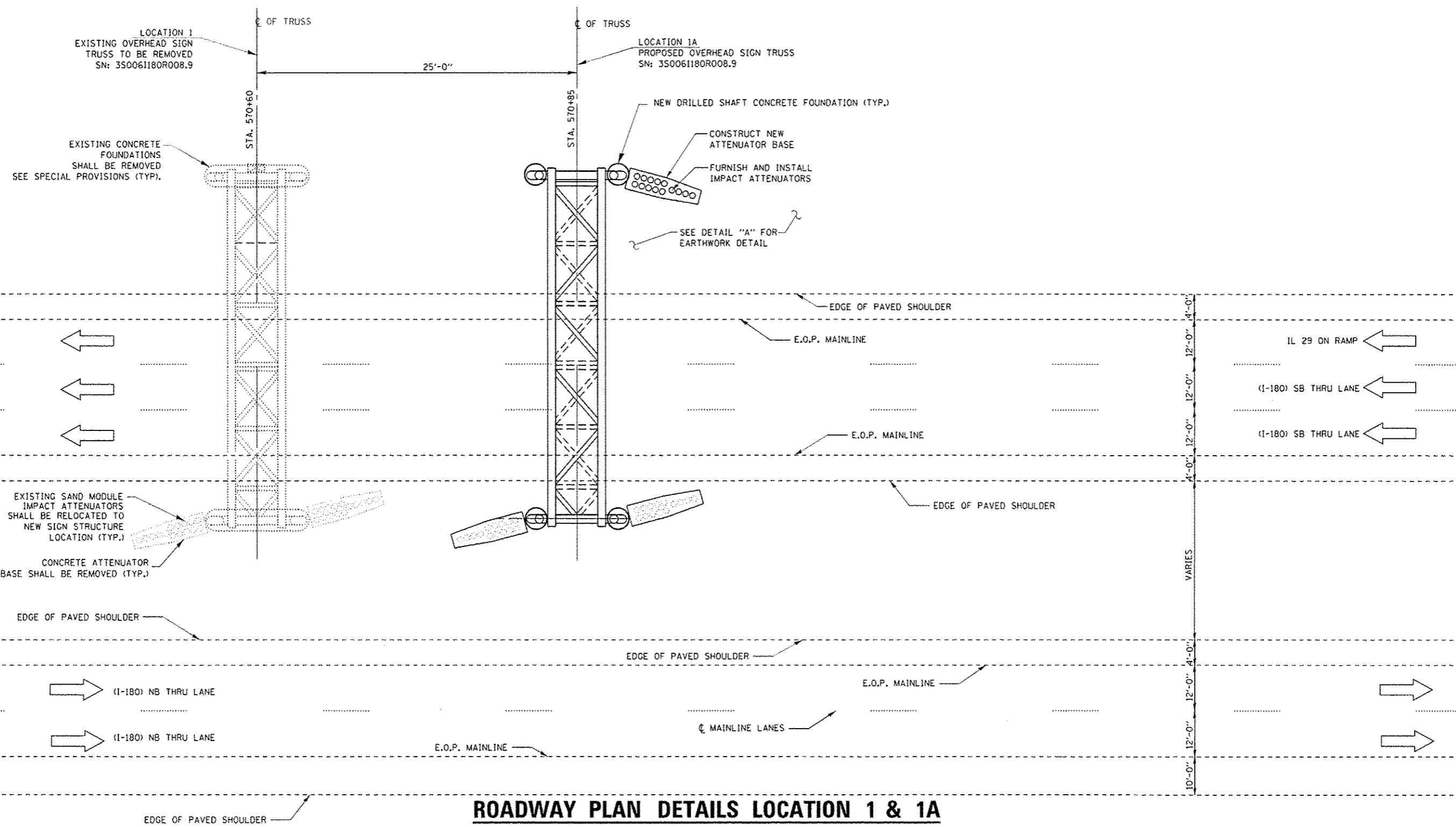
LOCATION NO.	2	STATE I.D. NO.	3S006I180R009.7 (STA 611+00)				
COUNTY	BUREAU	ROUTE	FAI 180	M.P.	9.7	DIRECTION	SB
DESCRIPTION OF WORK				UNIT		QUANTITY	
REMOVE OVERHEAD SIGN STRUCTURE - SPAN				EACH		1	
REMOVE CONCRETE FOUNDATION - OVERHEAD				EACH		2	
REMOVE ELECTRICAL SERVICE				EACH		1	

LOCATION NO.	2A	STATE I.D. NO.	3S006I180R009.7 (STA 611+25)				
COUNTY	BUREAU	ROUTE	FAI 180	M.P.	9.7	DIRECTION	SB
DESCRIPTION OF WORK				UNIT		QUANTITY	
DRILLED SHAFT CONCRETE FOUNDATIONS				CU YD		23.6	
OVERHEAD SIGN STRUCTURE-SPAN TYPE II-A				FOOT		108	
OVERHEAD SIGN STRUCTURE WALKWAY TYPE A				FOOT		58	
SIGN PANEL-TYPE 3				SQ FT		300	
STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS				FOOT		150	
TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT				EACH		1	
TRAFFIC BARRIER TERMINAL, TYPE 2				EACH		1	
GUARDRAIL MARKERS, TYPE A				EACH		3	
TERMINAL MARKER - DIRECT APPLIED				EACH		1	

LOCATION NO.	3	STATE I.D. NO.	3S006I180L011.3 (STA 696+20)				
COUNTY	BUREAU	ROUTE	FAI 180	M.P.	11.3	DIRECTION	WB
DESCRIPTION OF WORK				UNIT		QUANTITY	
REMOVE OVERHEAD SIGN STRUCTURE - SPAN				EACH		1	
REMOVE CONCRETE FOUNDATION - OVERHEAD				EACH		2	
REMOVE ELECTRICAL SERVICE				EACH		1	
REMOVE ATTENUATOR BASE				EACH		2	
IMPACT ATTENUATOR RELOCATE (NON-REDIRECTIVE) TL 3				EACH		2	

LOCATION NO.	3A	STATE I.D. NO.	3S006I180L011.3 (STA 695+95)				
COUNTY	BUREAU	ROUTE	FAI 180	M.P.	11.3	DIRECTION	WB
DESCRIPTION OF WORK				UNIT		QUANTITY	
DRILLED SHAFT CONCRETE FOUNDATIONS				CU YD		20.6	
OVERHEAD SIGN STRUCTURE-SPAN TYPE I-A				FOOT		84	
OVERHEAD SIGN STRUCTURE WALKWAY TYPE A				FOOT		34	
SIGN PANEL-TYPE 3				SQ FT		305	
EARTH EXCAVATION				CU YD		11	
FURNISHED EXCAVATION				CU YD		240	
ATTENUATOR BASE				SQ YD		81	
SUBBASE GRANULAR MATERIAL, TYPE B 4"				SQ YD		96	
IMPACT ATTENUATORS, (NON-REDIRECTIVE) TEST LEVEL 3				EACH		1	



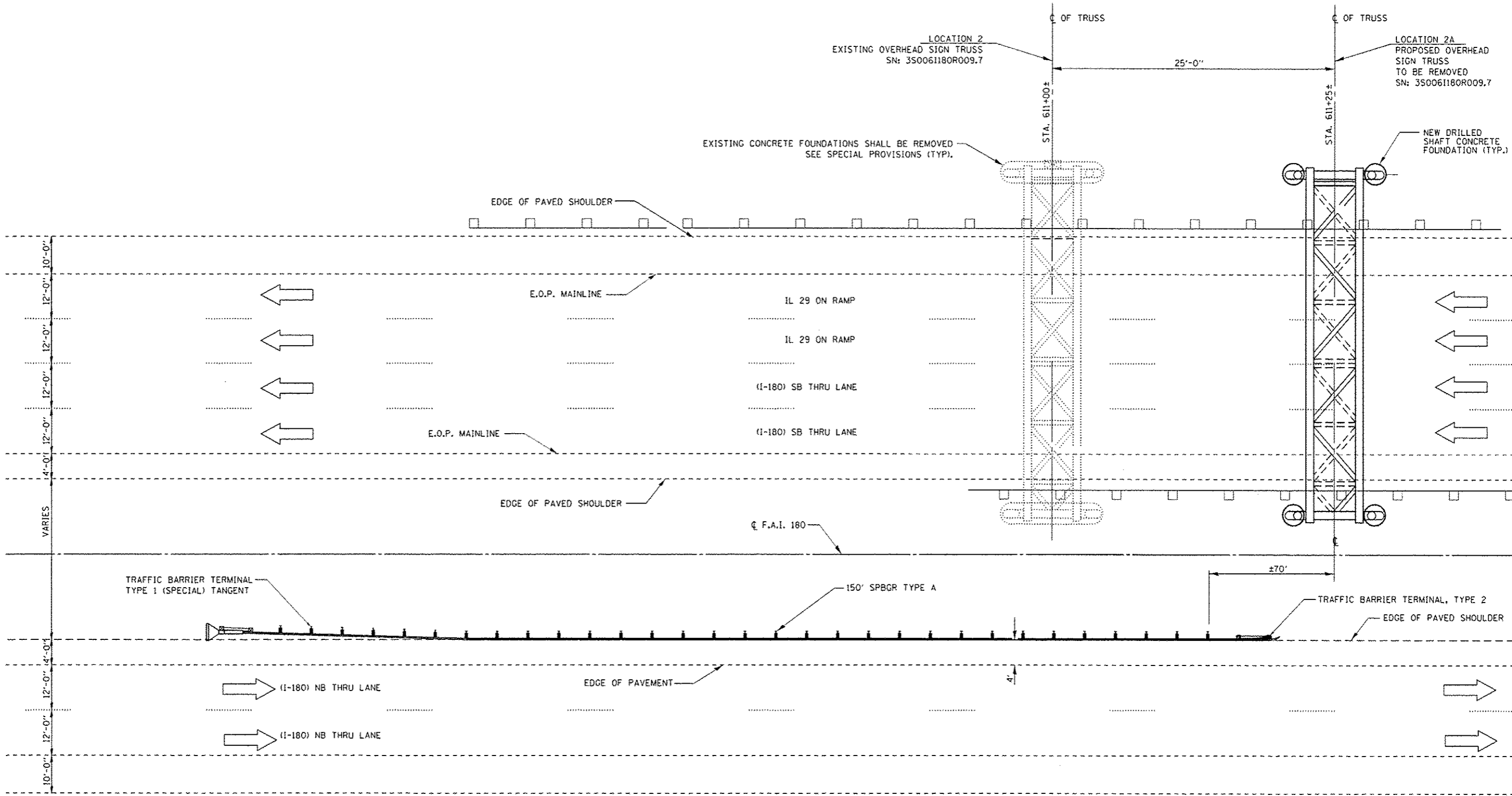


**ROADWAY PLAN DETAILS LOCATION 1 & 1A**

**STRUCTURE NO. 3S00611800R008.9**

EXISTING: I-180 SB M.P. 8.9 STA. 570+60  
 PROPOSED: I-180 SB M.P. 8.9 STA. 570+85

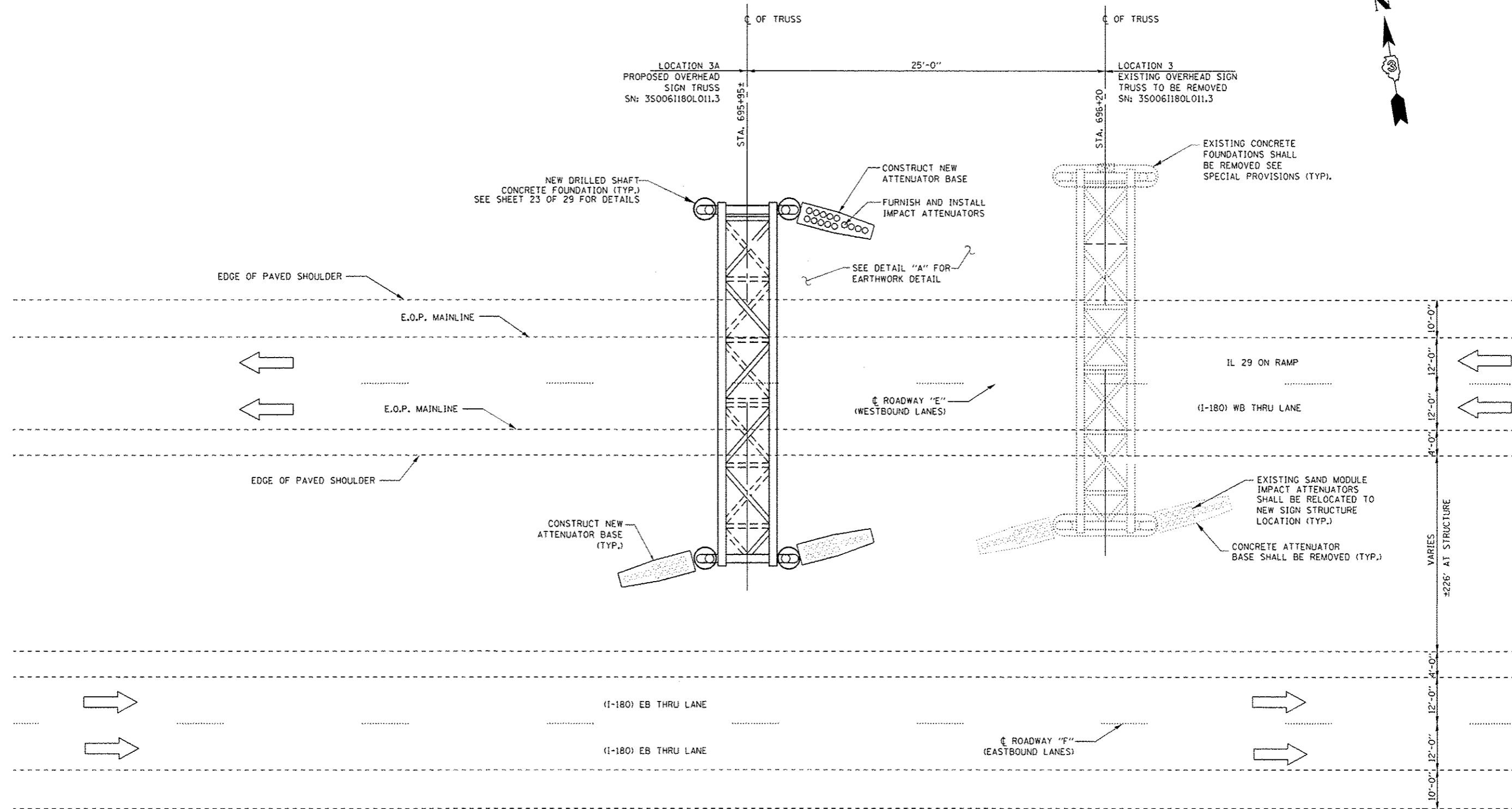
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	346325-ehs-details.dgn	DRAWN - YOGESH PATEL	REVISED -			1-180	D-3 OVD SIN STR REPL 15-06	BUREAU	28	9
	PLOT SCALE = 249999.6750 1/ in.	CHECKED - RON WOODSHANK	REVISED -							
	PLOT DATE = 10/2/2014	DATE - 6/4/2014	REVISED -			SCALE: _____	SHEET NO. 1 OF 1 SHEETS	STA. _____ TO STA. _____		CONTRACT NO. 46333



**ROADWAY PLAN DETAILS LOCATION 2 & 2A**  
**STRUCTURE NO. 3S0061180R009.7**

EXISTING: I-180 SB M.P. 9.7 STA. 611+00  
 PROPOSED: I-180 SB M.P. 9.7 STA. 611+25

FILE NAME -	USER NAME - woodshank-1	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN LOCATION 2 & 2A	F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
c:\pwworksp\woodshank-1\00398505	3346333-sht-details.dgn	DRAWN - YOGESH PATEL	REVISED -			I-180	0-3 OVD SIN STR REPL 15-06	BUREAU	28	10	
	PL01 SCALE = 2499946758 1/ in.	CHECKED - RON WOODSHANK	REVISED -			CONTRACT NO. 46333					
	PL01 DATE = 10/2/2014	DATE - 6/4/2014	REVISED -			ILLINOIS					
					SCALE: _____	SHEET NO. 1 OF 1 SHEETS		STA. _____ TO STA. _____			

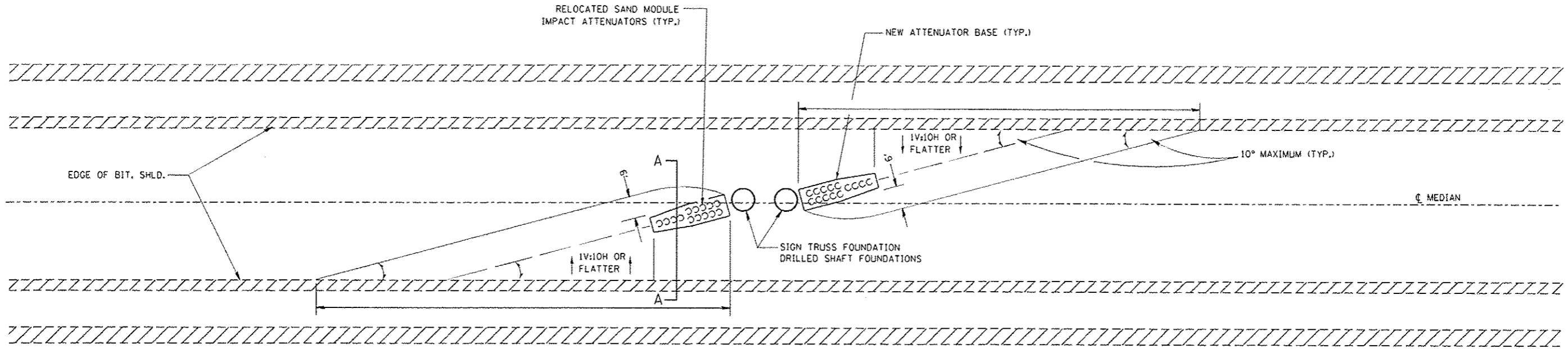


**ROADWAY PLAN DETAILS LOCATION 3 & 3A**

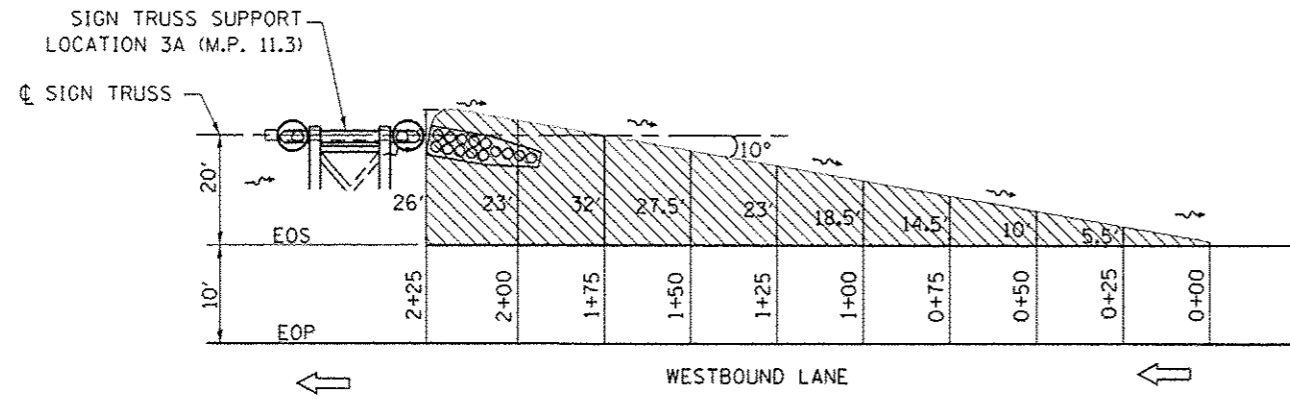
**STRUCTURE NO. 3S0061180L011.3**

EXISTING: I-180 WB M.P. 11.3 STA. 696 + 20  
 PROPOSED: I-180 WB M.P. 11.3 STA. 695 + 95

FILE NAME -	USER NAME - woodshank.1	DESIGNED - YOGESH PATEL	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GENERAL PLAN LOCATION 3 &amp; 3A</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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	PLOT SCALE = 2499/16720' / in.	CHECKED - RON WOODSHANK	REVISED -			CONTRACT NO. 46333					
	PLOT DATE = 10/22/2014	DATE - 6/4/2014	REVISED -			ILLINOIS					
					SCALE: _____	SHEET NO. 1 OF 1 SHEETS		STA. _____ TO STA. _____			

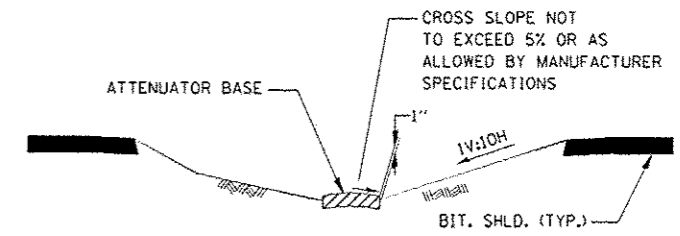


**IMPACT ATTENUATOR LAYOUT AND GRADING PLAN**



**DETAIL "A"**

NOTE: OFFSETS REFLECT THE MIN. LENGTH REQUIRED FOR A 10:1 SLOPE AFTER WHICH 6:1 SLOPE IS THE MIN. POLICY SLOPE



**SECTION A - A**  
SEE NOTES

NOTE:

ATTENUATOR BASE SHALL BE PER MANUFACTURER SPECIFICATIONS EXCEPT SAND MODULE SYSTEMS SHALL HAVE THE FOLLOWING ADDITIONAL REQUIREMENTS:

1. ATTENUATOR BASE SHALL PROVIDE A 1' BUFFER ALONG THE SIDES AND FRONT OF THE ARRAY.
2. SAND MODULE SYSTEMS SHALL BE PLACED ON A CONCRETE BASE
3. ALL EARTH EXCAVATION MATERIAL MUST BE DISTRIBUTED ON-SITE AT EACH LOCATION. THE CONTRACTOR IS NOT ALLOWED TO HAUL ANY MATERIAL AWAY.

**GENERAL NOTES**

1. THE 10:1 SLOPE CONTROLS NOSE OF ATTENUATOR BASE ELEVATION.
2. ATTENUATOR BASE GRADE PARALLELS EDGE OF PAVEMENT GRADE.
3. SLOPE ADJACENT TO ATTENUATOR BASE SHALL BE 10:1 OR FLATTER.
4. COST FOR ANY NECESSARY GRADING TO MEET THE SLOPE REQUIREMENTS SHALL BE INCLUDED IN THE COST OF THE INSTALLATION OF THE ATTENUATOR BASE
5. THIS DETAIL SHALL BE USED IN CONJUNCTION WITH STANDARD 643001-02

FILE NAME -	USER NAME - woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TYPICAL IMPACT ATTENUATORS LAYOUT &amp; GRADING PLAN</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
c:\pvc\work\pav\sdot\woodshankr1\140378505\346333-shs\details.dgn	DRAWN - YOGESH PATEL	REVISED -	1-180			0-3 OVD SIN STR REPL 15-06	BUREAU	28	12	
PLOT SCALE = 250000.0000 1/1 in.	CHECKED - RON WOODSHANK	REVISED -	CONTRACT NO. 46333							
PLOT DATE = 10/2/2014	DATE - 6/4/2014	REVISED -	ILLINOIS FED. AID PROJECT							
					SCALE: _____	SHEET NO. 1 OF 1 SHEETS		STA. _____ TO STA. _____		

**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<sub>u</sub> = 3,500 p.s.i.  
f<sub>y</sub> = 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 Specifications.

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) 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.

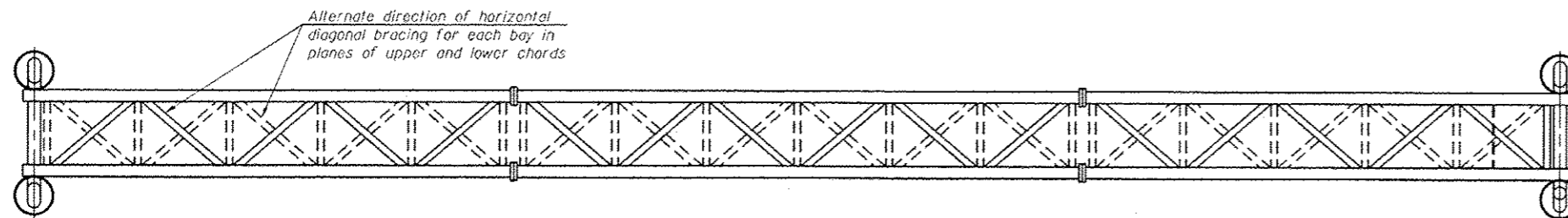
CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Concrete Sealer in accordance with the Standard Specifications.

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

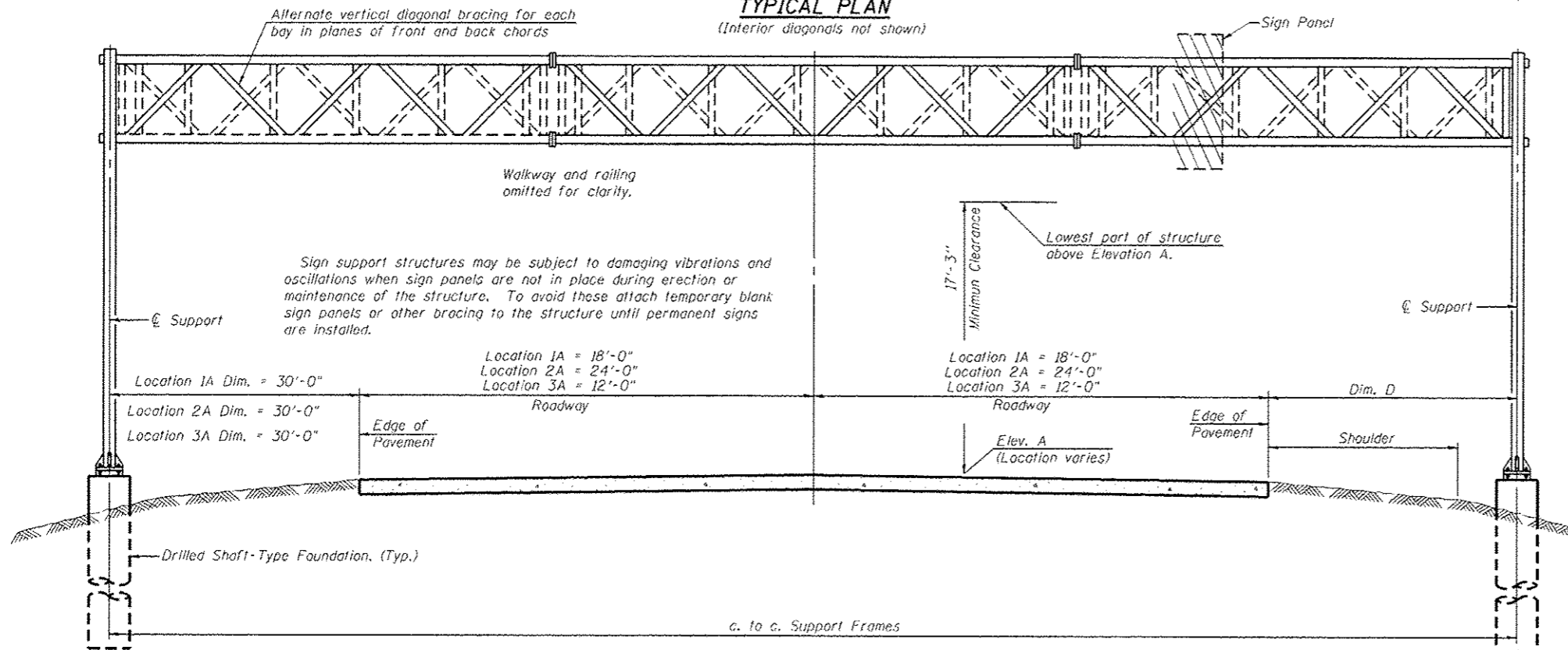
FOUNDATIONS: The contract unit price for Concrete Foundations and Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE SPAN TYPE I-A	Foot	
OVERHEAD SIGN STRUCTURE SPAN TYPE II-A	Foot	288'-0"
OVERHEAD SIGN STRUCTURE SPAN TYPE III-A	Foot	
OVERHEAD SIGN STRUCTURE WALKWAY TYPE A	Foot	134'-0"
CONCRETE FOUNDATIONS	Cu. Yds.	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	69.4

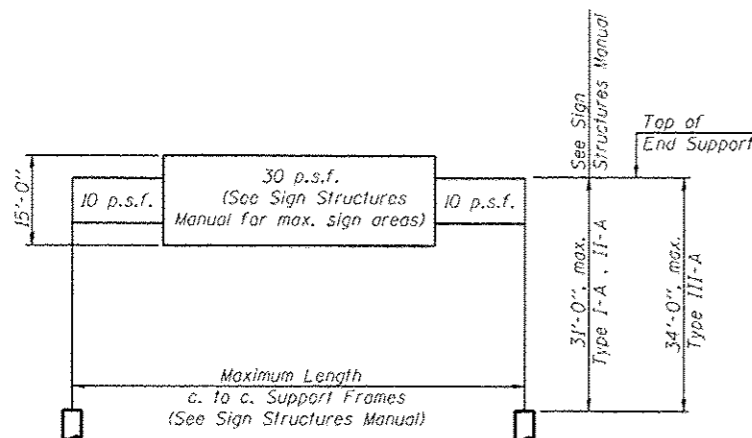


**TYPICAL PLAN**  
(Interior diagonals not shown)



**TYPICAL ELEVATION**  
(Looking at Face of Signs)\*\*

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



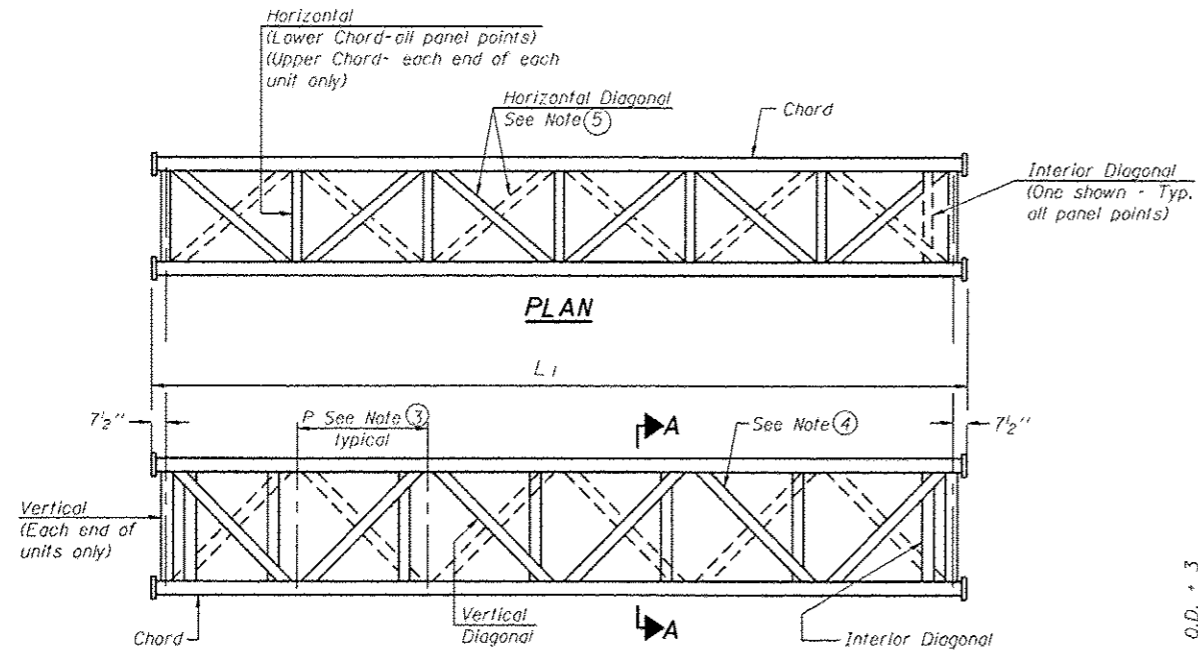
**DESIGN WIND LOADING DIAGRAM**

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.

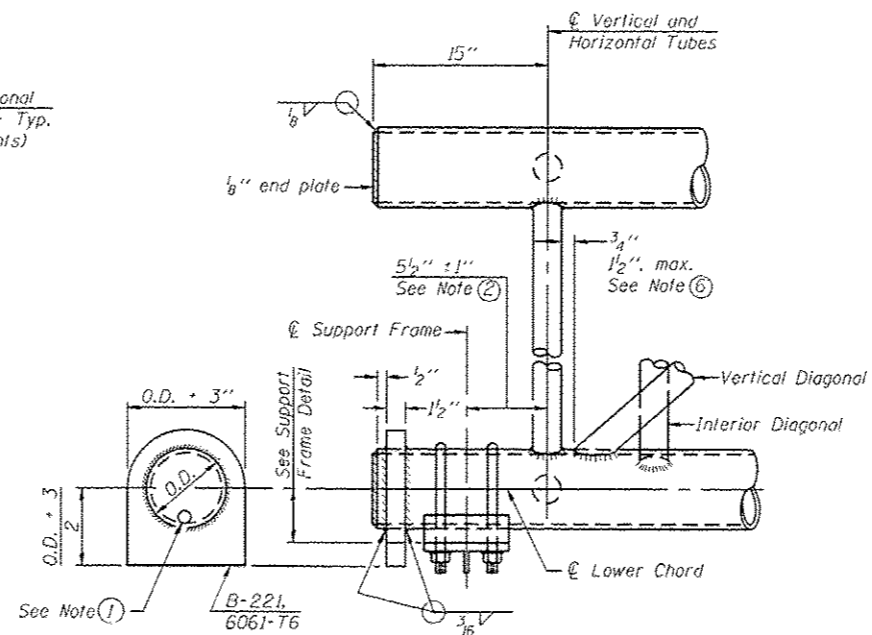
Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total Sign Area
3S0061180R008.9 (1A)	570+85	I-A	96'-0"	650.35	30'-0"	9'-6"	247 Sq. Ft.
3S0061180R009.7 (2A)	611+25	II-A	108'-0"	632.32	30'-0"	10'-0"	300 Sq. Ft.
3S0061180L011.3 (3A)	695+95	I-A	84'-0"	465.85	30'-0"	10'-0"	305 Sq. Ft.

\*\*Looking upstation for structures with signs both sides.

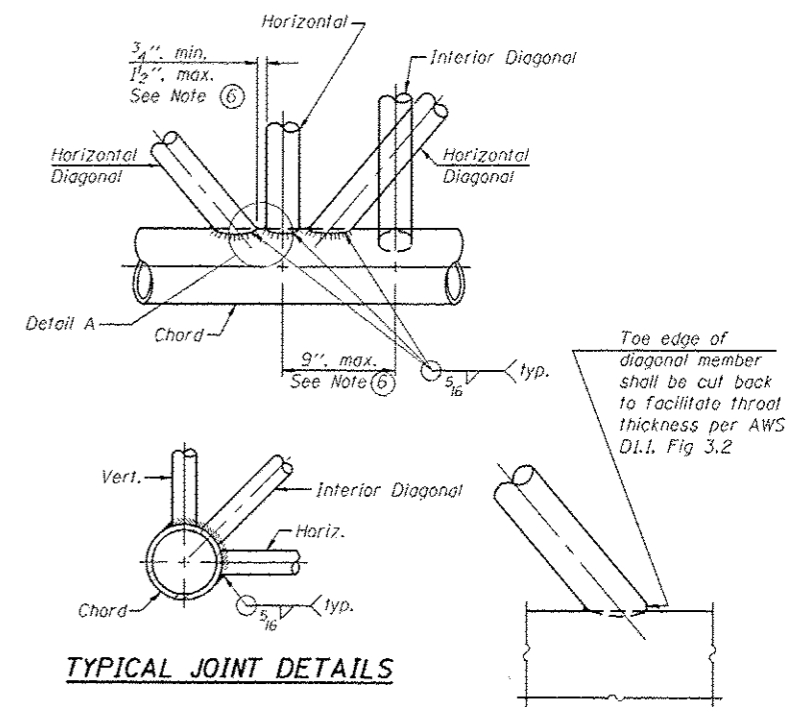
\* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.



**ELEVATION  
TYPICAL INTERIOR UNIT**  
Even number of panels/interior unit required.

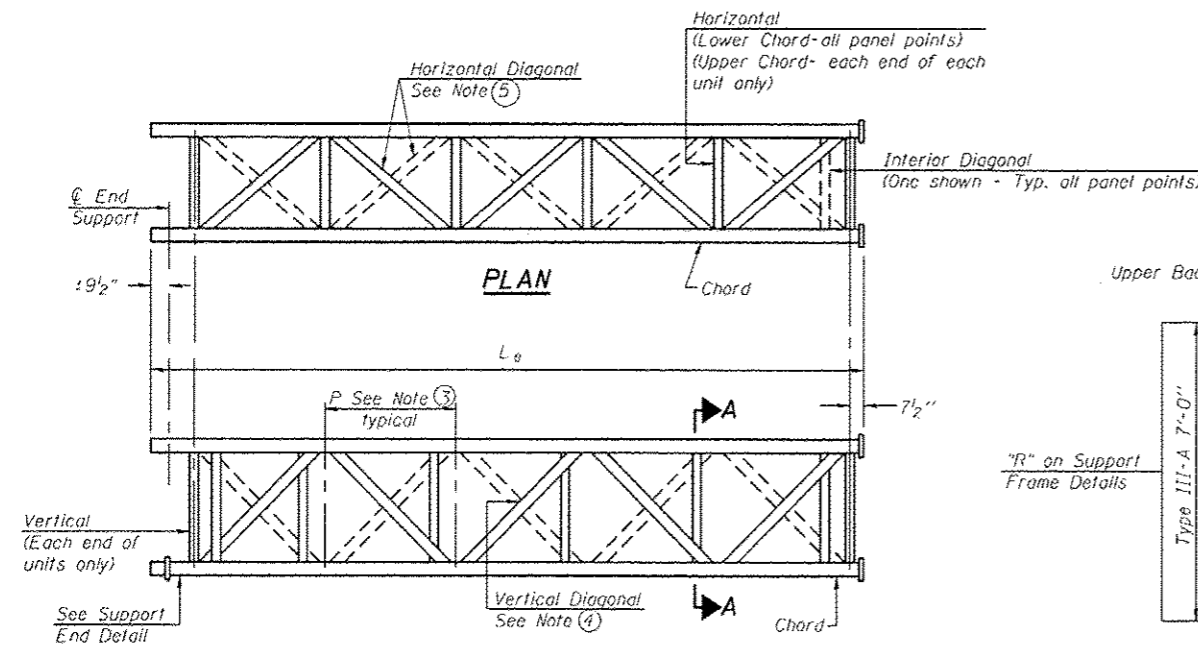


**SUPPORT END DETAIL FOR EXTERIOR UNIT**

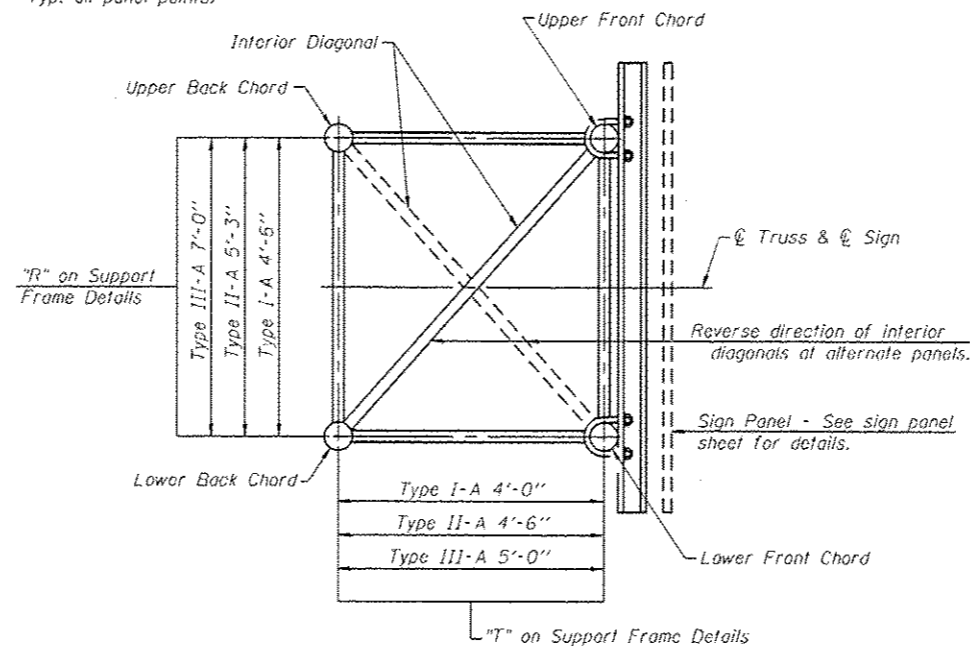


**TYPICAL JOINT DETAILS**

**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. 1/2" diameter drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)
- ② 5 1/2" 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 3/4" minimum to 1 1/2" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.

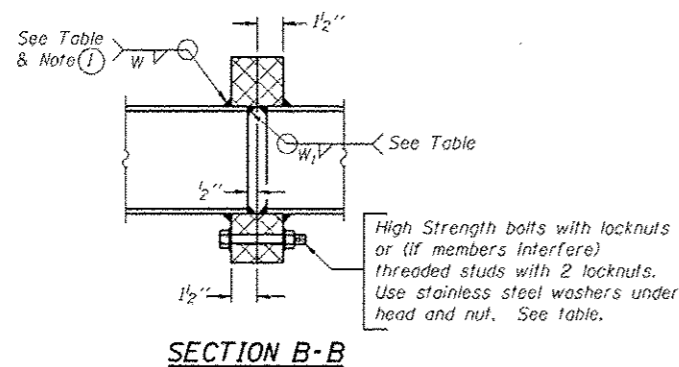
OS-A-2

6-1-12

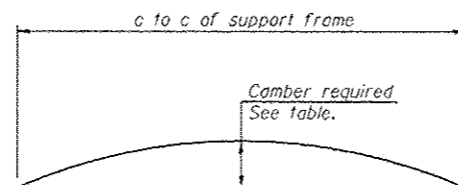
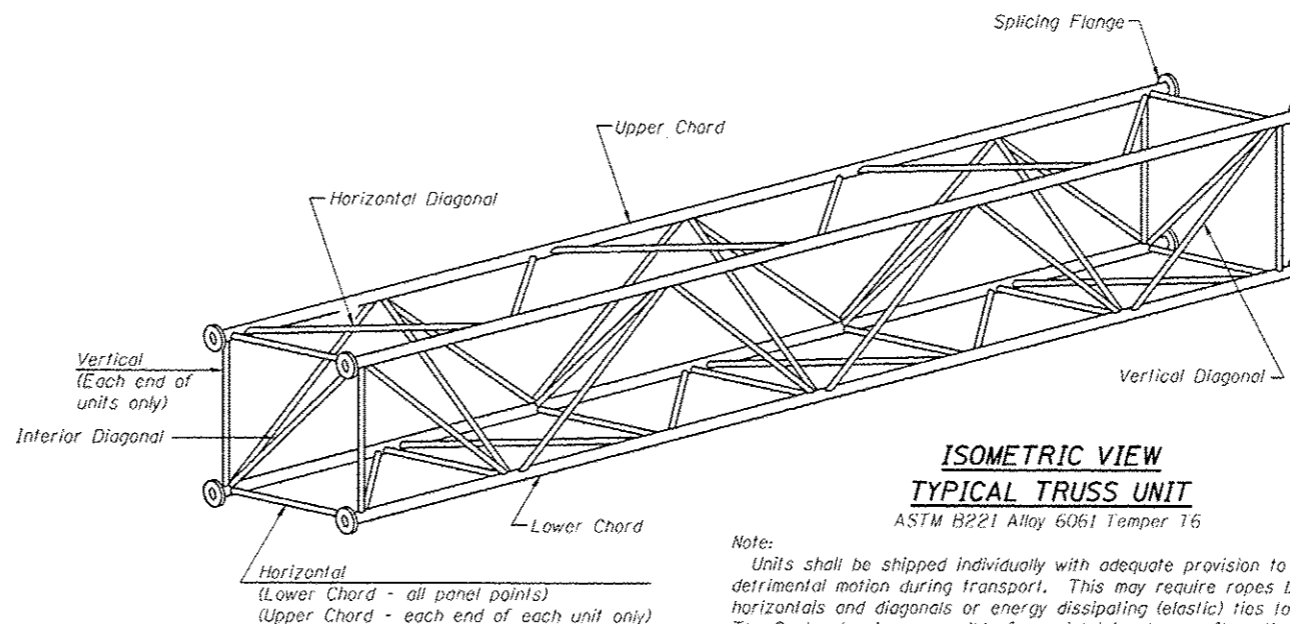
FILE NAME: c:\pwwork\pwwork\woodshank\108392505\346333-shr-detailed.dgn	USER NAME: woodshankr	DESIGNED: YOGESH PATEL	REVISED:	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>OVERHEAD SIGN STRUCTURES - ALUMINUM TRUSS DETAILS FOR TRUSS TYPES I-A, II-A AND III-A</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLU: SCALE: 25/8000.0000 1/2 in.	CHECKED: RON WOODSHANK	REVISED:	1-180			0-3 OVD SIGN STR REPL 15-06	BUREAU	28	14	
PLDT DATE: 6/26/2014	DATE: 6/4/2014	REVISED:	CONTRACT NO. 46333							
SCALE: SHEET NO. 2 OF 11 SHEETS STA. TO STA. ILLINOIS FED. AID PROJECT										

**TRUSS UNIT TABLE**

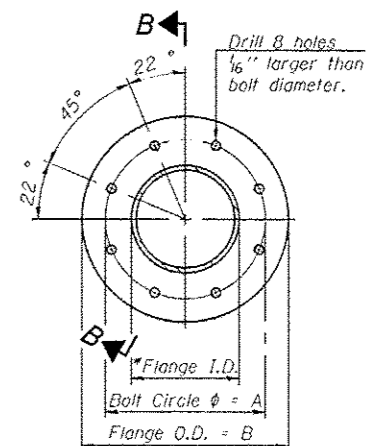
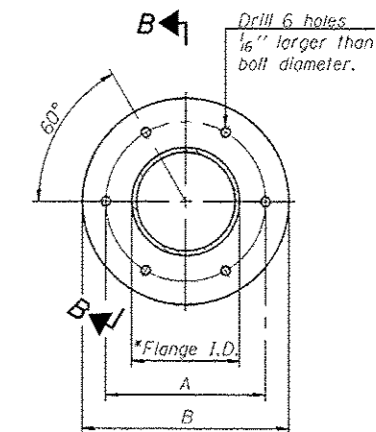
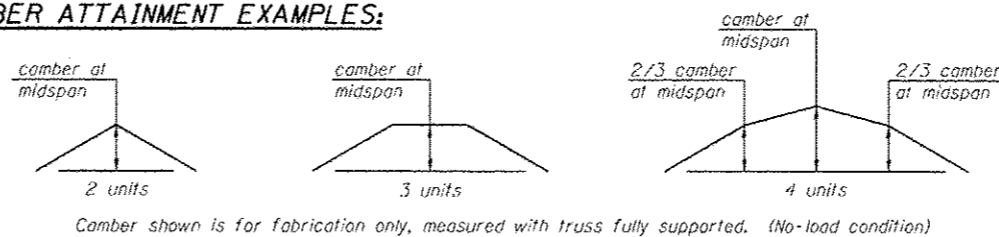
Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit				Upper & Lower Chord		Verticals: Horizontals: Vertical, Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
			No. Panels per Unit	Unit Lgth.(L <sub>e</sub> )	Panel Lgth.(P)	No. Req'd.	No. Panels per Unit	Unit Lgth.(L <sub>i</sub> )	Panel Lgth.(P)	O.D.	Wall	O.D.	Wall		Bolts		Weld Sizes		A	B
															No./Splice	Dia.	W	W <sub>1</sub>		
350061180R008.9 (1A)	570+85	I-A	7	34'-3"	4'-7 1/2"	1	6	29'-0"	4'-7 1/2"	5 1/2"	5/16"	2 1/2"	5/16"	3.04"	6	7/8"	3/8"	1/4"	9 1/4"	12 1/4"
350061180R009.7 (2A)	611+25	II-A	7	38'-5 3/4"	5'-2 3/4"	1	6	32'-7 1/2"	5'-2 3/4"	6 1/2"	5/16"	3"	5/16"	3.51"	6	1"	3/8"	1/4"	11"	14 1/2"
350061180L011.3 (3A)	695+95	I-A	6	28'-9"	4'-5 3/4"	1	6	28'-1 1/2"	4'-5 3/4"	5"	5/16"	2 1/2"	5/16"	2.48"	6	7/8"	5/16"	1/4"	8 3/4"	11 3/4"



(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.



**CAMBER ATTAINMENT EXAMPLES:**

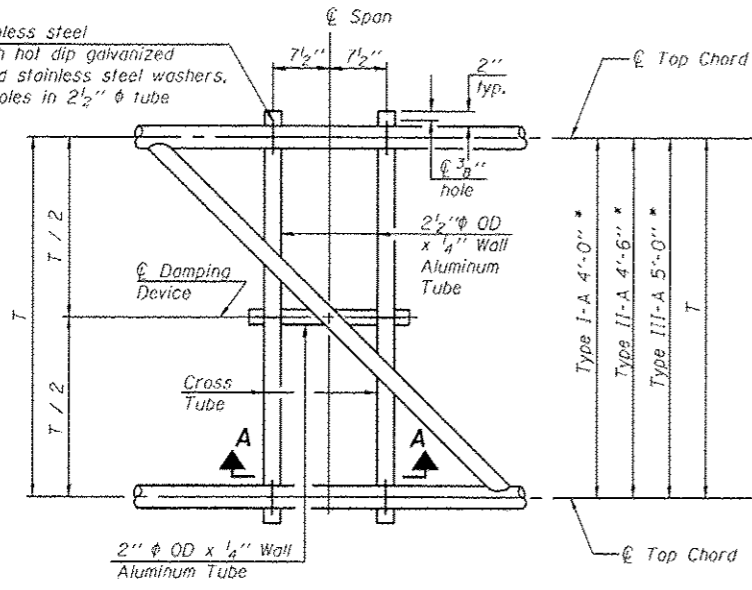


OS4-A-2

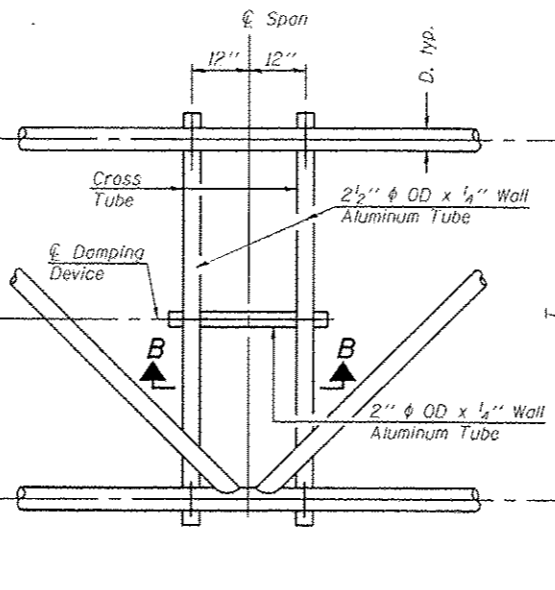
6-1-12

FILE NAME - c:\pwworkspace\woodshankr1\346333-shr-details.dgn	USER NAME - woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>OVERHEAD SIGN STRUCTURES - ALUMINUM TRUSS DETAILS FOR TRUSS TYPES I-A, II-A AND III-A</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLT SCALE - 250000.0000' / in.	CHECKED - RON WOODSHANK	REVISED -	1-180			D-3 OVD SIN STR REPL 15-06	BUREAU	28	15	
PLT DATE - 6/26/2014	DATE - 6/4/2014	REVISED -	CONTRACT NO. 46333							
SCALE: _____ SHEET NO. 3 OF 11 SHEETS STA. _____ TO STA. _____						ILLINOIS FED. AID PROJECT				

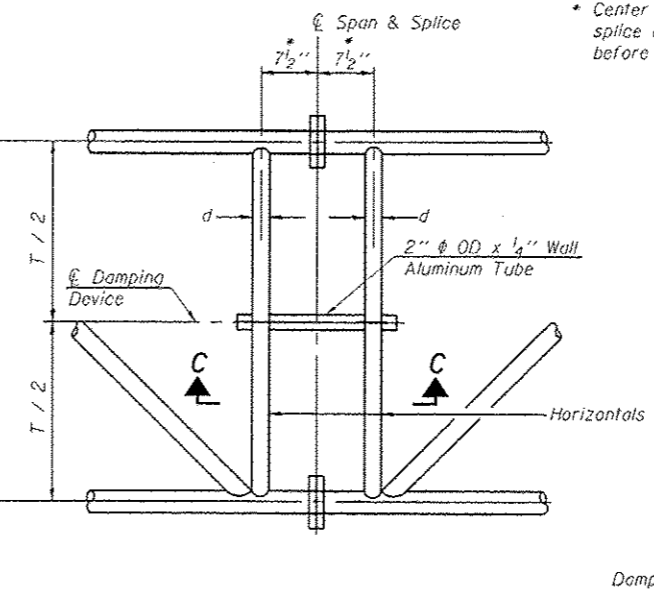
$\frac{5}{16}$ "  $\phi$  stainless steel  
U-bolt with hot dip galvanized  
locknuts and stainless steel washers,  
typ.  $\frac{3}{8}$ "  $\phi$  holes in  $2\frac{1}{2}$ "  $\phi$  tube



**PLAN DETAIL "A"**  
Span between Panel Points



**PLAN DETAIL "B"**  
Span at Panel Point



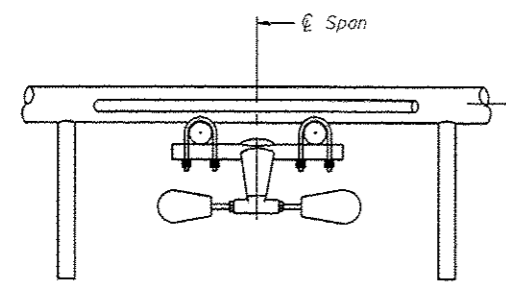
**PLAN DETAIL "C"**  
Span at Chord Splice

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

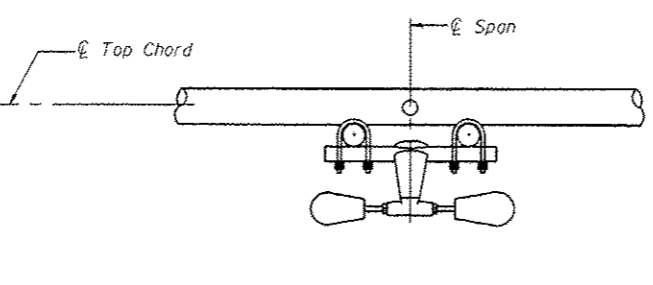
**NOTES**

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

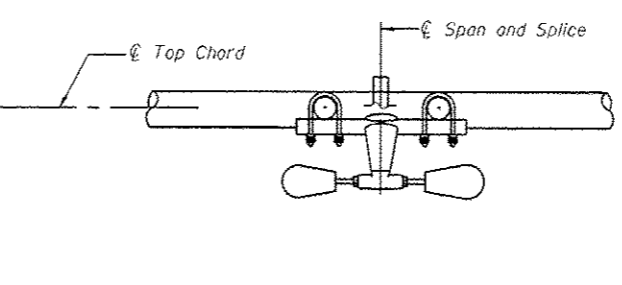
Materials: Materials: Aluminum tubes shall be ASTM B221 alloy 6061 Temper T6. Cost included in Overhead Sign Structure...



**SECTION A-A**

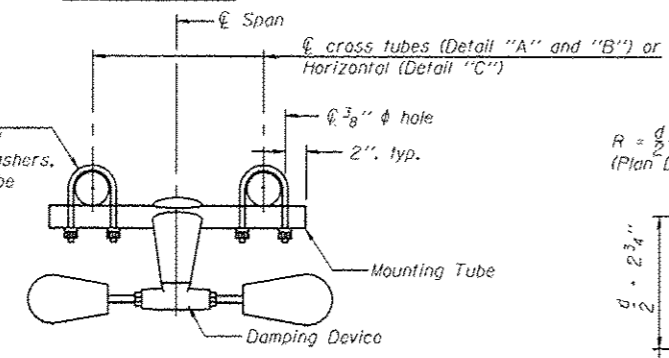


**SECTION B-B**

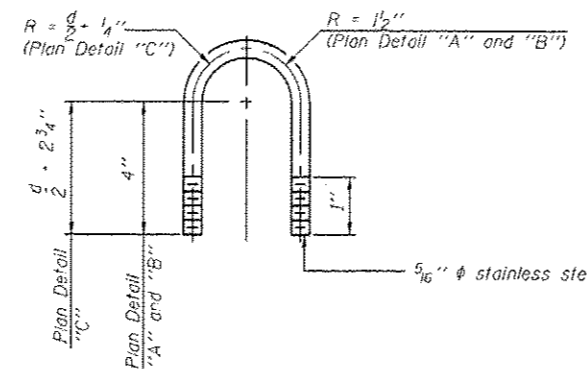


**SECTION C-C**

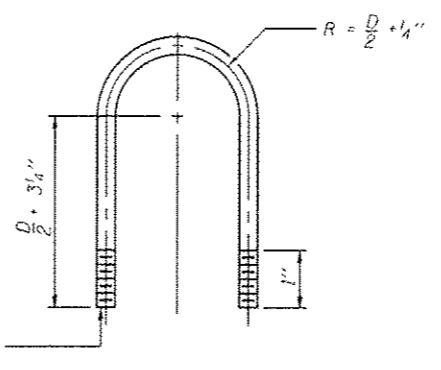
$\frac{5}{16}$ "  $\phi$  stainless steel  
U-bolt with hot dip galvanized  
locknuts and stainless steel washers,  
typ.  $\frac{3}{8}$ "  $\phi$  holes in mounting tube



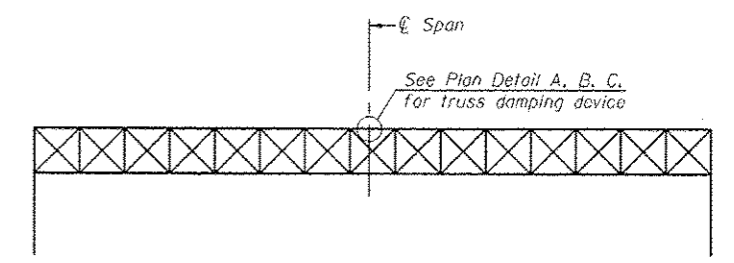
**TRUSS DAMPING  
DEVICE CONNECTION DETAIL**  
(Typical)



**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

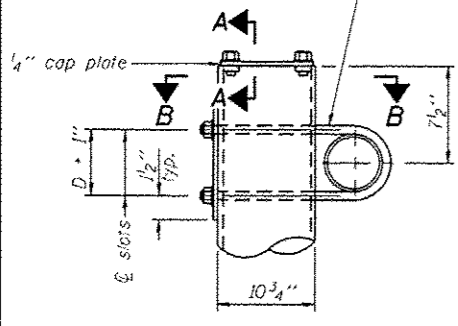
OS-A-D

6-1-12

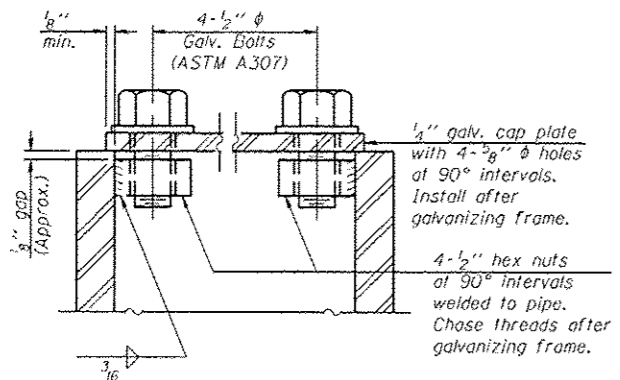
FILE NAME -	USER NAME - woodshank-1	DESIGNED - YOGESH PATEL	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>OVERHEAD SIGN STRUCTURE DAMPING DEVICE</b>		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ci:\pwork\pwork\woodshank-1\03292589	346333-struct-details.dgn	DRAWN - YOGESH PATEL	REVISED -		SCALE: _____	SHEET NO. 4 OF 11 SHEETS	STA.	TO STA.	1-180	0-3 OVD SIN STR REPL 15-06	BUREAU	28 16
	PLOT SCALE = 250000.0000 1/1 in.	CHECKED - RON WOODSHANK	REVISED -					CONTRACT NO. 46333				
	PLOT DATE = 6/26/2014	DATE - 6/4/2014	REVISED -					ILLINOIS FED. AID PROJECT				



3/4" φ stainless steel U-bolt.  
Provide two washers and two hexagon locknuts. (4)  
1 1/16" x 2" slots on 10" φ pipe.  
(4 slots required per pipe)

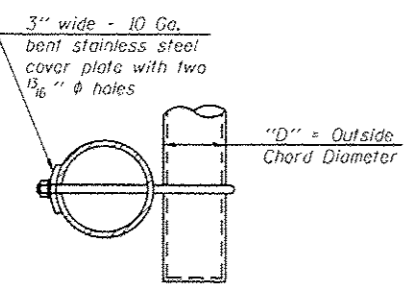


**DETAIL A**

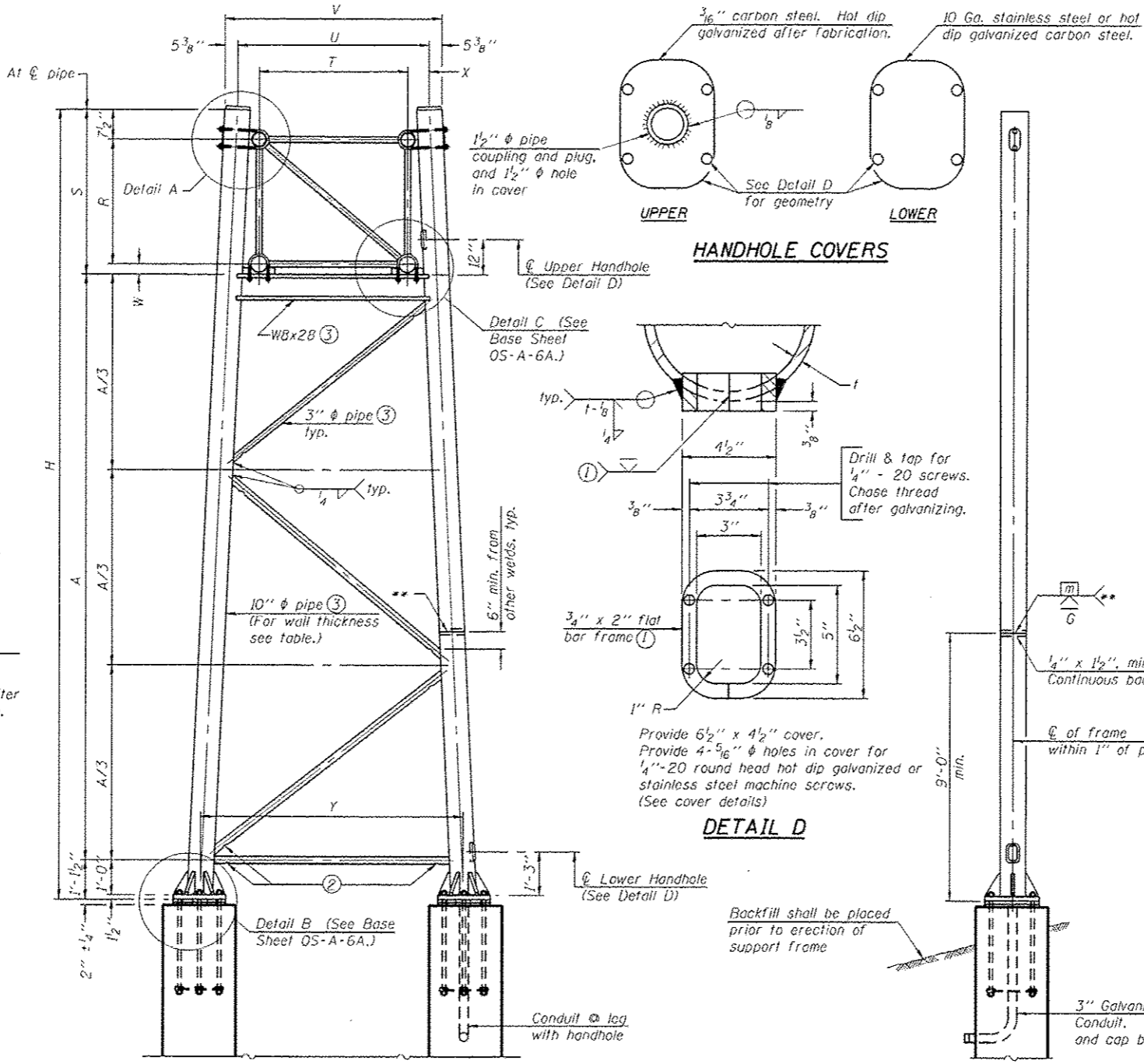


**SECTION A-A**

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

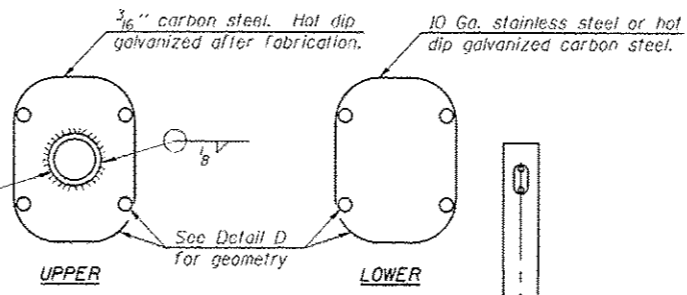


**SECTION B-B**

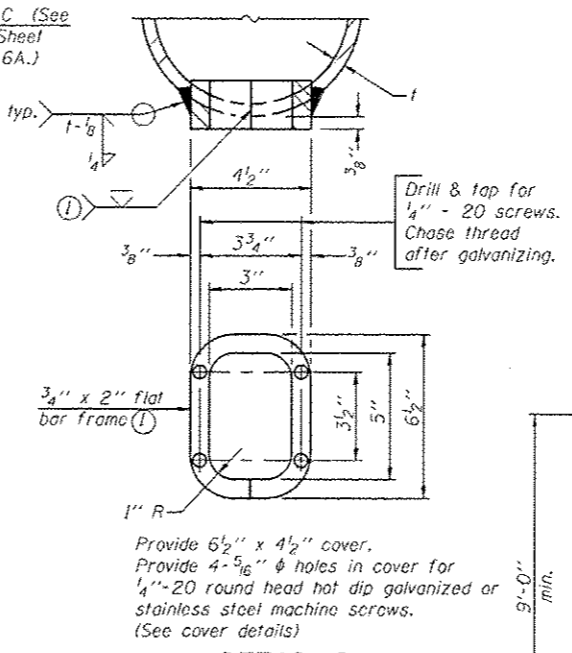


**SIDE ELEVATION**

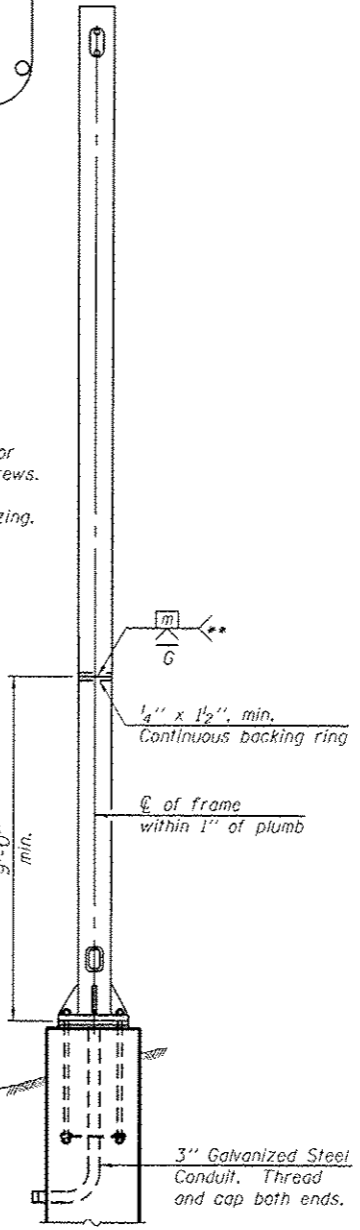
For Foundation Details, see base sheet OS-F3 (Spread Footing) or OS4-F3 (Drilled Shaft).



**HANDHOLE COVERS**



**DETAIL D**



**END ELEVATION**

Support Design Loads: See Base Sheet OS-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 500 μin 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 OS-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'-5 1/2"	4'-0"	5'-6"	6'-4 3/4"	4"	9"	8'-3"
II-A (5)	5'-3"	6'-3 1/4"	4'-6"	6'-1"	6'-11 3/4"	4 3/4"	9 1/2"	8'-3"

**10" φ 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.

Structure Number	Station	Support		Truss Type	Pipe Wall Thickness	H (6)	A
		Left	Right				
3S0061180R008.9 (1A)	570+85	X	X	I-A	0.279"	30'-0 1/2"	23'-5 1/2"
3S0061180R009.7 (2A)	611+25	X	X	II-A	0.500"	31'-10 3/4"	24'-6"
3S0061180L011.3 (3A)	695+95	X	X	I-A	0.279"	29'-3 1/4"	22'-8 1/4"

OS-A-6

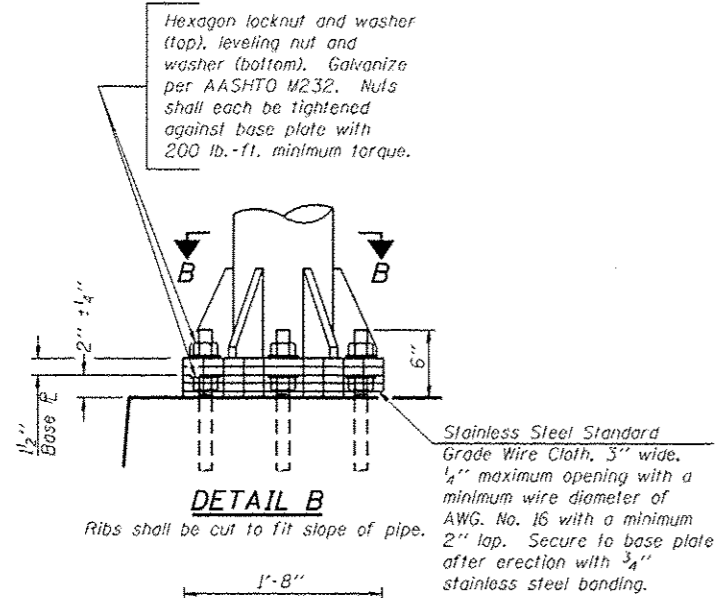
6-1-12

FILE NAME: c:\pwworkspace\woodshank\1400390205\346333-shr-details.dgn	USER NAME: woodshank	DESIGNED: YOGESH PATEL	REVISED:
PLOT SCALE: 250000.0000 1/1 in.		DRAWN: YOGESH PATEL	REVISED:
PLOT DATE: 6/26/2014		CHECKED: RON WOODSHANK	REVISED:
		DATE: 6/4/2014	REVISED:

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

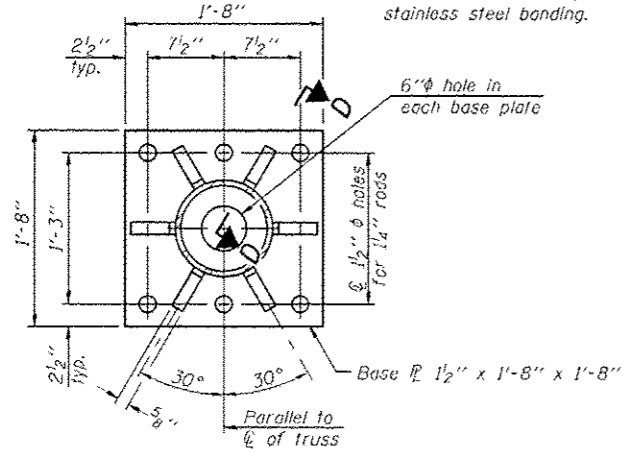
OVERHEAD SIGN STRUCTURES  
SUPPORT FRAME FOR ALUMINUM TRUSS

SCALE:	SHEET NO. 5 OF 11 SHEETS	STA. TO STA.	F.A.I. RTE. 1-180	SECTION D-3 OVD SIGN STR REPL 15-06	COUNTY BUREAU	TOTAL SHEETS 29	SHEET NO. 17
						CONTRACT NO. 46333	
ILLINOIS FED. AID PROJECT							

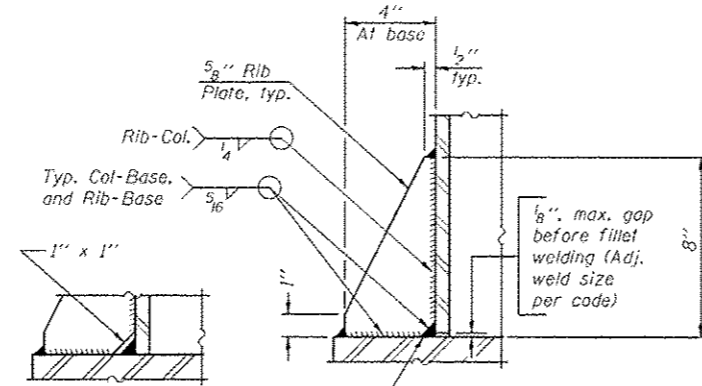


**DETAIL B**

Ribs shall be cut to fit slope of pipe.

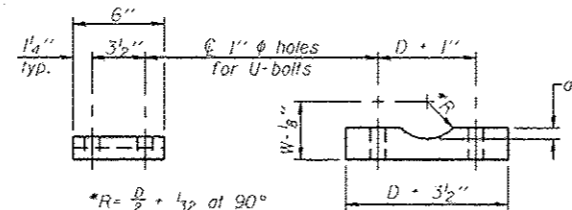


**SECTION B-B**



**SECTION D-D**

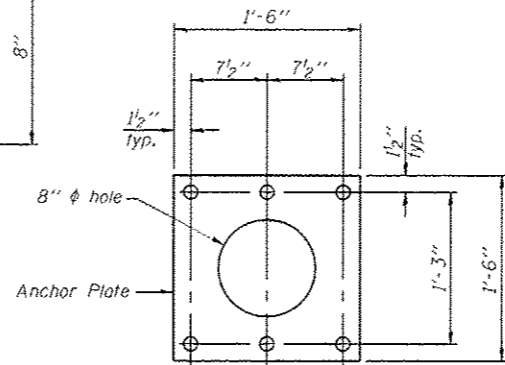
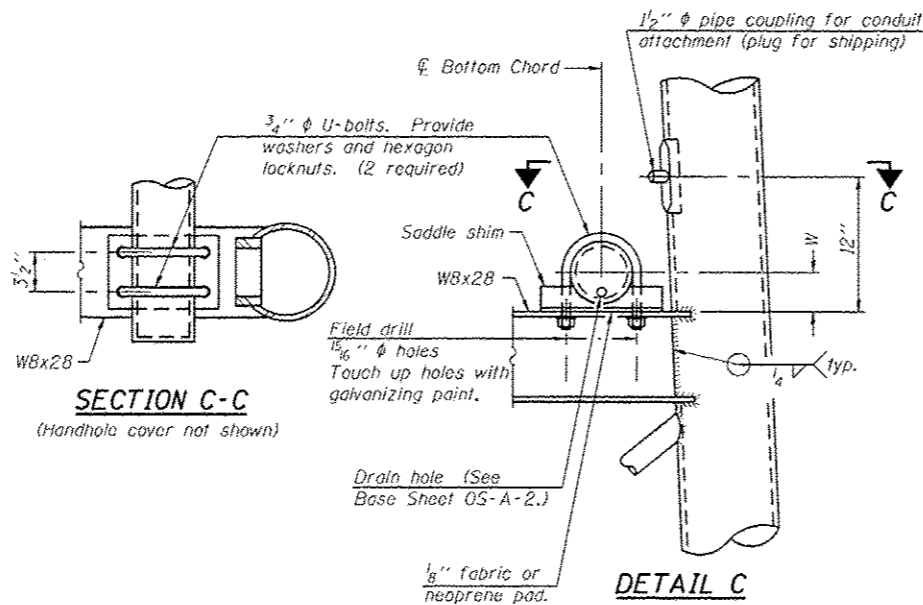
\*\* Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib 1/4" from snip.



**SADDLE SHIM DETAIL**

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

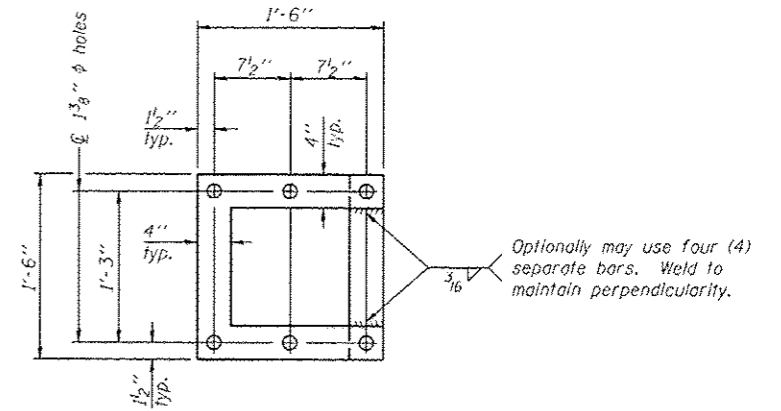
Truss Chord Nominal Dia.	0
5"	3/4"
5 1/2"	13/16"
6"	7/8"
6 1/2"	15/16"
7"	1"



**ANCHOR ROD DETAIL**  
Spread Footing Foundation

**10"  $\phi$  PIPE SUPPORT FRAME DETAILS**

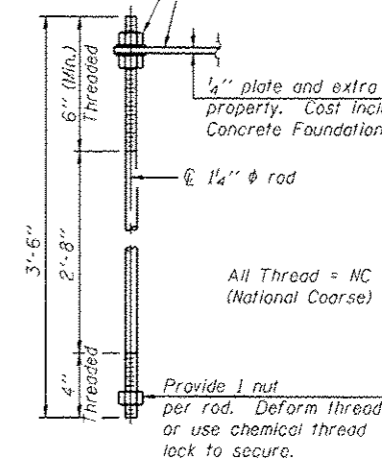
Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize upper 12" minimum per AASHTO M232. No welding shall be permitted on rods.



**POSITIONING PLATE(S)**

At each location, provide 1/4" thick positioning plate(s) and six (6) additional nuts to be used with leveling nuts to maintain anchor bolts position during concrete placement.

1/4" plate and extra nuts become Contractor's property. Cost included in Drilled Shaft Concrete Foundations.

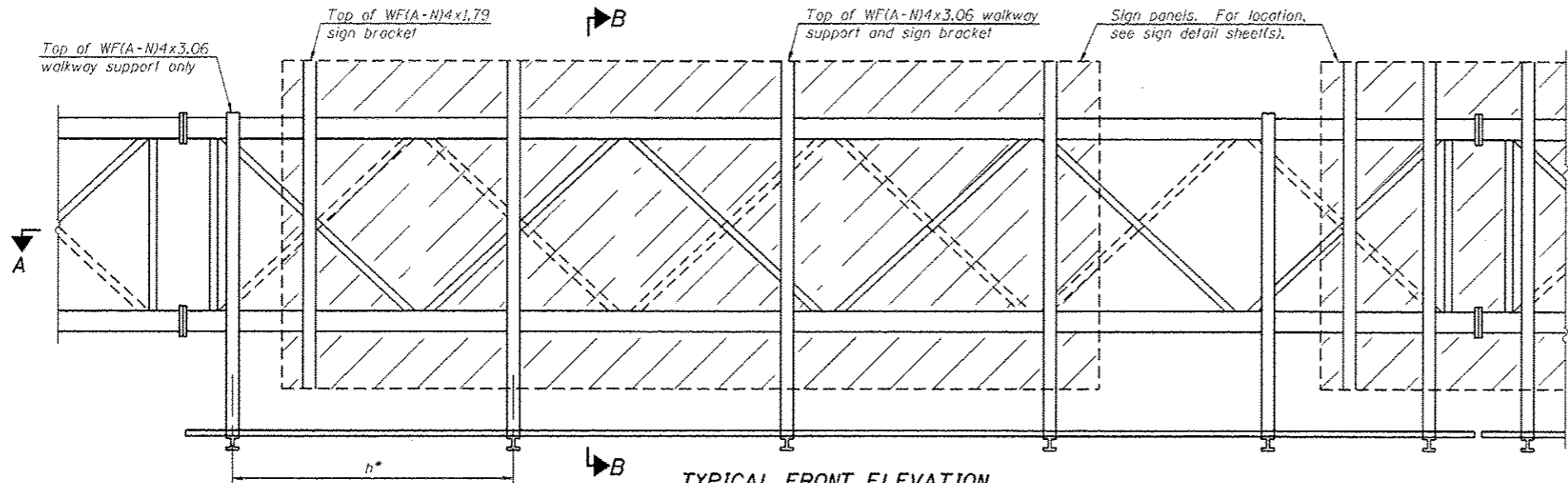


**ANCHOR ROD DETAIL**  
Drilled Shaft Foundation

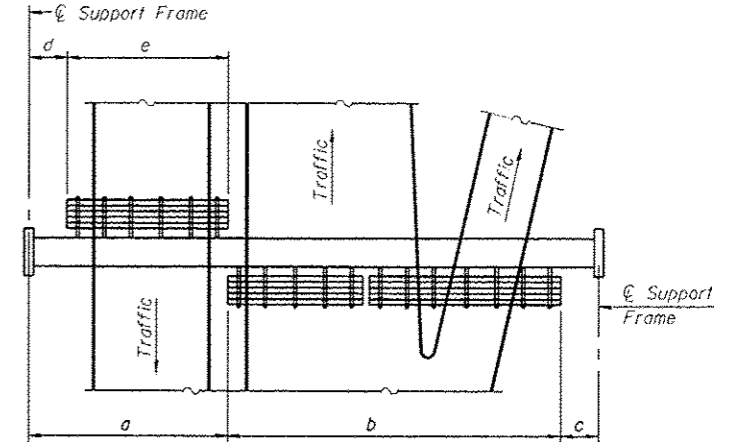
OS-A-6A

6-1-12

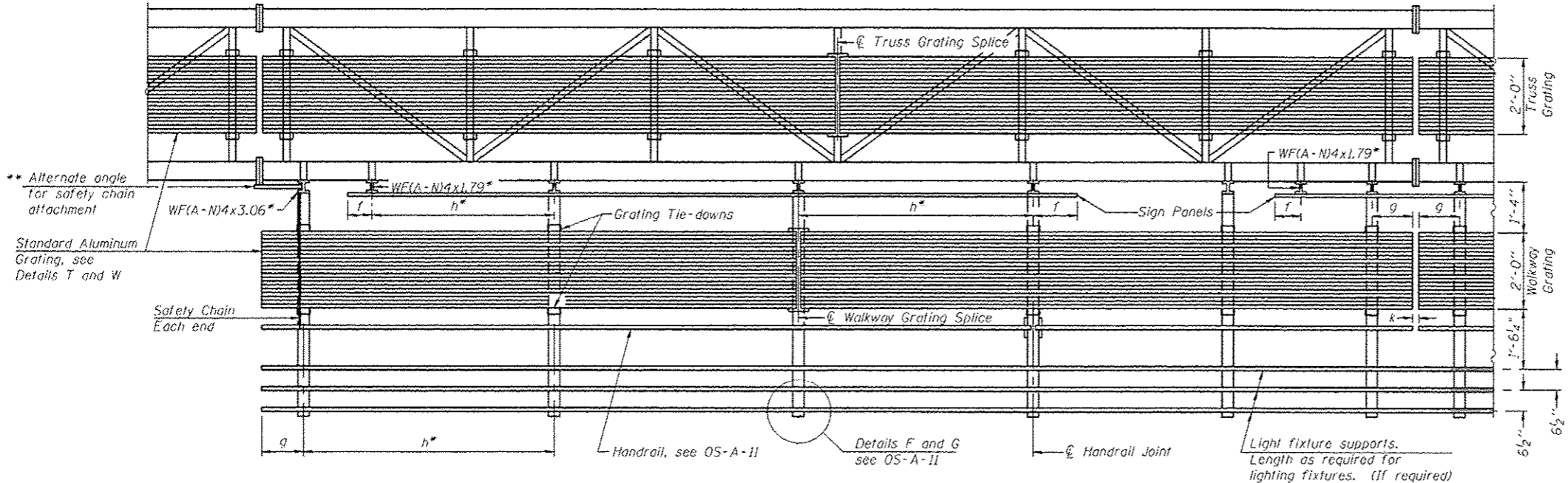
FILE NAME	USER NAME	DESIGNED	REVISIONS	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES SUPPORT FRAME DETAILS - ALUMINUM TRUSS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
en:\pwwork\woodshank\1103200505	woodshank	YOGESH PATEL		STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES SUPPORT FRAME DETAILS - ALUMINUM TRUSS	1-180	D-3 OVD SIN STR REPL 15-06	BUREAU	28	18		
		YOGESH PATEL				SCALE:	SHEET NO. 6 OF 11 SHEETS	STA.	TO STA.	CONTRACT NO. 46333		
		RON WOODSHANK				ILLINOIS FED. AID PROJECT						
		6/4/2014										



**TYPICAL FRONT ELEVATION**  
With lights and handrail omitted for clarity.  
For Section B-B, see Base Sheet OS-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 center of nearest bracket)  
 g = 12" maximum, 4" minimum (End of walkway grating to center of nearest support bracket)  
 h = 6'-0" maximum (center to center of 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 OS-A-11.  
 For Details T and W, Section B-B and Grating Splice Details see Base Sheet OS-A-10.  
 For Handrail Details see Base Sheet OS-A-11.

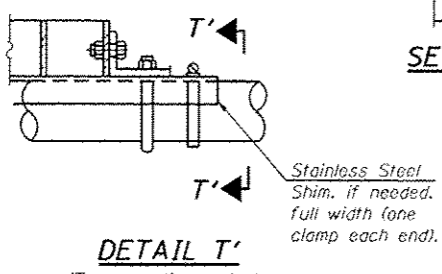
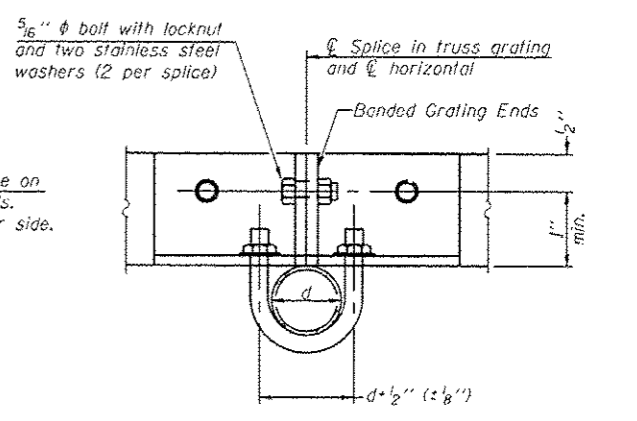
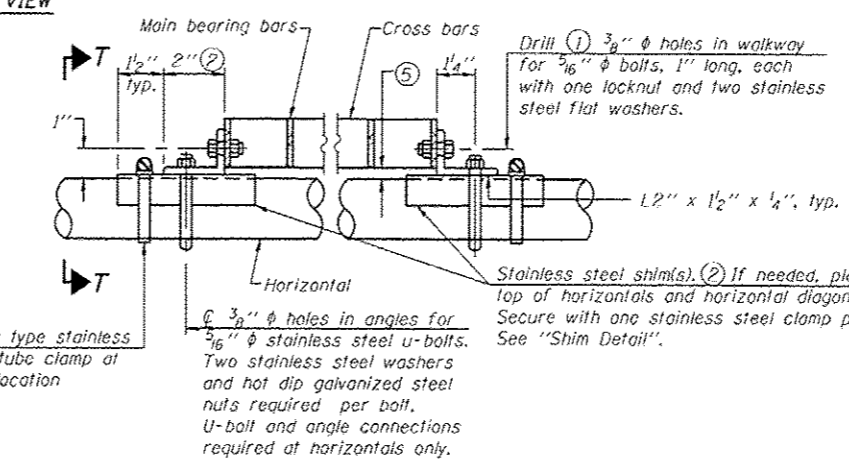
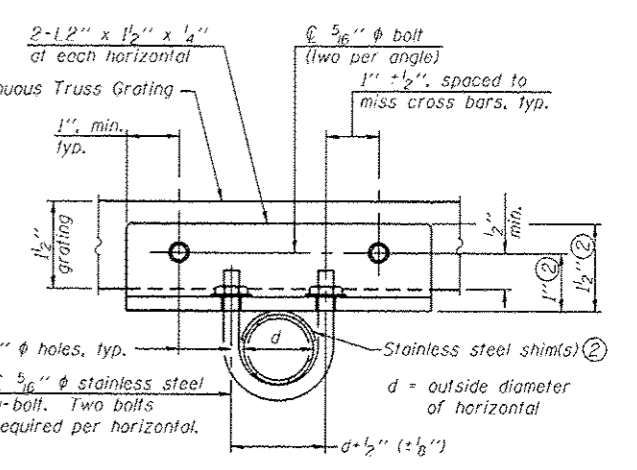
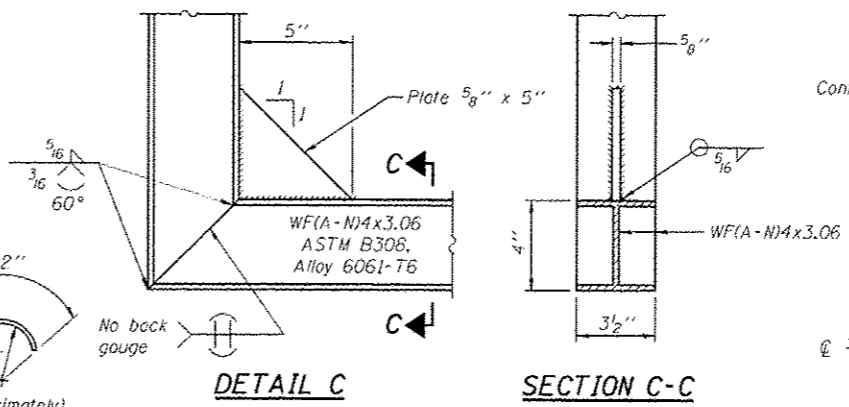
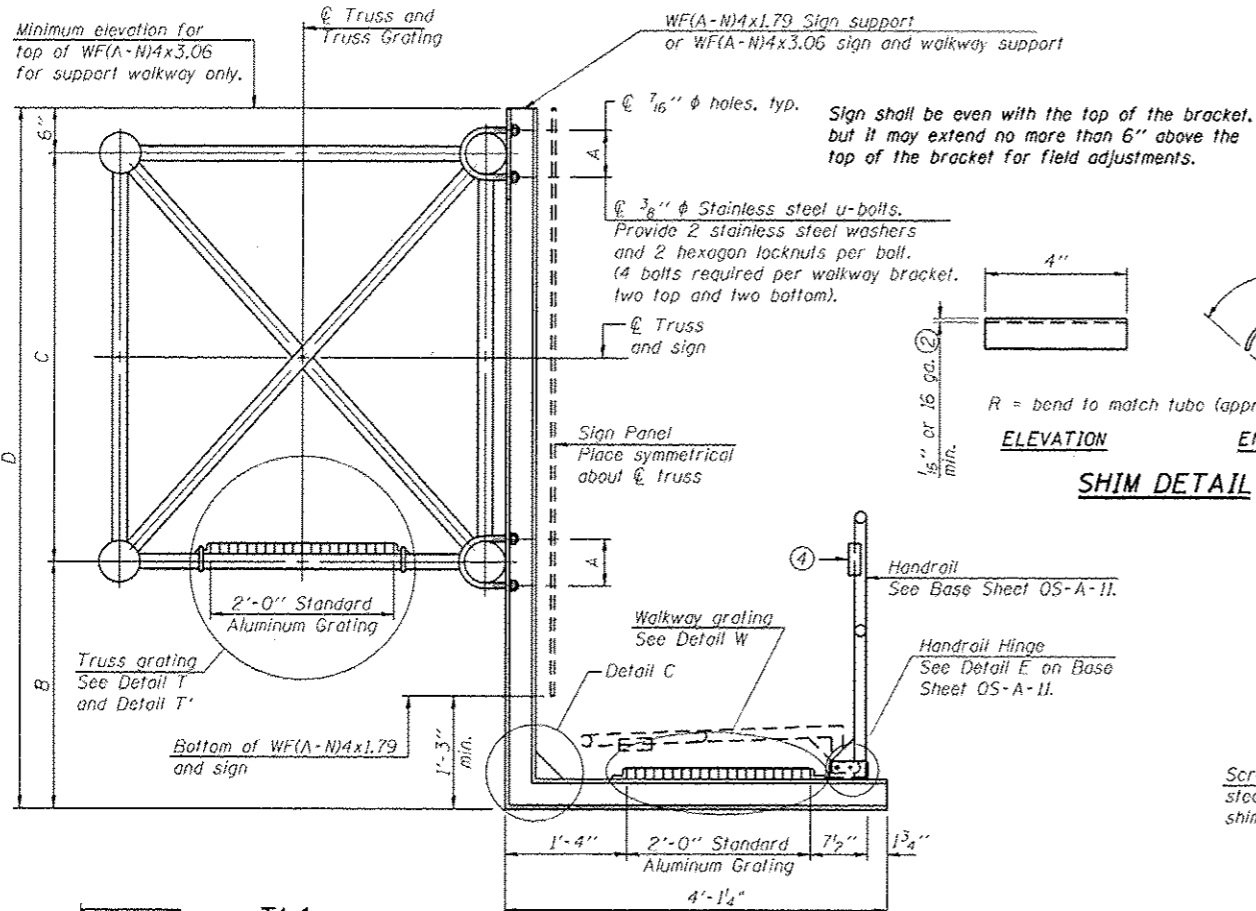
Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths
3S0061B0R008.9 (1A)	570+85	25'-0"	46'-0"	25'-0"	N/A	N/A	46'-0"
3S0061B0R009.7 (2A)	611+25	25'-0"	58'-0"	25'-0"	N/A	N/A	58'-0"
3S0061B0L011.3 (3A)	695+95	25'-0"	34'-0"	25'-0"	N/A	N/A	34'-0"

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".

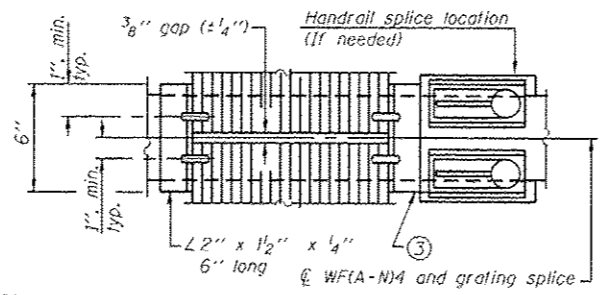
Walkway and Truss Grating width dimensions are nominal and may vary ±1/2" based on available standard widths.

OS-A-9

6-1-12



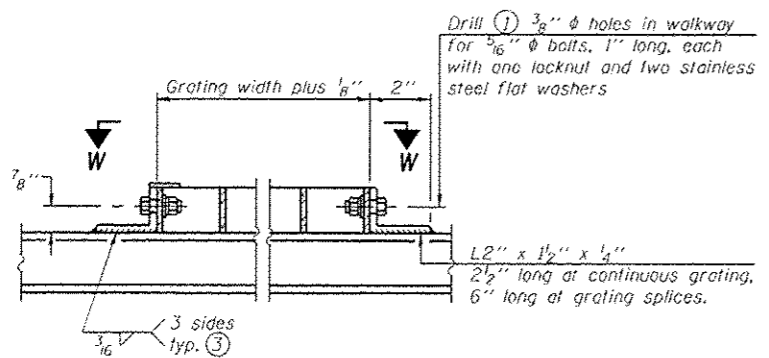
SECTION B-B



(AT WALKWAY GRATING SPLICE)

SECTION W-W

DETAIL T' (Truss grating splice) Details not shown same as Detail T. Alternate materials may be used subject to the Engineer's review and approval.



DETAIL W (Walkway grating)

**SPECIFICATIONS FOR STANDARD ALUMINUM GRATING**

Main Bearing Bars shall be 3/16" x 1 1/2" on 1 3/16" centers and conform to ASTM B221 Alloy 6061-T6.  
 Cross bars shall be 3/16" x 1 1/2" on 4" centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

Aluminum Grating with modified "I" sections for main bearing bars shall meet the following requirements:  
 Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.<sup>3</sup> per bar, a depth of 1 1/2", spaced on 1 3/16" centers.  
 Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 4" centers.

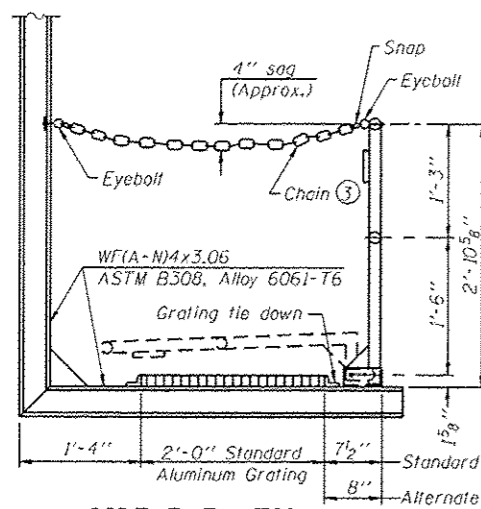
Structure Number	Station	A	(6) B	C	(6) D
3S0061180R008.9 (1A)	570+85	7"	5'-9"	4'-6"	10'-9"
3S0061180R009.7 (2A)	611+25	7"	5'-6"	5'-3"	11'-3"
3S0061180L011.3 (3A)	695+95	7"	6'-3"	4'-6"	11'-3"

- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
- Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.
- If Handrail Joint present, weld angle to WF(A-N)4 and 1/4" extension bars. (See Base Sheet OS-A-11.)
- 1/8" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.
- Tube to grating gap may vary from 0 to 1/2", max. to align walkway, allow for camber, etc.
- Based on actual height of tallest sign given on OS-A-1.

OS-A-10

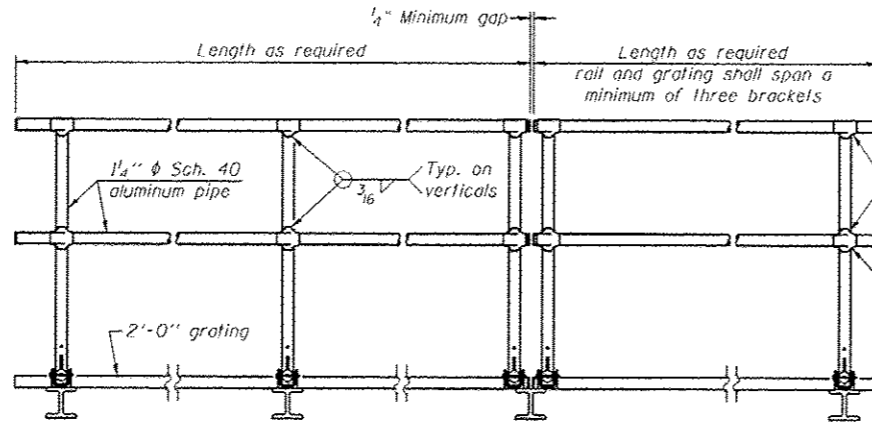
6-1-12

FILE NAME	USER NAME	DESIGNED	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES ALUMINUM WALKWAY DETAILS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
#FILE#	#USER#	DRAWN	REVISED			1-180	D-3 OVD SIN STR REPL 15-06	BUREAU	28	20	
PLOT SCALE	#SCALE#	CHECKED	REVISED			CONTRACT NO. 46333					
PLOT DATE	#DATE#	DATE	REVISED			ILLINOIS FED. AID PROJECT					



**SIDE ELEVATION**

(Showing safety chain w/o sign)

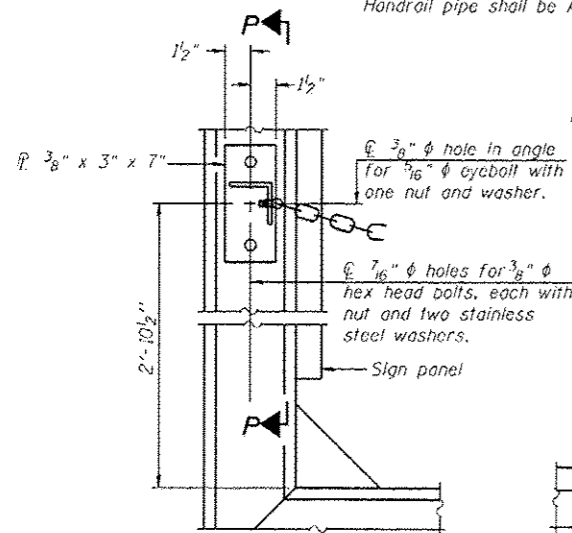


**FRONT ELEVATION**

**HANDRAIL DETAILS**

Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.

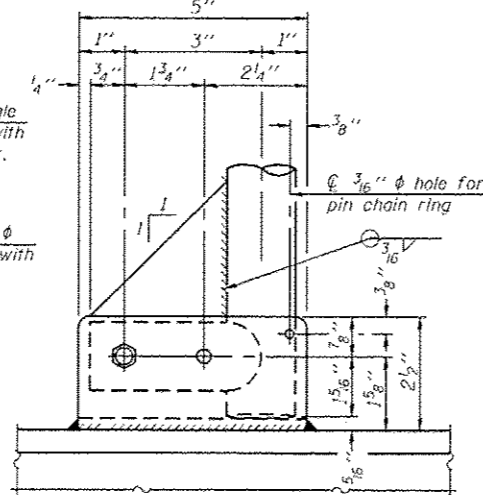
① Install standard force-fit end caps or weld 1/8" end plates with 1/8" c.f.w. and grind smooth. (All rail ends)  
 Fittings-ASTM B26, Alloy 356-T7 or 1 1/2" diameter aluminum pipe  
 ② Horizontal handrail member shall be continuous thru fitting. Provide 7/16" diameter hole in fitting for 3/8" diameter bolt. Field drill 7/16" diameter hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 5/16" eyebolts in 7/16" holes on top rail at ends only.)



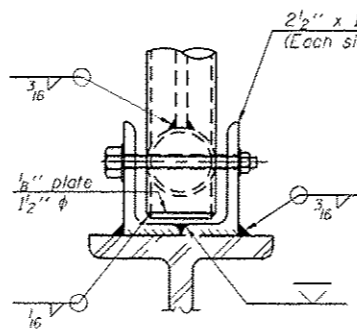
**ALTERNATE SAFETY CHAIN ATTACHMENT**

(With Sign Present)

Items not shown same as "Side Elevation" of "Handrail Details"

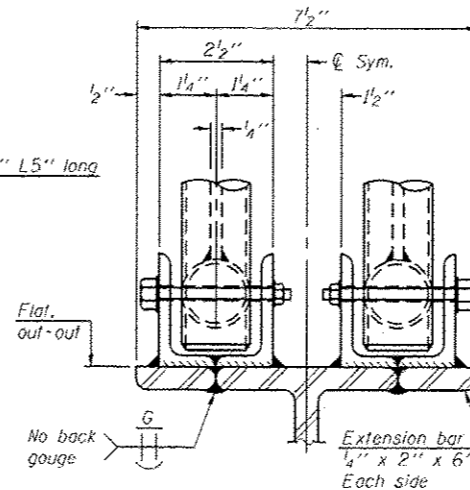


**SIDE ELEVATION**

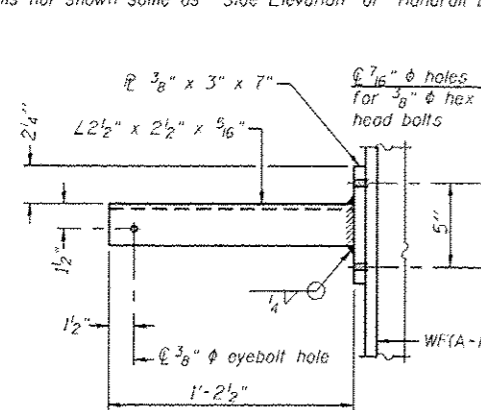


**FRONT ELEVATION**

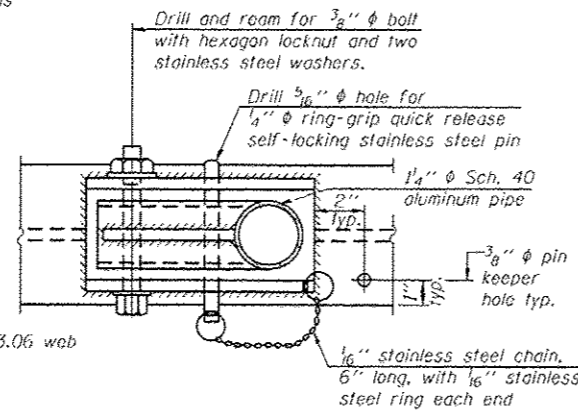
See "Elevation" at right for dimensions.



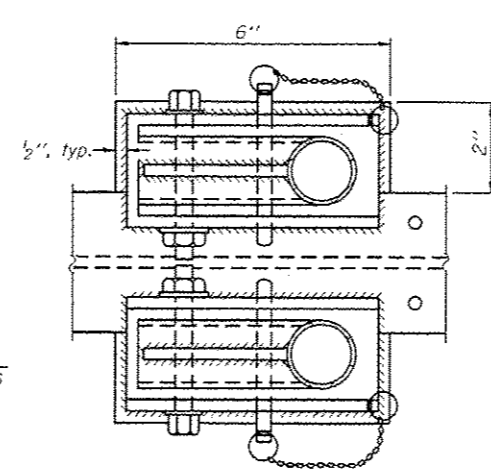
**ELEVATION AT HANDRAIL JOINT** ④



**SECTION P-P**

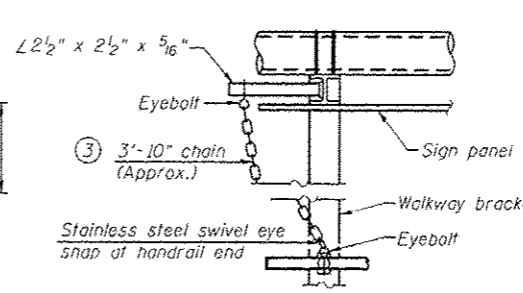


**PLAN DETAIL E HANDRAIL HINGE**



**PLAN AT HANDRAIL JOINT**

Details not shown same as "PLAN"

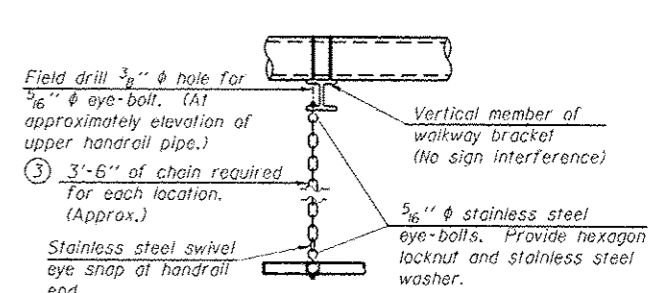


**ALTERNATE SAFETY CHAIN ATTACHMENT**

Details not shown similar to "Safety Chain" Details (Walkway omitted for clarity)

③ 3/16" Type 304L stainless steel chain, approximately 12 links per foot.

④ Extrusions may be used in lieu of the details shown, with approval of the Engineer.



**SAFETY CHAIN**

One required for each end of each walkway.

OS-A-11

6-1-12

FILE NAME -	USER NAME - woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES ALUMINUM HANDRAIL DETAILS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
c:\pvc\work\pvc\dot\woodshankr1\46333\0805\	346333-shr-detailed.dgn	DRAWN - YOGESH PATEL	REVISED -			1-180	0-3 OVD SIN STR REPL 15-06	BUREAU	28	21	
	PLOT SCALE = 2500000.0000 1/2 in.	CHECKED - RON WOODSHANK	REVISED -			CONTRACT NO. 46333					
	PLOT DATE = 6/26/2014	DATE - 6/4/2014	REVISED -			ILLINOIS FED. AID PROJECT					

**BAR LIST - EACH FOUNDATION**

Bar	Number	Size	Length	Shape
v4(E)	24	#9	Loss 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.

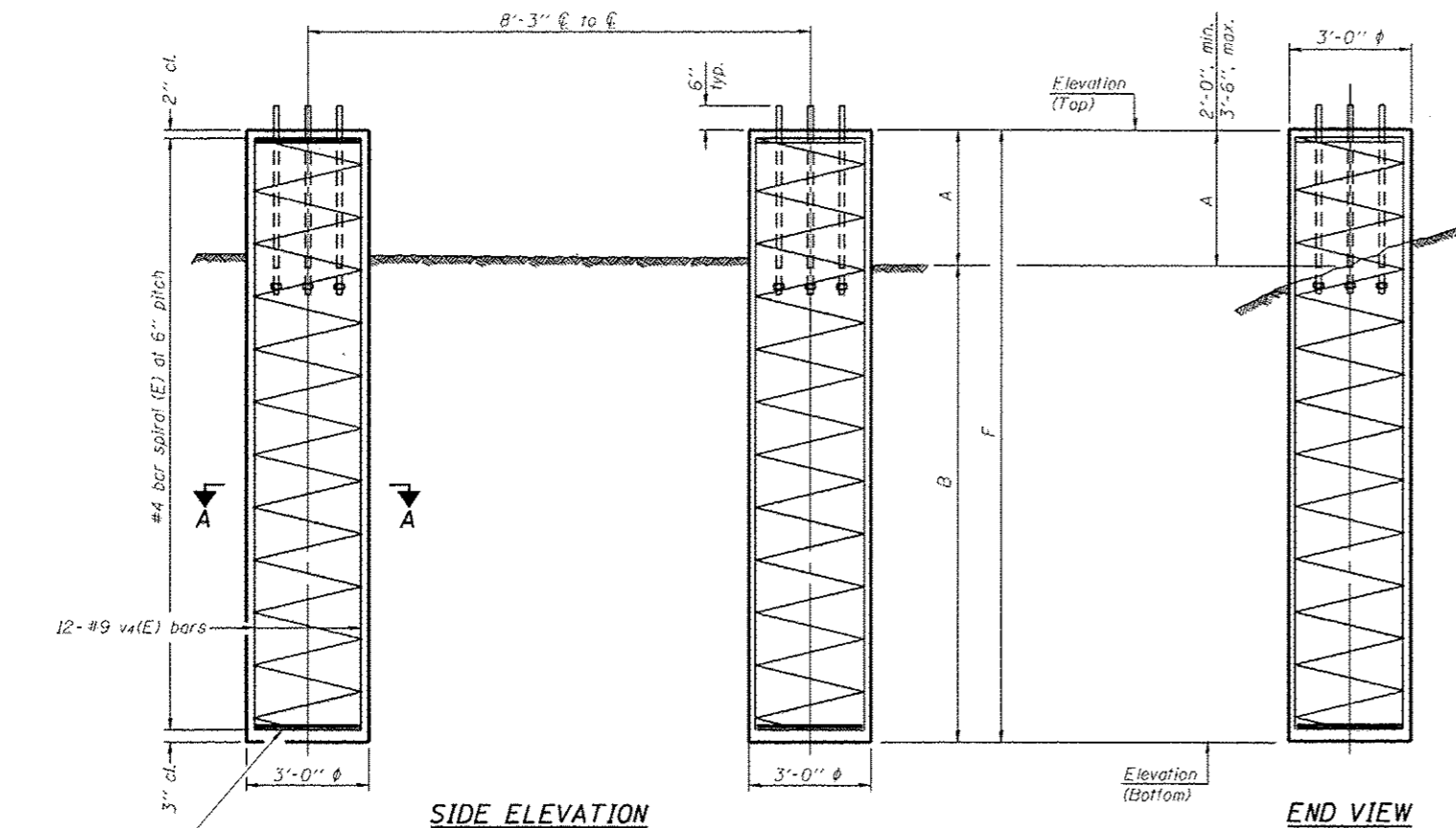
If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District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

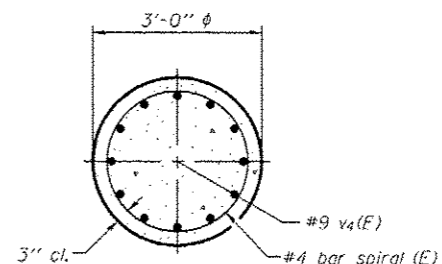
Concrete shall be placed monolithically, without construction joints.

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. Cast included in Drilled Shaft Concrete Foundation.



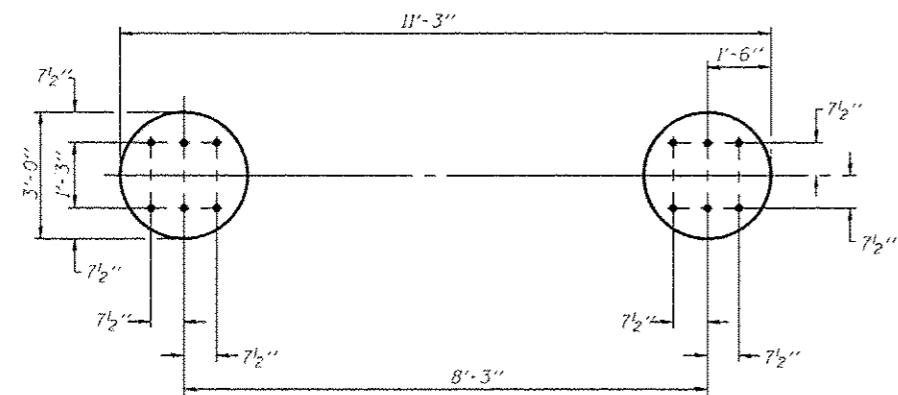
3 hoops minimum top and bottom



**SECTION A-A**

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.



**PLAN**

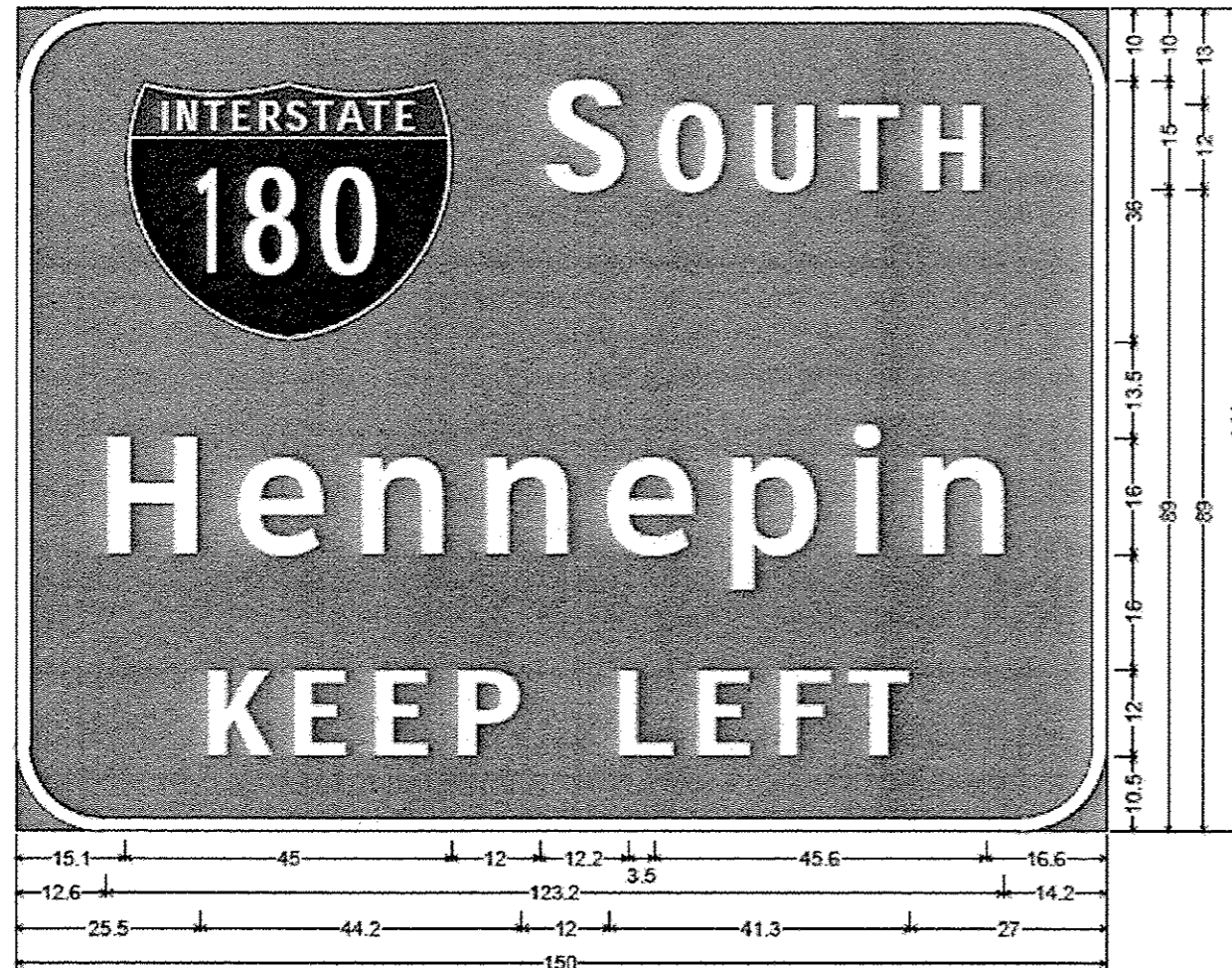
**DETAILS FOR 10" Ø SUPPORT FRAME  
TYPE I-A or II-A TRUSS**

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
3S0061180R008.9 (1A)	570+85	649.01	630.51	2'-0"	16'-6"	18'-6"	649.01	629.68	2'-10"	16'-6"	19'-4"	19.8
3S0061180R009.7 (2A)	611+25	629.51	606.88	2'-1 5/8"	20'-6"	22'-7 5/8"	629.51	607.01	2'-0"	20'-6"	22'-6"	23.6
3S0061180L011.3 (3A)	695+95	465.28	445.78	2'-0"	17'-6"	19'-6"	465.28	445.36	2'-5"	17'-6"	19'-11"	20.6

OS4-F3

8-21-13

FILE NAME: c:\pwworkspace\woodshankr1\d08398585	USER NAME: woodshankr1	DESIGNED: YOGESH PATEL	REVISED:	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>OVERHEAD SIGN STRUCTURES DRILLED SHAFT DETAILS</b>	F.A.I. RTE.:	SECTION:	COUNTY:	TOTAL SHEETS:	SHEET NO.:	
	346333-shr-details.dgn	DRAWN: YOGESH PATEL	REVISED:			1-180	D-3 OVD SIN STR REPL 15-06	BUREAU:	28	22	
	PL01 SCALE: 2000000000 1/4" = 1'	CHECKED: RON WOODSHANK	REVISED:			CONTRACT NO. 46333					
	PL01 DATE: 6/26/2014	DATE: 6/4/2014	REVISED:			ILLINOIS FED. AID PROJECT					

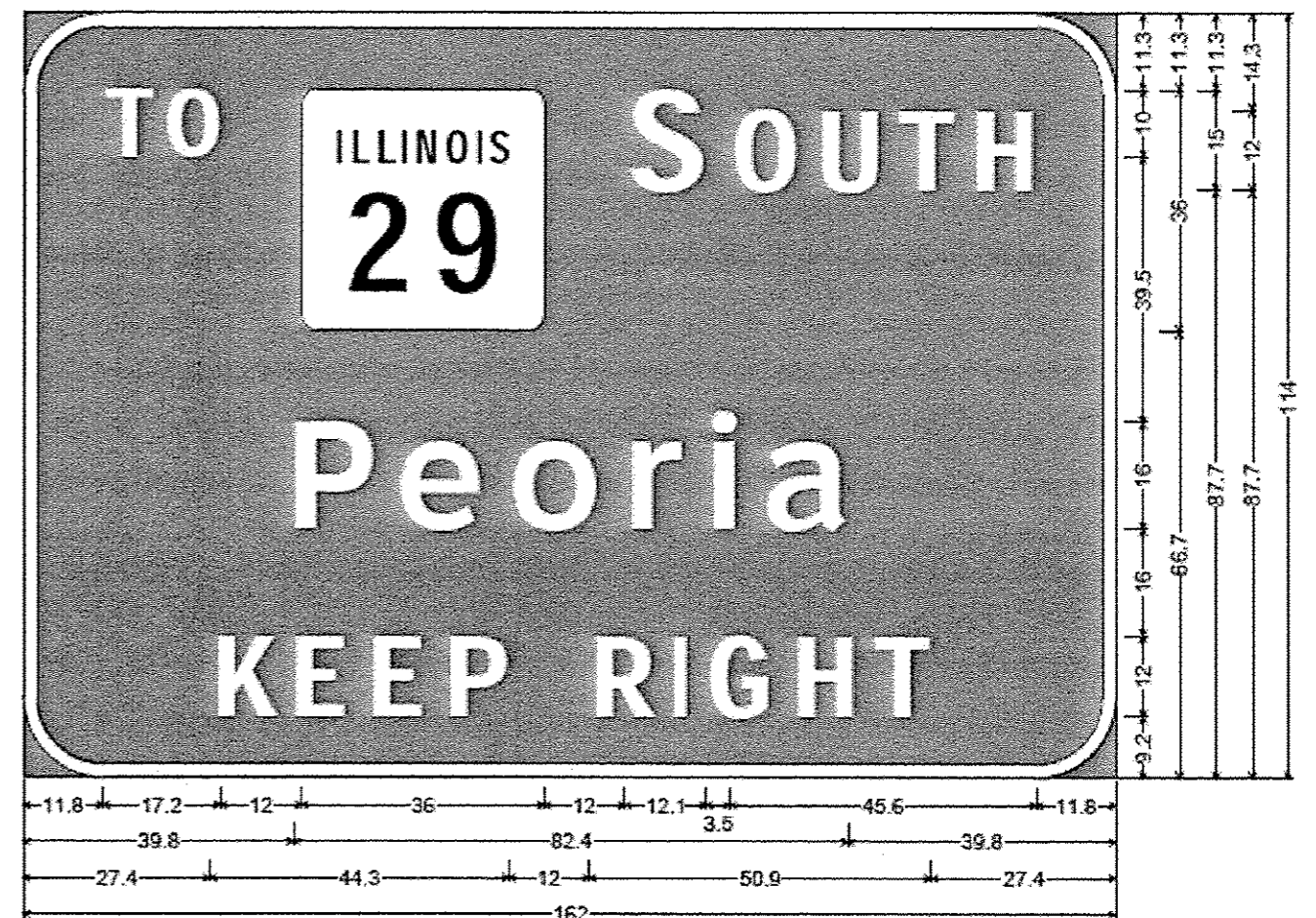


12.0" Radius, 2.0" Border, White on Green;

"S OUTH" E Mod 2K; "Hennepin" ClearviewHwy-5-W; "KEEP LEFT" E Mod 2K;

Table of distances between letter and object lefts.

15.1	57.0	15.7	12.9	11.9	11.0	9.8	16.6
12.6	17.9	17.2	17.1	16.6	17.2	16.6	9.5
25.5	11.7	11.4	11.4	21.7	10.8	11.4	10.2



12.0" Radius, 2.0" Border, White on Green;

"TO" E Mod 2K; "S OUTH" E Mod 2K; "Peoria" ClearviewHwy-5-W; "KEEP RIGHT" E Mod 2K;

Table of distances between letter and object lefts.

11.8	8.8	20.4	48.0	15.6	13.0	11.9	11.0	9.7	11.8
39.8	16.0	16.5	17.8	11.7	8.5	11.9	39.8		
27.4	11.8	11.4	11.4	21.7	12.2	5.3	12.6	11.9	8.9

**\*SIGN PANEL DETAILS LOCATION 1A**

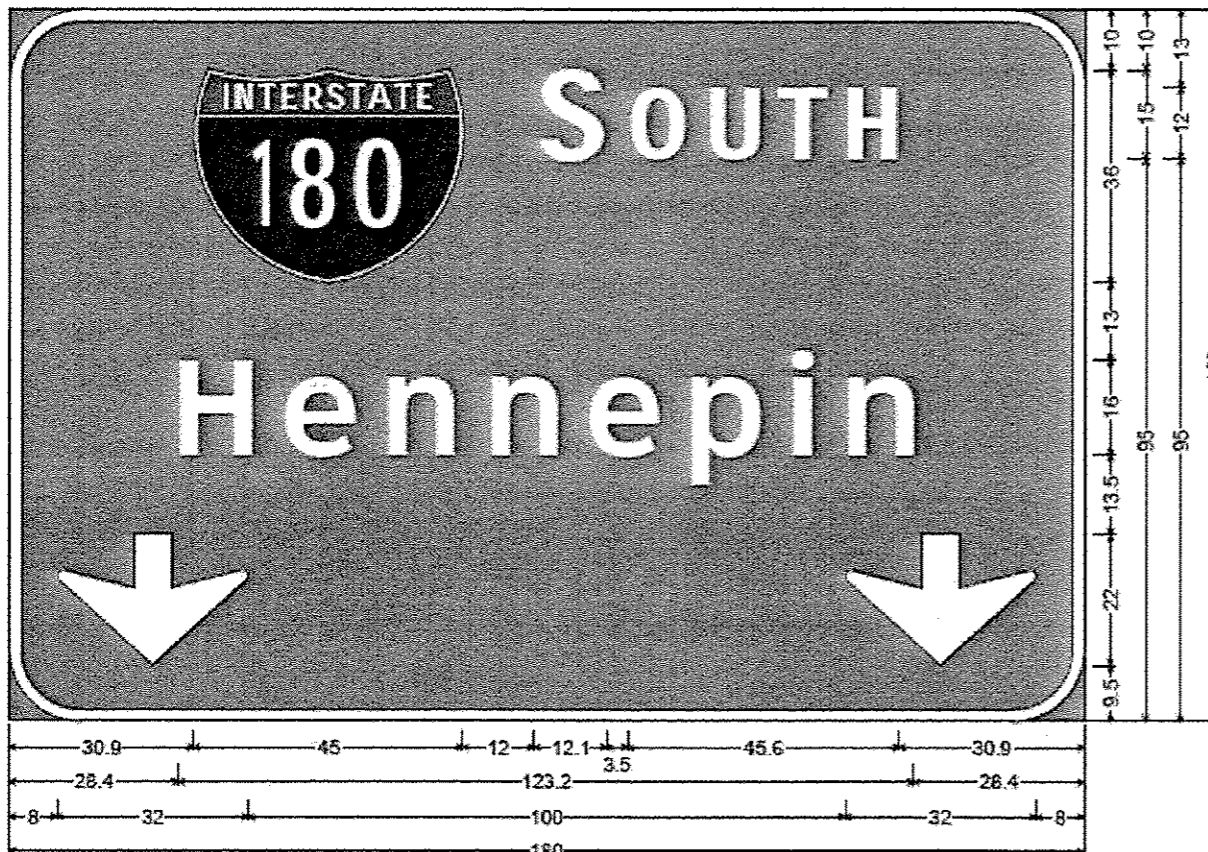
PROPOSED: I-180 SB M.P. 8.9 STA. 570 + 95 ±

\* RESIDENT ENGINEER SHALL DETERMINE EXACT POSITIONING OF SIGN PANELS IN THE FIELD.

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
SIGN PANEL - TYPE 3	Sq. Ft.	247

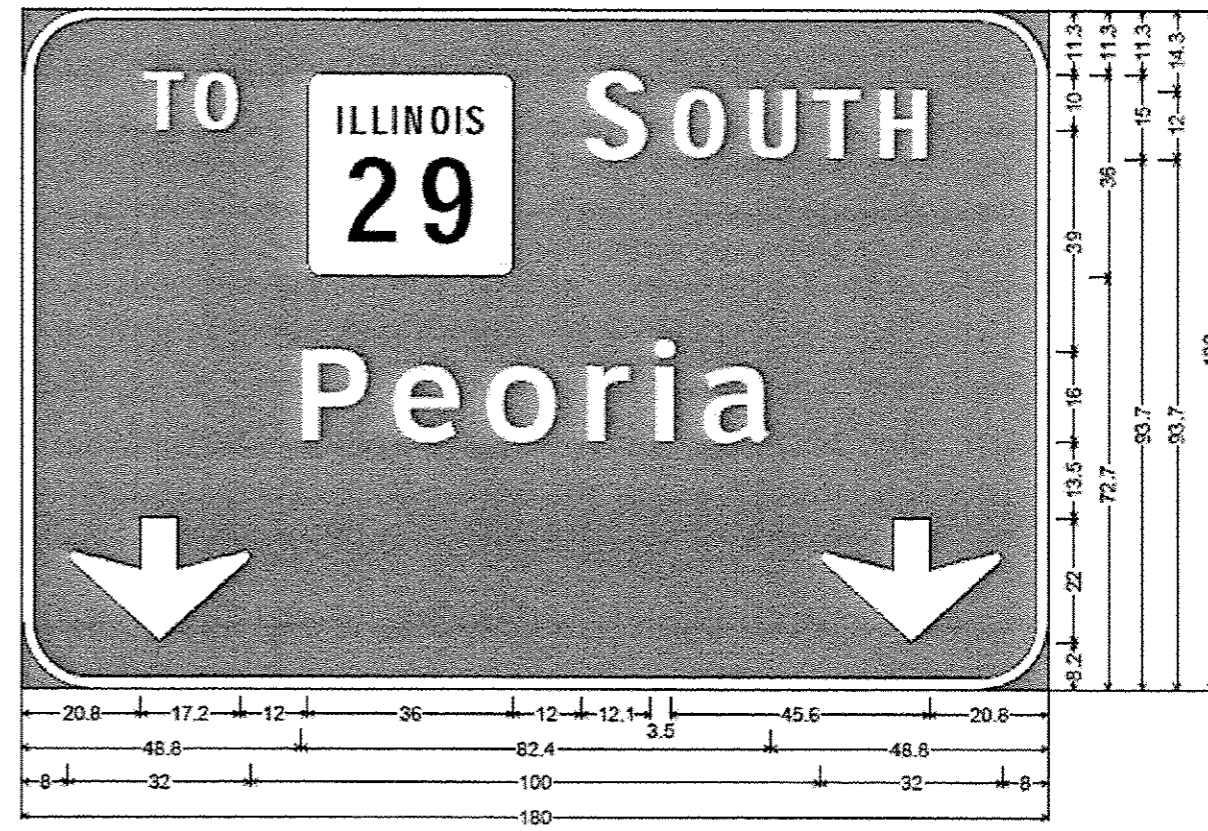
FILE NAME -	USER NAME - woodshank1	DESIGNED - YOGESH PATEL	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SIGN PANEL DESIGN LOCATION 1A</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
cr:\pvt_work\pvt\101\woodshank1\100390505\	0346333-shr-de-tol1.dgn	DRAWN - YOGESH PATEL	REVISED -			I-180	D-3 OVD SIN STR REPL 15-06	BUREAU	28	23
	PLOT SCALE - 250000.0000 1/2 in.	CHECKED - RON WOODSHANK	REVISED -			CONTRACT NO. 46333		ILLINOIS FED. AID PROJECT		
	PLOT DATE - 6/26/2014	DATE - 6/4/2014	REVISED -			SCALE: _____	SHEET NO. 11 OF 11 SHEETS	STA. _____	TO STA. _____	



12.0" Radius, 2.0" Border, White on Green;  
 "S OUTH" E Mod 2K; "Hennepin" ClearviewHwy-5-W; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

Table of distances between letter and object lefts.

30.9	57.0	15.6	13.0	11.9	11.0	9.7	30.9		
28.4	H	e	n	n	e	p	i	n	28.4
8.0	↓	132.0	↓	32.0	8.0				



12.0" Radius, 2.0" Border, White on Green;  
 "TO" E Mod 2K; "S OUTH" E Mod 2K; "Peoria" ClearviewHwy-5-W; Down Arrow 22.0" 270°;  
 Down Arrow 22.0" 270°;

Table of distances between letter and object lefts.

20.8	T	O	ILLINOIS	S	O	U	T	H	20.8
48.8	P	e	o	r	i	a	48.8		
8.0	↓	132.0	↓	32.0	8.0				

**\* SIGN PANEL DETAILS LOCATION 2A**

PROPOSED: I-180 SB M.P. 9.7 STA. 610 + 75 ±

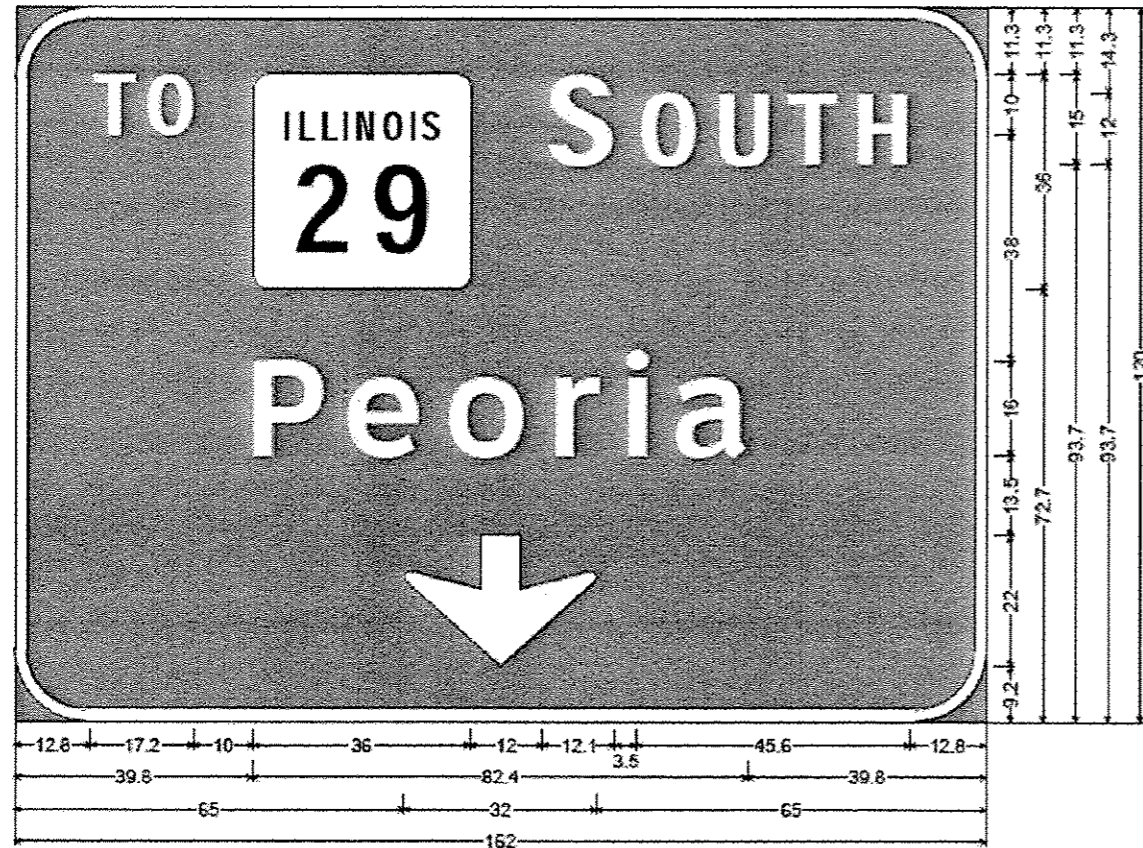
\* RESIDENT ENGINEER SHALL DETERMINE EXACT POSITIONING OF SIGN PANELS IN THE FIELD.

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
SIGN PANEL - TYPE 3	Sq. Ft.	300

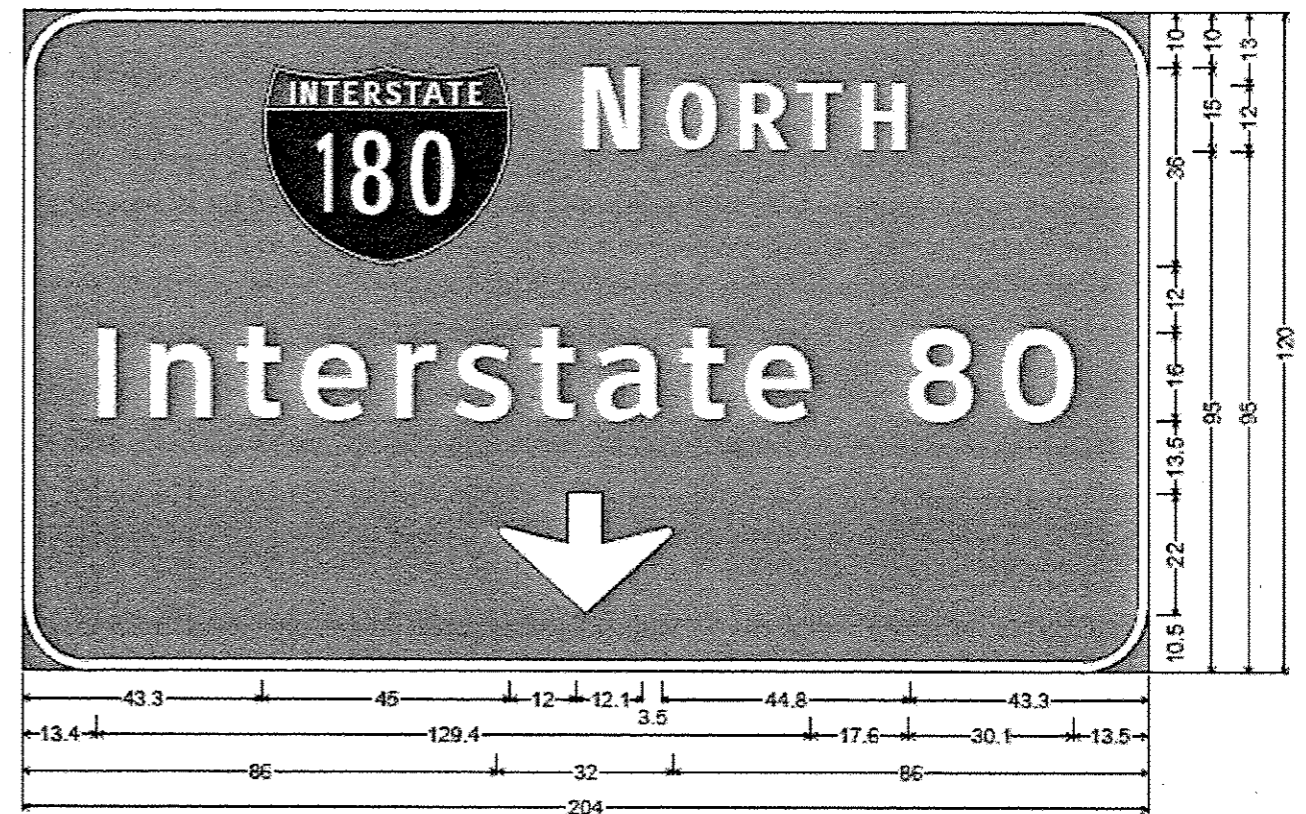
FILE NAME -	USER NAME - woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SIGN PANEL DESIGN LOCATION 2A</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
cd:\pwwork\pwwork\woodshankr1\d001905405\0340333-shv-details.dgn	DRAWN - YOGESH PATEL	REVISED -	1-180			D-3 OVD SH STR REPL 15-06	BUREAU	28	24	
PLOT SCALE = 250000.0000 1/2 in.	CHECKED - RON WOODSHANK	REVISED -	CONTRACT NO. 46333							
PLOT DATE = 6/26/2014	DATE - 6/4/2014	REVISED -	ILLINOIS FED. AID PROJECT							





12.0" Radius, 2.0" Border, White on Green;  
 "TO" E Mod 2K; "SOUTH" E Mod 2K; "Peoria" ClearviewHwy-5-W; Down Arrow 22.0" 270°;  
 Table of distances between letter and object lefts.

	T	O	I	L	L	S	O	U	T	H	
12.8	8.8	18.4	48.0	15.6	13.0	11.9	11.0	9.7	12.8		
	P	e	o	r	i	a					
39.8	16.0	16.5	17.8	11.7	8.5	11.9	39.8				
	↓										
65.0	32.0	65.0									



12.0" Radius, 2.0" Border, White on Green;  
 "NORTH" E Mod 2K; "Interstate 80" ClearviewHwy-5-W; Down Arrow 22.0" 270°;  
 Table of distances between letter and object lefts.

	I	N	O	R	T	H						
43.3	57.0	15.6	13.0	11.0	11.1	9.7	43.3					
	I	n	t	e	r	s	t	a	t	e	8	0
13.4	9.4	15.5	12.0	17.2	10.8	13.7	11.7	15.3	12.1	29.3	17.0	13.1
	↓											
86.0	32.0	86.0										

**\*SIGN PANEL DETAILS LOCATION 3A**

PROPOSED: I-180 WB (NB) M.P. 11.3 STA. 695 + 95 ±

\* RESIDENT ENGINEER SHALL DETERMINE EXACT POSITIONING OF SIGN PANELS IN THE FIELD.

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
SIGN PANEL - TYPE 3	Sq. Ft.	305

FILE NAME -	USER NAME - woodshank1	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SIGN PANEL DESIGN LOCATION 3A	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
c:\pwwork\pwwork\woodshank1\46333\shs\details.dgn	346333-shs\details.dgn	DRAWN - YOGESH PATEL	REVISED -			1-180	0-3 OVD SIN STR REPL 15-06	BUREAU	28	25	
PLT SCALE - 250000/8000 1/2 in.		CHECKED - RON WOODSHANK	REVISED -			SCALE: _____		SHEET NO. 11 OF 11 SHEETS		STA.	TO STA.
PLT DATE - 6/26/2014		DATE - 6/4/2014	REVISED -					CONTRACT NO. 46333		ILLINOIS FED. AID PROJECT	





Illinois Department of Transportation  
Division of Highways  
IDOT

SOIL BORING LOG

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Date 3/28/14

ROUTE I-180 DESCRIPTION Southbound I-180 at milepost 9.7 LOGGED BY Larry Myers

SECTION D3 OVD SIN STR REPL 15-06 LOCATION NE 1/4, SEC. 24, TWP. 15N, RNG. 9E, 4th PM,  
Latitude 41.275672, Longitude -89.400389

COUNTY Bureau DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 3S0061180R009.7  
Station 610+75  
BORING NO. 01 (West Leg)  
Station 610+76  
Offset 125.0 ft RI.  
Ground Surface Elev. 631.76 ft

D	B	U	M	Surface Water Elev.	ft	D	B	U	M
E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
P	O	S	I	Groundwater Elev.:		P	O	S	I
T	W	S	S	First Encounter	Dry ft	T	W	S	S
H	S	Qu	T	Upon Completion	Dry ft	H	S	Qu	T
				After	Hrs.				
(ft)	(/6")	(1st)	(%)	(ft)	(/6")	(1st)	(%)		

Augered Bituminous Shoulder, Brown & Gray Silty Clay Loom Till Fill				Medium Brown Fine Clean Sand (Fill?) (continued)	7				
					10			4	
					12				
	629.26								
Hard Gray & Brown Silty Clay Loom Till Fill & Brown Loamy Sand Fill with some Silty Loom Till layers & Clean Fill Sand (All layers about 1' or less thick)		9			9				
		11	>4.5	9	12			5	
		24	P		15				
		11			7				
		10	>4.5	9	9			22	
		8	P		13				
		3							
		11	4.5	11					
		14	P						
		12							
		12	>4.5	10					
		24	P						
		5							
		11	4.5	13					
		15	P						
		9							
		19	>4.5	8					
		25	P						
		6							
		12	>4.5	8					
		18	P						
Medium Brown Fine Clean Sand (Fill?)	612.76								

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, form 137 (Rev. 8-99)



Illinois Department of Transportation  
Division of Highways  
IDOT

SOIL BORING LOG

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Date 3/28/14

ROUTE I-180 DESCRIPTION Southbound I-180 at milepost 9.7 LOGGED BY Larry Myers

SECTION D3 OVD SIN STR REPL 15-06 LOCATION NE 1/4, SEC. 24, TWP. 15N, RNG. 9E, 4th PM,  
Latitude 41.275667, Longitude -89.400183

COUNTY Bureau DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 3S0061180R009.7  
Station 610+75  
BORING NO. 02 (East Leg)  
Station 610+76  
Offset 62.0 ft RI.  
Ground Surface Elev. 631.23 ft

D	B	U	M	Surface Water Elev.	ft	D	B	U	M
E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
P	O	S	I	Groundwater Elev.:		P	O	S	I
T	W	S	S	First Encounter	Dry ft	T	W	S	S
H	S	Qu	T	Upon Completion	Dry ft	H	S	Qu	T
				After	Hrs.				
(ft)	(/6")	(1st)	(%)	(ft)	(/6")	(1st)	(%)		

Augered Bituminous Shoulder, Brown & Gray Silty Clay Loom Fill				Medium Gray to Brown Fine Sand, Loamy 20'-21' then Clean (Fill?) (continued)	4				
					5			10	
					7				
	628.73								
Hard Gray & Brown Silty Clay Loom & Sandy Clay Loom Till Fill & Brown Sand/Sandy Loom Fill Interbedded		8			5				
		11	>4.5	10	6			17	
		15	P		9				
		4			6				
		8	5.1	10	6			18	
		11	S		7				
		6							
		6	4.2	11					
		7	S						
		5							
		4	4.0	13					
		5	B						
		5							
		6	3.8	18					
		4	B						
		4							
		5	3.0	20					
		6	S						
		4							
		5	2.5	19					
		5	B						
Very Stiff Brown & Gray Silty Clay/Silty Clay Loom (Fill?)	617.23								
		4							
		5	3.0	20					
		6	S						
		4							
		5	2.5	19					
		5	B						
Medium Gray to Brown Fine Sand, Loamy 20'-21' then Clean (Fill?)	612.23								

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, form 137 (Rev. 8-99)

SOIL BORING LOGS LOCATION 2A

PROPOSED: I-180 SB M.P. 9.7 STA. 611+25

FILE NAME -	USER NAME - woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS LOCATION 2A	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
c:\p\work\p\dot\woodshankr1\dr03\0505	346333-sht-details.dgn	DRAWN - YOGESH PATEL	REVISED -			I-180	D-3 OVD SIN STR REPL 15-06	BUREAU	28	27	
	PLOT SCALE = 250000:1	CHECKED - RON WOODSHANK	REVISED -			CONTRACT NO. 46333					
	PLOT DATE = 6/26/2014	DATE - 6/4/2014	REVISED -			ILLINOIS FED. AID PROJECT					

