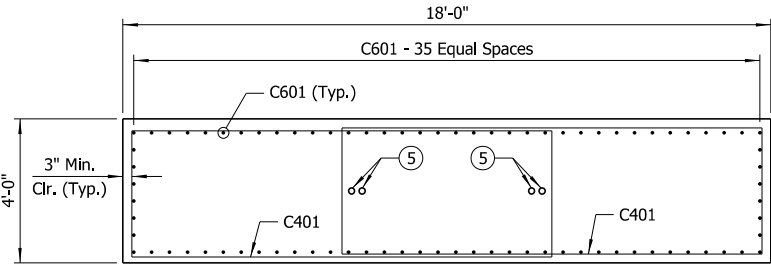


DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.			
TEE MOUNT SIGN STR. - 55098A						

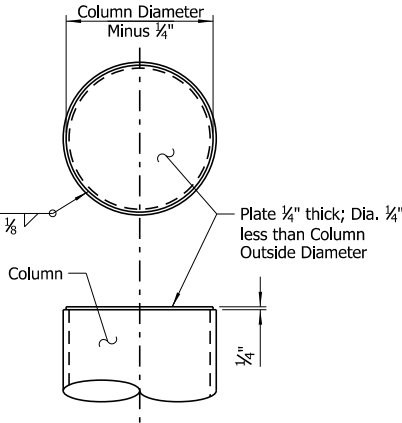
BAR LIST - FOUNDATION A1				BAR BENDING DIAGRAMS	
MARK	NO. REQ'D	LENGTH	P.D.		
C401	10	30'-10"	2"		
C601	84	6'-8"	4 1/2"		
F601	38	17'-6"	Str.		
F602	70	9'-6"	Str.		

NOTES:
Dimensions of bars are out-to-out.
Number of bars shown is for one Foundation A1.

NOTE:
Refer to Sign Layout Sheets and/or ITS Plans
for Foundation Type required for each
structure.



SECTION B-B
Scale: 3/8" = 1'-0"



END CAP DETAIL
Scale: 1 1/2" = 1'-0"

- The Contractor shall make field measurements to determine the column height ("H") that is required to maintain the minimum vertical clearance. The column height shall be shown on the shop drawings with a note stating that the Contractor has made the required field measurements. If the structure height ("H") exceeds 30'-0", contact the Engineer.
- Threaded Conduit Nipples shall be fitted with standard plugs until conduit is installed.
- HSS3x3x3/8 Strut attached to vertical end struts. See "DETAIL X" on Std. Dwg. 55098C. HSS3x3x3/8 member shall always be provided. HSS3x3x3/8 member shall be used for possible Radar Detection Sensor attachment, as required per ITS Plans or for future ITS improvements.
- See "SECTION U-U" on Std. Dwg. 55098B. WT6x17.5 always required. 3" Conduit and Clamping U-Bolts only required when necessary to support ITS equipment or as directed by the Engineer. See ITS Plans.

APPROX. QUANTITIES FOR FOUNDATION A1
(FOR INFORMATION ONLY)

CLASS S CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EXCAVATION (CU. YDS.)
25.40	3,050	61

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

SHEET 1 OF 5
STANDARD DETAILS OF STEEL TEE MOUNT
SIGN STRUCTURE
ARKANSAS STATE HIGHWAY COMMISSION

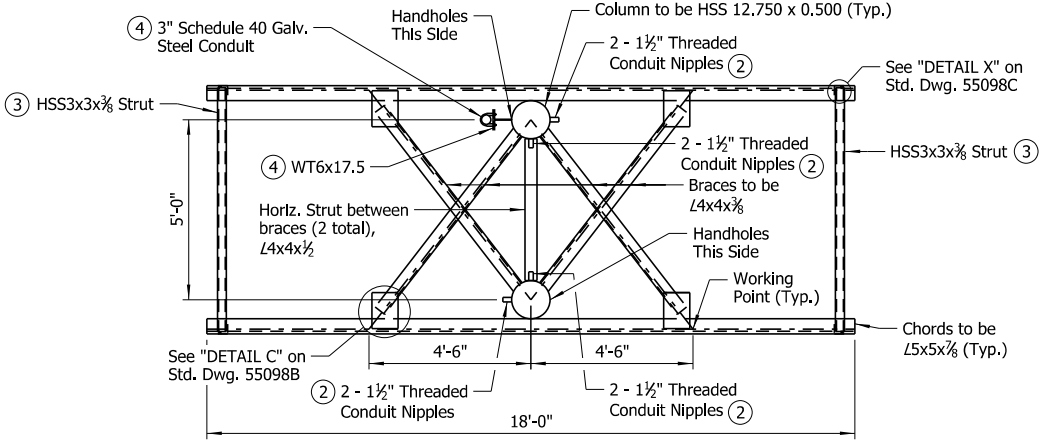
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: SEP. 2022 FILENAME: b55098a.dgn
CHECKED BY: ABH DATE: SEP. 2022 SCALE: As Shown
DESIGNED BY: STD. DATE: -

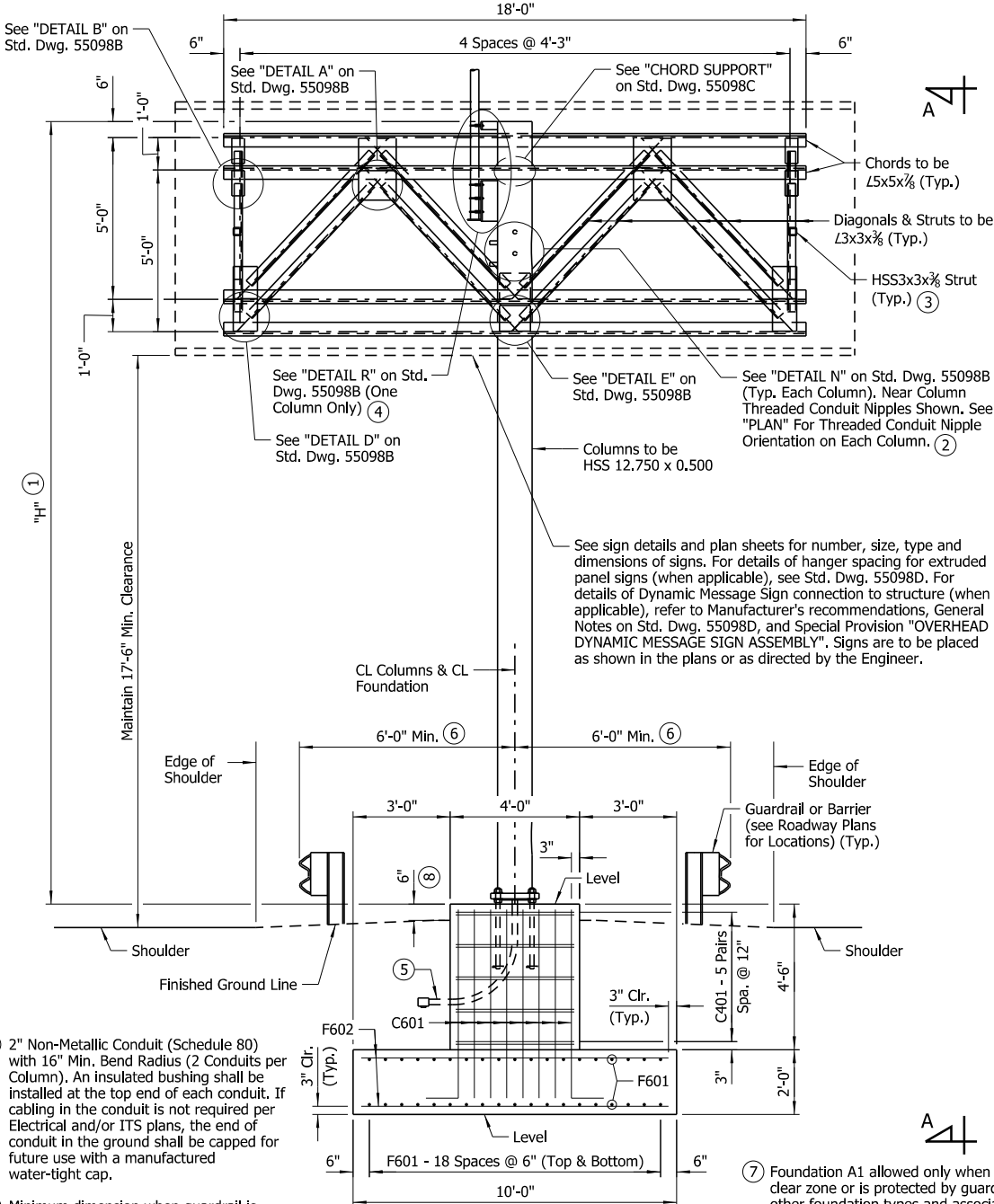
DRAWING NO. 55098A

This document was originally issued by ARDOT Bridge Division. A sealed and signed original is held on file. This copy is not a signed and sealed document.

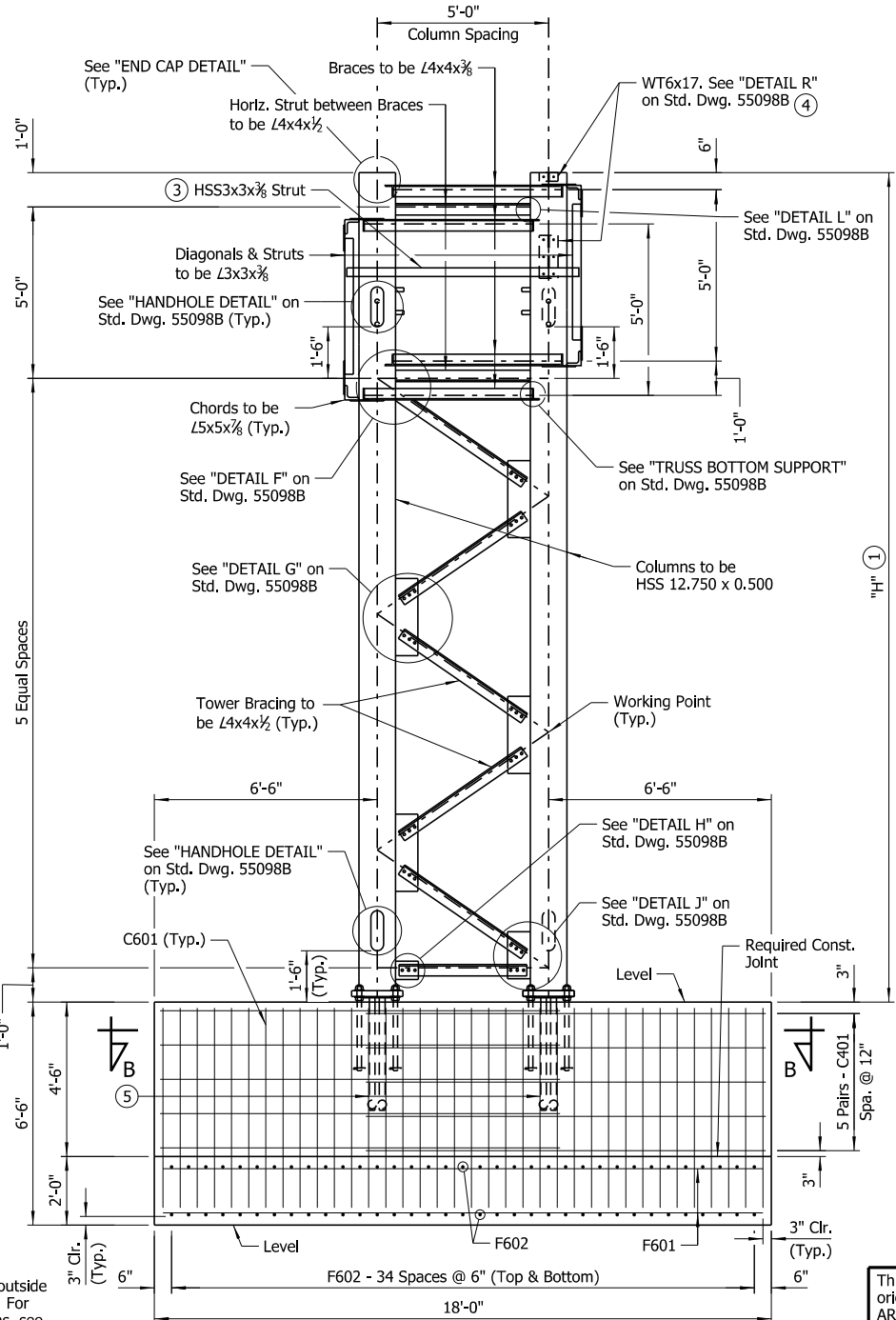
Scales shown are for full size 22"x34" drawings. When using 11"x17" drawings, reduce scale by one half.



PLAN
Scale: 3/8" = 1'-0"



ELEVATION - FOUNDATION A1
No Scale



VIEW A-A
(Foundation A1)
No Scale

- Foundation A1 allowed only when foundation is outside clear zone or is protected by guardrail or barrier. For other foundation types and associated restrictions, see Std. Dwg. 55098D and 55098E.
- Dimension from top of pedestal to Finished Ground Line shall be maintained along the perimeter of the pedestal.

- 2" Non-Metallic Conduit (Schedule 80) with 16" Min. Bend Radius (2 Conduits per Column). An insulated bushing shall be installed at the top end of each conduit. If cabling in the conduit is not required per Electrical and/or ITS Plans, the end of conduit in the ground shall be capped for future use with a manufactured water-tight cap.
- Minimum dimension when guardrail is present. See Sign Layout Sheets and/or ITS Plans for actual dimension for each structure.

BAR LIST - FOUNDATION B1				BAR BENDING DIAGRAMS	
MARK	NO. REQ'D	LENGTH	P.D.		
C401	10	30'-10"	2"		
C601	84	8'-8"	4½"		
F601	38	17'-6"	Str.		
F602	70	9'-6"	Str.		

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 Edition, with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Specifications unless otherwise noted in the plans.

DESIGN SPECIFICATIONS: AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, First Edition, 2015 with current interim revisions.

Basic Wind Speed = 120 mph
Fatigue Category: I

This structure is approved for 250 square feet of sign area and a maximum sign weight (total of all signs and hangers) of 6000 lbs. Use of additional sign area or a heavier sign must be approved by the Engineer. If the structure height ("H") exceeds 30'-0", contact the Engineer.

FOUNDATION MATERIALS AND STRENGTHS:
Class S Concrete $f_c = 3,500$ psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A) $f_y = 60,000$ psi

Spread footings for the structure have been designed assuming a factored bearing resistance of 2.0 ksf. Contractor shall be responsible for evaluating and verifying that the foundation soils are adequate to achieve the assumed factored bearing capacity, utilizing SPT (Standard Penetration Test), CPT (Cone Penetration Test), DCP (Dynamic Cone Penetration) test, or other suitable means, prior to or after footing excavation, whichever is appropriate. If the foundation soils are verified to be adequate, then the footing shall be constructed in accordance with the planned dimensions. Otherwise, the Design Engineer shall be contacted. Costs for foundation soil evaluation and verification shall be included in the item "STEEL TEE MOUNT SIGN STRUCTURE ()".

Structural steel sign support members shall comply with the following specifications:

- Angles: ASTM A709, Gr. 36 ($F_y = 36,000$ psi)
Plate, W-Section: ASTM A709, Gr. 50 ($F_y = 50,000$ psi)
Pipe: ASTM A139, Gr. C, straight-seam welded ($F_y = 42,000$ psi),
ASTM A500, Gr. B ($F_y = 42,000$ psi),
ASTM A501, Gr. B ($F_y = 50,000$ psi)
Z-Shapes: ASTM A709, Grade 36 ($F_y = 36,000$ psi)
Shim Plates: ASTM A1011, SS, Grade 36, Type 2, or Grade 40
Square HSS Tubing: ASTM A500, Gr. B ($F_y = 46,000$ psi),
ASTM A501, Gr. B ($F_y = 50,000$ psi),
ASTM A709, Gr. 36 ($F_y = 36,000$ psi)
Bolts: ASTM F3125, Grade A325, Type 1
Locknuts - Approved Type: ASTM A563, Grade DH or AASHTO M 292, Grade 2H
Washers: ASTM F436
Nuts: ASTM A563, Grade DH or AASHTO M 292, Grade 2H

- ① In addition to material requirements, all pipe used for welded applications shall have a maximum carbon equivalency (CE) of 0.4 using the following equation:
- $$CE = \%C + \%Mn/6 + \%Cu/40 + \%Ni/20 + \%Cr/10 - \%Mo/50 - \%V/10$$

The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearances and to fit the new structure to the existing conditions.

Drawings show general features of design only. Shop drawings shall be made in accordance with Subsection 807.04, submitted, and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

All steel shall be galvanized according to Subsection 807.19. Steel completely encased in concrete may not be galvanized. Galvanized coating damaged during transport, handling or erection shall be field repaired in accordance with Subsection 807.88.

All main load carrying tension members greater than ½" in thickness shall conform to the requirements of the Longitudinal Charpy V-Notch test specified for Zone 1 minimum service temperature. This work and materials shall be paid for in accordance with Special Provision "STEEL SIGN STRUCTURES."

Truss field sections shall be shop assembled. Entire truss shall be fully assembled and lifted into place as one unit on to tower supports. All truss member connections shall be bolted connections.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval. All welding shall conform to Subsection 807.26 except welding of tubular sections shall conform to AWS D1.1 Structural Welding Code.

No circumferential butt welds will be allowed in any pipe sections.

All fillet welds of critical members shall be tested according to AWS D1.1 Structural Welding Code - Steel using the magnetic particle method. Critical welds shall include: column to base plate and truss bottom support to column.

Connections shall be bolted with high-strength bolts. Unless otherwise noted, bolts shall be ¾" diameter and open holes shall be 1½" diameter. Bolt spacing shall be 2¼" for ¾" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of all members.

All truss frame bolts shall comply with ASTM F3125, Grade A325, Type 1, galvanized according to Subsection 807.06. Nuts and washers for ASTM F3125, Grade A325, Type 1 bolts shall be furnished and galvanized in accordance with Subsection 807.06.

Locknuts shall be equipped with nylon locking Inserts or other approved type locking system. Locknuts shall be Installed according to Manufacturer's recommendations.

Anchor bolts shall comply with AASHTO M 314, Grade 55, Including Supplementary Requirement S1, and shall be galvanized according to Subsection 807.07. Nuts and washers for anchor bolts shall be furnished and galvanized in accordance with Subsection 807.07. Anchor bolts shall be pretensioned in accordance with Special Provision "STEEL SIGN STRUCTURES."

Shoring may be required to protect existing shoulders or other elements during excavation. Any shoring required shall not be paid for directly, but shall be considered incidental to the item "STEEL TEE MOUNT SIGN STRUCTURE ()". The excavations for the footings shall be backfilled before the structure is attached to the foundations.

DYNAMIC MESSAGE SIGN (WHEN APPLICABLE): The Dynamic Message Sign (DMS) supplier shall be responsible for the attachment method and materials used to attach the DMS and its accessories to the structure. The method of attachment shall not facilitate any corrosion of the structure. For additional information regarding the DMS, see Special Provision "OVERHEAD DYNAMIC MESSAGE SIGN ASSEMBLY."

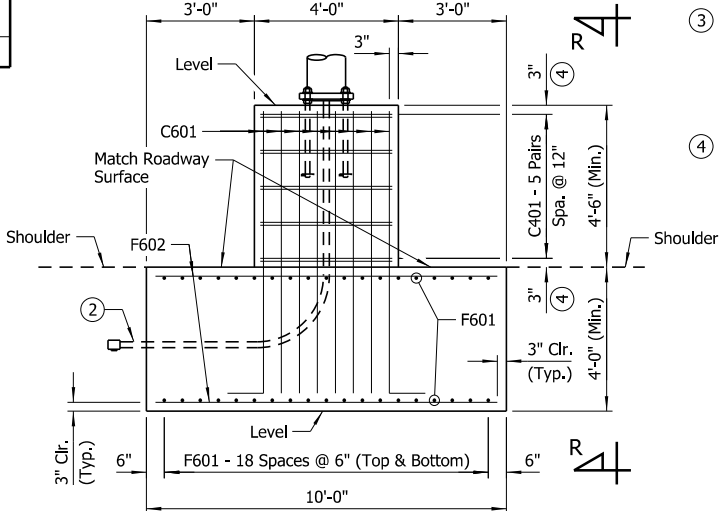
For location of each tee mount sign structure and associated foundation type to be used, refer to ITS and/or Sign Plans.

APPROX. QUANTITIES FOR FOUNDATION B1
(FOR INFORMATION ONLY)

Class S Concrete (Cu. Yds.)	Reinforcing Steel (Lbs.)	Excavation (Cu. Yds.)
38.70	3,300	41

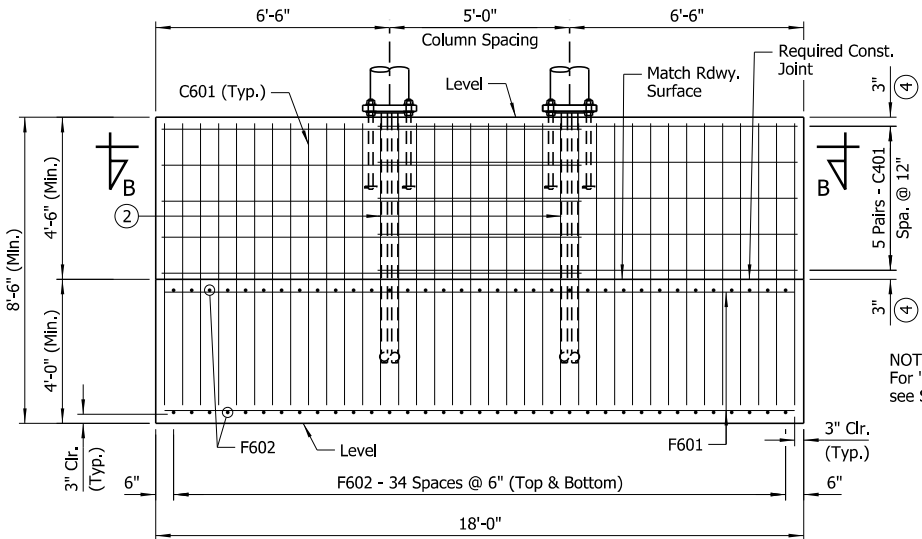
NOTES:
Dimensions of bars are out-to-out.

Number of bars shown is for one Foundation B1.



ELEVATION - FOUNDATION B1 ③

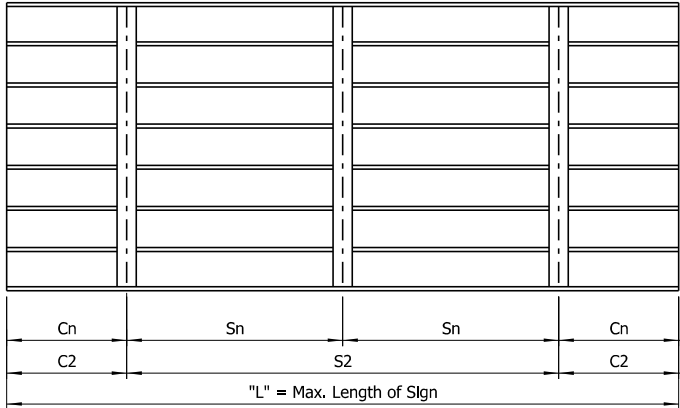
Scale: 3/8" = 1'-0"



VIEW R-R

(Foundation B1)

Scale: 3/8" = 1'-0"

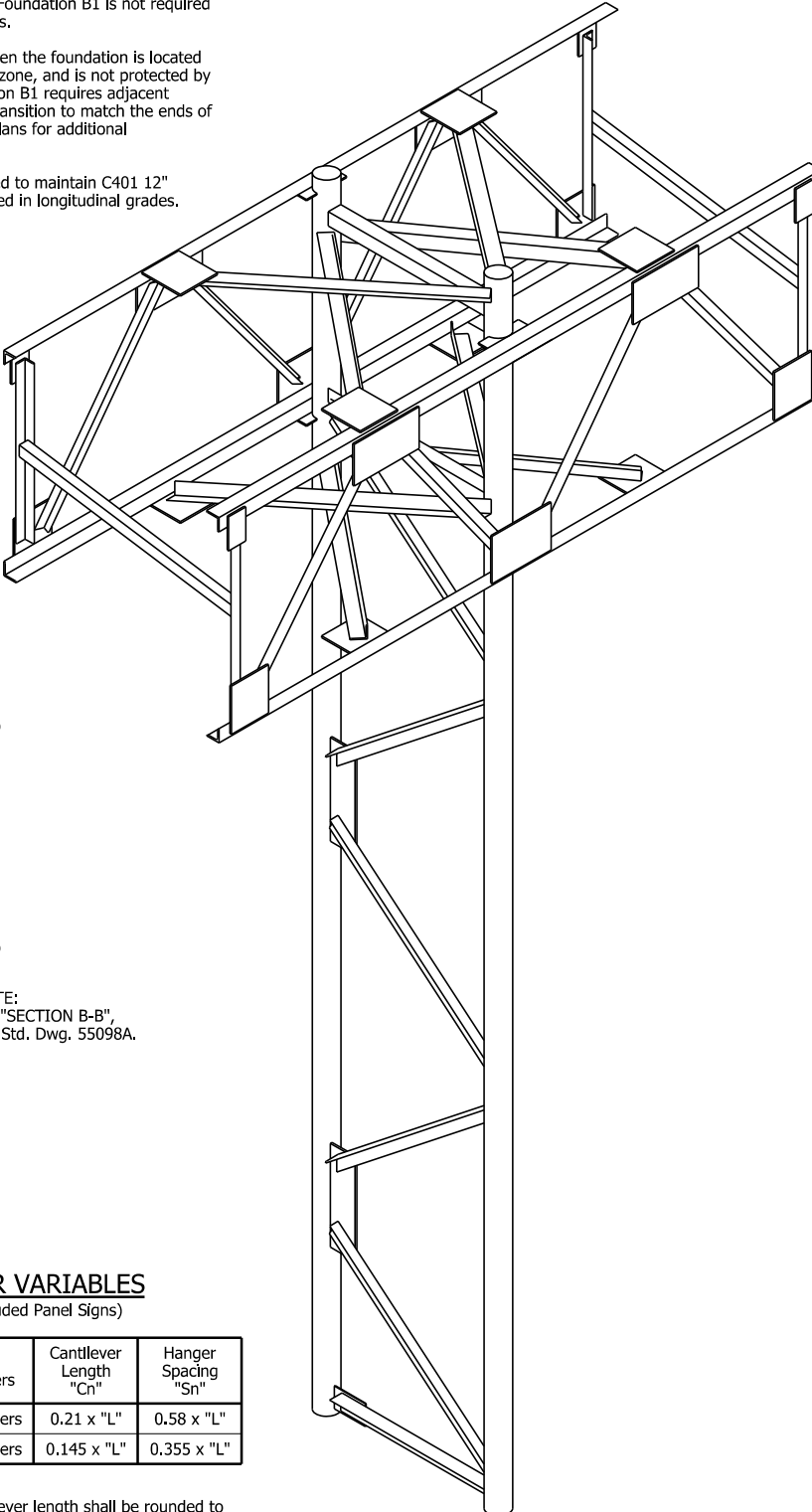


NOTE:
See sign details and plan sheets for number, size and dimensions of signs.

HANGER SPACING DETAILS FOR
EXTRUDED PANEL SIGNS

No Scale

- ② 2" Non-Metallic Conduit (Schedule 80) with 16" Min. Bend Radius (2 Conduits per Column). An insulated bushing shall be installed at the top end of each conduit. Conduit shall not be provided if cabling at Foundation B1 is not required per Electrical and/or ITS plans.
- ③ Foundation B1 is required when the foundation is located in a median, within the clear zone, and is not protected by guardrail or barrier. Foundation B1 requires adjacent Roadway Median Barrier to transition to match the ends of the pedestal. See Roadway Plans for additional information.
- ④ Minor adjustments are allowed to maintain C401 12" spacing for foundations located in longitudinal grades.



ISOMETRIC VIEW

No Scale

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

SHEET 4 OF 5
STANDARD DETAILS OF STEEL TEE MOUNT
SIGN STRUCTURE
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: SEP. 2022 FILENAME: b55098d.dgn
CHECKED BY: ABH DATE: SEP. 2022 SCALE: As Shown
DESIGNED BY: STD. DATE: -

DRAWING NO. 55098D

Scales shown are for full size 22"x34" drawings. When using 11"x17" drawings, reduce scale by one half.

This document was originally issued by ARDOT Bridge Division. A sealed and signed original is held on file. This copy is not a signed and sealed document.

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.			
TEE MOUNT SIGN STR. - 55098E						

DRILLED SHAFT NOTES (FOUNDATIONS A2 & B2)

Drilled shafts shall conform to Special Provision "DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES". Drilled shafts will not be paid for directly but shall be considered subsidiary to the unit price bid for "STEEL TEE MOUNT SIGN STRUCTURE ()". Temporary casing may be required. Unless approved by the Engineer, permanent steel casing shall not be used.

Crosshole Sonic Logging (CSL) shall be performed on one drilled shaft at each foundation and as directed by the Engineer. Testing shall be performed in accordance with Special Provision "NONDESTRUCTIVE TESTING OF DRILLED SHAFTS FOR STEEL SIGN STRUCTURES".

Concrete and reinforcing steel placed in drilled shafts will not be paid for directly but shall be considered subsidiary to the unit price bid for "STEEL TEE MOUNT SIGN STRUCTURE ()". No additional payment shall be made for spacers, additional splices or bracing needed for assembly, shipping, handling or erecting.

Concrete in drilled shafts shall be Class "S" as modified by Special Provision "DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES".

Drilled shaft lengths shall be determined based on the results of exploratory borings, which shall be performed by the Contractor prior to shaft excavation.

If competent rock is not encountered in the exploratory boring, the Standard Penetration Test (SPT) blow count corrected by the hammer efficiency, N60, shall be used to determine shaft lengths. See "TABLE OF VARIABLES".

If competent rock is encountered in the exploratory boring within 25'-0" of planned top of drilled shaft, the shafts shall be founded a minimum of 3'-0" into rock and have a minimum length of 25'-0".

If competent rock is encountered in the exploratory boring below 25'-0" from planned top of drilled shaft, the shafts shall be founded a minimum of 3'-0" into rock or to the depth based on the SPT N60 value and associated shaft length in the "TABLE OF VARIABLES", whichever is shallower.

Testing results shall be submitted to the Engineer for review. Final drilled shaft lengths shall be approved by the Engineer prior to construction.

The cost of performing exploratory borings and in-situ strength testing shall be included in the item "STEEL TEE MOUNT SIGN STRUCTURE ()".

TABLE OF VARIABLES ⑧

SPT N60 (blows/ft.) ⑦	Min. Depth of Exploratory Boring	Drilled Shaft Length, "C"	"D"	"E"	"F" ⑨	"G"
<5	-	Contact Engineer	-	-	-	-
5 To 7	72'-0"	67'-0"	133	268	69'-5"	134'-0"
7 To 9	60'-0"	55'-0"	109	220	57'-5"	110'-0"
9 To 11	45'-0"	40'-0"	79	160	42'-5"	80'-0"
11 To 13	36'-0"	31'-0"	61	124	33'-5"	62'-0"
>13	30'-0"	25'-0"	49	100	27'-5"	50'-0"

- 2" Non-Metallic Conduit (Schedule 80) with 16" Min. Bend Radius (2 Conduits per Column). An insulated bushing shall be installed at the top end of each conduit. At Foundation B2, conduit shall not be provided if cabling is not required per Electrical and/or ITS plans. At Foundation A2, conduit shall always be provided. If cabling in the conduit at Foundation A2 is not required per Electrical and/or ITS plans, the end of conduit in the ground shall be capped for future use with a manufactured water-tight cap.
- Foundation A2 allowed only when foundation is outside clear zone or is protected by guardrail or barrier.
- Foundation B2 is required when the foundation is located in a median, within the clear zone, and is not protected by guardrail or barrier. Foundation B2 requires adjacent Roadway Median Barrier to transition to match the ends of the cap. See Roadway Plans for additional information.
- C401 Ties - 2 Spaces @ 9"

APPROX. QUANTITIES FOR FOUNDATION A2 (FOR INFORMATION ONLY)

⑤ CLASS S CONCRETE (CU. YDS.)	⑥ REINFORCING STEEL (LBS.)	EXCAVATION (CU. YDS.)	DRILLED SHAFT (30" DIA.) (LIN. FT.)	CROSSHOLE SONIC LOGGING (30" DIA.) (EACH)
7.40	1,040	15	"G"	1

APPROX. QUANTITIES FOR FOUNDATION B2 (FOR INFORMATION ONLY)

⑤ CLASS S CONCRETE (CU. YDS.)	⑥ REINFORCING STEEL (LBS.)	DRILLED SHAFT (30" DIA.) (LIN. FT.)	CROSSHOLE SONIC LOGGING (30" DIA.) (EACH)
7.40	1,040	"G"	1

- Does not include Class S Concrete for Drilled Shafts
- Does not include D401 and D801 Bars in Drilled Shafts

⑦ Tabulated SPT N60 values are raw SPT N values corrected by SPT hammer efficiency and represent average values along the plan shaft penetration. If the SPT N60 values in the foundation soils within 2 shaft diameters below the plan tip elevation are less than the average SPT N60 values along the plan shaft penetration, the Engineer shall be contacted.

⑧ If final drilled shaft length is not shown in "TABLE OF VARIABLES" due to the presence of rock or other factors, variables "D" through "G" shall be determined as follows:

"D" = (Shaft Length in Ft. - 0.5) / 0.5
"E" = Shaft Length in Ft. x 4
"F" = Shaft Length + 2'-5"
"G" = Shaft Length x 2

⑨ If "F" exceeds 60'-0", a lap splice is required for each D801 bar at the midpoint of the drilled shaft. Min. lap splice length for D801 bar = 3'-6". Length shown in table does not include the additional length required for a lap splice.

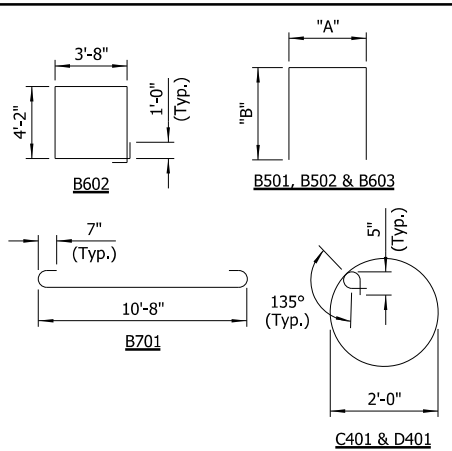
BAR LIST - FOUNDATION A2 OR B2

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B501	6	6'-4"	3'-6"	1'-6"	2½"
B502	6	6'-10"	4'-0"	1'-6"	2½"
B601	14	10'-8"			Str.
B602	13	16'-10"			4½"
B603	4	11'-8"	3'-8"	4'-2"	4½"
B701	12	12'-4"			5¼"
C401	6	7'-4"			3"
D401	"E"	7'-4"			3"
D801	20	"F"			Str.

NOTES:
Dimensions of bars are out-to-out.

Number of bars shown is for one Foundation A2 or one Foundation B2.

BAR BENDING DIAGRAMS



THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

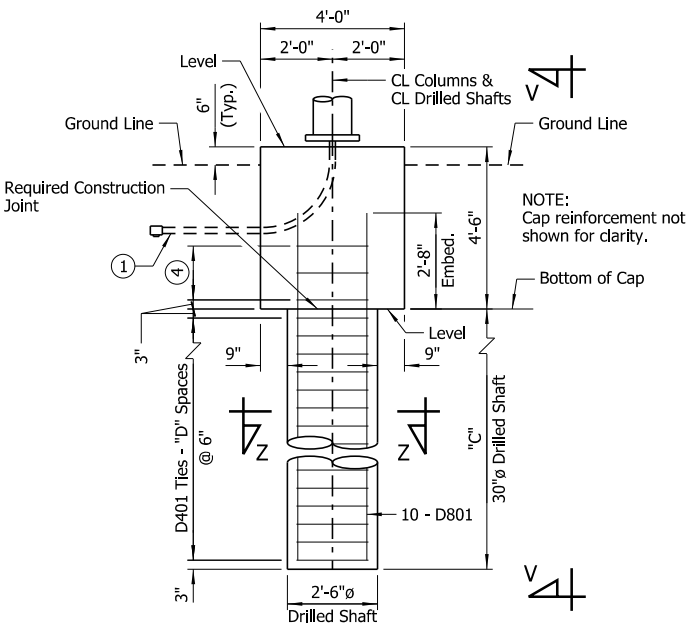
SHEET 5 OF 5 STANDARD DETAILS OF STEEL TEE MOUNT SIGN STRUCTURE ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

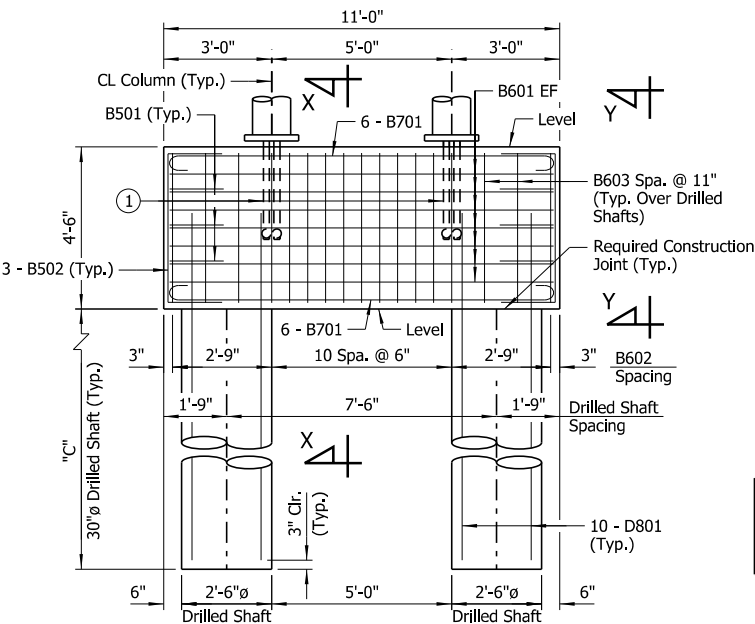
DRAWN BY: CSW DATE: SEP. 2022 FILENAME: b55098e.dgn
CHECKED BY: ABH DATE: SEP. 2022 SCALE: As Shown
DESIGNED BY: STD. DATE: -

DRAWING NO. 55098E

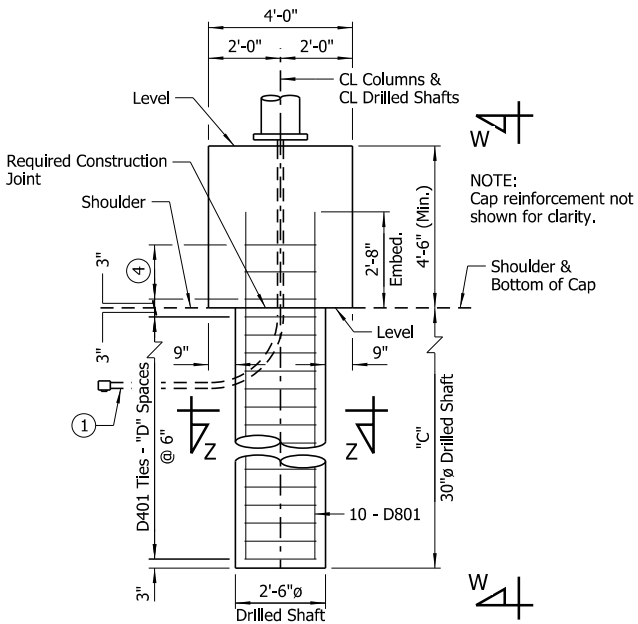
Scales shown are for full size 22"x34" drawings. When using 11"x17" drawings, reduce scale by one half.



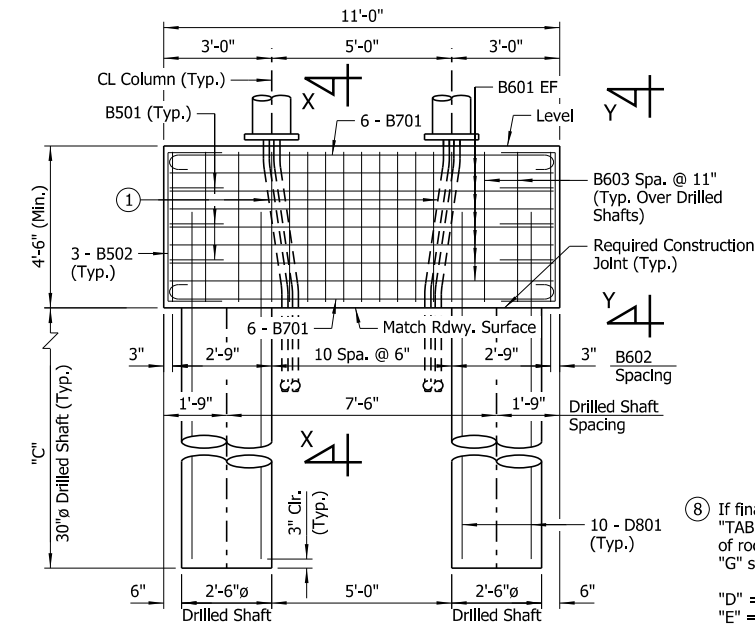
ELEVATION - FOUNDATION A2 ②
Scale: ¾" = 1'-0"



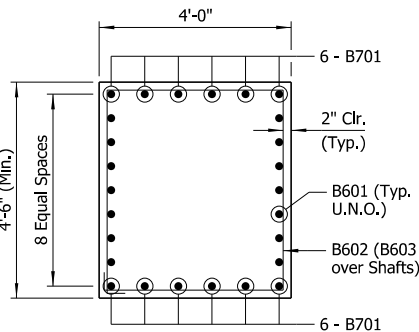
VIEW V-V
Scale: ¾" = 1'-0"



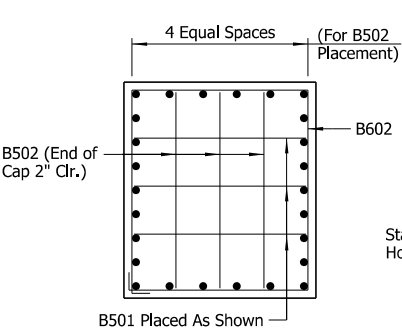
ELEVATION - FOUNDATION B2 ③
Scale: ¾" = 1'-0"



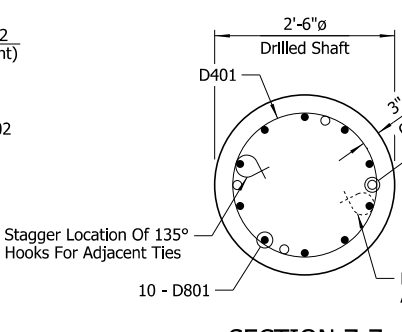
VIEW W-W
Scale: ¾" = 1'-0"



SECTION X-X
Scale: ½" = 1'-0"



VIEW Y-Y
Scale: ½" = 1'-0"



SECTION Z-Z
Scale: ¾" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise
EF = Each Face

This document was originally issued by ARDOT Bridge Division. A sealed and signed original is held on file. This copy is not a signed and sealed document.