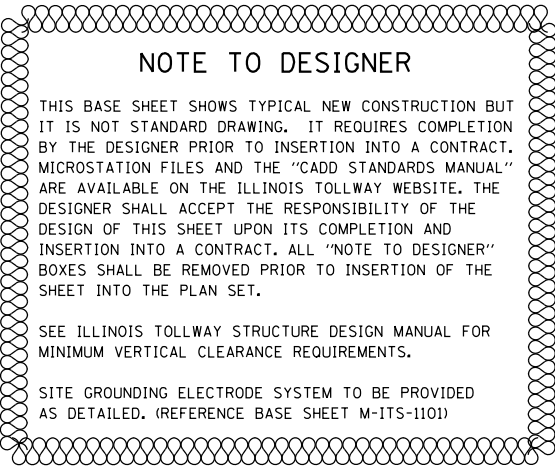


Illinois Tollway Base Sheet Revisions
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Section M	Base Sheet Drawings	
	Drawing	Modification Summary
		Effective: 03-01-2018
	All	The electronic (pdf) version of the Standard Drawing are now made searchable (text).
	Overhead Sign (OHS)-Series 720	
	M-OHS-720	Overhead Sign Structure Span Type Summary and Total Bill of Material
		Revised vertical clearance and added note



SUMMARY																										
STRUCTURE NUMBER	STATION	MONOTUBE FRAME TYPE	SPAN "S"	ELEV. A	ELEV. B	ELEV. C	ELEV. D	ELEV. E	ELEV. F	PROPOSED MINIMUM VERTICAL CLEARANCE	SHEET 2 OF STANDARD F13							SHEETS 6 AND 7 OF STANDARD F13	SIGN AREA (SQ FT)	SIGN LENGTH	FOUNDATION FOR OVERHEAD SIGN STRUCTURE		SINGLE FACE BARRIER	REINFORCEMENT BARS, EPOXY COATED (POUND)	PROTECTIVE COAT (SQ YD)	
											L _S	L ₁	L ₂	L ₃	L ₄	H	H ₁	"C"			CLASS SI CONCRETE (CU YD)	CLASS DS CONCRETE (CU YD)	CONCRETE STRUCTURES (CU YD)			
																					TOTAL					

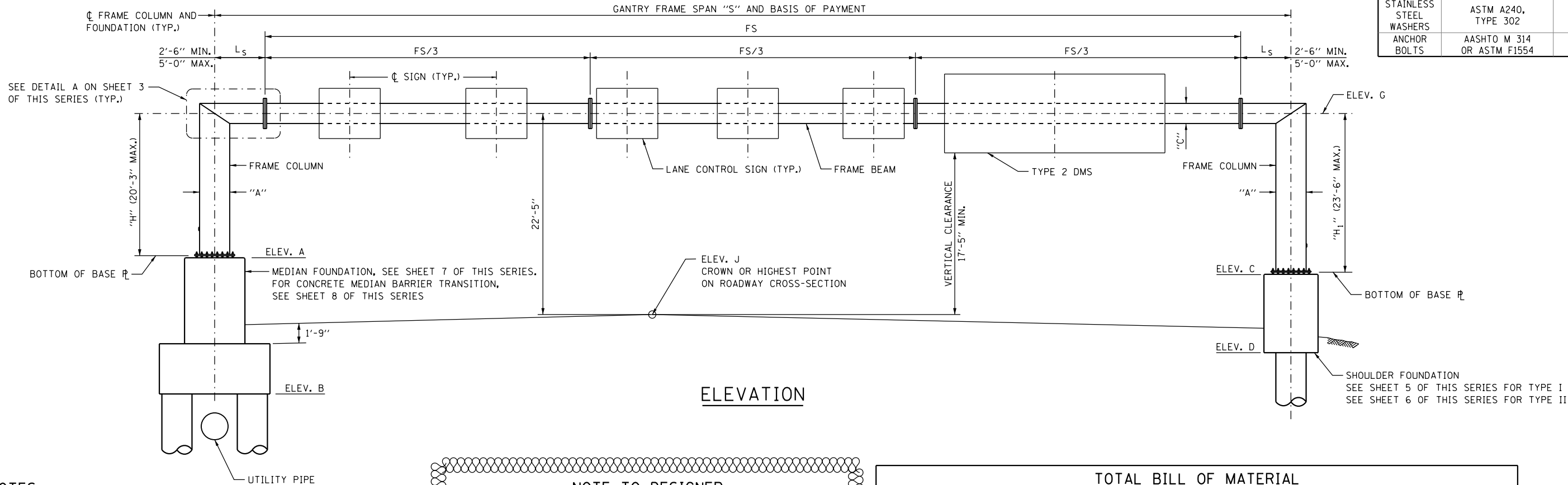
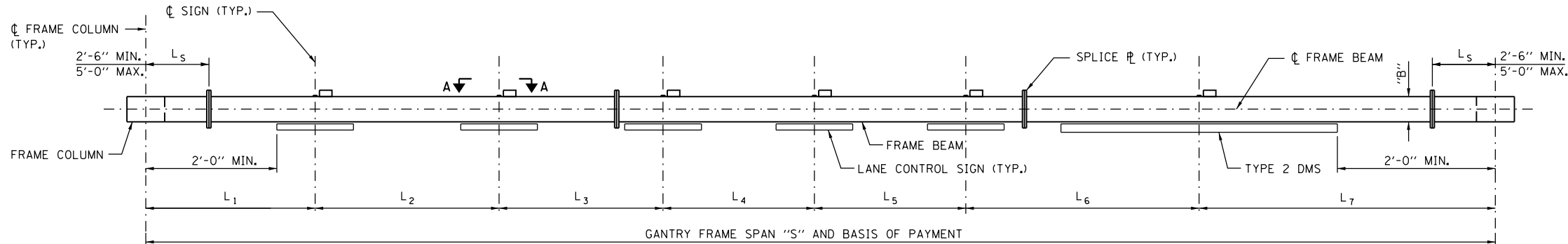
TOTAL BILL OF MATERIAL			
PAY ITEM	DESCRIPTION	UNIT	TOTAL
	OVERHEAD SIGN STRUCTURE, MAINLINE EXIT MONOTUBE TYPE (STEEL)	FOOT	
	OVERHEAD SIGN STRUCTURE, MAINLINE EXIT MONOTUBE TYPE (STEEL)	FOOT	
	OVERHEAD SIGN STRUCTURE, MAINLINE EXIT MONOTUBE TYPE (STEEL)	FOOT	
	FOUNDATION FOR OVERHEAD SIGN STRUCTURE, MAINLINE MONOTUBE TYPE	CU YD	
	CONCRETE STRUCTURES	CU YD	
	REINFORCEMENT BARS, EPOXY COATED	POUND	
	PROTECTIVE COAT	SQ YD	

NOTE:
WORK THIS SHEET WITH STANDARD F13

	
<p>OVERHEAD SIGN STRUCTURE EXIT MONOTUBE TYPE (STEEL) MAINLINE SUMMARY AND TOTAL BILL OF MATERIAL</p> <p>DATE</p> <p>3-31-2017</p>	

MATERIAL SPECIFICATIONS FOR
STRUCTURAL STEEL AND FASTENERS

ELEMENT OF STRUCTURE	SPECIFICATION	F _y (KSI)	F _u (KSI)
STRUCTURAL STEEL TUBE FRAME (HSS)	ASTM A500 GRADE C	50	62
STRUCTURAL STEEL TUBE MOUNTING BEAMS (HSS)	ASTM A500 GRADE B	46	58
STEEL SHAPES	ASTM A709 GRADE 50	50	65
STEEL PLATES	ASTM A572 GR. 50 OR ASTM A709 GR. 50	50	65
STEEL BOLTS	ASTM 325 TYPE 1	--	105
SIGN BRACKET RODS	ASTM A307	--	60
LOCK NUTS	ASTM A194 GR. 8F OR ASTM A194 GR. 2H	--	--
NUTS	ASTM A563 GRADE DH	--	--
STEEL WASHERS	ASTM F436	--	--
STAINLESS STEEL WASHERS	ASTM A240, TYPE 302	--	--
ANCHOR BOLTS	AASHTO M 314 OR ASTM F1554	55	75



NOTES:

- SEE SHEET 2 OF THIS SERIES FOR VIEW A-A AND DESIGN SUMMARY TABLE.
- CAMBER IS PROVIDED AT MIDSPAN OF STRUCTURE.
- PRIOR TO FABRICATING GANTRY FRAME, THE CONTRACTOR SHALL VERIFY LOCATIONS OF LANE CONTROL SIGNS AND TYPE 2 DMS WITH ENGINEER. (DIMENSIONS L₁ THROUGH L₇)
- FRAME SPAN SHALL BE IN THE CONFIGURATION SHOWN WITH 2 COLUMNS AND 3 FIELD SECTIONS.
- PRIOR TO FABRICATING GANTRY FRAME, THE CONTRACTOR SHALL FIELD VERIFY LOCATION OF EACH FOUNDATION, ANCHOR BOLTS AND DETAILS AFFECTING GANTRY FRAME FABRICATION AND CONSTRUCTION. NOTIFY THE ENGINEER OF ANY VARIATIONS FROM CONTRACT PLANS AND MAKE NECESSARY APPROVED ADJUSTMENTS. SUCH VARIATIONS DO NOT CONSTITUTE ADDITIONAL COMPENSATION FOR CHANGE IN SCOPE OF WORK. CONTRACTOR WILL BE PAID FOR THE ACTUAL QUANTITY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.
- WHEN REQUIRED FOR ADJUSTMENT, A MAX. OF TWO 1/4" SHIM PLATES SHALL BE PROVIDED AT EACH FIELD SPLICE LOCATION IN BETWEEN SPLICE PLATES.

NOTE TO DESIGNER:

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PROVIDE APPROPRIATE PROTECTION FOR SHOULDER FOUNDATION.

USE SHOULDER FOUNDATION TYPE I WHEN FOUNDATION IS PLACED ADJACENT TO RDWY. SHOULDER. USE SHOULDER FOUNDATION TYPE II WHEN FOUNDATION IS PLACED OUTSIDE CLEAR ZONE OR BEHIND GUARDRAIL.

PROVIDE SITE GROUNDING ELECTRODE SYSTEM DETAIL ACCORDING TO THE ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS SECTION 734.

REFERENCE BASE SHEET M-ITS-1101.

DIFFERENCE BETWEEN ELEV. A AND ELEV. C SHOULD NOT EXCEED 5'-0".

TOTAL BILL OF MATERIAL

PAY ITEM	ITEM	UNIT	TOTAL
J5734610	FOUNDATION FOR ITS GANTRY FRAME	CU YD	
JT740110	ITS GANTRY FRAME (STEEL), SPANS LESS THAN OR EQUAL TO 110'	FOOT	
JT740130	ITS GANTRY FRAME (STEEL), SPANS GREATER THAN 110' AND LESS THAN OR EQUAL TO 130'	FOOT	
JT740150	ITS GANTRY FRAME (STEEL), SPANS GREATER THAN 130' AND LESS THAN OR EQUAL TO 150'	FOOT	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	
42001300	PROTECTIVE COAT	SQ YD	

STRUCTURAL STEEL TUBE (HSS) FRAME TABLE

SPAN "S"	FRAME COLUMN	FRAME BEAM	CAMBER	"A"	"B"	"C"
<=110'	HSS 28x24x0.625	HSS 28x24x0.500	3 1/2"	2'-0"	2'-4"	2'-0"
110'<"S"<=130'	HSS 28x28x0.625	HSS 28x24x0.625	5"	2'-4"	2'-4"	2'-0"
130'<"S"<=150'	HSS 30x30x0.625	HSS 30x30x0.625	5 1/2"	2'-6"	2'-6"	2'-6"

BASE DRAWING M-OHS-729
SHEET 1 OF 8



OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
SINGLE SPAN
STRUCTURE DETAILS

DATE
3-31-2017

ALL EXPOSED CONCRETE EDGES SHALL HAVE A $\frac{3}{4}$ " x 45° CHAMFER, EXCEPT WHERE SHOWN OTHERWISE. CHAMFER ON VERTICAL EDGES SHALL BE CONTINUED A MINIMUM OF ONE FOOT BELOW FINISHED GROUND LEVEL.

- REINFORCEMENT BARS, INCLUDING REINFORCEMENT BARS, EPOXY-COATED SHALL CONFORM TO THE REQUIREMENTS OF STANDARD SPECIFICATIONS SECTION 508 AND ARTICLE 1006.10.
- REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY-COATED.
- REINFORCEMENT BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".
- REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT-TO-OUT.
- COVER FROM THE FACE OF CONCRETE TO FACE OF REINFORCEMENT BARS SHALL BE 3" FOR SURFACES FORMED AGAINST EARTH AND 2" FOR ALL OTHER SURFACES UNLESS OTHERWISE SHOWN.

ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS ISSUED MARCH, 2015 TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

ILLINOIS DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS ADOPTED JANUARY 1, 2015.

ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2012.



1. CONDUITS SHALL BE LOCATED IN THE NORTHERN MOST GANTRY FOUNDATION, EXCEPT FOR THE HALF GANTRIES JUST WEST OF IL-31 AND JUST EAST OF DEVON TOLL PLAZA 17. AT THESE TWO LOCATIONS THE CONDUITS SHALL BE IN THE SOUTHERN MOST GANTRY FOUNDATION.
2. A BORING IS REQUIRED AT EACH FOUNDATION LOCATION.
3. NO STANDARD DRILLED SHAFT FOUNDATIONS WERE DESIGNED OR DETAILED FOR COHESIONLESS SOIL CONDITIONS. REGARDLESS, THE DESIGNER MUST CONDUCT A SUBSURFACE INVESTIGATION AT EACH OVERHEAD SIGN STRUCTURE FOUNDATION TO DETERMINE THE ACTUAL SOIL PROPERTIES. SHOULD THE INVESTIGATION REVEAL THE PRESENCE OF COHESIONLESS SOIL OR COHESIVE SOILS WITH PROPERTIES LESS THAN THE AVERAGES INDICATED IN THIS STANDARD, THE DESIGNER SHALL DESIGN AND DETAIL THE DRILLED SHAFT FOUNDATIONS TO MEET THE ACTUAL SOIL CONDITIONS.
4. DESIGN AND CONSTRUCTION SPECIFICATIONS: THE DESIGNER IS RESPONSIBLE FOR UPDATING THE EDITION OF SPECIFICATIONS AND THE DATE OF PUBLICATION TO THE EDITION OF SPECIFICATIONS AND THE DATE OF PUBLICATION USED IN DESIGN.
5. DESIGNER TO ENSURE ALL LATEST CODE REQUIREMENTS ARE MET.
6. DESIGNER TO DETERMINE THAT APPLIED LOADS DO NOT EXCEED DESIGN VALUES.



WIND LOAD CRITERIA			
SIGN PANEL	40 P.S.F.	BASIC WIND SPEED	90 M.P.H.
COLUMN/BEAM	40 P.S.F.	G	1.14
TYPE 2 DMS	42 P.S.F.	I _r (WIND IMPORTANCE FACTOR)	1.0
		K _z	1.0

ITS GANTRY FRAMES ARE DESIGNED FOR MAX. LOADING OF 2-TYPE 2 DMS AND 4-LANE CONTROL SIGNS.
ITS GANTRY FOUNDATIONS ARE DESIGNED FOR MAX. LOADING OF 3-TYPE 2 DMS AND 1-LANE CONTROL
SIGN IN EACH ADDITIONAL 12' LANE.

f'_c = COMPRESSIVE STRENGTH OF CONCRETE (CLASS BS) = 4,000 P.S.I.
 f'_c = COMPRESSIVE STRENGTH OF CONCRETE (CLASS DS) = 4,000 P.S.I.
 f_y = YIELD STRENGTH OF REINFORCEMENT BARS (GRADE 60) = 60,000 P.S.I.

- 1. ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL ISSUED MARCH, 2015, WITH LATEST DESIGN BULLETINS.
- 2. AASHTO STANDARD SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, SIXTH EDITION.
- 3. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION WITH CURRENT INTERIMS.
- 4. ILLINOIS DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL, JANUARY 2012.
- 5. ILLINOIS TOLLWAY GEOTECHNICAL ENGINEER MANUAL DATED MARCH 2014.



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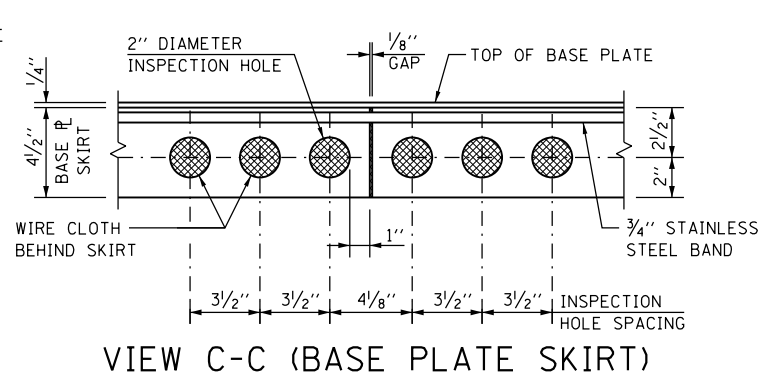
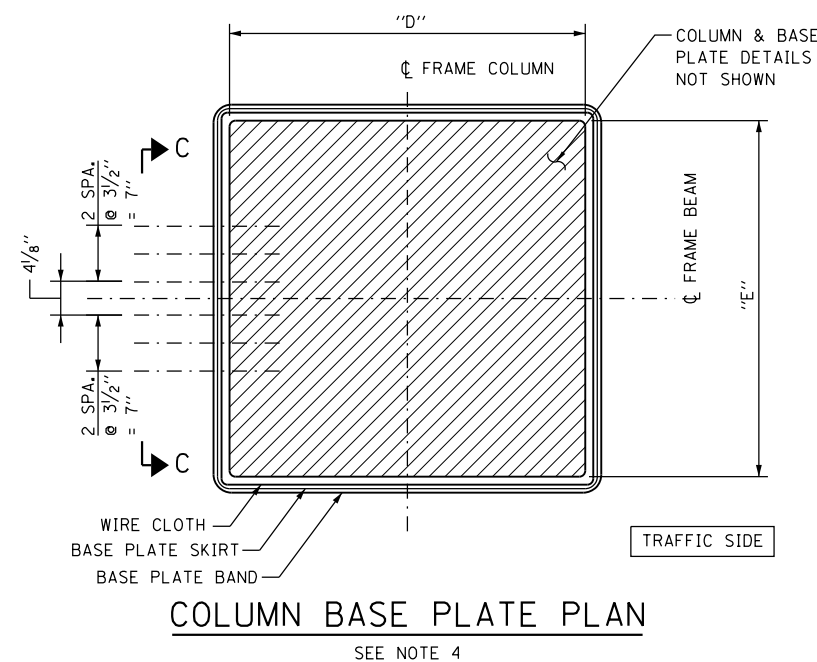
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SPAN "S"	"D"	"E"	N ₁	X ₁	N ₂	X ₂	ANCHOR BOLT DIAMETER	NO. ANCHOR BOLT
<=110"	3'-2"	3'-5"	4	8"	5	7"	1 $\frac{3}{4}$ "	18
110'<"S"<=130'	3'-5"	3'-6"	5	7"	6	6"	1 $\frac{3}{4}$ "	22
130'<"S"<=150'	3'-7 $\frac{1}{2}$ "	3'-6"	5	7 $\frac{1}{2}$ "	6	6"	1 $\frac{3}{4}$ "	22



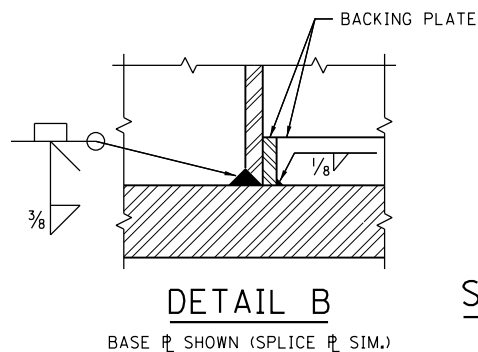
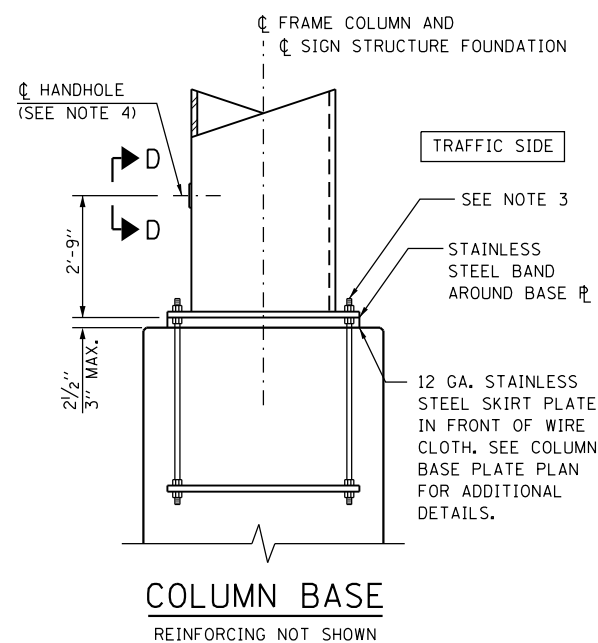
OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
SINGLE SPAN
STRUCTURE DETAILS

DATE
3-31-2017

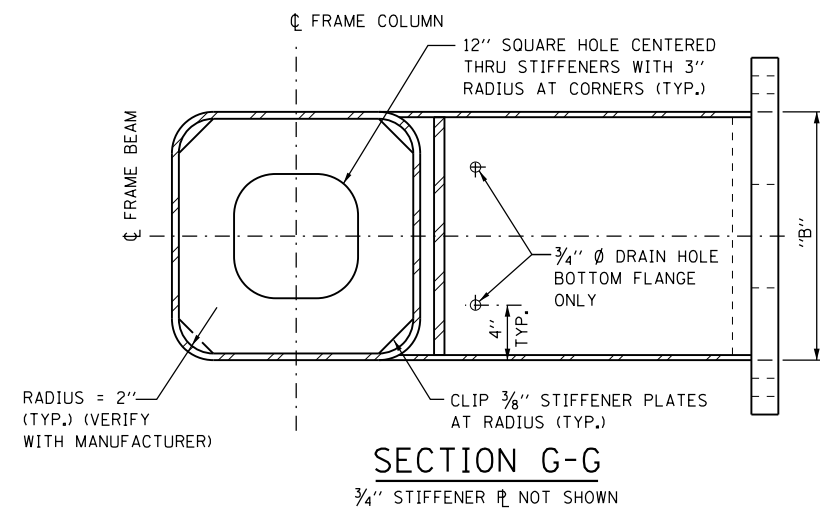
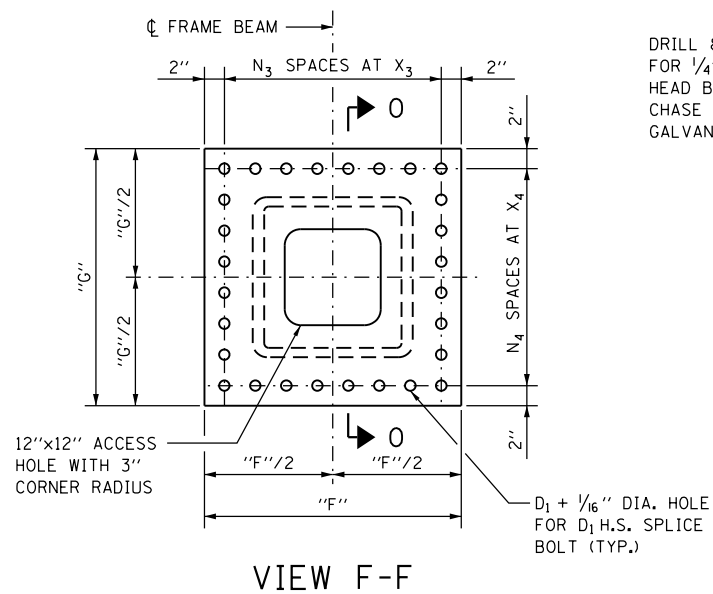
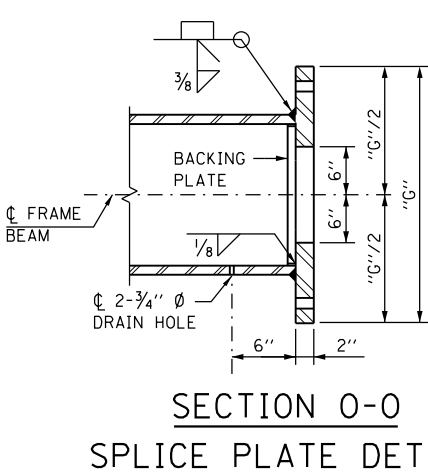
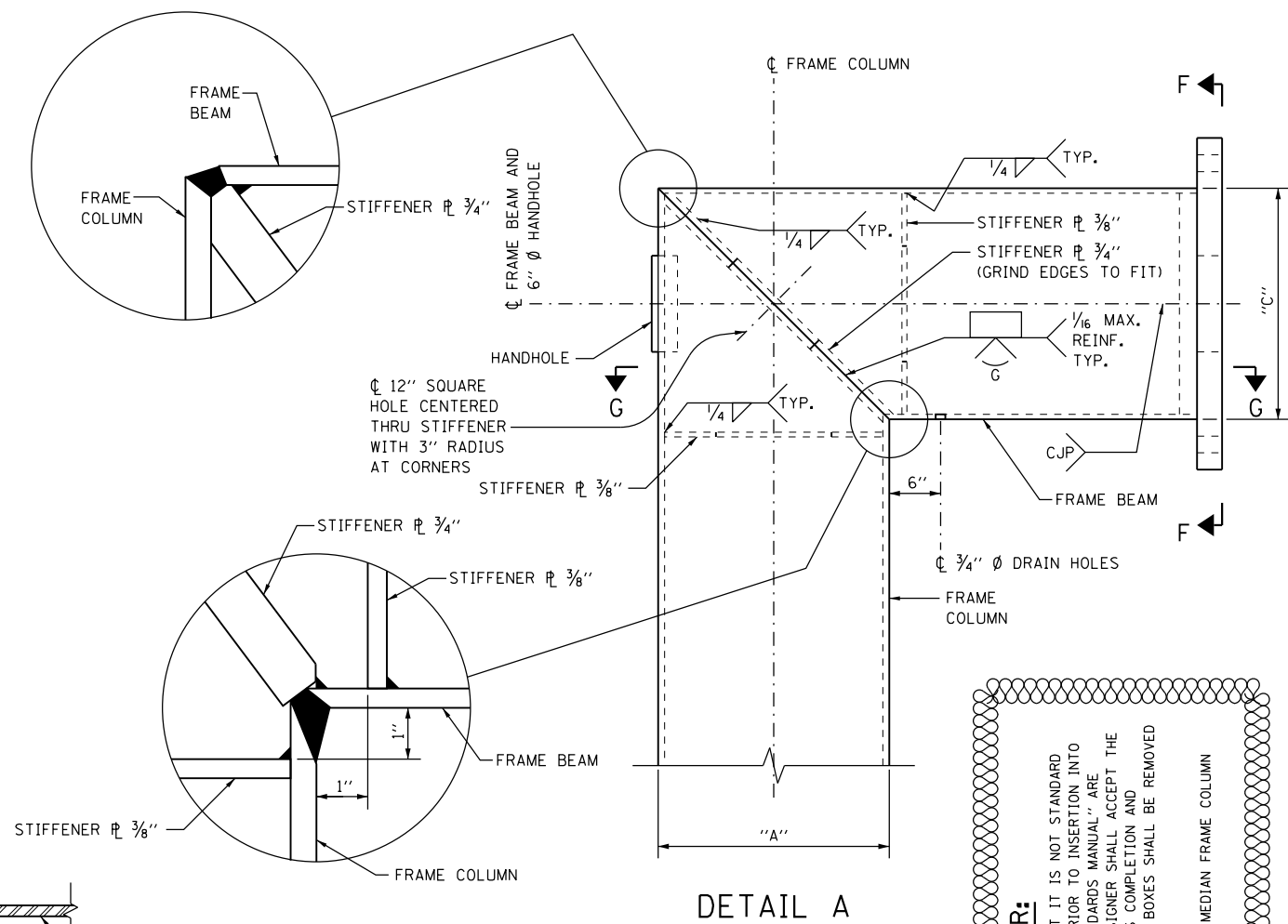
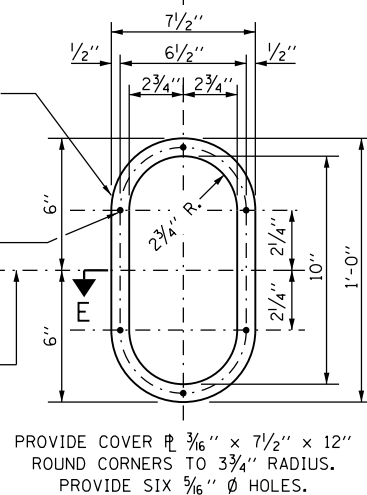
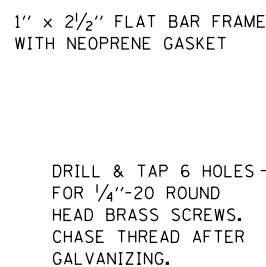


NOTE:

1. SEE SHEET 1 OF THIS SERIES FOR DIMENSIONS "A", "B" AND "C".
2. SEE SHEET 2 OF THIS SERIES FOR DIMENSIONS "D" AND "E".
3. AFTER ADJUSTMENTS TO LEVEL FRAME BEAM AND ENSURE ADEQUATE VERTICAL CLEARANCE, TIGHTEN ALL TOP AND LEVELING NUTS AGAINST THE BASE PLATE WITH A MINIMUM TORQUE OF 200 LB.-FT. THEN PLACE STAINLESS STEEL MESH AROUND THE PERIMETER OF THE BASE PLATE. SECURE TO BASE PLATE WITH STAINLESS STEEL BANDING.
4. SHOULDER FOUNDATION SHOWN. VERIFY HANDHOLE AND INSPECTION HOLES PLACEMENT ON MEDIAN FRAME COLUMN WITH THE ENGINEER.



SECTION E-E



NOTE TO DESIGNER:

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VERIFY HANDHOLE AND INSPECTION HOLES PLACEMENT ON MEDIAN FRAME COLUMN WITH ILLINOIS TOLLWAY ITS.

SPLICE PLATE TABLE

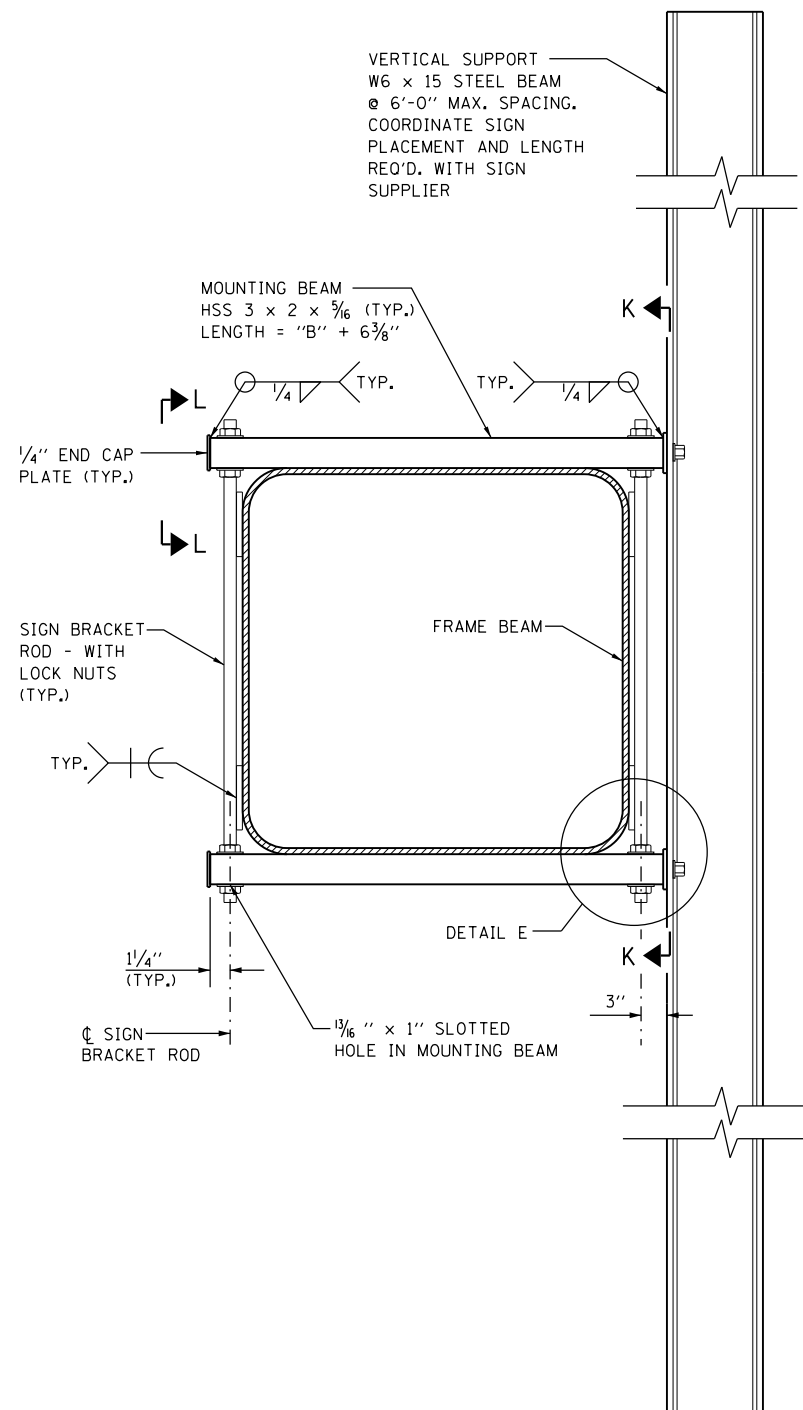
SPAN "S"	"F"	"G"	N ₃	X ₃	N ₄	X ₄	SPLICE BOLT DIAMETER (D ₁)	NO. SPLICE BOLT
<=110'	3'-1"	2'-8 1/2"	6	5 1/2"	6	4 3/4"	1"	24
110'<"S"<=130'	3'-0 1/2"	2'-10"	5	6 1/2"	5	6"	1 1/4"	20
130'<"S"<=150'	3'-4"	3'-4"	6	6"	6	6"	1 1/4"	24

BASE DRAWING M-OHS-729
SHEET 3 OF 8



OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
SINGLE SPAN
STRUCTURE DETAILS

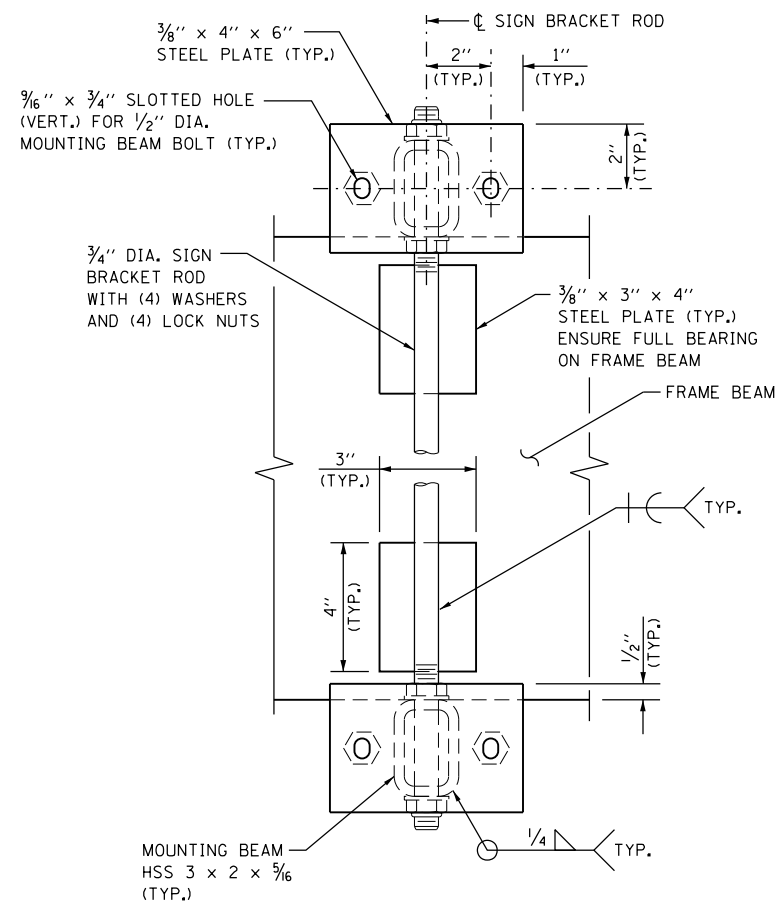
DATE
3-31-2017



CONNECTION SIDE VIEW

NOTE TO DESIGNER:

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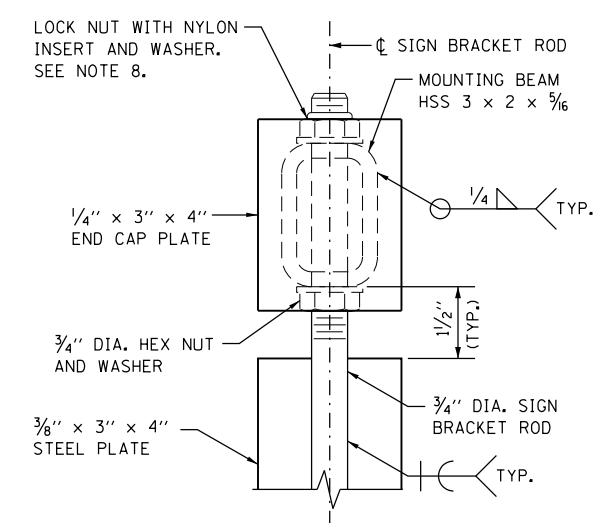
SECTION K-K

VERTICAL SUPPORT TABLE

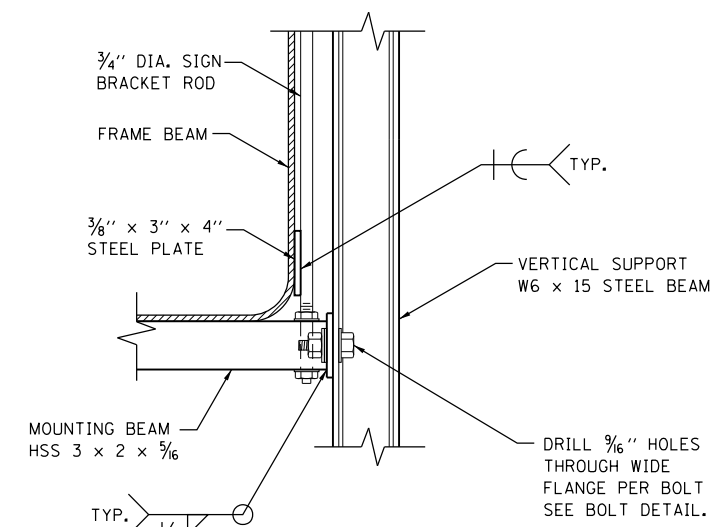
W6x15		
SIGN WIDTH		NUMBER OF VERTICAL SUPPORTS REQUIRED
GREATER THAN	LESS THAN OR EQUAL TO	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5

NOTES:

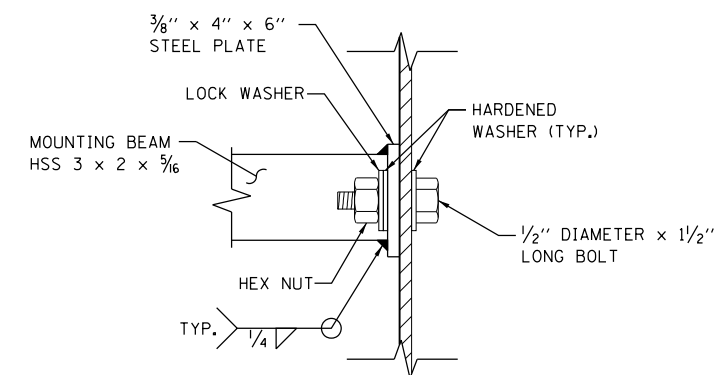
1. CONNECTION DETAIL IS APPLICABLE TO DMS AND LANE CONTROL SIGN.
2. VERIFY VERTICAL SUPPORT MEMBER LENGTH PRIOR TO FABRICATION.
3. DMS MANUFACTURER AND LANE CONTROL SIGN MANUFACTURER SHALL DESIGN, PROVIDE AND INSTALL HORIZONTAL MOUNTING MEMBERS. VERTICAL SPACING OF HORIZONTAL MEMBERS SHALL BE DESIGNED BY MANUFACTURER. VERIFY VERTICAL SPACING WITH HOLES ON W6x15 VERTICAL SUPPORT.
4. PROVIDE HIGH STRENGTH BOLTS WITH WASHERS AND LOCK NUTS TO FASTEN DMS AND LANE CONTROL SIGN TO VERTICAL SUPPORT MEMBERS.
5. GALVANIZE ALL NON-STAINLESS STEEL PARTS.
6. SIGN BRACKET RODS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307.
7. LOCK NUTS SHALL BE STAINLESS STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A194 GRADE 8F OR ASTM A194 GRADE 2H.



VIEW L-L



DETAIL E



BOLT DETAIL

SIGN BRACKET ROD NOT SHOWN FOR CLARITY

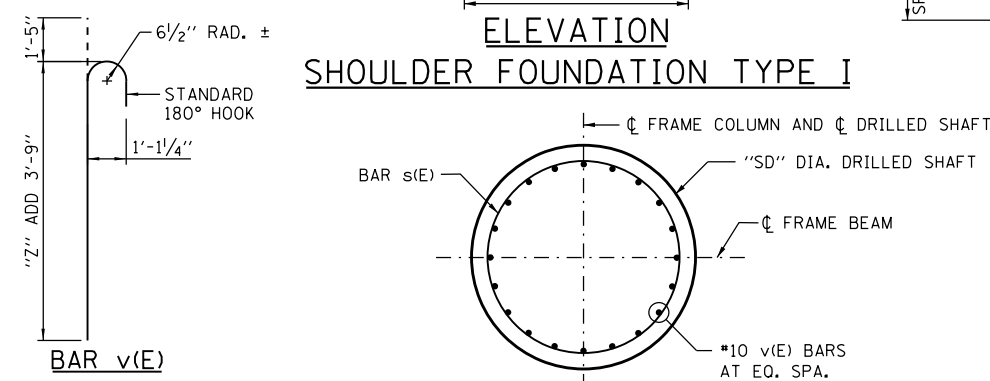
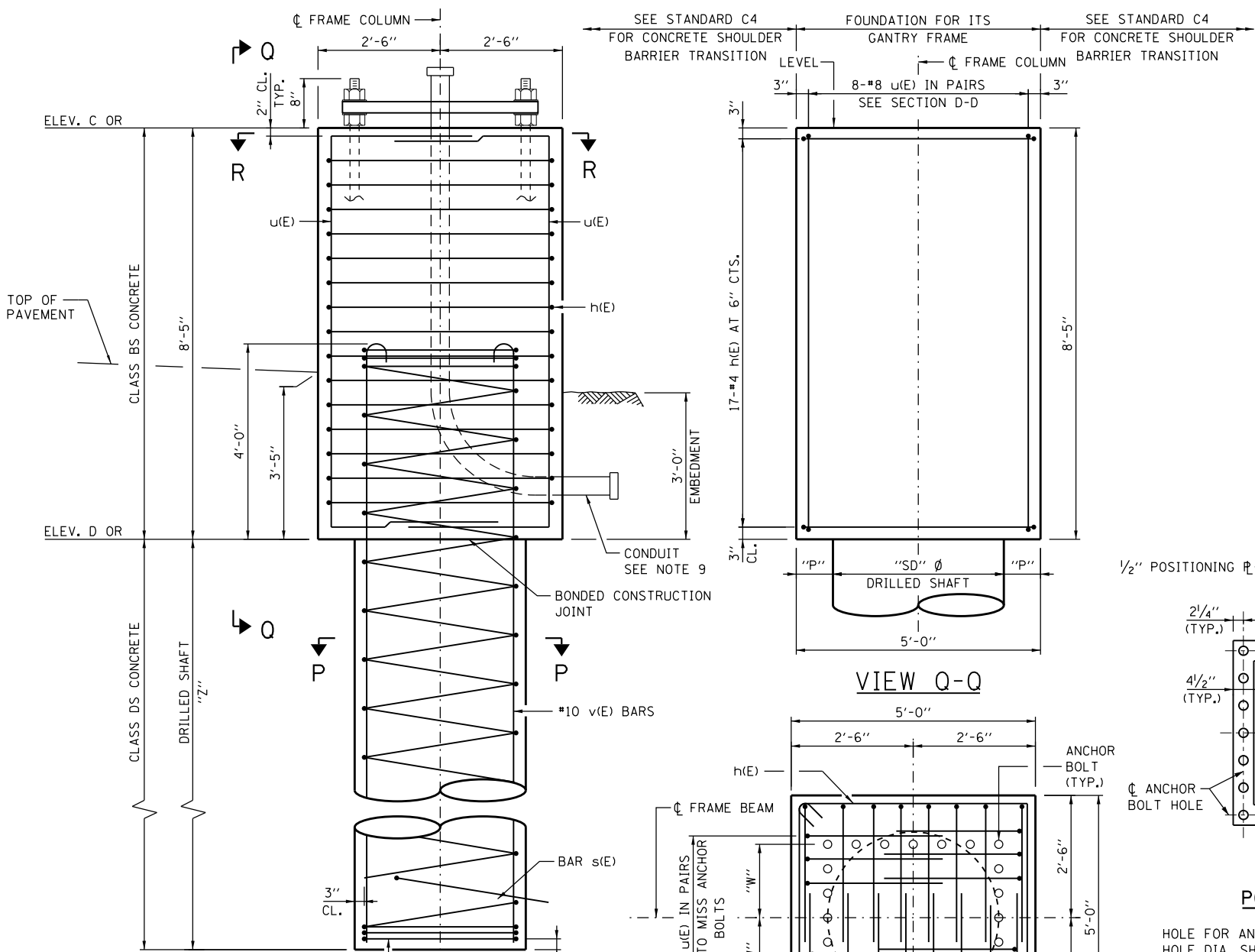
BASE DRAWING M-OHS-729

SHEET 4 OF 8



OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
SINGLE SPAN
STRUCTURE DETAILS

DATE
3-31-2017



SECTION P-P

SHOULDER FOUNDATION TYPE I SCHEDULE

SPAN "S"	CLASS BS CONCRETE (CU YD)	CLASS DS CONCRETE (CU YD)	REINF. BARS (LB)
<=110'	8.0	10.0	4,790
110'<"S"<=130'	8.0	12.0	5,530
130'<"S"<=150'	8.0	17.0	6,410

BAR v(E)

BAR h(E)

BAR u(E)

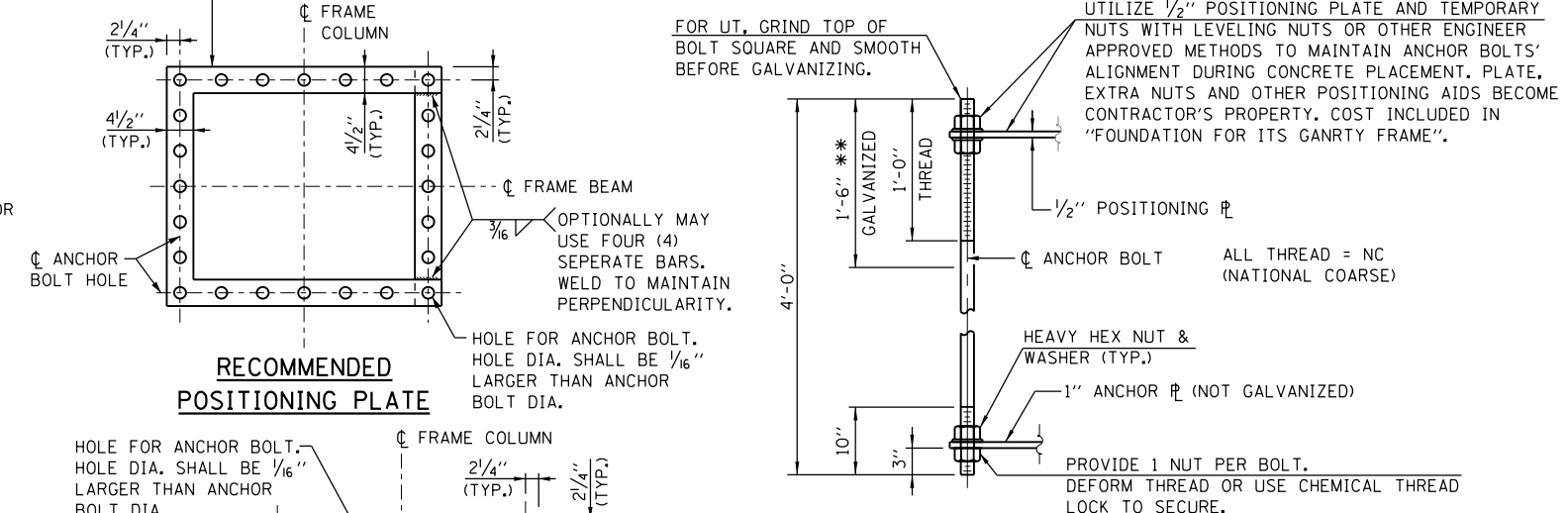
NOTE TO DESIGNER:

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS BASE DRAWING UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

- NOTES:**
1. THE FOUNDATION DETAILS SHOWN ARE BASED ON THE PRESENCE OF MOSTLY COHESIVE SOIL CONDITIONS (SILTY OR SANDY CLAY), WITH AN AVERAGE UNCONFINED COMPRESSIVE STRENGTH (QU) > 1.25 TON/SQ. FT. WHICH MUST BE DETERMINED BY PREVIOUS SOIL INVESTIGATIONS AT THE JOBSITE. WHEN OTHER CONDITIONS ARE INDICATED, THE BORING DATA SHALL BE INCLUDED IN THE PLANS AND THE FOUNDATION DIMENSIONS SHOWN SHALL BE THE RESULT OF SITE SPECIFIC DESIGNS. IF CONDITIONS ENCOUNTERED IN THE FIELD ARE DIFFERENT THAN THOSE INDICATED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO DETERMINE IF THE FOUNDATION DIMENSIONS NEED TO BE MODIFIED.
 2. ALL MATERIAL, FABRICATION, AND CONSTRUCTION REQUIREMENTS FOR THE FOUNDATIONS SHALL BE IN ACCORDANCE WITH SECTION 734 OF THE ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS.
 3. CONCRETE SHALL BE PLACED MONOLITHICALLY, WITHOUT CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
 4. BACKFILL SHALL BE PLACED PER SECTION 502 OF THE STANDARD SPECIFICATION AND PRIOR TO ERECTION OF GANTRY FRAME.
 5. PROVIDE NORMAL SURFACE FINISH, FOLLOWED BY PROTECTIVE COAT APPLICATION ON ALL CONCRETE SURFACES ABOVE ELEV. D. COST INCLUDED IN THE COST OF "FOUNDATION FOR ITS GANTRY FRAME".
 6. ALL REINFORCEMENT BAR DESIGNATED (E) SHALL BE EPOXY COATED. REINFORCEMENT BAR SHALL BE POSITIONED SO THAT THERE WILL BE NO INTERFERENCE BETWEEN VERTICAL REINFORCEMENT AND ANCHOR BOLTS.
 7. FURNISHING AND INSTALLING ALL CONDUIT, FITTINGS AND GROUNDING SYSTEM ARE INCLUDED IN THE COST OF "FOUNDATION FOR ITS GANTRY FRAME".
 8. NO SONOTUBES OR DECOMPOSABLE FORMS SHALL BE USED 1'-0" BELOW THE FINISHED GROUND LINE. PERMANENT METAL FORMS OR OTHER SHIELDING MAY NOT BE LEFT IN PLACE WITHOUT THE ENGINEER'S WRITTEN PERMISSION. EXCAVATIONS SHALL BE DEWATERED BEFORE CONCRETE PLACEMENT AT NO ADDITIONAL COST.
 9. COORDINATE STAINLESS STEEL RIGID CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL AND ITS PLANS. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT BARS. DO NOT CUT REINFORCEMENT BARS.

NOTE TO DESIGNER:

DESIGNER TO COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL AND ITS PLANS. REMOVE THIS "NOTE TO DESIGNER" PRIOR TO INSERTION INTO THE PLAN SET.



ANCHOR BOLT DETAIL

ANCHOR BOLTS SHALL CONFORM TO AASHTO M314 OR ASTM F1554 GRADE 55 AND MEET CHARPY V-NOTCH (CVN) ENERGY OF 15 LB.-FT. AT 40° F. GALVANIZE UPPER 18" PER AASHTO M 232. NO WELDING SHALL BE PERMITTED ON ANCHOR BOLTS.

* 18" IS MINIMUM TO BE GALVANIZED. ENTIRE BOLT MAY BE GALVANIZED AT CONTRACTOR'S OPTION.

SHOULDER FOUNDATION TYPE I TABLE

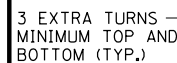
SPAN "S"	"W"	"X"	"Z"	"SD"	"P"	BAR s(E) PITCH	NO. ANCHOR BOLT
<=110'	1'-5 1/2"	1'-4"	28'-0"	3'-6"	9"	6"	18
110'<"S"<=130'	1'-8"	1'-5 1/2"	32'-0"	3'-6"	9"	6"	22
130'<"S"<=150'	1'-8"	1'-6 3/4"	35'-0"	4'-0"	6"	6"	22

REINFORCEMENT BAR SCHEDULE

FOR ONE FOUNDATION

SPAN "S"	BAR	NO.	SIZE	LENGTH	SHAPE
<=110'	h(E)	17	#4	19'-5"	□
	s(E)	1	#4	31'-9"	▬▬▬
	v(E)	20	#10	33'-2"	▬▬▬
	u(E)	28	#8	13'-11"	▬▬▬
110'<"S"<=130'	h(E)	17	#4	19'-5"	□
	s(E)	1	#6	31'-9"	▬▬▬
	v(E)	20	#10	37'-2"	▬▬▬
	u(E)	28	#8	13'-11"	▬▬▬
130'<"S"<=150'	h(E)	17	#4	19'-5"	□
	s(E)	1	#6	38'-9"	▬▬▬
	v(E)	22	#10	40'-2"	▬▬▬
	u(E)	28	#8	13'-11"	▬▬▬

* THE LENGTH OF SPIRAL SHOWN IS THE HEIGHT OF SPIRAL.



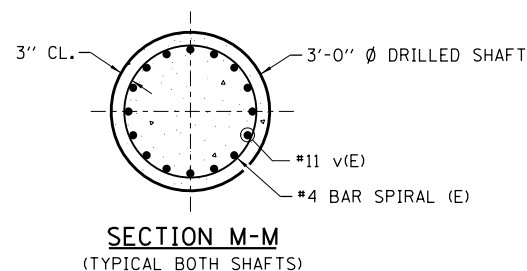
1. THE FOUNDATION DETAILS SHOWN ARE BASED ON COMMON COHESIVE SOIL CONDITIONS (SILTY OR SANDY CLAY), WITH AN AVERAGE UNCONFINED COMPRESSIVE STRENGTH (QU) > 1.25 TON/SQ. FT. WHICH MUST BE DETERMINED BY PREVIOUS SOIL INVESTIGATIONS AT THE JOBSITE. WHEN OTHER CONDITIONS ARE INDICATED, THE BORING DATA SHALL BE INCLUDED IN THE PLANS AND THE FOUNDATION DIMENSIONS SHOWN SHALL BE THE RESULT OF SITE SPECIFIC DESIGNS. IF CONDITIONS ENCOUNTERED IN THE FIELD ARE DIFFERENT THAN THOSE INDICATED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO DETERMINE IF THE FOUNDATION DIMENSIONS NEED TO BE MODIFIED.
2. ALL MATERIAL, FABRICATION, AND CONSTRUCTION REQUIREMENTS FOR THE FOUNDATION SHALL BE IN ACCORDANCE WITH SECTION 734 OF THE ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS.
3. CONCRETE SHALL BE PLACED MONOLITHICALLY, WITHOUT CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
4. BACKFILL SHALL BE PLACED PER SECTION 502 OF THE STANDARD SPECIFICATION AND PRIOR TO ERECTION OF GANTRY FRAME.
5. PROVIDE NORMAL SURFACE FINISH, FOLLOWED BY PROTECTIVE COAT APPLICATION ON ALL CONCRETE SURFACES ABOVE ELEV. D. COST INCLUDED IN THE COST OF "FOUNDATION FOR ITS GANTRY FRAME".
6. ALL REINFORCEMENT BAR DESIGNATED (E) SHALL BE EPOXY COATED. REINFORCEMENT BAR SHALL BE POSITIONED SO THAT THERE WILL BE NO INTERFERENCE BETWEEN VERTICAL REINFORCEMENT AND ANCHOR BOLTS.
7. FURNISHING AND INSTALLING ALL CONDUIT, FITTINGS AND GROUNDING SYSTEM ARE INCLUDED IN THE COST OF "FOUNDATION FOR ITS GANTRY FRAME".
8. NO SONOTUBES OR DECOMPOSABLE FORMS SHALL BE USED 1'-0" BELOW THE FINISHED GROUND LINE. PERMANENT METAL FORMS OR OTHER SHIELDING MAY NOT BE LEFT IN PLACE WITHOUT THE ENGINEER'S WRITTEN PERMISSION. EXCAVATIONS SHALL BE DEWATERED BEFORE CONCRETE PLACEMENT AT NO ADDITIONAL COST.
9. COORDINATE STAINLESS STEEL RIGID CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL AND ITS PLANS. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT BARS. DO NOT CUT REINFORCEMENT BARS.

NOTE TO DESIGNER:

DESIGNER TO COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL AND ITS PLANS. MODIFY DRAWING AS NECESSARY. REMOVE THIS "NOTE TO DESIGNER" PRIOR TO INSERTION INTO THE PLAN SET.

NOTE TO DESIGNER:

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS BASE DRAWING UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.
























SHOULDER FOUNDATION TYPE II SCHEDULE

SPAN "S"	"Z"	"W"	"X"	CLASS DS CONCRETE (CU YD)	REINF. BARS (LB)
<=110'	38'-0"	1'-5/2"	1'-4"	35.0	10,190
110'<"S"<=130'	42'-0"	1'-8"	1'-5/2"	37.0	10,950
130'<"S"<=150'	46'-0"	1'-8"	1'-6 3/4"	39.0	11,720



REINFORCEMENT BAR SCHEDULE

(2 DRILLED SHAFTS AND 1 GRADE BEAM)

SPAN "S"	BAR	NO.	SIZE	LENGTH	SHAPE
"S"<=110'	h(E)	10	#7	15'-8"	
	p(E)	14	#8	15'-8"	
	t(E)	24	#6	6'-0"	
	s(E)	2	#4	42'-3"	
	v(E)	32	#11	43'-10"	
	v ₁ (E)	24	#6	15'-2"	
	u(E)	24	#4	8'-6"	
110'<"S"<=130'	h(E)	10	#7	15'-8"	
	p(E)	14	#8	15'-8"	
	t(E)	24	#6	6'-0"	
	s(E)	2	#4	46'-3"	
	v(E)	32	#11	47'-10"	
	v ₁ (E)	24	#6	15'-2"	
	u(E)	24	#4	8'-6"	
130'<"S"<=150'	h(E)	10	#7	15'-8"	
	p(E)	14	#8	15'-8"	
	t(E)	24	#6	6'-0"	
	s(E)	2	#4	50'-3"	
	v(E)	32	#11	51'-10"	
	v ₁ (E)	24	#6	15'-2"	
	u(E)	24	#4	8'-6"	

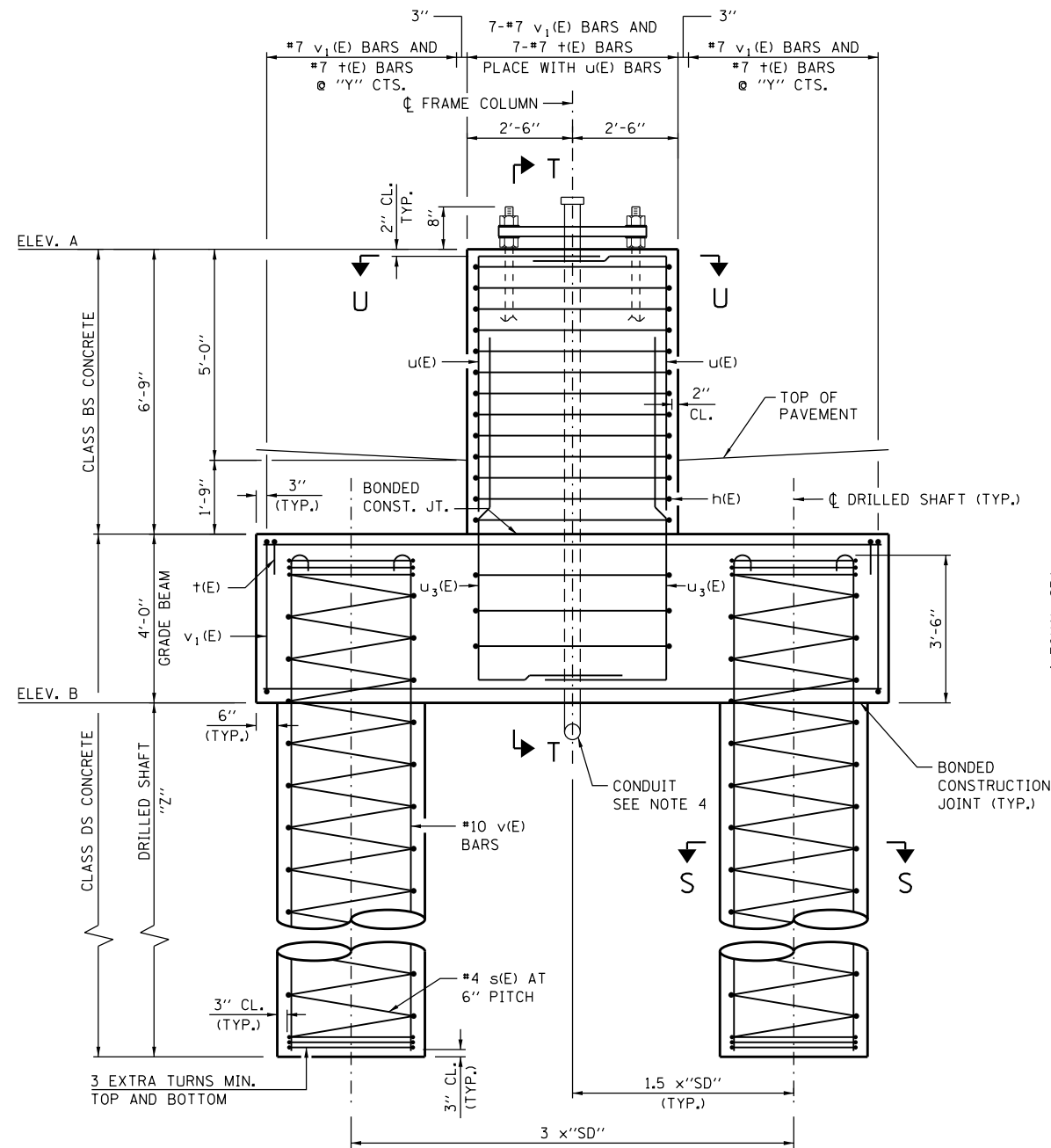
* THE LENGTH OF SPIRAL SHOWN IS THE HEIGHT OF SPIRAL.

BASE DRAWING M-OHS-729
SHEET 6 OF 8



OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
SINGLE SPAN
STRUCTURE DETAILS

DATE
3-31-2017

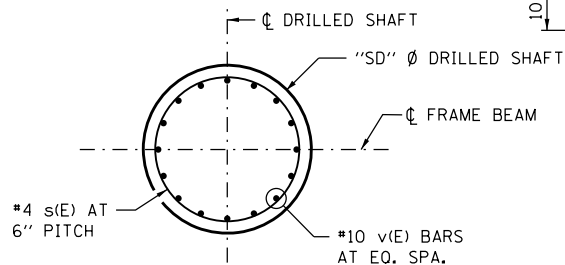


ELEVATION
MEDIAN FOUNDATION

REINFORCEMENT BAR SCHEDULE
FOR ONE FOUNDATION

MAX. SPAN "S ₁ " OR "S ₂ "	BAR	NO.	SIZE	LENGTH	SHAPE
<=110'	h ₁ (E)	6	#6	12'-8"	***
	p(E)	12	#8	12'-8"	
	t(E)	23	#7	6'-2"	
	s(E)	2	#4	33'-3"	
	v(E)	32	#10	34'-8"	
	v ₁ (E)	23	#7	13'-4"	
110'<"S"<=130'	h ₁ (E)	6	#6	14'-8"	***
	p(E)	12	#8	14'-8"	
	t(E)	27	#7	6'-2"	
	s(E)	2	#4	31'-3"	
	v(E)	32	#10	32'-8"	
	v ₁ (E)	27	#7	13'-4"	
130'<"S"<=150'	h ₁ (E)	6	#6	14'-8"	***
	p(E)	12	#8	14'-8"	
	t(E)	31	#7	6'-2"	
	s(E)	2	#4	31'-3"	
	v(E)	40	#10	32'-8"	
	v ₁ (E)	31	#7	13'-4"	

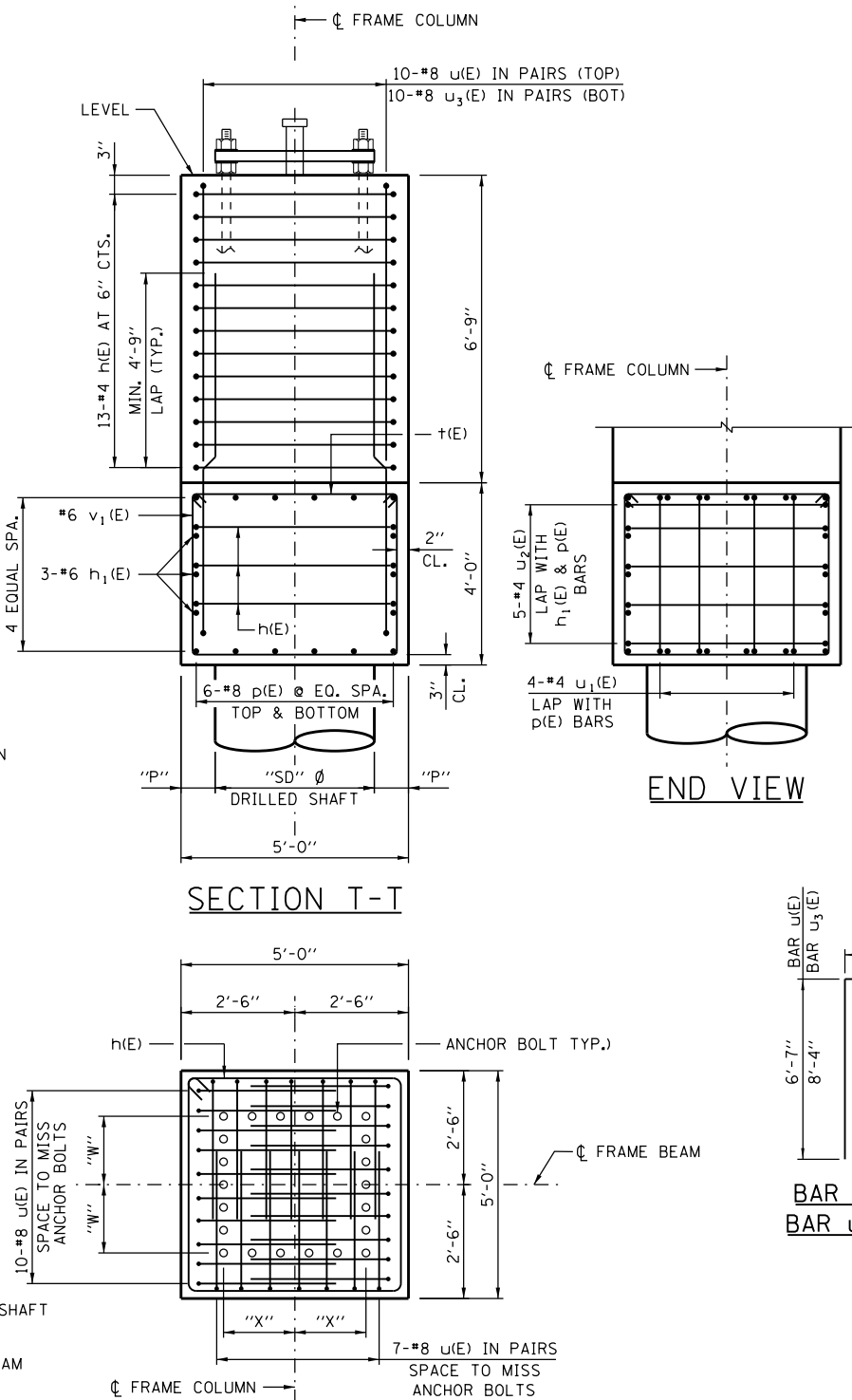
* THE LENGTH OF SPIRAL SHOWN IS THE HEIGHT OF SPIRAL.



SECTION S-S

REINFORCEMENT BAR SCHEDULE
FOR ONE FOUNDATION

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	16	#4	19'-1"	***
u(E)	34	#8	9'-7"	
u ₁ (E)	8	#4	4'-11"	
u ₂ (E)	10	#4	5'-10"	
u ₃ (E)	34	#8	11'-4"	***
h(E)	16	#4	19'-1"	
u(E)	34	#8	9'-7"	
u ₁ (E)	8	#4	4'-11"	



SECTION U-U

NOTE TO DESIGNER:

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NOTES:

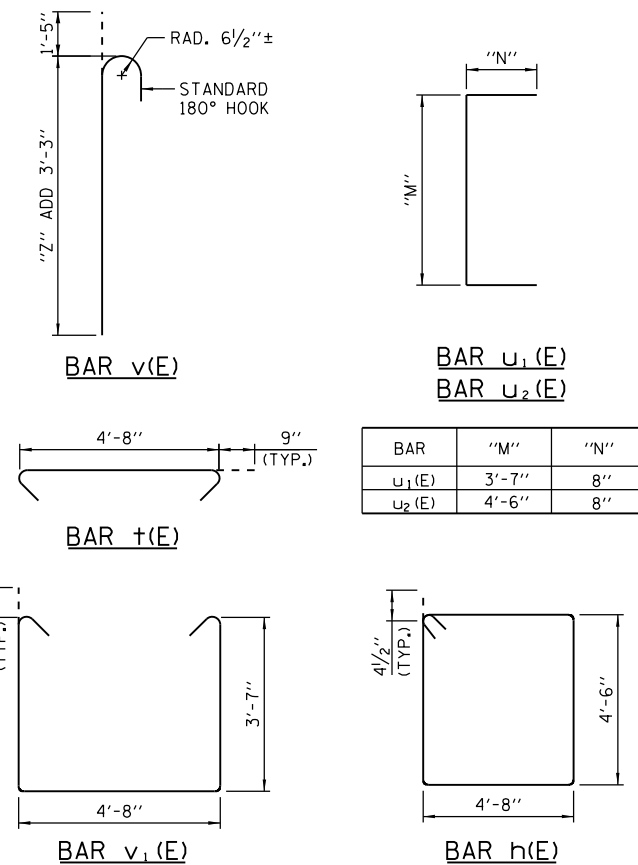
- SEE SHEET 5 OF THIS SERIES FOR FOUNDATION NOTES, DESIGN CRITERIA, ANCHOR BOLT DETAIL AND ANCHOR PLATE DETAIL.
- PROVIDE NORMAL SURFACE FINISH, FOLLOWED BY PROTECTIVE COAT APPLICATION ON ALL CONCRETE SURFACES ABOVE TOP OF GRADE BEAM. COST INCLUDED IN THE COST OF "FOUNDATION FOR ITS GANTRY FRAME".
- SEE SHEET 8 OF THIS SERIES FOR CONCRETE MEDIAN BARRIER TRANSITION. COST OF BARRIER TRANSITION INCLUDED IN COST OF "CONCRETE MEDIAN BARRIER TRANSITION, TYPE V-F".
- COORDINATE STAINLESS STEEL RIGID CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL AND ITS PLANS. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT BARS. DO NOT CUT REINFORCEMENT BARS.
- PROTECTIVE COAT SHALL BE APPLIED TO TRAFFIC AND TOP FACES OF CONCRETE CRASHWALL.

NOTE TO DESIGNER:

DESIGNER TO COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL AND ITS PLANS. MODIFY DRAWING AS NECESSARY. REMOVE THIS "NOTE TO DESIGNER" PRIOR TO INSERTION INTO THE PLAN SET.

MEDIAN FOUNDATION TABLE

SPAN "S"	"Z"	"SD"	"P"	"W"	"X"	"Y"	NO. ANCHOR BOLT
<=110'	30'-0"	3'-0"	1'-0"	1'-5 1/2"	1'-4"	6"	18
110'<"S"<=130'	28'-0"	3'-6"	9"	1'-8"	1'-5 1/2"	6"	22
130'<"S"<=150'	28'-0"	3'-6"	9"	1'-8"	1'-6 3/4"	5"	22



MEDIAN FOUNDATION SCHEDULE

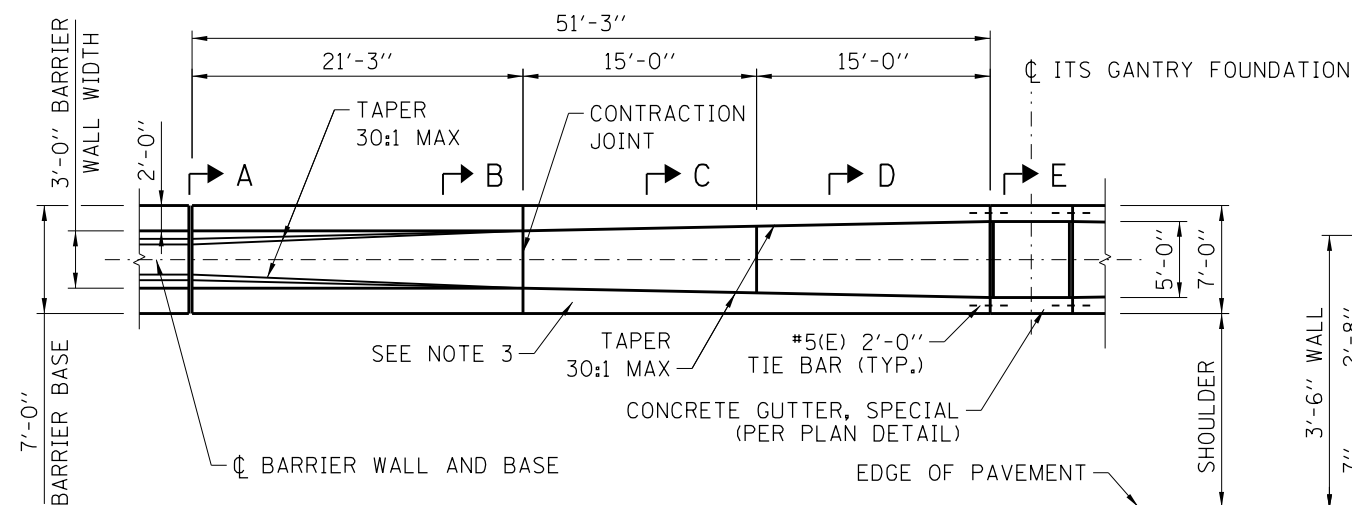
SPAN "S"	CLASS BS CONCRETE (CU YD)	CLASS DS CONCRETE (CU YD)	REINF. BARS (LB)	PROTECTIVE COAT (SQ YD)
<=110'	7.0	26.0	9,120	9
110'<"S"<=130'	7.0	32.0	9,190	9
130'<"S"<=150'	7.0	32.0	10,480	9

BASE DRAWING M-OHS-729
SHEET 7 OF 8

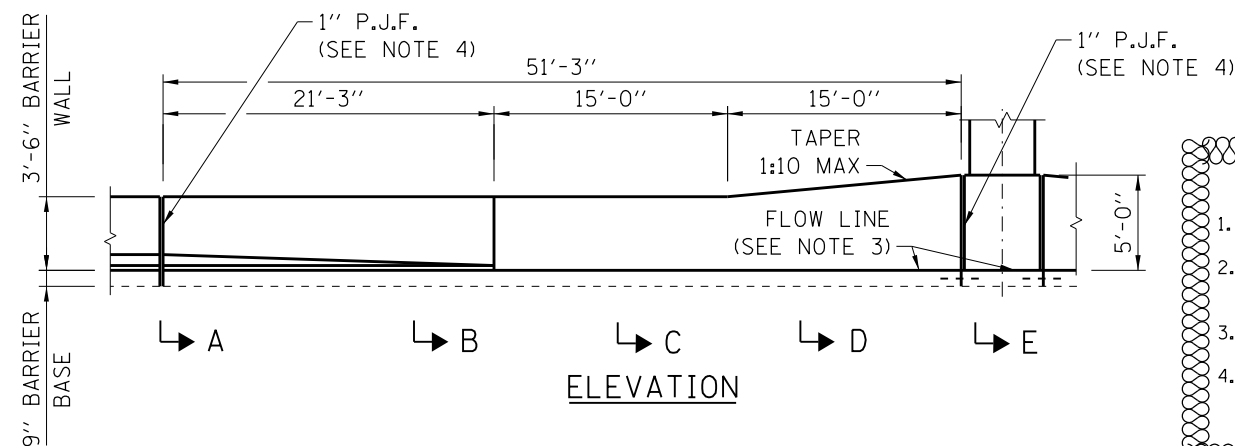


OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
SINGLE SPAN
STRUCTURE DETAILS

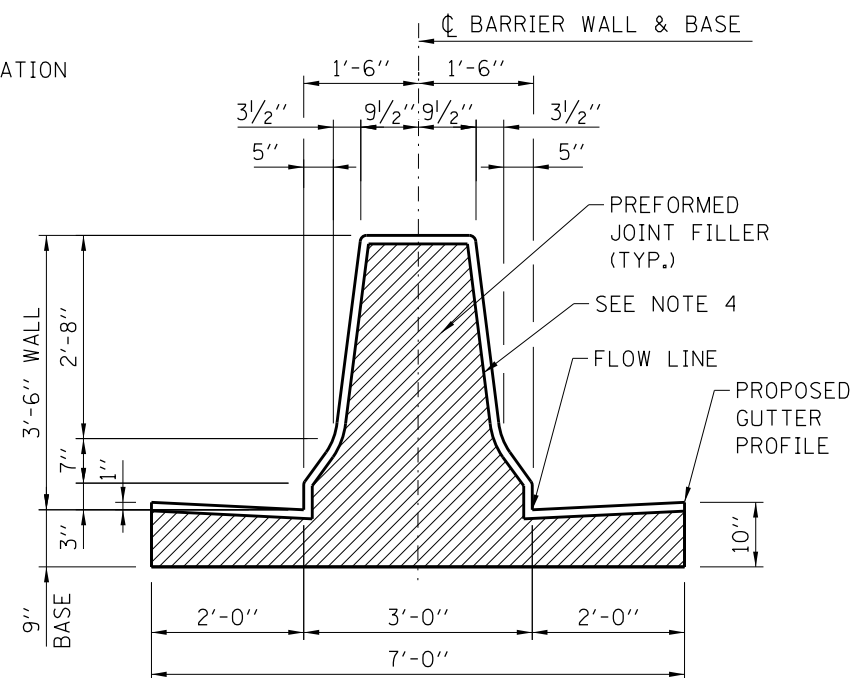
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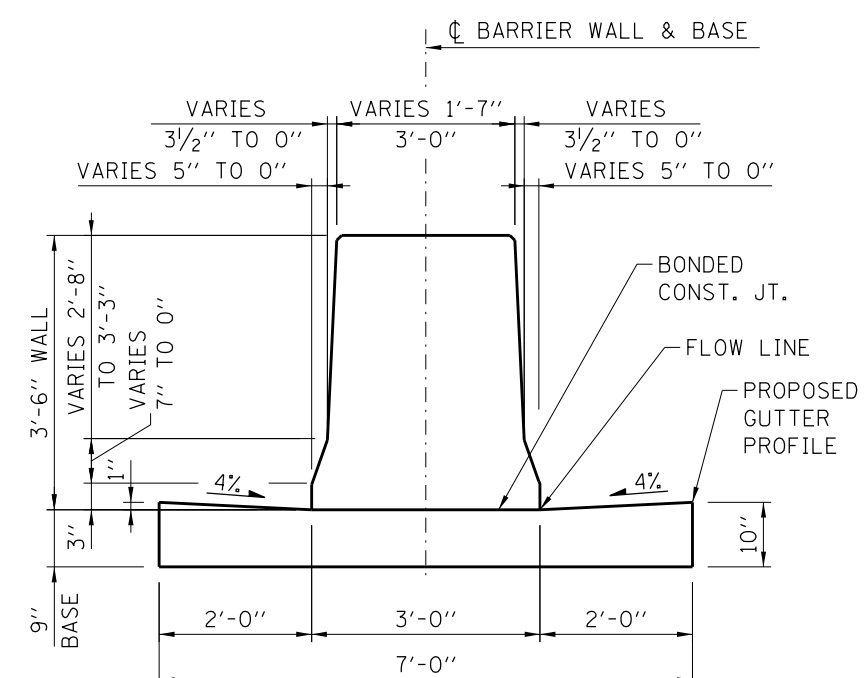
PLAN



ELEVATION



SECTION A-A

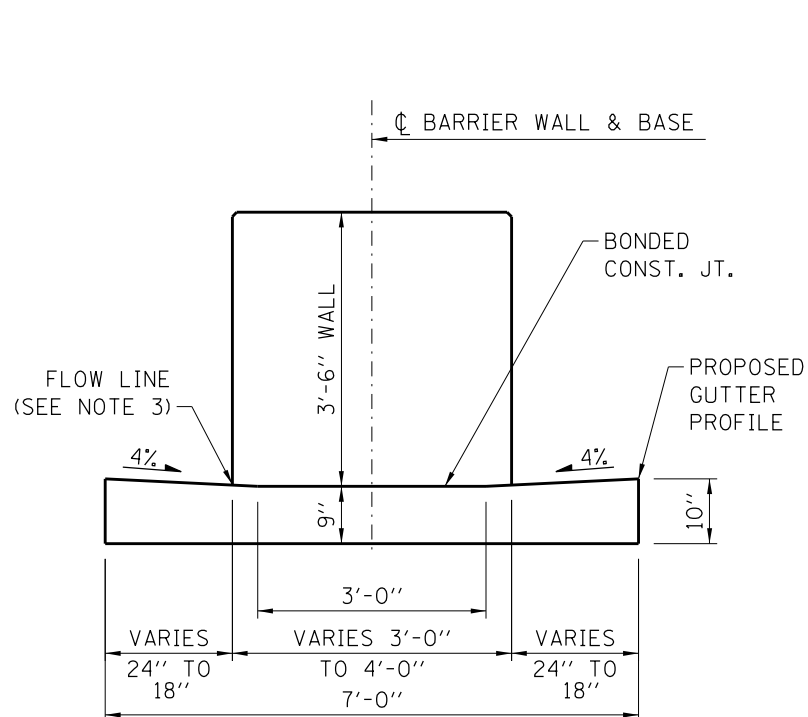


SECTION B-B

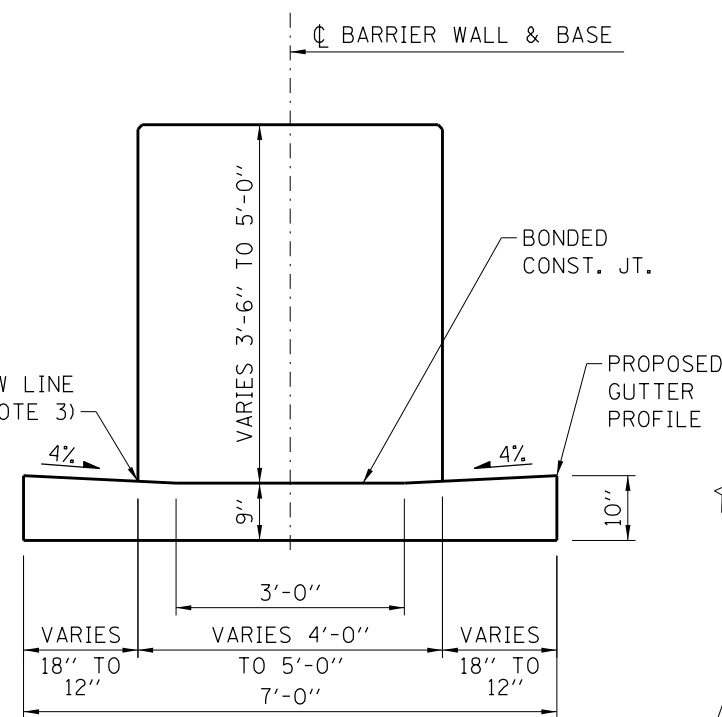
NOTE TO DESIGNER:

1. WITHIN SECTION B-B, THE GUTTER PORTION OF THE BARRIER BASE REMAINS 2'-0"; THEREFORE, STANDARD TYPE 20A F&G SHALL BE USED.
2. WITHIN SECTION C-C & D-D, THE GUTTER PORTION OF THE BARRIER BASE IS LESS THAN 2'-0"; THEREFORE, NON-ILLINOIS TOLLWAY STD. F&G SHALL BE USED.
3. WITHIN SECTION B-B & C-C, THE BARRIER HEIGHT REMAINS 42", THIS ALLOWS THE PLACEMENT OF LIGHT POLE FOUNDATIONS WITHIN THIS AREA.
4. WITHIN SECTION D-D, THE BARRIER HEIGHT IS INCREASING FROM 42" TO 60", THE LIGHT POLE FOUNDATIONS SHALL NOT BE PLACED WITHIN THIS AREA.

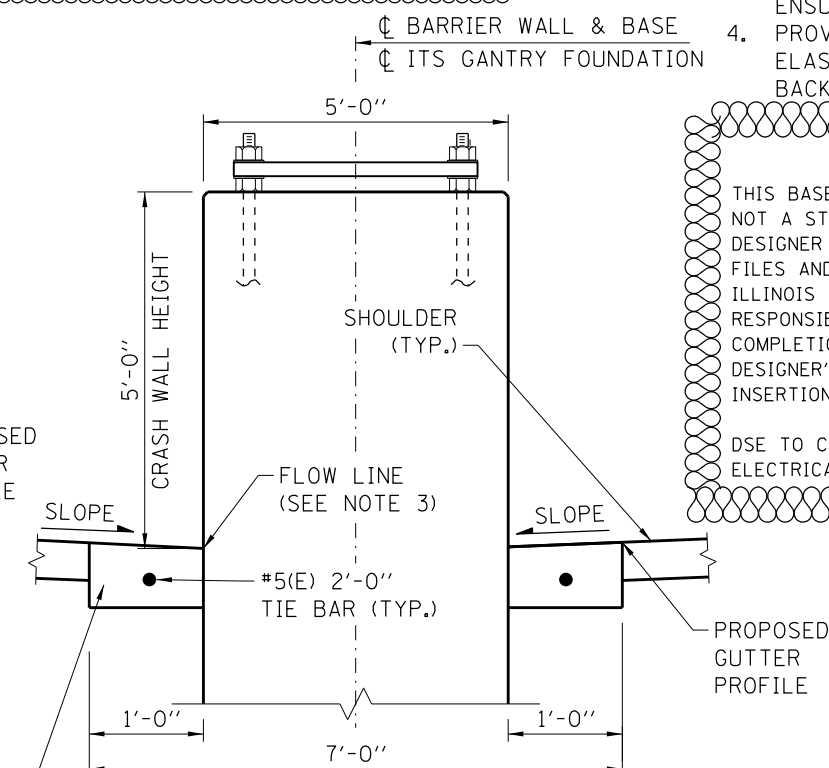
CONCRETE MEDIAN BARRIER TRANSITION, TYPE V-F AT ITS GANTRY



SECTION C-C



SECTION D-D



SECTION E-E

NOTES:

1. 2" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN THE CONCRETE BARRIER WALL AND IN THE CONCRETE BARRIER BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM JOINT SPACING SHALL BE 30'.
2. THE FORMING OF CONTRACTION JOINTS SHALL BE DONE BY SAWING.
3. GUTTER PROFILE IN THE VICINITY OF SAG VERTICAL CURVES, ALONG FLAT GRADES AND AT THE MEETING OF PROPOSED AND EXISTING GUTTER, SHALL BE CAREFULLY CONTROLLED AND FIELD ADJUSTED IF NECESSARY TO ENSURE POSITIVE DRAINAGE AND AVOID PONDING.
4. PROVIDE NON-STAINING GRAY ONE COMPONENT NON-SAG ELASTOMETRIC GUN GRADE POLYURETHANE SEALANT WITH BACKER ROD.

NOTE TO DESIGNER:

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DSE TO COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL AND ITS PLANS. MODIFY DRAWING AS NECESSARY.

BASE DRAWING M-OHS-729
SHEET 8 OF 8



OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
SINGLE SPAN
STRUCTURE DETAILS

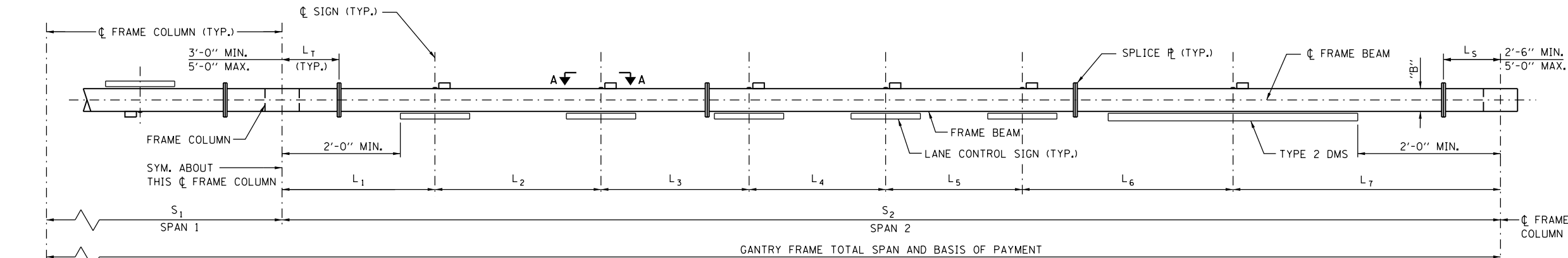
DATE
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MATERIAL SPECIFICATIONS FOR
STRUCTURAL STEEL AND FASTENERS

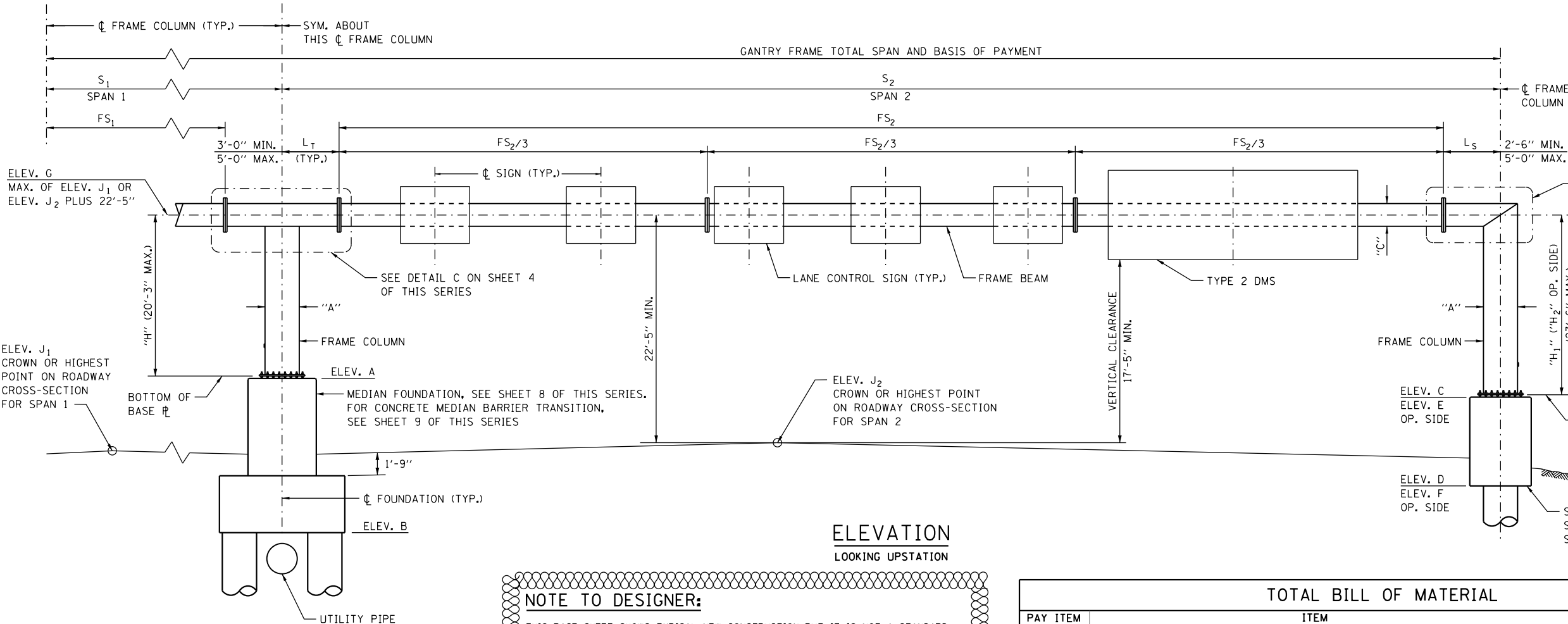
ELEMENT OF STRUCTURE	SPECIFICATION	F _y (KSI)	F _u (KSI)
STRUCTURAL STEEL TUBE FRAME (HSS)	ASTM A500 GRADE C	50	62
STRUCTURAL STEEL TUBE MOUNTING BEAMS (HSS)	ASTM A500 GRADE B	46	58
STEEL SHAPES	ASTM A709 GRADE 50	50	65
STEEL PLATES	ASTM A572 GR. 50 OR ASTM A709 GR. 50	50	65
STEEL BOLTS	ASTM 325 TYPE 1	--	105
SIGN BRACKET RODS	ASTM A307	--	60
LOCK NUTS	ASTM A194 GR. 8F OR ASTM A194 GR. 2H	--	--
NUTS	ASTM A563 GRADE DH	--	--
STEEL WASHERS	ASTM F436	--	--
STAINLESS STEEL WASHERS	ASTM A240, TYPE 302	--	--
ANCHOR BOLTS	AASHTO M 314 OR ASTM F1554	55	75

CAMBER TABLE

SPAN "S ₁ " OR "S ₂ "	CAMBER
<=110'	3/4"
110'<"S"<=130'	4/2"
130'<"S"<=150'	5"



PLAN



ELEVATION

LOOKING UPSTATION

TOTAL BILL OF MATERIAL

PAY ITEM	ITEM	UNIT	TOTAL
JS734G10	FOUNDATION FOR ITS GANTRY FRAME	CU YD	
JT740I10	ITS GANTRY FRAME (STEEL), SPANS LESS THAN OR EQUAL TO 110'	FOOT	
JT740I30	ITS GANTRY FRAME (STEEL), SPANS GREATER THAN 110' AND LESS THAN OR EQUAL TO 130'	FOOT	
JT740I50	ITS GANTRY FRAME (STEEL), SPANS GREATER THAN 130' AND LESS THAN OR EQUAL TO 150'	FOOT	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	
42001300	PROTECTIVE COAT	SQ YD	

STRUCTURAL STEEL TUBE (HSS) FRAME TABLE

MAX. SPAN "S ₁ " OR "S ₂ "	FRAME COLUMN	FRAME BEAM	"A"	"B"	"C"
<=110'	HSS 28x24x0.625	HSS 28x24x0.500	2'-0"	2'-4"	2'-0"
110'<"S"<=130'	HSS 28x28x0.625	HSS 28x24x0.625	2'-4"	2'-4"	2'-0"
130'<"S"<=150'	HSS 30x30x0.625	HSS 30x30x0.625	2'-6"	2'-6"	2'-6"

BASE DRAWING M-OHS-730

SHEET 1 OF 9



OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
TWO-SPAN
STRUCTURE DETAILS

DATE

3-31-2017

NOTES:

- SEE SHEET 2 OF THIS SERIES FOR VIEW A-A AND DESIGN SUMMARY TABLE.
- CAMBER IS PROVIDED AT MIDSPAN OF EACH SPAN OF STRUCTURE.
- PRIOR TO FABRICATING GANTRY FRAME, THE CONTRACTOR SHALL VERIFY LOCATIONS OF LANE CONTROL SIGNS AND TYPE 2 DMS WITH ENGINEER. (DIMENSIONS L₁ THROUGH L₇)
- FRAME SPAN SHALL BE IN THE CONFIGURATION SHOWN WITH 3 COLUMNS AND 6 FIELD SECTIONS.
- PRIOR TO FABRICATING GANTRY FRAME, THE CONTRACTOR SHALL FIELD VERIFY LOCATION OF EACH FOUNDATION, ANCHOR BOLTS AND DETAILS AFFECTING GANTRY FRAME FABRICATION AND CONSTRUCTION. NOTIFY THE ENGINEER OF ANY VARIATIONS FROM CONTRACT PLANS AND MAKE NECESSARY APPROVED ADJUSTMENTS. SUCH VARIATIONS DO NOT CONSTITUTE ADDITIONAL COMPENSATION FOR CHANGE IN SCOPE OF WORK. CONTRACTOR WILL BE PAID FOR THE ACTUAL QUANTITY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.
- WHEN REQUIRED FOR ADJUSTMENT, A MAX. OF TWO 1/4" SHIM PLATES SHALL BE PROVIDED AT EACH FIELD SPLICE LOCATION IN BETWEEN SPLICE PLATES.

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PROVIDE APPROPRIATE PROTECTION FOR SHOULDER FOUNDATION.

USE SHOULDER FOUNDATION TYPE I WHEN FOUNDATION IS PLACED ADJACENT TO RDWY. SHOULDER. USE SHOULDER FOUNDATION TYPE II WHEN FOUNDATION IS PLACED OUTSIDE CLEAR ZONE OR BEHIND GUARDRAIL.

PROVIDE SITE GROUNDING ELECTRODE SYSTEM DETAIL ACCORDING TO THE ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS SECTION 734.

REFERENCE BASE SHEET M-ITS-1101.

PAY ITEM FOR ITS GANTRY FRAME SHALL BE BASED ON THE LONGER SPAN LENGTH.

DIFFERENCE BETWEEN ELEV. A AND ELEV. C (OR ELEV. E) SHALL NOT EXCEED 5'-0".

ALL EXPOSED CONCRETE EDGES SHALL HAVE A $\frac{3}{4}$ " x 45° CHAMFER, EXCEPT WHERE SHOWN OTHERWISE. CHAMFER ON VERTICAL EDGES SHALL BE CONTINUED A MINIMUM OF ONE FOOT BELOW FINISHED GROUND LEVEL.

- REINFORCEMENT BARS, INCLUDING REINFORCEMENT BARS, EPOXY-COATED SHALL CONFORM TO THE REQUIREMENTS OF STANDARD SPECIFICATIONS SECTION 508 AND ARTICLE 1006.10.
- REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY-COATED.
- REINFORCEMENT BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".
- REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT-TO-OUT.

- ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS ISSUED MARCH, 2015 TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- ILLINOIS DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS ADOPTED JANUARY 1, 2015.
- ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2012.



THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT
REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION
FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE
DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS BASE DRAWING UPON ITS
COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED
BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

1. CONDUITS SHALL BE LOCATED IN THE NORTHERN MOST GANTRY FOUNDATION, EXCEPT FOR THE HALF GANTRIES JUST WEST OF IL-31 AND JUST EAST OF DEVON TOLL PLAZA 17. AT THESE TWO LOCATIONS THE CONDUITS SHALL BE IN THE SOUTHERN MOST GANTRY FOUNDATION.
2. A BORING IS REQUIRED AT EACH FOUNDATION LOCATION.
3. NO STANDARD DRILLED SHAFT FOUNDATIONS WERE DESIGNED OR DETAILED FOR COHESIONLESS SOIL CONDITIONS. REGARDLESS, THE DESIGNER MUST CONDUCT A SUBSURFACE INVESTIGATION AT EACH OVERHEAD SIGN STRUCTURE FOUNDATION TO DETERMINE THE ACTUAL SOIL PROPERTIES. SHOULD THE INVESTIGATION REVEAL THE PRESENCE OF COHESIONLESS SOIL OR COHESIVE SOILS WITH PROPERTIES LESS THAN THE AVERAGES INDICATED IN THIS STANDARD, THE DESIGNER SHALL DESIGN AND DETAIL THE DRILLED SHAFT FOUNDATIONS TO MEET THE ACTUAL SOIL CONDITIONS.
4. DESIGN AND CONSTRUCTION SPECIFICATIONS: THE DESIGNER IS RESPONSIBLE FOR UPDATING THE EDITION OF SPECIFICATIONS AND THE DATE OF PUBLICATION TO THE EDITION OF SPECIFICATIONS AND THE DATE OF PUBLICATION USED IN DESIGN.
5. DESIGNER TO ENSURE ALL LATEST CODE REQUIREMENTS ARE MET.
6. DESIGNER TO DETERMINE THAT APPLIED LOADS DO NOT EXCEED DESIGN VALUES.



SEE SHEET 1 OF THIS SERIES FOR DIMENSIONS "A" AND "B"

WIND LOAD CRITERIA			
SIGN PANEL	40 P.S.F.	BASIC WIND SPEED	90 M.P.H.
COLUMN/BEAM	40 P.S.F.	G	1.14
TYPE 2 DMS	42 P.S.F.	I _r (WIND IMPORTANCE FACTOR)	1.0
		K _z	1.0

TL-5 DESIGN REQUIREMENTS, WHERE APPLICABLE FOR FOUNDATION ONLY, PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION WITH CURRENT INTERIMS

LANE CONTROL SIGN (460 LB. MAX. (5'-0" H. X 6'-1" W. X 1'-2" D. MAX.)
TYPE 2 DMS (1,800 LB. MAX. (8'-0" H. X 22'-0" W. X 1'-2" D. MAX.)

ITS GANTRY FRAMES ARE DESIGNED FOR MAX. LOADING IN EACH SPAN OF 2-TYPE 2 DMS
AND 4-LANE CONTROL SIGNS.

ITS GANTRY FOUNDATIONS ARE DESIGNED FOR MAX. LOADING IN EACH SPAN OF 3-TYPE 2 DMS
AND 1-LANE CONTROL SIGN IN EACH ADDITIONAL 12' LANE.

f'c = COMPRESSIVE STRENGTH OF CONCRETE (CLASS BS) = 4,000 P.S.I.
f'c = COMPRESSIVE STRENGTH OF CONCRETE (CLASS DS) = 4,000 P.S.I.
fy = YIELD STRENGTH OF REINFORCEMENT BARS (GRADE 60) = 60,000 P.S.I.

1. ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL ISSUED MARCH, 2015, WITH LATEST DESIGN BULLETINS.
2. AASHTO STANDARD SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS, SIXTH EDITION.
3. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION WITH CURRENT INTERIMS.
4. ILLINOIS DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL, JANUARY 2012.
5. ILLINOIS TOLLWAY GEOTECHNICAL ENGINEER MANUAL DATED MARCH 2014.

MAX. SPAN "S ₁ " OR "S ₂ "	"D"	"E"	N ₁	X ₁	N ₂	X ₂	ANCHOR BOLT DIAMETER	NO. ANCHOR BOLT
<=110"	3'-2"	3'-5"	4	8"	5	7"	1¾"	18
110"<"S"<=130"	3'-5"	3'-6"	5	7"	6	6"	1¾"	22
130"<"S"<=150"	3'-7½"	3'-6"	5	7½"	6	6"	1¾"	22



DESIGN SUMMARY																										
STRUCTURE NUMBER	STATION	S ₁ (FT)	S ₂ (FT)	TOTAL SPAN (FT)	ELEVATION								FOUNDATION TYPE	MINIMUM VERTICAL CLEARANCE	FS ₁	FS ₂	L _S	L _T	H	H ₁	H ₂	CONCRETE (CU YD)		REINF. BARS, EPOXY COATED (LB)	PROTECTIVE COAT (SQ YD)	
					A	B	C	D	E	F	G	J ₁										J ₂	CLASS BS			CLASS DS
																				TOTAL						

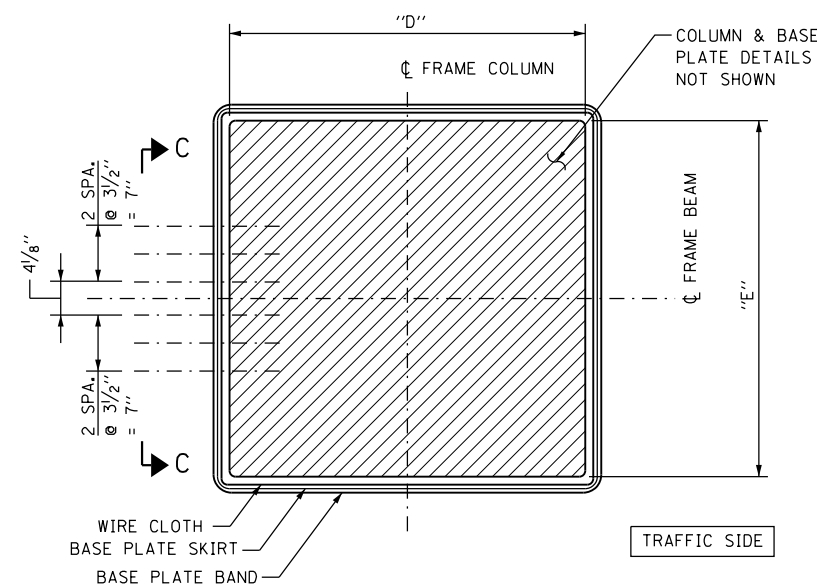
[illegible]

BASE Φ TYPE E IS ONLY APPLICABLE TO I-90 GANTRY LOCATION AT STATIONS 3290+35.00, 3315+00, 3341+00, 3358+60, 3617+00, 3728+45, 3785+95, 3904+08.00, 3933+50.00, 3966+92.00 AND 4009+33.00. OTHERWISE, USE BASE Φ TYPE N. FIELD VERIFY DIMENSIONS AND BOLT SPACING PRIOR TO FABRICATING BASE Φ . DESIGNED FOR 1-TYPE 2 DMS AND 5 LANE CONTROL SIGNS, IN EACH SPAN. DESIGNER SHALL PROVIDE ANALYSIS VERIFICATION PRIOR TO MOUNTING ADDITIONAL EQUIPMENT. REMOVE THIS TABLE AND NOTE IF NOT USED.

[illegible]

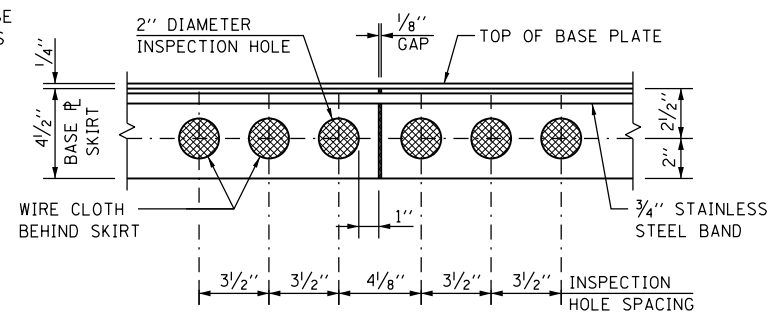
OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
TWO-SPAN
STRUCTURE DETAILS

DATE
3-31-2017



COLUMN BASE PLATE PLAN

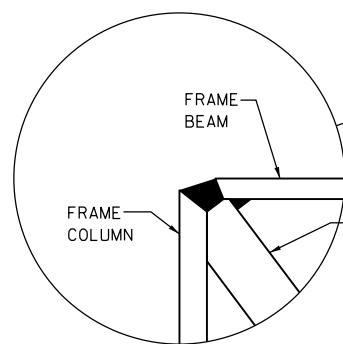
SEE NOTE 4



VIEW C-C (BASE PLATE SKIRT)

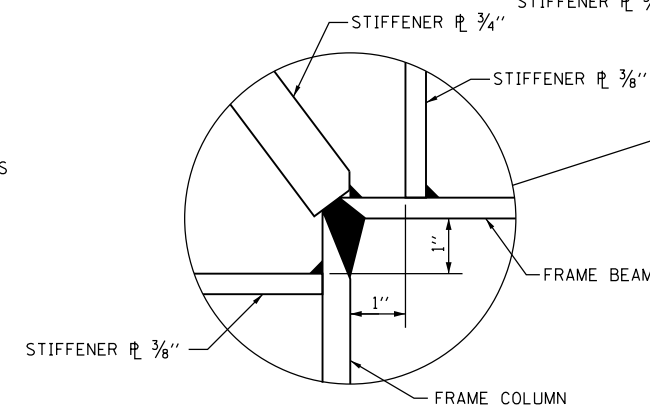
NOTE:

1. SEE SHEET 1 OF THIS SERIES FOR DIMENSIONS "A", "B" AND "C".
2. SEE SHEET 2 OF THIS SERIES FOR DIMENSIONS "D" AND "E".
3. AFTER ADJUSTMENTS TO LEVEL FRAME BEAM AND ENSURE ADEQUATE VERTICAL CLEARANCE, TIGHTEN ALL TOP AND LEVELING NUTS AGAINST THE BASE PLATE WITH A MINIMUM TORQUE OF 200 LB.-FT. THEN PLACE STAINLESS STEEL MESH AROUND THE PERIMETER OF THE BASE PLATE. SECURE TO BASE PLATE WITH STAINLESS STEEL BANDING.
4. SHOULDER FOUNDATION SHOWN. VERIFY HANDHOLE AND INSPECTION HOLES PLACEMENT ON MEDIAN FRAME COLUMN WITH THE ENGINEER.

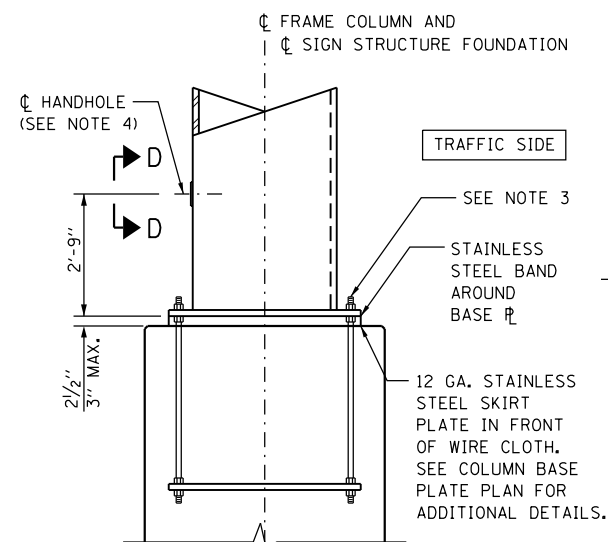


NOTE TO DESIGNER:

VERIFY HANDHOLE AND INSPECTION HOLES PLACEMENT ON MEDIAN FRAME COLUMN WITH ILLINOIS TOLLWAY ITS.

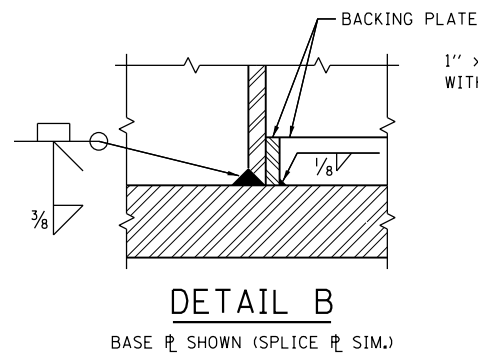


DETAIL A



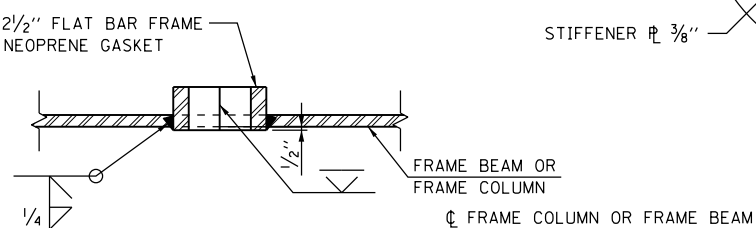
COLUMN BASE

REINFORCING NOT SHOWN



DETAIL B

BASE PLATE SHOWN (SPLICE PLATE SIM.)

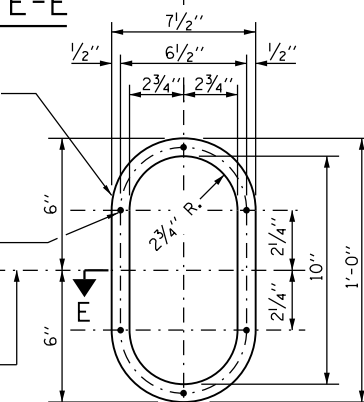


SECTION E-E

1" x 2 1/2" FLAT BAR FRAME WITH NEOPRENE GASKET

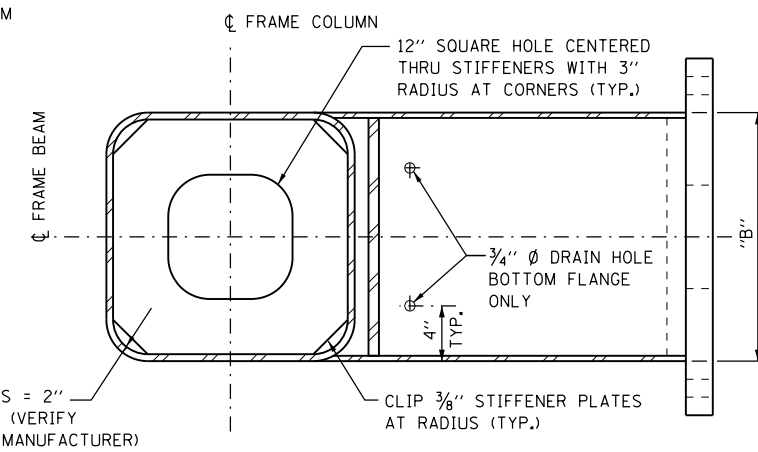
DRILL & TAP 6 HOLES FOR 1/4"-20 ROUND HEAD BRASS SCREWS. CHASE THREAD AFTER GALVANIZING.

FRAME BEAM OR FRAME COLUMN



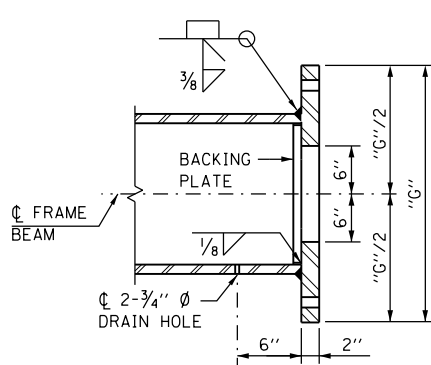
PROVIDE COVER PLATE 3/16" x 7 1/2" x 12" ROUND CORNERS TO 3 3/4" RADIUS. PROVIDE SIX 5/16" Ø HOLES.

**VIEW D-D
HANDHOLE DETAIL**

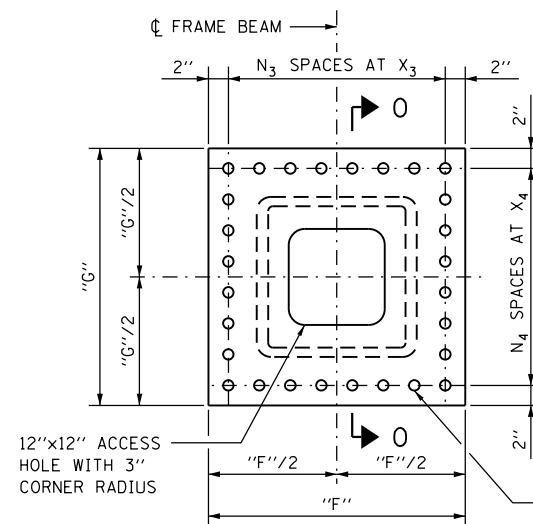


SECTION G-G

3/4" STIFFENER PLATE NOT SHOWN



**SECTION O-O
SPLICE PLATE DETAIL**



SECTION F-F

D1 + 1/16" DIA. HOLE FOR D1 H.S. SPLICE BOLT (TYP.)

SPLICE PLATE TABLE

MAX. SPAN "S1" OR "S2"	"F"	"G"	N3	X3	N4	X4	SPLICE BOLT DIAMETER (D1)	NO. SPLICE BOLT
<=110'	3'-1"	2'-8 1/2"	6	5 1/2"	6	4 3/4"	1"	24
110' < "S" <=130'	3'-0 1/2"	2'-10"	5	6 1/2"	5	6"	1 1/4"	20
130' < "S" <=150'	3'-4"	3'-4"	6	6"	6	6"	1 1/4"	24

BASE DRAWING M-OHS-730

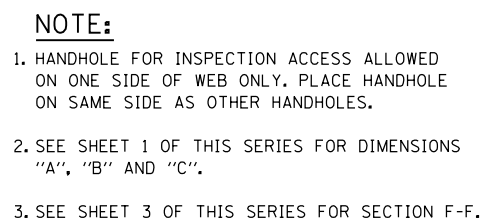
SHEET 3 OF 9



OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
TWO-SPAN
STRUCTURE DETAILS

DATE
3-31-2017

NOTE TO DESIGNER:
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VERIFY HANDHOLE AND INSPECTION HOLES PLACEMENT ON MEDIAN FRAME COLUMN WITH ILLINOIS TOLLWAY ITS.

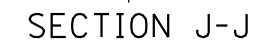


DETAIL C



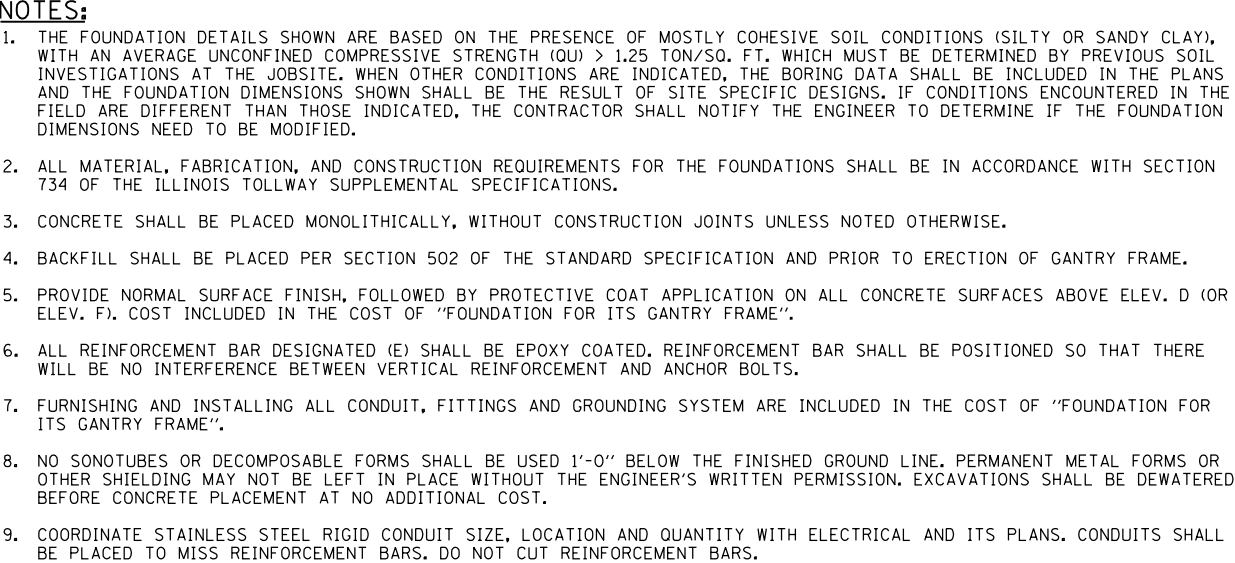
Diagram illustrating a butt joint between a frame beam and a frame column. The joint is shown in cross-section, with the frame beam on the left and the frame column on the right. The joint is a butt joint with a root opening, which is specified to meet AWS Fig. 3.4. The diagram also shows the frame beam, frame column, and the root opening. The joint is labeled as a butt joint with a root opening to meet AWS Fig. 3.4.

DETAIL D

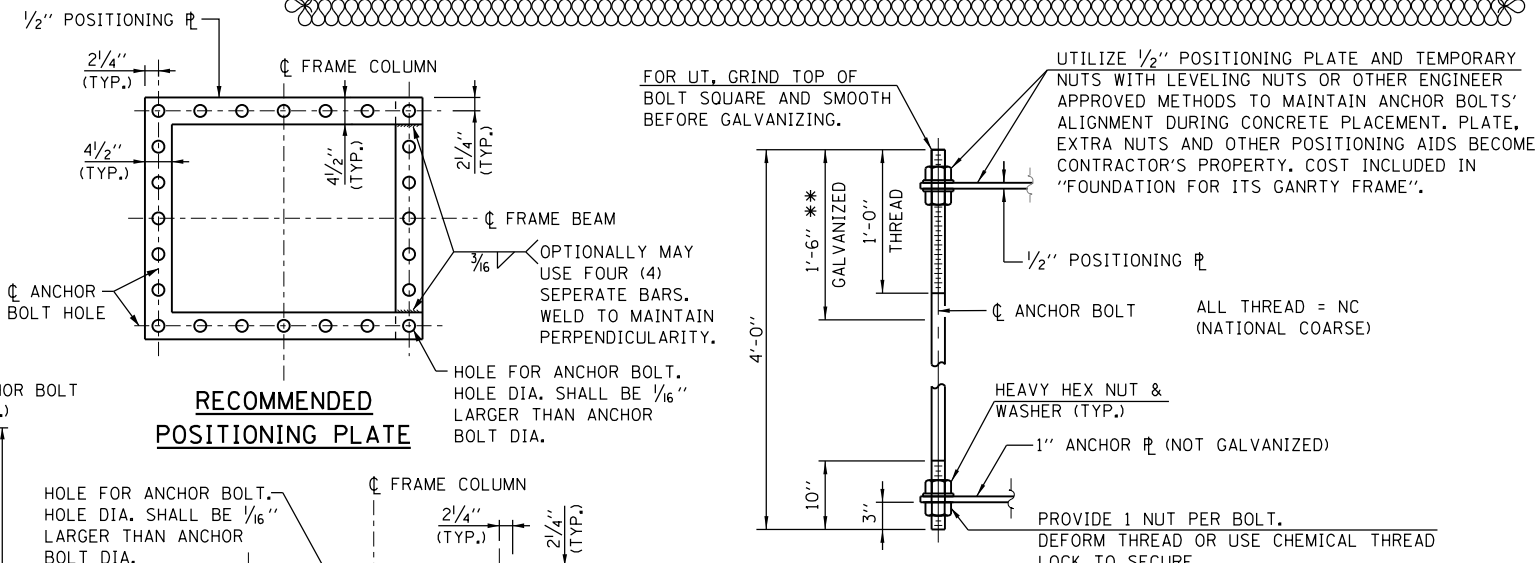


OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
TWO-SPAN
STRUCTURE DETAILS

DATE
3-31-2017















DESIGNER TO COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL AND ITS PLANS. MODIFY DRAWING AS NECESSARY. REMOVE THIS "NOTE TO DESIGNER" PRIOR TO INSERTION INTO THE PLAN SET.



ANCHOR BOLTS SHALL CONFORM TO AASHTO M314 OR ASTM F1554 GRADE 55 AND MEET CHARPY V-NOTCH (CVN) ENERGY OF 15 LB.-FT. AT 40° F. GALVANIZED UPPER 18" PER AASHTO M 232. NO WELDING SHALL BE PERMITTED ON ANCHOR BOLTS.

18" IS MINIMUM TO BE GALVANIZED. ENTIRE BOLT MAY BE GALVANIZED AT CONTRACTOR'S OPTION.

SPAN "S ₁ " OR "S ₂ "	"W"	"X"	"Z"	"SD"	"P"	BAR S(E) PITCH	NO. ANCHOR BOLT
<=110"	1'-5/2"	1'-4"	28'-0"	3'-6"	9"	6"	18
110"<"S"<=130"	1'-8"	1'-5/2"	28'-0"	3'-6"	9"	5"	22
130"<"S"<=150"	1'-8"	1'-6 3/4"	35'-0"	4'-0"	6"	5"	22

SPAN "S ₁ " OR "S ₂ "	BAR	NO.	SIZE	LENGTH	SHAPE
<=110'	h(E)	17	#4	19'-5"	
	s(E)	1	#4	31'-9"	
	v(E)	20	#10	33'-2"	
	u(E)	28	#8	13'-11"	
110'<"S"<=130'	h(E)	17	#4	19'-5"	
	s(E)	1	#5	31'-9"	
	v(E)	20	#10	33'-2"	
	u(E)	28	#8	13'-11"	
130'<"S"<=150'	h(E)	17	#4	19'-5"	
	s(E)	1	#5	38'-9"	
	v(E)	22	#10	40'-2"	
	u(E)	28	#8	13'-11"	

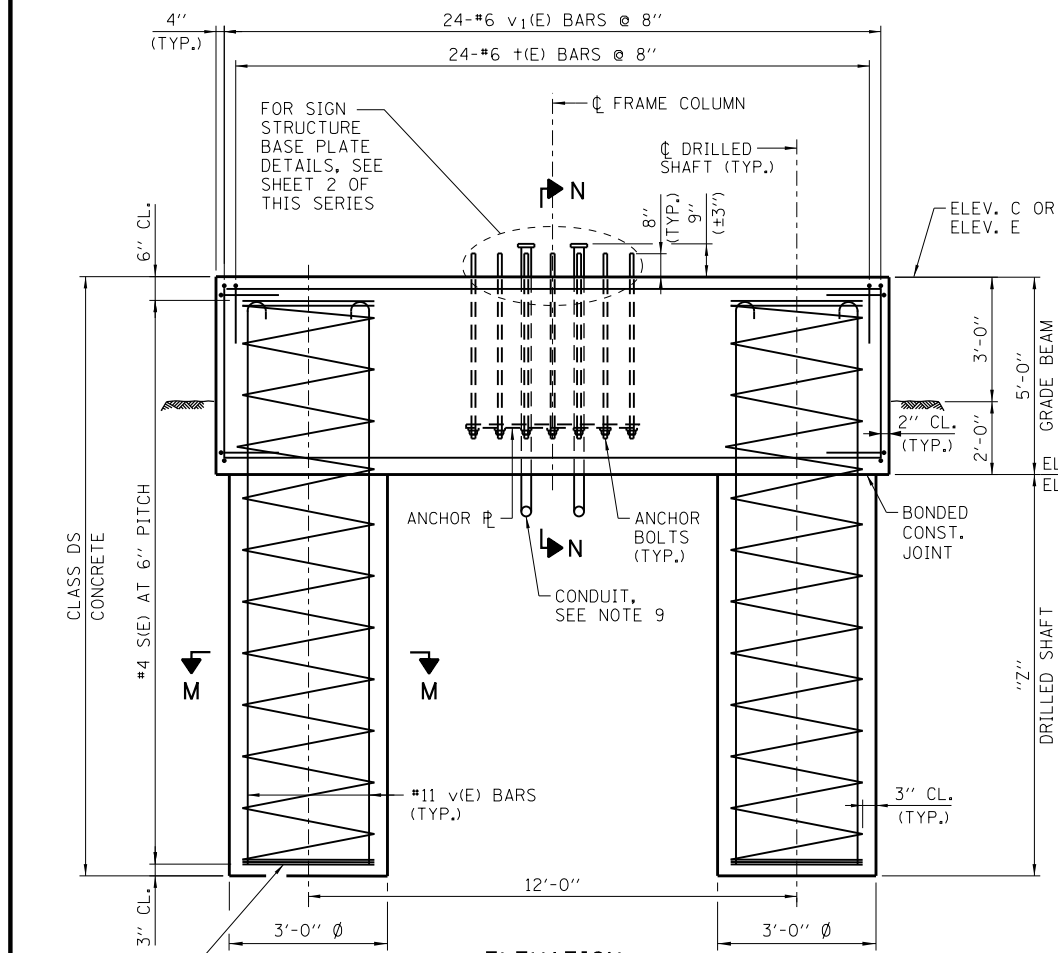
* THE LENGTH OF SPIRAL SHOWN IS THE HEIGHT OF SPIRAL.

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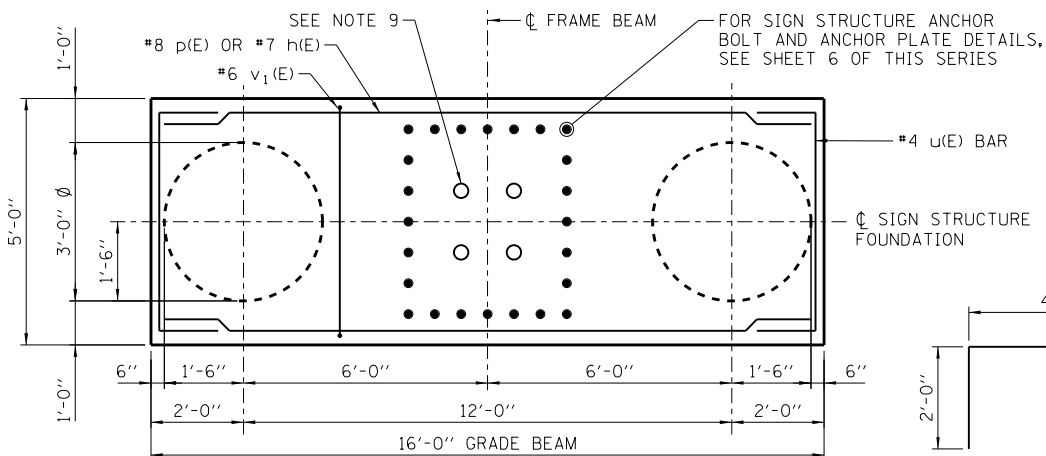
OVERHEAD SIGN STRUCTURE ITS GANTRY FRAME (STEEL) TWO-SPAN STRUCTURE DETAILS

DATE
3-31-2017

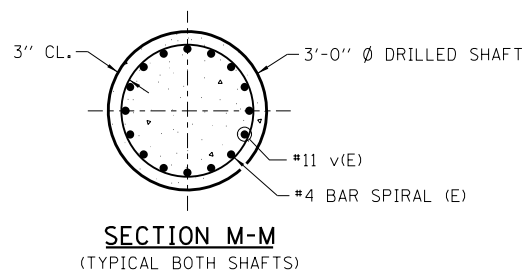


ELEVATION
SHOULDER FOUNDATION TYPE II

3 EXTRA TURNS
MINIMUM TOP AND
BOTTOM (TYP.)

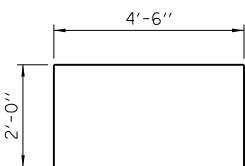


PLAN
SHOULDER FOUNDATION TYPE II

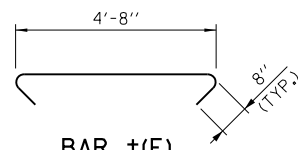


SECTION M-M
(TYPICAL BOTH SHAFTS)

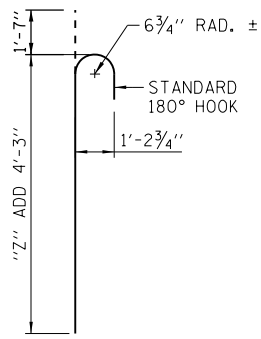
BAR u(E)



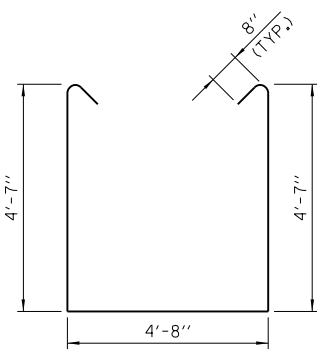
BAR t(E)



BAR v(E)



BAR v1(E)



SHOULDER FOUNDATION TYPE II SCHEDULE

SPAN "S ₁ " OR "S ₂ "	"Z"	"W"	"X"	CLASS DS CONCRETE (CU YD)	REINF. BARS (LB)
<=110'	38'-0"	1'-5 1/2"	1'-4"	35.0	10,190
110'<"S"<=130'	42'-0"	1'-8"	1'-5 1/2"	37.0	10,950
130'<"S"<=150'	46'-0"	1'-8"	1'-6 3/4"	39.0	11,720

NOTES:

1. THE FOUNDATION DETAILS SHOWN ARE BASED ON COMMON COHESIVE SOIL CONDITIONS (SILTY OR SANDY CLAY), WITH AN AVERAGE UNCONFINED COMPRESSIVE STRENGTH (QU) > 1.25 TON/SQ. FT. WHICH MUST BE DETERMINED BY PREVIOUS SOIL INVESTIGATIONS AT THE JOBSITE. WHEN OTHER CONDITIONS ARE INDICATED, THE BORING DATA SHALL BE INCLUDED IN THE PLANS AND THE FOUNDATION DIMENSIONS SHOWN SHALL BE THE RESULT OF SITE SPECIFIC DESIGNS. IF CONDITIONS ENCOUNTERED IN THE FIELD ARE DIFFERENT THAN THOSE INDICATED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO DETERMINE IF THE FOUNDATION DIMENSIONS NEED TO BE MODIFIED.
2. ALL MATERIAL, FABRICATION, AND CONSTRUCTION REQUIREMENTS FOR THE FOUNDATION SHALL BE IN ACCORDANCE WITH SECTION 734 OF THE ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS.
3. CONCRETE SHALL BE PLACED MONOLITHICALLY, WITHOUT CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
4. BACKFILL SHALL BE PLACED PER SECTION 502 OF THE STANDARD SPECIFICATION AND PRIOR TO ERECTION OF GANTRY FRAME.
5. PROVIDE NORMAL SURFACE FINISH, FOLLOWED BY PROTECTIVE COAT APPLICATION ON ALL CONCRETE SURFACES ABOVE ELEV. D (OR ELEV. F). COST INCLUDED IN THE COST OF "FOUNDATION FOR ITS GANTRY FRAME".
6. ALL REINFORCEMENT BAR DESIGNATED (E) SHALL BE EPOXY COATED. REINFORCEMENT BAR SHALL BE POSITIONED SO THAT THERE WILL BE NO INTERFERENCE BETWEEN VERTICAL REINFORCEMENT AND ANCHOR BOLTS.
7. FURNISHING AND INSTALLING ALL CONDUIT, FITTINGS AND GROUNDING SYSTEM ARE INCLUDED IN THE COST OF "FOUNDATION FOR ITS GANTRY FRAME".
8. NO SONOTUBES OR DECOMPOSABLE FORMS SHALL BE USED 1'-0" BELOW THE FINISHED GROUND LINE. PERMANENT METAL FORMS OR OTHER SHIELDING MAY NOT BE LEFT IN PLACE WITHOUT THE ENGINEER'S WRITTEN PERMISSION. EXCAVATIONS SHALL BE DEWATERED BEFORE CONCRETE PLACEMENT AT NO ADDITIONAL COST.
9. COORDINATE STAINLESS STEEL RIGID CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL AND ITS PLANS. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT BARS. DO NOT CUT REINFORCEMENT BARS.

NOTE TO DESIGNER:

DESIGNER TO COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL AND ITS PLANS. MODIFY DRAWING AS NECESSARY. REMOVE THIS "NOTE TO DESIGNER" PRIOR TO INSERTION INTO THE PLAN SET.

NOTE TO DESIGNER:

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REINFORCEMENT BAR SCHEDULE

(2 DRILLED SHAFTS AND 1 GRADE BEAM)

MAX. SPAN "S ₁ " OR "S ₂ "	BAR	NO.	SIZE	LENGTH	SHAPE
"S"<=110'	h(E)	10	#7	15'-8"	***
	p(E)	14	#8	15'-8"	
	t(E)	24	#6	6'-0"	
	s(E)	2	#4	42'-3"	
	v(E)	32	#11	43'-10"	
	v1(E)	24	#6	15'-2"	
110'<"S"<=130'	u(E)	24	#4	8'-6"	***
	h(E)	10	#7	15'-8"	
	p(E)	14	#8	15'-8"	
	t(E)	24	#6	6'-0"	
	s(E)	2	#4	46'-3"	
	v(E)	32	#11	47'-10"	
130'<"S"<=150'	v1(E)	24	#6	15'-2"	***
	u(E)	24	#4	8'-6"	
	h(E)	10	#7	15'-8"	
	p(E)	14	#8	15'-8"	
	t(E)	24	#6	6'-0"	
	s(E)	2	#4	50'-3"	
	v(E)	32	#11	51'-10"	
	v1(E)	24	#6	15'-2"	
	u(E)	24	#4	8'-6"	

* THE LENGTH OF SPIRAL SHOWN IS THE HEIGHT OF SPIRAL.



















BASE DRAWING M-OHS-730
SHEET 7 OF 9








OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
TWO-SPAN
STRUCTURE DETAILS

DATE
3-31-2017



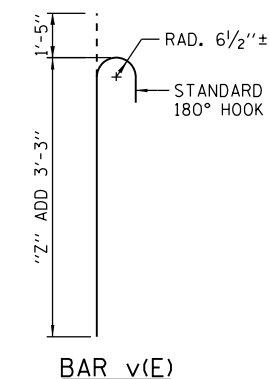
MAX. SPAN “S ₁ ” OR “S ₂ ”	BAR	NO.	SIZE	LENGTH	SHAPE
“S” $\leq 110'$	h ₁ (E)	6	#6	12'-8"	
	p(E)	12	#8	12'-8"	
	t(E)	23	#7	6'-2"	
	s(E)	2	#4	33'-3"	
	v(E)	32	#10	34'-8"	
	v ₁ (E)	23	#7	13'-4"	
110' < “S” $\leq 130'$	h ₁ (E)	6	#6	14'-8"	
	p(E)	12	#8	14'-8"	
	t(E)	27	#7	6'-2"	
	s(E)	2	#4	31'-3"	
	v(E)	32	#10	32'-8"	
	v ₁ (E)	27	#7	13'-4"	
130' < “S” $\leq 150'$	h ₁ (E)	6	#6	14'-8"	
	p(E)	12	#8	14'-8"	
	t(E)	31	#7	6'-2"	
	s(E)	2	#4	31'-3"	
	v(E)	40	#10	32'-8"	
	v ₁ (E)	31	#7	13'-4"	

SECTION S-S

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	16	#4	19'-11"	
u(E)	34	#8	9'-7"	
u ₁ (E)	8	#4	4'-11"	
u ₂ (E)	10	#4	5'-10"	
u ₃ (E)	34	#8	11'-4"	



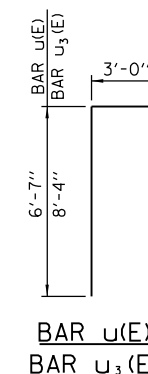
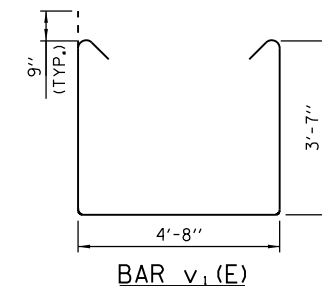
MAX. SPAN "S ₁ " OR "S ₂ "	CLASS BS CONCRETE (CU YD)	CLASS DS CONCRETE (CU YD)	REINF. BARS (LB)	PROTECTIVE COAT (SQ YD)
<=110'	7.0	26.0	9,120	9
110'<"S ₁ "<=130'	7.0	32.0	9,190	9
130'<"S ₁ "<=150'	7.0	32.0	10,480	9



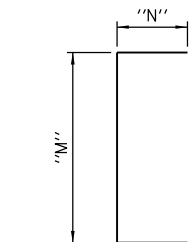
BAR $v(E)$

BAR ±(E)

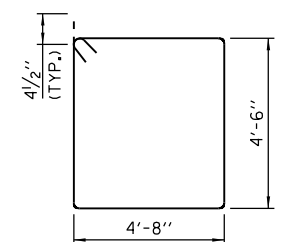
BAR + (E)


$$\frac{\text{BAR } \cup(E)}{\text{BAR } \cup_3(E)}$$


BAR $v_1(E)$


$$\frac{\text{BAR } u_1(E)}{\text{BAR } u_2(E)}$$

BAR	"M"	"N"
$u_1(E)$	3'-7''	8''
$u_2(E)$	4'-6''	8''

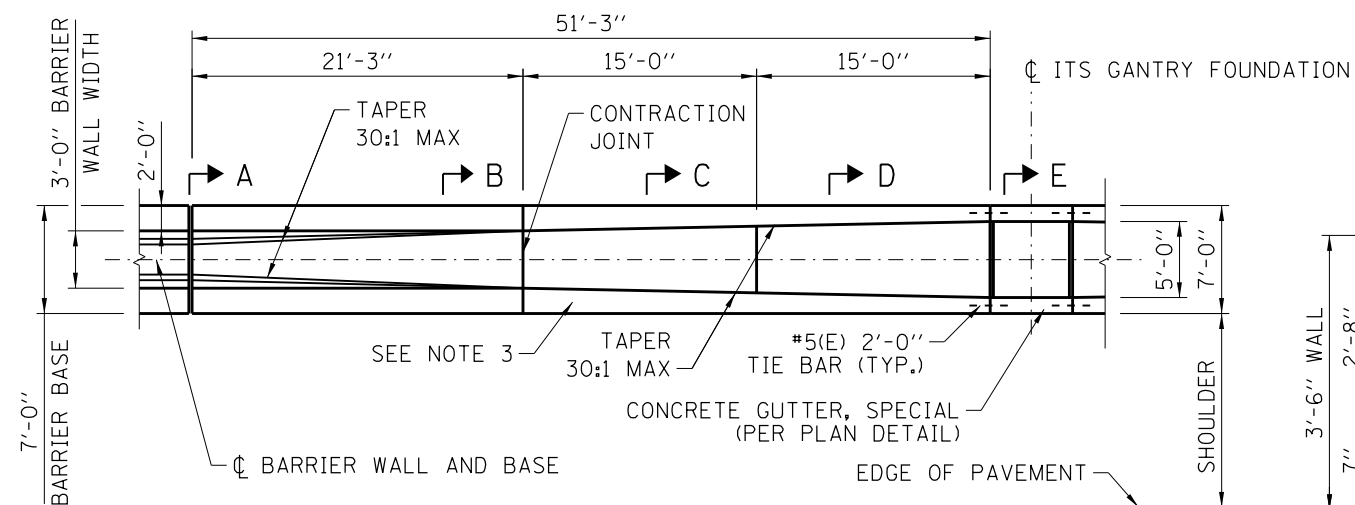


BAR $h(E)$

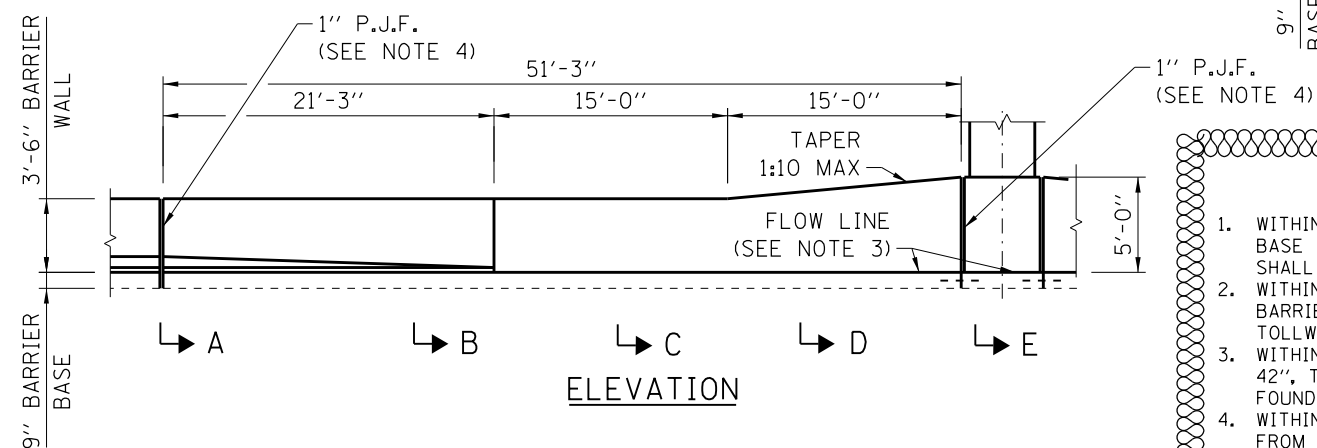


OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
TWO-SPAN
STRUCTURE DETAILS

DATE
3-31-2017

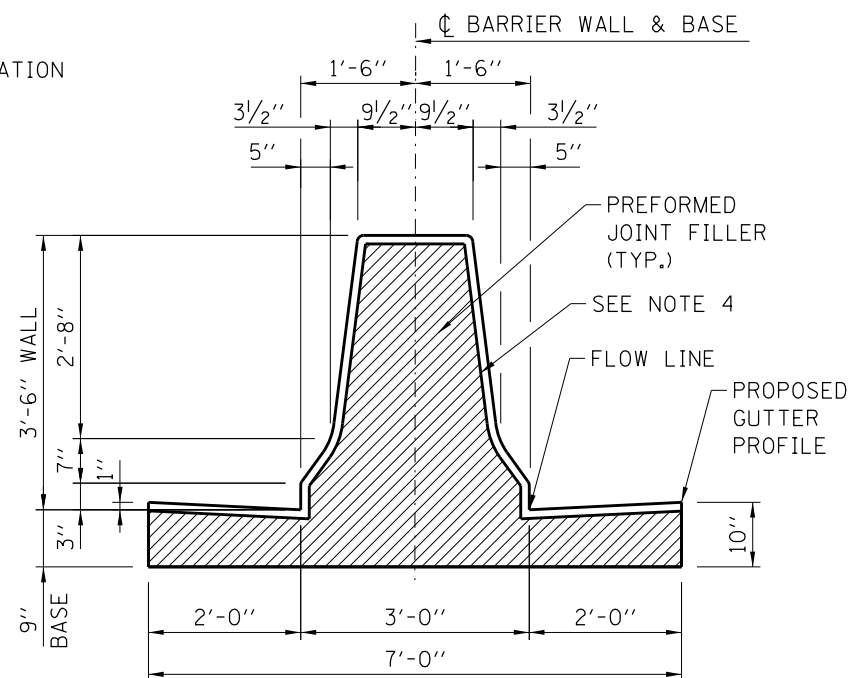


PLAN



ELEVATION

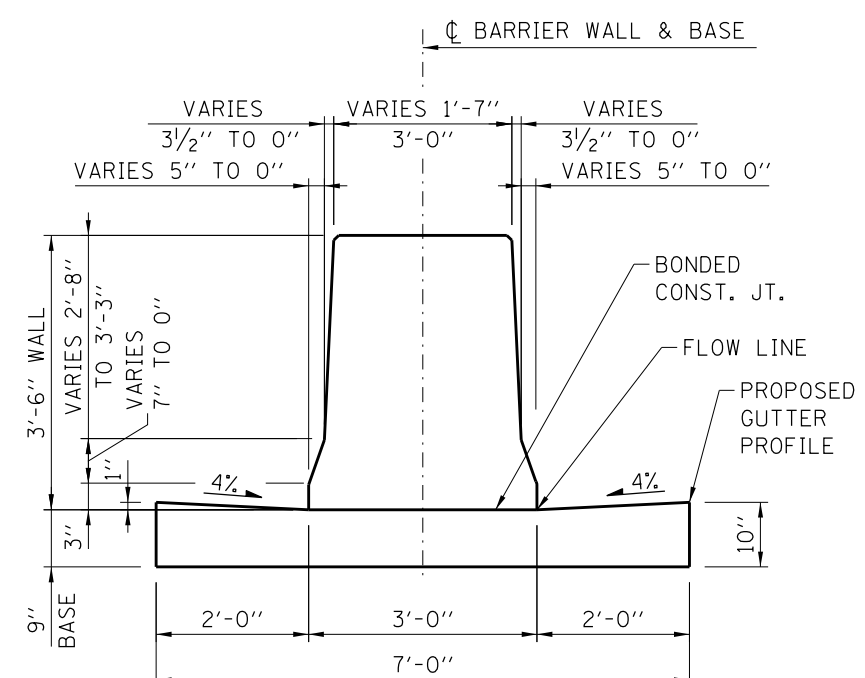
CONCRETE MEDIAN BARRIER TRANSITION, TYPE V-F AT ITS GANTRY



SECTION A-A

NOTE TO DESIGNER:

1. WITHIN SECTION B-B, THE GUTTER PORTION OF THE BARRIER BASE REMAINS 2'-0"; THEREFORE, STANDARD TYPE 20A F&G SHALL BE USED.
2. WITHIN SECTION C-C & D-D, THE GUTTER PORTION OF THE BARRIER BASE IS LESS THAN 2'-0"; THEREFORE, NON-ILLINOIS TOLLWAY STD. F&G SHALL BE USED.
3. WITHIN SECTION B-B & C-C, THE BARRIER HEIGHT REMAINS 42", THIS ALLOWS THE PLACEMENT OF LIGHT POLE FOUNDATIONS WITHIN THIS AREA.
4. WITHIN SECTION D-D, THE BARRIER HEIGHT IS INCREASING FROM 42" TO 60", THE LIGHT POLE FOUNDATIONS SHALL NOT BE PLACED WITHIN THIS AREA.



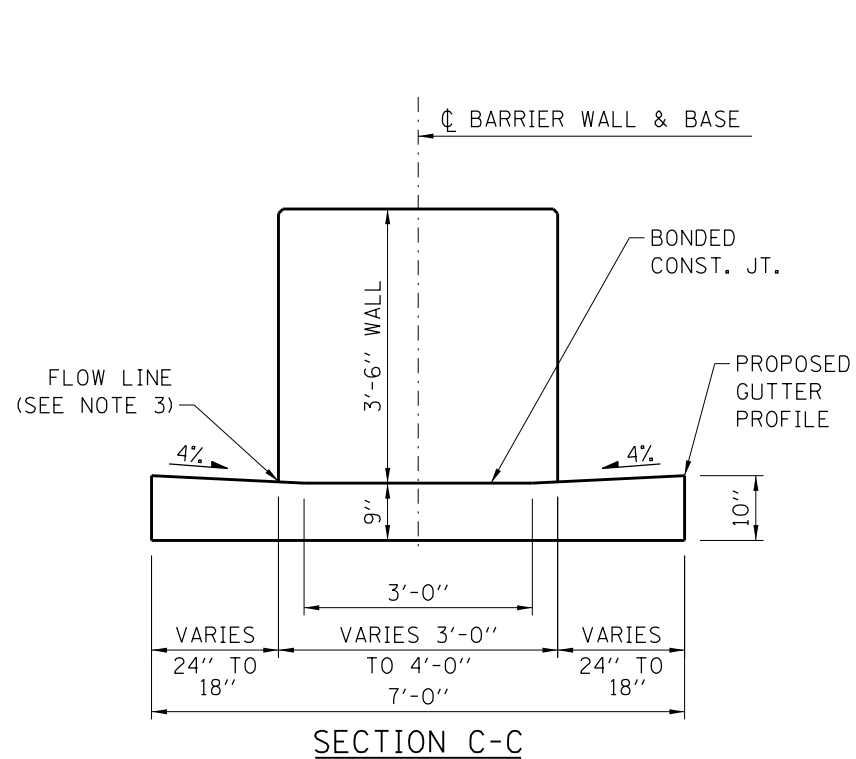
SECTION B-B

NOTE TO DESIGNER:

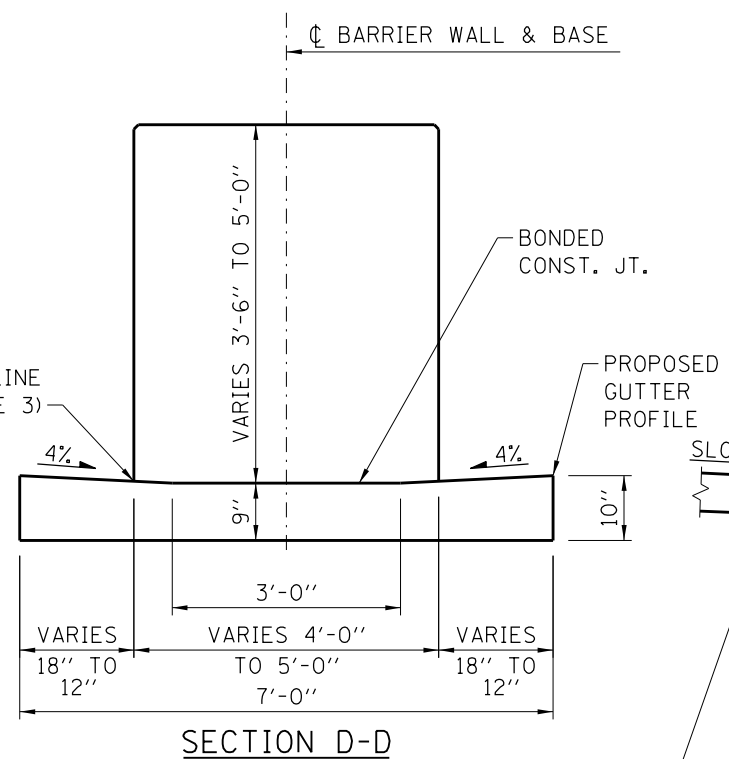
THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS BASE DRAWING UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

NOTES:

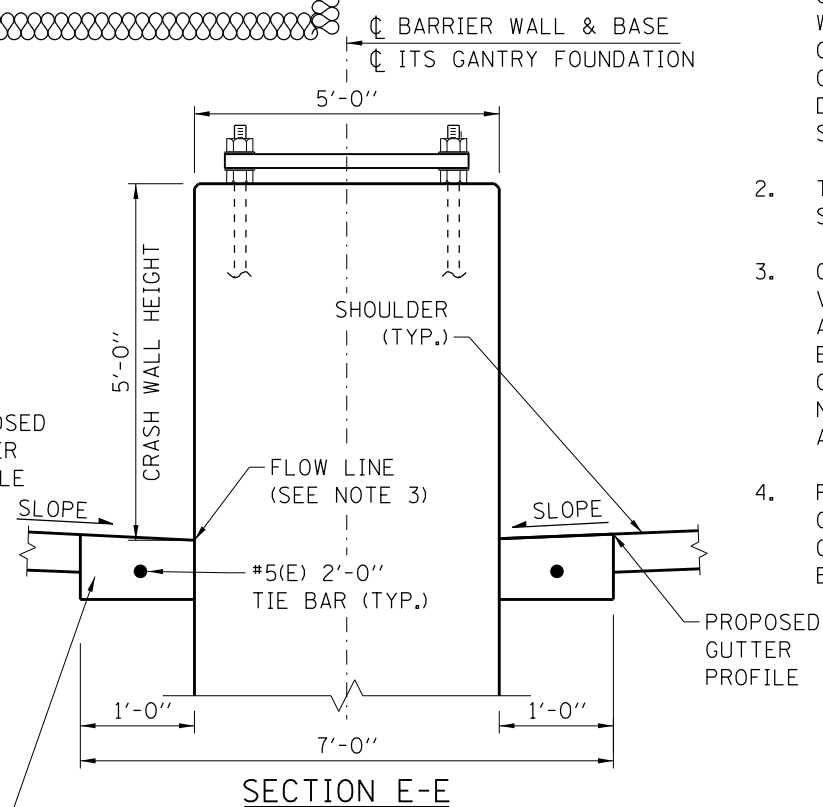
1. 2" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN THE CONCRETE BARRIER WALL AND IN THE CONCRETE BARRIER BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM JOINT SPACING SHALL BE 30'.
2. THE FORMING OF CONTRACTION JOINTS SHALL BE DONE BY SAWING.
3. GUTTER PROFILE IN THE VICINITY OF SAG VERTICAL CURVES, ALONG FLAT GRADES AND AT THE MEETING OF PROPOSED AND EXISTING GUTTER, SHALL BE CAREFULLY CONTROLLED AND FIELD ADJUSTED IF NECESSARY TO ENSURE POSITIVE DRAINAGE AND AVOID PONDING.
4. PROVIDE NON-STAINING GRAY ONE COMPONENT NON-SAG ELASTOMETRIC GUN GRADE POLYURETHANE SEALANT WITH BACKER ROD.



SECTION C-C



SECTION D-D



SECTION E-E

CONC. GUTTER, SPECIAL,
(PER PLAN DETAIL)

BASE DRAWING M-OHS-730
SHEET 9 OF 9



OVERHEAD SIGN STRUCTURE
ITS GANTRY FRAME (STEEL)
TWO-SPAN
STRUCTURE DETAILS

DATE
3-31-2017